06-12-2020 LETTING ITEM 098

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14 BOWMAN PUMP STATION ELECTRICAL MODIFICATIONS PROPOSED PUMP ROOM PLAN

HIGHWAY STANDARDS

000001-07 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

0 100' 200' 300' — 1" = 100'
0 50' 100' — 1" = 50'
0 50' 100' — 1" = 40'
0 50' 100' — 1" = 30'
0 50' 100' — 1" = 20'

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS. THE ABOVE SCALES MAY BE USED.

J.U.L.I.E. JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION 1-800-892-0123 OR 811

PROJECT ENGINEER HERVE GELIN
PROJECT MANAGER PHILLIP SAWYER

618-346-3175 618-346-3275

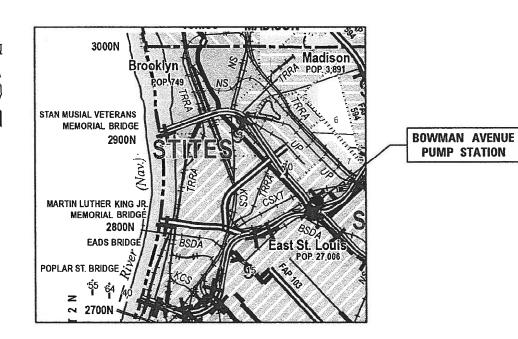
CONTRACT NO. 76N54

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PROPOSED HIGHWAY PLANS

FAI ROUTE 70 (I-70)
SECTION 82-2-1PS-5
PUMP STATION REPAIRS
ST. CLAIR COUNTY

C-98-103-20



ST. CLAIR COUNTY

& ASSOCIATES, P.C.

Engineers • Architects • Surveyors

616 North 24th Street, Quincy, IL

4510 Parts Grard Road, Harmbol, MO

610 N. 4th Street, Suite 100, Burington, IA

640 Horth Parts Street, Galestory B.

640 Liberty Street, Suites 125, Pella, IA

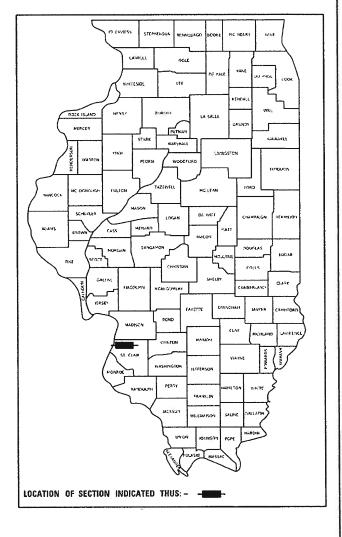
907 East Ah Street, Columbia, MO

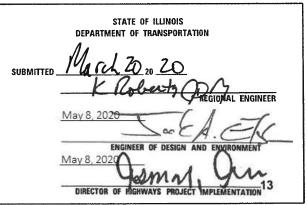
Internet Address: STATE OF ILLINOIS DESIGN FIRM # 1842738



DANE A. STIVERS REGISTERED PROFESSIONAL ENGINEER STATE OF ILLINOIS NO. 062-062692 LICENSE EXPIRES NOVEMBER 30, 2021

D-98-087-20





PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

GENERAL NOTES

- PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURES HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD, AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING MATERIALS.
- 2. THE CONTRACTOR SHALL SECURE ANY LOCAL, STATE, COUNTY PERMITS NEEDED FOR THIS PROJECT.
- 3. THE CONTRACTOR SHALL PERFORM ALL CONSTRUCTION FOR THE PROJECT IN A MANNER AND SEQUENCE THAT ARE BASED ON ACCEPTED INDUSTRY STANDARDS THAT RECOGNIZE THE INTERACTION OF THE COMPONENTS THAT COMPRISE THE STRUCTURE, WITHOUT CAUSING DISTRESS, UNANTICIPATED MOVEMENTS OR IRREGULAR LOAD PATHS AS A RESULT OF THE CONSTRUCTION MEANS AND METHODS EMPLOYED.
- 4. CONSTRUCTION LOADS SHALL NOT EXCEED DESIGN LIVE LOAD. THE CONTRACTOR IS RESPONSIBLE FOR ALL DESIGN REQUIRED TO SUPPORT CONSTRUCTION EQUIPMENT USED IN CONSTRUCTING THIS PROJECT. SHORING AND RESHORING IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 5. UTILITIES LOCATIONS / INFORMATION ON PLANS

ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE TO BE GIVEN TO UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:

- * Ameren Illinois (GAS & ELECTRIC)
- * AT&T Illinois (COMMUNICATIONS)
- * CenturyLink, Inc. (COMMUNICATIONS)
- * City of East St. Louis (LIGHTING)
- * ILLINOIS AMERICAN WATER CO. (WATER)

MEMBERS OF J.U.L.I.E. CALL TOLL FREE (800) 892-0123 OR 811 AND ARE INDICATED BY *. NON-J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY

- 6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENFORCE ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
- 7. ALL CONTRACTORS ARE REQUIRED TO EXAMINE THE DRAWINGS AND SPECIAL PROVISIONS CAREFULLY, VISIT THE SITE AND FULLY INFORM THEMSELVES AS TO ALL EXISTING CONDITIONS AND LIMITATIONS, PRIOR TO AGREEING TO PERFORM THE WORK. FAILURE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND LIMITATIONS WILL IN NO WAY RELIEVE THE CONTRACTOR FROM FURNISHING ANY MATERIALS OR PERFORMING ANY WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS WITHOUT ADDITIONAL COST TO THE OWNER.
- 8. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE EXISTING PUMP STATION BUILDING.
- 9. DRAWINGS ARE NOT TO SCALE.
- 10. THE DEPARTMENT RESERVES THE RIGHT TO NOTIFY THE CONTRACTOR TO CHANGE THE CONSTRUCTION SCHEDULE IF NEEDED TO ENSURE PROPER DEWATERING NEEDS FOR THE DEPARTMENT.
- 11. THE DEPARTMENT STRONGLY ENCOURAGES THE PRIME CONTRACTOR AND THEIR APPROVED SUB-CONTRACTORS TO HIRE MINORITY, WOMEN AND DISADVANTAGED INDIVIDUALS FROM ITS FEDERALLY FUNDED HIGHWAY CONSTRUCTION CAREERS TRAINING PROGRAM (HCCTP) TO HELP MEET WORKFORCE AND TRAINEE GOALS. THIS PROGRAM IS TRAINING MINORITIES, WOMEN AND DISADVANTAGED INDIVIDUALS IN HIGHWAY CONSTRUCTION RELATED SKILLS, E.G., MATH FOR THE TRADES, JOB READINESS, TECHNICAL SKILLS COURSEWORK (CARPENTRY, CONCRETE FLATWORK, BLUEPRINT READING, SITE PLANS, SITE WORK, TOOLS USE, ETC.) AND OSHA 10 HOUR CERTIFICATION TO PREPARE THEM FOR A CAREER IN THE HIGHWAY CONSTRUCTION TRADES, GRADUATES ARE WELL TRAINED AND READY TO BECOME PRODUCTIVE ENTRY LEVEL CONSTRUCTION WORKERS. CONTACT THE DISTRICT 8 EEO OFFICE AT 618-346-3360 AND/OR THE HCTP COORDINATOR AT 618-874-6528 TO LEARN MORE ABOUT THE PROGRAM AND FOR ASSISTANCE IN MEETING WORKFORCE AND TRAINEE GOALS.

