

BRICK BREEDEN FIELD HOUSE | LIGHTING PLANS

BOZEMAN, MONTANA

100% CONSTRUCTION DOCUMENTS

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PROJECT MANAGER | ANDREW MOORE



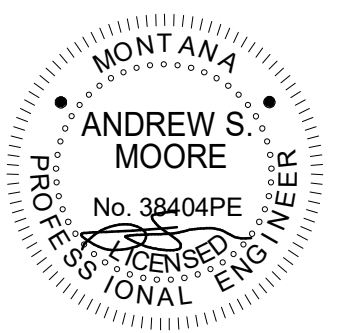
BRICK BREEDEN FIELD HOUSE LIGHTING UPGRADES - PHASE II

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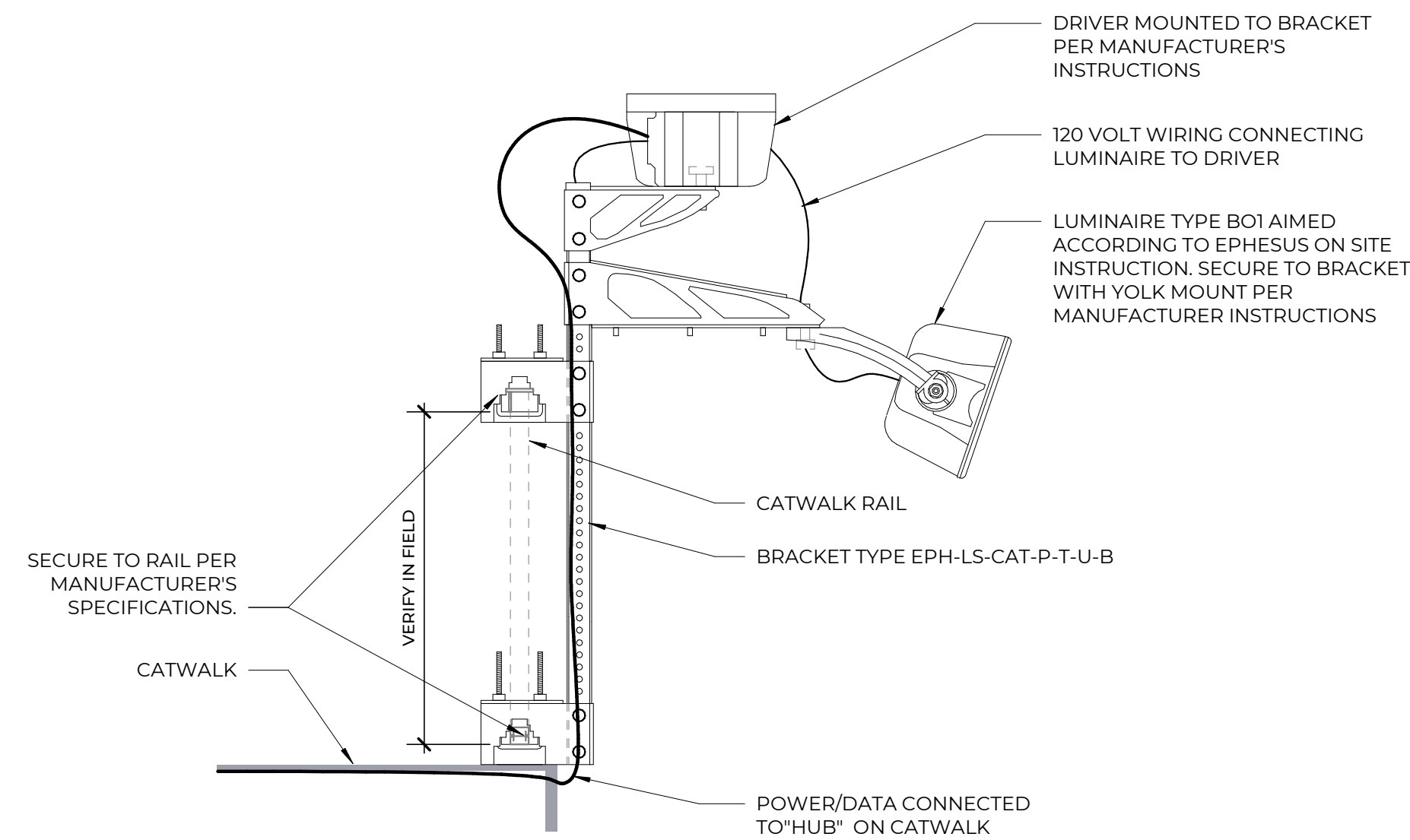
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LIGHTING INDEX

