

ABBREVIATIONS INDEX

ABBREV.	DESCRIPTION	ABBREV.	DESCRIPTION
#	NUMBER	MH	MANHOLE
AC	ALTERNATING CURRENT	MIC	MICROPHONE
A.F.F.	ABOVE FINISH FLOOR	MIN	MINIMUM
ANC	AMPS INTERRUPTING CAPACITY	MTG	MOUNTING
AM	AMPS METER	MTR	MOTOR
AMP	AMPERE	N/A	NOT APPLICABLE
ANN	ANNUNCIATOR	NC	NORMALLY CLOSED
ATS	AUTOMATIC TRANSFER SWITCH	NEC	NATIONAL ELECTRICAL CODE
AUX	AUXILIARY	NEMA	NATIONAL ELECT. MANUFAC. ASSOC.
AWG	AMERICAN WIRE GAUGE	NFPA	NATIONAL FIRE PROTECTION ASSOC.
BC	BARRE COPPER	N.I.C.	NOT IN CONTRACT
BFG	BELOW FINISH GRADE	NO	NORMALLY OPENED
C	CONDUIT	NTS	NOT TO SCALE
CAB	CABINET	OS & Y	OUTSIDE SCREW & YOKE
CATV	COMMUNITY ANTENNA TELEVISION	PB	PUSHBUTTON
CAV	CABLE TELEVISION	PF	POWER FACTOR
CKT	CIRCUIT	PFR	PHASE FAILURE RELAY
CLG	CEILING	PNL	PANEL
CONTR	CONTRACTOR	PT	POTENTIAL TRANSFORMER
C.O.	CONDUIT ONLY	PVC	POLYVINYL CHLORIDE CONDUIT
CRT	COMPUTER TERMINAL	REL	RELOCATE
CT	CURRENT TRANSFORMER	RECEP	RECEPTACLE
CU	COPPER	REQ	REQUIREMENT
CW	COMPLETE WITH	RLA	RATED LOAD AMPS
DB	DECIBEL	RMP	ROCKY MOUNTAIN POWER
DC	DIRECT CURRENT	RMS	ROOT MEAN SQUARE
DWG	DRAWING	SE	SERVICE ENTRANCE
(E)	EXISTING	SPEC	SPECIFICATIONS
EC	EMPTY CONDUIT	SPKR	SPEAKER
EG	EMERGENCY GENERATOR	SS	SELECTOR SWITCH
EMT	ELECTRICAL METALLIC TUBING	SW	SWITCH
EX	EXPLOSION PROOF	SWBD	SWITCHBOARD
FACP	FIRE ALARM CONTROL PANEL	SWGR	SWITCHGEAR
FC	FOOT CANDLE	TTB	TELEPHONE TERMINAL BOARD
FT	FOOT	TTC	TELEPHONE TERMINAL CABINET
GFI	GROUND FAULT INTERRUPTER	TV	TELEVISION
GRD	GROUND	TYP	TYPICAL
GRG	GALVANIZED RIGID CONDUIT	UG	UNDERGROUND
HP	HORSE POWER	UPS	UNINTERRUPTED POWER SUPPLY
HZ	HERTZ	V	VOLT (KV-KILOVOLT)
IFC	INTERNATIONAL FIRE CODE	VAR	VOLT-AMPS/REACTIVE
IG	ISOLATED GROUND	VM	VOLT METER
IMC	INTERMEDIATE METALLIC CONDUIT	W	WATTS
IN	INCH	WTH	WITH
J-BOX	JUNCTION BOX	WH	WATT-HOUR METER
KV	KILOVOLT	W/O	WITHOUT
KVA	KILOVOLT AMPERES	WP	WEATHERPROOF
KVAR	KILOVARS	XFRM	TRANSFORMER
KW	KILOWATT	XFRM SW	TRANSFER SWITCH
LRA	LOCKED ROTOR AMPS	XP	EXPLOSION PROOF
LTG	LIGHTING	1P	SINGLE-PHASE
MNF	MANUFACTURER	2P	TWO-POLE
MAX	MAXIMUM	3P	THREE-POLE
MB	MAIN BUS	4P	FOUR-POLE
MCC	MOTOR CONTROL CENTER	Ø	PHASE
MCM	1000 CIRCULAR MILLS		

SYMBOL LEGEND

NOTES:

