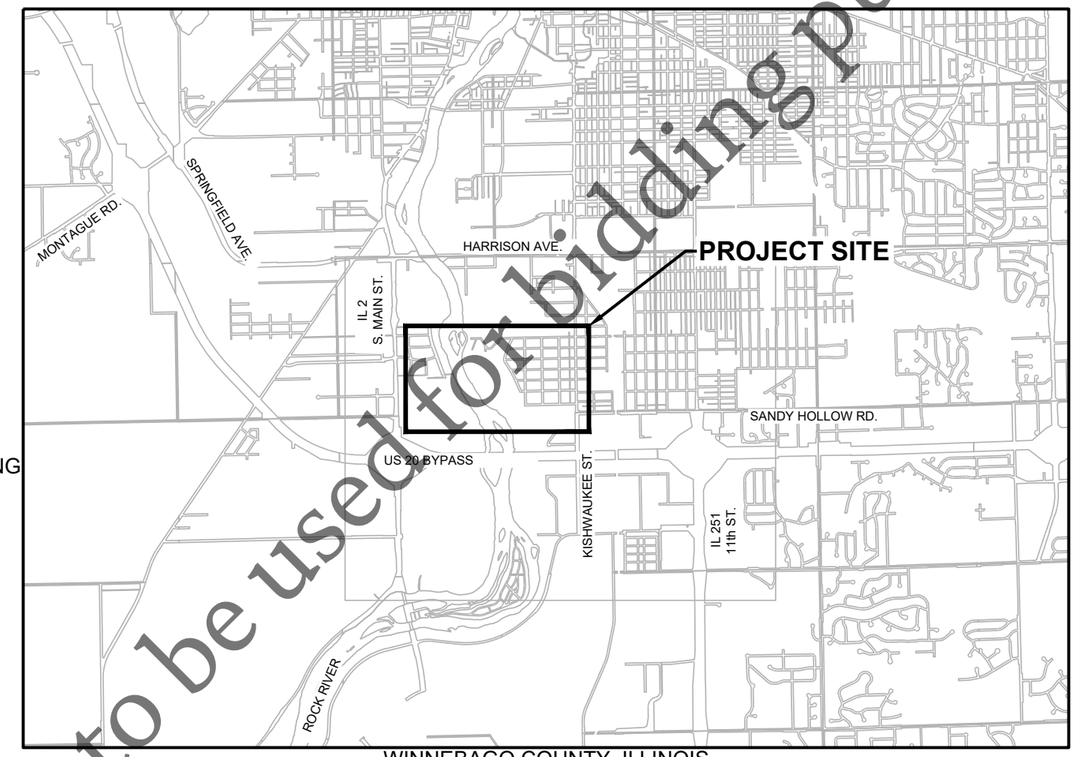
FOUR RIVERS SANITATION AUTHORITY
ROCKFORD, ILLINOIS

MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
JULY 2024



WINNEBAGO COUNTY, ILLINOIS

PROJECT ADDRESS
3333 KISHWAUKEE STREET
ROCKFORD, IL 61109

DONOHUE

Four Rivers Sanitation Authority

plot date: 9/30/2021
file: P:\14211nap\Dwg\001G0 COVER.dwg
sheet set: 14211 FRSA

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 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	

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	14211
Designed By	JTB
Drawn By	JTB
Checked By	RJF
Approved By	JTB

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MAIN POWER TRANSITION PROJECT
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ROCKFORD, IL

GENERAL
DRAWING INDEX AND SIGNATURE SHEET

DONOHUE 7/2024

Sheet No. 2

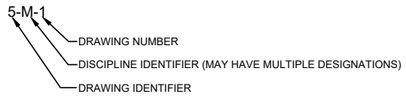
Drawing No. **1-G-01**

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

DRAWING NUMBER DESIGNATION



PLAN NOTE DESIGNATION

PLAN NOTE. SEE NOTES ON SAME DRAWING.

STANDARD DETAIL DESIGNATION

ON DRAWING WHERE DETAIL IS TAKEN

ON DRAWING WHERE DETAIL IS SHOWN

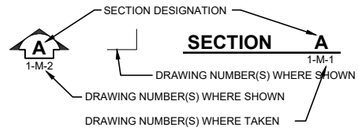
NOTE:
STANDARD DETAILS ARE LOCATED ON DRAWINGS THAT HAVE BEEN ASSIGNED A DRAWING IDENTIFIER OF 10 FOLLOWED BY A DISCIPLINE IDENTIFIER. THESE DRAWINGS ARE PLACED LAST IN THE DRAWING SET.

EXAMPLE: 10-M-01

SECTION DESIGNATION

ON DRAWING WHERE SECTION IS TAKEN

ON DRAWING WHERE SECTION IS SHOWN

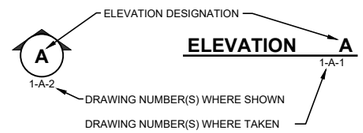


NOTE: PHANTOM LINETYPE THRU STRUCTURE MAY BE BROKEN FOR CLARITY

CASEWORK ELEVATION DESIGNATION

ON DRAWING WHERE SECTION IS TAKEN

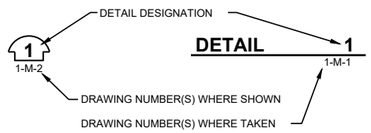
ON DRAWING WHERE SECTION IS SHOWN



DETAIL DESIGNATION

ON DRAWING WHERE DETAIL IS TAKEN

ON DRAWING WHERE DETAIL IS SHOWN



AREA DESIGNATION

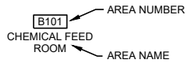
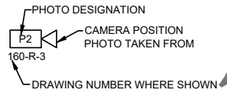
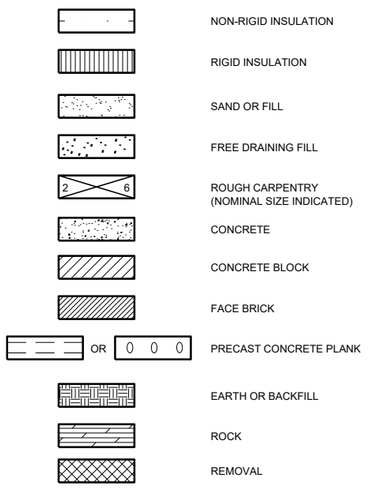


PHOTO DESIGNATION



SYMBOLS

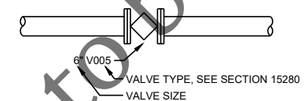


INSTRUMENT IDENTIFICATION

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

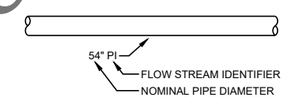
VALVE IDENTIFICATION

EXAMPLE:



PIPE IDENTIFICATION

EXAMPLE:



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 MASONRY UNIT	NOM	NOMINAL	SH	SHEET
AL	ALUMINUM	DIA	DIAMETER			NR	NON-RATED	SIM	SIMILAR
ALT	ALTERNATE	DIAG	DIAGONAL	GL	GLASS	NTS	NOT TO SCALE	SPA	SPACE OR SPACING
APPROX	APPROXIMATE	DIM	DIMENSION	GR	GRADE			SPECS	SPECIFICATIONS
ARCH	ARCHITECTURAL	DIP	DUCTILE IRON PIPE	GYP BD	GYPSUM BOARD	OC	ON CENTER	SQ	SQUARE
AVG	AVERAGE	DIR	DIRECTION			OD	OUTSIDE DIAMETER	SR	SHORT RADIUS
		DN	DOWN	H	HIGH	OFI	OWNER FURNISHED ITEM	SS or SST	STAINLESS STEEL
BOT	BOTTOM	DWG	DRAWING	HB	HOSE BIB	OFOI	OWNER FURNISHED OWNER INSTALLED	STD	STANDARD
B/	BOTTOM OF			H/C	HANDICAPPED			STL	STEEL
BF	BLIND FLANGE	EA	EACH	HDWD	HARDWOOD	OPNG or OPN'G	OPENING	STR	STRUCTURAL
BFP	BACKFLOW PREVENTER	ECC	ECCENTRIC	HDWR	HARDWARE	OPP	OPPOSITE	SUSP	SUSPENDED
BLDG	BUILDING	EF	EACH FACE	HM	HOLLOW METAL			S.V.	STAIN AND VARNISH
BLK	BLOCK	EJ	EXPANSION JOINT	HORIZ	HORIZONTAL	P&ID	PROCESS AND INSTRUMENTATION DIAGRAM		
BLKG	BLOCKING	EL	ELEVATION	HP	HIGH POINT			T	TOP
BM	BEAM	ELEC	ELECTRICAL	HT	HEIGHT	P. LAM.	PLASTIC LAMINATE	T	TREAD
BOB	BOTTOM OF BEAM	EL	ELEVATION	HWL	HIGH WATER LEVEL	PDC	PORTLAND CEMENT	T/	TOP OF
BOT	BOTTOM	ELL	ELBOW			PJF	PREFORMED JOINT FILLER	T/S	TOP OF STEEL
BRD	BOARD	EQ	EQUAL	ID	INSIDE DIAMETER	PL	PLATE	T&B	TOP AND BOTTOM
		EQUIP	EQUIPMENT	INSUL	INSULATION	PLAS	PLASTIC	T & G	TONGUE & GROOVE
C/L	CENTERLINE	EW	EACH WAY	INT	INTERIOR	PLYWD	PLYWOOD	TDC	TRAFFIC DECK COVERING
CEM	CEMENT	EWC	ELECTRICAL WATER COOLER	INV	INVERT	PR	PAIR	TMP	TEMPERED
CH	CEILING HEIGHT	EXIST or (X)	EXISTING			PREP	PREPARATION	THK	THICK
CJT	CONTROL JOINT	EXP	EXPANSION	KITCH	KITCHEN	PROJ	PROJECTION	TOC	TOP OF CONCRETE or CURB
CL	CENTERLINE	EXP JT	EXPANSION JOINT	LAV	LAVATORY	PT	PAINT	TOP	TOP OF PARAPET
CLG or CEIL	CEILING	EXT	EXTERIOR	LEV	LEVEL	PVC	POLYVINYL CHLORIDE	TOS	TOP OF STEEL
CLO	CLOSET			LIG	LAY-IN-GRID CEILING			TOW	TOP OF WALL
CLR	CLEAR	F/	FACE OF	LLH	LONG LEG HORIZONTAL	QT	QUARRY TILE	TYP	TYPICAL
CMU	CONCRETE MASONRY UNIT	FCA	FLANGED COUPLING ADAPTOR	LLV	LONG LEG VERTICAL				
CO	CLEAN OUT	FD	FLOOR DRAIN	LP	LOW POINT	R	RISER	UNO	UNLESS NOTED OTHERWISE
COL	COLUMN	FE	FIRE EXTINGUISHER	LGR	LONG RADIUS	R or RAD	RADIUS		
COMPO	COMPOSITION	FEC	FIRE EXTINGUISHER CABINET	LTG	LIGHTING	RC	ROOF CONDUCTOR	VYLB	VINYL BASE
CONC	CONCRETE	FF	FINISH FLOOR	LTWT	LIGHT WEIGHT	RCP	REINFORCED CONCRETE PIPE	VCT	VINYL COMPOSITION TILE
CONF	CONFERENCE	FFE	FINISH FLOOR ELEVATION	LWL	LOW WATER LEVEL	RCP	REFLECTED CEILING PLAN	VER	VERIFY
CONN	CONNECTION	FHT	FULL HEIGHT			RD	ROOF DRAIN	VERT	VERTICAL
CONST	CONSTRUCTION	FHC	FIRE HOSE CABINET	MAINT	MAINTENANCE	REC	RECESSED	VIF	VERIFY IN FIELD
CONT	CONTINUOUS	FIN	FINISH	MTL	MATERIAL	RED	REDUCER		
CONTR	CONTRACT/CONTRACTOR	FLR	FLOOR	MAX	MAXIMUM	REDW'D	REDWOOD	W	WIDE
CONTR JT	CONTRACTION JOINT	FLG	FLANGE	MB	MACHINE BOLT	REF	REFERENCE	W/	WITH
CORR	CORRIDOR	FO	FINISHED OPENING	MECH	MECHANICAL	REFL	REFLECTED	WC	WATER CLOSET
CT	CERAMIC TILE	FOC	FACE OF CONCRETE	MET	METAL	REINF	REINFORCE/REINFORCING	WD	WOOD
CPVC	CHLORINATED POLYVINYL CHLORIDE	FOS	FACE OF STUD	MEZZ	MEZZANINE	REQ'D	REQUIRED	WL	WATER LEVEL
		FOUND	FOUNDATION	MFR	MANUFACTURER	RES	RESILIENT	W/O	WITHOUT
CSK	COUNTERSINK	FOW	FACE OF WALL	MH	MANHOLE	REV	REVISION/REVISED	WP	WATERPROOFING
CTR	CENTER	FRP	FIBER REINFORCED PLASTIC	MIN	MINIMUM	RM	ROOM	WS	WATERSTOP
		FS	FLOOR SINK	MISC	MISCELLANEOUS			WWF	WELDED WIRE FABRIC
		FS	FULL SIZE	MJ	MECHANICAL JOINT				
		FSD	FULL SIZE DETAIL	MO	MASONRY OPENING			YR	YEAR
		FT	FEET	MULL	MULLION				
		FTG	FOOTING						
		FV	FIELD VERIFY						

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

GENERAL NOTES:

1. THIS IS STANDARD LEGEND. NOT ALL OF THE INFORMATION SHOWN ON THIS LEGEND IS NEEDED IN THESE CONTRACT DRAWINGS.
2. WORK IN THIS CONTRACT SHOWN FULL-TONE UNLESS OTHERWISE NOTED.
3. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
4. SEE SECTION 01 11 00 FOR PROJECT CONSTRAINTS.
5. 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.
6. 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.
7. REFER TO DRAWING 1-G-03 FOR GENERAL CIVIL NOTES.
8. REFER TO DRAWING 1-G-05 FOR GENERAL I&C NOTES.

