Department of Licensing and Regulatory Affairs

1st Floor Ottawa Building
611 W. Ottawa Street
Lansing, MI 48933

Final Report - Approved

Application Number: PR2025BCC-000931

Report Date: 03/31/2025
Description : Football Stadium Scoreboard Replacement
Address : 2615 BAKER RD, DEXTER, MI, 48130
Record Type : Bureau of Construction Codes Plan Review Application
Document Filename : SEALED_DCS Scoreboard Replace Al Ritt Stadium Drawings - Construction.pdf

Reviewer Contact Information:

Reviewer Name	Reviewer Email	Reviewer Phone
Neil Pline	PlineN@michigan.gov	517-280-9516

General Comments

Markups for this Approved Document or Plan

Comment ID	Page Ref	Reviewer : Department	Review Comments
1	E5.1	Neil Pline : Electrical	NEC, Sections 250.52, 250.53, 250.64, 250.66, and 250.68 - Grounding electrodes, grounding electrode conductors, and bonding jumpers shall comply with the code. Grounds required at T-FB and PNL-FB.
2	E5.1	Neil Pline : Electrical	NEC, Section 450.14 - Transformers require a disconnecting means within sight or lockable in a remote location.

DEXTER COMMUNITY SCHOOLS
SCOREBOARD REPLACEMENT
AL RITT STADIUM

2615 Baker Rd, Dexter, MI 48130

CONSTRUCTION 3/12/2025

DEXTER COMMUNITY SCHOOLS

Peter Basso Associates
CONSULTING ENGINEERS
5145 Livernois, Suite 100
Troy, Michigan 48098-3276
Tel: 248-879-5666
www.PeterBassoAssociates.com
PBA Project No.: 2025.0035

STATE OF MICHIGAN
SCOTT TIMOTHY PECK
ENGINEER
No. 6201055669
LICENSED PROFESSIONAL ENGINEER

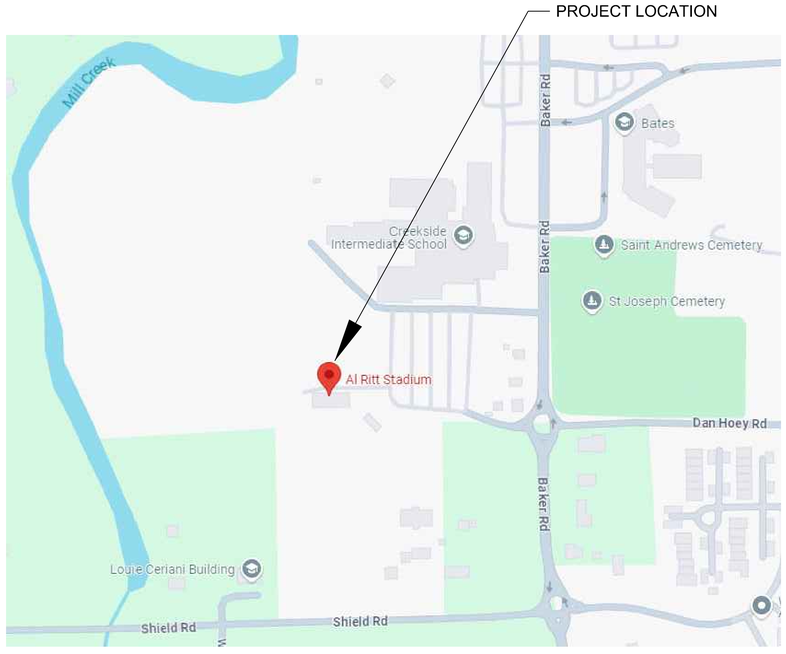
CONSTRUCTION 03-12-2025

CODES AND STANDARDS

2015	REHABILITATION CODE MICHIGAN FOR EXISTING BUILDING
2023	STATE OF MICHIGAN ELECTRIC CODE PART 8 ELECTRICAL CODE RULES (INCORPORATING NFPA 70 – NATIONAL ELECTRICAL CODE 2023 EDITION AND MICHIGAN AMENDMENTS)

ELECTRICAL DRAWING INDEX

SHEET NO.	SHEET TITLE
E0.1	ELECTRICAL STANDARDS AND DRAWING INDEX
E0.2	ELECTRICAL STANDARD SCHEDULES
E0.3	ELECTRICAL DEMOLITION SITE PLAN
E0.4	ELECTRICAL NEW WORK SITE PLAN
E5.1	ONE LINE DIAGRAM & PANEL SCHEDULE



LOCATION MAP
NO SCALE

ELECTRICAL

These documents are approved for compliance with the STATE OF MICHIGAN ELECTRICAL CODE subject to field inspection and the conditions of approval.

ELECTRICAL SYMBOL LIST

(NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT)

SYMBOL	DESCRIPTION
X (NL)	X DENOTES FIXTURE TYPE (NL INDICATES NIGHT LIGHT)
	FILL DENOTES EMERGENCY FIXTURE
	TROFFER LIGHT
	STRIP LIGHT
	LINEAR LIGHT
	MULTIHEAD ADJUSTABLE LIGHT
	DOWN LIGHT
	DIRECTIONAL DOWN LIGHT
	DECORATIVE LIGHT
	DECORATIVE LIGHT
	WALL MOUNTED LIGHT
	WALL SCONCE
	ARM MOUNTED LIGHT
	LIGHTING TRACK
	TRACK LIGHT
	ADJUSTABLE FLOOD LIGHT
	STEP LIGHT
	LED TAPE
	REMOTE DRIVER
	HIGH BAY LIGHT
	POLE MOUNTED LIGHT
	POST TOP LIGHT
	BOLLARD LIGHT
	IN GROUND LIGHT
	EMERGENCY LIGHT
	EXIT LIGHT WITH DIRECTIONAL ARROWS (FILLED AREA INDICATES FACE)
	EXIT LIGHT WITH DIRECTIONAL ARROWS (FILLED AREA INDICATES FACE)
	EXIT LIGHT – WALL MOUNTED (FILLED AREA INDICATES FACE)
	EXIT/EMERGENCY LIGHT COMBO – WALL MOUNTED (FILLED AREA INDICATES FACE)
BCELTS	BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH
ALCR	AUTOMATIC LOAD CONTROL RELAY
LC	LIGHTING CONTROL DEVICE – REFER TO LIGHTING CONTROL SCHEDULE
XX	ROOM CONTROL DESIGNATION – REFER TO LIGHTING CONTROL SCHEDULE
S	SINGLE POLE TOGGLE SWITCH
S2	TWO POLE TOGGLE SWITCH
S3	3 WAY TOGGLE SWITCH
S4	4 WAY TOGGLE SWITCH
K	KEY OPERATED SWITCH
K3	3 WAY KEY OPERATED SWITCH
K4	4 WAY KEY OPERATED SWITCH
D	DIMMER SWITCH
D3	3 WAY DIMMER SWITCH
Do	DIMMER OCCUPANCY SENSOR SWITCH
DL	LOW VOLTAGE DIMMER SWITCH
Sp	PILOT SWITCH

