

SECTION 16010 - GENERAL PROVISIONS

- A. WORK CONSISTS OF FURNISHING LABOR, MATERIALS, EQUIPMENT AND SERVICES REQUIRED FOR THE CONSTRUCTION OF ELECTRICAL WORK SHOWN IN THE CONTRACT DOCUMENTS AND SPECIFIED IN DIVISION 16.
- B. INCLUDE ALL PARTS AND LABOR, WHICH ARE INCIDENTAL AND NECESSARY FOR A COMPLETE AND OPERABLE INSTALLATION EVEN THOUGH NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS. SUCH ITEMS INCLUDE NUTS, BOLTS, ANCHORS, BRACKETS, SLEEVES, OFFSETS IN CONDUIT, FITTINGS, RELAYS, ETC.
- C. OPERATE EQUIPMENT AND SYSTEMS IN ALL THEIR OPERATING MODES, TO VERIFY PROPER OPERATION, PRIOR TO FINAL INSPECTION AND OWNER INSTRUCTIONS. NOTIFY THE ENGINEER, IN WRITING, THAT ALL SYSTEMS HAVE BEEN TESTED AND ARE FUNCTIONING AND OPERATING PROPERLY.
- D. INCLUDE DOCUMENTATION OF INSTRUCTIONS IN THE OPERATION AND MAINTENANCE MANUALS.
- E. REQUEST INSPECTIONS AS REQUIRED BY REGULATING AGENCIES AND/OR REGULATIONS. PAY ALL CHARGES FOR INSPECTIONS BY REGULATING AGENCIES OF INSTALLATIONS OF PLANS AND SPECIFICATIONS.
- F. INCLUDE STATE AND LOCAL SALES TAXES IN THE BID. KEEP ACCURATE RECORDS OF THESE TAXES AND FURNISH SUCH RECORDS TO THE TENANT UPON REQUEST.
- G. MEET OR EXCEED ALL CURRENT APPLICABLE CODES, ORDINANCES AND REGULATIONS FOR ALL INSTALLATIONS. PROMPTLY NOTIFY THE ENGINEER, IN WRITING, IF THE CONTRACT DOCUMENTS APPEAR TO CONFLICT WITH GOVERNING CODES AND REGULATIONS. CONTRACTOR ASSUMES ALL RESPONSIBILITY AND COSTS FOR CORRECTING NON-COMPLYING WORK INSTALLED WITHOUT NOTIFYING THE ENGINEER.
- H. HIGHER QUALITY OF WORKMANSHIP AND MATERIALS INDICATED IN THE CONTRACT DOCUMENTS TAKES PRECEDENCE OVER THAT ALLOWED IN REFERENCED CODES AND STANDARDS.
- I. THE TERMS DEFINED BELOW APPLY TO ALL WORK INCLUDED IN DIVISION 16.
 - 1. THE TERM "WORK" MEANS THE CONSTRUCTION AND SERVICES REQUIRED BY THE CONTRACT DOCUMENTS AND INCLUDES ALL OTHER LABOR, MATERIALS, EQUIPMENT AND SERVICES PROVIDED OR TO BE PROVIDED BY THE CONTRACTOR TO FULFILL THE CONTRACTOR'S OBLIGATIONS.
 - 2. FURNISH - TO OBTAIN IN NEW CONDITION READY FOR INSTALLATION INTO THE WORK.
 - 3. INSTALL - TO STORE, SET IN PLACE, CONNECT AND PLACE INTO OPERATION INTO THE WORK.
 - 4. PROVIDE - TO FURNISH AND INSTALL.
 - 5. CONNECT - TO BRING SERVICE TO THE EQUIPMENT AND MAKE FINAL ATTACHMENT INCLUDING NECESSARY SWITCHES, OUTLETS, BOXES, TERMINATIONS, ETC.