GENERAL REMOVAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. FULL TONE COMPONENTS ON REMOVAL DRAWINGS TO BE REMOVED.
3. SEE SECTION 01 11 00 FOR PROJECT CONSTRAINTS.
4. 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.
5. 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.
6. 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.
7. 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, SPAWLED, ETC. AS A RESULT OF REMOVAL, PATCH SURFACE WITH PATCHING MORTAR AND FINISH TO MATCH ADJACENT FINISHED SURFACE.
8. 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.
9. 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.

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ROCKFORD, IL

GENERAL LEGEND
SYMBOLS, NOTES AND ABBREVIATIONS

DONOHUE 7/2024

Sheet No. 3

Drawing No. **1-G-02**

file: P:\14211nap\Dwg\001G2 Legends - SSM.dwg

LEGEND

EXISTING	PROPOSED	
BM# 1		BENCHMARK
		CATCH BASIN
TV		CATV PEDESTAL
		CULVERT
		CULVERT OVER 24" (SHOWN ACTUAL SIZE)
E		ELECTRIC MANHOLE
EM		ELECTRIC METER
E		ELECTRIC PEDESTAL
		FLARED END SECTION
GM		GAS METER
		GATE VALVE
		GUY WIRE
HH		HANDHOLE
		INLET
		LIGHTPOLE
		SANITARY OR STORM MANHOLE
		SIGN
SB 1		SOIL BORING
CP# 1		SURVEY CONTROL POINT
T		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
CATV		CABLE TV
		CENTERLINE OF ROAD
400	100	CONTOUR
		DITCH/SWALE
		EASEMENT
X X	X X	FENCE
E	E	ELECTRIC
DUCT	DUCT	ELECTRICAL DUCT
FO	FO	FIBER OPTIC
FM	FM	FORCEMAIN
G	G	GAS
		GUARDRAIL
OH		OVERHEAD ELECTRIC
		PIPE, ABANDON
		PIPE, PREVIOUSLY ABANDONED
		PIPE OVER 24" (SHOWN ACTUAL SIZE)
		PROPERTY LINE
		R.O.W.
		RAILROAD
SAN	SAN	SANITARY SEWER
		SILT FENCE
ST	ST	STORM SEWER
T		TELEPHONE
W	W	WATER

GENERAL NOTES

1. THE MAPPING AND UNDERGROUND UTILITY INFORMATION SHOWN IS FROM FRSA GIS INFORMATION AND RECORD DRAWINGS.
2. DIMENSIONS OR COORDINATES TAKE PRECEDENCE OVER SCALE. CONTRACTORS TO VERIFY ALL DIMENSIONS AND COORDINATES IN THE FIELD FOR PROPER FIT AND ALIGNMENT.
3. THE CONTRACTOR SHALL CONTACT THE ILLINOIS ONE CALL SYSTEM (J.U.L.I.E.) 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.
4. 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.
5. 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.
6. 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.
7. ACCESS CONSTRAINTS TO BE PLACED ON THE CONTRACTOR FOR THE PROJECT ARE SPECIFIED IN SECTION 01 11 00 OF THE SPECIFICATIONS.
8. 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.
9. 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.
10. CONTRACTOR SHALL RECEIVE ALL OF THEIR DELIVERIES. CONTRACTOR DELIVERIES ARE NOT ALLOWED TO OWNER'S MAINTENANCE BUILDING OR ADMINISTRATION BUILDING.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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.
16. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING CONSTRUCTION OF THE PROJECT.
17. 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.
18. 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.
19. 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
DIA	DIAMETER	PVI	POINT OF VERTICAL INTERSECTION
DIP	DUCTILE IRON PIPE	R	RADIUS
DWP	DEWATERING PIPE	RCP	REINFORCED CONCRETE PIPE
EXIST	EXISTING	RIM	TOP OF CASTING ELEVATION
EOP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
F&C	FRAME AND COVER	RT	RIGHT
F/C	FACE OF CURB	SAN	SANITARY SEWER
F TO F	FACE TO FACE	STM	STORM SEWER
FG	FINISHED GRADE	SD	SUMP DISCHARGE
FES	FLARED END SECTION	T/C	TOP OF CURB
INV	INVERT	T/W	TOP OF WALL
L	LENGTH OF CURVE	UD	UNDERDRAIN
LF	LINEAR FT	VC	VERTICAL CURVE
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:

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

Four Rivers Sanitation Authority

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

DONOHUE 7/2024

Sheet No. 4

Drawing No. 1-G-03

file: P:\14211nap\Dwg\001G2 Legends - SSM.dwg

PLUMBING / HVAC ABBREVIATIONS AND SYMBOLS

PLUMBING LEGEND

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

HVAC LEGEND

- AD — ACCESS DOOR
- 12x20 — DUCT (FIRST FIG. IS SIDE SHOWN)
- 20x12 — DUCT SECTION (RETURN)
- DUCT SECTION (SUPPLY)
- DUCT LINING
- RETURN, EXHAUST OR SUPPLY GRILLE W/ MVD
- ELBOW DOWN
- ELBOW W/ TURNING VANES
- MANUAL VOLUME DAMPER
- FLEXIBLE CONNECTOR
- SD — SMOKE DETECTOR
- T H P G — STAT, T=TEMP, H=HUMIDITY, P=PRESSURE, G=GAS
- XX GAS MONITORED — SENSOR WITH DISPLAY AND ADJUSTMENT
- XX GAS MONITORED — SENSOR WITHOUT DISPLAY OR ADJUSTMENT
- H — ALARM WARNING LIGHT WITH HORN
- ALARM WARNING LIGHT WITH HORN
- FIRE DAMPER
- MOTOR OPERATED DAMPER
- GRAVITY BACKDRAFT DAMPER
- PRESSURE GAUGE
- THERMOMETER

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)		
CGS	COOLING GLYCOL SUPPLY	HW	HOT WATER	SAN	SANITARY SEWER	W4	WELL WATER (NON-POTABLE)
CR	CONDENSATE RETURN	HWR	HEATING WATER RETURN	SLP	STEAM (LOW PRESSURE)	"A"	WATER HAMMER SIZE, LETTERS A-D
CWR	CHILLED WATER RETURN	HWRE	HOT WATER RECIRCULATION	STM	STORM SEWER		

ABBREVIATIONS

AFF	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			VIF	VERIFY IN FIELD
DFU	DRAINAGE FIXTURE UNIT	LP	LOW POINT	THRU	THROUGH		

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			RHP	RADIANT HEATING PANEL		
EG	EXHAUST GRILLE	HPW	HIGH PRESSURE WATER SYSTEM	RPZ	REDUCED ZONE PRESSURE BACKFLOW PREVENTER	WC	WATER CLOSET
EH	ELECTRIC HEATER	HUH	HOT WATER UNIT HEATER	RTU	ROOFTOP UNIT	WH	WALL HYDRANT
EUH	ELECTRIC UNIT HEATER	HWC	HOT WATER CONVECTOR	SD	SUPPLY DIFFUSER		
EWC	ELECTRIC WATER COOLER	ICD	INSULATED MOTOR CONTROL DAMPER	SF	SUPPLY FAN		

ELECTRICAL ABBREVIATIONS AND SYMBOLS

ABBREVIATIONS

A	AMPERE
AFF	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

ONE-LINE SYMBOLS

- 15 M (OR) CL 600 500 — 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)
- FVNR 2a 1b 2 — MAGNETIC STARTER AND 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)
- T — TRANSFORMER
- FVNR 2a 1b 2 — 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) (AUXILIARY CONTACTS - (2a TWO N.O.)(1b ONE N.C.) (NUMERAL INDICATES NEMA SIZE)
- GROUND
- 75 — MOTOR (NUMERAL INDICATES HORSEPOWER)
- GENERATOR
- 52 — DRAW-OUT CIRCUIT BREAKER (NUMERAL INDICATES DEVICE NUMBER)
- 80A — FUSED SWITCH (NUMERAL INDICATES FUSE SIZE)
- MEDIUM-VOLTAGE TERMINATION
- 52 — CURRENT TRANSFORMER AND PROTECTIVE DEVICE (NUMERAL INDICATES DEVICE NUMBER)
- K — KIRK KEY INTERLOCK

PLAN SYMBOLS

- A — LED OR FLUORESCENT FIXTURE - RECESSED (LETTER DENOTES TYPE)
- A — LED OR FLUORESCENT FIXTURE - SURFACE/SUSPENDED (LETTER DENOTES TYPE)
- A — LED OR FLUORESCENT FIXTURE - WALL MOUNTED (LETTER DENOTES TYPE)
- A — LED OR HID FIXTURE - WALL MOUNTED (LETTER DENOTES TYPE)
- A — LED OR HID FIXTURE - POLE MOUNTED FIXTURE (LETTER DENOTES TYPE)
- A — LED OR HID FIXTURE - SURFACE/SUSPENDED (LETTER DENOTES TYPE)
- EMERGENCY BATTERY LIGHT
- REMOTE HEAD FOR EMERGENCY BATTERY LIGHT
- EXIT LIGHT WITH INDICATING DIRECTIONAL ARROW
- S 1 2 3 4 — SWITCH (SINGLE POLE, 2-POLE, 3-WAY, 4-WAY)
- MC — MOMENTARY CONTACT SWITCH - CENTER OFF
- P — SWITCH / PILOT LIGHT
- DUPLEX GROUNDED RECEPTACLE - 120V
- EXPLOSIONPROOF SIMPLEX GROUNDED RECEPTACLE - 120V
- TELEPHONE OUTLET, WALL MOUNT WITH 3/4" CONDUIT TO TELEPHONE TERMINAL CABINET
- D — DATA INFORMATION OUTLET
- RECESSED CEILING SPEAKER
- V — VOLUME CONTROL
- WALL SPEAKER
- S — SMOKE DETECTOR
- F — FIRE ALARM HORN
- F S — FIRE ALARM HORN AND STROBE
- S — FIRE ALARM STROBE
- F — FIRE ALARM PULL STATION
- H — HEAT DETECTOR
- F FS — FLOW SWITCH
- MD — MOTION DETECTOR
- CONNECTION TO EQUIPMENT
- SPECIAL PURPOSE RECEPTACLE, NEMA TYPE AND AMPERE RATING AS INDICATED
- MANUAL STARTER WITH PILOT LIGHT
- THREE PHASE MAGNETIC STARTER
- INFORMATION OUTLET
- THREE PHASE COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH
- SINGLE PHASE MAGNETIC STARTER
- 30 — NON-FUSED DISCONNECT SWITCH (NUMERAL INDICATES SWITCH RATING)
- F 60 40 — FUSED DISCONNECT SWITCH - 3 POLE UNLESS OTHERWISE INDICATED (UPPER NUMERAL INDICATES SWITCH RATING) (LOWER NUMERAL INDICATES FUSE RATING)
- $ — 3-PHASE MANUAL MOTOR SWITCH
- LIGHTING PANEL
- T — TRANSFORMER
- POWER PANEL
- TERMINAL CABINET (ITC - INDICATES INSTRUMENTATION) (TTC - INDICATES TELEPHONE)
- M — MOTOR
- J — JUNCTION BOX
- HH — HANDHOLE
- MH — MANHOLE
- SURVEILLANCE CAMERA
- GROUND ROD
- CONDUIT STUB
- CONDUIT TURNING UP OR TO OBSERVER
- CONDUIT TURNING DOWN OR AWAY FROM OBSERVER
- FLEXIBLE CONDUIT CONNECTION
- HOMERUN CIRCUIT OR CONDUCTORS
- E — DIRECT BURIAL CABLE
- UNDERGROUND ELECTRICAL DUCT, CONCRETE ENCASED.

PANELBOARDS

010LP1-4

- BUILDING NO.
- LIGHTING OR POWER PANEL AS INDICATED
- PANEL NO.
- CIRCUIT NO.

MOTOR CONTROL CENTER

010MCC-1

- BUILDING NO.
- MCC NO.

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:\14211nap\Dwg\001G2 Legends - SSM.dwg

Four Rivers Sanitation Authority

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

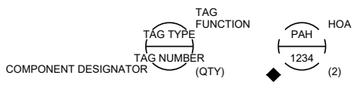
GENERAL LEGEND
PLUMBING LEGEND/HVAC LEGEND/ ELECTRICAL LEGEND

DONOHUE 7/2024

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

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

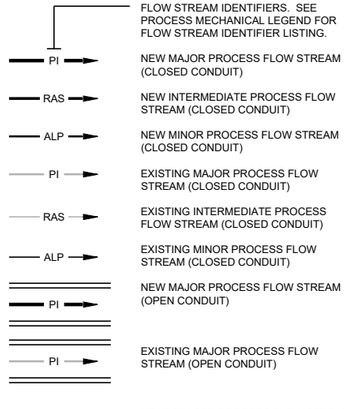
MEANINGS OF INSTRUMENT IDENTIFICATION LETTERS

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	

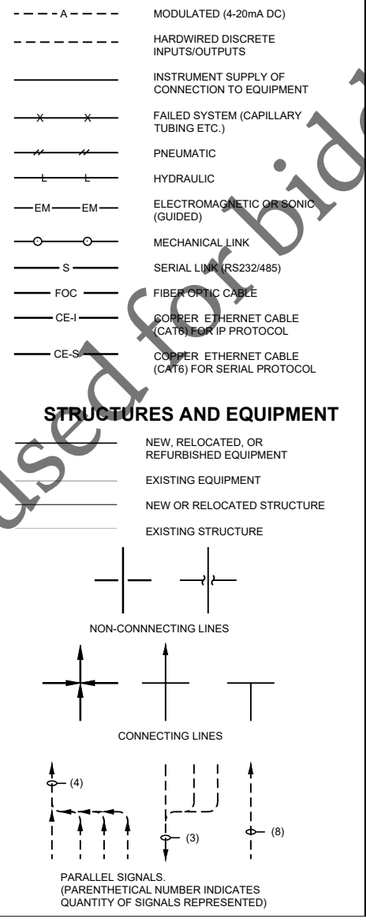
(*) WHEN USED. AN EXPLANATION IS SHOWN ADJACENT TO SYMBOL.

