CITY OF FLINT GENESEE COUNTY, MICHIGAN CONSTRUCTION PLANS FOR BATTERY B SECONDARY CLARIFIER FLOW CONTROL PROJECT COF1077-01F

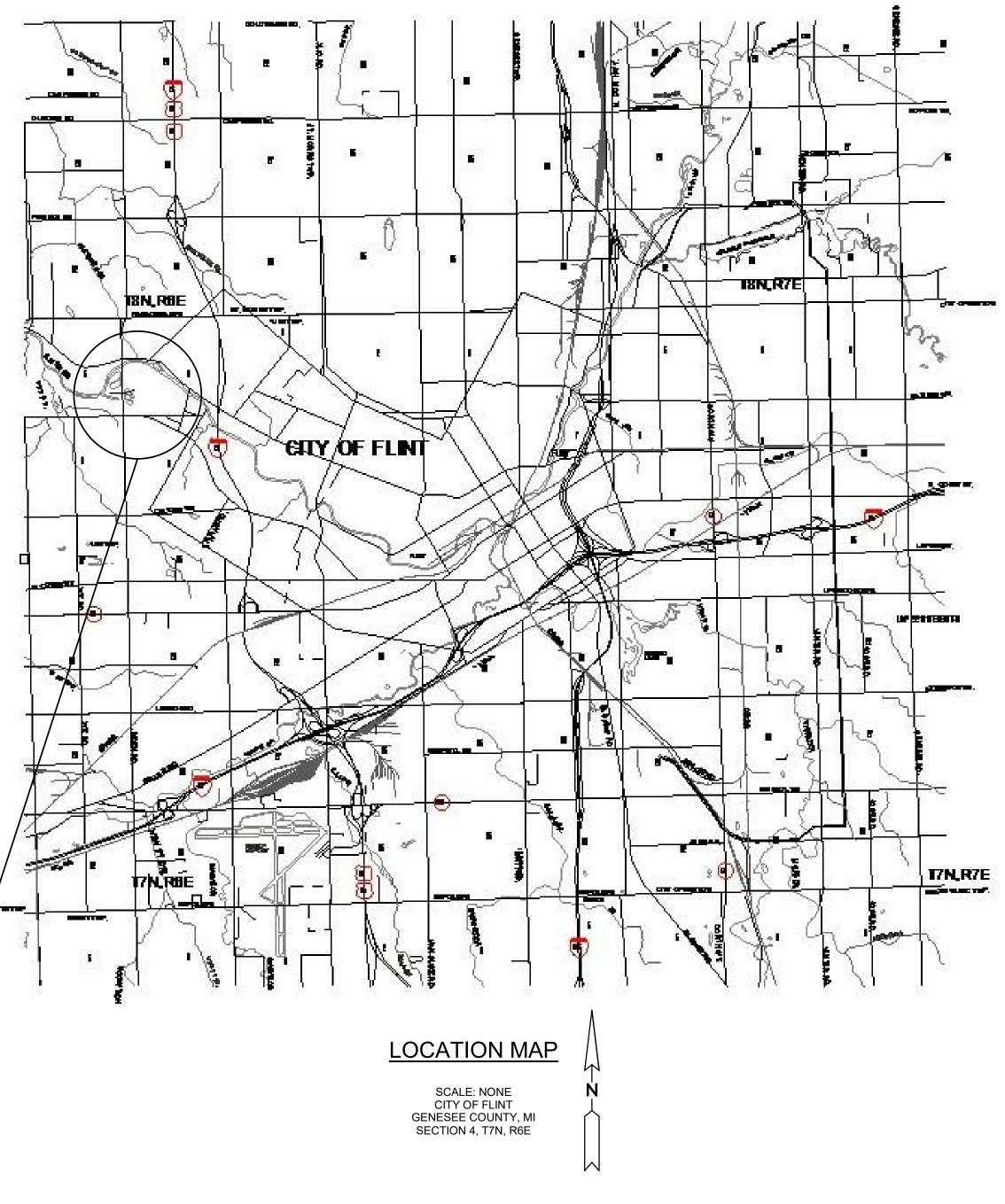
DRAWING INDEX

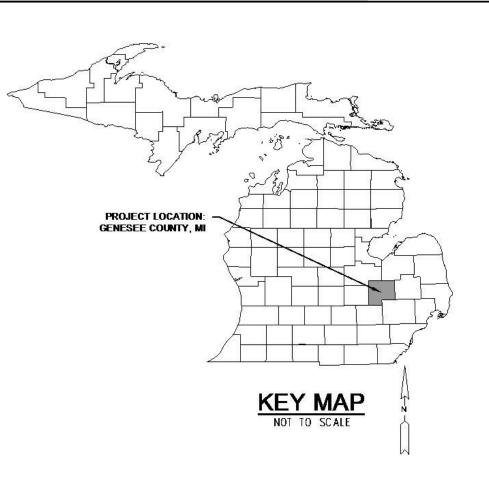
SHEET NO	DESCRIPTION		
GENERAL			
G-001	COVER SHEET		
STRUCTURAL			
S-100	STRUCTURAL GENERAL NOTES		
SX-100	STRUCTURAL DEMO - PLAN		
S-101	PLANS		
S-102	SECTIONS & DETAILS		
PLUMBING			
P-001	PLUMBING GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS		
P-101	PLUMBING PLAN		
P-601	PLUMBING SCHEMATIC, SCHEDULES, AND DETAILS		
PROCESS			
D-001	PROCESS SYMBOLS AND ABBREVIATIONS		
DX-101	DEMOLITION PLANS		
DX-301	DEMOLITION SECTIONS		
D-101	FLOOR PLANS		
D-301	SECTIONS - VALVE ROOM		
D-901	3D REPRESENTATIONS		
MECHANICAL			
M-001	HVAC GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS		
M-101	HVAC PLAN		
M-301	HVAC SECTIONS		
ELECTRICAL			
E-001	ELECTRICAL SYMBOLS AND ABBREVIATIONS		
E-002	GENERAL NOTES AND ABBREVIATIONS		
EX-101	ELECTRICAL DEMOLTION PLAN - CLARIFIER STRUCTURE		
EX-102	ELECTRICAL DEMOLITION PLAN - BATTERY B/EQUIPMENT BUILDING		
E-101	ELECTRICAL SITE PLAN		
E-102	VAULT ELECTRICAL PLAN		
E-103	EQUIPMENT BUILDING GRADE FLOOR ELECTRICAL PLAN		
E-104	EQUIPMENT BUILDING LOWER LEVEL ELECTRICAL PLAN		
E-501	ELECTRICAL DETAILS		
E-601	ELECTRICAL SCHEDULES		
E-801	POWER WIRING DIAGRAMS		

TTED 6/22/2023 10:28:21 AM



CITY OF FLINT WATER POLLUTION CONTROL FACILITY PROJECT LOCATION: G-4652 BEECHER RD FLINT, MI 48532





UTILITIES & MUNICIPALITIES

TELEPHONE	CITY OF FLINT
AT&T ENGINEERING	702 WEST 12TH STREET
54 NORTH MILL STREET, P.O. BOX 32	TRANSPORTATION BUILDING
PONTIAC, MICHIGAN 48342	FLINT, MICHIGAN 48502
CONTACT: JEFF HEATH	CONTACT: JOHN DALY
PHONE: 248.975.4588	PHONE: 810.766.7343
CABLE TV COMCAST CABLEVISION 6095 WALL STREET STERLING HEIGHTS, MICHIGAN 48312 CONTACT: TOM DICKINSON PHONE: 586.883.7412	CITY OF FLINT WATER SERVICE CENTER 3310 EAST COURT STREET FLINT, MICHIGAN 48506 CONTACT: PHONE: 810.766.7202
ELECTRIC CONSUMERS ENERGY - ELECTRIC 3201 EAST COURT STREET FLINT, MICHIGAN 48501 CONTACT: MARCEY CONN PHONE: 810.760.3506	CITY OF FLINT ENGINEERING 702 WEST 12TH STREET FLINT, MICHIGAN 48502 CONTACT: MARK ADAS PHONE: 810.766.7135
GAS	SOIL EROSION & SEDIMENTATION CONTROL
CONSUMERS ENERGY	GCDC-WWS
3201 EAST COURT STREET	G-4610 BEECHER ROAD
FLINT, MICHIGAN 48501	FLINT, MICHIGAN 48532
CONTACT: SALVATORE DELISI	CONTACT: MARK STEPHENS
PHONE: 810.760.3486	PHONE: 810.732.7870

2023.06.24 ISSUED FOR BIDS





GENERAL NOTES

- DIMENSIONS AND ELEVATIONS OF EXISTING STRUCTURES ARE BASED ON PREVIOUS CONTRACT DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING W/FIELD MEASUREMENTS ALL DIMENSIONS AND ELEVATIONS FOR FABRICATION AND/OR MODIFICATIONS OR ADDITIONS BEING MADE UNDER THIS CONTRACT. ANY DISCREPANCIES SHALL BE PRESENTED TO THE OWNER AND ANY DESIGN CONFLICTS SHALL BE RESOLVED WITH OWNER PRIOR TO FABRICATIONS OR CONSTRUCTION OF IMPACTED ITEMS.
- ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN WITH THE ± SYMBOL, 2. ARE APPROXIMATE AND SHALL BE VERIFIED IN FIELD BY THE CONTRACTOR BEFORE FABRICATION AND CONSTRUCTION.
- 3. ALL DIMENSIONS OR ELEVATIONS MARKED WITH AN ASTERISK "*" SHALL BE DETERMINED OR VERIFIED WITH EQUIP. MFR. CERTIFIED SHOP DRAWINGS OR FIELD MEASUREMENTS OF EXISTING CONSTRUCTION BEFORE FABRICATION AND CONSTRUCTION.
- 4. ALL ADHESIVE ANCHORING SYSTEMS FOR POST-INSTALLED ANCHORS AND/OR REINFORCING DOWELS IN CONCRETE OR MASONRY SHALL BE "HIT-HY 200 ADHESIVE ANCHORING SYSTEM" BY HILTI AT SIZE AND SPACING INDICATED ON DRAWINGS.

CODES AND LOADS

- 1. ALL STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH THE FOLLOWING CODES:
 - CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE Α. STRUCTURES - AMERICAN CONCRETE ASSOCIATION ACI 350 (2006)
- 2. DESIGN LOADS (GENERAL)
 - ELEVATED SLAB & SLABS ON GRADE LIVE LOADS 150 PSF Α. Β.
 - ELEVATED PLATFORM LIVE LOADS 150 PSF SNOW LOADS, PER ASCE 7-16 (OCCUPANCY CATEGORY III) C. 1. GROUND SNOW LOAD - 30 PSF
 - 2. SNOW EXPOSURE FACTOR Ce = 0.9 3. SNOW THERMAL FACTOR - Ct = 1.0
 - 4. SNOW IMPORTANCE FACTOR I = 1.1 5. FLAT ROOF SNOW LOAD - Pf = 21.0 PSF
 - WIND LOADS D.
 - 1. BASIC WIND SPEED (3-SECOND)=120 MPH 2. WIND EXPOSURE CATEGORY C 3. HEIGHT AND EXPOSURE FACTOR: 1.4
 - LATERAL EARTH PRESSURES DRAINED CONDITION E. 1. ACTIVE PRESSURE - Pa = 40.0 PSF; Ka = 0.32 2. AT REST PRESSURE - Po = 60.0 PSF; Ko = 0.48 3. PASSIVE PRESSURE - Pp = 375 PSF; Kp = 3.12
 - F. LATERAL EARTH PRESSURE - UNDRAINED CONDITION 1. ACTIVE PRESSURE - Pa = 84.0 PSF 2. AT REST PRESSURE - Po = 94.0 PSF 3. PASSIVE PRESSURE - Pp = 267 PSF
 - G. 100 YEAR FLOOD ELEVATION GRADE

DEMOLITION

- 1. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT DAMAGE TO EXISTING STRUCTURES, WHICH ARE TO REMAIN, DURING DEMOLITION WORK. ALL DAMAGE SHALL BE REPAIRED TO THE COMPLETE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- WHEN REMOVING EXISTING CONCRETE BY CUTTING OR CHIPPING THE 2. CONTRACTOR SHALL ONLY REMOVE REINFORCING BARS WHICH CANNOT BE BENT INTO AREAS WHERE NEW CONCRETE WOULD COMPLETELY COVER THEM.
- IF FRACTURE OF ADJACENT CONCRETE OCCURS DURING DEMOLITION/ 3 ALTERATION WORK, THE REPAIR SHALL BE WITH AN ENGINEER APPROVED PRESSURE INJECTED EPOXY, TO THE COMPLETE SATISFACTION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL PROVIDE WRITTEN PLAN AND DESCRIPTION OF ALL 4. DEMOLITION, MODIFICATION, OR ALTERATION WORK ON EXISTING STRUCTURES FOR REVIEW AND ACCEPTANCE PRIOR TO BEGINNING WORK.
- ANY REMAINING EXPOSED REINFORCING STEEL AFTER DEMO SHALL BE COATED 5. WITH CORROSION INHIBITING COMPOUND. USE SIKA ARMATEC 110 EPOCEM OR APPROVED EQUAL.

METALS

STEEL

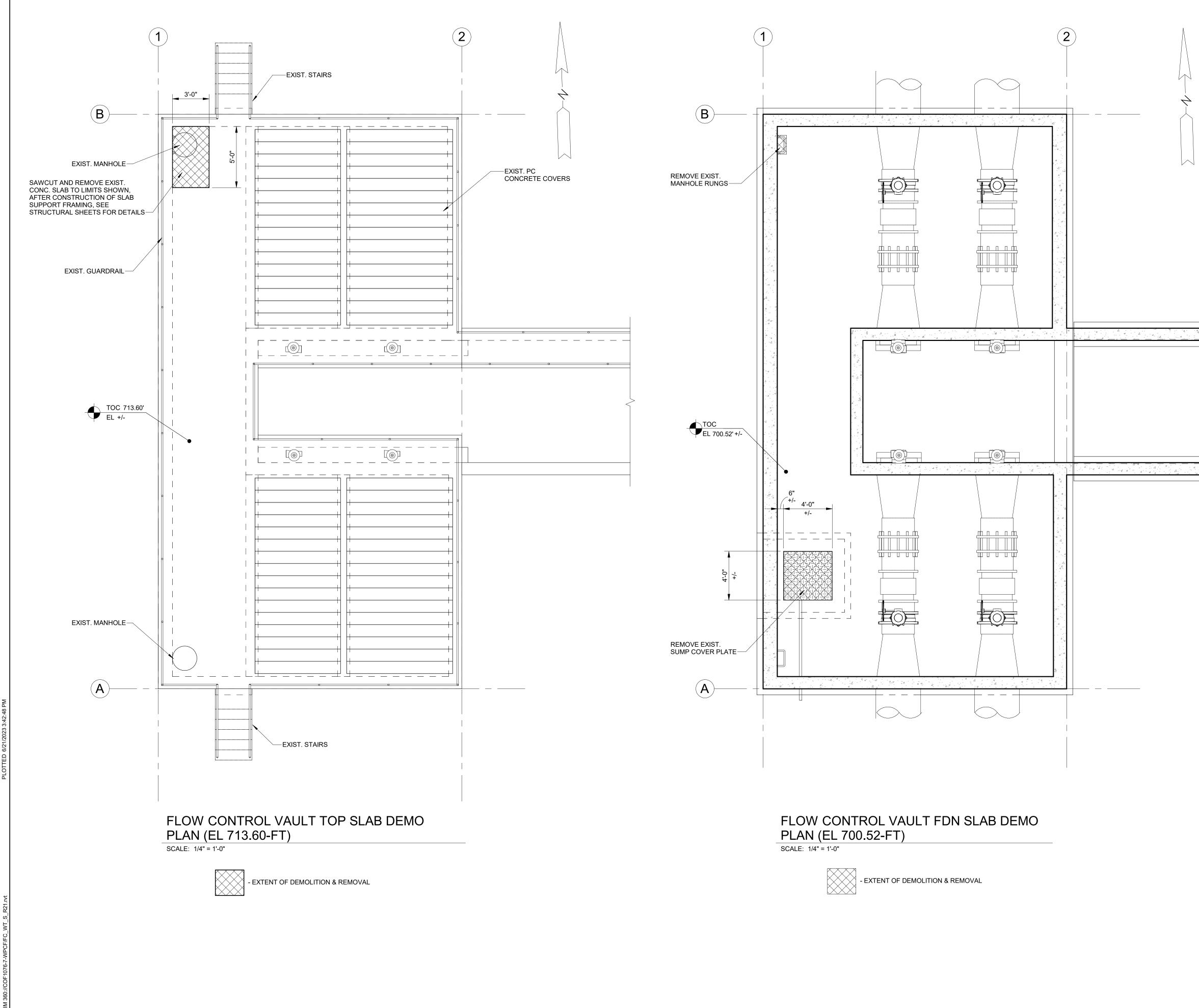
- 1. STRUCTURAL STEEL AND MISCELLANEOUS METALS DESIGN SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, AISC/ANSI 360.
- 2. ALL STRUCTURAL STEEL W SHAPES SHALL CONFORM TO ASTM A-992, GRADE 50. MISCELLANEOUS METALS SHALL CONFORM TO ASTM A-36.
- 3. BOLTS SHALL BE A MINIMUM 3/4" DIAMETER, ASTM A325N, TYPE 1, GALVANIZED, UNLESS NOTED OTHERWISE. PROVIDE COMPATIBLE A563 GRADE DH, HEAVY HEX NUTS, AND F436 GRADE 1 WASHERS.
- 4. ALL GALVANIZED STEEL SHALL BE HOT-DIP GALVANIZED CONFORMING TO ASTM A123, UNO.
- ALL 1-1/2" DEEP STEEL GRATING INDICATED ON PLANS SHALL BE TYPE 15-SGI-4 GRATING AND 5. SHALL HAVE A MINIMUM ALLOWABLE WORKING STRESS OF 12,000 PSI WITH THE FOLLOWING MINIMUM SECTION PROPERTIES: Sx = 0.90 IN^3/FT lx = 0.675 IN^4/FT
- ALL GRATING PENETRATIONS SHALL BE CUT NEATLY AND A RECTANGULAR BAND BAR OF THE 6. SAME HEIGHT AND MATERIAL SHALL BE INSTALLED BY WELDING.
- 7. ALL GRATING SHALL BE SECURED TO FRAMING MEMBERS USING GALV. STEEL SADDLE CLIPS AND 1/4" DIA. GALV. STEEL TEK SCREWS AS SPECIFIED BY GRATING MANUFACTURER.

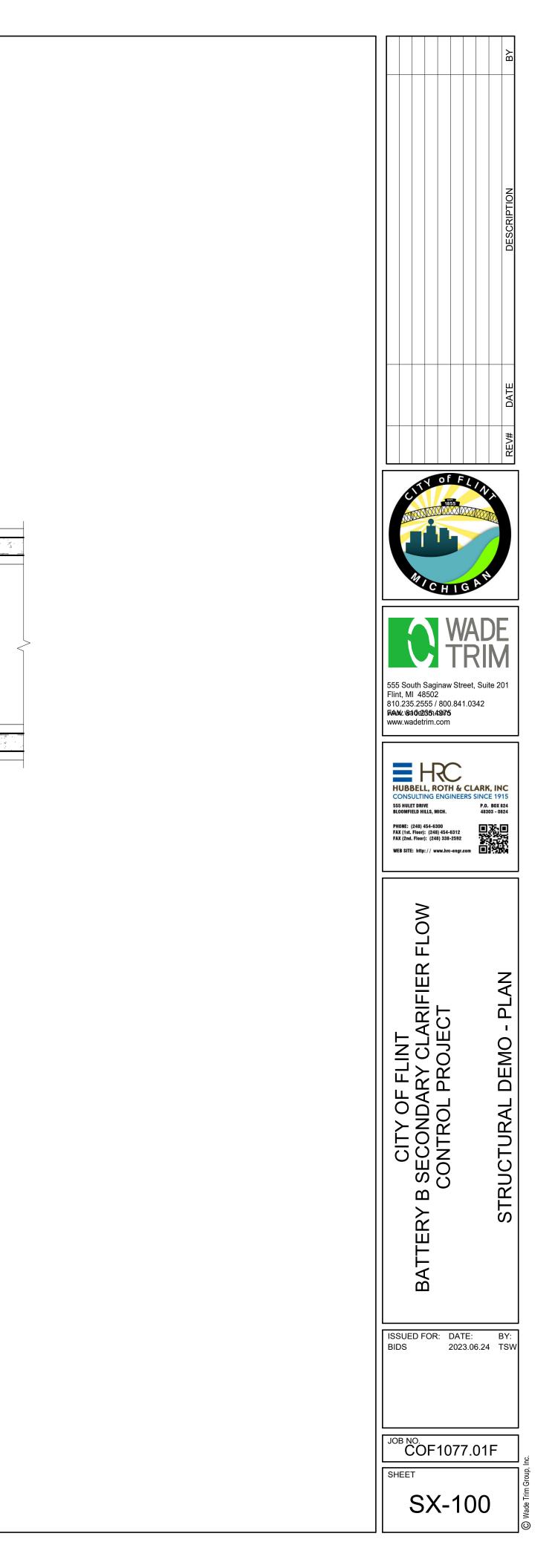
HC HOLLOW CORE HP HIGH POINT	ALT ALUM BLDG BM BSM CJ CLR CONC CONST CON	CONTINUOUS CONTROLLED LOW STRENGTH MATERIA CONCRETE MASONRY UNIT CORNER CUBIC YARD DOWEL BAR REPLACEMENT DETAIL DIAMETER DIAGONAL DISCONTINUOUS DOWELS EXPANSION JOINT EACH END EACH FACE EACH SIDE EQUAL EACH WAY EACH ELEVATION EXISTING EXTERIOR/ EXTENSION FILLET CONCRETE FLOOR DRAIN FAR FACE FAR SIDE FINISH FLOOR FOUNDATION FEET GALVANIZED GRADE GROSS VEHICLE WEIGHT HORIZONTAL
	H HC	HORIZONTAL HOLLOW CORE

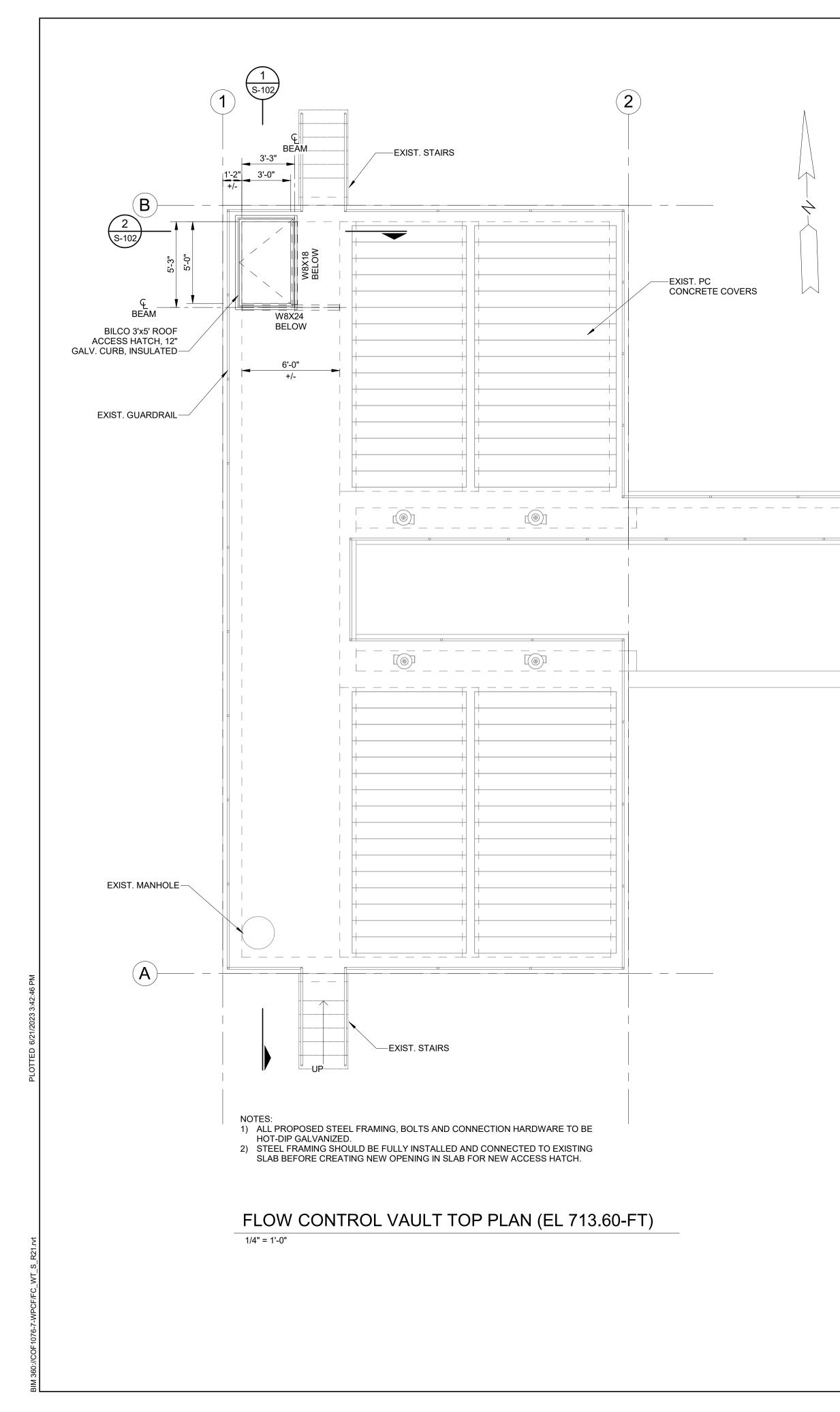
HP

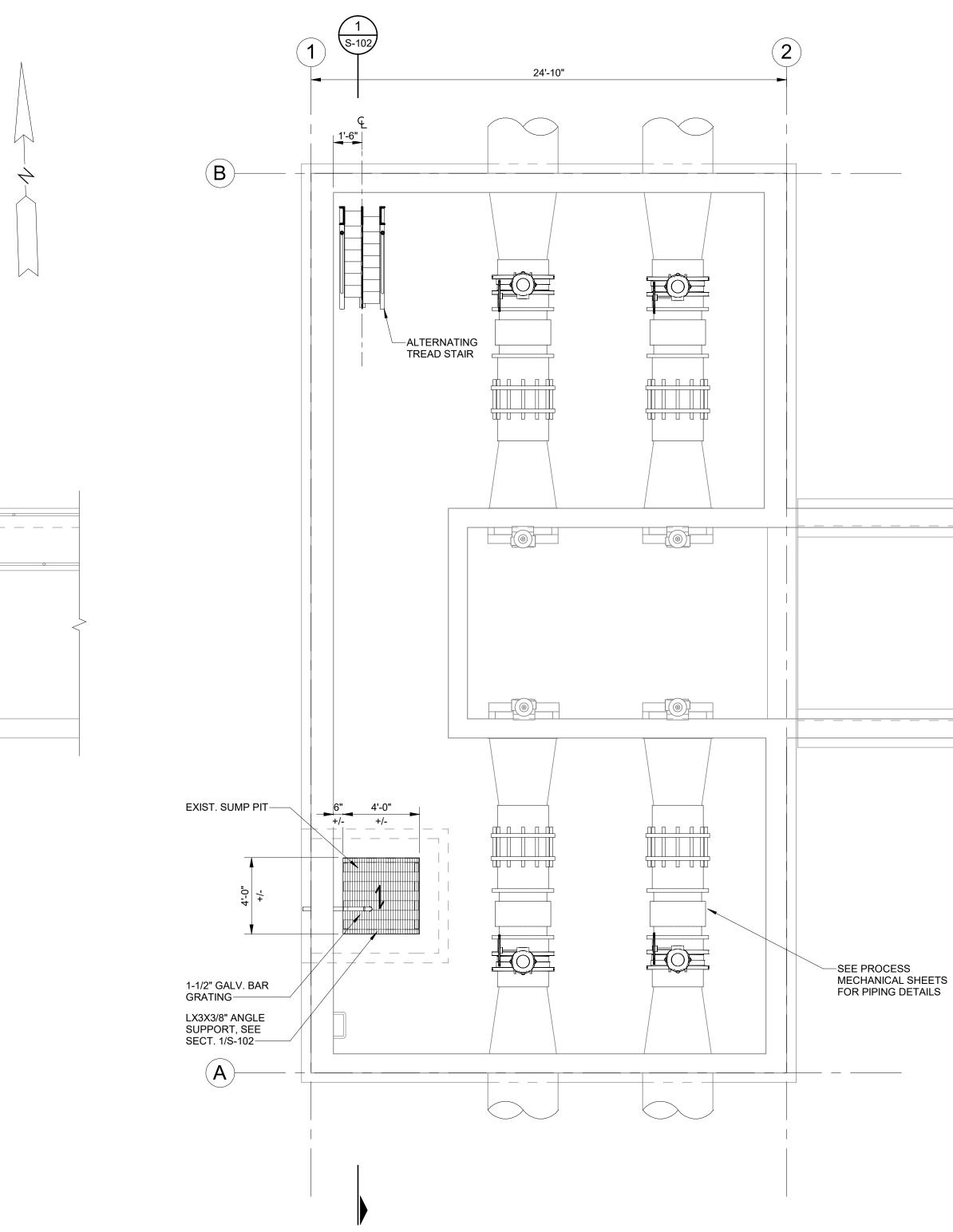
HIGH PERFORMANCE COATING HPC HK HOOK ΗT HEIGHT INSIDE DIAMETER ID INVERT ELEVATION INSIDE FACE INCHES IN INT INTERIOR JOINT JT KIP THOUSAND POUNDS KSI KIPS PER SQUARE INCH KB KNEE BRACE LENGTH LOW POINT LP IAL LGHT LENGTH MAX MAXIMUM MIN MINIMUM MCP MO MULTIPLE CORROSION PROTECTION MASONRY OPENING NA NOT APPLICABLE NF NEAR FACE NS NEAR SIDE NTS NIC NOT TO SCALE NOT IN CONTRACT OC ON CENTER OD OF OUT SIDE DIAMETER OUT SIDE FACE OPNG OPENING PSF PSI POUNDS PER SQ. FEET POUNDS PER SQUARE INCH PΤ PRESSURE TREATED REINFORCEMENT REINF RE REFER TO REM REMOVABLE SHTS SHEETS SIM SIMILAR SJ SLAB CONTROL JOINT SS STAINLESS STEEL STIR STIRRUPS STRUCT STRUCTURAL Τ/ TOP TEMPORARY EARTH RETENTION SYSTEM TERS THK THICK TOS ELEVATION TOP OF STRUCTURAL STEEL TYP TYPICAL UNLESS NOTED OTHERWISE UNO VERTICAL V WIDTH W WORK POINT WP

