FOUR RIVERS SANITATION AUTHORITY
ROCKFORD, ILLINOIS

PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
NOVEMBER 2021

Not to be used for bidding purposes

BOARD OF TRUSTEES

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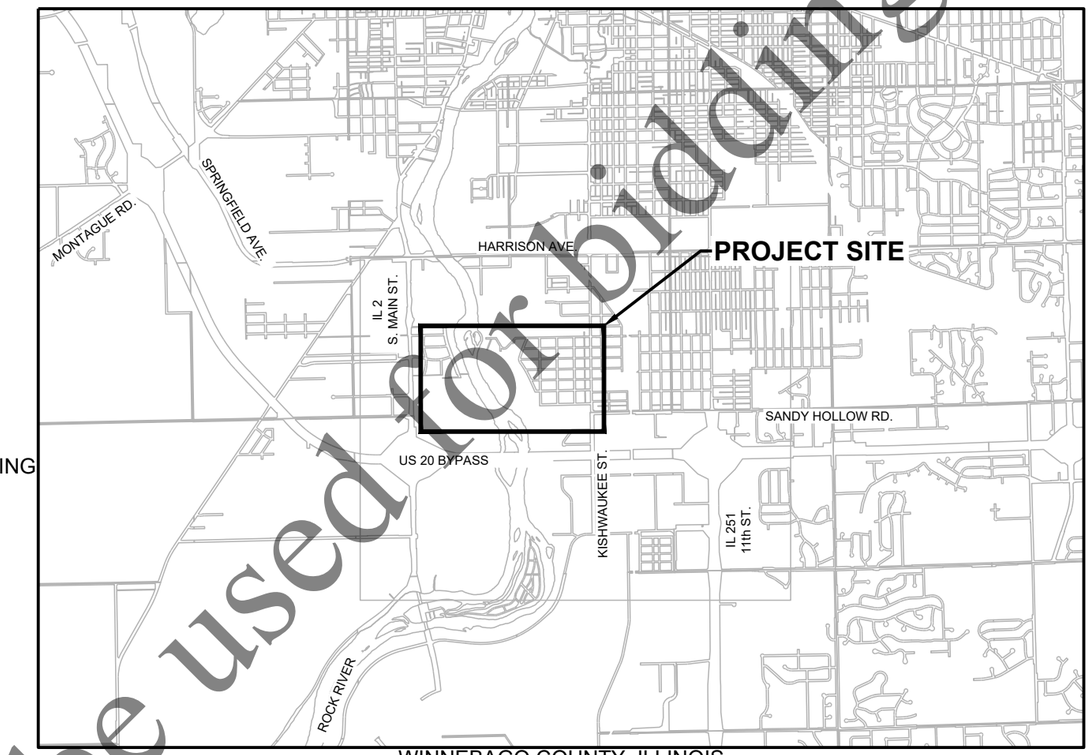

WINNEBAGO COUNTY, ILLINOIS

PROJECT ADDRESS
3333 KISHWAUKEE STREET
ROCKFORD, IL 61109

DONOHUE

Four Rivers
Sanitation Authority

plot date: 9/30/2021
file: P:\13852chiDwg\001G1 COVER.dwg
sheet set: 13852 FRSA PRIMARY FILTRATION PHASE I

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Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	JKR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GENERAL
DRAWING INDEX

DONOHUE 11/23/2021

Sheet No. 2

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

file: P:\13852chi\Dwg\001G2 INDEX.dwg

PROCESS	HVAC / PLUMBING	STRUCTURAL	ARCHITECTURAL	ELECTRICAL	INSTRUMENTATION AND CONTROLS	CIVIL
KAM PING LAW 062-053292 REGISTERED PROFESSIONAL ENGINEER STATE OF ILLINOIS 11/23/2021 Expires: 2/28/202	LICENSED PROFESSIONAL ENGINEER JEFFREY L. WILLS 062-061503 STATE OF ILLINOIS 11/23/2021 Exp: 2/28/2022	LICENSED STRUCTURAL ENGINEER CARL E. ERICKSON 081.007807 11-23-21 STATE OF ILLINOIS EXP: 11-30-22	LICENSED ARCHITECT STEVEN R. WEISS 001-023025 STATE OF ILLINOIS 11/23/2021 EXPIRES: 11/30/2022	FRANK G. MACINO 062-065121 LICENSED PROFESSIONAL ENGINEER STATE OF ILLINOIS Date:11/23/2021 Exp:02/28/2022	LICENSED PROFESSIONAL ENGINEER BART L. GODZIEJEWICZ 062064516 STATE OF ILLINOIS 11/23/2021 Expires: 2/28/2022	LICENSED PROFESSIONAL ENGINEER MICHELLE L. MADRID 062.070476 STATE OF ILLINOIS 11/23/2021 EXP. 02/28/2022
TITLE	TITLE	TITLE	TITLE	TITLE	TITLE	TITLE
LIST DRAWING SHEETS: 1-G-01 1-G-02 1-G-03 1-ENV-01 1-M-01 1-M-02 3-MEN-01 4-R-01 4-R-02 4-R-03 4-MEN-01 4-M-02 5-M-01 5-M-02 5-M-03 5-M-04 5-M-05 5-M-06 5-M-07 5-M-08 5-M-09 5-M-10 5-M-11 6-R-01 6-SM-01 7-RM-01 8-R-01 8-R-02 8-R-03 8-R-04 8-R-05 8-R-06 8-MEN-01 8-MEN-02 8-M-03 8-SMEN-04 8-MN-05 8-M-06 10-M-01 10-M-02 10-M-03	LIST DRAWING SHEETS: 1-G-05 5-P-01 5-P-02 5-P-03 5-P-04 5-P-05 5-H-01 5-H-02 5-H-03 5-H-04 9-R-01 9-R-02 9-R-03 9-R-04 9-R-05 9-H-01 9-H-02 9-H-03 9-H-04 9-H-05 9-H-06 10-P-01 10-P-02 10-H-01 10-H-02 10-H-03	LIST DRAWING SHEETS: 4-R-01 4-R-02 4-R-03 4-S-01 4-S-02 5-S-01 5-S-02 5-S-03 5-S-04 5-S-05 5-S-06 5-S-07 5-S-08 5-S-09 5-S-10 5-S-11 5-S-12 6-R-01 6-SM-01 8-SMEN-04 9-R-02 9-R-03 9-R-04 9-R-05 9-S-01 9-S-02 9-S-03 9-S-04 10-S-01 10-S-02 10-S-03 10-S-04 10-S-05 10-S-06 10-S-07 10-S-08 10-S-09	LIST DRAWING SHEETS: 5-A-01 5-A-02 5-A-03 5-A-04 5-A-05 5-A-06 10-A-01 10-A-02 10-A-03	LIST DRAWING SHEETS: 1-G-05 1-E-01 1-E-02 1-E-03 1-E-04 1-E-05 1-E-06 1-E-07 1-E-08 2-EN-01 3-MEN-01 4-R-01 4-R-02 4-R-03 4-MEN-01 5-E-01 5-E-02A 5-E-02B 5-E-03A 5-E-03B 8-R-02 8-MEN-01 8-MEN-02 8-SMEN-04 9-R-01 9-R-02 9-R-03 9-EN-01 9-EN-02A 9-EN-02B 9-EN-03A 9-EN-03B 9-EN-04 10-E-01 10-E-02	LIST DRAWING SHEETS: 1-G-06 1-G-07 1-N-00 1-N-01 1-N-02 1-N-03 1-N-04 1-N-05 1-N-06 1-N-07 2-EN-01 3-MEN-01 4-MEN-01 5-N-01 5-N-02 5-N-03 8-MEN-01 8-MEN-02 8-SMEN-04 8-MN-05 9-EN-01 9-EN-02A 9-EN-02B 9-EN-03A 9-EN-03B 9-EN-04 10-N-01 10-N-02 10-N-03 10-N-04	LIST DRAWING SHEETS: 1-G-04 2-CK-01 2-CK-02 2-CE-01 2-CR-01 2-CR-02 2-CP-01 2-CP-02 2-CP-03 2-CP-04 2-CP-05 2-CF-01 2-CF-02 2-CF-03 2-CG-01 2-CFG-01 2-CFG-02 2-CFG-03 2-CFG-04 10-C-01 10-C-02 10-C-03 10-C-04 10-C-05 10-C-06 10-C-07 10-C-08 10-C-09

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
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PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SEALS AND SIGNATURES

DONOHUE 11/23/2021

Sheet No. 3

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

file: P:\13852chi\Dwg\001G2 SEAL SHEET.dwg

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

5-M-1

- DRAWING NUMBER
- DISCIPLINE IDENTIFIER (MAY HAVE MULTIPLE DESIGNATIONS)
- DRAWING IDENTIFIER

PLAN NOTE DESIGNATION

1 — PLAN NOTE. SEE NOTES ON SAME DRAWING.

STANDARD DETAIL DESIGNATION

ON DRAWING WHERE DETAIL IS TAKEN — ON DRAWING WHERE DETAIL IS SHOWN

DETAIL DESIGNATION

S100 — STANDARD DETAIL — S100

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

SECTION DESIGNATION

A 1-M-2 — SECTION — A 1-M-1

- DRAWING NUMBER(S) WHERE SHOWN
- DRAWING NUMBER(S) WHERE SHOWN
- DRAWING NUMBER(S) WHERE TAKEN

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

ELEVATION DESIGNATION

A 1-A-2 — ELEVATION — A 1-A-1

- DRAWING NUMBER(S) WHERE SHOWN
- DRAWING NUMBER(S) WHERE TAKEN

DETAIL DESIGNATION

ON DRAWING WHERE DETAIL IS TAKEN — ON DRAWING WHERE DETAIL IS SHOWN

DETAIL DESIGNATION

1 1-M-2 — DETAIL — 1 1-M-1

- DRAWING NUMBER(S) WHERE SHOWN
- DRAWING NUMBER(S) WHERE TAKEN

AREA DESIGNATION

B101 — AREA NUMBER
CHEMICAL FEED ROOM — AREA NAME

PHOTO DESIGNATION

PHOTO DESIGNATION
P2 — CAMERA POSITION PHOTO TAKEN FROM
160-R-3 — DRAWING NUMBER WHERE SHOWN

SYMBOLS

- NON-RIGID INSULATION
- RIGID INSULATION
- SAND OR FILL
- FREE DRAINING FILL
- ROUGH CARPENTRY (NOMINAL SIZE INDICATED) — 2 × 6
- CONCRETE
- CONCRETE BLOCK
- FACE BRICK
- OR — PRECAST CONCRETE PLANK
- EARTH OR BACKFILL
- ROCK
- REMOVAL
- BAR GRATING
- CHECKERED PLATE
- PLANK GRATING
- 2' x 2' SUSPENDED ACOUSTICAL CEILING
- GYPSUM BOARD CEILING. REFER TO ROOM FINISH SCHEDULE FOR FINISH
- 8'-8" — CEILING HEIGHT ABOVE FINISHED FLOOR
- 111-10 — DOOR DESIGNATOR; DOOR NO.
- 105 — WINDOW NO.; WINDOW DESIGNATOR

INSTRUMENT IDENTIFICATION

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

VALVE IDENTIFICATION

EXAMPLE:

6" V005
- VALVE TYPE, SEE SECTION 15280
- VALVE SIZE

PIPE IDENTIFICATION

EXAMPLE:

54" PI
- FLOW STREAM IDENTIFIER
- NOMINAL PIPE DIAMETER

ABBREVIATIONS

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

FLOW STREAM IDENTIFIERS

ALP	AIR (LOW PRESSURE)
AHP	AIR (HIGH PRESSURE)
BD	BASIN DRAIN
BYP	BYPASS
BWW	BACKWASH WASTE
CEN	CENTRATE
CGR	COOLING GLYCOL RETURN
CGS	COOLING GYLCOL SUPPLY
D	DRAIN
DCT	DECANT
DG	DIGESTER GAS
DSC	DIGESTED SLUDGE CIRCULATED
DS	DIGESTED SLUDGE
DSH	DIGESTED SLUDGE HEATED
DSL	DIGESTED SLUDGE LOADOUT
DSM	DIGESTED SLUDGE MIXING
DST	DIGESTED SLUDGE TRANSFER
EXH	EXHAUST
FE	FINAL EFFLUENT
FECL	FERRIC CHLORIDE
FLT	FILTRATE
GTO	GRAVITY THICKENER OVERFLOW
GRS	GRIT SLURRY
GRT	GRIT
H2S	HYDROGEN SULFIDE
HGR	HEATING GLYCOL RETURN
HGS	HEATING GLYCOL SUPPLY
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
LPO	LIQUID POLYMER
ML	MIXED LIQUOR
NG	NATURAL GAS
ODA	ODOROUS AIR
OF	OVERFLOW
PE	PRIMARY EFFLUENT
PFI	PRIMARY FILTRATION INFLUENT
PFE	PRIMARY FILTRATION EFFLUENT
PFS	PRIMARY FILTRATION SLUDGE (COMBINED BACKWASH WASTE AND SOLIDS WASTE DRAWOFF)
PFTS	PRIMARY FILTRATION THICKENED SLUDGE
PI	PRIMARY INFLUENT
PO	POLYMER
PSD	PRIMARY SLUDGE
PSM	PRIMARY SCUM
RAS	RETURN ACTIVATED SLUDGE
RCY	RECYCLE
RCC	RECYCLE CHLORINE CLEAN
RWW	RAW WASTEWATER
SA	SAMPLE
SAN	SANITARY SEWER
SBS	SODIUM BISULFITE
SCN	SCREENINGS
SE	SECONDARY EFFLUENT
SI	SECONDARY INFLUENT
SHC	SODIUM HYPOCHLORITE
SLD	SOLIDS WASTE DRAWOFF
SSM	SECONDARY SCUM
SUP	SUPERNATANT
TDSD	THICKENED DIGESTED SLUDGE
TPSD	THICKENED PRIMARY SLUDGE
TS	THICKENED SLUDGE
TWAS	THICKENED WASTE ACTIVATED SLUDGE
V	VENT
WAS	WASTE ACTIVATED SLUDGE
W1	POTABLE CITY WATER
W2	NON-POTABLE CITY WATER
W3	PLANT EFFLUENT WATER (NON-POTABLE)
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-ENV-01 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 THIS DRAWING INDICATE SPACES IN WHICH A HAZARDOUS ENVIRONMENT MAY GENERALLY EXIST. CONTRACTOR SHALL REFER TO SPACE ENVIRONMENT/HAZARDOUS RATING SCHEDULE IN DRAWING 1-ENV-01 FOR ADDITIONAL INFORMATION EXPLAINING THE EXTENT AND ENVELOPE ASSOCIATED WITH THESE HAZARDS.
7. REFER TO DRAWING 1-G-04 FOR GENERAL CIVIL NOTES.
8. REFER TO DRAWING 1-G-06 FOR GENERAL I&C NOTES.
9. REFER TO DRAWING 10-S-01 FOR GENERAL STRUCTURAL NOTES

GENERAL REMOVAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. FULL TONE COMPONENTS TO BE REMOVED.
4. SEE SECTION 01 11 00 FOR PROJECT CONSTRAINTS.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GENERAL LEGEND
SYMBOLS, NOTES AND ABBREVIATIONS

DONOHUE — 11/23/2021

Sheet No. 4
Drawing No. 1-G-03

file: P:\13852chi\Dwg\001-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
100	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 SHOWN IS BASED ON A TOPOGRAPHIC SURVEY COMPLETED IN JANUARY 2021. 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.
4. THE CONTRACTOR SHALL PROVIDE 72 HOURS NOTIFICATION IN ADVANCE OF ANY SITE EXCAVATION WORK TO ALLOW THE OWNER AN OPPORTUNITY TO GPS LOCATE ALL STRUCTURES AND UTILITIES THAT ARE EXPOSED DURING EXCAVATION.
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.

ABBREVIATIONS

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

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.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GENERAL LEGEND
CIVIL LEGEND AND GENERAL NOTES

DONOHUE 11/23/2021

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

file: P:\13852chi\Dwg\001-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 XX — STAT, T=TEMP, H=HUMIDITY, P=PRESSURE, G=GAS XX GAS MONITORED
- T H P G XX — SENSOR WITH DISPLAY AND ADJUSTMENT XX GAS MONITORED
- T H P G XX — SENSOR WITHOUT DISPLAY OR ADJUSTMENT XX GAS MONITORED
- 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
CGR	COOLING GLYCOL RETURN	HPW	HIGH PRESSURE WATER	RS	REFRIGERANT (SUCTION)		(NOT-POTABLE)
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	WSFU	WATER SUPPLY FIXTURE UNIT
CL	CENTER LINE ELEVATION	HP	HIGH POINT		(GAUGE)	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	HPW	HIGH PRESSURE WATER SYSTEM	RHP	RADIANT HEATING PANEL	WC	WATER CLOSET
EG	EXHAUST GRILLE	HUH	HOT WATER UNIT HEATER	RPZ	REDUCED ZONE PRESSURE BACKFLOW PREVENTER	WH	WALL HYDRANT
EH	ELECTRIC HEATER	HWC	HOT WATER CONVECTOR	RTU	ROOFTOP UNIT		
EUH	ELECTRIC UNIT HEATER	ICD	INSULATED MOTOR CONTROL DAMPER	SD	SUPPLY DIFFUSER		
EWC	ELECTRIC WATER COOLER			SF	SUPPLY FAN		

ELECTRICAL ABBREVIATIONS AND SYMBOLS

ABBREVIATIONS

A	AMPERE
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
- $ 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
- I — 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.

Not to be used for building purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CAH/FGM
Drawn By	CAH/FGM
Checked By	JLW/JBL
Approved By	JLW/FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GENERAL LEGEND
PLUMBING LEGEND/HVAC LEGEND/ ELECTRICAL LEGEND

DONOHUE 11/23/2021

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

file: P:\13852chi\Dwg\001-Legends - SSM.dwg

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

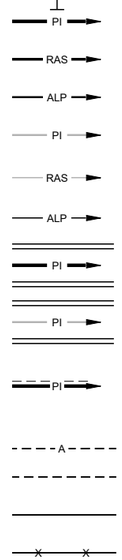
LETTER	FIRST LETTER (S)		SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (*)		ALARM (W. LOGGING)	ANNUNCIATE	
B	BURNER, FLAME, COMBUSTION		USERS CHOICE (*)	USERS CHOICE (*)	USERS CHOICE (*)
C	USERS CHOICE (*)			CONTROL	
D	USERS 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

FLOW STREAM IDENTIFIERS. SEE PROCESS MECHANICAL LEGEND FOR FLOW STREAM IDENTIFIER LISTING.



NEW MAJOR PROCESS FLOW STREAM (CLOSED CONDUIT)

NEW INTERMEDIATE PROCESS FLOW STREAM (CLOSED CONDUIT)

NEW MINOR PROCESS FLOW STREAM (CLOSED CONDUIT)

EXISTING MAJOR PROCESS FLOW STREAM (CLOSED CONDUIT)

EXISTING INTERMEDIATE PROCESS FLOW STREAM (CLOSED CONDUIT)

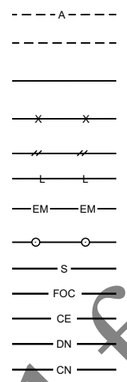
EXISTING MINOR PROCESS FLOW STREAM (CLOSED CONDUIT)

NEW MAJOR PROCESS FLOW STREAM (OPEN CONDUIT)

EXISTING MAJOR PROCESS FLOW STREAM (OPEN CONDUIT)

HEAT TRACED PROCESS FLOW STREAM (CLOSED CONDUIT)

SIGNALS



MODULATED (4-20mA DC)

HARDWIRED DISCRETE INPUTS/OUTPUTS

INSTRUMENT SUPPLY OF CONNECTION TO EQUIPMENT

FAILED SYSTEM (CAPILLARY TUBING ETC.)

PNEUMATIC

HYDRAULIC

ELECTROMAGNETIC OR SONIC (GUIDED)

MECHANICAL LINK

SERIAL LINK (RS232/485)

FIBER OPTIC CABLE

COPPER ETHERNET CABLE

DEVICENET

CONTROLNET

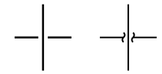
STRUCTURES AND EQUIPMENT

NEW, RELOCATED, OR REFURBISHED EQUIPMENT

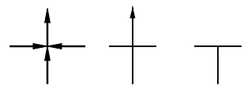
EXISTING EQUIPMENT

NEW OR RELOCATED STRUCTURE

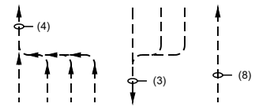
EXISTING STRUCTURE



NON-CONNNECTING LINES



CONNECTING LINES



PARALLEL SIGNALS. (PARENTHETICAL NUMBER INDICATES QUANTITY OF SIGNALS REPRESENTED)

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 WETWELL 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

Not to be used for bidding purposes

VALVE SYMBOLS

- SEAT — ECCENTRIC PLUG
- BUTTERFLY
- BALL
- VENTED BALL (V)
- GLOBE
- GATE
- KNIFE GATE (K)
- PINCH
- DIAPHRAGM
- SOLENOID (S)
- THREE-WAY
- TELESCOPING (T)
- 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

- E XX — ELECTRIC MOTOR
- E Z XX — ELECTRIC MOTOR WITH POSITIONER
- P S XX — PNEUMATIC WITH SOLENOID
- P Z XX — PNEUMATIC WITH POSITIONER
- H S XX — HYDRAULIC WITH SOLENOID
- H Z XX — 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 (D)
- STRAINER
- FLUSHING WATER CONNECTION (F)
- SEAL WATER CONNECTION (S)
- EJECTOR
- AUTOMATIC SAMPLER (S)
- 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 (S)
- AUTOMATIC DRAIN (A)
- MANUAL DRIP TRAP (D)
- 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 (XX)
- CENTRIFUGAL PUMP (DRY PIT, PLAN VIEW) (XX)
- CENTRIFUGAL PUMP (DRY PIT, ELEVATION) (XX)
- CENTRIFUGAL PUMP (INLINE)
- VERTICAL TURBINE PUMP (XX)
- PROGRESSING CAVITY PUMP (XX)
- CENTRIFUGAL BLOWER (XX)
- CHEMICAL INDUCTION MIXER (XX)
- ROTARY LOBE PUMP, BLOWER OR COMPRESSOR (POSITIVE DISPLACEMENT) (XX)
- AXIAL FLOW PUMP (XX)
- AIR OPERATED DIAPHRAGM PUMPS W. INTEGRAL CHECK VALVES:
  - CYLINDER ASSIST
  - SPRING RETURN
- COMPRESSOR (PISTON) (XX)
- CHEMICAL FEED PUMP (XX)
- PLUNGER PUMP (XX)
- DOUBLE DISC PUMP (XX)
- DIAPHRAGM PUMP (XX)
- HOSE PUMP (M) (XX)

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 — I/O (X)

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

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	LPH
Drawn By	LPH
Checked By	BLG
Approved By	BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GENERAL LEGEND
I&C STANDARD SYMBOLOGY

DONOHUE 11/23/2021

Sheet No. 8

Drawing No. 1-G-07

file: P:\13852chi\Dwg\001-Legends - SSM.dwg

SPACE ENVIRONMENT AND HAZARDOUS RATINGS SCHEDULE

AREA			ENVIRONMENT				
BUILDING	SPACE NO.	SPACE NAME	LOCATION	TYPE	EXPOSURE	HAZARDOUS RATING	NOTES
PRIMARY SETTLING TANKS 1	001	PRIMARY SETTLING TANKS 1	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 2, GROUP D	5
PRIMARY SETTLING TANKS 2	002	PRIMARY SETTLING TANKS 2	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 2, GROUP D	5
PRIMARY FILTRATION FACILITY 1	001	PFI WET WELL 1	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 1, GROUP D	1, 2, 3
	002	PFI CHANNEL 1	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 1, GROUP D	1, 2, 3
	003	PRIMARY FILTER PUMP ROOM 1	INTERIOR	PROCESS	WET	UNCLASSIFIED	
	004	PRIMARY FILTER TANK 1	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 1, GROUP D	1, 2, 3
	005	PRIMARY FILTER TANK 2	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 1, GROUP D	1, 2, 3
	006	PFE CHANNEL 1	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 1, GROUP D	1, 2, 3
	007	PFE CHANNEL 2	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 1, GROUP D	1, 2, 3
	008	GRAVITY THICKENER PUMP ROOM 1	INTERIOR	PROCESS	WET	UNCLASSIFIED	
	009	SCUM WET WELL 1	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 1, GROUP D	1, 2, 3
	010	PRIMARY FILTER EFFLUENT DIVERSION STRUCTURE	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 2, GROUP D	4
	100	PRIMARY FILTRATION CONTROL ROOM 1	INTERIOR	ELECTRICAL	DRY	UNCLASSIFIED	
	101	STAIRWELL 1	INTERIOR	OTHER	WET	UNCLASSIFIED	
	102	STAIRWELL 2	INTERIOR	OTHER	WET	UNCLASSIFIED	
	103	GRAVITY THICKENER 1	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 2, GROUP D	1, 5
	104	GTO BOX 1	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 2, GROUP D	1, 5
PARSHALL FLUME	001	PARSHALL FLUME	EXTERIOR	PROCESS	WET	CLASS I, DIVISION 2, GROUP 1	4
PRIMARY SLUDGE MANHOLE	001	PRIMARY SLUDGE MANHOLE	INTERIOR	PROCESS	WET	CLASS I, DIVISION 2, GROUP D	1
PRIMARY SETTLING TANK 3	003	ENTIRE STRUCTURE	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 2, GROUP D	5
PRIMARY SETTLING TANK 4	004	ENTIRE STRUCTURE	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 2, GROUP D	5
PRIMARY TANK OUTLET STRUCTURE	001	PRIMARY SLUDGE MANHOLE	SUBMERGED	PROCESS	WET	UNCLASSIFIED	
PRIMARY FILTER DISTRIBUTION BOX	001	PRIMARY FILTER DISTRIBUTION BOX	SUBMERGED	PROCESS	WET	CLASS I, DIVISION 1, GROUP D	1
GRAVITY BELT THICKENING BUILDING	001	UTILITIES TUNNEL 1	INTERIOR	PROCESS	WET	UNCLASSIFIED	
	002	PRIMARY SLUDGE PUMPING ROOM	INTERIOR	PROCESS	WET	UNCLASSIFIED	
	003	UTILITIES TUNNEL 3	INTERIOR	PROCESS	WET	UNCLASSIFIED	
	101	GRAVITY BELT THICKENER 1 ROOM	INTERIOR	PROCESS	WET	UNCLASSIFIED	
	102	GRAVITY BELT THICKENER 2 ROOM	INTERIOR	PROCESS	WET	CLASS I, DIVISION 2, GROUP D	
	103	ELECTRICAL / CONTROL ROOM	INTERIOR	ELECTRICAL	DRY	UNCLASSIFIED	
DIGESTER CONTROL BUILDING	001	LOWER LEVEL	INTERIOR	PROCESS	WET	UNCLASSIFIED	
MAIN PUMP II BUILDING	L101	SUBLEVEL	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	001	LOWER LEVEL	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	002	ELECTRICAL ROOM	INTERIOR	ELECTRICAL	DRY	UNCLASSIFIED	
	003	VESTIBULE	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	101	GENERAL OFFICE	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	102	OFFICE	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	103	OFFICE	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	104	ELECTRICAL ROOM	INTERIOR	ELECTRICAL	DRY	UNCLASSIFIED	
	106	SUPPLY ROOM	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	107	LOBBY	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	108	VESTIBULE	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	109	OPEN	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	111	CONFERENCE ROOM	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	114	MENS	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	115	WOMENS	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	120	STAIRWAY	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	201	GENERAL OFFICE	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	202	OFFICE	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	203	HALL	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	204	MECHANICAL	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	205	CLOSET	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	220	STAIRWAY	INTERIOR	OTHER	DRY	UNCLASSIFIED	
	301	ROOF	EXTERIOR	OTHER	WET	UNCLASSIFIED	
ADMIN BUILDING I	100	ENTIRE BUILDING	INTERIOR	ADMIN	DRY	UNCLASSIFIED	

GENERAL NOTES

1. WITHIN OPEN TANKS AND CHANNELS, SUBMERGED INCLUDES ALL LOCATIONS UP TO 1'-6" ABOVE HIGH LIQUID LEVEL.
2. WITHIN ENCLOSED TANKS, WELLS AND CHANNELS, SUBMERGED INCLUDES ALL LOCATIONS BELOW COVER SYSTEM.

EXPLOSION HAZARD NOTES

1. ENTIRE ENCLOSED AREA.
2. AREAS WITHIN 3-FOOT RADIUS OF VENTS ARE C1, D1, AREA BETWEEN 3 AND 5-FOOT RADIUS OF VENTS ARE C1, D2.
3. AREAS WITHIN 3-FEET OF REMOVABLE/OPENABLE ACCESS HATCHES ARE C1, D2 TO A HEIGHT 1'-6" ABOVE DECK.
4. AREAS WITHIN 10-FT OF EQUIPMENT OR OPEN CHANNELS ARE C1, D2.
5. ENVELOPE INCLUDES ALL LOCATIONS WITHIN 10-FEET LATERALLY FROM VESSEL, UP TO 1'-6" ABOVE AND ALONG EXTERIOR FACE OF ENCLOSING WALLS AND 1'-6" ABOVE ADJACENT GRADE OR FLOOR SURFACES.

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

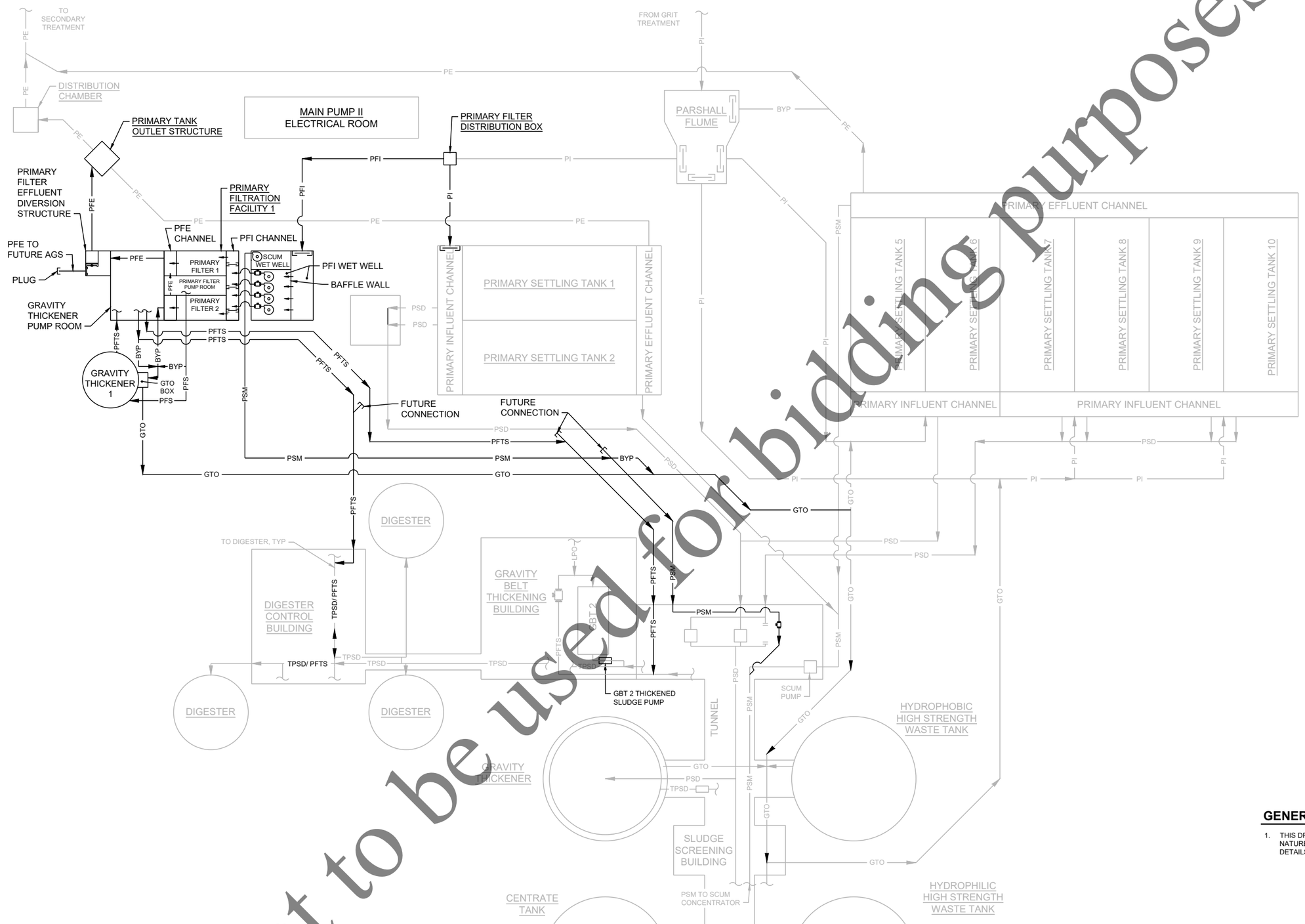
SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE

DONOHUE 11/23/2021

Sheet No. 9

Drawing No. 1-ENV-01

file: P:\13852chi\Dwg\001-ENV1.dwg



GENERAL NOTES:

1. THIS DRAWING IS OVERALL PROCESS AND SCHEMATIC IN NATURE. SEE DRAWINGS 1-N-01 THRU 1-N-07 FOR ADDITIONAL DETAILS.

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				Project No.	13852
				Designed By	MTR
				Drawn By	MTR
				Checked By	SPG
				Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

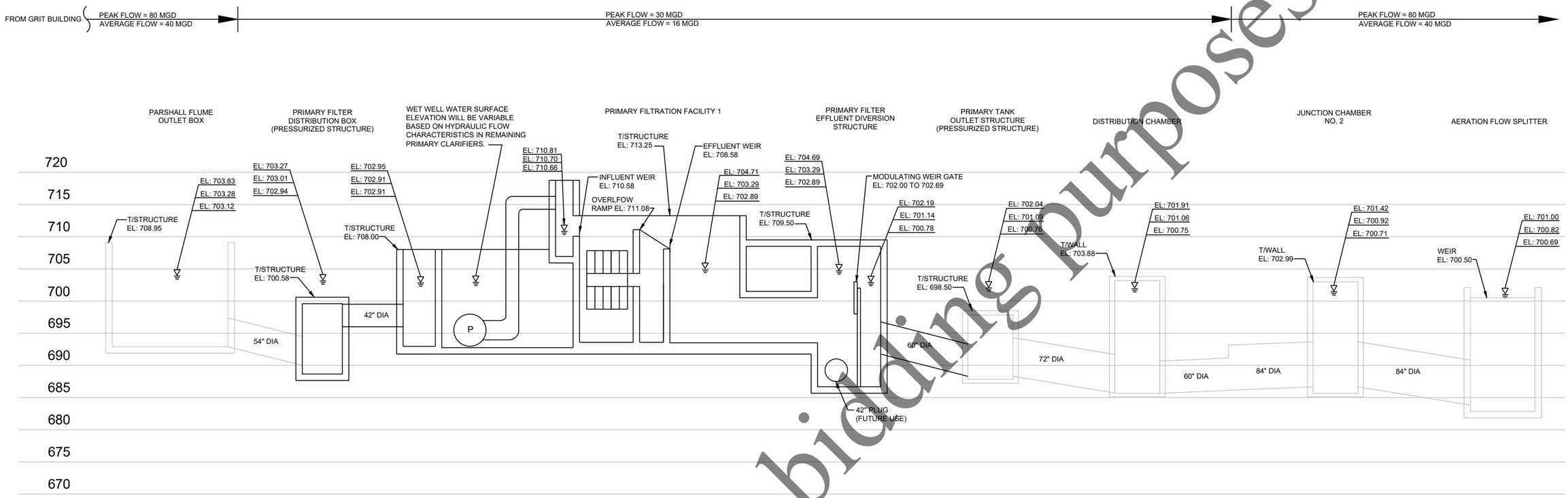
PROCESS FLOW DIAGRAM

DONOHUE 11/23/2021

Sheet No. 10

Drawing No. **1-M-01**

file: P:\13852chi\Dwg\1-M-01.dwg



PRIMARY FILTRATION PHASE I HYDRAULIC PROFILE

VERTICAL: 0 1" 8'

HORIZONTAL: NTS

HYDRAULIC PROFILE WATER LEVELS

DESIGN PEAK FLOW: 80 MGD

DESIGN AVERAGE FLOW: 40 MGD

MINIMUM WWTP FLOW: 18 MGD

GENERAL NOTES:

1. DURING WET WEATHER PEAK FLOW, FLOWS IN EXCESS OF 80 MGD CAN BE DIVERTED TO THE EXCESS FLOW FACILITY.
2. FOR PURPOSES OF HYDRAULIC PROFILE CALCULATIONS, IT WAS ASSUMED THE AERATION FLOW SPLITTER WEIRS ARE NOT SUBMERGED FOR ALL FLOWS.
3. THE OPERATIONAL RANGE OF THE MODULATING WEIR GATE IN THE PRIMARY FILTER EFFLUENT DIVERSION STRUCTURE SHALL BE EL. 702.00 TO EL. 702.69 FOR THE PHASE 1 PROJECT. AN OPERATIONAL RANGE OF THE WEIR GATE BETWEEN EL. 703.99 AND 706.50 SHALL BE USED TO MAINTAIN A WSE OF 706.50 +/- IN THE PRIMARY EFFLUENT DIVERSION STRUCTURE IN THE FUTURE.

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Four Rivers Sanitation Authority

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Project No.	13852
Designed By	KEM
Drawn By	KEM
Checked By	NWC
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

HYDRAULIC PROFILE

DONOHUE 11/23/2021

Sheet No. 11

Drawing No. **1-M-02**

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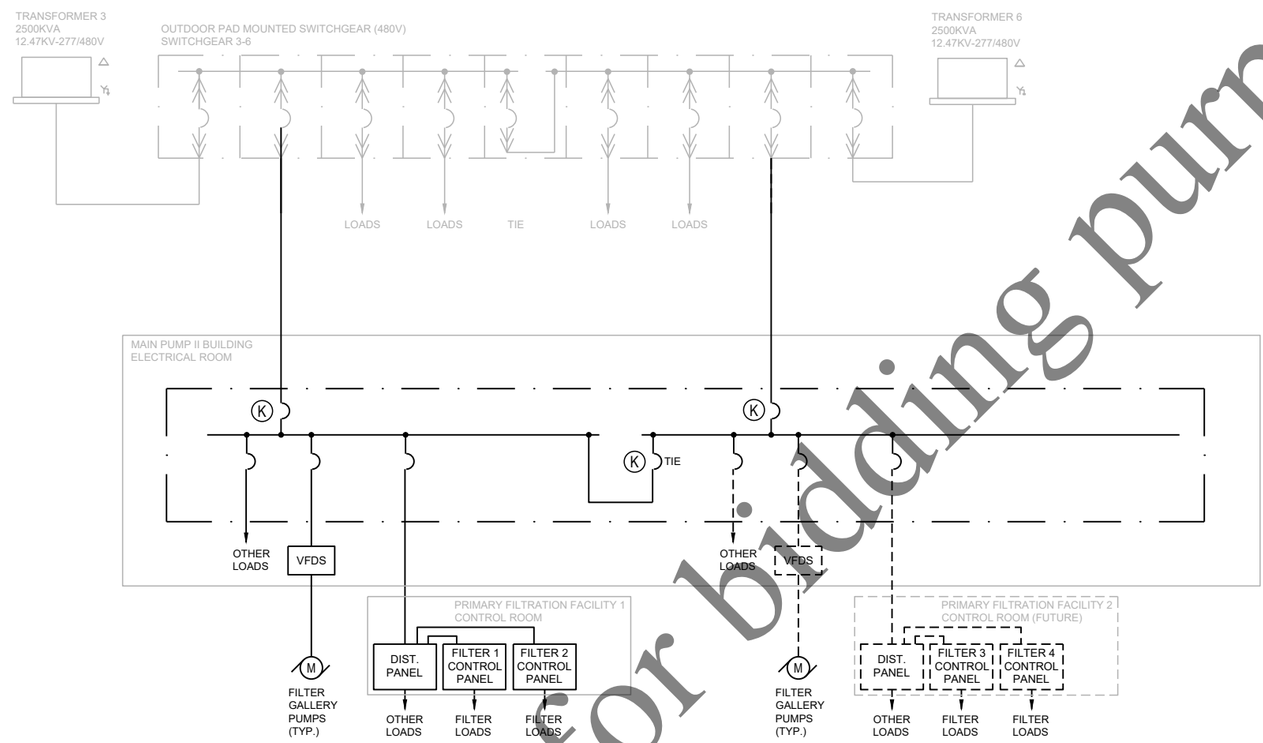

OVERALL ONE-LINE DIAGRAM

GENERAL NOTES:

1. FUTURE PHASE II WORK SHOWN AS DASHED.
2. ALL EQUIPMENT IN THIS PROJECT SHALL BE SUITABLE FOR 600VAC.

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file: P:\13852chi\Dwg\001E1.dwg

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

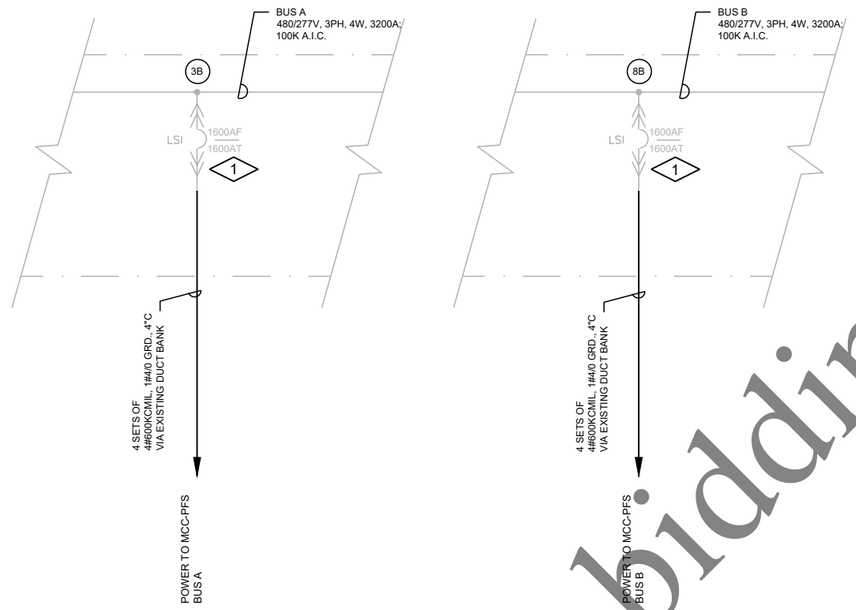
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

ELECTRICAL DISTRIBUTION
OVERALL ONE-LINE DIAGRAM

DONOHUE 11/23/2021

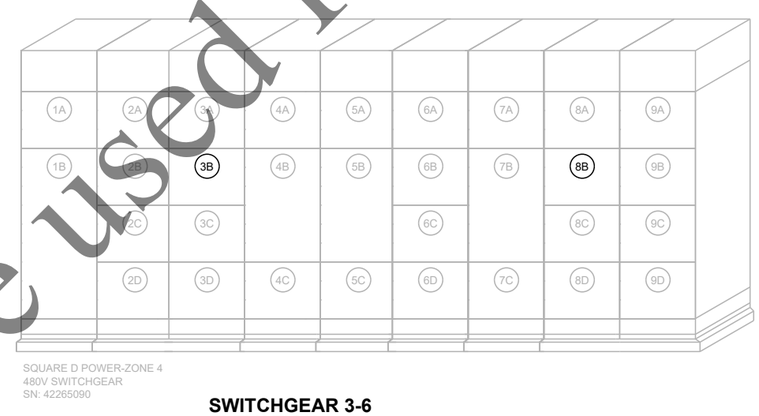
Sheet No. 12

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



SWITCHGEAR 3-6
PARTIAL ONE-LINE DIAGRAM
SWITCHGEAR ENCLOSURE

NTS



SWITCHGEAR 3-6
ELEVATION
SWITCHGEAR ENCLOSURE

NTS

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
3. SEE 01 11 00 FOR PROJECT CONSTRAINTS.

PLAN NOTES: ◇

1. ADJUST TRIP SETTINGS FOR EXISTING BREAKER PER POWER SYSTEMS STUDY RECOMMENDATIONS. PROVIDE NEW FRONT OF BUCKET NAMEPLATES.

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Four Rivers Sanitation Authority

No:	DATE:	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

ELECTRICAL DISTRIBUTION
PARTIAL ONE-LINE DIAGRAM AND ELEVATION

DONOHUE

11/23/2021

Sheet No. 13

Drawing No. **1-E-02**

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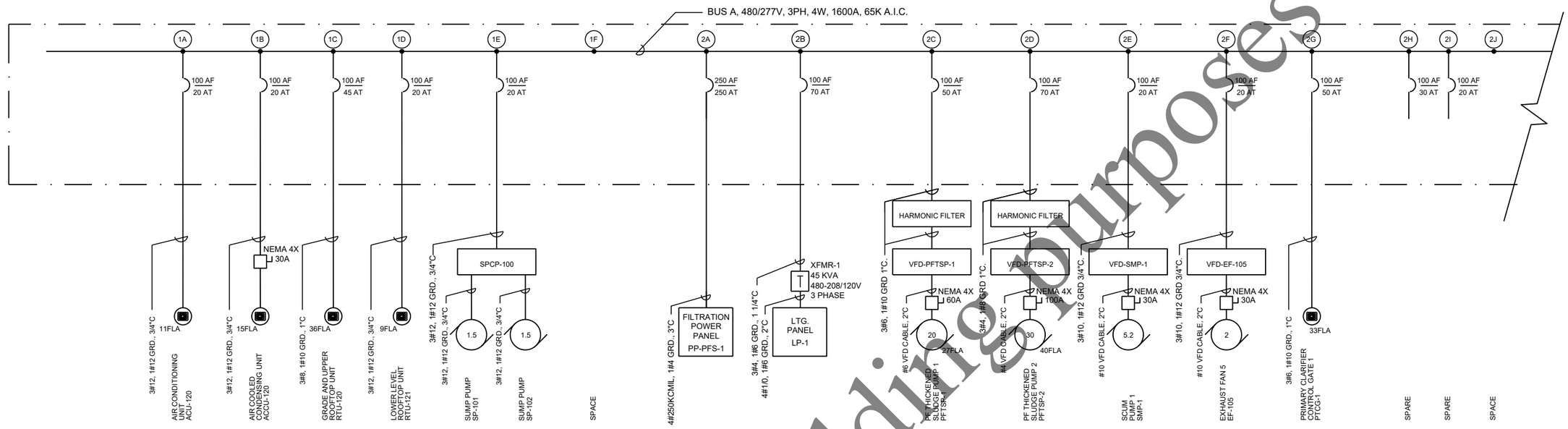
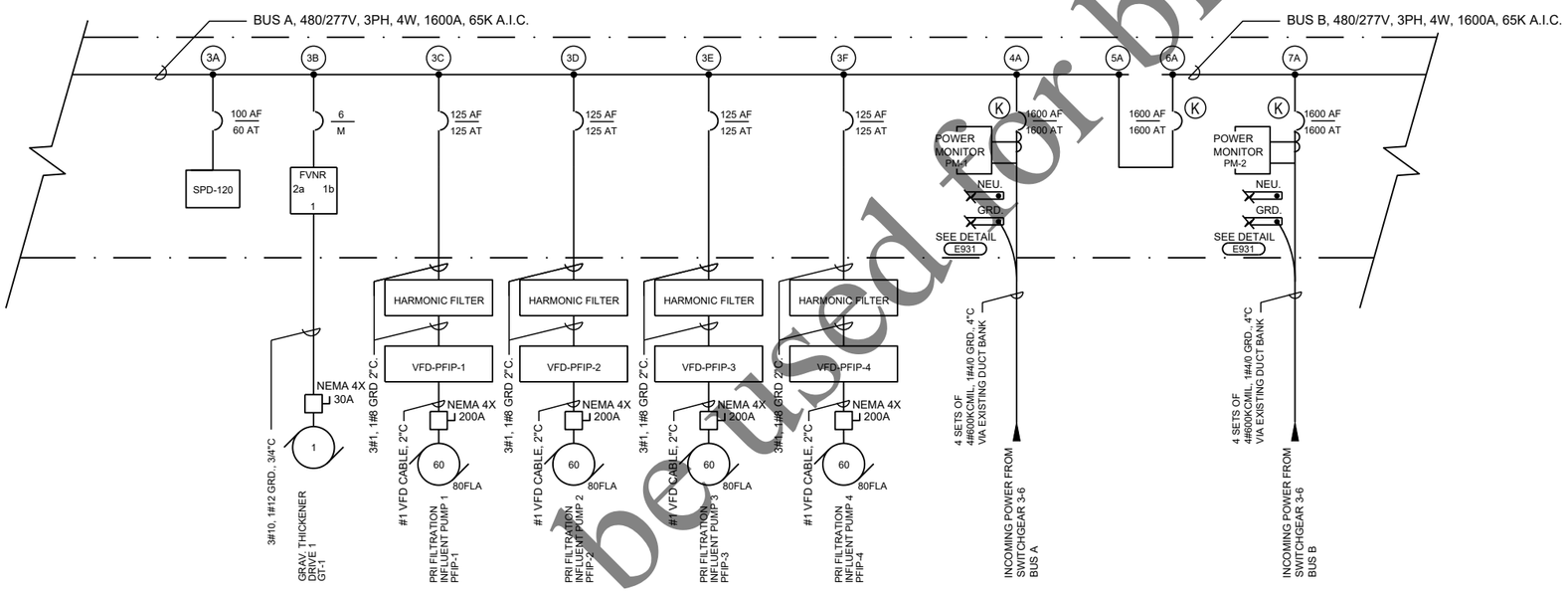


MCC-PFS
ONE-LINE DIAGRAM
MAIN PUMP II BUILDING
NTS

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. SEE 01 11 00 FOR PROJECT CONSTRAINTS.



MCC-PFS
ONE-LINE DIAGRAM
MAIN PUMP II BUILDING
NTS

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

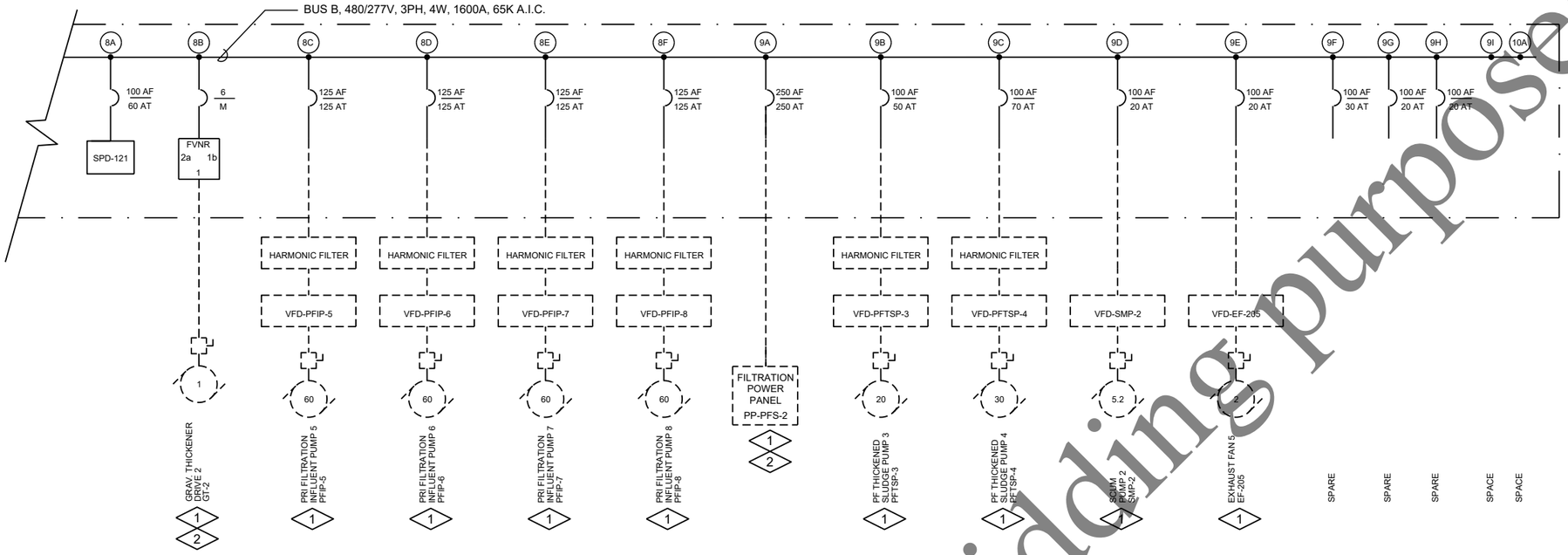
ELECTRICAL DISTRIBUTION
ONE-LINE DIAGRAM

DONOHUE 11/23/2021

Sheet No. 14

Drawing No. **1-E-03**

file: P:\13852chi\Dwg\001E1.dwg



MCC-PFS
ONE-LINE DIAGRAM
MAIN PUMP II BUILDING

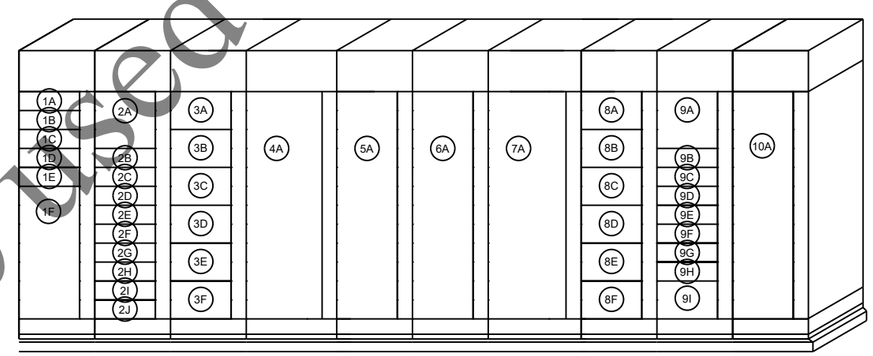
NTS

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. SEE 01 11 00 FOR PROJECT CONSTRAINTS.
3. PHASE II WORK SHOWN AS DASHED.

PLAN NOTES:

1. FUTURE CABLE, CONDUIT, AND LOADS WILL BE INSTALLED UNDER PHASE II. PREPARE SPACE IN MCC FOR INSTALLATION OF FUTURE PHASE II LOADS.
2. CORE HOLES BENEATH MCC FOR FUTURE CONDUIT.



MCC-PFS
ELEVATION
MAIN PUMP II BUILDING

NTS

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

ELECTRICAL DISTRIBUTION
ONE-LINE DIAGRAM AND ELEVATION

DONOHUE 11/23/2021

Sheet No. 15

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

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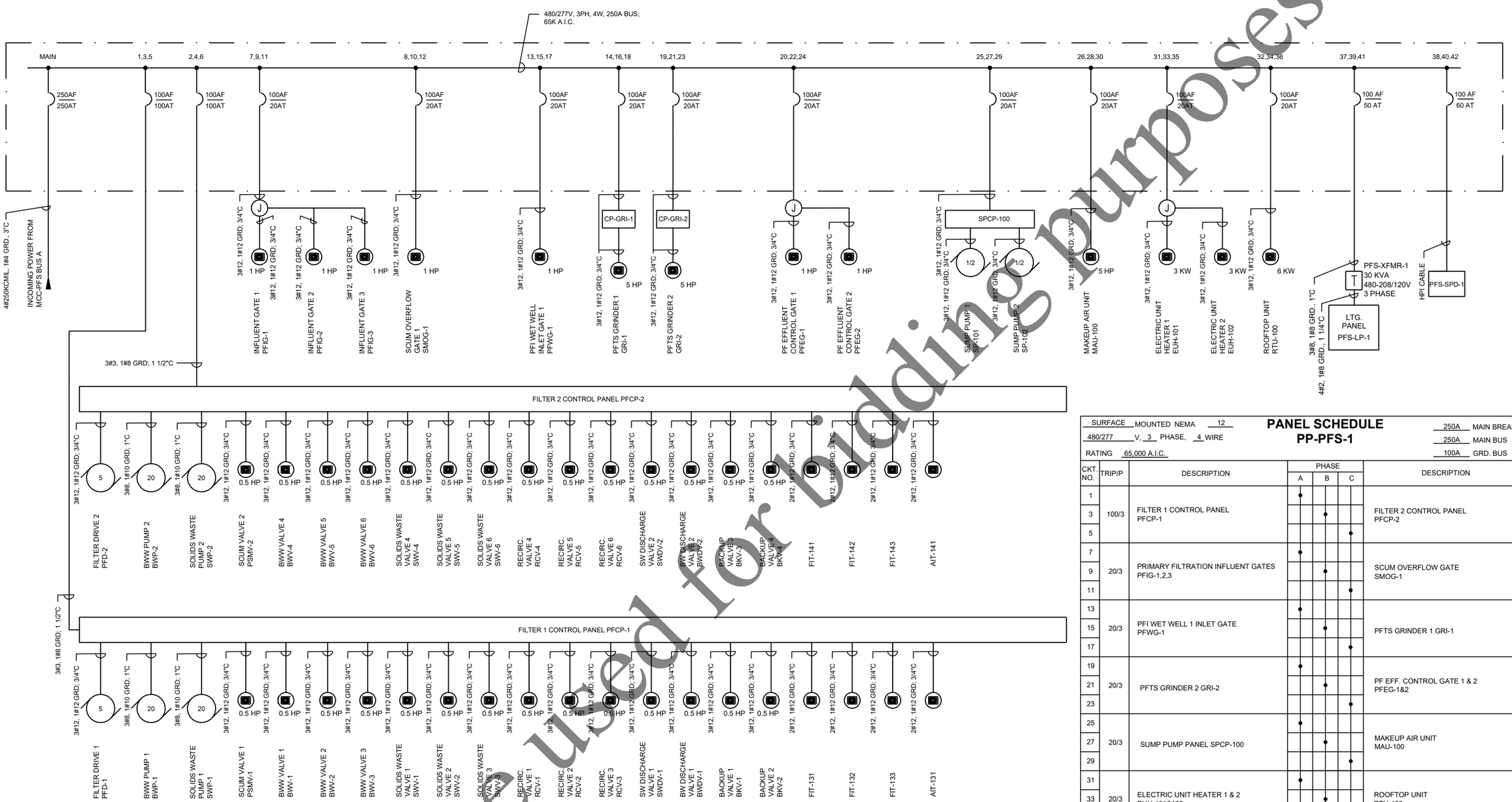

PP-PFS-1
ONE-LINE DIAGRAM
FILTER STRUCTURE 1

NTS

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. SEE 01 11 00 FOR PROJECT CONSTRAINTS.

PANEL SCHEDULE
PP-PFS-1

SURFACE MOUNTED NEMA 12
480/277 V, 3 PHASE, 4 WIRE
RATING 65,000 A.I.C.

250A MAIN BREAKER
250A MAIN BUS
100A GRD. BUS

CKT. NO.	TRIP/P	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	TRIP/P	CKT. NO.
1			•					2
3	100/3	FILTER 1 CONTROL PANEL PFCP-1		•		FILTER 2 CONTROL PANEL PFCP-2	100/3	4
5					•			6
7			•					8
9	20/3	PRIMARY FILTRATION INFLUENT GATES PFIG-1,2,3		•		SCUM OVERFLOW GATE SMOG-1	20/3	10
11					•			12
13			•					14
15	20/3	PFI WET WELL 1 INLET GATE PFWG-1		•		PFTS GRINDER 1 GRI-1	20/3	16
17					•			18
19			•					20
21	20/3	PFTS GRINDER 2 GRI-2		•		PF EFF. CONTROL GATE 1 & 2 PFEG-1&2	20/3	22
23					•			24
25			•					26
27	20/3	SUMP PUMP PANEL SPCP-100		•		MAKEUP AIR UNIT MAU-100	20/3	28
29					•			30
31			•					32
33	20/3	ELECTRIC UNIT HEATER 1 & 2 EUH-101&102		•		ROOFTOP UNIT RTU-100	20/3	34
35					•			36
37			•					38
39	50/3	TRANSFORMER PFS-XFMR-1 (PANEL PFS-LP-1)		•		SURGE PROTECTION DEVICE SPD-100	60/3	40
41					•			42
		TOTALS:	-	-	-	-		

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Four Rivers Sanitation Authority

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Checked By	JTB
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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

ELECTRICAL DISTRIBUTION
ONE-LINE DIAGRAM

DONOHUE 11/23/2021

Sheet No. 16
Drawing No. 1-E-05

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PANEL SCHEDULE
LP-1
(MAIN PUMP II BUILDING)

SURFACE MOUNTED NEMA 1
120 / 208 V, 3 PHASE, 4 WIRE
RATING 22,000 A.I.C.

150A MAIN BREAKER
225A MAIN BUS
100A GRD. BUS

CKT. NO.	TRIP/P	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	TRIP/P	CKT. NO.
1	20/1	MAIN PUMP II PLC PANEL PLC-PFS	•			ELECTRICAL ROOM LIGHTS	20/1	2
3	20/1	VENT. CONTROL PANEL VCP-120		•		ELECTRICAL ROOM RECEPT.	20/1	4
5	20/1	FIRE ALARM PANEL FACP-1			•	ROOF RECEPT.	20/1	6
7	20/1	SPARE	•			LOWER LEVEL LIGHTS	20/1	8
9	20/1	SPARE		•		GROUND LEVEL LIGHTS	20/1	10
11	20/2	LOWER LEVEL RETURN FAN RF-120			•	LOWER LEVEL RECEPT.	20/1	12
13			•			GROUND LEVEL BATH/OFFICE LIGHTS	20/1	14
15	20/1	TOILET ROOMS EXHAUST FAN EF-120		•		SPARE	20/1	16
17	20/1	JANITOR CLOSET FAN EF-121			•	SPARE	20/1	18
19	20/1	SPARE	•			SPARE	20/1	20
21	20/1	SPARE		•		SPARE	20/1	22
23	20/1	SPARE			•	SPARE	20/1	24
25	20/1	SPARE	•			SPARE	20/1	26
27	20/1	SPARE		•		SPARE	20/1	28
29	20/1	SPARE			•	SPARE	20/1	30
31	-	-	•			-	-	32
33	-	-		•		-	-	34
35	-	-			•	-	-	36
37	-	-	•			SPD-122	60/3	38
39	-	-		•				40
41	-	-			•			42
		TOTALS:	-	-	-	-		

PANEL SCHEDULE
PFS-LP-1
(PFS CONTROL ROOM I)

SURFACE MOUNTED NEMA 12
120 / 208 V, 3 PHASE, 4 WIRE
RATING 22,000 A.I.C.

100A MAIN BREAKER
100A MAIN BUS
100A GRD. BUS

CKT. NO.	TRIP/P	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	TRIP/P	CKT. NO.
1	20/1	REMOTE I/O PANEL RIO-PFS-1	•			CONTROL ROOM LIGHTS	20/1	2
3	20/1	GAS DETECT. PANEL GDP-100		•		THICKENER PUMP ROOM LIGHTS	20/1	4
5	20/1	PFIP 1 DISCHARGE FLOW FIT-121			•	FILTER PUMP ROOM LIGHTS	20/1	6
7	20/1	PFIP 2 DISCHARGE FLOW FIT-122	•			WEST STAIR LIGHTS	20/1	8
9	20/1	PFIP 3 DISCHARGE FLOW FIT-123		•		EAST STAIR LIGHTS	20/1	10
11	20/1	PFIP 4 DISCHARGE FLOW FIT-124			•	GRAV. THICKENER LIGHTS/RECEPT.	20/1	12
13	20/1	PFTSP 1 DISCHARGE FLOW FIT-171	•			CONTROL ROOM RECEPT.	20/1	14
15	20/1	PFTSP 2 DISCHARGE FLOW FIT-172		•		OUTDOOR WALLPACK LIGHTS	20/1	16
17	20/2	EXHAUST FAN EF-103			•	FILTER/PUMP ROOM RECEPT.	20/1	18
19			•			SPARE	20/1	20
21	20/2	EXHAUST FAN EF-104		•		OUTDOOR POLE LIGHTS	20/1	22
23					•	EFF. SAMPLER PFS-SAM-1 RECEPT.	20/1	24
25	20/1	EXHAUST FAN EF-101	•			SPARE	20/1	26
27	20/1	EXHAUST FAN EF-102		•		SPARE	20/1	28
29	20/1	VENT. CONTROL PANEL VCP-100			•	SPARE	20/1	30
31	25/2	SPARE	•			SPARE	20/1	32
33				•		SPARE	20/1	34
35	30/2	SPARE			•	SPARE	20/1	36
37			•			PFS-SPD-101	60/3	38
39	30/1	SPARE		•				40
41	20/1	SPARE			•			42
		TOTALS:	-	-	-	-		

EXISTING PANEL SCHEDULE
LHSW-1
(GBT BUILDING)

SURFACE
120 / 208 V, 3 PHASE, 4 WIRE

60A MAIN BREAKER

CKT. NO.	TRIP/P	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	TRIP/P	CKT. NO.
1	20/1	LIGHTS	•			BALL VALVE 366	20/1	2
3	20/1	PLC-GBT-1		•		BALL VALVE 367	20/1	4
5	20/1	NEW GBT BUILDING LIGHTS			•	BALL VALVE 368	20/1	6
7	20/1	NEW GBT BUILDING RECEPT.	•			BALL VALVE 369	20/1	8
9	20/1	NEW GBT BUILDING LIGHTS		•		BALL VALVE 370	20/1	10
11	20/1	FIT-201			•	FIBER HUB	20/1	12
13	20/1	LCP-940	•			SCUM FLOW FIT-173	20/1	14
15	20/1	-		•		SPARE	20/1	16
17	20/1	-			•	SPARE	20/1	18
19	20/1	-	•			SPARE	20/1	20
21	20/1	-		•		SPARE	20/1	22
23	20/1	-			•	SPARE	20/1	24
25	20/1	SPARE	•			SPARE	20/1	26
27	20/1	SPARE		•		SPARE	20/1	28
29	20/1	SPARE			•	SPARE	20/1	30
		TOTALS:	-	-	-			

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. SEE 01 11 00 FOR PROJECT CONSTRAINTS.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

ELECTRICAL DISTRIBUTION
PANEL SCHEDULES

DONOHUE 11/23/2021

Sheet No. 17
Drawing No. 1-E-06

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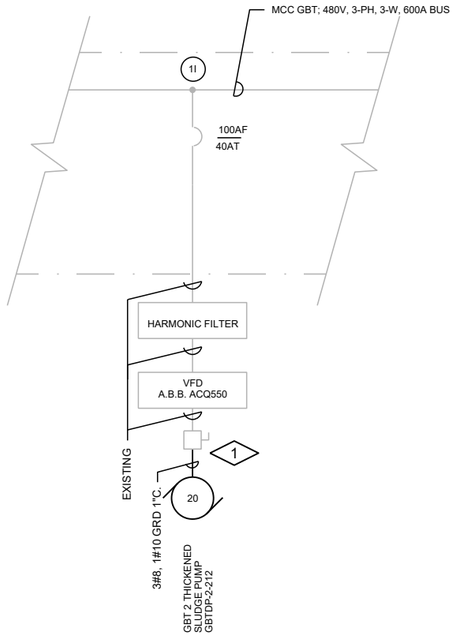
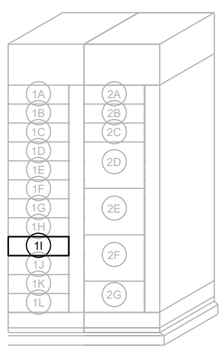


MCC GBT
PARTIAL ONE-LINE DIAGRAM
GBT BUILDING

NTS



SQUARE D MODEL 6
480V, 3-PH, 3-W, 600A BUS;
F.O. 40042649-001

MCC GBT
ELEVATION
GBT BUILDING

NTS

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
3. SEE 01 11 00 FOR PROJECT CONSTRAINTS.

PLAN NOTES:

1. EXTEND NEW CABLE AND CONDUIT FROM NEW PUMP TO EXISTING NEMA 7 DISCONNECT SWITCH. REPROGRAM EXISTING VFD FOR NEW PUMP.

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

ELECTRICAL DISTRIBUTION
PARTIAL ONE-LINE DIAGRAM AND ELEVATION

DONOHUE

11/23/2021

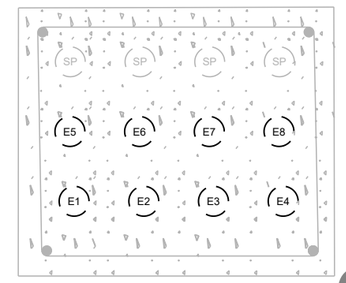
Sheet No. 18

Drawing No. **1-E-07**

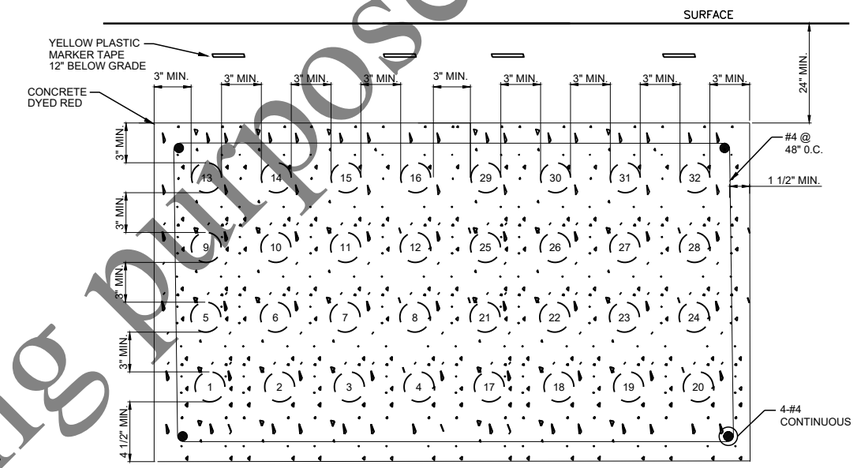
file: P:\13852chi\Dwg\001E1.dwg

DUCTBANK SCHEDULE

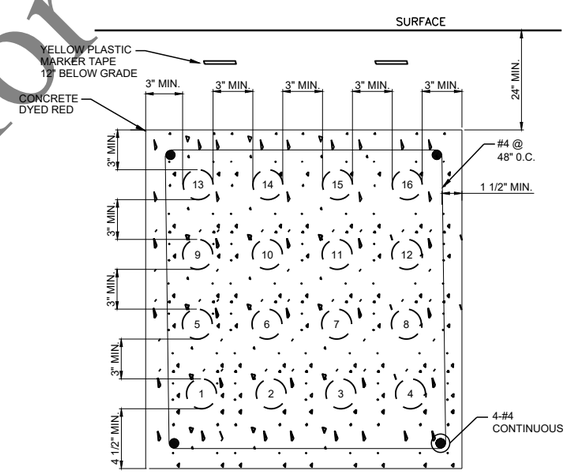
NUMBER	SIZE	FROM	TO	CONTENTS	REMARKS
E1	4"	SWGR 3-6	EXISTING J.BOX	480V POWER	NEW CABLE IN EXISTING DUCT
E2	4"	SWGR 3-6	EXISTING J.BOX	480V POWER	NEW CABLE IN EXISTING DUCT
E3	4"	SWGR 3-6	EXISTING J.BOX	480V POWER	NEW CABLE IN EXISTING DUCT
E4	4"	SWGR 3-6	EXISTING J.BOX	480V POWER	NEW CABLE IN EXISTING DUCT
E5	4"	SWGR 3-6	EXISTING J.BOX	480V POWER	NEW CABLE IN EXISTING DUCT
E6	4"	SWGR 3-6	EXISTING J.BOX	480V POWER	NEW CABLE IN EXISTING DUCT
E7	4"	SWGR 3-6	EXISTING J.BOX	480V POWER	NEW CABLE IN EXISTING DUCT
E8	4"	SWGR 3-6	EXISTING J.BOX	480V POWER	NEW CABLE IN EXISTING DUCT
1	3"	MCC-PFS	PF STRUCTURE 1	480V POWER	POWER TO PP-PFS-1
2	2"	MCC-PFS	PF STRUCTURE 1	480V POWER	POWER TO PFIP-1
3	2"	MCC-PFS	PF STRUCTURE 1	480V POWER	POWER TO PFIP-2
4	2"	MCC-PFS	PF STRUCTURE 1	480V POWER	POWER TO PFIP-3
5	2"	MCC-PFS	PF STRUCTURE 1	480V POWER	POWER TO PFIP-4
6	2"	MCC-PFS	PF STRUCTURE 1	480V POWER	POWER TO PFTSP-1
7	2"	MCC-PFS	PF STRUCTURE 1	480V POWER	POWER TO PFTSP-2
8	2"	MCC-PFS	PF STRUCTURE 1	480V POWER	POWER TO SMP-1, EF-105
9	2"	MCC-PFS	PF STRUCTURE 1	480V POWER	POWER TO GT-1
10	2"	MAIN PUMP II BUILDING	PF STRUCTURE 1	DISCRETE I/O	-
11	2"	MAIN PUMP II BUILDING	PF STRUCTURE 1	SPARE	-
12	2"	MAIN PUMP II BUILDING	PF STRUCTURE 1	SPARE	-
13	2"	MAIN PUMP II PLC PANEL	PF STRUCTURE 1	F.O. CABLE, FIRE ALRM	-
14	2"	MAIN PUMP II PLC PANEL	PF STRUCTURE 1	F.O. CABLE	-
15	2"	MAIN PUMP II BUILDING	PF STRUCTURE 1	SPARE	-
16	2"	MAIN PUMP II BUILDING	PF STRUCTURE 1	SPARE	-
17	3"	MCC-PFS	PF STRUCTURE 2	FUTURE 480V POWER	FUTURE POWER TO PP-PFS-2
18	2"	MCC-PFS	PF STRUCTURE 2	FUTURE 480V POWER	FUTURE POWER TO PFIP-5
19	2"	MCC-PFS	PF STRUCTURE 2	FUTURE 480V POWER	FUTURE POWER TO PFIP-6
20	2"	MCC-PFS	PF STRUCTURE 2	FUTURE 480V POWER	FUTURE POWER TO PFIP-7
21	2"	MCC-PFS	PF STRUCTURE 2	FUTURE 480V POWER	FUTURE POWER TO PFIP-8
22	2"	MCC-PFS	PF STRUCTURE 2	FUTURE 480V POWER	FUTURE POWER TO PFTSP-3
23	2"	MCC-PFS	PF STRUCTURE 2	FUTURE 480V POWER	FUTURE POWER TO PFTSP-4
24	2"	MCC-PFS	PF STRUCTURE 2	FUTURE 480V POWER	POWER TO SMP-2, EF-205
25	2"	MCC-PFS	PTCG-1	480V POWER	POWER TO PTCG-1 (FUTURE GT-2)
26	2"	MAIN PUMP II PLC PANEL	PTCG-1	DISCRETE I/O	CONTROL FOR PTCG-1 (FUTURE I/O)
27	2"	MAIN PUMP II PLC PANEL	PTCG-1	ANALOG I/O	CONTROL FOR PTCG-1 (FUTURE I/O)
28	2"	MAIN PUMP II BUILDING	PF STRUCTURE 2	SPARE	-
29	2"	MAIN PUMP II PLC PANEL	PF STRUCTURE 2	FUTURE F.O./FIRE ALARM	-
30	2"	MAIN PUMP II PLC PANEL	PF STRUCTURE 2	FUTURE F.O.	-
31	2"	MAIN PUMP II BUILDING	PF STRUCTURE 2	SPARE	-
32	2"	MAIN PUMP II BUILDING	PF STRUCTURE 2	SPARE	-



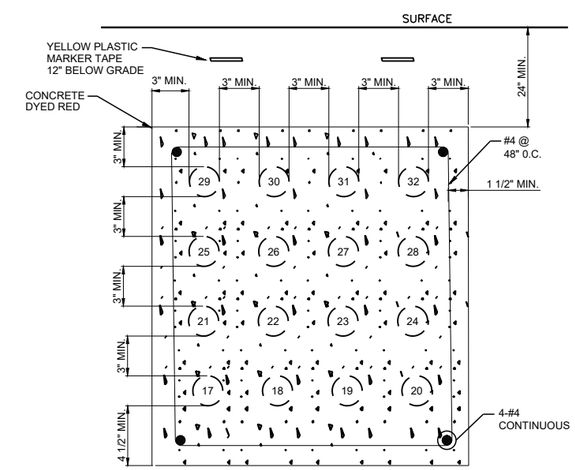
EXISTING DUCTBANK SECTION A
NTS 2-EN-01



DUCTBANK SECTION B
NTS 2-EN-01



DUCTBANK SECTION C
NTS 2-EN-01



DUCTBANK SECTION D
NTS 2-EN-01

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. SEE 01 11 00 FOR PROJECT CONSTRAINTS.

PLAN NOTES:

1. CONDUITS TO BE STUBBED OUT AND CAPPED FOR FUTURE EXTENSION INTO FUTURE PRIMARY FILTRATION STRUCTURE 2.
2. CONDUITS SHALL BE USED FOR PTCG-1 UNDER PHASE I WORK. CONDUITS WILL BE RE-PURPOSED UPON FUTURE CONSTRUCTION OF PRIMARY FILTRATION STRUCTURE 2.

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Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

ELECTRICAL DISTRIBUTION
DUCTBANK SCHEDULE

DONOHUE 11/23/2021

Sheet No. 19
Drawing No. **1-E-08**

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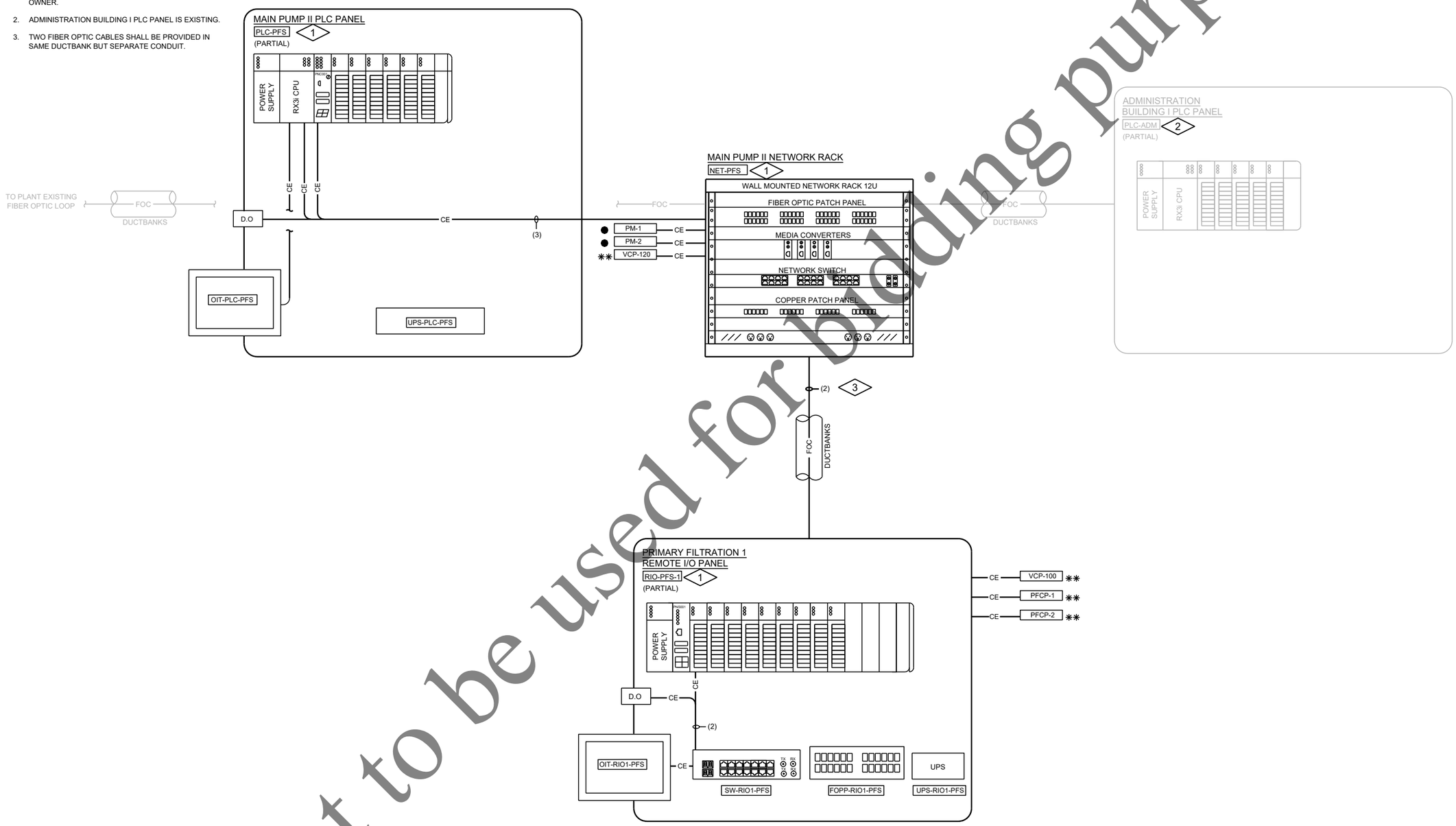
GENERAL NOTES:

1. PLC LAYOUT DEPICTIONS ARE NOT INTENDED TO SHOW ACTUAL I/O MODULE COUNT.
2. FOR CLARITY, NOT ALL COMPONENTS ARE SHOWN.

PLAN NOTES: ◇

1. MAIN PUMP II PLC PANEL, MAIN PUMP II NETWORK RACK, AND PRIMARY FILTRATION 1 REMOTE I/O PANEL ARE PROVIDED AND INSTALLED BY THE OWNER.
2. ADMINISTRATION BUILDING I PLC PANEL IS EXISTING.
3. TWO FIBER OPTIC CABLES SHALL BE PROVIDED IN SAME DUCTBANK BUT SEPARATE CONDUIT.



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				Project No.	13852
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				Drawn By	LPH
				Checked By	BLG
				Approved By	BLG

Four Rivers Sanitation Authority

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PROCESS AND INSTRUMENTATION DIAGRAM
NETWORK DIAGRAM

DONOHUE 11/23/2021

Sheet No. 20

Drawing No. **1-N-00**

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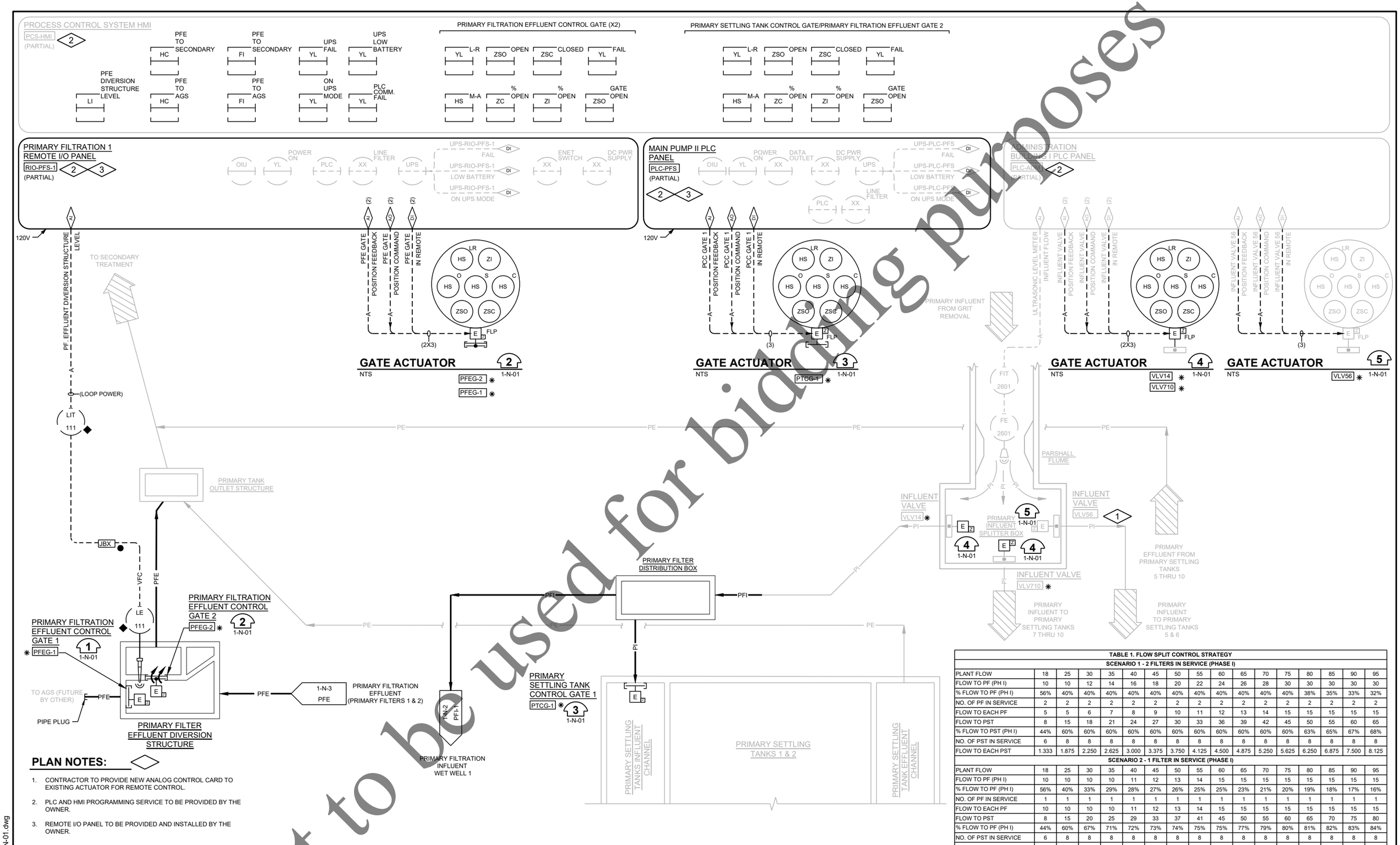

PLAN NOTES:

1. CONTRACTOR TO PROVIDE NEW ANALOG CONTROL CARD TO EXISTING ACTUATOR FOR REMOTE CONTROL.
2. PLC AND HMI PROGRAMMING SERVICE TO BE PROVIDED BY THE OWNER.
3. REMOTE I/O PANEL TO BE PROVIDED AND INSTALLED BY THE OWNER.

TABLE 1. FLOW SPLIT CONTROL STRATEGY

SCENARIO 1 - 2 FILTERS IN SERVICE (PHASE I)																
PLANT FLOW	18	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
FLOW TO PF (PH I)	10	10	12	14	16	18	20	22	24	26	28	30	30	30	30	30
% FLOW TO PF (PH I)	56%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	38%	35%	33%	32%
NO. OF PF IN SERVICE	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
FLOW TO EACH PF	5	5	6	7	8	9	10	11	12	13	14	15	15	15	15	15
FLOW TO PST	8	15	18	21	24	27	30	33	36	39	42	45	50	55	60	65
% FLOW TO PST (PH I)	44%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	63%	65%	67%	68%
NO. OF PST IN SERVICE	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
FLOW TO EACH PST	1.333	1.875	2.250	2.625	3.000	3.375	3.750	4.125	4.500	4.875	5.250	5.625	6.250	6.875	7.500	8.125
SCENARIO 2 - 1 FILTER IN SERVICE (PHASE I)																
PLANT FLOW	18	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
FLOW TO PF (PH I)	10	10	10	10	11	12	13	14	15	15	15	15	15	15	15	15
% FLOW TO PF (PH I)	56%	40%	33%	29%	28%	27%	26%	25%	25%	23%	21%	20%	19%	18%	17%	16%
NO. OF PF IN SERVICE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
FLOW TO EACH PF	10	10	10	10	11	12	13	14	15	15	15	15	15	15	15	15
FLOW TO PST	8	15	20	25	29	33	37	41	45	50	55	60	65	70	75	80
% FLOW TO PF (PH I)	44%	60%	67%	71%	72%	73%	74%	75%	75%	77%	79%	80%	81%	82%	83%	84%
NO. OF PST IN SERVICE	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
FLOW TO EACH PST	1.333	1.875	2.50	3.125	3.625	4.125	4.625	5.125	5.625	6.250	6.875	7.500	8.125	8.750	9.375	10.000

Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PROCESS AND INSTRUMENTATION DIAGRAM
PRIMARY FILTRATION FLOW SPLITS

DONOHUE

11/23/2021

Sheet No. 21

Drawing No. **1-N-01**

file: P:\13852chi\Dwg\1-N-01.dwg

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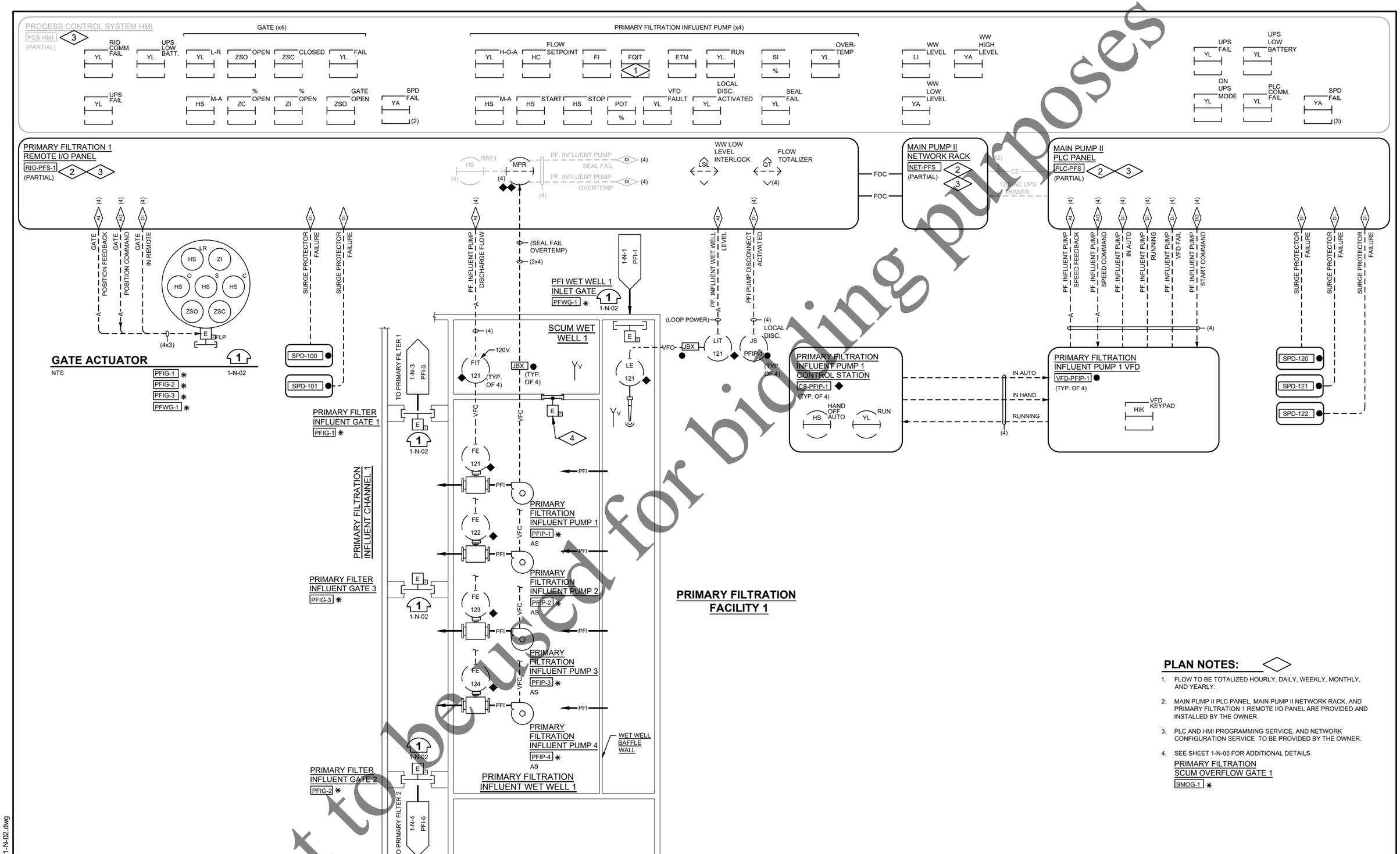

PLAN NOTES:

1. FLOW TO BE TOTALIZED HOURLY, DAILY, WEEKLY, MONTHLY, AND YEARLY.
2. MAIN PUMP II PLC PANEL, MAIN PUMP II NETWORK RACK, AND PRIMARY FILTRATION 1 REMOTE I/O PANEL ARE PROVIDED AND INSTALLED BY THE OWNER.
3. PLC AND HMI PROGRAMMING SERVICE, AND NETWORK CONFIGURATION SERVICE TO BE PROVIDED BY THE OWNER.
4. SEE SHEET 1-N-05 FOR ADDITIONAL DETAILS.
   PRIMARY FILTRATION SCUM OVERFLOW GATE 1
   SMOG-1

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PROCESS AND INSTRUMENTATION DIAGRAM
PRIMARY FILTRATION INFLUENT PUMPING

DONOHUE 11/23/2021

Sheet No. 22

Drawing No. 1-N-02

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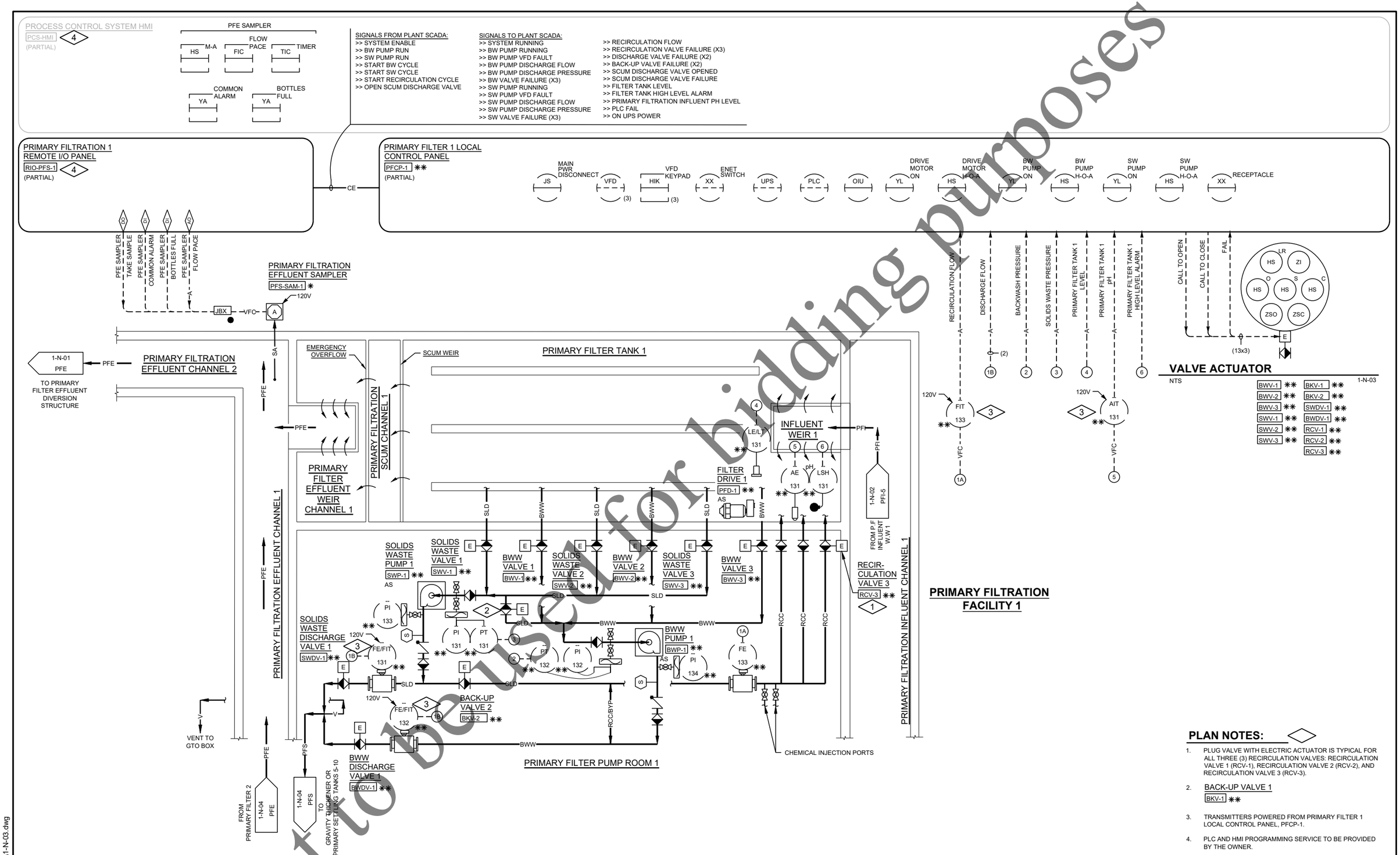

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PROCESS AND INSTRUMENTATION DIAGRAM
PRIMARY FILTER 1

DONOHUE 11/23/2021

Sheet No. 23
Drawing No. 1-N-03

file: P:\13852chi\Dwg\1-N-03.dwg

PROCESS CONTROL SYSTEM HMI
PCS-HMI (PARTIAL) 4

SIGNALS FROM PLANT SCADA:
>> SYSTEM ENABLE
>> BW PUMP RUN
>> SW PUMP RUN
>> START BW CYCLE
>> START SW CYCLE
>> START RECIRCULATION CYCLE
>> OPEN SCUM DISCHARGE VALVE

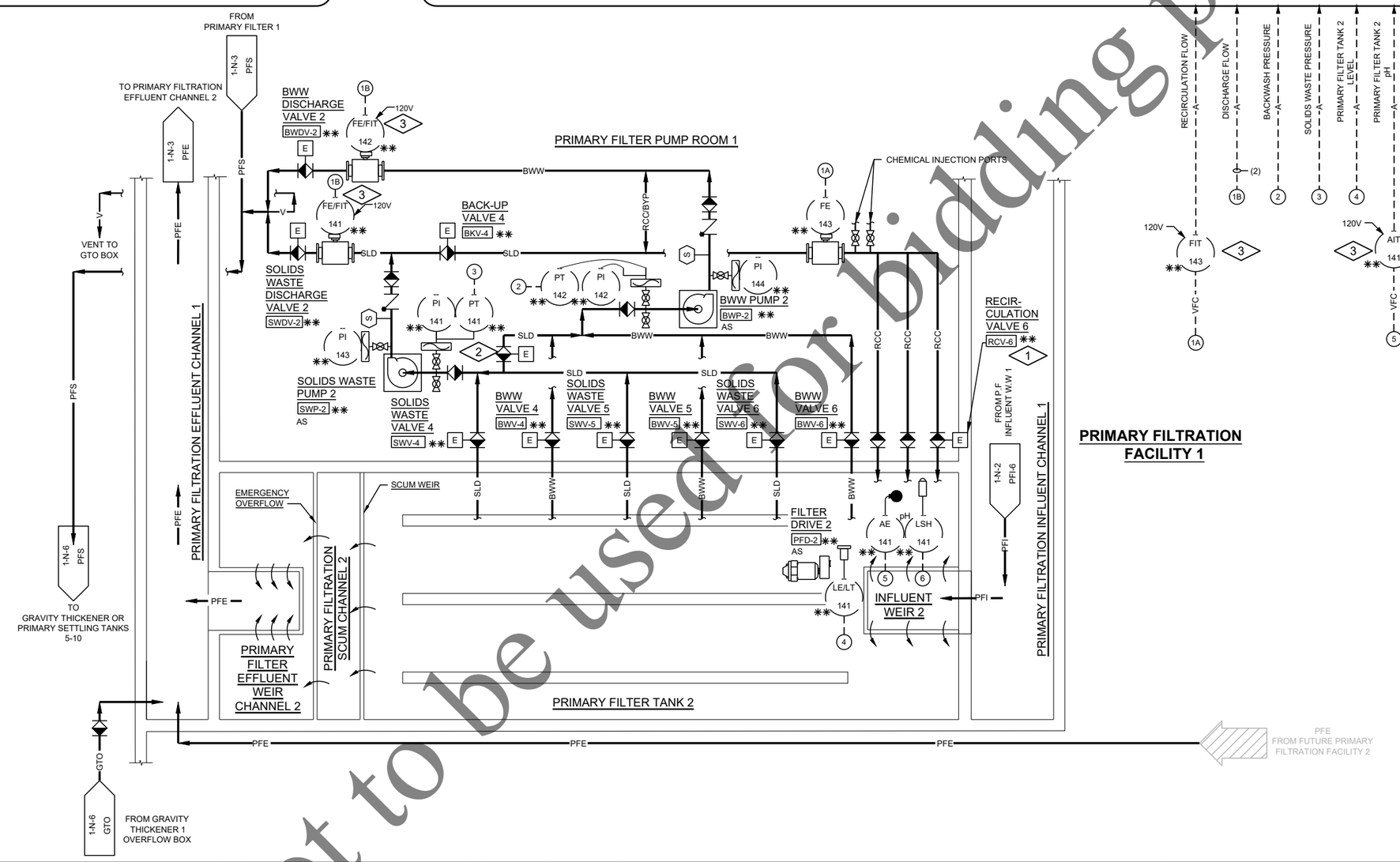
SIGNALS TO PLANT SCADA:
>> SYSTEM RUNNING
>> BW PUMP RUNNING
>> BW PUMP VFD FAULT
>> BW PUMP DISCHARGE FLOW
>> BW PUMP DISCHARGE PRESSURE
>> BW VALVE FAILURE (X3)
>> SW PUMP RUNNING
>> SW PUMP VFD FAULT
>> SW PUMP DISCHARGE FLOW
>> SW PUMP DISCHARGE PRESSURE
>> SW VALVE FAILURE (X3)
>> RECIRCULATION FLOW
>> RECIRCULATION VALVE FAILURE (X3)
>> DISCHARGE VALVE FAILURE (X2)
>> BACK-UP VALVE FAILURE (X2)
>> SCUM DISCHARGE VALVE OPENED
>> SCUM DISCHARGE VALVE FAILURE
>> FILTER TANK LEVEL
>> FILTER TANK HIGH LEVEL ALARM
>> PRIMARY FILTRATION INFLUENT PH LEVEL
>> PLC FAIL
>> ON UPS POWER

PRIMARY FILTRATION 1
REMOTE I/O PANEL
RIO-PFS-1 (PARTIAL) 4

CE

PRIMARY FILTER 2 LOCAL
CONTROL PANEL
PFCP-2 ** (PARTIAL)

JS MAIN PWR DISCONNECT
VFD (3)
HIK VFD KEYPAD (3)
XX ENET SWITCH
UPS
PLC
OIU
YL DRIVE MOTOR ON
HS DRIVE MOTOR H-O-A
YL BW PUMP ON
HS BW PUMP H-O-A
YL SW PUMP ON
HS SW PUMP H-O-A
XX RECEPTACLE



VALVE ACTUATOR

NTS

1-N-04

BWV-4 **	BKV-3 **
BWV-5 **	BKV-4 **
BWV-6 **	SWDV-2 **
SWV-4 **	BWDV-2 **
SWV-5 **	RCV-4 **
SWV-6 **	RCV-5 **
	RCV-6 **

PLAN NOTES:

1. PLUG VALVE WITH ELECTRIC ACTUATOR IS TYPICAL FOR ALL THREE (3) RECIRCULATION VALVES: RECIRCULATION VALVE 4 (RCV-4), RECIRCULATION VALVE 5 (RCV-5), AND RECIRCULATION VALVE 6 (RCV-6).
2. BACK-UP VALVE 3 BKV-3 **
3. TRANSMITTERS POWERED FROM PRIMARY FILTER 2 LOCAL CONTROL PANEL, PFCP-2.
4. PLC AND HMI PROGRAMMING SERVICE TO BE PROVIDED BY THE OWNER.

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	LPH
Drawn By	LPH
Checked By	BLG
Approved By	BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PROCESS AND INSTRUMENTATION DIAGRAM
PRIMARY FILTER 2

DONOHUE 11/23/2021

Sheet No. 24
Drawing No. 1-N-04

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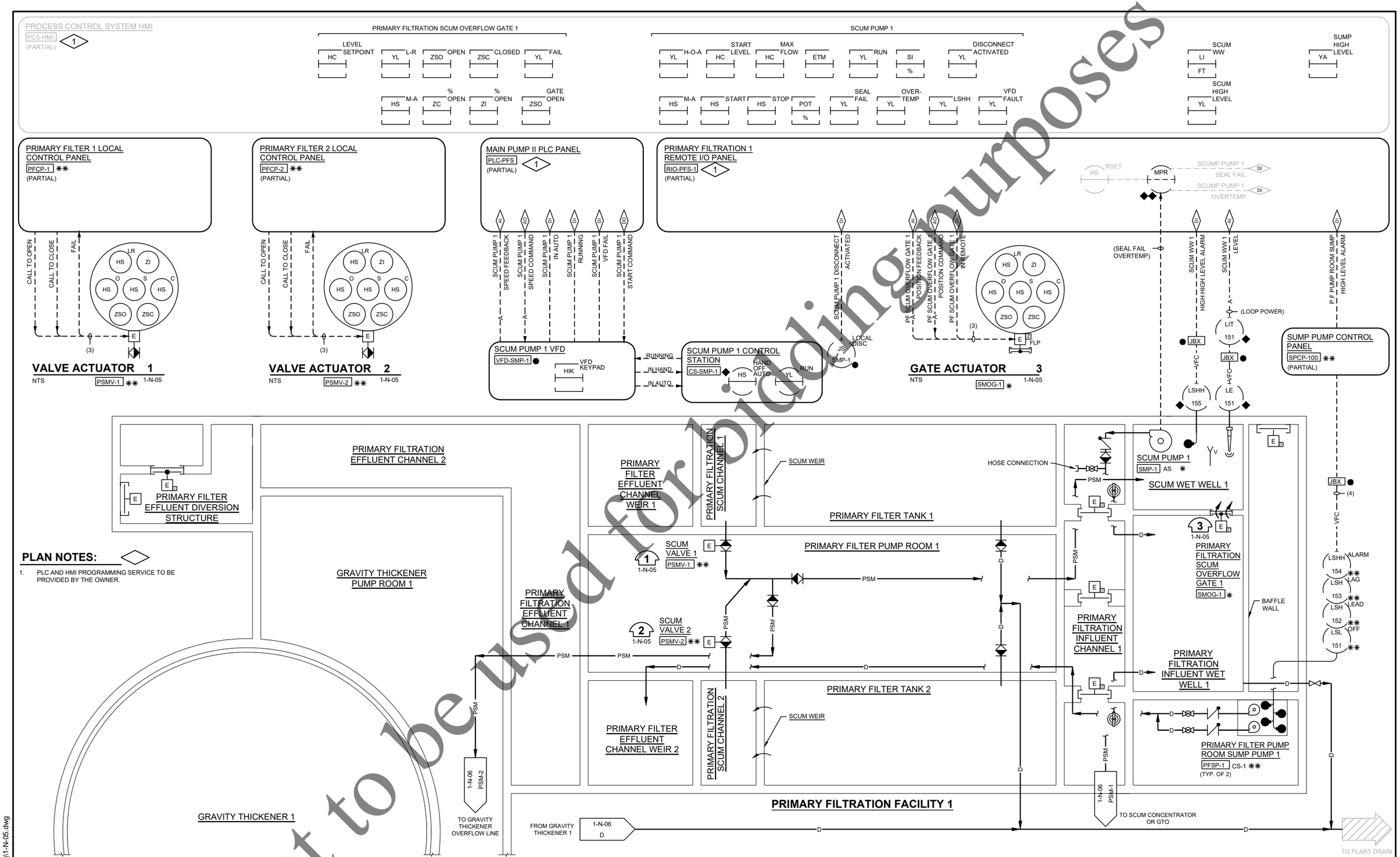

PLAN NOTES:

1. PLC AND HMI PROGRAMMING SERVICE TO BE PROVIDED BY THE OWNER.

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Four Rivers Sanitation Authority

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PROCESS AND INSTRUMENTATION DIAGRAM
PRIMARY FILTER SCUM AND DRAIN

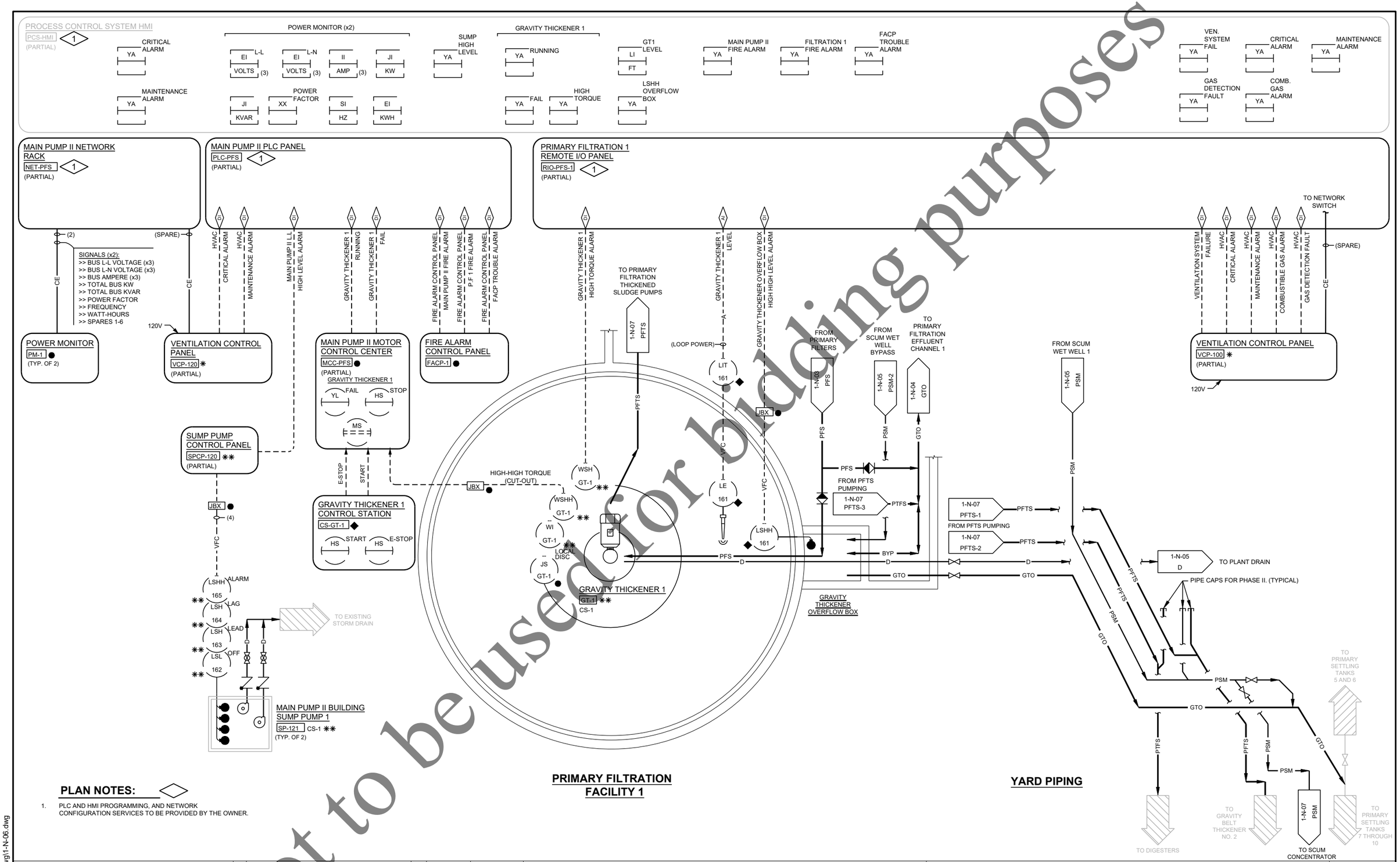
DONOHUE

11/23/2021

Sheet No. 25

Drawing No. **1-N-05**

file: P:\13852chi\Dwg\1-N-05.dwg



PLAN NOTES:

1. PLC AND HMI PROGRAMMING, AND NETWORK CONFIGURATION SERVICES TO BE PROVIDED BY THE OWNER.

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Four Rivers Sanitation Authority

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PROCESS AND INSTRUMENTATION DIAGRAM
GRAVITY THICKENER 1

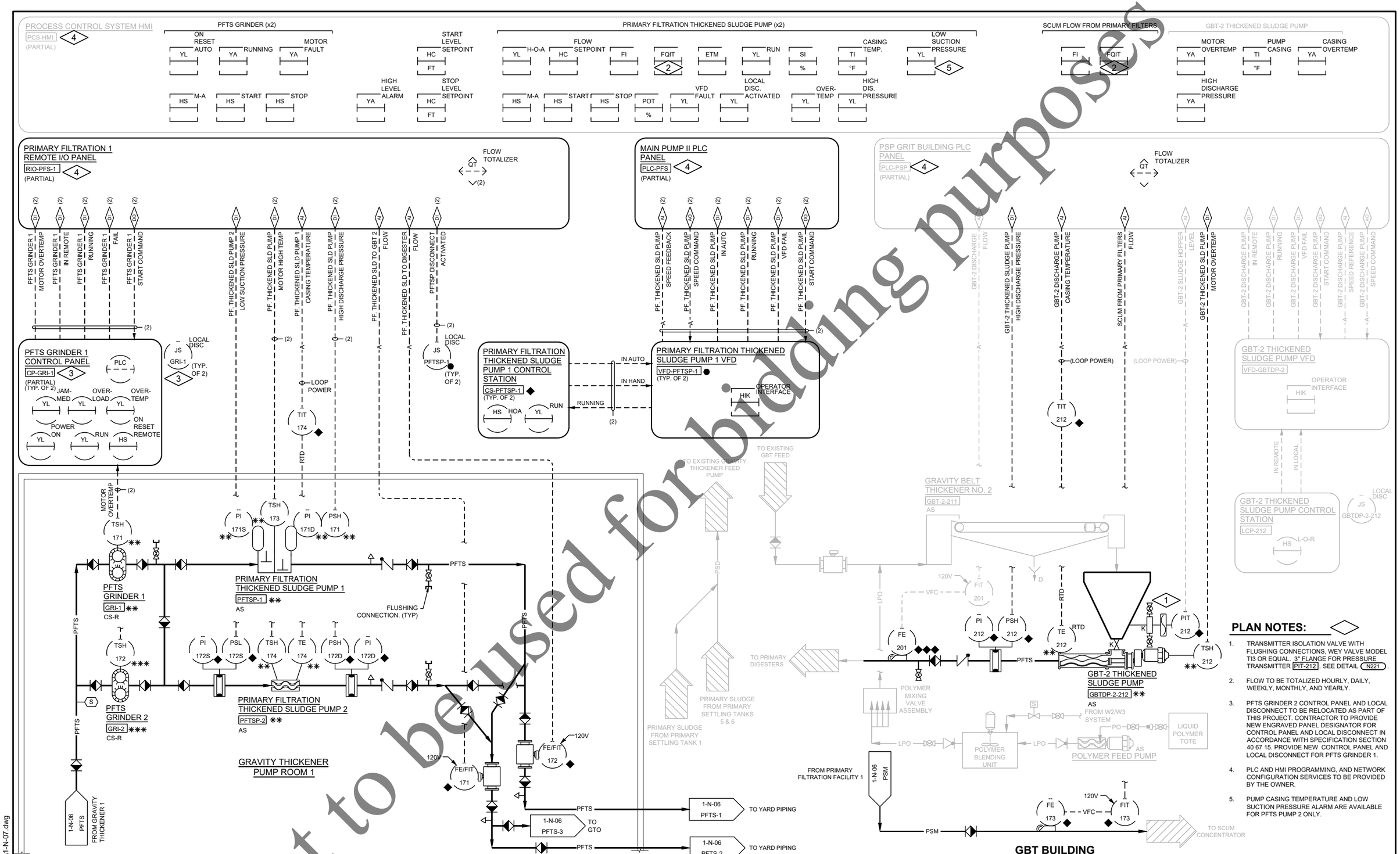
DONOHUE

11/23/2021

Sheet No. 26

Drawing No. **1-N-06**

file: P:\13852ch\Dwg\1-N-06.dwg



PLAN NOTES:

1. TRANSMITTER ISOLATION VALVE WITH FLUSHING CONNECTIONS, WEY VALVE MODEL TI3 OR EQUAL. 3" FLANGE FOR PRESSURE TRANSMITTER PIT-212. SEE DETAIL N221.
2. FLOW TO BE TOTALIZED HOURLY, DAILY, WEEKLY, MONTHLY, AND YEARLY.
3. PFTS GRINDER 2 CONTROL PANEL AND LOCAL DISCONNECT TO BE RELOCATED AS PART OF THIS PROJECT. CONTRACTOR TO PROVIDE NEW ENGRAVED PANEL DESIGNATOR FOR CONTROL PANEL AND LOCAL DISCONNECT IN ACCORDANCE WITH SPECIFICATION SECTION 40 67 15. PROVIDE NEW CONTROL PANEL AND LOCAL DISCONNECT FOR PFTS GRINDER 1.
4. PLC AND HMI PROGRAMMING, AND NETWORK CONFIGURATION SERVICES TO BE PROVIDED BY THE OWNER.
5. PUMP CASING TEMPERATURE AND LOW SUCTION PRESSURE ALARM ARE AVAILABLE FOR PFTS PUMP 2 ONLY.

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

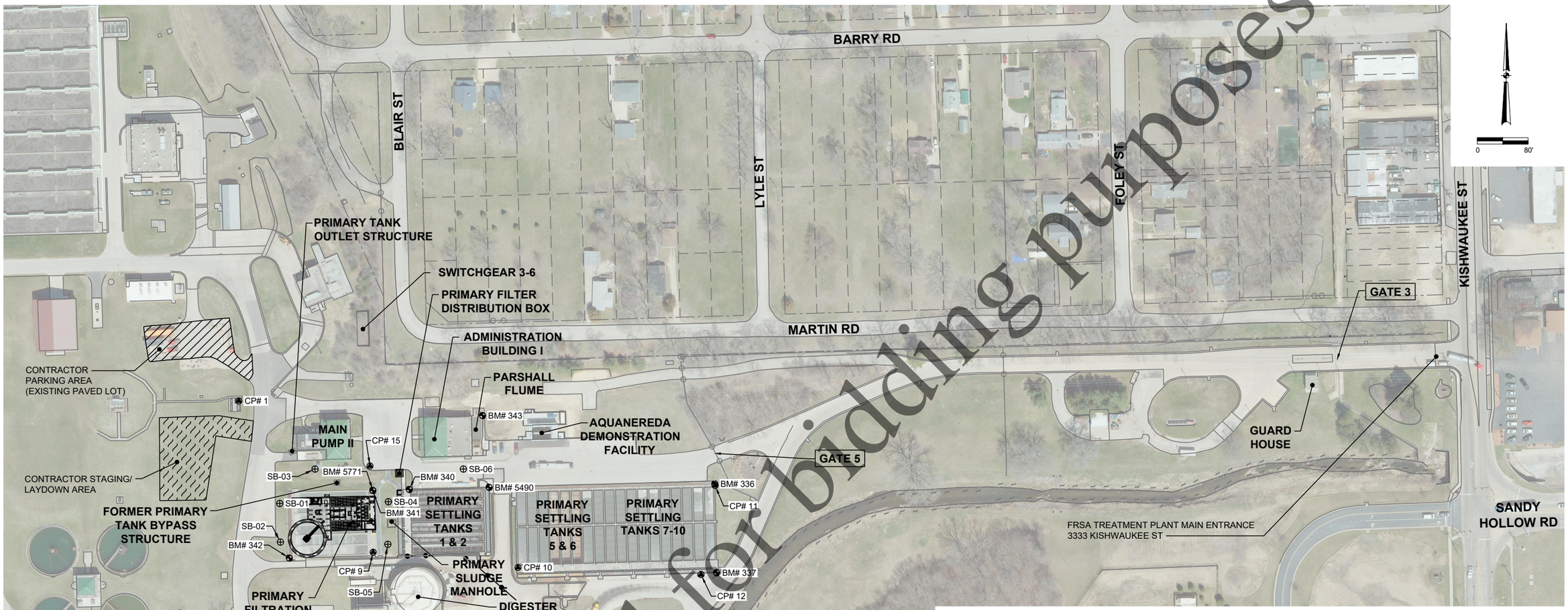
PROCESS AND INSTRUMENTATION DIAGRAM
PRIMARY FILTRATION THICKENED SOLID AND GBT2 DISCHARGE PUMPING

DONOHUE 11/23/2021

Sheet No. 27

Drawing No. 1-N-07

file: P:\13852chi\Dwg\1-N-07.dwg



CONTROL POINT TABLE

CP#	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	2025945.94	2587090.76	703.88	CP CUT X
9	2025705.88	2587300.21	704.21	CP CUT X
10	2025679.70	2587527.98	704.19	CP CUT X
11	2025806.30	2587839.41	704.22	CP CUT X
12	2025666.07	2587816.15	704.22	CP CUT X
15	2025841.69	2587296.44	702.46	CP MAG

BENCHMARK TABLE

BM#	NORTHING	EASTING	ELEVATION	DESCRIPTION
336	2025808.87	2587839.10	704.18	BM CHISELED SQUARE
337	2025668.91	2587840.60	704.19	BM COPPER DISC
340	2025804.10	2587357.97	704.32	BM CHISELED SQUARE
341	2025802.98	2587300.60	704.24	BM CHISELED SQUARE
342	2025697.73	2587168.21	704.06	BM CHISELED SQUARE
343	2025919.52	2587474.32	708.98	BM CHISELED SQUARE
5490	2025806.42	2587483.78	704.20	BM CHISELED SQ
5771	2025803.06	2587300.62	704.29	BM CHISELED SQ

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. CONTRACTOR SHALL ESTABLISH ADDITIONAL CONTROL POINTS AND BENCHMARKS AS REQUIRED TO MAINTAIN ADEQUATE CONTROL. SOME ESTABLISHED CONTROL POINTS AND BENCHMARKS MAY BE DISTURBED OR DESTROYED BY CONSTRUCTION.
3. GATES 5, 9 AND 16 MAY BE USED FOR CONSTRUCTION TRAFFIC. GATE 16 (NOT SHOWN ON THIS DRAWING) IS LOCATED AT THE NORTH END OF THE PLANT SITE AT THE INTERSECTION OF CHAPMAN ROAD AND BROOKE ROAD.
4. CONTRACTOR SHALL MAINTAIN ACCESS TO EXISTING FACILITIES TO REMAIN DURING CONSTRUCTION FOR DELIVERIES.

