GH2 ARCHITECTS
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Addendum 3

To:	Bidding Documents Plan-Holders of Record Project File	**Date:** **Addendum Number:** **Architect's Project #:** **Project Name:**	07/01/2024 Three 20230239 Owasso PS Enrollment and IT Center

From: **GH2 ARCHITECTS, LLC**
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NOTICE••••••••••••
This Addendum supplements and amends the original Bidding Documents, shall be taken into account in preparing proposals, and shall become a part of the Construction Documents. The bidder shall indicate receipt of this addendum and all previously issued addenda on the Bid/Proposal Form.

PRIOR ADDENDA
Two

Changes / Clarifications To Specifications:

1. Specification Section 01 4000, Quality Requirements (Narrative only)
    a. 1.07, A: Revise to "Owner will employ and pay for services of an independent testing agency to perform specified testing, unless noted otherwise."
2. Specification Section 09 3000 – Tiling (Narrative only)
    a. 1.06, G: Revise to "Concrete moisture testing to be provided by contractor."

Changes / Clarifications To Drawings:

1. Sheet A101, Floor Plan
    a. Alignment notes added to floor plan.

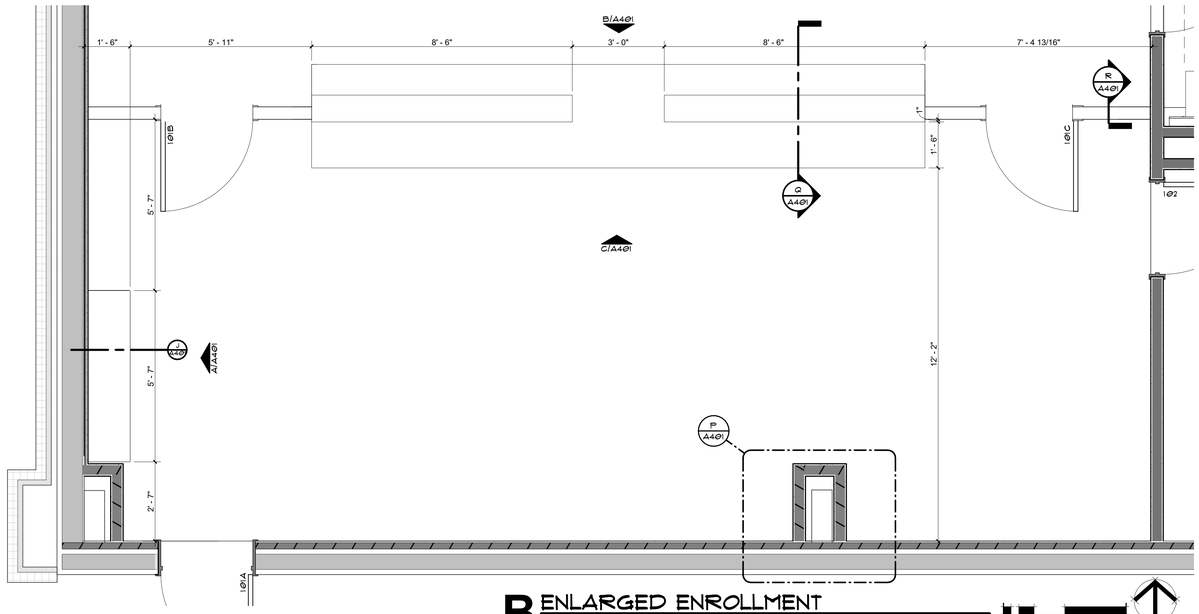
2. Sheet A121, Reflected Ceiling Plan – First Floor
    a. Alignment notes moved to A101.

3. Sheet E100, Lighting Plan
    a. Removed general note. All light fixtures are now furnished and installed by the contractor.
    b. Removed Lutron lighting controls and replaced with standard toggle switches and occupancy sensors.
    c. Updated the title blocks.

LIST OF ATTACHMENTS

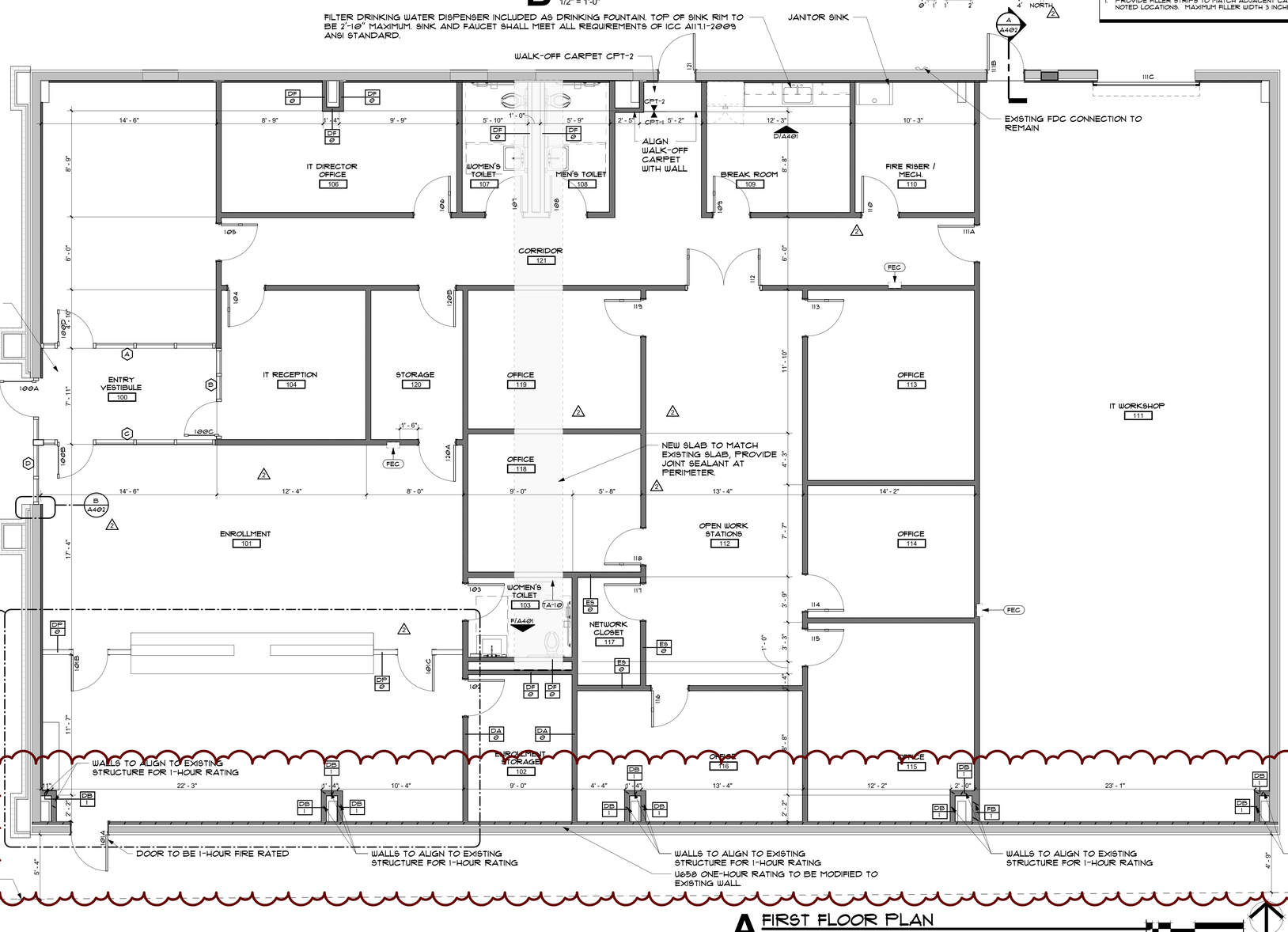
1. A101 – FLOOR PLAN
2. A121 – REFLECTED CEILING PLAN – FIRST FLOOR
3. ED100 – ELECTRICAL DEMOLITION
4. E001 – ELECTRICAL GENERAL NOTES & SYMBOLS
5. E100 – LIGHTING PLAN
6. E200 – POWER PLAN
7. E300 – ONE-LINE DIAGRAM & PANEL SCHEDULES
8. E401 – ELECTRICAL SPECIFICATION
9. E402 – ELECTRICAL SPECIFICATION

END OF ADDENDUM



B ENLARGED ENROLLMENT
1/2" = 1'-0"

0' 1' 1' 2' 4' NORTH



A FIRST FLOOR PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8' NORTH

FINISH FLOOR PLAN GENERAL NOTES

1. ALL NEW BUILDING MATERIALS AND PRODUCTS SHALL NOT CONTAIN LEAD, CADMIUM, OR ASBESTOS.
2. RECYCLE ALL ELIGIBLE FINISH MATERIALS PER MANUFACTURER'S RETURN OR RECLAMATION PROGRAM.
3. REFER TO ROOM FINISH SCHEDULE FOR ADDITIONAL INFORMATION AT NON-ELEVATED AREAS.
4. PROVIDE CORNER AND END-WALL GUARDS AT OUTSIDE GYPSUM BOARD CORNERS.
5. WALL FINISHES TO HAVE MINIMUM CLASS "A" RATING FOR FLAME SPREAD AND SMOKE DEVELOPMENT.
6. FINISH HATCHES AND PATTERNS ARE FOR GRAPHIC PURPOSES ONLY, AND ARE NOT INTENDED TO SHOW EXACT PATTERN OR SIZES OF FINISHES.
7. PROVIDE TILE BACKER BOARD AT ALL WALLS SHOWN TO RECEIVE TILE.
8. PROVIDE SEALANT AT ALL TILE INSIDE CORNERS AND AT DOOR FRAMES. COLOR TO MATCH ADJACENT GROUT COLOR.

TILE

1. "LEVEL LINE" OF TILE INSTALLATION TO BE TAKEN AT THE LOW POINT OF THE FLOOR SLAB TO ALLOW TILE TO BE FLUSH WITH VARIATION IN FLOOR SLAB.
2. USE SCHLUTER QUADEC TRANSITION STRIP FOR ALL OUTSIDE CORNERS OF TILE CONDITIONS AND UNFINISHED EXPOSED EDGES OF TILE INSTALLATION. MITER OUTSIDE CORNERS OF TRIM. BUTT JOINTS ARE NOT ALLOWED. FINISH: SATIN NICKEL.
3. TILE SOFT JOINTS TO MATCH GROUT COLOR. RE: SPECIFICATIONS FOR ADDITIONAL INFORMATION. INSTALL TILE AT WALLS WITH FULL PIECE AT FLOOR, CUTS TO OCCUR AT CEILING IF NEEDED, UNLESS NOTED OTHERWISE.

PAINT

1. ALL GYPSUM BOARD WALLS TO BE PAINTED PT-1, UNLESS NOTED OTHERWISE.
2. DOOR FRAMES TO BE PT-2, UNLESS NOTED OTHERWISE.
3. ALL ELECTRICAL PANEL DOORS, AND WALL AND CEILING GRILLES ARE TO HAVE A FINISH TO MATCH ADJACENT SURFACE, UNLESS NOTED OTHERWISE.
4. SWITCH PLATES AND ELECTRICAL DEVICES ARE NOT TO BE PAINTED.

FLOORING

1. CHANGES IN FLOORING HEIGHTS UP TO 1/4 INCH MAY BE VERTICAL AND WITHOUT REDUCING EDGE TREATMENT. CHANGES IN FLOORING HEIGHTS BETWEEN 1/4 INCH AND 1/2 INCH SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2. IF CHANGES IN FLOORING LEVEL ARE GREATER THAN 1/2 INCH, NOTIFY ARCHITECT FOR DETAILS TO PROVIDE ADA COMPLIANT RAMP.
2. ALL FLOORING TRANSITIONS ARE TO OCCUR AT THE CENTERLINE OF DOOR, UNLESS NOTED OTHERWISE.
3. PROVIDE STAINLESS STEEL SCHLUTER TRANSITION STRIP BETWEEN CHANGE IN FLOOR SURFACE, UNLESS NOTED OTHERWISE.
4. PROVIDE THRESHOLD AT TRANSITION FROM WET AREAS.

CASEWORK

1. CONTRACTOR TO FIELD MEASURE AND VERIFY ALL DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION OF CASEWORK.
2. REFER TO FLOOR PLANS AND INTERIOR ELEVATIONS FOR EXACT LOCATIONS OF CASEWORK.
3. COUNTERTOPS AND BACKSPLASHES TO RECEIVE CLEAR SEALANT AT WALL.
4. ALL SOLID SURFACE COUNTERS TO BE S8-1, UNLESS NOTED OTHERWISE.
5. PROVIDE SIDE, TOP, AND BOTTOM FILLER PIECES AS REQUIRED TO COMPLETE THE CASEWORK AS INDICATED ON THE PLANS AND INTERIOR ELEVATIONS.
6. PROVIDE FINISHED END PANELS AT ALL EXPOSED CABINET ENDS, KNEE SPACES, AND BANQUETTE ENDS.
7. PROVIDE FILLER STRIPS TO MATCH ADJACENT CABINETS AT ALL NOTED LOCATIONS. MAXIMUM FILLER WIDTH 3 INCHES.

FLOOR PLAN GENERAL NOTES

NEW WALL / PARTITION

EXISTING WALL / PARTITION

TYPICAL DOOR PLACEMENT, UNLESS NOTED OTHERWISE. APPLIES TO SINGLE AND DOUBLE DOORS

ALIGN FINISHED EDGES, UNLESS NOTED OTHERWISE

XX'-XX" FLOORING TRANSITION XX'-XX"

1. ALL INTERIOR DIMENSIONS ARE TO THE FACE OF STUD, UNLESS NOTED OTHERWISE. DO NOT SCALE DRAWINGS. CONTACT ARCHITECT FOR CLARIFICATION.
2. ALL EXTERIOR DIMENSIONS ARE FROM FACE OF EXTERIOR FINISH, UNLESS NOTED OTHERWISE.
3. UNLESS DIMENSIONED OTHERWISE, ALIGN PARTITIONS ON GRIDLINES WITH CENTERLINE OF STUD.
4. INTERIOR PARTITIONS ARE TYPE DA@ UNLESS NOTED OTHERWISE. REFER TO SHEET A601 FOR PARTITION TYPES. 2
5. WHEN WALL PARTITIONS OF DIFFERENT FIRE OR SOUND RATINGS INTERSECT, THE HIGHEST RATED PARTITION SHALL TAKE PRECEDENT.
6. WHERE EQUIPMENT IS SHOWN IN DASHED AND / OR HALFTONE, IT SHALL BE OWNER FURNISHED, OWNER INSTALLED, UNLESS NOTED OTHERWISE. EQUIPMENT, WHERE SHOWN, IS FOR COORDINATION AND BACKING PURPOSES ONLY. CONFIRM MAKES AND MODELS WITH OWNER. VERIFY EQUIPMENT ROUGH-IN DIMENSIONS WITH MANUFACTURER. COORDINATE UTILITIES FOR EQUIPMENT WITH OWNER'S EQUIPMENT AND MEP DOCUMENTS. CONTRACTOR TO VERIFY AND COORDINATE ALL EQUIPMENT WITH OWNER, INCLUDING BUT NOT LIMITED TO WEIGHT, LOCATION, BACKING REQUIREMENTS, POWER AND CLEARANCES.
7. ALL INTERIOR PARTITIONS TO BE PAINTED PT-1, UNLESS NOTED OTHERWISE.
8. EXPOSED SURFACES OF CABINETS FINISHED TO MATCH FACE.
9. ALL COUNTERTOPS SHALL HAVE EASED EDGE CORNERS AT ALL EXPOSED EXTERIOR CORNERS.
10. ALL EXPOSED PIPES UNDER RESTROOM SINKS TO HAVE INSULATION WRAP.
11. REFER TO SHEET A401 FOR WINDOW AND DOOR SCHEDULE AND DETAILS.

PARTITION TYPES NAMING CONVENTION

STRUCTURE
- A 1/8 HAT CHANNEL
- B 1 5/8" METAL STUD
- D 3 5/8" METAL STUD

SUB-TYPE
- A 6" ABOVE CEILING, BRACED HEAD (OR STRAIGHT TO STRUCTURE ABOVE IF UNDER 24")
- F FURRING 6" ABOVE CEILING
- P PARTIAL HEIGHT

FIRE RESISTANCE RATING
- 0 NON-RATED
- 1 1 HOUR

EXAMPLE

D5 / 1X
- STRUCTURE: D = 3 5/8" METAL STUD
- SUB-TYPE: 5 = SOUND PARTITION
- SMOKE RATED (OPTIONAL): 1 = 1 HR FIRE RESISTANCE RATING
- FIRE RATING: X = SMOKE RATED PARTITION

PARTITION TYPES GRAPHICS CONVENTION

TYPICAL PARTITION WITH NO SPECIAL MATERIALS OR RATINGS
- EXISTING PARTITION
- NEW PARTITION
- FIRE RATED PARTITIONS USE STRIPES TO CONVEY 1+HR FIRE RATING

INTERIOR FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	CEILING FINISH	COMMENTS
100	ENTRY VESTIBULE	CPT-2	RB-1	ACT-1	
101	ENROLLMENT	CPT-1	RB-1	ACT-1	
102	ENROLLMENT STORAGE	CONC-1	RB-1	ACT-1	
103	WOMEN'S TOILET	TL-1	TB-1	PT-3	
104	IT RECEPTION	CPT-1	RB-1	ACT-1	
106	IT DIRECTOR OFFICE	CPT-1	RB-1	ACT-1	
107	WOMEN'S TOILET	TL-1	TB-1	PT-3	
108	MEN'S TOILET	TL-1	TB-1	PT-3	
109	BREAK ROOM	TL-1	TB-1	ACT-1	
110	FIRE RISER / MECH.	CONC-1	RB-1	OTS	
111	IT WORKSHOP	CONC-1	RB-1	OTS	
112	OPEN WORK STATIONS	CPT-1	RB-1	ACT-1	
113	OFFICE	CPT-1	RB-1	ACT-1	
114	OFFICE	CPT-1	RB-1	ACT-1	
115	OFFICE	CPT-1	RB-1	ACT-1	
116	OFFICE	CPT-1	RB-1	ACT-1	
117	NETWORK CLOSET	CONC-1	RB-1	OTS	
118	OFFICE	CPT-1	RB-1	ACT-1	
119	OFFICE	CPT-1	RB-1	ACT-1	
120	STORAGE	CONC-1	RB-1	OTS	
121	CORRIDOR	CPT-1	RB-1	ACT-1	

FINISH LEGEND

FLOOR FINISH
- CPT-1 OWNER FURNISHED, CONTRACTOR INSTALLED
- CPT-2 WALK OFF CARPET TILE; MANUF: PATCRAFT; STYLE: WALK RIGHT IN II; SIZE: 24" X 24"; THICKNESS: 9.15 MM; COLOR: STERLING; INSTALL: MONOLITHIC
- CONC-1 CONCRETE; EXISTING CONCRETE TO REMAIN
- TL-1 PORCELAIN TILE; MANUF: METRO SURFACES; STYLE: WALES; COLOR: PALLADIUM; FINISH: MATTE; SIZE: 12" X 24"; INSTALL: MONOLITHIC

BASE FINISH
- RB-1 RESILIENT BASE; MANUF: TARKETT; STYLE: THERMOSET RUBBER; COLOR: BLACK; SIZE: 4" WITH TOE
- TB-1 TILE BASE; MANUF: METRO SURFACES; STYLE: WALES; COLOR: PALLADIUM; FINISH: MATTE; SIZE: 3X24 BULLNOSE

CEILING FINISH
- ACT-1 ACOUSTICAL CEILING TILE; MANUF: ARMSTRONG CEILINGS; STYLE: CALLA; COLOR: WHITE; SIZE: 24" X 24"; GRID: SQUARE LAY-IN 15/16"
- PT-4 GYPSUM CEILING PAINT; MANUF: PANTONE 425; SHEEN: FLAT; COLOR: ANTHRACITE GRAY

WALL FINISH
- PT-1 GENERAL WALL PAINT; MANUF: SHERWIN WILLIAMS; SHEEN: EGGSHELL; COLOR: TINSMITH
- PT-2 DOOR PAINT AND DOOR FRAME (HM ONLY); MANUF: SHERWIN WILLIAMS; SHEEN: SEMI-GLOSS; COLOR: CAVIAR
- PT-3 GENERAL WALL PAINT; MANUF: SHERWIN WILLIAMS; SHEEN: EGGSHELL; COLOR: COLOR TO MATCH PANTONE/PMS - 202 C CARDINAL RED. SWATCH TO BE SUBMITTED TO OWNER AND ARCHITECT FOR FINAL APPROVAL

MISCELLANEOUS
- PL-1 PLASTIC LAMINATE; MANUF: FORMICAR; COLOR: WALNUT RIFTWOOD; TEXTURE: NATURAL GRAIN FINISH
- QZ-1 QUARTZ STONE (COUNTER); MANUF: CORIAN; COLOR: ASHEN GRAY; LEATHERED
- WY-1 WOOD VENEER; MANUF: ACROVYN; COLOR: 1352 FOSSIL TEAK WOOD
- CG-1 CORNER GUARD; MANUF: CONTRACTOR TO SELECT; FINISH: STAINLESS STEEL; SIZE: 1 1/2" LONG, 1'-0" LONG
- AB-1 ACOUSTIC CEILING BAFFLE; MANUF: SOELBERG; COLOR: STORM MUTO BLOX CEILING BAFFLE; SIZE: 6" DEPTH

GH2 ARCHITECTS
STATE OF OKLAHOMA
Tyler Dee Wallace
6649
LICENSED ARCHITECT
07.01.24

OWASSO PS - ENROLLMENT & IT CENTER
1309 N Main St, Owasso, OK 74055

A101 FLOOR PLAN

GH2 ARCHITECTS
GH2.COM

GH2 PROJECT NUMBER: **20230239**

ISSUE DATE: **04/29/2024**

ISSUE: **CONSTRUCTION DOCUMENTS**

OTHER ISSUE DATES:

NO.	DESCRIPTION	DATE
1	Addendum 01	05.24.2024
2	Addendum 02	06.18.2024
3	Addendum 03	Date 3

SHEET NAME: **FLOOR PLAN**

SHEET NUMBER: **A101**

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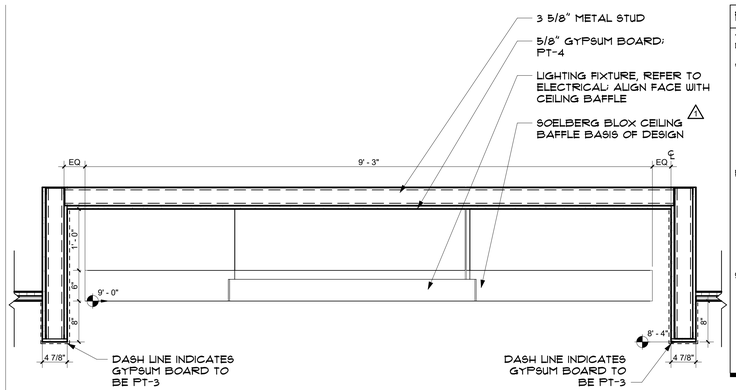


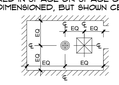
B SECTION DETAIL
1" = 1'-0"

REFLECTED CEILING PLAN DIAGRAMS

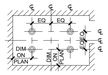
THE FOLLOWING DESIGN CRITERIA APPLIES UNLESS SPECIFICALLY NOTED AND DIMENSIONED OTHERWISE.