 - 6. CONDUIT - INCLUDES IN ADDITION TO CONDUIT, ALL FITTINGS, PULL BOXES, HANGERS AND OTHER SUPPORTS AND ACCESSORIES RELATED TO SUCH CONDUIT.
 - 7. CONCEALED - HIDDEN FROM SIGHT IN CHASES, FURRED SPACES, SHAFTS, HUNG CEILINGS, EMBEDDED IN CONSTRUCTION, IN CRAWL SPACES OR BURIED.
 - 8. EXPOSED: NOT INSTALLED UNDERGROUND NOR CONCEALED AS DEFINED ABOVE.
- J. THE DRAWING AND SPECIFICATIONS CONSTITUTE THE CONTRACT DOCUMENTS. ANY ITEM NOTED IN THE SPECIFICATION OR SHOWN ON THE DRAWINGS IS INCLUDED IN THE CONTRACT DOCUMENTS.
- K. ALL ELECTRICAL DETAILS AND DRAWINGS ARE DIAGRAMMATIC, UNLESS SPECIFICALLY NOTED. FIELD VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY CONFLICTS OR DISCREPANCIES, IN WRITING, PRIOR TO INSTALLATION.
- L. INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY PRECAUTIONS REQUIRED WITH THIS WORK IN ACCORDANCE WITH THE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND OTHER GOVERNING AGENCIES.
- M. DO NOT REMOVE OR DISTURB ANY ASBESTOS CONTAINING MATERIALS FROM THE PROJECT. IMMEDIATELY STOP WORK AND NOTIFY THE TENANT IF ASBESTOS CONTAINING MATERIALS ARE SUSPECTED.
- N. BEFORE SUBMITTING A PROPOSAL ON THE WORK CONTEMPLATED, EXAMINE THE SITE OF THE PROPOSED WORK AND BECOME THOROUGHLY FAMILIAR WITH EXISTING CONDITIONS AND LIMITATIONS. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF MISUNDERSTANDING AS TO THE AMOUNT OF WORK INVOLVED NOR BIDDERS LACK OF KNOWLEDGE OF EXISTING CONDITIONS WHICH COULD HAVE BEEN DISCOVERED OR REASONABLY ANTICIPATED PRIOR TO BIDDING.
- O. CONDUITS, PIPES, DUCTS, LIGHTS, DEVICES, SPEAKERS, ETC., SHOWN ON THE DRAWINGS AS EXISTING HAVE BEEN BASED ON EXISTING PLANS AND MAY NOT BE INSTALLED AS ORIGINALLY SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND MAKE EXACT DETERMINATION OF THE EXISTENCE, LOCATION AND CONDITION OF SUCH FACILITIES PRIOR TO SUBMITTING A BID.
- P. CONSULT THE DRAWINGS AND SPECIFICATIONS OF MECHANICAL AND OTHER TRADES FOR CORRELATING INFORMATION AND LAY OUT WORK SO THAT IT WILL COORDINATE WITH OTHER TRADES. VERIFY DIMENSIONS AND CONDITIONS (I.E., FINISHED CEILING HEIGHTS, FOOTING AND FOUNDATION ELEVATIONS, BEAM DEPTHS, ETC.) WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. NOTIFY THE ARCHITECT/ENGINEER OF ANY CONFLICTS THAT CANNOT BE RESOLVED, IN THE FIELD, BY AFFECTED TRADES. REPLACEMENT OF WORK DUE TO LACK OF COORDINATION AND FAILURE TO VERIFY EXISTING CONDITIONS WILL BE COMPLETED AT NO COST TO THE TENANT.