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 FITER 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

1. DRAWINGS SHOW CONTROL, SIGNAL AND ASSOCIATED SINGLE PHASE POWER WIRING REQUIREMENTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRING, WHETHER SHOWN OR NOT, NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.
3. DRAWINGS SHOW APPROXIMATE LOCATIONS OF DEVICES AND PANELS, FIELD VERIFY DIMENSIONS AND ELEVATIONS.
4. 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.
5. CONDUITS SHALL BE SIZED TO ACCOMMODATE REQUIRED CONDUCTORS AND SPARES.
6. 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.
7. PROVIDE EXPLOSION-PROOF SEAL-OFF FITTINGS ON ALL CONDUIT EXITING CLASSIFIED OR RATED LOCATIONS. FITTINGS SHALL BE INSTALLED PER NEC.
8. SHIELDED AND UNSHIELDED CONDUCTORS SHALL HAVE A MINIMUM OF 6" SEPARATION BETWEEN CONDUIT ON PARALLEL RUNS.
8. SHIELDED AND UNSHIELDED CONDUCTORS SHALL BE SEPARATED BY STEEL BARRIERS IN ALL COMBINED SIGNAL JUNCTION BOXES AND INSTRUMENT TERMINATION CABINETS.
9. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AT TERMINALS OR AS DESIGNATED BY ENGINEER.
10. 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.
11. SPARE AND GROUND CONDUCTORS ARE GENERALLY NOT SHOWN IN WIRING TABLES.
12. PLC, HMI, AND OIT PROGRAMMING SERVICE SHALL BE COMPLETED BY THE OWNER.
13. 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

Four Rivers Sanitation Authority

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

DONOHUE 7/2024

Sheet No. 6

Drawing No. 1-G-05

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VALVE SYMBOLS

SEAT
ECCENTRIC PLUG
BUTTERFLY
BALL
VENTED BALL
GLOBE
GATE
KNIFE GATE
PINCH
DIAPHRAGM
SOLENOID
THREE-WAY
TELESCOPING
BALL CHECK
SWING CHECK
SPLIT DISC CHECK
DIAPHRAM CHECK
CALIBRATED BALANCE
PRESSURE CONTROL (REGULATED SIDE)
TEMPERATURE CONTROL
PRESSURE RELIEF
AIR RELEASE AND VACUUM RELIEF
MUD

GATE SYMBOLS

SLUICE
SLIDE
FLAP GATE
WEIR GATE
STOP PLANK (LOG)

VALVE AND GATE POWER ACTUATOR SYMBOLS

ELECTRIC MOTOR
ELECTRIC MOTOR WITH POSITIONER
PNEUMATIC WITH SOLENOID
PNEUMATIC WITH POSITIONER
HYDRAULIC WITH SOLENOID
HYDRAULIC WITH POSITIONER

NOTE ON 'XX':

ON LOSS OF PRIMARY POWER (PNEUMATIC OR ELECTRICAL)

XX:
FC = FAIL CLOSED POSITION
FIP = FAIL INTERMEDIATE POSITION
FLP = FAIL LAST POSITION
FO = FAIL OPEN POSITION

FLOW AND LEVEL ELEMENT SYMBOLS

PARSHALL FLUME
ROTAMETER
PROPELLER OR TURBINE METER
LEVEL ELEMENT, ULTRASONIC, SUSPENDED, NON-INTRUSIVE
LEVEL ELEMENT, RADAR, SUSPENDED, NON-INTRUSIVE
LEVEL ELEMENT, HYDROSTATIC, SUSPENDED, SUBMERSIBLE
LEVEL ELEMENT, INDUCTIVE, SUSPENDED, SUBMERSIBLE
LEVEL ELEMENT, BUBBLER
PULSE-DOPPLER VELOCITY PROFILER
CLAMP ON ULTRASONIC FLOWMETER
MAGNETIC FLOWMETER
PITOT-STATIC
VENTURI OR FLOW TUBE
VORTEX SHEDDING
ORIFICE METER
BALL FLOAT
FLOAT, MAGNETICALLY ACTIVATED REED SWITCH
ANALYSIS ELEMENT, SUSPENDED, IMMERSIBLE
043 FE/FIT 0843
THERMAL DISPERSION HOT-TAP RETRACTABLE FLOW ELEMENT
MICROWAVE DENSITY METER

MISCELLANEOUS SYMBOLS

SWITCHED RECEPTACLE (POWER, CONTROL OR SIGNAL) WITH CORD AND PLUG SET
BLIND FLANGE OR CLEAN OUT
DRAIN
STRAINER
FLUSHING WATER CONNECTION
SEAL WATER CONNECTION
EJECTOR
AUTOMATIC SAMPLER
DIFFUSER
VENT
PURGE SET
X: W = WATER
A = AIR
PULSATION DAMPENER
EXPANSION JOINT
FLAME ARRESTOR
FLAME TRAP ASSEMBLY
FLAME CHECK
DESK MOUNTED MONITOR AND KEYBOARD
MC
MEDIA CONVERTER
120V
120 VOLT, 60 HZ POWER SUPPLY POINT
MIXER WITH ELECTRIC MOTOR
ELECTRIC MOTOR
MANUAL SAMPLE PORT
AUTOMATIC DRAIN
MANUAL DRIP TRAP
DIAPHRAGM SEAL
ANNULAR SEAL
FLOW STRAIGHTENING VANE
CALIBRATION CHAMBER
DENSITY METER
X: N - NUCLEAR
O - OPTICAL
U - ULTRASONIC
M - MICROWAVE
RUPTURE DISK
BALANCING VALVE
ANTENNA
DESK MOUNTED THICK CLIENT/ WORK STATION WITH MONITOR(S)
D.O.
INDUSTRIAL DATA OUTLET W/ 120VAC OUTLET AND ETHERNET CONNECTION

PUMP & COMPRESSOR SYMBOLS

SUBMERSIBLE PUMP
CENTRIFUGAL PUMP (DRY PIT, PLAN VIEW)
CENTRIFUGAL PUMP (DRY PIT, ELEVATION)
CENTRIFUGAL PUMP (INLINE)
VERTICAL TURBINE PUMP
PROGRESSING CAVITY PUMP
CENTRIFUGAL BLOWER
CHEMICAL INDUCTION MIXER
ROTARY LOBE PUMP, BLOWER OR COMPRESSOR (POSITIVE DISPLACEMENT)
AXIAL FLOW PUMP
AIR OPERATED DIAPHRAGM PUMPS W. INTEGRAL CHECK VALVES:
CYLINDER ASSIST
SPRING RETURN
COMPRESSOR (PISTON)
CHEMICAL FEED PUMP
PLUNGER PUMP
DOUBLE DISC PUMP
DIAPHRAGM PUMP
HOSE PUMP

NOTE ON 'X':

AS : ADJUSTABLE SPEED
CS-1 : CONSTANT SPEED (SINGLE SPEED)
CS-2 : CONSTANT SPEED (TWO SPEED)
CS-R : CONSTANT SPEED (REVERSING)
MS : MECHANICAL SHIV (ADJUSTABLE)

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

EQUIPMENT FUNCTION (X)
I/O

UNIVERSAL INPUT/OUPUT (I/O = I/O POINT TYPE)

I/O POINT TYPES:

DI (DIGITAL INPUT)
RO (RELAY OUTPUT)
AI (ANALOG INPUT)
AO (ANALOG OUTPUT)
RTD (RESISTANCE TEMPERATURE DETECTOR)

NOTE ON 'X':

X = TOTAL NUMBER OF I/O WHERE MORE THAN ONE I/O IS REQUIRED. IF QUANTITY IS NOT SHOWN THEN ONE I/O IS REQUIRED.

INTERFACE SYMBOLS

PROCESS

XXX
A

SOURCE SHEET NO. NOT VISIBLE
XXX = DESTINATION SHEET NO.
A = INTERFACE DESIGNATOR

TO EXISTING INTERFACE NOT IN CONTRACT

ELECTRICAL

XXX
A

SOURCE SHEET NO. NOT VISIBLE
XXX = DESTINATION SHEET NO.
A = INTERFACE DESIGNATOR

TO NEW OR FUTURE INTERFACE NOT IN CONTRACT

Four Rivers Sanitation Authority

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

DONOHUE 7/2024

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

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SPACE ENVIRONMENT AND HAZARDOUS RATINGS SCHEDULE

SEE MATERIALS SCHEDULE FOR REQUIRED CONSTRUCTION MATERIALS FOR VARIOUS EXPOSURES

BUILDING	SPACE NO.	SPACE NAME	EXPOSURE	HAZARDOUS RATING	HAZARD NOTES
MAIN SWITCHGEAR BUILDING	--	ELECTRICAL ROOM	DRY 2	UNCLASSIFIED	
MAIN PUMP BUILDING	--	MOTOR ROOM	DRY 2	UNCLASSIFIED	
	--	LOWER SCREEN ROOM	WET 3	CLASS I, DIVISION 1, GROUP D (CI, D1)	1
	--	CONTROL ROOM	DRY 2	UNCLASSIFIED	
	--	OFFICE	DRY 2	UNCLASSIFIED	

MATERIALS SCHEDULE

SEE SPACE ENVIRONMENT AND HAZADOUS RATINGS SCHEDULE FOR AREAS ASSOCIATED WITH EXPOSURES LISTED

REQUIREMENTS GIVEN IN DETAILED SPECIFICATIONS SUPERCEDE MATERIALS GIVEN IN THIS SCHEDULE

EXPOSURE	ANCHOR BOLTS/FASTENERS	PIPING NUTS AND BOLTS (7)	HANGERS AND SUPPORTS	CONDUIT	ENCLOSURES (3)(8)	DUCTWORK	PLUMBING PIPING
CHEMICAL 1	316SST	316SST	316SST	SCH 80 PVC	NEMA 4X - FRP	316SST	PVC, CPVC, OR SST
CHEMICAL 2	NON-METALLIC	316SST	FRP/NYLON	SCH 80 PVC	NEMA 4X - FRP	PVC OR FRP	PVC OR CPVC
CHEMICAL 3	NON-METALLIC	316SST	FRP/NYLON	SCH 80 PVC	N/A	PVC OR FRP	PVC OR CPVC
CHEMICAL 4							
DRY 1	ELECTROPLATED STEEL	CARBON STEEL (10)	GALVANIZED STEEL	EMT	NEMA 1 (9) - CAST OR STEEL	GALVANIZED STEEL	COPPER, PVC, OR CPVC
DRY 2	ELECTROPLATED STEEL	CARBON STEEL (10)	GALVANIZED STEEL	GRS OR ALUMINUM	NEMA 1 (9) - CAST OR STEEL	GALVANIZED STEEL	COPPER, PVC, OR CPVC
DRY 3	GALVANIZED STEEL	CARBON STEEL (10)	GALVANIZED STEEL	GRS OR ALUMINUM	NEMA 4 - SST	ALUMINUM	PVC, CPVC, OR SST
DRY 4							
EXTERIOR	316SST	316SST (11)	316SST (6)	PVC COATED (6)	NEMA 4X - 316SST	ALUMINUM (5)	SST
WET 1	GALVANIZED STEEL	N/A	GALVANIZED STEEL	EMT (1)	NEMA 1 - STEEL	GALVANIZED STEEL	COPPER
WET 2	GALVANIZED STEEL	CARBON STEEL (10)	GALVANIZED STEEL	GRS (2)	NEMA 4 - STEEL	GALVANIZED STEEL	PVC, CPVC, OR SST
WET 3	316SST	316SST	316SST	ALUMINUM OR PVC COATED	NEMA 4X - 316SST	316SST	PVC, CPVC, OR SST
WET 4	316SST	316SST	316SST	N/A (4)	N/A (4)	N/A (4)	PVC
WET 5							

NOTES (X):

1. GRS FROM FLOOR TO 6'-0" ABOVE.
2. FIBERGLASS CONDUIT ALLOWABLE IN PIPING GALLERIES AND TUNNELS.
3. HAZARDOUS RATING GIVEN IN SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE TAKES PRECEDENCE; NEMA 7 FOR CLASS I AND NEMA 9 FOR CLASS II AREAS.
4. NOT ALLOWED ON INTERIOR WALLS OF WATER HOLDING STRUCTURES.
5. IF TEMPERED AIR USED PREINSULATED DUCTWORK SYSTEM.
6. ALUMINUM WHERE SUPPORTED FROM ALUMINUM RAILING.
7. UNLESS OTHERWISE SPECIFIED IN THE DETAILED IN PIPING SYSTEMS SPECIFICATIONS.
8. NEMA 7 ENCLOSURES LOCATED IN EXTERIOR, WET 2, OR WET 3 LOCATIONS SHALL PROVIDED WITH AN O-RING OR GASKET IN COVER TO PREVENT WATER ENTRY.
9. ENCLOSURES FOR PLCS, EQUIPMENT CONTROL PANELS, AND OTHER CONTROL ENCLOSURES SHALL BE NEMA 12.
10. COATED ALONG WITH PIPING SYSTEM.
11. FOR PIPING SYSTEMS BEING COATED PROVIDE CARBON STEEL NUTS AND BOLTS.