LEGEND

- CP# — CONTROL POINT
- BM# — BENCHMARK
- SB- — SOIL BORING

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
SITE ACCESS, STRUCTURE IDENTIFICATION, AND CONTROL POINTS

DONOHUE 11/23/2021

Sheet No. 28

Drawing No. 2-CK-01

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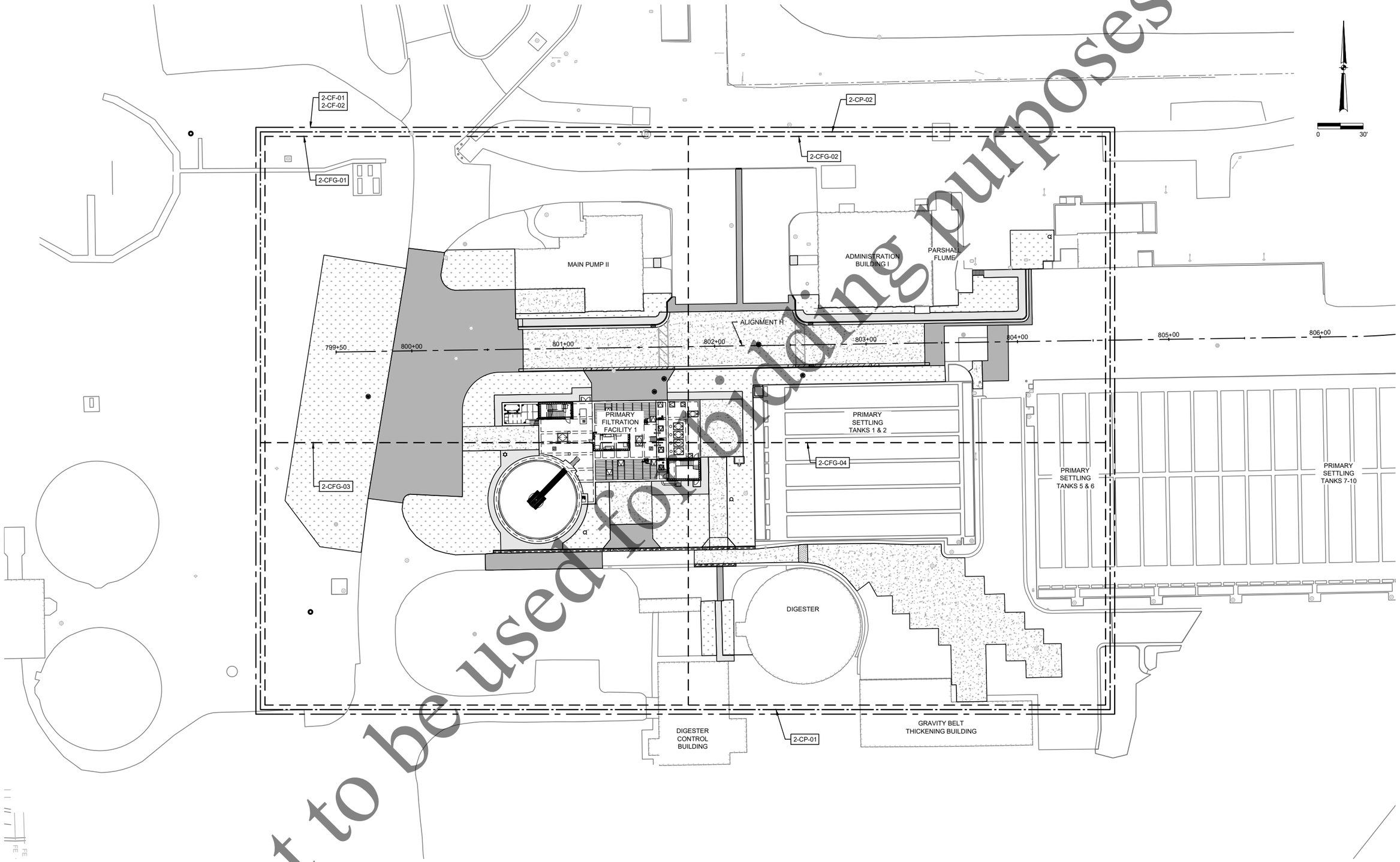

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
KEY PLAN

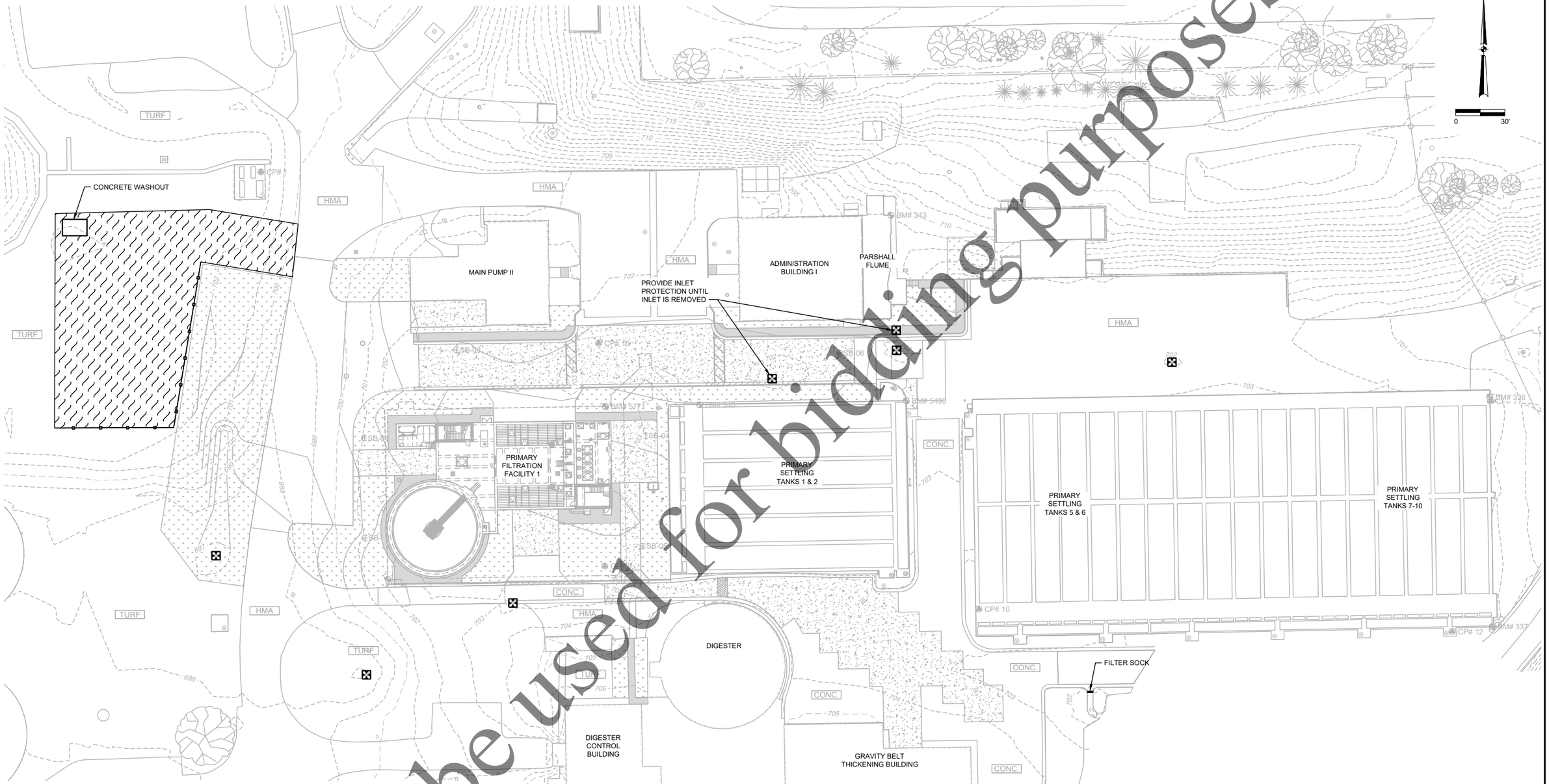
DONOHUE

11/23/2021

Sheet No. 29

Drawing No. **2-CK-02**

file: P:\13852chi\Dwg\2-CK-02.dwg



LEGEND

- STAGING / LAYDOWN AREA
- INLET PROTECTION
- SILT FENCE

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. PROVIDE TEMPORARY EROSION CONTROL DEVICES IN ACCORDANCE WITH ILLINOIS URBAN MANUAL, LATEST EDITION, AND IDOT STANDARD 280001-07. IDOT STANDARD 280001-07 INCLUDED ON DRAWING 10-E-04.

Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
EROSION CONTROL PLAN

DONOHUE

11/23/2021

Sheet No. 30

Drawing No. **2-CE-01**

file: P:\13852chi\Dwg\2-CE-01.dwg

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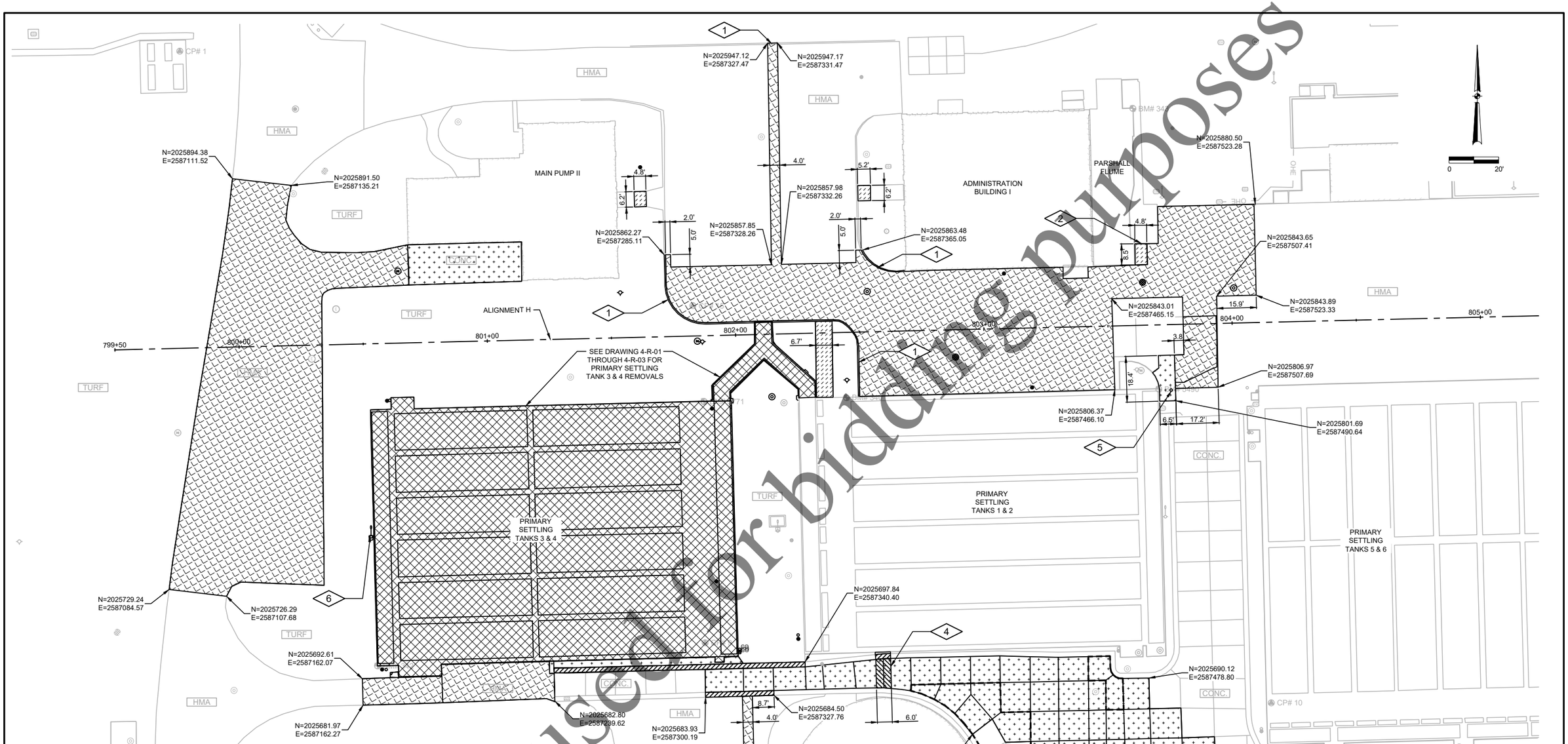

LEGEND

- STRUCTURE DEMOLITION
- HMA PAVEMENT REMOVAL
- PCC PAVEMENT REMOVAL
- PCC SIDEWALK REMOVAL
- PCC PAVEMENT CONTAINING REINFORCING
- CURB & GUTTER REMOVAL

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES.
2. EXISTING PCC PAVEMENT AND CURB AND GUTTER IS DOWELED. PRESERVE DOWELS IN EXISTING CONCRETE TO REMAIN.
3. PARTIAL REMOVAL OF PCC PAVEMENT PANELS NOT PERMITTED. WHERE REMOVAL OF PCC PAVEMENT IS REQUIRED, CONTRACTOR SHALL REMOVE ENTIRE PANEL.
4. REMOVE VEGETATION AND STRIP TOPSOIL FROM UNPAVED AREAS DISTURBED BY CONSTRUCTION IN ACCORDANCE WITH SPECIFICATION SECTION 31 10 00.
5. SAWCUT PCC SIDEWALK AT REMOVAL LIMITS SHOWN OR REMOVE TO NEAREST JOINT.

PLAN NOTES:

1. REMOVE CONCRETE CURB.
2. REMOVE SHIP'S LADDER AT PARSHALL FLUME.
3. REMOVE WOODEN FENCE.
4. REMOVE CONCRETE SLEEPER SLAB. SEE DRAWING 10-C-09 FOR DETAIL OF EXISTING SLEEPER SLAB.
5. REMOVE BOLLARD. REPLACE PER DETAIL ON DRAWING 10-C-09.
6. REMOVE EXISTING LIGHT POLE AND FOUNDATION.

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
SURFACE FEATURES REMOVAL PLAN

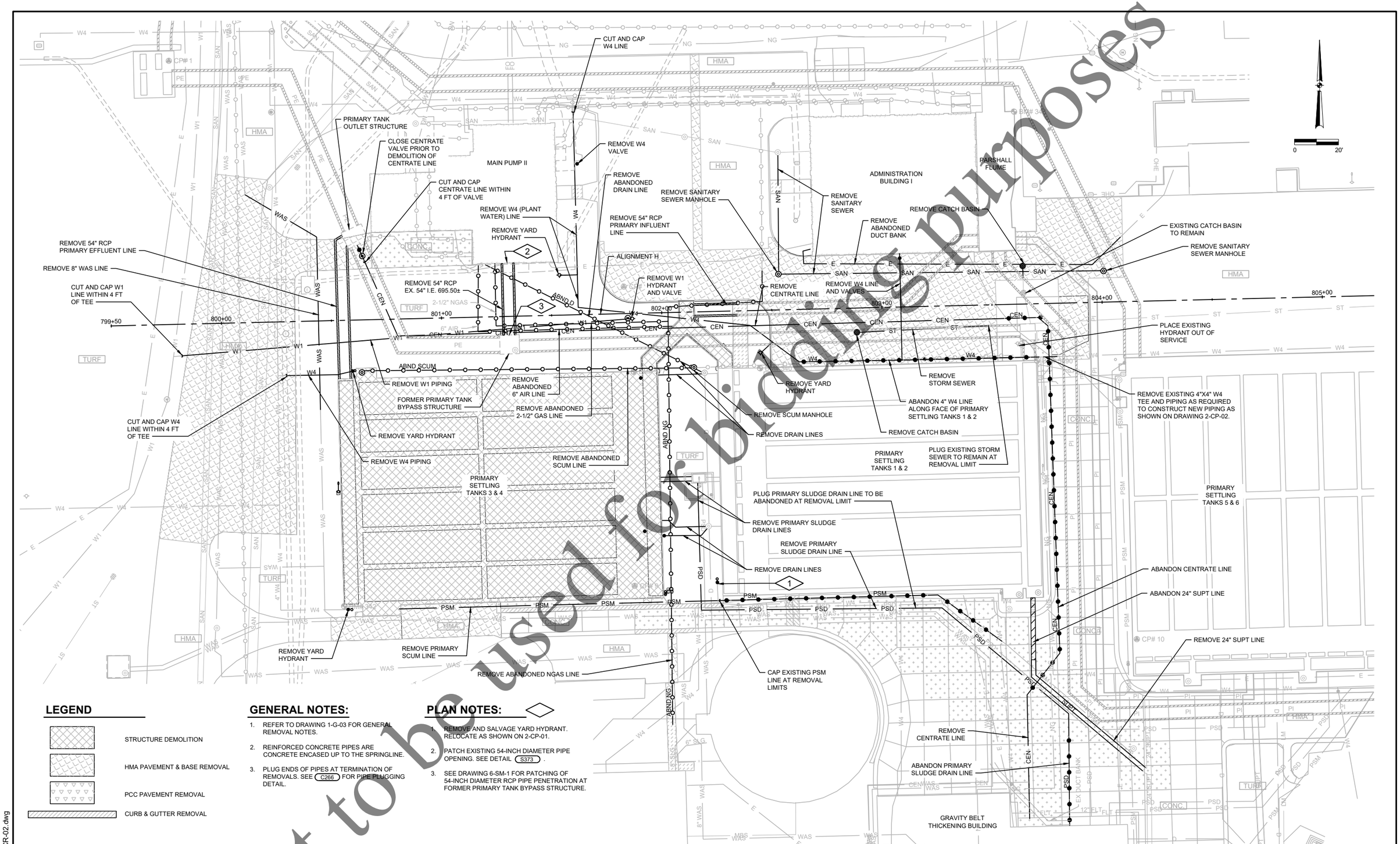
DONOHUE

11/23/2021

Sheet No. 31

Drawing No. **2-CR-01**

file: P:\13852chi\Dwg\2-CR-01.dwg



LEGEND

- STRUCTURE DEMOLITION
- HMA PAVEMENT & BASE REMOVAL
- PCC PAVEMENT REMOVAL
- CURB & GUTTER REMOVAL

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES.
2. REINFORCED CONCRETE PIPES ARE CONCRETE ENCASED UP TO THE SPRINGLINE.
3. PLUG ENDS OF PIPES AT TERMINATION OF REMOVALS. SEE C266 FOR PIPE PLUGGING DETAIL.

PLAN NOTES:

1. REMOVE AND SALVAGE YARD HYDRANT. RELOCATE AS SHOWN ON 2-CP-01.
2. PATCH EXISTING 54-INCH DIAMETER PIPE OPENING. SEE DETAIL S373 .
3. SEE DRAWING 6-SM-1 FOR PATCHING OF 54-INCH DIAMETER RCP PIPE PENETRATION AT FORMER PRIMARY TANK BYPASS STRUCTURE.

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
PIPING REMOVAL PLAN

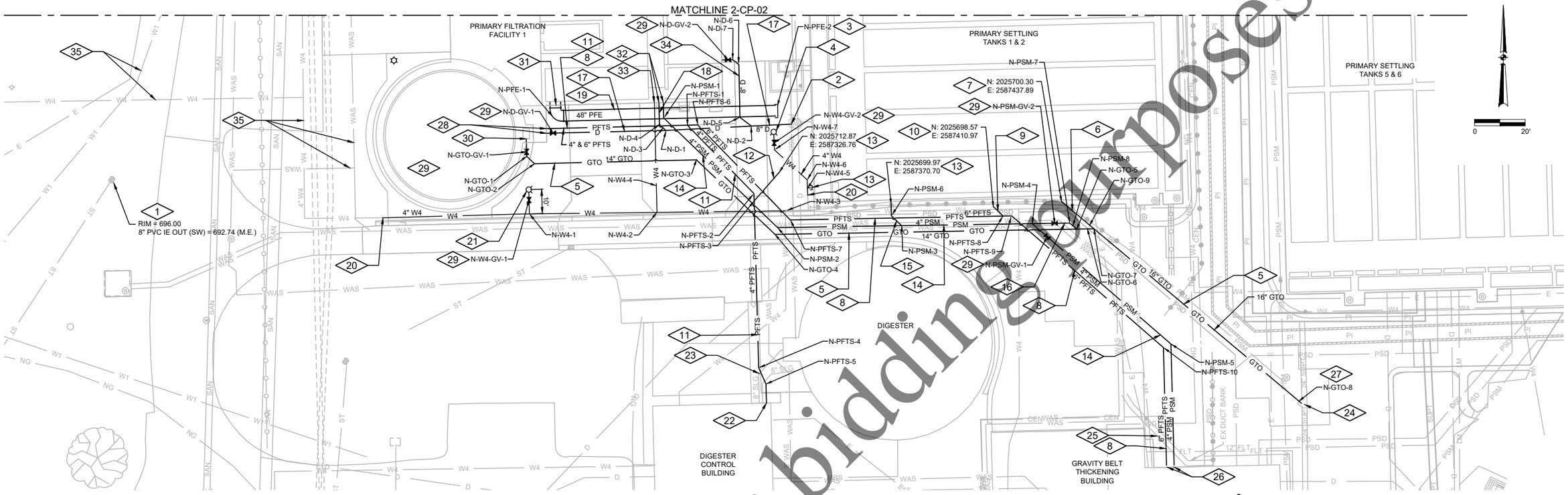
DONOHUE

11/23/2021

Sheet No. 32

Drawing No. **2-CR-02**

file: P:\13852ch\Dwg\2-CR-02.dwg



VALVE TABLE			
NAME	DESCRIPTION	NORTHING	EASTING
N-D-GV-1	8 IN GV	2025729.03	2587237.62
N-D-GV-2	8 IN GV	2025757.33	2587306.91
N-GTO-GV-1	14 IN GV	2025721.73	2587227.16
N-PSM-GV-1	4 IN GV	2025686.45	2587432.16
N-PSM-GV-2	4 IN GV	2025691.72	2587435.12
N-W4-GV-1	4 IN GV	2025702.70	2587227.94
N-W4-GV-2	4 IN GV	2025724.45	2587324.79

FITTING TABLE			
NAME	DESCRIPTION	NORTHING	EASTING
N-D-1	8 IN WYE	2025729.71	2587282.11
N-D-2	8 IN WYE	2025731.12	2587315.90
N-D-3	REDUCER 8X6	2025730.71	2587281.06
N-D-4	6 IN 45° BEND	2025732.09	2587279.63
N-D-5	8 IN 45° BEND	2025734.59	2587311.39
N-D-6	8 IN 45° BEND	2025755.45	2587311.15
N-D-7	8 IN 45° BEND	2025757.35	2587308.81
N-GTO-1	14 IN 45° BEND	2025719.97	2587227.19
N-GTO-2	14 IN 45° BEND	2025717.02	2587230.23
N-GTO-3	14 IN 45° BEND	2025717.99	2587294.09

FITTING TABLE			
NAME	DESCRIPTION	NORTHING	EASTING
N-GTO-4	14 IN 45° BEND	2025688.29	2587324.84
N-GTO-5	14 IN WYE	2025689.35	2587443.82
N-GTO-6	REDUCER 16X14	2025689.39	2587448.02
N-GTO-7	16 IN WYE	2025689.41	2587450.61
N-GTO-8	REDUCER 24X16	2025620.79	2587330.89
N-GTO-9	REDUCER 16X14	2025690.87	2587448.90
N-PFE-1	54 IN 90° BEND	2025735.80	2587238.73
N-PFE-2	54 IN CAP	2025737.12	2587325.57
N-PFTS-1	4 IN 45° BEND	2025731.68	2587290.65
N-PFTS-2	4 IN 45° BEND	2025704.50	2587316.65

FITTING TABLE			
NAME	DESCRIPTION	NORTHING	EASTING
N-PFTS-3	4 IN WYE	2025701.55	2587316.71
N-PFTS-4	4 IN 22.5° BEND	2025635.73	2587317.93
N-PFTS-5	4 IN 22.5° BEND	2025629.28	2587320.74
N-PFTS-6	6 IN 45° BEND	2025731.74	2587294.74
N-PFTS-7	6 IN 45° BEND	2025693.97	2587330.88
N-PFTS-9	6 IN 45° BEND	2025694.79	2587418.20
N-PFTS-10	6 IN 45° BEND	2025642.32	2587477.57
N-PSM-1	4 IN 45° BEND	2025734.66	2587281.33
N-PSM-2	4 IN 45° BEND	2025690.98	2587325.85
N-PSM-3	4 IN WYE	2025691.31	2587374.76

FITTING TABLE			
NAME	DESCRIPTION	NORTHING	EASTING
N-PSM-4	4 IN WYE	2025691.66	2587426.26
N-PSM-5	4 IN 45° BEND	2025643.69	2587480.54
N-PSM-6	4 IN 45° BEND	2025695.29	2587370.74
N-PSM-7	4 IN 45° BEND	2025691.76	2587441.06
N-PSM-8	REDUCER 14X4	2025690.66	2587442.26
N-W4-1	TEE 4X4	2025697.23	2587228.05
N-W4-2	TEE 4X4	2025697.39	2587278.37
N-W4-3	TEE 4X4	2025697.55	2587329.02
N-W4-4	4 IN 11.25° BEND (VERTICAL)	2025707.93	2587278.22
N-W4-5	TEE 4X4	2025706.49	2587337.75

FITTING TABLE			
NAME	DESCRIPTION	NORTHING	EASTING
N-W4-6	4 IN 45° BEND	2025709.75	2587337.65
N-W4-7	4 IN 45° BEND	2025721.68	2587324.88

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. SEE LEGEND SHEETS FOR FLOW STREAM IDENTIFICATION AND ABBREVIATIONS.
3. INSTALL PIPING WITH APPROPRIATE TRENCHING, BEDDING, AND BACKFILL REQUIREMENTS. SEE DETAILS C500 C505 C507
4. INSULATION SHALL BE PROVIDED AT ALL LOCATIONS WHERE LESS THAN 5-FT OF COVER IS PROVIDED OVER PIPE CROWN. SEE DETAIL C565
5. PIPING SHALL BE INSTALLED ON A CONTINUOUS GRADE WITHOUT SAGS OR HUMPS BETWEEN ELEVATIONS INDICATED. CONTACT THE ENGINEER FOR GUIDANCE WHERE THIS IS NOT POSSIBLE.
6. ALL EXISTING PIPING SHALL BE FIELD VERIFIED FOR LOCATION AND ELEVATION AT CONNECTION LOCATIONS.
7. PROTECT ALL UTILITIES, DUCT BANKS, ETC. NOT SHOWN FOR REMOVAL WITH SHEETING, SHORING, OR OTHER MEANS NECESSARY TO PROTECT THEM FROM DAMAGE.
8. TRACER WIRE IS REQUIRED ON ALL NEW BURIED PIPING AND DUCT BANKS. PROVIDE TRACER WIRE AND ACCESS POINTS IN ACCORDANCE WITH FRSA TREATMENT PLANT TRACER WIRE & ACCESS POINTS DETAIL ON DRAWING 10-C-09.
9. WHERE EACH NEW PIPE PASSES THROUGH THE FORMER PRIMARY SETTLING TANK WALL, INCREASE THE WALL DEMOLITION DEPTH ON DRAWING 4-R-02 AS NEEDED TO ACCOMMODATE THE NEW PIPE. PROVIDE AT LEAST 12 INCHES CLEARANCE ON EACH SIDE OF THE PIPE.
11. WHERE THERE IS LESS THAN 6 INCHES OF CLEARANCE BETWEEN CROSSING PIPES, PROVIDE INSULATION BOARD CUSHION BETWEEN PIPES PER DETAIL C566.

PLAN NOTES:

1. ADJUST EX CATCH BASIN TO PROPOSED GRADE.
2. CONNECT DRAIN LINE TO EX MANHOLE INSIDE OF REMOVED PIPE OPENING. SEAL OPENING AROUND PIPE WITH BRICK AND MORTAR CONNECTION.
3. RESTRAINED 48" MJ CAP FOR PFE FUTURE CONNECTION.
4. RE-INSTALL SALVAGED HYDRANT
5. SEE DRAWING 2-CP-03 FOR GTO PROFILE 1.
6. SEE DRAWING 2-CP-03 FOR GTO PROFILE 2.
7. 14-INCH MJ RESTRAINED CAP.
8. SEE DRAWING 2-CP-03 FOR PFTS PROFILE 1.
9. SEE DRAWING 2-CP-03 FOR PFTS PROFILE 2.
10. 6-INCH MJ RESTRAINED CAP.
11. SEE DRAWING 2-CP-03 FOR PFTS PROFILE 3.
12. SEE DRAWING 2-CP-03 FOR PFTS PROFILE 4.
13. 4-INCH MJ RESTRAINED CAP.
14. SEE DRAWING 2-CP-04 FOR PSM PROFILE 1.
15. SEE DRAWING 2-CP-04 FOR PSM PROFILE 2.
16. SEE DRAWING 2-CP-04 FOR PSM PROFILE 3.
17. SEE DRAWING 2-CP-04 FOR D PROFILE 1.
18. SEE DRAWING 2-CP-04 FOR D PROFILE 2.
19. SEE DRAWING 2-CP-04 FOR PFE PROFILE 1.
20. PROVIDE RESTRAINED CONNECTION ONTO EXISTING 4" W4.
21. 2" YARD HYDRANT. SEE FRSA TREATMENT PLANT YARD HYDRANT ASSEMBLY DETAIL ON DRAWING 10-C-09.
22. SEE DRAWING 8-M-06 FOR 4-IN PFTS CONNECTION AT DIGESTER CONTROL BUILDING.
23. SUPPORT PIPE DURING CONSTRUCTION OF 4-IN PFTS LINE.
24. PROVIDE RESTRAINED MECHANICAL JOINT CONNECTION ONTO EXISTING 24-INCH SUPT WYE.
25. SUPPORT DUCT BANK DURING CONSTRUCTION OF PFTS AND PSM PIPING.
26. SEE DRAWING 8-MEN-02 FOR 6-IN PFTS AND 4-IN PSM CONNECTION AT GRAVITY BELT THICKENING BUILDING.
27. PROVIDE RESTRAINED CONNECTION TO EXSTING 24-INCH WYE FITTING.
28. SEE DRAWING 5-M-01 FOR 6-IN PFTS, 4-IN PFTS, AND 4-IN PSM CONNECTION AT PRIMARY FILTRATION FACILITY 1.
29 GATE VALVE WITH VALVE BOX AND ADAPTOR, COVER, AND EXTENSION STEM, SEE DETAIL C407
30. SEE DRAWING 5-M-01 FOR 14-IN GTO CONNECTION AT PRIMARY FILTRATION FACILITY 1.
31. SEE DRAWING 5-M-01 FOR 54-IN PFE CONNECTION AT PRIMARY FILTRATION FACILITY 1.
32. SEE DRAWING 5-M-01 FOR 6-IN D AND 4-IN PSM CONNECTION AT PRIMARY FILTRATION FACILITY 1.
33. SEE DRAWING 5-P-02 FOR 4-IN W4 CONNECTION AT PRIMARY FILTRATION FACILITY 1.
34. SEE DRAWING 2-CP-04 FOR D PROFILE 3.
35. POTHOLE EXISTING PIPING IN AREAS WHERE PROPOSED GRADING INVOLVES CUT OPERATIONS. EXPOSE BURIED PIPE IN AREAS WHERE PROPOSED GRADING WILL RESULT IN DEPTH OF COVER LESS THAN 5 FEET AND PROVIDE INSULATION PER C565. SEE DRAWING 2-CG-01 FOR PROPOSED GRADING.

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
PIPING PLAN

DONOHUE 11/23/2021

Sheet No. 33

Drawing No. **2-CP-01**

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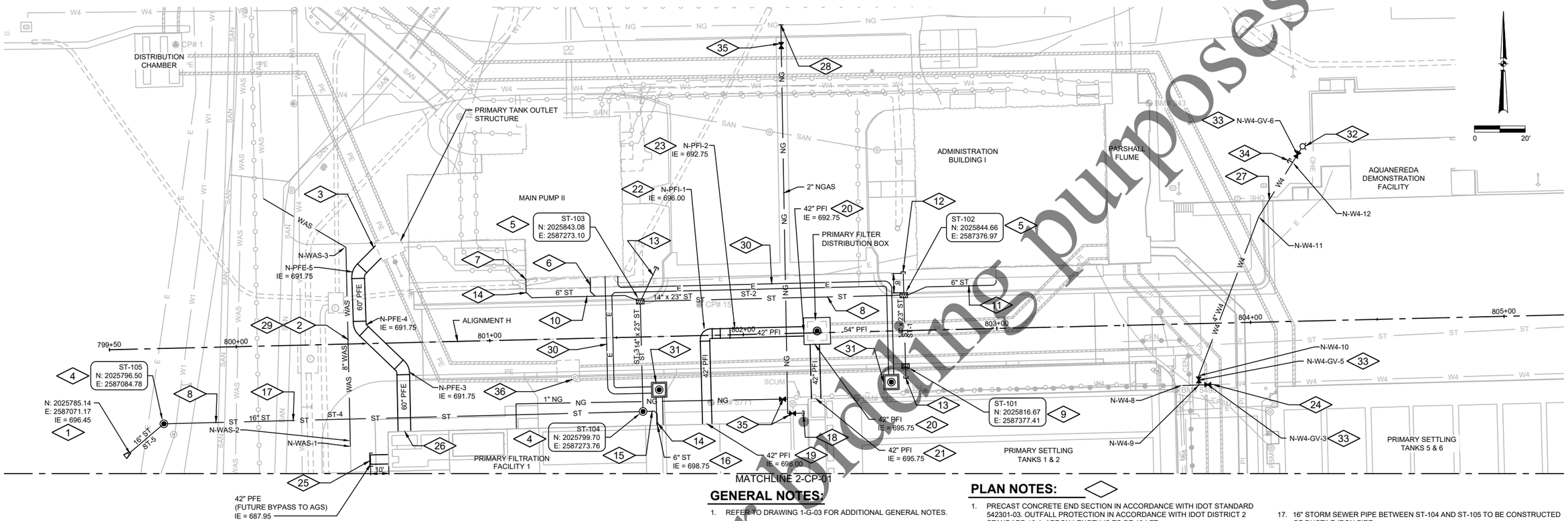

STORM SEWER STRUCTURE TABLE			
STRUCTURE ID	ALIGNMENT H STATION & OFFSET	DESCRIPTION	RIM & INVERT ELEVATIONS
ST-101	802+63.64, 14.00' R	IDOT REGION 2 INLET, SPECIAL (TYPE A GUTTER) W/CAST GRATE	RIM: 701.10 14" X 23" HERCP I.E. (N): 698.50 6" PVC I.E. (S): 698.75
ST-102	802+63.63, 14.00' L	5-FT DIA. MH W/FLAT SLAB TOP TYPE 3 INLET FRAME & GRATE	RIM: 701.42 14" X 23" HERCP I.E. (W): 698.30 14" X 23" HERCP I.E. (S): 698.40 6" PVC I.E. (E): 698.50 8" PVC I.E. (N): 698.50
ST-103	801+59.75, 14.00' L	5-FT DIA. MH W/FLAT SLAB TOP TYPE 3 INLET FRAME & GRATE	RIM: 702.03 14" X 23" HERCP I.E. (S): 697.84 14" X 23" HERCP I.E. (E): 697.94 6" PVC I.E. (NE): 698.00 6" PVC I.E. (W): 698.15
ST-104	801+59.75, 29.39' R	5-FT DIA. MH W/FLAT SLAB TOP TYPE 1 FRAME W/SOLID LID	RIM: 702.25 16" DIP I.E. (W): 697.59 14" X 23" HERCP I.E. (N): 697.69 6" PVC I.E. (E): 698.50
ST-105	799+70.74, 29.70' R	5-FT DIA. MH W/FLAT SLAB TOP TYPE 1 FRAME W/SOLID LID	RIM: 699.50 18" RCP I.E. (SW): 696.55 16" DIP I.E. (E): 696.64

NOTE: STATION & OFFSETS ON THIS TABLE REFERENCE ALIGNMENT H.

STORM SEWER PIPE TABLE					
PIPE ID	TYPE	LENGTH	CONNECTED STRUCTURES	INVERT ELEVATIONS	SLOPE
ST-1	14" X 23" HERCP	28.0'	U/S: ST-102 D/S: ST-101	U/S I.E.: 698.50 D/S I.E.: 698.40	0.35%
ST-2	14" X 23" HERCP	103.9'	U/S: ST-103 D/S: ST-102	U/S I.E.: 698.30 D/S I.E.: 697.94	0.35%
ST-3	14" X 23" HERCP	43.4'	U/S: ST-104 D/S: ST-103	U/S I.E.: 697.84 D/S I.E.: 697.69	0.35%
ST-4	16" DIP	189.0'	U/S: ST-105 D/S: ST-104	U/S I.E.: 697.59 D/S I.E.: 696.64	0.50%
ST-5	18" RCP	14.5'	U/S: ST-106 D/S: ST-105	U/S I.E.: 696.55 D/S I.E.: 696.48	0.50%

VALVE TABLE			
NAME	DESCRIPTION	NORTHING	EASTING
N-W4-GV-3	4 IN GV	2025808.33	2587496.48
N-W4-GV-5	4 IN GV	2025810.14	2587492.98
N-W4-GV-6	4 IN GV	2025898.67	2587532.63

FITTING TABLE			
NAME	DESCRIPTION	NORTHING	EASTING
N-PFI-1	42 IN 90° BEND	2025830.11	2587298.40
N-PFI-2	42 IN 22.5° BEND (VERTICAL)	2025830.32	2587310.47
N-W4-8	4 IN 90° BEND	2025808.09	2587485.95
N-W4-9	TEE 4X4	2025808.25	2587493.03
N-W4-10	4 IN 22.5° BEND	2025811.87	2587492.94
N-W4-11	4 IN 11.25° BEND	2025874.28	2587517.13
N-W4-12	TEE 4X4	2025895.62	2587530.69
N-WAS-1	8 IN 45° BEND (VERTICAL)	2025786.94	2587158.26
N-WAS-2	8 IN 45° BEND (VERTICAL)	2025789.19	2587158.14
N-WAS-3	8 IN 45° BEND	2025865.49	2587157.13

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. SEE LEGEND SHEETS FOR FLOW STREAM IDENTIFICATION AND ABBREVIATIONS.
3. FOR PIPE INSTALLATION SEE DETAILS C500 C505 AND C507.
4. INSULATION SHALL BE PROVIDED AT ALL LOCATIONS WHERE LESS THAN 5-FT OF COVER IS PROVIDED OVER PIPE CROWN, SEE DETAIL C565.
5. PIPING SHALL BE INSTALLED ON A CONTINUOUS GRADE WITHOUT SAGS OR HUMPS BETWEEN ELEVATIONS INDICATED. CONTACT THE ENGINEER FOR GUIDANCE WHERE THIS IS NOT POSSIBLE.
6. ALL EXISTING PIPING SHALL BE FIELD VERIFIED FOR LOCATION AND ELEVATION AT CONNECTION LOCATIONS.
7. PROTECT ALL UTILITIES, DUCT BANKS, ETC. NOT SHOWN FOR REMOVAL WITH SHEETING, SHORING, OR OTHER MEANS NECESSARY TO PROTECT THEM FROM DAMAGE.
8. TRACER WIRE IS REQUIRED ON ALL NEW BURIED PIPING AND DUCT BANKS. PROVIDE TRACER WIRE AND ACCESS POINTS IN ACCORDANCE WITH FRSA TREATMENT PLANT TRACER WIRE & ACCESS POINTS DETAIL ON DRAWING 10-C-09.
9. WHERE EACH NEW PIPE PASSES THROUGH THE FORMER PRIMARY SETTLING TANK WALL, INCREASE THE WALL DEMOLITION DEPTH ON DRAWING 4-R-02 AS NEEDED TO ACCOMMODATE THE NEW PIPE. PROVIDE AT LEAST 12 INCHES CLEARANCE ON EACH SIDE OF THE PIPE.
10. SEE STANDARD DETAIL DRAWINGS (SERIES 10-C DRAWINGS) FOR REFERENCED IDOT STANDARDS.
11. WHERE THERE IS LESS THAN 6 INCHES OF CLEARANCE BETWEEN CROSSING PIPES, PROVIDE INSULATION BOARD CUSHION BETWEEN PIPES PER DETAIL C566.

PLAN NOTES:

1. PRECAST CONCRETE END SECTION IN ACCORDANCE WITH IDOT STANDARD 542301-03. OUTFALL PROTECTION IN ACCORDANCE WITH IDOT DISTRICT 2 STANDARD 19.4. APRON LENGTH IS TO BE 12-LFT.
2. REMOVE AND REPLACE 8-IN WAS LINE. RE-LAY BENEATH STORM SEWER TO PROVIDE 18-IN VERTICAL CLEARANCE. THERE IS POTENTIAL THAT RELOCATION OF WAS PIPE WILL CREATE A HIGH POINT WHERE AIR CAN BE TRAPPED. IF RELOCATION CREATES A HIGH POINT, COORDINATE WITH OWNER TO UPDATE EXISTING WAS PUMPING O&M MANUAL TO REQUIRE HIGH PUMPING RATE TO FLUSH AIR FROM LINE AFTER WAS FLOW DROP OFF.
3. CONNECT 60" PFE TO PRIMARY TANK OUTLET STRUCTURE. SEE PRIMARY TANK OUTLET STRUCTURE DRAWING 6-M-01.
4. 5-FT DIA. MH WITH FLAT SLAB TOP IN ACCORDANCE WITH IDOT STANDARD 602402-03 AND TYPE 1 FRAME & SOLID LID PER IDOT STANDARD 604001-05.
5. 5-FT DIA. MH WITH FLAT SLAB TOP IN ACCORDANCE WITH IDOT STANDARD DETAIL 602402-03 AND TYPE 3 INLET FRAME & GRATE PER IDOT STANDARD DETAIL 604006-05.
6. PROVIDE 2" PVC SUMP PUMP DISCHARGE LINE. CONNECT TO 2" PIPE FROM MAIN PUMP II. PROVIDE FITTINGS AS REQUIRED TO ACHIEVE GENERAL ALIGNMENT SHOWN. CONNECT TO 6" STORM SEWER WITH WYE.
7. PROVIDE DOWNSPOUT INTERCEPTOR PER DETAIL C370. REMOVE EXISTING DOWNSPOUT PIPING AS REQUIRED. PROVIDE 6" PVC STORM SEWER.
8. SEE DRAWING 2-CP-05 FOR ST PROFILE 1.
9. IDOT REGION 2 INLET, SPECIAL (TYPE A GUTTER) WITH CAST GRATE PER IDOT DISTRICT 2 STANDARD 10.2.
10. 6" PVC STORM SEWER. PROVIDE FITTINGS AS REQUIRED TO ACHIEVE GENERAL ALIGNMENT SHOWN.
11. FIELD LOCATE EXISTING BURIED ROOF DRAIN PIPING AND CONNECT TO EXISTING. PROVIDE 6" PVC STORM SEWER PIPING AND FITTINGS. INSTALL CLEANOUT AT CONNECTION TO EXISTING PER DETAIL C230.
12. PROVIDE 8" PVC STUB-OUT AT 2% FROM MANHOLE. PLUG STUB-OUT FOR FUTURE CONNECTION.
13. PROVIDE 6" PVC STUB-OUT OUT AT 2% FROM STRUCTURE. PLUG STUB-OUT FOR FUTURE CONNECTION.
14. INSTALL CLEANOUT WITH VERTICAL WYE AND 45 ELBOW IN ACCORDANCE WITH DETAIL C230.
15. 6-INCH PVC STORM SEWER PIPING FOR BUILDING ROOF DRAIN.
16. SEE DRAWING 5-P-02 FOR ROOF DRAIN CONNECTION AT BUILDING. PROVIDE 4" X 6" REDUCER.
17. 16" STORM SEWER PIPE BETWEEN ST-104 AND ST-105 TO BE CONSTRUCTED OF DUCTILE IRON PIPE.
18. CAP 1" NG PIPE.
19. 42" PFI PIPE CONNECTION TO PRIMARY FILTRATION FACILITY 1, SEE DRAWING 5-M-01.
20. 42" PFI PIPE CONNECTION TO PRIMARY FILTER DISTRIBUTION BOX, SEE DRAWING 4-MEN-01.
21. 42" PFI PIPE CONNECTION TO PRIMARY SETTLING TANKS 1 & 2, SEE DRAWING 4-MEN-01.
22. 42" ELBOW ROTATED 22.5 DEGREES DOWN VERTICALLY TO THE EAST.
23. 42" 22.5 DEGREE ELBOW TO BE INSTALLED IN VERTICAL ORIENTATION.
24. PROVIDE RESTRAINED CONNECTION TO EXISTING 4" W4.
25. RESTRAINED 42" MJ CAP FOR PFE FUTURE BYPASS CONNECTION.
26. CONNECT 60" PFE TO PRIMARY FILTRATION FACILITY 1. SEE DRAWING 5-M-01.
27. PROVIDE 8" DIAMETER STEEL CASING PIPE BENEATH EXISTING RETAINING WALL FOR 4" W4 LINE. JACK CASING BENEATH RETAINING WALL. PROVIDE CASING SPACERS, CENTERED AND RESTRAINED. PROVIDE VERTICAL BENDS FOR 4" W4 LINE AS REQUIRED TO CROSS BENEATH RETAINING WALL FOOTING AND RETURN TO TYPICAL 5-FT DEPTH OF COVER ON NORTH SIDE OF WALL.
28. PROVIDE 2-INCH NG CONNECTION. CUT IN TEE ON EXISTING NG LINE.
29. SEE DRAWING 2-CP-05 FOR WAS PROFILE 1.
30. ELECTRICAL DUCT BANK. SEE DRAWING 2-EN-01 FOR DUCT BANK INFORMATION.
31. ELECTRICAL MANHOLE. SEE DRAWING 2-EN-01 FOR INFORMATION.
32. 2" YARD HYDRANT. SEE FRSA TREATMENT PLANT YARD HYDRANT ASSEMBLY DETAIL ON DRAWING 10-C-09.
33. GATE VALVE WITH VALVE BOX AND ADAPTOR, COVER, AND EXTENSION STEM. SEE DETAIL
34. PROVIDE RESTRAINED 4" MJ CAP FOR FUTURE CONNECTION.
35. PROVIDE NATURAL GAS VALVE PER C408.
36. MODIFY FORMER BYPASS STRUCTURE PER DRAWING 6-SM-01.

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

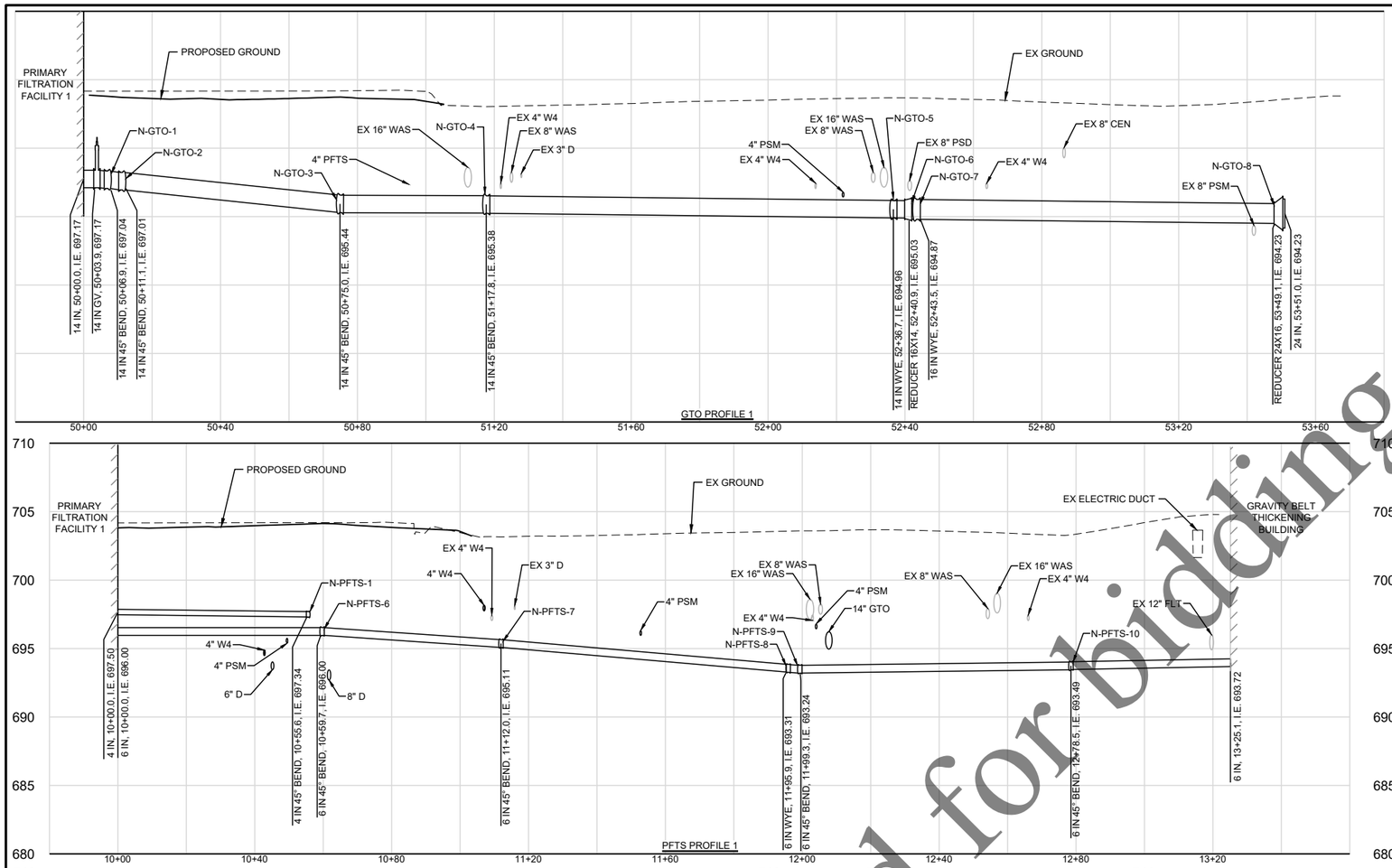
SITE DEVELOPMENT
PIPING PLAN

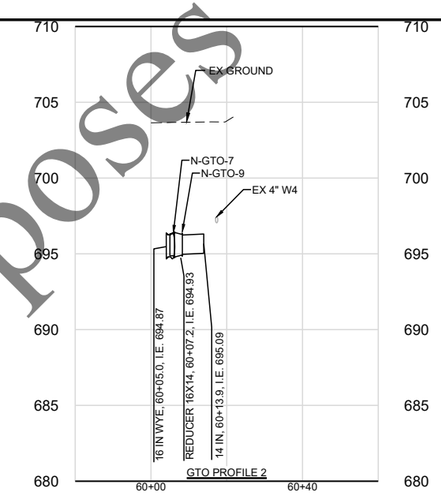
DONOHUE 11/23/2021

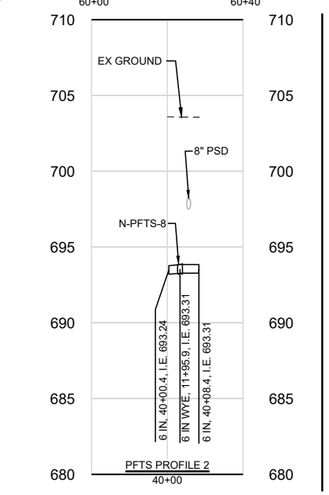
Sheet No. 34

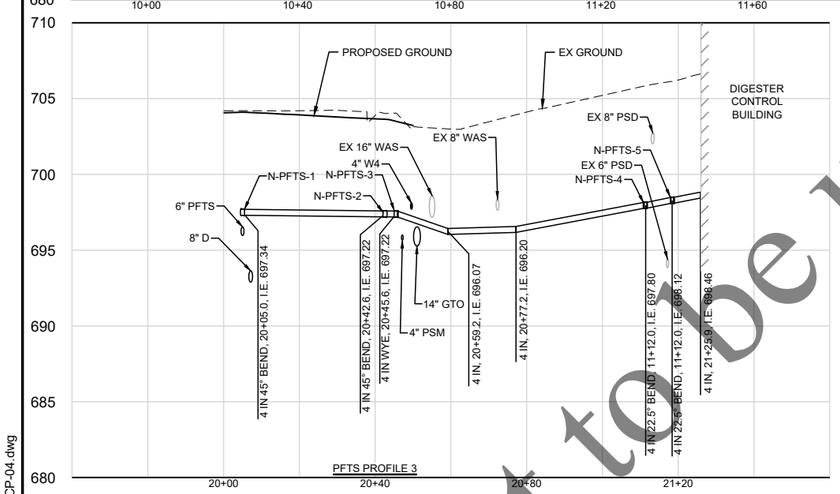
Drawing No. **2-CP-02**

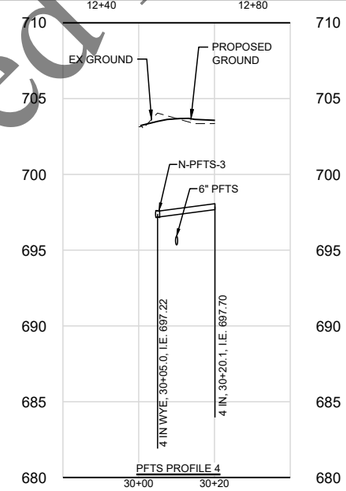
file: P:\13852chi\Dwg\2-CP-01.dwg











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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
PIPING PROFILES

DONOHUE 11/23/2021

Sheet No. 35

Drawing No. **2-CP-03**

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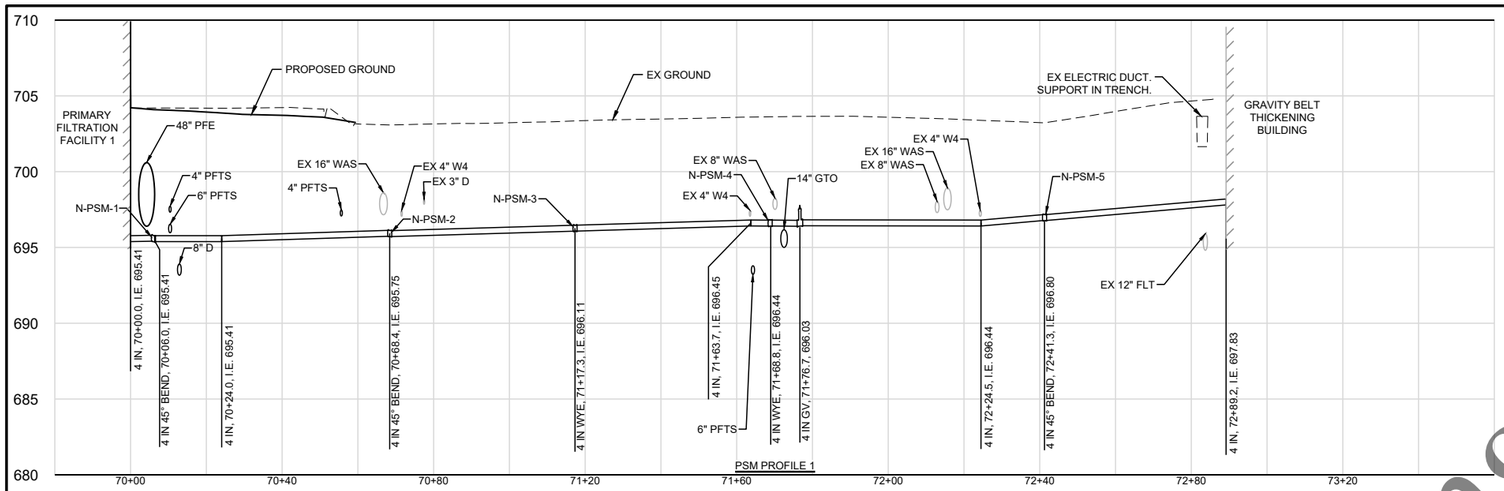

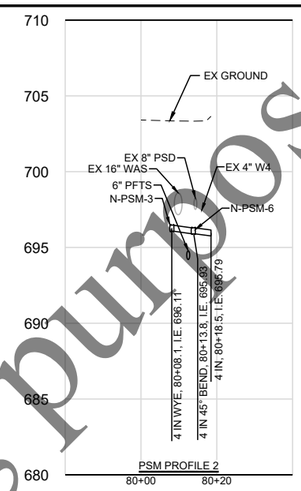

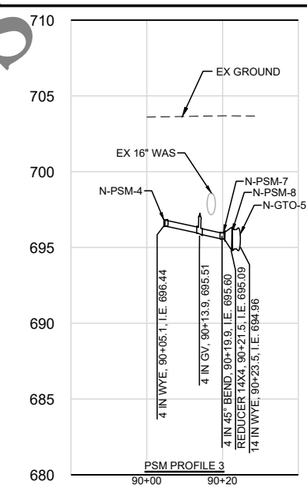

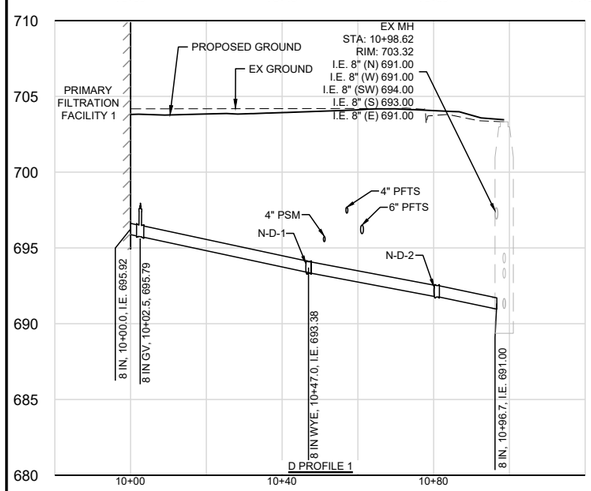

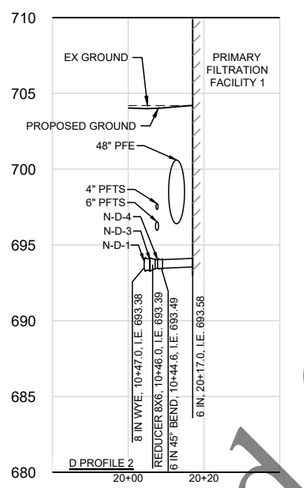

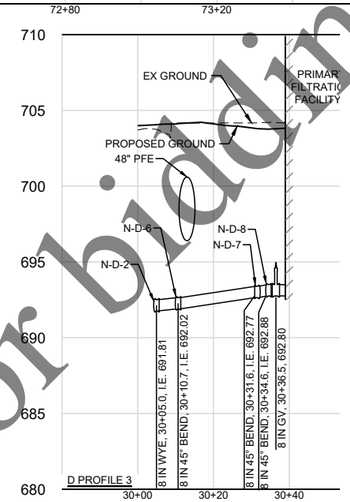

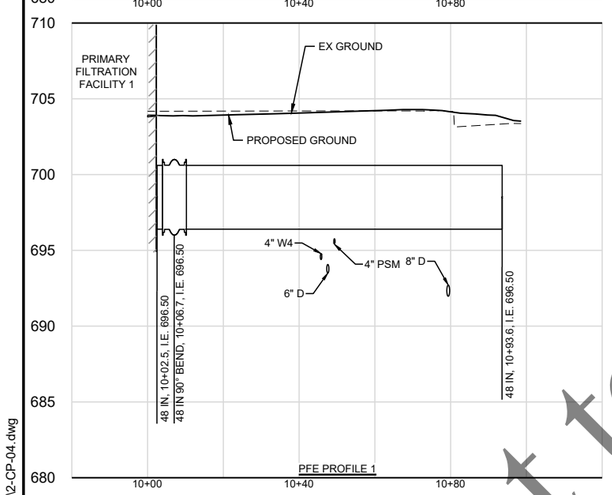

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
PIPING PROFILES

DONOHUE 11/23/2021

Sheet No. 36

Drawing No. **2-CP-04**

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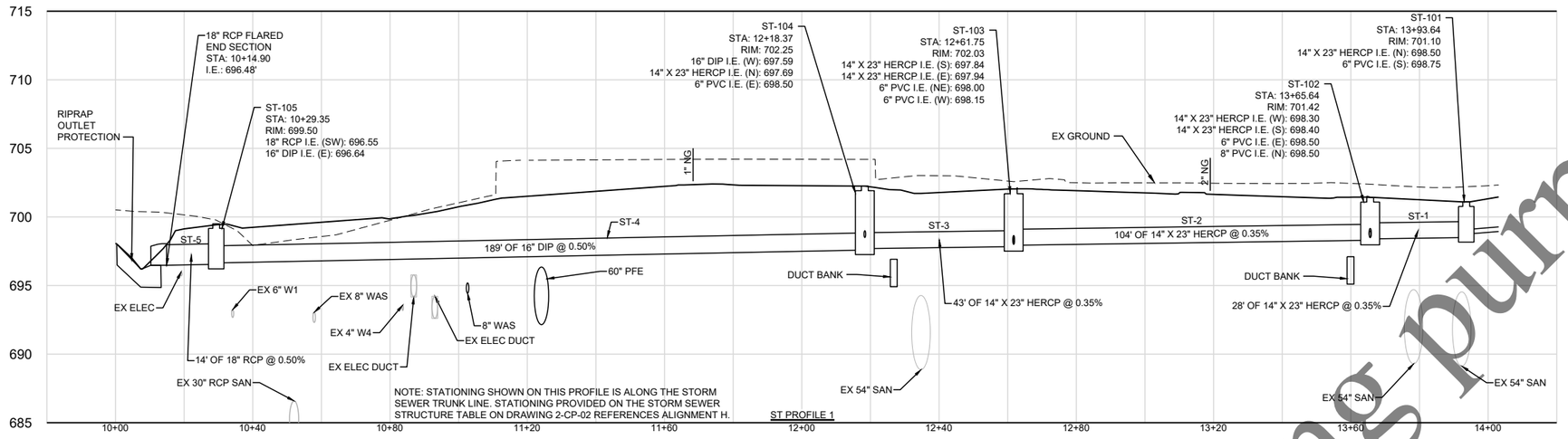

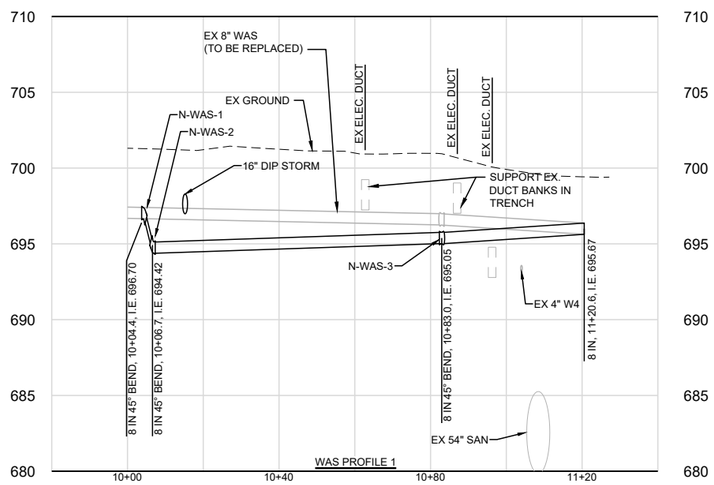

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

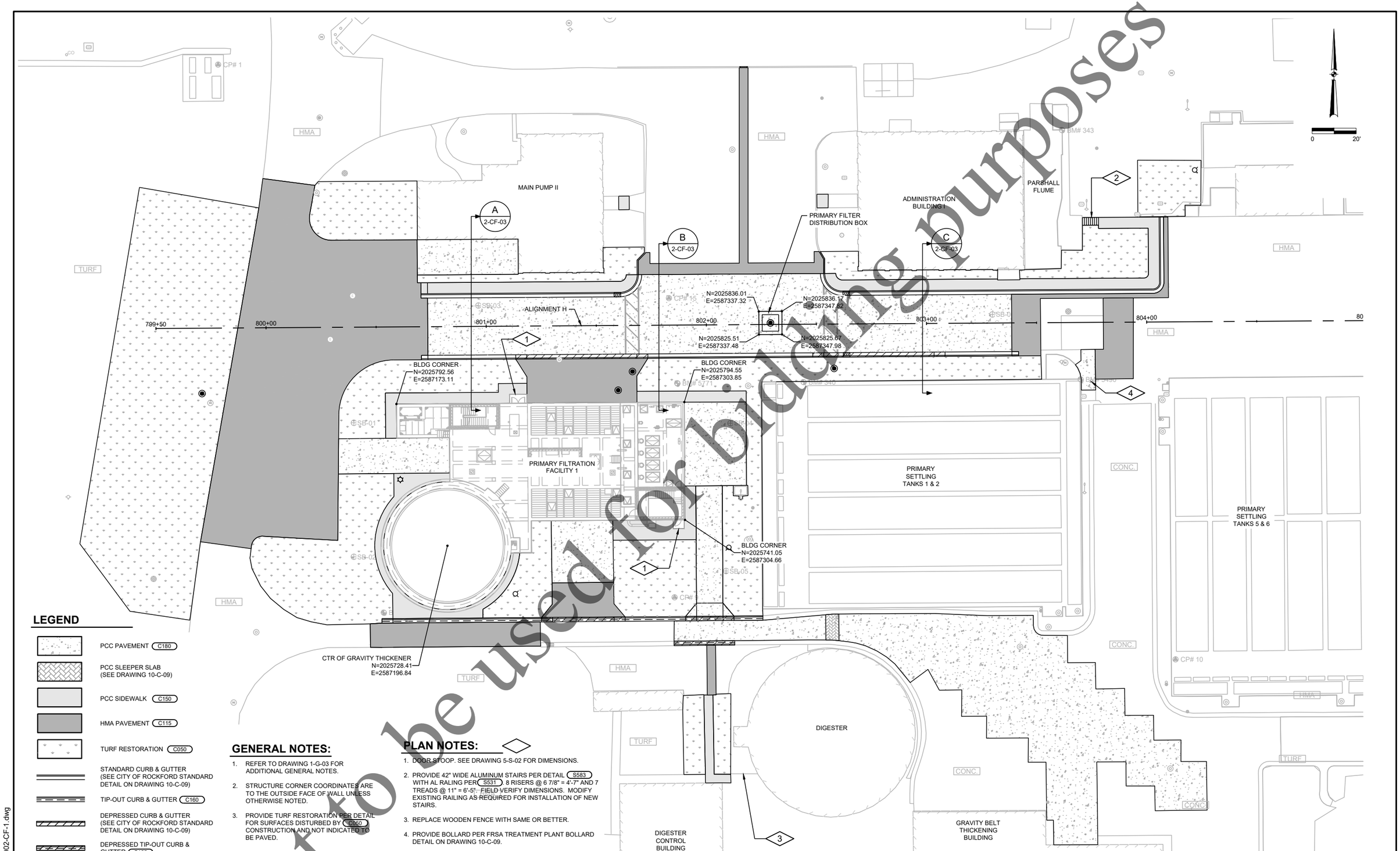
SITE DEVELOPMENT
PIPING PROFILES

DONOHUE

11/23/2021

Sheet No. 37

Drawing No. **2-CP-05**



LEGEND

- PCC PAVEMENT (C180)
- PCC SLEEPER SLAB (SEE DRAWING 10-C-09)
- PCC SIDEWALK (C150)
- HMA PAVEMENT (C115)
- TURF RESTORATION (C050)
- STANDARD CURB & GUTTER (SEE CITY OF ROCKFORD STANDARD DETAIL ON DRAWING 10-C-09)
- TIP-OUT CURB & GUTTER (C160)
- DEPRESSED CURB & GUTTER (SEE CITY OF ROCKFORD STANDARD DETAIL ON DRAWING 10-C-09)
- DEPRESSED TIP-OUT CURB & GUTTER (C165)

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. STRUCTURE CORNER COORDINATES ARE TO THE OUTSIDE FACE OF WALL UNLESS OTHERWISE NOTED.
3. PROVIDE TURF RESTORATION PER DETAIL (C050) FOR SURFACES DISTURBED BY CONSTRUCTION AND NOT INDICATED TO BE PAVED.

PLAN NOTES:

1. DOOR STOOP. SEE DRAWING 5-S-02 FOR DIMENSIONS.
2. PROVIDE 42" WIDE ALUMINUM STAIRS PER DETAIL (S583) WITH AL RALING PER (S531). 8 RISERS @ 6 7/8" = 4'-7" AND 7 TREADS @ 11" = 6'-5". FIELD VERIFY DIMENSIONS. MODIFY EXISTING RAILING AS REQUIRED FOR INSTALLATION OF NEW STAIRS.
3. REPLACE WOODEN FENCE WITH SAME OR BETTER.
4. PROVIDE BOLLARD PER FRSA TREATMENT PLANT BOLLARD DETAIL ON DRAWING 10-C-09.

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
SITE PLAN AND STRUCTURE LAYOUT

DONOHUE

11/23/2021

Sheet No. 38

Drawing No. 2-CF-01

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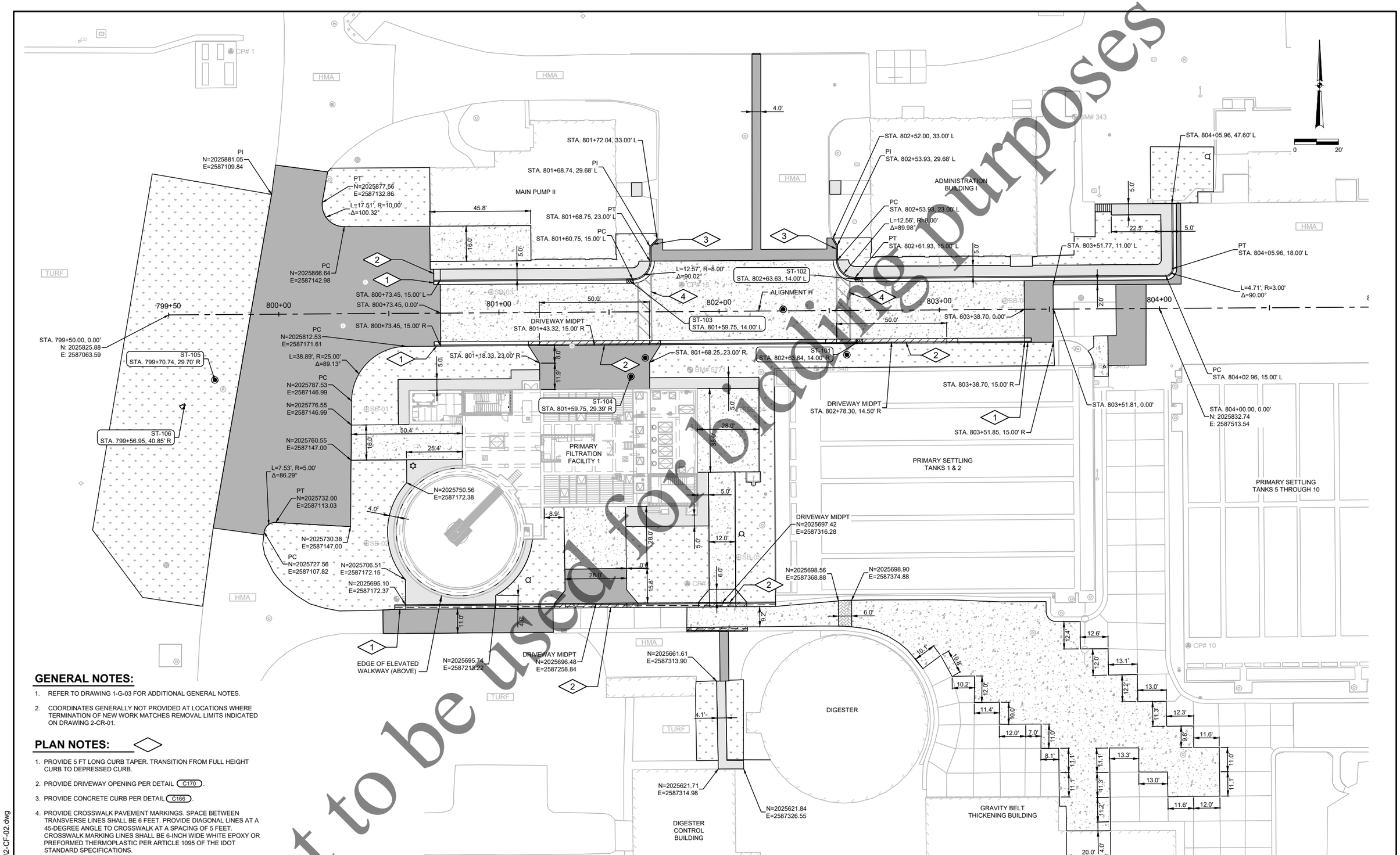

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. COORDINATES GENERALLY NOT PROVIDED AT LOCATIONS WHERE TERMINATION OF NEW WORK MATCHES REMOVAL LIMITS INDICATED ON DRAWING 2-CR-01.

PLAN NOTES:

1. PROVIDE 5 FT LONG CURB TAPER. TRANSITION FROM FULL HEIGHT CURB TO DEPRESSED CURB.
2. PROVIDE DRIVEWAY OPENING PER DETAIL C170.
3. PROVIDE CONCRETE CURB PER DETAIL C166.
4. PROVIDE CROSSWALK PAVEMENT MARKINGS. SPACE BETWEEN TRANSVERSE LINES SHALL BE 6 FEET. PROVIDE DIAGONAL LINES AT A 45-DEGREE ANGLE TO CROSSWALK AT A SPACING OF 5 FEET. CROSSWALK MARKING LINES SHALL BE 6-INCH WIDE WHITE EPOXY OR PREFORMED THERMOPLASTIC PER ARTICLE 1095 OF THE IDOT STANDARD SPECIFICATIONS.

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
SITE PLAN LAYOUT

DONOHUE

11/23/2021

Sheet No. 39

Drawing No. 2-CF-02

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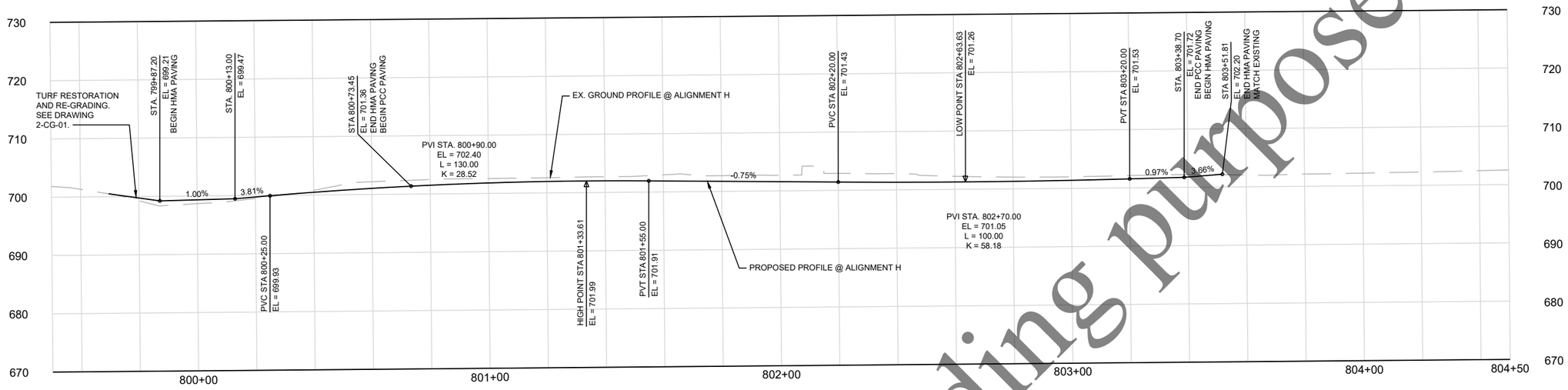
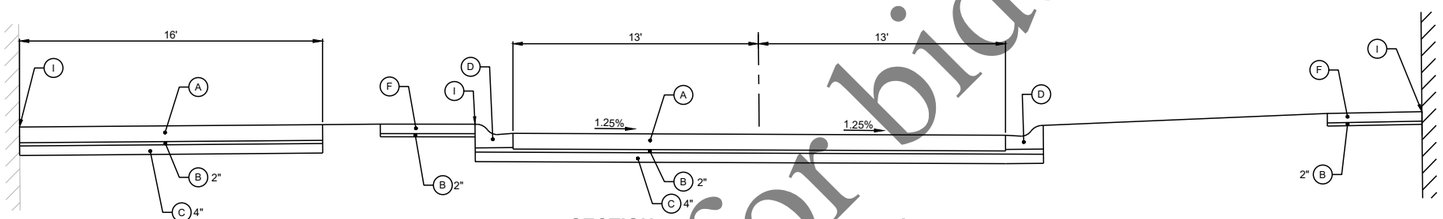
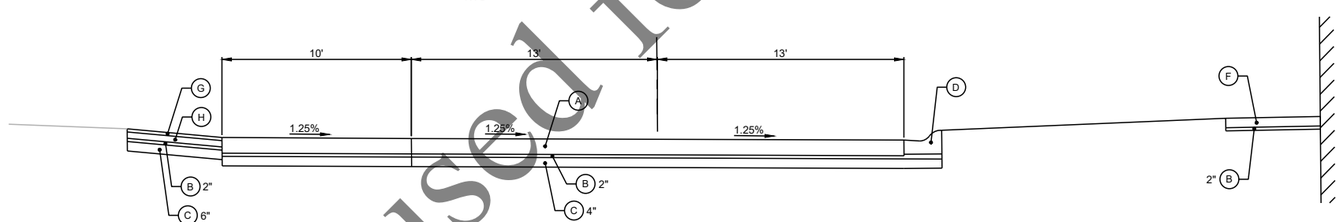


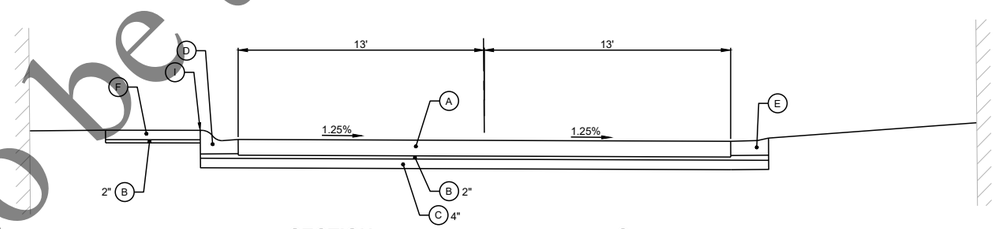
ALIGNMENT H PROFILE



SECTION A
NTS 2-CF-01



SECTION B
NTS 2-CF-01



SECTION C
NTS 2-CF-01

LEGEND

- (A) PCC PAVEMENT, 10" (JOINTED)
- (B) AGGREGATE BASE COURSE, GRADATION CA-6
- (C) AGGREGATE BASE COURSE, GRADATION CA-2
- (D) CURB & GUTTER, TYPE M 6.18 MODIFIED (SEE DRAWING 10-C-09)
- (E) DEPRESSED CURB & GUTTER, TYPE M 6.18 MODIFIED (SEE DRAWING 10-C-09)
- (F) PCC SIDEWALK, 4" THICK, VARIABLE WIDTH
- (G) HMA SURFACE COURSE (IL 9.5, N50, MIX "C"), 2" THICK
- (H) HMA BINDER COURSE (IL 19.0, N50), 4" THICK
- (I) PREFORMED EXPANSION JOINT FILLER

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

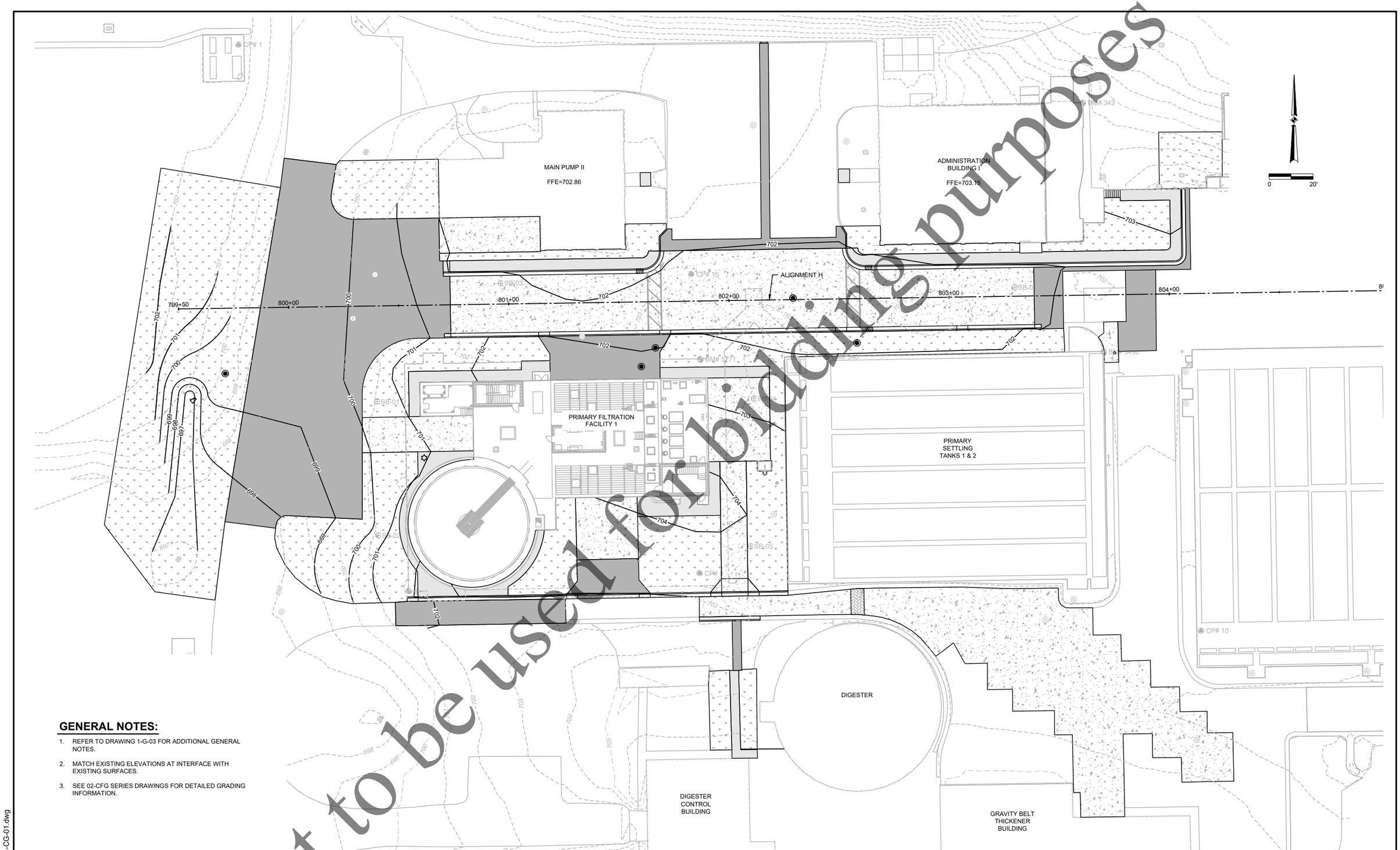
SITE DEVELOPMENT
ALIGNMENT H PROFILE & ROADWAY SECTIONS

DONOHUE 11/23/2021

Sheet No. 40

Drawing No. **2-CF-03**

file: P:\13852ch\Dwg\2-CF-03.dwg



GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. MATCH EXISTING ELEVATIONS AT INTERFACE WITH EXISTING SURFACES.
3. SEE 02-CFG SERIES DRAWINGS FOR DETAILED GRADING INFORMATION.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
SITE GRADING PLAN

DONOHUE

11/23/2021

Sheet No. 41

Drawing No. **2-CG-01**

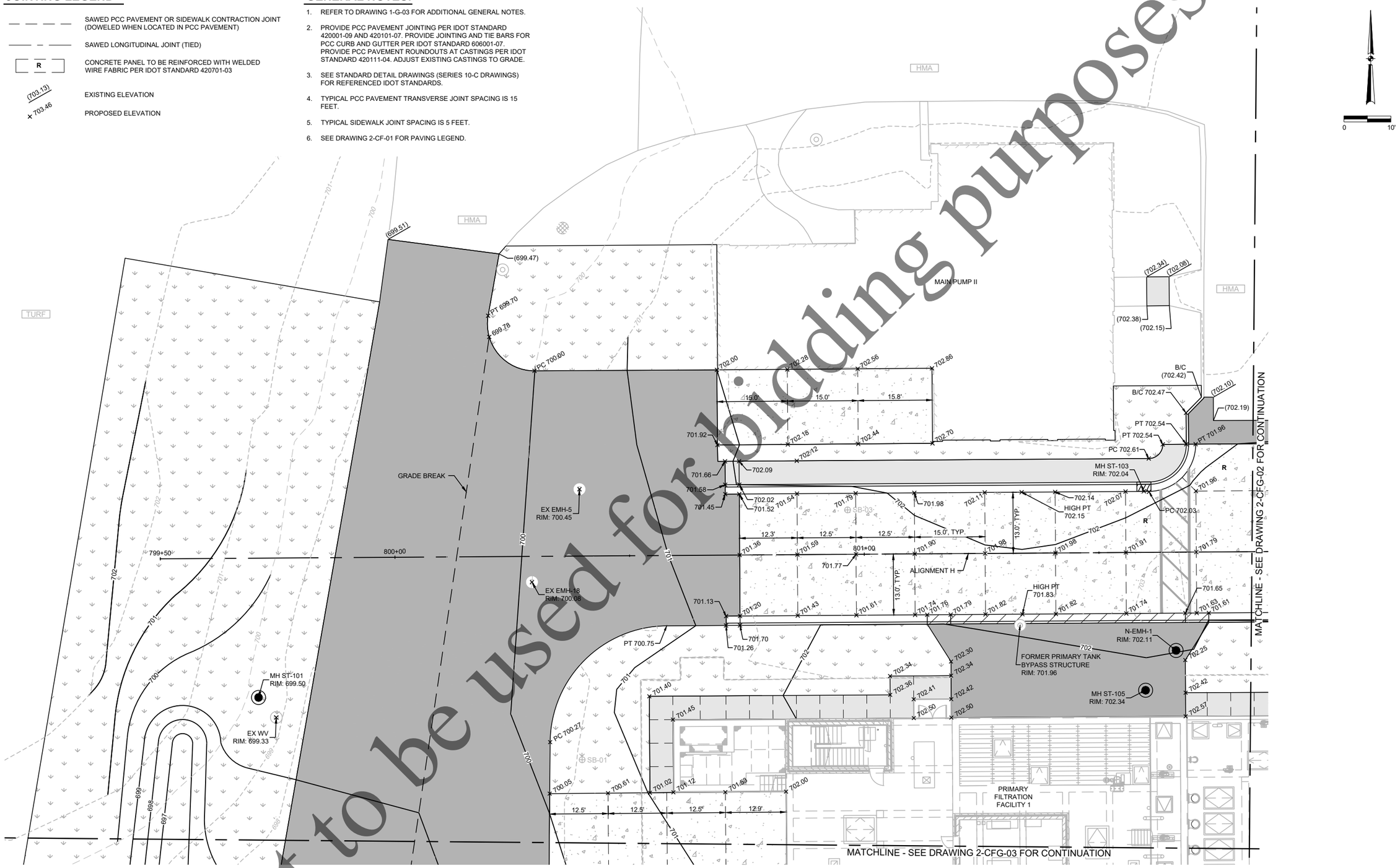
file: P:\13852ch\Dwg\2-CG-01.dwg

JOINTING LEGEND

- SAWED PCC PAVEMENT OR SIDEWALK CONTRACTION JOINT (DOWELED WHEN LOCATED IN PCC PAVEMENT)
- SAWED LONGITUDINAL JOINT (TIED)
- R — CONCRETE PANEL TO BE REINFORCED WITH WELDED WIRE FABRIC PER IDOT STANDARD 420701-03
- (703.13) — EXISTING ELEVATION
- × 703.46 — PROPOSED ELEVATION

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. PROVIDE PCC PAVEMENT JOINTING PER IDOT STANDARD 420001-09 AND 420101-07. PROVIDE JOINTING AND TIE BARS FOR PCC CURB AND GUTTER PER IDOT STANDARD 606001-07. PROVIDE PCC PAVEMENT ROUNDOUTS AT CASTINGS PER IDOT STANDARD 420111-04. ADJUST EXISTING CASTINGS TO GRADE.
3. SEE STANDARD DETAIL DRAWINGS (SERIES 10-C DRAWINGS) FOR REFERENCED IDOT STANDARDS.
4. TYPICAL PCC PAVEMENT TRANSVERSE JOINT SPACING IS 15 FEET.
5. TYPICAL SIDEWALK JOINT SPACING IS 5 FEET.
6. SEE DRAWING 2-CF-01 FOR PAVING LEGEND.



Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
ENLARGED PAVING AND GRADING PLAN

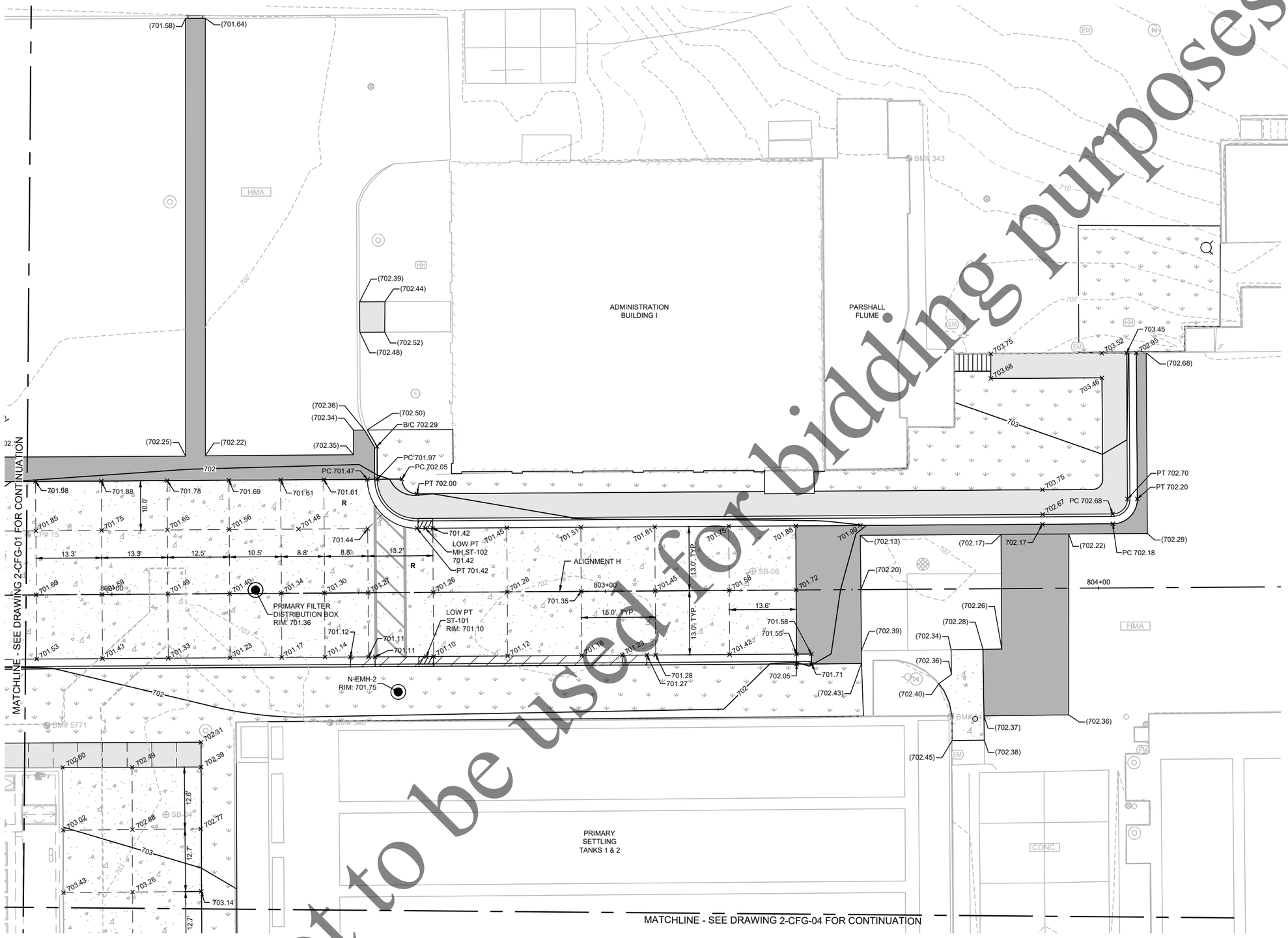
DONOHUE

11/23/2021

Sheet No. 42

Drawing No. 2-CFG-01

file: P:\13852chi\Dwg\2-CFG-01.dwg



GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. PROVIDE PCC PAVEMENT JOINTING PER IDOT STANDARD 420001-09 AND 420101-07. PROVIDE JOINTING AND TIE BARS FOR PCC CURB AND GUTTER PER IDOT STANDARD 606001-07. PROVIDE PCC PAVEMENT ROUNDOUTS AT CASTINGS PER IDOT STANDARD 420111-04.
3. SEE STANDARD DETAIL DRAWINGS (SERIES 10-C DRAWINGS) FOR REFERENCED IDOT STANDARDS.
4. TYPICAL PCC PAVEMENT TRANSVERSE JOINT SPACING IS 15 FEET UNLESS OTHERWISE NOTED.
5. TYPICAL SIDEWALK JOINT SPACING IS 5 FEET.
6. SEE DRAWING 2-CF-01 FOR PAVING LEGEND.

JOINTING LEGEND

— — — —	SAWED PCC PAVEMENT OR SIDEWALK CONTRACTION JOINT (DOWELED WHEN LOCATED IN PCC PAVEMENT)
—— – ——	SAWED LONGITUDINAL JOINT (TIED)
R	CONCRETE PANEL TO BE REINFORCED WITH WELDED WIRE FABRIC PER IDOT STANDARD 420701-03
(703.13)	EXISTING ELEVATION
× 703.46	PROPOSED ELEVATION

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

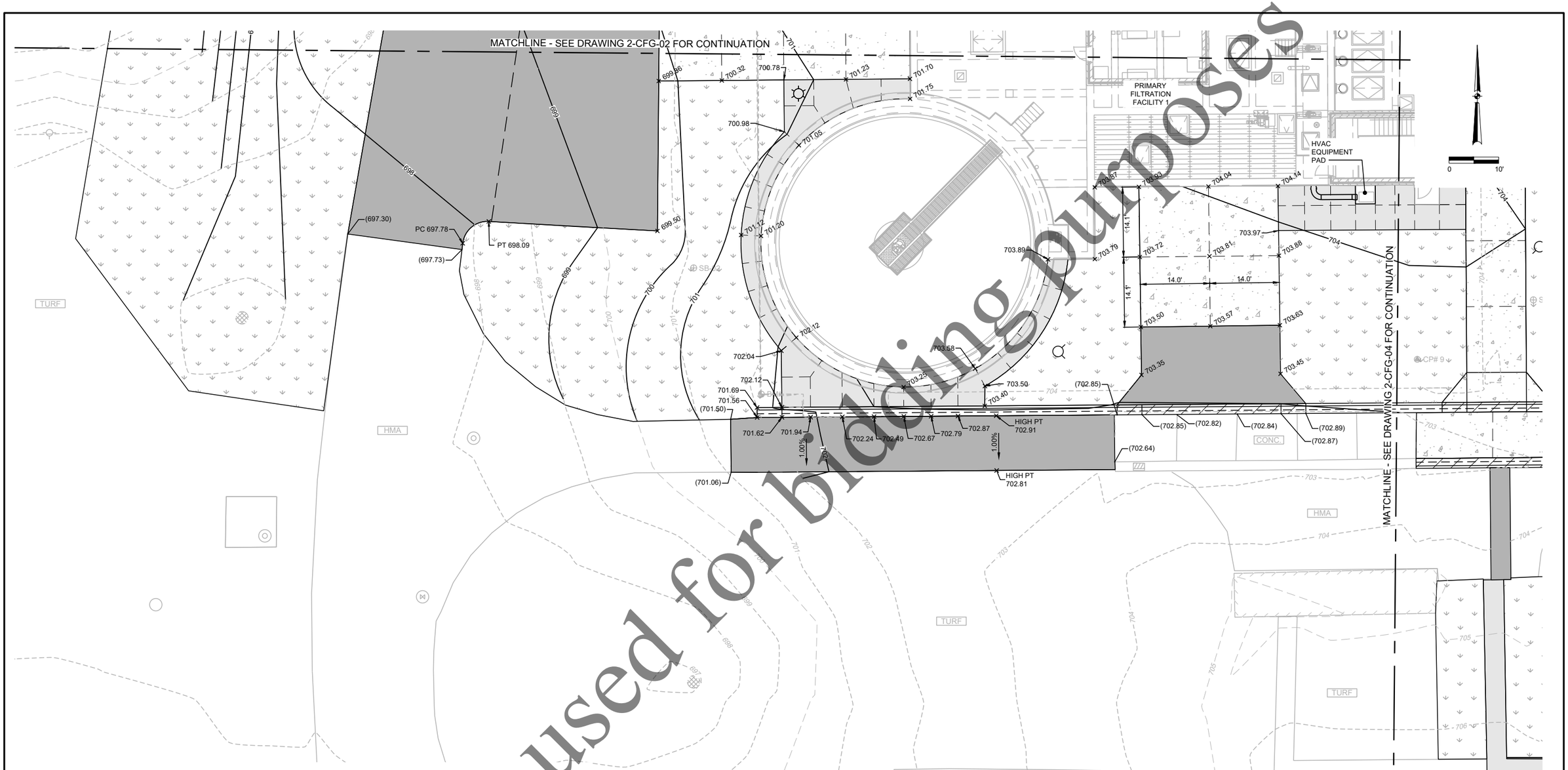
SITE DEVELOPMENT
ENLARGED PAVING AND GRADING PLAN

DONOHUE 11/23/2021

Sheet No. 43

Drawing No. **2-CFG-02**

file: P:\13852chi\Dwg\2-CFG-01.dwg



JOINTING LEGEND

- SAWED PCC PAVEMENT OR SIDEWALK CONTRACTION JOINT (DOWELED WHEN LOCATED IN PCC PAVEMENT)
- SAWED LONGITUDINAL JOINT (TIED)
- R — CONCRETE PANEL TO BE REINFORCED WITH WELDED WIRE FABRIC PER IDOT STANDARD 420701-03
- (703.13) — EXISTING ELEVATION
- + 703.46 — PROPOSED ELEVATION

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. PROVIDE PCC PAVEMENT JOINTING PER IDOT STANDARD 420001-09 AND 420101-07. PROVIDE JOINTING AND TIE BARS FOR PCC CURB AND GUTTER PER IDOT STANDARD 606001-07. PROVIDE PCC PAVEMENT ROUNDOUTS AT CASTINGS PER IDOT STANDARD 420111-04. ADJUST EXISTING CASTINGS TO GRADE.
3. SEE STANDARD DETAIL DRAWINGS (SERIES 10-C DRAWINGS) FOR REFERENCED IDOT STANDARDS.
4. TYPICAL PCC PAVEMENT TRANSVERSE JOINT SPACING IS 15 FEET.
5. TYPICAL SIDEWALK JOINT SPACING IS 5 FEET.
6. SEE DRAWING 2-CF-01 FOR PAVING LEGEND.

Not one used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
ENLARGED PAVING AND GRADING PLAN

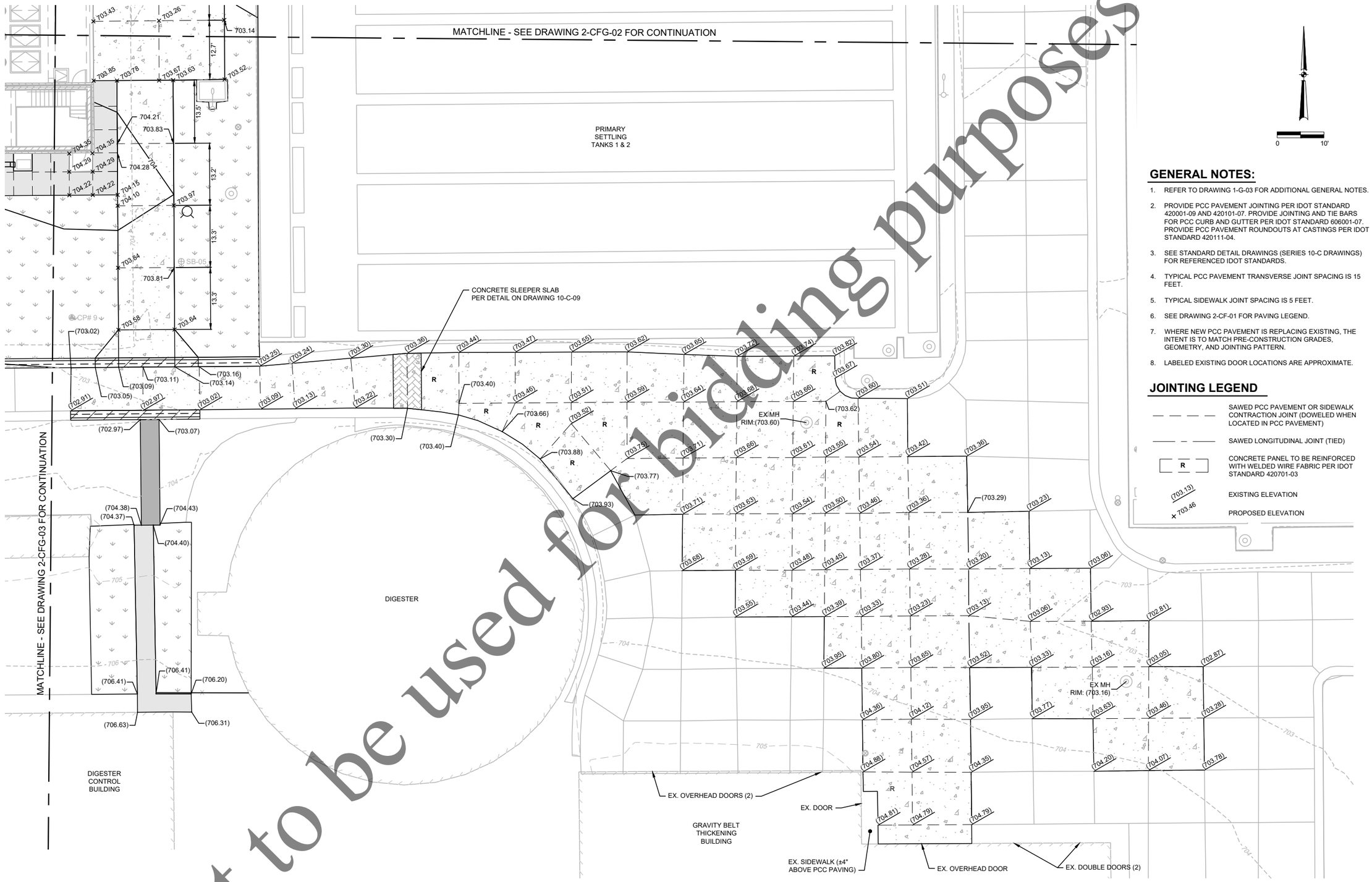
DONOHUE

11/23/2021

Sheet No. 44

Drawing No. 2-CFG-03

file: P:\13852chi\Dwg\2-CFG-01.dwg



GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. PROVIDE PCC PAVEMENT JOINTING PER IDOT STANDARD 420001-09 AND 420101-07. PROVIDE JOINTING AND TIE BARS FOR PCC CURB AND GUTTER PER IDOT STANDARD 606001-07. PROVIDE PCC PAVEMENT ROUNDOUTS AT CASTINGS PER IDOT STANDARD 420111-04.
3. SEE STANDARD DETAIL DRAWINGS (SERIES 10-C DRAWINGS) FOR REFERENCED IDOT STANDARDS.
4. TYPICAL PCC PAVEMENT TRANSVERSE JOINT SPACING IS 15 FEET.
5. TYPICAL SIDEWALK JOINT SPACING IS 5 FEET.
6. SEE DRAWING 2-CF-01 FOR PAVING LEGEND.
7. WHERE NEW PCC PAVEMENT IS REPLACING EXISTING, THE INTENT IS TO MATCH PRE-CONSTRUCTION GRADES, GEOMETRY, AND JOINTING PATTERN.
8. LABELED EXISTING DOOR LOCATIONS ARE APPROXIMATE.

JOINTING LEGEND

— — — —	SAWED PCC PAVEMENT OR SIDEWALK CONTRACTION JOINT (DOWELED WHEN LOCATED IN PCC PAVEMENT)
—— – ——	SAWED LONGITUDINAL JOINT (TIED)
R	CONCRETE PANEL TO BE REINFORCED WITH WELDED WIRE FABRIC PER IDOT STANDARD 420701-03
(703.13)	EXISTING ELEVATION
× 703.46	PROPOSED ELEVATION

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	MLM
				Drawn By	MLM
				Checked By	PMS
				Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
ENLARGED PAVING AND GRADING PLAN

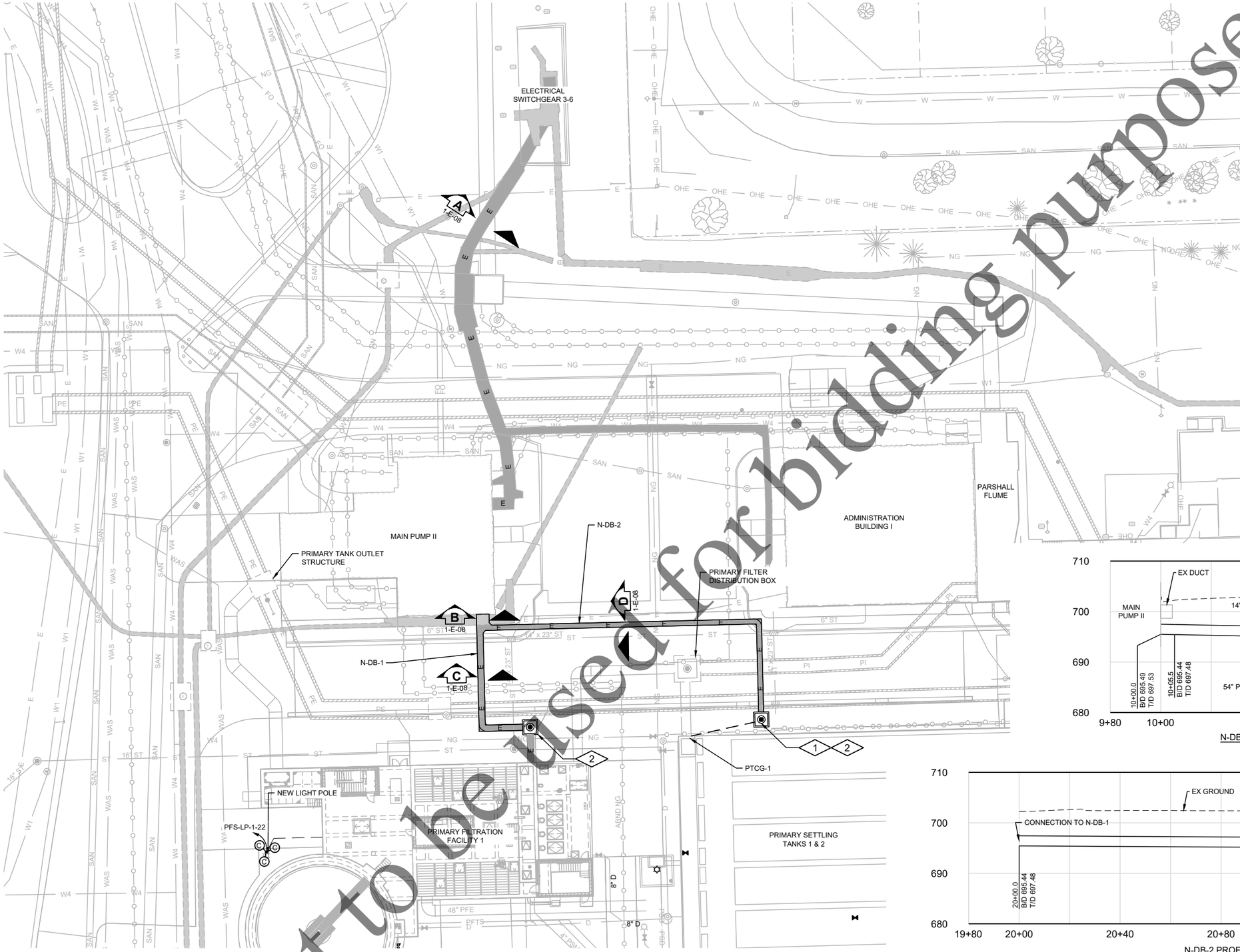
DONOHUE

11/23/2021

Sheet No. 45

Drawing No. 2-CFG-04

file: P:\13852chh\Dwg\2-CFG-01.dwg



0 20'

GENERAL NOTES:

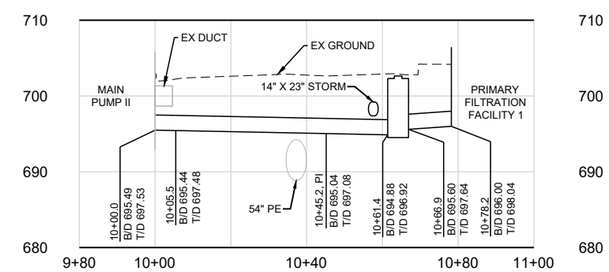
1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.
2. CONTRACTOR RESPONSIBLE FOR VERIFYING EXISTING UNDERGROUND UTILITY LOCATIONS.
3. THE EXACT HORIZONTAL LOCATION OF THE BENDS AND FITTINGS SHOWN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE IN ACCORDANCE WITH THE GENERAL CONFIGURATION SHOWN.
4. TRACER WIRE IS REQUIRED ON ALL NEW BURIED PIPING AND DUCT BANKS. PROVIDE TRACER WIRE AND ACCESS POINTS IN ACCORDANCE WITH FRSA TREATMENT PLANT TRACER WIRE & ACCESS POINTS DETAIL ON DRAWING 10-C-09.

PLAN NOTES:

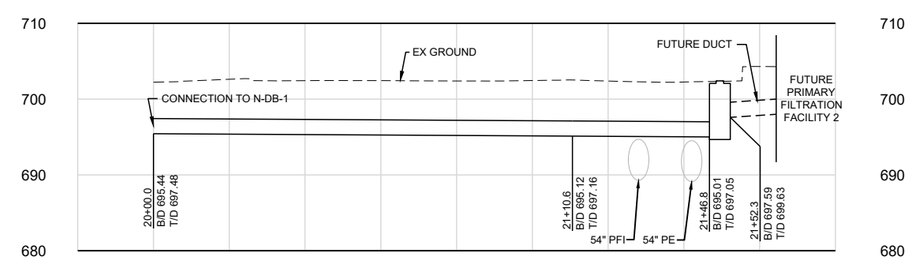
1. CAP DUCTS IN MANHOLE FOR FUTURE PHASE II EXTENSION. PROVIDE KNOCKOUT PANEL IN MANHOLE FOR FUTURE PHASE II EXTENSION. EXTEND DIRECT BURIED CONDUITS FROM MANHOLE TO PTCG-1 FOR POWER AND CONTROLS.
2. SEE DETAIL E228

LEGEND

B/DB	BOTTOM OF DUCT BANK
DB	DUCT BANK
T/DB	TOP OF DUCT BANK
E	EXISTING DUCT BANK
E	EXISTING DUCT BANK WITH NEW CONDUCTORS
E	DUCT BANK



N-DB-1 PROFILE



N-DB-2 PROFILE

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

SITE DEVELOPMENT
ELECTRICAL SITE PLAN

DONOHUE

11/23/2021

Sheet No. 46

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

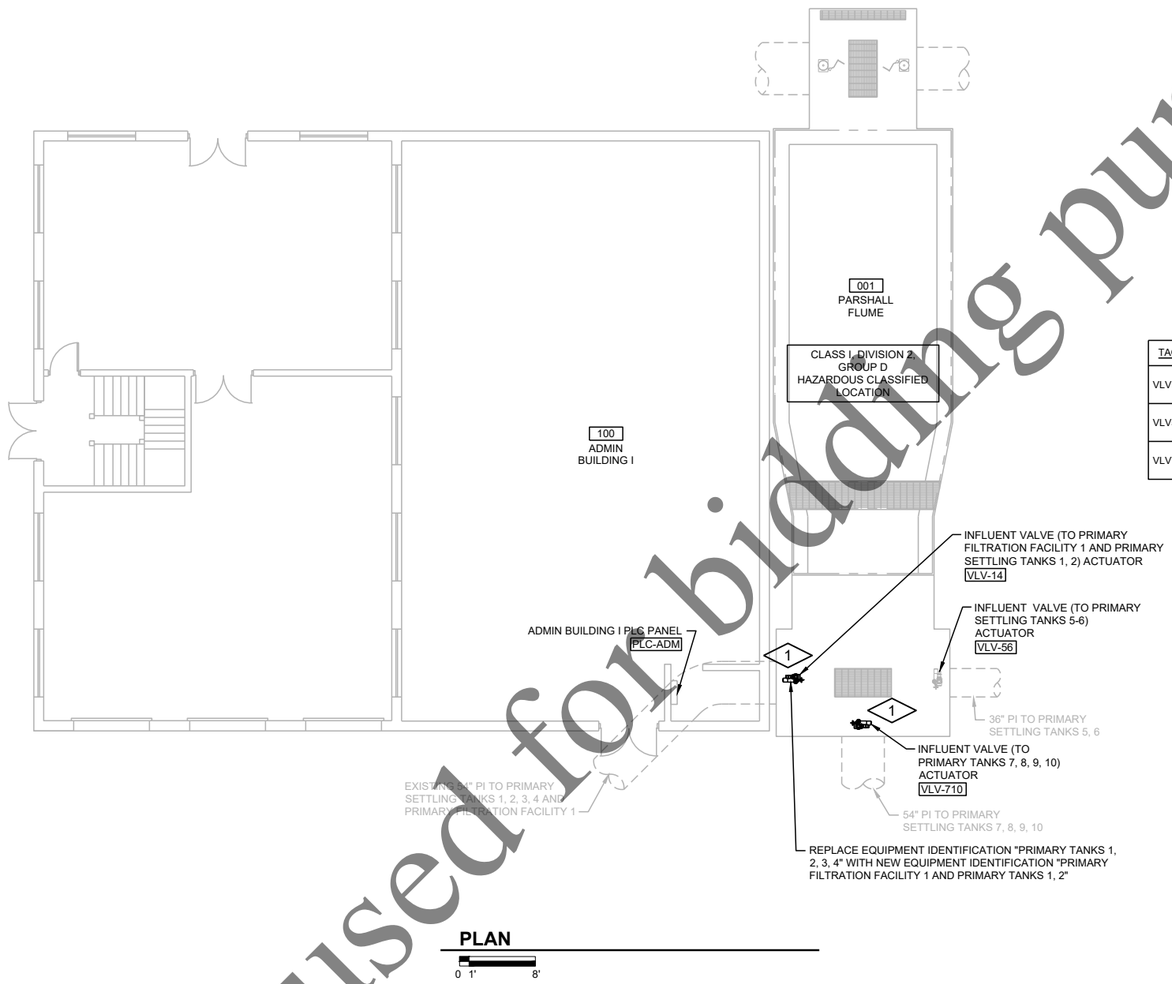
file: P:\13852ch\Dwg\2-EN-01.dwg

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.

PLAN NOTES:

1. EXISTING 480V CABLE AND CONDUIT SHALL REMAIN. RECONNECT POWER TO NEW VALVE ACTUATOR.



PLAN

0 1' 8'

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION	COMMENT
VLV14	INFLUENT VALVE 14	MFR.	(2) TSP	PLC-ADM	
			(2) #14	PLC-ADM	
VLV56	INFLUENT VALVE 56	MFR.	(2) TSP	PLC-ADM	
			(2) #14	PLC-ADM	
VLV710	INFLUENT VALVE 710	MFR.	(2) TSP	PLC-ADM	
			(2) #14	PLC-ADM	

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR/FGM/LPH
Drawn By	MTR/FGM/LPH
Checked By	SPG/JTB/BLG
Approved By	KPL/FGM/BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

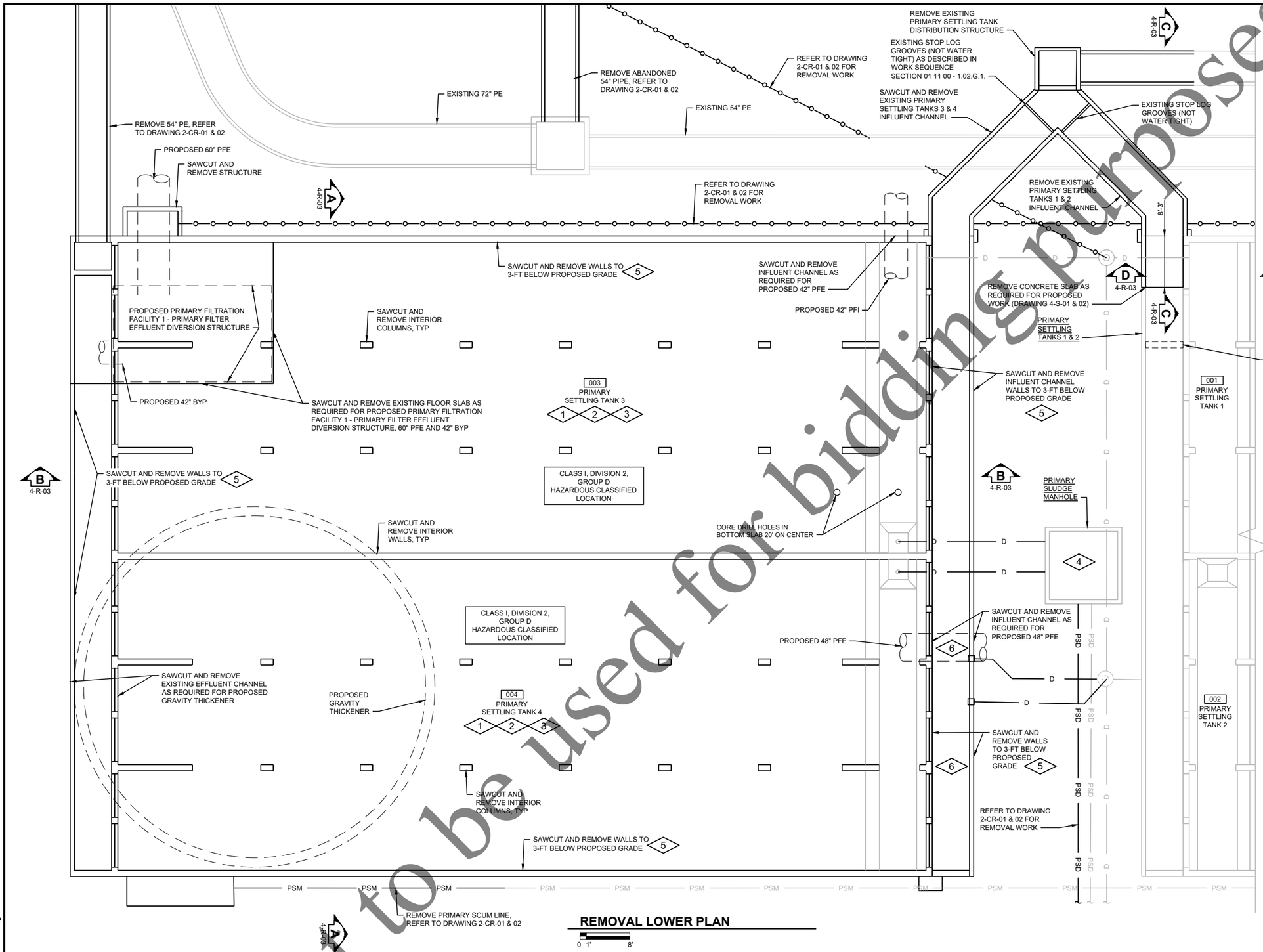
PARSHALL FLUME
PLAN

DONOHUE 11/23/2021

Sheet No. 47

Drawing No. **3-MEN-01**

file: P:\13852chi\Dwg\3MENP1.dwg



REMOVAL LOWER PLAN

0 1' 8'

GENERAL REMOVAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES.

PLAN NOTES:

1. PROVIDE REMOVALS AS INDICATED AND AS REQUIRED FOR PROPOSED WORK.
2. REFER TO DRAWING 2-CR-01 & 02 FOR ADDITIONAL REMOVAL WORK
3. REMOVE ALL EQUIPMENT AND PIPING WITHIN TANKS. EXISTING PRV ON TANK FLOOR TO REMAIN.
4. REFER TO DRAWING 7-RM-01
5. SEE DRAWING 2-CP-01 & 02 FOR NEW PIPING LOCATIONS THAT MAY REQUIRE ADDITIONAL WALL REMOVAL DEPTH TO ACCOMMODATE NEW PIPING.
6. SEE DRAWING 2-CP-01 & 02 FOR NEW PIPING LOCATIONS THAT MAY REQUIRE ADDITIONAL INFLUENT CHANNEL REMOVAL TO ACCOMMODATE NEW PIPING.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR/CEE/FGM
Drawn By	MTR/CEE/FGM
Checked By	SPG/TJB/JTB
Approved By	KPL/CEE/FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

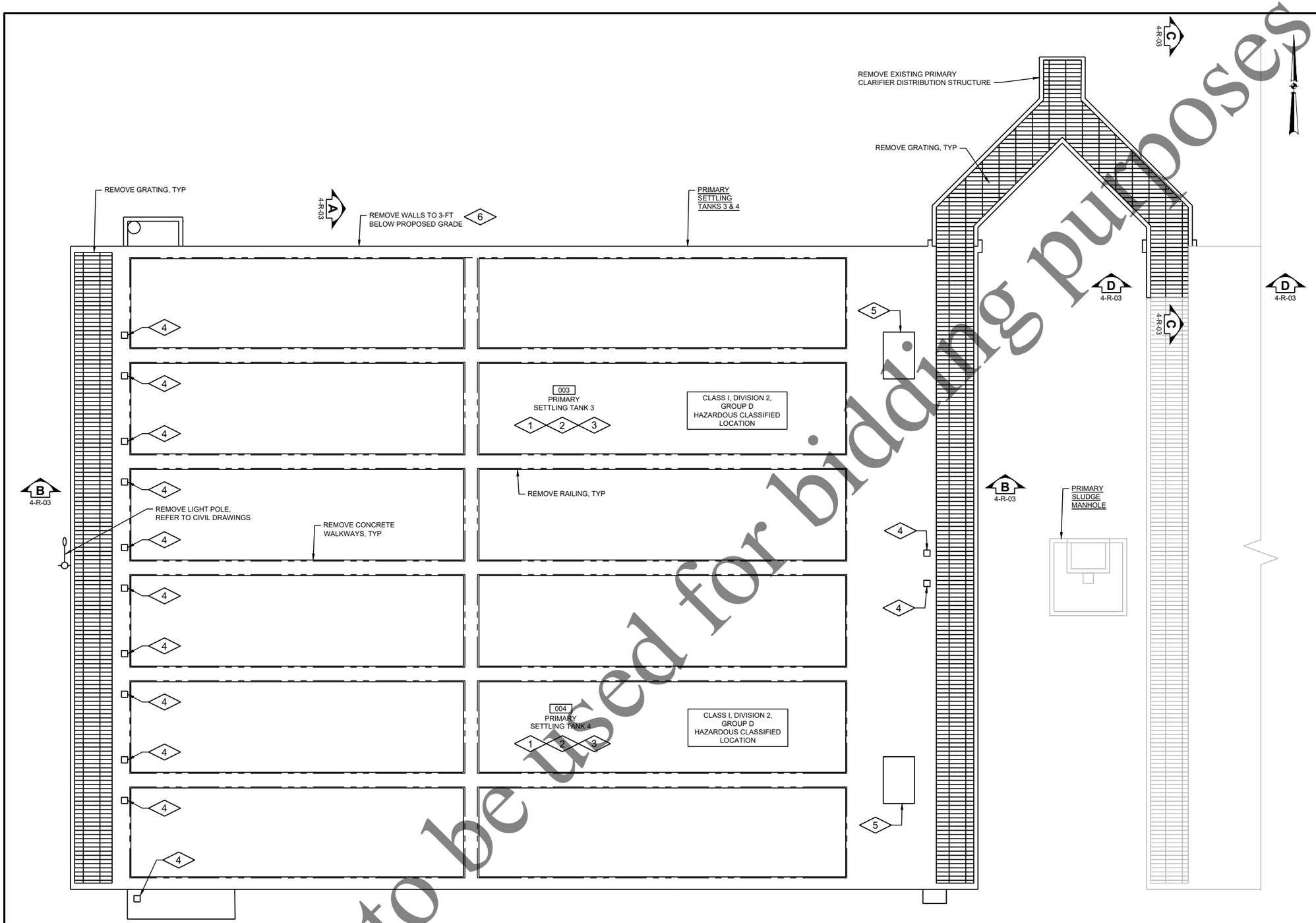
PRIMARY SETTLING TANKS 1 THRU 4
OVERALL LOWER REMOVAL PLAN

DONOHUE 11/23/2021

Sheet No. 48

Drawing No. 4-R-01

file: P:\13852ch\Dwg\4RP1.dwg



REMOVAL GRADE PLAN

0 1' 8'

GENERAL REMOVAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES.

