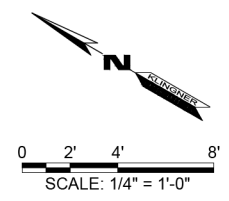


LOWER FRAMING PLAN
SCALE: 1/4" = 1'-0"

3 S304 & 4 S304 UPPER LEVEL PLANS
1 S307 & 2 S307 LOWER LEVEL PLANS

5 S304 & 6 S304 UPPER LEVEL PLANS
3 S307 & 4 S307 LOWER LEVEL PLANS

- *NOTE:
- 1) THE PRICE OF ALL ACCESS DOORS SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 2) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



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KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = bgj	DESIGNED - ADL	REVISED -
PLOT SCALE = 40.0000' / in.	DRAWN - EAW	REVISED -
PLOT DATE = 1/13/2015	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

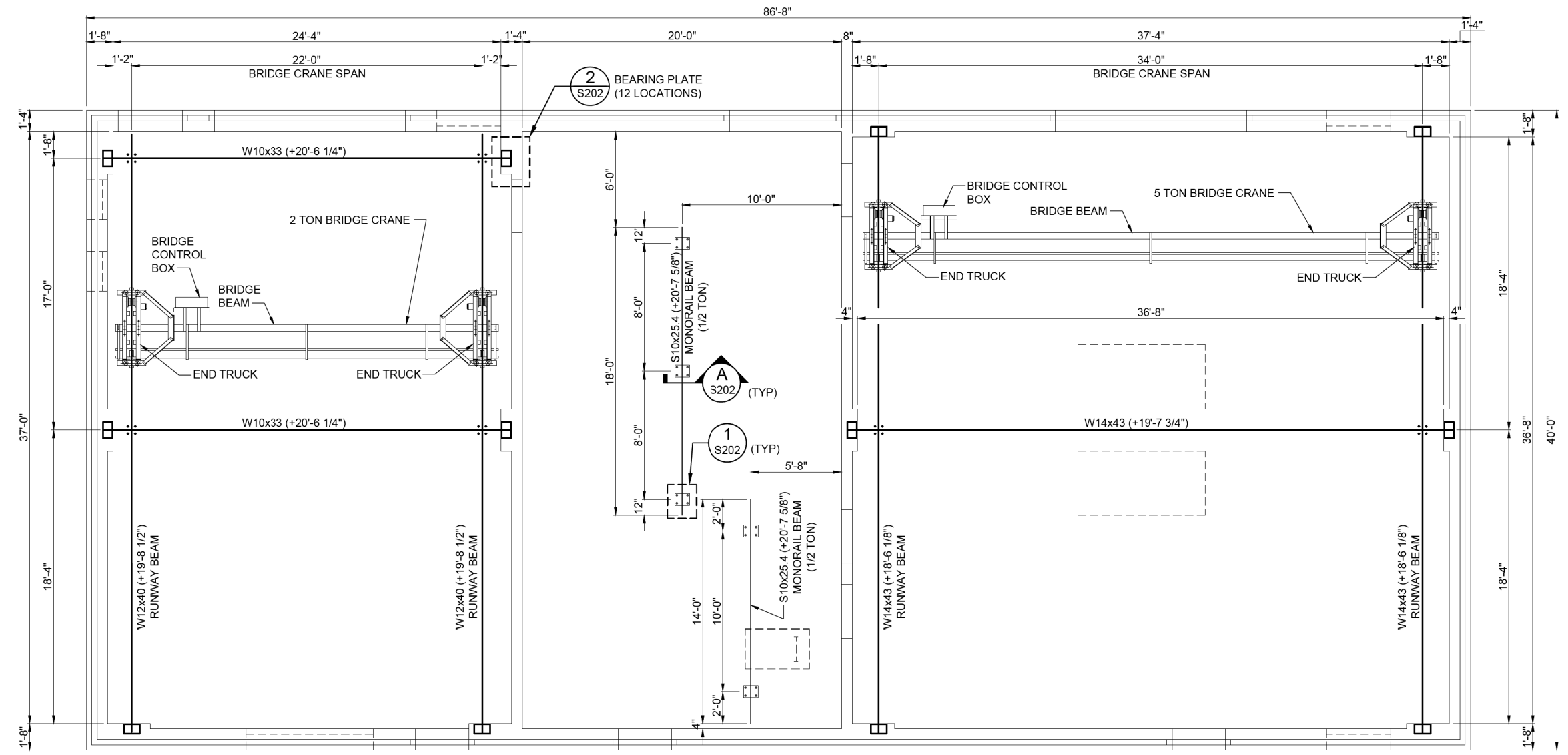
WELL HOUSE BUILDING - FRAMING PLAN & DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED SHEET 1 OF 3 SHEETS STA. TO STA.

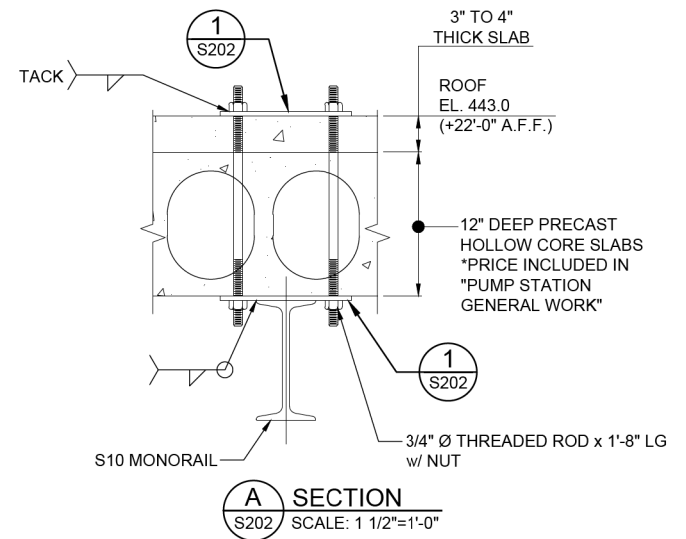
F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 102
CONTRACT NO. 76C99			ILLINOIS FED. AID PROJECT	

S201

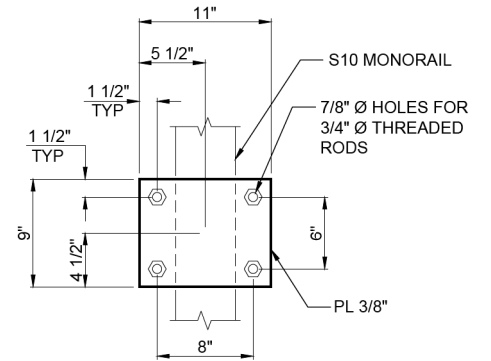
*NOTE:
 1) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



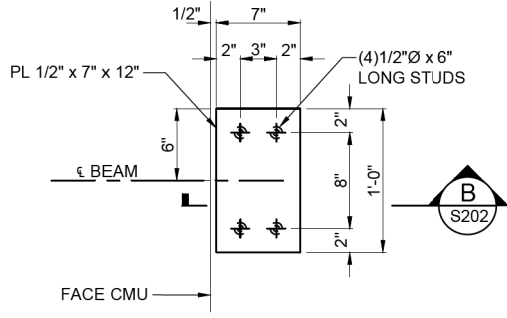
MONORAIL AND BRIDGE CRANE FRAMING PLAN
 SCALE: 1/4" = 1'-0"



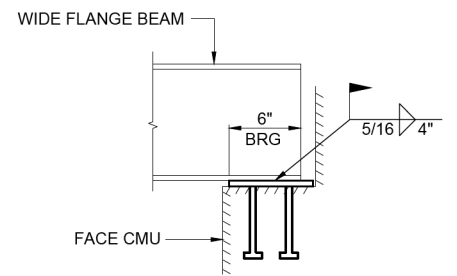
A SECTION
 S202 SCALE: 1 1/2" = 1'-0"



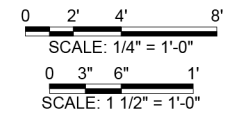
1 DETAIL - PLAN
 S202 SCALE: 1 1/2" = 1'-0"



2 BEARING PLATE DETAIL
 S202 SCALE: 1 1/2" = 1'-0"



B SECTION
 S202 SCALE: 1 1/2" = 1'-0"



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KLINGNER & ASSOCIATES, P.C.
 Engineers • Architects • Surveyors

USER NAME = bgj
 PLOT SCALE = 40.0000' / in.
 PLOT DATE = 1/13/2015

DESIGNED - ADL
 DRAWN - EAW
 CHECKED -
 DATE -

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

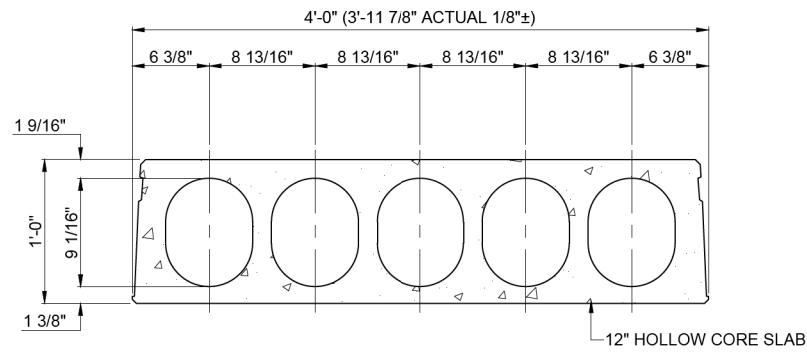
WELL HOUSE BUILDING - FRAMING PLAN & DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED SHEET 2 OF 3 SHEETS STA. TO STA.

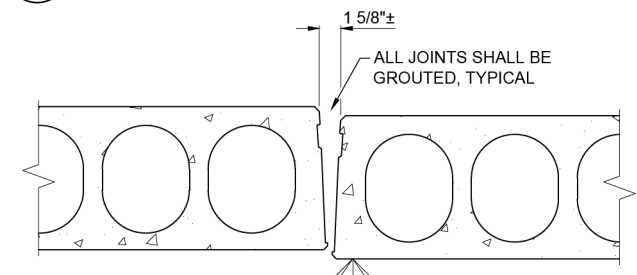
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	103
CONTRACT NO. 76C99				

ILLINOIS FED. AID PROJECT

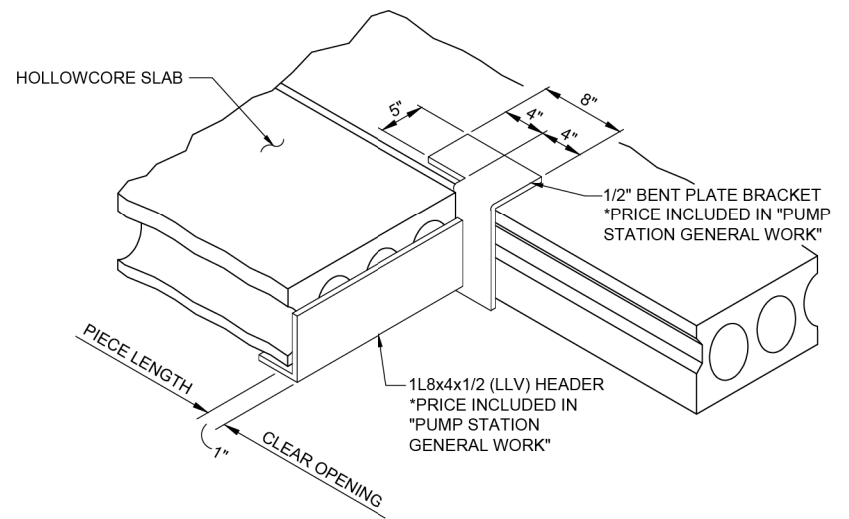
S202



1 TYPICAL HOLLOW CORE SLAB DETAIL
 S301 SCALE: 1 1/2" = 1'-0" APPROXIMATE WEIGHT: 77 PSF

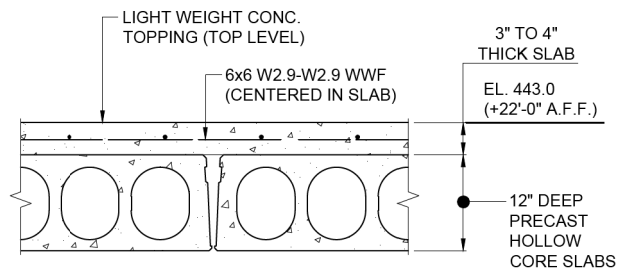


2 TYPICAL HOLLOW CORE JOINT DETAIL
 S301 SCALE: 1 1/2" = 1'-0"

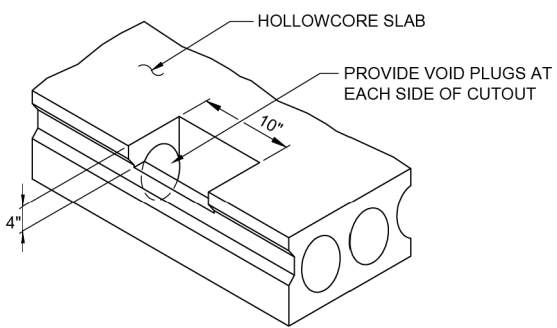


3 TYPICAL HEADER DETAIL
 S301 SCALE: NONE

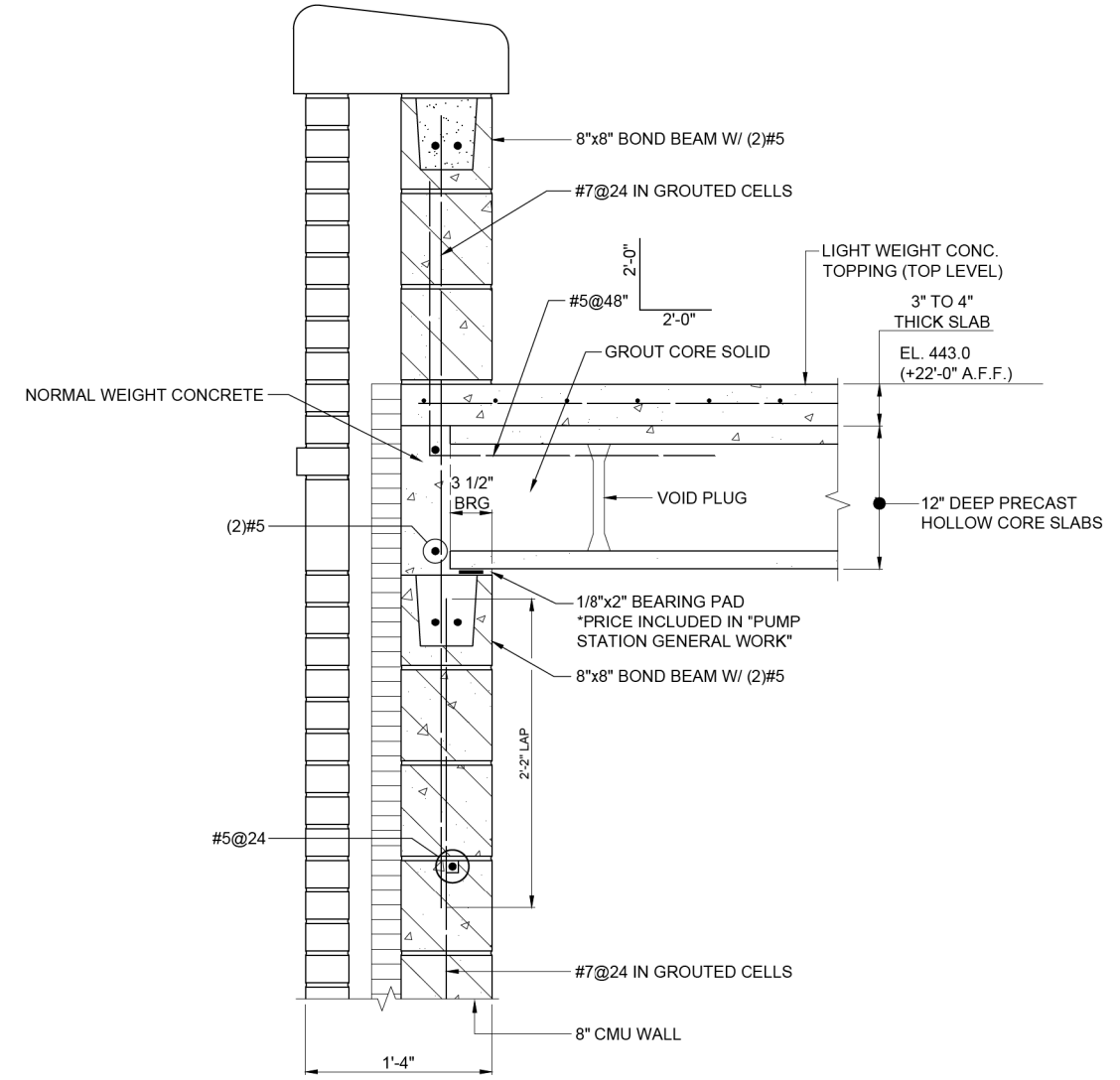
- *NOTE:
- 1) THE PRICE OF ALL MASONRY WORK (CMU, BRICK, REINF., ETC.) SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 2) THE PRICE OF ALL HOLLOWCORE SLABS AND CONCRETE TOPPING SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



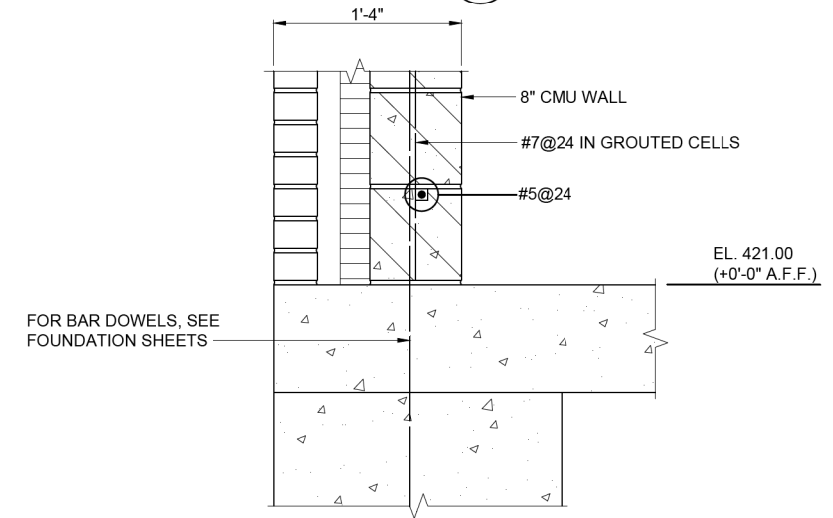
4 TYPICAL SLAB CONSTRUCTION
 S301 SCALE: 1 1/2" = 1'-0"



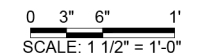
5 TYPICAL CUTOUT DETAIL
 S301 SCALE: NONE



A SECTION
 S301 SCALE: 1 1/2" = 1'-0"



B SECTION
 S301 SCALE: 1 1/2" = 1'-0"

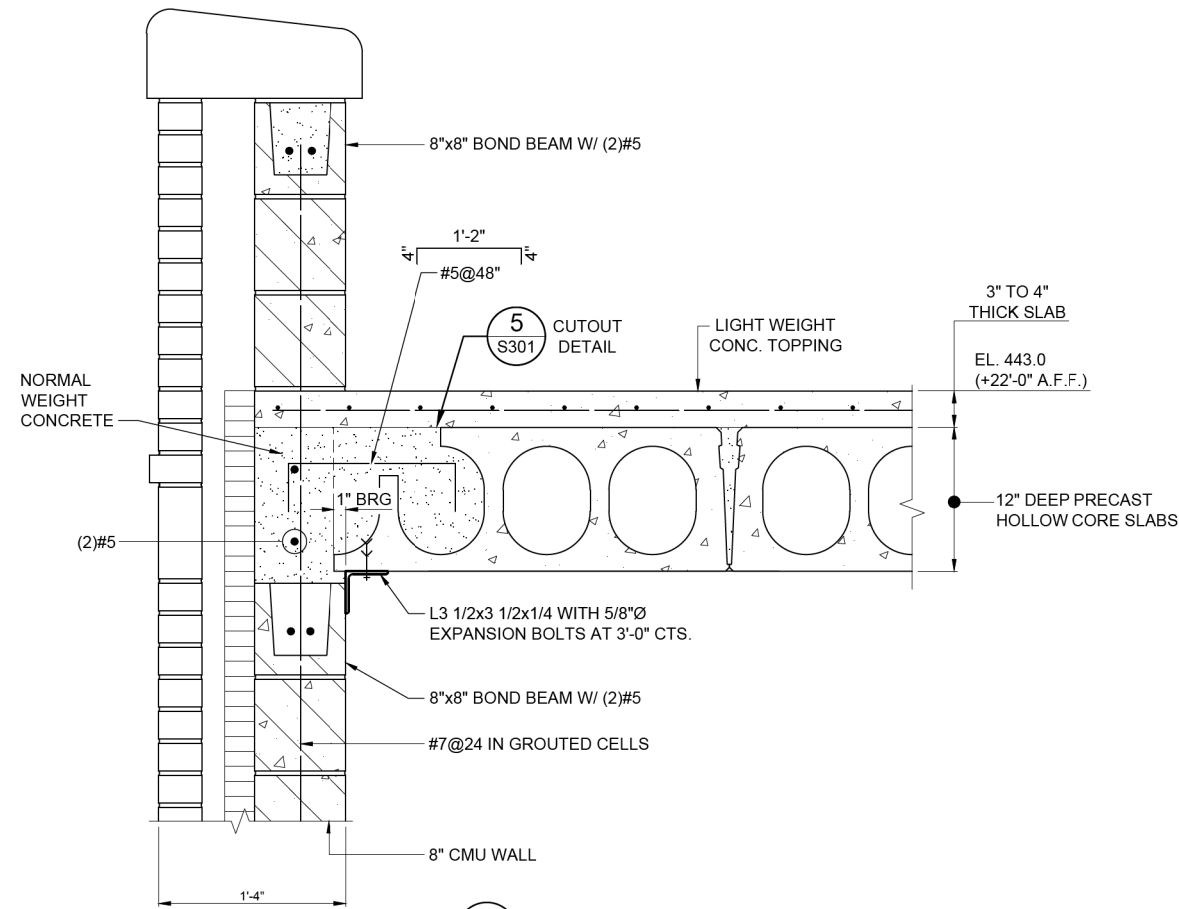


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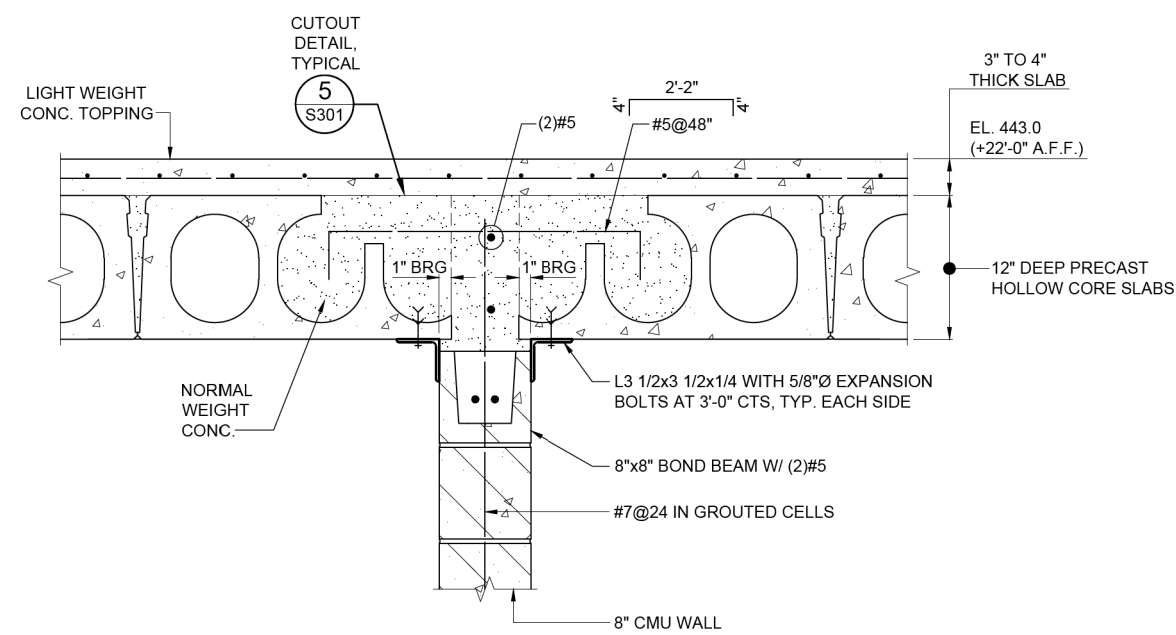
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PLOT SCALE = 40.0000' / in.	DRAWN - ADL	REVISED -
PLOT DATE = 1/13/2015	CHECKED -	REVISED -
	DATE -	REVISED -

*NOTE:

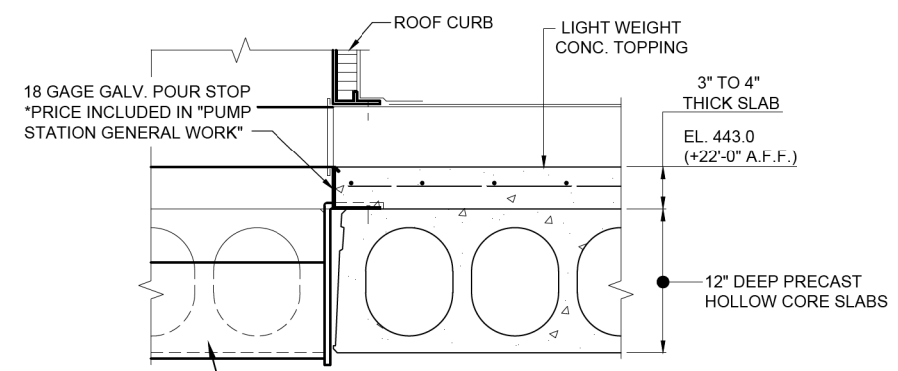
- 1) THE PRICE OF ALL MASONRY WORK (CMU, BRICK, REINF., ETC.) SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
- 2) THE PRICE OF ALL HOLLOWCORE SLABS AND CONCRETE TOPPING SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
- 3) THE PRICE OF GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



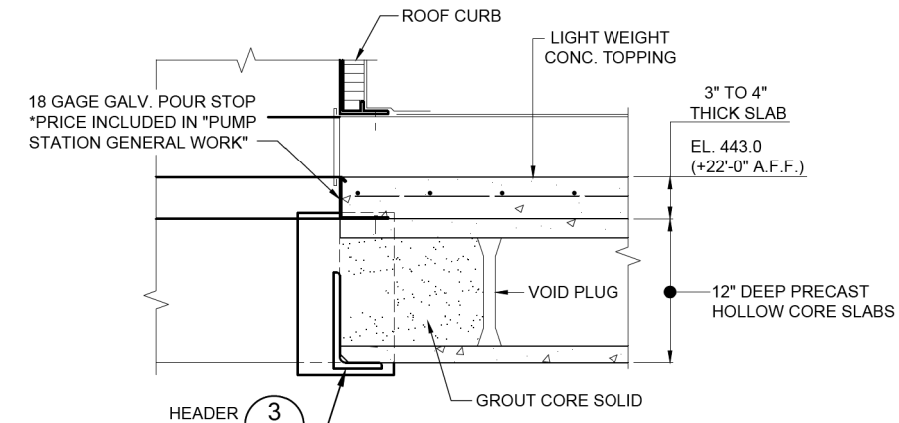
A SECTION
S302 SCALE: 1 1/2"=1'-0"



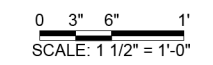
B SECTION
S302 SCALE: 1 1/2"=1'-0"



C SECTION
S302 SCALE: 1 1/2"=1'-0"



D SECTION
S302 SCALE: 1 1/2"=1'-0"



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KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = bgj
PLOT SCALE = 48.0000' / in.
PLOT DATE = 1/13/2015

DESIGNED - ADL
DRAWN - ADL
CHECKED -
DATE -

REVISED -
REVISED -
REVISED -
REVISED -

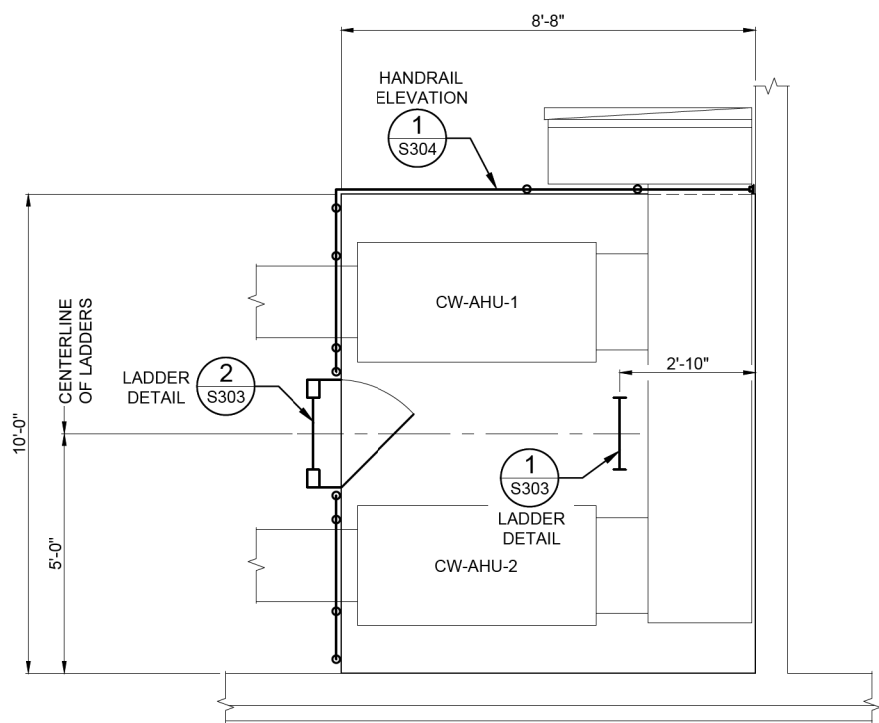
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WELL HOUSE BUILDING - STRUCTURAL DETAILS
MISSOURI AVENUE DEEP WELL FACILITY**

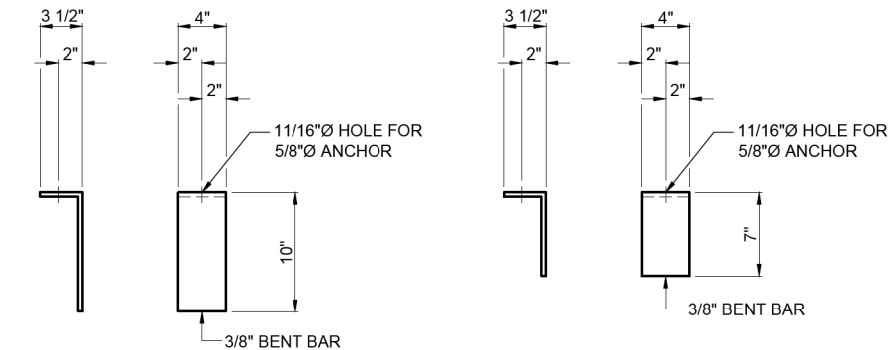
SCALE: AS NOTED SHEET 2 OF 10 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	106
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

S302

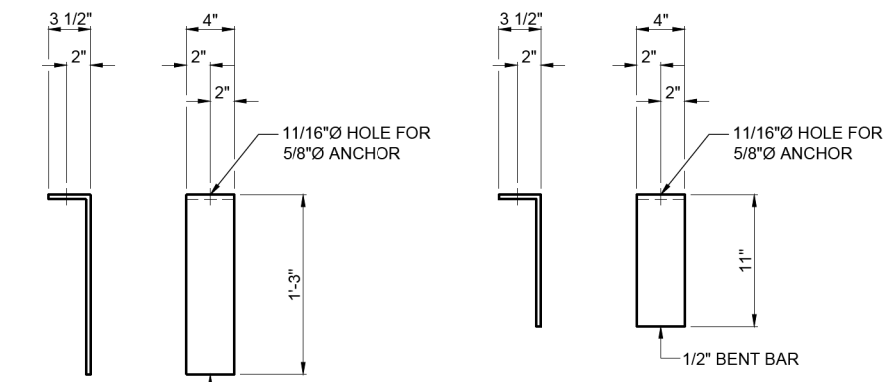


7 MEZZANINE HANDRAIL LAYOUT
S303 SCALE: 1/2"=1'-0"
MEZZANINE FLOOR EL. 429.67 (+8'-8" A.F.F.)



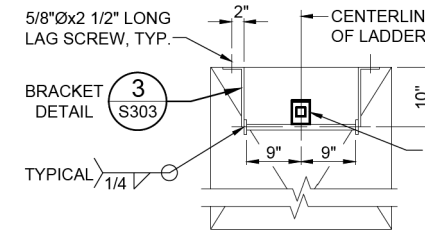
3 BRACKET DETAIL
S303 SCALE: 1 1/2"=1'-0"

4 BRACKET DETAIL
S303 SCALE: 1 1/2"=1'-0"

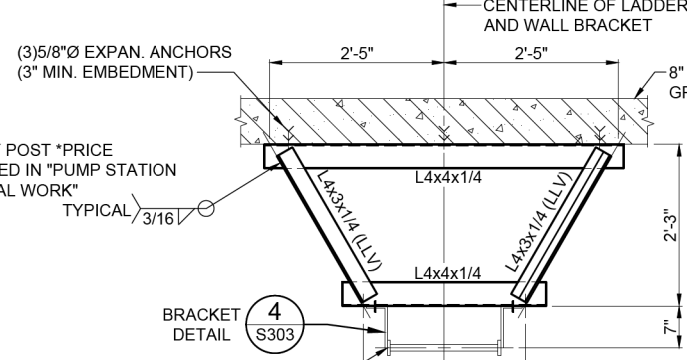


5 BRACKET DETAIL
S303 SCALE: 1 1/2"=1'-0"

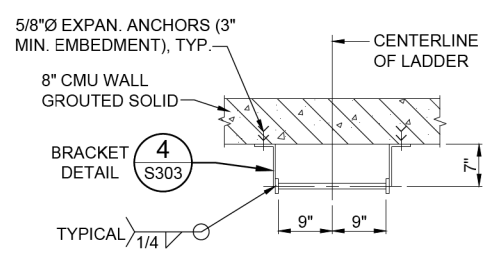
6 BRACKET DETAIL
S303 SCALE: 1 1/2"=1'-0"



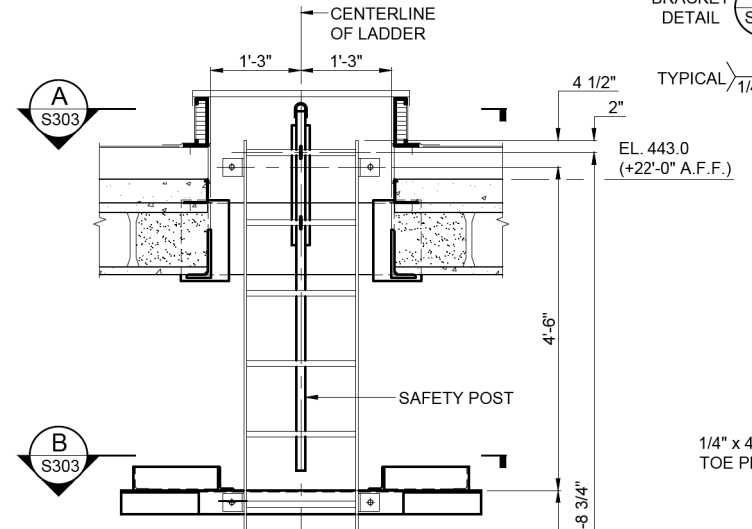
A SECTION
S303 SCALE: 3/4"=1'-0"



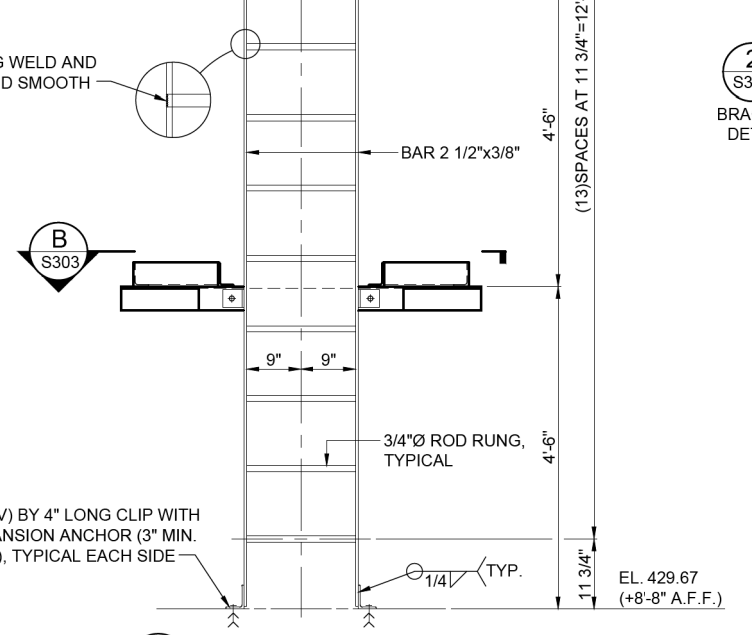
B SECTION
S303 SCALE: 3/4"=1'-0"



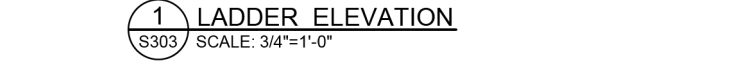
C SECTION
S303 SCALE: 3/4"=1'-0"



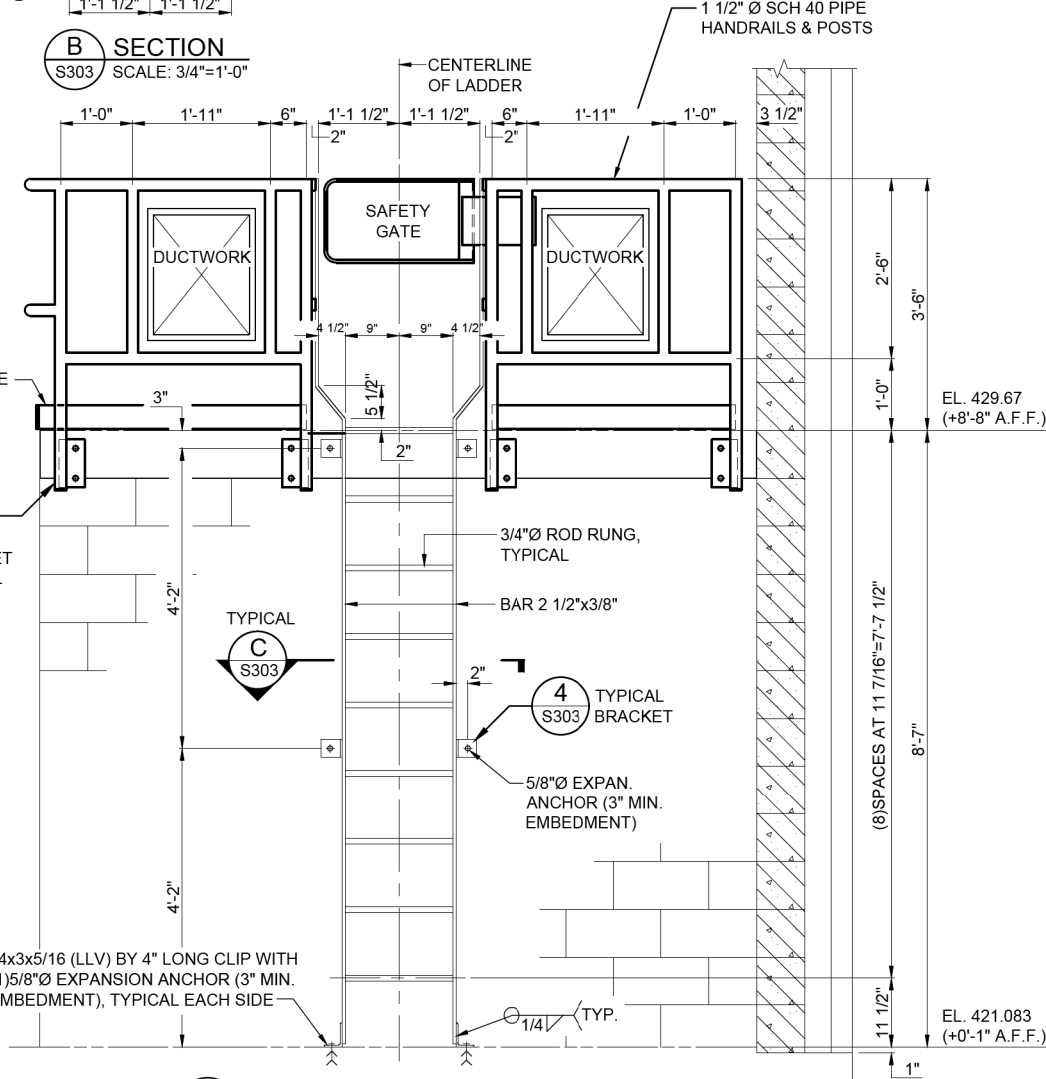
A SECTION
S303



B SECTION
S303

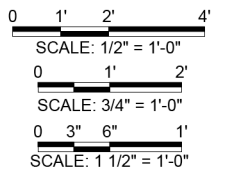


1 LADDER ELEVATION
S303 SCALE: 3/4"=1'-0"

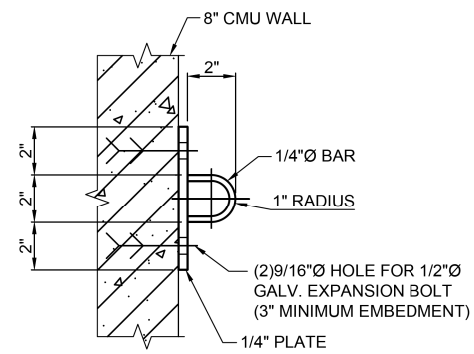


2 LADDER & HANDRAIL ELEVATION
S303 SCALE: 3/4"=1'-0"

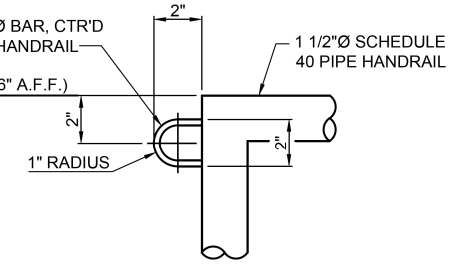
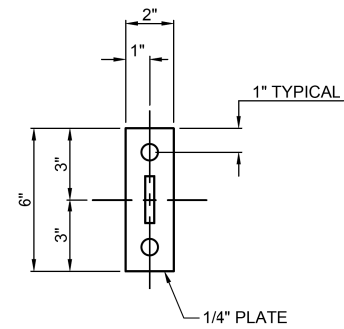
- *NOTE:
- 1) THE PRICE OF ALL ALUMINUM MATERIAL, SHAPES AND GRATING SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 2) THE PRICE OF SAFETY GATE SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 3) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



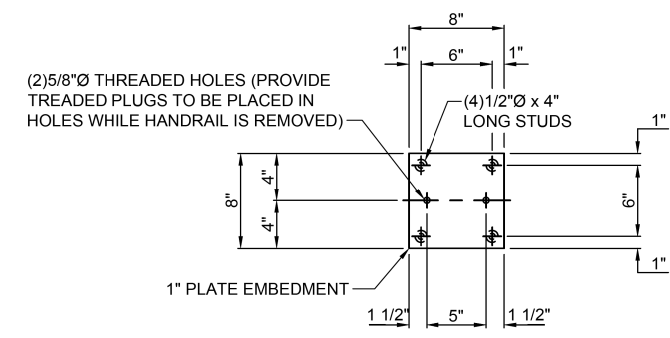
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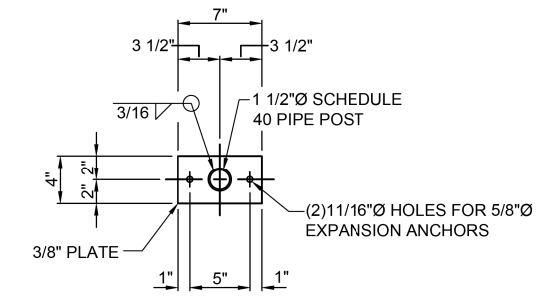
1 CHAIN BRACKET DETAIL
S306 SCALE: 3"=1'-0"



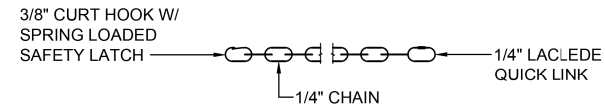
2 CHAIN LOOP DETAIL
S306 SCALE: 3"=1'-0"



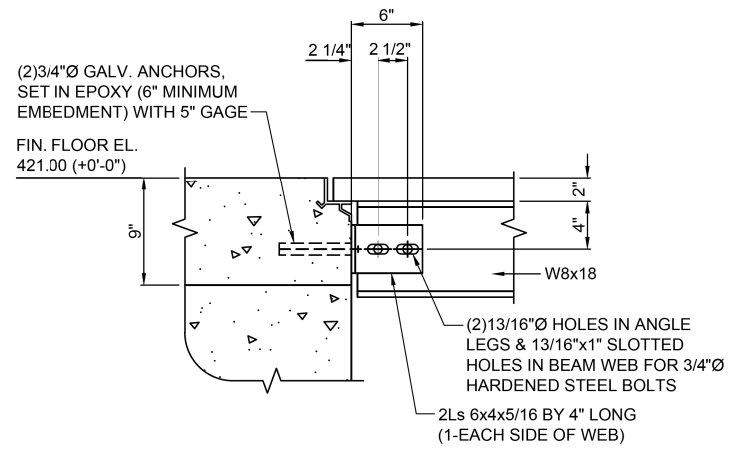
4 EMBEDMENT PLATE
S306 SCALE: 1 1/2"=1'-0"



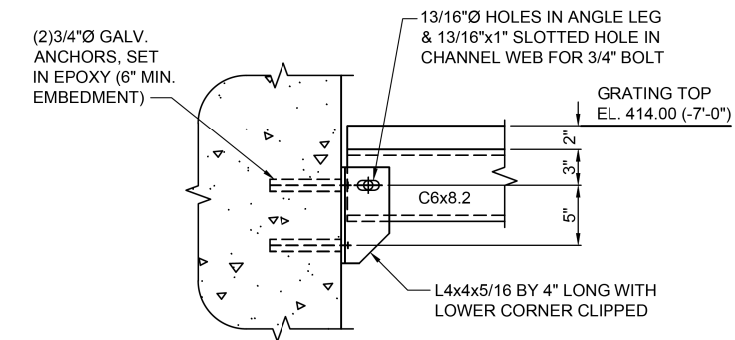
5 HANDRAIL BASE PLATE
S306 SCALE: 1 1/2"=1'-0"



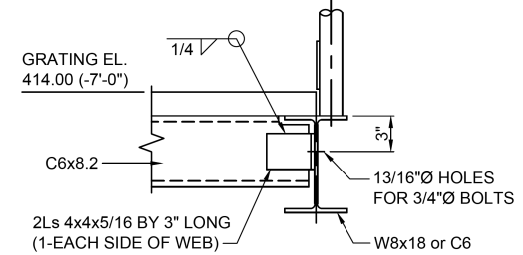
3 CHAIN DETAIL
S306 SCALE: 3"=1'-0"



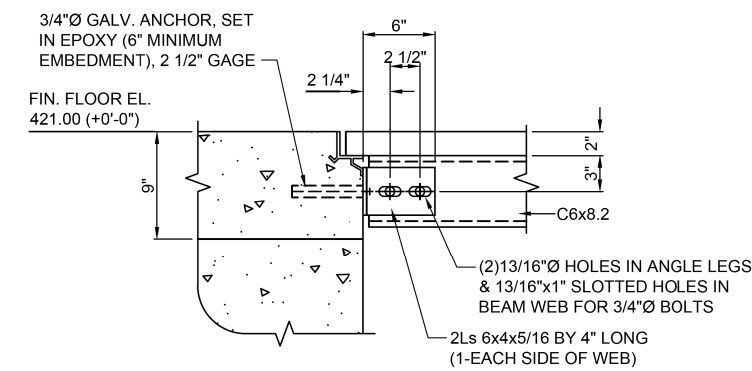
6 END CONNECTION DETAIL
S306 SCALE: 1 1/2"=1'-0"



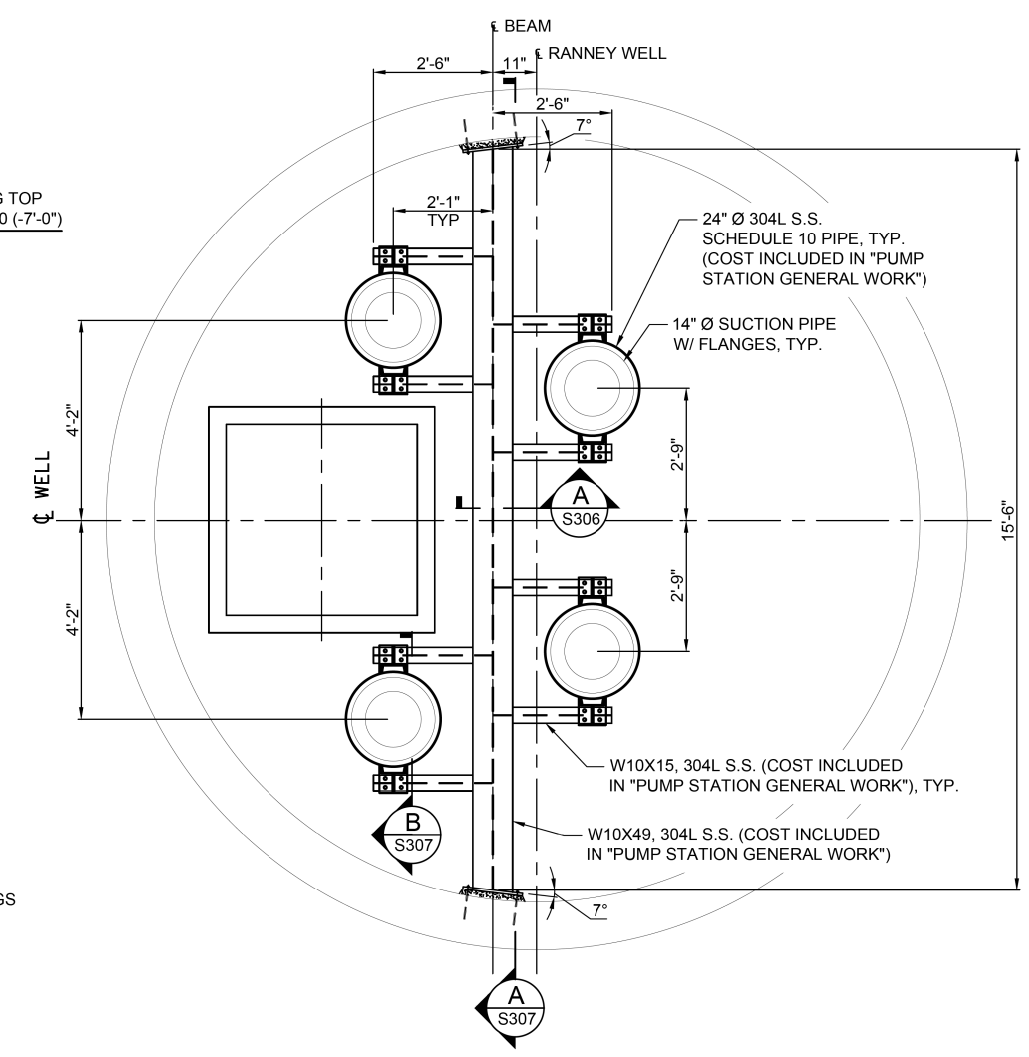
7 END CONNECTION DETAIL
S306 SCALE: 1 1/2"=1'-0"



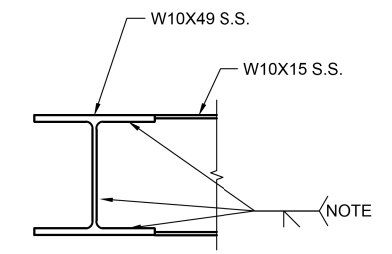
8 END CONNECTION DETAIL
S306 SCALE: 1 1/2"=1'-0"



9 END CONNECTION DETAIL
S306 SCALE: 1 1/2"=1'-0"

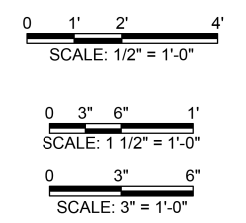


10 DETAIL - SEISMIC RESTRAINT (4 LOCATIONS)
S306 SCALE: 1/2"=1'-0"



A SECTION
S306 SCALE: 1 1/2"=1'-0"

NOTE:
1) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
2) THE PRICE OF SEISMIC RESTRAINTS SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"

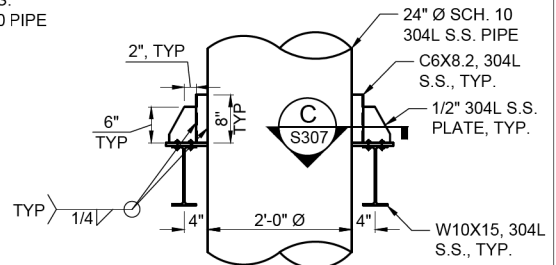


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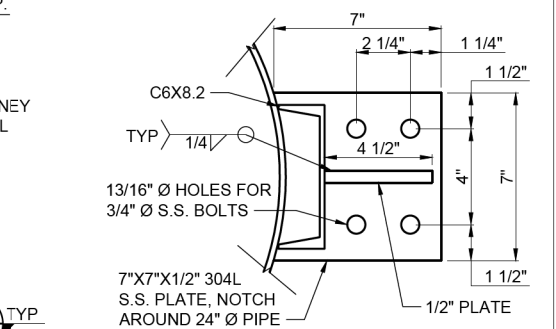
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PLOT DATE = 1/14/2015	CHECKED -	REVISED -
	DATE -	REVISED -

WELL HOUSE BUILDING - STRUCTURAL DETAILS		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
MISSOURI AVENUE DEEP WELL FACILITY		55/70/64	82-4T-1	ST. CLAIR	185	110
SCALE: AS NOTED SHEET 6 OF 10 SHEETS STA. TO STA.		CONTRACT NO. 76C99				

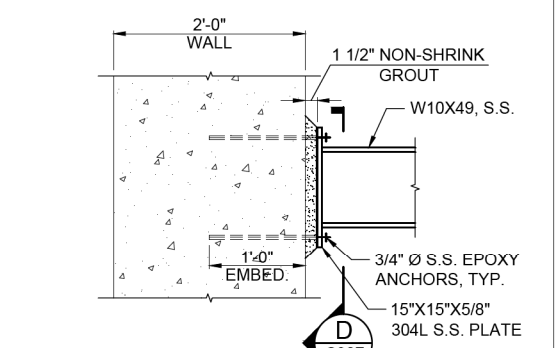
- *NOTE:
- 1) THE PRICE OF ALL ALUMINUM MATERIAL, SHAPES AND GRATING SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 2) THE PRICE OF ALL STAINLESS STEEL BOLTS AND MATERIAL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 3) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 4) THE PRICE OF SEISMIC RESTRAINTS SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



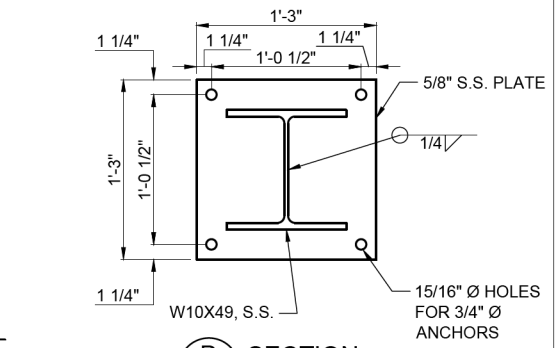
B SECTION
S307 SCALE: 3/4"=1'-0"



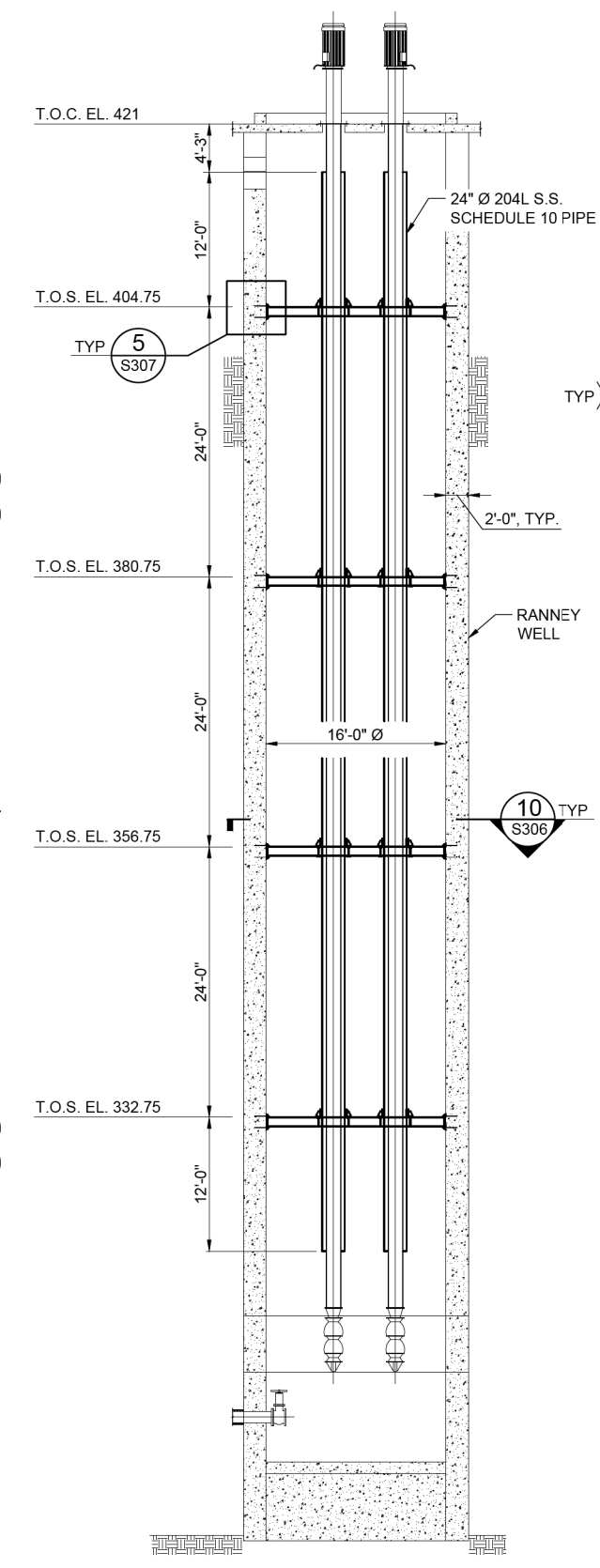
C SECTION
S307 SCALE: 3"=1'-0"



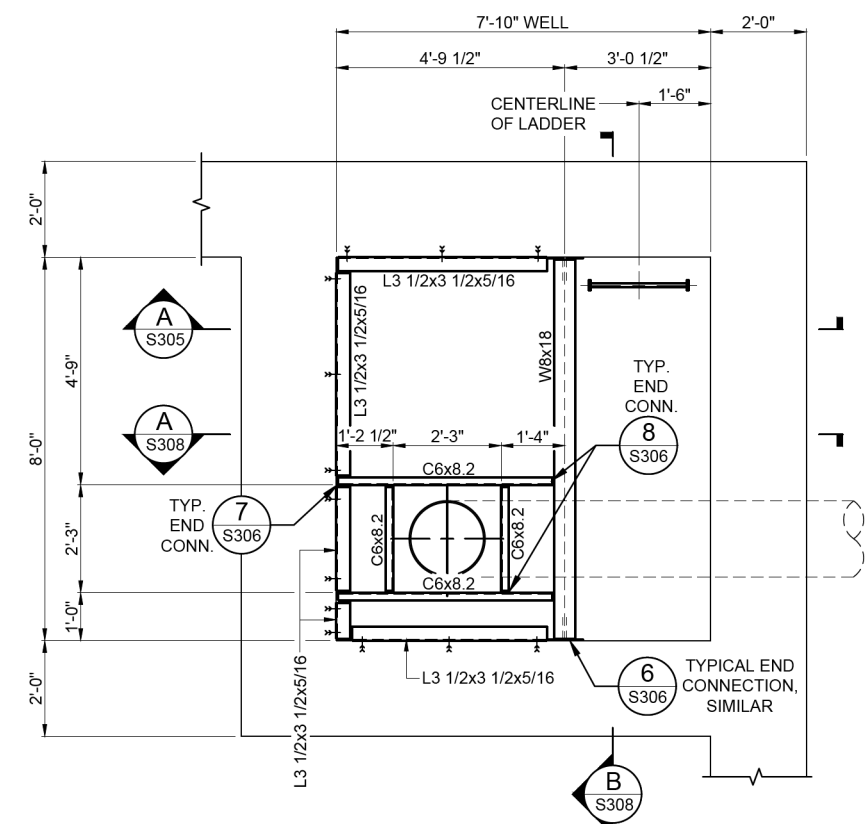
D SECTION
S307 SCALE: 1 1/2"=1'-0"



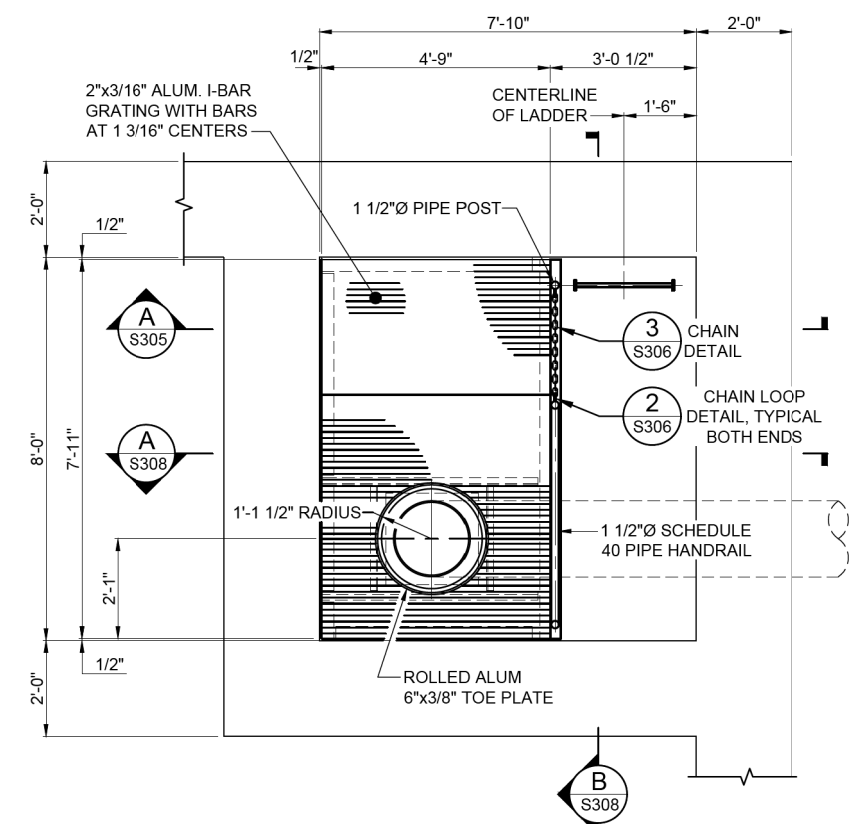
5 DETAIL
S307 SCALE: 1"=1'-0"



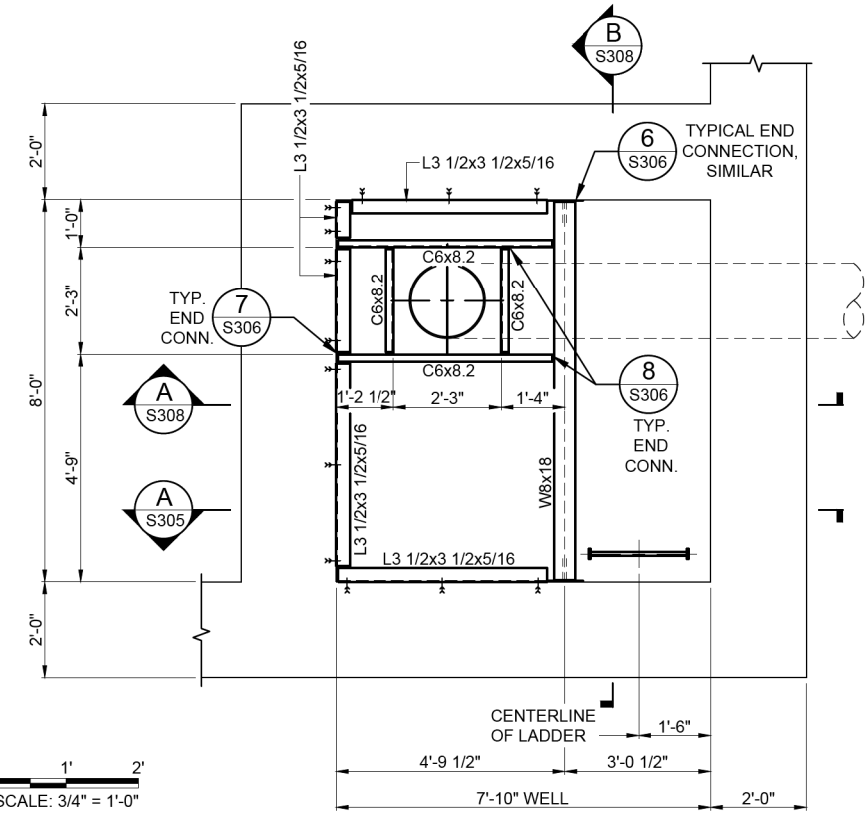
A SECTION - SEISMIC RESTRAINT
S307 SCALE: 1/8"=1'-0"



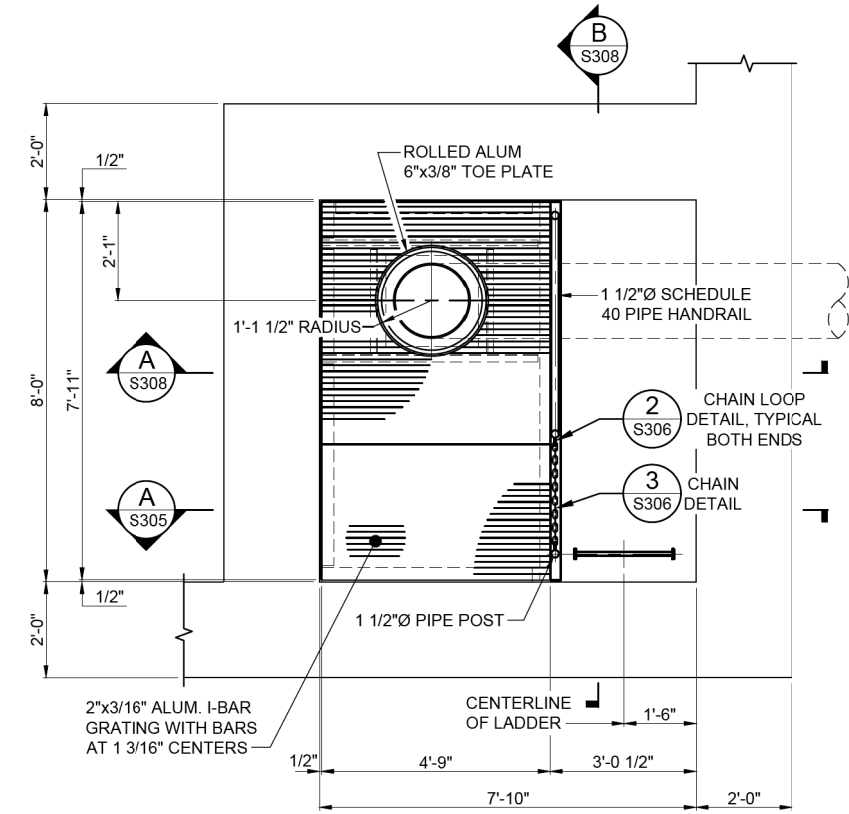
1 SOUTHEAST COLLECTOR WELL FRAMING PLAN
S307 SCALE: 1/2"=1'-0"
GRATING TOP EL. 414.00 (-7'-0") TOP OF FRAMING (-7'-2"), TYPICAL U.N.O.



