

FOUR RIVERS SANITATION AUTHORITY ROCKFORD, ILLINOIS

MAIN POWER TRANSITION PROJECT (CAPITAL PROJECT NO. 1361)

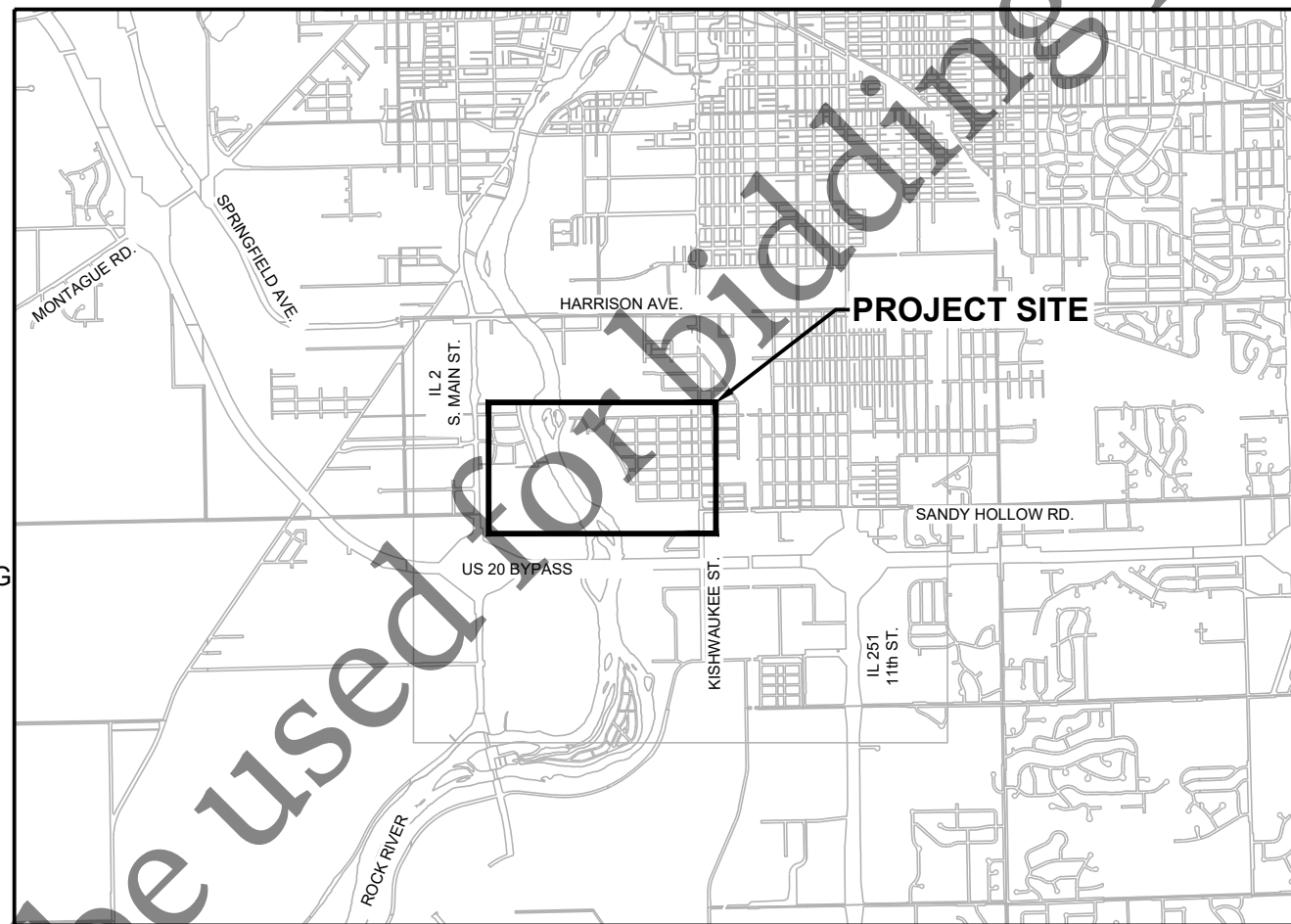
AUGUST 2023

BOARD OF TRUSTEES

RICHARD POLLACK	PRESIDENT
BEN BERNSTEN	VICE-PRESIDENT
GINGER HAAS	CLERK/TREASURER
VACANT	TRUSTEE
ELMER JONES	TRUSTEE

OFFICIALS

TIMOTHY S. HANSON	EXECUTIVE DIRECTOR
CHRISTOPHER T. BAER, PE	DIRECTOR OF ENGINEERING

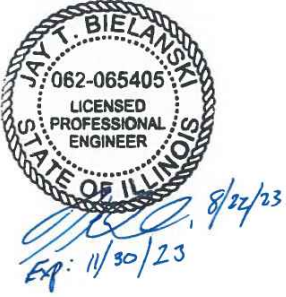


WINNEBAGO COUNTY, ILLINOIS

PROJECT ADDRESS
3333 KISHWAUKEE STREET
ROCKFORD, IL 61109



SHEET NUMBER	DRAWING NUMBER	DRAWING DESCRIPTION
1 - GENERAL		
1	1-G-00	COVER
2	1-G-01	DRAWING INDEX AND SIGNATURE SHEET
3	1-G-02	SYMBOLS, NOTES AND ABBREVIATIONS
4	1-G-03	CIVIL LEGEND AND GENERAL NOTES
5	1-G-04	PLUMBING LEGEND/HVAC LEGEND/ ELECTRICAL LEGEND
6	1-G-05	INSTRUMENTATION AND CONTROL
7	1-G-06	I&C STANDARD SYMBOLOGY
8	1-G-07	SPACE ENVIRONMENT AND HAZARDOUS RATINGS SCHEDULE
ELECTRICAL DISTRIBUTION		
9	1-E-01	OVERALL ONE LINE DIAGRAM
10	1-ER-02	ONE LINE DIAGRAM - REMOVAL
11	1-ER-03	MAIN SWITCHGEAR REMOVAL DETAILS
12	1-E-04	ONE LINE DIAGRAM
13	1-E-05	MAIN SWITCHGEAR DETAILS
PROCESS AND INSTRUMENTATION DIAGRAM		
14	1-N-01	MAIN SWITCHGEAR
2 - SITE DEVELOPMENT		
15	2-GK-01	TEMPORARY GENERATOR AND STAGING AREA KEY PLAN
16	2-GE-01	TEMPORARY GENERATOR PLAN
17	2-GE-02	TEMPORARY GENERATOR PLAN
18	2-GE-03	TEMPORARY GENERATOR PLAN
19	2-GE-04	TEMPORARY GENERATOR PLAN
20	2-GE-05	TEMPORARY GENERATOR PLAN
21	2-GE-06	TEMPORARY GENERATOR PLAN
22	2-EN-01	ELECTRICAL SITE PLAN
23	2-EN-02	DUCTBANK SECTIONS AND DETAILS
3 - MAIN PUMP BUILDING		
24	3-EN-01	LOWER PLAN
25	3-EN-02	UPPER PLAN
4 - MAIN SWITCHGEAR BUILDING		
26	4-EN-01	GRADE PLAN
5 - STANDARD DETAILS		
27	5-EN-01	ELECTRICAL AND INSTRUMENTATION AND CONTROLS
28	5-EN-02	DETAILS
29	5-EN-03	DETAILS
30	5-EN-04	DETAILS



JAY T. BIELANSKI
NAME

ELECTRICAL
INSTRUMENTATION AND CONTROLS
TITLE

LIST DRAWING SHEETS:

1-G-00	2-GK-01	5-EN-01
1-G-01	2-GE-01	5-EN-02
1-G-02	2-GE-02	5-EN-03
1-G-03	2-GE-03	5-EN-04
1-G-04	2-GE-04	
1-G-05	2-GE-05	
1-G-06	2-GE-06	
1-G-07	2-EN-01	
1-E-01	2-EN-02	
1-ER-02		
1-ER-03	3-EN-01	
1-E-04	3-EN-02	
1-E-05		
1-N-01	4-EN-01	

Not to be used for bidding purposes

file: P:\14211map\Dwg\DA2234.RR.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**GENERAL
DRAWING INDEX AND SIGNATURE SHEET**



8/2023

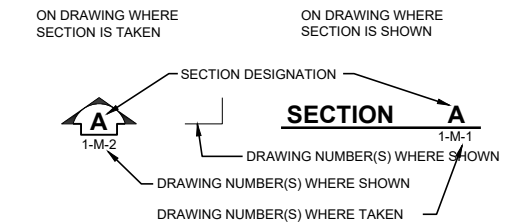
Sheet No.	2
Drawing No.	1-G-01

GENERAL LEGEND

DISCIPLINE IDENTIFIER

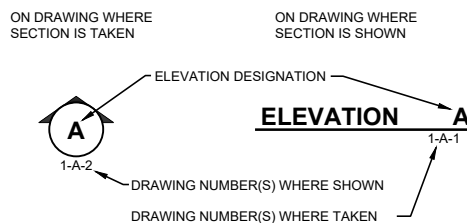
DISCIPLINE	DISCIPLINE IDENTIFIER
GENERAL	G
CIVIL KEY	CK
CIVIL NOTES	CN
CIVIL REMOVAL	CR
CIVIL FACILITIES	CF
CIVIL GRADING	CG
CIVIL EROSION CONTROL	CE
CIVIL PIPING	CP
REMOVALS	R
ARCHITECTURAL	A
STRUCTURAL	S
PROCESS-MECHANICAL	M
PLUMBING	P
HVAC	H
ELECTRICAL AND LIGHTING	E
INSTRUMENTATION AND CONTROL	N

SECTION DESIGNATION

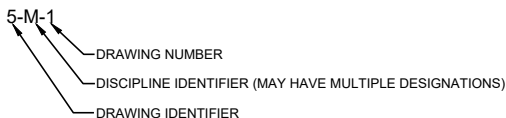


NOTE: PHANTOM LINETYPE THRU STRUCTURE MAY BE BROKEN FOR CLARITY

CASEWORK ELEVATION DESIGNATION



DRAWING NUMBER DESIGNATION



PLAN NOTE DESIGNATION



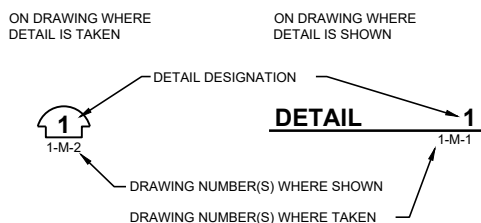
STANDARD DETAIL DESIGNATION



NOTE: STANDARD DETAILS ARE LOCATED ON DRAWINGS THAT HAVE BEEN ASSIGNED A DRAWING IDENTIFIER OF 10 FOLLOWED BY A DISCIPLINE IDENTIFIER. THESE DRAWINGS ARE PLACED LAST IN THE DRAWING SET.

EXAMPLE: 10-M-01

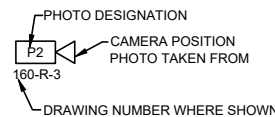
DETAIL DESIGNATION



AREA DESIGNATION



PHOTO DESIGNATION



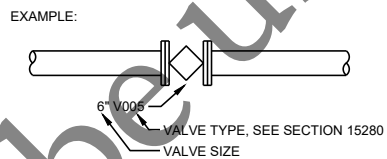
SYMBOLS

	NON-RIGID INSULATION		BAR GRATING
	RIGID INSULATION		CHECKERED PLATE
	SAND OR FILL		PLANK GRATING
	FREE DRAINING FILL		2' x 2' SUSPENDED ACOUSTICAL CEILING
	ROUGH CARPENTRY (NOMINAL SIZE INDICATED)		GYPSUM BOARD CEILING. REFER TO ROOM FINISH SCHEDULE FOR FINISH
	CONCRETE		CEILING HEIGHT ABOVE FINISHED FLOOR
	CONCRETE BLOCK		DOOR DESIGNATOR
	FACE BRICK		WINDOW NO. WINDOW DESIGNATOR
	PRECAST CONCRETE PLANK		
	EARTH OR BACKFILL		
	ROCK		
	REMOVAL		

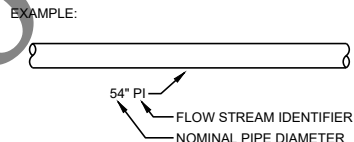
INSTRUMENT IDENTIFICATION

SAME AS SHOWN ON P&ID LEGEND. EXCEPTION: COMPONENT DESIGNATORS NOT USED ON PROCESS MECHANICAL DRAWINGS

VALVE IDENTIFICATION



PIPE IDENTIFICATION



ABBREVIATIONS

ACST	ACOUSTICAL TILE	DBL	DOUBLE	GA	GAUGE	NW	NEW	SCHED	SCHEDULE
AD	ACCESS DOOR	DEG	DEGREE	GALV	GALVANIZED	NIC	NOT IN CONTRACT	SD	SUMP DISCHARGE
ADDL	ADDITIONAL	DEG	DEGREES (ANGULAR)	G.B.	GRAB BAR	NO. or #	NUMBER	SECT	SECTION
AFF	ABOVE FINISHED FLOOR	DET	DETAIL	GCMU	GLAZED CONCRETE	NOM	NOMINAL	SH	SHEET
AL	ALUMINUM	DIA	DIAMETER	GL	MASONRY UNIT	NR	NON-RATED	SIM	SIMILAR
ALT	ALTERNATE	DIAG	DIAGONAL	GR	GLASS	NTS	NOT TO SCALE	SPA	SPACE OR SPACING
APPROX	APPROXIMATE	DIM	DIMENSION	GYP BD	GRADE	OC	ON CENTER	SQ	SQUARE
ARCH	ARCHITECTURAL	DIP	DUCTILE IRON PIPE	H	GYP BOARD	OD	OUTSIDE DIAMETER	SR	SHORT RADIUS
AVG	AVERAGE	DIR	DIRECTION	HB	HIGH	OFOI	OWNER FURNISHED ITEM	SS or SST	STAINLESS STEEL
BOT	BOTTOM	DNG	DRAWING	H/C	HOSE BIB	OPNG or OPNG'	OWNER FURNISHED	STD	STANDARD
BF	BOTTOM OF	EA	EACH	HDWD	HANDICAPPED	OPP	OWNER INSTALLED	STL	STEEL
BFL	BLIND FLANGE	ECC	ECCENTRIC	HDWR	HARDWOOD		OPENING	STR	STRUCTURAL
BFP	BACKFLOW PREVENTER	EF	EACH FACE	HM	HARDWARE		OPPOSITE	SUSP	SUSPENDED
BLDG	BUILDING	EJ	EXPANSION JOINT	HORIZ	HOLLOW METAL	P&ID	PROCESS AND	S.V.	STAIN AND VARNISH
BLK	BLOCK	EL	ELEVATION	HP	HORIZONTAL		INSTRUMENTATION DIAGRAM	T	TOP
BLKG	BLOCKING	ELEC	ELECTRICAL	HT	HIGH POINT	P. LAM.	PLASTIC LAMINATE	T	TREAD
BM	BEAM	EL	ELEVATION	HWL	HEIGHT	PDC	PORTLAND CEMENT	T/	TOP OF
BOB	BOTTOM OF BEAM	ELL	ELBOW	EQ	HIGH WATER LEVEL	PJF	PREFORMED JOINT FILLER	T/S	TOP OF STEEL
BOT	BOTTOM	EQ	EQUAL	EQUIP	EQUIPMENT	PL	PLATE	T&B	TOP AND BOTTOM
BRD	BOARD	EW	EACH WAY	EWC	ELECTRICAL WATER COOLER	PLAS	PLASTIC	T & G	TONGUE & GROOVE
CL	CENTERLINE	EX	EXISTING	EXT	EXISTING	PLYWD	PLYWOOD	TDC	TRAFFIC DECK COVERING
CEM	CEMENT	EXP	EXPANSION	EXP JT	EXPANSION JOINT	PR	PAIR	TMP	TEMPERED
CH	CEILING HEIGHT	EXT	EXTERIOR			PREP	PREPARATION	THK	THICK
CJT	CONTROL JOINT	F	FACE OF			PROJ	PROJECTION	TOC	TOP OF CONCRETE or CURB
CL	CENTERLINE	FCA	FLANGED COUPLING ADAPTOR			PT	PAINT	TOP	TOP OF PARAPET
CLG or CEIL	CEILING	FD	FLOOR DRAIN			PVC	POLYVINYL CHLORIDE	TOS	TOP OF STEEL
CLO	CLOSET	FE	FIRE EXTINGUISHER			QT	QUARRY TILE	TOW	TOP OF WALL
CLR	CLEAR	FEC	FIRE EXTINGUISHER CABINET					TYP	TYPICAL
CMU	CONCRETE MASONRY UNIT	FF	FINISH FLOOR			R	RISER	UNO	UNLESS NOTED OTHERWISE
CO	CLEAN OUT	FFE	FINISH FLOOR ELEVATION			R or RAD	RADIUS		
COL	COLUMN	FHT	FIRE HOSE CABINET			RC	ROOF CONDUCTOR	VYLB	VINYL BASE
COMPO	COMPOSITION	FHC	FINISH			RCP	REFLECTED CONCRETE PIPE	VCT	VINYL COMPOSITION TILE
CONC	CONCRETE	FIR	FLOOR			RCP	REFLECTED CEILING PLAN	VER	VERIFY
CONF	CONFERENCE	FLG	FINISHED OPENING			RD	ROOF DRAIN	VERT	VERTICAL
CONN	CONNECTION	FO	FACE OF CONCRETE			REC	RECESSED	VIF	VERIFY IN FIELD
CONST	CONSTRUCTION	FOS	FACE OF STUD			RED	REDUCER		
CONT	CONTINUOUS	FOUND	FOUNDATION			REDWD	REDWOOD	W	WIDE
CONTR	CONTRACT/CONTRACTOR	FRP	FIBER REINFORCED PLASTIC			REF	REFERENCE	W/	WITH
CONTR JT	CONTRACTION JOINT	FS	FULL SIZE			REFL	REFLECTED	WC	WATER CLOSET
CORR	CORRIDOR	FSD	FULL SIZE DETAIL			REIN	REINFORCED	WD	WOOD
CT	CERAMIC TILE	FT	FEET			REQ'D	REQUIRED	WL	WATER LEVEL
CPVC	CHLORINATED POLYVINYL CHLORIDE	FTG	FOOTING			RES	RESILIENT	W/O	WITHOUT
CSK	COUNTERSINK	FV	FIELD VERIFY			REV	REVISION/REVISED	WP	WATERPROOFING
CTR	CENTER					RM	ROOM	WS	WATERSTOP
								WWF	WELDED WIRE FABRIC
								YR	YEAR

FLOW STREAM IDENTIFIERS

ALP	AIR (LOW PRESSURE)	PE	PRIMARY EFFLUENT
AHP	AIR (HIGH PRESSURE)	PFI	PRIMARY FILTRATION INFLUENT
BD	BASIN DRAIN	PFE	PRIMARY FILTRATION EFFLUENT
BYP	BYPASS	PFS	PRIMARY FILTRATION SLUDGE (COMBINED BACKWASH WASTE AND SOLIDS WASTE DRAWOFF)
BWW	BACKWASH WASTE	PFTS	PRIMARY FILTRATION THICKENED SLUDGE
CEN	CENTRATE	PI	PRIMARY INFLUENT
CGR	COOLING GLYCOL RETURN	PO	POLYMER
CGS	COOLING GLYCOL SUPPLY	PSD	PRIMARY SLUDGE
D	DRAIN	PSM	PRIMARY SCUM
DCT	DECANT	RAS	RETURN ACTIVATED SLUDGE
DG	DIGESTER GAS	RCY	RECYCLE
DSC	DIGESTED SLUDGE	RCC	RECYCLE CHLORINE CLEAN
DS	DIGESTED SLUDGE	RWW	RAW WASTEWATER
DSH	DIGESTED SLUDGE HEATED	SA	SAMPLE
DSL	DIGESTED SLUDGE LOADOUT	SAN	SANITARY SEWER
DSM	DIGESTED SLUDGE MIXING	SBS	SODIUM BISULFITE
DST	DIGESTED SLUDGE TRANSFER	SCN	SCREENINGS
EXH	EXHAUST	SE	SECONDARY EFFLUENT
FE	FINAL EFFLUENT	SI	SECONDARY INFLUENT
FCL	FERRIC CHLORIDE	SHC	SODIUM HYPOCHLORITE
FLT	FILTRATE	SLD	SOLIDS WASTE DRAWOFF
GTO	GRAVITY THICKENER OVERFLOW	SSM	SECONDARY SCUM
GRS	GRIT SLURRY	SUP	SUPERNTANT
GRT	GRIT	TDSD	THICKENED DIGESTED SLUDGE
H2S	HYDROGEN SULFIDE	TPSD	THICKENED PRIMARY SLUDGE
HGR	HEATING GLYCOL RETURN	TS	THICKENED SLUDGE
HGS	HEATING GLYCOL SUPPLY	TWAS	THICKENED WASTE ACTIVATED SLUDGE
HWR	HEATING WATER RETURN	V	VENT
HWS	HEATING WATER SUPPLY	WAS	WASTE ACTIVATED SLUDGE
LPO	LIQUID POLYMER	W1	POTABLE CITY WATER
ML	MIXED LIQUOR	W2	NON-POTABLE CITY WATER
NG	NATURAL GAS	W3	PLANT EFFLUENT WATER (NON-POTABLE)
ODA	ODOROUS AIR	W4	WELL WATER
OF	OVERFLOW		

GENERAL NOTES:

- THIS IS STANDARD LEGEND. NOT ALL OF THE INFORMATION SHOWN ON THIS LEGEND IS NEEDED IN THESE CONTRACT DRAWINGS.
- WORK IN THIS CONTRACT SHOWN FULL-TONE UNLESS OTHERWISE NOTED.
- CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
- SEE SECTION 01 11 00 FOR PROJECT CONSTRAINTS.
- REFER TO DRAWING 1-G-07 FOR THE SPACE ENVIRONMENT/HAZARDOUS RATING SCHEDULE REGARDING ENVIRONMENTAL CONDITIONS ANTICIPATED WITHIN EACH SPACE AND ALLOWABLE MATERIALS OF CONSTRUCTION TO BE USED WITHIN EACH SPACE.
- HAZARDOUS RATINGS IDENTIFIED ON THE DRAWINGS INDICATE SPACES IN WHICH A HAZARDOUS ENVIRONMENT MAY GENERALLY EXIST. CONTRACTOR SHALL REFER TO SPACE ENVIRONMENT/HAZARDOUS RATING SCHEDULE IN DRAWING 1-G-07 FOR ADDITIONAL INFORMATION EXPLAINING THE EXTENT AND ENVELOPE ASSOCIATED WITH THESE HAZARDS.
- REFER TO DRAWING 1-G-03 FOR GENERAL CIVIL NOTES.
- REFER TO DRAWING 1-G-05 FOR GENERAL I&C NOTES.

GENERAL REMOVAL NOTES:

- CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
- FULL TONE COMPONENTS ON REMOVAL DRAWINGS TO BE REMOVED.
- SEE SECTION 01 11 00 FOR PROJECT CONSTRAINTS.
- SAWCUT AND REMOVE CONCRETE TO THE LIMITS NOTED. IN EXPOSED AREAS NOT COVERED BY NEW CONSTRUCTION, REMOVE REINFORCEMENT AND EMBEDMENTS 1" BEYOND FINISHED SURFACE AND PATCH SURFACE WITH PATCHING MORTAR TO MATCH ADJACENT FINISHED SURFACE.
- REMOVE CONCRETE ANCHORS, ANCHOR BOLTS, AND OTHER EMBEDMENTS FOR MATERIALS AND EQUIPMENT BEING REMOVED. IN EXPOSED AREAS NOT COVERED BY NEW CONSTRUCTION, REMOVE CONCRETE ANCHORS, ANCHOR BOLTS, AND OTHER EMBEDMENTS 1" BEYOND FINISHED SURFACE AND PATCH SURFACE WITH PATCHING MORTAR. FINISH SURFACE TO MATCH ADJACENT FINISHED SURFACE.
- WHERE EQUIPMENT IS INDICATED TO BE REMOVED, REMOVE ALL ASSOCIATED POWER AND CONTROL WIRING AND CONDUIT BACK TO SOURCE. REMOVE JUNCTION BOXES AND PULL BOXES ASSOCIATED WITH THE REMOVED CONDUITS. WHERE CONDUIT SYSTEM CONTAINS CIRCUITS TO OTHER EQUIPMENT THAT REMAINS, RETAIN THESE CIRCUITS AND RELOCATE EXISTING CONDUIT AND EXTEND EXISTING CIRCUITS AS REQUIRED FOR THE INSTALLATION OF NEW EQUIPMENT.
- REMOVE ALL SUPPORTS ASSOCIATED WITH REMOVED PIPING, DUCTWORK, CONDUIT, AND EQUIPMENT. REMOVE RODS AND FASTENERS FROM CEILINGS, FLOORS, AND WALLS WITH CARE. WHERE SURFACE HAS BEEN MARRED, CHIPPED, SPALLLED, ETC. AS A RESULT OF REMOVAL, PATCH SURFACE WITH PATCHING MORTAR AND FINISH TO MATCH ADJACENT FINISHED SURFACE.
- REMOVE EXISTING CONCRETE PADS OF ANY EQUIPMENT BEING REMOVED. REMOVE CONCRETE REINFORCEMENT A MINIMUM OF 1" BEYOND FINISHED SURFACE AT ANY LOCATION WHERE NEW CONCRETE PAD WILL NOT COVER ROUGH SURFACE OF REMOVED PAD. PATCH SURFACE WITH PATCHING MORTAR AND FINISH TO MATCH ADJACENT FINISHED SURFACE.
- WHERE OPENINGS ARE LEFT IN WALLS, SLABS, OR CEILINGS DUE TO REMOVED PIPING, DUCTWORK, EQUIPMENT, OR OTHER WORK, PATCH OPENING TO MATCH ADJACENT SURFACES UNLESS NOTED OTHERWISE. THE PERIMETER OF OPENINGS IN CONCRETE WALLS AND SLABS EXPOSED TO EARTH, WEATHER, OR WATER SHALL BE LINED WITH A GASKET TYPE WATERSTOP PRIOR TO PATCHING OF THE WALL. OPENINGS IN PRECAST CONCRETE ROOF MEMBERS ARE TO BE PATCHED WITH CONCRETE AND DOWELED TO THE EXISTING ROOF MEMBERS UNLESS NOTED OTHERWISE. ROOFING SYSTEM SHALL BE PATCHED TO PREVENT ANY LEAKING AT THE OPENING.

file: P:\14211map\Drawg\001C2_ Legends - SSM.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**GENERAL LEGEND
SYMBOLS, NOTES AND ABBREVIATIONS**



8/2023

Sheet No.

