TOWN OF BROWNSBURG HENDRICKS COUNTY, INDIANA

PROJECT #24-011-WW: MAIN PLANT BIOSOLIDS (PHASE 1) AND TERTARY FILTERS IMPROVEMENTS **MAY 2025**

TOWN COUNCIL

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5-22-25 DATE :

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5-22-25 DATE :



CONTRACT NO. : S24211



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WATER, SEWER, STORM, STREET LIGHTS



GENERAL ABBREVIATIONS

A AB AFF ALT ALUM @ APP. ATT AUTO	AIR ANCHOR BOLT ABOVE FINISH FLOOR ALTERNATE ALUMINUM AT APPARENT AERATION TANK TRANSFER AUTOMATIC	FM FRP FT FTG FW GALV GEN	FORCE MAIN FIBER REINFORCED PLASTIC FEET OR FOOT FOOTING FINISHED WATER GAS GALVANIZED GENERAL
AVG	AVERAGE	GRD	GROUND OR GRADE
B BLDG BM BOT BRG	BAFFLE BUILDING BENCH MARK BOTTOM BEARING	HB HORIZ HP HW	HOSE BIBB HORIZONTAL HORSEPOWER HOT WATER
CFM CL CO COL/C CONC	CUBIC FEET PER MINUTE CENTERLINE CLEAN OUT COLUMN CONCRETE	ID I.E. IJ INV IP	INSIDE DIAMETER INVERT ELEVATION ISOLATION JOINT INVERT IRON PIN
COP		LAV	LAVATORY
CP		LB	
CW/			
CY	CUBIC YARD	LTG	LIGHTING
D DEC DIA DIM DI DL DSPT DWG	DRAIN DECANT DIAMETER DIMENSION DUCTILE IRON PIPE DEAD LOAD DOWN SPOUT DRAWING	MAX MCC MGD MH MIN MJ NC NG	MAXIMUM MOTOR CONTROL CENTER MILLION GALLONS PER DAY MANHOLE MINIMUM, MINUTE MECHANICAL JOINT NORMALLY CLOSED NATURAL GAS
Е	ELECTRICAL CONDUIT	NIC	NOT IN CONTRACT
EA	EACH	NO	NORMALLY OPEN
EF	EACH FACE	NO.	NUMBER
EFFL	EFFLUENT	NPW	NON-POTABLE WATER
EL	ELEVATION		
EW	EACH WAY	OC	ON CENTER
EX/EXIST		OD	
		OPG	OPENING
EXP JI	EXPANSION JOINT	OPP	OPPOSITE
F	FILTER	PB	PULL BOX
FCAR	FLANGED COUPLING ADAPTER,	PE	POLYETHYLENE EXP. JT. MATERIAL
	RESTRAINED	P/L	PROPERTY LINE
FD	FLOOR DRAIN	POJ	PUSH ON JOINT
		PSF	POUNDS PER SQUARE FOOT
		PSI	
		PVV	PUTABLE WATER

GENERAL SCHEMATIC LEGEND

<u>[</u> ====	QUICK DISCONNECT	σ	BOOSTER PUMP
	FLANGED SPOOL SECTION	ARV O	AIR RELIEF VALVE
PRV	PRESSURE REDUCER VALVE	FM	FLOW METER
	FLANGED COUPLING ADAPTER	\bigotimes^{Gv}	GATE VALVE
Z	BALL CHECK VALVE	FCV	FLOW CONTROL VALVE
${\mathbb M}$	MOTOR ACTUATOR	\bowtie	VALVE
	FLEXIBLE CONNECTION	\bowtie	ECCENTRIC PLUG VALVE
SCR	FLANGE FILLER & S.S. MESH SCREEN	И	CHECK VALVE
W V90	90° V-NOTCH WEIR	∇	INCREASER / REDUCER
M	MAGNETIC FLOW METER	₹	BUTTERFLY VALVE
	ULTRASONIC SENSOR	ЭE	PIPE THROUGH FLOOR / WALL
Ğ	SUBMERSIBLE PUMP	۱۹	BALL VALVE
	NEW PIPING AND EQUIPMENT	╟─╺	BLIND FLANGE OR PLUG
	EXISTING PIPING AND EQUIPMENT		HOSE BIBB
	FUTURE PIPING AND EQUIPMENT		STOP PLATE
		W	WEIR

DISCLAIMER NOTE:

THIS DRAWING REFLECTS TYPICAL INFORMATION, SOME MAY NOT BE APPLICABLE TO THIS PROJECT.

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R

DRAWING SET LEGEND

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TP

R RAD RCP RD REINF REQ'D R/W (ROW)	RECIRCULATION RADIUS RETURN ACTIVATED SLUDGE REINFORCED CONCRETE PIPE ROOF DRAIN REINFORCING REQUIRED RIGHT-OF-WAY
SAN	SANITARY
SAS	SANITARY SEWER
SCH	SCHEDULE
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SCS	SAMPLE LINE
SOS	STORM SEWER
SP	STOP PLATE
SQ	SQUARE
STD	STANDARD
STL, SS	STAINLESS STEEL
STL	STEEL
SUP	SUPERNATANT
SY	SQUARE YARD
TOS	TOP OF SLAB
TOW	TOP OF WALL
TW	TERTIARY WATER
TYP	TYPICAL
/	VACUUM OR VALVE
/AR	VARIES
/ERT	VERTICAL
V V/O VAS VC VH VL VWF	WEIR WITH WITHOUT WASTE ACTIVATED SLUDGE WATER CLOSET WATER HEATER WATER LINE WELDED WIRE FABRIC

YARD HYDRANT

HATCHING SYMBOLS



-CMU WALL (PLAN VIEW) -GRANULAR BACKFILL (PROFILE VIEW)

- DEMOLITION (CONTRACTOR SHALL REFER TO DETAILED SPECIFICATIONS)

- GROUT

- CONCRETE

- STEEL

- COMPACTED GRANULAR BACKFILL OR COMPACTED FOUNDATION

- ABANDONED IN PLACE

EXOHT EXOHT
——— EXG ——— EXG ————————————————————————
——— EXW ——— EXW ————————————————————————
——— EXF/0 ——— EXF/0 ———
EXOHE EXOHE
EXBE EXBE
NPW NPW
POT POT
EXBT
APP.EXG APP.EXG
APP.EXW APP.EXW
x x x x
APP. R/W
APP. P/L
\$\$ _
<u>_</u>
— — — — — 785 — — — —
784
www
SN SN
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x x x x x x x x x

EXISTING OVERHEAD TELEPHONE LINE EXISTING GAS LINE AND VALVE EXISTING WATER LINE AND VALVE EXISTING FIBER OPTIC LINE EXISTING OVERHEAD ELECTRIC LINE EXISTING BURIED ELECTRIC EXISTING NON-POTABLE WATER LINE EXISTING POTABLE WATER LINE EXISTING BURIED TELEPHONE LINE APPARENT GAS LINE APPARENT WATER LINE EXISTING FENCE APPARENT RIGHT-OF-WAY APPARENT PROPERTY LINE