A. DIMENSIONS: WHEN COMPLETELY DIMENSIONED ON CEILING PLAN, LOCATE ITEMS AS INDICATED WHEN SHOWN DIMENSIONED BY A REFLECTED CEILING PLAN. SPECIFIC DIMENSIONS SHOWN BY REFLECTED CEILING PLANS TAKE PRECEDENCE OVER TYPICAL LOCATIONS.

B. CENTERING: WHEN NOT DIMENSIONED BUT SHOWN CENTERED, LOCATE ITEMS CENTERED IN SPACE OR SPACE CREATED BETWEEN TWO ELEMENTS WHEN NOT DIMENSIONED, BUT SHOWN CENTERED.

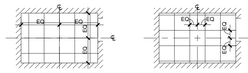


C. SYMMETRY: LOCATE FEATURES SYMMETRICALLY. LOCATE ITEMS ALIGNED WITH OTHER ITEMS SHOWN DIMENSIONED ELSEWHERE IN SPACE.



D. FIXTURES IN ACOUSTICAL CEILING TILE: WHEN NOT DIMENSIONED BUT OCCURS ON ACT / SQUARE GRID-TYPE CEILING, LOCATE ITEMS (LIGHT FIXTURES, SPRINKLER HEADS, AND OTHER DEVICES) AT CENTER OF PANEL ON ACT / SQUARE GRID-TYPE CEILINGS.

E. ACOUSTICAL CEILING TILE PLACEMENT: ACT / SQUARE AND / OR RECTANGULAR GRID-TYPE CEILINGS TO BE EVENLY SPACED. CUT TO FIT IRREGULAR GRID AND PERIMETER EDGE TRIM. MAKE FIELD CUT EDGES OF SAME PROFILE AS FACTORY EDGES. DOUBLE CUT AND FIELD PAINT EXPOSED REVEAL EDGES.



F. CONDUIT: CONCEAL ALL WIRE IN CONDUIT WHERE EXPOSED TO VIEW. INCLUDES:
1. ALL ELECTRICAL WIRING.
2. ALL DATA / IT / SECURITY WIRING; PROVIDE CONDUIT. CABLE TRAYS ARE ONLY ALLOWED WHERE CONCEALED BY ACT, DROP CEILING / CLOUDS AND WHERE WIRE IS FULLY CONCEALED FROM VIEW. EXPOSED UNDERSIDES OF CABLE TRAYS ARE ONLY ALLOWED WHERE MATERIAL IS PLACED SIMILAR TO MECHANICAL DUCTWORK. EXPOSED RANDOMLY PLACED CABLE TRAYS ARE NOT ALLOWED.
3. MC CABLE IS NOT ALLOWED AT EXPOSED LOCATIONS.

REFLECTED CEILING PLAN LEGEND

2X4 LAY IN LENS	SUPPLY DIFFUSER
EMERGENCY 2X4 LAY IN LENS	RETURN
RECESSED CAN LIGHT	EXHAUST FAN
2X2 ACOUSTIC CEILING TILE (ACT)	10' - 0" AFF — CEILING HEIGHT
GYPSUM BOARD	EXIT SIGN
EXISTING STRUCTURE	ALIGN — ALIGN FINISHED SURFACES
DATA, CEILING MOUNTED	OTS — OPEN TO STRUCTURE

NOTE: REFER TO STRUCTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

REFLECTED CEILING PLAN NOTES

1. ALL CEILINGS SHALL BE 8' - 6" AFF, UNLESS NOTED OTHERWISE.
2. ALL CEILING FINISHES TO BE ACT-1, UNLESS NOTED OTHERWISE. ALL CEILING GRIDS TO BE CENTERED IN ROOM, UNLESS NOTED OTHERWISE.
3. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR MOUNTING LOCATIONS OF ITEMS WHERE NO CEILING IS REQUIRED OR INDICATED.
4. IN THE CASE OF MINOR DISCREPANCIES BETWEEN MECHANICAL, ELECTRICAL, PLUMBING AND ARCHITECTURAL DOCUMENTS IN THE LOCATION OF CEILING MOUNTED COMPONENTS, THE ARCHITECTURAL REFLECTED CEILING PLAN SHALL GOVERN. IN THE CASE OF MAJOR DISCREPANCIES, THE ARCHITECT SHALL BE NOTIFIED AS SOON AS THE DISCREPANCY IS DISCOVERED PRIOR TO PROCEEDING WITH THE WORK.
5. LIGHTS, EXIT SIGNS, SMOKE DETECTORS, SPEAKERS, DIFFUSERS, STROBES, AND MISCELLANEOUS DEVICES SHALL BE CENTERED IN THE CEILING TILE IN WHICH THEY OCCUR, UNLESS NOTED OTHERWISE.
6. CENTER, ALIGN AND / OR LOCATE LIGHT FIXTURES, MECHANICAL GRILLES, LIFE SAFETY DEVICES, OCCUPANCY SENSORS, SECURITY AND DATA FIXTURES AND OTHER MISCELLANEOUS COMPONENTS IN A UNIFORM AND ORDERLY FASHION, UNLESS ALTERNATE ARRANGEMENT IS SPECIFICALLY DIMENSIONED AND NOTED. INSTALL TRUE AND SQUARE.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE FIT OF ALL WORK AND TO PROVIDE A UNIFORM AND ORDERLY PLACEMENT AND APPEARANCE, WHETHER EXPOSED TO VIEW OR CONCEALED BY FINISHES.
8. ALL SPRINKLER HEADS SHALL BE ALIGNED IN THE SAME CEILING LOCATION PARALLEL TO THE WALL WITHIN EACH SPECIFIC CEILING CONSTRUCTION.
9. CENTER EXIT SIGNS ABOVE DOORS, UNLESS ALTERNATE ARRANGEMENT IS SPECIFICALLY DIMENSIONED AND NOTED.
10. CENTER, ALIGN AND LOCATE ACCESS PANELS IN ACCORDANCE WITH DESIGN CRITERIA FOR OTHER DEVICES. SUBMIT SHOP DRAWINGS THAT INDICATE EXACT SIZE, TYPE AND LOCATION OF CEILING AND WALL ACCESS PANELS FOR REVIEW AND ACCEPTANCE BEFORE INSTALLATION. ALL ACCESS PANELS SHALL BE PAINTED, UNLESS NOTED OTHERWISE AND EXTERIOR GRADE WHERE REQUIRED.
11. PROVIDE GYPSUM BOARD BULKHEADS WHERE CEILINGS OF DIFFERENT HEIGHTS OR ORIENTATION ABUT. DO NOT BUILD BULKHEADS OF ACOUSTICAL CEILING MATERIAL.
12. ALIGN ALL SOFFITS AND / OR BULKHEADS WITH ADJACENT WALLS, UNLESS NOTED OTHERWISE.
13. PROVIDE SUFFICIENT SUPPORT AND GRID SYSTEMS TO SUPPORT ALL CEILING MOUNTED DEVICES. ALL FIXTURES SHALL BE SUPPORTED AT EACH CORNER.
14. ALL OUTLETS, RECEPTACLES, DEVICES AND COVER PLATES SHALL BE INSTALLED PLUMB AND LEVEL. CROOKED INSTALLATION IS NOT ALLOWED.
15. MISALIGNED MEP FIXTURES OF ANY TYPE OR AT ANY LOCATION EXPOSED TO VIEW ARE NOT ALLOWED. MISALIGNED FIXTURES SHALL BE ADJUSTED OR REMOVED AND REPLACED IF REQUIRED FOR PROPER ALIGNMENT AT NO ADDITIONAL COST.
16. ALL RECESSED LIGHTING TO BE SEALED AIR-TIGHT, ICC-RATED AND SEALED TO GYPSUM BOARD OR FINISH MATERIAL AS REQUIRED BY THE IECC (INTERNATIONAL ENERGY CONSERVATION CODE). ALL MECHANICAL, ELECTRICAL AND PLUMBING FIXTURES SHALL BE IECC COMPLIANT.
17. CONTRACTOR TO COORDINATE ALL OUTLETS, SWITCHES AND POWER FEED WITH CASEWORK, PARTITIONS, FINISHES, FIXTURES AND EQUIPMENT.
18. SPRINKLER HEAD TYPES AND FINISHES:
    A. EXPOSED STRUCTURE: EXPOSED / CHROME
    B. FINISHED CEILING OR WALLS: FULLY RECESSED AND CONCEALED WITH WHITE COVER PLATE, FLAT AND FLUSH WITH CEILING OR WALL.
    C. PRE-FINISHED METAL CEILING OR WALL FEATURES: FULLY RECESSED AND CONCEALED WITH COVER PLATE, FLAT AND FLUSH TO MATCH ADJACENT FINISH; CUSTOM COLOR MAY BE REQUIRED IF MANUFACTURER'S RANGE DOES NOT PROVIDE MATCH, IN THE OPINION OF THE ARCHITECT.
    D. PROVIDE SPRINKLER GUARDS WHERE REQUIRED BY CODE.
19. PROVIDE SPRINKLER HEADS AND COVERS IN ACCORDANCE WITH SPECIFIED LEVEL OF EXPOSURE (TO VIEW), DESIGN CRITERIA AND AS INDICATED. PROVIDE BRAIDED METAL FLEXIBLE SPRINKLER DROPS AT ALL FINISHED CEILINGS OR WHERE REQUIRED FOR SPECIFIED PLACEMENT. CENTER AND ALIGN PIPES WITH ARCHITECTURAL FEATURES. PROVIDE ADDITIONAL HEADS BEYOND THAT REQUIRED FOR MINIMUM COVERAGE AS REQUIRED TO COMPLY WITH ARCHITECTURAL LAYOUT, AND UNIFORM ALIGNMENT WITH OTHER FIXTURES. SUBMIT LAYOUT FOR REVIEW PRIOR TO AHJ REVIEW OR INSTALLATION.
20. PROVIDE PRE-FINISHED GRAY ELECTRICAL DEVICES AND STAINLESS STEEL COVER PLATES AT ALL WALLS IN PROJECT. AT ALL OTHER LOCATIONS, SUCH AS CASEWORK, RECEPTACLES AND COVER PLATES SHALL MATCH ADJACENT FINISHES, AS DETERMINED AND SELECTED BY THE ARCHITECT FROM MANUFACTURER'S FULL RANGE. FIELD PAINT WHERE REQUIRED.
21. MAINTAIN CONTINUOUS FIRE RATED ENCLOSURES AS REQUIRED AT RATED WALLS AND CEILINGS. PROVIDE FIRE RATED FIXTURE COVERS, J-BOXES OR CONSTRUCT GYPSUM BOARD ENCLOSURES WHERE REQUIRED FOR FIXTURE OR MEP RUNS TO MAINTAIN CONTINUOUS FIRE RATING.
22. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION FOR DIFFUSERS AND GRILLE TYPES. REFER TO ELECTRICAL DRAWINGS FOR FIXTURE SCHEDULES AND ADDITIONAL INFORMATION. DESIGN INTENT FOR APPEARANCE, TYPE, ARRANGEMENT AND LOCATION IS INDICATED ON ARCHITECTURAL DRAWINGS. REPORT DISCREPANCIES TO ARCHITECT FOR CLARIFICATION PRIOR TO ORDERING MATERIALS OR THE START OF ROUGH-IN.
23. LIFE SAFETY DEVICE COLORS: GRAY (UNLESS RED IS SPECIFICALLY REQUIRED BY CODE)
    A. WHITE, AT WHITE CEILINGS OR WHERE EXPOSED STRUCTURES.
    B. OTHER CEILINGS NOT ALLOWED, USE WALL MOUNTED.
    C. INTERIOR / EXTERIOR WALLS: GRAY.
24. EXPOSED METAL DUCTWORK: ALL METAL DUCTWORK EXPOSED TO VIEW SHALL HAVE UNIFORM AND NEAT SEALANT AND SEAMS, CLEAN EXCESS SEALANT. PROVIDE 12 FOOT BY 12 FOOT MOCK-UP TO ILLUSTRATE ALL SEAMS AND SEALANT TYPES IN PROJECT.
25. EXPOSED STRUCTURE: WHEN NOT DIMENSIONED, BUT OCCURS ON OR ADJACENT TO EXPOSED STRUCTURE. LOCATE ITEMS (LIGHT FIXTURES, SPRINKLER PIPING / HEADS, MECHANICAL DUCTS, PIPES, PLUMBING, DEVICES, AND ALL ASSOCIATED MOUNTING BRACKETS AND FASTENERS) CENTERED WITHIN SPACE BETWEEN OR ON STRUCTURAL ELEMENTS. MATCH ORIENTATION OF STRUCTURE, UNLESS A SPECIFIC ALTERNATE ARRAIGNMENT IS DIMENSIONED AND NOTED. CHANGE ORIENTATION OF ITEMS, IN ACCORDANCE WITH DESIGN CRITERIA FOR PLACEMENT, TO MATCH CHANGES IN ORIENTATION OF STRUCTURE. WHERE MULTIPLE SYSTEMS NEED TO SHARE THE SAME SPACE, CENTER ONE SYSTEM AND ALIGN ADJACENT SYSTEMS IN A UNIFORM AND ORDERLY FASHION.
26. COORDINATION: ALL DEVICES REQUIRED FOR PROJECT MAY NOT BE SHOWN ON ARCHITECTURAL DRAWINGS. REFER TO MECHANICAL, ELECTRICAL, PLUMBING AND TECHNOLOGY DRAWINGS FOR ADDITIONAL DEVICES. ALL DEVICES IN PROJECT SHALL FOLLOW DESIGN CRITERIA FOR PLACEMENT, AS INDICATED, WHETHER OR NOT SHOWN ON ARCHITECTURAL DRAWINGS. REPORT DISCREPANCIES TO ARCHITECT FOR CLARIFICATION PRIOR TO INSTALLATION.
27. COORDINATION DRAWINGS - PROVIDE THE FOLLOWING: PREPARE COORDINATION DRAWINGS TO A SCALE OF 1/4 INCH = 1'-0" OR LARGER, DETAILING MAJOR ELEMENTS, COMPONENTS, AND SYSTEMS OF FIRE PROTECTION EQUIPMENT AND MATERIALS IN RELATIONSHIP WITH OTHER SYSTEMS, INSTALLATIONS, AND BUILDING COMPONENTS. INDICATE LOCATIONS WHERE SPACE IS LIMITED FOR INSTALLATION AND ACCESS AND WHERE SEQUENCING AND COORDINATION OF INSTALLATION ARE IMPORTANT TO THE EFFICIENT FLOW OF THE WORK, INCLUDING, BUT NOT NECESSARILY LIMITED TO THE FOLLOWING:
    A. INDICATE THE PROPOSED LOCATIONS OF PIPING, EQUIPMENT, HANGERS, HEAD TYPES AND LOCATIONS, AND MATERIALS.
    B. CLEARANCES FOR INSTALLING AND MAINTAINING INSULATION.
    C. CLEARANCES FOR SERVICING AND MAINTAINING EQUIPMENT, INCLUDING TUBE REMOVAL, FILTER REMOVAL, AND SPACE FOR EQUIPMENT DISASSEMBLY REQUIRED FOR PERIODIC MAINTENANCE.
    D. EQUIPMENT CONNECTIONS AND SUPPORT DETAILS.
    E. EXTERIOR AND FOUNDATION PENETRATIONS. FIRE-RATED WALL AND FLOOR PENETRATIONS.
    F. UNDERGROUND PIPING.
    G. SIZES AND LOCATIONS OF REQUIRED CONCRETE PADS AND BASES.
28. ABOVE ALL NEW CEILINGS, PROVIDE R-21 BATT INSULATION.