SYMBOL	DESCRIPTION
TWC	TWO-WAY COMMUNICATION SYSTEM CALL STATION
TWCD	TWO-WAY COMMUNICATION SYSTEM AUTO DIALER
TWCA	TWO-WAY COMMUNICATION SYSTEM ANNUNCIATOR & COMMUNICATION PANEL
TWCP	TWO-WAY COMMUNICATION SYSTEM POWER SUPPLY WITH BATTERY BACK-UP
TWCDP	TWO-WAY COMMUNICATION SYSTEM AUTO DIALER POWER SUPPLY WITH BATTERY BACK-UP
RGP	REMOTE GENERATOR ANNUCIATOR PANEL
ATS	AUTOMATIC TRANSFER SWITCH
UPS	UNINTERRUPTIBLE POWER SUPPLY
CSX	LOW VOLTAGE CONTROL STATION "X" INDICATES TYPE
"X"	SINGLE / DUPLEX RECEPTACLE OUTLET "X" INDICATES TYPE
	SINGLE/DUPLEX RECEPTACLE OUTLET CONTROLLED BY AUTOMATIC CONTROL DEVICE/SYSTEM
HH	QUAD RECEPTACLE OUTLET
X	ABOVE COUNTER DUPLEX RECEPTACLE OUTLET (SIMILAR FOR TAMPER RESISTANT, CONTROLLED, QUADS, EMERGENCY, UPS, USB, AND GFCI RECEPTACLE OUTLETS)
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE OUTLET
	DEAD FRONT GROUND FAULT CIRCUIT INTERRUPTER
	DUPLEX EMERGENCY RECEPTACLE OUTLET
	DUPLEX TAMPER RESISTANT RECEPTACLE OUTLET
	QUAD TAMPER RESISTANT RECEPTACLE OUTLET
	DUPLEX UPS RECEPTACLE OUTLET
	DUPLEX RECEPTACLE OUTLET WITH 2 USB PORTS
	4 PORT USB CHARGING STATION
	CEILING MOUNTED DUPLEX/QUAD RECEPTACLE OUTLET
	POWER POLE
TCB	WALL/CEILING MOUNTED SPECIAL RECEPTACLE OUTLET – REFER TO ELECTRICAL STANDARD SCHEDULES
TMGB	BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH
IC	MULTI-OUTLET SURFACE RACEWAY
S	MULTI-SERVICE DROP SEE ELECTRICAL DETAILS AND DIAGRAMS SHEET "X" INDICATES TYPE
PTX	POKE-THROUGH ASSEMBLY "X" INDICATES TYPE
FBX	FLOOR SERVICE FITTING "X" INDICATES TYPE
AFX	ACCESS FLOOR SERVICE FITTING "X" INDICATES TYPE
RX	CORD REEL "X" INDICATES TYPE
	DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
	3-WAY DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
	4-WAY DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
ST	DIGITAL TIME SWITCH
SI	ILLUMINATED TOGGLE SWITCH FOR CONTROL OF LIGHTING ON CRITICAL POWER-ILLUMINATED WHEN SWITCH IS IN "OFF" POSITION
SL	LOW VOLTAGE SWITCH
So	OCCUPANCY SENSOR REFER TO ELECTRICAL STANDARD SCHEDULES
So2	OCCUPANCY SENSOR
OS X	OCCUPANCY SENSOR "X" INDICATES TYPE

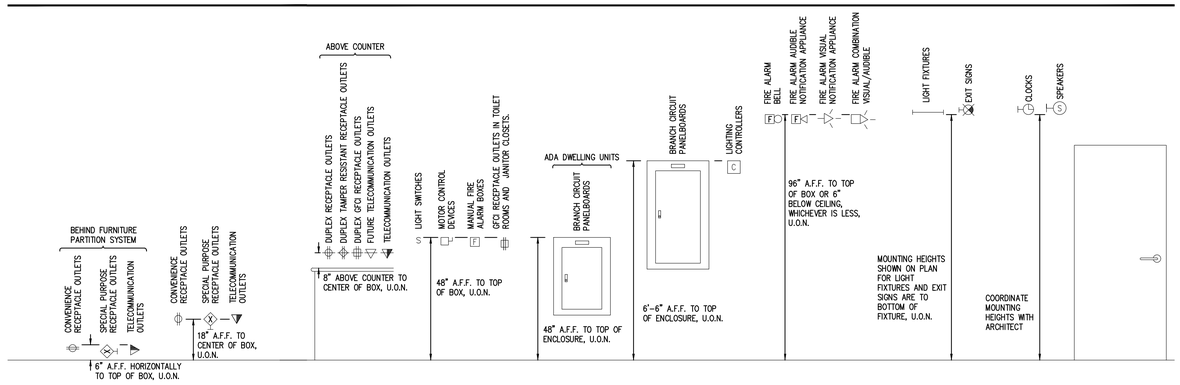
SYMBOL	DESCRIPTION
CP	CONTROL PANEL
	MOTOR
VFC	VARIABLE FREQUENCY CONTROLLER.
	MANUAL CONTROLLER
	MAGNETIC CONTROLLER
	COMBINATION MAGNETIC CONTROLLER
	NON-FUSIBLE DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
CB	ENCLOSED CIRCUIT BREAKER
	PUSH BUTTON STATION
J	JUNCTION BOX
	HARD WIRE POWER CONNECTION
	GROUND ROD
	GROUND CONNECTION
HH	HANDHOLE
ACCP	ACCESS CONTROL CONTROL PANEL
ACPS	ACCESS CONTROL POWER SUPPLY
	CONDUIT SLEEVE WITH BUSHINGS LENGTH AS REQUIRED "X" INDICATES CONDUIT SIZE
	CONDUIT UP
	CONDUIT DOWN
	EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET
	ABOVE COUNTER EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET
	EMPTY BOX FOR FUTURE CEILING MOUNTED TELECOMMUNICATION OUTLET
	TELECOMMUNICATION OUTLET "X" INDICATES TYPE
	ABOVE COUNTER TELECOMMUNICATION OUTLET "X" INDICATES TYPE
	TELECOMMUNICATION CEILING MOUNTED OUTLET "X" INDICATES TYPE
	TELECOMMUNICATION BACKBOARD
TGB	TELECOMMUNICATION GROUNDING BUS BAR
TMGB	TELECOMMUNICATION MAIN GROUNDING BUS BAR
IC	INTERCOM OUTLET
S	SPEAKER
S	SPEAKER – WALL MOUNTED
MIC	MICROPHONE
VC	VOLUME CONTROL/STATION SELECTOR
B	SIGNALING BELL
	SINGLE FACE CLOCK – CEILING MOUNTED
	SINGLE FACE CLOCK – WALL MOUNTED
	DOUBLE FACE CLOCK – CEILING MOUNTED
	DOUBLE FACE COMBINATION CLOCK/SPEAKER CEILING MOUNTED
	DOUBLE FACE CLOCK – WALL MOUNTED
	DOUBLE FACE COMBINATION CLOCK/SPEAKER WALL MOUNTED
TC	TIME CLOCK
C	CONTACTOR
P	PHOTOCELL
TT	TWIST TIMER
EVSE	ELECTRICAL VEHICLE SUPPLY EQUIPMENT
DCFC	DC FAST CHARGER – STANDALONE
DCPM	DC FAST CHARGER – POWER MODULE
DCDP	DC FAST CHARGER – DISPENSER