PLAN NOTES:

1. PROVIDE REMOVALS AS INDICATED AND AS REQUIRED FOR PROPOSED WORK.
2. REFER TO DRAWING 2-CR-01 & 02 FOR ADDITIONAL REMOVAL WORK
3. REMOVE ALL EQUIPMENT AND PIPING WITHIN TANKS. EXISTING PRV ON TANK FLOOR TO REMAIN.
4. REMOVE EQUIPMENT, SALVAGE EXISTING ROTORK ACTUATORS AND DELIVER ROTORK ACTUATORS TO OWNER AT LOCATION ONSITE . REMOVE CABLE AND ABOVE GRADE CONDUIT BACK TO SOURCE IN GRAVITY BELT THICKENING BUILDING ELECTRICAL ROOM. CUT AND SEAL ABANDONED BELOW GRADE CONDUIT.
5. REMOVE COLLECTOR DRIVE AND ENTIRE COLLECTION MECHANISM. REMOVE CABLE AND ABOVE GRADE CONDUIT BACK TO SOURCE IN GRAVITY BELT THICKENING BUILDING ELECTRICAL ROOM. CUT AND SEAL ABANDONED BELOW GRADE CONDUIT.
6. SEE DRAWING 2-CP-01 & 02 FOR NEW PIPING LOCATIONS THAT MAY REQUIRE ADDITIONAL WALL REMOVAL DEPTH TO ACCOMMODATE NEW PIPING.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR/CEE/FGM
Drawn By	MTR/CEE/FGM
Checked By	SPG/TJB/JTB
Approved By	KPL/CEE/FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY SETTLING TANKS 1 THRU 4
OVERALL UPPER REMOVAL PLAN

DONOHUE 11/23/2021

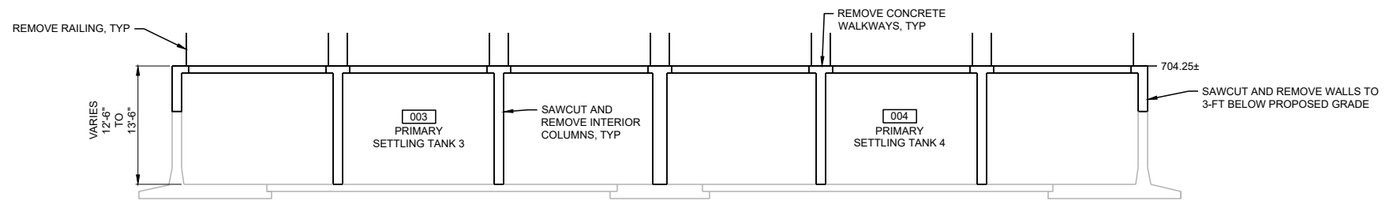
Sheet No. 49

Drawing No. 4-R-02

file: P:\13852chi\Dwg\4RP1.dwg

GENERAL NOTES:

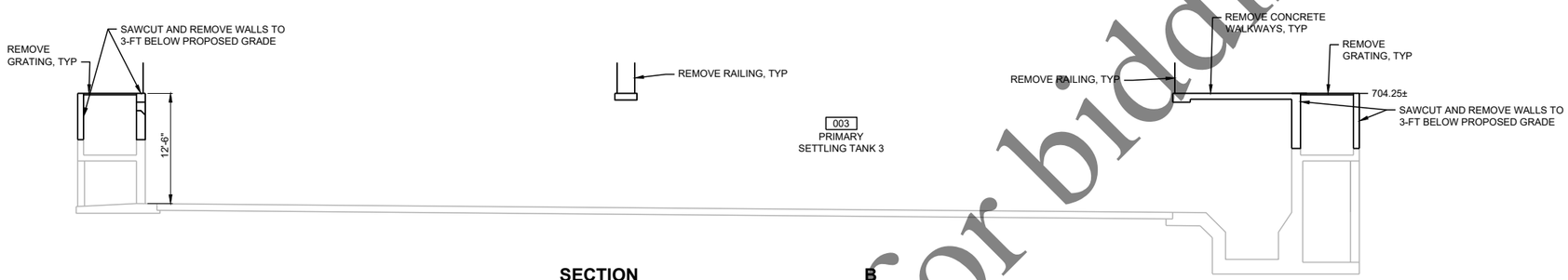
1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES.



SECTION A

0 1' 8'

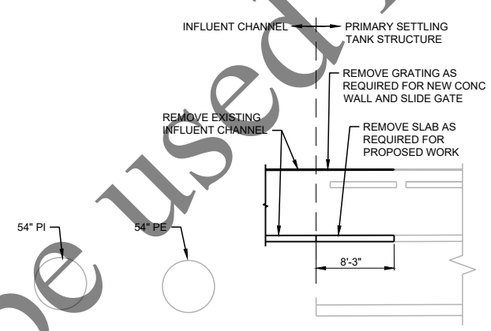
4-R-01
4-R-02



SECTION B

0 1' 8'

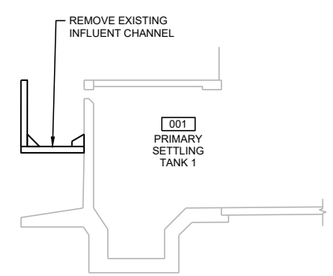
4-R-01
4-R-02



SECTION C

0 1' 8'

4-R-01
4-R-02



SECTION D

0 1' 8'

4-R-01
4-R-02

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR/CEE/FGM
Drawn By	MTR/CEE/FGM
Checked By	SPG/TJB/JTB
Approved By	KPL/CEE/FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY SETTLING TANKS 1 THRU 4
REMOVAL SECTIONS

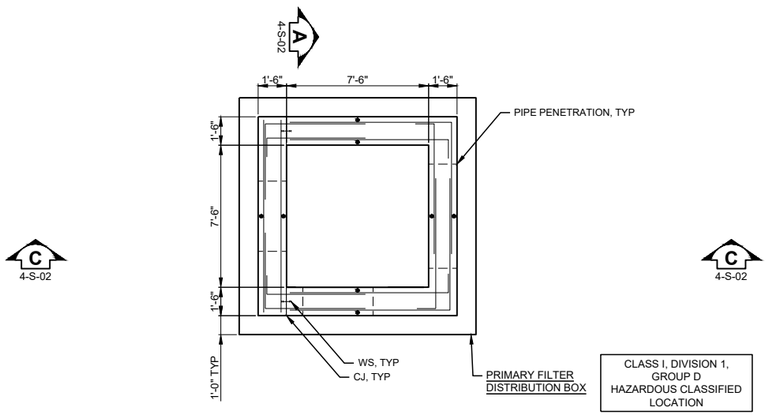
DONOHUE

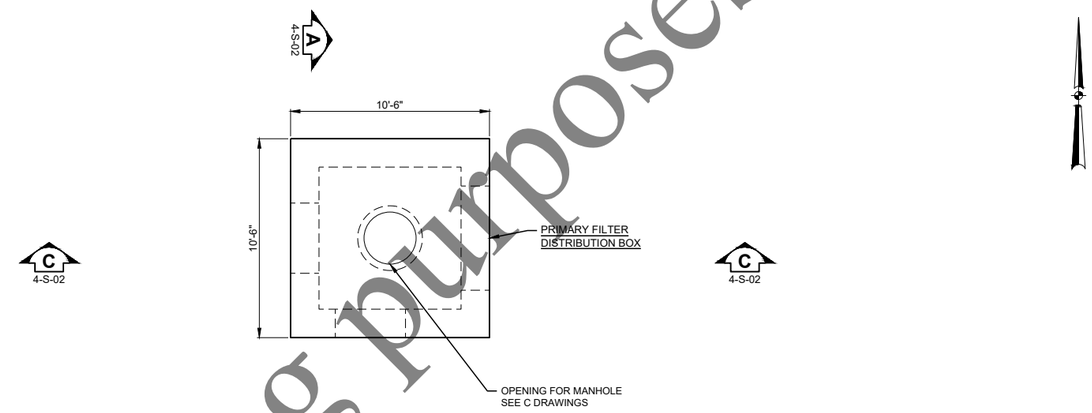
11/23/2021

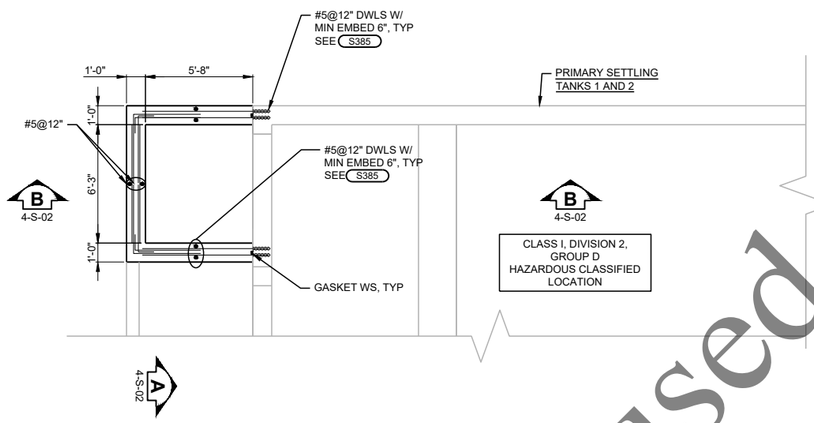
Sheet No. 50

Drawing No. **4-R-03**

file: P:\13852chi\Dwg\4RP1.dwg

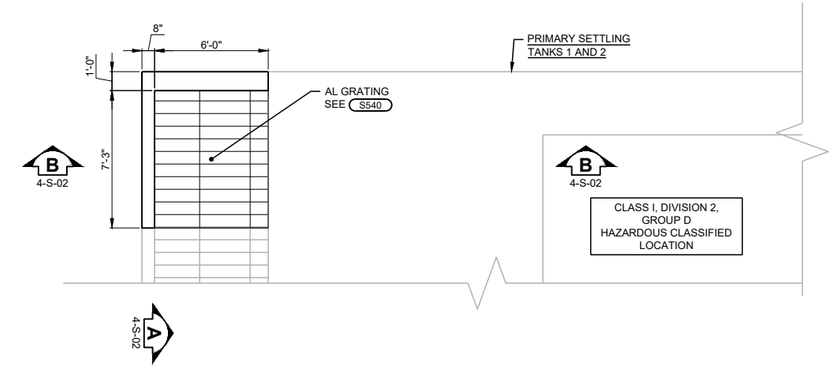






LOWER PLAN

0 1' 4'



GRADE PLAN

0 1' 4'

GENERAL NOTES:

1. ALL CONCRETE SHOWN SHALL ACHIEVE A HIGH-EARLY STRENGTH. CONCRETE MIX DESIGN SHALL CONSIST OF A TYPE I/II CEMENT WITH ADDITIVES TO MEET THIS REQUIREMENT. CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION.
2. ALL REINFORCEMENT SHOWN IS #6@8" UNLESS NOTED OTHERWISE.
3. CONSTRUCTION JOINTS SHOWN ARE PLACED SUCH TO FACILITATE CONSTRUCTION CONSTRAINTS. CONTRACTOR MAY SUBMIT ALTERNATIVE CONSTRUCTION JOINT PLAN TO FACILITATE FASTER CONSTRUCTION. ALTERNATIVE PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

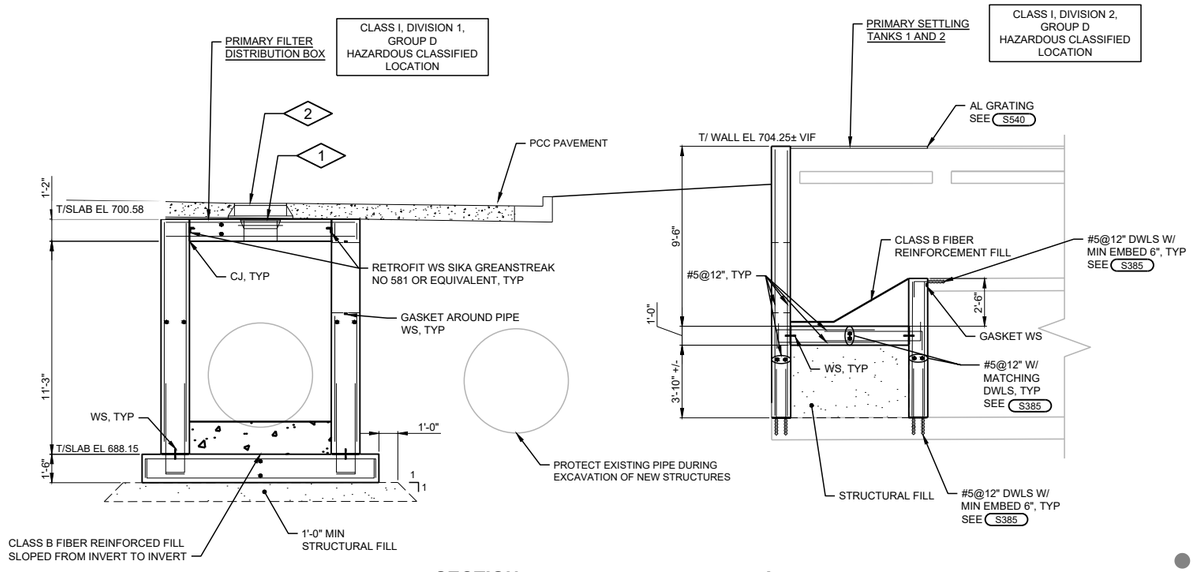
PRIMARY FILTER DISTRIBUTION BOX
ENLARGED PLANS

DONOHUE 11/23/2021

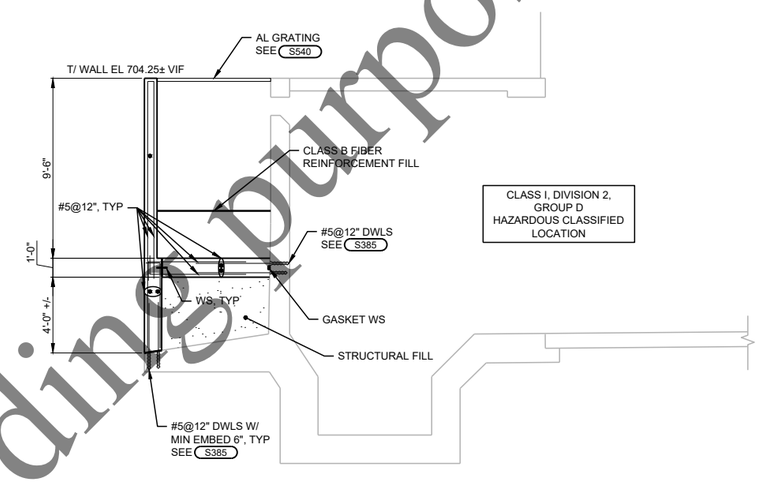
Sheet No. 51

Drawing No. 4-S-01

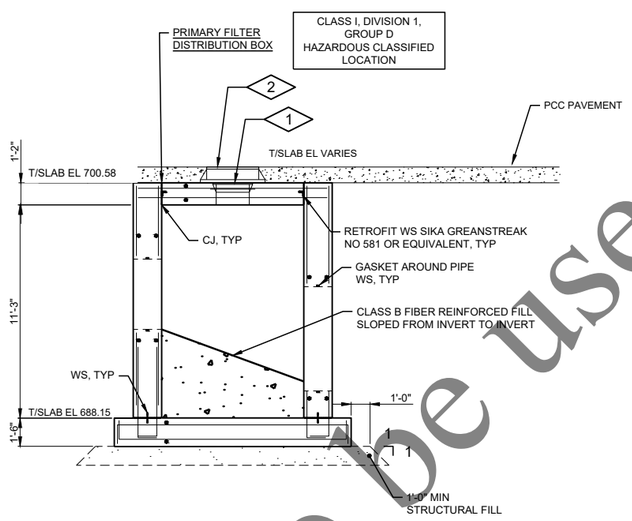
file: P:\13852chl\Dwg\4SP1.dwg



SECTION A
4-S-01
0 1' 4'



SECTION B
4-S-01
0 1' 4'



SECTION C
4-S-01
0 1' 4'

PLAN NOTES:

1. PRIMARY FILTER DISTRIBUTION BOX LOWER FRAME AND COVER PER SPECIFICATION SECTION 33 05 61. FRAME SHALL BE CAST INTO TOP SLAB OF PRIMARY FILTER DISTRIBUTION BOX. RIM ELEVATION TO MATCH TOP OF SLAB.
2. PRIMARY FILTER DISTRIBUTION BOX UPPER FRAME AND COVER PER SPECIFICATION SECTION 33 05 61. CENTER FRAME OVER LOWER FRAME AND COVER. SEE CIVIL DRAWINGS FOR RIM ELEVATION.

GENERAL NOTES:

1. ALL CONCRETE SHOWN SHALL ACHIEVE A HIGH-EARLY STRENGTH. CONCRETE MIX DESIGN SHALL CONSIST OF A TYPE I/II CEMENT WITH ADDITIVES TO MEET THIS REQUIREMENT. CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION.
2. ALL REINFORCEMENT SHOWN IS #6@8" UNLESS NOTED OTHERWISE.
3. CONSTRUCTION JOINTS SHOWN ARE PLACED SUCH TO FACILITATE CONSTRUCTION CONSTRAINTS. CONTRACTOR MAY SUBMIT ALTERNATIVE CONSTRUCTION JOINT PLAN TO FACILITATE FASTER CONSTRUCTION. ALTERNATIVE PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	CEE

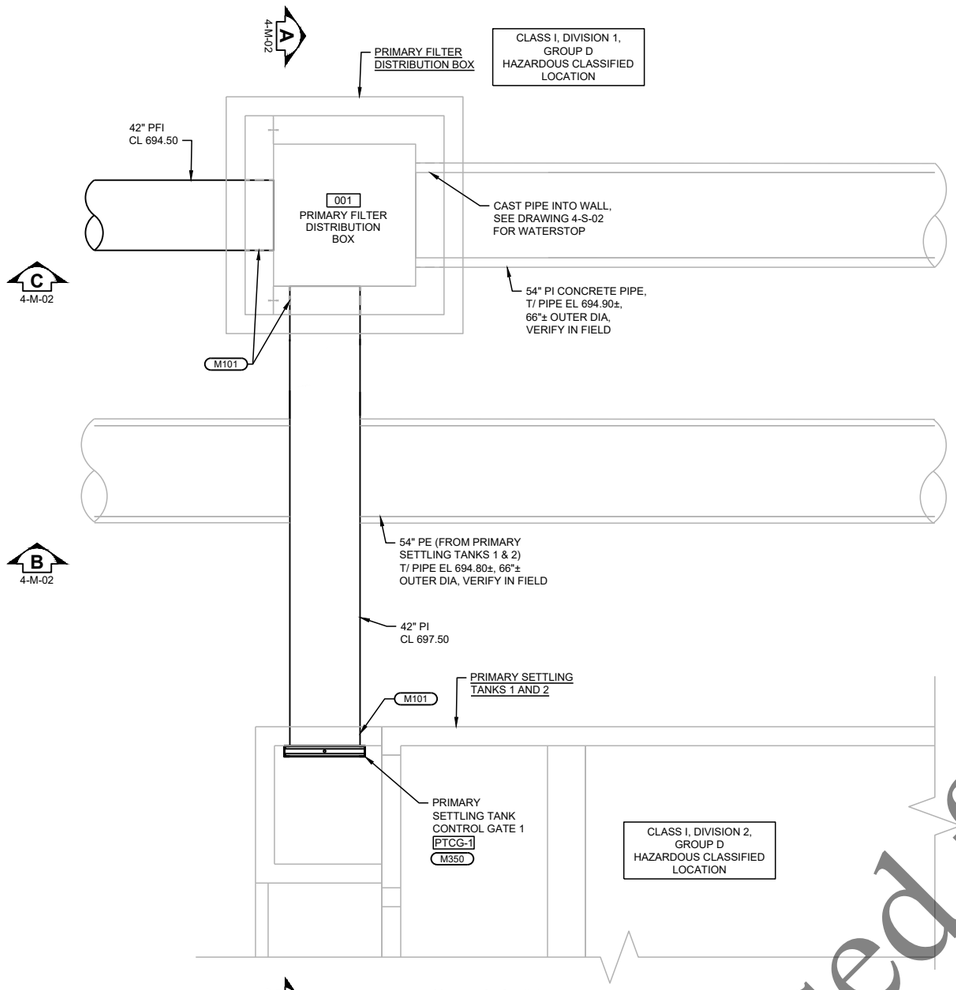
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTER DISTRIBUTION BOX
SECTIONS

DONOHUE 11/23/2021

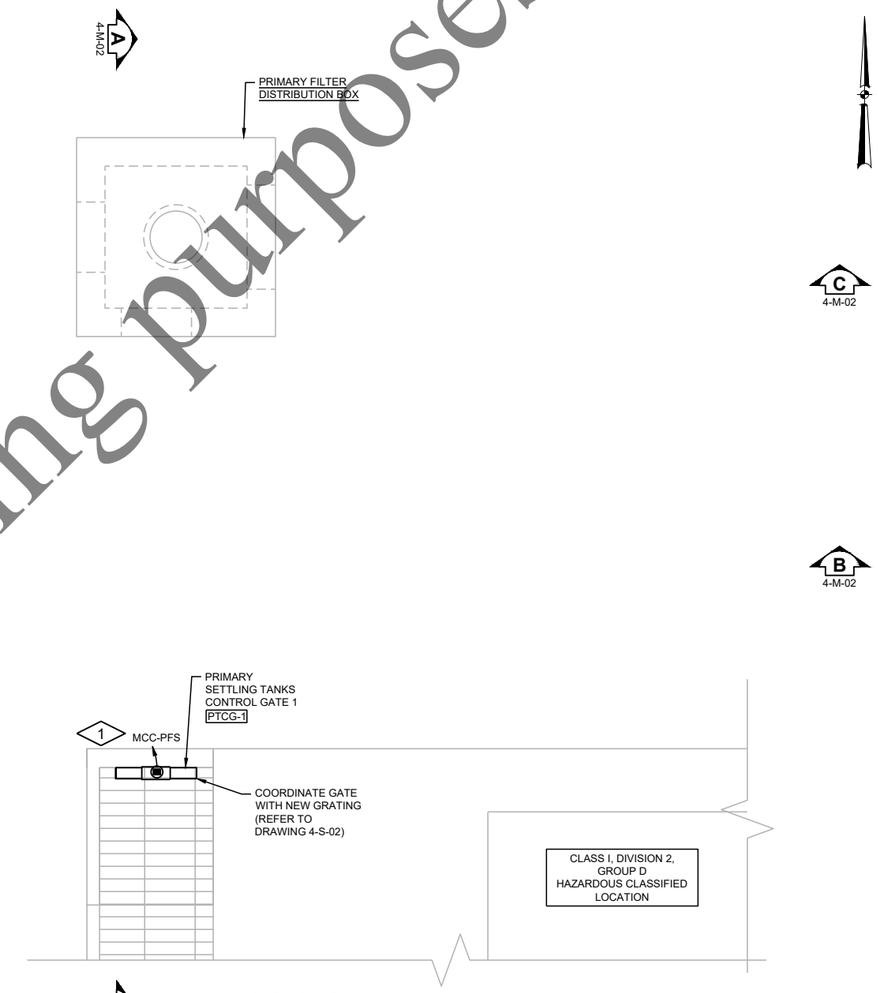
Sheet No. 52
Drawing No. **4-S-02**

file: P:\13852chi\Dwg\4SP1.dwg



LOWER PLAN

0 1' 4'



GRADE PLAN

0 1' 4'

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION	COMMENT
PTCG-1	PRIMARY SETTLING TANK CONTROL GATE 1	MFR.	(2) TSP	PLC-PFS	REFER TO SHEET 9-EN-03A FOR PLC LOCATION
			(2) #14	PLC-PFS	

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.

PLAN NOTES:

1. POWER AND CONTROL CONDUITS SHALL BE EXTENDED WITH DIRECT BURIED CONDUITS FROM MANHOLE DESIGNATED FOR FUTURE PHASE II WORK. SEE DRAWING 2-EN-01 FOR MANHOLE LOCATION.

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Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR/FGM/LPH
Drawn By	MTR/FGM/LPH
Checked By	SPG/JTB/BLG
Approved By	KPL/FGM/BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

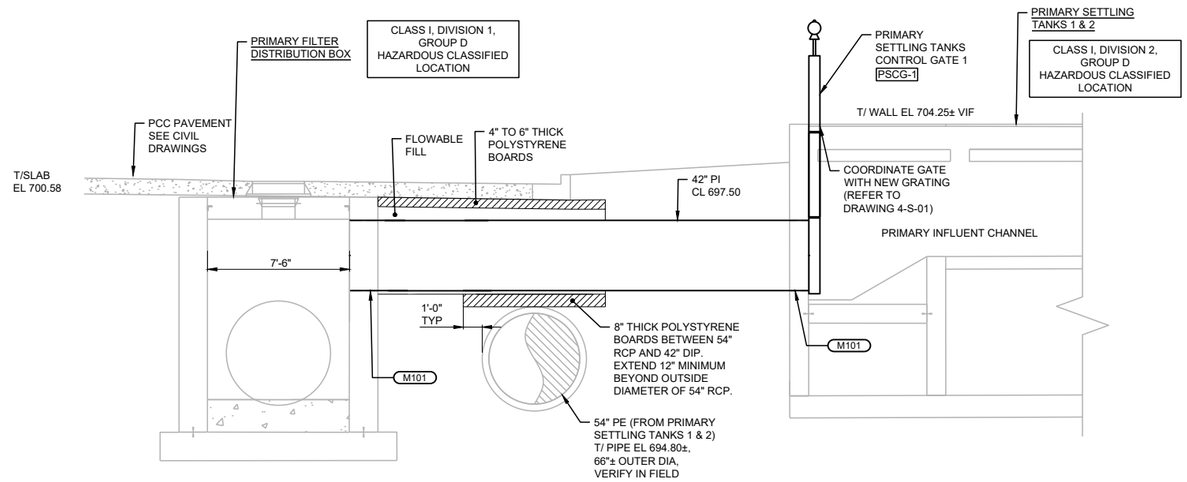
PRIMARY FILTER DISTRIBUTION BOX
ENLARGED PLANS

DONOHUE 11/23/2021

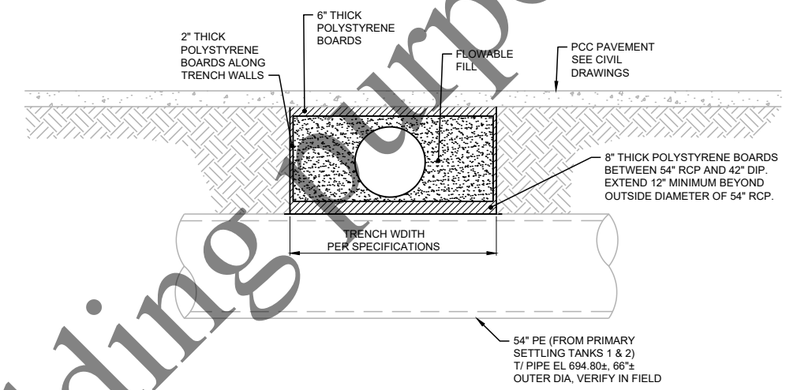
Sheet No. 53

Drawing No. 4-MEN-01

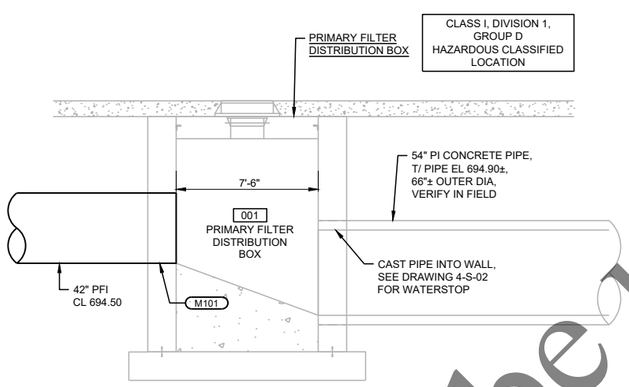
file: P:\13852chi\Dwg\4MENP1.dwg



SECTION A
4-MEN-01
0 1' 4'



SECTION B
4-MEN-01
0 1' 4'



SECTION C
4-MEN-01
0 1' 4'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.

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file: P:\13852chi\Dwg\4MENP1.dwg

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

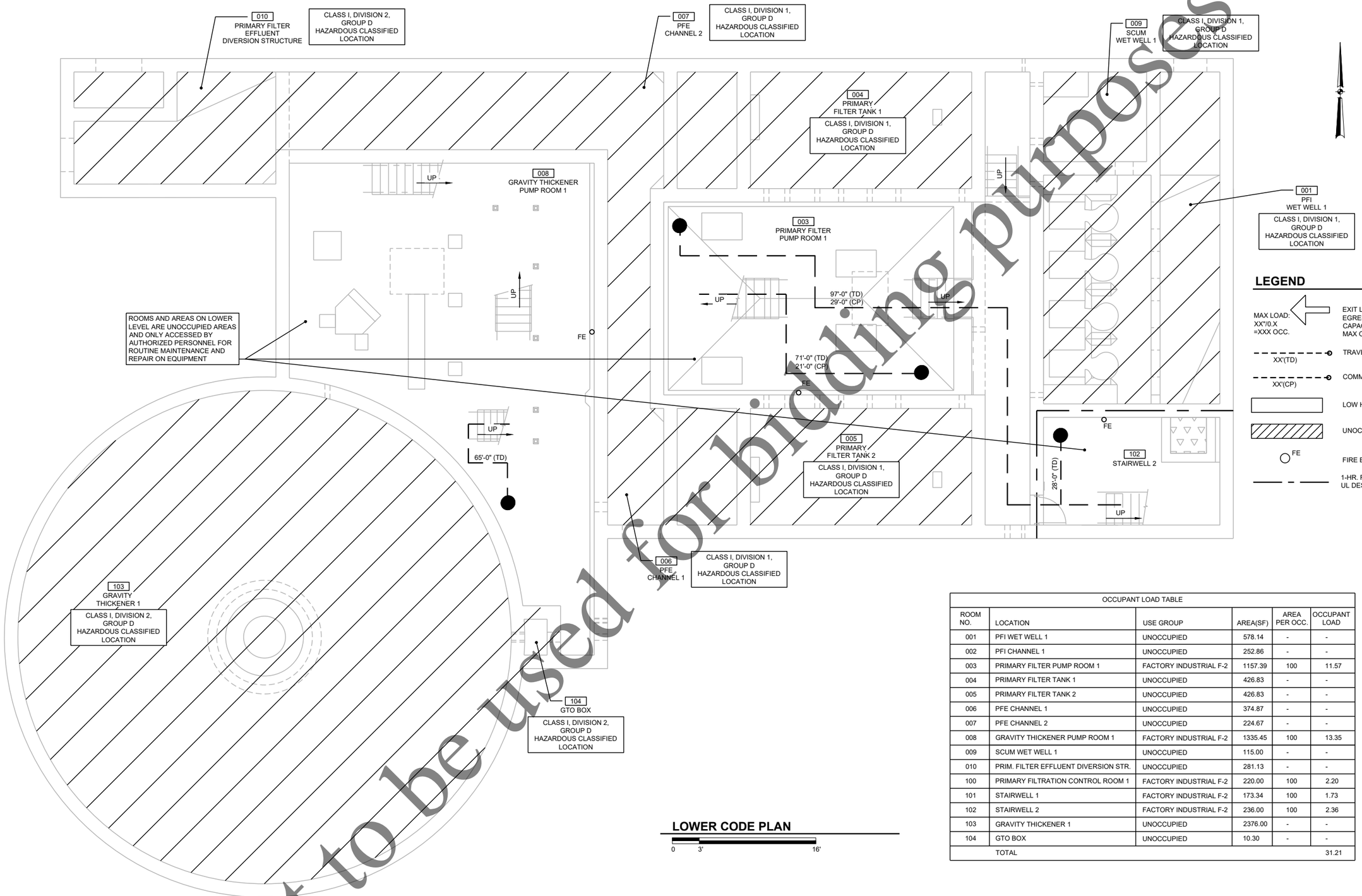
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTER DISTRIBUTION BOX
SECTIONS

DONOHUE 11/23/2021

Sheet No. 54

Drawing No. **4-M-02**



LOWER CODE PLAN

0 3' 16'

OCCUPANT LOAD TABLE					
ROOM NO.	LOCATION	USE GROUP	AREA(SF)	AREA PER OCC.	OCCUPANT LOAD
001	PFI WET WELL 1	UNOCCUPIED	578.14	-	-
002	PFI CHANNEL 1	UNOCCUPIED	252.86	-	-
003	PRIMARY FILTER PUMP ROOM 1	FACTORY INDUSTRIAL F-2	1157.39	100	11.57
004	PRIMARY FILTER TANK 1	UNOCCUPIED	426.83	-	-
005	PRIMARY FILTER TANK 2	UNOCCUPIED	426.83	-	-
006	PFE CHANNEL 1	UNOCCUPIED	374.87	-	-
007	PFE CHANNEL 2	UNOCCUPIED	224.67	-	-
008	GRAVITY THICKENER PUMP ROOM 1	FACTORY INDUSTRIAL F-2	1335.45	100	13.35
009	SCUM WET WELL 1	UNOCCUPIED	115.00	-	-
010	PRIM. FILTER EFFLUENT DIVERSION STR.	UNOCCUPIED	281.13	-	-
100	PRIMARY FILTRATION CONTROL ROOM 1	FACTORY INDUSTRIAL F-2	220.00	100	2.20
101	STAIRWELL 1	FACTORY INDUSTRIAL F-2	173.34	100	1.73
102	STAIRWELL 2	FACTORY INDUSTRIAL F-2	236.00	100	2.36
103	GRAVITY THICKENER 1	UNOCCUPIED	2376.00	-	-
104	GTO BOX	UNOCCUPIED	10.30	-	-
	TOTAL				31.21

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	SRW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
LOWER CODE PLAN

DONOHUE 11/23/2021

Sheet No. 55

Drawing No. 5-A-01

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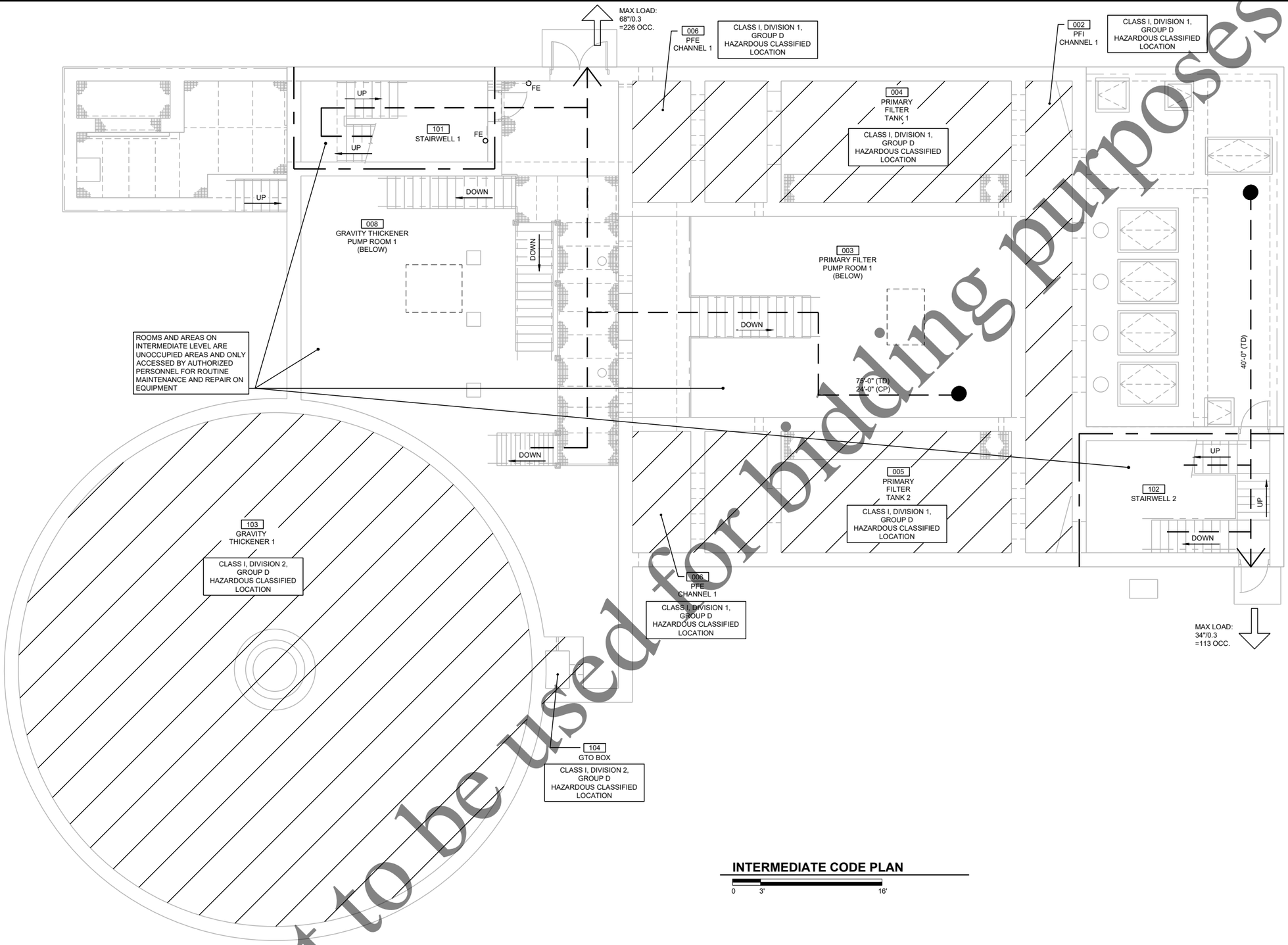

LEGEND

MAX LOAD: XX"/0.X =XXX OCC.	EXIT LOCATION EGRESS COMPONENT WIDTH/ CAPACITY FACTOR = MAX OCC. LOAD
XX'(TD)	TRAVEL DISTANCE
XX'(CP)	COMMON PATH OF TRAVEL
	LOW HAZARD FACTORY INDUSTRIAL F-2
	UNOCCUPIED
FE	FIRE EXTINGUISHER
	1-HR. FIRE-RATED SHAFT ENCLOSURE UL DESIGN NO. U905

INTERMEDIATE CODE PLAN

0 3' 16'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
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Drawn By	CEE
Checked By	TJB
Approved By	SRW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

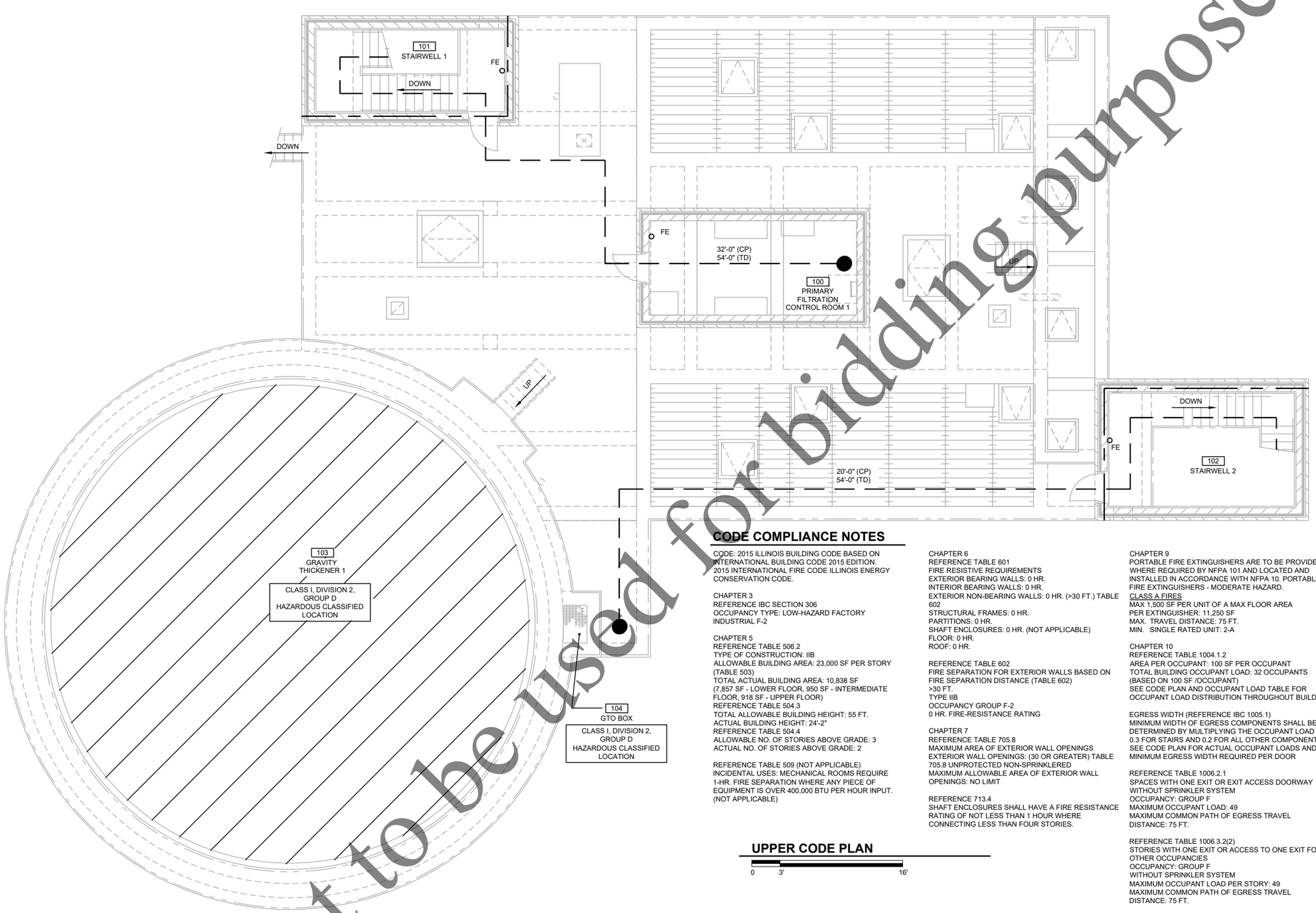
PRIMARY FILTRATION FACILITY 1
INTERMEDIATE CODE PLAN

DONOHUE 11/23/2021

Sheet No. 56

Drawing No. **5-A-02**

file: P:\13852ch\Dwg\5AP1.dwg



LEGEND

MAX LOAD: XX"/0.X =XXX OCC.	EXIT LOCATION EGRESS COMPONENT WIDTH/ CAPACITY FACTOR = MAX OCC. LOAD
XX'(TD)	TRAVEL DISTANCE
XX'(CP)	COMMON PATH OF TRAVEL
	LOW HAZARD FACTORY INDUSTRIAL F-2
	UNOCCUPIED
FE	FIRE EXTINGUISHER
	1-HR. FIRE-RATED SHAFT ENCLOSURE UL DESIGN NO. U905

CODE COMPLIANCE NOTES

CODE: 2015 ILLINOIS BUILDING CODE BASED ON INTERNATIONAL BUILDING CODE 2015 EDITION.
2015 INTERNATIONAL FIRE CODE ILLINOIS ENERGY CONSERVATION CODE.

CHAPTER 3
REFERENCE IBC SECTION 306
OCCUPANCY TYPE: LOW-HAZARD FACTORY INDUSTRIAL F-2

CHAPTER 5
REFERENCE TABLE 506.2
TYPE OF CONSTRUCTION: IIB
ALLOWABLE BUILDING AREA: 23,000 SF PER STORY (TABLE 503)
TOTAL ACTUAL BUILDING AREA: 10,838 SF
(7,857 SF - LOWER FLOOR, 950 SF - INTERMEDIATE FLOOR, 918 SF - UPPER FLOOR)
REFERENCE TABLE 504.3
TOTAL ALLOWABLE BUILDING HEIGHT: 55 FT.
ACTUAL BUILDING HEIGHT: 24'-2"
REFERENCE TABLE 504.4
ALLOWABLE NO. OF STORIES ABOVE GRADE: 3
ACTUAL NO. OF STORIES ABOVE GRADE: 2

REFERENCE TABLE 509 (NOT APPLICABLE)
INCIDENTAL USES: MECHANICAL ROOMS REQUIRE 1-HR. FIRE SEPARATION WHERE ANY PIECE OF EQUIPMENT IS OVER 400,000 BTU PER HOUR INPUT. (NOT APPLICABLE)

CHAPTER 6
REFERENCE TABLE 601
FIRE RESISTIVE REQUIREMENTS
EXTERIOR BEARING WALLS: 0 HR.
INTERIOR BEARING WALLS: 0 HR.
EXTERIOR NON-BEARING WALLS: 0 HR. (>30 FT.) TABLE 602
STRUCTURAL FRAMES: 0 HR.
PARTITIONS: 0 HR.
SHAFT ENCLOSURES: 0 HR. (NOT APPLICABLE)
FLOOR: 0 HR.
ROOF: 0 HR.

REFERENCE TABLE 602
FIRE SEPARATION FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE (TABLE 602)
>30 FT.
TYPE IIB
OCCUPANCY GROUP F-2
0 HR. FIRE-RESISTANCE RATING

CHAPTER 7
REFERENCE TABLE 705.8
MAXIMUM AREA OF EXTERIOR WALL OPENINGS
EXTERIOR WALL OPENINGS: (30 OR GREATER) TABLE 705.8 UNPROTECTED NON-SPRINKLERED
MAXIMUM ALLOWABLE AREA OF EXTERIOR WALL OPENINGS: NO LIMIT

REFERENCE 713.4
SHAFT ENCLOSURES SHALL HAVE A FIRE RESISTANCE RATING OF NOT LESS THAN 1 HOUR WHERE CONNECTING LESS THAN FOUR STORIES.

CHAPTER 9
PORTABLE FIRE EXTINGUISHERS ARE TO BE PROVIDED WHERE REQUIRED BY NFPA 101 AND LOCATED AND INSTALLED IN ACCORDANCE WITH NFPA 10. PORTABLE FIRE EXTINGUISHERS - MODERATE HAZARD.
CLASS A FIRES
MAX 1,500 SF PER UNIT OF A MAX FLOOR AREA
PER EXTINGUISHER: 11,250 SF
MAX. TRAVEL DISTANCE: 75 FT.
MIN. SINGLE RATED UNIT: 2-A

CHAPTER 10
REFERENCE TABLE 1004.1.2
AREA PER OCCUPANT: 100 SF PER OCCUPANT
TOTAL BUILDING OCCUPANT LOAD: 32 OCCUPANTS (BASED ON 100 SF /OCCUPANT)
SEE CODE PLAN AND OCCUPANT LOAD TABLE FOR OCCUPANT LOAD DISTRIBUTION THROUGHOUT BUILDING

EGRESS WIDTH (REFERENCE IBC 1005.1)
MINIMUM WIDTH OF EGRESS COMPONENTS SHALL BE DETERMINED BY MULTIPLYING THE OCCUPANT LOAD BY 0.3 FOR STAIRS AND 0.2 FOR ALL OTHER COMPONENTS.
SEE CODE PLAN FOR ACTUAL OCCUPANT LOADS AND MINIMUM EGRESS WIDTH REQUIRED PER DOOR

REFERENCE TABLE 1006.2.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY WITHOUT SPRINKLER SYSTEM
OCCUPANCY: GROUP F
MAXIMUM OCCUPANT LOAD: 49
MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE: 75 FT.

REFERENCE TABLE 1006.3.2(2)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES
OCCUPANCY: GROUP F
WITHOUT SPRINKLER SYSTEM
MAXIMUM OCCUPANT LOAD PER STORY: 49
MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE: 75 FT.

REFERENCE SECTION 1010.1.2.1
DOORS SHALL SWING IN THE DIRECTION OF EGRESS WHERE SERVING AN OCCUPANT LOAD OF 50 OR MORE PERSONS.

REFERENCE TABLE 1014.3
COMMON PATH OF EGRESS: 75 FT. WITHOUT SPRINKLER SYSTEM
NOTE: ROOMS AND AREAS ON LOWER LEVEL ARE UNOCCUPIED AREAS AND ONLY ACCESSED BY AUTHORIZED PERSONNEL FOR ROUTINE MAINTENANCE AND REPAIR ON EQUIPMENT.

REFERENCE TABLE 1017.2
EXIT ACCESS TRAVEL DISTANCE:
LOW-HAZARD FACTORY INDUSTRIAL F-2 OCCUPANCY: 300 FT. WITHOUT SPRINKLER SYSTEM

SECTION 1019.3
EXIT ACCESS STAIRWAYS AND RAMPS EXCEPTION NO. 1:
IN OTHER THAN GROUP I-2 AND GROUP 1-3 OCCUPANCIES, EXIT STAIRS THAT SERVE OR ATMOSPHERICALLY COMMUNICATE BETWEEN ONLY TWO STORIES ARE NOT REQUIRED TO BE ENCLOSED.

REFERENCE TABLE 1020.2
MINIMUM CORRIDOR WIDTH: 36 IN. WITH OCCUPANT LOAD (LESS THAN 50 OCCUPANTS)
ACCESS TO MECHANICAL SYSTEMS OR EQUIPMENT: 24 IN.
STAIRWAY WIDTH: 36 IN. MINIMUM (LESS THAN 50 OCCUPANTS)

REFERENCE SECTION 1023.2
ENCLOSURES FOR INTERIOR EXIT STAIRWAYS SHALL BE CONSTRUCTED AS FIRE BARRIERS IN ACCORDANCE WITH SECTION 707. INTERIOR EXIT STAIRWAYS SHALL HAVE A FIRE RESISTANCE OF NOT LESS THAN 1 HOUR WHERE CONNECTING LESS THAN FOUR STORIES.

UPPER CODE PLAN

0 3' 16'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
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Drawn By	CEE
Checked By	TJB
Approved By	SRW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
UPPER CODE PLAN

DONOHUE 11/23/2021

Sheet No. 57

Drawing No. 5-A-03

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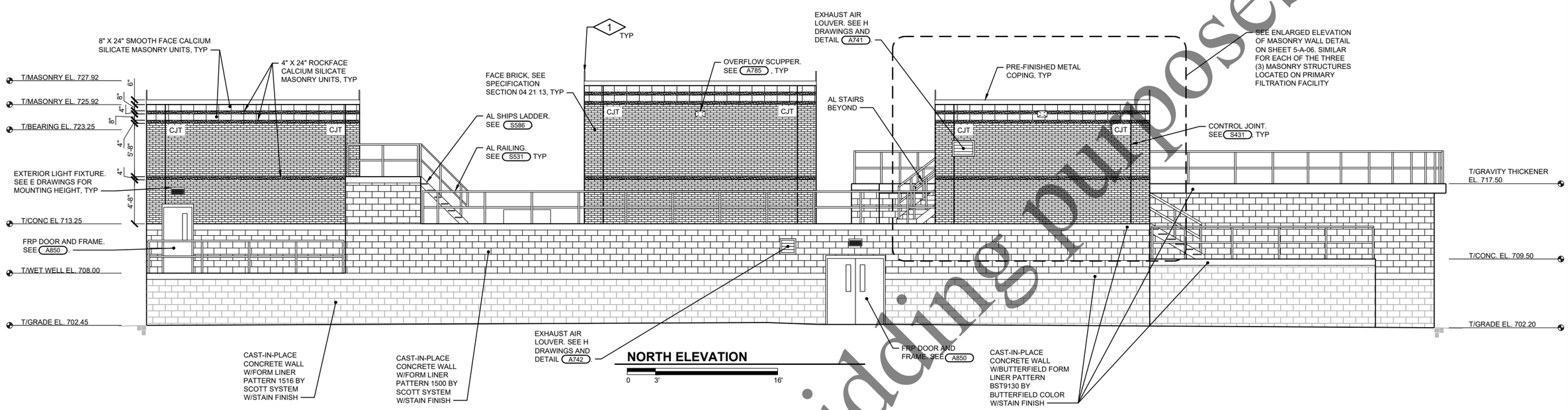
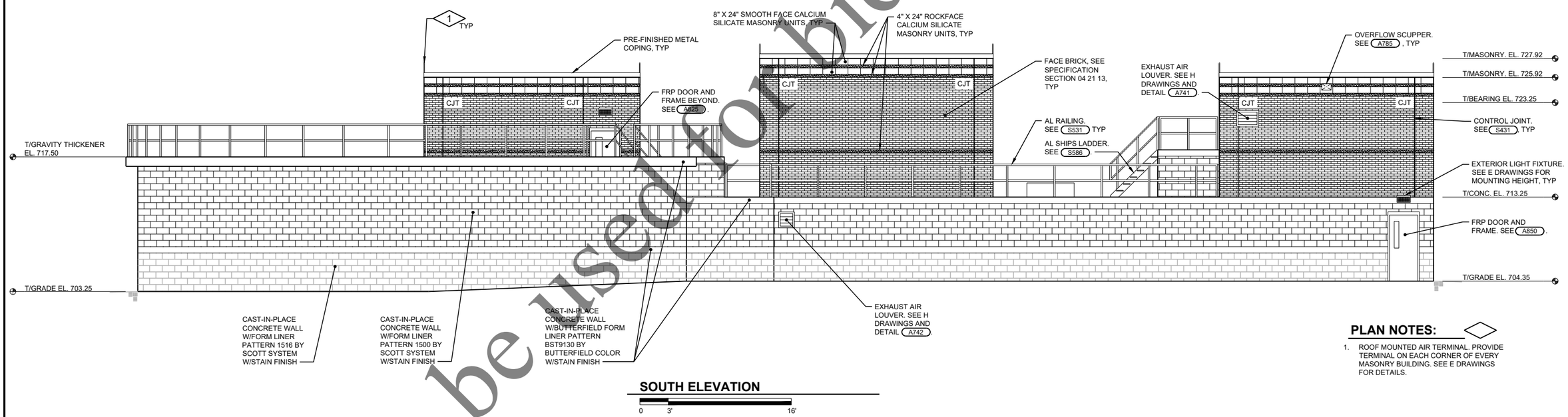


NORTH ELEVATION



SOUTH ELEVATION

PLAN NOTES:

1. ROOF MOUNTED AIR TERMINAL. PROVIDE TERMINAL ON EACH CORNER OF EVERY MASONRY BUILDING. SEE E DRAWINGS FOR DETAILS.

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

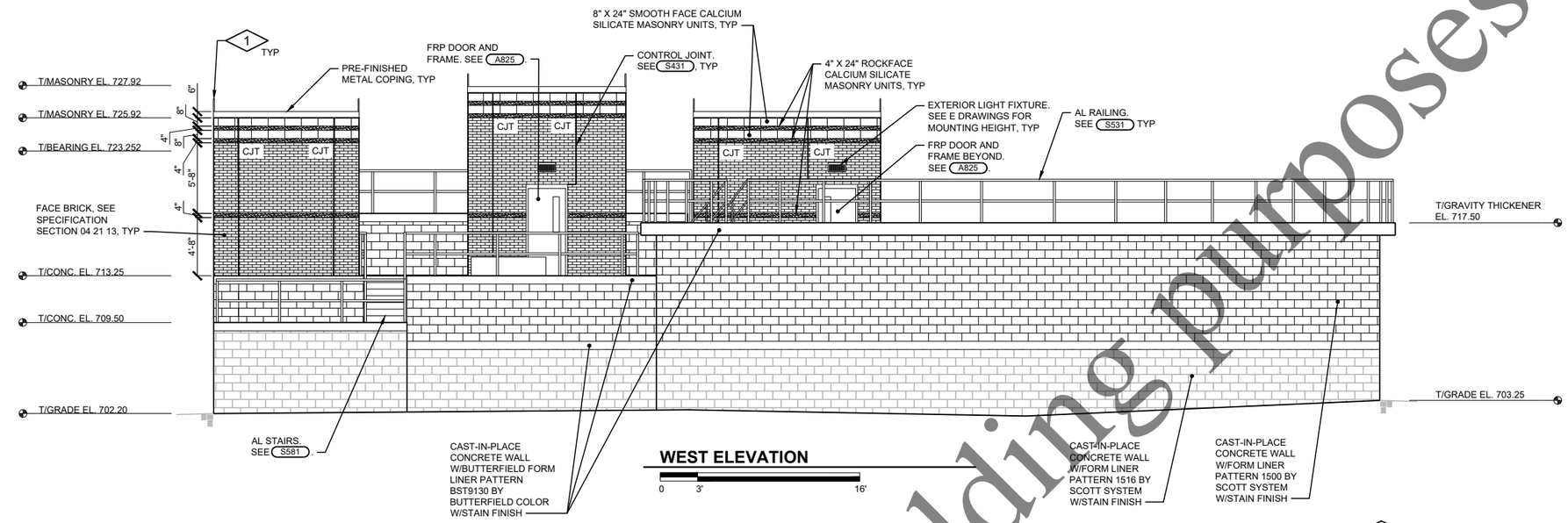
PRIMARY FILTRATION FACILITY 1
ELEVATIONS

DONOHUE 11/23/2021

Sheet No. 58

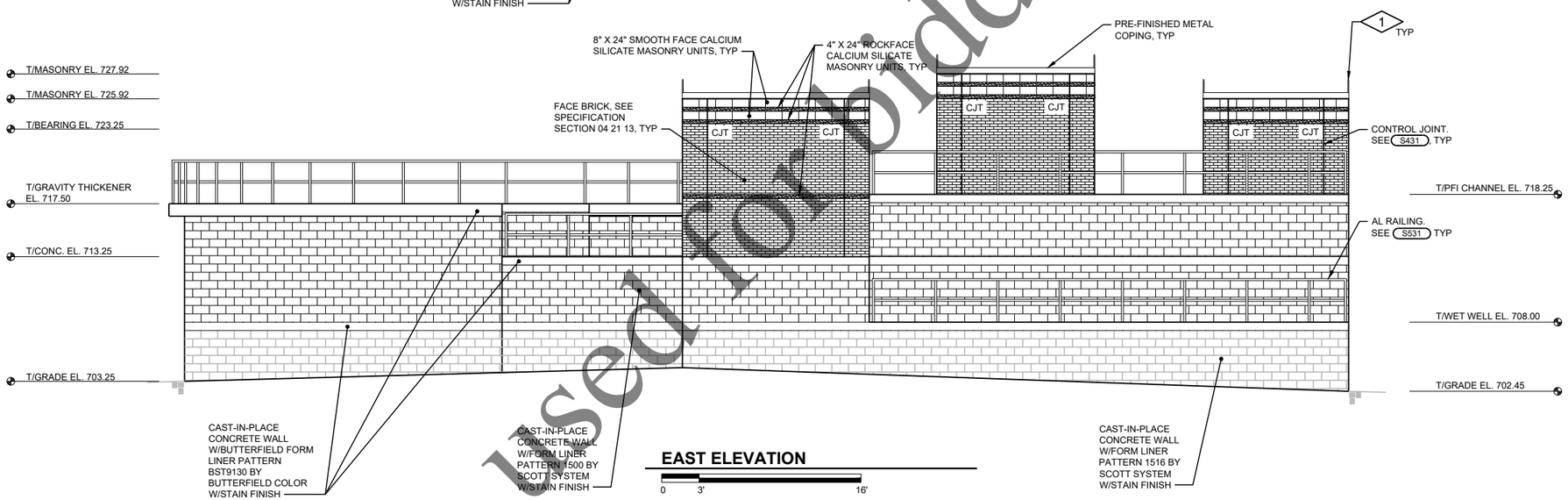
Drawing No. 5-A-04

file: P:\13852chi\Dwg\5AP2.dwg



WEST ELEVATION

0 3' 16'



EAST ELEVATION

0 3' 16'

PLAN NOTES:

1. ROOF MOUNTED AIR TERMINAL. PROVIDE TERMINAL ON EACH CORNER OF EVERY MASONRY BUILDING. SEE E DRAWINGS FOR DETAILS.

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file: P:\13852ch\Dwg\5AP2.dwg

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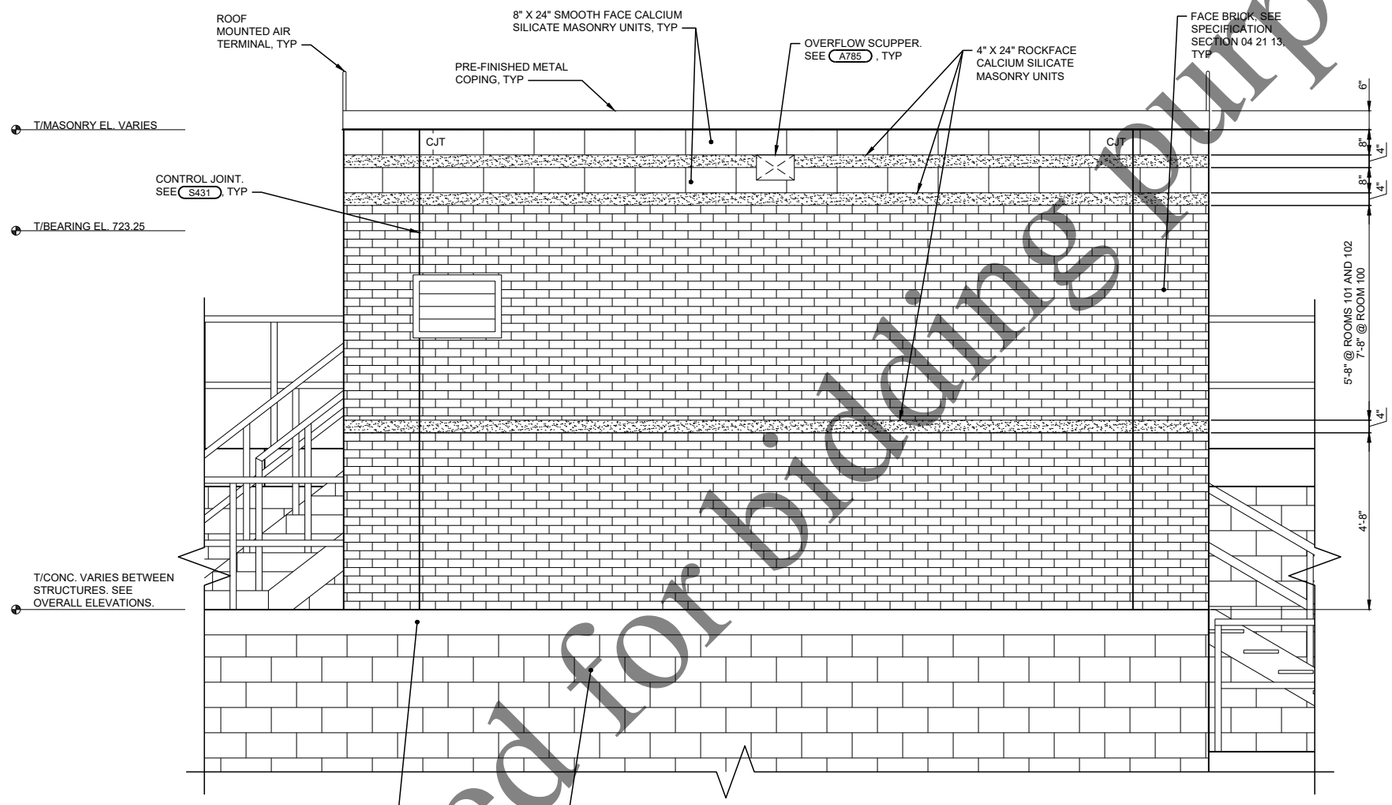
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
ELEVATIONS

DONOHUE 11/23/2021

Sheet No. 59

Drawing No. 5-A-05



GENERAL NOTES:

1. ELEVATIONS OF DECORATIVE CONCRETE FORM LINER PATTERNS, FACE BRICK, CMU AND CALCIUM SILICATE MASONRY UNITS ARE EQUIVALENT ON ALL BUILDING WALLS.
2. SEE SPECIFICATION SECTION 03 11 16 FOR STAIN FINISHES ON CAST-IN-PLACE CONCRETE FORM LINERS.

ENLARGED TYPICAL MASONRY WALL ELEVATION

0 1' 2'

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file: P:\13852chi\Dwg\5AP2.dwg

Four Rivers Sanitation Authority

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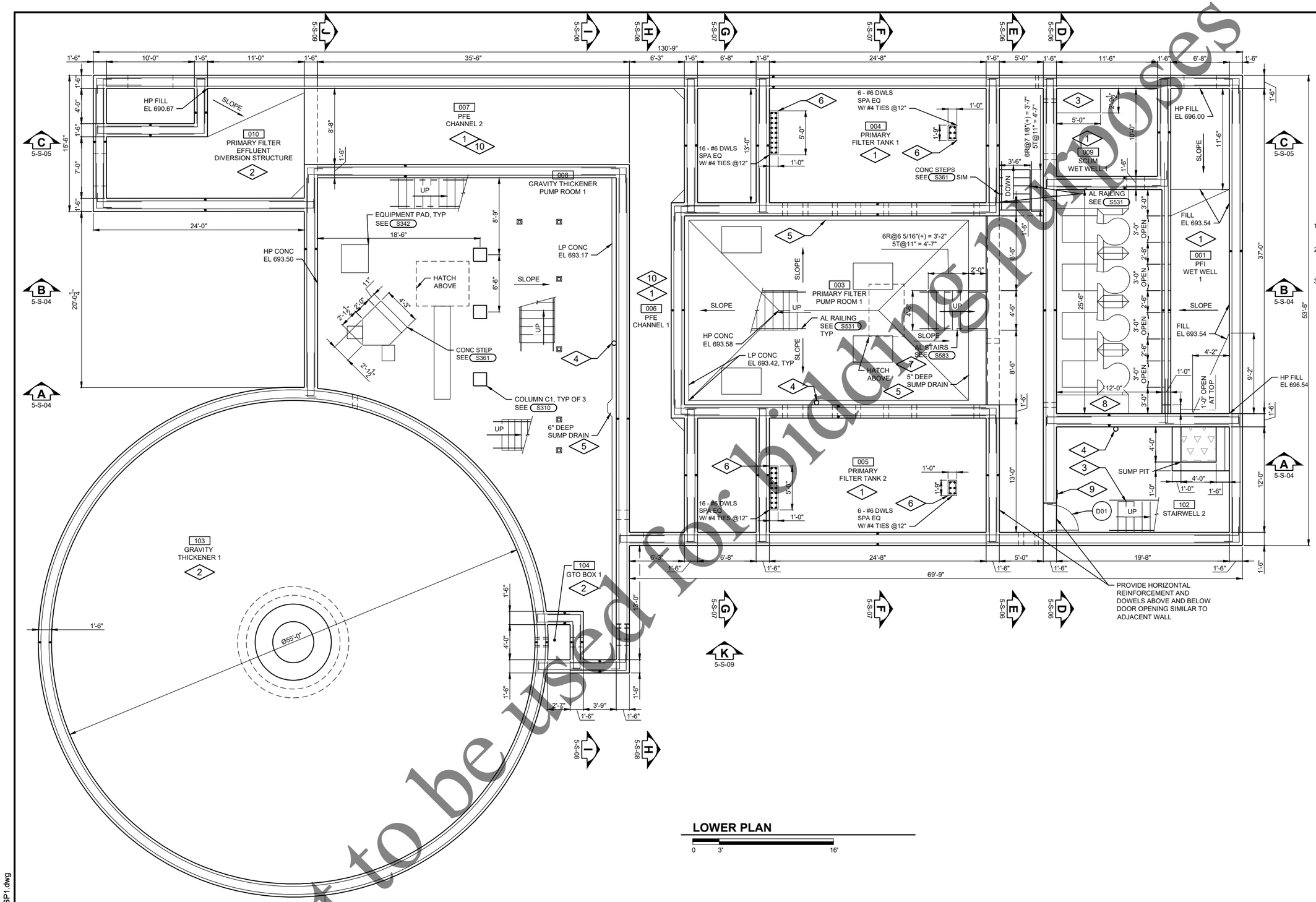
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
ELEVATION

DONOHUE 11/23/2021

Sheet No. 60

Drawing No. **5-A-06**



LOWER PLAN

0 3' 16'

GENERAL NOTES:

1. ALL REINFORCEMENT SHOWN IS #6@8" UNLESS NOTED OTHERWISE.
2. CLASS B FIBER REINFORCED CONCRETE FILL PER PUMP MANUFACTURER'S REQUIREMENTS.
3. CONTRACTOR SHALL FIELD VERIFY T/SLAB ELEVATIONS AT STAIR LANDINGS. COORDINATE FINAL STAIR DIMENSIONS ACCORDINGLY.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
3. CONCRETE STAIRS. SEE S351 AND S352
4. PROVIDE WALL MOUNTED FIRE EXTINGUISHER.
5. SUMP DRAIN. SEE S335
6. COORDINATE FINAL PEDESTAL SIZE AND LOCATION WITH FILTER MFR'S GENERAL ARRANGEMENT.
7. CONTRACTOR SHALL FIELD VERIFY T/SLAB ELEVATIONS AT STAIR LANDINGS. COORDINATE FINAL STAIR DIMENSIONS ACCORDINGLY.
8. COORDINATE FINAL GROUT LAYOUT AND SLOPES W/ PUMP MFR.
9. WARNING SIGN. MOUNT BOTTOM @ 5'-0" AFF. SEE A920
10. COAT TOP SLAB, WALLS, AND BOTTOM SLAB WITH XYPEX CEMENTITIOUS WATERPROOF COATING APPROVED BY ENGINEER.
11. CONCRETE FLOOR RECESSED 3" FOR PUMP. COORDINATE FINAL SIZE OF RECESS WITH PUMP MFR. ADJACENT VERTICAL WALL DOWELS AND MAT REINFORCEMENT ARE #6@6" EW, EF UNDER FLOOR RECESSION. FILL FRP BASIN WITH CONCRETE (OUTSIDE OF WET WELL) AND DROP FRP BASIN INTO PLACE AFTER CONCRETE HAS CURED. PERFORM WORK IN ACCORDANCE WITH REQUIREMENT IN SPECIFICATION 43 23 13 - 2.04 MANUFACTURER'S INSTRUCTIONS.

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

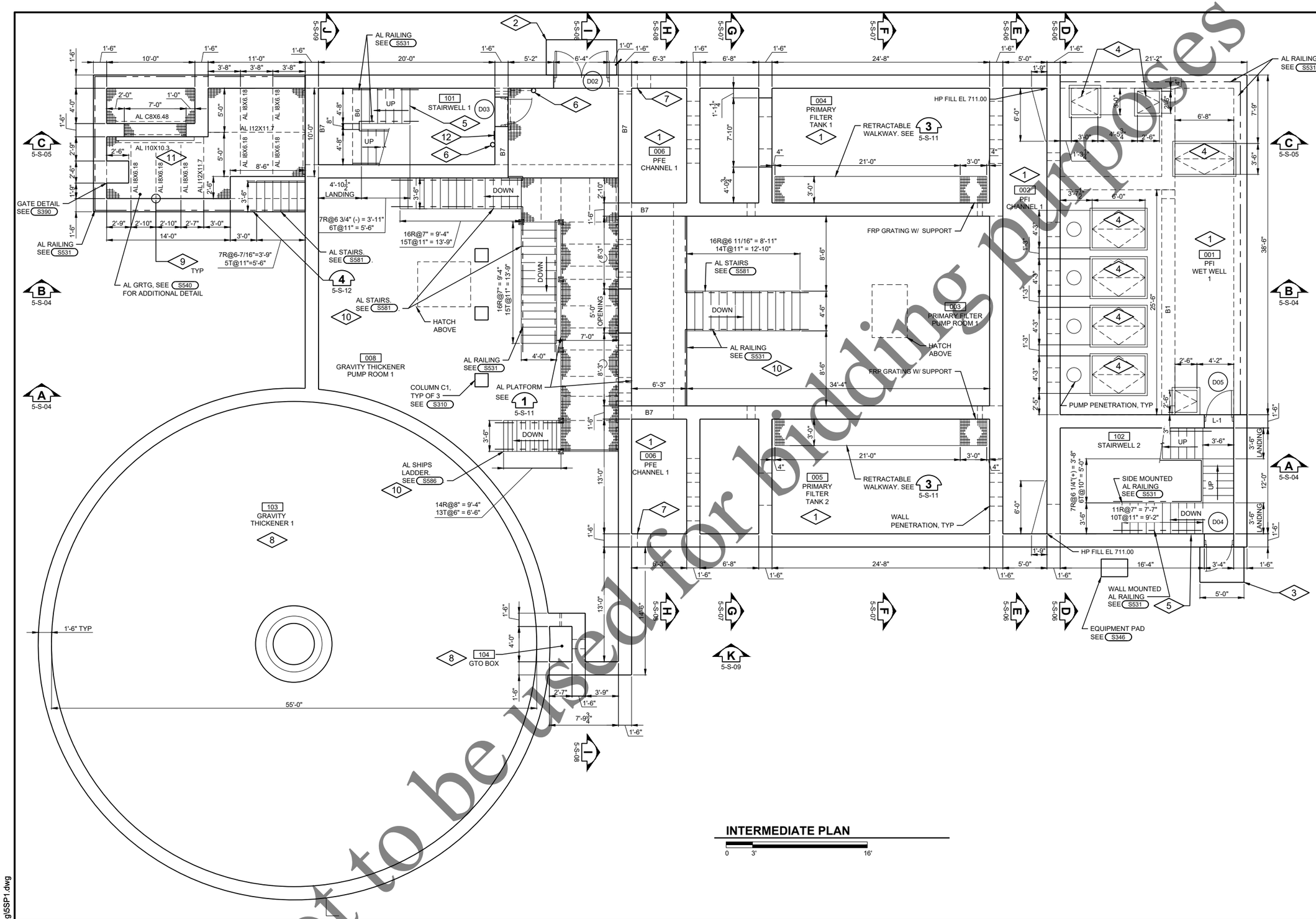
PRIMARY FILTRATION FACILITY 1
LOWER PLAN

DONOHUE 11/23/2021

Sheet No. 61

Drawing No. 5-S-01

file: P:\13852chi\Dwg\5SP1.dwg



PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. 4'-0" X 8'-0" DOOR STOOP, SEE S360
3. 4'-0" X 5'-0" DOOR STOOP, SEE S360
4. ALUMINUM DRAINAGE CHANNEL HATCH. PIPE DRAIN BELOW.
5. CONCRETE STAIRS. SEE S351 AND S352
6. PROVIDE WALL MOUNTED FIRE EXTINGUISHER.
7. EXHAUST AIR LOUVER. SEE H DRAWINGS AND DETAIL A742
8. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
9. PROVIDE A DOUBLE CLIP ANGLE CONNECTION WITH 2 - 3/4" DIA SS BOLTS AND 4 - 3/4" DIA SS CONC ANCHORS.
10. CONTRACTOR SHALL FIELD VERIFY T/SLAB ELEVATIONS AT STAIR LANDINGS. COORDINATE FINAL STAIR DIMENSIONS ACCORDINGLY.
11. COORDINATE LOCATION OF BEAM WITH GATE.
12. WARNING SIGN. MOUNT BOTTOM @ 5'-0" AFF. SEE A920

INTERMEDIATE PLAN

0 3' 16'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
INTERMEDIATE PLAN

DONOHUE 11/23/2021

Sheet No. 62

Drawing No. 5-S-02

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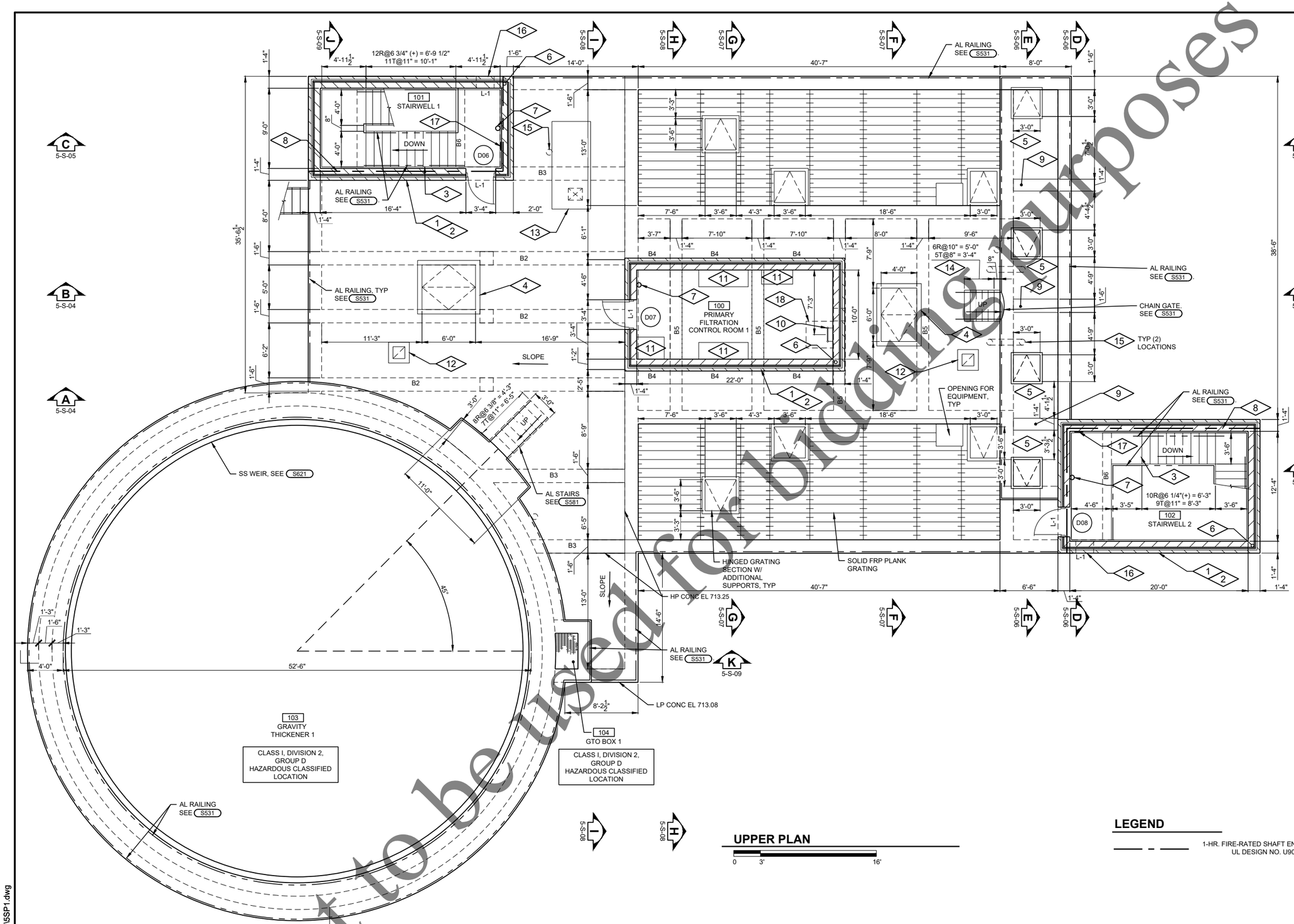

UPPER PLAN

0 3' 16'

PLAN NOTES:

1. ROOF CONSTRUCTION
   - FULLY ADHERED WHITE TPO MEMBRANE ROOFING
   - FULLY ADHERED TAPERED POLYISOCYANURATE INSULATION (R-30 AVERAGE)
   - AIR AND WATER BARRIER
   - 8" PRECAST CONCRETE ROOF PLANK
2. WALL CONSTRUCTION (R-24.45)
   - 4" FACE BRICK
   - AIR SPACE
   - 2" POLYISOCYANURATE INSULATION
   - AIR BARRIER
   - 8" CMU (FILL CORES W/FOAM INSULATION)
3. CONCRETE STAIRS. SEE S351 AND S352
4. ALUMINUM ROOF HATCH WITH 6" X 1'-6"H CONCRETE CURB. SEE S560 AND S325
5. ALUMINUM DRAINAGE CHANNEL HATCH. PIPE DRAIN BELOW.
6. #5@32" W/ 1-#5 @ CORNERS AND ENDS. SEE S451
7. PROVIDE WALL MOUNTED FIRE EXTINGUISHER.
8. 1-HR. FIRE-RATED SHAFT ENCLOSURE
9. GATE STEM COVER. SEE 5 / 5-S-12
10. ALUMINUM LADDER W/ RETRACTABLE SAFETY POST. SEE S526
11. EQUIPMENT PAD. SEE S340
12. EXHAUST FAN ON 6" WIDE CONC CURB. SEE H DRAWINGS AND DETAIL S325
13. MAKE-UP AIR UNIT ON 6" WIDE CONC CURB WHERE REQUIRED BY MFR. SEE H DRAWINGS AND DETAIL S325
14. AL SHIPS LADDER. SEE S586
15. PIPE PENETRATION. SEE H DRAWINGS.
16. EXHAUST AIR LOUVER. SEE H DRAWINGS AND DETAIL A741
17. WARNING SIGN. MOUNT BOTTOM @ 5'-0" AFF. SEE A920
18. OUTLINE OF 3'-0" X 3'-0" ROOF HATCH ABOVE.

LEGEND

1-HR. FIRE-RATED SHAFT ENCLOSURE
UL DESIGN NO. U905

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
UPPER PLAN

DONOHUE 11/23/2021

Sheet No. 63

Drawing No. 5-S-03

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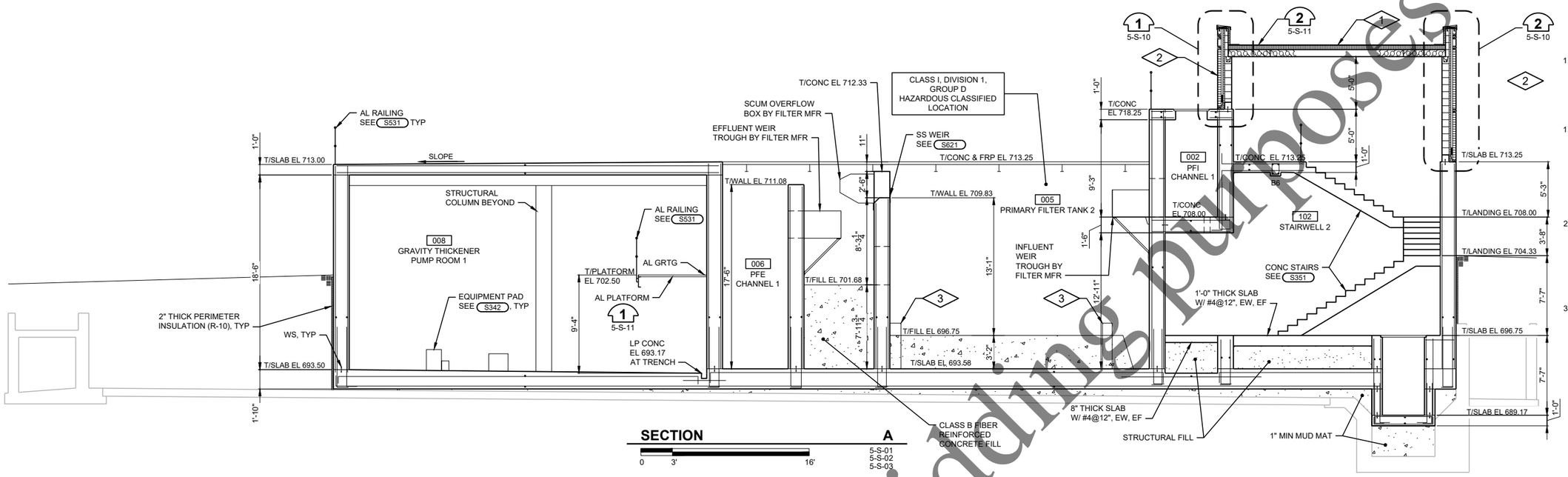


SECTION A

0 3' 16'

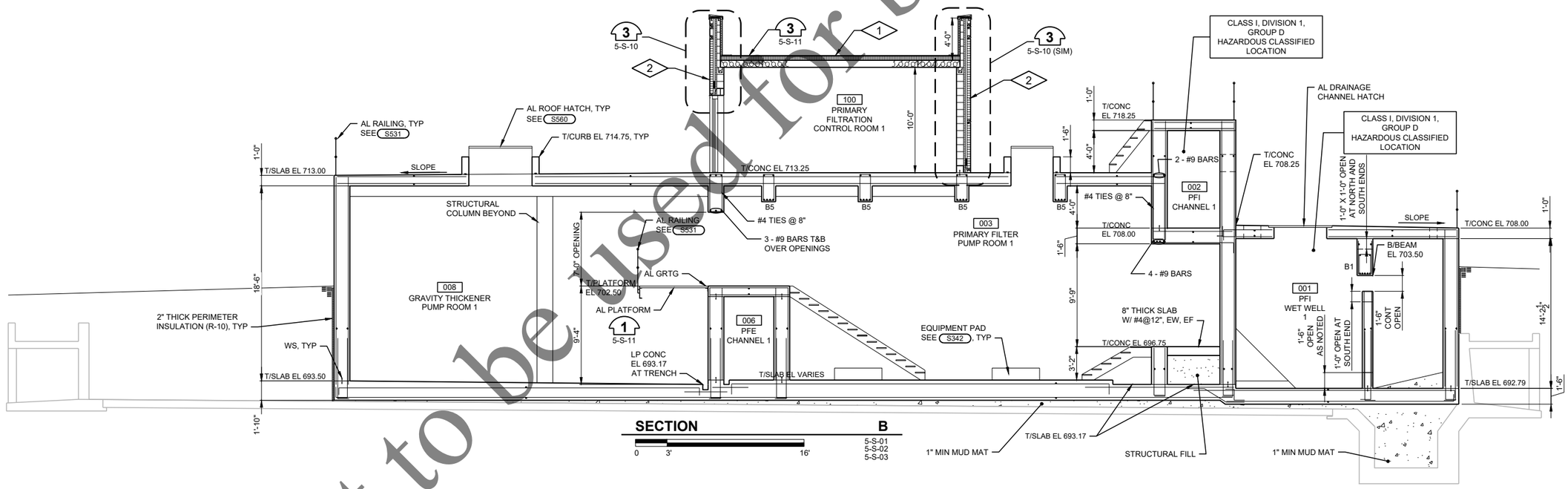
5-S-01
5-S-02
5-S-03

GENERAL NOTES:

1. ALL REINFORCEMENT SHOWN IS #6@8" UNLESS NOTED OTHERWISE.

PLAN NOTES:

1. ROOF CONSTRUCTION
   - FULLY ADHERED WHITE TPO MEMBRANE ROOFING
   - FULLY ADHERED TAPERED POLYISOCYANURATE INSULATION (R-30 AVERAGE)
   - AIR AND WATER BARRIER
   - 8" PRECAST CONCRETE ROOF PLANK
2. WALL CONSTRUCTION (R-24.45)
   - 4" FACE BRICK
   - AIR SPACE
   - 2" POLYISOCYANURATE INSULATION
   - AIR BARRIER
   - 8" CMU (FILL CORES W/FOAM INSULATION)
3. COORDINATE FINAL PEDESTAL SIZE AND LOCATION WITH FILTER MFR'S GENERAL ARRANGEMENT.



SECTION B

0 3' 16'

5-S-01
5-S-02
5-S-03

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				Checked By	TJB
				Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
SECTIONS

DONOHUE

11/23/2021

Sheet No. 64

Drawing No. **5-S-04**

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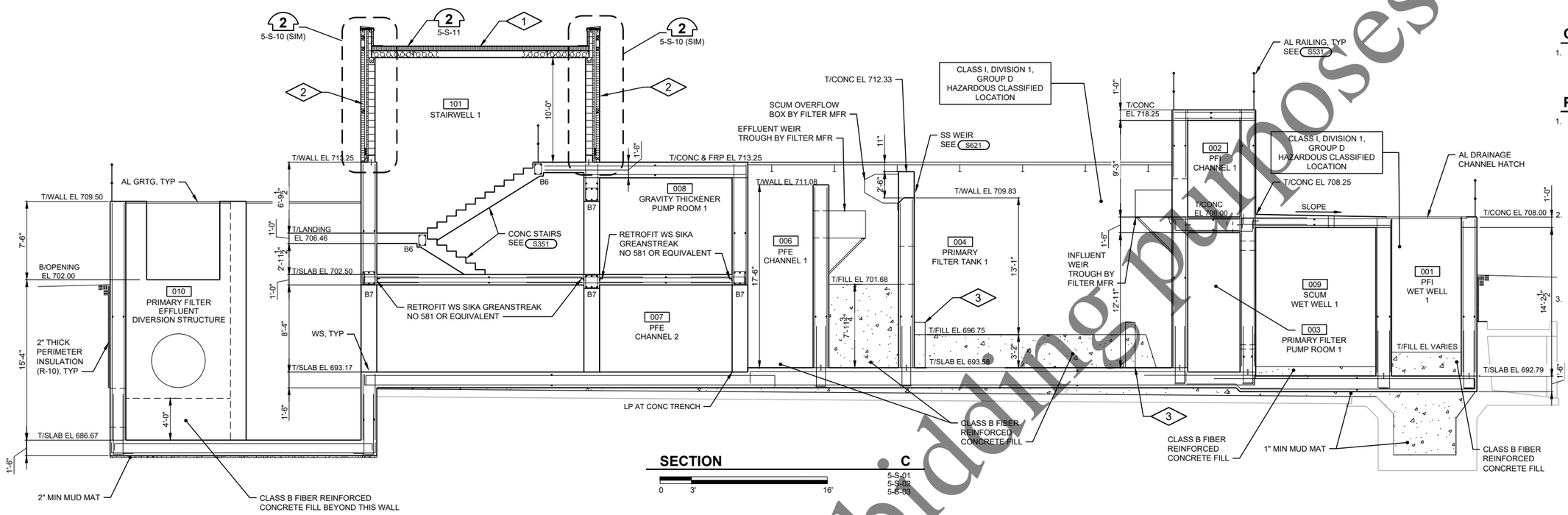
Not to be used for bidding purposes



SECTION C

5-S-01
5-S-02
5-S-03

0 3' 16'

GENERAL NOTES:

1. ALL REINFORCEMENT SHOWN IS #6@8" UNLESS NOTED OTHERWISE.

PLAN NOTES:

1. ROOF CONSTRUCTION
   - FULLY ADHERED WHITE TPO MEMBRANE ROOFING
   - FULLY ADHERED TAPERED POLYISOCYANURATE INSULATION (R-30 AVERAGE)
   - AIR AND WATER BARRIER
   - 8" PRECAST CONCRETE ROOF PLANK
2. WALL CONSTRUCTION (R-24.45)
   - 4" FACE BRICK
   - AIR SPACE
   - 2" POLYISOCYANURATE INSULATION
   - AIR BARRIER
   - 8" CMU (FILL CORES W/FOAM INSULATION)
3. COORDINATE FINAL PEDESTAL SIZE AND LOCATION WITH FILTER MFR'S GENERAL ARRANGEMENT.

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Four Rivers Sanitation Authority

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Drawn By	CEE
Checked By	TJB
Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

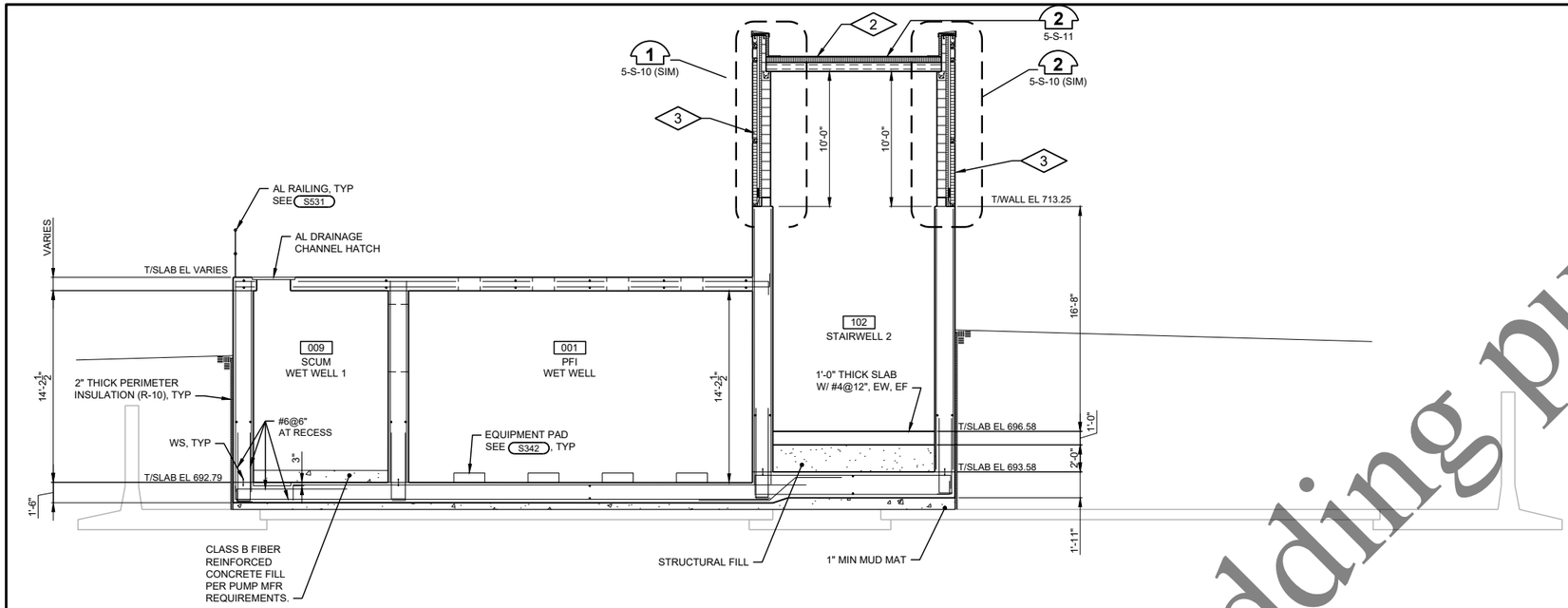
PRIMARY FILTRATION FACILITY 1
SECTION

DONOHUE 11/23/2021

Sheet No. 65

Drawing No. 5-S-05

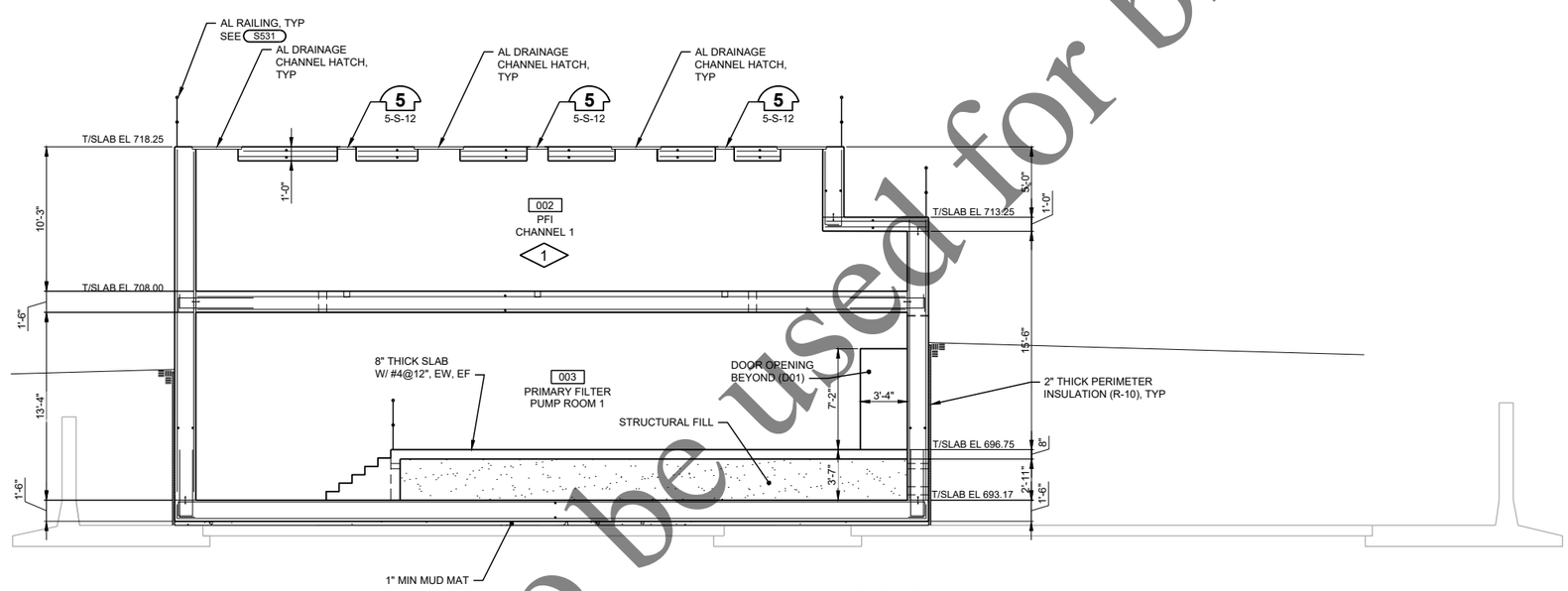
file: P:\13852chi\Dwg\5SS1.dwg



SECTION D

0 3' 16'

5-S-01
5-S-02
5-S-03



SECTION E

0 3' 16'

5-S-01
5-S-02
5-S-03

GENERAL NOTES:

1. ALL REINFORCEMENT SHOWN IS #6@8" UNLESS NOTED OTHERWISE.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. ROOF CONSTRUCTION
   - FULLY ADHERED WHITE TPO MEMBRANE ROOFING
   - FULLY ADHERED TAPERED POLYISOCYANURATE INSULATION (R-30 AVERAGE)
   - AIR AND WATER BARRIER
   - 8" PRECAST CONCRETE ROOF PLANK
3. WALL CONSTRUCTION (R-24.45)
   - 4" FACE BRICK
   - AIR SPACE
   - 2" POLYISOCYANURATE INSULATION
   - AIR BARRIER
   - 8" CMU (FILL CORES W/FOAM INSULATION)

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Four Rivers Sanitation Authority

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Drawn By	CEE
Checked By	TJB
Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
SECTIONS

DONOHUE 11/23/2021

Sheet No. 66

Drawing No. **5-S-06**

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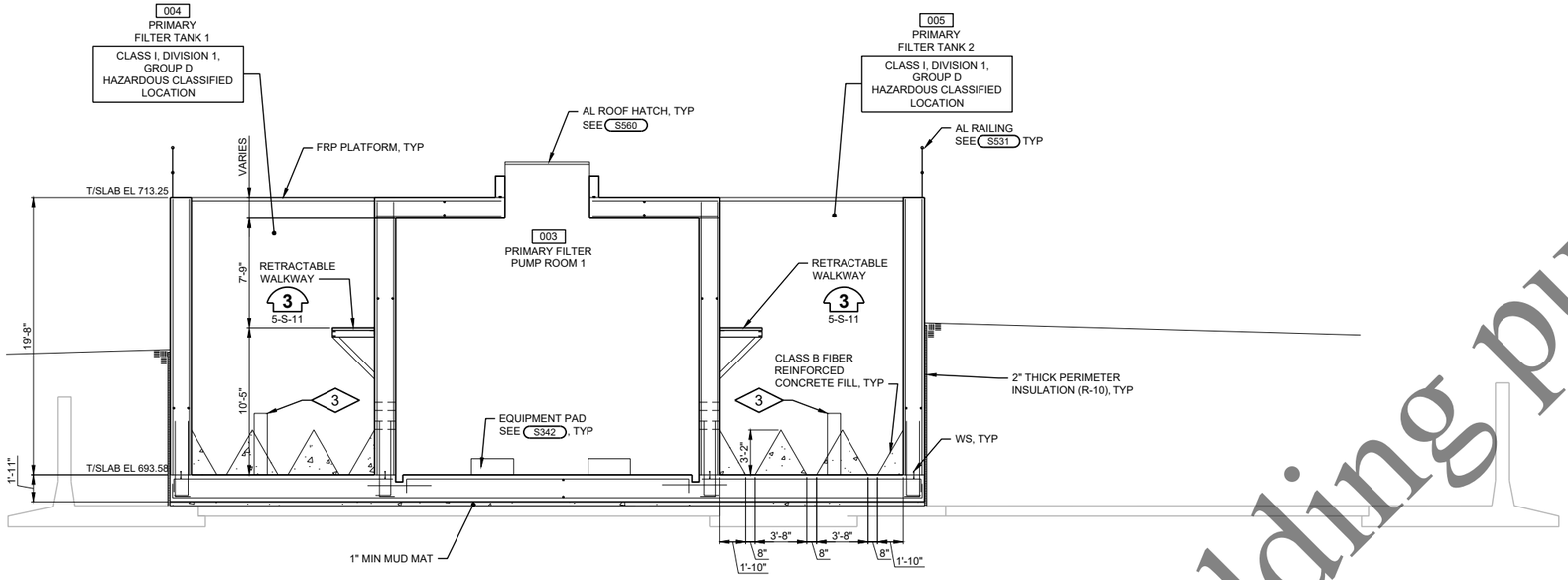
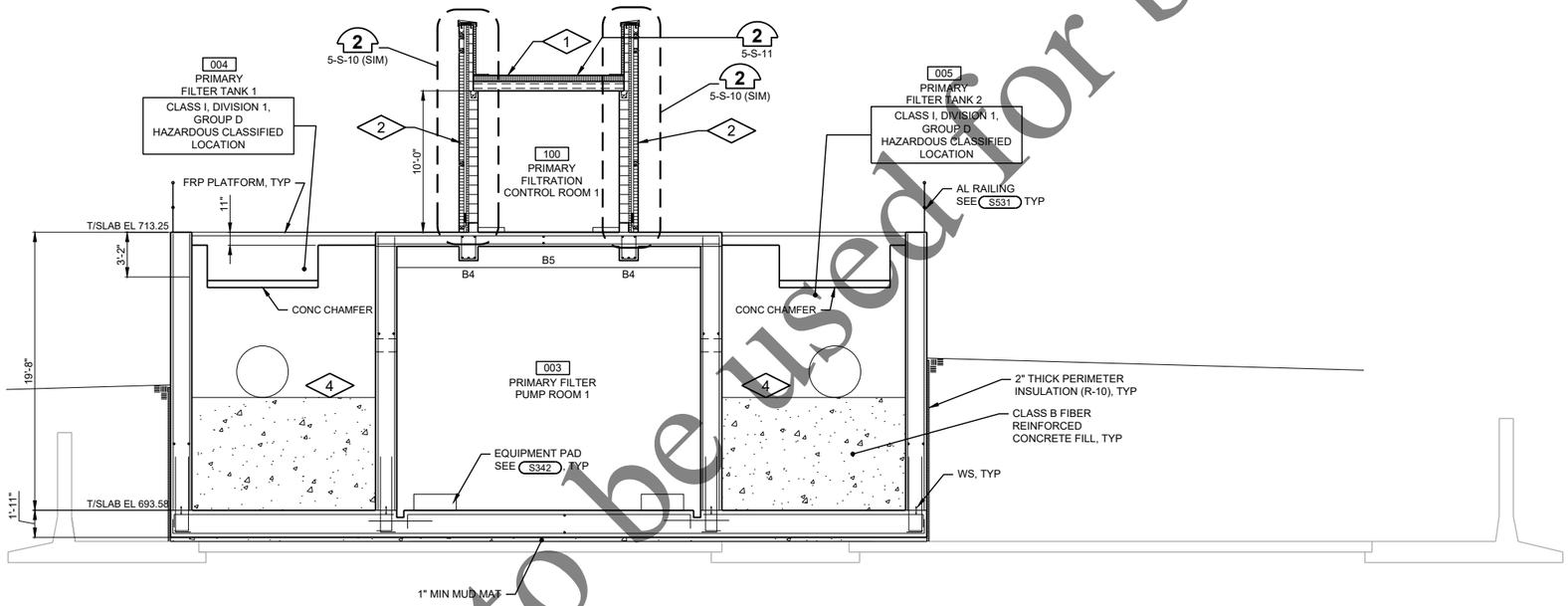


SECTION F

0 3' 16'

5-S-01
5-S-02
5-S-03



SECTION G

0 3' 16'

5-S-01
5-S-02
5-S-03

GENERAL NOTES:

1. ALL REINFORCEMENT SHOWN IS #6@8" UNLESS NOTED OTHERWISE.

PLAN NOTES:

1. ROOF CONSTRUCTION
   - FULLY ADHERED WHITE TPO MEMBRANE ROOFING
   - FULLY ADHERED TAPERED POLYISOCYANURATE INSULATION (R-30 AVERAGE)
   - AIR AND WATER BARRIER
   - 8" PRECAST CONCRETE ROOF PLANK
2. WALL CONSTRUCTION (R-24.45)
   - 4" FACE BRICK
   - AIR SPACE
   - 2" POLYISOCYANURATE INSULATION
   - AIR BARRIER
   - 8" CMU (FILL CORES W/FOAM INSULATION)
3. COORDINATE FINAL PEDESTAL SIZE AND LOCATION WITH FILTER MFR'S GENERAL ARRANGEMENT.
4. PLACE CONCRETE FILL TO INVERT ELEVATION OF PIPE.

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Four Rivers Sanitation Authority

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Checked By	TJB
Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
SECTIONS

DONOHUE 11/23/2021

Sheet No. 67

Drawing No. 5-S-07

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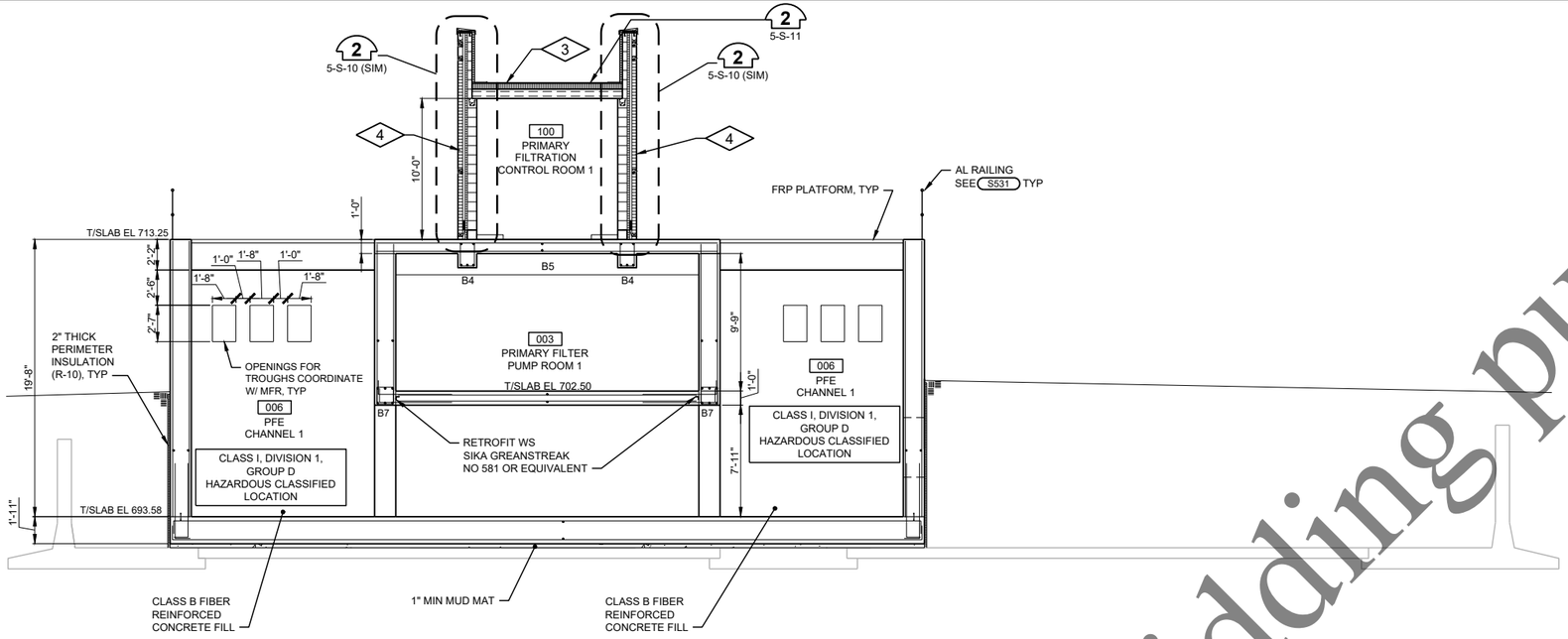
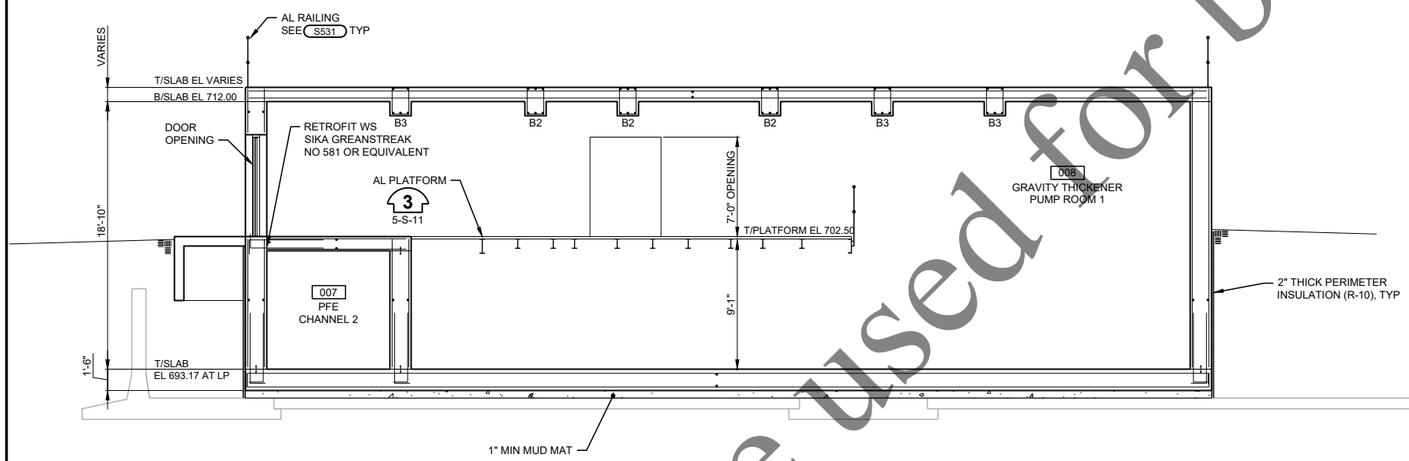


SECTION H

0 3' 16'

5-S-01
5-S-02
5-S-03



SECTION I

0 3' 16'

5-S-01
5-S-02
5-S-03

GENERAL NOTES:

1. ALL REINFORCEMENT SHOWN IS #6@8" UNLESS NOTED OTHERWISE.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
3. ROOF CONSTRUCTION
   - FULLY ADHERED WHITE TPO MEMBRANE ROOFING
   - FULLY ADHERED TAPERED POLYISOCYANURATE INSULATION (R-30 AVERAGE)
   - AIR AND WATER BARRIER
   - 8" PRECAST CONCRETE ROOF PLANK
4. WALL CONSTRUCTION (R-24.45)
   - 4" FACE BRICK
   - AIR SPACE
   - 2" POLYISOCRYANURATE INSULATION
   - AIR BARRIER
   - 8" CMU (FILL CORES W/FOAM INSULATION)

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
SECTIONS

DONOHUE 11/23/2021

Sheet No. 68

Drawing No. **5-S-08**

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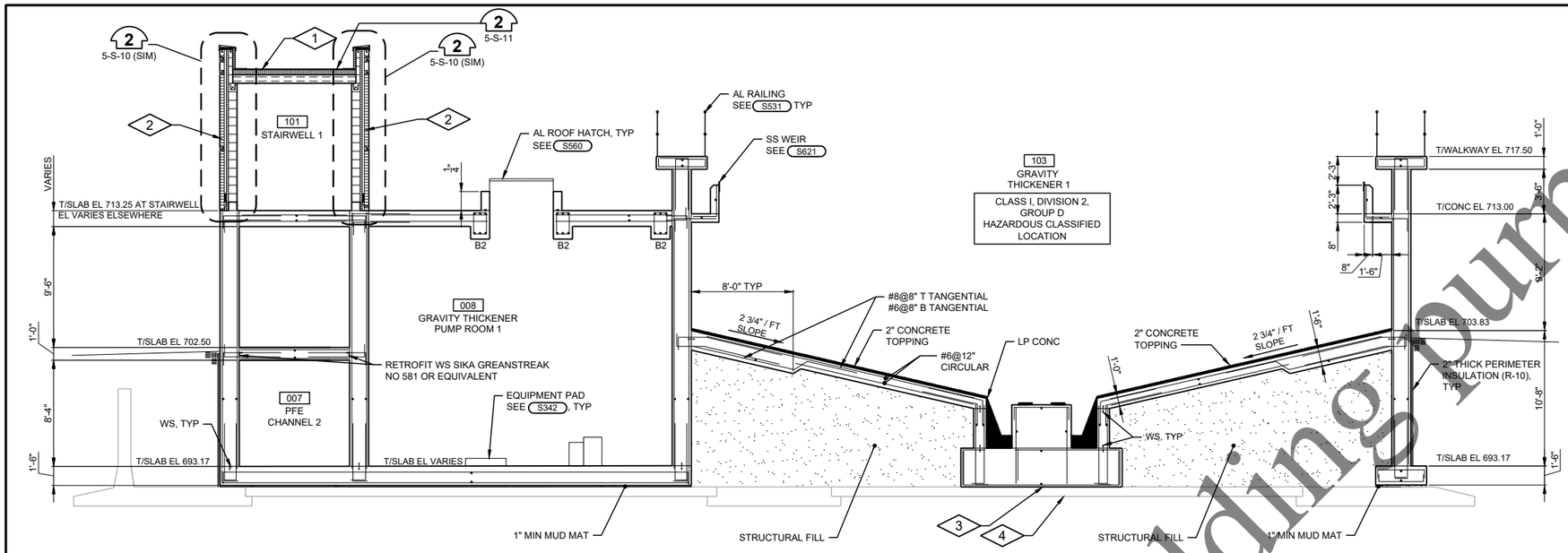
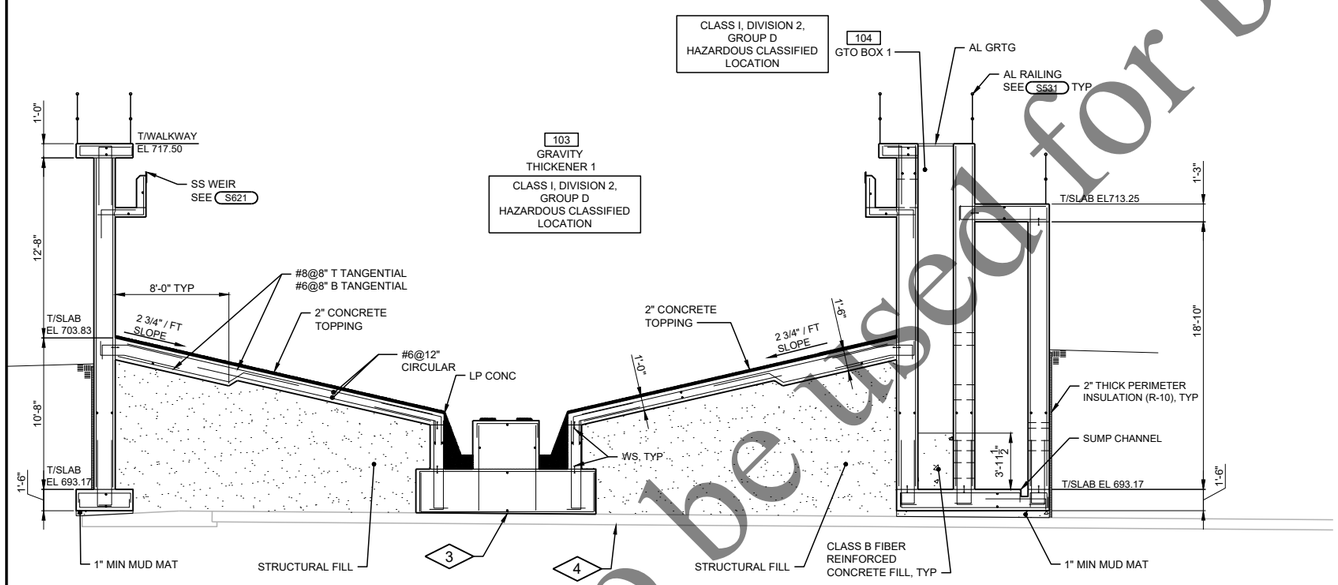


SECTION J

0 3' 16'

5-S-01
5-S-02
5-S-03



SECTION K

0 3' 16'

5-S-01
5-S-02
5-S-03

GENERAL NOTES:

1. ALL REINFORCEMENT SHOWN IS #6@8" UNLESS NOTED OTHERWISE.

PLAN NOTES:

1. ROOF CONSTRUCTION
   - FULLY ADHERED WHITE TPO MEMBRANE ROOFING
   - FULLY ADHERED TAPERED POLYISOCYANURATE INSULATION (R-30 AVERAGE)
   - AIR AND WATER BARRIER
   - 8" PRECAST CONCRETE ROOF PLANK
2. WALL CONSTRUCTION (R-24.45)
   - 4" FACE BRICK
   - AIR SPACE
   - 2" POLYISOCYANURATE INSULATION
   - AIR BARRIER
   - 8" CMU (FILL CORES W/FOAM INSULATION)
3. CONTRACTOR SHALL COORDINATE THE REQUIREMENTS OF BLOCK SUPPORT FOR THE MECHANISM WITH THE MFR. BLOCK SHALL BE REINFORCED WITH #6@12", EW, EF.
4. CORE DRILL 6" DIAMETER HOLES IN EXISTING SLAB UNDER GRAVITY THICKENER 10'-0" ON CENTER.