- Q. INSTALL ALL CONDUIT, EQUIPMENT, ETC. ALLOWING PROPER CODE AND MAINTENANCE CLEARANCES AND TO AVOID BLOCKING PASSAGEWAYS AND ACCESS PANELS.
- R. WHERE WORK MUST BE REPLACED DUE TO THE FAILURE OF THE CONTRACTOR TO VERIFY THE CONDITIONS EXISTING ON THE JOB, SUCH REPLACEMENT MUST BE ACCOMPLISHED AT NO COST TO THE TENANT. THIS APPLIES TO SHOP FABRICATED WORK AS WELL AS TO WORK FABRICATED IN PLACE.
- S. THROUGHOUT THE COURSE OF THE WORK, MINOR CHANGES AND ADJUSTMENTS TO THE INSTALLATION MAY BE REQUESTED BY THE ENGINEER. THE CONTRACTOR SHALL MAKE ADJUSTMENTS WITHOUT ADDITIONAL COST TO THE TENANT, WHERE SUCH ADJUSTMENTS ARE NECESSARY TO THE PROPER INSTALLATION AND OPERATION WITHIN THE INTENT OF THE CONTRACT DOCUMENTS. THIS DOES NOT INCLUDE WORK ALREADY COMPLETED.
- T. OBTAIN EXACT LOCATION OF CONNECTION TO EQUIPMENT, FURNISHED BY OTHERS, FROM THE PERSON FURNISHING THE EQUIPMENT.
- U. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY AND WHAT IS CALLED FOR IN EITHER ONE IS AS BINDING AS IF CALLED FOR IN BOTH.
- V. INCLUDE THE BETTER QUALITY, GREATER QUANTITY OR HIGHER COST FOR AN ITEM OR ARRANGEMENT WHERE A DISAGREEMENT EXISTS IN THE DRAWINGS AND SPECIFICATIONS.
- W. GUARANTEE AND MAINTAIN THE STABILITY OF WORK AND MATERIALS AND KEEP SAME IN PERFECT REPAIR AND CONDITION FOR THE PERIOD OF ONE (1) YEAR AFTER THE FINAL COMPLETION OF THE WORK.
- X. DO NOT DISTURB NORMAL USE OF THE FACILITY, EXCEPT WITHIN THE IMMEDIATE CONSTRUCTION AREA. KEEP WALKS, DRIVEWAYS, ENTRANCES, ETC. FREE AND CLEAR OF EQUIPMENT, MATERIAL AND DEBRIS.
- Y. STORE ALL EQUIPMENT AND MATERIAL IN A PLACE AND MANNER THAT MINIMIZES CONGESTION AND IS APPROVED BY THE TENANT.
- Z. PROVIDE NEW MATERIAL AND EQUIPMENT, UNLESS NOTED OTHERWISE. PROTECT EQUIPMENT AND MATERIAL FROM DAMAGE, DIRT AND THE WEATHER.
- AA. PROVIDE THE HIGHEST QUALITY WORKMANSHIP AND PERFORM ALL WORK ONLY BY SKILLED MECHANICS. INSTALL MATERIAL AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, INSTRUCTIONS AND CURRENT NECA STANDARDS.
- BB. THE OWNER RESERVES THE RIGHT TO REJECT MATERIAL OR WORKMANSHIP NOT IN ACCORDANCE WITH THE SPECIFICATIONS, BEFORE OR AFTER INSTALLATION.
- CC. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO ELECTRICAL EQUIPMENT OR MATERIALS UNTIL FINAL ACCEPTANCE OF THE ENTIRE PROJECT BY THE TENANT. KEEP ALL EQUIPMENT CLEAN MATERIALS UNTIL FINAL ACCEPTANCE OF THE ENTIRE PROJECT BY THE TENANT.