REFER TO ELECTRICAL STANDARD SCHEDULES

SYMBOL	DESCRIPTION
	SECURITY CAMERA
MD	MOTION DETECTOR
K	SECURITY KEY SWITCH
DC	DOOR CONTACT
KP	KEY PAD
CR	CARD READER
DB	DURESS PUSH BUTTON STATION
DE	DELAYED EGRESS
REX	REQUEST TO EXIT STATION
PP	AUTOMATIC DOOR PUSH PAD OPERATOR
DO	DOOR OPERATOR
DA	DOOR ACTUATOR
AC	ACCESS CONTROL STATION
	CIRCUIT BREAKER
	DRAWOUT CIRCUIT BREAKER MANUALLY/ OPERATED
	DRAWOUT CIRCUIT BREAKER ELECTRICALLY/ OPERATED
	SWITCH
	AUTOMATIC OR MANUAL TRANSFER SWITCH
	FUSE
	TRANSFORMER
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	LIGHTNING ARRESTOR
X	PANELBOARD "X" INDICATES PANELBOARD NAME
	GROUND
	STRESS CONE TERMINATION
K	SECURITY KEY INTERLOCK
G	ENGINE GENERATOR
M	UTILITY METER
EMU	ELECTRONIC METERING UNIT
A	AMMETER
V	VOLTMETER
AS	AMMETER SWITCH
VS	VOLTMETER SWITCH
SPD	SURGE PROTECTIVE DEVICE
CR	CONTROL RELAY
TDR	TIME DELAY RELAY
PRM	PHASE ROTATION MONITOR
	CAMLOK – MALE
	CAMLOK – FEMALE
	THERMAL OVERLOAD RELAY
	NORMALLY OPEN CONTACTS
	NORMALLY CLOSED CONTACTS
	N.O. PUSH BUTTON SINGLE CIRCUIT
	N.C. PUSH BUTTON SINGLE CIRCUIT
X–X	CABLE VAULT "X–X" INDICATES TYPE
	BRANCH CIRCUIT PANELBOARD
	LOAD CENTER
	MOTOR CONTROL CENTER
T	TRANSFORMER
	DISTRIBUTION EQUIPMENT
GB	ELECTRICAL GROUNDING BUS BAR
PB	PLUG IN BUSWAY
FB	FEEDER BUSWAY
12x4	CABLE TRAY – ALL SIZES IN INCHES

SYMBOL	DESCRIPTION
F	MANUAL FIRE ALARM BOX
SD	SMOKE DETECTOR
DD	DUCT SMOKE DETECTOR
CO	CARBON MONOXIDE DETECTOR
RT	REMOTE TEST STATION (FOR DUCT DETECTOR)
HD	HEAT DETECTOR
BD	PROJECTED BEAM DETECTOR
F	FIRE ALARM BELL
F	FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE
XX	FIRE ALARM VISUAL NOTIFICATION APPLIANCE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
XX	FIRE ALARM COMBINATION VISUAL/ AUDIBLE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
F XX	FIRE ALARM COMBINATION VISUAL/ AUDIBLE NOTIFICATION APPLIANCE– CEILING MOUNTED "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
XX	FIRE ALARM VISUAL NOTIFICATION APPLIANCE CEILING MOUNTED "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
F	FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE – CEILING MOUNTED
F	FIREFIGHTERS PHONE JACK
FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM ANNUNCIATOR PANEL
NAC	NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL
MM	ADDRESSABLE MONITORING MODULE
CM	ADDRESSABLE CONTROL MODULE
TS	ADDRESSABLE MONITORING MODULE FOR TAMPER SWITCH
FS	ADDRESSABLE MONITORING MODULE FOR FLOW SWITCH
DR	MAGNETIC DOOR RELEASE

STANDARD MOUNTING HEIGHTS



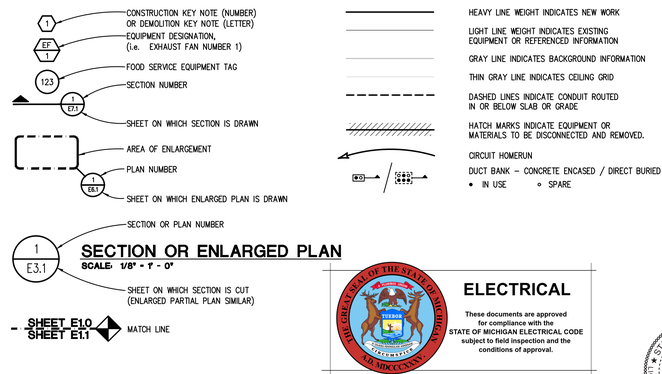
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ELECTRICAL ABBREVIATION LIST