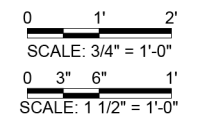
2 SOUTHEAST COLLECTOR WELL FRAMING PLAN
S307 SCALE: 1/2"=1'-0"
GRATING TOP EL. 414.00 (-7'-0")



3 SOUTHEAST COLLECTOR WELL FRAMING PLAN
S307 SCALE: 1/2"=1'-0"
GRATING TOP EL. 414.00 (-7'-0")



4 SOUTHEAST COLLECTOR WELL FRAMING PLAN
S307 SCALE: 1/2"=1'-0"
GRATING TOP EL. 414.00 (-7'-0")



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KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = bgj	DESIGNED - ADL	REVISED - AMS - 9/25/14
PLOT SCALE = 40.0000' / in.	DRAWN - ADL	REVISED -
PLOT DATE = 1/13/2015	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

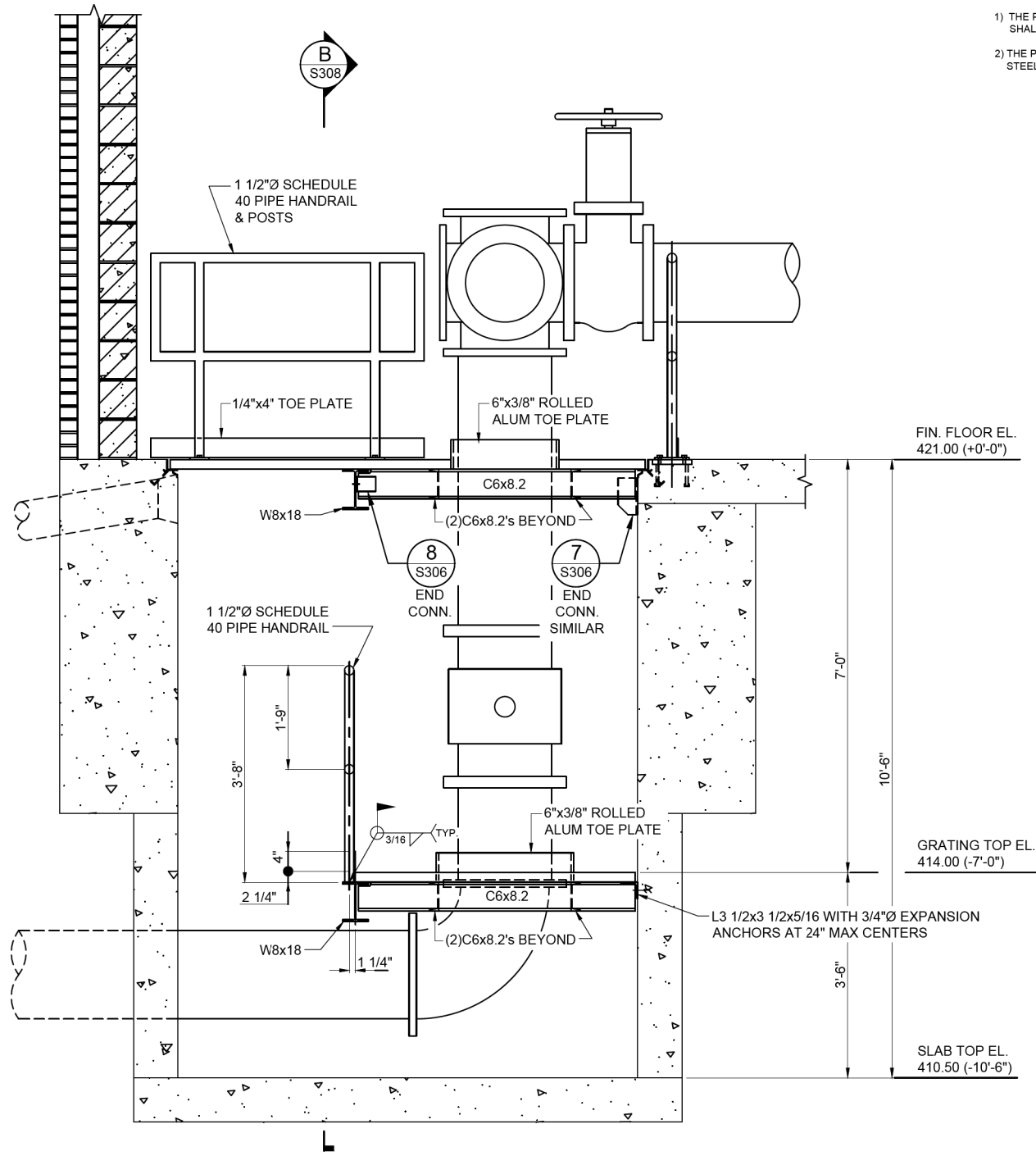
WELL HOUSE BUILDING - STRUCTURAL DETAILS
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: AS NOTED SHEET 7 OF 10 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 111
CONTRACT NO. 76C99			ILLINOIS FED. AID PROJECT	

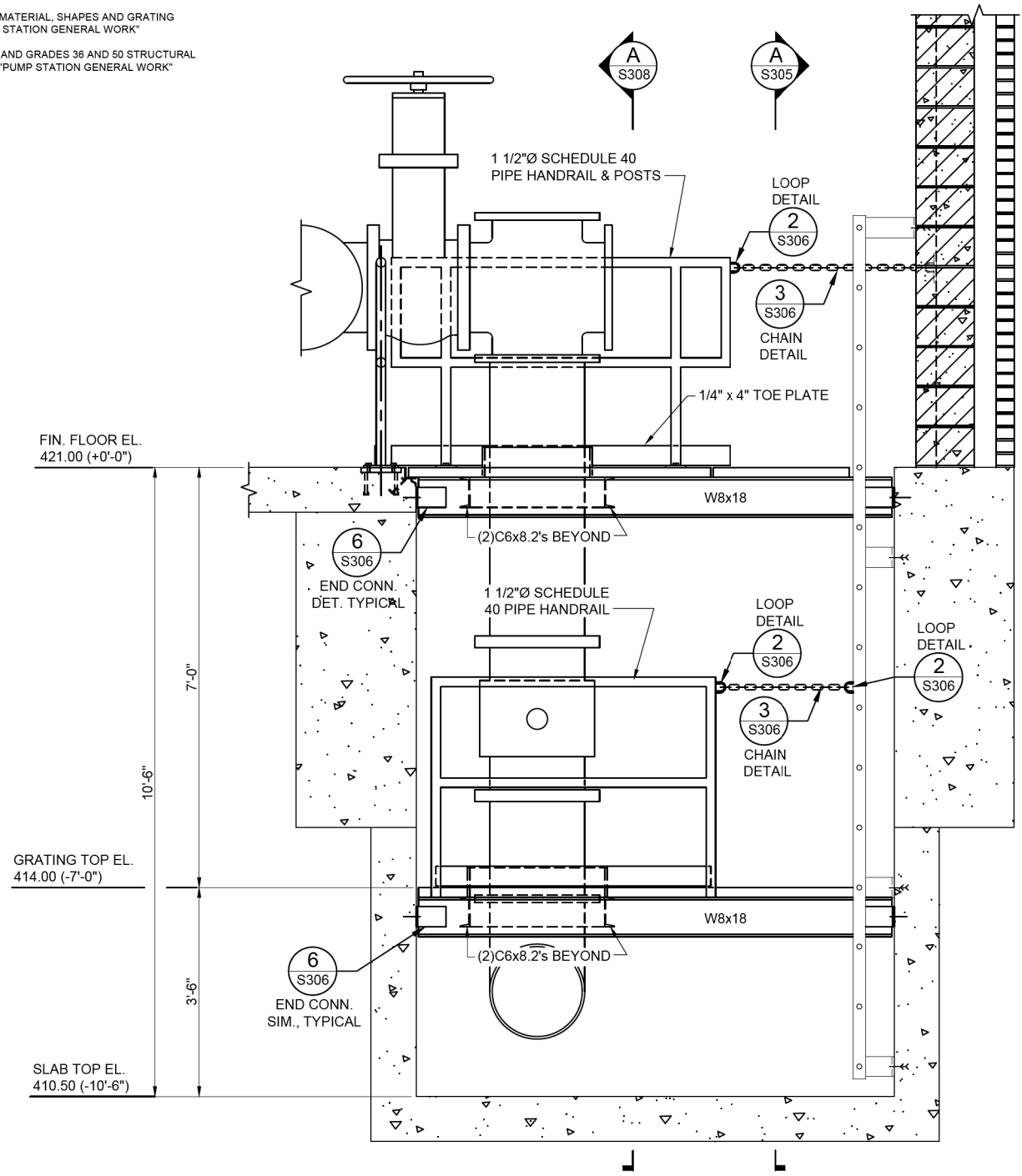
S307

***NOTE:**

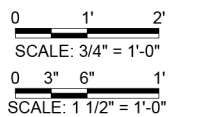
- 1) THE PRICE OF ALL ALUMINUM MATERIAL, SHAPES AND GRATING SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
- 2) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



A SECTION
S308 SCALE: 3/4"=1'-0"



B SECTION
S308 SCALE: 3/4"=1'-0"



FILE NAME = G:\115\1150223\Work - 6\CADD Sheets\0876099-struct\KLA_S308.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = bgj
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PLOT DATE = 1/13/2015

DESIGNED - ADL	REVISED -
DRAWN - ADL	REVISED -
CHECKED -	REVISED -
DATE -	REVISED -

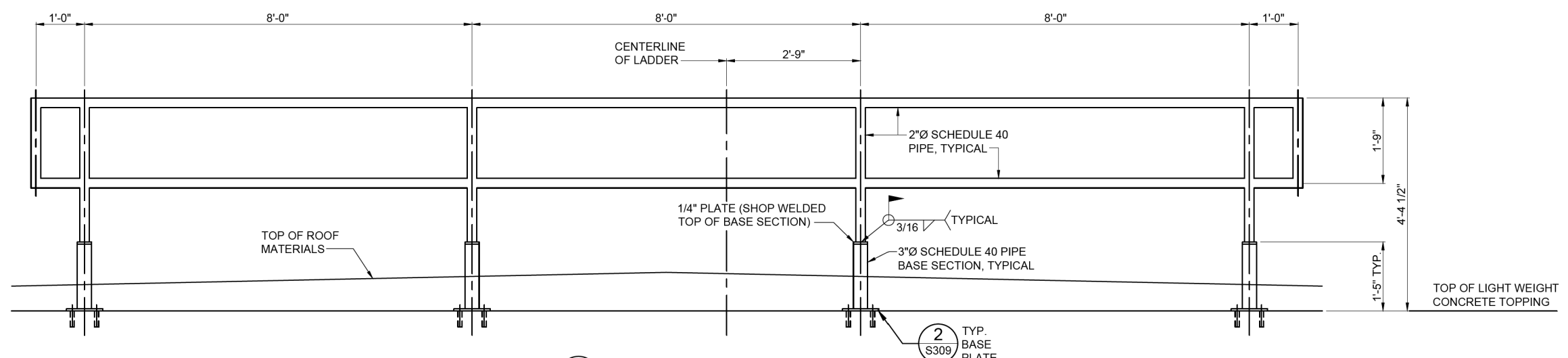
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WELL HOUSE BUILDING - STRUCTURAL DETAILS
MISSOURI AVENUE DEEP WELL FACILITY**

SCALE: AS NOTED SHEET 8 OF 10 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	112
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

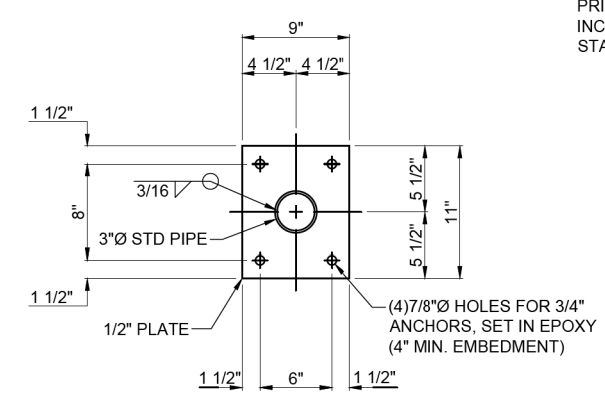
S308



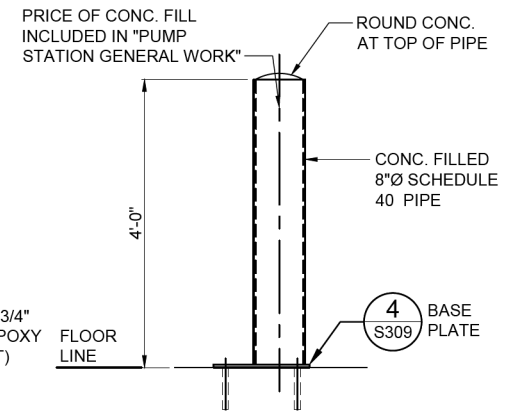
- *NOTE:
- 1) THE PRICE OF ACCESS DOOR AND FRAME SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 2) THE PRICE OF ALL HOLLOWCORE SLABS AND CONCRETE TOPPING SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 3) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 60 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"

1 GUARDRAIL ELEVATION
S309 SCALE: 3/4" = 1'-0"

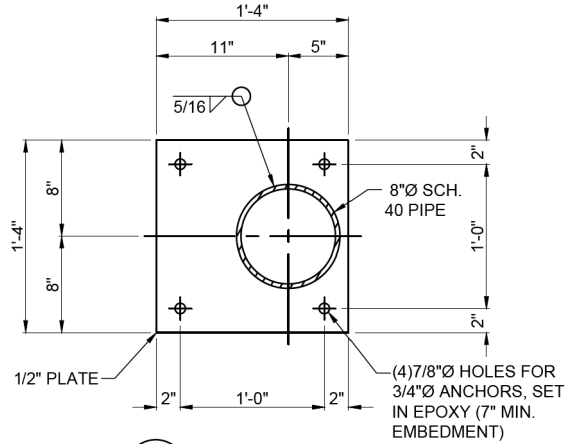
NOTE: PROVIDE WEEP HOLES IN GUARDRAIL POSTS AND RAILS



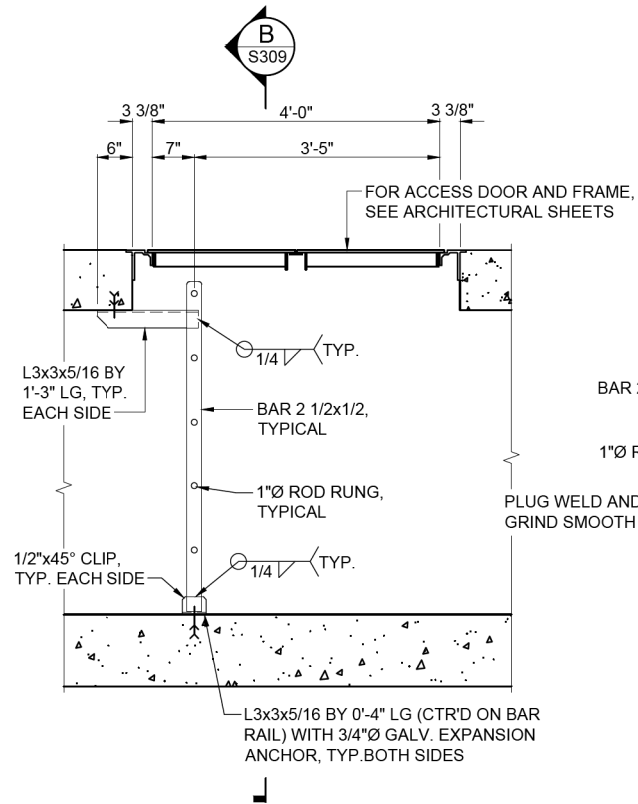
2 POST BASE PLATE
S309 SCALE: 1 1/2" = 1'-0"



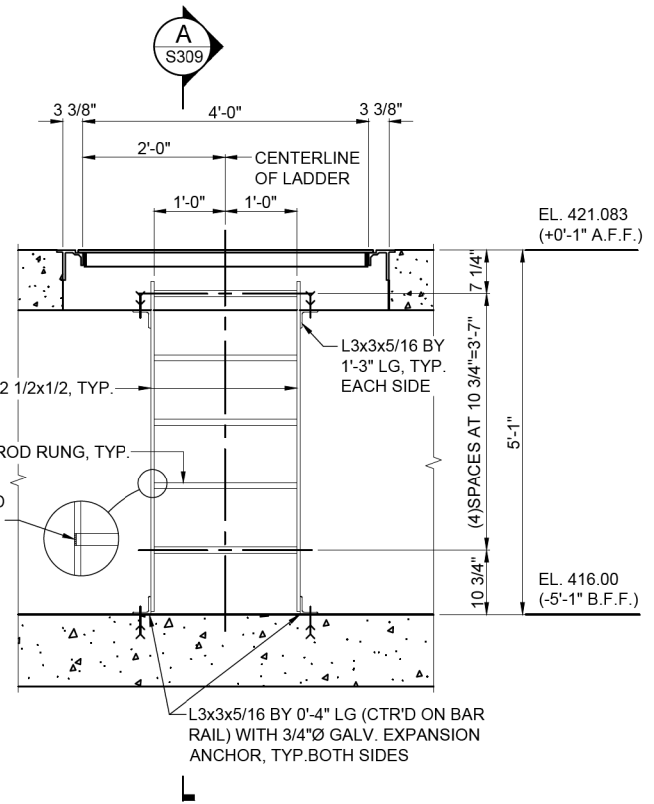
3 BOLLARD DETAIL
S309 SCALE: 3/4" = 1'-0"



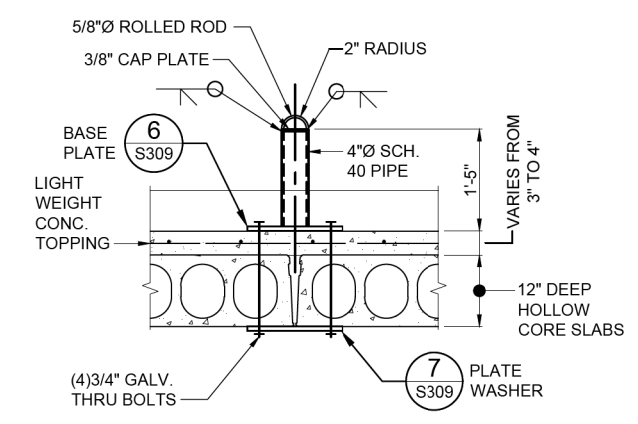
4 BASE PLATE
S309 SCALE: 1 1/2" = 1'-0"



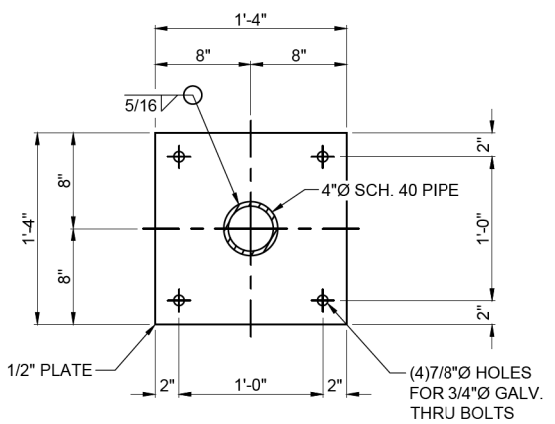
A SECTION
S309 SCALE: 3/4" = 1'-0"



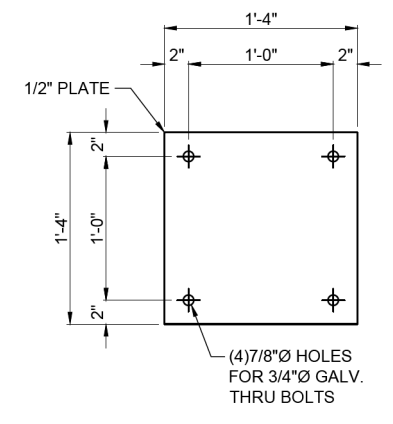
B SECTION
S309 SCALE: 3/4" = 1'-0"



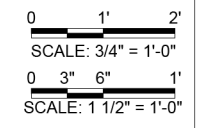
5 TIE-OFF DETAIL
S309 SCALE: 3/4" = 1'-0"



6 BASE PLATE
S309 SCALE: 1 1/2" = 1'-0"



7 PLATE WASHER
S309 SCALE: 1 1/2" = 1'-0"



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KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = bgj
PLOT SCALE = 40.0000' / in.
PLOT DATE = 1/13/2015

DESIGNED - ADL	REVISED -
DRAWN - ADL	REVISED -
CHECKED -	REVISED -
DATE -	REVISED -

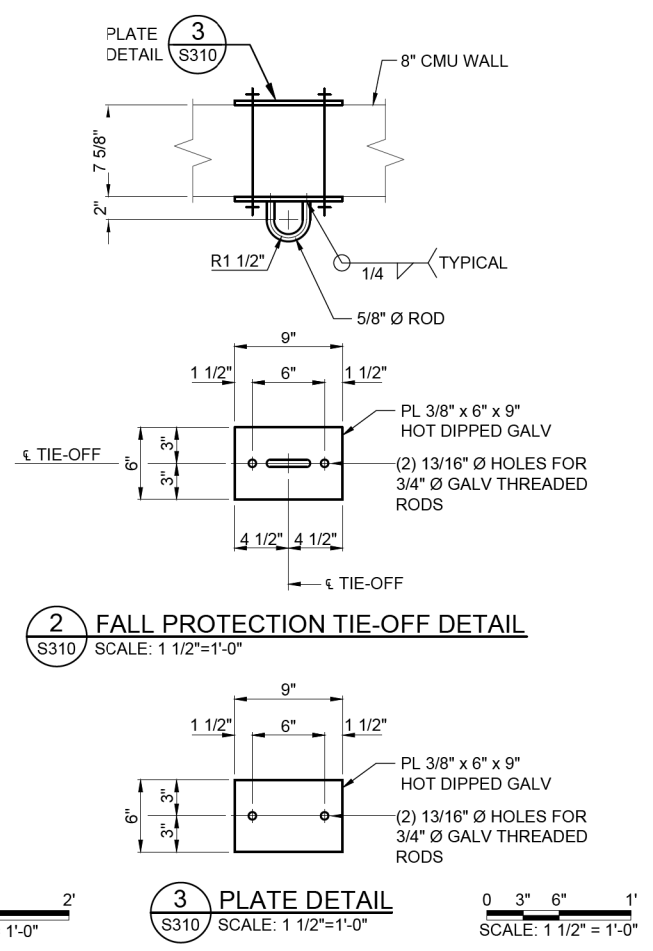
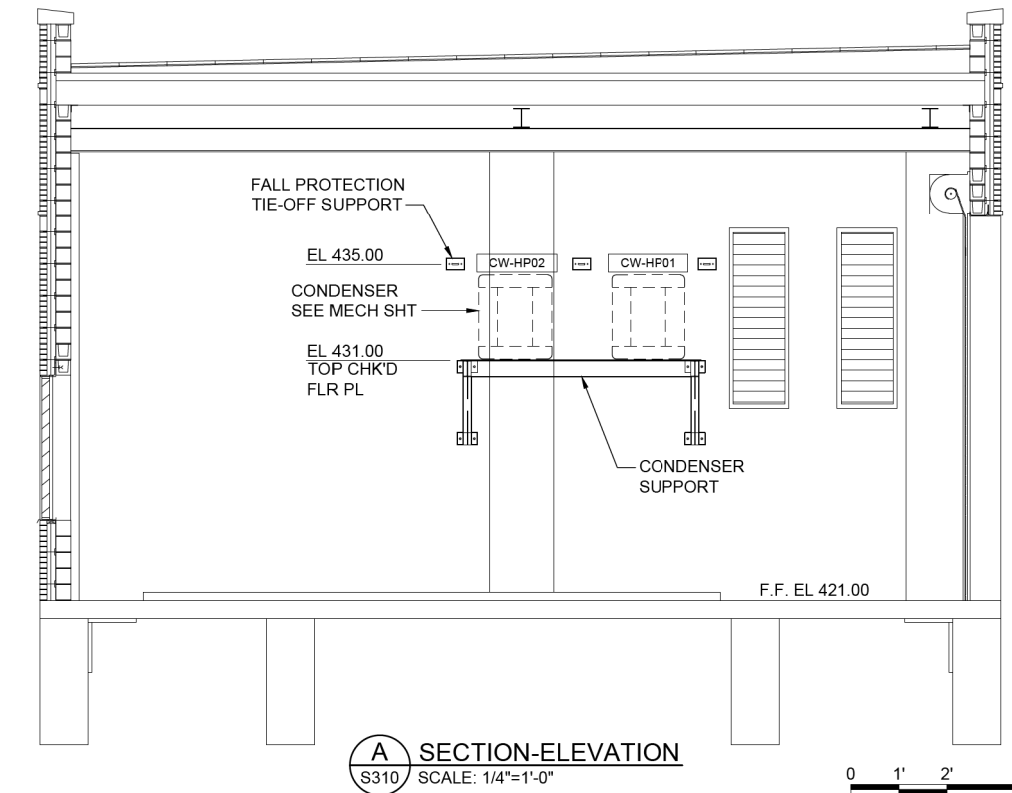
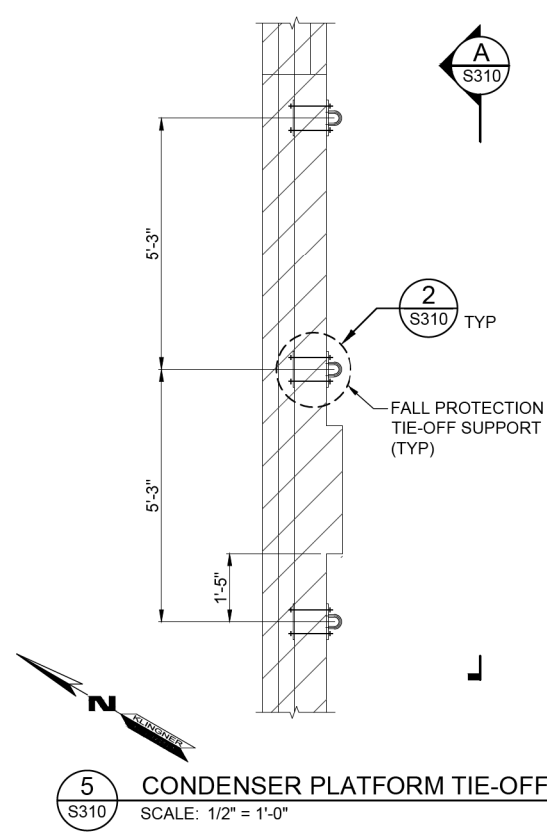
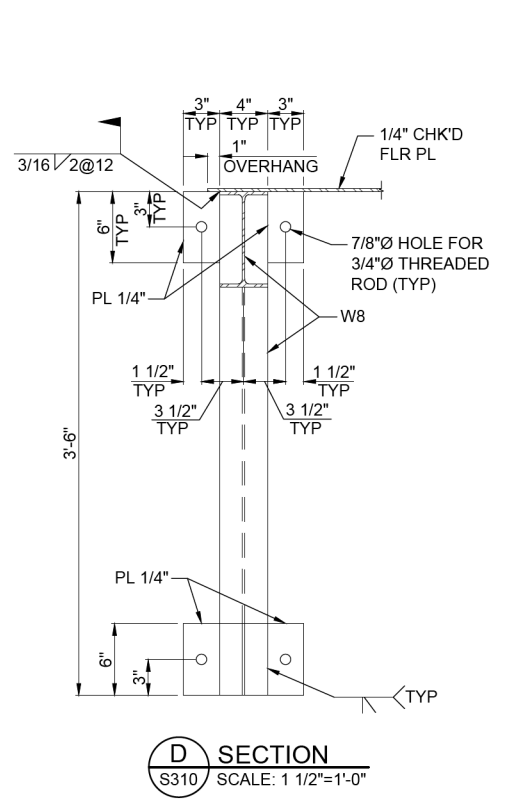
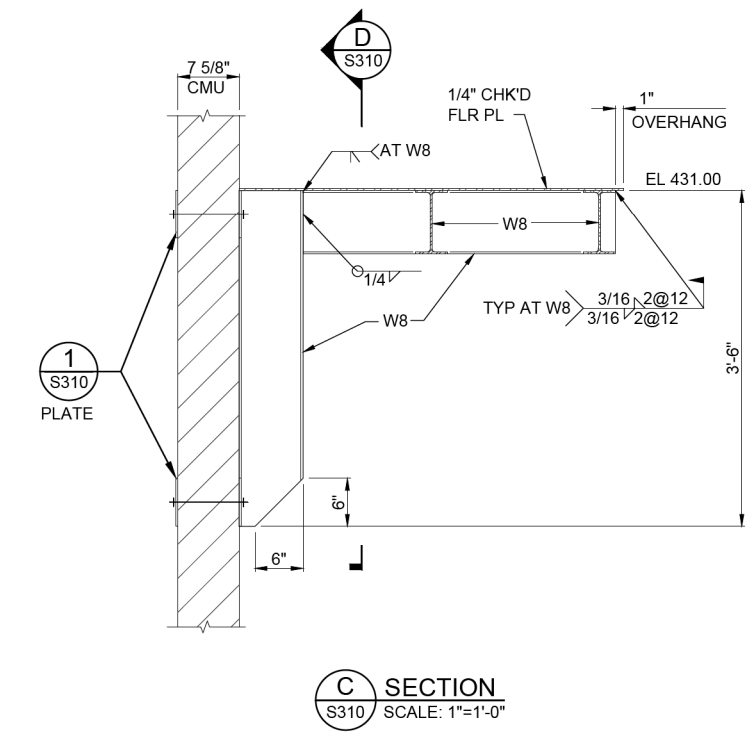
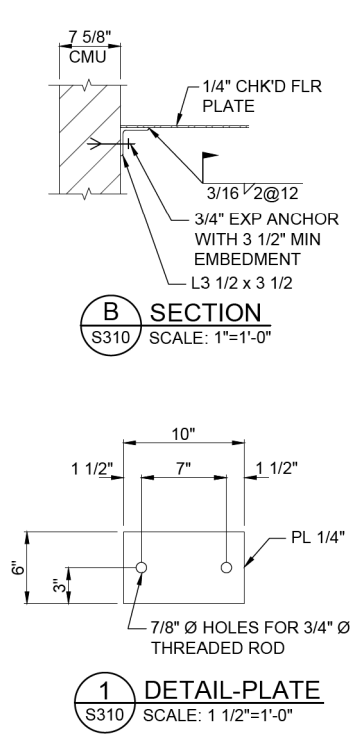
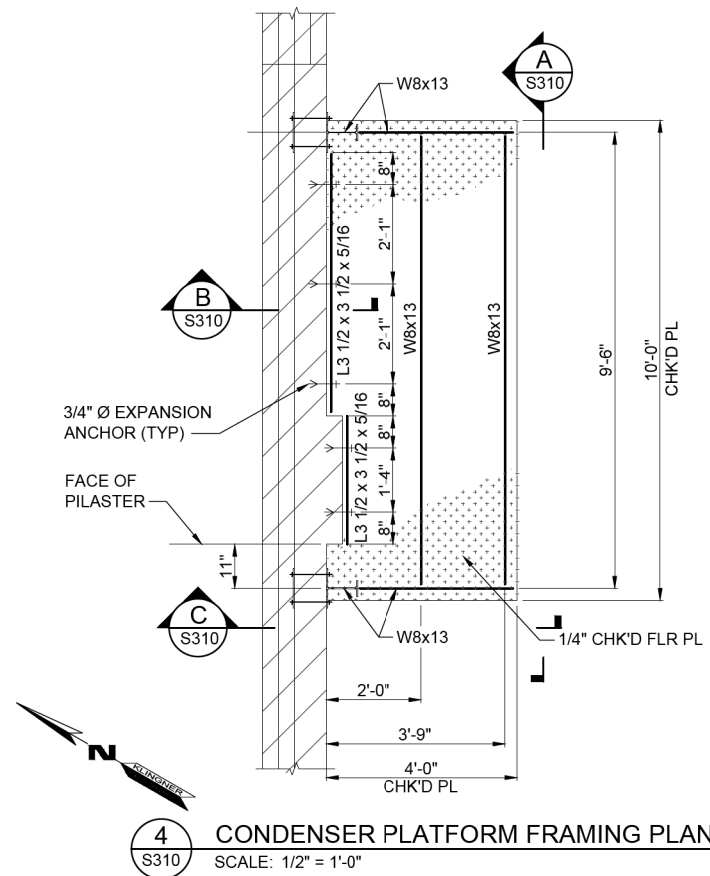
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BUILDING - STRUCTURAL DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED SHEET 9 OF 10 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 113
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

S309



FILE NAME = G:\115\115023\Work_Drwnr_6\CADD_Sheets\0876099-sh-t-KL-A_S310.dgn

KLINGNER & ASSOCIATES, P.C.
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USER NAME = bgj
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CHECKED -
DATE -

REVISED -
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REVISED -

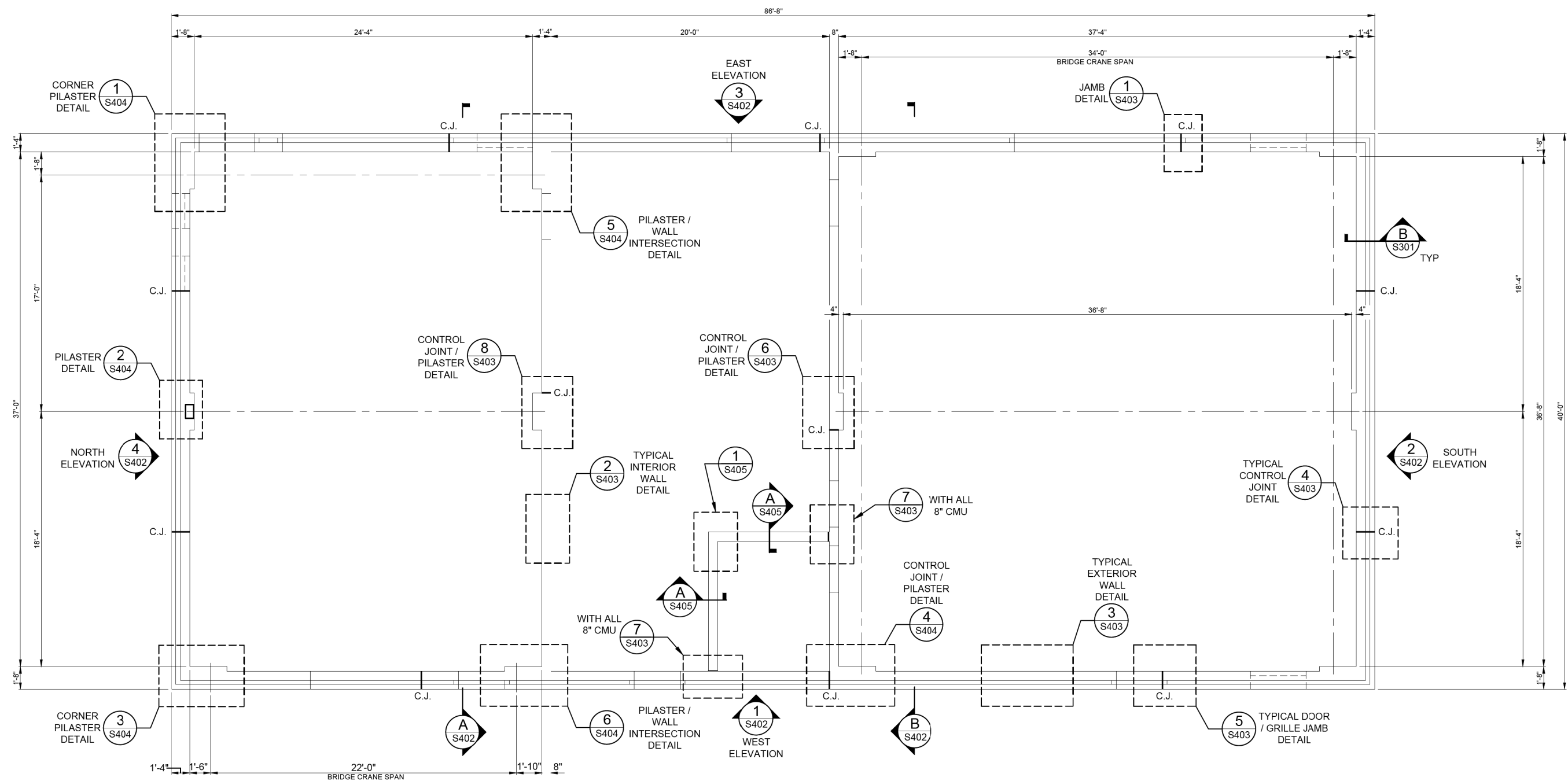
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WELL HOUSE BUILDING - STRUCTURAL DETAILS
MISSOURI AVENUE DEEP WELL FACILITY**

SCALE: AS NOTED SHEET 10 OF 10 SHEETS STA. TO STA.

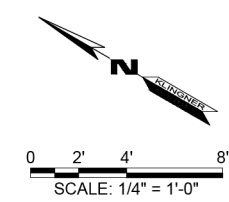
F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 114
CONTRACT NO. 76C99			ILLINOIS FED. AID PROJECT	

S310



STRUCTURAL LINTEL & CMU WALL REINFORCEMENT PLAN
 SCALE: 1/4" = 1'-0"

*NOTE:
 1) THE PRICE OF ALL MASONRY WORK (CMU, BRICK, REINF., ETC.) SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



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KLINGNER & ASSOCIATES, P.C.
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	DATE -	REVISED -

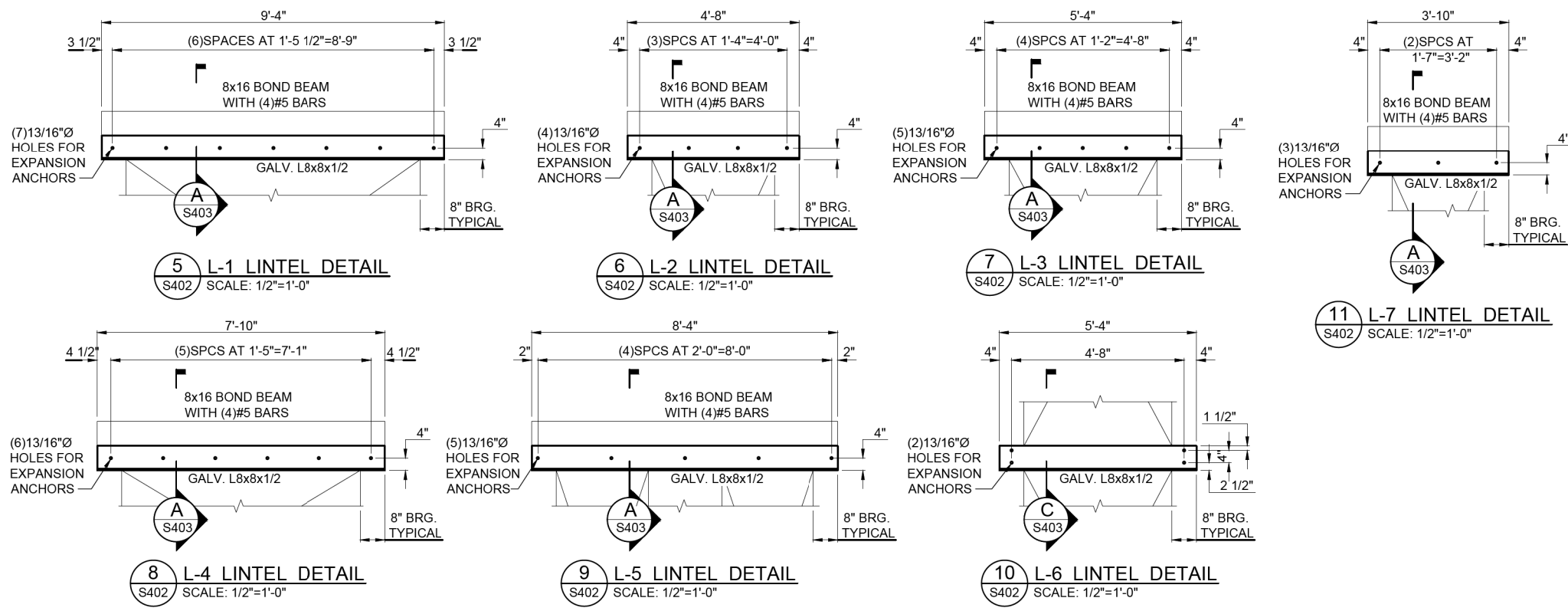
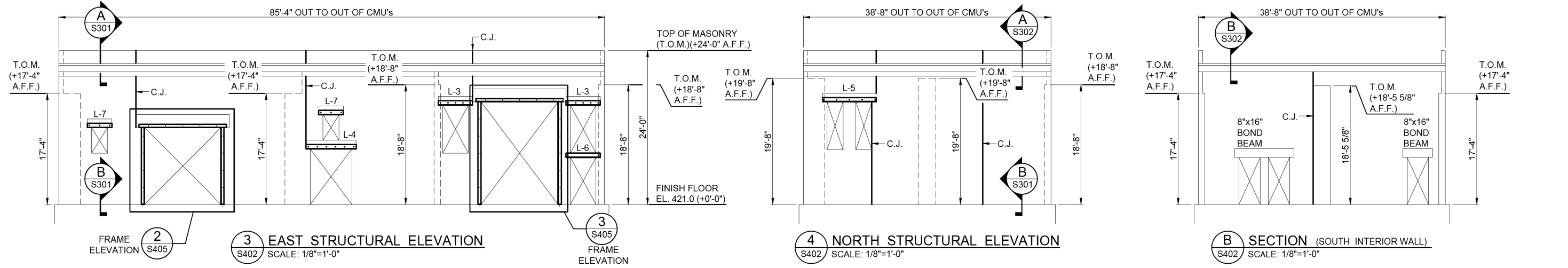
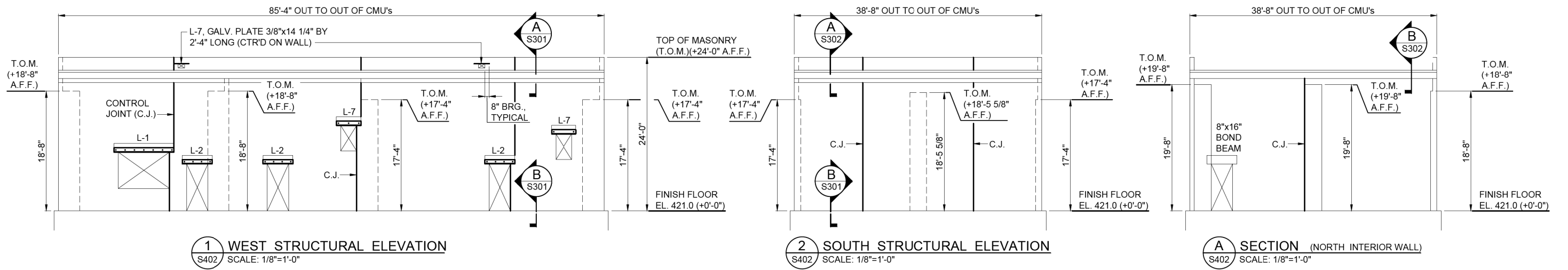
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

WELL HOUSE BUILDING - LINTEL, CMU PLAN & DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

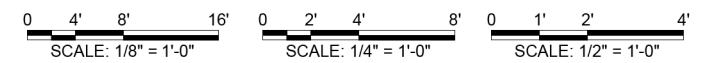
SCALE: AS NOTED SHEET 1 OF 5 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 115
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

S401



NOTE:
1) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



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KLINGNER & ASSOCIATES, P.C.
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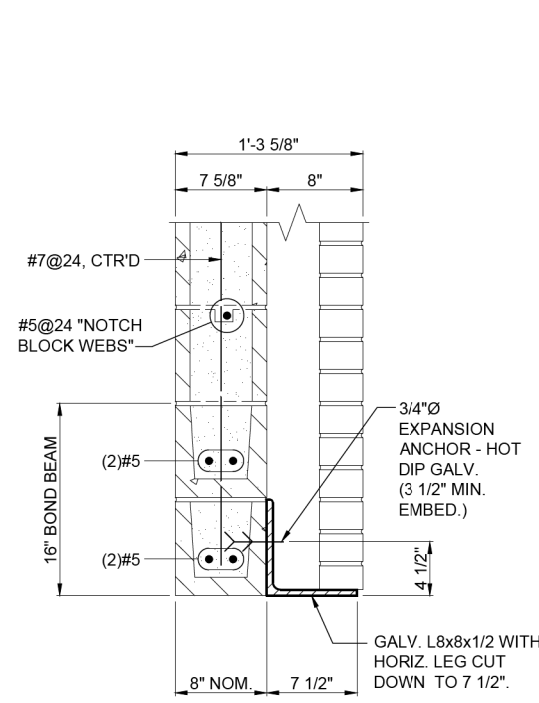
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PLOT DATE = 1/13/2015	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

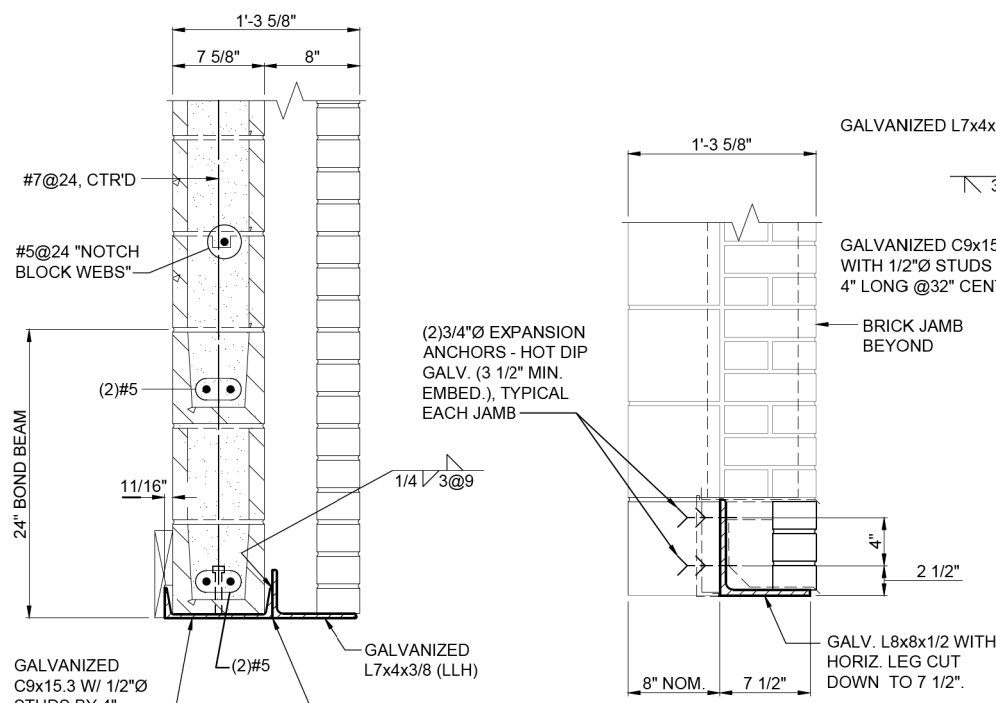
WELL HOUSE BUILDING - LINTEL, CMU PLAN & DETAILS
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: AS NOTED SHEET 2 OF 5 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 116
ILLINOIS FED. AID PROJECT			CONTRACT NO. 76C99	

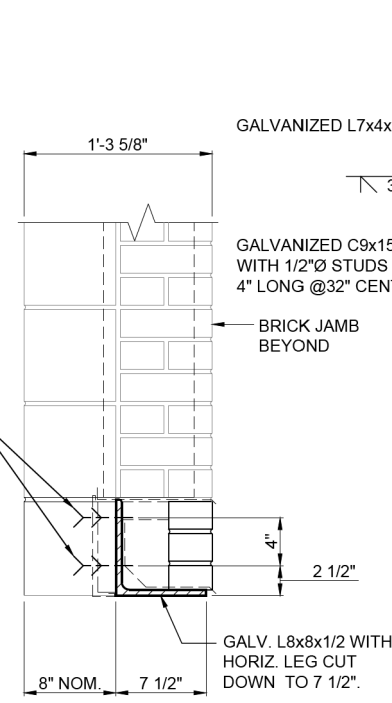
S402



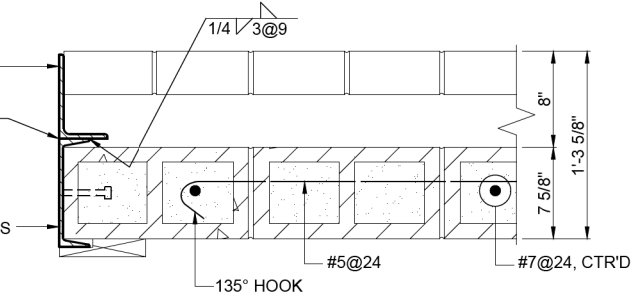
A HEAD SECTION
S403 SCALE: 1 1/2"=1'-0"



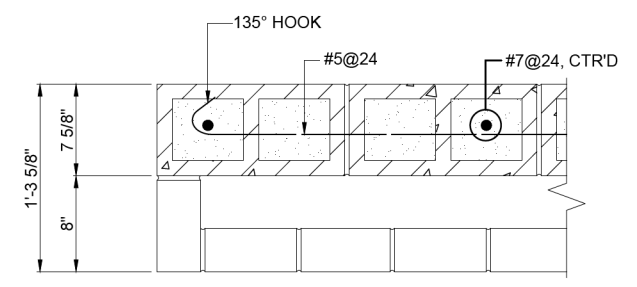
B HEAD SECTION
S403 SCALE: 1 1/2"=1'-0"



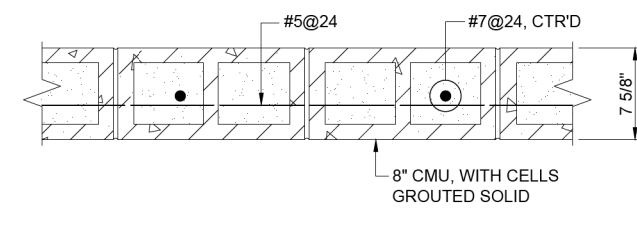
C HEAD SECTION
S403 SCALE: 1 1/2"=1'-0"



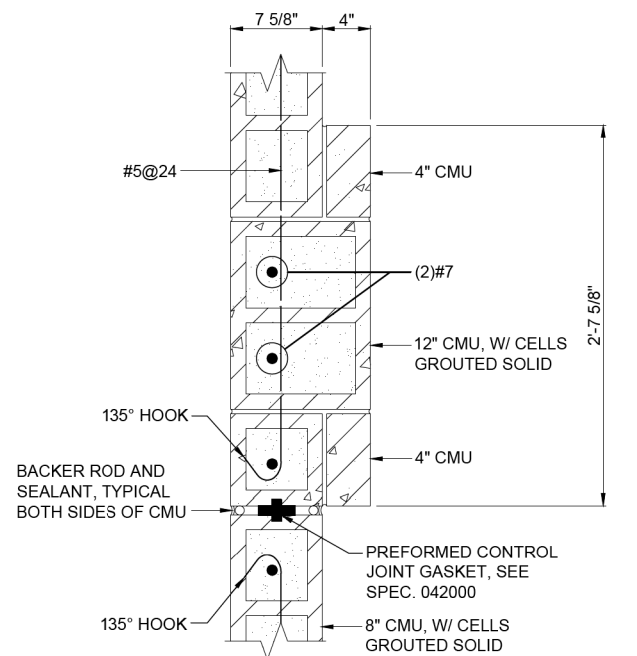
1 JAMB DETAIL
S403 SCALE: 1 1/2"=1'-0"



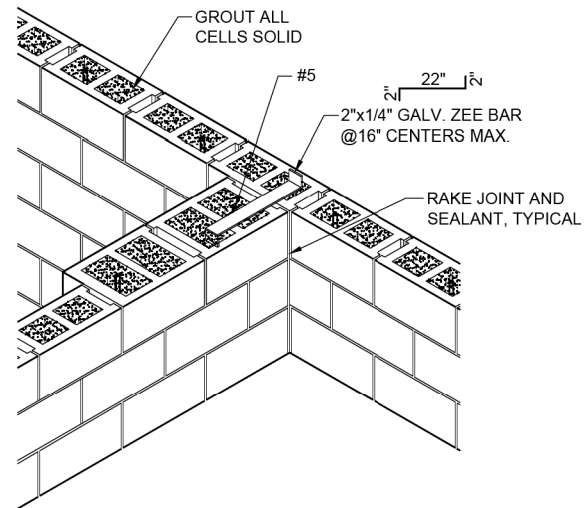
5 TYPICAL DOOR / GRILLE JAMB DETAIL
S403 SCALE: 1 1/2"=1'-0"



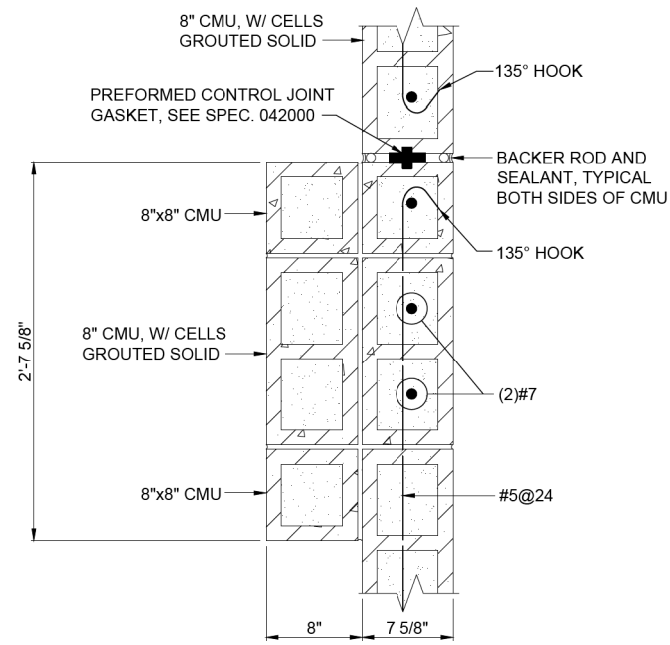
2 TYPICAL INTERIOR WALL CONSTRUCTION
S403 SCALE: 1 1/2"=1'-0"



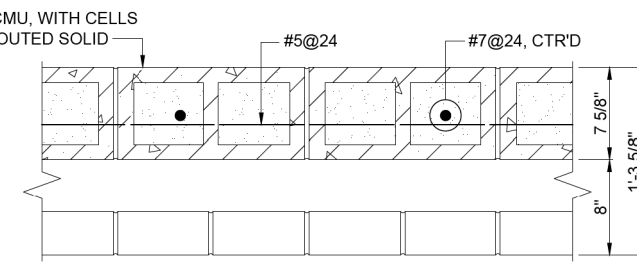
6 CONTROL JOINT / PILASTER DETAIL
S403 SCALE: 1 1/2"=1'-0"



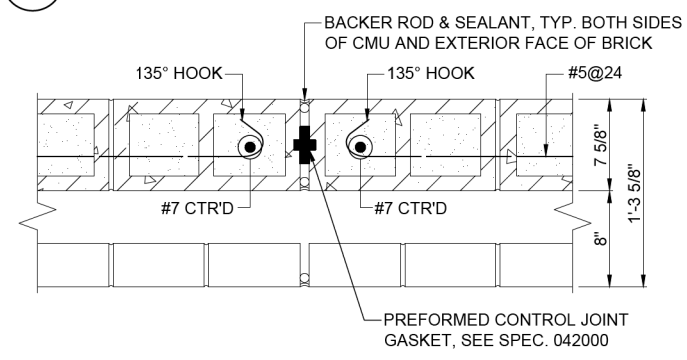
7 ISOMETRIC DETAIL AT CONTROL JOINT AT WALL INTERSECTION
S403 SCALE: 3/4"=1'-0"



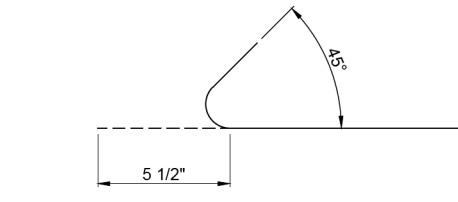
8 CONTROL JOINT / PILASTER DETAIL
S403 SCALE: 1 1/2"=1'-0"



3 TYPICAL EXTERIOR WALL CONSTRUCTION
S403 SCALE: 1 1/2"=1'-0"



4 TYPICAL CONTROL JOINT DETAIL
S403 SCALE: 1 1/2"=1'-0"

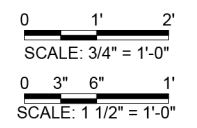


8 TYPICAL 135 DEGREE HOOK FOR #5 BAR
S403 SCALE: N.T.S. NOTE: ROTATE END OF HOOK TO FIT CMU CORE

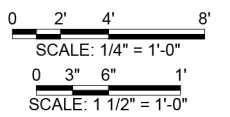
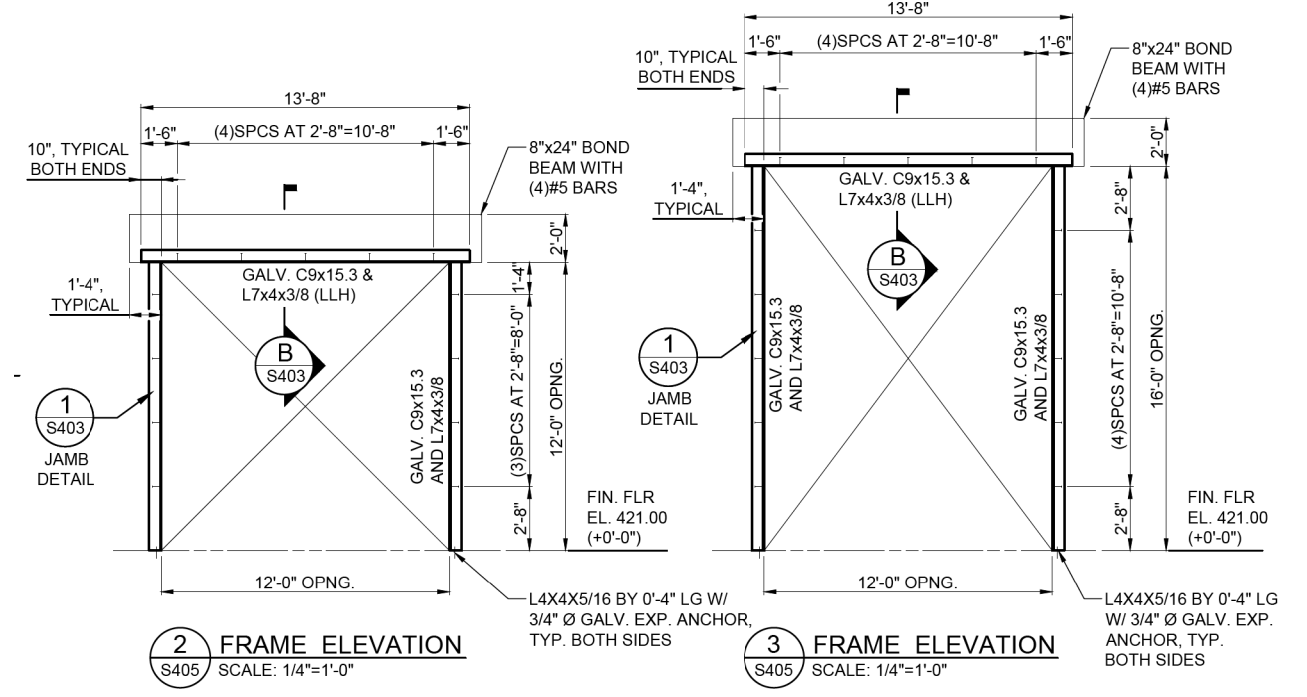
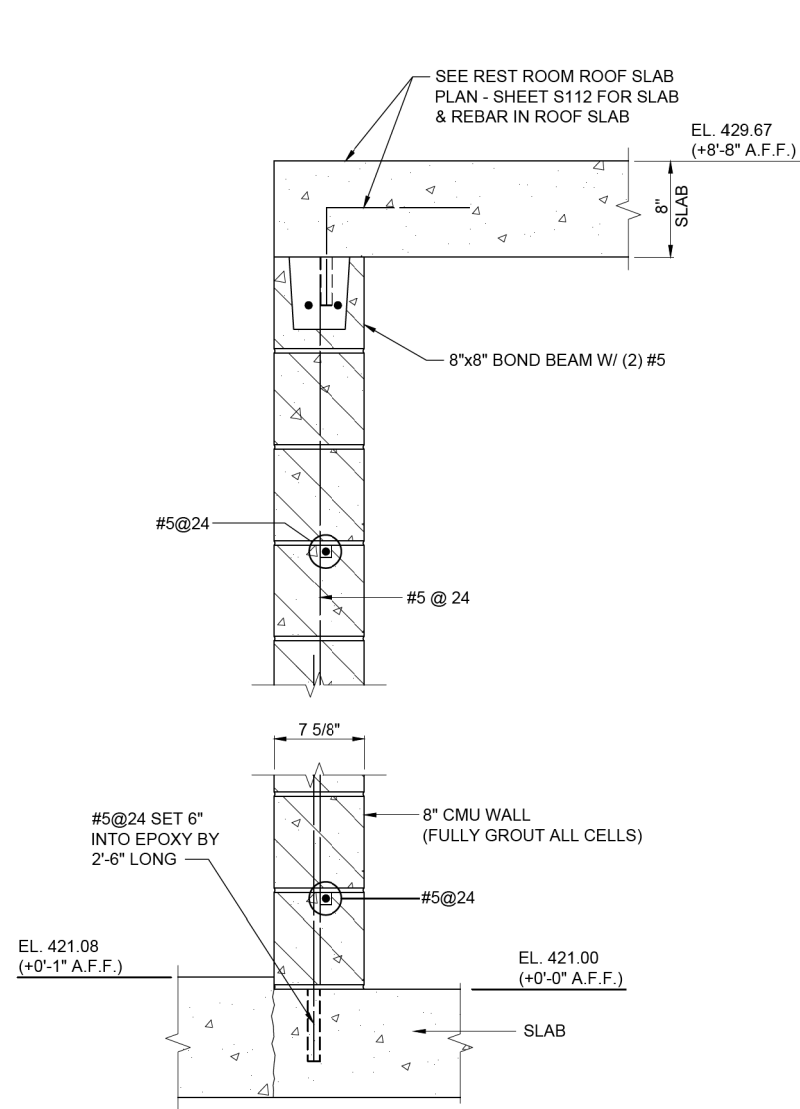
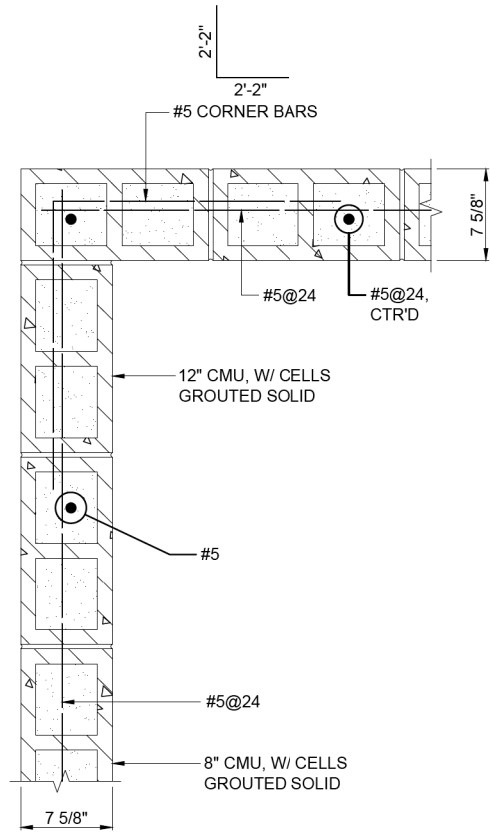
NOTE: HORIZONTAL REINFORCEMENT IN BOND BEAMS SHALL RUN CONTINUOUS THROUGH JOINTS

NOTE: HORIZONTAL REINFORCEMENT IN BOND BEAMS SHALL RUN CONTINUOUS THROUGH JOINTS

- *NOTE:
- 1) THE PRICE OF ALL MASONRY WORK (CMU, BRICK, REINF., ETC.) SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 2) THE PRICE OF GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



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KLINGNER & ASSOCIATES, P.C.
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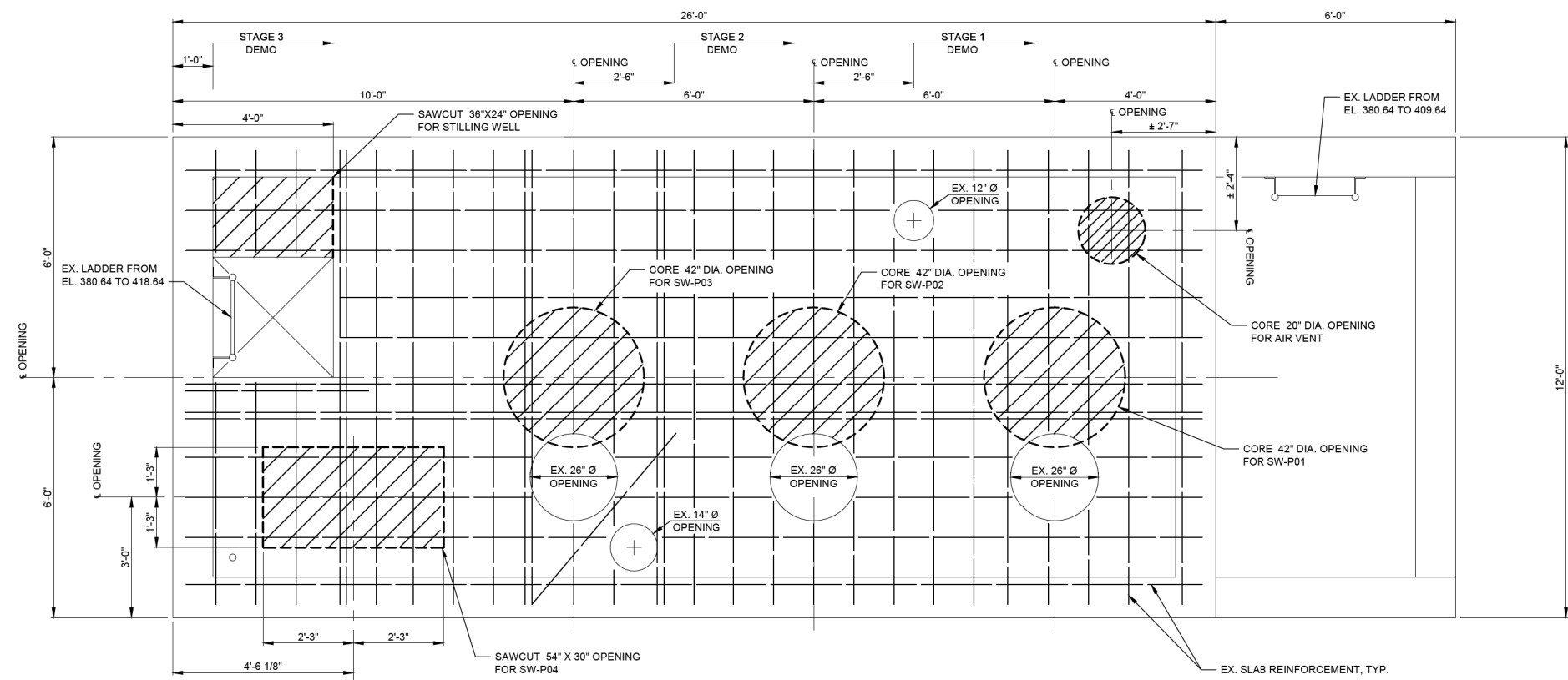
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DRAWN - BGJ	REVISIION -	
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PLOT DATE = 1/13/2015	DATE -	REVISIION -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BUILDING - LINTEL, CMU PLAN & DETAILS
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: AS NOTED SHEET 5 OF 5 SHEETS STA. TO STA.

