

SHEET SCHEDULE

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|------|------------------------|
| A001 | GENERAL NOTES |
| A101 | FLOOR PLANS |
| A201 | ROOF PLAN & ELEVATIONS |
| A301 | BUILDING SECTIONS |
| S1.1 | FOUNDATION PLAN |
| S3.1 | FOUNDATION DETAILS |

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|-------|--------------------|
| M101 | PLUMBING PLANS |
| M201 | PLUMBING DETAILS |
| EG000 | ELECTRICAL NOTES |
| E101 | LIGHTING PLANS |
| E201 | POWER PLANS |
| E301 | ELECTRICAL DETAILS |
| E401 | ELECTRICAL SPECS |
| E402 | ELECTRICAL SPECS |

SYMBOLS:

| | | | |
|--|----------------------------|--|------------------------------|
| | DOOR NUMBER REFERENCE | | GRID NUMBER |
| | ACCESSORY REFERENCE | | ELEVATION REFERENCE |
| | FLAG or CRITERIA NOTE | | SHEET NO. |
| | REVISION NUMBER REFERENCE | | CASEWORK ELEVATION REFERENCE |
| | BUILDING SECTION REFERENCE | | VIEW NAME |
| | ROOM NAME ROOM NUMBER | | PARTITION TYPE |
| | FURNISHINGS REFERENCE | | FINISH TAG |
| | DATUM ELEVATION | | CEILING HEIGHT |
| | | | WINDOW TYPE |
| | | | DETAIL REFERENCE |

ABBREVIATIONS:

| | |
|---|-----------------------------|
| ABV: Above | SCHED: Schedule |
| ADDL: Additional | SF: Square Foot |
| ADH: Adhesive | SIM: Similar |
| AF: Above the Floor | SS: Stainless Steel |
| AFF: Above Finished Floor | STRO: Storage |
| ALT: Alternate | SURF: Surface |
| APPD: Approved | SY: Square Yard |
| APPROX: Approximate | SYM: Symmetrical |
| APRVD: Approved | |
| AVG: Average | |
| B TO B: Back to Back | T&B: Top and Bottom |
| BEL: Below | T&G: Tongue & Groove |
| BETW: Between | THK: Thick, Thickness |
| BLK: Block | THRU: Through |
| BOT: Bottom | |
| CAPT: Carpet | UH: Unit Heater |
| CF: Cubic Feet | UNFIN: Unfinished |
| CL: Centerline | UNO: Unless Noted Otherwise |
| CLC: Ceiling | VCT: Vinyl Composition Tile |
| CONC: Concrete | VOL: Volume |
| CTR: Center, Counter | W: Width |
| CU. FT.: Cubic Feet | W/: With |
| CU. YD.: Cubic Yard | W/O: Without |
| | WC: Watercloset |
| | WD: Wood |
| | WIN: Window |
| | YD: Yard |
| | YR: Year |
| E: East | |
| E TO E: End to End | |
| EA: Each | |
| ELEV: Elevation OR Elevator | |
| EST: Estimate | |
| F: Degrees Fahrenheit, Fuse | |
| F TO F: Face to Face | |
| FA: Fire Alarm, Fresh Air | |
| FE: Fire Extinguisher | |
| FEC: Fire Extinguisher Cabinet | |
| FF: Finished Floor | |
| FFE: Finished Floor Elevation | |
| FFBE: Fixtures, Furnishings & Equipment | |
| FIX: Fixture | |
| FLR: Floor | |
| FP: Fireproof | |
| FRFP: Fireproof | |
| FUR: Furred | |
| FURN: Furnish, Furniture | |
| GA: Gauge, Gage | |
| GL: Glass | |
| GYP: Gypsum | |
| GYP BD: Gypsum Board | |
| HGT: Height | |
| HM: Hollow Metal | |
| HVAC: Heating, Ventilating & Air Conditioning | |
| ID: Inside Diameter | |
| INT: Interior | |
| JST: Joist | |
| LB: Pound (weight) | |
| LL: Live Load | |
| NRC: Noise Reduction Coefficient | |
| NTS: Not To Scale | |
| OC: On Center | |
| OD: Outside Diameter | |
| OF: Outside Face | |
| OH: Overhead | |
| OHD: Overhead Door | |
| PAR: Parallel | |
| PARTN: Partition | |
| PERIM: Perimeter | |
| PERP: Perpendicular | |
| PNT: Paint | |
| QTY: Quantity | |
| RM: Room | |

MATERIALS LEGEND:

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|---|
| 1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND REQUIREMENTS OF THE DETAILED SPECIFICATIONS. |
| 2. THE LOCATION OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES ARE APPROXIMATE OR MAY BE INDICATED IN THESE PLANS. UNDERGROUND FACILITIES, WHETHER INDICATED OR NOT, WILL BE LOCATED AND FLAGGED BY THE UTILITY COMPANIES AT THE REQUEST OF THE CONTRACTOR. NO EXCAVATION WILL BE PERMITTED IN THE AREA UNTIL ALL SUCH UNDERGROUND UTILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES AND THEN ONLY WITH EXTREME CARE TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING UTILITIES, PAVEMENT, AND OTHER IMPROVEMENTS. ANY DAMAGE TO THE EXISTING UTILITIES AND/OR PAVED STREETS CAUSED BY CONSTRUCTION OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. |
| 3. THE CONTRACTOR SHALL CALL FOR THE EXISTING UTILITY LOCATION STAKES 48 HOURS PRIOR TO DIGGING, CALL ALL APPLICABLE UTILITY COMPANIES. |
| 4. ALL DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS SHALL BE HAULED OFF SITE AND DISPOSED OF PROPERLY. |
| 5. THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES, WARNING SIGNS, LIGHTS, AND FLAG MAN AS PER THE CITY WORK REQUIREMENTS. COST SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. |
| 6. PROTECT BY WHATEVER MEANS REQUIRED ALL FENCES, SIGNS, STRUCTURES, DRIVES, SIDEWALKS, STREETS, BUSHES, TREES, ETC. WHICH ARE NOT DESIGNATED FOR REMOVAL, OR ARE OUTSIDE THE LIMITS OF CONSTRUCTION. |
| 7. PROVIDE POSITIVE DRAINAGE AT ALL TIME WITHIN THE CONSTRUCTION AREA. DO NOT ALLOW WATER TO POND IN EXCAVATION AREAS, AND MAINTAIN ALL EXISTING DRAINAGE PATTERS. A DIAMOND EDGE SAW BLADE SHALL BE USED FOR CUTTING ALL REQUIRED CONCRETE REMOVAL. |
| 8. THE CONTRACTOR SHALL CONSTRUCT ALL PAVEMENT TO CONFORM WITH THE CORRECT LINES, AND FINISHED GRADES AS INDICATED ON THE PLANS. NO PONDING OF WATER WILL BE ALLOWED. |
| 9. THE CONTRACTOR SHALL PAY ALL PERMIT FEES AND OTHER ASSOCIATED FEES REQUIRED TO SUCCESSFULLY COMPLETE THE PROJECT. ALL REMOVED ITEMS ARE TO BE OFFERED TO THE OWNER BEFORE THE CONTRACTOR TAKES OWNERSHIP. |
| 10. ALL DISTURBED VEGETATION GROUND COVER SHALL BE SODDED AND ANY DISTURBED GRAVEL GROUND COVER SHALL BE REPLACED WITH NEW GRAVEL. CONSTRUCT ALL THE SIDEWALKS WITH A SLOPE OF 1/4" PER FOOT AWAY FROM THE BUILDING. |
| 11. ALL GRADE LEVELS SHOULD SLOPE AWAY FROM THE BUILDING AT A RATE OF 1/4" PER FOOT. |
| 12. ALL PAVED AND PARKING SLOPES SHALL NOT EXCEED A 1:12 SLOPE. CONTACT ARCHITECT IF CONDITIONS WILL NOT ALLOW. |

PARTITION NOTES:

- INTERIOR WALL TYPES ARE NOTED ON THE FLOOR PLANS WITH THE FOLLOWING SYMBOL:
 - a = ACOUSTIC CONDITION. PARTITION TO MEET ACOUSTIC RATING AND ACOUSTIC STANDARDS
- AS DEFINED BY THE SPECIFICATIONS AND ACOUSTIC NOTES AND DETAILS ON THIS SHEET.
 - s = SMOKE CONDITION. PARTITION TO RESIST THE PASSAGE OF SMOKE AND INCORPORATE SMOKE NOTES AND DETAILS ON THIS SHEET.
 - r = RATED CONDITION. PARTITION TO MEET FIRE RATING AS INDICATED ON CODE PLAN AND INCORPORATE FIRE RATING NOTES AND DETAILS ON THIS SHEET.
- REFERENCE REFLECTED CEILING PLANS FOR PARTITION HEIGHT. PARTITIONS ARE SHADED IN THE FOLLOWING MANNER:
 - NO SHADING INDICATES WALL EXTENDS 4" MIN ABOVE FINISH CEILING.
 - SHADING INDICATES WALL EXTENDS TO DECK (OR THROUGH SECOND FLOOR WHERE OCCURS).
- REFERENCE FINISH PLANS FOR LOCATION OF RECESSED CARPET BASE, TILE, FRP, AND OTHER SPECIAL DETAIL AND FINISH CONDITIONS.
- PROVIDE 1/2" PLYWOOD BACKING BEHIND GYP BOARD ON WALLS SCHEDULED TO RECEIVE SHELVING OR STANDARDS AND BRACKETS, (TYP).
- BREAK METAL IS REQUIRED AT DECK WHERE IT IS EXPOSED. BREAK METAL SHALL BE 4" x 4" x 20 GA. UNO AND FASTENED WITH SCREWS TO DECK @ 2'-0" O.C.
- REFERENCE DETAILS ON THIS SHEET FOR TOP OF WALL CONDITIONS.

GENERAL SITE NOTES:

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND REQUIREMENTS OF THE DETAILED SPECIFICATIONS.
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GENERAL CONSTRUCTION NOTES:

- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OSHA REGULATIONS.

LUMBER AND FRAMING NOTES:

- PROVIDE MATERIALS IN THE QUANTITIES NEEDED FOR THE WORK SHOWN ON THE DRAWINGS, AND MEETING OR EXCEEDING THE FOLLOWING STANDARDS OF QUALITY.
- SILL AND PLATES, AND ALL OTHER LIGHT FRAMING: SPRUCE-PINE-FIR OR HEM-FIR, CONSTRUCTION GRADE OR BETTER.
- SILL, PLATES AND WOOD BLOCKING IN CONTACT WITH CONCRETE, MASONRY, ROOF INSULATION, ROOF CURBS AND ROOF PARAPETS WALLS: PRESSURE-TREATED SOUTHERN PINE, CONSTRUCTION GRADE OR BETTER; OR CALIFORNIA REDWOOD, CONSTRUCTION HEART, MIXED, OR BETTER.
- SILL SEALER UNDER WOOD SILL PLATES ON CONCRETE AND/OR MASONRY: ONE INCH THICK OWENS-CORNING FIBERGLASS SILL SEALER OR MANVILLE SILL SEALER.
- STUDS: SPRUCE-PINE-FIR OR HEM-FIR, STUD GRADE.
- SOUND BOARD: 1/2" THICK FIBER BOARD RATED AS A SOUND BOARD, IN 4' WIDTHS.
- HEADERS AND BEAMS: HEM-FIR #2 OR BETTER, UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS.
- LAMINATED WOOD BEAMS (NOTED AS "LVL" ON DRAWINGS) GANG-LAM LVL AS MANUFACTURED BY LOUISIANA-PACIFIC, OR EQUAL.
- PLYWOOD FLOOR UNDERLAYMENT: APA 190C RATED STURD-I-FLOOR, EXPOSURE 1 (EXTERIOR GLUE), 23/32" MIN. THICKNESS, TONGUE AND GROOVE.
- ROOF AND WALL SHEATHING: APA 3216 RATED SHEATHING, EXPOSURE 1 (EXTERIOR GLUE), 5/8" MINIMUM THICKNESS, 4 PLY PLYWOOD (NO WAFERBOARD OR PARTIALBOARD ALLOWED).
- INSULATING WALL SHEATHING (APPLY OVER WALL SHEATHING): 1/2" EXTRUDED POLYSTYRENE R-2.5 (DOW "BLUEBOARD" OR FOAMULA 250 SE)
- ROOF UNDERLAYMENT: ASPHALT SATURATED FELT, NON-PERFORATED, 15#, CONFORMING TO ASTM D2226
- JOIST HANGERS, WOOD CONNECTORS, ETC. SIMPSON CO., OR TECO, OR SILVER METAL PRODUCTS. PROVIDE IN SIZES AND TYPES REQUIRED.
- STEEL HARDWARE: ASTM A 7 OR A 36 (USE GALVANIZED AT EXTERIOR LOCATIONS)
- MACHINE BOLTS. ASTM A 307
- LAG BOLTS. FED. SPEC. FF-B-561
- NAILS: COMMON, EXCEPT AS NOTED OR REQUIRED FED. SPEC. FF-N-1 (USE GALVANIZED AT EXTERIOR LOCATIONS)
- WOOD PRESERVATIVE: WOLMANIZED PROCESS BY KOPPERS CO., INC.
- ROOF VENTS: PROVIDE IN SIZES REQUIRED TO PROVIDE A FREE VENTILATING AREA OF 1/150 OF THE HORIZONTAL CEILING AREA. PROVIDE GALVANIZED METAL ROOF VENTS WITH A MESH INSECT SCREEN, LAMONCO #750.

GENERAL DEMOLITION NOTES:

- THE ARCHITECT AND SUB-CONSULTANTS HAVE MADE EFFORTS TO CONFIRM AND VERIFY BUILDING CONDITIONS WHICH WILL AFFECT THE QUALITY, NATURE, AND PERFORMANCE OF THE WORK. THE EXISTING INFORMATION ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED WITH THE MATERIALS THE ARCHITECT AND CONSULTANTS WERE GIVEN.
- THE DRAWINGS, SCHEDULES, AND SPECIFICATIONS ARE INTENDED TO ASSIST THE CONTRACTOR IN UNDERSTANDING WHAT IS TO BE THE END RESULT OF THE PROJECT.
- THE CONTRACTOR SHALL VERIFY EXISTING CONDITION PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO REMOVAL OF MATERIAL OR EQUIPMENT NOT INDICATED ON THE DRAWING TO BE REMOVED.
- EXACT LOCATIONS, LEVELS, MEASUREMENTS, DISTANCES, ETC. WILL BE GOVERNED BY CONDITIONS AT THE JOB SITE. CONTRACTORS SHALL FIELD VERIFY ALL EXISTING CONDITIONS WHICH AFFECT WORK TO BE PERFORMED AS PART OF THE PROJECT. UNUSUAL CONDITIONS OR DISCREPANCIES ENCOUNTERED DURING DEMOLITION SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BRING TO THE ATTENTION OF THE ARCHITECT ANY CONDITIONS WHICH WILL NOT PERMIT CONSTRUCTION ACCORDING TO THE INTENTIONS OF THESE DOCUMENTS.
- IT IS THE RESPONSIBILITY OF THE ARCHITECT TO PROVIDE DETAILS AND OR DIRECTIONS REGARDING DESIGN INTENT WHERE IT IS ALTERED BY EXISTING CONDITIONS.
- HALF-TONE NOTES OR LINE WORK ON PLAN INDICATE MATTER OR EQUIPMENT THAT IS EXISTING. DASHED LINE WORK ON PLANS INDICATE MATTER OR EQUIPMENT THAT IS TO BE REMOVED.
- EXISTING SURFACE DISTURBED BY NEW CONSTRUCTION SHALL BE PATCHED AND FINISHED TO MATCH ADJACENT SURFACES.
- REMOVAL WORK AT EXTERIOR OF BUILDING SHALL BE DONE IN SUCH A MANNER AS TO PREVENT MATERIALS FROM DAMAGING ADJACENT STRUCTURES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF EXISTING STRUCTURES SURROUNDING THE CONTRACT AREA. DAMAGE TO EXISTING STRUCTURE OR EQUIPMENT SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
- PATCH, PREPARE, AND CLEAN EXISTING CONCRETE FLOORS AS REQUIRED TO RECEIVE NEW FLOORING MATERIALS OR FINISHES.
- PORTIONS OF CONCRETE THAT ARE TO BE REMOVED SHALL HAVE SAW CUT EDGES THAT ARE RELATIVELY SMOOTH.
- FOR ADDITIONAL DEMOLITION, SEE STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
- LOOSE FURNITURE (I.E. DESKS, CHAIRS, CABINETS) ARE TO BE REMOVED BY OWNER AS REQUIRED.
- THE OWNER HAS FIRST RIGHT OF REFUSAL FOR ALL MATERIALS REMOVED. IF THE OWNER DOES NOT WANT THE ITEM THEN THE CONTRACTOR IS RESPONSIBLE FOR RECYCLING THE PRODUCT IF POSSIBLE OR PROPERLY DISPOSING OF IT.
- ALL PATCHING AND/OR REPLACEMENT OF ANY PORTION OF THE BUILDING OR SITE SHALL, BE THE ULTIMATE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- ALL PENETRATIONS THROUGH THE ROOF, REMOVALS OF ROOF EQUIPMENT, AND PATCHES SHALL BE DONE PER THE ROOFING MANUFACTURER'S REQUIREMENTS. MANUFACTURER SHALL BE NOTIFIED PRIOR TO ANY WORK BEING DONE ON THE ROOF. CONTRACTOR IS RESPONSIBLE FOR THE EXISTING WARRANTY NOT BEING VOIDED DUE TO THE CONTRACTOR'S ACTIONS.

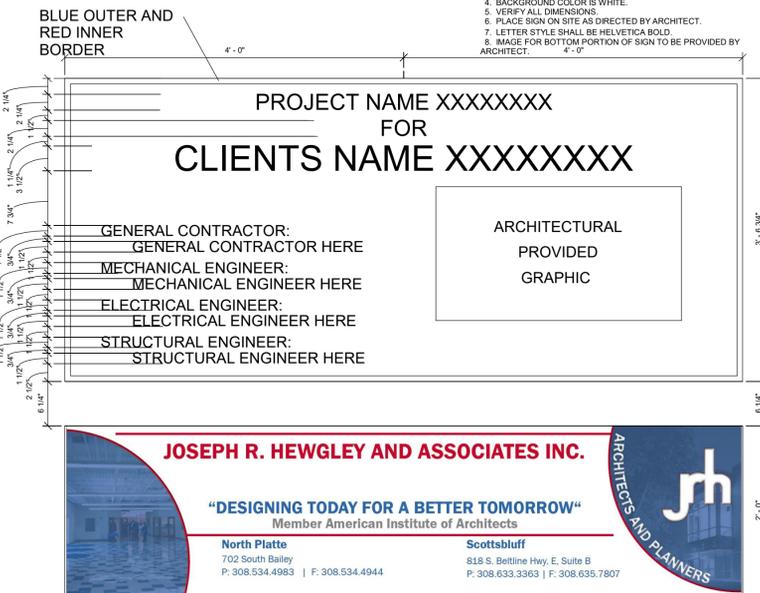
GENERAL PROJECT NOTES:

- CONTRACTOR SHALL COMPLY WITH NATIONAL, STATE, & LOCAL CODES & NATIONAL, STATE & LOCAL ADA CODES.
- GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT JOB SITE, AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
- ALL CONTRACTORS SHALL WORK FROM THE ENTIRE SET OF DRAWINGS.
- IT IS THE RESPONSIBILITY THE GENERAL CONTRACTOR TO SUPPLY ANY SUBCONTRACTORS, SUPPLIERS, ETC. OF ALL REVISIONS OR CHANGES THROUGHOUT THE DURATION OF THE PROJECT.
- SCHEDULING OF WORK SHALL BE AS OUTLINE IN SUPPLEMENTARY CONDITIONS
- ALL LAWS, ORDINANCES, REGULATIONS, ORDERS, MANUALS, MANUFACTURES SPECIFICATIONS, OR PUBLICATIONS, WHERE OR NOT SPECIFICALLY MADE A PART OF OR INCORPORATED BY REFERENCE IN THE CONTRACT DOCUMENTS SHALL BE THE LATEST EDITION UNLESS SPECIFICALLY NOTED OTHERWISE.
- ALL REFERENCE TO MANUFACTURES DIRECTIONS, SPECIFICATION OR RECOMMENDATION SHALL REFER TO THEIR REFERENCED MANUFACTURES CURRENT PUBLISHED MANUALS OR PUBLICATIONS. THESE PUBLICATIONS ARE HEREBY MADE A PART OF AND INCORPORATED BY THIS REFERENCES IN THE PROJECT SPECIFICATIONS.
- MANUFACTURER'S DIRECTIONS: MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED, AND CONDITIONED AS PER THE MANUFACTURE'S PRINTED DIRECTIONS.
- EXCEPT AS OTHERWISE APPROVED BY THE ARCHITECT, DETERMINE AND COMPLY WITH MANUFACTURERS' RECOMMENDATIONS ON PRODUCT HANDLING, STORAGE, AND PROTECTION.
- COOPERATION - ALL SUBCONTRACTORS SHALL COORDINATE THEIR WORK WITH ALL ADJACENT WORK AND WITH OTHER TRADES SO AS TO FACILITATE THE GENERAL PROGRESS OF THE WORK. EACH TRADE SHALL AFFORD ALL OTHER TRADES EVERY REASONABLE OPPORTUNITY FOR THE INSTALLATION OF THEIR WORK AND FOR THE STORAGE OF THEIR MATERIALS.
- IT SHALL BE CLEARLY UNDERSTOOD THAT ALL WALLS, FLOORS, OR OTHER PORTIONS OF THE BUILDING SHALL BE "FINISHED SURFACES" I.E. PAINTED, CARPETED, ETC., UNLESS SPECIFICALLY NOTED OTHERWISE. ALL PATCHING OR REPLACEMENT OF WALLS, FLOORS, ETC. OR OTHER PORTION OF THE BUILDING SHALL BE FIGURES AS "FINISHED SURFACES" I.E. PAINTED, CARPETED, ETC., TO MATCH THE ADJACENT FINISH UNLESS SPECIFICALLY NOTED OTHERWISE.
- PROTECT FINISHED SURFACES, INCLUDING JAMBS, AND SOFFITS OF OPENING USED AS PASSAGEWAYS, THROUGH WHICH EQUIPMENT AN MATERIALS ARE HANDLED.
- PROVIDE PROTECTION FOR FINISHED FLOOR SURFACES IN TRAFFIC AREAS PRIOR TO ALLOWING EQUIPMENT OR MATERS TO BE MOVED OVER SUCH SURFACES.
- MAINTAIN FINISHED SURFACES CLEAN, UNMARRED, AND SUITABLY PROTECTED UNTIL ACCEPTED BY THE OWNER.
- PROVIDE CONCRETE SPLASH BLOCKS AT ALL DOWNSPOUTS.
- ALL DIMENSIONS ARE TO THE CENTER OF STUD WALLS, THE EXTERIOR OF MASONRY WALLS, THE CENTER OF DOORS, AND EDGES OF WINDOWS UNLESS NOTED OTHERWISE.