ABBREVIATION	DESCRIPTION
A	AMPERES
AER	ARC ENERGY REDUCTION
AF	AMPERES FRAME (BREAKER RATING)
AFCI	ARC FAULT CIRCUIT INTERRUPTER
A.F.F.	ABOVE FINISH FLOOR
AIC	AMPS INTERRUPTING CAPACITY
AL	AUDIENCE LEFT
ALCR	AUTOMATIC LOAD CONTROL RELAY
AR	AUDIENCE RIGHT
AT	AMPERES TRIP (BREAKER SETTING)
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
BCELTS	BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH
BKR	BREAKER
BPS	BOLTED PRESSURE SWITCH
C	CONDUIT
CB	CIRCUIT BREAKER
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CKT	CIRCUIT
CT	CURRENT TRANSFORMER
DEMO	DEMOLITION
DIM	DIMENSION
DISC	DISCONNECT
DP	DISTRIBUTION PANEL
DS	DOWNSTAGE
DWG	DRAWING
EBU	EMERGENCY BATTERY UNIT
EC	ELECTRICAL CONTRACTOR
ECM	ELECTRONICALLY COMMUTATED MOTOR
ELEC	ELECTRICAL
EM/ EMERG	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EO	ELECTRICALLY OPERATED
EPO	EMERGENCY POWER OFF
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
FA	FIRE ALARM
FLA	FULL LOAD AMPS
FLR	FLOOR
FOH	FRONT OF HOUSE
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR
FU	FUSE
G/GRD/EG	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
HOA	HAND–OFF–AUTO
HP	HORSEPOWER
HV	HIGH VOLTAGE
HZ	HERTZ
IG	ISOLATED GROUND
JB	JUNCTION BOX
KA	THOUSAND AMP
KV	KILOVOLT
KVA	KILOVOLT – AMPERES
KW	KILOWATT
KWH	KILOWATT – HOURS
LA	LIGHTNING ARRESTOR
LP	LIGHTING PANEL
LDP	LIGHTING DISTRIBUTION PANEL
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MIN	MINIMUM
MISC.	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MOP	MAXIMUM OVERCURRENT PROTECTION
MTD	MOUNTED
MTG	MOUNTING
MTR	MOTOR
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NF	NON–FUSIBLE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
P	POLE
PB	PUSHBUTTON STATION
PH	PHASE
PT	POTENTIAL TRANSFORMER
PDP	POWER DISTRIBUTION PANEL
RECEPT.	RECEPTACLE
RDP	RECEPTACLE DISTRIBUTION PANEL
RP	RECEPTACLE PANEL
RSC	RIGID STEEL CONDUIT
SCCR	SHORT CIRCUIT CURRENT RATING
SCHED	SCHEDULE
SPD	SURGE PROTECTION DEVICE
ST	SHUNT TRIP
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TB	TERMINAL BOX
TELECOM	TELECOMMUNICATIONS
TR	TAMPER RESISTANT
TTB	TELEPHONE TERMINAL BACKBOARD
TYP	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
US	UPSTAGE
V	VOLTS
W	WIRE OR WATTS
WAP	WIRELESS ACCESS POINT
WG	WIRE GUARD
WP	WEATHERPROOF
WR	WEATHER RESISTANT
XFMR	TRANSFORMER
XP	EXPLOSION PROOF
(E)	EXISTING
(R)	RELOCATED

STANDARD METHODS OF NOTATION



ELECTRICAL

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SCOTT TIMOTHY PECK
ENGINEER
No. 6201055669
LICENSED PROFESSIONAL ENGINEER

REVISION
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5145 Livernois, Suite 100
Troy, Michigan 48098-3276
Tel: 248-879-3666
www.thepetersbassogroup.com
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SHEET TITLE
ELECTRICAL STANDARDS AND DRAWING INDEX

DATE
03/12/2025

ISSUE
Construction

SHEET No.
E0.1

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FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE - GENERAL PURPOSE

OVERCURRENT DEVICE RATING (AMPERES)	COPPER CONDUCTORS						KEYED NOTES
	WIRE SIZE (AWG OR KCMIL)		CONDUIT SIZE				
	PHASE & NEUTRAL	GROUND	SINGLE PHASE 2 WIRE+G (1PH, 1N, 1G, 2PH, 1G)	SINGLE PHASE 3 WIRE+G (2PH, 1N, 1G)	THREE PHASE 3 WIRE+G (3PH, 1G)	THREE PHASE & NEUTRAL 4 WIRE+G (3PH, 1N, 1G)	
15–20	12	12	3/4"	3/4"	3/4"	3/4"	
25–30	10	10	3/4"	3/4"	3/4"	3/4"	
35–40	8	10	3/4"	3/4"	3/4"	3/4"	
45–50	8 (6)	10	3/4"	3/4"	3/4"	3/4"	1
60	6 (4)	10	3/4" (1")	3/4" (1")	3/4" (1")	1" (1 1/4")	1
70	4	8	1"	1 1/4"	1 1/4"	1 1/4"	
80	4 (3)	8	1"	1 1/4"	1 1/4"	1 1/4"	1
90–100	3 (2)	8	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1
110	2 (1)	6	–	1 1/4"	1 1/4"	1 1/4" (1 1/2")	1
125	1 (1/0)	6	–	1 1/4" (1 1/2")	1 1/4" (1 1/2")	1 1/2"	1
150	1/0	6	–	1 1/2"	1 1/2"	1 1/2"	
175	2/0	6	–	2"	2"	2"	
200	3/0	6	–	2"	2"	2 1/2"	
225	4/0	4	–	2"	2"	2 1/2"	
250	250	4	–	2 1/2"	2 1/2"	2 1/2"	
300	350	4	–	2 1/2"	2 1/2"	3"	
350	500	3	–	3"	3"	3"	
400	500	3	–	3"	3"	3"	