- SEE FIXTURE SCHEDULE FOR TYPE, MOUNTING AND WATTAGE.
- HEIGHT MEASURED TO CENTER LINE OF THE BOX FROM THE FINISHED FLOOR.
- REFER TO DRAWINGS FOR DIRECTIONAL ARROWS.
- SUBSCRIPT INDICATES FIXTURES TO BE CONTROLLED.
- NEMA TYPE 'ND' NON-FUSED UNLESS NOTED 'P' (FUSED). USE '10' 480 V.
- HEIGHT MEASURED TO TOP OF THE BOX FROM FINISHED FLOOR.
- PROVIDE I.O.A. AND S.S. DISTRIBUTIONS AS REQUIRED.
- DOUBLE ARROWS INDICATES A DOUBLE FACE UNIT.
- DASHED LINE INDICATES EQUIPMENT CLEARANCES. ARROW INDICATES FRONT OF RACK.
- SUBSCRIPT INDICATES NEMA CONFIGURATION.
- SOLID BOX AROUND DEVICE INDICATES INSTALLED IN FLOOR. DASHED BOX AROUND DEVICE INDICATES INSTALLED IN CEILING.
- COORDINATE WITH DOOR HARDWARE SUPPLIER.
- FOR WATER COOLER LOCATION, SEE DIAGRAM R002. FOR ALL OTHER LOCATIONS, MOUNT AT 18" TO BOTTOM OF BOX FROM FINISHED FLOOR, OR AS NOTED.
- ARROWS SHOWN ON DEVICE INDICATE AMING DIRECTION.
- CAMERA NUMBERS ARE SHOWN INSIDE THE CAMERA SYMBOL. CAMERA TYPES ARE INDICATED IN TAG.
- MOUNT ON TRACK OF OVERHEAD DOOR, 6" FROM TOP OF DOOR, UNLESS OVERHEAD DOOR IS A ROLL UP DOOR. THEN MOUNT PER MANUFACTURERS INSTRUCTIONS.
- INSTALL DEVICES PER MANUFACTURERS INSTALLATION INSTRUCTIONS.
- DASHED LINE INDICATES EQUIPMENT CLEARANCES. ARROW INDICATES FRONT OF RACK.
- SPEAKER TO BE MOUNTED IN HORIZONTAL POSITION.
- MOUNTING HEIGHT IS TO BOTTOM OF DISPLAY.
- *TYPICAL SYMBOL SCHEDULE. SOME SYMBOLS MAY NOT BE USED ON THIS SET OF DRAWINGS.