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Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

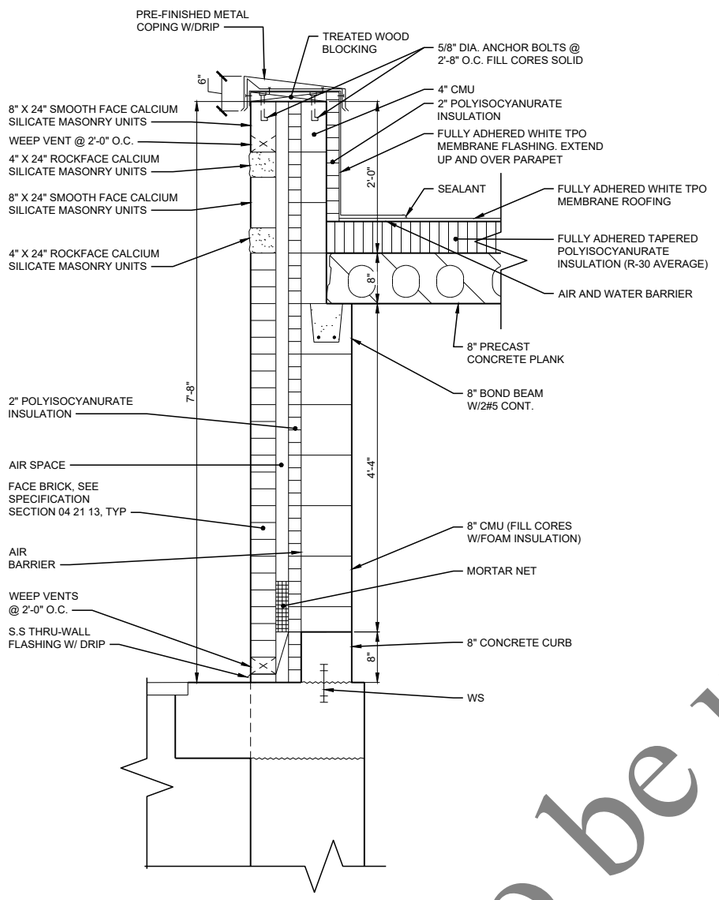
PRIMARY FILTRATION FACILITY 1
SECTION

DONOHUE 11/23/2021

Sheet No. 69

Drawing No. 5-S-09

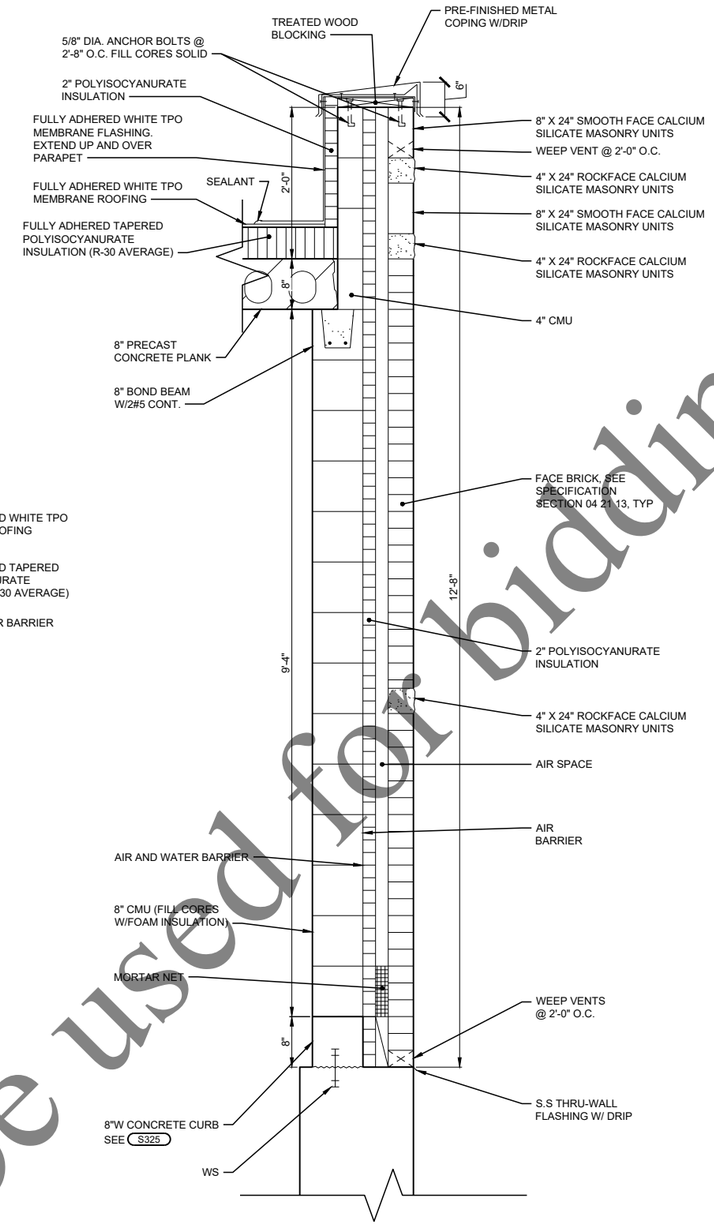
file: P:\13852chi\Dwg\5SS1.dwg



WALL DETAIL 1

0 1'

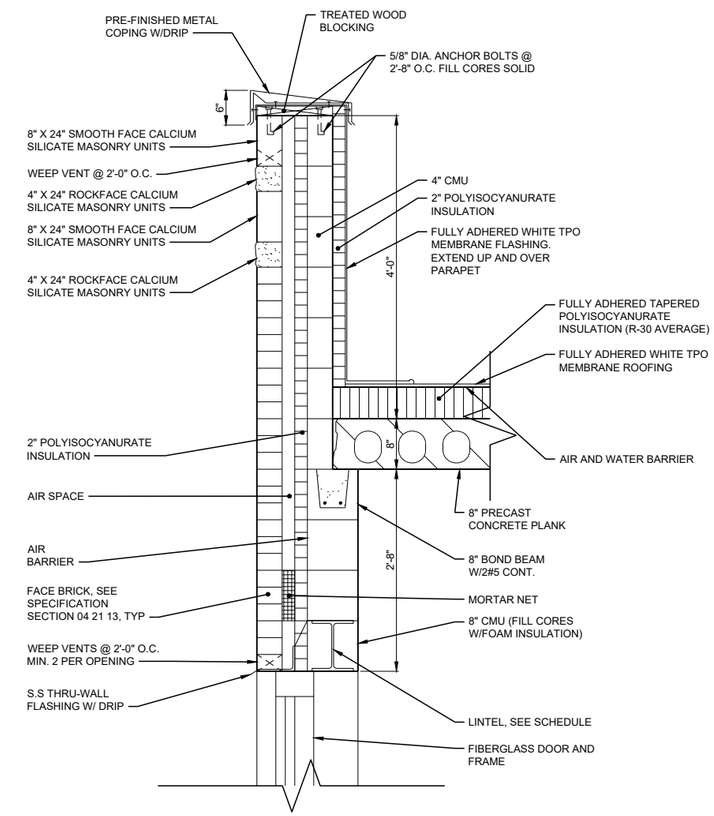
5-S-04
5-S-06



WALL DETAIL 2

0 1'

5-S-04
5-S-05
5-S-06
5-S-07
5-S-08
5-S-09



WALL DETAIL 3

0 1'

5-S-04

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
DETAILS

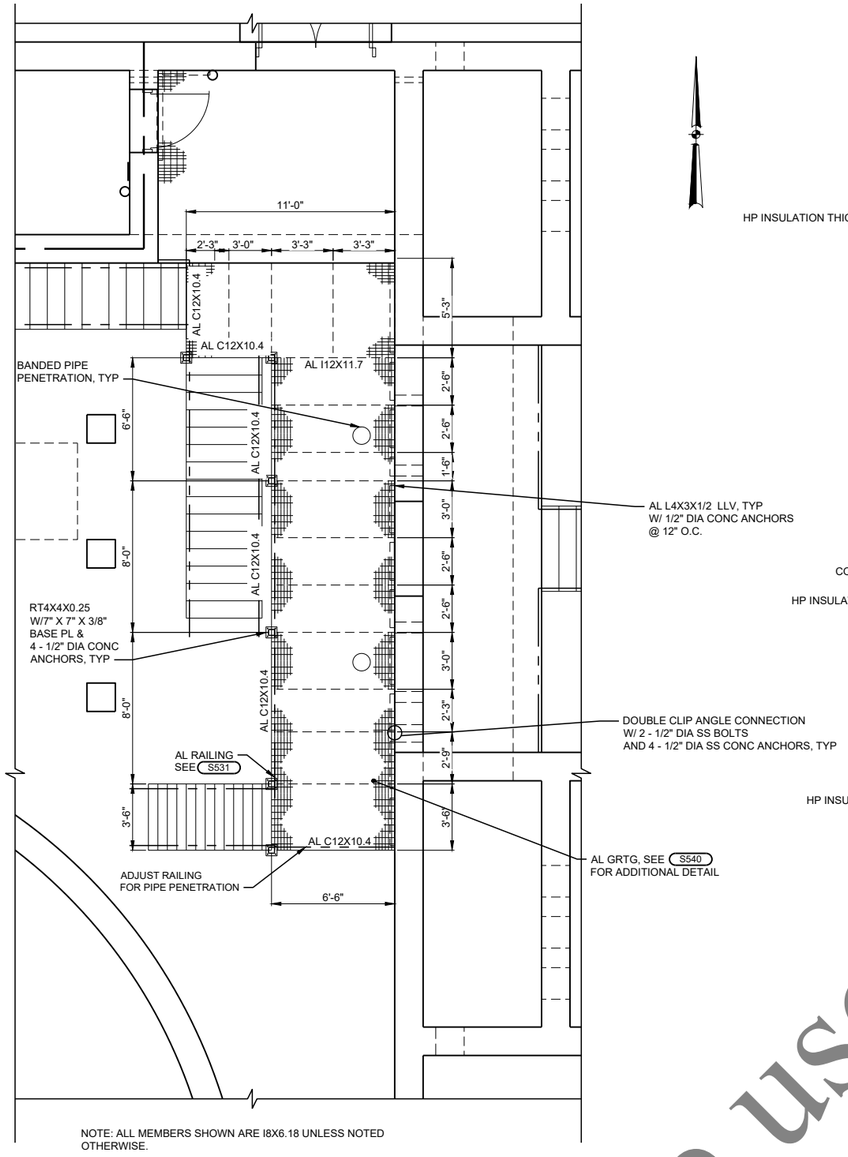
DONOHUE

11/23/2021

Sheet No. 70

Drawing No. **5-S-10**

file: P:\13852chi\Dwg\5SS1.dwg

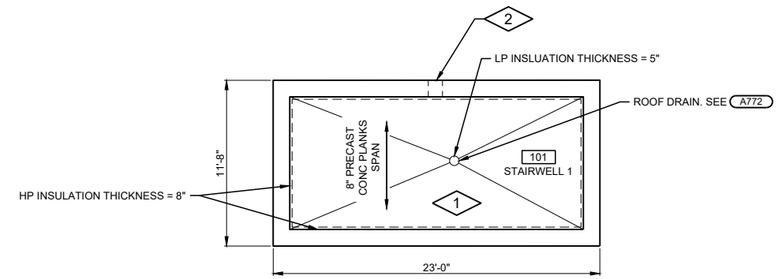


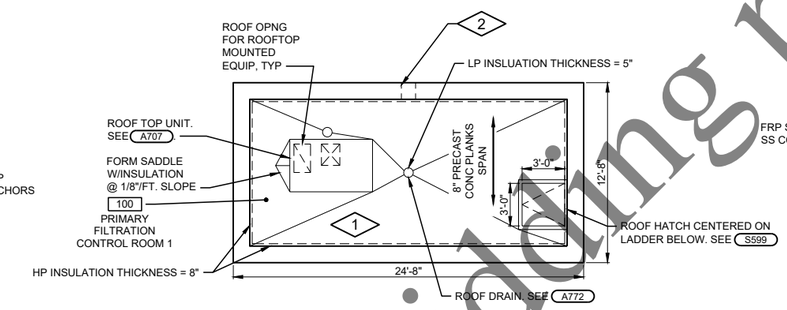
NOTE: ALL MEMBERS SHOWN ARE I8X6.18 UNLESS NOTED OTHERWISE.

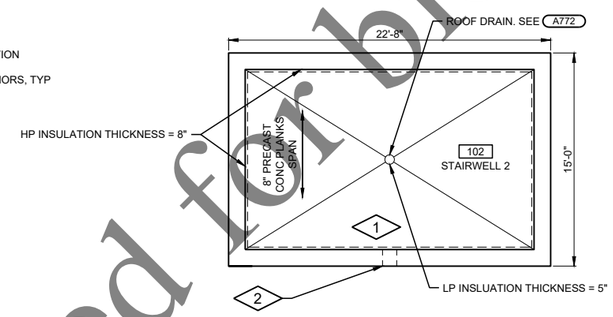
ENLARGED PLATFORM PLAN 1

0 1' 4'

5-S-02
5-S-04



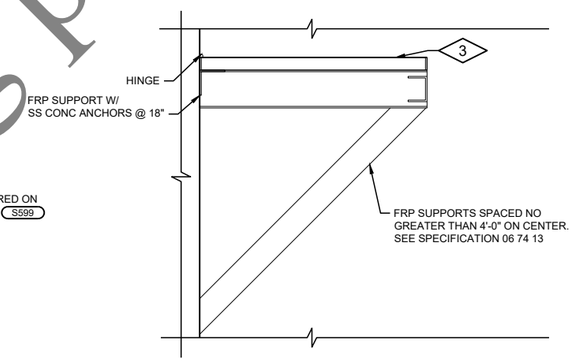




ENLARGED ROOF PLANS 2

0 3' 16'

5-S-04
THRU
05-S09



RETRACTABLE GRATING DETAIL 3

0 1'

5-S-02
5-S-07

PLAN NOTES:

1. DESIGN ROOF PLANKS FOR 35 PSF UNIFORM SNOW LOAD.
2. OVERFLOW SCUPPER, SEE A785. COORDINATE LOCATION WITH JOINTS IN LIMESTONE BLOCKS.
3. FRP GRATING PANELS SHALL BE FURNISHED AND INSTALLED WITH AN SS HINGE. PANELS SHALL BE SIZED SUCH THAT THE PANELS CAN BE LIFTED BY HAND. THE PANELS LOCATED DIRECTLY UNDER ACCESS HATCHES SHALL BE PROVIDED WITH A SS CABLE TO LIFT AND LOWER THE PANELS FROM THE UPPER LEVEL. THE CABLE SHALL BE PROVIDED A HOOK ON THE FRP HATCH ABOVE. ALL OTHER PANELS SHALL BE PROVIDED A LATCH AND HOOK INSTALLED ON THE ADJACENT CONCRETE WALLS SUCH THAT THE PANELS ARE IN THE UPRIGHT POSITION DURING OPERATION.

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

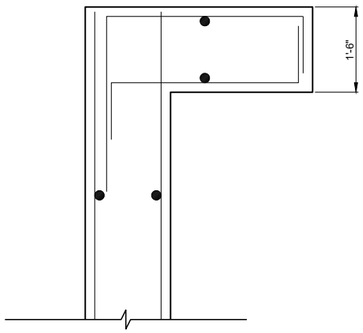
PRIMARY FILTRATION FACILITY 1
DETAILS

DONOHUE 11/23/2021

Sheet No. 71

Drawing No. **5-S-11**

file: P:\13852chi\Dwg\5SS1.dwg

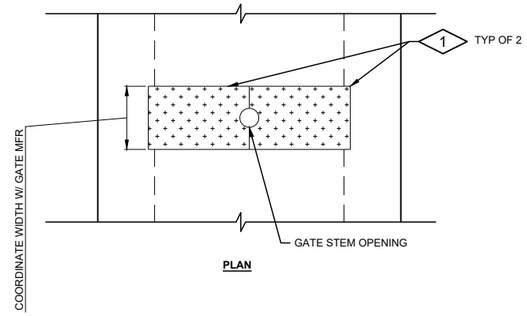


NOTE: ALL REINFORCEMENT SHOWN IS #6@8"

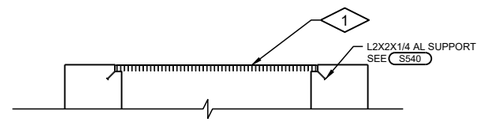
TOP SLAB DETAIL **4**

5-S-02

0 3' 4'



PLAN



SECTION

GATE STEM COVER DETAIL **5**

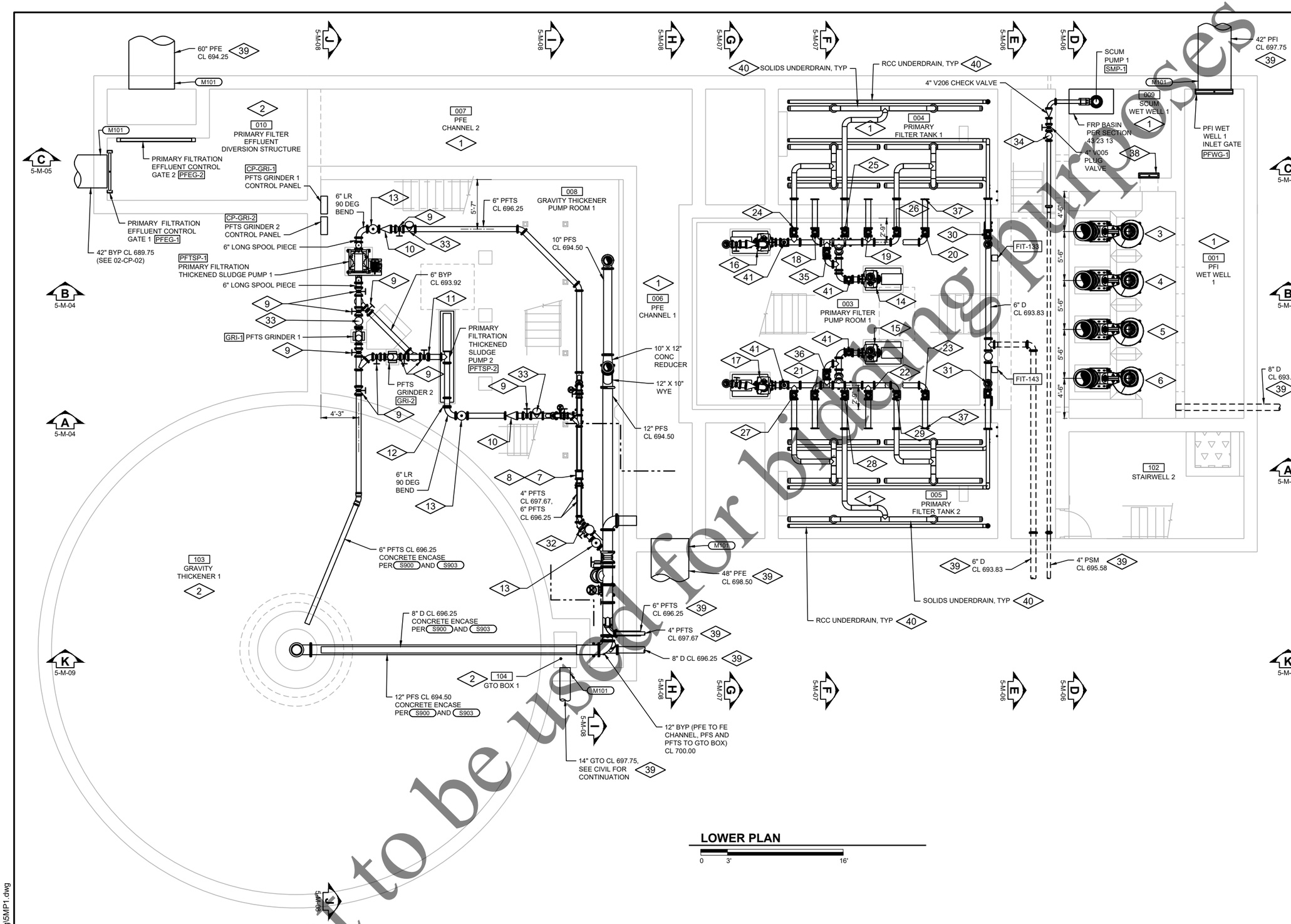
5-S-03
5-S-06

0 3' 4'

PLAN NOTES:

1. COMPOSITE AL GRATING AND AL CHECKERED PLATE SHALL CONSIST OF STANDARD GRATING PER SPECIFICATION WITH 1/4" CHECKERED PLATE ON TOP. THE CHECKERED PLATE SHALL BE SHOP WELDED TO THE GRATING PANELS. FINGER HOLES SHALL BE PROVIDED IN THE CHECKERED PLATE FOR REMOVAL.

Not to be used for bidding purposes



GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
3. PRIMARY FILTRATION INFLUENT PUMP 1 PFIP-1
4. PRIMARY FILTRATION INFLUENT PUMP 2 PFIP-2
5. PRIMARY FILTRATION INFLUENT PUMP 3 PFIP-3
6. PRIMARY FILTRATION INFLUENT PUMP 4 PFIP-4
7. 4" PFTSP ELECTROMAGNETIC FLOWMETER FE/FIT-171 W/ DISMANTLING JOINT
8. 6" PFTSP ELECTROMAGNETIC FLOWMETER FE/FIT-172 (BELOW) W/ DISMANTLING JOINT
9. 6" V005 PLUG VALVE
10. 6" V205 CHECK VALVE
11. ANNULAR SEAL WITH PI-172S & PSL-172S PER N520
12. ANNULAR SEAL WITH PI-172D & PSH-172D PER N520
13. 6" x 4" TEE OR 4"X4" TEE TO MATCH LINE SIZE, 4" BLIND FLANGE, 2" 304 SS PIPE, 2" CAMLOCK AND 2" PLUG VALVE FOR ISOLATION, 2" V901 AIR RELEASE VALVE, 1" V
14. BWW PUMP 1 BWP-1 40
15. BWW PUMP 2 BWP-2 40
16. SOLIDS WASTE PUMP 1 SWP-1 40
17. SOLIDS WASTE PUMP 2 SWP-2 40
18. BWW VALVE 1 BWV-1 40
19. BWW VALVE 2 BWV-2 40
20. BWW VALVE 3 BWV-3 40
21. BWW VALVE 4 BWV-4 40
22. BWW VALVE 5 BWV-5 40
23. BWW VALVE 6 BWV-6 40
24. SOLIDS WASTE VALVE 1 SWV-1 40
25. SOLIDS WASTE VALVE 2 SWV-2 40
26. SOLIDS WASTE VALVE 3 SWV-3 40
27. SOLIDS WASTE VALVE 4 SWV-4 40
28. SOLIDS WASTE VALVE 5 SWV-5 40
29. SOLIDS WASTE VALVE 6 SWV-6 40
30. RECIRCULATION VALVE 1 RCV-1 (BELOW) 40
    RECIRCULATION VALVE 2 RCV-2 (ABOVE) 40
31. RECIRCULATION VALVE 4 RCV-4 (BELOW) 40
    RECIRCULATION VALVE 5 RCV-5 (ABOVE) 40
32. 4" V005 PLUG VALVE AND 6" V005 PLUG VALVE (BELOW)
33. 6" TEE W/ BF AND FLUSH CONNECTION PER M710
34. 4" TEE W/ BF AND FLUSH CONNECTION PER M710
35. BACKUP VALVE 1 BKV-1 40
36. BACKUP VALVE 3 BKV-3 40
37. PROVIDE CONNECTION TO FILTER BACKWASH MANIFOLD, TYP 40
38. PRIMARY FILTRATION SCUM OVERFLOW GATE 1 SMOG-1
39. SEE CIVIL FOR CONTINUATION
40. PROVIDED UNDER SECTION 46 61 41
41. 6" V005 PLUG VALVE 40

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	MTR
				Drawn By	MTR
				Checked By	SPG
				Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

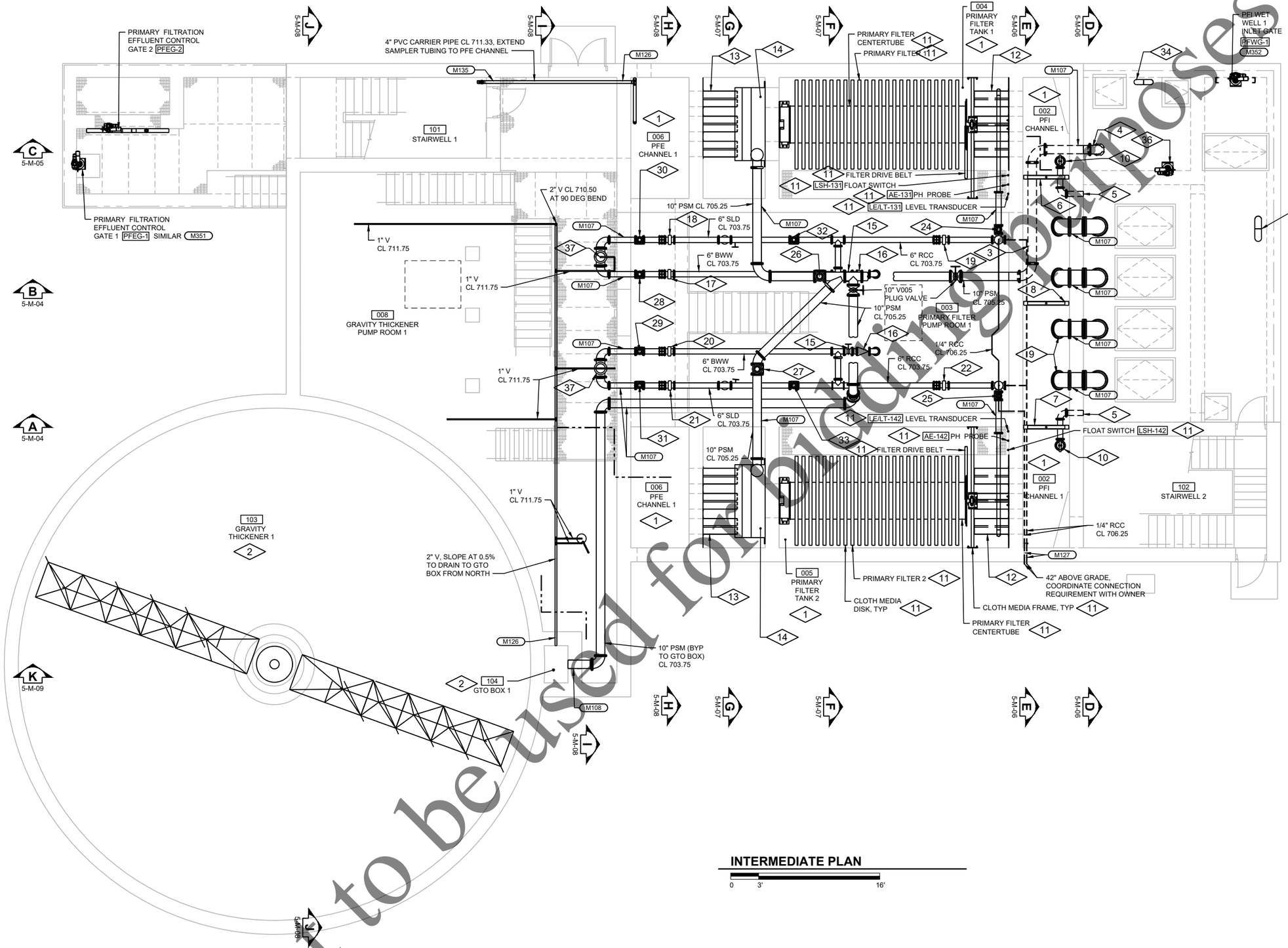
PRIMARY FILTRATION FACILITY 1
LOWER PLAN

DONOHUE 11/23/2021

Sheet No. 73

Drawing No. **5-M-01**

file: P:\13852chi\Dwg\5MP1.dwg



INTERMEDIATE PLAN

0 3' 16'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
3. 10" PSM CL 705.25 BELOW PFI CHANNEL 1
4. 10" PSM CL 705.25, INSIDE SCUM WET WELL BELOW SLAB
5. 6" D CL 705.00 (BELOW PFI CHANNEL 1), PROVIDE M108 THRU WALL TO WET WELL
6. PRIMARY FILTER INFLUENT GATE 1 PFIG-1
7. PRIMARY FILTER INFLUENT GATE 2 PFIG-2
8. PRIMARY FILTER INFLUENT GATE 3 PFIG-3
9. 18" 45 DEG BEND FACING DOWN, TYP
10. 6" MUD VALVE M129
11. PROVIDED UNDER SECTION 46 61 41
12. INFLUENT WEIR TROUGH 11
13. EFFLUENT WEIR TROUGH 11
14. SCUM AND OVERFLOW BOX 11
15. 6" MANUAL PLUG VALVE 11
16. 6" CHECK VALVE 11
17. 6" BACKWASH WASTE DISCHARGE FLOW METER 1 FE/FIT-132 11 23
18. 6" SOLIDS WASTE DISCHARGE FLOW METER 1 FE/FIT-131 11 23
19. 6" RECIRCULATION FLOW ELEMENT 1 FE-133 11 23
20. 6" BACKWASH WASTE DISCHARGE FLOW METER 2 FE/FIT-142 11 23
21. 6" SOLIDS WASTE DISCHARGE FLOW METER 2 FE/FIT-141 11 23
22. 6" RECIRCULATION FLOW ELEMENT 2 FE-143 11 23
23. PROVIDE FCA
24. RECIRCULATION VALVE 3 RCV-3 11
25. RECIRCULATION VALVE 6 RCV-6 11
26. SCUM VALVE 1 PSMV-1 11
27. SCUM VALVE 2 PSMV-2 11
28. BWW DISCHARGE VALVE 1 BWDV-1 11
29. BWW DISCHARGE VALVE 2 BWDV-2 11
30. SOLIDS WASTE DISCHARGE VALVE 1 SWDV-1 11
31. SOLIDS WASTE DISCHARGE VALVE 2 SWDV-2 11
32. BACKUP VALVE 2 BKV-2 11
33. BACKUP VALVE 4 BKV-4 11
34. 6" V PER M223
35. 8" V PER M223
36. PRIMARY FILTRATION SCUM OVERFLOW GATE 1 SMOG-1
37. 10" CROSS, 10" BF, 2" 304SS PIPE WITH 2" V005 PLUG VALVE FOR ISOLATION, 2" V901 AIR RELEASE VALVE, 1" V IN VERTICAL

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

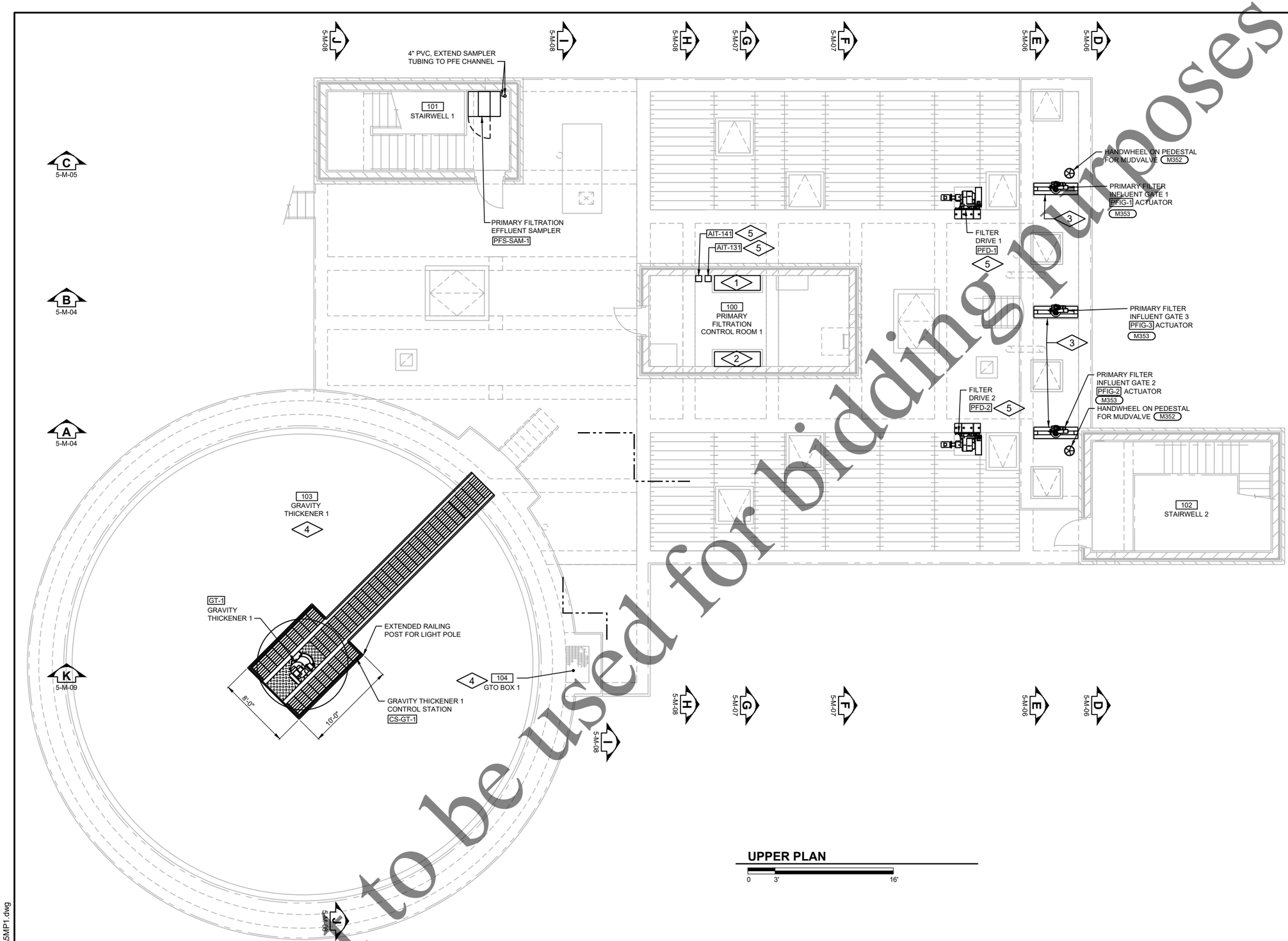
PRIMARY FILTRATION FACILITY 1
INTERMEDIATE PLAN

DONOHUE 11/23/2021

Sheet No. 74

Drawing No. 5-M-02

file: P:\13852ch\Dwg\5MP1.dwg



GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. PRIMARY FILTER 1 LOCAL CONTROL PANEL PFCP-1
2. PRIMARY FILTER 2 LOCAL CONTROL PANEL PFCP-2
3. ALUMINUM PLATE OVER YOKE, SEE DRAWING 5-S-03
4. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
5. PROVIDED UNDER SECTION 46 61 41

UPPER PLAN

0 3' 16'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

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Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

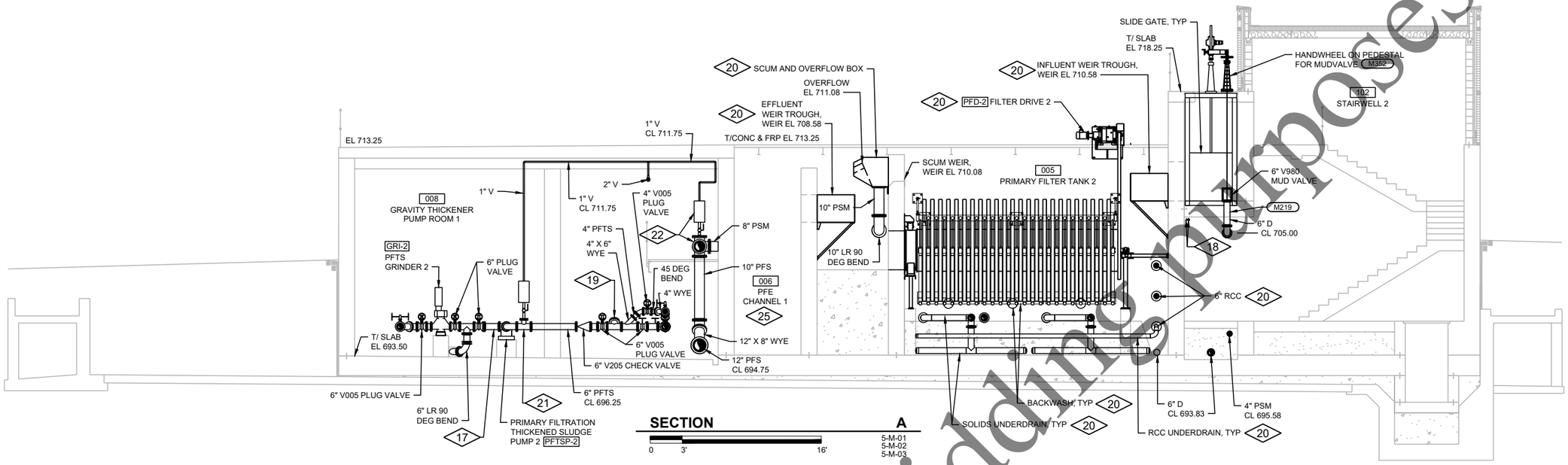
PRIMARY FILTRATION FACILITY 1
UPPER PLAN

DONOHUE 11/23/2021

Sheet No. 75

Drawing No. **5-M-03**

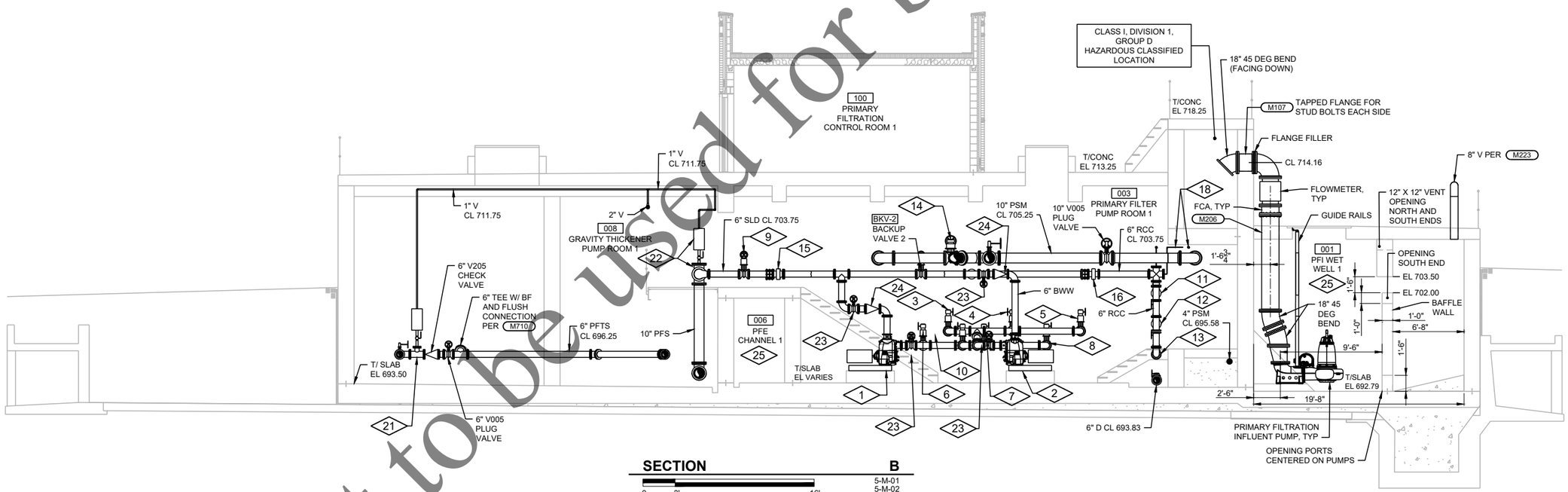
file: P:\13852chi\Dwg\5MP1.dwg



SECTION A

0 3' 16'

5-M-01
5-M-02
5-M-03



SECTION B

0 3' 16'

5-M-01
5-M-02
5-M-03

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. SOLIDS WASTE PUMP 1 SWP-1 20
2. BWW PUMP 1 BWP-1 20
3. BWW VALVE 1 BWV-1 20
4. BWW VALVE 2 BWV-2 20
5. BWW VALVE 3 BWV-3 20
6. SOLIDS WASTE VALVE 1 SWV-1 (BEHIND PIPE) 20
7. SOLIDS WASTE VALVE 2 SWV-2 (BEHIND PIPE) 20
8. SOLIDS WASTE VALVE 3 SWV-3 (BEHIND PIPE) 20
9. SOLIDS WASTE DISCHARGE VALVE 1 SWDV-1 (BEHIND) 20

   BWW DISCHARGE VALVE 1 BWDV-1 20
10. BACK-UP VALVE 1 BKV-1 20
11. RECIRCULATION VALVE 1 RCV-1 20
12. RECIRCULATION VALVE 2 RCV-2 20
13. RECIRCULATION VALVE 3 RCV-3 20
14. 10" SCUM VALVE 1 PSMV-1 20
15. 6" BACKWASH WASTE DISCHARGE FLOWMETER 1 FE/FIT-132 20

    6" SOLIDS WASTE DISCHARGE FLOWMETER 1 FE/FIT-131 BEHIND 20
16. 6" RECIRCULATION FLOW ELEMENT 1 FE-133 20
17. ANNULAR SEAL WITH PI-172S & PSL-172S PER N520
18. 1/4" RCC CL 706.25
19. 4" TEE W/ BF AND HOSE CONNECTION PER
20. PROVIDED UNDER SECTION 46 61 41 M710
21. 4" x 3" TEE, 3" BF, 2" 304SS PIPE WITH 2" CAMLOCK AND 2" V005 PLUG VALVE FOR ISOLATION, 2" V901 AIR RELEASE VALVE, 1" V IN VERTICAL
22. 10" CROSS, 10" BF, 2" 304SS PIPE WITH 2" CAMLOCK AND 2" V005 PLUG VALVE FOR ISOLATION, 2" V901 AIR RELEASE VALVE, 1" V IN VERTICAL
23. 6" PLUG VALVE PROVIDED UNDER SECTION 46 61 41
24. 6" CHECK VALVE PROVIDED UNDER SECTION 46 61 41
25. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION

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Four Rivers Sanitation Authority

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				Drawn By	MTR
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				Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
SECTIONS

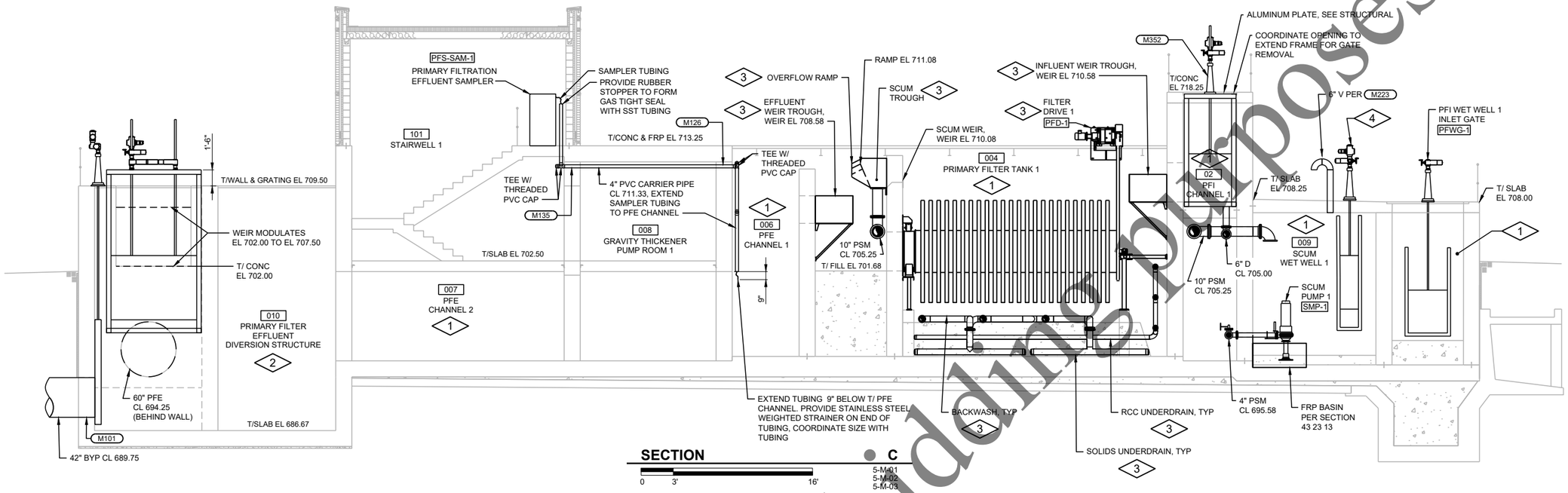
DONOHUE

11/23/2021

Sheet No. 76

Drawing No. **5-M-04**

file: P:\13852chi\Dwg\5\MS1.dwg



SECTION C

0 3' 16'

5-M-01
5-M-02
5-M-03

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
3. PROVIDED UNDER SECTION 46 61 41
4. PRIMARY FILTRATION SCUM OVERFLOW GATE 1 SMOG-1

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Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	MTR
				Drawn By	MTR
				Checked By	SPG
				Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
SECTION

DONOHUE 11/23/2021

Sheet No. 77

Drawing No. **5-M-05**

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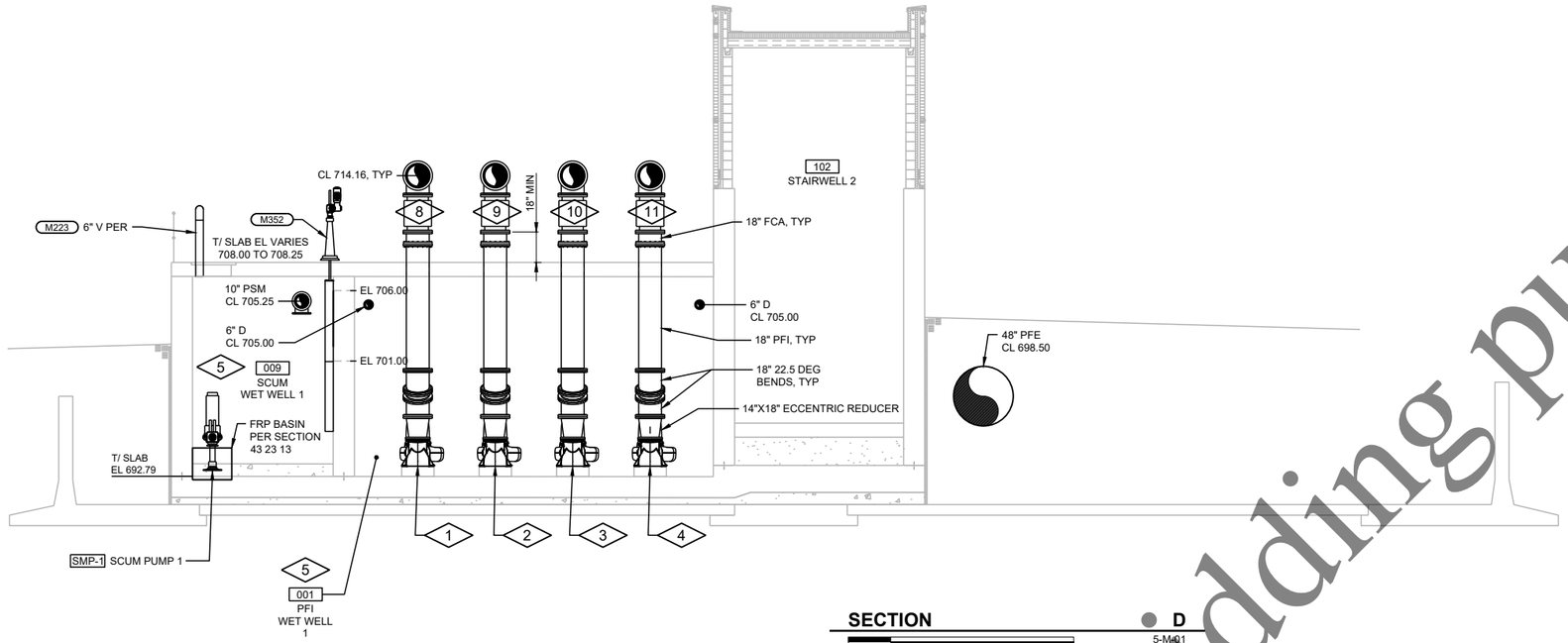
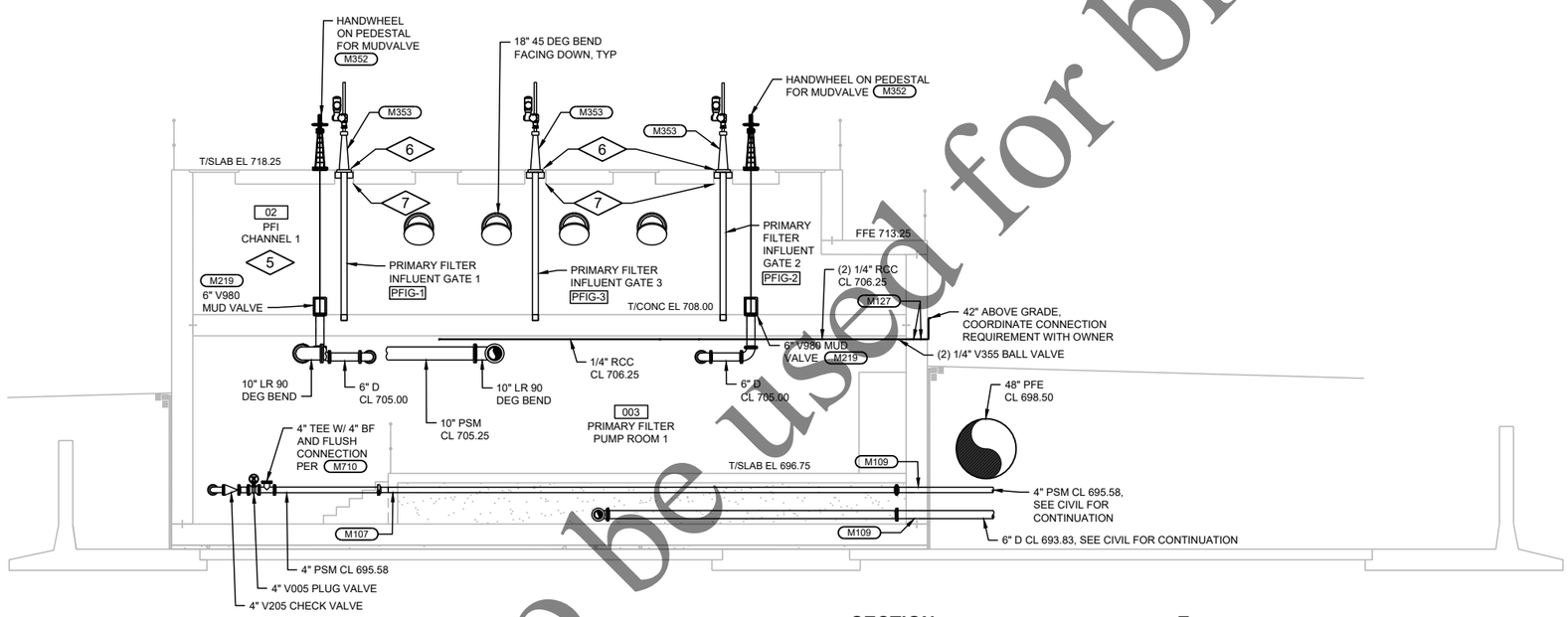


SECTION D

0 3' 16'

5-M-01
5-M-02
5-M-03



SECTION E

0 3' 16'

5-M-01
5-M-02
5-M-03

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. PRIMARY FILTRATION INFLUENT PUMP 1 PFIP-1
2. PRIMARY FILTRATION INFLUENT PUMP 2 PFIP-2
3. PRIMARY FILTRATION INFLUENT PUMP 3 PFIP-3
4. PRIMARY FILTRATION INFLUENT PUMP 4 PFIP-4
5. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
6. ALUMINUM PLATE, SEE STRUCTURAL
7. COORDINATE OPENING TO EXTEND FRAME FOR GATE REMOVAL
8. 18" PFIP 1 DISCHARGE FLOW ELEMENT FE-121
9. 18" PFIP 2 DISCHARGE FLOW ELEMENT FE-122
10. 18" PFIP 3 DISCHARGE FLOW ELEMENT FE-123
11. 18" PFIP 4 DISCHARGE FLOW ELEMENT FE-124 , PROVIDE 18" SPOOL PIECE FOR FLOW METER REMOVAL

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Four Rivers Sanitation Authority

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Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

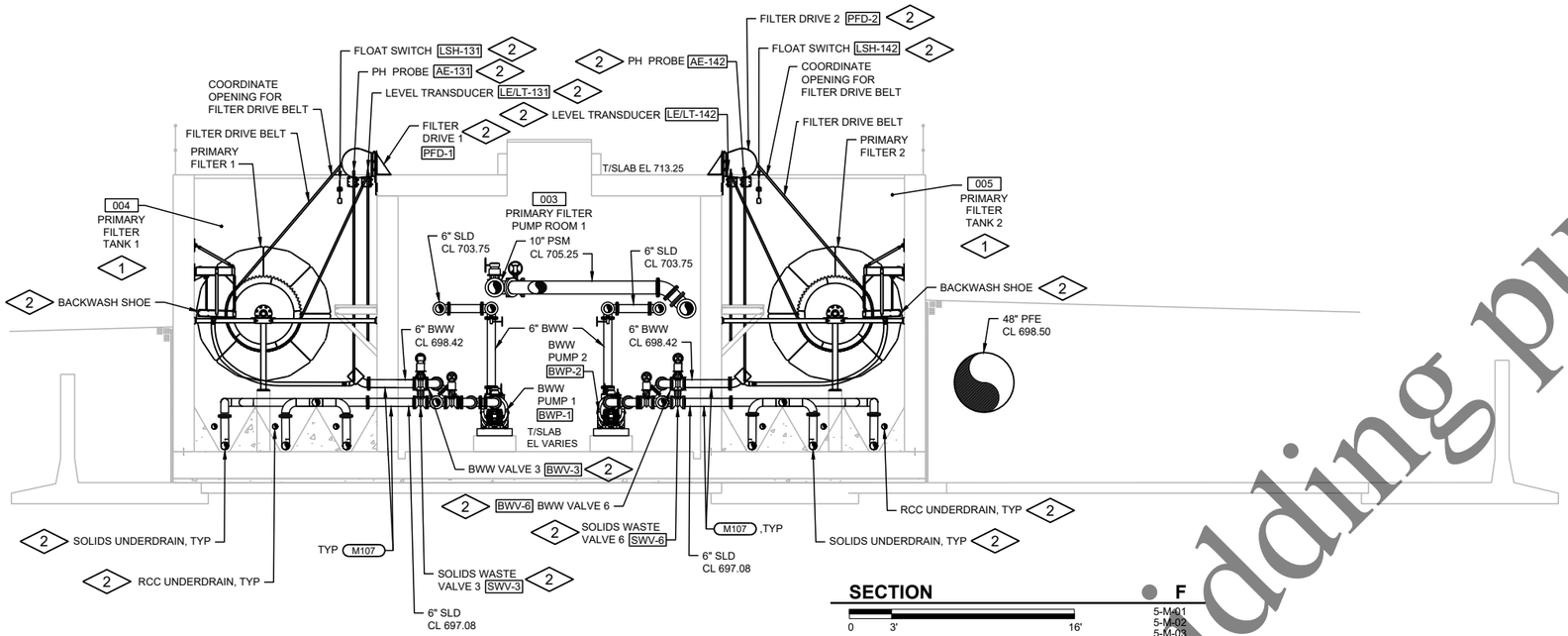
PRIMARY FILTRATION FACILITY 1
SECTIONS

DONOHUE 11/23/2021

Sheet No. 78

Drawing No. **5-M-06**

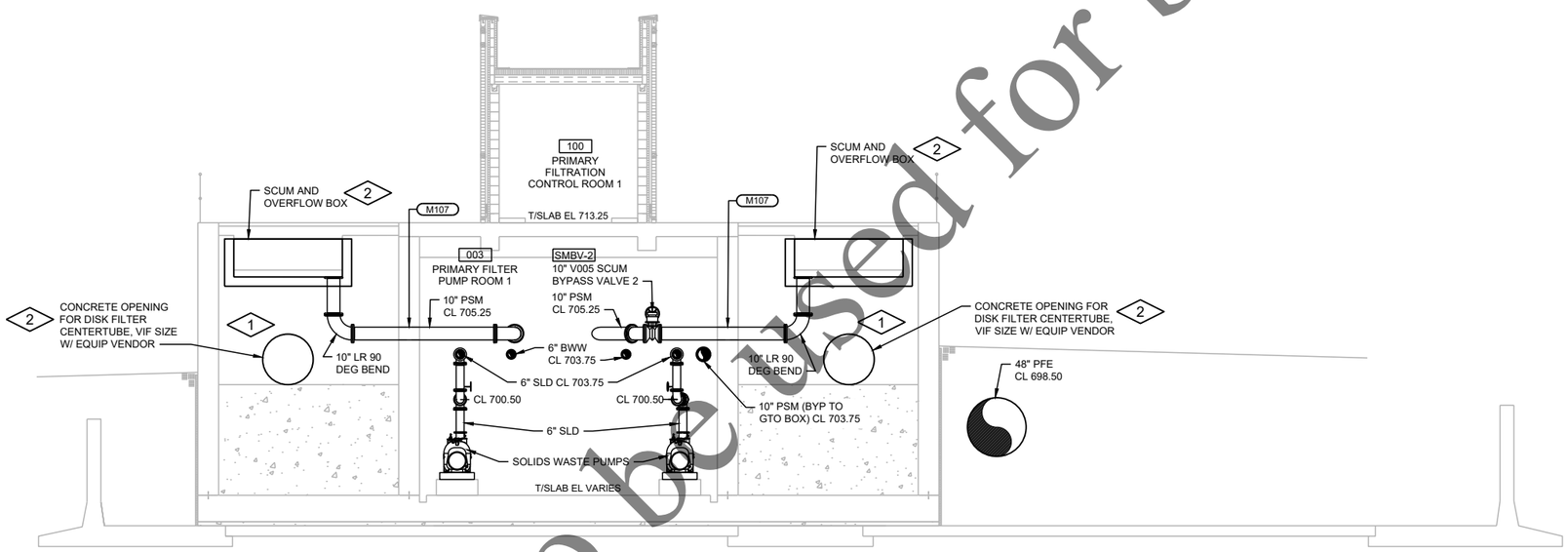
file: P:\13852ch\Dwg\5MS1.dwg



SECTION F

0 3' 16'

5-M-01
5-M-02
5-M-03



SECTION G

0 3' 16'

5-M-01
5-M-02
5-M-03

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION

2. PROVIDED UNDER SECTION 46 61 41

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Four Rivers Sanitation Authority

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Drawn By	MTR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

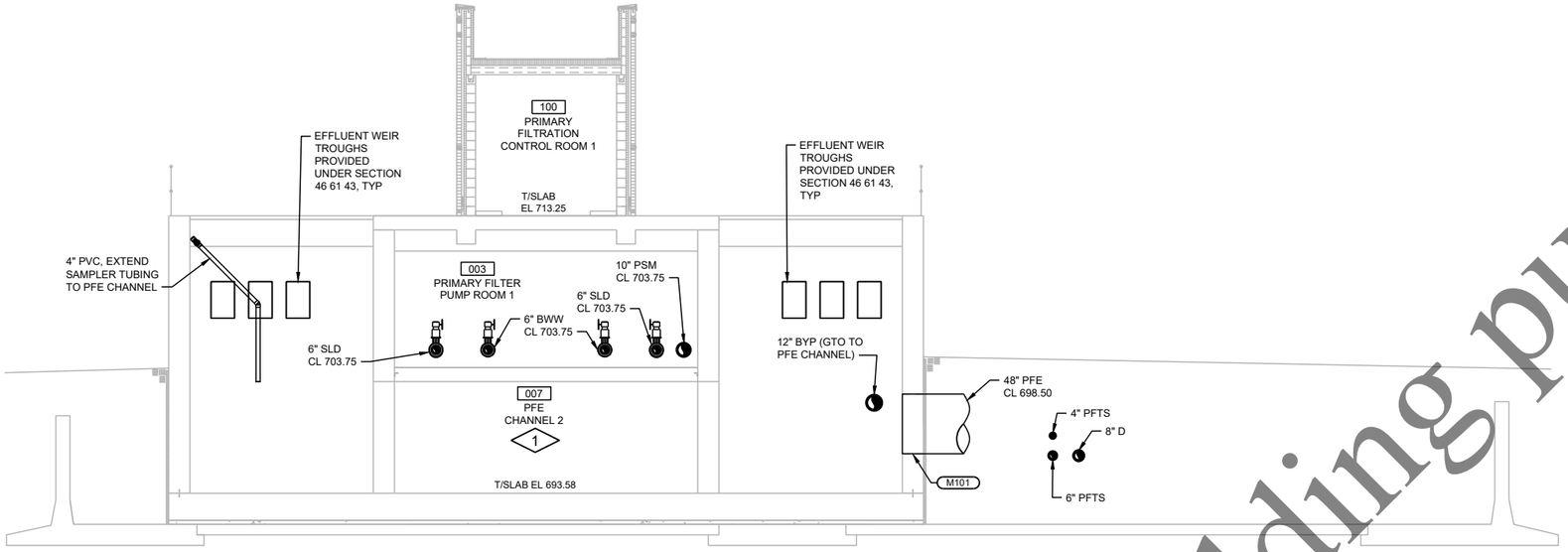
PRIMARY FILTRATION FACILITY 1
SECTIONS

DONOHUE 11/23/2021

Sheet No. 79

Drawing No. **5-M-07**

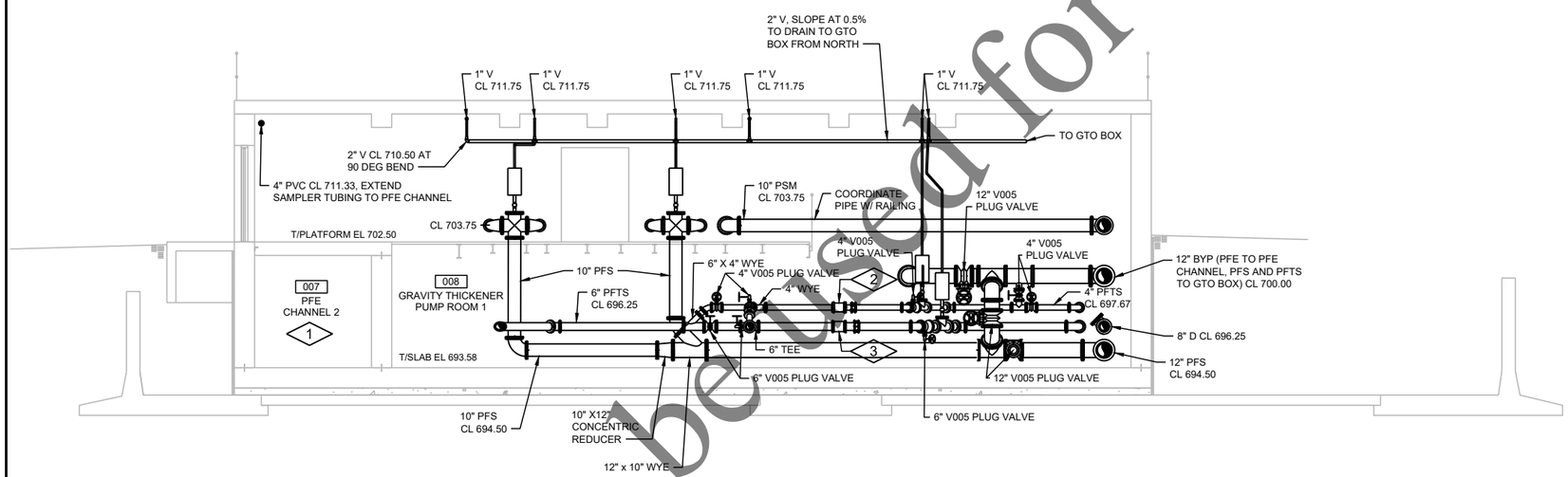
file: P:\13852chi\Dwg\5MS1.dwg



SECTION H

0 3' 16'

5-M-01
5-M-02
5-M-03



SECTION I

0 3' 16'

5-M-01
5-M-02
5-M-03

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. 4" PFTSP ELECTROMAGNETIC FLOWMETER FE/FIT-171 WITH DISMANTLING JOINT, PROVIDE 4" SPOOL PIECE FOR FLOWMETER REMOVAL
3. 6" PFTSP ELECTROMAGNETIC FLOWMETER FE/FIT-172 WITH DISMANTLING JOINT, PROVIDE 6" SPOOL PIECE FOR FLOWMETER REMOVAL

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

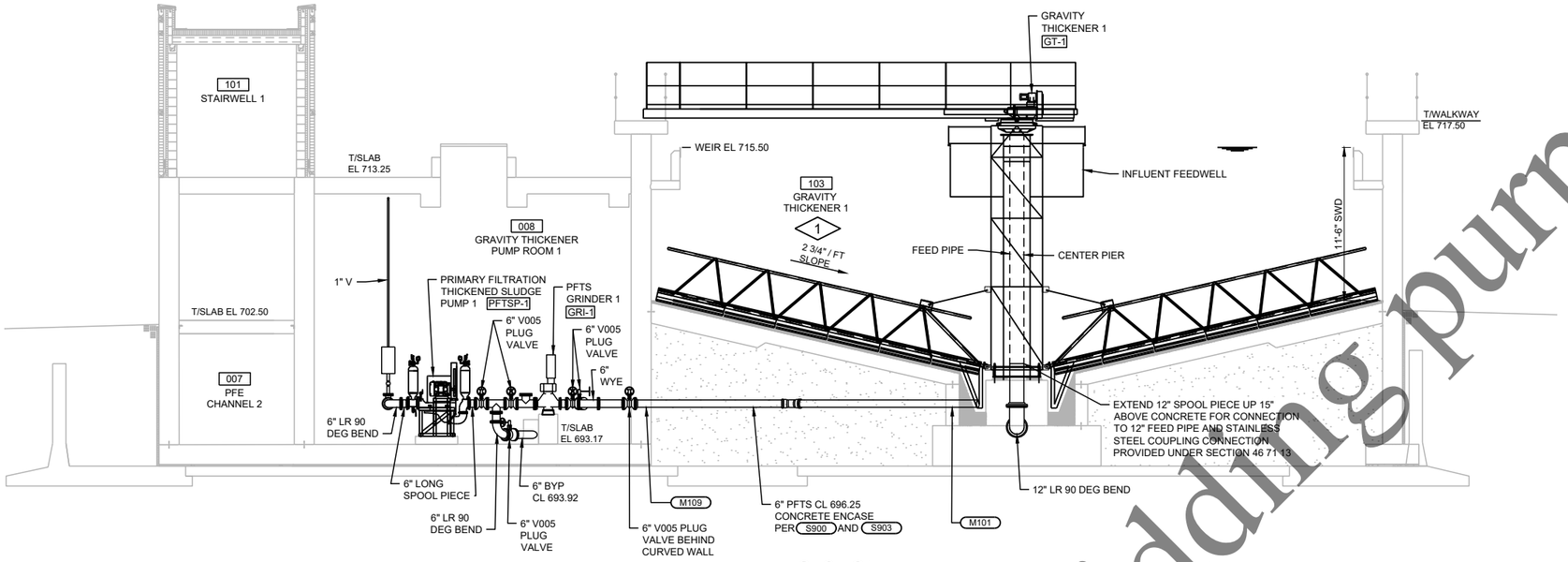
PRIMARY FILTRATION FACILITY 1
SECTIONS

DONOHUE 11/23/2021

Sheet No. 80

Drawing No. 5-M-08

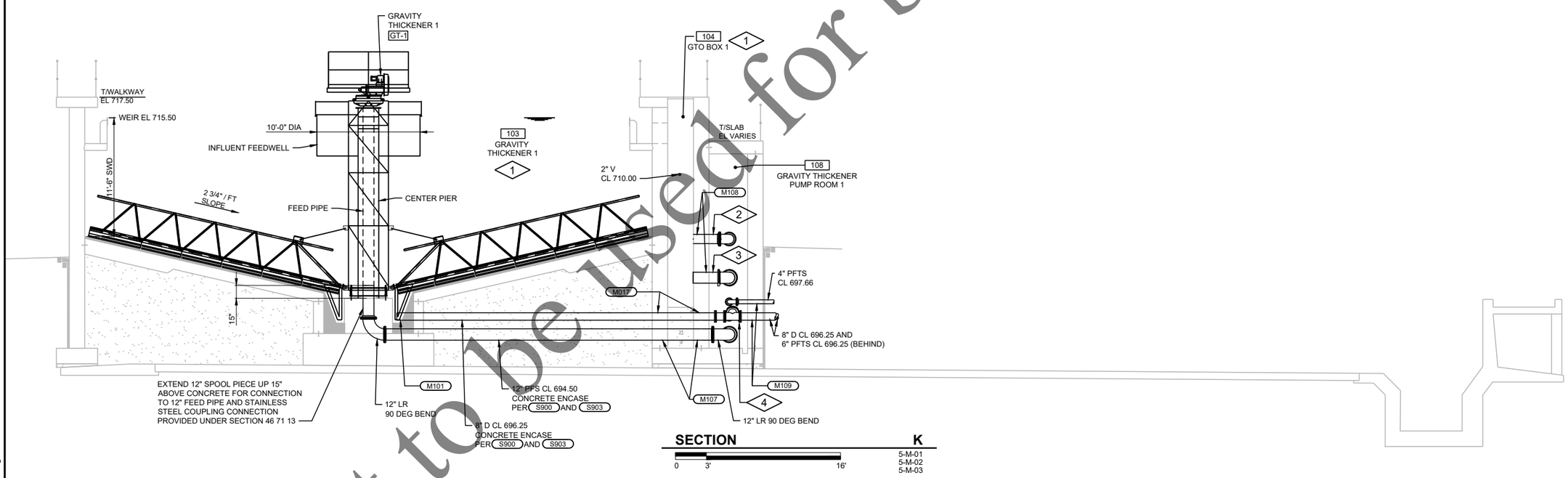
file: P:\13852chi\Dwg\5\MS1.dwg



SECTION J

0 3' 16'

5-M-01
5-M-02
5-M-03



SECTION K

0 3' 16'

5-M-01
5-M-02
5-M-03

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. 10" PSM (BYP TO GTO BOX) CL 703.75
3. 12" BYP (GTO TO PFE CHANNEL, PFS TO GTO BOX) CL 700.00
4. 8"X4" TEE W/ 4" BF AND FLUSH CONNECTION PER M710

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	MTR
				Drawn By	MTR
				Checked By	SPG
				Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

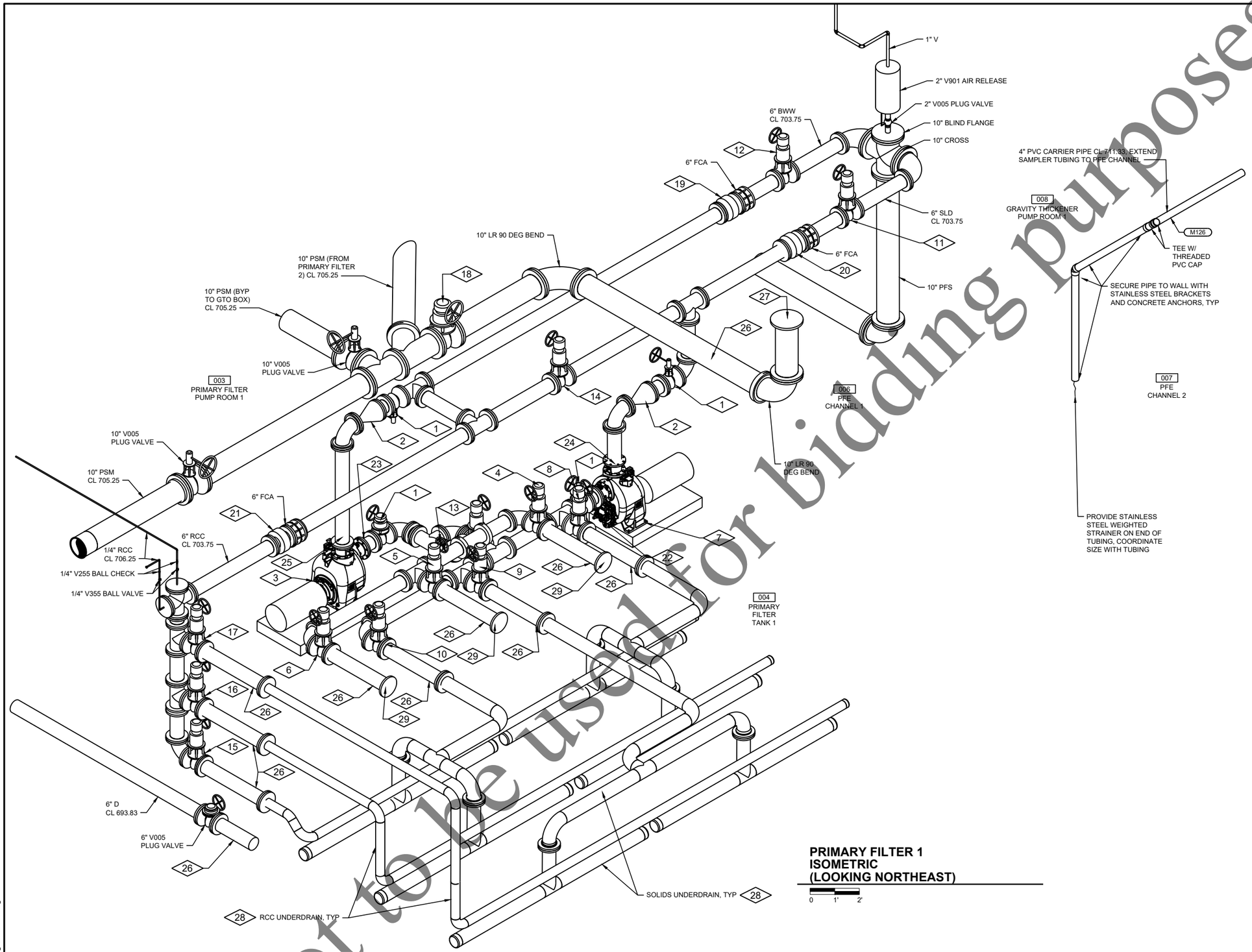
PRIMARY FILTRATION FACILITY 1
SECTION

DONOHUE 11/23/2021

Sheet No. 81

Drawing No. **5-M-09**

file: P:\13852chi\Dwg\5MS1.dwg



PRIMARY FILTER 1 ISOMETRIC (LOOKING NORTHEAST)

0 1' 2'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. 6" V005 PLUG VALVE 28
2. 6" V206 CHECK VALVE 28
3. BWW PUMP 1 BWP-1 28
4. 6" BWW VALVE 1 BWV-1 28
5. 6" BWW VALVE 2 BWV-2 28
6. 6" BWW VALVE 3 BWV-3 28
7. SOLIDS WASTE PUMP 1 SWP-1 28
8. 6" SOLIDS WASTE VALVE 1 SWV-1 28
9. 6" SOLIDS WASTE VALVE 2 SWV-2 28
10. 6" SOLIDS WASTE VALVE 3 SWV-3 28
11. 6" SOLIDS WASTE DISCHARGE VALVE 1 SWDV-1 28
12. 6" BWW DISCHARGE VALVE 1 BWDV-1 28
13. 6" BACK-UP VALVE 1 BKV-1 28
14. 6" BACK-UP VALVE 2 BKV-2 28
15. 6" RECIRCULATION VALVE 1 RCV-1 28
16. 6" RECIRCULATION VALVE 2 RCV-2 28
17. 6" RECIRCULATION VALVE 3 RCV-3 28
18. 10" SCUM VALVE 1 PSMV-1 28
19. 6" BACKWASH WASTE DISCHARGE FLOWMETER 1 FE/FIT-132 28
20. 6" SOLIDS WASTE DISCHARGE FLOWMETER 1 FE/FIT-131 28
21. 6" RECIRCULATION FLOW ELEMENT 1 FE-133 28
22. PI-131 & PT-131 PER N590 28
23. PI-132 & PT-132 PER N590 28
24. PI-133 PER N590 28
25. PI-134 PER N590 28
26. M107 THRU WALL
27. FLANGE CONNECTION TO SCUM AND OVERFLOW BOX
28. PROVIDED UNDER SECTION 46 61 41
29. FLANGE CONNECTION TO BACKWASH, TYP

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
PRIMARY FILTER 1 ISOMETRIC

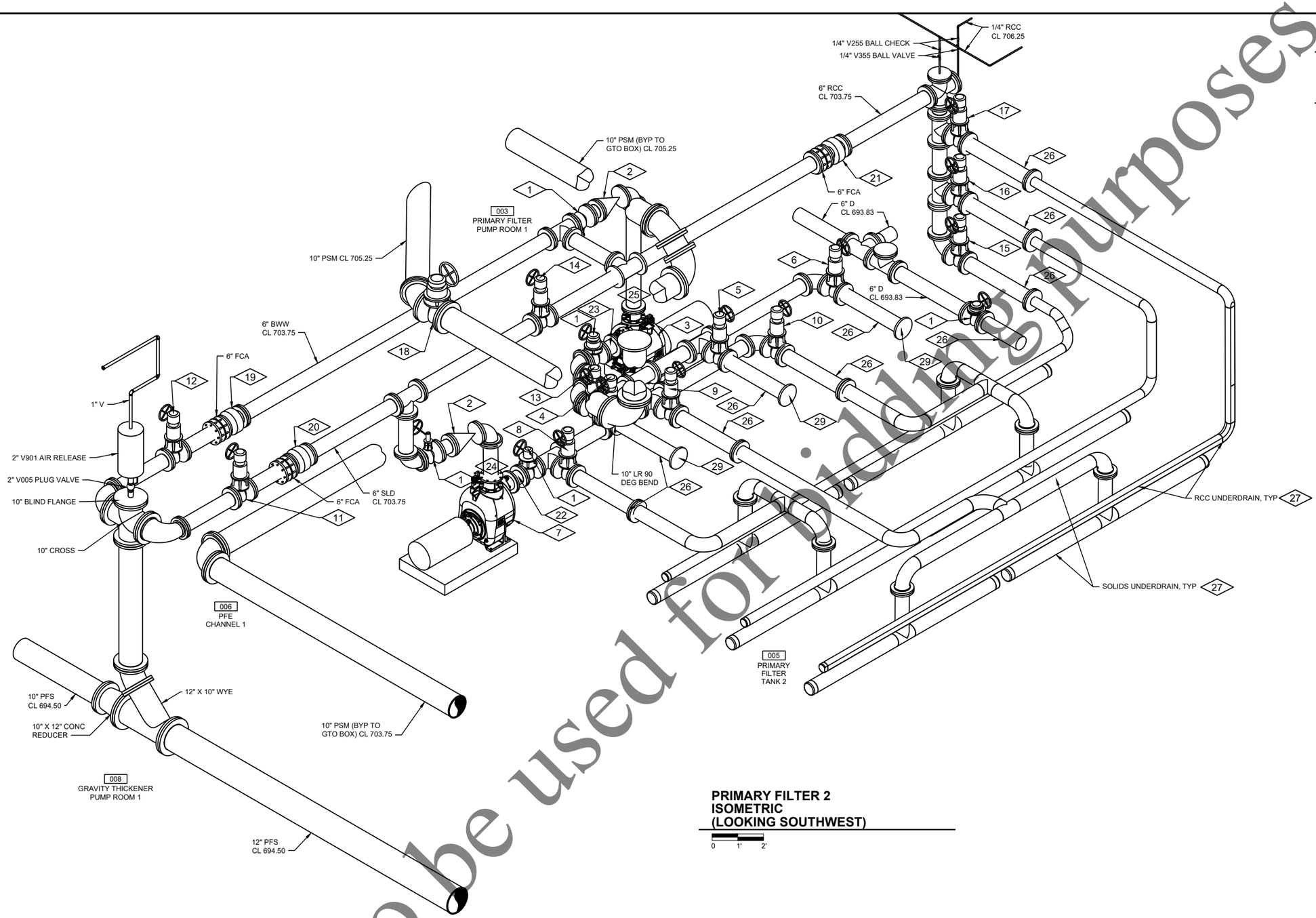
DONOHUE

11/23/2021

Sheet No. 82

Drawing No. 5-M-10

file: P:\13852chi\Dwg\5MIso1.dwg



PRIMARY FILTER 2
ISOMETRIC
(LOOKING SOUTHWEST)

0 1' 2'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. 6" V005 PLUG VALVE 27
2. 6" V206 CHECK VALVE 27
3. BWW PUMP 2 BWP-2 27
4. BWW VALVE 4 BWV-4 27
5. BWW VALVE 5 BWV-5 27
6. BWW VALVE 6 BWV-6 27
7. SOLIDS WASTE PUMP 2 SWP-2 27
8. SOLIDS WASTE VALVE 4 SWV-4 27
9. SOLIDS WASTE VALVE 5 SWV-5 27
10. SOLIDS WASTE VALVE 6 SWV-6 27
11. SOLIDS WASTE DISCHARGE VALVE 2 SWDV-2 27
12. BWW DISCHARGE VALVE 2 BWDV-2 27
13. BACK-UP VALVE 3 BKV-3 27
14. BACK-UP VALVE 4 BKV-4 27
15. RECIRCULATION VALVE 4 RCV-4 27
16. RECIRCULATION VALVE 5 RCV-5 27
17. RECIRCULATION VALVE 6 RCV-6 27
18. SCUM VALVE 2 PSMV-2 27
19. 6" BACKWASH WASTE DISCHARGE FLOWMETER 2 FE/FIT-142 27
20. 6" SOLIDS WASTE DISCHARGE FLOWMETER 2 FE/FIT-141 27
21. 6" RECIRCULATION FLOW ELEMENT 2 FE-143 27
22. PI-141 & PT-141 PER N590 27
23. PI-142 & PT-142 PER N590 27
24. PI-143 PER N590 27
25. PI-144 PER N590 27
26. M107 THRU WALL
27. PROVIDED UNDER SECTION 46 61 41
29. FLANGE CONNECTION TO BACKWASH, TYP

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

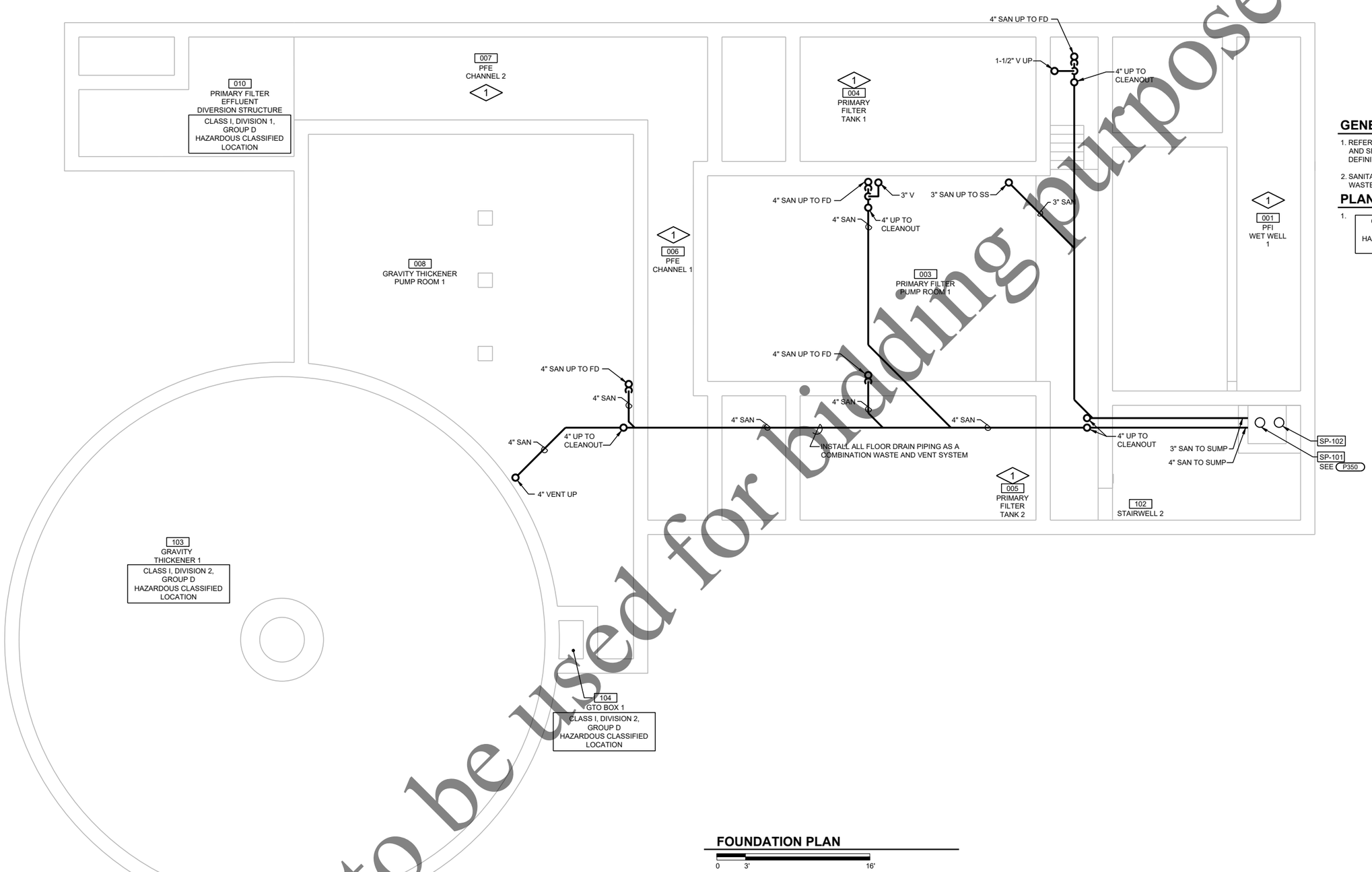
PRIMARY FILTRATION FACILITY 1
PRIMARY FILTER 2 ISOMETRIC

DONOHUE 11/23/2021

Sheet No. 83

Drawing No. **5-M-11**

file: P:\13852chi\Dwg\5MIso1.dwg



GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.
2. SANITARY SYSTEM FOR FLOOR DRAINS IS A COMBINATION WASTE VENT SYSTEM.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION

FOUNDATION PLAN

0 3' 16'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	CAH
				Drawn By	CAH
				Checked By	JLW
				Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

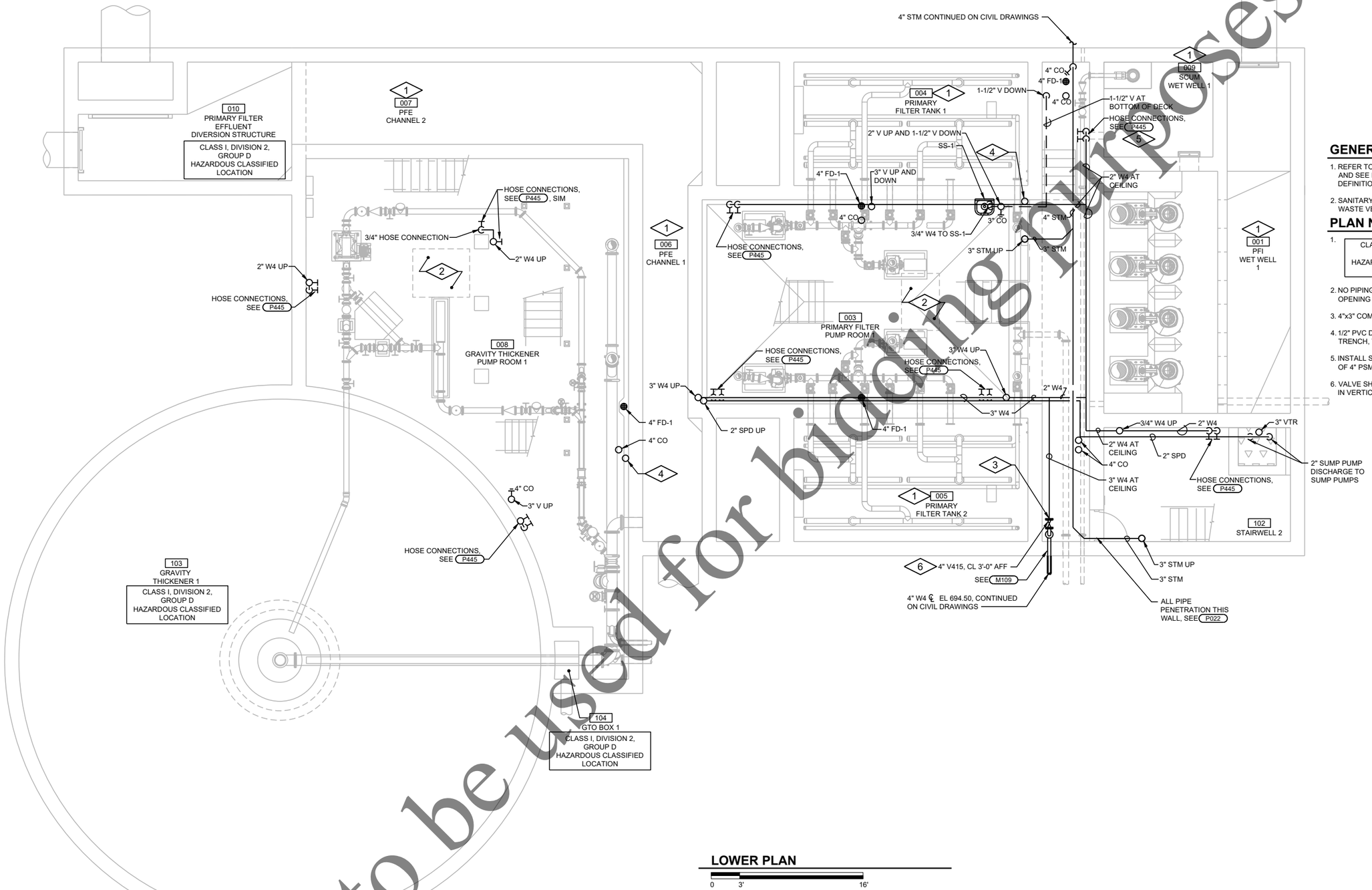
PRIMARY FILTRATION FACILITY 1
FOUNDATION PLAN

DONOHUE 11/23/2021

Sheet No. 84

Drawing No. 5-P-01

file: P:\13852ch\Dwg\5PP1.dwg



GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.
2. SANITARY SYSTEM FOR FLOOR DRAINS IS A COMBINATION WASTE VENT SYSTEM.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. NO PIPING SHALL BE ROUTED WITHIN 2'-0" OF PROJECTED OPENING OF HATCH ABOVE.
3. 4"x3" COMPANION FLANGE.
4. 1/2" PVC D FROM DECK HYDRANT WEEP HOLE, ROUTE TO TRENCH, TERMINATE 4" AFF.
5. INSTALL SUCH THAT HOSE CONNECTIONS ARE 1'-6" ABOVE TOP OF 4" PSM PIPE, APPROX EL 697.25.
6. VALVE SHOWN AS HORIZONTAL FOR CLARITY. INSTALL VALVE IN VERTICAL RISE.

LOWER PLAN

0 3' 16'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CAH
Drawn By	CAH
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

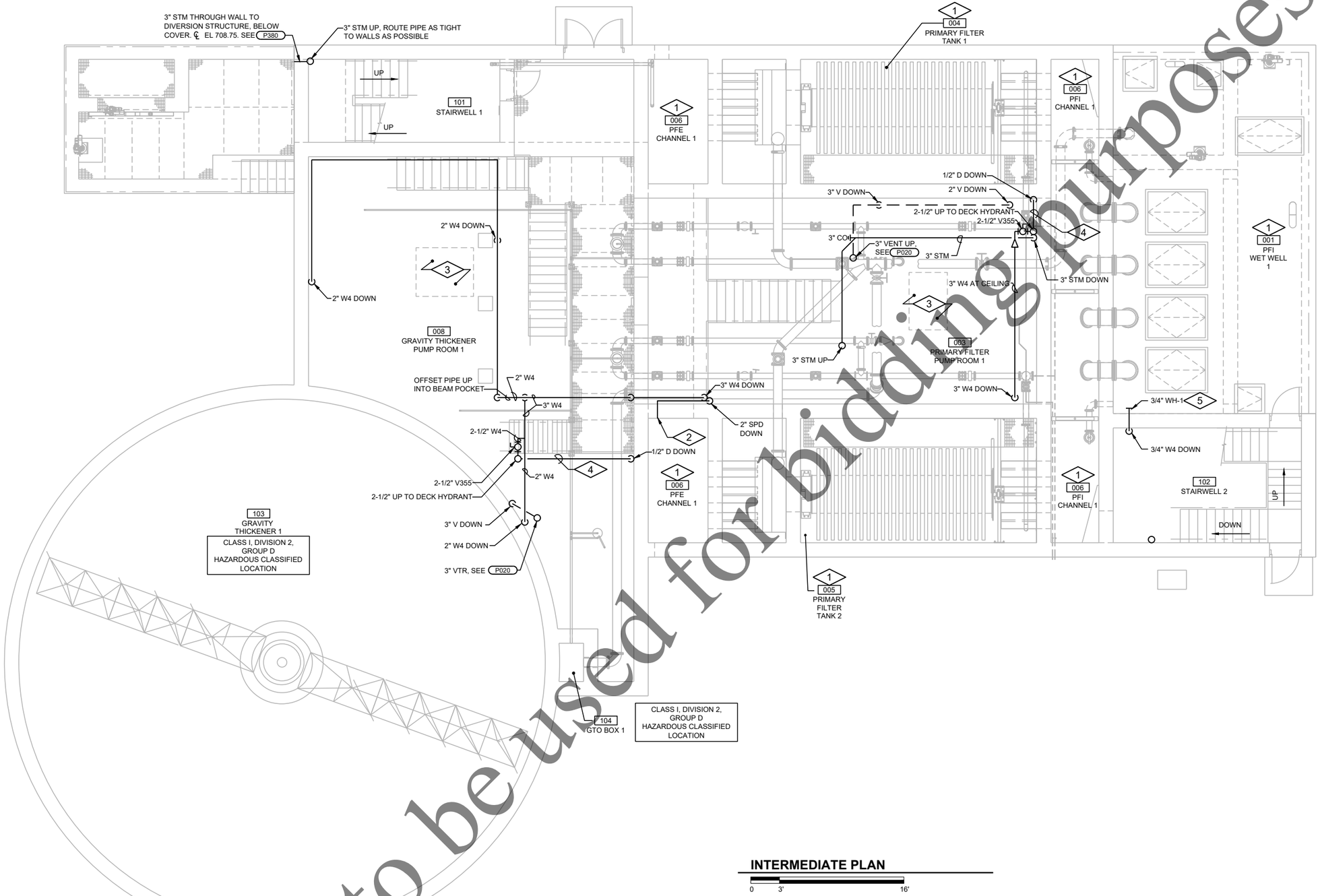
PRIMARY FILTRATION FACILITY 1
LOWER PLAN

DONOHUE 11/23/2021

Sheet No. 85

Drawing No. 5-P-02

file: P:\13852ch\Dwg\5PP1.dwg



INTERMEDIATE PLAN

0 3' 16'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. 2" SUMP PUMP DISCHARGE TO EFFLUENT CHANNEL AT CL EL 708.17, SEE P380
3. NO PIPING SHALL BE ROUTED WITHIN 2'-0" OF PROJECTED OPENING OF HATCH ABOVE.
4. 1/2" PVD D FROM DECK HYDRANT WEEP HOLE.
5. INSTALL AT 2'-6" ABOVE EXTERIOR DECK SURFACE.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CAH
Drawn By	CAH
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

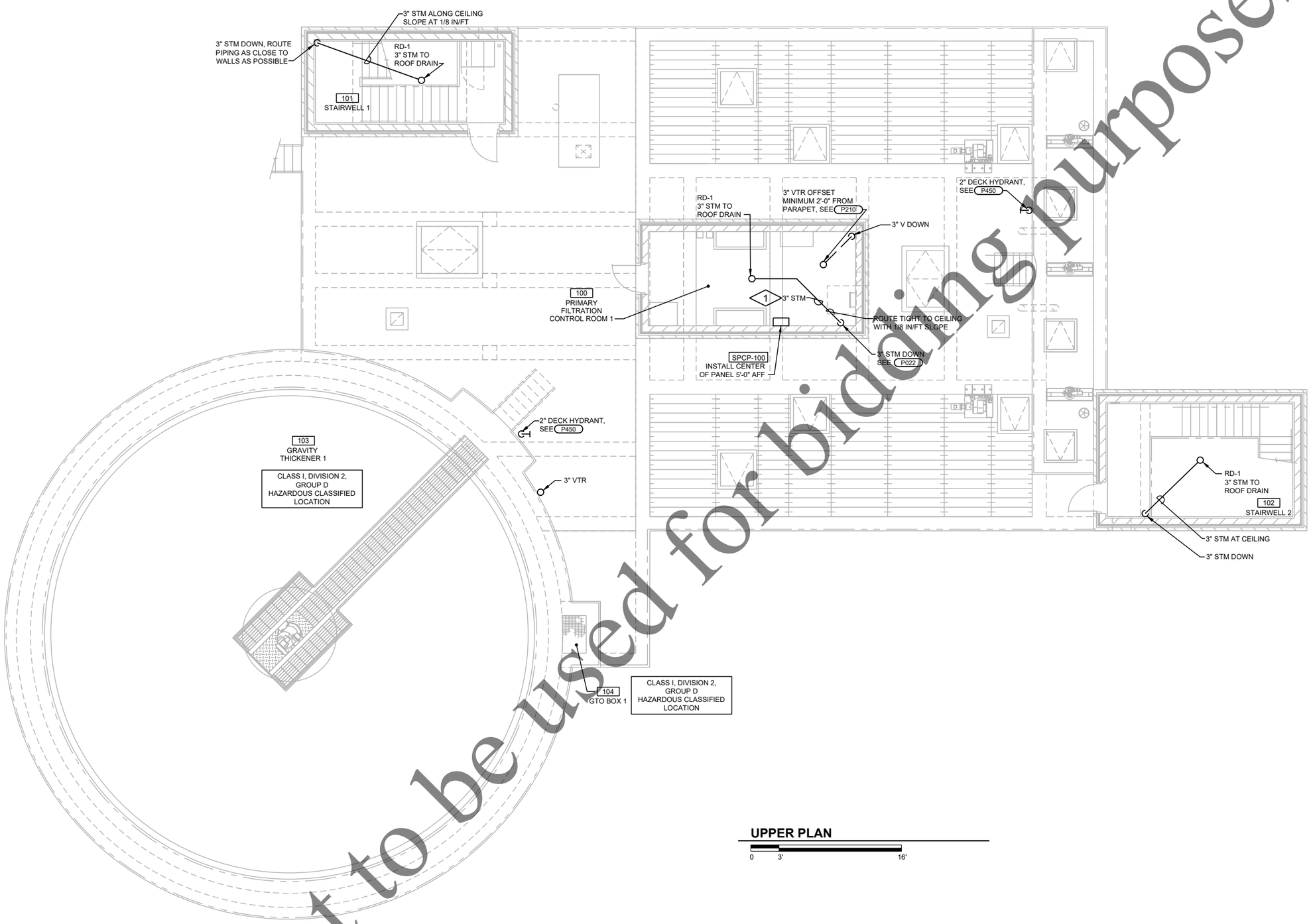
PRIMARY FILTRATION FACILITY 1
INTERMEDIATE PLAN

DONOHUE 11/23/2021

Sheet No. 86

Drawing No. 5-P-03

file: P:\13852chi\Dwg\5PP1.dwg



UPPER PLAN

0 3' 16'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.

PLAN NOTES:

1. PIPING SHALL BE ROUTED TO AVOID ANY PIPING INSTALLED ABOVE ELECTRICAL OR CONTROL EQUIPMENT. MAINTAIN MINIMUM CLEAR SPACE OF 3'-0" WEST OF AN 1'-6" ADJACENT TO ROOF ACCESS LADDER.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CAH
Drawn By	CAH
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

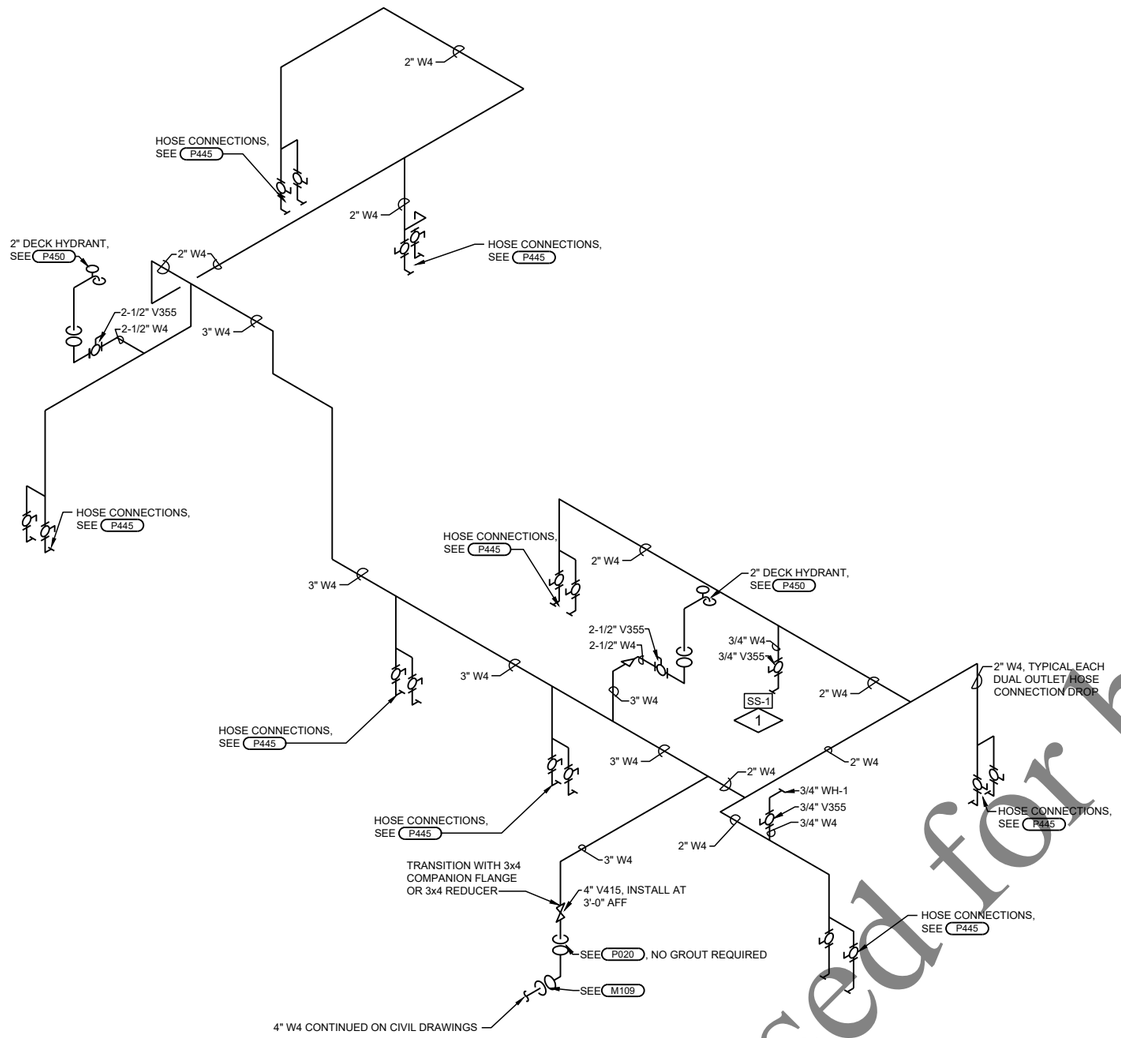
PRIMARY FILTRATION FACILITY 1
UPPER PLAN

DONOHUE 11/23/2021

Sheet No. 87

Drawing No. 5-P-04

file: P:\13852chi\Dwg\5PP1.dwg



WATER ISOMETRIC

NTS

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.

PLAN NOTES:

1. TERMINATE WATER OUTLET CENTERED ON SINK BASIN, 8" FROM WALL AND 1'-0" ABOVE BASIN RIM. LOCATE ISOLATION VALVE NO MORE THAN 4'-6" AFF.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CAH
Drawn By	CAH
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

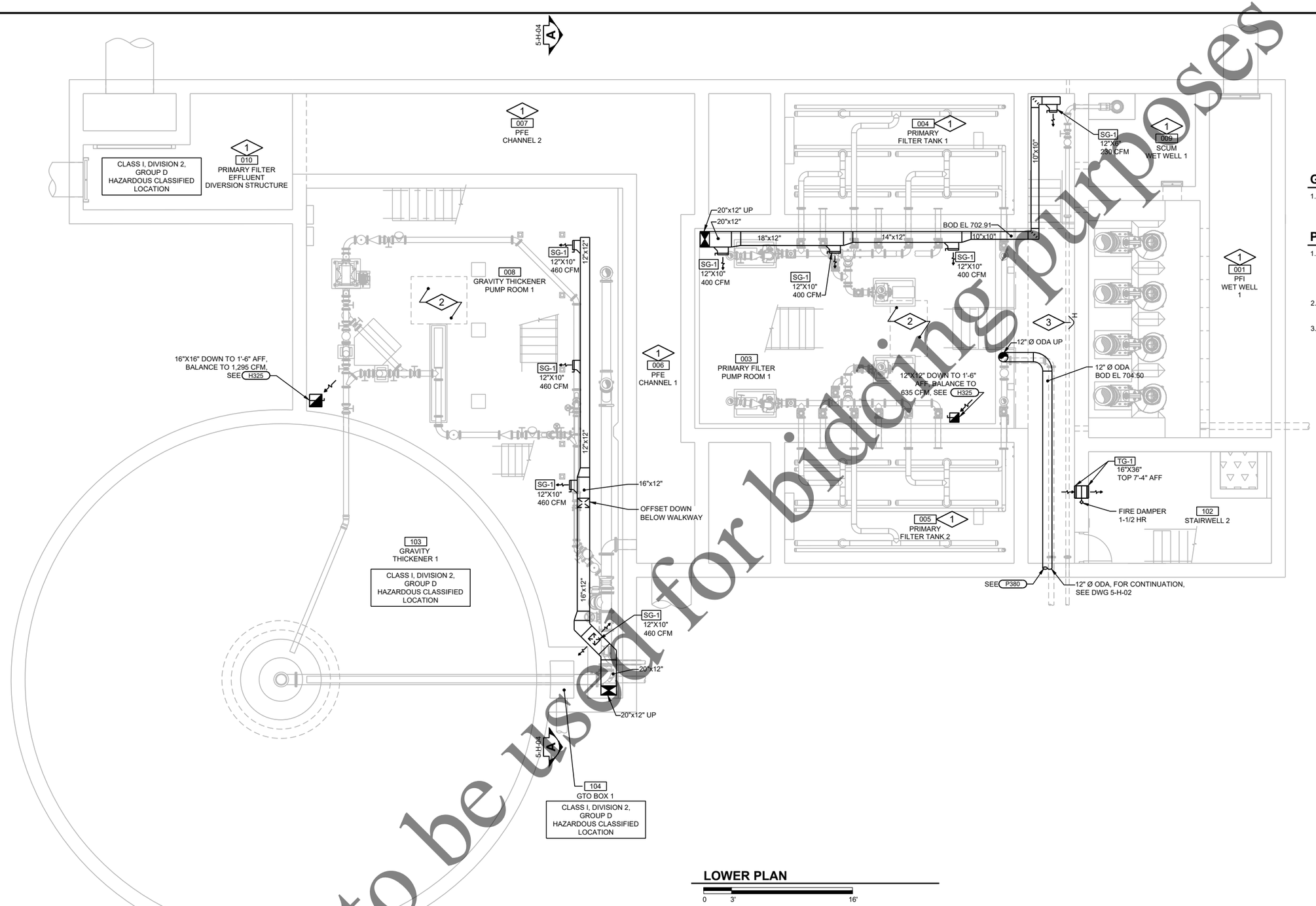
PRIMARY FILTRATION FACILITY 1
WATER ISOMETRIC

DONOHUE 11/23/2021

Sheet No. 88

Drawing No. 5-P-05

file: P:\13852chi\Dwg\5PP1.dwg



LOWER PLAN

0 3' 16'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. NO PIPING SHALL BE ROUTED WITHIN 2'-0" OF PROJECTED OPENING OF HATCH ABOVE.
3. INSTALL LIGHT AND HORN AT 4'-0" AFF SO VISIBLE FROM WEST UPPER WALKWAY.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CAH
Drawn By	CAH
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

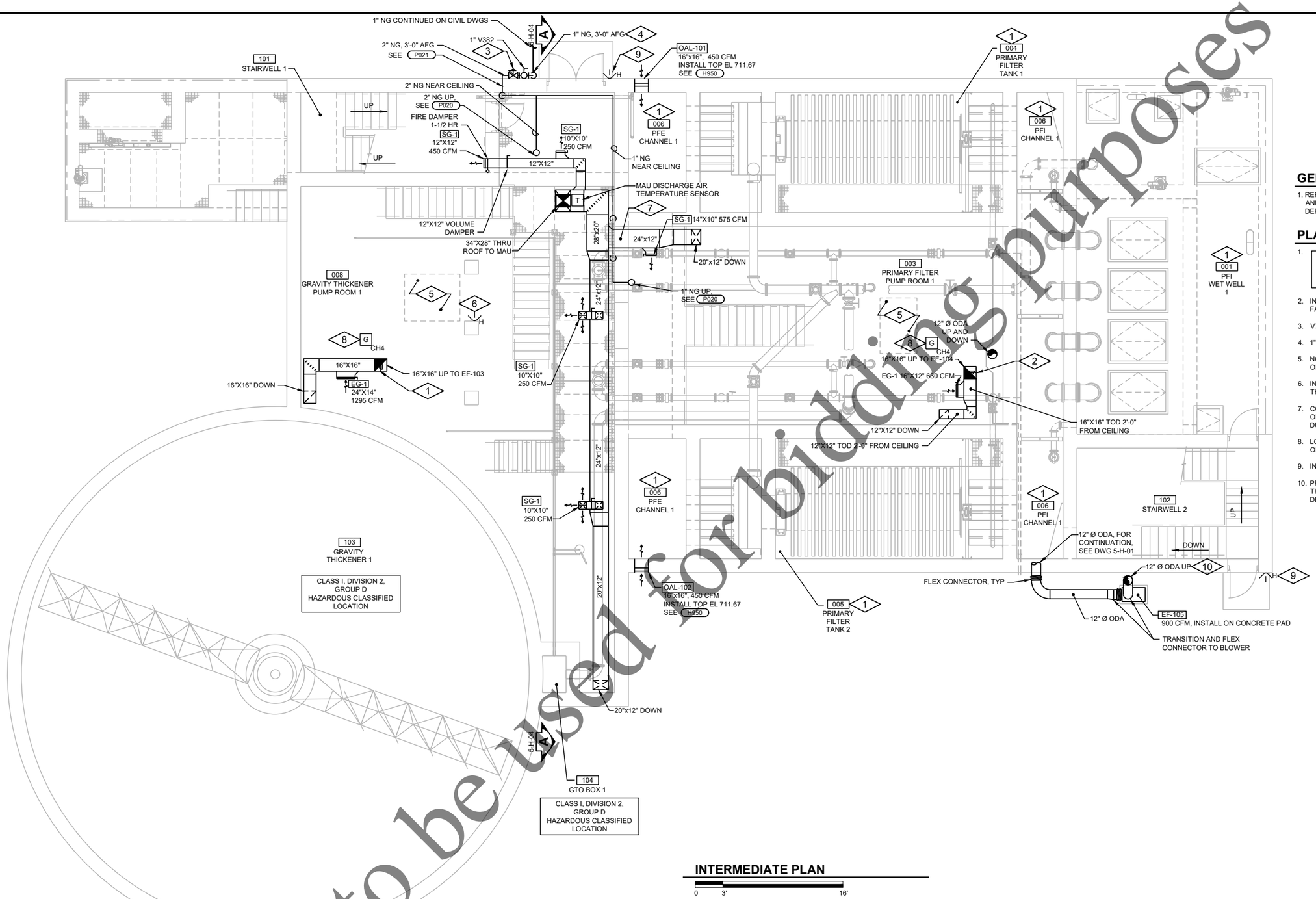
PRIMARY FILTRATION FACILITY 1
LOWER PLAN

DONOHUE 11/23/2021

Sheet No. 89

Drawing No. 5-H-01

file: P:\13852ch\Dwg\5HP1.dwg



INTERMEDIATE PLAN

0 3' 16'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. INSTALL GRAVITY BACKDRAFT DAMPER FURNISHED WITH FAN.
3. V707, 5 PSI INCOMING, 14 IN WC OUTGOING, FLOW 625 CFH.
4. 1" ANODELESS RISER.
5. NO PIPING SHALL BE ROUTED WITHIN 2'-0" OF PROJECTED OPENING OF HATCH ABOVE.
6. INSTALL LIGHT AND HORN AT 4'-0" ABOVE PLATFORM TO THE EAST.
7. COORDINATE WITH CONCRETE WORK TO PROVIDE DUCT OPENING 2" LARGER IN WIDTH AND DEPTH OF PASSING DUCT. NO PENETRATION CLOSURE REQUIRED.
8. LOCATE COMBUSTIBLE GAS DETECTOR 8" BELOW BOTTOM OF BEAMS.
9. INSTALL ALARM LIGHT AND HORN AT 8'-6" AFG.
10. PROVIDE 45Ø LATERAL TO RECEIVE FAN DISCHARGE THROUGH BRANCH. CAP BASE OF LATERAL AND DRILL 1/4" DRAIN HOLE AT LOW POINT OF CAP.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CAH
Drawn By	CAH
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
INTERMEDIATE PLAN

DONOHUE 11/23/2021

Sheet No. 90

Drawing No. 5-H-02

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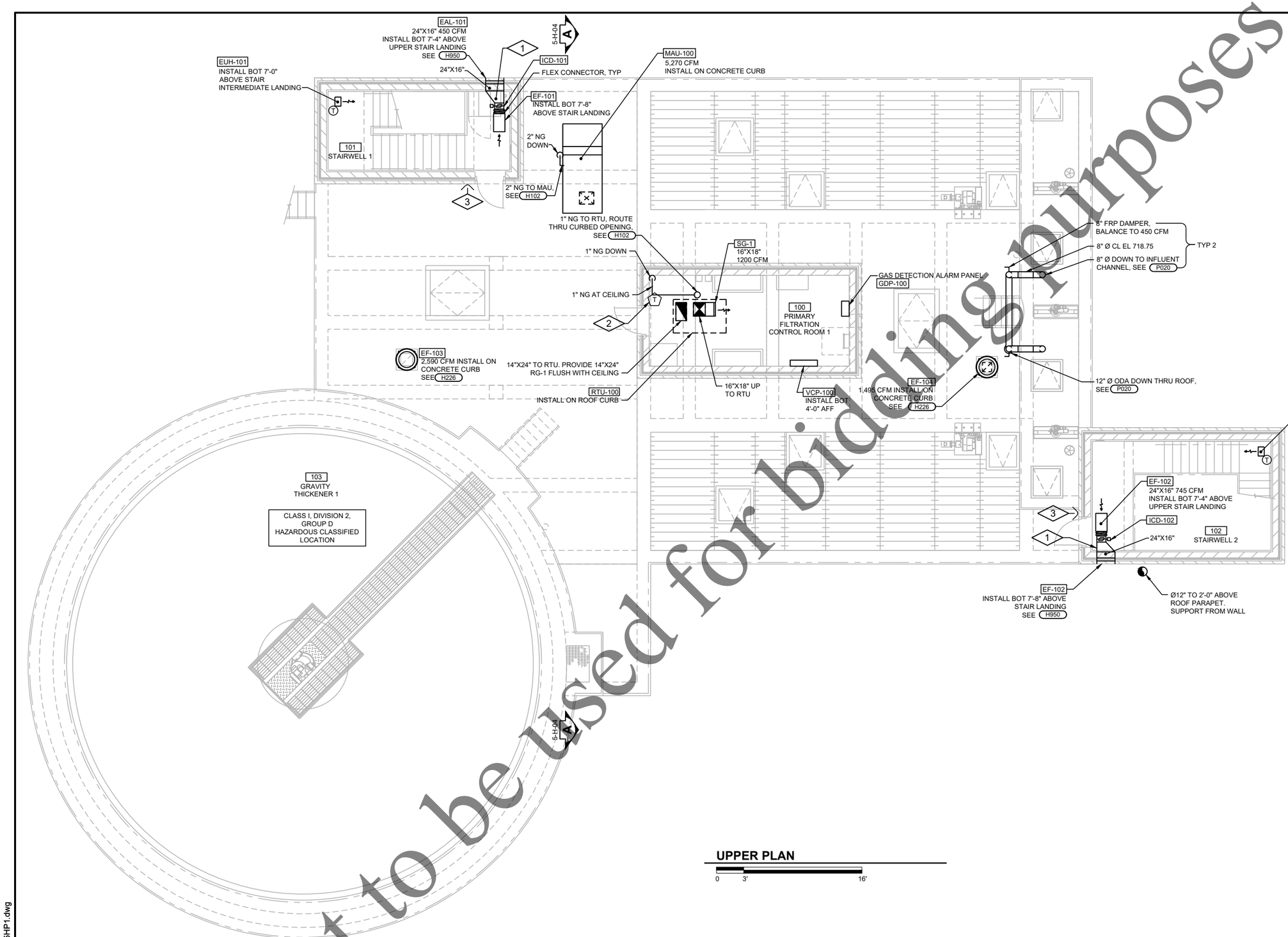


GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.

PLAN NOTES:

1. INSULATE DUCTWORK FROM LOUVER TO DAMPER IN ACCORDANCE WITH SPECIFICATION 23 07 00.
2. INSTALL TEMPERATURE SENSOR FURNISHED WITH EQUIPMENT.
3. INSTALL ALARM LIGHT AT 8'-6" AFF.