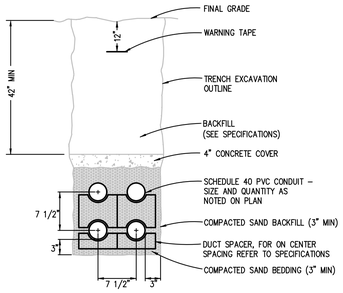
GENERAL NOTES:
1. CONTRACTOR TO SIZE FEEDERS AND BRANCH CIRCUITS BASED ON THIS SCHEDULE AND OVER CURRENT DEVICE SIZE, UNLESS NOTED OTHERWISE.
2. CONTRACTOR MAY COMBINE 20A CIRCUITS AS NOTED IN SPECIFICATION.
3. CONDUCTORS ARE BASED ON THHN/THWN-2 UP TO AND INCLUDING #4/0. LARGER THAN #4/0 ARE BASED ON TYPE XHHW.
4. CONDUIT SIZES ARE VALID FOR EMT OR RSC. CONDUIT SIZES SHALL BE ADJUSTED AS REQUIRED FOR OTHER TYPES OF CONDUIT.
5. SIZE OF DISCONNECT SWITCH LOCATED AT EQUIPMENT SHALL BE SIZED BASED UPON OVERCURRENT PROTECTION OF THAT DEVICE.
6. OBTAIN APPROVAL FROM ENGINEER PRIOR TO INSTALLING DIFFERENT SIZE/QUANTITY OF CONDUCTORS TO OBTAIN AN EQUIVALENT AMPACITY.

KEYED NOTES:
1. CONDUCTORS ARE BASED ON 90°C, 600V INSULATED WIRE APPLIED AT 75°C FOR TERMINATION RATED 60/75°C OR 75°C. FOR TERMINATION RATED AT 60°C, USE CONDUCTORS AND CONDUIT SIZES INDICATED IN PARENTHESES.

RACEWAY / CONDUCTOR / CABLE APPLICATION SCHEDULE

	WIRE		RACEWAY							CABLE / CORD	
	COPPER, TYPE THHN/THWN-2	COPPER, TYPE XHHW-2	INTERMEDIATE METAL CONDUIT (IMC)	RIGID STEEL CONDUIT (RSC)	PVC COATED RIGID STEEL CONDUIT	RIGID NON-METALLIC CONDUIT (RNC) TYPE EPC-40	RIGID NON-METALLIC CONDUIT (RNC) TYPE EPC-80	LIQUID TIGHT FLEXIBLE METAL CONDUIT (LFMC)	POWER LIMITED CABLE	
FEEDERS - EXTERIOR										
EXPOSED, SURFACE MOUNTED TO STRUCTURE		X	X	X						
EXPOSED, WITH FREESTANDING SUPPORT		X	X	X						
BELOW PARKING LOTS AND ROADWAYS		X		X			X			
BELOW GREEN SPACE		X			X	X				
WITHIN 5' OF FOUNDATION WALL		X		X	X					
BRANCH CIRCUITS - EXTERIOR										
EXPOSED, SURFACE MOUNTED TO STRUCTURE		X	X	X			X			
EXPOSED, WITH FREESTANDING SUPPORT		X	X	X						
BELOW PARKING LOTS AND ROADWAYS		X		X	X	X				
BELOW GREEN SPACE		X				X				
WITHIN 5' OF FOUNDATION WALL		X		X	X					
SPECIAL APPLICATIONS										
CLASS 1 CONTROL CIRCUITS	X		X	X						
CLASS 2 CONTROL CIRCUITS	X		X	X						X
CLASS 3 CONTROL CIRCUITS	X		X	X						X
CONNECTIONS TO TRANSFORMERS, MOTORS AND VIBRATING EQUIPMENT		X						X		

GENERAL NOTES:
1. TRANSITION FROM PVC/HDPE AND PROVIDE RIGID STEEL OR RTRC SWEEPS WHERE CONDUITS PENETRATE WALLS, CONCRETE SLABS, CONCRETE BASES, AND ASPHALT.
2. REFER TO SPECIFICATIONS FOR RESTRICTIONS ON MC/AC CABLE INSTALLATION.
3. EMT SHALL NOT BE USED ON THE EXTERIOR OF A BUILDING OR IN AREAS SUBJECT TO DAMAGE BELOW 10' AFF.
4. INSTALL SURFACE RACEWAYS ONLY WHERE INDICATED ON DRAWINGS.



UNDERGROUND CONDUIT DETAIL

NO SCALE

NOTES:

1. QUANTITY AND CONFIGURATION OF DUCTS SHALL BE AS SHOWN ON PLAN DRAWINGS. 12" MINIMUM SEPARATION SHALL BE MAINTAINED BETWEEN ELECTRICAL AND COMMUNICATIONS DUCTS.

DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE

XFMR KVA	PRIMARY (480V)	SECONDARY (208Y/120 VOLT)								KEYED NOTES
	OVERCURRENT PROTECTION	OVERCURRENT PROTECTION	CONDUCTOR SIZE (AWG OR KCMIL)						GROUNDING ELECTRODE CONDUCTOR	
			PHASE & NEUTRAL		SUPPLY SIDE BONDING JUMPER		CONDUIT (4W + SSBJ)			
			COPPER	ALUMINUM	COPPER	ALUMINUM	COPPER	ALUMINUM	COPPER	ALUMINUM	
9	20A	30A	10	NA	8	NA	3/4"	NA	8	NA	
15	25A	60A	6	NA	8	NA	1"	NA	8	NA	1
30	45A	100A	3	1	8	6	1 1/4"	1 1/2"	8	6	1
45	70A	175A	2/0	4/0	4	2	2"	2 1/2"	4	2	
75	125A	300A/225A	350 / 4/0	500 / 300	2	1/0	3"	3 1/2"	2	1/0	2
112 1/2	175A	400A	600	2–250	1/0	2	3 1/2"	2–2 1/2"	1/0	1/0	
150	225A	600A	2–350	2–500	2–2	2–1/0	2–3"	2–3 1/2"	2/0	4/0	
225	350A	800A	2–600	3–400	2–1/0	3–1/0	2–3 1/2"	3–3"	3/0	4/0	
300	500A	1200A	3–600	4–500	3–1/0	4–1/0	3–3 1/2"	4–3 1/2"	3/0	250	
500	800A	1600A	4–600	5–600	4–1/0	5–3/0	4–3 1/2"	5–3 1/2"	3/0	250	