A FIRST FLOOR REFLECTED CEILING PLAN
1/4" = 1'-0"

NORTH

GH2 ARCHITECTS
STATE OF OKLAHOMA
Tyler Dee Wallace
6649
LICENSED ARCHITECT
07.01.24

OWASSO PS - ENROLLMENT & IT CENTER
1309 N Main St, Owasso, OK 74055

A121 REFLECTED CEILING PLAN - FIRST FLOOR

GH2 ARCHITECTS
GH2.COM

GH2 PROJECT NUMBER:
20230239

ISSUE DATE:
04/29/2024

ISSUE:
CONSTRUCTION DOCUMENTS

OTHER ISSUE DATES:

NO.	DESCRIPTION	DATE
1	Addendum 01	05.24.2024
2	Addenda 02	06.18.2024
3	Addendum 03	Date 3

SHEET NAME:
REFLECTED CEILING PLAN - FIRST FLOOR

SHEET NUMBER:
A121

6/25/2024 2:34:03 PM

POST-TENSION SLAB NOTE

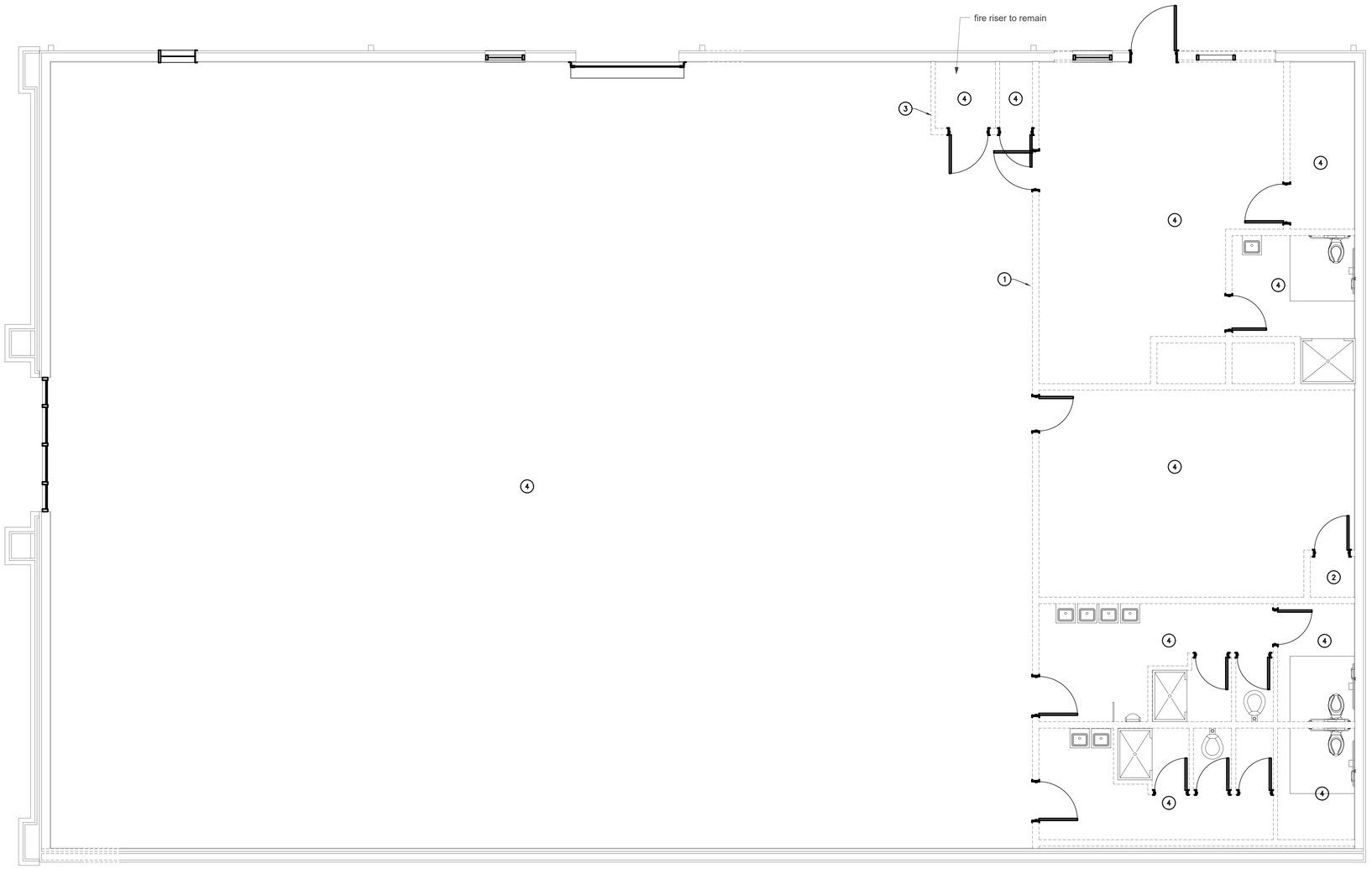
EXISTING BUILDING SLAB IS A POST–TENSION SLAB. BEFORE ANYWORK, THE CONTRACTOR SHALL X–RAY THE SLAB TO IDENTIFY THE LOCATIONS OF POST–TENSION TENDONS WITHIN THE SLAB. UNDER NO CIRCUMSTANCES TENONS SHALL BE CUT.

(#) KEY NOTES

1. WALL SHOWN DASHED TO BE DEMOLISHED. REMOVE ALL ELECTRICAL DEVICES BACK TO PANELBOARD.
2. EXISTING ELECTRICAL WATER HEATER TO BE REMOVED. REMOVE ALL ASSOCIATED ELECTRICAL DEVICES BACK TO PANEL BOARD.
3. EXISTING FIRE ALARM PANEL TO BE REMOVED.
4. ALL EXISTING LIGHTING IN THIS ROOM TO BE REMOVED. REFER TO E100 FOR NEW LIGHTING PLAN.

ELECTRICAL DEMOLITION GENERAL NOTES

1. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND SHALL BE FAMILIAR WITH THE LIMITS OF DEMOLITION REQUIRED FOR ALL TRADES. COORDINATE DEMOLITION WITH REQUIREMENTS OF NEW CONSTRUCTION PRIOR TO INITIATING WORK.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING COMPLETE REMOVAL AND DISCARDING OF ALL DEMOLITION WASTE INCLUDING ANY UNFORESEEN ITEMS WITHIN THE SCOPE OF THE PROJECT.
3. CONTRACTOR SHALL COORDINATE DEMOLITION OPERATIONS WITH CONTINUING OWNER OCCUPATION OF ADJACENT SPACES. ALL DEMOLITION WORK TO BE COORDINATED WITH OWNER AND CONDUCTED UNDER CONTROLLED CONDITIONS.
4. REPAIR/PATCH AS REQUIRED FOR DEMOLITION OF VARIOUS CONSTRUCTION ITEMS. VERIFY AND COORDINATE ANY REQUIRED OPENINGS WITH RESPECTIVE TRADES. FOR ANY WORK THAT SHALL OCCUR OUTSIDE OF DEMOLITION AREA, CONTRACTOR SHALL RETURN SPACE TO ORIGINAL CONDITION.
5. THE ELECTRICAL CONTRACTOR WILL BE RESPONSIBLE FOR ALL REQUIRED ELECTRICAL DEMOLITION OF THIS SPACE TO COMPLETE THIS PROJECT. REFER TO MECHANICAL AND ARCHITECTURAL DRAWINGS.
6. PRIOR TO DEMOLITION FIELD VERIFY AND IDENTIFY ANY EXISTING EQUIPMENT TO REMAIN IN SERVICE THAT IS SERVED BY SYSTEMS TO BE DEMOLISHED. NOTIFY ENGINEER OF ANY SUCH CONDITIONS AND REMOVE AND/OR RELOCATE THE SERVICES AS DIRECTED.
7. NOT USED.
8. ALL MATERIAL AND LABOR NECESSARY TO COMPLETE THIS PROJECT IS PROVIDED BY THE CONTRACTOR UNLESS SPECIFICALLY CALLED OUT TO BE PROVIDED BY OTHERS.
9. CONTRACTOR WILL BE RESPONSIBLE FOR ANY TEMPORARY POWER REQUIRED FOR THE COMPLETION OF THE JOB.
10. ALL NOTES ON THE ARCHITECTURAL DEMOLITION SHEETS APPLY TO THIS WORK.
11. CONTRACTOR IS TO REMOVE ALL EXISTING ELECTRICAL DEVICES, CONDUIT WIRE ETC THAT WILL NOT BE REUSED UNLESS NOTED OTHERWISE.WHERE REQUIRED, COORDINATE EQUIPMENT ELECTRICAL TERMINATION REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
12. THE DEFINITION OF ELECTRICAL IS ALL WIRING I.E. POWER, DATA, PHONE, ETC. THEREFORE WHEN A NOTE REFERS TO DISCONNECTING, CONNECTING OR RECONNECTING ELECTRICAL IT REFERS TO ALL WIRING NOT JUST POWER.
13. WHEN REMOVING OR RELOCATING AN ELECTRICAL DEVICE ALL ELECTRICAL SERVICE MATERIAL I.E. CONDUIT, WIRE, FITTINGS, HANGERS, ETC. THAT ARE NOT TO BE REUSED ARE TO BE REMOVED BACK TO THE FEEDING ELECTRICAL PANEL..



1 ED100 ELECTRICAL DEMOLITION
SCALE: 1/4" = 1'-0"
NORTH

4/22/2024 9:16:17 AM

GH2 ARCHITECTS

PETER A. HILGER 19695 OKLAHOMA PROFESSIONAL ENGINEER
6-25-24

OWASSO PS - ENROLLMENT & IT CENTER

1309 N Main St, Owasso, OK 74055

ED100 ELECTRICAL DEMOLITION

GH2 ARCHITECTS
GH2.COM

GH2 PROJECT NUMBER:
20230239

ISSUE DATE:
04/29/2024

ISSUE:
CONSTRUCTION DOCUMENTS

OTHER ISSUE DATES:

NO.	DESCRIPTION	DATE
1	ADD #1	5-24-24
2	ADD #2	6-18-24
3	ADD #3	6-28-24

SHEET NAME:
ELECTRICAL DEMOLITION

SHEET NUMBER:
ED100

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
	WALL MOUNTED FLOODLIGHT (TYPE DENOTED)
	RECESSED LIGHT (TYPE DENOTED)
	POLE MOUNTED LIGHT (TYPE DENOTED)
	2x4 LED PANEL (TYPE DENOTED)
	LINEAR LIGHT (TYPE DENOTED)
	SUSPENDED OR PENDANT LIGHT (TYPE DENOTED)
	RECESSED LINEAR LIGHT (TYPE DENOTED)
	STRIP LIGHT (TYPE DENOTED)
	TRACK AND TRACK LIGHT (TYPES DENOTED)
	EMERGENCY BATTERY LIGHT (TYPE DENOTED)
	EXIT SIGN (TYPE DENOTED)
	LIGHT ON CORD REEL (TYPE DENOTED)
	SINGLE POLE SW.
2	2 POLE SINGLE THROW SW.
3	3-WAY SW.
4	4-WAY SW.
K	KEYED SW.
	SW. W/PILOT
D	DIMMER SWITCH
	OCCUPANCY SENSOR SWITCH
MC	MOMENTARY CONTACT SWITCH
	MOTOR SWITCH
TD	TIME DELAY SWITCH
	PUSH BUTTON
	SINGLE RECEPT.
	DUPLEX RECEPT.
	SPLIT DUPLEX RECEPT.
	ISOLATED GROUND RECEPT (DUPLEX SHOWN)
	RECEPT ON EMERGENCY CKT (DUPLEX SHOWN)
	FOURPLEX RECEPT.
	ISOLATED GROUND FOURPLEX RECEPT.
	240 VOLT RECEPT.
	FLOOR RECEPT. (DUPLEX SHOWN)
	RECEPT ON DROP CORD (DUPLEX SHOWN)
	RECEPT ON CORD REEL (DUPLEX SHOWN)

SYMBOL	DESCRIPTION
	MULTIOUTLET ASSEMBLY (TYPE DENOTED)
	CLOCK (TYPE DENOTED)
P	POWER POLE (OPEN OFFICE STYLE)
	SURGERY SERVICE COLUMN
	STATIC GROUND RECEPTACLE (TYPE DENOTED)
	LIGHTNING PROTECTION AIR TERMINAL
	LIGHTNING PROTECTION CONDUCTOR SPLICE
	GROUND ROD (PLAN VIEW)
P	UTILITY SERVICE POWER POLE (SITE)
	SPECIAL RECEPT. OR CONN. (SEE SCHEDULE)
J	JUNCTION BOX
PB	PULL BOX
	CIRCUIT BREAKER PANEL
	POWER OR DISTRIBUTION PANEL
	TRANSFORMER (TYPE DENOTED)
XX	XX-MOTOR (SEE SCHEDULE)
	COMB. MOTOR STARTER (FUSED)
	SAFETY DISC. SW. (NON-FUSED)
	SAFETY DISC. SW. (FUSED)
	BUS DUCT WITH PLUG IN DISCONNECT (FUSED)
R	RELAY
	ENCLOSED CIRCUIT BREAKER
	PRESSURE SWITCH
	FLOAT SWITCH
OS	OCCUPANCY SENSOR - TYPE DENOTED
LS	LIGHT LEVEL SENSOR - TYPE DENOTED
PC	PHOTOCELL
TCS	TIME CONTROL SWITCH (TIME SWITCH)
H	HUMIDISTAT
T	THERMOSTAT
	SOLENOID VALVE

SYMBOL	DESCRIPTION
	HDMI OUTLET
	INFORMATION OUTLET (TYPE DENOTED)
WAP	WIRELESS ACCESS POINT
TV	TELEVISION OUTLET
	BELL
	BUZZER
	CHIME
	DOOR SIGNAL - APT. UNIT
	SPEAKER (WALL OR CEILING MT.)
	HORN TYPE SPEAKER
	VOLUME CONTROL
	MICROPHONE OUTLET
FA	FIRE ALARM HORN W/STROBE (CANDELAS)
FA	FIRE ALARM BELL
FA	FIRE ALARM BELL W/STROBE (CANDELAS)
FA	FIRE ALARM CHIME W/STROBE (CANDELAS)
FA	FIRE ALARM STROBE (CANDELAS)
FA(S)	FIRE ALARM SPEAKER W/STROBE (CANDELAS)
FAAP	FIRE ALARM REMOTE ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
	SMOKE DETECTOR (TYPE DENOTED)
	HEAT DETECTOR (TYPE & TEMP DENOTED)
DD	DUCT SMOKE DETECTOR (TYPE DENOTED)
FA	REMOTE TEST/STATUS STATION
	F.A. PULLSTATION (TYPE DENOTED)
Z	F.A. ZONE ADDRESSABLE MODULE
I	F.A. INDIVIDUAL ADDRESSABLE MODULE
	F.A. DOOR HOLDER
	F.A. DOOR CLOSER
FR	FIRE ALARM SHUT DOWN RELAY
	SPRINKLER FLOW SWITCH
	SPRINKLER VALVE TAMPER SWITCH

SYMBOL	DESCRIPTION
ES	ELECTRIC STRIKE
ML	MAGNETIC LOCK
CL	COMBINATION LOCK
DC	DOOR CONTACTS
CR	CARD READER
KP	KEYPAD
MD	MOTION DETECTOR (TYPE DENOTED)
	NURSE CALL EMERG. STATION
	NURSE CALL CODE BLUE EMERG. STATION
	NURSE CALL DUTY STATION
	NURSE CALL STAFF STATION
	NURSE CALL SINGLE PATIENT STATION
	NURSE CALL DUAL PATIENT STATION
	NURSE CALL DOME LIGHT (2 LAMP)
	CCTV CAMERA
	CCTV CAMERA WITH PAN/TILT DRIVE
#	KEYED NOTE (SEE SCHEDULE)
TWC	TWO WAY COMMUNICATION SYSTEM

ELECTRICAL SYMBOL NOTES

(A) A-12.b — THE LIGHTING FIXTURE TYPE IS INDICATED BY AN UPPER CASE LETTER. THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER. THE SWITCH DESIGNATION IS INDICATED BY A LOWER CASE LETTER.

EXAMPLE 1: LIGHTING FIXTURE TYPE "A" IS CONNECTED TO CIRCUIT A-12 AND CONTROLLED BY SWITCH "b". WHERE NO SWITCH IS GIVEN, THE WALL SWITCH/OCCUPANCY SENSOR CONTROLS ONLY THOSE FIXTURES IN THE ROOM.

E 14 — EXIT LIGHTS. STEM INDICATES WALL MOUNTING. NO STEM INDICATES CEILING MOUNTING. SHADED AREA INDICATES ILLUMINATED FACE(S). ARROW INDICATES DIRECTIONAL ARROW ON ILLUMINATED FACE(S). THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER. EXAMPLE: THE WALL MOUNTED EXIT LIGHT TYPE "E" WITH SINGLE FACE AND DIRECTIONAL ARROW IS CONNECTED TO CIRCUIT 14.

16c — DEVICES. THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER. THE SWITCH DESIGNATION IS INDICATED BY A LOWER CASE LETTER. EXAMPLE: SPLIT DUPLEX RECEPTACLE IS CONNECTED TO CIRCUIT 16 AND ONE RECEPTACLE OUTLET IS CONTROLLED BY SWITCH "c".

d — THE CONTROL DEVICE DESIGNATION IS INDICATED BY A LOWER CASE LETTER. EXAMPLE: SINGLE POLE SWITCH "d" TO CONTROL LIGHTING FIXTURES INDICATED BY "d".

1 — SPECIAL NOTE. SEE THE SPECIAL NOTES ON THAT SHEET FOR THE NOTE NUMBER INDICATED IN OVAL SYMBOL.

CONDUIT SHOWN WITHOUT SLASH MARKS SHALL CONTAIN 2 # 12 CONDUCTORS IN 3/4" CONDUIT UNLESS SPECIFIC EQUIPMENT REQUIRES A DIFFERENT SIZE.

SLASH MARK INDICATORS ARE: SHORT STRAIGHT=PHASE CONDUCTOR, LONG STRAIGHT=NEUTRAL CONDUCTOR, LONG STRAIGHT WITH A DOT=GROUND CONDUCTOR, ARC=ISOLATED GROUND.

H-1,3,5 — HOME RUN TO BRANCH CIRCUIT PANELBOARD. THE PANELBOARD DESIGNATION IS SHOWN ADJACENT TO THE HOME RUN ARROW AS A NUMERATOR AND THE CIRCUIT DESIGNATION IS SHOWN AS THE DENOMINATOR. CIRCUIT BREAKER SIZES (AMPS/NUMBER OF POLES) ARE SHOWN IN THE PANELBOARD SCHEDULE WITH THE CORRESPONDING PANELBOARD AND CIRCUIT DESIGNATION. EXAMPLE: HOME RUN TO PANELBOARD "H", CIRCUITS 1, 3, 5.

SPECIFIC CODE NOTES

FIRE PROTECTION REQUIREMENTS

A. PENETRATIONS IN WALLS REQUIRING PROTECTED OPENINGS MUST BE FIRESTOPPED WITH AN APPROVED MATERIAL.
   1. CONDUITS MAY PENETRATE WALLS OR PARTITIONS, PROVIDED THEY ARE FIRE-STOPPED.
   2. OPENINGS FOR STEEL ELECTRICAL BOXES NOT EXCEEDING 16 SQUARE INCHES ARE PERMITTED PROVIDED OPENINGS DO NOT AGGREGATE MORE THAN 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL OR PARTITION.
   3. OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY A HORIZONTAL DISTANCE OF 24 INCHES.

B. LIGHT FIXTURES AND OTHER APPARATUS SUPPORTED BY THE ACOUSTICAL CEILING GRID MUST MEET THE REQUIREMENTS OF NEC SECTION 410.16, MEANS OF SUPPORT.

C. RECESSED LIGHTING FIXTURES INSTALLED IN FIRE RATED CEILING ASSEMBLIES SHALL BE FIRE RATED FIXTURES BEARING THE UL FIRE RATED LABEL. FIXTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE UL FIRE RESISTANCE DIRECTORY, AND SHALL INCLUDE A FIRE RATED ENCLOSURE INSTALLED OVER THE FIXTURE THAT MEETS THE REQUIREMENTS OF THE UL FIRE RESISTANCE DIRECTORY.