EDGE OF ROAD

EDGE OF ROAD WITH CURB EXISTING MAJOR CONTOUR LINE EXISTING MINOR CONTOUR LINE NEW WATER LINE

NEW SANITARY SEWER LINE

NEW FORCE MAIN

PROPOSED MAJOR CONTOUR LINE

PROPOSED MINOR CONTOUR LINE

PIPE TO BE ABANDONED IN PLACE

GENERAL NOTES

- ALL LOCATIONS, SIZES, MATERIALS, AND/OR INVERTS OF EXISTING UTILITIES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE. HOWEVER, THE ENGINEER DOES NOT GUARANTEE OR ASSURE THAT SUCH INFORMATION IS TRUE OR EVEN APPROXIMATE. THE CONTRACTOR SHALL DETERMINE WHICH UTILITIES CONFLICT WITH THE PROPOSED IMPROVEMENTS AND VERIFY THEIR LOCATIONS, SIZES, AND INVERTS. THE CONTRACTOR SHALL ADJUST WORK ACCORDINGLY AND NOTIFY THE OWNER AND ENGINEER OF ANY SUCH CONFLICTS AND/OR ADJUSTMENTS. THE CONTRACTOR SHALL REFER TO APPLICABLE SECTIONS OF THE SPECIFICATIONS RELATIVE TO THE ABOVE.
- 2. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE RESPECTIVE UTILITIES, BOTH EXISTING AND PROPOSED. UNLESS OTHERWISE NOTED OR SPECIFIED, CONTRACTOR SHALL NOTIFY UTILITIES A MINIMUM OF THREE (3) FULL WORKING DAYS IN ADVANCE OF REMOVING, RELOCATING, DISTURBING, OR ANY RELATED CONSTRUCTION ACTIVITY CAUSING A CONFLICT WITH ANY UTILITY AND SHALL ADJUST ITS WORK SCHEDULE ACCORDINGLY.
- 3. CONTRACTOR IS RESPONSIBLE FOR RELOCATING AND/OR SUPPORTING AT CONTRACTOR'S EXPENSE, ANY UTILITY LINES AND/OR SERVICE POLES NECESSARY TO COMPLETE CONSTRUCTION OPERATIONS. UTILITY POLES MAY BE SHOWN ON THE PLANS, BUT OVERHEAD LINES HAVE BEEN OMITTED FOR CLARITY. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATION OF OVERHEAD OBSTRUCTIONS, ESPECIALLY OVERHEAD ELECTRIC LINES.
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO STATE, CITY/TOWN OR PRIVATE PROPERTY, DRIVES, SIDEWALKS, BRIDGES, DRAINAGE PIPE SYSTEMS, FENCES, SHEDS, ETC, AS A RESULT OF THE CONTRACTOR'S WORK AND SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE PERMITTING AGENCY, THE OWNER, AND THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE RESTORATION. SITE RESTORATION SHALL BE EQUAL TO OR BETTER THAN CONDITIONS PRIOR TO CONSTRUCTION.
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING FLOW AND PROVIDING BYPASS PUMPING AS REQUIRED DURING CONSTRUCTION OPERATIONS. SUCH FLOW SHALL BE CONTINUOUSLY MONITORED AS NOT TO ALLOW SEWAGE BACK-UP WHICH MAY CAUSE PROPERTY DAMAGE. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGE INCURRED AND MUST MAKE RESTITUTION WITH ANY AFFECTED PROPERTY OWNER(S).

- REPRODUCTION.

0	AC UNIT	\bigcirc	TELEPHONE MANHOLE
0	BOLLARD	\Diamond	TELEPHONE LINE MARKER
\bigcirc	BOULDER / LARGE ROCK	T	TRAFFIC MANHOLE
⊠CL	CENTER LINE MONUMENT	$\langle \! \! \rangle \! >$	WATER LINE MARKER
¢	CONTROL POINT / BENCH MARK	\bigotimes	WATER METER
\odot	DRILL HOLE	¥¥ ⊠	VALVE
МВ	MAIL BOX	××	IRRIGATION CONTROL VALVE
Ø	FLAG POLE	y	FIRE HYDRANT
0	POST	F	FLUSH HYDRANT
0	STUMP	Q	YARD HYDRANT
සු	BUSH / HEDGE	\bowtie	WALL SPIGOT
\bigcirc	DECIDUOUS TREE	-	EXISTING PIPE PLUG
	CONIFEROUS TREE		STORM CATCH BASIN (SQUARE
	SIGN		STORM CATCH BASIN (ROUND)
₫	UTILITY LOCATE FLAG		STORM CURB INLET
Ô	GAS LINE MARKER	\bigcirc	STORM MANHOLE
GV	GAS VALVE	S	SANITARY MANHOLE
©	GAS METER	sv X	SANITARY VALVE
-0	GUY POLE	۲	CLEANOUT
Ø	POWER POLE	X	VENT
어	LIGHT POLE	×	NEW VALVE
\leftarrow	GUY WIRE	Ø	NEW FIRE HYDRANT
EM	ELECTRIC METER	F	NEW FLUSH HYDRANT
	ELECTRIC PANEL	ſx	NEW WET SADDLE AND VALVE
ET	ELECTRIC TRANSFORMER	L 1	NEW PLUG
\bigcirc	HAND HOLE BOX	LS	NEW LINE STOP
È	FIBER OPTIC MARKER	нн	NEW CUT AND CAP
TP	TEL/TV PEDESTAL	ଜ	NEW SANITARY MH
		Y⁻Y	

6. UNLESS OTHERWISE NOTED. EXISTING WASTEWATER TREATMENT FACILITIES. SEWER INTERCEPTORS, GRAVITY SEWERS, LIFT STATIONS & FORCEMAINS SHALL REMAIN IN CONTINUOUS SERVICE THROUGHOUT THE CONSTRUCTION PERIOD UNTIL SUCCESSFUL START-UP OF THE PROPOSED TREATMENT FACILITY, CONTRACTOR SHALL PROVIDE CONTINUOUS SUPERVISION AND MONITORING OF ANY BYPASS PUMPING OPERATIONS THAT OCCUR DURING CONSTRUCTION & NON-CONSTRUCTION HOURS. PROPOSED BYPASS SYSTEM SHALL INCLUDE EMERGENCY STANDBY/BACK-UP PROVISIONS AND ALARM MONITORING AND SHALL BE APPROVED BY THE OWNER AT LEAST TWO (2) FULL WORKING DAYS IN ADVANCE OF INITIATING ANY BYPASS OPERATIONS.

7. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL WITHIN STATE AND CITY/TOWN RIGHTS-OF-WAY. IF TRAFFIC WILL BE IMPACTED BY CONSTRUCTION ACTIVITIES, CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS TO CITY/TOWN, ENGINEER, AND OWNER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.

8. UNLESS OTHERWISE NOTED OR SPECIFIED, CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DISTURBANCE, DAMAGE, OR REMOVAL OF EXISTING TREES/VEGETATION WITHIN CONSTRUCTION LIMITS, INCLUDING CANOPIES, TRUNKS, AND ROOTS. IF DAMAGE OR REMOVAL IS NON-AVOIDABLE, CONTRACTOR SHALL OBTAIN APPROVAL FROM OWNER PRIOR TO INSTALLATION WITHIN AFFECTED AREA.

9. DAMAGED/DISTURBED CONCRETE SIDEWALK, DRIVES, AND CURBS SHALL BE REPLACED TO NEXT JOINT.

10. EXISTING AS-BUILT RECORD DRAWINGS MAY BE AVAILABLE FOR REVIEW BY PROSPECTIVE BIDDERS AT ENGINEER'S OR OWNER'S OFFICE BY APPOINTMENT ONLY. UPON CONTRACT AWARD, COPIES OF RECORD DRAWINGS MAY BE PROVIDED TO CONTRACTOR BUT WITHOUT COST FOR





EXISTI	NG STRUCTURES KEYNOTES
	LEGEND
# MARK	STRUCTURE
1	COVERED SLUDGE STORAGE PAD
2	BIOSOLIDS LOADING STATION
3	SLUDGE DRYING BED (NO. 1-6)
4	OPEN SLUDGE STORAGE PAD
5	THICKENER BUILDING
6	AEROBIC DIGESTER (NO. 1-2)
7	SLUDGE STORAGE TANK (NO. 1-2)
8	SLUDGE PUMPING VAULT
9	MAIN BUILDING
10	ANNEX BUILDING
11	SECONDARY CLARIFIER (NO. 1-5)

EXISTI	NG STRUCTURES KEYNOTES
	LEGEND
# MARK	STRUCTURE
12	JUNCTION CHAMBER (NO. 1-2)
13	ELECTRICAL SUBSTATION
14	OXIDATION DITCH (NO. 1-5)
15	CONDITIONER STRUCTURE (NO. 1-3)
16	PARSHALL FLUME (NO. 1-3)
17	SCREEN BUILDING
18	FLOW SPLITTER
19	POLISHING POND NO. 1 (ABANDONED)
20	POND CONTROL STRUCTURE
21	DECHLORINATION SHED
22	BUILDING "E"