SECTION 16050 - BASIC MATERIALS AND METHODS

- A. ENCASE ALL CONDUCTORS IN A CONTINUOUS RACEWAY SYSTEM. PROVIDE PULL AND JUNCTION BOXES AS REQUIRED BY THE NEC. SIZE ALL RACEWAY PER THE NEC WITH OVERSIZE CONDUITS AS INDICATED. PROVIDE MINIMUM 3/4" CONDUIT FOR BRANCH CIRCUITS, UNLESS NOTED OTHERWISE.
- B. PROVIDE EMT FOR ALL CONDUCTORS UNLESS NOTED OTHERWISE. PROVIDE CONCRETE-TIGHT STEEL COMPRESSION OR STEEL SETSCREW TYPE FITTINGS, COUPLINGS AND BUSHINGS. CAST OR INDENTOR TYPE DEVICES ARE NOT ACCEPTABLE. ALL FITTINGS USED IN PLENUM APPLICATIONS SHALL BE RATED FOR SUCH USE.
- C. PROVIDE RIGID STEEL GALVANIZED CONDUIT FOR EXTERIOR WORK.
- D. PVC CONDUIT MAY BE USED UNDERGROUND OR BELOW CONCRETE SLABS. PROVIDE COATED RIGID STEEL ELBOWS FOR ALL ELBOWS WHERE PVC IS USED.
- E. PROVIDE FLEXIBLE METAL CONDUIT FOR CONNECTIONS TO TRANSFORMERS, MOTORS AND OTHER VIBRATING PIECES OF EQUIPMENT. PROVIDE LIQUID-TIGHT CONDUIT FOR ALL CONNECTIONS IN DAMP OR WET LOCATIONS. PROVIDE GROUND TYPE FITTINGS AND GROUNDING CONDUCTOR INSIDE ALL FLEXIBLE CONDUIT. ADJUST CONDUIT SIZE IF REQUIRED.

- F. PROVIDE RECESSED OUTLET BOXES AND JUNCTION BOXES IN ALL NEW CONSTRUCTION. CONCEAL ALL CONDUIT WORK IN NEW CONSTRUCTION, EXCEPT MECHANICAL ROOMS. CONDUIT AND BOXES IN MECHANICAL ROOMS MAY BE RUN EXPOSED.
- G. PROVIDE EXPANSION FITTINGS WHERE RACEWAY CROSSES BUILDING EXPANSION JOINTS.
- H. RUN ALL EXPOSED CONDUIT IN A NEAT, WORKMANLIKE MANNER PARALLEL TO THE BUILDING LINES, TIGHT TO THE WALL AND CEILING SURFACES, AND FIRMLY SUPPORT WITH CONDUIT CLAMPS OR HANGERS. PROVIDE TWO (2) HOLE MOUNTING STRAPS, MINIMUM THREE (3) FEET ON CENTER, FOR ALL SURFACE CONDUIT MOUNTED ON WALLS LESS THAN SIX (6) FEET ABOVE FINISHED FLOOR. PLACE CONDUITS AT LEAST 6" AWAY FROM ALL HOT PIPING AND SURFACES INCLUDING DOMESTIC HOT WATER LINES.
- I. PROVIDE GALVANIZED CODE GAUGE STEEL JUNCTION AND PULL BOXES WITH SCREW ON COVERS OF TYPE, SHAPE AND SIZE REQUIRED TO SUIT EACH INSTALLATION. PROVIDE GASKETING IN DAMP AND DUSTY LOCATIONS. PROVIDE CAST BOXES IN WEATHERPROOF, VAPOR TIGHT AND EXPLOSION PROOF ENVIRONMENTS.
- J. PROVIDE 4" BOXES THROUGHOUT. PROVIDE 3 1/2" DEEP BOXES WHERE INSTALLED IN MASONRY, 2 1/2" MINIMUM ELSEWHERE. PROVIDE SINGLE GANG MUD OR TILE RING FOR SINGLE DEVICES.

- K. MOUNT OUTLETS BOXES IN EXPOSED MASONRY WALLS WITH THE BOTTOM OF THE BOX ON THE TOP OF THE MORTAR JOINT AND THE VERTICAL LINE OF THE BOX EITHER ON THE MORTAR JOINT OR ON THE CENTER LINE OF THE MASONRY UNIT. PLUMB AND ACCURATELY ALIGN ALL WALL OUTLETS IN ROWS. MOUNT CEILING BOXES SYMMETRICAL WITH WALLS, BEAMS AND/OR TILES. MOUNTING HEIGHTS INDICATED ON THE DRAWINGS ARE FROM THE CENTER OF THE OUTLET BOX TO THE FINISHED FLOOR DIRECTLY BELOW THE OUTLET. EXTERIOR HEIGHTS ARE FROM INSIDE ADJACENT DOOR, OR IF NO DOOR, FROM THE FIRST FLOOR ABOVE GRADE, UNLESS NOTED OTHERWISE.
- L. PROVIDE NEW WIRING DEVICES IN EACH OUTLET INDICATED ON THE DRAWINGS. PROVIDE ALL DEVICES FROM ONE MANUFACTURER.
- M. APPROVED STANDARD RECEPTACLE MANUFACTURERS/MODEL NUMBERS: 20A/125V STANDARD RECEPTACLES

