

CANTON TOWNSHIP

VICTORY PARK BALLFIELDS, BID PACKAGE 2 Canton Township, MI



Canton Township

Owner
1150 S Canton Center Rd
Canton, MI 48188
734.304.5100



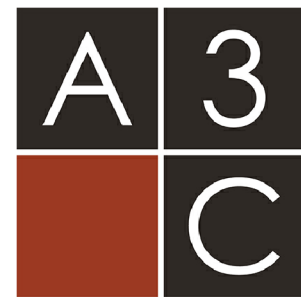
MA Engineering

Mech / Elec Engineering Consultants
180 High Oak Rd
Bloomfield Hills, MI 48304
PH: 248.258.1610
FX: 248.258.9538



PBA - Peter Basso Associates, Inc.

Electrical Consultant
5145 Livernois Rd. Suite 100
Troy, MI 48098
PH: 248.879.5666
FX: 248.879.0007



A3C Collaborative Architecture

Architect -- Project Number: 21033
115 1/2 East Liberty St.
Ann Arbor, MI 48104
PH: 734.663.1910
FX: 866.732.2168



Mannik & Smith Group

Civil Engineering Consultant
2365 S Haggerty Rd
Canton, MI 48188
PH: 173.439.73100



Musco Sports Lighting

Lighting Consultant
Jefferson T. Barber
Michigan Fields Sales
PH: 616.510.7146
FX: 800.374.6402

PROJECT TITLE

NO SCALE
REF'D FROM: NA

10

PROJECT GENERAL NOTES:

- ALL DIMENSIONS ARE FROM FINISH FACE OF MATERIAL, UNO.
- ALL ANGLES ARE 90 DEGREES, UNO.
- SITE CONDITIONS: THE CONTRACTOR BY COMMENCING THE WORK ACCEPTS THE CONDITIONS OF THE SITE AND THE COMPLETENESS OF THE CONTRACT DOCUMENTS. ANY DISCREPANCIES BETWEEN DRAWINGS AND ACTUAL CONDITIONS SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO BEGINNING THE WORK. NO EXTRAS SHALL BE ALLOWED FOR DISCREPANCIES AFTER THE WORK HAS BEGUN.
- DRAWINGS: ALL CONTRACTORS SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS. CONTRACTORS ARE RESPONSIBLE FOR COMPLETE REVIEW. ITEMS AFFECTING ALL TRADES ARE PLACED THROUGHOUT THE SET OF DRAWINGS. NO "EXTRAS" FOR MISSED ITEMS IN OTHER SECTIONS WILL BE PERMITTED. THE CONTRACTORS SHALL PROMPTLY NOTIFY THE ARCHITECT OF ANY AMBIGUITY, INCONSISTENCY OR ERROR WHICH THEY DISCOVER UPON EXAMINATION OF THE CONTRACT DOCUMENTS, THE SITE, OR LOCAL CONDITIONS. GENERAL CONTRACTORS SHALL DISTRIBUTE COMPLETE SETS OF DRAWINGS TO ALL SUBCONTRACTORS. DO NOT SEPARATE DRAWINGS BY DISCIPLINE. DO NOT SCALE DRAWINGS.
- COMPLETENESS: ANY MATERIAL NOT SHOWN ON THE DRAWINGS, NOR SPECIFIED, BUT WHICH IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK OF A SIMILAR NATURE SHALL BE FURNISHED WITHOUT ADDITIONAL COST TO THE OWNER OR ARCHITECT. IN THE CASE OF CONFLICTING QUANTITIES/VALUES, THE GREATER AMOUNT OR THE ONE OF GREATER VALUE SHALL PREVAIL AND BE PROVIDED BY THE CONTRACTOR AS A PART OF HIS BASE CONTRACT AND SHALL NOT BECOME A BASIS FOR CHANGE ORDERS OR CLAIMS FOR ADDITIONAL COMPENSATION.
- PROTECTION: GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR TAKING ALL STEPS NECESSARY TO PROTECT THE PUBLIC AND THE OWNER'S PERSONNEL FROM INJURY, AND ADJACENT PROPERTY FROM DAMAGES DURING CONSTRUCTION AS REQUIRED BY LOCAL CODES. THE GENERAL CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PROJECT SECURITY FROM THE START OF THE WORK UNTIL THE OWNER ACCEPTS THE PROJECT AS SUBSTANTIALLY COMPLETE AND/OR OCCUPIABLE.
- GRAPHIC SCALES ARE PROVIDED FOR REFERENCE ONLY. IN A CASE OF DIMENSIONAL QUESTION OR DISCREPANCY, SUBMIT A REQUEST FOR INFORMATION (RFI) TO THE CONSTRUCTION COORDINATOR.

BUILDING CODE: MICHIGAN BUILDING CODE, 2015
MICHIGAN REHABILITATION CODE, 2015

ACCESSIBILITY: 2010 ADA STANDARDS

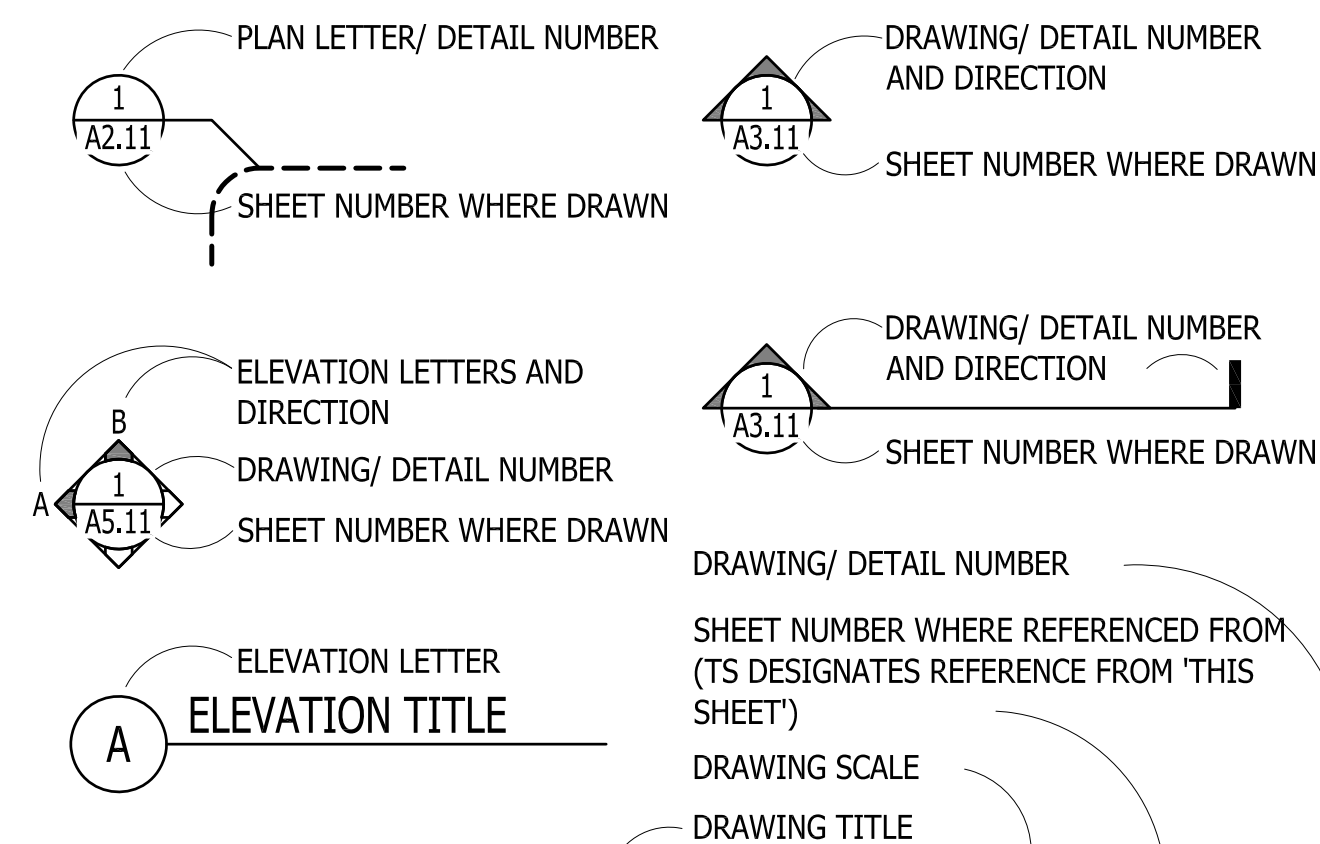
PLUMBING: MICHIGAN PLUMBING CODE, 2018

ELECTRICAL: MICHIGAN ELECTRICAL CODE, 2017

APPLICABLE CODES

NO SCALE
REF'D FROM: NA

7

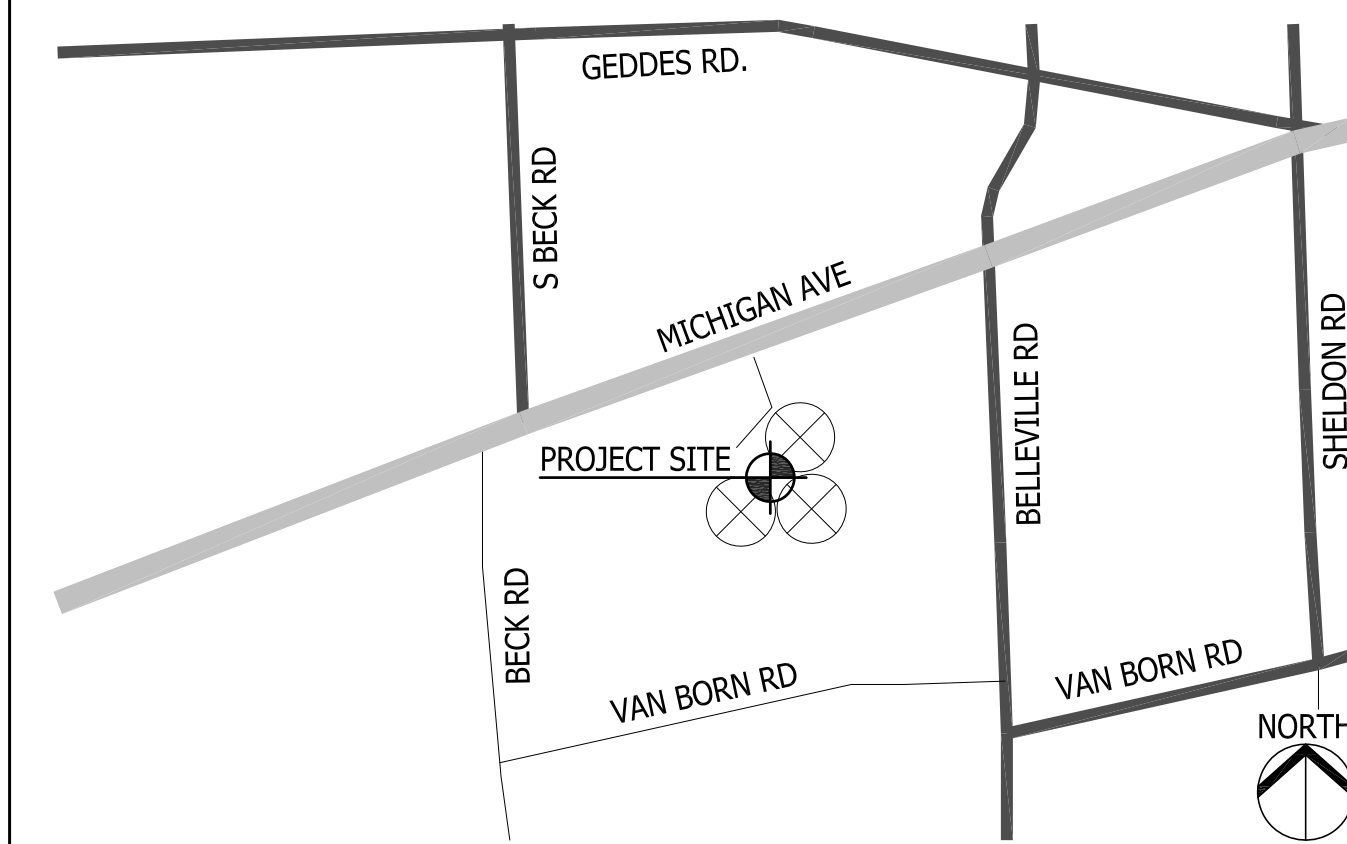


21004 G01

SYMBOLS LEGEND

NO SCALE
REF'D FROM: NA

3



21033 VP VM

VICINITY MAP

NO SCALE
REF'D FROM: TS

2

DRAWING INDEX KEY:

ISSUED FOR:

ISSUED FOR REFERENCE ONLY ☐

ISSUED FOR REVIEW ☒

ISSUED FOR BID/PERMIT ☒

SHT. #	SHEET NAME	12/20/22	02/23/23						
G0.1	Title Sheet	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
G0.2	Victory Park Key Plan	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
G0.3	Ballfield Lighting Key Plan	<input checked="" type="radio"/>	<input checked="" type="radio"/>						

ARCHITECTURAL									
A1.1	Ballfield New Work and Demolition Plan	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
A1.2	Restaurant New Work Plan	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
A1.3	Enlarged Plan and Details	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
A1.4	Pavilion Demo, New Work and Roof Plans	<input checked="" type="radio"/>	<input checked="" type="radio"/>						

ELECTRICAL- SITE									
E0.1	Electrical Standards and Drawing Index	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E0.2	Electrical Standard Schedules	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E0.3	Electrical Specifications	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E0.4	Lighting Demolition Site Plan	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E0.5	Lighting New Work Plan	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E6.1	Enlarged Electrical Plan	<input checked="" type="radio"/>	<input checked="" type="radio"/>						

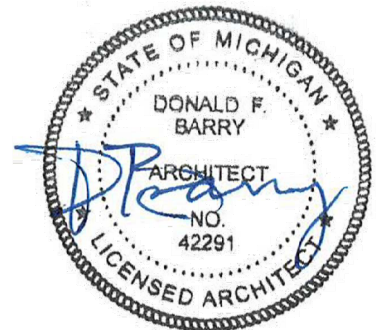
ELECTRICAL- RESTAURANT, PUMP AND PAVILION									
E002	Electrical Legend and Sheet Index	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E021	Electrical General Notes	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E022	Electrical Details	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E120	Electrical Key Plan	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E121	Electrical Demolition Plans	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E122	Electrical New Work Plans	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E123	Electrical Demolition Plan	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E124	Electrical New Work Plan	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E420	Electrical One-Line Diagram	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E421	Electrical Equipment Elevations	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
E422	Electrical Panel Schedules	<input checked="" type="radio"/>	<input checked="" type="radio"/>						

BALLFIELD LIGHTING EQUIPMENT (FOR REFERENCE ONLY)									
C1	Pole and Foundation (1 Sheet)	<input checked="" type="radio"/>							
--	Lighting System (18 Sheets)	<input checked="" type="radio"/>							

DRAWING INDEX

NO SCALE
REF'D FROM: NA

1

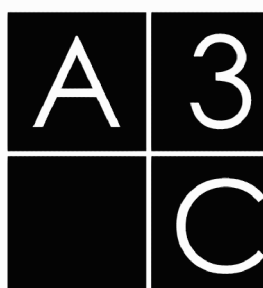


PROJECT NUMBER 21033

ISSUE		
Bids		02/23/23
Pre-Bid Review		12/20/22
DRN: JLS	CHK'D: AMC	

CANTON TOWNSHIP
VICTORY PARK BALLFIELDS

Title Sheet



115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104

T: (734) 663 - 1910
F: (866) 732 - 2168

www.a3c.com

COLLABORATIVE ARCHITECTURE

SHEET

G0.1

GENERAL KEY PLAN NOTES:

A. GENERAL KEY PLAN NOTES APPLY TO ALL FLOOR PLANS AND ENLARGED FLOOR PLANS INCLUDED WITHIN THIS DOCUMENT SET.

B. COORDINATE THE PHASING AND SEQUENCING OF NEW CONSTRUCTION WITH CONSTRUCTION MANAGER AND THE PROJECTS OWNER REPRESENTATIVE.

C. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING WORK OR SUPPLYING MATERIALS OR COMPONENTS.

D. REFER TO SHEET G0.3 FOR BALLFIELD LIGHTING KEY PLANS.

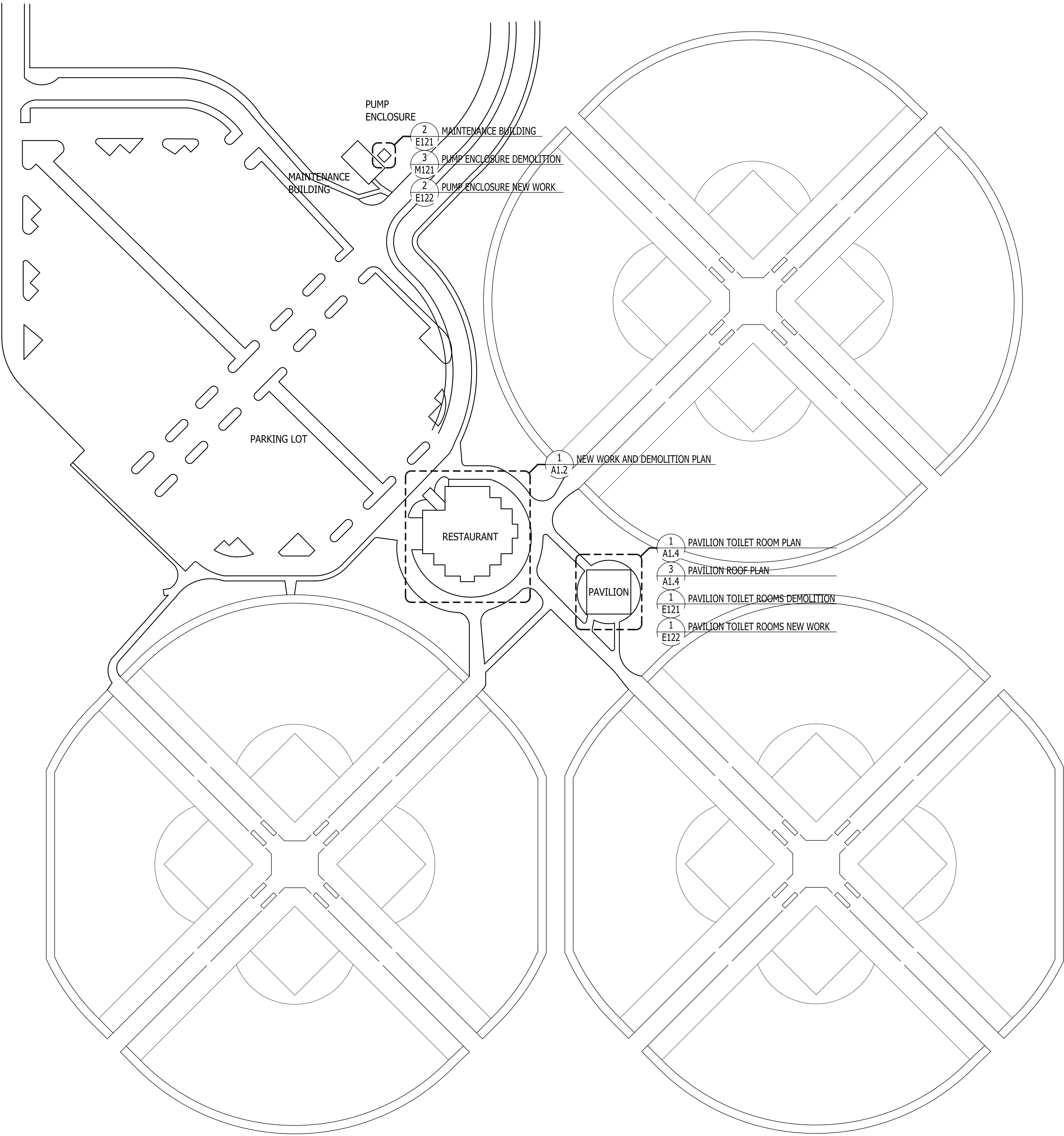
E. REFER TO SHEET A1.1 FOR BALLFIELD FENCING SCOPE OF WORK.

21033 VPKP01

GENERAL KEY PLAN NOTES

NO SCALE
REF'D FROM: TS

4



VICTORY PARK KEY PLAN

NO SCALE
REF'D FROM: TS

1



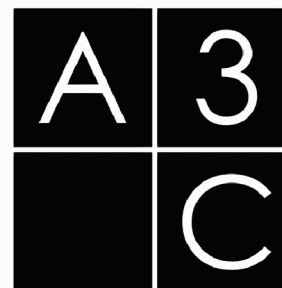
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ISSUE	
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CANTON TOWNSHIP
VICTORY PARK BALLFIELDS

Victory Park Key Plan



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COLLABORATIVE ARCHITECTURE

SHEET

G0.2

GENERAL NOTES:

A. REFER TO CIVIL AND ELECTRICAL DRAWINGS FOR ADDITIONAL PLANS AND DETAILS.

GENERAL NOTES

NO SCALE

REF'D FROM: TS

8

X

LIGHT POLE- EXISTING TO REMAIN

X

LIGHT POLE- TO BE REPLACED

X

FIELD NUMBER

X

QUAD NUMBER

KEY PLAN LEGEND

NO SCALE

REF'D FROM: TS

4

21033 VPKP01

The diagram is a key plan for the Victory Park Ballfield Lighting project. It shows three baseball fields, labeled Q1, Q2, and Q3, arranged in a triangular pattern. Each field is surrounded by a circular path of light poles, numbered 1 through 52. The poles are marked with 'X' to indicate existing poles to remain or poles to be replaced. The fields are also labeled with numbers 1 through 12. A north arrow is located in the bottom right corner of the plan area.

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CANTON TOWNSHIP
VICTORY PARK BALLFIELDS

Ballfield Lighting Key Plan

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SHEET
G0.3

GENERAL KEY PLAN NOTES:

A. GENERAL KEY PLAN NOTES APPLY TO ALL FLOOR PLANS AND ENLARGED FLOOR PLANS INCLUDED WITHIN THIS DOCUMENT SET.

B. COORDINATE THE PHASING AND SEQUENCING OF RENOVATIONS AND NEW CONSTRUCTION WITH CONSTRUCTION PHASING SEQUENCE AS INCLUDED WITHIN GENERAL DEMOLITION NOTES SEE SHEET G0.2 GENERAL NOTES.

C. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING WORK OR SUPPLYING MATERIALS OR COMPONENTS. NOTIFY ARCHITECT FOR DISPOSITION OF MAJOR CONFLICTS.

D. REFER TO SHEET G0.3 FOR BALLFIELD LIGHTING KEY PLAN.

GENERAL KEY PLAN NOTES

NO SCALE

REF'D FROM: TS

8

NEW WORK PLAN KEYED NOTES:

1 REMOVE AND SALVAGE PVC TUBING FROM TOP OF ALL OUTFIELD FENCES. PREP AND PAINT FENCING, FROM BOTH SIDES, TO MATCH EXISTING GREEN COLOR. REINSTALL PCV TUBING AT TOP OF FENCING.

2 SPLICE IN TOP SECTION OF FENCE POST. TOUCH UP WELDS WITH GALVANIZED PAINT.

3 PREP AND PAINT EXISTING NON-GALVANIZED FENCE POSTS - COLOR; SILVER

4 REPAIR UPPER OVERHANG BRACE POST ON BACKSTOP.

5 AT DUGOUT CONCRETE SLAB, GRIND CRACK SETTLEMENT FLUSH.

6 RE-PLUMB FENCE POSTS AND TEMPORARILY BRACE VERTICALLY, BACKFILL VOIDS IN SOIL WITH FAST-SETTING CONCRETE.

7 REPLACE DAMAGED LOWER SECTION OF BACKSTOP CHAIN LINK FENCE FABRIC, FROM INTERMEDIATE HORIZONTAL RAIL TO GRADE. REPLACE TENSION CABLE.

8 TOUCH UP WELDS ON SPLICED POSTS WITH GALVANIC PAINT.

9 AT THE EXISTING EASTERN FRONT DUGOUT CHAIN LINK FENCE, CAREFULLY EXCAVATE SOIL FROM AROUND EXISTING CONCRETE POST FOUNDATION. RE-ALIGN POST AND FOUNDATION VERTICALLY, TEMPORARILY BRACE POST AND POUR SUPPLEMENTAL CONCRETE POST FOUNDATION. REMOVE BRACING ONCE CONCRETE HAS CURED.

KEYED NOTES

NO SCALE

REF'D FROM: TS

4

21033 VPKP01

PROJECT NUMBER

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DRN: JLS

CHK'D: AMC

CANTON TOWNSHIP
VICTORY PARK BALLFIELDS

Ballfield New Work And Demolition Plan

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COLLABORATIVE ARCHITECTURE

SHEET

A1.1

NEW WORK PLAN KEYED NOTES:

- 1 SMOOTH OVER SCREW HOLES IN TEXTURED STAINLESS STEEL COOLER PANELS. CLEAN THOROUGHLY. COVER ONLY TEXTURED PANELS WITH ADHESIVE SET FRP-1. PROVIDE SILICONE SEALANT AT JOINTS AND EDGES.
- 2 REMOVE QUARRY TILE BASE. REPLACE WITH MATCHING TILES IN EPOXY ADHESIVE. PROVIDE EPOXY GROUT.
- 3 PATCH, REPAIR AND PAINT CEILING/SOFFITS OVER LARGE BOOTHS AND BAR AREA, PT-2.
- 4 REMOVE EXISTING STOREFRONT ALUMINUM DOORS, WINDOW FRAMES AND GLAZING. REPLACE WITH NEW STOREFRONT ALUMINUM DOORS, WINDOW FRAMES AND GLAZING. SEE DETAILS 12, 14, 15 AND 16, SHEET A1.3 FOR ADDITIONAL INFORMATION.
- 5 RE-UPHOLSTER ALL BENCH AND BOOTH SEAT BACKS AS UPH-1.
- 6 PAINT ALL WOOD BEADBOARD PANELING AND WOOD TRIM AS PT-1.
- 7 PAINT ALL WOOD SURFACE OF BENCHES AND BOOTHS AS PT-1. DO NOT PAINT TABLES OR UPHOLSTERY SURFACES.
- 8 NEW KINGSTON FENCE, ALMOND COLOR WITH WINDSOR POST TOPS. INSTALL 1'-0" MIN. FROM ELECTRICAL EQUIPMENT. CONTACT JOHN SZLINIS, CANTON TWSP, TO COORDINATE IRRIGATION SYSTEM LOCATIONS. (737-777-2348)
- 9 REINSTALL BROKEN BENCH SIDE PANEL PRIOR TO PAINTING.

KEYED NOTES

NO SCALE
REF'D FROM: TS

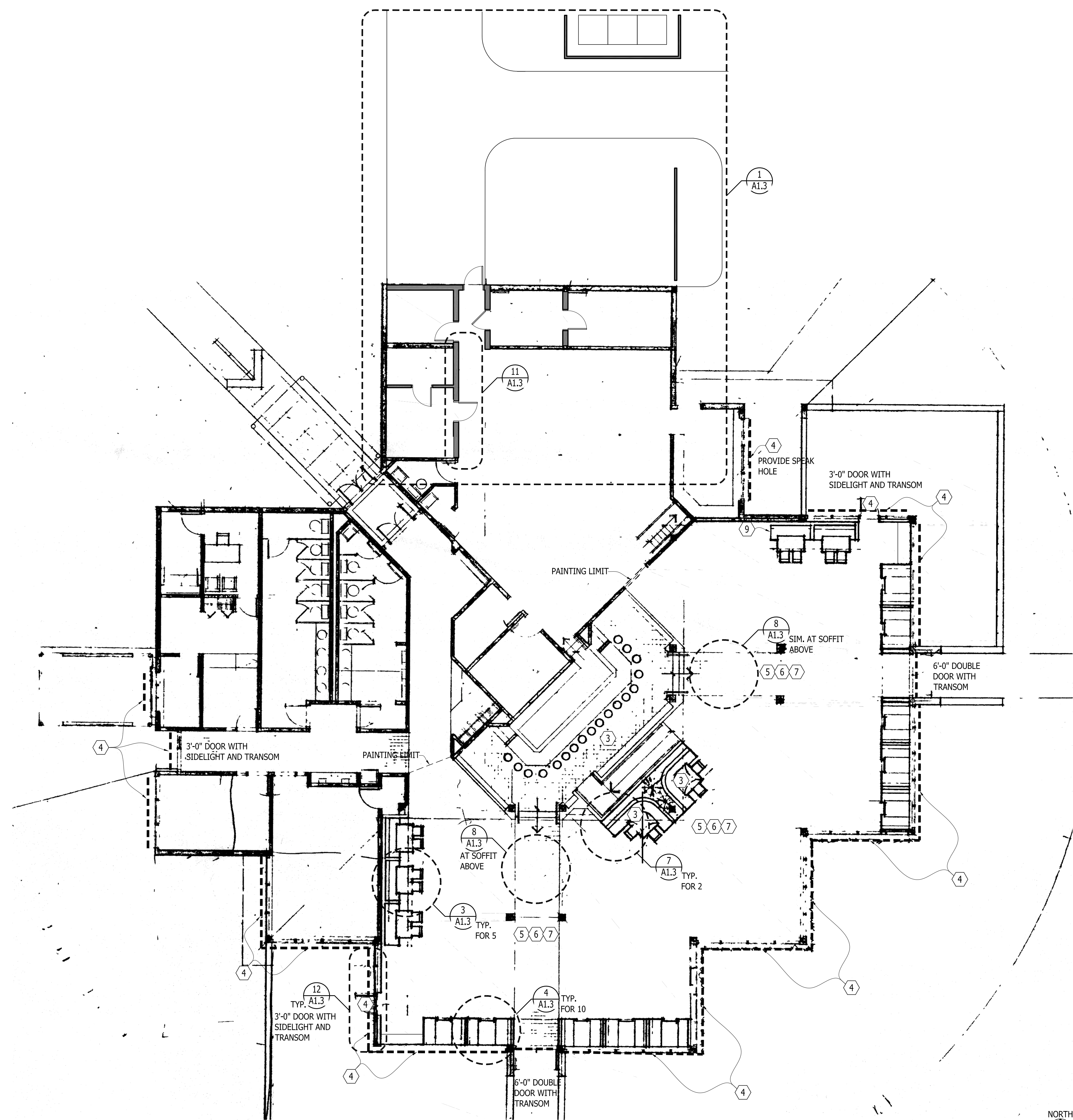
8

- EXISTING WALL
- NEW STUD WALL
- EXISTING DOOR
- NEW DOOR
- KEYED NOTE
- NAME NO.
- ROOM TAG
- EXISTING COLUMN TAG
- WINDOW TAG

FLOOR PLAN LEGEND

SCALE: 1/8"=1'-0"
REF'D FROM: TS

4



21033 VP FL01

RESTAURANT NEW WORK PLAN

NO SCALE
REF'D FROM: TS

1



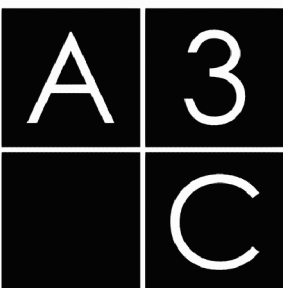
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DRN: JLS CHK'D: AMC

CANTON TOWNSHIP
VICTORY PARK BALLFIELDS

Restaurant New Work Plan

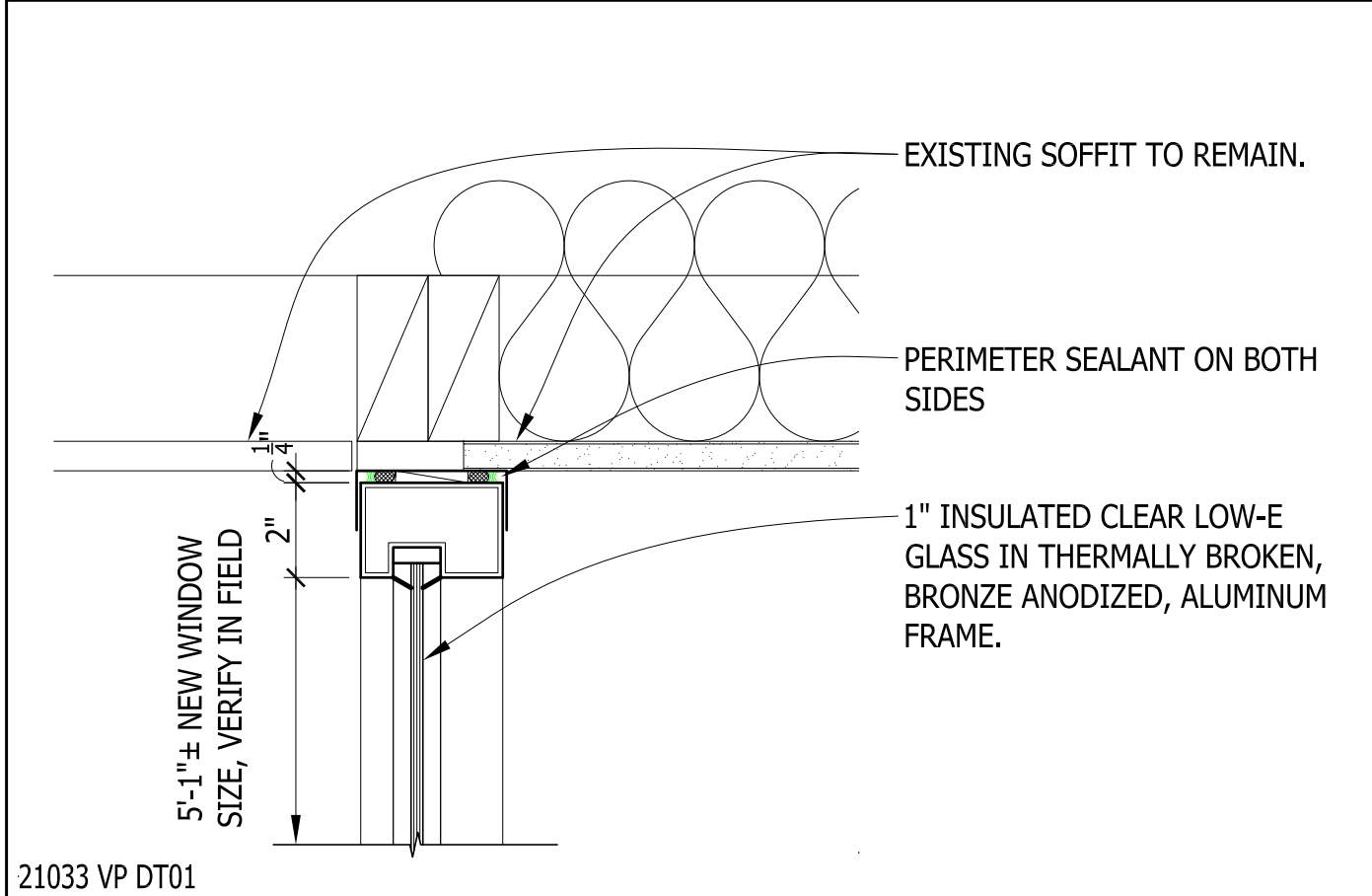


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COLLABORATIVE ARCHITECTURE

SHEET

A1.2



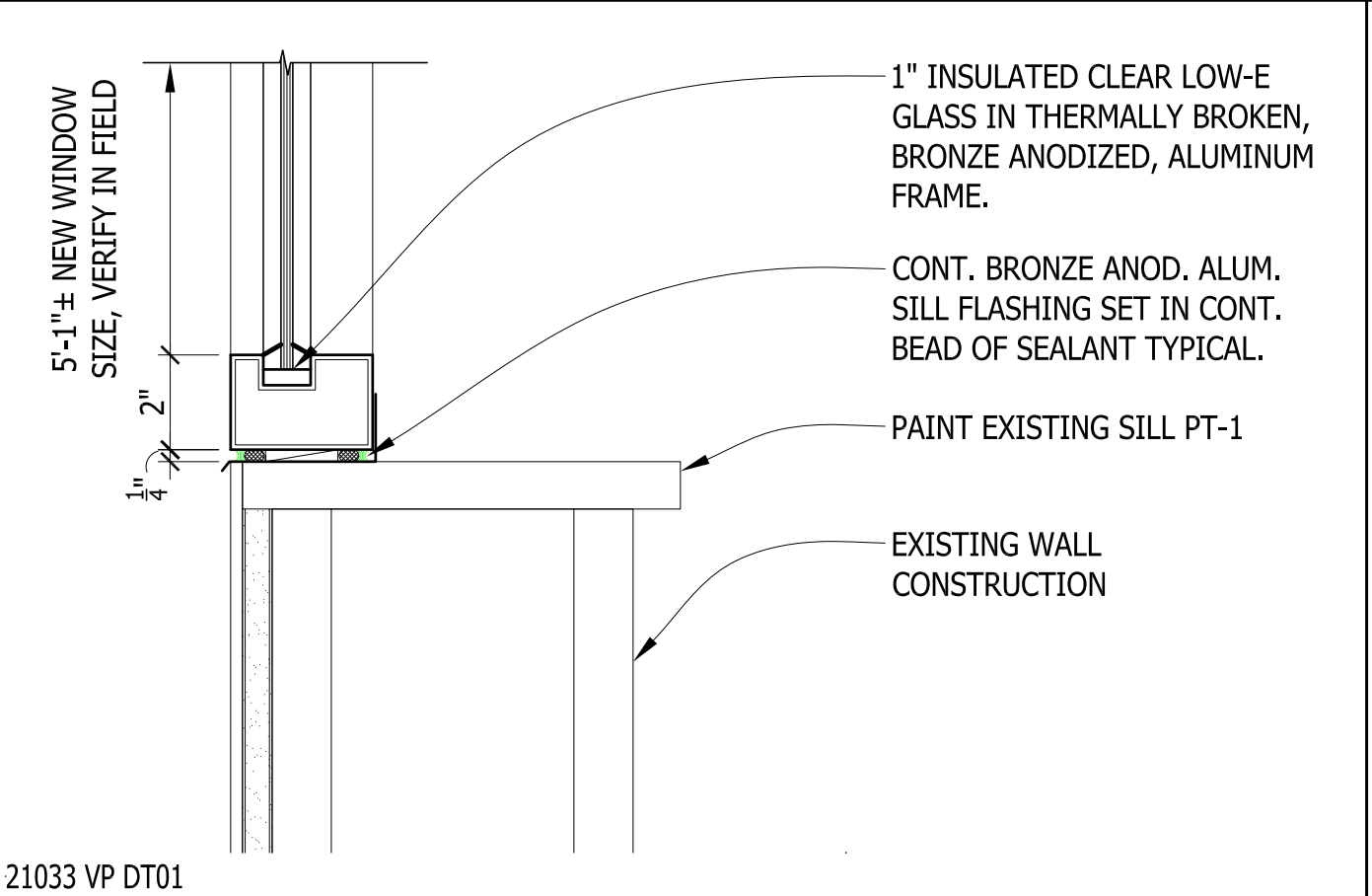
21033 VP DT01

ALUMINUM WINDOW HEAD

SCALE: 3"=1'-0"

REF'D FROM: TS

16



21033 VP DT01

ALUMINUM WINDOW SILL

SCALE: 3"=1'-0"

REF'D FROM: TS

15

SCOPE OF WORK NOTES - ALUMINUM STOREFRONT DOORS, SIDELIGHTS AND WINDOW REPLACEMENT:

A. THE SCOPE OF WORK FOR THE REMOVAL AND REPLACEMENT OF EXISTING ALUMINUM STOREFRONT DOORS, FRAMES, SIDELIGHTS AND WINDOWS IS SHOWN DIAGRAMMATICALLY ON DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, QUANTITIES AND WORK CONDITIONS PRIOR TO PREPARING SHOP DRAWINGS AND SUBMITTALS FOR STOREFRONT ALUMINUM WORK.