GENERAL				LIGHTING			
SYMBOL	DESCRIPTION	MOUNTING HEIGHT	NOTES	SYMBOL	DESCRIPTION	MOUNTING HEIGHT	NOTES
→	ONE CIRCUIT, HOME RUN TO PANEL			⊙	CEILING LIGHT FIXTURE	CEILING	1.
→→	2 CIRCUIT, HOME RUN TO PANEL			⊙	WALL LIGHT FIXTURE	AS NOTED	1.
→→→	3 CIRCUIT, HOME RUN TO PANEL			⊙	RECESSED DOWNLIGHT FIXTURE	CEILING	1.
→→→→	CONDUIT RUN CONCEALED IN WALL OR CEILING			⊙	RECESSED WALL-WASH DOWNLIGHT FIXTURE	CEILING	1.
→→→→→	CONDUIT RUN CONCEALED IN FLOOR OR GROUND			⊙	EGRESS LIGHT FIXTURE	AS NOTED	1.
→→→→→	CONDUIT UP			⊙	AREA LIGHT POLE AND FIXTURE	CONCRETE BASE	1, 14. SEE DIAGRAM
→→→→→	CONDUIT DOWN			⊙	BOLLARD	CONCRETE BASE	1, 14. SEE DIAGRAM
→→→→→	CONDUIT STUB LOCATION			⊙	STEP LIGHT FIXTURE	AS NOTED	1.
→→→→→	CONDUIT / CIRCUIT CONTINUATION			⊙	IN-GRADE LIGHT FIXTURE	CONCRETE BASE	1.
→→→→→				⊙	FLOOR OR TRACK FIXTURE	AS NOTED	1.
→→→→→				⊙	CEILING / WALL MOUNTED EXIT LIGHT	CEILING / AS NOTED	1, 3, B.
→→→→→				⊙	EMERGENCY LIGHT FIXTURE	AS NOTED	1.
→→→→→				⊙	COMBO EXIT / EMERGENCY LIGHT FIXTURE	AS NOTED	1.
→→→→→				⊙	TIME CLOCK	+60"	2.
⊙	POWER PACK	ABOVE CEILING	SEE DIAGRAM, SPEC.	⊙	DUAL TECH. CEILING MOUNTED OCCUPANCY SENSOR	CEILING	SEE DIAGRAM, SPEC.
⊙	DIGITAL ROOM CONTROLLER (SUBSCRIPT INDICATES NUMBER OF RELAYS)	ABOVE CEILING	SEE DIAGRAM, SPEC.	⊙	DUAL TECH. WALL MOUNTED OCCUPANCY SENSOR (SUBSCRIPT 'D' DIMMING AND DAYLIGHT CONTROL)	ABOVE CEILING	SEE DIAGRAM, SPEC.
⊙	EMERGENCY LIGHTING CONTROL UNIT	ABOVE CEILING	SEE DIAGRAM, SPEC.	⊙	PHOTO-ELECTRIC CONTROL (LOCATE ON ROOF, FACE NORTH)	AS NOTED	SEE DIAGRAM, SPEC.
⊙	THREE-WAY SWITCH	+46"	2, 4.	⊙	DIGITAL DAYLIGHT SENSOR	CEILING	SEE DIAGRAM, SPEC.
⊙	FOUR-WAY SWITCH	+46"	2, 4.				
⊙	KEY OPERATED SWITCH	+46"	2, 4.				
⊙	SWITCH WITH PILOT LIGHT	+46"	2, 4.				
⊙	VARIABLE INTENSITY SWITCH	+46"	2, 4.				
⊙	TIMER SWITCH	+46"	2, 4.				
⊙	MOMENTARY CONTACT SWITCH	+46"	2, 4.				
⊙	LOW VOLTAGE WALL STATION (SUBSCRIPT INDICATES CONFIGURATION & CONTROL SEQUENCE)	+46"	2. SEE DIAGRAM, SPEC.				
⊙	DUAL TECH. CEILING MOUNTED OCCUPANCY SENSOR (PROVIDE WITH ALL FP AND ROOM CONTROLLERS)	CEILING	SEE DIAGRAM, SPEC.				
⊙	DUAL TECH. WALL MOUNTED OCCUPANCY SENSOR (SUBSCRIPT 'D' DIMMING AND DAYLIGHT CONTROL)	ABOVE CEILING	SEE DIAGRAM, SPEC.				
⊙	PHOTO-ELECTRIC CONTROL (LOCATE ON ROOF, FACE NORTH)	AS NOTED	SEE DIAGRAM, SPEC.				
⊙	DIGITAL DAYLIGHT SENSOR	CEILING	SEE DIAGRAM, SPEC.				

COLOR LEGEND		POWER DEVICES		AUDIOVISUAL	
⊙	LIGHTING FIXTURES	⊙	TELECOMMUNICATIONS	⊙	SECURITY
⊙	LIGHTING DEVICES	⊙	FIRE ALARM	⊙	NURSECALL
⊙	POWER EQUIPMENT	⊙	CONDUIT		
⊙	CABLE TRAY				

GENERAL NOTES

- CONSULT ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHTING FIXTURES.
- VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO INSURE NEC CODE CLEARANCES REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
- CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF ALL EQUIPMENT FURNISHED UNDER ALL DIVISIONS, INCLUDING ALL EXISTING EQUIPMENT TO BE RE-USED. REVIEW ALL SHOP DRAWINGS AND EXISTING EQUIPMENT BEFORE BEGINNING ROUGH-IN.
- SEE SECTION 265100 (165) OF THE SPECIFICATION FOR REQUIRED COORDINATION MEETINGS WITH MECHANICAL AND CEILING CONTRACTORS.
- SEE APPLICABLE SHOP DRAWINGS FOR ROUGH IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC. WHERE APPLICABLE MOUNT ALL WIRING DEVICES ABOVE BACK SPLASH EXCEPT THOSE SERVING UNDER COUNTER EQUIPMENT.
- SEE SPECIFICATION FOR ENERGY SAVING LAMP AND BALLAST REQUIREMENTS.
- FINISHES OF ALL LIGHT FIXTURES SHALL BE AS SELECTED BY ARCHITECT.
- THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, DUCTS, OR EQUIPMENT PORTING TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THRU ELECTRICAL ROOMS OR SPACES, OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN OTHER AREAS.
- ELECTRICAL BOXES SHALL NOT BE LOCATED IN MASONRY WALLS OR BRICK WALLS OR IN GROUTED CELLS ADJACENT TO OPENINGS. COORDINATE LOCATION OF BOXES WITH MASONRY CONTRACTOR.
- ALL PENETRATIONS OF FIRE RATED FLOORS, WALLS, AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL TO MAINTAIN FIRE RATING OF SURFACE PENETRATED.
- CONTRACTOR SHALL VERIFY FURNITURE LAYOUT PRIOR TO ANY FLOORBOX OR POKE-THRU INSTALLATION. COORDINATE EXACT LOCATION OF FLOOR BOX OR POKE-THRU WITH OWNER AND FURNITURE PROVIDER PRIOR TO ROUGH-IN.
- CIRCUITS EXTENDING OVER 75' FOR 120 VOLT AND 115' FOR 277 VOLT 20 AMP CIRCUITS SHALL BE RUN WITH CONDUCTORS PER TABLE BELOW.

