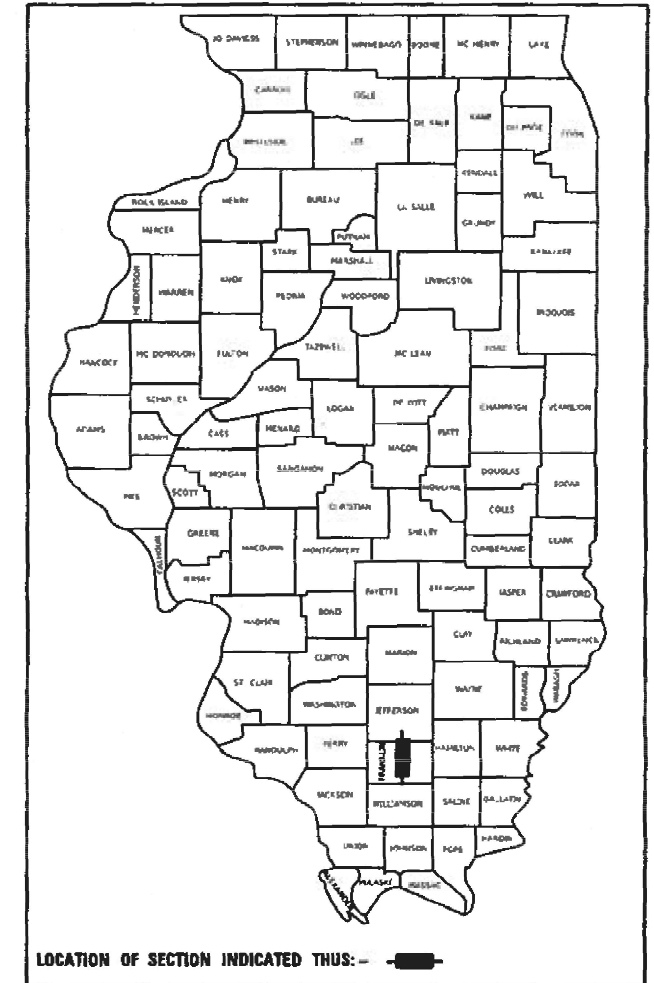


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	1
		ILLINOIS	CONTRACT NO. 78962	

D-98-057-22

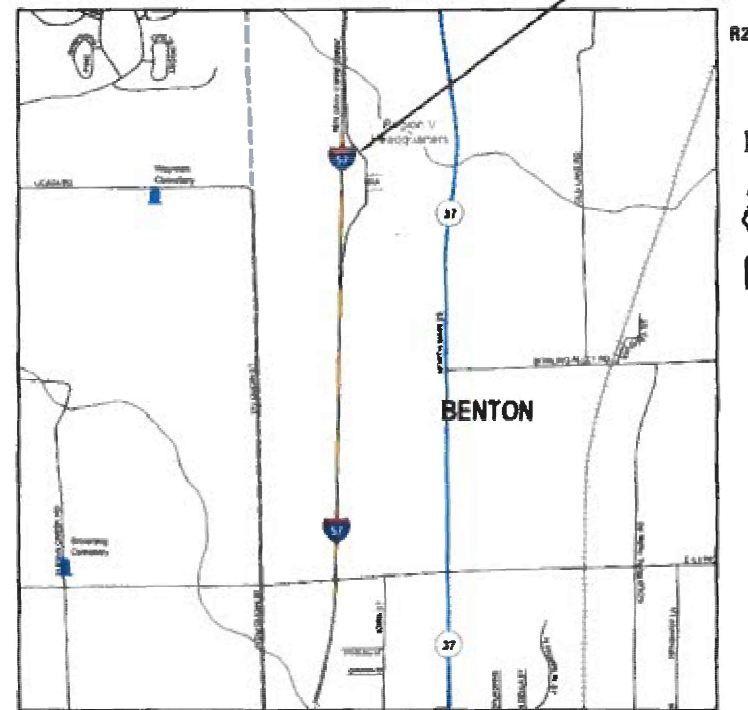


**PROPOSED
HIGHWAY PLANS**

F.A.I. ROUTE 57 (I-57)
SECTION (28-2-1)(I-2)RA
NB REND LAKE REST AREA
LIFT STATION REPLACEMENT
FRANKLIN COUNTY

C-99-077-22

NB REND LAKE REST AREA
IMPROVEMENTS



SCALE: 1" = 60'

T6S

TOWNSHIPS

BENTON

DESIGN DESIGNATION : INTERSTATE

COORDINATE SYSTEM : ILLINOIS COORDINATE SYSTEM, WEST ZONE

POSTED SPEED : 70 MPH

ALL ELEVATIONS IN THE PLANS ARE BASED
UPON THE NORTH AMERICAN VERTICAL DATUM
OF 1988 (NAVD88)

PLANS PREPARED BY:



4940 Old Collinsville Road
Swansea, Illinois 62226
Tel: 618.624.4488
www.twm-inc.com
ILLINOIS - MISSOURI - TENNESSEE

Illinois Professional
Design Firm
No. 184-001220
License Expires: 04/30/2023

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

PROJECT ENGINEER: CHARLES STEIN (618) 351-5210
PROJECT DESIGNER: BILL PORTER (618) 351-5224

CONTRACT NO. 78962



TIMOTHY B. PADGETT, PE EXPIRATION DATE
LICENSE NO. 062-049162 11-30-2023
SHEETS: 1-7, 15



SCOTT J. SIMMONS, PE EXPIRATION DATE
LICENSE NO. 062-061752 11-30-2023
SHEETS: 8-14



RASHESHKUMAR D. PATEL, PE EXPIRATION DATE
LICENSE NO. 062-064617 11-30-2023
SHEETS: 16-25

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED August 24, 2022

Kurt H. Bism
REGION FIVE ENGINEER

October 14, 2022
Scott A. Etk

ENGINEER OF DESIGN AND ENVIRONMENT

October 14, 2022
Stephen M. Smith
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

Prepared By: Charles Stein
DISTRICT STUDIES & PLANS ENGINEER

Examined By: Nancy Heo
DISTRICT LAND ACQUISITION ENGINEER

Examined By: Carrie Nelson
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: [Signature]
DISTRICT OPERATIONS ENGINEER

Examined By: Doris J. Melnik
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: Doris J. Melnik
DISTRICT CONSTRUCTION ENGINEER

Examined By: [Signature]
DISTRICT MATERIALS ENGINEER

MODEL: D:\d\hull
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PLOT DATE = 8.19.2022	CHECKED - TBP	REVISED -
	DATE - AUG 2022	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SIGNATURE SHEET			
SCALE:	SHEET 1	OF 1	SHEETS
	STA.		TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	2
CONTRACT NO. 78962				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

1. THE DISTRICT SHALL NOTIFY THE REST AREA VENDORS AND WORKSHOPS 30 DAYS IN ADVANCE OF THE PLANNED REST AREA CLOSURE DATES.

INDEX OF SHEETS

- 1 COVER SHEET
- 2 SIGNATURE SHEET
- 3 GENERAL NOTES, INDEX OF SHEETS, HIGHWAY STANDARDS & COMMITMENTS
- 4-5 SUMMARY OF QUANTITIES
- 6 LOCATION MAP
- 7 PLAN SHEET - DUMPSTER ACCESS
- 8 SITE PLAN OF NB REND LAKE REST AREA
- 9 SITE PLAN OF LIFT STATION
- 10 AIR RELEASE VALVE LOCATIONS
- 11 LIFT STATION DETAIL SHEET
- 12 SEWAGE GRINDER DETAILS
- 13-14 GENERAL DETAIL SHEETS
- 15 DISTRICT 9 STANDARDS
- 16-25 ELECTRICAL SHEETS

HIGHWAY STANDARDS

- | | |
|-----------|---|
| 000001-08 | STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS |
| 001006 | DECIMAL OF AN INCH AND OF A FOOT |
| 701101-05 | OFF-D OPERATIONS, MULTILANE, 15' (4.5m) TO 24" (600mm) FROM PAVEMENT EDGE |
| 701428-01 | TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY |
| 701451-05 | RAMP CLOSURE FREEWAY/EXPRESSWAY |
| 701901-08 | TRAFFIC CONTROL DEVICES |
| 420001-10 | PAVEMENT JOINTS |

COMMITMENTS

COMMITMENTS FOR THIS PROJECT ARE AS FOLLOWS: NONE

STANDARD LEGEND ITEMS

	IRON PIPE FOUND		GUYWIRE		FORCEMAIN LINE
	IRON PIPE SET		LIGHTPOLE		SANITARY SEWER LINE
	STREET SIGN		TELEPHONE POLE		WATER LINE
	LIFT STATION		TELEPHONE RISER		GAS LINE
	MANHOLE		MAILBOX		FIBER OPTIC LINE
	CLEAN OUT		SHED		UNDERGROUND ELECTRIC LINE
	WATER VALVE		FIR TREE		UNDERGROUND TELEPHONE LINE
	FIRE HYDRANT		DECIDUOUS TREE		STORM SEWER LINE
	WATER METER		BUSH OR SHRUB		PROPOSED WATER MAIN
	DOWNSPOUT		TREE LINE		PROPOSED STORM SEWER LINE
	GAS VALVE		TREE LINE		PROPOSED STORM SEWER LINE
	GAS METER		FENCE		PROPOSED FIRE HYDRANT
	TRANSFORMER				PROPOSED WATER VALVE
					PROPOSED MANHOLE
					PROPOSED OPEN-THROAT INLET
					PROPOSED JUNCTION BOX
					PROPOSED FLARED END SECTION
					PROPOSED WATER HYDRANT