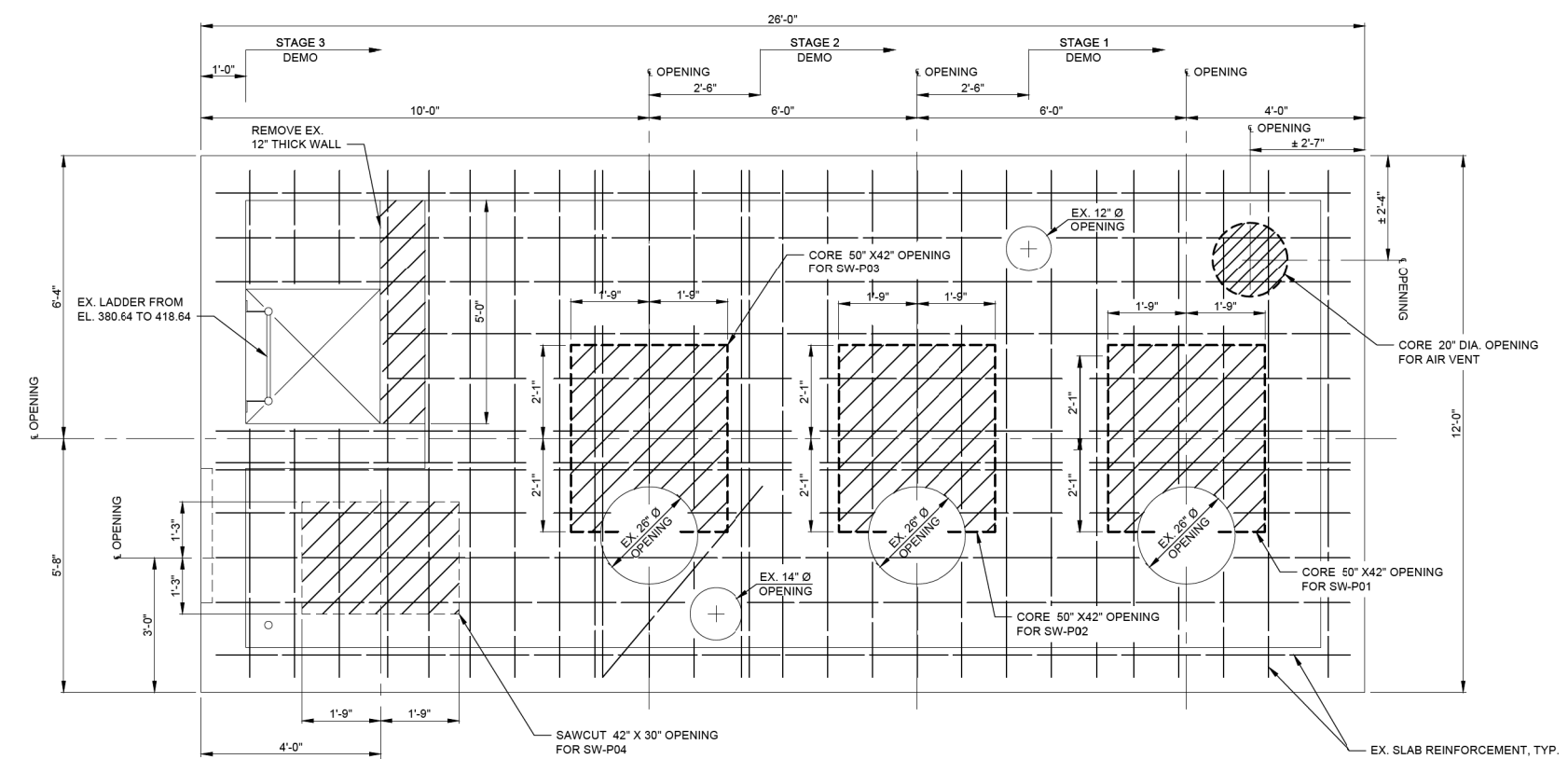
F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 119
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

S405

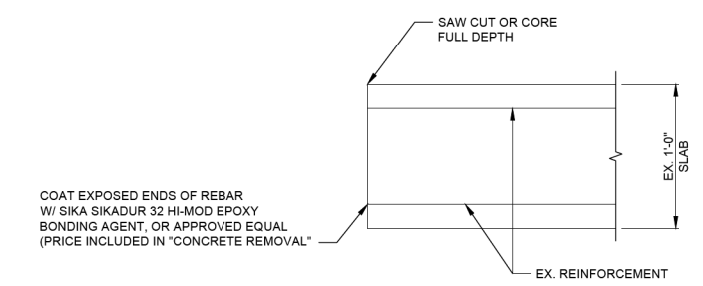


DEMO PLAN - ELEV. 393.64
SCALE: 1/2" = 1'-0"

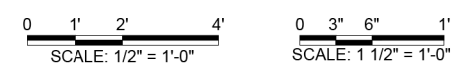
- NOTES:
- 1) NO SALVAGE
 - 2) COORDINATE ALL PIPE OPENINGS WITH ALL PIPING AND PUMPING EQUIPMENT PROVIDED



DEMO PLAN - ELEV. 412.64
SCALE: 1/2" = 1'-0"



TYPICAL SLAB AND WALL REMOVAL DETAIL
SCALE: 1 1/2" = 1'-0"



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KLINGNER & ASSOCIATES, P.C.
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USER NAME = bgj	DESIGNED - ADL	REVISED -
PLOT SCALE = 40.0000' / in.	DRAWN - AMS	REVISED -
PLOT DATE = 1/13/2015	CHECKED -	REVISED -
	DATE -	REVISED -

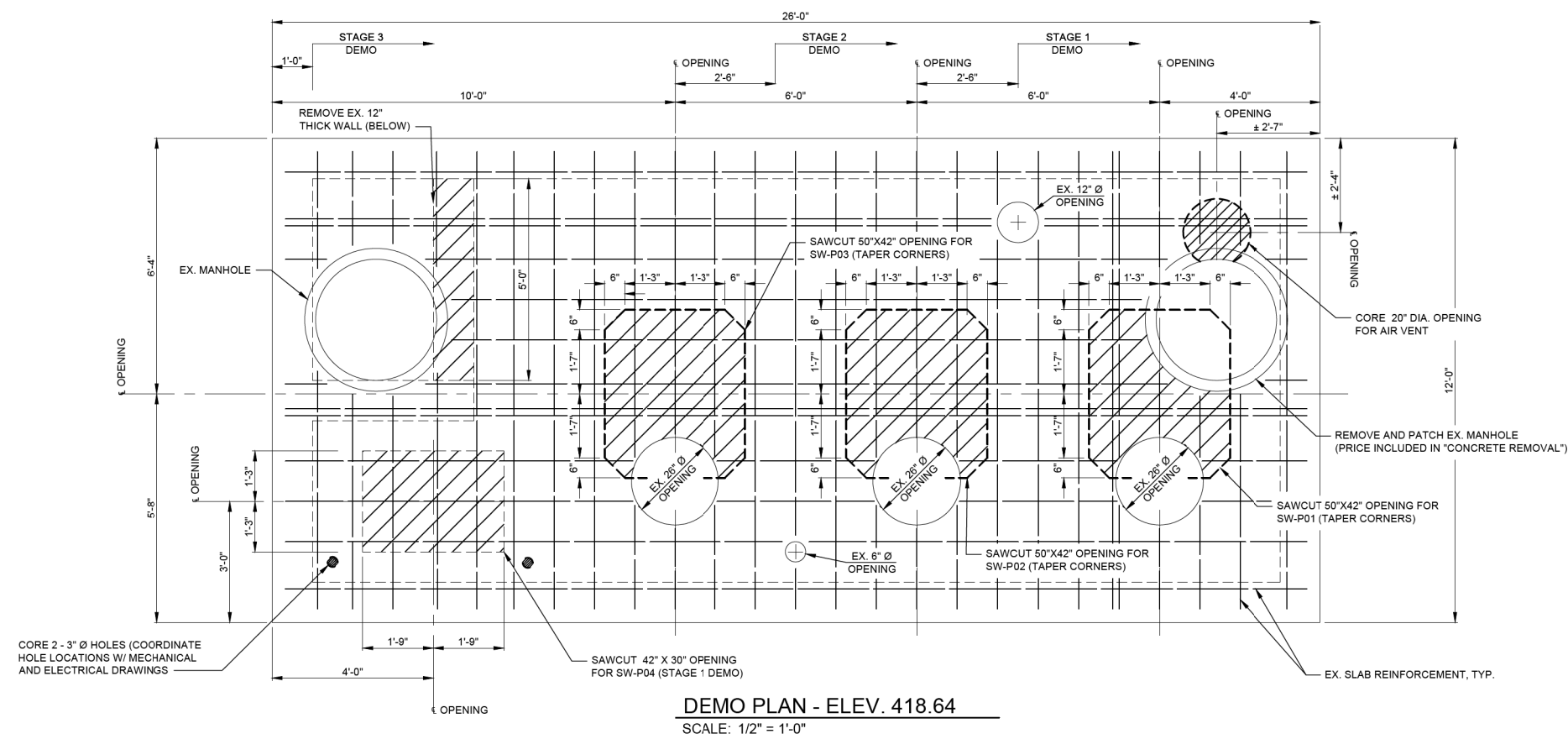
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

EXISTING PUMP STATION BUILDING - DEMO PLANS
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: AS NOTED SHEET 1 OF 2 SHEETS STA. TO STA.

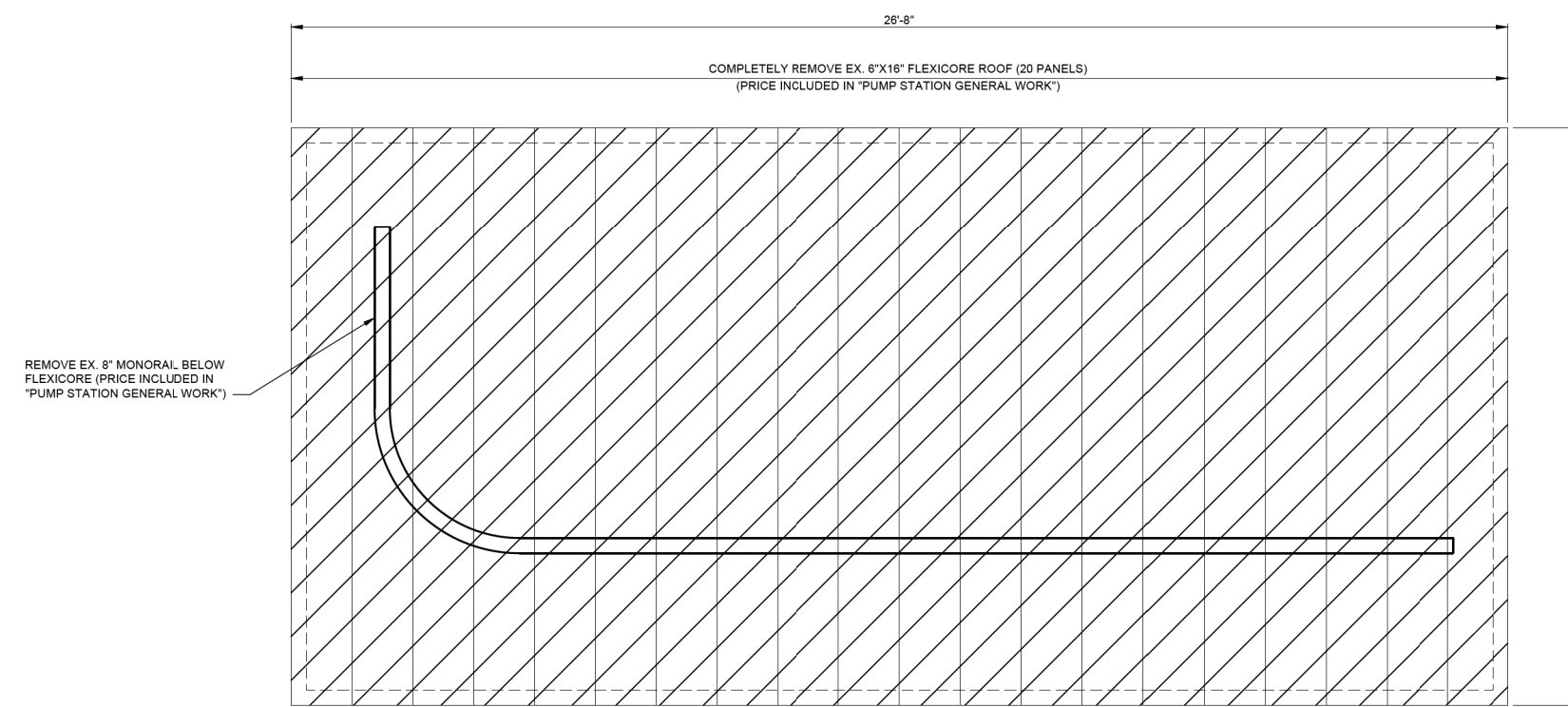
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	120
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

S501

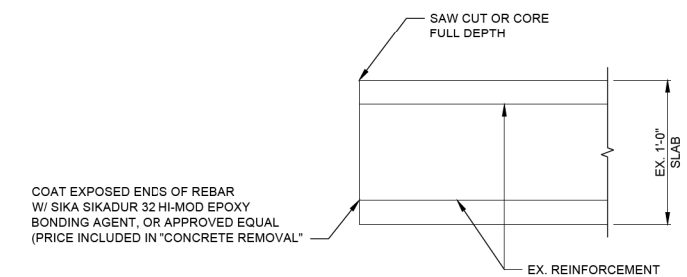
- NOTES:
- 1) NO SALVAGE
 - 2) COORDINATE ALL PIPE OPENINGS WITH ALL PIPING AND PUMPING EQUIPMENT PROVIDED



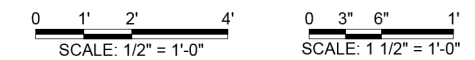
DEMO PLAN - ELEV. 418.64
SCALE: 1/2" = 1'-0"



ROOF DEMO PLAN
SCALE: 1/2" = 1'-0"

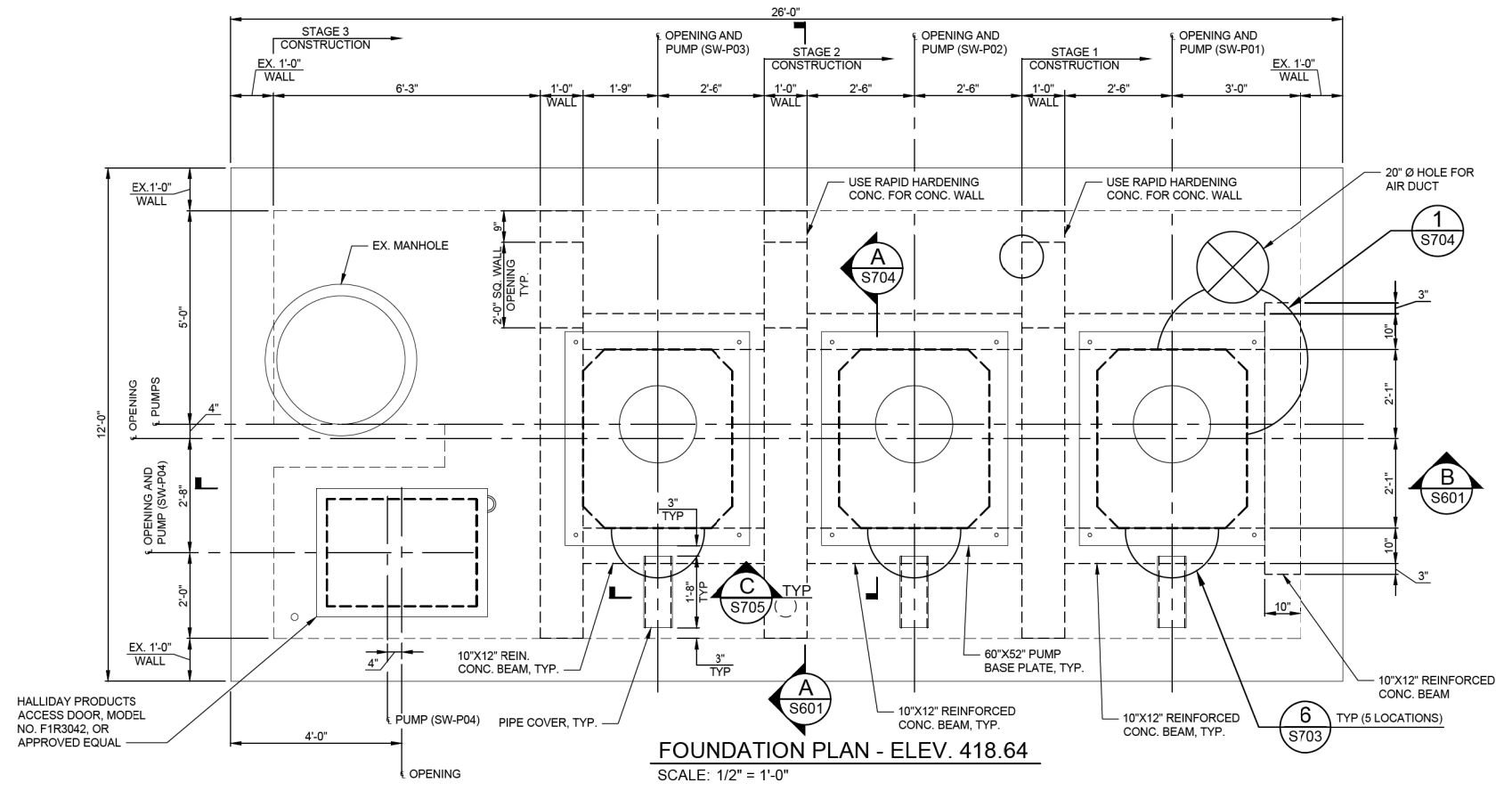


TYPICAL SLAB AND WALL REMOVAL DETAIL
SCALE: 1 1/2" = 1'-0"



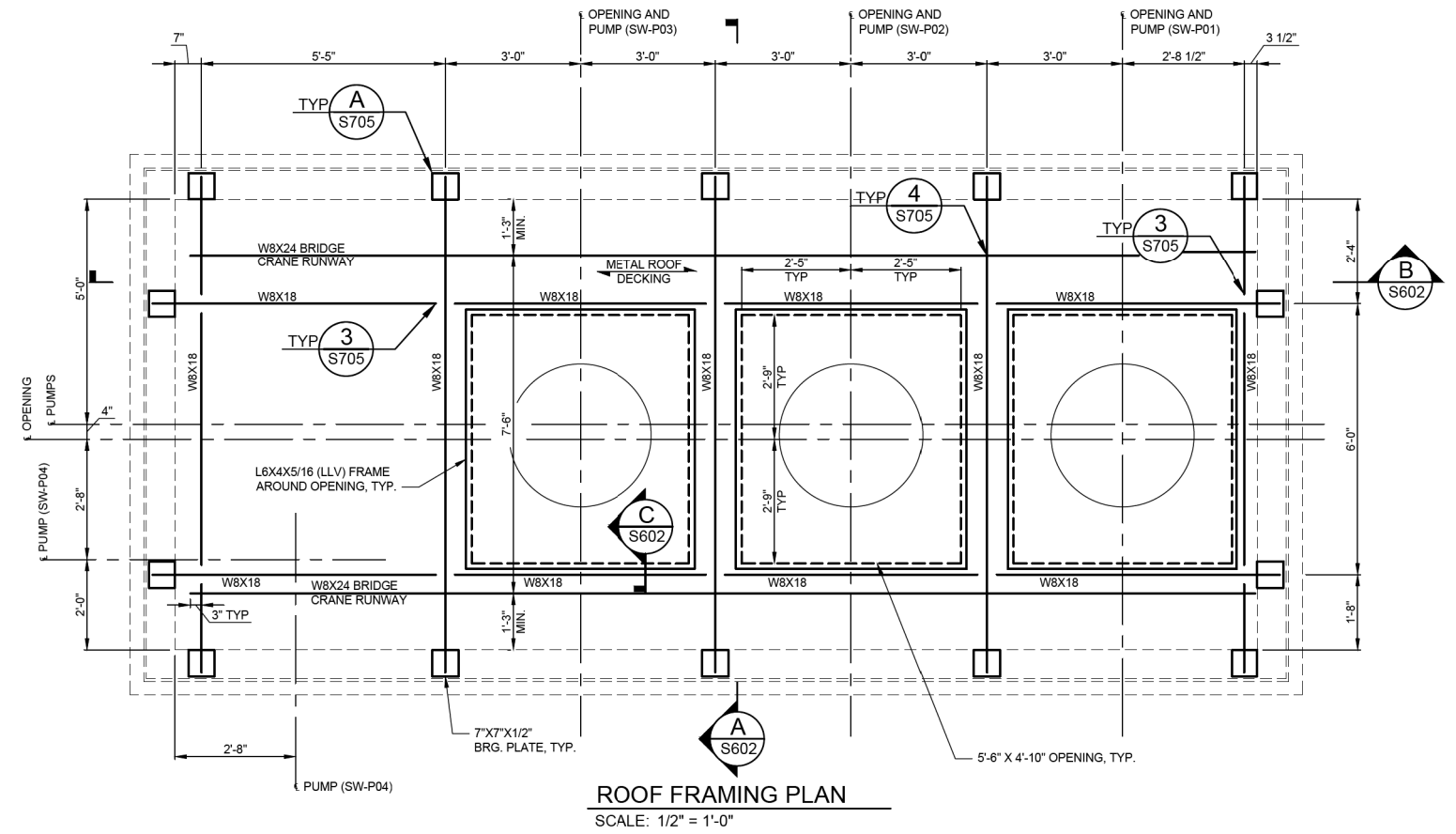
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	DATE -	REVISED -

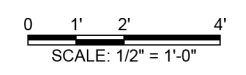


FOUNDATION PLAN - ELEV. 418.64
SCALE: 1/2" = 1'-0"

- *NOTE:
- 1) REBAR AND ANCHORS SHALL BE EPOXY GROUTED INTO EX. CONC. WITH HILTI HIT-HY 150MAX-SD, OR APPROVED EQUAL * PRICE INCLUDED IN "CONCRETE STRUCTURES"
 - 2) EXISTING CONCRETE SURFACE IN CONTACT WITH NEW CONCRETE SHALL BE CLEANED AND COATED WITH EPOXY BONDING AGENT, PRIOR TO CONCRETE INSTALLATION. * PRICE INCLUDED IN "CONCRETE STRUCTURES"
 - 3) THE PRICE OF ALL ALUMINUM MATERIAL, SHAPES AND GRATING SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 4) THE PRICE OF ALL STAINLESS STEEL BOLTS AND MATERIAL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 5) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



ROOF FRAMING PLAN
SCALE: 1/2" = 1'-0"



FILE NAME = G:\115\115023\Work_Drwnr_6\CADD_Sheets\0376099-shr-kla_st-5.dwg

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = bgj
PLOT SCALE = 40.0000' / in.
PLOT DATE = 1/13/2015

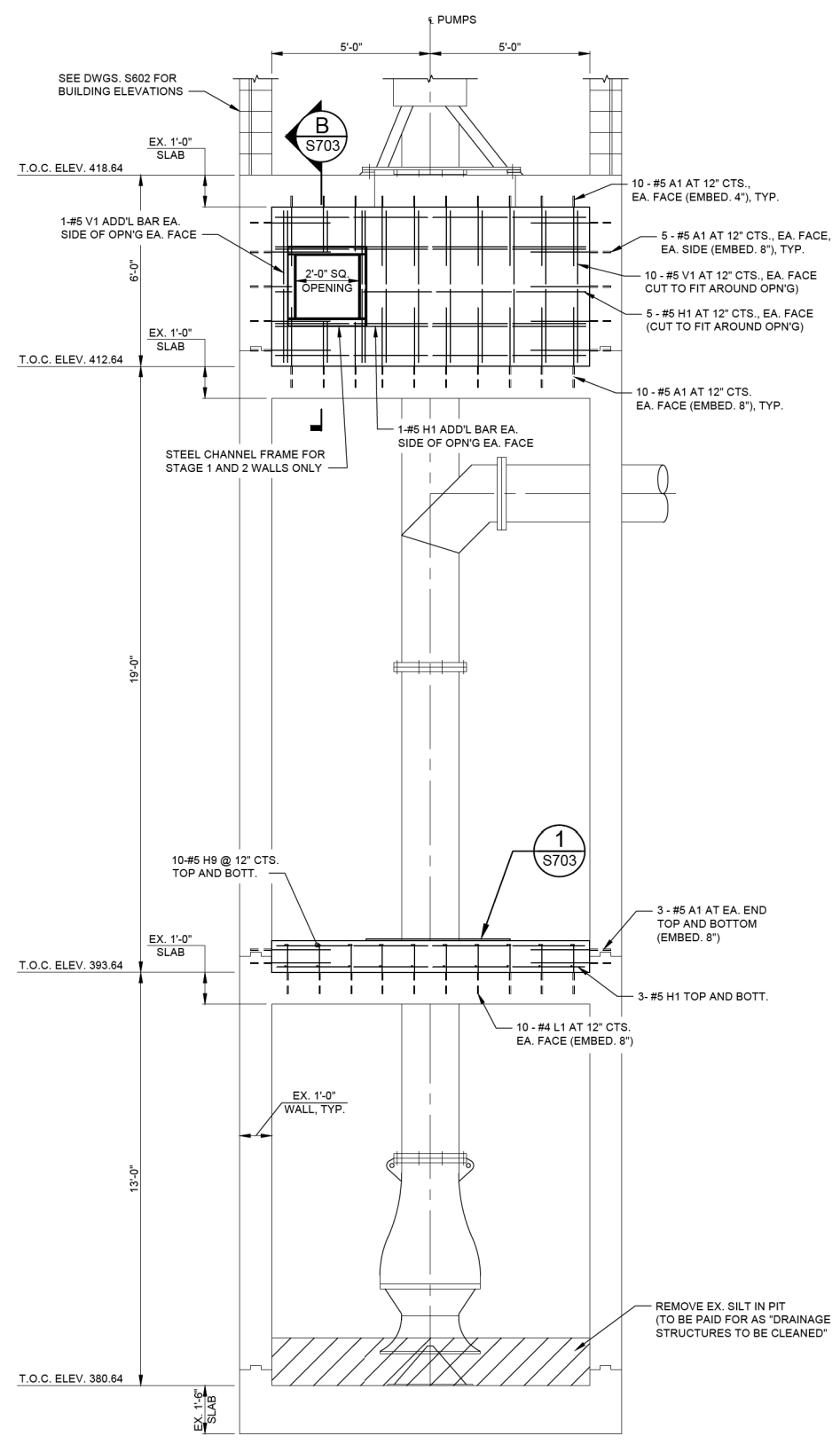
DESIGNED - ADL	REVISED - AMS - 9/25/14
DRAWN - AMS	REVISED -
CHECKED -	REVISED -
DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

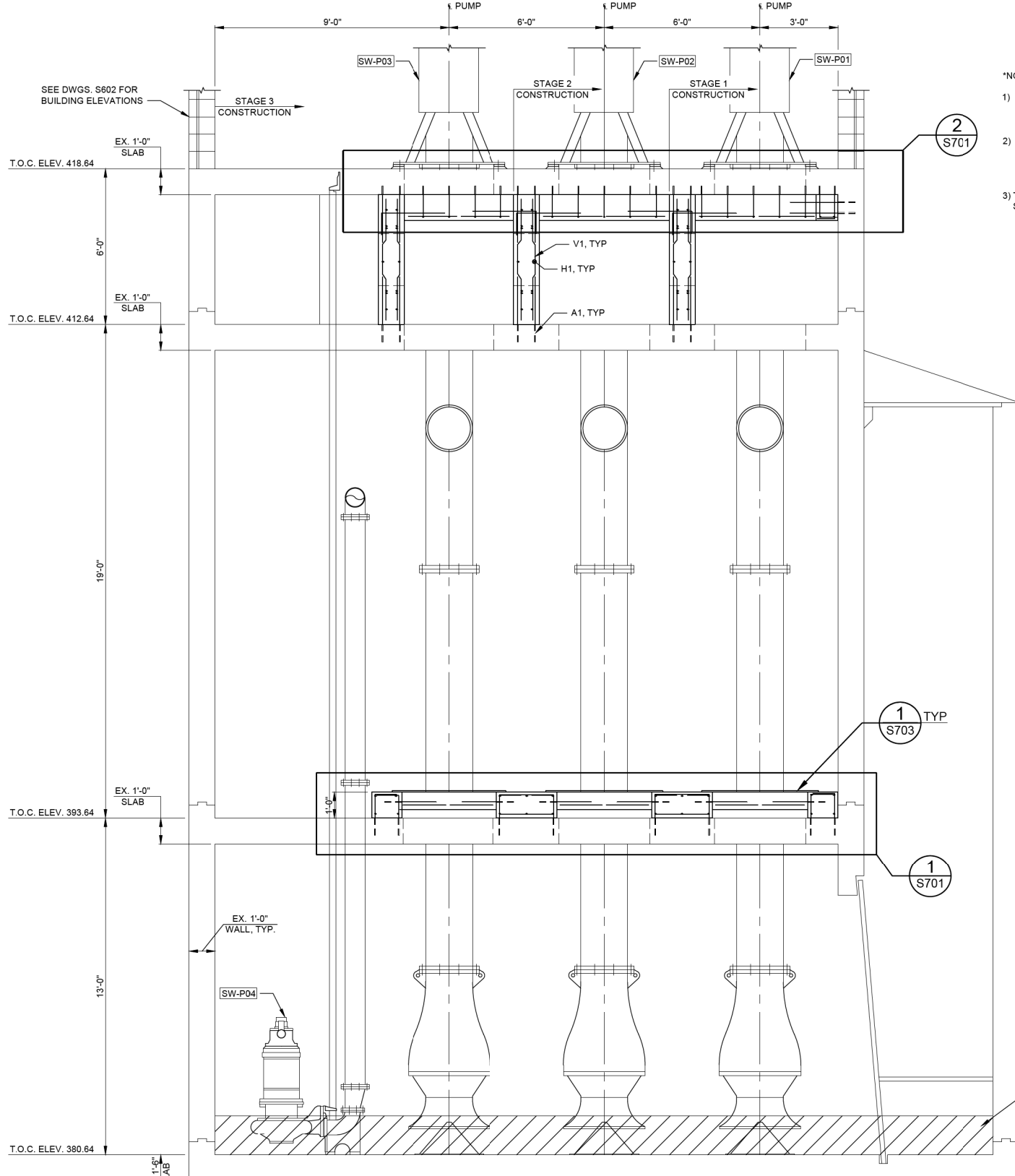
EXISTING PUMP STATION BUILDING - ROOF FRAMING & FOUNDATION
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: AS NOTED SHEET 2 OF 2 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	123
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

S504

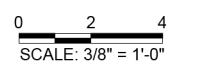


A SECTION
S601 SCALE: 3/8"=1'-0"



B SECTION
S601 SCALE: 3/8"=1'-0"

- *NOTE:
- 1) REBAR AND ANCHORS SHALL BE EPOXY GROUTED INTO EX. CONC. WITH HILTI HIT-HY 150MAX-SD, OR APPROVED EQUAL. *PRICE INCLUDED IN "CONCRETE STRUCTURES"
 - 2) EXISTING CONCRETE SURFACE IN CONTACT WITH NEW CONCRETE SHALL BE CLEANED AND COATED WITH EPOXY BONDING AGENT, PRIOR TO CONCRETE INSTALLATION. *PRICE INCLUDED IN "CONCRETE STRUCTURES"
 - 3) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



FILE NAME = G:\115\115023\Work - Order - 6\CADD Sheets\037609-11-KL-Str-6.dwg

KLINGNER & ASSOCIATES, P.C.
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USER NAME = bgj
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PLOT DATE = 1/13/2015

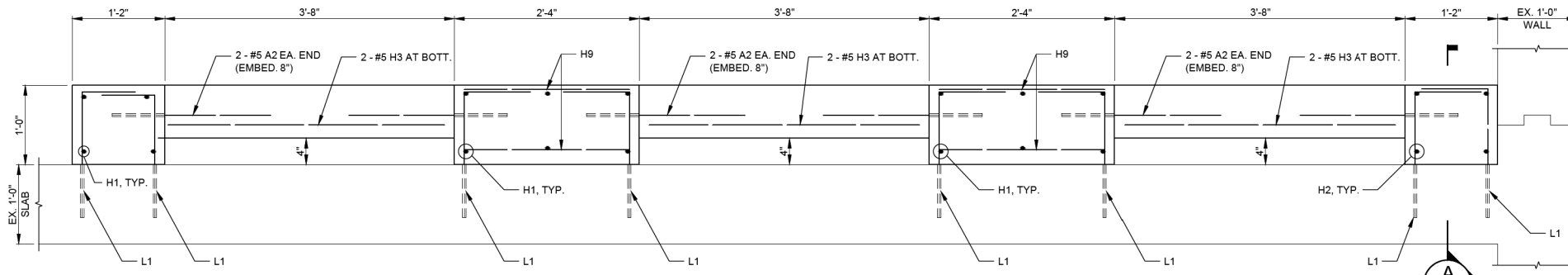
DESIGNED - ADL	REVISED - AMS - 9/25/14
DRAWN - AMS	REVISED -
CHECKED -	REVISED -
DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

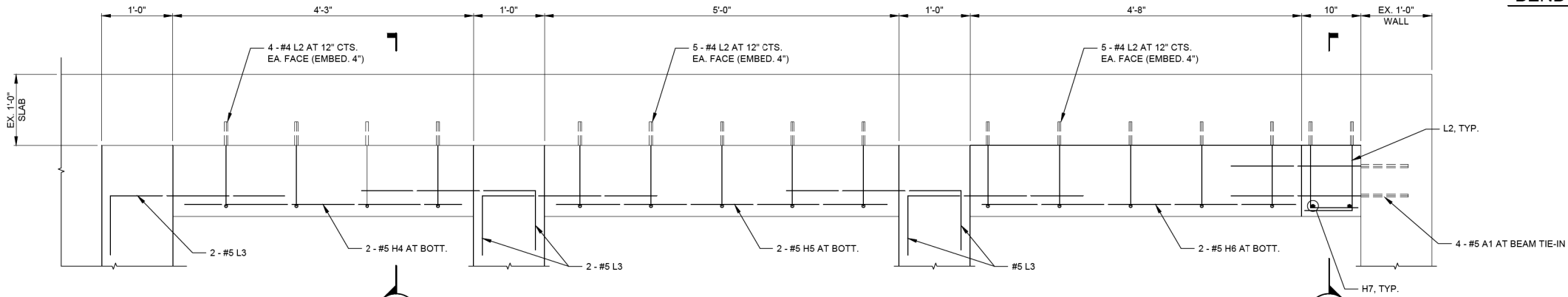
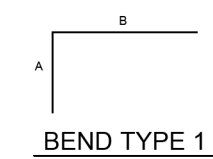
EXISTING PUMP STATION BUILDING - FOUNDATION SECTIONS
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: AS NOTED SHEET 1 OF 2 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	124
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

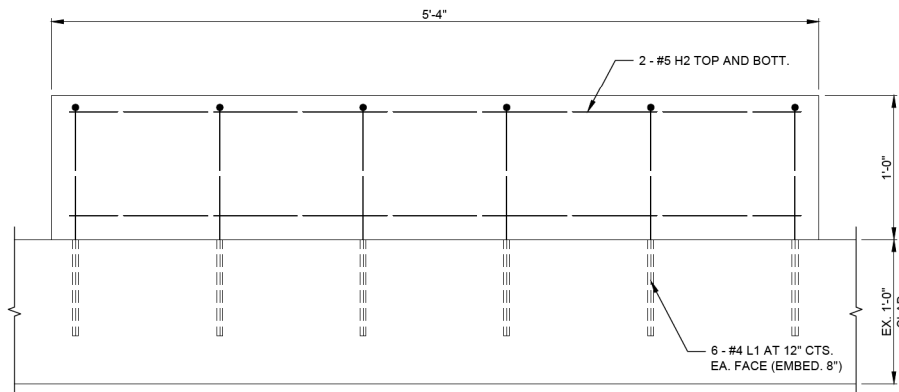
S601



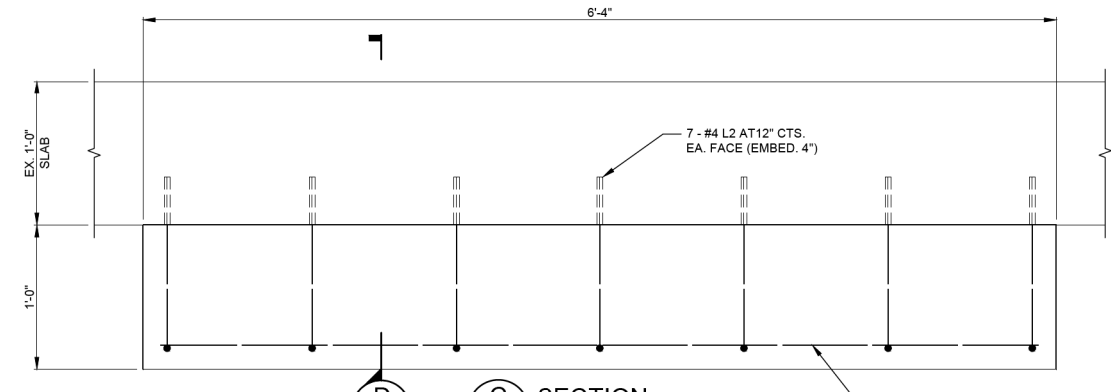
1 DETAIL
S701 SCALE: 1 1/2"=1'-0"



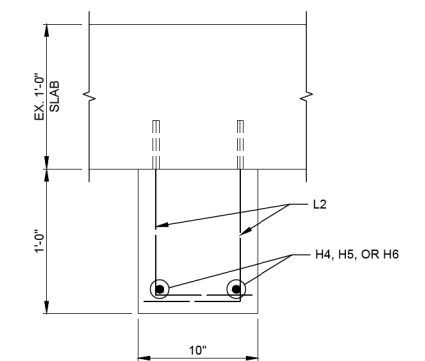
2 DETAIL
S701 SCALE: 1 1/2"=1'-0"



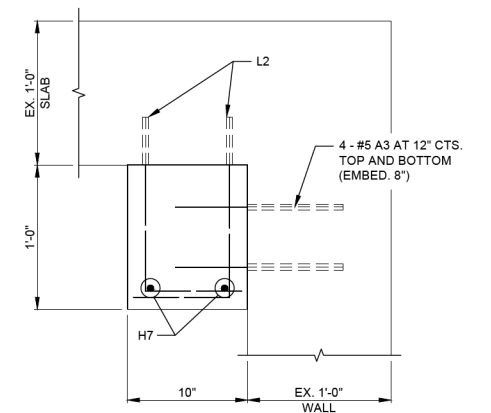
A SECTION
S701 SCALE: 1 1/2"=1'-0"



C SECTION
S701 SCALE: 1 1/2"=1'-0"

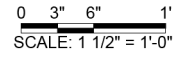


B SECTION
S701 SCALE: 1 1/2"=1'-0"



D SECTION
S701 SCALE: 1 1/2"=1'-0"

REBAR SCHEDULE							
BAR MARK	NO.	SIZE	LENGTH	BEND TYPE	WEIGHT (LBS)	A	B
A1	230	#5	2'-6"		600		
A2	24	#5	2'-0"		50		
A3	8	#5	1'-2"		10		
A4	36	#4	2'-0"		48		
A5	6	#4	1'-2"		5		
A6	20	#4	0'-10"		11		
A7	3	#4	0'-8"		1		
A8	46	#5	1'-4"		64		
A9	2	#4	3'-0"		4		
H1	58	#5	9'-9"		590		
H2	4	#5	5'-1"		21		
H3	12	#5	3'-5"		43		
H4	4	#5	4'-0"		17		
H5	4	#5	4'-9"		20		
H6	4	#5	4'-6"		19		
H7	2	#5	6'-1"		13		
H8	10	#4	0'-10"		6		
H9	40	#5	2'-0"		83		
H10	10	#5	3'-10"		40		
H11	6	#5	6'-5"		40		
H12	4	#5	6'-10"		28		
L1	87	#4	2'-4"	1	136	0'-10"	1'-6"
L2	70	#4	1'-10"	1	86	0'-8"	1'-2"
L3	20	#5	3'-4"	1	69	0'-10"	2'-8"
V1	72	#5	4'-8"		357		
TOTAL					2360		



- *NOTE:
- REBAR SHALL BE EPOXY GROUTED INTO EX. CONC. WITH HILTI HIT-HY 150MAX-SD, OR APPROVED EQUAL. *PRICE INCLUDED IN "CONCRETE STRUCTURES"
 - EXISTING CONCRETE SURFACE IN CONTACT WITH NEW CONCRETE SHALL BE CLEANED AND COATED WITH EPOXY BONDING AGENT, PRIOR TO CONCRETE INSTALLATION. *PRICE INCLUDED IN "CONCRETE STRUCTURES"

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KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

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PLOT SCALE = 48.0000' / in.
PLOT DATE = 1/13/2015

DESIGNED - ADL
DRAWN - AMS
CHECKED -
DATE -

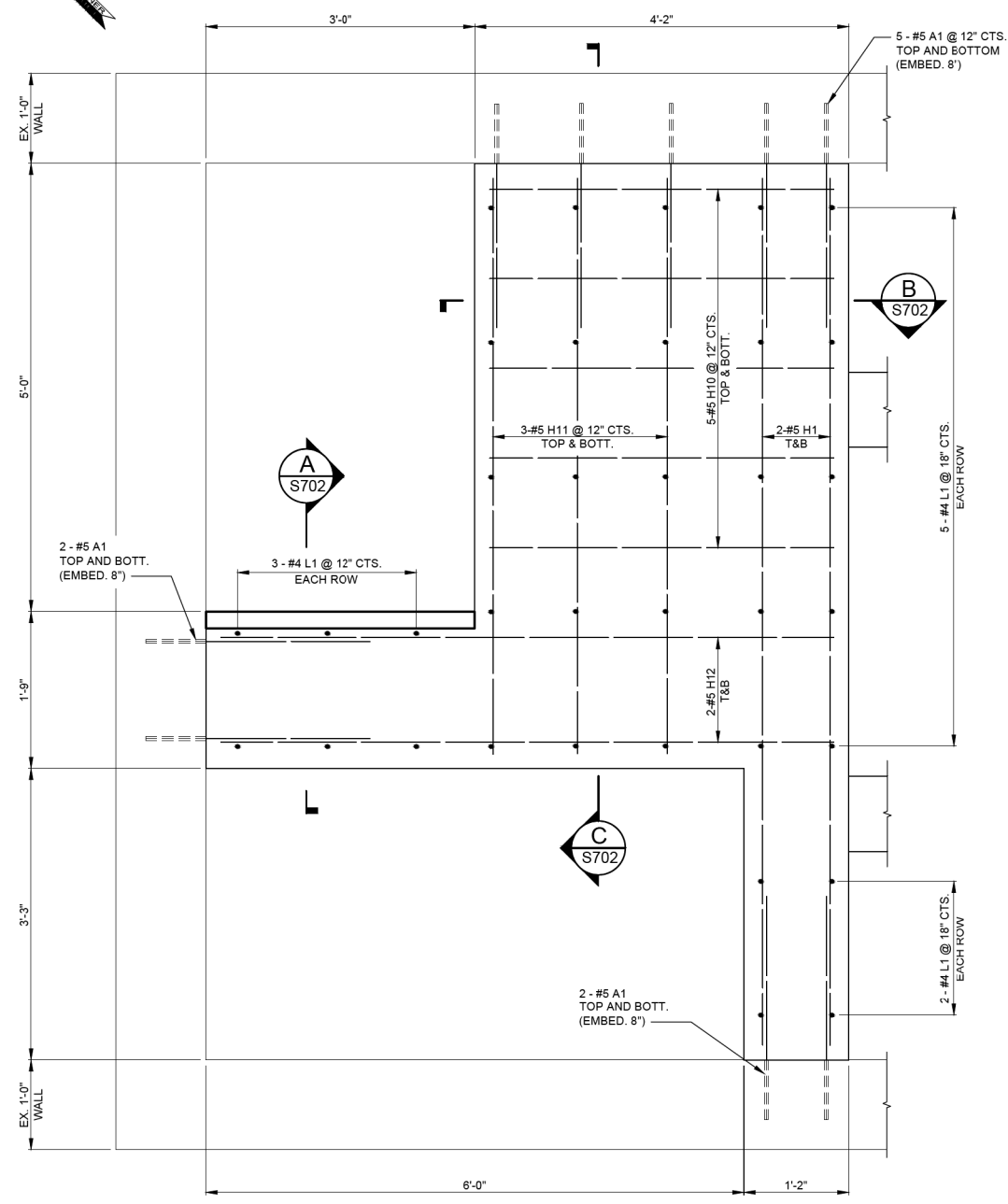
REVISED -
REVISED -
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

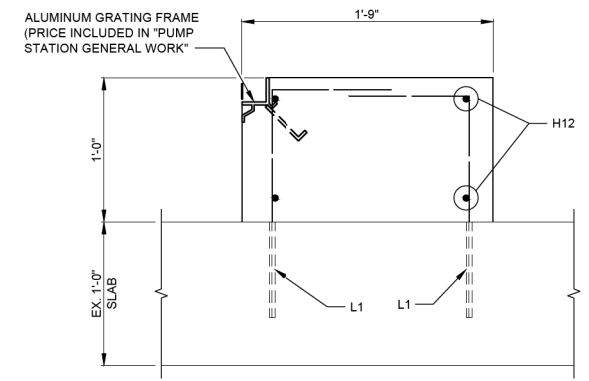
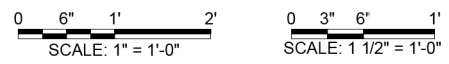
**EXISTING PUMP STATION BUILDING - STRUCTURAL DETAILS
MISSOURI AVENUE DEEP WELL FACILITY**
SCALE: AS NOTED SHEET 1 OF 5 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 126
ILLINOIS FED. AID PROJECT			CONTRACT NO. 76C99	

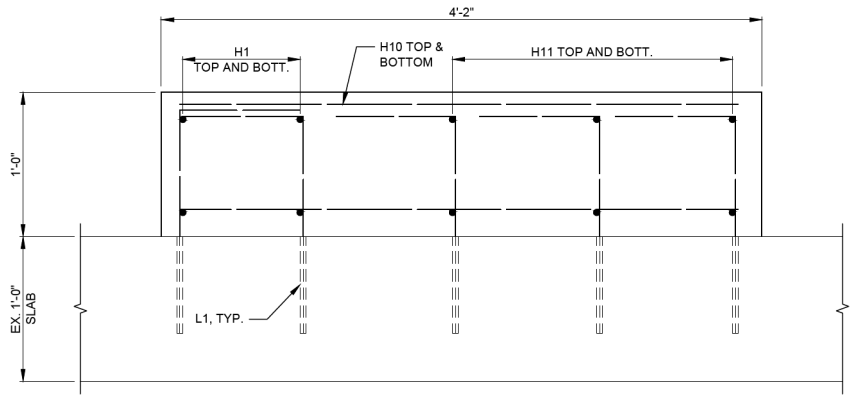
S701



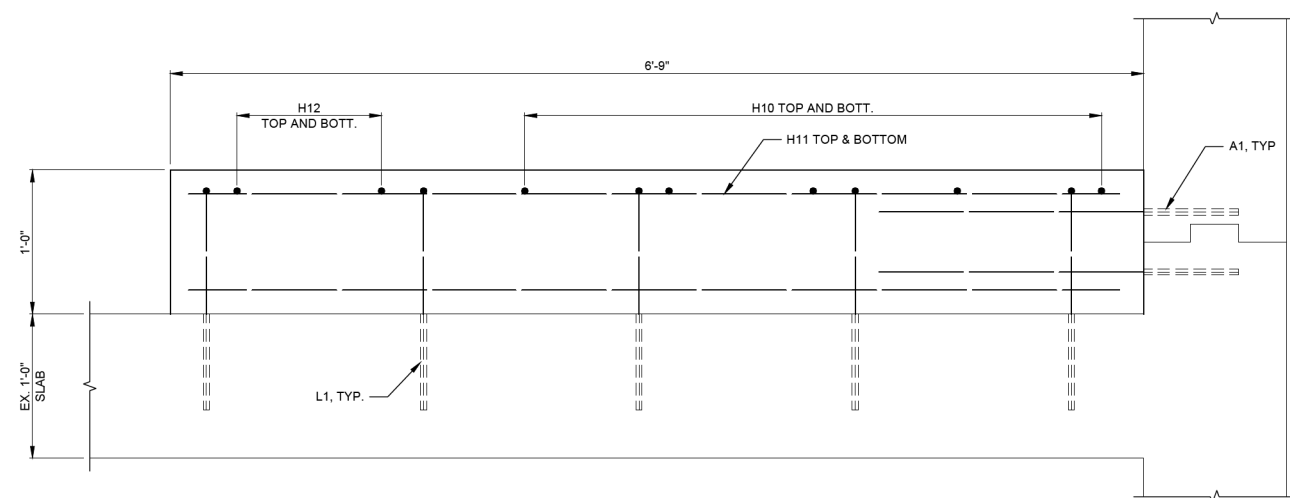
1 DETAIL
S702 SCALE: 1"=1'-0"



A SECTION
S702 SCALE: 1 1/2"=1'-0"



B SECTION
S702 SCALE: 1 1/2"=1'-0"



C SECTION
S702 SCALE: 1 1/2"=1'-0"

- *NOTE:
- 1) REBAR SHALL BE EPOXY GROUTED INTO EX. CONC. WITH HILTI HIT-HY 150MAX-SD, OR APPROVED EQUAL *PRICE INCLUDED IN "CONCRETE STRUCTURES"
 - 2) EXISTING CONCRETE SURFACE IN CONTACT WITH NEW CONCRETE SHALL BE CLEANED AND COATED WITH EPOXY BONDING AGENT, PRIOR TO CONCRETE INSTALLATION. *PRICE INCLUDED IN "CONCRETE STRUCTURES"

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KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = bgj
DRAWN - AMS
CHECKED -
DATE -
DESIGNED - ADL
REVISOR -
REVISOR -
REVISOR -
REVISOR -

PLOT SCALE = 40.0000' / in.
PLOT DATE = 1/13/2015

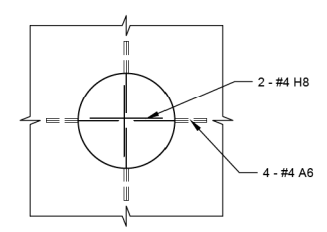
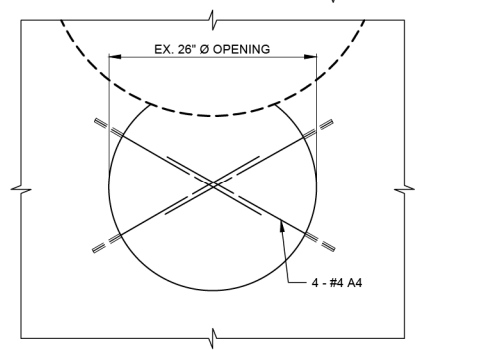
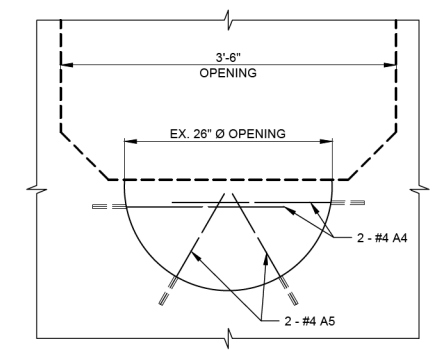
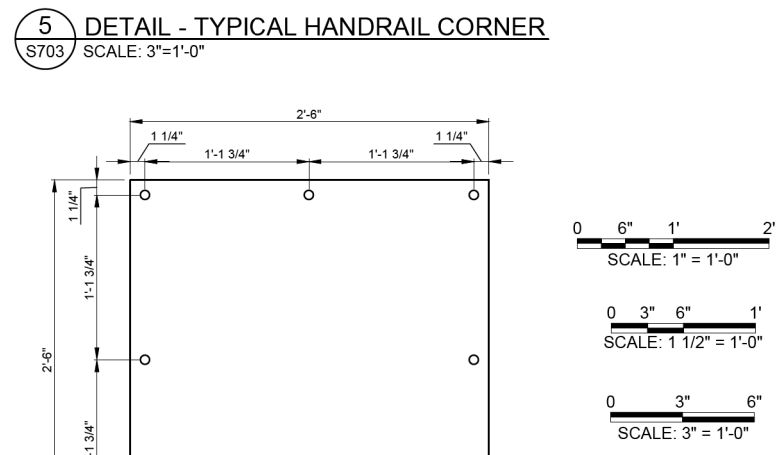
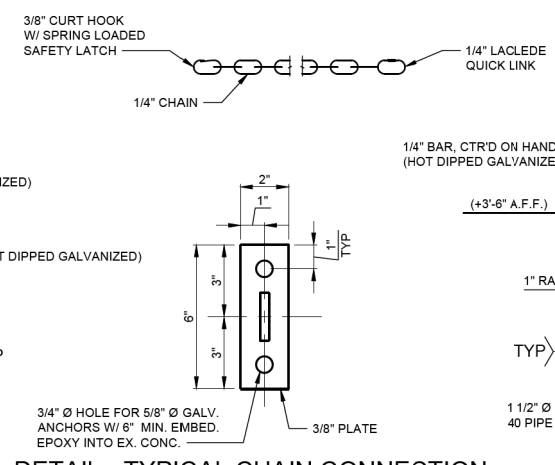
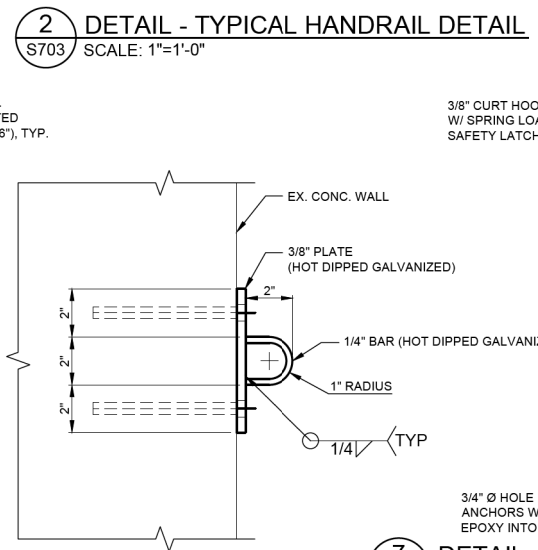
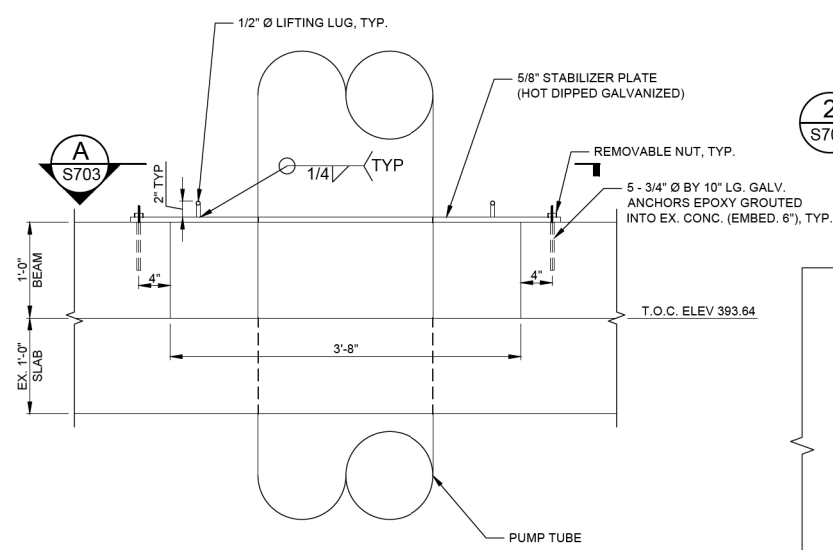
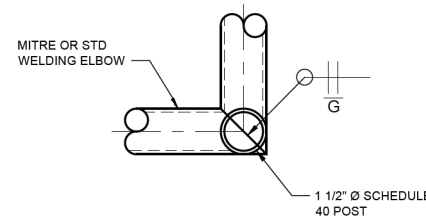
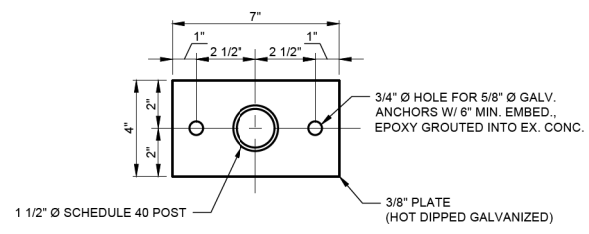
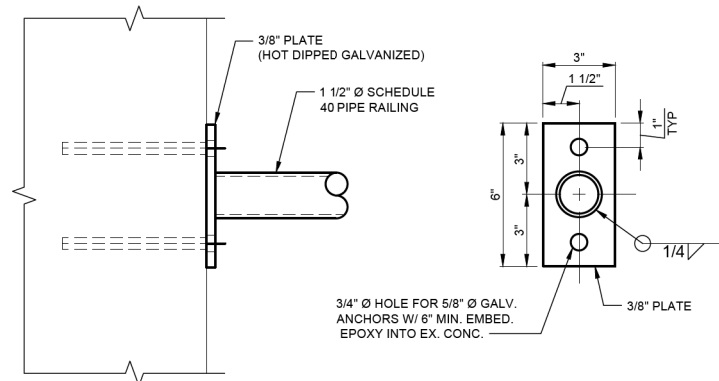
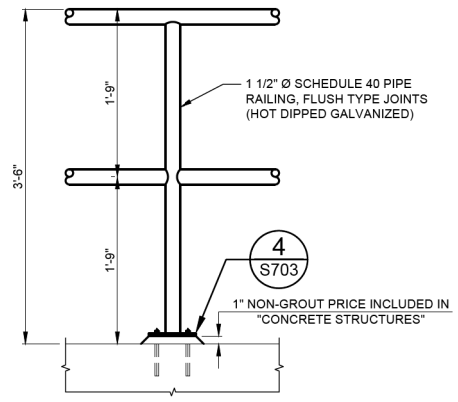
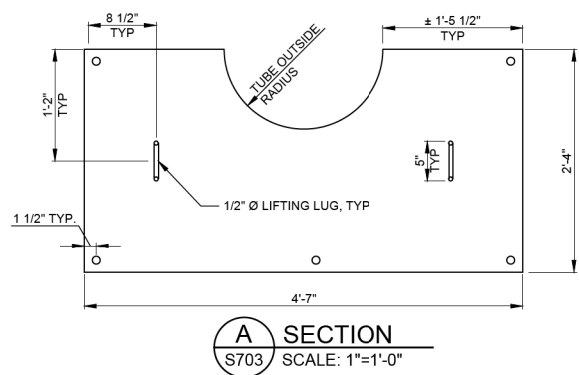
DESIGNED - ADL
REVISOR -
REVISOR -
REVISOR -
REVISOR -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EXISTING PUMP STATION BUILDING - STRUCTURAL DETAILS
MISSOURI AVENUE DEEP WELL FACILITY**
SCALE: AS NOTED SHEET 2 OF 5 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	127
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

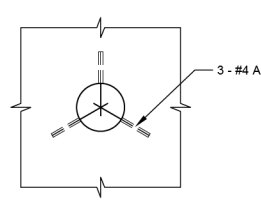
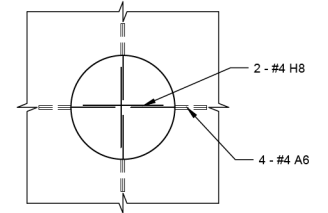
S702



EX. 26" Ø OPENING - ELEV. 393.64

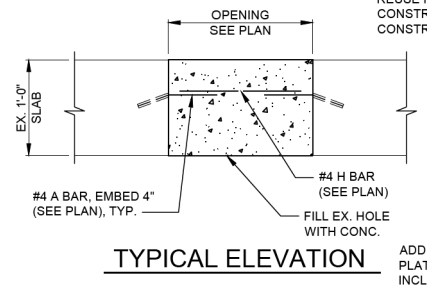
EX. 26" Ø OPENING - ELEV. 412.64 & 418.64

EX. 12" Ø OPENING

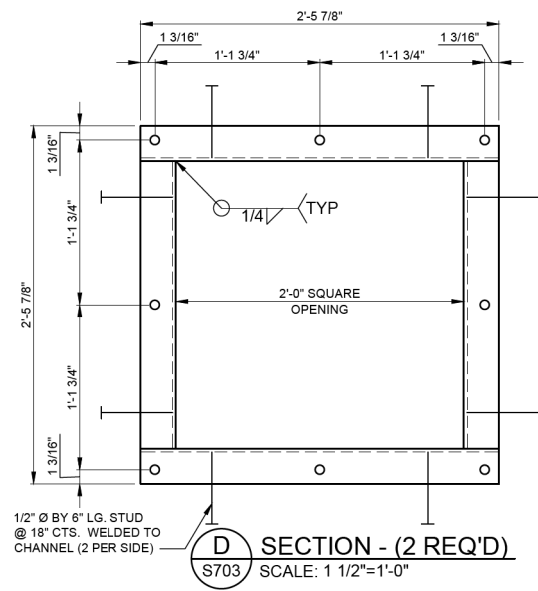
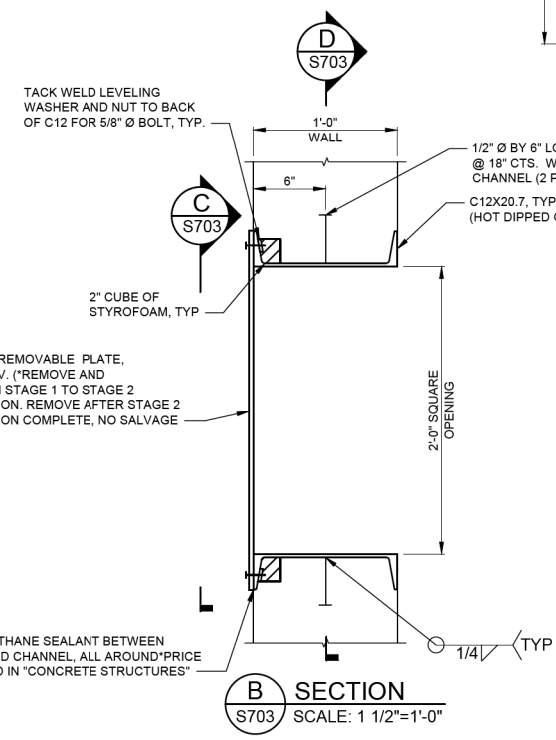


EX. 14" Ø OPENING

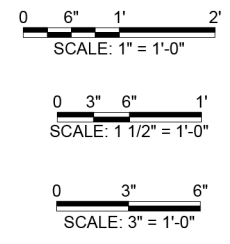
EX. 6" Ø OPENING



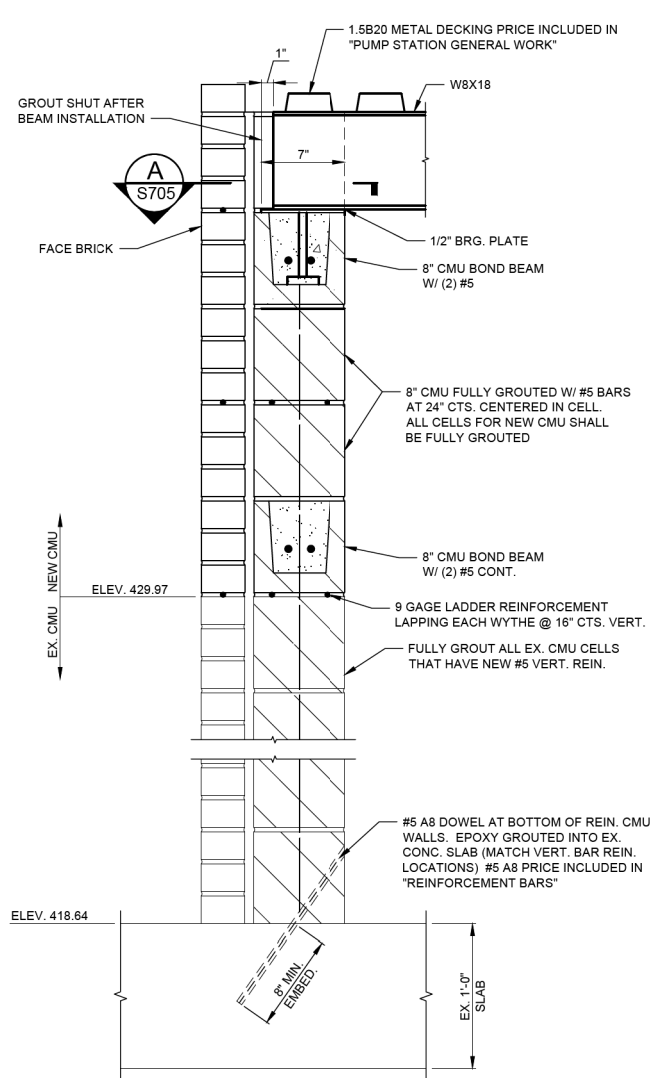
TYPICAL ELEVATION



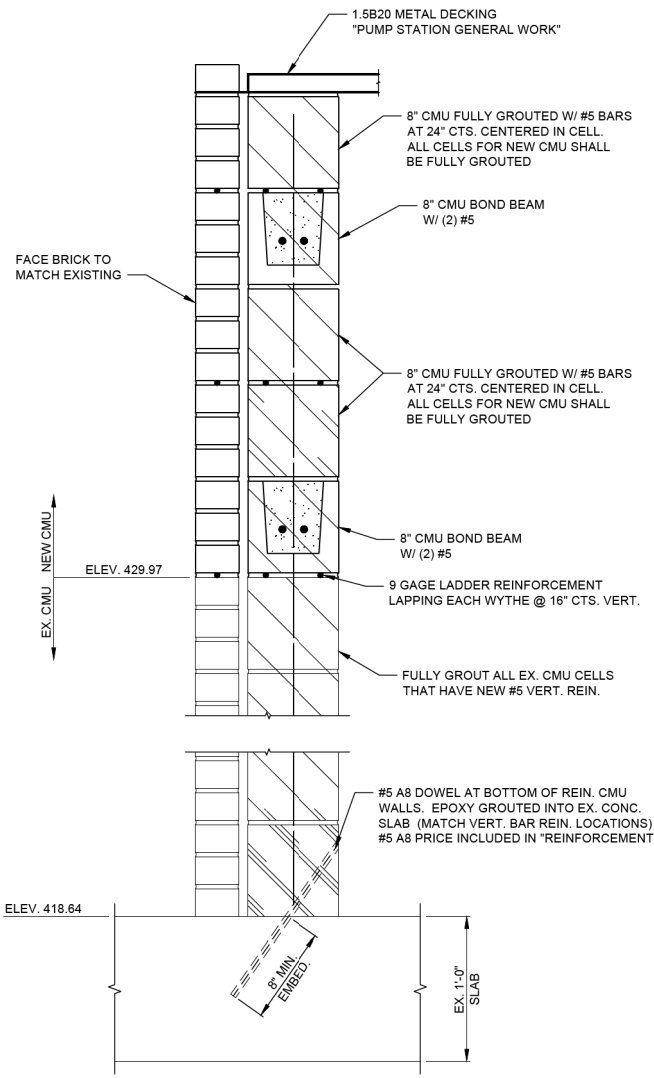
- NOTE:
- REBAR AND ANCHORS SHALL BE EPOXY GROUTED INTO EX. CONC. WITH HILTI HIT-HY 150MAX-SD, OR APPROVED EQUAL. * PRICE INCLUDED IN "CONCRETE STRUCTURES"
 - EXISTING CONCRETE SURFACE IN CONTACT WITH NEW CONCRETE SHALL BE CLEANED AND COATED WITH EPOXY BONDING AGENT, PRIOR TO CONCRETE INSTALLATION. * PRICE INCLUDED IN "CONCRETE STRUCTURES"
 - THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



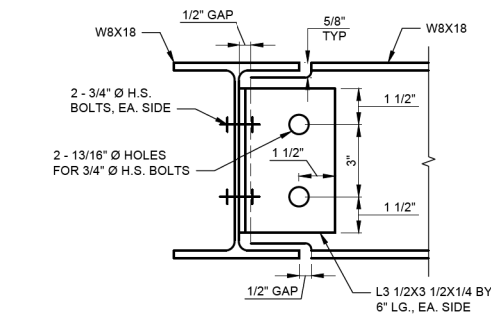
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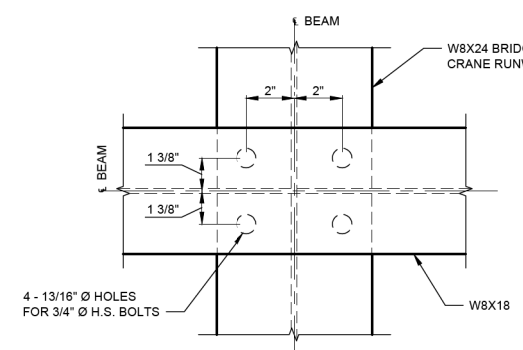
1 DETAIL
S705 SCALE: 1 1/2"=1'-0"



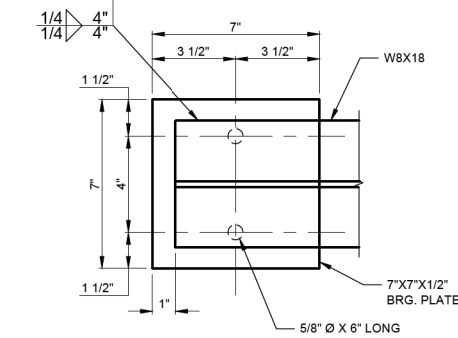
2 DETAIL
S705 SCALE: 1 1/2"=1'-0"



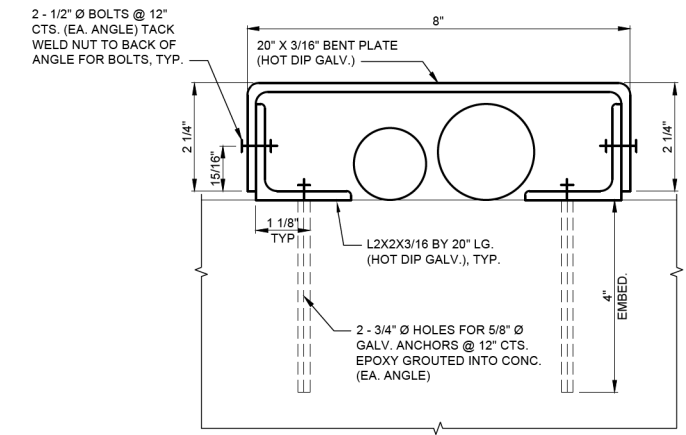
3 DETAIL
S705 SCALE: 3"=1'-0"