3

Drawing No.

1-G-02

LEGEND

EXISTING	PROPOSED	
		BENCHMARK
		CATCH BASIN
		CATV PEDESTAL
		CULVERT
		CULVERT OVER 24" (SHOWN ACTUAL SIZE)
		ELECTRIC MANHOLE
		ELECTRIC METER
		ELECTRIC PEDESTAL
		FLARED END SECTION
		GAS METER
		GATE VALVE
		GUY WIRE
		HANDHOLE
		INLET
		LIGHTPOLE
		SANITARY OR STORM MANHOLE
		SIGN
		SOIL BORING
		SURVEY CONTROL POINT
		TELEPHONE PEDESTAL
		TREE (CONIFEROUS & DECIDUOUS)
		SHRUB & BUSH
		TREE/SHRUB LINE
		WATER VALVE
		WATER VALVE WITH BOX
		WATER VALVE WITH VAULT
		WATER FIRE HYDRANT
		WATER YARD HYDRANT

LINE TYPE IDENTIFICATION

EXISTING	PROPOSED	
		BUILDING
		CABLE TV
		CENTERLINE OF ROAD
		CONTOUR
		DITCH/SWALE
		EASEMENT
		FENCE
		ELECTRIC
		ELECTRICAL DUCT
		FIBER OPTIC
		FORCEMAIN
		GAS
		GUARDRAIL
		OVERHEAD ELECTRIC
		PIPE, ABANDON
		PIPE, PREVIOUSLY ABANDONED
		PIPE OVER 24" (SHOWN ACTUAL SIZE)
		PROPERTY LINE
		R.O.W.
		RAILROAD
		SANITARY SEWER
		SILT FENCE
		STORM SEWER
		TELEPHONE
		WATER

GENERAL NOTES

- THE MAPPING AND UNDERGROUND UTILITY INFORMATION SHOWN IS FROM FRSA GIS INFORMATION AND RECORD DRAWINGS.
- DIMENSIONS OR COORDINATES TAKE PRECEDENCE OVER SCALE. CONTRACTORS TO VERIFY ALL DIMENSIONS AND COORDINATES IN THE FIELD FOR PROPER FIT AND ALIGNMENT.
- THE CONTRACTOR SHALL CONTACT THE ILLINOIS ONE CALL SYSTEM (O.C.S.) A MINIMUM OF 72 HOURS PRIOR TO PERFORMING ANY EARTH MOVING OR EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL ALSO CONTACT ANY OTHER UTILITIES WHICH MAY BE PRESENT WHICH ARE NOT PART OF THE ONE CALL SYSTEM. NOTIFY PLANT STAFF ONE WEEK IN ADVANCE OF PLANT UTILITY LOCATION NEEDS TO ALLOW ADEQUATE RESPONSE TIME FOR PLANT STAFF. CONTACT: WARREN ADAM 815-871-0787.
- THE CONTRACTOR SHALL PROVIDE 72 HOURS NOTIFICATION IN ADVANCE OF ANY SITE EXCAVATION WORK (IF REQUIRED) TO ALLOW THE OWNER AN OPPORTUNITY TO GPS LOCATE ALL STRUCTURES AND UTILITIES THAT ARE EXPOSED DURING EXCAVATION. CONTACT: WARREN ADAM 815-871-0787.
- EXISTING BURIED UTILITIES SHOWN IN PLAN AND PROFILE ARE INDICATED IN ACCORDANCE WITH THE AVAILABLE RECORDS AND FIELD INFORMATION AVAILABLE TO THE ENGINEER. OTHER UTILITIES MAY ALSO BE PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING FROM THE OWNERS OF THE EXISTING UTILITIES THE LOCATION OF THEIR BURIED FACILITIES. ANY UTILITIES DAMAGED OR DESTROYED BY THE CONTRACTOR'S OPERATIONS WHETHER SHOWN ON THE DRAWINGS OR NOT, SHALL BE REPLACED OR REPAIRED TO THE UTILITY'S SATISFACTION AT NO COST TO THE OWNER.
- IF UTILITY FACILITIES OTHER THAN THOSE SHOWN ARE LOCATED, OR IF UTILITIES ARE LOCATED WHICH ARE NOT IN ACCORDANCE WITH THE LOCATION SHOWN ON THE DRAWINGS, THE ENGINEER SHALL BE NOTIFIED TO DETERMINE IF PLAN REVISIONS ARE NEEDED. CONTRACTOR IS REQUIRED TO FIELD LOCATE ALL CROSSING UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION ACTIVITIES TO ALLOW ENGINEER TO REVISE LOCATIONS OF NEW FACILITIES TO AVOID CONFLICTS WITHOUT ADDITIONAL COST TO OWNER.
- ACCESS CONSTRAINTS TO BE PLACED ON THE CONTRACTOR FOR THE PROJECT ARE SPECIFIED IN SECTION 01 11 00 OF THE SPECIFICATIONS.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL SITE FACILITIES DURING CONSTRUCTION. CONTRACTOR SHALL PLAN ITS WORK SEQUENCE AND ACTIVITIES TO ENSURE THAT ITS WORK DOES NOT INTERFERE WITH PUBLIC NEEDS OR PUBLIC FACILITIES OPERATIONS, DELIVERIES, PICKUPS OR OTHER ACCESS NEEDS.
- THE CONTRACTOR SHALL COORDINATE THE ACTIVITIES OF ITS PERSONNEL, SUBCONTRACTORS, AND UTILITIES PERFORMING WORK ON THIS PROJECT. THE CONTRACTOR SHALL ALSO COORDINATE WITH AUTHORITY CREWS AND OTHER CONTRACTORS WORKING IN OR NEAR THE PROJECT AREA.
- CONTRACTOR SHALL RECEIVE ALL OF THEIR DELIVERIES. CONTRACTOR DELIVERIES ARE NOT ALLOWED TO OWNER'S MAINTENANCE BUILDING OR ADMINISTRATION BUILDING.
- THE CONTRACTOR SHALL MAINTAIN ON FILE WITH THE OWNER AND ENGINEER A CURRENT LIST OF EMERGENCY TELEPHONE NUMBERS FOR THE CONTRACTORS SUPERVISORY PERSONNEL ASSIGNED TO THIS PROJECT. NO LESS THAN 2 NAMES WITH 24 HOUR PHONE NUMBERS SHALL BE INCLUDED.
- ELEVATIONS CALLED OUT ON THE DRAWINGS ARE TYPICALLY AT THE "INVERT" OR BOTTOM OF PIPES AND STRUCTURES, ALONG THE FLOW LINE IN GUTTERS AND SWALES, AND AT THE "RIM" OR TOP (FINISHED GRADE) OF THE FRAME AND COVERS. OTHER ELEVATIONS ARE SPECIFICALLY NOTED.
- UNLESS NOTED OTHERWISE RESTORATION OF EXISTING SANITARY SEWERS AND SERVICE LINES, WATER MAINS AND SERVICE LINES, STORM SEWERS, OTHER UTILITIES, SIDEWALKS, CURBS, DRIVEWAYS, STREETS OR OTHER IMPROVEMENTS NOT SHOWN AS BEING REMOVED, REPLACED OR MODIFIED BY THE PROJECT IS REQUIRED ONLY TO THE EXTENT THEY ARE DAMAGED OR DISTURBED BY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL RESTORE ALL DAMAGED AND DISTURBED IMPROVEMENTS TO THE IMPROVEMENT OWNERS AND ENGINEERS SATISFACTION.
- WHERE NEW WORK ABUTS EXISTING CURBS, SIDEWALK, DRIVES, OR OTHER PAVEMENTS WHICH ARE TO REMAIN IN PLACE, THE CONTRACTOR SHALL PROVIDE NEAT SAWCUTS, FULL DEPTH AT THE LIMIT OF CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE SUPPORT AND SHALL MAINTAIN SERVICE TO ALL ABOVE AND BELOW GRADE UTILITIES INCLUDING POLES, CABLES, WIRES, WATER, GAS, STORM, AND SANITARY FACILITIES, OR WITH THE WRITTEN CONCURRENCE OF THE UTILITY OWNER, MAY REMOVE, STORE, REINSTALL AND REPLACE AS NECESSARY.
- CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING CONSTRUCTION OF THE PROJECT.
- THE CONTRACTOR SHALL PROTECT ALL PROPERTY PINS (STEEL REBARS, PIPES, CAPPED PINS, ETC.) WHICH WERE FOUND OR LOCATED ON THE PROJECT SITE WHETHER SHOWN ON THE PLANS OR ENCOUNTERED DURING CONSTRUCTION FROM BEING DAMAGED, DESTROYED OR MOVED. IF PROPERTY PINS ARE DAMAGED, DESTROYED OR MOVED, THE CONTRACTOR SHALL PROVIDE THE SERVICES OF A LICENSED ILLINOIS LAND SURVEYOR TO REPLACE THEM AT NO COST TO THE OWNER.
- AS PART OF THE CONTRACTORS RESPONSIBILITIES A DETAILED SET OF RECORD DRAWINGS SHALL BE KEPT TO RECORD CHANGES OR DEVIATIONS FROM THE PLANS AND TO SHOW EXISTING UNDERGROUND UTILITIES OR OTHER FEATURES ENCOUNTERED DURING CONSTRUCTION.
- COORDINATE ALL PLANT OUTAGES WITH THE OWNER PER SECTION 01 11 00.

ABBREVIATIONS

AGG	AGGREGATE	NG	NATURAL GAS
B/C	BACK OF CURB	OH	OVERHEAD UTILITY
BIT	BITUMINOUS/ASPHALT	PC	POINT OF CURVATURE
CIP	CAST IRON PIPE	PE	POLYETHYLENE PIPE
CO	CLEANOUT	PI	POINT OF INTERSECTION
CONC	CONCRETE	PL	PROPERTY LINE
CMP	CORRUGATED METAL PIPE	PT	POINT OF TANGENCY
CSP	CONCRETE SEWER PIPE	PVC	POLYVINYL CHLORIDE PIPE
		PVI	POINT OF VERTICAL INTERSECTION
DIA	DIAMETER	R	RADIUS
DIP	DUCTILE IRON PIPE	RCP	REINFORCED CONCRETE PIPE
DWP	DEWATERING PIPE	RIM	TOP OF CASTING ELEVATION
EXIST	EXISTING	ROW	RIGHT OF WAY
EOP	EDGE OF PAVEMENT	RT	RIGHT
F&C	FRAME AND COVER	SAN	SANITARY SEWER
F/C	FACE OF CURB	STM	STORM SEWER
F TO F	FACE TO FACE	SD	SUMP DISCHARGE
FG	FINISHED GRADE	T/C	TOP OF CURB
FES	FLARED END SECTION	TW	TOP OF WALL
INV	INVERT	UD	UNDERDRAIN
L	LENGTH OF CURVE	VC	VERTICAL CURVE
LF	LINEAR FT		
LT	LEFT		

SYMBOLS

	PROPOSED HMA PAVEMENT
	PROPOSED PCC PAVEMENT
	PROPOSED PCC SLEEPER SLAB
	PROPOSED PCC SIDEWALK
	TURF RESTORATION
	STRUCTURE DEMOLITION
	HMA PAVEMENT REMOVAL
	PCC PAVEMENT REMOVAL
	PCC SIDEWALK REMOVAL
	CURB & GUTTER REMOVAL
	STAGING AREA

NOTE:

- PROCESS FLOW STREAM IDENTIFIERS SAME AS SHOWN ON THE PROCESS MECHANICAL LEGEND
- THIS IS STANDARD LEGEND. NOT ALL OF THE INFORMATION SHOWN ON THIS LEGEND IS NEEDED IN THESE CONTRACT DRAWINGS.

file: P:\14211\map\Dwg\001C2_ Legends - SSM.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**GENERAL LEGEND
CIVIL LEGEND AND GENERAL NOTES**



8/2023

Sheet No.

4

Drawing No.

1-G-03

PLUMBING / HVAC ABBREVIATIONS AND SYMBOLS

PLUMBING LEGEND

---	HW - HOT WATER PIPE (ON PLUMBING DRAWINGS)		TRENCH DRAIN		GLOBE VALVE
---	HWRE - HOT WATER RECIRCULATING PIPE (ON PLUMBING DRAWINGS)		YARD HYDRANT		PLUG VALVE
---	HWS - HEATING WATER SUPPLY PIPE (ON HVAC DRAWINGS)		WALL HYDRANT		PRESSURE REDUCING VALVE
---	HWR - HEATING WATER RETURN PIPE (ON HVAC DRAWINGS)		HOSE BIBB		RELIEF OR SAFETY VALVE
---	PIPE (REFER TO FLOW STREAM IDENTIFIERS)		REDUCER (CONCENTRIC)		CONTROL VALVE (2-WAY)
---	BELOW SLAB OR BURIED PIPE (REFER TO FLOW STREAM IDENTIFIERS)		REDUCER (ECCENTRIC)		CONTROL VALVE (3-WAY)
---	VENT		BALL VALVE		BALANCING VALVE
	ELBOW FITTING (TURNED DOWN)		BUTTERFLY VALVE		MANUAL AIR VENT
	ELBOW FITTING (TURNED UP)		CHECK VALVE		STRAINER
	TEE OUTLET UP		GATE VALVE		BACKFLOW PREVENTER
	TEE OUTLET DOWN		ANGLE STOP		WATER HAMMER ARRESTOR
	PIPE ANCHOR				
	PIPE HANGER				
	PIPE GUIDE				
	CAP				
	EXPANSION JOINT				
	UNION				
	FLANGE				
	VENT THRU ROOF				
	FLOOR DRAIN				
	CLEANOUT				
	FLOOR CLEANOUT				
	WALL CLEANOUT				
	HUB DRAIN				
	ROOF DRAIN				
	OVERFLOW DRAIN				

HVAC LEGEND

	ACCESS DOOR		STAT, T=TEMP, H=HUMIDITY, P=PRESSURE, G=GAS
	DUCT (FIRST FIG. IS SIDE SHOWN)		SENSOR WITH DISPLAY AND ADJUSTMENT
	DUCT SECTION (RETURN)		SENSOR WITHOUT DISPLAY OR ADJUSTMENT
	DUCT SECTION (SUPPLY)		ALARM WARNING LIGHT WITH HORN
	DUCT LINING		ALARM WARNING LIGHT WITH HORN
	RETURN, EXHAUST OR SUPPLY GRILLE W/ MVD		FIRE DAMPER
	ELBOW DOWN		MOTOR OPERATED DAMPER
	ELBOW W/ TURNING VANES		GRAVITY BACKDRAFT DAMPER
	MANUAL VOLUME DAMPER		PRESSURE GAUGE
	FLEXIBLE CONNECTOR		THERMOMETER
	SMOKE DETECTOR		

FLOWSTREAM IDENTIFIERS

AI	INSTRUMENT AIR	CWS	CHILLED WATER SUPPLY	HWS	HEATING WATER SUPPLY	TW	TEMPERED WATER
AHP	AIR (HIGH PRESSURE)	F	FIRE SPRINKLER	NG	GAS (NATURAL)	V	VENT
AV	ACID VENT	HGR	HEATING GLYCOL RETURN	ODA	ODOROUS AIR	W1	POTABLE CITY WATER
AW	ACID WASTE	HGS	HEATING GLYCOL SUPPLY	RHG	REFRIGERANT (HOT GAS)	W2	NON-POTABLE CITY WATER
CND	CONDENSATE	HPHW	HIGH PRESSURE HOT WATER	RL	REFRIGERANT (LIQUID)	W3	PLANT EFFLUENT WATER (NOT-POTABLE)
CGR	COOLING GLYCOL RETURN	HPW	HIGH PRESSURE WATER	RS	REFRIGERANT (SUCTION)	W4	WELL WATER (NON-POTABLE)
CGS	COOLING GLYCOL SUPPLY	HW	HOT WATER	SAN	SANITARY SEWER	"A"	WATER HAMMER SIZE, LETTERS AND
CR	CONDENSATE RETURN	HWR	HEATING WATER RETURN	SLP	STEAM (LOW PRESSURE)		
CWR	CHILLED WATER RETURN	HWRE	HOT WATER RECIRCULATION	STM	STORM SEWER		

ABBREVIATIONS

AF	ABOVE FINISHED FLOOR	EL	ELEVATION	MVD	MANUAL VOLUME DAMPER	TOD	TOP OF DUCT
BDD	BACKDRAFT DAMPER	EXP	EXPLOSION PROOF	OA	OUTSIDE AIR	VTR	VENT THROUGH ROOF
BOD	BOTTOM OF DUCT	H-O-A	HAND-OFF-AUTO SWITCH	PSIG	POUND PER SQUARE INCH (GAUGE)	WSFU	WATER SUPPLY FIXTURE UNIT
CL	CENTER LINE ELEVATION	HP	HIGH POINT	THRU	THROUGH	VIF	VERIFY IN FIELD
DFU	DRAINAGE FIXTURE UNIT	LP	LOW POINT				

EQUIPMENT TAG IDENTIFIERS

ACU	AIR CONDITIONING UNIT	EWH	ELECTRIC WATER HEATER	IH	INTAKE HOOD	SG	SUPPLY GRILLE
ACCU	AIR COOLED CONDENSING UNIT	EWS	EMERGENCY WASH STATION	LAV	LAVATORY	SHR	SHOWER
AHU	AIR HANDLING UNIT	FCU	FAN COIL UNIT	MAU	MAKE-UP AIR UNIT	SP	SUMP PUMP
B	BOILER	FD	FLOOR DRAIN	MCD	MOTOR CONTROL DAMPER	SPCP	SUMP PUMP CONTROL PANEL
BS	BRANCH SELECTOR	GDCP	GAS DETECTION CONTROL PANEL	MS	MOP SINK	SS	SERVICE SINK
CO	CLEANOUT	GUH	GAS UNIT HEATER	OAL	OUTSIDE AIR LOUVER	TCP	TEMPERATURE CONTROL PANEL
CP	CIRCULATING PUMP	GWH	GAS WATER HEATER	P	PUMP	TG	TRANSFER GRILLE
CS	COUNTERTOP SINK	HB	HOSE BIB	RAL	RELIEF AIR LOUVER	TMV	THERMOSTATIC MIXING VALVE
DEH	DEHUMIDIFIER	HD	HUB DRAIN	RD	ROOF DRAIN	UR	URINAL
EAL	EXHAUST AIR LOUVER	HP	HEAT PUMP	RG	RETURN GRILLE	VAV	VARIABLE AIR VOLUME BOX
EEW	EMERGENCY EYEWASH STATION	HPHW	HIGH PRESSURE HOT WATER SYSTEM	RH	RELIEF HOOD	WCCU	WATER COOLED CONDENSING UNIT
EF	EXHAUST FAN	HPW	HIGH PRESSURE WATER SYSTEM	RHP	RADIANT HEATING PANEL	WC	WATER CLOSET
EG	EXHAUST GRILLE	HU	HOT WATER UNIT HEATER	RPZ	REDUCED ZONE PRESSURE BACKFLOW PREVENTER	WH	WALL HYDRANT
EH	ELECTRIC HEATER	HWC	HOT WATER CONVECTOR	RTU	ROOFTOP UNIT		
EUH	ELECTRIC UNIT HEATER	ICD	INSULATED MOTOR CONTROL DAMPER	SD	SUPPLY DIFFUSER		
EWC	ELECTRIC WATER COOLER			SF	SUPPLY FAN		

ELECTRICAL ABBREVIATIONS AND SYMBOLS

ABBREVIATIONS

A	AMPERE
AF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
C	CONTACTOR/CONDUIT/COIL
CB	CIRCUIT BREAKER
CKT, CCT	CIRCUIT
DISC	DISCONNECT
EP	EXPLOSION PROOF
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GRD	GROUND
GRS	GALVANIZED RIGID STEEL
HF	HARMONIC FILTER
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
J	JUNCTION BOX
KVA	KILOVOLT AMPERE
KW	KILOWATT
LCP	LOCAL CONTROL PANEL
LP	LIGHTING PANEL
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MV	MEDIUM VOLTAGE MANHOLE
NEC	NATIONAL ELECTRICAL CODE (ANSI/NFPA-70)
NEU, N	NEUTRAL
NC	NORMALLY CLOSED
NF	NON FUSED
NGR	NEUTRAL GROUND RESISTOR
NO	NORMALLY OPEN
OL	OVERLOAD RELAY
PC	PHOTOCELL
PMG	PADMOUNT GEAR
PMT	PADMOUNT TRANSFORMER
PP	POWER PANEL
PVC	POLY VINYL CHLORIDE
SW	SWITCH
SWBD	SWITCH BOARD
SWGR	SWITCHGEAR
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
XFMR	TRANSFORMER

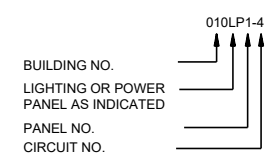
PLAN SYMBOLS

	LED OR FLUORESCENT FIXTURE - RECESSED (LETTER DENOTES TYPE)		MANUAL STARTER WITH PILOT LIGHT
	LED OR FLUORESCENT FIXTURE - SURFACE/SUSPENDED (LETTER DENOTES TYPE)		THREE PHASE MAGNETIC STARTER
	LED OR FLUORESCENT FIXTURE - WALL MOUNTED (LETTER DENOTES TYPE)		INFORMATION OUTLET
	LED OR HID FIXTURE - WALL MOUNTED (LETTER DENOTES TYPE)		THREE PHASE COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH
	LED OR HID FIXTURE - POLE MOUNTED FIXTURE (LETTER DENOTES TYPE)		SINGLE PHASE MAGNETIC STARTER
	LED OR HID FIXTURE - SURFACE/SUSPENDED (LETTER DENOTES TYPE)		NON-FUSED DISCONNECT SWITCH (NUMERAL INDICATES SWITCH RATING)
	EMERGENCY BATTERY LIGHT		FUSED DISCONNECT SWITCH - 3 POLE (UPPER NUMERAL INDICATES SWITCH RATING) (LOWER NUMERAL INDICATES FUSE RATING)
	REMOTE HEAD FOR EMERGENCY BATTERY LIGHT		3-PHASE MANUAL MOTOR SWITCH
	EXIT LIGHT WITH INDICATING DIRECTIONAL ARROW		LIGHTING PANEL
	SWITCH (SINGLE POLE, 2-POLE, 3-WAY, 4-WAY)		TRANSFORMER
	MOMENTARY CONTACT SWITCH - CENTER OFF		POWER PANEL
	SWITCH / PILOT LIGHT		TERMINAL CABINET (ITC - INDICATES INSTRUMENTATION) (TTC - INDICATES TELEPHONE)
	DUPLEX GROUNDED RECEPTACLE - 120V		MOTOR
	EXPLOSIONPROOF SIMPLEX GROUNDED RECEPTACLE - 120V		JUNCTION BOX
	TELEPHONE OUTLET, WALL MOUNT WITH 3/4" CONDUIT TO TELEPHONE TERMINAL CABINET		HANDHOLE
	DATA INFORMATION OUTLET		MANHOLE
	RECESSED CEILING SPEAKER		SURVEILLANCE CAMERA
	VOLUME CONTROL		GROUND ROD
	WALL SPEAKER		CONDUIT STUB
	SMOKE DETECTOR		CONDUIT TURNING UP OR TO OBSERVER
	FIRE ALARM HORN		CONDUIT TURNING DOWN OR AWAY FROM OBSERVER
	FIRE ALARM HORN AND STROBE		FLEXIBLE CONDUIT CONNECTION
	FIRE ALARM STROBE		HOMERUN CIRCUIT OR CONDUCTORS
	FIRE ALARM PULL STATION		DIRECT BURIAL CABLE
	HEAT DETECTOR		UNDERGROUND ELECTRICAL DUCT, CONCRETE ENCASED.
	FLOW SWITCH		
	MOTION DETECTOR		
	SPECIAL PURPOSE RECEPTACLE, NEMA TYPE AND AMPERE RATING AS INDICATED		