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PLOT DATE = 8/19/2022	DATE - AUG 2022	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES, INDEX OF SHEETS,
HIGHWAY STANDARDS & COMMITMENTS**

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	3
CONTRACT NO. 78962				
ILLINOIS FED. AID PROJECT				

REV. - MS

ROUTE:	FAI 57 (I-57)
COUNTY:	FRANKLIN
FUNDING:	100% STATE
LOCATION:	RURAL

CODE NO.	PAY ITEM	UNIT	TOTAL QUANTITY	OTHER
				0044
25000200	SEEDING, CLASS 2	ACRE	0.55	0.55
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	50	50
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	50	50
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	50	50
25000700	AGRICULTURAL GROUND LIMESTONE	TON	1.10	1.10
25100115	MULCH, METHOD 2	ACRE	0.55	0.55
42300400	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH	SQ YD	87	87
56200500	WATER SERVICE LINE 1 1/2"	FOOT	1040	1040
67100100	MOBILIZATION	L SUM	1	1
70100820	TRAFFIC CONTROL AND PROTECTION, STANDARD 701451	L SUM	1	1
80300100	LOCATING UNDERGROUND CABLE	FOOT	1040	1040
81028370	UNDERGROUND CONDUIT, PVC, 3" DIA.	FOOT	175	175
81603000	UNIT DUCT, 600V, 2-1C NO.8, 1/C NO.8 GROUND, (XLP-TYPE USE), 3/4" DIA POLYETHYLENE	FOOT	700	700

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	DATE - AUG 2022	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: N.T.S. SHEET 1 OF 2 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	4
			CONTRACT NO. 78962	
		ILLINOIS	FED. AID PROJECT	

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ROUTE:	FAI 57 (I-57)
COUNTY:	FRANKLIN
FUNDING:	100% STATE
LOCATION:	RURAL

CODE NO.	PAY ITEM	UNIT	TOTAL QUANTITY	OTHER
				0044
89500120	REMOVE EXISTING SERVICE INSTALLATION	EACH	1	1
X0324769	SANITARY SEWER LIFT STATION	L SUM	1	1
X0325790	WATER HYDRANT	EACH	1	1
X1400162	PUMP STATION MOTOR CONTROL CENTER	L SUM	1	1
X3400002	DEMOLITION OF EXISTING PUMP STATION	L SUM	1	1
X1200337	SANITARY SEWER GRINDING STATION	L SUM	1	1
X1200338	WATER SERVICE TAPPING SADDLE	L SUM	1	1
X1200339	AIR RELEASE VALVE REPLACEMENT	EACH	6	6

REV. - MS



USER NAME = dlee	DESIGNED - JCL	REVISED -
PLOT SCALE = in.	DRAWN - JCL	REVISED -
PLOT DATE = 8/24/2022	CHECKED - TBP	REVISED +
	DATE - AUG 2022	REVISED +

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES			
SCALE: N.T.S.	SHEET 2 OF 2 SHEETS	STA.	TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	5
CONTRACT NO. 78962				
ILLINOIS FED. AID PROJECT				



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TWM, INC.
 www.twm-inc.com
 ILLINOIS DESIGN FIRM LICENSE NO: 184-001220

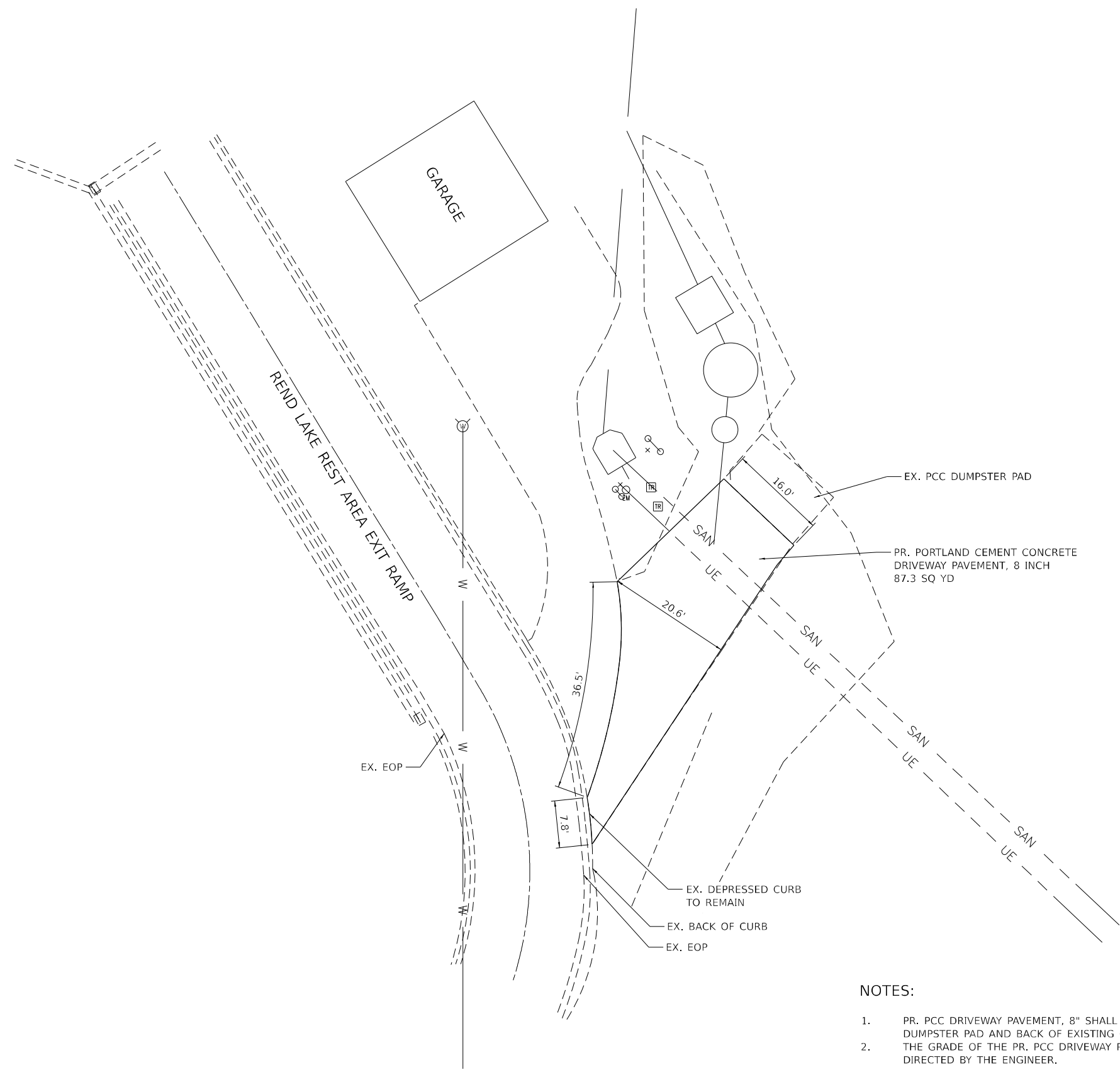
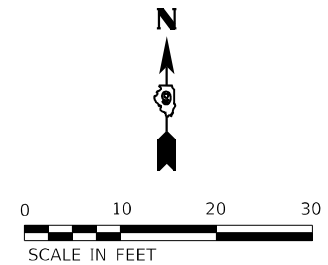
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	DATE - AUG 2022	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LOCATION MAP

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	6
CONTRACT NO. 78962				
ILLINOIS FED. AID PROJECT				



NOTES:

1. PR. PCC DRIVEWAY PAVEMENT, 8" SHALL MATCH THE ELEVATIONS OF THE EXISTING PCC DUMPSTER PAD AND BACK OF EXISTING CURB.
2. THE GRADE OF THE PR. PCC DRIVEWAY PAVEMENT, 8" SHALL MATCH FIELD CONDITIONS OR AS DIRECTED BY THE ENGINEER.