20 AMP MINIMUM BRANCH CIRCUIT CONDUCTOR SIZING			
MAXIMUM LENGTH (FT)	BRANCH CIRCUIT VOLTAGE		
	120 VOLT	208 VOLT	277 VOLT
<70	MIN. #12 AWG	MIN. #12 AWG	MIN. #12 AWG
70 - 115	MIN. #10 AWG	MIN. #10 AWG	MIN. #10 AWG
115 - 170	MIN. #8 AWG	MIN. #8 AWG	MIN. #8 AWG
170 - 270	MIN. #6 AWG	MIN. #6 AWG	MIN. #6 AWG
271 - 380	NOTE B	MIN. #8 AWG	NOTE B
>380	NOTE B	NOTE B	NOTE B

A. THESE ARE BASED ON MAXIMUM LENGTH OF CIRCUIT.

B. PERFORM VOLTAGE DROP CALCULATIONS AND PROVIDE CONDUCTOR SIZE TO KEEP BRANCH CIRCUIT VOLTAGE DROP LESS THAN 3% WITH 15 AMP LOAD.

C. CONTRACTOR SHALL ENSURE THAT THE INSTALLATION OF EACH BRANCH CIRCUIT STAYS WITHIN 3% VOLTAGE DROP FOR A 15 AMP LOAD. IF NECESSARY CONTRACTOR SHALL INCREASE WIRE AND CONDUIT SIZE TO MEET THE STANDARD AT NO ADDITIONAL COST TO OWNER.

13. ALL CONDUIT SHALL BE INSTALLED IN STRAIGHT LINES PARALLEL TO, OR AT RIGHT ANGLES TO, THE STRUCTURAL ELEMENTS WHEN PARALLEL TO JOISTS AS CODE WILL ALLOW. OVERALL INSTALLATION SHALL BE ACCOMPLISHED IN AN AESTHETIC AND WORKMANLIKE MANNER. NO CONDUITS SHALL BE ALLOWED TO RUN PERPENDICULAR TO THE BOTTOM CHORD OF THE JOISTS.

14. DIVISION 26 SHALL VISIT SITE PRIOR TO BIDDING. BIDS SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS. FIELD VERIFY ALL ELECTRICAL EQUIPMENT.

15. BIDDERS SHALL EXAMINE THE SITE AND THE COMPLETE SET OF PLANS AND SPECIFICATIONS COVERING THE ENTIRE PROJECT. THEY SHALL BECOME FULLY CONVERSANT WITH THE TYPE OF GENERAL CONSTRUCTION AS WELL AS ALL PERTINENT FACTS AFFECTING THE COST OF CARRYING OUT THE WORK THEY WILL CONTRACT TO PERFORM.

16. ELECTRICAL CONTRACTOR SHALL COORDINATE PROJECT PHASING WITH GENERAL CONTRACTOR AND BID AND PERFORM RESPONSIBILITIES FOR THIS PROJECT TO GENERAL CONTRACTOR EXPECTATIONS.

17. COORDINATE ELECTRICAL DEMOLITION WITH ARCHITECTURAL DRAWINGS AND GENERAL CONTRACTOR. CLOSELY COORDINATE ANY REQUIRED POWER SHUTDOWNS WITH HEAD CUSTODIAN AND OWNER.