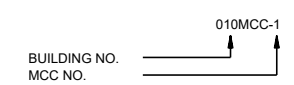
ONE-LINE SYMBOLS

	MOLDED CASE CIRCUIT BREAKER (UPPER NUMERAL INDICATES FRAME SIZE) (LOWER NUMERAL INDICATES TRIP SETTING) (CL - INDICATES CURRENT LIMITING CIRCUIT BREAKER) (M - INDICATES MOTOR CIRCUIT PROTECTOR) (NUMERAL INDICATES NEMA SIZE)
	TRANSFORMER
	COMBINATION MAGNETIC STARTER WITH MOLDED CASE CIRCUIT BREAKER (FVNR - INDICATES FULL VOLTAGE NON-REVERSING) (FVR - INDICATES FULL VOLTAGE REVERSING) (SSRV - INDICATES SOLID STATE REDUCED VOLTAGE) (TSTW - INDICATES TWO SPEED TWO WINDING) (TSSW - INDICATES TWO SPEED SINGLE WINDING) (CONT - INDICATES CONTACTOR) (AUXILIARY CONTACTS - (2a TWO N.O.)(1b ONE N.C.) (NUMERAL INDICATES NEMA SIZE)
	GROUND
	MOTOR (NUMERAL INDICATES HORSEPOWER)
	GENERATOR
	DRAW-OUT CIRCUIT BREAKER (NUMERAL INDICATES DEVICE NUMBER)
	FUSED SWITCH (NUMERAL INDICATES FUSE SIZE)
	MEDIUM-VOLTAGE TERMINATION
	CURRENT TRANSFORMER AND PROTECTIVE DEVICE (NUMERAL INDICATES DEVICE NUMBER)
	KIRK KEY INTERLOCK

PANELBOARDS



MOTOR CONTROL CENTER



DEVICE NUMBER	FUNCTION
27	UNDervOLTAGE RELAY
32	REVERSE POWER RELAY
46	PHASE-BALANCE CURRENT RELAY
47	PHASE-SEQUENCE VOLTAGE RELAY
50	INSTANTANEOUS OVERCURRENT
51	AC TIME OVERCURRENT RELAY
51N	GROUND OVERCURRENT
52	AC CIRCUIT BREAKER
59	OVERVOLTAGE RELAY
67	AC DIRECTIONAL OVERCURRENT
81	OVER/UNDER FREQUENCY RELAY
86	LOCKOUT RELAY
89	POTENTIAL TRANSFORMER

NOTE:
1. THIS IS STANDARD LEGEND. NOT ALL OF THE INFORMATION SHOWN ON THIS LEGEND IS NEEDED IN THESE CONTRACT DRAWINGS.

file: P:\14211map\Drawg001C2 Legends - SSM.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

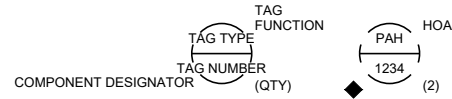
**GENERAL LEGEND
PLUMBING LEGEND/HVAC LEGEND/ ELECTRICAL LEGEND**



8/2023

Sheet No.
5
Drawing No.
1-G-04

INSTRUMENT TAG IDENTIFICATION



TAG TYPE P: FIRST LETTER, SEE TABLE BELOW
 AH: SUCCEEDING LETTERS, SEE TABLE BELOW

TAG NUMBER 1234: INSTRUMENT NUMBER

TAG FUNCTION HOA: TAG FUNCTION ABBREVIATION, SEE LISTING AT RIGHT

(QUANTITY) (2): TOTAL NUMBER OF DEVICES WHERE MORE THAN ONE DEVICE IS REQUIRED. DEVICE NUMBERS ARE SEQUENTIAL BEGINNING WITH THE TAG NUMBER SHOWN. IF QUANTITY IS NOT SHOWN THEN ONE DEVICE ONLY IS REQUIRED.

COMPONENT DESIGNATOR ◆ SEE LISTING AT RIGHT

MISCELLANEOUS ABBREVIATIONS

ACC	ACCUMULATE/ACCUMULATION	MC	MEDIA CONVERTER
ALT	ALTERNATE	MM	MULTIMODE
CAM	CAMERA	MS	MOTOR STARTER
CN	CONTROLNET	NIC	NETWORK INTERFACE CARD
CPU	CENTRAL PROCESSING UNIT	OIU	OPERATOR INTERFACE UNIT
CTL	CONTROL		
DN	DEVICENET	PCN	PROCESS CONTROL NETWORK
DO	DATA OUTLET	PLC	PROGRAMMABLE LOGIC CONTROLLER
DSC	DISCONNECT	PROT	PROTECTOR/PROTECTION
ETM	ELAPSED TIME METER	PTR	PRINTER
FOC	FIBER OPTIC CABLE	PWR	POWER
FW	FIREWALL	RAD	RADIO
HMI	HUMAN MACHINE INTERFACE	RIO	REMOTE I/O
INIT	INITIATE	SBOX	SPLICE BOX
INT	INTERVAL	SEQ	SEQUENCE
IP	INTERNET PROTOCOL	SM	SINGLE MODE
		SW	SWITCH
JBX	JUNCTION BOX	TEMP	TEMPERATURE
MOR	MOTOR OVERLOAD RELAY	UPS	UNINTERRUPTIBLE POWER SUPPLY
MPR	MOTOR PROTECTION RELAY		

MEANINGS OF INSTRUMENT IDENTIFICATION LETTERS

LETTER	FIRST LETTER (S)		SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (*)		ALARM (W. LOGGING)	ANNUNCIATE	
B	BURNER, FLAME, COMBUSTION		USERS CHOICE (*)	USERS CHOICE (*)	USERS CHOICE (*)
C	USERS CHOICE (*)			CONTROL	
D	USERS CHOICE (*)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			FEEDBACK
G	USERS CHOICE (*)		GLASS, VIEWING DEVICE		
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE	TIME RATE OF CHANGE	KEYPAD (DATA ENTRY)	CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTOR, MOISTURE, HUMIDITY	MOMENTARY			MONITORING
N	USERS CHOICE (*)		USERS CHOICE (*)	USERS CHOICE (*)	USERS CHOICE (*)
O	USERS CHOICE (*)		ORIFICE		
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR HEAT DUTY	INTEGRATE			
R	RADIATION		RECORD, TREND, LOG		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	UNIVERSAL/MULTIVARIABLE (*)		MULTIFUNCTION (*)	MULTIFUNCTION (*)	MULTIFUNCTION (*)
V	VIBRATION, MECHANICAL ANAL.			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE, TORQUE		WELL		
X	UNCLASSIFIED (*)	X AXIS	UNCLASSIFIED (*)	UNCLASSIFIED (*)	UNCLASSIFIED (*)
Y	EVENT, STATE, OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

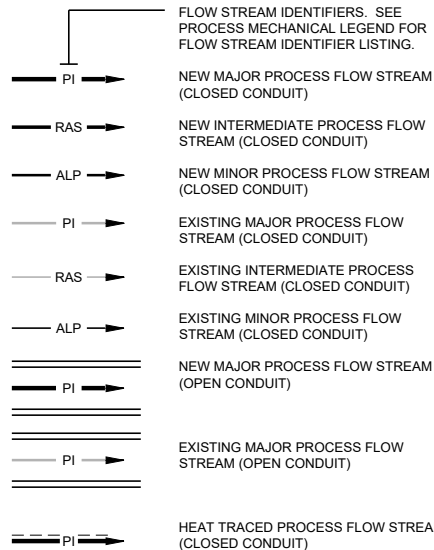
(*) WHEN USED, AN EXPLANATION IS SHOWN ADJACENT TO SYMBOL.

TAG FUNCTION ABBREVIATIONS

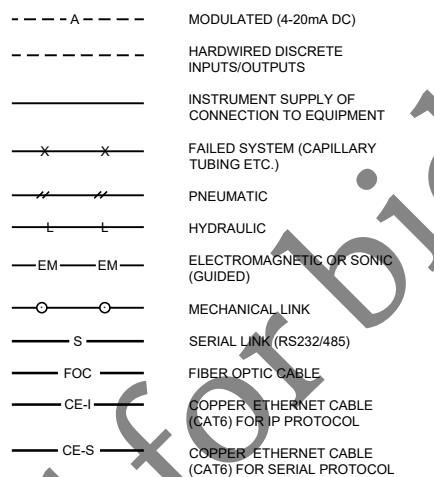
ALT	ALTERNATE
C	CLOSE/CLOSED
COMM	COMMUNICATIONS
CM	COMPUTER-MANUAL
DIFF	DIFFERENCE/DIFFERENTIAL
DN	DEVICENET
DO	DISSOLVED OXYGEN
ESTP	EMERGENCY STOP (ESTOP)
F	FAIL
F(X)	CHARACTERIZED/FUNCTION
FOR	FORWARD-STOP(OFF)-REVERSE (MAINTAINED CONTACT)
FSR	FORWARD-STOP-REVERSE (MOMENTARY CONTACT)
FWD	FORWARD
F/R	FORWARD/REVERSE (MOTOR STARTER COILS)
HOA	HAND-OFF-AUTOMATIC (MAINTAINED CONTACT)
HOR	HAND-OFF-REMOTE (MAINTAINED CONTACT)
II	CURRENT TO CURRENT
IP	CURRENT TO PNEUMATIC
LL	LEAD-LAG (MAINTAINED CONTACT)
LOE	LOSS OF ECHO (ULTRASONIC SENSOR FAILURE)
LOR	LOCAL-OFF-REMOTE (MAINTAINED CONTACT)
LOS	LOCKOUT STOP (LOCKABLE IN STOP POSITION)
L/R	LOCAL-REMOTE (MAINTAINED CONTACT)
MA	MANUAL-AUTOMATIC (MAINTAINED CONTACT)
MOA	MANUAL-OFF-AUTOMATIC (MAINTAINED CONTACT)
O	OPEN/OPENED
OA	OFF-AUTOMATIC
OCA	OPEN-CLOSE-AUTOMATIC (MAINTAINED CONTACT)
OC	OPEN-CLOSE
OSC	OPEN-STOP-CLOSE (SPRING RETURN TO CENTER)
OO	ON-OFF (MAINTAINED CONTACT)
OOA	ON-OFF-AUTO (MAINTAINED CONTACT)
OOR	ON-OFF-REMOTE (MAINTAINED CONTACT)
QTY	QUANTITY
R	RUN
REV	REVERSE
RST	RESET
SBL	SLUDGE BLANKET INTERFACE LEVEL
SP	SPEED POTENTIOMETER
SPD	SPEED
SQRT	SQUARE ROOT
SS	START-STOP (MOMENTARY CONTACT)
SSA	START-STOP-AUTOMATIC (MOMENTARY CONTACT)
SSL	START-STOP-LOCK (LOCKABLE IN STOP POSITION)
SUM	SUMMATION
VIB	VIBRATION
X	MULTIPLE/MULTIPLY

LINE IDENTIFICATION

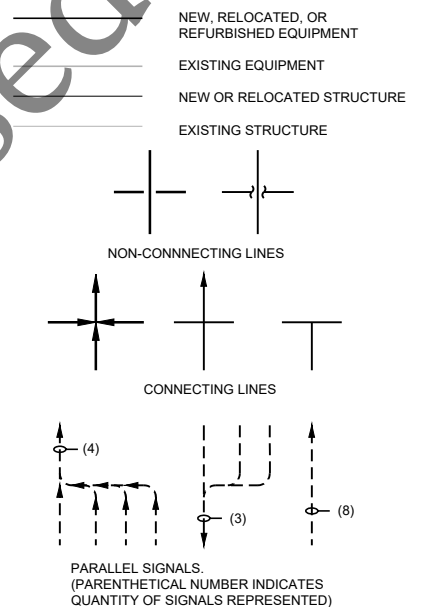
PROCESS FLOW



SIGNALS



STRUCTURES AND EQUIPMENT



CONTROL PANEL IDENTIFICATION

TAG NUMBER

XX-YY-ZZ ◆

XX : CONTROL PANEL TYPE (SEE EQUIPMENT ABBREVIATION LIST BELOW)
 YY : CONTROLLED EQUIPMENT
 ZZ : EQUIPMENT NUMBER
 ◆ : COMPONENT DESIGNATOR

EQUIPMENT ABBREVIATIONS

ACU	AIR CONDITIONING UNIT
BKPV	BACKUP VALVE
BWP	BWW PUMP
BWV	BACKWASH WASTE VALVE
CP	CONTROL PANEL
CS	CONTROL STATION
EF	EXHAUST FAN
EUH	ELECTRIC UNIT HEATER
FDVLV	FILTER DRAIN VALVE
GBT	GRAVITY BELT THICKENER
GBTDP	GBT THICKENED SLUDGE/DISCHARGE PUMP
GRI	GRINDER
GT	GRAVITY THICKENER DRIVE
IDVLV	INFLUENT CHANNEL DRAIN VALVE
MAU	MAKEUP AIR UNIT
NET	NETWORK RACK
PFCP	PRIMARY FITTER CONTROL PANEL
PFD	FILTER DRIVE
PFIG	PRIMARY FILTRATION INFLUENT GATE
PFIP	PRIMARY FILTRATION INFLUENT PUMP
PFTSP	PRIMARY FILTRATION THICKENED SLUDGE PUMP
PFWG	PFI WET WELL INLET GATE
PLC	PROGRAMMABLE LOGIC CONTROLLER
RCV	RECIRCULATION VALVE
RIO	REMOTE INPUT/OUTPUT
SAM	SAMPLER
SMP	SCUM PUMP
SP	SUMP PUMP
SWP	SOLIDS WASTE PUMP
SVLV	SCUM VALVE
SWV	SOLIDS WASTE VALVE
TCP	TEMPERATURE CONTROL PANEL
VFD	VARIABLE FREQUENCY DRIVE

COMPONENT DESIGNATORS

- ◆ PROVIDE CONTROLS COMPONENT IN ACCORDANCE WITH SECTION 40 61 13.
 - ◆◆ CONTROLS COMPONENT FURNISHED AS PART OF A MANUFACTURER'S OR VENDOR'S PACKAGED SYSTEM UNDER DIVISIONS 23/41/43/46. TO BE INSTALLED IN ACCORDANCE WITH SECTION 40 61 13.
 - ◆◆◆ EXISTING CONTROLS COMPONENT, TO BE RELOCATED IN ACCORDANCE WITH SECTION 40 61 13.
 - ◆◆◆◆ OWNER FURNISHED CONTROLS COMPONENT, TO BE INSTALLED IN ACCORDANCE WITH SECTION 40 61 13.
 - * PROVIDE MECHANICAL COMPONENT IN ACCORDANCE WITH DIVISIONS 23/40/41/43/46.
 - ** MECHANICAL COMPONENT FURNISHED AS PART OF A MANUFACTURER'S OR VENDOR'S PACKAGED SYSTEM, TO BE INSTALLED IN ACCORDANCE WITH DIVISIONS 23/40/41/43/46.
 - *** EXISTING MECHANICAL COMPONENT, TO BE RELOCATED IN ACCORDANCE WITH DIVISIONS 23/40/41/43/46.
 - **** OWNER FURNISHED MECHANICAL COMPONENT, TO BE INSTALLED IN ACCORDANCE WITH DIVISIONS 23/40/41/43/46.
 - PROVIDE ELECTRICAL COMPONENT IN ACCORDANCE WITH DIVISIONS 26/28.
 - ELECTRICAL COMPONENT FURNISHED AS PART OF A MANUFACTURER'S OR VENDOR'S PACKAGED SYSTEM UNDER DIVISIONS 26/28 TO BE INSTALLED IN ACCORDANCE WITH DIVISION 23/40/41/43/46.
 - EXISTING ELECTRICAL COMPONENT, TO BE RELOCATED IN ACCORDANCE WITH DIVISIONS 26/28.
 - OWNER FURNISHED ELECTRICAL COMPONENT, TO BE INSTALLED IN ACCORDANCE WITH DIVISIONS 26/28.
- COMPONENT DESIGNATORS ARE NOT INTENDED TO ENCOMPASS PIPING, CONDUIT, WIRING, OR CONCRETE STRUCTURES.

INSTRUMENT SYMBOLS

	FIELD MOUNTED	PANEL MOUNTED ACCESSIBLE TO OPERATOR	PANEL MOUNTED INACCESSIBLE TO OPERATOR	MOTOR STARTER MOUNTED ACCESSIBLE TO OPERATOR	MOTOR STARTER MOUNTED INACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	()	()	()	()	()
PROGRAMMABLE CONTROLLER-BASED FUNCTIONS					
PANEL MOUNTED OIU FUNCTIONS	()	()	()	()	()
PC BASED HMI WORKSTATION FUNCTIONS					

INDEX LEGEND

() #14	(QUANTITY)	#14 THHN/THWN CONDUCTORS.
() STP	(QUANTITY)	#16 SHIELDED TWISTED PAIR.
() MB	(QUANTITY)	#16 SHIELDED TWISTED PAIR (MODBUS).
() 3C-S	(QUANTITY)	#16 SHIELDED 3-CONDUCTOR.
() 4C-S	(QUANTITY)	#16 SHIELDED 4-CONDUCTOR.
() 5C-S	(QUANTITY)	#16 SHIELDED 5-CONDUCTOR.
() RTD	(QUANTITY)	3-WIRE RTD CABLE.
() E	(QUANTITY)	TYPE E THERMOCOUPLE CABLE.
() K	(QUANTITY)	TYPE K THERMOCOUPLE CABLE.
() FOC	(QUANTITY)	FIBER OPTIC CABLE.
() FOPC	(QUANTITY)	FIBER OPTIC PATCH CABLE.
() CE	(QUANTITY)	COPPER ETHERNET.
() VFC	(QUANTITY)	VENDOR FURNISHED CABLE.

GENERAL NOTES

- DRAWINGS SHOW CONTROL, SIGNAL AND ASSOCIATED SINGLE PHASE POWER WIRING REQUIREMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRING, WHETHER SHOWN OR NOT, NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.
- DRAWINGS SHOW APPROXIMATE LOCATIONS OF DEVICES AND PANELS, FIELD VERIFY DIMENSIONS AND ELEVATIONS.
- SHIELDED AND UNSHIELDED CONDUCTORS SHALL BE RUN IN CONDUIT. SHIELDED CONDUCTORS SHALL NOT BE COMBINED WITH UNSHIELDED CONDUCTORS IN ANY CONDUIT. NEITHER SHIELDED NOR UNSHIELDED CONDUCTORS SHALL BE INCLUDED IN THE SAME CONDUIT AS POWER WIRING.
- CONDUITS SHALL BE SIZED TO ACCOMMODATE REQUIRED CONDUCTORS AND SPARES.
- DRAWINGS DO NOT SHOW CONDUIT SYSTEMS. PROVIDE, AS A MINIMUM, PULL BOXES AS RECOMMENDED BY CONDUCTOR MANUFACTURER. CONDULETS SHALL NOT BE USED AS PULL BOXES.
- PROVIDE EXPLOSION-PROOF SEAL-OFF FITTINGS ON ALL CONDUIT EXITING CLASSIFIED OR RATED LOCATIONS. FITTINGS SHALL BE INSTALLED PER NEC.
- SHIELDED AND UNSHIELDED CONDUCTORS SHALL HAVE A MINIMUM OF 6" SEPARATION BETWEEN CONDUIT ON PARALLEL RUNS.
- SHIELDED AND UNSHIELDED CONDUCTORS SHALL BE SEPARATED BY STEEL BARRIERS IN ALL COMBINED SIGNAL JUNCTION BOXES AND INSTRUMENT TERMINATION CABINETS.
- CONDUCTORS SHALL NOT BE SPLICED EXCEPT AT TERMINALS OR AS DESIGNATED BY ENGINEER.
- FOR EACH CONDUIT, PROVIDE A MINIMUM OF TWO CONDUCTORS OR 10% OF TOTAL CONDUCTORS IN CONDUIT, WHICHEVER IS GREATER AS SPARES. TAG BOTH ENDS OF EACH SPARE. TERMINATE EACH END OF SPARE CONDUCTORS AT TERMINALS WHENEVER POSSIBLE.
- SPARE AND GROUND CONDUCTORS ARE GENERALLY NOT SHOWN IN WIRING TABLES.
- PLC, HMI, AND OIT PROGRAMMING SERVICE SHALL BE COMPLETED BY THE OWNER. CONTRACTOR SHALL PROVIDE AND INSTALL CONTROL WIRING AND COMPONENTS AS INDICATED AND SPECIFIED. THE OWNER WILL COMPLETE TERMINATIONS IN THE PLC AND REMOTE I/O PANELS. THE CONTRACTOR WILL COMPLETE TERMINATIONS TO EQUIPMENT, INSTRUMENTS, PUMP LOCAL CONTROL STATIONS, MOTOR CONTROL CENTERS, AND VENDOR-SUPPLIED CONTROL PANELS.

file: P:\14211map\Drawg001C2 Legends - SSM.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	LPH
				Drawn By	LPH
				Checked By	BLG
				Approved By	BLG