EXISTING STRUCTURES KEYNOTES			
) MARK	STRUCTURE		
23	BUILDING "G"		
24	PHOSPHORUS REMOVAL BUILDING		
25	RAS PUMP STATION		
26	TERTIARY FILTER BUILDING		
27	U.V. CHANNELS		
28	ELECTRICAL BUILDING		
29	CASCADE AERATION		
30	NORTHWEST INTERCEPTOR LIFT STATION		
31	WATER DEPARTMENT BUILDING		





SHEET NOTES:

- 1. OWNER HAS FIRST RIGHT OF REFUSAL. REFER TO DEMOLITION SPECS. 024119 FOR ADDITIONAL REQUIREMENTS.
- 2. CONTRACTOR SHALL REMOVE AND LAWFULLY DISPOSE OFF-SITE THE EXISTING EQUIPMENT/COMPONENTS IN THEIR ENTIRETY IDENTIFIED IN THE SCHEDULE HEREIN (INCLUDING ASSOCIATED ANCILLARIES).
- 3. ALL EXISTING ANCHORING HARDWARE ASSOCIATED WITH DEMOLISHED COMPONENTS SHALL BE CUT FLUSH WITH CONCRETE WALL OR SLAB AND COATED WITH CORROSION-INHIBITING TREATMENT SUCH AS "SIKA FERRO-GARD"; OR EQUAL.
- 4. DO NOT DISTURB OR DAMAGE ANY EXISTING EQUIPMENT AND STRUCTURES NOT SPECIFICALLY NOTED TO BE DEMOLISHED. COORDINATE WITH OWNER FOR APPROVAL OF ANY TEMPORARY REMOVAL OF EXISTING MATERIALS TO REMAIN TO FACILITATE CONSTRUCTION OPERATIONS.
- 5. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS.



EX. BFP & DEWATERING CONVEYOR (LOOKING NW)

Α

ΡΗΟΤΟ NOT TO SCALE



EX. BFP STAIR & PLATFORM (LOOKING EAST) ΡΗΟΤΟ

С NOT TO SCALE

	CONTRACT 2					
EX. THICKENER BUILDING						
D	EMOLITION KEYNOTES					
	STRUCTURE					
	REMOVE / REHABILITATE EX. BELT THICKENER/FILTER PRESS UNIT (BFP) PER SPECS					
2	REMOVE BFP LOCAL CONTROL PANEL					
3	REMOVE EXISTING STAIR AND PLATFORM INCLUDING ALL STRUCTURAL SUPPORTS					
4	REMOVE EXISTING DEWATERING CONVEYOR IN ITS ENTIRETY (3 SECTIONS)					
5	REMOVE EXISTING CONVEYOR SUPPORT AND CONTROLS (TYP.)					



Β

EX. BFP LOCAL CONTROL PANEL (LOOKING NORTH)

PHOTO NOT TO SCALE



D

PHOTO NOT TO SCALE





SHEET NOTES:

(NOTES APPLY TO IMPROVEMENTS DRAWINGS D1-2 & D1-3)

- 1. CONTRACTOR TO FIELD VERIFY DIMENSIONS AND ELEVATIONS AND COORDINATE WITH RESPECTIVE MANF. TO SUIT PROPOSED INSTALLATION. DIMENSIONS AND ELEVATIONS IF NOTED ARE APPROXIMATE.
- 2. REFER TO SPEC. 467621 FOR BELT FILTER PRESS EQUIPMENT REQUIREMENTS AND SPEC. 411213.36 FOR CONVEYOR EQUIPMENT REQUIREMENTS. CONVEYOR FLOOR AND CEILING SUPPORTS DESIGN BY CONVEYOR MANF.
- 3. CONTRACTOR SHALL FURNISH, INSTALL, TEST AND PLACE INTO SERVICE THE NEW EQUIPMENT/ COMPONENTS IDENTIFIED IN THE SCHEDULE HEREIN (INCLUDING ASSOCIATED ANCILLARIES).
- 4. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL IMPROVEMENT REQUIREMENTS.
- 5. SURFACE PREP. AND FINISH PAINT NEW COMPONENTS, WHERE APPLICABLE, IN ACCORDANCE WITH SPEC. SECTION 099000 AND RESPECTIVE EQUIPMENT SPEC SECTIONS.
- 6. NEW STAIRS/PLATFORM ASSEMBLY TO BE DELEGATED DESIGN BY CONTRACTOR IN ACCORDANCE WITH MISC. METALS SPEC. 055000, GRATING SPEC. 055300, AND RAILING SPEC. 055213 REQUIREMENTS. CONTRACTOR SHALL FURNISH INDIANA P.E. CERTIFIED SUBMITTAL DRAWINGS AND DESIGN CALCULATIONS AS PART OF SHOP DRAWING SUBMITTAL FOR ENGINEER'S REVIEW AND APPROVAL.

ALUM. RAILING -



ALUM. ANCHORING ANGLE ATTACHED TO STRINGER; S.S. DRILL AND EPOXY ANCHOR TO SLAB (HILTI HIT HY200); 4" MIN. EMBED

STAIR / PLATFORM DETAIL

NOT TO SCALE





	CONTRACT 2					
E>	K. THICKENER BUILDING					
IMPROVEMENTS KEYNOTES						
# MARK	STRUCTURE					
1	REHABILITATE EX. BELT THICKENER/FILTER PRESS UNIT (BFP) PER SPECS					
2	NEW BFP LOCAL CONTROL PANEL					
3	NEW ELEVATED METAL PLATFORM W/ HANDRAILS INCLUDING ALL STRUCTURAL SUPPORTS (SEE DETAIL)					
4	NEW DEWATERING CONVEYOR AND SUPPORTS PER MANF. REQUIREMENTS					
5	NEW CONVEYOR CONTROLS (TYP.)					
6	NEW METAL STAIRS (SEE DETAIL)					
7	FUTURE CENTRIFUGE AND HOIST ASSEMBLY FOR REFERENCE (N.I.C.)					
8	REMOVE/REINSTALL EXISTING CHICANE HANDLES TO THIS SIDE (TYP.)					







CONTRACT 2 TERTIARY FILTER BUILDING KEYNOTES STRUCTURE EX. 24" SLUICE GATE - FILTER INFLUENT (TO REMAIN; MANUAL OPERATOR TO BE REMOVED) EX. 48" SLUICE GATE - FILTER BYPASS (TO

REMAIN; MANUAL OPERATOR TO BE REMOVED)

02

1. OWNER HAS FIRST RIGHT OF REFUSAL. REFER TO DEMOLITION SPECS. 024119 FOR ADDITIONAL REQUIREMENTS.

CONTRACTOR SHALL REMOVE AND LAWFULLY DISPOSE OFF-SITE THE EXISTING EQUIPMENT/COMPONENTS IN THEIR ENTIRETY IDENTIFIED IN THE SCHEDULE HEREIN (INCLUDING ASSOCIATED ANCILLARIES).

3. ALL EXISTING ANCHORING HARDWARE ASSOCIATED WITH DEMOLISHED COMPONENTS SHALL BE CUT FLUSH WITH CONCRETE WALL OR SLAB AND COATED WITH CORROSION-INHIBITING TREATMENT SUCH AS "SIKA FERRO-GARD"; OR EQUAL.

4. DO NOT DISTURB OR DAMAGE ANY EXISTING EQUIPMENT AND STRUCTURES NOT SPECIFICALLY NOTED TO BE DEMOLISHED. COORDINATE WITH OWNER FOR APPROVAL OF ANY TEMPORARY REMOVAL OF EXISTING MATERIALS TO REMAIN TO FACILITATE CONSTRUCTION OPERATIONS.

5. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS.