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TWM, INC.
www.twm-inc.com
IL DESIGN FIRM
LICENSE NO: 184-001220

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PLOT DATE = 8/19/2022	CHECKED - TBP	REVISED -
	DATE - AUG 2022	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

PLAN SHEET DUMPSTER ACCESS			
SCALE: 1:10	SHEET 1	OF 1 SHEETS	STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	7
CONTRACT NO. 78962				
ILLINOIS FED. AID PROJECT				

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TWM, INC.
 WWW.TWM-INC.COM
 IL DESIGN FIRM
 LICENSE NO: 184-001220

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 CHECKED - SJS
 DATE - AUG. 2022

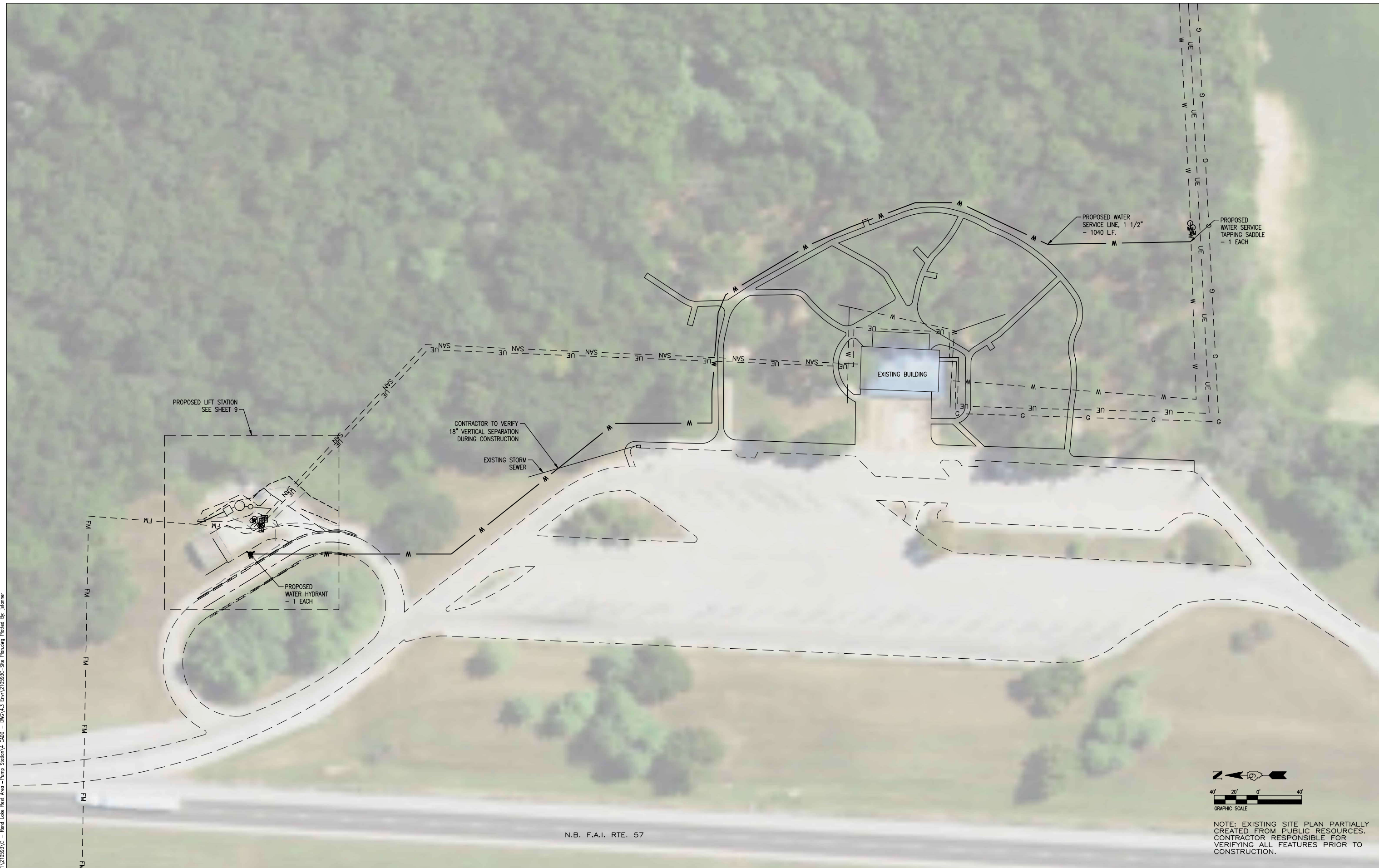
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**SITE PLAN OF N.B. REND LAKE
 REST AREA**

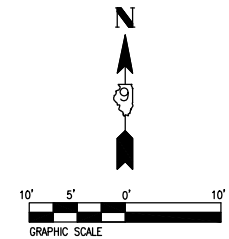
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	8
CONTRACT NO. 78962				
ILLINOIS NON FED. AID PROJECT				



NOTE: EXISTING SITE PLAN PARTIALLY CREATED FROM PUBLIC RESOURCES. CONTRACTOR RESPONSIBLE FOR VERIFYING ALL FEATURES PRIOR TO CONSTRUCTION.

N.B. F.A.I. RTE. 57

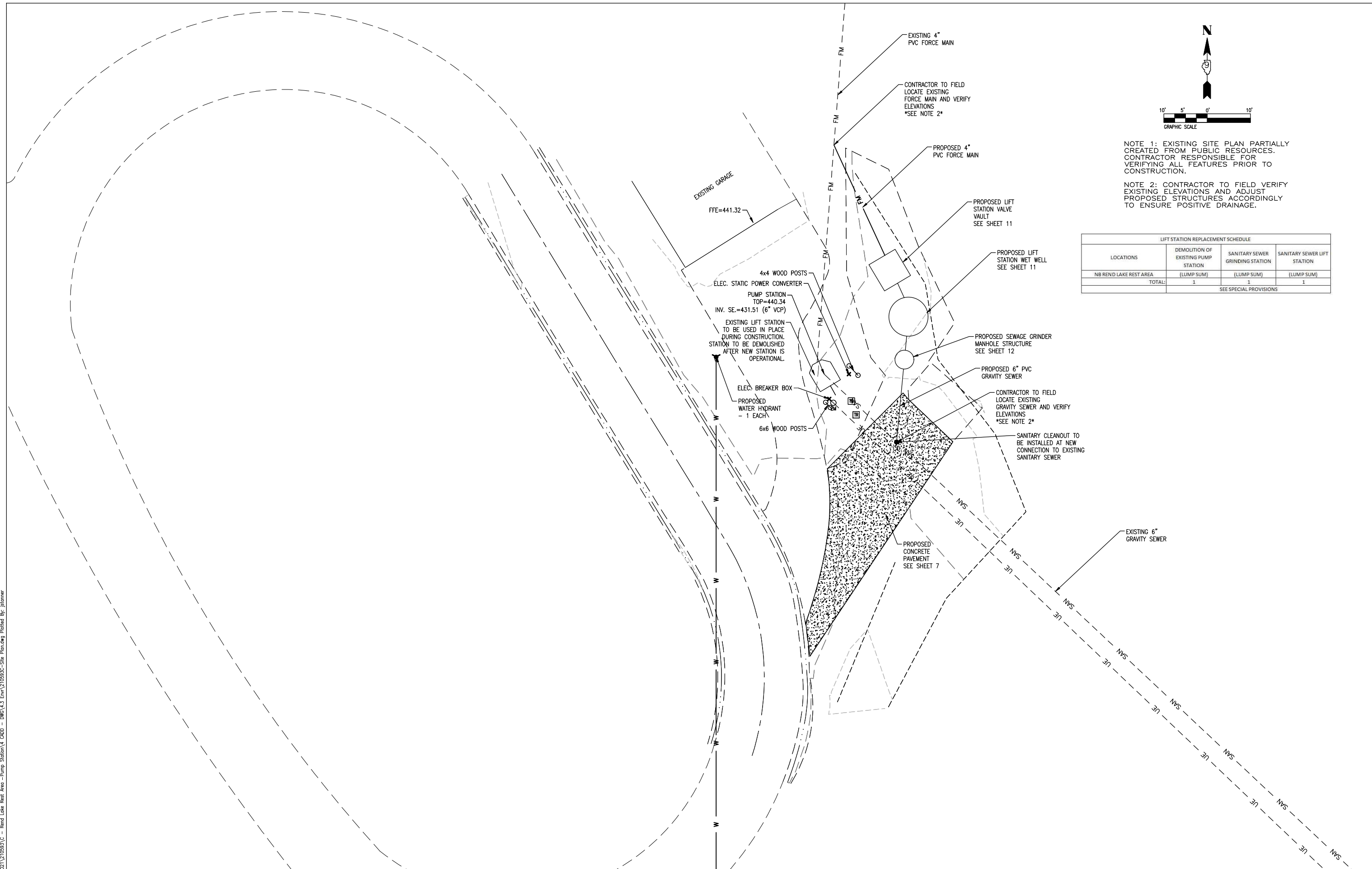


NOTE 1: EXISTING SITE PLAN PARTIALLY CREATED FROM PUBLIC RESOURCES. CONTRACTOR RESPONSIBLE FOR VERIFYING ALL FEATURES PRIOR TO CONSTRUCTION.

NOTE 2: CONTRACTOR TO FIELD VERIFY EXISTING ELEVATIONS AND ADJUST PROPOSED STRUCTURES ACCORDINGLY TO ENSURE POSITIVE DRAINAGE.