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les	& ASSOCIATES, P.C.	L
186	Engineers • Architects • Surveyors	ı
8	616 N.24TH ST. QUINCY, ILLINOIS 62301 217 223 3670 STATE OF ILLINOIS DESIGN FIRM NO. 184-2738	Γ

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										CONTRACT	NO.	76N54
NTS	SHEET	1	OF	1	SHEETS	STA.	TO STA.		ILLINOIS FED. AI	ID PROJECT		

05 - Bowman Ventilation/Sheets/D876N54-sht-Gennotes.dgn

ILLINOIS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

			100% STATE	CONSTRU	JCTION TYPE COL	DE
			T0T41	ST. CLAIR		
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	0044		
			40,	URBAN		
67100100	MOBILIZATION	L SUM	1	1		
V0792200	DUMP CTATION ELECTRICAL MORK	I CHM	1	1		
X0783300	PUMP STATION ELECTRICAL WORK	L SUM	1	1		

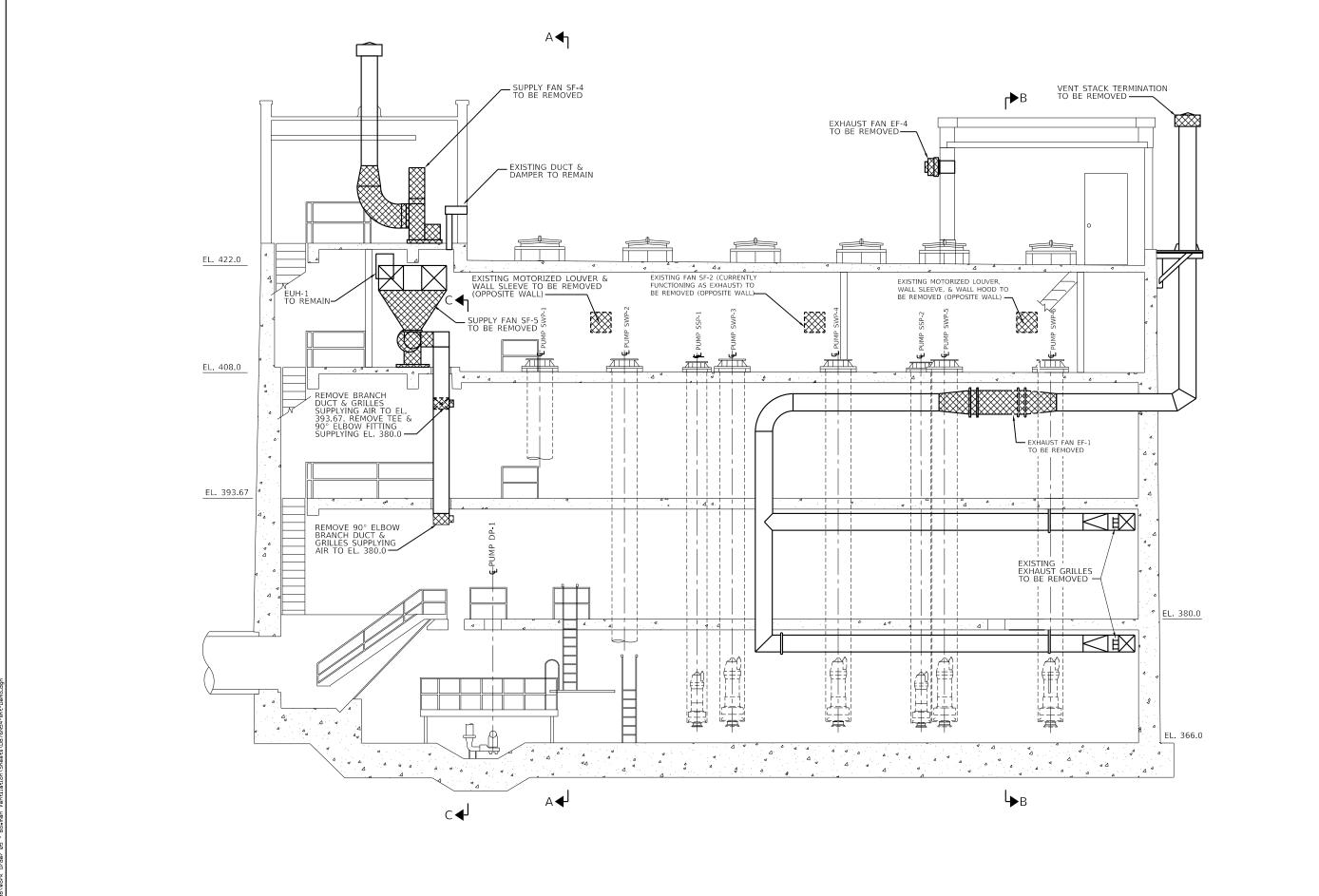
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201	& ASSOCIATES, P.C.	
5	Engineers • Architects • Surveyors	F
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STATE OF	ILLINOIS
DEPARTMENT OF	TRANSPORTATION