MANUFACTURER	GCFI
ARROW HART	GF5342
HUBBELL	GF5362
PASS & SEYMOUR	2091
- N. PROVIDE NEW COVERPLATES OVER ALL BOXES WITH THE FOLLOWING SPECIFICATIONS: PROVIDE NEW WEATHERPROOF METAL WHILE-IN USE COVER PLATES FOR OUTLETS AS INDICATED ON THE DRAWINGS AND FOR ALL EXTERIOR DEVICES.

- O. PROVIDE WIRE AND CABLE WITH INSULATION VOLTAGE RATING EQUAL TO OR GREATER THAN THE APPLIED SYSTEM VOLTAGE. PROVIDE SOLID OR STRANDED COPPER CONDUCTORS WITH TYPE THWN, THHN, OR XHHN INSULATION FOR NO. 12 AWG AND NO. 10 AWG CONDUCTORS. PROVIDE STRANDED COPPER CONDUCTORS WITH TYPE THWN, THHN, OR XHHW INSULATION FOR NO. 8 AWG AND LARGER CONDUCTORS. PROVIDE MINIMUM NO. 12 AWG CONDUCTOR SIZE, UNLESS NOTED OTHERWISE. USE THE MINIMUM CONDUCTOR SIZE WHEN NO SIZE IS INDICATED. ALL CONDUCTORS TO BE COLOR-CODED AS FOLLOWS: 120/208 VOLT SYSTEMS—PHASE A (BLACK), PHASE B (RED), PHASE C (BLUE), NEUTRAL (WHITE), 277/480-VOLT SYSTEMS—PHASE A (BROWN), PHASE B (ORANGE), PHASE C (YELLOW), NEUTRAL (WHITE WITH TRACER OR GRAY), GROUNDING SYSTEM (GREEN).
- P. MAKE CONNECTIONS TO ALL MOTORS AND EQUIPMENT FURNISHED AND SET IN PLACE BY OTHERS.

SECTION 16500 - LIGHTING

- A. COMPLY WITH NEC AS APPLICABLE TO THE INSTALLATION AND CONSTRUCTION OF LIGHT FIXTURES.
- B. PROVIDE LIGHT FIXTURES THAT ARE LISTED AND LABELED BY U.L. OR ANOTHER NATIONALLY RECOGNIZED TESTING LABORATORY FOR THE APPLICATION.
- C. PROVIDE LAMP BALLASTS THAT COMPLY WITH CERTIFIED BALLAST MANUFACTURERS ASSOCIATION STANDARDS AND CARRY THE CBM LABEL.
- D. COMPLY WITH ALL LOCAL, STATE AND FEDERAL ENERGY CODES.
- E. PROVIDE FIXTURES WITH LAMPS, FOR EACH OUTLET SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN. SEE FIXTURES LIST ON THE PLAN.
- F. PROVIDE LAMPS AS NOTED IN LIGHT FIXTURE SCHEDULE
- G. PROVIDE ALL HANGERS, RODS, MOUNTING BRACKETS, SUPPORTS, FRAMES, ETC. FOR PROPER AND SAFE FIXTURE INSTALLATION. INSTALL ALL FIXTURES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS AND INSTRUCTIONS.