HAZARD NOTES

1. ENTIRE ENCLOSED AREA
2. AREAS WITHIN 3'-0" RADIUS OF VENTS ARE CI, D1, AREA BETWEEN 3'-0" AND 5'-0" RADIUS OF VENTS ARE CI, D2.
3. AREAS WITHIN 3'-0" RADIUS OF VENTS ARE CI, D2.
4. AREAS WITHIN 3'-0" OF REMOVABLE/OPENABLE ACCESS HATCHES ARE CI, D2 TO A HEIGHT 1'-6" ABOVE DECK.
5. AREAS WITHIN 3'-0" OF DOORS OR OTHER EXTERIOR WALL OPENINGS ARE CI, D2.
6. AREAS WITHIN 10'-0" OF EQUIPMENT OR OPEN CHANNELS ARE CI, D2.
7. ENVELOPE INCLUDES ALL LOCATIONS WITHIN 10'-0" LATERALLY, UP TO 1'-6" ABOVE AND ALONG EXTERIOR FACE OF ENCLOSING WALLS AND 1'-6" ABOVE ADJACENT GRADE OR FLOOR SURFACES.
8. AREAS WITHIN 5-FEET HORIZONTALLY AND 10'-0" ABOVE ARE CI, D1. AREA BETWEEN 5'-0" AND 10'-0" HORIZONTALLY AND BETWEEN 10'-0" AND 25'-0" ABOVE ARE CI, D2.
9. AREAS WITHIN 5'-0" RADIUS OF VENTS ARE CI, D1. AREA BETWEEN 5'-0" AND 10'-0" RADIUS OF VENTS ARE CI, D2.
10. AREAS WITHIN 5'-0" RADIUS OF VENTS ARE CI, D2.
11. AREAS WITHIN 5'-0" OF DOORS, VENTS, AND EXTERIOR WALL OPENINGS ARE CI, D1. AREA BETWEEN 5'-10" AND 10'-0" OF OPENINGS ARE CI, D2.
12. AREAS WITHIN 5'-0" OF DOORS AND EXTERIOR WALL OPENINGS ARE CI, D2.
13. AREAS WITHIN 3'-0" RADIUS OF HAZARDOUS MATERIAL EQUIPMENT ARE CI, D2.
14. AREAS WITHIN 5'-0" RADIUS OF HAZARDOUS MATERIAL EQUIPMENT ARE CI, D1.
15. AREAS WITHIN 10'-0" RADIUS OF DIGESTER GAS VALVES OR PIPING APPURTENANCES ARE CI, D1.
16. AREAS WITHIN 10'-0" RADIUS OF DIGESTER GAS VALVES OR PIPING APPURTENANCES ARE CI, D2.
17. AREAS WITHIN 3'-0" RADIUS OF ODOR CONTROL EQUIPMENT AND POINTS OF LEAKAGE SUCH AS DAMPERS AND FLANGES ARE CI, D2.
18. AREAS WITHIN A 10'-0" ENVELOPE OF ALL FIXTURES, APPURTENANCES, AND HOUSING ARE CI, D1. THE AREAS WITHIN A 15'-0" ENVELOPE ABOVE AND 5-FOOT ENVELOPE ON ALL SIDES OF THE OF THE D1 ENVELOPE ARE CI, D2.
19. AREAS WITHIN EQUIPMENT PROCESSING DRIED SLUDGE ARE CII, D1.
20. AREAS WITHIN A 10'-0" ENVELOPE OF EQUIPMENT PROCESSING DRIED SLUDGE ARE CII, D2.
21. AREAS WITHIN TANKS STORING DRIED SLUDGE ARE CII, D1.
22. AREAS WITHIN A 10'-0" ENVELOPE OF TANKS STORING DRIED SLUDGE ARE CII, D2.
23. AREAS ARE CLASSIFIED AS A CI, D2 UNTIL PROPOSED SEPARATION AND VENTILATION IS COMPLETED.
24. AREAS WITHIN 10'-0" OF NATURAL GAS OR DIGESTER GAS VALVES AND APPURTENCES ARE CLASSIFIED AS A CI, D1 AND ENCLOSED AREAS ARE CLASSIFIED AS CI, D2 UNTIL NATURAL GAS AND DIGESTER GAS PIPING HAS BEEN REMOVE AND PROPOSED SEPARATION AND VENTILATION IS COMPLETED.

Four Rivers Sanitation Authority

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Drawn By	JTB
Checked By	RJF
Approved By	JTB

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

GENERAL
SPACE ENVIRONMENTAL AND HAZARDOUS RATING SCHEDULE

DONOHUE 7/2024

Sheet No. 8

Drawing No. 1-G-07

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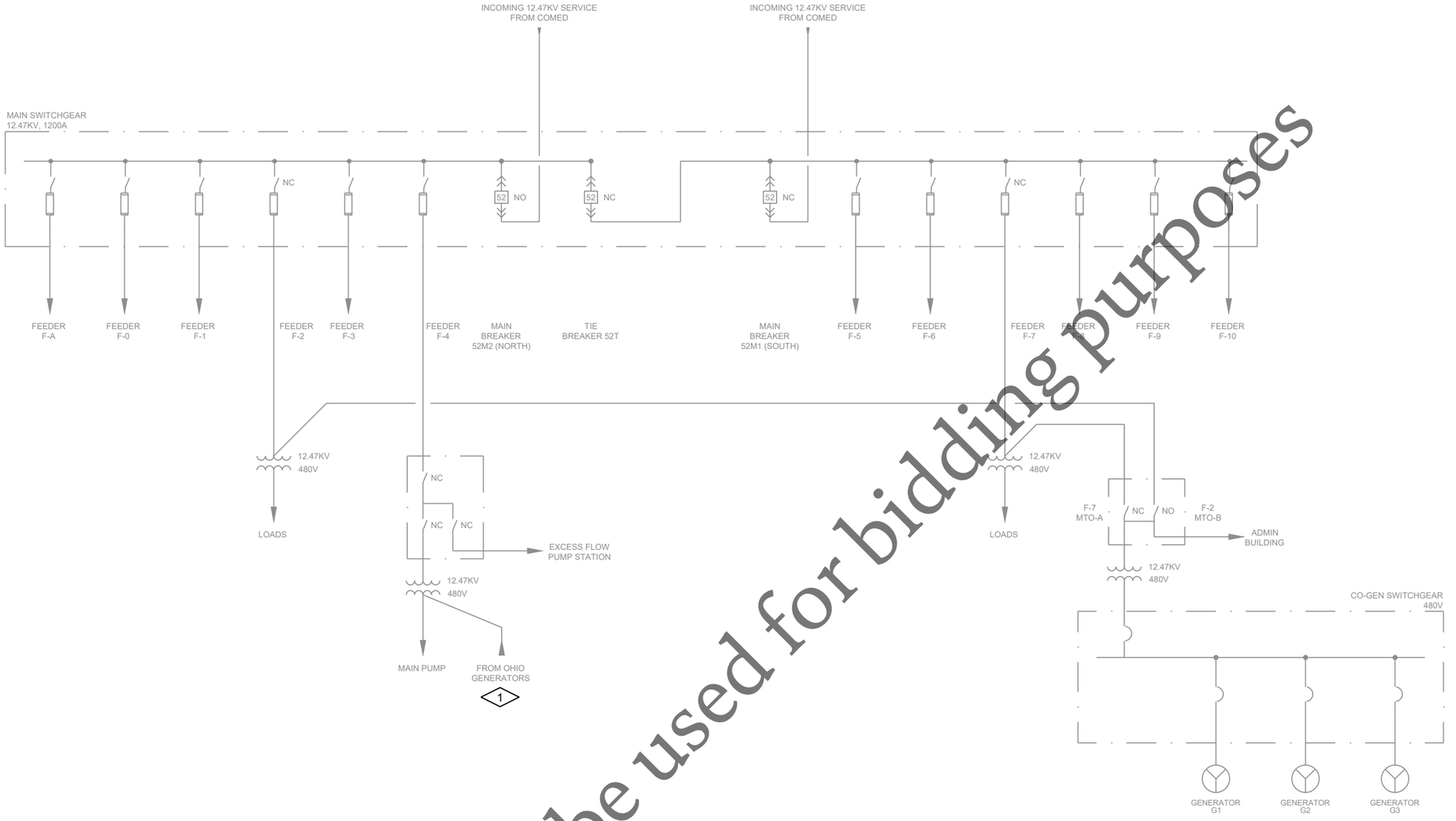
GENERAL NOTES:

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. OWNER HAS 2 EXISTING 500KW STANDBY DIESEL GENERATORS LOCATED AT THE OHIO BUILDING THAT MAY BE USED TO PROVIDE BACKUP POWER TO THE MAIN PUMP AND EXCESS FLOW BUILDINGS. SEE DRAWING 2-GE-03.



OVERALL ONE LINE DIAGRAM

NTS

No.	DATE	REVISION	INT.

Project No.	14211
Designed By	JTB
Drawn By	JTB
Checked By	RJF
Approved By	JTB

Four Rivers Sanitation Authority

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

ELECTRICAL DISTRIBUTION
OVERALL ONE LINE DIAGRAM

DONOHUE 7/2024

Sheet No. 9

Drawing No. **1-E-01**

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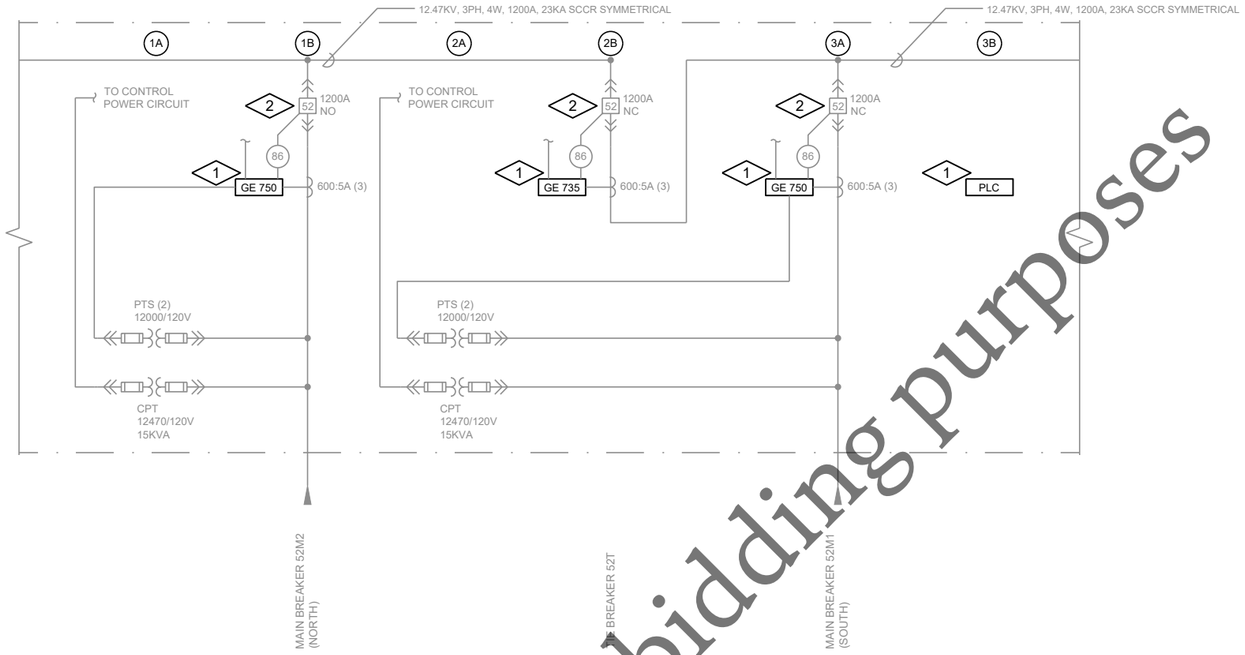
GENERAL NOTES:

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.

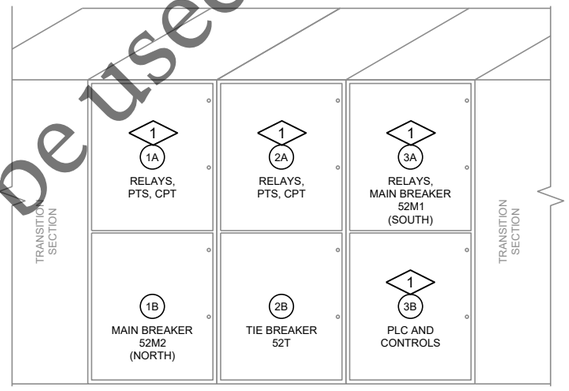
PLAN NOTES:

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 2

NTS

Four Rivers Sanitation Authority

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

DONOHUE 7/2024

Sheet No. 10

Drawing No. **1-ER-02**

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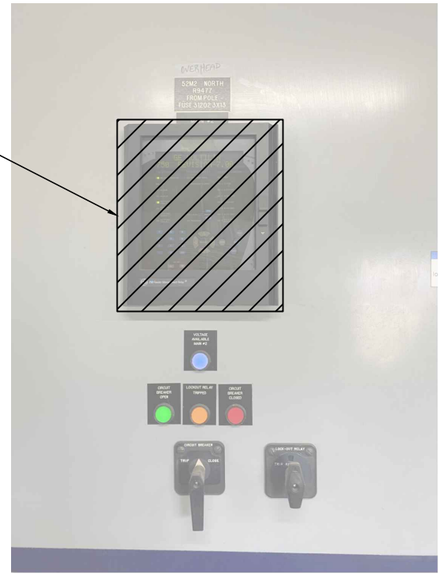
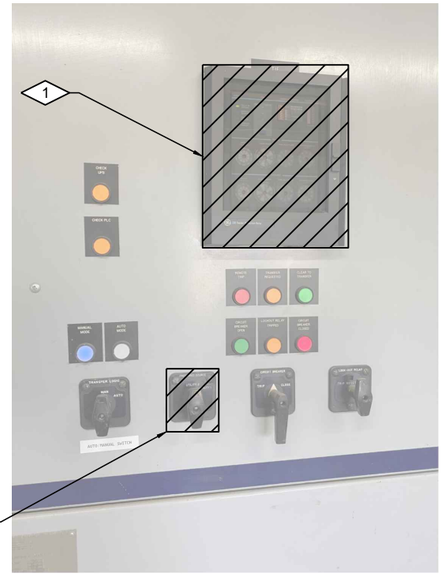
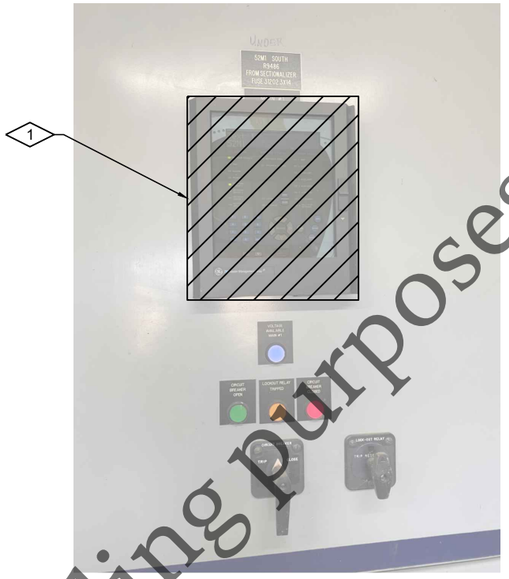