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		:	SUM	MA	RY OF	QUANT	ITIES
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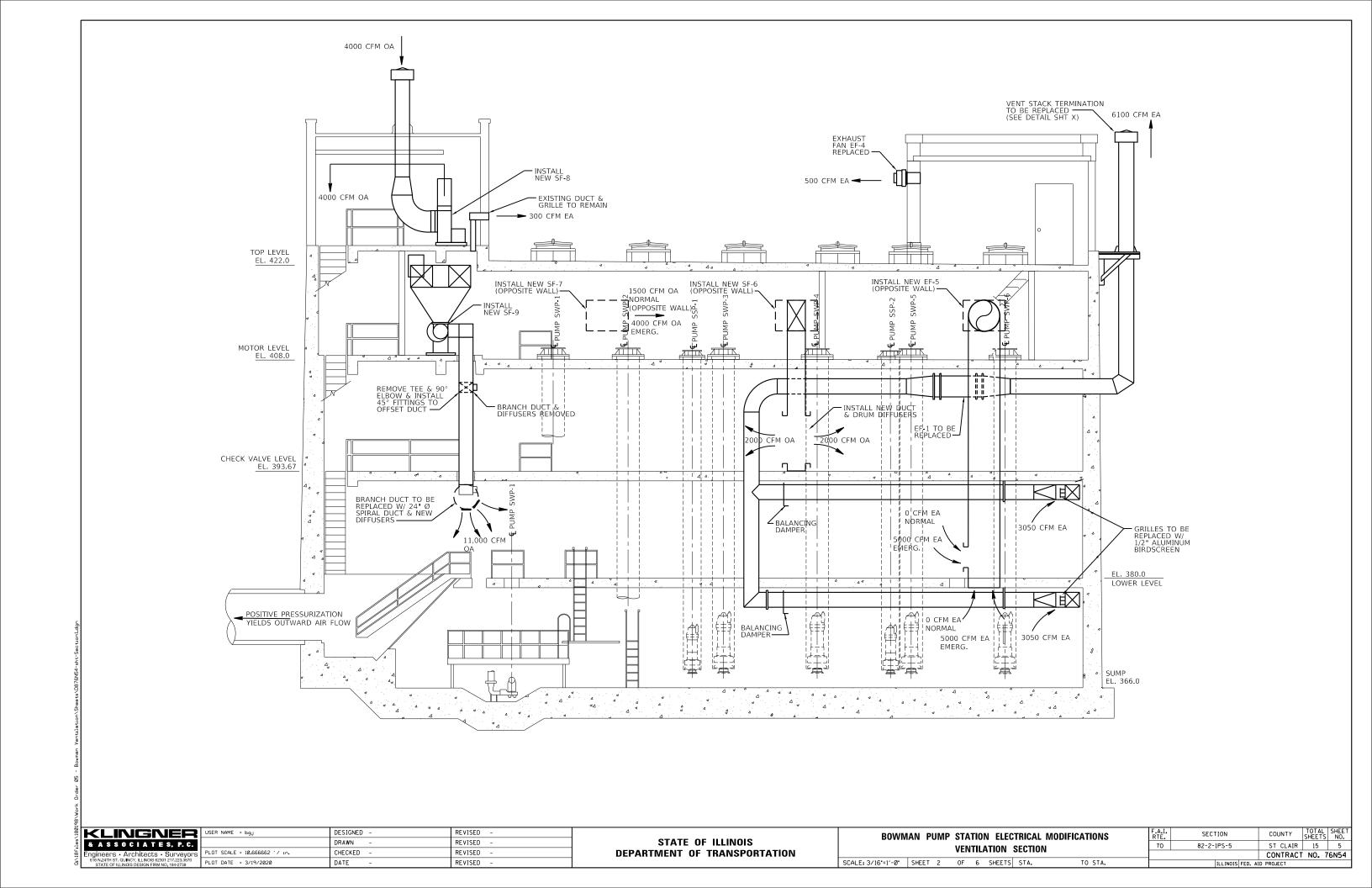


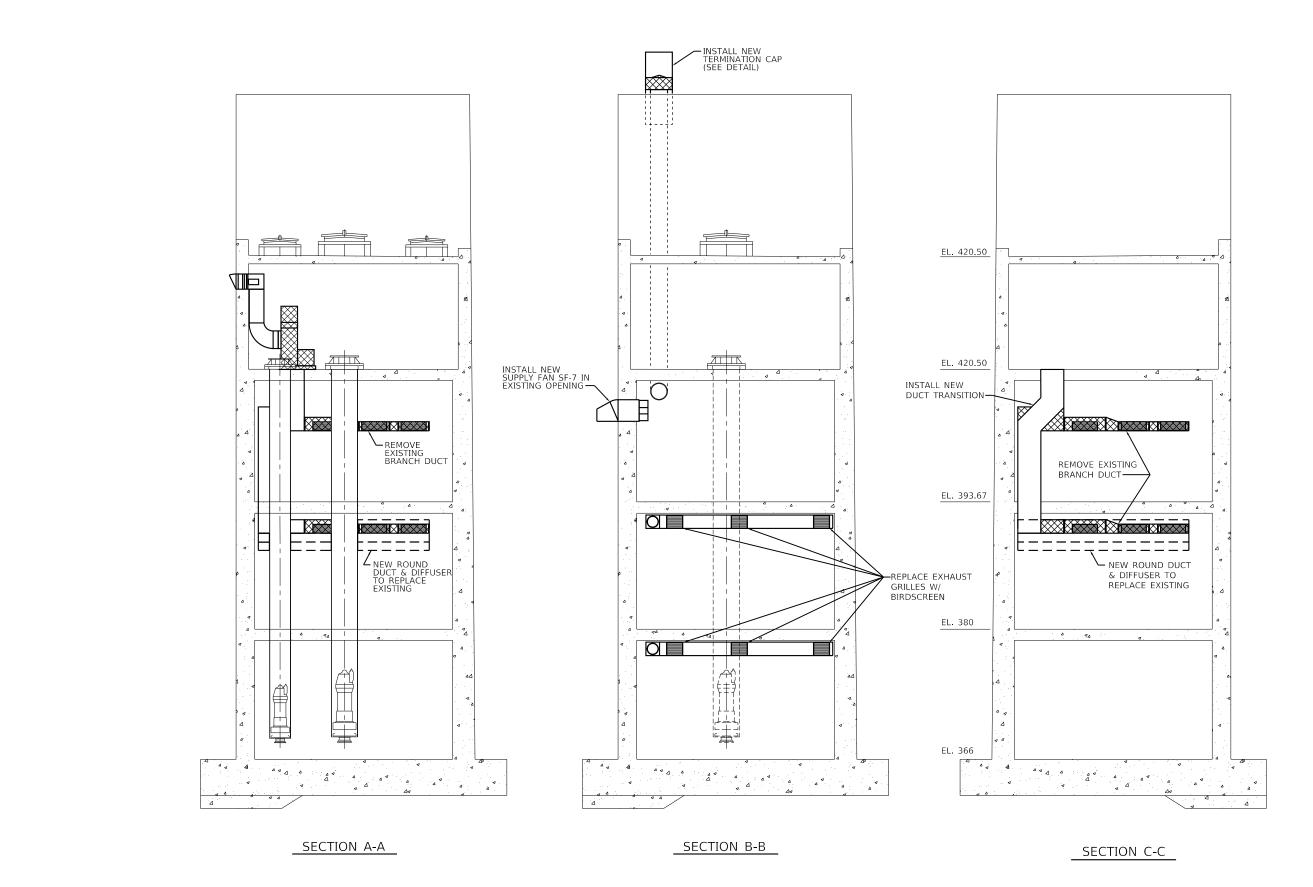
& ASSOCIATES, P.C.
Engineers - Architects - Surveyors
610 N24TH ST. QUINCY, ILLINOIS 62301 217, 223, 3470
STATE OF ILLINOIS DESIGN FRIN NO, 1842798

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION BOWMAN PUMP STATION ELECTRICAL MODIFICATIONS

DEMOLITION SECTION

SCALE: 3/16'=1'-0' SHEET 1 OF 6 SHEETS STA. TO STA.