EX. SPLITTER BOX (LOOKING WEST) PHOTO NOT TO SCALE





Β

EX. PLC PANEL (LOOKING EAST) ΡΗΟΤΟ NOT TO SCALE





CONTRACT 2 TERTIARY FILTER BUILDING IMPROVEMENTS KEYNOTES



STRUCTURE INSTALL (3) NEW ELECTRIC MOTOR ACTUATORS ON IN-SERVICE 24" INFLUENT SLIDE GATES INSTALL (1) NEW ELECTRIC MOTOR ACTUATOR ON 48" BYPASS GATE

CONTRACTOR TO FIELD VERIFY DIMENSIONS AND ELEVATIONS AND COORDINATE WITH RESPECTIVE MANF. TO SUIT PROPOSED INSTALLATION.

3. CONTRACTOR SHALL FURNISH, INSTALL, TEST AND PLACE INTO SERVICE THE NEW EQUIPMENT/COMPONENTS IDENTIFIED IN THE SCHEDULE HEREIN

5. SURFACE PREP. AND FINISH PAINT NEW COMPONENTS, WHERE APPLICABLE, IN ACCORDANCE WITH SPEC. SECTION 099610 AND RESPECTIVE EQUIPMENT SPEC

6. CONTRACTOR SHALL MATCH ELEVATION OF FINISHED CONCRETE TO EXISTING



	PRC	CESS	AND INST	RUMENTATION DIAC	GRAM LEGE	END				
					TAG FUN	CTION ABBREVIAT	TIONS			
INSTRUMENT TAG IDENTIFICAT AREA TAG TYPE TAG FUNCTION TAG TYPE TAG FUNCTION AREA TAG FUNCTION	TION 10A 2)	ALT C CM DIFF DO F F(X) FOR FSR HOA HOR II IL LOE LOS L/R MA	ALTERNATE CLOSED(C) COMPUTER- DIFFERENC DISSOLVED FAIL CHARACTEF FOWARD-ST FOWARD-ST FOWARD-ST CHARACTEF FOWARD-ST CHARACTEF CURRENT TO CURRENT TO CURRENT TO CURRENT TO LEAD-LAG(M LOSS OF EC LOCAL-OFF LOCKOUT S MOMENTARY LOCAL/REM(MANUAL-AU	MANUAL CE OR DIFFERENTIAL OXYGEN RIZED TOP(OFF)-REVERSE(MAINTAIN TOP-REVERSE(MOMENTARY C AUTOMATIC(MAINTAINED CONTA CURRENT) PNEUMATIC AINTAINED CONTACT) CHO(ULTRASONIC SENSOR FA -REMOTE(MAINTAINED CONTA STOP(LOCKABLE IN "STOP" PO CONTACT) OTE(MAINTAINED CONTACT) DTE(MAINTAINED CONTACT) ITOMATIC(MAINTAINED CONTACT)	NED CONTACT) CONTACT) NTACT) ACT) AILURE) ACT) DSITION ACT) CONTACT)	O OA OC OC OS OO OO OO OO R SBI SP SQ SS SS SS SS SS SS SS SS SS SS SS SS	OPEN OFF-AUTON A OPEN-CLOS OPEN-STO RETURN TO (ON-OFF(MAI A ON-OFF-AI N ON-OFF-AI RUN L SLUDGE BL SPEED POT RT SQUARE F START-STO A START-STO A START-STO L START-STO (LOCKABLE IN M SUMMMAT 3 VIBRATION MULTIPLY /D FOWARD	MATIC SE-AUTOMATIC (MAIN SE(D) (MAINTAINED C) P-CLOSE (MOMENTAIN CENTER POSITION) INTAINED CONTACT) UTOMATIC (MAINTAINED LANKET INTERFACE I F ROOT P-AUTOMATIC DP-AUTOMATIC DP-LOCK N "STOP" POSITION. M FION N	NTAINED CON ONTACT) RY CONTACT IED CONTACT CONTACT) LEVEL	
AREA 035D: BUILDING OR PROCESS AREA N <u>TAG TYPE</u> P: FIRST LETTER, SEE ISA TABLE E AH: SUCCEEDING LETTERS, SEE ISA TAB <u>TAG NUMBER</u> 12: P&ID NUMBER <u>3: LOOP NUMBER</u> <u>4: EQUIPMENT NUMBER</u> <u>A: DEVICE LETTER IF MULTIPLE DEVICES</u>	UMBER BELOW LE BELOW					F/R EST SPI SUS ALF RSI STF	FOWARD/R TP ESTOP(EN D (SPEED PC SP SUSPENE RT ALERT ET RESET RT START	EVERSE(MOTOR STA MERGENCY STOP))T))	ARTER COILS)	
TAG FUNCTION HOA: TAG FUNCTION ABBREVIAT	ION, SEE LISTING AT RIGHT				TAG	SYMBOLS				
(QUANTITY) (2): TOTAL NUMBER OF DEVICES W DEVICE IS REQUIRED. DEVICE NUMBER BEGINNING WITH THE TAG NUMBER SHI IS NOT SHOWN, THEN ONE DEVICE ONL COMPONENT SEE LISTING AT RIGHT DESIGNATOR	HERE MORE THAN ONE S ARE SEQUENTIAL OWN. IF QUANTITY Y IS REQUIRED.	SINC	HI FOR PH SINGLE FUNC SLE/MULTI I/O ION-CONFIGU JON-PROGRAM	ORIZONTAL BAR SYMBC HYSICAL MOUNTING OF I TION DEVICE MU RABLE MABLE PROG	DLS DEVICE ULTI FUNCTION MULTI I/O GRAMMABLE DE	VICE	CONTF [ADD APF	ROL AND I/O DEV DISPLAY PROPRIATE HORZ. B/	ICES Ar(S)]	
				FIELD MOUNTED		NO	N-DISPLAYED			
ANALOG OUTPUT ANALOG OUTPUT DISCRETE INPUT DISCRETE OUTPUT			\bigcirc	MAIN CONTROL ROOM PANEL NORMALLY ACCESSIBLE BEHIND MAIN CONTROL		CONFIG (SEMI-P		CE PR LE)	ROGRAMMABL (ie: PLC)	
				PANEL NOT NORMALLY ACCESSIBLE LOCAL PANEL NORMALLY ACCESSIBLE		CONFIC (SEMI-F	DISPLAYED GURABLE DEVIG PROGRAMMABI	CE PRC LE)		
				LOCAL PANEL - NOT NORMALLY ACCESSIBLE				PR((HMI	DISPLAYED DISPLAYED DGRAMMABLE TOUCH SCREE	
				INSTRUMENT SC	OCIETY OF	 AMERICA TABLE			SCADA SOFTW	
	LETTER	FIRST LETTER		R(S)				SUCCEEDING LETTER(S)		
	A ANALYSIS B BURNER COME		VARIABLE	MODIFIER		ALARM(W. LOGGING) USERS CHOICE(*)	ANN USE	SUTPUT FUNCTION NUNCIATE ERS CHOICE(*)	USERS CH	
	C USERS CHOICE D USERS CHOICE E VOLTAGE	=(*) =(*)		DIFFERENTIAL		PRIMARY ELEMENT	CON	NTROL	CLOSE	
	F FLOW RATE G USERS CHOICE H HAND (MANUA	E(*) L)		RATIO		GLASS			FEEDBAC HIGH	
	I CURRENT J POWER K TIME OR SCHE	DULE		SCAN TIME RATE OF CHANGE		INDICATE KEYPAD(DATA ENTRY)	100	NTROL STATION		
	L LEVEL M MOTOR N USERS CHOICE	Ξ(*)		MOMENTARY		LIGHT(PILOT)	USE	ERS CHOICE(*)	LOW MONITOR USERS CH	
	O USERS CHOICE P PRESSURE OR O OUANTITY	E(*) VACUUM				ORIFICE POINT TEST CONNECTION	N			
	R RADIATION S SPEED OR FRE T TEMPERATURE			SAFETY		RECORD, TREND, LOG	SWI			
	U UNIVERSAL/MU V VIBRATION W WEIGHT FORG		BLE(*)			MULTIFUNCTION(*) VALUE	MUL VAL	_TIFUNCTION(*) _VE	MULTIFUN	
	X UNCLASSIFIED Y EVENT, STATE Z POSITION, DIM	ension		X AXIS Y AXIS Z AXIS		UNCLASSIFIED(*)	UNC REL DRI UNC COM	CLASSIFIED(*) AY OR COMPUTE(*) VE, ACTUATE OR CLASSIFIED FINAL NTROL ELEMENT	UNCLASS	
	(*) WHEN USED, EXPLANATI	ON IS SHC	WN ADJACEN	T TO INSTRUMENT SYMBOL		SPECIAL CASE ETM - ELAPSEI JBX - JUNCTIO NDX - INDEX # MS - MOTOR S MOR - MOTOR MPR - MOTOR	ES: D TIME METER N BOX STARTER OVERLOAD RE PROTECTION	ELAY RELAY		
CONDUIT NOTES						REMENTS				
PVC SCHEDULE 40 BELOW GRADE.		EACH ANALOG INPUT REQUIRES AN 18/2 TWISTED SHIELDED PAIR IN 3/4"						INSTRUMENTS RE	QUIRING 120	
			EACH ANA	LOG OUTPUT REQUIRES AN 1	18/2 TWISTED SH	IELDED PAIR IN 3/4"		1. MAGNETIC F 2. TURBIDITY 7 3 pH TRANSM	LOW METERS	
NO CONDUIT SHALL BE INSTALLED ON TOP OF A DECK,	RIGID ALUMINUM OR PVC COATED RGS CONDUIT IN CLASSIFIED AND CORROSIVE SPACES. NO CONDUIT SHALL BE INSTALLED ON TOP OF A DECK, ON A WALKWAY, OR IN AN				CONDUIT UNLESS NOTED OTHERWISE. EACH DISCRETE INPUT REQUIRES 2 #14's IN 3/4" CONDUIT UNLESS NOTOTHERWISE.			3. pH TRANSMITTERS 4. ORP TRANSMITTERS 5. DO TRANSMITTERS 6. ULTRASONIC LEVEL TR		
DECK, ABOVE A WALKWAY, OR IN AN AREA THAT IS CON CONDUIT IN SUCH AREAS SHALL BE COORDINATED WIT	MILL DE INSTALLED ABOVE A MMONLY TRAVELED. ALL H THE OWNER/ENGINEER AND		EACH DISC NOTED OT	CRETE OUTPUT REQUIRES 2 # 'HERWISE.	#14's IN 3/4" CONI	DUIT UNLESS		8. INFLUENT A		
CONDUIT INSTALLED BELOW GRADE OK IN THE CONDUIT CONDUIT INSTALLED IN CONCRETE DECKING OR PAD S POSSIBLE. IF CONDUIT IS TO BE ROUTED IN A STRUCTUI WALL, ETC. IT SHALL BE COORDINATED AND APPROVED INSTALLATION. CONDUIT INSTALLED IN CONCRETE CAN INTEGRITY OF CONCRETE. IT IS THE CONTRACTORS RES ANY REQUIREMENTS REQUIRED OF THE STRUCTURAL E THE INTEGRITY OF THE INSTALLATION AT NO COST TO T EMBEDDED IN CONCRETE TO BE CONSIDERED IT MUST I SOLUTION AS DETERMINED BY THE ENGINEER. ALL PRO	O CONTROL WIRING OF THE SAME TYPE MAY BE COMBINED INTO THE SAME CONDUIT. EXAMPLES: TWO 4-20MA ANALOG SIGNALS MAY BE COMBINED, TWO 24VDC DISCRETE SIGNALS MAY BE COMBINED, AND TWO 120VAC DISCRETE SIGNALS MAY BE COMBINED. TO NOTE: INSTRUMENTS AND CABLE SHALL BE AS REQUIRED BY THE INSTRUMENT MANUFACTURER.					NOTE: THIS LIST IS PROVIDED AND IS NOT ALL INCLUSIVE. C THE GENERAL CONTRACTOR EQUIPMENT SUPPLIERS FOR REQUIREMENTS OF INSTRUM AND EQUIPMENT.				
COMPLY WITH ACI 318 AND BE ENGINEER APPROVED.	TH ENDS.]			
NO CONDUIT PENETRATIONS ON THE TOP OF ANY OUTD	OOR PANELS/ENCLOSURES.									
EMT IS ACCEPTABLE IN CONDITIONED ELECTRICAL ROOD ONLY. EMT SHALL BE TRANSITIONED PRIOR TO EXITING SHALL NOT BE USED WHEN IT CAN BE EXPOSED TO ANY	MS AND OFFICE/BREAK AREAS NON CORROSIVE SPACES. EM CORROSIVE GASES.	т		•						