19. WHERE JOB CONDITIONS REQUIRE CHANGES FROM THE CONTRACT DOCUMENTS THAT DO NOT CHANGE THE SCOPE OF INSTALLATION OR NATURE OF WORK REQUIRED, THE CONTRACTOR WILL MAKE SUCH CHANGES WITHOUT ADDITIONAL COST TO THE OWNER. NO OTHER CHANGES MAY BE MADE WITHOUT WRITTEN PERMISSION OF THE OWNER.

20. SEQUENCE, COORDINATE, AND INTEGRATE INSTALLATIONS OF ELECTRICAL MATERIALS AND EQUIPMENT FOR EFFICIENT FLOW OF THE WORK. GIVE PARTICULAR ATTENTION TO LARGE EQUIPMENT REQUIRING POSITIONING PRIOR TO CLOSING IN THE BUILDING. COORDINATE THE CUTTING AND PATCHING OF BUILDING COMPONENTS TO ACCOMMODATE INSTALLATION OF ELECTRICAL EQUIPMENT AND MATERIALS.

21. DO NOT PENETRATE STRUCTURAL ELEMENTS OF FLOORS, WALLS, CEILINGS, ROOFS, ETC.

22. DISCONNECT AND RECONNECT ANY/ALL FIXTURES, DEVICES, EQUIPMENT, ETC. REQUIRED FOR PROPER COMPLETION OF THE WORK.

23. CONTRACTOR MUST CONCEAL ALL RACEWAY THROUGHOUT THE PROJECT. SURFACE MOUNT RACEWAY IS UNACCEPTABLE EXCEPT WHERE THE USE OF PAINTED SURFACE METAL RACEWAYS (EMT) IS APPROVED SOLELY BY THE ARCHITECT. PAINT TO MATCH SURROUNDING SURFACE.

24. ALL CONCRETE CUT AND PATCH WORK REQUIRED FOR FLOOR BOXES INSTALLATION AND/OR RELOCATION OF ELECTRICAL DEVICES AND PANELS THAT REQUIRE WORK WITHIN THE FLOORS SHALL BE DONE BY ELECTRICAL CONTRACTOR. ALL CORE CUTTING FOR NEW SERVICE SHALL ALSO BE COVERED UNDER ELECTRICAL CONTRACTORS REQUIRED WORK.

25. CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES FREE OF ALL WASTE, SURPLUS MATERIALS, RUBBISH OR DEBRIS WHICH IS CAUSED BY HIS EMPLOYEES OR RESULTING FROM HIS WORK. AFTER ALL EQUIPMENT AND DEVICES HAVE BEEN INSTALLED, REMOVE ALL LABELS, STICKERS, STAINS, TEMPORARY COVERS, ETC. IDENTIFICATION PLATES ON ALL EQUIPMENT.