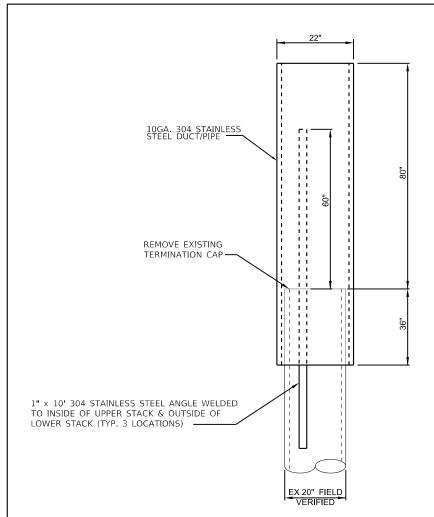
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& A S S O C I A T E S, P. C.
Engineers · Architects · Surveyors
616 N.24TH ST. QUINCY, ILLINOIS 62301 217.2223.370

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION BOWMAN PUMP STATION ELECTRICAL MODIFICATIONS

VENTILATION SECTIONS

SCALE: 3/16*=1'-0* SHEET 3 OF 6 SHEETS STA. TO STA.



NEW TERMINATION FOR EXISTING VENT PIPE DETAIL NO SCALE

	VENTILATION EQUIPMENT SCHEDULE												
				ELEC	TRICAL				FAN				
TAG	DESCRIPTION	LOCATION	HP	RPM	VOLTS	PH	Hz	TYPE	CFM	SP	DRIVE	MTG	NOTES
SF-6	NEW SUPPLY FAN TO REPLACE SF-2	EL. 408.0	1.5	1750	460	3	60	IN-LINE CENTRIFUGAL SIDE DISCHARGE	4000	0.25	BELT	WALL	1
SF-7	NEW 2-SPEED SUPPLY FAN	EL. 408.0	0.75	875 / 1750	460	3	60	SIDEWALL PROPELLER	2050 / 4000	0.09 / 0.35	DIRECT	WALL	1, 2
SF-8	NEW SUPPLY FAN TO REPLACE SF-4	EL. 422.0	1.5	1750	460	3	60	IN-LINE CENTRIFUGAL SIDE DISCHARGE	4000	0.25	BELT	DUCT	1
SF-9	NEW SUPPLY FAN TO REPLACE SF-5	EL. 408.0	7.5	1750	460	3	60	UTILITY CENTRIFUGAL	11,000	2.0	BELT	DUCT	1
EF-4	NEW EXHAUST FAN	EL. 422.0	0.25	1550	120	1	60	SIDEWALL CENTRIFUGAL	500	0.375	DIRECT	WALL	1, 2
EF-5	NEW EXHAUST FAN	EL. 408.0	7.5	1550	460	3	60	TUBULAR CENTRIFUGAL	10,000	2.0	BELT	BELT	1

	DIFFUSER SCHEDULE												
				ELEC	TRICAL				FAN				
TAG	DESCRIPTION	LOCATION	HP	RPM	VOLTS	PH	Hz	TYPE	CFM	SP	DRIVE	MTG	NOTES
	DRUM DIFFUSER	N/A	N/A	N/A	N/A	N/A	N/A	ADJUSTABLE HEAVY GAUGE ALUMINMUM					50 " x 10"

NOTES:

- 1. EQUIPMENT SHALL MEET REQUIREMENTS FOR NEC CLASS 1 DIV 2 GROUP D HAZARDOUS LOCATION.
- 2. PROVIDE W/ WALL COLLAR, MOTOR GUARD, GRAVITY BACKDRAFT DAMPER, & 90° WEATHERHOOD

VENTILATION SEQUENCE OF OPERATION

NORMAL VENTILATION

EXHAUST FANS EF-1& EF-4 SHALL OPERATE CONTINUOUSLY. SUPPLY FANS SF-6 & SF-8 SHALL OPERATE CONTINUOUSLY. SUPPLY FAN SF-7 SHALL OPERATE CONTINUOUSLY ON LOW SPEED.

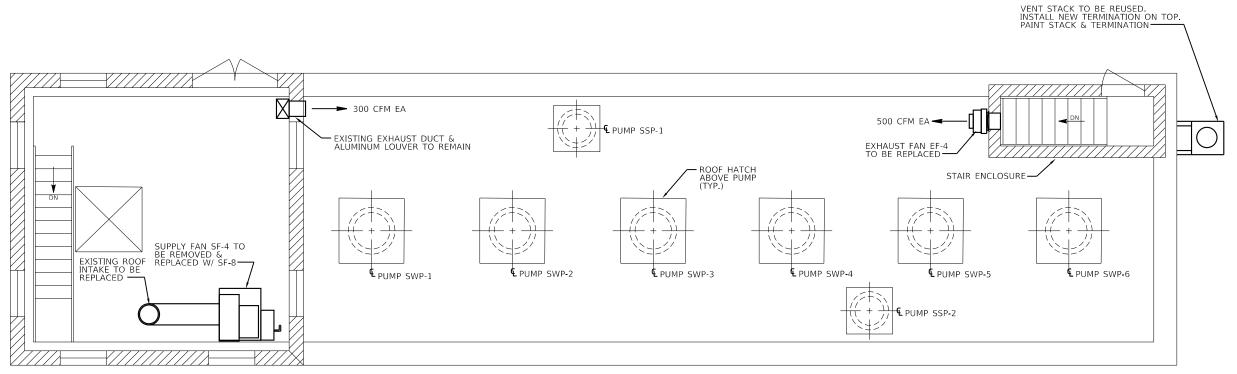
EMERGENCY VENTILATION

MANUAL OPERATION

UPON COMBUSTIBLE GAS DETECTION
EXHAUST FAN EF-5 SHALL TURN ON.
SUPPLY FAN SF-9 SHALL TURN ON. SUPPLY FAN SF-7 SHALL SWITCH TO HIGH SPEED.