B. EXISTING ALUMINUM STOREFRONT DOORS, FRAMES, SIDELIGHTS AND WINDOWS SHALL BE REPLACED ON A ONE-FOR-ONE BASIS. PHOTOGRAPH AND CATALOG ALL EXISTING COMPONENTS FOR POSSIBLE FUTURE REFERENCE PRIOR TO REMOVAL.

C. WORK SHALL INCLUDE THE REMOVAL AND REPLACEMENT OF ALL ALUMINUM CLADDING AT EXISTING STEEL COLUMNS. PROVIDE NEW ALUMINUM CLADDING TO MATCH STOREFRONT SYSTEM FINISH. PROVIDE ISOLATION GASKETS BETWEEN DISSIMILAR MATERIALS TO PREVENT GALVANIC ACTION.

D. PROVIDE SPEAKHOLE AT EXTERIOR SERVICE WINDOW

E. PATCH, REPAIR AND REPAINT ANY EXISTING FINISHES DISTURBED DURING THE DEMOLITION AND INSTALLATION OF STOREFRONT ALUMINUM SYSTEMS.

SCOPE OF WORK NOTES

SCALE: 1/2"=1'-0"

REF'D FROM: TS

14

CODE	MATERIAL	MANUFACTURER	STYLE	COLOR	SIZE	MANUFACTURER'S CODE	NOTES
FRP-1	FIBER REINFORCED PLASTIC PANELS	--	--	TO MATCH EXISTING	--	--	MATCH EXISTING
QT-1	QUARRY TILE	--	COVE BASE	TO MATCH EXISTING	MATCH	--	MATCH EXISTING
PT-1	PAINT	SHERWIN WILLIAMS	LATEX, SEMI-GLOSS	TRICORN BLACK	--	SW6258	WOOD BEAD BOARD, TRIM AND WINDOW STOOLS.
PT-2	PAINT	SHERWIN WILLIAMS	LATEX, SEMI-GLOSS	TRICORN BLACK	--	SW6258	SOFFITS/ DROP CEILINGS
UPH-1	UPHOLSTERY	MAHARAM	100% POLYURETHANE SILICONE	GALAXY	--	466508-001	CONTACT: SOMER MATTY 313.686.7243, BOOTHS AND BENCH BACKS

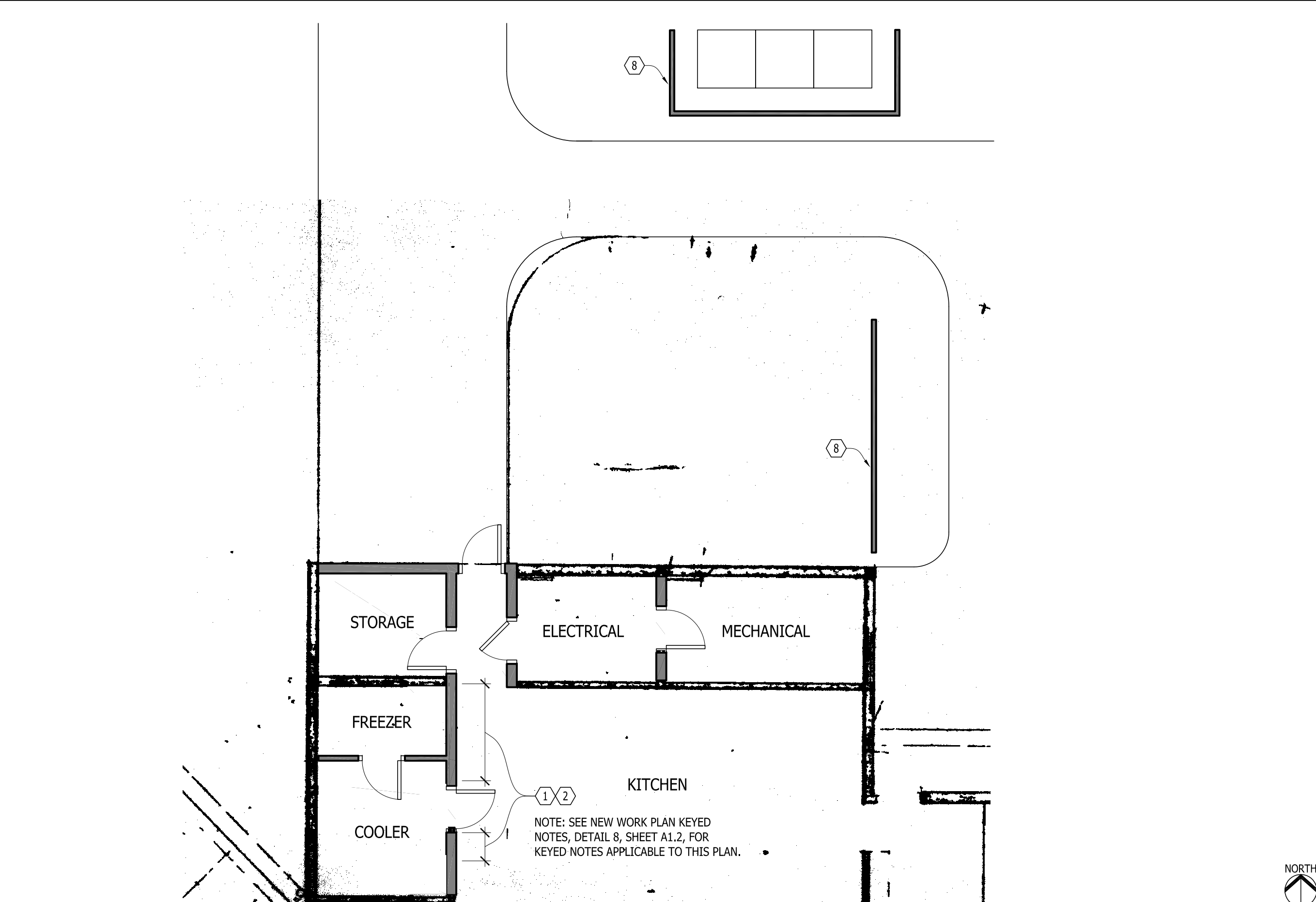
21033 VP IFS

INTERIOR FINISH SCHEDULE

NO SCALE

REF'D FROM: TS

9



21033 CP FL03

ENLARGED ELECTRICAL ROOM PLAN

SCALE: 1/4"=1'-0"

REF'D FROM: A1.2

1



21033 VP PD01

TYP. WINDOW & DR REPLACEMENT

NO SCALE

REF'D FROM: A1.2

12



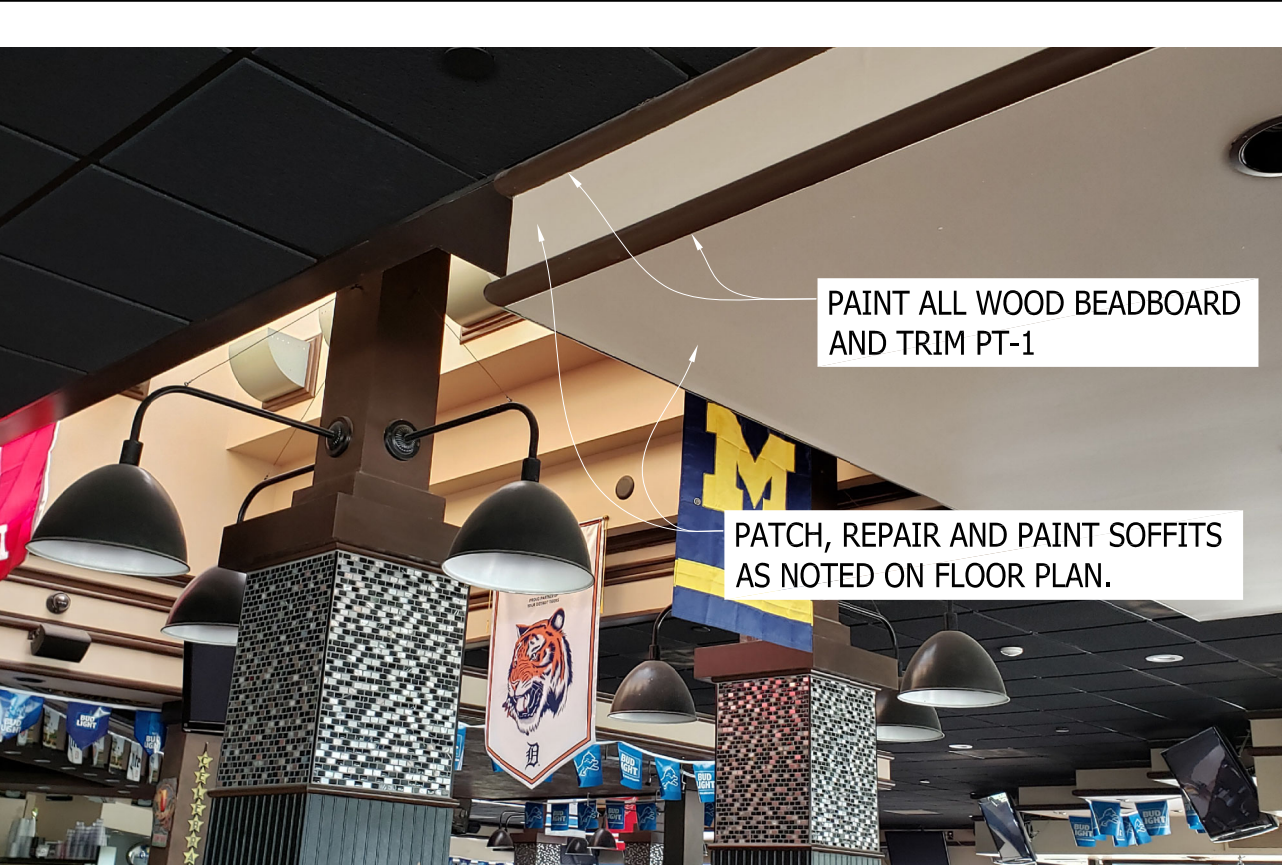
21033 VP PD01

COOLER REFRESH DETAIL

NO SCALE

REF'D FROM: A1.2

11



21033 VP PD01

TYP. WOODWORK & TRIM DETAIL

NO SCALE

REF'D FROM: A1.2

8



21033 VP PD01

TYP. LARGE BOOTH & SERVER

NO SCALE

REF'D FROM: A1.2

7



21033 VP PD01

TYP. BOOTH DETAIL

NO SCALE

REF'D FROM: A1.2

4



21033 VP PD01

TYP. BENCH DETAIL

NO SCALE

REF'D FROM: A1.2

3



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VICTORY PARK BALLFIELDS

Enlarged Plan And Details

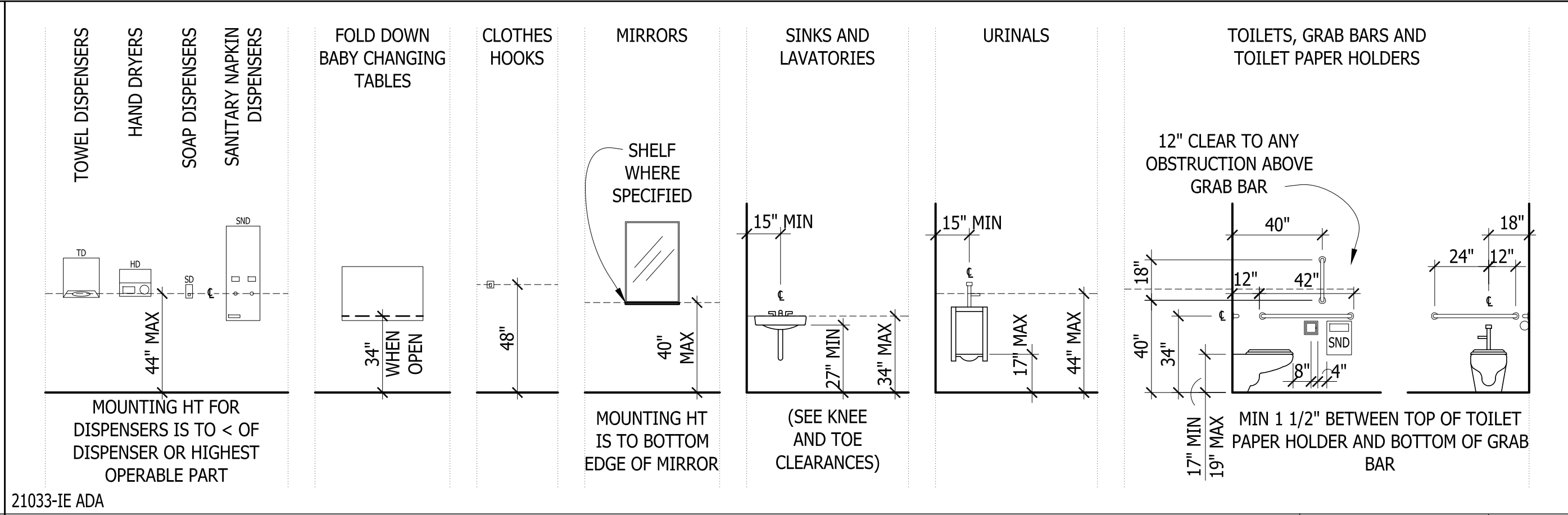
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COLLABORATIVE ARCHITECTURE

SHEET A1.3

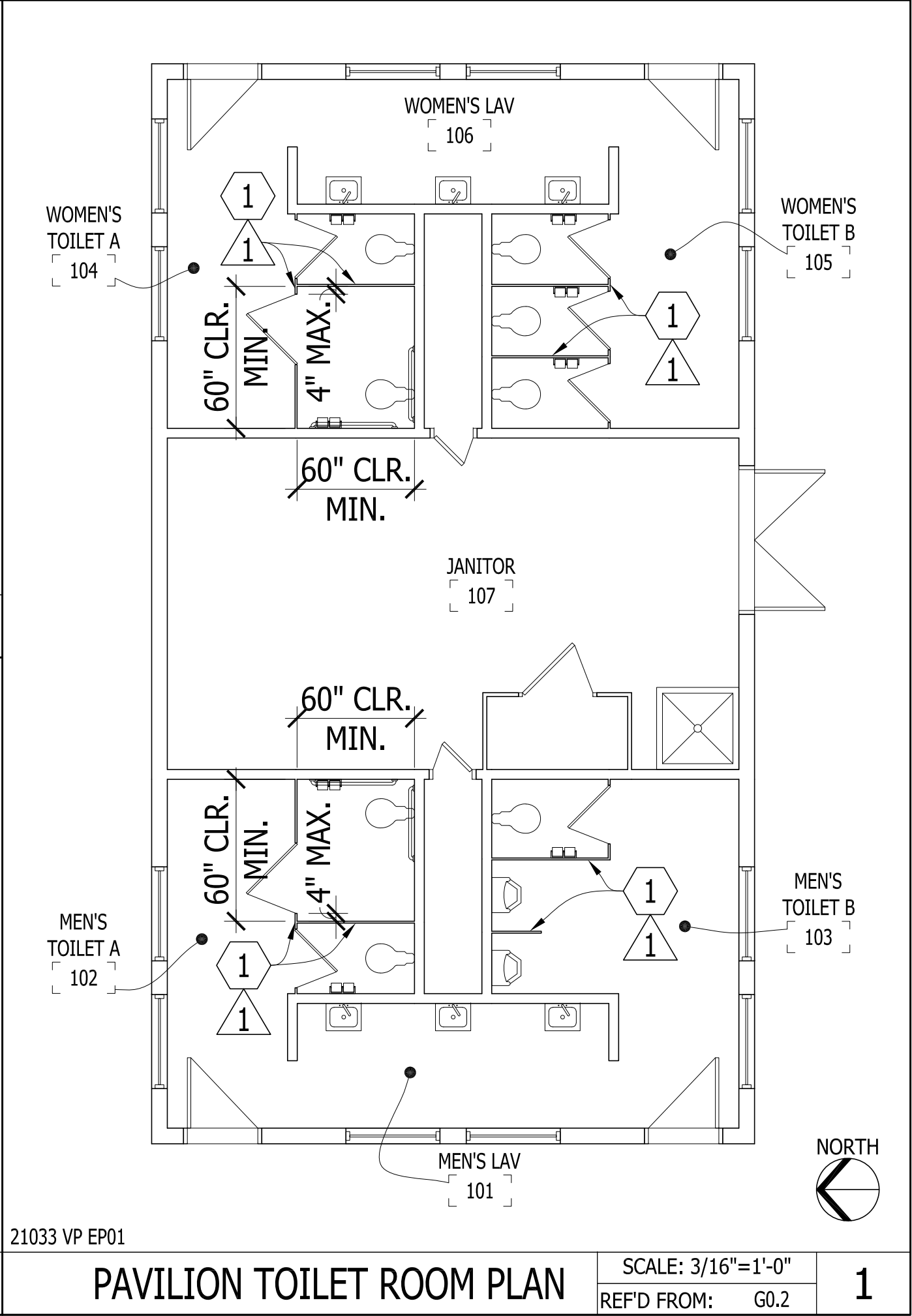
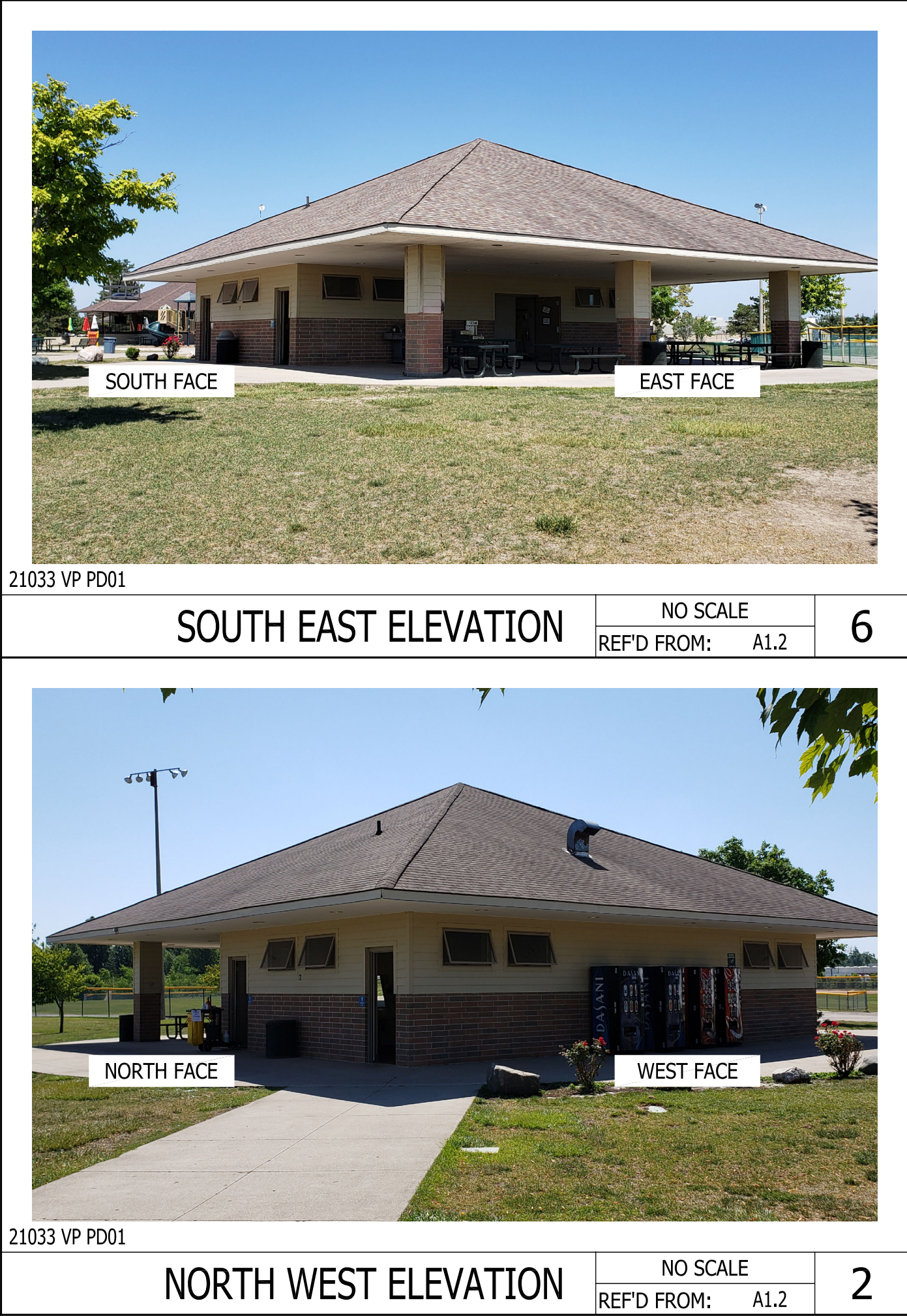
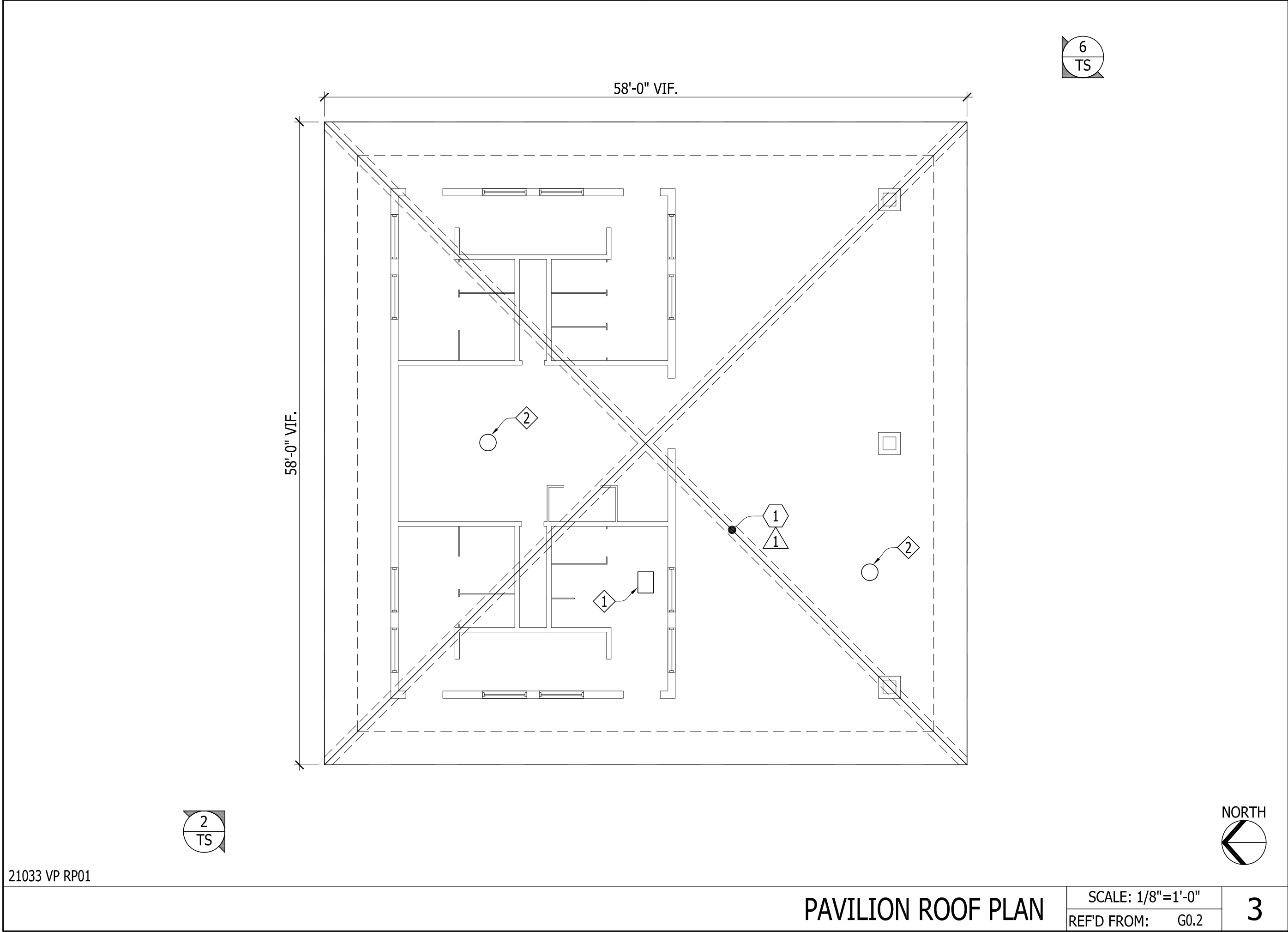
- DEMOLITION AND NEW WORK PLAN KEYED NOTES:**
- 1 REMOVE ASPHALT SHINGLES, UNDERLAYMENT, EDGE TRIM AND FLASHING. ASSESS THE CONDITION OF PLYWOOD SHEATHING AND PROVIDE A PROPOSAL FOR REPAIR/REPLACEMENT OF DAMAGED OR DETERIORATED SHEATHING, IF ANY.
 - 1 PROVIDE 3 FT WIDE SELF-ADHERED UNDERLAYMENT AT EDGES AND RIDGES. PROVIDE FLASHING AT EXISTING STACKS AND EXHAUST DUCT. TRIM AND PAINT GOOSE NECK VENTILATOR. PROVIDE ASPHALT SHINGLE ROOF SYSTEM, INCLUDING EDGE TRIM AND RIDGE VENTS.
 - 1 EXISTING GOOSE NECK EXHAUST VENT TO REMAIN - FLASH AND TRIM TO ROOF SYSTEM. PAINT TO MATCH SHINGLES.
 - 2 EXISTING PLUMBING STACK TO REMAIN - PROVIDE FLEXIBLE BOOT FLASH AND TRIM TO ROOF SYSTEM. PAINT STACKS TO MATCH SHINGLES.



- DEMOLITION AND NEW WORK PLAN KEYED NOTES:**
- 1 REMOVE TOILET PARTITIONS AND URINAL SCREEN. SALVAGE ATTACHED TOILET ACCESSORIES FOR REINSTALLATION.
 - 1 PROVIDE TOILET PARTITIONS AND URINAL SCREEN. INSTALL SALVAGED TOILET ACCESSORIES PER DETAIL 10, THIS SHEET.
- NOTE: PATCH AND REPAIR EXISTING FINISHES WHERE DAMAGED BY REMOVAL AND REPLACEMENT OF TOILET PARTITIONS. INFILL HOLES WITH SEALANT TO MATCH EXISTING WALL FINISHES.

PAVILLION ROOF- KEYED NOTES

INTERIOR KEYED NOTES



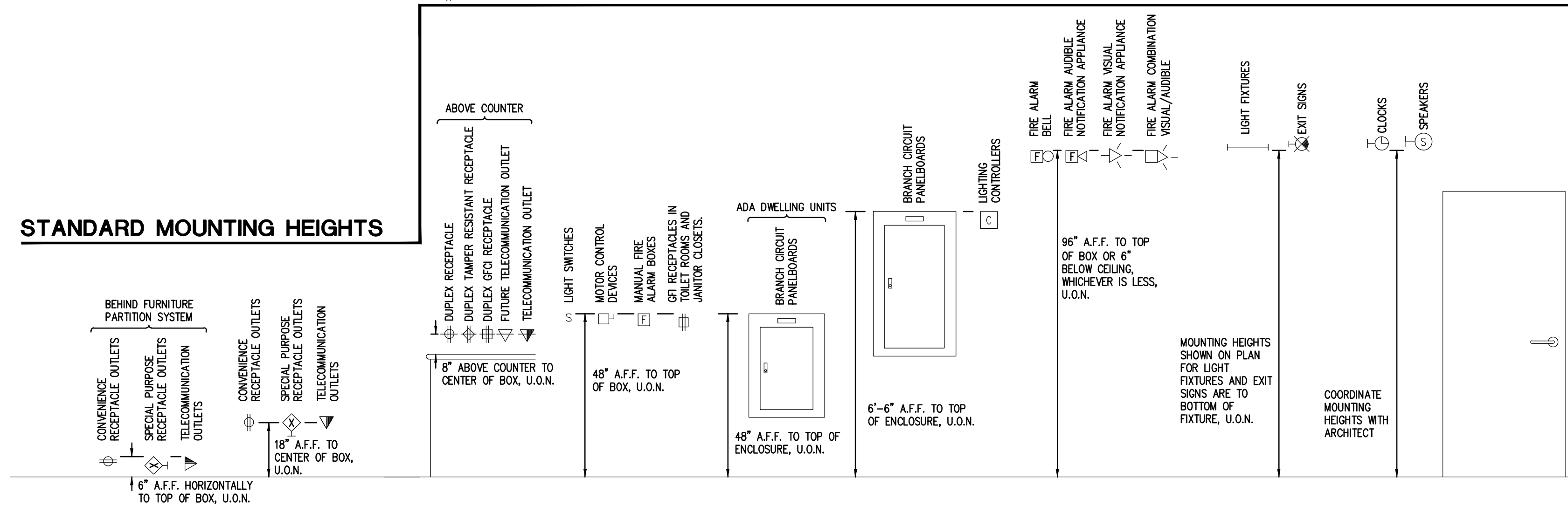
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CANTON TOWNSHIP VICTORY PARK BALLFIELDS	Pavilion Demo, New Work And Roof Plans
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SHEET	A1.4

ELECTRICAL SYMBOL LIST

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

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
FX (NL)	FIXTURE TYPE (NL INDICATES NIGHT LIGHT)	TWC	TWO-WAY COMMUNICATION SYSTEM CALL STATION	CP	CONTROL PANEL
	LIGHTING FIXTURE	TWCD	TWO-WAY COMMUNICATION SYSTEM AUTO DIALER		MOTOR
	DIRECT/INDIRECT LIGHTING FIXTURE	TWCA	TWO-WAY COMMUNICATION SYSTEM ANNUNCIATOR & COMMUNICATION PANEL	VFC	VARIABLE FREQUENCY CONTROLLER
	EMERGENCY FIXTURE	TWCP	TWO-WAY COMMUNICATION SYSTEM POWER SUPPLY WITH BATTERY BACK-UP		MANUAL CONTROLLER
	LIGHTING FIXTURE	TWCDP	TWO-WAY COMMUNICATION SYSTEM AUTO DIALER POWER SUPPLY WITH BATTERY BACK-UP		MAGNETIC CONTROLLER
	WALL MOUNTED LIGHTING FIXTURE	RGP	REMOTE GENERATOR ANNUNCIATOR PANEL		COMBINATION MAGNETIC CONTROLLER
	LIGHTING FIXTURE	ATS	AUTOMATIC TRANSFER SWITCH		NON-FUSIBLE DISCONNECT SWITCH
	DIRECTIONAL LIGHTING FIXTURE	UPS	UNINTERRUPTIBLE POWER SUPPLY		FUSIBLE DISCONNECT SWITCH
	PENDANT LIGHTING FIXTURE	CSX	LOW VOLTAGE CONTROL STATION "X" INDICATES TYPE		ENCLOSED CIRCUIT BREAKER
	WALL SCONCE		SINGLE/DUPLEX RECEPTACLE OUTLET "X" INDICATES TYPE		PUSH BUTTON STATION
	LIGHTING TRACK		SINGLE/DUPLEX RECEPTACLE OUTLET CONTROLLED BY AUTOMATIC CONTROL DEVICE/SYSTEM		JUNCTION BOX
	TRACK LIGHTING FIXTURE		QUAD RECEPTACLE OUTLET		HARD WIRE POWER CONNECTION
	POLE MOUNTED LIGHTING FIXTURE		ABOVE COUNTER DUPLEX RECEPTACLE (SIMILAR FOR TAMPER RESISTANT, QUADS, EMERGENCY, USB AND GFCI RECEPTACLES)		GROUND ROD
	POLE MOUNTED LIGHTING FIXTURE - POST TOP		DUPLEX RECEPTACLE-GROUND FAULT CIRCUIT INTERRUPTER		GROUND CONNECTION
	BOLLARD LIGHTING FIXTURE		DEAD FRONT-GROUND FAULT CIRCUIT INTERRUPTER		HANDHOLE
	EMERGENCY LIGHTING UNIT		DUPLEX EMERGENCY RECEPTACLE OUTLET		CONDUIT SLEEVE WITH BUSHINGS
	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROWS (SHADED AREA INDICATES FACE)		DUPLEX TAMPER RESISTANT RECEPTACLE OUTLET		CONDUIT UP
	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROWS (SHADED AREA INDICATES FACE)		QUAD TAMPER RESISTANT RECEPTACLE OUTLET		CONDUIT DOWN
	EXIT LIGHTING FIXTURE - WALL MOUNTED		ABOVE COUNTER DUPLEX TAMPER RESISTANT RECEPTACLE OUTLET		EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET
	EXIT/EMERGENCY LIGHTING COMBO		DUPLEX UPS RECEPTACLE		ABOVE COUNTER EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET
	BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH		DUPLEX RECEPTACLE WITH 2 USB PORTS OUTLET		EMPTY BOX FOR FUTURE CEILING MOUNTED TELECOMMUNICATION OUTLET
	AUTOMATIC LOAD CONTROL RELAY		4 PORT USB CHARGING STATION		TELECOMMUNICATION OUTLET "X" INDICATES TYPE
	LIGHTING CONTROL DEVICE - REFER TO LIGHTING CONTROL SCHEDULE		CEILING MOUNTED DUPLEX/QUAD RECEPTACLE		TELECOMMUNICATION CEILING MOUNTED OUTLET "X" INDICATES TYPE
	ROOM CONTROL DESIGNATION - REFER TO LIGHTING CONTROL SCHEDULE		POWER POLE		TELECOMMUNICATION BACKBOARD
	SINGLE POLE TOGGLE SWITCH		WALL/CEILING MOUNTED SPECIAL RECEPTACLE - REFER TO ELECTRICAL STANDARD SCHEDULES		TELECOMMUNICATION GROUNDING BUS BAR
	TWO POLE TOGGLE SWITCH		MULTI-OUTLET SURFACE RACEWAY		TELECOMMUNICATION MAIN GROUNDING BUS BAR
	3 WAY TOGGLE SWITCH		MULTI-SERVICE DROP		INTERCOM OUTLET
	4 WAY TOGGLE SWITCH		SEE ELECTRICAL DETAILS AND DIAGRAMS SHEET		SPEAKER
	KEY OPERATED SWITCH		POKE-THROUGH ASSEMBLY "X" INDICATES TYPE		SPEAKER - WALL MOUNTED
	3 WAY KEY OPERATED SWITCH		FLOOR SERVICE FITTING "X" INDICATES TYPE		MICROPHONE
	4 WAY KEY OPERATED SWITCH		ACCESS FLOOR SERVICE FITTING "X" INDICATES TYPE		VOLUME CONTROL/STATION SELECTOR
	DIMMER SWITCH		CORD REEL "X" INDICATES TYPE		SIGNALING BELL
	3 WAY DIMMER SWITCH		DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES		SINGLE FACE CLOCK - CEILING MOUNTED
	DIMMER OCCUPANCY SENSOR SWITCH		3-WAY DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES		SINGLE FACE CLOCK - WALL MOUNTED
	LOW VOLTAGE DIMMER SWITCH		4-WAY DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES		DOUBLE FACE CLOCK - CEILING MOUNTED
	PILOT SWITCH		DIGITAL TIME SWITCH		DOUBLE FACE COMBINATION CLOCK/SPEAKER CEILING MOUNTED
			ILLUMINATED TOGGLE SWITCH FOR CONTROL OF LIGHTING ON CRITICAL POWER-ILLUMINATED WHEN SWITCH IS IN "OFF" POSITION		DOUBLE FACE CLOCK - WALL MOUNTED
			LOW VOLTAGE SWITCH		DOUBLE FACE COMBINATION CLOCK/SPEAKER WALL MOUNTED
			OCCUPANCY SENSOR		TIME CLOCK
			OCCUPANCY SENSOR REFER TO ELECTRICAL STANDARD SCHEDULES		CONTACTOR
			OCCUPANCY SENSOR "X" INDICATES TYPE		PHOTOCELL
					TWIST TIMER