	ELECTRICAL GENERAL NOTES	L		LEGEND
	(GENERAL NOTES APPLICABLE TO ALL ELECTRICAL SHEETS)	L	SYMBOL	DESCRIPTION
	1. CONTRACTOR SHALL EXAMINE NOT ONLY PLANS AND SPECIFICATIONS FOR ELECTRICAL AND INSTRUMENTATION, BUT PLANS AND SPECIFICATIONS FOR OTHER	!		OPEN LIGHTING FIXTURE SYMBOLOGY DENOTING FIXTURES CONNECTED TO NORMAL POWER: FIXTURE TYPE DETERMINES
	RELATED SECTIONS. VISIT THE SITE TO BECOME ACQUAINTED WITH ALL PROJECT CONDITIONS INCLUDING EXISTING CONDITIONS. EXECUTION OF CONTRACT IS	ŀ		MOUNTING. SINGLE DIAGONAL LIGHTING FIXTURE SYMBOLOGY DENOTING FIXTURES
	EVIDENCE THAT THE CONTRACTOR HAS EXAMINED ALL DRAWINGS AND SPECIFICATIONS AND THAT ALL CONDITIONS OF INSTALLING THE WORK IN THIS	ļ		CONNECTED TO CRITICAL OR EQUIPMENT BRANCH (OR EMERGENCY POWER), UON: FIXTURE TYPE DETERMINES MOUNTING.
	SECTION ARE VERIFIED. LATE CLAIMS FOR LABOR AND MATERIALS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD	ſ	$\boxtimes \boxtimes \otimes$	DOUBLE DIAGONAL LIGHTING FIXTURE SYMBOLOGY DENOTING FIXTURES CONNECTED TO LIFE SAFETY BRANCH (OR EMERGENCY
ATIC(MAINTAINED CONTACT)	EXAMINATIONS BEEN MADE WILL NOT BE RECOGNIZED.	ŀ		POWER), UON: FIXTURE TYPE DETERMINES MOUNTING.
OMENTARY CONTACT SPRING	 THE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO INCLUDE EVERY DETAIL OF REQUIRED CONSTRUCTION, EQUIPMENT, AND MATERIALS. PROVIDE ALL 	Ļ		
	MATERIALS AND WORK NOT SPECIFICALLY MENTIONED, SHOWN, OR CAN BE REASONABLY INFERRED ON THE DRAWINGS BUT WHICH ARE NECESSARY TO FULLY		<u> </u>	RQMTS, SHADING DENOTE FACE(S) ORIENTATION.
NTAINED CONTACT)	COMPLETE THE WORK.		0	OPEN SIDE DENOTES ORIENTATION. TYPE DETERMINES MOUNTING.
ERFACE LEVEL	3. WHEN SUBSTITUTING OTHER EQUIPMENT, MATERIALS, AND PRODUCTS THAN SPECIFIED IN THE CONTRACT DOCUMENTS, INCLUDE IN PRICING ALL COSTS FOR		$\nabla \nabla \nabla$	TRACK LIGHTING FIXTURE: TYPE DETERMINES MOUNTING.
	OTHER DESIGN CHANGES TO THE PROJECT (ALL DIVISIONS) WHICH WILL RESULT FROM USE OF THE SUBSTITUTED ITEM(S).	Ŀ	എ	POLE-MOUNTED SITE LIGHTING FIXTURE: TYPE DETERMINES MTG.
TIC	4. REVIEW THE CONTRACT DOCUMENTS OF OTHER DIVISIONS, AND COORDINATE	Γ	δ	FLOOD LIGHTING FIXTURE: TYPE DETERMINES MOUNTING.
SITION. MOMENTARY CONTACT)	ELECTRICAL AND CONTROL WORK WITH THE WORK OF OTHER DISCIPLINES TO AVOID CONFLICTS AND INTERFERENCE.	F	PC	PHOTO-CELL
	5. UPON COMPLETION OF THE WORK REQUIRED UNDER THIS CONTRACT, PROVIDE	F	\bigcirc	ALL FIXTURES IN THIS SPACE SHALL BE SAME TYPE
	TYPED UPDATED DIRECTORY WITHIN DOOR OF EACH AFFECTED PANELBOARD. LEAVE "SPARE" BREAKERS IN "OFF" POSITION.	F	S	SINGLE-POLE TOGGLE SWITCH
	6. ALL MOUNTING HEIGHTS INDICATED ON DRAWINGS ARE TO CENTERLINE. UON.	F	\$	SINGLE-POLE TOGGLE SWITCH: SLASH DENOTES ESSENTIAL POWER
OTOR STARTER COILS)	7. PROVIDE LIGHTING FIXTURES COMPATIBLE WITH CEILING CONSTRUCTION.	F	୍କ ଜ	SYSTEM CONNECTION - TYPICAL FOR ALL SWITCHES. DUAL TECHNOLOGY, WALL MNTD OCCUPANCY SENSOR WITH MANUAL
	COORDINATE WITH ARCHITECTURAL ROOM FINISH SCHEDULES.	F	୍ଦ୍	DVERRIDE SWITCH DUAL TECHNOLOGY, CEILING MNTD OCCUPANCY SENSOR WITH
	 IN AREAS HAVING FINISHED CEILINGS, LOCATE CEILING-MOUNTED ELECTRICAL DEVICES AND FIXTURES ACCORDING TO ARCHITECTURAL REFLECTED CEILING 	ŀ	୍ <u>ଚ୍ଚ</u> ୍ଚ୍ଚ୍	REMOTE MANUAL OVERRIDE SWITCH SINGLE-POLE REMOTE OVERRIDE SWITCH FOR CEILING MNTD
	PLAN. DO NOT INSTALL CEILING-MOUNTED SMOKE DETECTORS WITHIN 4 FEET OF HVAC SUPPLY DIFFUSERS.			OCCUPANCY SENSOR
	9. IN ELECTRICAL AND MECHANICAL EQUIPMENT SPACES. COORDINATE EXACT	┝	Sd	DIMMER SWITCH
	LOCATIONS OF LIGHTING FIXTURES WITH CONDUIT BANKS, DUCTWORK, PIPING, STRUCTURE, SUPPORTS, AND OTHER OBSTRUCTIONS, LOCATE FIXTURES SUCH	F	Sd3	THREE-WAY DIMMER SWITCH
	THAT DIALS, GAUGES, METERS, ETC. ARE PROPERLY ILLUMINATED.	L	Sp	SINGLE-POLE TOGGLE SWITCH WITH PILOT LIGHT
	10. DO NOT USE ANY LIGHTING FIXTURE AS A RACEWAY FOR CONDUCTORS NOT SERVING THAT PARTICULAR FIXTURE.		Sm	SINGLE-POLE MOTOR-RATED TOGGLE SWITCH DISCONNECT
	11. CONNECT BATTERY-OPERATED EMERGENCY LIGHTING UNITS AND EXIT SIGNS	L	St	SINGLE-POLE OR DOUBLE-POLE MANUAL MOTOR STARTER WITH MELTING ALLOY ELEMENTS FOR THERMAL OVERLOAD PROTECTION
/O DEVICES	HAVING BATTERY BACK-UP TO UNSWITCHED LEG OF LOCAL LIGHTING CIRCUIT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND NEC SUCH THAT	Γ	S _{IR}	OCCUPANCY SENSOR SWITCH
PLAY	FAILURE OF CIRCUIT TRANSFERS UNIT FROM NORMAL TO EMERGENCY MODE, CAUSING LAMPS TO RE-ENERGIZE	F	Sit	INTERVAL TIMER RESET AND CONTROL SWITCH
HORZ. BAR(S)]	12 DO NOT INSTALL OUTLET BOXES BACK-TO-BACK IN NON-RATED PARTITIONS		S J	JOG SWITCH
	OFFSET AND SEAL, SIMILAR TO REQUIREMENTS FOR RATED PARTITIONS, TO MINIMIZE SOLIND TRANSMISSION			MUSHROOM HEAD TYPE PUSHBUTTON STATION
	13 COORDINATE ROUTING OF ALL LARGE CONDUITS (2" DIA AND LARGER) AND PULL		P	
	BOX LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION TO AVOID CONFLICTS AND TO GLARANTEE REQUIRED CLEARANCE AND ACCESSIBILITY OF		C Sy	VARIABLE INTENSITY CONTROLLER INCLUDED WITH OWNER-
NON-DISPLAYED	ELECTRICAL AND OTHER SYSTEMS.	• -	- SV	FURNISHED-CONTRACTOR-INSTALLED SURGICAL LIGHTING FIXTURE
(ie: PLC)	14. COORDINATE WITH OWNER OR OWNER'S SELECTED VENDOR PRIOR TO ROUGH-IN		ئ _{لا}	
	EQUIPMENT. VERIFY REQUIRED NEMA CONFIGURATION OF ALL SUCH OUTLETS.	-	ws	LIGHT-INSTALLED BY ELECTRICAL CONTRACTOR
	15. PROVIDE APPROPRIATE PULL WIRE IN EACH EMPTY SYSTEMS CONDUIT INCLUDED IN			120V DUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT
		′ L	e-	INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED
DISPLAYED PROGRAMMABLE DEVICE	250-122 WITH ALL BRANCH CIRCUIT CONDUCTORS SERVING LIGHTING FIXTURES.	L	₽	120V QUADRUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT
	17 MATCH A LC RATINGS AND OTHER CHARACTERISTICS OF EXISTING DEVICES IN		—	INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED
	PANELBOARD WHEN ADDING BREAKERS TO EXISTING PANELBOARDS.	L	θ-	120V SINGLE RECEPTACLE, AMP RATING (IF OTHER THAN 20A) SHOWN: STANDARD MOUNTING HEIGHT, OR OTHER HEIGHT AS NOTED
	 ALL WORK SHALL BE IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE - LATEST EDITION ADOPTED BY INDIANA. THE INDIANA CODE AMENDMENT. 			120V GFCI DUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT
	LOCAL/MUNICIPAL CODE, AND THE AUTHORITIES HAVING JURISDICTION.	Γ	\$ -	120V GFCI QUADRUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED
PROGRAMMABLE POINT	19. ALL CONNECTIONS TO EQUIPMENT SUBJECT TO MOVEMENT OR VIBRATION SHALL BE LIQUID TIGHT FLEXIBLE METAL CONDUIT, NOT LESS THAN 12" IN LENGTH, NOR	F	0 -	120V GFCI DUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED
(HMI TOUCH SCREEN OR SCADA SOFTWARE)	GREATER THAN 36" IN LENGTH.		€	SINGLE RECEPTACLE (OTHER THAN 120V), VOLTAGE, AMP RATING, NEMA CONFIGURATION, AND MOUNTING HEIGHT AS NOTED
	20. ALL CONDUIT PENETRATIONS SHALL BE SEALED WITH APPROPRIATE CONDUIT SEALING MATERIAL.	F	₽	RECPTACE OR J-BOX CONNECTION FOR X-RAY VIEWER: VERIFY
ETTED(S)	21. ALL CABLE SIZES SHALL UTILIZE COPPER CONDUCTORS.		۲	120V DUPLEX RECEPTACLE IN FLUSH FLOOR-MOUNTED BOX
	22. FIELD VERIFY LOCATIONS OF BUILDING EXPANSION JOINTS WHEN ROUTING	F	- TP	TELE-POWER POLE
WODIFIER	CONDUIT. ALL CONDUITS CROSSING EXPANSION JOINTS SHALL BE INSTALLED WITH THE EXPANSION FITTINGS, EXPANSION FITTINGS SHALL BE INSTALLED IN	F		HALON DUMP STATION
(*) USERS CHOICE(*) CLOSE	ACCORDANCE WITH THE NEC AND MANUFACTURERS WRITTEN RECOMMENDATIONS.	F	 F	
	23. FEEDERS FROM PANELBOARDS BACK TO MAIN SWITCHBOARD, BETWEEN AUTO TRANSFER SWITCHES AND THEIR SOURCES/LOADS, BETWEEN DRY TRANSFORMERS	F		
FEEDBACK	AND THEIR SOURCES/LOADS ARE NOT INDICATED. FEEDERS ARE PART OF THE WORK, AND SHALL BE SIZED AS INDICATED ON THE LINE DIAGRAM.	ŀ		
HIGH	24. HOMERUNS SHALL NOT BE COMBINED IN A RACEWAY UNLESS SHOWN ON THE	F		
ION	CONTRACT DRAWINGS. SINGLE PHASE BRANCH CIRCUIT HOMERUNS MAY BE COMBINED AT THE CONTRACTORS DISCRETION NOT GREATER THAN (3) PHASE	┝		
LOW	CONDUCTORS, NEUTRAL CONDUCTORS, AND A GROUNDING CONDUCTOR.	F	Ds	FIRE ALARM SUPPLY AIR DUCT-MOUNTED SMOKE DETECTOR
(*) USERS CHOICE(*)	25. EACH SINGLE PHASE BRANCH CONDUCTOR SHALL HAVE A DEDICATED NEUTRAL BACK TO THE PANEL.	L		FIRE ALARM RETURN AIR DUCT-MOUNTED SMOKE DETECTOR
	26. ALL PENETRATIONS BELOW GRADE SHALL USE LINK SEALS.	L	DR⊄	FIRE ALARM PROJECTED BEAM SMOKE DETECTOR - RECEIVER
	27. WHERE LOW VOLTAGE (CONTROL) CABLING IS ALLOWED TO BE INSTALLED	L	סד⊲	FIRE ALARM PROJECTED BEAM SMOKE DETECTOR - TRANSMITTER
N(*) MULTIFUNCTION(*)	WITHOUT A RACEWAY, IT SHALL BE SUPPORTED NOT EXCEEDING INTERVALS OF 48", AND NOT MORE THAN 6" FROM THE CABINETS, BOXES, FITTINGS, OUTLETS, RACKS,		Y	FIRE ALARM CONNECTION TO SPRINKLER SYSTEM VALVE STATUS SWITCH (TAMPER SWITCH)
		Γ	FS	FIRE ALARM CONNECTION TO SPRINKLER SYSTEM WATER
) UNCLASSIFIED() PUTE(*)	28. ALL MOUNTING HARDWARE INCLUDING NUTS, BOLTS, SCREWS, WASHERS, ETC. SHALL BE STAINLESS STEEL.	F	FD	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE-CHIME & STROBE
E OR FINAL	29. MOUNT JUNCTION BOXES AND DISCONNECT SWITCHES ON STAINLESS STEEL	F	F۵	FIRE ALARM AUDIO/VISIUAL NOTIFICATION DEVICE-HORN & STROBE
IENT		F	F	FIRE ALARM VISUAL ONLY NOTIFICATION DEVICE - STROBE LIGHT
	STAINLESS STEEL.	F	FS HFS	FIRE ALARM SPEAKER: CEILING-MOUNTED, WALL-MOUNTED
	31. DO NOT MIX CONTROL AND POWER CONDUCTORS IN THE SAME CONDUIT. DO NOT		 FH∕	FIRE ALARM HORN, WALL-MOUNTED
	MIX DISCRETE AND ANALOG CONTROL CONDUCTORS IN THE SAME CONDUCT.	F		DUCT SMOKE DETECTOR ALARM REMOTE INDICATOR LIGHT:
	SEPARATE RACEWAYS.	ŀ		DUCT SMOKE DETECTOR ALARM REMOTE INDICATOR LIGHT AND TEST
	33. CONTRACTOR SHALL COORDINATE WITH HEAT TRACE MANUFACTURER DURING	ŀ		SWITCH: CEILING-MOUNTED, WALL-MOUNTED
NSTRUMENT POWER	CIRCUITS AS REQUIRED. HEAT TRACE SHALL BE PROVIDED/INSTALLED COMPLETE.	┣		
	34. CONTRACTOR SHALL NOT COMBINE POWER FEEDS FOR THREE PHASE LOADS	┣		
	35. THE BELOW I OCATIONS ARE WHERE GEOLOLITIETS ARE REQUIRED.	┝	◆	
GINE TIC FLOW METERS RBIDITY TRANSMITTERS	35.1. KITCHENS: ALL KITCHEN OUTLETS. 35.2. BATHROOMS: GECLOUTLETS ARE REQUIRED IN BATHROOMS NEAD THE SINK	F	FR	
TRANSMITTERS	35.3. GARAGES: GFCI OUTLETS ARE REQUIRED IN GARAGES THAT HAVE SINK. 35.4. BASEMENTS: LINEINISHED BASEMENTS DECLIDE AT LEAST ONE OF OUTLET	L	0	DESK MOUNTED INTERCOM
RANSMITTERS	35.5. OUTDOOR SPACES: GFCI OUTLETS ARE REQUIRED IN OUTDOOR AREAS THAT ARE ACCESSIBLE OR AT GRADE LEVEL	L	(WALL MOUNTED INTERCOM
RASUNIC FLOW TRANSMITTERS	35.6. LAUNDRY ROOMS: ALL LAUNDRY ROOM OUTLETS. 35.7. CRAWL SPACES: GECLOUTLETS ARE REQUIRED IN CRAWL SPACES MILEDE	L	\$ _×	EXPLOSION PROOF SWITCH
IS LIST IS PROVIDED AS A REFERENCE	MECHANICAL EQUIPMENT IS LOCATED. 35.8. UTILITY ROOMS: ALL UTILITY ROOM OUTLETS		\$ ₃	3 WAY SWITCH
ERAL CONTRACTOR AND THE	36. LIMIT CAT 6E INSTALLATION TO 230' MAXIMUM DISTANCE CONTRACTOR SHALL		\$ 4	4 WAY SWITCH
MENTS OF INSTRUMENTS, SENSORS,	FURNISH AND INSTALL FIBER OPTIC CABLE AND MEDIA CONVERTERS IF CONDUIT ROUTING EXCEEDS CAT 6E LIMITS.	Γ	\$ _{WP}	NEMA 4X SWITCH
n WLNT.		Ē		
		┝	SYMBOL	