GFCI PROTECTION

A. ALL SINGLE-PHASE RECEPTACLES THAT ARE 50 AMPERES OR LESS, RATED 150 VOLTS TO GROUND OR LESS, AND ALL THREE-PHASE RECEPTACLES THAT ARE 100 AMPERES OR LESS, RATED 150 VOLTS TO GROUND OR LESS IN BATHROOMS, KITCHENS, ROOFTOPS, OUTDOORS, WET LOCATIONS, LOCKER ROOMS, GARAGES, UNFINISHED BASEMENTS, AND WITHIN 6FT OF SINKS TO BE GFCI AND IN READILY ACCESSIBLE LOCATION. IF READILY ACCESSIBLE LOCATION NOT AVAILABLE CIRCUIT TO BE FURNISHED WITH GFCI BREAKER

TAMPER-RESISTANT RECEPTACLES

A. ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NONLOCKING-TYPE RECEPTACLES IN THE AREAS SPECIFIED IN 406.12(1) THROUGH (7) SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES.
(1) DWELLING UNITS IN ALL AREAS SPECIFIED IN 210.52 AND 550.13
(2) GUEST ROOMS AND GUEST SUITES OF HOTELS AND MOTELS
(3) CHILD CARE FACILITIES
(4) PRESCHOOLS AND ELEMENTARY EDUCATION FACILITIES
(5) BUSINESS OFFICES, CORRIDORS, WAITING ROOMS AND THE LIKE IN CLINICS, MEDICAL AND DENTAL OFFICES AND OUTPATIENT FACILITIES
(6) SUBSET OF ASSEMBLY OCCUPANCIES DESCRIBED IN 518.2 TO INCLUDE PLACES OF WAITING TRANSPORTATION, GYMNASIUMS, SKATING RINKS, AND AUDITORIUMS
(7) DORMITORIES

EXCEPTION TO (1), (2), (3), (4), (5), (6), AND (7): RECEPTACLES IN THE FOLLOWING LOCATIONS SHALL NOT BE REQUIRED TO BE TAMPER RESISTANT: (1) RECEPTACLES LOCATED MORE THAN 1.7 M (5 ½ FT) ABOVE THE FLOOR (2) RECEPTACLES THAT ARE PART OF A LUMINAIRE OR APPLIANCE
(3) A SINGLE RECEPTACLE OR A DUPLEX RECEPTACLE FOR TWO APPLIANCES LOCATED WITHIN THE DEDICATED SPACE FOR EACH APPLIANCE THAT, IN NORMAL USE, IS NOT EASILY MOVED FROM ONE PLACE TO ANOTHER AND THAT IS CORD-AND-PLUG-CONNECTED IN ACCORDANCE WITH 400.10(A)(6), (A)(7), OR (A)(8)
(4) NONGROUNDING RECEPTACLES USED FOR REPLACEMENTS AS

ELECTRICAL ABBREVIATIONS LIST

1P	1 POLE (2P, 3P, 4P, ETC.)	CTR	CENTER	HT	HEIGHT	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	SWBD	SWITCHBOARD
A	AMPERE	CU	COPPER	HTG	HEATING	NFDS	NON-FUSED SAFETY DISCONNECT SWITCH	SYM	SYMMETRICAL
AC	ABOVE COUNTER OR AIR CONDITIONER	DCP	DOMESTIC WATER CIRCULATING PUMP	HTR	HEATER	NIC	NOT IN CONTRACT	SYS	SYSTEM
ACLG	ABOVE CEILING	DEPT	DEPARTMENT	HV	HIGH VOLTAGE	NL	NIGHT LIGHT	TEL	TELEPHONE
ADO	AUTOMATIC DOOR OPENER	DET	DETAIL	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	N.O.	NORMALLY OPEN	TEL/DATA	TELEPHONE/DATA
AF	AMP FRAME	DIA	DIAMETER	HWP	HYDRONIC WATER PUMP	NPF	NORMAL POWER FACTOR	TERM	TERMINAL
AFF	ABOVE FINISHED FLOOR	DISC	DISCONNECT	IC	INTERRUPTING CAPACITY	NTS	NOT TO SCALE	TL	TWIST LOCK
AFG	ABOVE FINISHED GRADE	DIST	DISTRIBUTION	IG	ISOLATED GROUND	OH	OVERHEAD	TR	TAMPER RESISTANT
AFI	ARC FAULT CIRCUIT INTERRUPTER	DN	DOWN	IMC	INTERMEDIATE METAL CONDUIT	OL	OVERLOADS	T-STAT	THERMOSTAT
AHU	AIR HANDLING UNIT	DPR	DAMPER	INCAND	INCANDESCENT	PA	PUBLIC ADDRESS	TTC	TELEPHONE TERMINAL CABINET
AL	ALUMINUM	DS	SAFETY DISCONNECT SWITCH	IR	INFRARED	PB	PULL BOX OR PUSHBUTTON	TV	TELEVISION
ALT	ALTERNATE	DT	DOUBLE THROW	IW	INTERLOCK WITH	PE	PNEUMATIC ELECTRIC	TVTC	TELEVISION TERMINAL CABINET
AMP	AMPERE	DWG	DRAWING	J-BOX	JUNCTION BOX	PED	PEDESTAL	TYP	TYPICAL
AMPL	AMPLIFIER	EC	ELECTRICAL CONTRACTOR	KV	KILOVOLT	PF	POWER FACTOR	UC	UNDER COUNTER
ANNUN	ANNUNCIATOR	ELEC	ELECTRIC, ELECTRICAL	KVA	KILOVOLT-AMPERE	PH	PHASE	UE	UNDERGROUND ELECTRICAL
APPROX	APPROXIMATELY	ELEV	ELEVATOR	KVAR	KILOVOLT-AMPERE REACTIVE	PIV	POST INDICATING VALVE	UG	UNDERGROUND
AQ-STAT	AQUASTAT	EM	EMERGENCY	KW	KILOWATT	PNL	PANEL	UH	UNIT HEATER
ARCH	ARCHITECT, ARCHITECTURAL	EMT	ELECTRICAL METALLIC TUBING	KWH	KILOWATT HOUR	PP	POWER POLE	UT	UNDERGROUND TELEPHONE
AS	AMP SWITCH	EP	ELECTRIC PNEUMATIC	LOC	LOCATE OR LOCATION	PR	PAIR	UTIL	UTILITY
AT	AMP TRIP	EQUIP	EQUIPMENT	LT	LIGHT	PRI	PRIMARY	UV	UNIT VENTILATOR OR ULTRAVIOLET
ATS	AUTOMATIC TRANSFER SWITCH	EWC	ELECTRIC WATER COOLER	LTG	LIGHTING	PROJ	PROJECTION	V	VOLT
AUTO	AUTOMATIC	EXIST	EXISTING	LTNG	LIGHTNING	PRV	POWER ROOF VENTILATOR	VA	VOLT-AMPERES
AUX	AUXILIARY	EXH	EXHAUST	LV	LOW VOLTAGE	PT	POTENTIAL TRANSFORMER	VDT	VIDEO DISPLAY TERMINAL
AV	AUDIO VISUAL	EXP	EXPLOSION PROOF	MAX	MAXIMUM	PVC	POLYVINYL CHLORIDE (CONDUIT)	VERT	VERTICAL
AWG	AMERICAN WIRE GAUGE	FA	FIRE ALARM	MAG.S	MAGNETIC STARTER	PWR	POWER	VFD	VARIABLE FREQUENCY DRIVE
BATT	BATTERY	FABP	FIRE ALARM BOOSTER POWER SUPPLY PANEL	M/C	MOMENTARY CONTACT	QUAN	QUANTITY	VOL	VOLUME
BD	BOARD	FACP	FIRE ALARM CONTROL PANEL	MC	MECHANICAL CONTRACTOR	RCPT	RECEPTACLE	W	WATT
BLDG	BUILDING	FCU	FAN COIL UNIT	MCB	MAIN CIRCUIT BREAKER	REQD	REQUIRED	W/	WITH
BMS	BUILDING MANAGEMENT SYSTEM	FIXT	FIXTURE	MCC	MOTOR CONTROL CENTER	RM	ROOM	WG	WIRE GUARD
C	CONDUIT	FLR	FLOOR	MDC	MAIN DISTRIBUTION CENTER	RSC	RIGID STEEL CONDUIT	WH	WATER HEATER
CAB	CABINET	FLUOR	FLUORESCENT	MDP	MAIN DISTRIBUTION PANEL	RTU	ROOF TOP UNIT	W/O	WITHOUT
CAT	CATALOG	FU	FUSE	MFR	MANUFACTURER	SC	SURFACE CONDUIT	WP	WEATHERPROOF
CATV	CABLE TELEVISION	FUDS	FUSED SAFETY DISCONNECT SWITCH	MFS	MAIN FUSED DISCONNECT SWITCH	SEC	SECONDARY	XFMR	TRANSFORMER
CB	CIRCUIT BREAKER	GA	GAUGE	MH	MANHOLE	SHT	SHEET	XFR	TRANSFER
CCTV	CLOSED CIRCUIT TELEVISION	GAL	GALLON	MIC	MICROPHONE	SIM	SIMILAR		
CKT	CIRCUIT	GALV	GALVANIZED	MIN	MINIMUM	S/N	SOLID NEUTRAL		
CLG	CEILING	GC	GENERAL CONTRACTOR	MISC	MISCELLANEOUS	SPEC	SPECIFICATION	∠	ANGLE
COMB	COMBINATION	GEN	GENERATOR	MLO	MAIN LUGS ONLY	SPKR	SPEAKER	@	AT
CMPR	COMPRESSOR	GFI	GROUND FAULT CIRCUIT INTERRUPTER	MMS	MANUAL MOTOR STARTER	SP	SPARE	▲	DELTA
CONN	CONNECTION	GFP	GROUND FAULT PROTECTOR	MOA	MULTIOUTLET ASSEMBLY	SR	SURFACE RACEWAY	'	FEET
CONST	CONSTRUCTION	GND	GROUND	MSP	MOTOR STARTER PANELBOARD	SS	STAINLESS STEEL	"	INCHES
CONT	CONTINUATION OR CONTINUOUS	GRS	GALVANIZED RIGID STEEL (CONDUIT)	MSBD	MAIN SWITCHBOARD	SSW	SELECTOR SWITCH	#	NUMBER
CONTR	CONTRACTOR	GYP BD	GYPSUM BOARD	MT	MOUNT	S/S	STOP/START PUSHBUTTONS	Ø	PHASE
CONV	CONVECTOR	HOA	HAND/S-OFF-AUTOMATIC SWITCH	MT.C	EMPTY CONDUIT	STA	STATION	℄	CENTER LINE
CP	CIRCULATING PUMP	HORIZ	HORIZONTAL	MTS	MANUAL TRANSFER SWITCH	STD	STANDARD	P	PLATE
CRT	CATHODE-RAY TUBE	HP	HORSEPOWER	MTR	MOTOR, MOTORIZED	SURF	SURFACE MOUNTED		
CT	CURRENT TRANSFORMER	HPF	HIGH POWER FACTOR	N.C.	NORMALLY CLOSED	SW	SWITCH		
				NEC	NATIONAL ELECTRICAL CODE				

GENERAL ELECTRICAL NOTES

A. ALL CONDUCTORS OPERATING AT 50 VOLTS OR GREATER SHALL BE IN RACEWAY. ALL RACEWAY WITHIN THE STRUCTURE AND FLOOR SLAB SHALL BE METAL. UNDERGROUND RACEWAY OUTSIDE THE STRUCTURE SHALL BE PVC.

B. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN METAL RACEWAY WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES. LOW VOLTAGE CABLES MAY BE RUN IN CABLE TRAY WHERE NOTED. LOW VOLTAGE CABLES MAY BE RUN IN CABLE SUPPORT HOOKS ABOVE ACCESSIBLE CEILINGS WHERE NOTED.

C. COORDINATE LOCATIONS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND DETAILS. ARCHITECTURAL ELEVATIONS AND DETAILS TAKE PRECEDENCE OVER LOCATIONS SHOWN ON ELECTRICAL DRAWINGS. SEE ARCHITECTURAL ELEVATIONS FOR LOCATIONS OF ELECTRICAL DEVICES AT PATIENT BED HEADWALLS.

D. VERIFY LOCATIONS AND ROUGH-IN REQUIREMENTS OF ALL OWNER FURNISHED EQUIPMENT PRIOR TO ROUGH-IN.

E. CONDUIT AND WIRE SHALL NOT BE INSTALLED BELOW FLOOR SLAB UNLESS INDICATED ON PLAN BY DASHED CONDUIT.

F. CONTRACTOR SHALL BE RESPONSIBLE FOR WIRING ALL ELECTRICAL ITEMS SHOWN ON DRAWINGS EXCEPT FOR ITEMS LISTED IN NOTE G.

G. TV OUTLETS, VOLUME CONTROLS, TELEPHONE OUTLETS, DATA OUTLETS, AND FIRE ALARM DEVICES SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING, SEE STUB UP DETAIL. VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOX 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.

H. FURNISH AND INSTALL CONDUIT FROM BACK BOXES FOR THE FOLLOWING DEVICES INTO THE ACCESSIBLE CEILING SPACE:

1/2"C	TV OUTLETS
1/2"C	VOLUME CONTROLS
3/4"C	TELEPHONE OUTLETS
3/4"C	NETWORK OUTLETS
3/4"C	FIRE ALARM DEVICES

4/22/2024 9:16:17 AM

GH2 ARCHITECTS

PETER A. HILGER — 19695 — OKLAHOMA — PROFESSIONAL ENGINEER — 6-25-24

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E001 ELECTRICAL GENERAL NOTES & SYMBOLS

GH2 ARCHITECTS
GH2.COM

GH2 PROJECT NUMBER: **20230239**

ISSUE DATE: **04/29/2024**

ISSUE: **CONSTRUCTION DOCUMENTS**

OTHER ISSUE DATES:

NO.	DESCRIPTION	DATE
1	ADD #1	5-24-24
2	ADD #2	6-18-24
3	ADD #3	6-28-24

SHEET NAME: ELECTRICAL GENERAL NOTES & SYMBOLS

SHEET NUMBER: **E001**

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MOUNTING	LAMP	LUMENS DOWN	LUMENS UP	CCT	CRI	BALLAST/DRIVER	Voltage	WATTS	WATTS PER FOOT	EMERGENCY COMPONENT	MFR	CATALOG NUMBER	NOTE
A1	3" ARCHITECTURAL LINEAR (SURFACE MOUNT ACT)	SURFACE	LED	750 lm/ft	0 lm	3500 K	80	LED DRIVER, 0-10V DIMMING, 1%	120V	29 W	7.25	--	LUX	EOS 3.0-S LAM 750 4 35K 8 UNV S1 (FINISH)	--
A2	3" ARCHITECTURAL LINEAR (SURFACE MOUNT GYP)	SURFACE	LED	750 lm/ft	0 lm	3500 K	80	LED DRIVER, 0-10V DIMMING, 1%	120V	29 W	7.25	--	LUX	EOS 3.0-S LAM 750 4 35K 8 UNV S1 (FINISH) HC	--
A3	3" ARCHITECTURAL LINEAR (SUSPENDED)	SUSPENDED	LED	750 lm/ft	0 lm	3500 K	80	LED DRIVER, 0-10V DIMMING, 1%	120V	29 W	7.25	--	LUX	EOS 3.0-P-D LAM 750 4 35K 8 UNV S1 (FINISH) HC 102	--
B1	4FT STRIP LIGHT	SUSPENDED	LED	5,000 lm	0 lm	3500 K	80	LED DRIVER, 0-10V DIMMING, 10%	120V	33W	--	--	H.E. WILLIAMS	7SR - 4 - L50/835 - ACF/D96 - DIM - UNV	--
B2	4FT STRIP LIGHT	SUSPENDED	LED	8,500 lm	0 lm	3500 K	80	LED DRIVER, 0-10V DIMMING, 10%	120V	57W	--	--	H.E. WILLIAMS	7SR - 4 - L85/835 - ACF/D96 - DIM - UNV	--
C1	4" DOWNLIGHT	RECESSED	LED	3,000 lm	0 lm	3500 K	80	LED DRIVER, 0-10V DIMMING, 10%	120V	28W	--	--	H.E. WILLIAMS	4DR - TL - L30/835 - DIM - UNV - R - W - QF CS N - F1	--
D1	2X4 TROFFER	RECESSED	LED	4,000 lm	0 lm	3500 K	80	LED DRIVER, 0-10V DIMMING, 10%	120V	32W	--	--	H.E. WILLIAMS	LT - 24 - L40/835 - AF - EM/10W - DIM - UNV	--
D2	2X4 TROFFER	RECESSED	LED	5,000 lm	0 lm	3500 K	80	LED DRIVER, 0-10V DIMMING, 10%	120V	38W	--	--	H.E. WILLIAMS	LT - 24 - L52/835 - AF - EM/10W - DIM - UNV	--
EX1	EXIT SIGN	SURFACE	LED	--	--	--	--	--	120V	5W		NI-CAD BATTERY	ISOLITE	EUG - EM - R -1C MNTEB	--
EX2	EXIT SIGN & EMERGENCY COMBO	SURFACE	LED	--	--	--	--	--	120V	5W		NI-CAD BATTERY	ISOLITE	CMB-EM-R-LI-WH-MTEBP-L1	--
EM	EMERGENCY BUG EYE	SURFACE	LED	--	--	--	--	--	120V	5W		NI-CAD BATTERY	ISOLITE	EL16-WH-MB-L67	--
W1	EXTERIOR WALL PACK	WALL	LED	3,000 lm	0 lm	4000 K	70	LED DRIVER, 0-10V DIMMING, 10%	120V	19W	--	--	LSI	XWS LED 3L SIL 3 UNV DIM 40 70CRI BLK	--
R	EXTERIOR EGRESS LIGHT	WALL	LED	546 lm	0 lm	4000 K	70	LED DRIVER	120V	10W	--	10W EM BATTERY	ISOLITE	ODLE 10 EM BK MB	--

POST-TENSION SLAB NOTE

EXISTING BUILDING SLAB IS A POST-TENSION SLAB. BEFORE ANYWORK, THE CONTRACTOR SHALL X-RAY THE SLAB TO IDENTIFY THE LOCATIONS OF POST-TENSION TENDONS WITHIN THE SLAB. UNDER NO CIRCUMSTANCES TENONS SHALL BE CUT.

KEY NOTES

1. EMERGENCY LIGHTS AND EXIT SIGNS SHALL BE CONNECTED AHEAD OF ALL LIGHTING CONTROLS AS PER NEC ARTICLE 700.12
2. REPLACE EXISTING EXTERIOR WALL PACKS. REUSE EXISTING CIRCUIT. CONTROL VIA PHOTO CELL TORK 2001 SERIES OR APPROVED EQUAL. FIELD VERIFY EXACT LOCATIONS.

LIGHTING GENERAL NOTES

1. ALL RECESSED LIGHTING FIXTURES IN LAY-IN CEILINGS SHALL BE INSTALLED WITH 8' LONG FLEXIBLE METAL CONDUIT.
2. ALL MOUNTING HEIGHTS FOR LIGHTING FIXTURES ARE TO THE BOTTOM OF THE FIXTURES UNLESS INDICATED OTHERWISE.
3. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.
4. ALL WORK SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH GOOD INSTALLATION PRACTICES, SPECIFICATIONS, AND THE LATEST EDITIONS OF ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES. ALL COMPONENTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
5. PLANS SHOWN ARE DIAGRAMMATICAL IN NATURE AND DO NOT INDICATE EVERY FITTING, TRANSITION, BOX, ETC REQUIRED. THEREFORE, CONTRACTOR IS TO COORDINATE ALL ELECTRICAL REQUIREMENTS WITH OTHER TRADES PRIOR TO INSTALLATION.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING COMPLETE AND OPERATIONAL SYSTEMS SHOWN ON PLAN.
7. ALL CONDUIT, POWER WIRES, RECEPTACLE BOXES, RECEPTACLES, AND OVERLOAD PROTECTION DEVICES SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
8. ALL CONDUIT SIZES SHALL BE DETERMINED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
9. WIRING DEVICES:
   a. SWITCHES +46"
   b. RECEPTACLES +18"
   c. VOICE/DATA +18"
10. EXIT SIGN MOUNTING:
    a. WALL FIXTURE: CENTER 12" ABOVE DOOR OPENING
    b. CEILING/PENDANT FIXTURE: ON CEILING OR AT HEIGHT SPECIFIED ON DRAWINGS
11. EXIT SIGNS, EMERGENCY BATTERY PACKS, AND NIGHT LIGHTS SHALL NOT BE SWITCHED.
12. ELECTRICAL CONTRACTOR WILL PROVIDE A ROOF MOUNTED PHOTOCELL IN A NEUTRAL POSITION THAT IS NOT FACING EAST OR WEST, TO CONTROL ALL EXTERIOR LIGHTS AND SIGNS.
13. PROVIDE SEPARATE BOXES FOR GANGED SWITCHES ON SEPARATE BRANCH CIRCUITS.
14. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND DETAILS FOR THE EXACT LOCATION OF ALL LIGHTING FIXTURES AND ANY OTHER EQUIPMENT INSTALLED IN THE CEILING SYSTEMS. VERIFY EXACT MOUNTING HEIGHTS AND FINISHES WITH ARCHITECT PRIOR TO ROUGH-IN.
15. ADDITIONAL EXIT AND EMERGENCY LIGHTS MAY BE REQUIRED BY THE AUTHORITY HAVING JURISDICTION. ADDITIONAL FIXTURES SHALL BE ADDED AS DIRECTED BY THE LOCAL AUTHORITY.
16. MAXIMUM COMBINED FEEDER AND BRANCH CIRCUITS SHALL NOT EXCEED 5% VOLTAGE DROP, AND THE MAXIMUM ON THE FEEDER OR BRANCH CIRCUIT SHALL NOT EXCEED 3% VOLTAGE DROP. ELECTRICAL CONTRACTOR TO INCREASE WIRE/CONDUIT SIZE AS NECESSARY TO MAINTAIN VOLTAGE DROP RECOMMENDATIONS.
17. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR GROUNDING OF ALL ELECTRICAL EQUIPMENT.
18. EMERGENCY LIGHT MOUNTING:
    a. WALL FIXTURE: 12" BELOW FINISHED CEILING OR +10'-0" IN AREAS OF EXPOSED STRUCTURE, UNLESS NOTED OTHERWISE.
    b. PENDANT FIXTURE: BOTTOM OF FIXTURE AT HEIGHT SPECIFIED ON DRAWINGS.
    c. REMOTE HEAD FIXTURE: HEADS CENTERED ABOVE DOOR OPENING +9'-0", UNLESS NOTED OTHERWISE AND BATTERY PACK MOUNTED ON INTERIOR SIDE OF WALL 12" BELOW FINISHED CEILING OR AT BAR JOIST IN AREAS OF EXPOSED