	BY
	DESCRIPTION
	DATE
	REV#
MICHIGA	
555 South Saginaw Street, St Flint, MI 48502 810.235.2555 / 800.841.0342 FMAX: V8404286148975 www.wadetrim.com	uite 201
CITY OF FLINT BATTERY B SECONDARY CLARIFIER FLOW CONTROL PROJECT	STRUCTURAL GENERAL NOTES
ISSUED FOR: DATE: BIDS 2023.06.2	BY: 24 TSW
COF1077.0 ⁷	1F
SHEET S-100	

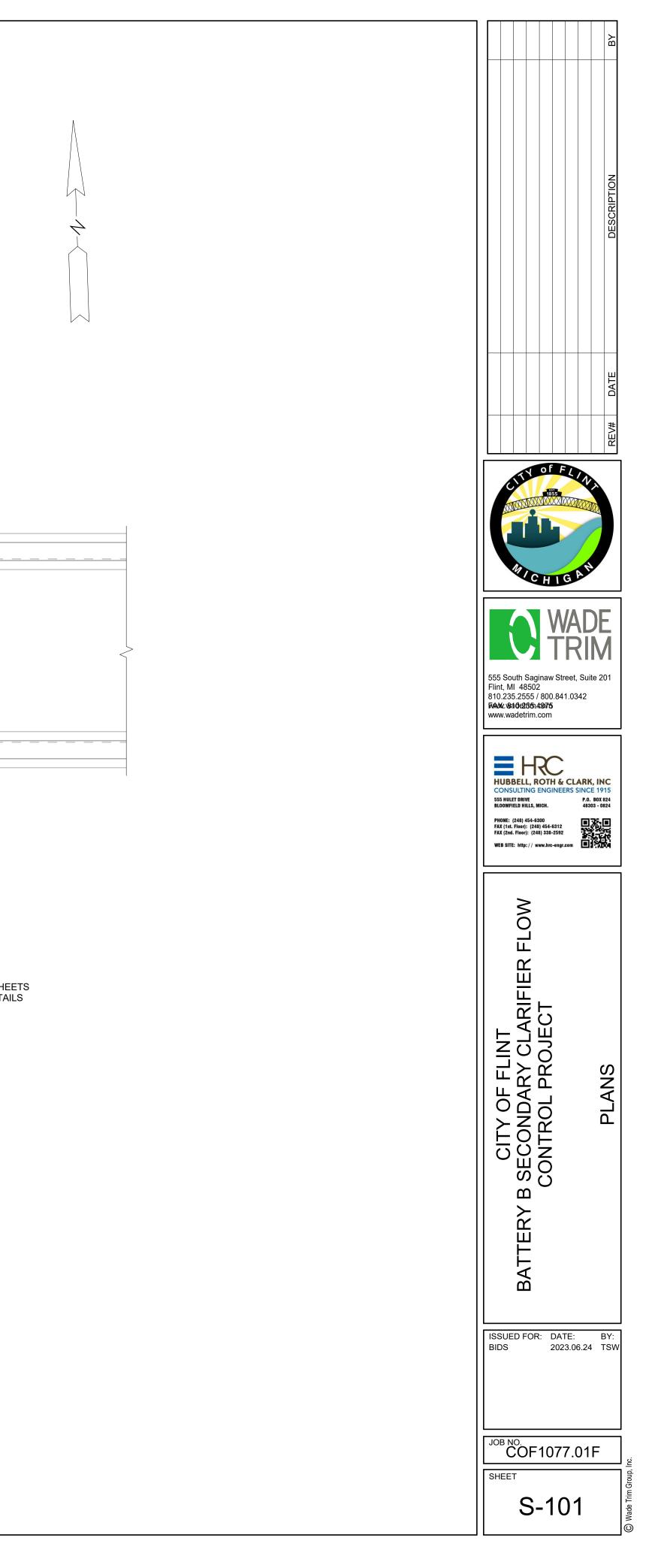


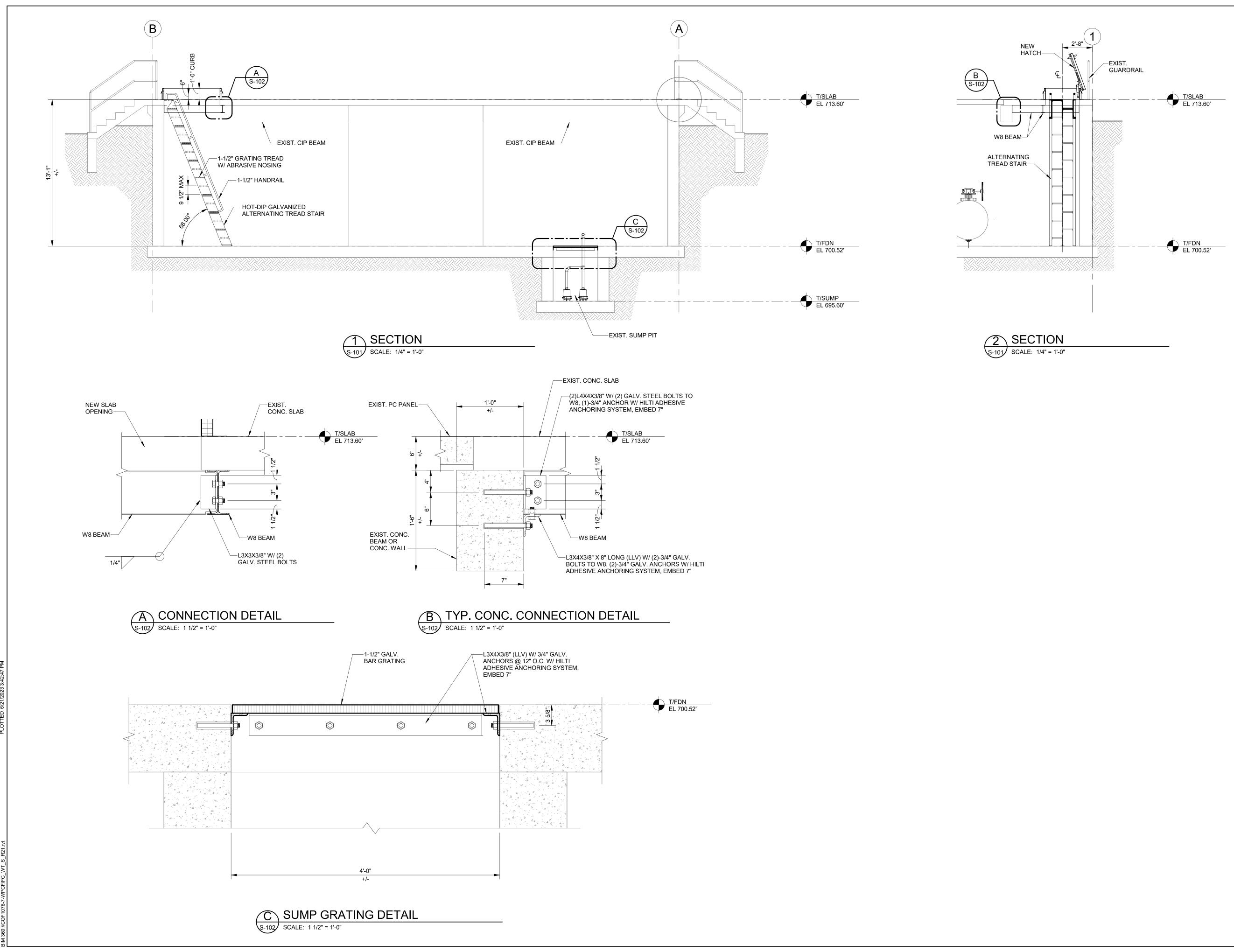


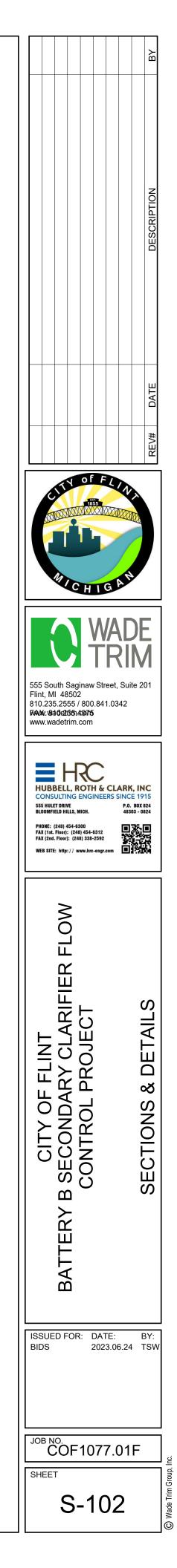




FLOW CONTROL VAULT FDN PLAN (EL 700.52-FT) 1/4" = 1'-0"





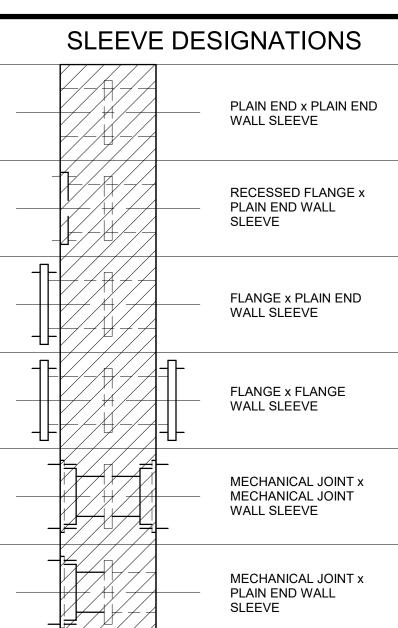


AFF ABOVE FINISHED FLOOR AL ALUMINUM ARV AIR RELIEF VALVE BCE BIOLOGICAL CONTACTOR EFFLUENT BF BLIND FLANGE BP BYPASS C CENTRATE CA COMPRESSED AIR CDS CHEMICAL DOSING CE CHLORINATED EFFLUENT CI CAST IRON CIP CAST IRON SIDL PIPE CISP CAST IRON SIDL PIPE CIP CAST IRON SIDL PIPE CON CONCENTRATE CONC CONCENTRIC REDUCER CONC CONCENTRIC CUP COPPER PIPE CW COLOWATER D DUCTILE IRON DIP DUCTILE IRON PIPE DMJ DISMANTLING JOINT DS DIGESTED SLUDGE ECC ECCENTRIC ED EOUIPMENT DRAIN EFF EFFLUENT EIF EFFLUENT		
AL ALUMINUM ARV AIR RELIEF VALVE BGC BIOLOGICAL CONTACTOR EFFLUENT BF BLIND FLANGE BP BYPASS C CENTRATE CA COMPRESED AIR CDS CHEMICAL DOSING CE CHLORINATED EFFLUENT CI CAST IRON PIPE CISP CAST IRON SOIL PIPE CL CENTER LINE CON CONCENTRATE CONCECONCENTRATE CON CONCENTRATE CONC CONCENTRATE CON CONCENTRATE CONC CONCENTRATE CONC CONCENTRATE CON COLONCENTRATE CONC CONCENTRATE CONC CONCENTRATE CONC CONCENTRATE CONC CONCENTRATE CONC CONCENTRATE CW COLD WATER D DERAIN DE DECANT DI DUCTILE IRON PIPE DMJ DISMANTLING JOINT DS DIGESTED SLUDGE ECC ECCENTRIC REDUCER ED EQUIPMENT DANIN EIF EFFLUENT <th>ABE</th> <th>BREVIATIONS - PIPING</th>	ABE	BREVIATIONS - PIPING
ARV AIR RELIEF VALVE BCE BIOLOGICAL CONTACTOR EFFLUENT BF BLIND FLANGE BP BYPASS C CENTRATE CA COMPRESSED AIR CDS CHEMICAL DOSING CE CHLORINATED EFFLUENT CI CAST IRON PIPE CISP CAST IRON PIPE CI CAST IRON PIPE CON CONCENTRATE CON CONCENTRIC REDUCER CONRED CONCENTRIC REDUCER CONC CONCRETE CV CHLORINATED POLYVINYL CHLORIDE CUP COPPER PIPE CW COLD WATER D DRAIN DE DECANT DI DUCTILE IRON PIPE DMJ DISMANTLING JOINT DS DIGESTED SLUDGE ECC ECCENTRIC REDUCER ED EQUIPMENT DRAIN EFF EFFLUENT EI EQUALIZATION TANK INFLUENT EI EQUALIZATION TANK RETURN ES EQUALIZATION TANK SLUDGE FA FOU		ABOVE FINISHED FLOOR
BCE BIOLOGICAL CONTACTOR EFFLUENT BF BLIND FLANGE BP BYPASS C CENTRATE CA COMPRESSED AIR CDS CHEMICAL DOSING CE CHLORINATED EFFLUENT CI CAST IRON CIP CAST IRON PIPE CISP CAST IRON SOLL PIPE CIP CAST IRON SOLL PIPE CIP CAST IRON SOLL PIPE CIP CAST IRON SOLL PIPE CON CONCENTRATE CON CONCENTRIC REDUCER CONC CONCENTRIC REDUCER CONC CONCENTRIC REDUCER CONC CONCENTRIC REDUCER CW COLD WATER D DRAIN DE DECANT DI DUCTILE IRON PIPE DM DUSMANTLING JOINT DS DIGESTED SLUDGE ECC ECCENTRIC ECC RED EQUIPMENT DRAIN EFF EFFLUENT EI EQUALIZATION TANK INFLUENT EL ELEVATION ELE EQUALIZATION TANK RETURN ES EQUALIZATION TANK RETURN ES EQUALIZATION TANK SLUDGE FA FOUL AIR FCA FL		
BF BLIND FLANGE BP BYPASS C CENTRATE CA COMPRESSED AIR CDS CHEMICAL DOSING CE CHLORINATED EFFLUENT CI CAST IRON CIP CAST IRON PIPE CISP CAST IRON SOIL PIPE CL CENTER LINE CON CONCENTRATE CON CONCENTRIC REDUCER CONC CONCENTRIC REDUCER CONC CONCENTRIC REDUCER CUP COPPER PIPE CW COLD WATER D DRAIN DE DECANT DI DUCTILE IRON DIP DUCTILE IRON PIPE DMJ DISMANTLING JOINT DS DIGESTED SLUDGE ECC RED ECCENTRIC ECC RED ECCENTRIC ECC RED ECCENTRIC ECC RED ECCENTRIC ECC RED EQUIPMENT DRAIN EFF EFFLUENT EI EQUALIZATION TANK INFLUENT EL ELEVATION ELB ELBOW ER EQUALIZATION TANK SLUDGE FA FOUL AIR FCA FLANGE FM FORCE MAIN <td>ARV</td> <td></td>	ARV	
BP BYPASS C CENTRATE CA COMPRESSED AIR CDS CHEMICAL DOSING CE CHLORINATED EFLUENT CI CAST IRON PIPE CIP CAST IRON SOIL PIPE CISP CAST IRON SOIL PIPE CINCENTRATE CONCENTRATE CON CONCENTRATE CONC CONCENTRIC REDUCER CONC CONCRETE CW COLD WATER D D BRAIN DE DECANT DI DUCTILE IRON PIPE DMJ DISMANTLING JOINT DS DIGESTED SLUDGE ECC ECCENTRIC ECC RED ECONTRIC REDUCER ED EQUIPMENT DRAIN EI EQUALIZATION TANK INFLUENT EL ELEVATION ELB EBOW ER	BCE	
C CENTRATE CA COMPRESSED AIR CDS CHEMICAL DOSING CE CHLORINATED EFFLUENT CI CAST IRON PIPE CISP CAST IRON PIPE CISP CAST IRON SOIL PIPE CIL CENTER LINE CON CONCENTRATE CON CONCENTRIC REDUCER CONC CONCENTRIC REDUCER CONC CONCRETE CPVC CHLORINATED POLYVINYL CHLORIDE CUP COPPER PIPE CW COLD WATER D DRAIN DE DECANT DI DUCTILE IRON PIPE DMJ DISMANTLING JOINT DS DIGESTED SLUDGE ECC ECCENTRIC REDUCER ED EQUIPMENT DRAIN EFF EFFLUENT EI EQUALIZATION TANK INFLUENT EL ELEVATION ELB ELBOW ER EQUALIZATION TANK RETURN ES EQUALIZATION TANK SLUDGE FA FOUL AIR FCA FLANGED COUPLING ADAPTER FD FLOOR DRAIN FEF FINAL EFFLUENT FE FINA FUN	BF	
CACOMPRESSED AIRCDSCHEMICAL DOSINGCECHLORINATED EFFLUENTCICAST IRONCIPCAST IRON PIPECISPCAST IRON SOLL PIPECLCENTER LINECONCONCENTRATECON CONCENTRIC REDUCERCONCCONCENTRIC REDUCERCUPCONCENTRIC REDUCERCUPCONCENTRIC REDUCERCUPCONCENTRIC REDUCERCUPCONPER PIPECWCOLD WATERDDEDECANTDIDIDUCTILE IRONDIPDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONEKEQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFEFINAL EFFLUENTFEFINAL EFFLUENTFFWFEED FORWARDFOTFLAT ON BOTTOMFOTFLAT ON WATERHDPE<		
CDSCHEMICAL DOSINGCECHLORINATED EFFLUENTCICAST IRONCIPCAST IRON SOLPIPECISPCAST IRON SOLPIPECLCENTER LINECONCONCENTRATECONCENTRATECONCENTRATECONCENTRATECONCENTRATECONCENTRATECONCENTRATECONC CONCERTECONCENTRATECONC CONCERTECONCENTRATECONC CONCRETECONC CONCRETECWCOLD WATERDDRAINDEDECANTDIDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONELBELBOWEREQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRNGGRAVANIZED STEEL PIPEGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEMWINFERAREDHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFERREDLPALOW PR	-	
CE CHLORINATED EFFLUENT CI CAST IRON PIPE CISP CAST IRON SOIL PIPE CL CENTER LINE CON CONCENTRATE CON CONCENTRATE CON CONCENTRIC REDUCER CONC CONCENTRIC REDUCER CONC CONCETE CUP COPPER PIPE CW COLD WATER D DRAIN DE DECANT DI DUCTILE IRON PIPE DMJ DISMANTLING JOINT DS DIGESTED SLUDGE ECC ECCENTRIC ECC ECCENTRIC ECC ECCENTRIC ED EQUIPMENT DRAIN EFF EFFLUENT EI EQUALIZATION TANK INFLUENT EL ELEVATION ELB ELBOW ER EQUALIZATION TANK RETURN ES EQUALIZATION TANK SLUDGE FA FOUL AIR FCA FLANGED COUPLING ADAPTER FD FLOOR DRAIN FE FINAL EFFLUENT FFW FEED FORWARD FLAT ON BOTTOM FOT FLAT ON TOP FRM FORCE MAIN FOR ERLUENT FINAL EFFLUENT FINAL EFFLUENT FINAL EFFLUENT FINAL EFFLUENT FOT FLAT ON TOP FRM FORCE MAIN FOT FLAT ON TOP FRM FORCE MAIN FOT FLAT ON WASTE GRS GREASE GRT GREIT GRV GROOVED JOINT INF INFLUENT INF INFRARED LPA LOW PRESSURE AIR LCN WORESSURE AIR LCN WORESSURE AIR LCN WORENT CONTENT CONT CANTONE CONTENT CONTEN		
CICAST IRONCIPCAST IRON SOIL PIPECISPCAST IRON SOIL PIPECLCENTER LINECONCONCENTRATECON REDCONCENTRIC REDUCERCONCCONCENTECVCCHLORINATED POLYVINYL CHLORIDECUPCOPPER PIPECWCOLD WATERDDRAINDEDECANTDIDUCTILE IRONDPDUTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONESEQUALIZATION TANK RETURNESEQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEGFIANAL EFFLUENTFFWFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRYGROVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS <td></td> <td></td>		
CIPCAST IRON PIPECISPCAST IRON SOIL PIPECLCENTER LINECONCONCENTRIC REDUCERCONCCONCRETECPVCCHLORINATED POLYVINYL CHLORIDECUPCOPPER PIPECWCOLD WATERDDRAINDEDECANTDIDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUALIZATION TANK INFLUENTEIEQUALIZATION TANK RETURNESEQUALIZATION TANK RETURNESEQUALIZATION TANK RETURNESEQUALIZATION TANK RETURNFAFOUL AIRFCAFLOOR DRAINFEFINAL EFFLUENTFEFINAL EFFLUENTFEFINAL EFFLUENTFEFINAL EFFLUENTFEFINAL EFFLUENTFEFINAL EFFLUENTFFWDFEED FORWARDFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILER TO WASTEGRVGROVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFERREDLPALOW PRESSURE AIRLRLONG RADIUS		
CISPCAST IRON SOL PIPECLCENTER LINECONCONCENTRATECONREDCONCENTRIC REDUCERCONCCONCENTECONCCONCRETECVCCHLORINATED POLYVINYL CHLORIDECUPCOPPER PIPECWCOLD WATERDDRAINDEDECANTDIDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONESEQUALIZATION TANK RETURNESEQUALIZATION TANK RETURNESEQUALIZATION TANK RETURNFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFMFORCE MAINFOTFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRVGROVED JOINTGSPGALVANIZED STEEL PIPEMINFINFELUENTINFINFERAREDLPALOW PRESSURE AIRLRLONG RADIUS		
CLCENTER LINECONCONCENTRATECONRCONCENTRIC REDUCERCONCCONCRETECPVCCHLORINATED POLYVINYL CHLORIDECUPCOPPER PIPECWCOLD WATERDDRAINDEDECANTDIDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONENBELOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFBDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFOTFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROVED JOINTGSPGALVANIZED STEEL PIPEHSHEATED SLUDGEINFINFERAREDLPALOW PRESSURE AIRLPALOW PRESSURE AIRLRLONG RADIUS		
CONCONCENTRATECON REDCONCENTRIC REDUCERCONCCONCRETECPVCCHLORINATED POLYVINYL CHLORIDECUPCOPPER PIPECWCOLD WATERDDRAINDEDECANTDIDUCTILE IRONDIPDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON STEEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS		
CON REDCONCENTRIC REDUCERCONCCONCRETECPVCCHLORINATED POLYVINYL CHLORIDECUPCOPPER PIPECWCOLD WATERDD BRAINDEDECANTDIDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEGFINAL EFFLUENTFFFINAL EFFLUENTFFFINAL FORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON TOPFRMFORCE MAINFOBFLAT ON SUMARDFORFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGRADIUSHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFERREDLPALOW PRESSURE AIRLPALOW PRESSURE AIRLRLONG RADIUS		
CONCCONCRETECPVCCHLORINATED POLYVINYL CHLORIDECUPCOPPER PIPECWCOLD WATERDDRAINDEDECANTDIDUCTILE IRONDIPDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICEDCEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONENEQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFEFINAL EFFLUENTFFMFORCE MAINFORFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFERAREDLPALOW PRESSURE AIRLPALOW PRESSURE AIRLRLONG RADIUS	CON	CONCENTRATE
CPVCCHLORINATED POLYVINYL CHLORIDECUPCOPPER PIPECWCOLD WATERDDRAINDEDECANTDIDUCTILE IRONDIPDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLAT ON BOTTOMFORCE MAINFOBFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFERAREDLPALOW PRESSURE AIRLRLONG RADIUS	CON RED	CONCENTRIC REDUCER
CUPCOPPER PIPECWCOLD WATERDDRAINDEDECANTDIDUCTILE IRONDIPDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTELEQUALIZATION TANK INFLUENTELELEVATIONEKBELBOWEREQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS		
CWCOLD WATERDDRAINDEDECANTDIDUCTILE IRONDIPDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONENEQUALIZATION TANK RETURNESEQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFEURNTINVERTINVERTIRINFERAREDLPALOW PRESSURE AIRLRLONG RADIUS		
DDRAINDEDECANTDIDUCTILE IRONDIPDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINFINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	CUP	COPPER PIPE
DEDECANTDIDUCTILE IRONDIPDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONENEQUALIZATION TANK RETURNESEQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFELUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	CW	COLD WATER
DiscreteDiscreteDiscreteDiscreteDistreteDistreteDistreteDistreteECCECUEUEQUALIZATION TANK INFLUENTELELBOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRTGRITGRITGRITGRITGRITGRITGRITGRITGRITGRITGRITGRITGRITGRITGRITGRITGRITGRITGRIT <td>D</td> <td>DRAIN</td>	D	DRAIN
DIPDUCTILE IRON PIPEDMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONELBELBOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	DE	DECANT
DMJDISMANTLING JOINTDSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONELBELBOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFERAREDLPALOW PRESSURE AIRLRLONG RADIUS	DI	DUCTILE IRON
DSDIGESTED SLUDGEECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONELBELBOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFILT O WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFELIENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	DIP	DUCTILE IRON PIPE
ECCECCENTRICECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONELBELBOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGRALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	DMJ	DISMANTLING JOINT
ECC REDECCENTRIC REDUCEREDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONELBELBOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	DS	DIGESTED SLUDGE
EDEQUIPMENT DRAINEFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONELBELBOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	ECC	ECCENTRIC
EFFEFFLUENTEIEQUALIZATION TANK INFLUENTELELEVATIONELBELBOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROVED JOINTGSPGALVANIZED STEEL PIPEHSHEATED SLUDGEINFINFLUENTINFINFLUENTINFINFLUENTINFINFLUENTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	ECC RED	ECCENTRIC REDUCER
EIEQUALIZATION TANK INFLUENTELELEVATIONELBELBOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEHSHEATED SLUDGEINFINFLUENTINFINFLUENTINFINFLUENTINFINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	ED	EQUIPMENT DRAIN
ELELEVATIONELBELBOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGAOVED JOINTGSPGALVANIZED STEEL PIPEHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	EFF	EFFLUENT
ELBELBOWEREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	EI	EQUALIZATION TANK INFLUENT
EREQUALIZATION TANK RETURNESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGOOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	EL	ELEVATION
ESEQUALIZATION TANK SLUDGEFAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFEREDLPALOW PRESSURE AIRLRLONG RADIUS	ELB	ELBOW
FAFOUL AIRFCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	ER	EQUALIZATION TANK RETURN
FCAFLANGED COUPLING ADAPTERFDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	ES	EQUALIZATION TANK SLUDGE
FDFLOOR DRAINFEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	FA	FOULAIR
FEFINAL EFFLUENTFFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	FCA	FLANGED COUPLING ADAPTER
FFWDFEED FORWARDFLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	FD	FLOOR DRAIN
FLGFLANGEFMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS		FINAL EFFLUENT
FMFORCE MAINFOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS		FEED FORWARD
FOBFLAT ON BOTTOMFOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	FLG	FLANGE
FOTFLAT ON TOPFRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS		
FRPFIBERGLASS REINFORCED PIPEFSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	FOB	
FSFINAL TANK SLUDGEFTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	FOT	FLAT ON TOP
FTWFILTER TO WASTEGRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	FRP	FIBERGLASS REINFORCED PIPE
GRSGREASEGRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	FS	FINAL TANK SLUDGE
GRTGRITGRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	FTW	FILTER TO WASTE
GRVGROOVED JOINTGSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	GRS	GREASE
GSPGALVANIZED STEEL PIPEGWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	GRT	
GWGLAND WATERHDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	-	
HDPEHIGH DENSITY POLYETHYLENE PIPEHSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	GSP	GALVANIZED STEEL PIPE
HSHEATED SLUDGEINFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	GW	
INFINFLUENTINVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	HDPE	HIGH DENSITY POLYETHYLENE PIPE
INVINVERTIRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	HS	HEATED SLUDGE
IRINFRAREDLPALOW PRESSURE AIRLRLONG RADIUS	INF	INFLUENT
LPA LOW PRESSURE AIR LR LONG RADIUS	INV	INVERT
LR LONG RADIUS	IR	INFRARED
	LPA	LOW PRESSURE AIR
MBR MEMBRANE BIOREACTOR	LR	LONG RADIUS
	MBR	MEMBRANE BIOREACTOR

ABE	BREVIATIONS - PIPING
MFR	MANUFACTURER
MH	MANHOLE
MJ	MECHANICAL JOINT
ML	MIXED LIQUOR
MLP	MAIN LIFT PUMP
NaOCI	SODIUM HYPOCHLORITE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NPW	NON-POTABLE WATER
OVRFL	OVERFLOW
PA	
PE PEP	PRIMARY TANK EFFLUENT POLYETHYLENE PIPE
PEP	PERMEATE
PEW	PLANT EFFLUENT WATER
PI	PRIMARY TANK INFLUENT
PLT	PLATE
PDA	PULLOUT ASSEMBLY
PP	POLYPROPYLENE PIPE
PS	PRIMARY TANK SLUDGE
PVC	POLYVINYL CHLORIDE
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RC	RECYCLED
RCP	REINFORCED CONCRETE PIPE
RDMJ	RESTRAINED DISMANTLING JOINT
RECYC	INTERNAL RECYCLE
RED	REDUCER
REW	REUSE WATER
RFCA	RESTRAINED FLANGED COUPLING ADAPTER
RO	REVERSE OSMOSIS
RS	RAW SEWAGE
RW	RAW WATER
S	SCUM
SAM	SAMPLE
SE	SECONDARY EFFLUENT
SFE	SECONDARY FINAL EFFLUENT
SN	SUPERNATANT
SPD	SUMP PUMP DISCHARGE
SS or SST	
STL	
SW	
SWHP SWLP	SECONDARY WATER - HIGH PRESSURE
SWLP	SECONDARY WATER - LOW PRESSURE
SWIMP	SECONDARY WATER - MEDIOM PRESSURE
TE	
THD	THREADED
THS	THICKENED SLUDGE
ТО	THICKENER OVERFLOW
TOR	THERMAL OIL RETURN
TOS	THERMAL OIL SUPPLY
TS	TRANSFER SLUDGE
UNO	UNLESS NOTED OTHERWISE
UWF	UNFILTERED WATER FLUSH
V	VENT
VIF	VERIFY IN FIELD
WAS	WASTE ACTIVATED SLUDGE
WM	WATER MAIN
WWD	WASHWATER DRAIN
WWS	WASHWATER SUPPLY

PIPING & EQUIPMENT SYMBOLS

PIPING	& EQUIPMENT SYMBOLS
VTR	VENT TO ROOF
\rightarrow	PIPE ANCHOR
M	EXPANSION JOINT
—— <u>VV</u> ——	EXPANSION COMPENSATOR
	FLEXIBLE CONNECTOR
	FLOW ELEMENT
	PIPE GUIDE
— О УН	YARD HYDRANT
PRS	PRESSURE REDUCING STATION
	PUMP SEALING WATER CONNECTION
	SAMPLE FUNNEL
	AIR SET ASSEMBLY
 А-тн]	AIR TO VALVE OPERATOR (THROTTLING SERVICE)
A-0s]	AIR TO VALVE OPERATOR (OPEN SHUT SERVICE)
	IN LINE STATIC MIXER
E	EDUCTOR
	INJECTOR
	TRAP (STEAM OR AIR MOISTURE)
[QD	QUICK DISCONNECT (AIR) (3/4")
	ELBOW UP
+9	ELBOW DOWN
-+0+	TEE UP
	TEE DOWN
	REDUCER-CONCENTRIC
<u> </u>	REDUCER-ECCENTRIC
+ \\$	WYE STRAINER
	BASKET STRAINER
	UNION
M	METER (TOTALIZING)
	ROTAMETER
	STEEL WALL SLEEVE
	EMERGENCY SHOWER AND EYEWASH
	PIPING (BELOW SLAB)
()FD	FLOOR DRAIN
	FLOOR DRAIN W/SEDIMENT BUCKET
FS	FLOOR SINK
	PUMP BASE DRAIN
∩ E D	EQUIPMENT DRAIN
co	CLEANOUT-FLOOR
11 00	CLEANOUT-HORIZONTAL
— — — — — RD	ROOF DRAIN
-	
+(p)+	IN-LINE PUMP
	INSTRUMENT AIR PNEUMATIC SIGNAL
<u> </u>	ELECTRIC
	INSTRUMENT CAPILLARY TUBING BACKFLOW PREVENTER
	CONNECTION TO EXISTING
	PIPE CAP OR PLUG
	DIRECTION OF FLOW
	ELBOW FLOW METER



	SLEEVE
Ţ	VALVE SYMBOLS
	TRIPLE DUTY VALVE
	GATE VALVE
	GLOBE VALVE
—-1XXI——	BALL VALVE
— \ —	BUTTERFLY VALVE
	CORPORATION COCK
$-\otimes$	BALANCING VALVE
	PET COCK
	CHECK VALVE
$\neg \neg \nabla \vdash \neg$	PLUG VALVE
	STOP AND CHECK VALVE
	PINCH VALVE
	DIAPHRAGM VALVE
	AUTO-FLOW CONTROL VALVE
	ANGLE OR NEEDLE VALVE
	PRESSURE RELIEF VALVE
	THREE WAY VALVE
	TEMPERING VALVE
	SOLENOID OPERATED VALVE
	PRESSURE REGULATING VALVE (SELF CONTAINED)
	MOTORIZED CONTROL VALVE (OPEN-SHUT, THROTTLING)
	PNEUMATIC OPERATED CONTROL VALVE (OPEN-SHUT, THROTTLING)
BP	BACKPRESSURE VALVE
——————————————————————————————————————	HOSE BIBB (3/4")
	HOSE REEL (3/4")
	FLUSHING HOSE BIBB (1-1/2")
	SILL COCK (3/4")
──── ─ ┼-⊧c	FLUSHING CONNECTION (ON PIPE) 1-1/2"
ASV	ANTISIPHON VALVE
0-100 PSI 0-1	00 PSI PUMP/BLOWER INCLUDING PRESSURE GAUGES PI = PRESSURE GAUGE
	PI-D = PRESSURE GAUGE W/ DIAPHRAGM SEAL
	PI-P = PRESSURE GAUGE W/ PULSATION DAMPER

А	LAY PIPE TO UNIFORM GRADE BET
В	UNLESS NOTED OTHERWISE, PIPE
С	SUBMIT THE ROUTING OF PIPING N
D	SIZE OF FITTINGS SHOWN ON DRA OTHERWISE. TYPE OF JOINT AND I
Е	LOCATIONS AND NUMBER OF PIPE AND PROVIDE PIPE SUPPORTS AS
F	ALL JOINTS SHALL BE WATERTIGH OR THROUGH WATERTIGHT STRU
G	ALL FLEXIBLE CONNECTORS AND UNLESS NOTED OTHERWISE. THR
Н	NOT ALL OF THE GRAPHICS, ABBR
Ι	NUMBER AND LOCATION OF UNION FACILITATE CONVENIENT REMOVA
J	WHERE A GROOVED END COUPLIN FLANGED COUPLING ADAPTER IS \$
Κ	LOCATE PRESSURE TAPS ON THE
L	LOCATE SAMPLE TAPS ON THE SID
М	LOCATE DRAIN TAPS ON THE BOT
Ν	INSTALL ALL PLUG, BUTTERFLY, AI OTHERWISE.
0	ALL MECHANICAL AND PROCESS E NOT. SEE STRUCTURAL SHEETS F
Р	VERTICAL ELEVATIONS ARE PROV

GENERAL PIPING NOTES

TWEEN INDICATED ELEVATION POINTS. E ELEVATIONS SHOWN ON PIPING DRAWINGS REFER TO CENTERLINE OF PIPE.