MAIN SWITCHGEAR
CIRCUIT BREAKER CUBICLES - REMOVAL
MAIN SWITCHGEAR BUILDING

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

Four Rivers Sanitation Authority

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

DONOHUE 7/2024

Sheet No. 11

Drawing No. **1-ER-03**

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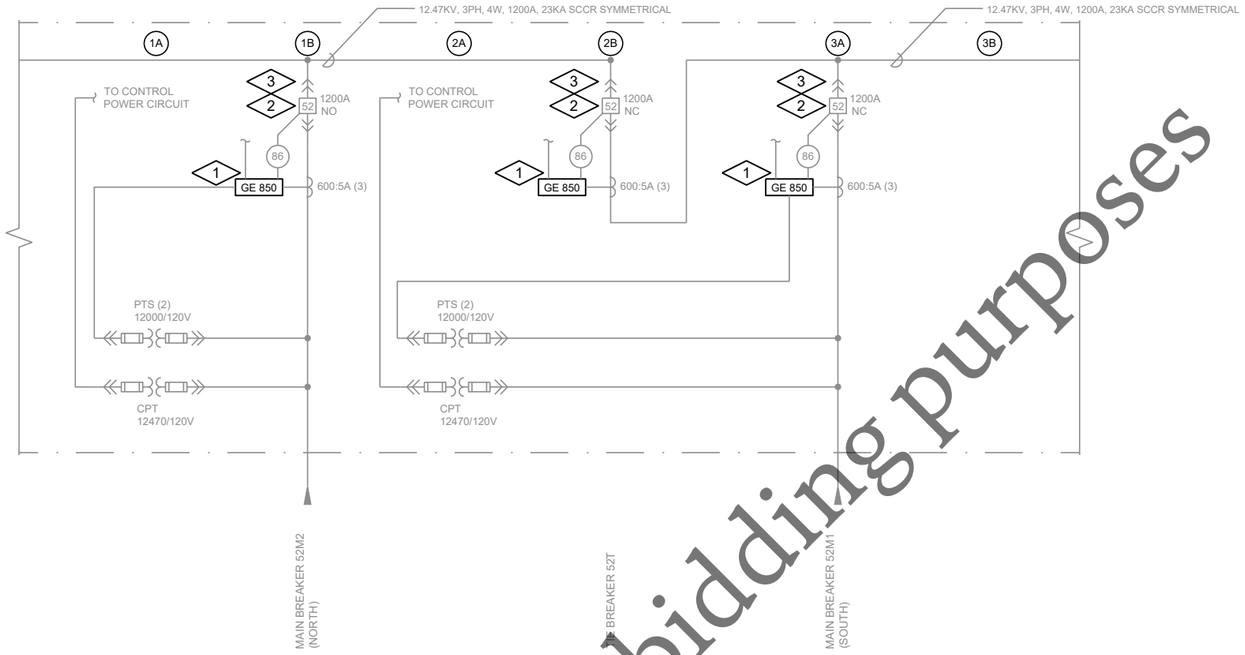
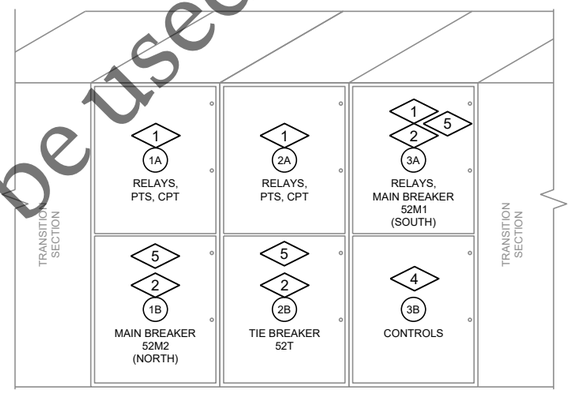


MAIN SWITCHGEAR
PARTIAL ONE LINE DIAGRAM
MAIN SWITCHGEAR BUILDING
NTS



MAIN SWITCHGEAR
PARTIAL ELEVATION
MAIN SWITCHGEAR BUILDING 3
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. 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. CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONFIGURATION AND SETUP OF THE FEEDER PROTECTION RELAYS. SEE SECTIONS 26 13 00 AND 26 05 73.
2. 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.
3. 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.
4. PROVIDE NEW NAMEPLATE LABELED AS "CONTROL". NAMEPLATE SPECIFICATION SHALL MATCH EXISTING.
5. RETROFIT RJ45 COMMUNICATION PORT TO COMMUNICATE WITH THE MR2 INTEGRAL MOTORIZED REMOTE RACKING SYSTEMS USING PORTABLE PENDANT.

RELAY PROTECTION FUNCTIONS	
DEVICE NUMBER	DESCRIPTION ◇1
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-OVERCURENT - GROUND
51_2	TIME-OVERCURRENT - NEGATIVE SEQUENCE
59P	OVERVOLTAGE - PHASE
81O	FREQUENCY - OVER
81U	FREQUENCY - UNDER

Four Rivers Sanitation Authority

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Approved By	JTB

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

ELECTRICAL DISTRIBUTION
ONE LINE DIAGRAM

DONOHUE 7/2024

Sheet No. 12
Drawing No. **1-E-04**

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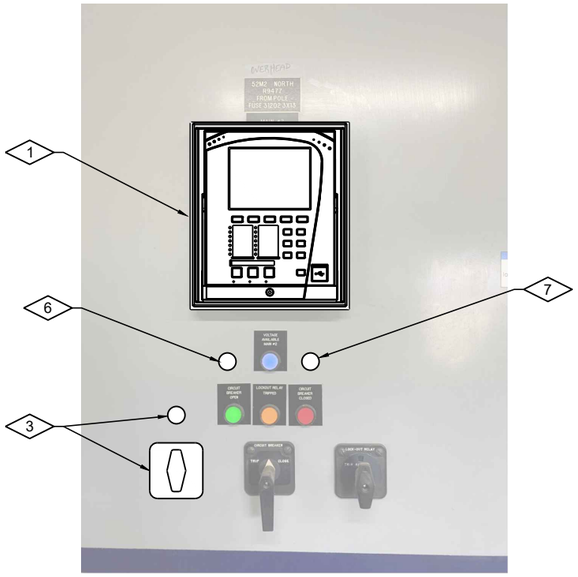
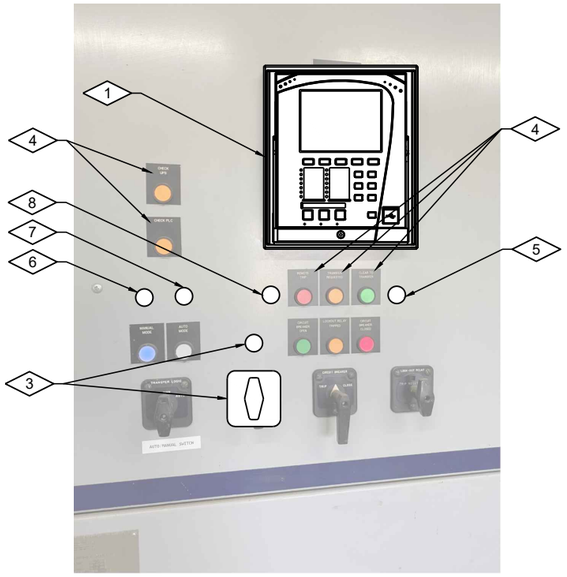
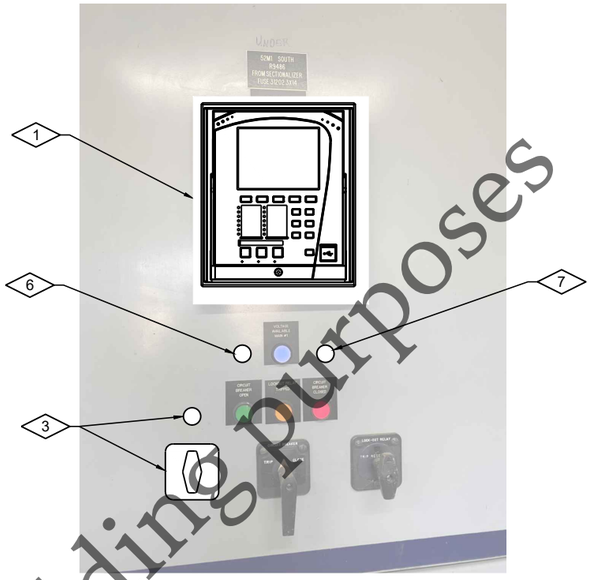
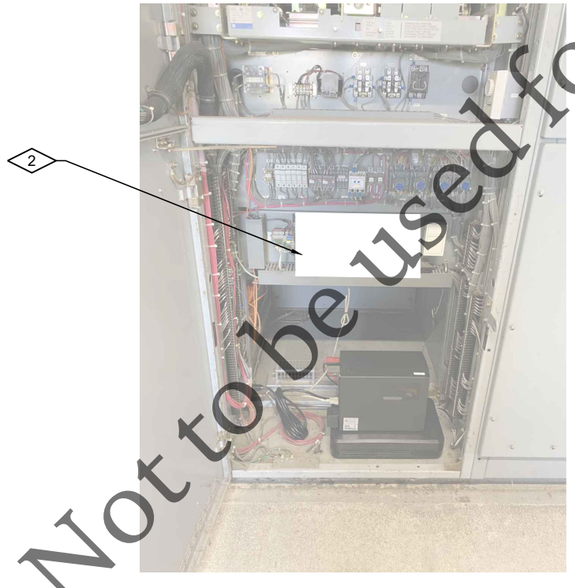


MAIN SWITCHGEAR
CIRCUIT BREAKER CUBICLES
MAIN SWITCHGEAR BUILDING

NTS







MAIN SWITCHGEAR
CONTROL CUBICLE
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.
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.

Four Rivers Sanitation Authority

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

DONOHUE 7/2024

Sheet No. 13

Drawing No. **1-E-05**

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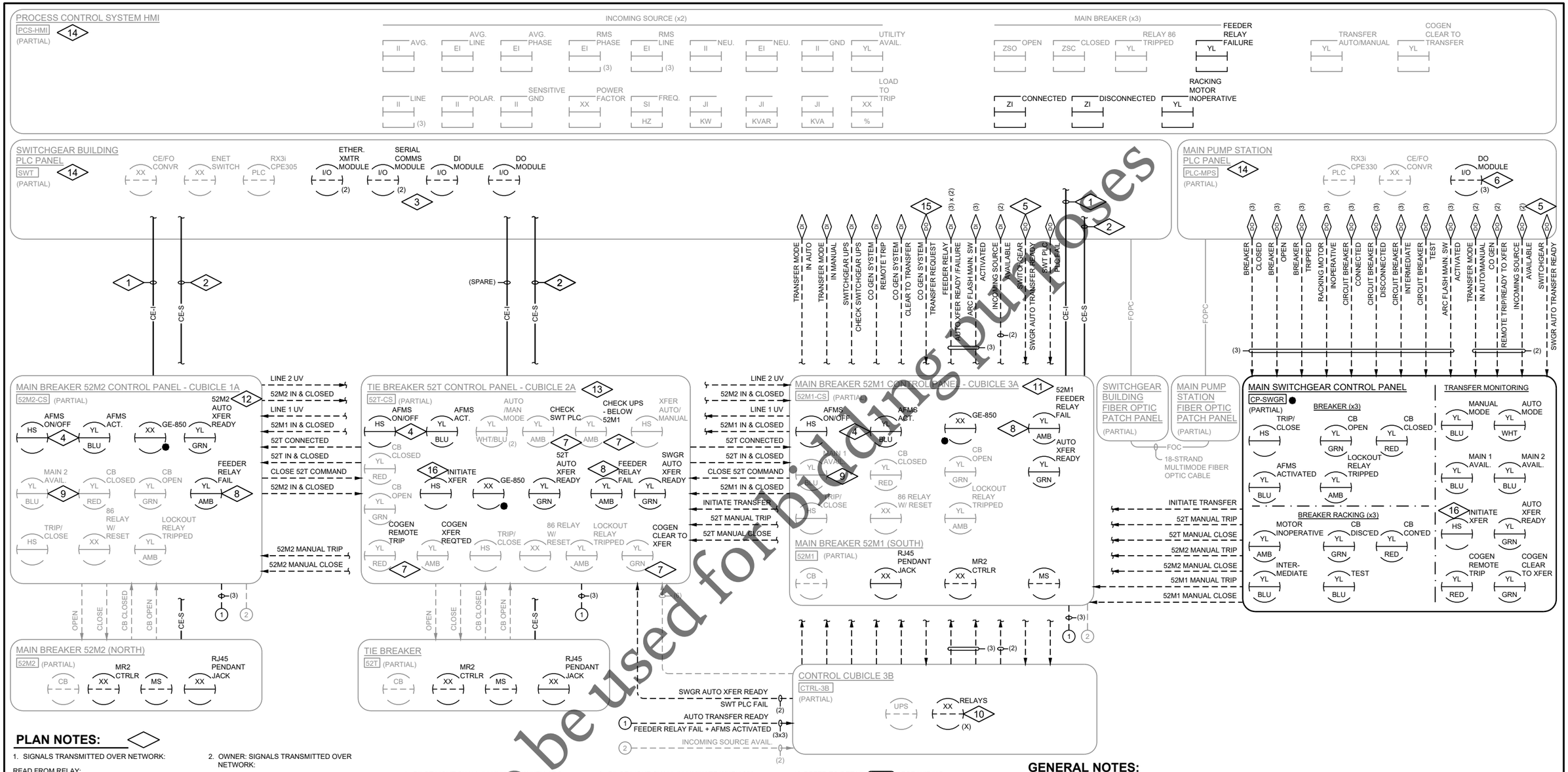

PLAN NOTES:

1. 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

2. OWNER: SIGNALS TRANSMITTED OVER NETWORK:

   READ FROM MR2 CONTROLLER:
   - CB OPEN
   - CB CLOSED
   - CB CONNECTED
   - CB DISCONNECTED
   - CB IN TEST POSITION
   - MOTOR INOPERATIVE
   - INTERMEDIATE INPUT
   - 5 SPARES

3. 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. OWNER: "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.