1 E100 LIGHTING PLAN
SCALE: 1/4" = 1'-0"

GH2 ARCHITECTS

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E100 LIGHTING PLAN

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SHEET NAME: LIGHTING PLAN

SHEET NUMBER: E100

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POST-TENSION SLAB NOTE

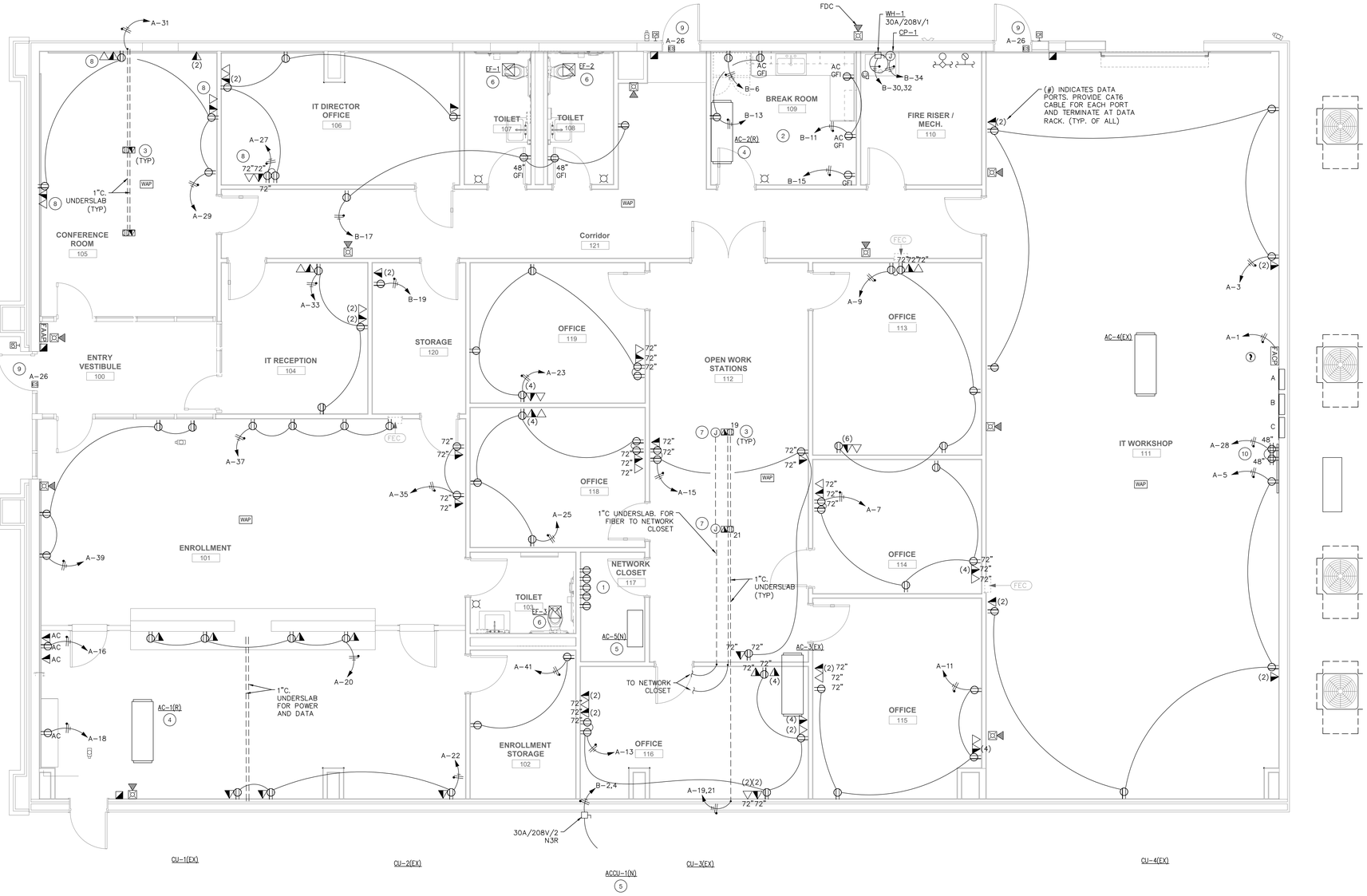
EXISTING BUILDING SLAB IS A POST-TENSION SLAB. BEFORE ANYWORK, THE CONTRACTOR SHALL X-RAY THE SLAB TO IDENTIFY THE LOCATIONS OF POST-TENSION TENDONS WITHIN THE SLAB. UNDER NO CIRCUMSTANCES TENONS SHALL BE CUT.

(#) KEY NOTES

1. PROVIDE FIVE DEDICATED DUPLEX RECEPTACLES 48" AFF FOR NETWORK RACK. REFER TO PANEL SCHEDULES ON SHEET E300 FOR HOMERUNS.
2. PROVIDE A GFCI CIRCUIT BREAKER IN LIEU OF A GFCI OUTLET IF THE OUTLET LOCATION IS NOT READILY ACCESSIBLE.
3. PROVIDE (1) 4-GANG FLOOR BOX (LEGRAND EFB45S OR EQUAL), WITH (2) 20AMP DUPLEX RECEPTACLES AND (2) DATA PORTS. COORDINATE WITH ARCHITECT FOR COVER FINISH.
4. RELOCATED MECHANICAL UNIT. EXTEND AND RECONNECT AS REQUIRED.
5. INTERLOCK INDOOR UNIT WITH OUTDOOR UNIT AS REQUIRED. COORDINATE WITH MECHANICAL PLANS.
6. POWER AND CONTROL EXHAUST FAN WITH RESTROOM LIGHTS.
7. 2 KEYSTONE JACK FOR FIBER (LC) UNDER TABLE.
8. 1-1/2"C. FOR HDMI FROM BEHIND DISPLAY TO DESK.
9. DOOR SHALL BE PROVIDED WITH ACCESS CONTROL DEVICES AS REQUIRED. PROVIDE A LOW VOLTAGE TRANSFORMER WITH 120V CONNECTION ON PRIMARY SIDE IF NEEDED FOR ELECTRICAL STRIKE DEVICE. PROVIDE A CARD READER AND INTERLOCK WITH ACCESS CONTROL PANEL AS REQUIRED. VERIFY WITH OWNER FOR EXACT REQUIREMENTS.
10. PROVIDE A 4'X8' PLYWOOD TELEPHONE BACKBOARD WITH SIEMENS #ECGB-5 GROUND BAR OR APPROVED EQUAL AND (2) 2"C TO BUILDING TELEPHONE SERVICE. COORDINATE EXACT REQUIREMENTS WITH SERVICE PROVIDER.

POWER GENERAL NOTES

1. ALL WORK SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH GOOD INSTALLATION PRACTICES, SPECIFICATIONS, AND THE LATEST EDITIONS OF ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES. ALL COMPONENTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
2. PLANS SHOWN ARE DIAGRAMMATICAL IN NATURE AND DO NOT INDICATE EVERY FITTING, TRANSITION, BOX, ETC REQUIRED. THEREFORE, CONTRACTOR IS TO COORDINATE ALL ELECTRICAL REQUIREMENTS WITH OTHER TRADES PRIOR TO INSTALLATION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING COMPLETE AND OPERATIONAL SYSTEMS SHOWN ON PLAN.
4. ALL CONDUIT, POWER WIRES, RECEPTACLE BOXES, RECEPTACLES, AND OVERLOAD PROTECTION DEVICES SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
5. ALL CONDUIT SIZES SHALL BE DETERMINED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
6. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR GROUNDING OF ALL ELECTRICAL EQUIPMENT.
7. WIRING DEVICES:
   a. SWITCHES +46"
   b. RECEPTACLES +18"
   c. VOICE/DATA +18"
8. WIRING SHALL INCLUDE FINAL CONNECTION TO ALL EQUIPMENT IN CONFORMANCE WITH EQUIPMENT SUPPLIER WIRING DIAGRAMS.
9. UPON COMPLETION OF ELECTRICAL INSTALLATION AND PRIOR TO ENERGIZING CIRCUIT:
   a. INSPECT WIRE AND CABLE FOR PHYSICAL DAMAGE.
   b. PERFORM CONTINUITY TEST.
   c. VERIFY PROPER PHASING CONNECTION TO ALL THREE PHASE MOTOR LOADS.
10. CONTRACTOR IS RESPONSIBLE FOR PROVIDING COMPLETE PANELBOARD TYPEWRITTEN IDENTIFICATION SCHEDULES.
11. WHERE BRANCH CIRCUITS ARE GROUPED, SIZE CONDUIT AND DERATE CURRENT CARRYING CONDUCTORS PER NEC.
12. WHERE EQUIPMENT NAMEPLATE PROTECTIVE DEVICE RATING DIFFERS FROM SIZE PROVIDED, CHANGE OUT BRANCH CIRCUIT WIRING AND OVERCURRENT DEVICE TO APPROPRIATE RATING PER NEC.
13. NO ALUMINUM WIRE CONDUCTORS SHALL BE USED FOR INSTALLATION OF BRANCH CIRCUITS. USE COPPER WIRE CONDUCTORS. ALUMINUM CONDUCTORS FOR FEEDERS WILL NEED TO BE APPROVED BY ENGINEER AND OWNER.
14. EQUIPMENT SHALL BE OF MATERIALS SUITABLE FOR AND RATED FOR THE ENVIRONMENT IN WHICH THEY ARE TO BE INSTALLED.
15. WORKING CLEARANCES FOR ELECTRICAL EQUIPMENT SHALL BE IN COMPLIANCE WITH NEC 110. THE EXCLUSIVELY DEDICATED SPACE EXTENDING FROM FLOOR TO STRUCTURAL CEILING WITH A WIDTH AND DEPTH OF THE PANELBOARD OR SWITCHBOARD MUST BE CLEAR OF ALL PIPING, DUCTS, EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT OR ARCHITECTURAL APPURTENANCES IN ACCORDANCE WITH NEC 408.
16. MAXIMUM COMBINED FEEDER AND BRANCH CIRCUITS SHALL NOT EXCEED 5% VOLTAGE DROP, AND THE MAXIMUM ON THE FEEDER OR BRANCH CIRCUIT SHALL NOT EXCEED 3% VOLTAGE DROP. ELECTRICAL CONTRACTOR TO INCREASE WIRE/CONDUIT SIZE AS NECESSARY TO MAINTAIN VOLTAGE DROP RECOMMENDATIONS.
17. WHERE CONNECTED TO A 20A. BRANCH CIRCUIT SUPPLYING AN INDIVIDUAL RECEPTACLE (SIMPLEX OR DUPLEX), THE RECEPTACLE SHALL BE RATED AT 20A.
18. CIRCUIT NUMBERS AT DEVICES CORRESPOND TO PANELBOARD BREAKERS (SEE PANELBOARD SCHEDULE). BRANCH CIRCUITS SHALL BE SIZED ACCORDING TO THE CIRCUIT BREAKER RATING, UNLESS INDICATED OTHERWISE ON THE ELECTRICAL EQUIPMENT SCHEDULE.
19. PROVIDE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED AND GRADE MOUNTED ELECTRICAL EQUIPMENT. MINIMUM REQUIREMENTS: 4" HIGH, 4% AIR ENTRAINED, POLYFIBER REINFORCED CONCRETE, 4" WIDER AND 4" LONGER THAN EQUIPMENT TO BE PLACED ON IT. REFER TO ELECTRICAL DETAIL DRAWINGS FOR TRANSFORMER, GENERATOR, OR SWITCHGEAR PADS THAT MAY EXCEED



1 E200 POWER PLAN
SCALE: 1/4" = 1'-0"
NORTH

4/22/2024 9:16:17 AM

GH2 ARCHITECTS

OKLAHOMA LICENSED PROFESSIONAL ENGINEER
PETER A. HILGER
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6-25-24

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E200 POWER PLAN

GH2 ARCHITECTS
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3	ADD #3	6-28-24

SHEET NAME:
POWER PLAN

SHEET NUMBER:
E200

B — ELECTRICAL PANEL SCHEDULE — EXISTING

SERVICE: 120/240,1PH,3W,+G,IG **BUS RATING:** 200A MCB **SECTIONS:** 1
PANEL TYPE: NEMA 1 **AIC RATING:** EXISTING **MOUNTING:** SURFACE

EQUIP No.	DESCRIPTION	NOTE	AMPS	LOADS (KVA)	WIRE N	WIRE PH	CKT CB/P	CKT #	PHASE A	PHASE B	CKT #	CKT CB/P	WIRE PH	WIRE N	LOADS (KVA)	LOADS AMPS	NOTE	DESCRIPTION	EQUIP No.
	NETWORK RACK		1.5	0.180	12	12	20/1	1	*		2	20/2	12		1.144	9.5		ACCU-1	
	NETWORK RACK		1.5	0.180	12	12	20/1	3		*	4		12		1.144	9.5		-	
	NETWORK RACK		1.5	0.180	12	12	20/1	5	*		6	20/1	12	12	0.480	4.0	GF	ICEMAKER	
	NETWORK RACK		1.5	0.180	12	12	20/1	7	*		8				0.000	0.0			
	NETWORK RACK		1.5	0.180	12	12	20/1	9		*	10				0.000	0.0			
	REC: BREAK ROOM		8.3	1.000	12	12	20/1	11			12				0.000	0.0			
	REC: BREAK ROOM		8.3	1.000	12	12	20/1	13	*		14				0.000	0.0		-	
	REFRIGERATOR		8.3	1.000	12	12	20/1	15		*	16				0.000	0.0			
	REC: RR & CORRIDOR		8.3	1.000	12	12	20/1	17			18				0.000	0.0			
	PRINTER		10.0	1.200	12	12	20/1	19	*		20				0.000	0.0			
			0.0	0.000				21		*	22				0.000	0.0			
			0.0	0.000				23			24				0.000	0.0			
			0.0	0.000				25	*		26				0.000	0.0			
			0.0	0.000				27		*	28				0.000	0.0			
			0.0	0.000				29			30	30/2	10		2.000	16.7		WATER HEATER	
			0.0	0.000				31	*		32		10		2.000	16.7		-	
			0.0	0.000				33		*	34	20/1	12	12	0.000	0.0		CP-1	
			0.0	0.000				35			36				0.000	0.0			
			0.0	0.000				37	*		38				0.000	0.0			
			0.0	0.000				39		*	40	20/2			0.000	0.0	EX	SPD	
			0.0	0.000				41			42				0.000	0.0		-	

TOTAL CONNECTED LOAD: 12.87 KVA
TOTAL CONNECTED AMPS: 53.6 AMPS

PHASE "A": 6.164 KVA 51.4 AMPS
PHASE "B": 6.704 KVA 55.9 AMPS

TOTAL CALCULATED LOAD: 13.87 KVA
TOTAL CALCULATED AMPS: 57.8 AMPS

PANELBOARD NOTES:
OI - VIA LTG CONTACTOR #
EM - EMERG LTG HANDLE-ON CLAMP
EX - EXISTING
FA - RED/HANDLE-ON CLAMP
GF - GFCI TYPE CIRCUIT BREAKER
LCK - HAND PADLOCKABLE/S-OFF DEVICE
ST - SHUNT TRIP
OL - REFER TO ONE-LINE DIAGRAM

A — ELECTRICAL PANEL SCHEDULE — EXISTING

SERVICE: 120/240,1PH,3W,+G,IG **BUS RATING:** 200A MCB **SECTIONS:** 1
PANEL TYPE: NEMA 1 **AIC RATING:** EXISTING **MOUNTING:** SURFACE

EQUIP No.	DESCRIPTION	NOTE	AMPS	LOADS (KVA)	WIRE N	WIRE PH	CKT CB/P	CKT #	PHASE A	PHASE B	CKT #	CKT CB/P	WIRE PH	WIRE N	LOADS (KVA)	LOADS AMPS	NOTE	DESCRIPTION	EQUIP No.
	FIRE ALARM CONTROL PANEL	FA	1.5	0.180	12	12	20/1	1	*		2	20/1	12	12	1.548	12.9		INTERIOR LIGHTS	
	REC: IT WORKSHOP		6.0	0.720	12	12	20/1	3		*	4	20/1	12	12	1.528	12.7		INTERIOR LIGHTS	
	REC: IT WORKSHOP		6.0	0.720	12	12	20/1	5			6				0.000	0.0	EX	EXTERIOR LIGHTS	
	REC: OFFICE 114		7.5	0.900	12	12	20/1	7	*		8				0.000	0.0	EX	EXTERIOR LIGHTS	
	REC: OFFICE 113		7.5	0.900	12	12	20/1	9		*	10				0.000	0.0			
	REC: OFFICE 115		7.5	0.900	12	12	20/1	11			12				0.000	0.0	EX	EXISTING LOAD	
	REC: OFFICE 116		7.5	0.900	12	12	20/1	13	*		14				0.000	0.0		-	
	REC: OPEN WORK STATIONS		6.0	0.720	12	12	20/1	15		*	16	20/1	12	12	1.200	10.0		PRINTER	
	REC: OPEN WORK STATIONS		1.5	0.180	12	12	20/1	17	*		18	20/1	12	12	1.200	10.0		PRINTER	
	REC: OPEN WORK STATIONS		3.0	0.360		12	20/2	19	*		20	20/1	12	12	0.720	6.0		REC: ENROLLMENT	
	-		3.0	0.360		12		21		*	22	20/1	12	12	0.720	6.0		REC: ENROLLMENT	
	REC: OFFICE 119		7.5	0.900	12	12	20/1	23			24	20/1	12	12	0.180	1.5		CONDENSATE PUMP	
	REC: OFFICE 118		7.5	0.900	12	12	20/1	25	*		26	20/1	12	12	0.500	4.2		ACCESS CONTROL	
	REC: IT DIRECTOR OFFICE		6.0	0.720	12	12	20/1	27		*	28	20/1	12	12	0.720	6.0		TELEPHONE BOARD	
	REC: CONFERENCE		6.0	0.720	12	12	20/1	29			30				0.000	0.0			
	REC: CONFERENCE		6.0	0.720	12	12	20/1	31	*		32				0.000	0.0			
	REC: IT RECEPTION		4.5	0.540	12	12	20/1	33		*	34				0.000	0.0			
	REC: TVS		3.0	0.360	12	12	20/1	35	*		36				0.000	0.0			
	REC: ENROLLMENT		6.0	0.720	12	12	20/1	37	*		38				0.000	0.0			
	REC: ENROLLMENT		6.0	0.720	12	12	20/1	39		*	40	30/2			0.000	0.0		SPD	
	REC: STORAGE		1.5	0.180	12	12	20/1	41			42				0.000	0.0		-	

TOTAL CONNECTED LOAD: 21.63 KVA
TOTAL CONNECTED AMPS: 90.1 AMPS

PHASE "A": 10.268 KVA 85.6 AMPS
PHASE "B": 11.366 KVA 94.7 AMPS

TOTAL CALCULATED LOAD: 18.12 KVA
TOTAL CALCULATED AMPS: 75.5 AMPS

PANELBOARD NOTES:
OI - VIA LTG CONTACTOR #
EM - EMERG LTG HANDLE-ON CLAMP
EX - EXISTING
FA - RED/HANDLE-ON CLAMP
GF - GFCI TYPE CIRCUIT BREAKER
LCK - HAND PADLOCKABLE/S-OFF DEVICE
ST - SHUNT TRIP
OL - REFER TO ONE-LINE DIAGRAM

C — ELECTRICAL PANEL SCHEDULE — EXISTING

SERVICE: 120/240,1PH,3W,+G,IG **BUS RATING:** 200A MCB **SECTIONS:** 1
PANEL TYPE: NEMA 1 **AIC RATING:** EXISTING **MOUNTING:** SURFACE