GENERAL NOTES:
1. TRANSFORMERS AND FEEDERS ARE BASED ON 480 VOLT, 3 PHASE, 3 WIRE PRIMARY AND 208Y/120 VOLT, 3 PHASE, 4 WIRE, SECONDARY.
2. ALUMINUM CONDUCTORS ARE PERMITTED ONLY IF INCLUDED IN FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE.
3. PRIMARY OVERCURRENT PROTECTION IS SIZED AT 125% OF TRANSFORMER FULL LOAD CURRENT. PROVIDE PRIMARY OVERCURRENT DEVICE SELECTION TO ALLOW TRANSFORMER IN-RUSH CURRENT AND PROTECT BASED ON THE ANSI DAMAGE CURVE. IF MANUFACTURER REQUIRES PRIMARY OVERCURRENT GREATER THAN 125% (NOT TO EXCEED 250%) THEN PRIMARY FEEDER SHALL BE INCREASED ACCORDINGLY.
4. SECONDARY CONDUCTOR BASED ON TEN FOOT MAXIMUM LENGTH (NEC 240.21(C)(2)). IF CONDUCTORS ARE LONGER THAN TEN FOOT, REQUIREMENTS IN NEC 240.21(C)(6) MUST BE MET. IN NO CASE SHALL CONDUCTORS BE LONGER THAN TWENTY-FIVE FEET.

KEYED NOTES:
1. CONDUCTORS ARE BASED ON 90°C, 600V. INSULATED WIRE APPLIED AT 75°C FOR TERMINATION RATED 60/75°C OR 75°C.
2. THE SMALLER SIZE IS TO BE USED TO FEED 225A PANELBOARDS.

BRANCH CIRCUIT VOLTAGE DROP WIRING SCHEDULE FOR SINGLE PHASE CIRCUITS

BRANCH CKT RATING (A)	WIRE SIZE (AWG)	MAXIMUM BRANCH CIRCUIT LENGTH (IN FEET)				
		120V	208V	240V	277V	480V
20A	12	83	143	165	191	331
	10	128	222	256	295	511
	8	201	348	402	464	804
	6	313	542	625	721	1250
30A	10	85	148	170	197	341
	8	134	232	268	309	536
	6	208	361	417	481	833
	4	313	542	625	721	1250

GENERAL NOTES:
1. THE ABOVE TABLE VALUES ARE BASED ON COPPER CONDUCTORS, IN STEEL CONDUIT, WITH A LOAD POWER FACTOR OF 0.85 PER NEC CHAPTER 9, TABLE 9.
2. PROVIDE BRANCH CIRCUIT CONDUCTORS AS INDICATED IN THE TABLE ABOVE FOR ALL LIGHTING AND RECEPTACLE BRANCH CIRCUITS. WHERE BRANCH CIRCUITS SERVE DEDICATED EQUIPMENT, THE CONTRACTOR MAY PERFORM VOLTAGE DROP CALCULATIONS BASED ON ACTUAL EQUIPMENT CONNECTED LOAD AND PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO A MAXIMUM OF 3%.
3. CONDUCTOR SIZES ARE BASED ON MAXIMUM OF 9 CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT.
4. LIMITS FOR CONDUCTOR LENGTHS SHOWN ARE BASED ON A MAXIMUM BRANCH CIRCUIT LOADING OF 64% OF THE BRANCH BREAKER RATING AND A MAXIMUM OF 3 PERCENT VOLTAGE DROP TO COMPLY WITH ASHRAE 90.1 AND THE NEC. FOR CIRCUITS LOADED GREATER THAN 64% OF BRANCH BREAKER RATING, THE CONTRACTOR SHALL PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO 3%.

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NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT.

STATE OF MICHIGAN
SCOTT TIMOTHY PECK
ENGINEER
No. 6201055669
LICENSED PROFESSIONAL ENGINEER

REVISION
.
REVISION
.

5145 Livernois, Suite 100
Troy, Michigan 48098-3276
Tel: 248-879-3666
www.PeterBassoAssociates.com
PBA Project No: 2025.0035

Peter Basso Associates
CONSULTING ENGINEERS

PROJECT TITLE
DEXTER COMMUNITY SCHOOLS
SCOREBOARD REPLACEMENT
AL RITT STADIUM
2521 Baker Rd, Dexter, MI 48130

SHEET TITLE
ELECTRICAL STANDARD SCHEDULES

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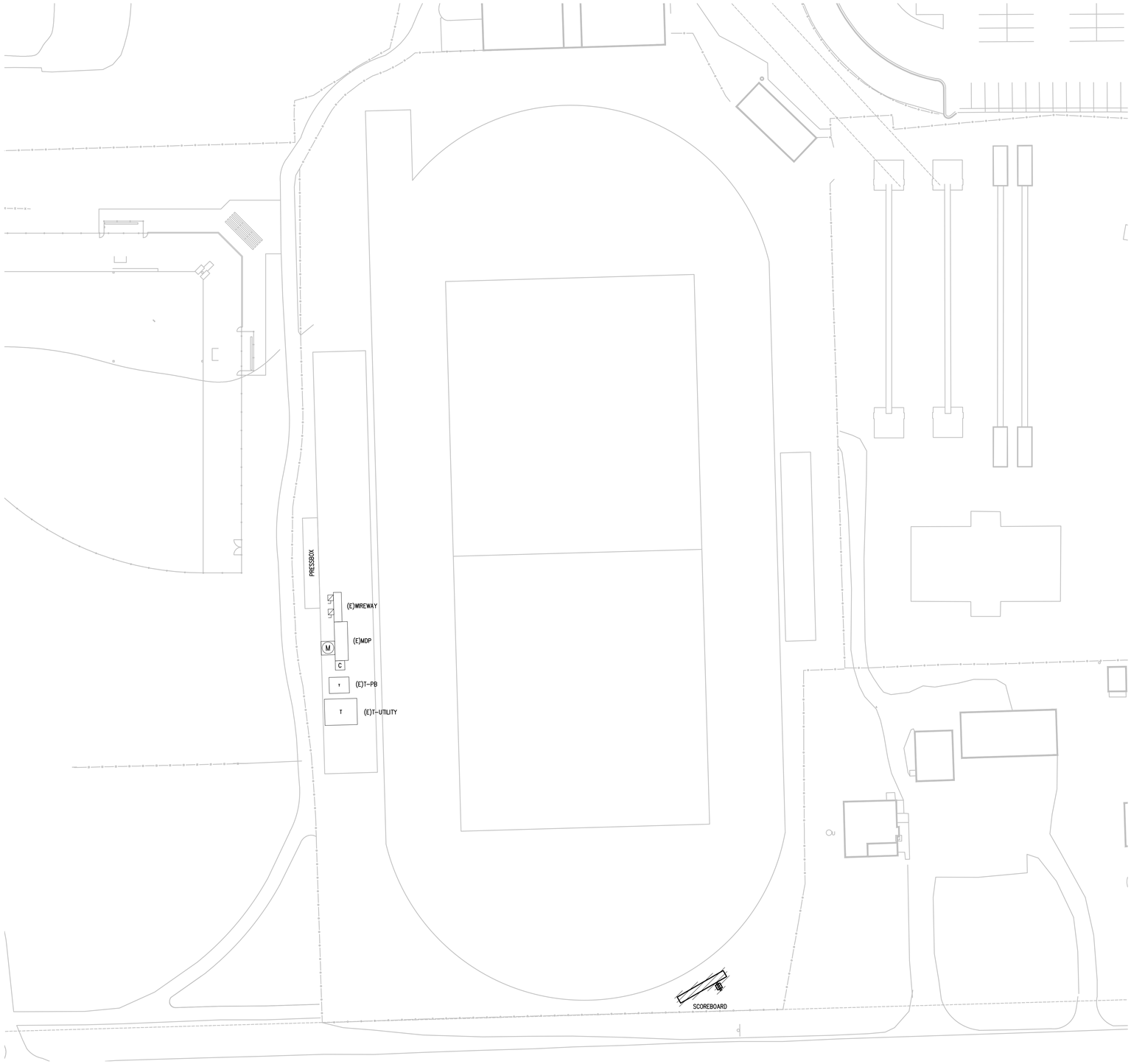
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SITE PLAN GENERAL NOTES:

1. THESE NOTES ARE GENERIC GUIDELINES ONLY. ELECTRICAL CONTRACTOR'S PERSONNEL ON SITE SHALL BE THOROUGHLY FAMILIAR WITH THE PUBLISHED SPECIFICATIONS FOR EXACT DESCRIPTIONS OF SCOPE, METHODS, AND MATERIAL.
2. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
3. CONDUCT A SURVEY TO IDENTIFY ALL UNDERGROUND UTILITIES. CALL 811 PRIOR TO EXCAVATION.
4. UTILITIES SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY. COORDINATE EXACT LOCATION OF ALL EXISTING UTILITIES, AND ROUTING OF ALL NEW UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
5. DEWATER TRENCHES PRIOR TO INSTALLATION OF CONDUITS. PROVIDE WATER TIGHT FITTINGS ON ALL UNDERGROUND CONDUITS.
6. COORDINATE DEMOLITION WORK, AND ELECTRICAL AND TELEPHONE SERVICES TO THE SITE, WITH THE RESPECTIVE LOCAL UTILITY COMPANY REPRESENTATIVES PRIOR TO COMMENCEMENT OF WORK. INCLUDE ALL ASSOCIATED COST/FEES BY THE UTILITY COMPANIES IN THE BID PRICE.
7. INSTALL UNDERGROUND CONDUITS 42" BELOW FINISHED GRADE, MINIMUM, UNLESS NOTED OTHERWISE.
8. COORDINATE SERVICE SHUT-DOWNS WITH ALL TRADES INVOLVED ON SITE AND OBTAIN WRITTEN AUTHORIZATION FROM OWNER 72 HOURS PRIOR TO ANY ELECTRICAL AND/OR TELEPHONE SHUT-DOWN.
9. REMOVE ALL DE-ENERGIZED CONDUCTORS FROM SITE AT COMPLETION OF THE PROJECT.
10. SPARE CONDUITS SHALL INCLUDE PULL STRING AND SHALL BE TERMINATED WITH A CAP.
11. EXCAVATE THE ENTIRE LENGTH OF TRENCH TO PROPERLY SET DUCT ELEVATIONS.
12. DO NOT ROUTE CONDUITS UNDER FOOTBALL FIELD OR TRACK.



ELECTRICAL DEMOLITION SITE PLAN
SCALE: 1" = 30'

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5145 Livernois, Suite 100
Troy, Michigan 48098-3276
Tel: 248-879-3666
www.PeterBassoAssociates.com
PBA Project No: 2025.0035