THESE FANS SHALL TURN OFF WHEN COMBUSTIBLE GAS CONCENTRATION FALLS BELOW THE DETECTOR SETTING.

A HAND-AUTO SWITCH SHALL BE INSTALLED AT EL 408.0 ADJACENT TO THE STAIRWAY DOOR TO TURN ON EXHAUST FAN EF-5, SUPPLY FAN SF-9, AND SWITCH SUPPLY FAN SF-7 TO HIGH SPEED (ACTIVATES EMERGENCY VENTILATION RATES).



FLOOR PLAN EL. 422.0

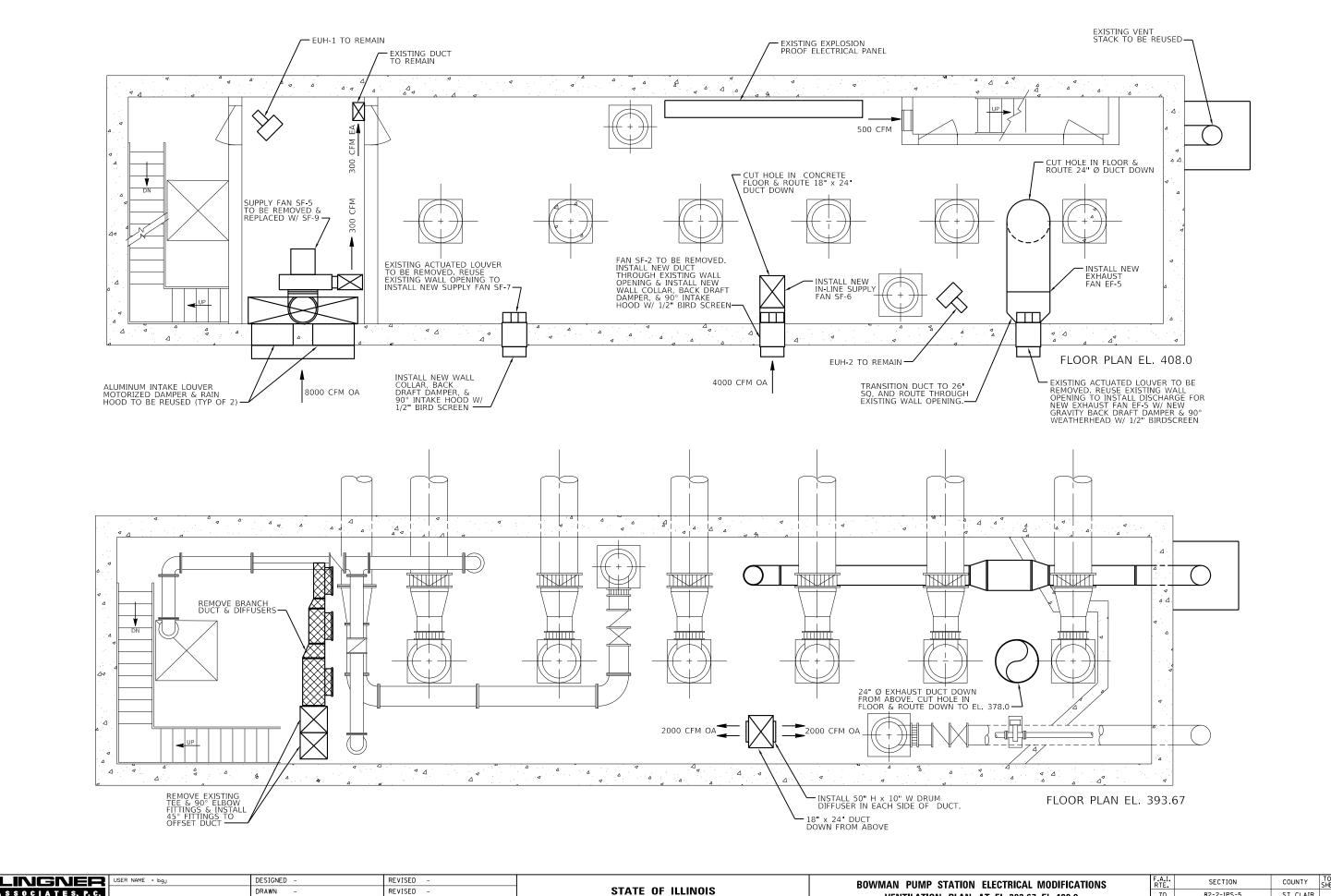
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les	& ASSOCIATES, P.C.	
181	Engineers • Architects • Surveyors	PL
6	616 N.24TH ST. QUINCY, ILLINOIS 62301 217.223.3670 STATE OF ILLINOIS DESIGN FIRM NO. 184-2738	PL

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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	VENT	ILATI	ON I	PLAI	N AT I	ELEVATIO	ON 422.0
SCALE: 1/4"=1'-0	SHEET	4	OF	6	SHEETS	STA.	TO STA.

F.A.I. RTE.	SECTION		COUNTY	TOTAL SHEETS	SHEET NO.
70	82-2-1PS-5		ST CLAIR	15	7
			CONTRACT	NO. 7	6N54
	ILLINOIS FED.	AID	PROJECT		