PUMP AND METER LEGEND							
SYMBOL	DESCRIPTION						
М	MAGNETIC FLOW METER						
\Box	SONIC FLOW METER						
Q	CENTRIFUGAL PUMP						
๎฿	LOBE PUMP						
Ø	PERISTALTIC PUMP						
Δ	SUBMERSIBLE PUMP						
Q	GRINDER PUMP						

ABV						
		MON				
		MTG	MOUNTING			
REC		MIC MV				
	CRITICAL BRANCH OR EMERG PWR-	N/1 V				
C	RED DEVICE & PLATE, UON.					
CLG			OWNER-FURNISHED	-CONTRACTOR-		
ECB		P15	EQUIP BRANCH OR E	MERG PWR-		
EMER		Q	RED DEVICE & PLATE	E, UON.		
EWC		REF	REFRIGERATOR			
EWH		RQMTS	REQUIREMENTS			
FAX		Т Т	I AMPERPROOF DEV			
FBO		TSP	TWISTED SHIELDED	PAIR		
GFCI		UON	UNLESS OTHERWISE	NOTED		
GFI		UCR	UNDER-COUNTER RE	EFRIGERATOR		
HGT		WP	WEATHERPROOF			
FPMR	RECOMMENDATIONS					
				MTG HGT AFF		
		RIPTION		TO CL, UON		
	BRANCH CIRCUIT RACEWAY CONCEALE	D IN OR BELO	WITHIN WALLS			
	OR BELOW GRADE					
	GRADE			 		
	LIGHTNING PROTECTION CABLING	OWHEADS DE	NOTES NUMBER			
	OF CIRCUITS.					
~	RACEWAY TURNING UP AS VIEWED FRO	M THE LOAD				
-	RACEWAY TURNING DOWN AS VIEWED F	ROM THE LO				
	LEVELS SHOWN			 T		
~"	CAPPED RACEWAY					
	GENERAL LIGHTING OR OUTLET CIRCUI	T - MAY BE DA	ISY CHAINED			
\bigcirc	JUNCTION BOX			AS NOTED		
	ENCLOSED BREAKER					
	NON EUGIDLE SAFETY SWITCH (AMP RATING,	N 1 NOTED)				
Þ	NON-FUSIBLE SAFETT SWITCH (AMP RA NEMA ENCLOSURE TYPE IF OTHER THAN	N 1 NOTED)				
Ŕ	COMBINATION MAGNETIC ACROSS-THE- CIRCUIT PROTECTOR (NEMA STARTER S	SIZE NOTED)				
***	POINT ELECTRICAL CONNECTION REQU	IRED)	NT (SINGLE-			
O	MOTOR					
+~	FLEXIBLE CONDUIT CONNECTION					
	SURFACE- OR FLUSH-MOUNTED LIGHTIN	NG/RECEPTAC	LE PANELBOARD			
	POWER DISTRIBUTION PANELBOARD					
ТТ	DRY TYPE TRANSFORMER					
xxx	MISCELLANEOUS SYSTEMS PANEL OR C ABBREVIATIONS.	ABINET: REFI	ER TO			
NOTE !! A NECESSA THAT APP	ALL ABBREVIATIONS, NOTES, AND SYMBOL RILY APPEAR IN THIS SET OF CONTRACT PLY.	S SHOWN ON DOCUMENTS.	THIS DRAWING DO NO REFER ONLY TO THOS	T E		