PROJECT SIGN DETAIL NOTES:

SIGN NOTES:

- SIGN MATERIAL IS 1/2" M.D.O. AND (2) 4x4x1/4" REDWOOD POSTS.
- ALL 3 1/2" & 2 1/4" LETTERS ARE SOLID BLUE
- ALL OTHER LETTERS ARE SOLID BLACK.
- BACKGROUND COLOR IS WHITE.
- VERIFY ALL DIMENSIONS.
- PLACE SIGN ON SITE AS DIRECTED BY ARCHITECT.
- LETTER STYLE SHALL BE HELVETICA BOLD.
- IMAGE FOR BOTTOM PORTION OF SIGN TO BE PROVIDED BY ARCHITECT.



JOSEPH R. HEWGLE AND ASSOCIATES INC.

"DESIGNING TODAY FOR A BETTER TOMORROW"
Member American Institute of Architects

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CONSTRUCTION DOCUMENTS

I, Joseph R. Hewgley, Jr. am the Coordinating Professional on the Morgan County Hog and Sheep Barn, Brush, CO



NEW HOG/SHEEP BARN

for
MORGAN COUNTY FAIRGROUNDS

PROJECT #: N-0124

DATE: 12-2-24

DRAWN: RDS

REVISIONS

| DATE | DESCRIPTION |
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SHEET
A001



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CONSTRUCTION
DOCUMENTS



NEW HOG/SHEEP BARN
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PROJECT #: N-0124

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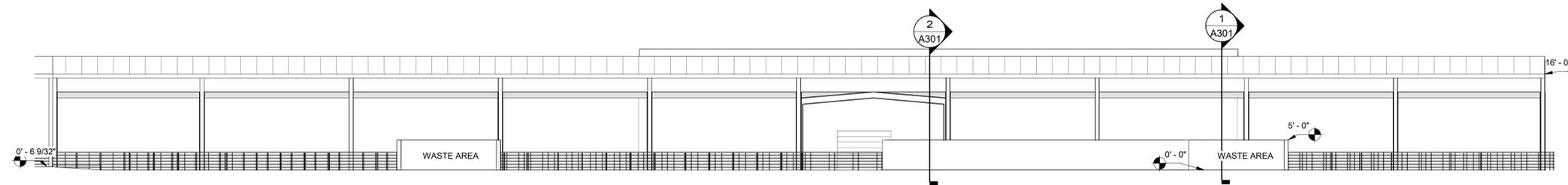
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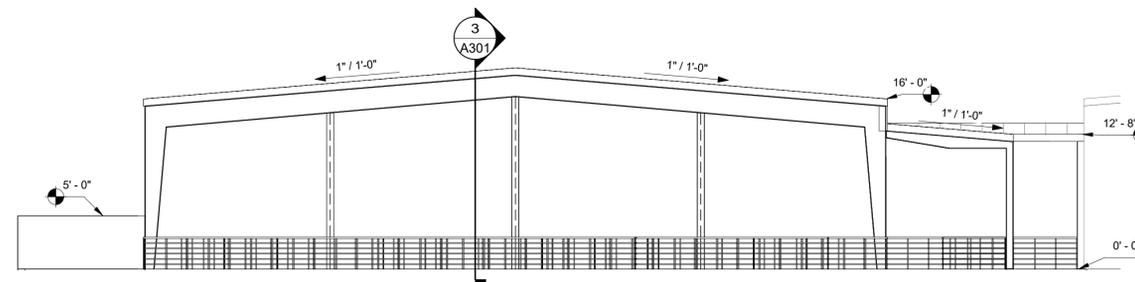


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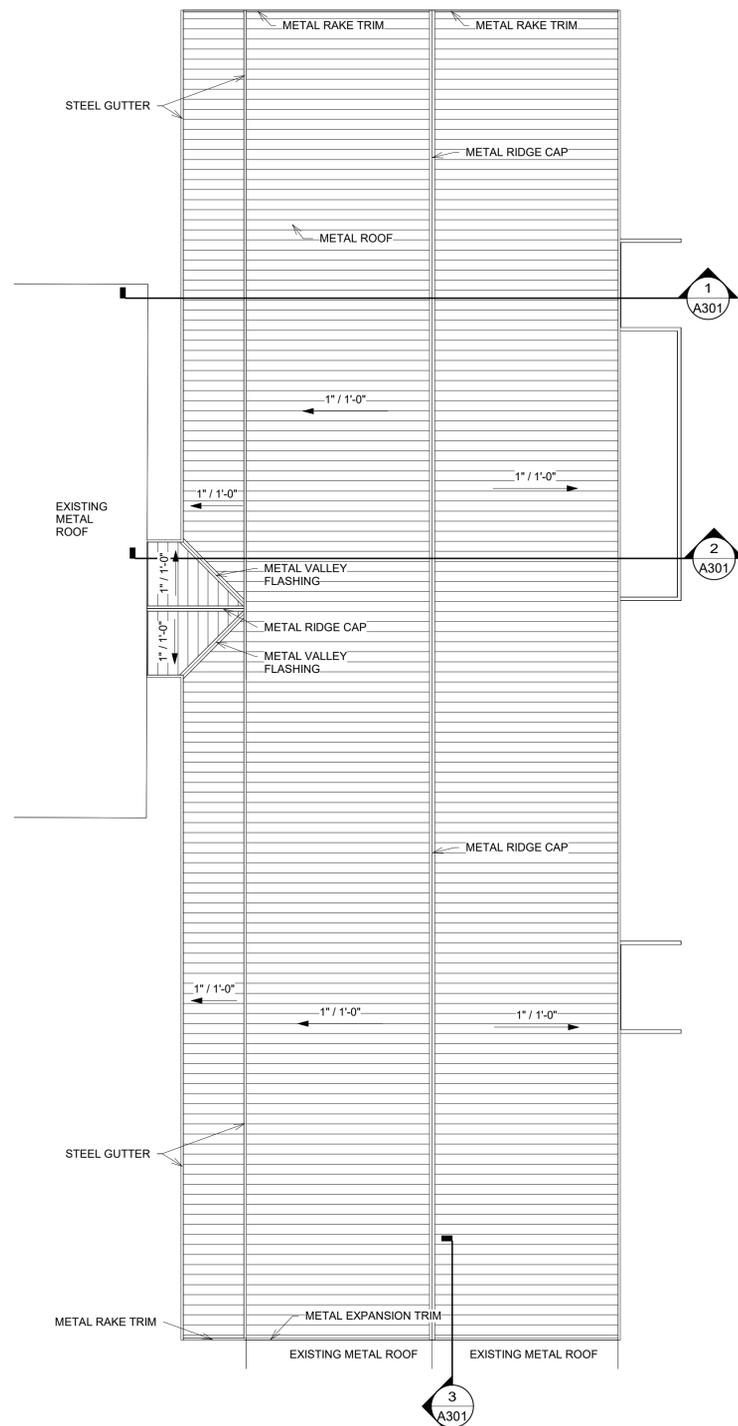
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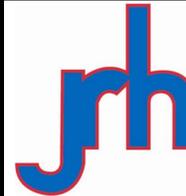
2 EAST ELEVATION
3/32" = 1'-0"



3 NORTH ELEVATION
1/8" = 1'-0"



1 ROOF PLAN
1/16" = 1'-0"



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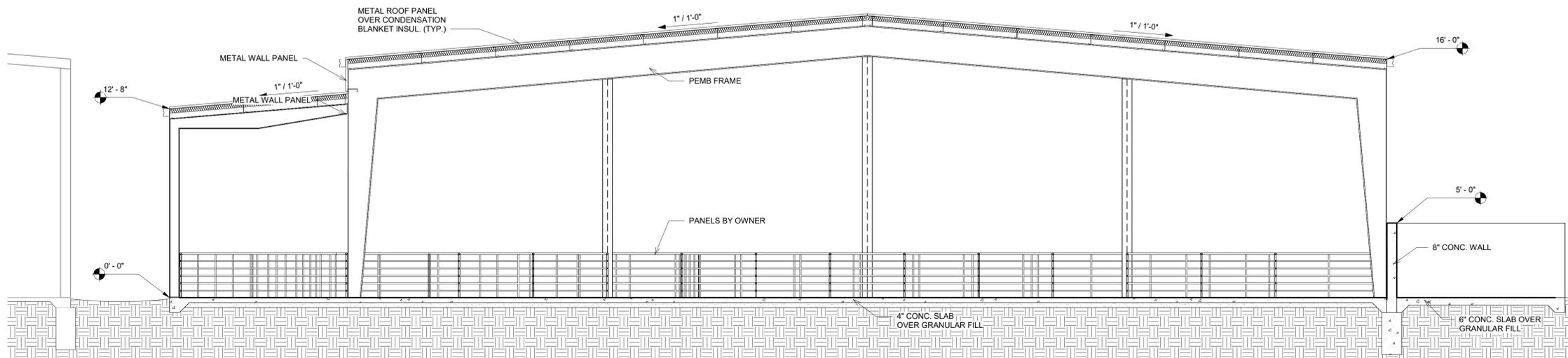
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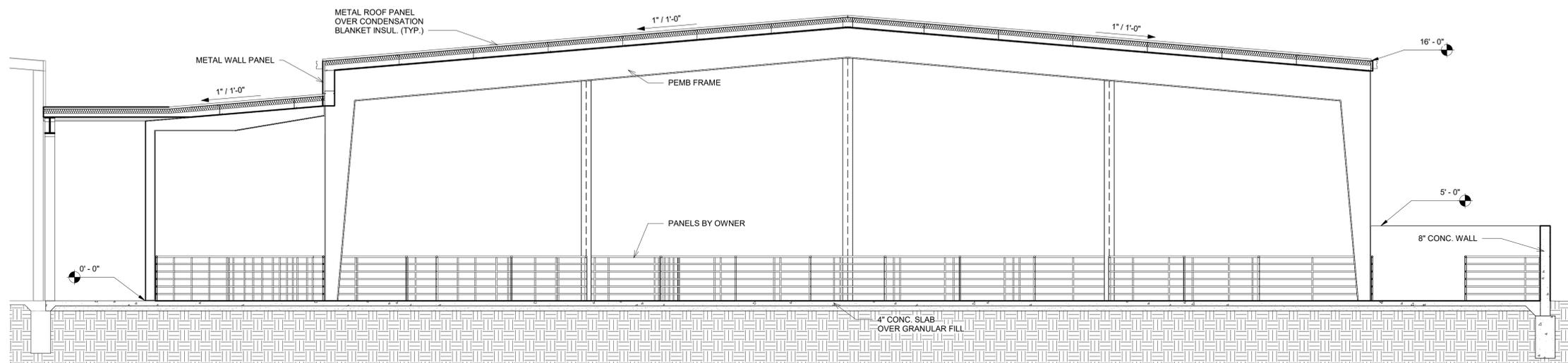


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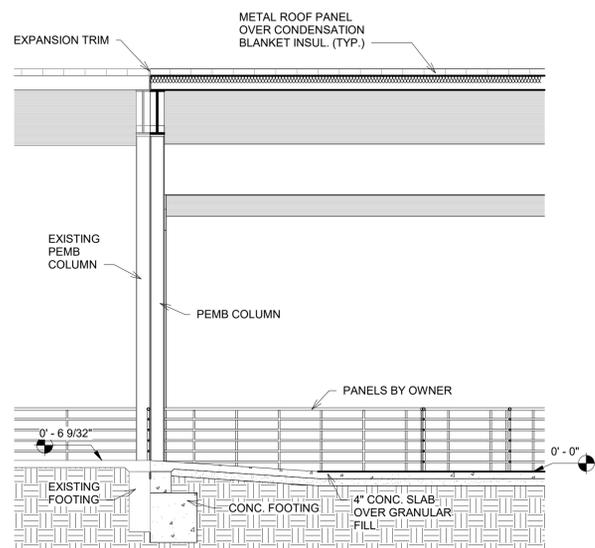
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A301



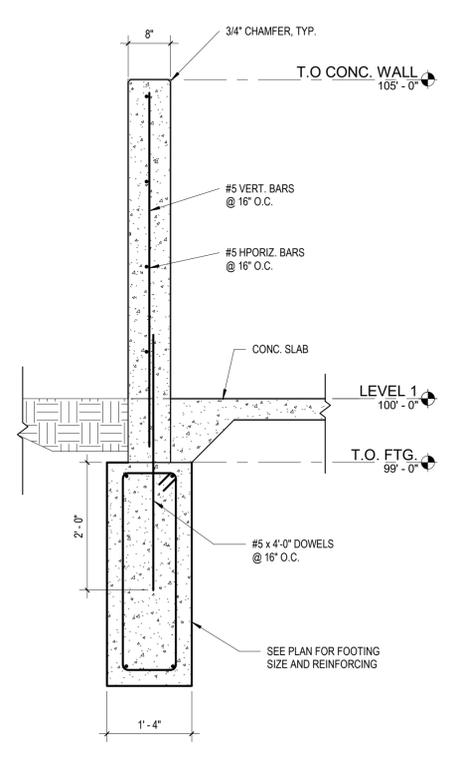
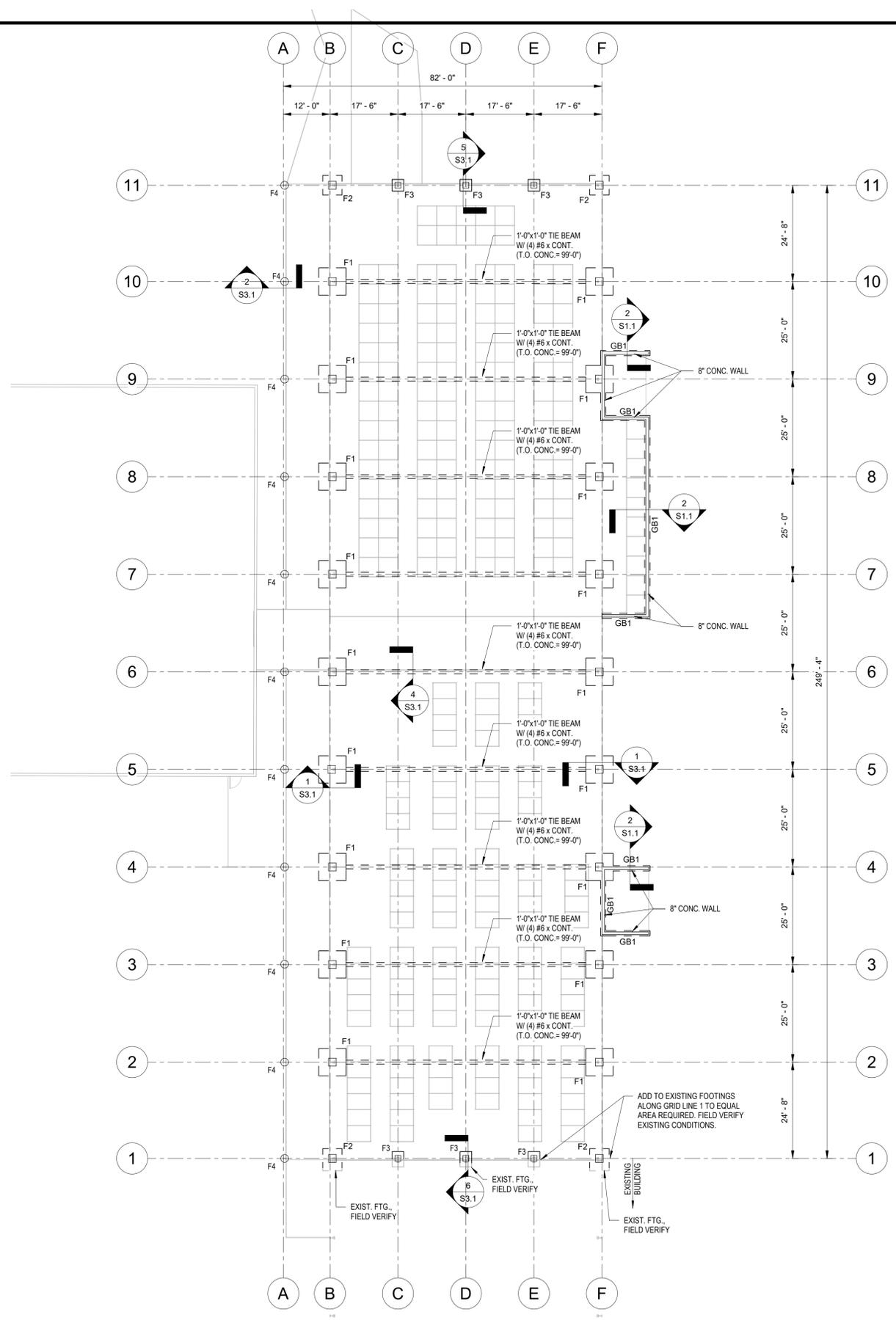
1 Section 1
1/4" = 1'-0"



2 Section 2
1/4" = 1'-0"



3 Section 3
1/4" = 1'-0"



2 FOOTING SECTION
3/4" = 1'-0"

| FOUNDATION SCHEDULE | | |
|---------------------|--------------------|---|
| MARK | SIZE (L x W x D) | REINFORCING |
| F1 | 7'-0"x7'-0"x3'-6" | (7) #6 E.W., T&B |
| F2 | 5'-0"x5'-0"x3'-6" | (5) #6 E.W., T&B |
| F3 | 3'-0"x3'-0"x3'-6" | (4) #6 E.W., T&B |
| F4 | 2'-0" DIA. x3'-6" | (6) #5 VERT BARS, & #3 TIES @ 16" O.C. |
| GB1 | CONT. x1'-4"x3'-6" | (2) #5 CONT., T&B, #4 STIRRUPS @ 2'-0" O.C. |

NOTES:
 1. BOT. DENOTES BOTTOM. CONT. DENOTES CONTINUOUS. E.W. DENOTES EACH WAY, O.C. DENOTES ON CENTER AND T&B DENOTES TOP AND BOTTOM.
 2. UNLESS NOTED OTHERWISE, TOP OF FOOTING ELEVATION = 99'-4"

1 FOUNDATION PLAN
1/16" = 1'-0"



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 702 South Bailey - North Platte, Ne. 69101
 Phone: 308/534-4983 • Fax: 308/534-4944

SCHEMATIC DESIGN



NEW HOG/SHEEP BARN
 for
 MORGAN COUNTY FAIRGROUNDS

PROJECT #: _____
 DATE: 11-26-24
 DRAWN: SLM

| DATE | DESCRIPTION |
|------|-------------|
| | |
| | |
| | |

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 ASSOCIATES, INC.
 MEMBER
 AMERICAN
 INSTITUTE
 OF ARCHITECTS

SHEET
S1.1

GENERAL STRUCTURAL NOTES:

A. DESIGN DATA:
 DESIGN CODE: IBC 2021
 CONCRETE 28 DAY STRENGTH: FC = 4,000 PSI
 REINFORCING STEEL: ASTM A615 FY = 60,000 PSI
 WELDED REINFORCING: ASTM A615 FY = 60,000 PSI
 ALLOWABLE SOIL BEARING CAPACITY: 1,500 PSF (ASSUMED)

DESIGN LOADS
 GRAVITY LOADS:
 LL BASED ON GROUND SNOW LOAD OF 30 PSF (CE = 1.0, CT = 1.0, AND I = 1.0)**

**INCREASE LIVE LOAD FOR SNOW DRIFTING AS REQUIRED IN CONFORMANCE WITH THE AMERICAN SOCIETY OF CIVIL ENGINEERS ANS/ASCE 7-16.

WIND LOADING CRITERIA (2021 IBC)
 BASE WIND SPEED (3 SECOND GUST) V = 115 MPH
 BUILDING CATEGORY II
 IMPORTANCE FACTOR I_w = 1.0
 EXPOSURE CATEGORY C

B. FOUNDATION WORK:

1. SUBSOILS SUPPORTING OR IN DIRECT CONTACT WITH FOOTINGS, SLABS ON GRADE, OR OTHER FOUNDATION ELEMENTS SHALL BE PROTECTED AGAINST FREEZING CONDITIONS THAT COULD CAUSE MOVEMENT OR OTHER DETRIMENTAL EFFECT TO THE STRUCTURE AS A WHOLE OR TO ANY OF ITS COMPONENT PARTS.