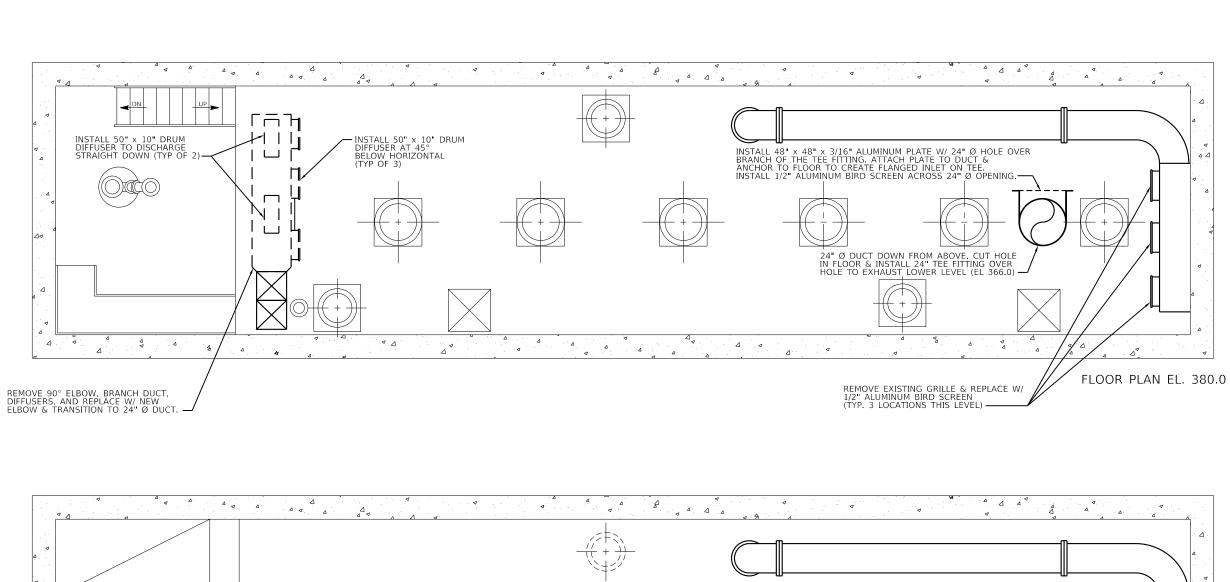


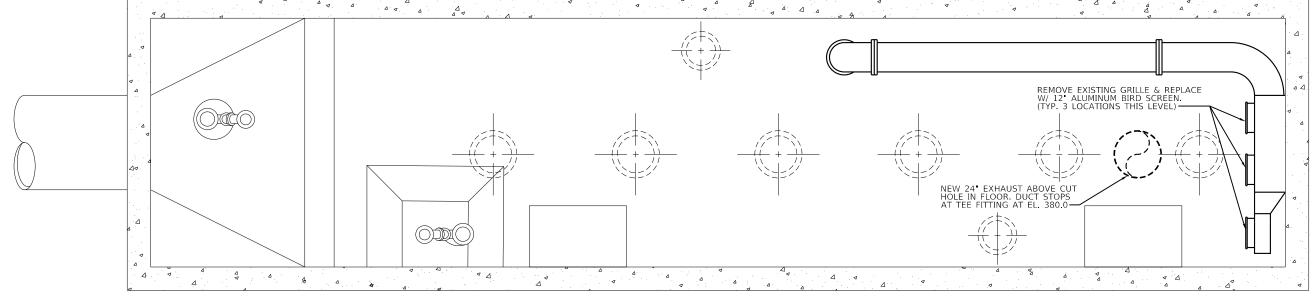
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Engineers - Architects - Surveyors
616 N24TH-87 OUNCY (LENOIS 62301 217 223-3570

DEPARTMENT OF TRANSPORTATION

BOWMAN PUMP STATION ELECTRICAL MODIFICATIONS VENTILATION PLAN AT EL 393.67, EL 408.0

SCALE: 1/4'=1'-0' SHEET 5 OF 6 SHEETS STA. TO STA.