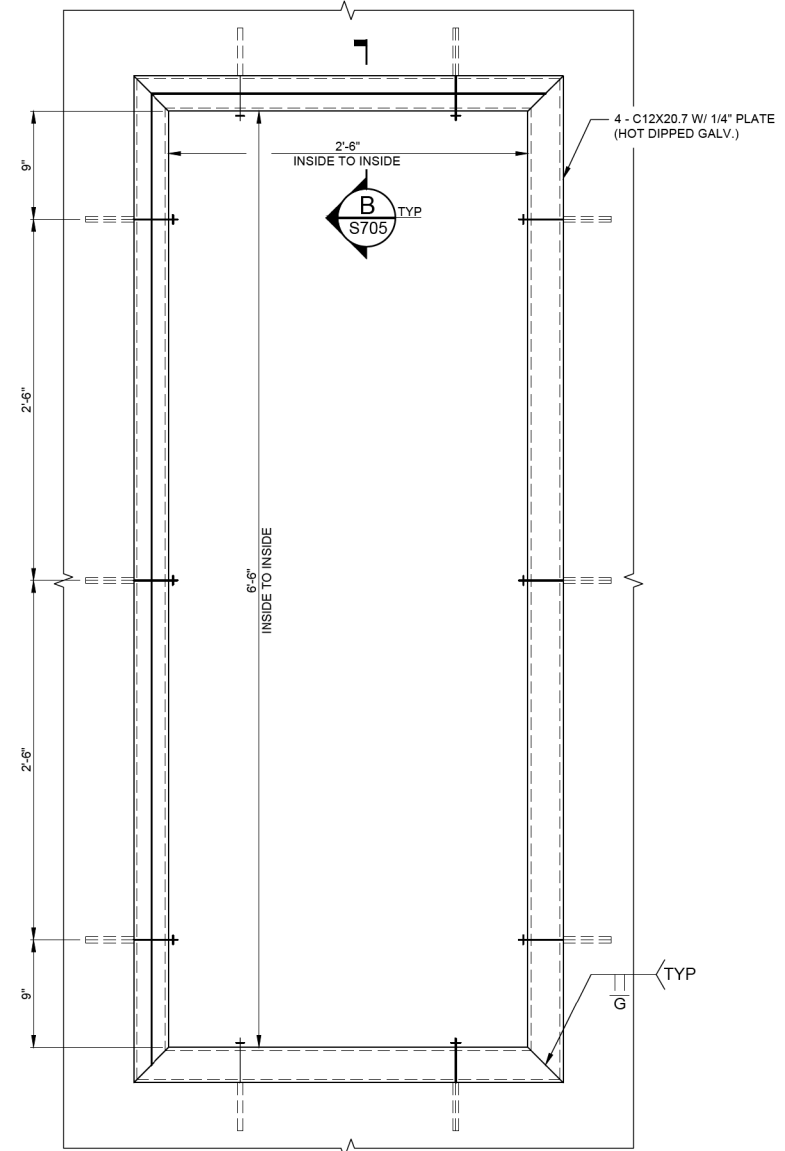
4 DETAIL
S705 SCALE: 3"=1'-0"



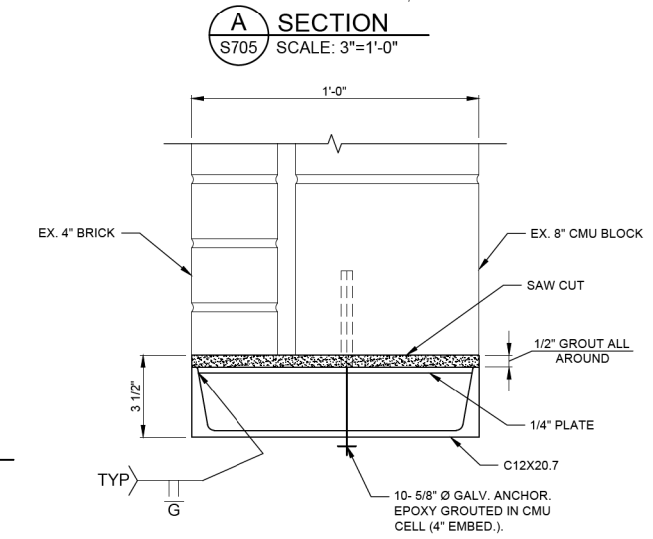
A SECTION
S705 SCALE: 3"=1'-0"



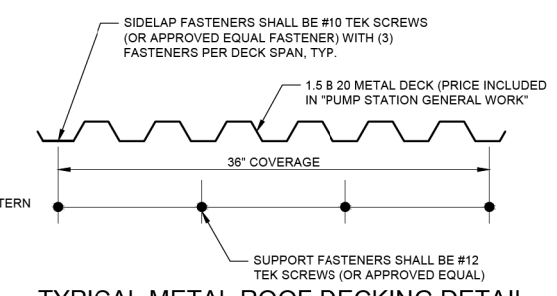
C SECTION - 3 REQ'D
S705 SCALE: 6"=1'-0"



5 DETAIL
S705 SCALE: 1 1/2"=1'-0"

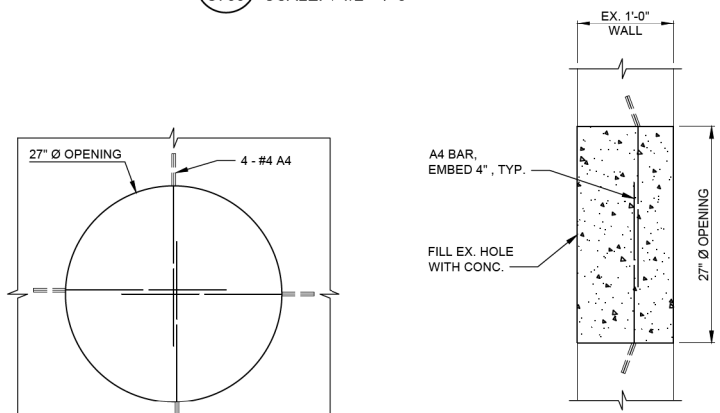


B SECTION
S705 SCALE: 3"=1'-0"



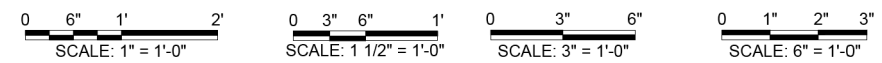
TYPICAL METAL ROOF DECKING DETAIL
SCALE: 1 1/2" = 1'-0"

- *NOTE:
- 1) REBAR AND ANCHORS SHALL BE EPOXY GROUTED INTO EXISTING CONCRETE WITH HILTI HIT-HY 150MAX-SD, OR APPROVED EQUAL. *PRICE INCLUDED IN "CONCRETE STRUCTURES"
 - 2) EXISTING CONCRETE SURFACE IN CONTACT WITH NEW CONCRETE SHALL BE CLEANED AND COATED WITH EPOXY BONDING AGENT, PRIOR TO CONCRETE INSTALLATION. *PRICE INCLUDED IN "CONCRETE STRUCTURES"
 - 3) THE PRICE OF ALL MASONRY WORK (CMU, BRICK, REINFORCEMENT, ETC.) SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
 - 4) SEE ARCHITECTURAL DRAWINGS FOR ROOF DETAILS
 - 5) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



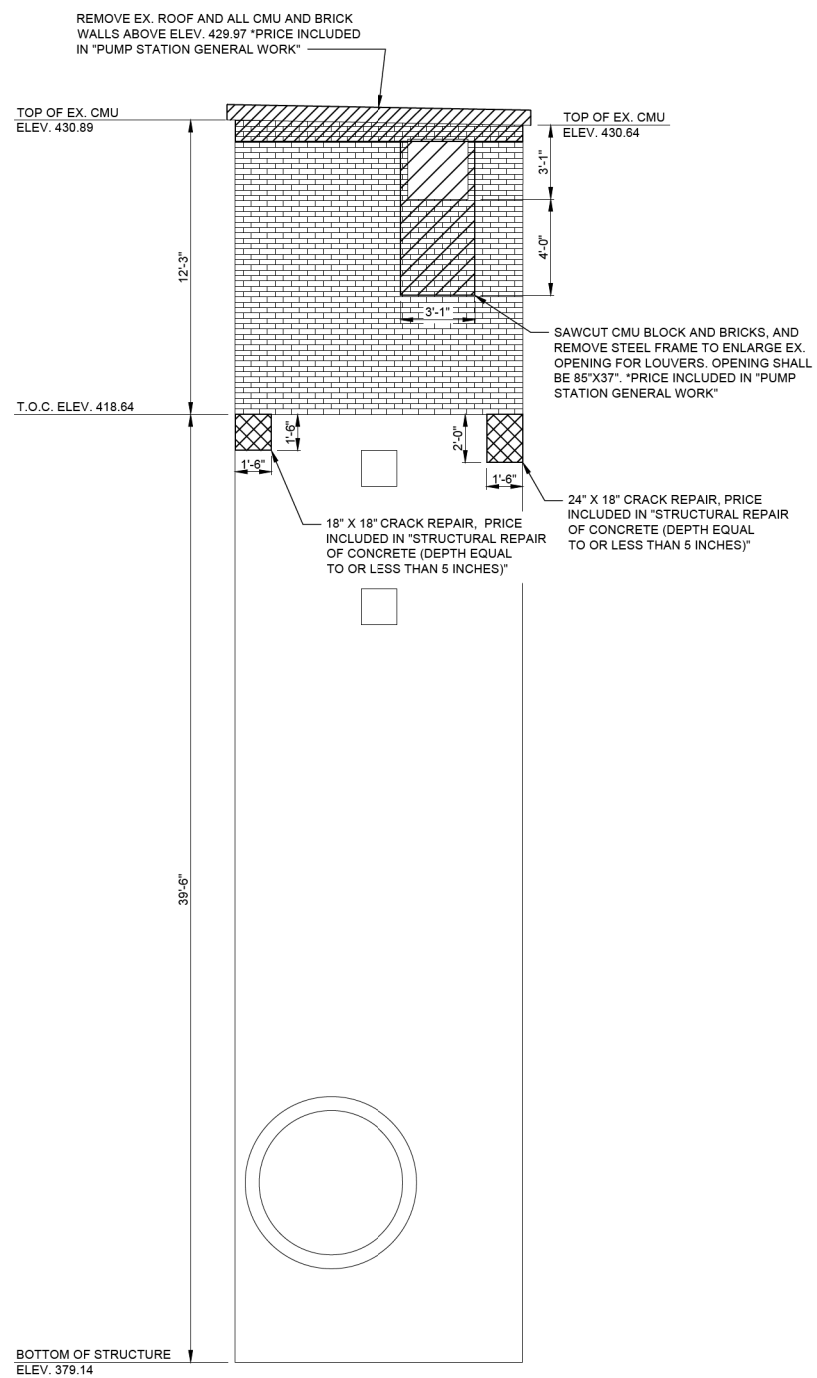
TYPICAL ELEVATION

6 DETAIL
S705 SCALE: 1"=1'-0"

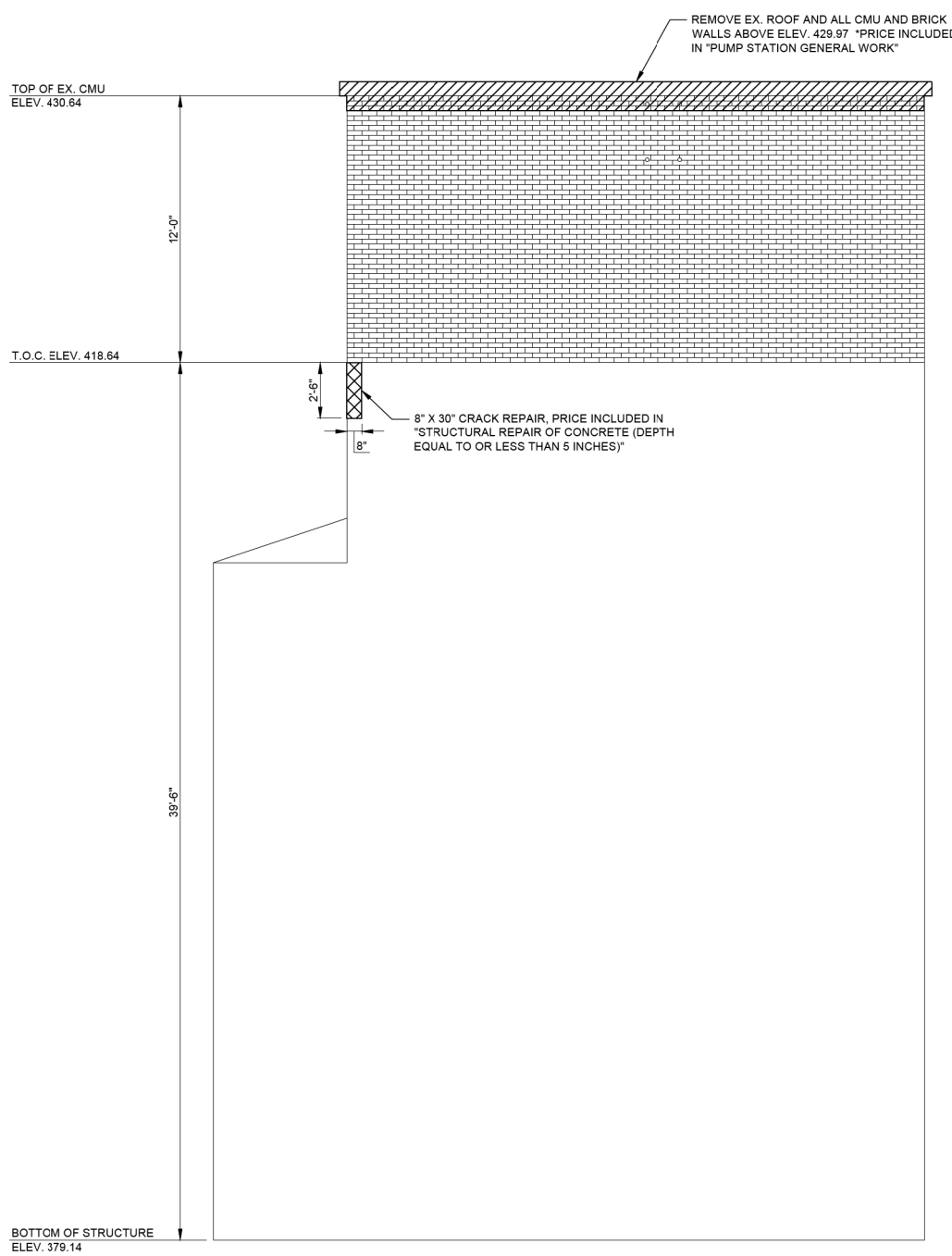


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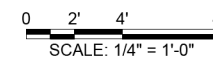
NOTES:
1) NO SALVAGE



SOUTH DEMO AND REPAIR ELEVATION
SCALE: 1/4" = 1'-0"



EAST DEMO AND REPAIR ELEVATION
SCALE: 1/4" = 1'-0"



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KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = bgj	DESIGNED - ADL	REVISED -
PLOT SCALE = 40.0000' / in.	DRAWN - AMS	REVISED -
PLOT DATE = 1/13/2015	CHECKED -	REVISED -
	DATE -	REVISED -

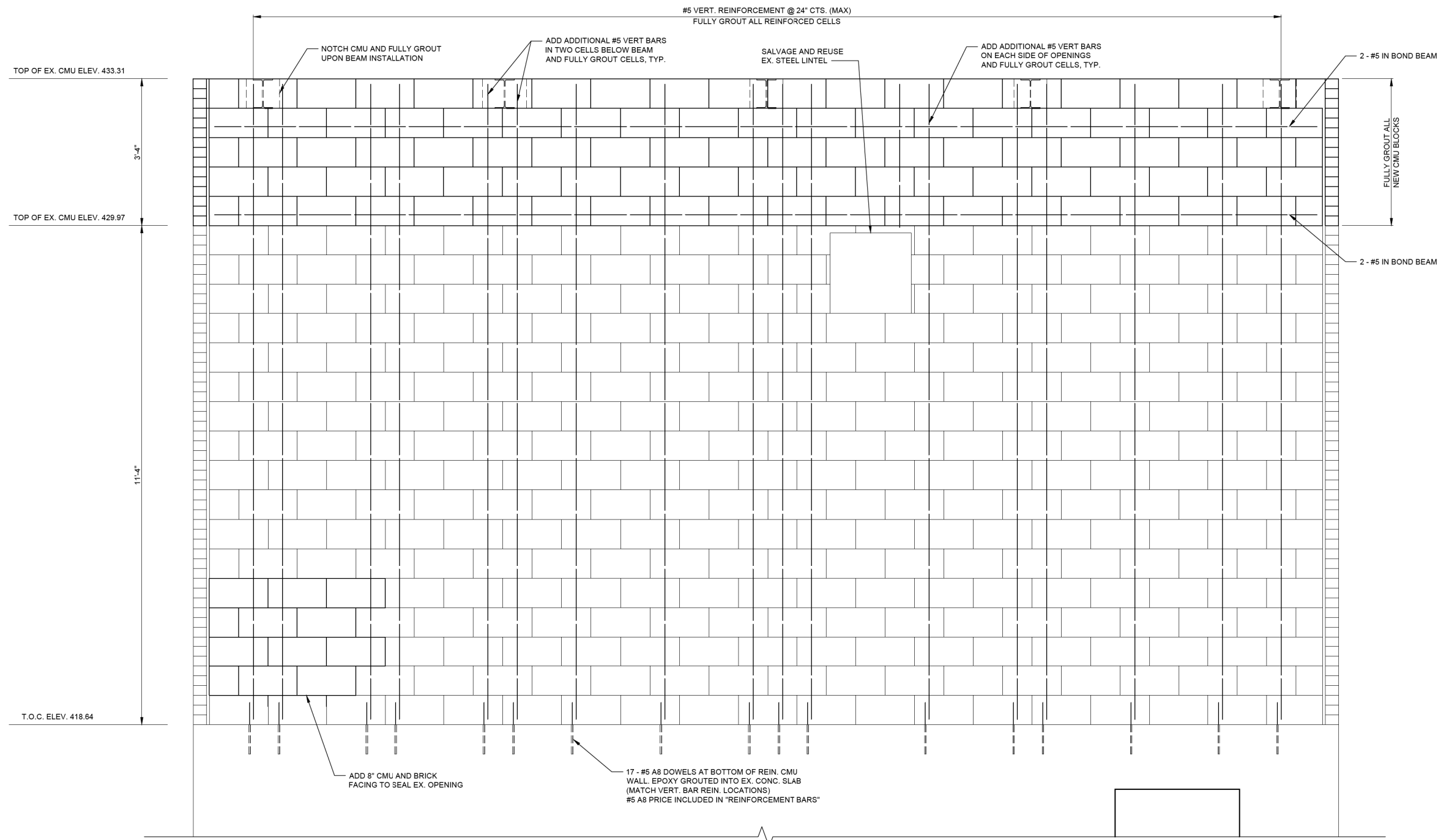
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EXISTING PUMP STATION BUILDING - ELEVATIONS
MISSOURI AVENUE DEEP WELL FACILITY**

SCALE: AS NOTED SHEET 2 OF 5 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	132
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

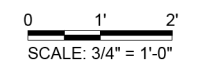
S802



WEST CMU ELEVATION
SCALE: 3/4" = 1'-0"

***NOTE:**

- 1) REBAR AND ANCHORS SHALL BE EPOXY GROUTED INTO EXISTING CONCRETE WITH HILTI HIT-HY 150MAX-SD, OR APPROVED EQUAL. *PRICE INCLUDED IN "CONCRETE STRUCTURES"
- 2) THE PRICE OF ALL MASONRY WORK (CMU, BRICK, REINFORCEMENT, ETC.) SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
- 3) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



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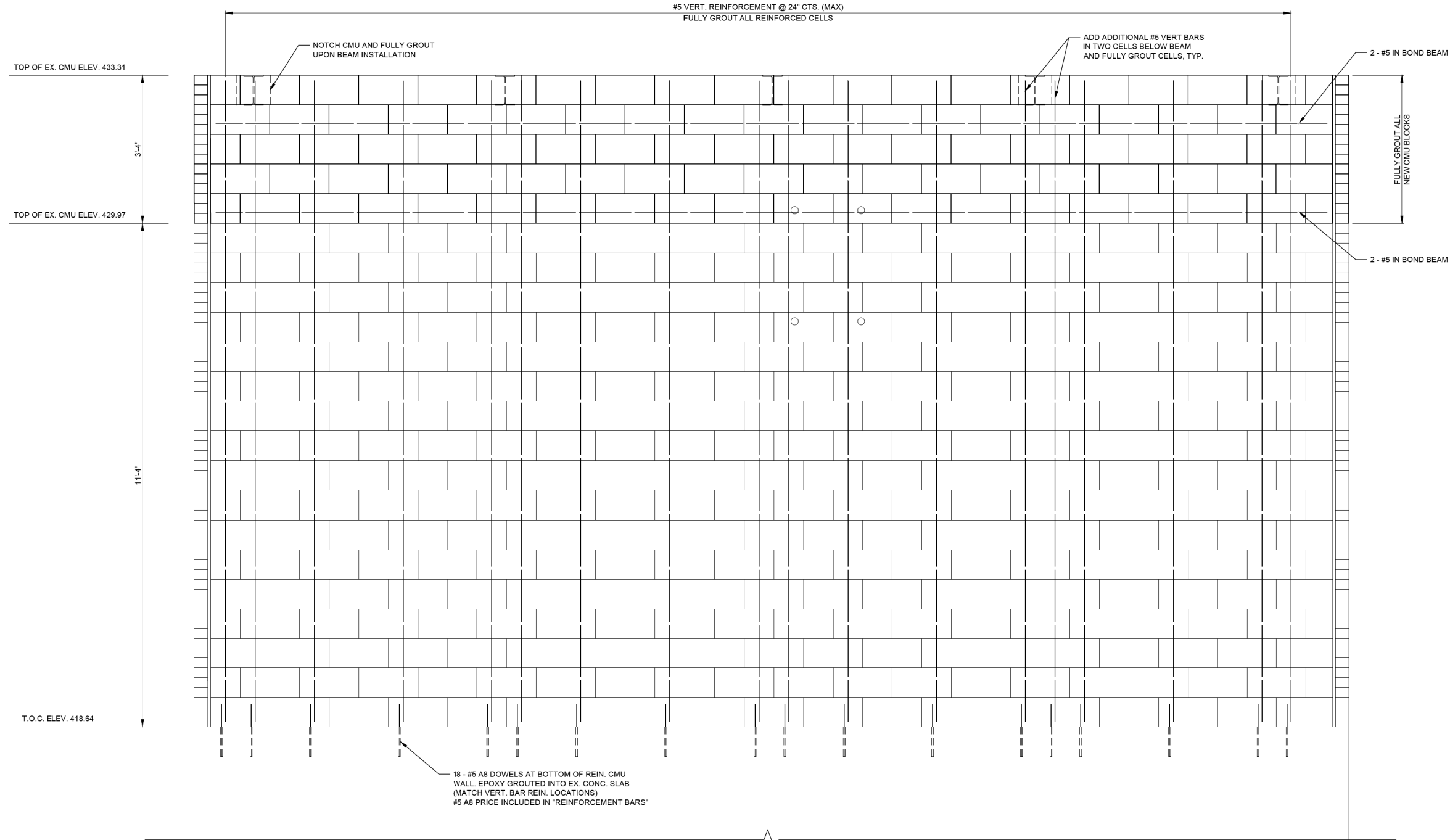
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EXISTING PUMP STATION BUILDING - ELEVATIONS
MISSOURI AVENUE DEEP WELL FACILITY**

SCALE: AS NOTED SHEET 4 OF 5 SHEETS STA. TO STA.

F.A.I. RTE. = 55/70/64	SECTION = 82-4T-1	COUNTY = ST. CLAIR	TOTAL SHEETS = 185	SHEET NO. = 134
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

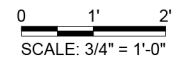
S804



EAST CMU ELEVATION
SCALE: 3/4" = 1'-0"

***NOTE:**

- 1) REBAR AND ANCHORS SHALL BE EPOXY GROUTED INTO EXISTING CONCRETE WITH HILTI HIT-HY 150MAX-SD, OR APPROVED EQUAL. *PRICE INCLUDED IN "CONCRETE STRUCTURES"
- 2) THE PRICE OF ALL MASONRY WORK (CMU, BRICK, REINFORCEMENT, ETC.) SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"
- 3) THE PRICE OF ALL HANDRAILS AND GRADES 36 AND 50 STRUCTURAL STEEL SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK"



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KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

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	DATE -	REVISED -

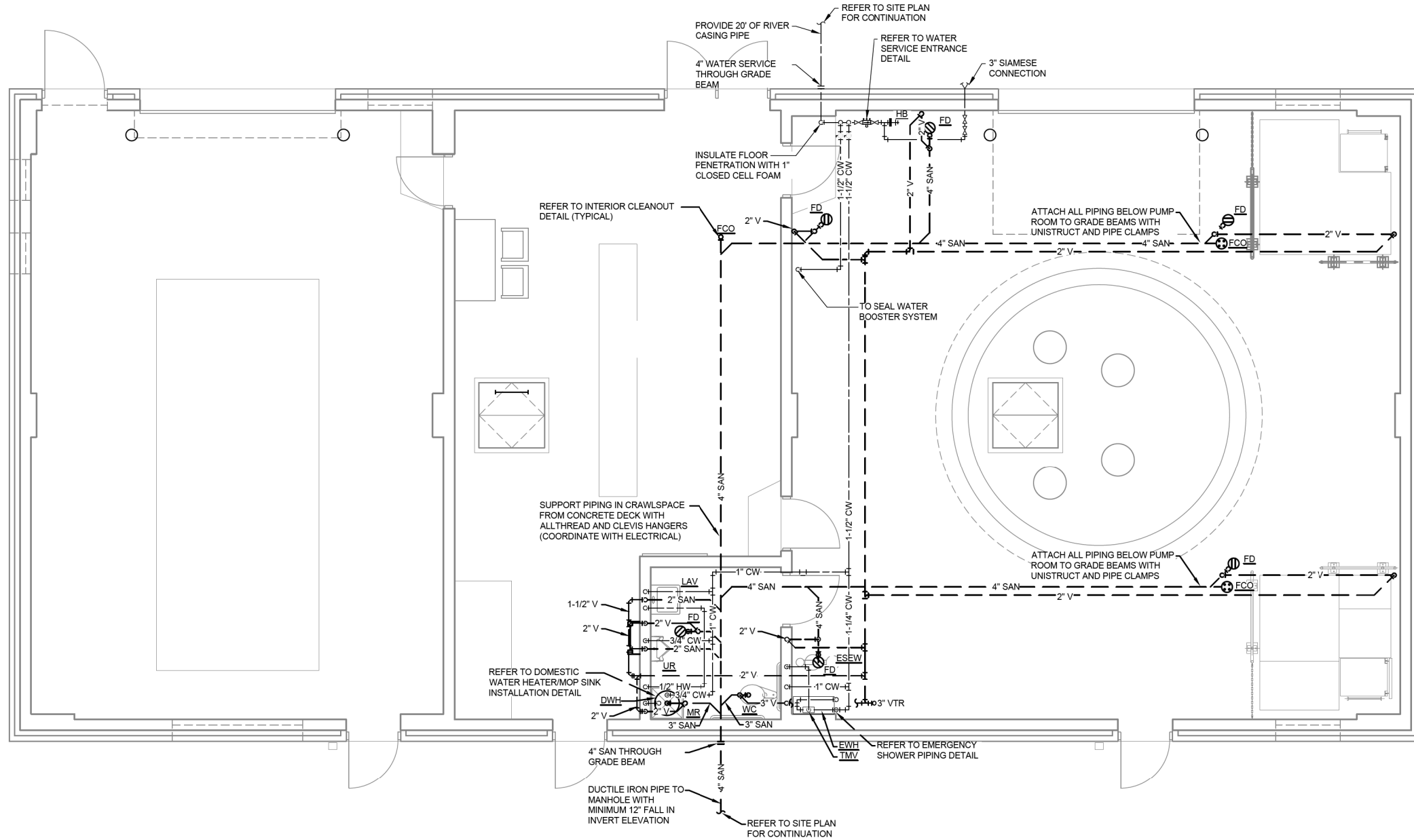
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EXISTING PUMP STATION BUILDING - ELEVATIONS
MISSOURI AVENUE DEEP WELL FACILITY**

SCALE: AS NOTED SHEET 5 OF 5 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	135
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

S805



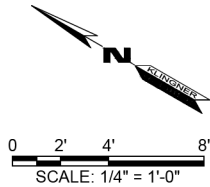
PLUMBING LEGEND	
	2" VENT RISER
	4" VTR 4" VENT THROUGH ROOF
	DOMESTIC COLD WATER (CW)
	DOMESTIC 115° HOT WATER (HW)
	DOMESTIC 140° HOT WATER (HW)
	SEAL WATER SUPPLY (SW)
	SEWER OR WASTE (SAN)
	VENT LINE (V)
	RISE IN PIPE
	DROP IN PIPE
	CAP ON END OF PIPE
	POINT OF CONNECTION
	CLEAN OUT (WALL OR SIDE OF PIPE)
	FLOOR CLEAN OUT (C.O., RISER)
	EXTERIOR CLEAN OUT
	BALL VALVE
	FLOOR DRAIN

WELL HOUSE BUILDING- DOMESTIC PLUMBING PLAN

SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. ALL CORE DRILLED HOLES THROUGH GRADE BEAMS SHALL BE COORDINATED WITH THE STRUCTURAL ENGINEER. PROVIDE PROPOSED HOLE LOCATIONS TO ENGINEER FOR REVIEW PRIOR TO DRILLING HOLES.



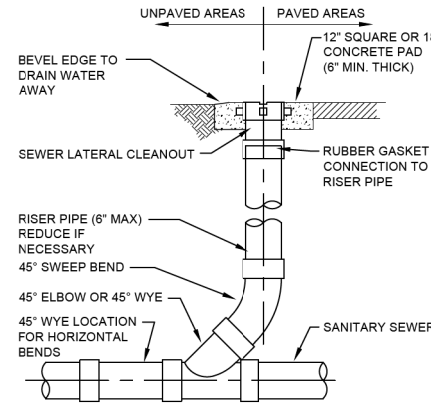
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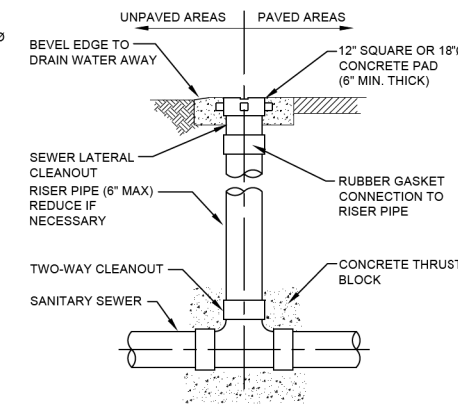
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	136
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

PLUMBING FIXTURE SCHEDULE

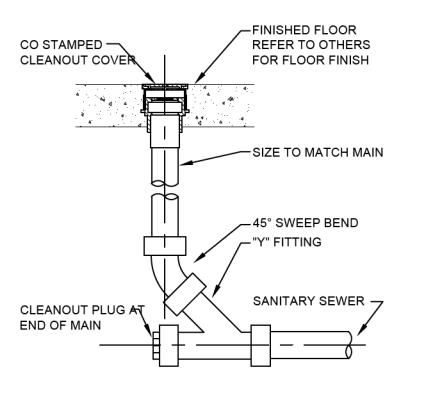
MARK	DESCRIPTION	BASIS OF DESIGN		COMMENTS	BRANCH PIPE SIZE (IN)			
		MANUFACTURER	MODEL		CW	HW	W	V
WC	TOILET - FLOOR MOUNTED, VITREOUS CHINA, ELONGATED BOWL, SIPHON JET, WITH TOP SPUD	AMERICAN STANDARD GERBER	MADERA 2305.100 25-730	MOUNT 17" FLOOR TO RIM				
	SEAT - ELONGATED, HEAVY DUTY, SOLID PLASTIC, OPEN FRONT, WITH LIFT OFF HINGE	BEMIS OLSONITE	2155C 8C					
	FLUSH VALVE - WITH BUMPER ON ANGLE STOP	SLOAN	ROYAL 111	1.6 GPF	1			
LAV	LAVATORY - WALL MOUNTED, VITREOUS CHINA, 4" ON CENTERS	AMERICAN STANDARD GERBER TOTO	LUCERNE 0355.012 12-904 LT307				1-1/4	1-1/4
	STRAINER - 1-1/4" CAST BRASS GRID STRAINER	DELTA GERBER	33T260 43-970					
	FAUCET - 4" CENTERS, LEVER ACTUATED WITH SEPARATE HOT AND COLD AND 0.5 GPM FLOW CONTROL	GERBER	53-100-64-67	0.5 GPM	1/2	1/2		
	CARRIER - FOOT SUPPORT, CONCEALED ARMS	ZURN WADE	1231 W-520					
UR	URINAL - WALL MOUNTED, VITREOUS CHINA, WASHOUT FLUSH ACTION, TOP SPUD	AMERICAN STANDARD GERBER KOHLER	WASHBROOK 6501.010 27-780 K-4904				3/4	
	FLUSH VALVE - WITH BUMPER ON ANGLE STOP	SLOAN	ROYAL 186-1					
	CARRIER - FLUSH VALVE SUPPORT AND LOWER BEARING PLATE	WADE JAY R. SMITH ZURN	W-400-AMI-AMII 0617 Z1222					
MR	MOP SINK RECEPTOR, ONE-PIECE, 304 STAINLESS STEEL RIM GUARDS, 304 STAINLESS STEEL WALL PANELS, MOP HANGER, HOSE AND HANGER	SWAN MUSTEE	MS2424 63M				3	2
	FAUCET - WALL MOUNT, WITH REINFORCING BAR	CHICAGO	897MPCRF		3/4	3/4		
HB	HOSE BIBB - FREEZELESS WALL HYDRANT, DOUBLE CHECK BACKFLOW PREVENTION	WOODFORD	MODEL 67		3/4			
WH	WALL HYDRANT - HOT AND COLD WATER, WALL MOUNT, FREEZEPROOF	WOODFORD	MODEL C22		1/2	1/2		
DWH	WATER HEATER - 20 GALLON HEAVY DUTY, COMMERCIAL, ELECTRIC, 1500 WATT ELEMENT	AMERICAN	LDCE31-20U	208V/1PHASE/7.2A	3/4	3/4		
EWH	EMERGENCY SHOWER WATER HEATER - INSTANTANEOUS, COMMERCIAL, ELECTRIC, 96KW, NEMA 4 ENCLOSURE	HUBBELL	ETX-96-12-T4	480V/3PHASE/MCA116	1-1/4"	1-1/4"		
TMV	THERMOSTATIC MIXING VALVE - LIQUID FILLED, ADJUSTABLE SETPOINT, DIAL THERMOMETER, WITH SHUTOFF VALVES	BRADLEY	S19-2100-B-P	1-1/4" TEMPERED WATER SUPPLY	3/4	3/4		
ESEW	COMBINATION DRENCH SHOWER AND EYE/FACE WASH, 304 STAINLESS STEEL, WITH DUST COVER	BRADLEY	S19314AB1FEABO	1-1/4" TEMPERED WATER SUPPLY				
FD	FLOOR DRAIN - POLISHED NICKEL BRONZE STRAINER, CAST IRON BODY, DEEP SEAL TRAP, 8" TYPE B STRAINER	ZURN SIOUX CHIEF JAY R. SMITH	ZN-415-8B 832-XXXX 2005				3	1-1/2
FCO	FLOOR CLEANOUT - ADJUSTABLE, CAST IRON BODY, POLISHED NICKEL BRONZE TOP, BRONZE PLUG	ZURN	ZN-1400-BP				4	



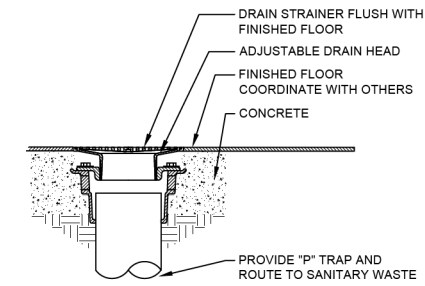
NOTE: PIPE MATERIAL TO BE SAME AS SANITARY SEWER.
EXTERIOR CLEANOUT DETAIL
 N.T.S.



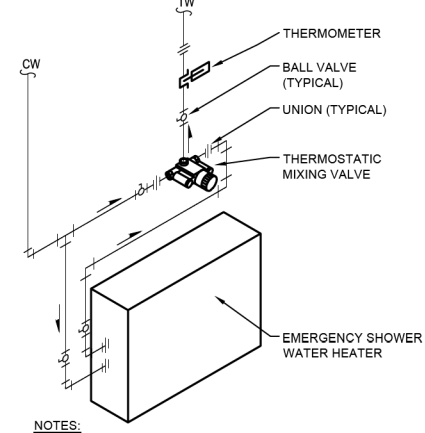
NOTE: PIPE MATERIAL TO BE SAME AS SANITARY SEWER.
EXTERIOR TWO-WAY CLEANOUT DETAIL
 N.T.S.



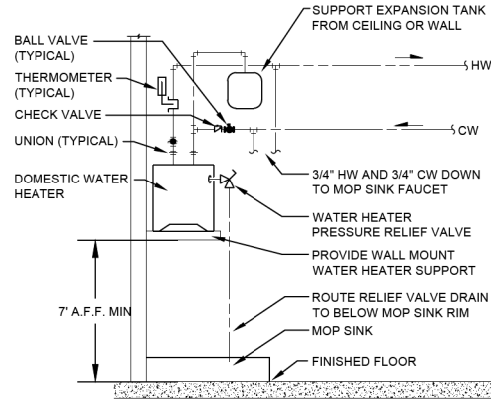
NOTE: PIPE MATERIAL TO BE SAME AS SANITARY SEWER.
INTERIOR CLEANOUT DETAIL
 N.T.S.



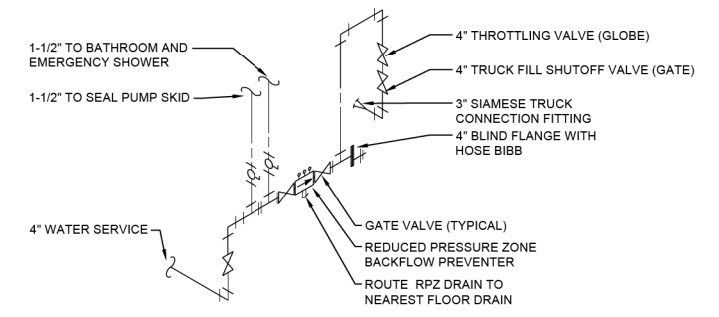
NOTE: ALL FLOOR DRAINS SHALL BE VENTED PER CODE.
FLOOR DRAIN DETAIL
 N.T.S.



NOTES:
 1. ALL PIPING SHOWN SHALL BE 1-1/4".
 2. WATER HEATER SETPOINT SHALL BE 120°F.
 3. MIXING VALVE SETPOINT SHALL BE 80°F.
EMERGENCY SHOWER PIPING DETAIL
 N.T.S.



DOMESTIC WATER HEATER/MOP SINK INSTALLATION DETAIL
 NOT TO SCALE



WATER SERVICE ENTRANCE DETAIL
 N.T.S.

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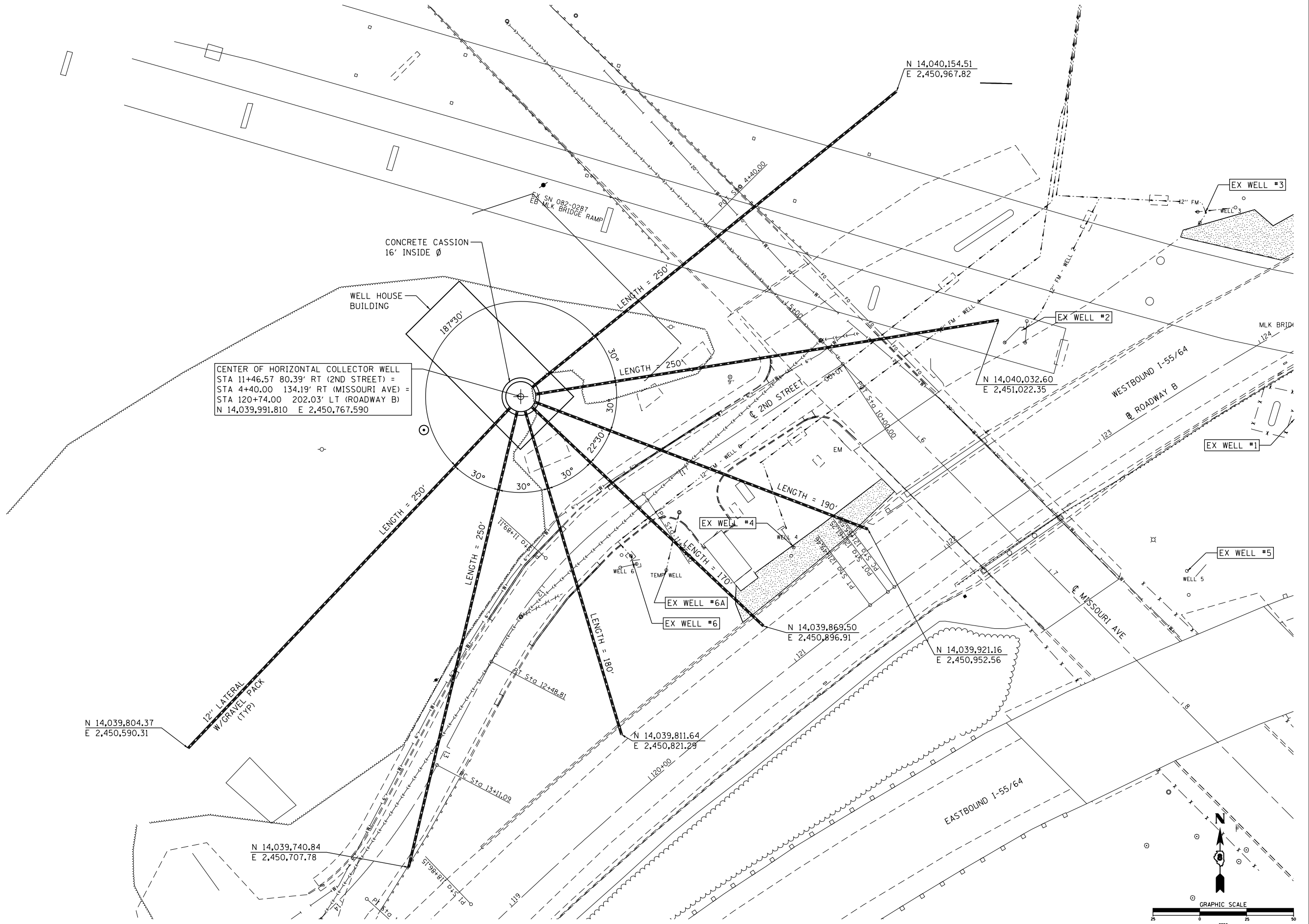
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	DATE -	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

WELL HOUSE BUILDING - DOMESTIC PLUMBING SCHEDULES AND DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 137
ILLINOIS FED. AID PROJECT			CONTRACT NO. 76C99	



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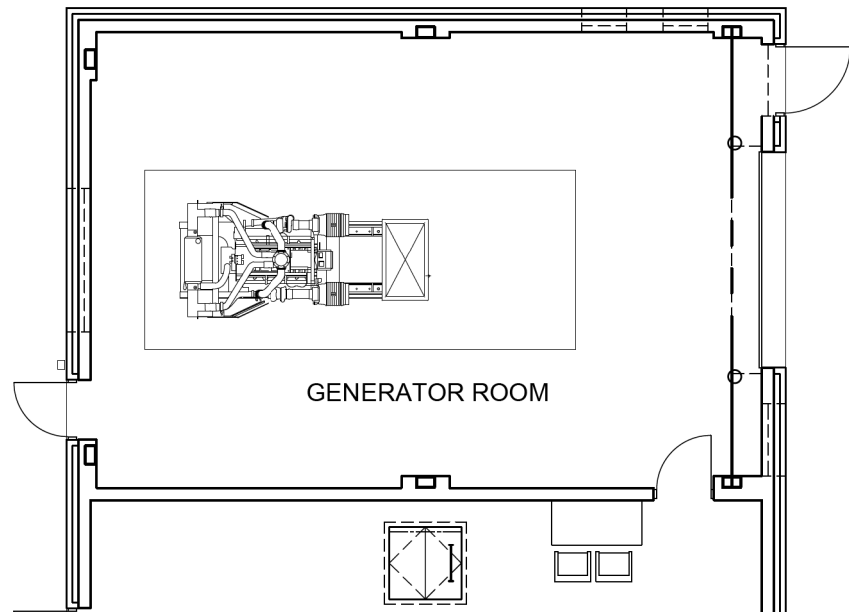
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**HORIZONTAL COLLECTOR WELL LATERAL PLAN
 MISSOURI AVENUE DEEP WELL FACILITY**

SCALE: 1"=25' SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 138
ILLINOIS FED. AID PROJECT			CONTRACT NO. 76C99	

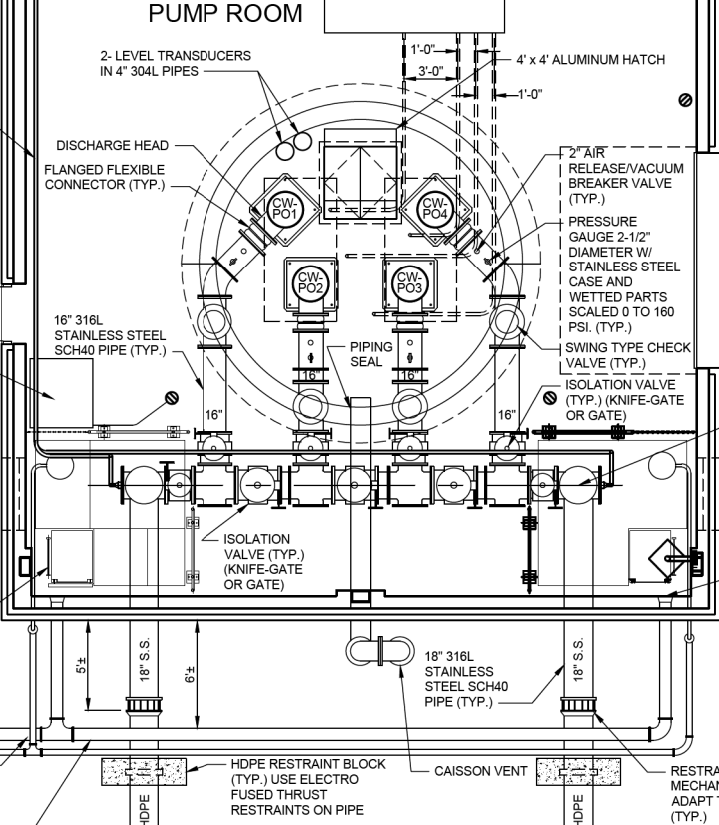
M100



GENERATOR ROOM

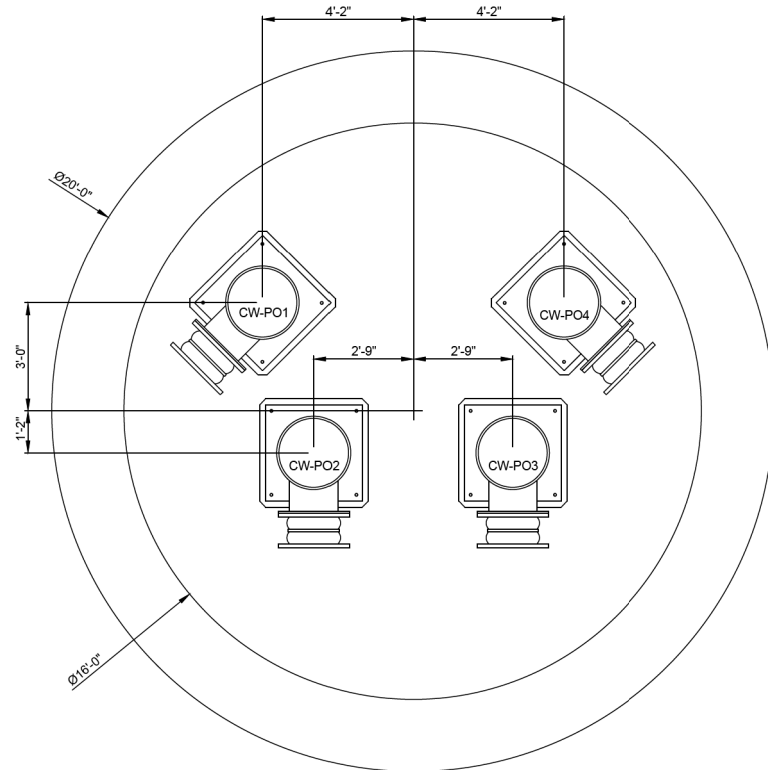


ELECTRICAL AND CONTROL ROOM



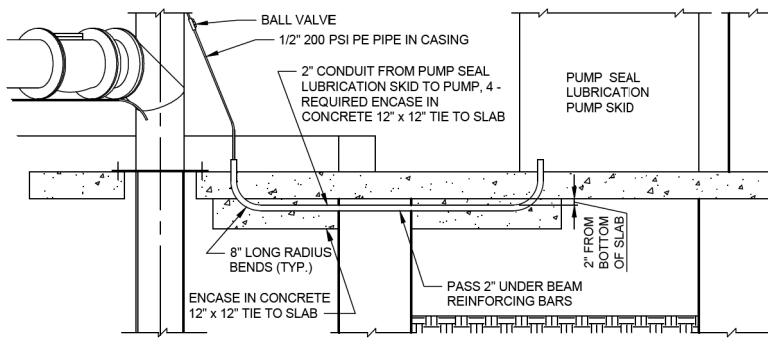
PUMP ROOM FLOOR PLAN

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



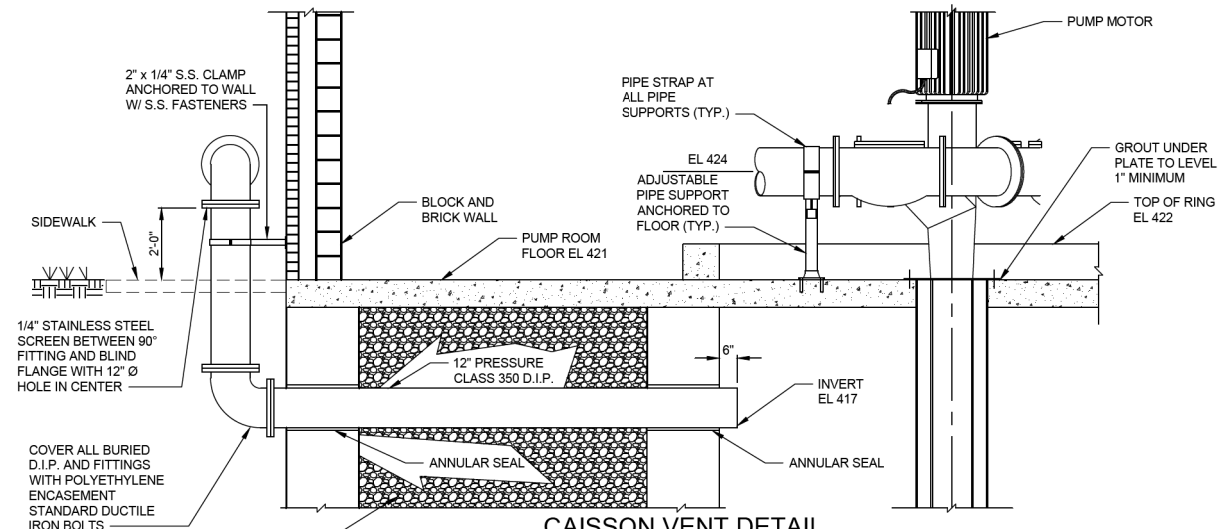
CAISSON PUMP LOCATION DETAIL

SCALE: 3/8" = 1'-0"



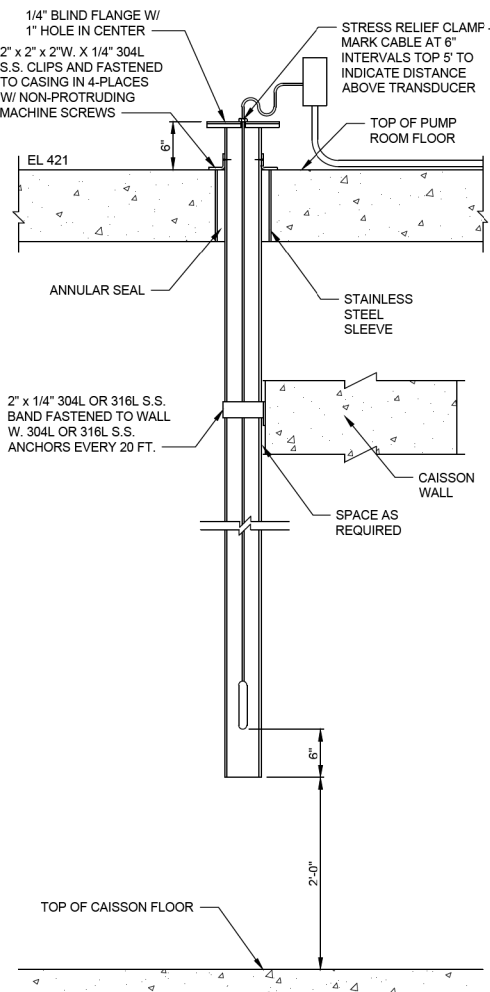
PUMP AND SEAL LUBRICATION CONDUIT DETAIL

SCALE: 3/8" = 1'-0"



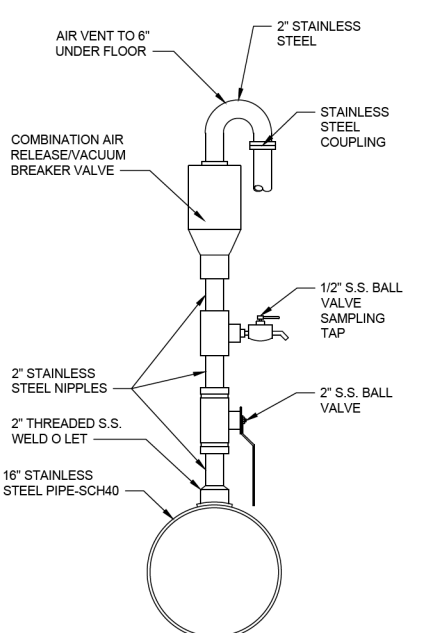
CAISSON VENT DETAIL

SCALE: 3/8" = 1'-0"



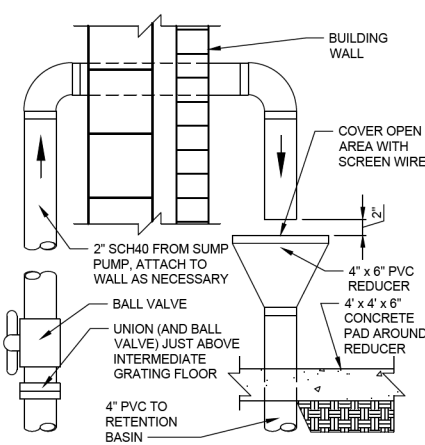
LEVEL TRANSDUCER DETAIL (TYP.)

SCALE: 1" = 1'-0"



AIR-RELEASE/VACUUM BREAKER VALVE DETAIL

SCALE: NONE



SUMP DRAIN DETAIL (TYP.)

SCALE: NONE

NOTES:

- BLIND FLANGES ARE PROVIDED TO AID IN PIPE LINE CLEANING. PROVIDE LIFT EYES ON EACH BLIND FLANGE TO PROVIDE POINT OF LIFTING FOR BRIDGE CRANE.
- ADJUST PIPING CENTERLINE AS NECESSARY TO ACCOMMODATE DISCHARGE HEAD AND GROUT LEVELING COURSE.
- DIRECT AIR RELEASE/VACUUM BREAKER VALVE EXHAUST WITH 2" SCH 10 304L STAINLESS STEEL PIPE EXTENDED THROUGH SLAB TO 1'-0" BELOW BOTTOM OF SLAB. USE ANNULAR SEALS IN SLAB.
- CONVERT FROM 18" 316L SCH40 STAINLESS STEEL PIPE TO 18" HDPE DR17 PIPE 5" OUTSIDE PUMP ROOM. USE MJ TYPE CONNECTOR.
- OVERFLOW DRAIN IS 8" CLASS 150 PSI PIPE, CEMENT LINED, BITUMINUS COATED, POLYETHYLENE ENCASED RJMJ FITTINGS AND JOINTS. TERMINATE AT RETENTION BASIN WITH CONCRETE HEADWALL AND RUBBER DUCKBILL CHECK VALVE WITH STAINLESS STEEL FASTENERS.
- PROVIDE A 1" IPS THREADED STAINLESS STEEL BALL VALVE ON THE BOTTOM OF EACH PIPE RUN TO SERVE TO DRAIN THE PIPE FOR INSPECTION OR CLEANING.
- DISPLAYS FOR METERS AND TRANSDUCERS TO BE LOCATED IN ELECTRICAL AND CONTROL ROOM PER OWNER'S PREFERENCE.

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DEPARTMENT OF TRANSPORTATION

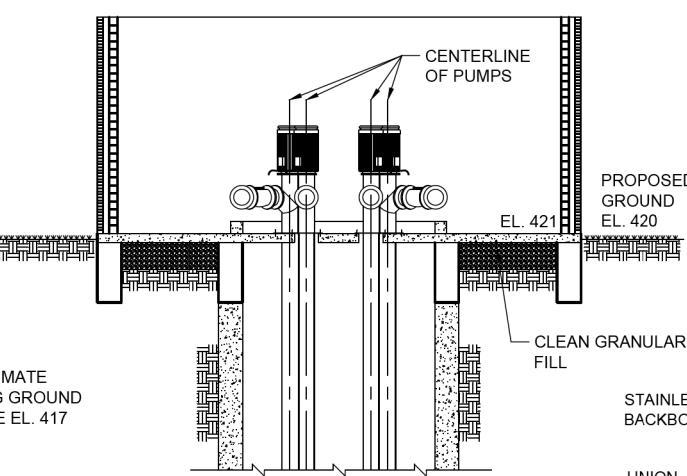
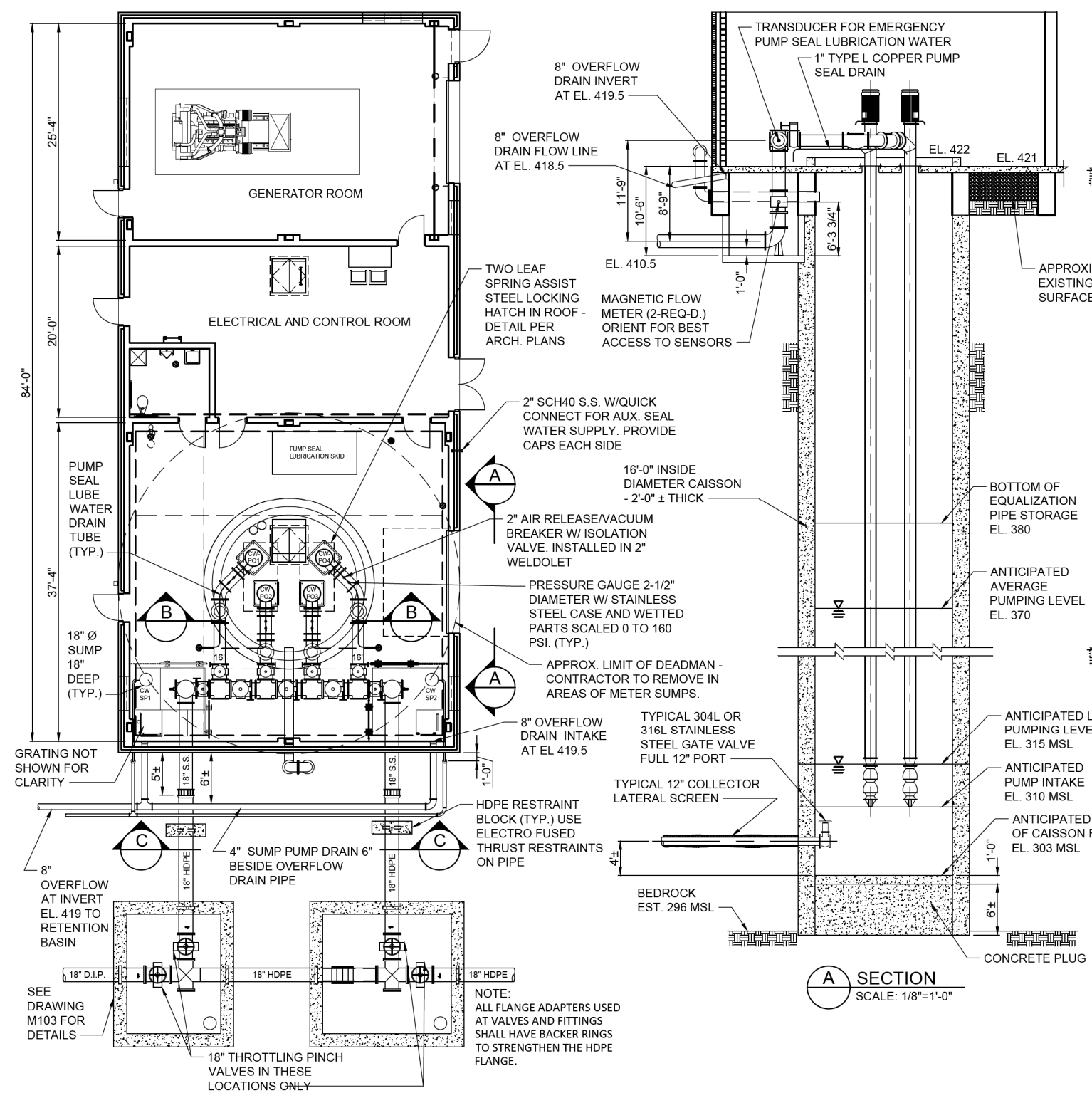
WELL HOUSE BUILDING - PUMP ROOM DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED SHEET 1 OF 1 SHEETS STA. TO STA.

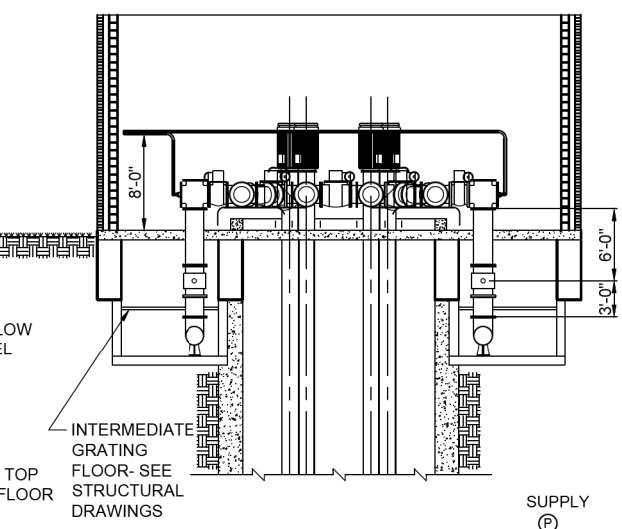
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64	82-4T-1	ST. CLAIR	185	139
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

M101

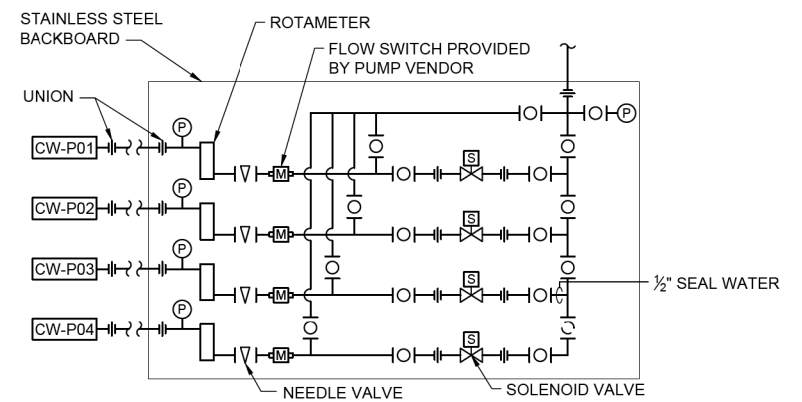
NOTE:
THE BORING SHOWN ON SHEETS S003 AND S004
WAS CONDUCTED IN 2014 AT THE APPROXIMATE
CENTER OF THE PROPOSED CAISSON AND IS
PROVIDED FOR INFORMATION ONLY. THE
CONTRACTOR IS RESPONSIBLE FOR ANY OTHER
INFORMATION NEEDED TO FURNISH AND INSTALL
ALL COLLECTOR LATERALS AND FURNISH AND
INSTALL ALL COLLECTOR SCREENS, TO
ACCOMPLISH A SATISFACTORY AND
SUCCESSFUL COLLECTOR WELL.



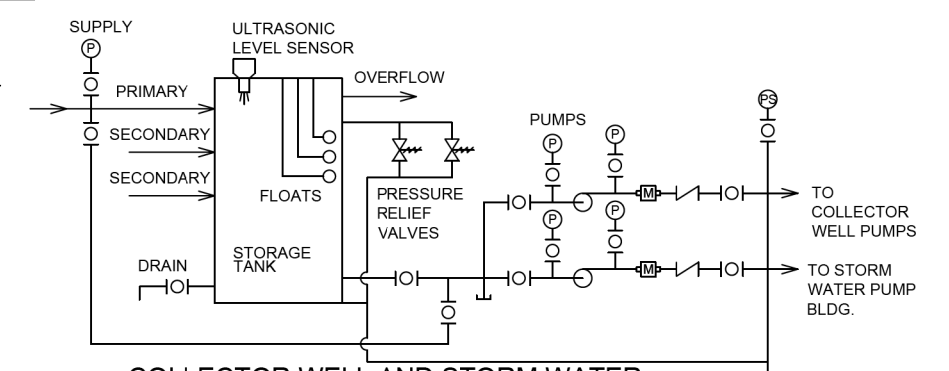
B SECTION
SCALE: 1/8"=1'-0"



C SECTION
SCALE: 1/8"=1'-0"



COLLECTOR WELL SEAL WATER CONTROL BACKBOARD
SCALE: NTS



COLLECTOR WELL AND STORM WATER PUMPS SEAL WATER SYSTEM SCHEMATIC
SCALE: NTS

FLOOR PLAN
SCALE: 1/8" = 1'-0"

A SECTION
SCALE: 1/8"=1'-0"

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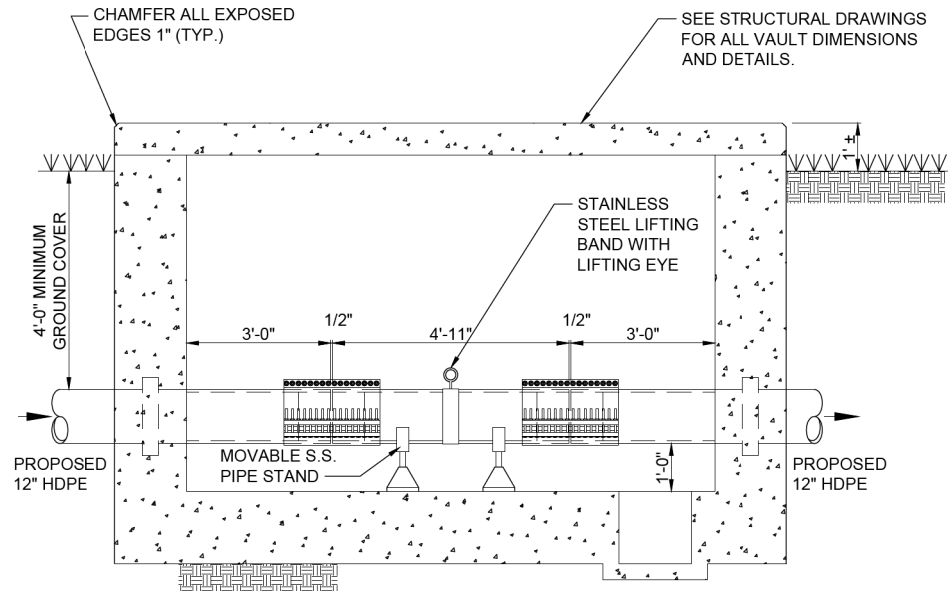
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	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

WELL HOUSE BUILDING - CAISSON DETAILS
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: AS NOTED SHEET 1 OF 1 SHEETS STA. TO STA.