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.

12. REFER TO DETAIL N502 FOR WIRING MODIFICATIONS.

13. REFER TO DETAIL N503 FOR WIRING MODIFICATIONS.

14. OWNER: IN HMI AND PLC PROGRAMS, REPLACE THE TERM "UNDERGROUND" USED TO REFER TO 52M2 INCOMING SOURCE WITH "NORTH", AND THE TERM "OVERHEAD" USED TO REFER TO 52M1 INCOMING SOURCE WITH "SOUTH".

15. OWNER: PROVIDE PLC LOGIC IDENTICAL TO EXISTING GE 90-30 PLC LOGIC TO SEND OUT "COGEN TRANSFER REQUEST" WHEN REQUIRED.

16. "INITIATE TRANSFER" MOMENTARY PUSHBUTTON IS UTILIZED FOR MANUAL RE-TRANSFER OPERATION. SEE SECTION 26 13 00 FOR MORE DETAILS.

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 PLC 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.

Four Rivers Sanitation Authority

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 7/2024

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

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KEY PLAN

0 80'

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. CONTRACTOR MAY 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.

Four Rivers Sanitation Authority

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

SITE DEVELOPMENT
TEMPORARY GENERATOR AND STAGING AREA KEY PLAN

DONOHUE 7/2024

Sheet No. 15

Drawing No. 2-GK-01

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TEMPORARY GENERATOR PLAN

0 20'

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:

1 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.

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Four Rivers Sanitation Authority

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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

DONOHUE 7/2024

Sheet No. 16

Drawing No. **2-GE-01**

TEMPORARY GENERATOR PLAN

0 20'

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:

(2) 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.

Four Rivers Sanitation Authority

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

DONOHUE 7/2024

Sheet No. 17

Drawing No. 2-GE-02

file: P:\14211nap\Dwg\2GE02.dwg

TEMPORARY GENERATOR PLAN

0 20'

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:

3 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. OWNER HAS 2 EXISTING 500KW STANDBY DIESEL GENERATORS LOCATED AT THE OHIO BUILDING. THE STANDBY GENERATORS PROVIDE BACKUP POWER TO THE MAIN PUMP BUILDING AND EXCESS FLOW BUILDING VIA UNIT SUBSTATION MSGR1. CONTRACTOR MAY USE OWNER'S GENERATORS TO PROVIDE TEMPORARY POWER TO MSGR1 DURING TIMES OF A COMPLETE PLANT OUTAGE. 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.

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

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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

DONOHUE 7/2024

Sheet No. 18

Drawing No. 2-GE-03

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

TEMPORARY GENERATOR PLAN

0 20'

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:

4 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.

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	14211
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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

DONOHUE 7/2024

Sheet No. 19

Drawing No. **2-GE-04**

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

TEMPORARY GENERATOR PLAN

0 20'

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:

5 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.

Four Rivers Sanitation Authority

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Project No.	14211
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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

DONOHUE 7/2024

Sheet No. 20

Drawing No. **2-GE-05**

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

TEMPORARY GENERATOR PLAN

0 20'

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.

No.	DATE	REVISION	INT.

Project No.	14211
Designed By	JTB
Drawn By	JTB
Checked By	RJF
Approved By	JTB

Four Rivers Sanitation Authority

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

SITE DEVELOPMENT
TEMPORARY GENERATOR PLAN

DONOHUE 7/2024

Sheet No. 21

Drawing No. **2-GE-06**

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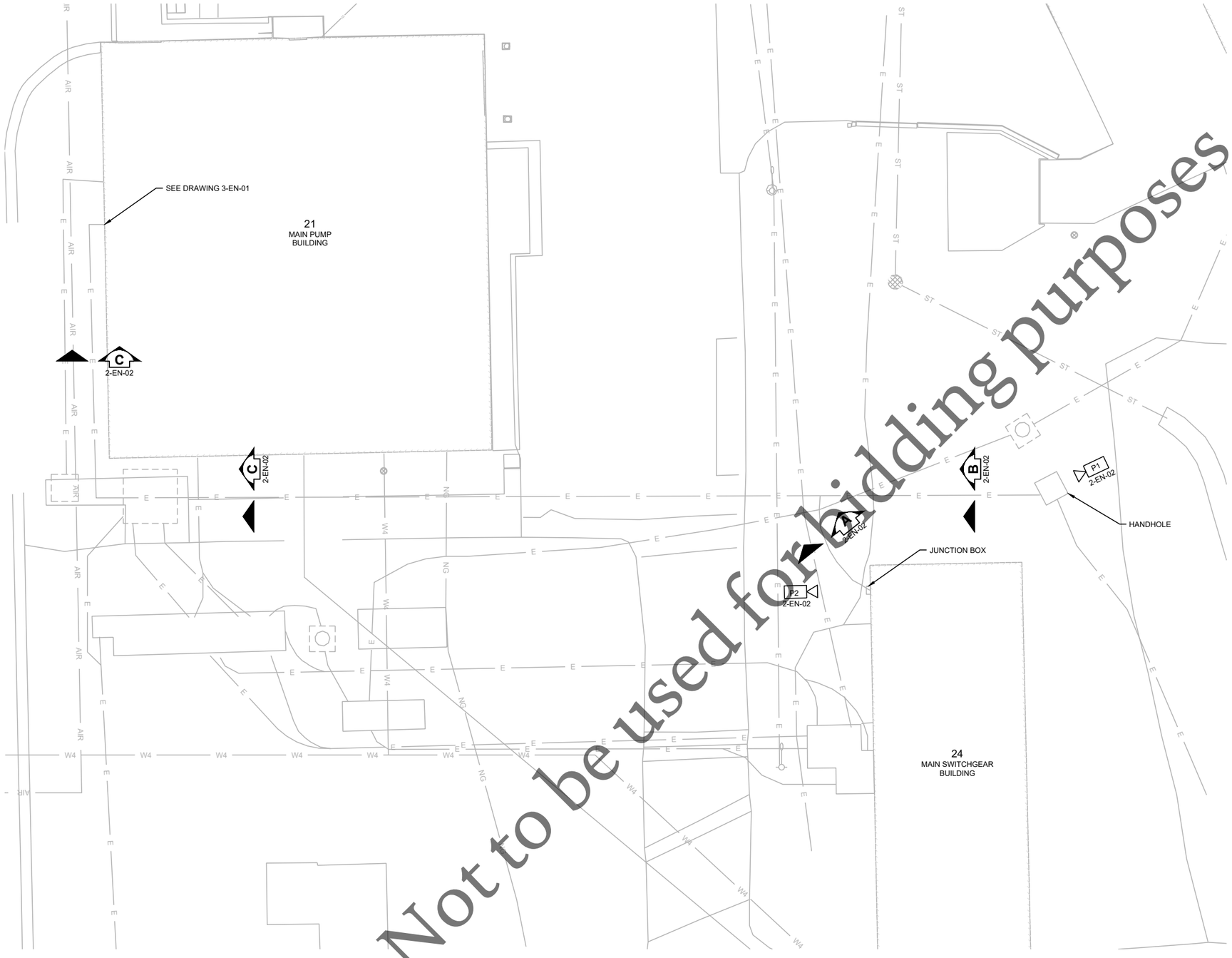

GENERAL NOTES:

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

0 10'

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	14211
Designed By	JTB
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Approved By	JTB

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

SITE DEVELOPMENT
ELECTRICAL SITE PLAN

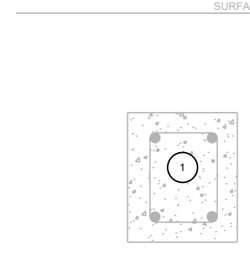
DONOHUE 7/2024

Sheet No. 22

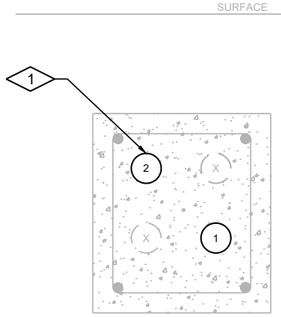
Drawing No. **2-EN-01**

DUCTBANK SCHEDULE

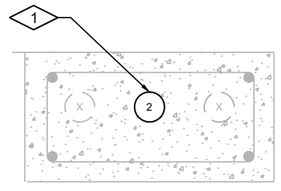
NUMBER	SIZE	FROM	TO	CONTENTS	REMARKS
1	2"	MAIN SWITCHGEAR BUILDING	HANDHOLE	CONTROLS	EXISTING CONDUIT
2	2"	HANDHOLE	MAIN PUMP BUILDING	CONTROLS	EXISTING CONDUIT



DUCTBANK SECTION A
NTS 2-EN-01



DUCTBANK SECTION B
NTS 2-EN-01



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.

Four Rivers Sanitation Authority

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

DONOHUE 7/2024

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

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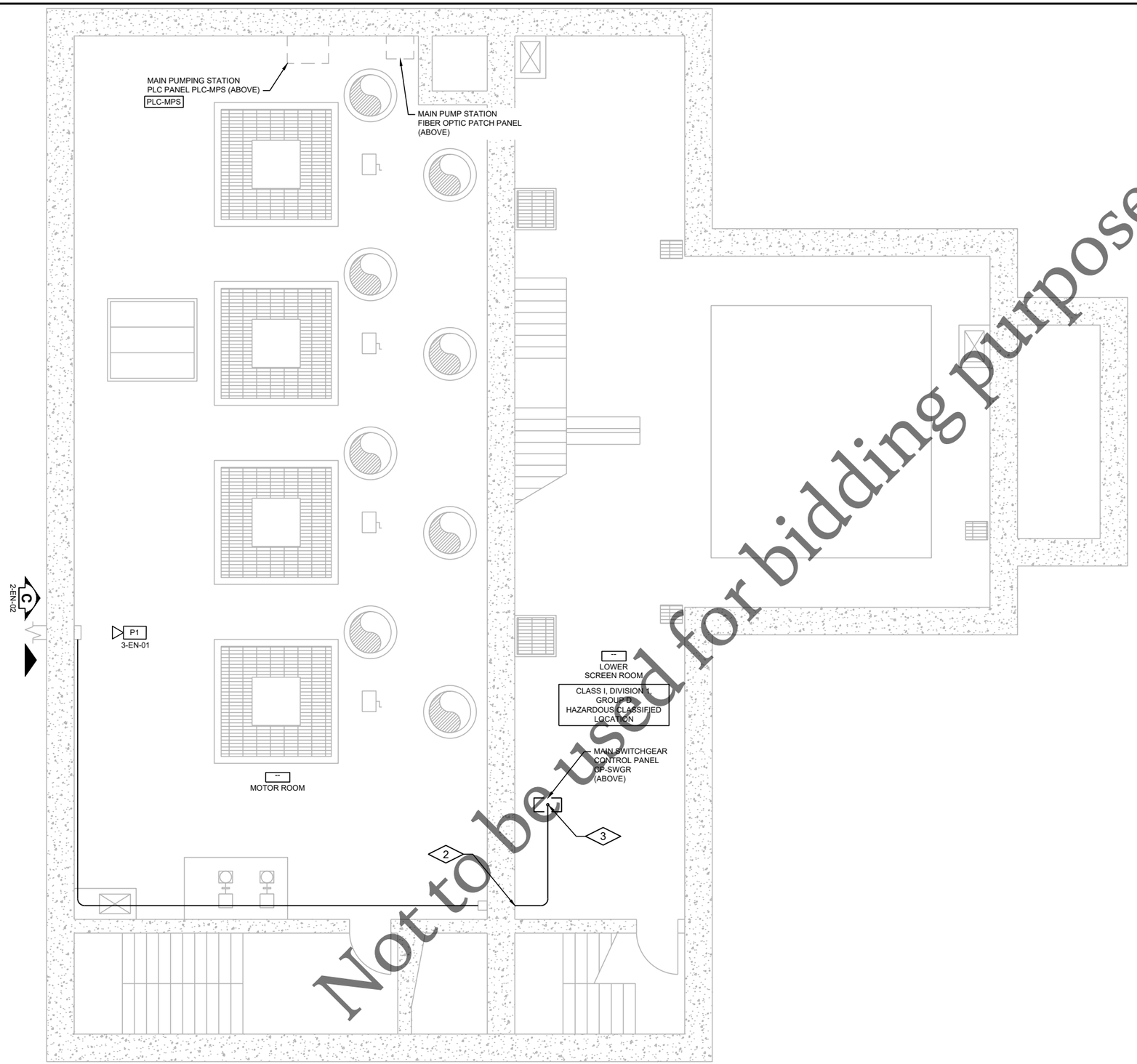
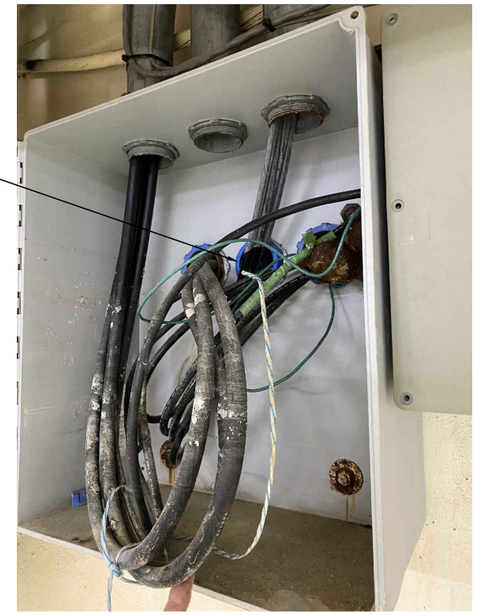