NOT SHOWN IN THE DRAWINGS FOR APPROVAL, INCLUDING PIPING SMALLER THAN 3 INCHES. AWINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS NOTED FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE. E HANGERS AND PIPE SUPPORTS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DESIGN

SPECIFIED. HT. WALL PIPES SHALL BE USED WHEREVER PIPING PASSES FROM A STRUCTURE TO BACKFILL UCTURE.

COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST PROTECTION AS SPECIFIED, RUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.

REVEATIONS, ETC., SHOWN ON THIS SHEET ARE USED ON THE PROJECT. NS SHOWN ON DRAWINGS ARE APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO AL OF VALVES AND MECHANICAL EQUIPMENT.

ING IS SHOWN, IT SHALL BE THE RIGID JOINT TYPE, UNLESS OTHERWISE SPECIFIED. WHERE A S SHOWN, A STANDARD FLANGE SHALL BE JOINED TO THE COUPLING ADAPTER. TOP OF PROCESS PIPES.

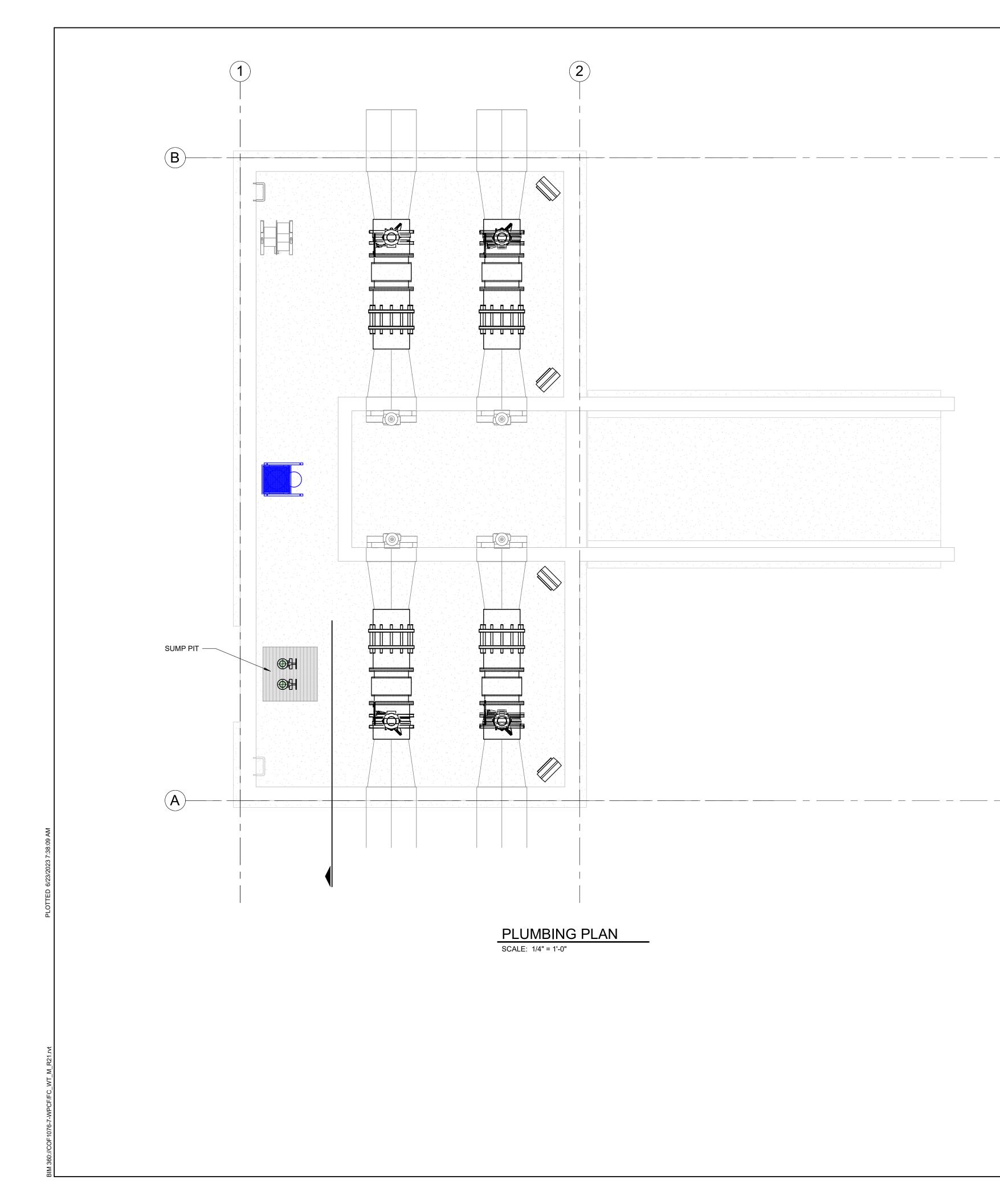
DE OF PROCESS PIPES. ITOM OF PROCESS PIPES.

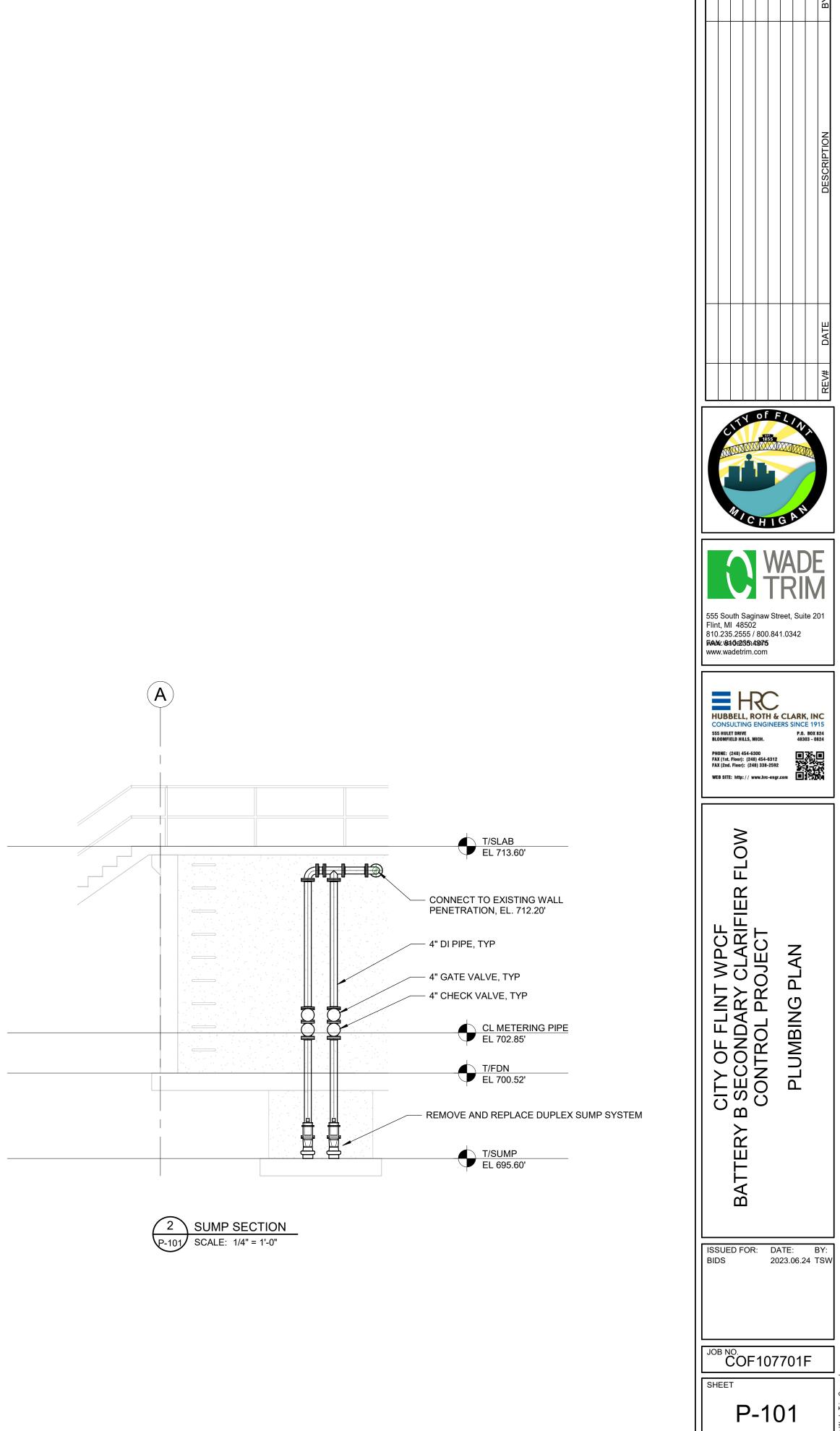
AND BALL VALVES WITH THE SHAFT IN THE HORIZONTAL POSITION, UNLESS NOTED

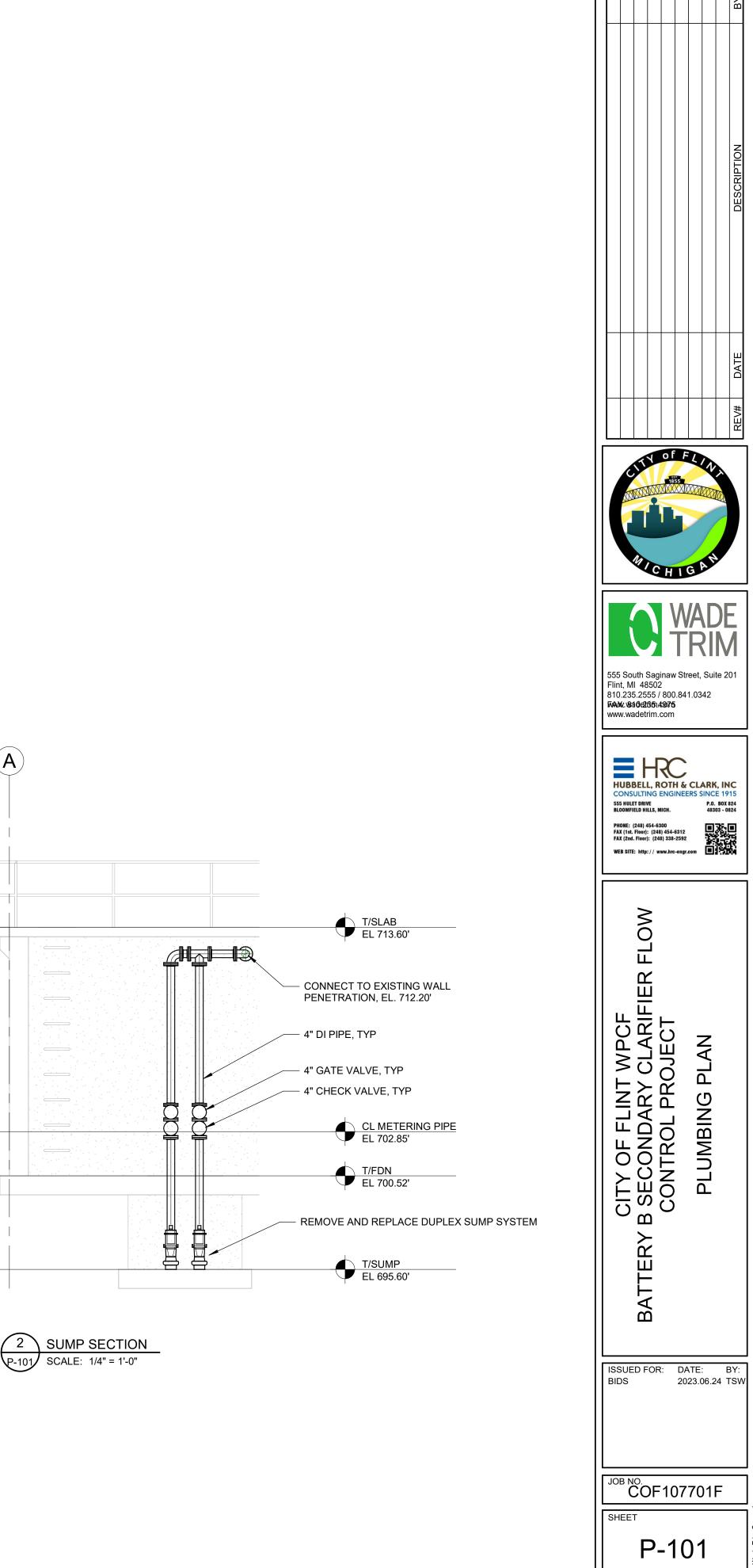
EQUIPMENT SHALL BE PLACED ON CONCRETE HOUSEKEEPING PADS, WHETHER INDICATED OR FOR TYPICAL DETAILS.

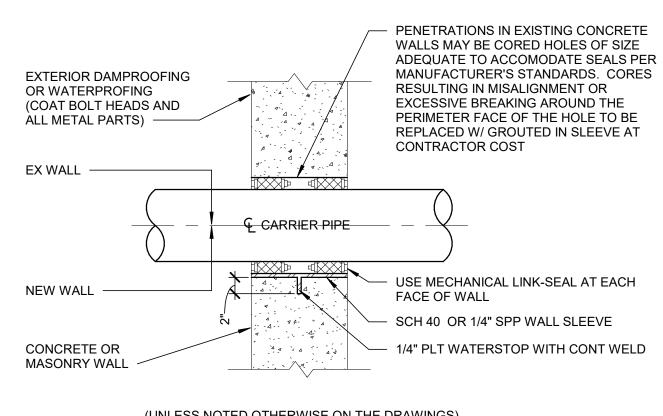
VERTICAL ELEVATIONS ARE PROVIDED IN THE CITY OF DETROIT DATUM. ALL OTHER ELEVATIONS ARE PROVIDED IN NAVD88. THE CONVERSION FROM THE CITY OF DETROIT DATUM TO NAVD88 IS 479.20'.





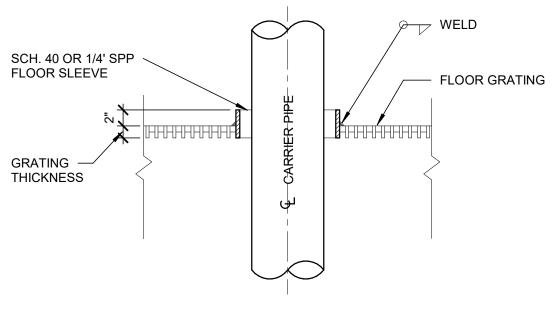






(UNLESS NOTED OTHERWISE ON THE DRAWINGS) NO SCALE



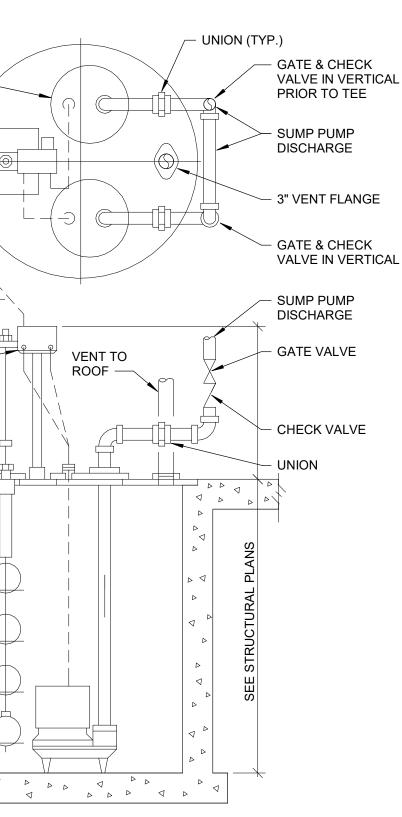


FOR PIPING 4" DIA. AND LARGER NO SCALE



REMOVABLE PUMP COVER (TYP.)
BASE FOR FLOAT STAND. PROVIDE HOLE IN SUMP COVER
FUSED DISCONNECT SWITCH
ALLOW UP TO 24" FOR FLOAT ROD RISE
MECHANICAL ALTERNATOR FLOAT OPERATED W./ HIGH LEVEL ALARM
FLOAT ROD STOPS
FLOAT COVER
ROD GUIDE
HIGH WATER
TURN ON 2ND PUMP
TURN ON 1ST PUMP
PUMP(S) OFF
7" Ø FLOAT





DUPLEX SYSTEM SUBMERSIBLE SUMP PUMP DETAIL



ABI	BREVIATIONS - PIPING	AE	BREVIATIONS
AFF	ABOVE FINISHED FLOOR	МН	MANHOLE
AL	ALUMINUM	MJ	MECHANICAL JOINT
ARV	AIR RELIEF VALVE	ML	MIXED LIQUOR
BCE	BIOLOGICAL CONTACTOR EFFLUENT	MLP	MAIN LIFT PUMP
BF	BLIND FLANGE	NaOCI	SODIUM HYPOCHLORITE
BP	BYPASS	NC	NORMALLY CLOSED
C	CENTRATE	NO	NORMALLY OPEN
CA	COMPRESSED AIR	NPW	NON-POTABLE WATER
CDS	CHEMICAL DOSING	OVRFL	OVERFLOW
CE	CHLORINATED EFFLUENT	PA	PROCESS AIR
CI	CAST IRON	PE	PRIMARY TANK EFFLUEN
CIP	CAST IRON PIPE	PEP	POLYETHYLENE PIPE
CISP	CAST IRON SOIL PIPE	PERM	PERMEATE
CL	CENTER LINE	PEW	PLANT EFFLUENT WATE
CON	CONCENTRATE	PI	PRIMARY TANK INFLUEN
		PI PLT	
CON RED			
CONC		POA	PULLOUT ASSEMBLY
CPVC	CHLORINATED POLYVINYL CHLORIDE	PP	POLYPROPYLENE PIPE
CUP	COPPER PIPE	PS	PRIMARY TANK SLUDGE
CW	COLD WATER	PVC	POLYVINYL CHLORIDE
D	DRAIN	PW	POTABLE WATER
DE	DECANT	RAS	RETURN ACTIVATED SLU
DI	DUCTILE IRON	RC	RECYCLED
DIP	DUCTILE IRON PIPE	RCP	REINFORCED CONCRET
DMJ	DISMANTLING JOINT	RDMJ	RESTRAINED DISMANTL
DRC	DRESSER COUPLING	RECYC	INTERNAL RECYCLE
DS	DIGESTED SLUDGE	RED	REDUCER
ECC	ECCENTRIC	REW	REUSE WATER
ECC RED	ECCENTRIC REDUCER	RFCA	RESTRAINED FLANGED
ED	EQUIPMENT DRAIN	RO	REVERSE OSMOSIS
EFF	EFFLUENT	RS	RAW SEWAGE
El	EQUALIZATION TANK INFLUENT	RW	RAW WATER
EL	ELEVATION	S	SCUM
	ELBOW	SAM	SAMPLE
ELB			
ER		SE	SECONDARY EFFLUENT
ES	EQUALIZATION TANK SLUDGE	SFE	SECONDARY FINAL EFFL
FA	FOULAIR	SLG	SLUICE GATE
FCA	FLANGED COUPLING ADAPTER	SN	SUPERNATANT
FD	FLOOR DRAIN	SPD	SUMP PUMP DISCHARGE
FE	FINAL EFFLUENT	SS or SS	
FFWD	FEED FORWARD	STL	STEEL PIPE
FLG	FLANGE	SW	SECONDARY WASTE
FM	FORCE MAIN	SWHP	SECONDARY WATER - H
FOB	FLAT ON BOTTOM	SWLP	SECONDARY WATER - LO
FOT	FLAT ON TOP	SWMP	SECONDARY WATER - M
FRP	FIBERGLASS REINFORCED PIPE	SWP	SEAL WATER PANEL
FS	FINAL TANK SLUDGE	TE	TERTIARY EFFLUENT
FTW	FILTER TO WASTE	THD	THREADED
GRS	GREASE	THS	THICKENED SLUDGE
GRT	GRIT	ТО	THICKENER OVERFLOW
GRV	GROOVED JOINT	TOR	THERMAL OIL RETURN
GSP	GALVANIZED STEEL PIPE	TOS	THERMAL OIL SUPPLY
GW	GLAND WATER	TS	TRANSFER SLUDGE
HDPE	HIGH DENSITY POLYETHYLENE PIPE	UNO	
HS	HEATED SLUDGE	UWF	UNFILTERED WATER FLU
INF	INFLUENT	V	VENT
INV	INVERT	VIF	VERIFY IN FIELD
LPA	LOW PRESSURE AIR	WAS	WASTE ACTIVATED SLUI
LR	LONG RADIUS	WM	WATER MAIN
		WWD	WASHWATER DRAIN
MAG	MAG METER	VVVD	
MAG MBR	MAG METER MEMBRANE BIOREACTOR	WWS	WASHWATER DRAIN WASHWATER SUPPLY

LAY PI
UNLES
SUBMI INCHE
SIZE O OTHEF
LOCAT SUPPC
ALL JO BACKF
ALL FL UNLES
NOT AI
NUMBE COUPL
WHER A FLAN
LOCAT
LOCAT
LOCAT
INSTAL OTHER
ALL ME OR NO
HYDRA PROVII

/IATIONS - PIPING
OLE
ANICAL JOINT
LIQUOR
IFT PUMP
MHYPOCHLORITE
ALLY CLOSED
ALLY OPEN
OTABLE WATER
FLOW
ESS AIR
RY TANK EFFLUENT
THYLENE PIPE
EFFLUENT WATER
RY TANK INFLUENT
DUT ASSEMBLY
PROPYLENE PIPE
RY TANK SLUDGE
/INYL CHLORIDE
BLE WATER
RN ACTIVATED SLUDGE
CLED
ORCED CONCRETE PIPE
AINED DISMANTLING JOINT
NAL RECYCLE
CER
E WATER
RAINED FLANGED COUPLING ADAPTER
RSE OSMOSIS
VATER
F
E GATE
RNATANT
PUMP DISCHARGE
LESS STEEL
PIPE
NDARY WASTE
NDARY WATER - HIGH PRESSURE
NDARY WATER - LOW PRESSURE
NDARY WATER - MEDIUM PRESSURE
WATER PANEL
ARY EFFLUENT
ENER OVERFLOW
IAL OIL RETURN
IAL OIL SUPPLY
SFER SLUDGE
SS NOTED OTHERWISE
TERED WATER FLUSH
Y IN FIELD
E ACTIVATED SLUDGE
R MAIN
· · · · · · · · · ·

N	VALVE SYMBOLS
	TRIPLE DUTY VALVE
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CORPORATION COCK
	BALANCING VALVE
	PET COCK
	CHECK VALVE
$\neg \neg \nabla \vdash \neg$	PLUG VALVE
	STOP AND CHECK VALVE
	PINCH VALVE
	DIAPHRAGM VALVE
	AUTO-FLOW CONTROL VALVE
	ANGLE OR NEEDLE VALVE
	PRESSURE RELIEF VALVE
	THREE WAY VALVE
	TEMPERING VALVE
	SOLENOID OPERATED VALVE
	PRESSURE REGULATING VALVE (SELF CONTAINED)
	MOTORIZED CONTROL VALVE (OPEN-SHUT, THROTTLING)
	PNEUMATIC OPERATED CONTROL VALVE (OPEN-SHUT, THROTTLING)
BP	BACKPRESSURE VALVE
——————————————————————————————————————	HOSE BIBB (3/4")
	FLUSHING HOSE BIBB (1-1/2")
	SILL COCK (3/4")
━━━━━━━━━━━━━━━━━━━━━━━	FLUSHING CONNECTION (ON PIPE) 1-1/2"
ASV	ANTISIPHON VALVE
0-100 PSI 0-1	00 PSI PUMP/BLOWER INCLUDING PRESSURE GAUGES PI = PRESSURE GUIDE
Ţ	PI-D = PRESSURE GAUGE W/ DIAPHRAGM SEAL
	PI-P = PRESSURE GAUGE W/ PULSATION DAMPER

GENERAL NOTES PROCESS PIPING

IPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS. SS NOTED OTHERWISE, PIPE ELEVATIONS SHOWN ON PIPING DRAWINGS REFER TO CENTERLINE OF PIPE. IIT THE ROUTING OF PIPING NOT SHOWN IN THE DRAWINGS FOR APPROVAL, INCLUDING PIPING SMALLER THAN 3 ES.

OF FITTINGS SHOWN ON DRAWINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS NOTED RWISE. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE. TIONS AND NUMBER OF PIPE HANGERS AND PIPE SUPPORTS SHOWN ARE APPROXIMATE. DESIGN AND PROVIDE PIPE ORTS AS REQUIRED.

OINTS SHALL BE WATERTIGHT. WALL PIPES SHALL BE USED WHEREVER PIPING PASSES FROM A STRUCTURE TO FILL OR THROUGH WATERTIGHT STRUCTURE.

LEXIBLE CONNECTORS AND COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST PROTECTION AS SPECIFIED, SS NOTED OTHERWISE. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED. ALL OF THE GRAPHICS, ABBREVEATIONS, ETC., SHOWN ON THIS SHEET ARE USED ON THE PROJECT.

BER AND LOCATION OF UNIONS SHOWN ON DRAWINGS ARE APPROXIMATE. PROVIDE ALL UNIONS, FLANGES, AND PLINGS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES, INSTRUMENTS, AND MECHANICAL EQUIPMENT. RE A GROOVED END COUPLING IS SHOWN, IT SHALL BE THE RIGID JOINT TYPE, UNLESS OTHERWISE SPECIFIED. WHERE INGED COUPLING ADAPTER IS SHOWN, A STANDARD FLANGE SHALL BE JOINED TO THE COUPLING ADAPTER. TE PRESSURE TAPS ON THE TOP OF PROCESS PIPES.

TE SAMPLE TAPS ON THE SIDE OF PROCESS PIPES.