MTG HGT AFF TO CL, UON

7'-6"

3'-10"

3'-10"

3'-10" 3'-10" 3'-10"

3'-10"

3'-10"

3'-10" 5'-0"

5'-0" 3'-10'

3'-10"

1'-6"

1'-6"

1'-6"

3'-10"

AS NOTED

AS NOTED

6'-8''

6'-8''

6'-8''

6'-8"

6'-8"

6'-8"

6'-4"

3'-10" 3'-10''

3'-10" 3'-10"

AS NOTED

ABOVE COUNTER

ABOVE COUNTER

ABOVE COUNTER ABOVE COUNTER

1'-6", UON

	MOTOR CONTROLLER LEGEND
SYMBOL	DESCRIPTION
MS	ACROSS THE LINE MOTOR STARTER
ss	SOFT STARTER
VFD	VARIABLE FREQUENCY DRIVE
MS	ACROSS THE LINE MOTOR STARTER WITH INTEGRAL DISCONNECT
SS	SOFT STARTER WITH INTEGRAL DISCONNECT
	VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT
	LIGHTING LEGEND
SYMBOL	DESCRIPTION
o	FIXTURE WITH STANDARD BALLAST.
	FIXTURE WITH STANDARD BALLAST AND EMERGENCY BALLAST.







EX. BELT FILTER PRESS CONTROL PANEL



E1-0

Sheet: 11 OF 19





THE NEW DEWATERING CONVEYOR SYSTEM SHALL INCLUDE A NEW CONVEYOR CONTROL PANEL. THE CONTRACTOR SHALL FURNISH AND INSTALL 1" CONDUIT WITH (4) #10 CONDUCTORS FROM MOTOR CONTROL CENTER IN ELECTRICAL ROOM TO POWER NEW CONVEYOR CONTROL PANEL. THE CONTRACTOR SHALL FURNISH AND INSTALL ONE (1) NEW MCC BUCKET WITH 3-POLE, 480V, 30A BREAKER TO POWER NEW CONVEYOR CONTROL PANEL. MULTIPLE SPARE SPACES FOR MCC BUCKETS ARE AVAILABLE IN EXISTING MCC. EXISTING CONDUITS MAY BE REUSED AT CONTRACTORS DISCRETION. UNUSED CONDUITS SHALL BE DEMOLISHED COMPLETE AFTER

CONTRACT 2 EX. THICKENER BUILDING IMPROVEMENTS KEYNOTES

STRUCTURE NEW BFP LOCAL CONTROL PANEL NEW CONVEYOR CONTROLS (TYP.)

	A weath of resources to master a common goal. https://commonwealthengineers.com/									
No. 19800084 B. STATE OF No. 19800084 TRANSPORTED No. 19800084 MOLIANA MILLING										
TOWN OF BROWNSBURG HENDRICKS COUNTY,	INDIANA PROJECT #24-011-WW	(CONTRACT 2)								
(A)	3811	811 before you dig. 82-5544 4E LAW)								
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LOW HYDRAULIC PRESSURE PRESSURE SWITCH LOW WATER PRESSURE SWITCH

GRAVITY BELT BROKEN

PRESSURE BELT BROKEN (UPPER ROLL)

PRESSURE BELT BROKEN (LOWER ROLL)

GRA∨ITY BELT DRI∨E M⊡TOR THERMAL CUTOUT

PRESSURE BELT DRIVE

EMERGENCY TRIP (UPPER DRIVE SIDE)

EMERGENCY TRIP (LOWER DRIVE SIDE)

EMERGENCY TRIP

EMERGENCY TRIP (UPPER NON-DRIVE SIDE)

(LOWER NON-DRIVE SIDE)

PRESSURE BELT MISALIGNMENT

GRA∨ITY BELT MISALIGNMENT

(JUNCTION BOX PRE-WIRED BY K-S)

1. THE ATTACHED DRAWING IS FURNISHED FOR CONTRACTOR REFERENCE ONLY. DRAWING IS NOT FOR RENOVATED FILTER PRESS WIRING DETAILS. THE CONTRACTOR SHALL COORDINATE DURING BIDDING AND CONSTRUCTION WITH THE FILTER PRESS MANUFACTURERS REPRESENTATIVE/SUPPLIER FOR DETAILED MOUNTING AND WIRING REQUIREMENTS TO ENSURE THAT ALL COMPONENTS OF THE REHABILITATED FILTER PRESS SYSTEM ARE FULLY OPERATIONAL.















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ELECTRICAL AND INSTRUMENTATION, BUT ALSO PLANS AND SPECIFICATIONS FOR PROJECT CONDITIONS INCLUDING EXISTING CONDITIONS. EXECUTION OF CONTRACT SECTION ARE VERIFIED. LATE CLAIMS FOR LABOR AND MATERIALS REQUIRED DUE TO

AS NECESSARY. SPLICES ARE NOT ACCEPTABLE. ALL WIRES AND TERMINAL BLOCKS







1 THE CONTRACTOR SHALL FURNISH AND INSTALL CONTROL CONDUITS AND WIRE TO GATE ACTUATORS FROM NEW CONTROL PANEL. CONTROL OF GATE ACTUATORS SHALL BE INTEGRATED INTO THE PLANT SCADA SYSTEM.

THE BYPASS GATE SHALL BE CAPABLE OF FULL MODULATION TO LIMIT MAXIMUM FLOW THROUGH TERTIARY FILTER BUILDING.

THE TERTIARY FILTER GATES OPERATION SHALL BE 100% OPEN/CLOSED.