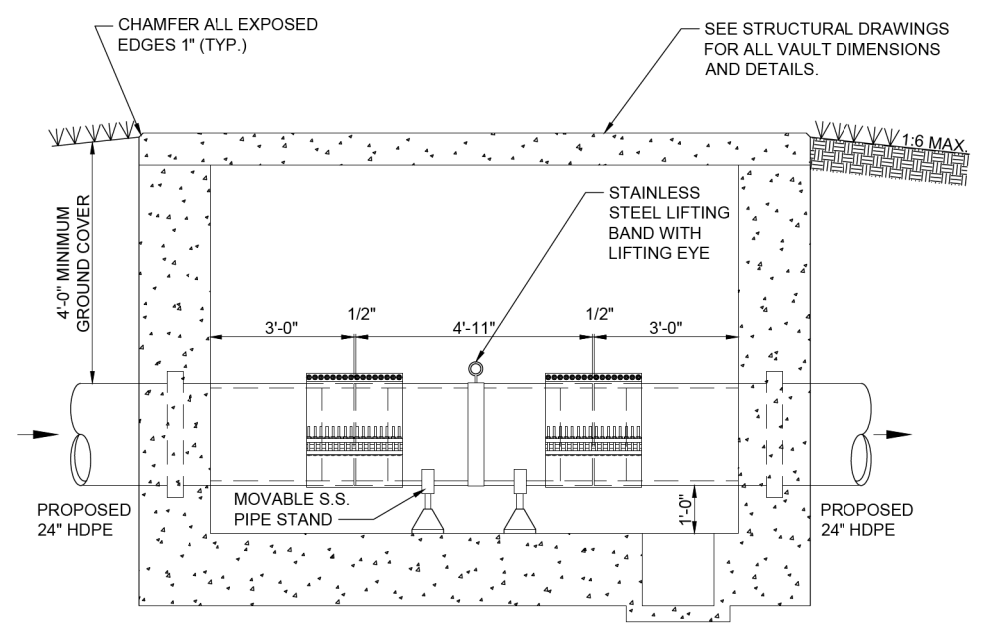
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 76C99	

M102



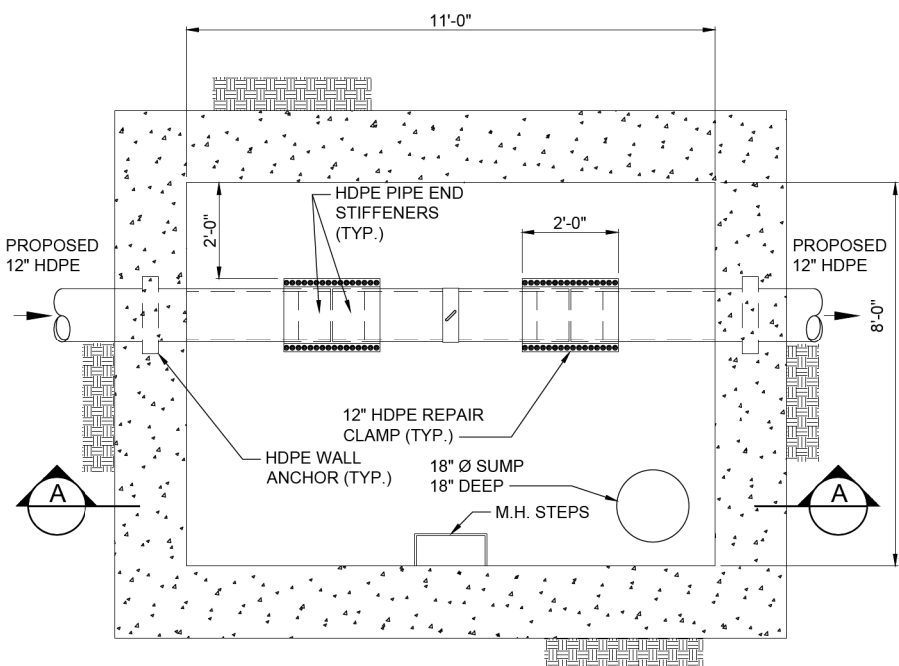
NOTE:
INSTALL 316L S.S.
STIFFENERS IN EACH
PLAIN END OF HDPE
PIPE (TYPICAL)

A SECTION
SCALE: 1/2"=1'-0"



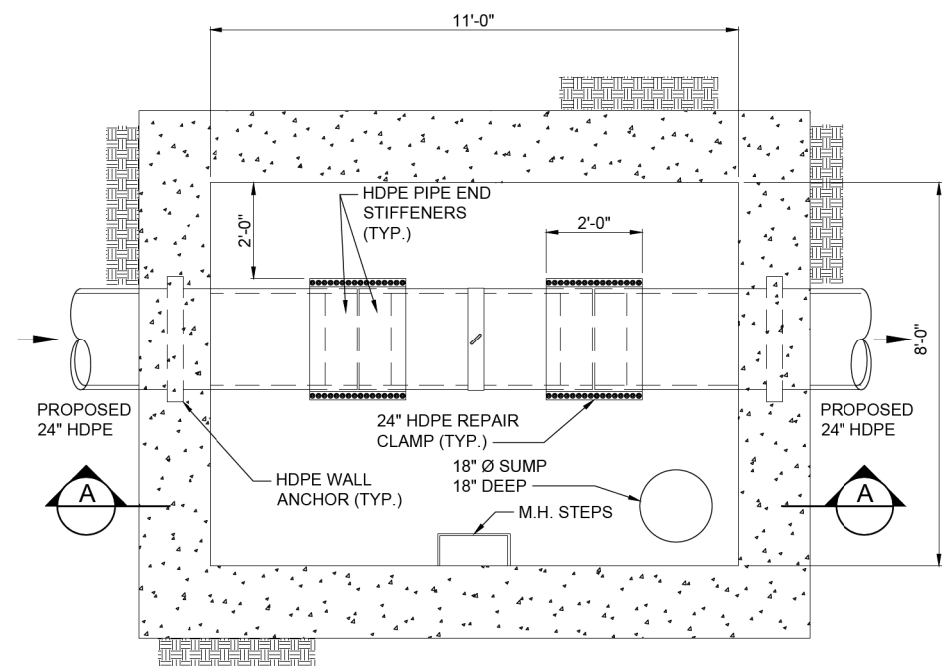
NOTE:
INSTALL 316L S.S.
STIFFENERS IN EACH
PLAIN END OF HDPE
PIPE (TYPICAL)

A SECTION
SCALE: 1/2"=1'-0"



12" CLEAN-OUT VAULT PLAN
SCALE: 1/2" = 1'-0"
LOCATION: C6

NOTE:
MANHOLE STEPS
(STD 602701) IN-LINE
WITH CENTER OF
FRAME AND LID

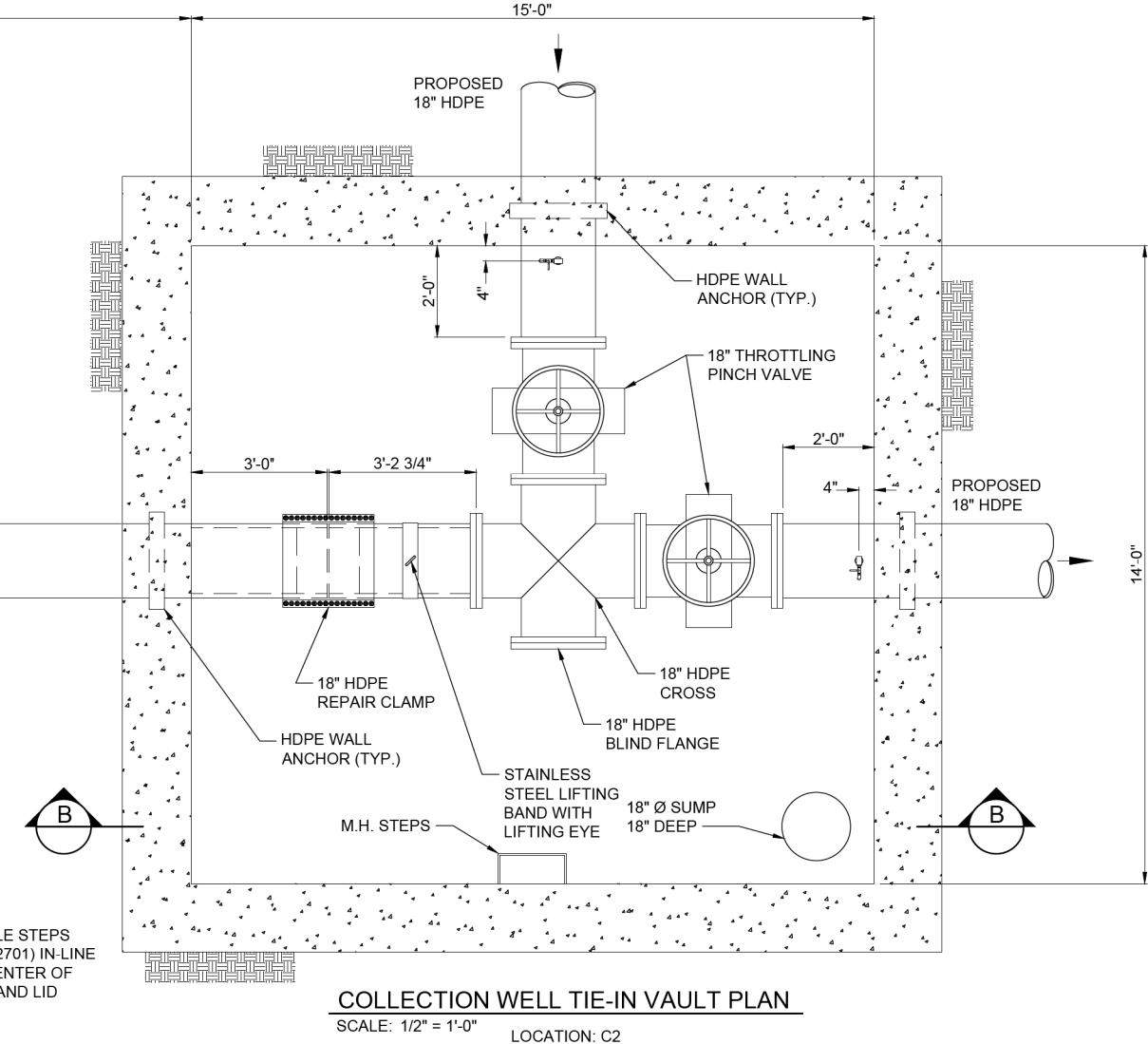
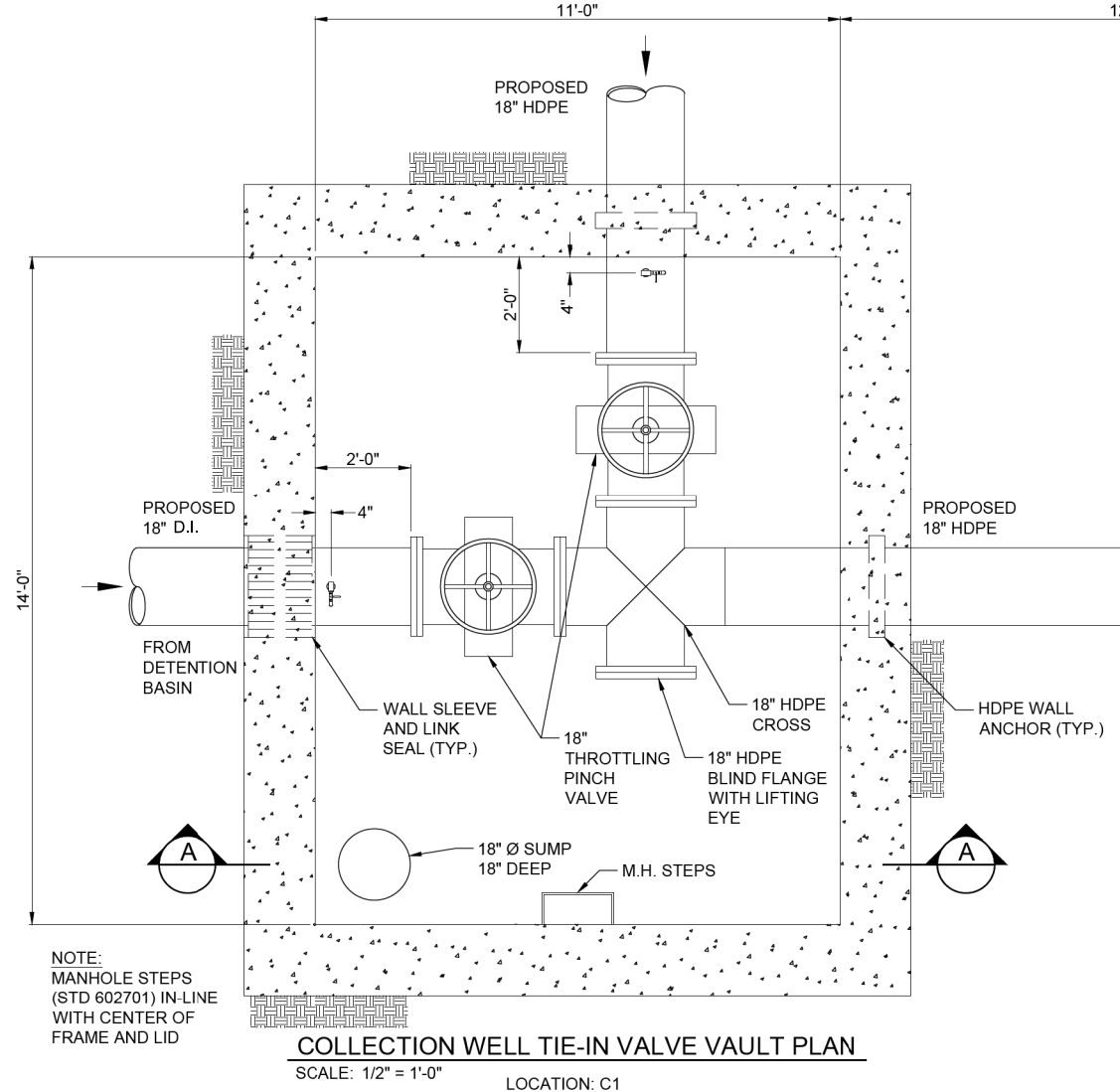
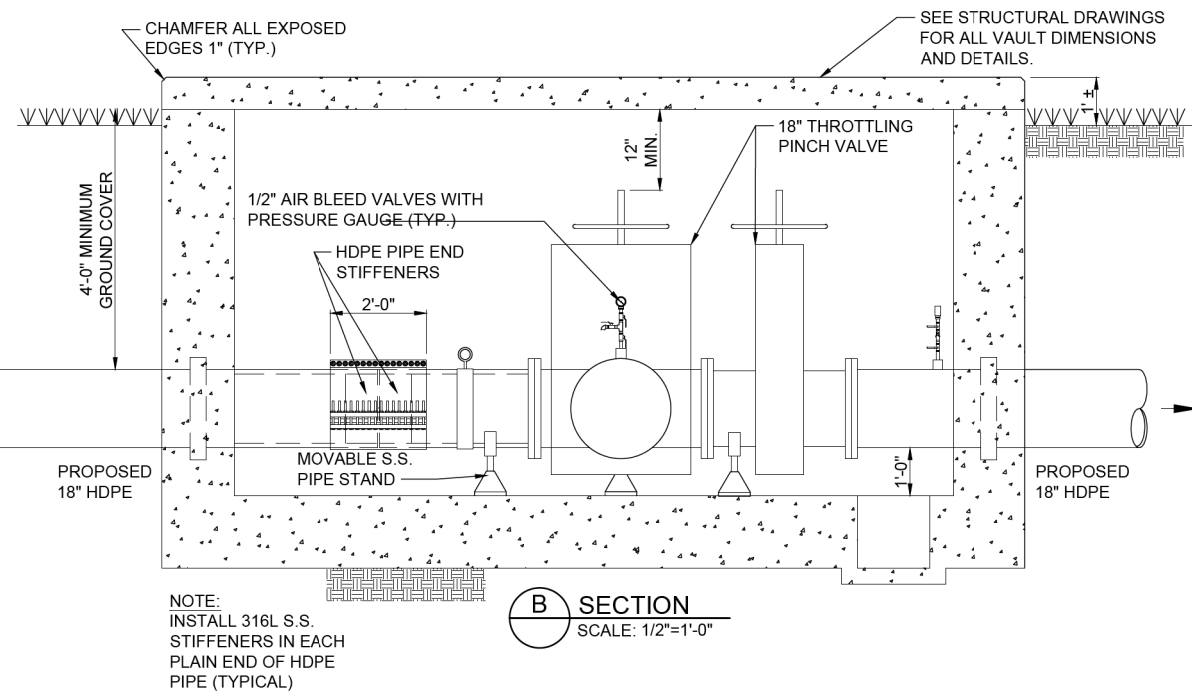
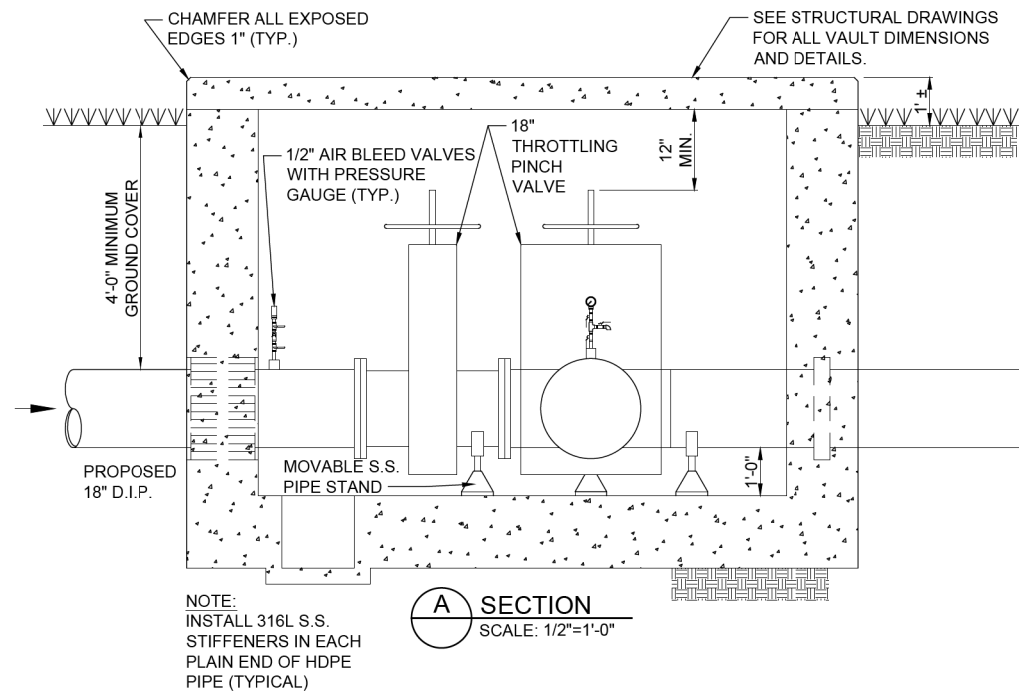


24" CLEAN-OUT VAULT PLAN
SCALE: 1/2" = 1'-0"
LOCATION: C8 - C18

NOTE:
MANHOLE STEPS
(STD 602701) IN-LINE
WITH CENTER OF
FRAME AND LID

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	DATE -	REVISED -



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USER NAME = bgj
PLOT SCALE = 40.0000' / in.
PLOT DATE = 1/13/2015

DESIGNED - SEH
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

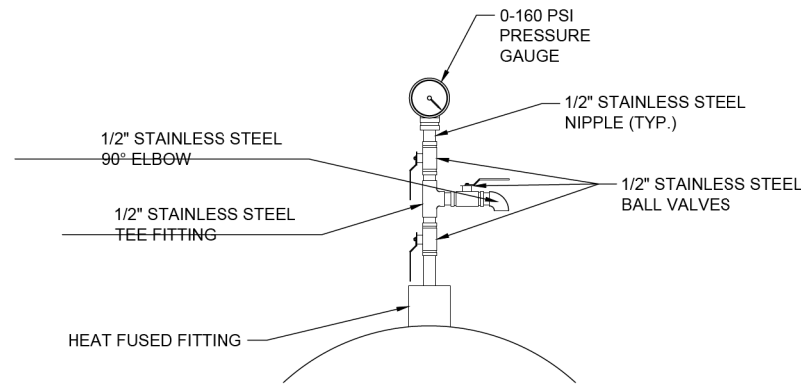
HORIZONTAL COLLECTOR WELL - VAULT PIPING DETAILS
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: AS NOTED SHEET 2 OF 4 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	142
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

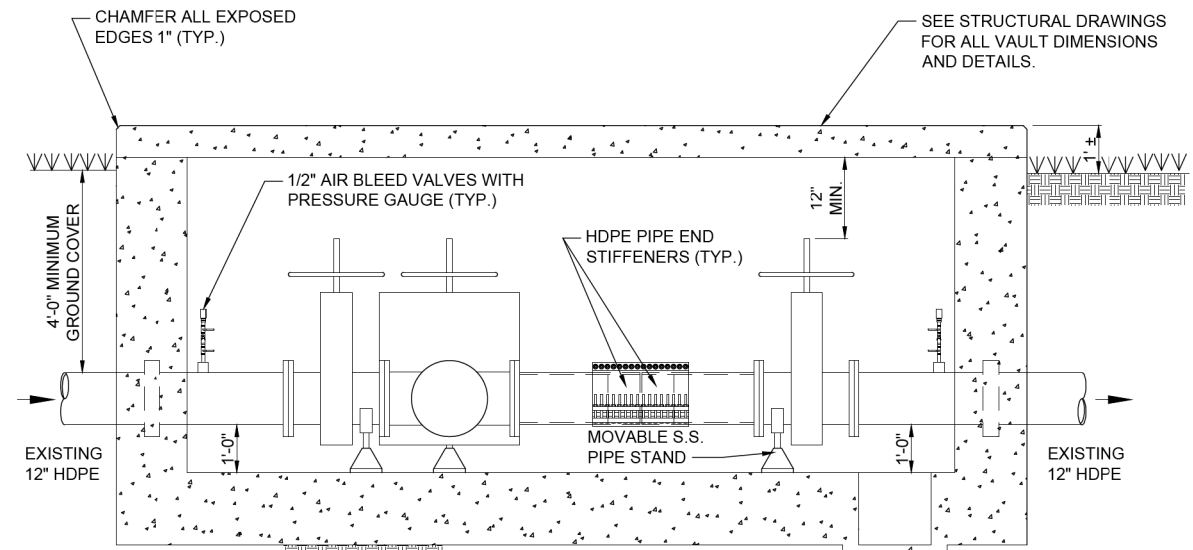
M104

NOTE:

1. USE 304L OR 316L STAINLESS STEEL AND TEFLON TAPE ON THREADED CONNECTIONS.
2. ALL PRESSURE GAUGES SHALL BE 2-1/2" DIAMETER WITH STAINLESS STEEL CASE AND WETTED PARTS. THE PRESSURE GAUGE SHALL BE SCALED 0 TO 160 PSI.

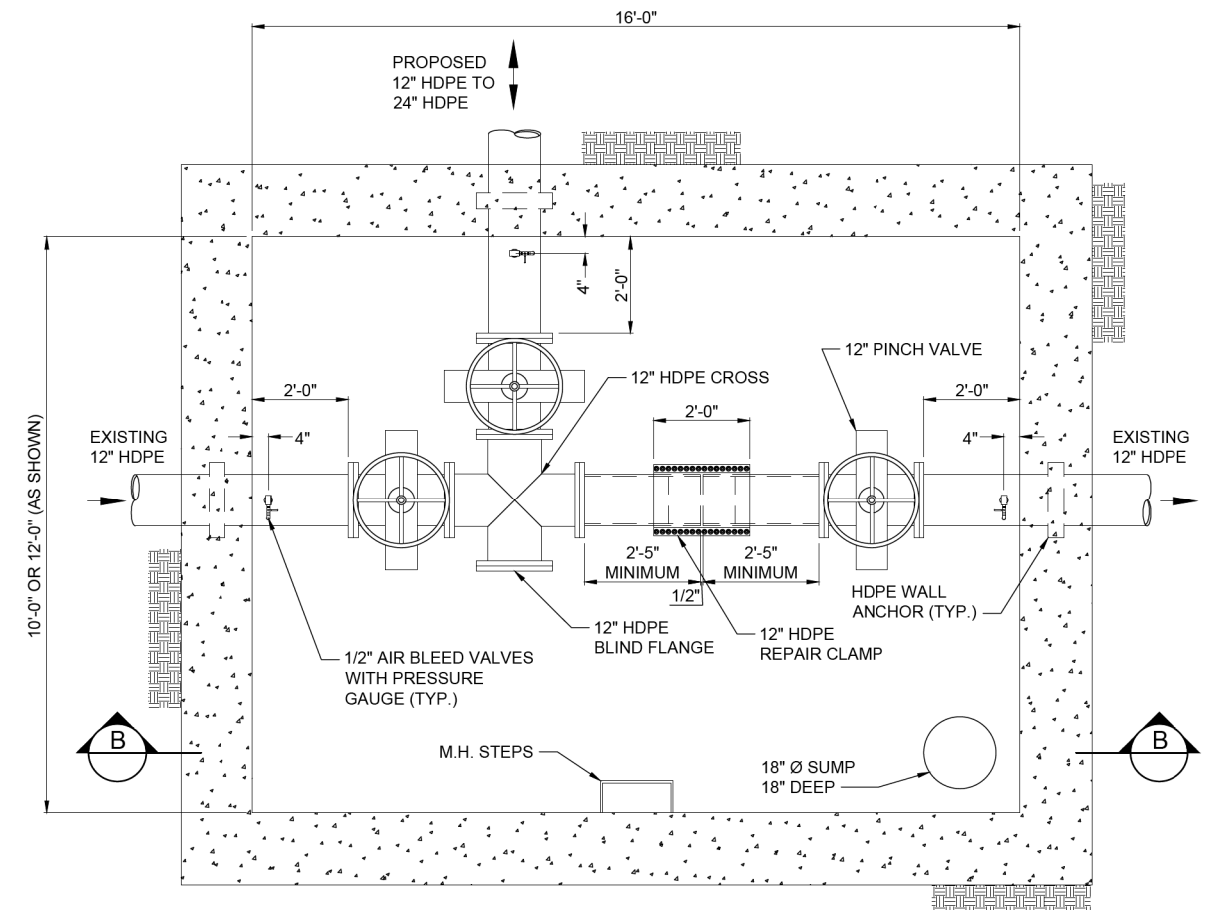


TYPICAL 1/2" AIR BLEED VALVES WITH PRESSURE GAUGE DETAIL
SCALE: 1/2" = 1'-0"



NOTE:
INSTALL 316L S.S. STIFFENERS IN EACH PLAIN END OF HDPE PIPE (TYPICAL)

B SECTION
SCALE: 1/2" = 1'-0"



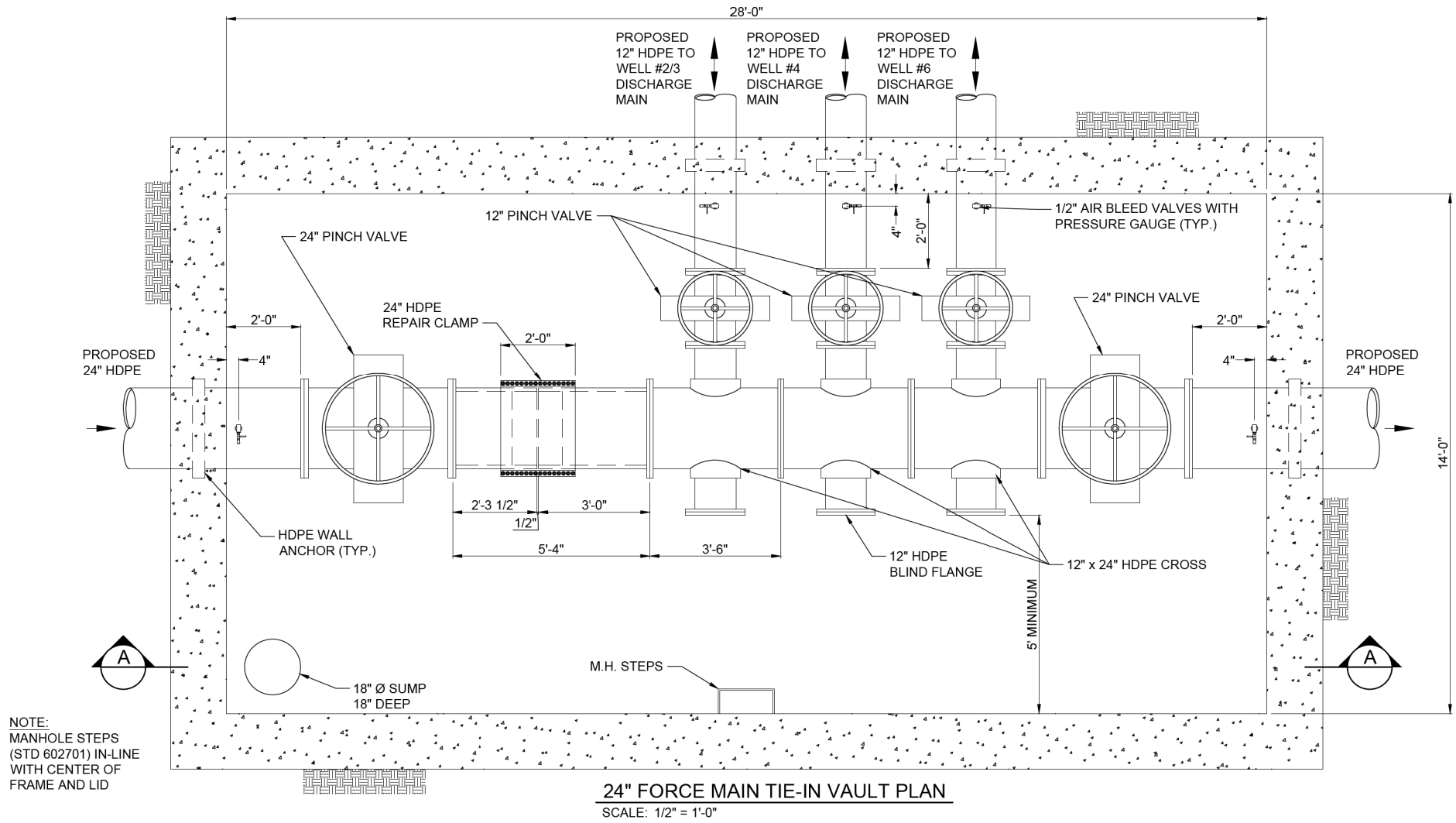
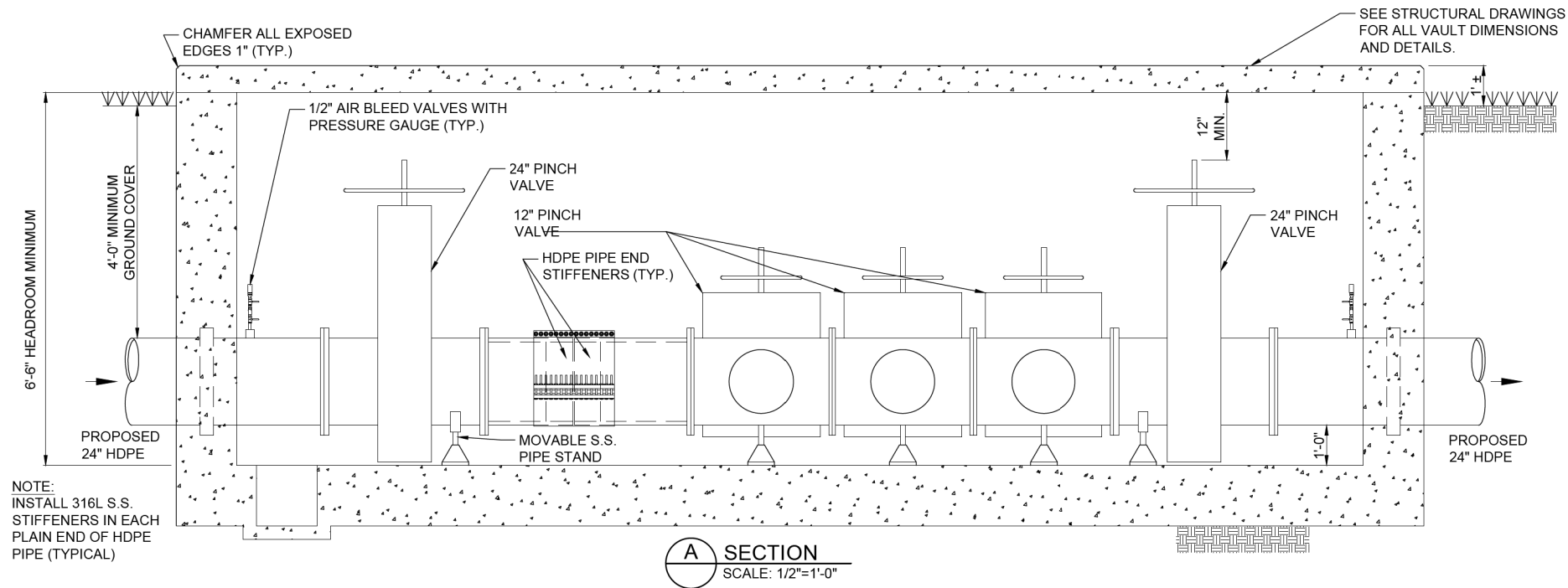
EXISTING 12" MAIN TIE-IN VALVE VAULT PLAN
SCALE: 1/2" = 1'-0"

NOTE:
MANHOLE STEPS (STD 602701) IN-LINE WITH CENTER OF FRAME AND LID

LOCATION: C4, C5, C7

FILE NAME = G:\115\115023\Work_Drwn_6\CADD_Sheets\0876099-att-KLA_Mech.dgn

USER NAME = bgj	DESIGNED - SEH	REVISED -
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PLOT DATE = 1/13/2015	DATE -	REVISED -



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	DATE -	REVISED -

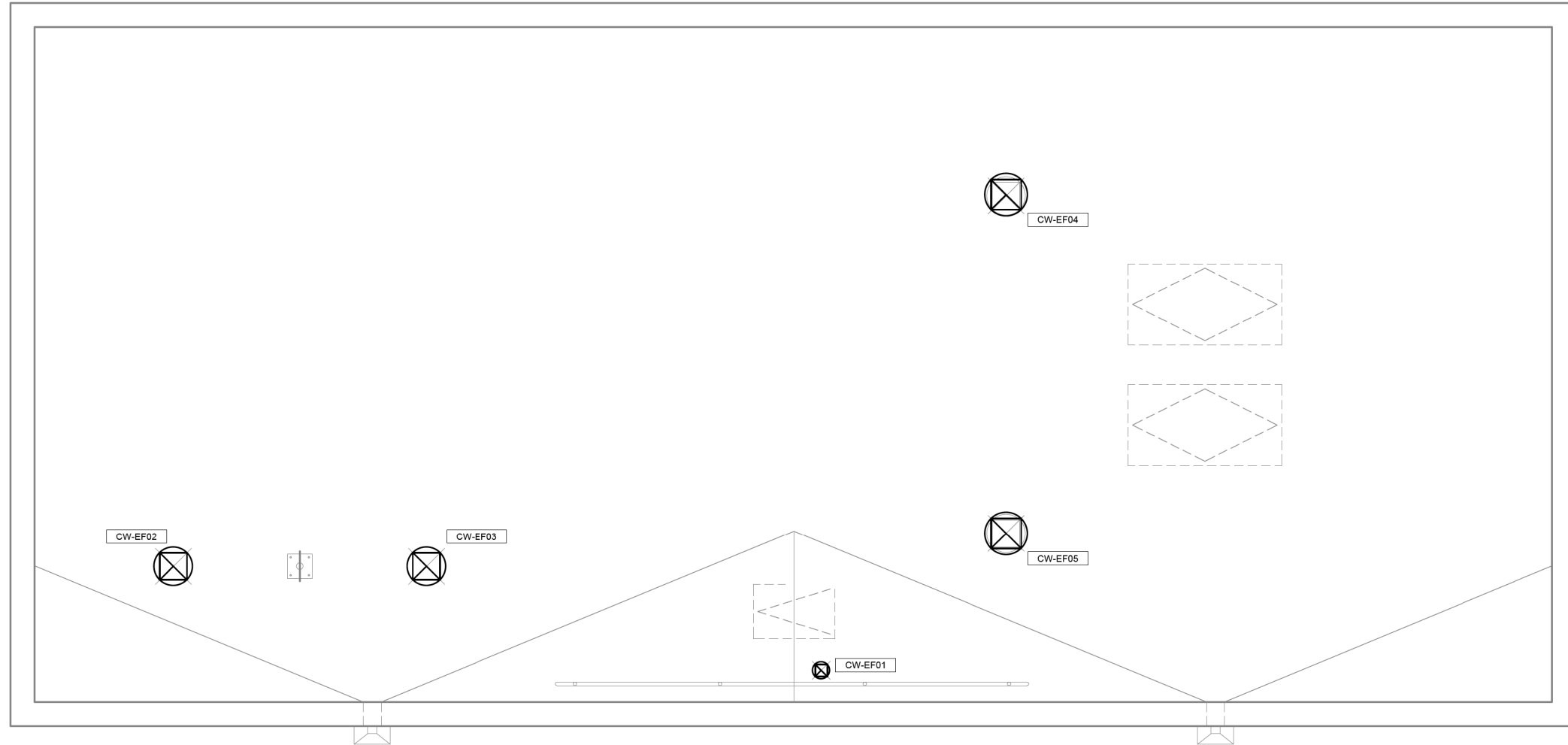
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HORIZONTAL COLLECTOR WELL - VAULT PIPING DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

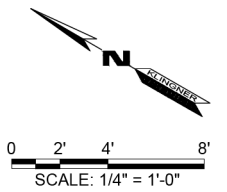
SCALE: AS NOTED SHEET 4 OF 4 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	144
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

M106



WELL HOUSE BLDG- ROOF MECHANICAL PLAN
 SCALE: 1/4" = 1'-0"



FILE NAME = G:\115\110223\Work_Drwn_6\CADD_Sheets\087699-att-KLA_Mech2.dwg

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PLOT DATE = 1/13/2015	DATE -	REVISED -

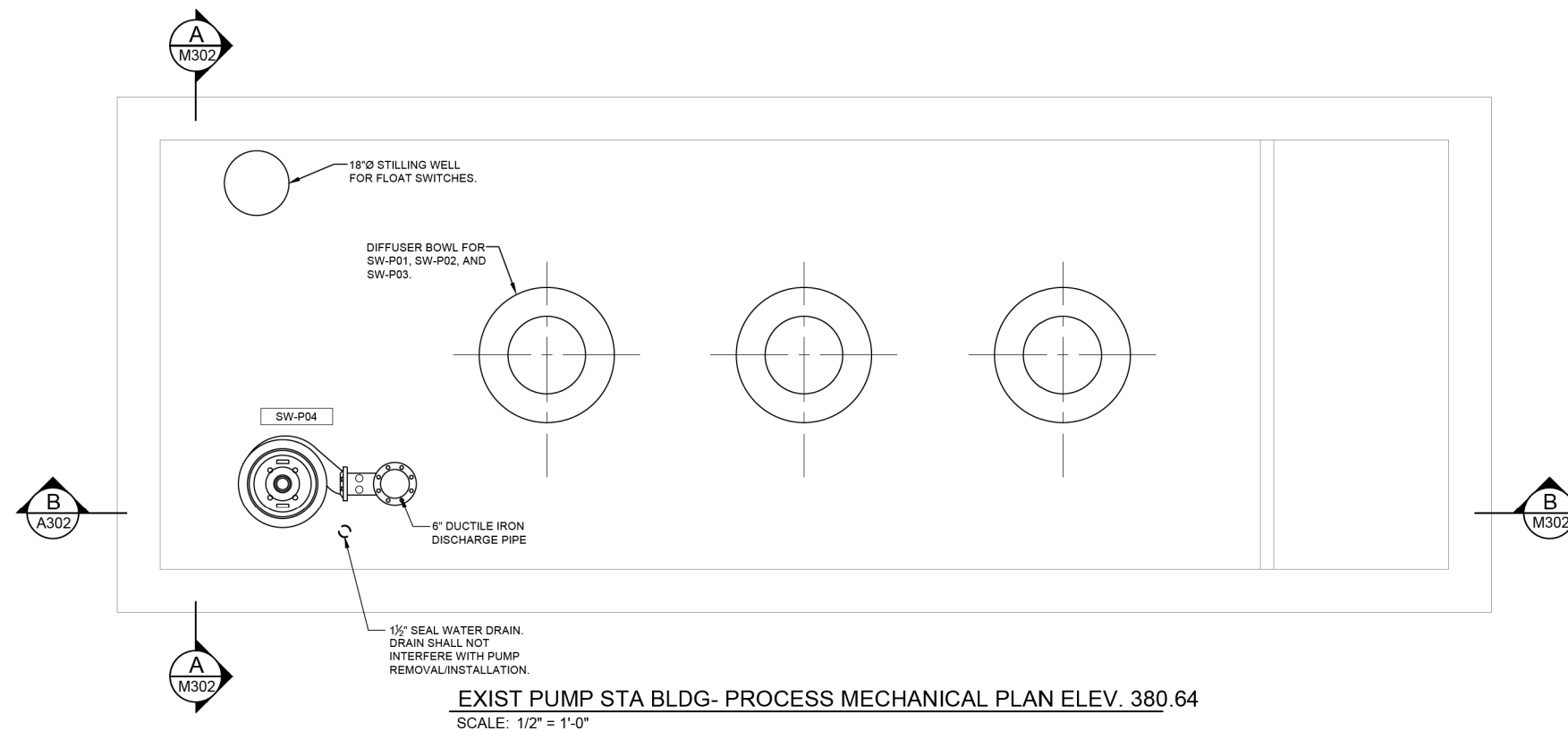
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

WELL HOUSE BUILDING - MECHANICAL	
MISSOURI AVENUE DEEP WELL FACILITY	
SCALE: AS NOTED	SHEET 2 OF 3 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	146
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

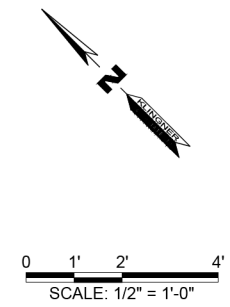
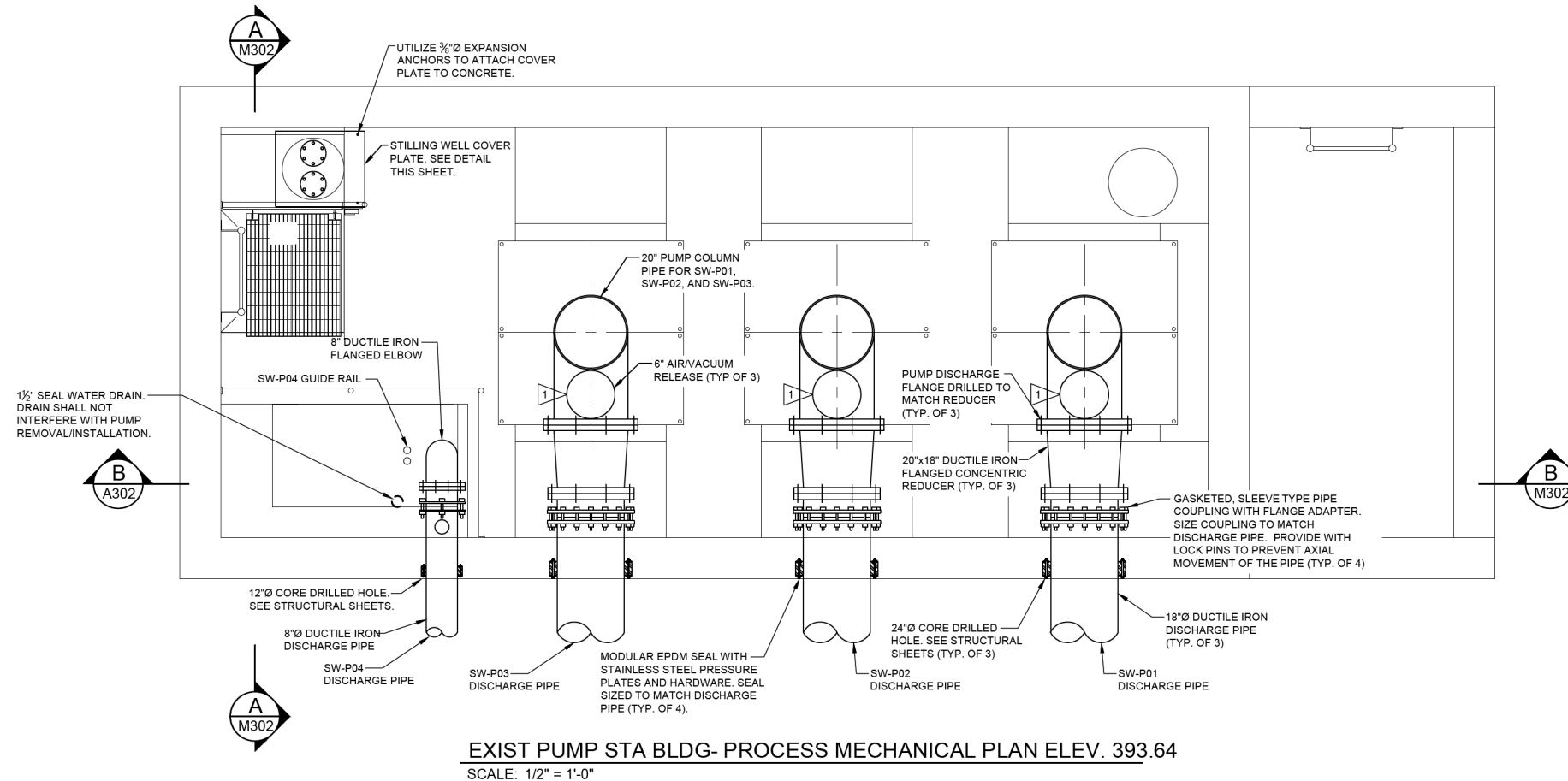
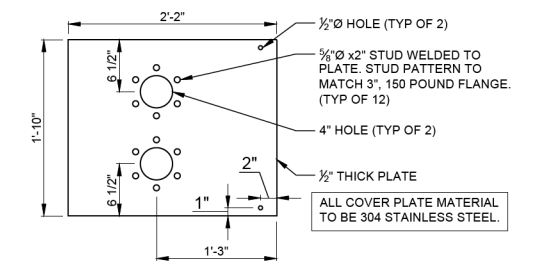
M201

THE STORMWATER PUMP STATION ELECTRICAL CLASSIFICATION IS CLASS 1, DIVISION 2, GROUP D. ALL EQUIPMENT INSTALLED AND INSTALLATION METHODS WITHIN OR ON THE STORMWATER PUMP STATION SHALL BE SUITABLE FOR THIS CLASSIFICATION.



KEYED NOTES (NOTES APPLICABLE TO THIS SHEET ONLY)

1 PUMP SHALL BE PROVIDED WITH 6" FLANGED CONNECTION (ALONG WITH 6" BLIND FLANGES) ON TOP OF DISCHARGE ELBOW FOR MOUNTING OF AIR/VACUUM RELEASE. PROVIDE HANGER ON SIDE OF DISCHARGE ELBOW FOR 6" BLIND FLANGES.



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PLOT DATE = 1/13/2015	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

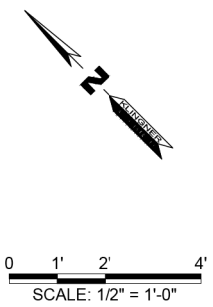
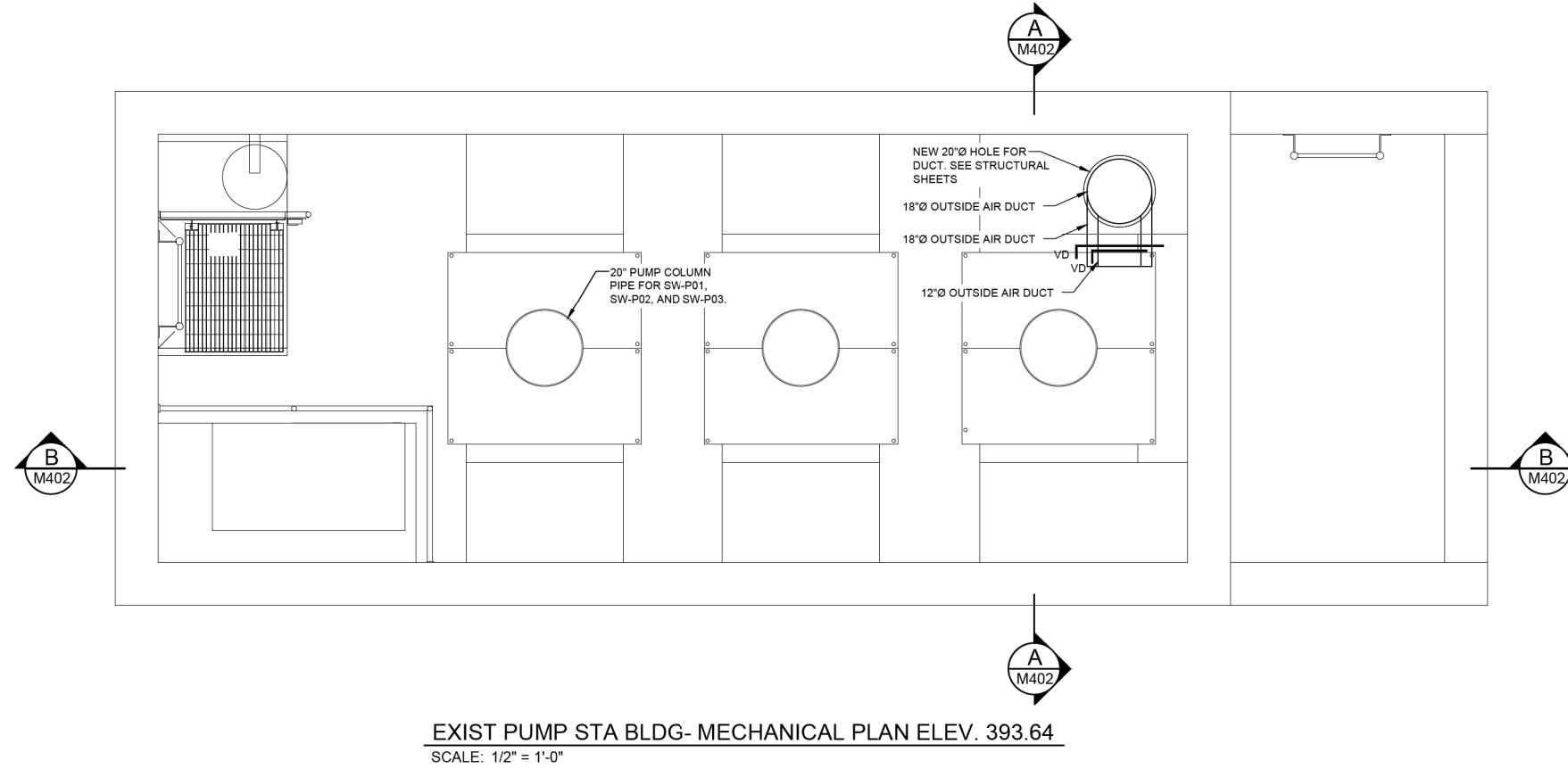
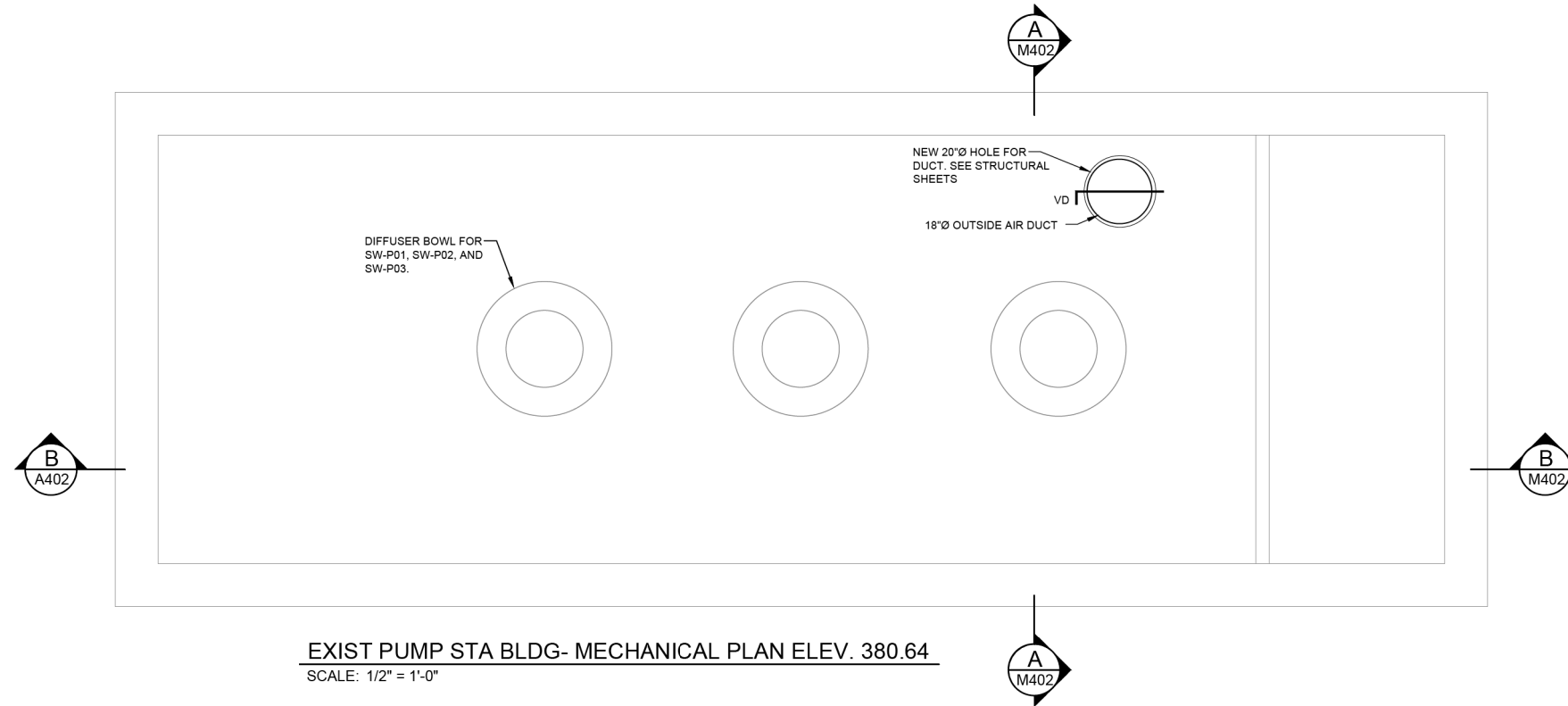
EXISTING PUMP STATION BUILDING - PROCESS MECHANICAL
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED SHEET 1 OF 3 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 148
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

M300

THE STORMWATER PUMP STATION ELECTRICAL CLASSIFICATION IS CLASS 1, DIVISION 2, GROUP D. ALL EQUIPMENT INSTALLED AND INSTALLATION METHODS WITHIN OR ON THE STORMWATER PUMP STATION SHALL BE SUITABLE FOR THIS CLASSIFICATION.



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	DRAWN - JJN	REVISED -
PLOT SCALE = 48.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 1/13/2015	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

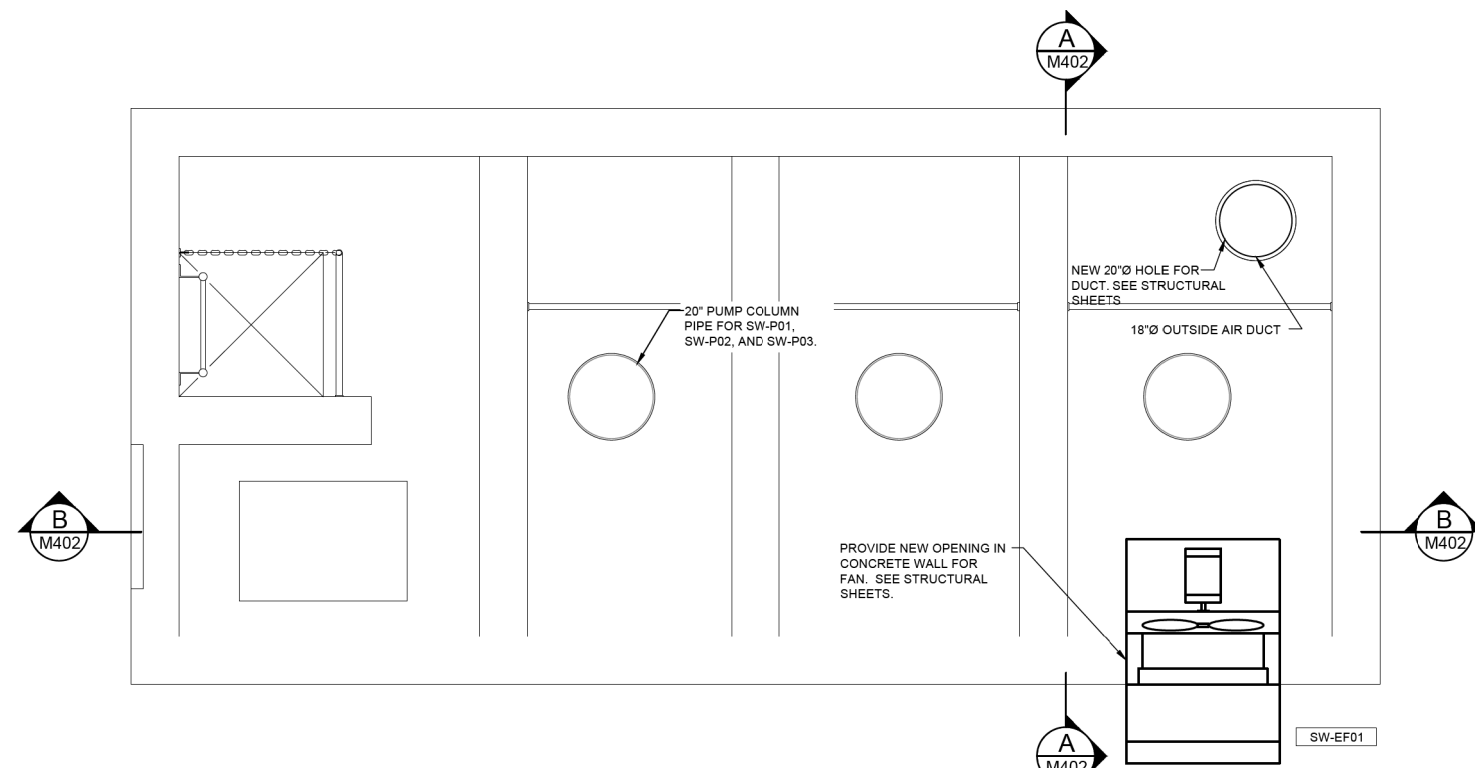
**EXISTING PUMP STATION BUILDING - MECHANICAL
MISSOURI AVENUE DEEP WELL FACILITY**

SCALE: AS NOTED SHEET 1 OF 3 SHEETS STA. TO STA.

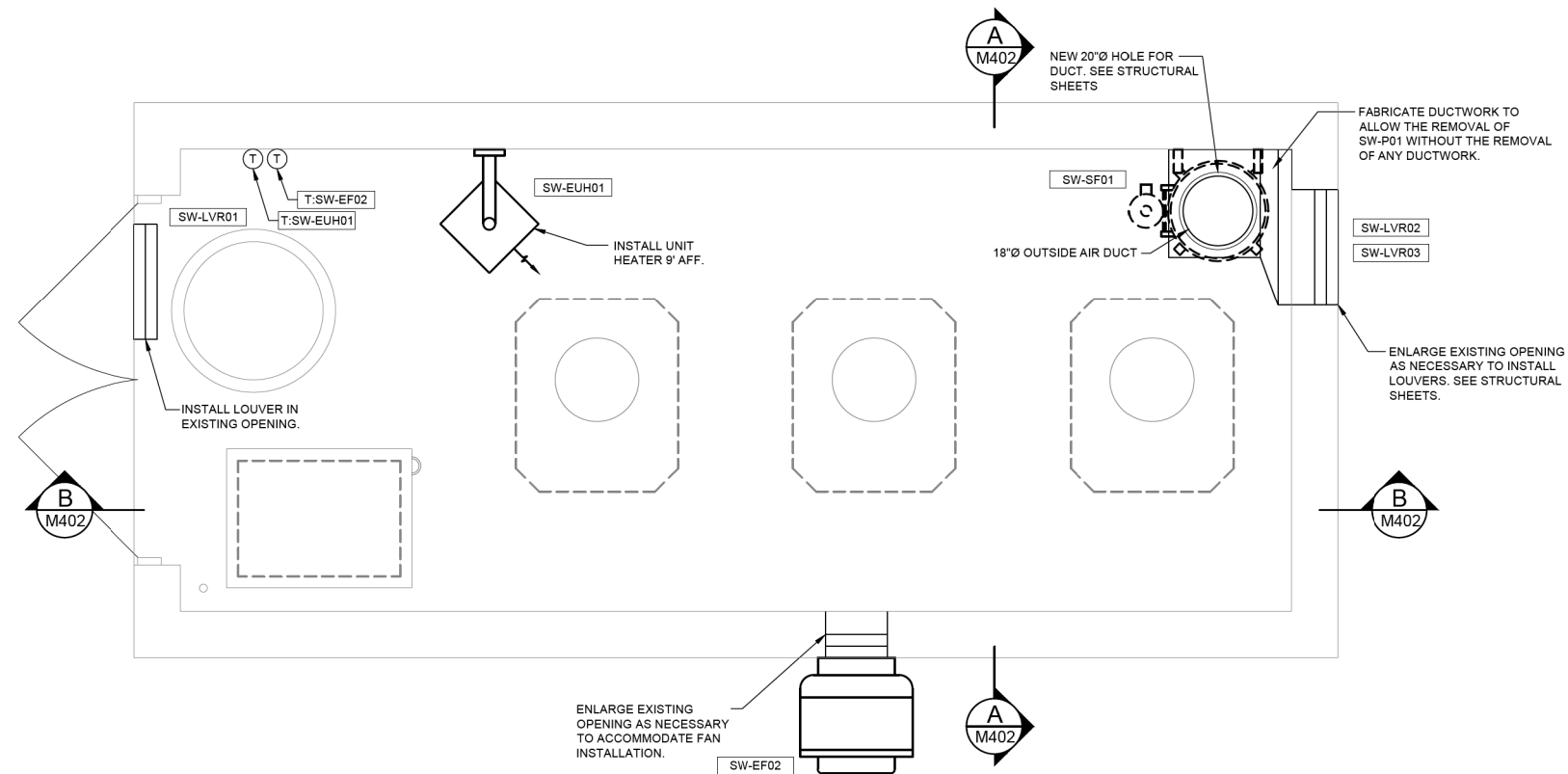
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	151
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

M400

THE STORMWATER PUMP STATION ELECTRICAL CLASSIFICATION IS CLASS 1, DIVISION 2, GROUP D. ALL EQUIPMENT INSTALLED AND INSTALLATION METHODS WITHIN OR ON THE STORMWATER PUMP STATION SHALL BE SUITABLE FOR THIS CLASSIFICATION.



EXIST PUMP STA BLDG- MECHANICAL PLAN ELEV. 412.64
SCALE: 1/2" = 1'-0"



EXIST PUMP STA BLDG- MECHANICAL PLAN ELEV. 418.64
SCALE: 1/2" = 1'-0"



0 1' 2' 4'
SCALE: 1/2" = 1'-0"

FILE NAME = G:\115\115023\Work_Drwn_6\CADD_Sheets\0876699-sh1-KL-Mech4.dgn

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USER NAME = bgj	DESIGNED - JJN	REVISED -
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PLOT DATE = 1/13/2015	CHECKED -	REVISED -
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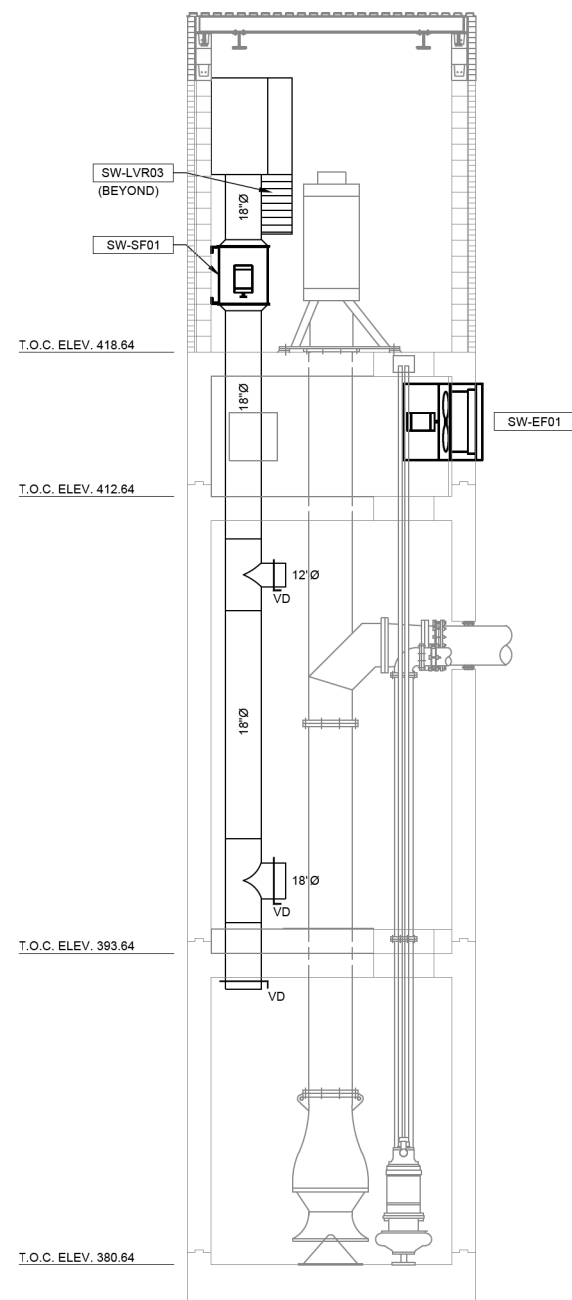
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PUMP STATION BUILDING - MECHANICAL
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: AS NOTED SHEET 2 OF 3 SHEETS STA. TO STA.

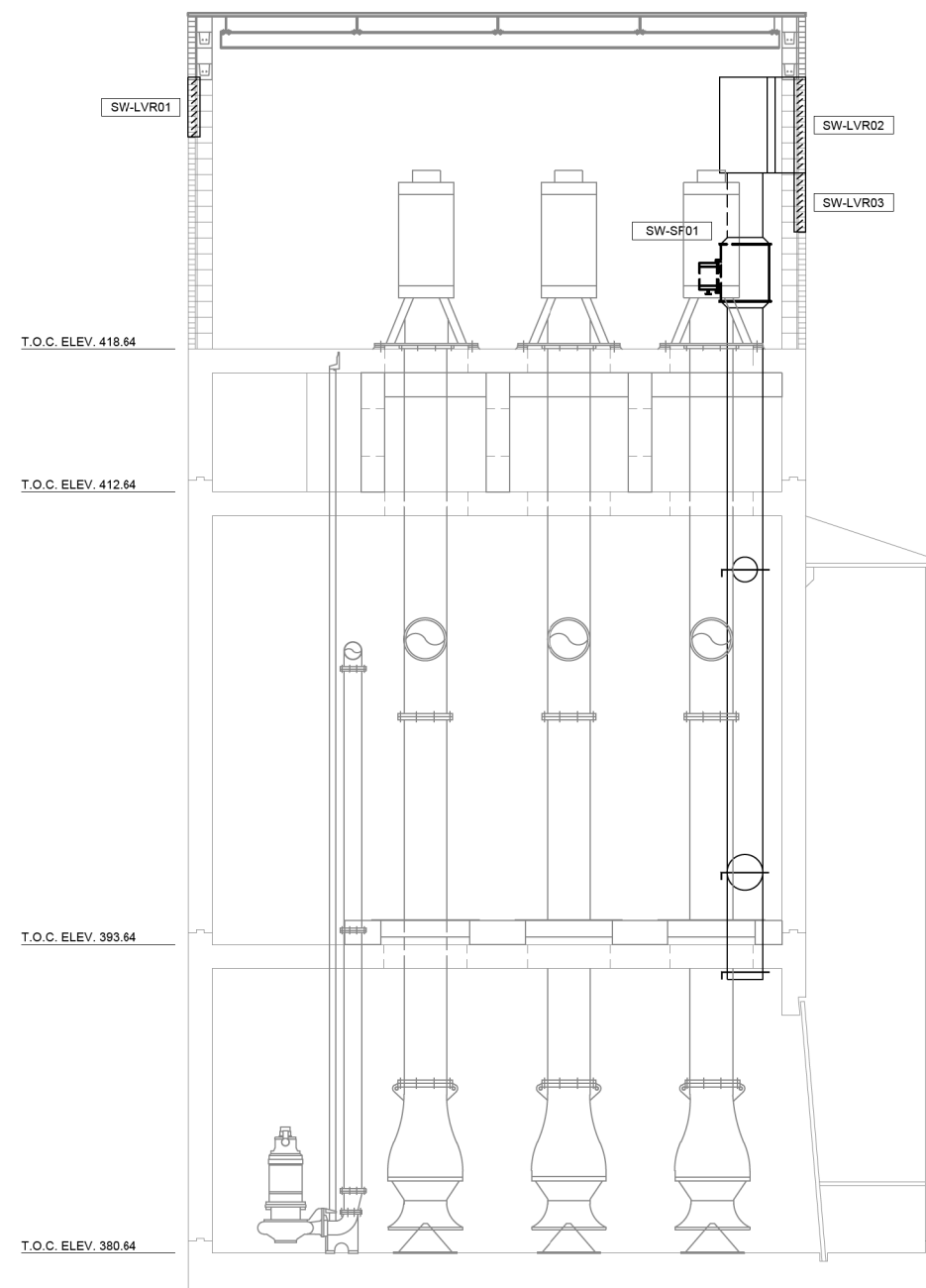
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	152
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

M401

THE STORMWATER PUMP STATION ELECTRICAL CLASSIFICATION IS CLASS 1, DIVISION 2, GROUP D. ALL EQUIPMENT INSTALLED AND INSTALLATION METHODS WITHIN OR ON THE STORMWATER PUMP STATION SHALL BE SUITABLE FOR THIS CLASSIFICATION.