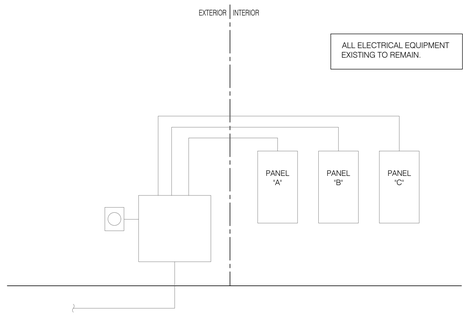
EQUIP No.	DESCRIPTION	NOTE	AMPS	LOADS (KVA)	WIRE N	WIRE PH	CKT CB/P	CKT #	PHASE A	PHASE B	CKT #	CKT CB/P	WIRE PH	WIRE N	LOADS (KVA)	LOADS AMPS	NOTE	DESCRIPTION	EQUIP No.
	EXISTING LOAD	EX	0.0	0.000				1	*		2				0.000	0.0	EX	EXISTING LOAD	
	-	EX	0.0	0.000				3		*	4				0.000	0.0	EX	-	
	EXISTING LOAD	EX	0.0	0.000				5			6				0.000	0.0	EX	EXISTING LOAD	
	-	EX	0.0	0.000				7	*		8				0.000	0.0	EX	-	
	EXISTING LOAD	EX	0.0	0.000				9		*	10				0.000	0.0	EX	EXISTING LOAD	
		EX	0.0	0.000				11			12				0.000	0.0	EX	-	
	EXISTING LOAD	EX	0.0	0.000				13	*		14				0.000	0.0	EX	EXISTING LOAD	
	-	EX	0.0	0.000				15		*	16				0.000	0.0	EX	-	
	EXISTING LOAD	EX	0.0	0.000				17			18				0.000	0.0	EX	EXISTING LOAD	
	-	EX	0.0	0.000				19	*		20				0.000	0.0	EX	-	
	EXISTING LOAD	EX	0.0	0.000				21		*	22				0.000	0.0	EX	EXISTING LOAD	
	-	EX	0.0	0.000				23			24				0.000	0.0	EX	-	
			0.0	0.000				25	*		26				0.000	0.0			
			0.0	0.000				27		*	28				0.000	0.0			
			0.0	0.000				29			30				0.000	0.0			
			0.0	0.000				31	*		32				0.000	0.0			
			0.0	0.000				33		*	34				0.000	0.0			
			0.0	0.000				35			36				0.000	0.0			
			0.0	0.000				37	*		38				0.000	0.0			
			0.0	0.000				39		*	40				0.000	0.0			
			0.0	0.000				41			42				0.000	0.0			

TOTAL CONNECTED LOAD: 0 KVA
TOTAL CONNECTED AMPS: 0.0 AMPS

PHASE "A": 0.000 KVA 0 AMPS
PHASE "B": 0.000 KVA 0 AMPS

TOTAL CALCULATED LOAD: 0 KVA
TOTAL CALCULATED AMPS: 0.0 AMPS

PANELBOARD NOTES:
OI - VIA LTG CONTACTOR #
EM - EMERG LTG HANDLE-ON CLAMP
EX - EXISTING
FA - RED/HANDLE-ON CLAMP
GF - GFCI TYPE CIRCUIT BREAKER
LCK - HAND PADLOCKABLE/S-OFF DEVICE
ST - SHUNT TRIP
OL - REFER TO ONE-LINE DIAGRAM



1 / E300 ELECTRICAL RISER DIAGRAM
SCALE: NTS

4/22/2024 9:16:17 AM

GH2 ARCHITECTS

PETER A. HILGER — OKLAHOMA — 19695 — REGISTERED PROFESSIONAL ENGINEER
6-25-24

OWASSO PS - ENROLLMENT & IT CENTER
1309 N Main St, Owasso, OK 74055

E300 ONE-LINE DIAGRAM & PANEL SCHEDULES

GH2 ARCHITECTS
GH2.COM

GH2 PROJECT NUMBER:
20230239

ISSUE DATE:
04/29/2024

ISSUE:
CONSTRUCTION DOCUMENTS

OTHER ISSUE DATES:

NO.	DESCRIPTION	DATE
1	ADD #1	5-24-24
2	ADD #2	6-18-24
3	ADD #3	6-28-24

SHEET NAME:
ONE-LINE DIAGRAM & PANEL SCHEDULES

SHEET NUMBER:
E300

Division 26: GENERAL ELECTRICAL REQUIREMENTS

1. GENERAL INSTRUCTIONS

A. GENERAL REQUIREMENTS

All requirements under Division 01 and the general and supplementary conditions of these specifications apply to this section and division. Where the requirements of this section and division exceed those of Division 01, this section and division take precedence. Become thoroughly familiar with all its contents as to requirements that affect this division, section, or both. Work required under this division includes all material, equipment, appliances, transportation, services, and labor required to complete the entire system as required by the drawings and specifications, or reasonably inferred to be necessary to facilitate the function of each system as implied by the design and the equipment specified.

The specifications and drawings for the project are complementary, and any portion of work described in one shall be provided as if described in both. In the event of discrepancies, notify the Engineer and request clarification prior to proceeding with the Work involved.

Drawings are graphic representations of the work upon which the contract is based. They show the materials and their relationship to one another, including sizes, shapes, locations, and connections. They convey the scope of work, indicating the intended general arrangement of the systems without showing all of the exact details as to elevations, offsets, control lines, and other installation requirements. Use the drawings as a guide when laying out the work and to verify that materials and equipment will fit into the designated spaces, and which when installed per manufacturers' requirements, will ensure a complete, coordinated, satisfactory, and properly operating system.

B. DEFINITIONS

Furnish: "to supply and deliver to the project site, ready for unloading, unpacking, assembling, installing, and similar operations."

Install: "to perform all operations at the project site including, but not limited to, the actual unloading, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, testing, commissioning, starting up and similar operations, complete, and ready for the intended use."

Provide: "to furnish and install."

Furnished by Owner (or Owner-Furnished) or Furnished by Others: "an item furnished by the Owner or under other divisions or contracts, and installed under the requirements of this division, complete, and ready for the intended use, including all items and services incidental to the work necessary for proper installation and operation. Include the installation under the warranty required by this division.

Engineer: Where referenced in this Division, "Engineer" is the Engineer of Record and the Design Professional for the work under this division, and is a consultant to, and an authorized representative of the Architect, as defined in the General and/or Supplementary Conditions. When used in this division, Engineer means increased involvement by and obligations to the Engineer, in addition to involvement by and obligations to the Architect.

AHJ: The local code and/or inspection agency (Authority) Having Jurisdiction over the Work.

NRTL: Nationally Recognized Testing Laboratory, as defined and listed by OSHA in 29 CFR 1910.7 (e.g., UL, ETL, CSA), and acceptable to the AHJ over this project. Nationally recognized testing laboratories and standards listed are used only to represent the characteristics required and are not intended to restrict the use of other NRTLs that are acceptable to the AHJ and standards that meet the specified criteria.

Homerun: That portion of an electrical circuit originating at a junction box, termination box, receptacle, or switch with termination at an electrical panelboard. Note: Where MC cable is utilized for receptacle and/or lighting branch circuiting loads, the originating point of the homerun shall be at the first load in the circuit or at a junction box located in an accessible ceiling space as close as possible to the first load.

Substitution: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor. Substitutions include Value Engineering proposals.
1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

The terms "approved equal", "equivalent", or "equal" are used synonymously and shall mean "accepted by or acceptable to the Engineer as equivalent to the item or manufacturer specified". The term "approved" shall mean labeled, listed, certified, or all three, by an NRTL, and acceptable to the AHJ over this project.

C. PRE-BID SITE VISIT

Prior to submitting bid, visit the site of the proposed work and become fully informed as to the conditions under which the work is to be done. Failure to comply with this requirement shall not be considered sufficient justification to request or obtain extra compensation over and above the contract price.

D. MATERIAL AND WORKMANSHIP

Provide new material, equipment, and apparatus under this contract unless otherwise stated herein, of best quality normally used for the purpose in good commercial practice, and free from defects. Model numbers listed in the specifications or shown on the drawings are not necessarily intended to designate the required trim. written descriptions of the trim govern model numbers.

Provide markings or a nameplate for all material and equipment identifying the manufacturer and providing sufficient reference to establish quality, size, and capacity. All workmanship shall be of the finest possible by experienced mechanics of the proper trade. In general, provide the following quality grade(s) for all materials and equipment.

Commercial specification grade:

Provide all hoists, scaffolds, staging, runways, tools, machinery, and equipment required for the performance of the electrical work. Store and maintain material and equipment in clean condition, and protected from weather, moisture, and physical damage.

Furnish only material and equipment that are listed, labeled, certified, or all three, by an NRTL whenever any listing or labeling exists for the types of material and equipment specified.

At a minimum, general work practices for electrical construction shall be in accordance with NECA 1 (latest edition), "Standard Practices for Good Workmanship in Electrical Construction".

E. MANUFACTURERS

In other articles where lists of manufacturers are introduced, subject to compliance with requirements, provide products by one of the manufacturers specified.

Where a list is provided, manufacturers are listed alphabetically and not in accordance with any ranking or preference.

Where manufacturers are not listed, provide products subject to compliance with requirements from manufacturers that have been actively involved in manufacturing the specified product for no less than 5 years.

F. COORDINATION

Coordinate all work with other divisions and trades so that various components of the systems are installed at the proper time, fit the available space, and allow proper service access to those items requiring maintenance. Components which are installed without regard to the above shall be relocated at no additional cost to the Owner.

Unless otherwise indicated, the General Contractor shall provide chases and openings in building construction required for installation of the systems specified herein. Contractor shall furnish the General Contractor with information where chases and openings are required. Contractor shall keep informed as to the work of other trades engaged in the construction of the project and shall execute work in a manner as to not interfere with or delay the work of other trades.

Figured dimensions shall be taken in preference to scale dimensions. Contractor shall take his own measurements at the building, as variations may occur. Contractor shall be held responsible for errors that could have been avoided by proper checking and inspection.

Provide materials with trim that will properly fit the types of ceiling, wall, or floor finishes actually installed. Model numbers listed in the specifications or shown on the drawings are not intended to designate the required trim.

Make all offsets required to clear equipment, beams, and other structural members, and to facilitate concealing raceways in the manner anticipated in the design. Provide materials with trim that will fit properly the types of ceiling, wall, or floor finishes actually installed.

G. ORDINANCES AND CODES

Work performed under this contract shall, at a minimum, be in conformance with applicable national, state and local codes having jurisdiction. Equipment furnished and associated installation work performed under this contract shall be in strict compliance with current applicable codes adopted by the local AHJ, including any amendments and standards as set forth by the following:
1. National Fire Protection Association (NFPA)
2. Underwriters Laboratories (UL)
3. Occupational Safety and Health Administration (OSHA)
4. American National Standards Institute (ANSI)
5. American Society of Testing Materials (ASTM)
6. Rules and regulations of public utilities and municipal departments affected by connection of services.
7. Other national standards and codes where applicable.

Where the contract documents exceed the requirements of the referenced codes, standards, etc., the contract documents shall take precedence. Where conflicts between various codes, ordinances, rules, and regulations exist, comply with the most stringent.

Promptly bring all conflicts observed between codes, ordinances, rules, regulations, referenced standards, and these documents to the attention of the Architect and Engineer for final resolution. Contractor will be held responsible for any violation of the law.

Procure and pay for permits and licenses required for the accomplishment of the work herein described. Where required, obtain, pay for, and furnish certificates of inspection to Owner. Provide all safety lights, guards, and warning signs required for the performance of the work and for the safety of the public.

H. PROTECTION OF EQUIPMENT AND MATERIALS

Store and protect from damage equipment and materials delivered to job site. For materials and equipment susceptible to changing weather conditions, dampness, or temperature variations, store inside in conditioned spaces. For materials and equipment not susceptible to these conditions, cover with waterproof, tear-resistant, heavy tarp or polyethylene plastic as required to protect from plaster, dirt, paint, water, or physical damage. Equipment and material damaged by construction activities shall be rejected, and Contractor shall furnish new equipment and material of a like kind at its own expense.

Keep premises broom clean of foreign material created during work performed under this contract. Conduit, equipment, etc. shall have a neat and clean appearance at the termination of the work.

Plug or cap open ends of conduits while stored and installed during construction when not in use to prevent the entrance of debris into the systems.

I. SUBSTITUTIONS

Materials, products, equipment, and systems described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by the proposed substitution. The base bid shall include only the products from manufacturers specifically named in the drawings and specifications. To request a substitution, request the Substitution Request From from the Architect or Engineer. Complete and send the Substitution Request From for each material, product, equipment, or system that is proposed to be substituted. The burden of proof of the merit of the proposed substitution is upon the proposer.

Unless stated otherwise in writing to the Engineer by the Contractor, Contractor warrants to the Engineer, Architect, and Owner the following:
1. Proposed substitution has been fully investigated and determined to meet or exceed the specified Work in all respects unless stated otherwise in the substitution request.
2.Proposed substitution is consistent with the Contract Documents and will produce indicated results, including functional clearances, maintenance service, and sourcing of replacement parts.
3.Proposed substitution has received necessary approvals of authorities having jurisdiction.
4. Same warranty will be furnished for proposed substitution as for specified Work.
5.If accepted substitution fails to perform as required, Contractor shall replace substitute material or system with that originally specified and bear costs incurred thereby.
6. Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

No substitutions will be considered unless the Substitution Request Form is completed and attached with the appropriate substitution documentation. No substitution will be considered prior to receipt of bids unless written request for approval to bid has been received by the Engineer at least ten (10) calendar days prior to the date for receipt of bids .

If the proposed substitution is approved prior to receipt of bids, such approval will be stated in an addendum. Bidders shall not rely upon approvals made in any other way. Verbal approval will not be given. No substitutions will be considered after the contract is awarded unless specifically provided in the contract documents.

Provide factory generated point-by-point calculations for all exterior light fixtures .

Provide interior point-by-point calculations at the discretion of the engineer.

J. SUBMITTALS

Assemble and submit for review, shop drawings, material lists, manufacturer product literature for equipment to be furnished, and items requiring coordination between contractors under this contract. Provide submittals in sufficient detail so as to demonstrate compliance with these Contract Documents and the design concept. Prior to transmitting submittals, verify that the equipment submitted is mutually compatible with and suitable for the intended use, will fit the available space, and maintain manufacturer recommended service clearances. If the size of equipment furnished makes necessary any change in location or configuration, submit a shop drawing showing the proposed layout.

Transmit submittals as early as required to support the project schedule. Allow two weeks for Engineer review time, plus to/from mailing time via the Architect, plus a duplication of this time for resubmittals, if required. Only resubmit those sections requested for resubmittal.

Submittals shall contain the project name, applicable specification section, submittal data, equipment identification acronym as used on the drawings, and the Contractor's stamp. The stamp shall certify that the submittal has been checked by the Contractor, complies with the drawings and specifications, and is coordinated with other trades. Manufacturer product literature shall include shop drawings, product data, performance sheets, samples, and other submittals required by this division. Highlight, mark, list, or indicate the materials, performance criteria, and accessories that are being proposed. General product catalog data not specifically noted to be part of the specified product will be rejected and returned without review.

Submittals and shop drawings shall not contain firm name, logo, the seal, or signature of the Engineer. They shall not be copies of the work product of the Engineer. If the Contractor desires to use elements of such product, refer to paragraph "Electronic Drawing Files" for procedures to be used.

Separate submittals according to individual specification sections. Illegible submittals will be rejected and returned without review. Catalog data shall be properly bound, identified, indexed and tabbed in a 3-ring binder. Each item or model number shall be clearly marked and accessories indicated. Label the catalog data with the equipment identification acronym or number as used on the drawings and include performance curves, capacities, sizes, weights, materials, finishes, wiring diagrams, electrical requirements and deviations from specified equipment or materials. Mark out inapplicable items. Shop drawings will be returned without review if the above mentioned requirements are not met.
Provide the quantity of submittals required by Division 01. If not indicated and hard-copy sets are provided, submit a minimum of six (6) copies. Refer to Division 01 for acceptance of electronic submittals for this project. For electronic submittals, Contractor shall submit the documents in accordance with the procedures specified in Division 01. Contractor shall notify the Architect and Engineer that the submittals have been posted. If electronic submittal procedures are not defined in Division 01, Contractor shall include the website, user name, and password information needed to access the submittals. For submittals sent by e-mail, Contractor shall copy the designated representatives of the Architect and Engineer. Contractor shall allow for the Engineer review time as specified above in the construction schedule. Contractor shall submit only the documents required to purchase the materials and/or equipment in the submittal.

The checking and subsequent acceptance of submittals by the Engineer and/or Architect shall not relieve the Contractor from responsibility for deviations from the drawings and specifications, errors in dimensions, details, sizes of equipment, or quantities, omissions of components or fittings, coordination of electrical requirements, and not coordinating items with actual building conditions and adjacent work. Contractor shall request and secure written acceptance from the Engineer and Architect prior to implementing any deviation.

K. RECORD DRAWINGS (AS-BUILT DRAWINGS)

During progress of the work in this division, Contractor shall maintain an accurate record of all changes made during the installation of the system. Upon completion of the work, accurately transfer all record information to three identical sets of the approved shop drawings. Insert one set into each copy of the manual described below.

See Division 01 and General Conditions for additional information.

L. OPERATION AND MAINTENANCE INSTRUCTIONS

During the course of construction, collect and compile a complete brochure of equipment furnished and installed on this project. Include operational and maintenance instructions, manufacturer's catalog sheets, wiring diagrams, parts lists, approved submittals and shop drawings, warranties, and descriptive literature as furnished by the equipment manufacturer. Include an inside cover sheet that lists the project name, date, Owner, Architect, Engineer, General Contractor, Sub-Contractor, and an index of contents.

Submit three copies of literature bound in approved binders with index and tabs separating equipment types to the Architect at the termination of the work. Paper clips, staples, rubber bands, loose-leaf binding, and mailing envelopes are not considered approved binders. Final approval of systems installed under this contract shall be withheld until this equipment brochure is received and deemed complete by the Architect and Engineer. Instruct workmen to save required literature shipped with the equipment itself for inclusion in this brochure.

Include Record Drawings as described above.

Refer to Division 01 for acceptance of electronic manuals for this project. For electronic manuals, refer to paragraph "Submittals" for requirements.

M. WARRANTIES

Warrant each system and each element thereof against all defects due to faulty workmanship, design, or material for a period of 12 months from date of Substantial Completion, unless specific items are noted to carry a longer warranty in these construction documents or manufacturer's standard warranty exceeds 12 months. Remedy all defects occurring within the warranty period(s) as stated in the General Conditions and Division 01.

Warranties shall include labor and material, including travel expenses. Make repairs or replacements without any additional costs to the Owner, and to the satisfaction of the Owner, Architect, and Engineer.

Perform the remedial work promptly, upon written notice from the Engineer or Owner.

Also warrant the following additional items:
1. All raceways are free from obstructions, holes, crushing, or breaks of any nature.
2.All raceway seals are effective.
3.The entire electrical system is free from all short circuits and unwanted open circuits and grounds.

At the time of Substantial Completion, deliver to the Owner all warranties, in writing and properly executed, including term limits for warranties extending beyond the one year period and any actions the Owner must take in order to maintain warranty status. Each warranty instrument shall be addressed to the Owner and state the commencement date and term.

2. GENERAL MATERIALS AND INSTALLATION

A. EXCAVATION AND BACKFILLING

Perform excavation and backfill required for installation of underground work under this contract. Trenches shall be of sufficient width. Crib or brace trenches to prevent cave-in or settlement. Do not excavate trenches close to columns and walls of new building without prior consultation with the Architect. Use pumping equipment if required to keep trenches free of water. Backfill trenches in maximum 6-inch layers of well tamped dry earth in a manner to prevent future settlement.

Excavation as specified herein shall be classified as common excavation. Common excavation shall comprise the satisfactory removal and disposition of material of whatever substances and of every description encountered, including rock, if any, within the limits of the work as specified and shown on the drawings. Excavation shall be performed to the lines and grades indicated on the drawings. Dispose of excavated materials that are considered unsuitable for backfill, and surplus of excavated material, which is not required for backfill, all to the satisfaction of the Engineer.

B. COINCIDENTAL DAMAGE

Repair streets, sidewalks, drives, paving, walls, finishes, and other facilities damaged in the course of this Work. Repair materials shall match existing construction. Repair work shall meet all requirements of the Owner, local authorities having jurisdiction, and meet the satisfaction of the Architect. Repair work shall be thoroughly first class.