GENERAL NOTES:

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

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	14211
Designed By	JTB
Drawn By	JTB
Checked By	RJF
Approved By	JTB

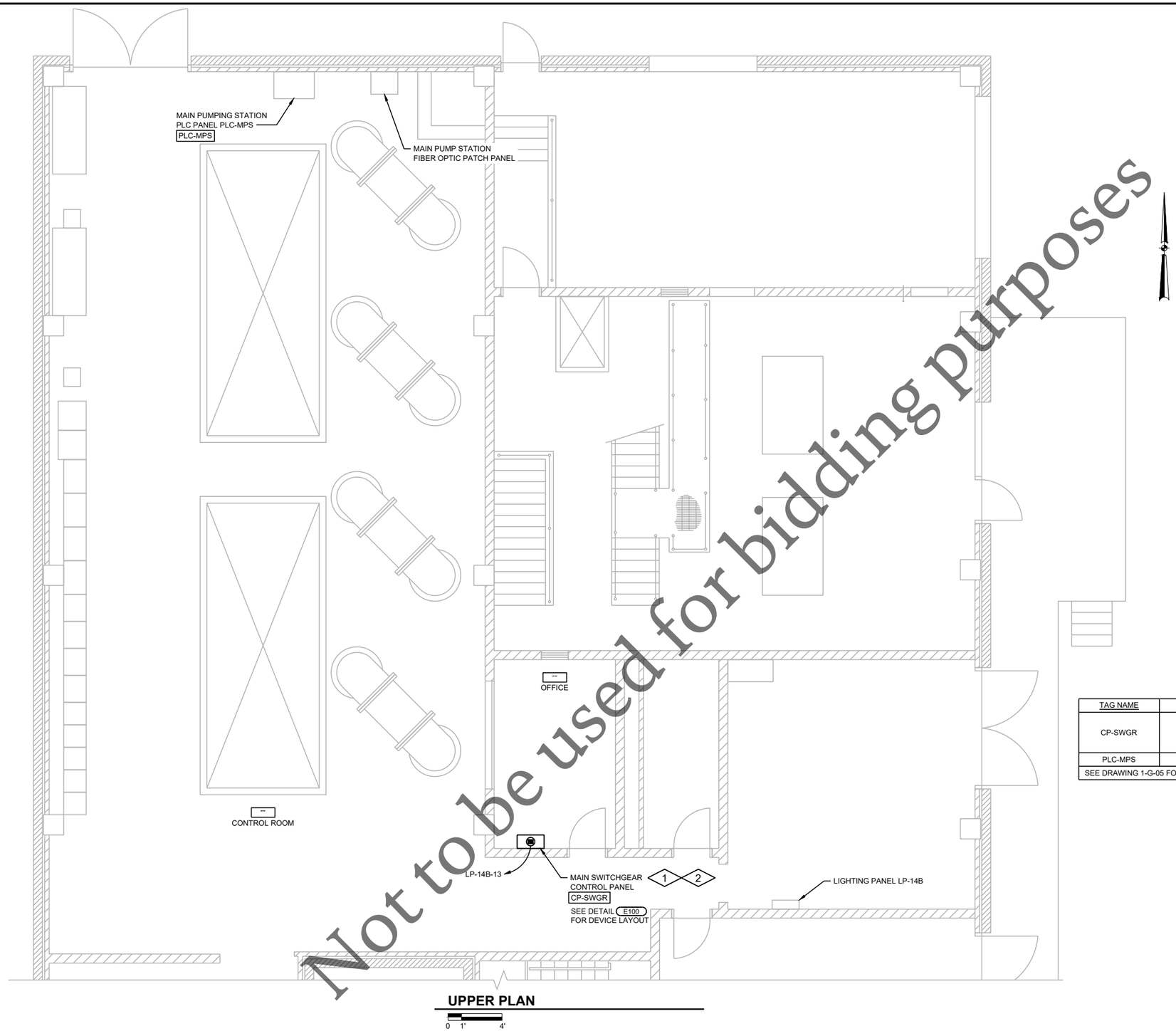
FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL

MAIN PUMP BUILDING
LOWER PLAN

DONOHUE 7/2024

Sheet No. 24

Drawing No. **3-EN-01**



UPPER PLAN

0 1' 4'

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
2. PROVIDE SEPARATE CONDUITS FOR POWER AND CONTROL WIRING.

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.				

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	14211
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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

DONOHUE 7/2024

Sheet No. 25

Drawing No. 3-EN-02

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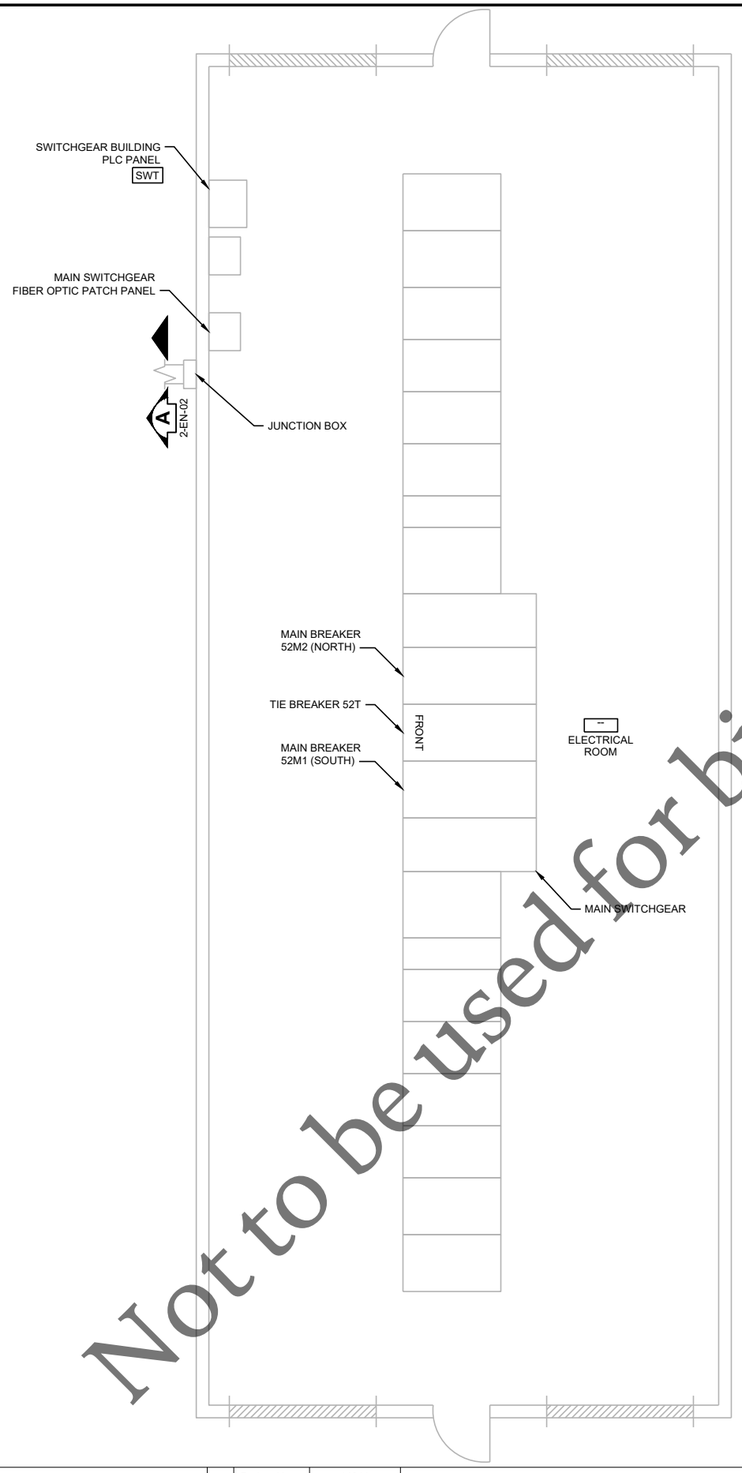

GENERAL NOTES:

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.

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

0 1' 4'

Four Rivers Sanitation Authority

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

DONOHUE 7/2024

Sheet No. 26

Drawing No. **4-E-01**

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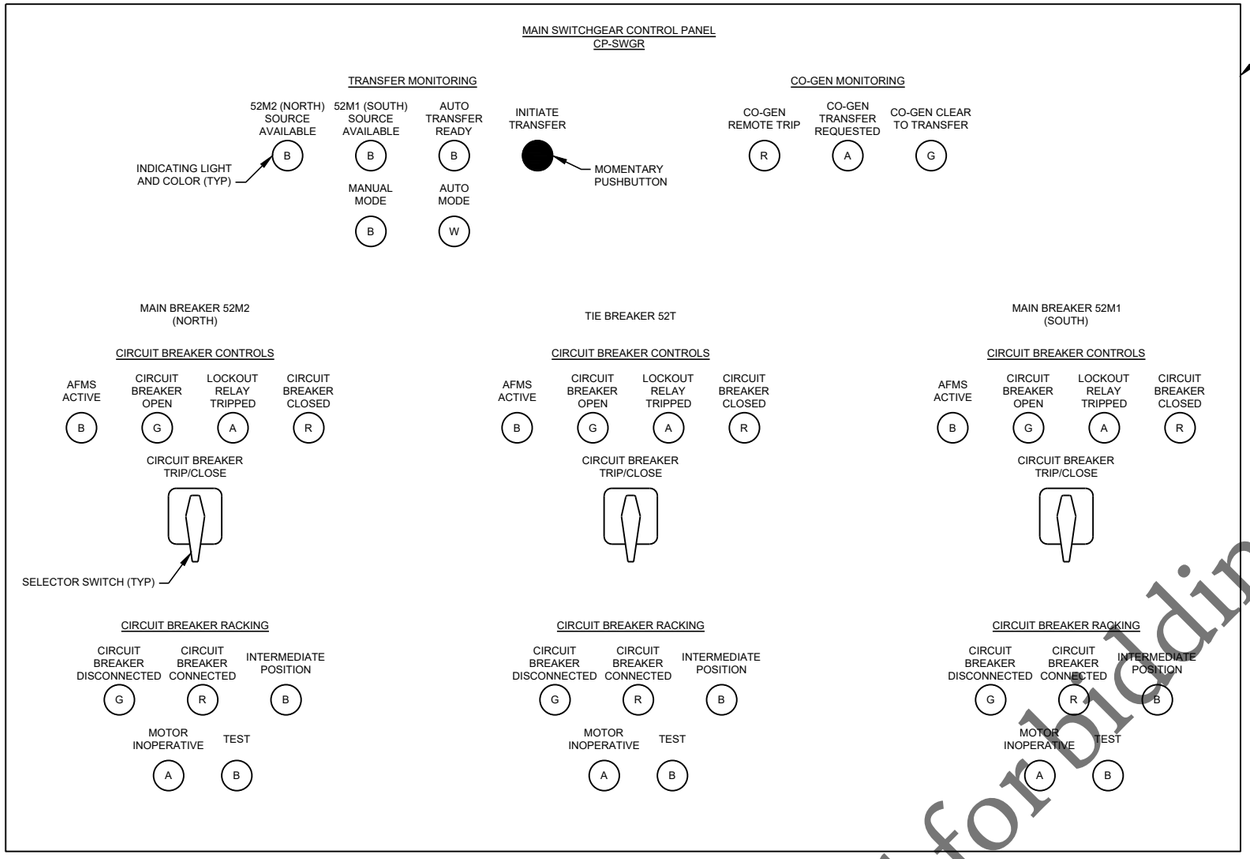