A SECTION
M400 SCALE: 1/4"=1'-0"



B SECTION
M400 SCALE: 1/4"=1'-0"

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

FILE NAME = G:\115\115023\Work_Drwn_6\CADD_Sheets\0876699-shc-KLA_Mech4.dgn

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PLOT SCALE = 40.0000' / in.	DRAWN - JJN	REVISED -
PLOT DATE = 1/13/2015	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PUMP STATION BUILDING - MECHANICAL	
MISSOURI AVENUE DEEP WELL FACILITY	
SCALE: AS NOTED	SHEET 3 OF 3 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 153
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

M402

RADIANT BASEBOARD HEATER SCHEDULE									
MARK	DESCRIPTION	OUTPUT CAPACITY (W)	ELECTRICAL					REMARKS	
			VOLT (V)	FREQ (HZ)	PHASE	MCA (A)	MOP (A)		
CW-RH01	ELECTRIC, LIQUID FILLED, RADIANT BASEBOARD HEATER	500	208	60	1	2.4	15	1 - 3	

- REMARKS: 1. PROVIDE LINE VOLTAGE THERMOSTAT.
2. PROVIDE TWO POLE DISCONNECT SWITCH.
3. PROVIDE NECESSARY WALL MOUNT HARDWARE.

AIR INLETS AND OUTLETS SCHEDULE							
MARK	DESCRIPTION	MATERIAL	AIRFLOW		PRESSURE DROP (INWC)	FINISH	REMARKS
			PATTERN	RATE (CFM)			
S	12" x 8" DUCT MOUNTED SUPPLY GRILLE	ALUMINUM	35° SINGLE DEFLECTION	440	0.13	WHITE	1
R1	8" x 8" SURFACE MOUNTED LOUVERED RETURN GRILLE	ALUMINUM	0° DEFLECTION	75	NA	WHITE	
R2	48"x36" DUCT MOUNTED, RETURN GRILLE	ALUMINUM	35° SINGLE DEFLECTION	3,960	0.25	WHITE	2 - 4

- REMARKS: 1. PROVIDE NECK MOUNTED OPPOSED BLADE BALANCING DAMPER.
2. PROVIDE TOP HINGE.
3. PROVIDE 2" DISPOSABLE, MERV 8 FILTERS AND ADDITIONAL SET.
4. PROVIDE KNURLED KNOB FASTENERS.

UNIT HEATER SCHEDULE									
MARK	DESCRIPTION	AIRFLOW (CFM)	HEAT CAPACITY (KW)	ELECTRICAL					REMARKS
				VOLT (V)	FREQ (HZ)	PHASE	MCA (A)	MOP (A)	
CW-EUH01	INDUSTRIAL, ELECTRIC, UNIT HEATER	500	10	480	60	3	12.8	20	1 - 3
CW-EUH02	INDUSTRIAL, ELECTRIC, UNIT HEATER	500	10	480	60	3	12.8	20	1 - 3
CW-EUH03	INDUSTRIAL, ELECTRIC, UNIT HEATER	750	15	480	60	3	18.8	25	1 - 3
CW-EUH04	INDUSTRIAL, ELECTRIC, UNIT HEATER	750	15	480	60	3	18.8	25	1 - 3
SW-EUH01	INDUSTRIAL, ELECTRIC, UNIT HEATER	750	15	480	60	3	18.8	25	1 - 4

- REMARKS: 1. PROVIDE WALL MOUNT BRACKET.
2. PROVIDE SINGLE POLE THERMOSTAT KIT.
3. PROVIDE UNIT MOUNTED DISCONNECT.
4. HEATER SHALL BE SUITABLE FOR CLASS 1, DIVISION 2, GROUP D ENVIRONMENT.

SUPPLY FAN SCHEDULE										
MARK	DESCRIPTION	AIRFLOW (CFM)	STATIC PRES. DROP (INWC)	MOTOR POWER (HP)	OPERATING POWER (HP)	ELECTRICAL				REMARKS
						VOLT (V)	FREQ (HZ)	PHASE	MOP (A)	
SW-SF01	ALUMINUM, INLINE, TUBULAR, BACKWARD INCLINED, BELT DRIVE	4,800	0.7	3	2.92	208	60	3	20	1 - 3

- REMARKS: 1. PROVIDE UNIT MOUNTED DISCONNECT SWITCH.
2. FAN SHALL BE SUITABLE FOR CLASS 1, DIVISION 2, GROUP D ENVIRONMENT.
3. MOTOR SHALL BE ORIENTED AS SHOWN ON PLANS WITH A MOTOR GUARD.

DEHUMIDIFIER SCHEDULE										
MARK	DESCRIPTION	WATER REMOVAL RATE/DAY				ELECTRICAL				REMARKS
		VOLUME (PINTS)	TEMP. (DEG F)	RH (%)	PINTS/ KWH	VOLT (V)	FREQ (HZ)	PHASE	MOP (A)	
CW-DHF01	PORTABLE HIGH-EFFICIENCY DEHUMIDIFIER	106	80	60	6.4	120	60	1	20	1 - 3

- REMARKS: 1. PROVIDE WITH 6' POWER CORD.
2. PROVIDE WITH INTERNAL CONDENSATE PUMP.
3. 20-80% RELATIVE HUMIDITY CONTROL WITH POSITIVE "ON" AND "OFF" SETTINGS.

HEAT PUMP SCHEDULE											
MARK	DESCRIPTION	AMBIENT AIR TEMP.		COOLING CAPACITY (BTU/H)	HEATING CAPACITY (BTU/H)	ELECTRICAL				REMARKS	
		SUMMER (°F)	WINTER (°F)			VOLT (V)	FREQ (HZ)	PHASE	MCA (A)		MOP (A)
CW-HP01	AIR-TO-AIR HEAT PUMP	95	-10	60,000	56,000	208	60	1	36	60	1 - 4
CW-HP02	AIR-TO-AIR HEAT PUMP	95	-10	60,000	56,000	208	60	1	36	60	1 - 4

- REMARKS: 1. PROVIDE LOW AMBIENT COOLING CAPABILITY TO 20°F.
2. PROVIDE ANTI-SHORT CYCLE TIMER.
3. PROVIDE EVAPORATOR DEFROST CONTROL.
4. PROVIDE CRANKCASE HEATER.

AIR HANDLING UNIT SCHEDULE													
MARK	DESCRIPTION	AIRFLOW (CFM)	STATIC PRES. (INWC)	COOLING		HEATING		ELECTRICAL				REMARKS	
				S. CAP. (BTU/H)	T. CAP. (BTU/H)	HEAT PUMP CAP. (BTU/H)	AUX. ELEC. CAP. (KW)	VOLT (V)	FREQ (HZ)	PHASE	MCA (A)		MOP (A)
CW-AHU01	HORIZONTAL, ELECTRIC HEAT & COOLING	1,980	0.4	45,000	60,000	56,000	5.76	208	60	1	44	45	1 - 3
CW-AHU02	HORIZONTAL ELECTRIC HEAT & COOLING	1,980	0.4	45,000	60,000	56,000	5.76	208	60	1	44	45	1 - 3

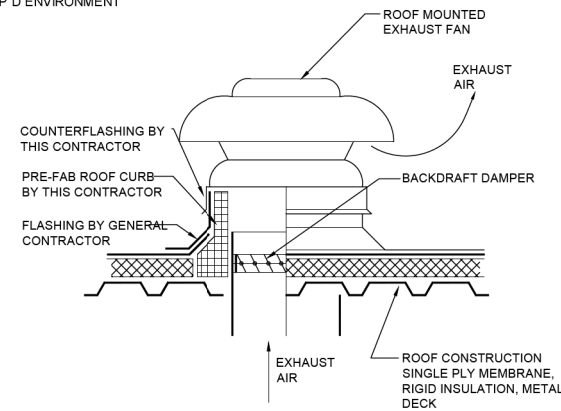
- REMARKS: 1. PROVIDE HDPE PAN AND ROUTE DRAIN TO NEAREST MOP SINK.
2. PROVIDE UNIT MOUNTED DISCONNECT.
3. PROVIDE MANUFACTURER INSTALLED 24V POWER SUPPLY.

EXHAUST FAN SCHEDULE										
MARK	DESCRIPTION	AIRFLOW (CFM)	STATIC PRES. DROP (INWC)	MOTOR POWER (HP)	OPERATING POWER (HP)	ELECTRICAL				REMARKS
						VOLT (V)	FREQ (HZ)	PHASE	MOP (A)	
CW-EF01	ROOF MOUNTED, DIRECT DRIVE, CENTRIFUGAL, DOWNBLAST	75	0.25	1/100	0.01	120	60	1	15	1 - 3
CW-EF02	ROOF MOUNTED, BELT DRIVE CENTRIFUGAL, DOWNBLAST	4,000	0.5	3/4	0.66	208	60	1	20	1 - 3
CE-EF03	ROOF MOUNTED, BELT DRIVE CENTRIFUGAL, DOWNBLAST	4,000	0.5	3/4	0.66	208	60	1	20	1 - 3
CW-EF04	ROOF MOUNTED, BELT DRIVE CENTRIFUGAL, DOWNBLAST	3,000	0.5	3/4	0.56	208	60	1	20	1 - 3
CW-EF05	ROOF MOUNTED, BELT DRIVE CENTRIFUGAL, DOWNBLAST	3,000	0.5	3/4	0.56	208	60	1	20	1 - 3
SW-EF01	SIDEWALL, PROPELLER, ALUMINUM, DIRECT DRIVE	4,593	0.229	3/4	0.52	208	60	3	20	2 - 5
SW-EF02	SIDEWALL EXHAUST, BELT DRIVE, CENTRIFUGAL	3,000	0.25	3/4	0.59	208	60	3	20	2 - 4

- REMARKS: 1. PROVIDE MINIMUM 18" PREFABRICATED ROOF CURB WITH MINIMUM 1" FIBER GLASS INSULATION.
2. PROVIDE UNIT MOUNTED DISCONNECT SWITCH.
3. PROVIDE BAROMETRIC BACKDRAFT DAMPER.
4. FAN SHALL BE SUITABLE FOR CLASS 1, DIVISION 2, GROUP D ENVIRONMENT.
5. PROVIDE WITH WALL COLLAR, MOTOR SIDE GUARD, 45 DEG WEATHERHOOD AND BIRD SCREEN.

LOUVER SCHEDULE							
MARK	DESCRIPTION	LENGTH (IN)	WIDTH (IN)	FREE AREA (SQFT)	STATIC PRES. DROP (INWC)	AIRFLOW (CFM)	REMARKS
CW-LVR02	COMBINATION INTAKE LOUVER/DAMPER, DRAINABLE BLADE	90	48	15.34	0.16"	14,000	1,5-8
CW-LVR03	COMBINATION INTAKE LOUVER/DAMPER, DRAINABLE BLADE	90	30	9.19	0.16"	8,000	1,5-8
CW-LVR04	COMBINATION INTAKE LOUVER/DAMPER, DRAINABLE BLADE	90	30	9.19	0.08"	6,000	2,5-8
CW-LVR05	COMBINATION EXHAUST LOUVER/GRAVITY BACKDRAFT DAMPER	72	96	NA	0.26"	36,000	3,5-8
CW-LVR06	COMBINATION INTAKE LOUVER/DAMPER, DRAINABLE BLADE	48	30	4.36	0.08"	3,000	2,5-8
CW-LVR07	COMBINATION INTAKE LOUVER/DAMPER, DRAINABLE BLADE	48	30	4.36	0.08"	3,000	2,5-8
CW-LVR08	COMBINATION INTAKE LOUVER/DAMPER, DRAINABLE BLADE	48	30	4.36	0.15"	4,000	5,8-10
CW-LVR09	COMBINATION EXHAUST LOUVER/DAMPER, DRAINABLE BLADE	48	30	4.36	0.14"	4,000	2,5-8
SW-LVR01	COMBINATION INTAKE LOUVER/DAMPER, DRAINABLE BLADE	30	30	2.54	-0.0"	500	2,4-7,9
SW-LVR02	COMBINATION INTAKE LOUVER/DAMPER, DRAINABLE BLADE	48	30	4.38	0.17"	4,500	2,4-7,9
SW-LVR03	COMBINATION INTAKE LOUVER/DAMPER, DRAINABLE BLADE	30	30	2.54	-0.0"	500	2,4-7,9

- REMARKS:
1. SPRING OPEN, 120V POWER CLOSED
2. 120V POWER OPEN, SPRING CLOSE
3. OVERALL DIMENSIONS PROVIDED, MULTIPLE SECTIONS PERMITTED.
4. ACTUATOR SHALL BE SUITABLE FOR CLASS 1, DIVISION 2, GROUP D ENVIRONMENT
5. PROVIDE WITH BIRDSCREEN
6. CLEAR ANODIZED FINISH
7. PROVIDE WITH SECURITY BARS
8. PROVIDE WITH EXTENDED SILL
9. PROVIDE WITH FLANGED FRAME
10. 120V MODULATING ACTUATOR



ROOF MOUNTED EXHAUST FAN DETAIL
N.T.S.

MECHANICAL EQUIPMENT SEQUENCE OF OPERATION

CW-AHU01, CW-HP01, CW-AHU02 AND CW-HP02

- OPERATION CONTROLLED BY WALL MOUNTED THERMOSTAT (T-CW-AHU01 AND T-CW-AHU02) AND ECONOMIZER CONTROLLER. SEE CW-LVR08 AND CW-LVR09 FOR ADDITIONAL INFORMATION.

CW-EF01:

- EXHAUST FAN SHALL BE CONNECTED TO LIGHTING CIRCUIT WITHIN SPACE AND SHALL OPERATE WHEN LIGHTS ARE ON.

CW-EF02 AND CW-EF03

- OPERATION DETERMINED BY HAND-OFF-AUTO (HOA) SELECTOR SWITCH LOCATED IN CW-CP03.
 - HAND POSITION: FAN SHALL OPERATE CONTINUOUSLY.
 - OFF POSITION: FAN SHALL NOT OPERATE
 - AUTO POSITION: FAN OPERATION SHALL BE CONTROLLED BY WALL MOUNTED THERMOSTAT (T-CW-EF02 AND T-CW-EF03) AND SHALL OPERATE DURING AN ALARM CONDITION FROM EITHER THE COMBUSTIBLE GAS OR CARBON MONOXIDE DETECTORS..
- SEE CONTROL DRAWING No. 4 FOR ADDITIONAL INFORMATION.

CW-EF04 AND CW-EF05

- OPERATION DETERMINED BY HAND-OFF-AUTO (HOA) SELECTOR SWITCH LOCATED IN CW-CP04.
 - HAND POSITION: FAN SHALL OPERATE CONTINUOUSLY.
 - OFF POSITION: FAN SHALL NOT OPERATE
 - AUTO POSITION: FAN OPERATION SHALL BE CONTROLLED BY WALL MOUNTED THERMOSTAT (T-CW-EF04 AND T-CW-EF05).
- SEE CONTROL DRAWING No. 5 FOR ADDITIONAL INFORMATION.

CW-EUH01 AND CW-EUH02

- OPERATION CONTROLLED BY WALL MOUNTED THERMOSTAT (T-CW-EUH01 AND T-CW-EUH02).
- UNITS SHALL BE INTERLOCKED WITH CW-GEN01 TO PREVENT OPERATION OF THE HEATERS WHEN GENERATOR IS OPERATING.
- SEE CONTROL DRAWING No. 4 FOR ADDITIONAL INFORMATION.

CW-EUH03 AND CW-EUH04

- OPERATION CONTROLLED BY WALL MOUNTED THERMOSTAT (T-CW-EUH03 AND T-CW-EUH04).

CW-LVR01, CW-LVR02, AND CW-LVR03

- DAMPERS SHALL BE SPRING OPEN, POWER CLOSED.
- DAMPERS SHALL OPEN WHEN SW-GEN01 IS OPERATING OR DURING A POWER OUTAGE. DAMPERS SHALL BE CLOSED AT ALL OTHER TIMES.
- SEE CONTROL DRAWING No. 4 FOR ADDITIONAL INFORMATION.

CW-LVR04

- DAMPER SHALL BE SPRING CLOSE, POWER OPEN.
- DAMPER SHALL BE OPEN WHEN CW-EF02, CW-EF03, OR THE CW-GEN01 IS OPERATING. DAMPERS SHALL BE CLOSED AT ALL OTHER TIMES.
- SEE CONTROL DRAWING No. 4 FOR ADDITIONAL INFORMATION.

CW-LVR06 AND CW-LVR07

- DAMPER SHALL BE SPRING CLOSE, POWER OPEN.
- DAMPER SHALL BE OPEN WHEN CW-EF03 OR CW-EF04 IS OPERATING. DAMPERS SHALL BE CLOSED AT ALL OTHER TIMES.
- SEE CONTROL DRAWING No. 5 FOR ADDITIONAL INFORMATION.

CW-LVR08 AND CW-LVR09

- DAMPERS SHALL BE CONTROLLED BY ECONOMIZER CONTROLLER.
- ECONOMIZER CONTROLLER SHALL ENABLE BOTH LOUVERS WHEN OUTDOOR AIR TEMPERATURE IS BELOW 75°F AND ABOVE 45°F.
 - IF THE AHU THERMOSTAT CALLS FOR COOLING THE OUTDOOR AIR INTAKE DAMPER SHALL MODULATE FROM 0-100% AS REQUIRED TO MINIMIZE MIXED AIR TEMPERATURE WITH A LOWER LIMIT OF 45°F
 - IF THE INTAKE AIR LOUVER IS OPEN THEN THE EXHAUST AIR LOUVER SHALL OPEN TO 100%.
 - IF THE AIR HANDLING UNIT CALLS FOR HEAT THE INTAKE AIR DAMPER AND EXHAUST DAMPER SHALL BE CLOSED.

CW-RH01

- OPERATION CONTROLLED BY WALL MOUNTED THERMOSTAT (T-CW-RH01).

SW-EF01 AND SW-SF01:

- EXHAUST FAN AND SUPPLY FAN SHALL OPERATE WHENEVER THE LIGHTS IN THE LOWER LEVEL OF THE PUMP STATION ARE ON AND SHALL OPERATE DURING AN ALARM CONDITION FROM THE COMBUSTIBLE GAS DETECTOR.
- SEE CONTROL DRAWING No. 8 FOR ADDITIONAL INFORMATION.

SW-EF02:

- OPERATION DETERMINED BY HAND-OFF-AUTO (HOA) SELECTOR SWITCH.
 - HAND POSITION: FAN SHALL OPERATE CONTINUOUSLY.
 - OFF POSITION: FAN SHALL NOT OPERATE
 - AUTO POSITION: FAN OPERATION SHALL BE CONTROLLED BY WALL MOUNTED THERMOSTAT (T-CW-EF02) AND SHALL OPERATED DURING AN ALARM CONDITION FROM THE COMBUSTIBLE GAS DETECTOR.
- SEE CONTROL DRAWING No. 7 FOR ADDITIONAL INFORMATION.

SW-LVR01 AND SW-LVR03

- DAMPERS SHALL BE SPRING CLOSE, POWER OPEN.
- DAMPERS SHALL BE OPEN WHEN SW-EF02 IS OPERATING. DAMPERS SHALL BE CLOSED AT ALL OTHER TIMES.
- SEE CONTROL DRAWING No. 7 FOR ADDITIONAL INFORMATION.

SW-LVR02

- DAMPER SHALL BE SPRING CLOSE, POWER OPEN.
- DAMPER SHALL BE OPEN WHEN SW-EF01 AND SW-SF01 ARE OPERATING. DAMPERS SHALL BE CLOSED AT ALL OTHER TIMES.
- SEE CONTROL DRAWING No. 8 FOR ADDITIONAL INFORMATION.

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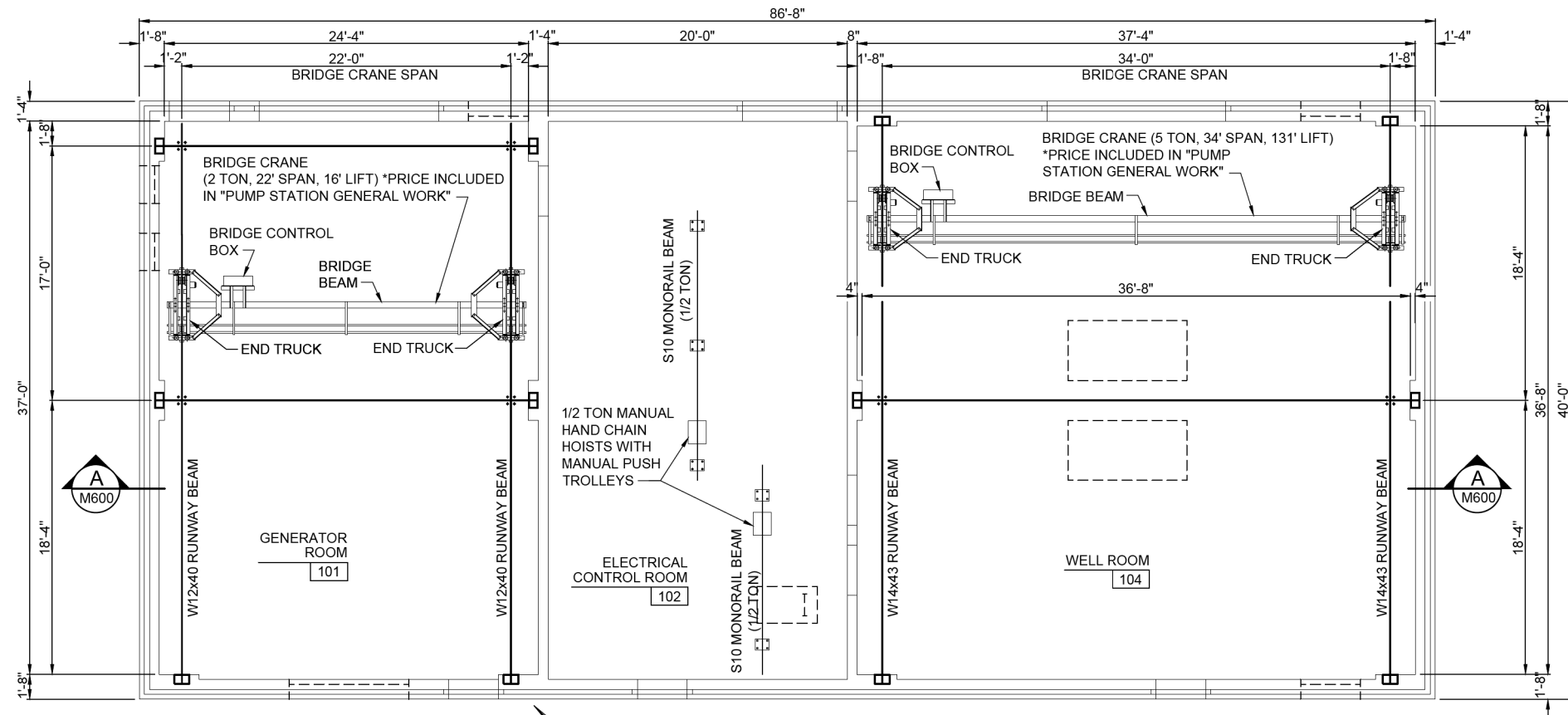
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MECHANICAL SCHEDULES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. R.T.E. SECTION COUNTY TOTAL SHEETS SHEET NO.
55/70/64 82-4T-1 ST. CLAIR 185 154
CONTRACT NO. 76C99
ILLINOIS FED. AID PROJECT

M500



GENERATOR ROOM BRIDGE CRANE

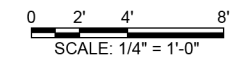
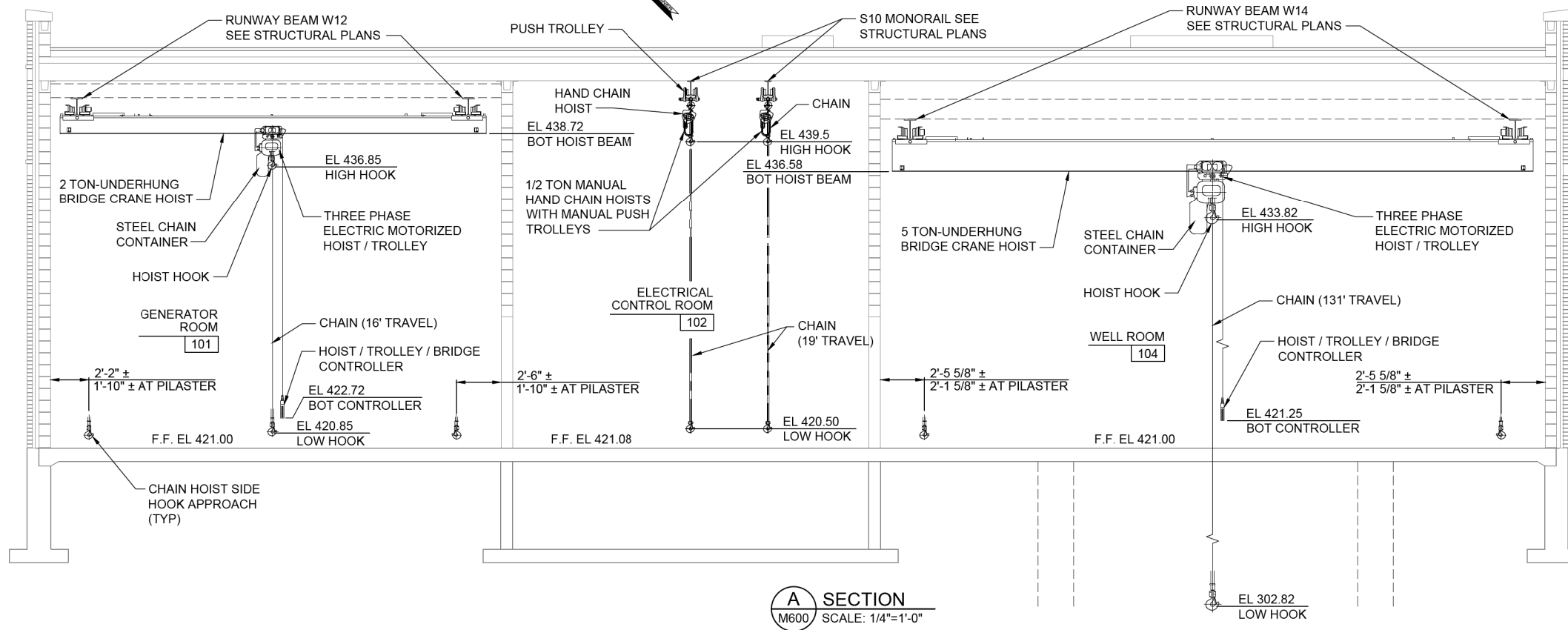
- 1. 2 TON OVERHEAD UNDER HUNG BRIDGE CRANE WITH ELECTRIC MOTORIZED END TRUCKS, ELECTRIC MOTORIZED CHAIN HOIST/TROLLEY, CHAIN AND HOOK, BRIDGE AND HOIST CONTROLLER, ELECTRICAL PANELS, AND ACCESSORIES

ELECTRICAL CONTROL ROOM

- 1. TWO (2) 1/2 TON HAND CHAIN HOISTS WITH PUSH TROLLEYS.

WELL ROOM BRIDGE CRANE

- 1. 5 TON OVERHEAD UNDER HUNG BRIDGE CRANE WITH ELECTRIC MOTORIZED END TRUCKS, ELECTRIC MOTORIZED CHAIN HOIST/TROLLEY, CHAIN AND HOOK, BRIDGE AND HOIST CONTROLLER, ELECTRICAL PANELS, AND ACCESSORIES.



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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

WELL HOUSE BUILDING - BRIDGE CRANES & HOISTS	
MISSOURI AVENUE DEEP WELL FACILITY	
SCALE: AS NOTED	SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 155
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

M600

ELECTRICAL SYMBOLS

	20 AMP 3P	LOW-VOLTAGE CIRCUIT BREAKER. RATING AND NUMBER OF POLES AS SHOWN
		FUSE: SIZE AND NUMBER OF FUSES AS NOTED
		FUSIBLE SWITCH: CURRENT RATING, FUSE SIZE, AND QUANTITY AS INDICATED
		NON-FUSED SWITCH: CURRENT RATING, AND NUMBER OF POLES INDICATED
		DISCONNECT OR DRAWOUT CONNECTION
		MOTOR STARTER AND SEPARATELY MOUNTED COMBINATION MOTOR STARTER
		MOTOR CONTROLLER AND SEPARATELY MOUNTED MOTOR CONTROLLER WITH SHORT CIRCUIT PROTECTION AND DISCONNECT
MOTOR STARTER AND CONTROLLER SUBSCRIPTS:		
A- MOTOR STARTER NEMA SIZE		
B-STARTER TYPE		
FVNR- FULL VOLTAGE NON-REVERSING		
FVR- FULL VOLTAGE REVERSING		
ZS- TWO SPEED		
RVAT- REDUCED VOLTAGE AUTO TRANSFORMER		
C- CONTROL DIAGRAM		
D- CONTROLLER TYPE		
VFD- VARIABLE FREQUENCY DRIVE		
SS- SOLID STATE		
	30	NON-FUSED DISCONNECT OR SAFETY SWITCH. SIZE AND NUMBER OF POLES AS NOTED
	X Y	FUSED DISCONNECT OR SAFETY SWITCH. X INDICATES SIZE, Y INDICATES FUSE SIZE, AND NUMBER OF POLES AS NOTED
		SEPARATELY MOUNTED CIRCUIT BREAKER
	M 60 HP	MOTOR WITH DESIGN HORSEPOWER
		GENERATOR
		TRANSFORMER Δ 3-PHASE, 3 WIRE DELTA CONNECTION Y 3-PHASE, 4 WIRE WYE CONNECTION
		VOLTAGE TRANSFORMER (VT OR PT)
		CURRENT TRANSFORMER
		GROUND
		SURGE PROTECTION DEVICE
		SELECTOR SWITCH
		PUSH BUTTON
		INSTRUMENTATION/CONTROL DEVICE
		CONTROL PANEL
		JUNCTION BOX
		THERMOSTAT
		PANELBOARD (250V-600V)
		PANELBOARD (LESS THAN 250V)

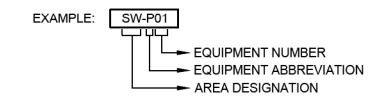
ELECTRICAL SYMBOLS

	\$	LIGHT SWITCH
	\$X	LIGHT SWITCH, X WAY
		FLOOR BOX WITH DUPLEX RECEPTACLE
		FLOOR BOX FOR DATA/COMMUNICATION
		WALL BOX FOR DATA/COMMUNICATION
		DUPLEX RECEPTACLE OUTLET
	GFCI	DUPLEX RECEPTACLE OUTLET WITH GROUND FAULT INTERRUPTER
	WP	WEATHERPROOF RECEPTACLE OUTLET WITH CFCI PROTECTION
		QUAD RECEPTACLE OUTLET
	X##	CIRCUITING NOTATION: X DENOTES PANEL AND ## DENOTES CIRCUIT NUMBER
		DENOTES CIRCUITING FOR STANDARD ELECTRICAL DEVICES

CONTROL SYMBOLS

		ELECTRICAL CONNECTION
		NO ELECTRICAL CONNECTION
		NORMALLY OPEN CONTACT
		NORMALLY CLOSED CONTACT
		NORMALLY OPEN TIME DELAY RELAY CONTACT. CLOSSES UPON TIME DELAY AFTER ACTIVATING COIL
		NORMALLY CLOSED TIME DELAY RELAY CONTACT. OPENS UPON TIME DELAY AFTER ACTIVATING COIL
		NORMALLY OPEN TIME DELAY RELAY CONTACT. OPENS UPON TIME DELAY AFTER DE-ACTIVATING COIL
		NORMALLY CLOSED TIME DELAY RELAY CONTACT. CLOSSES UPON TIME DELAY AFTER DE-ACTIVATING COIL
		NORMALLY OPEN TEMPERATURE SWITCH: CLOSSES ON RISING TEMPERATURE
		NORMALLY CLOSED TEMPERATURE SWITCH: OPENS ON RISING TEMPERATURE
		NORMALLY OPEN FLOW SWITCH: CLOSSES ON INCREASING FLOW
		NORMALLY CLOSED FLOW SWITCH: OPENS ON INCREASING FLOW
		NORMALLY OPEN LEVEL SWITCH: CLOSSES ON INCREASING LEVEL
		NORMALLY CLOSED LEVEL SWITCH: OPENS ON INCREASING LEVEL
		NORMALLY OPEN PRESSURE SWITCH: CLOSSES ON INCREASING PRESSURE
		NORMALLY CLOSED PRESSURE SWITCH: OPENS ON INCREASING PRESSURE
		NORMALLY OPEN LIMIT SWITCH: CLOSSES UPON REACHING LIMIT
		NORMALLY CLOSED LIMIT SWITCH: OPENS ON REACHING LIMIT
	PLC	MICROPROCESSOR INPUT
	PLC	MICROPROCESSOR OUTPUT
		FIELD WIRING EXTERNAL TO CONTROL PANEL
	H O A 000	3-POSITION SELECTOR SWITCH, MAINTAINED CONTACTS
		NORMALLY OPEN PUSHBUTTON, MOMENTARY CONTACT
		NORMALLY CLOSED PUSHBUTTON, MOMENTARY CONTACT
	X	INDICATING LIGHT, X INDICATES COLOR
	X	PUSH TO TEST INDICATING LIGHT, X INDICATES COLOR LENS COLOR: R- RED Y-YELLOW G- GREEN W-WHITE B-BLUE A- AMBER
		SOLENOID VALVE
		THERMAL OVERLOAD ELEMENT
	QL	THERMAL OVERLOAD ELEMENT RELAY CONTACT
	ETM	ELAPSED TIME METER
	MSC	MOTOR STARTS COUNTER
	ISB	INTRINSICALLY SAFE BARRIER

EQUIPMENT DESIGNATIONS



AREA DESIGNATIONS

CW	COLLECTOR WELL PUMP STATION
SW	STORMWATER PUMP STATION
VW	VERTICAL WELLS

EQUIPMENT ABBREVIATIONS

A	ALARM
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
BV	BALL VALVE
BD	BACKDRAFT DAMPER
CB	CIRCUIT BREAKER
CKV	CHECK VALVE
CP	CONTROL PANEL
CPU	CENTRAL PROCESSING UNIT
CR	CRANE
CTU	CT/PT CABINET (UTILITY)
CU	CONDENSING UNIT
CV	CONTROL VALVE
D	DAMPER
DHF	DEHUMIDIFIER
ESEW	EMERGENCY EYEWASH AND SHOWER
EF	EXHAUST FAN
EUH	ELECTRIC UNIT HEATER
F	FAN
FD	FLOOR DRAIN
FM	FLOW METER
GEN	GENERATOR
HO	HOIST
HB	HOSE BIB
HS	HORN/STROBE
IA	INTRUSION ALARM
KGV	KNIFE GATE VALVE
L	LAVATORY
LP	LIGHTING PANEL, LOW VOLTAGE (<250V)
LR	LEVEL RECORDER
LS	LEVEL SWITCH
LVR	LOUVER
MCC	MOTOR CONTROL CENTER
MOD	MOTOR OPERATED DAMPER
MR	MOP RECEPTOR
OIT	OPERATOR INTERFACE TERMINAL
P	PUMP
PDC	POWER DISTRIBUTION CENTER
PG	PRESSURE GAUGE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PT	PRESSURE TRANSDUCER
PZW	PIEZOMETER WELL
RH	RADIANT HEATER
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
SBD	SWITCHBOARD
SF	SUPPLY FAN
SP	SCADA PANEL
SS	SOLID STATE MOTOR CONTROLLER
SV	SOLENOID VALVE
SW	SWITCH
T	THERMOSTAT
TS	TEMPERATURE SWITCH
U	URINAL
US	ULTRASONIC LEVEL SENSOR
V	VALVE
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
WC	WATER CLOSET
XFMR	TRANSFORMER
YH	YARD HYDRANT

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PRIMARY ELEMENT SYMBOLOGY

	ANALYTICAL ELEMENT
	ULTRASONIC LEVEL ELEMENT
	ROTOMETER
	SONIC OR ULTRASONIC FLOWMETER
	MAGNETIC FLOWMETER
	THERMAL MASS DISPERSION FLOWMETER
	FLUME
	WEIR
	PROPELLER OR TURBINE METER
	FLOAT SWITCH
	TEMPERATURE ELEMENT WITH THERMOWELL
	SIGHT FLOW GLASS
	INSTRUMENT TAP ISOLATION DIAPHRAGM

CROSS REFERENCE SYMBOLOGY

	CONTINUATION ON SHEET Y-3
	CONTINUATION ON SHEET Y-3

ACTUATOR SYMBOLOGY

	OPERATOR ABBREVIATIONS: M = MOTOR P = PNEUMATIC S = SOLENOID
	FLOAT OPERATOR
	SPRING-OPPOSED SINGLE-ACTING PNEUMATIC CYLINDER
	DOUBLE-ACTING PNEUMATIC CYLINDER
	PNEUMATIC DIAPHRAGM
	PNEUMATIC DIAPHRAGM WITH POSITIONER

CONTROL SWITCH NOTATION ABBREVIATIONS

	ACK	ACKNOWLEDGE
	ESTOP	EMERGENCY STOP
	FAIL	FAILURE
	FOR	FORWARD-OFF-REVERSE
	FR	FORWARD-REVERSE
	FS	FAST-SLOW
	HOA	HAND-AUTO
	HOR	HAND-OFF-AUTO
	LL	HAND-OFF-REMOTE
	LLS	LEAD-LAG
	LOR	LEAD-LAG-STANDBY
	LR	LOCAL-OFF-REMOTE
	LS	LOCAL-REMOTE
	MA	LEAD-STANDBY
	OAC	MANUAL-AUTO
	OC	OPEN-AUTO-CLOSE
	OO	OPEN-CLOSE
	OSC	ON-OFF
	RJ	OPEN-STOP-CLOSE
	RJR	RUN-JOG
	SIL	RUN-JOG-REVERSE
	SS	SILENCE
	START-STOP	START-STOP

INSTRUMENT SYMBOLOGY

	LOCALLY MOUNTED FIELD INSTRUMENTATION
	MOUNTED ON PANEL FRONT
	MOUNTED INSIDE PANEL
	FRONT PANEL MOUNTED ON AUXILIARY PANEL (SUBSCRIPT INDICATES PANEL)
	MOUNTED INSIDE AUXILIARY PANEL
	PILOT LIGHT
	INSTRUMENT FUNCTIONS SHARING COMMON HOUSING
	COMPLEX INTERLOCK AS DEFINED IN CONTROL DIAGRAM OR IN SPECIFICATIONS
	SHARED DISPLAY, SHARED CONTROL, FIELD MOUNTED
	SHARED DISPLAY, SHARED CONTROL, PRIMARY LOCATION - NORMALLY ACCESSIBLE TO OPERATOR
	PROGRAMMABLE LOGIC CONTROL, PRIMARY LOCATION - NORMALLY ACCESSIBLE TO OPERATOR
	PROGRAMMABLE LOGIC CONTROL, FIELD MOUNTED

VALVES

	BALL VALVE
	BUTTERFLY VALVE
	CONE VALVE
	CHECK VALVE
	DOUBLE-DISK CHECK VALVE
	BALL CHECK VALVE
	DIAPHRAGM VALVE
	GATE VALVE
	GLOBE VALVE
	KNIFE GATE VALVE
	NEEDLE VALVE
	PINCH VALVE
	PLUG VALVE
	THREE-WAY BALL VALVE
	THREE-WAY PLUG VALVE
	PRESSURE-REDUCING VALVE
	PRESSURE REGULATING VALVE
	THREE-WAY CONTROL VALVE
	PRESSURE RELIEF VALVE
	AIR-RELEASE VACUUM VALVE A = AIR RELEASE VAC = VACUUM

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTER		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	CLOSED
D	USER'S CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND CURRENT (ELECTRICAL)				HIGH
I	POWER	SCAN	INDICATE		
K	TIME, TIME SCHEDULE	TIME, RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION DIMENSION	Z AXIS		DRIVER ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

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ELECTRIC TRANSFORMER PAD CONTRACTOR TO CONSTRUCT PAD AND BOLLARDS IN ACCORDANCE WITH THE UTILITY COMPANY (AMEREN) STANDARDS. TRANSFORMER TO BE PROVIDED BY THE UTILITY COMPANY. TRANSFORMER PAD TO BE PAID FOR AS "CONCRETE FOUNDATION, TYPE D"

*CONCRETE FOUNDATION, TYPE D, 4.0' FOR PAD MOUNT CABINET AND METER

PROVIDE NEW TELEPHONE POLE & SERVICE

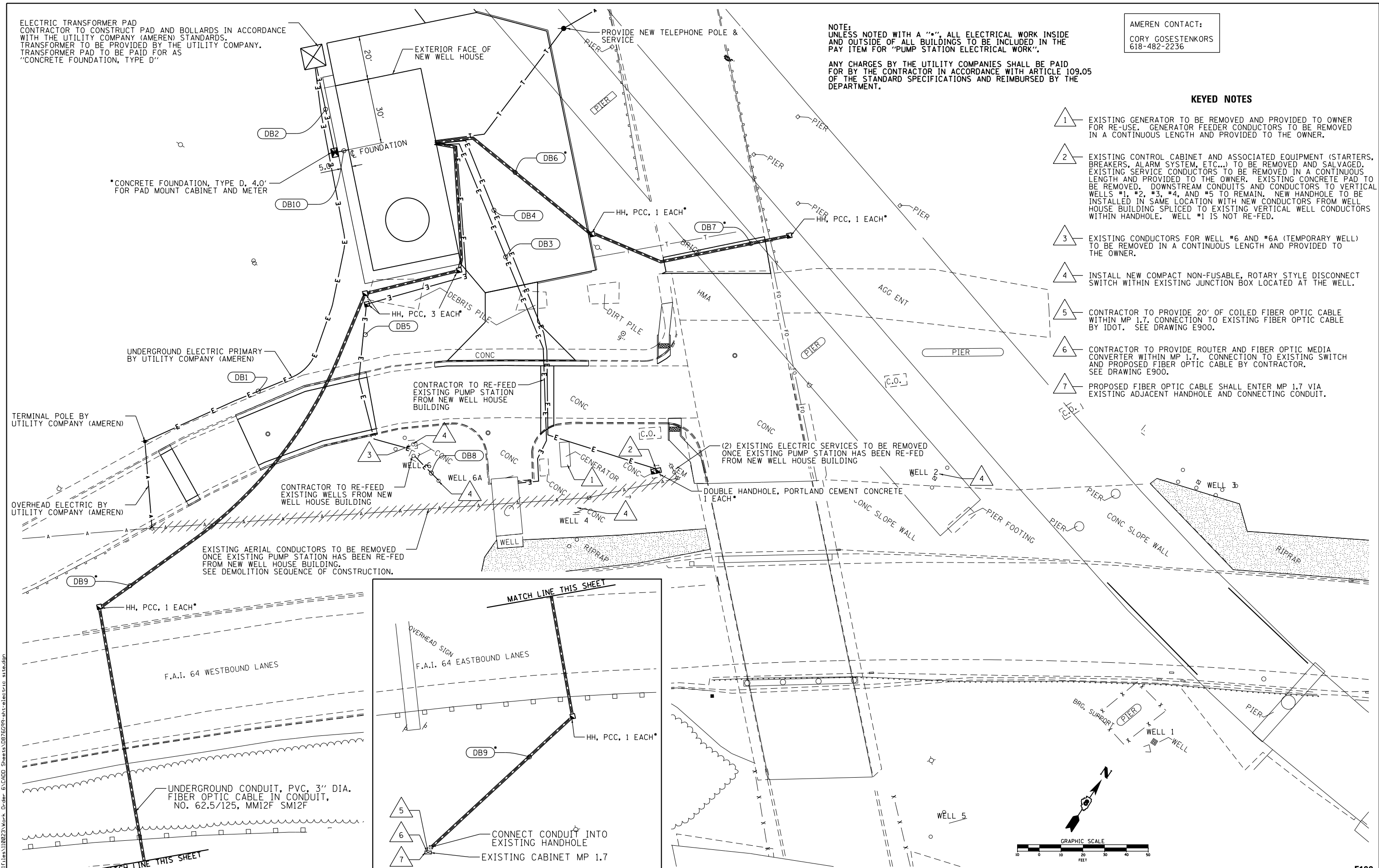
NOTE: UNLESS NOTED WITH A "•", ALL ELECTRICAL WORK INSIDE AND OUTSIDE OF ALL BUILDINGS TO BE INCLUDED IN THE PAY ITEM FOR "PUMP STATION ELECTRICAL WORK".

ANY CHARGES BY THE UTILITY COMPANIES SHALL BE PAID FOR BY THE CONTRACTOR IN ACCORDANCE WITH ARTICLE 109.05 OF THE STANDARD SPECIFICATIONS AND REIMBURSED BY THE DEPARTMENT.

AMEREN CONTACT:
CORY GOSESTENKORS
618-482-2236

KEYED NOTES

- 1 - EXISTING GENERATOR TO BE REMOVED AND PROVIDED TO OWNER FOR RE-USE. GENERATOR FEEDER CONDUCTORS TO BE REMOVED IN A CONTINUOUS LENGTH AND PROVIDED TO THE OWNER.
- 2 - EXISTING CONTROL CABINET AND ASSOCIATED EQUIPMENT (STARTERS, BREAKERS, ALARM SYSTEM, ETC...) TO BE REMOVED AND SALVAGED. EXISTING SERVICE CONDUCTORS TO BE REMOVED IN A CONTINUOUS LENGTH AND PROVIDED TO THE OWNER. EXISTING CONCRETE PAD TO BE REMOVED. DOWNSTREAM CONDUITS AND CONDUCTORS TO VERTICAL WELLS #1, #2, #3, #4, AND #5 TO REMAIN. NEW HANDHOLE TO BE INSTALLED IN SAME LOCATION WITH NEW CONDUCTORS FROM WELL HOUSE BUILDING SPLICED TO EXISTING VERTICAL WELL CONDUCTORS WITHIN HANDHOLE. WELL #1 IS NOT RE-FED.
- 3 - EXISTING CONDUCTORS FOR WELL #6 AND #6A (TEMPORARY WELL) TO BE REMOVED IN A CONTINUOUS LENGTH AND PROVIDED TO THE OWNER.
- 4 - INSTALL NEW COMPACT NON-FUSABLE, ROTARY STYLE DISCONNECT SWITCH WITHIN EXISTING JUNCTION BOX LOCATED AT THE WELL.
- 5 - CONTRACTOR TO PROVIDE 20' OF COILED FIBER OPTIC CABLE WITHIN MP 1.7. CONNECTION TO EXISTING FIBER OPTIC CABLE BY IDOT. SEE DRAWING E900.
- 6 - CONTRACTOR TO PROVIDE ROUTER AND FIBER OPTIC MEDIA CONVERTER WITHIN MP 1.7. CONNECTION TO EXISTING SWITCH AND PROPOSED FIBER OPTIC CABLE BY CONTRACTOR. SEE DRAWING E900.
- 7 - PROPOSED FIBER OPTIC CABLE SHALL ENTER MP 1.7 VIA EXISTING ADJACENT HANDHOLE AND CONNECTING CONDUIT.



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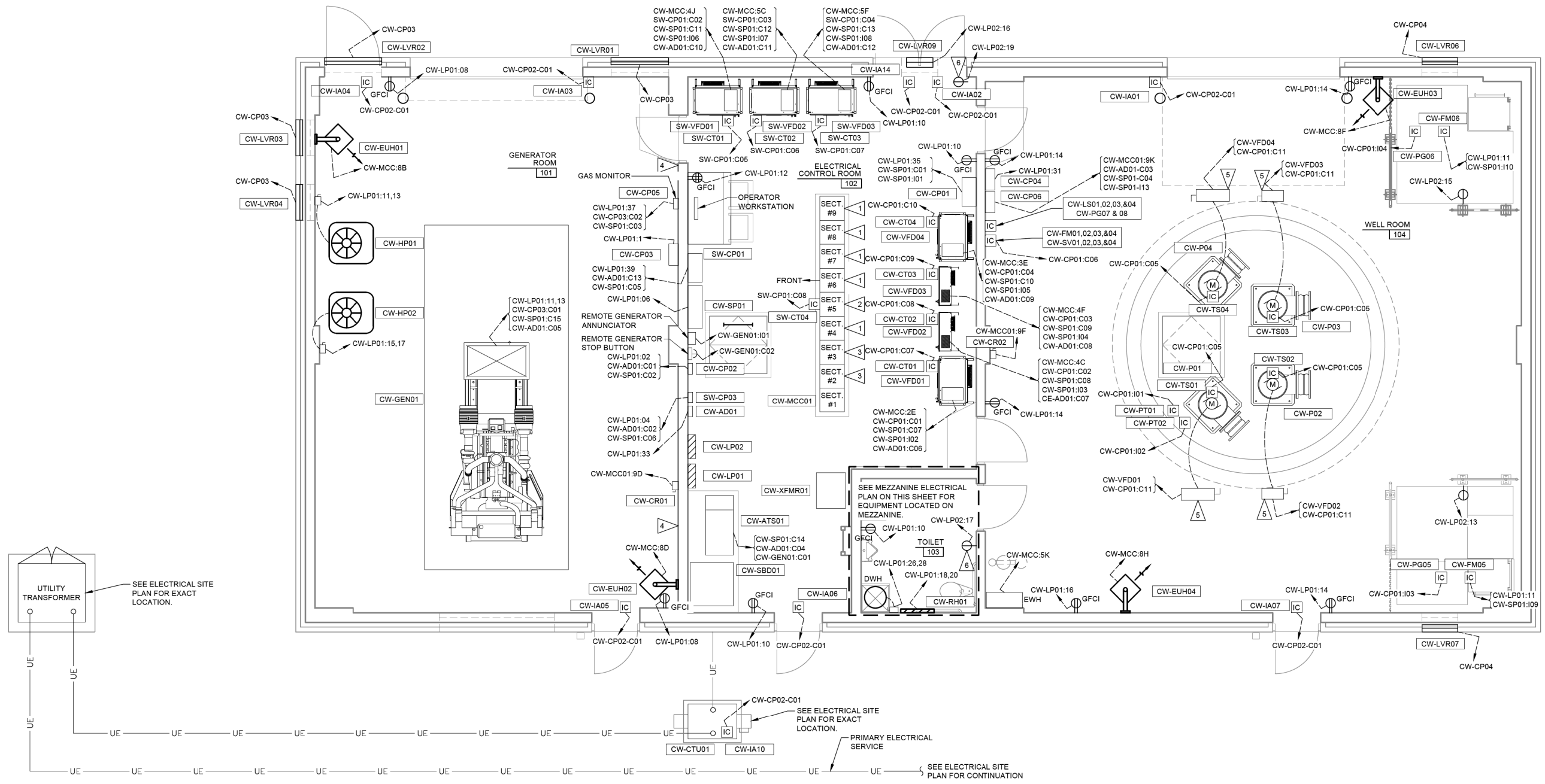
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CONNECT CONDUIT INTO EXISTING HANDHOLE
EXISTING CABINET MP 1.7

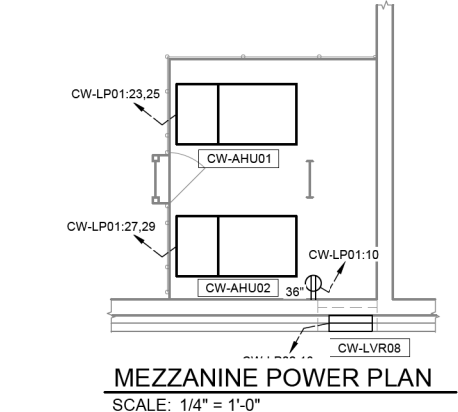
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SITE PLAN
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: 1"=20'
SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 159
CONTRACT NO. 76C99				E100
ILLINOIS FED. AID PROJECT				



WELL HOUSE BUILDING - ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"



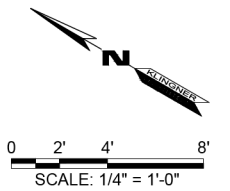
MEZZANINE POWER PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. ALL CONDUIT SHALL BE ROUTED BELOW THE FLOOR, WALL MOUNTED, OR LOCATED WITHIN A WALL. SUSPENDED CONDUIT (EXCEPT TO SERVE INTERIOR LIGHT FIXTURES) IS NOT PERMITTED.
2. CONDUIT BELOW THE GENERATOR AND WELL ROOM FLOOR SHALL BE ATTACHED TO GRADE BEAMS. UNSUPPORTED CONDUIT IS NOT PERMITTED.
3. CONDUIT BELOW THE ELECTRICAL AND TOILET ROOMS MAY BE ATTACHED TO GRADE BEAMS AND/OR SUSPENDED FROM THE FLOOR ABOVE.
4. ALL CORE DRILLED HOLES THROUGH GRADE BEAMS SHALL BE COORDINATED WITH THE STRUCTURAL ENGINEER. PROVIDE PROPOSED HOLE LOCATIONS TO ENGINEER FOR REVIEW PRIOR TO DRILLING HOLES.

KEYED NOTES (NOTES APPLICABLE TO THIS SHEET ONLY)

- 1 PROVIDE (2) 1" SPARE CONDUITS INTO MCC SECTION FROM CRAWLSPACE.
- 2 PROVIDE (4) 1" SPARE CONDUITS INTO MCC SECTION FROM CRAWLSPACE.
- 3 PROVIDE (2) 1 1/2" SPARE CONDUITS INTO MCC SECTION FROM CRAWLSPACE.
- 4 CONDUIT PENETRATIONS THROUGH WALL ARE NOT PERMITTED.
- 5 PROVIDE FLOOR MOUNTED STRUT FRAMEWORK TO SUPPORT DISCONNECT SWITCH.
- 6 RECEPTACLE LOCATED IN CRAWLSPACE BELOW FOR SUMP PUMP.



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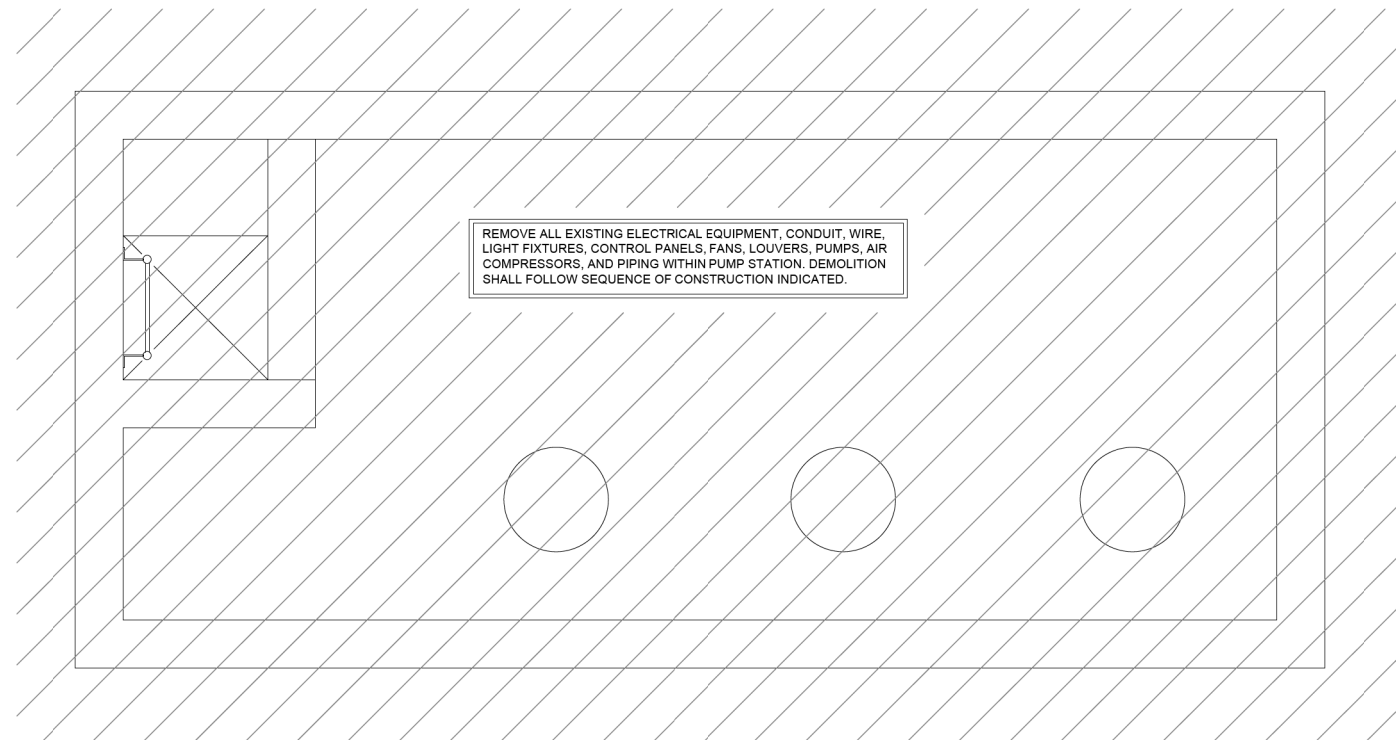
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	DATE -	REVISED -

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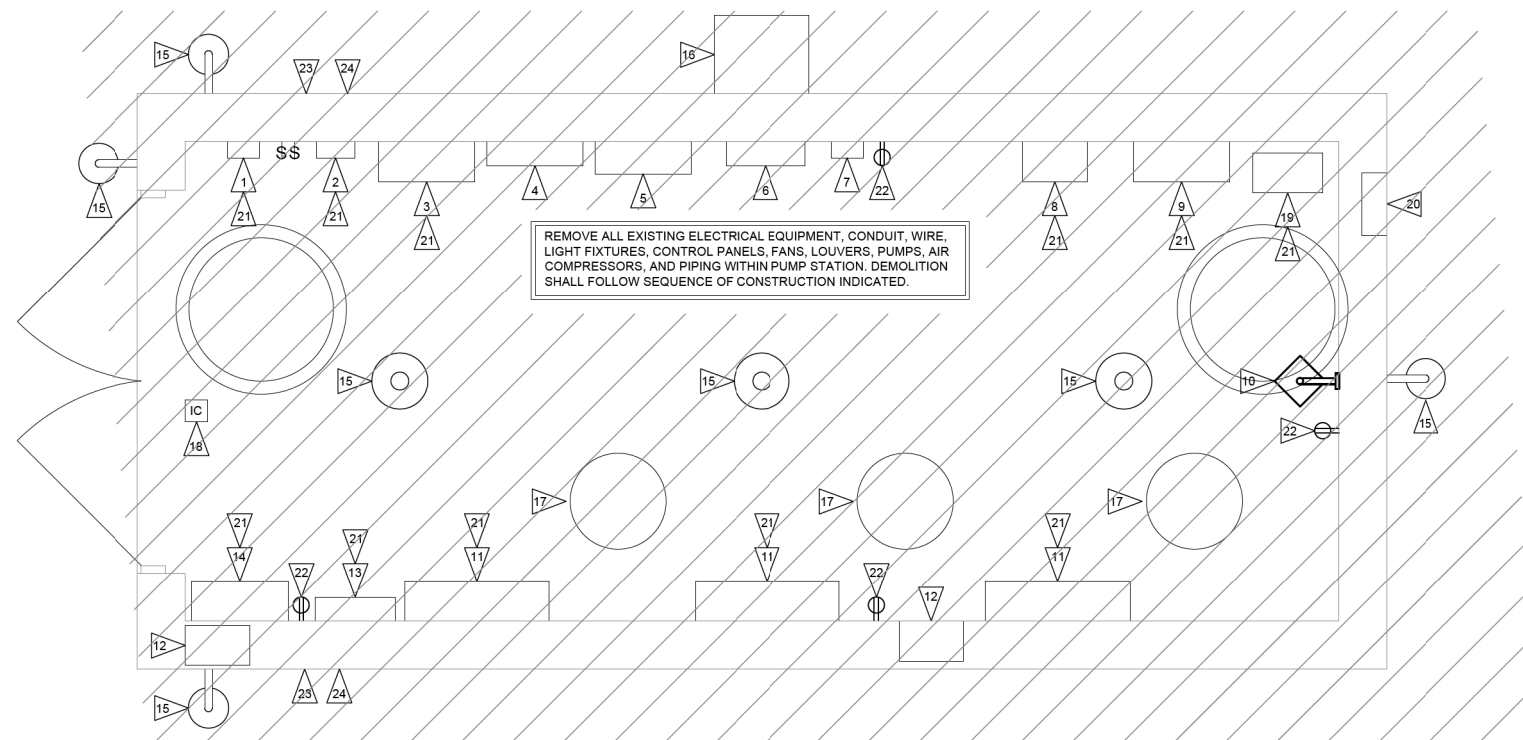
WELL HOUSE BUILDING - ELECTRICAL PLAN		F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 160
SCALE: AS NOTED	SHEET 1 OF 1 SHEETS	STA. TO STA.	CONTRACT NO. 76C99			

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E200



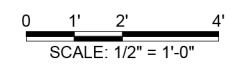
EXIST PUMP STA BLDG- DEMOLITION PLAN ELEV. 412.64
SCALE: 1/2" = 1'-0"



EXIST PUMP STA BLDG- DEMOLITION PLAN ELEV. 418.64
SCALE: 1/2" = 1'-0"

KEYED NOTES (NOTES APPLICABLE TO THIS SHEET ONLY)

- 1 GENERATOR ANNUNCIATOR PANEL
- 2 BATTERY CHARGER
- 3 AUTOMATIC TRANSFER SWITCH
- 4 MAIN CIRCUIT BREAKER FOR STORMWATER PUMPS
- 5 480V DISTRIBUTION PANEL
- 6 120/208V LIGHTING PANEL
- 7 TIMECLOCK
- 8 DIALER PANEL
- 9 BUBBLER SYSTEM CONTROL PANEL
- 10 ELECTRIC UNIT HEATER
- 11 PUMP CONTROL PANEL
- 12 SUPPLY FAN
- 13 TEMPORARY WELL STARTER
- 14 WELL #6 STARTER
- 15 LIGHT FIXTURE
- 16 TRANSFORMER
- 17 SUBMERSIBLE PUMP TUBE
- 18 DOOR LIMIT SWITCH
- 19 AIR COMPRESSOR
- 20 BAROMETRIC RELIEF DAMPER
- 21 EQUIPMENT SHALL BE RETAINED BY OWNER. CONTRACTOR SHALL REMOVE EQUIPMENT AND PROVIDE TO OWNER FOR RE-USE.
- 22 RECEPTACLE
- 23 ALL EXPOSED CONDUIT ON OUTSIDE OF BUILDING SHALL BE REMOVED TO AT LEAST 12" BELOW GRADE.
- 24 ALL FORMER CONDUIT PENETRATION IN EXTERIOR WALL TO BE FILLED WITH GROUT COLORED TO MATCH BRICK.



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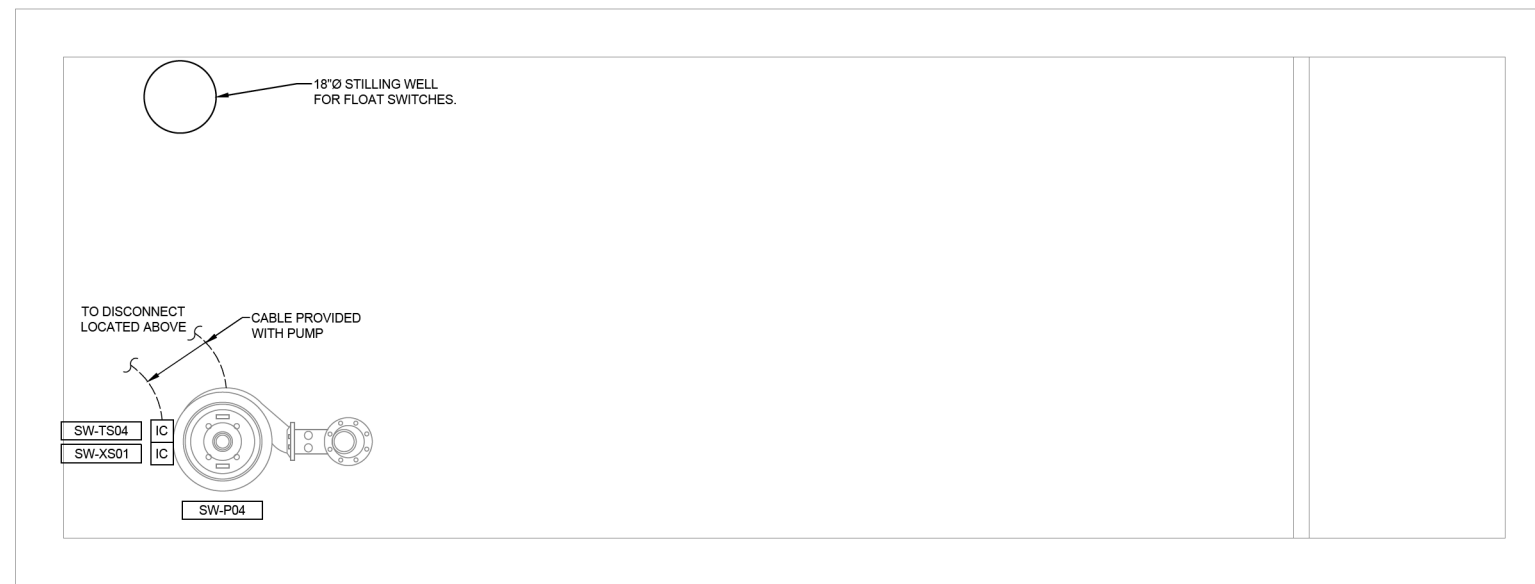
**EXISTING PUMP STATION BUILDING - DEMOLITION PLANS
MISSOURI AVENUE DEEP WELL FACILITY**

SCALE: AS NOTED SHEET 2 OF 2 SHEETS STA. TO STA.

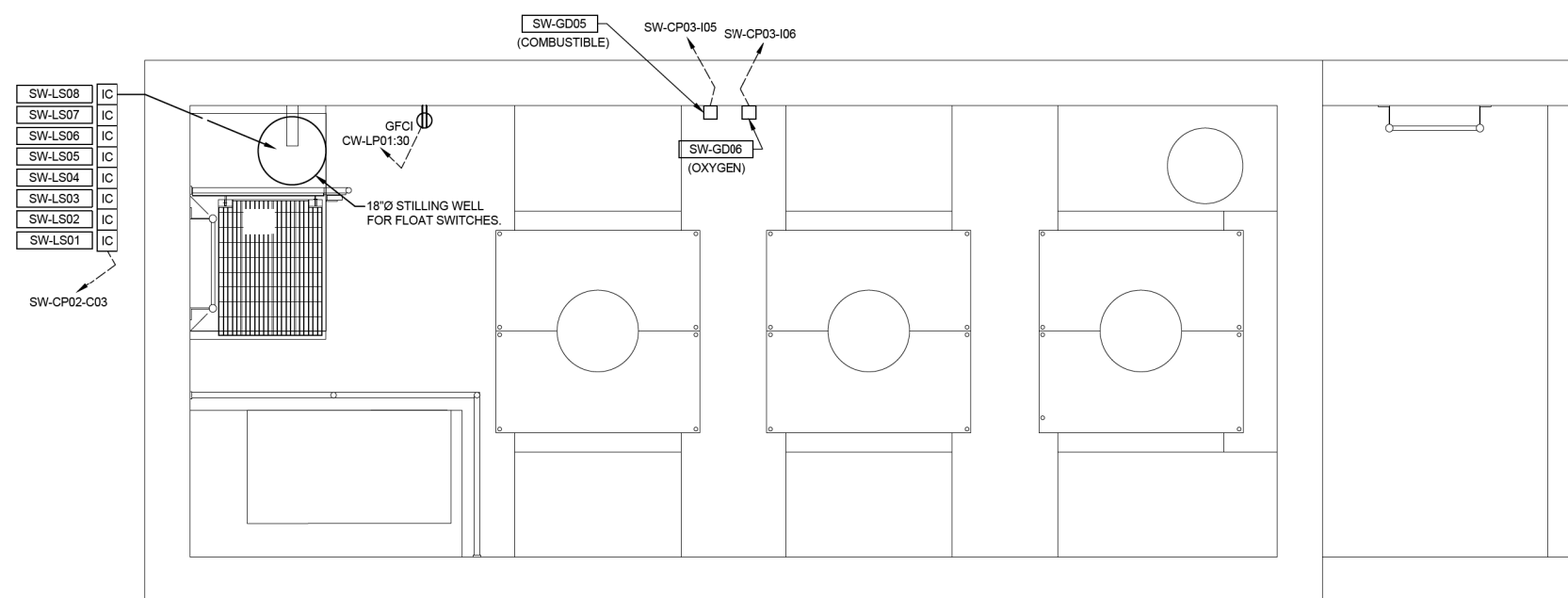
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55/70/64	82-4T-1	ST. CLAIR	185	164
CONTRACT NO. 76C99				
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E401

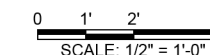
THE STORMWATER PUMP STATION ELECTRICAL CLASSIFICATION IS CLASS 1, DIVISION 2, GROUP D. ALL EQUIPMENT INSTALLED AND INSTALLATION METHODS WITHIN OR ON THE STORMWATER PUMP STATION SHALL BE SUITABLE FOR THIS CLASSIFICATION.