BACK OF HOUSE
PACKAGE 06/07/11

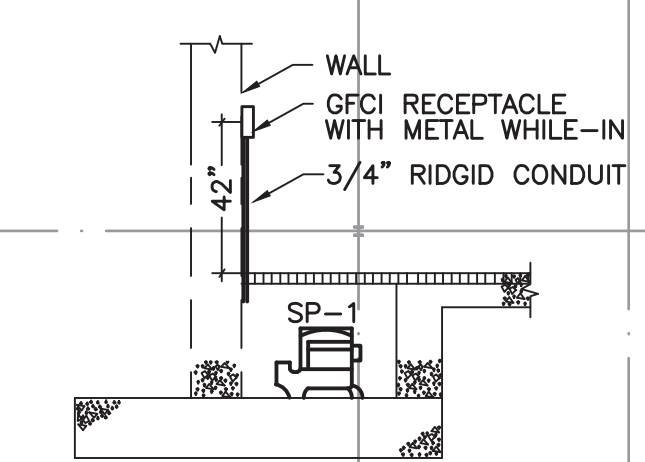
ISSUED FOR CONSTRUCTION
OCTOBER 8, 2014

SYMBOL SCHEDULE	
SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
LIGHTING (LETTER DENOTES TYPE - SEE LIGHT FIXTURE SCHEDULE)	
⊕	LIGHT FIXTURE - WALL MOUNTED
RECEPTACLES AND OUTLETS	
⊕	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
⊕	JUNCTION BOX
MOTOR CONTROLLERS AND EQUIPMENT	
⊕	MOTOR, MAKE FINAL MOTOR CONNECTION
CIRCUITING	
—	CONDUIT
----	CONDUIT IN/OR BELOW FLOOR, SLAB, OR GRADE
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF

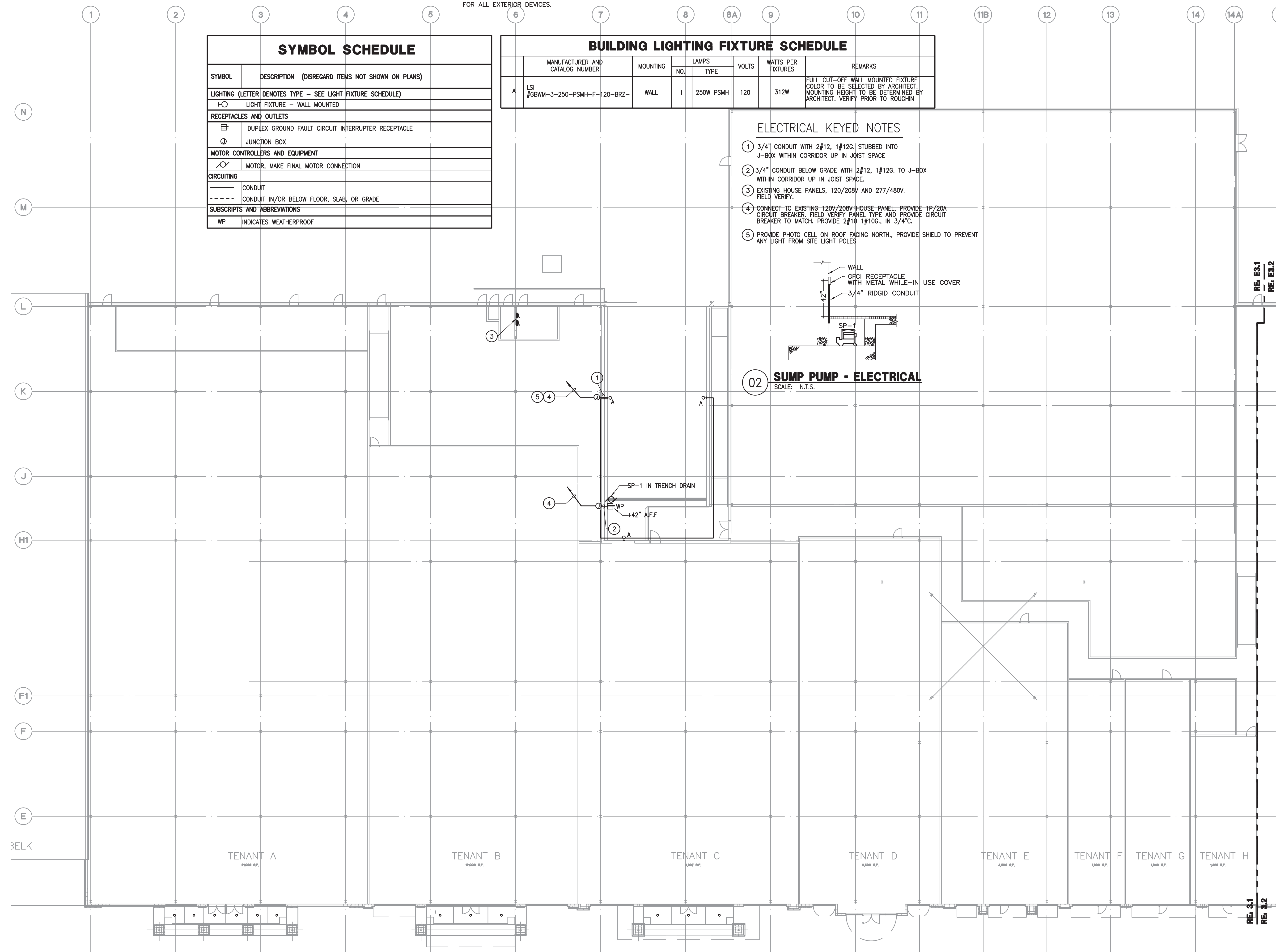
BUILDING LIGHTING FIXTURE SCHEDULE							
SYMBOL	MANUFACTURER AND CATALOG NUMBER	MOUNTING	LAMPS		VOLTS	WATTS PER FIXTURES	REMARKS
			NO.	TYPE			
A	LSI #GBWM-3-250-PSMH-F	-120-BRZ-	1	250W PSMH	120	312W	FULL CUT-OFF WALL MOUNTED FIXTURE COLOR TO BE SELECTED BY ARCHITECT. MOUNTING HEIGHT TO BE DETERMINED BY ARCHITECT. VERIFY PRIOR TO ROUGHIN