C. CUTTING AND PATCHING

Conform to the requirements in Division 01. Cut walls, floors, ceilings, and other portions of the facility as required to install work under this division. Obtain permission of the Architect prior to cutting. Do not cut or disturb structural members without prior approval from the Architect. Cut holes as small as possible. Patch walls, floors, and other portions of the facility as required by work under this division. Patching shall match the original material and construction including fire ratings, if applicable. Repair and refinish areas disturbed by work to the condition of adjoining surfaces in a manner satisfactory to the Architect.

D. ROUGH-IN

Coordinate without delay all roughing-in with other divisions. Conceal all conduit and raceways except in unfinished areas and where otherwise indicated on the drawings.

E. SUPPORT SYSTEMS

Steel Slotted Support Systems (Slotted Channel): Comply with MFMA-3, factory-fabricated components for field assembly; 12-gauge, 1-5/8-inch by 1-5/8-inch.

Finishes:
1. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-3.
2.Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane or polyester coating applied according to MFMA-3.
3. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-3.

Aluminum Slotted Support Systems (Slotted Channel): Comply with MFMA-3, Type 6063-T6, per ASTM B221; factory-fabricated components for field assembly; 12-gauge, 1-5/8-inch by 1-5/8-inch.

Manufacturers: Cooper B-Line, ERICO International, Hilti, Power-Strut, Thomas and Betts, or Unistrut.

Field Fabrication:

Where field cutting of standard lengths of channel are required, make cuts straight and perpendicular to manufactured surfaces.

For field-cut or damaged surfaces of coated channels, dress cut ends, damaged surfaces, or both, with an abrasive material (e.g., file, grinding stone, or similar) and cleanser to remove oils, rust, sharp edges, and shards.

For channel with a factory-applied coating, re-finish cut edges with a coating compatible with the factory finish and as recommended by the manufacturer (e.g., manufacturer's touch-up paint or zinc-rich cold-galvanizing compound, as applicable).

F. ACCESS DOORS

Provide access doors for all concealed equipment where indicated or as required, except where above lay-in ceilings. Access doors shall be adequately sized for the devices served with a minimum size of 18 inches x 18 inches. Access doors must be of the proper construction for the type of construction in which it is installed. Obtain Architect's approval of type, size, location and color before ordering. Provide factory-fabricated and assembled units, complete with attachment devices and fasteners ready for installation, concealed hinges, flush screwdriver-operated cam lock, and anchor straps. Provide access doors manufactured by: Bar-Co, J.L. Industries, Karp Associates, Milcor, Nystrom Building Products, Wade, or Zum.

G. PENETRATIONS

Coordinate sleeve selection and application with selection and application of fire-stopping specified in Division 07 section "Through-Penetration Firestop Systems."

Roofs:
1. Coordinate all roof penetrations with Engineer, Owner, and as applicable, the roofing contractor providing a roof warranty.

2.Keep all raceway penetrations within mechanical equipment curbs wherever possible. Coordinate with Division 01.

3.Flash and counterflash all openings through roof, and/or provide pre-fabricated molded seals compatible with the roof construction installed, or as required by the Engineer, Owner, or roofing contractor. All roof penetrations shall be leaktight at the termination of the work and shall not void any new or existing roof warranties.

Walls and Floors:
1.Steel Pipe Sleeves for Raceways and Cables: ASTM A53/A53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends, and drip rings.

2. Cast-Iron Pipe Sleeves for Raceways and Cables: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

3. Sleeves for Rectangular Openings: Galvanized sheet steel with minimum 0.052 inch thickness and of length to suit application.

H. FIRESTOPPING

Sealants and accessories shall have fire-resistance ratings indicated, as established by testing identical assemblies in accordance with UL 2079 or ASTM E 814, or other NRTL acceptable to AHJ.

Manufacturers: Hilti, RectorSeal, Specified Technologies Inc., United States Gypsum Company, or 3M corp.

Through and Membrane Penetration Firestopping Systems Product Schedule: Provide UL listing, location, wall or floor rating, and installation drawing for each penetration fire stop system.

Where project conditions require modification to qualified testing and inspecting agency's illustrations for a particular firestopping condition, submit illustration, with modifications marked, approved by penetration firestopping manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly. Include qualifications data for testing agency.

I. EQUIPMENT FURNISHED BY OTHERS

Provide necessary equipment and accessories that are not provided by the equipment supplier or Owner to complete installation of equipment furnished by others in locations as indicated on the drawings, specified herein, or both. Equipment and accessories not provided by the equipment supplier may include, but not be limited to, flexible cords and plugs as required for proper operation of the complete system, in accordance with the manufacturers' instructions.

Contractor shall be responsible for correct rough-in dimensions, and verify them with Architect and/or equipment supplier prior to rough-in and service installations.

J. SYSTEM TESTING AND ADJUSTING

Adjust, align, and test all electrical equipment on this project provided under this division and all electrical equipment furnished by others for installation or wiring under this division for proper operation.

Test all systems and equipment according to the requirements in NETA ATS (latest edition) and all additional requirements specified in following sections.

Maintain the following on the project premises at all times: a true RMS reading voltmeter, a true RMS reading ammeter, and a megohmmeter insulation resistance tester. Provide test data readings as requested or as required by the Engineer.

K. EQUIPMENT IDENTIFICATION

Provide equipment identification nameplates on all switchboards, panelboards, electrical equipment enclosures, access doors, transformers, disconnect switches, enclosed circuit breakers, motor starters, feeder devices in switchboards, distribution panelboards, and motor control centers .

Nameplates:
1. Engraved, contrasting color, three-layer, laminated plastic , indicating the name of the equipment, load, or circuit as designated on the drawings and in the specifications.
2. Field-applied permanent epoxy adhesive, compatible with the equipment finish.

Attachment method shall be acceptable to the manufacturers of the equipment to which the nameplates are being applied.

Nameplate Color:
1. Black background with white letters for Normal Power;
2. Red background with white letters for Emergency Power.
Letter height: 3/8-inch minimum.

L. SYSTEM START UP

Perform the following prior to starting up the electrical systems:
1.Check all components and devices and lubricate items accordingly.
2. Tighten screws and bolts for connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
3.Adjust taps on each transformer for rated secondary voltage when the transformer is at minimum load.
4.Check and record building's service entrance voltage, grounding conditions, grounding resistance, and proper phasing.
5. Replace all burned-out lamps and lamps used for temporary construction lighting in permanent light fixtures.
6. After all systems have been inspected and adjusted, confirm all operating features required by the drawings and specifications and make final adjustments as necessary.

3. ACCEPTANCE TESTING

Perform acceptance test procedures in accordance with the specifications listed in the Reference Joint Appendices for the Building Energy Efficiency Standards of California. Reference the Non-Residential Certificate of Compliance (NRCC) forms on the drawings for the systems which shall be tested. Submit Non-Residential Certificate of Acceptance (NRCA) forms for each system for which the CLCATT is responsible.

END OF SECTION

Division 26: BASIC ELECTRICAL MATERIALS AND METHODS

1. RACEWAYS

A. METALLIC CONDUIT AND TUBING

Electrical Metallic Tubing, Couplings, and Fittings (EMT): ANSI C80.3, UL 797. Only steel products allowed . Reduced wall EMT is not allowed .

Flexible Metal Conduit (FMC): Zinc-coated steel or aluminum, UL 1. Reduced-wall FMC is not allowed .

Intermediate Metal Conduit (IMC): Hot-dip Galvanized Rigid Steel Conduit, ANSI C80.6, UL 1242.

Liquidtight Flexible Metal Conduit (LFMC): Flexible steel conduit with PVC jacket, UL 360; fittings: NEMA FB 1.

Rigid Metal Conduit (RMC):
1. Hot-dip Galvanized Rigid Steel Conduit (GRS): ANSI C80.1, UL 6.
2. Rigid Aluminum Conduit (RAC): ANSI C80.5, UL 6A.
Plastic-Coated IMC, RMC, and Fittings: NEMA RN 1, NRTL listed. Coating thickness of 0.04 inches minimum.

IMC and RMC Fittings: NEMA FB 1; compatible with conduit type and material, NRTL listed.

Manufacturers: AFC Cable, Alflex, Anamet Electrical, Electri-Flex, Indalex, Manhattan/CDT/Cole-Flex, O-Z/Gedney, Republic Raceway, Tyco International, Western Tube and Conduit, or Wheatland Tube.

B. NON-METALLIC CONDUIT AND TUBING

Rigid Nonmetallic Conduit (RNC): Schedule 40 PVC, 90 deg C rated, NEMA TC-2, UL 651

Fittings: NEMA TC 3, TC 6; UL 651, compatible with conduit/tubing type and material, NRTL listed.

Manufacturers: AFC Cable, American International, Anamet Electrical, Amco, Cantex, Certainteed, Condux International, Elecsys, Electri-Flex, Lamson and Sessions, Manhattan/CDT/Cole-Flex, Prime Conduit, Raco, Spiralduct, Superflex Ltd, or Thomas and Betts.

2. RACEWAY INSTALLATION

A. GENERAL RACEWAY INSTALLATION REQUIREMENTS

Install raceways parallel and perpendicular to building lines.

Install raceways to requirements of structure, to requirements of all other work on the project, and to clear all openings, depressions, pipes, ducts, reinforcing steel, and other immovable obstacles.

Install raceways set in forms for concrete structure in such a manner that installation will not affect the strength of the structure.

Except where approved in writing by the Engineer, install no raceway in a slab-on-grade. Locate raceway below granular fill below slabs-on-grade.

Install raceways continuous between connections to outlets, boxes, and cabinets with a minimum possible number of bends and not more than the equivalent of four 90-degree bends between connections. Use manufactured elbows for all 45- and 90-degree bends, unless approved by the Engineer in advance. Make other bends smooth and even and without flattening raceway or flaking galvanizing or enamel. Radii of bends shall be as long as possible and never shorter than the corresponding trade elbow.

Use long radius elbows for all underground installations, where necessary, or where otherwise indicated.

Securely fasten raceways in place with approved straps, hangers, and steel supports as required. Attach raceway supports to the building structure. Hang single raceways for feeders with malleable split ring hangers with rod and turnbuckle suspension from inserts spaced not over 10 feet apart in construction above. Clamp groups of horizontal feeder raceways to steel channels that are suspended from inserts spaced not over 10 feet apart in construction above. Securely clamp vertical feeder raceways to structural steel members attached to structure. Install cable clamps for support of vertical feeders where required. Add raceway supports within 12 inches of all bends, on both sides of the bends. Do not support raceways from suspended ceiling components.

Ream raceway ends, thoroughly clean raceways before installation, and keep clean after installation. Plug or cover openings and boxes as required to keep raceways clean during construction and fish all raceways clear of obstructions before pulling conductor wires. Provide raceways of ample size for pulling of wire, not smaller than code requirements and not less than 1/2-inch in size, unless indicated otherwise on Drawings. Homeruns containing more than one branch circuit shall not be less than 3/4-inch in size.

Protect all raceway installations against damage during construction. Repair all raceways damaged or moved out of line after roughing-in to meet Engineer's approval without additional cost to the Owner.

4/22/2024 9:16:17 AM

GH2 ARCHITECTS

OWASSO PS - ENROLLMENT & IT CENTER
1309 N Main St, Owasso, OK 74055

E401
ELECTRICAL SPECIFICATIONS

GH2 ARCHITECTS
GH2.COM

GH2 PROJECT NUMBER:
20230239

ISSUE DATE:
04/29/2024

ISSUE:
CONSTRUCTION DOCUMENTS

OTHER ISSUE DATES:

NO.	DESCRIPTION	DATE
1	ADD #1	5-24-24
2	ADD #2	6-18-24
3	ADD #3	6-28-24

SHEET NAME:
ELECTRICAL SPECIFICATION

SHEET NUMBER:
E401

Align and install true and plumb all raceway terminations at panelboards, switchboards, motor control equipment, and junction boxes.

Install approved expansion/deflection fittings where raceways pass through (if embedded) or across (if exposed) expansion joints, and when using RNC or RAC in exposed environments in accordance with NFPA 70 and expansion/contraction properties of RNC or RAC.

Install a pull wire in each empty raceway that is left for installation of conductors or cables under other divisions or contracts. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 24 inches of slack at each end of pull wire.

Make all joints and connections in a manner that will ensure mechanical strength and electrical continuity.

For raceways penetrating freezer and cooler walls, effectively seal raceways by installing a conduit fitting at the boundary of the two spaces and filling it with an approved pliable material after conductors or cables have been installed. Provide fitting whenever raceways pass from non-cooled to cooled spaces, raceways transition from outside a facility or enclosure to inside, or whether buried or exposed.

B. ABOVE GROUND RACEWAY USE:

Install all circular raceways concealed above suspended ceilings or concealed in walls or floors wherever possible except where otherwise indicated. Provide GRS for all conduits exposed to weather or other hazardous conditions.

Unless noted otherwise, all other raceway may be EMT where approved by local code. Use compression type fittings for EMT, with all fittings NRTL listed for the environment in which they are used. Unless noted otherwise, set-screw type fittings are not allowed.

C. UNDERGROUND RACEWAY USE:

Provide GRS installed below grade with a corrosion-resistant bonded-plastic or approved mastic coating. This shall include the 90-degree elbow below grade and the entire vertical transition to above grade.

RNC conduit may be used underground where permitted by local code and where not specifically restricted by these documents. When used, provide plastic-coated GRS, as specified above, for all bends greater than 30 degrees, including the 90-degree elbows below grade and the entire vertical risers for transitions from below to above grade or above slab.

D. EQUIPMENT CONNECTIONS

Use FMC for final connection to each motor, transformer, and any device that would otherwise transmit motion, vibration, or noise. Use LFMC where exposed to liquids, vapors, or sunlight , and to connect to kitchen and food service equipment. Provide all FMC and LFMC with an insulated bonding conductor.

Use only metal raceways for all power wiring from the output of variable frequency drives to their respective motors.

3. BUSHINGS AND LOCKNUTS

Rigidly terminate conduits entering sheet metal enclosures to the enclosure with a bushing and locknut on the inside and a locknut or an approved hub on the outside. Conduit shall enter the enclosure squarely.

Provide bushings and locknuts made of galvanized malleable iron with sharp, clean-cut threads.

Where EMT enters a box, provide approved EMT compression connectors.

Use insulated, grounding, or combination bushings wherever connection is subject to vibration or moisture, when required by NFPA 70, or both.

4. CONDUCTORS AND CABLES

Annealed (soft) copper complying with ICEA S-95-658/NEMA WC70 and UL standards 44 or 83 as applicable .

Aluminum conductor option:
Compact stranded, aluminum alloy (AA-8000 series), complying with ICEA S-95-658/NEMA WC70; No. 1/0 AWG or larger only.

Terminations: Tinned, compression type only; NRTL-listed for copper and aluminum conductors at 75 degrees C minimum.

Increase the raceway size as required, at no additional cost to the Owner, to accommodate the increased size of the aluminum Conductors.

Aluminum conductor size shall meet or exceed the ampere rating of the scheduled copper conductors at 75 degrees C.

Option applies only for the following feeders or services No. 2 AWG and larger (based on copper conductors):
1.Service entrance conductors.
2.Feeders to switchboards.
3.Feeders to panelboards. Exception: Apartment unit load center feeder conductors shall be copper; aluminum is not acceptable.
4.Feeders to motor control centers.
5.Feeders to transformers

Where aluminum conductors terminate existing panelboards , switchboards or switchgear that utilize compression connections use hydraulic-compression type connectors with a zinc base, anti_oxidizing compound. Use compression tools of the type that will not release unless the correct pressure has been applied.

Measure the temperature of all aluminum conductors at all splices and terminations. Make each test under typical building load Conditions after the building is occupied and in operation for a minimum of two weeks. Replace all joints or splices indicating excessive heating.

Take measurements with a non-contact type infrared thermometer, with target size not exceeding one inch at five feet and an accuracy of two percent or better. Submit the meter specifications and calibration date with the test results.

Aluminum Conductor Manufacturer: General Cable or approved equal.

Conductor Insulation Types: 90-degree C-rated, Type THHN/THWN-2 or XHHW-2 complying with ICEA S-95-658/NEMA WC70.

Sizes of conductors and cables indicated or specified are in American Wire Gage (AWG).

All feeder and branch circuit conductors No. 8 AWG and larger: Stranded.

All conductors, No. 10 AWG and smaller: Solid copper.

All Branch Circuit Wiring: Not smaller than No. 12 AWG. If no conductor size is indicated on the Drawings for a branch circuit, provide conductors and conduit sized per NFPA 70 and based on the indicated branch circuit overcurrent protective device (OCPD) rating and number of poles. Where no circuit size (i.e., conductors and OCPD) is indicated on the drawings for a branch circuit, provide three No. 12 AWG conductors, in 3/4-inch raceway, and a 20A circuit breaker.

Control Wiring: Stranded copper conductors, 600V insulation, of the proper type, size, and number as required to accomplish specified function. Minimum size: No. 14 AWG, unless noted otherwise.

Flexible Cords and Cables: Stranded copper conductors for all, unless noted otherwise.

Special Purpose Conductors And Cables, Such As Low Voltage Control And Shielded Instrument Wiring: As recommended by the system equipment manufacturer unless indicated otherwise.

Copper Conductor Manufacturers: Advance Wire and Cable, AFC Cable, Alan Wire, Alflex, American Insulated Wire, Encore Wire, Northern Cables, Okonite, or Southwire.

Connections: Apply a zinc based anti_oxidizing compound to connections. Do not use terminals on wiring devices to feed through to the next device.

5. CONDUCTORS AND CABLES INSTALLATION

Install all wiring in approved raceway and enclosures, except
where specified or indicated for low-voltage wiring, where specified or indicated for direct-buried cables, or where type MC cable is indicated or specified as acceptable.

Install all conductors and cables in raceways continuous without taps or splices. Splice or tap only in approved boxes and enclosures with approved solderless connectors, or crimp connectors and terminal blocks for control wiring, and keep to the minimum required. Insulate all splices, taps, and joints as required by codes.

All materials used to terminate, splice, or tap conductors: designed for, properly sized for, and NRTL listed for the specific application and conductors involved, and installed in strict accordance with the manufacturer's recommendations, using the manufacturer's recommended tools.

Where wiring is indicated as installed, but the connection is indicated "FUTURE" or "BY OTHER DIVISION, TRADES, OR CONTRACTS", leave a minimum 3-foot "Pigtail" at the box, tape the ends of the conductors, and cover the box.

Common or shared neutrals are not allowed unless shown on the drawings to be used or specifically noted to be allowed.

Where multi-wire branch circuits (i.e., shared neutral) are allowed, they shall be provided with a means that will simultaneously disconnect all ungrounded conductors at the point the branch circuit originates. Multi-pole breakers or 3 single-pole breakers with a handle tie are two examples.

When multiple home runs are combined into a single raceway such that the number of conductors exceeds four (conductor count is made up of any combination of phase and neutral conductors), the following restrictions apply, which are in addition to those in NFPA 70:

Normal or Non-Essential circuits:

1. Maximum of 16 conductors in a single raceway. For up to eight conductors in a raceway, minimum raceway size: 3/4-inch. For greater than eight conductors, minimum raceway size: 1-inch. Do not install any other type of circuit in this raceway.

2. Minimum wire size for all conductors in this raceway: No. 10 AWG.

3. Only 15A and 20A branch circuit homeruns may be combined into one raceway.

GFCI circuits:
1. Do not use multi-conductor circuits, with a shared neutral, for any GFCI circuit breaker or receptacle circuit.

For branch circuits fed from GFCI circuit breakers, limit the one-way conductor length to 100 feet between the panelboard and the most remote receptacle or load on the GFCI circuit.

Properly identify all terminal blocks and wire terminals for control wiring with vinyl stick-on markers or equivalent. Provide Engineer with a list of proposed identifying numbers for review prior to installing markers.

Provide an equipment-grounding conductor or bonding jumper, as applicable, in all feeders and branch circuits, sized in accordance with NFPA 70 Tables 250.66 or 250.122, as applicable, unless indicated as larger on the drawings.

Wiring shall have insulation of the proper color to match color code system in the table below unless there is a color system currently in use by the facility, in which case the colors are to match the existing system. In larger sizes where properly colored insulation is not available, use vinyl plastic electrical tape of the appropriate color around each conductor at all termination points, junctions, and pull boxes.

System Voltage:

240V and under, including 208Y/120, 120/240, 120/208, and 240D/120 systems:
1. Phase A: Black.
2.Phase B: Red.
3. Phase C: Blue.
4.Neutral: White.
5. Equipment Ground: Green.
6.Isolated Ground: Green with yellow stripe.