STANDARD MOUNTING HEIGHTS



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SECURITY CAMERA		MANUAL FIRE ALARM BOX
	MOTION DETECTOR		SMOKE DETECTOR
	SECURITY KEY SWITCH		DUCT SMOKE DETECTOR
	DOOR CONTACT		CARBON MONOXIDE DETECTOR
	KEY PAD		REMOTE TEST STATION (FOR DUCT DETECTOR)
	CARD READER		THERMAL DETECTOR
	DURESS PUSH BUTTON STATION		PROJECTED BEAM DETECTOR
	DELAYED EGRESS		FIRE ALARM BELL
	REQUEST TO EXIT STATION		FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE
	AUTOMATIC DOOR PUSH PAD OPERATOR		FIRE ALARM VISUAL NOTIFICATION APPLIANCE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
	DOOR OPERATOR		FIRE ALARM COMBINATION VISUAL/ AUDIBLE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
	DOOR ACTUATOR		FIRE ALARM COMBINATION VISUAL/ AUDIBLE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
	ACCESS CONTROL STATION		FIRE ALARM COMBINATION VISUAL/ AUDIBLE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
	ACCESS CONTROL CONTROL PANEL		FIRE ALARM VISUAL NOTIFICATION APPLIANCE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
	ACCESS CONTROL POWER SUPPLY		FIRE ALARM VISUAL NOTIFICATION APPLIANCE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
	CIRCUIT BREAKER		FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE CEILING MOUNTED "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
	DRAWOUT CIRCUIT BREAKER MANUALLY/ OPERATED		FIREFIGHTERS PHONE JACK
	DRAWOUT CIRCUIT BREAKER ELECTRICALLY/ OPERATED		FIRE ALARM CONTROL PANEL
	SWITCH		FIRE ALARM ANNUNCIATOR PANEL
	AUTOMATIC OR MANUAL TRANSFER SWITCH		NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL
	FUSE		ADDRESSABLE MONITORING MODULE
	TRANSFORMER		ADDRESSABLE CONTROL MODULE
	CURRENT TRANSFORMER		TAMPER SWITCH
	POTENTIAL TRANSFORMER		FLOW SWITCH
	LIGHTNING ARRESTOR		MAGNETIC DOOR RELEASE
	PANELBOARD "X" INDICATES PANELBOARD NAME		THERMAL OVERLOAD RELAY
	GROUND		NORMALLY OPEN CONTACTS
	STRESS CONE TERMINATION		NORMALLY CLOSED CONTACTS
	SECURITY KEY INTERLOCK		N.O. PUSH BUTTON SINGLE CIRCUIT
	ENGINE GENERATOR		N.C. PUSH BUTTON SINGLE CIRCUIT
	UTILITY METER		CABLE VAULT "X-X" INDICATES TYPE
	ELECTRONIC METERING UNIT		BRANCH CIRCUIT PANELBOARD
	AMMETER		LOAD CENTER
	VOLTMETER		MOTOR CONTROL CENTER
	AMMETER SWITCH		TRANSFORMER
	VOLTMETER SWITCH		DISTRIBUTION PANEL
	SURGE PROTECTIVE DEVICE		GROUND BUS
	CONTROL RELAY		PLUG IN BUSWAY
	TIME DELAY RELAY		FEEDER BUSWAY
	PHASE ROTATION MONITOR		
	CAMLOCK -- MALE		
	CAMLOCK -- FEMALE		

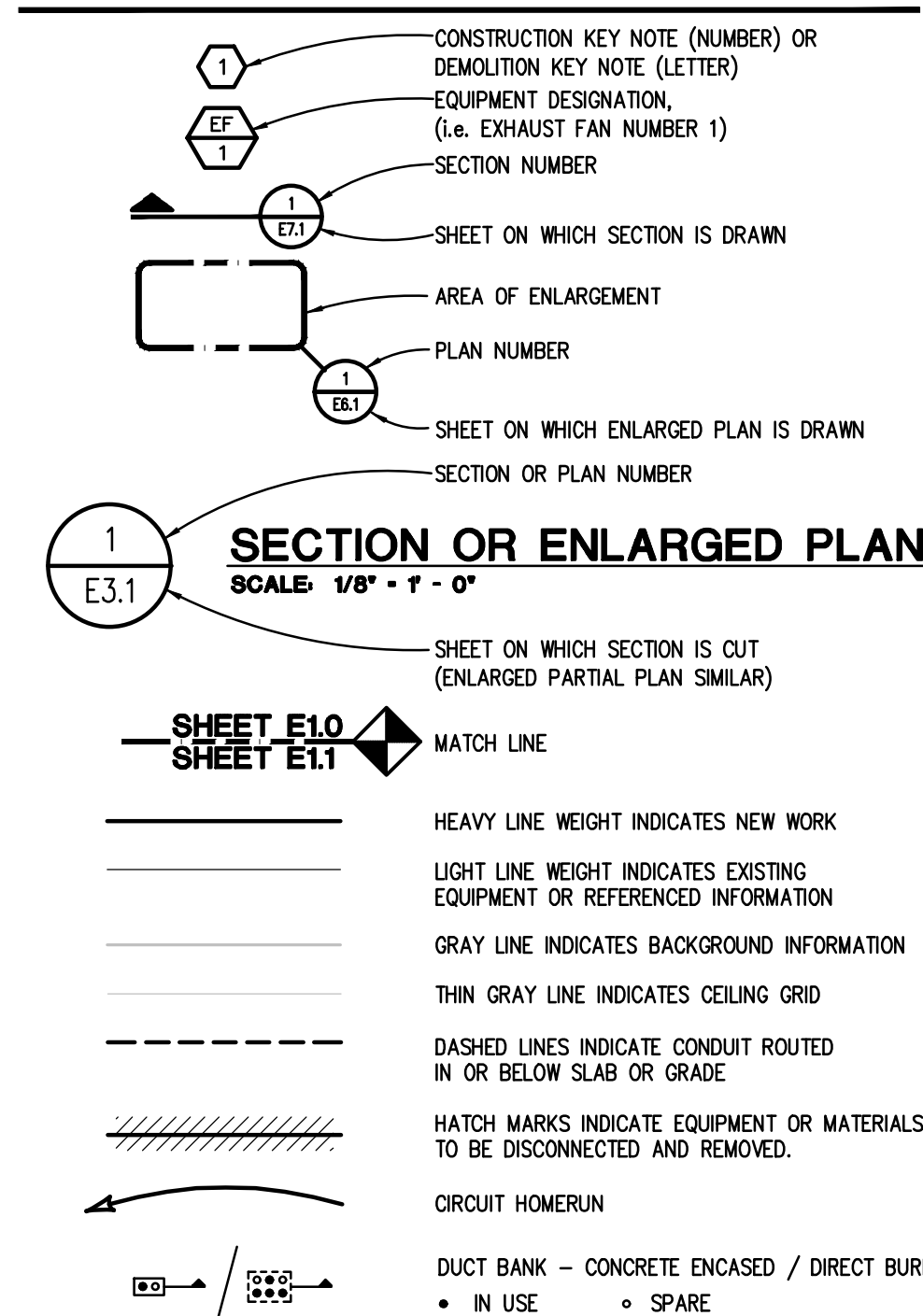
ELECTRICAL DRAWING INDEX

<u>SHEET NO.</u>	<u>SHEET TITLE</u>
E0.1	ELECTRICAL STANDARDS AND DRAWING INDEX
E0.2	ELECTRICAL STANDARD SCHEDULES
E0.3	ELECTRICAL SPECIFICATIONS
E0.4	LIGHTING DEMOLITION SITE PLAN
E0.5	LIGHTING NEW WORK SITE PLAN
E6.1	ENLARGED ELECTRICAL PLAN

ELECTRICAL ABBREVIATION LIST

<u>ABBREVIATION</u>	<u>DESCRIPTION</u>	<u>ABBREVIATION</u>	<u>DESCRIPTION</u>	<u>ABBREVIATION</u>	<u>DESCRIPTION</u>
A	AMPERES	JB	JUNCTION BOX	P	POLE
AER	ARC ENERGY REDUCTION	KA	THOUSAND AMP	PB	PUSHBUTTON STATION
AF	AMPERES FRAME (BREAKER RATING)	KV	KILOVOLT	PH	PHASE
AFCI	ARC FAULT CIRCUIT INTERRUPTER	KVA	KILOVOLT – AMPERES	PT	POTENTIAL TRANSFORMER
A.F.F.	ABOVE FINISH FLOOR	KW	KILOWATT	PDP	POWER DISTRIBUTION PANEL
AIC	AMPS INTERRUPTING CAPACITY	KWH	KILOWATT – HOURS	RECEPT.	RECEPTACLE
AL	AUDIENCE LEFT	LD	LIGHTNING ARRESTOR	RDP	RECEPTACLE DISTRIBUTION PANEL
ALCR	AUTOMATIC LOAD CONTROL RELAY	LP	LIGHTING PANEL	RP	RECEPTACLE PANEL
AR	AUDIENCE RIGHT	LDP	LIGHTING DISTRIBUTION PANEL	RSC	RIGID STEEL CONDUIT
AT	AMPERES TRIP (BREAKER SETTING)	MAX	MAXIMUM	SCCR	SHORT CIRCUIT CURRENT RATING
ATS	AUTOMATIC TRANSFER SWITCH	MCA	MINIMUM CIRCUIT AMPACITY	SCHED	SCHEDULE
AUX	AUXILIARY	MCB	MAIN CIRCUIT BREAKER	SPD	SURGE PROTECTION DEVICE
BCELT5	BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH	MCC	MOTOR CONTROL CENTER	ST	SHUNT TRIP
BKR	BREAKER	MDP	MAIN DISTRIBUTION PANEL	SW	SWITCH
BPS	BOLTED PRESSURE SWITCH	MECH	MECHANICAL	SWBD	SWITCHBOARD
C	CONDUIT	MIN	MINIMUM	SWGR	SWITCHGEAR
CB	CIRCUIT BREAKER	MISC.	MISCELLANEOUS	TB	TERMINAL BOX
CCF	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	MLO	MAIN LUGS ONLY	TELECOM	TELECOMMUNICATIONS
CKT	CIRCUIT	MOP	MAXIMUM OVERCURRENT PROTECTION	TR	TAMPER RESISTANT
CT	CURRENT TRANSFORMER	MTD	MOUNTED	TTB	TELEPHONE TERMINAL BACKBOARD
DEMO	DEMOLITION	MTG	MOUNTING	TYP	TYPICAL
DIM	DIMENSION	MTR	MOTOR	U.O.N.	UNLESS OTHERWISE NOTED
DISC	DISCONNECT	N	NEUTRAL	UP	UPSTAGE
DP	DISTRIBUTION PANEL	NC	NORMALLY CLOSED	V	VOLTS
DS	DOWNSTAGE	NEC	NATIONAL ELECTRICAL CODE	W	WIRE OR WATTS
DWG	DRAWING	NF	NOT-FUSIBLE	WG	WIRE GUARD
EBU	EMERGENCY BATTERY UNIT	NO	NOT IN CONTRACT	WP	WEATHERPROOF
EC	ELECTRICAL CONTRACTOR	NL	NIGHT LIGHT	WR	WEATHER RESISTANT
ELEC	ELECTRICAL	NOC	NORMALLY OPEN	XFMR	TRANSFORMER
EM/ EMERG	EMERGENCY	NTS	NOT TO SCALE	XP	EXPLOSION PROOF
EMT	ELECTRICAL METALLIC TUBING	ON CENTER	ON CENTER	(E)	EXISTING
EO	ELECTRICALLY OPERATED	OF	OWNER FURNISHED, CONTRACTOR INSTALLED	(R)	RELOCATED
EPO	EMERGENCY POWER OFF	OFOI	OWNER FURNISHED, OWNER INSTALLED		
ENC	ELECTRIC WATER COOLER				
EXIST	EXISTING				

STANDARD METHODS OF NOTATION



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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 UP TO AND INCLUDING #4/0. LARGER THAN #4/0 ARE BASED ON TYPE XHHW.
4. CONDUIT SIZES ARE VALID FOR EMT OR RGS. CONDUIT SIZES SHALL BE ADJUSTED AS REQUIRED FOR OTHER TYPES OF CONDUIT.
5. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE REQUIRED WIRE SIZES TO ACCOMMODATE MECHANICAL EQUIPMENT LUG SIZES.
6. SIZE OF DISCONNECT SWITCH LOCATED AT EQUIPMENT SHALL BE SIZED BASED UPON OVERCURRENT PROTECTION OF THAT DEVICE.
7. OBTAIN APPROVAL FROM ENGINEER PRIOR TO INSTALLING DIFFERENT SIZE/QUANTITY OF CONDUCTORS TO OBTAIN AN EQUIVALENT AMPACITY.
8. SPLICE FROM ALUMINUM TO COPPER PRIOR TO ENTERING EQUIPMENT LISTED FOR USE WITH COPPER CONDUCTORS ONLY OR USE COPPER CONDUCTORS FOR THE ENTIRE LENGTH OF FEEDER.

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.

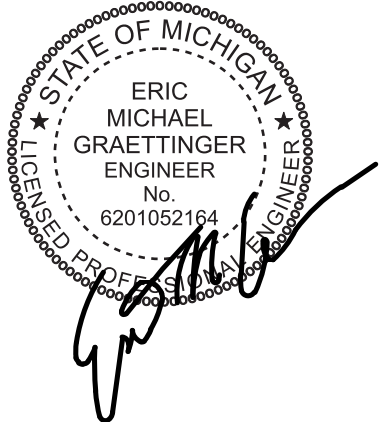
BRANCH CIRCUIT VOLTAGE DROP WIRING SCHEDULE FOR SINGLE PHASE CIRCUITS						
BRANCH CKT RATING (A)	WIRE SIZE (AWG)	MAXIMUM BRANCH CIRCUIT LENGTH (IN FEET)				
		120V	208V	240V	277V	480V
20A	12	83	143	165	191	331
	10	128	222	256	295	511
	8	201	348	402	464	804
	6	313	542	625	721	1250
	4	85	148	170	197	341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

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%.

RACEWAY / CONDUCTOR / CABLE APPLICATION SCHEDULE													
	WIRE		RACEWAY								CABLE /CORD		
	COPPER, TYPE THHN/THWN-2												
	COPPER, TYPE XHHW-2												
	ALUMINUM, TYPE XHHW-2 (100A AND ABOVE ONLY)												
	ELECTRICAL METALLIC TUBING (EMT)												
	INTERMEDIATE METAL CONDUIT (IMC)												
	RIGID STEEL CONDUIT (RSC)												
	PVC COATED RIGID STEEL CONDUIT												
	ALUMINUM RIGID CONDUIT												
	RIGID NON-METALLIC CONDUIT (RNC) TYPE EPC-40												
	RIGID NON-METALLIC CONDUIT (RNC) TYPE EPC-80												
	HIGH DENSITY POLYETHYLENE (HDPE) SCHEDULE 40												
	FLEXIBLE METAL CONDUIT (FMC)												
	SURFACE RACEWAY												
	CABLE TRAY												
	METAL CLAD TYPE CABLE WITH INSULATED GROUND WIRE (TYPE MC)												
	TRAY CABLE (TYPE TC)												
	TRAY CABLE FOR EXPOSED RUNS (TYPE TC-ER)												
	POWER LIMITED CABLE												
FEEDERS - INTERIOR	CONCEALED, ACCESSIBLE CEILINGS	X	X	X	X								
	CONCEALED, INACCESSIBLE CEILINGS	X	X	X	X								
	CONCEALED IN GYPSUM BOARD PARTITION WALLS	X	X	X	X								
	CONCEALED IN CMU WALLS	X	X	X	X								
	EXPOSED, BELOW 10' AFF AND SUBJECT TO DAMAGE	X	X	X	X	X							
	EXPOSED, BELOW 10' AFF AND NOT SUBJECT TO DAMAGE	X	X	X	X								
	EXPOSED, ABOVE 10' AFF UNFINISHED SPACES	X	X	X	X								
	EXPOSED, FINISHED SPACES	X	X							X			
	DAMP AND WET LOCATIONS	X	X	X	X	X	X						
	EXPOSED, SURFACE MOUNTED TO STRUCTURE	X		X	X	X		X					
BRANCH CIRCUITS - EXTERIOR	EXPOSED, WITH FREESTANDING SUPPORT	X	X	X	X								
	CONCEALED IN RETAINING WALL OR SIMILAR ELEMENT	X			X	X	X						
	BELOW PARKING LOTS AND ROADWAYS	X			X	X	X	X					
	BELOW GREEN SPACE	X						X					
	WITHIN 5' OF FOUNDATION WALL	X				X	X						
BRANCH CIRCUITS - INTERIOR	CONCEALED, ACCESSIBLE CEILINGS	X			X	X						X	
	CONCEALED, INACCESSIBLE CEILINGS	X			X	X							
	CONCEALED IN GYPSUM BOARD PARTITION WALLS	X	X	X	X						X	X	
	CONCEALED IN CMU WALLS	X			X	X							
	EXPOSED, BELOW 10' AFF AND SUBJECT TO DAMAGE	X			X	X	X						
	EXPOSED, BELOW 10' AFF AND NOT SUBJECT TO DAMAGE	X	X	X	X					X			
	EXPOSED, ABOVE 10' AFF UNFINISHED SPACES	X			X	X							
SPECIAL APPLICATIONS	EXPOSED, FINISHED SPACES	X								X			
	CLASS 1 CONTROL CIRCUITS	X			X	X	X					X	X
	CLASS 2 CONTROL CIRCUITS	X			X	X	X					X	X
	CLASS 3 CONTROL CIRCUITS	X			X	X	X					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.

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



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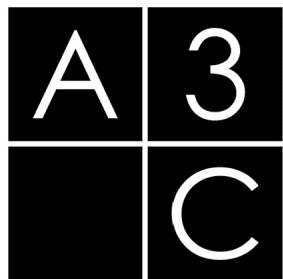
PROJECT NUMBER: 21033

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BIDS		02/23/2023
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VICTORY PARK BALLFIELDS

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COLLABORATIVE ARCHITECTURE

SHEET

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260010 – ELECTRICAL GENERAL REQUIREMENTS

- A. SCOPE OF WORK: ALL MATERIAL SHALL BE NEW UNLESS OTHERWISE INDICATED. FURNISH ALL LABOR, EQUIPMENT, TECHNICAL SUPERVISION, AND INCIDENTAL SERVICES REQUIRED TO COMPLETE, TEST, AND LEAVE READY FOR OPERATION THE ELECTRICAL SYSTEMS AS SPECIFIED AND AS INDICATED ON DRAWINGS.
- B. ORDINANCES AND CODES: PERFORM ALL WORK IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL ORDINANCES AND REGULATIONS, THE RULES AND REGULATIONS OF NFPA, NECA, AND UL, UNLESS OTHERWISE INDICATED.
- C. UNLESS OTHERWISE INDICATED, ALL REQUIRED PERMITS, LICENSES, INSPECTIONS, APPROVALS AND FEES FOR ELECTRICAL WORK SHALL BE SECURED AND PAID FOR BY THE CONTRACTOR. ALL WORK SHALL CONFORM TO ALL APPLICABLE CODES, RULES AND REGULATIONS.
- D. THE DRAWINGS SHOW THE LOCATION AND GENERAL ARRANGEMENT OF EQUIPMENT, ELECTRICAL SYSTEMS AND RELATED ITEMS. THEY SHALL BE FOLLOWED AS CLOSELY AS ELEMENTS OF THE CONSTRUCTION WILL PERMIT.
- E. EXAMINE THE DRAWINGS OF OTHER TRADES AND VERIFY THE CONDITIONS GOVERNING THE WORK ON THE JOB SITE. ARRANGE WORK ACCORDINGLY, PROVIDING SUCH FITTINGS, CONDUIT, JUNCTION BOXES AND ACCESSORIES AS MAY BE REQUIRED TO MEET SUCH CONDITIONS.
- F. COORDINATE ARRANGEMENT, MOUNTING AND SUPPORT OF ELECTRICAL EQUIPMENT WITH OTHER TRADES.
- G. VISIT THE SITE, EXAMINE AND VERIFY THE CONDITIONS UNDER WHICH THE WORK MUST BE CONDUCTED BEFORE SUBMITTING PROPOSAL. THE SUBMITTING OF A PROPOSAL IMPLIES THAT THE CONTRACTOR HAS VISITED THE SITE AND UNDERSTANDS THE CONDITIONS UNDER WHICH THE WORK MUST BE CONDUCTED. NO ADDITIONAL CHARGES WILL BE ALLOWED BECAUSE OF FAILURE TO MAKE THIS EXAMINATION OR TO INCLUDE ALL MATERIALS AND LABOR TO COMPLETE THE WORK.
- H. BIDS SHALL BE BASED UPON MANUFACTURED EQUIPMENT SPECIFIED. VOLUNTARY ALTERNATES MAY BE SUBMITTED FOR CONSIDERATION, WITH LISTED ADDITION OR DEDUCTION TO THE BID.
- I. WARRANTY: CONTRACTOR SHALL WARRANTY THAT THE ELECTRICAL INSTALLATION IS FREE FROM DEFECTS AND AGREES TO REPLACE OR REPAIR, TO THE OWNER'S SATISFACTION, ANY PART OF THIS ELECTRICAL INSTALLATION WHICH BECOMES DEFECTIVE WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION FOLLOWING FINAL ACCEPTANCE, PROVIDED THAT SUCH FAILURE IS DUE TO DEFECTS IN THE EQUIPMENT, MATERIAL, WORKMANSHIP OR FAILURE TO FOLLOW THE CONTRACT DOCUMENTS.
- J. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TEMPORARY SERVICES INCLUDING EQUIPMENT AND INSTALLATION REQUIRED TO MAINTAIN OPERATION AS A RESULT OF ANY EQUIPMENT FAILURE OR DEFECT DURING WARRANTY PERIOD.
- K. FILE WITH THE OWNER ANY AND ALL WARRANTIES FROM THE EQUIPMENT MANUFACTURERS INCLUDING THE OPERATING CONDITIONS AND PERFORMANCE CAPACITIES THEY ARE BASED ON.
- L. CONSULT WITH THE OWNER'S REPRESENTATIVE AS TO THE METHODS OF CARRYING ON THE WORK SO AS NOT TO INTERFERE WITH THE OWNER'S OPERATION ANY MORE THAN ABSOLUTELY NECESSARY. ACCORDINGLY, ALL SERVICE LINES SHALL BE KEPT IN OPERATION AS LONG AS POSSIBLE AND THE SERVICES SHALL ONLY BE INTERRUPTED AT SUCH TIME AS WILL BE DESIGNATED BY THE OWNER'S REPRESENTATIVE.
- M. ALL CUTTING, PATCHING AND REPAIR WORK SHALL BE PERFORMED BY THE CONTRACTOR THROUGH APPROVED, QUALIFIED SUBCONTRACTORS. CONTRACTOR SHALL INCLUDE FULL COST OF SAME IN BID.
- N. PROVIDE ALL EXCAVATION, TRENCHING, TUNNELING, DEWATERING AND BACKFILLING REQUIRED FOR THE ELECTRICAL WORK. COORDINATE THE WORK WITH OTHER EXCAVATING AND BACKFILLING IN THE SAME AREA.
- O. INSPECT THE INSTALLATION OF ALL EQUIPMENT PER THE MANUFACTURER'S RECOMMENDATION AND APPLICABLE CODES.
- P. PROVIDE UL APPROVED FIRE-STOPPING SYSTEM FOR ALL PENETRATIONS PASSING THROUGH FIRE RATED ASSEMBLIES.
- Q. COMPLY WITH NECA 1.
- R. PROVIDE COMPLETE OPERATION AND MAINTENANCE INSTRUCTIONAL MANUALS COVERING ALL ELECTRICAL EQUIPMENT HEREIN SPECIFIED, TOGETHER WITH PARTS LISTS.
- S. CONTRACTOR SHALL SUBMIT TO THE ARCHITECT/ENGINEER, RECORD DRAWINGS ON ELECTRONIC MEDIA OR MYLAR WHICH HAVE BEEN NEATLY MARKED TO REPRESENT AS-BUILT CONDITIONS FOR ALL NEW ELECTRICAL WORK.
- T. SUBMIT FOR REVIEW SHOP DRAWINGS FOR ELECTRICAL SYSTEMS OR EQUIPMENT LISTED BELOW:
1. TRANSFORMERS
 2. ENCLOSED SWITCHES AND CIRCUIT BREAKERS
 3. WIRING DEVICES

DEMOLITION WORK

- A. IN GENERAL, DEMOLITION WORK IS INDICATED ON THE DRAWINGS. HOWEVER, THE CONTRACTOR SHALL VISIT THE JOB SITE TO DETERMINE THE FULL EXTENT AND SCOPE OF THIS WORK.
- B. UNLESS SPECIFICALLY NOTED TO THE CONTRARY, REMOVED MATERIALS SHALL NOT BE REUSED IN THE WORK. SALVAGED MATERIALS THAT ARE TO BE REUSED SHALL BE STORED SAFE AGAINST DAMAGE AND TURNED OVER TO THE APPROPRIATE TRADE FOR REUSE. SALVAGED MATERIALS OF VALUE THAT ARE NOT TO BE REUSED SHALL REMAIN THE PROPERTY OF THE OWNER UNLESS SUCH OWNERSHIP IS WAIVED. ITEMS ON WHICH THE OWNER WAIVES OWNERSHIP SHALL BECOME THE PROPERTY OF THE CONTRACTOR, WHO SHALL REMOVE AND LEGALLY DISPOSE OF SAME, AWAY FROM THE PREMISES.
- C. WHERE EQUIPMENT OR FIXTURES ARE REMOVED AND WALLS REMAIN, OUTLETS SHALL BE PROPERLY BLANKED OFF, CONDUITS CAPPED, AND CONDUCTORS REMOVED BACK TO SOURCE OR NEAREST UPSTREAM DEVICE REMAINING IN SERVICE. AFTER ALTERATIONS ARE DONE, THE ENTIRE INSTALLATION SHALL PRESENT A "FINISHED" LOOK, AS APPROVED BY THE ARCHITECT/ENGINEER. THE ORIGINAL FUNCTION OF THE PRESENT ELECTRICAL WORK TO BE MODIFIED SHALL NOT BE CHANGED UNLESS REQUIRED BY THE SPECIFIC REVISIONS TO THE SYSTEM AS SPECIFIED OR AS INDICATED.
- D. REROUTE SIGNAL WIRES, LIGHTING AND POWER WIRING AS REQUIRED TO MAINTAIN SERVICE. WHERE WALLS AND CEILINGS ARE TO BE REMOVED AS SHOWN ON THE DRAWINGS, THE CONDUIT IS TO BE CUT OFF BY THE ELECTRICAL TRADES SO THAT THE ABANDONED CONDUIT IN THESE WALLS AND CEILINGS MAY BE REMOVED WITH THE WALLS AND CEILINGS BY THE ARCHITECTURAL TRADES. ALL DEAD-END CONDUIT RUNS SHALL BE PLUGGED AT THE REMAINING LINE OUTLET BOXES OR AT THE PANELS.
- E. ALL ELECTRICAL WORK IN ALTERED AND UNALTERED AREAS SHALL BE RUN CONCEALED WHEREVER POSSIBLE. USE OF SURFACE RACEWAY OR EXPOSED CONDUITS WILL BE PERMITTED ONLY WHERE APPROVED BY THE ARCHITECT/ENGINEER.

260519 – CONDUCTORS AND CABLES

- A. CONDUCTOR MATERIAL: COPPER COMPLYING WITH NEMA WC 70; STRANDED CONDUCTOR.
- B. CONDUCTOR INSULATION TYPES: TYPE THHN–THWN, XHHW–2, SO, COMPLYING WITH NEMA WC 70.
- C. CONCEAL CABLES IN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.
- D. USE CONDUCTOR NOT SMALLER THAN 12 AWG FOR POWER AND LIGHTING CIRCUITS. UNLESS INDICATED OTHERWISE, ALL CIRCUITS SHALL BE 2#12, 1#12G, 3/4" C.
- E. USE CONDUCTOR NOT SMALLER THAN 14 AWG FOR CONTROL CIRCUITS, PROVIDED BY ELECTRICAL CONTRACTOR.
- F. SUPPORT COMMUNICATION CABLES ABOVE ACCESSIBLE CEILING, USING SPRING METAL CLIPS OR PLASTIC CABLE TIES TO SUPPORT CABLES FROM STRUCTURE. DO NOT REST CABLE ON CEILING PANELS.
- G. USE "STA-KON" CONNECTORS TO TERMINATE STRANDED CONDUCTORS #10 AWG AND SMALLER TO SCREW TERMINALS.
- H. CONDUCTOR AND INSULATION APPLICATIONS:
1. REFER TO APPLICATION SCHEDULE INCLUDED ON THE DRAWINGS.

260526 – GROUNDING AND BONDING

- A. EQUIPMENT GROUNDING: COMPLY WITH NFPA 70, ARTICLE 250, FOR TYPES, SIZES, AND QUANTITIES OF EQUIPMENT GROUNDING CONDUCTORS, UNLESS SPECIFIC TYPES, LARGER SIZES, OR MORE CONDUCTORS THAN REQUIRED BY NFPA 70 ARE INDICATED.
- B. PROVIDE EQUIPMENT GROUNDING CONDUCTORS IN EACH RACEWAY.

260533 – RACEWAYS AND BOXES

- A. MINIMUM RACEWAY SIZE: 3/4–INCH TRADE SIZE.
- B. INSTALL CONDUIT IN ACCORDANCE WITH NECA "NATIONAL ELECTRICAL INSTALLATION STANDARDS".
- C. ROUTE CONDUITS IN FINISHED AREAS WITH EXPOSED CEILINGS AT UNDERSIDE OF STRUCTURAL DECK OR AS HIGH AS POSSIBLE. WHERE STEEL METAL DECK ON STEEL JOIST CONSTRUCTION, ROUTE CONDUITS ABOVE JOISTS. DO NOT SECURE CONDUIT TO BOTTOM OF JOISTS.
- D. RACEWAY APPLICATIONS: REFER TO RACEWAY APPLICATIONS SCHEDULE INCLUDED ON THE DRAWINGS.
- E. FITTINGS FOR EMT: STEEL, COMPRESSION TYPE.
- F. CONCEAL CONDUIT AND EMT WITHIN FINISHED WALLS, CEILINGS, AND FLOORS UNLESS OTHERWISE INDICATED.
- G. COMMUNICATIONS AND SIGNAL CABLING SYSTEMS RACEWAYS: ALL BENDS WILL BE LONG, SWEEPING BENDS WITH A RADIUS NOT LESS THAN:
1. SIX TIMES THE INTERNAL DIAMETER OF CONDUITS 2 INCHES OR SMALLER.
 2. TEN TIMES THE INTERNAL DIAMETER OF CONDUITS LARGER THAN 2 INCHES.
 3. TEN TIMES THE INTERNAL DIAMETER OF CONDUITS FOR FIBER CABLING.

260553 – ELECTRICAL IDENTIFICATION

- A. COMPLY WITH ANSI A13.1, ANSI C2, NFPA 70, AND 29 CFR 1910.145.
- B. COORDINATE IDENTIFICATION NAMES, ABBREVIATIONS, COLORS, AND OTHER FEATURES WITH REQUIREMENTS IN THE CONTRACT DOCUMENTS, SHOP DRAWINGS, MANUFACTURER'S WIRING DIAGRAMS, AND THE OPERATION AND MAINTENANCE MANUAL, AND WITH THOSE REQUIRED BY CODES, STANDARDS, AND 29 CFR 1910.145. USE CONSISTENT DESIGNATIONS THROUGHOUT PROJECT.
- C. COORDINATE INSTALLATION OF IDENTIFYING DEVICES WITH COMPLETION OF COVERING AND PAINTING OF SURFACES WHERE DEVICES ARE TO BE APPLIED, WITH LOCATION OF ACCESS PANELS AND DOORS.
- D. USE THE COLORS LISTED BELOW FOR UNGROUNDED SERVICE, FEEDER, AND BRANCH–CIRCUIT CONDUCTORS.
1. COLOR SHALL BE FACTORY APPLIED OR, FOR SIZES LARGER THAN NO. 10 AWG IF AUTHORITIES HAVING JURISDICTION PERMIT, FIELD APPLIED.
 2. COLORS FOR 208/120–V CIRCUITS:
 - a. PHASE A: BLACK.
 - b. PHASE B: RED.
 - c. PHASE C: BLUE.
 - d. NEUTRAL: WHITE.
 3. COLORS FOR 480/277–V CIRCUITS:
 - a. PHASE A: BROWN.
 - b. PHASE B: ORANGE.
 - c. PHASE C: YELLOW.
 - d. NEUTRAL: GRAY.
 4. FIELD–APPLIED, COLOR–CODING CONDUCTOR TAPE: APPLY IN HALF–LAPPED TURNS FOR A MINIMUM DISTANCE OF 6 INCHES FROM TERMINAL POINTS AND IN BOXES WHERE SPLICES OR TAPS ARE MADE. APPLY LAST TWO TURNS OF TAPE WITH NO TENSION TO PREVENT POSSIBLE UNWINDING. LOCATE BANDS TO AVOID OBSCURING FACTORY CABLE MARKINGS.

260923 – LIGHTING CONTROL DEVICES

- A. PROVIDE LIGHTING CONTROL DEVICES AS PER MUSCO DESIGN.

260943 – LIGHTING CONTROL SYSTEMS

- A. PROVIDE LIGHTING CONTROL SYSTEM AS PER MUSCO DESIGN.

262200 – DRY–TYPE TRANSFORMERS (600 V AND LESS)

- A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS; PROVIDE PRODUCTS BY SQUARE D, EATON, GENERAL ELECTRIC, OR SIEMENS.
- B. DESCRIPTION: FACTORY–ASSEMBLED AND TESTED, AIR COOLED, DRY–TYPE TRANSFORMER RATED FOR 60 HZ OPERATION. COMPLY WITH NEMA ST 20, AND LIST AND LABEL AS COMPLYING WITH UL 1561.
- C. INDOOR ENCLOSURE: VENTILATED, NEMA 250, TYPE 2. PROVIDE LIFTING EYES OR BRACKETS.
- D. OUTDOOR ENCLOSURE: VENTILATED, RAIN TIGHT, NEMA 250, TYPE 3R. PROVIDE LIFTING EYES OR BRACKETS.
- E. INSULATION CLASS (15 KVA AND LARGER): 220 DEG C, UL–COMPONENT–RECOGNIZED INSULATION SYSTEM WITH A MAXIMUM OF 150 DEG C RISE ABOVE 40 DEG C AMBIENT TEMPERATURE.
- F. BASIC IMPULSE LEVEL: 10 KV.
- G. TAPS FOR TRANSFORMERS 7.5 TO 24 KVA: ONE 5 PERCENT TAP ABOVE AND ONE 5 PERCENT TAP BELOW NORMAL FULL CAPACITY.
- H. TAPS FOR TRANSFORMERS 25 KVA AND LARGER: TWO 2.5 PERCENT TAPS ABOVE AND TWO 2.5 PERCENT TAPS BELOW NORMAL FULL CAPACITY.
- I. CASE TEMPERATURE: DO NOT EXCEED 35 DEGREES C RISE ABOVE AMBIENT AT WARMEST POINT.
- J. CORES: GRAIN–ORIENTED, NON–AGING SILICON STEEL.
- K. COILS: CONTINUOUS WINDINGS WITHOUT SPLICES, EXCEPT FOR TAPS; INTERNAL COIL CONNECTIONS: BRAZED OR PRESSURE TYPE; COIL MATERIAL: ALUMINUM.
- L. VIBRATION ISOLATION: ISOLATE CORE AND COIL FROM ENCLOSURE USING VIBRATION–ABSORBING MOUNTS.
- M. GROUNDING: GROUND CORE AND COIL ASSEMBLY TO ENCLOSURE BY MEANS OF A VISIBLE FLEXIBLE COPPER GROUNDING STRAP.
- N. TEST AND INSPECT TRANSFORMERS ACCORDING TO IEEE C57.12.91.
- O. VERIFY THAT FIELD MEASUREMENTS ARE AS NEEDED TO MAINTAIN WORKING CLEARANCES REQUIRED BY NFPA 70 AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
- P. RECORD TRANSFORMER SECONDARY VOLTAGE AT EACH UNIT FOR AT LEAST 48 HOURS OF TYPICAL OCCUPANCY PERIOD. ADJUST TRANSFORMER TAPS TO PROVIDE OPTIMUM VOLTAGE CONDITIONS AT SECONDARY TERMINALS.