TE DRAIN TAPS ON THE BOTTOM OF PROCESS PIPES. ALL ALL PLUG, BUTTERFLY, AND BALL VALVES WITH THE SHAFT IN THE HORIZONTAL POSITION, UNLESS NOTED

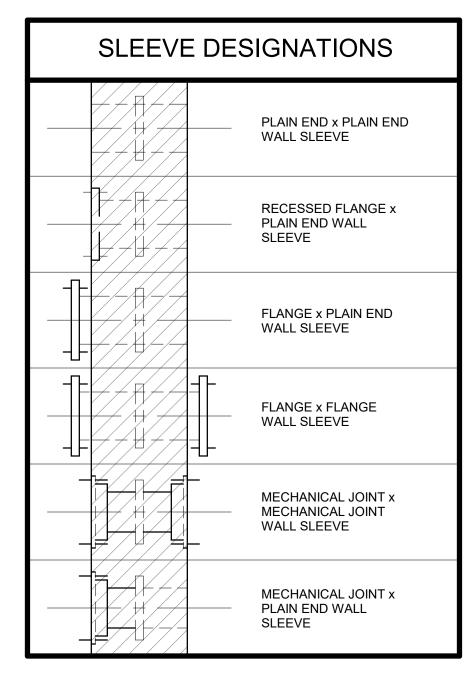
ERWISE. MECHANICAL AND PROCESS EQUIPMENT SHALL BE PLACED ON CONCRETE HOUSEKEEPING PADS, WHETHER INDICATED OT. SEE STRUCTURAL SHEETS FOR TYPICAL DETAILS. RAULIC GRADE LINE ELEVATIONS ARE PROVIDED IN THE CITY OF DETROIT DATUM. ALL OTHER ELEVATIONS ARE /IDED IN NAVD88. THE CONVERSION FROM THE CITY OF DETROIT DATUM TO NAVD88 IS 479.20'.

PIF	PING & EQUIPMENT
	SYMBOLS
VTR	VENT TO ROOF
\rightarrow	PIPE ANCHOR
——M——	EXPANSION JOINT
—— <u> </u>	EXPANSION COMPENSATOR
XXX	FLEXIBLE CONNECTOR
	FLOW ELEMENT
	PIPE GUIDE
— с — Дун	YARD HYDRANT (SEE DETAIL)
PRS PRS	PRESSURE REDUCING STATION (SEE DETAIL)
[SEAL]	PUMP SEALING WATER CONNECTION (SEE DETAIL)
	SAMPLE FUNNEL (SEE DETAIL)
	AIR SET ASSEMBLY (SEE DETAIL)
A-TH]	AIR TO VALVE OPERATOR (SEE DETAIL) (THROTTLING SERVICE)
—_[A-OS]	AIR TO VALVE OPERATOR (SEE DETAIL) (OPEN SHUT SERVICE)
MIX	IN LINE STATIC MIXER
(E)	EDUCTOR
	INJECTOR
 ▼	TRAP (STEAM OR AIR MOISTURE)
[QD	QUICK DISCONNECT (AIR) (3/4")
+O	ELBOW UP
—+)	ELBOW DOWN
-+0+	TEE UP
	TEE DOWN
Z	REDUCER-CONCENTRIC
— <u>D</u>	REDUCER-ECCENTRIC
	WYE STRAINER
∽ ⊓⊫	BASKET STRAINER
	UNION
Гм]	METER (TOTALIZING)
	ROTAMETER
·····	
	CLEANOUT-HORIZONTAL
//	
<u></u>	
	INSTRUMENT CAPILLARY TUBING
	BACKFLOW PREVENTER
— \} —	CONNECTION TO EXISTING
]	PIPE CAP OR PLUG
]	PIPE CAP OR PLUG

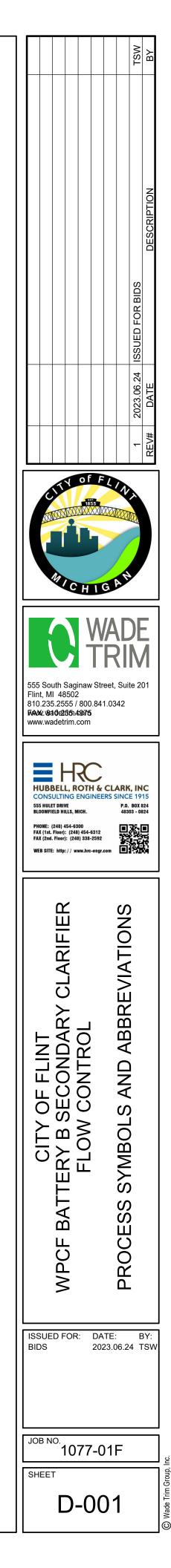
DIRECTION OF FLOW

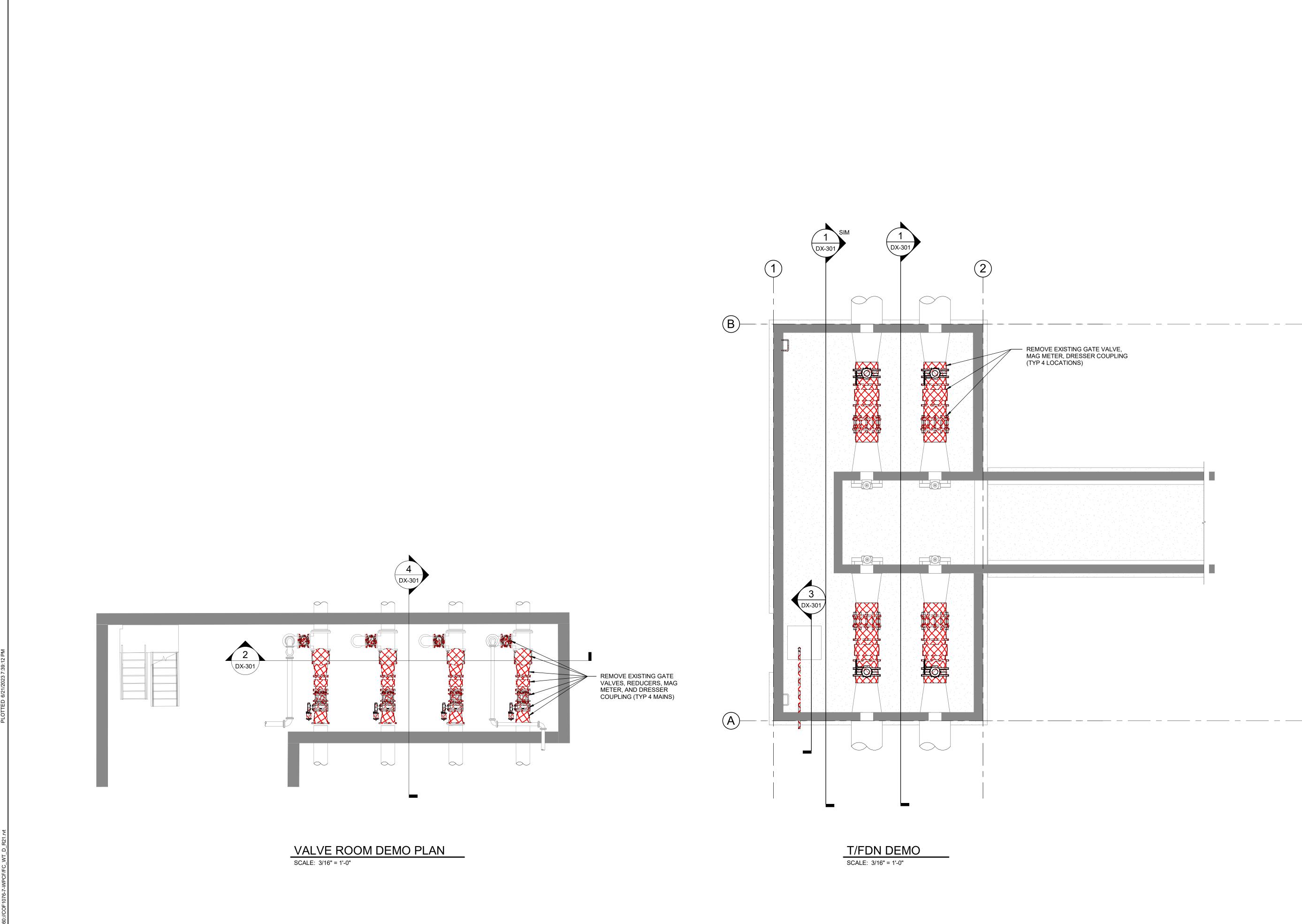
INSTRUMENTATION SYMBOLS	
\ominus	PANEL MOUNTED INSTRUMENT (INSIDE)
\ominus	PANEL MOUNTED INSTRUMENT (FACE)
\bigcirc	LOCALLY MOUNTED INSTRUMENT
FE	FLOW ELEMENT
FI	FLOW INDICATOR

LE	LEVEL ELEMENT
LWC	LOW WATER CUT-OFF
PS	PRESSURE SWITCH
TI	TEMPERATURE INDICATOR
TIC	TEMPERATURE INDICATOR CONTROLLER
TT	TEMPERATURE TRANSMITTER

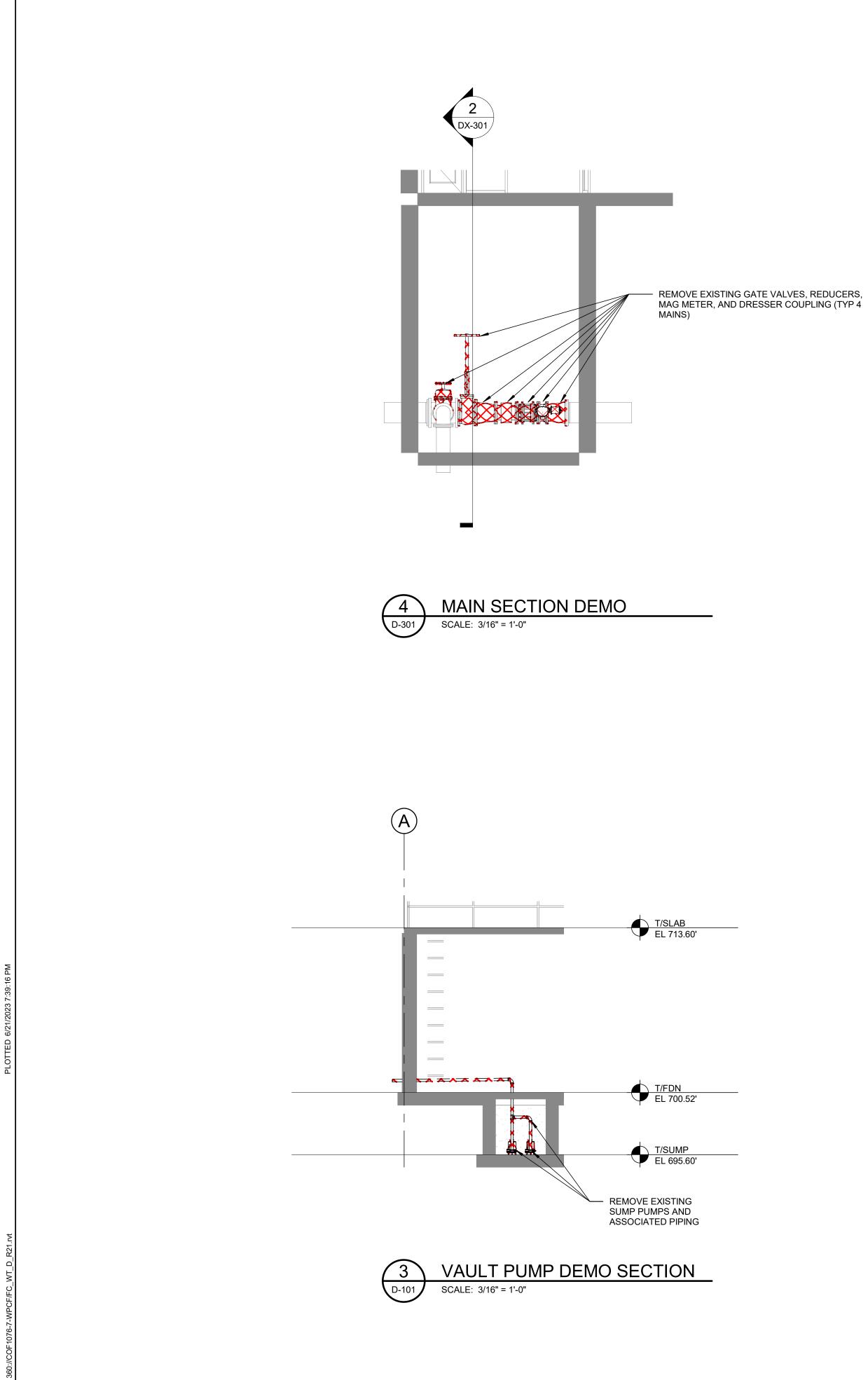


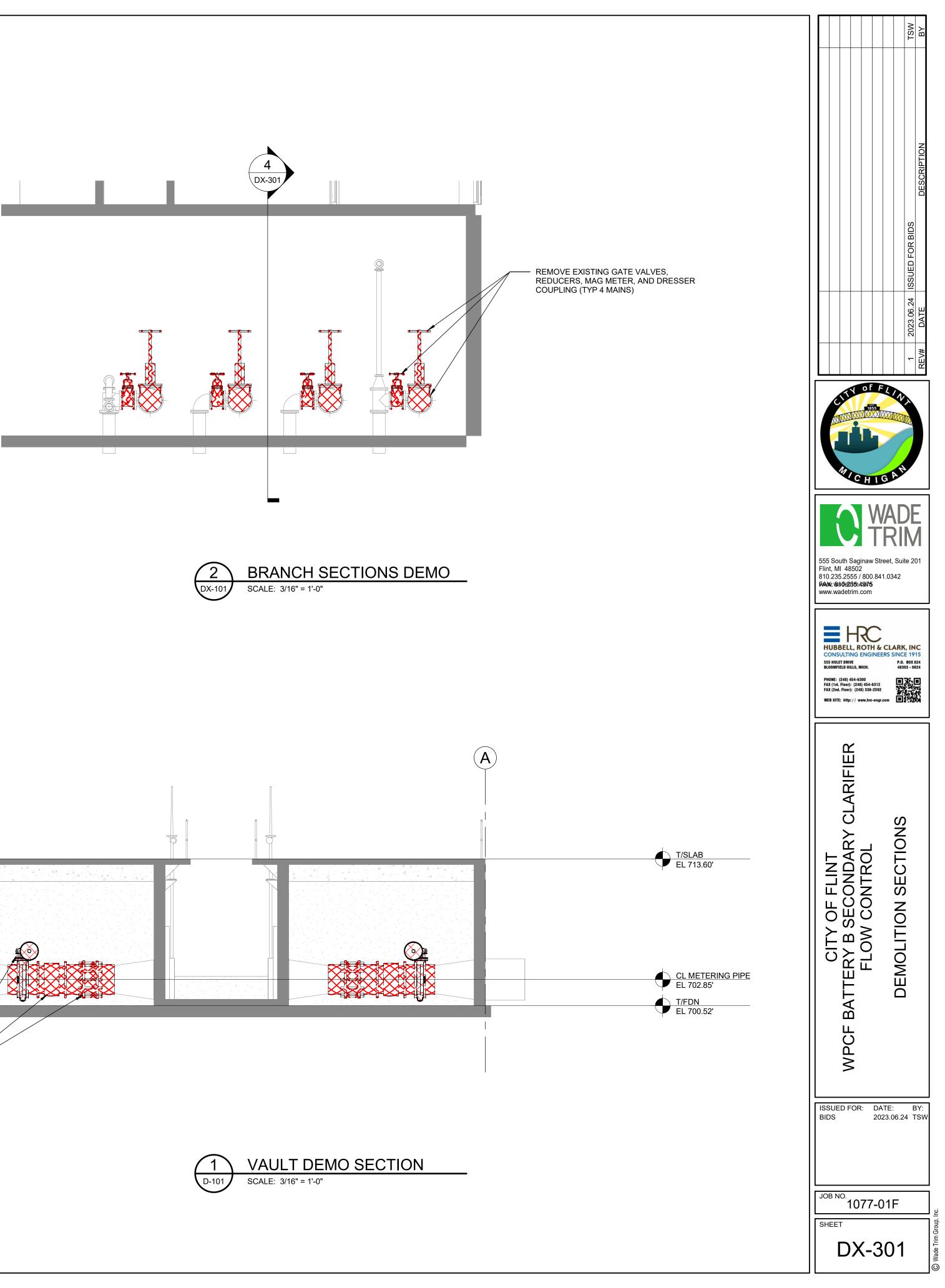
TEMPE	RATURE CONTROL SYMBOLS
F	TEMPERATURE INDICATOR
M-1	DAMPER OPERATOR
Π-1	TEMPERATURE TRANSMITTER
F8-1 S	FIRESTAT
FZ-1	FREEZE STAT
R A A A	EP RELAY
τς-1	TEMPERATURE CONTROLLER
R-1	RELAY
C-1	CONTROLLER
SD-1	SMOKE DETECTOR
*	PANEL MOUNTED DEVICES
NT	NIGHT THERMOSTAT



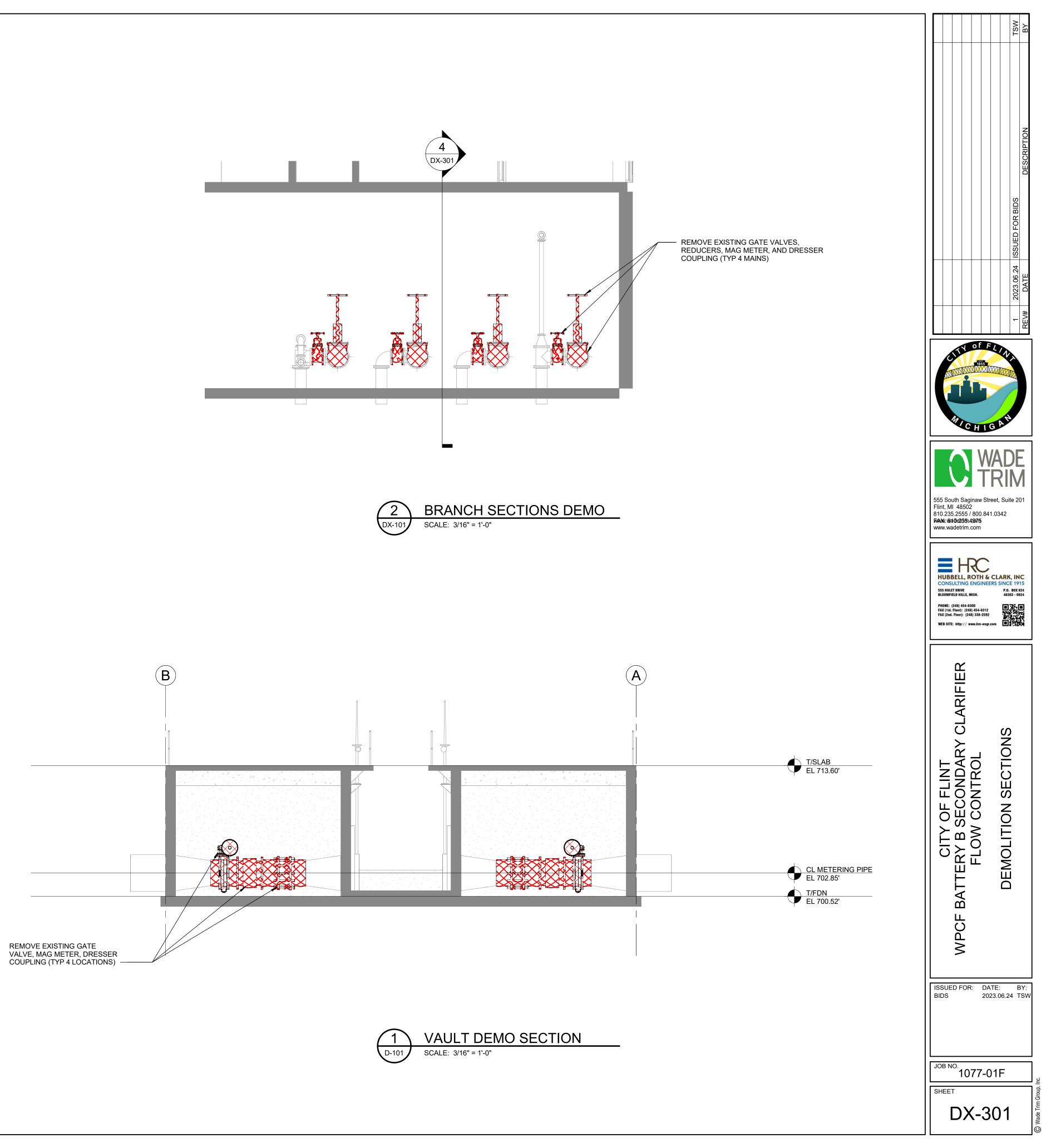


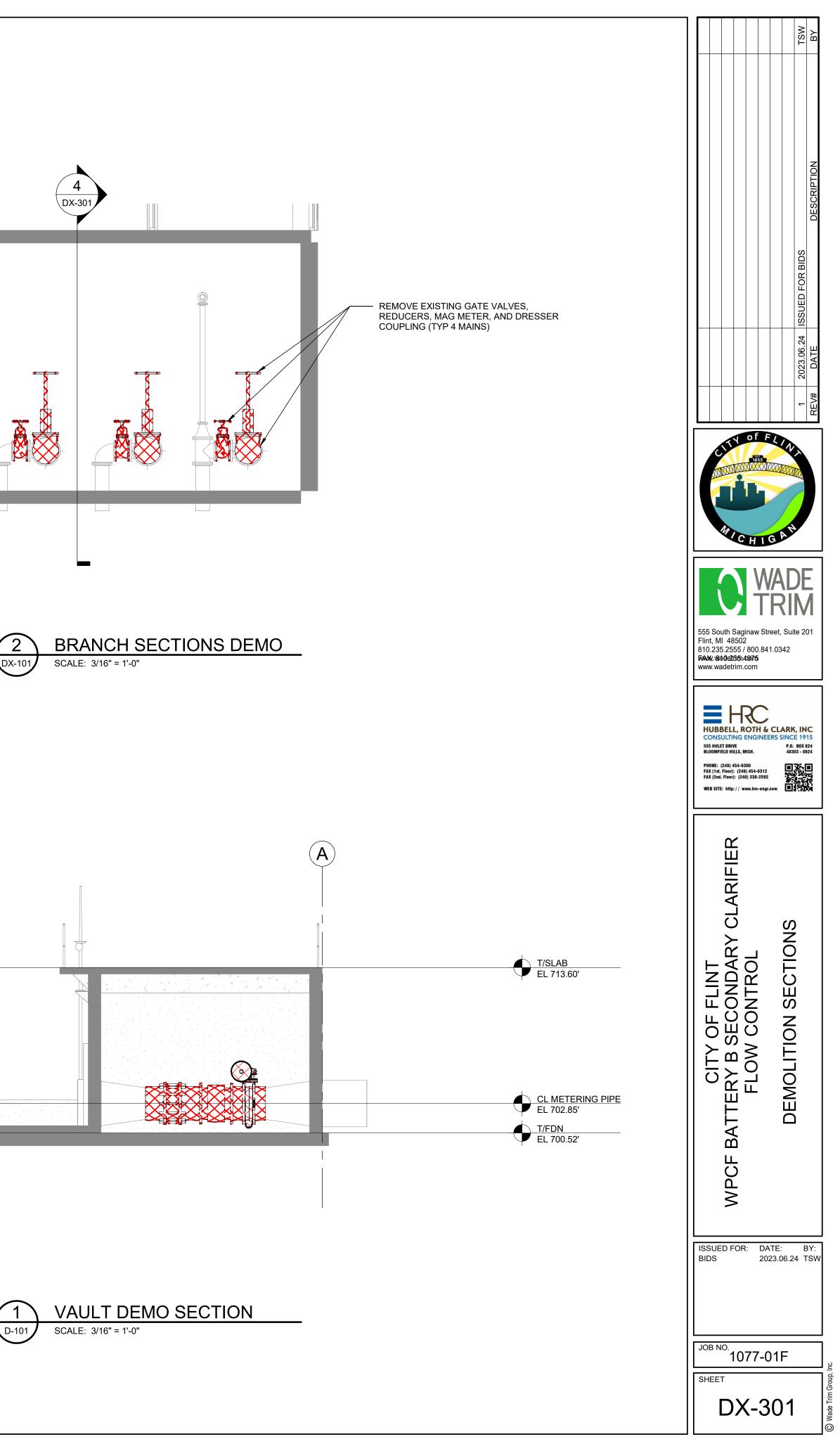
TSW BY
S DESCRIPTION
2023.06.24 ISSUED FOR BIDS DATE
1 202 REV# I
M/CHIGAN
555 South Saginaw Street, Suite 201 Flint, MI 48502 810.235.2555 / 800.841.0342 FMM: 84062860.4975
www.wadetrim.com
HUBBELL, ROTH & CLARK, INC CONSULTING ENGINEERS SINCE 1915 Stommer Since Stommer Since PHONE: (248) PHONE: (248) PAC (15 Floor): (248) Sta (15 Floor): (248) (248) Sta (15 Floor): (248) (15 Floor): (248) (248) (248) (248) (248) (248) (248) (248
CITY OF FLINT WPCF BATTERY B SECONDARY CLARIFIER FLOW CONTROL DEMOLITION PLANS
ISSUED FOR: DATE: BY: BIDS 2023.06.24 TSW
^{ЈОВ NO.} 1077-01F
SHEET DX-101

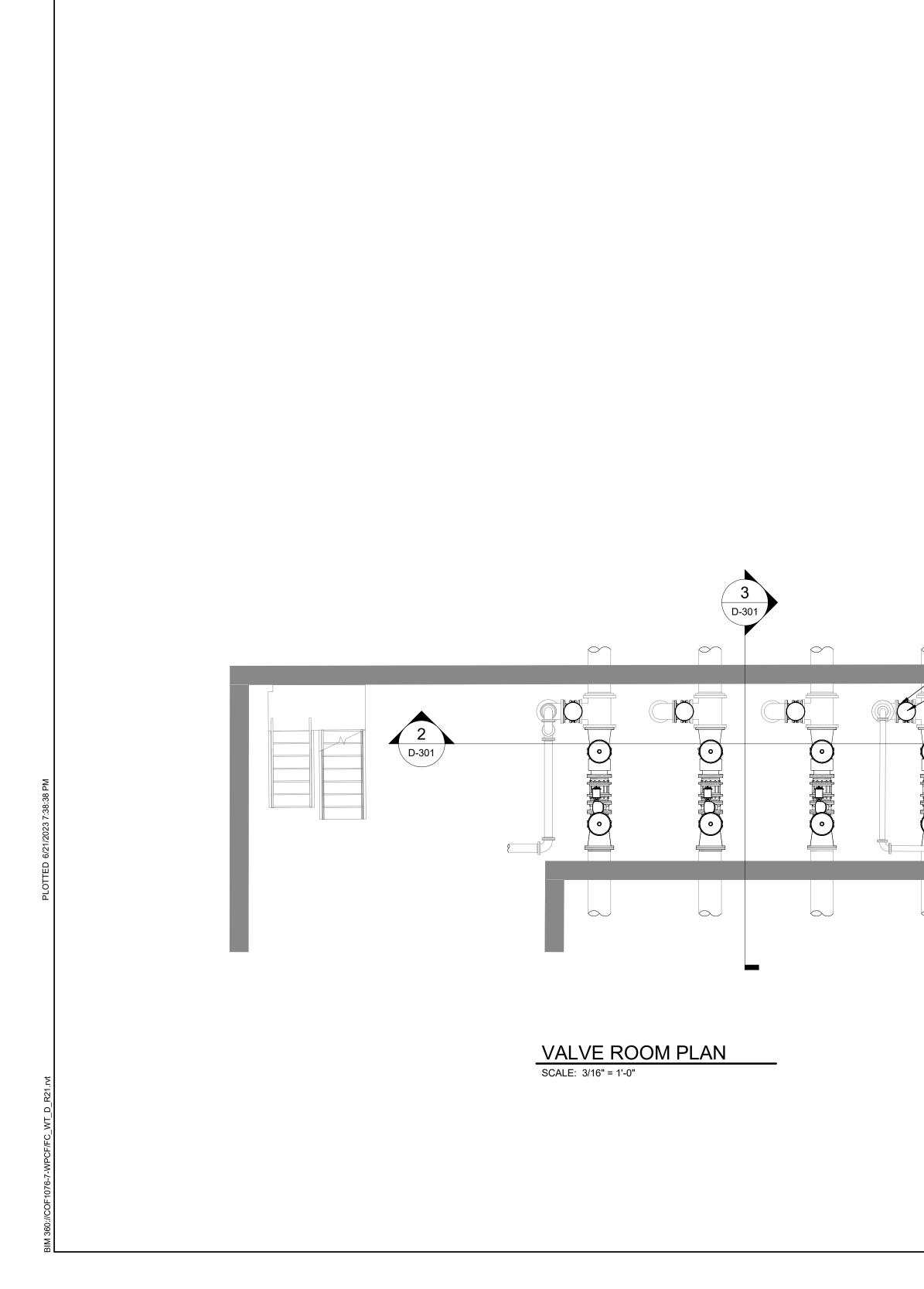




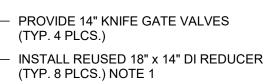








VAULT T/FDN PLAN SCALE: 3/16" = 1'-0"



PROVIDE 14" DIP SPOOL (TYP. 4 PLCS.)

- PROVIDE 14" BUTTERFLY FLOW CONTROL VALVES (TYP. 4 PLCS.)

PROVIDE 14" PLAIN END PIPE COUPLING (TYP. 4 PLCS.)

(TYP. 4 PLCS.)

PROVIDE 14" MAGNETIC FLOWMETERS

PROVIDE 14" KNIFE GATE VALVES (TYP. 4 PLCS.)

INSTALL REUSED 18" x 14" DI REDUCER (TYP. 8 PLCS.) NOTE 1

PROVIDE 12" KNIFE GATE VALVES (TYP. 4 PLCS.)

 \sim

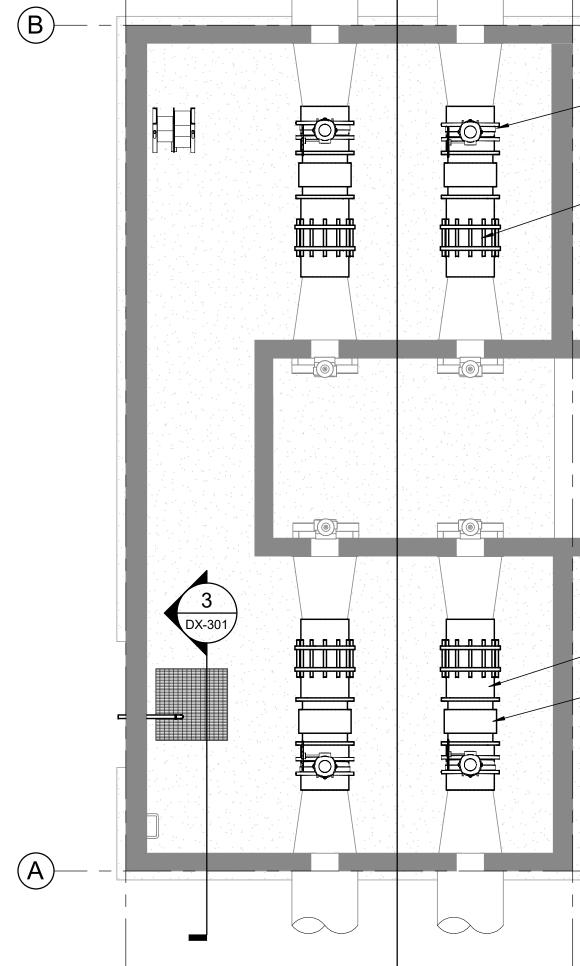
O

 (\mathbf{v})

 \bigtriangledown

PROVIDE 12" DIP SPOOL (TYP. 4 PLCS.)