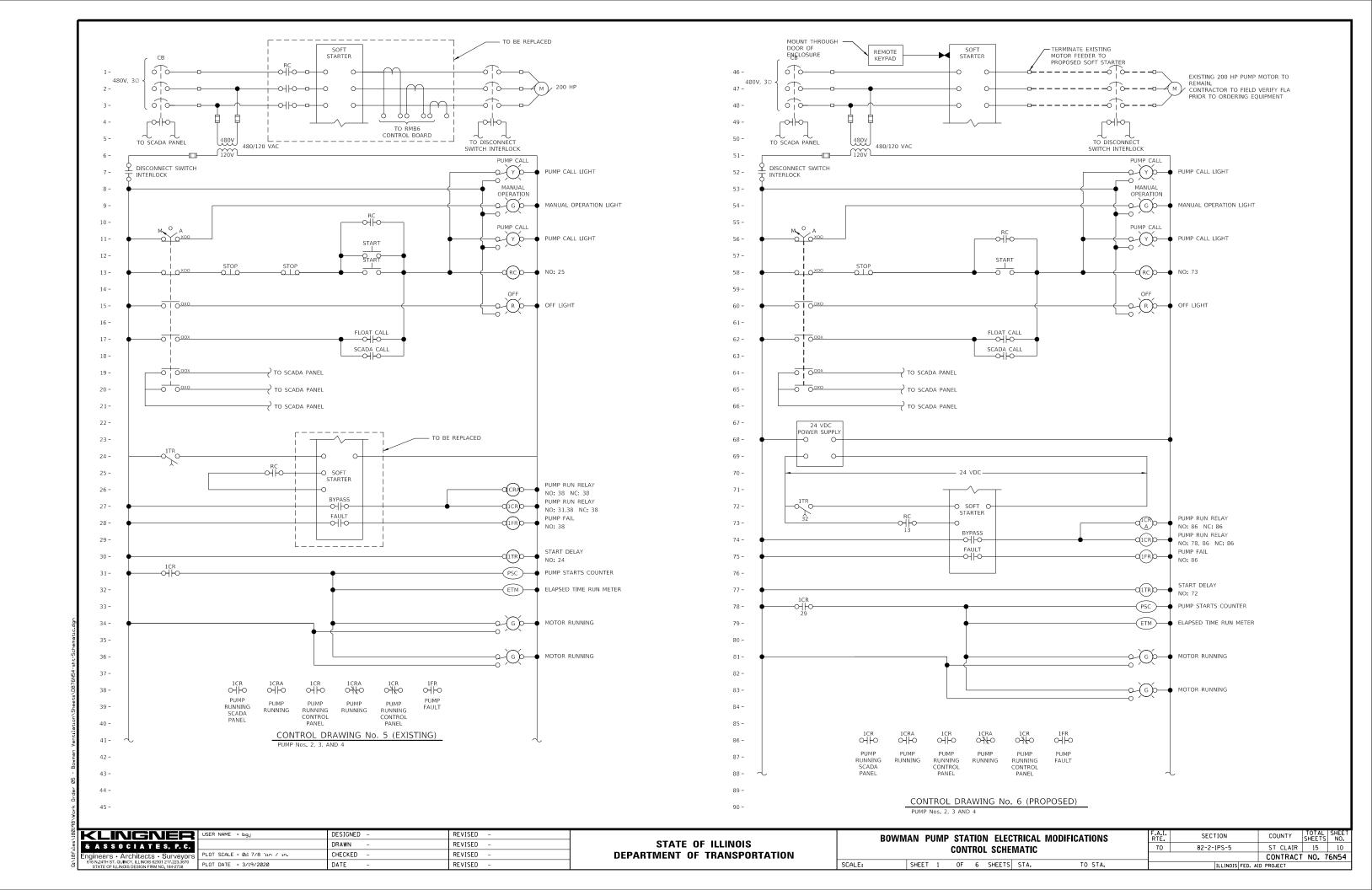
FLOOR PLAN EL. 366.0

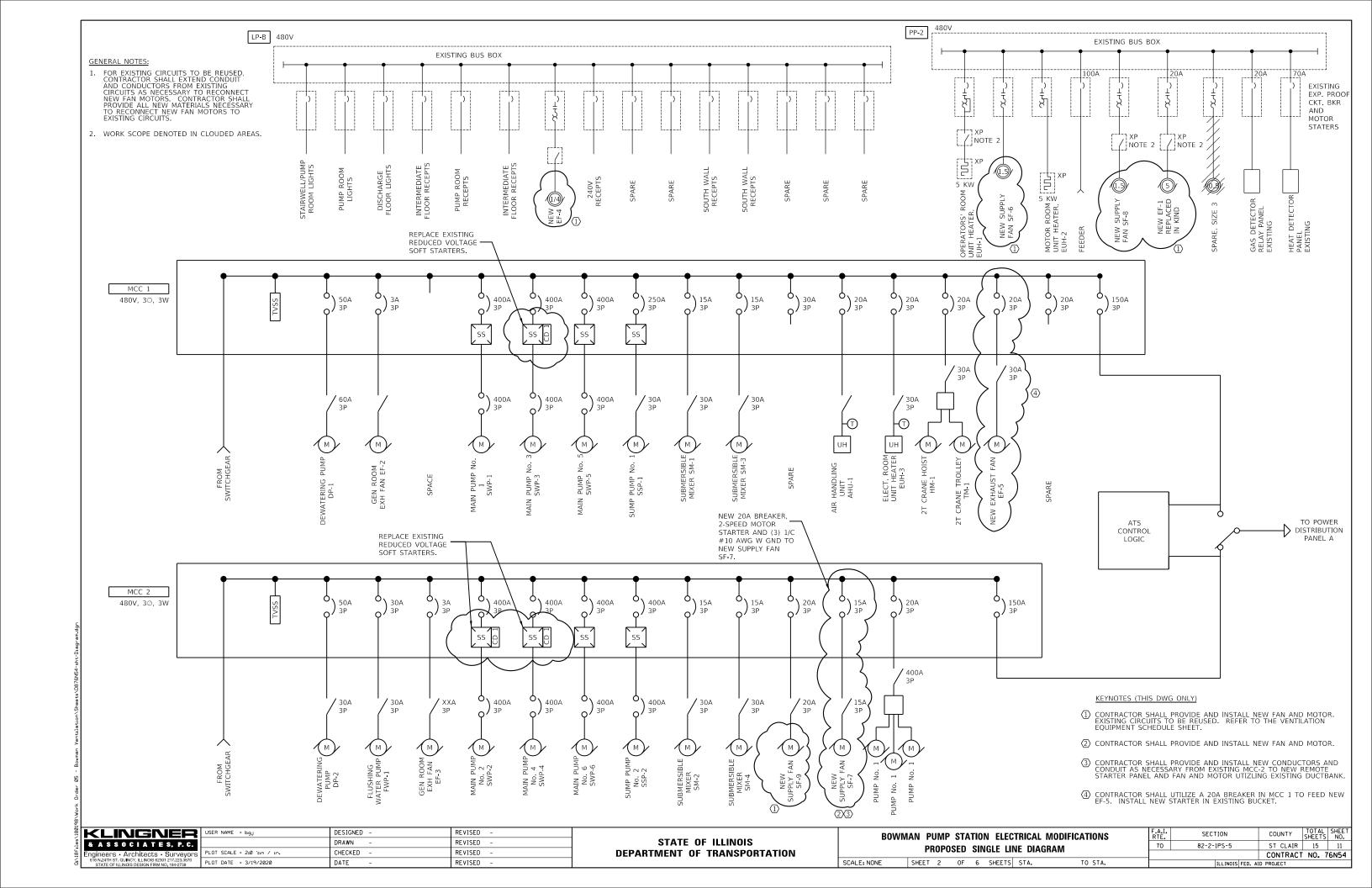
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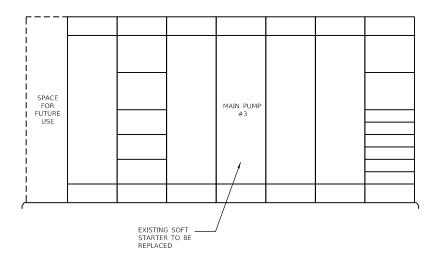
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BOWMAN PUMP STATION ELECTRICAL MODIFICATIONS					F.A.I. RTE.	
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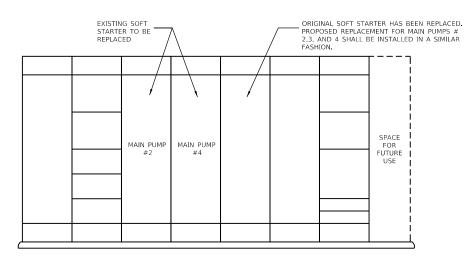
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		CONTRACT	NO. 7	6N54
70	82-2-1PS-5	ST CLAIR	15	9
RTE.	SECTION	COUNTY	SHEETS	NO.







SECTION A-A (MCC 1 ELEVATION)
N.T.S.



SECTION B-B (MCC 2 ELEVATION) N.T.S.



180	KLINGNER
les	& ASSOCIATES, P.C.
186	Engineers • Architects • Surveyors
á	616 N.24TH ST. QUINCY, ILLINOIS 62301 217.223.3670

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BOWM	٩N	PUMP	STA	TION	ELEC	TRICAL	MODIFICATIONS
ELECTRICAL PLAN							
	CHEE	T 2	ΛE	-	CHEETE	CTA	TO CTA

GENERATOR ROOM

GENERATOR ROOM

ELECTRICAL ROOM

ELECTRICAL ROOM PLAN VIEW

SCALE: 3/16"=1'-0"