ELO.01

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1 LUMINAIRE TYPE B01 MOUNTING DETAIL
ELO.01 1" = 1'-0"



2 LUMINAIRE TYPE B01 EXISTING MOUNTING CONDITION PHOTO
ELO.01 1/4" = 1'-0"

SHEET NUMBERING (CAD STANDARD)

ELO.01 (ELECTRICAL LIGHTING FLOOR PLAN, 1ST SHEET)

- SEQUENCE NUMBERS
- SEQUENCE TYPE
- SHEET TYPE
- 0 GENERAL: SYMBOL LEGEND, NOTES
- 1 PLANS
- 2 ELEVATIONS
- 3 REFLECTED CEILING
- 4 LARGE SCALE DRAWINGS, ELEVATIONS
- 5 DETAILS
- 6 SCHEDULES AND DIAGRAMS
- 7 USER DEFINED
- 8 USER DEFINED
- 9 3D DRAWINGS, ISOMETRIC
- DISCIPLINE DESIGNATOR
- E ELECTRICAL
- EL ELECTRICAL - LIGHTING
- T TECHNOLOGY

SHEET INDEX

SHEET #	SHEET NAME
ELO.01	LIGHTING INDEX
EL3.01	LIGHTING REFLECTED CEILING PLAN

GENERAL NOTES

- THE SYMBOLS AND ABBREVIATIONS LIST ON THIS SHEET IS A COMPREHENSIVE STANDARD GUIDE. INTENDED GENERAL USE ON ALL PROJECTS. THEREFORE, NOT ALL OF THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY.
- ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC 2020 AND ALL LOCAL CODES HAVING JURISDICTION.
- ALL MATERIALS PROVIDED BY THE CONTRACTOR SHALL BE NEW AND FREE OF DEFECTS, LISTED/LABELED FOR THE INTENDED PURPOSE BY UNDERWRITERS (UL) OR OTHER ORGANIZATION THAT IS ACCEPTABLE TO THE AHJ.
- GENERAL WORK PRACTICES FOR ELECTRICAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NECA 1 STANDARD FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION (ANSI). THESE DRAWINGS AND ACCOMPANYING SPECIFICATIONS ARE INTENDED TO DESCRIBE AND ILLUSTRATE SYSTEMS WHICH WILL NOT INTERFERE WITH THE STRUCTURE OF THE BUILDING AND WHICH WILL FIT INTO THE AVAILABLE SPACES. THE CONTRACTOR IS RESPONSIBLE FOR LAYING OUT ALL WORK TO CONFORM TO NATIONAL ELECTRICAL CODE CLEARANCES, ARCHITECTURAL, STRUCTURAL, MECHANICAL AND SITE CONDITIONS, TO AVOID OBSTRUCTIONS AND TO ALLOW THE PROPER INSTALLATION OF EACH ITEM.
- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT ONLY. COORDINATE WITH DRAWINGS OF OTHER TRADES TO FIT THE ACTUAL SPACE CONDITIONS, HEADROOM AND SPACE CONDITION TO BE MAINTAINED. THE DRAWINGS ARE TO BE CONSIDERED SCHEMATIC ONLY AND DO NOT NECESSARILY SHOW THE EXACT LOCATION AND DETAILS OF THE WORK TO BE INSTALLED.
- UPON THE COMPLETION OF THE WORK, THE ENTIRE ELECTRICAL SYSTEM SHALL BE TESTED AND SHALL BE SHOWN TO BE IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE INTENT OF THE SPECIFICATIONS AND DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL SYSTEM READY FOR OPERATION AND INSPECTION BY AHJ.
- ELECTRICAL CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE ELECTRICAL SYSTEM PRIOR TO COMMENCING WORK AND SHALL NOT INSTALL ANY ELECTRICAL COMPONENTS BEFORE VERIFYING DIMENSIONS AND ROUTING WITH BUILDING CONDITIONS.