2. WHEN WORKING NEAR EXISTING AND/OR NEW CONSTRUCTION, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO UNDERMINE, DISTURB, DAMAGE OR, IN ANY WAY, CAUSE UNDESIRABLE MOVEMENT, CRACKING, AND/OR SETTLEMENT OF THE ADJACENT CONSTRUCTION.

3. ALL SLABS ON GRADE SHALL BEAR ON UNDISTURBED VIRGIN SOIL OR PROPERLY COMPACTED BACKFILL/GRANULAR FILL. ANY UNACCEPTABLE UNDISTURBED VIRGIN SOIL OR BACKFILL/GRANULAR FILL, AS DETERMINED BY THE OWNER'S GEOTECHNICAL ENGINEER, SHALL BE REMOVED AND REPLACED.

4. CONTRACTOR SHALL COORDINATE FOOTING ELEVATIONS WITH FINAL GRADING PLAN TO PROVIDE A MINIMUM OF 42" OF GRADE ABOVE THE BOTTOM OF ALL FOOTINGS FOR FROST PROTECTION.

C. CONCRETE:

1. FOR REINFORCEMENT DEVELOPMENT LENGTH AND SPLICE LENGTH SEE TYPICAL REINFORCEMENT TABLE ON THIS SHEET.

2. PROVIDE CORNER BARS IN WALLS AND FOOTINGS THE SAME SIZE AND NUMBER AS THE CONTINUOUS REINFORCING.

3. REINFORCING IN FOOTINGS SHALL BE ACCURATELY PLACED BEFORE PLACING CONCRETE. DO NOT FLOAT REINFORCING INTO FOOTINGS.

4. CONCRETE SHALL BE REGULAR WEIGHT (144 PCF) WITH TYPE I CEMENT, POTABLE WATER, AND AGGREGATES CONFORMING TO REQUIREMENTS OF ASTM C-33 CONCRETE, UNLESS NOTED OTHERWISE. CONCRETE SHALL CONFORM TO ACI 301-10.

5. MECHANICALLY VIBRATE CONCRETE, EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND UNDERFLOOR DUCTS AND OTHER ITEMS EMBEDDED IN THE SLAB.

6. DO NOT PLACE PIPES, DUCTS, OR CHASES IN STRUCTURAL CONCRETE WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER. SEE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR LOCATIONS.

7. CONSTRUCT FORMWORK SO CONCRETE MEMBERS AND STRUCTURES ARE OF SIZE, SHAPE, ALIGNMENT, ELEVATION, AND POSITION INDICATED, WITHIN TOLERANCE LIMITS OF ACI 117.

8. FINISH CONCRETE SUSPENDED SLABS AND SLABS-ON-GRADE PER THE FOLLOWING CRITERIA ACCORDING TO ASTM E 1155. COMPLY WITH ACI 302.1R RECOMMENDATIONS FOR SCREEDING, RESTRAIGHTENING, AND FINISHING OPERATIONS FOR CONCRETE SURFACES. DO NOT WET CONCRETE SURFACES.

9. CONTROL JOINTS IN SLAB-ON-GRADE SHALL BE PLACED AT COLUMN-LINE INTERSECTIONS AND AS NECESSARY TO NOT EXCEED A SPACING OF 36 TIMES THE SLAB THICKNESS. MAXIMUM ASPECT RATIO SHALL BE 1.5 TO 1.0 UNLESS NOTED OTHERWISE.

10. ALL REINFORCING STEEL SHALL BE DEFORMED NEW BILLETS BARS (A615, GRADE 60), BENT COLD, AND DETAILED, FABRICATED, AND HELD IN PLACE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315 LATEST EDITION) EXCEPT AS OTHERWISE DETAILED OR SPECIFIED.

11. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT, UNLESS NOTED OTHERWISE:
 CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"
 CONCRETE EXPOSED TO EARTH OR WEATHER: 2"
 CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH SLABS AND WALLS 1", BEAMS AND COLUMNS 2"
 GROUND: 2"

12. ALL REINFORCING IN SLABS AND WALLS SHALL BE CONTINUOUS UNLESS DETAILED OTHERWISE AND LAP SPICED ONLY IN REGIONS OF LOW STRESS. ALL BARS SHALL HAVE A STANDARD HOOK WHERE A HOOK IS SHOWN, UNLESS DETAILED OTHERWISE.

D. OTHER:

1. UNLESS NOTED OTHERWISE, ADHESIVE (EPOXY) ANCHORS SHALL CONSIST OF HILTI STANDARD HAS-E RODS WITH THE HIT-HY 200 ADHESIVE SYSTEM OR APPROVED EQUAL. INSTALL ANCHOR PER MANUFACTURER'S REQUIREMENTS.

2. VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO STARTING WORK. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES.

3. VERIFY IN FIELD ALL EXISTING CONDITIONS SHOWN ON DRAWINGS.

4. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL, AND PLUMBING WITH APPROPRIATE TRADES. PROVIDE ALL TEMPORARY BRACING, SHORING, GUYING, OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION.

5. ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE STAMP (AND SIGNATURE) OF AN ENGINEER REGISTERED IN COLORADO.

TYPICAL REINFORCING NOTES:

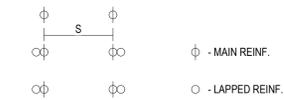
1. REINFORCING BAR DEVELOPMENT AND LAP SPLICE LENGTH SHALL BE AS SHOWN IN THIS TABLES UNLESS OTHERWISE NOTED ON THE DRAWINGS.

2. THE LENGTHS SHOWN IN THE TABLES ARE BASED ON THE FOLLOWING CONCRETE COVERAGE AND REINFORCING C-C SPACING:
 BEAMS OR COLUMNS:
 COVER (EQUAL OR MORE) 1.0bd (BAR DIAMETER)
 CENTER TO CENTER (C-C) SPACING (EQUAL OR MORE) 2.0bd.
 ALL OTHERS:
 COVER (EQUAL OR MORE) 1.0bd
 CENTER TO CENTER SPACING (EQUAL OR MORE) 3.0bd.

3. TOP BARS ARE DEFINED AS HORIZONTAL REINFORCEMENT SUCH THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.

4. DEVELOPMENT AND SPLICE LENGTH SHOWN SHALL NOT APPLY IF ANY OF THE FOLLOWING CONDITIONS OCCUR:
 A) f_c < 4000 PSI
 B) f_y > 60,000 PSI
 C) THE COVER OR C-C BAR SPACING IS NOT AS LISTED ABOVE
 D) THE REINFORCING STEEL IS EPOXY COATED
 E) LIGHT WEIGHT CONCRETE IS USED.

5. CENTER ON CENTER SPACING (S) IS DEFINED AS BELOW:

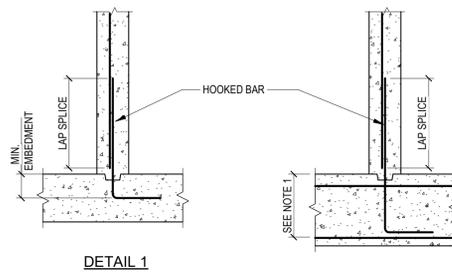


| REINFORCING DEVELOPMENT AND SPLICES f _c = 4000 PSI | | | | |
|--|--------------------|--------|---------------|--------|
| BAR SIZE | DEVELOPMENT LENGTH | | SPLICE LENGTH | |
| | OTHER | TOP | OTHER | TOP |
| #3 | 1'-3" | 1'-7" | 1'-7" | 2'-0" |
| #4 | 1'-7" | 2'-1" | 2'-1" | 2'-8" |
| #5 | 2'-0" | 2'-7" | 2'-7" | 3'-4" |
| #6 | 2'-5" | 3'-1" | 3'-1" | 4'-0" |
| #7 | 3'-6" | 4'-6" | 4'-6" | 5'-10" |
| #8 | 4'-0" | 5'-2" | 5'-2" | 6'-8" |
| #9 | 4'-6" | 5'-10" | 5'-10" | 7'-7" |
| #10 | 5'-1" | 6'-7" | 6'-7" | 8'-6" |
| #11 | 5'-7" | 7'-3" | 7'-3" | 9'-5" |

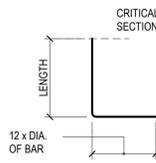
DEVELOPMENT LENGTH NOTES:

1. WHERE DRAWINGS ARE DETAILED SIMILAR TO DETAIL 2, EXTEND THE EMBEDMENT LENGTH SUCH THAT THE HOOKED BAR CONTACTS THE LAYER OF MAIN REINFORCING SHOWN.

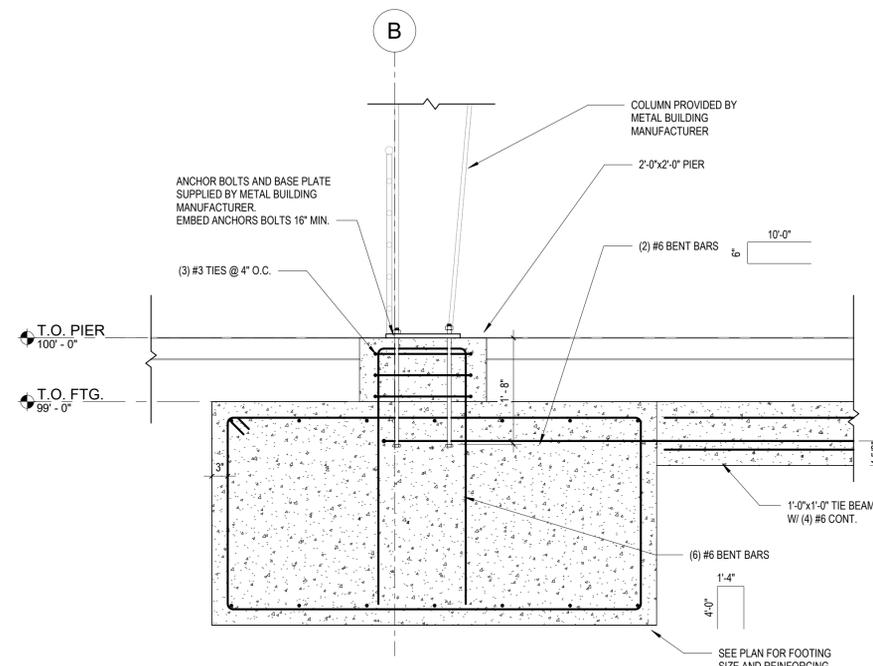
2. EMBEDMENT LENGTHS IN CHART ARE TYPICAL EXCEPT AS NOTED IN DETAIL 2, OR AS INDICATED ON DRAWINGS.



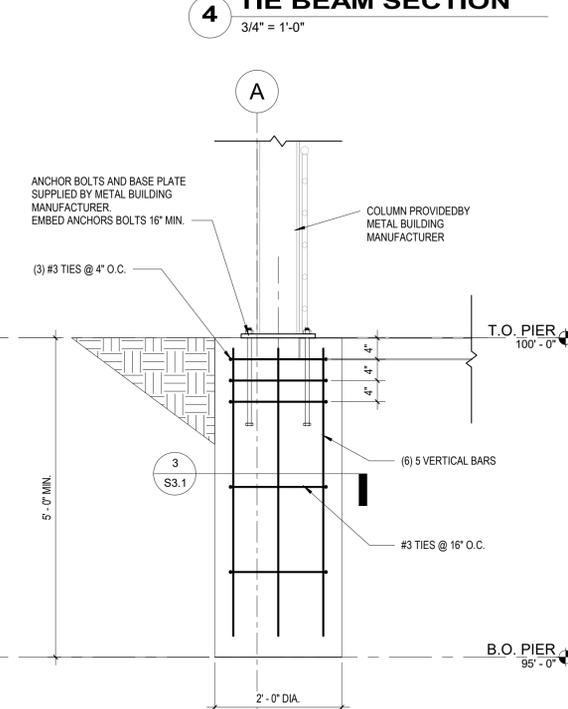
| DEVELOPMENT LENGTHS HOOKED BARS (f _c = 4000 PSI) | |
|--|--------------------------|
| BAR SIZE | LENGTH OR MIN. EMBEDMENT |
| #3 | 7" |
| #4 | 10" |
| #5 | 1'-0" |
| #6 | 1'-3" |
| #7 | 1'-5" |
| #8 | 1'-7" |
| #9 | 1'-10" |
| #10 | 2'-0" |
| #11 | 2'-3" |



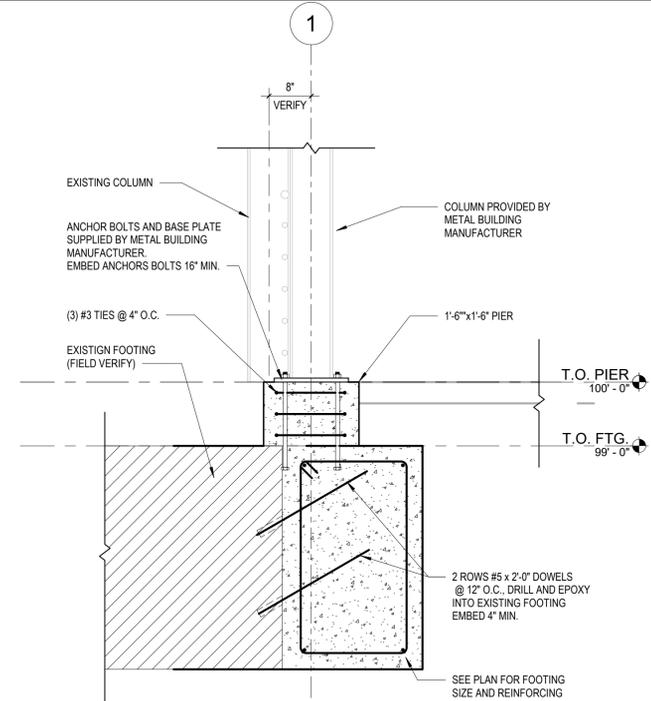
RADIUS OF HOOK:
 4 x DIA. OF BAR - #3 TO #8 BARS
 5 x DIA. OF BAR - #9 TO #11 BARS
 6 x DIA. OF BAR - #14 & #18 BARS



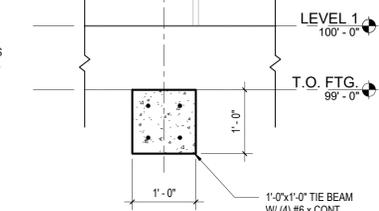
1 FOOTING SECTION
3/4" = 1'-0"



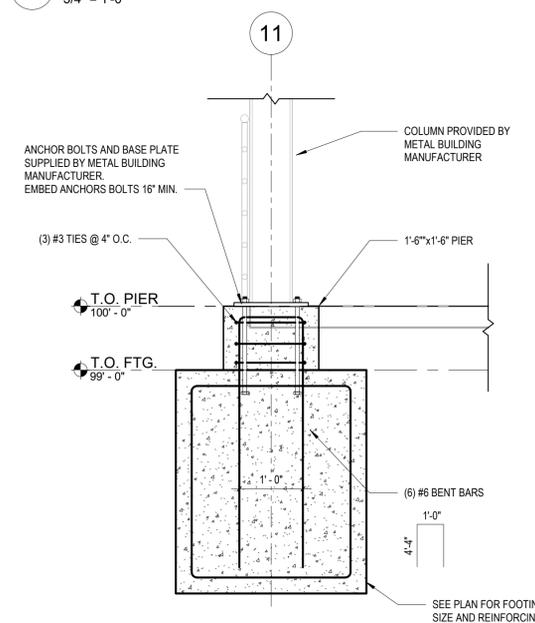
2 PIER SECTION
3/4" = 1'-0"



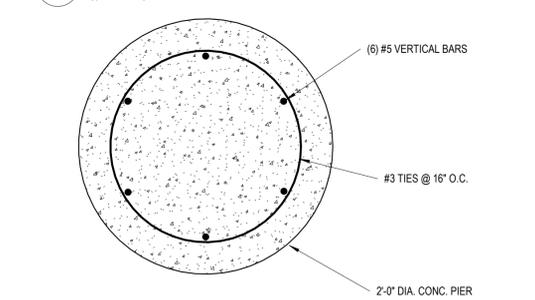
6 FOOTING SECTION
3/4" = 1'-0"



4 TIE BEAM SECTION
3/4" = 1'-0"



5 FOOTING SECTION
3/4" = 1'-0"



3 ROUND PIER SECTION
1 1/2" = 1'-0"



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SCHEMATIC DESIGN



NEW HOG/SHEEP BARN
 for
 MORGAN COUNTY FAIRGROUNDS

PROJECT #: 11-26-24

DATE: 11-26-24

DRAWN: Author

REVISIONS

| DATE | DESCRIPTION |
|------|-------------|
| | |
| | |
| | |

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SHEET
S3.1

⑥ SHEET NOTES

- 1 SEE CIVIL PLANS FOR CONTINUATION.
- 2 SEE WATER ENTRANCE PIT DETAIL ON SHEET M201.
- 3 SEE DOUBLE EXTERIOR CLEANOUT DETAIL ON SHEET M201.
- 4 SEE MUD TRAP DETAIL ON SHEET M201.
- 5 SEE PLUMBING PLAN - NORTH ON THIS SHEET.
- 6 SEE PLUMBING PLAN - SOUTH ON THIS SHEET.



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Mechanical & Electrical Building Solutions
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P 402-476-1273 | F 402-476-1274
1101 N. 139th St. | Omaha, NE 68102
P 402-330-2772
ETI Project No: 2024-042

NEW HOG/SHEEP BARN

for
MORGAN COUNTY FAIRGROUNDS

PROJECT #:

DATE: 11-26-24

DRAWN: NPS

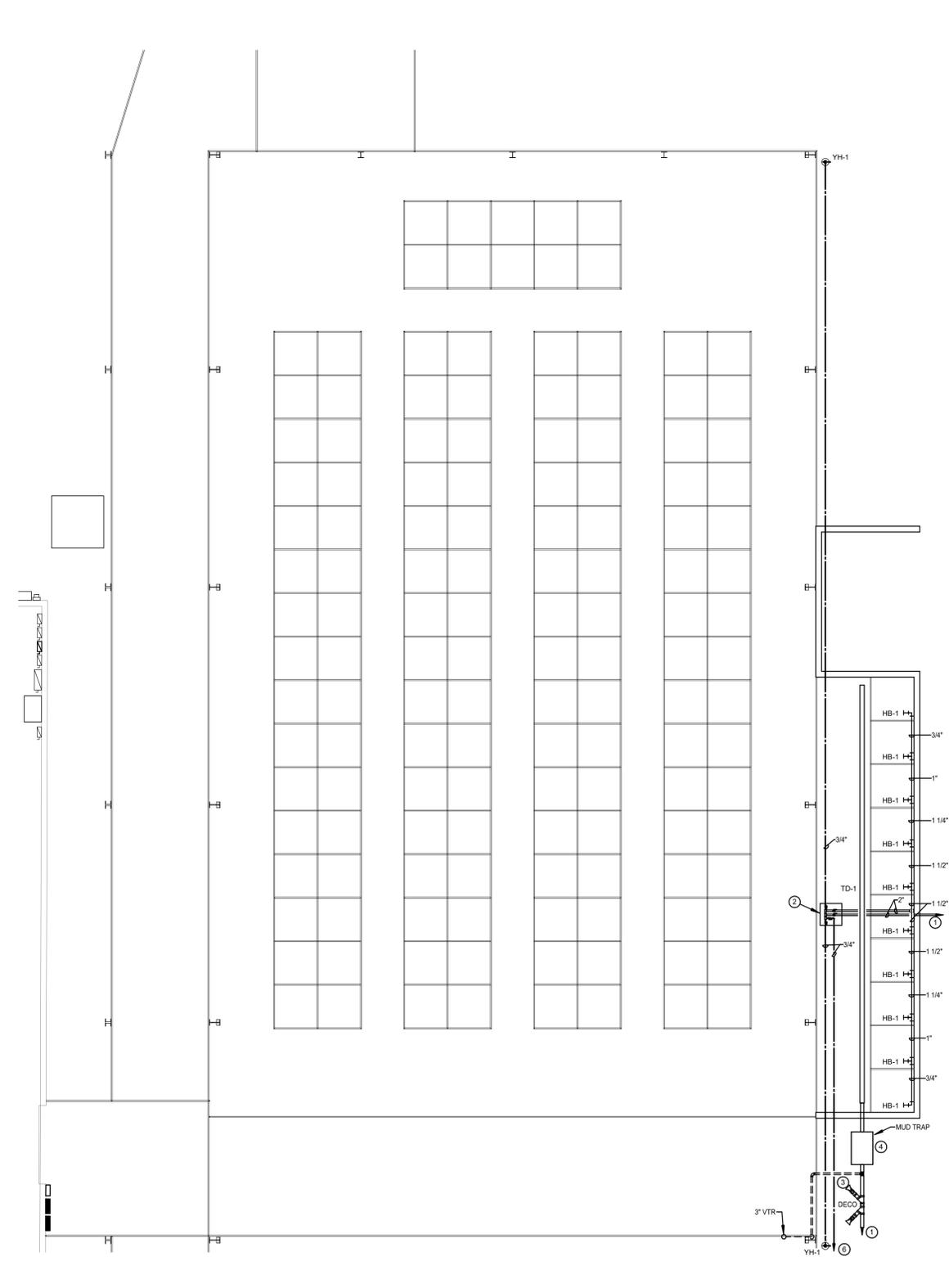
REVISIONS

| DATE | DESCRIPTION |
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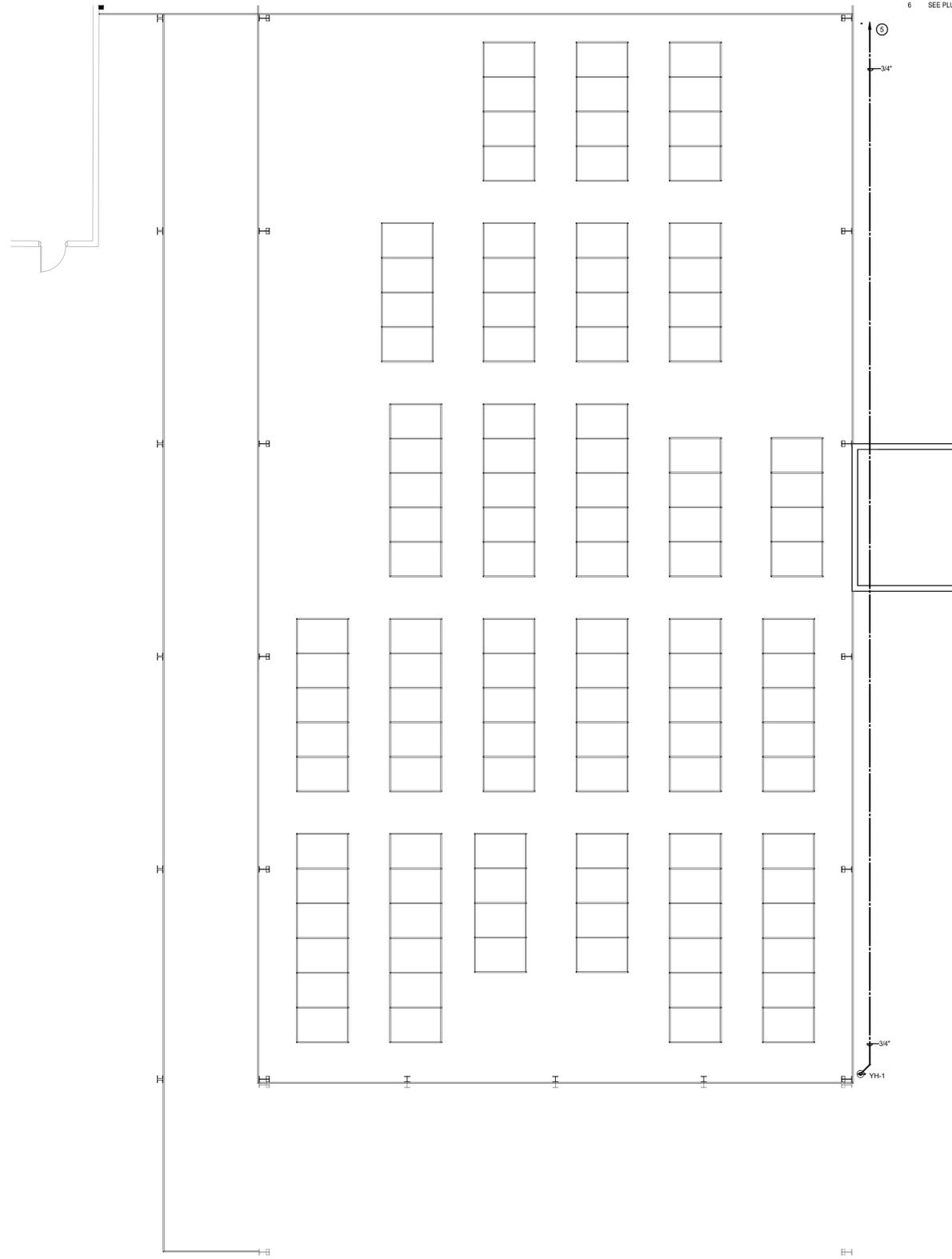
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SHEET
M101



1 PLUMBING PLAN - NORTH
1/8" = 1'-0"



2 PLUMBING PLAN - SOUTH
1/8" = 1'-0"

DIVISION 22 - PLUMBING
SECTION 220050 - GENERAL PLUMBING AND MECHANICAL PROVISIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The work required under Plumbing Contract shall include all material, labor, equipment and services necessary and reasonably incidental to the proper completion of the systems, and all special work as hereinafter specified and indicated on the drawings.
- B. All work shall be executed in such a manner as to interfere as little as possible with the normal functioning of the facility, including operations of all utility services and any equipment, and with work being done by others. Roads shall be kept clear of materials, etc., at all times so that there will be no interference with the usual traffic. Where necessary, on account of new work connecting to existing pipes, where utility services are required to be cut, they shall be cut and capped at suitable places where indicated by drawings, or in the absence of such indication, where directed by the Architect/Engineer. No road traffic or utility service such as water, gas, or steam shall be interrupted without prior approval of the Owner, and all arrangements for work which will involve such interference shall be made in advance with the Owner so that same can be effected in a minimum of time and interference.
- 1.2 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS
 - A. Drawings and specifications shall be taken together. Provide work specified and not indicated, or work indicated and not specified as though mentioned in both.
 - B. In case of discrepancy between drawings and specifications, or within either document, the greater quantity of work and/or better quality shall be used for estimating and the matter brought to the Architect/Engineer's attention for a written decision.
 - C. Drawings are to be interpreted as diagrammatic only, intended to convey the scope of the work and to indicate the general arrangements and locations of equipment, outlets, etc., and the approximate sizes of equipment. It should be understood that the Contractor shall determine the exact locations of equipment and rough-ins, and the exact routing of pipes and ducts so as to best fit the layout of the job. Scaling of the drawings will not be sufficient or accurate for determining these locations. Contractor shall refer to the Architectural drawing for dimensions of walls, foundations, structural beams, and other structural building members. Where job conditions require reasonable changes in indicated arrangements and locations, such changes shall be made by the Contractor at no additional cost to the Owner.
 - D. Because of the scale of the drawings, certain basic items, such as fittings, boxes, valves, unions, etc., may not be shown, but where such items are required by other sections of the specifications or where they are required for proper installation of the work, such items shall be furnished and installed.
 - E. The determination of quantities of material and equipment required shall be made by the Contractor from the drawings. Schedules on the drawings and in the specifications are completed as an aid to the Contractor but where discrepancies arise, the greater number shall govern.
 - F. Where words "provide", "install", or "furnished" are used on the drawings or in the specifications, it shall be taken to mean, to furnish, install and connect up complete and ready for operation, the items mentioned.

1.3 COOPERATION AND PROGRESS

- A. Keep informed about the work of all other trades engaged in the project and execute the work in such a manner as not to delay or interfere with the progress of other trades. The Contractor shall schedule his work so that no other contractor is delayed in the execution of his work. Complete cooperation of all trades is expected. Employ a competent foreman on job throughout the entire project to ensure that coordination is maintained and that adequate clearance is allowed with respect to his equipment, other equipment, and the building. The Owner's representative reserves the right to determine space priority in the event of interference between piping, conduit, ducts, and equipment of the various contractors.
- B. Schedule and coordinate the work of this Division with the schedule of the contractor to progress the work expeditiously, and to avoid unnecessary delays.
- C. Examine fully the drawings and specifications for other contractors for other trades, and coordinate the installation of this work with the work of the other contractors. Consult and cooperate with other contractors for determining space requirements and for determining that adequate clearance is allowed with respect to his equipment, other equipment, and the building. The Owner's representative reserves the right to determine space priority in the event of interference between piping, conduit, ducts, and equipment of the various contractors.
- D. Conflicts between the drawings and the specification shall be called to the attention of the Owner's representative and Architect/Engineer. If clarification is not asked for prior to the taking of bids, it will be assumed that none is required and that the contractor is in agreement with the drawings and specifications as issued. If clarification is required after the Contract is awarded, such clarification will be made by the Architect/Engineer and his decision will be final.
- E. Coordinate the installation of all mechanical system components with all other trades, including structural components and electrical trades. Allocate space in the different areas to allow for the installation of ductwork, piping, sprinklers, waste and vents, and mechanical equipment above ceilings and in equipment spaces. Recommend rerouting, resizing or relocation of mechanical components, if necessary, so all trades can install their systems in the space allotted. Any proposed changes from the systems layout, on the drawings, shall be done in accordance with the design criteria specified in the applicable codes and shall be subject to the review and acceptance of the Architect/Engineer.
- F. After award of the Contract, and prior to start of construction, the General Contractor shall schedule a meeting with the contractor and all subcontractors responsible of the work items listed above. The purpose of the meeting is to introduce the coordination program and to determine its implementation in relation to the progress schedule.
- G. All contractors and subcontractors shall participate in the coordination process. Participation is mandatory. If a contractor or subcontractor fails to participate in the coordination process, the Owner reserves the right to do the following:
 - 1. Stop any and all construction progress payments for any work performed by the contractor.
 - Such payments will be reinstated only after the contractor or subcontractor resumes participation in the coordination drawing process.
 - 2. Relocate and resize contractor's work components as necessary to ensure all components will be installed as intended. In the event the contractor did not participate in the coordination process, he will not be entitled to any contract cost increases or time extensions due to Owner initiated changes in the work.
- H. The contractor shall also be held responsible for any unnecessary rework by other trade contractors that is attributable to his failure to participate in the coordination process.
- I. The contract drawings are schematic in nature and do not show every fitting and appurtenance for each utility because of the scale of the drawings. Each contractor is expected to have included in his bid sufficient fittings, material, and labor to allow for adjustments in routing of utilities made necessary by the coordination process. The contractor will not be allowed any contract cost extra or time extension for changes dictated by the coordination process.
- J. Utility installation in congested areas is dependent on the sequence of utility installation as much as it is dependent on the physical size of the utilities. The contractor shall use the coordination process to properly sequence the installation of utilities as appropriate to ensure the above ceiling and congested area utility installation is satisfactory.

1.4 GUARANTEE

- A. The Contractor, by the acceptance of this specification and the signing of the Contract, acknowledges his acquaintance with all the requirements and guarantees that every part going to make up the system, will be the best of its respective kind and will be erected in a good thorough and substantial manner by none but experienced labor.
- B. The Contractor guarantees that all piping as provided in this specification will be free from all obstructions, and that all piping will be tight and drip free.
- C. The Contractor guarantees that, in the entire domestic water system, a continuous and noiseless circulation of water will be established to all fixtures; and that water may be drawn from any fixture without hammering.
- D. The Contractor guarantees that the entire system of ductwork will provide free circulation of air without objectionable noise and that all air distribution within the conditioned space will be draftless and reasonably quiet.
- E. The Contractor guarantees that all equipment and appliances will successfully and acceptably perform the work for which they are installed and that each will operate smoothly and quietly up to its rated capacity.
- F. The Contractor further guarantees himself responsible for any defects which may develop in any part of the system, including equipment, piping, fixtures and appliances, due to faulty workmanship, design or material; and to replace and make good, without cost to the Owner, any such faulty parts or construction which develop defects at any time within one (1) year from the date of substantial completion. The date of substantial completion shall be as defined in the Contract Documents. Any repairs or replacement required on account of defects, as outlined in this paragraph shall be made promptly upon written notice from the Architect.
- G. Natural wear, accident, or carelessness on the part of others, however, shall not be made good by the Contractor.

1.5 PROTECTION OF INSTALLED WORK AND MATERIAL STORED ON SITE

- A. The Contractor is responsible for all work installed by him until his contract is complete and shall protect it from injury by others.
- B. All piping, fittings, equipment and material to be stored on the jobsite for any period of time shall be protected from the weather in a manner that is acceptable to the Architect.

1.6 SITE VISIT

- A. Bidders are advised to visit the site and inform themselves as to all conditions, and failure to do so will in no way relieve the successful bidder from the necessity of furnishing any material or performing any work that may be required to complete the work in accordance with the true intent and meaning of the drawings and specifications without additional cost to the Owner.
- B. Before bidding the job, investigate, determine and verify locations and invert elevations of sanitary and storm sewers, city water mains and any other buried or overhead utilities on or near site. Determine such locations in conjunction with all public and private utility companies and with all authorities having jurisdiction.

1.7 RULES, REGULATIONS AND CODES

- A. The Contractor shall become acquainted with the local codes, and in case of a discrepancy between plans or specifications and the local codes, the Contractor shall use the code requirements. The greater quantity of work and material and/or better quality shall be used for

estimating and the matter brought to the Architect's attention for a written decision.

- B. Perform all work in strict accordance with all rules, regulations, codes, ordinances, or laws of Local, State, and Federal governments, or of other authorities having lawful jurisdiction. Comply therewith. Such rules, regulations, codes, ordinances, or laws include, but are not necessarily limited to, the following:
 - 1. State building and fire codes.
 - 2. State plumbing and mechanical codes.
 - 3. City building and fire codes.
 - 4. City plumbing and mechanical codes.
 - 5. American Gas Association.
 - 6. National Electric Code.
 - 7. National Fire Protection Association.
 - 8. Occupation Safety and Health Act.
- C. If the Contractor notes, at the time of bidding, any parts of the plans and specifications which are not in accord with the applicable codes or regulations, he shall inform the Architect/Engineer in writing, requesting a clarification. If there is insufficient time to follow this procedure, he shall submit with his proposal a separate price indicating to make the system shown on the drawings comply with the codes and regulations.
- D. All changes to the system made after the letting of the contract, in order to comply with the applicable codes or the requirements of the inspector, shall be made by the Contractor without cost to the Owner.

1.8 SUBSTITUTIONS

- A. The Architect/Engineer shall be the sole and final judge as to the suitability of items substituted for those specified.
- B. The entire cost of all changes of any type due to substitutions for materials specified shall be borne by the Contractor at no extra cost to the Owner.
- C. Unsolicited and voluntary deducts, on the part of the Contractor for substituting unapproved equipment, shall not be considered for the purpose of awarding the Contract.
- D. When the drawings and/or specifications refer to any item, article, material, method, fabrication, assembly or condition by means of one or more manufacturer's trade name, catalog reference or similar means of identification of manufacturer, the Contractor shall furnish one of the makes so identified without substitution unless other make or makes have been approved by addendum to the contract documents prior to the receipt of bids. Requests for the approval of items of equal quality are requested to be in writing to the Architect/Engineer five days prior to the date of the receipt of bids so that a list of acceptable equal quality items can be made known to all bidders by an addendum. If substitution for names items, articles, materials, methods, fabrications, assembly or construction are approved, the Contractor assumes all responsibility for coordination and performing the related changes in the work necessitated by such substitutions and shall include in his bid all costs involved therein.

1.9 SHOP DRAWING REVIEW

- A. Shop drawings will be reviewed only to extent of information indicated. This check is only for review of general conformance with the design concept of the project and general compliance with the information given the contract documents. The contractor is responsible for conforming and correlating all quantities and dimensions, selecting fabrication processes techniques of construction, coordinating his work in a safe and satisfactory manner.
- B. Review of shop drawings shall not relieve Contractor of responsibility for providing all controls, wiring, components, etc., which are shown or specified, or all additional controls, wiring, components, etc., required to provide complete and correctly operating mechanical systems.
- C. In cases where substituted equipment has been installed in place of specified equipment the Contractor shall bear the entire cost of all changes of any type due to the substitution, even though the shop drawings have been reviewed by the Architect/Engineer.
- D. Shop drawings in no way relieve the contractor from performing on the job as to the intent of the construction documents.

1.10 ACCESS TO EQUIPMENT FOR MAINTENANCE

- A. Install all equipment, piping, etc., to permit access for normal maintenance. Maintain easy access to filters, motors, drives, compressors, coils, etc. Install all such equipment and accessories to facilitate maintenance. Perform any relocation of pipes, ducts, etc. required to permit access at request of Architect/Engineer at no additional cost to Owner.

1.11 FIRE AND SMOKE STOPPAGE

- A. It shall be the responsibility of this Contractor to maintained fire and smoke integrity of all walls, ceilings, floors, etc., through which this work passes through or into. Fire and smoke barriers shall be provided in and around as required by Codes.
- B. Where holes are required to be patched, or conduit, piping, ducts, etc., are required to be patched around, it shall be filled with a material that is UL Classified Standard 1479 for this use and Factory Mutual System approved.
- C. Fire and smoke stoppage material shall be water based with inlustrated properties. Material may be in the form of caulking, putty pads or wrap strips. Materials shall be installed in accordance to manufacturers and UL standards.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 220050

SECTION 220501 - CLOSEOUT SUBMITTALS FOR PLUMBING AND MECHANICAL

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings
 - 2. Addenda
 - 3. Change Orders and other modifications to the Contract.
- B. Record information concurrent with construction progress.
- C. Record Drawings: Legibly mark each item to record actual construction including:
 - 1. Field changes of dimension and detail.
- 3.2 OPERATION AND MAINTENANCE DATA
 - A. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
 - B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
 - C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
 - D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- 3.3 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS
 - A. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
 - B. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - C. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - D. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
 - E. Include test and balancing reports.
 - F. Additional Requirements: As specified in individual product specification sections.
- 3.4 WARRANTIES AND BONDS
 - A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.

END OF SECTION 220501

SECTION 221005 - PLUMBING PIPING

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content, label pipe and fittings.
- 2.2 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET OF BUILDING
 - A. Cast Iron Pipe: ASTM A74 service weight.
 - 1. Fittings: Cast iron.
 - 2. Joints: Hub-and-spigot, CISPI HSN compression type with ASTM C564 neoprene gaskets or lead and oakum.
 - B. PVC Pipe: ASTM D2665 or ASTM D3034.
 - 1. Fittings: PVC.
 - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.
- 2.3 SANITARY SEWER PIPING, ABOVE GRADE
 - A. Cast Iron Pipe: ASTM A74, service weight.
 - 1. Fittings: Cast iron.
 - 2. Joint Seals: ASTM C564 neoprene gaskets, or lead and oakum.

B. Cast Iron Pipe: CISPI 301, hubless, service weight.

- 1. Fittings: Cast iron.
- 2. Joints: CISPI 310, neoprene gaskets and type MG stainless steel clamp-and-shield assemblies. Such rules, regulations, codes, ordinances, or laws include, but are not necessarily limited to, the following:
 - 1. State building and fire codes.
 - 2. State plumbing and mechanical codes.
 - 3. City building and fire codes.
 - 4. City plumbing and mechanical codes.
 - 5. American Gas Association.
 - 6. National Electric Code.
 - 7. National Fire Protection Association.
 - 8. Occupation Safety and Health Act.

2.5 FLANGES, UNIONS, AND COUPLINGS

- A. Unions for Pipe Sizes 3 Inches and Under:
 - 1. Ferrous pipe: Class 150 malleable iron threaded unions.
 - 2. Copper tube and pipe: Class 150 bronze unions with soldered joints.
- B. Flanges for Pipe Size Over 1 Inch:
 - 1. Ferrous Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
 - 2. Copper Tube and Pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.
- C. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.6 BALL VALVES

- A. Construction, 4 Inches and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze or ductile iron body, 304 stainless steel or chrome plated brass ball, regular port, teflon seals and stuffing box ring, blow-out proof stem, lever handle with balancing stops, threaded or grooved ends with union.

PART 3 EXECUTION

- 3.1 INSTALLATION
 - A. Install in accordance with manufacturer's instructions.
 - B. Provide non-conducting dielectric connections wherever joining dissimilar metals.
 - C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
 - D. Provide all piping offsets and fittings as required for a quality installation.
 - E. Provide access where valves and fittings are not exposed.
 - F. Establish elevations of buried piping outside the building to ensure not less than 4 ft of cover.
 - G. Install vent piping penetrating roofed areas to maintain integrity of roof assembly; refer to roofing specification.
 - H. Prepare exposed, unfinished pipe, fittings, supports, and accessories for finish painting.
 - I. Install water piping to ASME B31.9.
 - J. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.
- K. Inserts:
 - 1. Provide inserts for placement in concrete formwork.
 - 2. Where concrete slabs form finished ceiling, locate inserts with top of sleeve 1" above slab surface.
- L. Hydrostatically test water piping with 125 psi of water pressure for 24 hours.
- M. Hydrostatically test sanitary and storm drainage piping with 10 feet of water column for 30 minutes.

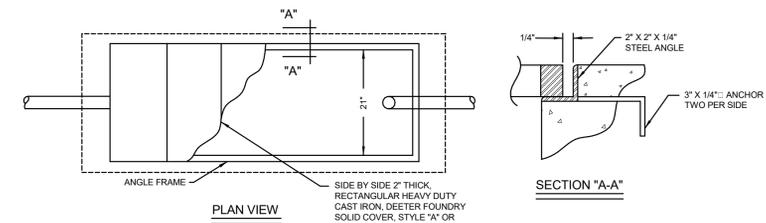
3.2 TOLERANCES

- A. Drainage Piping: Establish invert elevations within 1/2 inch vertically of location indicated and slope to drain at minimum of 1/8 inch per foot slope.
- B. Water Piping: Slope at minimum of 1/32 inch per foot and arrange to drain at low points.