LIFT STATION REPLACEMENT SCHEDULE			
LOCATIONS	DEMOLITION OF EXISTING PUMP STATION	SANITARY SEWER GRINDING STATION	SANITARY SEWER LIFT STATION
NB REND LAKE REST AREA	(LUMP SUM)	(LUMP SUM)	(LUMP SUM)
TOTAL:	1	1	1

SEE SPECIAL PROVISIONS



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SITE PLAN OF LIFT STATION

<p>TWM ENGINEERING GEOSPATIAL SERVICES</p>	<p>USER NAME = JSTANNER</p> <p>DESIGNED - JST</p> <p>DRAWN - JST</p> <p>CHECKED - SJS</p> <p>DATE - AUG. 2022</p>	<p>REVISIONS:</p> <table border="1"> <tr><td>REVISIONS</td><td>REVISIONS</td></tr> <tr><td>REVISIONS</td><td>REVISIONS</td></tr> <tr><td>REVISIONS</td><td>REVISIONS</td></tr> <tr><td>REVISIONS</td><td>REVISIONS</td></tr> <tr><td>REVISIONS</td><td>REVISIONS</td></tr> </table>	REVISIONS	REVISIONS	REVISIONS	REVISIONS	REVISIONS	REVISIONS	REVISIONS	REVISIONS	REVISIONS	REVISIONS
REVISIONS	REVISIONS											
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REVISIONS	REVISIONS											
REVISIONS	REVISIONS											
REVISIONS	REVISIONS											

SCALE: 1" = 10' SHEET 2 OF 3 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	9
CONTRACT NO. 78962				
ILLINOIS NON FED. AID PROJECT				

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MODEL FILE NAME: P:\2021\21659A\C - Rend Lake Rest Area - Pump Station\4 CAD - DWG\4.3 Env\216593C-Site Planning Plotted By: jstanner



NOTE: EXISTING SITE PLAN PARTIALLY CREATED FROM PUBLIC RESOURCES. CONTRACTOR RESPONSIBLE FOR VERIFYING ALL FEATURES PRIOR TO CONSTRUCTION.

TWM
ENGINEERING
GEOSPATIAL SERVICES

TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM
LICENSE NO:
184-001220

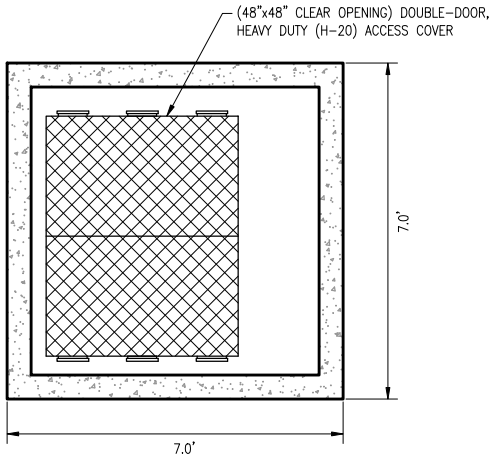
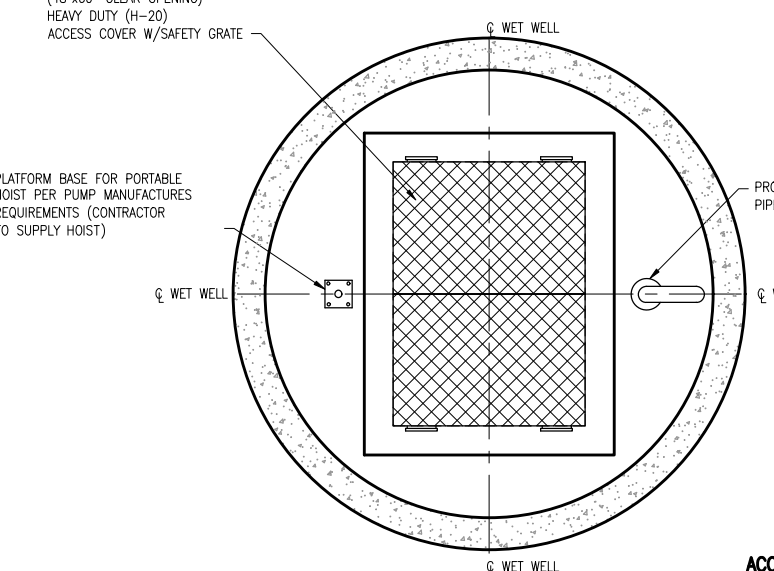
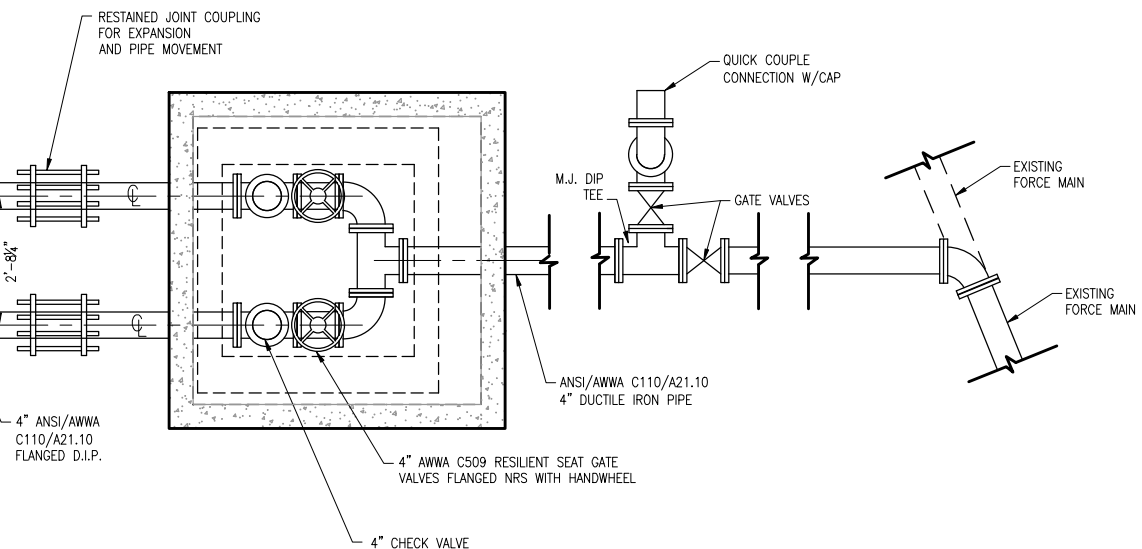
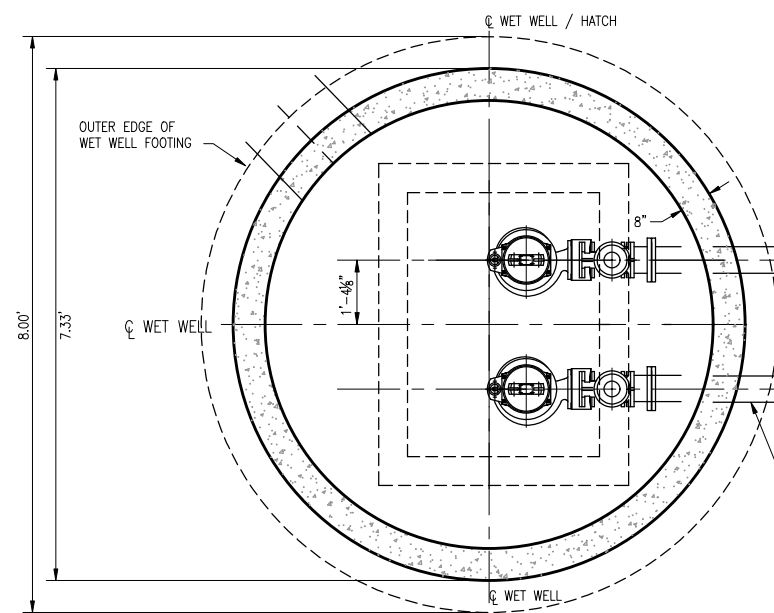
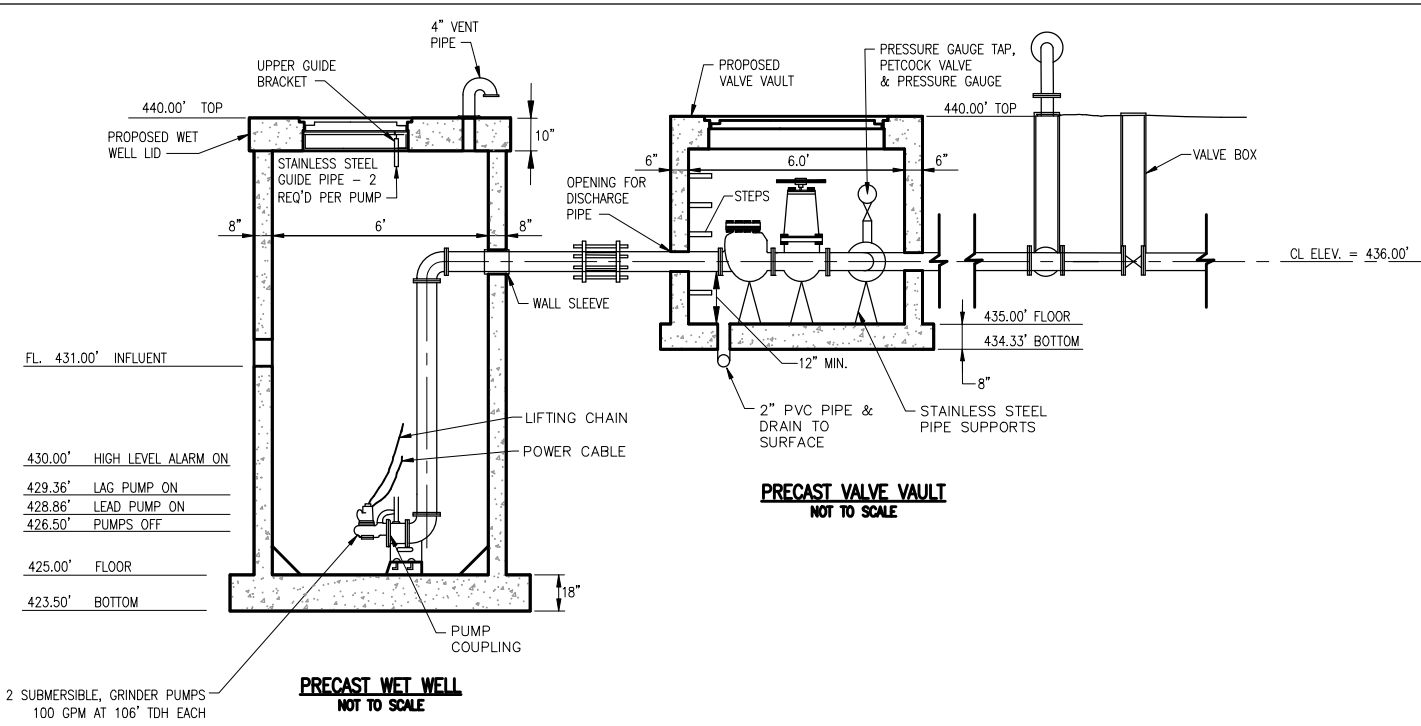
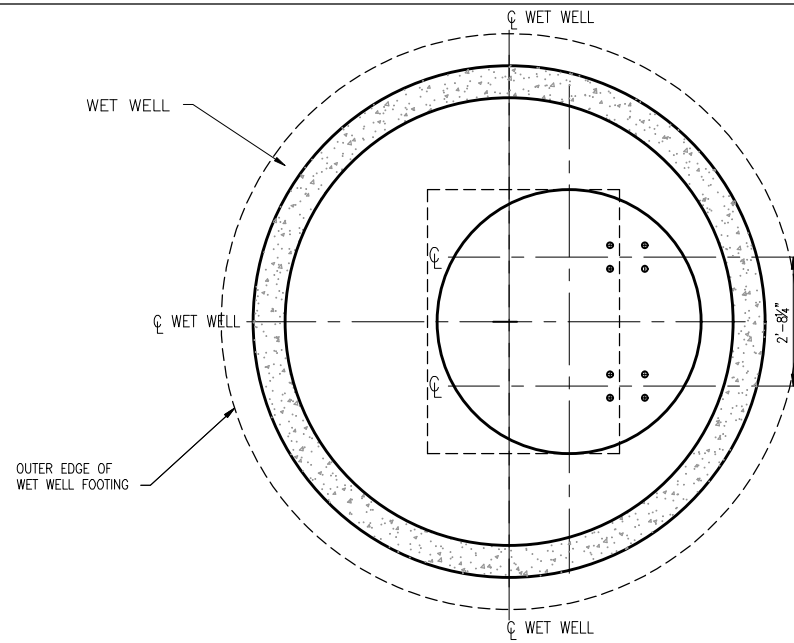
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	DATE - AUG. 2022	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