**FOUR RIVERS SANITATION AUTHORITY
 MAIN POWER TRANSITION PROJECT
 (CAPITAL PROJECT NO. 1361)
 ROCKFORD, IL**

**GENERAL LEGEND
 INSTRUMENTATION AND CONTROL**

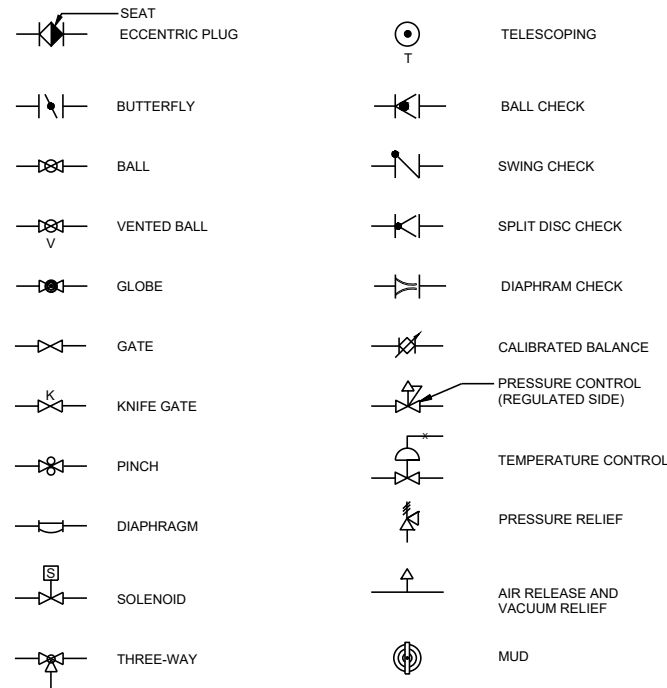


8/2023

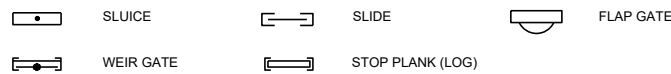
Sheet No.	6
Drawing No.	1-G-05

file: P:\14211map\Dwg\001G2_ Legends - SSM.dwg

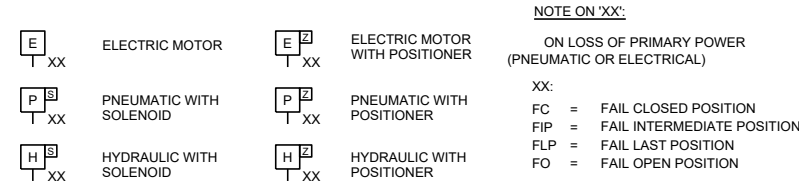
VALVE SYMBOLS



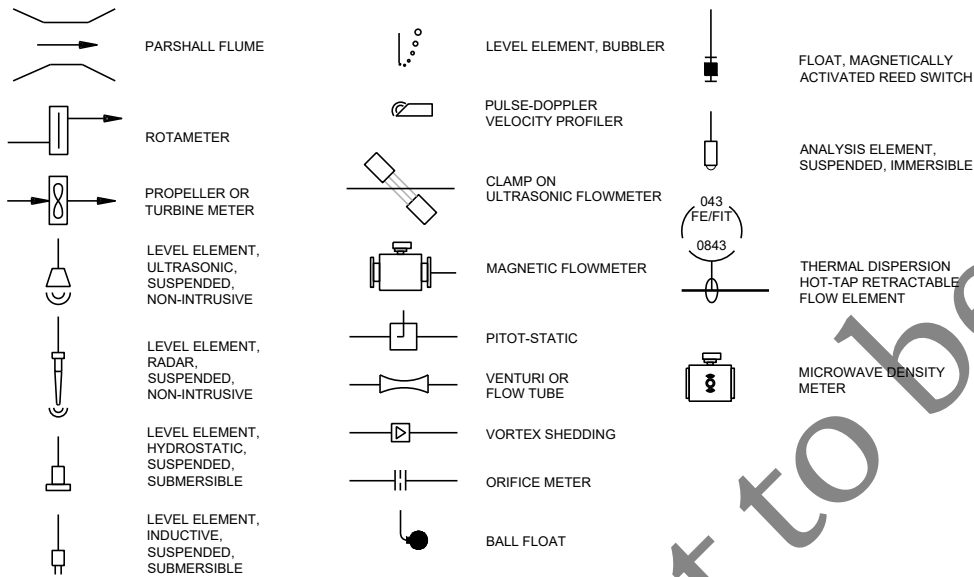
GATE SYMBOLS



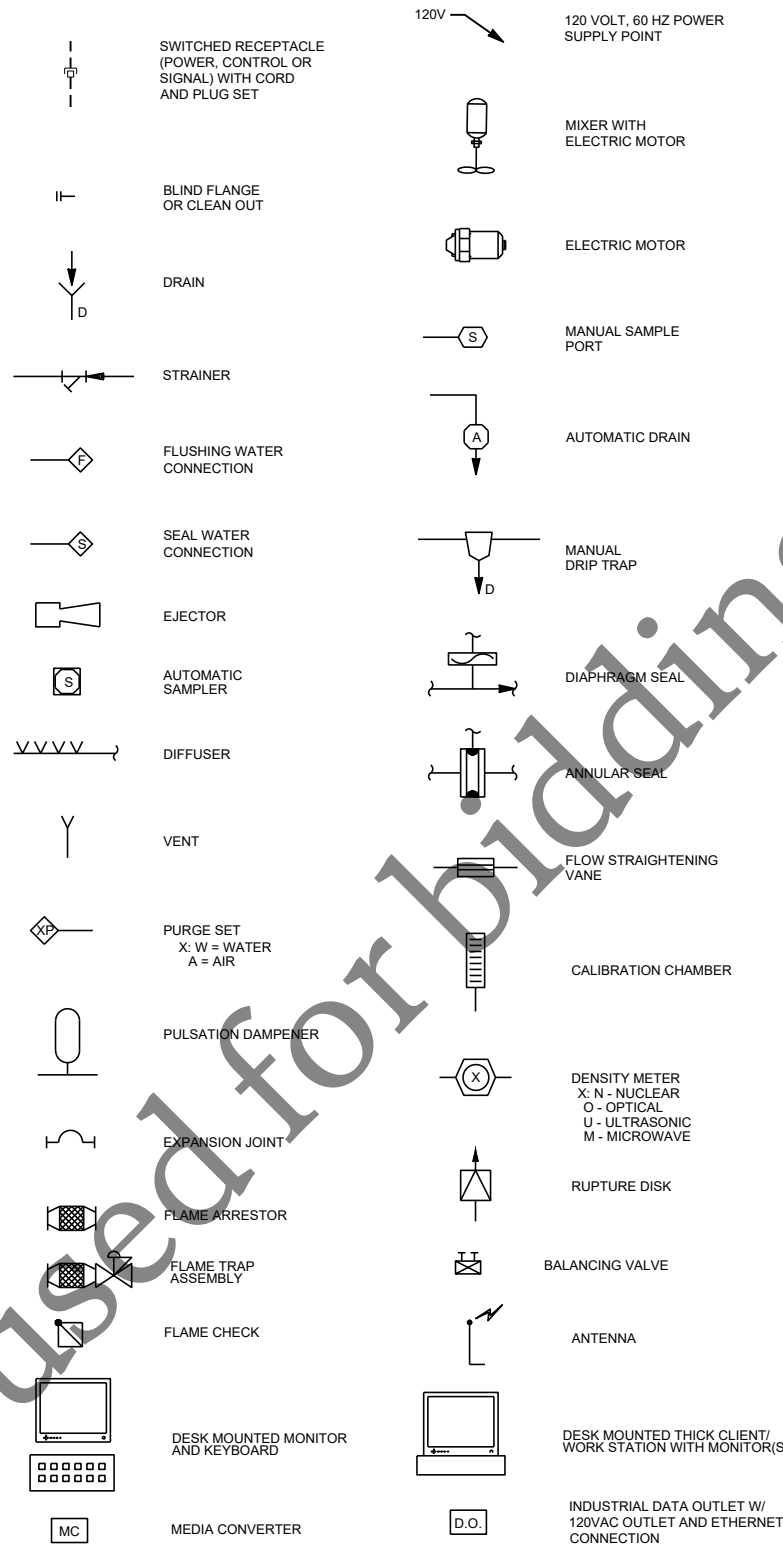
VALVE AND GATE POWER ACTUATOR SYMBOLS



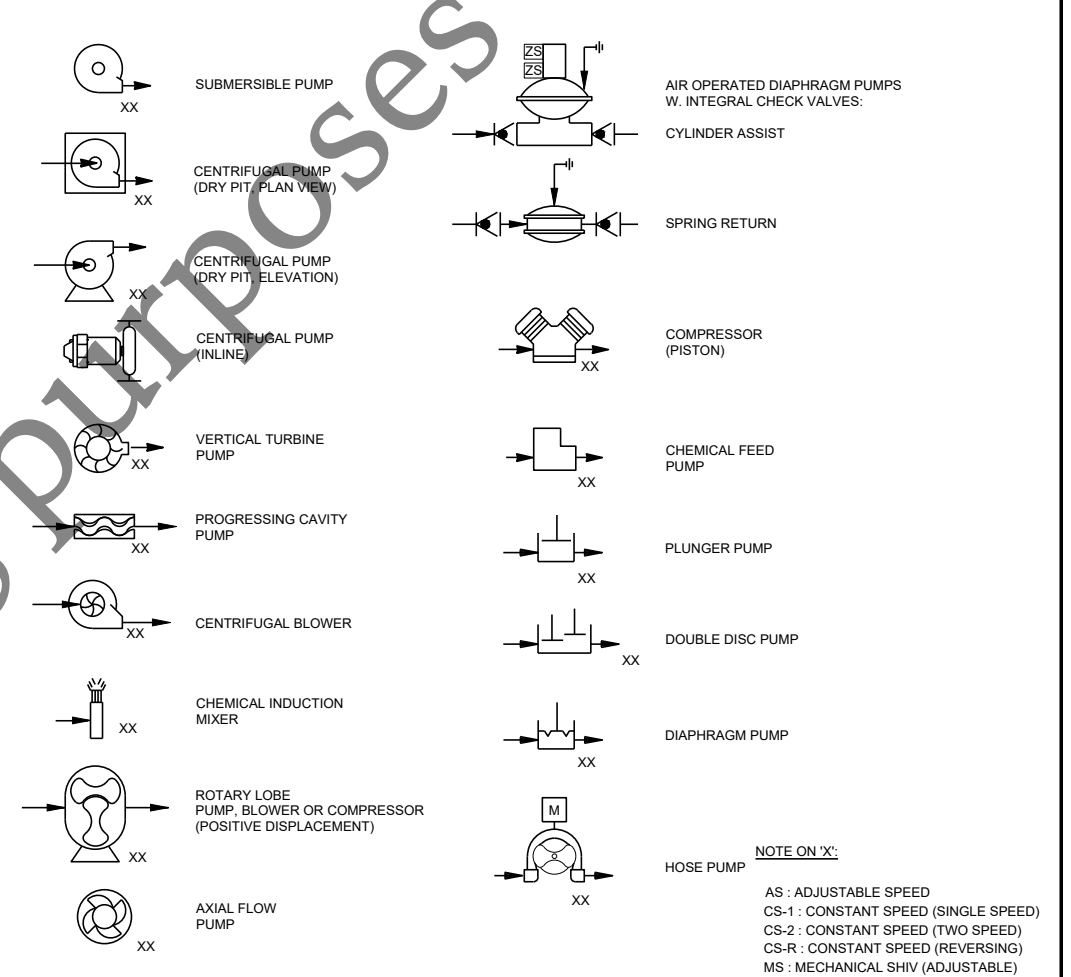
FLOW AND LEVEL ELEMENT SYMBOLS



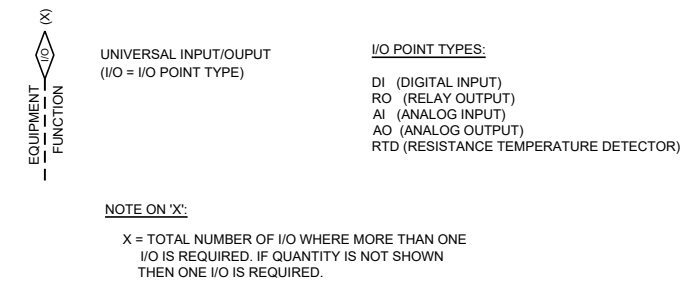
MISCELLANEOUS SYMBOLS



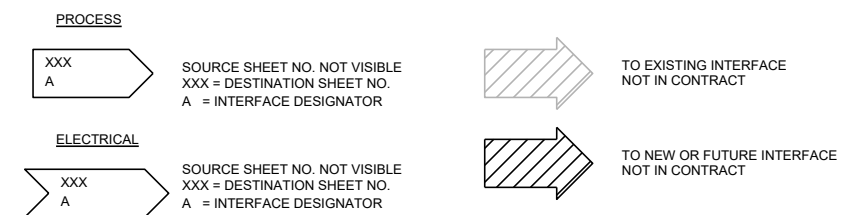
PUMP & COMPRESSOR SYMBOLS



INPUTS & OUTPUTS (I/O) TO PLC, DAQ OR DISTRIBUTED CONTROL SYSTEMS



INTERFACE SYMBOLS



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	LPH
				Drawn By	LPH
				Checked By	BLG
				Approved By	BLG

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**GENERAL LEGEND
I&C STANDARD SYMBOLOGY**

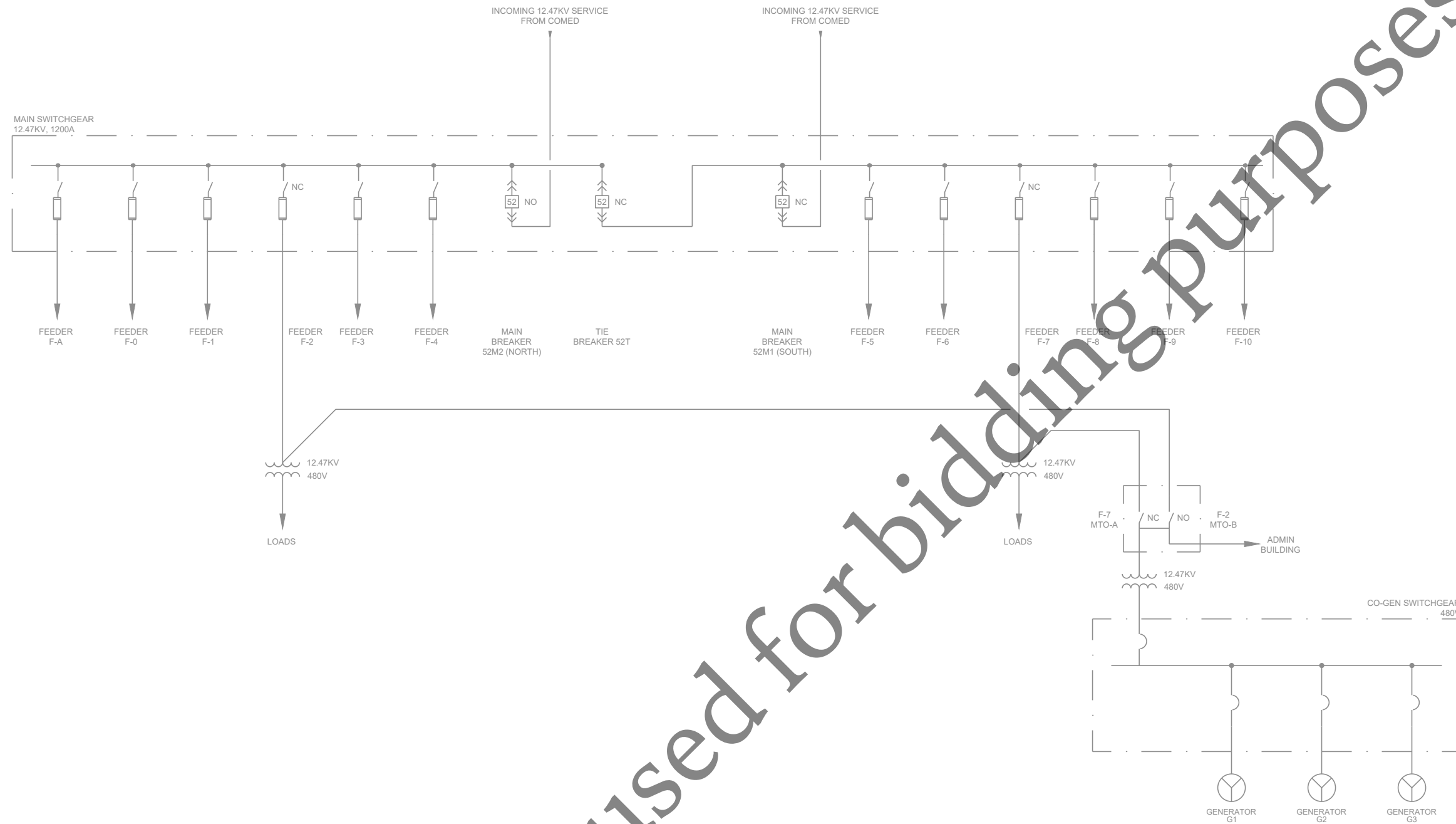


8/2023

Sheet No.
7
Drawing No.
1-G-06

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.



OVERALL ONE LINE DIAGRAM

NTS

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**ELECTRICAL DISTRIBUTION
OVERALL ONE LINE DIAGRAM**



8/2023

Sheet No.

9

Drawing No.

1-E-01

No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

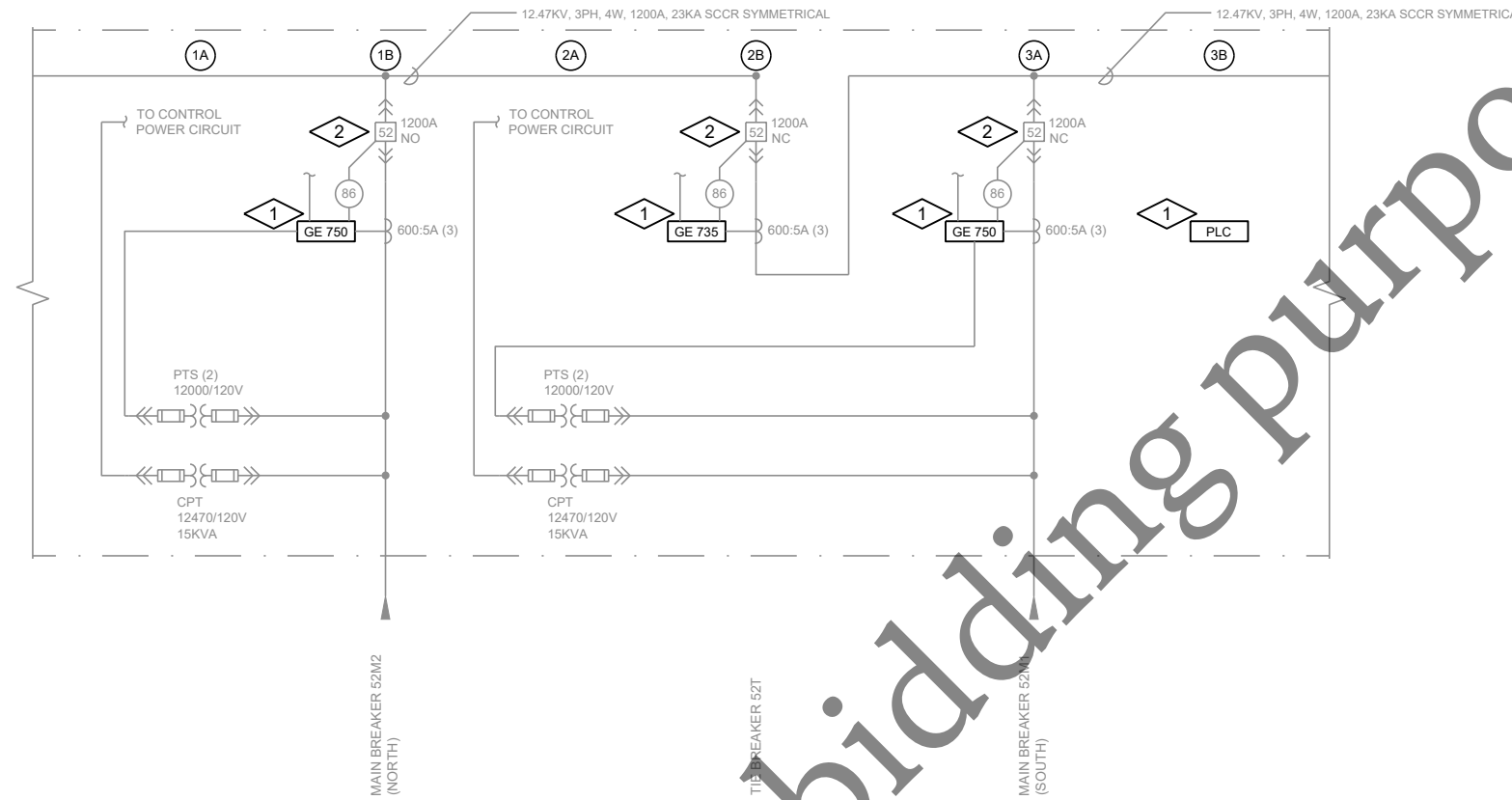


GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

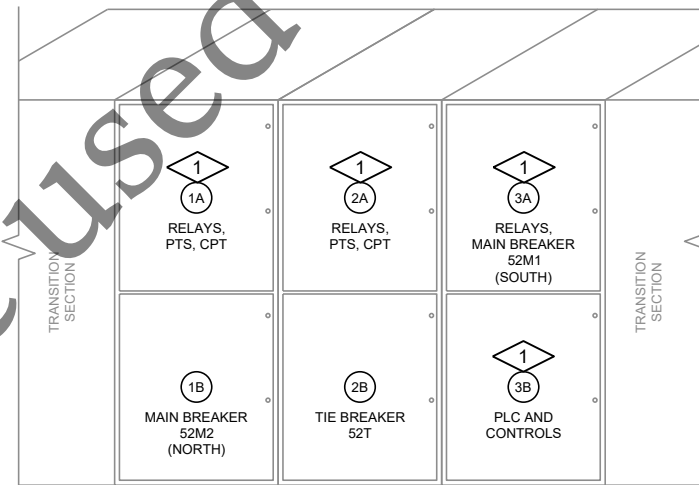
PLAN NOTES:

1. SEE DRAWING 1-ER-03 FOR ADDITIONAL REMOVAL DETAILS.
2. PROVIDE INSPECTION AND MAINTENANCE ON THREE SWITCHGEAR SECTIONS AND CIRCUIT BREAKERS. SWITCHGEAR IS EATON/CUTLER-HAMMER TYPE VAC-CLAD-W METAL-CLAD SWITCHGEAR. CIRCUIT BREAKERS ARE EATON/CUTLER HAMMER TYPE 150VCP-W500. PROVIDE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS; EATON/CUTLER-HAMMER ORIGINAL INSTALLATION INSTRUCTION BOOKLETS IB 32-255 AND IB 32-255-1F.



**MAIN SWITCHGEAR
PARTIAL ONE LINE DIAGRAM - REMOVAL
MAIN SWITCHGEAR BUILDING**

NTS



**MAIN SWITCHGEAR
PARTIAL ELEVATION - REMOVAL
MAIN SWITCHGEAR BUILDING**

NTS



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

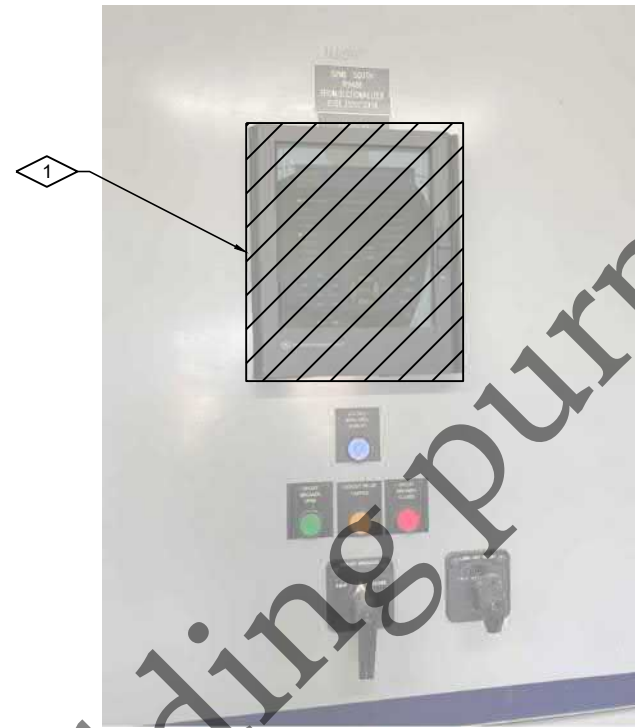
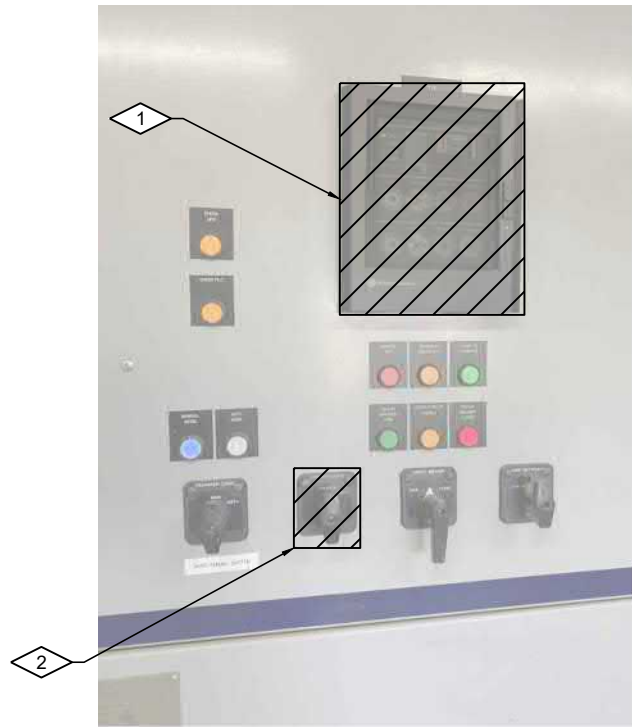
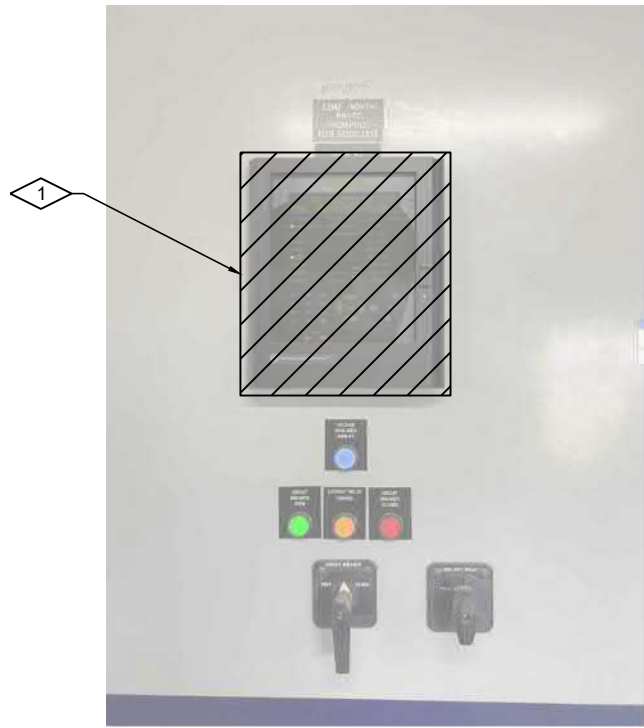
**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**ELECTRICAL DISTRIBUTION
ONE LINE DIAGRAM - REMOVAL**



8/2023

Sheet No.
10
Drawing No.
1-ER-02



**MAIN SWITCHGEAR
CIRCUIT BREAKER CUBICLES - REMOVAL
MAIN SWITCHGEAR BUILDING**

NTS



**MAIN SWITCHGEAR
PLC AND CONTROL CUBICLE - REMOVAL
MAIN SWITCHGEAR BUILDING**

NTS

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

PLAN NOTES:

1. REMOVE RELAY. MODIFY EXISTING CUBICLE DOOR CUTOUT BASED ON DIMENSIONS OF PROPOSED RELAY.
2. REMOVE CONTROL SWITCH.
3. REMOVE FIBER PATCH CABLE FROM SWITCHGEAR BACK TO MAIN SWITCHGEAR FIBER OPTIC PATCH PANEL.
4. REMOVE PLC RACK. REMOVE CONDUCTORS OF THE FOLLOWING SIGNALS BACK TO SOURCE:
 - AUTO CLOSE RELAY (x3) - DIGITAL OUTPUT
 - AUTO TRIP RELAY (x3) - DIGITAL OUTPUT
 - REQUEST TO TRANSFER RELAY - DIGITAL OUTPUT
 - CIRCUIT BREAKER CONFIRMED CLOSED (x3) - DIGITAL INPUT
 - LOCKOUT RELAY TRIPPED (x3) - DIGITAL INPUT
 - CIRCUIT BREAKER MANUALLY CLOSED (x3) - DIGITAL INPUT
 - CIRCUIT BREAKER MANUALLY TRIPPED (x3) - DIGITAL INPUT
 - 52M1 PREFERRED FEEDER - DIGITAL INPUT

file: \\d001.com\projects\14211\map\dwg\1E01.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**ELECTRICAL DISTRIBUTION
MAIN SWITCHGEAR REMOVAL DETAILS**



8/2023

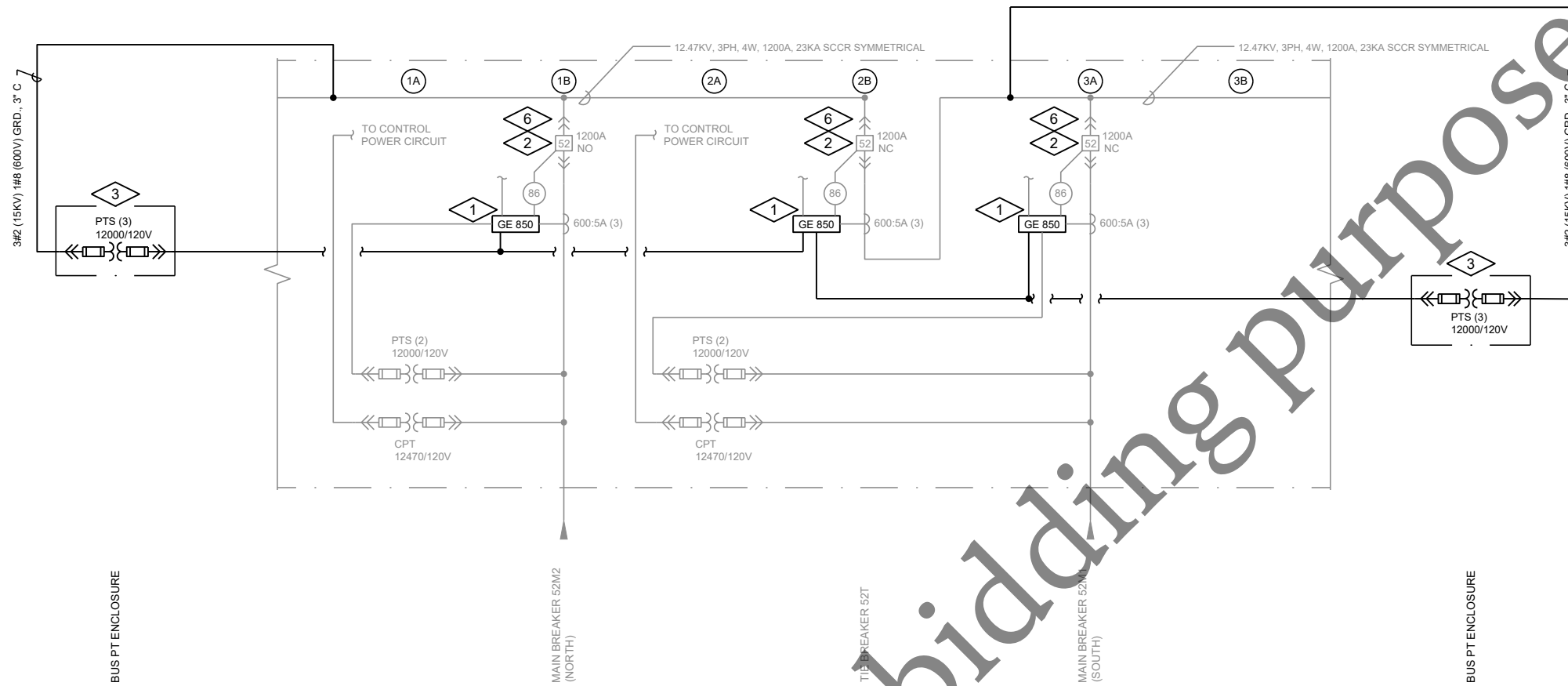
Sheet No.
11
Drawing No.
1-ER-03

GENERAL NOTES:

- CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
- SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

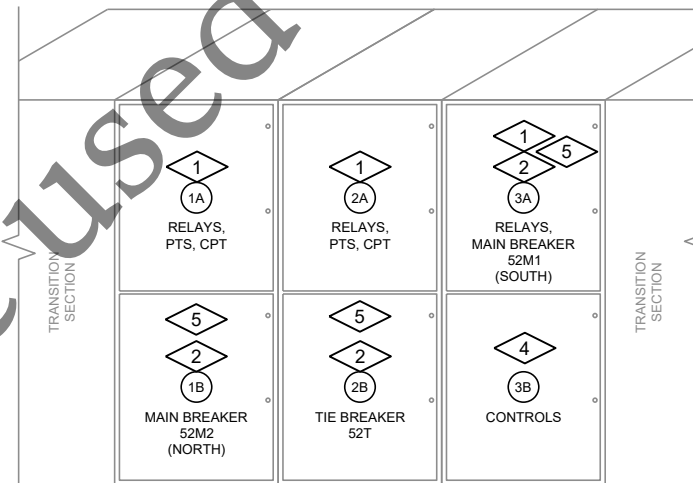
PLAN NOTES:

- PROVIDE GE MULTILIN 850 RELAY. CONFIGURE 850 RELAYS FOR NEW MAIN-TIE-MAIN AUTOMATIC TRANSFER SCHEME. SEE 1-N-01 AND 5-EN-01 THROUGH 5-EN-04. PROVIDE PROTECTION FUNCTIONS FOR EACH RELAY AS INDICATED IN THE TABLE. POWER SYSTEM STUDIES SHALL INCLUDE RECOMMENDED SETTINGS FOR ALL PROVIDED FUNCTIONS FOR EACH GE DEVICE. SEE SECTIONS 26 13 00 AND 26 05 73.
- RETROFIT THE 52M1, 52M2, AND 52T CIRCUIT BREAKER CUBICLES WITH EATON MR2 INTEGRAL MOTORIZED REMOTE RACKING SYSTEMS. PROVIDE 120V POWER FOR THE REMOTE RACKING SYSTEM FROM THE CPTS LOCATED IN CUBICLES 1A AND 2A. SEE SECTION 26 13 00.
- PROVIDE CUSTOM-BUILT, NEMA 1 EQUIVALENT, FREE STANDING, STEEL ENCLOSURES TO HOUSE BUS PTS. PROVIDE A SEPARATE ENCLOSURE FOR EACH SET OF PTS. SEE SECTION 26 13 00.
- PROVIDE NEW NAMEPLATE LABELED AS "CONTROL". NAMEPLATE SPECIFICATION SHALL MATCH EXISTING.
- RETROFIT RJ45 COMMUNICATION PORT TO COMMUNICATE WITH THE MR2 INTEGRAL MOTORIZED REMOTE RACKING SYSTEMS USING PORTABLE PENDANT.
- PROVIDE INSPECTION AND MAINTENANCE ON THREE SWITCHGEAR SECTIONS AND CIRCUIT BREAKERS. SWITCHGEAR IS EATON/CUTLER-HAMMER TYPE VAC-CLAD-W METAL-CLAD SWITCHGEAR. CIRCUIT BREAKERS ARE EATON/CUTLER-HAMMER TYPE 150VCP-W500. PROVIDE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS; EATON/CUTLER-HAMMER ORIGINAL INSTALLATION INSTRUCTION BOOKLETS IB 32-255 AND IB 32-255-1F.



**MAIN SWITCHGEAR
PARTIAL ONE LINE DIAGRAM
MAIN SWITCHGEAR BUILDING**

NTS



**MAIN SWITCHGEAR
PARTIAL ELEVATION
MAIN SWITCHGEAR BUILDING**

NTS

RELAY PROTECTION FUNCTIONS	
DEVICE NUMBER	DESCRIPTION
25	SYNCHRONISM CHECK
27P	UNDERVOLTAGE - PHASE
32	REVERSE POWER
50P	OVERCURRENT - PHASE
50G	OVERCURRENT - GROUND
50_2	OVERCURRENT - NEGATIVE SEQUENCE
51P	TIME-OVERCURRENT - PHASE
51G	TIME-OVERCURRENT - GROUND
51_2	TIME-OVERCURRENT - NEGATIVE SEQUENCE
59P	OVERVOLTAGE - PHASE
81O	FREQUENCY - OVER
81U	FREQUENCY - UNDER



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**ELECTRICAL DISTRIBUTION
ONE LINE DIAGRAM**



8/2023

Sheet No.

12

Drawing No.

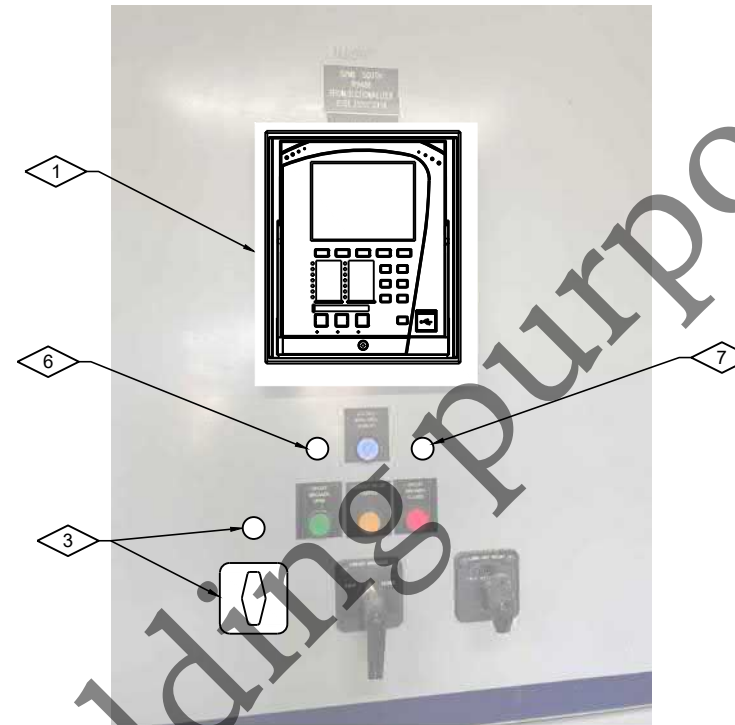
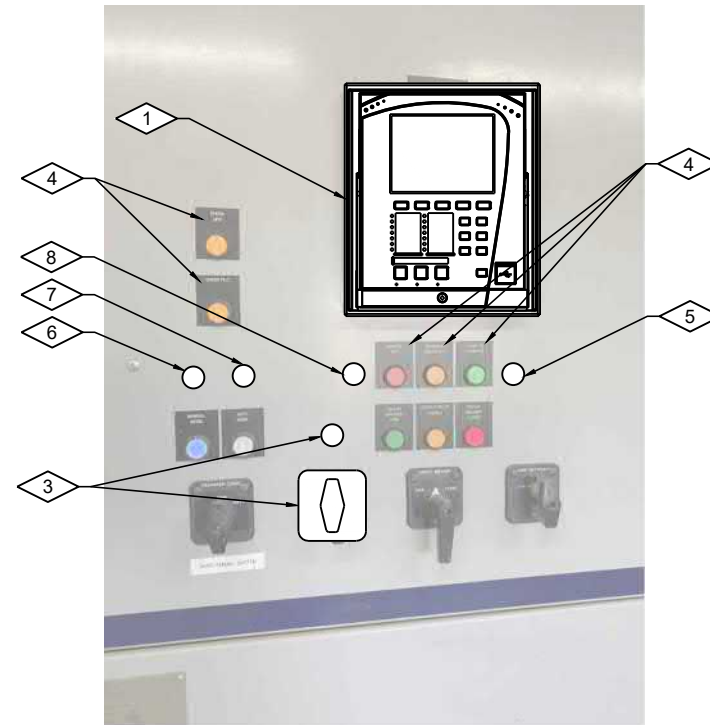
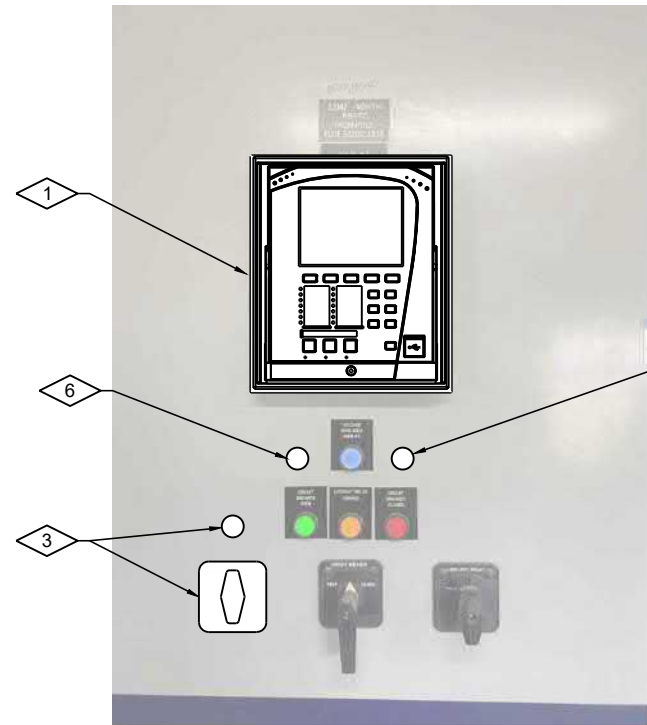
1-E-04

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.
3. NEW NAMEPLATES SHALL MATCH EXISTING.

PLAN NOTES:

1. PROVIDE GE 850 RELAY.
2. PROVIDE RELAYS WITH DUAL OUTPUTS TO EXISTING PILOT LIGHTS AND TO THE SWT PLC. INPUTS TO THE RELAYS ARE FROM EXISTING FIELD WIRINGS. APPLICABLE SIGNALS INCLUDE "IN AUTO", "IN MANUAL", "CHECK SWITCHGEAR UPS", "COGEN REMOTE TRIP", "COGEN CLEAR TO TRANSFER", AND "COGEN TRANSFER REQUESTED".
3. PROVIDE ARC FLASH MAINTENANCE SYSTEM (AFMS) CONTROL SWITCH WITH TWO POSITIONS "ON" AND "OFF". PROVIDE BLUE LED INDICATING LIGHT LABELED "AFMS ACTIVATED". INDICATING LIGHT SHALL BE ILLUMINATED WHEN AFMS SWITCH IS IN THE "ON" POSITION.
4. REPLACE EXISTING "CHECK PLC", "CHECK UPS", "REMOTE TRIP", "CLEAR TO TRANSFER", AND "TRANSFER REQUESTED" NAMEPLATES WITH "CHECK SWT PLC", "CHECK UPS - BELOW 52M1", "COGEN REMOTE TRIP", "COGEN CLEAR TO TRANSFER", AND "COGEN TRANSFER REQUESTED", RESPECTIVELY.
5. PROVIDE A GREEN LED INDICATING LIGHT LABELED "SWITCHGEAR AUTO TRANSFER READY". INDICATING LIGHT SHALL BE ILLUMINATED WHEN DIGITAL OUTPUT FROM THE SWT PLC IS ENERGIZED.
6. PROVIDE A GREEN LED INDICATING LIGHT LABELED "AUTO TRANSFER READY". INDICATING LIGHT SHALL BE ILLUMINATED WHEN CONTACT OUTPUT #16 OF GE 850 RELAY IS ENERGIZED.
7. PROVIDE AN AMBER LED INDICATING LIGHT LABELED "RELAY FAIL". INDICATING LIGHT SHALL BE ILLUMINATED WHEN CONTACT OUTPUT #8 OF GE 850 RELAY IS ENERGIZED.
8. PROVIDE AN "INITIATE TRANSFER" PUSHBUTTON. WHEN PRESSED, GE 850 AUTOMATIC TRANSFER SCHEME SHALL PERFORM A CLOSED TRANSITION TRANSFER BETWEEN SOURCES.



**MAIN SWITCHGEAR
CIRCUIT BREAKER CUBICLES
MAIN SWITCHGEAR BUILDING**

NTS



**MAIN SWITCHGEAR
CONTROL CUBICLE
MAIN SWITCHGEAR BUILDING**

NTS



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**ELECTRICAL DISTRIBUTION
MAIN SWITCHGEAR DETAILS**



8/2023

Sheet No.

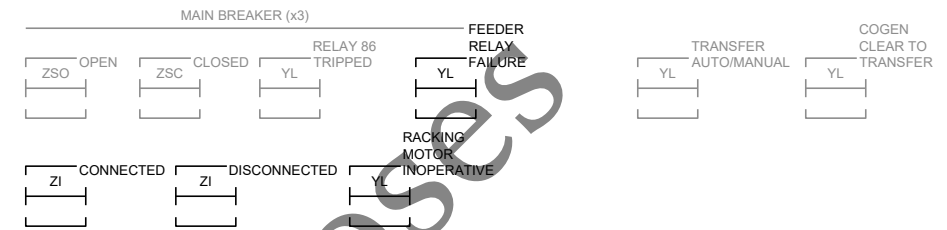
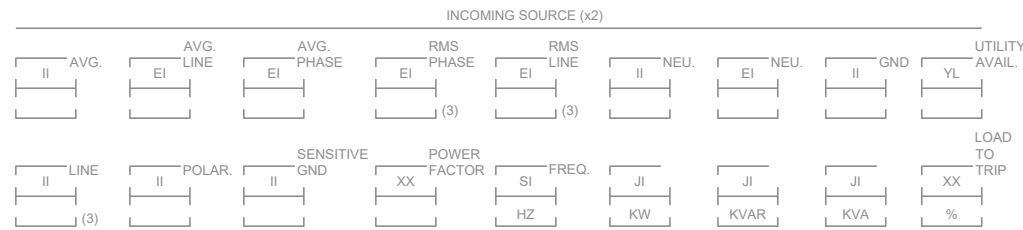
13

Drawing No.

1-E-05

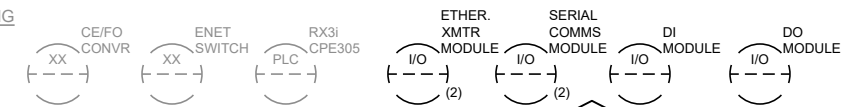
PROCESS CONTROL SYSTEM HMI

PCS-HMI (PARTIAL) 14



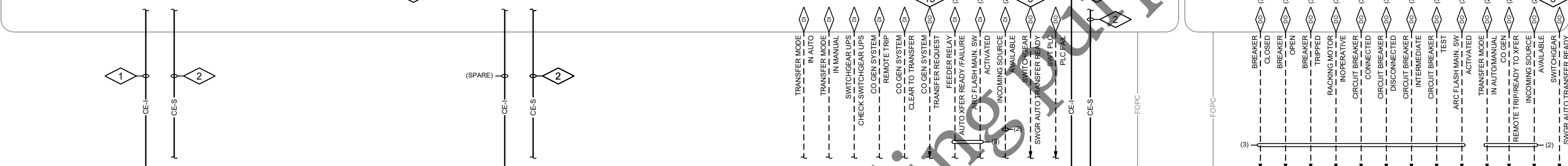
SWITCHGEAR BUILDING PLC PANEL

SWT (PARTIAL) 14



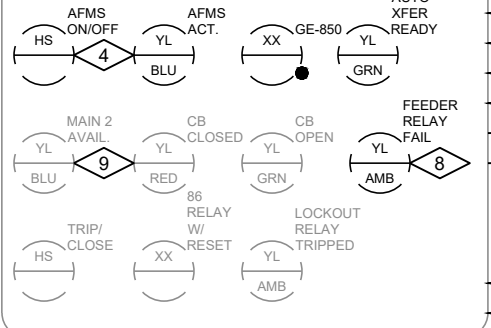
MAIN PUMP STATION PLC PANEL

PLC-MPS (PARTIAL) 14



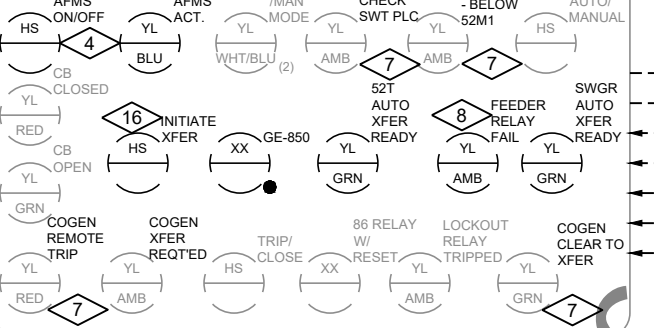
MAIN BREAKER 52M2 CONTROL PANEL - CUBICLE 1A

52M2-CS (PARTIAL) 12



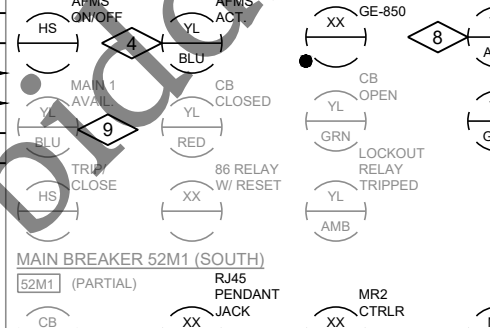
TIE BREAKER 52T CONTROL PANEL - CUBICLE 2A

52T-CS (PARTIAL) 13



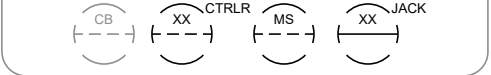
MAIN BREAKER 52M1 CONTROL PANEL - CUBICLE 3A

52M1-CS (PARTIAL) 11



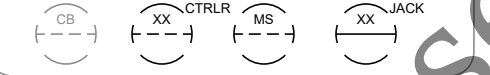
MAIN BREAKER 52M2 (NORTH)

52M2 (PARTIAL)



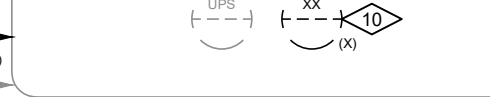
TIE BREAKER

52T (PARTIAL)



CONTROL CUBICLE 3B

CTRL-3B (PARTIAL)



PLAN NOTES:

- 1. SIGNALS TRANSMITTED OVER NETWORK:
- 2. SIGNALS TRANSMITTED OVER NETWORK:

READ FROM RELAY:

- AVERAGE CURRENT
- AVERAGE LINE VOLTAGE
- AVERAGE PHASE VOLTAGE
- L-N RMS VOLTAGE (x3)
- PHASE RMS VOLTAGE (x3)
- NEUTRAL VOLTAGE
- NEUTRAL CURRENT
- GROUND CURRENT
- PHASE CURRENT (x3)
- POLARIZING CURRENT
- SENSITIVE GROUND CURRENT
- 3 PHASE POWER FACTOR
- SYSTEM FREQUENCY
- REAL POWER
- REACTIVE POWER
- APPARENT POWER
- LOAD TO TRIP (%)
- UNDER-VOLTAGE CONDITION
- 5 SPARES

READ FROM MR2 CONTROLLER:

- CB OPEN
- CB CLOSED
- CB CONNECTED
- CB DISCONNECTED
- CB IN TEST POSITION
- MOTOR INOPERATIVE
- INTERMEDIATE INPUT
- 5 SPARES

OWNER TO PROVIDE TWO (2) 2-PORT ETHERNET TRANSMITTER MODULES (P/N: IC695ETM001), TWO (2) 2-PORT SERIAL COMMUNICATIONS MODULES (P/N: IC695CMM002) FOR COMMUNICATION WITH CIRCUIT BREAKER REMOTE RACKING CONTROLLERS, ONE (1) 16-POINT DISCRETE OUTPUT MODULE (P/N: IC694MDL340), AND ONE (1) 16-POINT DISCRETE INPUT MODULE (P/N: IC694MDL240).

- 4. PILOT LIGHT SHALL ILLUMINATE WHEN ARC FLASH MAINTENANCE SYSTEM (AFMS) CONTROL SWITCH IS IN THE "ON" POSITION. PROVIDE DRY CONTACT FOR REMOTE AFMS POSITION INDICATION AT PLANT SCADA (TYPICAL OF 3).
- 5. "SWITCHGEAR AUTO TRANSFER READY" SIGNAL IS ACTIVE WHEN "AUTO TRANSFER READY" SIGNALS FROM EACH CIRCUIT BREAKER ARE ALL ACTIVE.
- 6. OWNER TO PROVIDE THREE (3) 16-POINT DISCRETE OUTPUT MODULES (P/N: IC694MDL340).
- 7. REPLACE EXISTING "CHECK PLC", "CHECK UPS", "REMOTE TRIP", "CLEAR TO TRANSFER", AND "TRANSFER REQUESTED" NAMEPLATES WITH "CHECK SWT PLC", "CHECK UPS-BELOW 52M1", "COGEN REMOTE TRIP", "COGEN CLEAR TO TRANSFER", AND "COGEN TRANSFER REQUESTED", RESPECTIVELY.