UPPER PLAN

0 3' 16'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CAH
Drawn By	CAH
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

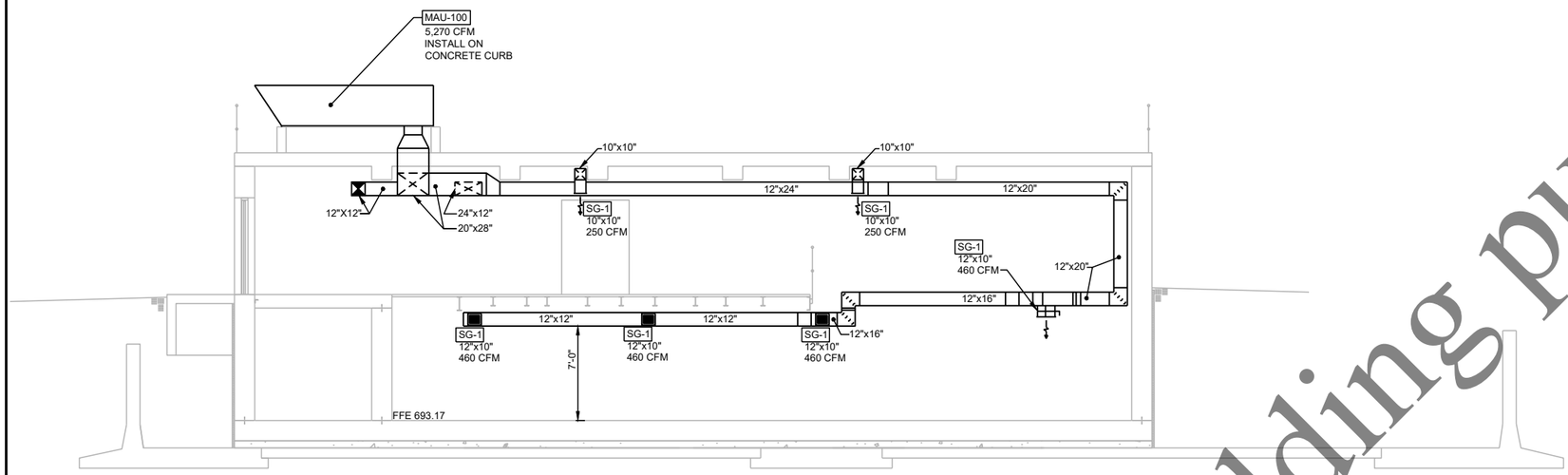
PRIMARY FILTRATION FACILITY 1
UPPER PLAN

DONOHUE 11/23/2021

Sheet No. 91

Drawing No. 5-H-03

file: P:\13852chi\Dwg\5HP1.dwg



SECTION A

0 3' 16'

5-H-01
5-H-02
5-H-03

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	CAH
				Drawn By	CAH
				Checked By	JLW
				Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
SECTION

DONOHUE 11/23/2021

Sheet No. 92

Drawing No. **5-H-04**

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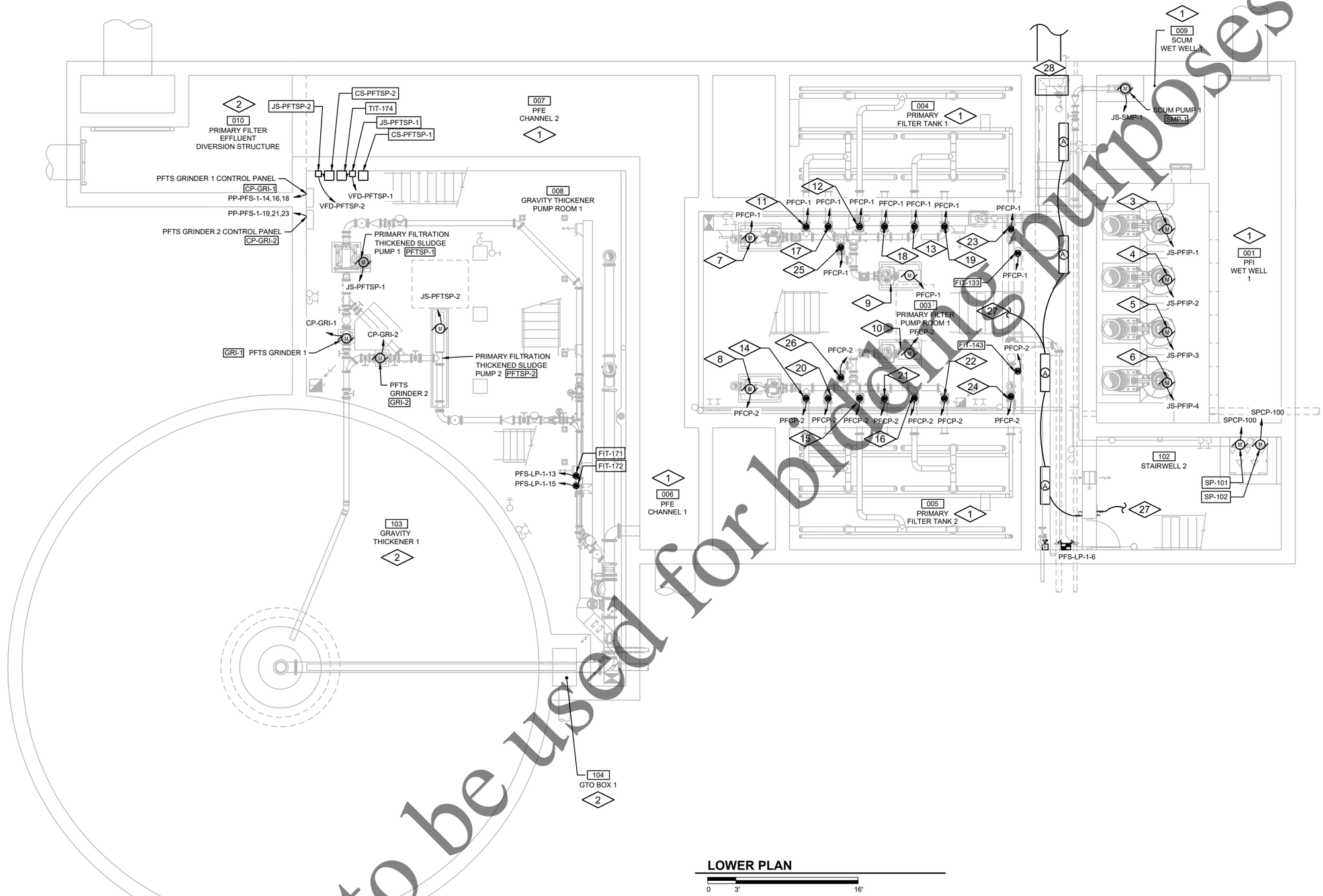


LOWER PLAN

0 3' 16'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND 1-G-05 FOR ELECTRICAL LEGEND.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
3. PRIMARY FILTRATION INFLUENT PUMP 1 PFIP-1
4. PRIMARY FILTRATION INFLUENT PUMP 2 PFIP-2
5. PRIMARY FILTRATION INFLUENT PUMP 3 PFIP-3
6. PRIMARY FILTRATION INFLUENT PUMP 4 PFIP-4
7. SOLIDS WASTE PUMP 1 SWP-1
8. SOLIDS WASTE PUMP 2 SWP-2
9. BWW PUMP 1 BWP-1
10. BWW PUMP 2 BWP-2
11. SOLIDS WASTE VALVE 1 SWV-1
12. SOLIDS WASTE VALVE 2 SWV-2
13. SOLIDS WASTE VALVE 3 SWV-3
14. SOLIDS WASTE VALVE 4 SWV-4
15. SOLIDS WASTE VALVE 5 SWV-5
16. SOLIDS WASTE VALVE 6 SWV-6
17. BWW VALVE 1 BWV-1
18. BWW VALVE 2 BWV-2
19. BWW VALVE 3 BWV-3
20. BWW VALVE 4 BWV-4
21. BWW VALVE 5 BWV-5
22. BWW VALVE 6 BWV-6
23. RECIRCULATION VALVE 1 RCV-1 AND RECIRCULATION VALVE 2 RCV-2 BELOW
24. RECIRCULATION VALVE 4 RCV-4 AND RECIRCULATION VALVE 5 RCV-5 BELOW
25. BACK-UP VALVE 1 BKV-1 IN VERTICAL
26. BACK-UP VALVE 3 BKV-3 IN VERTICAL
27. CONTINUED TO LIGHTING CIRCUIT ON DRAWING 5-E-02B.
28. INCOMING DUCTBANK SHALL ENTER PRIMARY FILTRATION FACILITY BELOW GRADE. PROVIDE NEW BOLTED STAINLESS STEEL JUNCTION BOX WITH DRAIN LINE CONNECTION AND BARRIERS BETWEEN POWER AND CONTROL CABLES. SEE ONE-LINE DIAGRAMS AND DUCT BANK SCHEDULE. EXTEND CONDUITS TO EQUIPMENT THROUGH PRIMARY FILTER PUMP ROOM AND CORRIDOR.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

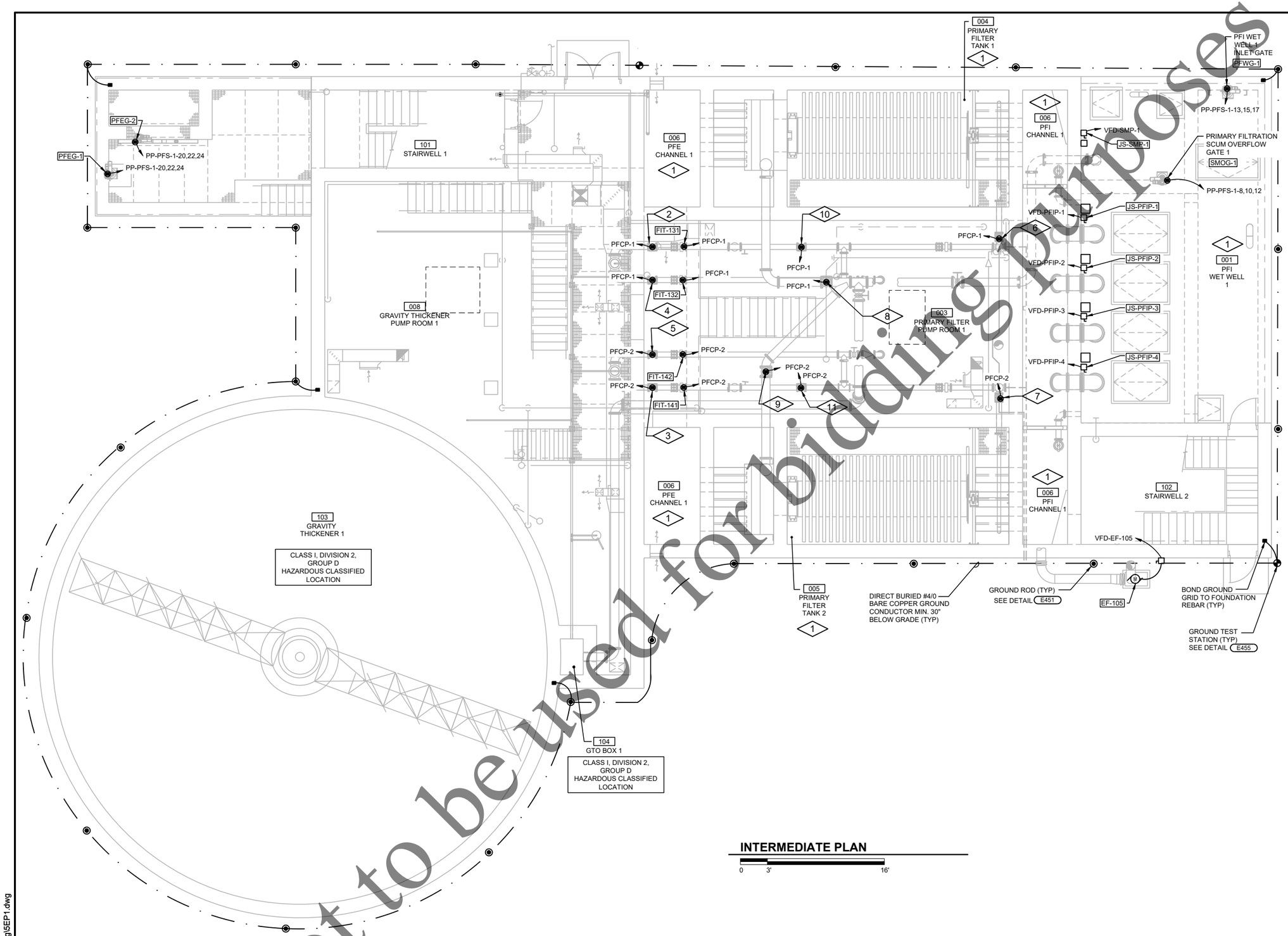
PRIMARY FILTRATION FACILITY 1
LOWER PLAN

DONOHUE 11/23/2021

Sheet No. 93

Drawing No. 5-E-01

file: P:\13852chi\Dwg\5EP1.dwg



INTERMEDIATE PLAN

0 3' 16'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND 1-G-05 FOR ELECTRICAL LEGEND.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. SOLIDS WASTE DISCHARGE VALVE 1 SWDV-1
3. SOLIDS WASTE DISCHARGE VALVE 2 SWDV-2
4. BWW DISCHARGE VALVE 1 BWDV-1
5. BWW DISCHARGE VALVE 2 BWDV-2
6. RECIRCULATION VALVE 3 RCV-3
7. RECIRCULATION VALVE 6 RCV-6
8. SCUM VALVE 1 PSMV-1
9. SCUM VALVE 2 PSMV-2
10. BACK-UP VALVE 2 BKV-2
11. BACK-UP VALVE 4 BKV-4

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

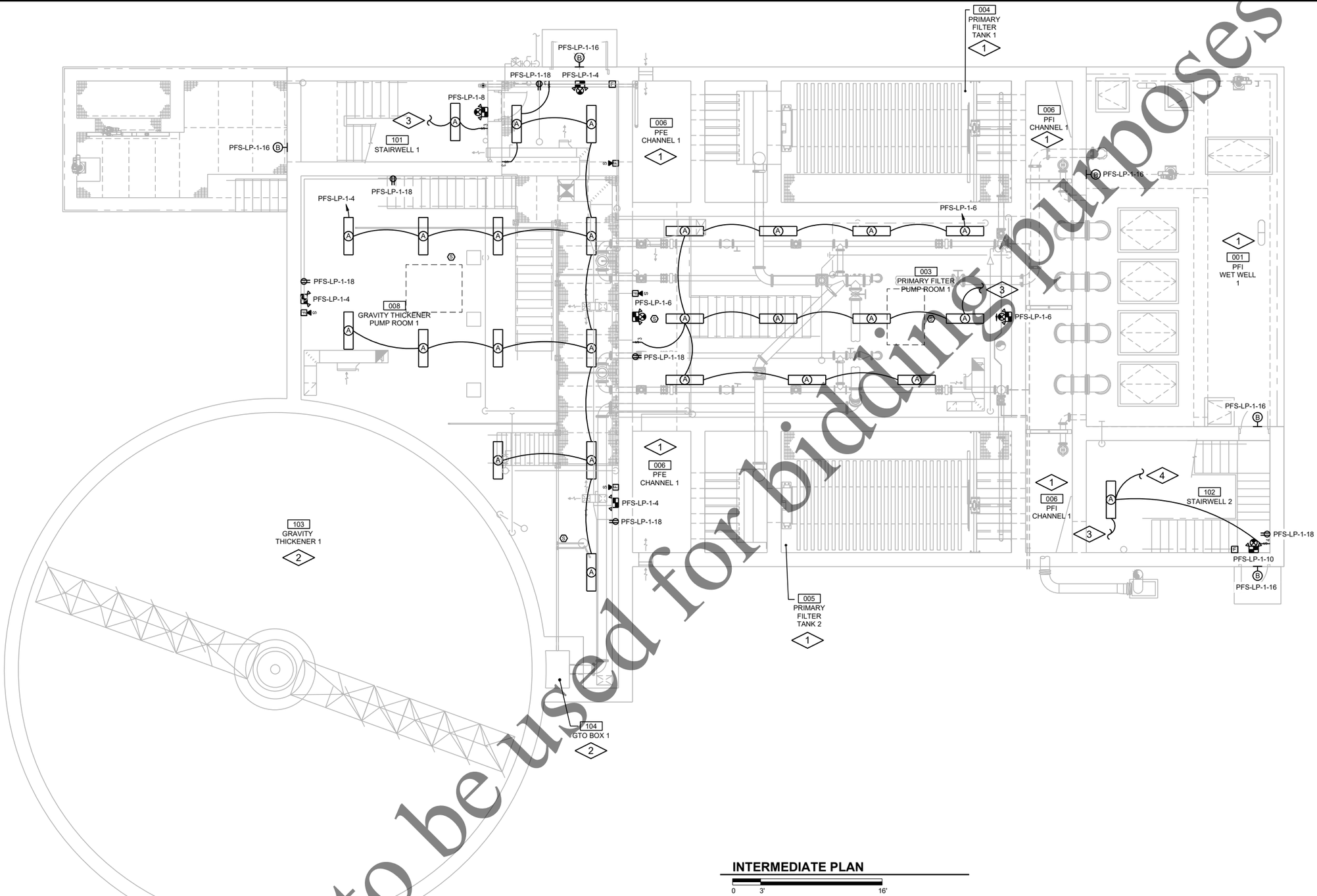
PRIMARY FILTRATION FACILITY 1
INTERMEDIATE PLAN

DONOHUE 11/23/2021

Sheet No. 94

Drawing No. 5-E-02A

file: P:\13852ch\Dwg\5EP1.dwg



GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND 1-G-05 FOR ELECTRICAL LEGEND.
2. EXTEND MANUFACTURER'S RECOMMENDED WIRING IN CONDUIT FROM FACP-1 IN MAIN PUMP II BUILDING TO FIRE ALARM DEVICES.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
3. CONTINUED TO LIGHTING CIRCUIT ON DRAWING 5-E-01
4. CONTINUED TO LIGHTING CIRCUIT ON DRAWING 5-E-03B

INTERMEDIATE PLAN

0 3' 16'

Not to be used for bidding purposes

file: P:\13852chi\Dwg\5EP1.dwg

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

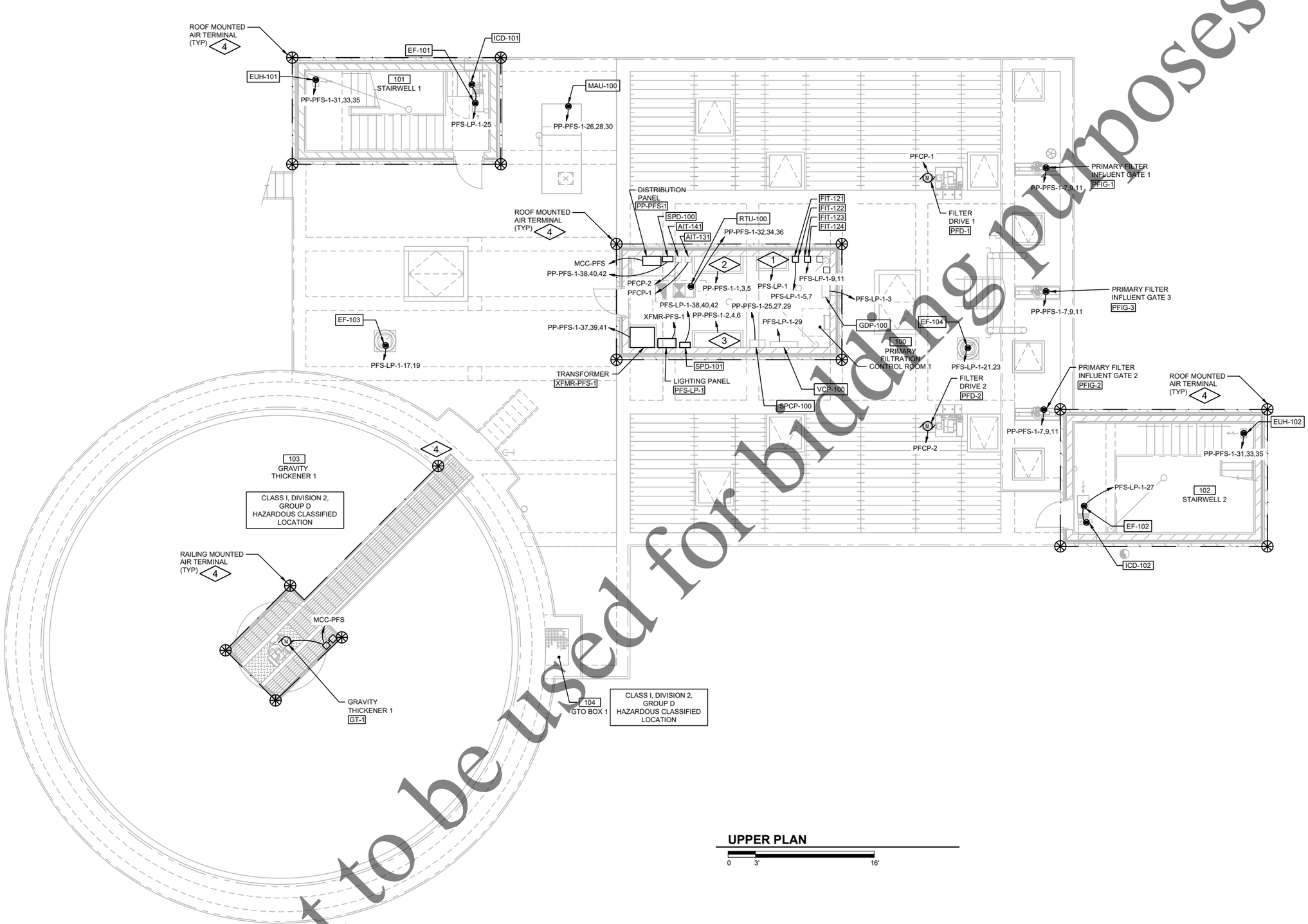
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
INTERMEDIATE PLAN

DONOHUE 11/23/2021

Sheet No. 95

Drawing No. **5-E-02B**



GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND 1-G-05 FOR ELECTRICAL LEGEND.

PLAN NOTES:

1. PRIMARY FILTRATION 1 REMOTE I/O PANEL RIO-PFS-1
2. PRIMARY FILTER 1 LOCAL CONTROL PANEL PFCP-1
3. PRIMARY FILTER 2 LOCAL CONTROL PANEL PFCP-2
4. ROOF/RAILING MOUNTED AIR TERMINAL. INSTALL USING MANUFACTURER'S RECOMMENDED MOUNTING HARDWARE. EXTEND DOWN CONDUCTOR TO GROUND GRID BELOW. PROVIDE ADDITIONAL DOWN CONDUCTORS AND GROUND RODS REQUIRED BY UL 96A AND NFPA 780. SEE DETAIL E469

UPPER PLAN

0 3' 16'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

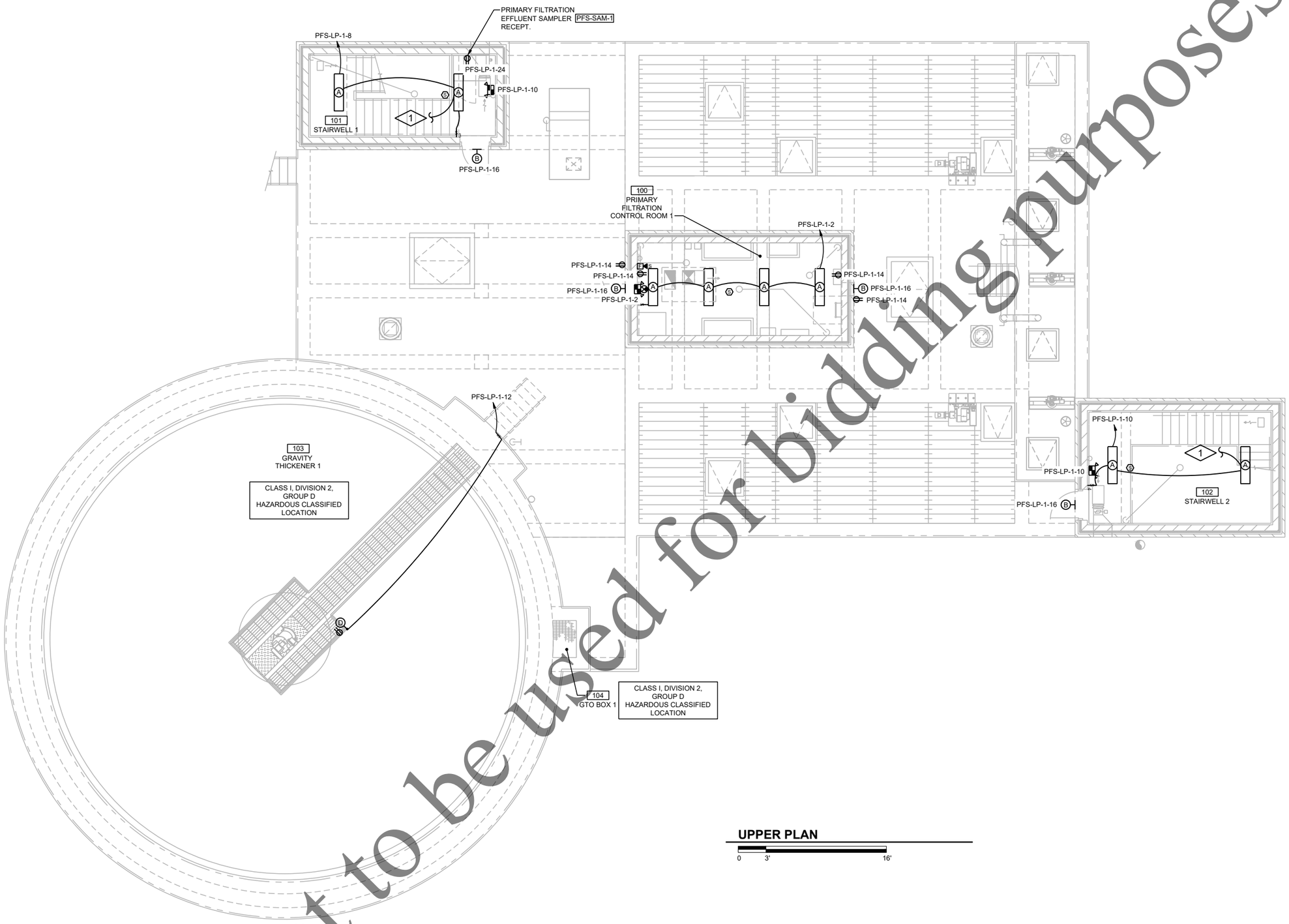
PRIMARY FILTRATION FACILITY 1
UPPER PLAN

DONOHUE 11/23/2021

Sheet No. 96

Drawing No. 5-E-03A

file: P:\13852chi\Dwg\5EP1.dwg



GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND 1-G-05 FOR ELECTRICAL LEGEND.
2. EXTEND MANUFACTURER'S RECOMMENDED WIRING IN CONDUIT FROM FACP-1 IN MAIN PUMP II BUILDING TO FIRE ALARM DEVICES.

PLAN NOTES:

1. CONTINUED TO LIGHTING CIRCUIT ON DRAWING 5-E-02B

UPPER PLAN

0 3' 16'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

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FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
UPPER PLAN

DONOHUE 11/23/2021

Sheet No. 97

Drawing No. 5-E-03B

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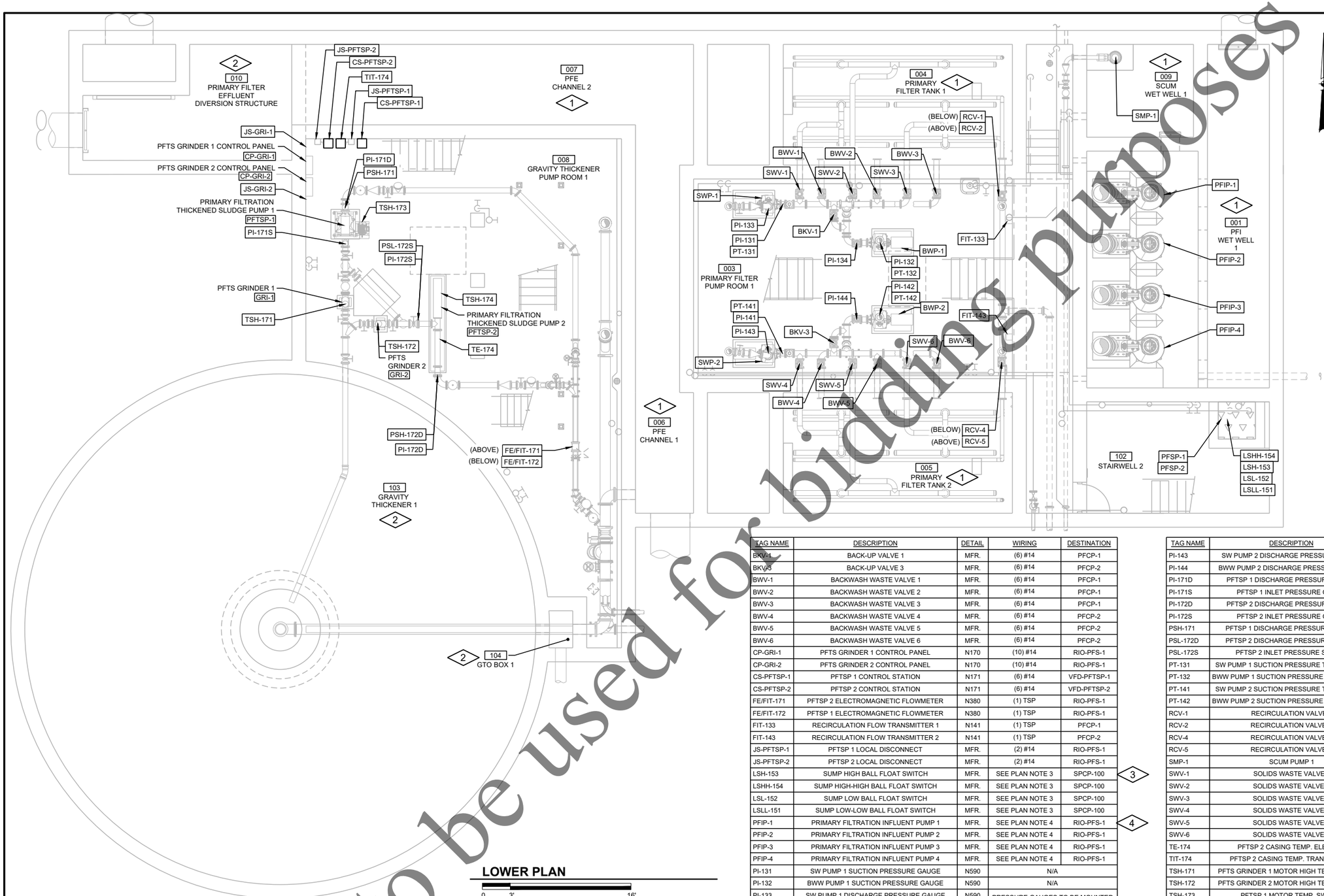


GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
3. (1) VFC TO JUNCTION BOX THEN (2) #14 TO CP.
4. (1) VFC TO JUNCTION BOX THEN (4) #14 TO PLC.

LOWER PLAN

0 3' 16'

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
BKV-1	BACK-UP VALVE 1	MFR.	(6) #14	PFCP-1
BKV-3	BACK-UP VALVE 3	MFR.	(6) #14	PFCP-2
BWV-1	BACKWASH WASTE VALVE 1	MFR.	(6) #14	PFCP-1
BWV-2	BACKWASH WASTE VALVE 2	MFR.	(6) #14	PFCP-1
BWV-3	BACKWASH WASTE VALVE 3	MFR.	(6) #14	PFCP-1
BWV-4	BACKWASH WASTE VALVE 4	MFR.	(6) #14	PFCP-2
BWV-5	BACKWASH WASTE VALVE 5	MFR.	(6) #14	PFCP-2
BWV-6	BACKWASH WASTE VALVE 6	MFR.	(6) #14	PFCP-2
CP-GRI-1	PFTS GRINDER 1 CONTROL PANEL	N170	(10) #14	RIO-PFS-1
CP-GRI-2	PFTS GRINDER 2 CONTROL PANEL	N170	(10) #14	RIO-PFS-1
CS-PFTSP-1	PFTSP 1 CONTROL STATION	N171	(6) #14	VFD-PFTSP-1
CS-PFTSP-2	PFTSP 2 CONTROL STATION	N171	(6) #14	VFD-PFTSP-2
FE/FIT-171	PFTSP 2 ELECTROMAGNETIC FLOWMETER	N380	(1) TSP	RIO-PFS-1
FE/FIT-172	PFTSP 1 ELECTROMAGNETIC FLOWMETER	N380	(1) TSP	RIO-PFS-1
FIT-133	RECIRCULATION FLOW TRANSMITTER 1	N141	(1) TSP	PFCP-1
FIT-143	RECIRCULATION FLOW TRANSMITTER 2	N141	(1) TSP	PFCP-2
JS-PFTSP-1	PFTSP 1 LOCAL DISCONNECT	MFR.	(2) #14	RIO-PFS-1
JS-PFTSP-2	PFTSP 2 LOCAL DISCONNECT	MFR.	(2) #14	RIO-PFS-1
LSH-153	SUMP HIGH BALL FLOAT SWITCH	MFR.	SEE PLAN NOTE 3	SPCP-100
LSHH-154	SUMP HIGH-HIGH BALL FLOAT SWITCH	MFR.	SEE PLAN NOTE 3	SPCP-100
LSL-152	SUMP LOW BALL FLOAT SWITCH	MFR.	SEE PLAN NOTE 3	SPCP-100
LSLL-151	SUMP LOW-LOW BALL FLOAT SWITCH	MFR.	SEE PLAN NOTE 3	SPCP-100
PFIP-1	PRIMARY FILTRATION INFLUENT PUMP 1	MFR.	SEE PLAN NOTE 4	RIO-PFS-1
PFIP-2	PRIMARY FILTRATION INFLUENT PUMP 2	MFR.	SEE PLAN NOTE 4	RIO-PFS-1
PFIP-3	PRIMARY FILTRATION INFLUENT PUMP 3	MFR.	SEE PLAN NOTE 4	RIO-PFS-1
PFIP-4	PRIMARY FILTRATION INFLUENT PUMP 4	MFR.	SEE PLAN NOTE 4	RIO-PFS-1
PI-131	SW PUMP 1 SUCTION PRESSURE GAUGE	N590	N/A	
PI-132	BWW PUMP 1 SUCTION PRESSURE GAUGE	N590	N/A	
PI-133	SW PUMP 1 DISCHARGE PRESSURE GAUGE	N590	PRESSURE GAUGES TO BE MOUNTED ON VERTICAL PIPE.	
PI-134	BWW PUMP 1 DISCHARGE PRESSURE GAUGE	N590		
PI-141	SW PUMP 2 SUCTION PRESSURE GAUGE	N590	N/A	
PI-142	BWW PUMP 2 SUCTION PRESSURE GAUGE	N590	N/A	

3

4

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
PI-143	SW PUMP 2 DISCHARGE PRESSURE GAUGE	N590	PRESSURE GAUGES TO BE MOUNTED ON VERTICAL PIPE.	
PI-144	BWW PUMP 2 DISCHARGE PRESSURE GAUGE	N590		
PI-171D	PFTSP 1 DISCHARGE PRESSURE GAUGE	MFR.	N/A	
PI-171S	PFTSP 1 INLET PRESSURE GAUGE	MFR.	N/A	
PI-172D	PFTSP 2 DISCHARGE PRESSURE GAUGE	N520	N/A	
PI-172S	PFTSP 2 INLET PRESSURE GAUGE	N520	N/A	
PSH-171	PFTSP 1 DISCHARGE PRESSURE SWITCH	MFR.	(2) #14	RIO-PFS-1
PSL-172D	PFTSP 2 DISCHARGE PRESSURE SWITCH	N520	(2) #14	RIO-PFS-1
PSL-172S	PFTSP 2 INLET PRESSURE SWITCH	N520	(2) #14	RIO-PFS-1
PT-131	SW PUMP 1 SUCTION PRESSURE TRANSDUCER	N590	(1) TSP	PFCP-1
PT-132	BWW PUMP 1 SUCTION PRESSURE TRANSDUCER	N590	(1) TSP	PFCP-1
PT-141	SW PUMP 2 SUCTION PRESSURE TRANSDUCER	N590	(1) TSP	PFCP-2
PT-142	BWW PUMP 2 SUCTION PRESSURE TRANSDUCER	N590	(1) TSP	PFCP-2
RCV-1	RECIRCULATION VALVE 1	MFR.	(6) #14	PFCP-1
RCV-2	RECIRCULATION VALVE 2	MFR.	(6) #14	PFCP-1
RCV-4	RECIRCULATION VALVE 4	MFR.	(6) #14	PFCP-2
RCV-5	RECIRCULATION VALVE 5	MFR.	(6) #14	PFCP-2
SMP-1	SCUM PUMP 1	MFR.	(4) #14	RIO-PFS-1
SWV-1	SOLIDS WASTE VALVE 1	MFR.	(6) #14	PFCP-1
SWV-2	SOLIDS WASTE VALVE 2	MFR.	(6) #14	PFCP-1
SWV-3	SOLIDS WASTE VALVE 3	MFR.	(6) #14	PFCP-1
SWV-4	SOLIDS WASTE VALVE 4	MFR.	(6) #14	PFCP-2
SWV-5	SOLIDS WASTE VALVE 5	MFR.	(6) #14	PFCP-2
SWV-6	SOLIDS WASTE VALVE 6	MFR.	(6) #14	PFCP-2
TE-174	PFTSP 2 CASING TEMP. ELEMENT	MFR.	(1) RTD	TIT-174
TIT-174	PFTSP 2 CASING TEMP. TRANSMITTER	N171	(1) TSP	RIO-PFS-1
TSH-171	PFTS GRINDER 1 MOTOR HIGH TEMP. SWITCH	MFR.	(2) #14	CP-GRI-1
TSH-172	PFTS GRINDER 2 MOTOR HIGH TEMP. SWITCH	MFR.	(2) #14	CP-GRI-2
TSH-173	PFTSP 1 MOTOR TEMP. SWITCH	MFR.	(2) #14	RIO-PFS-1
TSH-174	PFTSP 2 MOTOR TEMP. SWITCH	MFR.	(2) #14	RIO-PFS-1

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	LPH
Drawn By	LPH
Checked By	BLG
Approved By	BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
LOWER PLAN

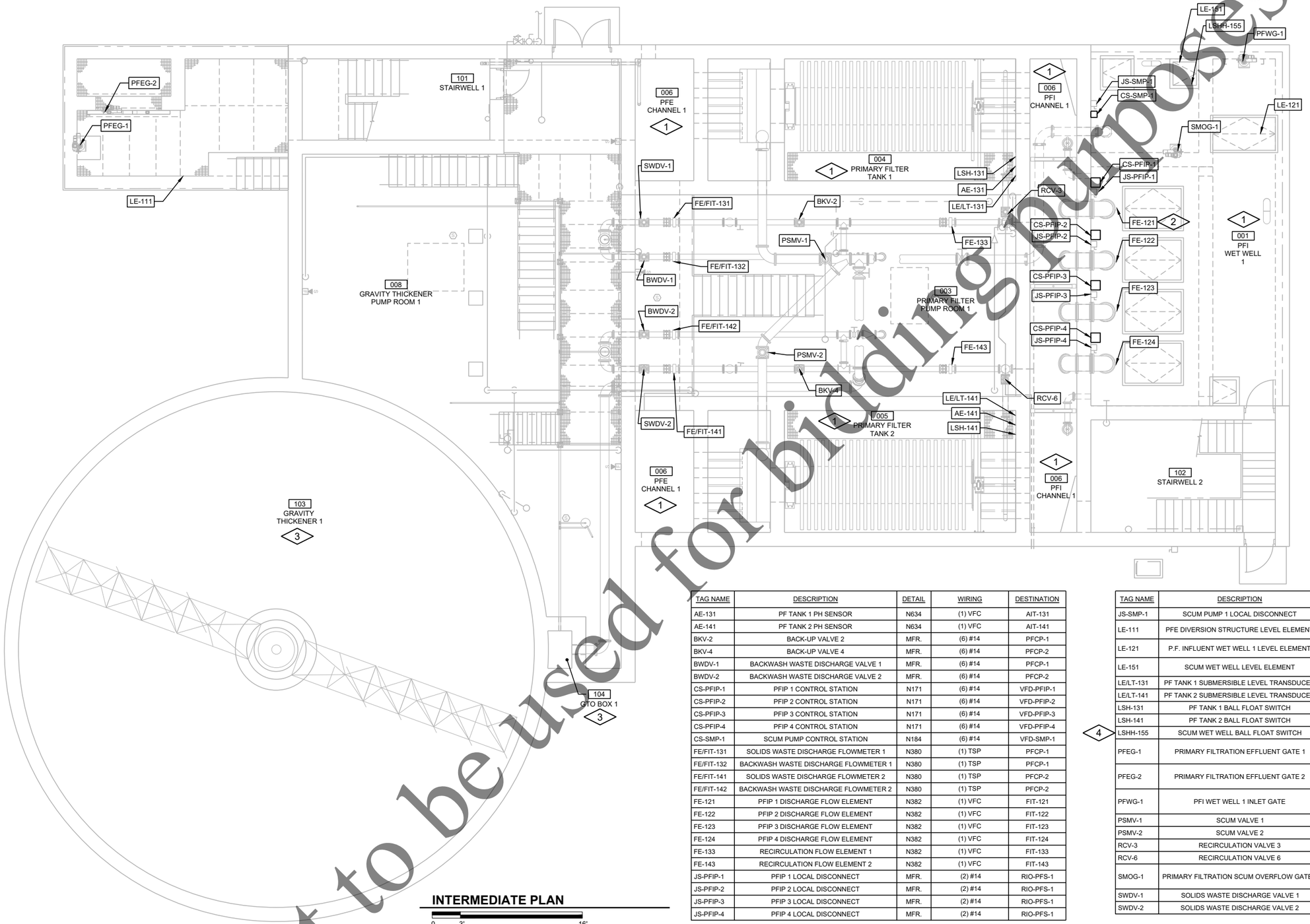
DONOHUE

11/23/2021

Sheet No. 98

Drawing No. **5-N-01**

file: P:\13852ch\Dwg\5NP1.dwg



INTERMEDIATE PLAN

0 3' 16'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.

PLAN NOTES:

1. CLASS I, DIVISION 1, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. ELECTROMAGNETIC FLOW ELEMENT TO BE MOUNTED ON VERTICAL PIPE. TYPICAL FOR FE-121, FE-122, FE-123, AND FE-124.
3. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
4. (1) VFC TO JUNCTION BOX, THEN 2#14 TO PLC.

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
AE-131	PF TANK 1 PH SENSOR	N634	(1) VFC	AIT-131
AE-141	PF TANK 2 PH SENSOR	N634	(1) VFC	AIT-141
BKV-2	BACK-UP VALVE 2	MFR.	(6) #14	PFCP-1
BKV-4	BACK-UP VALVE 4	MFR.	(6) #14	PFCP-2
BWDV-1	BACKWASH WASTE DISCHARGE VALVE 1	MFR.	(6) #14	PFCP-1
BWDV-2	BACKWASH WASTE DISCHARGE VALVE 2	MFR.	(6) #14	PFCP-2
CS-PFIP-1	PFIP 1 CONTROL STATION	N171	(6) #14	VFD-PFIP-1
CS-PFIP-2	PFIP 2 CONTROL STATION	N171	(6) #14	VFD-PFIP-2
CS-PFIP-3	PFIP 3 CONTROL STATION	N171	(6) #14	VFD-PFIP-3
CS-PFIP-4	PFIP 4 CONTROL STATION	N171	(6) #14	VFD-PFIP-4
CS-SMP-1	SCUM PUMP CONTROL STATION	N184	(6) #14	VFD-SMP-1
FE/FIT-131	SOLIDS WASTE DISCHARGE FLOWMETER 1	N380	(1) TSP	PFCP-1
FE/FIT-132	BACKWASH WASTE DISCHARGE FLOWMETER 1	N380	(1) TSP	PFCP-1
FE/FIT-141	SOLIDS WASTE DISCHARGE FLOWMETER 2	N380	(1) TSP	PFCP-2
FE/FIT-142	BACKWASH WASTE DISCHARGE FLOWMETER 2	N380	(1) TSP	PFCP-2
FE-121	PFIP 1 DISCHARGE FLOW ELEMENT	N382	(1) VFC	FIT-121
FE-122	PFIP 2 DISCHARGE FLOW ELEMENT	N382	(1) VFC	FIT-122
FE-123	PFIP 3 DISCHARGE FLOW ELEMENT	N382	(1) VFC	FIT-123
FE-124	PFIP 4 DISCHARGE FLOW ELEMENT	N382	(1) VFC	FIT-124
FE-133	RECIRCULATION FLOW ELEMENT 1	N382	(1) VFC	FIT-133
FE-143	RECIRCULATION FLOW ELEMENT 2	N382	(1) VFC	FIT-143
JS-PFIP-1	PFIP 1 LOCAL DISCONNECT	MFR.	(2) #14	RIO-PFS-1
JS-PFIP-2	PFIP 2 LOCAL DISCONNECT	MFR.	(2) #14	RIO-PFS-1
JS-PFIP-3	PFIP 3 LOCAL DISCONNECT	MFR.	(2) #14	RIO-PFS-1
JS-PFIP-4	PFIP 4 LOCAL DISCONNECT	MFR.	(2) #14	RIO-PFS-1

4

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
JS-SMP-1	SCUM PUMP 1 LOCAL DISCONNECT	N184	(2) #14	RIO-PFS-1
LE-111	PFE DIVERSION STRUCTURE LEVEL ELEMENT	N295	(1) VFC TO JBX THEN CABLE TO LIT	LIT-111
LE-121	P.F. INFLUENT WET WELL 1 LEVEL ELEMENT	N295	(1) VFC TO JBX THEN CABLE TO LIT	LIT-121
LE-151	SCUM WET WELL LEVEL ELEMENT	N295	(1) VFC TO JBX THEN CABLE TO LIT	LIT-151
LE/LT-131	PF TANK 1 SUBMERSIBLE LEVEL TRANSDUCER	N271	(1) TSP	PFCP-1
LE/LT-141	PF TANK 2 SUBMERSIBLE LEVEL TRANSDUCER	N271	(1) TSP	PFCP-2
LSH-131	PF TANK 1 BALL FLOAT SWITCH	N270	(2) #14	PFCP-1
LSH-141	PF TANK 2 BALL FLOAT SWITCH	N270	(2) #14	PFCP-2
LSHH-155	SCUM WET WELL BALL FLOAT SWITCH	N269	SEE PLAN NOTE 4	RIO-PFS-1
PFEG-1	PRIMARY FILTRATION EFFLUENT GATE 1	MFR.	(2) #14	RIO-PFS-1
			(2) TSP	RIO-PFS-1
PFEG-2	PRIMARY FILTRATION EFFLUENT GATE 2	MFR.	(2) #14	RIO-PFS-1
			(2) TSP	RIO-PFS-1
PFWG-1	PFI WET WELL 1 INLET GATE	MFR.	(2) #14	RIO-PFS-1
			(2) TSP	RIO-PFS-1
PSMV-1	SCUM VALVE 1	MFR.	(6) #14	PFCP-1
PSMV-2	SCUM VALVE 2	MFR.	(6) #14	PFCP-2
RCV-3	RECIRCULATION VALVE 3	MFR.	(6) #14	PFCP-1
RCV-6	RECIRCULATION VALVE 6	MFR.	(6) #14	PFCP-2
SMOG-1	PRIMARY FILTRATION SCUM OVERFLOW GATE 1	MFR.	(2) #14	RIO-PFS-1
			(2) TSP	RIO-PFS-1
SWDV-1	SOLIDS WASTE DISCHARGE VALVE 1	MFR.	(6) #14	PFCP-1
SWDV-2	SOLIDS WASTE DISCHARGE VALVE 2	MFR.	(6) #14	PFCP-2

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	LPH
Drawn By	LPH
Checked By	BLG
Approved By	BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
INTERMEDIATE PLAN

DONOHUE

11/23/2021

Sheet No. 99

Drawing No. 5-N-02

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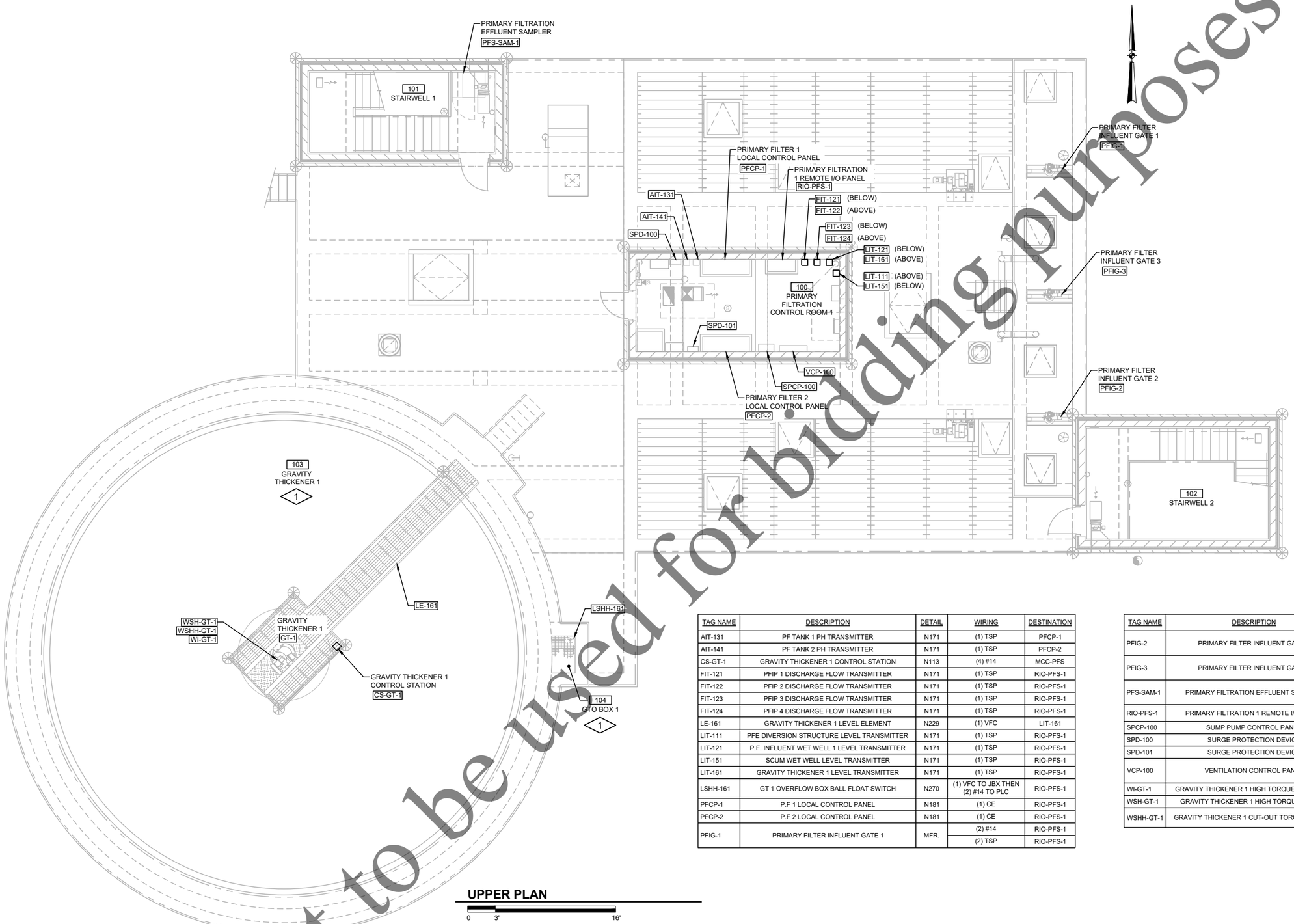

UPPER PLAN

0 3' 16'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES.

PLAN NOTES:

1. CLASS I, DIVISION 2, GROUP D HAZARDOUS CLASSIFIED LOCATION
2. REMOTE I/O PANEL TO BE PROVIDED AND INSTALLED BY OWNER.
3. PROVIDE (1) VFC TO JUNCTION BOX, THEN PROVIDE CABLES AS INDICATED IN WIRING TABLE.

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
AIT-131	PF TANK 1 PH TRANSMITTER	N171	(1) TSP	PFCP-1
AIT-141	PF TANK 2 PH TRANSMITTER	N171	(1) TSP	PFCP-2
CS-GT-1	GRAVITY THICKENER 1 CONTROL STATION	N113	(4) #14	MCC-PFS
FIT-121	PFIP 1 DISCHARGE FLOW TRANSMITTER	N171	(1) TSP	RIO-PFS-1
FIT-122	PFIP 2 DISCHARGE FLOW TRANSMITTER	N171	(1) TSP	RIO-PFS-1
FIT-123	PFIP 3 DISCHARGE FLOW TRANSMITTER	N171	(1) TSP	RIO-PFS-1
FIT-124	PFIP 4 DISCHARGE FLOW TRANSMITTER	N171	(1) TSP	RIO-PFS-1
LE-161	GRAVITY THICKENER 1 LEVEL ELEMENT	N229	(1) VFC	LIT-161
LIT-111	PFE DIVERSION STRUCTURE LEVEL TRANSMITTER	N171	(1) TSP	RIO-PFS-1
LIT-121	P.F. INFLUENT WET WELL 1 LEVEL TRANSMITTER	N171	(1) TSP	RIO-PFS-1
LIT-151	SCUM WET WELL LEVEL TRANSMITTER	N171	(1) TSP	RIO-PFS-1
LIT-161	GRAVITY THICKENER 1 LEVEL TRANSMITTER	N171	(1) TSP	RIO-PFS-1
LSHH-161	GT 1 OVERFLOW BOX BALL FLOAT SWITCH	N270	(1) VFC TO JBX THEN (2) #14 TO PLC	RIO-PFS-1
PFCP-1	P.F 1 LOCAL CONTROL PANEL	N181	(1) CE	RIO-PFS-1
PFCP-2	P.F 2 LOCAL CONTROL PANEL	N181	(1) CE	RIO-PFS-1
PFIG-1	PRIMARY FILTER INFLUENT GATE 1	MFR.	(2) #14	RIO-PFS-1
			(2) TSP	RIO-PFS-1

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
PFIG-2	PRIMARY FILTER INFLUENT GATE 2	MFR.	(2) #14	RIO-PFS-1
			(2) TSP	RIO-PFS-1
PFIG-3	PRIMARY FILTER INFLUENT GATE 3	MFR.	(2) #14	RIO-PFS-1
			(2) TSP	RIO-PFS-1
PFS-SAM-1	PRIMARY FILTRATION EFFLUENT SAMPLER	MFR.	3 (6) #14	RIO-PFS-1
			(1) TSP	RIO-PFS-1
RIO-PFS-1	PRIMARY FILTRATION 1 REMOTE I/O PANEL	2	(2) FOC	NET-PFS
SPCP-100	SUMP PUMP CONTROL PANEL	MFR.	(2) #14	RIO-PFS-1
SPD-100	SURGE PROTECTION DEVICE	MFR.	(2) #14	RIO-PFS-1
SPD-101	SURGE PROTECTION DEVICE	MFR.	(2) #14	RIO-PFS-1
VCP-100	VENTILATION CONTROL PANEL	MFR.	(1) CE	RIO-PFS-1
			(10) #14	RIO-PFS-1
WI-GT-1	GRAVITY THICKENER 1 HIGH TORQUE INDICATOR	MFR.	N/A	
WSH-GT-1	GRAVITY THICKENER 1 HIGH TORQUE SWITCH	MFR.	(2) #14	RIO-PFS-1
WSHH-GT-1	GRAVITY THICKENER 1 CUT-OUT TORQUE SWITCH	MFR.	(1) VFC TO JBX THEN (2) #14 TO MCC	MCC-PFS

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Four Rivers Sanitation Authority

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Designed By	LPH
Drawn By	LPH
Checked By	BLG
Approved By	BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY FILTRATION FACILITY 1
UPPER PLAN

DONOHUE 11/23/2021

Sheet No. 100

Drawing No. 5-N-03

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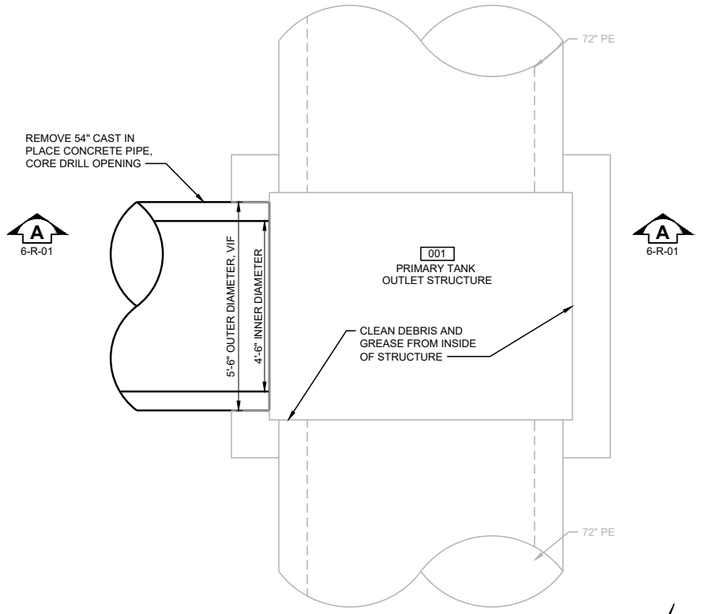
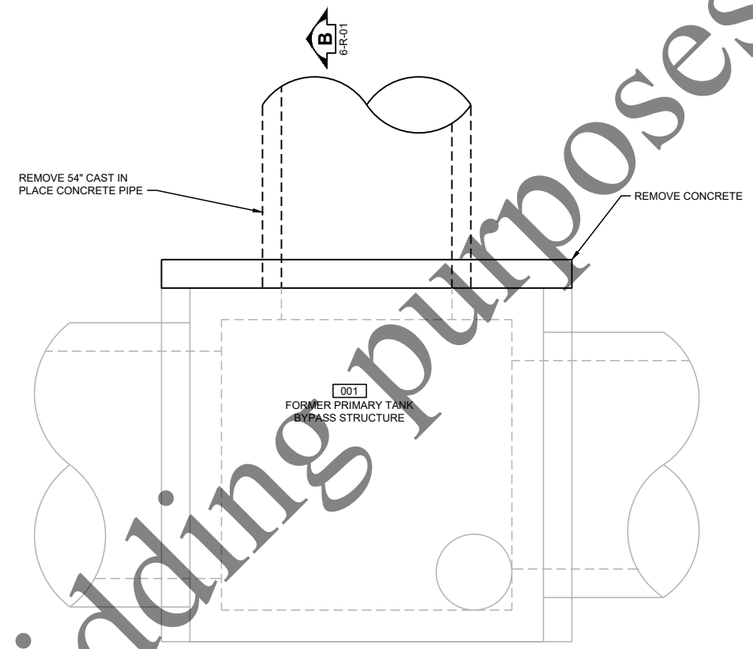


OVERALL LOWER PLAN

0 1' 2'



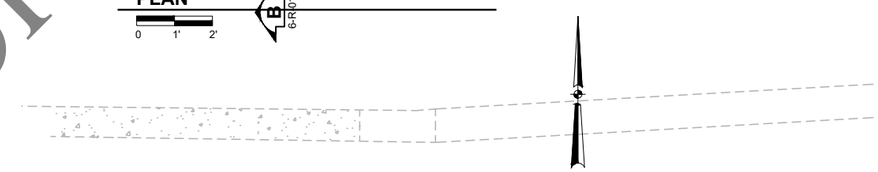
PLAN

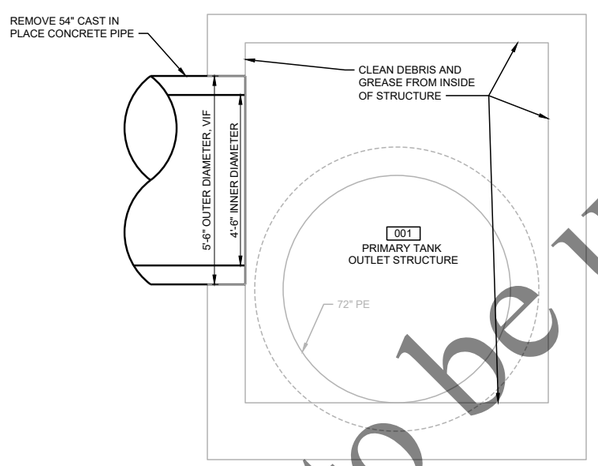
0 1' 2'

B 6-R-01

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES

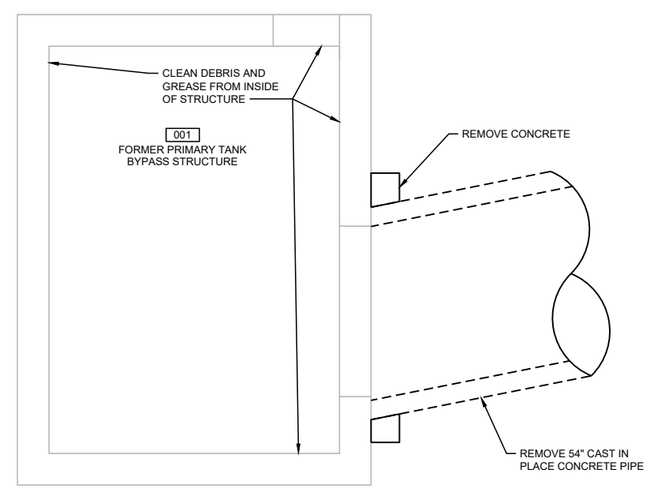




SECTION A

6-R-01

0 1' 2'



SECTION B

6-SM-01

0 1' 2'

No.	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	MTR/CEE
				Drawn By	MTR/CEE
				Checked By	SPG/TJB
				Approved By	KPL/CEE

Four Rivers Sanitation Authority

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY TANK OUTLET STRUCTURE AND FORMER PRIMARY TANK BYPASS STRUCTURE PLANS AND SECTIONS

DONOHUE 11/23/2021

Sheet No. 101

Drawing No. 6-R-01

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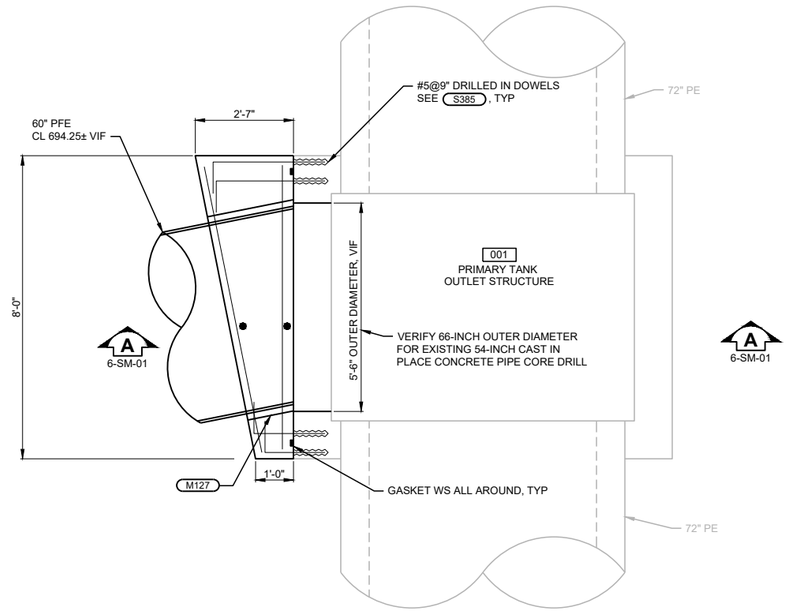
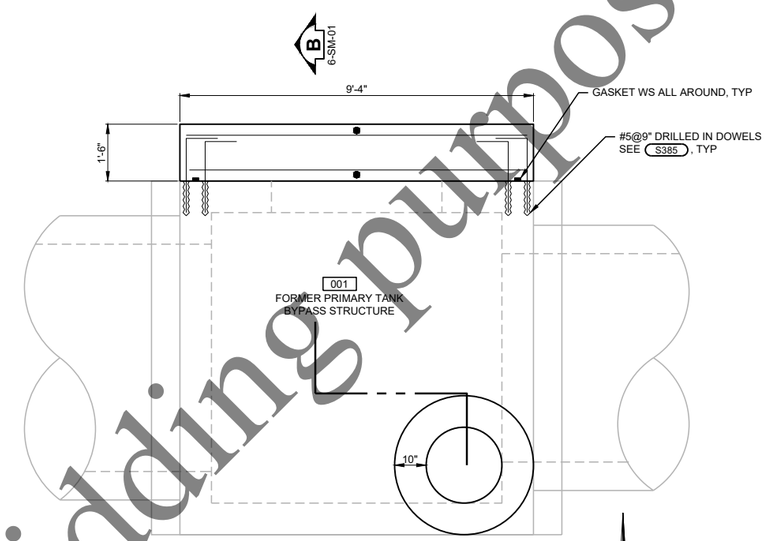
Not to be used for bidding purposes



LOWER PLAN

0 1' 2'



PLAN

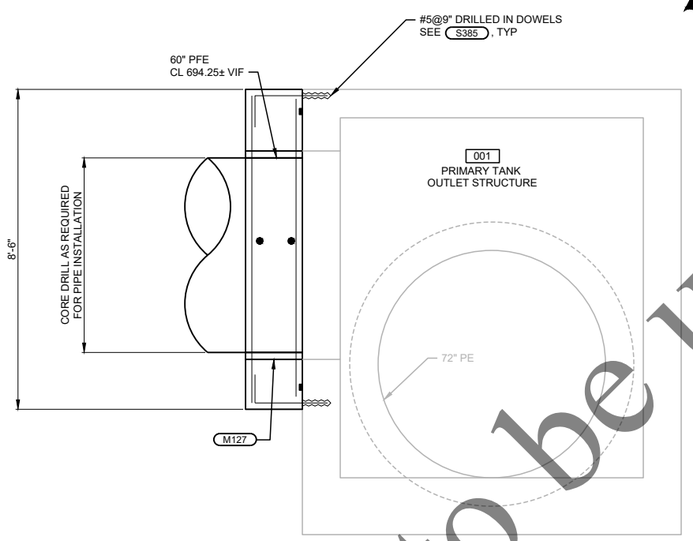
0 1' 2'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES
2. ALL REINFORCEMENT SHOWN IS #5@9" UNLESS NOTED OTHERWISE.

PLAN NOTES:

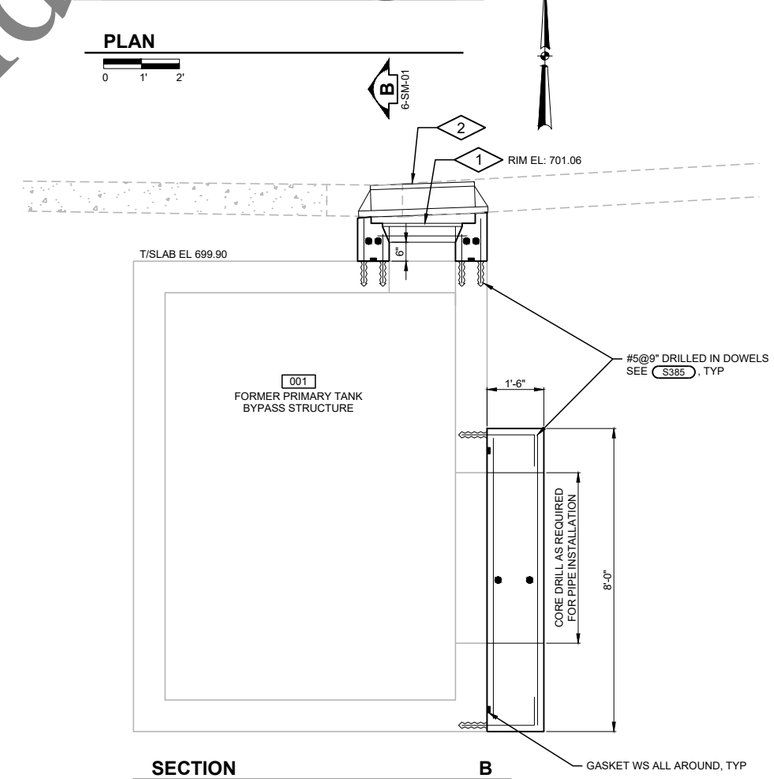
1. FORMER PRIMARY TANK BYPASS STRUCTURE LOWER FRAME AND COVER PER SPECIFICATION SECTION 33 05 61. FRAME SHALL BE CAST INTO CAST-IN-PLACE CONCRETE RISER.
2. FORMER PRIMARY TANK BYPASS STRUCTURE UPPER FRAME AND COVER PER SPECIFICATION SECTION 33 05 61. CENTER FRAME OVER LOWER FRAME AND COVER. SEE CIVIL DRAWINGS FOR RIM ELEVATION. ADJUST RISER HEIGHT AS REQUIRED SO THAT COVER SITS FLUSH WITH PAVEMENT SURFACE.



SECTION A

6-SM-01

0 1' 2'



SECTION B

6-SM-01

0 1' 2'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR/CEE
Drawn By	MTR/CEE
Checked By	SPG/TJB
Approved By	KPL/CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY TANK OUTLET STRUCTURE AND FORMER PRIMARY TANK BYPASS STRUCTURE PLANS AND SECTIONS

DONOHUE

11/23/2021

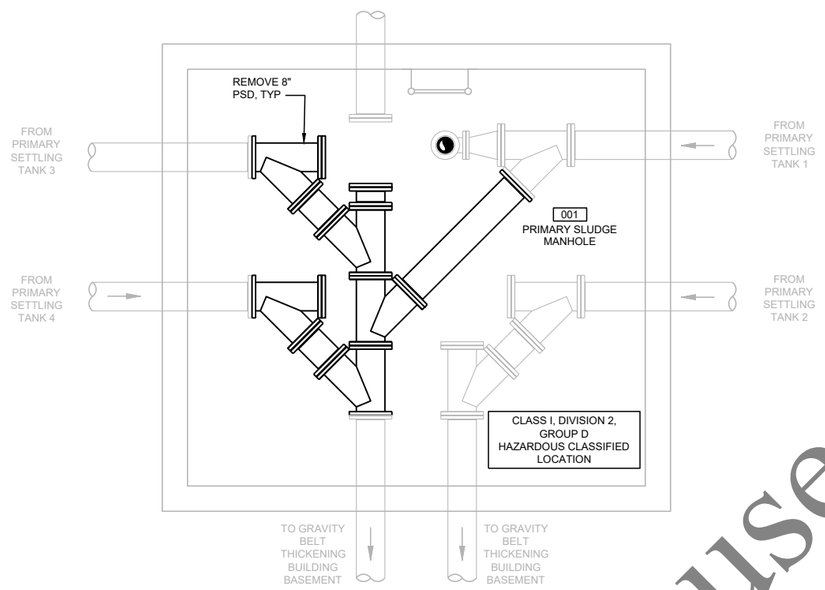
Sheet No. 102

Drawing No. 6-SM-01

file: P:\13852ch\Dwg\6MP1.dwg

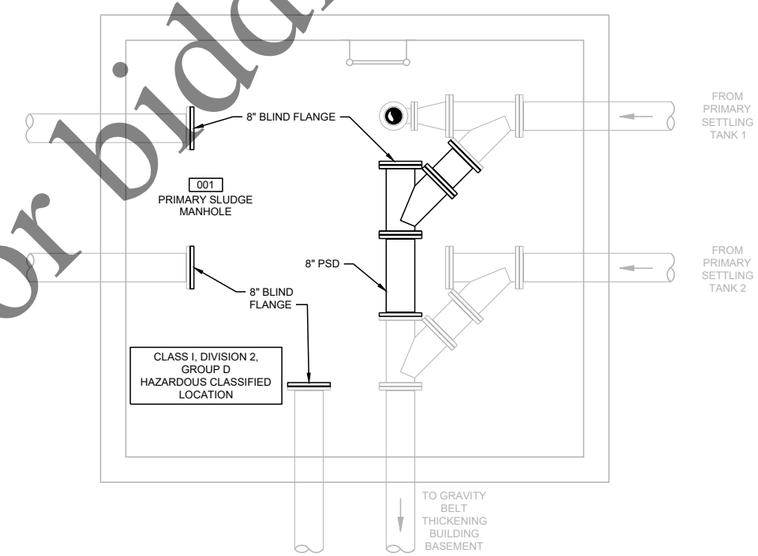
GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND GENERAL REMOVAL NOTES.



OVERALL LOWER REMOVAL PLAN

0 1' 2'



OVERALL LOWER PLAN

0 1' 2'

Not to be used for bidding purposes

file: P:\13852ch\Dwg\7RMP1.dwg

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

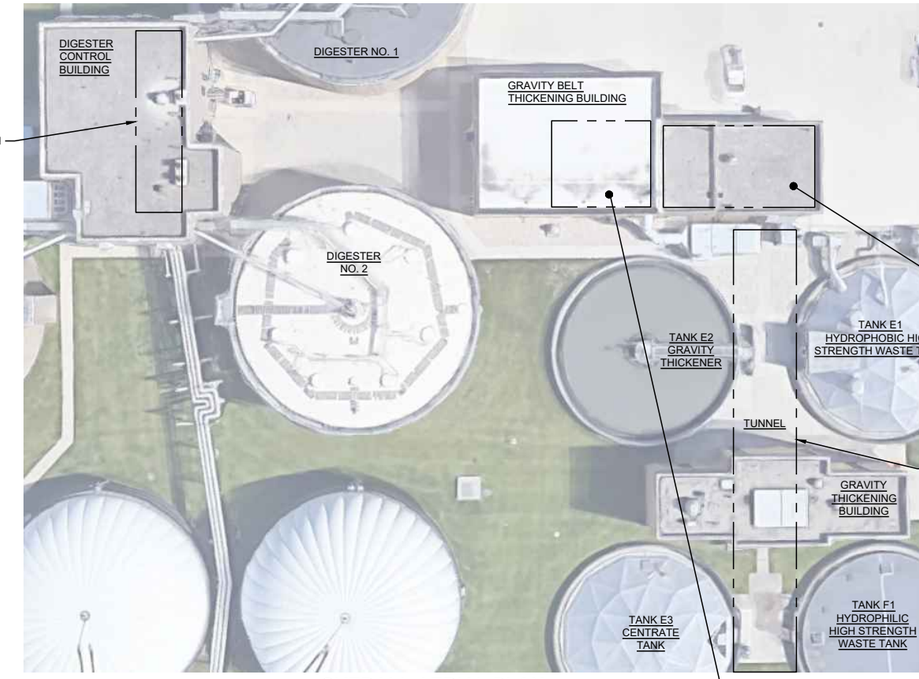
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

PRIMARY SLUDGE MANHOLE
PLANS

DONOHUE 11/23/2021

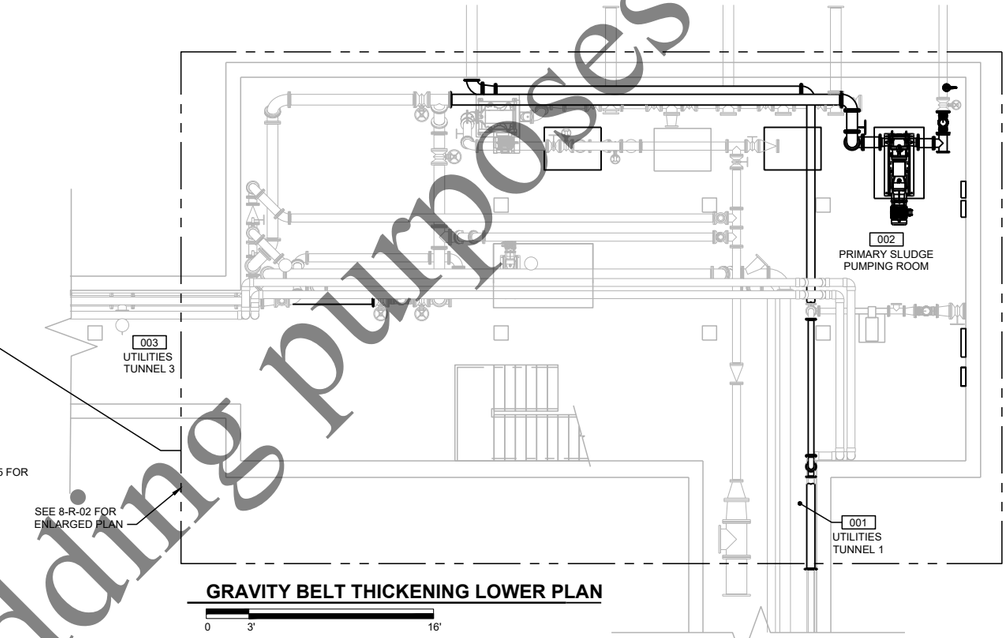
Sheet No. 103

Drawing No. 7-RM-1



OVERALL AERIAL PLAN

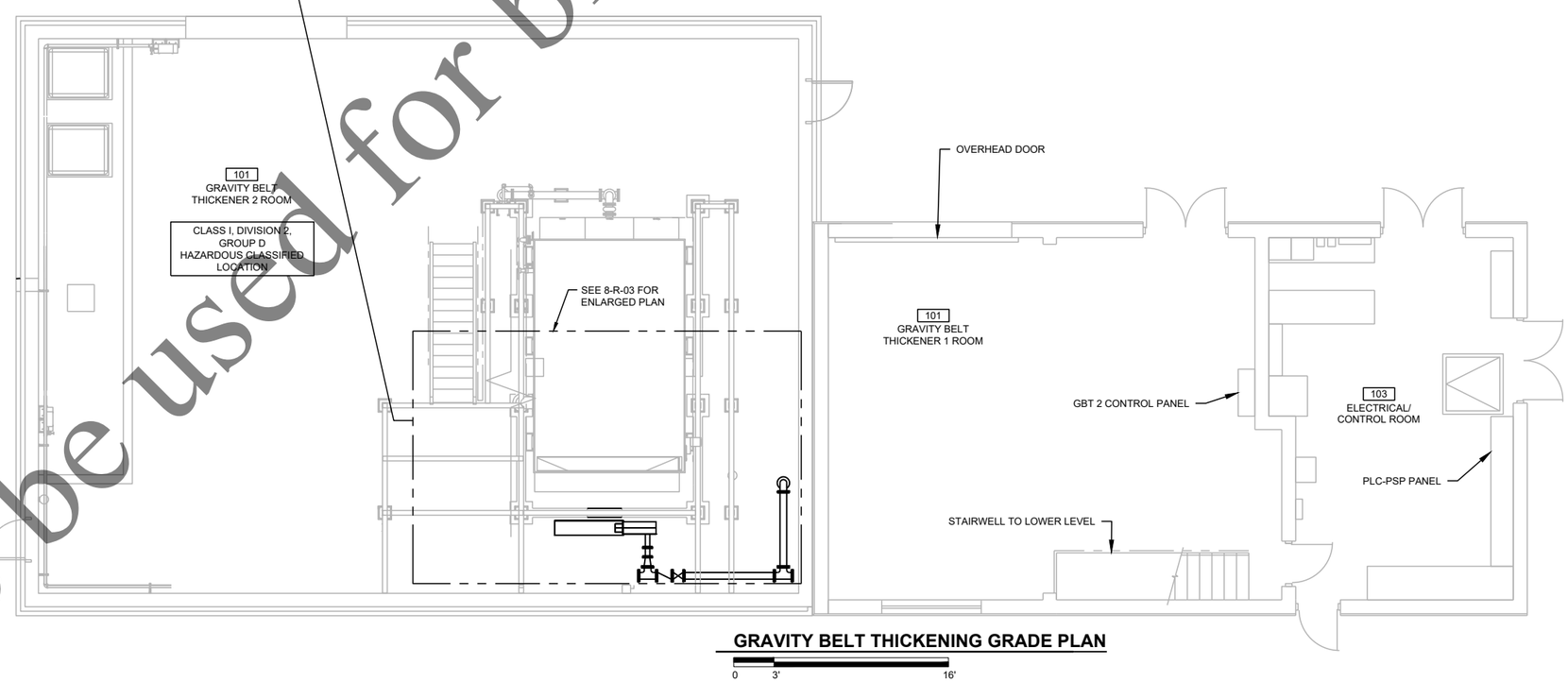
NTS



GRAVITY BELT THICKENING LOWER PLAN

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES



GRAVITY BELT THICKENING GRADE PLAN

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	JKR
Drawn By	JKR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

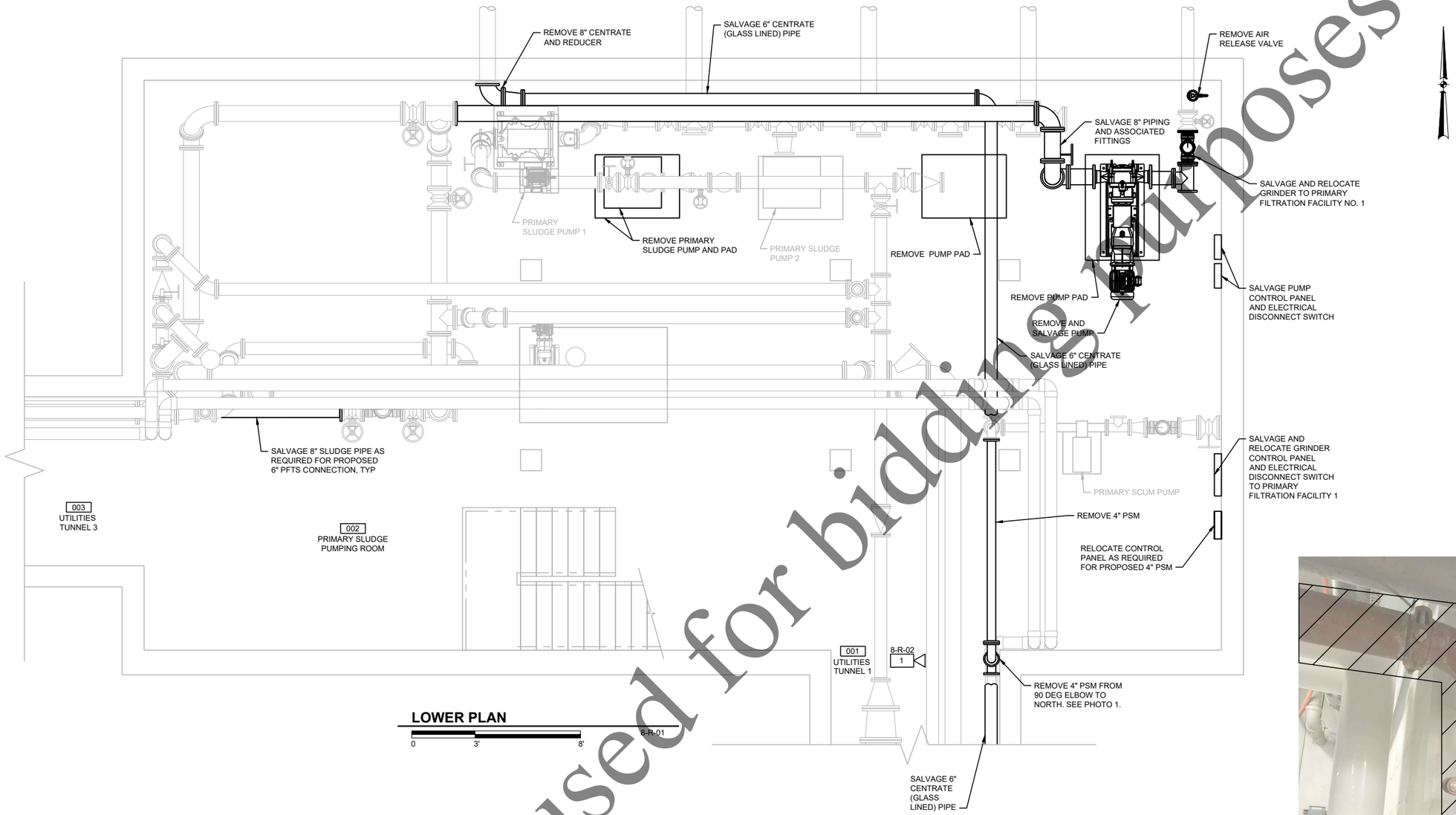
GRAVITY BELT THICKENING BUILDING
OVERALL PLANS

DONOHUE 11/23/2021

Sheet No. 104

Drawing No. **8-R-01**

file: P:\13852chi\Dwg\8RP1.dwg



LOWER PLAN

0 3' 8'

8-R-01

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES

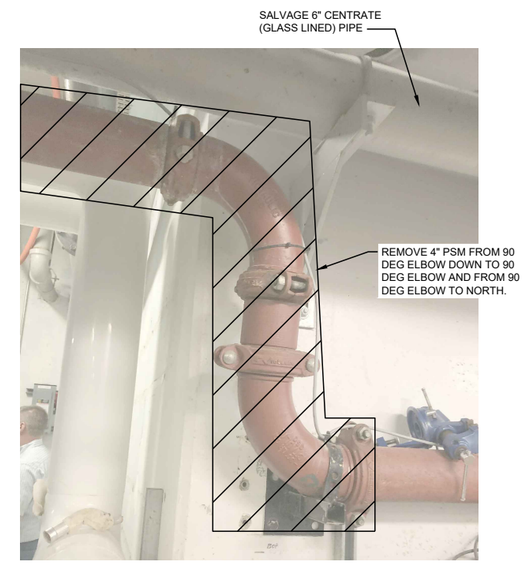


PHOTO 1

NTS 8-R-02

Not to be used for bidding purposes

file: P:\13852chl\Dwg\8RP1.dwg

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	JKR/FGM
Drawn By	JKR/FGM
Checked By	SPG/JTB
Approved By	KPL/FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

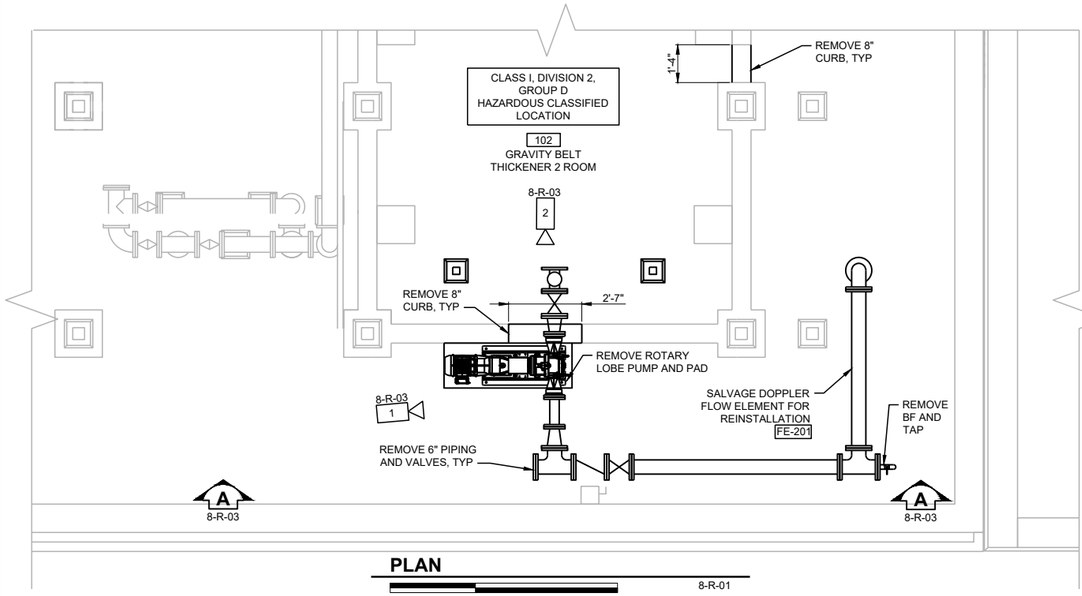
GRAVITY BELT THICKENING BUILDING
ENLARGED BASEMENT PLAN AND PHOTO

DONOHUE

11/23/2021

Sheet No. 105

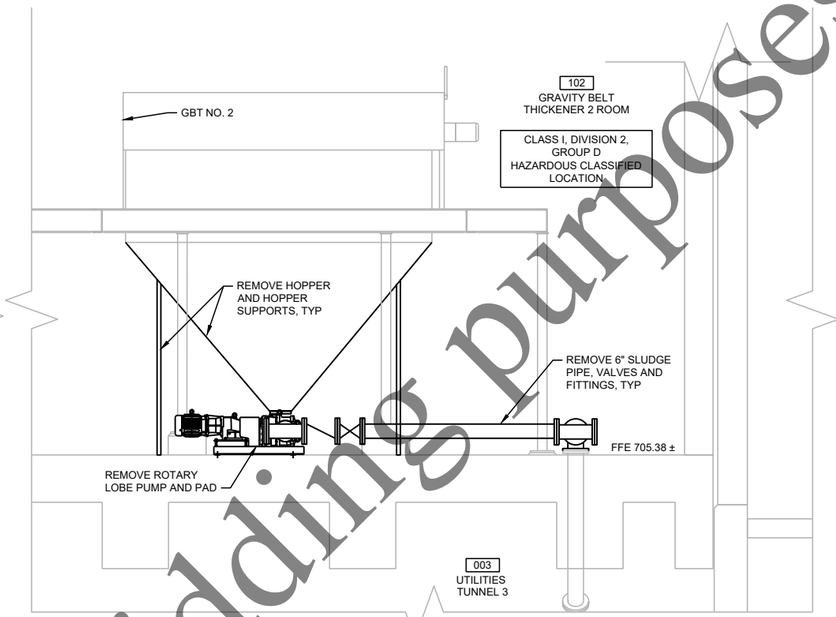
Drawing No. 8-R-02



PLAN

0 3' 8'

8-R-01



SECTION A

0 3' 8'

8-R-03

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES

PLAN NOTES:

1. REMOVE AND SALVAGE DOPPLER FLOW ELEMENT, FE-201 . SEE SHEET 8-SME-04 FOR RE-INSTALLATION LOCATION. REMOVE CONDUIT FROM FLOW ELEMENT TO FLOOR PENETRATION. SALVAGE CABLE FOR REINSTALLATION.

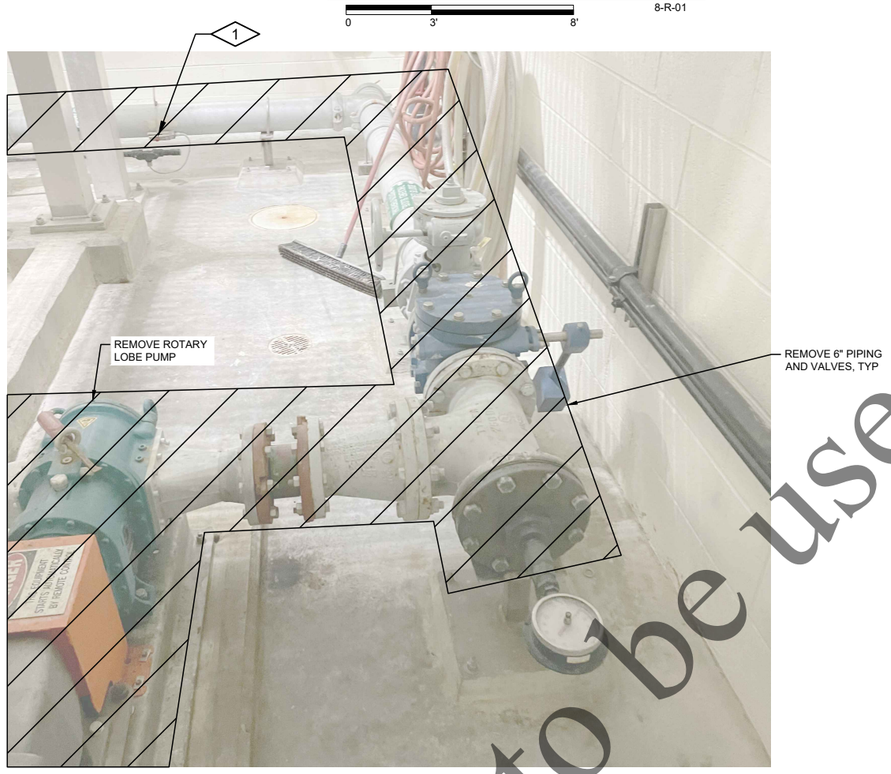


PHOTO 1

NTS

8-R-03

PHOTO 2

NTS

8-R-03

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	JKR
Drawn By	JKR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

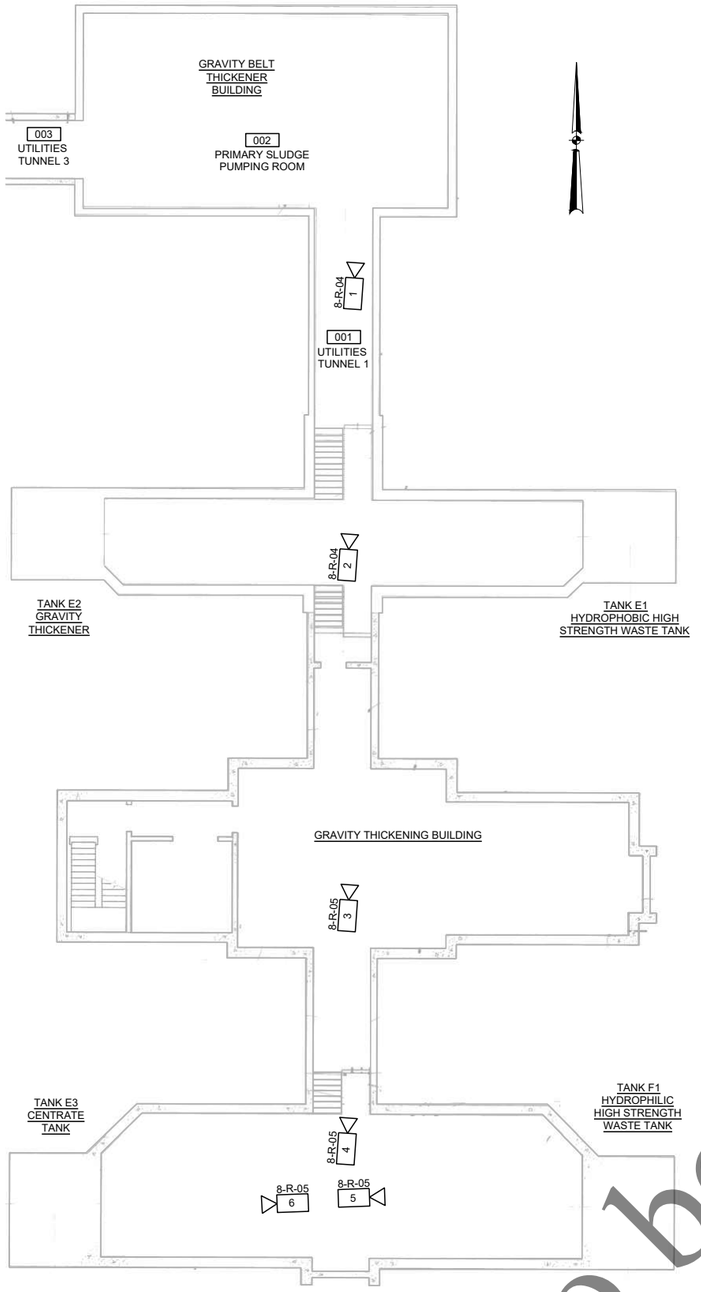
GRAVITY BELT THICKENING BUILDING
ENLARGED GBT NO. 2 PLAN, SECTION AND PHOTOS

DONOHUE 11/23/2021

Sheet No. 106

Drawing No. 8-R-03

file: P:\13852chi\Dwg\8RP1.dwg



CENTRATE REMOVAL KEY PLAN

NTS

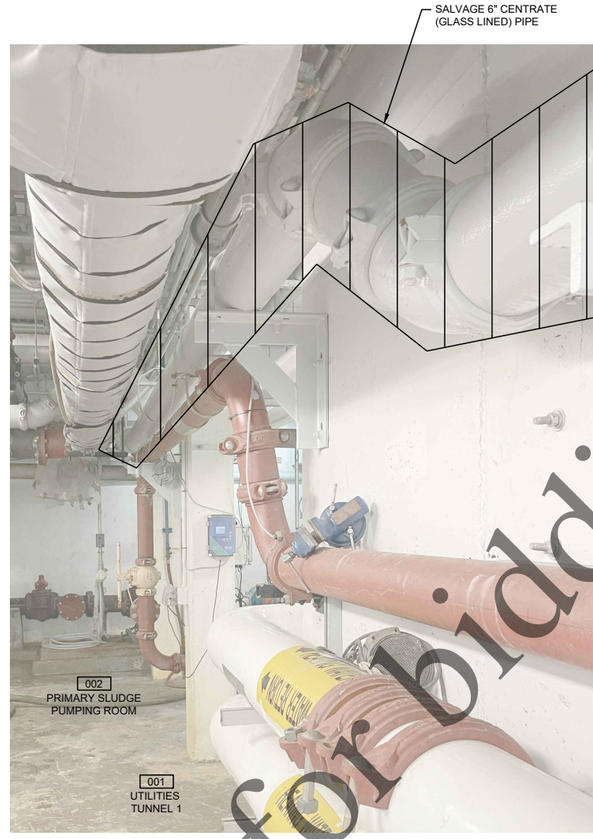


PHOTO 1

NTS 8-R-04

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES

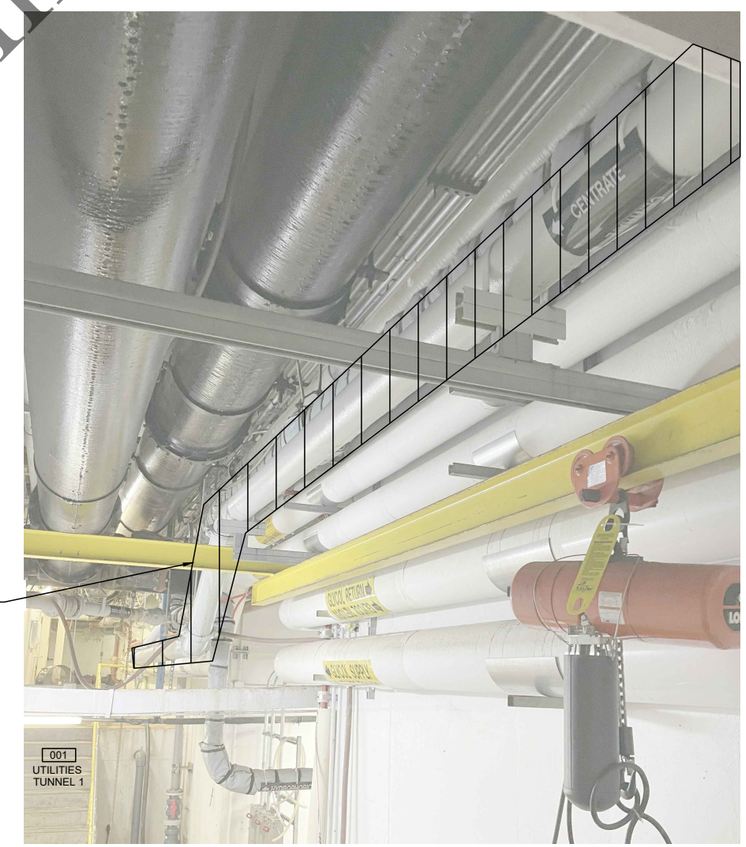


PHOTO 2

NTS 8-R-04

Not to be used for bidding purposes

file: P:\13852chi\Dwg\8RP4.dwg

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	JKR
Drawn By	JKR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GRAVITY BELT THICKENING BUILDING
CENTRATE LINE REMOVAL PLAN AND PHOTOS

DONOHUE 11/23/2021

Sheet No. 107

Drawing No. **8-R-04**

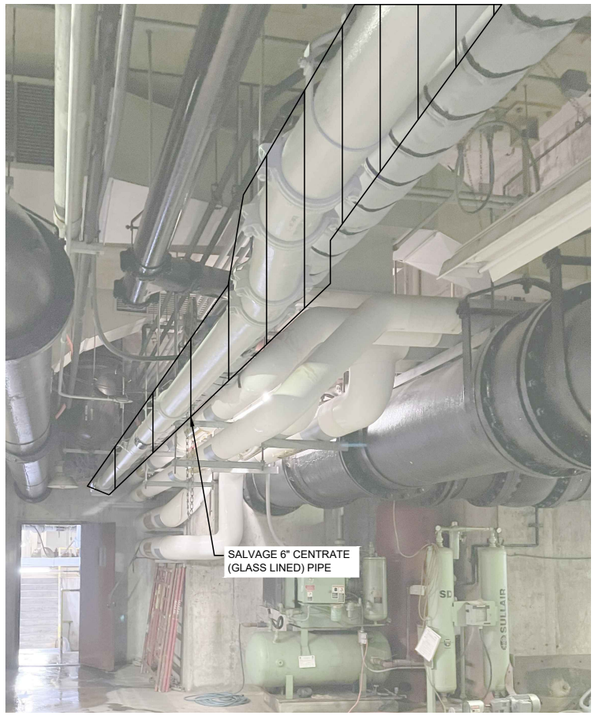


PHOTO 3
NTS 8-R-04

PHOTO 4
NTS 8-R-04

PHOTO 5
NTS 8-R-04

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES

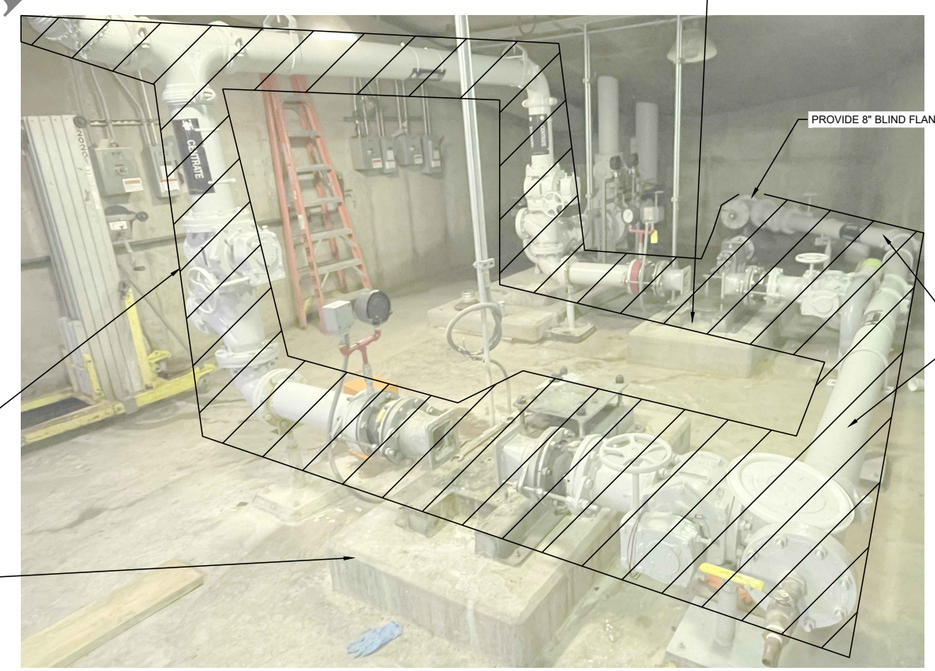


PHOTO 6
NTS 8-R-04

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	JKR
				Drawn By	JKR
				Checked By	SPG
				Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GRAVITY BELT THICKENING BUILDING
CENTRATE LINE REMOVAL PHOTOS

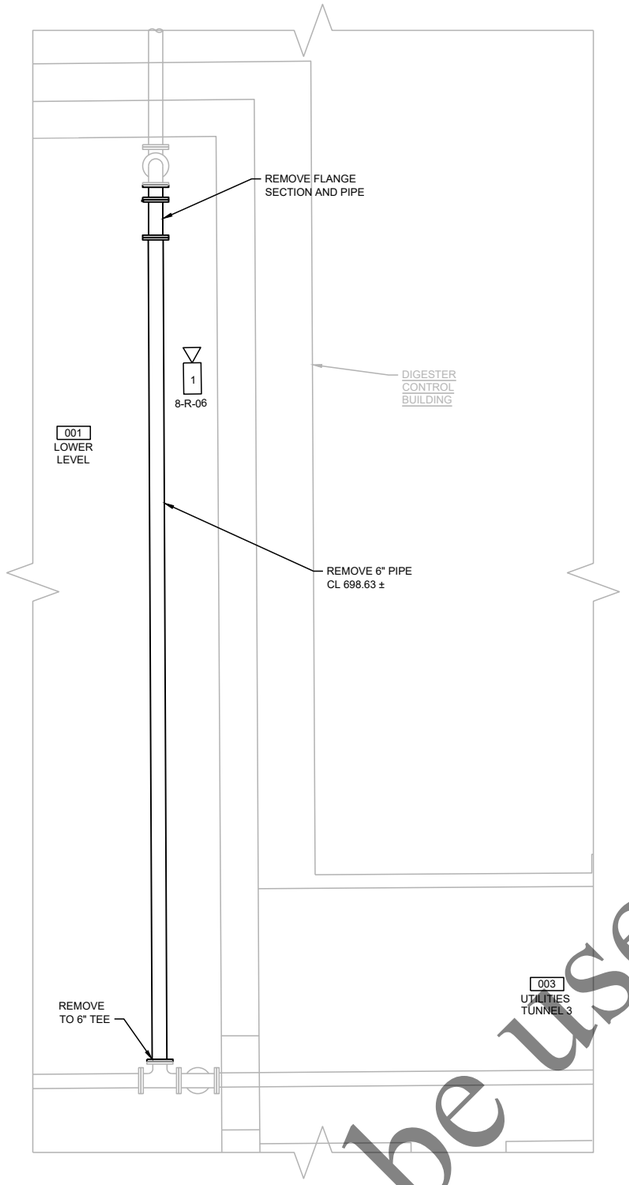
DONOHUE 11/23/2021

Sheet No. 108
Drawing No. **8-R-05**

file: P:\13852chl\Dwg\8RP4.dwg

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES



ENLARGED GRADE PLAN 8-R-01

0 3' 8'

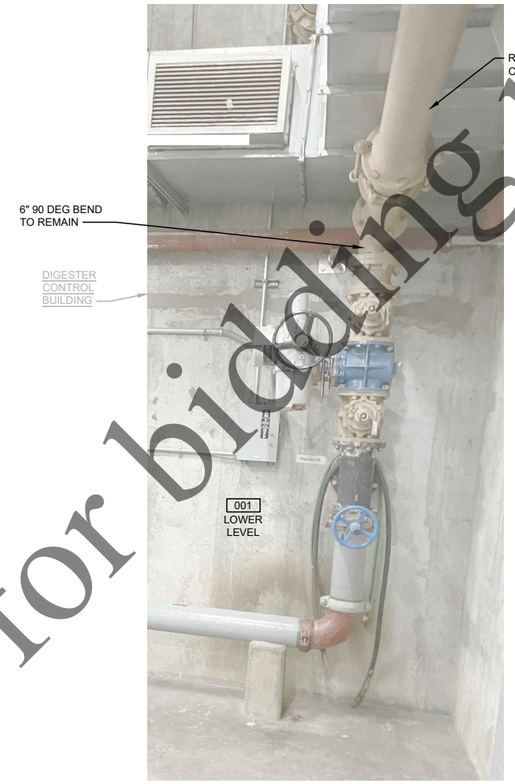


PHOTO 1

NTS 8-R-06

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	JKR
Drawn By	JKR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

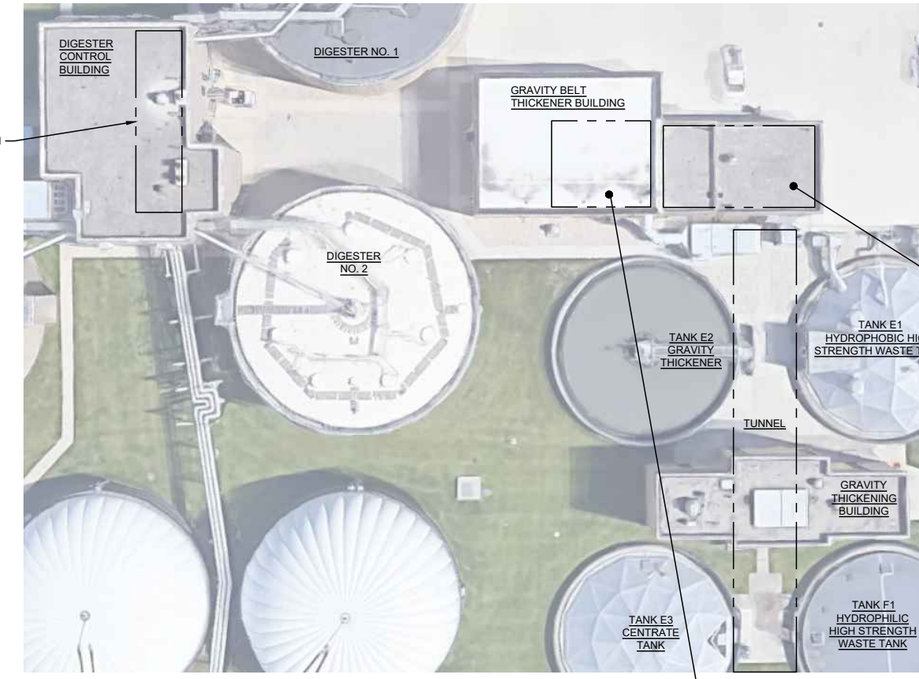
DIGESTER CONTROL BUILDING
ENLARGED PLAN AND PHOTO

DONOHUE 11/23/2021

Sheet No. 109

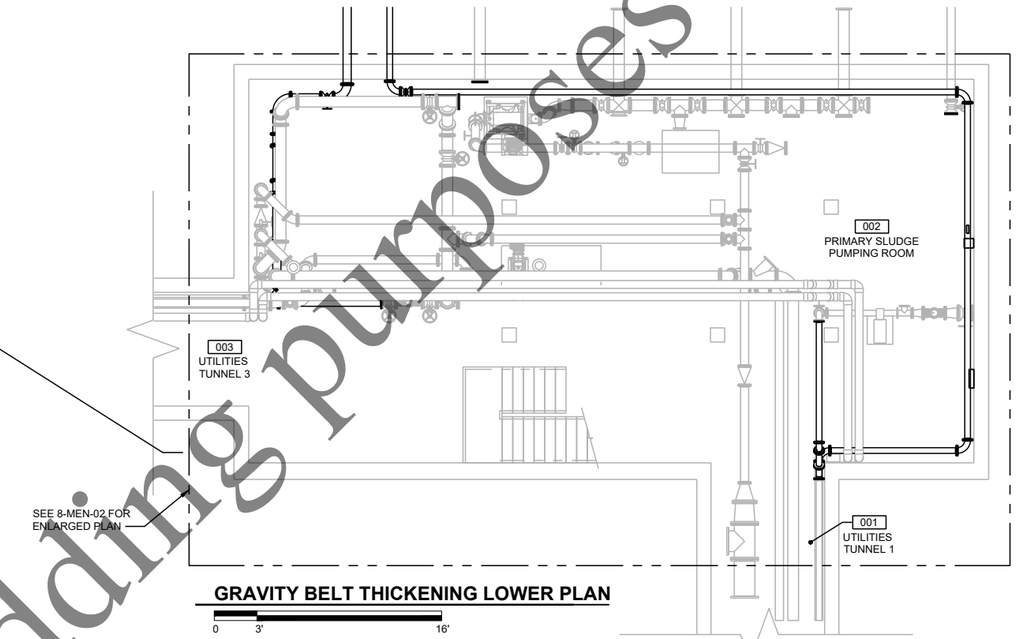
Drawing No. **8-R-06**

file: P:\13852chi\Dwg\8RP4.dwg



OVERALL AERIAL PLAN

NTS



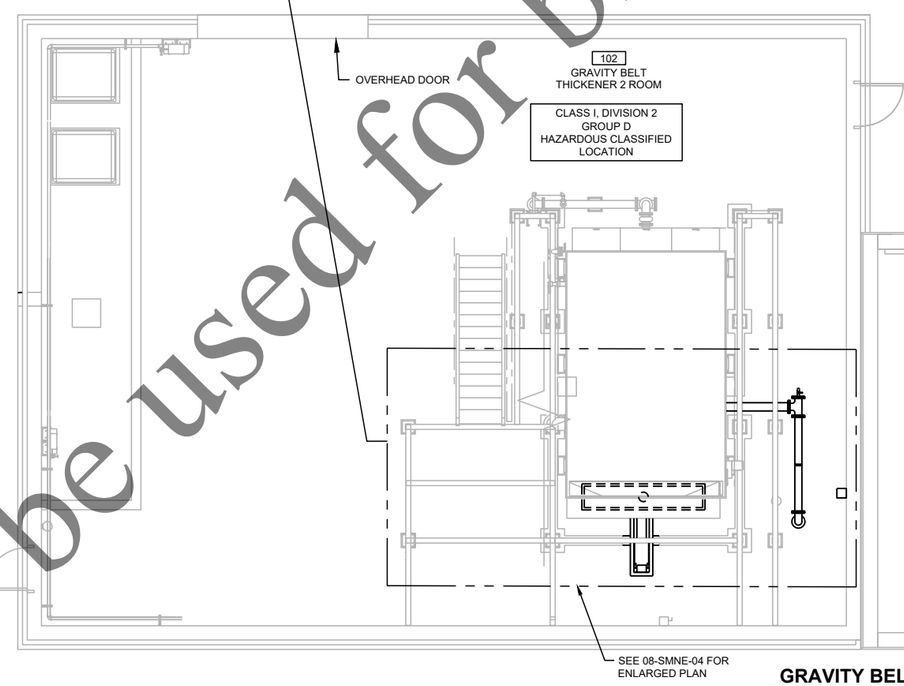
GRAVITY BELT THICKENING LOWER PLAN

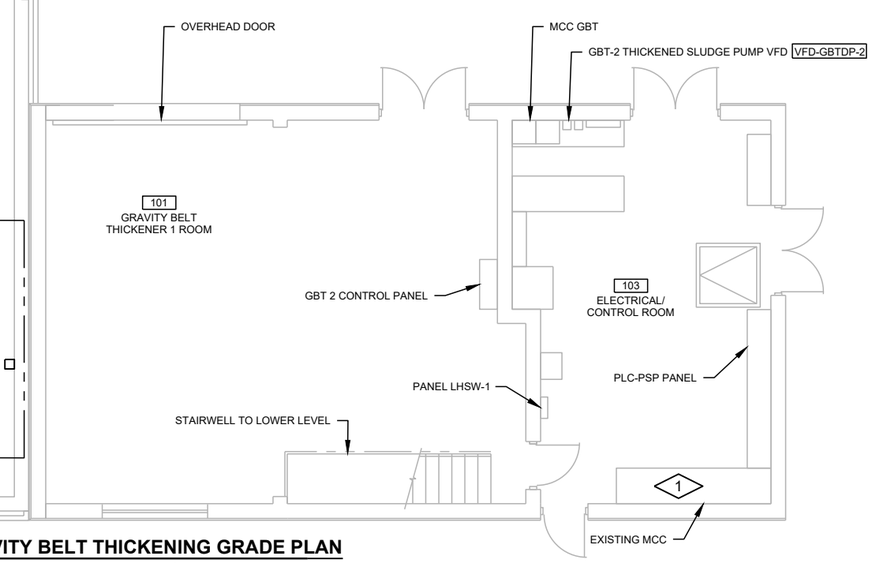
GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. RELABEL ABANDONED MCC BUCKETS FROM DEMOLISHED CLARIFIER EQUIPMENT AS "SPARE".





GRAVITY BELT THICKENING GRADE PLAN

0 3' 16'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	JKR/FGM/LPH
Drawn By	JKR/FGM/LPH
Checked By	SPG/JTB/BLG
Approved By	KPL/FGM/BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GRAVITY BELT THICKENING BUILDING
OVERALL PLANS

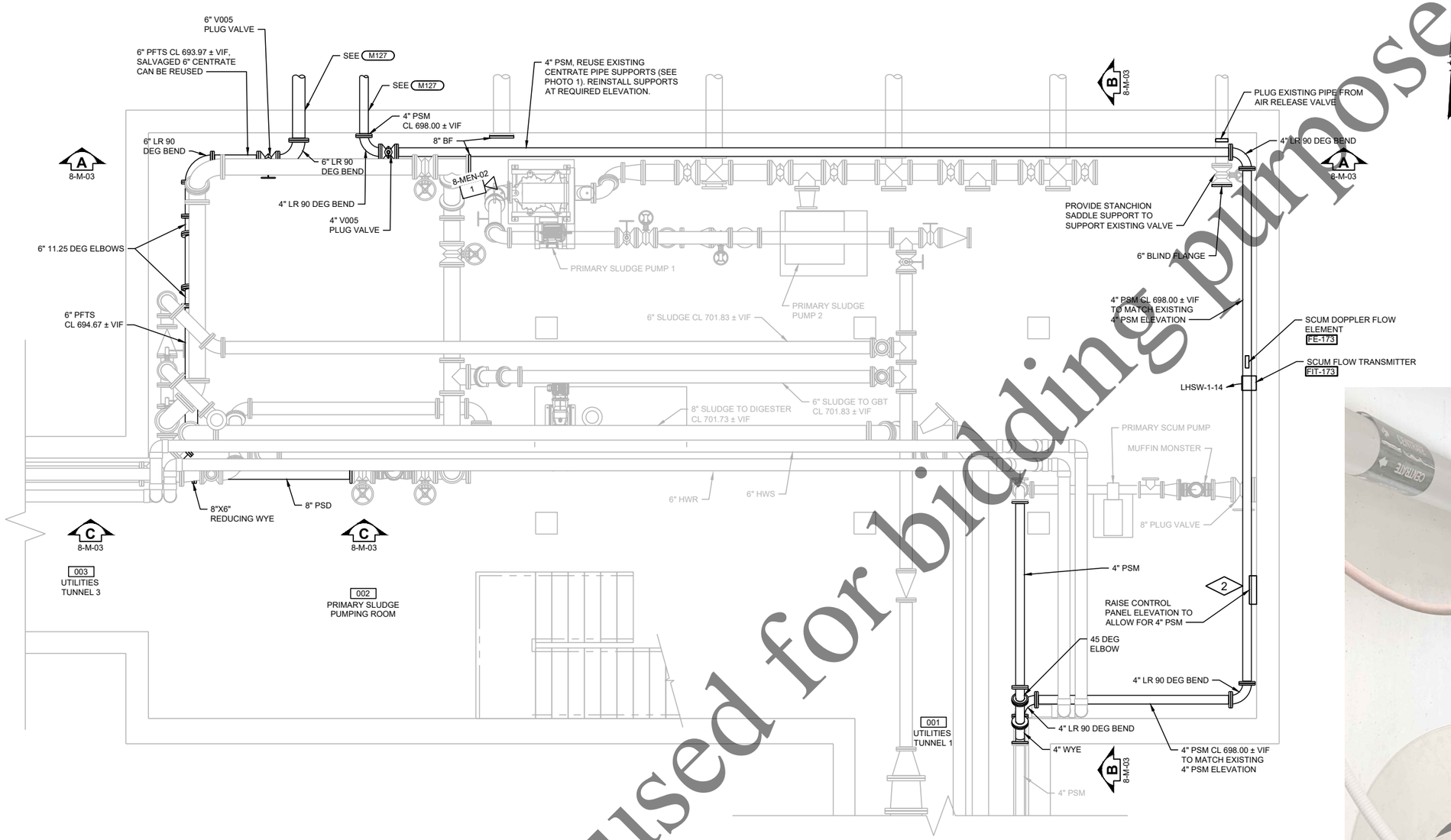
DONOHUE

11/23/2021

Sheet No. 110

Drawing No. 8-MEN-01

file: P:\13852ch\Dwg\8MP1.dwg



LOWER PLAN

8-MEN-01

0 3' 8'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. REFER TO SHEET 8-MEN-01 FOR PLC-PSP LOCATION.
2. ADJUST CONDUITS AND RE-TERMINATE CABLES AS REQUIRED TO ACCOMMODATE ELEVATED PANEL.

REUSE EXISTING PIPE SUPPORTS AND REINSTALL AS REQUIRED.

PHOTO 1

NTS 8-MEN-02

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
FE-173	SCUM FROM PRIMARY FILTERS FLOW ELEMENT	N385	(1) VFC	FIT-173
FIT-173	SCUM FROM PRIMARY FILTERS FLOW TRANSMITTER	N171	(1) TSP	PLC-PSP

1

Not to be used for bidding purposes

file: P:\13852chi\Dwg\8MP1.dwg

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	JKR/FGM/LPH
Drawn By	JKR/FGM/LPH
Checked By	SPG/JTB/BLG
Approved By	KPL/FGM/BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GRAVITY BELT THICKENING BUILDING
ENLARGED BASEMENT PLAN

DONOHUE

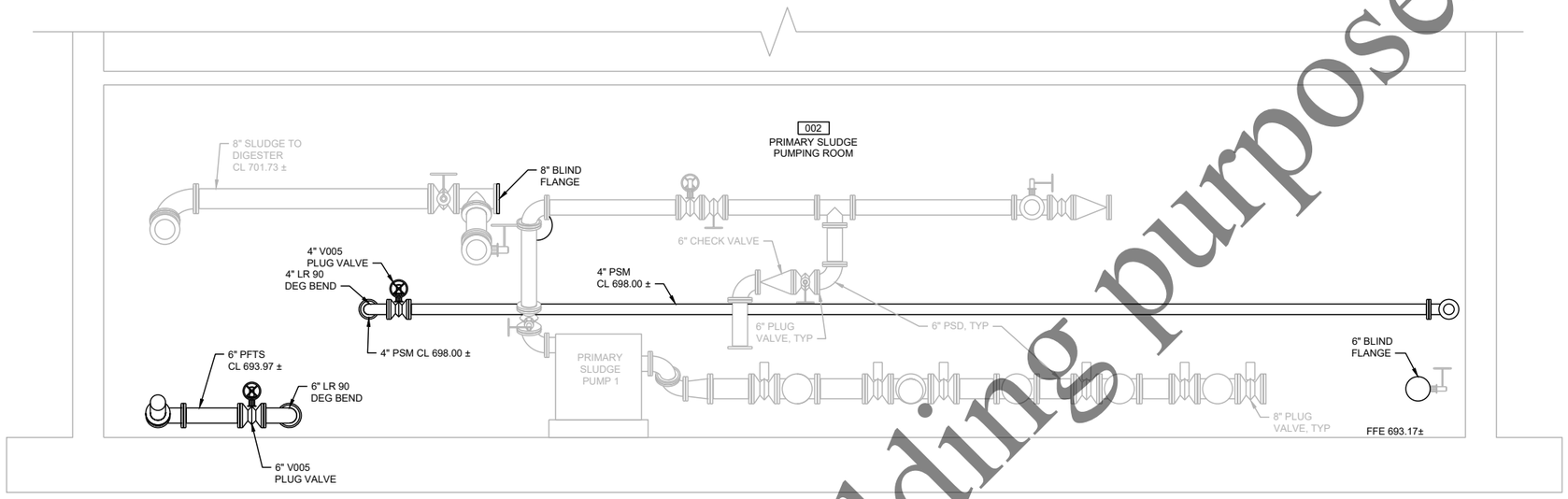
11/23/2021

Sheet No. 111

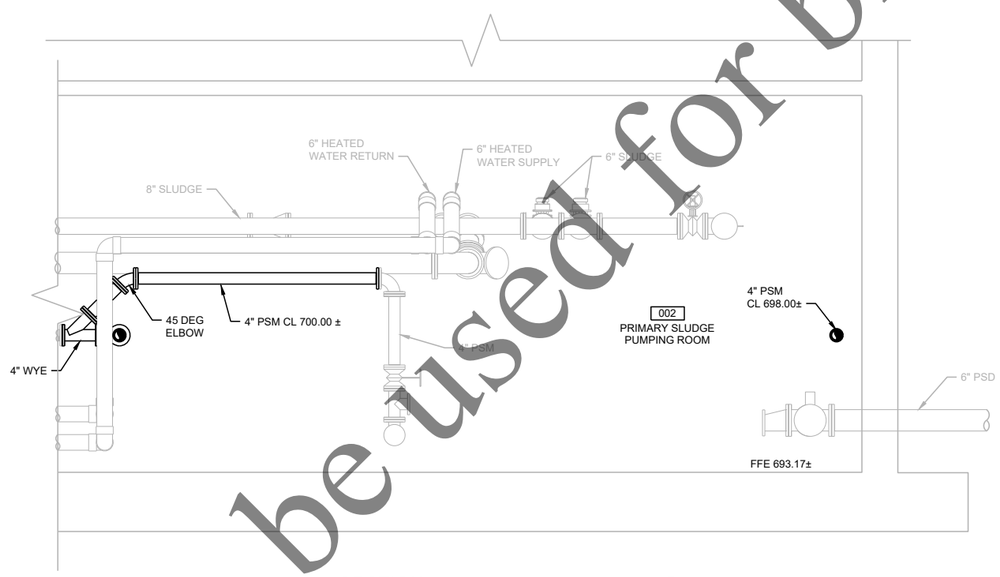
Drawing No. 8-MEN-02

GENERAL NOTES:

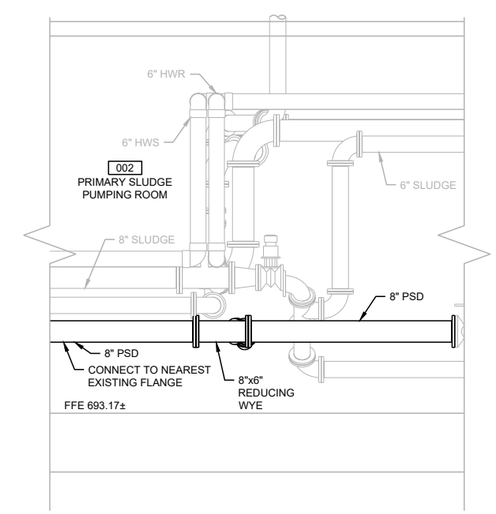
1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES



SECTION A
8-MEN-02
0 3' 8'



SECTION B
8-MEN-02
0 3' 8'



SECTION C
8-MEN-02
0 3' 8'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	JKR
				Drawn By	JKR
				Checked By	SPG
				Approved By	KPL

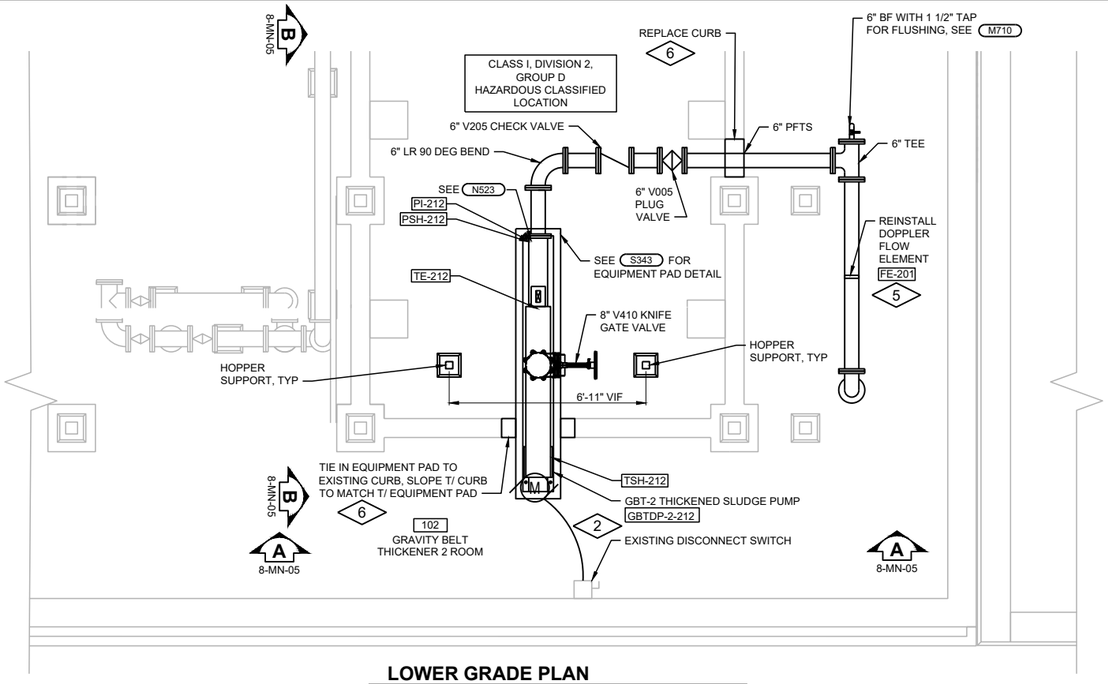
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GRAVITY BELT THICKENING BUILDING
SECTIONS

DONOHUE 11/23/2021

Sheet No. 112
Drawing No. **8-M-03**

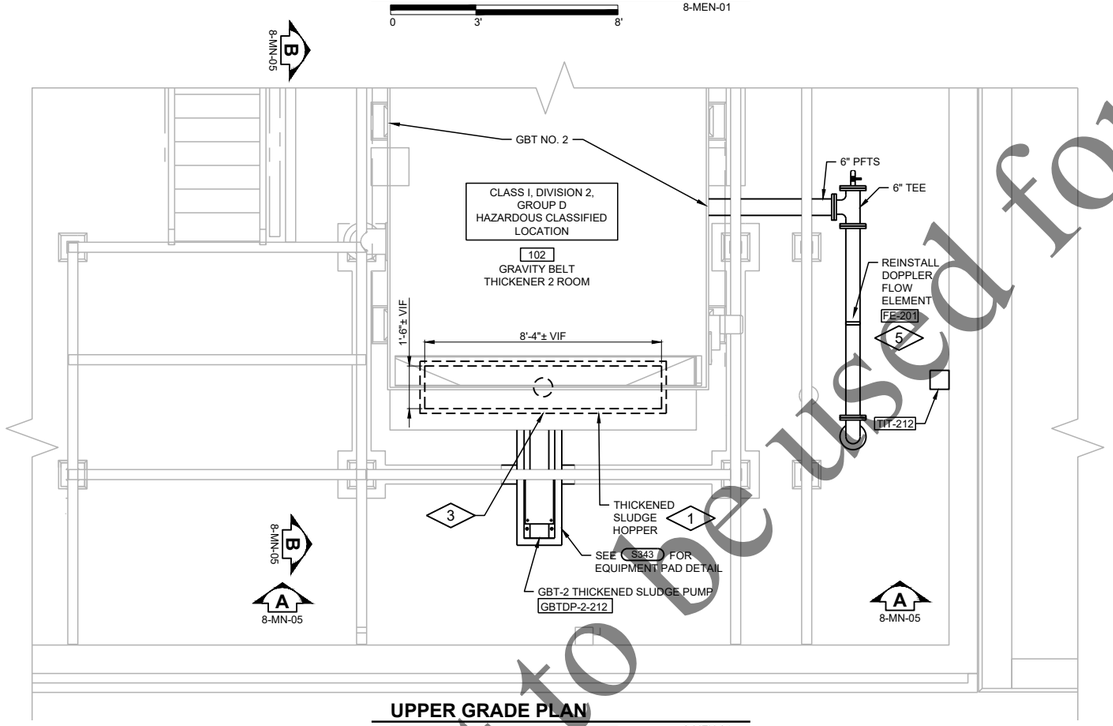
file: P:\13852chi\Dwg\8MP1.dwg



LOWER GRADE PLAN

8-MEN-01

0 3' 8'



UPPER GRADE PLAN

8-MEN-01

0 3' 8'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. PROVIDE HOPPER IN ACCORDANCE WITH SPECIFICATION SECTION 46 71 16.
2. EXTEND NEW CONDUIT, CABLE, AND SEAL TO EXISTING DISCONNECT SWITCH.
3. PROVIDE 3" PFTS, 3" V420 TRANSMITTER ISOLATION VALVE WITH FLUSHING CONNECTIONS, 3" BLIND FLANGE FOR PRESSURE TRANSMITTER, AND PIT-212 IN ACCORDANCE WITH DETAIL N221, REUSE EXISTING CONTROL WIRING AND CONDUIT.
4. REFER TO SHEET 8-MEN-01 FOR PLC-PSP LOCATION.
5. PROVIDE NEW CONDUIT FROM FLOOR PENETRATION TO FLOW ELEMENT, AND NEW CONDUIT SEAL-OFF. SPLICE CABLE IF REQUIRED.
6. REPLACE CONCRETE CURB SIMILAR TO DETAIL S325. REINFORCEMENT SHALL BE POST-INSTALLED PER DETAIL S385.