480V and 480Y/277V

1. Phase A: Brown.
2.Phase B: Orange.
3. Phase C: Yellow.
4. Neutral: Gray.
5. Equipment ground: green.

6. MC CABLE

A. CABLE SPECIFICATIONS

Metal-clad cable (MC Cable) : 600V, unjacketed; UL Standard 83, 1569, and 1685; NFPA 70 Article 330 ; aluminum or galvanized steel interlocked armor; THHN- or XHHW-insulated conductors; color code: ICEA Method 1, with green insulated grounding conductor; listed for use in UL 1, 2, and 3 hour through-penetration firestop systems. MC Cable manufacturers: AFC Cable Systems, Encore Wire Corporation, Kaf-Tech, or Southwire.

B. APPLICATIONS OF MC CABLE

In lieu of flexible conduit and wiring from light fixtures located in accessible ceilings to junction boxes attached to building structure directly above the ceiling. Provide cable whips of sufficient lengths to allow for relocating each light fixture within a 5 foot radius of its installed location, but not exceeding 6 feet in unsupported lengths.

2. For vertical drops in stud walls.

3. In lieu of EMT, only for 15A and 20A branch circuits (with up to four (4) conductors, not including ground conductor), and only in dry concealed locations above grade, except where specifically not permitted by NFPA 70, owner, landlord, ahj, or noted in list below.

C. PROHIBITED USE OF MC CABLE UNLESS NOTED ABOVE

Examples of those uses include, but are not limited to the following:
1. Homeruns to panelboards (refer to Section 26: Definitions).
2. Where exposed to view.
3. Where exposed to damage.
4. Hazardous locations.
5. Wet locations.
6. When restricted otherwise.
7. When specifically disallowed by the local AHJ.
8. When specifically disallowed by the landlord.

7. MC CABLE INSTALLATION

Secure and support cable per NFPA 70 Article 330 . Secure cable within 12 inches of every box or fitting. Securing and supporting intervals shall not exceed six feet. Maintain consistent spacing to avoid derating due to bundling per NFPA 70 Section 310.15. Utilize steel cable hangers, Arlington SMC series or equivalent, to support wherever possible so cables can be routed in a neat and workmanship like manner.

8. JUNCTION BOXES, PULL BOXES, CABINETS, AND WIREWAYS

Provide junction boxes, pull boxes, cabinets, and wireways wherever necessary for proper installation of various electrical systems according to NFPA 70 and where indicated on the drawings. Size as required for the specific function or as required by NFPA 70, whichever is larger. Construction shall be of a NEMA design suitable for the environment installed.

Junction boxes shall be 4 inches square or larger with galvanized covers.

9. OUTLET BOXES

All outlets including light fixture, switch, receptacle, and similar outlets: galvanized steel knockout boxes, suitable in design to the purpose they serve and the space they occupy. Size as required for the specific function or as required by NFPA 70, whichever is larger. Set all outlet boxes in walls, columns, floors, or ceilings so they are flush with the finished surface, accurately set, and rigidly secured in position. Provide plaster rings, extension rings and/or masonry rings as required for flush mounting. Provide approved cast outlet boxes with hubs and weatherproof covers in all areas subject to damp, wet, or harsh conditions.

Manufacturers: Appleton, Cooper, Erikson Electrical, Hoffman, Killark Electric, O-Z/Gedney, Raco, Robroy Industries, Scott Fetzer, Spring City Electrical, Thomas and Betts, Walker Systems, or Woodhead.

10. OUTLET LOCATIONS

Coordinate locations of outlet boxes. Outlets are only approximately located on the small scale drawings. Use great care in the actual location by consulting the various large scale detailed drawings used by other division trades, and by securing definite locations from the Architect .

11. MOUNTING HEIGHTS

Unless noted otherwise, install wiring devices vertically aligned at height indicated on construction drawings.

A. RECEPTACLES
All duplex receptacles shall be specification grade, tamper resistant, 20 amp. GFCI protected where indicated.

Unless indicated otherwise, install vertically.

Where installed horizontally, install with the neutral slot mounted at the top .

Above counter: mount vertically aligned.

Mechanical and electrical equipment rooms and janitors closets: mount vertically aligned .

Weatherproof exterior receptacles: horizontally aligned.

GFCI receptacles: Same as general receptacles .

Isolated ground receptacles: Same as general receptacles .

SPD receptacles: Same as general receptacles .

Clock Receptacles: 84 inches above finished floor.

Concrete Block Walls: As long as ADA requirements are maintained, dimensions above may be adjusted slightly as required to compensate for variable joint dimensions such that bottom or top of boxes, as applicable, are at block joints.

B. SWITCHES

All switches shall be specification grade, 277v, 20 amp. type as indicated on drawings.

General: All switches shall be mounted at the same height throughout the project unless noted otherwise.

Above Counters: Same as for receptacles.

Concrete Block Walls: As long as ADA requirements are maintained, dimensions above may be adjusted slightly as required to compensate for variable joint dimensions, such that bottom or top of boxes, as applicable, are at block joints.

Walls with Wainscoting: 6 inches minimum above wainscoting, but not exceeding 48 inches above finished floor.

C. TELEPHONE/DATA OUTLET BOXES

General: Match mounting height of adjacent wiring device listed above.

For other than wiring devices, refer to paragraphs, articles, sections, divisions, or drawings to obtain mounting heights for specific equipment or systems.

12. WIRING DEVICES

Minor changes relative to the location of electrical equipment may be made to comply with structural and building requirements as determined in the course of construction. Provide all wiring devices of the same manufacturer and not mixed on the project, to the maximum extent possible. Provide color of toggles and receptacles as requested by the Architect.

Wiring Devices: Unless noted otherwise, devices shall be commercial grade, and rated for 20A.
Wiring device manufacturers: Cooper, Hubbell, Legrand, or Leviton.

Floor Boxes: UL 514A listed for scrub water exclusion. For slab on grade - Watertight, Class 1, and fully adjustable cast iron box. For slab above grade - Concrete-tight, fully adjustable, stamped galvanized steel box. Floor box shape, quantity of gangs, type and quantity of devices, finish, and flange type per drawings. Floor box manufacturers: Hubbell, Legrand, Thomas and Betts, or Walker.

13. SWITCH AND OUTLET COVER PLATES

Switch and Outlet Plates: Colored, smooth nylon; by the same manufacturer as the wiring devices, wherever possible. Verify desired materials and colors with Architect before installation. Switch plates in unfinished rooms and spaces: Stamped steel, cadmium plated. Install groups of switches under one gangs-type stainless steel, usually horizontally; or, where required by details, vertically. Set all cover plates plumb, parallel, and finished flush with the wall.

14. WEATHERPROOF COVER PLATES

Provide GFCI receptacles for designated weatherproof receptacles, unless indicated otherwise on the drawings.

Unattended Exterior, Wet Locations or Other Locations as Indicated: In-use, NEMA 3R, recessed or flush mount, NRTL labeled plates molded from a clear high impact ultraviolet stabilized polycarbonate material for easy verification that cords are plugged in and that the GFCI is functioning. Back box must be suitable for conduit connecting. Coordinate back box with wall depth. Intermatic WP1000RCHRC or equal.

Attended Wet Or Damp Locations: Weatherproof cover plates NRTL listed for wet locations with cover(s) closed; die-cast aluminum or Type 302 stainless steel; single-cover for switches and vertically mounted receptacles; double-cover for horizontally mounted receptacles; self-closing covers.

Cover Plates: By the same manufacturer as the wiring devices; complying with NFPA 70 ARTICLES 406.9 (A) or (B) requirements for attended or unattended use as applicable.

15. ELECTRICAL SERVICE AND GROUNDING

A. ELECTRICAL SERVICE

See drawings for type, size, voltage, phase, and other requirements.

B. CONNECTION TO SERVING UTILITIES

Provide raceways, terminations, metering provisions, and miscellaneous equipment as required for electrical and telecom services for connection by the serving utility, in strict compliance with the requirements of all applicable codes and of the serving utility involved. Verify all service terminations and connection points in the field and work in conjunction with the utility involved in the installation of all services. Provide all materials and equipment required for complete utility connection but not furnished by the serving utility. Notify the utility companies involved within two weeks after notice to proceed of all required information necessary for the utility to supply the project without delay. Pay all charges of the serving utility for the electrical service(s).

C. GROUNDING

Permanently and effectively ground and bond the electrical installation in a thorough and efficient manner, and in conformance, at a minimum, with NFPA 70, or these documents, where they exceed code requirements. Use bare or insulated conductors as specified herein, and other materials indicated on the Drawings.

16. DISTRIBUTION AND CONTROL EQUIPMENT

A. POWER DISTRIBUTION PANELBOARDS: CIRCUIT BREAKER, 1200A BUS OR SMALLER

Panelboards: Dead-front distribution panelboards with number and sizes of circuit breakers as indicated on the drawings; where installed as service entrance equipment, permanently label as suitable for use as service entrance equipment; fully-rated for the available fault current indicated on the drawings; hinged, lockable front door that covers the circuit breaker handles. Circuit breakers: Quick-make, quick-break, indicating type; engraved nameplates for circuit identification of each circuit breaker. Provide a typewritten card directory indicating exactly what each circuit breaker controls on the inside face of the door for circuit identification.

Manufacturers: Square D, Eaton, G.E. , or Siemens.

B. LIGHTING AND APPLIANCE PANELBOARDS

Panelboards: Complete with bolt-on thermal magnetic, molded case circuit breakers assembled in a dead-front finished cabinet containing a typewritten card directory indicating exactly what each circuit breaker controls; fully-rated and with the integrated short circuit current ratings indicated on the drawings. Plug-in type breakers will not be acceptable. All two- and three-pole breakers: Common trip type.

1. Type SWD Circuit Breakers: Use when breaker serves as a switch for 120V or 277V lighting circuits.

2. GFCI Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip). Use as indicated on drawings.

3. Ground-Fault Equipment Protection (GFEP) Circuit Breakers: Class B ground-fault protection (30-mA trip). Use as indicated on drawings.

4. Handle Clamp: Loose attachment for holding circuit breaker handle in "on " position. Use for all circuits containing emergency lighting loads, fire alarm loads, and as indicated on drawings. Breakers serving fire alarm loads must have a permanently-affixed red label stating "FA" in white letters adjacent to the circuit breaker.

5. Handle padlocking device: fixed attachment for locking circuit breaker handle in "on" or "off" position. Use as indicated on drawings.

Manufacturers: Square D (as applicable, based on voltage and ampere ratings and required short-circuit interrupting ratings as scheduled on the drawings) or approved equal by Eaton, G.E., or Siemens.

D. DISCONNECT (SAFETY) SWITCHES

Disconnect (Safety) Switches: Heavy-duty, fused or non-fused (as indicated on drawings or required) NEMA KS1, externally operated, visible-blade safety switches; NEMA enclosure type indicated on the drawings or suitable for the environment in which installed. based on fusible switch and fuse sizes indicated, include Class R, J, or L fuse provisions as applicable.

Where indicated, provide fusible switches permanently labeled as suitable for use as service entrance equipment, with integral and separate neutral and ground assemblies, suitable for the sizes of conductors indicated. Do not double-lug any terminations not specifically listed as suitable for more than one conductor.

Provide switches where not furnished with the starting equipment, at all other points required by NFPA 70, and where indicated on the drawings.

Manufacturers: Eaton, G.E., Siemens, or Square D.

F. FUSES

Provide each circuit and set of fuse clips throughout the work with sizes and types as required or indicated. All fuses larger than 600A: UL Class L, similar to type KRP-C Bussmann Low Peak or equal. Fuses used to protect motors: UL Class RK5, Bussmann Fusetron or equal. Fuses used to protect all other electrical equipment: UL Class RK1, dual element, Bussmann LPS/LPN or equal. All fused devices shall be labeled as to type and size of fuse required.

Furnish three spare fuses of each size and type used on the project (except for main switch fuses, furnish one spare), neatly contained in a properly labeled cabinet.

Manufacturers: Bussmann, Edison Fuse, Mersen/Ferraz Shawmut, or Littlefuse.

G. DRY-TYPE TRANSFORMERS

Transformers: General purpose, NRTL listed/labeled. Comply with NEMA ST 20 and UL 1561.

Insulation Class: For three-phase transformers less than 15 kVA and all single-phase, 185 degrees C, NRTL-component-recognized insulation system with a maximum of 115 degree C rise above a 40 degree C ambient temperature; for three-phase transformers 15 kVA and larger, 220 degrees C, NRTL-component-recognized insulation system with a maximum of 150 degree C rise above a 40 degree C ambient temperature. NRTL-component-recognized insulation system replaces the UL 1446 insulation rating system that used letters.

Phases, Voltages, and Sizes: As indicated on the drawings.

Sound Level: Not exceeding 3 dBa less than NEMA ST 20 standards for the sizes indicated when factory tested according to IEEE C57.12.91.

Full-Capacity Primary Taps: For three-phase below 25 kVA and all single-phase, one 5 percent tap above and one 5 percent tap below; 25 kVA to 500 kVA, six 2.5 percent taps (2 above, 4 below); above 500 kVA, four 2.5 percent (2 above, 2 below).

Transformer Core and Coil Assemblies: Mounted on integral vibration-absorbing pads.

Transformers 75 kVA and larger shall be floor mounted unless indicated otherwise. Transformers 45 kVA and smaller may be wall mounted where wall construction is suitable for the load. Floor mounted transformers shall be securely bolted to a 4 inch house keeping pad with vibration isolation pads. Wall mounted or suspended transformers shall have a means of isolating vibration from the support. Wall mounts must be by same manufacturer as and provided with transformer.

Transformers up through 1000 kVA shall be mounted on elastomeric vibration isolation pads. Pad shall be constructed of neoprene, rubber, glass fiber, or a combination thereof. Pads shall be "ribbed" or "waffled" in texture. Pads shall be selected for smallest durometer (hardness), preferably less than 50. Deflection of pad shall be 0.25 inches static minimum. Stack pads until the desired deflection is achieved.

Make final conduit connections to transformers with flexible conduit, with at least 6 inches of slack in all directions. Minimum flexible conduit length shall be 2 feet.

Transformer Enclosures: Removable front cover, core and coil encapsulated within resin compound, drip-proof, fabricated of heavy gauge sheet steel construction. Dry locations: Ventilated, NEMA 250 Type 2. Damp or wet locations: Ventilated with weather shields, NEMA 250 Type 3R. Corrosive locations: Totally enclosed, non-ventilated, NEMA 250 Type 4X, stainless steel.

Provide energy-efficient transformers complying with federal regulation 10 CFR 431.192 thru 431.196 requirements.

K-rated transformers shall be provided as indicated on the drawings and be listed for 115 degree C rise.

Manufacturers: ACME, Eaton, G.E., Siemens, Hammond, Sola/Hevi-Duty, or Square D.

H. FRACTIONAL HORSEPOWER MANUAL CONTROLLER

Manual motor starters for fractional horsepower single-phase motors shall consist of a manually operated toggle switch equipped with melting alloy type overload relay. Thermal unit shall be of one piece construction and interchangeable. Starter shall be inoperative if thermal unit is removed. Provide flush mounted units in finished areas and surface mounted units in unfinished areas. Starters shall have NEMA I general purpose enclosure, unless otherwise indicated, and be rated for the motor horsepower required. Provide with handle guard with locking provisions and an integral pilot light.

Manufacturers: Square D Class 2510 Type F, Eaton 9101 series, G.E. CR101 series, Siemens MSF series, or Westinghouse MST series.

17. LIGHT FIXTURES, LAMPS AND BALLASTS

A. LIGHT FIXTURE LOCATIONS

Light fixtures shown on the drawings represent general arrangements only. Refer to architectural drawings for more exact locations. Coordinate location with all other trades before installation to avoid conflicts. Coordinate light fixture locations in mechanical rooms with final installed piping and ductwork layouts.

LIGHT FIXTURES
Refer to Light Fixture Schedule on electrical drawings for requirements. see general
requirements in these specifications for substitution requirements.

B. DRIVERS

LED Drivers: Comply with NRTL requirements and ANSI C82.77; designed for type and quantity of lamps served; sound levels not exceeding Class A ambient noise levels; lamp current crest factor of 1.5 or less; 90-percent power factor or greater; line transient withstand ratings as defined in ANSI/IEEE C62.41, Category A ; total harmonic distortion less than 20 percent; shall tolerate sustained open circuit and short circuit output conditions without damage; shall not over-drive LEDs at a current or voltage above LED rated values; ROHS compliant; meets EN610000 requirements for input harmonics.

C. DIMMABLE LIGHT FIXTURES

For dimmable light fixtures provide both control and power wiring between light fixture and control device and between light fixtures. Quantity of low voltage and line voltage wiring and wire type shall be per manufacturer's recommendations. Coordinate light fixture and control device dimming types for compatibility.

18. MISCELLANEOUS ELECTRICAL

A. WIRING OF MECHANICAL EQUIPMENT

Provide all raceways and power wiring for all Division 23 equipment requiring electrical connections, including but not limited to pumps, water heaters, and HVAC equipment, and all line-voltage control and interlock wiring not provided under Division 23. Connect per manufacturers' wiring diagrams. Coordinate with Division 23 for disconnects and variable frequency drives (VFD) furnished with equipment, and provide all disconnect switches and final connections as required. If VFD is separate or does not have an integral disconnect feature, provide disconnect switch with auxiliary contact such that motor will be turned off if switch is off, provide VFD cable, Belden or approved equivalent, for connection of VFD to motor when required. After installing wiring, verify that each motor load has the correct phase rotation.

Verify the actual "Maximum Overcurrent Protection" (MOCP) device ratings and "Minimum Circuit Ampacity" (MCA) conductor sizing for mechanical equipment from the equipment nameplate. Base electrical installations on actual required amperages, which may vary somewhat from the conductor and equipment sizes shown on the drawings; however, in no case, reduce the size of conductors indicated on the drawings without authorization from the Engineer. Provide properly sized electrical wiring and equipment without extra cost to the Owner. Notify the Engineer of all changes required in the electrical installation due to equipment variances so that the effects on feeders, branch circuits, panelboards, fuses and circuit breakers can be checked prior to purchasing and installation. Be responsible for coordinating with Division 23 to verify the actual ampacities and correct sizes of all conductors and overcurrent protective devices for all equipment, and correct overload heaters for all motors, when starters are provided under Division 26.

B. WIRING OF THERMOSTATS, TIME AND TEMPERATURE CONTROLS

Provide all raceways, power wiring, and line-voltage control and interlock wiring not provided under Division 23, for all thermostats, temperature control devices, and controls, including, but not limited to, night-stats, water heater interlocks, time switches and override timers. See mechanical drawings for locations and temperature control diagrams. Low-voltage conductors for thermostats and temperature control system may be run exposed above finished accessible ceilings, if approved and listed for this purpose, but shall be installed in conduit within walls and where exposed in the work areas.

C. TELEPHONE SYSTEM PROVISIONS

Provide incoming telephone service raceways as indicated on drawings or as required by the serving telephone company. Provide 3/4-inch thick plywood board, fire-retardant-treated and stamped FRT, securely anchored to the wall, at the location and of the size as indicated on the drawings. Provide flush mounted telephone outlet boxes with 3/4 inch conduit stub-up to accessible ceiling space at locations as indicated
on the drawings. Furnish and install cat6 cable as required.

D. DATA SYSTEM PROVISIONS

Provide flush mounted data outlet boxes with 3/4 inch conduit stub-up concealed to accessible ceiling space at locations as indicated on the drawings. Furnish and install cat6 cable as
requied.

END OF SECTION 26.

4/22/2024 9:16:17 AM

GH2 ARCHITECTS

OWASSO PS - ENROLLMENT & IT CENTER
1309 N Main St, Owasso, OK 74055

E402 ELECTRICAL SPECIFICATIONS

OKLAHOMA PETER A. HILGER 19695 REGISTERED PROFESSIONAL ENGINEER
6-25-24

GH2 ARCHITECTS
GH2.COM

GH2 PROJECT NUMBER:
20230239

ISSUE DATE:
04/29/2024

ISSUE:
CONSTRUCTION DOCUMENTS

OTHER ISSUE DATES:

NO.	DESCRIPTION	DATE
1	ADD #1	5-24-24
2	ADD #2	6-18-24
3	ADD #3	6-28-24

SHEET NAME:
ELECTRICAL SPECIFICATION

SHEET NUMBER:
E402