ELECTRICAL KEYED NOTES

- 1 3/4" CONDUIT WITH 2#12, 1#12G; STUBBED INTO J-BOX WITHIN CORRIDOR UP IN JOIST SPACE
- 2 3/4" CONDUIT BELOW GRADE WITH 2#12, 1#12G, TO J-BOX WITHIN CORRIDOR UP IN JOIST SPACE.
- 3 EXISTING HOUSE PANELS, 120/208V AND 277/480V. FIELD VERIFY.
- 4 CONNECT TO EXISTING 120V/208V HOUSE PANEL. PROVIDE 1P/20A CIRCUIT BREAKER. FIELD VERIFY PANEL TYPE AND PROVIDE CIRCUIT BREAKER TO MATCH. PROVIDE 2#10 1#10G, IN 3/4" C.
- 5 PROVIDE PHOTO CELL ON ROOF FACING NORTH, PROVIDE SHIELD TO PREVENT ANY LIGHT FROM SITE LIGHT POLES



02 SUMP PUMP - ELECTRICAL
SCALE: N.T.S.



01 FLOOR PLAN - ELECTRICAL
SCALE: 1/16"=1'-0"

Hermes Architects

Members A.I.A.
1777 West Loop South, Ste. 500
Houston, Texas 77027
Tel: 713-785-3644
www.hermesarchitects.com
Houston • Dallas • Ft. Worth

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KEITH W. GASSMAN
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GREENVILLE PROPERTIES, LTD.
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SUITE 1050
LOS ANGELES, CA 90024

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DRAWN BY	
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FLOOR PLAN ELECTRICAL

AKME
KALMANS MARSHALL ENGINEERING, INC.
HOUSTON | DALLAS/FT. WORTH | BAYTOWN ROUGE
1423 Greenway Drive, Suite 440
Irving, TX 75038 (972) 812-1270
REGISTRATION # F-4111
RME PROJECT # 0301003

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