- ELECTRICAL CONTRACTOR TO VERIFY ACTUAL INSTALLED EQUIPMENT ELECTRICAL NAME PLATE DATA BEFORE ENERGIZING THE CIRCUIT. CONFIRM ELECTRICAL DESIGN VALUES AND ACTUAL EQUIPMENT BEING INSTALLED ARE IN COMPLIANCE WITH ELECTRICAL CODE AND MANUFACTURER INSTALLATION REQUIREMENTS.
- CONDUIT RUNS WHEN SHOWN ARE DIAGRAMMATIC. FINAL LOCATION AND ROUTING SHALL BE VERIFIED IN THE FIELD. ALL CONDUIT TYPES AND INSTALLATION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- PROVIDE CONDUIT EXPANSION FITTINGS WITH BONDING JUMPERS FOR ALL CONDUITS PASSING THROUGH EXPANSION JOINTS.
- THE USE OF FLEXIBLE CONDUIT FROM LIGHTING FIXTURES TO JUNCTION BOX IS PERMITTED ONLY WHEN A SEPARATE GROUND WIRE IS INSTALLED WITH THE CONDUCTORS INSIDE FLEXIBLE CONDUIT. THE GROUND WIRE MUST BOND THE FIXTURE HOUSING TO THE JUNCTION BOX. MAXIMUM LENGTH SHALL BE 6'-0".
- IN NO CASE THERE SHALL BE MORE THAN 6 CURRENT CARRYING CONDUCTORS IN ANY CONDUIT INSTALLATION.
- PROVIDE BRANCH CIRCUIT WIRING TO ALL ITEMS REQUIRING ELECTRICAL CONNECTIONS. WHERE BRANCH CIRCUIT WIRING IS NOT SHOWN, CONNECT ITEMS TO CIRCUITS INDICATED. THE CONTRACTOR SHALL DETERMINE EXACT ROUTING OF CONDUITS AND WIRING. UNLESS INDICATED OTHERWISE, ALL BRANCH CIRCUITS SHALL BE MINIMUM #12 AWG.
- CONDUIT SHALL BE SIZED TO COMPLY WITH NEC FOR NUMBER AND SIZE OF CONDUCTORS INSTALLED.
 - OUTDOOR INSTALLATIONS: PVC COATED RIGID CONDUIT FOR EXPOSED LOCATIONS, EMT FOR ABOVE GROUND CONCEALED LOCATIONS AND RNC, TYPE EPC-40-PVC OR DIRECT BURIAL CABLE
 - FOR UNDERGROUND LOCATIONS. SCHEDULE 80 PVC UNDER PAVED SURFACES.
 - INDOOR INSTALLATIONS: EMT CONDUIT, RMC IF EXPOSED AND SUBJECT TO PHYSICAL DAMAGE
- CONDUCTORS: COPPER WITH COLOR CODING, #10 AND SMALLER TO BE SOLID OR STRANDED, #8 AND LARGER TO BE STRANDED; MINIMUM #12 UNLESS OTHERWISE INDICATED. ALUMINUM CONDUCTORS PERMITTED FOR FEEDERS 100A AND LARGER. CONDUCTORS MUST BE INSTALLED IN ACCORDANCE WITH NEC AND CANNOT BE SUPPORTED FROM CEILING SUPPORT WIRES. ALL INSULATION TO BE RATED FOR 600V AND TYPES AS FOLLOWS (UON):
 - THWN-2 FOR WET & UNDERGROUND LOCATIONS
 - THHN FOR DRY LOCATIONS
- COLOR-CODE SYSTEM SECONDARY SERVICE, FEEDER, AND BRANCH-CIRCUIT CONDUCTORS THROUGHOUT AS FOLLOWS:
 - NEUTRAL: WHITE
 - PHASE A OR L1: BLACK
 - PHASE B OR L2: RED
 - PHASE C OR L3: BLUE
 - GROUND: GREEN

LIGHTING SYMBOL LEGEND

- LIGHTING**
- 1 B01 IDENTIFICATION
 - a LUMINAIRE TYPE
 - at SWITCH/ZONE
 - T CIRCUIT NUMBER
 - FILLED LUMINAIRE INDICATED EMERGENCY OPERATION
 - CATWALK MOUNTED SPORT LIGHTING

ORIENTATION

- DIRECTIONAL AIMING LINE

LIGHTING CONTROLS

- \$ SWITCH - TYPE AS INDICATED ON LIGHTING CONTROL EQUIPMENT SCHEDULE
- PP POWER PACK - REFER TO LIGHTING CONTROL EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION

ABBREVIATIONS

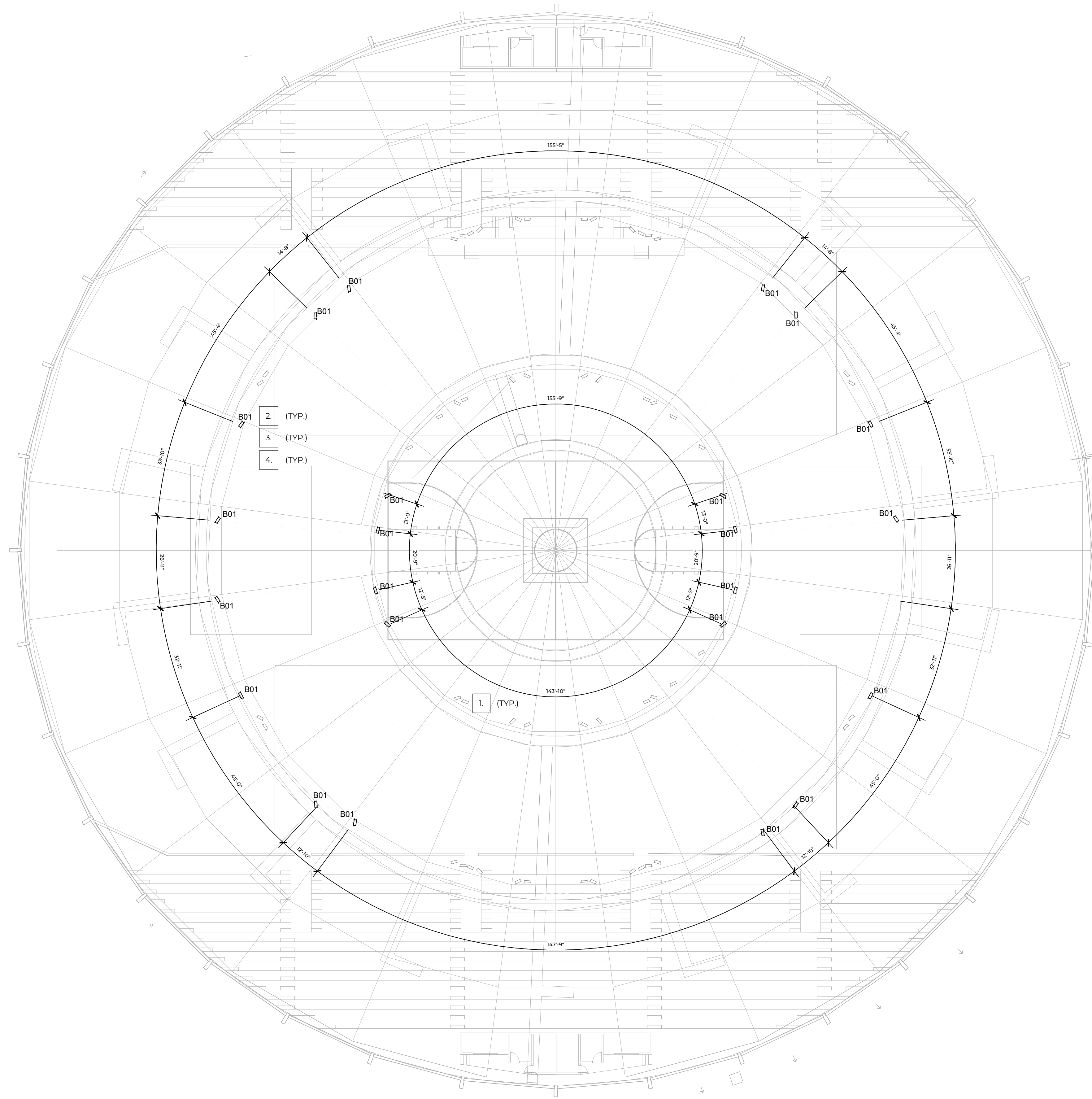
A	AMPERES	EMT	ELECTRICAL METALLIC TUBING	(R)	EXISTING TO REMAIN
C	CONDUIT	(E)	EXISTING	SPEC	SPECIFICATION
CB	CIRCUIT BREAKER	GND	GROUND	TYP	TYPICAL
CKT	CIRCUIT	HID	HIGH INTENSITY DISCHARGE	UON	UNLESS OTHERWISE NOTED
CU	COPPER	LTG	LIGHTING	V	VOLT
(D)	EXISTING TO BE DEMOLISHED	LV	LOW VOLTAGE	VA	VOLT-AMPERES
EC	ELECTRICAL CONTRACTOR	MIN	MINIMUM	W/O	WITHOUT