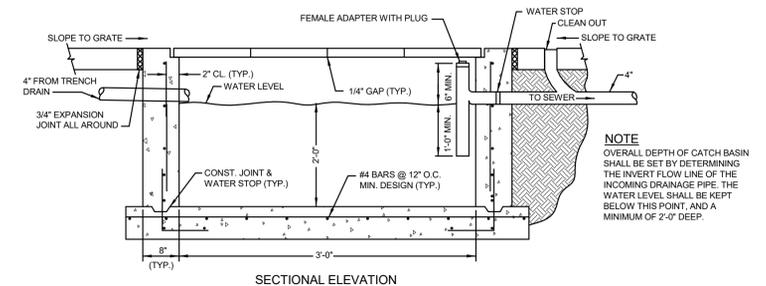
END OF SECTION 221005

PLUMBING FIXTURE SCHEDULE

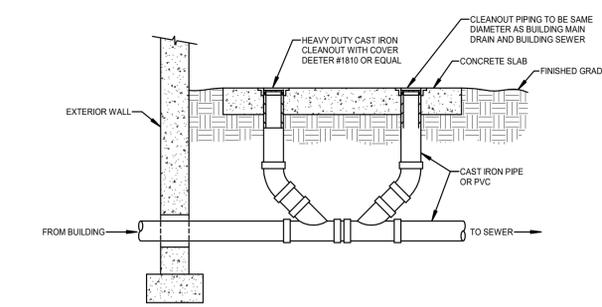
| MARK | FUNCTION | MANUFACTURER AND MODEL (OR PRIOR APPROVED EQUAL) | WASTE | VENT | CW | HW | NOTE |
|------|-------------------------|---|-------|------|------|----|-------------------|
| CO-1 | CLEAN OUT | JAY R. SMITH MODEL 4020 FOR FLOORS. CAST IRON, WITH ROUND ADJUSTABLE NICKEL BRONZE TOP. | | | | | SEE PLAN FOR SIZE |
| HB-1 | HOSE BIBB | WOODFORD MODEL 24 WITH CP INLET, CHROME PLATED, ANTI-SIPHON VACUUM BREAKER. | | | 3/4" | | SEE PLAN FOR SIZE |
| TD-1 | TRENCH DRAIN | JAY R. SMITH MODEL 8614, 6" WIDE CHANNEL SLOPE PRECAST POLYMER CONCRETE SYSTEM, 4" HORIZONTAL OUTLET, PROVIDE SMITH 8670-405-0M HEAVY DUTY GALVANIZED STEEL MESH GRATE. | | | | | SEE PLAN FOR SIZE |
| YH-1 | FREEZELESS YARD HYDRANT | WOODFORD MODEL Y06, BRASS CASTING WITH ANTI-SIPHON VACUUM BREAKER, AUTOMATIC DRAIN FEATURE, BURY DEPTH TO BE A MINIMUM OF 3'-0". | | 18" | | 1' | |



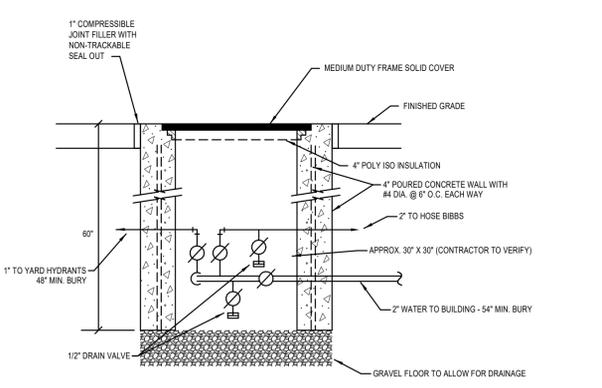
2 MUD TRAP DETAIL
NO SCALE



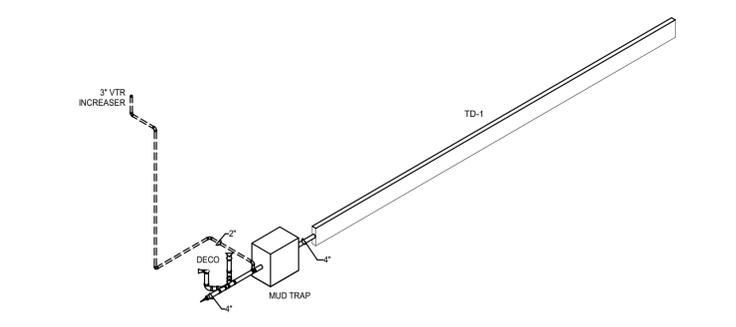
1 DOUBLE EXTERIOR CLEANOUT DETAIL
NO SCALE



3 WATER ENTRANCE PIT DETAIL
NO SCALE



4 PLUMBING RISER
NO SCALE



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 ETI Project No: 2024-042

NEW HOG/SHEEP BARN
for
MORGAN COUNTY FAIRGROUNDS

PROJECT #:

DATE: 11-26-24

DRAWN: NPS

REVISIONS

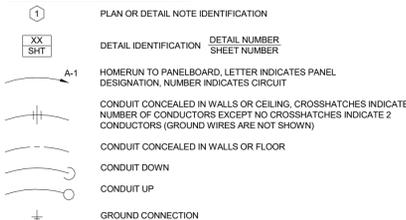
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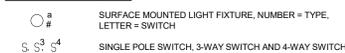


SHEET
M201

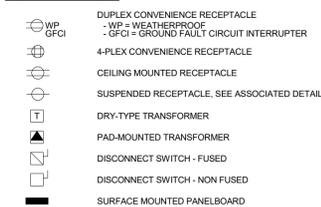
MISC. ELECTRICAL SYMBOLS



LIGHTING SYMBOLS



POWER SYMBOLS



ABBREVIATIONS

| | |
|-----------|--|
| A | AMPERES |
| AC | 4" ABOVE COUNTERTOP OR BACKSPASH TO CENTER |
| AFF | ABOVE FINISHED FLOOR |
| AWG | AMERICAN WIRE GAUGE |
| BD | BOARD |
| C | CONDUIT |
| CU | COPPER |
| E | INDICATES EXISTING TO REMAIN |
| EF | EXHAUST FAN |
| EM | EMERGENCY |
| EMT | ELECTRICAL METALLIC TUBING |
| F OR FRAC | FRACTIONAL |
| GND | GROUND |
| HZ | HERTZ |
| KVA | KILOVOLT AMPERES |
| KW | KILOWATT |
| NEC | NATIONAL ELECTRICAL CODE |
| NFPA | NATIONAL FIRE PROTECTION ASSOCIATION |
| NL | NIGHT LIGHT, CONNECT TO UNSWITCHED LIGHTING CIRCUIT |
| P | POLE |
| PART | PARTIAL CIRCUIT |
| PNL | PANELBOARD |
| PVC | POLY VINYL CHLORIDE NON-METALLIC RACEWAY, SCHEDULE 40 OR SCHEDULE 80 |
| RMC | STEEL RIGID METAL CONDUIT |
| SPDT | SINGLE POLE DOUBLE THROW |
| SPST | SINGLE POLE SINGLE THROW |
| SS | STAINLESS STEEL |
| TYP | TYPICAL |
| V | VOLTS |
| W | WATT |
| WP | INDICATES WEATHERPROOF |
| XFMR | TRANSFORMER |

ELECTRICAL SITE GENERAL NOTES

- A VERIFY THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE DIGGING, EXCAVATING, OR DIRECTIONAL BORING. REPAIR EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- B ALL UNDERGROUND CONDUIT SHALL BE 1" MINIMUM AND INSTALLED A 24" BELOW FINISHED GRADE, UNLESS OTHERWISE NOTED, WITH RED WARNING TAPE 12" ABOVE.

ELECTRICAL DEMOLITION GENERAL NOTES

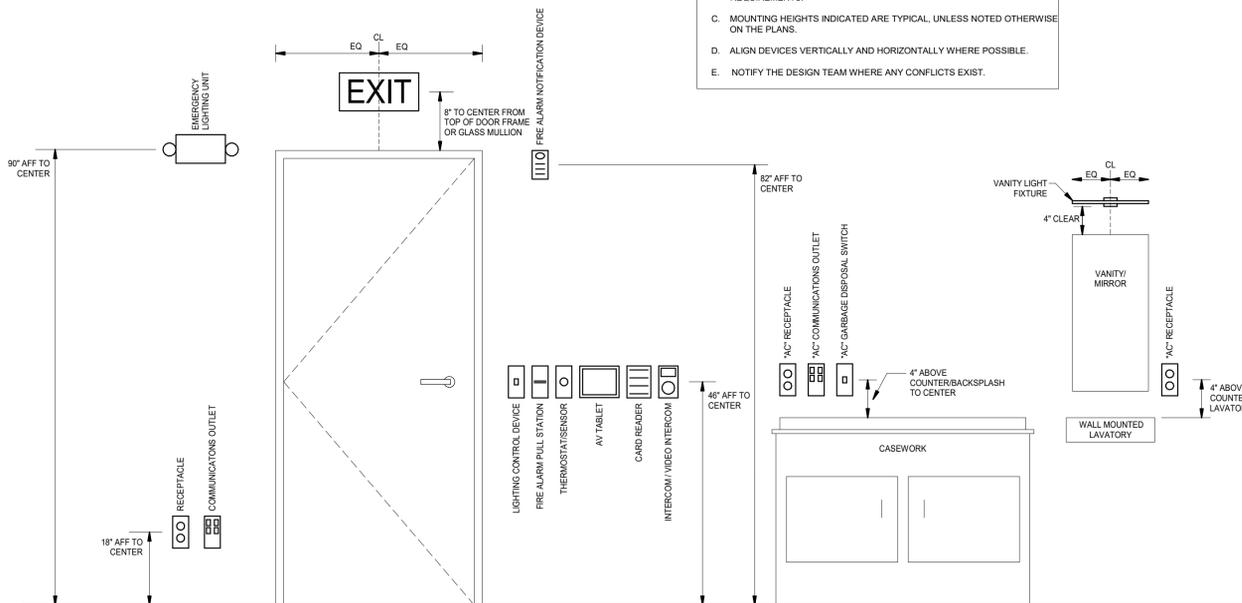
- A THESE PLANS INDICATE MAJOR ITEMS OF DEMOLITION IN THE PROJECT AND ARE NOT INTENDED TO INDICATE ALL DEMOLITION REQUIRED TO COMPLETE THE WORK. REMOVE ITEMS INDICATED ON THE DEMOLITION SHEETS AND ADDITIONAL ITEMS AS REQUIRED FOR DEMOLITION WORK. DEMOLITION SHALL BE COMPLETE INCLUDING, BUT NOT LIMITED TO, REMOVAL OF DESIGNATED EQUIPMENT AND ASSOCIATED CONDUIT, CABLES, CONDUIT, BOXES, DEVICES, MOUNTING HARDWARE, ETC. PATCH AND REPAIR WALLS AS REQUIRED TO MATCH THE ADJACENT FINISH.
- B REMOVE ALL DEVICES AND FIXTURES AND ALL ASSOCIATED WIRING AND EXPOSED CONDUIT, IN WALLS AND CEILING SPACES WHICH ARE BEING REMOVED. MAINTAIN CIRCUIT CONTINUITY FOR ALL DEVICES, EQUIPMENT, AND FIXTURES WHICH REMAIN.
- C FLUORESCENT LAMPS THAT ARE REMOVED SHALL BE BOXED AND RECYCLED IN ACCORDANCE WITH FEDERAL AND STATE ENVIRONMENTAL GUIDELINES.
- D FLUORESCENT BALLASTS THAT ARE MARKED AS "CONTAINS NO PCB'S" SHALL BE DISPOSED OF BY THIS CONTRACTOR. BALLASTS THAT CONTAIN PCB'S OR THAT ARE NOT MARKED "CONTAINS NO PCB'S" SHALL BE BOXED AND/OR PALLETIZED AND RECYCLED IN ACCORDANCE WITH FEDERAL AND STATE ENVIRONMENTAL GUIDELINES.
- E EXISTING COMMUNICATIONS, COMPUTER NETWORKING, OR OTHER SPECIAL SYSTEMS CABLES SHALL BE SECURED AND PROTECTED DURING CONSTRUCTION. ANY CABLE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER (THE ENTIRE CABLE SHALL BE REPLACED AND TESTED FOR PROPER OPERATION IN THE PRESENCE OF THE OWNER).
- F OWNER SHALL HAVE FIRST SALVAGE RIGHTS FOR ALL FIXTURES, EQUIPMENT, DEVICES, PANELS, ETC. BEING REMOVED. CONTRACTOR SHALL DISPOSE OF ALL ITEMS NOT SALVAGED BY OWNER.
- G ALL ABANDONED COMMUNICATIONS CABLING, CONDUIT/RACEWAYS, DEVICES, AND EQUIPMENT SHALL BE REMOVED. PATCH AND COVER SURFACES AS REQUIRED TO MATCH EXISTING SURFACES.

ELECTRICAL GENERAL NOTES

- A PROVIDE TEMPORARY POWER, LIGHTING, AND HEATING AS REQUIRED FOR CONSTRUCTION. COORDINATE WITH THE GENERAL CONTRACTOR AND OTHER TRADES.
- B FIRE SEAL ALL PENETRATIONS THROUGH FIRE RATED WALLS, CEILING AND FLOORS.
- C COORDINATE LOCATION OF WIRING DEVICES, TELECOM OUTLETS, FIRE ALARM DEVICES, ETC. WITH MILLWORK, TILE LAYOUT, AND OTHER WALL FINISHES PRIOR TO ROUGH-IN.
- D ALIGN ADJACENT WALL MOUNTED OUTLET BOXES FOR SWITCHES, THERMOSTATS, AND SIMILAR DEVICES. DEVICES SHALL BE ALIGNED VERTICALLY WHEN INSTALLED AT DIFFERING HEIGHTS AND INSTALL ALL ADJACENT DEVICES AT THE SAME HEIGHT TO CENTER. NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN TRADES PRIOR TO ROUGH-IN.
- E CONCEAL ALL CONDUITS IN WALL CHASES, ABOVE CEILINGS, BELOW FLOOR, OR IN ADJACENT STORAGE OR UNFINISHED SPACES, WHERE POSSIBLE. RUN EXPOSED CONDUITS VERTICALLY, WHERE POSSIBLE, TO ABOVE ACCESSIBLE CEILING, CONNECT HORIZONTALLY ABOVE CEILING.
- F PROVIDE TAMPER RESISTANT RECEPTACLES WHERE REQUIRED BY THE NEC.
- G UTILIZE EXISTING CONCEALED CONDUIT AND FLUSH MOUNTED BOXES WHERE POSSIBLE.
- H INSTALL NEW DEVICES IN EXISTING BACKBOXES WHERE POSSIBLE. REUSE CONDUITS/SURFACE RACEWAYS AS AVAILABLE. PROVIDE GANGED COVERPLATES AND/OR BLANK COVERPLATES AS REQUIRED.
- I POWER TO EXISTING AREAS NOT WITHIN THE SCOPE OF THIS PROJECT SHALL BE MAINTAINED AT ALL TIMES EXCEPT FOR SHORT TERM OUTAGES NECESSARY FOR RECONNECTION OF EXISTING CIRCUITS. COORDINATE AND SCHEDULE OUTAGES WITH THE OWNER AND GOVERNMENT.

DETAIL GENERAL NOTES

- A NOT ALL DEVICES OR CONFIGURATIONS ARE INDICATED IN THIS DETAIL. REFER TO PLANS FOR ADDITIONAL REQUIREMENTS.
- B ALL DEVICES SHALL BE LOCATED TO MAINTAIN ADA MOUNTING HEIGHT REQUIREMENTS.
- C MOUNTING HEIGHTS INDICATED ARE TYPICAL, UNLESS NOTED OTHERWISE ON THE PLANS.
- D ALIGN DEVICES VERTICALLY AND HORIZONTALLY WHERE POSSIBLE.
- E NOTIFY THE DESIGN TEAM WHERE ANY CONFLICTS EXIST.



1 TYPICAL DEVICE ALIGNMENT DETAIL
NO SCALE



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ETI Project No: 2024-042

NEW HOG/SHEEP BARN
for
MORGAN COUNTY FAIRGROUNDS

PROJECT #:

DATE: 11-26-24

DRAWN: TMR

REVISIONS

| DATE | DESCRIPTION |
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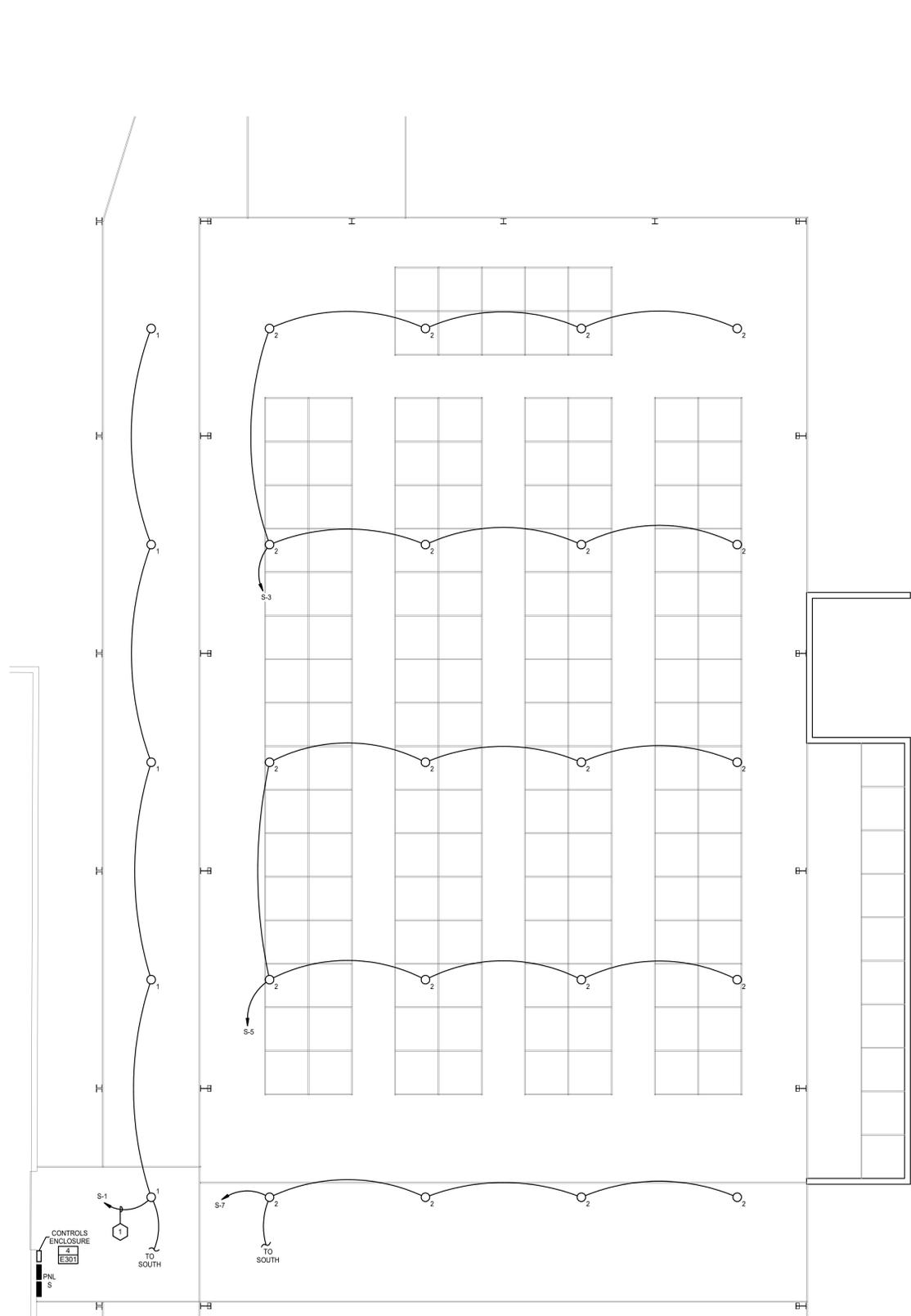
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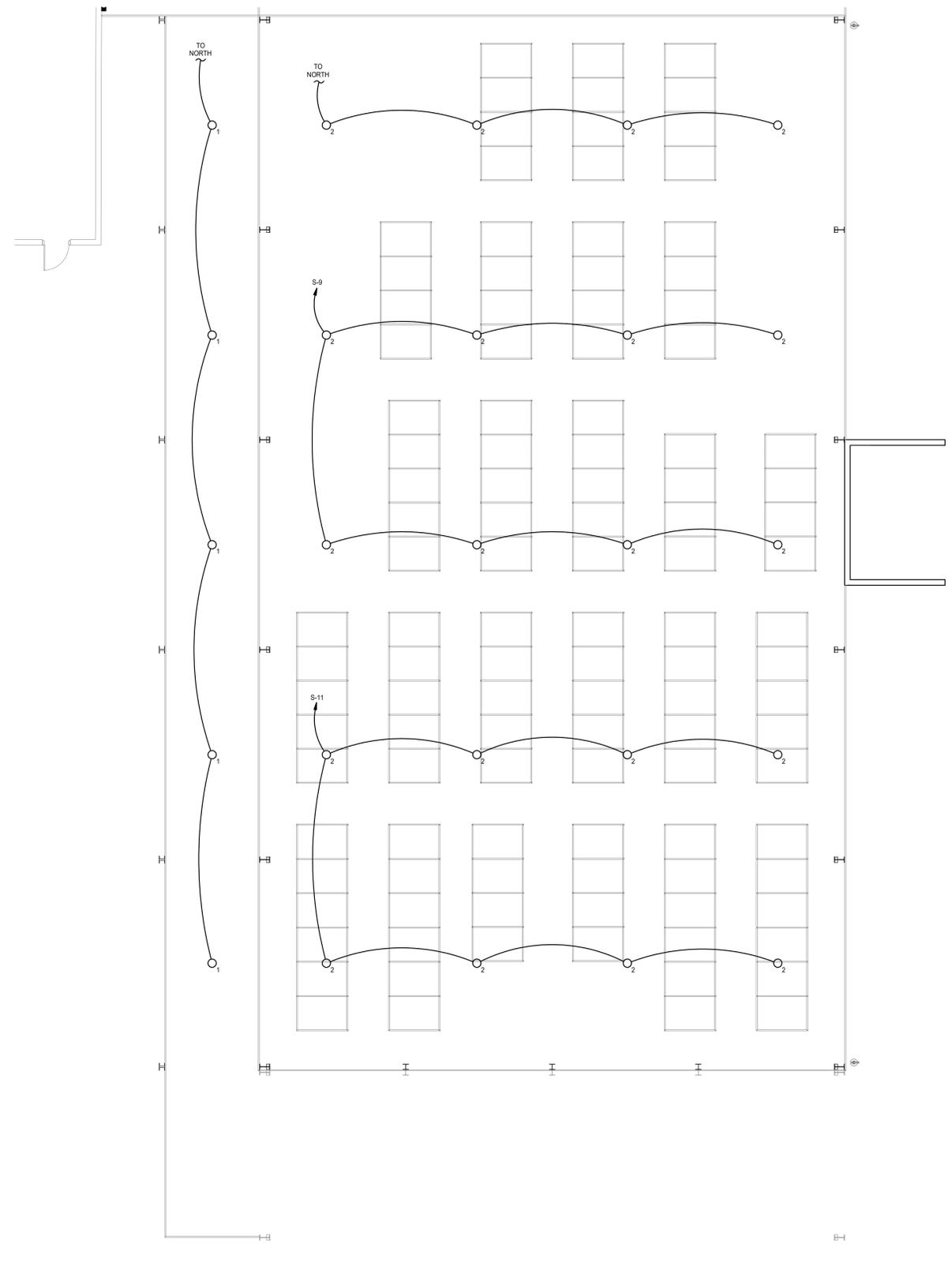
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EG000