REFER TO DETAIL N502 FOR WIRING MODIFICATIONS.

- 8. PILOT LIGHT SHALL ILLUMINATE WHEN 850 RELAY FAILS, WHICH ENERGIZES CONTACT OUTPUT #8 OF THE 850 RELAY (TYPICAL OF 3).
- 9. CONFIGURE SPARE CONTACT OUTPUT # 10 (CO10) OF NEW 850 RELAY TO BE ENERGIZED WHEN INCOMING SOURCE 1 IS HEALTHY. PROVIDE RELAY WITH DUAL OUTPUTS, ONE TO EXISTING PILOT LIGHT AND ONE TO THE SWT PLC (TYPICAL OF 2).
- 10. PROVIDE RELAYS WITH DUAL OUTPUTS, ONE TO EXISTING PILOT LIGHT AND ONE TO SWT PLC. INPUTS TO THE RELAYS ARE FROM EXISTING FIELD WIRINGS. APPLICABLE SIGNALS INCLUDE "IN AUTO", "IN MANUAL", "CHECK SWITCHGEAR UPS", "COGEN REMOTE TRIP", "COGEN CLEAR TO TRANSFER", AND "COGEN TRANSFER REQUESTED".
- 11. REFER TO DETAIL N501 FOR WIRING MODIFICATIONS.

GENERAL NOTES:

- 1. FOR CLARITY, NOT ALL DETAILS OF EXISTING EQUIPMENT IS SHOWN.
- 2. CONTRACTOR SHALL PROVIDE CONTROL WIRING AND COMPONENTS AS INDICATED AND SPECIFIED. ALL WIRES SHALL BE LABELED AT EACH END. OWNER WILL COMPLETE TERMINATIONS IN THE PLCS PANELS (SWT AND PLC-MPS) WITH THE CONTRACTOR COMPLETING TERMINATIONS TO EQUIPMENT, SWITCHGEAR, AND CONTRACTOR SUPPLIED MATERIALS.
- 3. HMI AND PLC PROGRAM SHALL BE PROVIDED BY THE OWNER.

file: P:\14211map\Drawg\1N01.dwg



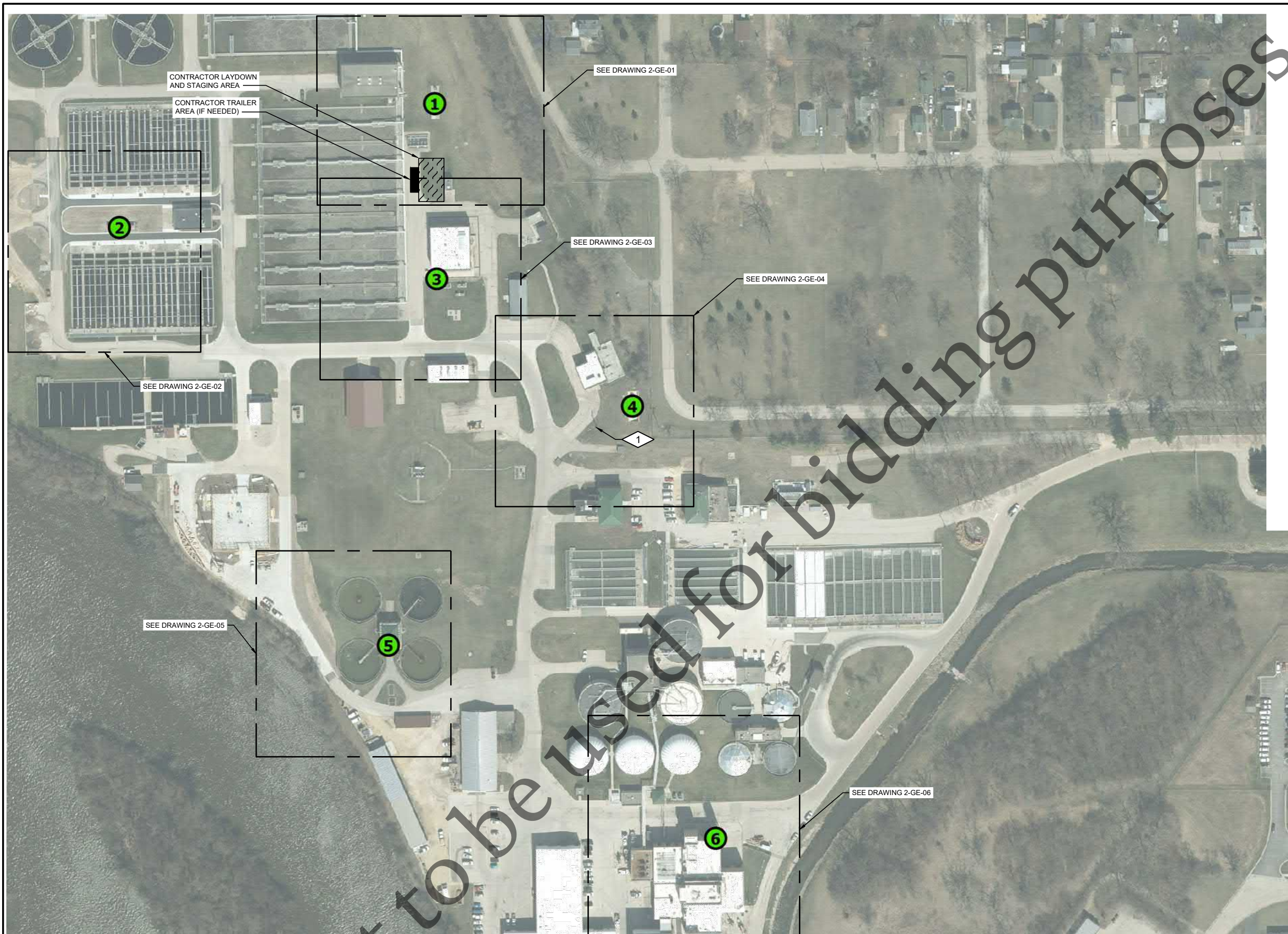
No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	LPH
				Drawn By	LPH
				Checked By	BLG
				Approved By	BLG

FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL

PROCESS AND INSTRUMENTATION DIAGRAM
MAIN SWITCHGEAR
DONOHUE

Sheet No.	14
Drawing No.	1-N-01

8/2023



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.
3. A PORTION OF THE WORK MAY REQUIRE A COMPLETE OUTAGE OF THE MAIN SWITCHGEAR. THE MAXIMUM DURATION THE PLANT SHALL OPERATE ON TEMPORARY POWER TO BE 8 HOURS FOR EACH OCCURRENCE. SHOULD ADDITIONAL TIME ABOVE THE 8 HOUR LIMIT BE REQUIRED, COORDINATE WITH THE OWNER. DURING THE ENTIRE PERIOD OF THE CONTRACT, PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 30 MINUTES DURING REGULAR BUSINESS HOURS, AND PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 2 HOURS AT NIGHT AND ON WEEKENDS. FAILURE TO RESTORE TEMPORARY POWER WITHIN THESE CONSTRAINTS WILL RESULT IN LIQUIDATED DAMAGES PER THE AGREEMENT.
4. CONTRACTOR SHALL COORDINATE, PLAN, AND SCHEDULE ALL OUTAGES AND POWER SWITCHOVERS WITH THE OWNER. ALL PLANNED OUTAGES SHALL BE NO GREATER THAN 60 MINUTES.

LEGEND:

- ① TEMPORARY GENERATOR CONNECTION LOCATION (TYP)

PLAN NOTES:

1. TO REMOVE POWER TO MAIN BREAKER 52M2 (NORTH) OPEN CUTOUTS ON FRSA OWNED UTILITY POLE. POWER SHALL BE MAINTAINED TO THE AGS PROJECT WHICH IS TAPPED FROM THE 12.47KV OVERHEAD LINES UPSTREAM OF THE FRSA OWNED UTILITY POLE.
2. UTILIZE EXISTING ADMINISTRATION BUILDING GENERATOR DURING OUTAGES. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT AND LABOR TO PLACE THE GENERATOR IN SERVICE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY COST AND LABOR FOR THE OPERATION, MAINTENANCE, AND SERVICING OF THE GENERATOR INCLUDING FUELING AND REFUELING. REFUEL GENERATOR AFTER COMPLETION OF THE PROJECT.

KEY PLAN



file: P:\14211\map\Dwg\2GK01.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**SITE DEVELOPMENT
TEMPORARY GENERATOR AND STAGING AREA KEY PLAN**



8/2023

Sheet No.	15
Drawing No.	2-GK-01



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

LEGEND:

- TEMPORARY GENERATOR CONNECTION LOCATION - (MCLU-1) BLOWER BUILDING

PLAN NOTES:

1. A PORTION OF THE WORK MAY REQUIRE A COMPLETE OUTAGE OF THE MAIN SWITCHGEAR. THE MAXIMUM DURATION THE PLANT SHALL OPERATE ON TEMPORARY POWER TO BE 8 HOURS FOR EACH OCCURRENCE. SHOULD ADDITIONAL TIME ABOVE THE 8 HOUR LIMIT BE REQUIRED, COORDINATE WITH THE OWNER. DURING THE ENTIRE PERIOD OF THE CONTRACT, PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 30 MINUTES DURING REGULAR BUSINESS HOURS, AND PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 2 HOURS AT NIGHT AND ON WEEKENDS. FAILURE TO RESTORE TEMPORARY POWER WITHIN THESE CONSTRAINTS WILL RESULT IN LIQUIDATED DAMAGES PER THE AGREEMENT.
2. CONTRACTOR SHALL PROVIDE A TEMPORARY STANDBY DIESEL GENERATOR AND TEMPORARY STEP-UP TRANSFORMER CAPABLE OF PROVIDING A MINIMUM OF 750KW. THE GENERATOR SHALL PROVIDE STANDBY POWER TO MCLU-1 DURING TIMES OF A COMPLETE OUTAGE OF THE MAIN SWITCHGEAR. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, TEMPORARY WIRING, AND LABOR TO CONNECT AND PLACE THE GENERATOR IN SERVICE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY COST AND LABOR FOR THE OPERATION, MAINTENANCE, AND SERVICING OF THE GENERATOR INCLUDING FUELING AND REFUELING.
3. CONTRACTOR SHALL COORDINATE, PLAN, AND SCHEDULE ALL OUTAGES AND POWER SWITCHOVERS WITH THE OWNER. ALL PLANNED OUTAGES SHALL BE NO GREATER THAN 60 MINUTES.
4. MCLU-1 IS A 4160V, 1200A, DOUBLE-ENDED, MEDIUM VOLTAGE MOTOR CONTROL CENTER. PROVIDE 3 SETS OF 350KCMIL & #2/0 GRD. CABLE TO CONNECT TEMPORARY GENERATOR TO TEMPORARY STEP-UP TRANSFORMER. PROVIDE 1 SET OF 3#2 5KV MV-105 & 1#6 (480V) GRD CABLE TO CONNECT TEMPORARY TRANSFORMER TO MCLU-1.
5. THERE ARE 2 SETS OF EXISTING CABLES FROM SUBSTATION 1-8 (DRAWING 2-GE-02) TO THE BLOWER BUILDING MCC. THE CIRCUIT BREAKER IN SUBSTATION 1-8 IS LOCKED OUT AND THE CABLES ARE COILED AND TAPED IN THE REAR OF THE BLOWER BUILDING MCC. CONNECT THE CABLES TO THE MAIN CIRCUIT BREAKER PRIOR TO ENERGIZING THE GENERATOR AT SUBSTATION 1-8. THE MAIN FEEDER INTO THE BLOWER BUILDING MCC MAY BE ISOLATED BY OPENING THE CORRESPONDING FEEDER SWITCH AT THE MAIN SWITCHGEAR. THE BLOWER BUILDING MCC WILL BE POWERED FROM SUBSTATION 1-8 WHILE ON TEMPORARY GENERATOR.

TEMPORARY GENERATOR PLAN



file: P:\14211\map\Dwg\2GE01.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**SITE DEVELOPMENT
TEMPORARY GENERATOR PLAN**



8/2023


Sheet No.
16
Drawing No.
2-GE-01



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

LEGEND:

-  TEMPORARY GENERATOR CONNECTION LOCATION - SUBSTATION 1-8 (AERATION)

PLAN NOTES:

1. A PORTION OF THE WORK MAY REQUIRE A COMPLETE OUTAGE OF THE MAIN SWITCHGEAR. THE MAXIMUM DURATION THE PLANT SHALL OPERATE ON TEMPORARY POWER TO BE 8 HOURS FOR EACH OCCURRENCE. SHOULD ADDITIONAL TIME ABOVE THE 8 HOUR LIMIT BE REQUIRED, COORDINATE WITH THE OWNER. DURING THE ENTIRE PERIOD OF THE CONTRACT, PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 30 MINUTES DURING REGULAR BUSINESS HOURS, AND PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 2 HOURS AT NIGHT AND ON WEEKENDS. FAILURE TO RESTORE TEMPORARY POWER WITHIN THESE CONSTRAINTS WILL RESULT IN LIQUIDATED DAMAGES PER THE AGREEMENT.
2. CONTRACTOR SHALL PROVIDE A TEMPORARY STANDBY DIESEL GENERATOR CAPABLE OF PROVIDING A MINIMUM OF 1000KW. THE GENERATOR SHALL PROVIDE STANDBY POWER TO SUBSTATION 1-8 DURING TIMES OF A COMPLETE PLANT OUTAGE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, TEMPORARY WIRING, AND LABOR TO CONNECT AND PLACE THE GENERATOR IN SERVICE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY COST AND LABOR FOR THE OPERATION, MAINTENANCE, AND SERVICING OF THE GENERATOR INCLUDING FUELING AND REFUELING.
3. CONTRACTOR SHALL COORDINATE, PLAN, AND SCHEDULE ALL OUTAGES AND POWER SWITCHOVERS WITH THE OWNER. ALL PLANNED OUTAGES SHALL BE NO GREATER THAN 60 MINUTES.
4. SUBSTATION 1-8 IS A 480V, 3000A, DOUBLE-ENDED, UNIT SUBSTATION. PROVIDE 4 SETS OF 3-500KCMIL & 1#4/0 GRD. CABLE TO CONNECT TEMPORARY GENERATOR TO SUBSTATION 1-8.
5. SEE DRAWING 2-GE-01 FOR POWER FEED TO BLOWER BUILDING MCC WHILE ON TEMPORARY GENERATOR.

TEMPORARY GENERATOR PLAN



file: P:\14211map\Drawg\2GE02.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**SITE DEVELOPMENT
TEMPORARY GENERATOR PLAN**



8/2023


Sheet No.
17
Drawing No.
2-GE-02



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

LEGEND:

-  TEMPORARY GENERATOR CONNECTION LOCATION - MSGR1 (MAIN PUMP)

PLAN NOTES:

1. A PORTION OF THE WORK MAY REQUIRE A COMPLETE OUTAGE OF THE MAIN SWITCHGEAR. THE MAXIMUM DURATION THE PLANT SHALL OPERATE ON TEMPORARY POWER TO BE 8 HOURS FOR EACH OCCURRENCE. SHOULD ADDITIONAL TIME ABOVE THE 8 HOUR LIMIT BE REQUIRED, COORDINATE WITH THE OWNER. DURING THE ENTIRE PERIOD OF THE CONTRACT, PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 30 MINUTES DURING REGULAR BUSINESS HOURS, AND PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 2 HOURS AT NIGHT AND ON WEEKENDS. FAILURE TO RESTORE TEMPORARY POWER WITHIN THESE CONSTRAINTS WILL RESULT IN LIQUIDATED DAMAGES PER THE AGREEMENT.
2. CONTRACTOR SHALL PROVIDE A TEMPORARY STANDBY DIESEL GENERATOR CAPABLE OF PROVIDING A MINIMUM OF 1000KW. THE GENERATOR SHALL PROVIDE STANDBY POWER TO MSGR1 DURING TIMES OF A COMPLETE PLANT OUTAGE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, TEMPORARY WIRING, AND LABOR TO CONNECT AND PLACE THE GENERATOR IN SERVICE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY COST AND LABOR FOR THE OPERATION, MAINTENANCE, AND SERVICING OF THE GENERATOR INCLUDING FUELING AND REFUELING.
3. CONTRACTOR SHALL COORDINATE, PLAN, AND SCHEDULE ALL OUTAGES AND POWER SWITCHOVERS WITH THE OWNER. ALL PLANNED OUTAGES SHALL BE NO GREATER THAN 60 MINUTES.
4. MSGR1 IS A 480V, 3000A, DOUBLE-ENDED, UNIT SUBSTATION. PROVIDE 4 SETS OF 3-500KCMIL & 1#4/0 GRD. CABLE TO CONNECT TEMPORARY GENERATOR TO SUBSTATION.

TEMPORARY GENERATOR PLAN



file: P:\14211\map\Dwg\2GE03.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**SITE DEVELOPMENT
TEMPORARY GENERATOR PLAN**



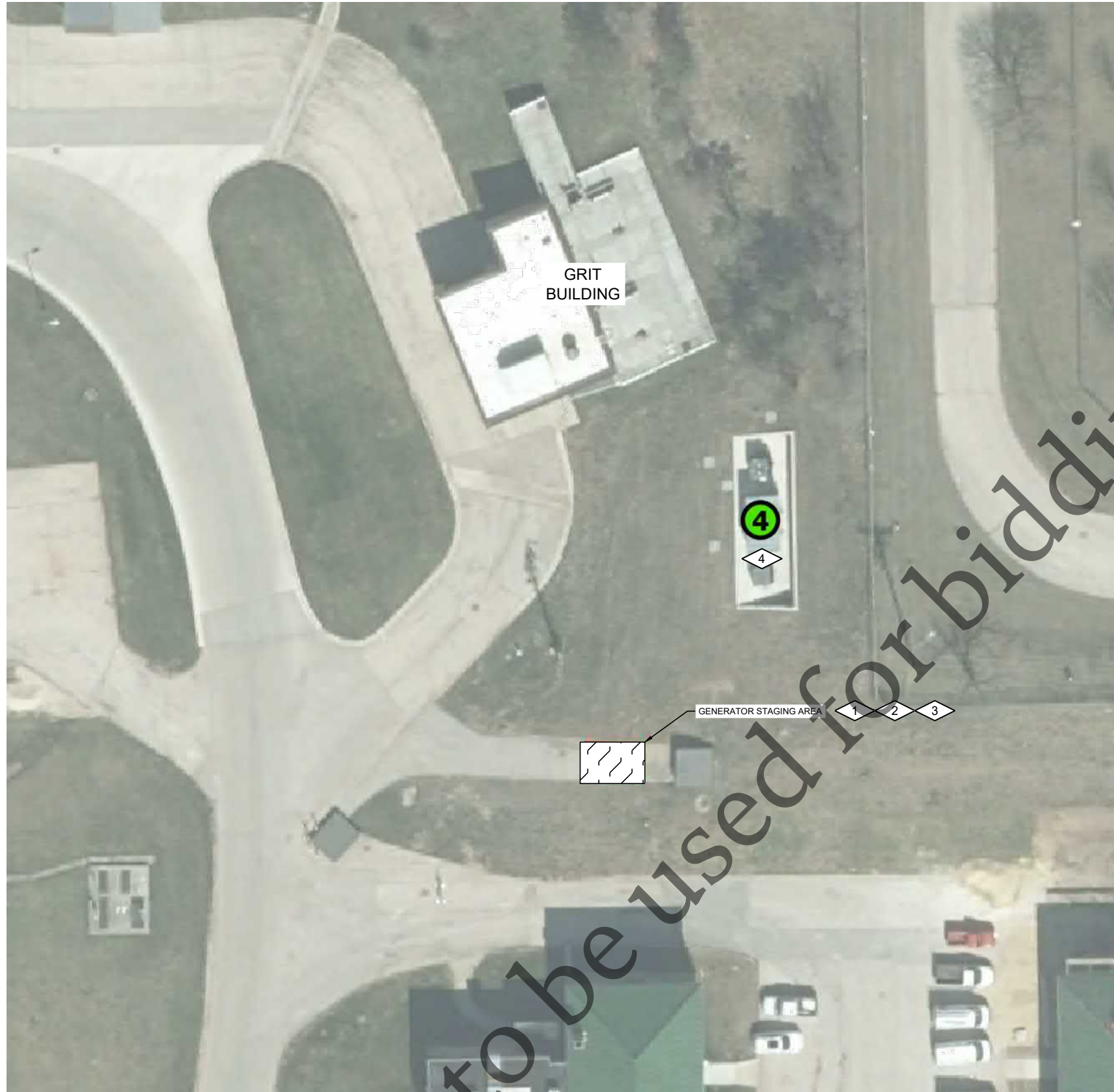
8/2023

Sheet No.

18

Drawing No.


2-GE-03



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

LEGEND:

-  TEMPORARY GENERATOR CONNECTION LOCATION - SUBSTATION 3-6 (GRIT/ADMIN)

PLAN NOTES:

1. A PORTION OF THE WORK MAY REQUIRE A COMPLETE OUTAGE OF THE MAIN SWITCHGEAR. THE MAXIMUM DURATION THE PLANT SHALL OPERATE ON TEMPORARY POWER TO BE 8 HOURS FOR EACH OCCURRENCE. SHOULD ADDITIONAL TIME ABOVE THE 8 HOUR LIMIT BE REQUIRED, COORDINATE WITH THE OWNER. DURING THE ENTIRE PERIOD OF THE CONTRACT, PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 30 MINUTES DURING REGULAR BUSINESS HOURS, AND PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 2 HOURS AT NIGHT AND ON WEEKENDS. FAILURE TO RESTORE TEMPORARY POWER WITHIN THESE CONSTRAINTS WILL RESULT IN LIQUIDATED DAMAGES PER THE AGREEMENT.
2. CONTRACTOR SHALL PROVIDE A TEMPORARY STANDBY DIESEL GENERATOR CAPABLE OF PROVIDING A MINIMUM OF 250KW. THE GENERATOR SHALL PROVIDE STANDBY POWER TO SUBSTATION 3-6 DURING TIMES OF A COMPLETE PLANT OUTAGE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, TEMPORARY WIRING, AND LABOR TO CONNECT AND PLACE THE GENERATOR IN SERVICE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY COST AND LABOR FOR THE OPERATION, MAINTENANCE, AND SERVICING OF THE GENERATOR INCLUDING FUELING AND REFUELING.
3. CONTRACTOR SHALL COORDINATE, PLAN, AND SCHEDULE ALL OUTAGES AND POWER SWITCHOVERS WITH THE OWNER. ALL PLANNED OUTAGES SHALL BE NO GREATER THAN 60 MINUTES.
4. SUBSTATION 3-6 IS A 480V, 3200A, DOUBLE-ENDED, UNIT SUBSTATION. PROVIDE 1 SET OF 3-500KCMIL & 1#3 GRD. CABLE TO CONNECT TEMPORARY GENERATOR TO SUBSTATION.

TEMPORARY GENERATOR PLAN



file: P:\14211\map\Dwg\2GE04.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**SITE DEVELOPMENT
TEMPORARY GENERATOR PLAN**



8/2023


Sheet No.
19
Drawing No.
2-GE-04



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

LEGEND:

-  TEMPORARY GENERATOR CONNECTION LOCATION - SWITCHBOARD A/10 (RIVER STATION)

PLAN NOTES:

1. A PORTION OF THE WORK MAY REQUIRE A COMPLETE OUTAGE OF THE MAIN SWITCHGEAR. THE MAXIMUM DURATION THE PLANT SHALL OPERATE ON TEMPORARY POWER TO BE 8 HOURS FOR EACH OCCURRENCE. SHOULD ADDITIONAL TIME ABOVE THE 8 HOUR LIMIT BE REQUIRED, COORDINATE WITH THE OWNER. DURING THE ENTIRE PERIOD OF THE CONTRACT, PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 30 MINUTES DURING REGULAR BUSINESS HOURS, AND PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 2 HOURS AT NIGHT AND ON WEEKENDS. FAILURE TO RESTORE TEMPORARY POWER WITHIN THESE CONSTRAINTS WILL RESULT IN LIQUIDATED DAMAGES PER THE AGREEMENT.
2. CONTRACTOR SHALL PROVIDE A TEMPORARY STANDBY DIESEL GENERATOR CAPABLE OF PROVIDING A MINIMUM OF 250KW. THE GENERATOR SHALL PROVIDE STANDBY POWER TO SWITCHBOARD A/10 DURING TIMES OF A COMPLETE PLANT OUTAGE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, TEMPORARY WIRING, AND LABOR TO CONNECT AND PLACE THE GENERATOR IN SERVICE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY COST AND LABOR FOR THE OPERATION, MAINTENANCE, AND SERVICING OF THE GENERATOR INCLUDING FUELING AND REFUELING.
3. CONTRACTOR SHALL COORDINATE, PLAN, AND SCHEDULE ALL OUTAGES AND POWER SWITCHOVERS WITH THE OWNER. ALL PLANNED OUTAGES SHALL BE NO GREATER THAN 60 MINUTES.
4. SWITCHBOARD A/10 IS A 480V, 1000A, DOUBLE-ENDED, SWITCHBOARD. PROVIDE 1 SET OF 3-500KCMIL & 1#3 GRD. CABLE TO CONNECT TEMPORARY GENERATOR TO SWITCHBOARD.