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
PI-212	GBTDP-2 DISCHARGE PRESSURE GAUGE	N520	N/A	
PIT-212	CAKE HOPPER PRESSURE TRANSDUCER	N221	RE-USE EXISTING CONTROL WIRING AND CONDUIT.	PLC-PSP
PSH-212	GBTDP-2 DISCHARGE PRESSURE SWITCH	N520	(2) #14	PLC-PSP
TE-212	GBTDP-2 CASING TEMP. ELEMENT	MFR.	(1) RTD	TIT-212
TIT-212	GBTDP-2 CASING TEMP. TRANSMITTER	N171	(1) TSP	PLC-PSP
TSH-212	GBTDP-2 MOTOR HIGH TEMP. SWITCH	MFR.	(2) #14	PLC-PSP

4

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	JKR/CEE/FGM/LPH
Drawn By	JKR/CEEFGM/LPH
Checked By	SPG/TJB/JTB/BLG
Approved By	KPL/CEE/FGM/BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GRAVITY BELT THICKENING BUILDING
ENLARGED GRADE PLANS

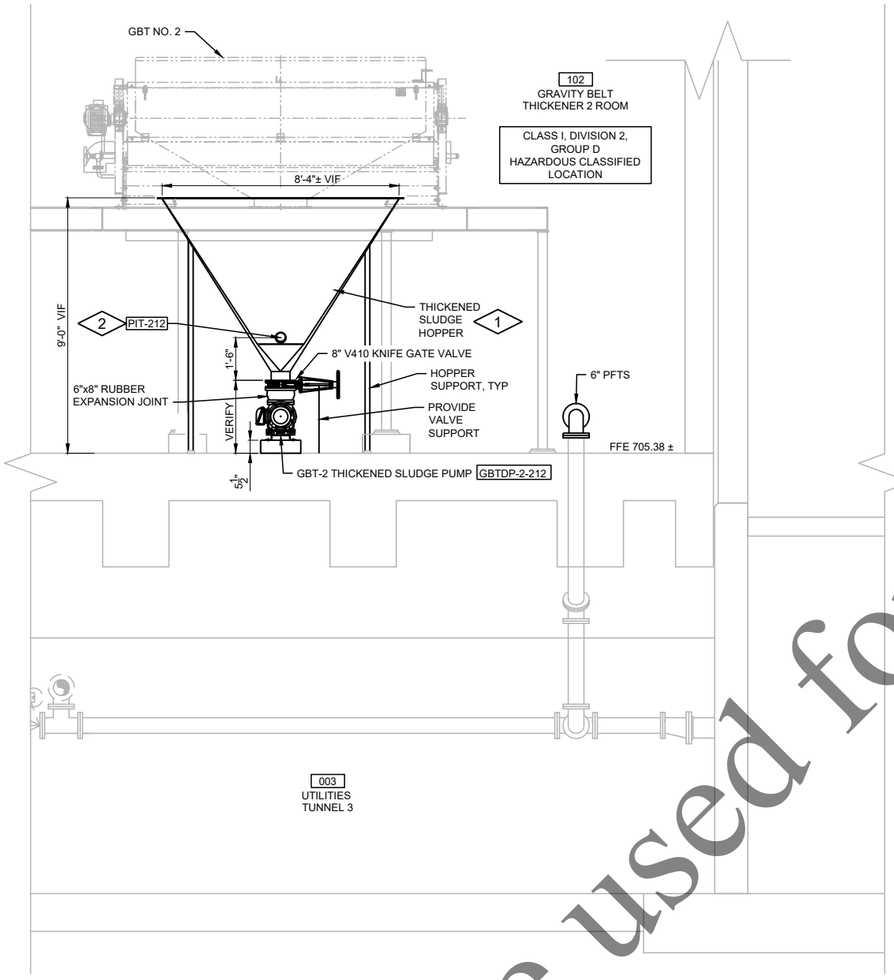
DONOHUE

11/23/2021

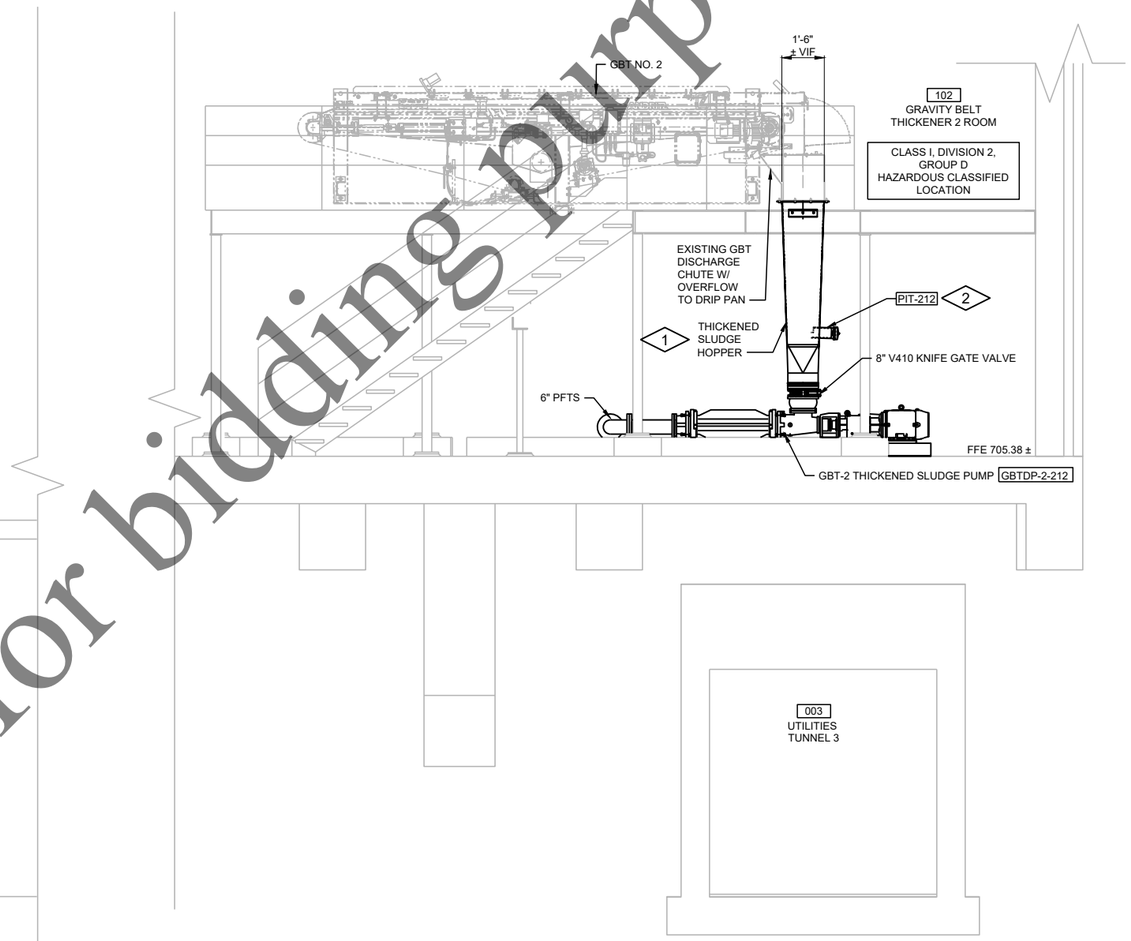
Sheet No. 113

Drawing No. **8-SMEN-04**

file: P:\13852chi\Dwg\8MP1.dwg



SECTION A
8-SMEN-04
0 3' 8'



SECTION B
8-SMEN-04
0 3' 8'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES:

1. PROVIDE HOPPER IN ACCORDANCE WITH SPECIFICATION SECTION 46 71 16. NO WEIGHT SHALL BEAR ON EXISTING GBT DISCHARGE CHUTE
2. PROVIDE 3" PFTS, 3" V420 TRANSMITTER ISOLATION VALVE WITH FLUSHING CONNECTIONS, 3" BLIND FLANGE FOR PRESSURE TRANSMITTER, AND PIT-212 IN ACCORDANCE WITH DETAIL N221. REUSE EXISTING CONTROL WIRING AND CONDUIT.

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Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	JKR/LPH
Drawn By	JKR/LPH
Checked By	SPG/BLG
Approved By	KPL/BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

GRAVITY BELT THICKENING BUILDING
SECTIONS

DONOHUE

11/23/2021

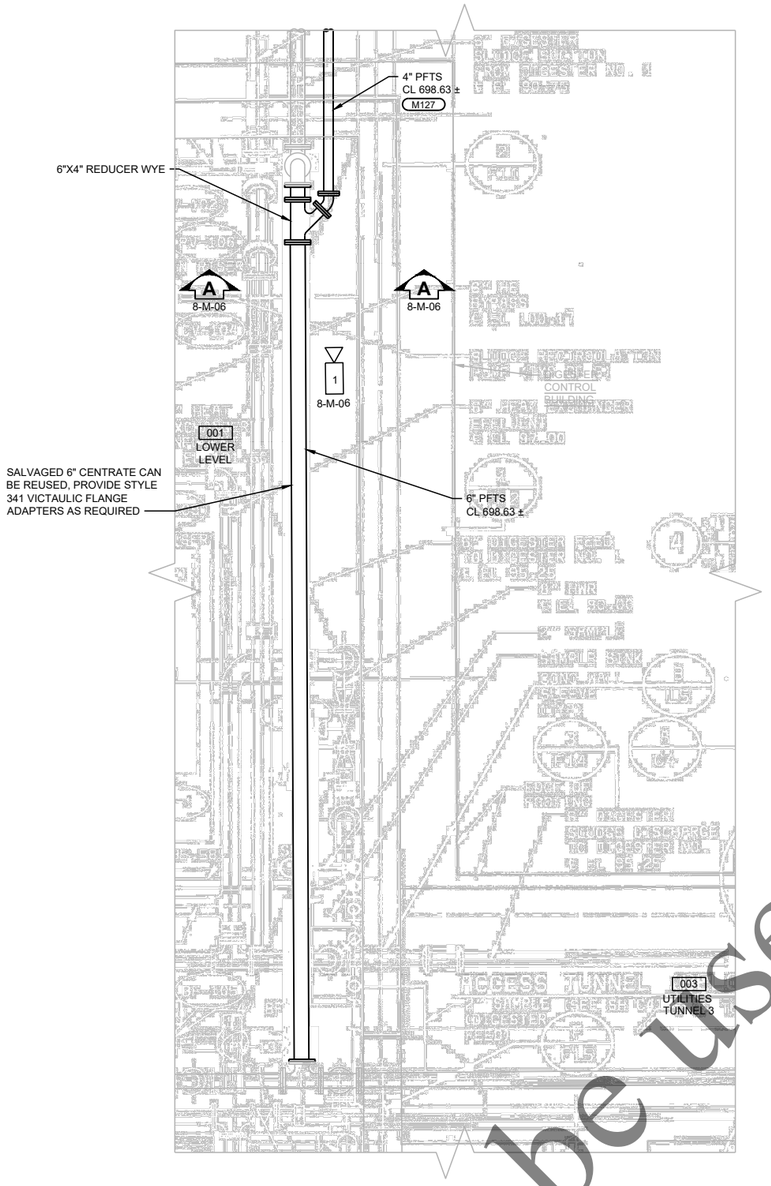
Sheet No. 114

Drawing No. 8-MN-05

file: P:\13852chi\Dwg\8MP1.dwg

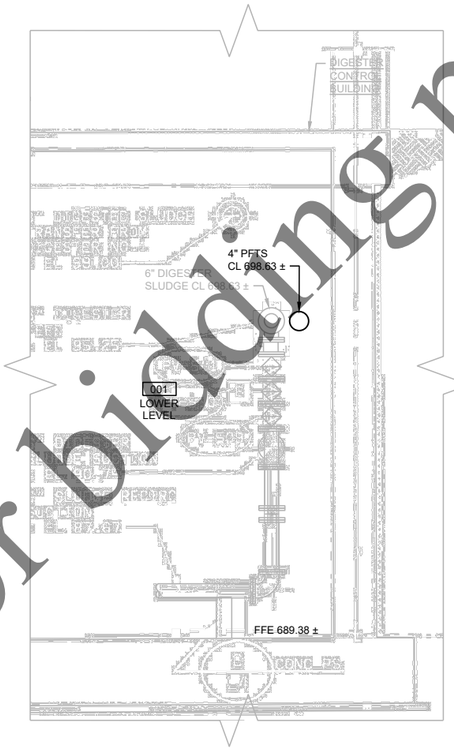
GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES



ENLARGED GRADE PLAN 8-MEN-01

0 3' 8'



SECTION A 8-M-06

0 3' 8'

PHOTO 1 8-M-06

NTS

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No.	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	JKR
				Drawn By	JKR
				Checked By	SPG
				Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

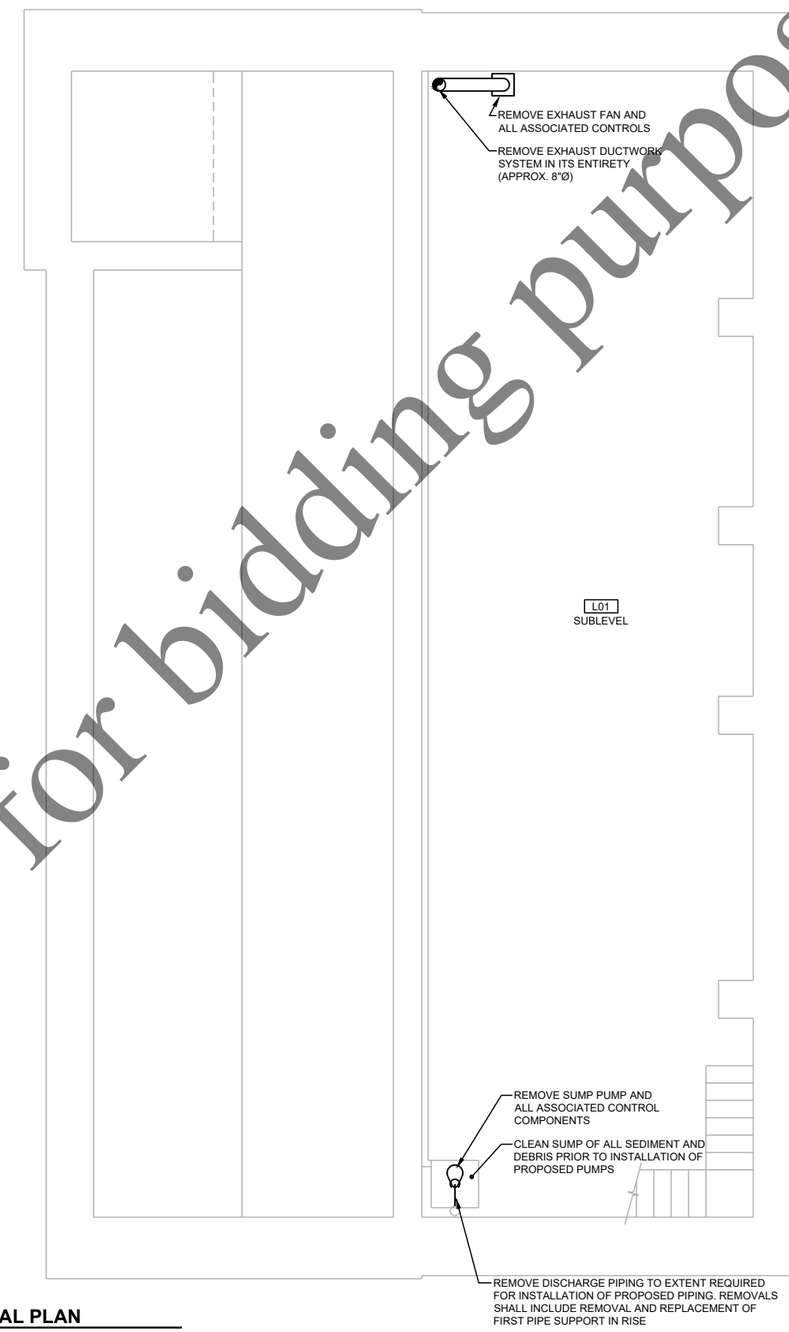
DIGESTER CONTROL BUILDING
ENLARGED PLAN, SECTION AND PHOTO

DONOHUE 11/23/2021

Sheet No. 115

Drawing No. **8-M-06**

file: P:\13852ch\Dwg\8MP1.dwg



SUBLEVEL REMOVAL PLAN

0 1' 4'

GENERAL REMOVAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	JLW
Drawn By	JLW
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

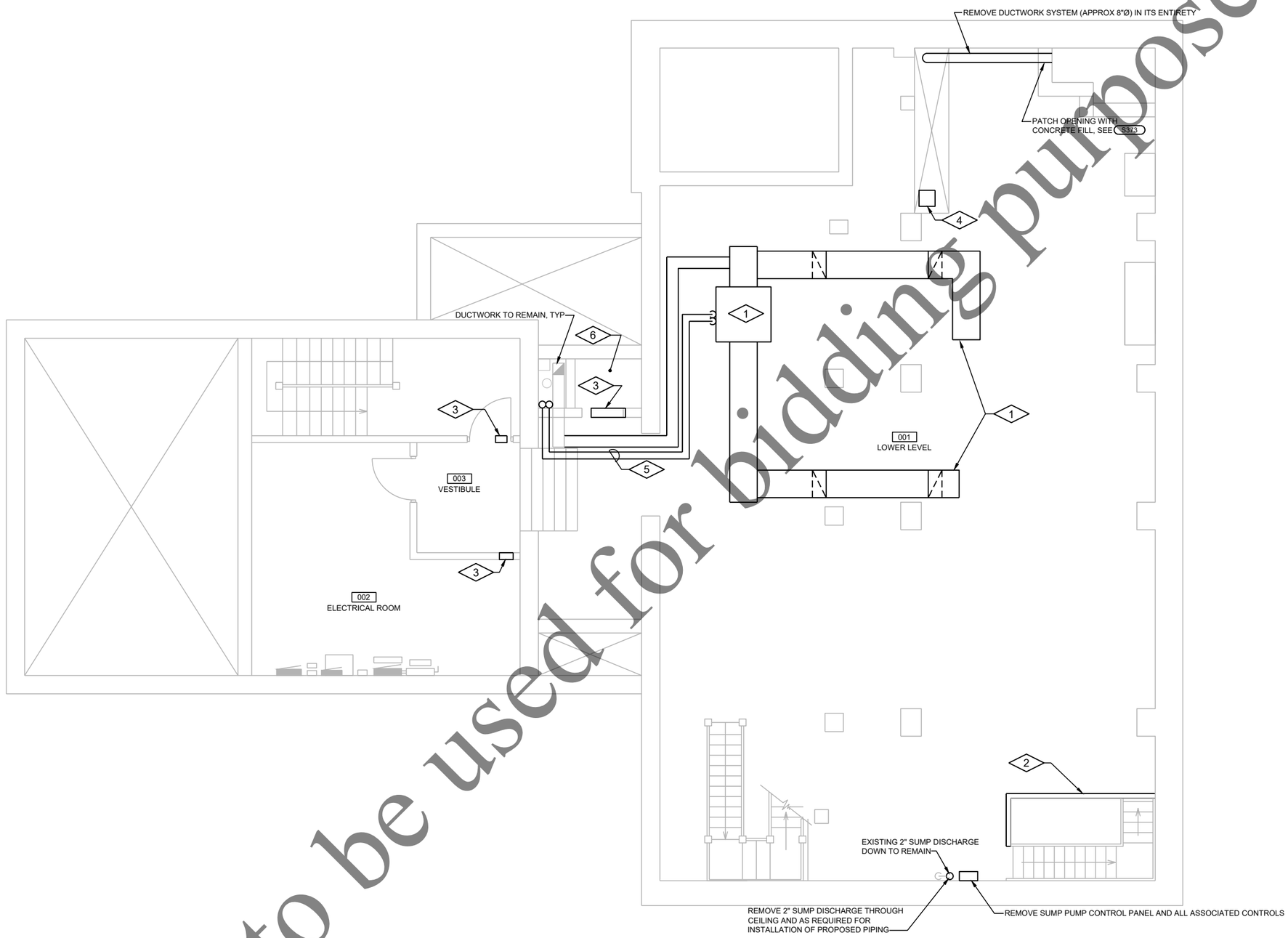
MAIN PUMP II
SUBLEVEL REMOVAL PLAN

DONOHUE 11/23/2021

Sheet No. 116

Drawing No. **9-R-01**

file: P:\13852chi\Dwg\9RP1.dwg



LOWER REMOVAL PLAN

0 1' 4'

GENERAL REMOVAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES.

PLAN NOTES:

1. REMOVE AIR HANDLING UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
2. REMOVE EXISTING GYPSUM BOARD WOOD FRAME WALL.
3. SAWCUT AND REMOVE PORTION OF WALL AS REQUIRED FOR PROPOSED DUCTWORK.
4. SAWCUT AND REMOVE PORTION OF FLOOR AS REQUIRED FOR PROPOSED DUCTWORK.
5. REMOVE ALL REFRIGERANT AND CONDENSATE PIPING ASSOCIATED WITH REMOVED AIR HANDLING UNIT.
6. ONLY EXISTING ACCESS POINT INTO DUMBWAITER CHASE IS AT BOTTOM OF CHASE IN LOWER LEVEL. CONTRACTOR RESPONSIBLE FOR ANY REMOVAL WORK REQUIRED TO PROVIDE ADDITIONAL ACCESS TO CHASE TO ALLOW FOR INSTALLATION OF PROPOSED WORK. ANY ADDITIONAL ACCESS POINTS SHALL BE CLOSED WITH LIKE MATERIALS AND LIKE FINISH AS ADJACENT SURFACES AFTER COMPLETION OF ALL SYSTEM TESTING.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE/CAH
Drawn By	CEE/CAH
Checked By	CEE/CAH
Approved By	CEE/JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

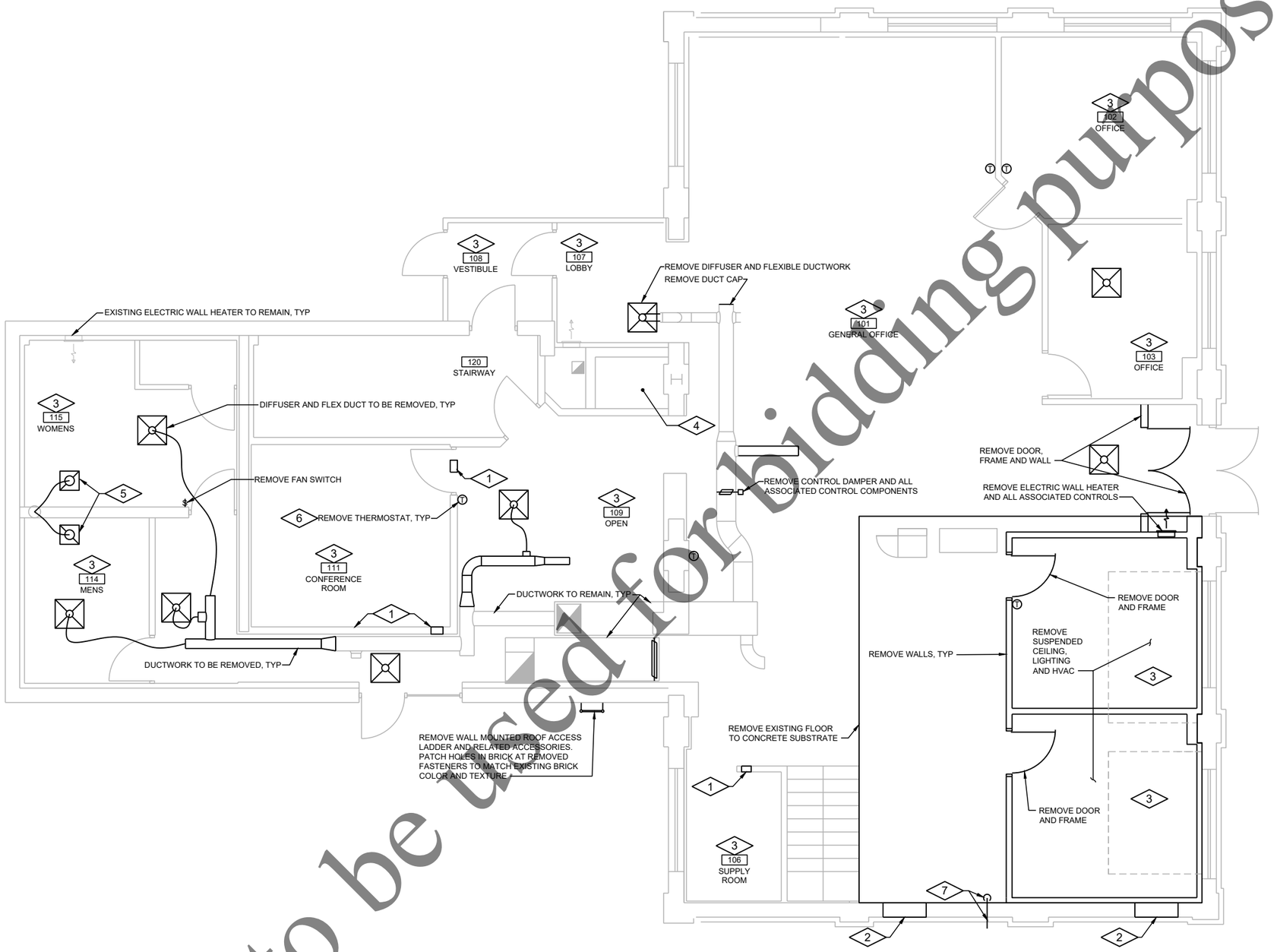
MAIN PUMP II
LOWER REMOVAL PLAN

DONOHUE 11/23/2021

Sheet No. 117

Drawing No. 9-R-02

file: P:\13852chi\Dwg\9RP1.dwg



GRADE REMOVAL PLAN

0 1' 4'

GENERAL REMOVAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES.

PLAN NOTES:

1. SAWCUT AND REMOVE PORTION OF WALL AS REQUIRED FOR PASSING DUCTWORK.
2. SAWCUT AND REMOVE MASONRY IN PATCHED OPENING AS REQUIRED FOR PROPOSED LOUVER.
3. REMOVE SUSPENDED CEILING, LIGHT FIXTURES AND ASSOCIATED CABLE/CONDUIT.
4. ONLY EXISTING ACCESS POINT INTO DUMBWAITER CHASE IS AT BOTTOM OF CHASE IN LOWER LEVEL. CONTRACTOR RESPONSIBLE FOR ANY REMOVAL WORK REQUIRED TO PROVIDE ADDITIONAL ACCESS TO CHASE TO ALLOW FOR INSTALLATION OF PROPOSED WORK. ANY ADDITIONAL ACCESS POINTS SHALL BE CLOSED WITH LIKE MATERIALS AND LIKE FINISH AS ADJACENT SURFACES AFTER COMPLETION OF ALL SYSTEM TESTING.
5. REMOVE EXHAUST FAN AND ALL DUCTWORK TO WALL, WALL PENETRATION DUCT TO REMAIN. REMOVE ALL ASSOCIATED CONTROLS AND INLINE COMPONENTS.
6. WHERE REMOVED THERMOSTAT IS NOT BEING REPLACED WITH NEW TEMPERATURE SENSOR, COVER REMAIN ELECTRICAL BOX WITH WALL PLATE PAINTED TO MATCH ADJACENT SURFACES.
7. REMOVE 2" SUMP PUMP DISCHARGE PIPING THROUGH WALL AND DOWN THROUGH FLOOR.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE/CAH
Drawn By	CEE/CAH
Checked By	CEE/CAH
Approved By	CEE/JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

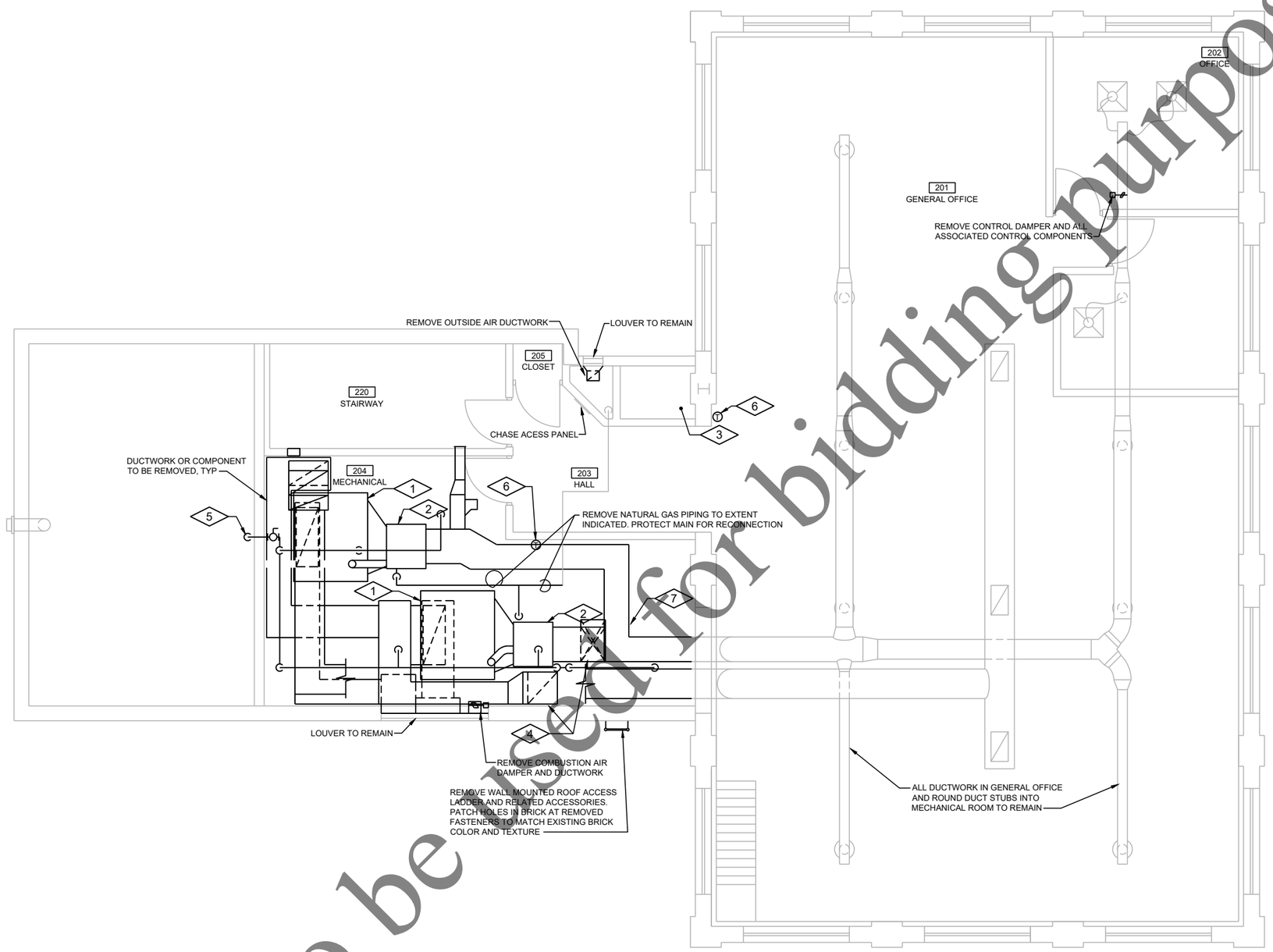
MAIN PUMP II
GRADE REMOVAL PLAN

DONOHUE 11/23/2021

Sheet No. 118

Drawing No. 9-R-03

file: P:\13852chi\Dwg\9RP1.dwg



UPPER PLAN

0 1' 4'

GENERAL REMOVAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES.

PLAN NOTES:

1. REMOVE AIR HANDLING UNIT AND ALL ASSOCIATED REFRIGERANT PIPING, CONDENSATE DRAIN PIPING, DUCTWORK AND CONTROL COMPONENTS.
2. REMOVE DUCT FURNACE AND ALL ASSOCIATED VENT PIPING, DUCTWORK AND CONTROL COMPONENTS.
3. ONLY EXISTING ACCESS POINT INTO DUMBWAITER CHASE IS AT BOTTOM OF CHASE IN LOWER LEVEL. CONTRACTOR RESPONSIBLE FOR ANY REMOVAL WORK REQUIRED TO PROVIDE ADDITIONAL ACCESS TO CHASE TO ALLOW FOR INSTALLATION OF PROPOSED WORK. ANY ADDITIONAL ACCESS POINTS SHALL BE CLOSED WITH LIKE MATERIALS AND LIKE FINISH AS ADJACENT SURFACES AFTER COMPLETION OF ALL SYSTEM TESTING.
4. DUCTWORK THROUGH FLOOR TO REMAIN AT THESE TWO LOCATIONS.
5. REMOVE FIRE SUPPRESSION (SPRINKLER) SYSTEM IN ITS ENTIRETY.
6. WHERE REMOVED THERMOSTAT IS NOT BEING REPLACED WITH NEW TEMPERATURE SENSOR, COVER REMAIN ELECTRICAL BOX WITH WALL PLATE PAINTED TO MATCH ADJACENT SURFACES.
7. REMOVE HUMIDIFICATION UNIT AND ALL ASSOCIATED CONTROL COMPONENTS AND WATER PIPING/TUBING. CAP PIPING AT EAST WALL.

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE/CAH
Drawn By	CEE/CAH
Checked By	CEE/CAH
Approved By	CEE/JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

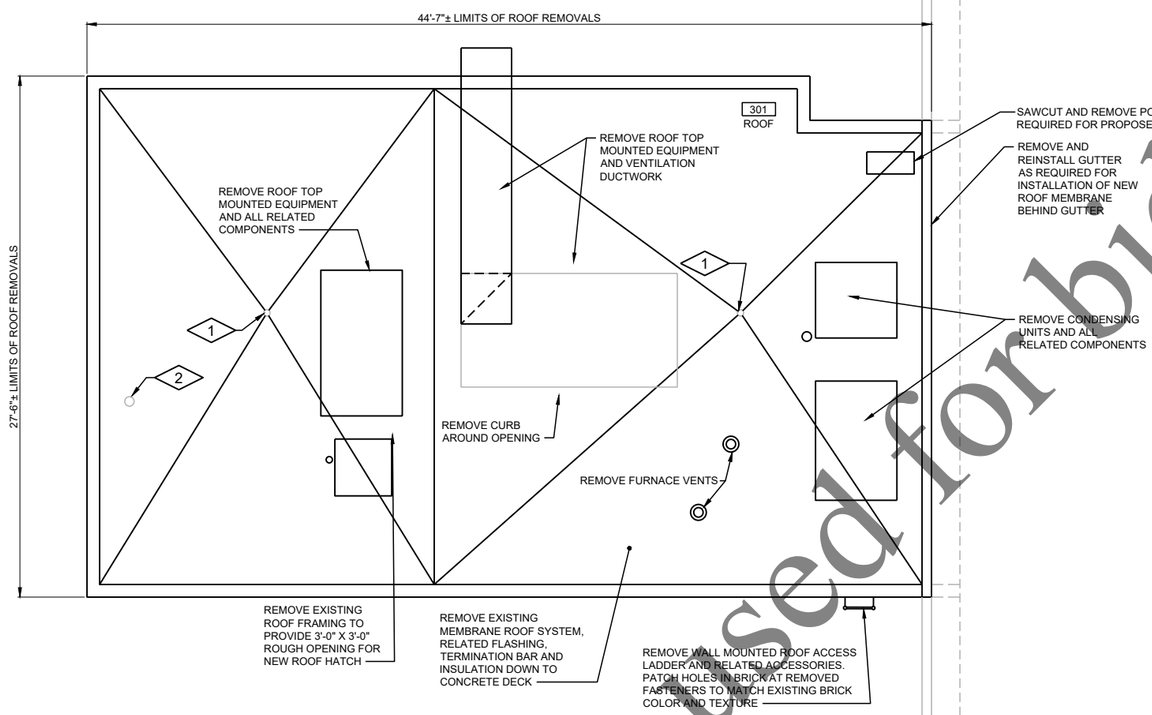
MAIN PUMP II
UPPER REMOVAL PLAN

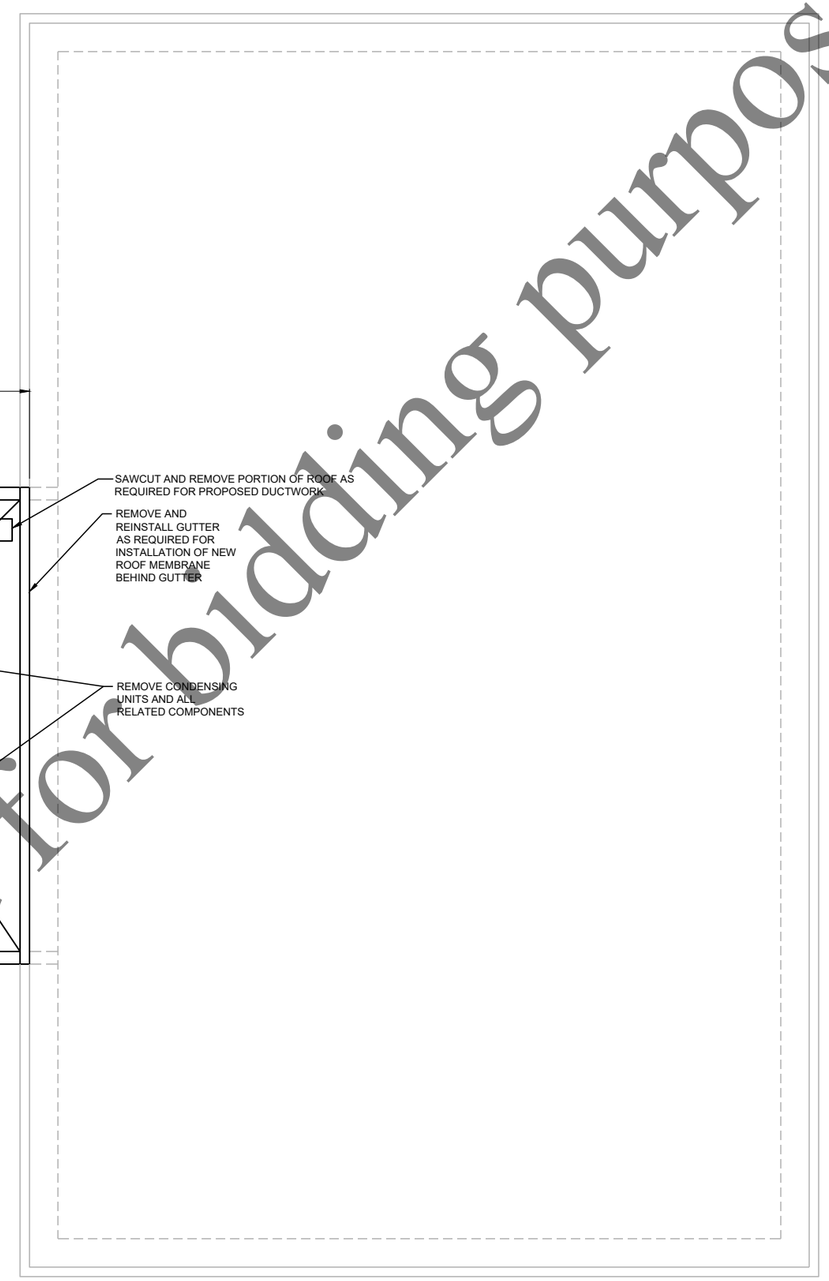
DONOHUE 11/23/2021

Sheet No. 119

Drawing No. **9-R-04**

file: P:\13852chi\Dwg\9RP1.dwg





ROOF PLAN

0 1' 4'

GENERAL REMOVAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR GENERAL REMOVAL NOTES.

PLAN NOTES:

1. ROOF DRAINS TO BE REUTILIZED. SALVAGE AND REINSTALL, UTILIZING EXISTING PIPING SYSTEMS, AS REQUIRED FOR INSTALLATION OF NEW ROOFING SYSTEM.
2. PLUMBING VENT PIPING TO REMAIN. REMOVE ROOFING BOOT AND REPLACE WITH NEW BOOT COMPATIBLE WITH PROPOSED ROOFING SYSTEM.

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Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE/CAH
Drawn By	CEE/CAH
Checked By	CEE/CAH
Approved By	CEE/JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

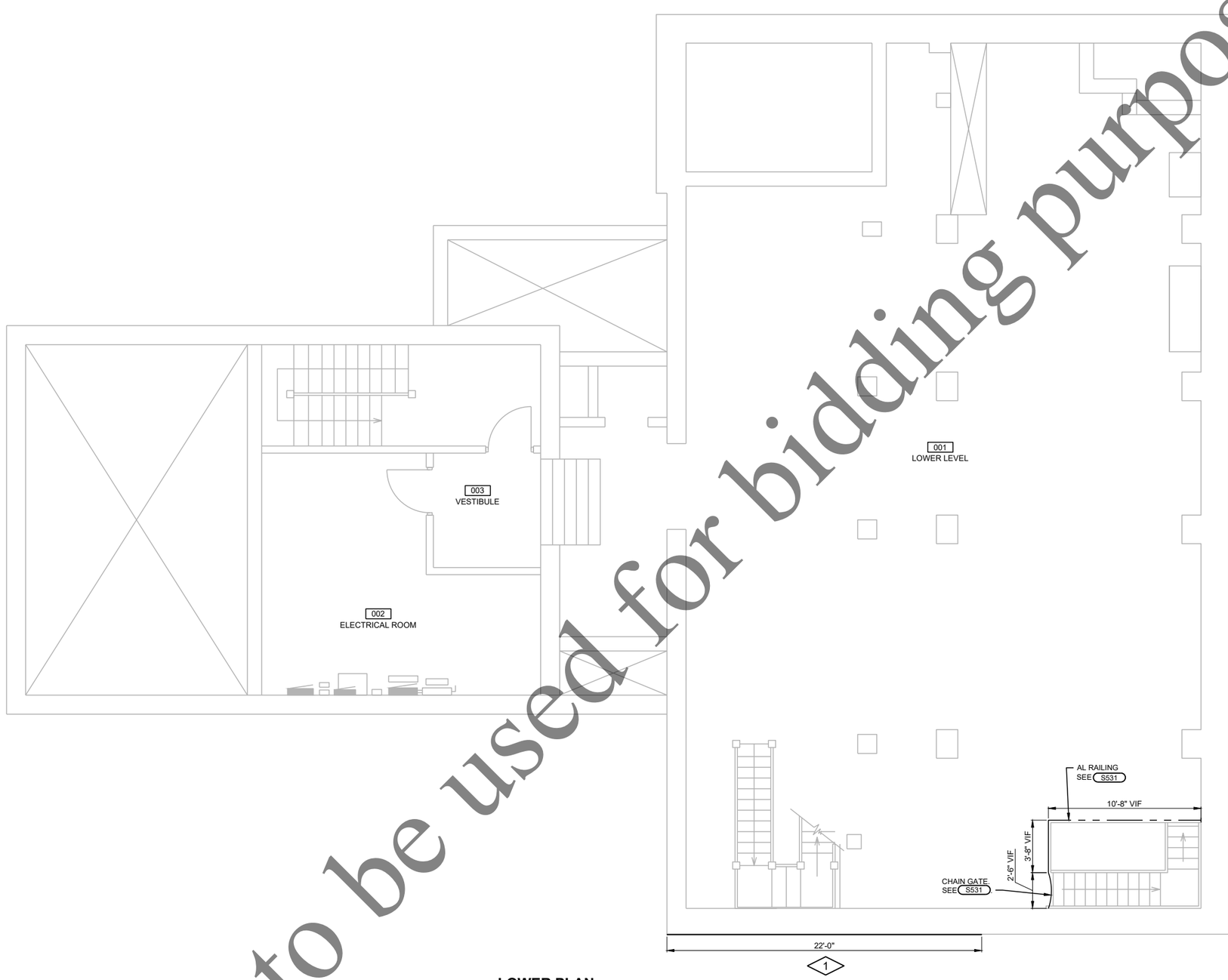
MAIN PUMP II
ROOF REMOVAL PLAN

DONOHUE 11/23/2021

Sheet No. 120

Drawing No. 9-R-05

file: P:\13852ch\Dwg\9RP1.dwg



LOWER PLAN

0 1' 4'

PLAN NOTES:

1. INSTALL WATERPROOFING MEMBRANE ON THE FOUNDATION WALL FOR THE APPROXIMATE LIMIT SHOWN AND APPROXIMATELY 14'-0" BELOW GRADE DURING EXCAVATION OF THE ADJACENT SOIL. WATERPROOFING MEMBRANE SHALL BE LEAKBARRIER BG700 BY TARCO.

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Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

MAIN PUMP II
LOWER PLAN

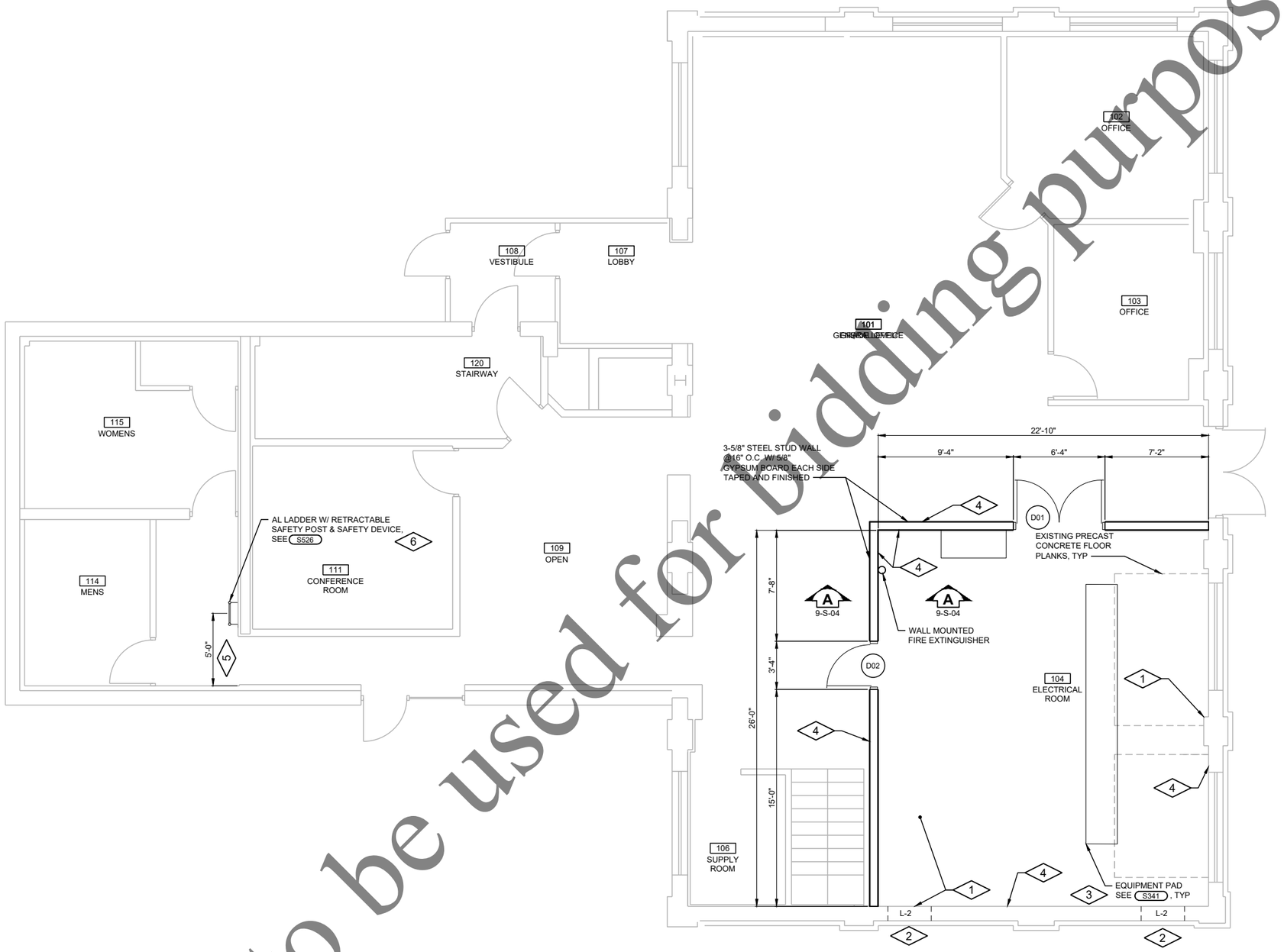
DONOHUE

11/23/2021

Sheet No. 121

Drawing No. **9-S-01**

file: P:\13852chi\Dwg\9SP1.dwg



GRADE PLAN

0 1' 4'

PLAN NOTES:

1. CLEAN EXISTING WALLS, FLOOR AND CEILING WITHIN THE FOOTPRINT OF THE ELECTRICAL ROOM. COAT FLOORS WITH RESINOUS FLOORING. SEE SPECIFICATION SECTION 09 67 16.
2. CONTRACTOR SHALL VERIFY WALL CONSTRUCTION IN THE FIELD AND NOTIFY THE ENGINEER IF THE LINTEL IS NOT APPROPRIATE FOR THE WALL CONSTRUCTION.
3. PROVIDE GROUNDING FOR MCC. SEE E DRAWINGS.
4. PROVIDE 4" HIGH VINYL BASE AT ENTIRE INTERIOR AND EXTERIOR PERIMETER OF ELECTRICAL ROOM 104.
5. VERIFY IN FIELD THAT LADDER AND HATCH ABOVE DO NOT CONFLICT WITH THE EXISTING ROOF FRAMING. IF CONFLICT OCCURS, CONTACT ENGINEER FOR RESOLUTION.
6. CONTRACTOR SHALL RELOCATE EXISTING CONDUITS, PIPING, AND ETC THAT ARE LOCATED IN THE PATH OF THE LADDER.

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Four Rivers Sanitation Authority

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Project No.	13852
Designed By	CEE
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Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

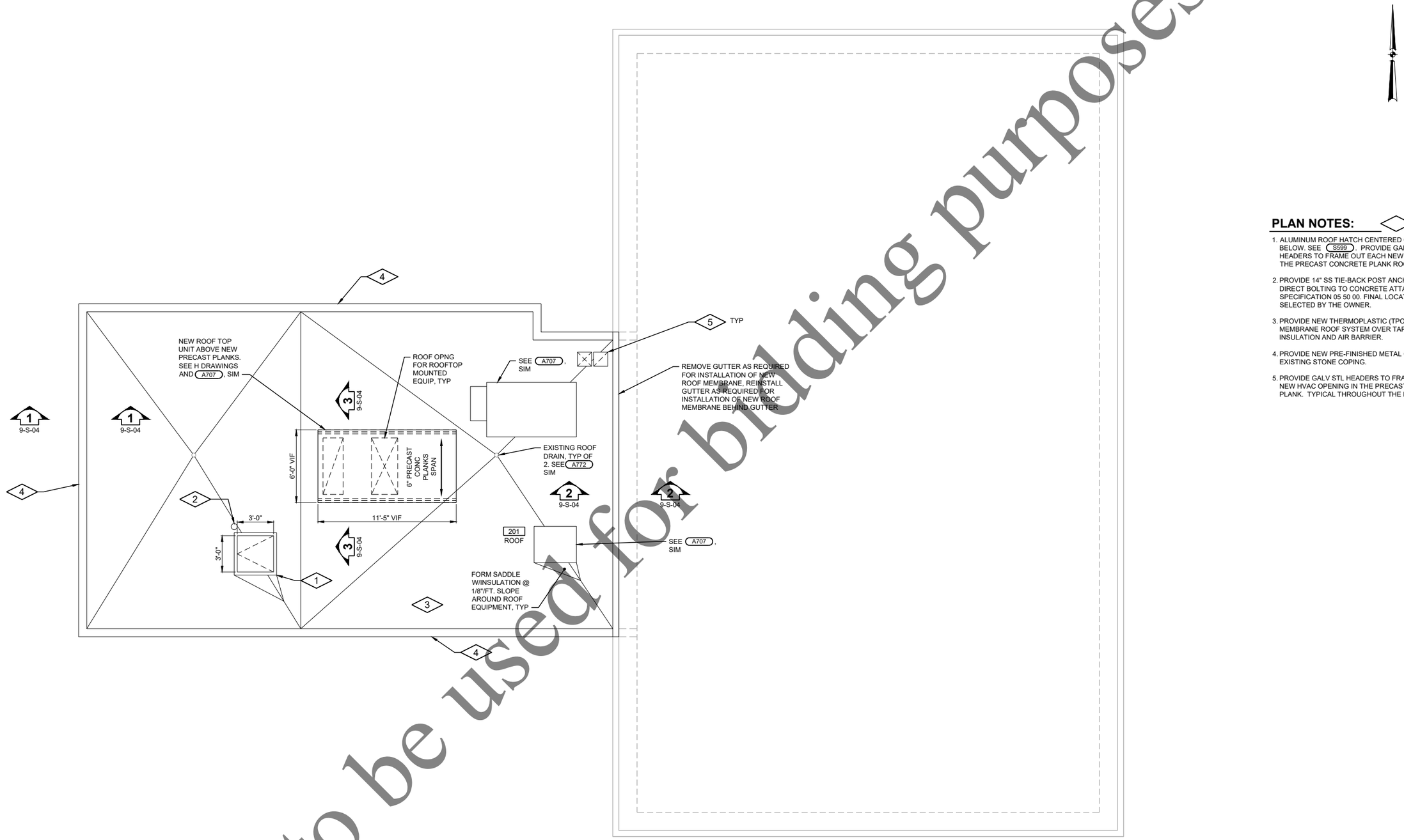
MAIN PUMP II
GRADE PLAN

DONOHUE 11/23/2021

Sheet No. 122

Drawing No. **9-S-02**

file: P:\13852ch\Dwg\9SP1.dwg



ROOF PLAN

0 1' 4'

PLAN NOTES:

1. ALUMINUM ROOF HATCH CENTERED OVER LADDER BELOW. SEE S599. PROVIDE GALV STL HEADERS TO FRAME OUT EACH NEW OPENING IN THE PRECAST CONCRETE PLANK ROOF.
2. PROVIDE 14" SS TIE-BACK POST ANCHOR WITH DIRECT BOLTING TO CONCRETE ATTACHMENT. SEE SPECIFICATION 05 50 00. FINAL LOCATION WILL BE SELECTED BY THE OWNER.
3. PROVIDE NEW THERMOPLASTIC (TPO) ROOF MEMBRANE ROOF SYSTEM OVER TAPERED INSULATION AND AIR BARRIER.
4. PROVIDE NEW PRE-FINISHED METAL COPING OVER EXISTING STONE COPING.
5. PROVIDE GALV STL HEADERS TO FRAME OUT EACH NEW HVAC OPENING IN THE PRECAST CONCRETE PLANK. TYPICAL THROUGHOUT THE BUILDING.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
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Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

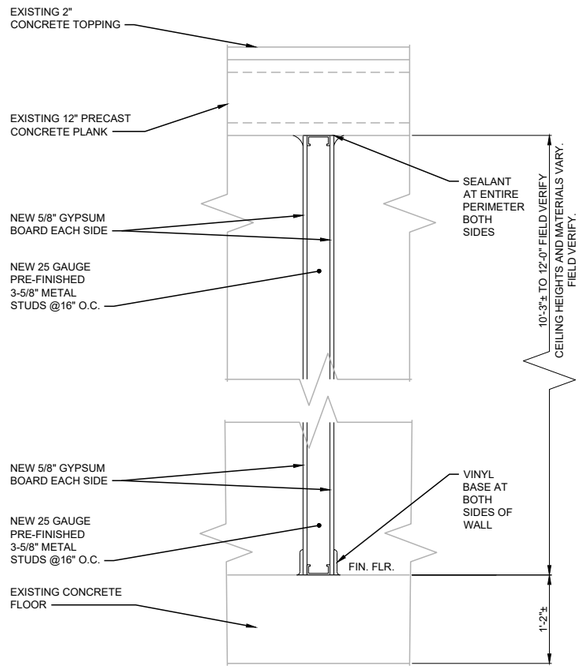
MAIN PUMP II
ROOF PLAN

DONOHUE 11/23/2021

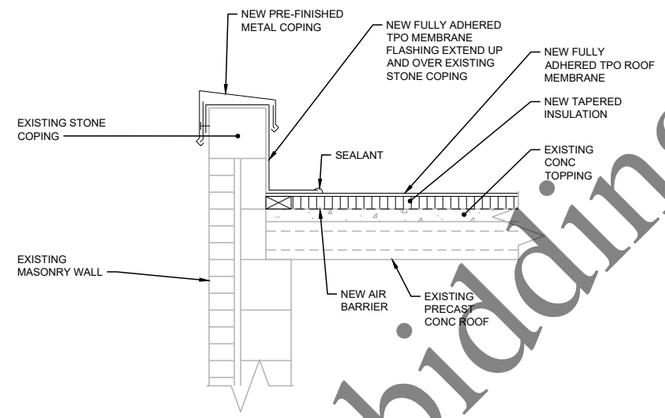
Sheet No. 123

Drawing No. 9-S-03

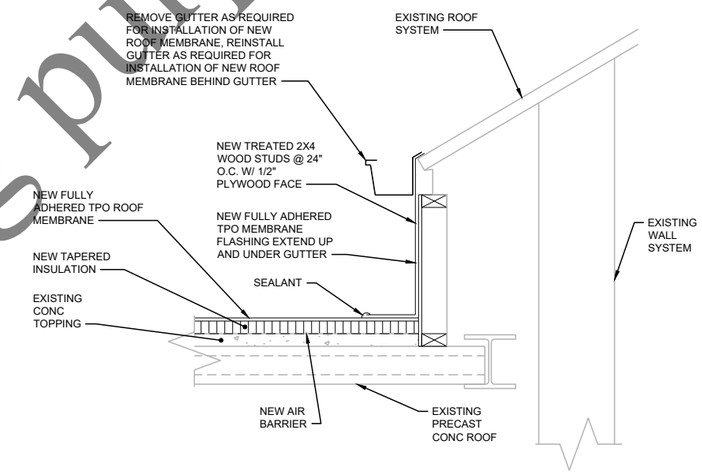
file: P:\13852ch\Dwg\9SP1.dwg



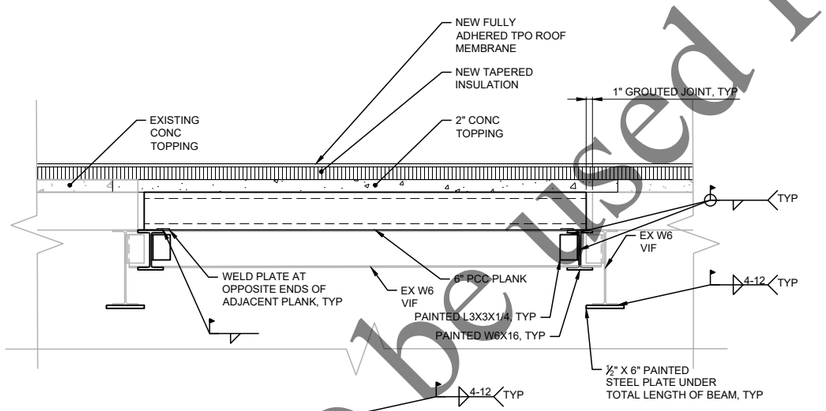
SECTION A
9-S-02
0 1'



ROOF SECTION 1
9-S-03
0 1'



ROOF SECTION 2
9-S-03
0 1'



SECTION 3
9-S-03
0 1'

Not to be Used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	CEE

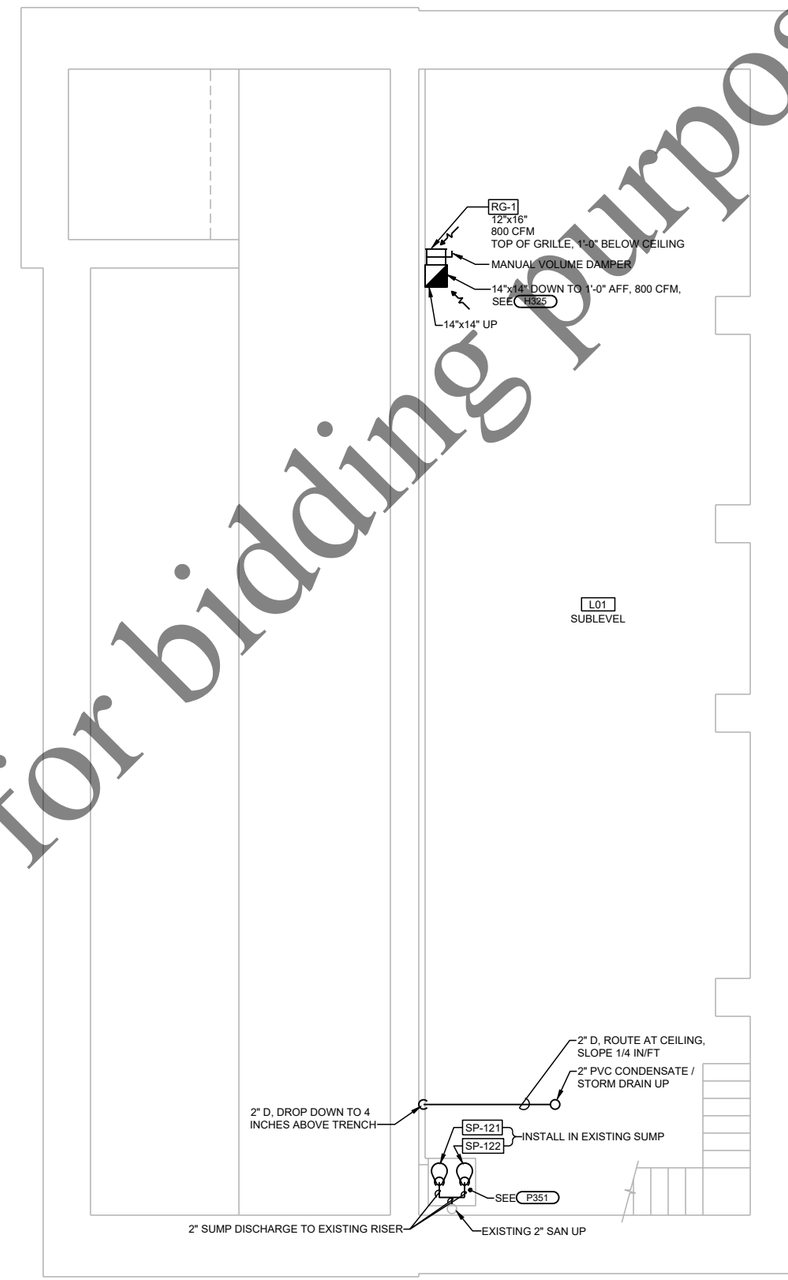
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

MAIN PUMP II
SECTION

DONOHUE 11/23/2021

Sheet No. 124
Drawing No. **9-S-04**

file: P:\13852chi\Dwg\9SP1.dwg



GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.

SUBLEVEL PLAN

0 1' 4'

Not to be used for bidding purposes

No:	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	JLW
				Drawn By	JLW
				Checked By	JLW
				Approved By	JLW

Four Rivers Sanitation Authority

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

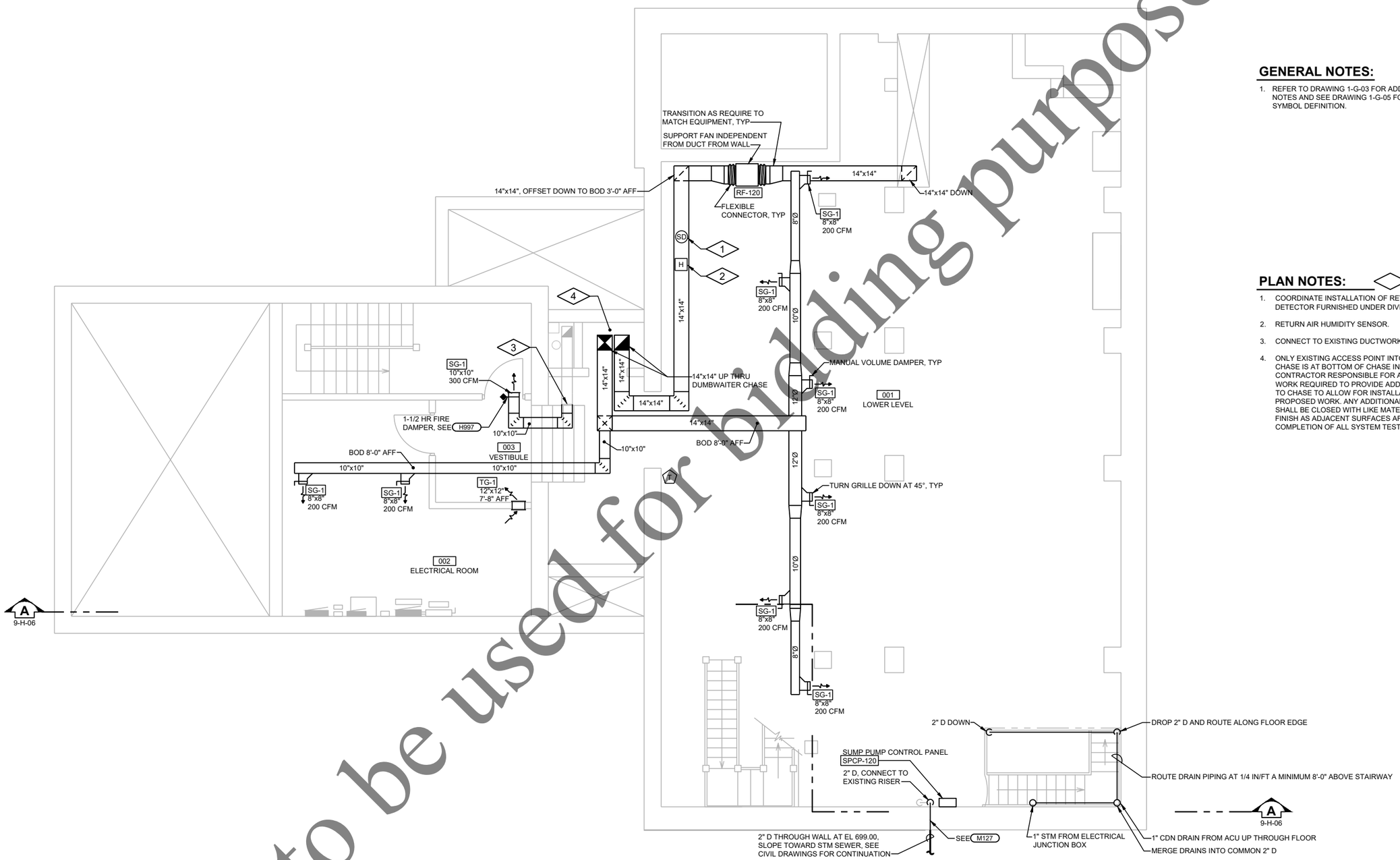
MAIN PUMP II
SUBLEVEL PLAN

DONOHUE 11/23/2021

Sheet No. 125

Drawing No. **9-H-01**

file: P:\13852chi\Dwg\9HP1.dwg



LOWER PLAN

0 1' 4'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.

PLAN NOTES:

1. COORDINATE INSTALLATION OF RETURN AIR SMOKE DETECTOR FURNISHED UNDER DIVISION 26.
2. RETURN AIR HUMIDITY SENSOR.
3. CONNECT TO EXISTING DUCTWORK.
4. ONLY EXISTING ACCESS POINT INTO DUMBWAITER CHASE IS AT BOTTOM OF CHASE IN LOWER LEVEL. CONTRACTOR RESPONSIBLE FOR ANY REMOVAL WORK REQUIRED TO PROVIDE ADDITIONAL ACCESS TO CHASE TO ALLOW FOR INSTALLATION OF PROPOSED WORK. ANY ADDITIONAL ACCESS POINTS SHALL BE CLOSED WITH LIKE MATERIALS AND LIKE FINISH AS ADJACENT SURFACES AFTER COMPLETION OF ALL SYSTEM TESTING.

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	JLW
Drawn By	JLW
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

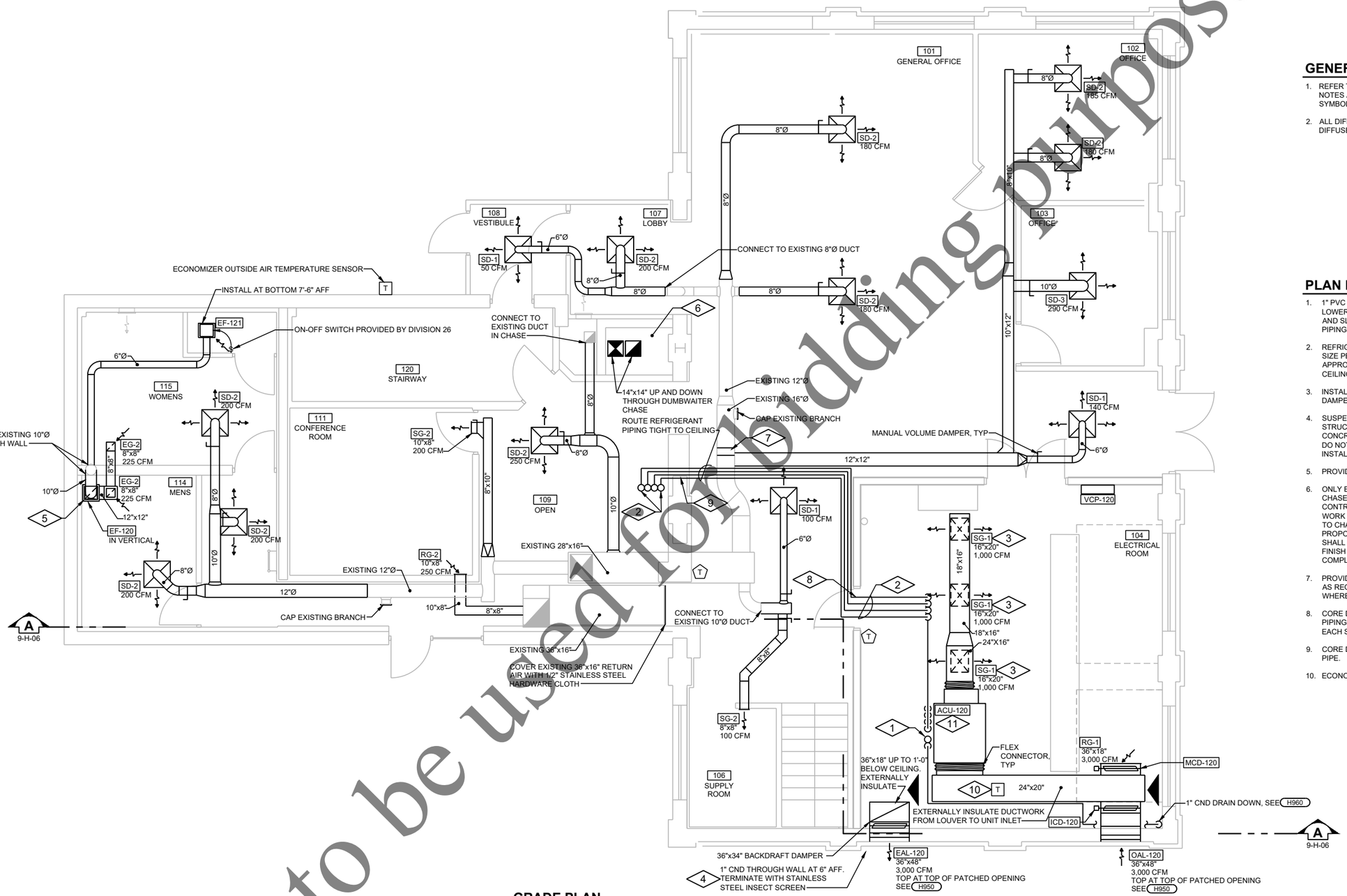
MAIN PUMP II
LOWER PLAN

DONOHUE 11/23/2021

Sheet No. 126

Drawing No. **9-H-02**

file: P:\13852chi\Dwg\9HP1.dwg



GRADE PLAN

0 1' 4'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.
2. ALL DIFFUSERS TO BE INSTALLED WITH BOTTOM OF DIFFUSER AT 7'-6" AFF UNLESS INDICATED OTHERWISE.

PLAN NOTES:

1. 1" PVC CONDENSATE DRAIN, INSULATE. ROUTE TO LOWER LEVEL. KEEP PIPING AS HIGH AS POSSIBLE AND SLOPE PIPING AT 1/4 IN/FT. AVOID ROUTING PIPING ABOVE ANY ELECTRICAL EQUIPMENT.
2. REFRIGERANT PIPING TWO SETS OF TWO PIPES, SIZE PER MANUFACTURER RECOMMENDATION, APPROXIMATELY 1-1/2" AND 1". ROUTE TIGHT TO CEILING AND INSULATE.
3. INSTALL GRILLE FLUSH WITH BOTTOM OF DUCT, NO DAMPER REQUIRED.
4. SUSPEND UNIT WITH THREADED RODS FROM STRUCTURAL STEEL WITH BEAM CLAMPS OR WITH CONCRETE ANCHORS IN CAST-IN-PLACE CONCRETE. DO NOT SUPPORT UNIT WITH CONCRETE ANCHORS INSTALLED IN PRECAST PANELS.
5. PROVIDE 12"x12" BDD ON FAN DISCHARGE.
6. ONLY EXISTING ACCESS POINT INTO DUMBWAITER CHASE IS AT BOTTOM OF CHASE IN LOWER LEVEL. CONTRACTOR RESPONSIBLE FOR ANY REMOVAL WORK REQUIRED TO PROVIDE ADDITIONAL ACCESS TO CHASE TO ALLOW FOR INSTALLATION OF PROPOSED WORK. ANY ADDITIONAL ACCESS POINTS SHALL BE CLOSED WITH LIKE MATERIALS AND LIKE FINISH AS ADJACENT SURFACES AFTER COMPLETION OF ALL SYSTEM TESTING.
7. PROVIDE DUCTWORK SPOOL OR PATCHING PIECES AS REQUIRED TO CLOSE DUCTWORK SYSTEM WHERE DAMPER REMOVED.
8. CORE DRILL HOLES AS REQUIRED FOR PASSING PIPING AND CAULK OPENING FULL PERIMETER, EACH SIDE.
9. CORE DRILL HOLES AS REQUIRED FOR PASSING PIPE.
10. ECONOMIZER MIXED AIR TEMPERATURE SENSOR.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	JLW
Drawn By	JLW
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

MAIN PUMP II
GRADE PLAN

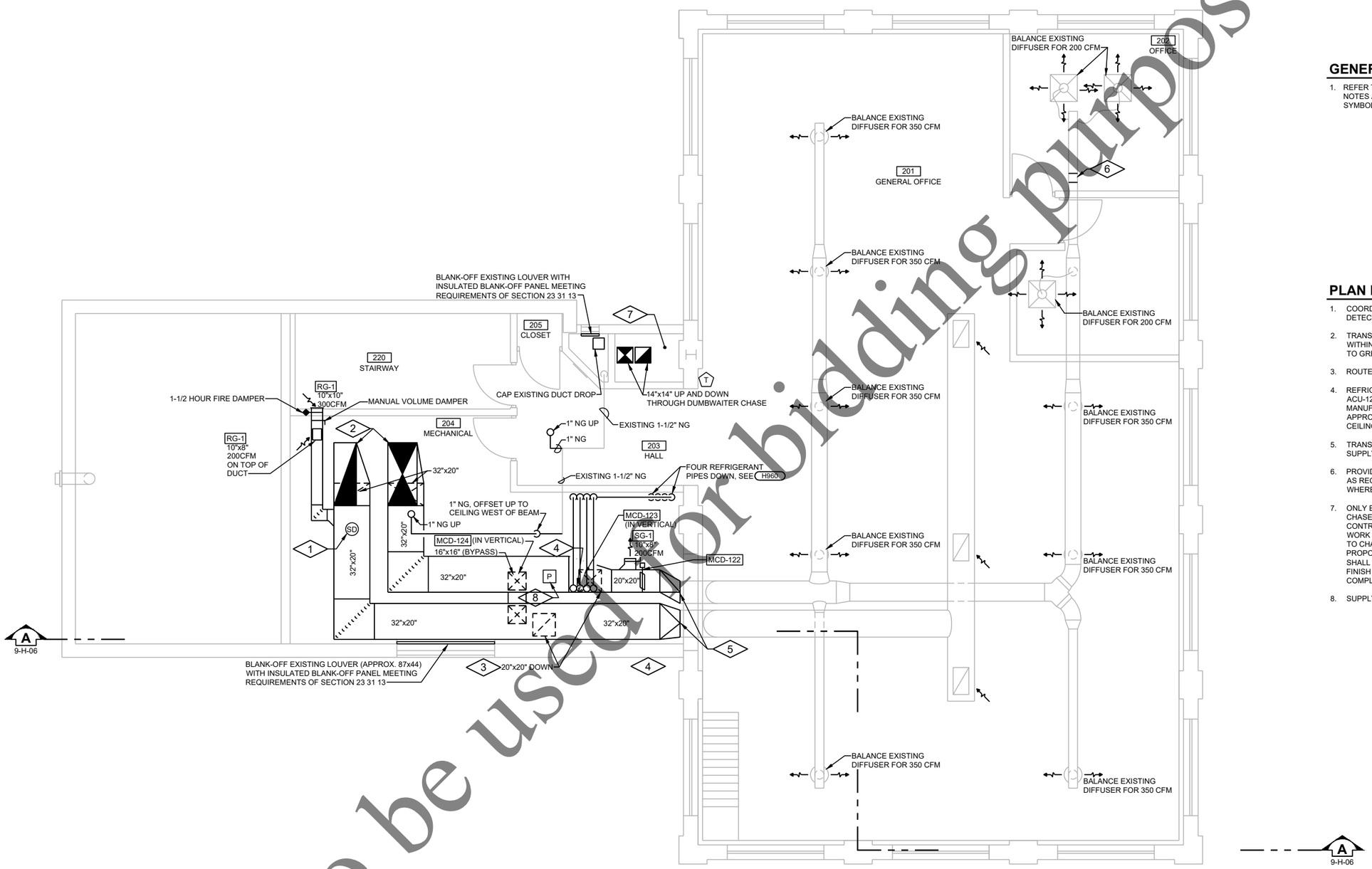
DONOHUE

11/23/2021

Sheet No. 127

Drawing No. 9-H-03

file: P:\13852chi\Dwg\9HP1.dwg



UPPER PLAN

0 1' 4'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.

PLAN NOTES:

1. COORDINATE INSTALLATION OF RETURN AIR SMOKE DETECTOR FURNISHED UNDER DIVISION 26.
2. TRANSITION TO MATCH UNIT CONNECTION SIZE WITHIN EXISTING ROOF OPENING AND ROOF CURB TO GREATEST EXTENT POSSIBLE.
3. ROUTE THROUGH EXISTING FLOOR PENETRATION.
4. REFRIGERANT PIPING BETWEEN ACCU-120 AND ACU-120, TWO SETS OF TWO PIPES, SIZE PER MANUFACTURER RECOMMENDATION, APPROXIMATELY 1-1/2" AND 1". ROUTE TIGHT TO CEILING AND INSULATE.
5. TRANSITION AND CONNECT TO EXISTING 20"Ø SUPPLY AND 24"Ø RETURN DUCTWORK.
6. PROVIDE DUCTWORK SPOOL OR PATCHING PIECES AS REQUIRED TO CLOSE DUCTWORK SYSTEM WHERE DAMPER REMOVED.
7. ONLY EXISTING ACCESS POINT INTO DUMBWAITER CHASE IS AT BOTTOM OF CHASE IN LOWER LEVEL. CONTRACTOR RESPONSIBLE FOR ANY REMOVAL WORK REQUIRED TO PROVIDE ADDITIONAL ACCESS TO CHASE TO ALLOW FOR INSTALLATION OF PROPOSED WORK. ANY ADDITIONAL ACCESS POINTS SHALL BE CLOSED WITH LIKE MATERIALS AND LIKE FINISH AS ADJACENT SURFACES AFTER COMPLETION OF ALL SYSTEM TESTING.
8. SUPPLY DUCT STATIC PRESSURE SENSOR.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	JLW
Drawn By	JLW
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

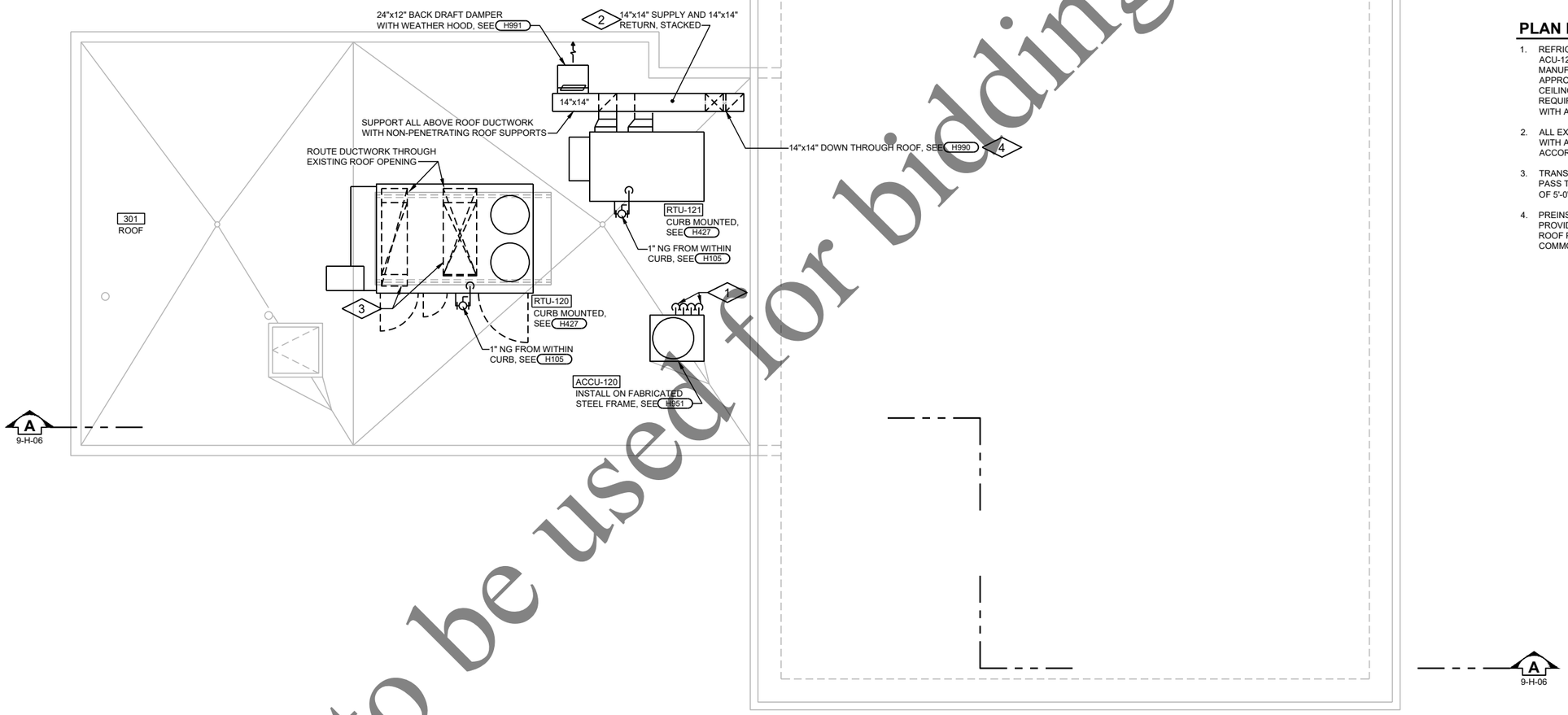
MAIN PUMP II
UPPER PLAN

DONOHUE 11/23/2021

Sheet No. 128

Drawing No. **9-H-04**

file: P:\13852ch\Dwg\9HP1.dwg



ROOF PLAN

0 1' 4'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.

PLAN NOTES:

1. REFRIGERANT PIPING BETWEEN ACCU-120 AND ACU-120, TWO SETS OF TWO PIPES, SIZE PER MANUFACTURER RECOMMENDATION, APPROXIMATELY 1-1/2" AND 1". ROUTE TIGHT TO CEILING AND INSULATE. CORE DRILL HOLES AS REQUIRED FOR PASSING PIPES AND SEAL EACH WITH AN EPDM FLASHING BOOT.
2. ALL EXTERIOR DUCTWORK SHALL BE FABRICATED WITH A PREINSULATED DUCTWORK SYSTEM IN ACCORDANCE WITH SECTION 23 31 14.
3. TRANSITION DUCTS WITHIN CURB AS REQUIRED TO PASS THROUGH AVAILABLE NORTH-SOUTH OPENING OF 5'-0".
4. PREINSULATED DUCT MANUFACTURER SHALL PROVIDE SINGLE PIECE SUPPLY/RETURN DUCT AT ROOF PENETRATION TO ALLOW FOR USE OF COMMON CURB AND FLASHING.

Not to be used for bidding purposes

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	JLW
Drawn By	JLW
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

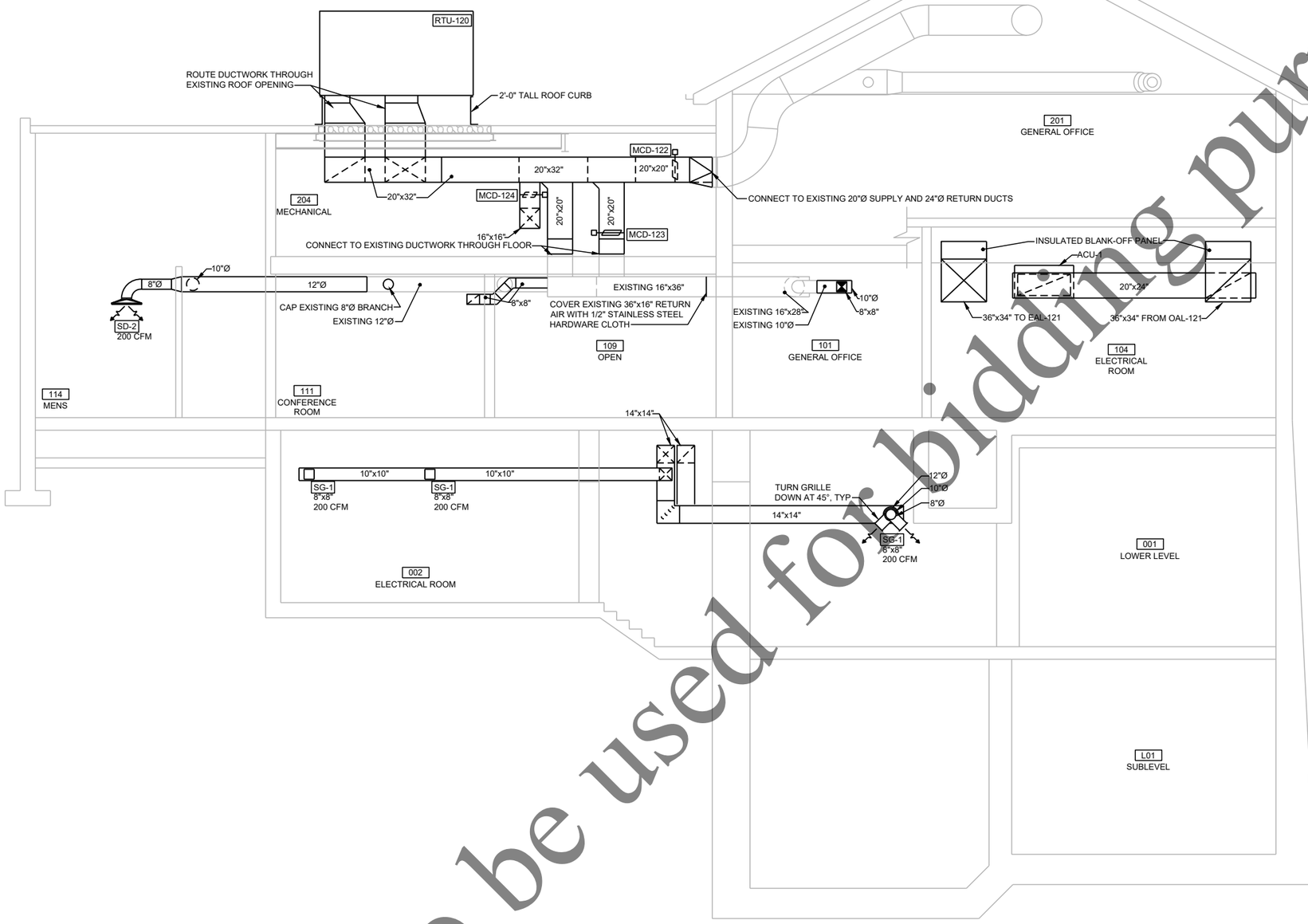
MAIN PUMP II
ROOF PLAN

DONOHUE 11/23/2021

Sheet No. 129

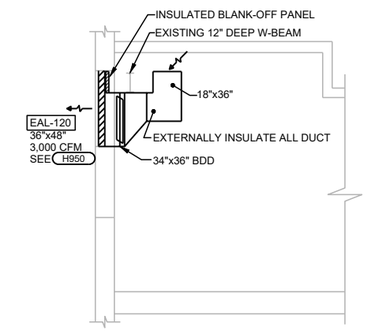
Drawing No. **9-H-05**

file: P:\13852ch\Dwg\9HP1.dwg

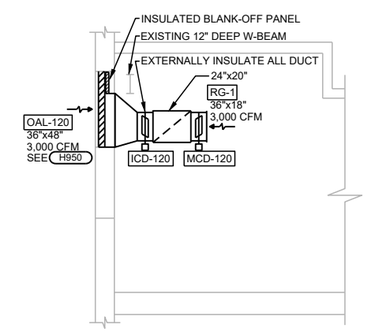


GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND SEE DRAWING 1-G-05 FOR LEGENDS AND SYMBOL DEFINITION.



SECTION B
9-H-03
0 1' 4'



SECTION A
9-H-02
9-H-03
9-H-04
9-H-05
0 1' 4'

SECTION C
9-H-03
0 1' 4'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	JLW
Drawn By	JLW
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

MAIN PUMP II
SECTION

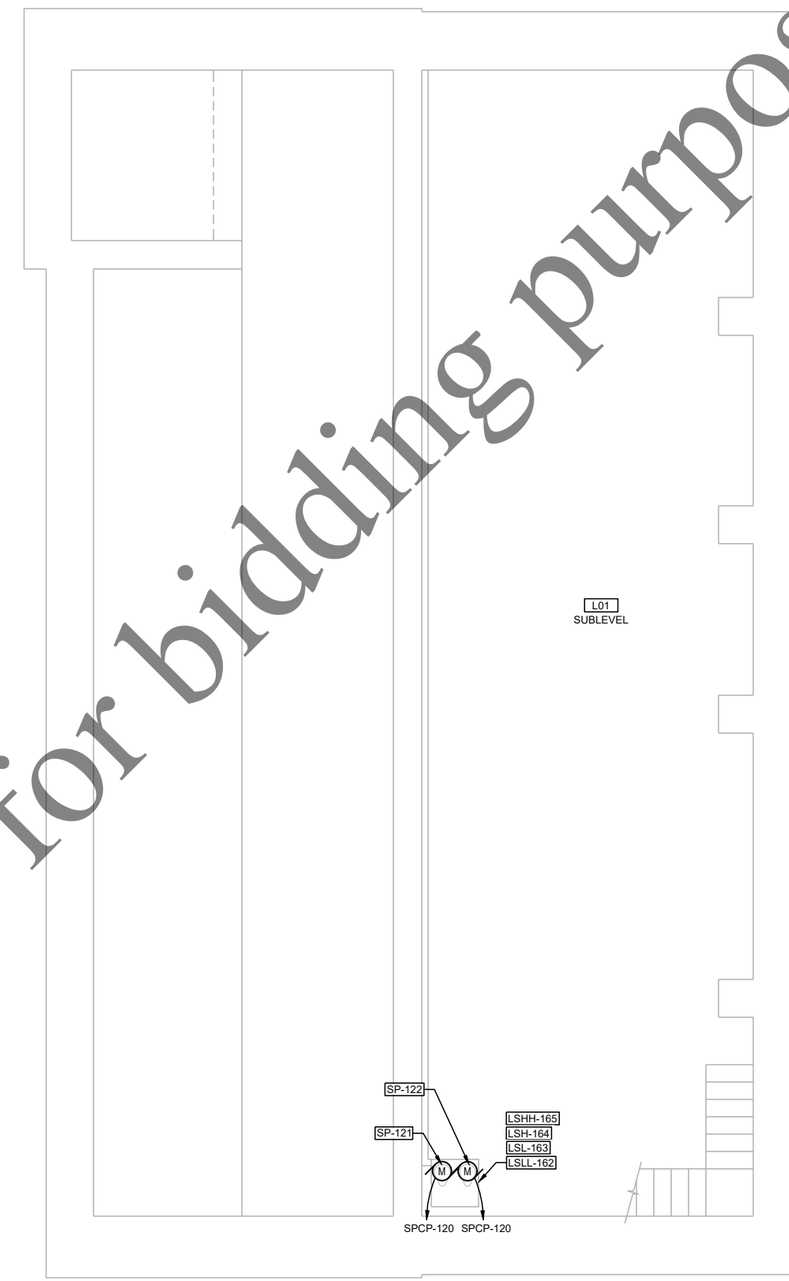
DONOHUE 11/23/2021

Sheet No. 130
Drawing No. **9-H-06**

file: P:\13852chi\Dwg\9HP1.dwg

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND 1-G-05 FOR ELECTRICAL LEGEND.
2. REFER TO SHEET 9-EN-2A FOR LOCATION OF SUMP PUMP CONTROL PANEL, SPCP-120.



TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
LSH-165	SUMP HIGH BALL FLOAT SWITCH	MFR.	(1) VFC TO JUNCTION BOX THEN (2) #14 TO SPCP	SPCP-120
LSHH-164	SUMP HIGH-HIGH BALL FLOAT SWITCH	MFR.	(1) VFC TO JUNCTION BOX THEN (2) #14 TO SPCP	SPCP-120
LSL-163	SUMP LOW BALL FLOAT SWITCH	MFR.	(1) VFC TO JUNCTION BOX THEN (2) #14 TO SPCP	SPCP-120
LSLL-162	SUMP LOW-LOW BALL FLOAT SWITCH	MFR.	(1) VFC TO JUNCTION BOX THEN (2) #14 TO SPCP	SPCP-120
SPCP-120	SUMP PUMP CONTROL PANEL	MFR.	(2) #14	PLC-PFS

SUBLEVEL PLAN

0 1' 4'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM/LPH
Drawn By	FGM/LPH
Checked By	JTB/BLG
Approved By	FGM/BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

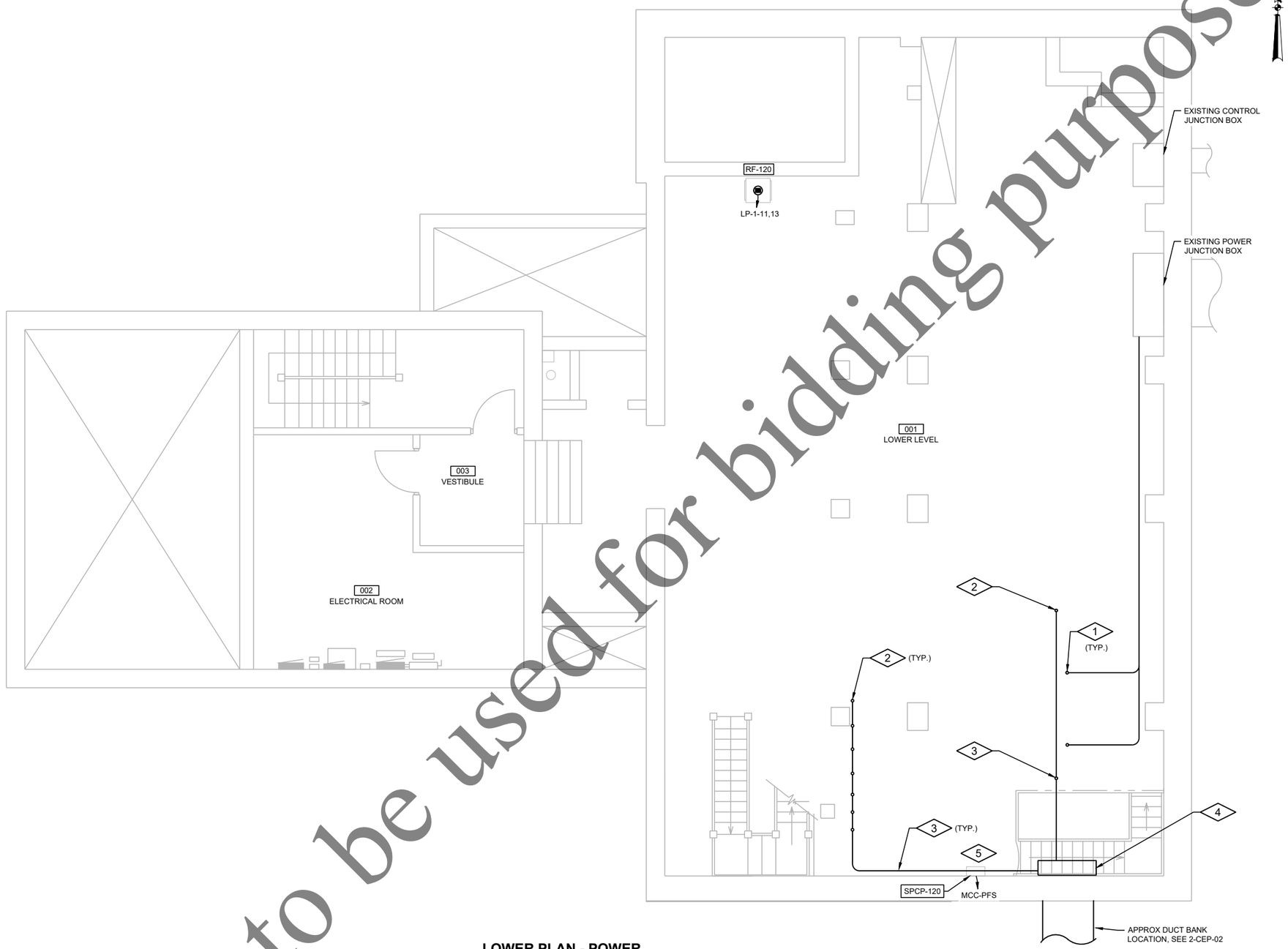
MAIN PUMP II
SUBLEVEL PLAN

DONOHUE 11/23/2021

Sheet No. 131

Drawing No. **9-EN-01**

file: P:\13852chi\Dwg\9ENP1.dwg



LOWER PLAN - POWER

0 1' 4'

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND 1-G-05 FOR ELECTRICAL LEGEND.

PLAN NOTES:

1. EXTEND CABLE AND CONDUITS FROM EXISTING JUNCTION BOX TO MCC-PFS. CORE TO FLOOR ABOVE AS REQUIRED. SEE ONE-LINE DIAGRAMS FOR CABLE AND CONDUIT SIZES.
2. EXTEND CABLE AND CONDUITS FROM NEW ELECTRICAL EQUIPMENT TO NEW JUNCTION BOX. CORE TO FLOOR ABOVE AS REQUIRED. SEE ONE-LINE DIAGRAMS FOR CABLE AND CONDUIT SIZES.
3. PROVIDE SPACE FOR CONDUITS FOR FUTURE PHASE II EQUIPMENT TO NEW JUNCTION BOX. SEE ONE-LINE DIAGRAMS FOR FUTURE PHASE II CONDUITS.
4. PROVIDE NEW BOLTED STAINLESS STEEL JUNCTION BOX WITH DRAIN LINE CONNECTION AND BARRIERS BETWEEN POWER AND CONTROL CABLES. SIZE JUNCTION BOX TO ACCOMMODATE FUTURE PHASE II CONDUITS AND SPARE DUCT BANK CONDUITS. SEE ONE-LINE DIAGRAMS AND DUCT BANK SCHEDULE.
5. EXTEND CABLE IN CONDUIT FROM SUMP PUMP CONTROL PANEL TO SUMP PUMPS BELOW.

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

MAIN PUMP II
LOWER LEVEL PLAN

DONOHUE

11/23/2021

Sheet No. 132

Drawing No. 9-EN-02A

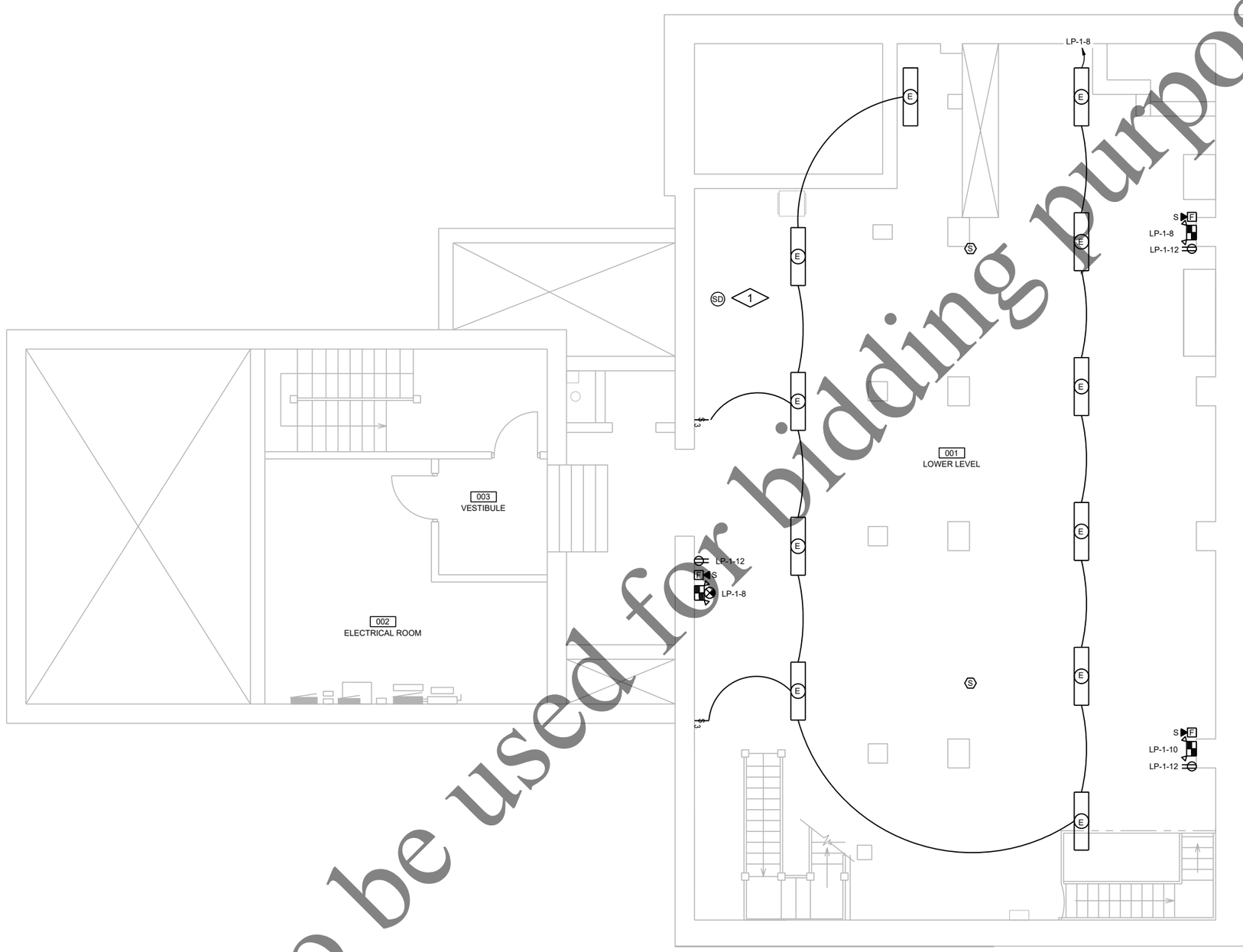
file: P:\13852chi\Dwg\9ENP1.dwg

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND 1-G-05 FOR ELECTRICAL LEGEND.
2. EXTEND MANUFACTURER'S RECOMMENDED WIRING IN CONDUIT FROM FACP-1 TO FIRE ALARM DEVICES.

PLAN NOTES:

1. PROVIDE RETURN AIR SMOKE DETECTOR AND COORDINATE INSTALLATION WITH HVAC CONTRACTOR.



LOWER PLAN - LIGHTING

0 1' 4'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

MAIN PUMP II
LOWER LEVEL PLAN

DONOHUE

11/23/2021

Sheet No. 133

Drawing No. **9-EN-02B**

file: P:\13852chi\Dwg\9ENP1.dwg

TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
FACP-1	FIRE ALARM CONTROL PANEL	MFR.	(6) #14	PLC-PFS
MCC-PFS	PFS MOTOR CONTROL CENTER	MFR.	(4) #14	PLC-PFS
NET-PFS	MAIN PUMP II NETWORK RACK	PLC PANEL AND NETWORK RACK ARE PROVIDED AND INSTALLED BY OWNER.		
PLC-PFS	MAIN PUMP II PLC PANEL			
PM-1	POWER MONITOR 1	MFR.	(1) CE	NET-PFS
PM-2	POWER MONITOR 2	MFR.	(1) CE	NET-PFS
SPD-120	SURGE PROTECTION DEVICE	MFR.	(2) #14	PLC-PFS
SPD-121	SURGE PROTECTION DEVICE	MFR.	(2) #14	PLC-PFS
SPD-122	SURGE PROTECTION DEVICE	MFR.	(2) #14	PLC-PFS
VCP-120	VENTILATION CONTROL PANEL - ELECTRICAL ROOM	MFR.	(1) CE	NET-PFS
			(4) #14	PLC-PFS
VFD-PFIP-1	P.F INFLUENT PUMP 1 VFD	MFR.	(2) TSP	PLC-PFS
			(8) #14	PLC-PFS

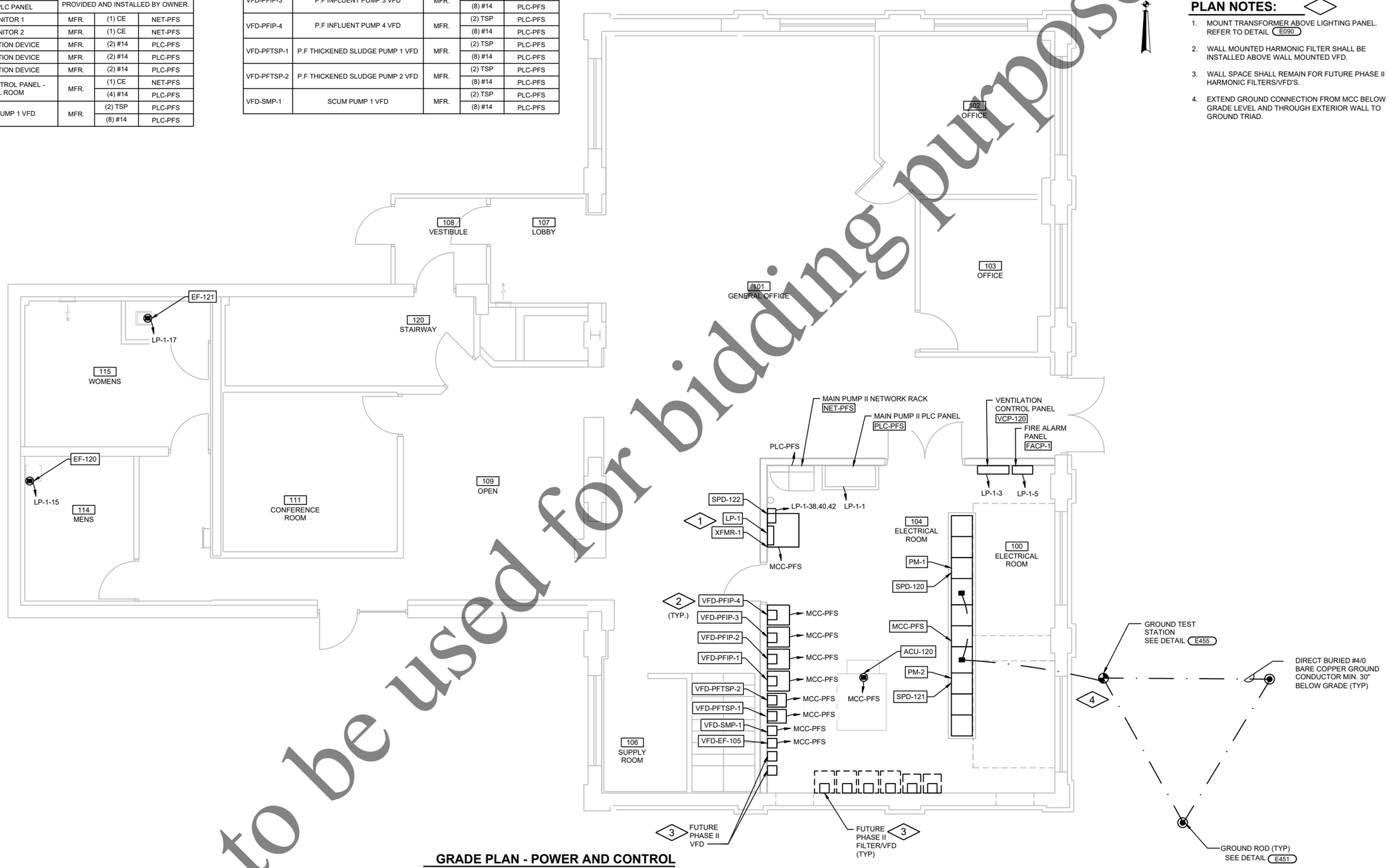
TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION
VFD-PFIP-2	P.F INFLUENT PUMP 2 VFD	MFR.	(2) TSP	PLC-PFS
			(8) #14	PLC-PFS
VFD-PFIP-3	P.F INFLUENT PUMP 3 VFD	MFR.	(2) TSP	PLC-PFS
			(8) #14	PLC-PFS
VFD-PFIP-4	P.F INFLUENT PUMP 4 VFD	MFR.	(2) TSP	PLC-PFS
			(8) #14	PLC-PFS
VFD-PFTSP-1	P.F THICKENED SLUDGE PUMP 1 VFD	MFR.	(2) TSP	PLC-PFS
			(8) #14	PLC-PFS
VFD-PFTSP-2	P.F THICKENED SLUDGE PUMP 2 VFD	MFR.	(2) TSP	PLC-PFS
			(8) #14	PLC-PFS
VFD-SMP-1	SCUM PUMP 1 VFD	MFR.	(2) TSP	PLC-PFS
			(8) #14	PLC-PFS

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND 1-G-05 FOR ELECTRICAL LEGEND.

PLAN NOTES:

1. MOUNT TRANSFORMER ABOVE LIGHTING PANEL. REFER TO DETAIL E090
2. WALL MOUNTED HARMONIC FILTER SHALL BE INSTALLED ABOVE WALL MOUNTED VFD.
3. WALL SPACE SHALL REMAIN FOR FUTURE PHASE II HARMONIC FILTERS/VFD'S.
4. EXTEND GROUND CONNECTION FROM MCC BELOW GRADE LEVEL AND THROUGH EXTERIOR WALL TO GROUND TRIAD.



GRADE PLAN - POWER AND CONTROL

0 1' 4'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

MAIN PUMP II
GRADE PLAN

DONOHUE 11/23/2021

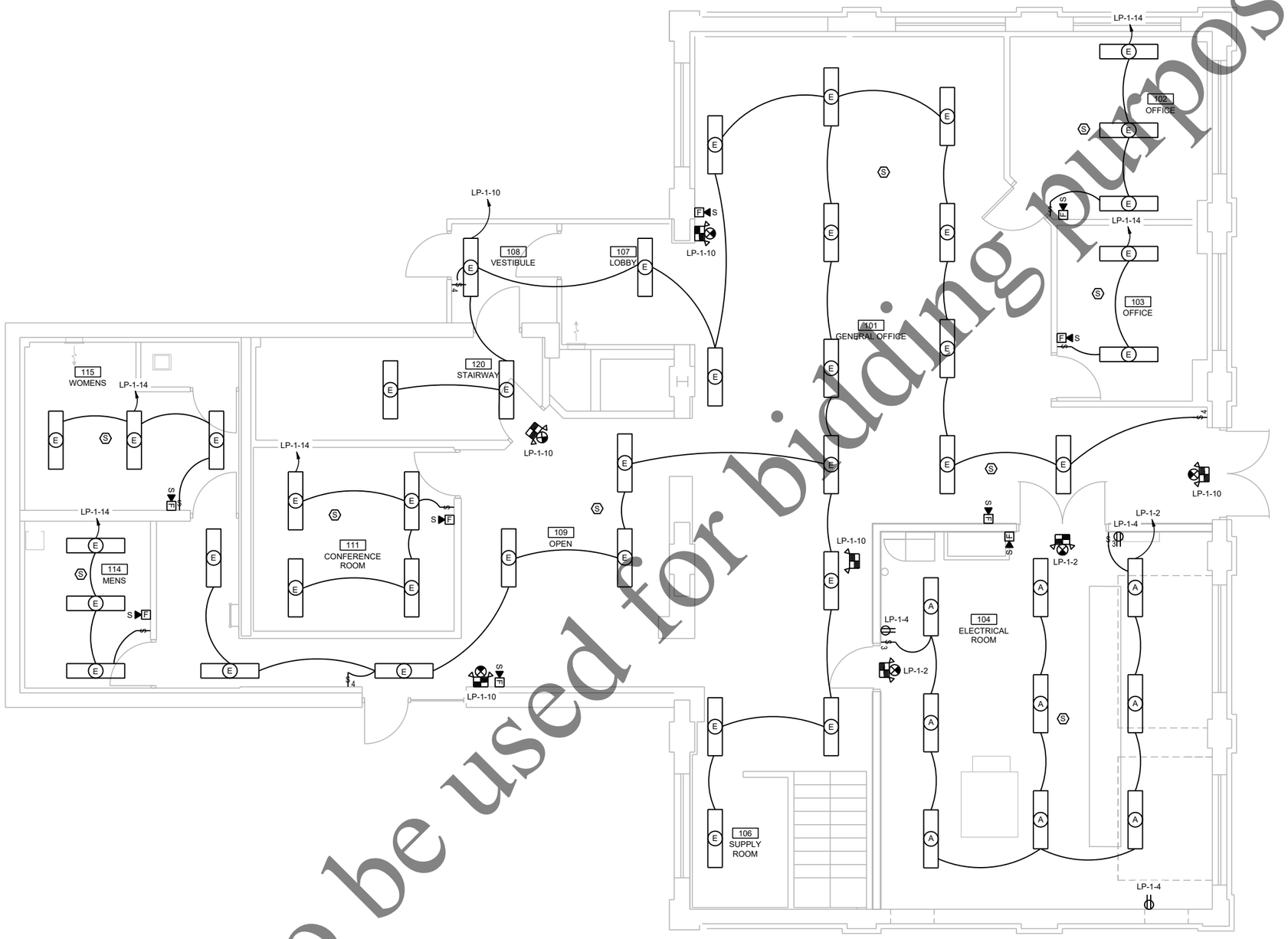
Sheet No. 134

Drawing No. 9-EN-03A

file: P:\13852chi\Dwg\9ENP1.dwg

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND 1-G-05 FOR ELECTRICAL LEGEND.
2. EXTEND MANUFACTURER'S RECOMMENDED WIRING IN CONDUIT FROM FACP-1 TO FIRE ALARM DEVICES.



GRADE PLAN - LIGHTING

0 1' 4'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

MAIN PUMP II
GRADE PLAN

DONOHUE

11/23/2021

Sheet No. 135

Drawing No. 9-EN-03B

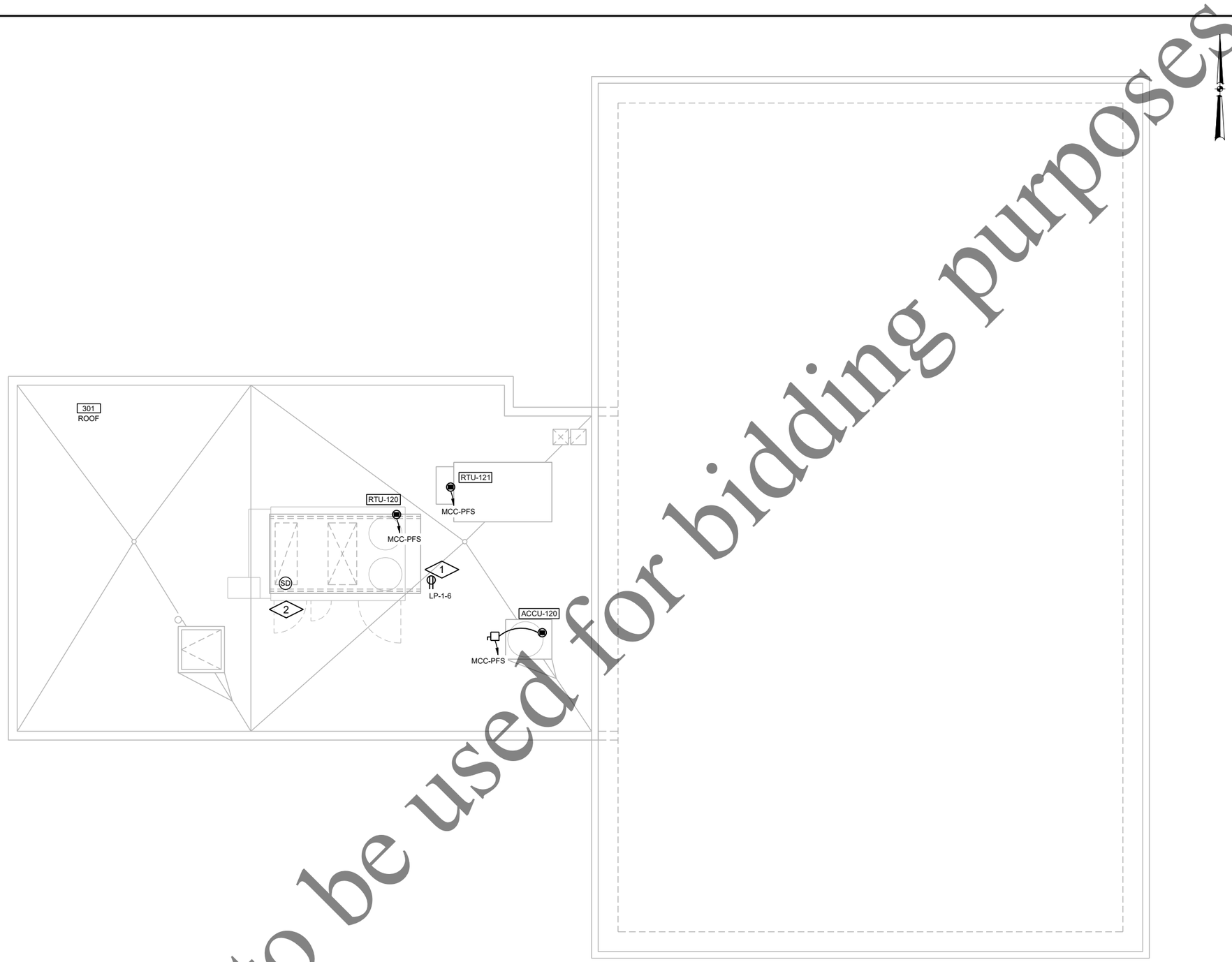
file: P:\13852ch\Dwg\9ENP1.dwg

GENERAL NOTES:

1. REFER TO DRAWING 1-G-03 FOR ADDITIONAL GENERAL NOTES AND 1-G-05 FOR ELECTRICAL LEGEND.
2. EXTEND MANUFACTURER'S RECOMMENDED WIRING IN CONDUIT FROM FACP-1 TO FIRE ALARM DEVICES.

PLAN NOTES:

1. STRUT MOUNT WEATHER PROOF RECEPTACLE ADJACENT TO CONDENSING UNIT.
2. PROVIDE RETURN AIR SMOKE DETECTOR IN DUCT BELOW AND COORDINATE INSTALLATION WITH HVAC CONTRACTOR.



ROOF PLAN

0 1' 4'

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

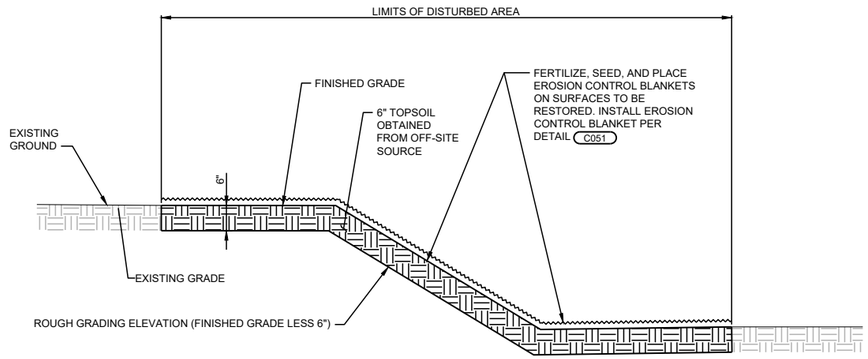
MAIN PUMP II
ROOF PLAN

DONOHUE 11/23/2021

Sheet No. 136

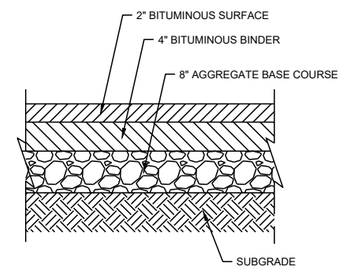
Drawing No. 9-EN-04

file: P:\13852chi\Dwg\9ENP1.dwg



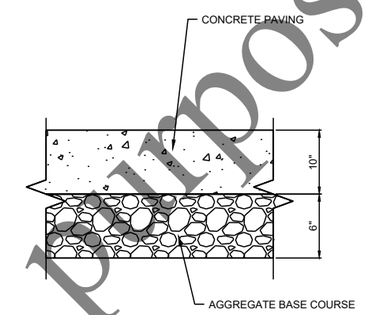
TYPICAL TURF RESTORATION DETAIL **C050**

NTS



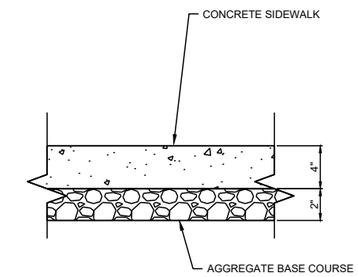
ASPHALT PAVEMENT **C115**

NTS



CONCRETE PAVEMENT **C180**

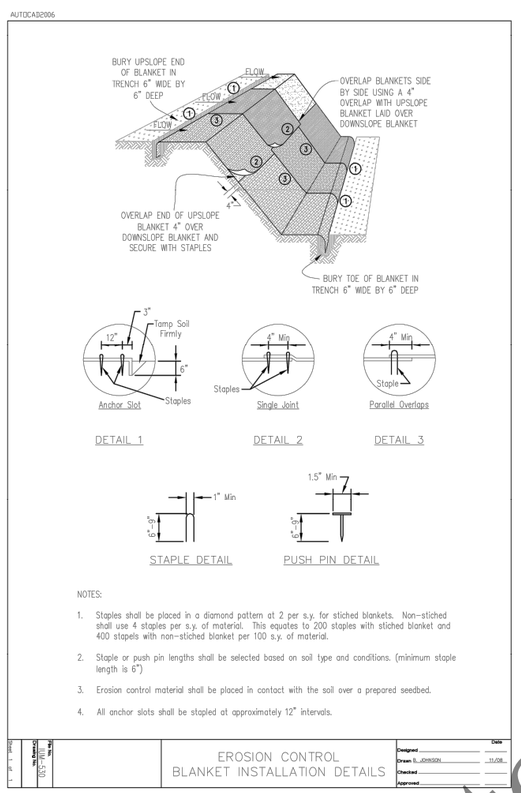
NTS



NOTES:
1. MINIMUM CROSS SLOPE = 0.5%. MAXIMUM CROSS SLOPE = 2%. TARGET CROSS SLOPE = 1.5%.
2. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAFFIC.