SHEET NOTES

1 CONNECT THROUGH SWITCH IN CONTROLS ENCLOSURE. (TYPICAL)



1 LIGHTING PLAN - NORTH
1/8" = 1'-0"



2 LIGHTING PLAN - SOUTH
1/8" = 1'-0"



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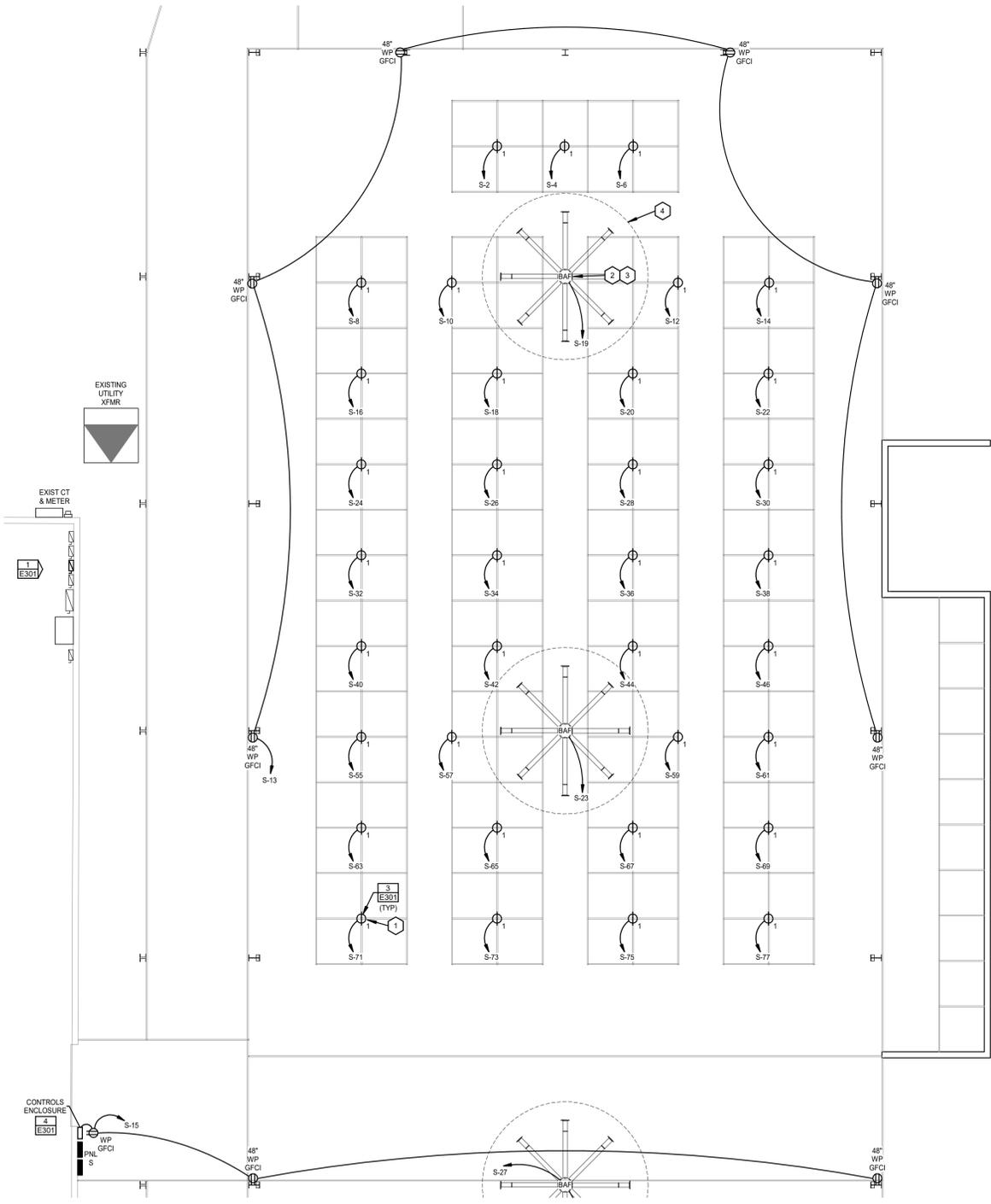
SHEET NOTES

- COORDINATE THE EXACT LOCATION OF CEILING DROP RECEPTACLE WITH FINAL PIN LAYOUT. COORDINATE WITH OWNER PRIOR TO ROUGH-IN. (TYPICAL).
- PROVIDE A 14FT DIAMETER, IP56 RATED, HIGH VELOCITY / LOW SPEED INDUSTRIAL CEILING FAN. BIG ASS FANS POWERFOIL 8 PFF6-14 SERIES. (TYPICAL).
- PROVIDE MANUFACTURER RECOMMENDED CAT 5 CABLING TO FAN. DABY CHAIN FANS PER MANUFACTURER'S INSTRUCTIONS AND CONNECT TO BAFCON CONTROLLER LOCATED IN THE CONTROLS ENCLOSURE. ALL CABLING SHALL BE INSTALLED IN CONDUIT. (TYPICAL).
- MAINTAIN REQUIRED CLEARANCE AROUND CEILING FAN. (TYPICAL).

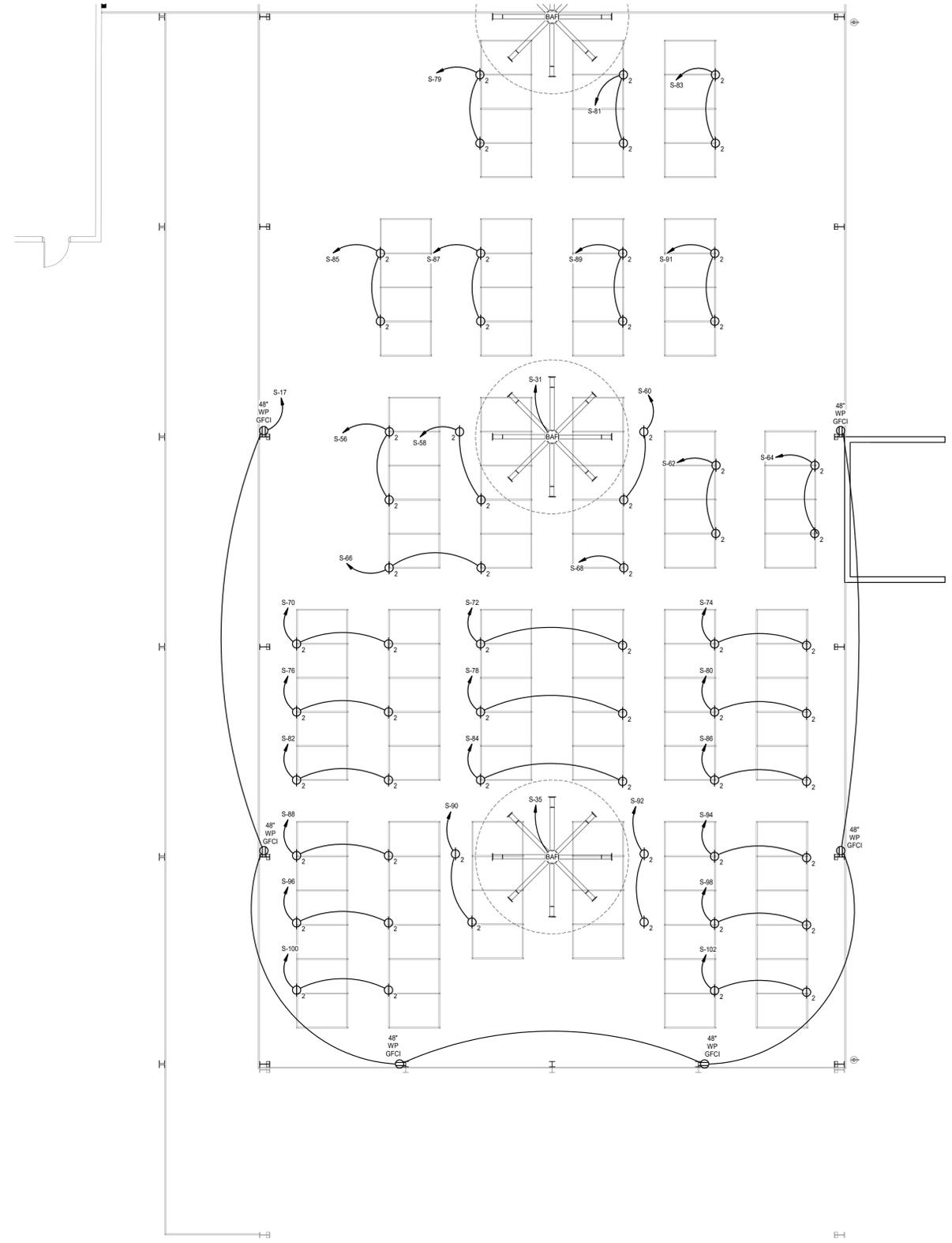
NEC 547 - AGRICULTURAL BUILDINGS:
 THE ELECTRICAL INSTALLATION THROUGHOUT THE PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF NEC 547.

PROVIDE AN EQUIPOTENTIAL PLANE (EP) THROUGHOUT THE PROJECT. THIS SHALL INCLUDE BUT NOT LIMITED TO THE FOLLOWING:
 1. BOND ALL REBAR, MESH, DRAINS, COLUMNS, AND OTHER METALLIC ELEMENTS TO THE EP WITH A #8 AWG GROUNDING CONDUCTOR.
 2. ANY TRENCH DRAINS SHALL BE BONDED TO THE EP WITH A #8 AWG GROUNDING CONDUCTOR.
 3. BOND DOORS TO DOOR FRAMES WITH A BRAIDED ALUMINUM STRAP AND BOND METAL DOOR FRAME TO THE EP WITH A #8 AWG GROUNDING CONDUCTOR.
 4. BOND AND METAL CAGING PRESENT TO THE EP WITH A #8 AWG GROUNDING CONDUCTOR.

COORDINATE WITH THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) ON ANY FURTHER REQUIREMENTS AND ANY INSPECTION REQUIREMENTS.



1 POWER PLAN - NORTH
 1/8" = 1'-0"



2 POWER PLAN - SOUTH
 1/8" = 1'-0"



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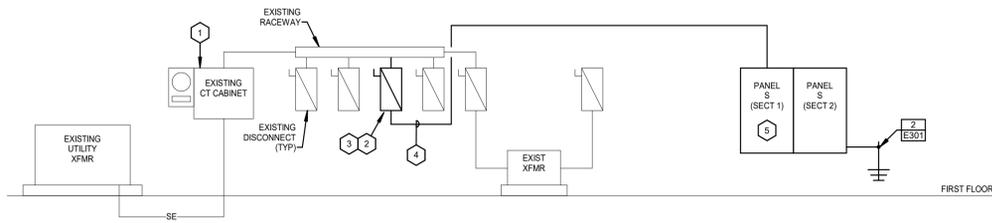
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NEW HOG/SHEEP BARN
 for
 MORGAN COUNTY FAIRGROUNDS

PROJECT #:
 DATE: 11-26-24
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| DATE | DESCRIPTION |
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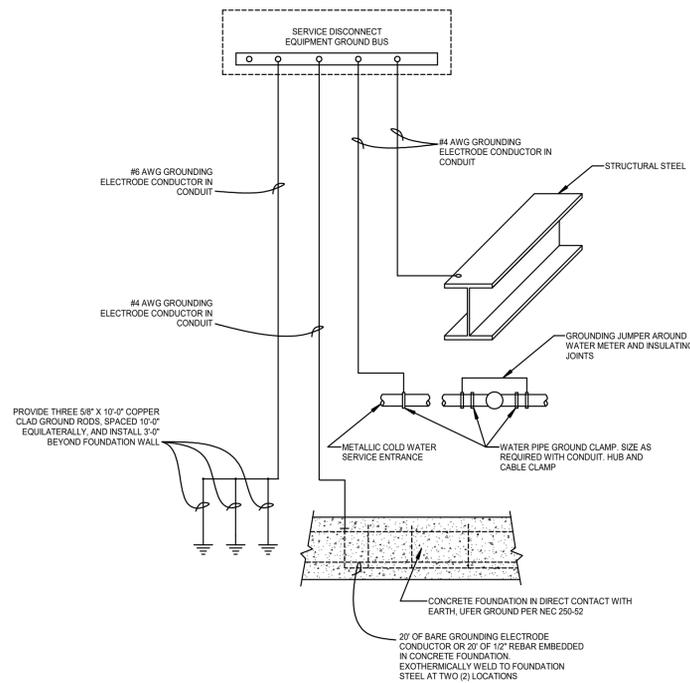
POWER RISER DIAGRAM NOTES

- 1 THIN LINES INDICATE EXISTING ITEMS TO REMAIN (TYPICAL).
- 2 REMOVE EXISTING 200A DISCONNECT SWITCH, FEEDER, AND CONDUIT THAT SERVES THE EXISTING SWINE BARN IN ITS ENTIRETY.
- 3 PROVIDE A NEW 200A, FUSIBLE DISCONNECT SWITCH TO SERVE THE NEW HOG BARN. PROVIDE LABEL NOTATING WHAT THE DISCONNECT SERVES PER NEC REQUIREMENTS.
- 4 PROVIDE 4 - #30, #6 GND IN A 2" CONDUIT.
- 5 DO NOT BOND NEUTRAL AND GROUND BUS IN THIS PANEL.

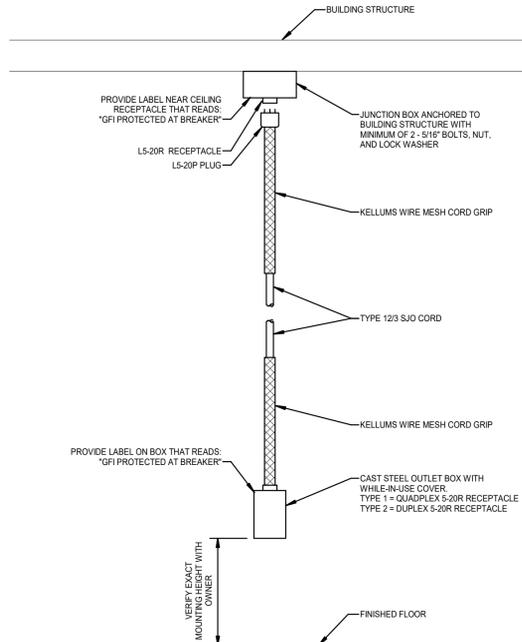
1 PARTIAL POWER RISER DIAGRAM
NO SCALE

DETAIL GENERAL NOTES

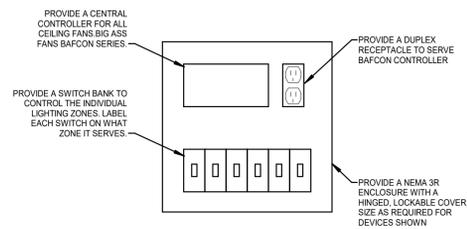
- INSTALL GROUND AND BONDING CONDUCTORS WITH SUFFICIENT SLACK TO AVOID BREAKAGE DUE TO SETTLEMENT AND MOVEMENT OF CONDUCTORS AT ATTACHED POINTS.
- GROUNDING CONDUCTORS SHALL BE UL LISTED FOR THE PURPOSE INTENDED.
- BELOW GRADE GROUNDING CONNECTIONS SHALL BE MADE BY USING EXOTHERMIC WELD PROCESS. MATERIALS USED (MOLDS, WELDING METAL, TOOLS ETC.) SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
- ABOVE GRADE GROUNDING CONNECTIONS SHALL BE MADE USING TWO HOLE CRIMP TYPE COMPRESSION CONNECTIONS. MECHANICAL CONNECTIONS, FITTINGS OR CONNECTIONS THAT DEPEND SOLELY ON SOLDER SHALL NOT BE USED.
- THE GROUNDING ELECTRODE CONDUCTOR SHALL BE RUN CONTINUOUS FROM THE GROUND BAR. IDENTIFY EACH GROUNDING ELECTRODE WITH AN IDENTIFICATION LABEL AT ITS SOURCE.



2 SERVICE GROUND BUS DETAIL
NO SCALE



3 SUSPENDED RECEPTACLE DETAIL
NO SCALE



4 CONTROLS ENCLOSURE DETAIL
NO SCALE

LIGHT FIXTURE SCHEDULE

GENERAL NOTES:
A. MOUNTING HEIGHT IS TO BOTTOM OF LIGHT FIXTURE, UNLESS OTHERWISE NOTED.
NOTES:
1. N/A

| TYPE | DESCRIPTION | LAMP | COLOR TEMP. | LUMENS | WATTS | MOUNTING | MANUFACTURER | CATALOG NUMBER | ACCEPTABLE MANUFACTURERS | NOTES |
|------|----------------------------|------|-------------|--------|-------|----------|--------------|------------------------|--------------------------|-------|
| 1 | ROUND HIGH BAY, IP65 RATED | LED | 4000K | 12,000 | 95W | SURFACE | LITHONIA | JEBL-12LM-40K-80CRI-WH | . | . |
| 2 | ROUND HIGH BAY, IP65 RATED | LED | 4000K | 18,000 | 135W | SURFACE | LITHONIA | JEBL-18LM-40K-80CRI-WH | . | . |

PANEL SCHEDULE

| PANEL S SECTION 1 | LOAD DESCRIPTION | VOLTAGE | | PHASE | | BREAKER | | LOAD | | NO. | PHASE | BREAKER | | LOAD | | NO. | PHASE | TYPE | VA | LOAD DESCRIPTION |
|-------------------|------------------|------------|----|-------|-------|---------|------|------|-------|-----|-------|---------|-------|-------------|--|-----|-------|------|----|------------------|
| | | 120 / 208V | 30 | NO. | POLES | AMPS | TYPE | NO. | POLES | | | AMPS | TYPE | | | | | | | |
| W. WALK LITG | 1,000 | L | 1 | 20 | - | 1 | A | 2 | G | 20 | 1 | X | 720 | ROW #1 DROP | | | | | | |
| N. PIN LITG | 1,080 | L | 1 | 20 | - | 3 | B | 4 | G | 20 | 1 | X | 720 | ROW #1 DROP | | | | | | |
| N. MID PIN LITG | 1,080 | L | 1 | 20 | - | 5 | C | 6 | G | 20 | 1 | X | 720 | ROW #1 DROP | | | | | | |
| MID PIN LITG | 1,080 | L | 1 | 20 | - | 7 | A | 8 | G | 20 | 1 | X | 720 | ROW #1 DROP | | | | | | |
| S. MID PIN LITG | 1,080 | L | 1 | 20 | - | 9 | B | 10 | G | 20 | 1 | X | 720 | ROW #2 DROP | | | | | | |
| S. PIN LITG | 1,080 | L | 1 | 20 | - | 11 | C | 12 | G | 20 | 1 | X | 720 | ROW #2 DROP | | | | | | |
| N. CONV. RECEPTS | 1,080 | R | 1 | 20 | - | 13 | A | 14 | G | 20 | 1 | X | 720 | ROW #2 DROP | | | | | | |
| MID CONV. RECEPTS | 540 | R | 1 | 20 | - | 15 | B | 16 | G | 20 | 1 | X | 720 | ROW #2 DROP | | | | | | |
| S. CONV. RECEPTS | 1,080 | R | 1 | 20 | - | 17 | C | 18 | G | 20 | 1 | X | 720 | ROW #3 DROP | | | | | | |
| N. BAF | 600 | X | 2 | 20 | - | 19 | A | 20 | G | 20 | 1 | X | 720 | ROW #3 DROP | | | | | | |
| S. BAF | 600 | X | 2 | 20 | - | 21 | B | 22 | G | 20 | 1 | X | 720 | ROW #3 DROP | | | | | | |
| N. MID BAF | 600 | X | 2 | 20 | - | 23 | C | 24 | G | 20 | 1 | X | 720 | ROW #4 DROP | | | | | | |
| MID BAF | 600 | X | 2 | 20 | - | 25 | A | 26 | G | 20 | 1 | X | 720 | ROW #4 DROP | | | | | | |
| S. MID BAF | 600 | X | 2 | 20 | - | 27 | B | 28 | G | 20 | 1 | X | 720 | ROW #4 DROP | | | | | | |
| S. BAF | 600 | X | 2 | 20 | - | 29 | C | 30 | G | 20 | 1 | X | 720 | ROW #5 DROP | | | | | | |
| S. BAF | 600 | X | 2 | 20 | - | 31 | A | 32 | G | 20 | 1 | X | 720 | ROW #5 DROP | | | | | | |
| S. BAF | 600 | X | 2 | 20 | - | 33 | B | 34 | G | 20 | 1 | X | 720 | ROW #5 DROP | | | | | | |
| S. BAF | 600 | X | 2 | 20 | - | 35 | C | 36 | G | 20 | 1 | X | 720 | ROW #5 DROP | | | | | | |
| S. BAF | 600 | X | 2 | 20 | - | 37 | A | 38 | G | 20 | 1 | X | 720 | ROW #5 DROP | | | | | | |
| SPARE | 1,000 | S | 1 | 20 | - | 39 | B | 40 | G | 20 | 1 | X | 720 | ROW #6 DROP | | | | | | |
| SPARE | 1,000 | S | 1 | 20 | - | 41 | C | 42 | G | 20 | 1 | X | 720 | ROW #6 DROP | | | | | | |
| SPARE | 1,000 | S | 1 | 20 | - | 43 | A | 44 | G | 20 | 1 | X | 720 | ROW #6 DROP | | | | | | |
| SPARE | 1,000 | S | 1 | 20 | - | 45 | B | 46 | G | 20 | 1 | X | 720 | ROW #6 DROP | | | | | | |
| SPACE PROVISION | - | - | 1 | 20 | - | 47 | C | 48 | G | 20 | 1 | S | 1,000 | SPARE | | | | | | |
| SPACE PROVISION | - | - | 1 | 20 | - | 49 | A | 50 | G | 20 | 1 | S | 1,000 | SPARE | | | | | | |
| SPACE PROVISION | - | - | 1 | 20 | - | 51 | B | 52 | G | 20 | 1 | S | 1,000 | SPARE | | | | | | |
| SPACE PROVISION | - | - | 1 | 20 | - | 53 | C | 54 | G | 20 | 1 | S | 1,000 | SPARE | | | | | | |