TEMPORARY GENERATOR PLAN



file: P:\14211\map\Dwg\2GE05.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**SITE DEVELOPMENT
TEMPORARY GENERATOR PLAN**



8/2023

Sheet No.
20
Drawing No.
2-GE-05



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

LEGEND:

- 6 TEMPORARY GENERATOR CONNECTION LOCATION - SWITCHBOARDS DEWATERING NORTH AND SWITCHBOARD DEWATERING SOUTH

PLAN NOTES:

1. A PORTION OF THE WORK MAY REQUIRE A COMPLETE OUTAGE OF THE MAIN SWITCHGEAR. THE MAXIMUM DURATION THE PLANT SHALL OPERATE ON TEMPORARY POWER TO BE 8 HOURS FOR EACH OCCURRENCE. SHOULD ADDITIONAL TIME ABOVE THE 8 HOUR LIMIT BE REQUIRED, COORDINATE WITH THE OWNER. DURING THE ENTIRE PERIOD OF THE CONTRACT, PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 30 MINUTES DURING REGULAR BUSINESS HOURS, AND PROVIDE RESTORATION OF TEMPORARY POWER WITHIN 2 HOURS AT NIGHT AND ON WEEKENDS. FAILURE TO RESTORE TEMPORARY POWER WITHIN THESE CONSTRAINTS WILL RESULT IN LIQUIDATED DAMAGES PER THE AGREEMENT.
2. CONTRACTOR SHALL PROVIDE A TEMPORARY STANDBY DIESEL GENERATOR CAPABLE OF PROVIDING A MINIMUM OF 800KW. THE GENERATOR SHALL PROVIDE STANDBY POWER TO SWITCHBOARD SWB-1 DURING TIMES OF A COMPLETE PLANT OUTAGE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, TEMPORARY WIRING, AND LABOR TO CONNECT AND PLACE THE GENERATOR IN SERVICE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY COST AND LABOR FOR THE OPERATION, MAINTENANCE, AND SERVICING OF THE GENERATOR INCLUDING FUELING AND REFUELING.
3. CONTRACTOR SHALL COORDINATE, PLAN, AND SCHEDULE ALL OUTAGES AND POWER SWITCHOVERS WITH THE OWNER. ALL PLANNED OUTAGES SHALL BE NO GREATER THAN 60 MINUTES.
4. SWITCHBOARD DEWATERING NORTH IS A 480V, 2500A, DOUBLE-ENDED, SWITCHBOARD. PROVIDE 4 SETS OF 3-350KCMIL & 1#3/0 GRD. CABLE TO CONNECT TEMPORARY GENERATOR TO SWITCHBOARD.
5. SWITCHBOARD DEWATERING SOUTH IS A 480V, 2500A, DOUBLE-ENDED, SWITCHBOARD. PROVIDE 2 SETS OF 3-350KCMIL & 1#3/0 GRD. CABLE TO CONNECT TEMPORARY GENERATOR TO SWITCHBOARD.

TEMPORARY GENERATOR PLAN



file: P:\14211\map\Drawg\2GE06.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**SITE DEVELOPMENT
TEMPORARY GENERATOR PLAN**



8/2023

Sheet No.

21

Drawing No.

2-GE-06

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.



SITE PLAN



file: P:\14211\map\Dwg\2EN01.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**SITE DEVELOPMENT
ELECTRICAL SITE PLAN**



8/2023

Sheet No.

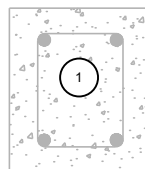
22

Drawing No.

2-EN-01

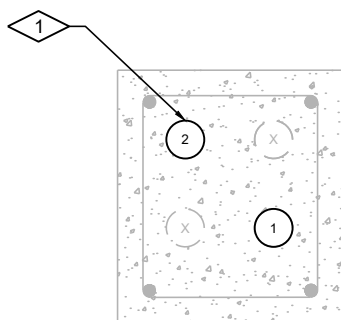
DUCTBANK SCHEDULE					
NUMBER	SIZE	FROM	TO	CONTENTS	REMARKS
1	2"	MAIN SWITCHGEAR BUILDING	HANDHOLE	CONTROLS	EXISTING CONDUIT
2	2"	HANDHOLE	MAIN PUMP BUILDING	CONTROLS	EXISTING CONDUIT

SURFACE



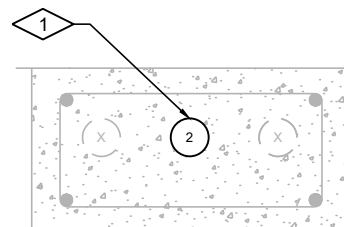
DUCTBANK SECTION A
NTS 2-EN-01

SURFACE



DUCTBANK SECTION B
NTS 2-EN-01

SURFACE



DUCTBANK SECTION C
NTS 2-EN-01



HANDHOLE P1
NTS 2-EN-01



JUNCTION BOX AT MAIN SWITCHGEAR BUILDING P2
NTS 2-EN-01

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

PLAN NOTES:

1. REMOVE ABANDONED MULTI-CONDUCTOR CONTROL CABLE PRIOR TO INSTALLATION OF NEW CABLES.

file: P:\14211\map\Dwg\2EN02.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

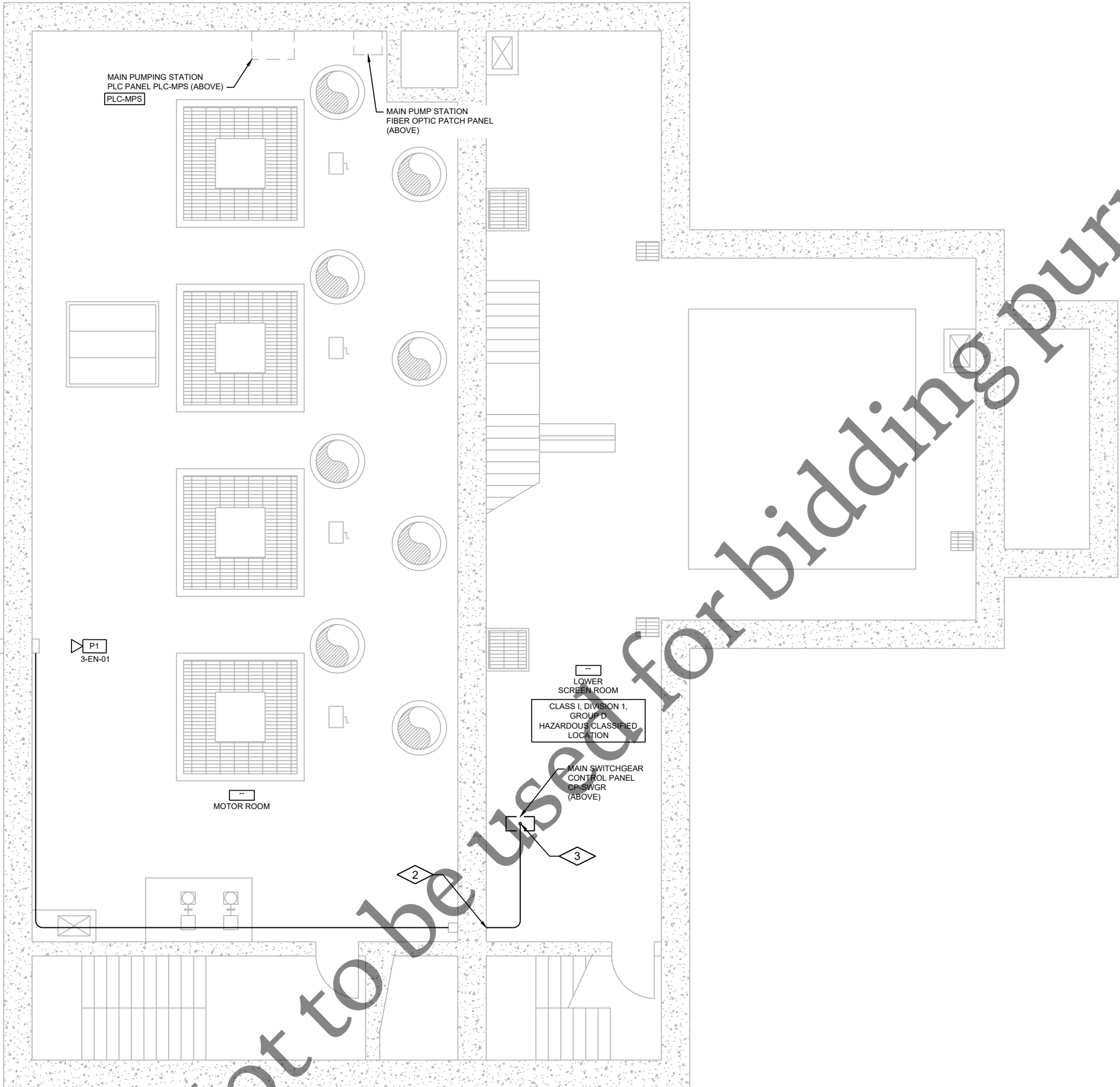
**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**SITE DEVELOPMENT
DUCTBANK SECTIONS AND DETAILS**



8/2023

Sheet No.
23
Drawing No.
2-EN-02



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

PLAN NOTES:

1. REMOVE ABANDONED MULTI-CONDUCTOR CONTROL CABLE PRIOR TO INSTALLATION OF NEW CABLES.
2. CONNECT NEW CONDUIT TO EXISTING CONDUIT THAT HAS BEEN CORED THROUGH THE WALL AND CAPPED IN THE LOWER SCREEN ROOM.
3. COORDINATE WITH OWNER PRIOR TO CORING HOLES THROUGH FLOOR.



JUNCTION BOX AT MAIN PUMP BUILDING **P1**
NTS 3-EN-01

file: P:\14211\map\Dwg\3EN01.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

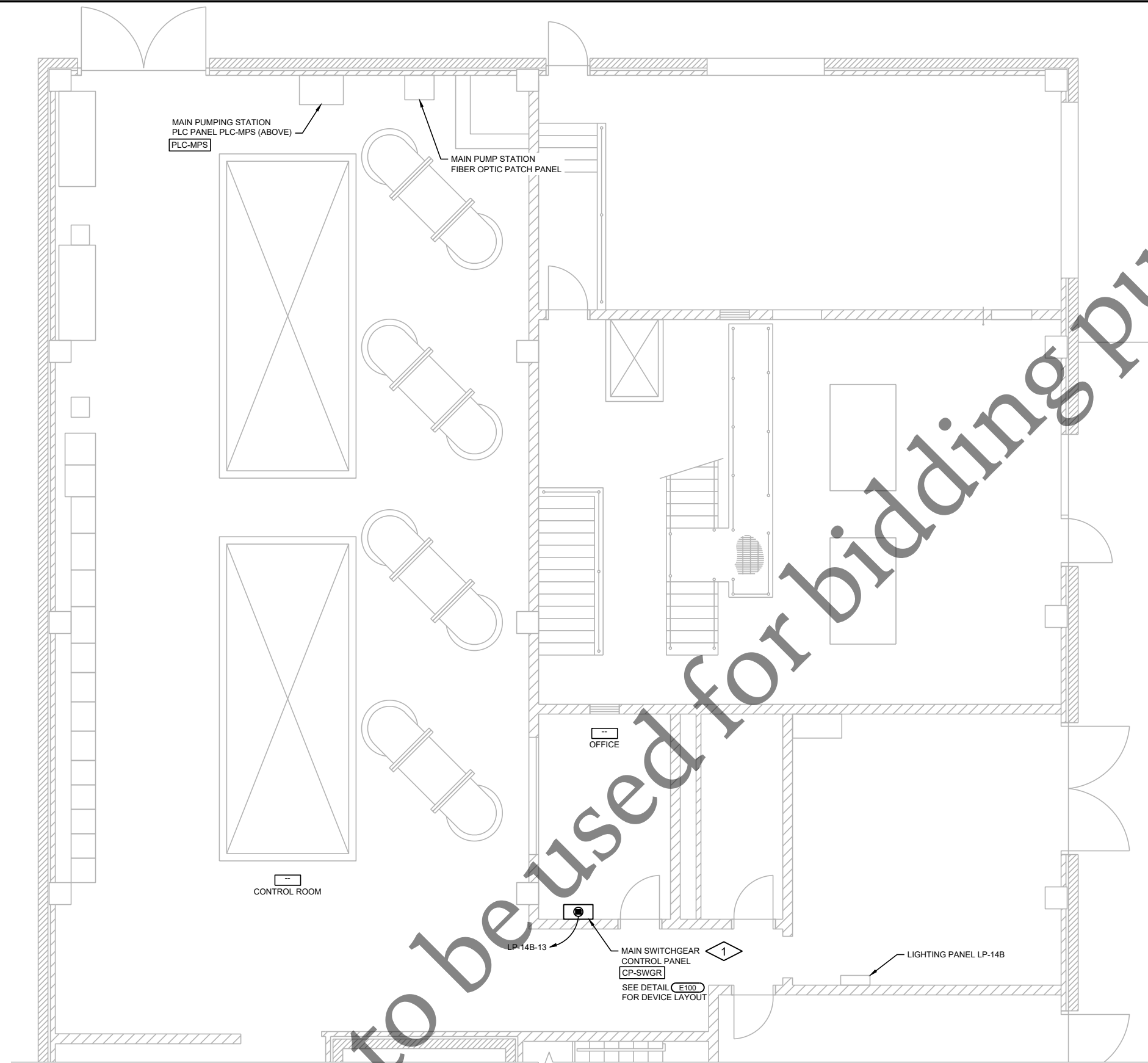
**FOUR RIVERS SANITATION AUTHORITY
 MAIN POWER TRANSITION PROJECT
 (CAPITAL PROJECT NO. 1361)
 ROCKFORD, IL**

**MAIN PUMP BUILDING
 LOWER PLAN**



8/2023

Sheet No.
24
 Drawing No.
3-EN-01



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.
3. CONTRACTOR SHALL PROVIDE CONTROL WIRING AND COMPONENTS AS INDICATED AND SPECIFIED. ALL WIRES SHALL BE LABELED AT EACH END.

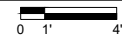
PLAN NOTES:

1. MOUNT MAIN SWITCHGEAR CONTROL PANEL TO CMU WALL WITH HILTI HIT-HY 270 ADHESIVE ANCHOR OR EQUAL. THREADED ROD ASSEMBLY SHALL BE 316 STAINLESS STEEL. ANCHOR DIAMETER SHALL BE COORDINATED WITH PANEL MANUFACTURER BASED ON FINAL DIMENSIONS AND WEIGHT OF PANEL. ANCHORS SHALL BE INSTALLED IN THE CELLS OF THE CMU. INSTALLATION IN THE MORTAR JOINT IS NOT PERMITTED. SEE DETAIL (N170)

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION	
CP-SWGR	MAIN SWITCHGEAR CONTROL PANEL	1	N170	(4) #14	52M1-CS
				(6) #14	52T-CS
				(4) #14	52M2-CS
PLC-MPS	MAIN PUMP STATION PLC PANEL		(68) #14	CP-SWGR	

SEE DRAWING 1-G-05 FOR CONTROL WIRING GENERAL NOTES.

UPPER PLAN



file: P:\14211map\Dwg\SEN02.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**MAIN PUMP BUILDING
UPPER PLAN**



8/2023

Sheet No.

25

Drawing No.

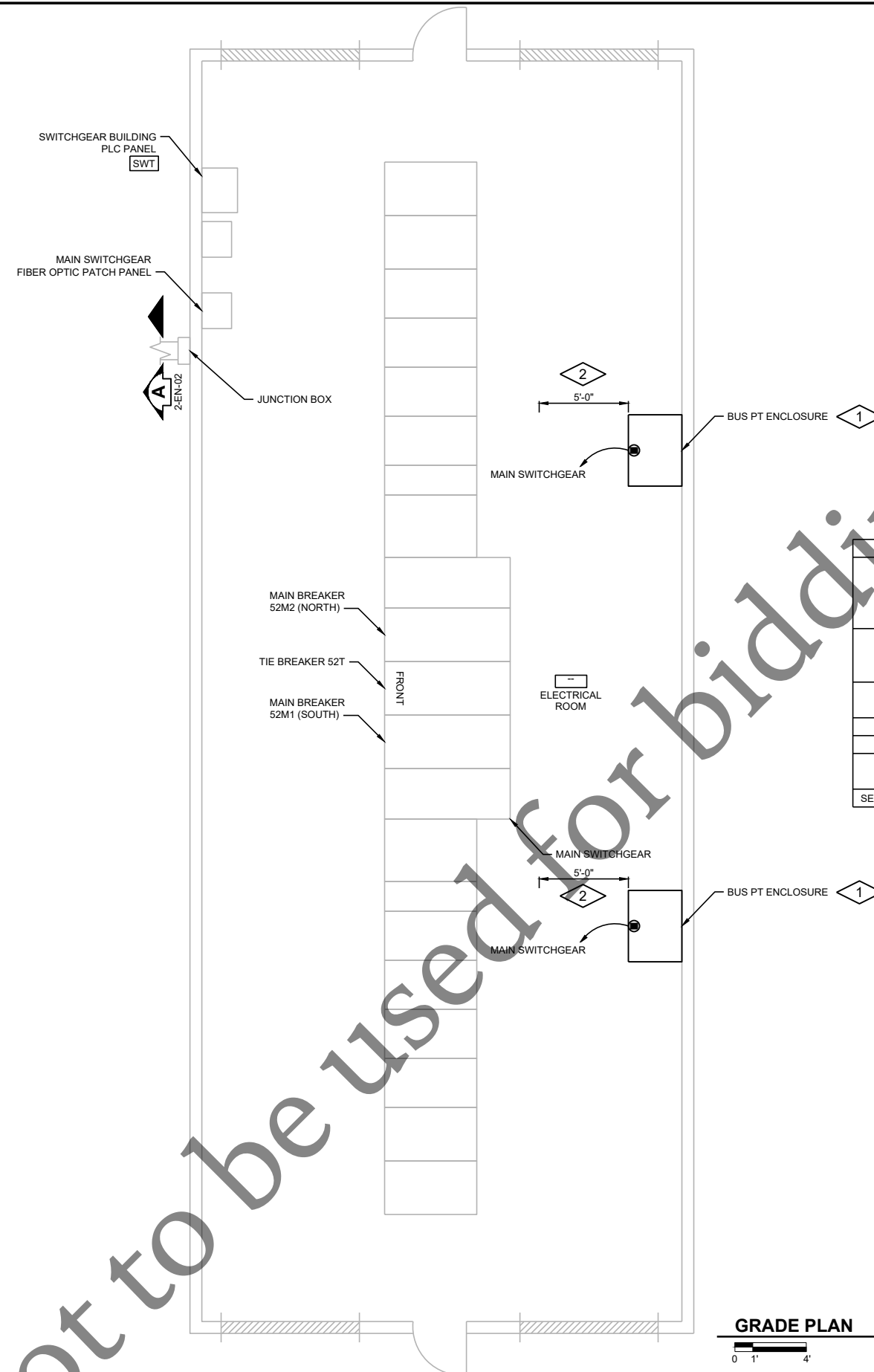
3-EN-02

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.
3. CONTRACTOR SHALL PROVIDE CONTROL WIRING AND COMPONENTS AS INDICATED AND SPECIFIED. ALL WIRES SHALL BE LABELED AT EACH END.

PLAN NOTES:

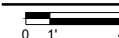
1. PROVIDE CUSTOM-BUILT, NEMA 1 EQUIVALENT, FREE STANDING, STEEL ENCLOSURE TO HOUSE BUS PTS. PROVIDE A SEPARATE ENCLOSURE FOR EACH SET OF PTS. SEE SECTION 26 13 00.
2. MINIMUM CLEARANCE FROM ACCESSIBLE PORTION OF BUS PT ENCLOSURE TO MAIN SWITCHGEAR.



TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
52M1-CS	MAIN BREAKER 52M1 CONTROL PANEL - CUBICLE 3A	-	(8) #14	52M2-CS
			(8) #14	52T-CS
			(6) #14	CTRL-3B
			(2) CE	SWT
52M2-CS	MAIN BREAKER 52M2 CONTROL PANEL - CUBICLE 1A	-	(8) #14	52T-CS
			(6) #14	CTRL-3B
			(1) CE	SWT
52T-CS	TIE BREAKER 52T CONTROL PANEL - CUBICLE 2A	-	(6) #14	CTRL-3B
			(1) CE	SWT
52M2	MAIN BREAKER 52M2 (NORTH)	-	(1) CE	SWT
52T	TIE BREAKER	-	(1) CE	SWT
CTRL-3B	CONTROL CUBICLE 3B	-	(4) #14	52T-CS
			(38) #14	SWT

SEE DRAWING 1-G-05 FOR CONTROL WIRING GENERAL NOTES.

GRADE PLAN



file: P:\14211map\Dwg\4E\N01.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**MAIN SWITCHGEAR BUILDING
GRADE PLAN**



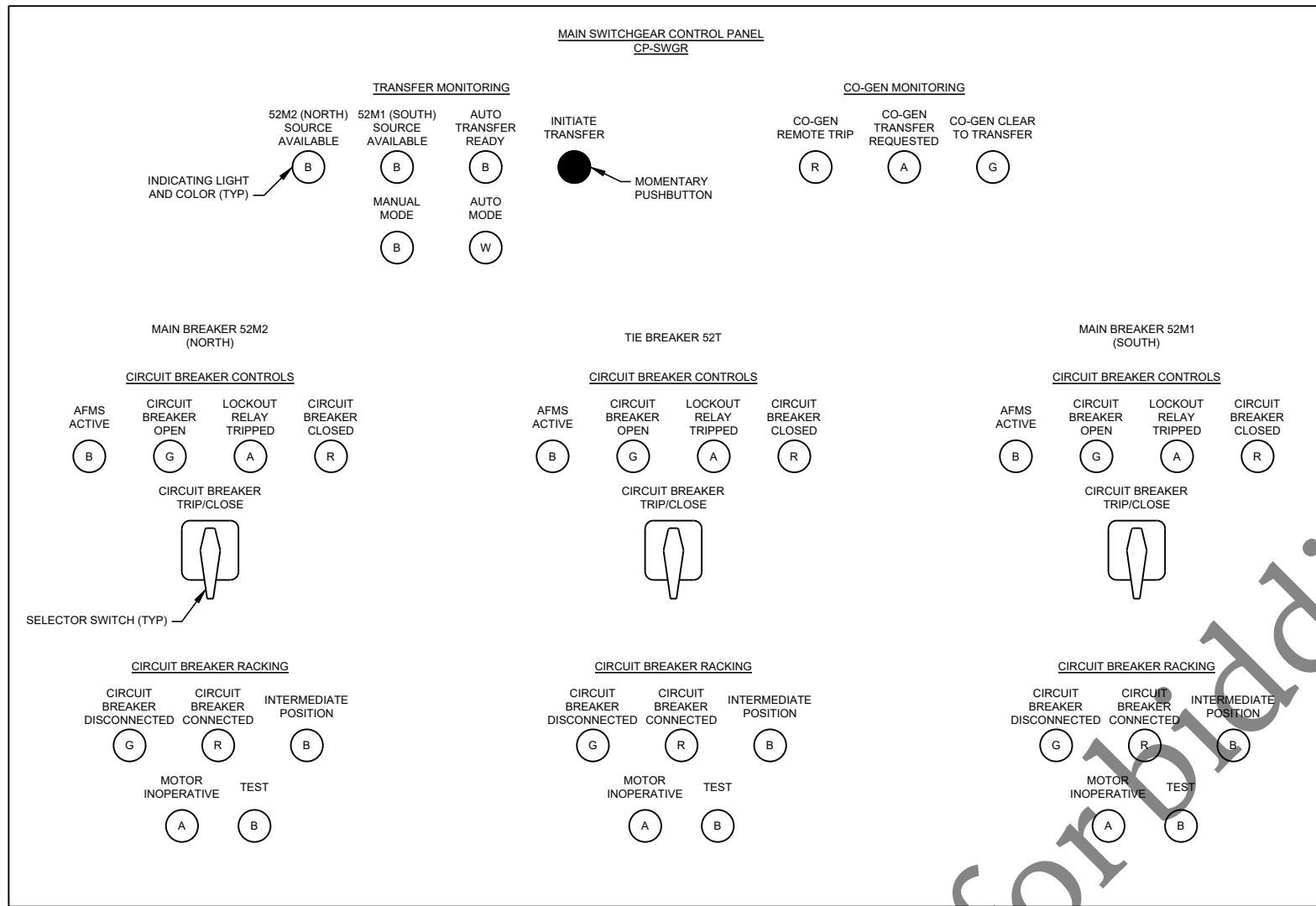
8/2023

Sheet No.