262726 – WIRING DEVICES

- A. GENERAL WIRING DEVICE REQUIREMENTS: COMPLY WITH NFPA 70, NEMA WD 1, NEMA WD 6, AND UL498.
- B. GFCI RECEPTACLES
1. COMPLY WITH UL943
 2. DUPLEX GFCI RECEPTACLE, NEMA 5–20R: HUBBELL GFRST20 OR EQUAL BY EATON/ARROW HART, LEVITON, OR LEGRAND PASS & SEYMOUR.
 3. TAMPER–RESISTANT DUPLEX GFCI RECEPTACLE, NEMA 5–20R: HUBBELL GFRST20 OR EQUAL BY EATON/ARROW HART, LEVITON, OR LEGRAND PASS & SEYMOUR.
 4. WEATHER–RESISTANT DUPLEX GFCI RECEPTACLE, NEMA 5–20R: EATON/ARROW HART WRSGF20 OR EQUAL BY LEVITON OR LEGRAND PASS & SEYMOUR.
 5. TAMPER– AND WEATHER–RESISTANT DUPLEX GFCI RECEPTACLE, NEMA 5–20R: SAFETY MECHANISM TO ENERGIZE CONTACTS ONLY WHEN BOTH OPENINGS ARE SIMULTANEOUSLY ENGAGED. HUBBELL GFTWRST20 OR EQUAL BY EATON/ARROW HART, LEVITON, OR LEGRAND PASS & SEYMOUR.
 6. DEAD FRONT GFCI, 20A: HUBBELL GFBFST20 OR EQUAL BY EATON/ARROW HART, LEVITON, OR LEGRAND PASS & SEYMOUR.
- C. INSTALL RECEPTACLES FLUSH, WITH LONG DIMENSION VERTICAL, AND WITH GROUNDING TERMINAL ON TOP.
- D. INSTALL GFCI RECEPTACLES SO THAT THE "PUSH TO TEST" AND "RESET" DESIGNATIONS CAN BE READ CORRECTLY. IF PRINTED IN BOTH DIRECTIONS, INSTALL WITH GROUNDING TERMINAL ON TOP.
- E. INSTALL WEATHER–RESISTANT TYPE RECEPTACLES IN ALL DAMP AND WET LOCATIONS, INCLUDING POOL ENVIRONMENTS.
- F. INSTALL TAMPER–RESISTANT TYPE RECEPTACLES IN ALL LOCATIONS AS REQUIRED BY THE NEC (406.12) AND AS INDICATED ON PLAN.
- G. CONNECT WIRING DEVICE GROUNDING TERMINAL TO OUTLET BOX WITH BONDING JUMPER. USE OF QUICK GROUND STRAP OR SCREW IS NOT ACCEPTABLE.

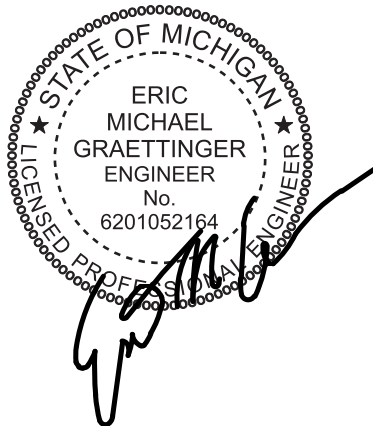
262816 – ENCLOSED SWITCHES AND CIRCUIT BREAKERS

- A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS; PROVIDE PRODUCTS BY SQUARE D, EATON, GENERAL ELECTRIC, OR SIEMENS.
- B. FUSIBLE AND NON–FUSIBLE SWITCHES: NEMA KS 1, QUICK MAKE, QUICK–BREAK LOAD INTERRUPTER ENCLOSED KNIFE SWITCH TYPE HD, WITH CLIPS OR BOLT PADS TO ACCOMMODATE SPECIFIED FUSES (IF REQUIRED), EXTERNALLY OPERABLE LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT TWO PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION. SQUARE D OR EQUAL.
- C. TOGGLE DISCONNECT SWITCH: HEAVY DUTY, 30A, 600 VOLT, DOUBLE OR THREE POLE AS REQUIRED, SINGLE THROW, MOTOR RATED SWITCH WITHOUT OVERLOAD PROTECTION. PROVIDE NEMA 1 ENCLOSURE AND PADLOCK ATTACHMENT.
- D. MOLDED–CASE CIRCUIT BREAKER: NEMA AB 1, WITH INTERRUPTING CAPACITY TO MEET AVAILABLE FAULT CURRENTS. THERMAL–MAGNETIC CIRCUIT BREAKER WITH INVERSE TIME–CURRENT ELEMENT FOR LOW–LEVEL OVERLOADS AND INSTANTANEOUS MAGNETIC TRIP ELEMENT FOR SHORT CIRCUITS. ADJUSTABLE MAGNETIC TRIP SETTING FOR CIRCUIT–BREAKER FRAME SIZES 250 A AND LARGER.
- E. MOLDED–CASE SWITCHES: MOLDED–CASE CIRCUIT BREAKER WITH FIXED, HIGH–SET INSTANTANEOUS TRIP ONLY, AND SHORT–CIRCUIT WITHSTAND RATING EQUAL TO EQUIVALENT BREAKER FRAME SIZE INTERRUPTING RATING.
- F. COMPLY WITH APPLICABLE PORTIONS OF NECA 1, NEMA PB 1.1, AND NEMA PB 2.1 FOR INSTALLATION OF ENCLOSED SWITCHES AND CIRCUIT BREAKERS.
- G. SET FIELD–ADJUSTABLE SWITCHES AND CIRCUIT–BREAKER TRIP AND TIME DELAY SETTINGS.

265600 – LED EXTERIOR LIGHTING

- A. PROVIDE LIGHTING FIXTURES AS PER MUSCO DESIGN.

NOTE: SPECIFICATIONS ON THIS SHEET
APPLY TO SHEETS E0.1, E0.2, E0.3, E0.4,
E0.5 AND E6.1



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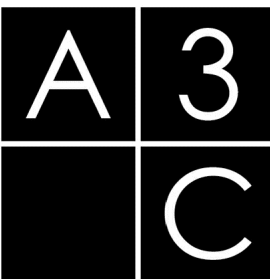
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CANTON TOWNSHIP
VICTORY PARK BALLFIELDS

ELECTRICAL
SPECIFICATIONS



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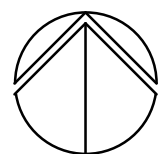
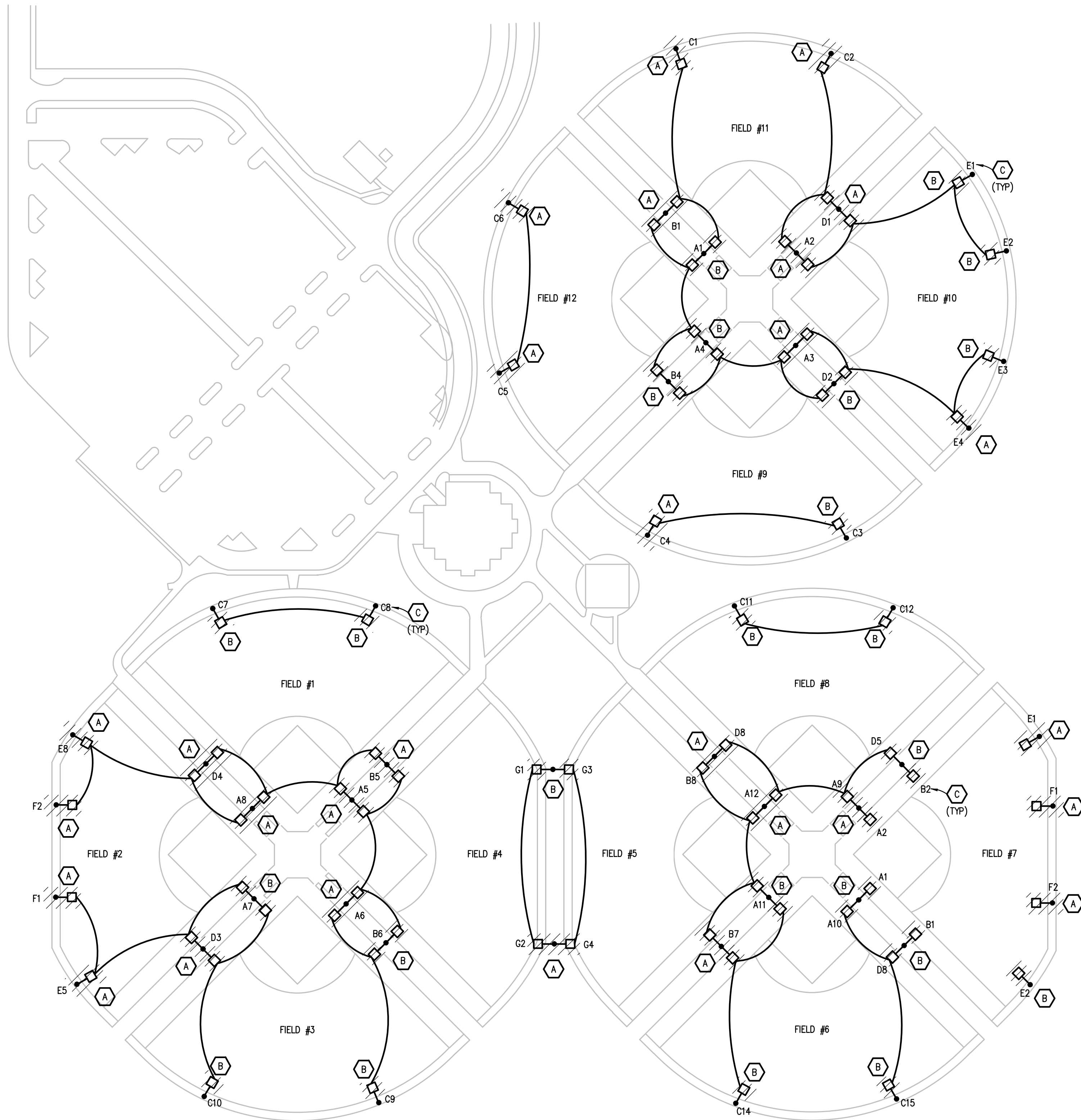
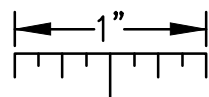
COLLABORATIVE ARCHITECTURE

SHEET

E0.3

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THE FOLLOWING DIMENSION EQUALS
ONE INCH WHEN PRINTED TO SCALE.



LIGHTING DEMOLITION SITE PLAN
SCALE: 1" = 100'

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/FEE'S 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. OUTDOOR LIGHTING BRANCH CIRCUIT WIRING SHALL BE MINIMUM #8 AWG CONDUCTORS (XHHW-2), IN MINIMUM 1" DIA. CONDUIT, UNLESS NOTED OTHERWISE.
11. SPARE CONDUITS SHALL INCLUDE PULL STRING AND SHALL BE TERMINATED WITH A CAP.
12. EXCAVATE THE ENTIRE LENGTH OF TRENCH TO PROPERLY SET DUCT ELEVATIONS.

DEMOLITION KEY NOTES:

- A. LIGHT POLE TO BE REPLACED. REMOVE CONDUIT AND BRANCH CIRCUIT WIRING.
- B. EXISTING POLE TO REMAIN. LIGHTS TO BE REMOVED AND REPLACED. REMOVE CONDUIT AND BRANCH CIRCUIT WIRING.
- C. EXISTING POLE LABELS ARE BASED ON MCC-A LABELS AND ARE INCLUDED FOR REFERENCE ONLY.



**Know what's below.
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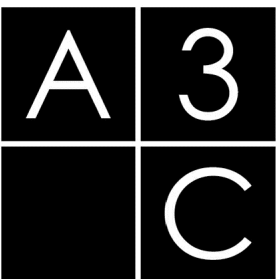


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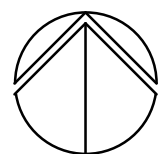
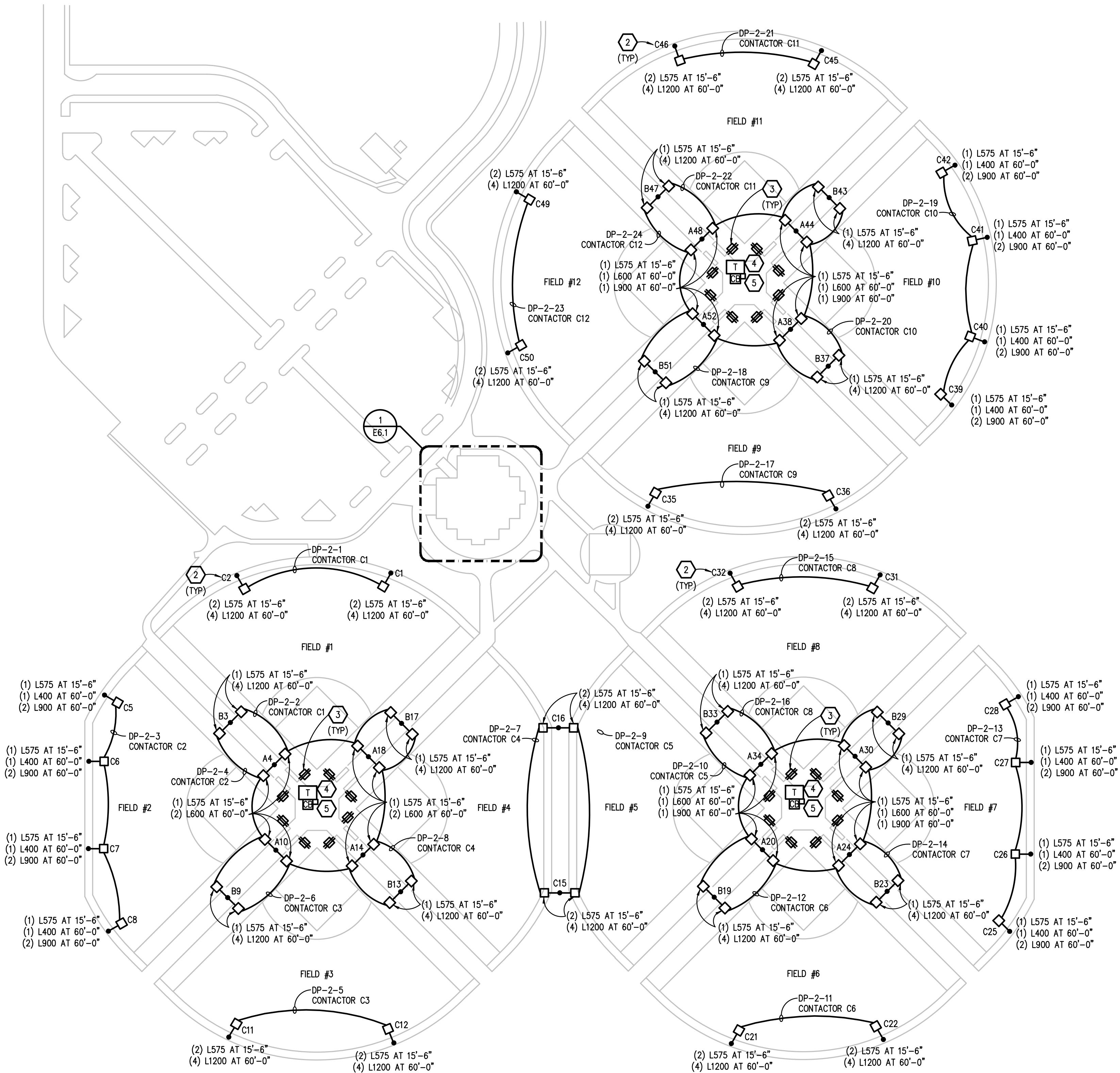
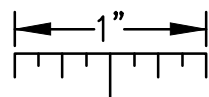
COLLABORATIVE ARCHITECTURE

SHEET

E0.4

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LIGHTING NEW WORK SITE PLAN

SCALE: 1" = 100'

SITE PLAN GENERAL NOTES:

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- CONDUCT A SURVEY TO IDENTIFY ALL UNDERGROUND UTILITIES. CALL 811 PRIOR TO EXCAVATION.
- 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.
- DEWATER TRENCHES PRIOR TO INSTALLATION OF CONDUITS. PROVIDE WATER TIGHT FITTINGS ON ALL UNDERGROUND CONDUITS.
- 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/FEE'S BY THE UTILITY COMPANIES IN THE BID PRICE.
- INSTALL UNDERGROUND CONDUITS 42" BELOW FINISHED GRADE, MINIMUM, UNLESS NOTED OTHERWISE.
- 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.
- REMOVE ALL DE-ENERGIZED CONDUCTORS FROM SITE AT COMPLETION OF THE PROJECT.
- OUTDOOR LIGHTING BRANCH CIRCUIT WIRING SHALL BE MINIMUM #8 AWG CONDUCTORS (XHHW-2), IN MINIMUM 1" DIA. CONDUIT, UNLESS NOTED OTHERWISE.
- SPARE CONDUITS SHALL INCLUDE PULL STRING AND SHALL BE TERMINATED WITH A CAP.
- EXCAVATE THE ENTIRE LENGTH OF TRENCH TO PROPERLY SET DUCT ELEVATIONS.

CONSTRUCTION KEY NOTES:

- NOT USED.
- PROVIDE NEW POLE NUMBERS AS PER MUSCO DESIGN.
- PROVIDE WEATHER PROOF, TAMPER RESISTANT GFCI RECEPTACLE IN DUGOUT. CIRCUIT (8) DUGOUT RECEPTACLES TO NEW TRANSFORMER.
- PROVIDE 1.5KVA, 277V/120 TRANSFORMER WITH NEMA 3R ENCLOSURE. COORDINATE WITH OWNER FOR EXACT LOCATION. CIRCUIT TRANSFORMER TO NEAREST SPARE 277V SINGLE PHASE 20A CIRCUIT.
- PROVIDE 20A 120V ENCLOSED CIRCUIT BREAKER WITH NEMA 3R ENCLOSURE ON SECONDARY SIDE OF TRANSFORMER. COORDINATE WITH OWNER FOR EXACT LOCATION.



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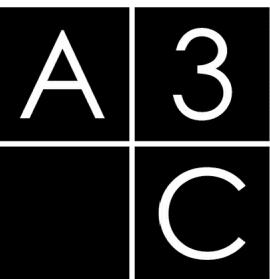
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**LIGHTING NEW WORK SITE
PLAN**



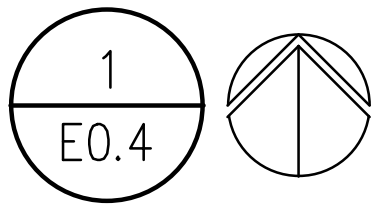
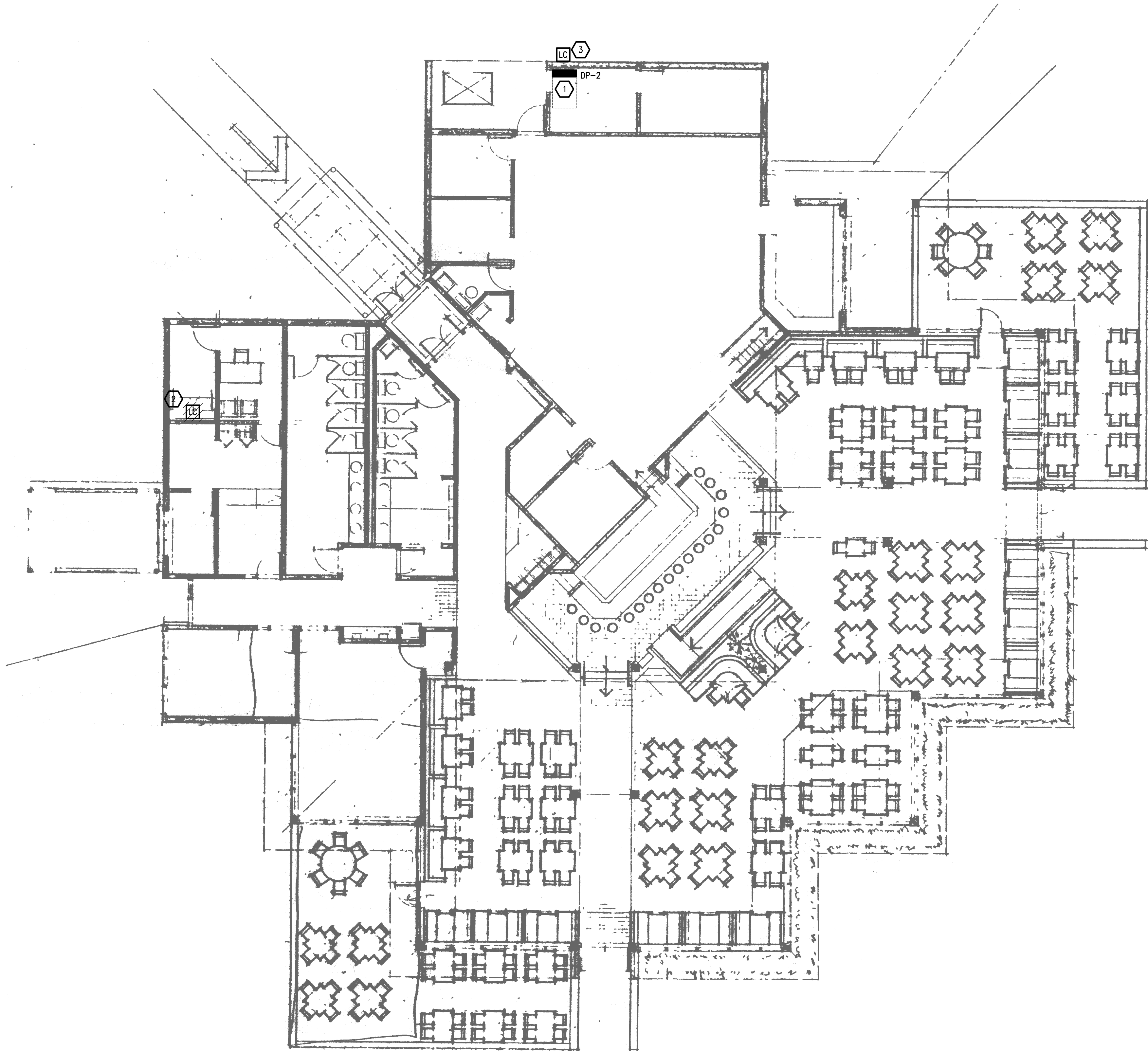
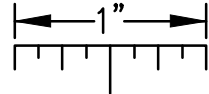
115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104
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COLLABORATIVE ARCHITECTURE

SHEET

E0.5

THE FOLLOWING DIMENSION EQUALS
ONE INCH WHEN PRINTED TO SCALE.



ENLARGED ELECTRICAL PLAN
SCALE: 1/8" = 1' - 0"

ELECTRICAL GENERAL NOTES:

1. 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.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
4. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
5. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
6. COORDINATE THE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.

CONSTRUCTION KEY NOTES:

1. DP-2 SHOWN FOR REFERENCE ONLY.
2. REMOVE EXISTING LIGHTING CONTROLS FOR BASE BALL FIELDS.
3. PROVIDE NEW MUSCO LIGHTING CONTACTOR CONTROLS FOR BASE BALL FIELDS.. PROVIDE MUSCO CONTROL-LINK CONTROL AND MONITORING SYSTEM AS PER MUSCO'S DESIGN.



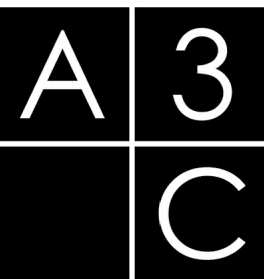
PROJECT NUMBER: 21033

ISSUE		
BIDS		02/23/2023
REVIEW		02/08/2022

DRN: CAH CHKD: EMG

CANTON TOWNSHIP
VICTORY PARK BALLFIELDS

ENLARGED ELECTRICAL
PLAN



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COLLABORATIVE ARCHITECTURE

SHEET

E6.1

THIS IS STANDARD SYMBOL LIST - SOME OF THESE SYMBOL MAY NOT APPEAR ON DRAWINGS.

ELECTRICAL DRAWING INDEX	
SHEET	DESCRIPTION
E002	BID PACKAGE #02 – PROJECT NO. 230015, 230023 & 230027 – ELECTRICAL LEGEND AND SHEET INDEX
E021	BID PACKAGE #02 – PROJECT NO. 230015, 230023 & 230027 – ELECTRICAL GENERAL NOTES
E022	BID PACKAGE #02 – PROJECT NO. 230015, 230023 & 230027 – ELECTRICAL DETAILS
E120	BID PACKAGE #02 – PROJECT NO. 230015, 230023 & 230027 – ELECTRICAL KEY PLAN
E121	BID PACKAGE #02 – PROJECT NO. 230023 & 230027 – ELECTRICAL DEMOLITION PLANS
E122	BID PACKAGE #02 – PROJECT NO. 230023 & 230027 – ELECTRICAL NEW WORK PLANS
E123	BID PACKAGE #02 – PROJECT NO. 230015 – ELECTRICAL DEMOLITION PLAN
E124	BID PACKAGE #02 – PROJECT NO. 230015 – ELECTRICAL NEW WORK PLAN
E420	BID PACKAGE #02 – PROJECT NO. 230015 – ELECTRICAL ONE-LINE DIAGRAM
E421	BID PACKAGE #02 – PROJECT NO. 230015 – ELECTRICAL EQUIPMENT ELEVATIONS
E422	BID PACKAGE #02 – PROJECT NO. 230015 – ELECTRICAL PANEL SCHEDULES

INCLUDE COST TO ALLOW FOR BALL FIELD UPGRADES (LIGHTING REPLACEMENT, ETC) BEING FROM EXISTING ELECTRICAL DISTRIBUTION EQUIPMENT. THEN UPGRADE ELECTRICAL SERVICE AND DISTRIBUTION EQUIPMENT AT A LATER DATE DUE TO EQUIPMENT AVAILABILITY AND BUILDING SUMMER USE SCHEDULING. RE-FEED LIGHTING FROM NEW DISTRIBUTION EQUIPMENT. COORDINATE ALL COST AND SCHEDULING WITH CONSTRUCTION MANAGER AND OWNER AND INCLUDE IN BID.



CANTON TOWNSHIP CIP 2022	BID PACKAGE #02 PROJECT NO. 230015, 230023 & 230027 ELECTRICAL LEGEND AND SHEET INDEX
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E002

H:\ACAD\FILES\00\00000-Canton Twp. Misc. Projects\CAD\ELECO\00000_E021_BPZ GENERAL NOTES.dwg Tue, 07 Mar 2023 - 2:10pm

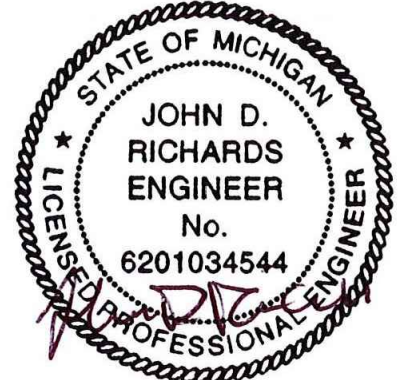
ELECTRICAL DEMOLITION GENERAL NOTES :

- A. DEMOLITION GENERAL NOTES APPLY TO ALL ELECTRICAL DEMOLITION PLANS INCLUDED WITHIN THIS DOCUMENT SET.
- B. COORDINATE ALL DEMOLITION WORK WITH MECHANICAL AND ARCHITECTURAL DEMOLITION PLANS, OWNER'S FACILITY MANAGER, AND ALL TRADE CONTRACTORS PERFORMING DEMOLITION.
- C. THESE DEMOLITION NOTES AND PLAN DO NOT FULLY REPRESENT ALL DEMOLITION WORK REQUIRED TO INSTALL NEW WORK IN ACCORDANCE WITH CONTRACT DOCUMENTS, BUT ARE INTENDED TO SERVE AS GENERAL DEMOLITION GUIDELINES. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS OF INCIDENTAL DEMOLITION WORK NOT INDICATED ON THIS PLAN.
- D. WHERE ITEMS ARE REMOVED, AND-OR WHERE NEW FLUSH MOUNTED DEVICES REQUIRE CUTTING/OPENING OF EXISTING SURFACES, PATCH SURFACES TO MATCH ADJACENT SURFACES OR TO RECEIVE NEW FINISHES WHERE SCHEDULED. PATCHING OF NEW OR EXISTING FINISHES SHALL EXTEND TO NEAREST CORNER OR NATURAL TERMINATION FOR A CONSISTENT, SMOOTH, INVISIBLE TRANSITION FINISHES AT THE END OF CONSTRUCTION.
- E. THE EXISTING FLOOR SLAB IS BEING REMOVED, CUT OR CORED AS PART OF DEMOLITION OR NEW WORK, PROVIDE SCANNING/TRACING OF FLOOR TO IDENTIFY AND PROTECT ANY EXISTING TO REMAIN ELECTRICAL CONDUITS AND WIRING AND OTHER UTILITIES AND STRUCTURAL ELEMENTS IN/UNDER SLAB PRIOR TO DEMOLITION OF THE SLAB. HAND DIG AROUND EXISTING TO REMAIN UTILITIES. PROTECT AND MAINTAIN FEEDERS AND CIRCUITS SERVING LOADS OUTSIDE THE AREA OF WORK. TYPICAL FOR OTHER UTILITIES.
- F. COORDINATE ANY SERVICE SHUTDOWNS WITH OWNER. COORDINATE ANY SHUTDOWNS OF EXISTING SERVICES OR EQUIPMENT WITH OWNER. PERFORM SHUTDOWNS AT A SCHEDULED TIME AS TO MINIMIZE DISRUPTION OF BUILDING OPERATIONS.
- G. WHERE DEMOLITION IS SPECIFIED OR INDICATED, REMOVE WORK AS NOTED BELOW AND PATCH SURFACE TO MATCH EXISTING OR NEW FINISH AS APPLICABLE. FIRE STOP ALL PENETRATIONS LEFT IN FLOORS AND FIRE/SMOKE-RATED WALLS. POWER, LIGHTING CONTROLS, BLANK OUTLET BOXES: REMOVE WIRING DEVICE. REMOVE WIRING BACK TO SOURCE OR TO THE NEAREST EXISTING TO REMAIN JUNCTION BOX IF CIRCUIT SERVES EXISTING TO REMAIN ACTIVE LOADS. REMOVE OUTLET BOX – DO NOT PROVIDE BLANK COVERPLATES. ABANDON CONDUIT CONCEALED IN WALLS. CUT OFF CONDUIT WHERE IT EMERGES FROM WALL ABOVE CEILING AND PLUG OR CAP END. REMOVE CONDUIT BACK TO SOURCE WHERE OTHERWISE ACCESSIBLE, INCLUDING ABOVE FINISHED CEILINGS. PLUG OPENINGS IN PANELS AND BOXES FROM REMOVED CONDUIT. REMOVE FLEXIBLE CONDUIT IN WALLS COMPLETELY. TELECOMMUNICATIONS/DATA: IF CONTRACTOR TO DISCONNECT AT SOURCE IN COMMUNICATIONS ROOM AND AT EACH OUTLET. ELECTRICAL CONTRACTOR TO REMOVE CABLE, OUTLET BOX AND CONDUIT AS NOTED FOR POWER AND LIGHTING CONTROLS.
- H. REFER TO DRAWINGS FOR EXISTING BUILDING COMPONENTS TO BE REMOVED, SALVAGED, AND REUSED IN NEW WORK. THE CONTRACTOR IS RESPONSIBLE FOR ALL ITEMS TO BE SALVAGED AND RELOCATED, THROUGHOUT THE CONSTRUCTION PERIOD, INCLUDING SAFE STORAGE OF SAME. UPON DEMOLITION, THE OWNER SHALL RETAIN THOSE ITEMS DEEMED SALVAGEABLE. ITEMS NOT RETAINED SHALL BECOME THE PROPERTY OF THE CONTRACTOR, WHO SHALL LEGALLY DISPOSE OF SAME.

ELECTRICAL GENERAL NOTES :

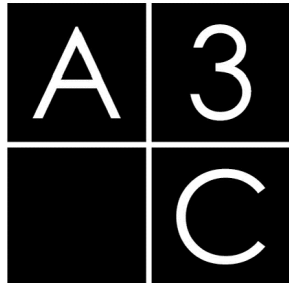
- A. ELECTRICAL GENERAL NOTES APPLY TO ALL ELECTRICAL SHEETS.
- B. WIRING DEVICE COVERPLATES FOR NORMAL POWER SWITCHES, DIMMERS, RECEPTACLES AND MANUAL MOTOR SWITCHES ARE TO BE BRUSHED STAINLESS STEEL. LABEL WIRING DEVICE COVERPLATES (SWITCHES, RECEPTACLES, DIMMERS, OCCUPANCY SENSORS) WITH PANEL AND BRANCH CIRCUIT NUMBERS USING WATERPROOF CLEAR PLASTIC LETTERED TAPE AND BLACK MACHINE PRINTED LETTERING. LOCATE LABEL CENTERED ON TOP OF COVERPLATE. FOR WEATHERPROOF APPLICATIONS LOCATE LABEL INSIDE WEATHERPROOF COVER. LABEL MOTORIZED DOOR OPERATORS AND HARDWIRED ELECTRICAL UTILIZATION EQUIPMENT IN THE SAME MANNER AS WIRING DEVICE COVERPLATES. TYPICAL FOR ALL NEW, RELOCATED AND EXISTING TO REMAIN WIRING DEVICE COVERPLATES AND EQUIPMENT WITHIN THE AREA OF WORK. LABEL OUTLET BOX COVERPLATES SERVING FLEXIBLE WHIPS FOR SYSTEMS FURNITURE, EQUIPMENT, AND FOODSERVICE LOADS WITH PANEL AND CIRCUIT NUMBERS SIMILAR TO WIRING DEVICES. LABEL LIGHTING CONTROLS AND RECEPTACLES (FACTORY AND FIELD-INSTALLED) IN SYSTEMS FURNITURE, EQUIPMENT AND POWER POLES WITH PANEL AND CIRCUIT NUMBERS SIMILAR TO WIRING DEVICES. LABEL OUTLET BOXES FOR AV WITH APPLICABLE SYSTEM IF COVERPLATES ARE BLANK OR GROMMETED, EG "A/V INPUT" OR "TV SIGNAL", ETC. IF VENDOR FOR LOW VOLTAGE SYSTEMS INSTALLS A COVERPLATE, VENDOR IS TO LABEL THE PLATE ACCORDINGLY.
- C. PROVIDE IDENTIFICATION AND COLOR CODING OF ELECTRICAL EQUIPMENT AND WORK. PROVIDE PLASTIC LAMINATE NAMEPLATES FOR ALL DISTRIBUTION EQUIPMENT. TYPICAL FOR ALL NEW AND EXISTING TO REMAIN DISTRIBUTION EQUIPMENT WITHIN THE AREA OF WORK.
- D. ALL NECESSARY ELECTRICAL EQUIPMENT REQUIRED FOR THE WORK PROPOSED SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
- E. REMOVE AND REINSTALL CEILINGS AND CEILING MOUNTED BUILDING SYSTEMS AS REQUIRED TO PERFORM WORK.
- F. MOUNTING HEIGHTS TO CENTER UNLESS OTHERWISE NOTED:
- REFER TO ARCHITECTURAL ELEVATIONS OF ALL AREAS PRIOR TO INSTALLATION OF ELECTRICAL WORK. MOUNT AS INDICATED ON ARCHITECTURAL ELEVATIONS. IF ANY DISCREPANCY EXISTS BETWEEN ELECTRICAL AND ARCHITECTURAL ELEVATIONS, THE ELEVATIONS TAKE PRECEDENCE.
- RECEPTACLES & VOICE/DATA OUTLETS: 18" AFF.
- WALL MOUNTED FIRE ALARM VISIBLE ONLY AND AUDIBLE/VISIBLE COMBINATION DEVICES: MOUNT SUCH THAT ENTIRE LENS IS NOT LESS THAN 80" AFF AND NOT GREATER THAN 96" AFF. MOUNT ALL SIMILAR DEVICES AT THE SAME HEIGHT.
- WALL MOUNTED FIRE ALARM AUDIBLE ONLY DEVICES: MOUNT SUCH THAT THE TOP OF THE DEVICE IS A MINIMUM OF 90" AFF AND A MINIMUM OF 6" BELOW THE FINISHED CEILING. MOUNT ALL SIMILAR DEVICES AT THE SAME HEIGHT.
- COORDINATE THE LOCATION OF ALL FIRE ALARM DEVICES IN THE AREA OF WORK OF ANY WORK, AND NOTIFY A/E OF ANY MOUNTING LOCATION DISCREPANCIES PRIOR TO THE INSTALLATION OF ANY FIRE ALARM WORK.
- SWITCHES AND FIRE ALARM PULL STATIONS: 48" AFF.
- DISCONNECT SWITCHES AND CIRCUIT BREAKERS: MOUNT SUCH THAT THE CENTER OF THE GRIP OF THE OPERATING HANDLE OF THE SWITCH OR CIRCUIT BREAKER, WHEN IN ITS HIGHEST POSITION, IS NOT MORE THAN 6 FEET 7 INCHES ABOVE FINISHED FLOOR.
- G. FOR ANY RECEPTACLE WITHIN 6'-0" OF A WATER SOURCE, REPLACE EXISTING TO REMAIN NON-GFR DUPLEX RECEPTACLES WITH GFR (GROUND FAULT CIRCUIT INTERRUPTER) TYPE. THESE RECEPTACLES MAY NOT BE INDICATED ON PLANS.
- H. UNLESS OTHERWISE NOTED, TYPICAL BRANCH CIRCUIT WIRING IS 3/4"C, 2#12 & 1#12G FROM A 20A/1P BRANCH BREAKER FOR CIRCUITS UP TO 100 FT. IN LENGTH. PROVIDE DEDICATED NEUTRAL CONDUCTORS FOR ALL BRANCH CIRCUITS. PROVIDE RIGID STEEL CONDUIT FOR ALL WORK IN SLAB AND FOR ANY CONDUITS IN CHASES.
- I. WHERE WIRING DEVICES AND EQUIPMENT DO NOT INCLUDE A BRANCH CIRCUIT DESIGNATION ON PLAN, INCLUDE COST IN BID TO PROVIDE A DEDICATED BRANCH CIRCUIT (3/4"C, 2#12 & 1#12G) FROM THE NEAREST PANELBOARD TO THE WIRING DEVICE/EQUIPMENT. WHERE LIGHTING FIXTURES DO NOT INCLUDE A BRANCH CIRCUIT DESIGNATION ON PLAN, INCLUDE COST IN BID TO CIRCUIT FIXTURE TO THE NEAREST LIGHTING CIRCUIT WITH A DESIGNATION. FOR WIRING DEVICES, EQUIPMENT AND LIGHTING FIXTURES, THE CIRCUIT COST IS TO BE COORDINATED FOR POWER TYPE BASED ON DRAWING SYMBOL. PROVIDE EMERGENCY CIRCUIT OR NORMAL CIRCUIT TO MATCH SYMBOL ON PLAN. PRIOR TO INSTALLATION OF CIRCUITING IN THE AREA, CONFIRM THE PROPER CIRCUIT DESIGNATION WITH A/E VIA AN RFI.
- J. CIRCUIT NUMBERS ON PLANS ARE BASED ON FIELD OBSERVATION AND ON THE OWNERS EXISTING DRAWINGS. CIRCUIT TRACE TO VERIFY ALL EXISTING BRANCH CIRCUITS IN AREA OF WORK. IDENTIFY CIRCUIT VOLTAGE, CONDUIT AND SIZE, SOURCE PANEL, BRANCH CIRCUIT OVERCURRENT DEVICE SIZE AND CIRCUIT NUMBER. INDICATE ACTUAL CIRCUIT TRACED BRANCH CIRCUIT NUMBERS ON AS-BUILT DOCUMENTS FOR EACH CIRCUIT AFFECTED BY WORK (DEMOLITION, NEW AND RELOCATED).
- K. WHERE EXISTING SPARES OR SPACES IN PANELBOARDS ARE INDICATED FOR USE IN THE PROJECT, REMOVE THE PANEL COVERS PRIOR TO INSTALLING ANY CONDUIT AND WIRING RELATED TO THE PANEL AND CONFIRM THAT SPARES ARE AVAILABLE (NO WIRING TO UNLABELED BREAKERS), AND CONFIRM THAT POSITIONS INDICATED AS SPACES CONTAIN BUSSING SUITABLE FOR THE ADDITION OF BREAKERS. SEND PHOTOGRAPHS TO A/E OF ANY CONDITIONS FOUND WHICH ARE NOT CONSISTENT WITH USABLE SPARES AND SPACES.