NEW HOG/SHEEP BARN
for
MORGAN COUNTY FAIRGROUNDS

PROJECT #:
DATE: 11-26-24
DRAWN: TMR

REVISIONS

| DATE | DESCRIPTION |
|------|-------------|
| | |
| | |
| | |

DIVISION 26 - ELECTRICAL
SECTION 260101 - COMMON ELECTRICAL WORK

PART 1 GENERAL

- 1.1 SCOPE
- A. This Section shall apply to all Contractors and Subcontractors that are responsible for Division 26, 27, and 28.
- B. The work covered by this Section of the Specifications consists of furnishing all labor and materials (unless otherwise specified) and in performing all operations necessary for the installation of the complete electronic and electrical system as required by terms and conditions of the Contract. The work shall also include the completion of such details of electrical work not mentioned or shown which are necessary for the successful operation of all electrical and electronic systems described on the drawings or required by these Specifications.
- C. The work in this Contract involves the installation of new work as well as work on the Site and may include demolition and renovation work. It shall be the Contractor's responsibility to visit the site so that he may ascertain all existing conditions which may affect the work under his Contract. No additional compensation will be granted for additional work required by this Contractor for his failure to visit the jobsite and determine existing conditions. This Contractor shall provide all labor and materials required to complete the work described in the Plans and Specifications and as may be required for a ready to operate installation.
- D. Generally the removal and repairing of existing floors, walls, ceilings, etc., in the remodeled areas where required for the installation of conduit, lights, panels, etc., shall be provided by the General Contractor under the direction of this Contractor. Holes required through floors, walls, and roof of the building shall be provided by this Contractor. If specifically shown to be done by this Contractor, this Contractor shall include in his Contract price the removal and replacement of general construction materials as required.

1.2 DRAWINGS

- A. The drawings which constitute a part of this Contract include the general arrangement of circuits and outlets, locations of switches, panelboards, and other work. The Drawings and Specifications are complementary each to the other, and what is called for by one shall be binding as if called for by both. Data presented on these drawings are as accurate as planning can determine, but accuracy is not guaranteed and field verification of all dimensions, locations, levels, etc., to suit field conditions is required. Review all Design Team's, Structural, and Mechanical Plans and adjust all work to conform to all conditions shown thereon. The Design Team's Drawings shall take precedence over all other drawings as to dimensions.

1.3 CONFLICTS

- A. Any conflict noted between (1) the Drawings, (2) Specifications, or (3) Drawings and Specifications; or (4) between Plans and Codes or Ordinances or (5) between the Plans or Specifications and Manufacturer's installation recommendations shall be immediately brought to the attention of the Design Team for clarification. If conflicts are discovered prior to bidding and there is not sufficient time to obtain a clarification from the Design Team prior to bidding, the Contractor shall bid the larger quantity or better quality of work. All conflicts shall be brought to the attention of the Design Team when discovered and before installation.
- B. Contractor shall be responsible to field measure and confirm mounting heights and locations of electrical equipment with respect to counters, radiation, etc. Do not scale distances off the Electrical Plans. Use actual building dimensions from the Design Team Drawings.

1.4 WORK IN EXISTING BUILDINGS

- A. All work in existing buildings, indicated on the drawings or specified herein, shall be executed with a minimum amount of interference with the normal activities of the occupants of the building. No services or utilities shall be interrupted without previous scheduling time of the same with the Owner and receipt of his approval. Changing of the electrical system, telephone system, and other major events shall be arranged and be agreeable with the Owner to length and time of downtime. All work shall be scheduled in advance with the Owner and shall not proceed without the Owner's written approval.
- B. The Owner shall be notified before starting to weld or cut. Fire extinguishers shall be immediately accessible when welding or cutting with an open flame or arc. Welding or cutting with an open flame or arc must be stopped in a timely fashion before leaving premises.
- C. Noisy operations such as those involving use of air hammers, etc., in demolition, or cutting of openings shall be scheduled with the Owner.
- D. Typically, the Owner will continue to occupy the building and carry on normal activity. Each Contractor shall protect the occupied areas from dust, smoke, etc., by a method approved by the Owner/Design Team.

1.5 EXAMINATION OF SITE

- A. Prior to submitting a bid, this Contractor shall visit the site of the job and ascertain all conditions affecting the proposed electrical installation and make provisions as to the cost thereof. No additional compensation will be granted for additional work required by this Contractor for failure to visit jobsite and determine existing conditions. The Contractor shall verify location and size of existing systems that are to be connected to, routed around, or extended from.
- B. The Contractor shall verify with the City and Utility Companies, and Owner, etc., the location of any existing overhead or buried utilities on or near the site. The Contractor shall verify requirements for connecting into existing utilities with the City and Utility Company, and Owner and connect into as required. Failure to determine existing conditions or the nature of new connections will not be considered a basis for the granting of additional compensation.

1.6 PRIOR APPROVAL

- A. The Contractor's attention is directed to the requirement of "prior approval" for materials to be supplied in this project if they are not specifically designated as a specified manufacturer or approved equal.
- B. Prior approval requires that literature be submitted to the Design Team a minimum of ten (10) days prior to the bidding date. This submitted material shall be informative enough to allow the Engineer to give approval. This approval is a tentative approval and does not imply anything but approval to bid.

1.7 SHOP DRAWINGS

- A. The Contractor shall submit five (5) copies of Shop Drawings and Product Data to the Design Team/Engineer for approval or submit digital information on a Submittal Exchange or other approved digital documentation system. Stamp, Date, and Sign each submittal to indicate submittal is in conformance with requirements of the Contract Documents. Shop Drawings shall be submitted for the following items:
1. Wiring Devices and Cover Plates
 2. Luminaires
 3. Enclosed Switches
 4. Panelboard

1.8 USE OF OTHER THAN SPECIFIED EQUIPMENT

- A. All equipment shown on the drawing shall be specified equipment. If the Contractor uses different approved equipment than what was specified, all additional work or components required to make an operable system shall be made without additional cost to the Owner. The Contractor shall be held responsible for selecting different approved equipment so that equipment will fit into the available space provided for the specified equipment.

1.9 PERMITS AND LICENSES

- A. Obtain and pay all permits and licenses required and furnish the Design Team for the Owner a certificate of final inspection and approval from the Local Authority having jurisdiction over this electrical installation.

1.10 WARRANTY

- A. The entire electrical system installed under this Contract shall be left in proper working order. Replace, without additional charge, any work or material (except materials not furnished by the Electrical Contractor) which develops defects from ordinary wear and tear within one (1) year from the date of acceptance, or provide a replacement, as specified. All new material and equipment shall be warranted against defects in composition, design, or workmanship. Lamps shall be warranted for their published life. Warranty certificates shall be furnished on special equipment.

1.11 PROGRESS OF WORK AND DOWNTIME

- A. Order the progress of the electrical work so as to conform to the progress of the work as scheduled in the Specifications and complete the entire installation as soon as the condition of the building will permit. Any cost resulting from defective or ill-timed work performed under this Section shall be borne by this Contractor.
- B. As much of this building may be occupied when construction is ongoing it will be of prime importance to coordinate downtime of electrical systems with the Owner. Changing of the electrical entrance and other major events shall be arranged and be agreeable with the Owner to length and time of downtime.

1.12 COORDINATION

- A. The Contractor shall confirm dimensions noted and locations of General and Mechanical Contractor's equipment as well as equipment to be furnished by the Owner. Verify all equipment and motor sizes, voltage and connection requirements for equipment furnished by others and wired under this Contract before roughing-in, and provide proper branch connections as recommended by equipment manufacturers. Coordinate with the other contractors to avoid interference with ductwork, structural members, girdes, cabinetwork, etc. Motors shall not be connected to utility verification has been made that motor running protection exists.
- B. Where the drawings indicate fixtures and equipment which are to be furnished by others (or Owner) and which require connections to the electrical systems, the Electrical Contractor shall furnish and install all rough-in of conduit, boxes, conductors, disconnect switches, plugs with gignals, receptacles, etc., which are required for the final connections and required connections shall be determined from the equipment itself or from the equipment manufacturer's shop drawings. Final connections to the equipment shall be made by this Contractor.

1.13 CUTTING AND PATCHING

- A. Each Contractor shall be responsible for all cutting and patching required for this work. Carefully lay out all work in advance and where cutting, channeling, chasing, or drilling of buildings surfaces is necessary for the proper installation of electrical equipment, carefully perform this work in a manner approved by the Design Team. Patching shall be done in a neat workmanlike manner by craftsmen skilled in the trade involved and shall be repaired to receive paint. Damaged surfaces shall be repaired at no cost to the Owner. Concrete walls shall be cut out with rotary type drilling tools. Openings through floors and walls may be drilled up to 1" but shall be covered over 1". Electrical equipment shall not be cut with torches, and shall be joined only by bolting (i.e., do not weld wireways to panels, etc.).

1.14 INDUSTRY STANDARDS AND CODES

- A. The complete installation shall comply with the applicable Local and State wiring ordinances, with the regulations of the latest edition of the National Electrical Code and the National Fire Protection Association (supplements and official interpretations included) and with the requirements of the Power, Television, and Telephone Companies furnishing service to this installation. The drawings and specifications take precedence when they are more stringent than codes, ordinances, or statutes in effect, and vice versa.
- B. All work shall be in accordance with State and Local Codes and requirements of Local Utilities. Where the applicable Building Codes and the drawings or specifications do not agree, the code shall take precedence, but only in those instances where what is shown on the drawings or required by the specifications violates the code. Where there is a Code or Utility Company requirement and drawing or specification discrepancy the Code shall have precedence only when it is more stringent than the item specified or shown on the drawings. Items that are allowable by the Local Building Codes, which are less stringent

- than that required by the specifications or the drawings the less stringent work, shall not be substituted.
- 1.15 RESPONSIBILITY OF THE CONTRACTOR
- A. The Contractor and his journeymen shall have Electrical Licenses, as required by the City and State in which work is being performed, and shall provide journeymen to work as superintendents and/or foremen on the project. All workmen shall be skilled in their trade or working under someone who is skilled in the trade and responsible for the work involved.
- B. The Contractor shall be totally responsible for his portion of the work from the date of his Contract until final acceptance of the building by the Owner, and must repair all damage sustained without cost to the Owner regardless of cause. The Contractor shall use proper care and diligence in bracing and securing all parts of the work against the elements and shall, in all cases, judge as to the amount of protection required. Proper storage of material shall be maintained at all times.

1.16 TEMPORARY POWER AND LIGHTING

- A. The Electrical Contractor shall provide electrical wiring and light fixtures for temporary power, heating, and lighting in construction areas.
- 1.17 FIRE AND SMOKE STOPPAGE
- A. It shall be the responsibility of this Contractor to maintain the fire and smoke integrity of all walls, ceilings, floors, etc., through which his work passes through or into. Fire and smoke barriers shall be provided in and around as required by Codes.
- B. Where holes are required to be patched, or conduit, piping, ducts, etc., are required to be patched around, it shall be filled with a material that is UL Classified Standard 1479 for this use and Factory Mutual Systems approved.

1.18 ACCESS TO EQUIPMENT

- A. All control devices, specialties, pull boxes, disconnect switches, and similar equipment shall be so located as to provide for easy access for operation, repair and maintenance. Access shall conform to Local Electric Codes. Access doors shall be provided if devices are concealed.

1.19 TESTS

- A. At the completion of his work, the Contractor shall perform the following tests in the presence of the Design Team:
1. Test for short circuits and grounds.
 2. Test to prove correct operation of all equipment, including lighting control systems.
 3. Check for balance of load on phases, and connect load to balance as closely as possible. Should the Power Company desire any unfavorable conditions or reactions on the service, the Contractor shall make changes as may be suggested to properly balance the load.

1.20 CLEAN-UP

- A. The Contractor shall remove all rubbish and debris resulting from his work daily and shall leave equipment that he installed clean and ready for operation.

1.21 QUALITY ASSURANCE

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless specifically indicated to be excluded, provide all required conduit, wiring, connectors, hardware, components, accessories, etc., as recommended by the manufacturer(s) and as required for a complete and operating system(s).
- C. Install products in accordance with manufacturer's instructions.
- D. Perform work in accordance with NECA 1 (general workmanship).
- E. Clean exposed surfaces to remove dirt, paint, or other foreign materials. Restore factory finishes, where applicable.
- F. Correct wiring deficiencies and replace damaged or defective items as a result of demolition or new work.
- G. Comply with requirements of NFPA 70.
- H. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.
- I. Receive, inspect, handle, and store products in accordance with manufacturer's instructions and NEMA VE 2.
- J. Handle products carefully to avoid damage to finish.
- K. Install devices and equipment plumb and level.

1.22 RECORD DRAWINGS

- A. Maintain a clean, undamaged set of whiteprints of Contract Drawings. Mark the set to show the actual installation where the installation varies from the work as originally shown. Mark whichever drawing is most complete of showing conditions fully and accurately, where Shop Drawings are used, record a cross-reference to the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
- B. Mark record sets with red erasable pencil, use other colors to distinguish between variations in separate categories of the work.
- C. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
- D. Note related Change Order numbers where applicable.
- E. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable legends, labels, and utility identification on the cover of each set.
- F. Turn Record Drawings over to the Owner with the Operation and Maintenance Manuals.

END OF SECTION 260101

SECTION 260505 - DEMOLITION FOR ELECTRICAL

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

- 3.1 EXAMINATION
- A. Verify that abandoned wiring and equipment serve only abandoned functions.
- B. Demolition drawings are based on casual field observation and existing record documents.
- C. Report discrepancies to Engineer before disturbing existing installation.
- D. Beginning of demolition means installer accepts existing conditions.
- 3.2 PREPARATION
- A. Disconnect electrical systems in walls, floors, and ceilings to be removed.
- B. Coordinate utility service outages with utility company.
- C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- D. Existing Electrical Service: Maintain existing system in service. Disable system only to make switchovers and connections. Minimize service duration.
1. Obtain permission from Owner at least 24 hours before partially or completely disabling system.
 2. Make temporary connections to maintain service in areas adjacent to work area.
- 3.3 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK
- A. Perform work for removal and disposal of equipment and materials containing toxic substances regulated under the Federal Toxic Substances Control Act (TSCA) in accordance with applicable federal, state, and local regulations. Applicable equipment and materials include, but are not limited to:
1. PCB-containing electrical equipment, including transformers, capacitors, and switches.
 2. PCB- and DEHP-containing lighting ballasts.
 3. Mercury-containing lamps and tubes, including fluorescent lamps, high intensity discharge (HID), arc lamps, ultra-violet, high pressure sodium, mercury vapor, igniton tubes, neon, and incandescent.
- B. Remove, relocate, and extend existing installations to accommodate new construction.
- C. Remove abandoned wiring to source of supply.
- D. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
- E. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.
- F. Disconnect and remove abandoned panelboards and distribution equipment.
- G. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
- H. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.
- I. Repair adjacent construction and finishes damaged during demolition and extension work.
- J. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

END OF SECTION 260505

SECTION 260529 - CONDUCTORS AND CABLES

PART 1 GENERAL

1.1 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.

PART 2 PRODUCTS

- 2.1 CONDUCTOR AND CABLE APPLICATIONS
- A. Provide single conductor building wire installed in suitable raceway unless otherwise indicated.
- B. Nonmetallic-sheathed cable is not permitted.
- C. Underground feeder and branch-circuit cable is not permitted.
- D. Service entrance cable is not permitted.
- E. Armored cable is not permitted.
- F. Metal-clad cable is not permitted.
- 2.2 CONDUCTOR AND CABLE GENERAL REQUIREMENTS
- A. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- B. Conductors and Cables Installed Exposed in Spaces Used for Environmental Air (only where specifically permitted). Plenum rated, listed and labeled as suitable for use in return air plenums.

- C. Conductor Material:
1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
- D. Minimum Conductor Size:
1. Branch Circuits: 12 AWG.
 - a. Exceptions:
 - 1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
 - 2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
 - 3) 20 A, 277 V circuits longer than 150 feet: 10 AWG, for voltage drop.
 2. Control Circuits: 14 AWG.
- E. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

- F. Conductor Color Coding:
1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
 2. Color Coding Method: Integrally colored insulation.
 - a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
 3. Color Code:
 - a. 208Y/120 V, 3 Phase, 4 Wire System:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - 4) Neutral/Ground: White.
 - b. Equipment Ground, All Systems: Green.
- G. Traverses for 3-Way and 4-Way Switching: Purple.

2.3 SINGLE CONDUCTOR BUILDING WIRE

- A. Conductor Stranding:
1. Feeders and Branch Circuits:
 - a. Size 10 AWG and Smaller: Solid.
 - b. Size 8 AWG and Larger: Stranded.
 2. Control Circuits: Stranded.
- B. Insulation Voltage Rating: 600 V.
- C. Insulation:
 1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
 - a. Size 4 AWG and Larger: Type XHHW-2.
 - b. Installed Underground: Type XHHW-2.

2.4 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Wiring Connectors for Splices and Taps:
 1. Copper Conductors Size 8 AWG and Smaller: Use twist-insulated spring connectors.
 2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors or compression connectors.
- C. Wiring Connectors for Terminations:
 1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
 2. Provide compression adapters for connecting conductors to equipment furnished with mechanical lugs when only one-hole or two-hole type, steel.
 3. Copper Conductors Size 8 AWG and Larger: Use mechanical connectors or compression connectors where connectors are required.
 4. Conductors for Control Circuits: Use crimped terminals for all connections.
- D. Do not use insulation-piercing or insulation-displacement connectors designed for use with conductors without stripping insulation.
- E. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.
- F. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
- G. Mechanical Connectors: Provide bolted type or set-screw type.
- H. Compression Connectors: Provide circumferential type or hex type crimp configuration.
- I. Crimped Terminals: Nylon-insulated, with insulation grip and terminal configuration suitable for connection to be made.

PART 3 EXECUTION

- 3.1 INSTALLATION
- A. Circulating Requirements:
 1. Unless dimensioned, circuit routing indicated is diagrammatic.
 2. When circuit destination is indicated without specific routing, determine exact routing required.
 3. Circuitous adjustment: Unless otherwise indicated, when branch circuits are indicated as separate, combining them together in a single raceway is permitted, under the following conditions:
 - a. Provide no more than six current-carrying conductors in a single raceway. Dedicated neutral conductors are considered current-carrying conductors.
 - b. Increase size of raceways as required to account for ampacity derating.
 - c. Size raceways, boxes, etc. to accommodate conductors.
 4. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among up to three single phase branch circuits installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
- B. Installation in Raceway:
 1. Pull all conductors and cables together into raceway at same time.
 2. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
 3. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- C. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
1. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conductors and cables to lay on ceiling tiles.
- D. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to uninsulated conductors.
- E. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.
- F. Install freestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 078400.
- G. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.1 GROUNDING AND BONDING REQUIREMENTS

- A. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- B. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- C. Grounding Electrode System:
 1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
 - a. Provide continuous grounding electrode conductors without splice or joint.
 - b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.
 2. Service-Supplied System Grounding:
 1. For each service disconnect, provide grounding electrode conductor to connect neutral (grounded) service conductor to grounding electrode system. Unless otherwise indicated, make connection at neutral (grounded) bus in service disconnect enclosure.
 2. For each service disconnect, provide main bonding jumper to connect neutral (grounded) bus to equipment ground bus where not factory-installed. Do not make any other connections between neutral (grounded) conductors and ground on load side of service disconnect.
- D. All metallic meter enclosures, CT Cabinets, and metallic conduit shall be bonded to the system per the NEC, see Article 250.5.