EXIST. PUMP STA BLDG - ELECTRICAL PLAN ELEV. 380.64
SCALE: 1/2" = 1'-0"



EXIST. PUMP STA BLDG - ELECTRICAL PLAN ELEV. 393.64
SCALE: 1/2" = 1'-0"



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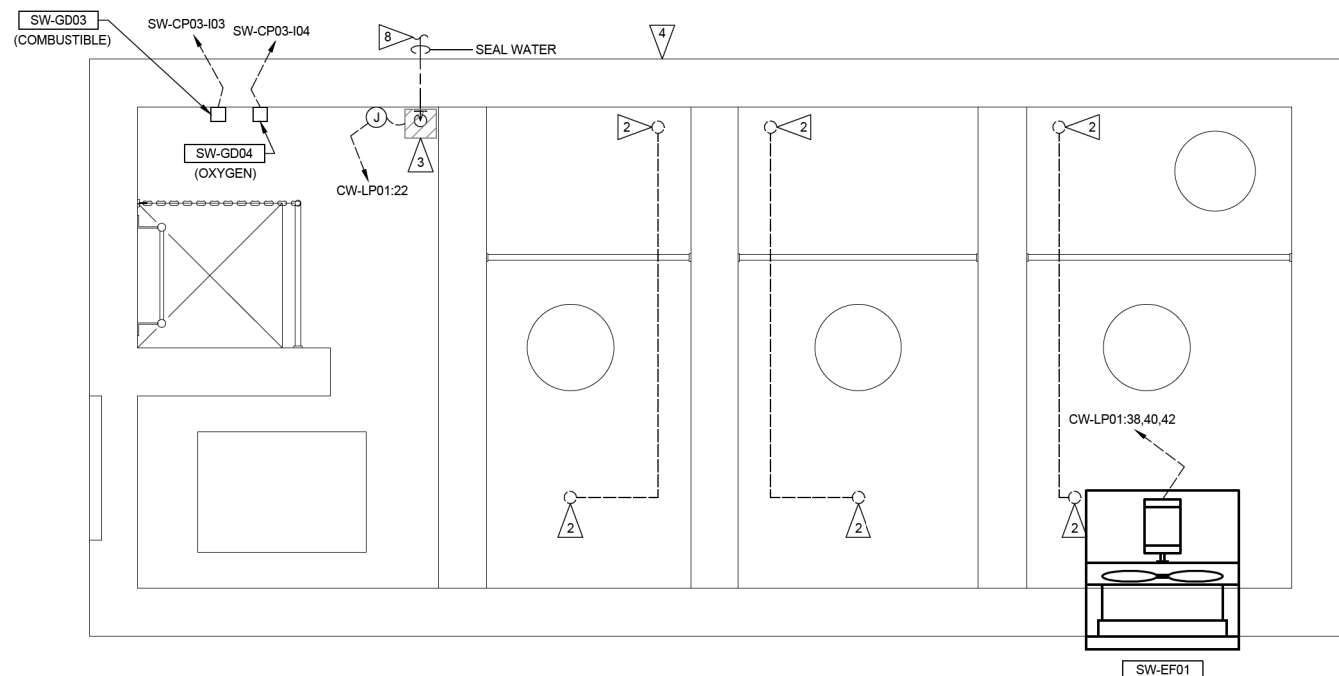
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EXISTING PUMP STATION BUILDING - ELECTRICAL PLAN			
MISSOURI AVENUE DEEP WELL FACILITY			
SCALE: AS NOTED	SHEET 1 OF 2 SHEETS	STA. TO STA.	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

E500

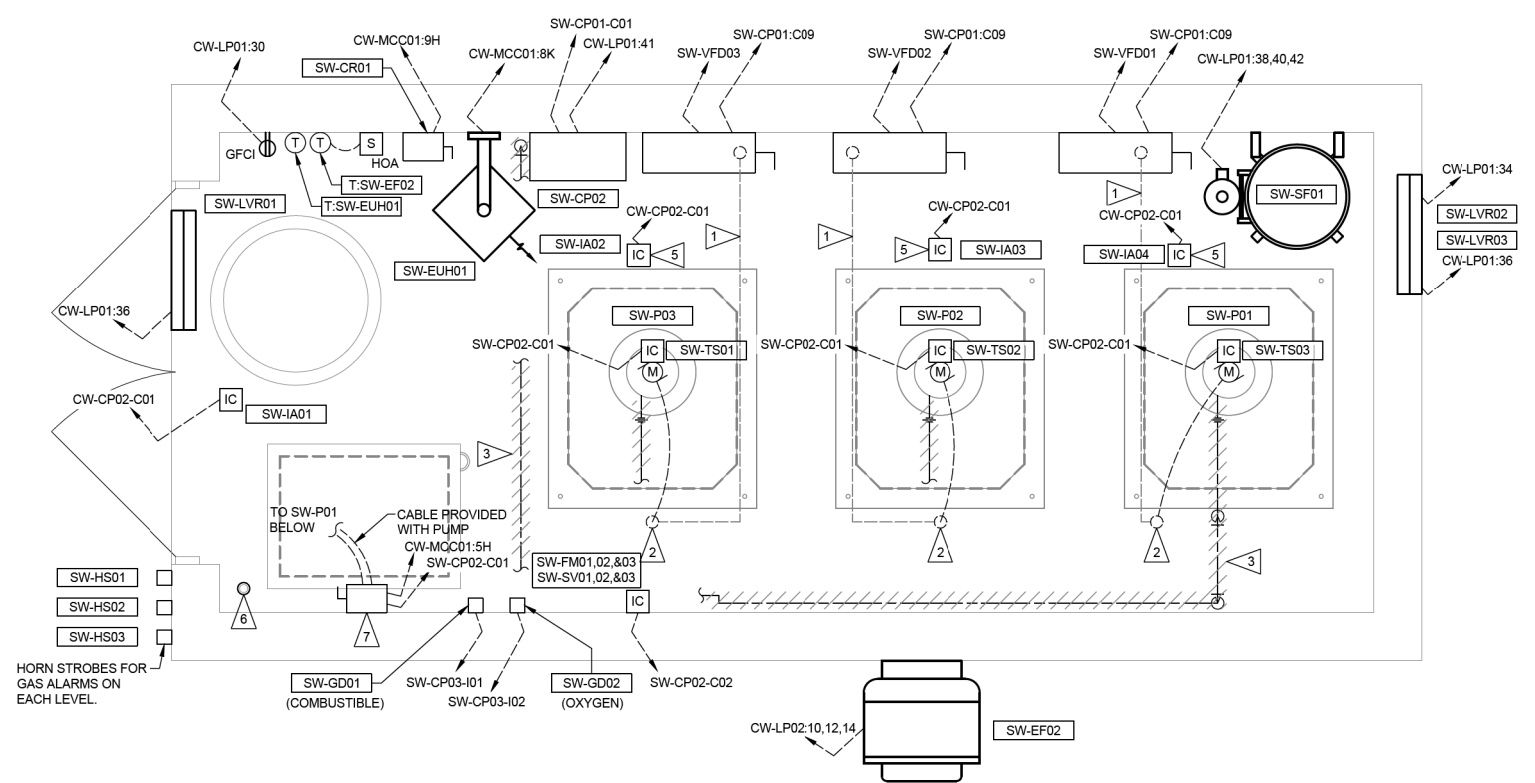


EXIST. PUMP STA BLDG - ELECTRICAL PLAN ELEV. 412.64
SCALE: 1/2" = 1'-0"

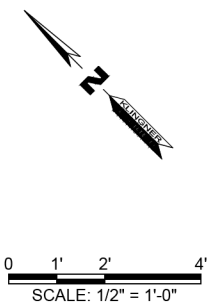
THE STORMWATER PUMP STATION ELECTRICAL CLASSIFICATION IS CLASS 1, DIVISION 2, GROUP D. ALL EQUIPMENT INSTALLED AND INSTALLATION METHODS WITHIN OR ON THE STORMWATER PUMP STATION SHALL BE SUITABLE FOR THIS CLASSIFICATION.

KEYED NOTES (NOTES APPLICABLE TO THIS SHEET ONLY)

- 1 CONDUIT ROUTED BELOW FLOOR
- 2 CONDUIT FLOOR PENETRATION
- 3 SEAL WATER PIPING SHALL BE HEAT TRACED. HEAT TRACE CABLE SHALL BE 120V, HAZARDOUS LOCATION, SELF REGULATING LOW TEMPERATURE CABLE WITH AN OUTPUT OF 3W/FT. PROVIDE ALL ACCESSORIES NECESSARY FOR A COMPLETE INSTALLATION INCLUDING BUT NOT LIMITED TO LINE SENSING THERMOSTAT, POWER CONNECTION, AND END SEALS.
- 4 COORDINATE CONDUIT WALL PENETRATIONS WITH PROPOSED CONCRETE WALLS.
- 5 INTRUSION ALARM ATTACHED TO ROOF HATCH ABOVE.
- 6 CORE DRILL 3" HOLE FOR PUMP CABLE PASSAGE TO LOWER LEVELS. FIELD LOCATE HOLE TO AVOID INTERFERENCES.
- 7 INSTALL DISCONNECT TO AVOID INTERFERENCE WITH FLOOR HATCH LID.
- 8 UNDERGROUND SEAL WATER PIPING IS NOT HEAT TRACED.



EXIST. PUMP STA BLDG - ELECTRICAL PLAN ELEV. 418.64
SCALE: 1/2" = 1'-0"



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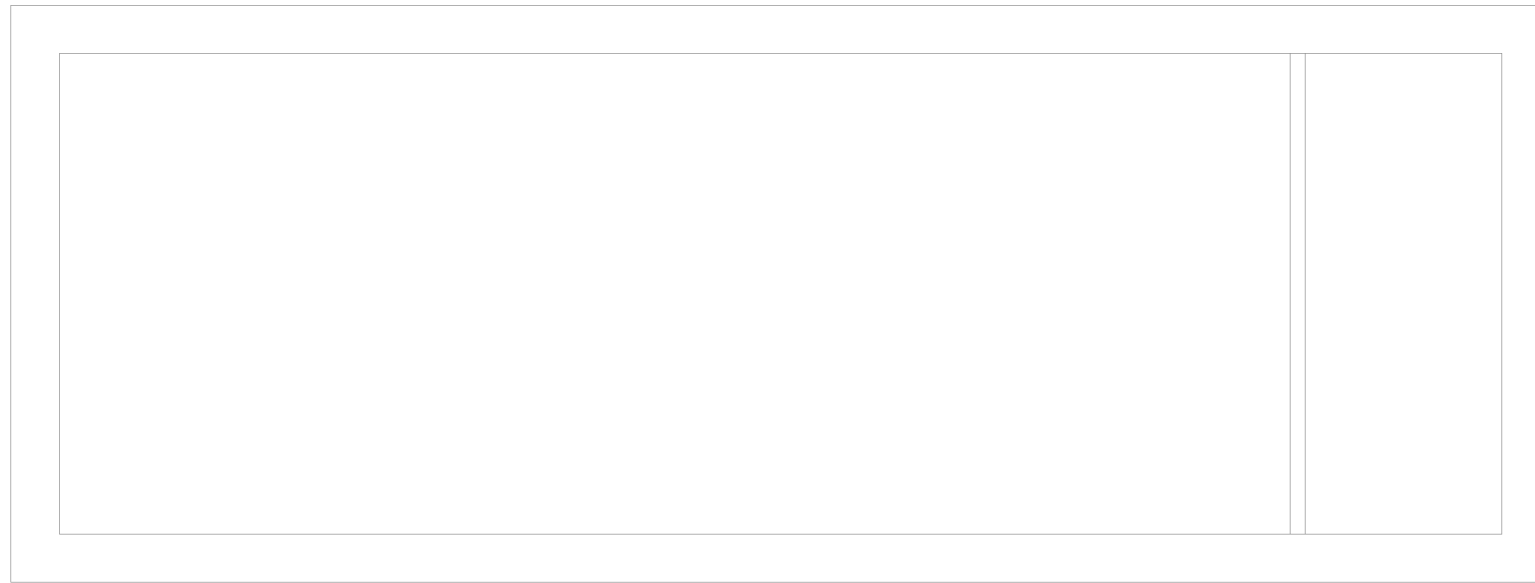
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DEPARTMENT OF TRANSPORTATION

EXISTING PUMP STATION BUILDING - ELECTRICAL PLAN
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: AS NOTED SHEET 2 OF 2 SHEETS STA. TO STA.

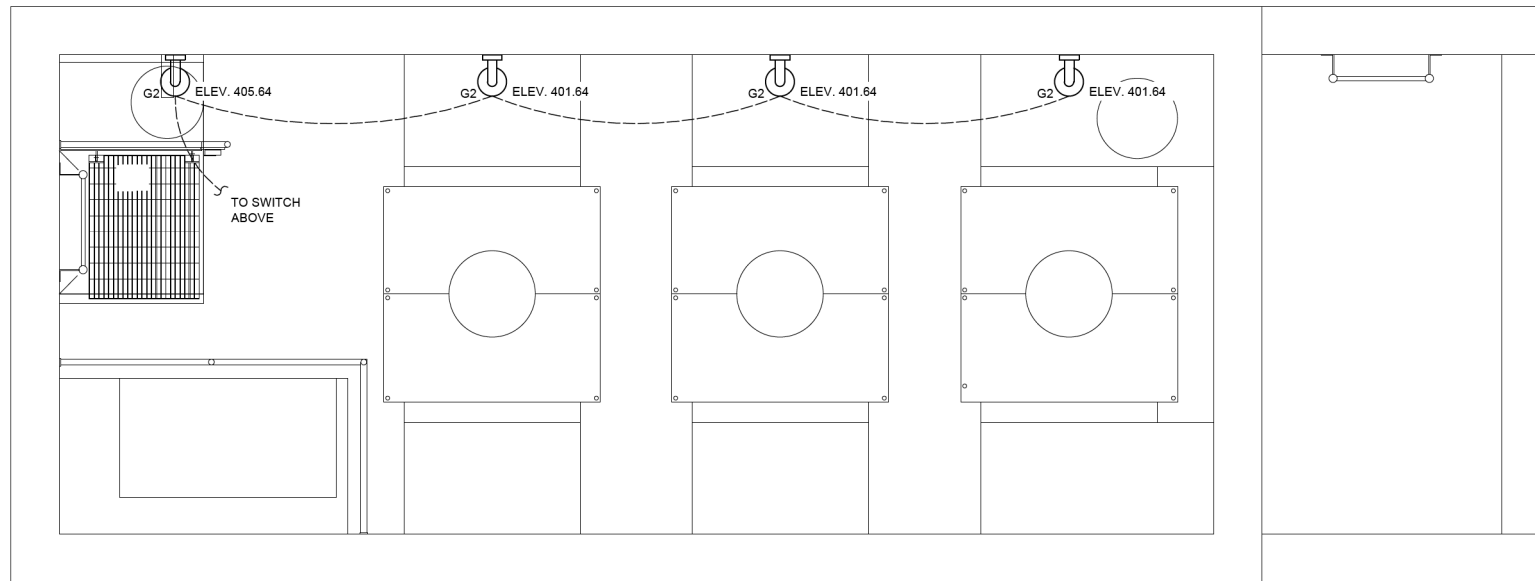
F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 166
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

E501

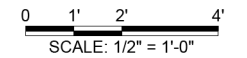
THE STORMWATER PUMP STATION ELECTRICAL CLASSIFICATION IS CLASS 1, DIVISION 2, GROUP D. ALL EQUIPMENT INSTALLED AND INSTALLATION METHODS WITHIN OR ON THE STORMWATER PUMP STATION SHALL BE SUITABLE FOR THIS CLASSIFICATION.



EXIST PUMP STA BLDG- LIGHTING PLAN ELEV. 380.64
SCALE: 1/2" = 1'-0"



EXIST PUMP STA BLDG- LIGHTING PLAN ELEV. 393.64
SCALE: 1/2" = 1'-0"



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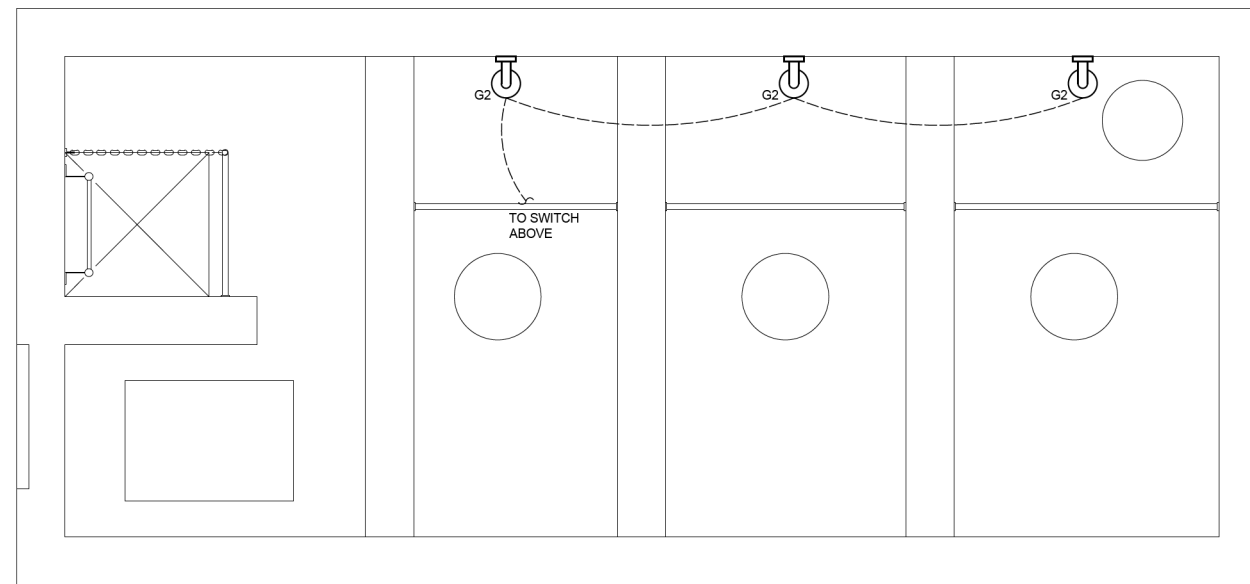
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

EXISTING PUMP STATION BUILDING - LIGHTING PLAN			
MISSOURI AVENUE DEEP WELL FACILITY			
SCALE: AS NOTED	SHEET 1 OF 2 SHEETS	STA. TO STA.	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	167
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

E600

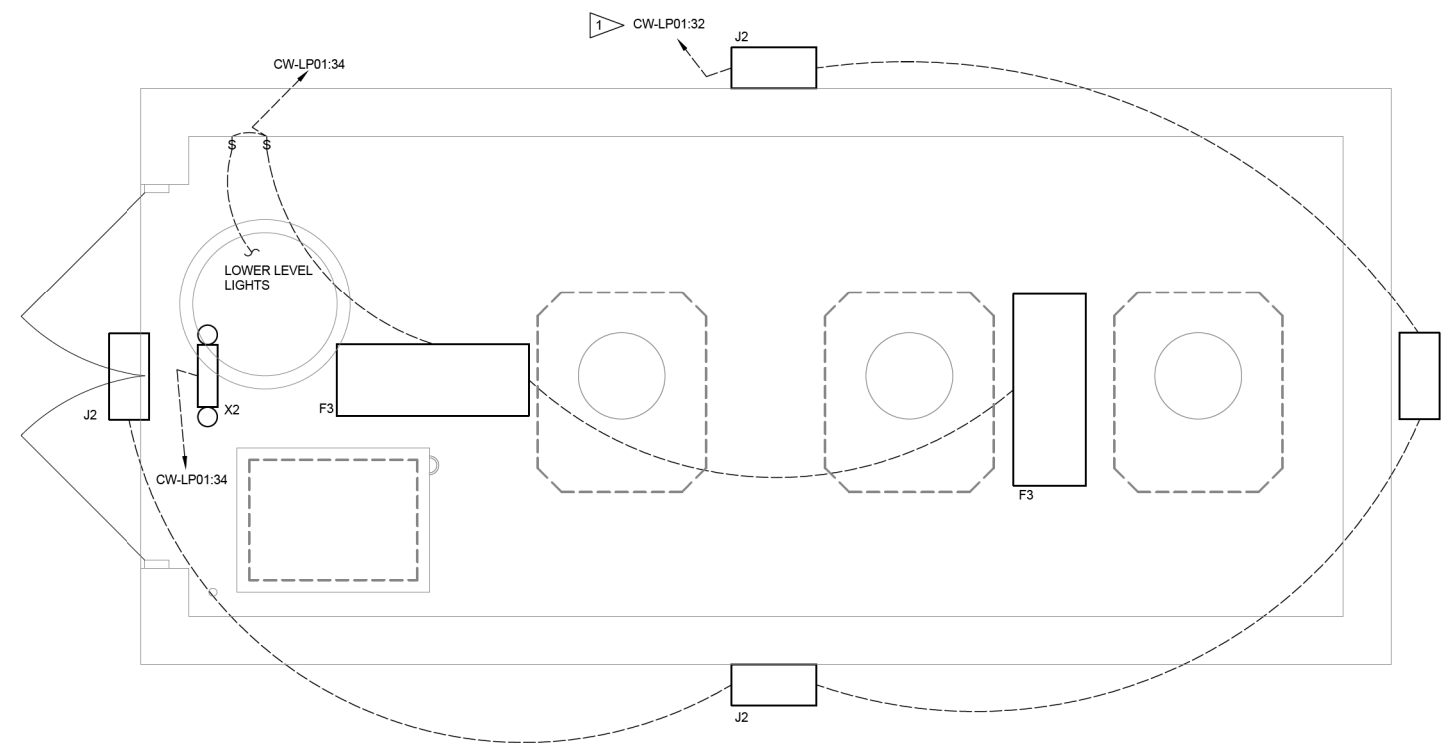
THE STORMWATER PUMP STATION ELECTRICAL CLASSIFICATION IS CLASS 1, DIVISION 2, GROUP D. ALL EQUIPMENT INSTALLED AND INSTALLATION METHODS WITHIN OR ON THE STORMWATER PUMP STATION SHALL BE SUITABLE FOR THIS CLASSIFICATION.



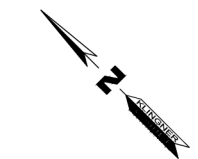
EXIST PUMP STA BLDG- LIGHTING PLAN ELEV. 412.64
SCALE: 1/2" = 1'-0"

KEYED NOTES (NOTES APPLICABLE TO THIS SHEET ONLY)

- 1 UTILIZE THE SAME PHOTOCELL/CONTACTOR USED FOR WELL BUILDING EXTERIOR LIGHTS FOR LIGHTING CONTROL.



EXIST PUMP STA BLDG- LIGHTING PLAN ELEV. 418.64
SCALE: 1/2" = 1'-0"



0 1' 2' 4'
SCALE: 1/2" = 1'-0"

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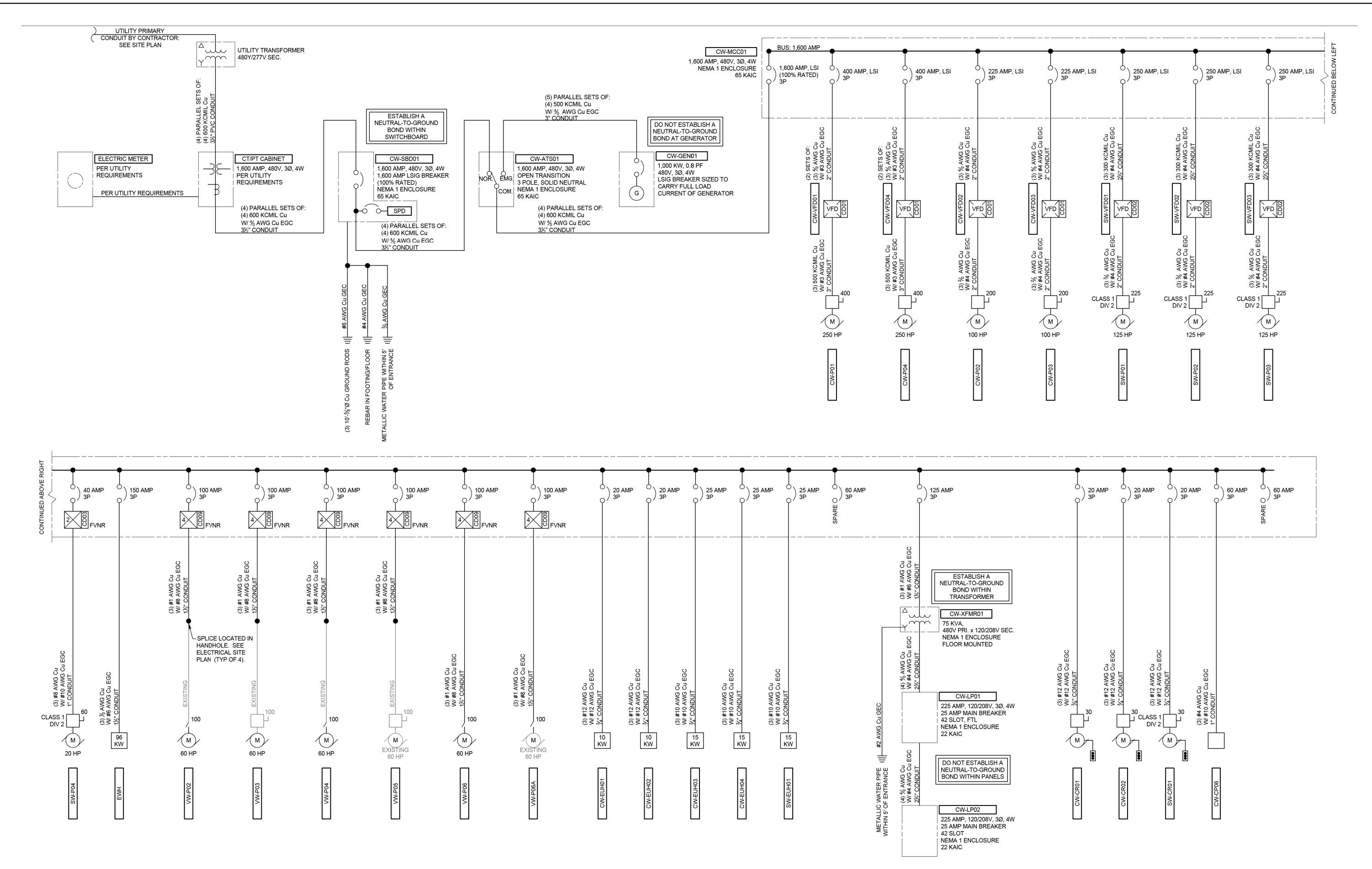
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PUMP STATION BUILDING - LIGHTING PLAN			
MISSOURI AVENUE DEEP WELL FACILITY			
SCALE: AS NOTED	SHEET 2 OF 2 SHEETS	STA. TO STA.	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	168
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

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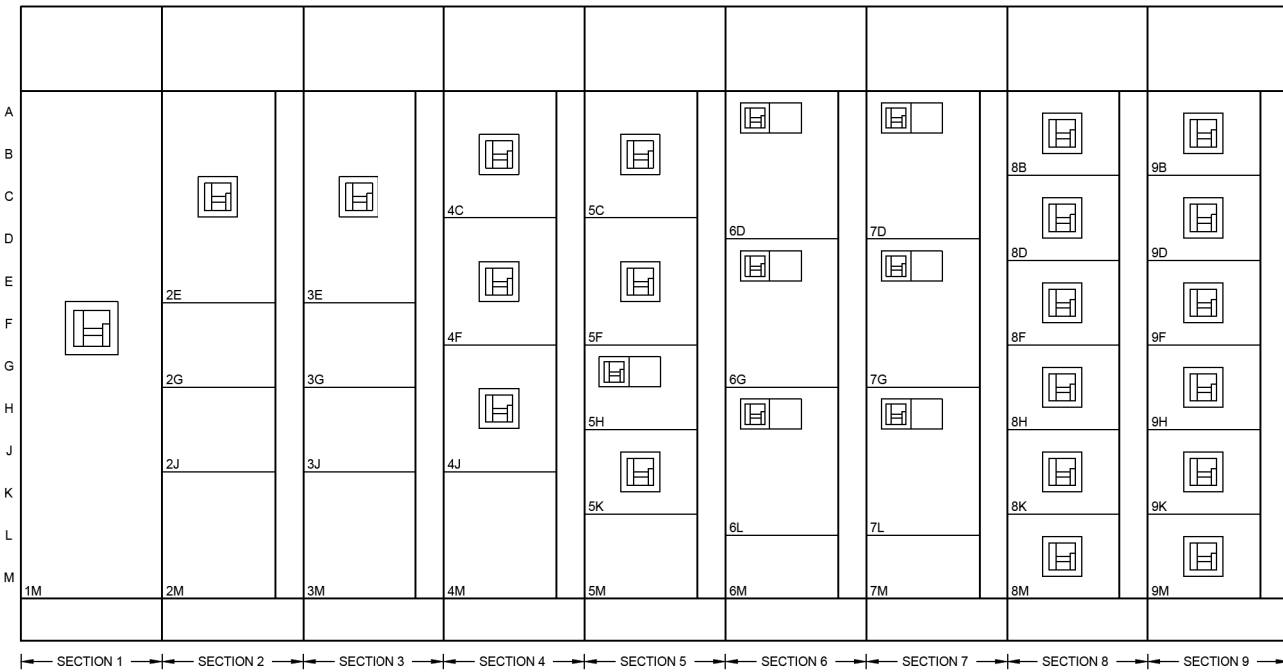
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**ELECTRICAL ONE-LINE DIAGRAM
 MISSOURI AVENUE DEEP WELL FACILITY**

SCALE: AS NOTED SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 169
ILLINOIS FED. AID PROJECT			CONTRACT NO. 76C99	

E700



CW-MCC01 FRONT ELEVATION
SCALE: NTS

CW-MCC01 SCHEDULE

ID	DEVICE INFORMATION						PROTECTION INFO			UNIT DATA			
SECT.	CELL	CIRCUIT NAMEPLATE	DEVICE TYPE	DEVICE SIZE	POLES	KAIC RATING	STARTER SIZE	MOTOR HP	FULL LOAD AMPS**	CPT REQUIRED (YES/NO)	ADDITIONAL ACCESSORIES	DEVICE SPACE REQUIRED	CABLE ENTRY DIRECTION
1	M	CW-MCC01: MAIN BREAKER	MAIN BREAKER	1,600 A	3	65	NA	NA	NA	NO	NA	72	BOTTOM
2	NA	NA	VERTICAL BUS SIZE	600 A									
2	E	CW-P01: COLLECTOR WELL PUMP #1	FEEDER BREAKER	400	3	65		250	302	NO		30	BOTTOM
2	G	NA	DOOR (FUTURE)									12	
2	J	NA	DOOR (FUTURE)									12	
2	M	NA	DOOR (FUTURE)									18	
3	NA	NA	VERTICAL BUS SIZE	600 A									
3	E	CW-P04: COLLECTOR WELL PUMP #4	FEEDER BREAKER	400	3	65		250	302	NO		30	BOTTOM
3	G	NA	DOOR (FUTURE)									12	
3	J	NA	DOOR (FUTURE)									12	
3	M	NA	DOOR (FUTURE)									18	
4	NA	NA	VERTICAL BUS SIZE	600 A									
4	C	CW-P02: COLLECTOR WELL PUMP #2	FEEDER BREAKER	225 A	3	65		100	124	NO		18	BOTTOM
4	F	CW-P03: COLLECTOR WELL PUMP #3	FEEDER BREAKER	225 A	3	65		100	124	NO		18	BOTTOM
4	J	SW-P01: STORMWATER PUMP #1	FEEDER BREAKER	250 A	3	65		125	156	NO		18	BOTTOM
4	M	NA	DOOR (FUTURE)									18	
5	NA	NA	VERTICAL BUS SIZE	600 A									
5	C	SW-P02: STORMWATER PUMP #2	FEEDER BREAKER	250 A	3	65		125	156	NO		18	BOTTOM
5	F	SW-P03: STORMWATER PUMP #3	FEEDER BREAKER	250 A	3	65		125	156	NO		18	BOTTOM
5	H	SW-P04: STORMWATER PUMP #4	FVNR STARTER		3	65	2	20	27*	NO		12	BOTTOM
5	K	EMG SHOWER WATER HEATER	FEEDER BREAKER	150 A	3	65			116			12	
5	M	NA	DOOR (FUTURE)									12	
6	NA	NA	VERTICAL BUS SIZE	600 A									
6	D	VW-P02: VERTICAL WELL PUMP #2	FVNR STARTER		3	65	4	60	77*	YES	SEE CD09	21	BOTTOM
6	G	VW-P03: VERTICAL WELL PUMP #3	FVNR STARTER		3	65	4	60	77*	YES	SEE CD09	21	BOTTOM
6	L	VW-P04: VERTICAL WELL PUMP #4	FVNR STARTER		3	65	4	60	77*	YES	SEE CD09	21	BOTTOM
6	M	NA	DOOR (FUTURE)									9	
7	NA	NA	VERTICAL BUS SIZE	600 A									
7	D	VW-P05: VERTICAL WELL PUMP #5	FVNR STARTER		3	65	4	60	77*	YES	SEE CD09	21	BOTTOM
7	G	VW-P06: VERTICAL WELL PUMP #6	FVNR STARTER		3	65	4	60	77*	YES	SEE CD09	21	BOTTOM
7	L	VW-P06A: VERTICAL WELL PUMP #6A	FVNR STARTER		3	65	4	60	77*	YES	SEE CD09	21	BOTTOM
7	M	NA	DOOR (FUTURE)									9	
8	NA	NA	VERTICAL BUS SIZE	600 A									
8	B	CW-EUH01: ELECTRIC UNIT HEATER #1	FEEDER BREAKER	20 A	3	65			13	NO		12	BOTTOM
8	D	CW-EUH02: ELECTRIC UNIT HEATER #2	FEEDER BREAKER	20 A	3	65			13	NO		12	BOTTOM
8	F	CW-EUH03: ELECTRIC UNIT HEATER #3	FEEDER BREAKER	25 A	3	65			19	NO		12	BOTTOM
8	H	CW-EUH04: ELECTRIC UNIT HEATER #4	FEEDER BREAKER	25 A	3	65			19	NO		12	BOTTOM
8	K	SW-EUH01: ELECTRIC UNIT HEATER #1	FEEDER BREAKER	25 A	3	65			19	NO		12	BOTTOM
8	M	SPARE	FEEDER BREAKER	60 A	3	65				NO		12	BOTTOM
9	NA	NA	VERTICAL BUS SIZE	600 A									
9	B	CW-LP01&02: LIGHTING PANEL #1 & #2	FEEDER BREAKER	125 A	3	65				NO		12	BOTTOM
9	D	CW-CR01: OVERHEAD CRANE	FEEDER BREAKER	20 A	3	65			9.3	NO		12	BOTTOM
9	F	CW-CR02: OVERHEAD CRANE	FEEDER BREAKER	20 A	3	65			13.8	NO		12	BOTTOM
9	H	SW-CR01: OVERHEAD CRANE	FEEDER BREAKER	20 A	3	65			9.3	NO		12	BOTTOM
9	K	CW-CP06: SEAL WATER CP	FEEDER BREAKER	60 A	3	65				NO		12	BOTTOM
9	M	SPARE	FEEDER BREAKER	60 A	3	65				NO		12	BOTTOM

*MOTOR FLA BASED ON NEC TABLE 430.250. HEATER SELECTION TO BE BASED ON NAMEPLATE FLA OF MOTOR TO BE PROVIDED.
**MOTOR FLA BASED ON NEC TABLE 430.250. IF ACTUAL FLA IS GREATER THAN LISTED VALUE, CONTRACTOR IS RESPONSIBLE FOR SIZING EQUIPMENT, CONDUCTORS, ETC BASED ON ACTUAL FLA.

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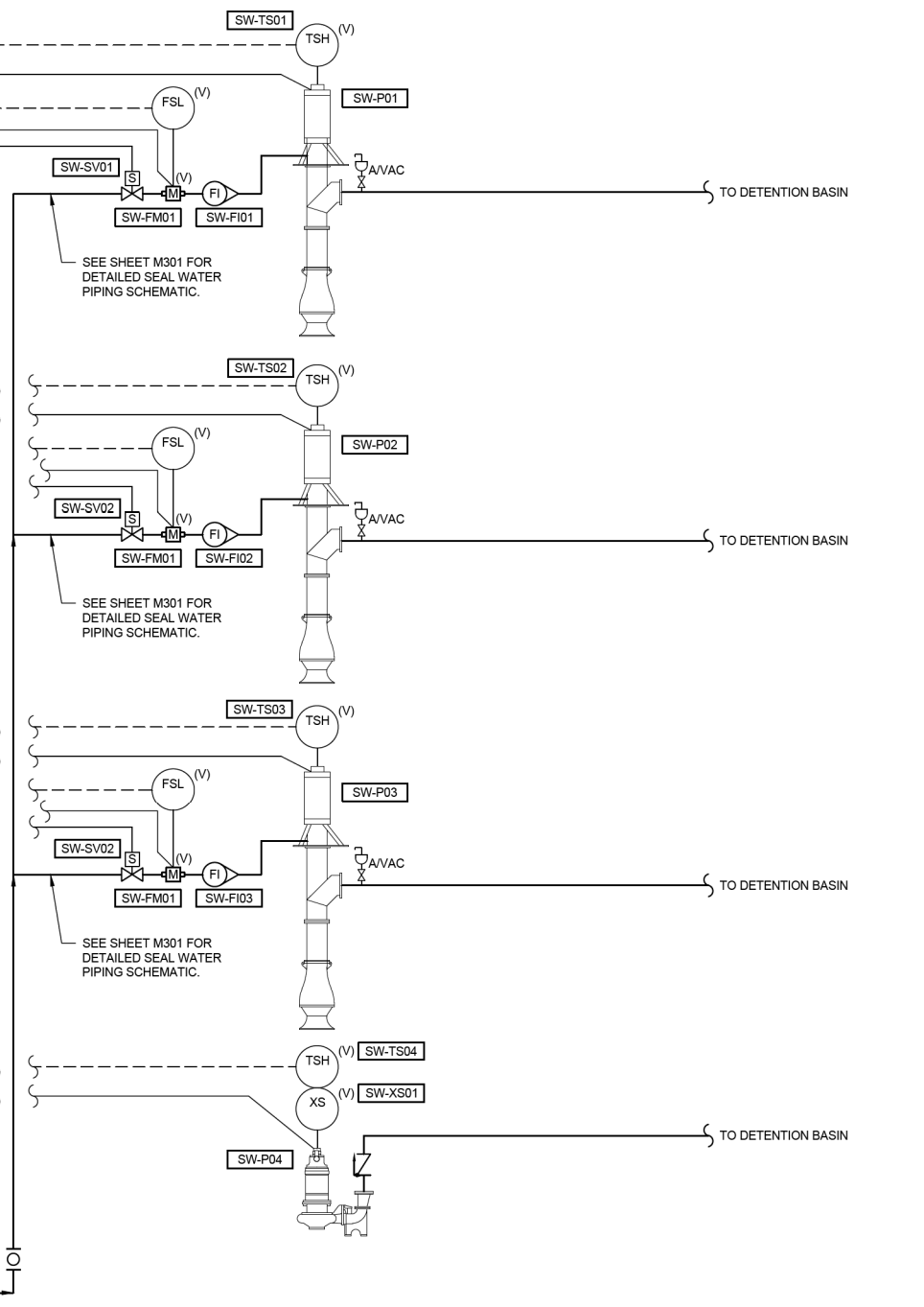
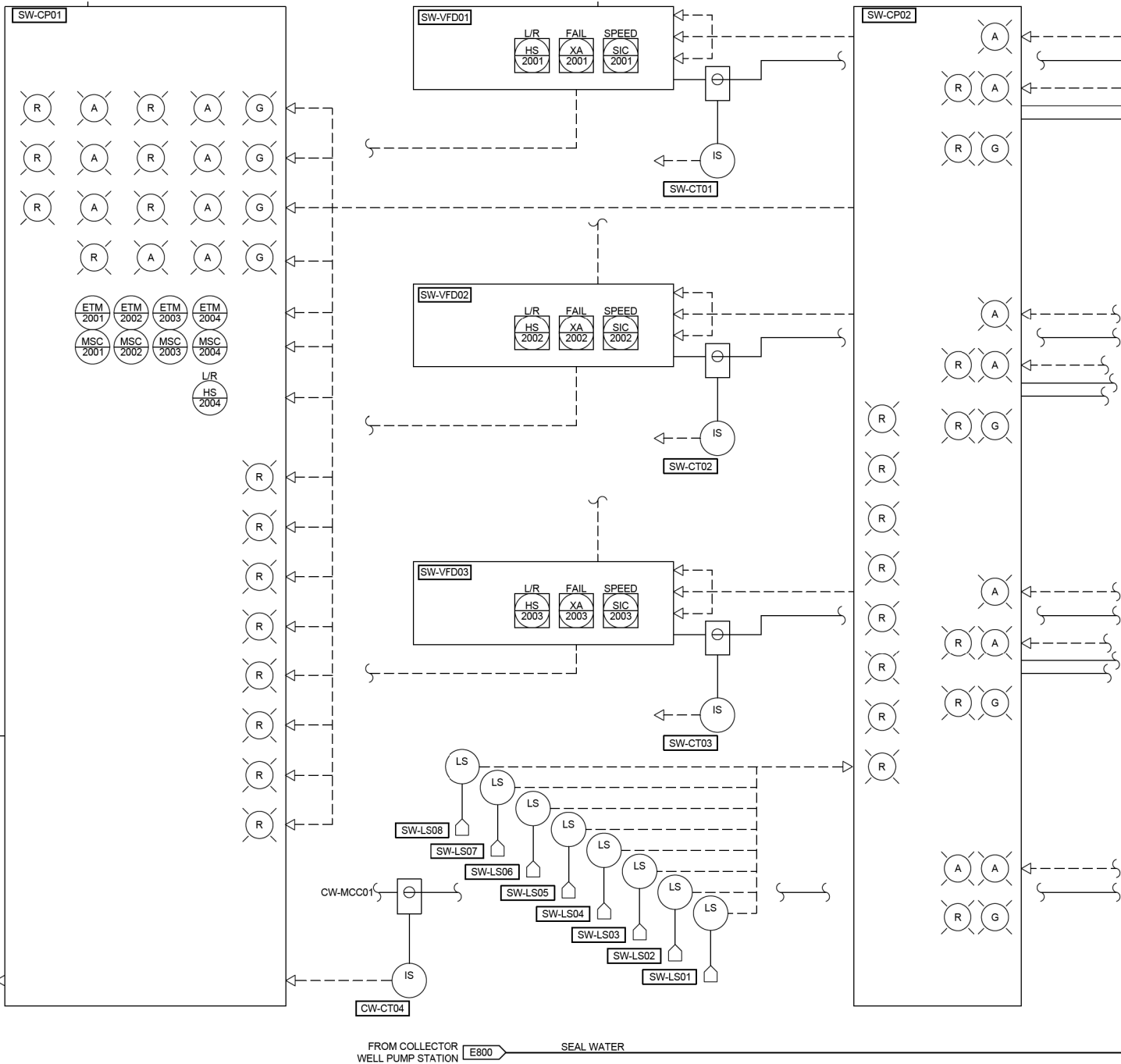
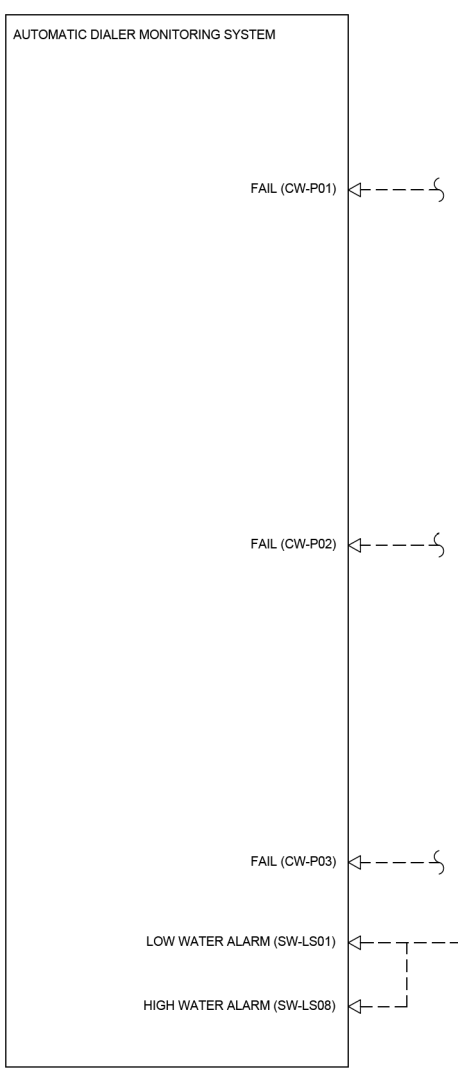
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DEPARTMENT OF TRANSPORTATION**

MCC ELEVATION AND SCHEDULE		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
MISSOURI AVENUE DEEP WELL FACILITY		55/70/64	82-4T-1	ST. CLAIR	185	170
SCALE: AS NOTED		SHEET 1 OF 1 SHEETS		STA. TO STA.		CONTRACT NO. 76C99

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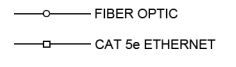
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PUMP STATION BUILDING - P&ID
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 173
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

E801

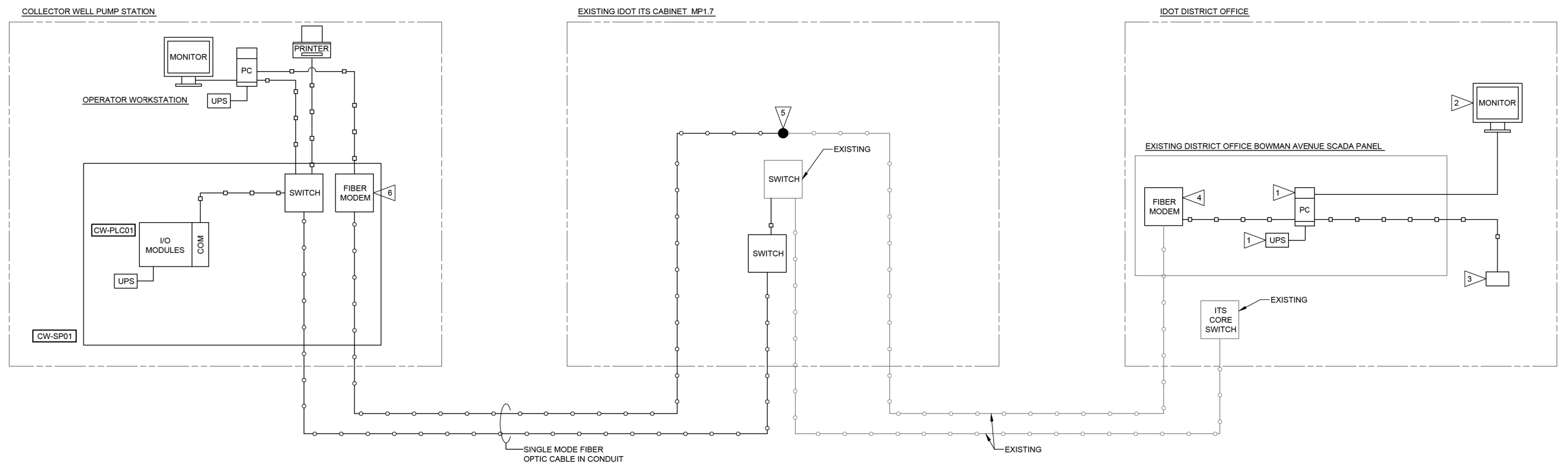


GENERAL NOTES

1. ALL EQUIPMENT, INSTALLATION, CONNECTIONS, WIRE, ETC SHOWN ARE THE RESPONSIBILITY OF THE CONTRACTOR UNLESS NOTED OTHERWISE.
2. IDOT DISTRICT OFFICE EQUIPMENT WILL BE USED BY IDOT DISPATCHER TO REMOTELY MONITOR STATUS, ALARMS AND ALLOW FOR ALARM ACKNOWLEDGMENT OF THE PUMP STATION SCADA SYSTEM. HARDWARE AND SOFTWARE PROVIDED FOR THIS LOCATION SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS SECTIONS 409500, 409510, AND 409520 AS APPLICABLE.

KEYED NOTES (NOTES APPLICABLE TO THIS SHEET ONLY)

1. CONTRACTOR TO PROVIDE AND INSTALL EQUIPMENT WITHIN EXISTING CABINET. INCLUDE APPROPRIATE "VIEW NODE" SOFTWARE AND CONFIGURATION SERVICES TO ALLOW REMOTE MONITORING OF COLLECTOR WELL PUMP STATION OVER ETHERNET NETWORK.
2. REMOTE WALL MOUNTED 32" LCD MONITOR. LOCATE MONITOR ON UPPER LEFT HAND SIDE OF DISPATCHER ALARM AND STATUS INDICATOR WALL. COORDINATE EXACT LOCATION WITH DISTRICT STAFF. CONTRACTOR IS RESPONSIBLE FOR INSTALLING 120V POWER CIRCUIT FOR MONITOR. POWER SHALL BE SUPPLIED FROM EXISTING CIRCUIT SUPPLYING EXISTING MONITORS ON THE SAME WALL.
3. PROVIDE A USB MOUSE AT THE DISPATCHER WORK AREA FOR ALARM ACKNOWLEDGMENT. CONNECT MOUSE TO PC USING A USB EXTENDER AND CAT5 CABLE.
4. EQUIPMENT PROVIDED, INSTALLED, AND ASSOCIATED CONNECTIONS BY IDOT.
5. CONNECTION BETWEEN PROPOSED FIBER AND EXISTING FIBER BY IDOT. CONTRACTOR TO PROVIDE AT LEAST 20' OF COILED FIBER WITHIN CABINET TO FACILITATE CONNECTION.
6. EQUIPMENT PROVIDED BY OWNER. INSTALLATION AND CONNECTIONS BY CONTRACTOR.



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SCADA INPUT/OUTPUT LIST					
No.	I/O TYPE	SOURCE TAG	I/O DESCRIPTION	INTERFACING CP	PID
1	AI	SI-1001	CW-P01 SPEED FEEDBACK	CW-VFD01	E800
2	AO	SC-1001	CW-P01 SPEED COMMAND	CW-VFD01	E800
3	DO	YC-1001	CW-P01 RUN COMMAND	CW-CP01	E800
4	DI	HS-1001	CW-P01 IN REMOTE	CW-VFD01	E800
5	DI	XA-1001	CW-P01 FAIL	CW-VFD01	E800
6	AI	SI-1002	CW-P02 SPEED FEEDBACK	CW-VFD02	E800
7	AO	SC-1002	CW-P02 SPEED COMMAND	CW-VFD02	E800
8	DO	YC-1002	CW-P02 RUN COMMAND	CW-CP01	E800
9	DI	HS-1002	CW-P02 IN REMOTE	CW-VFD02	E800
10	DI	XA-1002	CW-P02 FAIL	CW-VFD02	E800
11	AI	SI-1003	CW-P03 SPEED FEEDBACK	CW-VFD03	E800
12	AO	SC-1003	CW-P03 SPEED COMMAND	CW-VFD03	E800
13	DO	YC-1003	CW-P03 RUN COMMAND	CW-CP01	E800
14	DI	HS-1003	CW-P03 IN REMOTE	CW-VFD03	E800
15	DI	XA-1003	CW-P03 FAIL	CW-VFD03	E800
16	AI	SI-1004	CW-P04 SPEED FEEDBACK	CW-VFD04	E800
17	AO	SC-1004	CW-P04 SPEED COMMAND	CW-VFD04	E800
18	DO	YC-1004	CW-P04 RUN COMMAND	CW-CP01	E800
19	DI	HS-1004	CW-P04 IN REMOTE	CW-VFD04	E800
20	DI	XA-1004	CW-P04 FAIL	CW-VFD04	E800
21	DI	CW-CT01	CW-P01 MOTOR RUNNING	CW-CP01	E800
22	DI	CW-CT02	CW-P02 MOTOR RUNNING	CW-CP01	E800
23	DI	CW-CT03	CW-P03 MOTOR RUNNING	CW-CP01	E800
24	DI	CW-CT04	CW-P04 MOTOR RUNNING	CW-CP01	E800
25	DI	CW-TS01	CW-P01 MOTOR TEMPERATURE HIGH	CW-CP01	E800
26	DI	CW-TS02	CW-P02 MOTOR TEMPERATURE HIGH	CW-CP01	E800
27	DI	CW-TS03	CW-P03 MOTOR TEMPERATURE HIGH	CW-CP01	E800
28	DI	CW-TS04	CW-P04 MOTOR TEMPERATURE HIGH	CW-CP01	E800
29	DI	CW-FM01	CW-P01 SEAL WATER FAIL	CW-CP01	E800
30	DI	CW-FM02	CW-P02 SEAL WATER FAIL	CW-CP01	E800
31	DI	CW-FM03	CW-P03 SEAL WATER FAIL	CW-CP01	E800
32	DI	CW-FM04	CW-P04 SEAL WATER FAIL	CW-CP01	E800
33	DO	CW-SV01	CW-P01 SEAL WATER COMMAND	CW-CP01	E800
34	DO	CW-SV02	CW-P02 SEAL WATER COMMAND	CW-CP01	E800
35	DO	CW-SV03	CW-P03 SEAL WATER COMMAND	CW-CP01	E800
36	DO	CW-SV04	CW-P04 SEAL WATER COMMAND	CW-CP01	E800
37	DI	YI-1001	CW-FM01 SEAL WATER DELAY	CW-CP01	E800
38	DI	YI-1002	CW-FM02 SEAL WATER DELAY	CW-CP01	E800
39	DI	YI-1003	CW-FM03 SEAL WATER DELAY	CW-CP01	E800
40	DI	YI-1004	CW-FM04 SEAL WATER DELAY	CW-CP01	E800
41	AI	LIT-1001	COLLECTOR WELL WATER LEVEL	CW-CP01	E800
42	AI	LIT-1002	COLLECTOR WELL WATER LEVEL	CW-CP01	E800
43	AI	CW-FM05	COLLECTOR WELL DISCHARGE FLOW		E800
44	AI	CW-FM06	COLLECTOR WELL DISCHARGE FLOW		E800
45	AI	PIT-1001	COLLECTOR WELL HEADER DISCHARGE PRESSURE	CW-CP01	E800
46	AI	PIT-1002	COLLECTOR WELL HEADER DISCHARGE PRESSURE	CW-CP01	E800
47	DO	YC-1005	SEAL WATER BOOSTER PUMP RUN COMMAND	CW-CP06	E800
48	DI	CW-LS01	SEAL WATER BREAK TANK LEVEL HIGH	CW-CP06	E800
49	DI	CW-LS02	SEAL WATER BREAK TANK LEVEL LOW	CW-CP06	E800
50	DI	CW-LS03	SEAL WATER BREAK TANK LEVEL LOW LOW	CW-CP06	E800
51	DI	YI-1005	CW-P05 MOTOR RUNNING	CW-CP06	E800
52	DI	YI-1006	CW-P06 MOTOR RUNNING	CW-CP06	E800
53	AI	CW-PG07	SEAL WATER DISCHARGE PRESSURE	CW-CP06	E800
54	AI	CW-US01	SEAL WATER BREAK TANK LEVEL	CW-CP06	E800
55	DI	XA-1005	INTRUSION ALARM	CW-CP02	
56	DI	IA-1001	UTILITY POWER NOT AVAILABLE	CW-ATS01	
57	DI	ZI-1001	ATS SWITCH IN NORMAL POSITION	CW-ATS01	
58	DI	ZI-1002	ATS SWITCH IN EMERGENCY POSITION	CW-ATS01	
59	DI	YI-1007	GENERATOR RUNNING	CW-GEN01	
60	DI	XA-1006	COMMON GENERATOR ALARM	CW-GEN01	
61	DI		GENERATOR ROOM COMBUSTIBLE GAS ALARM	CW-CP05	
62	DI		GENERATOR ROOM CO2 ALARM	CW-CP05	
63	DO	YC-3001	VW-P02 RUN COMMAND	CW-MCC01	
64	DI	VW-CT01	VW-P02 MOTOR RUNNING	CW-MCC01	
65	DI	HS-3001	VW-P02 IN AUTO	CW-MCC01	
66	DO	YC-3002	VW-P03 RUN COMMAND	CW-MCC01	
67	DI	VW-CT02	VW-P03 MOTOR RUNNING	CW-MCC01	
68	DI	HS-3002	VW-P03 IN AUTO	CW-MCC01	
69	DO	YC-3003	VW-P04 RUN COMMAND	CW-MCC01	
70	DI	VW-CT03	VW-P04 MOTOR RUNNING	CW-MCC01	
71	DI	HS-3003	VW-P04 IN AUTO	CW-MCC01	
72	DO	YC-3004	VW-P05 RUN COMMAND	CW-MCC01	
73	DI	VW-CT04	VW-P05 MOTOR RUNNING	CW-MCC01	
74	DI	HS-3004	VW-P05 IN AUTO	CW-MCC01	
75	DO	YC-3005	VW-P06 RUN COMMAND	CW-MCC01	
76	DI	VW-CT05	VW-P06 MOTOR RUNNING	CW-MCC01	
77	DI	HS-3005	VW-P06 IN AUTO	CW-MCC01	
78	DO	YC-3006	VW-P06A RUN COMMAND	CW-MCC01	
79	DI	VW-CT06	VW-P06A MOTOR RUNNING	CW-MCC01	
80	DI	HS-3006	VW-P06A IN AUTO	CW-MCC01	

SCADA INPUT/OUTPUT LIST					
No.	I/O TYPE	SOURCE TAG	I/O DESCRIPTION	INTERFACING CP	PID
81	AI	SI-2001	SW-P01 SPEED FEEDBACK	SW-VFD01	E801
82	AO	SC-2001	SW-P01 SPEED COMMAND	SW-VFD01	E801
83	DO	YC-2001	SW-P01 RUN COMMAND	SW-CP01	E801
84	DI	HS-2001	SW-P01 IN REMOTE	SW-VFD01	E801
85	DI	XA-2001	SW-P01 FAIL	SW-VFD01	E801
86	AI	SI-2002	SW-P02 SPEED FEEDBACK	SW-VFD02	E801
87	AO	SC-2002	SW-P02 SPEED COMMAND	SW-VFD02	E801
88	DO	YC-2002	SW-P02 RUN COMMAND	SW-CP01	E801
89	DI	HS-2002	SW-P02 IN REMOTE	SW-VFD02	E801
90	DI	XA-2002	SW-P02 FAIL	SW-VFD02	E801
91	AI	SI-2003	SW-P03 SPEED FEEDBACK	SW-VFD03	E801
92	AO	SC-2003	SW-P03 SPEED COMMAND	SW-VFD03	E801
93	DO	YC-2003	SW-P03 RUN COMMAND	SW-CP01	E801
94	DI	HS-2003	SW-P03 IN REMOTE	SW-VFD03	E801
95	DI	XA-2003	SW-P03 FAIL	SW-VFD03	E801
96	DI	SW-CT01	SW-P01 MOTOR RUNNING	SW-CP01	E801
97	DI	SW-CT02	SW-P02 MOTOR RUNNING	SW-CP01	E801
98	DI	SW-CT03	SW-P03 MOTOR RUNNING	SW-CP01	E801
99	DI	SW-CT04	SW-P04 MOTOR RUNNING	SW-CP01	E801
100	DI	SW-TS01	SW-P01 MOTOR TEMPERATURE HIGH	SW-CP01	E801
101	DI	SW-TS02	SW-P02 MOTOR TEMPERATURE HIGH	SW-CP01	E801
102	DI	SW-TS03	SW-P03 MOTOR TEMPERATURE HIGH	SW-CP01	E801
103	DI	SW-TS04	SW-P04 MOTOR TEMPERATURE HIGH	SW-CP01	E801
104	DI	SW-FM01	SW-P01 SEAL WATER FAIL	SW-CP01	E801
105	DI	SW-FM02	SW-P02 SEAL WATER FAIL	SW-CP01	E801
106	DI	SW-FM03	SW-P03 SEAL WATER FAIL	SW-CP01	E801
107	DO	SW-SV01	SW-P01 SEAL WATER COMMAND	SW-CP01	E801
108	DO	SW-SV02	SW-P02 SEAL WATER COMMAND	SW-CP01	E801
109	DO	SW-SV03	SW-P03 SEAL WATER COMMAND	SW-CP01	E801
110	DI	SW-XS01	SW-P04 SEAL LEAK	SW-CP01	E801
111	DI	HS-2004	SW-P04 IN AUTO	SW-CP01	E801
112	DI	YI-2001	SW-FM01 SEAL WATER DELAY	SW-CP01	E801
113	DI	YI-2002	SW-FM02 SEAL WATER DELAY	SW-CP01	E801
114	DI	YI-2003	SW-FM03 SEAL WATER DELAY	SW-CP01	E801
115	DI	SW-LS01	SUMP LEVEL SWITCH	SW-CP01	E801
116	DI	SW-LS02	SUMP LEVEL SWITCH	SW-CP01	E801
117	DI	SW-LS03	SUMP LEVEL SWITCH	SW-CP01	E801
118	DI	SW-LS04	SUMP LEVEL SWITCH	SW-CP01	E801
119	DI	SW-LS05	SUMP LEVEL SWITCH	SW-CP01	E801
120	DI	SW-LS06	SUMP LEVEL SWITCH	SW-CP01	E801
121	DI	SW-LS07	SUMP LEVEL SWITCH	SW-CP01	E801
122	DI	SW-LS08	SUMP LEVEL SWITCH	SW-CP01	E801
123	DI		COMBUSTIBLE GAS ALARM	SW-CP03	
124	DI		COMBUSTIBLE GAS ALARM FAULT	SW-CP03	
125	DI		COMBUSTIBLE GAS ALARM FAULT	CW-CP05	

AUTOMATIC DIALER PANEL (CW-AD01) INPUT LIST					
No.	I/O TYPE	SOURCE TAG	I/O DESCRIPTION	INTERFACING CP	PID
1	DI	XA-1005	INTRUSION ALARM	CW-CP02	
2	DI	SW-GD01 & 02	EXISTING PUMP STATION GAS MONITORING ALARM	SW-CP03	
3	DI	CW-LS02	SEAL WATER TANK LOW LEVEL	CW-CP06	E800
4	DI	CS-LS01	SEAL WATER TANK HIGH LEVEL	CW-CP06	E800
5	DI	IA-1001	UTILITY POWER NOT AVAILABLE	CW-ATS01	
6	DI	YI-1007	GENERATOR RUNNING	CW-GEN01	
7	DI	XA-1006	COMMON GENERATOR ALARM	CW-GEN01	
8	DI	XA-1001	CW-P01 FAIL	CW-VFD01	E800
9	DI	XA-1002	CW-P02 FAIL	CW-VFD02	E800
10	DI	XA-1003	CW-P03 FAIL	CW-VFD03	E800
11	DI	XA-1004	CW-P04 FAIL	CW-VFD04	E800
12	DI	XA-2001	SW-P01 FAIL	SW-VFD01	E801
13	DI	XA-2002	SW-P02 FAIL	SW-VFD02	E801
14	DI	XA-2003	SW-P03 FAIL	SW-VFD03	E801
15	DI	SW-LS01	STORMWATER FLOAT SWITCH: LOW WATER ALARM	SW-CP01	E801
16	DI	SW-LS08	STORMWATER FLOAT SWITCH: HIGH WATER ALARM	SW-CP01	E801

CONTROL PANEL SCHEDULE			
TAG	CONTROL PANEL DESCRIPTION	SCOPE	NOTES
CW-CP01	COLLECTOR WELL PUMP CONTROL PANEL	CONTRACTOR	1
CW-CP02	INTRUSION ALARM CONTROL PANEL	CONTRACTOR	1
CW-CP03	GENERATOR ROOM HEATING/VENTILATION CONTROL PANEL	CONTRACTOR	1
CW-CP04	COLLECTOR WELL PUMP ROOM VENTILATION CONTROL PANEL	CONTRACTOR	1
CW-CP05	GENERATOR ROOM GAS MONITORING CONTROL PANEL	VENDOR	1
CW-CP06	SEAL WATER BOOSTER PUMP CONTROL PANEL	VENDOR	2
CW-GEN01	GENERATOR CONTROL PANEL	VENDOR	1
SW-CP01	STORMWATER PUMP CONTROL PANEL	CONTRACTOR	1
SW-CP02	STORMWATER PUMP CONTROL PANEL	CONTRACTOR	1
SW-CP03	STORMWATER PUMP STATION GAS MONITORING CONTROL PANEL	VENDOR	1
CW-SP01	SCADA CONTROL PANEL	CONTRACTOR	1
CW-AD01	AUTOMATIC TELEPHONE DIALER CONTROL PANEL	VENDOR	1

- NOTES:
1. REQUIRES EXTERNAL POWER SUPPLY: 120 VAC, 1 PH
2. REQUIRES EXTERNAL POWER SUPPLY: 480 VAC, 3 PH

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NO LIST
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: AS NOTED SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
55/70/64 82-4T-1 ST. CLAIR 185 175
CONTRACT NO. 76C99
ILLINOIS FED. AID PROJECT

Major Equipment:

- Pumps:
 1) CW-P01, CW-P02, CW-P03, and CW-P04
 Variable Frequency Drives:
 1) CW-VFD01, CW-VFD02, CW-VFD03, and CW-VFD04
 Motor Winding Temperature Switches:
 1) CW-TS01, CW-TS02, CW-TS03, and CW-TS04
 Solenoid Valves:
 1) CW-SV01, CW-SV02, CW-SV03, and CW-SV04
 Flow Meters:
 1) CW-FM01, CW-FM02, CW-FM03, and CW-FM04
 Control Panels:
 1) CW-SP01, CW-CP01,
 Level Sensors:
 1) CW-PT01, CW-PT02

Control Logic:

Collector Well Pumps

- When LOCAL mode is selected at VFD operator interface, the operator can manually control the pumps via the VFD operator interface.
 - When REMOTE mode is selected at VFD operator interface, the pumps are controlled manually via the SCADA system. SCADA system shall allow for manual operation only. No automatic control is required.
 - Activation of the motor winding temperature switch shall prevent operation of the pump in both LOCAL and REMOTE mode.
 - Verified closure of an auxiliary contact on the local safety disconnect for each pump shall be required to enable VFD operation. Auxiliary contact shall be interlocked with phase conductor contacts and shall be of the break-before-break style.
 - Pumps shall be accelerated to the desired pump speed in (2) steps. The first step shall be from 0-30 Hz and the second step shall be 30 Hz to desired pump speed. The ramp up time for each step shall be set in the field based on field observations of ramp up times that do not result in water hammer within the piping system.
 - Pump deceleration time from running speed to 0 Hz shall be 60 seconds. This number shall be adjusted in the field as necessary to eliminate water hammer.
- Seal Water Solenoid Valves
- Seal water solenoid be controlled via SCADA software and shall be open for (30) minutes once every (24) hours.
 - Seal water solenoid shall be open during pumping operation and for (5) minutes prior to pump operation and for (15) minutes following pump operation. This function shall be provided even in the event of SCADA failure.
- Seal Water Flow Meters
- Pump operation shall be prevented when the seal water flow meter indicates inadequate flow.

Indication at HMI:

- Pump Speed
- VFD in remote
- Pump Failure
- Pump Running
- Motor Temperature High
- Seal Water Fail
- Seal Water Delay
- Collector Well Water Level

COLLECTOR WELL PUMPS CONTROL LOOP

VERTICAL WELL PUMPS

Major Equipment:

- Pumps:
 1) VW-P02, VW-P03, VW-P04, VW-P05, VW-P06, VW-P06A

Control Logic:

Vertical Well Pumps Nos. 2-6A:

- When HAND mode is selected at the MCC bucket, the operator can manually control the pumps via the "Start-Stop" pushbuttons on the bucket.
- When AUTO is selected at the MCC bucket, the pumps are controlled in manually via the HMI software. No automatic operation is provided.