26

Drawing No.

4-E-01



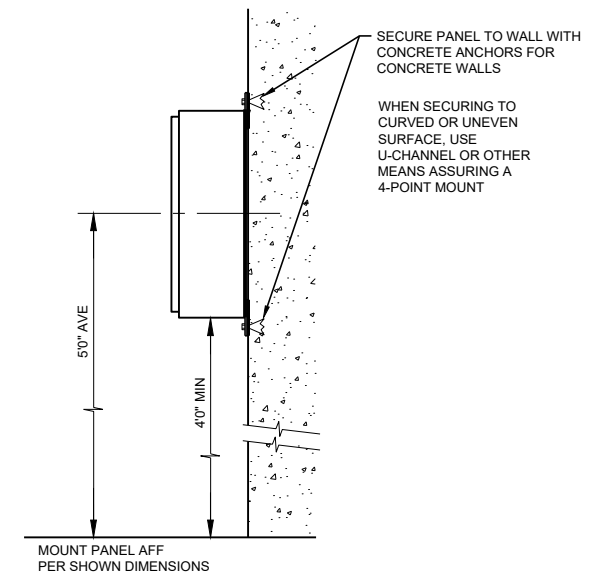
**MAIN SWITCHGEAR
CONTROL PANEL CP-SWGR
DEVICE LAYOUT** E100

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT SEQUENCES AND CONSTRAINTS.

PLAN NOTES:

1. SEE SECTION 40 67 15 FOR CONTROL PANEL CONSTRUCTION REQUIREMENTS.



**WALL MOUNT
CONTROL PANEL** N170
NTS

file: P:\14211map\Dwg\5ED01.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	JTB
				Drawn By	JTB
				Checked By	RJF
				Approved By	JTB

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

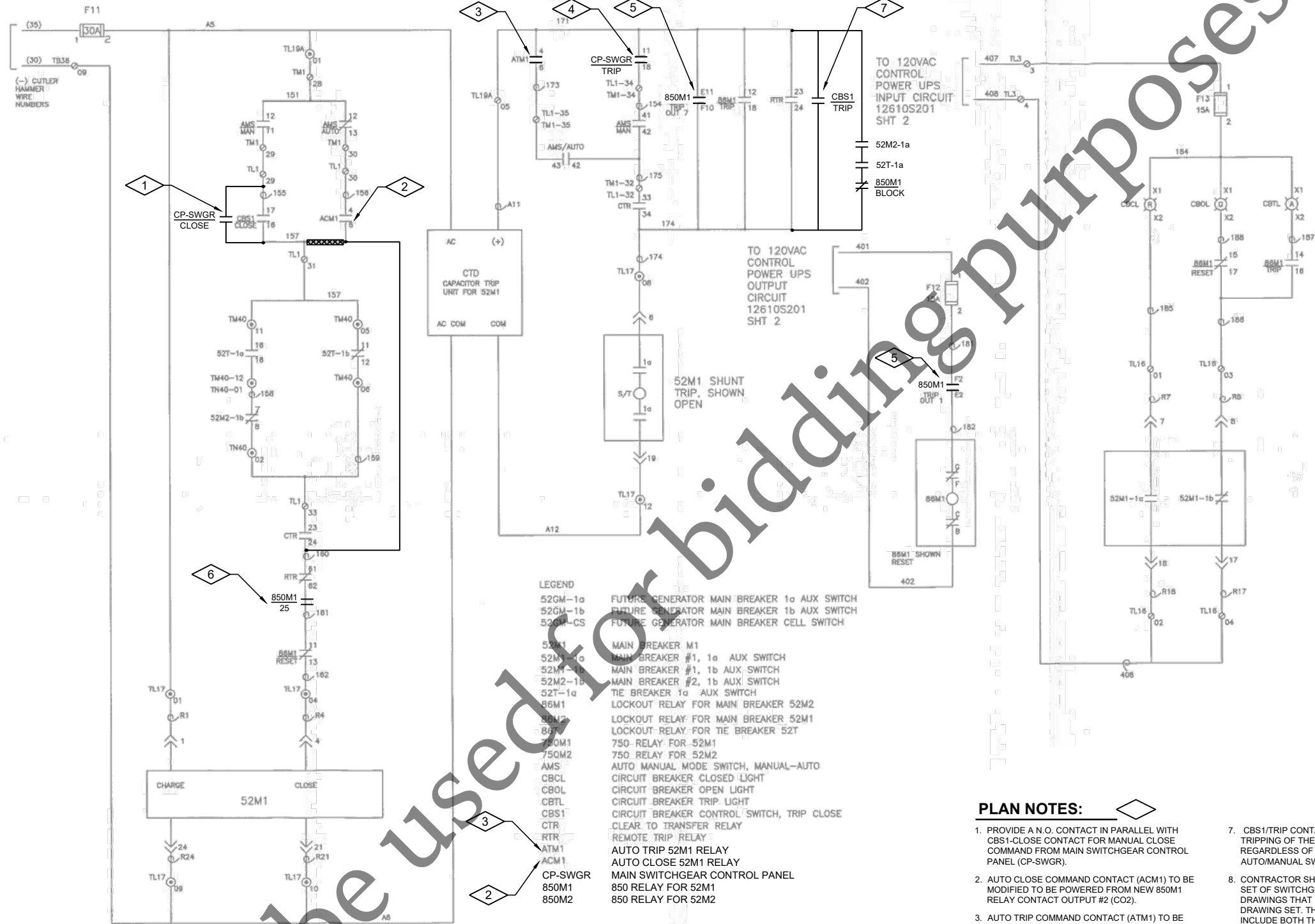
**ELECTRICAL AND INSTRUMENTATION AND CONTROLS
DETAILS**



8/2023

Sheet No.
27
Drawing No.
5-EN-01

100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138



- LEGEND**
- 52GM-1a FUTURE GENERATOR MAIN BREAKER 1a AUX SWITCH
 - 52GM-1b FUTURE GENERATOR MAIN BREAKER 1b AUX SWITCH
 - 52GM-CS FUTURE GENERATOR MAIN BREAKER CELL SWITCH
 - 52M1 MAIN BREAKER M1
 - 52M1-1a MAIN BREAKER #1, 1a AUX SWITCH
 - 52M1-1b MAIN BREAKER #1, 1b AUX SWITCH
 - 52M2-1a MAIN BREAKER #2, 1a AUX SWITCH
 - 52T-1a TIE BREAKER 1a AUX SWITCH
 - 85M1 LOCKOUT RELAY FOR MAIN BREAKER 52M2
 - 85M2 LOCKOUT RELAY FOR MAIN BREAKER 52M1
 - 85M3 LOCKOUT-RELAY FOR TIE BREAKER 52T
 - 750M1 750-RELAY FOR 52M1
 - 750M2 750-RELAY FOR 52M2
 - AMS AUTO MANUAL MODE SWITCH, MANUAL-AUTO
 - CBCL CIRCUIT BREAKER CLOSED LIGHT
 - CBOL CIRCUIT BREAKER OPEN LIGHT
 - CBTL CIRCUIT BREAKER TRIP LIGHT
 - CBS1 CIRCUIT BREAKER CONTROL SWITCH, TRIP CLOSE
 - CTR CLEAR TO TRANSFER RELAY
 - RTR REMOTE TRIP RELAY
 - ATM1 AUTO TRIP 52M1 RELAY
 - ACM1 AUTO CLOSE 52M1 RELAY
 - CP-SWGR MAIN SWITCHGEAR CONTROL PANEL
 - 850M1 850 RELAY FOR 52M1
 - 850M2 850 RELAY FOR 52M2

PLAN NOTES:

1. PROVIDE A N.O. CONTACT IN PARALLEL WITH CBS1-CLOSE CONTACT FOR MANUAL CLOSE COMMAND FROM MAIN SWITCHGEAR CONTROL PANEL (CP-SWGR).
2. AUTO CLOSE COMMAND CONTACT (ACM1) TO BE MODIFIED TO BE POWERED FROM NEW 850M1 RELAY CONTACT OUTPUT #2 (CO2).
3. AUTO TRIP COMMAND CONTACT (ATM1) TO BE MODIFIED TO BE POWERED FROM NEW 850M1 RELAY CONTACT OUTPUT #1 (CO1).
4. PROVIDE A N.O CONTACT INSERIES WITH MANUAL SWITCH FOR MANUAL TRIP COMMAND FROM MAIN SWITCHGEAR CONTROL PANEL (CP-SWGR).
5. TRIP COMMAND CONTACT (750M1/TRIP) TO BE MODIFIED TO BE POWERED FROM NEW 850M1 RELAY CONTACT OUTPUT #9 (CO9).
6. NEW SYNC CHECK CONTACT (850M1/25) TO BE POWERED FROM NEW 850M1 RELAY CONTACT OUTPUT. SET FOR LIVE-LINE/DEAD-BUS AND LIVE-LINE/LIVE-BUS
7. CBS1/TRIP CONTACT TO BE MODIFIED TO ALLOW TRIPPING OF THE CIRCUIT BREAKER REGARDLESS OF THE STATUS OF THE AUTO/MANUAL SWITCH.
8. CONTRACTOR SHALL CREATE A NEW, COMPLETE SET OF SWITCHGEAR SCHEMATIC AND WIRING DRAWINGS THAT UPDATES THE EXISTING DRAWING SET. THE DRAWING SET SHALL INCLUDE BOTH THE NEW FEATURES ADDED BY THE CONTRACTOR AS WELL AS THE EXISTING FEATURES THAT ARE UNCHANGED BY THE PROJECT. VERIFICATION OF THE CORRECTNESS OF THE EXISTING FEATURES IS THE RESPONSIBILITY OF THE CONTRACTOR.

**CIRCUIT BREAKER 52M1
WIRING DIAGRAM
MODIFICATIONS**
NTS

N501

file: P:\14211map\Drawg\5ND01.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	
				Drawn By	LPH
				Checked By	BLG
				Approved By	BLG

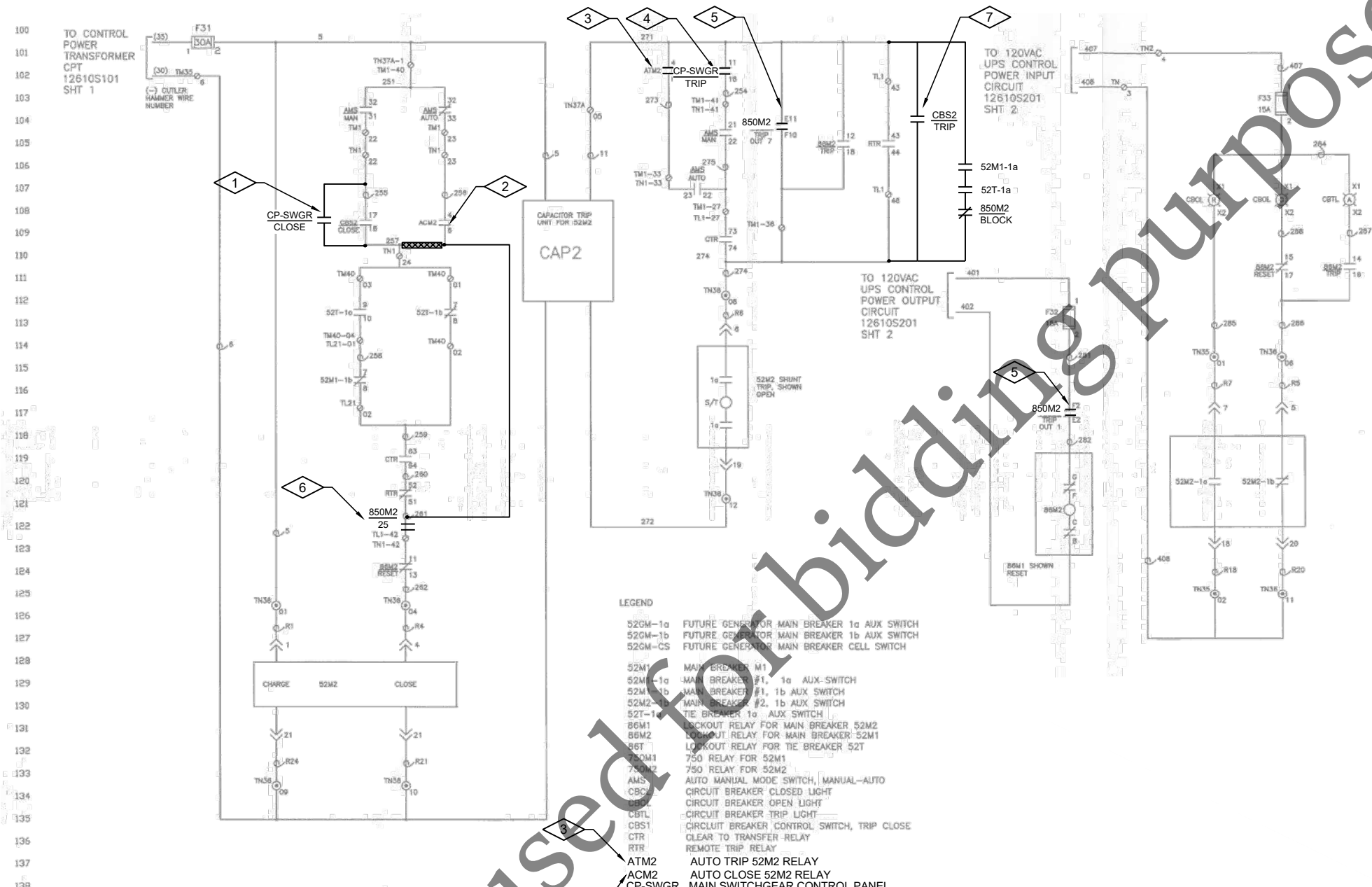
**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**ELECTRICAL AND INSTRUMENTATION AND CONTROLS
DETAILS**



8/2023

Sheet No.
28
Drawing No.
5-EN-02



- LEGEND**
- 52GM-1a FUTURE GENERATOR MAIN BREAKER 1a AUX SWITCH
 - 52GM-1b FUTURE GENERATOR MAIN BREAKER 1b AUX SWITCH
 - 52GM-CS FUTURE GENERATOR MAIN BREAKER CELL SWITCH
 - 52M1 MAIN BREAKER #1
 - 52M1-1a MAIN BREAKER #1, 1a AUX-SWITCH
 - 52M1-1b MAIN BREAKER #1, 1b AUX SWITCH
 - 52M2-1a MAIN BREAKER #2, 1a AUX SWITCH
 - 52M2-1b MAIN BREAKER #2, 1b AUX SWITCH
 - 52T-1 TIE BREAKER 1a AUX SWITCH
 - 86M1 LOCKOUT RELAY FOR MAIN BREAKER 52M2
 - 86M2 LOCKOUT RELAY FOR MAIN BREAKER 52M1
 - 86T LOCKOUT RELAY FOR TIE BREAKER 52T
 - 750M1 750 RELAY FOR 52M1
 - 750M2 750 RELAY FOR 52M2
 - AMS AUTO MANUAL MODE SWITCH, MANUAL-AUTO
 - CBCL CIRCUIT BREAKER CLOSED LIGHT
 - CBOL CIRCUIT BREAKER OPEN LIGHT
 - CBTL CIRCUIT BREAKER TRIP LIGHT
 - CTR CIRCUIT BREAKER CONTROL SWITCH, TRIP CLOSE
 - RTR CLEAR TO TRANSFER RELAY
 - ATM2 AUTO TRIP 52M2 RELAY
 - ACM2 AUTO CLOSE 52M2 RELAY
 - CP-SWGR MAIN SWITCHGEAR CONTROL PANEL
 - 850M1 850 RELAY FOR 52M1
 - 850M2 850 RELAY FOR 52M2

1. PROVIDE A N.O. CONTACT IN PARALLEL WITH CBS2-CLOSE CONTACT FOR MANUAL CLOSE COMMAND FROM MAIN SWITCHGEAR CONTROL PANEL (CP-SWGR).
2. AUTO CLOSE COMMAND CONTACT (ACM2) TO BE MODIFIED TO BE POWERED FROM NEW 850M2 RELAY CONTACT OUTPUT #2 (CO2).
3. AUTO TRIP COMMAND CONTACT (ATM2) TO BE MODIFIED TO BE POWERED FROM NEW 850M2 RELAY CONTACT OUTPUT #1 (CO1).
4. PROVIDE A N.O CONTACT IN SERIES WITH MANUAL SWITCH FOR MANUAL TRIP COMMAND FROM MAIN SWITCHGEAR CONTROL PANEL (CP-SWGR).
5. TRIP COMMAND CONTACT (750M2/TRIP) TO BE MODIFIED TO BE POWERED FROM NEW 850M2 RELAY CONTACT OUTPUT #9 (CO9).
6. NEW SYNC CHECK CONTACT (850M2/25) TO BE POWERED FROM NEW 850M2 RELAY CONTACT OUTPUT. SET FOR LIVE-LINE/DEAD-BUS AND LIVE-LINE/LIVE-BUS.
7. CBS2/TRIP CONTACT TO BE MODIFIED TO ALLOW TRIPPING OF THE CIRCUIT BREAKER REGARDLESS OF THE STATUS OF THE AUTO/MANUAL SWITCH.
8. CONTRACTOR SHALL CREATE A NEW, COMPLETE SET OF SWITCHGEAR SCHEMATIC AND WIRING DRAWINGS THAT UPDATES THE EXISTING DRAWING SET. THE DRAWING SET SHALL INCLUDE BOTH THE NEW FEATURES ADDED BY THE CONTRACTOR AS WELL AS THE EXISTING FEATURES THAT ARE UNCHANGED BY THE PROJECT. VERIFICATION OF THE CORRECTNESS OF THE EXISTING FEATURES IS THE RESPONSIBILITY OF THE CONTRACTOR.

**CIRCUIT BREAKER 52M2
WIRING DIAGRAM
MODIFICATIONS**

NTS N502

file: P:\14211\map\Drawg\5ND01.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	
				Drawn By	LPH
				Checked By	BLG
				Approved By	BLG

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

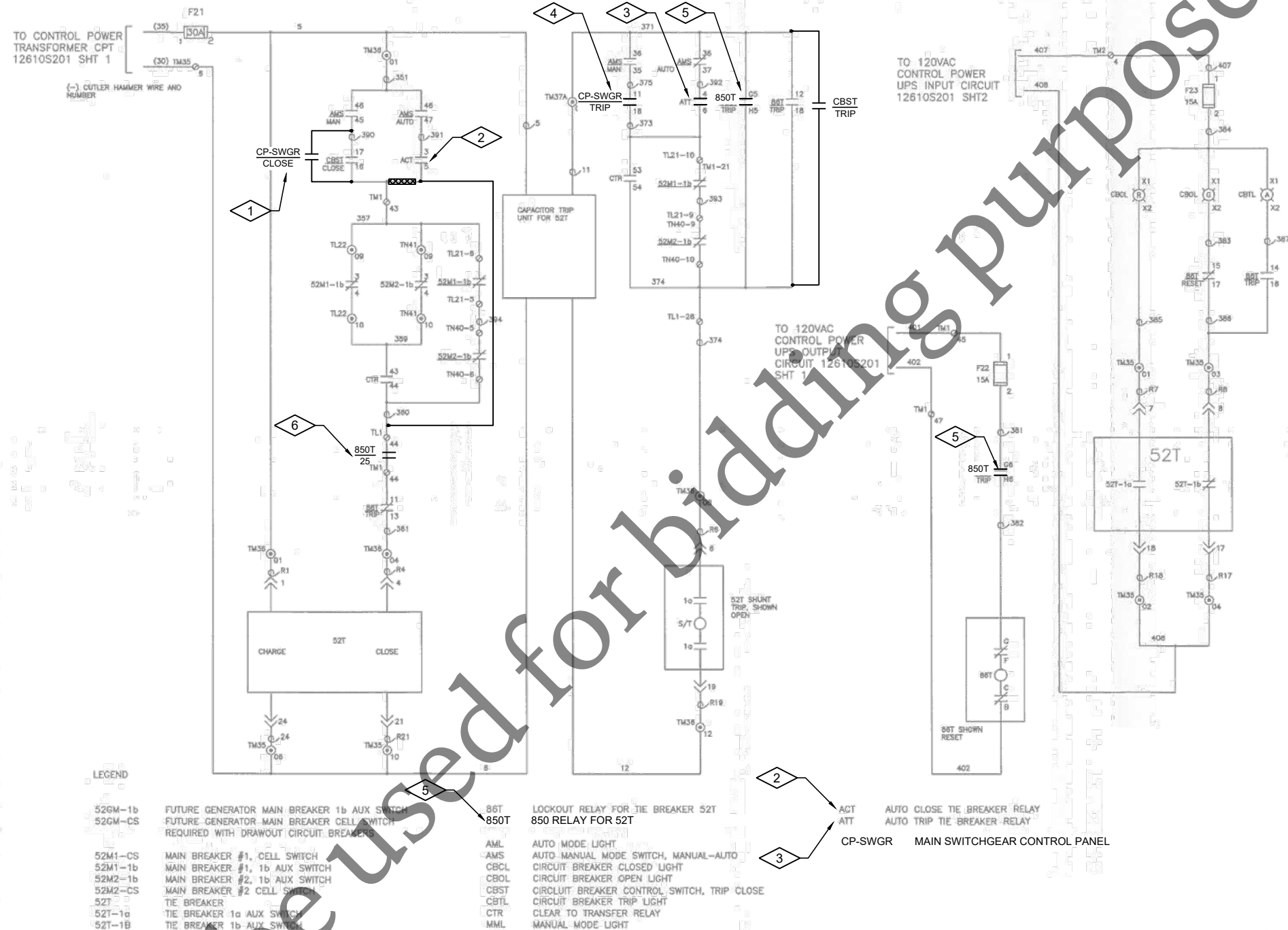
**ELECTRICAL AND INSTRUMENTATION AND CONTROLS
DETAILS**



8/2023

Sheet No.
29
Drawing No.
5-EN-03

100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138



**CIRCUIT BREAKER 52T
WIRING DIAGRAM
MODIFICATIONS**

N503

NTS

PLAN NOTES:

1. PROVIDE A N.O CONTACT IN PARALLEL WITH CBST-CLOSE CONTACT FOR MANUAL CLOSE COMMAND FROM MAIN SWITCHGEAR CONTROL PANEL (CP-SWGR).
2. AUTO CLOSE COMMAND CONTACT (ACT) TO BE MODIFIED TO BE POWERED FROM NEW 850T RELAY CONTACT OUTPUT #2 (CO2).
3. AUTO TRIP COMMAND CONTACT (ATT) TO BE MODIFIED TO BE POWERED FROM NEW 850T RELAY CONTACT OUTPUT #1 (CO1).
4. PROVIDE A N.O CONTACT IN SERIES WITH MANUAL SWITCH FOR MANUAL TRIP COMMAND FROM MAIN SWITCHGEAR CONTROL PANEL (CP-SWGR).
5. TRIP COMMAND CONTACT (735T/TRIP) TO BE MODIFIED TO BE POWERED FROM NEW 850T RELAY CONTACT OUTPUT #9 (CO9).
6. NEW SYNC CHECK CONTACT (850T/25) TO BE POWERED FROM NEW 850T RELAY CONTACT OUTPUT. SET FOR LIVE-LINE/LIVE-BUS, DEAD-LINE/LIVE-BUS, LIVE-LINE/DEAD-BUS, DEAD-LINE/DEAD-BUS.
7. CBST/TRIP CONTACT TO BE MODIFIED TO ALLOW TRIPPING OF THE CIRCUIT BREAKER REGARDLESS OF THE STATUS OF THE AUTO/MANUAL SWITCH.
8. CONTRACTOR SHALL CREATE A NEW, COMPLETE SET OF SWITCHGEAR SCHEMATIC AND WIRING DRAWINGS THAT UPDATES THE EXISTING DRAWING SET. THE DRAWING SET SHALL INCLUDE BOTH THE NEW FEATURES ADDED BY THE CONTRACTOR AS WELL AS THE EXISTING FEATURES THAT ARE UNCHANGED BY THE PROJECT. VERIFICATION OF THE CORRECTNESS OF THE EXISTING FEATURES IS THE RESPONSIBILITY OF THE CONTRACTOR.

file: P:\14211map\Drawg\5ND01.dwg



No.	DATE	REVISION	INT.	Project No.	14211
				Designed By	
				Drawn By	LPH
				Checked By	BLG
				Approved By	BLG

**FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL**

**ELECTRICAL AND INSTRUMENTATION AND CONTROLS
DETAILS**



8/2023

Sheet No.
30
Drawing No.
5-EN-04