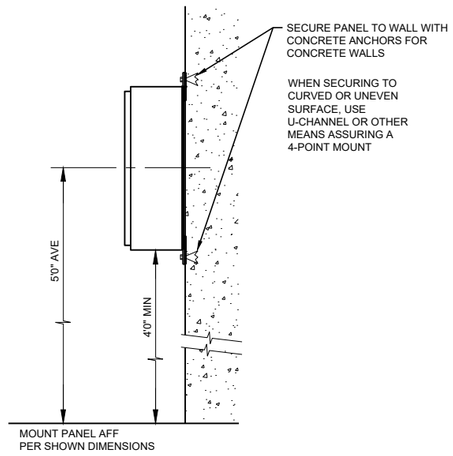
MAIN SWITCHGEAR CONTROL PANEL CP-SWGR DEVICE LAYOUT **E100** 1

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

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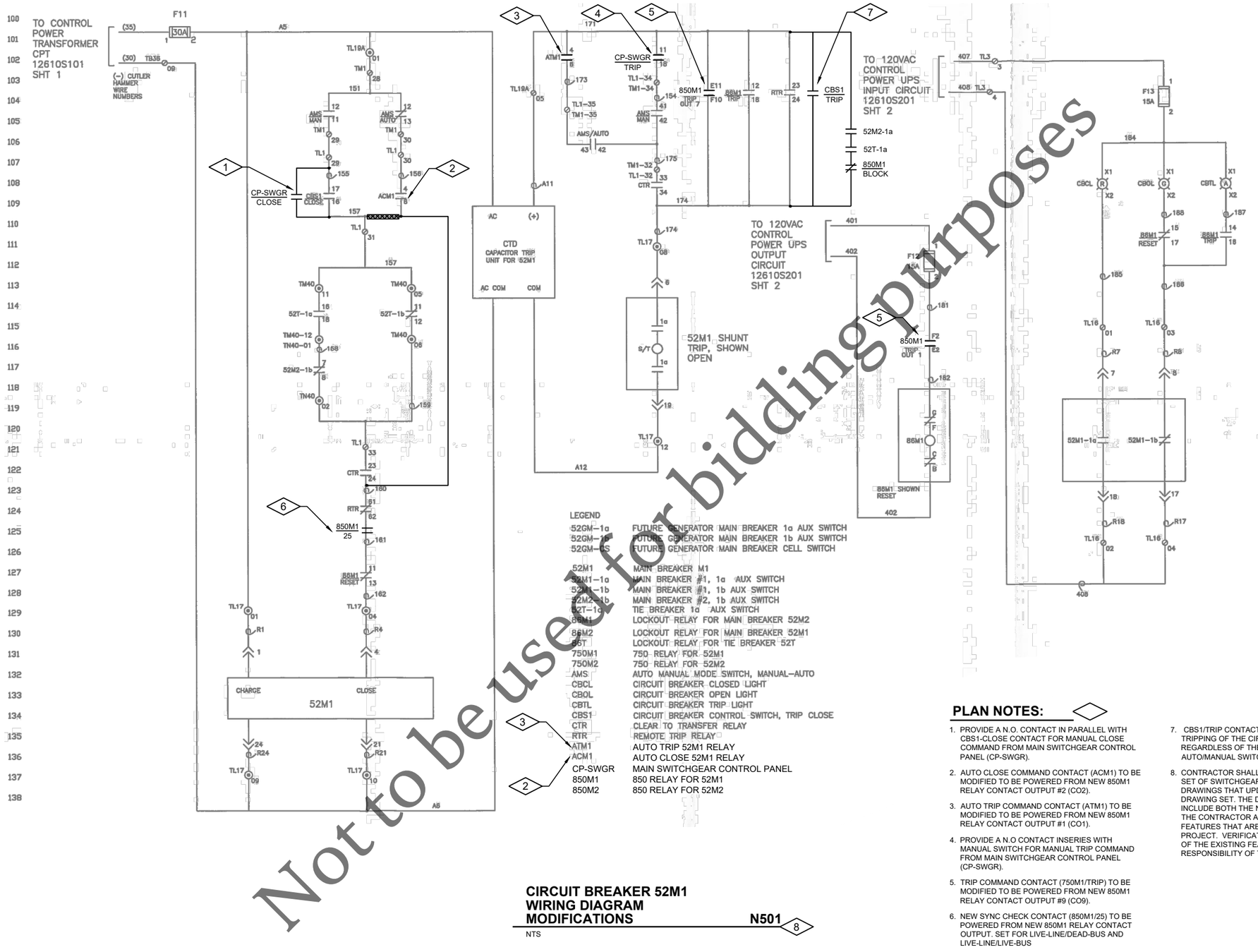
Four Rivers Sanitation Authority	No.	DATE	REVISION	INT.	Project No.	14211	FOUR RIVERS SANITATION AUTHORITY MAIN POWER TRANSITION PROJECT (CAPITAL PROJECT NO. 1361) ROCKFORD, IL	ELECTRICAL AND INSTRUMENTATION AND CONTROLS DETAILS	Sheet No. 27
					Designed By	JTB			
					Drawn By	JTB			
					Checked By	RJF		DONOHUE 7/2024	Drawing No. 5-EN-01
					Approved By	JTB			



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 N501 8

NTS

file: P:\14211nap\Dwg\5ND01.dwg

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	14211
Designed By	
Drawn By	LPH
Checked By	BLG
Approved By	BLG

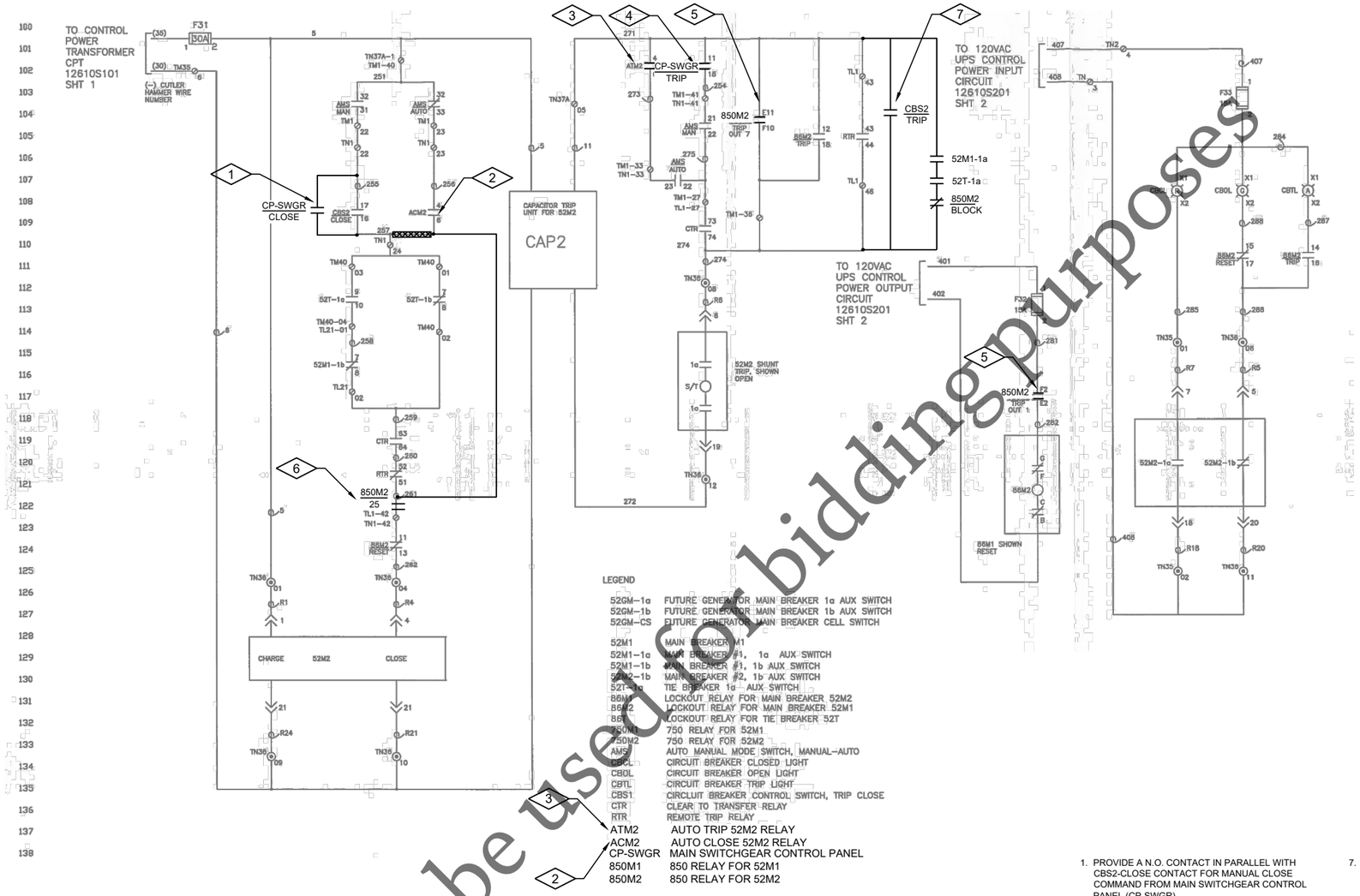
FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL

ELECTRICAL AND INSTRUMENTATION AND CONTROLS DETAILS

DONOHUE 7/2024

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
52M2–1b	MAIN BREAKER #2, 1b AUX SWITCH
52T–1a	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
CBS1	CIRCLUIT BREAKER CONTROL SWITCH, TRIP CLOSE
CTR	CLEAR TO TRANSFER RELAY
RTR	REMOTE TRIP 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 N502

NTS

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	14211
Designed By	
Drawn By	LPH
Checked By	BLG
Approved By	BLG

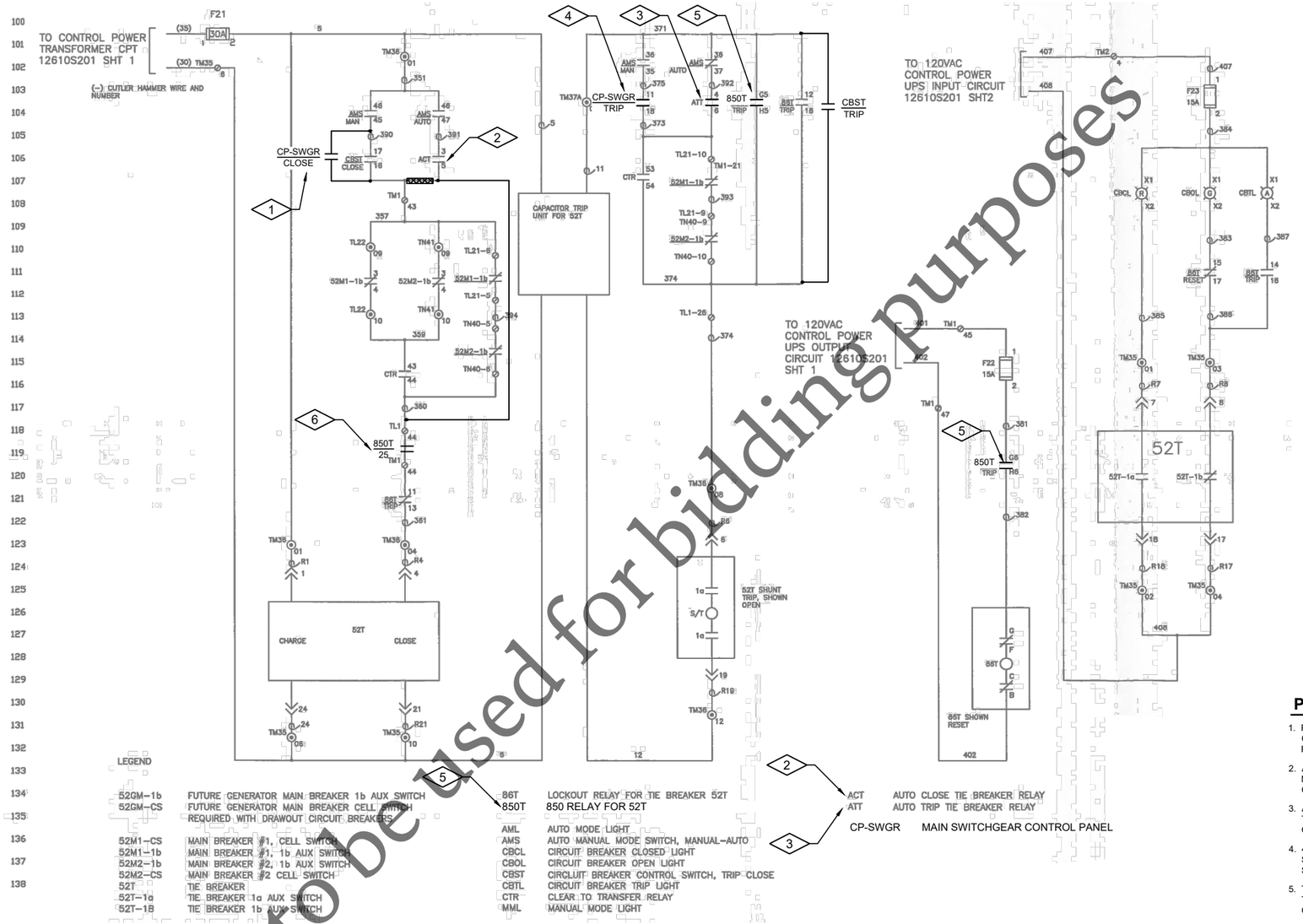
FOUR RIVERS SANITATION AUTHORITY
MAIN POWER TRANSITION PROJECT
(CAPITAL PROJECT NO. 1361)
ROCKFORD, IL

ELECTRICAL AND INSTRUMENTATION AND CONTROLS DETAILS

DONOHUE 7/2024

Sheet No. 29

Drawing No. 5-EN-03



LEGEND

52GM–1b	FUTURE GENERATOR MAIN BREAKER 1b AUX SWITCH	86T	LOCKOUT RELAY FOR TIE BREAKER 52T
52GM–CS	FUTURE GENERATOR MAIN BREAKER CELL SWITCH REQUIRED WITH DRAWOUT CIRCUIT BREAKERS	850T	850 RELAY FOR 52T
52M1–CS	MAIN BREAKER #1, CELL SWITCH	AML	AUTO MODE LIGHT
52M1–1b	MAIN BREAKER #1, 1b AUX SWITCH	AMS	AUTO MANUAL MODE SWITCH, MANUAL–AUTO
52M2–1b	MAIN BREAKER #2, 1b AUX SWITCH	CBCL	CIRCUIT BREAKER CLOSED LIGHT
52M2–CS	MAIN BREAKER #2 CELL SWITCH	CBOL	CIRCUIT BREAKER OPEN LIGHT
52T	TIE BREAKER	CBST	CIRCUIT BREAKER CONTROL SWITCH, TRIP CLOSE
52T–1a	TIE BREAKER 1a AUX SWITCH	CBTL	CIRCUIT BREAKER TRIP LIGHT
52T–1B	TIE BREAKER 1b AUX SWITCH	CTR	CLEAR TO TRANSFER RELAY
		MML	MANUAL MODE LIGHT

ACT	AUTO CLOSE TIE BREAKER RELAY	CP-SWGR	MAIN SWITCHGEAR CONTROL PANEL
ATT	AUTO TRIP TIE BREAKER RELAY		

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. 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.

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Four Rivers Sanitation Authority

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

ELECTRICAL AND INSTRUMENTATION AND CONTROLS DETAILS

DONOHUE 7/2024

Sheet No. 30

Drawing No. 5-EN-04