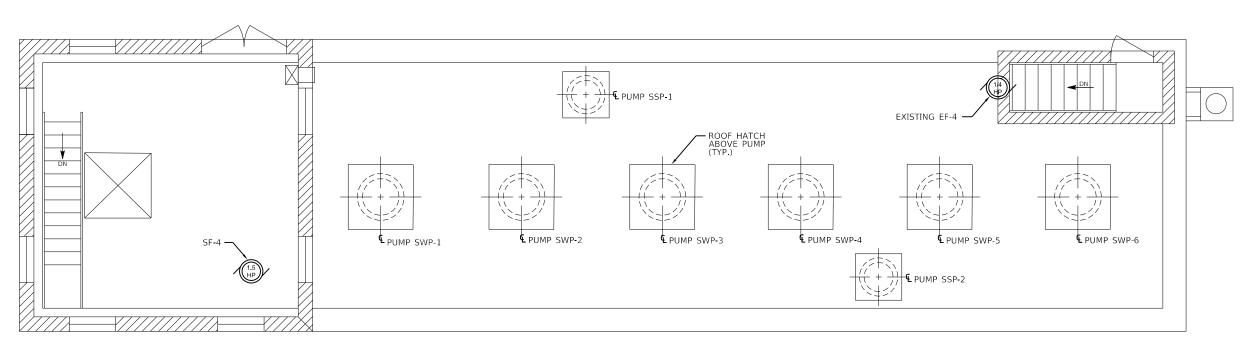
480V SWITCHGEAR

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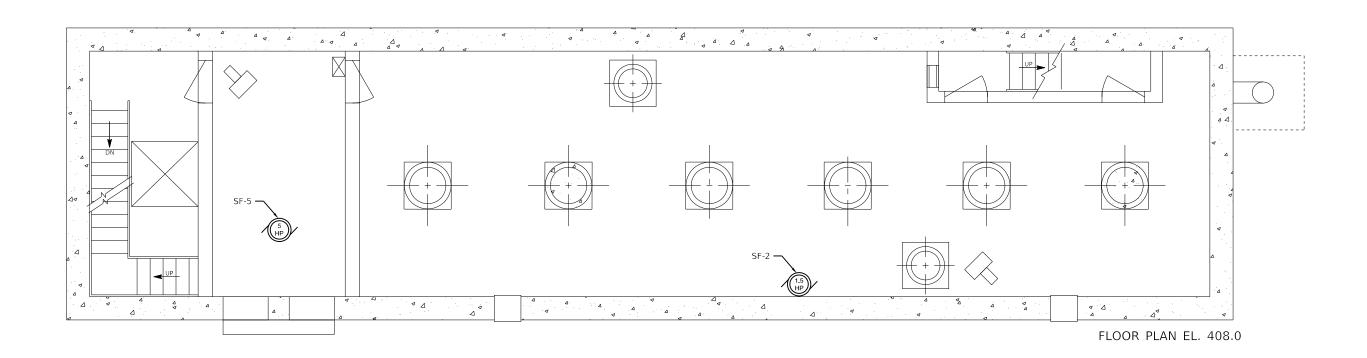
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SCALE:

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FLOOR PLAN EL. 422.0



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& ASSOCIATES, P.C.

Engineers · Architects · Surveyors
610 N24TH \$1.0 UNKY, ILLINOIS 62301 217.223.3670

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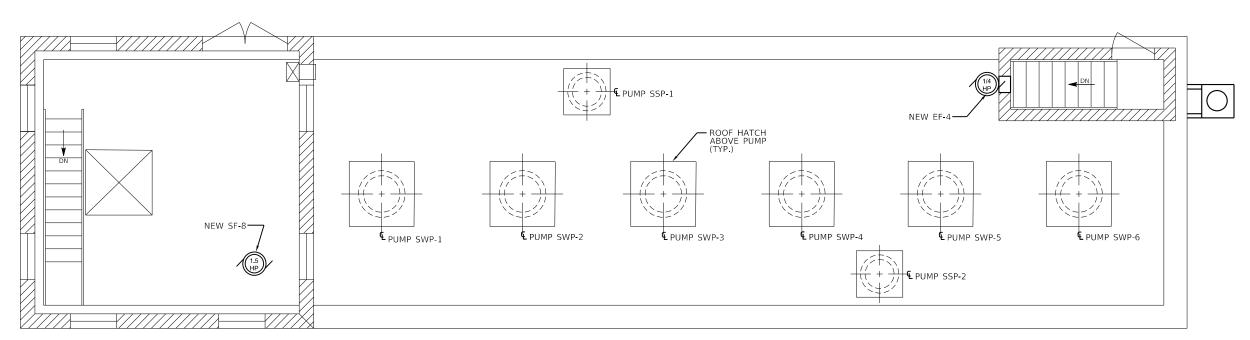
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BOWMAN PUMP STATION ELECTRICAL MODIFICATIONS

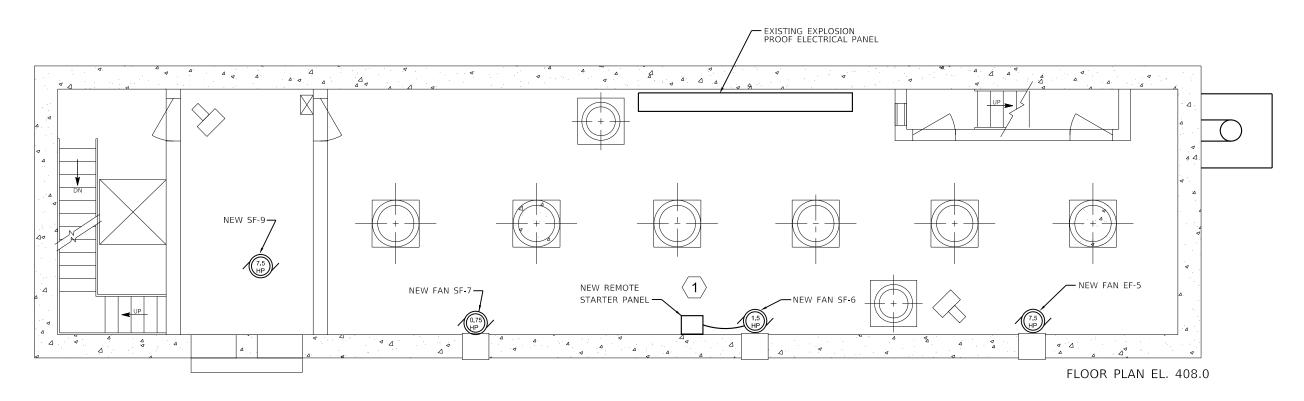
EXISTING PUMP ROOM PLAN

SCALE: 1/4'=1'-0 SHEET 4 OF 6 SHEETS STA. TO STA.

irder 05 - Bowman Ventilation/Sheets/UB/6N54-sht-Plan



FLOOR PLAN EL. 422.0



KEYNOTES:

SCALE:

 \langle 1 \rangle CONTRACTOR SHALL PROVIDE AND INSTALL REMOTE STARTER PANEL FOR NEW SF-6.

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501	& ASSOCIATES, P.C.	
01.10	Engineers • Architects • Surveyors	F
5	616 N.24TH ST. QUINCY, ILLINOIS 62301 217 223 3670 STATE OF ILLINOIS DESIGN FIRM NO. 184-2738	ш

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DEPARTMENT	OF TRANSPORTA	MOITA						

BOWMAN PUMP STATION ELECTRICAL MODIFICATIONS						F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS			
PROPOSED PUMP ROOM PLAN					70	82-2-1PS-5	ST CLAIR	15	14			
THOI OULD TOWN HOOM TEAM								CONTRACT	NO.	76N54		
	SHEET	5	OF	6	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT				