AIR RELEASE VALVE LOCATIONS

SCALE: 1" = 400' SHEET 3 OF 3 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	10
CONTRACT NO. 78962				
ILLINOIS NON FED. AID PROJECT				



- NOTES:**
- PUMPS AND ALL LIFT STATION PIPING SHALL BE CAPABLE OF PASSING A 3" SPHERE.
 - SUBMERSIBLE PUMPS AND MOTORS SHALL BE DESIGNED SPECIFICALLY FOR RAW SEWAGE USE INCLUDING TOTALLY SUBMERGED OPERATION DURING A PORTION OF EACH PUMPING CYCLE AND SHALL MEET THE REQUIREMENTS OF THE NATION ELECTRIC CODE (NEC) FOR SUCH UNITS.
 - PUMP MOTOR SHALL BE DESIGNED FOR FLEXIBILITY AND SERVICEABILITY UNDER CONDITIONS OF EXTRA HARD USAGE AND SHALL MEET THE REQUIREMENTS OF THE NEC FOR FLEXIBLE CORDS IN SEWAGE PUMPING STATIONS. GROUND FAULT INTERRUPTION PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH NEC TO DE-ENERGIZE THE CIRCUIT IN THE EVENT OF ANY FAILURE IN THE ELECTRICAL INTEGRITY OF THE CABLE.
 - WET WELL CONCRETE AND STEEL SHALL BE COATED WITH DURA-PLATE PVC LINER.
 - VALVE VAULT CONCRETE SHALL INCLUDE SILICA FUME ADMIXTURE FOR HYDROGEN SULFIDE RESISTANCE.
 - ALL LIFT STATION PIPING AND VALVE VAULT PIPING SHALL BE FLANGED DUCTILE IRON PIPE CLASS 53 UNLESS OTHERWISE NOTED.
 - THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
 - ALL HARDWARE INSIDE WET WELL FOR BASE PLATE, HATCH COVER, GUIDE RAILS, ETC. SHALL BE STAINLESS STEEL.
 - CONTRACTOR SHALL UTILIZE A-LOK PREMIUM FLEXIBLE COMPRESSION CONNECTORS THAT ALLOW A TEN (10) DEGREE DEFLECTION.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIFT STATION DETAIL SHEET