DX-301

 \bigcirc

 \bigcirc

(2)

- REUSE EXISTING 30" FLANGED STUB PIPE (TYP. 4 PLCS.) NOTE 1

- PROVIDE 30" MAGNETIC FLOWMETERS (TYP. 4 PLCS.)

PROVIDE 30" PLAIN END PIPE COUPLING (TYP. 4 PLCS.)

PROVIDE 30" BUTTERFLY FLOW CONTROL VALVES (TYP. 4 PLCS.)

ഴ V of FL CHIG WADE TRIN 555 South Saginaw Street, Suite 201 Flint, MI 48502 810.235.2555 / 800.841.0342 FAX: 0810e26514975 www.wadetrim.com HUBBELL, ROTH & CLARK, INC CONSULTING ENGINEERS SINCE 1915 P.O. BOX 824 48303 - 0824 555 HULET DRIVE BLOOMFIELD HILLS, MICH.

PHONE: (248) 454-6300 FAX (1st. Floor): (248) 454-6312 FAX (2nd. Floor): (248) 338-2592 WEB SITE: http://www.hrc-engr.com

PHONE: (248) 454-6300 FAX (1st. Floor): (248) 454-6312 FAX (2nd. Floor): (248) 338-2592

CLARIFIER

CITY OF FLINT FTERY B SECONDARY C FLOW CONTROL

BAT

PCF

 \geq

BIDS

JOB NO.

SHEET

ISSUED FOR: DATE: BY:

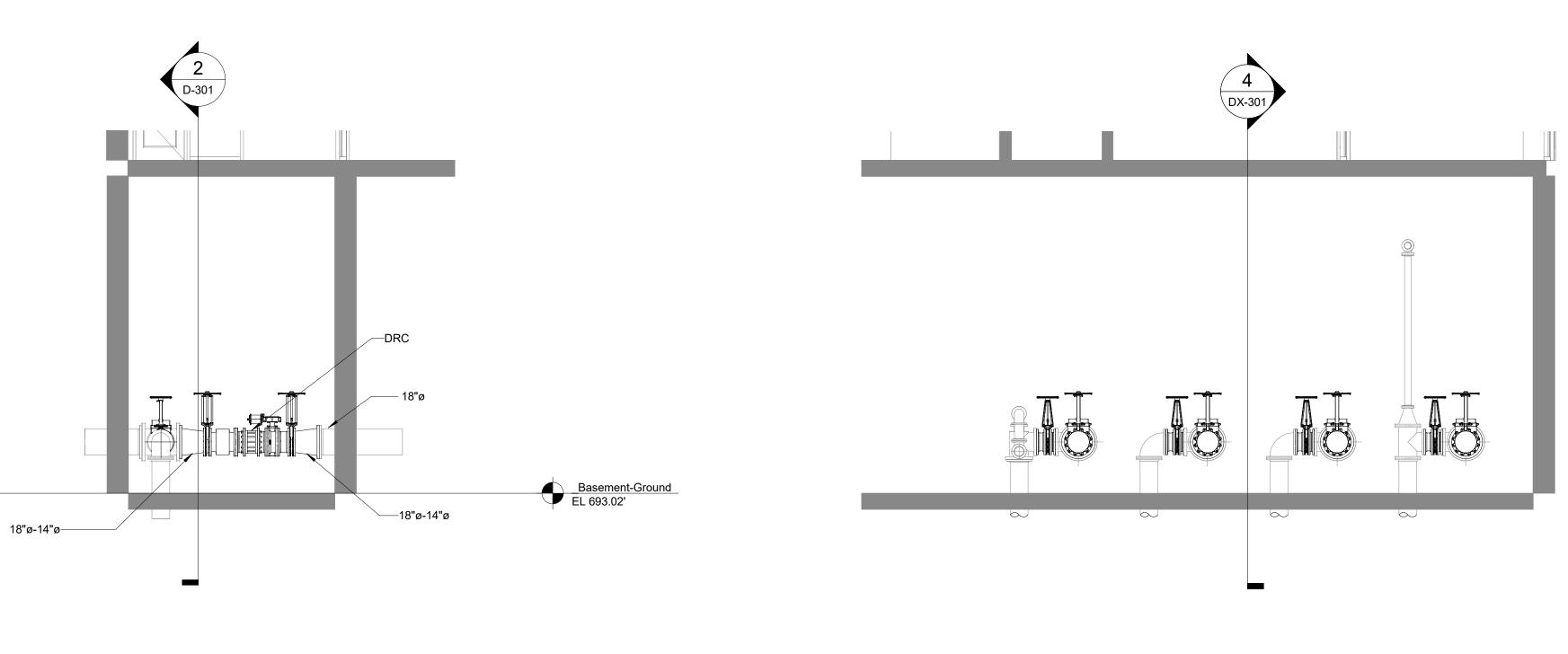
01077-01F

D-101

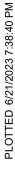
2023.06.24 TSW

FLOOR PLANS

NOTES: 1. PREPARE AND COAT EXISTING PIPING PER SPECIFICATION SECTION 09 96 00.

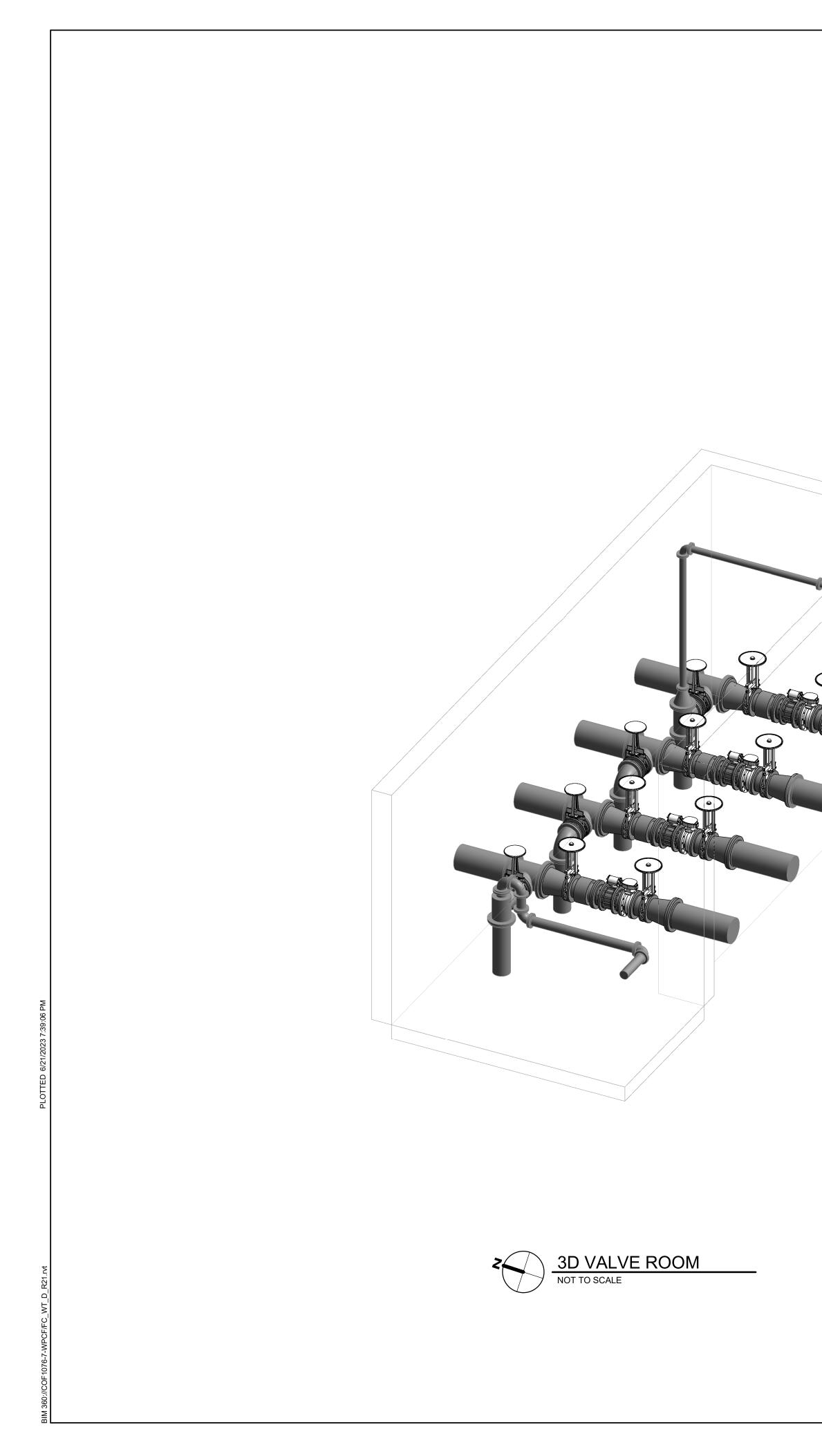


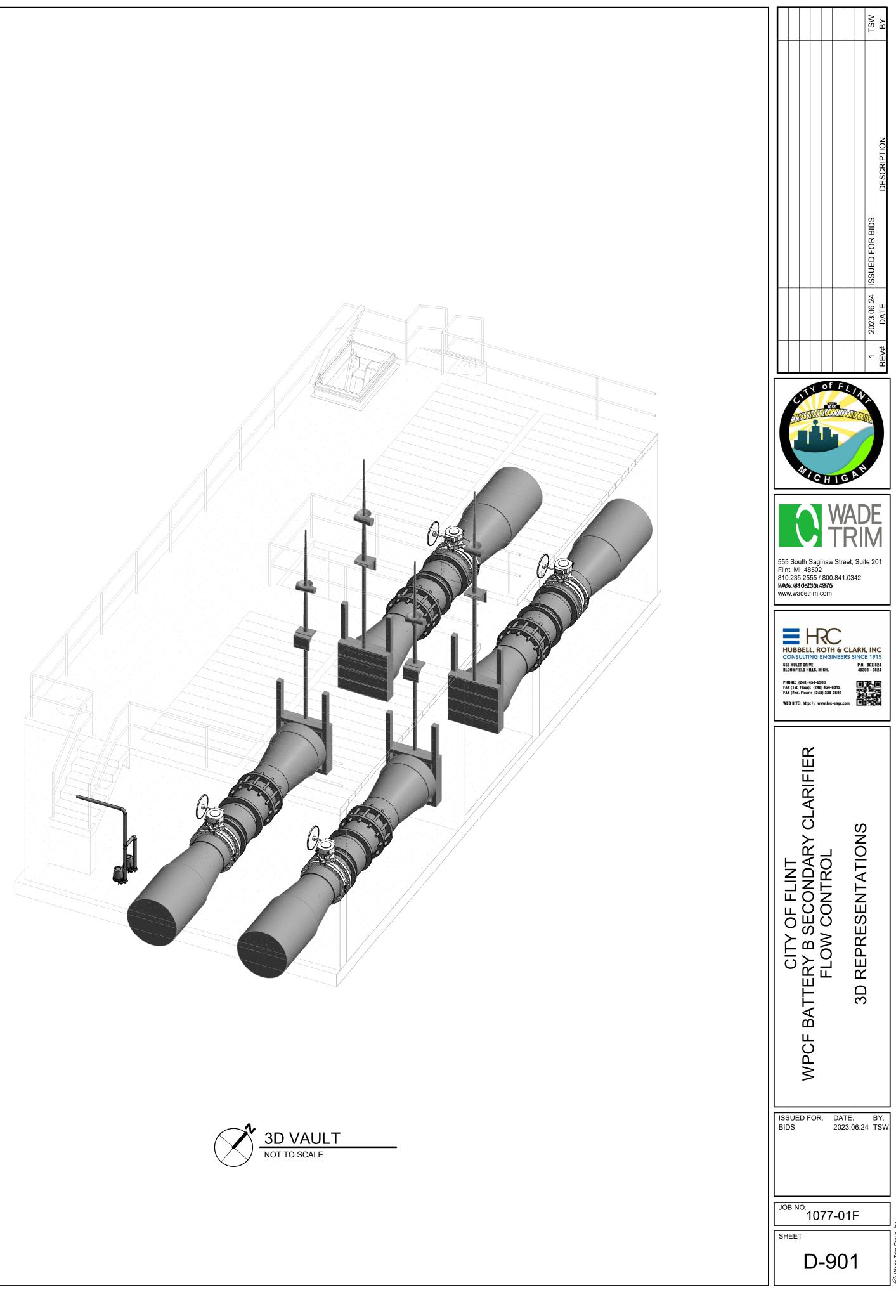






TSW BY
2023.06.24 ISSUED FOR BIDS DATE DESCRIPTION
1 2023.06.24 REV# DATE
CITY OF FLINK HIGAN
555 South Saginaw Street, Suite 201 Flint, MI 48502 810.235.2555 / 800.841.0342 FMX: Ved@2851.4975 www.wadetrim.com
HUBBELL, ROTH & CLARK, INC CONSULTING ENGINEERS SINCE 1915 555 HULET DRIVE P.O. BOX 824 BLOOMFIELD HILLS, MICH. 48303 - 0824 PHONE: (248) 454-6310 FAX (1st. Floor): (248) 454-6312 FAX (2nd. Floor): (248) 333-2592 WEB SITE: http:// www.hrc-engr.com
CITY OF FLINT WPCF BATTERY B SECONDARY CLARIFIER FLOW CONTROL SECTIONS - VALVE ROOM
ISSUED FOR: DATE: BY: BIDS 2023.06.24 TSW
JOB NO. 1077-01F
SHEET D-301





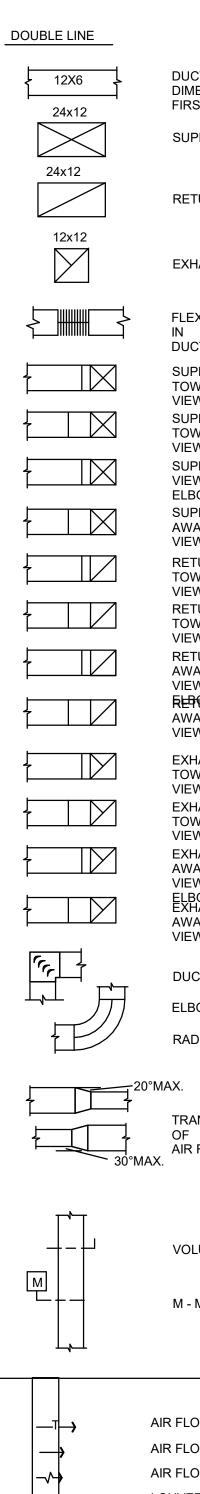


ABBREVIATIONS - HVAC

AB	BREVIATIONS - HVAC
%RH	RELATIVE HUMIDITY
A/C GAS	AIR CONDITIONING REFRIGERANT
ACC ACCU	AIR COOLED CONDENSER AIR COOLED CONDENSING UNIT
ACCO	ACCESS DOOR
ACP	ACCESS PANEL
AD	AUTOMATIC DAMPER
AD/PR	ACCESS DOOR / PRESSURE RELIEF
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	
APD	
AUX B	AUXILLIARY BOILER
BACNET	
BCU	BLOWER COIL UNIT
BF	BOOSTER FAN
BOD	BOTTOM OF DUCT
BOI	BOTTOM OF INSULATION
BOP	BOTTOM OF PIPE
BOT	BOTTOM
C CA	COMMON COMBUSTION AIR
CAV	COMBOSTION AIR CONSTANT AIR VOLUME
CC	CABINET CONVECTOR
CC	COOLING COIL
CD	CEILING DIFFUSER
CE	CEILING EXHAUSTER
CEF	CENTRIFUGAL FAN
CF	CABINET FAN
CLG	CEILING
CONC	CONCRETE
COND CONT	CONDENSATE CONTINUATION
CONTR	CONTRACTOR
CRD	CORROSION RESISTANT DUCT
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
CWF	CENTRIFUGAL WALL FAN
DB	DECIBEL
DF	DUCT FURNACE (GAS FIRED)
DG DH	
DIA	DOOR HEATER DIAMETER
DN	DOWN
DSF	DESTRATIFICATION FAN
DWG	DRAWING
DX	DIRECT EXPANSION
EA	
EAT EBR	ENTERING AIR TEMPERATURE ELECTRIC BASEBOARD RADIATION
EDR	ELECTRIC BASEBOARD RADIATION
EDB	ENTERING DRY BULB
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EH	ELECTRIC HUMIDIFIER
EH	EXHAUST HOOD
EHC	
EJ EL	EXPANSION JOINT ELEVATION
EL	
ELECT	ELECTRICAL
EP	EXHAUST PLENUM
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
EUH	
EWB	
EWH	ELECTRIC WATER HEATER ENTERING WATER TEMPERATURE
EWT F	ENTERING WATER TEMPERATURE
FAT	FINAL AIR TEMPERATURE
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FF	FORCE FLOW CONVECTOR
FFE	FINISHED FLOOR ELEVATION
FL	FLOOR
FM	FLOW METER
FO	FLOOR OPENING FREEZE STAT
FS FT	FREEZE STAT
FVV	FAN POWERED VAV BOX
FW	FIRE WATER
GC	GENERAL CONTRACTOR
GUH	GAS UNIT HEATER
GV	GRAVITY VENTILATOR
GWH	GAS WATER HEATER
HC	HEATING COIL HEATING & COOLING UNIT
HCU HD	HEATING & COOLING UNIT HEAT DETECTOR
HORIZ	HORIZONTAL
HRC	HEAT RECOVERY COIL
HRP	HEAT RECOVERY PUMP

ABBREVIATIONS - HVAC

	DIVE VIATIONS - TIVAC
HRU	HEAT RECOVERY UNIT
HTX	HEAT EXCHANGER
HUH	HYDRONIC UNIT HEATER
HUM	HUMIDIFIER
HV	HEATING AND VENTILATING UNIT
HVAC	HEATING, VENTILATING & AIR CONDITIONING UNIT
HZ	HERTZ
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INLINE FAN
IH	INTAKE HOOD
KW	KILOWATT
LAT	LATENT
	LEAVING DRY BULB
	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAU	MAKEUP AIR UNIT
MAX	MAXIMUM
MB	MIXING BOX
MC	MECHANICAL CONTRACTOR
MCC	MOTOR CONTROL CENTER
MID	MIDDLE
MIN	
MOD	MOTOR CONTROL DAMPER
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NG	NATURAL GAS
NGV	NATURAL GAS VENT
NIC	NOT IN CONTRACT
NK	NECK
NO	
NPW	NON-POTABLE WATER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAIL	OUTSIDE AIR INTAKE LOUVER
OAK	OUTSIDE AIR INTAKE
OD	OUTSIDE DIAMETER
Р	PUMP
PH	PENTHOUSE
PHC	PREHEAT COIL
PRV	PRESSURE REDUCING VALVE
RA	RETURN AIR
RAG	RETURN AIR GRILLE
RAR	RETURN AIR REGISTER
RF	ROOF FAN
RF	RETURN FAN
RH	RELIEF HOOD
RV	
SA	
SAD	SUPPLY AIR DIFFUSER
SD	
SDI SF	SMOKE DETECTOR IONIZATION SUPPLY FAN
SM	SHEET METAL
SM	STATIC PRESSURE
SPEC	SPECIFICATIONS
SQ	SQUARE
SQ SR	SUPPLY REGISTER
SS	STAINLESS STEEL
SST	SATURATED SUCTION TEMPERATURE
SUH	STEAM UNIT HEATER
SUMPP	SUMP PUMP
TA	TRANSFER AIR
TAG	TRANSFER AIR GRILLE
TCC	TEMPERATURE CONTROL CONTRACTOR
TCP	TEMPERATURE CONTROL PANEL
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
V	VENT
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VP	VELOCITY PRESSURE
VTR	VENT THROUGH ROOF
VU	VENTILATION UNIT
W	WIDTH
WCC	WATER COOLED CONDENSING UNIT
WCO	WALL CLEANOUT
WD	WALL DIFFUSER
WF	WALL FAN
WG	WALL GRILLE
WMS	WIRE MESH SCREEN
WO	WALL OPENING
WPD	WATER PRESSURE DROP



+0+

 \bigotimes

H

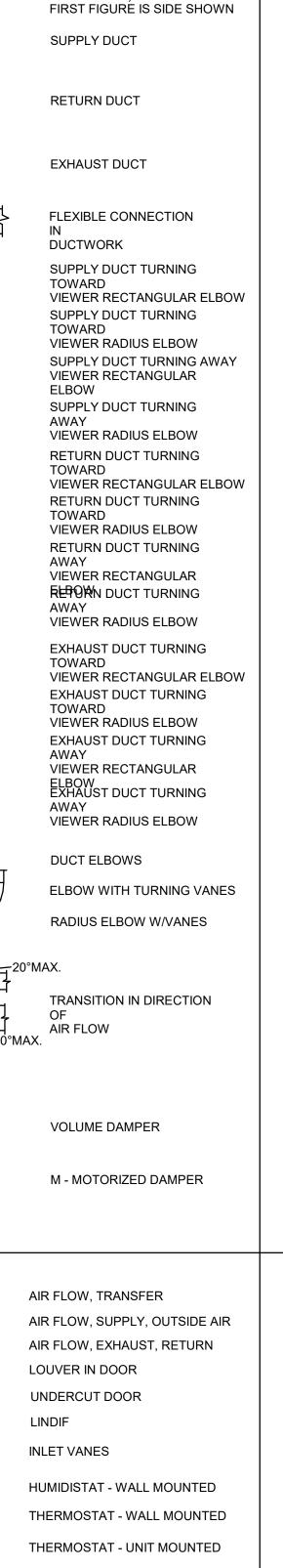
 \Box

FA

F

TT

H CO2



FIRE DAMPER 1 1/2 HOUR RATING FIRE DAMPER 2 HOUR RATING TEMPERATURE TRANSMITTER HUMIDIFICATION SENSOR

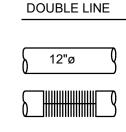
CARBON DIOXIDE SENSOR

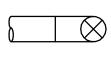


RECTANGULAR DUCT

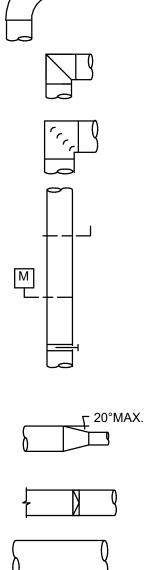
DUCT SIZE (INSIDE

DIMENSIONS)











W/TURNING VANES

VOLUME DAMPER

M - MOTORIZED DAMPER

BG - BLAST GATE

SQUARE TO ROUND TRANSITION

BELLMOUTH CONNECTION



Y-SPLIT

SMOKE DETECTOR BACKDRAFT DAMPER



SD

P

BDD





ROUND DUCT

DUCT SIZE (DIAMETER)

TOWARD VIEWER

MITER ELBOW

TRANSITION

TEE CONNECTION

Y CONNECTION

(EQUAL SIZE ONLY)

PRESSURE SENSOR

FAN

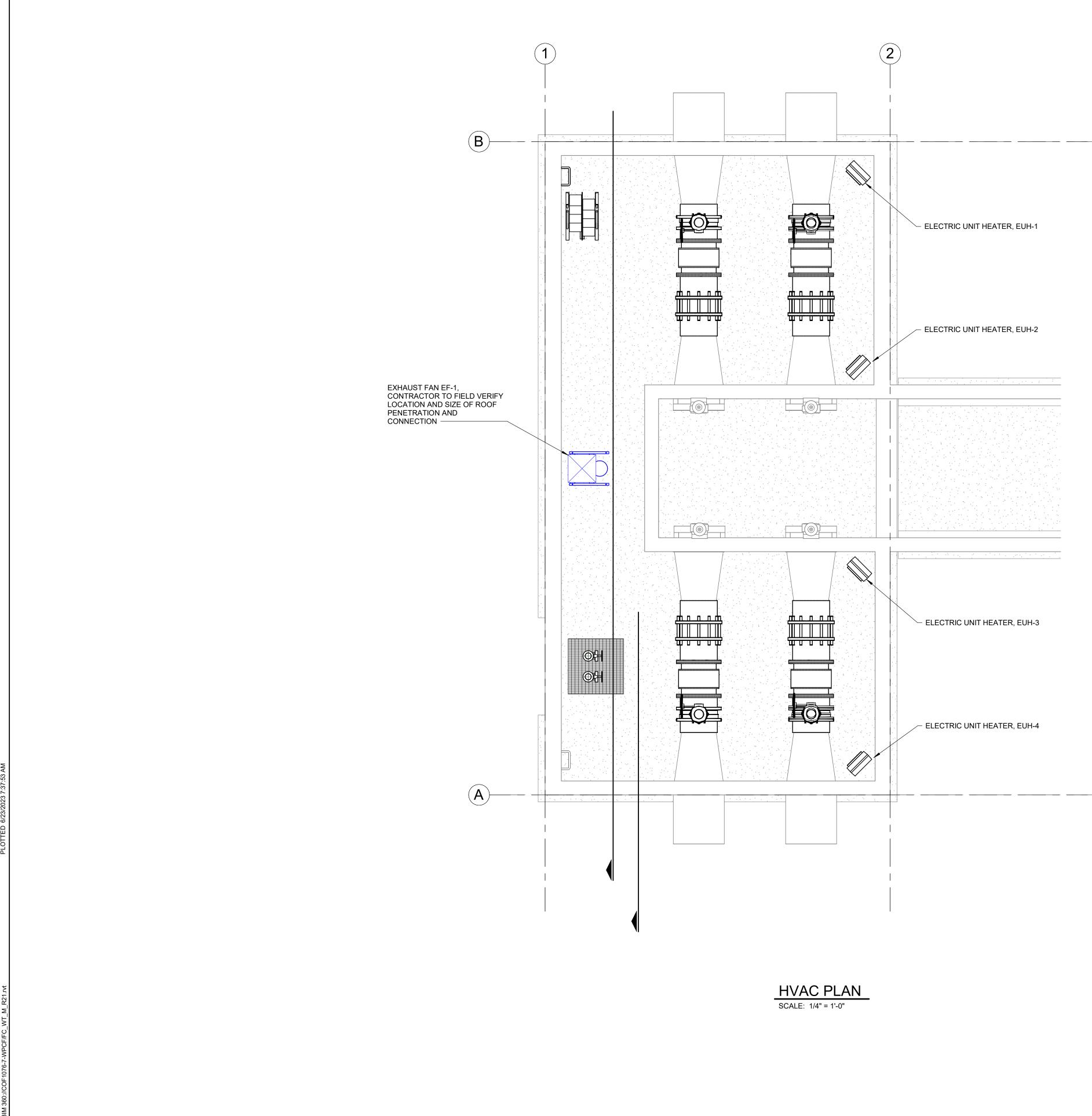
HEATING COIL

COOLING COIL

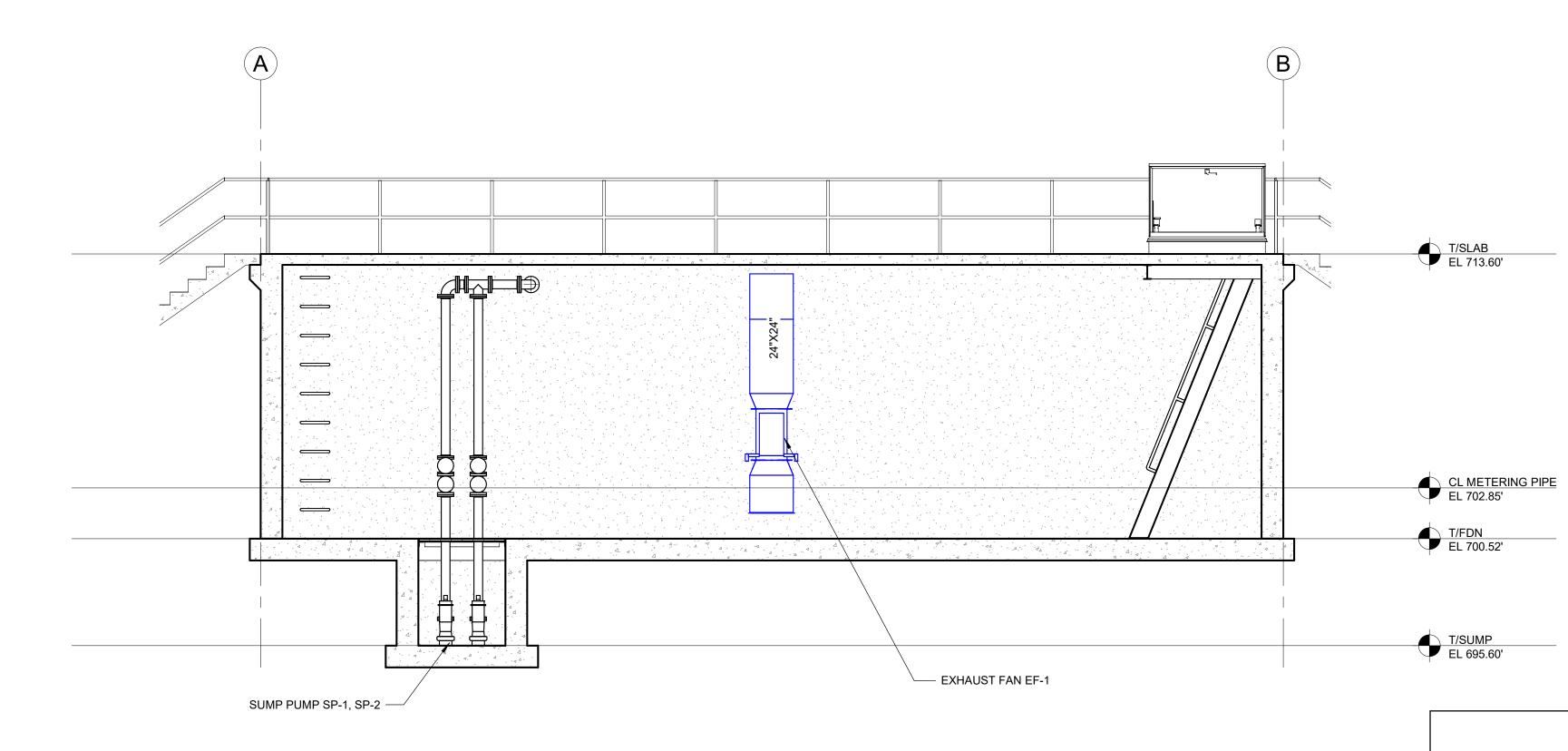
	(
Α	LAY PIPE TO UNIFORM GRADE BETWEE
В	UNLESS NOTED OTHERWISE, PIPE ELE
С	SUBMIT THE ROUTING OF PIPING NOT
D	SIZE OF FITTINGS SHOWN ON DRAWIN OTHERWISE. TYPE OF JOINT AND FITT
E	LOCATIONS AND NUMBER OF PIPE HAN AND PROVIDE PIPE SUPPORTS AS SPE
F	ALL JOINTS SHALL BE WATERTIGHT. W OR THROUGH WATERTIGHT STRUCTU
G	ALL FLEXIBLE CONNECTORS AND COU UNLESS NOTED OTHERWISE. THRUST
Н	NOT ALL OF THE GRAPHICS, ABBREVE
I	NUMBER AND LOCATION OF UNIONS SI FACILITATE CONVENIENT REMOVAL OF
J	WHERE A GROOVED END COUPLING IS FLANGED COUPLING ADAPTER IS SHO
К	LOCATE PRESSURE TAPS ON THE TOP
L	LOCATE SAMPLE TAPS ON THE SIDE O
М	LOCATE DRAIN TAPS ON THE BOTTOM
N	INSTALL ALL PLUG, BUTTERFLY, AND B OTHERWISE.
0	ALL MECHANICAL AND PROCESS EQUI NOT. SEE STRUCTURAL SHEETS FOR T
Р	VERTICAL ELEVATIONS ARE PROVIDED THE CONVERSION FROM THE CITY OF

GENERAL PIPING NOTES
EEN INDICATED ELEVATION POINTS.
EVATIONS SHOWN ON PIPING DRAWINGS REFER TO CENTERLINE OF PIPE.
SHOWN IN THE DRAWINGS FOR APPROVAL, INCLUDING PIPING SMALLER THAN 3 INCHES.
NGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS NOTED TING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
NGERS AND PIPE SUPPORTS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DESIGN ECIFIED.
WALL PIPES SHALL BE USED WHEREVER PIPING PASSES FROM A STRUCTURE TO BACKFILL JRE.
UPLING ADAPTERS SHALL BE PROVIDED WITH THRUST PROTECTION AS SPECIFIED, T PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.
EATIONS, ETC., SHOWN ON THIS SHEET ARE USED ON THE PROJECT.
SHOWN ON DRAWINGS ARE APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO DF VALVES AND MECHANICAL EQUIPMENT.
IS SHOWN, IT SHALL BE THE RIGID JOINT TYPE, UNLESS OTHERWISE SPECIFIED. WHERE A DWN, A STANDARD FLANGE SHALL BE JOINED TO THE COUPLING ADAPTER.
P OF PROCESS PIPES.
OF PROCESS PIPES.
M OF PROCESS PIPES.
BALL VALVES WITH THE SHAFT IN THE HORIZONTAL POSITION, UNLESS NOTED
JIPMENT SHALL BE PLACED ON CONCRETE HOUSEKEEPING PADS, WHETHER INDICATED OR TYPICAL DETAILS.
ED IN THE CITY OF DETROIT DATUM. ALL OTHER ELEVATIONS ARE PROVIDED IN NAVD88. F DETROIT DATUM TO NAVD88 IS 479.20'.