- L. COORDINATE PHASING OF WORK WITH CONSTRUCTION COORDINATOR INCLUDING BUT NOT LIMITED TO THE USE OF TEMPORARY PARTITIONS IN CORRIDORS TO MAINTAIN PEDESTRIAN CIRCULATION AND MULTIPLE PHASES OF CONSTRUCTION. REFER TO ARCHITECTURAL DOCUMENTS FOR ADDITIONAL PHASING REQUIREMENTS. PROVIDE ALL WORK AND TEMPORARY SERVICES AS REQUIRED TO ACCOMMODATE PHASING, INCLUDING BUT NOT LIMITED TO TEMPORARY NORMAL AND EMERGENCY EGRESS AND EXIT LIGHTING. TEMPORARY LIGHTING DESIGN / LAYOUT IS MEANS AND METHODS BY ELECTRICAL CONTRACTOR. PROVIDE PREMIUM TIME WORK IF DIRECTED AS REQUIRED TO ACCOMMODATE PROJECT SCHEDULING.
- M. WHERE WALLS, STRUCTURE AND OTHER BUILDING SYSTEMS ARE REMOVED AND ABOVE FINISHED CEILINGS, INDEPENDENTLY RE-SUPPORT ANY EXISTING TO REMAIN RACEWAYS. PROVIDE MISCELLANEOUS STEEL AS REQUIRED TO SUPPORT RACEWAY. REFER TO ARCHITECTURAL DOCUMENTS FOR WALLS TO BE REMOVED.
- N. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING WORK OR SUPPLYING MATERIALS OR COMPONENTS.
- O. PROVIDE FLUSH INSTALLATION OF OUTLET BOXES AND CONCEAL CONDUIT FOR ALL SYSTEMS IN FINISHED AREAS. WORK MAY BE EXPOSED IN MECHANICAL AND ELECTRICAL SPACES. CUT AND PATCH EXISTING SURFACES AS REQUIRED AND REFINISH TO MATCH FINAL ARCHITECTURAL FINISH OF SPACE, OR PRE-CONSTRUCTION CONDITIONS IF NO OTHER ARCHITECTURAL FINISH WORK IS PERFORMED IN THE AREA. REFER TO ARCHITECTURAL DRAWINGS TO DETERMINE LOCATIONS OF INCIDENTAL ADDITIONAL FINISH WORK ASSOCIATED WITH RESTORATION OF EXISTING FINISHES WHERE ALTERED BY ELECTRICAL WORK. FINISH ANY DAMAGED/ALTERED SURFACES PER ARCHITECT'S DIRECTION.
- P. CONTRACTOR IS TO DETERMINE ROUTING OF ALL CIRCUITS ABOVE FINISHED CEILING AS MEANS AND METHODS. FIELD SURVEY TO DETERMINE ROUTING. PROVIDE CONCEALED ROUTING FOR ALL WORK. REMOVE AND REINSTALL CEILING AS REQUIRED TO PERFORM WORK.
- Q. PROVIDE A LOCAL DISCONNECTING MEANS FOR ALL EQUIPMENT AND LOADS WHICH ARE NOT CORD-AND-PLUG CONNECTED.
- R. ALL WIRING IS TO BE PERFORMED BY LICENSED ELECTRICIANS.
- S. EXISTING DEVICES/EQUIPMENT TO REMAIN ARE SHOWN WITH LIGHT LINE WEIGHT, NEW DEVICES/EQUIPMENT ARE SHOWN WITH DARK LINE WEIGHT AND DEVICES/EQUIPMENT SHOWN HATCHED ARE TO BE REMOVED.
- T. MAINTAIN INTEGRITY OF ALL EXISTING FIRE RATED PARTITIONS. REFER TO ARCHITECTURAL DOCUMENTS AND EXISTING FIELD MARKINGS FOR RATINGS.
- U. INSTALL WORK AND EQUIPMENT AS INDICATED ON DRAWINGS, AND PER NEC.
- V. MAKE FINAL CONNECTION TO ALL EQUIPMENT INDICATED PER MANUFACTURER'S INSTALLATION INSTRUCTION. COORDINATE LOCATION OF SERVICE TO ALL EQUIPMENT WITH APPROVED SUBMITTALS AND WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.
- W. RESUPPORT ANY UNSUPPORTED WIRING AND RACEWAYS ABOVE CEILING IN WORK AREA.
- X. PROVIDE UL LISTED SYSTEM FOR FIRE STOPPING PENETRATIONS THROUGH FIRE RATED ASSEMBLIES. PROVIDE SYSTEM WITH EQUAL OR GREATER RATING THAN ASSEMBLY. REFER TO ARCHITECTURAL DOCUMENTS FOR RATINGS AND LOCATIONS OF ASSEMBLIES. FIRE STOPPING MUST BE INSTALLED BY CERTIFIED PERSONNEL.
- Y. EXISTING CONDUIT SIZES NOTED ARE APPROXIMATE ONLY. CONFIRM ACTUAL DIMENSIONS AND MATCH FOR ANY EXTENSION OF CIRCUITS UNLESS OTHERWISE NOTED.
- Z. WHERE EMERGENCY LIGHTING FIXTURES, UNIT LIGHTING EQUIPMENT, AND EXIT SIGNS CONTAIN BATTERIES AS THE EMERGENCY SOURCE, WIRE TO NORMAL LIGHTING CIRCUIT SERVING THE GENERAL LIGHTING IN THE SPACE AHEAD OF ANY MANUAL AND AUTOMATIC CONTROL.
- AA. WHERE "TYPICAL" IS NOTED, THE CONDITION APPLIES FOR ALL ROOMS ALL SHEETS IN THE WORK.
- AH. COORDINATE ALL WORK RELATING TO THE FIRE ALARM SYSTEM WITH FIRE ALARM DESIGNER/INSTALLER. FIRE ALARM DESIGNER AND INSTALLER IS REQUIRED TO BE NICET-CERTIFIED AND A SUBCONTRACTOR TO THE ELECTRICAL CONTRACTOR.
- AI. COORDINATE AND ATTEND COORDINATION MEETINGS BETWEEN CONTRACTOR TRADES PRIOR TO AND DURING CONSTRUCTION. REVIEW AND PLAN EQUIPMENT LOCATIONS AND ROUTING OF MECHANICAL AND ELECTRICAL WORK TO AVOID INTERFERENCES AND MAINTAIN WORKING CLEARANCES. VERIFY THAT CONDENSER LINES, DUCTWORK AND OTHER MECHANICAL ITEMS DO NOT INTERFERE WITH ELECTRICAL WORKING CLEARANCES.
- AJ. FOR ALL RECEPTACLES CONNECTED TO GFCI BRANCH BREAKERS PROVIDE ADDITIONAL LABELING ON DEVICE COVER PLATE THAT READS "GROUND FAULT PROTECTED".



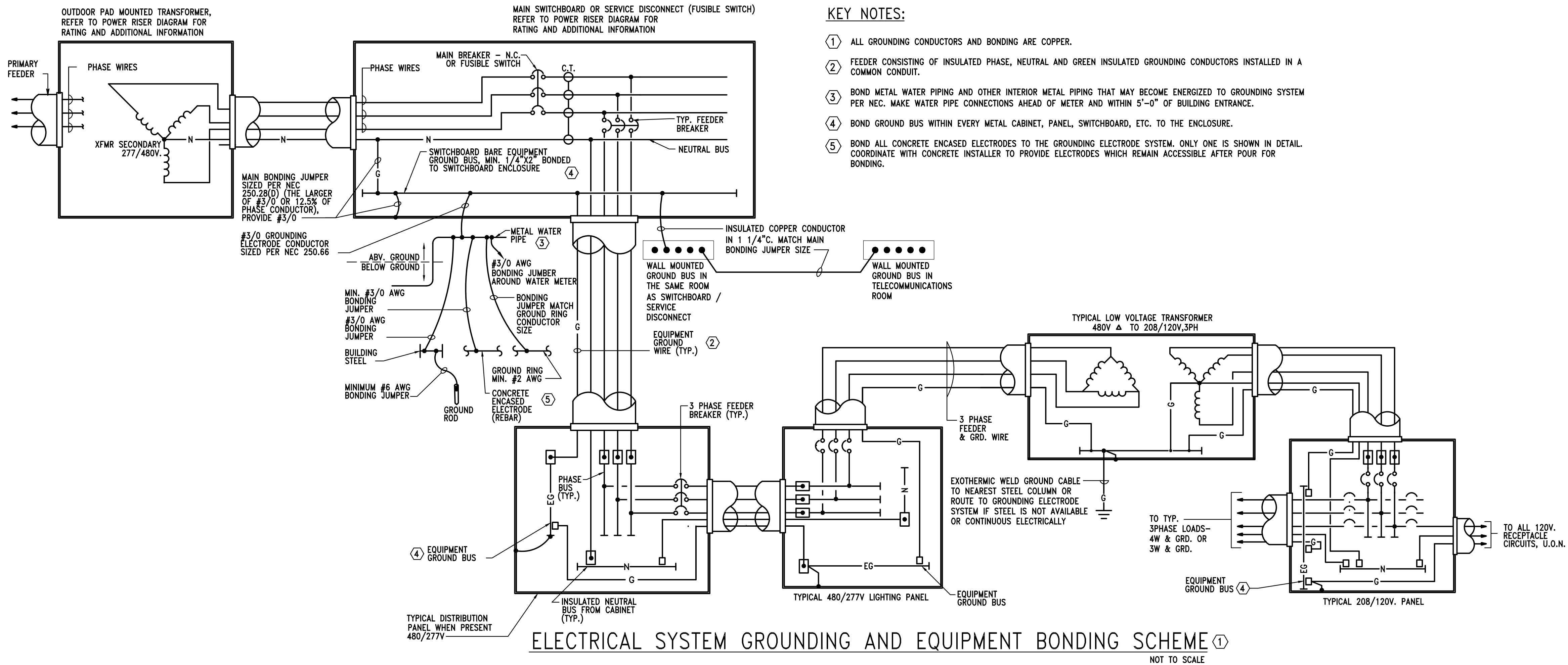
PROJECT NUMBER	
ISSUE	
BIDS	02.23.2023
SD REVIEW	05.12.2022
DRN: CGB CHK'D: SDW	

CANTON TOWNSHIP CIP 2022	BID PACKAGE #02 PROJECT NO. 230015, 230023 & 230027 ELECTRICAL GENERAL NOTES



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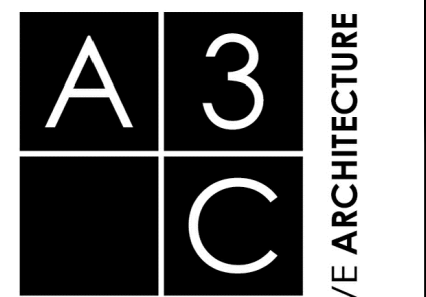


PROJECT NUMBER

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DRN: CGB CHK'D: SDW

CANTON TOWNSHIP CIP 2022	BID PACKAGE #02 PROJECT NO. 230015, 230023 & 230027 ELECTRICAL DETAILS
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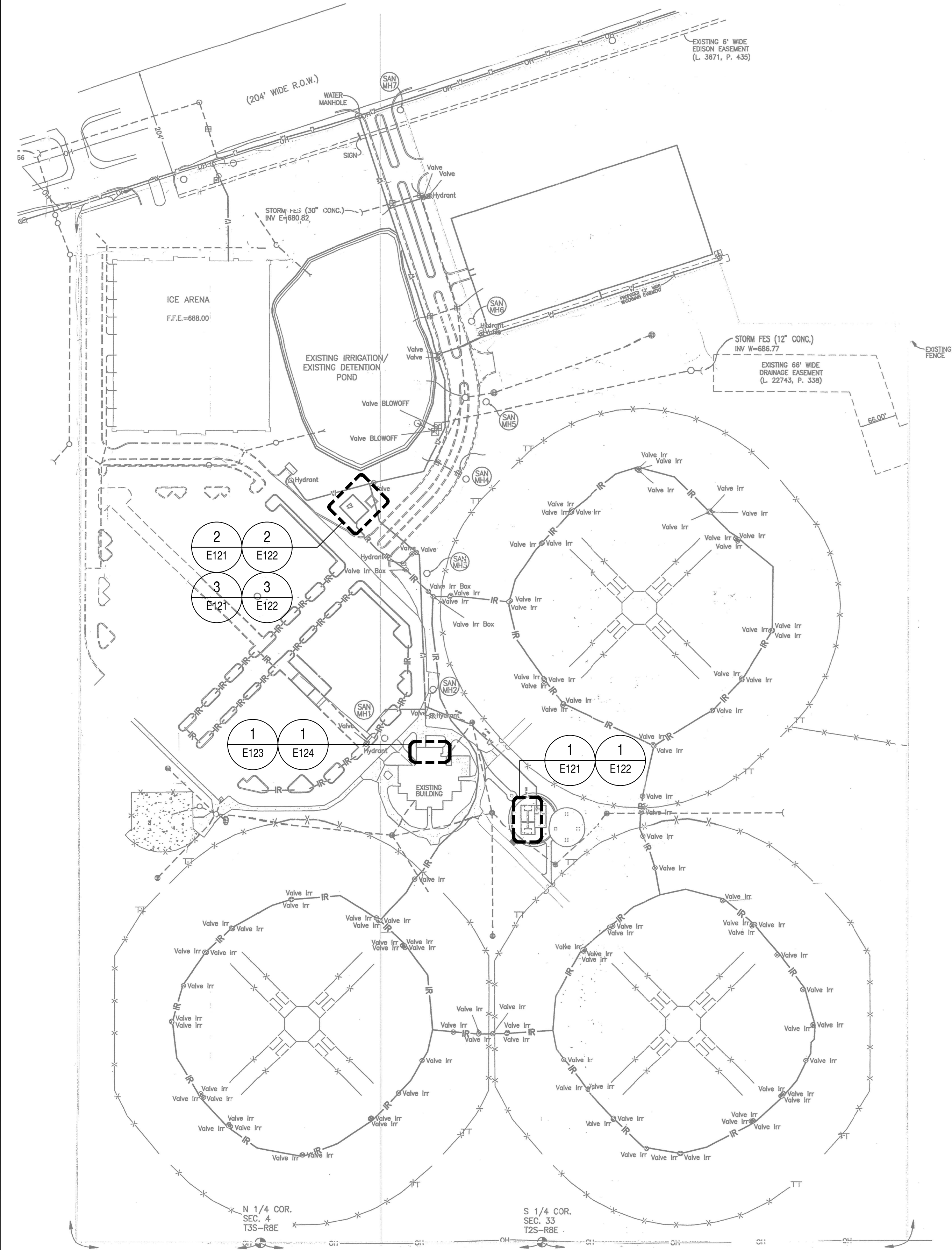


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SHEET

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VICTORY PARK KEY PLAN

SCALE: N/A
REFD FROM:



PROJECT NUMBER	
BIDS	02.23.2023
SD REVIEW	05.12.2022
DRN: CGB	CHK'D: SDW

CANTON TOWNSHIP CIP 2022	BID PACKAGE #02
	PROJECT NO. 230015, 230023 & 230027
ELECTRICAL KEY PLAN	

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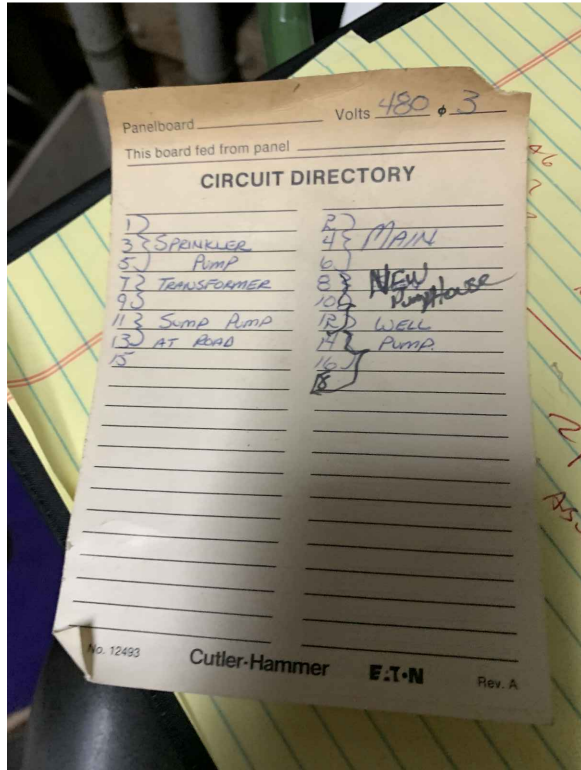
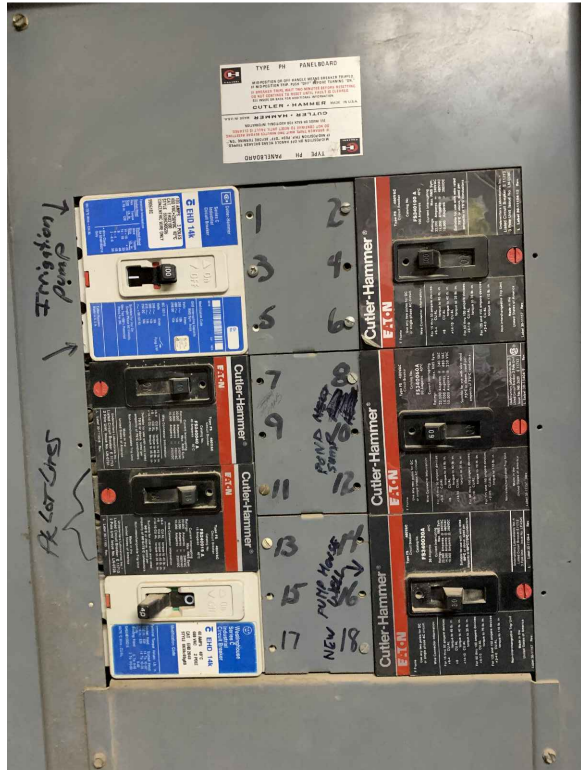
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PHOTOS - PUMP ENCLOSURE

SCALE: N/A
REF'D FROM:

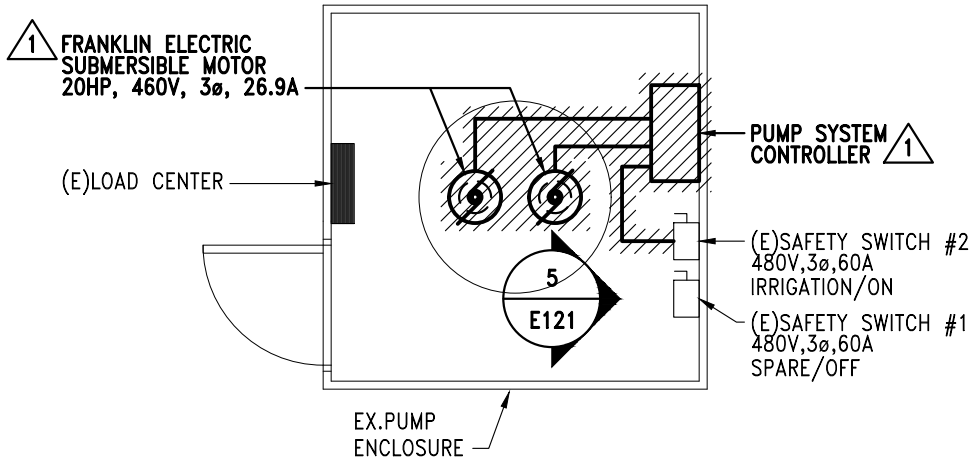
5



PHOTOS - 480V PANEL

SCALE: N/A
REF'D FROM:

4



COORDINATE WITH OWNER.
REMOVE SCOPE IF REQUIRED.

PUMP ENCLOSURE DEMOLITION

SCALE: 1/4" = 1'-0"
REF'D FROM:

3

DEMOLITION KEY NOTES:

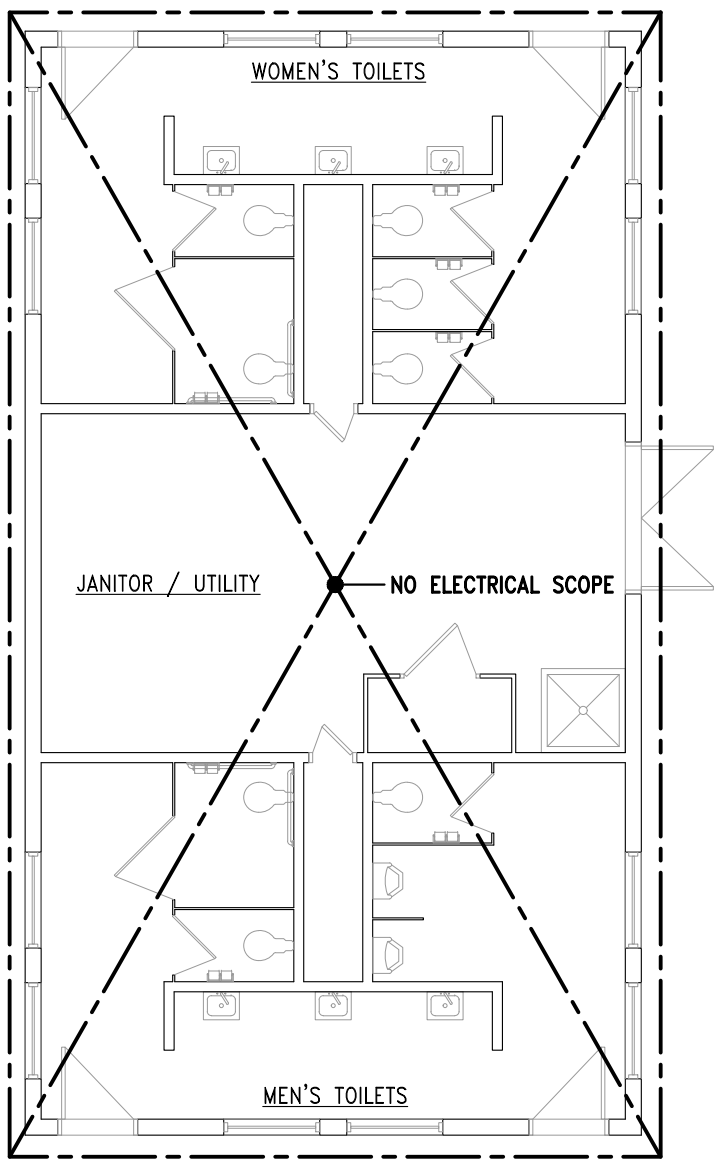
1. INFORMATION TAKEN FROM FRANKLIN CONTROLLER IN PUMP ENCLOSURE.
2. REMOVE ELECTRICAL CONNECTION FROM SAFETY SWITCH #2 TO CONTROLLER AND TO PUMP MOTOR.
3. EXISTING ONE-LINE DIAGRAMS ARE NOT AVAILABLE FOR THE ELECTRICAL SYSTEMS SERVING THE MAINTENANCE BUILDING AND PUMP ENCLOSURE. INCLUDE SCOPE IN BID FOR FIELD INVESTIGATION AND CIRCUIT TRACING OF ALL EXISTING ELECTRICAL SYSTEMS AS REQUIRED TO GENERATE A ONE-LINE DIAGRAM. INCLUDE RATINGS OF ELECTRICAL EQUIPMENT (VOLTAGE, FULL LOAD AMPS, HORSEPOWER, FUSE SIZES, AMPACITIES, ETC. AS APPLICABLE). INDICATE THE FOLLOWING:
 - A. UTILITY TRANSFORMER WITH RATINGS.
 - B. FEEDERS TO EACH PANELBOARD AND LOAD CENTER IN THE MAINTENANCE BUILDING AND IN THE PUMP ENCLOSURE.
 - C. LARGE LOADS INCLUDING ALL PUMPS, CONTROLLERS AND DISCONNECTING MEANS WITH RATINGS. DOCUMENT LOCATION OF THE LOAD ON THE ONE LINE DIAGRAM. PROVIDE A UNIQUE NAME TO EACH LOAD TO AVOID DUPLICATES.
 - D. INDICATE FEEDER SIZES (CONDUIT SIZE AND CONDUCTOR COUNTS AND SIZES WITH GROUND) AND OVERCURRENT DEVICE RATINGS SERVING EACH FEEDER.
 - E. TRANSFORMER RATINGS AND LOCATIONS SERVING LOAD CENTERS IN MAINTENANCE BUILDING AND IN PUMP ENCLOSURE BUILDING.
 - F. SMALL 120V AND 208V SINGLE PHASE LOADS FED BY LOAD CENTERS ARE NOT REQUIRED TO BE INDICATED ON THE ONE-LINE DIAGRAM, UNLESS OTHERWISE NOTED.
 - G. IDENTIFY THE LOCATION AND FUNCTION OF THE WELL CONTACTOR NOTED IN CIRCUIT 11 OF LOAD CENTER IN THE MAINTENANCE BUILDING.
 - H. IDENTIFY IF ANY LOADS SERVED BY PANELBOARDS ARE NOT IN USE OR ABANDONED. CONFIRM STATUS WITH OWNER SO THAT BREAKERS MAY BE MARKED SPARE.
4. PROTECT EXISTING FEEDER TO CONTROLLER FOR REUSE IN NEW WORK.



MAINTENANCE BUILDING

SCALE: 1/8" = 1'-0"
REF'D FROM:

2



PAVILION TOILET ROOMS DEMOLITION

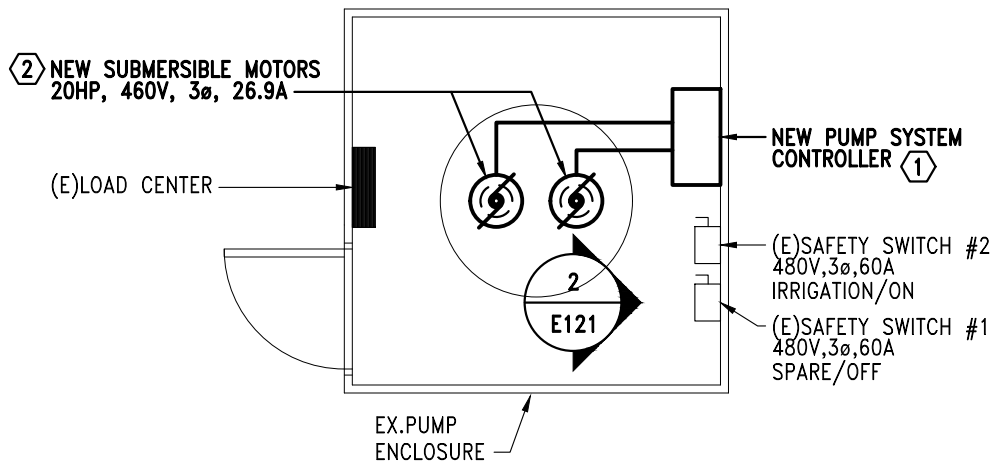
SCALE: 1/8" = 1'-0"
REF'D FROM:

1



PROJECT NUMBER	
ISSUE	
BIDS	02.23.2023
SD REVIEW	05.12.2022
DRN: DMH	CHK'D: JDR
CANTON TOWNSHIP CIP 2022	BID PACKAGE #02 PROJECT NO. 230023 & 230027 ELECTRICAL DEMOLITION PLANS
<div><div>A3C</div><div>115 1/2 E. LIBERTY STREET ANN ARBOR, MI 48104 T: (734) 663 - 1910 F: (866) 732 - 2168 www.a3c.com</div><div>COLLABORATIVE ARCHITECTURE</div></div>	
SHEET	
E121	

H:\ACAD\FILES\00000000-Canton Twp. Misc. Projects\CAD\IE\EO\0000_E122_BP2 NEW WORK.dwg Tue, 07 Mar 2023 - 2:10pm

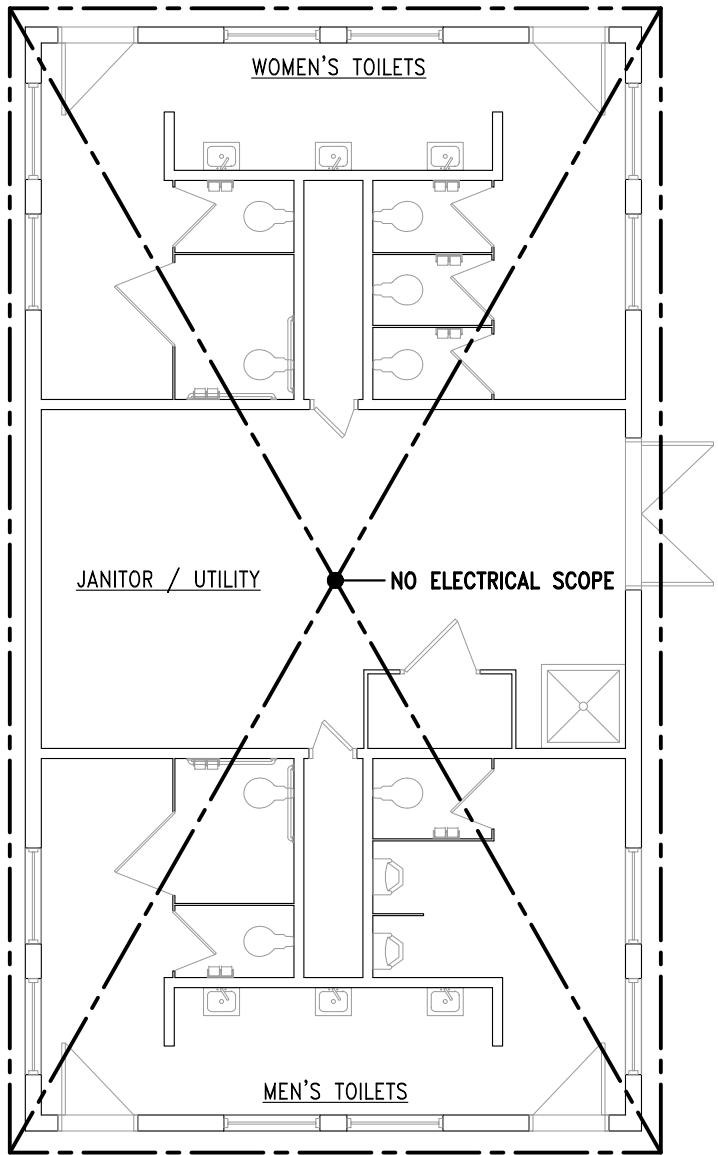


COORDINATE WITH OWNER.
REMOVE SCOPE IF REQUIRED.

PUMP ENCLOSURE NEW WORK

SCALE: 1/4" = 1'-0"
REF'D FROM:

2



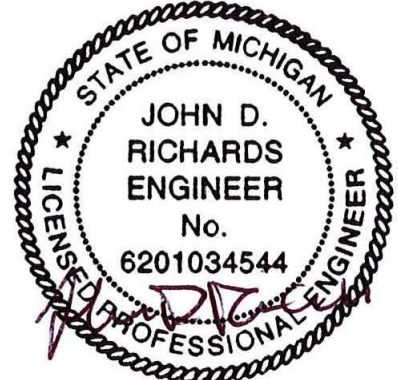
PAVILION TOILET ROOMS NEW WORK

SCALE: 1/8" = 1'-0"
REF'D FROM:

1

NEW WORK KEY NOTES:

- 1 RECONNECT EXISTING FEEDER TO NEW CONTROLLER. NO LOAD CHANGE. SCOPE IS 1:1 EQUIPMENT REPLACEMENT.
- 2 PROVIDE NEW CONNECTIONS TO PUMP MOTORS. SIZE PER CONTROLLER MANUFACTURER'S RECOMMENDATIONS AND NEC.



PROJECT NUMBER	
<div>ISSUE</div>	
<div>BIDS</div> 02.23.2023	
<div>SD REVIEW</div> 05.12.2022	
DRN: DMH CHK'D: JDR	
CANTON TOWNSHIP CIP 2022	BID PACKAGE #02 PROJECT NO. 230023 & 230027 ELECTRICAL NEW WORK PLANS
<div>A3C</div> <div>115 1/2 E. LIBERTY STREET ANN ARBOR, MI 48104 T: (734) 663 - 1910 F: (866) 732 - 2168 www.a3c.com</div> <div>COLLABORATIVE ARCHITECTURE</div>	
SHEET	
E122	

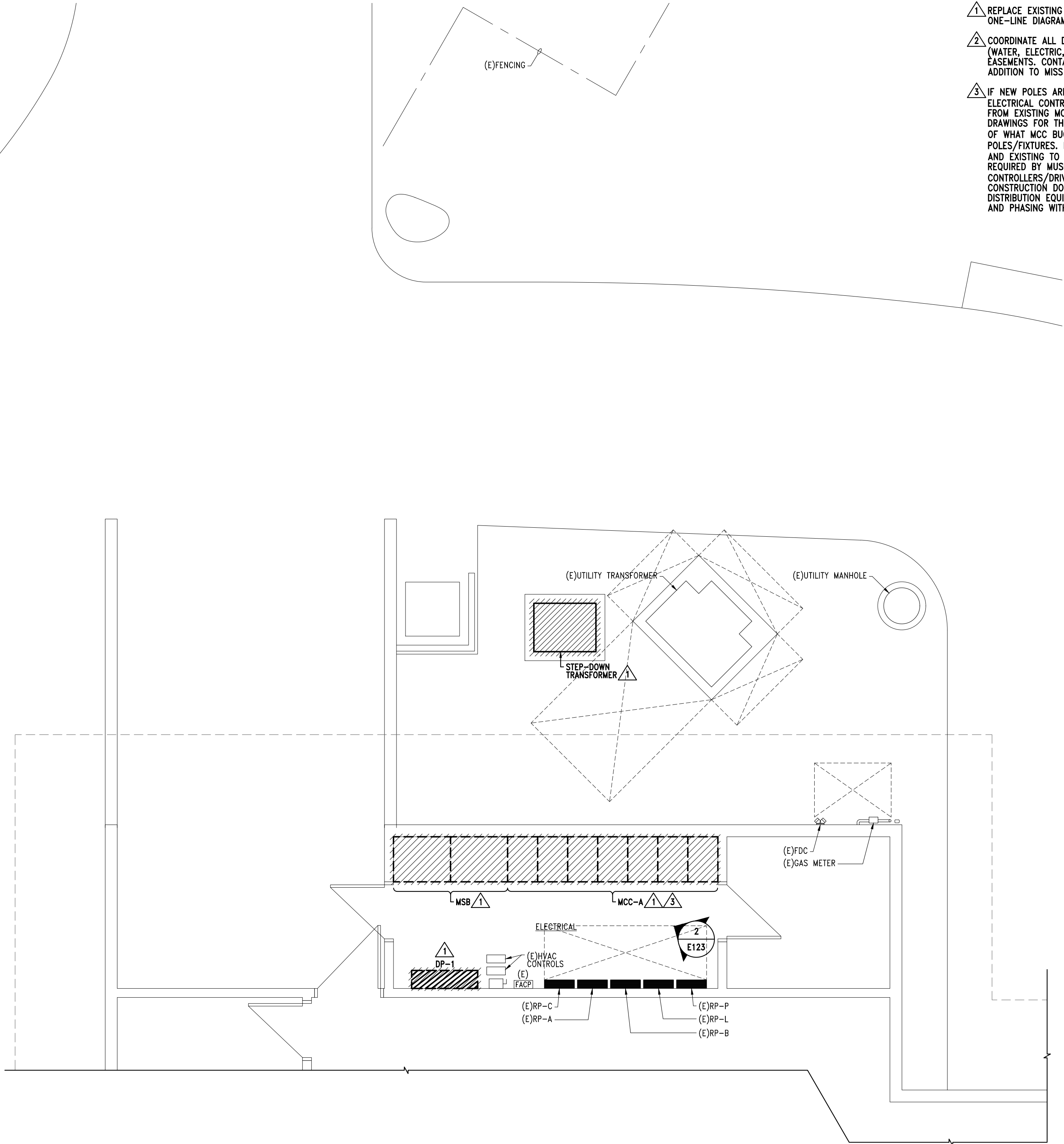
H:\ACAD\FILES\8080830-Canton Twp. Misc. Projects\CAD\ELEC\80830_E123_BP2 DEMO.dwg Tue, 07 Mar 2023 - 2:11pm



PHOTO OF MSB/MCC-A

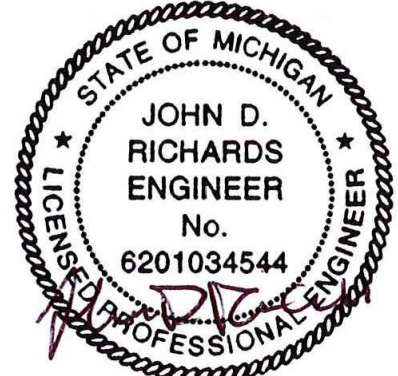
SCALE: N/A
REF'D FROM:

2



DEMOLITION KEY NOTES:

- 1. REPLACE EXISTING FEDERAL PACIFIC ELECTRICAL EQUIPMENT. REFER TO ONE-LINE DIAGRAM, SHEET E125 FOR ADDITIONAL INFORMATION.
- 2. COORDINATE ALL DEMO AND NEW WORK WITH EXISTING UNDERGROUND UTILITIES (WATER, ELECTRIC, GAS, ETC.), EXISTING UNDERGROUND DTE, AND ALL EASEMENTS. CONTACT MISS DIG TO MARK UTILITIES. PROVIDE SCANNING IN ADDITION TO MISS DIG IF REQUIRED. TYPICAL FOR ALL UNDERGROUND WORK.
- 3. IF NEW POLES ARE INSTALLED PRIOR TO NEW POWER DISTRIBUTION EQUIPMENT, ELECTRICAL CONTRACTOR IS TO TEMPORARILY FEED NEW POLES/CONTROLLERS FROM EXISTING MCC. DOCUMENT TEMPORARY CONDITIONS IN AS-BUILT DRAWINGS FOR THE TEMPORARY INSTALLATION, INCLUDING THE IDENTIFICATION OF WHAT MCC BUCKETS/OVERCURRENT DEVICES ARE FEEDING WHAT POLES/FIXTURES. RELABEL THE MCC WITH ALL TEMPORARY INSTALLED LOADS AND EXISTING TO REMAIN LOADS. SET MCC FEEDERS TO CONTINUOUS "ON" IF REQUIRED BY MUSCO FOR CONTINUOUS POWER TO THE NEW MUSCO CONTROLLERS/DRIVERS. REWORK ALL TEMPORARY CONDITIONS ACCORDING TO CONSTRUCTION DOCUMENTS FOR THE FINAL INSTALLATION ONCE NEW POWER DISTRIBUTION EQUIPMENT IS INSTALLED. COORDINATE CONSTRUCTION SCHEDULE AND PHASING WITH OWNER.