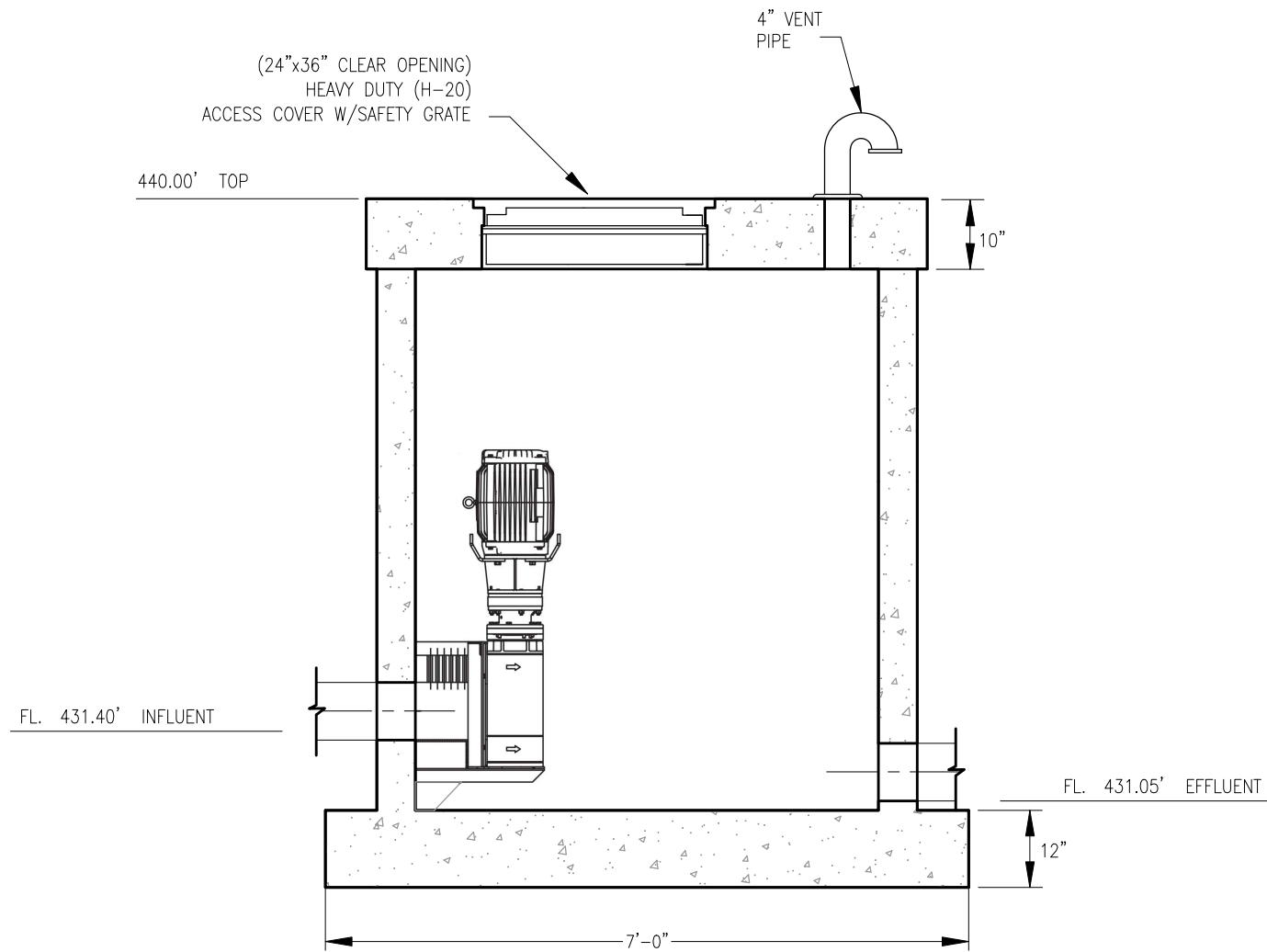


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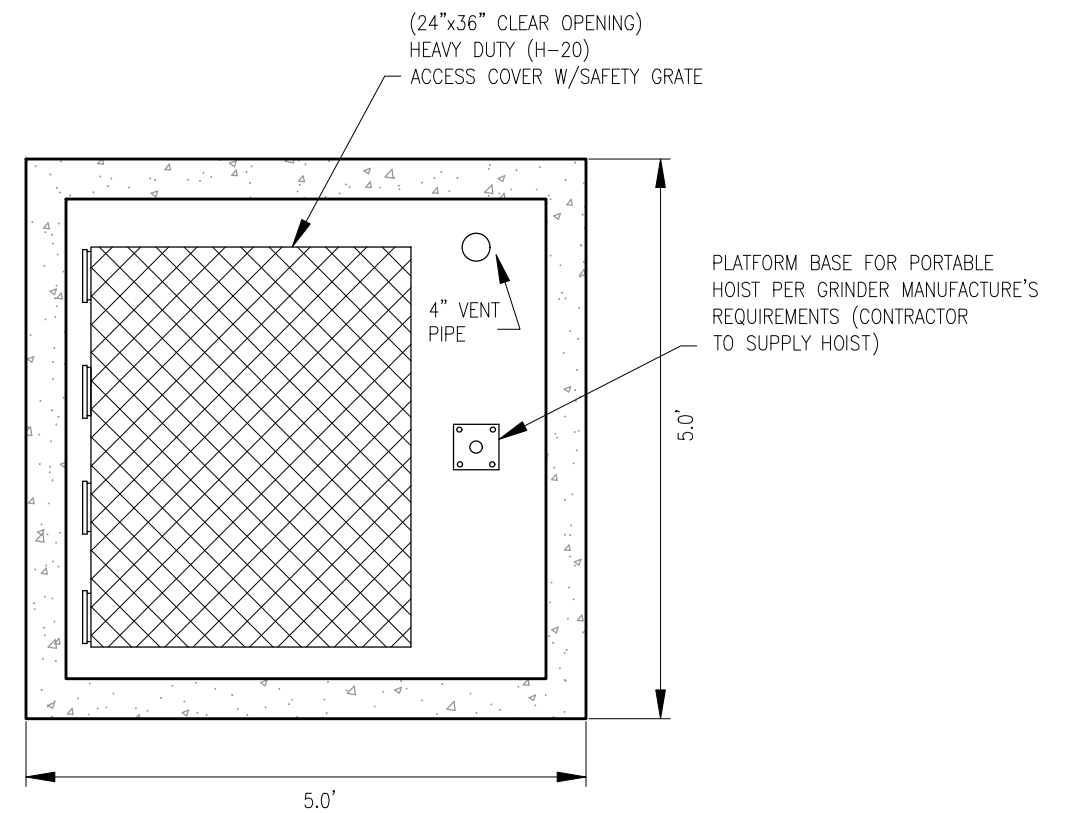
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F.A.I. RTE. 57	SECTION (28-2-1)(I-2)RA	COUNTY FRANKLIN	TOTAL SHEETS 25	SHEET NO. 11
CONTRACT NO. 78962				
ILLINOIS NON FED. AID PROJECT				

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SANITARY MANHOLE WITH GRINDER - SIDE VIEW
NOT TO SCALE



SANITARY MANHOLE WITH GRINDER - TOP VIEW
NOT TO SCALE

NOTE: CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

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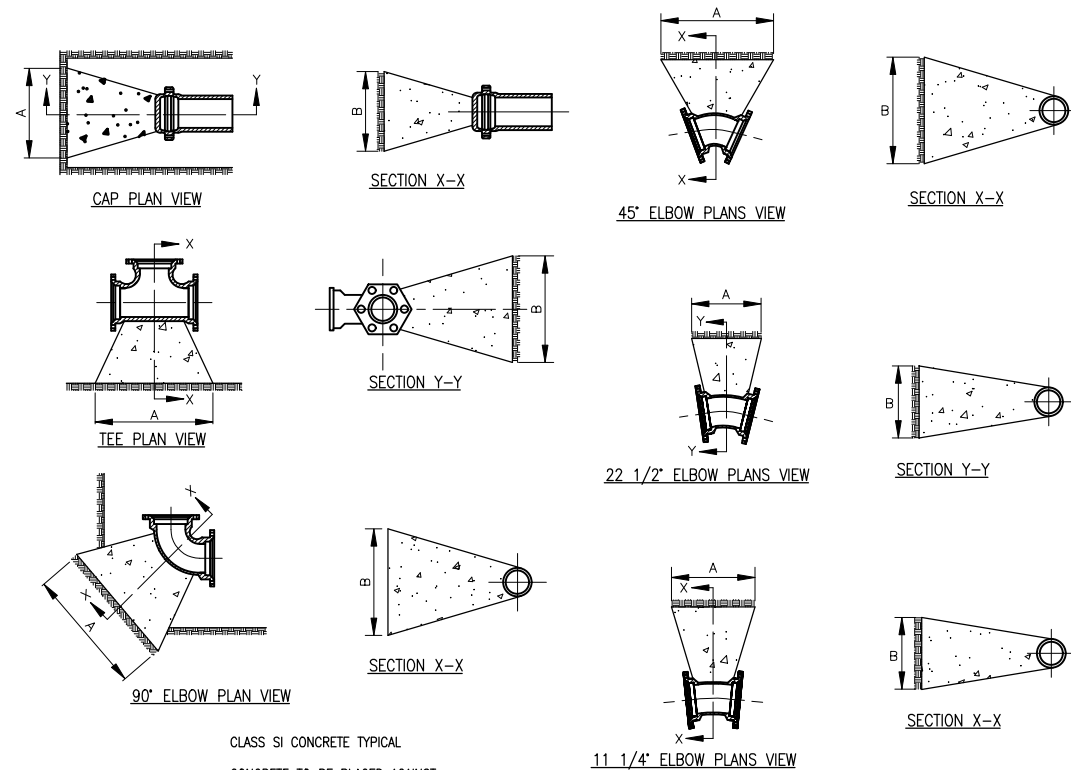
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PLOT DATE = 8/19/2022	DATE - AUG. 2022	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SEWAGE GRINDER DETAILS

SCALE: N/A SHEET 2 OF 4 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	12
CONTRACT NO. 78962				
ILLINOIS NON FED. AID PROJECT				



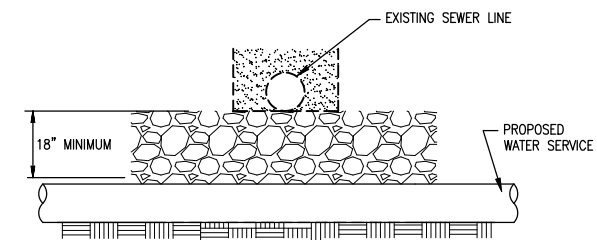
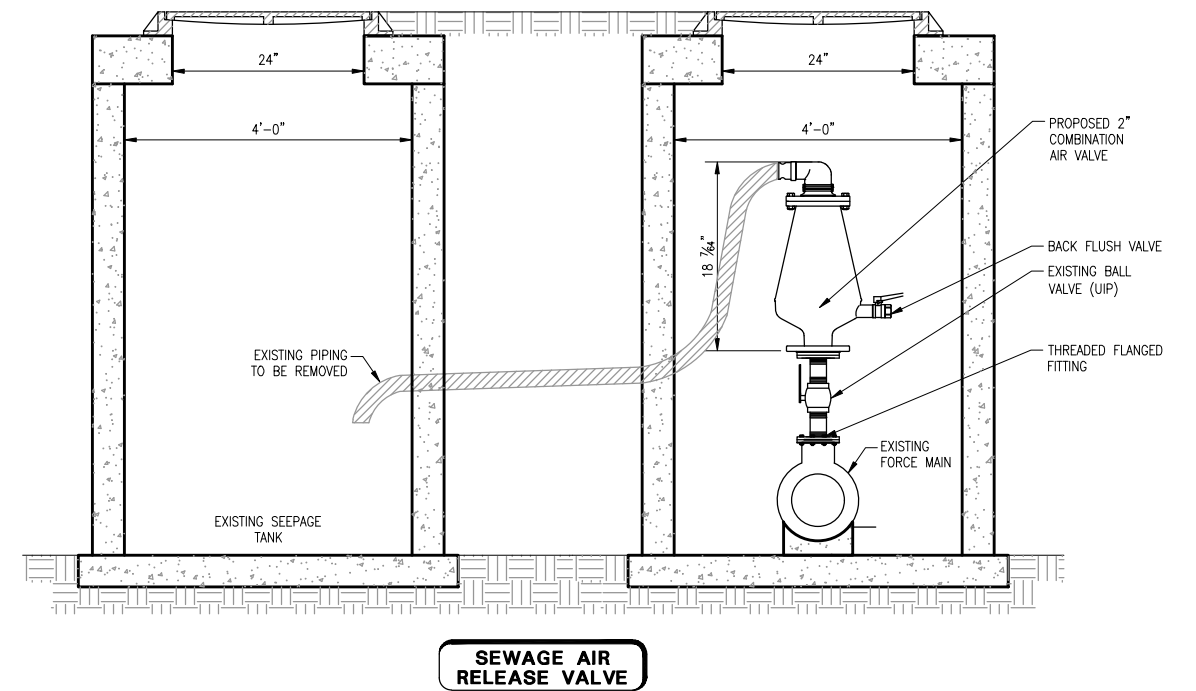
PIPE SIZE	DEGREE OF BEND	DIMENSIONS	
		A	B
8"	TEE OR PLUG	4'	2'
8"	90	5'	2 1/2'
8"	45	3'	2'
8"	22 1/2	3'	1'
8"	11 1/4	2'	1'
6"	TEE OR PLUG	2 1/2'	2'
6"	90	3'	2'
6"	45	3'	1 1/2'
6"	22 1/2	3'	1'
6"	11 1/4	2'	1'