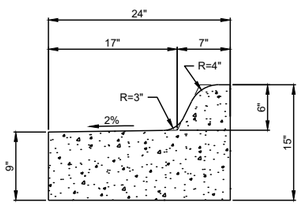
CONCRETE SIDEWALK **C150**

NTS



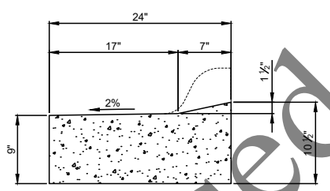
EROSION CONTROL BLANKET INSTALLATION **C051**

NTS



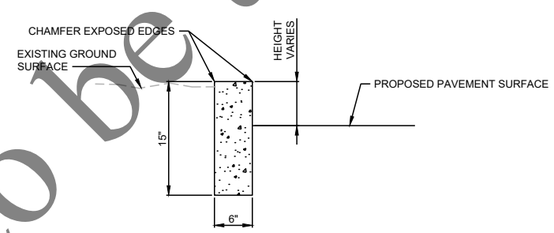
TIP-OUT CURB & GUTTER **C160**

NTS



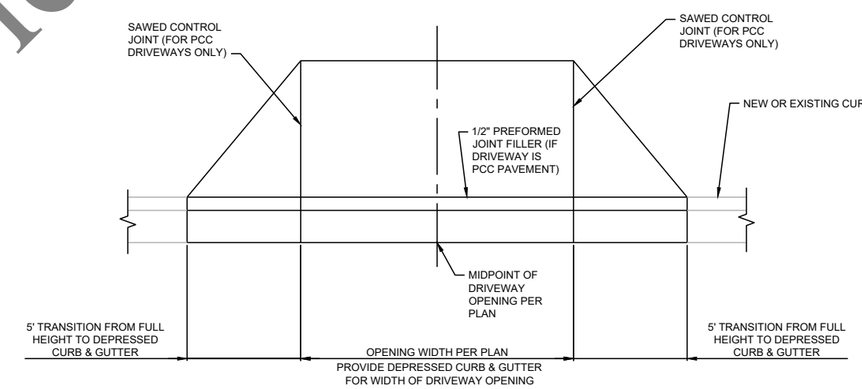
DEPRESSED TIP-OUT CURB & GUTTER **C165**

NTS

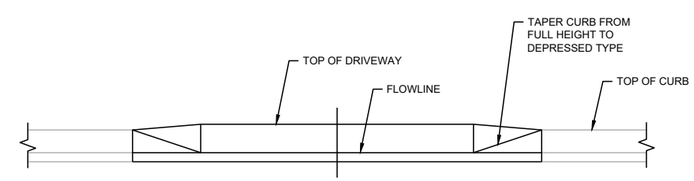


CONCRETE CURB **C166**

NTS



PLAN



ELEVATION

DRIVEWAY OPENING **C170**

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

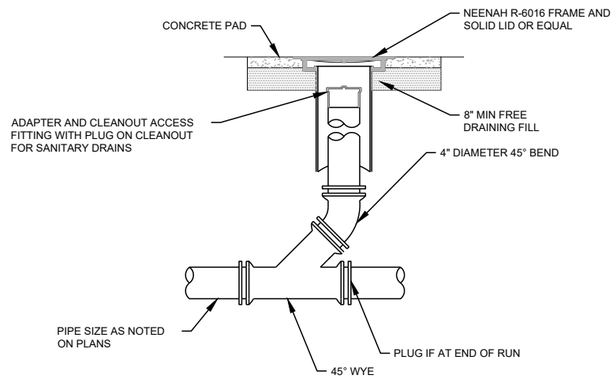
STANDARD DETAIL
CIVIL

DONOHUE 11/23/2021

Sheet No. 137

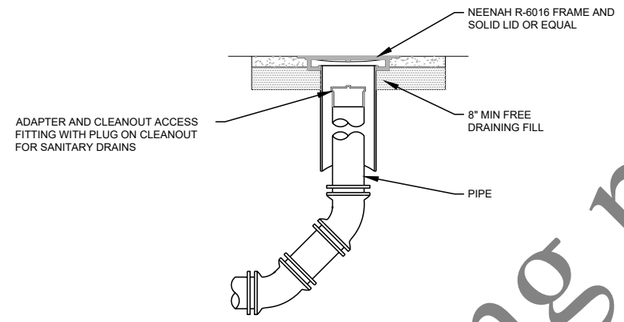
Drawing No. **10-C-01**

file: P:\13852chi\Dwg\10CD1.dwg



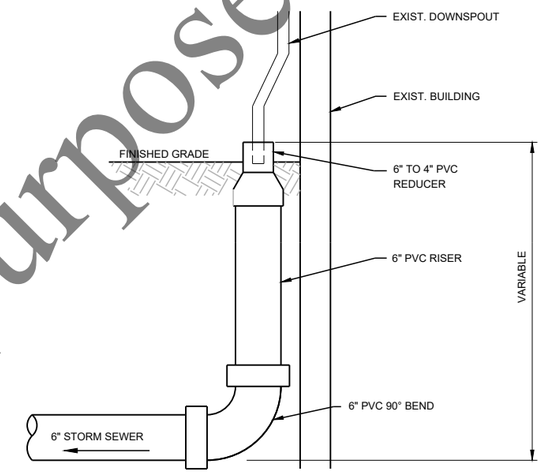
SINGLE CLEANOUT C230

NTS



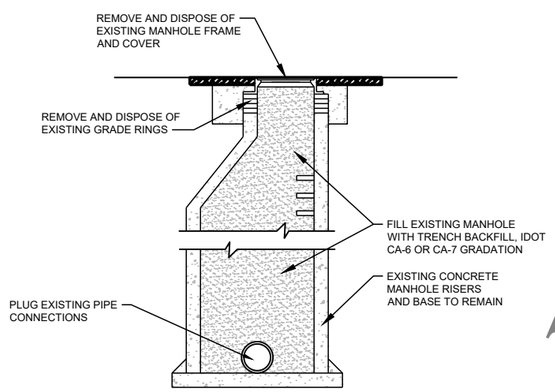
SANITARY CLEANOUT - END OF RUN C231

NTS



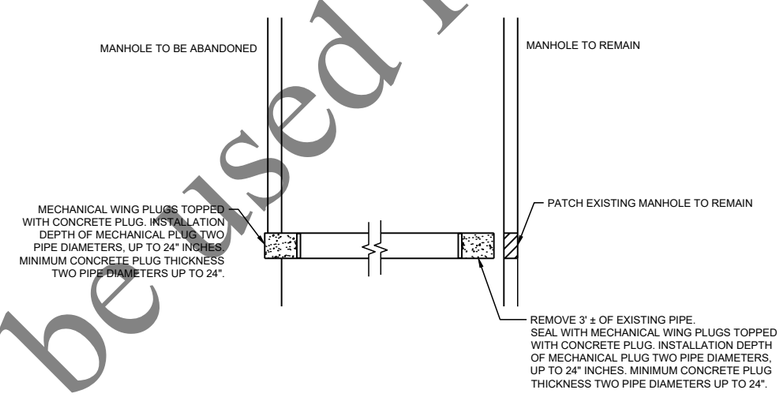
DOWNSPOUT INTERCEPTOR C370

NTS



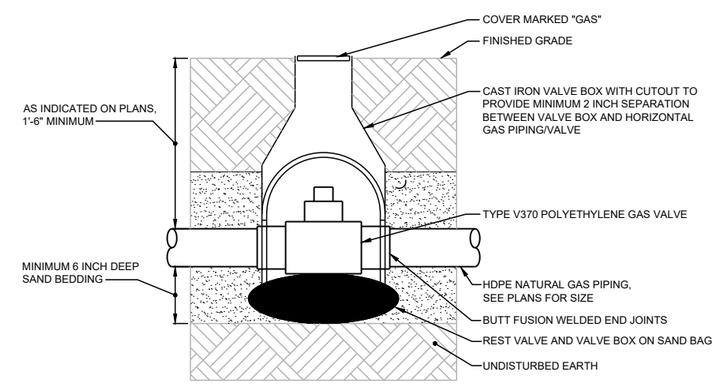
MANHOLE ABANDONMENT DETAIL C265

NTS



PIPE ABANDONMENT DETAIL C266

NTS



BURIED NON-METALLIC ISOLATION VALVE DETAIL C408

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	MLM
				Drawn By	MLM
				Checked By	PMS
				Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

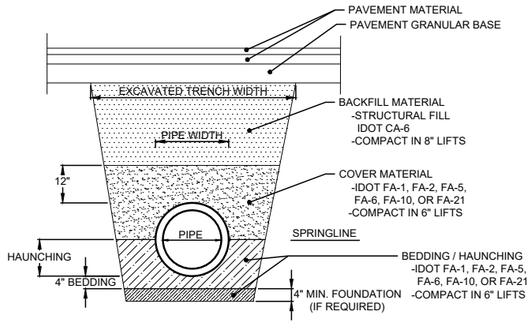
STANDARD DETAIL
CIVIL

DONOHUE 11/23/2021

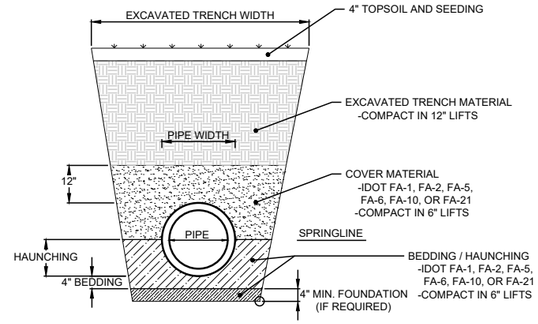
Sheet No. 138

Drawing No. **10-C-02**

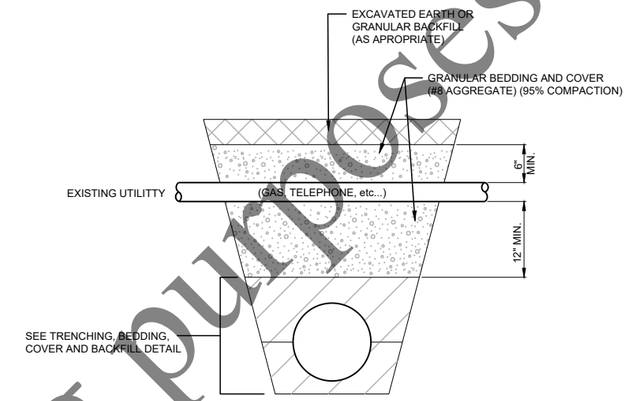
file: P:\13852chi\Dwg\10CD1.dwg



PLASTIC PIPE BEDDING

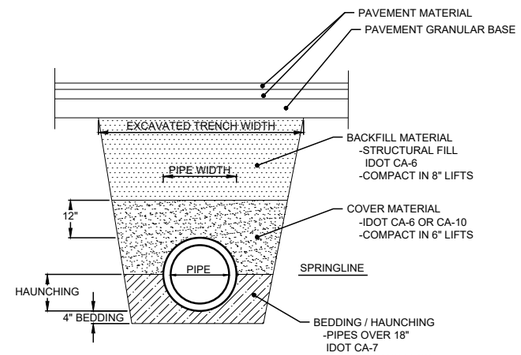


PLASTIC PIPE BEDDING



BACKFILLING DETAIL AROUND EXISTING UTILITIES C507

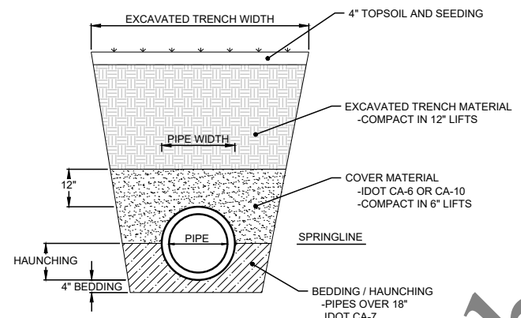
NTS



DIP & RCP BEDDING

PIPE BEDDING, COVER, AND BACKFILL IN OR WITHIN 5' OF PAVEMENT C500

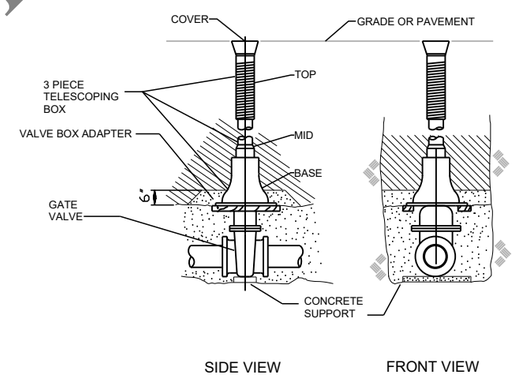
NTS



DIP & RCP BEDDING

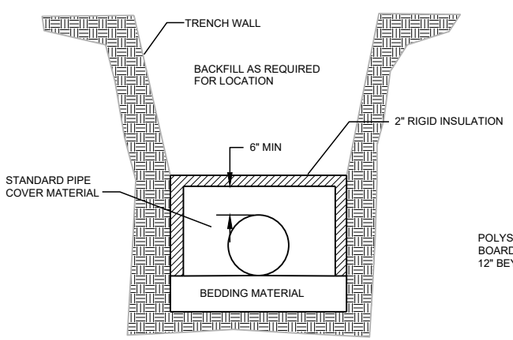
PIPE BEDDING, COVER, AND BACKFILL GREATER THAN 5' FROM PAVEMENT C505

NTS



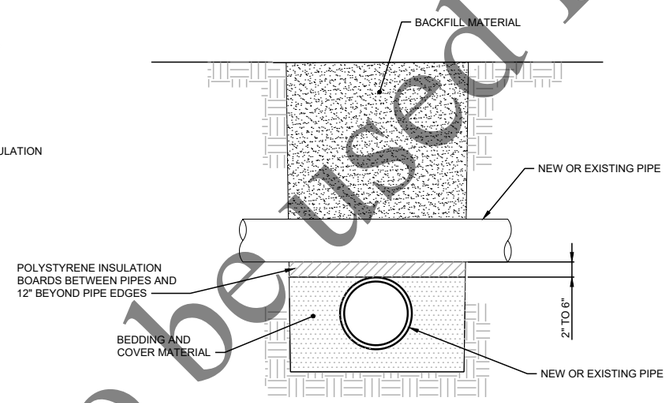
GATE VALVE IN A BOX DETAIL C407

NTS



BURIED INSULATION DETAIL C565

NTS



PIPE CROSSING DETAIL 6 INCHES OR LESS CLEARANCE C566

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

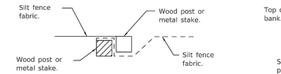
STANDARD DETAIL
CIVIL

DONOHUE 11/23/2021

Sheet No. 139

Drawing No. 10-C-03

file: P:\13852chi\Dwg\10CD1.dwg



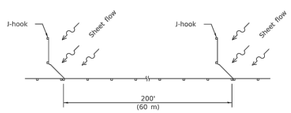
Place end-post (stake) of first silt fence adjacent to end-post (stake) of second silt fence with fabric positioned as swown.

STEP 1

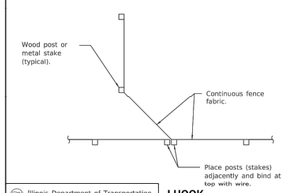
Rotate posts (stakes) together 180° clockwise and drive both posts (stakes) 18 (450) into ground.

STEP 2

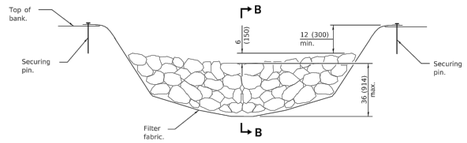
ATTACHING TWO SILT FILTER FENCES
(Not applicable for J-hooks)



SILT FILTER J-HOOK PLACEMENT

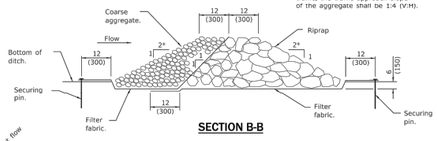


J-HOOK



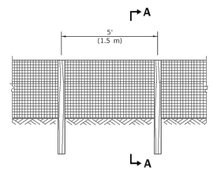
ELEVATION

* When the ditch check is within the clear zone and the road is open to traffic, the traffic approach slope or the aggregate shall be 1:4 (V:H).



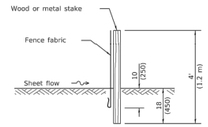
SECTION B-B

AGGREGATE DITCH CHECK

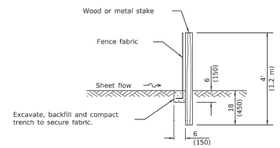


ELEVATION

SILT FILTER FENCE AS A PERIMETER EROSION BARRIER



SLICE METHOD



TRENCH METHOD

SECTION A-A

GENERAL NOTES

The installation details and dimensions shown for perimeter erosion barriers shall also apply for inlet and pipe protection.

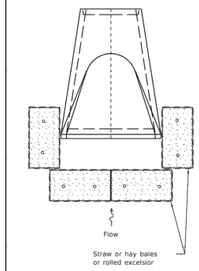
All dimensions are in inches (millimeters) unless otherwise shown.

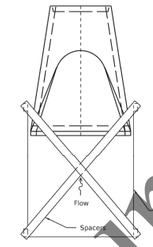
Illinois Department of Transportation
PASSED January 1, 2013 — Michael Bourd — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2013 — Maureen Ho Duke — ENGINEER OF DESIGN AND ENVIRONMENT
BDG020 1-1-07

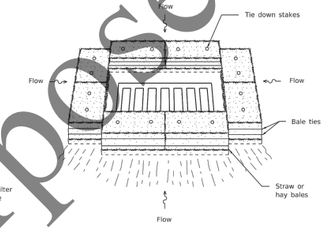
DATE	REVISIONS
1-1-13	Corrected notation for flowline (℄) on SEDIMENT BASIN ELEVATION.
1-1-12	Omitted hay/straw perimeter barrier. Added SLICE METHOD to SECTION A-A.

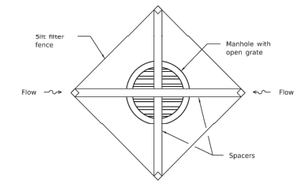
TEMPORARY EROSION CONTROL SYSTEMS
(Sheet 1 of 2)

STANDARD 280001-07

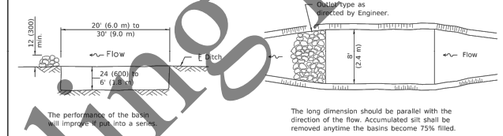








INLET AND PIPE PROTECTION



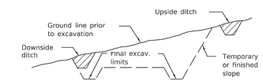
The performance of the basin will improve if split into a series.

ELEVATION

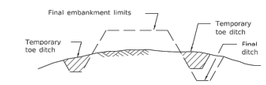
The long dimension should be parallel with the direction of the flow. Accumulated silt shall be removed anytime the basins become 75% filled.

PLAN

SEDIMENT BASIN



TYPICAL CUT CROSS-SECTION



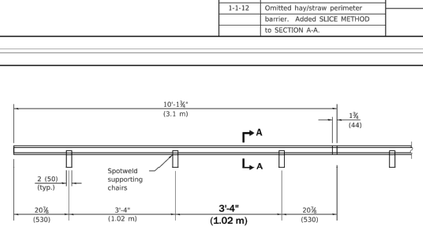
TYPICAL FILL CROSS-SECTION

TEMPORARY DITCHES FOR CUT & FILL SECTIONS

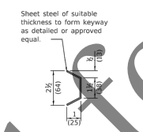
Illinois Department of Transportation
PASSED January 1, 2013 — Michael Bourd — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2013 — Maureen Ho Duke — ENGINEER OF DESIGN AND ENVIRONMENT
BDG020 1-1-07

TEMPORARY EROSION CONTROL SYSTEMS
(Sheet 2 of 2)

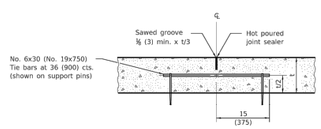
STANDARD 280001-07



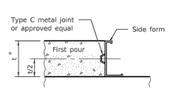
TYPE C METAL JOINT



SECTION A-A

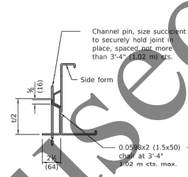


LONGITUDINAL SAWED JOINT

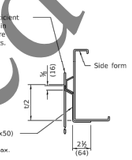


LONGITUDINAL KEYED JOINT

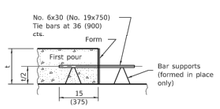
* 8 (203) min. pavement thickness for keyed joints.



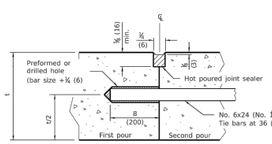
SUPPORTING CHAIR ALTERNATE



SUPPORTING CHAIR ALTERNATE



LONGITUDINAL CONSTRUCTION JOINT
(TIE BAR FORMED IN PLACE OR MECHANICALLY INSERTED)



LONGITUDINAL CONSTRUCTION JOINT
(TIE BAR GROUTED IN PLACE)

GENERAL NOTES

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

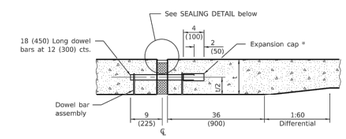
All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
PASSED January 1, 2018 — Michael Bourd — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2018 — Maureen Ho Duke — ENGINEER OF DESIGN AND ENVIRONMENT
BDG020 1-1-07

DATE	REVISIONS
1-1-18	Changed tie bar spacing to 36 (900) cts. Revised DOWEL BAR TABEL.
1-1-08	Switched units to English (metric).

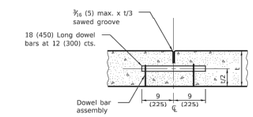
PAVEMENT JOINTS
(Sheet 1 of 2)

STANDARD 420001-09

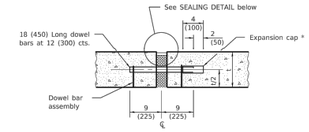


TRANSVERSE EXPANSION JOINT
(FOR PAVEMENTS WITH UNEQUAL THICKNESS)

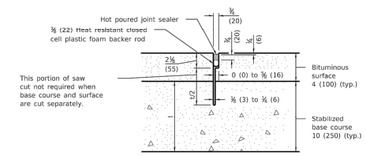
* Expansion caps shall be installed on the exposed end of each dowel bar once the header has been removed and the joint filler material has been installed.



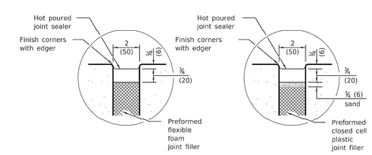
TRANSVERSE CONTRACTION JOINT



TRANSVERSE EXPANSION JOINT
(FOR PAVEMENTS WITH EQUAL THICKNESS)



TRANSVERSE CONTRACTION JOINT
(FOR CAM, CFA AND LFA BASE COURSE MIXTURES)



SEALING DETAIL

DOWEL BAR TABLE	
PAVEMENT THICKNESS	DOWEL BAR DIAMETER
10 (250) or greater	1½ (38)
8 (200) thru 9.99 (249)	1¼ (32)
Less than 8 (200)	1 (25)

Illinois Department of Transportation
PASSED January 1, 2018 — Michael Bourd — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2018 — Maureen Ho Duke — ENGINEER OF DESIGN AND ENVIRONMENT
BDG020 1-1-07

PAVEMENT JOINTS
(Sheet 2 of 2)

STANDARD 420001-09

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
CIVIL

DONOHUE

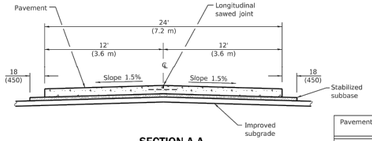
11/23/2021

Sheet No. 140

Drawing No. 10-C-04

file: P:\13852chi\Dwg\10CD1.dwg

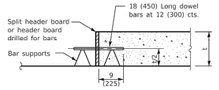
Not to be used for bidding purposes



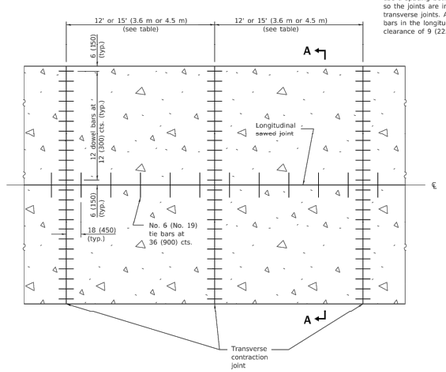
SECTION A-A
(TYPICAL 2-LANE WITH SHOULDERS)

Pavement Thickness	Spacing of Transverse Contraction Joints
Less than 10 (250)	12' (3.6 m) *
10 (250) and greater	15' (4.5 m) *

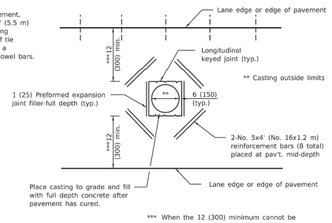
* When placed adjacent to existing PCC pavement, use a spacing between 12' (3.6 m) and 18' (5.5 m) so the joints are in prolongation with existing transverse joints. Also adjust the spacing of tie bars in the longitudinal joint(s) to maintain a clearance of 9 (225) from the end of the dowel bars.



TRANSVERSE CONSTRUCTION JOINT



PAVEMENT PLAN



*** When the 12 (300) minimum cannot be achieved, the transverse joints shall be extended to either the longitudinal joint or edge of pavement.

DETAIL OF ADDED REINFORCEMENT FOR PAVEMENT BLOCKS-OUTS

GENERAL NOTES

See Standard 420001 for details of joints not shown.

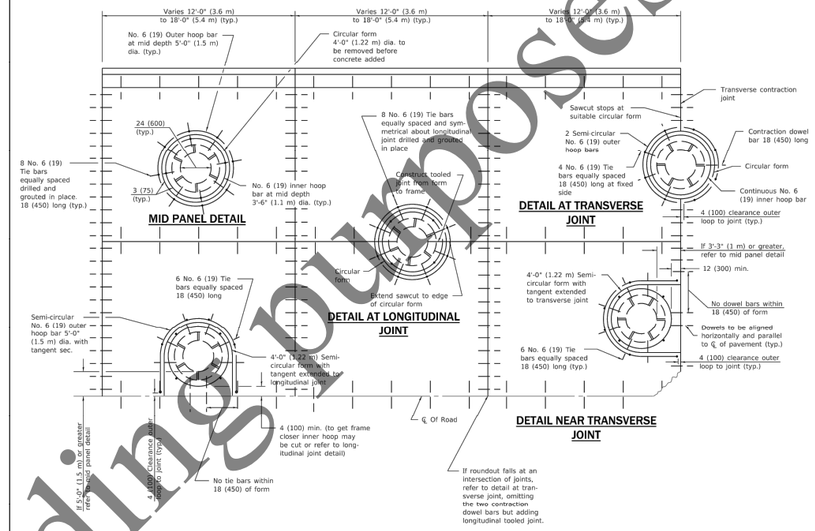
All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
PASSED January 1, 2022
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2022
ENGINEER OF DESIGN AND ENVIRONMENT
BDE 1-18-97

DATE	REVISIONS
1-1-22	Revised spacing of transverse contraction joints and header board callout.
1-1-18	Changed spacing of tie bars to 36 (900).

24' (7.2 m) JOINTED PCC PAVEMENT

STANDARD 420101-07



GENERAL NOTES

Transverse joints may be moved to accommodate roundout. Edge of circular joint shall be minimum 24 (600) from transverse joint. Relocated transverse joint shall be continuous from edge of pavement to edge of pavement.

The transverse joint spacing should be adjusted to use the DETAIL NEAR TRANSVERSE JOINT. If the joint cannot be adjusted to give the 12 (300) min. offset, use the DETAIL AT TRANSVERSE JOINT and ensure the joint is centered in the structure as shown.

Circular form shall be removed prior to drill and grout of tie bars.

Drill and grout is preferred, however tie bars can be poured in place if clearance is provided to outer edge of frame. Maximum 2 (50) clearance.

Shims shall be used to adjust all frames. After adjusting mortar has cured, the shims shall be removed and the voids under the frames filled with nonshrink grout.

Hoop reinforcement shall be one piece construction having a minimum lap length of 24 (600).

All situations not shown and may require combination of details.

WHEN USING CAST IN PLACE:
Frame shall be anchored to the structure to prevent movement during the paving operation.

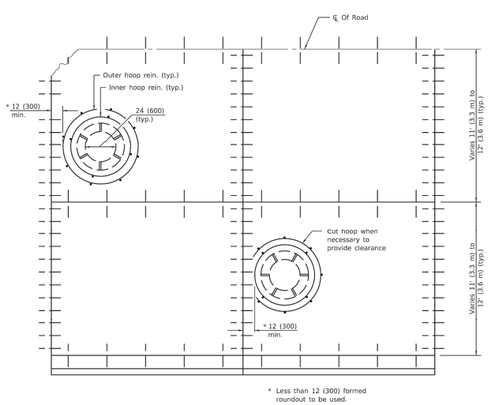
All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
PASSED January 1, 2018
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2018
ENGINEER OF DESIGN AND ENVIRONMENT
BDE 1-18-97

DATE	REVISIONS
1-1-18	Revised standard for 36 (900) tie bar spacing. Revised General Notes.
1-1-11	Corrected 'T/2' dim. on DETAIL OF REINFORCEMENT FOR PAVEMENT ROUNDOUT.

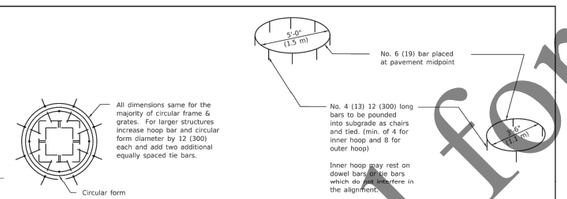
PCC PAVEMENT ROUNDOUTS (Sheet 1 of 2)

STANDARD 420111-04

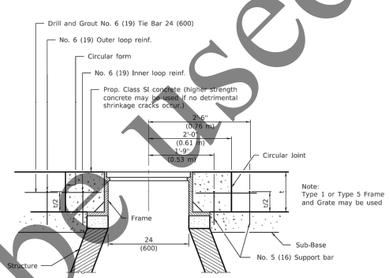


* Less than 12 (300) formed roundout to be used.

CAST IN PLACE DETAIL



ROUNDOUT FOR SQUARE FRAME & GRATE AND MANHOLES

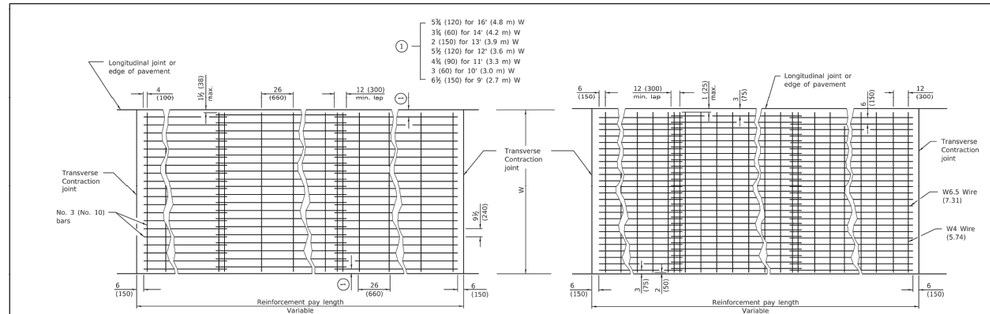


DETAIL OF REINFORCEMENT FOR PAVEMENT ROUNDOUT

Illinois Department of Transportation
PASSED January 1, 2018
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2018
ENGINEER OF DESIGN AND ENVIRONMENT
BDE 1-18-97

PCC PAVEMENT ROUNDOUTS (Sheet 2 of 2)

STANDARD 420111-04



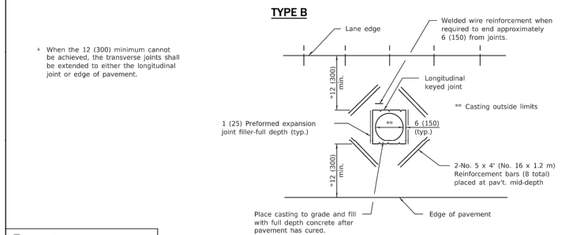
Approximately 63 lbs./100 sq. ft. (3.07 kg/m²)

When clipped bar mats are used, each bar intersection shall be clipped with W1.7 (3.74) wire.

TYPE B

Approximately 63 lbs./100 sq. ft. (3.07 kg/m²)

TYPE A



* When the 12 (300) minimum cannot be achieved, the transverse joints shall be extended to either the longitudinal joint or edge of pavement.

DETAIL OF ADDED REINFORCEMENT FOR PAVEMENT BLOCKS-OUTS

GENERAL NOTES

Pavement block-outs shall be at least 24 (600) from contraction joints.

Welded wire reinforcement which is lapped longitudinally shall have a minimum lap of 6 (150).

Welded wire reinforcement may be positioned with the transverse wires on top or bottom of the longitudinal wires.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
PASSED April 1, 2016
ENGINEER OF POLICY AND PROCEDURES
APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT
BDE 1-18-97

DATE	REVISIONS
4-1-16	Changed terminology to 'welded wire reinforcement'. Renamed standard.
1-1-08	Switched units to English (metric).

PAVEMENT WELDED WIRE REINFORCEMENT

STANDARD 420701-03

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

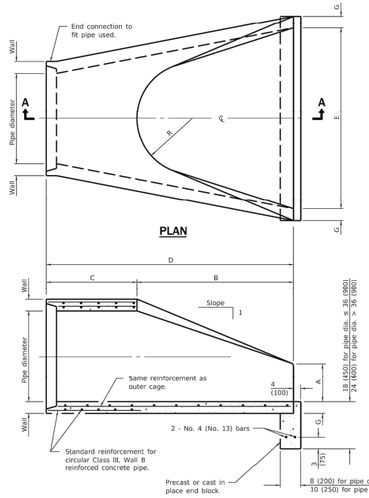
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
CIVIL

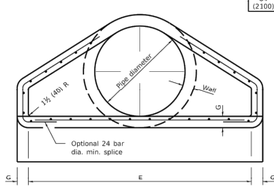
DONOHUE 11/23/2021

Sheet No. 141
Drawing No. 10-C-05

file: P:\13852chi\Dwg\10CD1.dwg



SECTION A-A



END VIEW

PIPE DIA.	APPROX. QTY. lbs. (kg)	WALL	A	B	C	D	E	G	R	APPROX. SLOPE
12 (300)	530 (240)	2 (51)	4 (102)	24 (610)	4'-0⅛" (1.241 m)	6'-0⅛" (1.851 m)	24 (610)	2 (51)	9 (229)	1:2.4
15 (375)	335 (57)	2¼ (57)	6 (152)	27 (686)	3'-10" (1.168 m)	6'-1" (1.854 m)	30 (762)	2½ (57)	11 (280)	1:2.4
18 (450)	990 (450)	2½ (64)	9 (229)	27 (686)	3'-10" (1.168 m)	6'-1" (1.854 m)	36 (914)	2½ (64)	12 (305)	1:2.4
21 (525)	1280 (580)	2¾ (70)	9 (229)	35 (889)	38 (965)	6'-1" (1.854 m)	3'-6" (1.067 m)	2¾ (70)	13 (330)	1:2.4
24 (600)	1520 (690)	3 (76)	9½ (241)	3'-7½" (1.105 m)	30 (762)	6'-1½" (1.867 m)	4'-0" (1.219 m)	3 (76)	14 (356)	1:2.5
27 (675)	1930 (875)	3¼ (83)	10½ (267)	4'-0" (1.219 m)	25⅛ (648)	6'-1½" (1.867 m)	4'-6" (1.372 m)	3¼ (83)	14⅛ (368)	1:2.4
30 (750)	2190 (995)	3½ (89)	12 (305)	4'-6" (1.375 m)	19¾ (502)	6'-1¾" (1.874 m)	5'-0" (1.524 m)	3½ (89)	15 (381)	1:2.5
33 (825)	3200 (1450)	3¾ (95)	13½ (343)	4'-10½" (1.486 m)	39⅛ (997)	8'-1⅜" (2.483 m)	5'-6" (1.676 m)	3¾ (95)	17⅝ (445)	1:2.5
36 (900)	4100 (1860)	4 (102)	15 (381)	5'-3" (1.6 m)	34⅞ (883)	8'-1⅜" (2.483 m)	6'-0" (1.829 m)	4 (102)	20 (508)	1:2.5
42 (1050)	5380 (2440)	4½ (114)	21 (533)	5'-3" (1.6 m)	35 (889)	8'-2" (2.489 m)	6'-6" (1.981 m)	4½ (114)	22 (559)	1:2.5
48 (1200)	6550 (2970)	5 (127)	24 (610)	6'-0" (1.829 m)	26 (660)	8'-2" (2.489 m)	7'-0" (2.134 m)	5 (127)	22 (559)	1:2.5
54 (1350)	8240 (3740)	5½ (140)	27 (686)	5'-5" (1.651 m)	35 (889)	8'-4" (2.54 m)	7'-6" (2.286 m)	5½ (140)	24 (610)	1:2.0
60 (1500)	8730 (3960)	6 (152)	35 (889)	5'-0" (1.524 m)	39 (991)	8'-3" (2.515 m)	8'-0" (2.438 m)	5 (127)	*	1:1.9
66 (1650)	10710 (4860)	6½ (165)	30 (762)	6'-0" (1.829 m)	27 (686)	8'-3" (2.515 m)	8'-6" (2.591 m)	5½ (140)	*	1:1.7
72 (1800)	12520 (5680)	7 (178)	36 (914)	6'-6" (1.981 m)	21 (533)	8'-3" (2.514 m)	9'-0" (2.743 m)	6 (152)	*	1:1.8
78 (1950)	14770 (6700)	7½ (191)	36 (914)	7'-6" (2.286 m)	21 (533)	9'-3" (2.819 m)	9'-6" (2.896 m)	6½ (165)	*	1:1.8
84 (2100)	18160 (8240)	8 (203)	36 (914)	7'-6⅜" (2.299 m)	21 (533)	9'-3⅜" (2.832 m)	10'-0" (3.048 m)	6½ (165)	*	1:1.6

* Radius as furnished by manufacturer

GENERAL NOTES

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

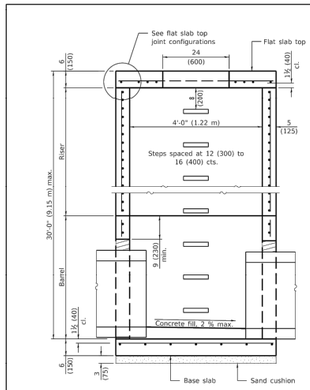
All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
PASSED January 1, 2021 — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2021 — ENGINEER OF DESIGN AND ENVIRONMENT
BDM600 1-1-07

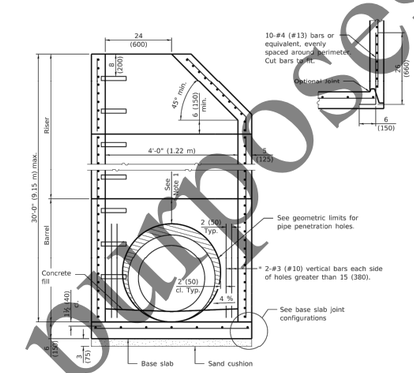
DATE	REVISIONS
1-1-11	Clarified ref. to pipe dia.
	on Section A-A. Changed
	'inner' to 'outer' cage ref.
1-1-09	Switched units to
	English (metric).

PRECAST REINFORCED CONCRETE FLARED END SECTION

STANDARD 542301-03

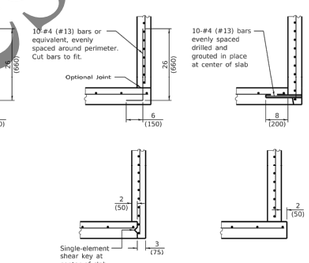


SECTION PARALLEL TO PIPE
(Without conical top riser)

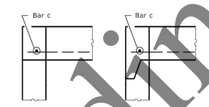


SECTION PERPENDICULAR TO PIPE
(With conical top riser)

* As an alternate, the barrel wall reinforcement may be reduced to riser wall reinforcement with #3 (#10) bars placed around the pipe penetration holes as shown. This option may be utilized when the pipe penetration holes are formed as opposed to cored.



BASE SLAB JOINT CONFIGURATIONS



FLAT SLAB TOP JOINT CONFIGURATIONS
(Shown at access hole)

GEOMETRIC LIMITS FOR PIPE PENETRATION HOLES

Note 1: A minimum of 9 (230) of monolithic reinforced concrete shall be maintained above pipe penetration holes > 24 (600).

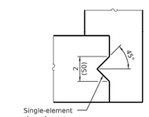
Note 2: A minimum 12 (300) inside arc length of reinforced concrete shall be maintained between pipe penetration holes > 15 (380).

Note 3: A maximum of 60 percent of the inside perimeter of the reinforced concrete manhole walls may be removed.

Note 4: Horizontal joints that intersect pipe penetration holes > 15 (380) shall have one joint splice for every location around the perimeter of the joint where the inside arc length between pipe penetration holes is < 24 (600). See joint splice detail.

Note 5: The recommended pipe penetration hole is equal to the O.D. of the pipe plus 4 (100).

Note 6: Only pipe penetration holes ≤ 15 (380) are allowed in riser sections.



SHEAR KEY GEOMETRY
(Reinforcement not shown for clarity)

GENERAL NOTES

The manufacturer shall ensure that all precast manhole sections are additionally reinforced where required to resist damage from handling, shipping and installation stresses.

Lifting holes shall be located in the sections as per the manufacturer's recommendations.

See Standard 602701 for details of manhole steps.

All dimensions are in inches (millimeters) unless otherwise noted.

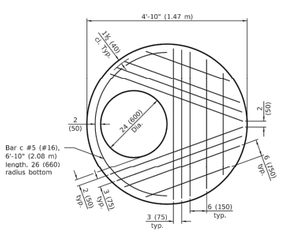
Illinois Department of Transportation
PASSED January 1, 2021 — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2021 — ENGINEER OF DESIGN AND ENVIRONMENT
BDM600 1-1-07

DATE	REVISIONS
1-1-21	Revised Note 1 and lifting hole
	general note.
3-1-19	Moved wall reinforcement from
	inside face to middle.

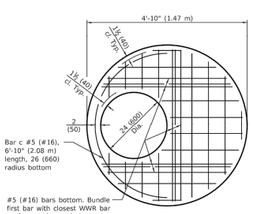
PRECAST MANHOLE TYPE A 4' (1.22 m) DIAMETER

(Sheet 1 of 2)

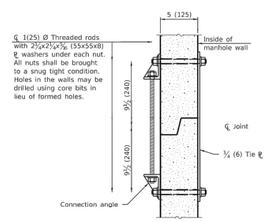
STANDARD 602401-07



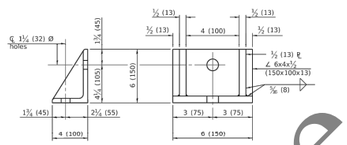
PLAN - FLAT SLAB TOP
(Showing layout of reinforcement bars and c bars)



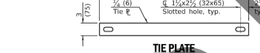
PLAN - FLAT SLAB TOP
(Showing layout of welded wire reinforcement and c bars)



JOINT SPLICE



CONNECTION ANGLE



TIE PLATE

FLAT SLAB TOP REINFORCEMENT

Location	WWR (each direction)		Rebar		
	A_s (min.)	Spacing (max.)	A_s (min.)	Spacing (max.)	Bar Size
Bottom Mat	** 0.62 sq. in./ft. (1312 sq. mm/m)	6 (150)	See plan view for rebar orientation and spacing and this table for bar size		#5 (#16)

** Only one layer of WWR permitted to avoid congestion.

WALL REINFORCEMENT

Location	Orientation	WWR or Rebar	
		A_s (min.)	Spacing (max.)
Riser	Circumferential	0.12 sq. in./ft. (254 sq. mm/m)	6 (150)
	Vertical	0.045 sq. in./ft. (95 sq. mm/m)	8 (200)
Barrel	Circumferential	0.12 sq. in./ft. (254 sq. mm/m)	6 (150)
	Vertical	0.16 sq. in./ft. (339 sq. mm/m)	4 (100)

BASE SLAB REINFORCEMENT

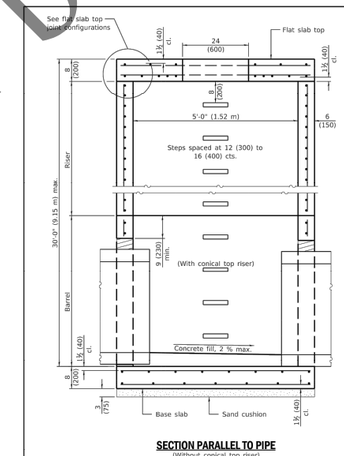
Location	Total Height	WWR or Rebar (each direction)	
		A_s (min.)	Spacing (max.)
Top Mat	≤ 20 ft. (6.10 m)	0.24 sq. in./ft. (508 sq. mm/m)	10 (250)
	> 20 ft. (6.10 m)	0.24 sq. in./ft. (508 sq. mm/m)	10 (250)

Illinois Department of Transportation
PASSED January 1, 2021 — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2021 — ENGINEER OF DESIGN AND ENVIRONMENT
BDM600 1-1-07

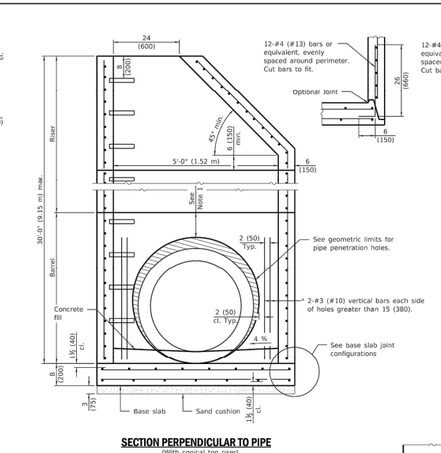
PRECAST MANHOLE TYPE A 4' (1.22 m) DIAMETER

(Sheet 2 of 2)

STANDARD 602401-07

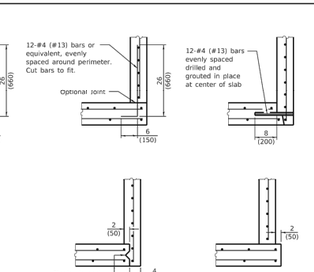


SECTION PARALLEL TO PIPE
(Without conical top riser)

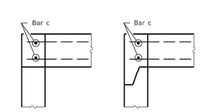


SECTION PERPENDICULAR TO PIPE
(With conical top riser)

* As an alternate, the barrel wall reinforcement may be reduced to riser wall reinforcement with #3 (#10) bars placed around the pipe penetration holes as shown. This option may be utilized when the pipe penetration holes are formed as opposed to cored.



BASE SLAB JOINT CONFIGURATIONS



FLAT SLAB TOP JOINT CONFIGURATIONS
(Shown at access hole)

GEOMETRIC LIMITS FOR PIPE PENETRATION HOLES

Note 1: A minimum of 9 (230) of monolithic reinforced concrete shall be maintained above pipe penetration holes > 32 (810).

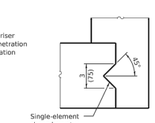
Note 2: A minimum 12 (300) inside arc length of reinforced concrete shall be maintained between pipe penetration holes > 15 (380).

Note 3: A maximum of 60 percent of the inside perimeter of the reinforced concrete manhole walls may be removed.

Note 4: Horizontal joints that intersect pipe penetration holes > 15 (380) shall have one joint splice for every location around the perimeter of the joint where the inside arc length between pipe penetration holes is < 24 (600). See joint splice detail.

Note 5: The recommended pipe penetration hole is equal to the O.D. of the pipe plus 4 (100).

Note 6: Only pipe penetration holes ≤ 15 (380) are allowed in riser sections.



SHEAR KEY GEOMETRY
(Reinforcement not shown for clarity)

GENERAL NOTES

The manufacturer shall ensure that all precast manhole sections are additionally reinforced where required to resist damage from handling, shipping and installation stresses.

Lifting holes shall be located in the sections as per the manufacturer's recommendations.

See Standard 602701 for details of manhole steps.

All dimensions are in inches (millimeters) unless otherwise noted.

Illinois Department of Transportation
PASSED January 1, 2021 — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2021 — ENGINEER OF DESIGN AND ENVIRONMENT
BDM600 1-1-07

DATE	REVISIONS
1-1-21	Revised Note 1 and lifting hole
	general note.
3-1-19	Moved wall reinforcement from
	inside face to middle.

PRECAST MANHOLE TYPE A 5' (1.52 m) DIAMETER

(Sheet 1 of 2)

STANDARD 602402-03

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
CIVIL

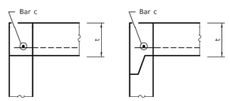
DONOHUE

11/23/2021

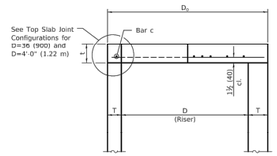
Sheet No. 142

Drawing No. 10-C-06

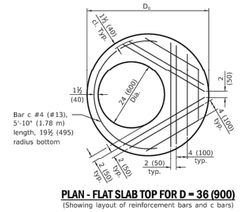
file: P:\13852chl\Dwg\10CD1.dwg



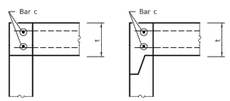
FLAT SLAB TOP JOINT CONFIGURATIONS FOR D = 36 (900) AND D = 4'-0" (1.22 m)
(Shown at access hole)



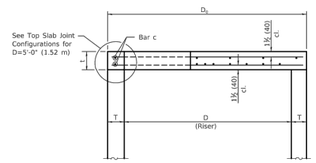
SECTION THRU FLAT SLAB TOP FOR D = 36 (900) AND D = 4'-0" (1.22 m)



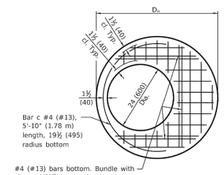
PLAN - FLAT SLAB TOP FOR D = 36 (900)
(Showing layout of reinforcement bars and c bars)



FLAT SLAB TOP JOINT CONFIGURATIONS D = 5'-0" (1.52 m)
(Shown at access hole)



SECTION THRU FLAT SLAB TOP FOR D = 5'-0" (1.52 m)



PLAN - FLAT SLAB TOP FOR D = 36 (900)
(Showing layout of welded wire reinforcement and c bars)

TABLE

D	T	D_0 (min.)	t
36 (900)	See applicable Standards	D + 2''	6 (150)
4'-0" (1.2 m)			6 (150)
5'-0" (1.5 m)			8 (200)

GENERAL NOTES

The flat slab top may be used in lieu of the tapered tops shown on Standards 602001, 602016, or 602306 at the option of the Contractor or when field conditions prohibit the use of tapered tops.

Lifting holes shall be located in the sections as per the manufacturer's recommendations.

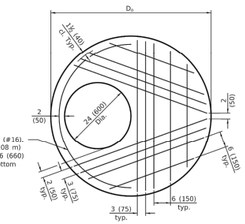
All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
PASSED January 1, 2019
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT
STANDARD 1-1-07

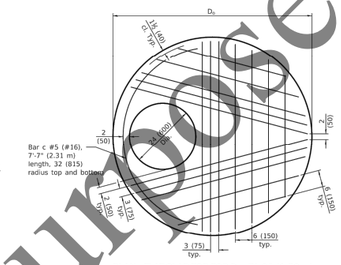
DATE	REVISIONS
1-1-19	Expanded / refined reinforcement
	options.
1-1-18	Revised for compliance with
	LRFD.

PRECAST REINFORCED CONCRETE FLAT SLAB TOP
(Sheet 1 of 2)

STANDARD 602601-06



PLAN - FLAT SLAB TOP FOR D = 4'-0" (1.22 m)
(Showing layout of reinforcement bars and c bars)



PLAN - FLAT SLAB TOP FOR D = 5'-0" (1.52 m)
(Showing layout of bottom reinforcement bars and c bars)

FLAT SLAB TOP REINFORCEMENT FOR D = 36 (900)

Location	WWR (each direction)		Rebar		
	A_s (min.)	Spacing (max.)	A_s (min.)	Spacing (max.)	Bar Size
Bottom Mat	* 0.60 sq. in./ft. (1270 sq. mm/m)	6 (150)	See plan view for rebar orientation and spacing and this table for bar size		#4 (#13)

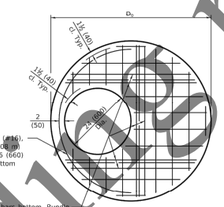
FLAT SLAB TOP REINFORCEMENT FOR D = 4'-0" (1.22 m)

Location	WWR (each direction)		Rebar		
	A_s (min.)	Spacing (max.)	A_s (min.)	Spacing (max.)	Bar Size
Bottom Mat	* 0.62 sq. in./ft. (1312 sq. mm/m)	6 (150)	See plan view for rebar orientation and spacing and this table for bar size		#5 (#16)

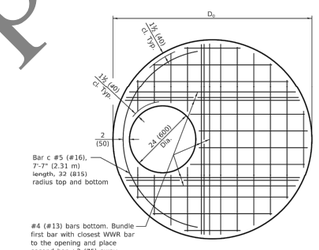
FLAT SLAB TOP REINFORCEMENT FOR D = 5'-0" (1.52 m)

Location	WWR (each direction)		Rebar (each direction except as noted)		
	A_s (min.)	Spacing (max.)	A_s (min.)	Spacing (max.)	Bar Size
Top Mat	0.11 sq. in./ft. (233 sq. mm/m)	18 (450)	0.11 sq. in./ft. (233 sq. mm/m)	18 (450)	#3 or #4 (#10) (#13)
Bottom Mat	* 0.40 sq. in./ft. (847 sq. mm/m)	6 (150)	See plan view for rebar orientation and spacing and this table for bar size		#4 (#13)

* Only one layer of WWR permitted to avoid congestion.



PLAN - FLAT SLAB TOP FOR D = 4'-0" (1.22 m)
(Showing layout of welded wire reinforcement and c bars)

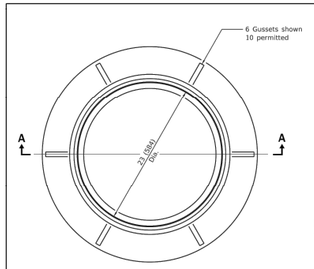


PLAN - FLAT SLAB TOP FOR D = 5'-0" (1.52 m)
(Showing layout of welded wire reinforcement and c bars)

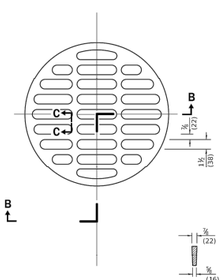
Illinois Department of Transportation
PASSED January 1, 2019
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT
STANDARD 1-1-07

PRECAST REINFORCED CONCRETE FLAT SLAB TOP
(Sheet 2 of 2)

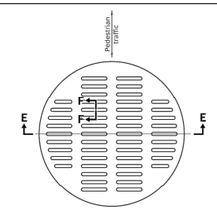
STANDARD 602601-06



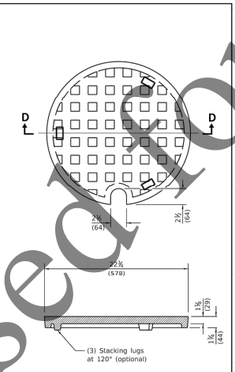
CAST FRAME



SECTION C-C

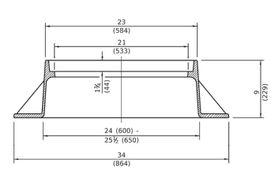


SECTION F-F

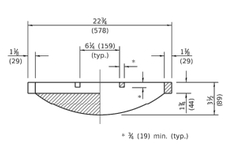


SECTION D-D

CAST CLOSED LID
Gray Iron Lid

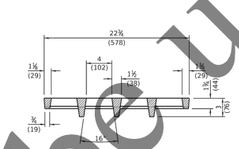


SECTION A-A
Gray Iron



SECTION B-B

CAST OPEN LID



SECTION E-E

ADA COMPLIANT CAST OPEN LID

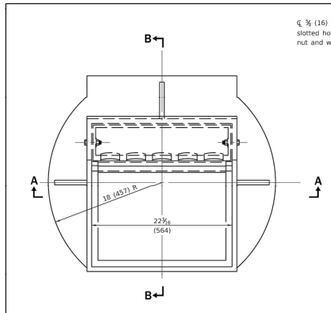
All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
PASSED January 1, 2020
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2020
ENGINEER OF DESIGN AND ENVIRONMENT
STANDARD 1-1-07

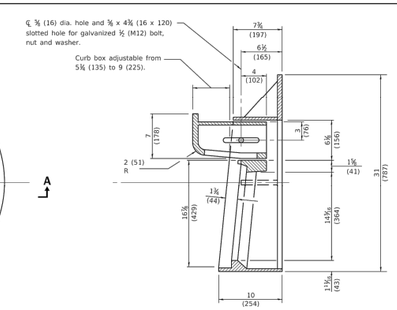
DATE	REVISIONS
1-1-20	Revised dimension in Section B-B
	of cast open lid.
1-1-15	Revised dimensioning of
	frame. Added ADA compliant
	open lid.
1-1-09	Switched units to English (metric).

FRAME AND LIDS TYPE 1

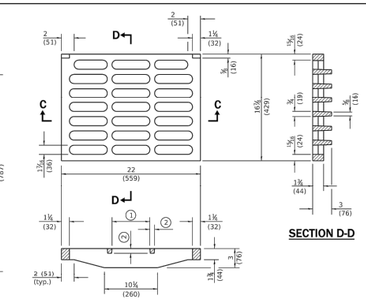
STANDARD 604001-05



CAST FRAME

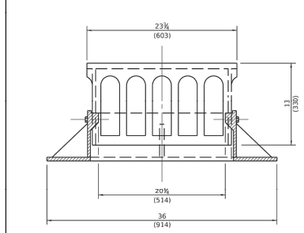


SECTION B-B

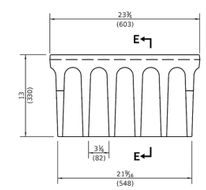


SECTION C-C
① = 6 (152) typ.
② = ¾ (19) typ.

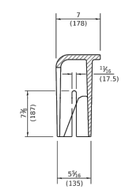
SECTION D-D



SECTION A-A



ALTERNATE CURB BOX



SECTION E-E

CAST GRATE

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
PASSED January 1, 2015
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2015
ENGINEER OF DESIGN AND ENVIRONMENT
STANDARD 1-1-07

DATE	REVISIONS
1-1-15	Revised dimensions of
	frame and alternate curb
	box.
1-1-09	Switched units to
	English (metric).

FRAME AND GRATE TYPE 3

STANDARD 604006-05

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

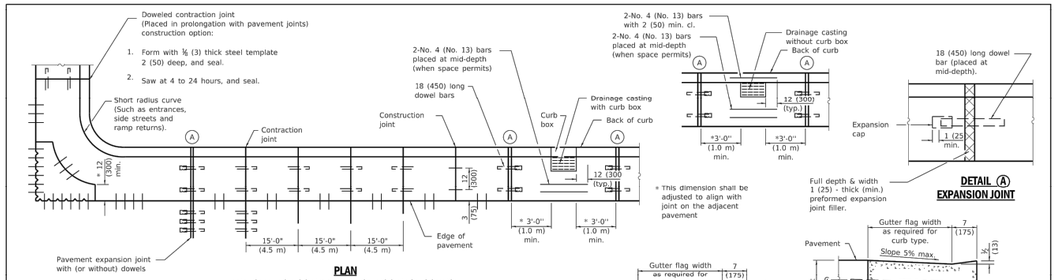
STANDARD DETAIL
CIVIL

DONOHUE 11/23/2021

Sheet No. 143

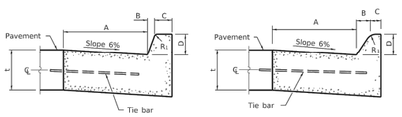
Drawing No. 10-C-07

file: P:\13852ch\Dwg\10CD1.dwg



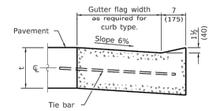
PLAN
ADJACENT TO PCC PAVEMENT OR PCC BASE COURSE

DETAIL (A)
EXPANSION JOINT

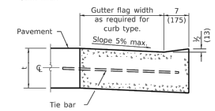


BARRIER CURB

MOUNTABLE CURB



DEPRESSED CURB (TYPICAL)



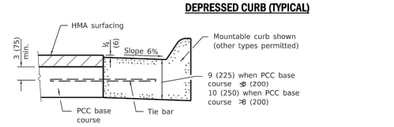
DEPRESSED CURB ADJACENT TO CURB RAMP ACCESSIBLE TO THE DISABLED

TABLE OF DIMENSIONS BARRIER CURB					
TYPE	A	B	C	D	R_1
B-6.06 ◆	6	1	6	6	1
(B-15.15)	(150)	(25)	(150)	(150)	(25)
B-6.12	12	1	6	6	1
(B-15.3)	(300)	(25)	(150)	(150)	(25)
B-6.18	18	1	6	6	1
(B-15.45)	(450)	(25)	(150)	(150)	(25)
B-6.24	24	1	6	6	1
(B-15.60)	(600)	(25)	(150)	(150)	(25)
B-9.12	12	2	5	9	1
(B-22.30)	(300)	(50)	(125)	(225)	(25)
B-9.18	18	2	5	9	1
(B-22.45)	(450)	(50)	(125)	(225)	(25)
B-9.24	24	2	5	9	1
(B-22.60)	(600)	(50)	(125)	(225)	(25)

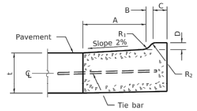
◆ For corner islands only.

TABLE OF DIMENSIONS MOUNTABLE CURB						
TYPE	A	B	C	D	R_1	R_2
M-2.06	6	2	4	2	3	2
(M-5.15)	(150)	(50)	(100)	(50)	(75)	(50)
M-2.12	12	2	4	2	3	2
(M-5.30)	(300)	(50)	(100)	(50)	(75)	(50)
M-4.06	6	4	3	4	3	NA
(M-10.15)	(150)	(100)	(75)	(100)	(75)	
M-4.12	12	4	3	4	3	NA
(M-10.30)	(300)	(100)	(75)	(100)	(75)	
M-4.18	18	4	3	4	3	NA
(M-10.45)	(450)	(100)	(75)	(100)	(75)	
M-4.24	24	4	3	4	3	NA
(M-10.60)	(600)	(100)	(75)	(100)	(75)	
M-6.06	6	6	2	6	2	NA
(M-15.15)	(150)	(150)	(50)	(150)	(50)	
M-6.12	12	6	2	6	2	NA
(M-15.30)	(300)	(150)	(50)	(150)	(50)	
M-6.18	18	6	2	6	2	NA
(M-15.45)	(450)	(150)	(50)	(150)	(50)	
M-6.24	24	6	2	6	2	NA
(M-15.60)	(600)	(150)	(50)	(150)	(50)	

Illinois Department of Transportation
PASSED January 1, 2018 — Michael Pownall — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2018 — Marcia M. Walker — ENGINEER OF DESIGN AND ENVIRONMENT
ISSUED 1-1-07



ADJACENT TO PCC BASE COURSE WITH HMA SURFACING



M-2.06 (M-5.15) and M-2.12 (M-5.30)

GENERAL NOTES

The bottom slope of combination curb and gutter constructed adjacent to pcc pavement shall be the same slope as the subbase or 6% when subbase is omitted.

t = Thickness of pavement.

Longitudinal joint tie bars shall be No. 6 (No. 19) at 36 (900) centers in accordance with details for longitudinal construction joint shown on Standard 420001.

A minimum clearance of 2 (50) between the end of the tie bar and the back of the curb shall be maintained.

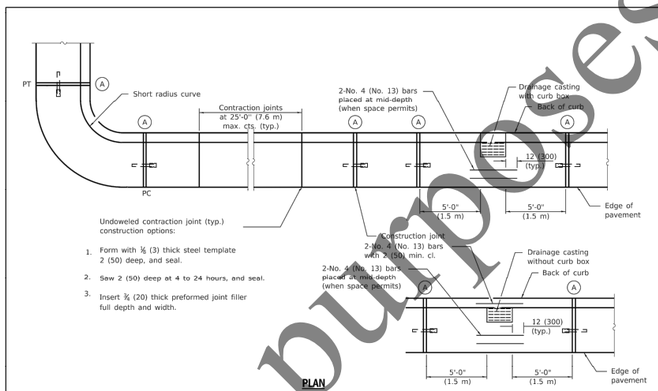
The dowel bars shown in contraction joints will only be required for monolithic construction.

See Standard 606301 for details of corner islands.

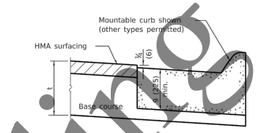
All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-18	Revised General Note for tie bar spacing to 36 (900) cts.
1-1-15	Added B-6.06 (B-15.15) barrier curb and gutter to table (corner islands only).

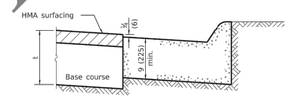
CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
(Sheet 1 of 2)
STANDARD 606001-07



PLAN

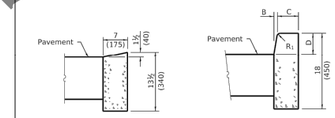


ON DISTURBED SUBGRADE



ON UNDISTURBED SUBGRADE

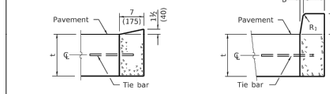
ADJACENT TO FLEXIBLE PAVEMENT



DEPRESSED CURB

BARRIER CURB

ADJACENT TO FLEXIBLE PAVEMENT



DEPRESSED CURB

BARRIER CURB

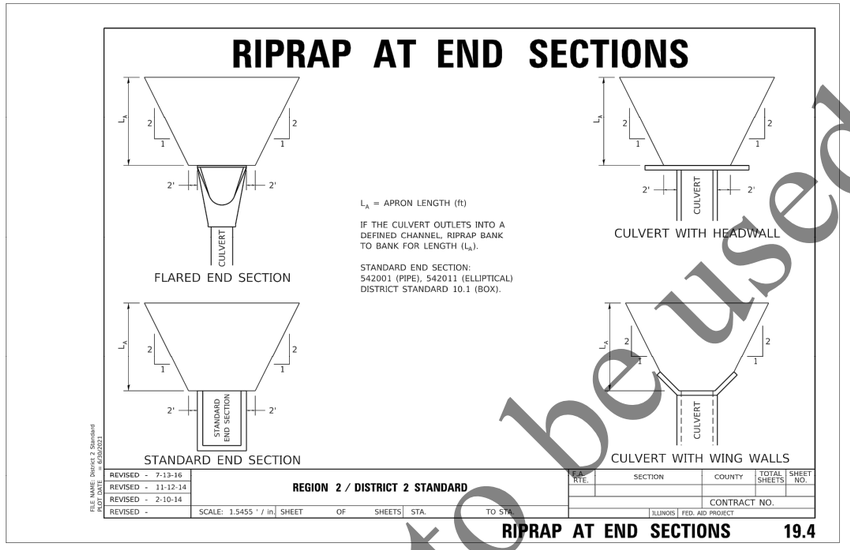
ADJACENT TO PCC PAVEMENT OR PCC BASE COURSE

CONCRETE CURB TYPE B

Illinois Department of Transportation
PASSED January 1, 2018 — Michael Pownall — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2018 — Marcia M. Walker — ENGINEER OF DESIGN AND ENVIRONMENT
ISSUED 1-1-07

ADJACENT TO FLEXIBLE PAVEMENT

CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
(Sheet 2 of 2)
STANDARD 606001-07



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No:	DATE:	REVISION	INT.

Project No.	13852
Designed By	MLM
Drawn By	MLM
Checked By	PMS
Approved By	MLM

Four Rivers Sanitation Authority

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

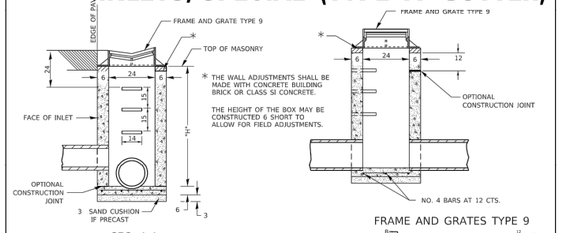
STANDARD DETAIL
CIVIL

DONOHUE 11/23/2021

Sheet No. 144
Drawing No. 10-C-08

file: P:\13852chi\Dwg\10CD1.dwg

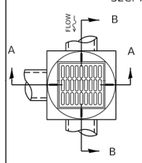
INLETS, SPECIAL (TYPE A GUTTER)



* THE WALL ADJUSTMENTS SHALL BE MADE WITH CONCRETE BUILDING BRICK OR CLASS SI CONCRETE.

THE HEIGHT OF THE BOX MAY BE CONSTRUCTED 6 SHORT TO ALLOW FOR FIELD ADJUSTMENTS.

SEC. A-A



NOTES

SEE STANDARD 602701 FOR DETAILS OF STEPS.

EXCEPT AS NOTED HEREON INLET SPECIAL SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 602 OF THE STANDARD SPECIFICATIONS.

THE SIDE WALLS MAY BE BUILT AS PRECAST SEGMENTED SECTIONS.

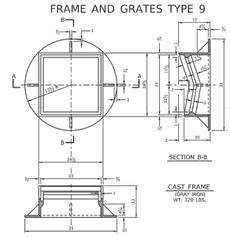
ALL VOIDS AROUND PIPE ENTRANCE, BOTH INSIDE AND OUTSIDE, SHALL BE SEALED WITH MORTAR.

WEIGHT OF CAST IRON FRAME & GRATE = 440 LBS.

STEPS SHALL BE OMITTED WHEN DEPTH OF "H" IS LESS THAN 5 FT.

DETAIL OF FRAME & GRATE

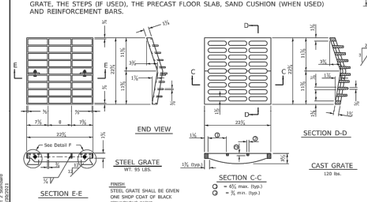
FRAME AND GRATES TYPE 9



NOTES

CLASS SI CONCRETE OR PRECAST CONCRETE SHALL BE USED THROUGHOUT. PRECAST CONCRETE SHALL BE IN ACCORDANCE WITH ARTICLES 504.01 THRU 504.05 OF THE STANDARD SPECIFICATIONS EXCEPT THAT CONCRETE STRENGTH SHALL BE 4,000 PSI AFTER 28 DAYS.

THE CONTRACT UNIT PRICE EACH FOR INLETS, SPECIAL SHALL INCLUDE THE COST OF CONSTRUCTING THE INLET BOX, FURNISHING AND INSTALLING THE FRAME AND GRATE, THE STEPS (IF USED), THE PRECAST FLOOR SLAB, SAND CUSHION (WHEN USED) AND REINFORCEMENT BARS.



GENERAL NOTES

THE MATERIAL FOR STEEL GRATE SHALL CONFORM TO ARTICLE 1006.04 OF THE STANDARD SPECIFICATIONS.

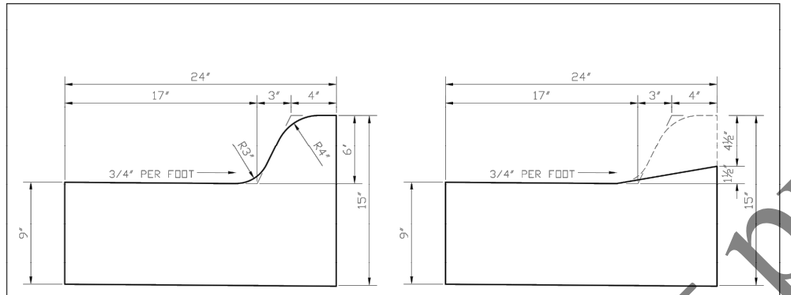
THE USE OF EITHER A CAST GRATE OR A STEEL GRATE WITH THE CAST FRAME SHALL BE THE OPTION OF THE CONTRACTOR.

THE CAST GRATE MAY BE MADE OF EITHER GRAY IRON OR DUCTILE IRON CONFORMING TO THE STANDARD SPECIFICATIONS. DUCTILE IRON CASTING SHALL BE GRADE 65-45-12

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

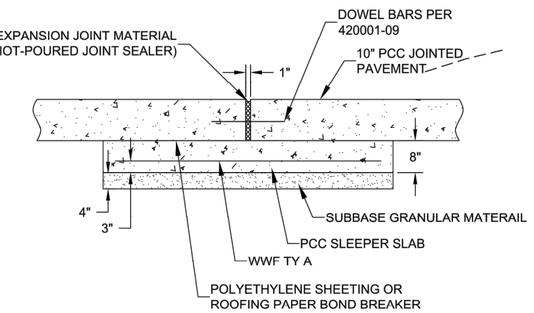
REVISED - 1-05-16	REGION 2 / DISTRICT 2 STANDARD	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
REVISED - 6-27-14						
REVISED - 10-13-11				CONTRACT NO.		
REVISED -	SCALE: 2.0000 ' / in. SHEET OF SHEETS STA. TO STA.		ILLINOIS FED. AID PROJECT			

INLETS, SPECIAL (TYPE A GUTTER) 11.2

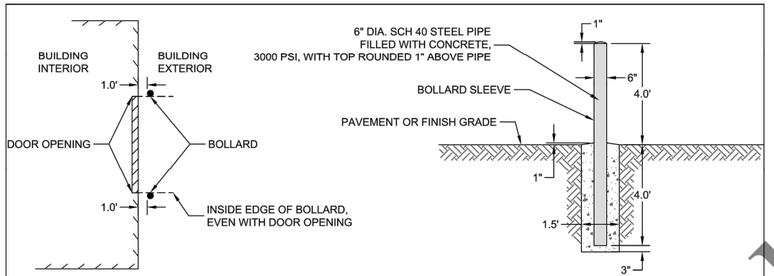


Combination Concrete Curb & Gutter, Type M6.18 Modified

DTL-CURB M6.18



SEPARATION JOINT WITH SLEEPER SLAB DETAIL



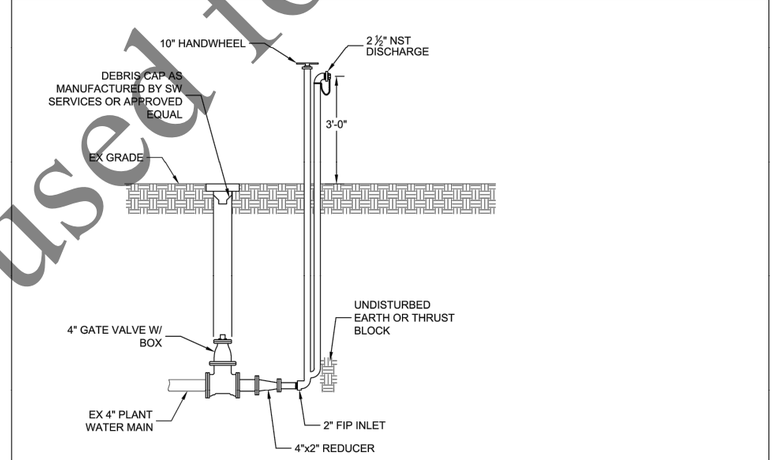
1. BOLLARD PLACEMENT IN FRONT OF BUILDINGS SHALL BE 1.0' CLEAR OF THE FACE OF BUILDING. THE INSIDE EDGE OF THE BOLLARD SHALL BE EVEN WITH THE DOOR OPENING.
2. BOLLARD PLACEMENT AT OTHER LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER.
3. BOLLARD PIPE SHALL BE 6" DIA. SCHEDULE 40 STEEL PIPE.
4. THE OUTSIDE OF THE BOLLARD PIPE SHALL BE PAINTED WITH A RUST PROHIBITIVE PRIMER.
5. STEEL PIPE FOR BOLLARDS SHALL BE ENCASED IN CONCRETE BELOW FINISH GRADE. THE TOP OF THE CONCRETE ENCASEMENT SHALL BE FINISHED TO 1" ABOVE FINISH GRADE AT THE STEEL PIPE.
6. STEEL PIPE FOR BOLLARDS SHALL BE FILLED WITH CONCRETE, AND ROUNDED 1" ABOVE THE TOP OF THE STEEL PIPE.
7. BOLLARDS SHALL INCLUDE A SLEEVE. SLEEVES SHALL BE ROUND SHAPE, HIGH DENSITY POLYETHYLENE WITH 0.17" WALL THICKNESS, 7" DIA., COLOR YELLOW, WITH WHITE REFLECTIVE STRIPE.
8. BOLLARD SLEEVES SHALL BE SUPPLIED AND INSTALLED AS A SINGLE UNIT. NO PIECING, PAINTING, OR OTHERWISE MODIFYING THE SLEEVE WILL BE ALLOWED.

Four Rivers Sanitation Authority

FRSA TREATMENT PLANT BOLLARD DETAIL

(NOT TO SCALE)

rev. 7/16/20

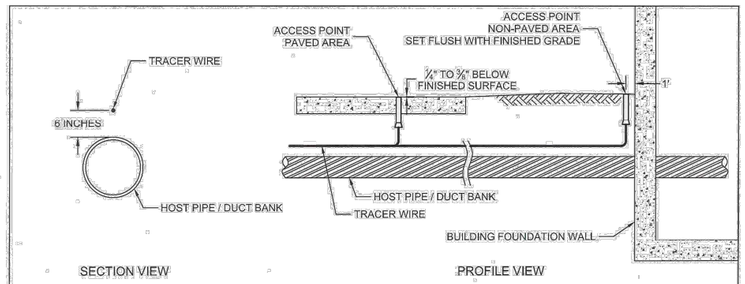


Four Rivers Sanitation Authority

FRSA TREATMENT PLANT YARD HYDRANT ASSEMBLY DETAIL

(NOT TO SCALE)

rev. 1/24/19



NOTES:

1. ALL NEW UNDERGROUND PIPING AND DUCT BANKS SHALL BE BURIED WITH LOCATING TRACER WIRE APPROXIMATELY 6 INCHES ABOVE THE TOP OF PIPE. TRACER WIRES SHALL BE TERMINATED AS SHOWN ON THE PLANS OR AS DIRECTED.
2. TRACER WIRE SHALL BE COPPER-CLAD STEEL HIGH STRENGTH 12 AWG AS MFG BY COPPERHEAD INDUSTRIES AND SHALL BE COLOR CODED PER APWA UNIFORM COLOR CODE
3. ACCESS POINTS SHALL BE PROVIDED AT EACH END OF NEW PIPING, OR IN BETWEEN ENDS OF PIPING IF REQUIRED. THE MAXIMUM LINEAR DISTANCE BETWEEN ACCESS POINTS SHALL BE 800 FEET. ACCESS POINTS IN NON-PAVED AREAS SHALL BE *SNAKEPIT LITE DUTY ADJUSTABLE SINGLE TERMINAL* ACCESS POINTS AS MFG BY COPPERHEAD INDUSTRIES, AND SHALL BE INSTALLED FLUSH WITH FINISHED GROUND ELEVATION. ACCESS POINTS IN PAVED AREAS SHALL BE *SNAKEPIT ROADWAY SINGLE TERMINAL CAST IRON LID* ACCES POINTS AS MFG BY COPPERHEAD INDUSTRIES, AND SHALL BE INSTALLED ¼" TO ⅜" BELOW FINAL PAVEMENT ELEVATION.

Four Rivers Sanitation Authority

FRSA TREATMENT PLANT TRACER WIRE & ACCESS POINTS DETAIL

(NOT TO SCALE)

rev. 8/10/21

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	MLM
				Drawn By	MLM
				Checked By	PMS
				Approved By	MLM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
CIVIL

DONOHUE

11/23/2021

Sheet No. 145

Drawing No. **10-C-09**

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ROOM FINISH SCHEDULE — A010

ROOM NO.	STRUCTURE/ROOM NAME	FLOOR MAT'L	FLOOR FINISH	WALLS MAT'L	WALLS FINISH	CEILING MAT'L	CEILING FINISH	BASE MAT'L	BASE FINISH	REMARKS	FINISH CLASS
	BUILDING 4 - PRIMARY SETTLING TANKS 1 & 2										
	PRIMARY SETTLING TANKS 1 & 2	CONC	COAT	CONC	COAT	CONC	COAT	CONC	-	SEE NOTE 1	C
	BUILDING 5 - PRIMARY FILTRATION FACILITY										
001	PFI WETWELL 1	CONC	SC	CONC	-	CONC	-	CONC	-	SEE NOTE 1	C
002	PFI CHANNEL 1	CONC	SC	CONC	-	CONC	-	CONC	-	SEE NOTE 1	C
003	PRIMARY FILTER PUMP ROOM 1	CONC	SC	CONC	-	CONC	-	CONC	-	SEE NOTE 1	C
004	PRIMARY FILTER TANK 1	CONC	SC	CONC	-	CONC/FRP	-	CONC	-	SEE NOTE 1	C
005	PRIMARY FILTER TANK 2	CONC	SC	CONC	-	CONC/FRP	-	CONC	-	SEE NOTE 1	C
006	PFE CHANNEL 1	CONC	SC	CONC	-	CONC/FRP	-	CONC	-	SEE NOTE 1	C
007	PFE CHANNEL 2	CONC	SC	CONC	-	CONC/FRP	-	CONC	-	SEE NOTE 1	C
008	GRAVITY THICKENER PUMP ROOM 1	CONC	SC	CONC	-	CONC	-	CONC	-	SEE NOTE 1	C
009	SCUM WET WELL 1	CONC	SC	CONC	-	CONC	-	CONC	-	SEE NOTE 1	C
010	PRIMARY FILTER EFFLUENT DIVERSION STRUCTURE	CONC	SC	CONC	-	ALGRTG	-	CONC	-	SEE NOTE 1	C
100	PRIMARY FILTRATION CONTROL ROOM 1	CONC	SC	CMU	COAT	PCONC	-	CMU	-	SEE NOTE 1	C
101	STAIRWELL 1	CONC	SC	CONC/CMU	-/COAT	PCONC	-	CMU	-	SEE NOTE 1	C
102	STAIRWELL 2	CONC	SC	CONC/CMU	-/COAT	PCONC	-	CMU	-	SEE NOTE 1	C
103	GRAVITY THICKENER 1	CONC	SC	CONC	-	-	-	CONC	-	SEE NOTE 1	C
104	GTO BOX	CONC	SC	CONC	-	ALGRTG	-	CONC	-	SEE NOTE 1	C
	BUILDING 6 - PRIMARY TANK OUTLET STRUCTURE										
001	OUTLET STRUCTURE	CONC	COAT	CONC	COAT	CONC	COAT	CONC	-	SEE NOTE 1	C
	BUILDING 9 - MAIN PUMP II										
100	ELECTRICAL ROOM	CONC	R	GB	COAT	EXP	COAT	GB	VB	SEE NOTE 1	C

ABBREVIATIONS

CMU	CONCRETE MASONRY UNIT
COAT	COATING
CONC	CONCRETE
EXP	EXPOSED STRUCTURE
FRP	FIBERGLASS REINFORCED PLASTIC
GB	GYPSUM BOARD
PCONC	PRECAST CONCRETE
R	RESINOUS FLOORING
SC	SEALED CONCRETE
VB	VINYL BASE

NOTES:

1. SEE SPECIFICATION SECTION 09 96 00 FOR COATING SCHEDULE.

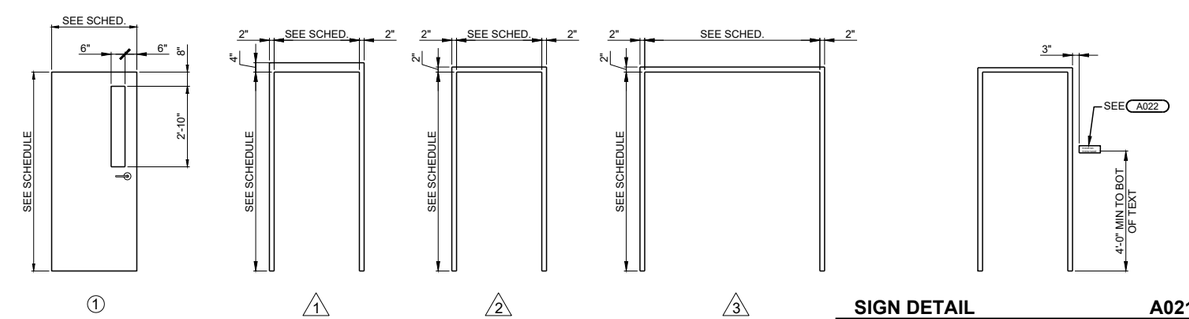
DOOR SCHEDULE — A020

STRUC. NO.	DOOR NO.	DOOR TYPE	DOOR LINTEL	DOOR SIZE WIDTH X HEIGHT	DOOR SIZE THK	DOOR MAT'L.	DOOR FINISH	DOOR H.W.SET	FRAME TYPE	FRAME MAT'L.	FRAME FINISH	GLASS TYPE	REMARKS
5	D01	1	-	3'-0"x7'-0"	1 3/4"	FRP	-	1	2	FRP	-	G4	1-HR. FIRE RATED
	D02	1	-	(2)-3'-0"x7'-0"	1 3/4"	FRP	-	4	3	FRP	-	G3	
	D03	1	-	3'-0"x7'-0"	1 3/4"	FRP	-	3	2	FRP	-	G4	1-HR. FIRE RATED
	D04	1	-	3'-0"x7'-0"	1 3/4"	FRP	-	3	2	FRP	-	G3	
	D05	1	-	3'-0"x7'-0"	1 3/4"	FRP	-	2	2	FRP	-	G1	1-HR. FIRE RATED
	D06	1	L-1	3'-0"x7'-0"	1 3/4"	FRP	-	3	1	FRP	-	G1	1-HR. FIRE RATED
	D07	1	L-1	3'-0"x7'-0"	1 3/4"	FRP	-	3	1	FRP	-	G3	
	D08	1	L-1	3'-0"x7'-0"	1 3/4"	FRP	-	3	1	FRP		G1	1-HR. FIRE RATED
9	D01	1	-	(2)-3'-0"x7'-0"	1 3/4"	GHM	CT	5	3	GHM	CT	G2	
	D02	1	-	3'-0"x7'-0"	1 3/4"	GHM	CT	1	2	GHM	CT	G2	

KEY

CT = COATING
FRP = FIBERGLASS REINFORCED PLASTIC
GHM = GALVANIZED HOLLOW METAL

✱ ALL DOORS ARE TO BE INSULATED

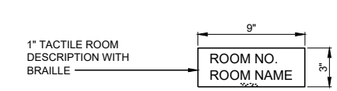


DOOR TYPE= ⓧ FRAME TYPE= △X

SIGN DETAIL — A021

NTS

ROOM SIGN SCHEDULE				
ROOM NO.	LOCATION	TYPE	ROOM NAME	DOOR NUMBER LOCATION
101	STAIRWELL 1	A	STAIRWELL 1	D03
102	STAIRWELL 2	A	STAIRWELL 2	D01



SIGN DETAIL TYPE A — A022

NTS

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Four Rivers Sanitation Authority

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Project No.	13852
Designed By	SRW
Drawn By	SRW
Checked By	TJB
Approved By	SRW

FOUR RIVERS SANITATION AUTHORITY
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PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

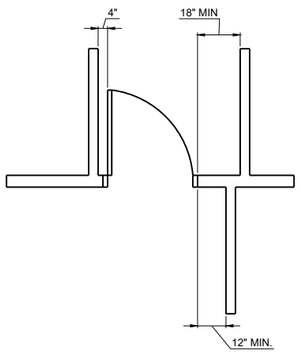
STANDARD DETAIL
ARCHITECTURAL

DONOHUE 11/23/2021

Sheet No. 146

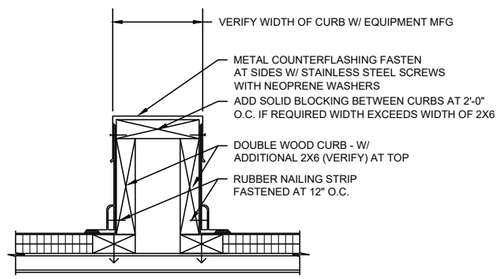
Drawing No. 10-A-01

file: P:\13852chi\Dwg\10AD1.dwg



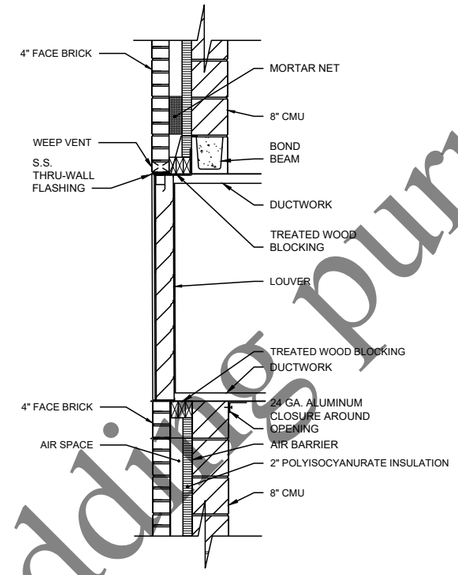
DOOR CLEARANCE DETAIL A050

NTS



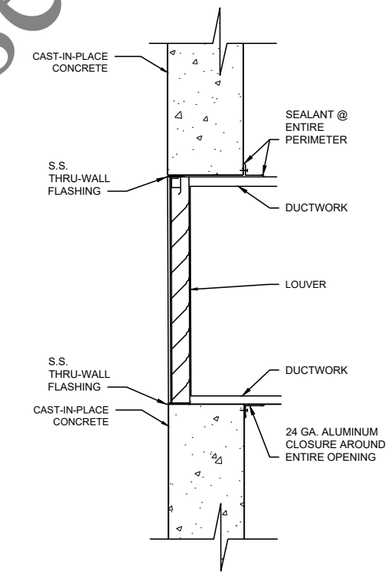
PIPE AND EQUIPMENT SUPPORT ROOF CURB DETAIL A707

NTS



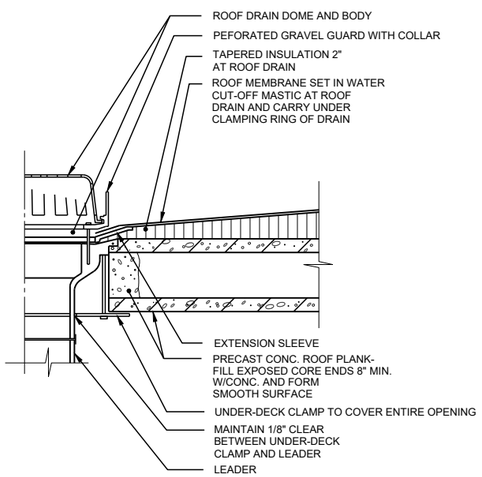
LOUVER DETAIL A741

NTS



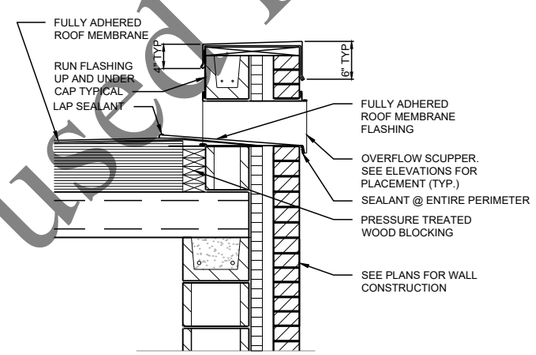
LOUVER DETAIL A742

NTS



ROOF DRAIN DETAIL A772

NTS



OVERFLOW SCUPPER DETAIL A785

NTS

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Four Rivers Sanitation Authority

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Approved By	SRW

FOUR RIVERS SANITATION AUTHORITY
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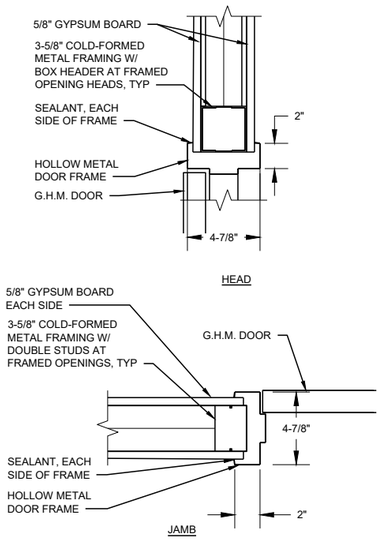
ARCHITECTURAL

DONOHUE 11/23/2021

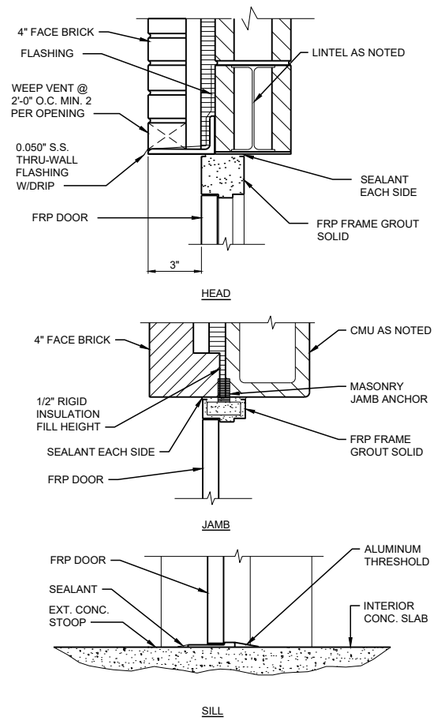
Sheet No. 147

Drawing No. **10-A-02**



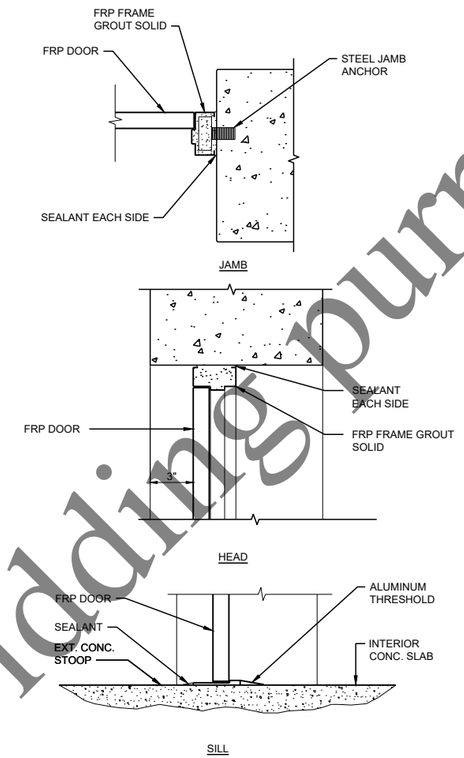
INTERIOR GALVANIZED HOLLOW METAL DOOR AND FRAME DETAILS **A805**

NTS



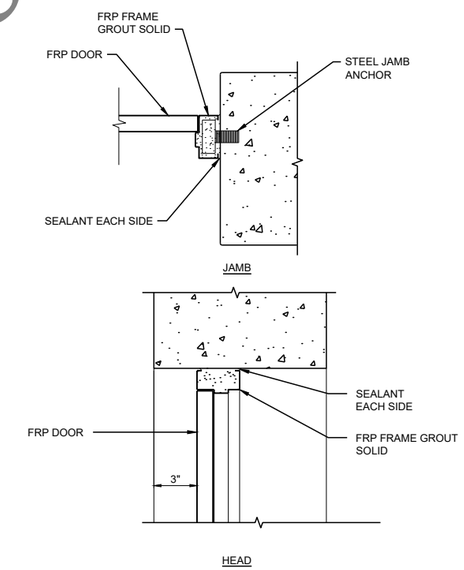
EXTERIOR FRP FRAME AND DOOR DETAIL **A825**

NTS



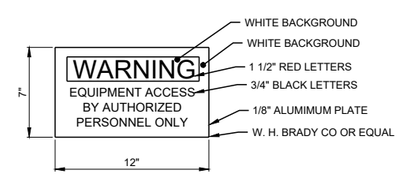
EXTERIOR FRP DOOR AND FRAME DETAIL **A850**

NTS



INTERIOR FRP DOOR AND FRAME DETAIL **A860**

NTS



WARNING SIGN DETAIL **A920**

NTS

Not to be used for bidding purposes

No.	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	SRW
				Drawn By	SRW
				Checked By	TJB
				Approved By	SRW

Four Rivers Sanitation Authority

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
ARCHITECTURAL

DONOHUE 11/23/2021

Sheet No. 148

Drawing No. **10-A-03**

file: P:\13852chi\Dwg\10AD1.dwg

GENERAL STRUCTURAL NOTES

GENERAL

1. THE GENERAL STRUCTURAL NOTES AND STANDARD STRUCTURAL DETAILS APPLY TO THE ENTIRE PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE.

DESIGN CRITERIA

1. DESIGN AND CONSTRUCT IN CONFORMANCE WITH THE INTERNATIONAL BUILDING CODE, 2015 EDITION.

2. SUPERIMPOSED DESIGN LOADS

A. FLOOR LIVE LOADS	100 PSF + EQUIP
B. ROOF LIVE LOAD	20 PSF
C. ROOF DEAD LOAD	10 PSF
D. MECHANICAL EQUIPMENT	VERIFY WITH MFR
E. STAIRS AND WALKWAYS	100 PSF OR 1000 CONC
F. SNOW LOAD:	
1. GROUND SNOW LOAD, Pg	30 PSF
2. FLAT ROOF SNOW LOAD, Pf	36 PSF
3. SNOW EXPOSURE FACTOR, Ce	1.0
4. SNOW LOAD IMPORTANCE FACTOR, I	1.1
5. THERMAL FACTOR, Ct	1.0
G. WIND LOAD:	
1. ULTIMATE DESIGN WIND SPEED, Vult	120 MPH
2. NOMINAL DESIGN WIND SPEED, Vasd	90 MPH
3. RISK CATEGORY	III
4. WIND EXPOSURE	C
5. INTERNAL PRESSURE COEFFICIENT, GCpi	+/- 0.18 PSI
6. COMPONENTS AND CLADDING WIND PRESSURES	+/- 30 PSF

3. SEISMIC DESIGN DATA:

A. RISK CATEGORY	III
B. IMPORTANCE FACTOR, I	1.25
C. MAPPED SPECTRAL RESPONSE ACCELERATIONS	
1. Ss	0.124g
2. S1	0.058g
D. SITE CLASS	D
E. SPECTRAL RESPONSE COEFFICIENTS	
1. Sds	0.132g
2. Sd1	0.092g
F. SEISMIC DESIGN CATEGORY	B
G. ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE PROCEDURE

FOUNDATIONS

1. GEOTECHNICAL INVESTIGATION BY GEOCON PROFESSIONAL SERVICES, LLC

NET ALLOWABLE SOIL BEARING CAPACITIES: 2000 PSF

2. PLACE FOOTINGS ON NATURAL UNDISTURBED EARTH OR STRUCTURAL FILL
3. PLACE FILL AGAINST FOUNDATION WALLS ENCLOSING INTERIOR SPACES AFTER CONSTRUCTION SUCH AS CROSS WALLS, BEAMS OR SLABS ARE IN PLACE TO BRACE WALL AND SUCH CONSTRUCTION HAS REACHED ITS DESIGN STRENGTH.
4. TO MINIMIZE LATERAL FORCES AGAINST THE STRUCTURE DUE TO WEDGING ACTION OF THE SOIL, BEGIN COMPACTION OF EACH LAYER AT THE STRUCTURE WALL.

REINFORCEMENT

1. REINFORCEMENT STEEL
   A. DEFORMED BARS: ASTM A615 - GRADE 60
2. B. WELDED WIRE REINFORCEMEN (WWR): ASTM A1064
3. UNLESS NOTED OTHERWISE PROVIDE CLEAR COVER FOR REINFORCEMENT AS FOLLOWS:

A. CAST AGAINST:	
1. EARTH:	3 INCHES
2. MUD SLAB:	2 INCHES
B. EXPOSED TO EARTH, WEATHER, OR WATER	
1. SLABS	
A. #5 BARS OR SMALLER:	1 1/2 INCHES
B. #6 THROUGH #11 BARS:	2 INCHES
2. WALLS, BEAMS, AND COLUMNS:	2 INCHES
C. NOT EXPOSED TO EARTH, WEATHER, OR WATER	
1. SLABS AND WALLS	
A. #3 THROUGH #7 BARS:	1 INCH
B. #8 THROUGH #11 BARS:	1 1/2 INCHES
2. BEAMS AND COLUMNS:	1 1/2 INCHES

4. PLACE DOWELS BEFORE PLACING CONCRETE.
5. DO NOT FIELD WELD OR FIELD BEND REINFORCING BARS.

CONCRETE

1. DESIGN STRENGTH

A. INTERIOR EQUIPMENT BASES, FENCE POST PIERS, CONCRETE FILLETS IN TANKS, AND WHERE SPECIFICALLY NOTED CLASS B:	F'C = 3000 PSI
B. ALL LOCATIONS, EXCEPT WHERE CLASS B SPECIFIED CLASS A:	F'C = 4500 PSI
C. CONCRETE TOPPING:	F'C = 4000 PSI
D. STRUCTURAL PRECAST CONCRETE	F'C = 4000 PSI

2. PROVIDE WATERSTOP IN CONSTRUCTION JOINTS IN
   A. WALLS AND SLABS SEPARATING DRY INTERIOR FROM EARTH OR LIQUID.
   B. EXTERIOR WALLS AND SLABS OF LIQUID HOLDING TANKS
   C. SLABS ABOVE OCCUPIED AREAS.
   D. OTHER LOCATIONS SHOWN ON DRAWINGS.
3. UNLESS NOTED OTHERWISE, CONSTRUCTION JOINTS SHOWN ARE OPTIONAL CONSTRUCTION JOINTS NOT SHOWN SHALL BE APPROVED BY ENGINEER.
4. LIMIT SIZE OF CONCRETE POURS. MAXIMUM LENGTH OF WALL AND SLAB POURS SHALL NOT EXCEED 60 FT.
5. BEFORE CONCRETE IS PLACED, CONSTRUCTION JOINTS SHALL BE CLEANED, LAITANCE REMOVED, AND SURFACE WETTED. REMOVE STANDING WATER.
6. LOCATE CONSTRUCTION JOINTS IN FLOORS WITHIN MIDDLE THIRD OF SPAN. CONSTRUCTION JOINTS IN FLOORS SUPPORTED BY WALLS MAY BE LOCATED AT CENTER OF WALL.
7. CONSTRUCTION JOINTS IN BEAMS SHALL BE OFFSET MIN DISTANCE OF 2 TIMES WIDTH OF INTERSECTING BEAM.
8. LOCATE VERTICAL JOINTS IN WALL A MIN OF ONE-HALF WALL HEIGHT FROM CORNERS OR OTHER INTERSECTING WALLS. LOCATE HORIZONTAL JOINTS IN WALLS WITHIN THE MIDDLE THIRD OF WALL HEIGHT.
9. BEAMS SHALL BE PLACED MONOLITHICALLY AS PART OF SLAB SYSTEM, UNLESS DETAILED OTHERWISE.
10. CONSTRUCTION JOINTS SHALL HAVE ROUGHENED SURFACES. SURFACE SHALL HAVE AMPLITUDE OF 1/4 IN. MIN.
11. PROVIDE 3/4 IN. CHAMFER ON EXTERNAL CORNERS OF EXPOSED EDGES OF CONSTRUCTION JOINTS.
12. VERIFY EQUIPMENT PAD AND CURB LOCATIONS, DIMENSIONS, AND ELEVATIONS WITH EQUIPMENT MANUFACTURERS.

MASONRY

1. MASONRY OPENINGS LESS THAN 4 FT IN WIDTH THAT DO NOT HAVE A LINTEL SCHEDULED SHALL HAVE AN 8 IN. HIGH REINFORCED MASONRY LINTEL WITH 2-#5 BARS OR STEEL LINTEL L-1.
2. UNLESS NOTED OTHERWISE, PROVIDE A CONTINUOUS BOND BEAM REINFORCED WITH 2-#5 AROUND THE TOP OF BUILDINGS.
3. UNLESS NOTED OTHERWISE, PROVIDE HORIZONTAL MASONRY REINFORCING IN WALLS AT 16 IN. ON CENTER.
4. FILL JAMB CORES OR OPENINGS OVER 3 FT IN WIDTH WITH MASONRY GROUT FROM BOTTOM OF LINTEL TO BOTTOM OF WALL. REINFORCE CORES WHERE NOTED.
5. BRACE MASONRY WALLS UNTIL ROOF OR FLOOR SYSTEM IS IN PLACE.

METALS

1. STEEL	
A. W SHAPES	ASTM A992
B. S, C, AND MC SHAPES	ASTM A36
C. SQUARE OR RECTANGULAR TUBE:	ASTM A500, GRADE B, 46 KSI
D. PIPE:	ASTM A53
E. PLATES AND BARS	ASTM A36
F. BOLTED CONNECTIONS FOR STEEL MEMBERS:	ASTM F3125, GRADE A325
G. BOLTED CONNECTIONS FOR ALUMINUM MEMBERS:	STAINLESS STEEL
H. STAINLESS STEEL	
1. EXTERIOR AND SUBMERGED USES	AISI, TYPE 316
2. INTERIOR AND ARCHITECTURAL USES	AISI, TYPE 304
3. CAST-IN-PLACE ANCHOR BOTLS	AISI, TYPE 316
2. ALUMINUM	
A. SHAPES AND PLATES:	ALLOY 6061-T6 OR 6063-T6
3. ANCHOR BOLTS, 1/2" MINIMUM DIA:	
A. DRY LOCATIONS	ASTM A307 GALVANIZED
B. ALL OTHER LOCATIONS:	STAINLESS STEEL

4. WELD STRUCTURAL STEEL WITH E70XX ELECTRODES IN ACCORDANCE WITH AWS REQUIREMENTS.
5. WELD ALUMINUM IN ACCORDANCE WITH AWS AND AA REQUIREMENTS.
6. COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE IN ACCORDANCE WITH AA REQUIREMENTS. UNDER NO CIRCUMSTANCES SHALL ALUMINUM CONTACT DISSIMILAR METALS.

MISCELLANEOUS

1. VERIFY PERTINENT EXISTING CONDITIONS AND DIMENSIONS BEFORE STARTING CONSTRUCTION AND/OR FABRICATION.
2. DO NOT FIELD CUT PRESTRESSING STRANDS IN PRECAST PRESTRESSED CONCRETE MEMBERS WITHOUT WRITTEN APPROVAL OF FABRICATOR AND ENGINEER.
3. FOR ADDITIONAL OPENINGS, ANCHORS, AND EMBEDDED ITEMS SEE ARCHITECTURAL, PROCESS, PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS.

REMOVALS

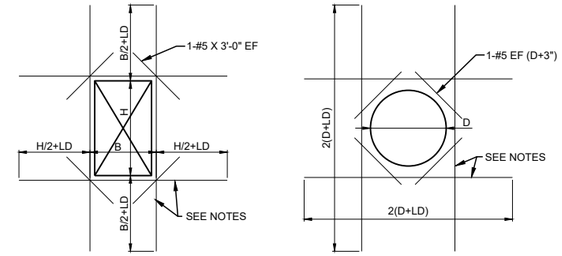
1. REMOVE ALL CONCRETE ANCHORS, ANCHOR BOLTS AND OTHER EMBEDMENTS A MINIMUM OF 1" BEYOND FINISHED SURFACE AND PATCH SURFACE WITH PATCHING MORTAR TO MATCH EXISTING.
2. REMOVE EXISTING CONCRETE PADS OF ANY EQUIPMENT BEING REMOVED. REMOVE CONCRETE AND REINFORCEMENT A MINIMUM OF 1" BEYOND FINISHED SURFACE AT ANY LOCATION WHERE NEW CONCRETE PAD WILL NOT COVER ROUGH SURFACE OF REMOVAL. PATCH BACK TO FINISHED SURFACE WITH PATCHING MORTAR.
3. SAWCUT AND REMOVE CONCRETE TO LIMITS NOTED. REMOVE CONCRETE AND REINFORCEMENT A MINIMUM 1" BEYOND FINISHED SURFACE AT ANY LOCATION WHERE NEW CONCRETE WILL NOT COVER ROUGH SURFACE OF REMOVAL. PATCH BACK TO FINISHED SURFACE WITH PATCHING MORTAR.

MINIMUM REINFORCEMENT BAR SPLICE AND ANCHORAGE LENGTH (INCHES) S010

BAR SIZE	LAPPED SPLICE LENGTH		EMBEDMENT LENGTH		COMPRESSION LAP LENGTH
	TOP BARS	OTHERS	TOP BARS	OTHERS	
3	24	19	19	15	12
4	32	25	25	19	15
5	40	31	31	24	19
6	48	37	37	29	23
7	70	54	54	42	26
8	80	62	62	48	30
9	91	70	70	54	34
10	102	78	78	61	38
11	113	87	87	67	42

NOTES:

1. TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
2. FOR BARS SPACED LESS THAN 6 BAR DIAMETER OC INCREASE LENGTH BY 25%.
3. WHEN LAPPING TWO DIFFERENT SIZE BARS USE THE LAP LENGTH OF THE SMALLER BAR UNLESS NOTED OTHERWISE.
4. EMBEDMENT LENGTH IS MINIMUM LENGTH OF EMBEDMENT FOR STRAIGHT DOWELS WHERE END HOOK IS NOT SHOWN, UNLESS OTHERWISE NOTED.
5. COMPRESSION LAP LENGTH FOR VERTICAL COLUMN BARS ONLY.
6. HOOKS SHALL BE ACI STANDARD UNLESS OTHERWISE NOTED.
7. FOR EPOXY COATED REINFORCEMENT, INCREASE LENGTH BY 20% FOR TOP BARS AND 50% FOR OTHERS.



RECTANGULAR OPENING CIRCULAR OPENING

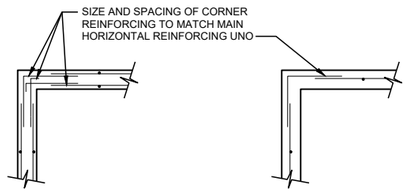
NOTES:

1. THESE DETAILS APPLY TO ALL OPENINGS IN CONCRETE WALLS AND SLABS WHEN THE LARGEST OPENING DIMENSION IS GREATER THAN TWO TIMES SECTION THICKNESS OR GREATER THAN REINFORCING SPACING IN THE SECTION, UNLESS OTHERWISE INDICATED IN THE DRAWINGS.
2. THE AREA OF ADDITIONAL REINFORCING REQUIRED IN EACH FACE ON EACH SIDE OF AN OPENING SHALL EQUAL OR EXCEED ONE-HALF OF THE AREA OF THE INTERCEPTED BARS IN EACH FACE, IN EACH DIRECTION, RESPECTIVELY WITH A MINIMUM OF 1-#5 BAR EACH FACE.
3. PLACE THE ADDED BARS IN THE SAME LAYERS AS THE WALL OR SLAB REINFORCING.
4. LD = EMBEDMENT LENGTH. SEE S010

ADDITIONAL REINFORCEMENT AT OPENINGS IN WALLS AND SLABS DETAIL S020

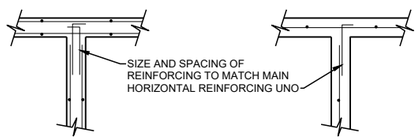
NTS

Not to be used for bidding purposes



90°CORNER - 2 LAYERS

90°CORNER - 1 LAYER

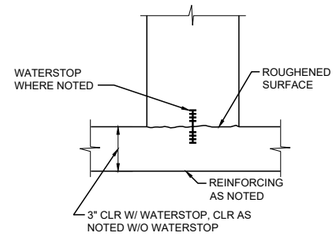


T-INTERSECTION - 2 LAYERS

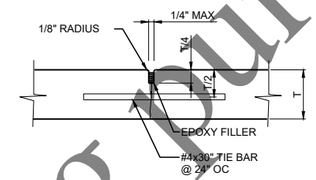
T-INTERSECTION - 1 LAYER

HORIZONTAL REINFORCEMENT DETAIL S030

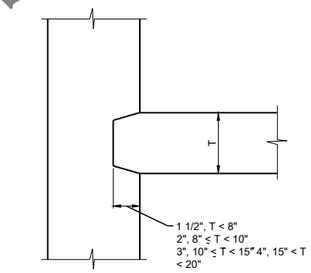
NTS



BASE OF WALL

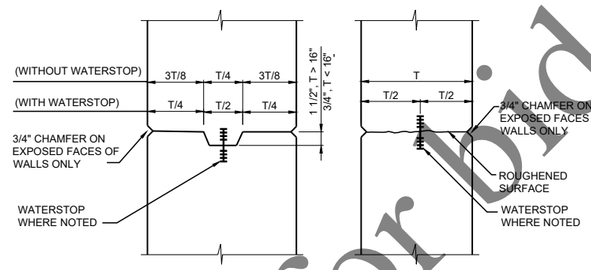


SLAB ON GRADE



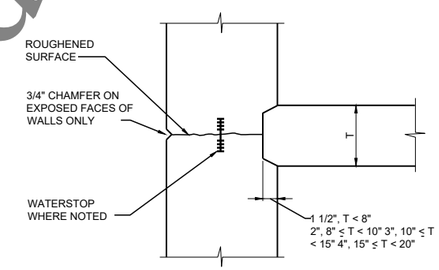
NOTES:
1. IF KEY DEPTH EXCEEDS COVER ON REINFORCING, PROVIDE FULL DEPTH KEY BETWEEN BARS

SLAB/WALL JOINT

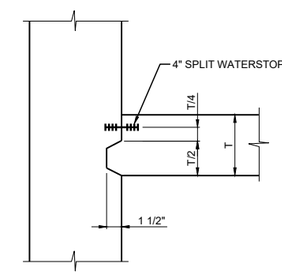


WITH KEYWAY WITHOUT KEYWAY

JOINT IN WALLS OR SLABS



SLAB / WALL

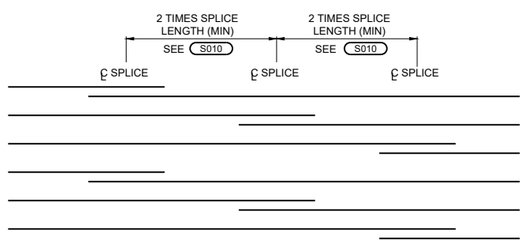


NOTE:
1. USE WHERE 4" SPLIT WATERSTOP NOTED.

SLAB/WALL JOINT

CONSTRUCTION JOINT DETAILS S300

NTS



NOTES:
1. TYPICAL FOR CIRCULAR REINFORCING IN CIRCULAR TANK WALLS AND SLABS.

RING BAR SPLICE STAGGER DETAIL S035

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
STRUCTURAL

DONOHUE 11/23/2021

Sheet No. 150

Drawing No. 10-S-02

file: P:\13852chi\Dwg\10SD1.dwg

CONCRETE COLUMN SCHEDULE S310

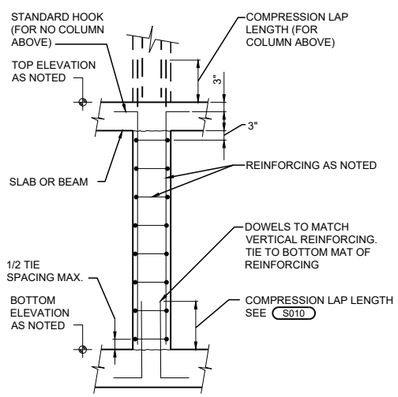
COLUMN MARK	TYPE	SIZE (INCHES)	TOP ELEV.	BOTTOM ELEV.	VERTICAL BARS	TIES	REMARKS
5-PRIMARY FILTRATION FACILITY							
C1	C	18X18	711.75	693.17	8-#6	#4@8"	

NOTES:
1. FOR TYPICAL COLUMN REINFORCEMENT SEE S311

CONCRETE BEAM SCHEDULE S315

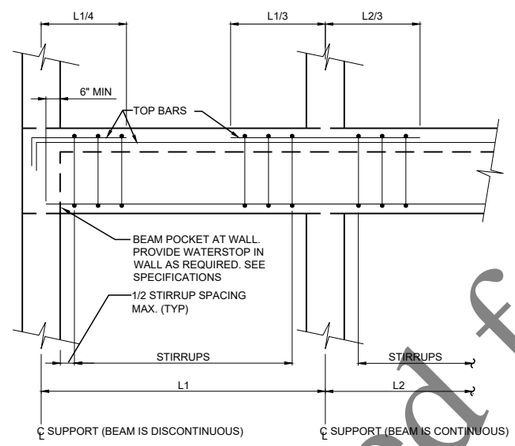
MARK	SIZE W x D (INCHES)	REINFORCEMENT A	B	C	D	E	F	G	STIRRUPS	SKETCH LEFT	SKETCH RIGHT	REMARKS
5-PRIMARY FILTRATION FACILITY												
B1	18X24	2-#9	5-#9						#4@10"			
B2	18X24	3-#7	3-#7						#4@10"			
B3	18X24	2-#7	3-#7						#4@10"			
B4	16X24	2-#9	3-#9						#4@10"			
B5	16X30	2-#9	4-#9						#4@10"			
B6	18X12	2-#6	2-#6						#4@8"			
B7	18X16	3-#6	3-#6						#4@8"			

NOTES:
1. LEFT SUPPORT IS DESIGNATED AS THE SUPPORT CLOSEST THE LEFT SIDE OR BOTTOM OF DRAWING ON WHICH FRAMING PLAN IS DRAWN UNLESS NOTED OTHERWISE.
2. FOR TYPICAL BEAM REINFORCEMENT SEE S316 & S317
3. THE BEAM DEPTH NOTED IS MINIMUM REQUIRED. CONTRACTOR SHALL INCREASE DEPTH AS REQUIRED TO PROVIDE FOR FLOOR AND / OR ROOF SLOPES.



COLUMN REINFORCING DETAILS S311

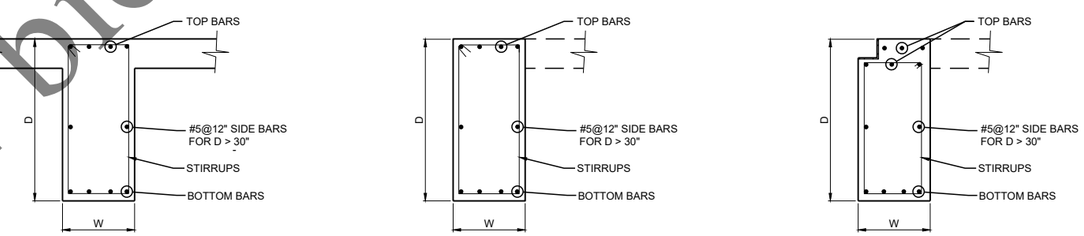
NTS



NOTES:
1. WALL REINFORCING SHALL BE CONTINUOUS THRU BEAM POCKETS. TOP BARS MAY BE SPLICED AT MID SPAN. BOTTOM BARS MAY BE SPLICED AT SUPPORT.

BEAM REINFORCING DETAIL S316

NTS



TYPICAL BEAM SECTIONS S317

NTS

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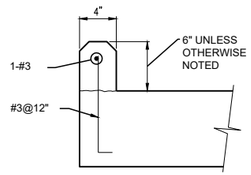
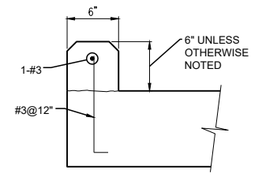
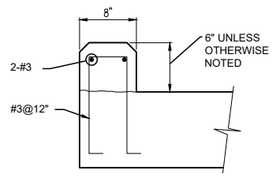


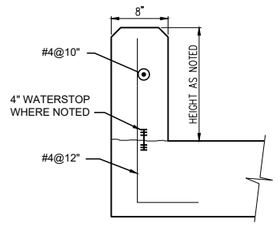
4" CURB



6" CURB



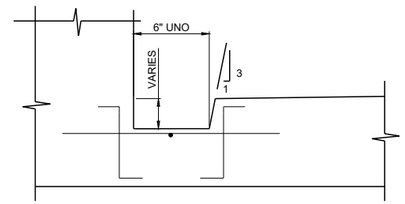
8" CURB
HEIGHT 16" OR LESS



8" CURB
HEIGHT OVER 16"

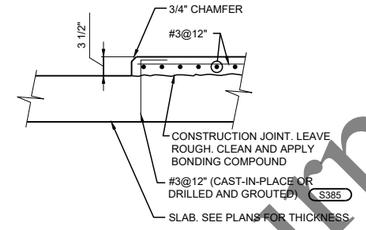
NOTE:
1. EXTEND DOWEL BAR A MINIMUM OF 6" INTO SLAB. FOR SLABS LESS THAN 8" THICK, PROVIDE 90 HOOK END.

CURB DETAILS S325
NTS



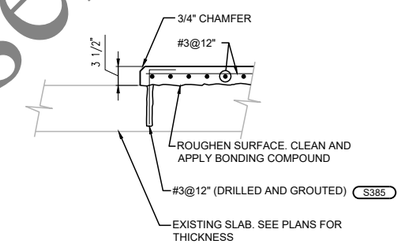
NOTES:
1. REINFORCEMENT SHALL MATCH THE MAT FOUNDATION REINFORCEMENT.
2. PROVIDE A MINIMUM DEPTH OF 1/2" AT HIGH POINTS. SLOPE TOWARD DISCHARGE AT 1/8" PER FOOT UNLESS OTHERWISE NOTED.