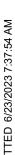
		ВҮ	
		DESCRIPTION	
		REV# DATE	
	A IN		
555 South Saginaw Str Flint, MI 48502 810.235.2555 / 800.847 FWW. 940626614975 www.wadetrim.com		E 1 201	
HUBBELL, ROTH & CONSULTING ENGINEE 555 HULET DRIVE BLOOMFIELD HILLS, MICH. PHONE: (248) 454-6312 FAX (1st. Floor): (248) 454-6312 FAX (2nd. Floor): (248) 338-2592 WEB SITE: http:// www.hrc-engr.d	RS SINCE 1 P.0. BOX 48303 - 1	915 824	
CITY OF FLINT WPCF BATTERY B SECONDARY CLARIFIER FLOW CONTROL PROJECT	HVAC GENERAL NOTES, SYMBOLS, AND	ADDREVIALIONS	
	.TE: 23.06.24	BY: TSW	
JOB NO. COF107	701F		up, IIIc.
M-00)1	Mada Trim Grain Inc	



				BY
				DESCRIPTION
				EV# DATE
	all'	of F	GA	
Flint, I 810.23	outh Sag MI 48502 35.2555 / 3402865/4 vadetrim.	<u>2</u> 800.84 19975		DE M ite 201
CON 555 HI BLOON PHONE FAX (1 FAX (2	BBELL, R BBELL, R SULTING INLET DRIVE IFIELD HILLS, N ILET DRIVE IFIELD HILLS, N INLET DRIVE IS A CONTRACT (248) 454-63 St. Floor): (244) H. St. Floor): (247) H. St. Floor): (24	ENGINEE IICH. 300 3) 454-6312 8) 338-2592	ERS SINC P.0 483	
CITY OF FLINT WPCF	BATTERY B SECONDARY CLARIFIER FLOW		HVAC PLAN	
	ED FOR		ATE: 23.06.2	BY: 24 TSW
JOB		107 - 1(F







FAN SCHEDULE										
TAG	QUANTITY	LOCATION	SERVICE	CFM	ESP (IN W.G.)	DRIVE	MOTOR	MANUFACTURERER	MODEL	REMARKS
EF-1	1	FLOW CONTROL	EXHAUST	1000	0.7	BELT	0.5 HP 460V, 3 PHASE	GREENHECK	QEI-9	ALL

REMARKS:

REMARKS: 1. PROVIDE NEMA 7 AND 9 DISCONNECT SWITCH. 2. PROVIDE INDUSTRIAL EPOXY COATING, GRAY 3. ALUMINUM MOTOR COVER 4. STAINLESS STEEL SHAFT 5. ALUMINUM HOUSING 6. TEFC PREMIUM EFFICIENCY MOTOR 7. GRIP NOTCH BELTS 8. ONE SPARE SET OF BELTS 9. BEARING AND GREASE FITTING 10. WIRING PIGTAIL 11 SPRING ISOLATORS

- 11. SPRING ISOLATORS

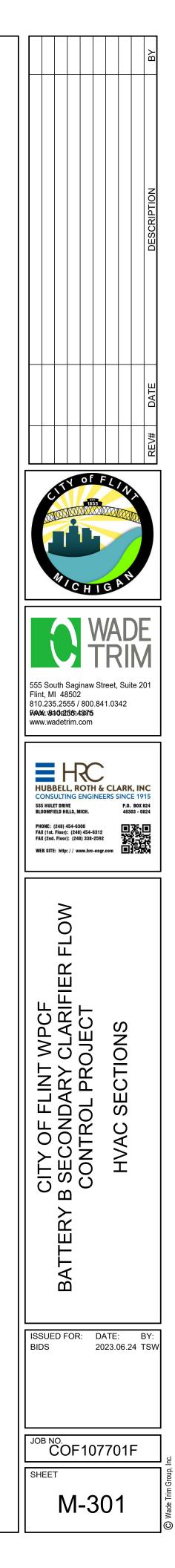
12. EXTENDED LUBE LINES
13. 2 YEAR WARRANTY
14. ALL STAINLESS STEEL FASTENERS

ALL STAINLESS STELL FASTENERS
 AUTO BELT TENSIONER
 J-BOX MOUNTED AND WIRED
 DUCT MOUNTED SMOKE DETECTOR, 120V
 AIR FLOW SWITCH FCI FLT93F 4" 316L STAINLESS STEEL ELEMENT, 120V

	AIR DISTRIBUTION SCHEDULE								
TAG	DESCRIPTION	SIZE	MATERIAL	SS DAMPER	BORDER FRAME TYPE	MAX. PRESSURE DROP	MAX N.C.	MANUFACTURERER	MODEL
EG-1	1/2" X 1/2" X 1/2" EGGCRATE TYPE EXHAUST AIR GRILLE	20" X 20"	316 SS	YES	DUCT MOUNT	0.10	30	TITUS	50R-SS

ELECTRICAL UNIT HEATER SCHEDULE						
TAG	LOCATION	VOLTS/PHASE	HEATING	MANUFACTURER	REMARKS	
EUH-1,2,3,4	WASTE UNLOADING	480/3	10 kW (EACH)	MODINE	EXPLOSION PROOF	





CIRCUIT BREAKER (CB) - RATINGS AND NO. OF POLES AS SHOWN.	$ \begin{array}{ccc} 0 \\ 100AF \\ 80AT \\ 0 \\ 3P \\ 0 \\ \end{array} \begin{array}{c} 0 \\ 3P \\ 0 \\ \end{array} \begin{array}{c} 0 \\ 3P \\ 0 \\ 3P \\ 0 \\ \end{array} \begin{array}{c} 20A \\ 3P \\ 3P \\ 0 \\ 3P \\ 0 \\ \end{array} $
30A, 3-POLE DISCONNECT SWITCH	
SEPARATELY MOUNTED COMBINATION MOTOR STARTER	
FUSED	
FUSED CUTOUT	_&
FUSIBLE SWITCH	
NON-FUSED SWITCH	_~_
DISCONNECT OR DRAWOUT CONNECTION	\approx
THERMAL OVERLOAD ELEMENT	-~~-
THERMAL OVERLOAD RELAY CONTACT	
480 VAC 3-PHASE MOTOR	Ø
120 VAC 1-PHASE MOTOR	6
120 VAC 1-PHASE MOTORIZED DAMPER	
TRANSFER SWITCH <u>X - INDICATES TYPE:</u> ATS - AUTOMATIC MTS - MANUAL	×
GENERATOR	G
TRANSFORMER Δ 3-PHASE, 3-WIRE DELTA CONNECTIONY3-PHASE, 4-WIRE GROUNDED WYE CONNECTION	<u>ulu</u>
CONTROL POWER TRANSFORMER (CPT)	CPT
VOLTAGE TRANSFORMER (VT)	
CURRENT TRANSFORME (CT)	Ę
MOTOR STARTER	MS
CONTROL RELAY	CR
TIMING RELAY	TR
GROUND	
LIGHTNING ARRESTER	

LOW VOLTAGE SURGE PROTECTIVE DEVICE	SPD
ELECTRICAL CONNECTION	_
NO ELECTRICAL CONNECTION	
NORMALLY-OPEN CONTACT	
NORMALLY-CLOSED CONTACT	H
NORMALLY-OPEN CONTACT FOR ON-DELAY TIMING RELAY	o ∧ o
NORMALLY OPEN CONTACT FOR OFF-DELAY TIMING RELAY	
NORMALLY-OPEN LIMIT SWITCH	<i>C</i>
NORMALLY-CLOSED LIMIT SWITCH	0_0
NORMALLY OPEN TEMPERATURE SWITCH; CLOSE ON RISING TEMPERATURE	
NORMALLY CLOSED TEMPERATURE SWITCH; OPEN ON RISING TEMPERATURE	<u>о-со</u> ч
NORMALLY OPEN FLOW SWITCH; CLOSE ON INCREASING FLOW	°
NORMALLY CLOSED FLOW SWITCH; OPEN ON INCREASING FLOW	To
NORMALLY OPEN LEVEL SWITCH	\sim
NORMALLY CLOSED LEVEL SWITCH	To
NORMALLY OPEN PRESSURE SWITCH	\sim
NORMALLY CLOSED PRESSURE SWITCH	To
NORMALLY-OPEN PUSHBUTTON	
NORMALLY-CLOSED PUSHBUTTON	$\circ \mid \circ$
TYPICAL SELECTOR SWITCH	HAND OFF AUTO
SEAL MOISTURE SENSOR	SM
TEMPERATURE SENSOR	TS
LOCAL CONTROL PANEL	LCP

		G
INTERLOCK X - INDICATES TYPE:	X	
E - ELECTRICAL; M - MECHANICAL; K - KEY	v	s
TRANSFORMER	Т	F
JUNCTION BOX	J OR JB	
CIRCUIT CONTINUATION		
CONDUIT STUBBED OUT AND CAPPED]	INE
CONDUIT TURNING UP	0	PL
CONDUIT TURNING DOWN	0 •	
HOME RUN TO PANEL, 2#12 + 1#12 GND IN 3/4"C UNLESS OTHERWISE NOTED		
ABOVE GROUND CONDUIT RUN		
UNDERGROUND CONDUIT RUN		F
GROUND CABLE		с
GROUND ROD	\odot	W
FIELD DEVICES		C
SELECTOR SWITCH	SS	
PUSHBUTTON	РВ	
PRESSURE ELEMENT/PRESSURE INDICATING TRANSMITTER	(PE) (PT)	E
LEVEL ELEMENT		E
TRANSMITTER		W
FLOW ELEMENT	(FE)	E>
FLOW INDICATING TRANSMITTER	(FT) (FIT)	D W
FLOW SWITCH	(FS)	D R Pl
FLOAT SWITCH	(LSH) (LSL)	
LIMIT SWITCH	ZS	SII W. DI
SOLENOID VALVE	S	RE PL
GAS DETECTOR	GE	AF
CONTROL STATION	•	P
THERMOSTAT	T T-STAT	
MOTORIZED DAMPER	MD M	
PRESSURE SWITCH	PS	тс
SINGLE DATA		
SINGLE TELEPHONE		
DOUBLE DATA / VOIP	\bowtie	
FLOOR MOUNTED DATA	${\bf \forall}$	
WELDER RECEPTACLE		
DUPLEX RECEPTACLE	Юx	

DUPLEX RECEPTACLE GFCI	⊕x	PANELBOARD (LESS THAN 250V)	
QUAD-DUPLEX RECEPTACLE	⊕x	PANELBOARD (250V TO 600V)	
SIMPLEX RECEPTACLE	-Ox	ELECTRICAL EQUIPMENT ENCLOSURE. AS INDICATED ON PLANS	
	₩ ₩ ₩	OCCUPANCY SENSOR CEILING MOUNTED	OS
X - INDICATES TYPE:			
GFCI - GROUND FAULT CIRCUIT INTERRUPTER		COMMUNICATION	
		CELL PHONE REPEATER	
		OUTDOORS ANTENNA	
O X INDICATES LENS COLOR: R - RED Y - YELLOW G - GREEN W - WHITE B - BLUE A - AMBER		END OF LINE ECRESISTANCE PANEL	DL-P
LIGHTING		FIRE ALARM	
PHOTOCELL	\oplus		
EILING/PENDANT-MOUNTED LUMINAIRE	X X X	FIRE ALARM ANNUNCIATOR	FAA
	Xγ	FIRE ALARM CONTROL PANEL	FACP
ALL-MOUNTED LUMINAIRE	-XX	FIRE ALARM ANNUNCIATOR PANEL	FAAP
EILING/PENDANT-MOUNTED	,	FIRE ALARM MANUAL STATION, MH=4'-0" AFF UNO	F
X	Y X Y	FIRE ALARM CONTACT, TAMPER SWITCH	TS
X MERGENCY LIGHT FIXTURE	Y	FIRE ALARM CONTACT, TAMPER SWITCH INSIDE KNOX KEYBOX	TS
		FIRE ALARM SMOKE DETECTOR, CEILING MOUNTED X - INDICATES TYPE <u>:</u>	< <u>5</u> ×
ALL MOUNTED CALL MOUNTED CALL MOUNTED CALL MOUNTED CALL CALL CALL CALL CALL CALL CALL CAL	₹¥	I - IONIZATION TYPE P - PHOTOELECTRIC TYPE	
OUBLE-FACED CEILING OR ALL-MOUNTED EXIT LIGHT; RECTIONAL ARROWS (IF	, H 🔆 X	FIRE ALARM ADDRESSABLE DUCT TYPE SMOKE DETECTOR, MOUNTED ON DUCT	< <u>></u>
EQUIRED) AS INDICATED ON _ANS		FIRE ALARM HEAT DETECTOR, CEILING MOUNTED	$\langle \downarrow \rangle$
NGLE-FACED CEILING OR ALL-MOUNTED EXIT LIGHT;	, H⊗ ∱×	FIRE ALARM BELL WITH PROTECTIVE CAGE, MH= 7'-6" AFG UNO	ХO
RECTIONAL ARROWS (IF EQUIRED) AS INDICATED ON ANS		FIRE ALARM SPEAKER, MH=10'-0" AFF UNO	X
		FIRE ALARM STROBE, MH=6'-8" AFF UNO	ХQ
REA OR ROADWAY LIGHT - OLE-MOUNTED	X ×	FIRE ALARM BELL AND FLASHING LIGHT COMBINATION UNIT, MH=7'-6" AFG UNO	X X V X
X - INDICATES FIXTURE TYPE PER LIGHTING FIXTURE SCHEDULE OR DETAILS		FIRE ALARM SPEAKER WITH STROBE, MH=6'-8" AFF UNO	x P <u>X</u>
Y - SWITCH CONTROL		<u>X - INDICATES TYPE:</u> NONE - GENERAL ALARM DEVICE F - FIRE ALARM DEVICE	
DGGLE SWITCH S	³ x	INTERFACE UNIT , MH=4'-0" AFF UNO	
X - INDICATES TYPE:		INTERFACE UNIT, CEILING MOUNTED UNO	СМ
NONE - SINGLE POLE 3 - THREE-WAY		0.10	
4 - FOUR-WAY HP - HORSEPOWER RATED		NOTES:	
K - KEY SWITCH P - PILOT LIGHT		1. STANDARD ELECTRICAL LEGEND SHEET. NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT.	
L - LIGHTED HANDLE TE - MANUAL MOTOR STARTER WITH THEF OS - OCCUPANCY SENSOR DM - DIMMABLE	RMAL ELEMENT		



]		TSW BY
		2023.06.24 ISSUED FOR BIDS DATE DESCRIPTION
		1 2023.06.24 REV# DATE
		E AN
	555 South Saginar Flint, MI 48502 810.235.2555 / 80 FAXX: \\$30@285h4397 www.wadetrim.con	0.841.0342 5
		8-2592
	BATTERY B SECONDARY CLARIFIER FLOW CONTROL	ELECTRICAL SYMBOLS AND ABBREVIATIONS
	ISSUED FOR: BIDS 20	DATE: BY: 023.06.24 TSW
	JOB NO. COF1	07601F

GENERAL ELECTRICAL NOTES: (APPLY TO ALL DRAWINGS)

- 1. THE CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY CHECK THE FIELD CONDITIONS AND THE EXISTING ELECTRICAL INSTALLATION AND UTILITIES PRIOR TO SUBMITTING HIS BID.
- 2. OTHER PROJECTS ARE, OR MAY BE, UNDER CONSTRUCTION AT THIS SITE, AND THIS CONTRACTOR SHALL COORDINATE WITH THEM SO AS NOT TO DELAY THEIR SCHEDULES OR IMPEDE THEIR WORK.
- 3. COORDINATE ALL NEW ELECTRICAL UNDERGROUND WORK WITH NEW AND EXISTING UNDERGROUND UTILITIES BEFORE INSTALLATION.
- 4. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH A FISH LINE.
- 5. ALL UNDERGROUND CONDUITS SHALL BE P.V.C., EXCEPT WHERE ENTERING MANHOLES, HANDHOLES, BUILDINGS, LIGHT POLE BASES, AND TRANSFORMER PAD. UNDERGROUND CONDUITS AND/OR DUCTS SHALL BE RIGID GALVANIZED ALUMINUM WITHIN 5'-0" OF THE STRUCTURE. ALL CONDUITS AND/OR DUCTS UNDER BUILDINGS SHALL BE RIGID GALVANIZED STEEL.
- 6. PROVIDE WATERTIGHT HUBS AT CONDUIT ENTRANCES TO ALL ENCLOSURES MOUNTED OUTDOORS AND AT ALL WATERTIGHT (NEMA TYPE 4 & 4X) ENCLOSURES MOUNTED INDOORS. ALL NEMA TYPE 4 & 4X ENCLOSURES, EXCEPT THOSE IN CORROSIVE AREAS, SHALL BE EQUIPPED WITH A DRAIN/BREATHER FITTING.
- 7. EXPANSION OR EXPANSION/DEFLECTION FITTINGS SHALL BE PROVIDED FOR ALL CONDUITS CROSSING BUILDING EXPANSION JOINTS.
- 8. ALL POWER FEEDERS SHALL BE RUN IN INDIVIDUAL CONDUITS, FROM SOURCE TO LOAD, AS INDICATED IN SCHEDULES, WIRING DIAGRAMS, OR BY HOME RUNS ON THE PLANS.
- 9. ALL CONDUITS SHALL BE ROUTED TO AVOID OPENINGS IN FLOORS, ROOFS, AND WALLS. LADDERS UP WALLS SHALL NOT BE CROSSED BY EXPOSED CONDUIT RUNS. PROVIDE THE MINIMUM CLEAR SPACE REQUIRED BY ALL GOVERNING CODES BETWEEN HANDRAILS AND ALL ELECTRICAL ENCLOSURES AND RACEWAYS, WHICH IN NO CASE SHALL BE LESS THAN 1 1/2" CLEAR.
- 10. ALL CONDUITS FOR 480VAC POWER FEEDERS, BRANCH CIRCUITS, AND INSTRUMENTATION SHALL BE RUN EXPOSED OVERHEAD, UNLESS SHOWN OTHERWISE ON THE PLANS.
- 11. ALL ELECTRICAL FLOOR MOUNTED EQUIPMENT SUCH AS MOTORS, CONTROL PANELS, AND METALLIC SUPPORT RACKS SHALL HAVE A #2 (UNLESS OTHERWISE NOTED) BARE GROUND CONDUCTOR TIE BETWEEN THE MOTOR FRAME, ENCLOSURE, OR SUPPORT LEG AND THE BUILDING GROUND SYSTEM.
- 12. GROUND CONDUCTOR SPLICING AND BONDING SHALL BE ACCOMPLISHED BY THE USE OF EXOTHERMIC WELDING.
- 13. PROVIDE A GREEN GROUND CONDUCTOR IN ALL SYSTEMS CONDUITS, EXCEPT INSTRUMENT SIGNAL AND ALARM CONDUITS, INCLUDING BRANCH CIRCUIT CONDUITS FOR LIGHTING AND RECEPTACLES. GROUND CONDUCTOR SIZING SHALL BE PER N.E.C. TABLE 250.122 (MINIMUM) WHERE NOT SIZED ON THE DRAWINGS.
- 14. COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES AND ELECTRICAL DEVICES WITH MECHANICAL PIPING AND DUCTWORK BEFORE INSTALLATION.
- 15. ALL THREADED MECHANICAL CONNECTIONS ON ELECTRICAL EQUIPMENT (CONDUIT, COUPLINGS, JUNCTION BOXES, ETC.) INSTALLED WITHIN WET AREAS. HAZARDOUS AREAS, OR OUTDOORS SHALL BE COATED WITH ANTI-SEIZE COMPOUND PRIOR TO INSTALLATION.
- 16. ALL WALL AND RACK MOUNTED DISCONNECT SWITCHES, CONTROL PANELS, AND LIGHTING PANELS SHALL BE 5'-6" TO TOP, ABOVE FINISHED FLOOR.
- 17. ALL WEATHERPROOF (W.P.) DUPLEX RECEPTACLES SHALL BE INSTALLED SUCH THAT COVER DOORS OPEN UPWARD.
- 18. ALL EXPOSED METALLIC ELECTRICAL EQUIPMENT, PULL BOXES, JUNCTION BOXES, CONDUITS, SUPPORTS, BRACKETS, HANGERS, NUTS, BOLTS, ETC. LOCATED WITHIN HAZARDOUS OR CORROSIVE AREAS, SHALL BE P.V.C. COATED WITH 40 MILS (MIN.) COVERING. WHERE FACTORY P.V.C. COATING IS NOT AVAILABLE OR WHERE P.V.C. COATING WOULD VOID U.L.LISTING OR LABELING, FACTORY OR FIELD COATING WITH A CORROSION RESISTANT, EPOXY PAINT SHALL BE PROVIDED.
- 19. ALL PENETRATIONS OF FIRE WALLS OR FLOORS SHALL BE SEALED AFTER INSTALLATION OF CONDUIT WITH A FIRE RETARDANT SEALANT THAT IS RATED THE SAME AS THE FIRE WALL OR FLOOR.
- 20. ALL CONDUITS AND/OR SLEEVES THAT PASS THROUGH WALLS OR FLOORS SEPARATING HAZARDOUS AREAS FROM NON-HAZARDOUS AREAS SHALL BE SEALED GAS-TIGHT WITH NON-METALLIC. NON SHRINK GROUT AFTER CONDUIT IS INSTALLED.
- 21. ALL WALL MOUNTED ELECTRICAL EQUIPMENT SHALL HAVE A 1/2" (MINIMUM) AIR SPACE BETWEEN WALL AND EQUIPMENT (PROVIDE NON-CORROSIVE SPACERS OR BRACKETS AS REQUIRED).
- 22. FOR ALL WALL MOUNTED EQUIPMENT WITHIN HAZARDOUS OR CORROSIVE AREAS USE STAINLESS STEEL ANCHORS AND 1/2" STAINLESS STEEL SPACERS ON STAINLESS STEEL ANCHOR BOLTS TO PROVIDE A 1/2" AIR SPACE BETWEEN THE EQUIPMENT AND THE WALL.
- 23. ALL FLOOR OR PAD MOUNTED ELECTRICAL ENCLOSURES SHALL BE SPACED 1" OUT FROM EXTERIOR WALLS (MINIMUM).
- 24. FOR ALL 120 VAC LIGHTING AND RECEPTACLE CIRCUITS, RUN 2-#12 (MINIMUM) + #12 GRD., 3/4"C. TO THE LIGHTING PANELBOARD INDICATED, UNLESS NOTED OTHERWISE. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR BRANCH CIRCUIT WIRING.

- 25. FOR EACH INTRINSICALLY SAFE CIRCUIT, RUN 2-#14 AWG (M PAIR-#18 FOIL SHIELDED, IN 3/4" R.G.S. (MINIMUM). INTRINS CIRCUITS MAY BE RUN WITH OTHER I.S. CIRCUITS IN THE I.S. BUT SHALL NOT BE RUN IN THE SAME CONDUIT. RACEWAY, N WITH ANY NON-INTRINSICALLY SAFE CIRCUITS, NOR SHALL I. COME IN CONTACT IN ANY FASHION WITH NON-INTRINSICALLY CONDUCTORS. I.S. CIRCUIT INSTALLATION SHALL MEET ALL I THE LATEST REVISIONS OF N.E.C. ARTICLE 504, ANSI/ISA RP ANSI/UL 913.
- 26. 4-20 MA, INSTRUMENT SIGNAL AND DC TOTALIZED PULSE CAN RUN WITH OTHER INSTRUMENT SIGNAL CABLES IN THE INSTRU SYSTEM. INSTRUMENT SIGNALS SHALL NOT BE RUN IN THE SA ANY OTHER TYPE OF ALARM, CONTROL AND/OR POWER WIRIN
- 27. DC ALARM WIRING SHALL BE #14 AWG AND MAY BE RUN WIT WIRING IN THE ALARM CONDUIT SYSTEM. ALARM WIRING SH IN THE SAME CONDUIT WITH ANY OTHER TYPE INSTRUMENT S OR POWER WIRING, UNLESS OTHERWISE SHOWN ON THE DRAW
- 28. IN AREAS WHERE ELECTRICAL WORK DISTURBS EXISTING SOD, BE REGRADED AS REQUIRED AND SOD SHALL BE REPAIRED O REQUIRED, TO RETURN THE SITE TO A CONDITION MEETING OR PRIOR TO THE BEGINNING OF WORK.
- 29. ALL SALVAGED MATERIALS SHALL BE TURNED OVER TO THE DISPOSED OF AS DIRECTED BY THE OWNER.