2.2 CONDUIT - GENERAL REQUIREMENTS

- A. Make grounding and bonding connections using specified connectors.
1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.1 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
 1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
 2. Where support and attachment components and types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported with a minimum safety factor of 1.25. Include consideration for vibration, equipment operation, and shock loads.
 3. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
 4. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
 - a. Conduit Straps: One-hole or two-hole type, steel.
 - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel or stainless steel unless otherwise indicated.
 5. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
 6. Anchors and Fasteners:
 1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
 2. Concrete: Use precast concrete inserts, expansion anchors, or screw anchors.
 3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
 4. Hollow Masonry: Use toggle bolts.
 5. Hollow Stud Walls: Use toggle bolts.
 6. Steel: Use beam clamps, machine bolts, or welded threaded studs.
 7. Sheet Metal: Use sheet metal screws.
 8. Wood: Use wood screws.
 9. Plastic and metal anchors are not permitted.
 10. Powder-actuated fasteners are not permitted.
 11. Hammer-driven anchors and fasteners are not permitted.
 12. Pre-stressed Concrete Inserts: Continuous metal channel (strut) and spot inserts specifically designed to be cast in concrete ceiling walls, and floors.
 13. Post-Installed Concrete and Masonry Anchors: Evaluated and recognized by ICC Evaluation Service, LLC (ICC-ES) for compliance with applicable building code.

3.1 INSTALLATION

- A. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- B. Equipment Support and Attachment:
 1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
 2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
 3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
 4. Unless otherwise indicated, mount equipment on properly sized 3 inch high concrete pad constructed in accordance with Section 033000.
 5. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.

END OF SECTION 260529

SECTION 260533 - CONDUIT

PART 1 GENERAL

1.1 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 1. Coordinate minimum sizes of conduits with actual type and quantity of conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 2. Coordinate arrangement of conduits with structural members, ductwork, piping, equipment, and other potential conflicts.
 3. Coordinate work to provide roof penetrations that preserve integrity of roofing system and do not void roof warranty.

PART 2 PRODUCTS

2.1 CONDUIT APPLICATIONS

- A. Unless otherwise indicated and where not otherwise restricted, use conduit types indicated for specified applications. Where more than one conduit type is indicated, use conduit with most restrictive requirements. Where conduit type for particular application is not specified, use galvanized steel rigid metal conduit.
- B. Underground:
 1. Under Slab on Grade: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), galvanized steel electrical metallic tubing (EMT), or rigid PVC conduit.
 2. Exterior, Direct-Buried: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), galvanized steel electrical metallic tubing (EMT), rigid PVC conduit, or high-density polyethylene (HDPE) conduit.
 3. Where rigid polyvinyl (PVC) conduit is provided, transition to galvanized steel rigid metal conduit below grade where emerging from underground.
 4. Where rigid polyvinyl (PVC) conduit larger than 2 inch (53 mm) trade size is provided, use galvanized steel rigid metal conduit elbows or PVC-coated galvanized steel rigid metal conduit elbows for bends.
 5. Where galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or rigid polyvinyl chloride (PVC) conduit is used, use corrosion protection tape, factory-applied corrosion protection coating, or field-applied corrosion protection compound acceptable to authorities having jurisdiction to provide supplementary corrosion protection for minimum of 4 inches on either side of where conduit emerges.
- C. Embedded Within Concrete:
 1. Under Slab on Grade: Not permitted.
 2. Concealed Within Masonry Walls: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- E. Concealed Within Hollow Stud Walls: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- F. Concealed Above Accessible Ceilings: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- G. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- H. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- I. Exposed, Exterior, Not Subject to Severe Physical Damage: Use galvanized steel rigid metal conduit (RMC) or galvanized steel intermediate metal conduit (IMC).
- J. Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit.
1. Maximum Length: 6 feet.
- K. Flexible Connections to Vibrating Equipment:
 1. Dry Locations: Use flexible metal conduit (FMC).
 2. Damp, Wet, or Corrosive Locations: Use liquid-tight flexible metal conduit.
 3. Maximum Length: 6 feet unless otherwise indicated.
- L. Fished in Existing Walls, Where Necessary: Use flexible metal conduit (FMC), galvanized steel electrical metallic tubing (EMT), or stainless steel electrical metallic tubing (EMT).

2.2 CONDUIT - GENERAL REQUIREMENTS

3. Provide bonding for interior metal piping systems in accordance with NFPA 70. This includes, but is not limited to:
- a. Metal water piping where not already effectively bonded to metal underground water pipe used as grounding electrode.
 - b. Metal gas piping.
- 2.2 GROUNDING AND BONDING COMPONENTS
- A. Conductors for Grounding and Bonding, in Addition to Requirements of Section 260526:
 1. Use insulated copper conductors unless otherwise indicated.
 - a. Exceptions:
 - 1) Use bare copper conductors where installed underground in direct contact with earth.
 - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- B. Connectors for Grounding and Bonding:
 1. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
 2. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Make grounding and bonding connections using specified connectors.
1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- END OF SECTION 260526

SECTION 260533 - CONDUIT

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.1 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
 1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
 2. Where support and attachment components and types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported with a minimum safety factor of 1.25. Include consideration for vibration, equipment operation, and shock loads.
 3. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
 4. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
 - a. Conduit Straps: One-hole or two-hole type, steel.
 - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel or stainless steel unless otherwise indicated.
 5. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
 6. Anchors and Fasteners:
 1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
 2. Concrete: Use precast concrete inserts, expansion anchors, or screw anchors.
 3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
 4. Hollow Masonry: Use toggle bolts.
 5. Hollow Stud Walls: Use toggle bolts.
 6. Steel: Use beam clamps, machine bolts, or welded threaded studs.
 7. Sheet Metal: Use sheet metal screws.
 8. Wood: Use wood screws.
 9. Plastic and metal anchors are not permitted.
 10. Powder-actuated fasteners are not permitted.
 11. Hammer-driven anchors and fasteners are not permitted.
 12. Pre-stressed Concrete Inserts: Continuous metal channel (strut) and spot inserts specifically designed to be cast in concrete ceiling walls, and floors.

- I. Provide pull string in each empty conduit and in conduits where conductors and cables are to be installed by others. Leave minimum slack of 12 inches at each end.
- J. Install no more than equivalent of four 90 degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use hydraulic one shot bender to fabricate bends in metal conduit larger than 1 1/4 inch size.

3.2 PROTECTION

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

END OF SECTION 260533

SECTION 260535 - BOXES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.1 BOXES

- A. General Requirements:
 1. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
 2. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
 3. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
 2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
 3. Use cast iron boxes or cast aluminum boxes where exposed galvanized steel rigid metal conduit or exposed intermediate metal conduit (IMC) is used.
 4. Use suitable concrete type boxes where flush-mounted in concrete.
 5. Use suitable masonry type boxes where flush-mounted in masonry walls.
 6. Use raised covers suitable for the type of wall construction and device configuration where required.
 7. Use shallow boxes where required by the type of wall construction.
 8. Do not use "through-wall" boxes designed for access from both sides of wall.
 9. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
 10. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
11. Minimum Box Size, Unless Otherwise Indicated:
 - a. Wiring Devices: 4 inch square by 2-1/8 inch deep (100 by 54 mm) trade size.
 - b. Communications Systems Outlets: 4 inch square by 2-1/8 inch (100 by 54 mm) trade size.
 - c. Communications Systems Outlets for CAT 6A or HDMI cable: 4-1/16 inch square by 2-1/8 inch trade size.
 - d. Ceiling Outlets: 4 inch octagonal or square by 2-1/8 inch deep (100 by 54 mm) trade size.
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
 1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
 2. NEMA 250 Environment Type, Unless Otherwise Indicated:
 - a. Indoor Clean, Dry Locations: Type 1, painted steel.
 - b. Outdoor Locations: Type 3R, painted steel.
 3. Junction and Pull Boxes Larger Than 100 cubic inches:
 - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
- D. Underground Boxes/Enclosures:
 1. Description: In-ground, open bottom boxes furnished with flush, non-skid covers with legend indicating type of service and stainless steel tamper resistant cover bolts.
 2. Provide logo on cover to indicate type of service.
 3. Applications:
 - a. Do not use polymer concrete enclosures in areas subject to deliberate vehicular traffic.
 4. Polymer Concrete Underground Boxes/Enclosures: Comply with SCTE 77.
 - a. Combination fiberglass/polymer concrete boxes/enclosures are acceptable.

PART 3 EXECUTION

- 3.1 INSTALLATION
 - A. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.
 - B. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.
- C. Box Locations:
 1. Unless dimensioned, box locations indicated are approximate.
 2. Locate boxes as required for devices installed under other sections or by others.
 3. Locate boxes so that wall plates do not span different building finishes.
 4. Locate boxes so that wall plates do not cross masonry joints.
 5. Unless otherwise indicated, where multiple outlet boxes are installed at the same location at different mounting heights, install along a common vertical center line.
 6. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches horizontal separation unless otherwise indicated.
 7. Acoustic-Rated Walls: Do not install flush-mounted boxes on opposite sides of walls back-to-back; provide minimum 24 inches horizontal separation.
 8. Fire Resistance Rated Walls: Install flush-mounted boxes such that the required fire resistance will not be reduced.
 - a. Do not install flush-mounted boxes on opposite sides of walls back-to-back; provide minimum 24 inches separation where wall is constructed with individual noncommunicating stud cavities or protect both boxes with listed putty pads.
 - b. Do not install flush-mounted boxes with area larger than 16 square inches or such that the total aggregate area of openings exceeds 100 square inches for any 100 square feet of wall area.
 9. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 260533.
- D. Box Supports:
 1. Secure and support boxes in accordance with NFPA 70 and Section 260529 using suitable supports and methods approved by the authority having jurisdiction.
- E. Install boxes plumb and level.
- F. Flush-Mounted Boxes:
 1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch or does not project beyond finished surface.
- G. Underground Boxes/Enclosures:
 1. Install enclosure on gravel base, minimum 6 inches deep.
 2. Mount enclosures located in landscaped areas with top at 1 inch above finished grade.
- H. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- I. Install freestanding to preserve fire resistance rating of partitions and other elements.
- J. Close unused box openings.
- K. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- L. Secure flush mounting box to interior wall and partition studs with external to box fasteners. Accurately position to allow for surface finish thickness.

END OF SECTION 260535

SECTION 260553 - IDENTIFICATION

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.1 IDENTIFICATION REQUIREMENTS

- A. Identification for Equipment:
 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
 - a. Panelboards:
 - 1) Identify ampere rating, voltage, and phase.
 - 2) Use typewritten circuit directory to identify load(s) served for panelboards with a door. Identify spares and spaces using pencil. Contractor shall coordinate with the Owner and use actual room numbers for circuit directory and not the room numbers on the drawings.
 - b. Enclosed switches, circuit breakers, and motor controllers:
 - 1) Identify power source and circuit number. Include location when not within sight of equipment.
 2. Use voltage marker to identify highest voltage present for each piece of electrical equipment.
 3. Use identification label or handwritten text using indelible marker on inside of door at each fused switch to identify required NEMA fuse class and size.
 4. Use identification label or handwritten text using indelible marker on inside of door at each motor controller to identify nameplate horsepower, full load amperes, code letter, service factor, voltage, and phase of motor(s) controlled.
 5. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70.
- B. Identification for Devices:
 1. Use identification label to identify fire alarm system devices.
 2. Use identification label or engraved wallplate to identify serving branch circuit for all receptacles.

2.2 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
 1. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.
 2. Stainless Steel Nameplates: Minimum thickness of 1/32 inch; engraved or laser-etched text.
 3. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch; engraved or laser-etched text.
- B. Format for Equipment Identification:
 1. Minimum Size: 1 inch by 2.5 inches.
 2. Text: All capitalized unless otherwise indicated.
 3. Minimum Text Height:
 - a. Equipment Designation: 1/2 inch.
 - b. Other Information: 1/4 inch.
 4. Color:
 - a. Normal Power System: White text on black background.
 - b. Emergency Power System: White text on red background.
- C. Format for Receptacle Identification:
 1. Minimum Size: 3/8 inch by 1.5 inches.
 2. Legend: Power source and circuit number or other designation indicated.

3. Text: All capitalized unless otherwise indicated.
4. Minimum Text Height: 3/16 inch.
5. Color: Black text on clear background.

2.3 UNDERGROUND WARNING TAPE

- A. Materials: Use foil-backed detectable type polyethylene tape suitable for direct burial, unless otherwise indicated; 3 inches wide, with minimum thickness of 5 mil, unless otherwise required for proper detection, with legend notatin type of service, continuously repeated over full length of tape.
- B. Color:
 1. Tape for Buried Power Lines: Black text on red background.
 2. Tape for Buried Communication, Alarm, and Signal Lines: Black text on orange background.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance.
 1. Devices: Outside face of cover.
- B. Install underground warning tape above buried lines with one tape per trench at 3 inches below finished grade.

END OF SECTION 260553

SECTION 260583 - WIRING CONNECTIONS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 ELECTRICAL CONNECTIONS

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquid-tight flexible conduit with watertight connectors in damp or wet locations.
- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to accommodate connection with attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.
- J. Coolers and Freezers: Cut and seal conduit openings in freezer and cooler walls, floor, and ceilings.

END OF SECTION 260583

SECTION 262416 - PANELBOARDS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. ABB/GE
- B. Eaton Corporation
- C. Schneider Electric; Square D Products
- D. Siemens Industry, Inc

2.2 PANELBOARDS - GENERAL REQUIREMENTS

- A. Short Circuit Current Rating:
 1. Provide panelboards with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
 2. Listed series ratings are not acceptable.
- B. Bussing: Sized in accordance with UL 67 temperature rise requirements.
 1. Provide fully rated neutral bus unless otherwise indicated, with a suitable lug for each feeder or branch circuit requiring a neutral connection.
 2. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
 3. Phase Bus Connections: Arranged for sequential phasing of overcurrent protective devices.
 4. Phase and Neutral Bus Material: Copper or Aluminum.
 5. Ground Bus Material: Copper or Aluminum.
- C. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
 1. Fronts:
 - a. Fronts for Surface-Mounted Enclosures: Same dimensions as boxes.
 - b. Fronts for Flush-Mounted Enclosures: Overlap boxes on all sides to conceal top opening.
 2. Lockable Doors: All locks keyed alike unless otherwise indicated.
- D. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.
- E. Load centers are not acceptable.

2.3 LIGHTING AND APPLIANCE PANELBOARDS

- A. Description: Panelboards complying with NEMA PB 1, lighting and appliance branch circuit type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.
- B. Circuit Breakers: Thermal magnetic bolt-on type unless otherwise indicated.
- C. Enclosures:
 1. Provide surface-mounted or flush-mounted enclosures as indicated.
 2. Fronts: Provide door-in-door trim with hinged cover to box for access to load terminals and wiring gutter, and separate lockable hinged door with concealed hinges for access to overcurrent protective device handles without exposing live parts. Outer door is to be bolted.
 3. Provide clear plastic circuit directory holder mounted on inside of door.

2.4 OVERCURRENT PROTECTIVE DEVICES

- A. Molded Case Circuit Breakers:
 1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with F3 W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
2. Interrupting Capacity:
 - a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated.
 - b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
3. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.
4. Provide the following circuit breaker types where indicated:
 - a. Ground Fault Circuit Interrupter (GFCI) Circuit Breakers: Listed as complying with UL 943, class A for protection of persons.
 - b. Arc-Fault Circuit Interrupter (AFCI) Circuit Breakers: Combination type listed as complying with UL 1699.
5. Provide the following features and accessories where indicated or where required to complete installation:
 - a. Shunt Trip: Provide coil voltage as required for connection to indicated trip actuator.
 - b. Handle Pad-Lock Provision: For locking circuit breaker handle in OFF position.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- B. Set field-adjustable circuit breaker tripping function settings as directed.
- C. Provide filler plates to cover unused spaces in panelboards.

END OF SECTION 262416

SECTION 262726 - WIRING DEVICES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.1 WIRING DEVICE APPLICATIONS

- A. Provide GFI protection for all receptacles installed within 6 feet of sinks and other locations as required by the NEC.
- B. Provide GFCI protection for receptacles installed in kitchens.
- C. Provide GFCI protection for receptacles serving electric drying fountains.

2.2 WIRING DEVICE FINISHES

- A. Wiring Devices Installed in Finished Spaces: Gray with stainless steel wall plate.
- B. Wiring Devices Installed in Unfinished Spaces: Gray with galvanized steel wall plate.
- C. Wiring Devices Installed in Wet or Damp Locations: Gray with specified weatherproof cover.

2.3 WALL SWITCHES

- A. Standard Wall Switches: Industrial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

2.4 RECEPTACLES

- A. Convenience Receptacles:
 1. Standard Convenience Receptacles: Industrial specification grade, tamper-resistant type, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
 2. Weather Resistant Convenience Receptacles: Industrial specification grade, tamper-resistant type, 20A, 125V, NEMA 5-20R, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations; single or duplex as indicated on the drawings.
- B. GFCI Receptacles:
 1. GFCI Receptacles - General Requirements: Tamper-resistant type, self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.

2. Standard GFCI Receptacles: Industrial specification grade, duplex, tamper-resistant type, 20A, 125V, NEMA 5-20R, rectangular decorator style.
3. Weather Resistant GFCI Receptacles: Industrial specification grade, duplex, tamper-resistant type, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations.

2.5 WALL PLATES

- A. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.
- B. Galvanized Steel Wall Plates: Rounded corners and edges, with corrosion resistant screws.
- C. Weatherproof Covers for Damp Locations: Gasketed, cast aluminum, with self-closing hinged cover and corrosion-resistant screws; listed as suitable for use in wet locations with cover closed.
- D. Weatherproof Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 260535 as required for installation of wiring devices provided under this section.
 1. Mounting Heights: Unless otherwise indicated, as follows:
 - a. Wall Switches: 46 inches above finished floor to center of box.
 - b. Receptacles: 18 inches above finished floor or 4 inches above top of counter/backsplash to center of box.
 2. Where multiple receptacles or wall switches are installed at the same location and at the same mounting height, gang devices together under a common wall plate. Provide voltage separation as required.

END OF SECTION 262726

SECTION 262813 - FUSES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.1 APPLICATIONS

- A. Feeders:
 1. Fusible Switches up to 600 Amperes: Class RK1, time-delay.
 2. Fusible Switches Larger Than 600 Amperes: Class L, time-delay.
 - B. General Purpose Branch Circuits: Class RK1, time-delay.
 - C. Individual Motor Branch Circuits: Class RK1, time-delay.
 - D. Primary Protection for Control Transformers: Class CC, time-delay.
- 2.2 FUSES**
- A. Unless specifically indicated to be excluded, provide fuses for all fusible equipment as required for a complete operating system.
 - B. Voltage Rating: Suitable for circuit voltage.
 - C. Provide the following accessories where indicated or where required to complete installation:
 1. Fuseholders: Compatible with indicated fuses.
 2. Fuse Reducers: For adapting indicated fuses to permit installation in switch designed for fuses with larger ampere ratings.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Do not install fuses until circuits are ready to be energized.
- B. Install fuses with label oriented such that manufacturer, type, and size are easily read.

END OF SECTION 262813

SECTION 262817 - ENCLOSED SWITCHES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. ABB/GE
- B. Eaton Corporation
- C. Schneider Electric; Square D Products
- D. Siemens Industry, Inc

2.2 ENCLOSED SAFETY SWITCHES

- A. Description: Quick-make, quick-break enclosed safety switches listed and labeled as complying with UL 98; heavy duty, ratings, configurations, and features as indicated on the drawings.
- B. Horsepower Rating: Suitable for connected load.
- C. Voltage Rating: Suitable for circuit voltage.
- D. Provide with switch blade contact position that is visible when the cover is open.
- E. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
- F. Provide the following features and accessories where indicated or where required to complete installation:
 1. Hubs: As required for environment type; sized to accept conduits to be installed.
 2. Auxiliary Switch: SPDT switch suitable for connection to system indicated, with auxiliary contact operation before switch blades open and after switch blades close.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Except where indicated to be mounted adjacent to the equipment they supply, mount enclosed switches such that the highest position of the operating handle does not exceed 78 inches above the floor or working platform.

END OF SECTION 262817

SECTION 265100 - LIGHTING

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.1 LUMINAIRES

- A. Furnish products as indicated in the Light Fixture Schedule included on the drawings.
- B. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, drivers, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- D. LED Luminaires:
 1. Components: UL 8750 recognized or listed as applicable.
 2. Tested in accordance with IES LM-79 and IES LM-80.
 3. LED Estimated Useful Life: Minimum of 50,000 hours at 80 percent lumen maintenance, calculated based on IES LM-80 test data.

2.2 DRIVERS

- A. Dimmable LED Drivers:
 1. Dimming Range: Continuous dimming from 100 percent to ten percent relative light output unless dimming capability to lower level is indicated, without flicker.
 2. Control Compatibility: Fully compatible with the dimming controls to be installed.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Verify ceiling and wall details from general construction documents prior to ordering luminaires. Provide proper mounting accessories for the intended installation. Install fixture trim tight to surrounding surfaces. Secure to prevent movement.
- B. Suspended Ceiling Mounted Luminaires:
 1. Secure surface-mounted and recessed luminaires to ceiling support channels or framing members or to building structure.
 2. Secure pendant-mounted luminaires to building structure.
 3. Secure recessed luminaires to ceiling support channels using listed safety clips at four corners.
 4. In addition to ceiling support wires, provide two galvanized steel safety wire(s), minimum 12 gauge, connected from opposing corners of each recessed luminaire to building structure.
- C. Suspended Luminaires:
 1. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.

END OF SECTION 265100



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NEW HOG/SHEEP BARN
for
MORGAN COUNTY FAIRGROUNDS

PROJECT #:

DATE: 11-26-24

DRAWN: TMR

REVISIONS:

| DATE | DESCRIPTION |
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