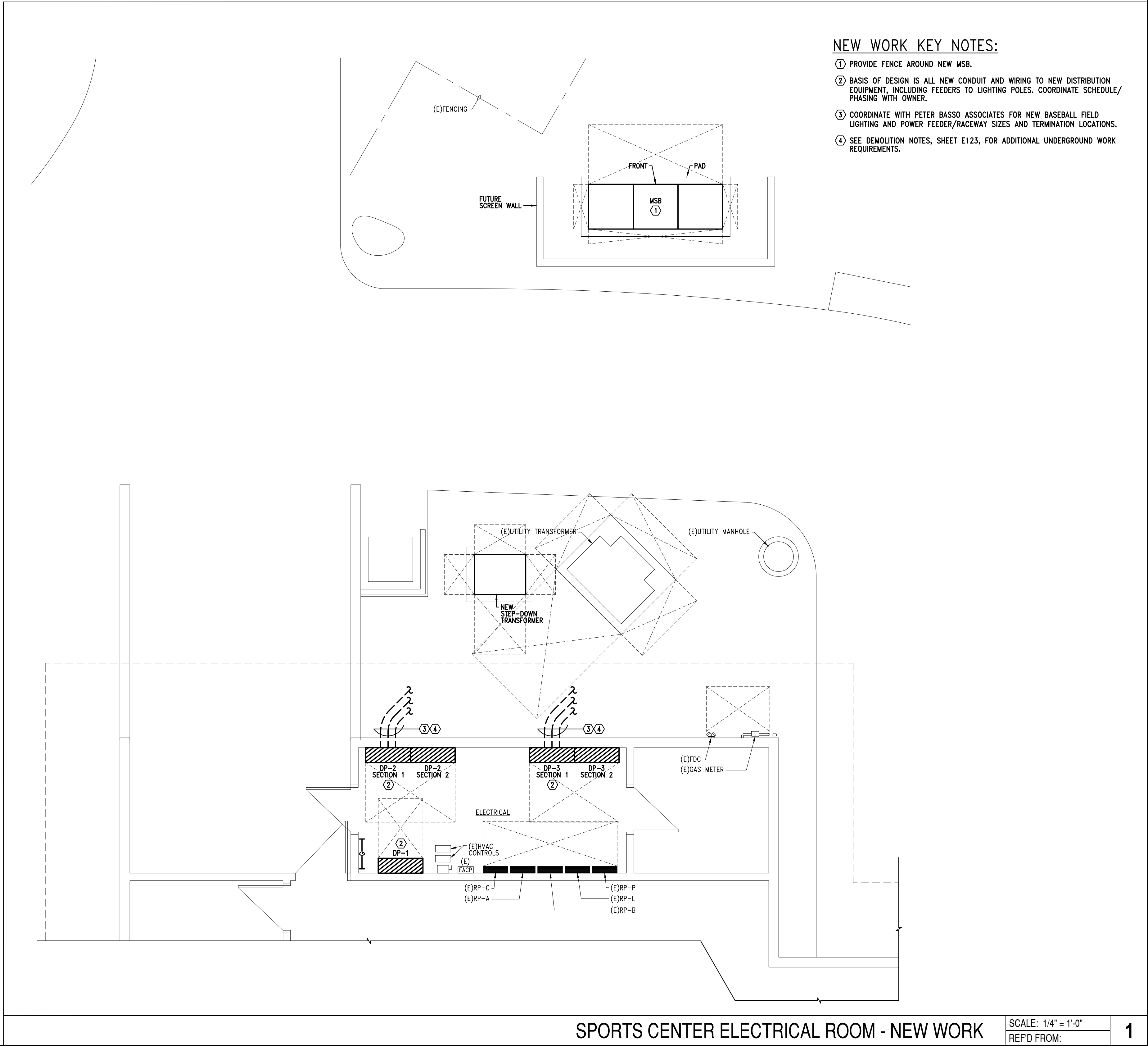
PROJECT NUMBER	
ISSUE	
BIDS	02.23.2023
SD REVIEW	05.12.2022
DRN: CGB	CHK'D: SDW
CANTON TOWNSHIP CIP 2022	
BID PACKAGE #02 PROJECT NO. 230015 ELECTRICAL DEMOLITION PLAN	
<div><div>A3C</div><div>115 1/2 E. LIBERTY STREET ANN ARBOR, MI 48104 T: (734) 663 - 1910 F: (866) 732 - 2168 www.a3c.com</div><div>COLLABORATIVE ARCHITECTURE</div></div>	
SHEET	
E123	

SPORTS CENTER ELECTRICAL ROOM - DEMOLITION

SCALE: 1/4" = 1'-0"
REF'D FROM:

1

H:\ACAD\FILES\8080830-Canton Twp. Misc. Projects\CAD\ELEC\80830_E123_BFP2 DEMO.dwg Tue, 07 Mar 2023 - 2:11pm



180 HIGH OAK ROAD
BLOOMFIELD HILLS, MI 48304
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f1 (248) 258-19538
www.ma-engineering.com

JOHN D. RICHARDS
ENGINEER
No. 6201034544
PROFESSIONAL ENGINEER

PROJECT NUMBER	
ISSUE	
BIDS	02.23.2023
SD REVIEW	05.12.2022
DRN: CGB	CHK'D: SDW

CANTON TOWNSHIP CIP 2022

BID PACKAGE #02
PROJECT NO. 230015
ELECTRICAL NEW
WORK PLAN

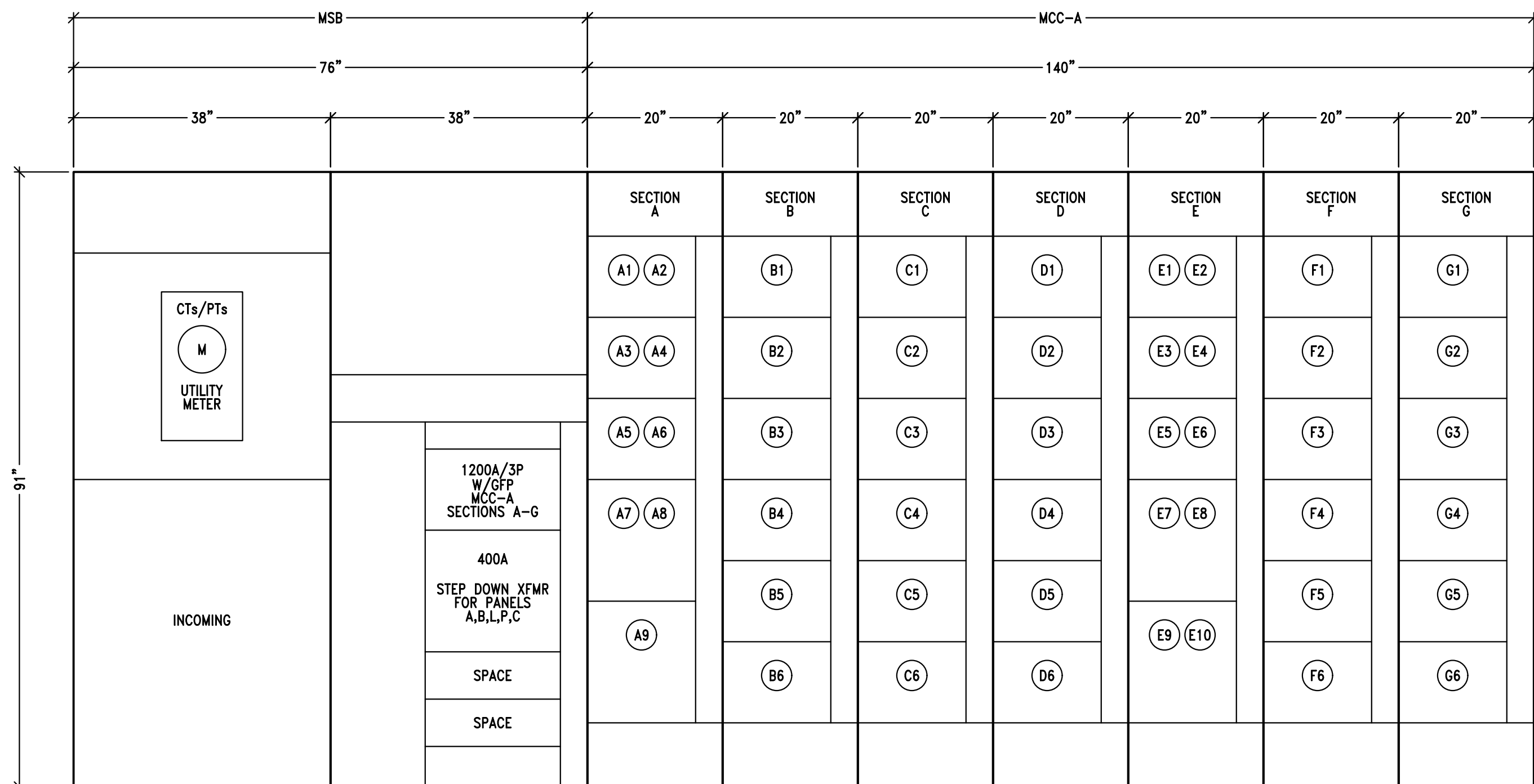
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COLLABORATIVE ARCHITECTURE

SHEET

E124

- ① FOR CIRCUITS SERVING BALL FIELD LIGHTING, ROUTE NEW FEEDERS TO MUSCO LIGHTING CONTROLLERS, THEN TO POLES. COORDINATE LOCATION OF CONTROLLERS WITH PETER BASSO ASSOCIATES DRAWINGS (PART OF THIS CONSTRUCTION DOCUMENT SET) AND WITH MUSCO. SIZE FEEDERS FOR VOLTAGE DROP.
- ② BREAKER SIZE INDICATED IS FOR PRICING ONLY AND IS BASED ON INITIAL SITE SURVEY. CONTRACTOR MUST CONFIRM VOLTAGE AND AMPCACITY OF EXISTING CURRENT PROTECTION DEVICES SERVING DISTRIBUTION LOADS ON MCA-1 PRIOR TO DEMOLITION AND WATCH THESE CONDITIONS IN NEW DISTRIBUTION PANELS.



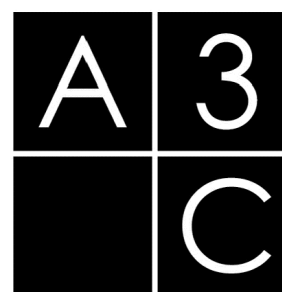
MCC-A DEVICE SCHEDULE					
DEVICE NO.	DEVICE TYPE	DEVICE RATING	WIRE SIZE	LOAD SERVED	
A1	CONTACTOR	30A	-	SCOREBOARDS #1 & #2 (NOT IN USE)	
A2	CONTACTOR	30A	-	SCOREBOARDS #3 & #4 (NOT IN USE)	
A3	CONTACTOR	30A	-	SCOREBOARDS #5 & #8 (NOT IN USE)	
A4	CONTACTOR	30A	-	SCOREBOARDS #6 & #7 (NOT IN USE)	
A5	CONTACTOR	30A	-	SCOREBOARDS #9 & #10 (NOT IN USE)	
A6	CONTACTOR	30A	-	SCOREBOARDS #11 & #12 (NOT IN USE)	
A7	CONTACTOR	?	-	MAINTENANCE BUILDING (NOT IN USE)	
A8	CONTACTOR	?	-	SOCCER DOME POWER (NOT IN USE)	
A9	CONTACTOR	?	-	PARKING LOT LIGHTS (NOT IN USE)	
B1	CONTACTOR	45A	#4	FIELD #1 POLES (B5,A5,A8,D4)	
B2	CONTACTOR	45A	#8	FIELD #1 POLES (C7,C8)	
B3	CONTACTOR	45A	#4	FIELD #2 POLES (A7,D3,E5,F1)	
B4	CONTACTOR	45A	#4	FIELD #2 POLES (A8,D4,D8,F2)	
B5	CONTACTOR	45A	#4	FIELD #3 POLES (A6,B6,C9)	
B6	CONTACTOR	45A	#4	FIELD #3 POLES (A7,D3,C10)	
C1	CONTACTOR	45A	#4	FIELD #4 POLES (B5,A5,A6,B6)	
C2	CONTACTOR	45A	#8	FIELD #4 POLES (G1,G2)	
C3	CONTACTOR	45A	#4	FIELD #5 POLES (B8,A12,A11,B7)	
C4	CONTACTOR	45A	#6	FIELD #5 POLES (G3,G4)	
C5	CONTACTOR	45A	#4	FIELD #6 POLES (A11,B7,C14)	
C6	CONTACTOR	45A	#4	FIELD #6 POLES (A10,D8,C13)	
D1	CONTACTOR	45A	#4	FIELD #7 POLES (A10,D6,E8,F4)	
D2	CONTACTOR	45A	#4	FIELD #7 POLES (D8,D7,E7,F3)	
D3	CONTACTOR	45A	#4	FIELD #8 POLES (A9,A12,A9,D5)	
D4	CONTACTOR	45A	#6	FIELD #8 POLES (C11,C12)	
D5	CONTACTOR	27A	#8	WALKWAY LIGHTS (SINGLE PHASE)	
D6	CONTACTOR	45A	#8	DRIVEWAY LIGHTS (SINGLE PHASE)	
E1	SWITCH	UNKNOWN	#10	SF1	
E2	SWITCH	UNKNOWN	#10	SF3	
E3	SWITCH	UNKNOWN	#10	SF5	
E4	SWITCH	UNKNOWN	#10	EF1	
E5	SWITCH	UNKNOWN	#10	EF2	
E6	SWITCH	UNKNOWN	#10	CU1	
E7	SWITCH	UNKNOWN	#6	RTU- 1	
E8	SWITCH	UNKNOWN	#6	RTU- 2	
E9	SWITCH	UNKNOWN	#4	BATTING CAGE	
E10	-	-	-	SPACE	
F1	CONTACTOR	45A	#4	FIELD #9 POLES (B4,A4,A3,D2)	
F2	CONTACTOR	45A	#6	FIELD #9 POLES (C3,C4)	
F3	CONTACTOR	45A	#4	FIELD #10 POLES (A2,D6,E1,E2)	
F4	CONTACTOR	45A	#4	FIELD #10 POLES (E3,D2,E3,E4)	
F5	CONTACTOR	45A	#4	FIELD #11 POLES (A1,B1,C1)	
F6	CONTACTOR	45A	#4	FIELD #11 POLES (A2,D1,C2)	
G1	CONTACTOR	45A	#4	FIELD #12 POLES (B4,A4,B1,A1)	
G2	-	-	-	TUB LABELED "OUT OF SERVICE"	
G3	CONTACTOR	30A	#8	SOCCER DOME 120V RECEPT.	
G4	CONTACTOR	45A	#6	FIELD #12 POLES (C5,C6)	
G5	CONTACTOR	30A	#8	SOCCER DOME LIGHTING	
G6	-	-	-	SPACE	

THERE ARE DISCREPANCIES
BETWEEN THE MCC-A LABELS
AND THE POLE NAMES/
NUMBERS IN THE FIELDS.
CONTRACTOR TO INCLUDE
COST TO TRACE ALL
CIRCUITS TO CONFIRM LOADS
PRIOR TO DEMOLITION.



PROJECT NUMBER		
ISSUE		
	BIDS	02.23.2023
	SD REVIEW	05.12.2022
DRN: CGB		CHK'D: SDW

BID PACKAGE #02
PROJECT NO. 230015
ELECTRICAL EQUIPMENT ELEVATIONS



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E421

SCALE: 1/2" = 1'-0"

SCALE: NONE
REF'D FROM:

NOT TO SCALE

REF'D FROM:

NOT TO SCALE

REF'D FROM:

NOT TO SCALE

REF'D FROM:

1

H:\ACAD\FILES\00\00000-Canton Twp. Misc. Projects\CAD\ELEC\00000_E422_BP2 PANEL SCHEDULES.dwg Tue, 07 Mar 2023 - 2:11pm

BREAKER SIZE INDICATED IS FOR PRICING ONLY AND IS BASED ON INITIAL SITE SURVEY. CONTRACTOR TO CONFIRM VOLTAGE AND AMPACITY OF EXISTING OVERCURRENT PROTECTION DEVICE SERVING ASSOCIATED LOADS IN MCC-A PRIOR TO DEMOLITION AND MATCH THESE CONDITIONS IN NEW DISTRIBUTION PANELS.

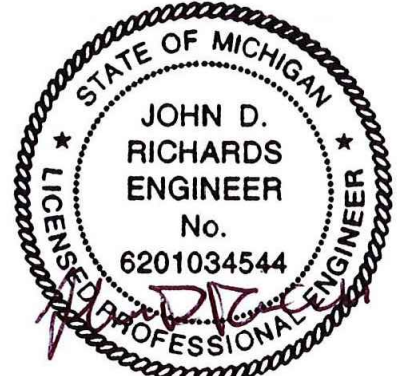
PANEL: DP-3						MOUNTING: AS INDICATED		
VOLTAGE: 480Y/208V, 3 PHASE, 4 WIRE + G						AIC: AS SPECIFIED		
MAIN: 800 A MCB								
LOCATION: MAIN ELEC ROOM								
Circ No	Breaker		Load Information Location/Description	OLD MCC-A DEVICE NUMBER	KVA			
	Pole	Trip			Conn	Dem		
1	3	30	SF1	E1	20.0	16.0		
2	3	30	SF3	E2	20.0	16.0		
3	3	30	SF5	E3	20.0	16.0		
4	3	30	EF1	E4	20.0	16.0		
5	3	30	EF2	E5	20.0	16.0		
6	3	30	CU1	E6	20.0	16.0		
7	3	50	RTU-1	E7	33.3	26.6		
8	3	50	RTU-2	E8	33.3	26.6		
9	3	60	BATTING CAGE	E9	39.9	31.9		
10	3	30	SOCCER DOME 120V	G3	20.0	16.0		
11	3	30	SOCCER DOME LIGHTING	G5	20.0	16.0		
12	3	60	SPARE					
13	3	60	SPARE					
14	3	30	SPARE					
15	3	30	SPARE					
16	1	15	1.5kVA FIELD POWER XFMR (FIELDS 1,2,3,4)		1.5			
17	1	15	1.5kVA FIELD POWER XFMR (FIELDS 5,6,7,8)		1.5			
18	1	15	1.5kVA FIELD POWER XFMR (FIELDS 9,10,11,12)		1.5			
19	-	-	SPACE					
20	-	-	SPACE					
21	-	-	SPACE					
22	-	-	SPACE					
				CONNECTED AMPS:	325.4			
				CONNECTED KVA:	270.5			
				DEMAND AMPS:	256.0			
				DEMAND KVA:	212.8			
				Totals:	270.5	212.8		

KEY NOTES:

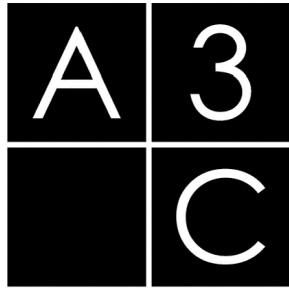
- ① PROVIDE ALL REMAINING VERTICAL POSITIONS FULLY BUSSED AS SPACE. INDICATE ON SUBMITTALS.

PANEL: DP-1						MOUNTING: AS INDICATED		
VOLTAGE: 208Y/120V, 3 PHASE, 4 WIRE + G						AIC: AS SPECIFIED		
MAIN: 800 A MCB								
LOCATION: MAIN ELEC ROOM								
Circ No	Breaker		Load Information Location/Description		KVA			
	Pole	Trip			Conn	Dem		
1	3	200	RP-A		50.0	40.0		
2	3	200	RP-B		50.0	40.0		
3	3	200	RP-L		50.0	40.0		
4	3	200	RP-P		50.0	40.0		
5	3	200	RTU		50.0	40.0		
6	3	200	SPARE					
7	3	100	RP-C		25.0	20.0		
8	3	50	BROASTER		12.0	9.6		
9	3	100	SPARE					
10	3	100	SPARE					
11	3	100	SPARE					
12	3	100	SPARE					
13	3	-	SPACE (100A FRAME)					
14	3	-	SPACE (100A FRAME)					
15	3	-	SPACE (100A FRAME)					
16	3	-	SPACE (100A FRAME)					
17	-	-	SPACE					
				CONNECTED AMPS:	796.6			
				CONNECTED KVA:	287.0			
				DEMAND AMPS:	637.3			
				DEMAND KVA:	229.6			
				Totals:	287.0	229.6		

PANEL: DP-2						MOUNTING: AS INDICATED		
VOLTAGE: 480Y/208V, 3 PHASE, 4 WIRE + G						AIC: AS SPECIFIED		
MAIN: 800 A MCB								
LOCATION: MAIN ELEC ROOM								
Circ No	Breaker		Load Information Location/Description		KVA			
	Pole	Trip			Conn	Dem		
1	3	45	FIELD #1 POLES (C1,C2)		14.0	14.0		
2	3	45	FIELD #1 POLES (B3,A4,A18,B17)		11.7	11.7		
3	3	45	FIELD #2 POLES (C5,C6,C7,C8))		14.0	14.0		
4	3	45	FIELD #2 POLES (B3,A4,A10,B9)		11.0	11.0		
5	3	45	FIELD #3 POLES (C11,C12)		14.0	14.0		
6	3	45	FIELD #3 POLES (B9,A10,A14,B13)		11.7	11.7		
7	3	45	FIELD #4 POLES (C15,C16)		14.0	14.0		
8	3	45	FIELD #4 POLES (B13,A14,A18,B17)		11.7	11.7		
9	3	45	FIELD #5 POLES (C15,C16)		14.6	14.6		
10	3	45	FIELD #5 POLES (B19,A20,A34,B33)		11.7	11.7		
11	3	45	FIELD #6 POLES (C21,C22)		14.6	14.6		
12	3	45	FIELD #6 POLES (B19,A20,A24,B23)		11.7	11.7		
13	3	45	FIELD #7 POLES (C25,C26,C27,C28)		14.6	14.6		
14	3	45	FIELD #7 POLES (B23,A24,A30,B29)		11.0	11.0		
15	3	45	FIELD #8 POLES (C31,C32)		14.6	14.6		
16	3	45	FIELD #8 POLES (B29,A30,A34,B33)		11.7	11.7		
17	3	45	FIELD #9 POLES (C35,C36)		11.7	11.7		
18	3	45	FIELD #9 POLES (B37,A38,A52,B51)		14.6	14.6		
19	3	45	FIELD #10 POLES (C39,C40,C41,C42)		11.0	11.0		
20	3	45	FIELD #10 POLES (B37,A38,A44,B43)		14.6	14.6		
21	3	45	FIELD #11 POLES (C45,C46)		11.7	11.7		
22	3	45	FIELD #11 POLES (B43,A44,A48,B47)		14.6	14.6		
23	3	45	FIELD #12 POLES (C49,C50)		11.7	11.7		
24	3	45	FIELD #12 POLES (B47,A48,A52,B51)		14.6	14.6		
25	2	30	WALKWAY LIGHTS (SINGLE PHASE)		11.5	11.5		
26	2	45	DRIVEWAY LIGHTS (SINGLE PHASE)		17.3	17.3		
27	3	45	SPARE					
28	3	45	SPARE					
29	3	45	SPARE					
30	3	45	SPARE					
31	3	45	SPARE					
32	3	45	SPARE					
33	3	-	SPACE (60A FRAME)					
34	3	-	SPACE (60A FRAME)					
35	-	-	SPACE					
				CONNECTED AMPS:	408.7			
				CONNECTED KVA:	339.8			
				DEMAND AMPS:	408.7			
				DEMAND KVA:	339.8			
				Totals:	339.8	339.8		



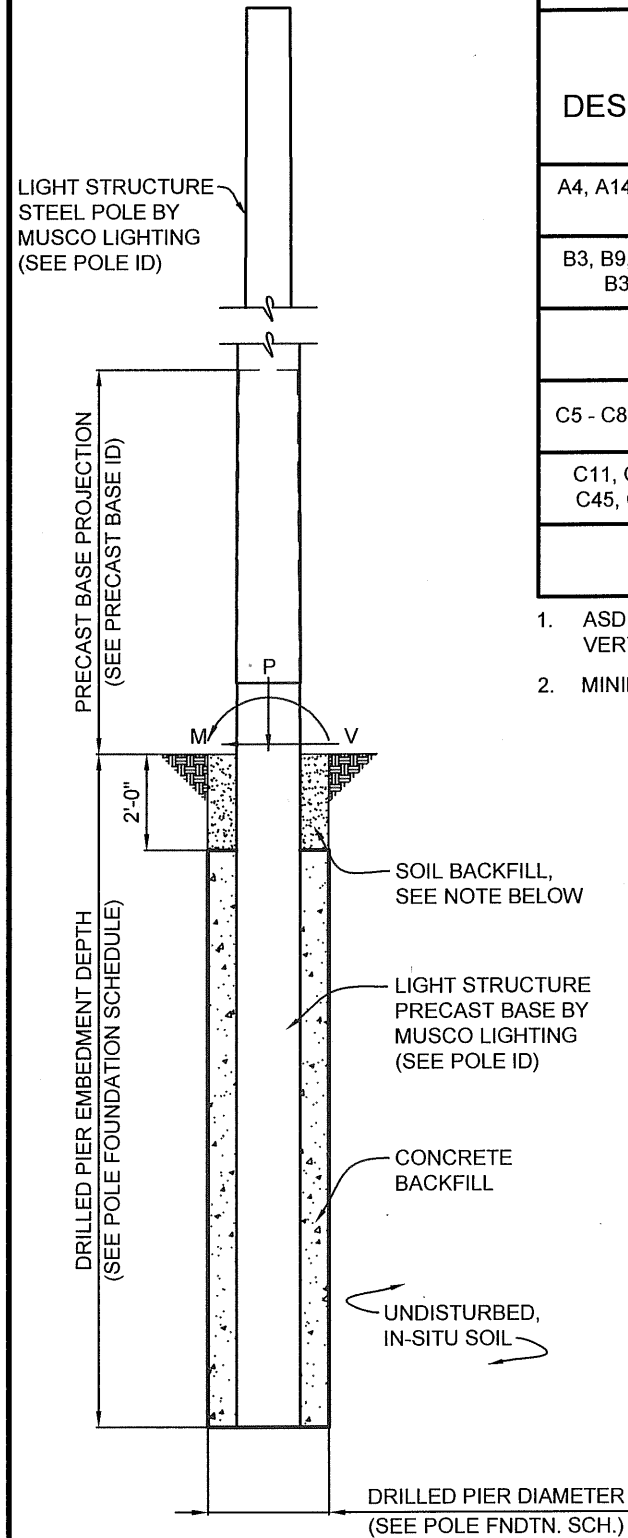
PROJECT NUMBER		
ISSUE		
	BIDS	02.23.2023
	SD REVIEW	05.12.2022
DRN: CGB		CHK'D: SDW
CANTON TOWNSHIP CIP 2022		BID PACKAGE #02 PROJECT NO 230015 ELECTRICAL PANEL SCHEDULES



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ANN ARBOR, MI 48104
T: (734) 663 - 1910
F: (866) 732 - 2168
www.a3c.com

SHEET

E422



POLE FOUNDATION ELEV.

SCALE: NOT TO SCALE

SOIL BACKFILL NOTE:
THE TOP TWO FEET OF ANNULUS SHALL BE BACKFILLED WITH SOIL, WITH A CLASSIFICATION OF CLASS 5 (TABLE 1806.2) OR BETTER. COMPACTION, 95% FOR COHESIVE SOIL AND 98% FOR A COHESIONLESS SOIL BASED UPON STANDARD PROCTOR TESTING (ASTM D698).

POLE FOUNDATION SCHEDULE						
POLE DESIGNATION	FORCES (1.)			DRILLED PIER		
	MOMENT (M) FT-LBS	SHEAR (V) LBS	VERTICAL (P) LBS	DIAMETER INCHES	EMBEDMENT DEPTH	CONCRETE BACKFILL YD ³ (2.)
A4, A14, A18, A30, A34, A38, A44	35,054	948	1,030	48	10'-0"	3.5
B3, B9, B17, B19, B29, B33, B47, B51	45,486	1,166	1,699	36	12'-0"	2.3
B43	44,950	1,132	1,664	36	12'-0"	2.3
C5 - C8, C26 - C28, C39	29,539	832	966	48	10'-0"	3.5
C11, C12, C32, C35, C45, C46, C49, C50	37,014	982	1,222	48	10'-0"	3.5
C15	50,599	1,309	1,813	36	12'-0"	2.3

- ASD LOAD COMBINATION D + 0.6W. VERTICAL FORCE IS WEIGHT OF DRESSED POLE (DOES NOT INCLUDE PRECAST BASE WEIGHT).
- MINIMUM CONCRETE BACKFILL VOLUME, SITE CONDITIONS MAY REQUIRE ADDITIONAL BACKFILL.

PRECAST BASE IDENTIFICATION

PRECAST BASE TYPE	PRECAST BASE WEIGHT	PRECAST BASE LENGTH	PROJECTION ABOVE GRADE	STANDARD EMBEDMENT	OUTSIDE DIAMETER
2B	1,690 LBS	17'-3"	7'-3"	10'-0"	12.00"
3B	2,470 LBS	20'-0"	8'-0"	12'-0"	13.38"

POLE IDENTIFICATION

POLE DESIGNATION	POLE TYPE	PRECAST BASE TYPE	FIXTURE CONFIGURATION (FIX. PER XARM)	FIXTURE AND ACCESSORIES EPA (FT ²)
A4, A14, A18, A30, A34, A38, A44	LSS60AA	2B	6 (2) / (2)	12.4
B3, B9, B17, B19, B29, B33, B47, B51	LSS60B	3B	10 (4) / (4)	17.4
B43	LSS60B	3B	9 (4) / (4)	15.6
C5 - C8, C26 - C28, C39	LSS60AA	2B	4 (3)	7.8
C11, C12, C32, C35, C45, C46, C49, C50	LSS60A	2B	6 (4)	14.1
C15	LSS60B	3B	12 (4) / (4)	24.3

- A4, A14, A18, A30, A34, A38, A44, B3, B9, B7, B19, B29, B33, B47, B51, C11, C12, C32, C35, C45, C46, C49, & C50 HAVE (2) MUSCO LED FIXTURES AT 15'-6" INCLUDED ABOVE.
- B43, C5 - C8, C26 - C28, & C39 HAVE (1) MUSCO LED FIXTURE AT 15'-6" INCLUDED ABOVE.
- C15 HAS (4) MUSCO LED FIXTURES AT 15'-6" INCLUDED ABOVE.

DESIGN NOTES

DESIGN PARAMETERS:
WIND: $V_{ult} = 115$ MPH, $V_{asd} = 89$ MPH (EXPOSURE C, RISK CATEGORY II) PER INTERNATIONAL BUILDING CODE, 2015 EDITION (ASCE 7-10). DESIGN WIND PARAMETERS ARE AS NOTED, ACTUAL EXPOSURE MUST BE VERIFIED FOR THE SITE BY THE PROPER GOVERNING OFFICIAL.

GEOTECHNICAL PARAMETERS:
ALLOWABLE END BEARING SOIL PRESSURE: 1,500 PSF
ALLOWABLE LATERAL SOIL BEARING PRESSURE:
0 PSF/FT (GRADE TO -2'-0"); 150 PSF/FT (-2'-0" TO -6'-0"); 200 PSF/FT (BELOW -6'-0")
IN ACCORDANCE WITH THE 2015 EDITION OF THE INTERNATIONAL BUILDING CODE, CHAPTER 18.

DESIGN SOIL PARAMETERS ARE AS NOTED. ACTUAL ALLOWABLE SOIL PARAMETERS MUST BE VERIFIED ON SITE. REFERENCE SOILS AND FOUNDATION REPORT, NO. A1910001, PREPARED BY MANNIK SMITH GROUP; CANTON, MI.

A GEOTECHNICAL ENGINEER OR REPRESENTATIVE OF IS RECOMMENDED (NOT REQUIRED) TO BE AVAILABLE AT THE TIME OF THE FOUNDATION INSTALLATION TO VERIFY THE SOIL DESIGN PARAMETERS AND TO PROVIDE ASSISTANCE IF ANY PROBLEMS ARISE IN FOUNDATION INSTALLATION.

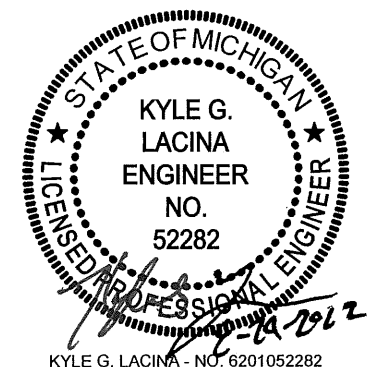
ENCOUNTERING SOIL FORMATIONS THAT WILL REQUIRE SPECIAL DESIGN CONSIDERATIONS OR EXCAVATION PROCEDURES MAY OCCUR. POLE FOUNDATIONS WILL NEED TO BE ANALYZED ACCORDING TO THE SOIL CONDITIONS THAT EXIST. IF ANY DISCREPANCIES OR INCONSISTENCIES ARISE, NOTIFY THE ENGINEER OF SUCH DISCREPANCIES. FOUNDATIONS WILL THEN BE REVISED ACCORDINGLY. REVISIONS WILL BE ANALYZED PER RECOMMENDATIONS DIRECTED BY A REGISTERED ENGINEER.

ALL EXCAVATIONS MUST BE FREE OF LOOSE SOIL AND DEBRIS PRIOR TO FOUNDATION INSTALLATION AND CONCRETE BACKFILL PLACEMENT. TEMPORARY CASINGS OR DRILLERS SLURRY MAY BE USED TO STABILIZE THE EXCAVATION DURING INSTALLATION. CASINGS MUST BE REMOVED DURING CONCRETE BACKFILL PLACEMENT. CONCRETE BACKFILL MUST BE PLACED WITH A TREMIE WHEN SLURRY OR WATER IS PRESENT WITHIN THE EXCAVATION OR WHEN THE FREE DROP EXCEEDS 6'-0".

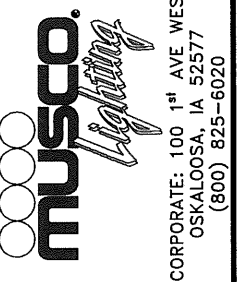
CONTRACTOR MUST BE FAMILIAR WITH THE COMPLETE SOIL INVESTIGATION REPORT AND BORINGS, AND CONTACT THE GEOTECHNICAL FIRM (IF NECESSARY) TO UNDERSTAND THE SOIL CONDITIONS AND THE POSSIBILITY OF GROUND WATER PUMPING AND EXCAVATION STABILIZATION OR BRACING DURING PRECAST BASE INSTALLATION AND PLACEMENT OF CONCRETE BACKFILL.