Indication at HMI:

- In Auto
- Pump Running

VERTICAL WELL PUMPS CONTROL LOOP

STORMWATER PUMPS

1. Major Equipment:

- a. Pumps:
 1) SW-P01, SW-P02, and SW-P03
 b. Variable Frequency Drives:
 1) SW-VFD01, SW-VFD02, and SW-VFD03
 c. Motor Winding Temperature Switches:
 1) SW-TS01, SW-TS02, and SW-TS03
 d. Solenoid Valves:
 1) SW-SV01, SW-SV02, and SW-SV03
 e. Flow Meters:
 1) SW-FM01, SW-FM02, and SW-FM03
 f. Float Switches:
 SW-LS03, SW-LS04, SW-LS05, SW-LS06, SW-LS07
 g. Control Panels:
 1) CW-SP01, SW-CP01, AND SW-CP02

2. Control Logic:

- a. Stormwater Pumps Nos. 1-3: SW-P01, SW-P02, and SW-P03
- When LOCAL mode is selected at VFD operator interface, the operator can manually control the pumps via the VFD operator interface.
 - When REMOTE mode is selected at VFD operator interface, the pumps are controlled in accordance with HMI software MANUAL/AUTOMATIC selection function as follows:
 - MANUAL- Pump is controlled by the remote operator via the SCADA software in accordance with the HMI selector switch On/Off function.
 - In AUTOMATIC the pump is controlled by the SCADA software as follows:
 - Rising Wetwell Water Level:
 - SW-LS05 Start Lead Pump
 - SW-LS06 Start First Lag Pump
 - SW-LS07 Start Second Lag Pump
 - Falling Wetwell Water Level:
 - SW-LS06 Stop First Pump On this cycle
 - SW-LS05 Stop Second Pump On this cycle
 - SW-LS04 Stop Last Pump On this cycle
 - SCADA software shall include:
 - Automatic alternation of lead, lag, and second lag pumps after each pumping cycle
 - Pump start delay timers to prevent more than one pump starting concurrently after a power outage
 - If a pump is called to operate and does not generate a pump running signal within (7) minutes, the pump shall be removed from service and a pump failure alarm shall be initiated at on the HMI. The next pump in the alternator sequence shall be started in its place.
 - Activating of the motor winding temperature switch shall prevent operation of the pump in all operation modes.
 - Verified closure of an auxiliary contact on the local safety disconnect for each pump shall be required to enable VFD operation. Auxiliary contact shall be interlocked with phase conductor contacts and shall be of the break-before-break style.
 - VFD shall operate pump at preset speed (60 Hz).

b. Seal Water Solenoid Valves

- Seal water solenoid be controlled via SCADA software and shall be open for (30) minutes once every (24) hours.
- Seal water solenoid shall be open when water level is above SW-LS03
- Seal water solenoid shall be open during pumping operation and for (5) minutes prior to pump operation and for (15) minutes following pump operation. This function shall be provided even in the event of SCADA failure.

c. Seal Water Flow Meters

- Pump operation shall be prevented when the seal water flow meter indicates inadequate flow.

3. Indication at HMI:

- a. Pump Speed
- b. VFD in remote
- c. Pump Failure
- d. Pump Running
- e. Motor Temperature High
- f. Seal Water Fail
- g. Seal Water Delay
- h. Float Switch SW-LS01
- i. Float Switch SW-LS02
- j. Float Switch SW-LS03
- k. Float Switch SW-LS04
- l. Float Switch SW-LS05
- m. Float Switch SW-LS06
- n. Float Switch SW-LS07
- o. Float Switch SW-LS08

STORMWATER PUMPS CONTROL LOOP

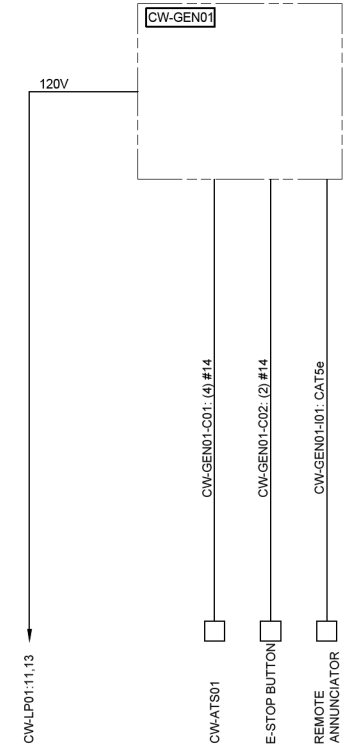
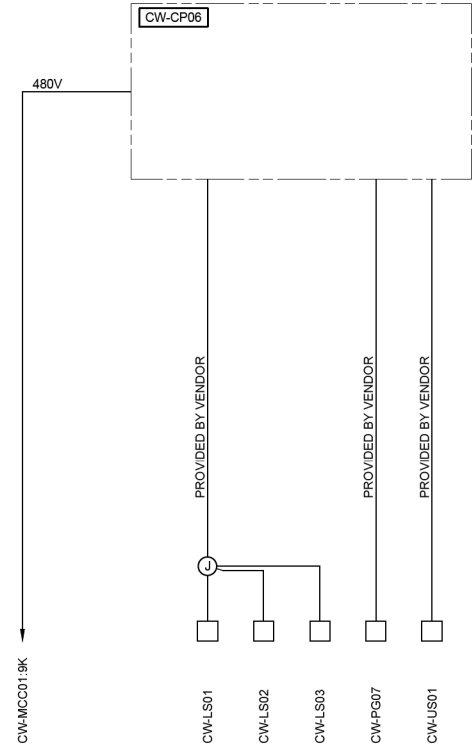
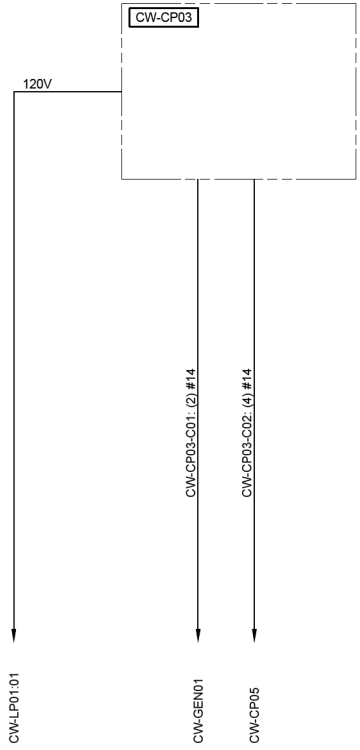
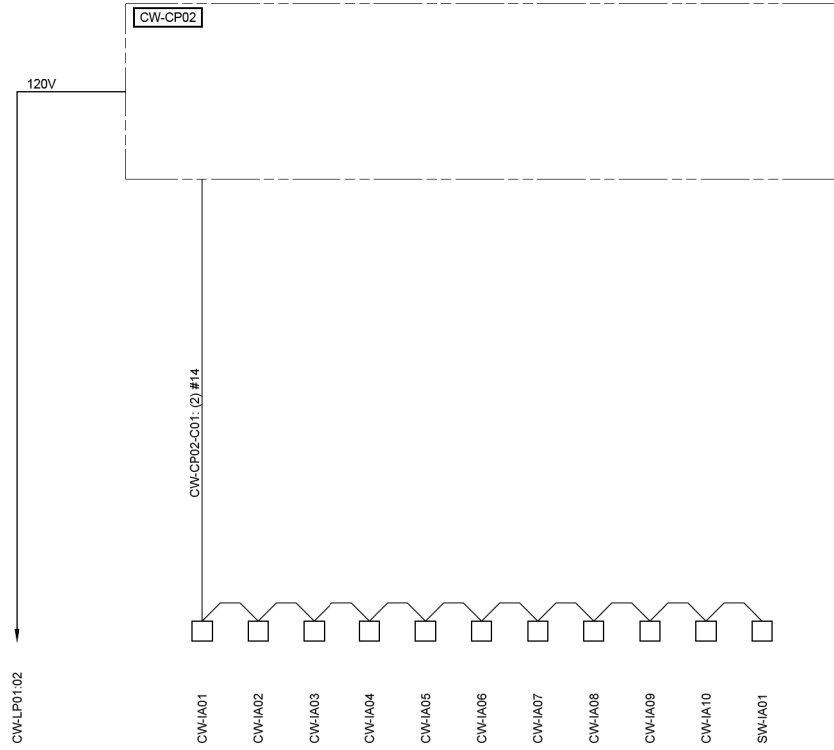
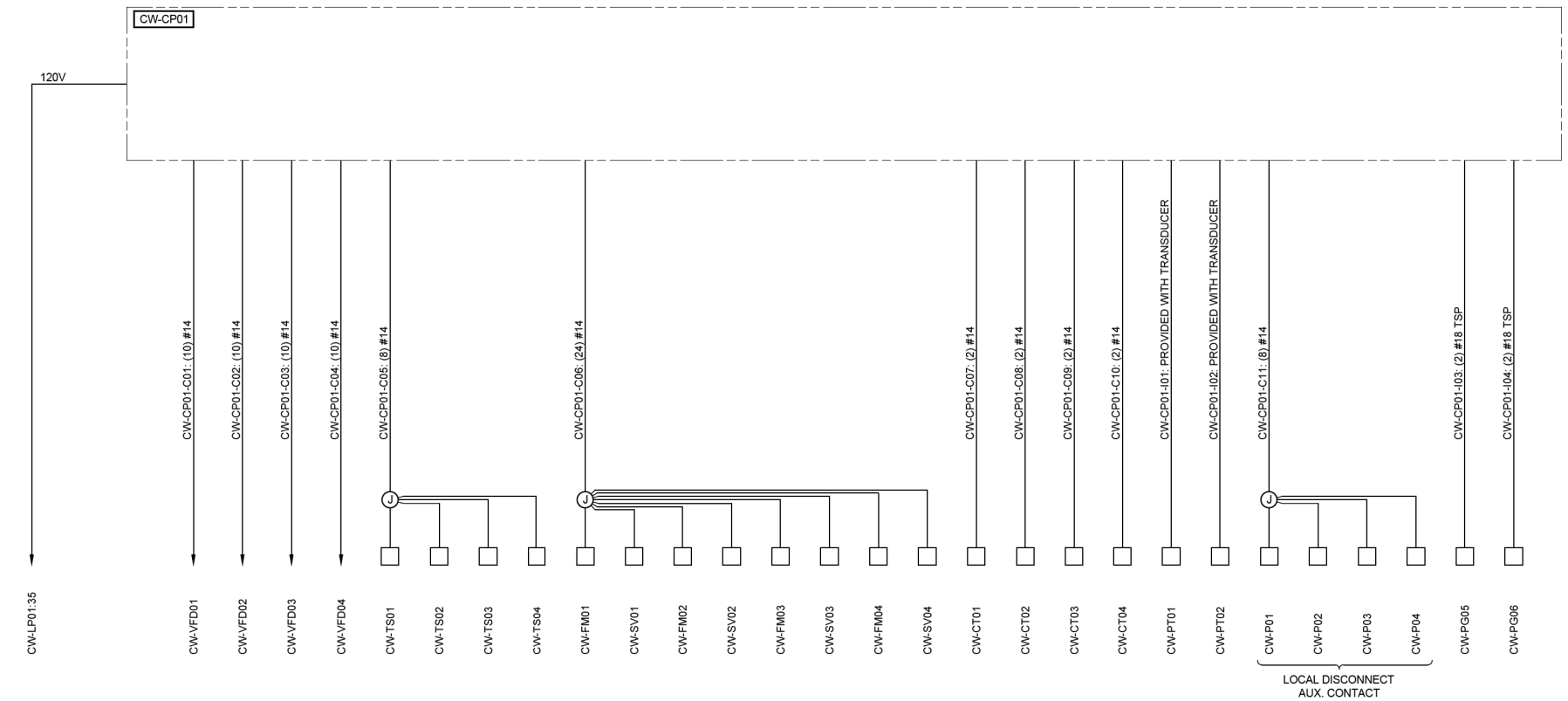
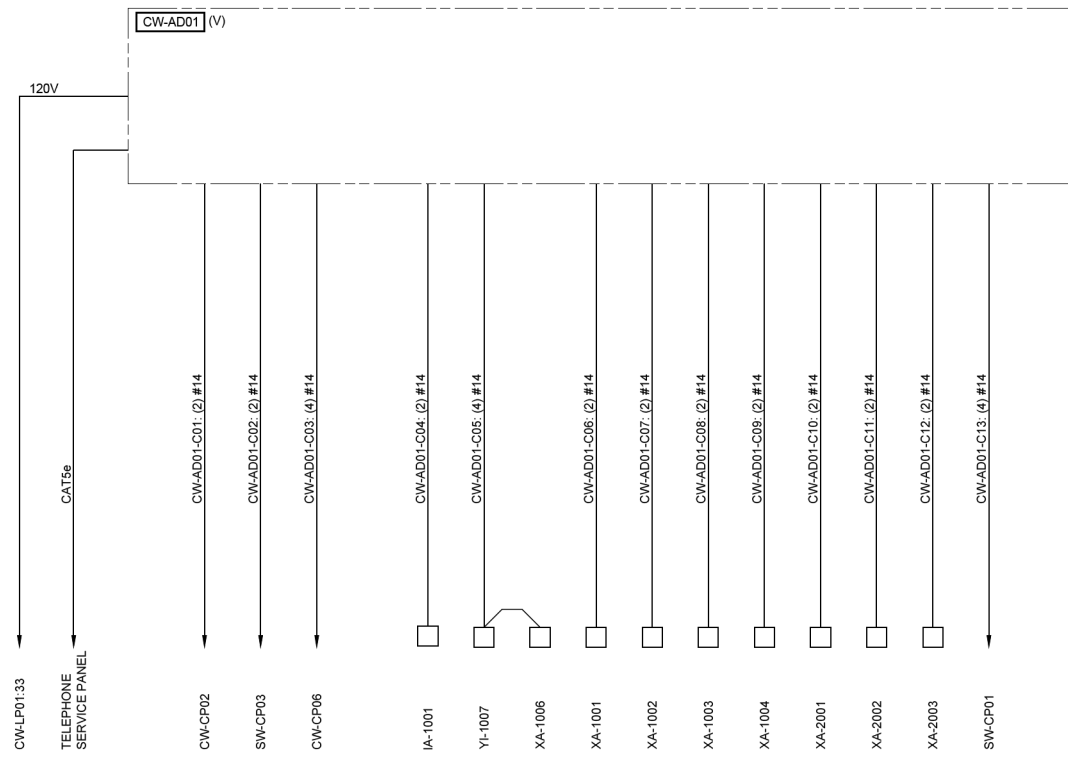
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PLOT DATE = 1/13/2015	DATE -	REVISED -

CONTROL LOOPS			
MISSOURI AVENUE DEEP WELL FACILITY			
SCALE: AS NOTED	SHEET 1 OF 1 SHEETS	STA.	TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	176
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

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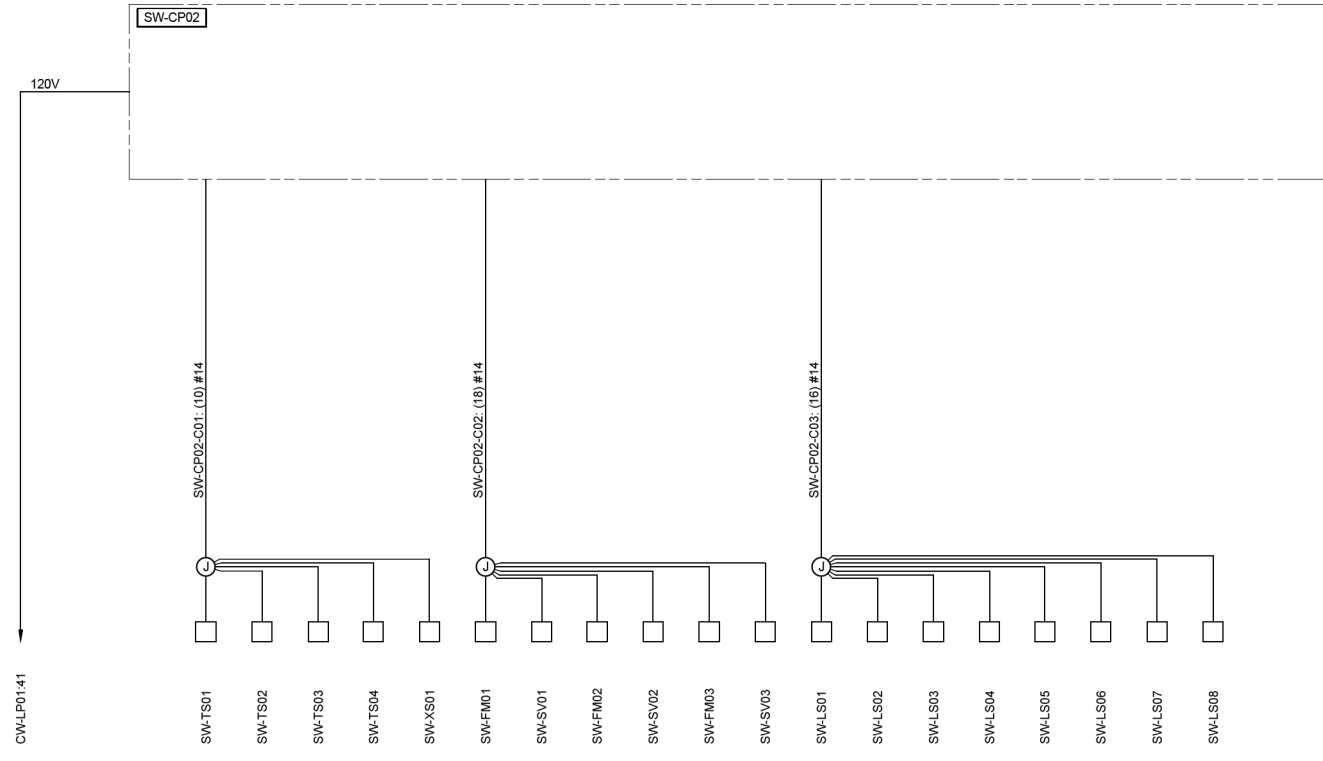
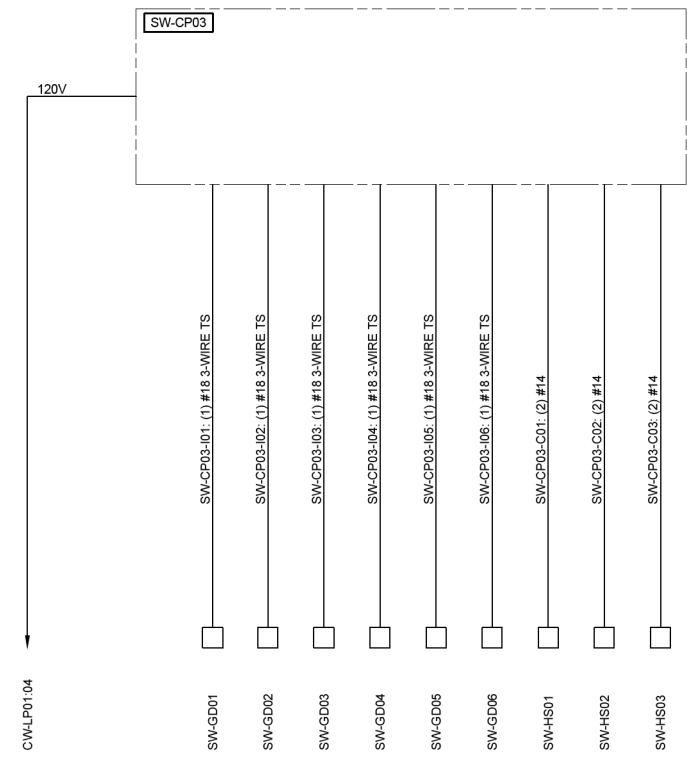
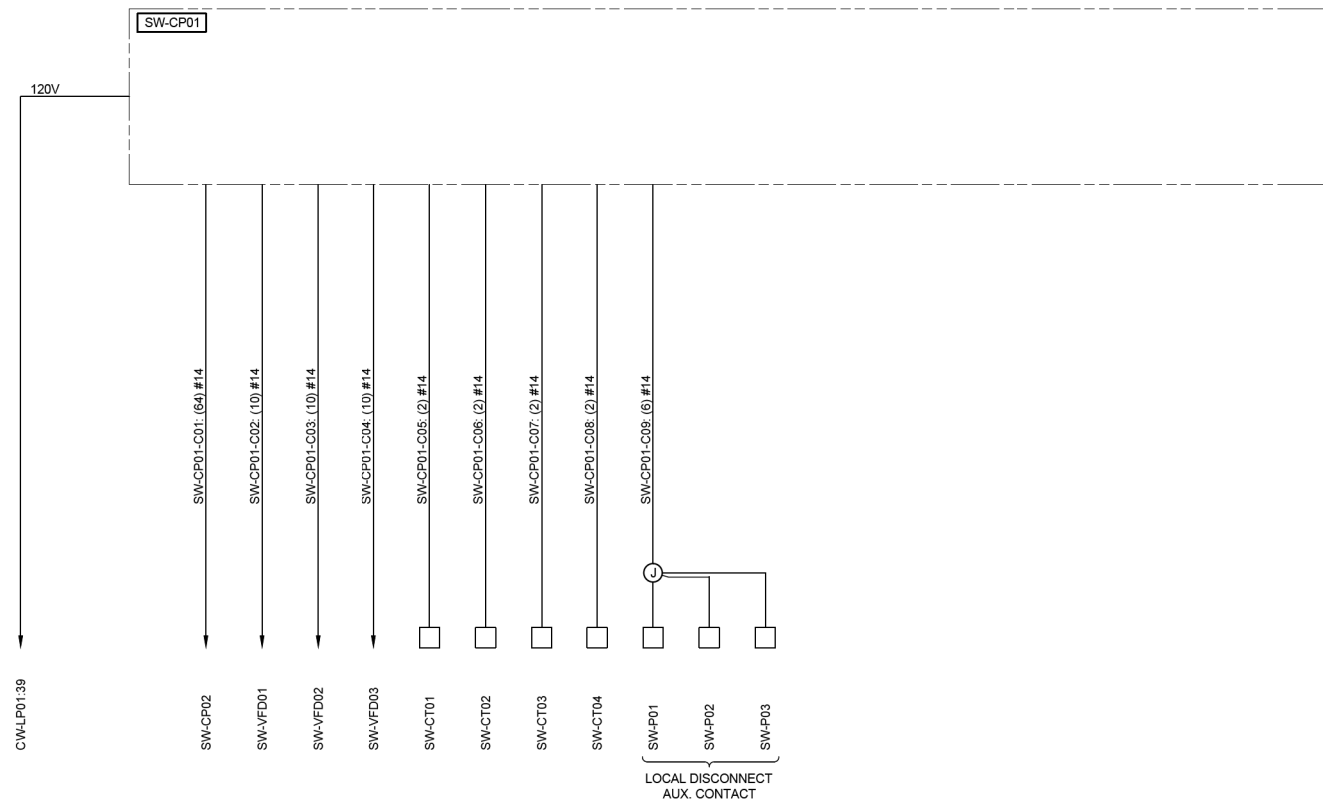
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

CONTROL ONE-LINE DIAGRAM MISSOURI AVENUE DEEP WELL FACILITY			
SCALE:	SHEET 1 OF 3 SHEETS	STA.	TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 177
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

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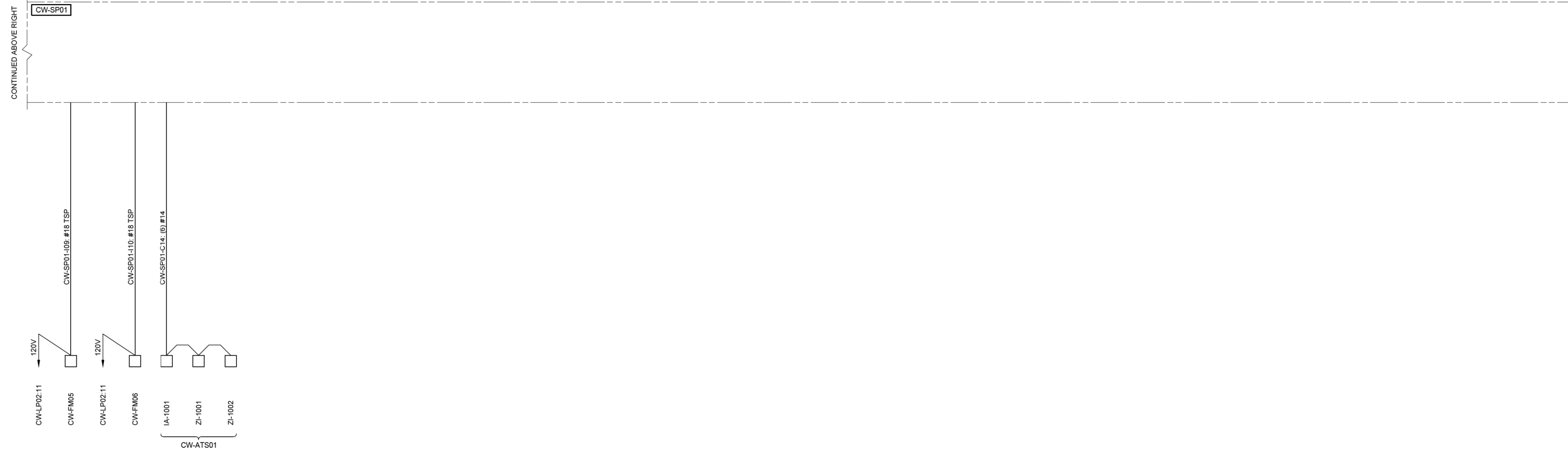
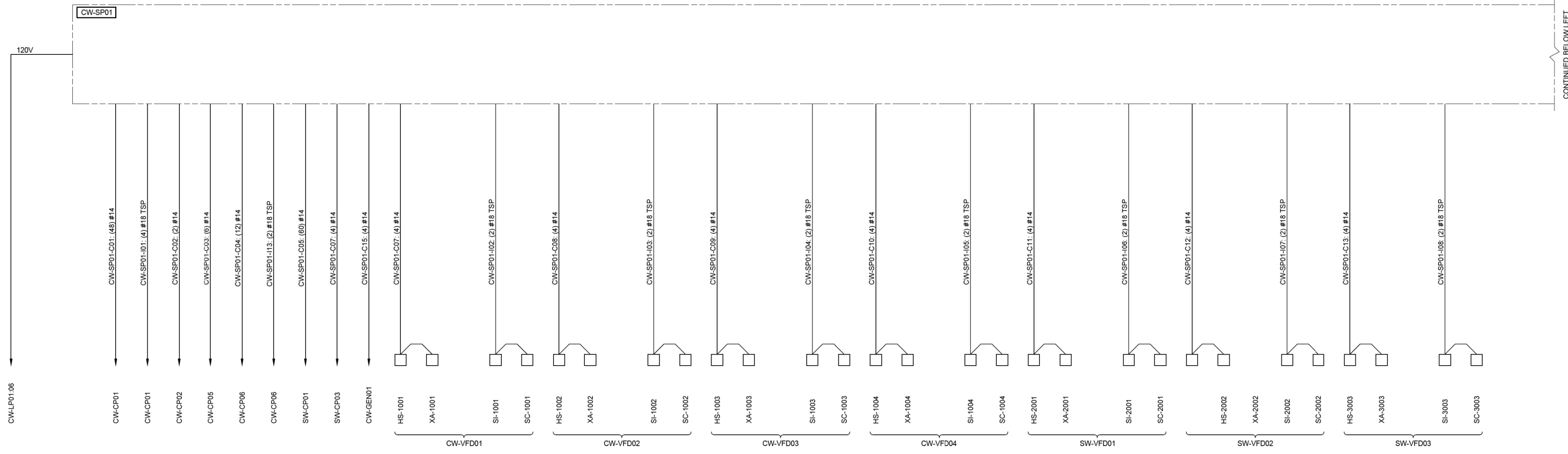
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

CONTROL ONE-LINE DIAGRAM MISSOURI AVENUE DEEP WELL FACILITY		
SCALE:	SHEET 2 OF 3 SHEETS	STA. TO STA.

F.A.I. RTE. 55/70/64	SECTION 82-4T-1	COUNTY ST. CLAIR	TOTAL SHEETS 185	SHEET NO. 178
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

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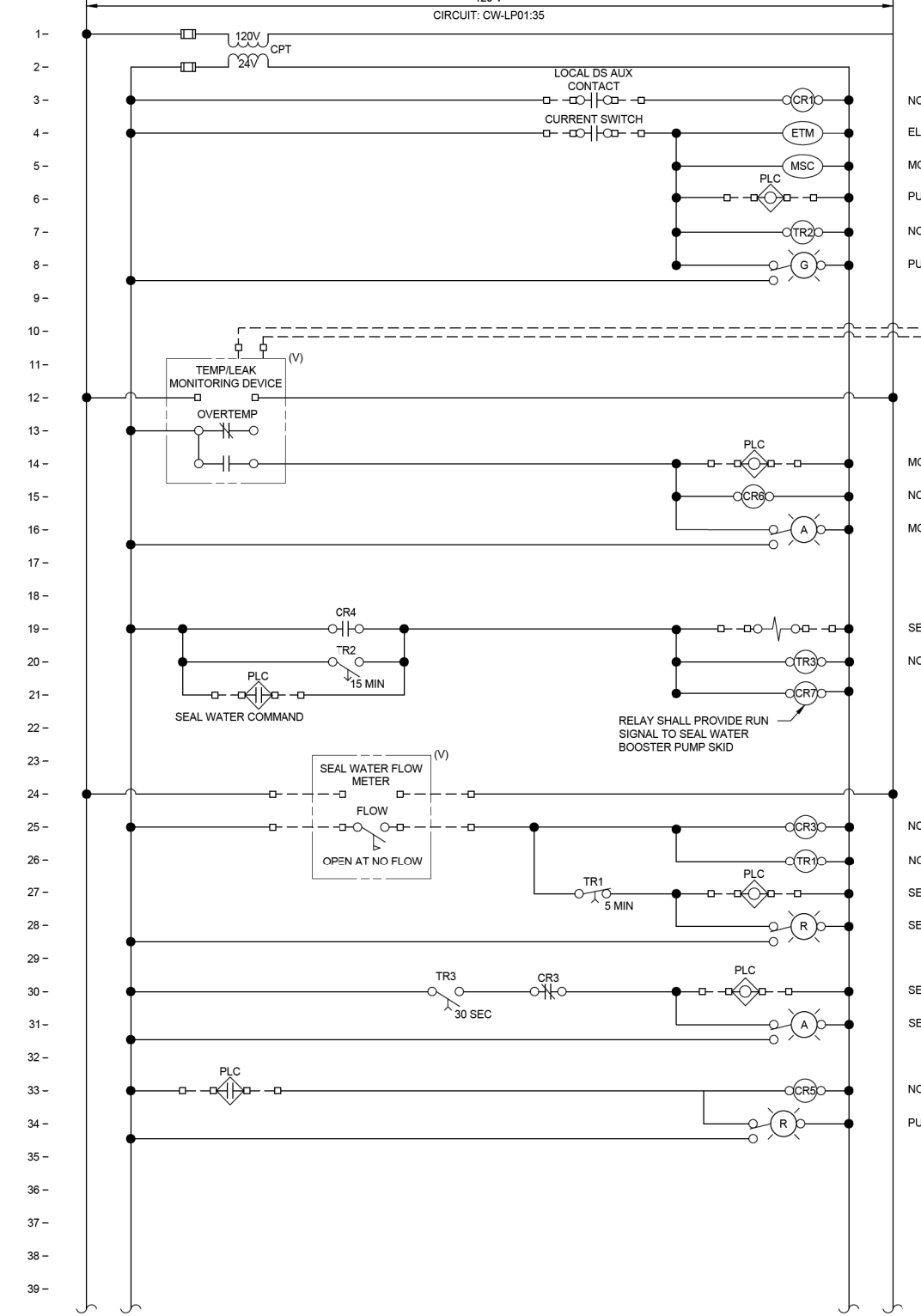
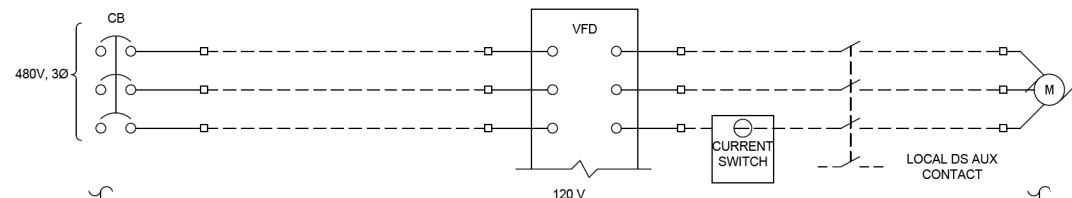
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

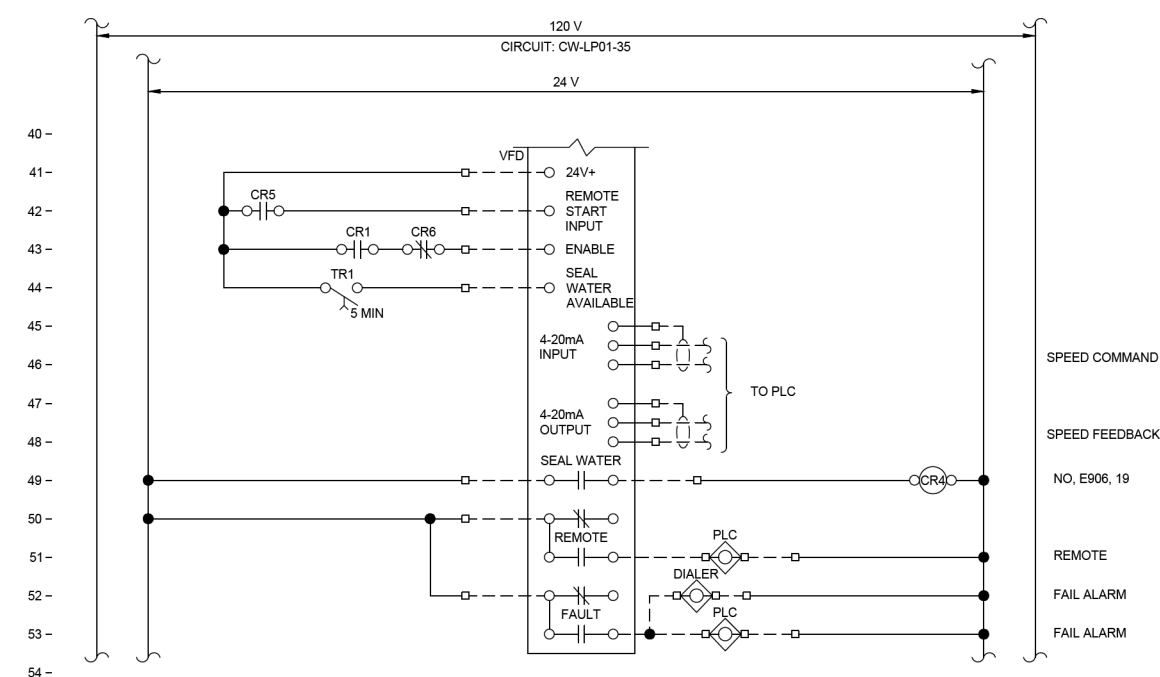
CONTROL ONE-LINE DIAGRAM MISSOURI AVENUE DEEP WELL FACILITY			
SCALE:	SHEET 3 OF 3 SHEETS	STA.	TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	179
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

E905



CW-CP01



CW-CP01

CONTROL DRAWING No. 1
TYPICAL FOR PUMPS: CW-P01, CW-P02, CW-CP03, AND CW-P04

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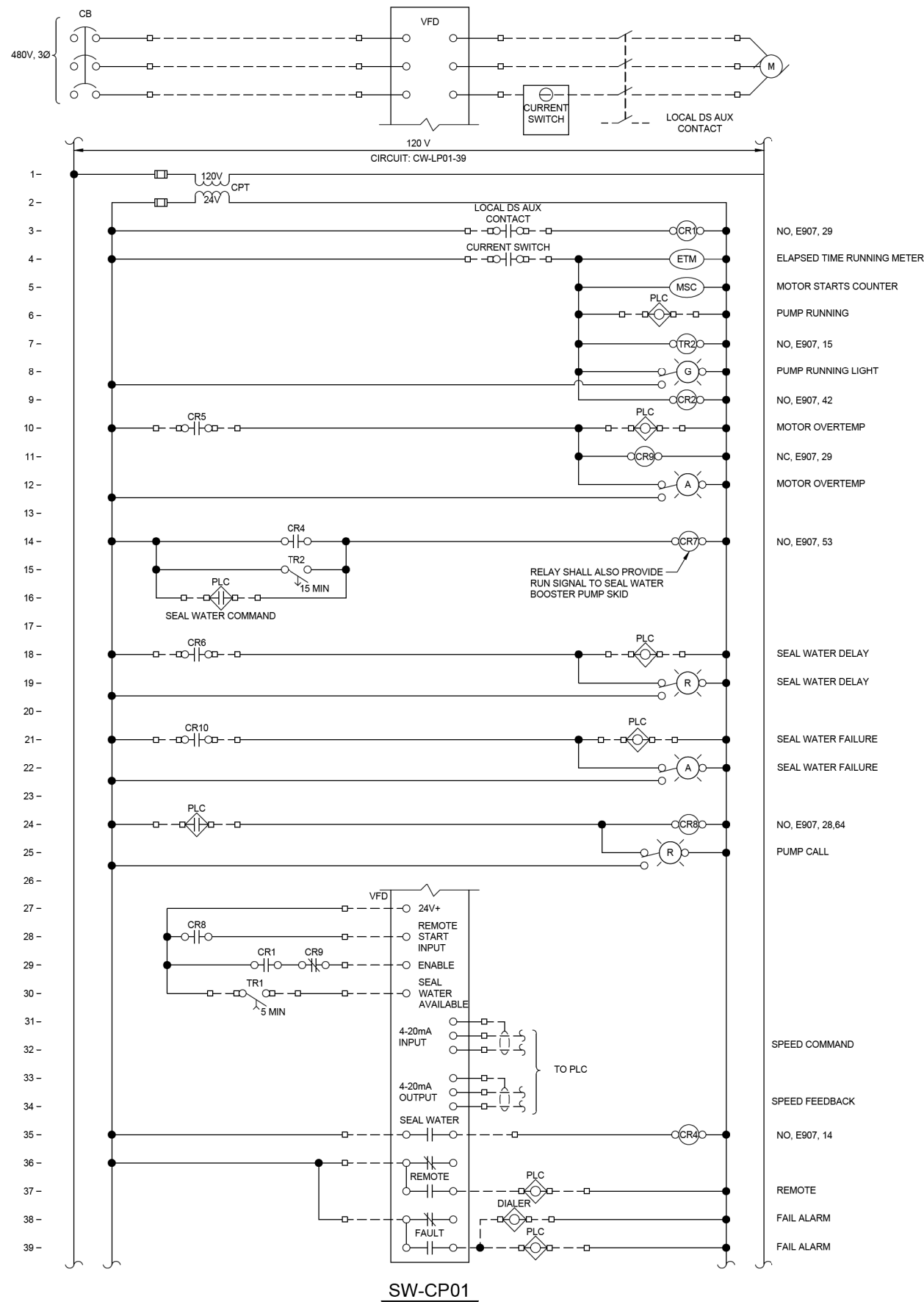
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	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONTROL DRAWINGS	
MISSOURI AVENUE DEEP WELL FACILITY	
SCALE:	SHEET 1 OF 6 SHEETS STA. TO STA.

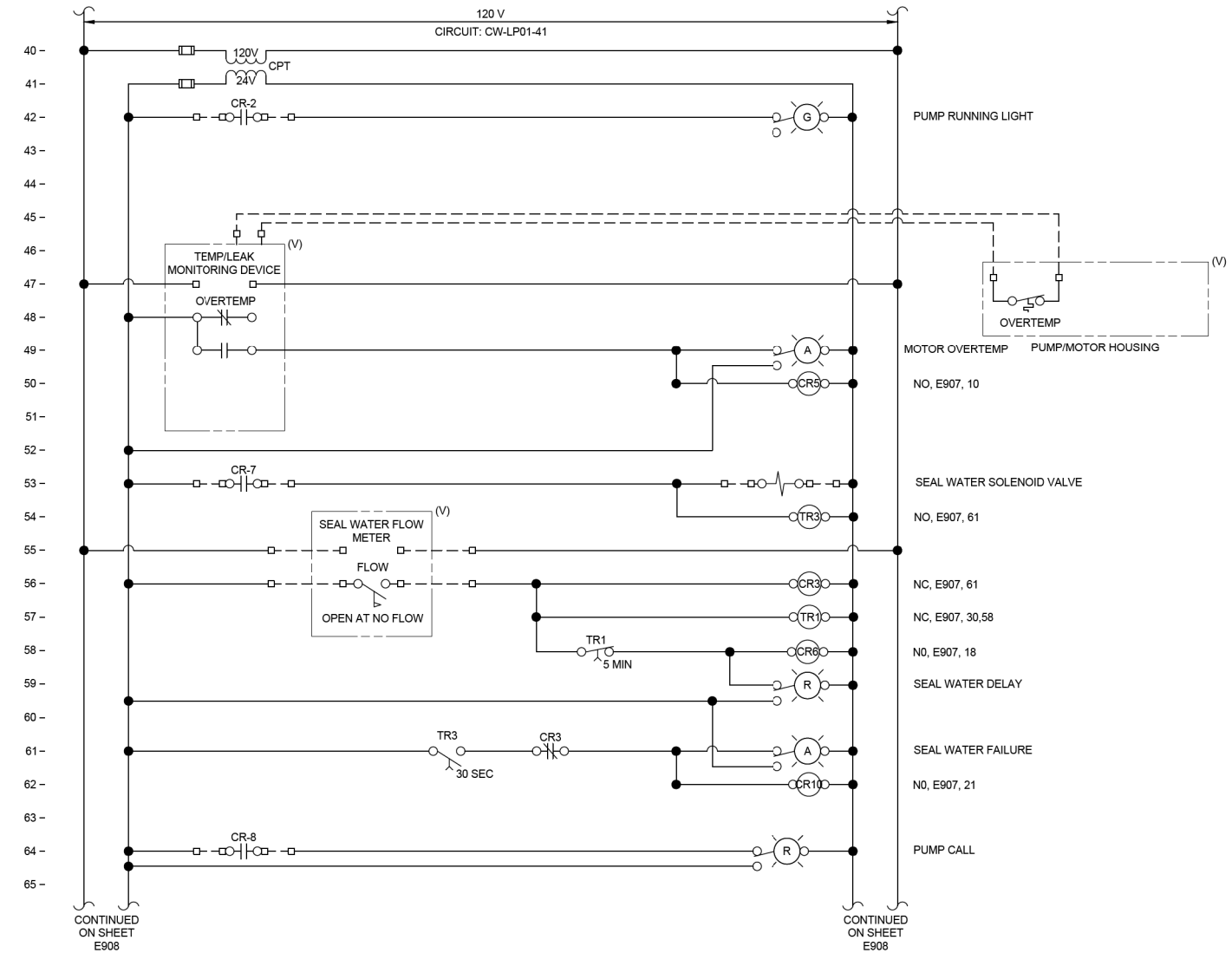
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	180
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

E906



SW-CP01

CONTROL DRAWING No. 2
TYPICAL FOR PUMPS: SW-P01, SW-P02, AND SW-P03



SW-CP02

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KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

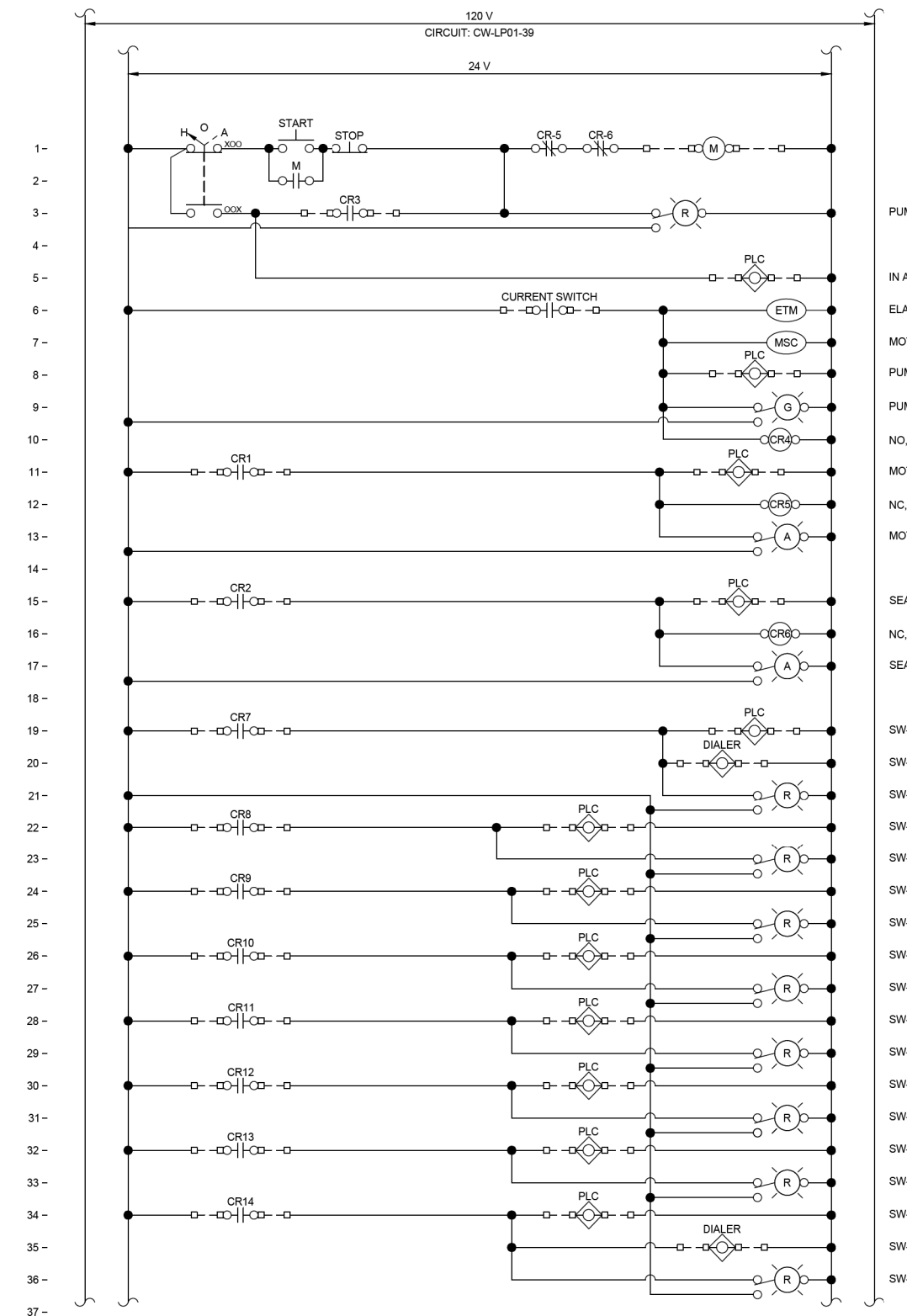
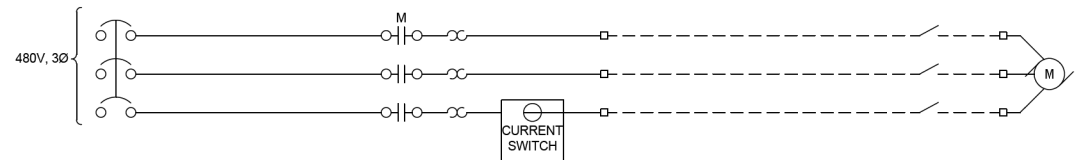
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	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE:		SHEET 2 OF 6 SHEETS		STA.	TO STA.
		CONTROL DRAWINGS MISSOURI AVENUE DEEP WELL FACILITY			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	181
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				

E907



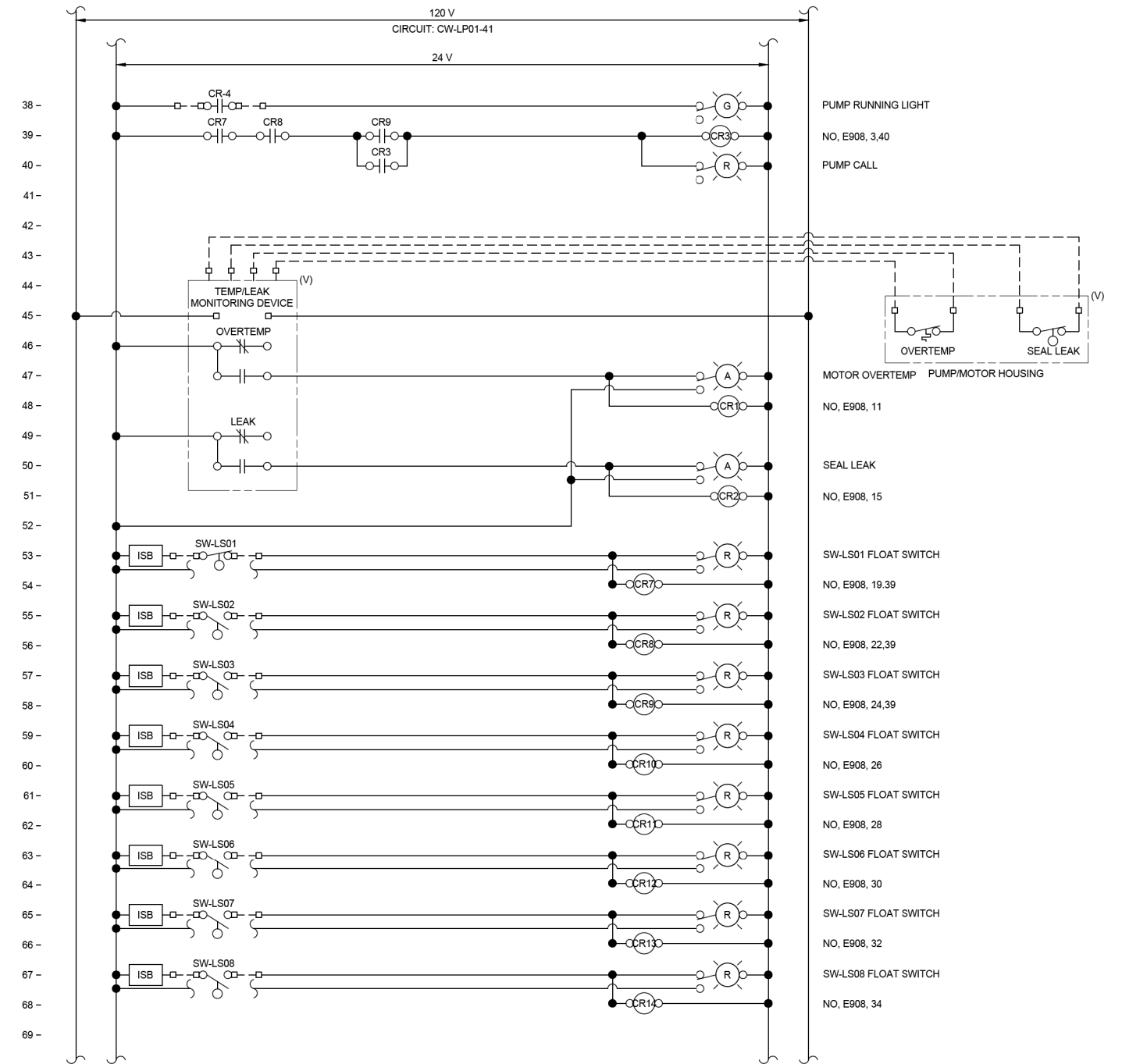
SW-CP01

- PUMP CALL
- IN AUTO
- ELAPSED TIME RUNNING METER
- MOTOR STARTS COUNTER
- PUMP RUNNING
- PUMP RUNNING LIGHT
- NO, E908, 38
- MOTOR OVERTEMP
- NC, E908, 1
- MOTOR OVERTEMP
- SEAL LEAK
- NC, E908, 1
- SEAL LEAK
- SW-LS01: LOW LEVEL ALARM
- SW-LS01: LOW LEVEL ALARM
- SW-LS01
- SW-LS02
- SW-LS02
- SW-LS03
- SW-LS03
- SW-LS04
- SW-LS04
- SW-LS05
- SW-LS05
- SW-LS06
- SW-LS06
- SW-LS07
- SW-LS07
- SW-LS08: HIGH LEVEL ALARM
- SW-LS08: HIGH LEVEL ALARM
- SW-LS08

CONTROL DRAWING No. 3
SW-P04

CONTINUED ON SHEET E907

CONTINUED ON SHEET E907



SW-CP02

- PUMP RUNNING LIGHT
- NO, E908, 3,40
- PUMP CALL
- MOTOR OVERTEMP PUMP/MOTOR HOUSING
- NO, E908, 11
- SEAL LEAK
- NO, E908, 15
- SW-LS01 FLOAT SWITCH
- NO, E908, 19,39
- SW-LS02 FLOAT SWITCH
- NO, E908, 22,39
- SW-LS03 FLOAT SWITCH
- NO, E908, 24,39
- SW-LS04 FLOAT SWITCH
- NO, E908, 26
- SW-LS05 FLOAT SWITCH
- NO, E908, 28
- SW-LS06 FLOAT SWITCH
- NO, E908, 30
- SW-LS07 FLOAT SWITCH
- NO, E908, 32
- SW-LS08 FLOAT SWITCH
- NO, E908, 34

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KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

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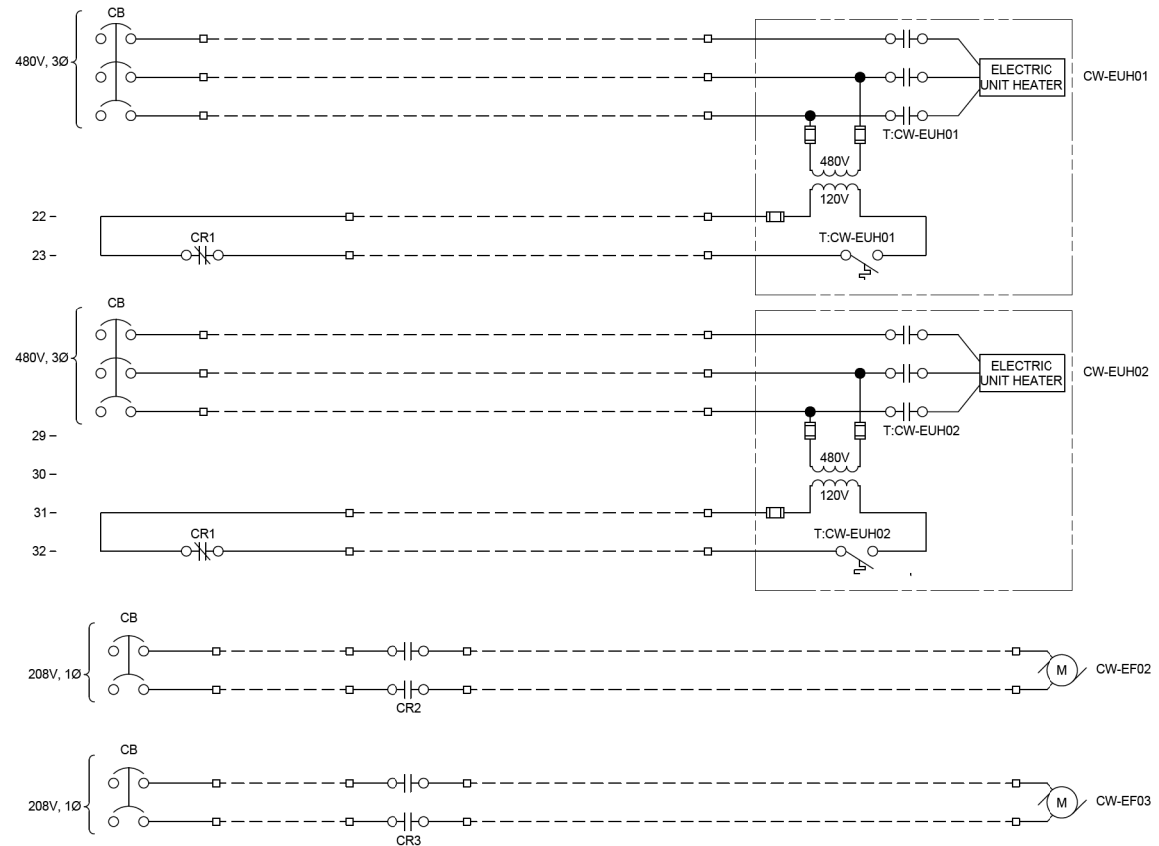
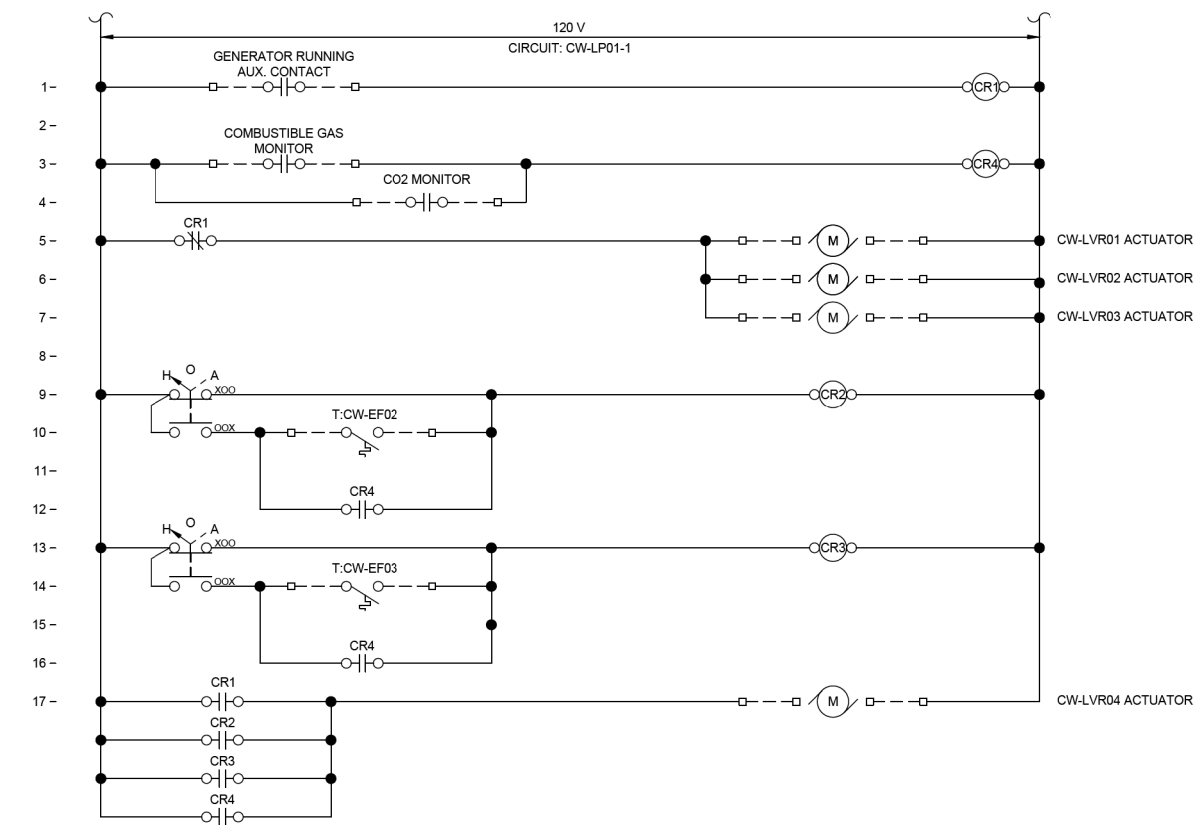
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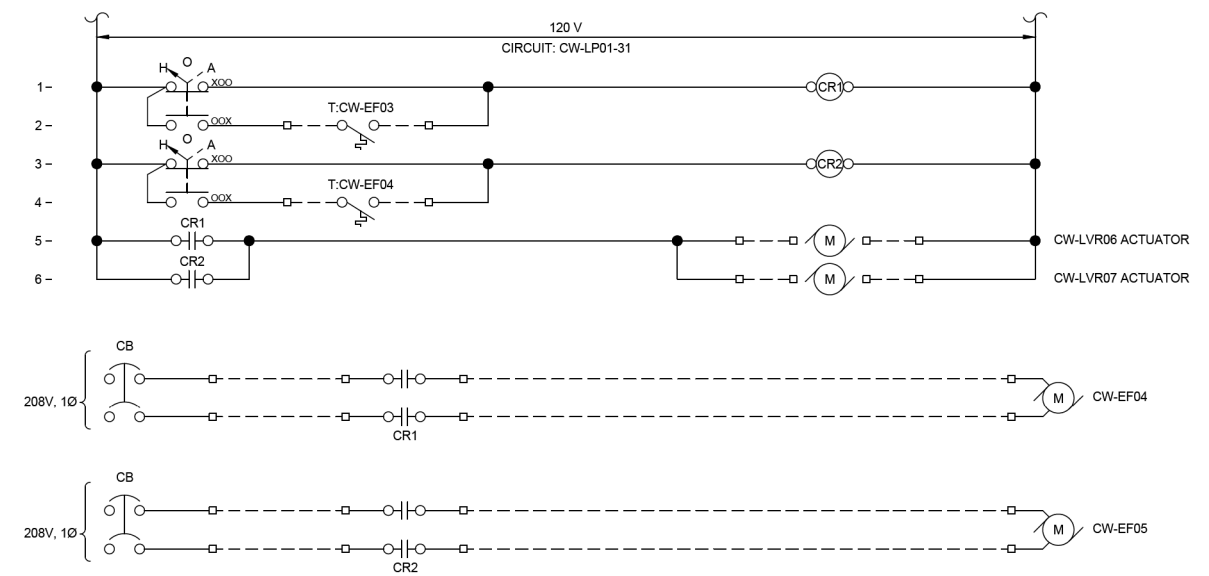
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONTROL DRAWINGS
MISSOURI AVENUE DEEP WELL FACILITY
SCALE: SHEET 3 OF 6 SHEETS STA. TO STA.

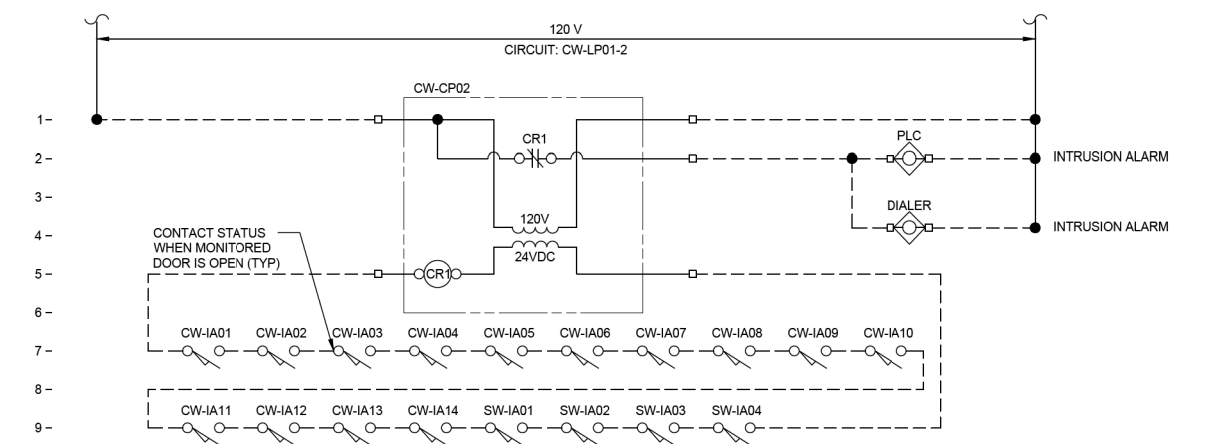
E908
F.A.I. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
55/70/64 82-4T-1 ST. CLAIR 185 182
CONTRACT NO. 76C99
ILLINOIS FED. AID PROJECT



CONTROL DRAWING No. 4
CW-CP03



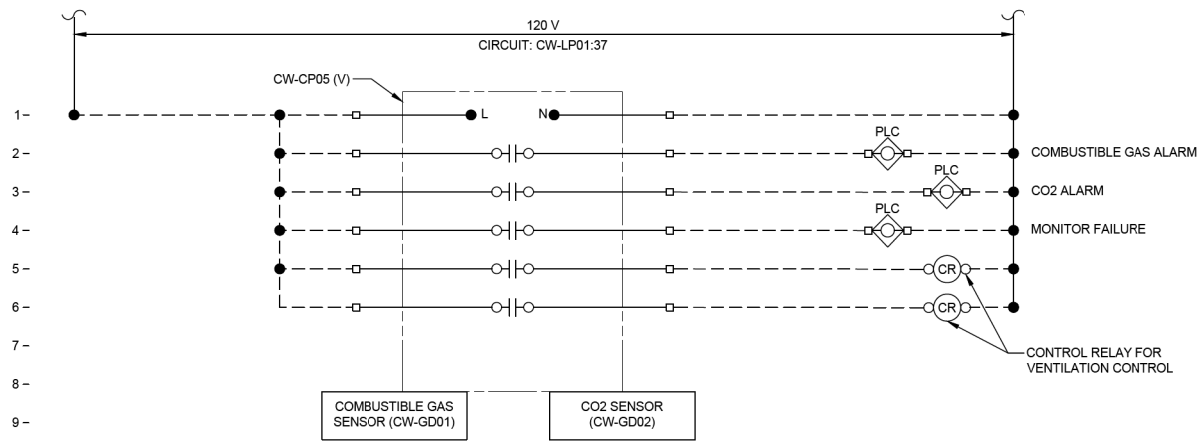
CONTROL DRAWING No. 5
CW-CP04



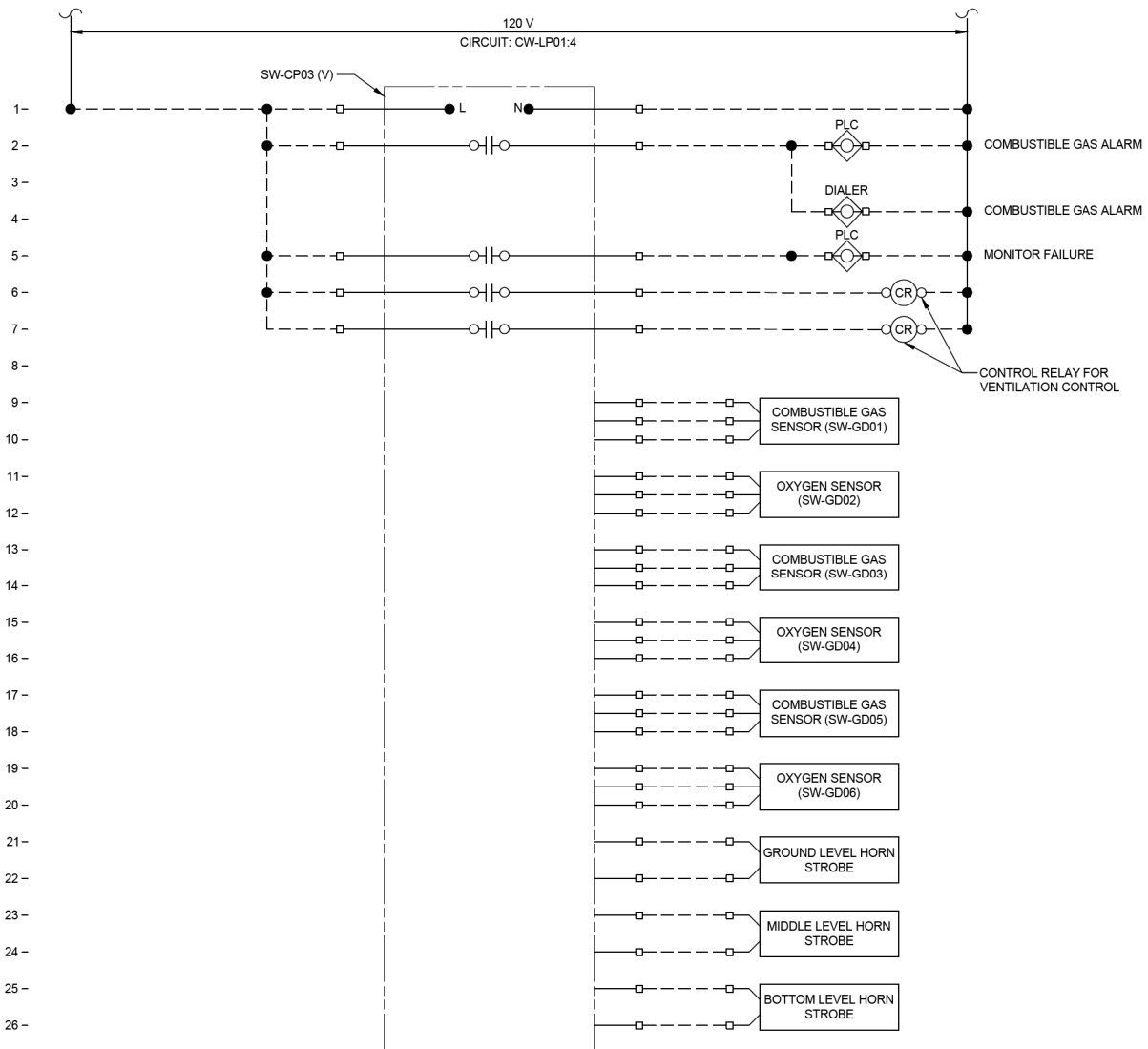
CONTROL DRAWING No. 6
INTRUSION ALARMS

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PLOT DATE = 1/13/2015	CHECKED -	REVISED -
	DATE -	REVISED -



CONTROL DRAWING No. 10
CW-CP05



CONTROL DRAWING No. 11
ALARM SIGNAL

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	DATE -	REVISED -

CONTROL DRAWINGS			
MISSOURI AVENUE DEEP WELL FACILITY			
SCALE:	SHEET 6	OF 6 SHEETS	STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70/64	82-4T-1	ST. CLAIR	185	185
CONTRACT NO. 76C99				
ILLINOIS FED. AID PROJECT				