SUMP DETAIL S335
NTS



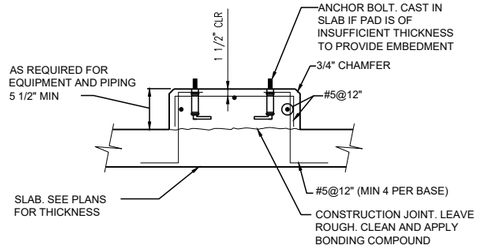
NOTES:
1. FOR EQUIPMENT PAD WITH ANCHOR BOLTS, SEE S342

EQUIPMENT PAD DETAIL S340
NTS

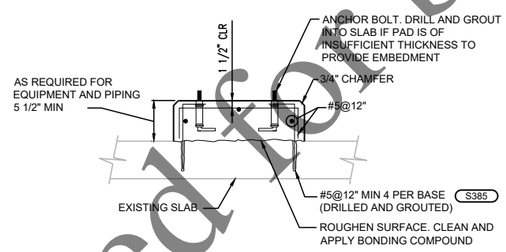


NOTES:
1. FOR EQUIPMENT PAD WITH ANCHOR BOLTS, SEE S343

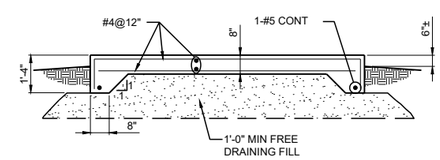
EQUIPMENT PAD DETAIL S341
NTS



EQUIPMENT PAD DETAIL S342
NTS



EQUIPMENT PAD DETAIL S343
NTS



NOTES :
1. AT CONTRACTORS OPTION, PAD CAN BE PLACED FULL THICKNESS THROUGHOUT

EQUIPMENT PAD DETAIL S346
NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
STRUCTURAL

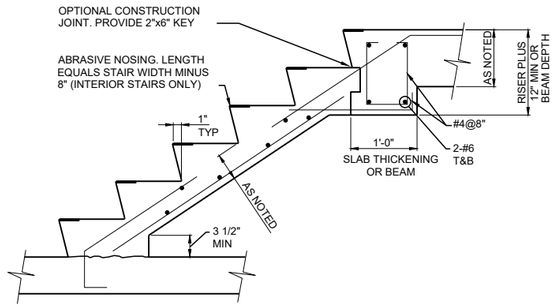
DONOHUE

11/23/2021

Sheet No. 152

Drawing No. 10-S-04

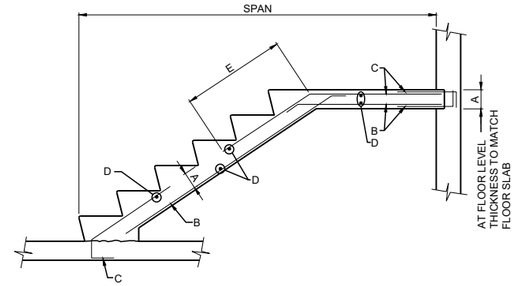
file: P:\13852chi\Dwg\10SD1.dwg



NOTES:
1. HANDRAIL NOT SHOWN.
2. SEE S352 FOR STAIR REINFORCING.
3. SEE DRAWINGS FOR TREAD LENGTH AND RISER HEIGHT.
4. STAIR WIDTH 3'-8" UNLESS OTHERWISE NOTED.
5. SLAB THICKENING OR BEAM REQUIRED AT CONSTRUCTION JOINTS IN STAIRS.
6. REINFORCING SHOWN FOR SLAB THICKENING. SEE BEAM SCHEDULE FOR BEAM SIZE AND REINFORCING.
7. FOR EXERIOR STAIRS SLOPE TOP OF TREAD 1/4".
8. PROVIDE BROOM FINISH ON TREADS.

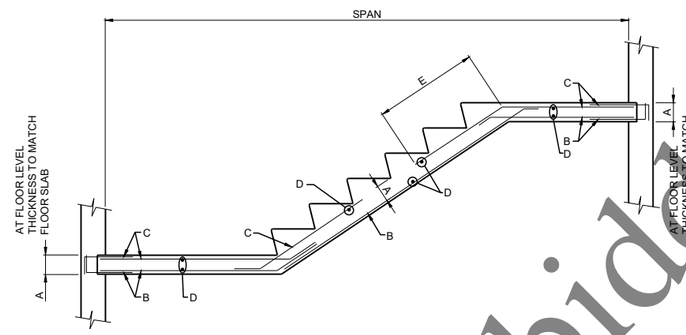
CONCRETE STAIR DETAIL S351

NTS

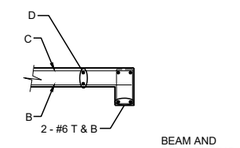


CONCRETE WALL

SPAN	A	B	C	D	E
SPAN < 12'-0"	12"	#5@9"	#5@9"	#5@9"	2'-7"
12'-0" < SPAN < 16'-0"	12"	#5@9"	#5@9"	#5@9"	2'-7"
16'-0" < SPAN < 20'-0"	12"	#5@9"	#5@9"	#5@9"	2'-7"



CONCRETE WALL



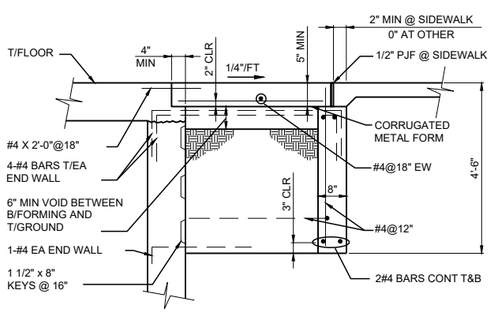
BEAM AND REINFORCING AS NOTED

CONCRETE BEAM

NOTE:
1. FOR ADDITIONAL INFORMATION, SEE S351

CONCRETE STAIR DETAIL S352

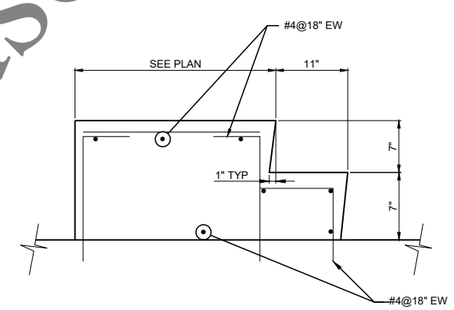
NTS



NOTES:
1. WHERE STOOP LENGTH NOTED IS GREATER THAN 6'-0", PROVIDE ADDITIONAL END WALLS AT 6'-0" OC.

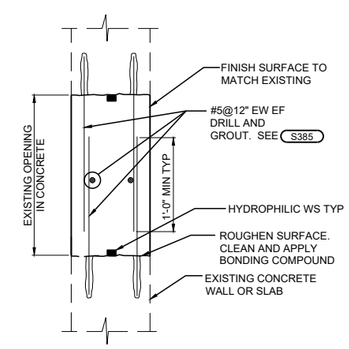
DOOR STOOP DETAIL S360

NTS



CONCRETE STOOP DETAIL S361

NTS



NOTES:
1. USE WITH DRY FACES BOTH SIDES OR WHERE NOTED.
2. REINFORCEMENT NOT REQUIRED FOR OPENINGS ≤ 16".

CONCRETE OPENING PATCHING DETAIL S373

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
STRUCTURAL

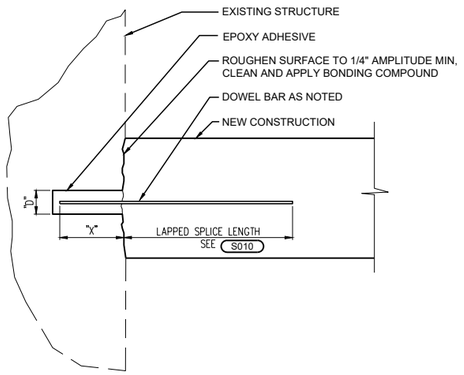
DONOHUE

11/23/2021

Sheet No. 153

Drawing No. 10-S-05

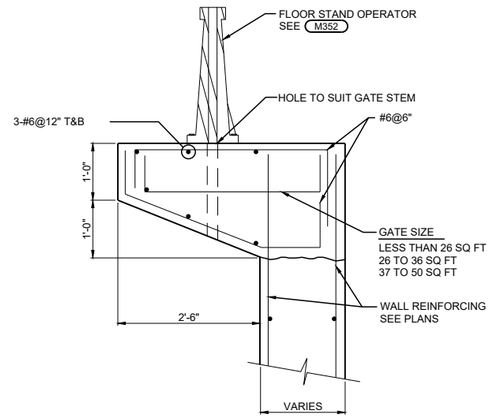
file: P:\13852chi\Dwg\10SD1.dwg



NOTES:
1. EMBEDMENT "X"=16 BAR DIAMETERS MIN.
2. HOLE DIAMETER "D"=2 BAR DIAMETERS MAX.

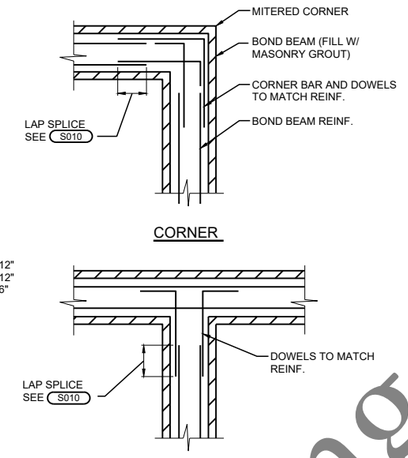
DRILLED IN DOWEL DETAIL S385

NTS



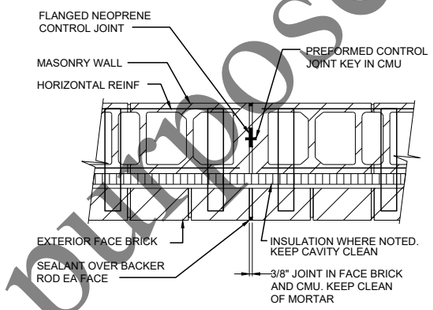
SLUICE GATE HAUNCH DETAIL S390

NTS



BOND BEAM REINFORCEMENT DETAIL S400

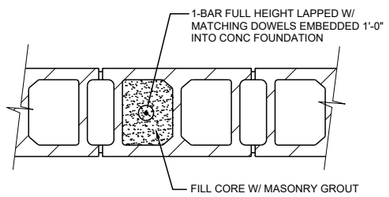
NTS



NOTES:
1. DISCONTINUE HORIZONTAL REINFORCING AT CONTROL JOINT.

BRICK AND CMU CONTROL JOINT DETAIL S431

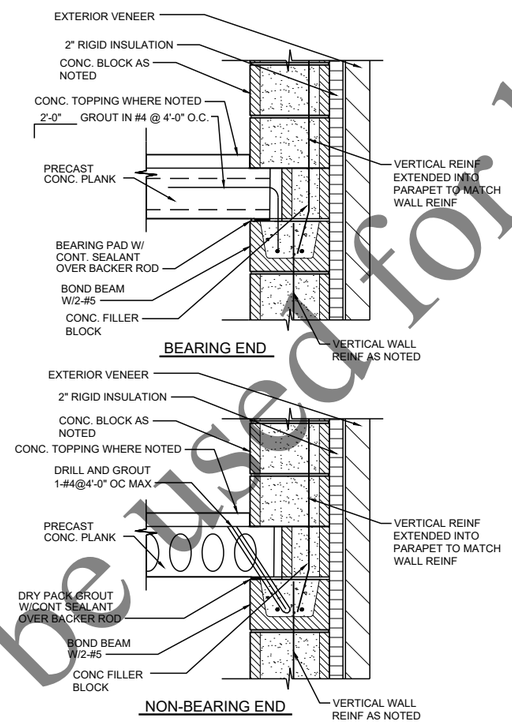
NTS



NOTES:
1. REINFORCING SIZE AND SPACING AS NOTED.
2. TYPICAL WHERE NOTED ON PLANS AS THUS ●

REINFORCED MASONRY DETAIL S451

NTS



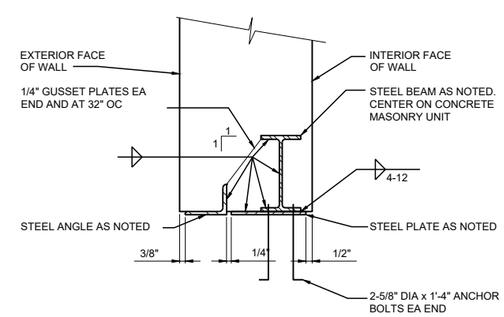
CONCRETE PLANK AT EXTERIOR WALL S461

NTS

LINTEL SCHEDULE S510

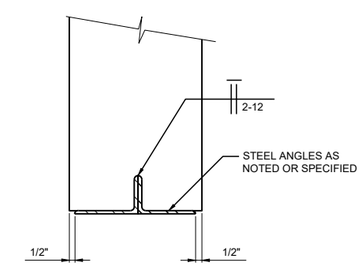
MARK	DESCRIPTION	TYPE	REMARKS
L-1	W8x28 W/ 5/16" PLATE & L6x4x5/16 LLH		8" BEARING EACH END. SEE S512
L-2	2L6x4x5/16 LLV W/ 5/16" PLATE		8" BEARING EACH END. SEE S512

NOTES:
1. MASONRY OPENINGS 4'-0" AND LESS IN WIDTH THAT DO NOT HAVE A LINTEL SCHEDULED SHALL HAVE L-1.
2. PROVIDE A MINIMUM OF 8" BEARING AT EACH END FOR STEEL BEAM LINTELS AND BOND BEAM LINTELS AND 6" BEARING AT EACH END FOR ANGLE LINTELS UNLESS NOTED OTHERWISE.



STEEL LINTEL DETAIL S512

NTS



STEEL LINTEL DETAIL S517

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	CEE

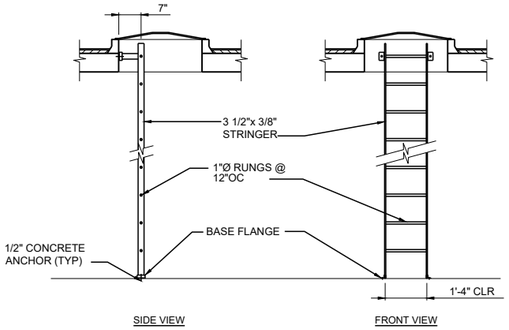
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
STRUCTURAL

DONOHUE 11/23/2021

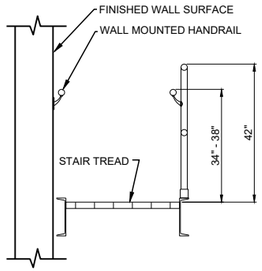
Sheet No. 154
Drawing No. 10-S-06

file: P:\13852chi\Dwg\10SD1.dwg

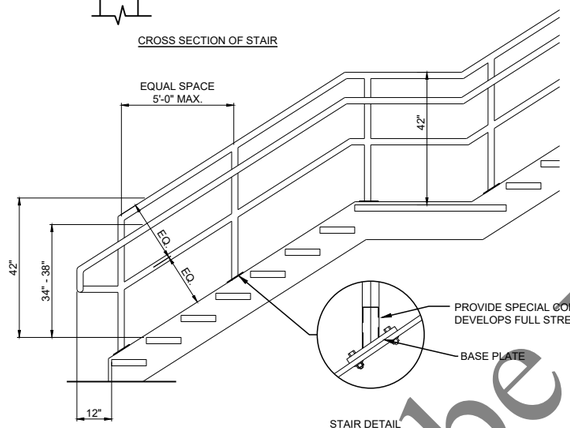


LADDER DETAIL **S526**

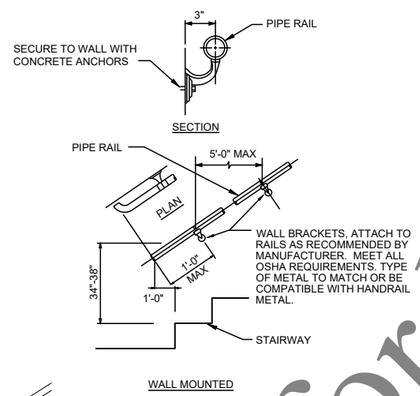
NTS



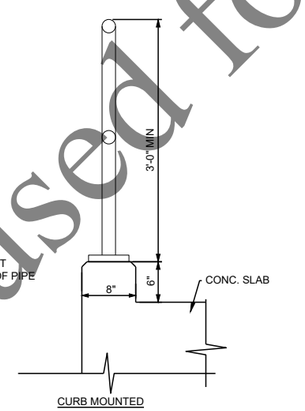
CROSS SECTION OF STAIR



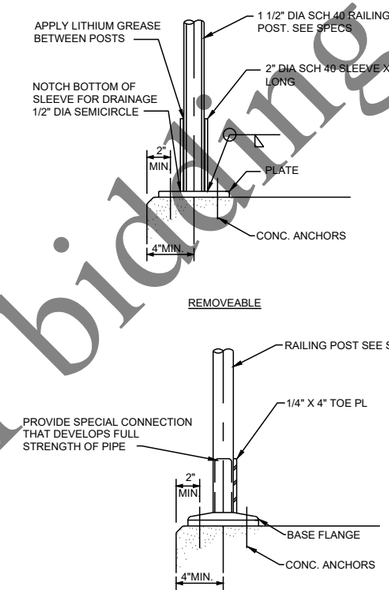
STAIR DETAIL

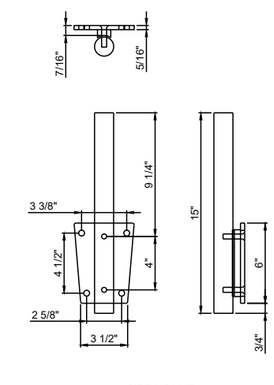


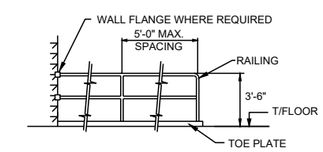
WALL MOUNTED



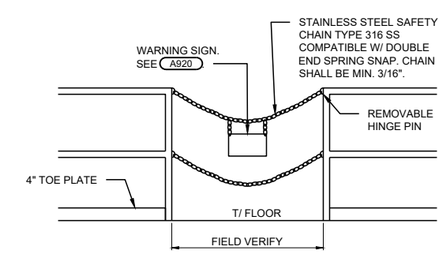
CURB MOUNTED







HORIZONTAL RAILING ELEVATION



RAILING CHAIN GATE

RAILING DETAIL **S531**

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

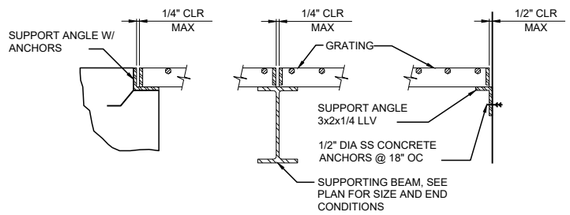
STANDARD DETAIL
STRUCTURAL

DONOHUE 11/23/2021

Sheet No. 155

Drawing No. **10-S-07**

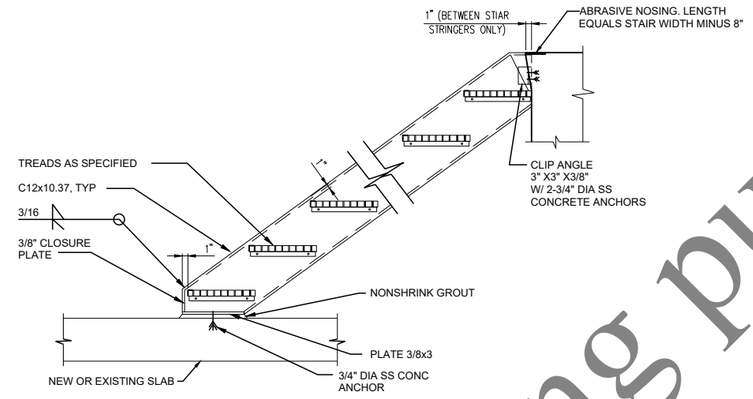
file: P:\13852chi\Dwg\10SD1.dwg



NOTES:
1. SUPPORT MATERIAL TO MATCH GRATING MATERIAL UNLESS OTHERWISE NOTED.
2. PROVIDE GRATING SUPPORTS ALL AROUND OPENING UNLESS OTHERWISE NOTED.
3. GRATING MAY BE CONTINUOUS OVER INTERIOR SUPPORT UNLESS OTHERWISE NOTED.

GRATING SUPPORT DETAIL S540

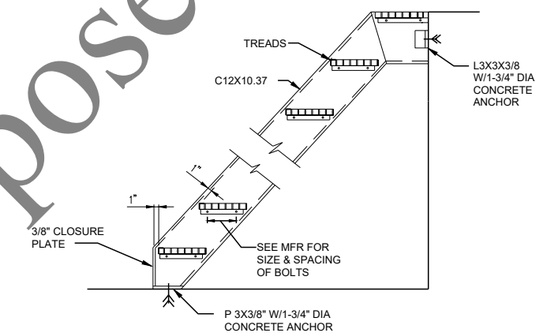
NTS



NOTES:
1. SPACE STRINGERS 3'-0" CLEAR MIN.
2. SEE DRAWINGS FOR SIZE AND NUMBER OF RISERS AND TREADS.
3. HANDRAIL NOT SHOWN.
4. STAIRS TO BE CONSTRUCTED OF ALUMINUM MEMBERS AND ALUMINUM GRATING.

ALUMINUM STAIR DETAIL S581

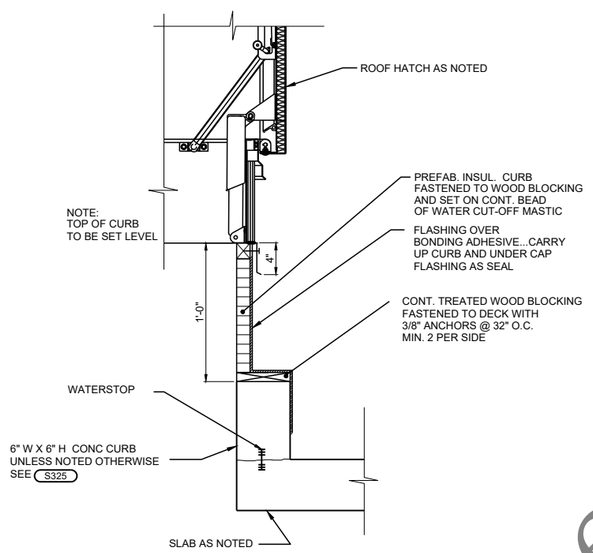
NTS



NOTES:
1. SPACE STRINGERS 3'-0" CLEAR MIN.
2. SEE DRAWINGS FOR SIZE AND NUMBER OF RISERS AND TREADS.
3. HANDRAIL NOT SHOWN.

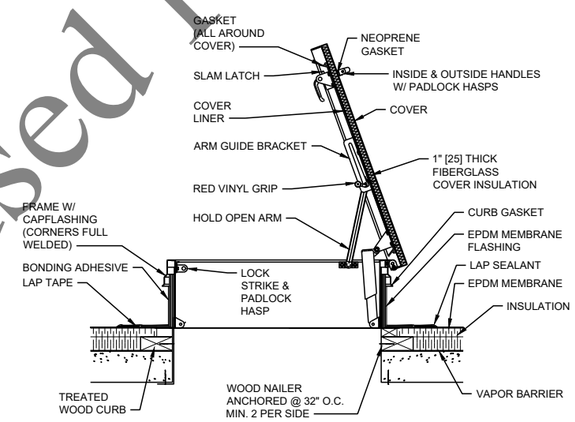
ALUMINUM SHIPS LADDER DETAIL S586

NTS



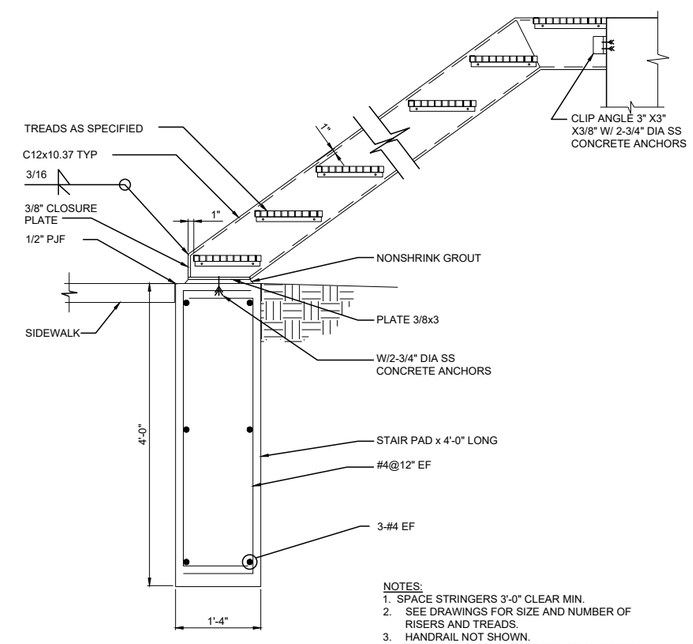
ROOF HATCH ON CURB S560

NTS



ROOF ACCESS HATCH DETAIL S599

NTS

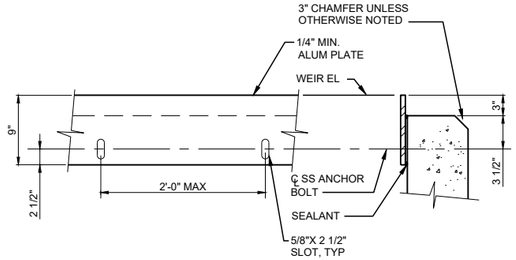


NOTES:
1. SPACE STRINGERS 3'-0" CLEAR MIN.
2. SEE DRAWINGS FOR SIZE AND NUMBER OF RISERS AND TREADS.
3. HANDRAIL NOT SHOWN.
4. STAIRS TO BE CONSTRUCTED OF ALUMINUM MEMBERS AND ALUMINUM GRATING.

ALUMINUM STAIR DETAIL S583

NTS

Not to be used for bidding purposes

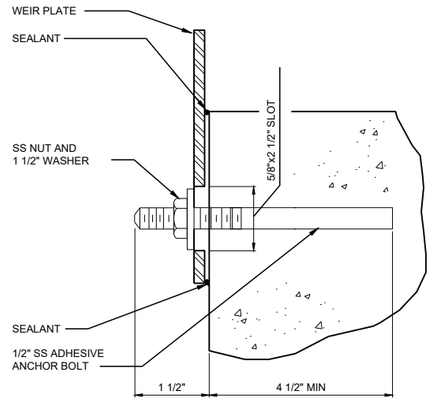


ELEVATION SECTION

STRAIGHT EDGE WEIR

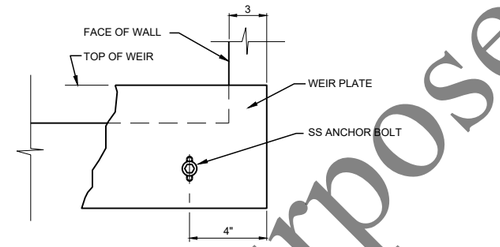
METAL WEIR DETAILS S621

NTS



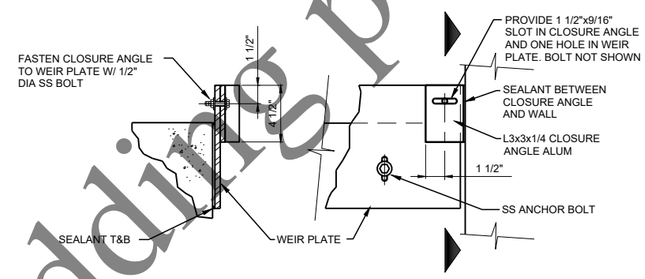
ANCHOR BOLT FOR METAL WEIR PLATES S621

NTS



ELEVATION

TYPE-1 CLOSURE

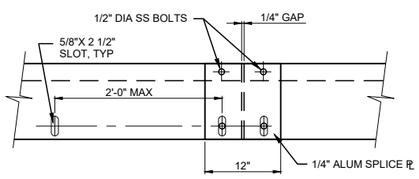


SECTION ELEVATION

TYPE-2 CLOSURE

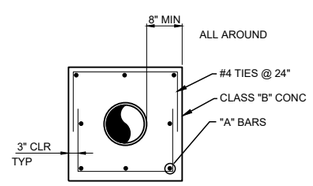
METAL WEIR CLOSURE DETAIL S621

NTS



METAL WEIR SPLICE PLATE DETAIL S621

NTS

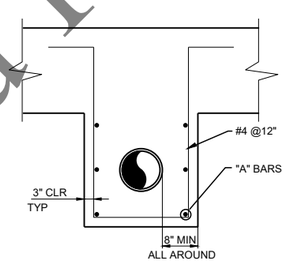


PIPE SIZE	"A" BARS
4" AND SMALLER PIPE	4-#4
5" TO 12" PIPE	8-#4
14" TO 36" PIPE	8-#5
42" AND LARGER PIPE	12-#5

NOTE:
EXTEND HORIZONTAL REINF. A MINIMUM OF 12" INTO STRUCTURE.

PIPE ENCASEMENT DETAIL S900

NTS



PIPE SIZE	"A" BARS
4" AND SMALLER PIPE	4-#4
5" TO 12" PIPE	6-#4
14" AND LARGER PIPE	6-#5

PIPE ENCASEMENT DETAIL S903

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	CEE
Drawn By	CEE
Checked By	TJB
Approved By	CEE

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

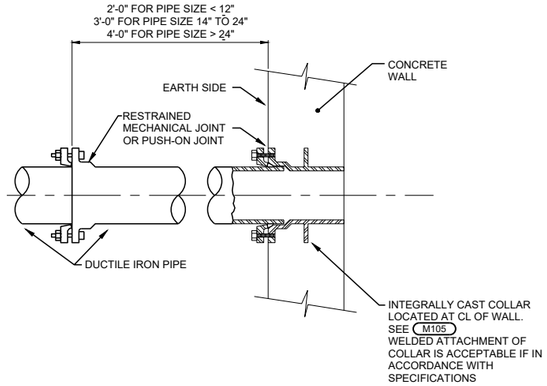
STANDARD DETAIL
STRUCTURAL

DONOHUE 11/23/2021

Sheet No. 157

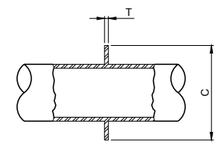
Drawing No. **10-S-09**

file: P:\13852chi\Dwg\10SD1.dwg



MJ / PLAIN END DUCTILE IRON WALL PIPE DETAIL M101

NTS

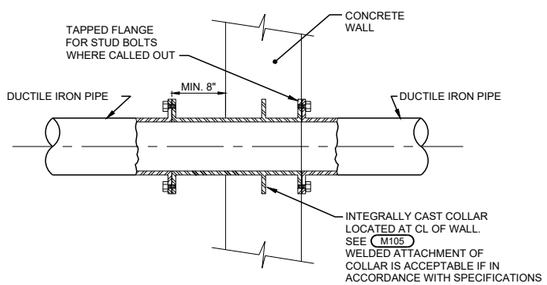


MINIMUM DIMENSIONS

NOMINAL PIPE DIA (INCHES)	T THICKNESS (INCHES)	C DIAMETER (INCHES)
4	0.50	8.00
6	0.50	10.00
8	0.50	12.50
10	0.50	14.50
12	0.50	16.50
14	0.75	19.50
16	0.75	21.75
18	0.75	23.75
20	0.75	25.75
24	0.75	30.25
30	1.00	36.50
36	1.00	43.00
42	1.25	49.50
48	1.25	56.50
54	1.50	63.00

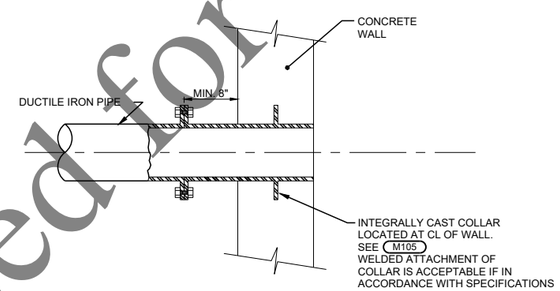
DUCTILE IRON WALL AND FLOOR PIPE COLLAR DIMENSIONS DETAIL M105

NTS



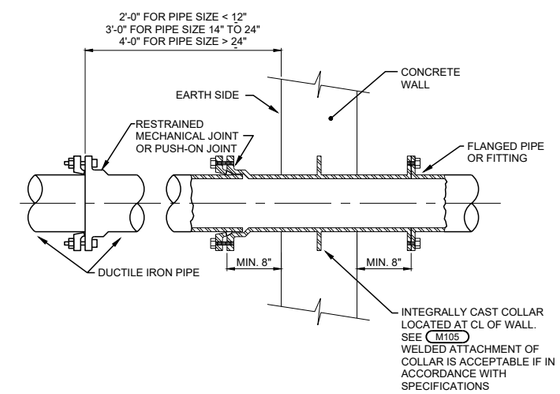
FLG / FLG DUCTILE IRON WALL PIPE DETAIL M107

NTS



FLG / PLAIN END DUCTILE IRON WALL PIPE DETAIL M108

NTS



MJ / FLG DUCTILE IRON WALL PIPE DETAIL M109

NTS

Not to be used for bidding purposes

file: P:\13852chi\Dwg\10MD1.dwg

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

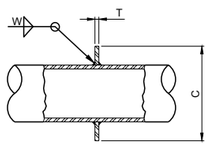
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
PROCESS MECHANICAL

DONOHUE 11/23/2021

Sheet No. 158

Drawing No. **10-M-01**

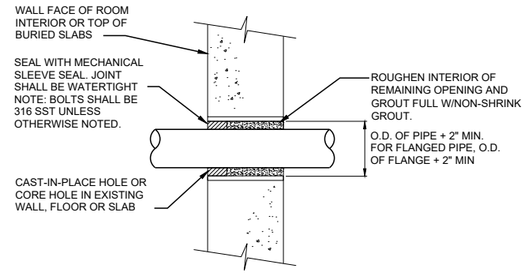


MINIMUM DIMENSIONS

NOMINAL PIPE DIA (INCHES)	T THICKNESS (INCHES)	C DIAMETER (INCHES)	W WELD SIZE (INCHES)
1	0.250	3.50	1/8
1 1/2	0.250	4.00	1/8
2	0.250	5.00	1/8
2 1/2	0.250	6.00	1/8
3	0.250	6.50	1/8
4	0.375	8.00	3/16
6	0.375	10.00	3/16
8	0.375	12.50	3/16
10	0.375	14.50	3/16
12	0.375	16.50	3/16
14	0.50	19.50	1/4
16	0.50	21.75	1/4
18	0.50	23.75	1/4
20	0.50	25.75	1/4
24	0.50	30.25	1/4
30	0.75	36.50	5/16
36	0.75	43.00	5/16
42	0.75	49.50	5/16
48	1.25	56.50	5/16
54	1.50	63.00	5/16

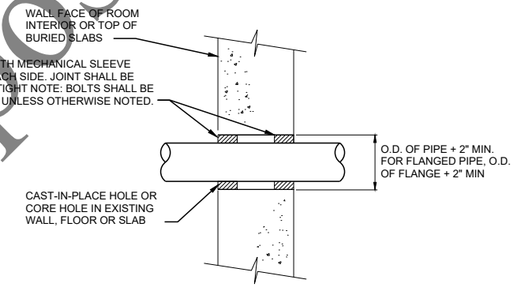
STEEL WALL AND FLOOR PIPE COLLAR DIMENSION DETAIL M115

NTS



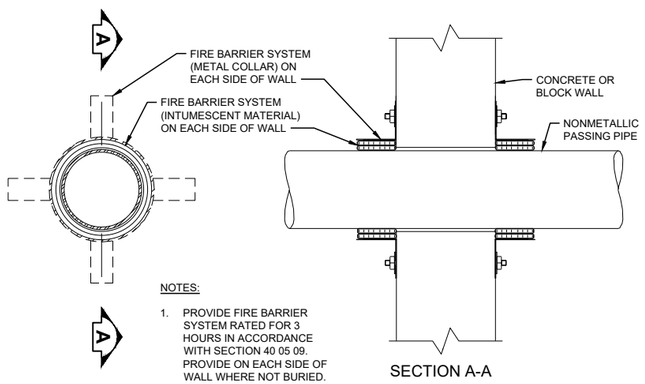
PIPE PENETRATION DETAIL M126

NTS



PIPE PENETRATION DETAIL M127

NTS

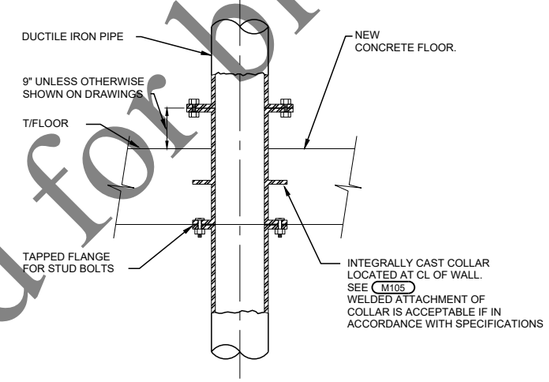


NOTES:

1. PROVIDE FIRE BARRIER SYSTEM RATED FOR 3 HOURS IN ACCORDANCE WITH SECTION 40 05 09. PROVIDE ON EACH SIDE OF WALL WHERE NOT BURIED.

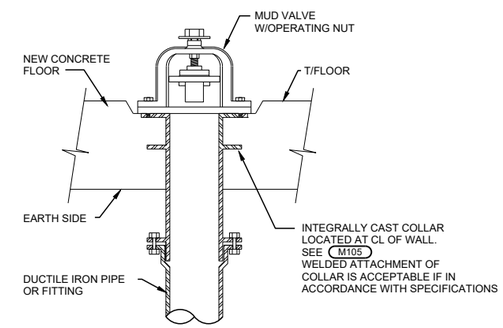
NONMETALLIC PIPE FIRE WALL PENETRATION DETAIL M135

NTS



FLG / FLG DUCTILE IRON FLOOR PIPE DETAIL M206

NTS



MUD VALVE DETAIL M219

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

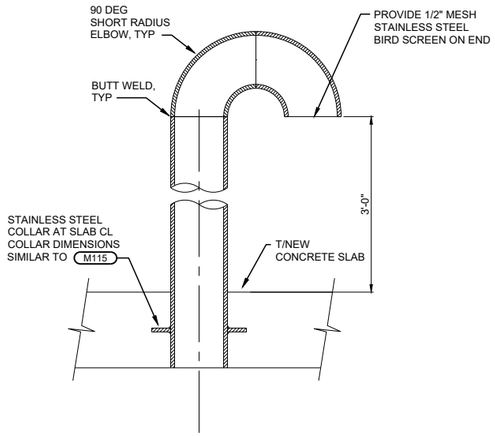
STANDARD DETAIL
PROCESS MECHANICAL

DONOHUE 11/23/2021

Sheet No. 159

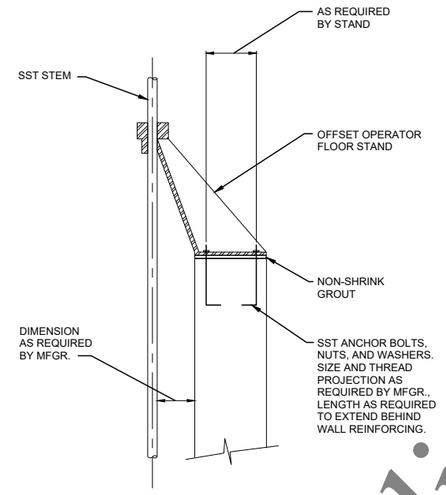
Drawing No. **10-M-02**

file: P:\13852chi\Dwg\10MD1.dwg



STAINLESS STEEL VENT PIPE DETAIL **M223**

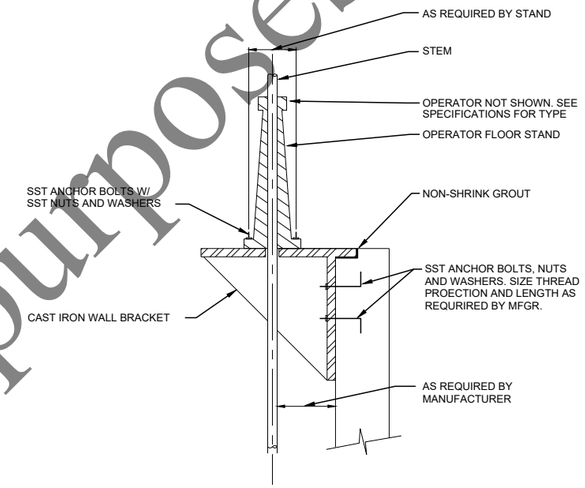
NTS



NOTES:
1. PROVIDE STEM GUIDES AS REQUIRED BY MANUFACTURER. SEE M380

FLOOR STAND DETAIL **M350**

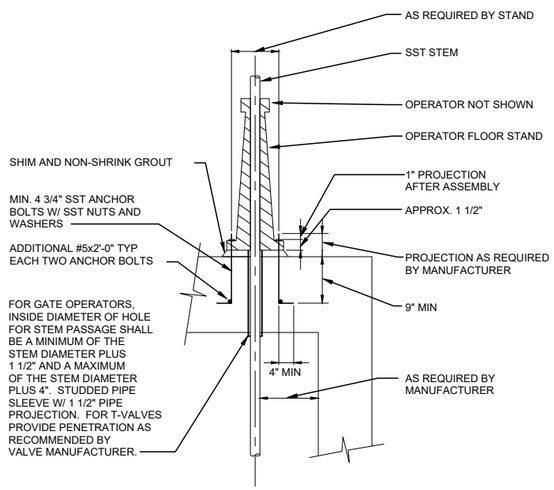
NTS



NOTES:
1. PROVIDE STEM GUIDES AS REQUIRED BY MANUFACTURER. SEE M380

FLOOR STAND DETAIL **M351**

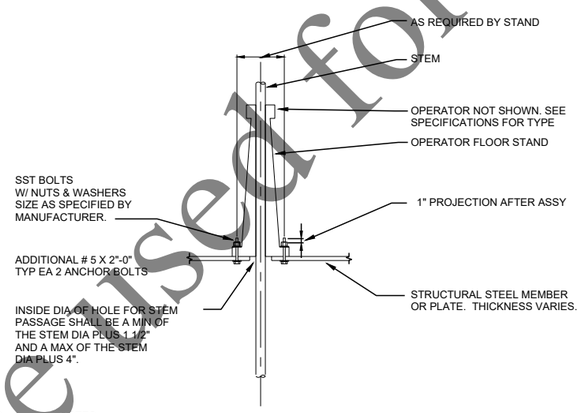
NTS



NOTES:
1. PROVIDE STEM GUIDES AS REQUIRED BY MANUFACTURER. SEE M380

FLOOR STAND DETAIL NEW CONCRETE **M352**

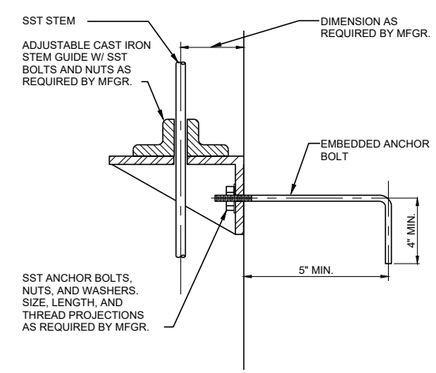
NTS



NOTES:
1. PROVIDE STEM GUIDES AS REQUIRED BY MANUFACTURER. SEE M380

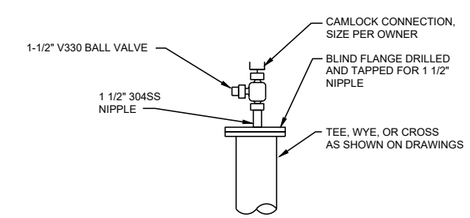
FLOOR STAND DETAIL NON-CONCRETE INSTALLATION **M353**

NTS



STEM GUIDE DETAIL **M380**

NTS



FLUSHING CONNECTION DETAIL **M710**

NTS

Not to be used for bidding purposes

file: P:\13852chi\Dwg\10MD1.dwg

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	MTR
Drawn By	MTR
Checked By	SPG
Approved By	KPL

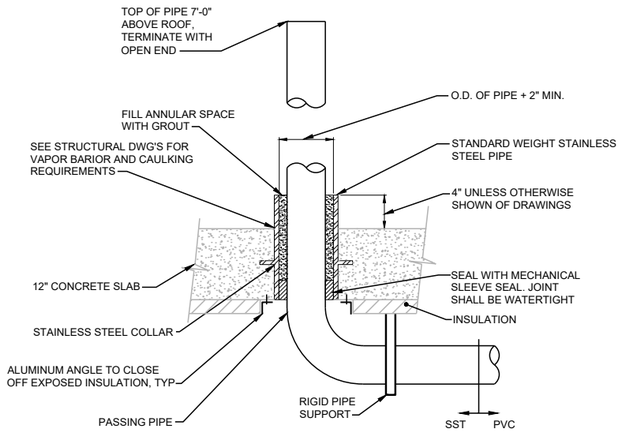
FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
PROCESS MECHANICAL

DONOHUE 11/23/2021

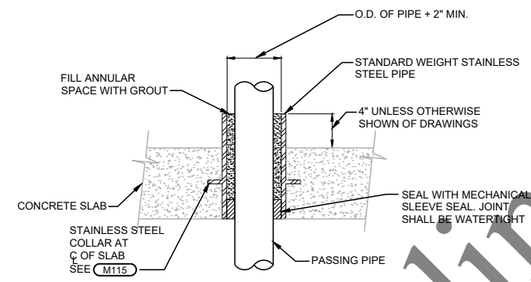
Sheet No. 160

Drawing No. **10-M-03**



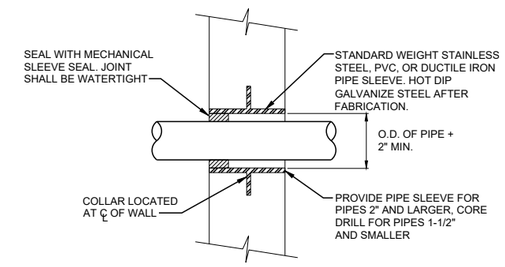
FLOOR SLEEVE DETAIL P019

NTS



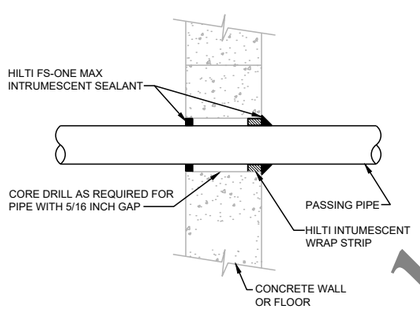
FLOOR SLEEVE DETAIL P020

NTS



WALL SLEEVE DETAIL P021

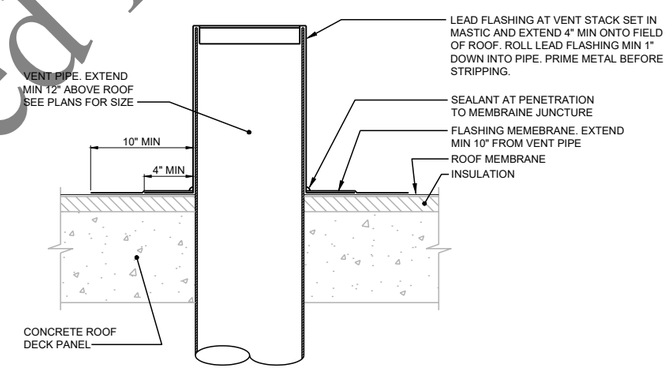
NTS



NOTE: INSTALL IN ACCORDANCE WITH HILTI SYSTEM NO. C-BJ-2013 TO ACHIEVE 2 HOUR FIRE RATING.

PIPE FIRE WALL PENETRATION DETAIL P022

NTS



NOTE: PROVIDE WHEREVER NOTED AS VTR ON PLANS AND ISOMETRICS

VENT THRU ROOF DETAIL P210

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	CAH
				Drawn By	CAH
				Checked By	JLW
				Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

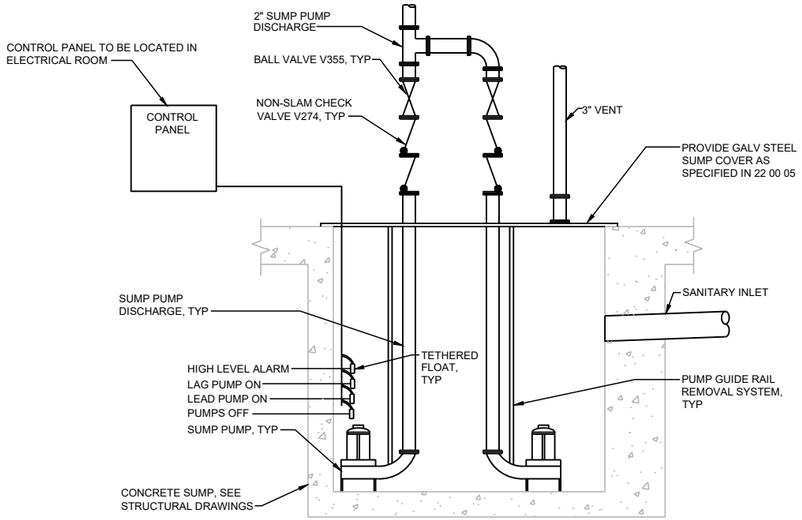
STANDARD DETAIL
PLUMBING

DONOHUE 11/23/2021

Sheet No. 161

Drawing No. **10-P-01**

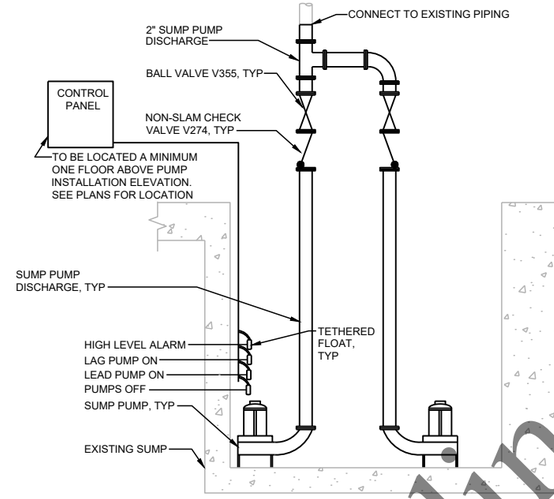
file: P:\13852chi\Dwg\10PHD1.dwg



NOTE: PUMP ORIENTATION ROTATED FOR CLARITY

DUPLEX SUBMERSIBLE SUMP PUMP DETAIL P350

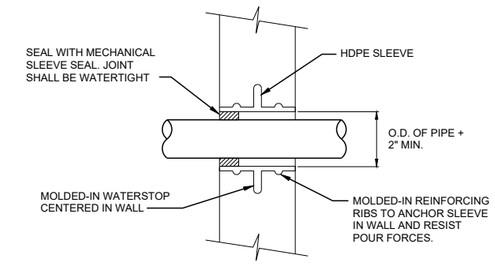
NTS



NOTE: PUMP ORIENTATION ROTATED FOR CLARITY

DUPLEX SUBMERSIBLE SUMP PUMP DETAIL P351

NTS



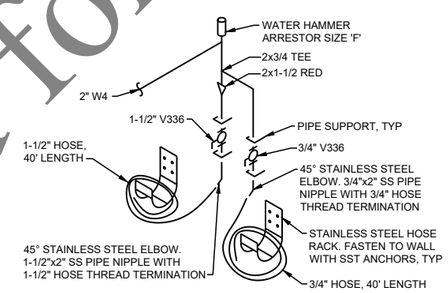
PLASTIC WALL SLEEVE DETAIL P380

NTS

NOTE: PROVIDE NON-POTABLE SIGN AT EACH SERVICE WATER (W2 AND W3) HOSE CONNECTION.

NON-POTABLE WATER SIGN P420

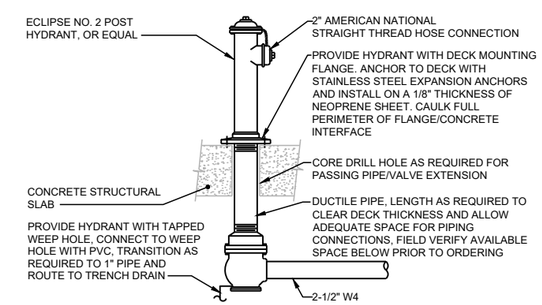
NTS



NOTES:
1. PROVIDE NON-POTABLE WATER SIGN AT EACH HB SEE P420
2. INSTALL EACH HOSE CONNECTION 3'-0" ABOVE FINISHED FLOOR OR GRATING, UNLESS INDICATED OTHERWISE.

HOSE CONNECTION DETAIL P445

NTS



NOTES:
1. PROVIDE NON-POTABLE WATER SIGN AT EACH HB SEE P420

FROST PROOF DECK HYDRANT DETAIL P450

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	CAH
				Drawn By	CAH
				Checked By	JLW
				Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
PLUMBING

DONOHUE 11/23/2021

Sheet No. 162

Drawing No. **10-P-02**

file: P:\13852chi\Dwg\10PHD1.dwg

WALL LOUVER SCHEDULE

SECTION 08 91 19

TAG NO.	MANUFACTURER	MODEL NUMBER	SERVICE	CFM	WIDTH (IN.)	HEIGHT (IN.)	DEPTH (IN.)	MAX. APD (IN. W.C.)	MAX. FREE AREA VEL. (FPM)	REMARKS
EAL-101	GREENHECK	ESD-403	EXHAUST	450	24	16	4	0.04	450	1,2,3
EAL-102	GREENHECK	ESD-403	EXHAUST	745	24	16	4	0.10	735	1,2,3
EAL-121	GREENHECK	ESD-403	EXHAUST	3,000	36	48	4	0.08	750	1,2,3,4
OAL-101	GREENHECK	ESD-403	INTAKE	450	16	16	4	0.03	300	1,2,3
OAL-102	GREENHECK	ESD-403	INTAKE	450	16	16	4	0.03	300	1,2,3
OAL-121	GREENHECK	ESD-403	INTAKE	3,000	36	48	4	0.10	750	1,2,3,4

1. = ALUMINUM BIRDSCREEN.
2. = EXTENDED SILL.
3. = 70% KYNAR FINISH WITH DARK BRONZE COLOR.
4. = PERFORMANCE BASED ON 36"x34" AREA THAT IS NOT BLANKED OFF.

AIR INLET AND OUTLET SCHEDULE

SECTION 23 37 00

TAG NO.	MANUFACTURER	MODEL	SERVICE	MAX. APD (IN. W.C.)	MAX. NC	PATTERN	FINISH	MATERIAL	REMARKS
EG-1	CARNES	RAAAH	EXHAUST	0.10	30	SD	ANOD	ALUM	
EG-2	CARNES	RATA	EXHAUST	0.10	30	EGGCRATE	WBE	ALUM	
RG-1	CARNES	RAAAH	RETURN	0.10	28	SD	ANOD	ALUM	
RG-2	CARNES	RAAAH	RETURN	0.10	28	SD	PTM	ALUM	
RG-3	CARNES	RATA	RETURN	0.10	30	EGGCRATE	WBE	ALUM	
SD-1	CARNES	SETA	SUPPLY	0.10	20	4-WAY	WBE	ALUM	24x24 DIFF, 6"Ø NECK
SD-2	CARNES	SETA	SUPPLY	0.10	20	4-WAY	WBE	ALUM	24x24 DIFF, 8"Ø NECK
SD-3	CARNES	SETA	SUPPLY	0.10	20	4-WAY	WBE	ALUM	24x24 DIFF, 10"Ø NECK
SG-1	CARNES	RADAH	SUPPLY	0.10	28	DD	ANOD	ALUM	
SG-2	CARNES	RADAH	SUPPLY	0.10	28	DD	PTM	ALUM	
TG-1	CARNES	RATA	TRANS	0.02	25	EGGCRATE	ANOD	ALUM	

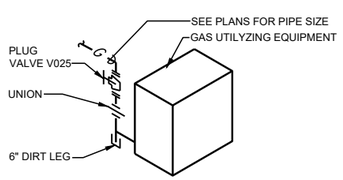
ANOD = ANODIZED FINISH.
DD = 3/4" BLADE DOUBLE DEFLECTION.
PTM = PAINT TO MATCH ADJACENT SURFACE.
SD = 3/4" BLADE SINGLE DEFLECTION.
WBE = WHITE BAKED ENAMEL.

MOTOR OPERATED DAMPER SCHEDULE

SECTION 23 09 23

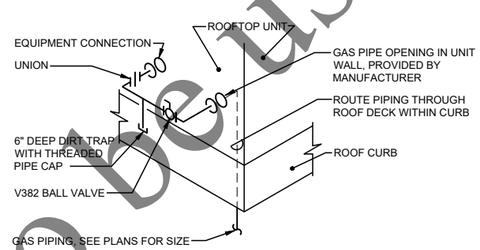
TAG NO.	TYPE	FUNCTION	BLADES	CFM	WIDTH (IN.)	HEIGHT (IN.)	FAIL POS.	ENCL. NEMA	ELEC	SERVICE	MOUNT	REMARKS
ICD-101	INSULATED	OPEN/CLOSE	PARALLEL	450	12	12	CLOSE	2	120V	EXHAUST	DUCT	1
ICD-102	INSULATED	OPEN/CLOSE	PARALLEL	745	12	12	CLOSE	2	120V	EXHAUST	DUCT	1
ICD-121	INSULATED	MODULATING	PARALLEL	3,000	36	18	CLOSE	2	24V	INTAKE	DUCT	3
MCD-121	CONTROL	MODULATING	PARALLEL	3,000	36	18	OPEN	2	24V	INTAKE	DUCT	3
MCD-122	CONTROL FLOW MEASURING	MODULATING	PARALLEL	3,400	20	20	OPEN	2	24V	SUPPLY	DUCT	2
MCD-123	CONTROL FLOW MEASURING	MODULATING	PARALLEL	3,000	20	20	OPEN	2	24V	SUPPLY	DUCT	2
MCD-124	CONTROL	MODULATING	PARALLEL	2,000	16	16	CLOSED	2	24V	BYPASS	DUCT	--

CC = CONTRACTOR'S CHOICE (120V OR LOW VOLTAGE)
1. = PROOF OF OPEN LIMIT SWITCH.
2. = WORK WITH FMS (SECTION 23 09 23) AND BALANCING CONTRACTOR (23 05 93) TO SET MINIMUM OPEN POSITION FOR 500 CFM FLOW RATE.
3. = PROVIDE WITH ANALOG POSITION FEEDBACK.



TYPICAL GAS CONNECTION DETAIL H102

NTS



TYPICAL ROOFTOP UNIT GAS CONNECTION DETAIL H105

NTS

MAKE-UP AIR UNIT SCHEDULE

SECTION 23 75 23

TAG NO.	MANUF.	MODEL NUMBER	TYPE	HEATING INPUT (MBH)	HEATING OUTPUT (MBH)	FILTER	AIR DATA: CFM	OUTSIDE AIR PERCENT	EAT (°F)	LAT (°F)	*ESP* (IN. W.C.)	TSP (IN. W.C.)	FAN RPM	MOTOR DATA: HP	VOLT/Ø	RPM	REMARKS
MAU-100	TRANE	DFOA	DIRECT OUTDOOR	551	506	2" ALUM	5,270 / 2,635	100%	-9	80	1.00	2.50	---	5	460/3	1,800	1,2,3,4,5,6,7,8,9,10,11

*ESP IS DUCTWORK LOSSES AND 0.40 IN W.C. FOR FILTERS.
1. = 2-PART EPOXY COATED DOUBLE WALL CONSTRUCTION WITH 1" INSULATION WITH UV TOPCOAT.
2. = MOTORIZED INLET DAMPERS.
3. = OUTSIDE AIR HOOD WITH ALUMINUM BIRDSCREEN.
4. = NEMA 4X DISCONNECT SWITCH.
5. = VERTICAL DOWN DISCHARGE.
6. = CONTROLS AS SPECIFIED.
7. = FORWARD CURVE FAN WHEEL.
8. = SUITABLE FOR INSTALLATION ON CONCRETE CURB.
9. = SUPPLY FAN VFD PROGRAMMED FOR TWO SPEED OPERATION.
10. = INVERTER DUTY RATED MOTOR WITH CLASS "F" INSULATION.
11. = DIRECT FIRED BURNER CAPABLE OF HEATING AT INDICATED AIRFLOWS.

SMALL PACKAGED ROOFTOP UNIT SCHEDULE

SECTION 23 74 19

TAG NO.	MANUF.	MODEL	CFM	ESP (IN WC)	MIN OA (CFM)	HP	VOLTAGE	MCA (AMP)	COOLING DATA: TOT CAP (MBH)	EAT(°F) (DB/WB)	LAT(°F) (DB/WB)	HEATING DATA: HEAT INPUT (MBH)	HEAT OUTPUT (MBH)	EAT (°F)	LAT (°F)	REMARKS
RTU-100	TRANE	YZC036	1,200	0.50	0	3/4	460	7	36.6	80/67	58/57	80	64	70	119	1,2,3,4,5,6,7,8,10
RTU-121	TRANE	YZC048	1,760	0.50	190	1	460	9	42	75/61	55/54	60	49	58	83	1,2,3,4,5,6,7,9

ESP = EXTERNAL STATIC PRESSURE INCLUDES DUCT LOSSES ONLY MANUFACTURER SHALL ADD RECOMMENDED LOSSES FOR THROWAWAY FILTERS FOR CALCULATION OF TSP.
1. = NEMA 3R DISCONNECT SWITCH.
2. = 18-INCH ROOF CURB.
3. = CONTROLS AS SPECIFIED.
4. = COATED CONDENSER COIL.
5. = VARIABLE SPEED COMPRESSOR.
6. = VARIABLE SPEED SUPPLY FAN.
7. = REMOTE ZONE TEMPERATURE SENSOR.
8. = 2" MERV 8 FILTERS.
9. = DEHUMIDIFICATION CONTROL WITH REMOTE MOUNT DUCT HUMIDITY SENSOR.
10. = POWERED CONVENIENCE OUTLET.

LARGE PACKAGED ROOFTOP UNIT SCHEDULE

SECTION 23 74 19

TAG NO.	MANUF.	MODEL	CFM	ESP (IN WC)	MIN OA (CFM)	HP	VOLTAGE	MCA (AMP)	COOLING DATA: TOT CAP (MBH)	EAT(°F) (DB/WB)	LAT(°F) (DB/WB)	HEATING DATA: HEAT INPUT (MBH)	HEAT OUTPUT (MBH)	EAT (°F)	LAT (°F)	REMARKS
RTU-120	TRANE	YZD-180	6,500/3,500	2.00	420	3	460	40	165	74.2/62.6	55/54	350/140	286/113	64/58	104/88	1,3,4,5,6,7,8,9

ESP = EXTERNAL STATIC PRESSURE INCLUDES DUCT LOSSES ONLY MANUFACTURER SHALL ADD RECOMMENDED LOSSES FOR THROWAWAY FILTERS FOR CALCULATION OF TSP.
1. = HEATING TEMPERATURES ARE AT MAXIMUM AIRFLOW, MAXIMUM OUTPUT / MINIMUM AIRFLOW, MINIMUM OUTPUT.
2. = UNIT MOUNTED, NON-FUSED DISCONNECT SWITCH.
3. = 24-INCH ROOF CURB.
4. = CONTROLS AS SPECIFIED.
5. = COATED DX COOLING COIL AND CONDENSER COIL.
6. = VARIABLE CAPACITY COMPRESSOR.
7. = VARIABLE SPEED SUPPLY FAN WITH SHAFT GROUNDING RINGS.
8. = MODULATING GAS HEAT WITH MINIMUM 2.5:1 TURNDOWN RATIO.
9. = 2" MERV 8 FILTERS WITH HINGED ACCESS PANELS.
10. = POWERED EXHAUST FAN.
11. = LOW LEAKAGE ECONOMIZER WITH FAULT DETECTION AND DIAGNOSTICS (FDD).

FAN SCHEDULE

SECTION 23 34 23

TAG NO.	MANUFACTURER	MODEL NUMBER	TYPE	SERVICE	AIR FLOW DATA: AIRFLOW (CFM)	ESP (IN WC)	TSP (IN WC)	BHP	FAN RPM	DRIVE	SONES	ELECTRICAL DATA: HP/WATTS	VOLTS	PHASE	RPM	REMARKS
EF-101	GREENHECK	SQ-90-VG	INLINE CENTRI	EXHAUST	450	0.30	0.30	0.05	1460	DIRECT	8	1/10	120	1	1725	1,3,4,8
EF-102	GREENHECK	SQ-100-VG	INLINE CENTRI	EXHAUST	745	0.30	0.30	0.07	1145	DIRECT	8	1/4	120	1	1725	1,3,4,8
EF-103	GREENHECK	CUE-160-VG	ROOF UPBLAST	EXHAUST	2,590	0.40	0.52	0.52	1110	DIRECT	14	3/4	208	1	1200	1,3,4,5,6,8
EF-104	GREENHECK	CUE-140-VG	ROOF UPBLAST	EXHAUST	1,495	0.40	0.48	0.24	1095	DIRECT	10	1/2	208	1	1300	1,3,4,5,6,8
EF-105	SEE SECTION 44 31 60 FOR PERFORMANCE REQUIREMENTS AND ACCESSORIES															
EF-120	GREENHECK	SQ-95-VG	CENTRI INLINE	EXHAUST	450	0.40	0.40	0.08	1435	DIRECT	8	1/6	115	1	1725	1,3,4,9
EF-121	GREENHECK	SP-B110	CENTRI CEILING	EXHAUST	75	0.30	0.30	---	760	DIRECT	1	80W	115	1	---	1,4,10,11,12
RF-120	GREENHECK	SQ-130-VG	CENTRI INLINE	RETURN	1,600	0.40	0.40	0.30	1370	DIRECT	10	3/4	208	1	1725	1,3,4,7

TSP SHALL INCLUDE SCHEDULED ESP AND ALL LOSSES ASSOCIATED WITH SCHEDULED ACCESSORIES INCLUDING FILTERS, BACKDRAFT DAMPERS, AND WALL HOUSINGS.
1. = ALUMINUM CONSTRUCTION.
2. = STAINLESS STEEL FAN SHAFT
3. = STAINLESS STEEL FASTENERS.
4. = NEMA 1 INTEGRAL DISCONNECT.
5. = ALUMINUM BIRDSCREEN.
6. = GRAVITY OPERATED DAMPER.
7. = ECM MOTOR WITH REMOTE ANALOG SPEED CONTROL.
8. = ECM MOTOR WITH REMOTE 2-SPEED CONTROL.
9. = ECM MOTOR WITH LOCAL DIAL FOR BALANCING PURPOSES ONLY.
10. = SPEED CONTROL DIAL, MOUNTED AT FAN FOR BALANCING PURPOSES ONLY.
11. = WHITE NON-METALLIC EXHAUST GRILLE.
12. = INTEGRAL BACKDRAFT DAMPER.

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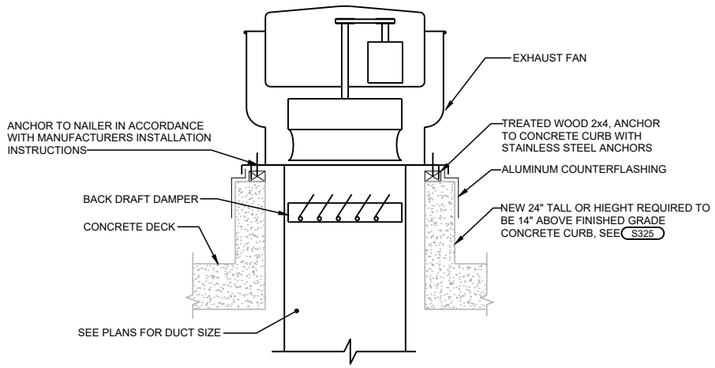


EXHAUST FAN ON CONCRETE CURB DETAIL H226

NTS

ELECTRIC HEATING TERMINAL SCHEDULE

SECTION 23 82 40

TAG NO.	MANUF.	MODEL NUMBER	TYPE	OUTPUT (MBH)	MOUNT. HEIGHT (FT)	AIR DATA			ELECTRICAL DATA			MOTOR DATA			REMARKS
						CFM	THROW (FT)	ΔT (°F)	KW	VOLT/Ø	AMP	HP	VOLT/Ø	RPM	
EUH-101	QMARK	QWD03432	CORR-RES UNIT	10.2	---	700	-	14	3	460/3	4	-	-	-	1,2,3
EUH-102	QMARK	QWD03432	CORR-RES UNIT	10.2	---	700	-	14	3	460/3	4	-	-	-	1,2,3

1. WALL MOUNTING BRACKET.
2. INTEGRAL DISCONNECT SWITCH.
3. INTEGRAL THERMOSTAT.

CEILING MOUNTED AIR CONDITIONING UNIT SCHEDULE

SECTION 23 81 26

TAG NO.	MANUF.	MODEL	CFM	ESP (IN WC)	MIN OA (CFM)	HP	VOLTAGE	FLA (AMP)	COOLING DATA			HEATING DATA			FILTER TYPE	REMARKS
									TOT CAP (MBH)	EAT(°F) (DB/WB)	LAT(°F) (DB/WB)	HEAT COIL INPUT (KW)	EAT (°F)	LAT (°F)		
ACU-120	TRANE	TWE-090	3,000	0.30	0	---	460/3	11	92	80/67	58/57	5	68	73	2" TA	1,2,3

ESP: INCLUDED DUCTWORK LOSSES ONLY. MANUFACTURER SHALL INCLUDED ALL LOSSES ASSOCIATED WITH INTERNAL COMPONENTS, ELECTRIC HEATER, AND FILTER MIDLIFE IN TSP SUMMATION.

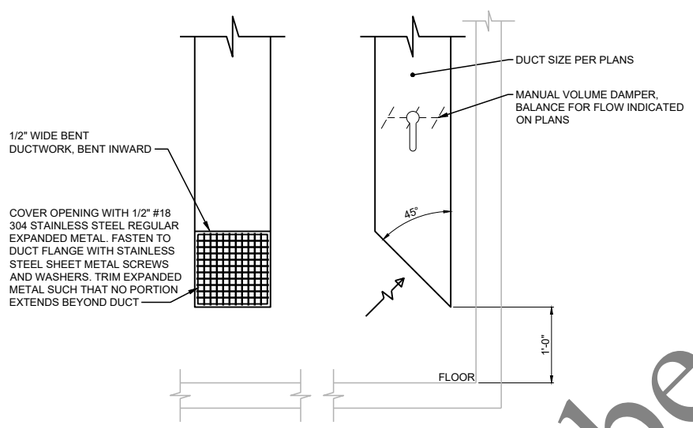
1. = ELECTRIC HEATER OF SCHEDULED CAPACITY.
2. = TWO SPEED FAN OPERATION.
3. = BACNET CONTROL INTERFACE.

AIR COOLED CONDENSER SCHEDULE

SECTION 23 81 26

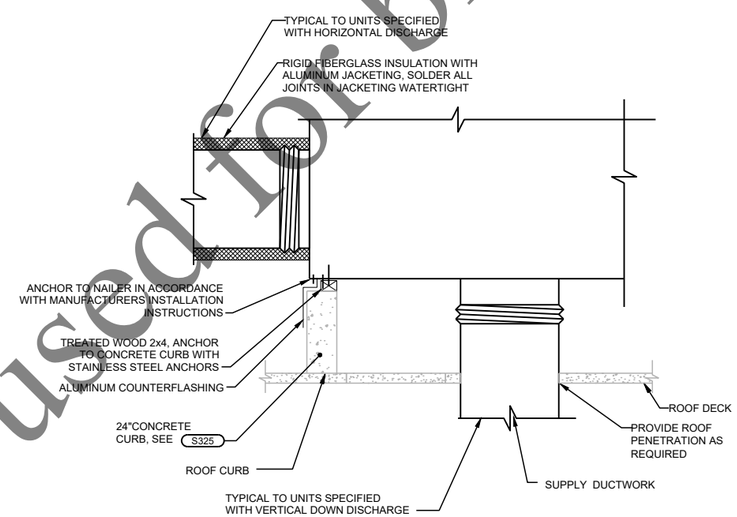
TAG NO.	MANUF	MODEL	NOMINAL CAPACITY (TONS)	TOTAL CAPACITY* (MBH)	REFRIGERANT	CIRCUITS	STAGES PER CIRCUIT	AMB. TEMP (°F)	SST (°F)	VOLT/ PHASE	MCA (AMPS)	REMARKS
ACCU-120	TRANE	TTA-090	7.5	93	R-410A	2	1	95	---	460/3	15	1,2,3,4,5,6

* = CAPACITY AT SCHEDULED SST AND AMBIENT TEMPERATURE
1. = MATCHED WITH COOLING COIL FROM ACU-120.
2. = COATED ON CONDENSER COIL.
3. = VIBRATION ISOLATORS AS RECOMMENDED BY MANUFACTURER.
4. = ETL LABELED.
5. = COMPRESSORS LOCATED IN REFRIGERANT COMPARTMENT.
6. = DESIGNED TO BE SUPPORTED ON A ROOF MOUNTED FRAME.
7. = BACNET CONTROL INTERFACE PACKAGE.



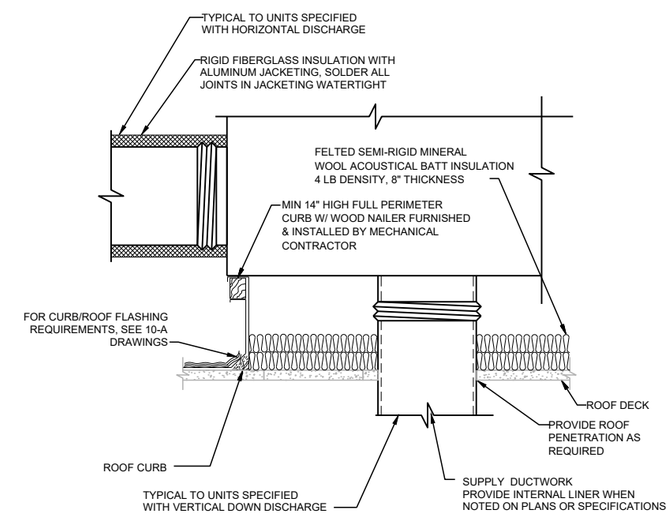
EXHAUST DUCT DROP DETAIL H325

NTS



ROOF MOUNTED EQUIPMENT DETAIL H426

NTS



ROOF MOUNTED EQUIPMENT DETAIL H427

NTS

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	CAH
Drawn By	CAH
Checked By	JLW
Approved By	JLW

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
HVAC

DONOHUE 11/23/2021

Sheet No. 164

Drawing No. 10-H-02

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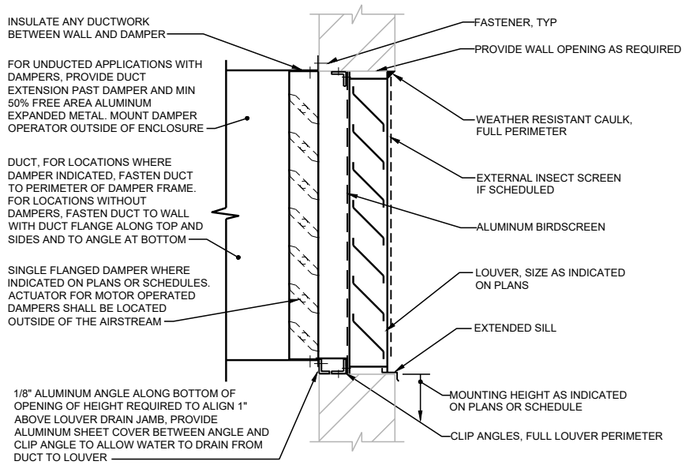
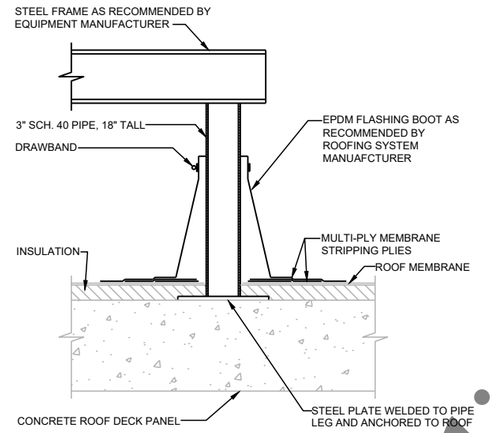


NOTE: ALL FASTENERS SHALL BE OF STAINLESS STEEL CONSTRUCTION

TYPICAL LOUVER DETAIL H950

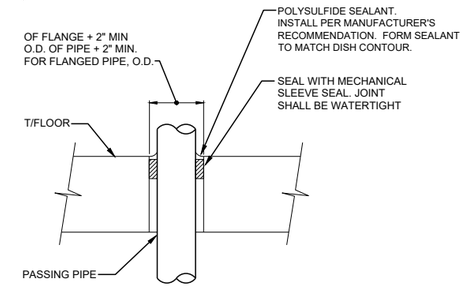
NTS



NOTE: ALL STEEL COMPONENTS SHALL BE HOT-DIPPED GALVANIZED

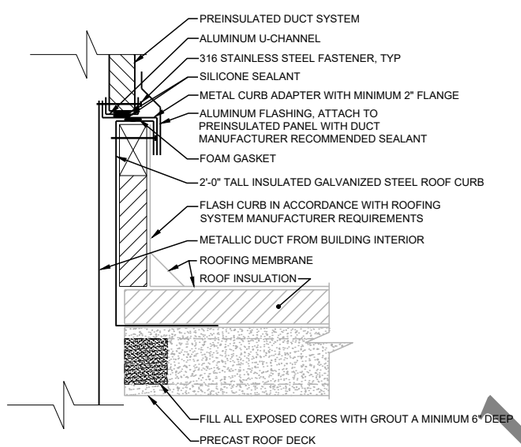
ROOF MOUNTED EQUIPMENT SUPPORT DETAIL H951

NTS



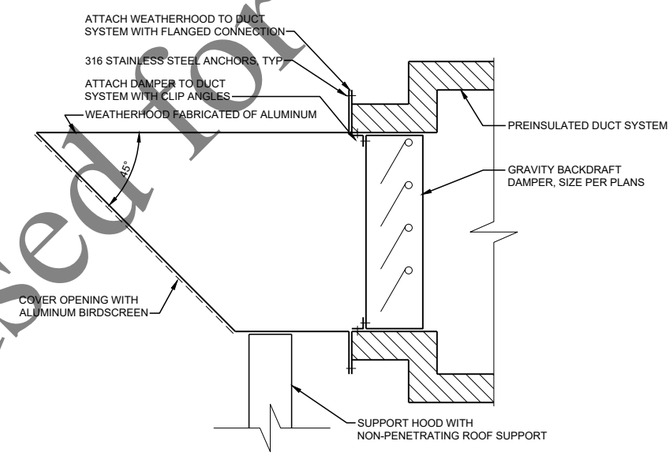
FLOOR PENETRATION DETAIL H960

NTS



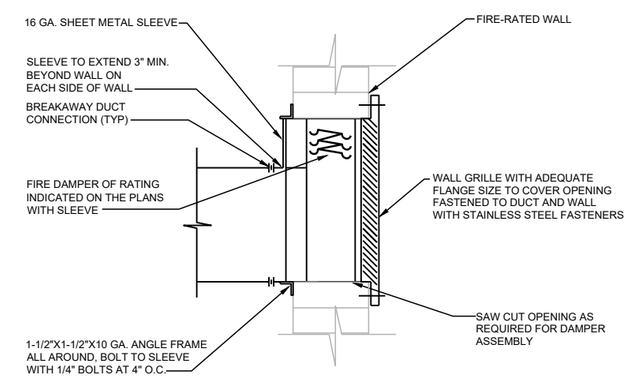
DUCTED ROOF PENETRATION DETAIL H990

NTS



BAROMETRIC RELIEF DAMPER DETAIL H991

NTS



DUCT THROUGH MASONRY WALL WITH FIRE DAMPER DETAIL H997

NTS

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Sheet No. 165

Drawing No. **10-H-03**

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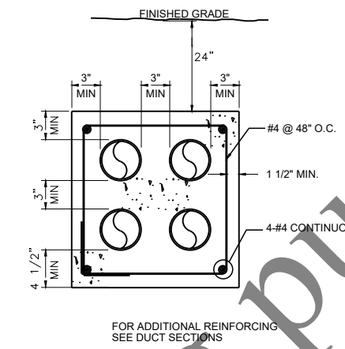
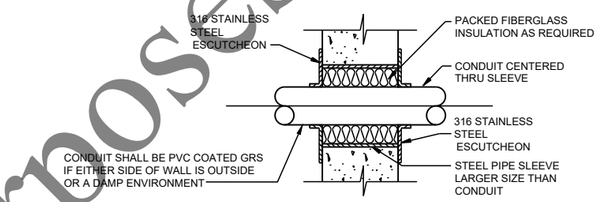
FIXTURE SCHEDULE

TYPE	DESCRIPTION	LUMENS (LM)	MANUFACTURER	CATALOG NUMBER	REMARKS
A	ENCLOSED AND GASKETED INDUSTRIAL 1X4 LED FIXTURE	6,096LM	RAB	SHARK 4 50 W	SEE PLAN NOTES FOR MOUNTING
B	LED OUTDOOR WALLPACK WITH PHOTOCELL/MOTION SENSOR	3,851LM	RAB	WPLED26	PROVIDE SEPERATE WEATHERPROOF PHOTOCELL/MOTION SENSOR TO BE MOUNTED ADJACENT TO FIXTURE
C	LED FLOOD LIGHT WITH PHOTOCELL 20' SQUARE ALUMINUM POLE TRI-BRACKET	21,534LM	RAB	FXLED 150 SF 4000K/PCT BULL3-120	POLE MOUNTING HARDWARE SHALL BE PROVIDED BY FIXTURE MANUFACTURER. POLE WITH DARK BRONZE FINISH.
D	LED FLOOD LIGHT POST MOUNTED	10,195LM	RAB	FXLED 78 SF 4000K	POLE MOUNTING HARDWARE SHALL BE PROVIDED BY FIXTURE MANUFACTURER.
E	GENERAL PURPOSE LED STRIP LIGHT 4' LED FIXTURE	4,200LM	TCP	TCP GPS 4 U ZD A 8 50 4200L 50K	PENDANT MOUNT 10' A.F.F.
	COMBINATION LED EXIT SIGN LED EMERGENCY BATTERY LIGHT	-	LITHONIA	ECRLEDHOM6	MOUNT AT 8'-0" A.F.F. WIRE TO UNSWITCHED LEG OF CIRCUIT
	LED EMERGENCY BATTERY LIGHT	-	LITHONIA	EU2C	MOUNT AT 8'-0" A.F.F. **WIRE TO UNSWITCHED LEG OF CIRCUIT**



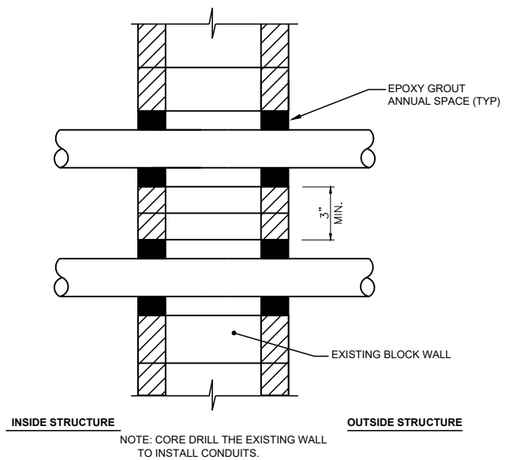
TYPICAL DUCT CONCRETE COVERING **E250**

NTS



TYPICAL CONDUIT ENTRY THRU WALLS **E010**

NTS

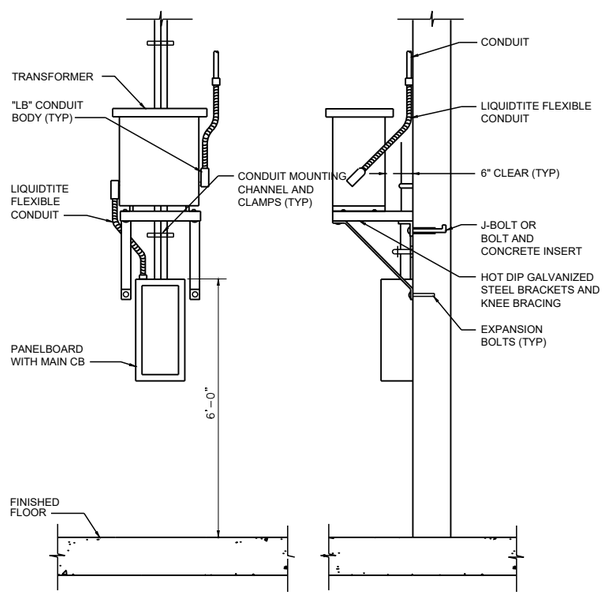


NOTE: CORE DRILL THE EXISTING WALL TO INSTALL CONDUITS.

ABOVE GRADE INSTALLATIONS

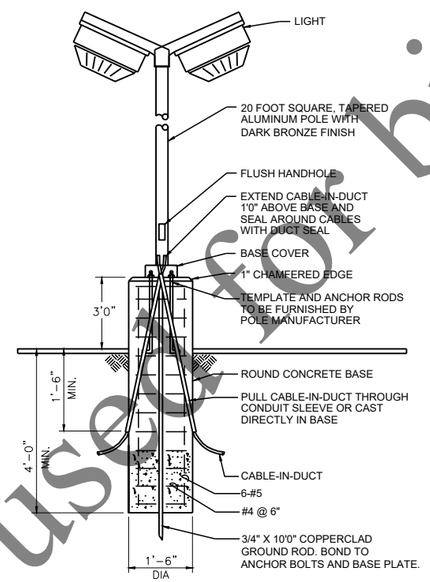
CONDUIT ENTRY THRU EXISTING WALL **E012**

NTS



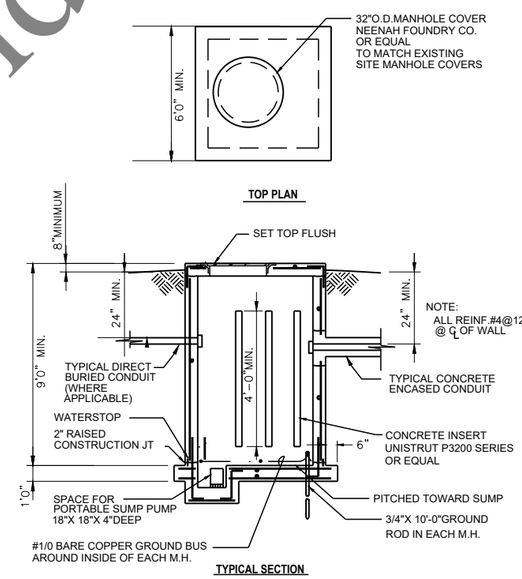
MOUNTING TRANSFORMER ABOVE PANEL DETAIL **E090**

NTS



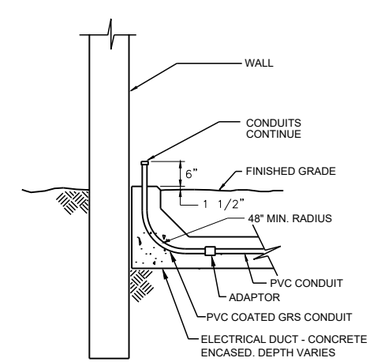
AREA LIGHTING POLES & BASE DETAIL **E510**

NTS



MANHOLE DETAIL **E228**

NTS



DUCT STUB DETAIL **E258**

NTS

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Four Rivers Sanitation Authority

No:	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

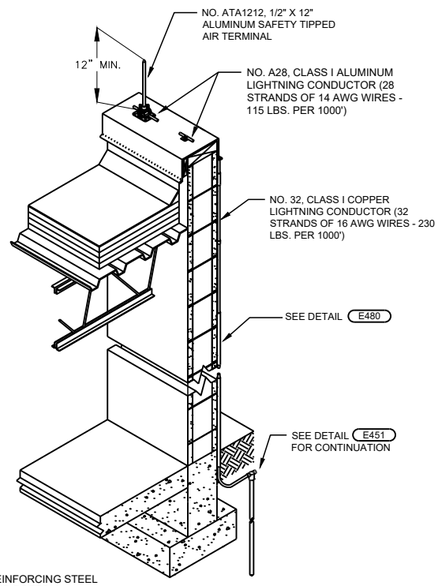
STANDARD DETAIL
ELECTRICAL

DONOHUE 11/23/2021

Sheet No. 166

Drawing No. **10-E-01**

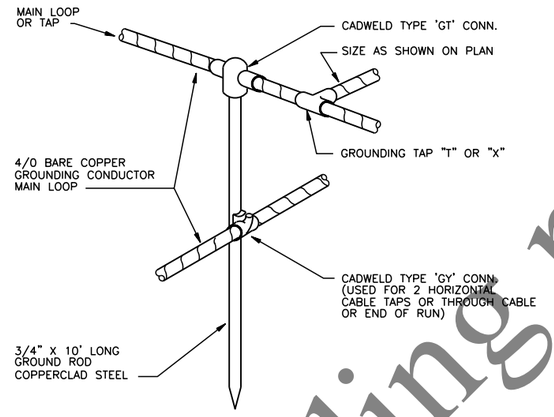
file: P:\13852chi\Dwg\10ED1.dwg



* BOND REINFORCING STEEL AT TOP AND BOTTOM

AIR TERMINAL AND DOWN CONDUCTOR DETAIL E469

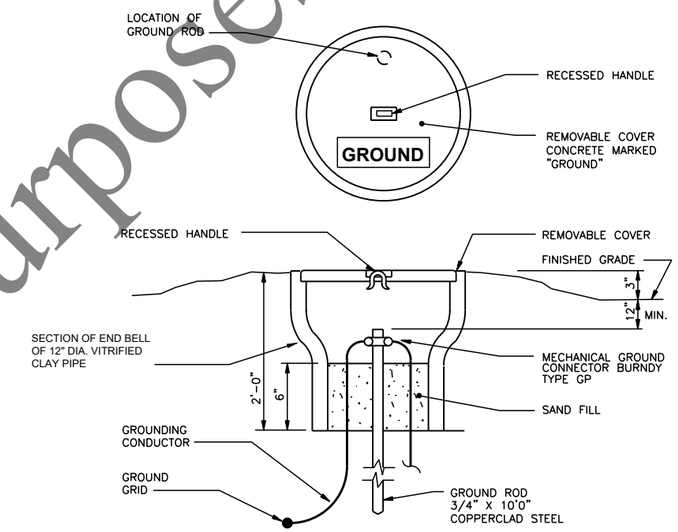
NTS



NOTE: HARGER ULTRA SHOT EXOTHERMIC CONNECTIONS ARE CONSIDERED AN OR EQUAL TO CADWELD

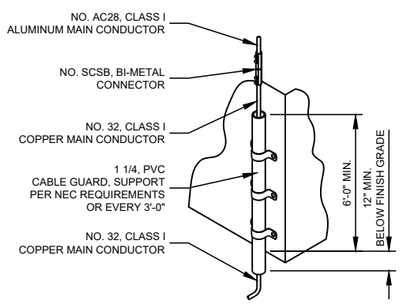
CONDUCTOR TO GROUND ROD CONNECTION DETAIL E451

NTS



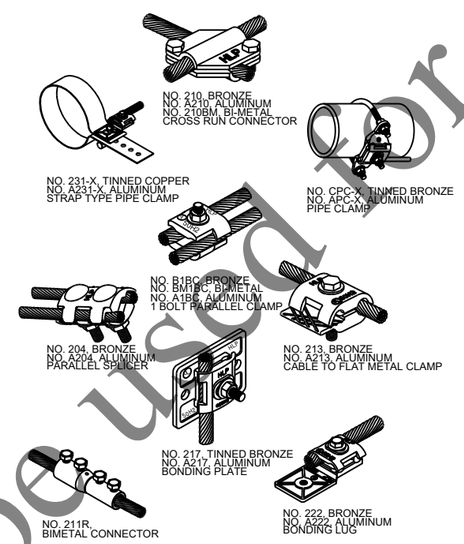
GROUNDING TEST STATION DETAIL E455

NTS



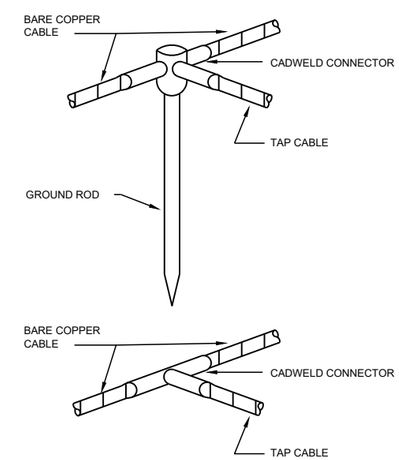
PVC CABLE GUARD E480

NTS



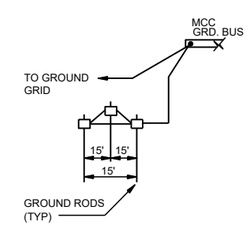
TYPICAL BONDING SPLICING DETAIL E479

NTS



GROUNDING CONNECTION DETAIL E463

NTS



GROUNDING DETAIL E931

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	FGM
Drawn By	FGM
Checked By	JTB
Approved By	FGM

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

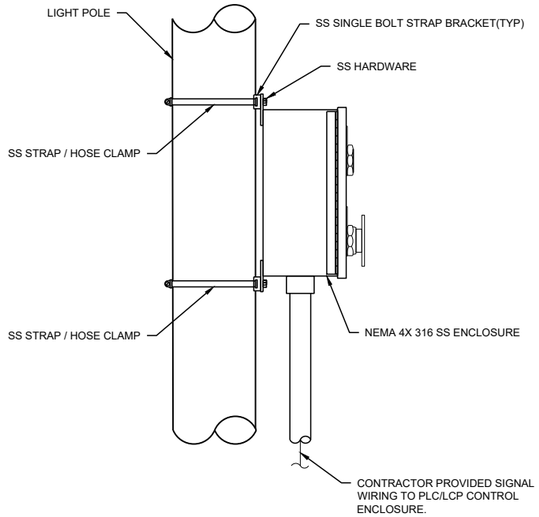
STANDARD DETAIL
ELECTRICAL

DONOHUE 11/23/2021

Sheet No. 167

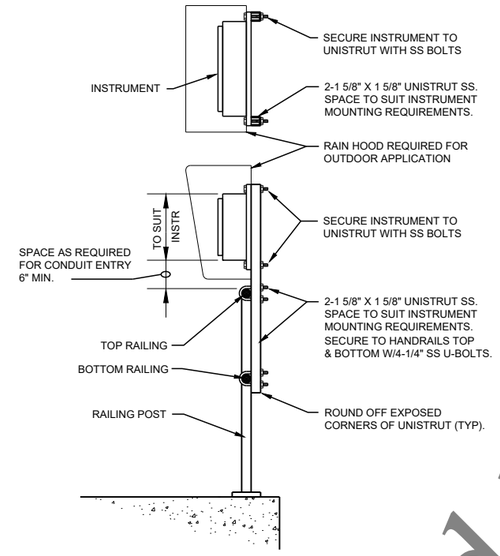
Drawing No. **10-E-02**

file: P:\13852chi\Dwg\10ED1.dwg



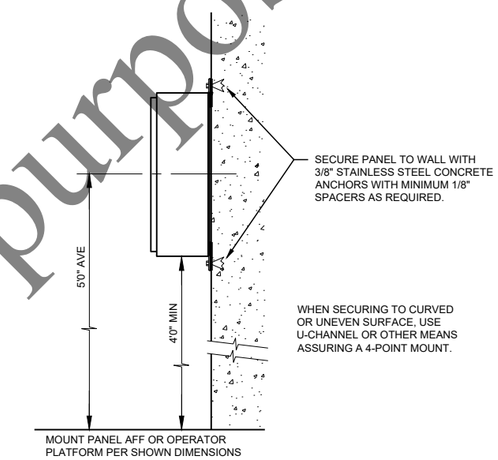
POLE MOUNTED CONTROL STATION N113

NTS



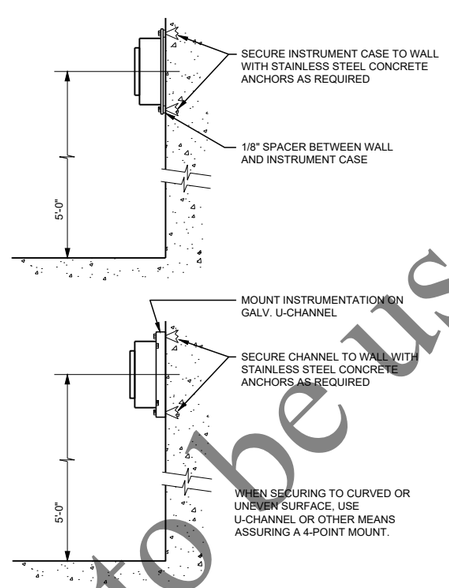
RAILING MOUNT SMALL CASE INSTRUMENTATION N141

NTS



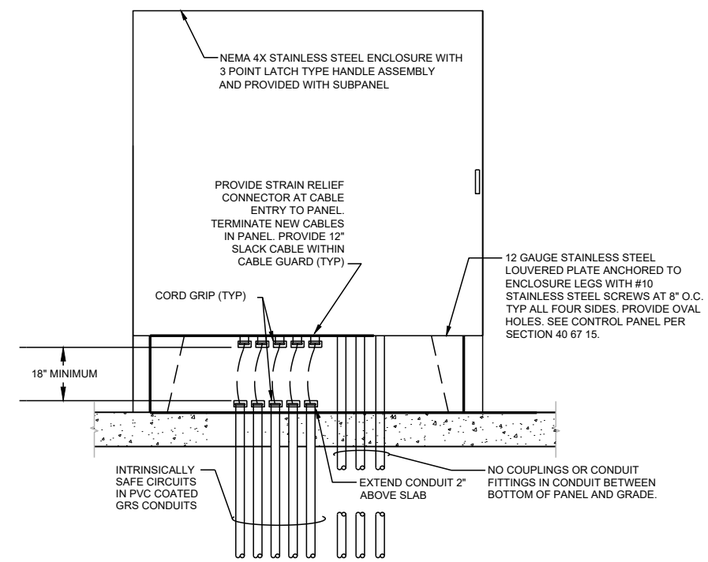
WALL MOUNT CONTROL PANEL N170

NTS



WALL MOUNT SMALL CASE INSTRUMENTATION N171

NTS



NOTES:
1. ROUND OFF ALL EXPOSED EDGES & CORNERS.
2. PAINT METAL IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.
3. PROVIDE SUFFICIENT COOLING AND AIR CONDITIONING TO MAINTAIN INTERIOR OF PANEL AT OR BELOW 90° F.

FLOOR MOUNT CONTROL PANEL N181

NTS

Not to be used for bidding purposes

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	LPH
Drawn By	LPH
Checked By	BLG
Approved By	BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

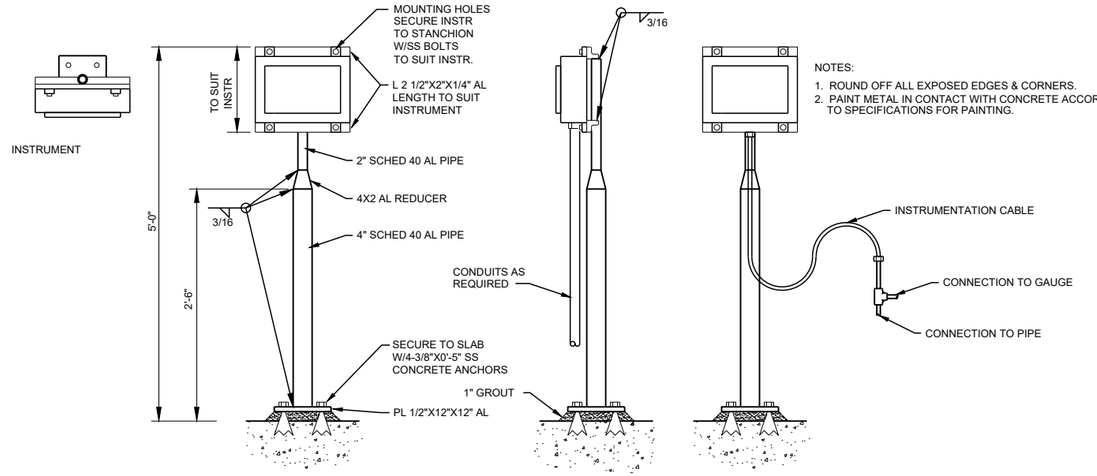
STANDARD DETAIL
INSTRUMENTATION AND CONTROLS

DONOHUE 11/23/2021

Sheet No. 168

Drawing No. **10-N-01**

file: P:\13852ch\Dwg\10ND1.dwg

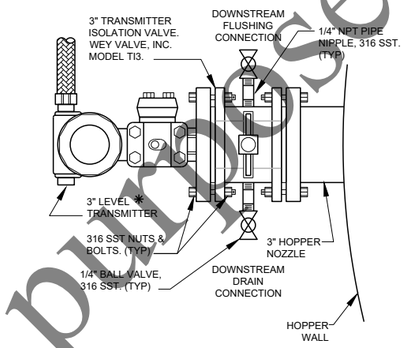


NOTES:

1. ROUND OFF ALL EXPOSED EDGES & CORNERS.
2. PAINT METAL IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.

SINGLE STANCHION MOUNT SMALL CASE INSTRUMENTATION N184

NTS

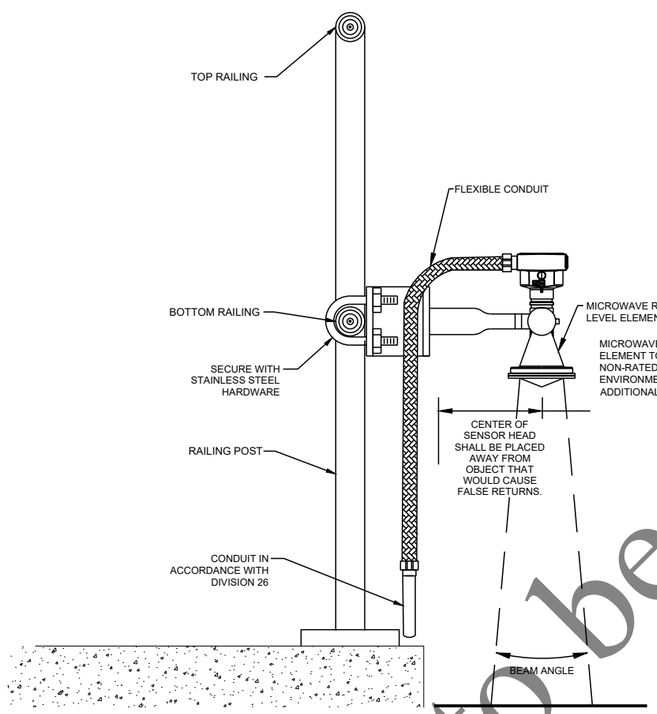


NOTES:

1. COMPONENTS DESIGNATED BY ✱ ARE SUPPLIED BY INSTRUMENT MANUFACTURER.
2. PROVIDE REDUCING FLANGE WHERE NEEDED TO FIT A 3" VALVE

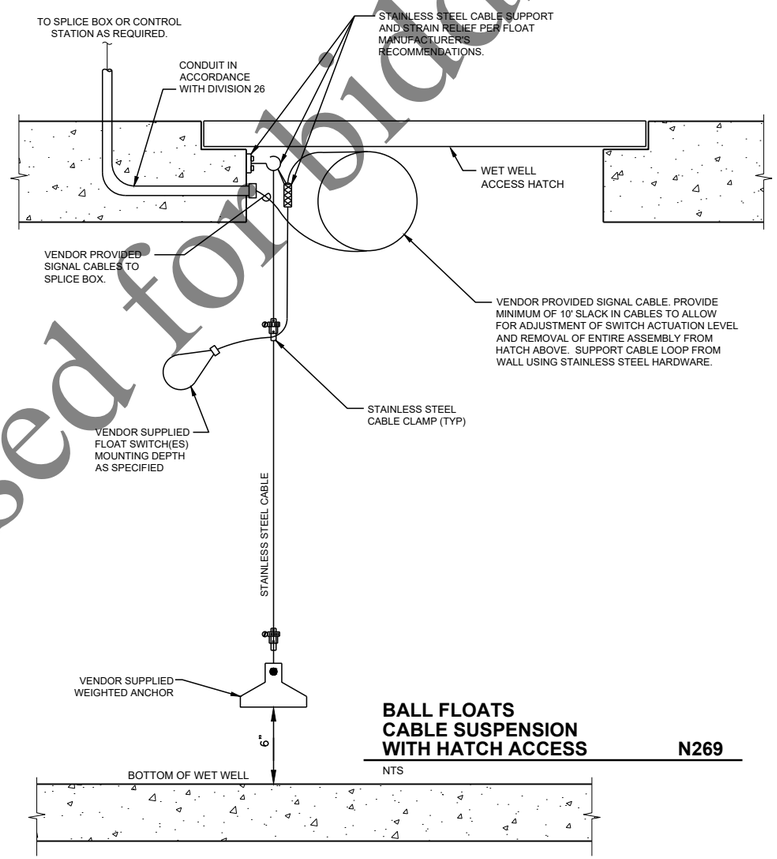
LEVEL TRANSMITTER, DIRECT SENSING, FLANGE MOUNTED N221

NTS



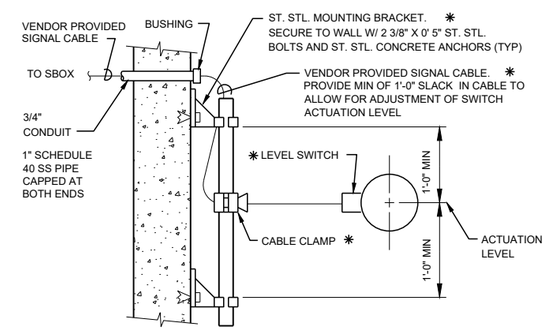
RAILING MOUNTED MICROWAVE RADAR LEVEL ELEMENT N229

NTS



BALL FLOATS CABLE SUSPENSION WITH HATCH ACCESS N269

NTS



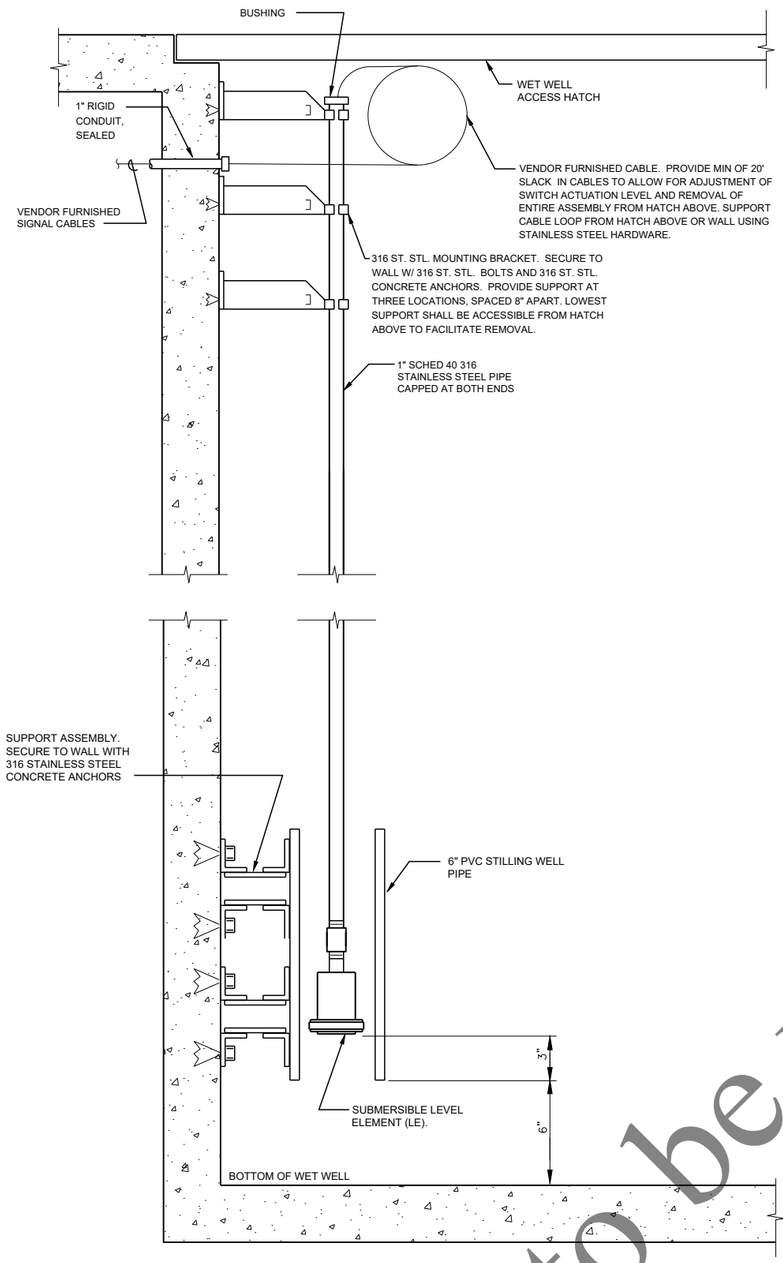
NOTES

1. ✱ DENOTES ITEM FURNISHED BY SWITCH MANUFACTURER. INSTALL FLOAT SWITCHES ON 1" SCHEDULE 40 SS PIPE. PIPE SHALL EXTEND 1'-0" MIN ABOVE THE HIGHEST SWITCH ACTUATION LEVEL & 1'-0" MIN BELOW THE LOWEST SWITCH ACTUATION LEVEL.
2. PROVIDE SUFFICIENT SLACK IN SWITCH CABLE TO LOWER CABLE CLAMP 1'-0" BELOW THE ACTUATION LEVEL. ALL SWITCHES SHALL BE INSTALLED SO AS NOT TO ALLOW INTERFERENCE WITH OPERATION OF ANY OTHER FLOAT SWITCH.
3. SEE PLANS AND/OR SPECIFICATIONS FOR ELEVATION AND NUMBER OF FLOATS REQUIRED.
4. IF FLOATS ARE LESS THAN 18" APART, MOUNT AT 90 DEGREE ANGLE FROM ADJACENT FLOAT TO AVOID INTERFERENCE.
5. IF FLOAT SWITCHES ARE LESS THAN 6" APART, PROVIDE ADDITIONAL MOUNTING PIPES TO ACHIEVE SPACING.

BALL FLOAT ON FIXED ARM N270

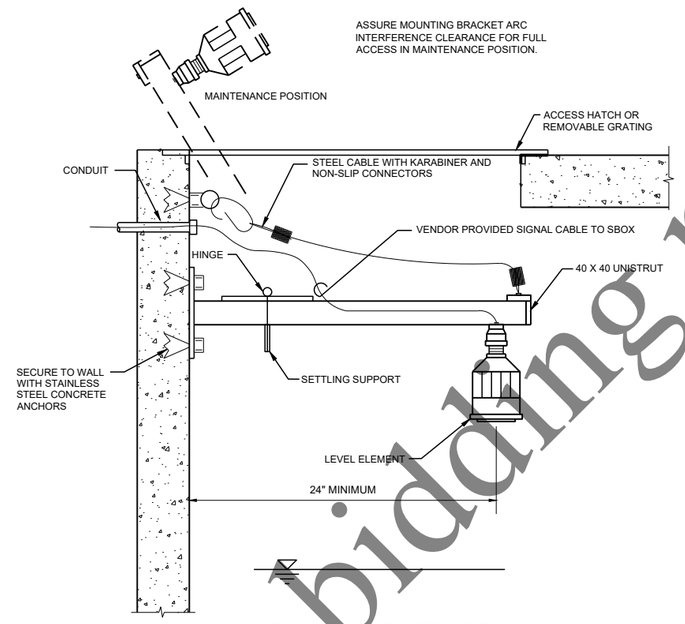
NTS

Not to be used for bidding purposes



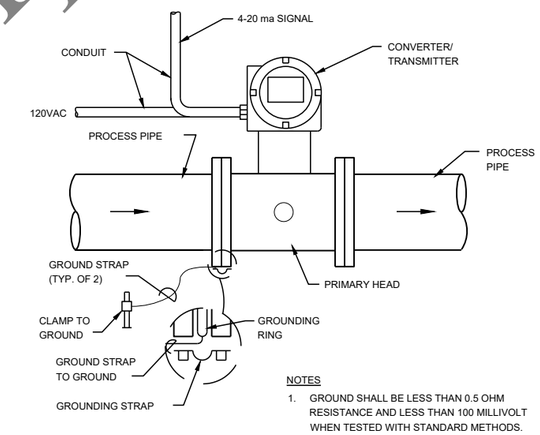
SUBMERSIBLE LEVEL TRANSDUCER IN PARTIAL STILLING WELL N271

NTS



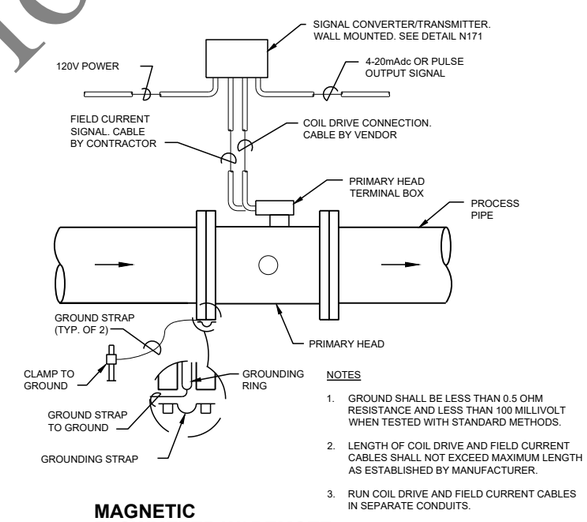
RADAR LEVEL SENSOR SIDEWALL HINGE MOUNT N295

NTS



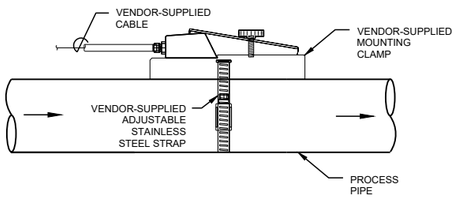
MAGNETIC FLOW METER WITH INTEGRAL CONVERTOR/TRANSMITTER N380

NTS



MAGNETIC FLOWMETER W/ REMOTE CONVERTOR/TRANSMITTER N382

NTS



DOPPLER FLOWMETER W/ REMOTE TRANSMITTER N385

NTS

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Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

Project No.	13852
Designed By	LPH
Drawn By	LPH
Checked By	BLG
Approved By	BLG

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

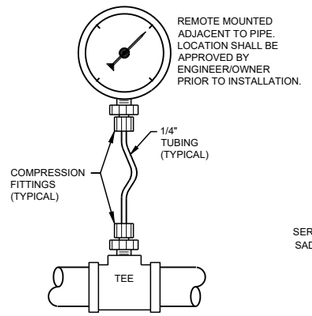
STANDARD DETAIL
INSTRUMENTATION AND CONTROLS

DONOHUE 11/23/2021

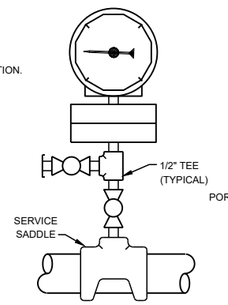
Sheet No. 170

Drawing No. 10-N-03

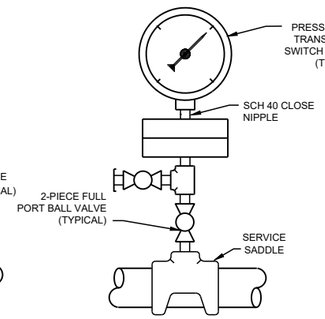
file: P:\13852chi\Dwg\10ND1.dwg



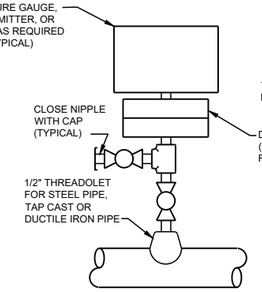
SMALLER THAN 2" DIAMETER PLASTIC PIPE



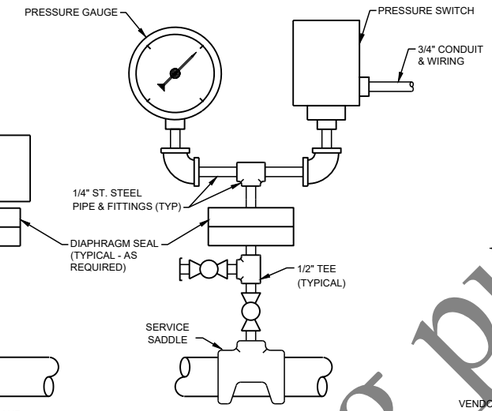
2" DIAMETER AND LARGER PLASTIC PIPE



SMALLER THAN 2" DIAMETER STEEL, CAST OR DUCTILE PIPE

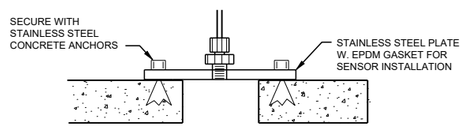


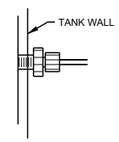
2" DIAMETER AND LARGER STEEL, CAST OR DUCTILE IRON PIPE



2" DIAMETER AND LARGER PLASTIC PIPE

1. FITTING MATERIAL SHALL BE COMPATIBLE WITH MAIN PROCESS PIPE MATERIAL. ALL REMAINING FITTINGS TO BE 316 STAINLESS STEEL.
2. 1/2" PIPE SHALL NOT BE REDUCED PRIOR TO FLUSHING TEE OR ISOLATION VALVE



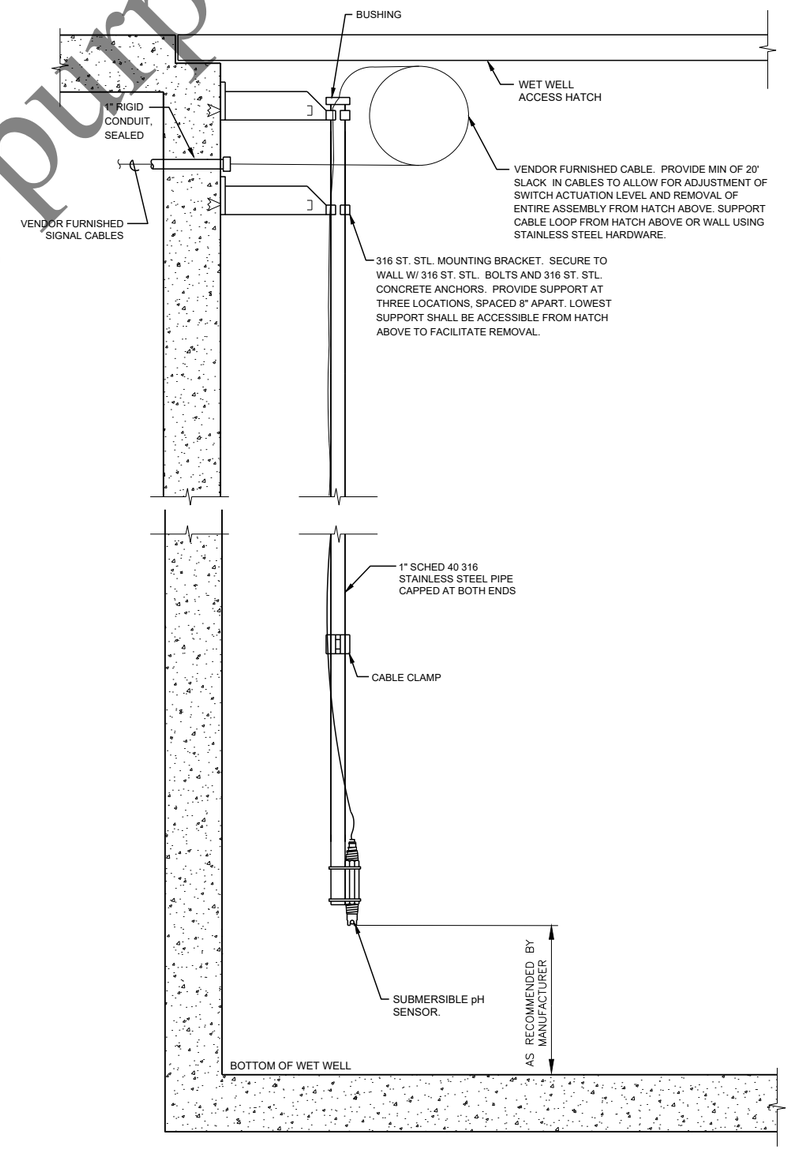


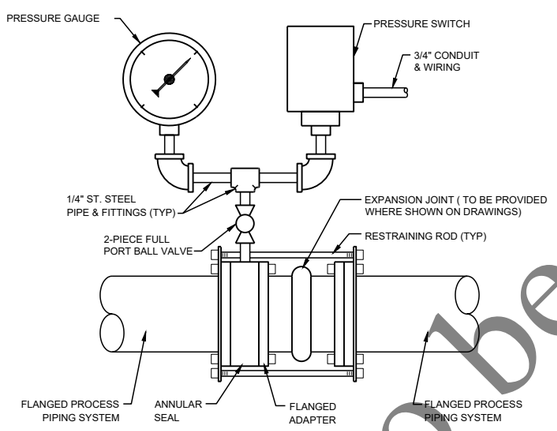
NOTE:

ALL MATERIALS ARE TO BE AS NOTED UNLESS NOTED MATERIAL IS NOT COMPATIBLE WITH PROCESS STREAM. IF NOTED MATERIALS NOT COMPATIBLE WITH PROCESS STREAM PROVIDE MATERIALS THAT ARE COMPATIBLE.

PRESSURE ELEMENTS PIPE MOUNTED - W OR WO DIAPHRAGM SEAL N590

NTS

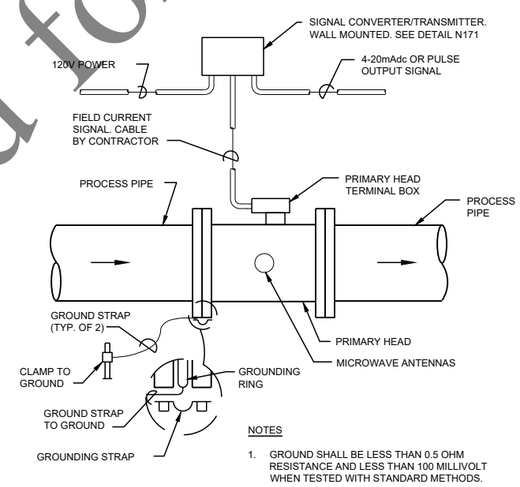




ALL MATERIALS ARE TO BE AS NOTED UNLESS NOTED MATERIAL IS NOT COMPATIBLE WITH PROCESS STREAM. IF NOTED MATERIALS NOT COMPATIBLE WITH PROCESS STREAM PROVIDE MATERIALS THAT ARE COMPATIBLE.

PRESSURE SWITCH AND GAUGE - W/ ANNULAR SEAL N520

NTS



NOTES

1. GROUND SHALL BE LESS THAN 0.5 OHM RESISTANCE AND LESS THAN 100 MILLIVOLT WHEN TESTED WITH STANDARD METHODS.

DENSITY METER W/ REMOTE CONVERTOR/TRANSMITTER N682

NTS

pH/ TEMPERATURE SENSOR - IMMERSIBLE N634

NTS

Not to be used for bidding purposes

No.	DATE	REVISION	INT.		
				Project No.	13852
				Designed By	LPH
				Drawn By	LPH
				Checked By	BLG
				Approved By	BLG

Four Rivers Sanitation Authority

FOUR RIVERS SANITATION AUTHORITY
PRIMARY FILTRATION PROJECT
PHASE I (CAPITAL PROJECT NO. 2022)
ROCKFORD, IL

STANDARD DETAIL
INSTRUMENTATION AND CONTROLS

DONOHUE 11/23/2021

Sheet No. 171

Drawing No. **10-N-04**

file: P:\13852chi\Dwg\10ND1.dwg