PIPE SIZE	DEGREE OF BEND	DIMENSIONS	
		A	B
12"	TEE OR PLUG	6'	3'
12"	90	6'	4'
12"	45	5'	3'
12"	22 1/2	4'	2'
12"	11 1/4	3'	2'
10"	TEE OR PLUG	4'	3'
10"	90	6'	3'
10"	45	5'	2'
10"	22 1/2	3'	2'
10"	11 1/4	3'	1'

PIPE SIZE	DEGREE OF BEND	DIMENSIONS	
		A	B
14"	TEE OR PLUG	6'	4'
14"	90	6'	4'
14"	45	5'	3'
14"	22 1/2	4'	2'
14"	11 1/4	3'	2'
16"	TEE OR PLUG	6'	4'
16"	90	6'	4'
16"	45	5'	3'
16"	22 1/2	4'	2'
16"	11 1/4	3'	2'

PIPE SIZE	DEGREE OF BEND	DIMENSIONS	
		A	B
20"	TEE OR PLUG	7'	5'
20"	90	7'	5'
20"	45	5'	4'
20"	22 1/2	5'	2'
20"	11 1/4	3'	2'
24"	TEE OR PLUG	8'	6'
24"	90	8'	6'
24"	45	6'	4 1/2'
24"	22 1/2	5'	3'
24"	11 1/4	4'	2'

THRUST BLOCKS FOR HORIZONTAL BENDS, TEES & CAPS (FOR ALL PRESSURE PIPE)



VERTICAL SEPARATION WATER UNDER SEWER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DETAIL SHEET

SCALE: N/A SHEET 3 OF 4 SHEETS STA. TO STA.

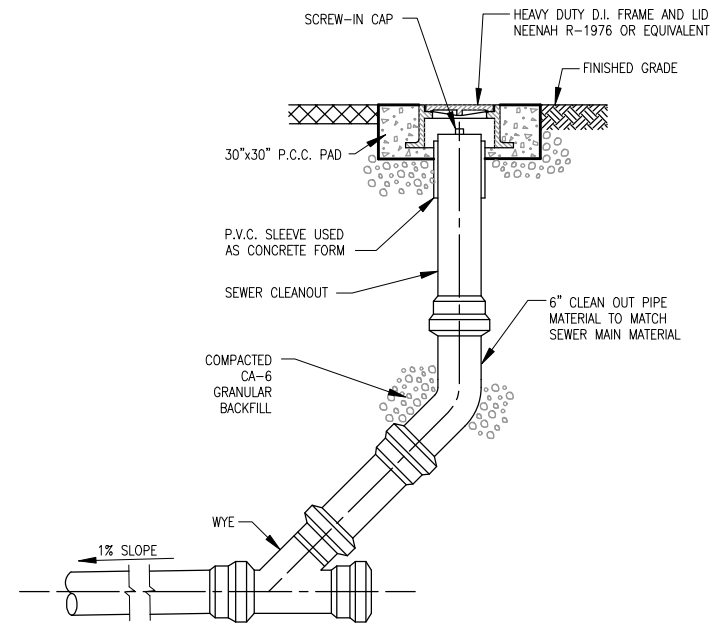
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	13
CONTRACT NO. 78962				
ILLINOIS NON FED. AID PROJECT				

MODEL: FILE NAME: P:\2021\216593\C - Rend Lake Rest Area - Pump Station\4 CAD - DWG\4.3 Envt\216593C-Detail Sheets.dwg Plotted By: jstanner

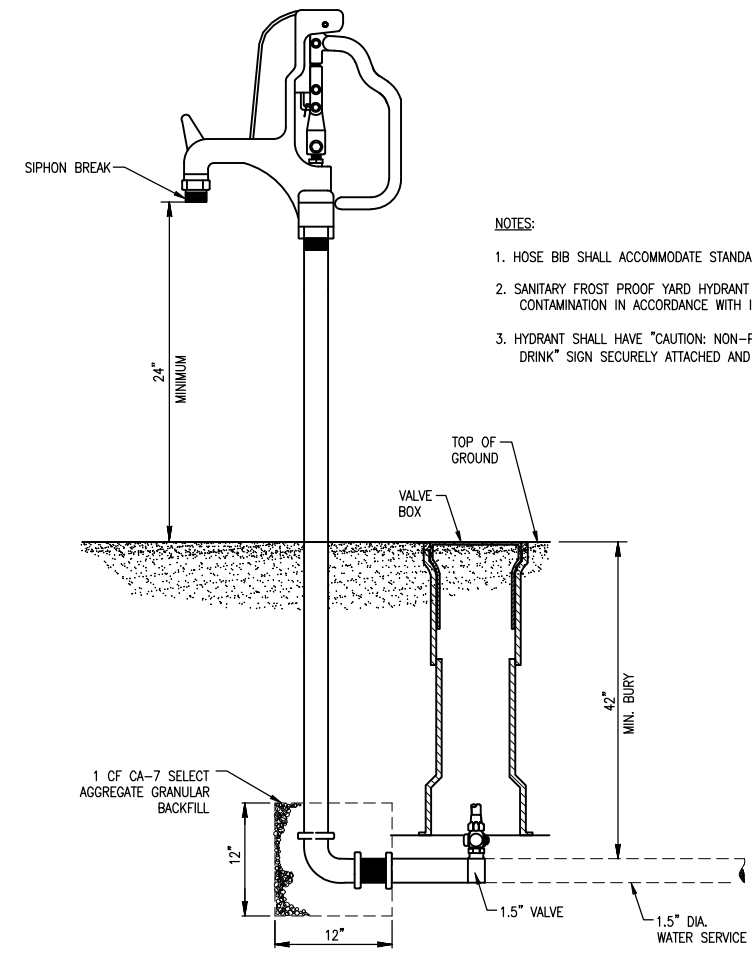


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DRAWN - JST
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DATE - AUG. 2022

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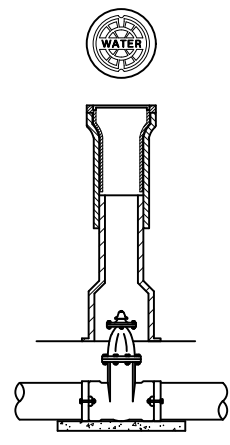


SANITARY SEWER CLEANOUT



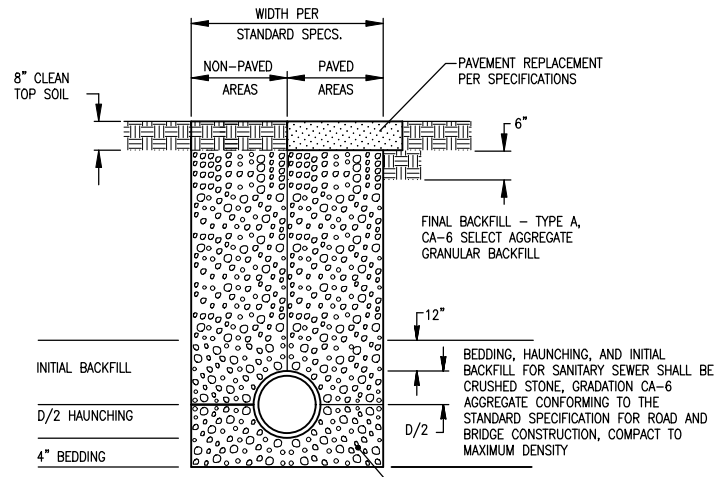
- NOTES:
- HOSE BIB SHALL ACCOMMODATE STANDARD 3/4" GARDEN HOSE.
 - SANITARY FROST PROOF YARD HYDRANT TO PREVENT CROSS CONTAMINATION IN ACCORDANCE WITH IDPH REGULATIONS.
 - HYDRANT SHALL HAVE "CAUTION: NON-POTABLE WATER DO NOT DRINK" SIGN SECURELY ATTACHED AND READILY VISIBLE.