CONCRETE:
CONCRETE SHALL BE AIR-ENTRAINED AND HAVE A MINIMUM COMPRESSIVE DESIGN STRENGTH AT 28 DAYS OF 3,000 PSI. 3,000 PSI CONCRETE SPECIFIED FOR EARLY POLE ERECTION, ACTUAL REQUIRED MINIMUM ALLOWABLE CONCRETE STRENGTH IS 1,000 PSI. ALL PIERS AND CONCRETE BACKFILL MUST BEAR ON AND AGAINST FIRM UNDISTURBED SOIL.

GENERAL NOTES:
FIXTURES MUST BE LOCATED TO MAINTAIN 10'-0" MINIMUM HORIZONTAL CLEARANCE FROM ANY OBSTRUCTION. ENGINEER MUST BE NOTIFIED IF FOUNDATIONS ARE NEAR ANY RETAINING WALLS OR WITHIN / NEAR ANY SLOPES STEEPER THAN 3H : 1V. POLES, FIXTURES, PRECAST BASES, ELECTRICAL ITEMS AND INSTALLATION PER MUSCO LIGHTING.



VICTORY PARK
BASEBALL
FIELD LIGHTING
CANTON, MI



STRUCTURAL ENGINEERS, P.C.
114 NICHOLAS DRIVE
MARSHALLTOWN, IOWA 50158
PHONE NUMBER: 641-752-6334
EMAIL: MSL.INFO@SEPC.BIZ

DRAWING TITLE: POLE AND FOUNDATION SCALE: SEE PLAN NOTES: SCAN #203640A	PROJECT NUMBER 203640
DATE 24 AUGUST 2022	DRAWING NUMBER C1
OF ONE	

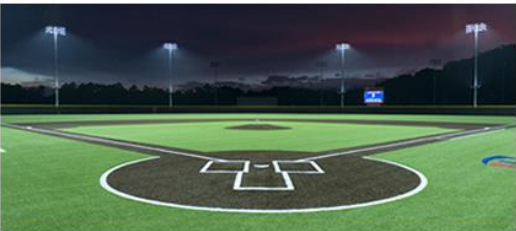
Canton Township Victory Park Baseball

Canton,MI

Lighting System

Pole / Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A4	60'	60'	2	TLC-LED-600	1.16 kW	A
		60'	2	TLC-LED-600	1.16 kW	B
		16'	1	TLC-BT-575	0.58 kW	A
A10	60'	16'	1	TLC-BT-575	0.58 kW	B
		60'	2	TLC-LED-600	1.16 kW	C
		60'	2	TLC-LED-600	1.16 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
A14	60'	16'	1	TLC-BT-575	0.58 kW	C
		60'	2	TLC-LED-600	1.16 kW	C
		60'	2	TLC-LED-600	1.16 kW	D
		16'	1	TLC-BT-575	0.58 kW	C
A18	60'	16'	1	TLC-BT-575	0.58 kW	D
		60'	2	TLC-LED-600	1.16 kW	A
		60'	2	TLC-LED-600	1.16 kW	D
		16'	1	TLC-BT-575	0.58 kW	A
A20	60'	16'	1	TLC-BT-575	0.58 kW	D
		60'	1	TLC-LED-600	0.58 kW	F
		60'	1	TLC-LED-600	0.58 kW	E
		60'	1	TLC-LED-900	0.89 kW	F
A24	60'	60'	1	TLC-LED-900	0.89 kW	E
		16'	1	TLC-BT-575	0.58 kW	F
		16'	1	TLC-BT-575	0.58 kW	E
		16'	1	TLC-BT-575	0.58 kW	E
A24	60'	60'	1	TLC-LED-600	0.58 kW	F
		60'	1	TLC-LED-600	0.58 kW	G
		60'	1	TLC-LED-900	0.89 kW	F
		60'	1	TLC-LED-900	0.89 kW	G
A24	60'	16'	1	TLC-BT-575	0.58 kW	F
		16'	1	TLC-BT-575	0.58 kW	G
		60'	1	TLC-LED-600	0.58 kW	H
		60'	1	TLC-LED-600	0.58 kW	G
A30	60'	60'	1	TLC-LED-900	0.89 kW	H
		60'	1	TLC-LED-900	0.89 kW	G
		60'	1	TLC-LED-900	0.89 kW	H
		16'	1	TLC-BT-575	0.58 kW	H
A34	60'	16'	1	TLC-BT-575	0.58 kW	G
		60'	1	TLC-LED-600	0.58 kW	H
		60'	1	TLC-LED-600	0.58 kW	E
		60'	1	TLC-LED-900	0.89 kW	H
A38	60'	60'	1	TLC-LED-900	0.89 kW	E
		16'	1	TLC-BT-575	0.58 kW	H
		16'	1	TLC-BT-575	0.58 kW	E
		60'	2	TLC-LED-600	1.16 kW	I
A38	60'	60'	1	TLC-LED-600	0.58 kW	J
		60'	1	TLC-LED-900	0.89 kW	J
		60'	1	TLC-LED-900	0.89 kW	J
		16'	1	TLC-BT-575	0.58 kW	J
A44	60'	16'	1	TLC-BT-575	0.58 kW	I
		60'	1	TLC-LED-600	0.58 kW	J
		60'	1	TLC-LED-600	0.58 kW	K
		60'	1	TLC-LED-900	0.89 kW	J
A48	60'	60'	1	TLC-LED-900	0.89 kW	K
		60'	1	TLC-LED-900	0.89 kW	K
		60'	1	TLC-LED-900	0.89 kW	L
		60'	1	TLC-LED-900	0.89 kW	K

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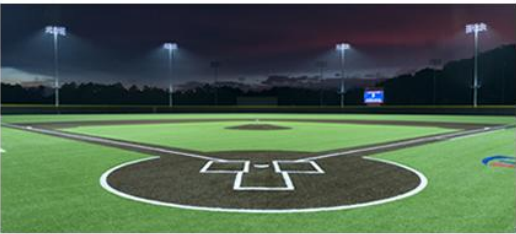
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Canton Township Victory Park Baseball

Canton,MI

Pole / Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A52	60'	16'	1	TLC-BT-575	0.58 kW	K
		16'	1	TLC-BT-575	0.58 kW	L
		60'	2	TLC-LED-600	1.16 kW	I
		60'	1	TLC-LED-600	0.58 kW	L
		60'	1	TLC-LED-900	0.89 kW	L
B3	60'	16'	1	TLC-BT-575	0.58 kW	L
		16'	1	TLC-BT-575	0.58 kW	I
		60'	4	TLC-LED-1200	4.68 kW	A
		60'	4	TLC-LED-1200	4.68 kW	B
		16'	1	TLC-BT-575	0.58 kW	A
B9	60'	16'	1	TLC-BT-575	0.58 kW	B
		60'	4	TLC-LED-1200	4.68 kW	C
		60'	4	TLC-LED-1200	4.68 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
		16'	1	TLC-BT-575	0.58 kW	C
B13	60'	60'	4	TLC-LED-1200	4.68 kW	C
		60'	4	TLC-LED-1200	4.68 kW	D
		16'	1	TLC-BT-575	0.58 kW	C
		16'	1	TLC-BT-575	0.58 kW	D
		60'	4	TLC-LED-1200	4.68 kW	A
B17	60'	60'	4	TLC-LED-1200	4.68 kW	A
		60'	4	TLC-LED-1200	4.68 kW	D
		16'	1	TLC-BT-575	0.58 kW	A
		16'	1	TLC-BT-575	0.58 kW	D
		60'	4	TLC-LED-1200	4.68 kW	F
B19	60'	60'	4	TLC-LED-1200	4.68 kW	E
		16'	1	TLC-BT-575	0.58 kW	F
		16'	1	TLC-BT-575	0.58 kW	E
		60'	4	TLC-LED-1200	4.68 kW	F
		60'	4	TLC-LED-1200	4.68 kW	G
B23	60'	16'	1	TLC-BT-575	0.58 kW	F
		16'	1	TLC-BT-575	0.58 kW	G
		60'	4	TLC-LED-1200	4.68 kW	H
		60'	4	TLC-LED-1200	4.68 kW	G
		16'	1	TLC-BT-575	0.58 kW	H
B29	60'	16'	1	TLC-BT-575	0.58 kW	G
		60'	4	TLC-LED-1200	4.68 kW	H
		60'	4	TLC-LED-1200	4.68 kW	G
		16'	1	TLC-BT-575	0.58 kW	H
		16'	1	TLC-BT-575	0.58 kW	G
B33	60'	60'	4	TLC-LED-1200	4.68 kW	H
		60'	4	TLC-LED-1200	4.68 kW	E
		16'	1	TLC-BT-575	0.58 kW	H
		16'	1	TLC-BT-575	0.58 kW	E
		60'	4	TLC-LED-1200	4.68 kW	J
B37	60'	60'	4	TLC-LED-1200	4.68 kW	I
		16'	1	TLC-BT-575	0.58 kW	J
		16'	1	TLC-BT-575	0.58 kW	I
		60'	4	TLC-LED-1200	4.68 kW	J
		60'	4	TLC-LED-1200	4.68 kW	K
B43	60'	60'	4	TLC-LED-1200	4.68 kW	K
		60'	4	TLC-LED-1200	4.68 kW	L
		16'	1	TLC-BT-575	0.58 kW	K
		60'	4	TLC-LED-1200	4.68 kW	L
		60'	4	TLC-LED-1200	4.68 kW	K
B47	60'	16'	1	TLC-BT-575	0.58 kW	K
		16'	1	TLC-BT-575	0.58 kW	L
		60'	4	TLC-LED-1200	4.68 kW	L
		60'	4	TLC-LED-1200	4.68 kW	I
		16'	1	TLC-BT-575	0.58 kW	L
B51	60'	16'	1	TLC-BT-575	0.58 kW	I
		60'	4	TLC-LED-1200	4.68 kW	A
		60'	4	TLC-LED-1200	4.68 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
C1-C2	60'	60'	4	TLC-LED-1200	4.68 kW	A
		16'	2	TLC-BT-575	1.15 kW	A

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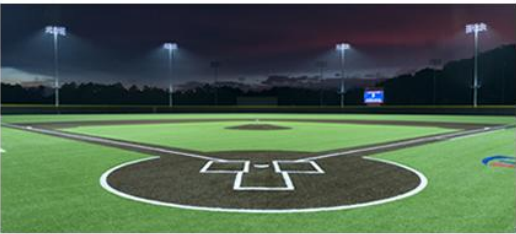
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Canton Township Victory Park Baseball

Canton,MI

Pole / Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
C5-C8	60'	60'	1	TLC-LED-400	0.40 kW	B
		60'	2	TLC-LED-900	1.78 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
C11-C12	60'	60'	4	TLC-LED-1200	4.68 kW	C
		16'	2	TLC-BT-575	1.15 kW	C
C15-C16	60'	60'	4	TLC-LED-1200	4.68 kW	D
		60'	4	TLC-LED-1200	4.68 kW	E
		16'	2	TLC-BT-575	1.15 kW	D
		16'	2	TLC-BT-575	1.15 kW	E
C21-C22	60'	60'	4	TLC-LED-1200	4.68 kW	F
		16'	2	TLC-BT-575	1.15 kW	F
C25-C28	60'	60'	1	TLC-LED-600	0.58 kW	G
		60'	2	TLC-LED-900	1.78 kW	G
		16'	1	TLC-BT-575	0.58 kW	G
C31-C32	60'	60'	4	TLC-LED-1200	4.68 kW	H
		16'	2	TLC-BT-575	1.15 kW	H
C35-C36	60'	60'	4	TLC-LED-1200	4.68 kW	I
		16'	2	TLC-BT-575	1.15 kW	I
C39-C42	60'	60'	1	TLC-LED-600	0.58 kW	J
		60'	2	TLC-LED-900	1.78 kW	J
		16'	1	TLC-BT-575	0.58 kW	J
C45-C46	60'	60'	4	TLC-LED-1200	4.68 kW	K
		16'	2	TLC-BT-575	1.15 kW	K
C49-C50	60'	60'	4	TLC-LED-1200	4.68 kW	L
		16'	2	TLC-BT-575	1.15 kW	L
52			347		310.97 kW	

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Canton Township Victory Park Baseball

Canton,MI

Circuit Summary			
Circuit	Description	Load	Fixture Qty
A	Field 1	25.64 kW	28
B	Field 2	25.0 kW	32
C	Field 3	25.64 kW	28
D	Field 4	25.64 kW	28
E	Field 5	26.26 kW	28
F	Field 6	26.26 kW	28
G	Field 7	26.34 kW	32
H	Field 8	26.26 kW	28
I	Field 9	25.64 kW	28
J	Field 10	25.76 kW	31
K	Field 11	26.26 kW	28
L	Field 12	26.26 kW	28

Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	38
TLC-LED-1200	LED 5700K - 75 CRI	1170W	136,000	>120,000	>120,000	>120,000	168
TLC-LED-400	LED 5700K - 75 CRI	400W	46,500	>120,000	>120,000	>120,000	4
TLC-LED-600	LED 5700K - 75 CRI	580W	65,600	>120,000	>120,000	>120,000	42
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	95

Light Level Summary

Calculation Grid Summary								
Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Blanket Spill	Horizontal	10.6	0	63	0.00		A,B,C,D,E, F,G,H,I,J, K,L	347
Field 10 (Infield)	Horizontal Illuminance	35.5	29	41	1.43	1.22	J	31
Field 10 (Outfield)	Horizontal Illuminance	21.8	14	32	2.22	1.56	J	31
Field 11 (Infield)	Horizontal Illuminance	35.5	31	41	1.34	1.15	K	28
Field 11 (Outfield)	Horizontal Illuminance	21.7	14	32	2.30	1.55	K	28
Field 12 (Infield)	Horizontal Illuminance	32.7	24	42	1.75	1.36	L	28
Field 12 (Outfield)	Horizontal Illuminance	22.3	12	31	2.49	1.86	L	28
Field 1 (Infield)	Horizontal Illuminance	32.3	26	41	1.58	1.24	A	28
Field 1 (Outfield)	Horizontal Illuminance	20.8	13	31	2.40	1.60	A	28
Field 2 (Infield)	Horizontal Illuminance	33.4	27	41	1.51	1.24	B	32
Field 2 (Outfield)	Horizontal Illuminance	22.8	15	30	2.02	1.52	B	32
Field 3 (Infield)	Horizontal Illuminance	30.9	24	41	1.70	1.29	C	28
Field 3 (Outfield)	Horizontal Illuminance	21.3	13	29	2.19	1.64	C	28
Field 4 (Infield)	Horizontal Illuminance	31.1	25	42	1.68	1.24	D	28
Field 4 (Outfield)	Horizontal Illuminance	22.4	13	33	2.52	1.72	D	28
Field 5 (Infield)	Horizontal Illuminance	36.9	30	46	1.54	1.23	E	28
Field 5 (Outfield)	Horizontal Illuminance	23	13	32	2.50	1.77	E	28
Field 6 (Infield)	Horizontal Illuminance	31.4	23	41	1.76	1.37	F	28
Field 6 (Outfield)	Horizontal Illuminance	21.5	14	29	2.12	1.54	F	28
Field 7 (Infield)	Horizontal Illuminance	37.6	30	46	1.56	1.25	G	32
Field 7 (Outfield)	Horizontal Illuminance	22	15	32	2.13	1.47	G	32
Field 8 (Infield)	Horizontal Illuminance	35.2	30	43	1.44	1.17	H	28
Field 8 (Outfield)	Horizontal Illuminance	22	13	32	2.38	1.69	H	28
Field 9 (Infield)	Horizontal Illuminance	34.4	30	41	1.40	1.15	I	28
Field 9 (Outfield)	Horizontal Illuminance	21.3	12	31	2.64	1.78	I	28

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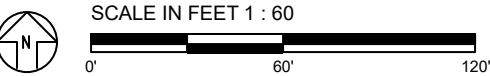
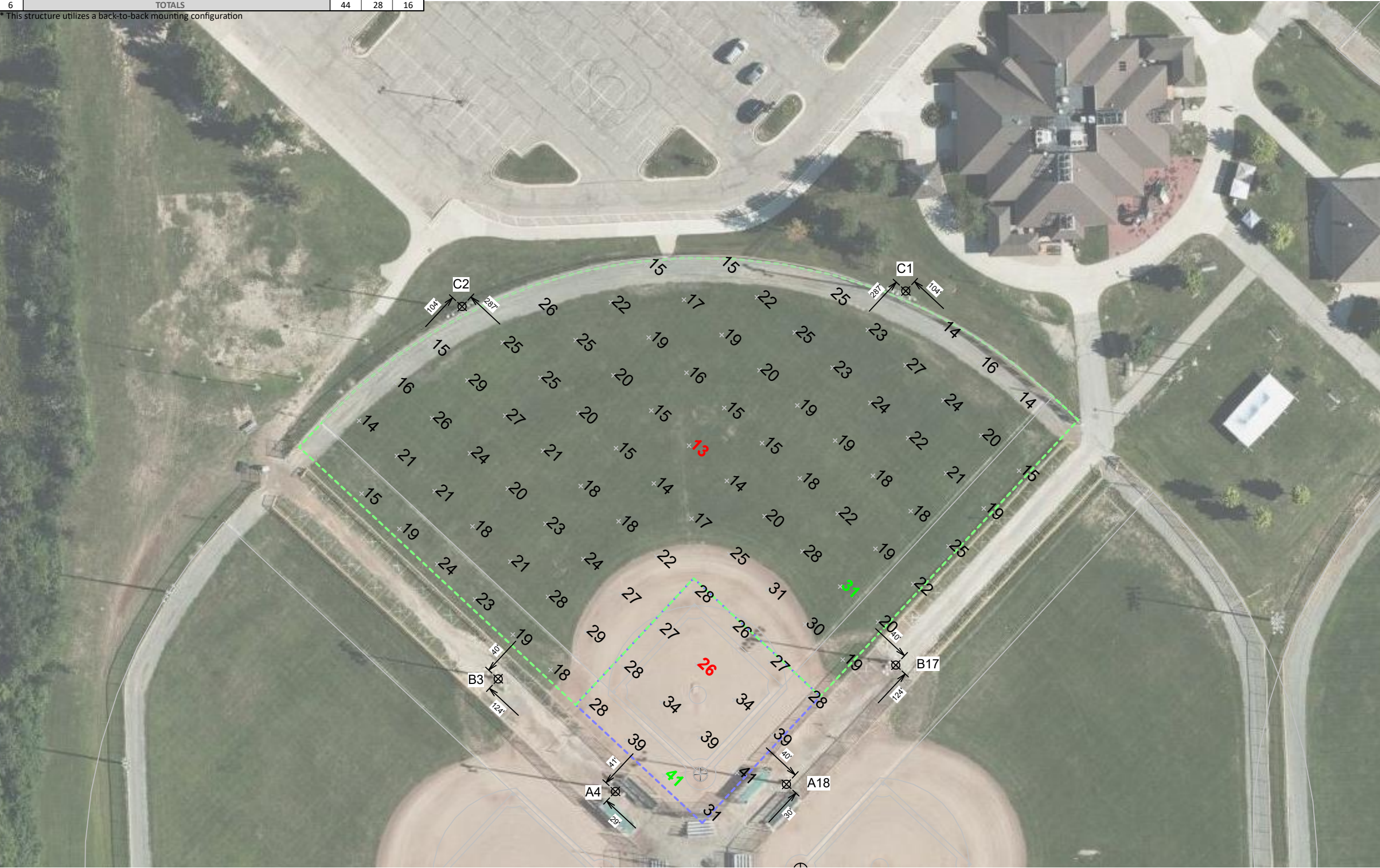


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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A4, A18	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	2/2*	2	2
2	B3, B17	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-1200	4/4*	4	4
2	C1-C2	60'	-	15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	4	4	0
6	TOTALS					44	28	16

* This structure utilizes a back-to-back mounting configuration



ENGINEERED DESIGN By: B.Guler · File #203640A · 05-Apr-22

Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 1
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	32.3	20.8
Maximum:	41	31
Minimum:	26	13
Avg / Min:	1.23	1.58
Guaranteed Max / Min:	2.5	3
Max / Min:	1.58	2.40
UG (adjacent pts):	1.40	1.97
CU:	0.71	
No. of Points:	16	82
LUMINAIRE INFORMATION		
Applied Circuits:	A	
No. of Luminaires:	28	
Total Load:	25.64 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

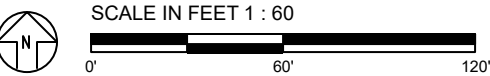
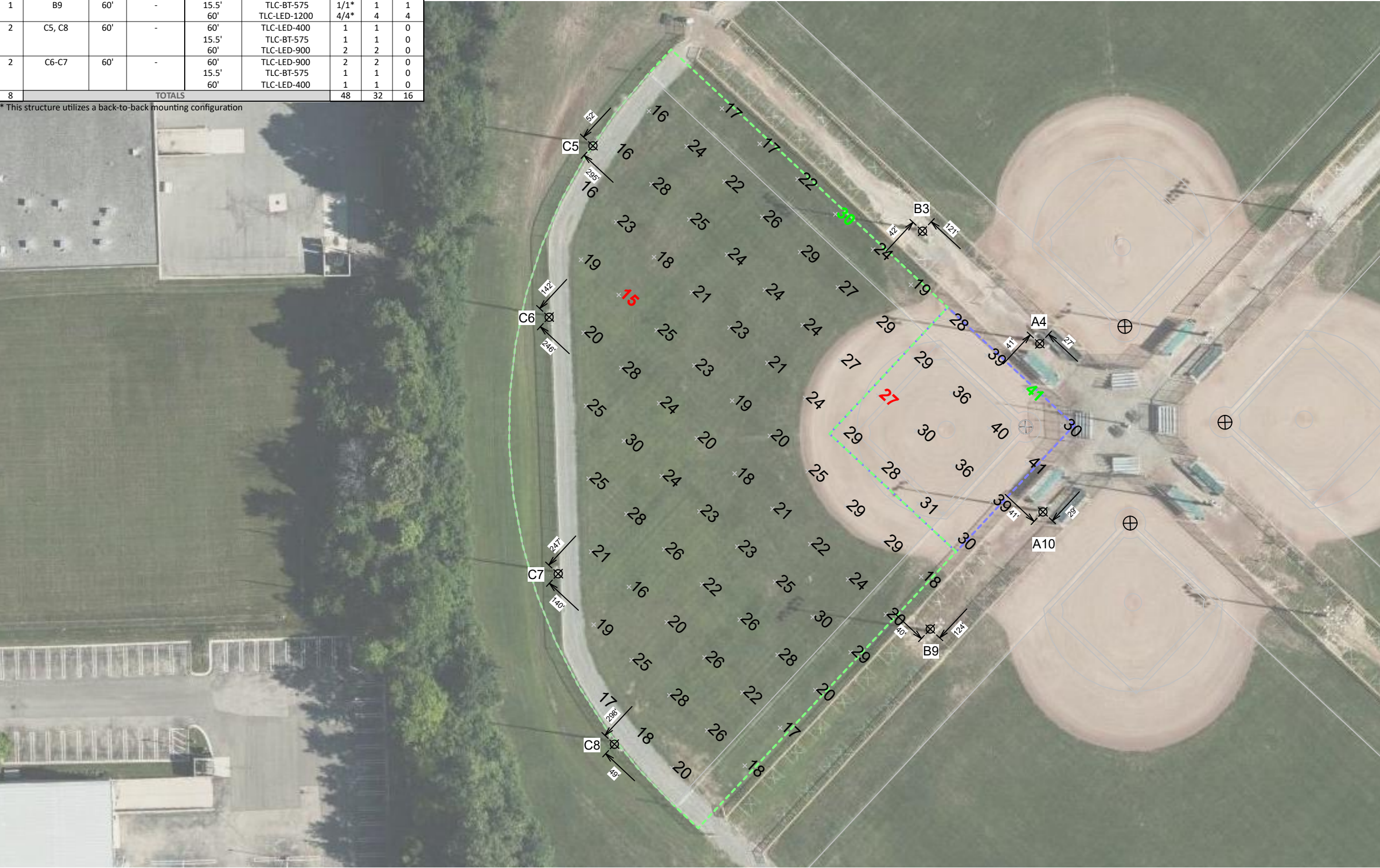


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ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
1	A4	60'	-	15.5'	TLC-BT-575	1/1*	1	1	1
				60'	TLC-LED-600	2/2*	2	2	2
1	A10	60'	-	15.5'	TLC-BT-575	1/1*	1	1	1
				60'	TLC-LED-600	2/2*	2	2	2
1	B3	60'	-	15.5'	TLC-BT-575	1/1*	1	1	1
				60'	TLC-LED-1200	4/4*	4	4	4
1	B9	60'	-	15.5'	TLC-BT-575	1/1*	1	1	1
				60'	TLC-LED-1200	4/4*	4	4	4
2	C5, C8	60'	-	60'	TLC-LED-400	1	1	1	0
				15.5'	TLC-BT-575	1	1	1	0
				60'	TLC-LED-900	2	2	2	0
2	C6-C7	60'	-	60'	TLC-LED-900	2	2	2	0
				15.5'	TLC-BT-575	1	1	1	0
				60'	TLC-LED-400	1	1	1	0
8	TOTALS					48	32	16	

* This structure utilizes a back-to-back mounting configuration



Pole location(s) ⚡ dimensions are relative to 0,0 reference point(s) ⊗

Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 2
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	33.4	22.8
Maximum:	41	30
Minimum:	27	15
Avg / Min:	1.22	1.55
Guaranteed Max / Min:	2.5	3
Max / Min:	1.51	2.02
UG (adjacent pts):	1.39	1.69
CU:	0.75	
No. of Points:	16	75
LUMINAIRE INFORMATION		
Applied Circuits:	B	
No. of Luminaires:	32	
Total Load:	25.0 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



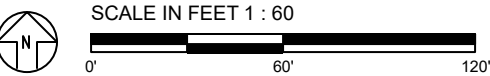
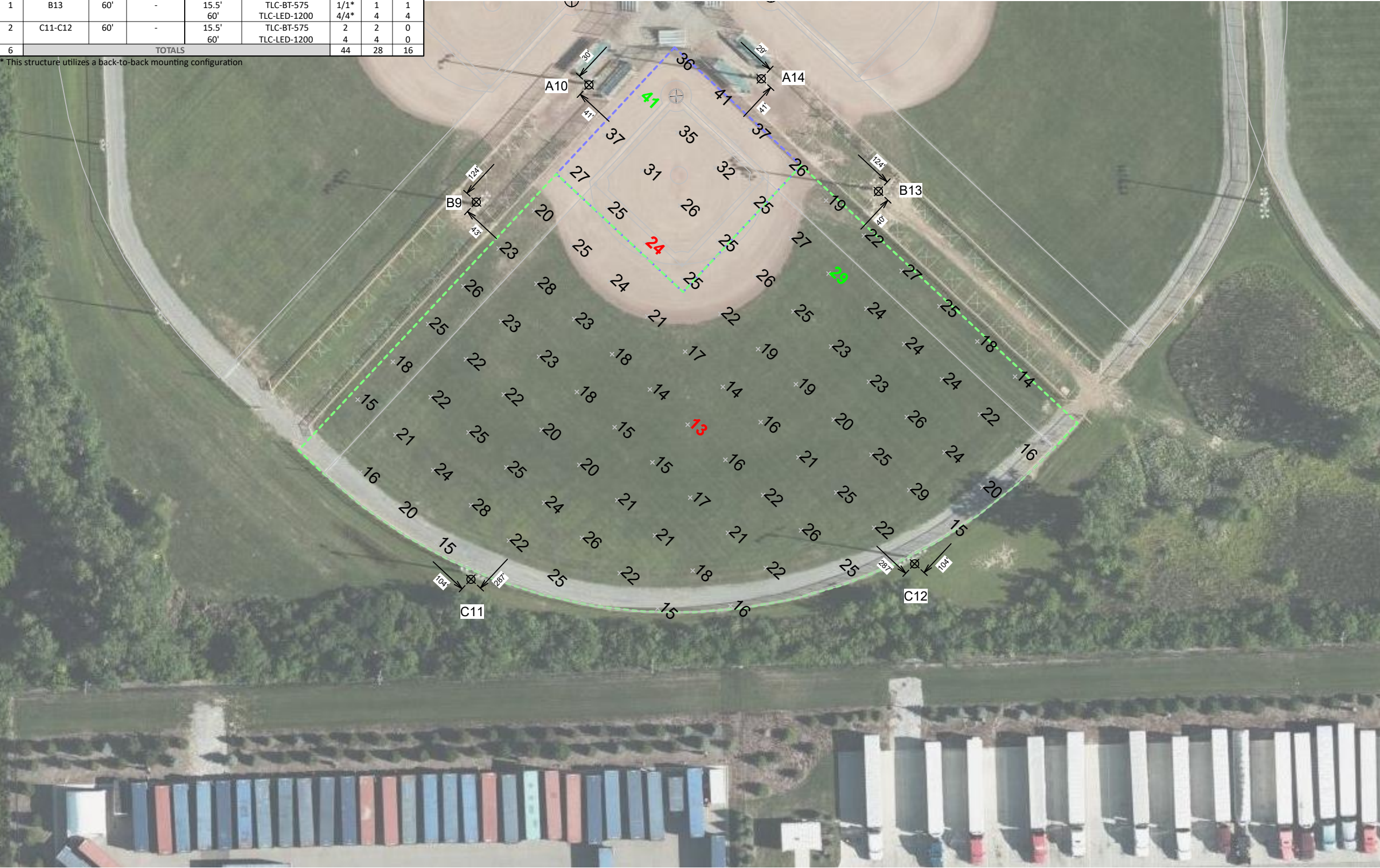
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ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN							
Pole				Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID
1	A10	60'	-	15.5'	TLC-BT-575	1/1*	1
				60'	TLC-LED-600	2/2*	2
1	A14	60'	-	15.5'	TLC-BT-575	1/1*	1
				60'	TLC-LED-600	2/2*	2
1	B9	60'	-	15.5'	TLC-BT-575	1/1*	1
				60'	TLC-LED-1200	4/4*	4
1	B13	60'	-	15.5'	TLC-BT-575	1/1*	1
				60'	TLC-LED-1200	4/4*	4
2	C11-C12	60'	-	15.5'	TLC-BT-575	2	2
				60'	TLC-LED-1200	4	4
6	TOTALS					44	28

* This structure utilizes a back-to-back mounting configuration



Pole location(s) ⚡ dimensions are relative to 0,0 reference point(s) ⊗

Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 3
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	30.9	21.3
Maximum:	41	29
Minimum:	24	13
Avg / Min:	1.27	1.61
Guaranteed Max / Min:	2.5	3
Max / Min:	1.70	2.19
UG (adjacent pts):	1.41	1.97
CU:	0.72	
No. of Points:	16	82
LUMINAIRE INFORMATION		
Applied Circuits:	C	
No. of Luminaires:	28	
Total Load:	25.64 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



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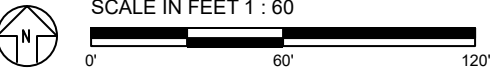
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ILLUMINATION SUMMARY



EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A14, A18	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	2/2*	2	2
2	B13, B17	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-1200	4/4*	4	4
2	C15-C16	60'	-	15.5'	TLC-BT-575	2/2*	2	2
				60'	TLC-LED-1200	4/4*	4	4
6	TOTALS					56	28	28

* This structure utilizes a back-to-back mounting configuration



ENGINEERED DESIGN By: B.Guler · File #203640A · 05-Apr-22

Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 4
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	31.1	22.4
Maximum:	42	33
Minimum:	25	13
Avg / Min:	1.25	1.69
Guaranteed Max / Min:	2.5	3
Max / Min:	1.68	2.52
UG (adjacent pts):	1.37	1.61
CU:	0.69	
No. of Points:	16	75
LUMINAIRE INFORMATION		
Applied Circuits:	D	
No. of Luminaires:	28	
Total Load:	25.64 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



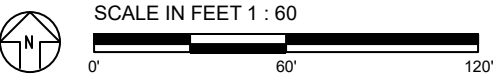
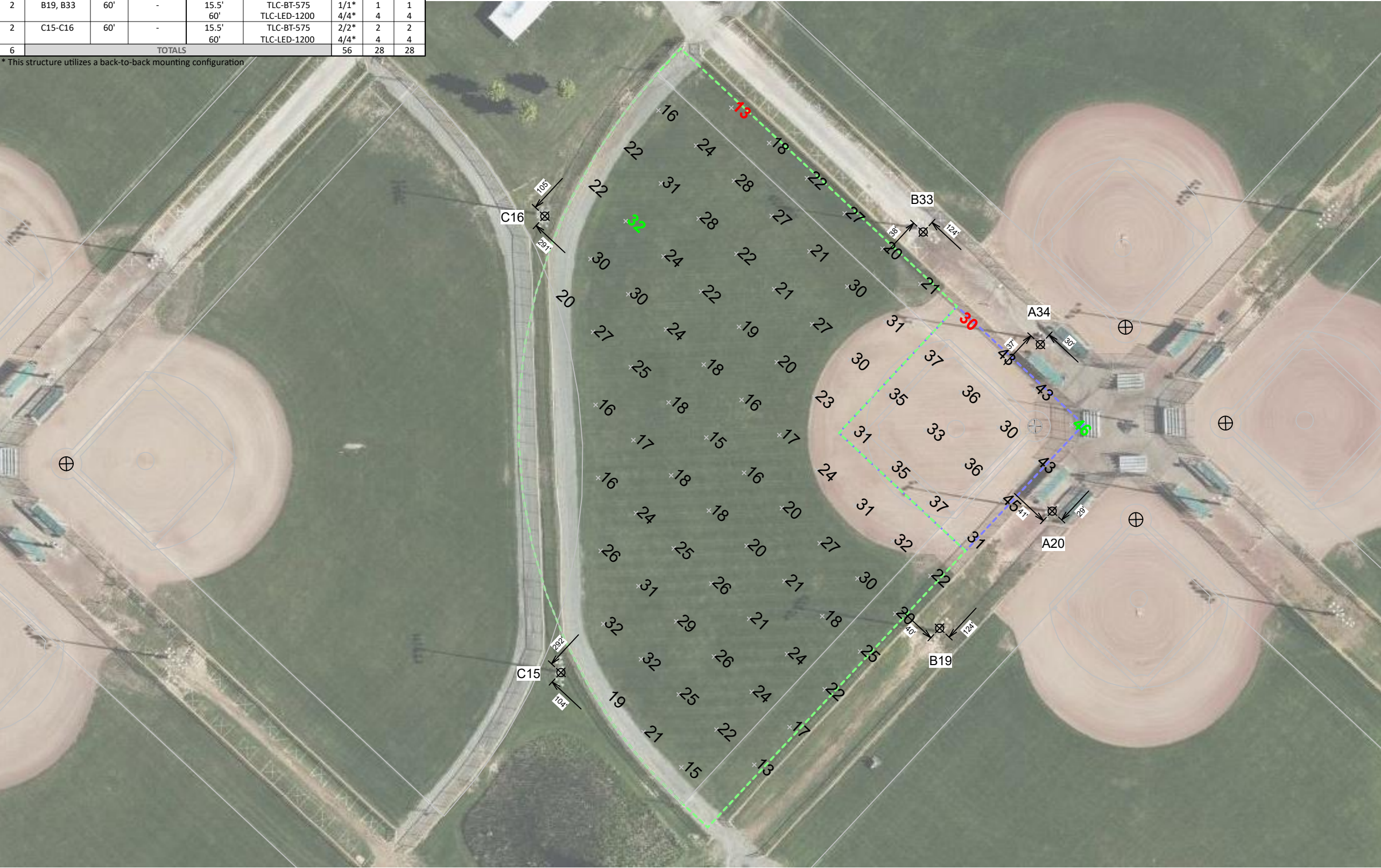
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ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A20	60'	-	60'	TLC-LED-900	1/1*	1	1
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	1/1*	1	1
1	A34	60'	-	60'	TLC-LED-900	1/1*	1	1
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	1/1*	1	1
2	B19, B33	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-1200	4/4*	4	4
2	C15-C16	60'	-	15.5'	TLC-BT-575	2/2*	2	2
				60'	TLC-LED-1200	4/4*	4	4
6	TOTALS					56	28	28

* This structure utilizes a back-to-back mounting configuration



Pole location(s) ⦿ dimensions are relative to 0,0 reference point(s) ⊗

Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 5
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	36.9	23.0
Maximum:	46	32
Minimum:	30	13
Avg / Min:	1.23	1.77
Guaranteed Max / Min:	2.5	3
Max / Min:	1.54	2.50
UG (adjacent pts):	1.44	1.84
CU:	0.73	
No. of Points:	16	76
LUMINAIRE INFORMATION		
Applied Circuits:	E	
No. of Luminaires:	28	
Total Load:	26.26 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