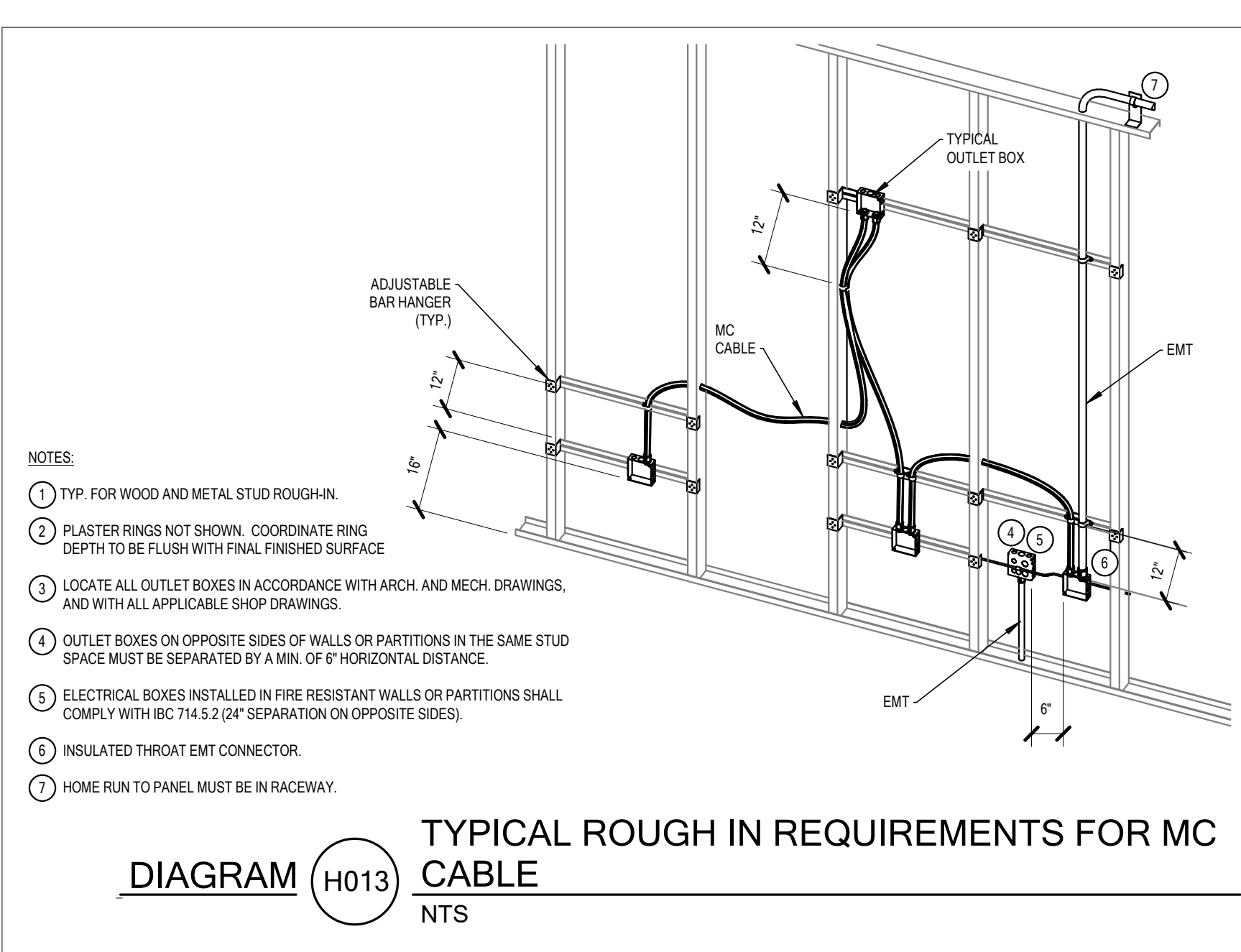
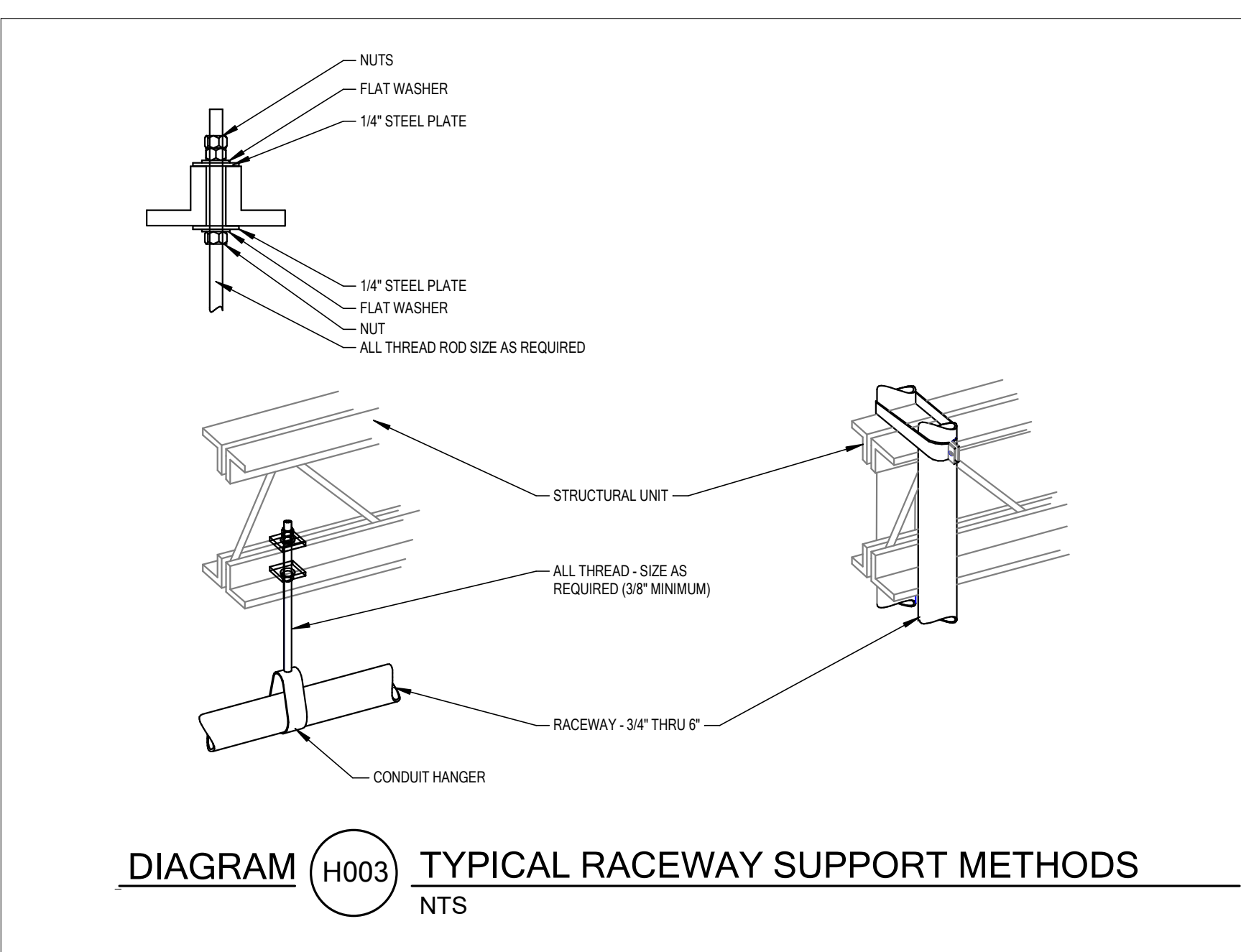
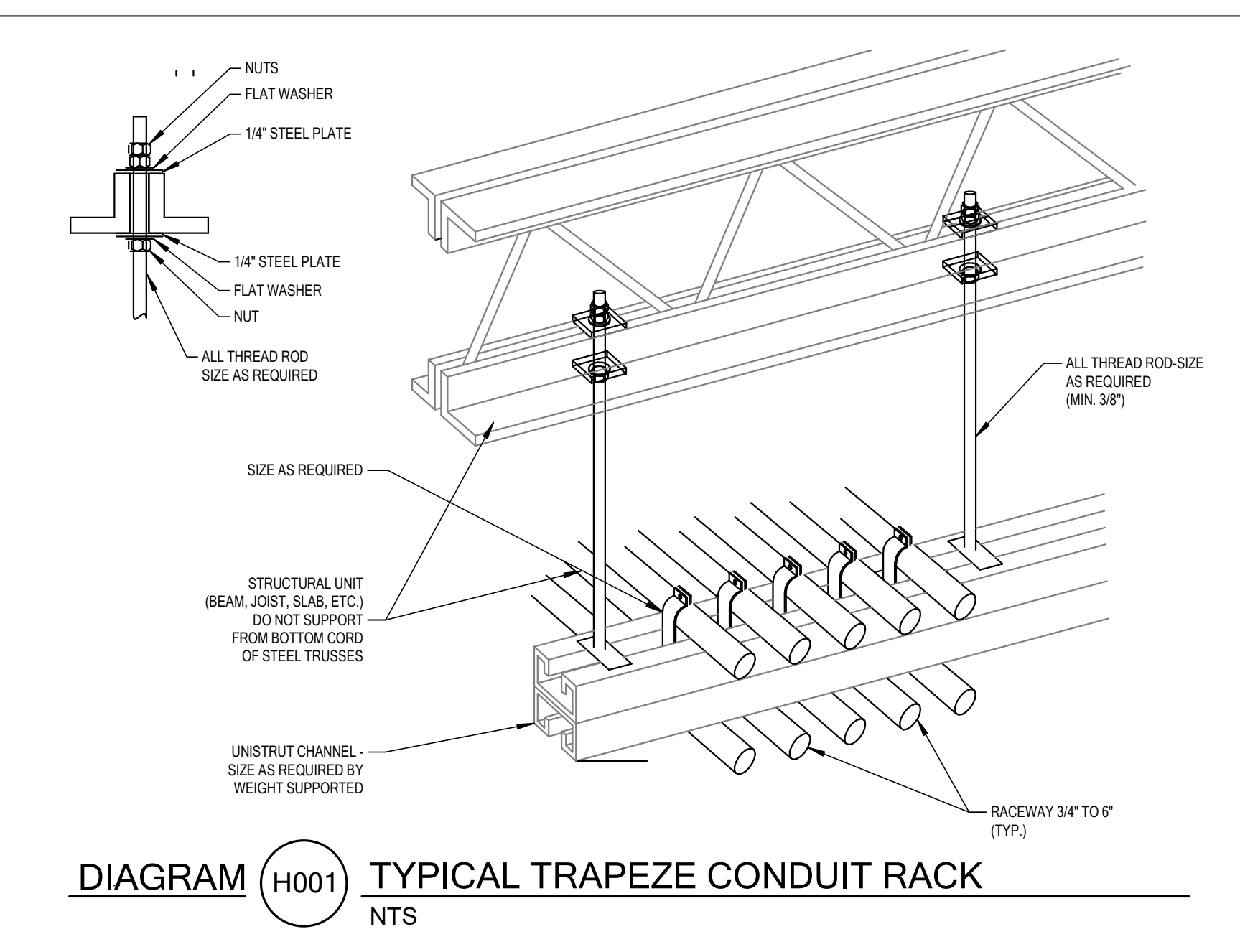
26. IT IS THE INTENT THAT THE FOREGOING WORK SHALL BE COMPLETE IN EVERY RESPECT AND THAT ANY MATERIAL OR WORK NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, BUT NECESSARY TO FULLY COMPLETE THE WORK SHALL BE FURNISHED BY ELECTRICAL CONTRACTOR.