LUMINAIRE SCHEDULE

Type	Description	Manufacturer	Catalog Number	Source	CRI	CCT	Voltage	Load	Luminous Flux	Efficacy	Dim	Life Expectancy	Mounting	Notes
B01	HIGH OUTPUT SPORT LIGHTING	COOPER / EPHEBUS	EPH-LS-08-0320L-40-70-55-XX / XV-AM-LY-XX-HEG	LED	70	4000 K	120 V	320 W	51861 lm	152 lm/W			BRACKET ON CATWALK	1,2,3,4,5

NOTES

- LUMINAIRE TO BE MOUNTED WITH SCHEDULED DRIVER AS PER DETAIL 1/ELO.01.
- PROVIDE EPHEBUS MODEL EPH-LS-CAT-P-T-U-B BRACKET FOR EACH LUMINAIRE AND MOUNT TO CATWALK IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL LUMINAIRE ON BRACKET IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND OVERSEEING SETUP OF WIRELESS MESH BETWEEN CONTROLLER AND ALL LUMINAIRES WITH EPHEBUS ON SITE.
- LIGHT HEAD CABLE AND POWER CABLE LENGTH PER PLANS.
- VOLTAGE TO BE CONFIRMED ON SITE FOR CONNECTION TO EXISTING SYSTEM.



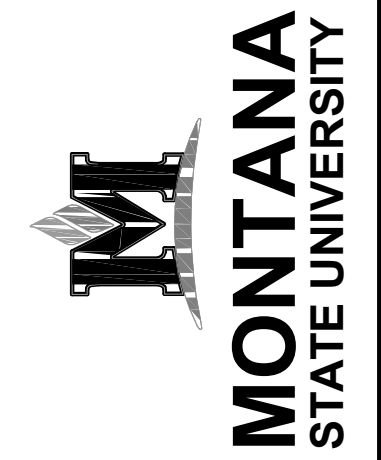
1 MAIN LEVEL LIGHTING PLAN
 EL3.01 1" = 20'-0"

GENERAL NOTES

1. INSTALLATION OF ALL WORK SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES AND THE EDITION OF THE NATIONAL ELECTRIC CODE NFPA 70 (NEC) IN EFFECT.
2. LIGHTING FIXTURE COMPATIBILITY MUST BE CONFIRMED BEFORE CONNECTING TO LIGHTING CONTROL EQUIPMENT.
3. THE LIGHTING CONTROL PLANS ARE DIAGRAMMATIC ONLY. COORDINATE EQUIPMENT LOCATION AND INSTALLATION WITH EQUIPMENT BEING SERVED.

REFERENCE KEYNOTES

1. LUMINAIRES IN GREY ARE EXISTING AND ONLY SHOWN FOR REFERENCE.
2. REFERENCE DETAIL V/EL0.01 FOR MOUNTING DETAIL TO CATWALK.
3. MANUFACTURER TO PERFORM FINAL AIMING ON SITE PER THEIR LIGHTING CALCULATION PLANS. EC TO COORDINATE PRE-AIMING DIRECTLY WITH MANUFACTURER.
4. CONNECT TO NEAREST 120V/20A/1P CATWALK LIGHTING CIRCUIT WITH MC CABLE SECURED TO CATWALK STRUCTURE.



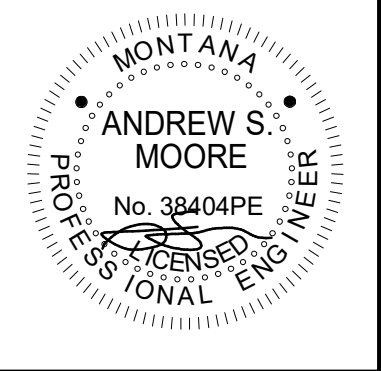
**BRICK BREEDEN
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LIGHTING
 REFLECTED
 CEILING PLAN

EL3.01