NSICALLY SAFE (I.S.)THOROUGHLY CHECK THE FIELD CONDITIONS AND THE EXISTING ELECTRICAL INSTALLATION PRIOR TO SUBMITTING A BID.A/GS. CONDUIT SYSTEM, WIRE DUCT, ETC., I.S. CONDUCTORS LY SAFE REQUIREMENTS OF REP-12.06, AND2. ALL DEMOLITION WORK SHALL BE COORDINATED WITH THE OWNER.AL A BID.3. ALL ELECTRICAL DEMOLITION WORK SHALL INCLUDE REMOVING OF EXISTING LIGHTING FIXTURES, DISCONNECT SWITCHES, WIRE, CONDUIT, BOXES, ETC., AS INDICATED ON THE DRAWINGS AND SHALL BE BY THIS CONTRACTOR.AM AM AT AT AT AT AT AT AT AT ARE NOT BEING RE-USED UNLESS CONCEALEDA/G A/G A/G	AIR CONDIT CIRCUIT BK ABOVE GRO	UTO, OR	
A/C(MINIMUM), OR 11. THE CONTRACTOR SHALL VISIT THE JOB SITE ANDA/CNSICALLY SAFE (I.S.)THOROUGHLY CHECK THE FIELD CONDITIONS AND THEA/GS. CONDUIT SYSTEM,EXISTING ELECTRICAL INSTALLATION PRIOR TO SUBMITTINGAICWIRE DUCT, ETC.,A BID.AICI.S. CONDUCTORS2. ALL DEMOLITION WORK SHALL BE COORDINATED WITH THEALLY SAFEOWNER.AIL ELECTRICAL DEMOLITION WORK SHALL INCLUDEAMIREQUIREMENTS OF3. ALL ELECTRICAL DEMOLITION WORK SHALL INCLUDEAMIRP-12.06, AND3. ALL ELECTRICAL DEMOLITION WORK SHALL INCLUDEANNCABLES, MAY BEON THE DRAWINGS OF EXISTING LIGHTING FIXTURES, DISCONNECTASRUMENT CONDUIT4. REMOVE ALL CONDUIT, WIRE, HANGERS, CLAMPS, ETC.AT	AIR CONDIT CIRCUIT BK ABOVE GRO	NG CURRENT	HTR HV HZ
I.S. CONDUCTORS 2. ALL DEMOLITION WORK SHALL BE COORDINATED WITH THE AL LY SAFE 0WNER. AMI REQUIREMENTS OF 3. ALL ELECTRICAL DEMOLITION WORK SHALL INCLUDE AMI RP-12.06, AND 3. ALL ELECTRICAL DEMOLITION WORK SHALL INCLUDE AMI REMOVING OF EXISTING LIGHTING FIXTURES, DISCONNECT AS SWITCHES, WIRE, CONDUIT, BOXES, ETC., AS INDICATED AS CABLES, MAY BE ON THE DRAWINGS AND SHALL BE BY THIS CONTRACTOR. AT RUMENT CONDUIT 4. REMOVE ALL CONDUIT, WIRE, HANGERS, CLAMPS, ETC. ATS		TIONING IR FRAME SIZE DUND	INCAND IND INST INSTR
REQUIREMENTS OF RP-12.06, AND3.ALL ELECTRICAL DEMOLITION WORK SHALL INCLUDEAMI ANN ANDCABLES, MAY BE RUMENT CONDUIT RUMENT CONDUIT NAME3.ALL ELECTRICAL DEMOLITION WORK SHALL INCLUDE DEMOVING OF EXISTING LIGHTING FIXTURES, DISCONNECT SWITCHES, WIRE, CONDUIT, BOXES, ETC., AS INDICATED ON THE DRAWINGS AND SHALL BE BY THIS CONTRACTOR.AMI ANN AS ATCABLES, MAY BE RUMENT CONDUIT SAME CONDUIT WITH4.REMOVE ALL CONDUIT, WIRE, HANGERS, CLAMPS, ETC. THAT ARE NOT BEING RE-USED UNLESS CONCEALEDAMI ANN AS AT			I/O ISO JB
RUMENT CONDUIT 4. REMOVE ALL CONDUIT, WIRE, HANGERS, CLAMPS, ETC. ATS SAME CONDUIT WITH THAT ARE NOT BEING RE-USED UNLESS CONCEALED ATS	P AMPERES N ANNUNCIAT AMMETER S		JCT KA KAIC
RING. ABOVE CEILINGS OR IN WALLS, WHICH MAY BE ABANDONED AND LEFT IN PLACE. CONDUIT IN FLOOR BAT	SWITCH G AMERICAN TT BATTERY	C TRANSFER WIRE GAUGE	KCMIL KVA KW
SHALL NOT BE RUN SLAB SHALL BE CUT FLUSH WITH SLAB AND PLUGGED BKI SIGNAL, CONTROL, WITH NON-SHRINK GROUT. BL AWINGS. 5. REMOVE ALL WIRE IN EXISTING CONCEALED ABANDONED BL	BLUE K BLOCK OR I	BLACK	L LCP LCS
D, GROUND SHALL CIRCUITS, EXISTING CONCEALED CONDUITS (IF BRI OR REPLACED, AS 6. EXISTING CONDUITS AND BRANCH CIRCUIT WIRING MAY BE REUSED FOR NEW WIRING MAY BE REUSED WHERE APPLICABLE. IF CONDUIT AND CAR	N BROWN CONDUIT O CONDUCTC)R	LOC LOR LOS
E OWNER OR T. ALL OPENING CREATED BY REMOVAL OF CONDUITS CKT THROUGH EXISTING WALLS OR FLOORS SHALL BE SEALED CLE	CIRCUIT BR T CIRCUIT F CURRENT L	EAKER IMITING FUSE	LP LRA LS
WATER TIGHT TO MATCH EXISTING. 8. REVISE ALL EXISTING LIGHTING PANEL DIRECTORIES AND CON MCC NAMEPLATES TO REFLECT ALL REVISIONS TO DRANCH CIRCUIT BREAKERS IN THE EXISTING PANELS CON AND MCC'S. CON	M COMMON MM COMMUNIC MP COMPRESS ND CONDUCTO	ATION GOR DR	LT LTG LTS LV M
9. VERIFY REMOVAL OF ALL EXISTING POWER AND CONTROL CP WIRING WITH THE OWNER PRIOR TO START OF DEMOLITION WORK. CP1	CONTROL F CHEMICAL I T CONTROL F	PANEL OR PUMP POWER XFMR	MA MCC
10. ALL SALVAGE ELECTRICAL EQUIPMENT SHALL BECOME CR THE PROPERTY OF THE OWNER AND SHALL BE STORED CT AT AN ON SITE LOCATION AS DIRECTED BY THE OWNER. CL	CURRENT TRANSFOR	MER	MCM MCP
11. ALL EXISTING PANELBOARDS, LIGHTING FIXTURES, WIRING CH DEVICES, TELEPHONE OUTLETS, ETC., SHALL REMAIN IN DCS THEIR EXISTING LOCATIONS, UNLESS OTHERWISE NOTED CH	CHANNEL S DISTRIBUTE SYSTEM	ED CONTROL	MFG MH
12. REMOVE EQUIPMENT AS SHOWN, INCLUDING ALL DEM ASSOCIATED CONDUIT AND WIRE. DIS	MO DEMOLITIO	N ON	MLO MOV
13. ALL ELECTRICAL EQUIPMENT WITHIN THE EXISTING DM CLARIFIER VAULT SHALL BE REMOVED (CONDUIT, WIRE, DP FLOAT SWITCHES, LIGHTS CONTROL PANELS, FLOW DPI METERS AND ETC.). DPI	DISTRIBUTI		MPZ MS MTR MTS
14. ALL INTERRUPTIONS OF POWER (IF REQUIRED) FOR DISCONNECTING OR CONNECTIONS OF POWER FOR THE DISCONNECTIONS OF POWER FOR THE DISCONNECT	THROW	DLE, SINGLE KE DETECTOR CY	MV N N/A
	ERG EMERGENC T ELECTRICA TUBING	CY L METALLIC	NC NEMA
	M ELAPSED T EXPLOSION EXHAUST F	IME METER I AN	NF NIC NL NO
F FDF FLA	FREQUENC R FEEDER A FULL LOAD	Y OR FUSE	NP NTS O
FO FT FVF	FLOW TRAN R FULL VOLT.	C NSMITTER REVERSING	OL ORN P PA
FVN G GET	REVERSING GROUND N GENERATO	R	PB PC PF
GFC GNI GRI	INTERRUPT D GROUND	AULT CIRCUIT ER	PH PL PLC
H HC HD HH	HEAT DETE	CTOR	PNL PMP PP
	HIGH INTEN DISCHARGE A HAND-OFF-/	ISITY E AUTOMATIC	POS POT PR PRI
HP HPS HS	HORSEPOV S HIGH PRES	VER SURE SODIUM	PS PT

HEATER PTZ HIGH VOLTAGE PWR HERTZ QTY INCANDESCENT INDICATION RAC INSTANTANEOUS RECPT INSTRUMENT REF INPUT/OUTPUT ISOLATION REG JUNCTION BOX RGS RMS JUNCTION RTU THOUSAND AMPERES THOUSAND AMPERES INTERRUPTING RVA CAPACITY THOUSAND CIRCULAR RVSS MILS **KILOVOLT AMPERE** KILOWATT S.S. LOCAL SA LOCAL CONTROL PANEL SEQ LOCAL CONTROL SF STATION SH LOCAL SHLD SIG LOCAL-OFF-REMOTE LOCKOUT STOP SP PUSHBUTTON SP HTR LIGHTING PANEL SPD LOCKED ROTOR AMPS LEVEL SWITCH SPDT LEVEL TRANSMITTER SPST LIGHTING LIGHTS SS LOW VOLTAGE MOTOR CONTACTOR SSL COIL SSW MILLIAMPERE STR MOTOR CONTROL SW CENTER THOUSAND CIRCULAR SWGR SYS MILS MOTOR CIRCUIT TACH PROTECTOR ΤВ MANUFACTURER TD METAL HALIDE TEL MOUNTING HEIGHT OR TERM MANHOLE MAIN LUGS ONLY TL MOTOR OPERATED TR VALVE ΤS MINI-POWER ZONE TSP MOTOR STARTER TSTAT MOTOF TTC MANUAL TRANSFER SWITCH TVSS MEDIUM VOLTAGE NEUTRAL TYP NOT APPLICABLE UC NORMALLY CLOSED UG NATIONAL ELECTRICAL UH MANUFACTURER'S UNO ASSOCIATION NON-FUSIBLE UPS NOT IN CONTRACT NIGHT LIGHT UTIL NORMALLY OPEN NAMEPLATE VA NOT TO SCALE VAR OPEN OR OFF VFD OVERLOAD ORANGE VM POLE PUBLIC ADDRESS VP PUSHBUTTON OR w PULLBOX W/ PHOTOCELL W/O POWER FACTOR WH PHASE WHM **PILOT LIGHT** WP PROGRAMMABLE LOGIC WT CONTROLLER WTR PANEL XFMR PUMP XMTR POWER PANEL OR XP PROCESSOR PANEL POSITION ZS POTENTIAL PAIR PRIMARY PRESSURE SWITCH OR POWER SUPPLY POTENTIAL TRANSFORMER OR PRESSURE TRANSMITTER CL

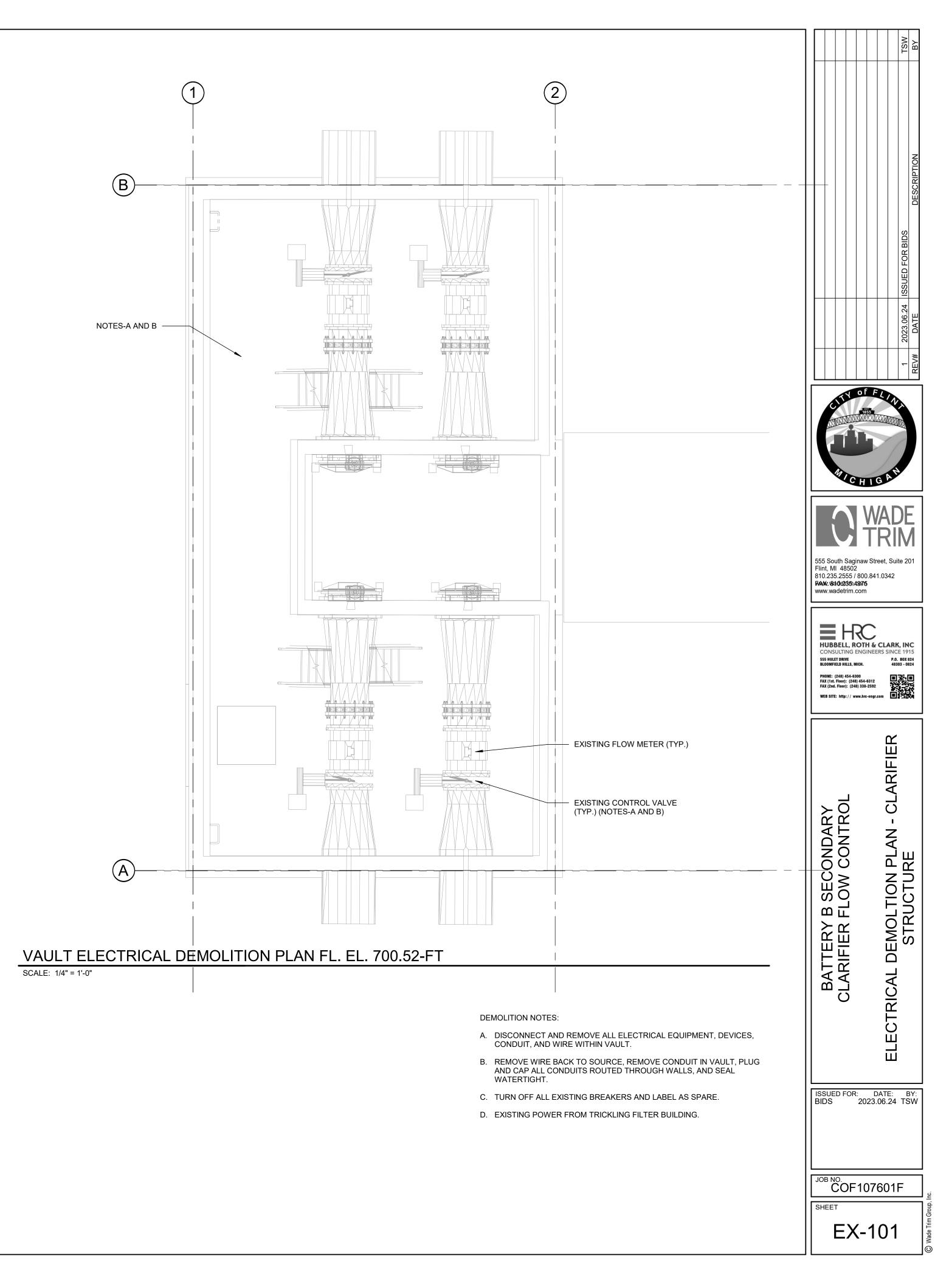
SWBD

VS

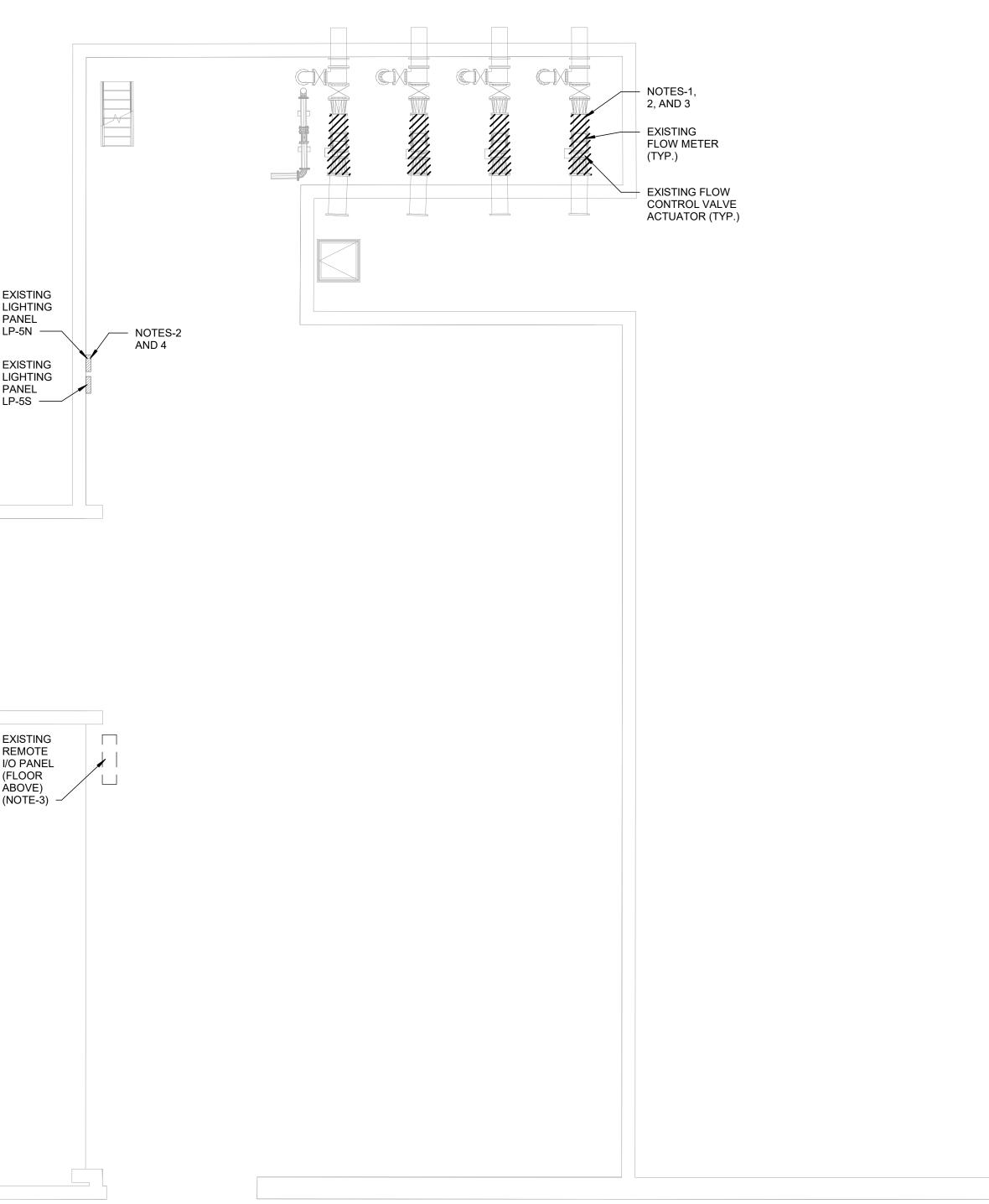
PAN-TILT-ZOOM POWER QUANTITY REMOTE OR RED **RIGID ALUMINUM** CONDUIT RECEPTACLE REFERENCE REGULATOR RIGID GALVANIZED STEEL ROOT MEAN SQUARE REMOTE TELEMETRY REDUCED VOLTAGE AUTO TRANSFORMER REDUCED VOLTAGE SOFT START SPARE STAINLESS STEEL SURGE ARRESTOR SEQUENCE SUPPLY FAN SODIUM HYPOCHLORITE SHIELD SIGNAL SPARE SPACE HEATER SPEED, SURGE PROTECTIVE DEVICE SINGLE POLE, DOUBLE THROW SINGLE POLE, SINGLE THROW SOLID STATE SPEED SWITCH LOW SELECTOR SWITCH STARTER SWITCH SWITCHBOARD SWITCHGEAR SYSTEM TACHOMETER TERMINAL BLOCK TIME DELAY TELEPHONE **TERMINAL OR** TERMINATION TWIST LOCK TIMING RELAY **TEMPERATURE SWITCH** TWISTED, SHIELDED PAIR THERMOSTAT **TELEPHONE TERMINAL** CABINET TRANSIENT VOLTAGE SURGE SUPPRESSOR TYPICAL UNDER COUNTER UNDERGROUND UNIT HEATER UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY UTILITY VOLTAGE OR VOLTS VOLT AMPERES VOLT-AMPERE REACTIVE VARIABLE FREQUENCY DRIVE VOLTMETER VOLTMETER SWITCH VAPOR PROOF WATT OR WIRE WITH WITHOUT WHITE WATT HOUR METER WEATHER-PROOF WEIGHT WATER TRANSFORMER TRANSMITTER EXPLOSION PROOF YELLOW POSITION (LIMIT) SWITCH ANGLE AT DELTA DEGREES FEET INCHES NUMBER PHASE CENTER LINE PLATE



PLOTTED 6/22/2023 6:58:06 PM



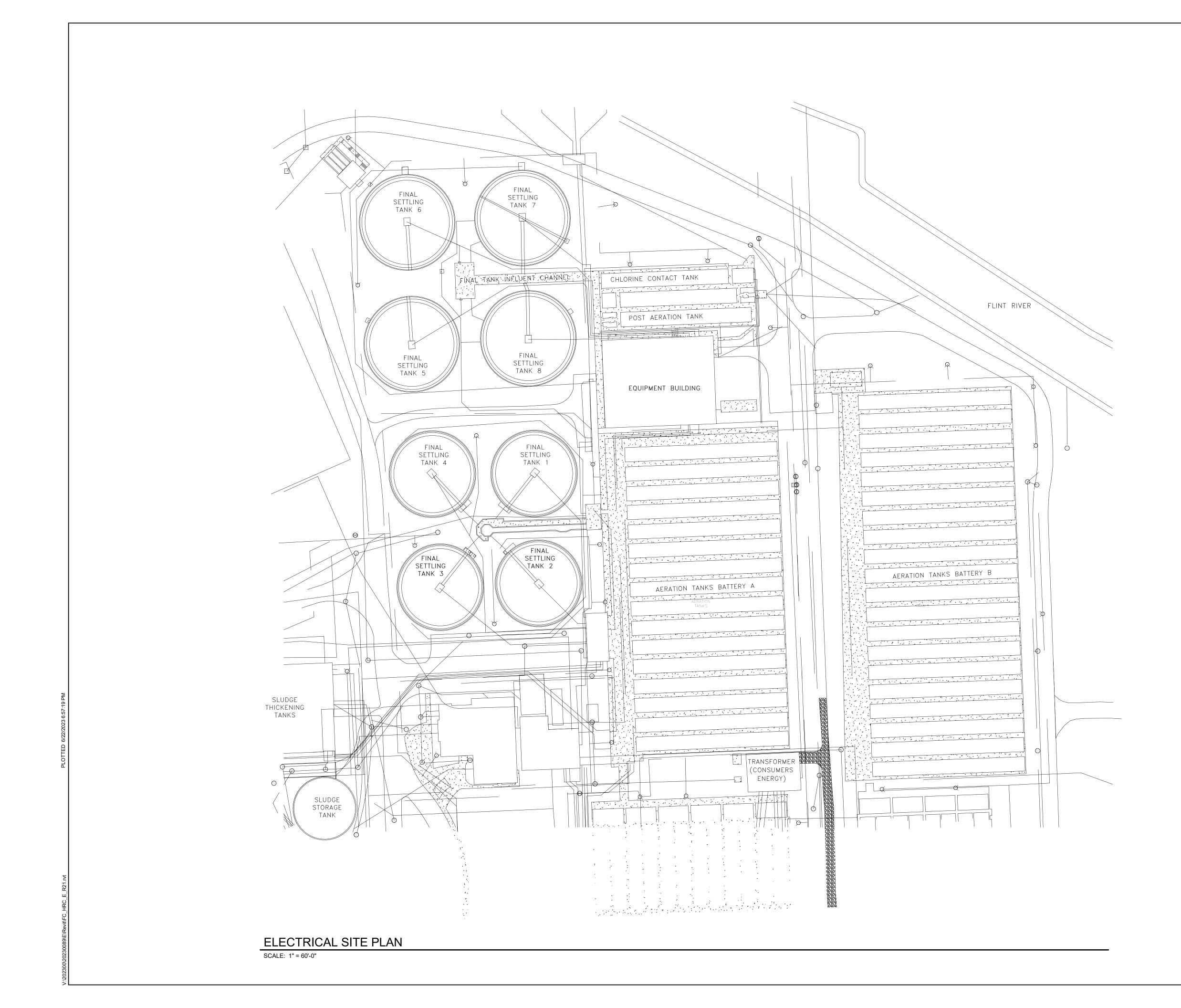
		E) Lli P/ Lf Lli P/ Lf
		E) RI I/C (F AI
PM		
PLOTTED 6/22/2023 6:58:10 PM		
2300\20230089\E\Revit\FC_HRC_E_R21.rvt	ELECTRICAL DEMOLITION PLAN - BATTERY B/EQUIPMENT BUILDING SCALE: 1/8" = 1'-0"	



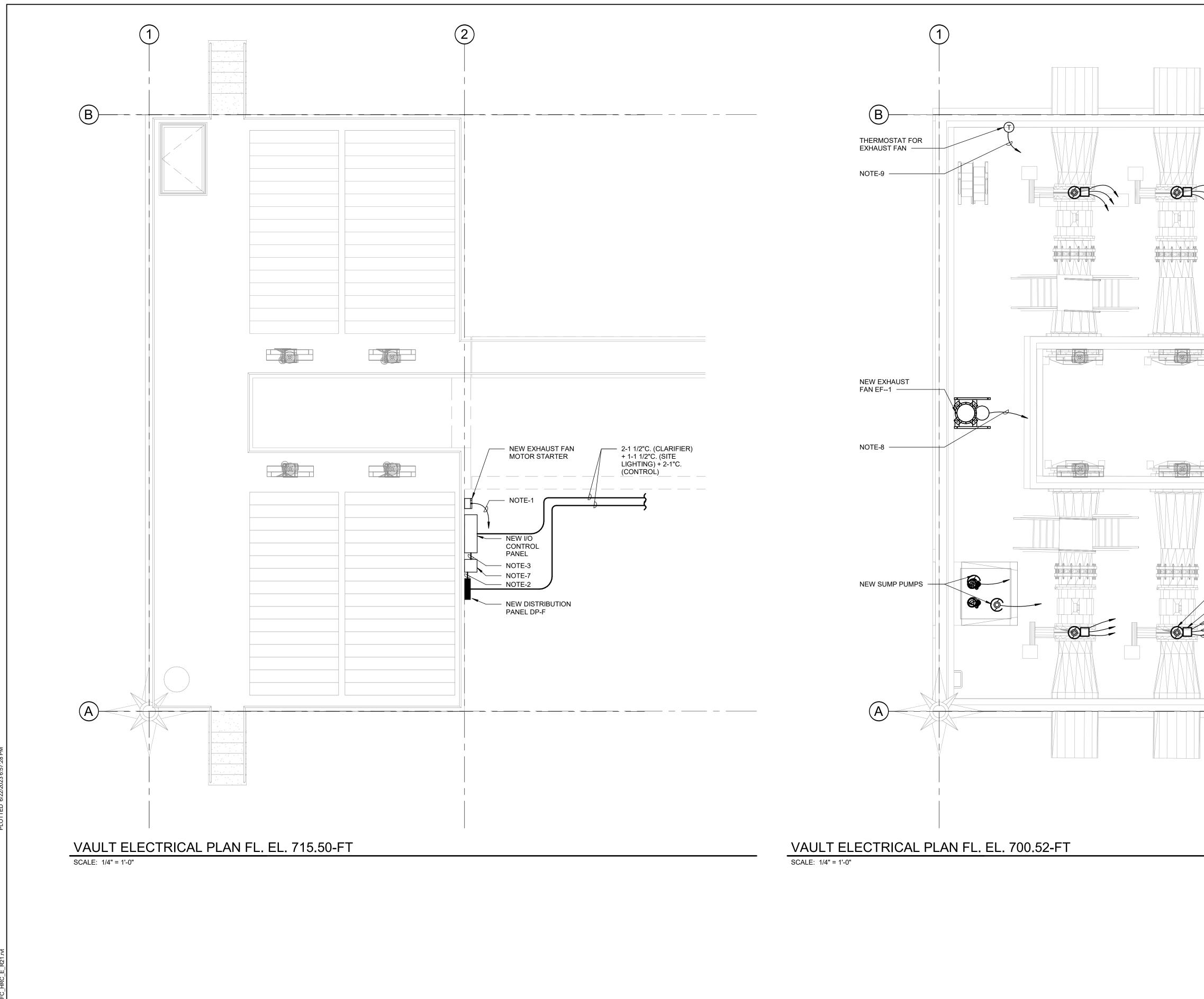
									TSW	BΥ
									ED FOR BIDS	DESCRIPTION
									2023.06.24 ISSUED FOR BIDS	DATE
									1 20	REV#
					Н		G		DE	
	Flin 810 FMAX	5 Sor t, M 0.235 \$2.08 \$2.08 \$2.08 \$2.08 \$2.08 \$2.08 \$2.08 \$2.08 \$2.08 \$2.08 \$2.08 \$2.08 \$2.09 \$	48 5.25 10∈2	3502 55 / 66 14	2 800 199715).84 5			te 2	01
	C(55 BL PH FA		ULTI ET DRIV ELD HI (248) 4 Floor) . Floor	NG I /E LLS, M 154-63 : (248): (24	ENG IICH. (00 () 454- 8) 338	6312 -2592	RS S	SINC P.0.	6, IN E 19 BOX 8 03 - 08	15 824
╎└		_	-	_					_	
		BALLERY B SECONDARY	CI ARIFIER FI OW CONTROL					ELECTRICAL DEMOLITION PLAN - BALTERY		
						 23.	DAT	E:		
	ISS BIE	SUE SUE		OR		23.	06	E:	E	

DEMOLITION NOTES:

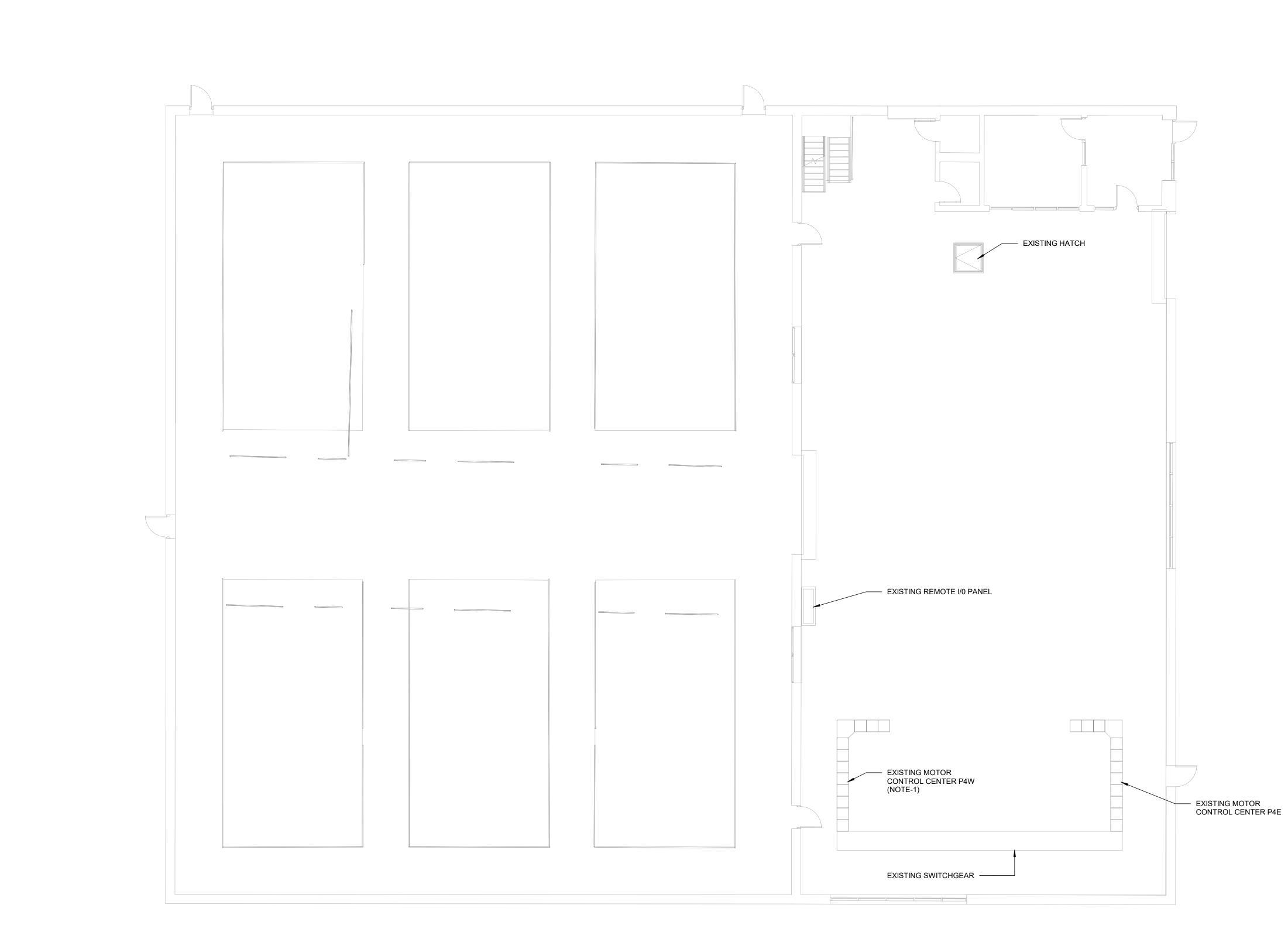
- DISCONNECT AND REMOVE EXISTING FLOW METERS AND FLOW CONTROL VALVE ACTUATORS.
- 2. REMOVE WIRE BACK TO SOURCE, LP-5N. REMOVE UNUSED CONDUIT, FURNISH AND INSTALL CAP FOR CONDUIT THAT REMAINS AND IS BEING USED.
- 3. REMOVE CONTROL WIRE AND CONDUIT BACK TO SOURCE AND BACK TO CONTROL PANEL AT GRADE ABOVE.
- REMOVE AND REPLACE EXISTING CIRCUIT BREAKER IN LP-5N FOR FLOW METERS AND VALVE ACTUATORS.