27. PROVIDE GFCI CIRCUIT BREAKERS SERVING RECEPTACLES PROVIDING POWER TO DRINKING FOUNTAINS, REFRIGERATORS, VENDING MACHINES, DISPOSALS, AND WASHING MACHINES.

28. CAREFULLY REVIEW THE ENTIRE DRAWING PACKAGE PRIOR TO PROVIDING BID, INCLUDING THE ARCHITECTURAL AND MECHANICAL DRAWINGS. NOT REVIEWING THE ENTIRE SET IS NOT ACCEPTABLE.

29. PROVIDE CONDUIT FROM DEVICE TO DEVICE IN OPEN AND/OR EXPOSED CEILINGS. CEILINGS WITH CLOUDS ARE CONSIDERED OPEN/EXPOSED CEILING. NO EXPOSED CABLES SHALL BE SEEN FROM BELOW.

30. PROVIDE WEATHERPROOF, NEMA 3R RATED EQUIPMENT FOR ALL EXTERIOR APPLICATIONS.



LIGHT FIXTURE SCHEDULE

PROJECT MANAGER: DRAYTON BAILEY

TYPE	DESCRIPTION	MFR.	CATALOG #	TOTAL WATTS	LAMP TYPE	DELIVERED LUMENS
EXF	EXISTING GENERATOR BACKED-UP AND ALWAYS ON LUMINAIRE. FIELD VERIFY EM BACKED-UP STATUS. THE NEW EXIT SIGN INTO EXISTING LUMINAIRES AS REQUIRED.	EXISTING EM FIXTURE		<varies>	LED	<varies>
X1G	UNIVERSAL EDGE-LIT EXIT SIGN. BRUSHED ALUMINUM HOUSING AND BLACK PLASTIC END-CAPS WITH HIGH GRADE ACRYLIC PANEL. UNIVERSAL FACE. SINGLE, DOUBLE, UNIVERSAL MOUNTING SURFACE. RECESSED OR END-MOUNT. AC ONLY.	EMERGI-LITE	PNG6	2 VA	LED	
X2G	THIN DIE-CAST ALUMINUM SLIM PROFILE LED EXIT SIGN. MATTE BLACK WITH BRUSHED ALUM. FACES. AC ONLY. UNIVERSAL MOUNTING - WALL, SIDE, OR CEILING. SEE PLANS FOR APPROX AND MOUNTING. PROVIDE WIRE GUARD AS INDICATED = "WG"	EMERGI-LITE	BA-TX-UNV-G	2 VA	LED	

SHEET INDEX

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E101	ELECTRICAL PLAN

REVISIONS	
MARK	DESCRIPTION

DATE: 1/6/2025
PROJECT NO: 24362
DRAWN BY: BNA
CHKD BY: BH/DSB

ELECTRICAL SYMBOLS AND NOTES