Peter Basso Associates
CONSULTING ENGINEERS

PROJECT TITLE
DEXTER COMMUNITY SCHOOLS
SCOREBOARD REPLACEMENT
AL RITT STADIUM
2521 Baker Rd, Dexter, MI 48130

SHEET TITLE
ELECTRICAL DEMOLITION SITE PLAN

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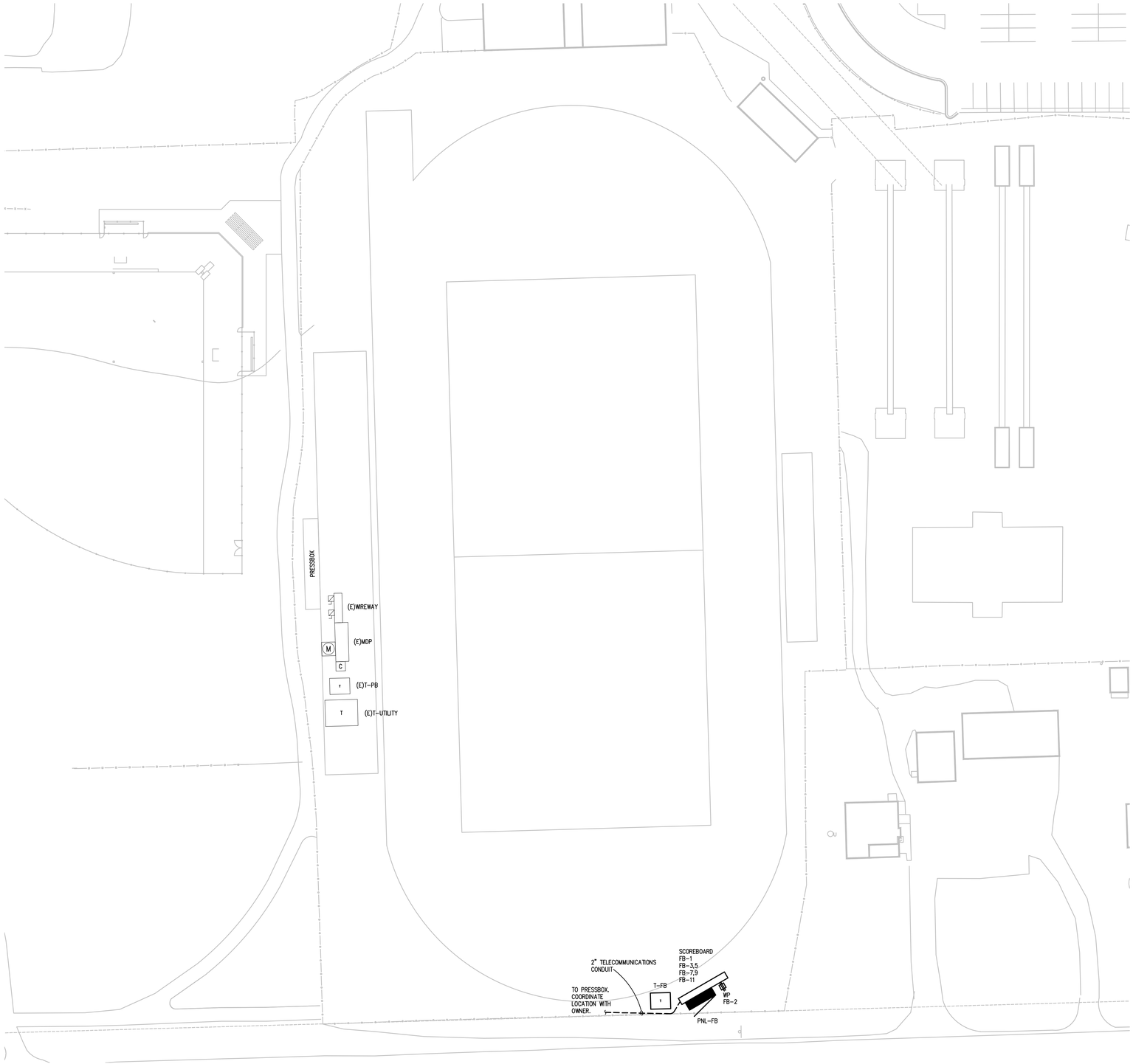
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ELECTRICAL NEW WORK SITE PLAN

SCALE: 1" = 30'

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5145 Livernois, Suite 100
Troy, Michigan 48098-3276
Tel: 248-879-3666
www.PeterBassoAssociates.com
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SCOREBOARD REPLACEMENT
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ENGINEER
No. 6201055669
PROFESSIONAL ENGINEER

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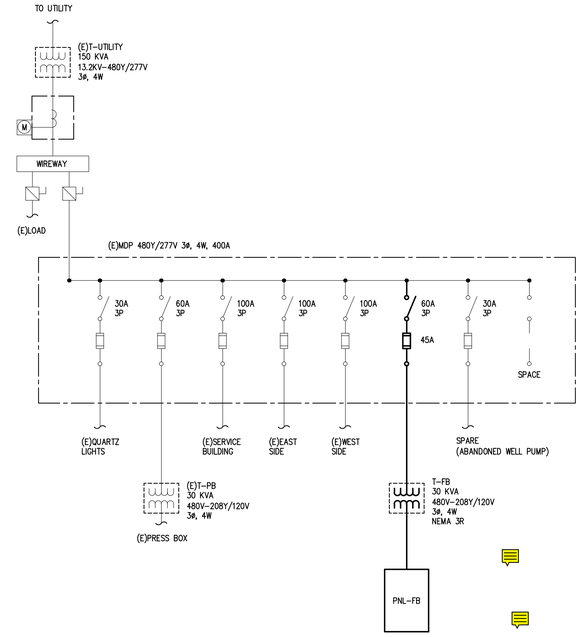
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DIAGRAM GENERAL NOTES:

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2. FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE–GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
3. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "TRANSFORMER CIRCUIT SIZING SCHEDULE–GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.



(E)MDP LOAD SUMMARY

EXISTING METERED LOAD:	128	154
EXISTING METERED LOAD x 125%:	160	193
ADDED LOADS	kVA	AMPS
PNL–FB	19	23
NEW TOTAL BUILDING LOAD:	180	216

ONE LINE DIAGRAM
NO SCALE

PNL–FB

#	CB TYPE	DESCRIPTION	CB TYPE	CB	VA	ØA	ØB	ØC	VA	CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	NC	SCOREBOARD	NEW	20	984	1164			180	20	NEW	RECEPTACLE	R	2
3	NC	VIDEO DISPLAY SECTION 100	NEW	50	4314		1920			20	NEW	SPARE		4
5	NC		NEW		3841			3841		20	NEW	SPARE		6
7	NC	VIDEO DISPLAY SECTION 200	NEW	50	4314	4314				20	NEW	SPARE		8
9	NC		NEW		3841		3841			20	NEW	SPARE		10
11	NC	SOUND SYSTEM	NEW	20	1920			1920		20	NEW	SPARE		12
						5478	5761	5761						
						ØA	ØB	ØC						

PANELBOARD INFORMATION
VOLTAGE: 208Y/120
BUS AMPACITY: 100A
MAIN TYPE: 100A MCB
MINIMUM A.I.C.: 10,000
MOUNTING: SURFACE

☐ FEED–THROUGH LUGS
☐ DOUBLE LUGS
☐ INTEGRAL SPD

PANELBOARD LOCATION

BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OCPD SIZING
CONTINUOUS LOAD (C)		100%		125%
ELECTRIC HEAT (E)		100%		100%
NON–CONTINUOUS LOAD (NC)	19215	100%	19215	100% 19215
KITCHEN LOAD (K)		100%		100%
RECEPTACLE BASE LOAD (R)	180	100%	180	100% 180
RECEPTACLE DEMAND LOAD (R)		50%		100%
LIGHTING LOAD (L)		100%		125%
ADDITIONAL TRACK LIGHTING LOAD				100%
MOTORS, HIGHEST LOAD (MH)		125%		100%
MOTORS, REMAINING LOAD (M)		100%		100%
		TOTAL(KVA):	19.4	
NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED FROM CONNECTED LOAD		TOTAL (AMPS):	53.8	TOTAL (AMPS): 53.8

NOTES:
LOCKABLE NEMA 3R ENCLOSURE

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STATE OF MICHIGAN
SCOTT TIMOTHY PECK
ENGINEER
No. 6201055669
LICENSED PROFESSIONAL ENGINEER

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5145 Livernois, Suite 100
Troy, Michigan 48098-3276
Tel: 248-879-2466
www.PeterBassoAssociates.com
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