	BY
	DESCRIPTION
	REV# DATE
	F F L MARKEN
555 South Sagina Flint, MI 48502 810.235.2555 / 80 FAX: 940e20514907 www.wadetrim.cor	ъ
	4-6312 18-2592
BATTERY B SECONDARY CLARIFIER FLOW CONTROL	ELECTRICAL SITE PLAN
ISSUED FOR: BIDS 20	DATE: BY: 023.06.24 TSW
JOB NO. COF1	07601F
E-	101



2	TSW BY
UNIT HEATER (TYP. 4) NOTE-1 (TYP. 4)	ISSUED FOR BIDS DESCRIPTION
	Image: state of the state
NEW VALVE ACTUATOR (TYP. 4) NEW MOTOR JUNCTION BOX (TYP. 4) NOTE-1 (TYP. 4) NOTE-5 (TYP. 4) NOTE-6 (TYP. 4)	Big Field State All State
	BATTERY B SECONDARY CLARIFIER FLOW CONTROL VAULT ELECTRICAL PLAN
PLAN NOTES: 1. 3-#12 + GRD., 3/4"C. TO DP-A. 2. 2-#10 + 1-#12 GRD., 3/4"C. 3. 2-#12 + 1-#12 GRD., 3/4"C.	
 2-#12 + 1-#12 GRD., 3/4 C. INSTALL I/O CONTROL PANEL. PANEL FURNSIHED BY OTHERS, SEE APPENDIX FOR PANEL DESCRIPTION. 2PR-#18 SHLD., 3/4"C. TO I/O CONTROL PANEL. 6-#14, 3/4"C. TO I/O CONTROL PANEL. MINI-LOAD CENTER, 480-240/120V, 10 KVA, 1-PHASE. 	ISSUED FOR: DATE: BY: BIDS 2023.06.24 TSW
 3-#12 + 1-#12 GRD., 3/4"C. TO EXHAUST FAN MOTOR STARTER. 2-#14, 3/4"C. TO EXHAUST FAN MOTOR STARTER. 	JOB NO. COF107601F
	E-102

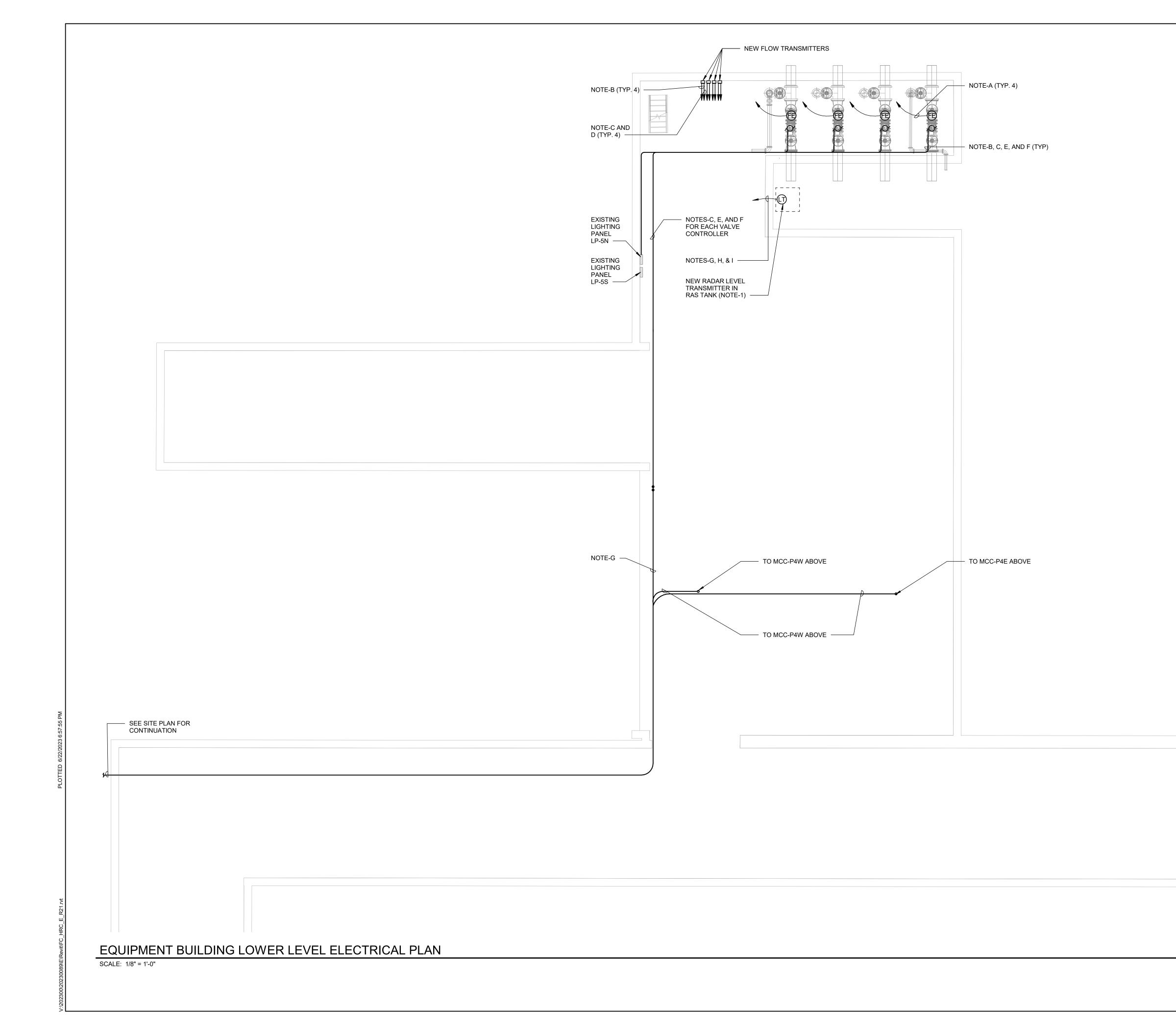


EQUIPMENT BUILDING GRADE FLOOR ELECTRICAL PLAN SCALE: 1/8" = 1'-0"

	TSW BY
	2023.06.24 ISSUED FOR BIDS DATE DESCRIPTION
	1 202 REV# [
CITY OF	FLINF 5 IGAN
555 South Saginaw Flint, MI 48502 810.235.2555 / 800. FMM: 810e236514975 www.wadetrim.com	
HUBBELL, ROTH CONSULTING ENGIN 555 HULET DRIVE BLOOMFIELD HILLS, MICH. PHONE: (248) 454-6300 FAX (1st. Floor): (248) 345-6 FAX (248) 338-3	
WEB SITE: http:// www.hrc-	2592
	2592
BATTERY B SECONDARY CLARIFIER FLOW CONTROL	engr.com
BATTERY B SECONDARY CLARIFIER FLOW CONTROL	EQUIPMENT BUILDING GRADE FLOOR ELECTRICAL PLAN

PLAN NOTES:

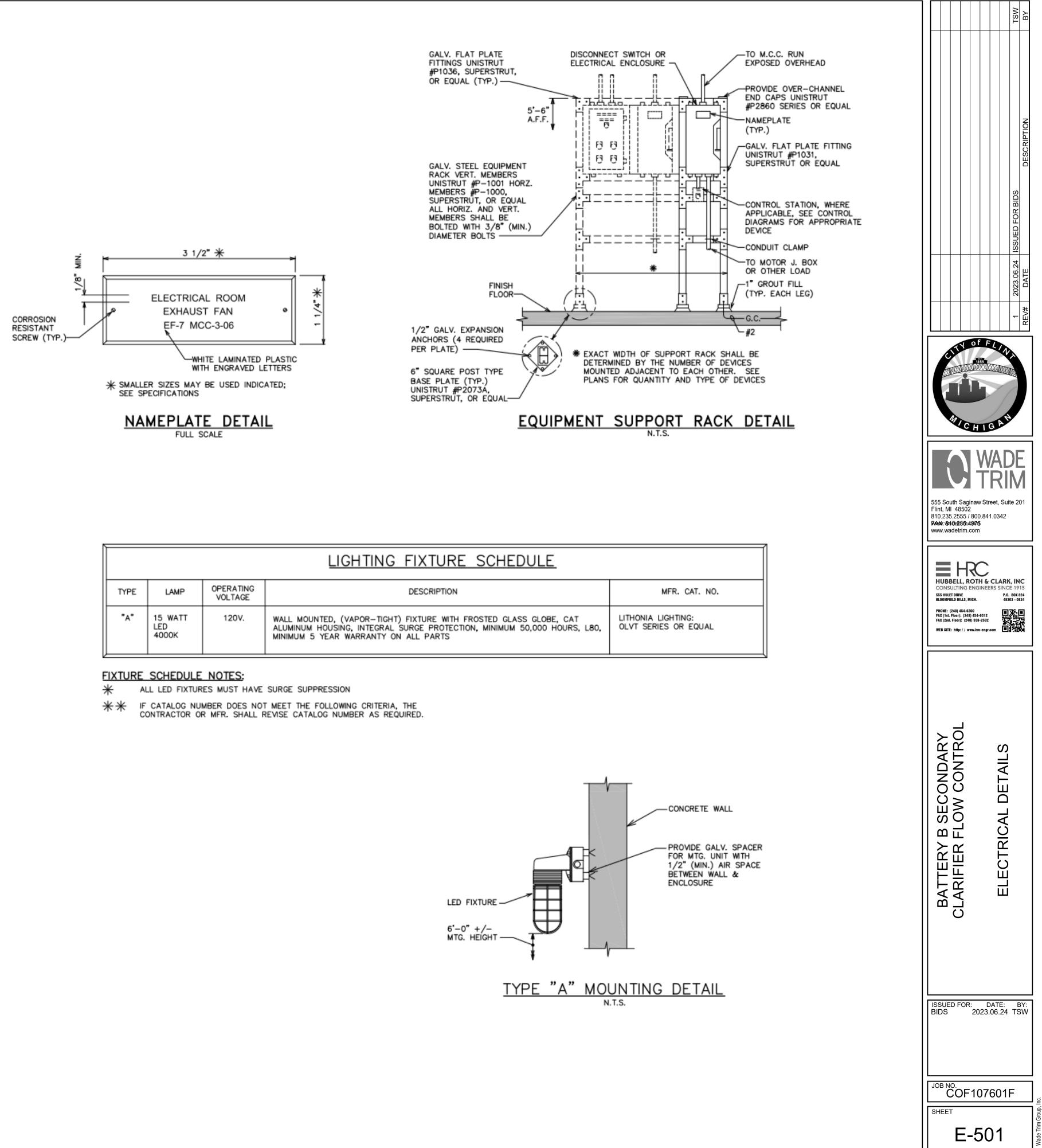
FURNISH AND INSTALL NEW MCC BUCKET AND 60A, 3-POLE CIRCUIT BREAKER.



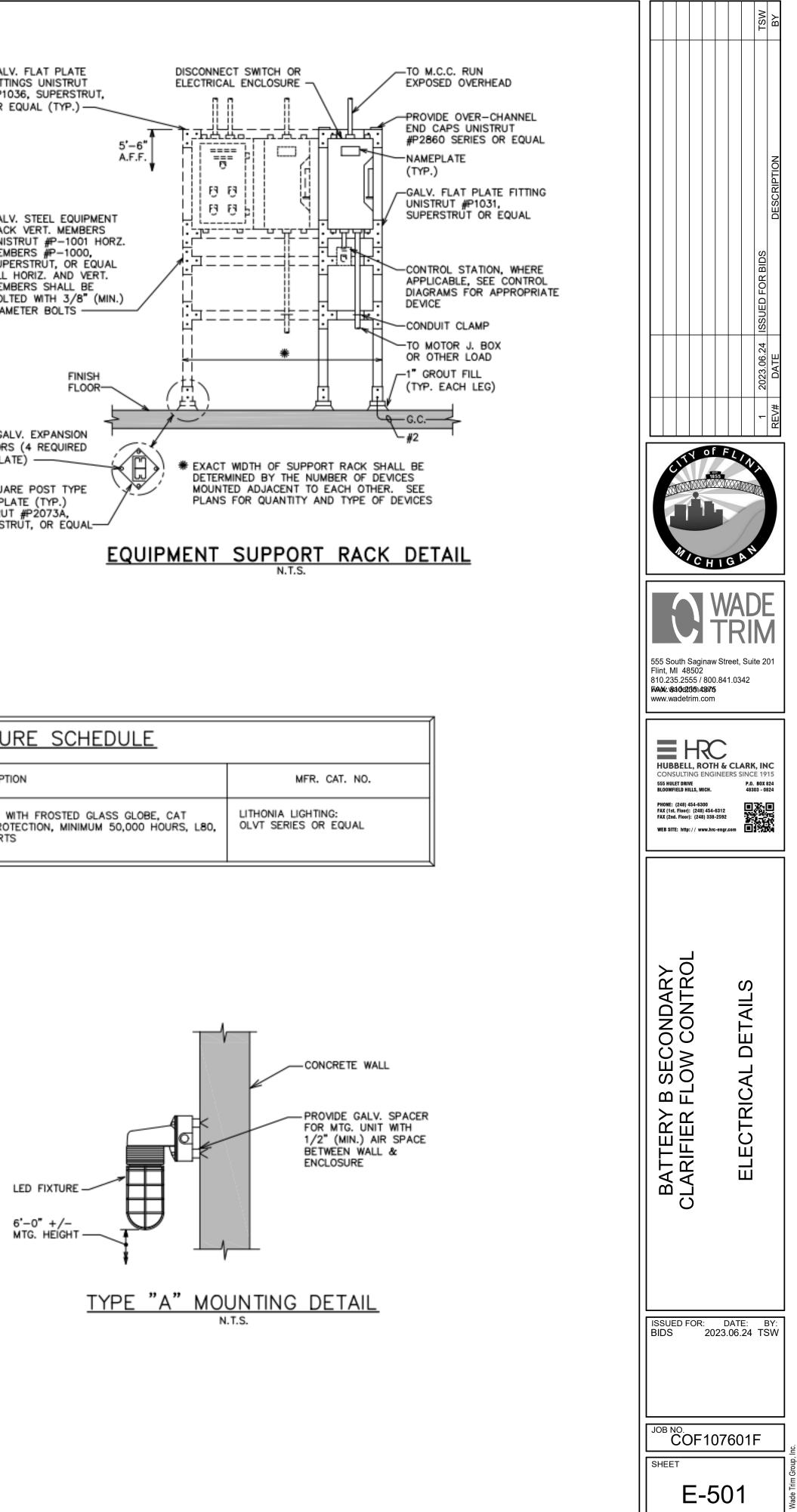
									TSW	BΥ	
									2023.06.24 ISSUED FOR BIDS	DESCRIPTION	
									2023.06.24	DATE	
									-	REV#	1
	Flin 810 ₩AAA	5 Sol t, M 0.235 %. %	uth 48 5.25 10 c2	Sagi 3502 55 / 6614	inaw 800	N T).841		K K Sui	DECENTION OF THE PROPERTY OF T		
	C(55 BL PH FA	UBI ONS 5 HULE 00MFI 0NE: (X (1st. X (2nd. EB SITE	ULTI ELD HI (248) 4 Floor) Floor	NG I /E LLS, M 154-63 : (248): (24	ENG IICH. (00 () 454- 8) 338	6312 -2592	RS S	P.O.		15 24	
		BALLERY B SECONDARY	CI ARIFIER FI OW CONTROL					EQUIPMENT BUILDING LOWER LEVEL			
		SUE				 23.	DAT		E		
	ISS	SUE	D F	OR	20	23.	06.	E:	ETS		© Mudat Tainen and and and and and and and and and an

PLAN NOTES:

- A. MANUFACTURER'S SPECIAL CABLE, 3/4"C. TO FLOW TRANSMITTER.
- B. 2-#12 + 1-#12 GRD., 3/4"C. TO EXISTING CIRCUIT BREAKER IN LP-5N.
- C. 2PR-#18 SHLD., 3/4"C. TO EXISTING REMOTE I/O PANEL ON GRADE LEVEL.
- D. RECONNECT FLOW SIGNAL TO EXISTING I/O POINT IN CONTROL PANEL.
- E. 6-#14, 3/4"C. TO REMOVE I/O PANEL AT GRADE LEVEL.
- F. CONNECT TO NEW I/O POINTS IN I/O PANEL.
- G. 4-STRAND FIBER OPTIC CABLE (MULTIMODE), 1 1/4"C. FROM EXISTING I/O CONTROL PANEL ABOVE TO NEW REMOTE I/O PANEL AT CLARIFIER VAULT.
- H. SEAL AROUND CONDUIT AT TANK WALL PENETRATION, WATER TIGHT.
- I. NEW RADAR LEVEL TRANSMITTER TO BE MOUNTED NEAR TANK HATCH OPENING, AND TANK WALL PENETRATION NEAR TOP OF TANK.
- J. 1-1/2"C. SPARE FROM EACH MCC TO CLARIFIER VAULT. CAP BELOW DISTRIBUTION PANEL DP-W.



			LIGHTING FIXTURE SCHEDULE
TYPE	LAMP	OPERATING VOLTAGE	DESCRIPTION
"A"	15 WATT LED 4000K	120V.	WALL MOUNTED, (VAPOR-TIGHT) FIXTURE WITH FROSTED GLASS GLOBE, C ALUMINUM HOUSING, INTEGRAL SURGE PROTECTION, MINIMUM 50,000 HOU MINIMUM 5 YEAR WARRANTY ON ALL PARTS



PLOTTED 6/22/2023 6:58:00 PN

DP-F Location: Supply From: Mounting: Surface Enclosure: Type 3R Notes:

Volts: 480V Phases: 3 Wires: 3 Bus:

	 - - - -	1				-	_	_		_						
СКТ	Circuit Description	Trip	Ρ	Wire Size		Α	E	3		C	N	/ire Size	Р	Trip	Circuit Description	СКТ
1	FINAL CLARIFIER #5 INFLUENT FCV				0.30	0.30									FINAL CLARIFIER #7 INFLUENT FCV	2
3	(MV-10A)	20 A	3	3-#12 + 1-#12 GRD., 3/4"C.			0.30	0.30			3-#12 + 1-	#12 GRD., 3/4"C.	3	20 A	(MV-10C)	4
5									0.30	0.30					· · · · ·	6
7	FINAL CLARIFIER #6 INFLUENT FCV				0.30	0.30									FINAL CLARIFIER #8 INFLUENT FCV	8 10
9	(MV-10B)	20 A	3	3-#12 + 1-#12 GRD., 3/4"C.			0.30	0.30			3-#12 + 1-	#12 GRD., 3/4"C.	3	20 A	(MV-10D)	
11	(0.30	0.30					(12
13					3.35	3.35										14
15	ELECTRIC UNIT HEATER EUH-1	20 A	3	3-#12 + 1-#12 GRD., 3/4"C.			3.35	3.35			3-#12 + 1-	#12 GRD., 3/4"C.	3	20 A	ELECTRIC UNIT HEATER EUH-4	16 18
17									3.35	3.35						
19					3.35	0.77										
21	ELECTRIC UNIT HEATER EUH-2	20 A	3	3-#12 + 1-#12 GRD., 3/4"C.			3.35	0.77			3-#12 + 1-	#12 GRD., 3/4"C.	3	20 A	EXHAUST FAN EF-1	22 24
23									3.35	0.77				i I		
25					3.35	1.33										26
27	ELECTRIC UNIT HEATER EUH-3	20 A	3	3-#12 + 1-#12 GRD., 3/4"C.			3.35	1.33			3-#12 + 1-	#12 GRD., 3/4"C.	3	15 A	A SUMP PUMP NO. 2	28 30
29									3.35	1.33						
31					1.33	0.00								10 0	MINI LOAD CENTER (10KVA) LP-F	32 34
33	SUMP PUMP NO. 1	15 A	3	3-#12 + 1-#12 GRD., 3/4"C.			1.33	0.00]		2 40 /		, , , , , , , , , , , , , , , , , , ,	
35									1.33	0.00			1	20 A	Spare	36
37					0.00	0.00										38
39	Spare	20 A	3				0.00	0.00					3	20 A	Spare	40
41									0.00	0.00						42
		Total	Load	:	17.0	5 kVA	17.05	5 kVA	17.0	5 kVA						
		Total	Amp	s:		2 A	62			2 A	1					
					-											
Load	Classification			Connected Lo	ad	De	mand Fa	ctor	Est	timated D	emand				Panel Totals	
HVAC	2			2304 VA			100.00%	1		2304 V/	A					
Heati	ng			40200 VA			100.00%	,		40200 V	/A		Tota	l Conr	n. Load: 51153 VA	
Moto	-			11639 VA			108.57%	1		12637 V	/A	-	Total	Est. D	emand: 52009 VA	
														Total	Conn.: 62 A	
												-	Total	Est. D	emand: 63 A	
<u> </u>																

Locatior Supply F Mountin Enclosu Notes:	From: DP-F g: Surface	-R LP-F				Volts: Phases: Wires:	
СКТ	Circuit Description	Trip P		Wire Size	A		В
1						0.00	
3							
5							
7							
9							
11							
13							
15							
17							
19							
21							
23							
25							
27							
29							
31							
33							
35							
37							
39							
41							
		Total Load:	•		0.00	kVA	0.00 k
		Total Amps:			0	A	0 A
Load Cla	assification			Connected Load	De	emand Fa	ctor

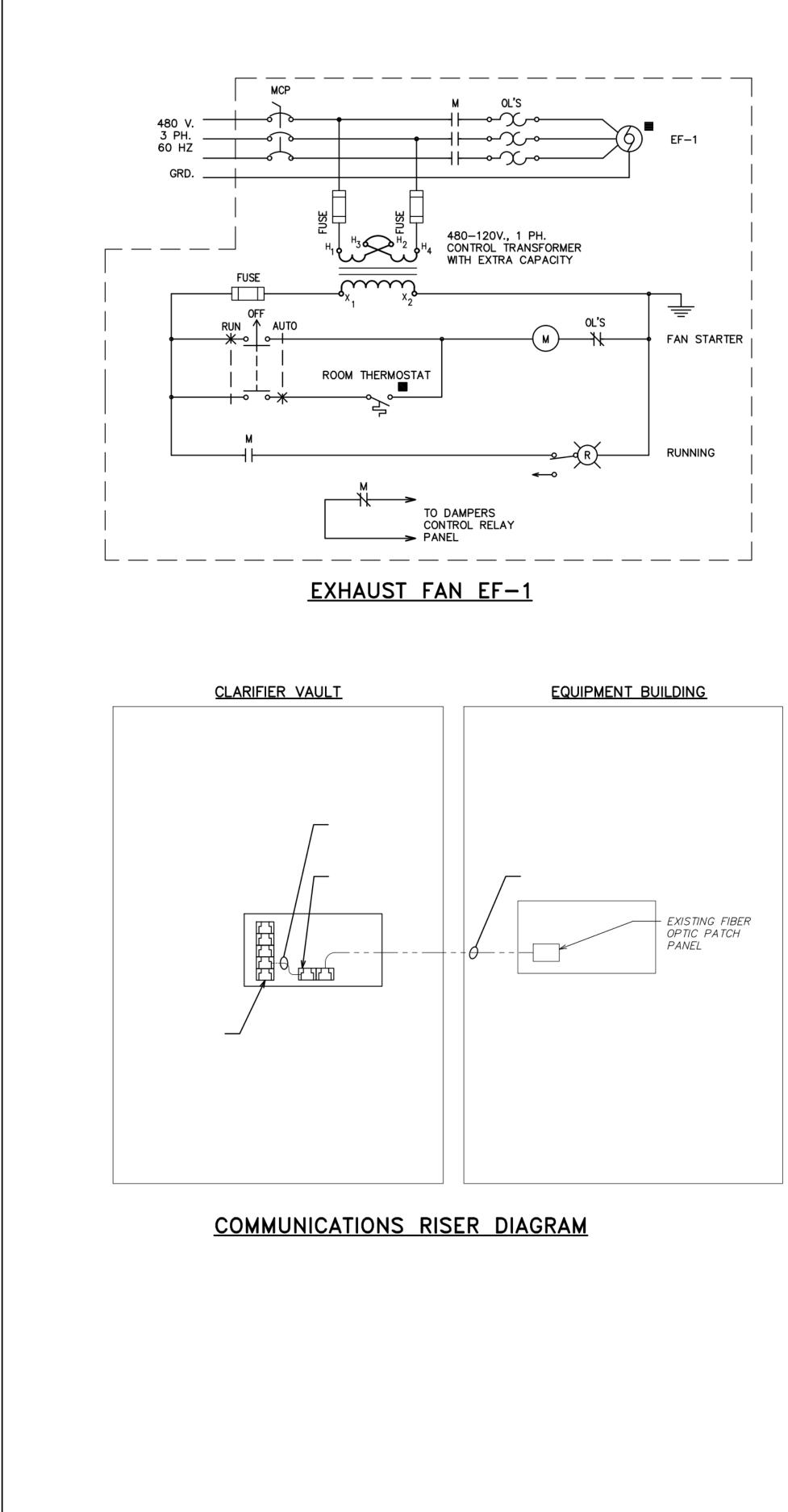
A.I.C. Rating: Mains Type: CB Mains Rating: 150 A MCB Rating: 150 A

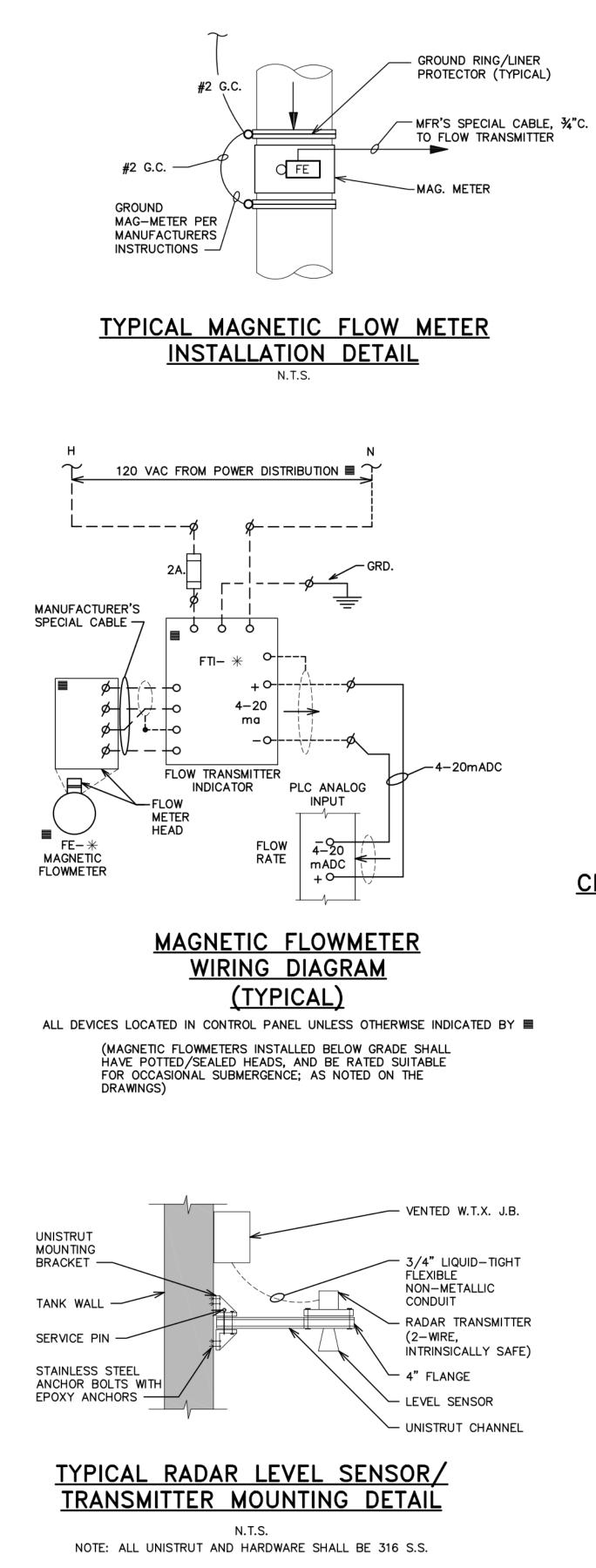
8V/120V Single

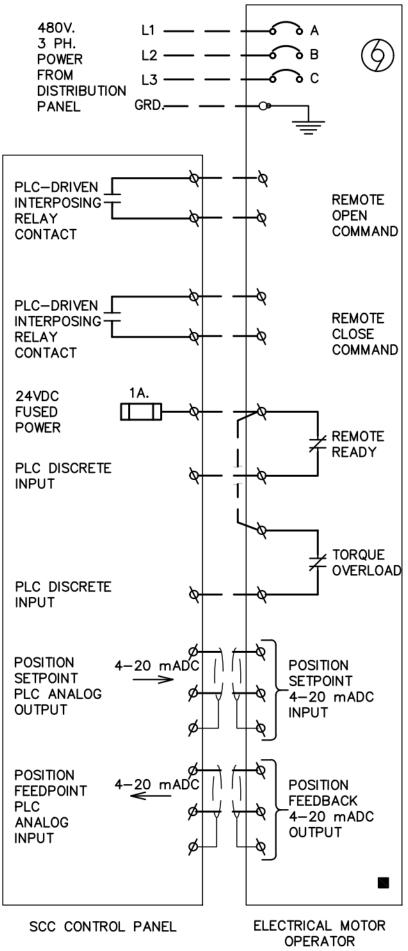
A.I.C. Rating: Mains Type: MCB Mains Rating: 40 A MCB Rating: 60 A

	В	Wire S		Р	Trip		Circuit Description	СКТ
		1-#12, 1-#1	2, 1-#12	1	20 A	FINA	L CLARIFIER I/O	2
								4
								6
								8
								10
								12
								14
								16
								18
								20
								22
								24
								26
								28
								30
								32
								34
								36
								38
								40
								42
	kVA A							
or	Estim	ated Demand			F	Panel	Totals	
				Tota	I Conn. L	_oad:	0 VA	
				Total	Est. Den	nand:	0 VA	
					Total C	onn.:	0 A	
				Total	Est. Den			

	TSW BY
	≠ DATE DESCRIPTION
	L 4
	IG AN
555 South Saginar Flint, MI 48502 810.235.2555 / 80 FAM: 0810628651497 www.wadetrim.con	5
	1-6312 8-2592
BATTERY B SECONDARY CLARIFIER FLOW CONTROL	ELECTRICAL SCHEDULES
ISSUED FOR: BIDS 20	DATE: BY: 023.06.24 TSW
	07601F
E-6	601







CLARIFIER VAULT VALVE OPERATOR CONNECTION DIAGRAM

NO SCALE