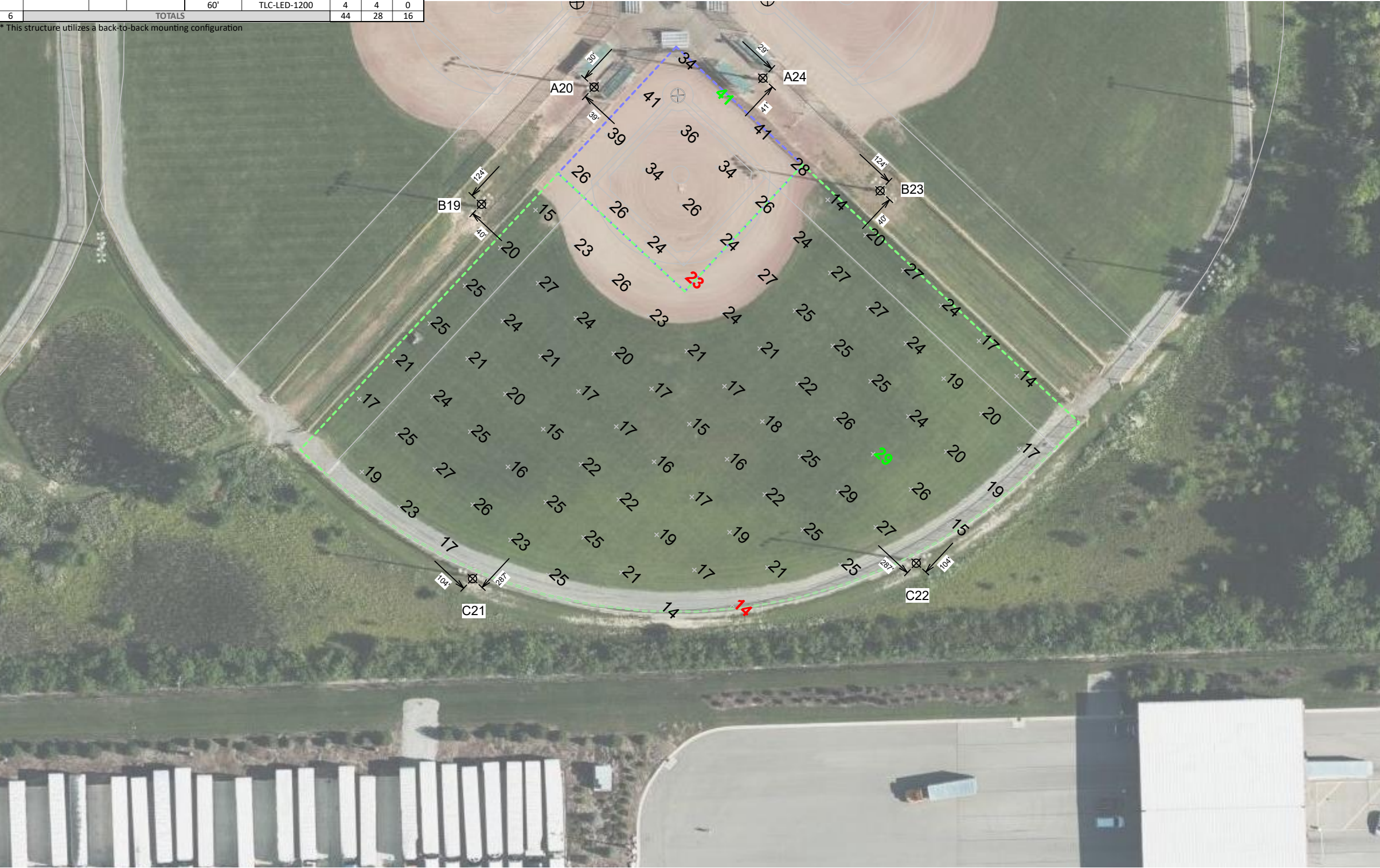


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ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A20, A24	60'	-	60'	TLC-LED-900	1/1*	1	1
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	1/1*	1	1
2	B19, B23	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-1200	4/4*	4	4
				15.5'	TLC-BT-575	2	2	0
2	C21-C22	60'	-	60'	TLC-LED-1200	4	4	0
				15.5'	TLC-BT-575	4	4	0
6	TOTALS					44	28	16

* This structure utilizes a back-to-back mounting configuration



Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 6
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

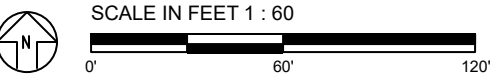
ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	31.4	21.5
Maximum:	41	29
Minimum:	23	14
Avg / Min:	1.34	1.56
Guaranteed Max / Min:	2.5	3
Max / Min:	1.76	2.12
UG (adjacent pts):	1.48	1.80
CU:	0.71	
No. of Points:	16	82
LUMINAIRE INFORMATION		
Applied Circuits:	F	
No. of Luminaires:	28	
Total Load:	26.26 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⚓ dimensions are relative to 0,0 reference point(s) ⊗

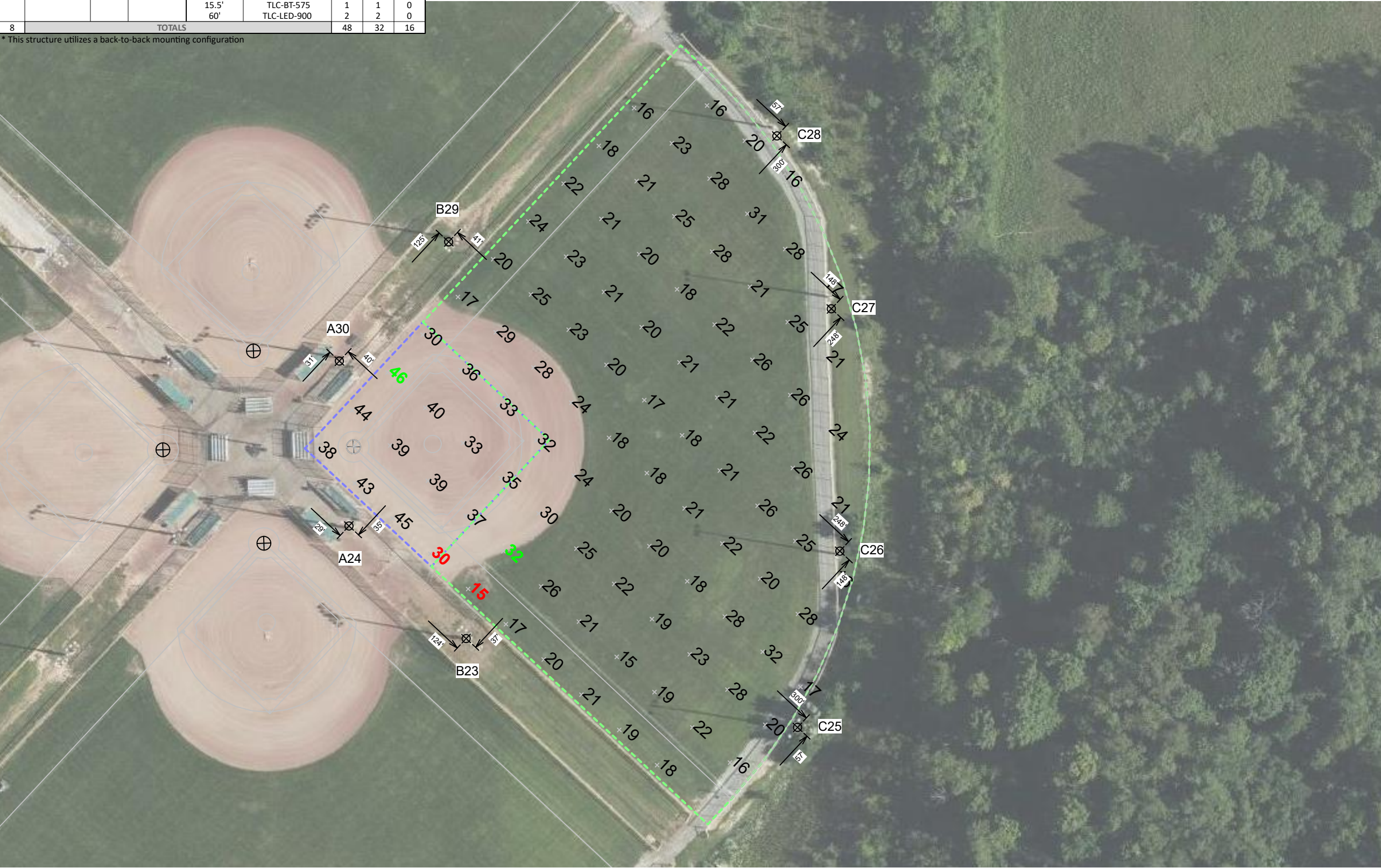


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ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A24, A30	60'	-	60'	TLC-LED-900	1/1*	1	1
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	1/1*	1	1
2	B23, B29	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-1200	4/4*	4	4
4	C25-C28	60'	-	60'	TLC-LED-600	1	1	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-900	2	2	0
8	TOTALS					48	32	16

* This structure utilizes a back-to-back mounting configuration



Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 7
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	37.6	22.0
Maximum:	46	32
Minimum:	30	15
Avg / Min:	1.26	1.48
Guaranteed Max / Min:	2.5	3
Max / Min:	1.56	2.13
UG (adjacent pts):	1.52	2.13
CU:	0.75	
No. of Points:	16	80
LUMINAIRE INFORMATION		
Applied Circuits:	G	
No. of Luminaires:	32	
Total Load:	26.34 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

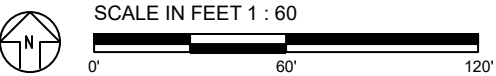
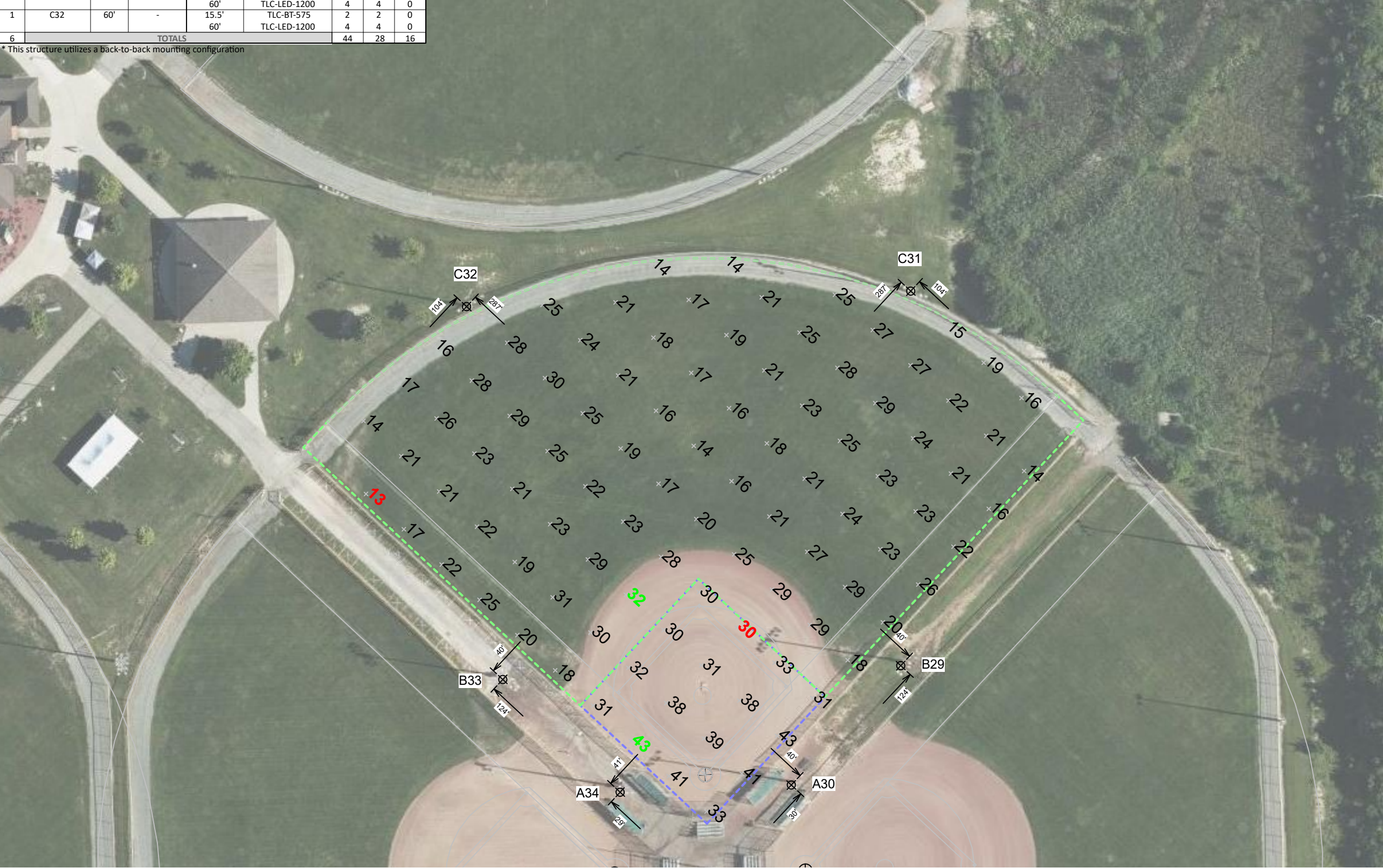
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



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EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A30, A34	60'	-	60'	TLC-LED-900	1/1*	1	1
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	1/1*	1	1
2	B29, B33	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-1200	4/4*	4	4
				15.5'	TLC-BT-575	2	2	0
1	C31	60'	-	60'	TLC-LED-1200	4	4	0
				15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	4	4	0
1	C32	60'	-	15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	4	4	0
				60'	TLC-LED-1200			
6	TOTALS					44	28	16

* This structure utilizes a back-to-back mounting configuration



Pole location(s) ⚓ dimensions are relative to 0,0 reference point(s) ⊗

Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 8
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	35.2	22.0
Maximum:	43	32
Minimum:	30	13
Avg / Min:	1.18	1.65
Guaranteed Max / Min:	2.5	3
Max / Min:	1.44	2.38
UG (adjacent pts):	1.40	1.77
CU:	0.74	
No. of Points:	16	82
LUMINAIRE INFORMATION		
Applied Circuits:	H	
No. of Luminaires:	28	
Total Load:	26.26 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

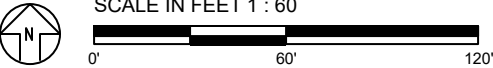
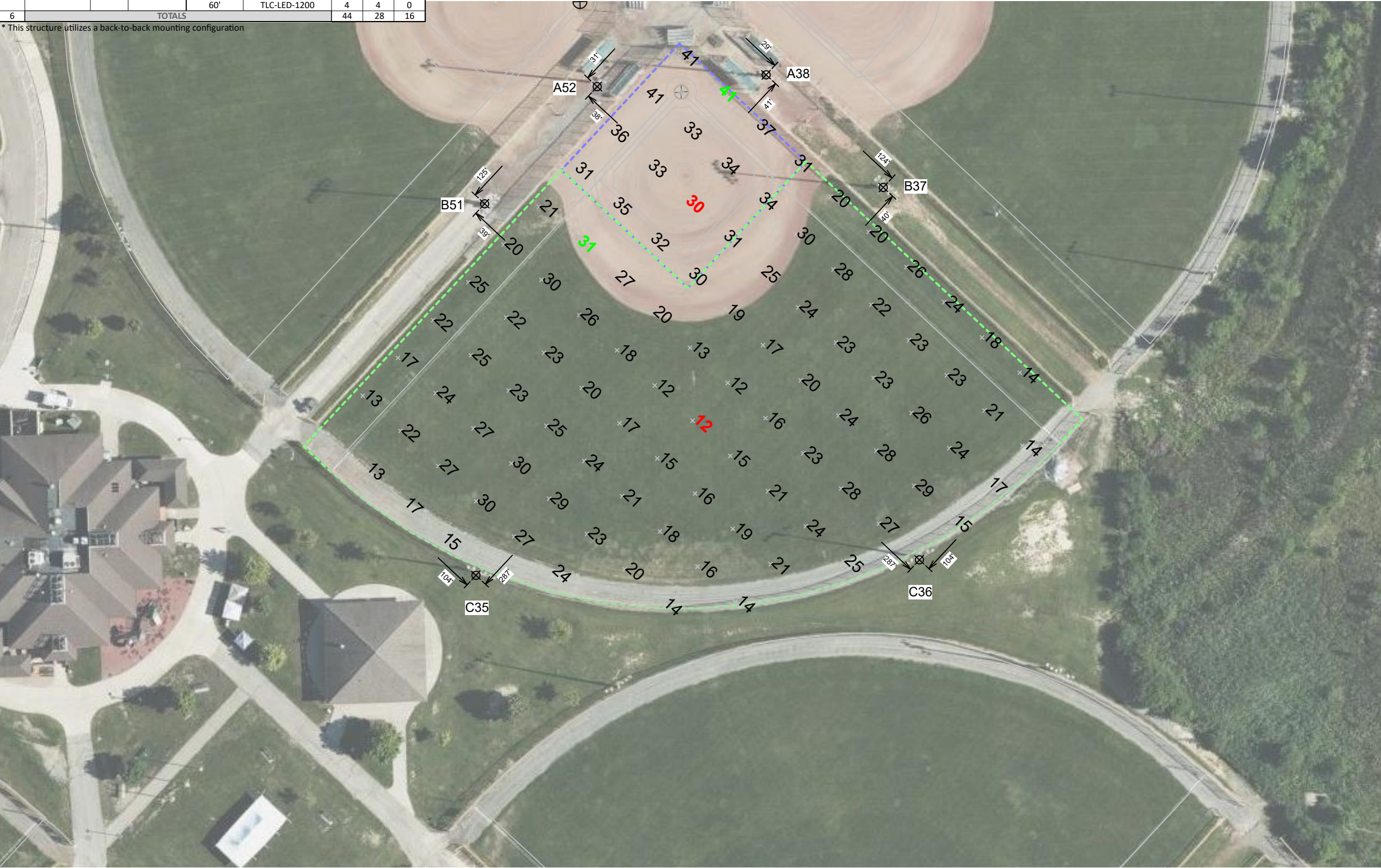


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ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A38, A52	60'	-	60'	TLC-LED-900	1	0	1
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	1/2*	2	1
2	B37, B51	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-1200	4/4*	4	4
				15.5'	TLC-BT-575	2	2	0
2	C35-C36	60'	-	60'	TLC-LED-1200	4	4	0
6	TOTALS					44	28	16

* This structure utilizes a back-to-back mounting configuration



Pole location(s) ⦿ dimensions are relative to 0,0 reference point(s) ⊗

Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 9
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	34.4	21.3
Maximum:	41	31
Minimum:	30	12
Avg / Min:	1.16	1.82
Guaranteed Max / Min:	2.5	3
Max / Min:	1.40	2.64
UG (adjacent pts):	1.27	1.98
CU:	0.73	
No. of Points:	16	82
LUMINAIRE INFORMATION		
Applied Circuits:	1	
No. of Luminaires:	28	
Total Load:	25.64 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

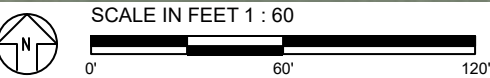
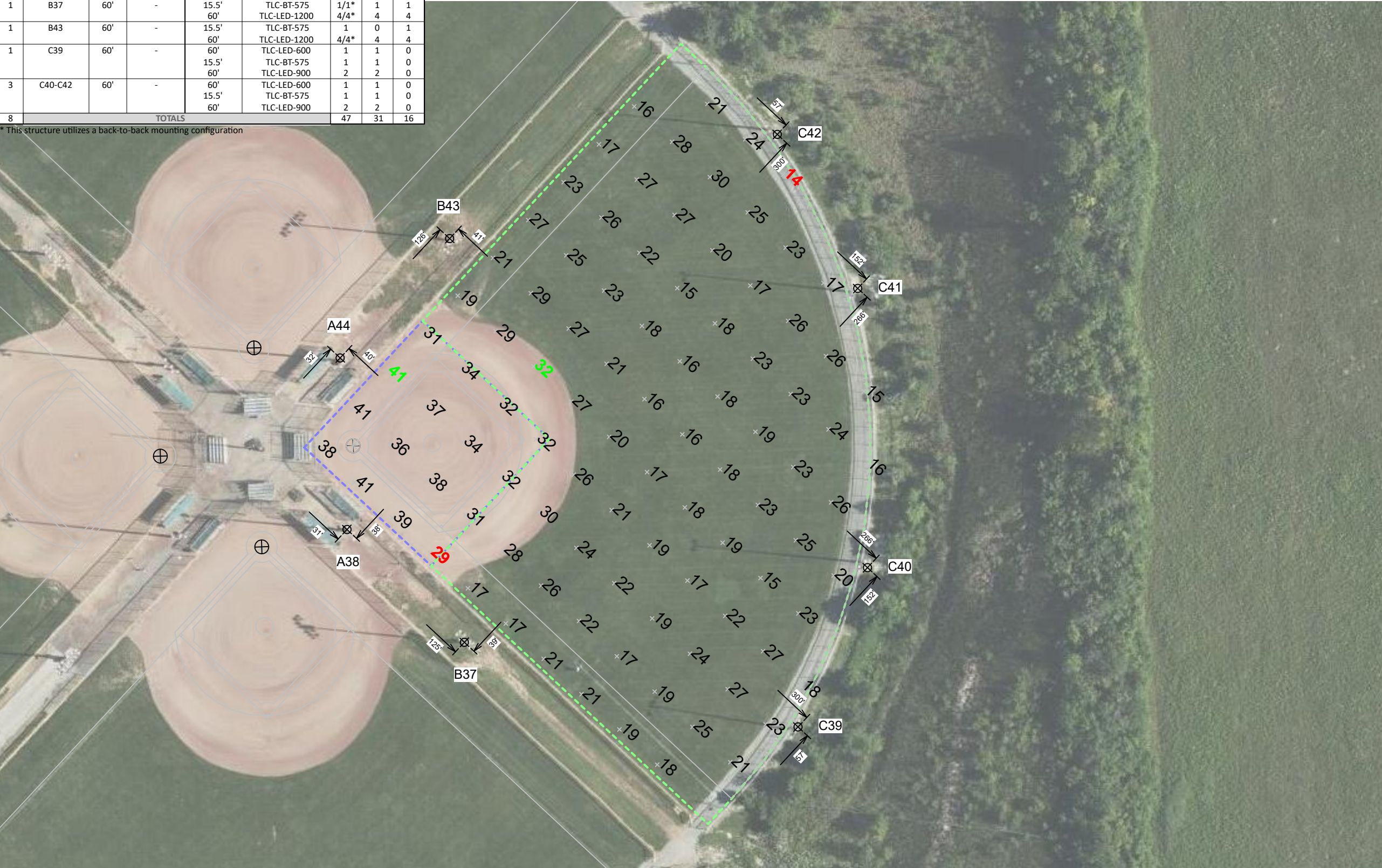


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ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A38	60'	-	60'	TLC-LED-900	1	1	0
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	1/2*	1	2
1	A44	60'	-	60'	TLC-LED-900	1/1*	1	1
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	1/1*	1	1
1	B37	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-1200	4/4*	4	4
1	B43	60'	-	15.5'	TLC-BT-575	1	0	1
				60'	TLC-LED-1200	4/4*	4	4
1	C39	60'	-	60'	TLC-LED-600	1	1	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-900	2	2	0
3	C40-C42	60'	-	60'	TLC-LED-600	1	1	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-900	2	2	0
8	TOTALS					47	31	16

* This structure utilizes a back-to-back mounting configuration



Pole location(s) ⦿ dimensions are relative to 0,0 reference point(s) ⊗

Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 10
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	35.5	21.8
Maximum:	41	32
Minimum:	29	14
Avg / Min:	1.22	1.53
Guaranteed Max / Min:	2.5	3
Max / Min:	1.43	2.22
UG (adjacent pts):	1.35	1.76
CU:	0.76	
No. of Points:	16	82
LUMINAIRE INFORMATION		
Applied Circuits:	J	
No. of Luminaires:	31	
Total Load:	25.77 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



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ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A44, A48	60'	-	60'	TLC-LED-900	1/1*	1	1
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	1/1*	1	1
1	B43	60'	-	15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	4/4*	4	4
				15.5'	TLC-BT-575	1/1*	1	1
1	B47	60'	-	60'	TLC-LED-1200	4/4*	4	4
				15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	4	4	0
1	C45	60'	-	15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	4	4	0
				15.5'	TLC-BT-575	2	2	0
1	C46	60'	-	60'	TLC-LED-1200	4	4	0
				15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	4	4	0
6	TOTALS					43	28	15

* This structure utilizes a back-to-back mounting configuration

Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 11
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

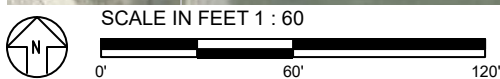
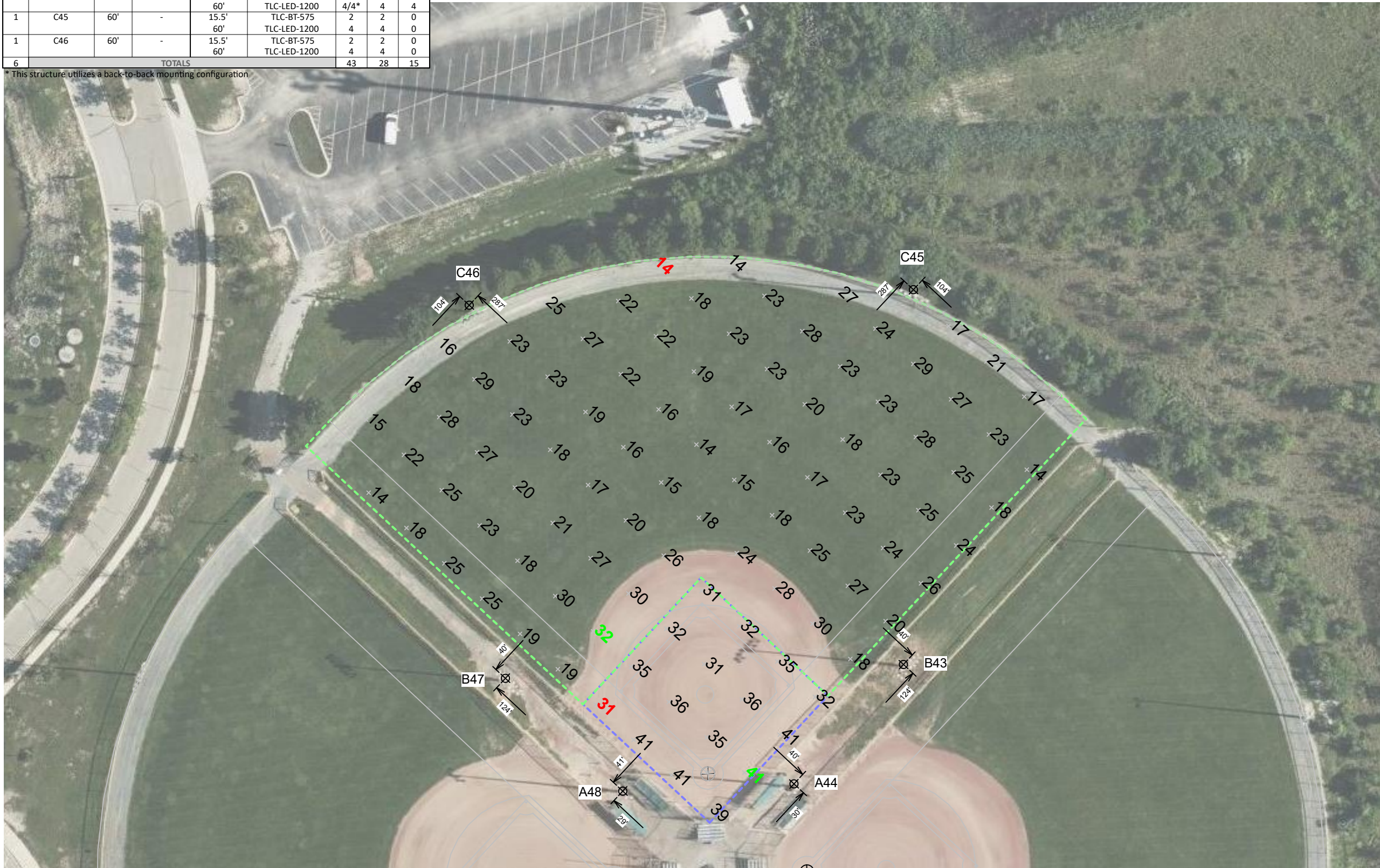
ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	35.5	21.7
Maximum:	41	32
Minimum:	31	14
Avg / Min:	1.15	1.58
Guaranteed Max / Min:	2.5	3
Max / Min:	1.34	2.30
UG (adjacent pts):	1.32	1.81
CU:	0.74	
No. of Points:	16	82
LUMINAIRE INFORMATION		
Applied Circuits:	K	
No. of Luminaires:	28	
Total Load:	26.26 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "**Musco Control System Summary**" for electrical sizing.

Installation Requirements: Results assume $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



ENGINEERED DESIGN By: B.Guler · File #203640A · 05-Apr-22

Pole location(s) \oplus dimensions are relative
to 0,0 reference point(s) \otimes



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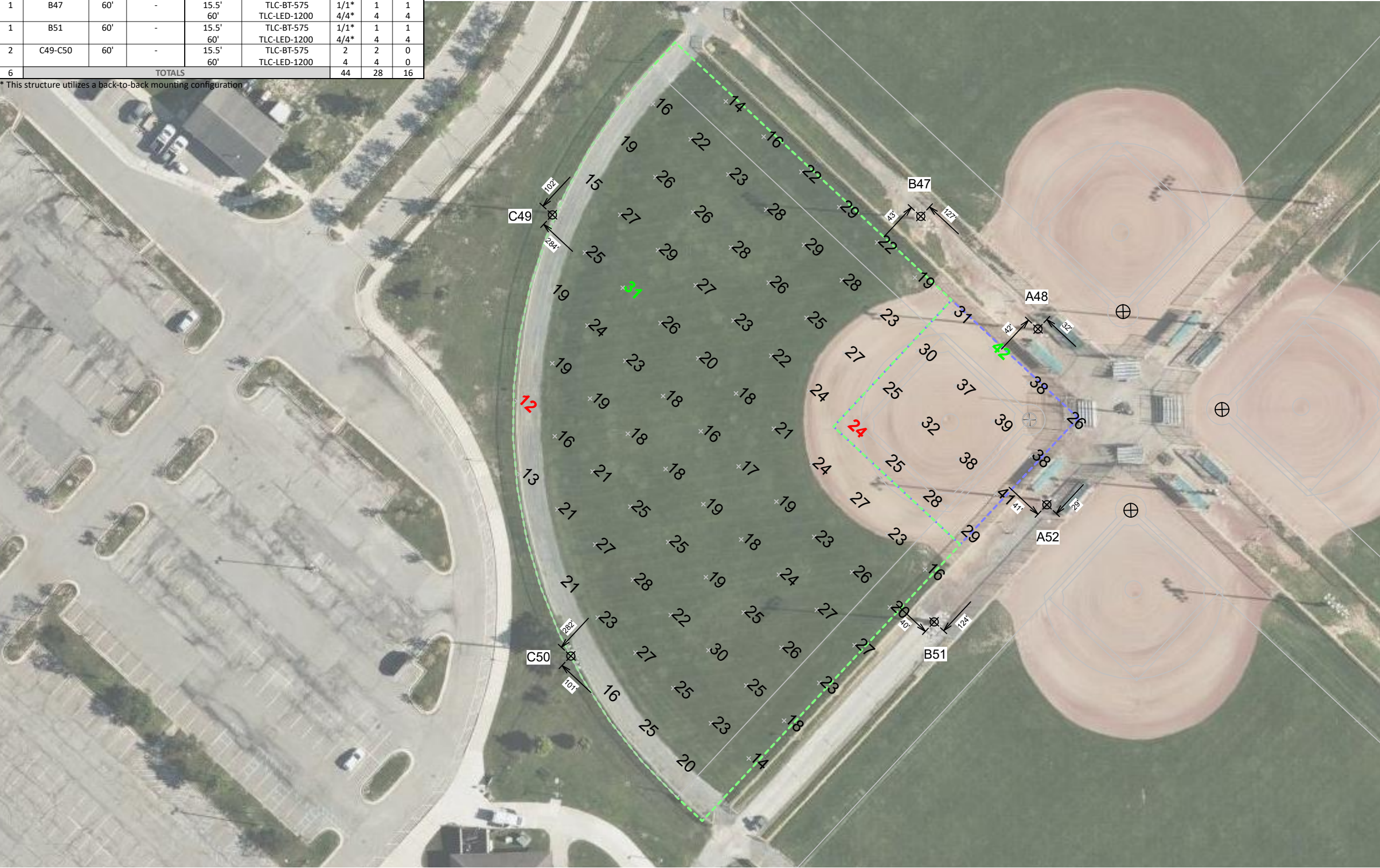
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ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A48	60'	-	60'	TLC-LED-900	1/1*	1	1
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	1/1*	1	1
1	A52	60'	-	60'	TLC-LED-900	1	1	0
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-600	1/2*	1	2
1	B47	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-1200	4/4*	4	4
				60'	TLC-LED-900	1	1	0
1	B51	60'	-	15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-1200	4/4*	4	4
				60'	TLC-LED-900	1	1	0
2	C49-C50	60'	-	15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	4	4	0
				60'	TLC-LED-900	1	1	0
6	TOTALS					44	28	16

* This structure utilizes a back-to-back mounting configuration



Canton Township Victory Park Baseball
Canton,MI

GRID SUMMARY	
Name:	Field 12
Size:	300'/300'/300' - basepath 70'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

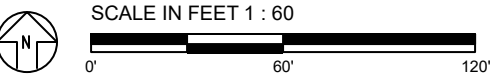
ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	30	20
Scan Average:	32.7	22.3
Maximum:	42	31
Minimum:	24	12
Avg / Min:	1.38	1.82
Guaranteed Max / Min:	2.5	3
Max / Min:	1.75	2.49
UG (adjacent pts):	1.45	1.85
CU:	0.74	
No. of Points:	16	82
LUMINAIRE INFORMATION		
Applied Circuits:	L	
No. of Luminaires:	28	
Total Load:	26.26 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⚡ dimensions are relative to 0,0 reference point(s) ⊗



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ILLUMINATION SUMMARY


GRID SUMMARY	
Name:	Blanket Spill
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
	Entire Grid
Scan Average:	10.6
Maximum:	63
Minimum:	0
Avg / Min:	-
Max / Min:	-
UG (adjacent pts):	33.86
CU:	0.85
No. of Points:	3658
LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C, D, E, F, G, H, I, J, K, L
No. of Luminaires:	347
Total Load:	310.97 kW

Installation Requirements: Results assume $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



SCALE IN FEET 1 : 200



0' 200' 400'

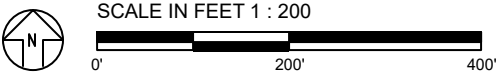
Pole location(s) \oplus dimensions are relative to 0,0 reference point(s) \otimes



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ILLUMINATION SUMMARY



ENGINEERED DESIGN By: B.Guler · File #203640A · 05-Apr-22

Pole location(s) ⚡ dimensions are relative to 0,0 reference point(s) ⊗

Canton Township Victory Park Baseball
Canton,MI

EQUIPMENT LAYOUT

INCLUDES:

- Field 1
- Field 10
- Field 11
- Field 12
- Field 2
- Field 3
- Field 4
- Field 5
- Field 6
- Field 7
- Field 8
- Field 9

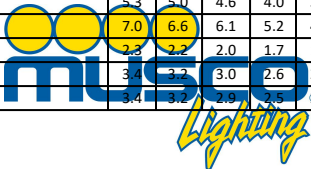
Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN						
Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
4	A14, A18 A4, A10	60'	-	15.5' 60'	TLC-BT-575 TLC-LED-600	1/1* 2/2*
6	A20, A24 A30, A34 A44, A48	60'	-	60' 60' 15.5'	TLC-LED-600 TLC-LED-900 TLC-BT-575	1/1* 1/1* 1/1*
2	A38, A52	60'	-	60' 15.5' 60'	TLC-LED-900 TLC-BT-575 TLC-LED-600	1 1/1* 1/2*
2	B9, B51	60'	-	15.5' 60'	TLC-BT-575 TLC-LED-1200	1/1* 4/4*
9	B17, B19 B23, B29 B3, B13 B33, B37 B47	60'	-	15.5' 60'	TLC-BT-575 TLC-LED-1200	1/1* 4/4*
1	B43	60'	-	15.5' 60'	TLC-BT-575 TLC-LED-1200	1 4/4*
14	C1-C2 C11-C12 C21-C22 C31-C32 C35-C36 C45-C46 C49-C50	60'	-	60' 60' 15.5'	TLC-LED-1200 TLC-BT-575	4 2
2	C5, C8	60'	-	60' 15.5' 60'	TLC-LED-400 TLC-BT-575 TLC-LED-900	1 1 2
2	C6-C7	60'	-	60' 15.5' 60'	TLC-LED-900 TLC-BT-575 TLC-LED-400	2 1 1
2	C15-C16	60'	-	15.5' 60'	TLC-BT-575 TLC-LED-1200	2/2* 4/4*
6	C25-C26 C28 C40-C42	60'	-	60' 60' 15.5'	TLC-LED-900 TLC-LED-600 TLC-BT-575	2 1 1
2	C27, C39	60'	-	60' 15.5' 60'	TLC-LED-600 TLC-BT-575 TLC-LED-900	1 1 2
52	TOTALS					347

* This structure utilizes a back-to-back mounting configuration

SINGLE LUMINAIRE AMPERAGE DRAW CHART							
Ballast Specifications (.90 min power factor)		Line Amperage Per Luminaire (max draw)					
Single Phase Voltage		208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	480 (60)
TLC-LED-900		5.3	5.0	4.6	4.0	3.2	2.9
TLC-LED-1200		7.0	6.6	6.1	5.2	4.2	4.0
TLC-LED-400		2.5	2.2	2.0	1.7	1.4	1.3
TLC-LED-600		3.0	2.7	3.0	2.6	2.0	1.9
TLC-BT-575		3.4	3.1	2.8	2.4	1.8	1.5



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