WATER HYDRANT

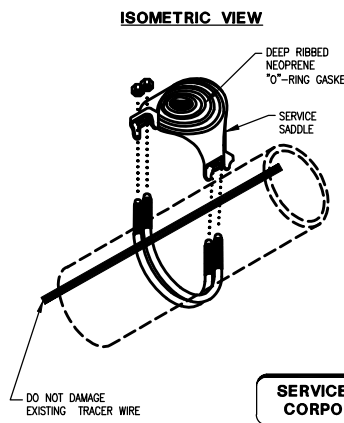


CAST IRON VALVE BOX 5 1/4" WITH SCREW TYPE ADJUSTMENT

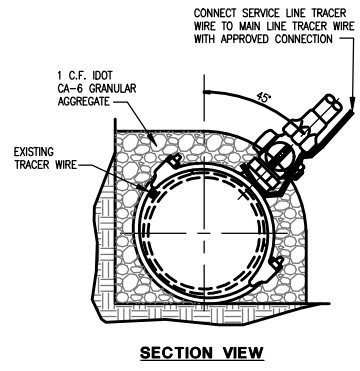
VALVE BOX ASSEMBLY



TRENCH DETAIL



SERVICE SADDLE AND CORPORATION STOP



SECTION VIEW

MODEL: FILE NAME: P:\2021\216593\C - Rend Lake Rest Area - Pump Station\4 CAD - DWG\4.3 Envt\216593C-Detail Sheets.dwg Plotted By: jstanner



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	DATE - AUG. 2022	REVISED -

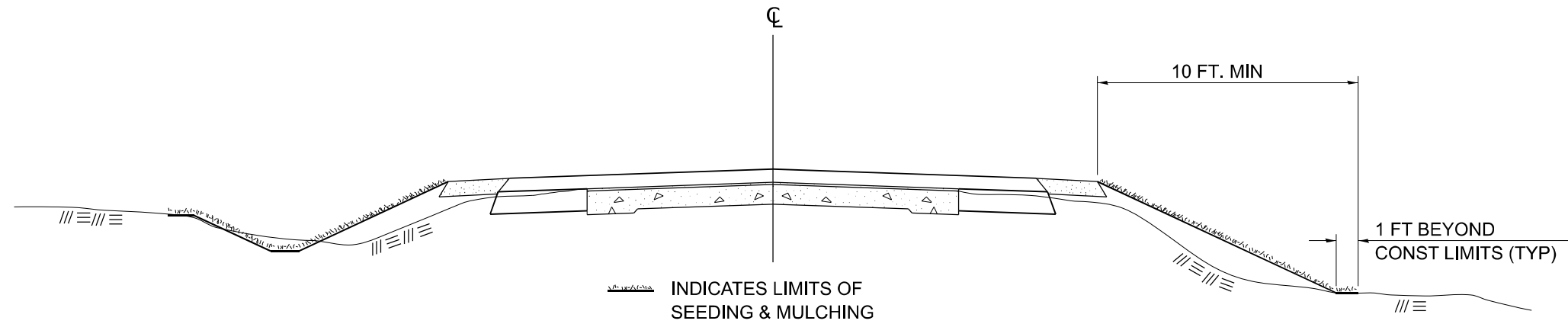
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DETAIL SHEET

SCALE: N/A SHEET 4 OF 4 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	14
CONTRACT NO. 78962				
ILLINOIS NON FED. AID PROJECT				

SEEDING & MULCHING



GENERAL NOTES

IN GENERAL, ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDED AND MULCHED UPON COMPLETION OF ALL GRADING OPERATIONS.

FERTILIZER NUTRIENTS SHALL BE APPLIED TO ALL SEEDED AREAS.
LIMESTONE SHALL BE APPLIED TO ALL AREAS OF FINAL SEEDING.

THE RATES OF APPLICATION OF FERTILIZER, MULCH AND LIMESTONE SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR ROAD AND BRIDGE CONSTRUCTION.

SECTIONS 250 AND 251 SHALL GOVERN THIS WORK EXCEPT AS SPECIFIED HEREIN OR AS NOTED IN THE SPECIAL PROVISIONS.

DRAWN	02-15-89
REVISED	03-27-08
REVISED	10-21-21
REVISED	05-27-22

STD. 9-19

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DISTRICT 9 STANDARDS

SCALE: NTS SHEET 1 OF 1 SHEETS STA. TO STA.

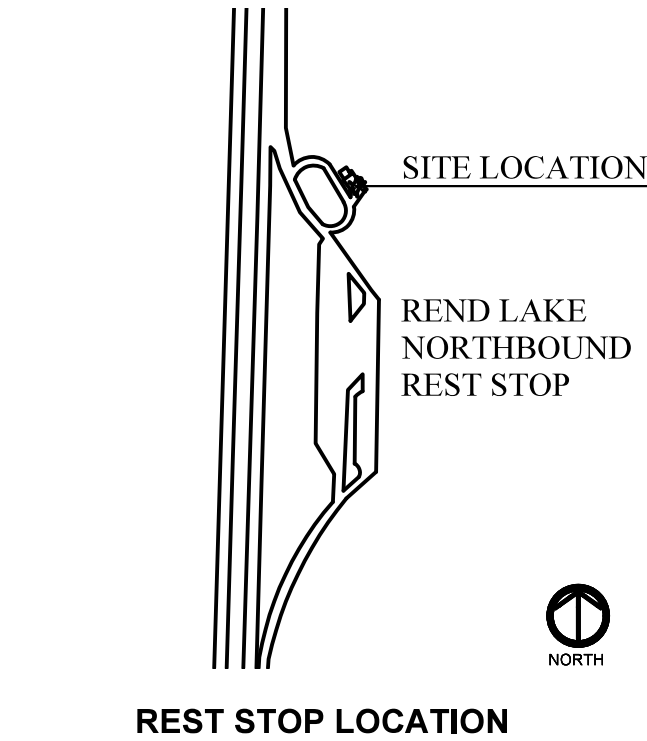
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)(I-2)RA	FRANKLIN	25	15
CONTRACT NO. 78962				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES:

1. PROVIDE A COMPLETE ELECTRICAL SYSTEM INCLUDING ALL NEW REQUIRED ELECTRICAL DEVICES, CONDUIT AND WIRING AS GENERALLY OUTLINED ON THE PLANS. THE ELECTRICAL CONTRACTOR IS TO PROVIDE ALL MATERIALS AND WORK NORMALLY REQUIRED FOR A COMPLETE INSTALLATION AND SHOULD INCLUDE ALL ANTICIPATED COSTS IN BID PRICING. IT IS REQUESTED THAT ANY SIGNIFICANT OMISSIONS, ADDITIONS OR DISCREPANCIES BE FULLY IDENTIFIED WHEN A BID IS SUBMITTED.
2. EC IS REQUIRED TO VERIFY ALL FIELD CONDITIONS PRIOR TO PERFORMING ANY WORK. ANY DISCREPANCIES OR OTHER ASPECTS OF CONSTRUCTION NOT ANTICIPATED BY THESE PLANS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.
3. INSULATE AND SEAL CONDUIT PENETRATIONS BETWEEN SPACES AT DIFFERENT TEMPERATURES AND HUMIDITY LEVELS.
4. PROVIDE A PULL STRING IN ALL CONDUIT RUNS.
5. ALL ELECTRICAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
6. EQUIPMENT LABELS AND INSTRUCTIONS REGARDING THE APPLICATION AND INSTALLATION OF THE LISTED EQUIPMENT SHALL BE FOLLOWED TO ENSURE THAT THE EQUIPMENT IS BEING INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S LISTING INSTRUCTIONS. THE TEMPERATURE RATING OF THE EQUIPMENT TERMINATIONS SHALL BE CAREFULLY CORRELATED WITH THE CONDUCTOR AMPACITY TO PREVENT OVERHEATING AND PREMATURE FAILURE.
7. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE. NO DIMENSIONS SHALL BE SCALED OFF ELECTRICAL DRAWINGS.
8. COORDINATE WITH OTHER TRADES AND INSTALL CONDUIT AND BOXES TO CLEAR EMBEDDED DUCTS, OPENINGS AND OTHER STRUCTURAL FEATURES.
9. FURNISH AND INSTALL EQUIPMENT DISCONNECT SWITCHES IN COMPLIANCE WITH ELECTRICAL CODE REQUIREMENTS.
10. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL DEVICES WITH THE ARCHITECTURAL PLANS, INCLUDING BUT NOT LIMITED TO ARCHITECTURAL DETAILS, ELEVATIONS.
11. ALL BRANCH CIRCUITS MUST BE GROUPED INTO PHASE BALANCED MULTIPLE CIRCUIT HOMERUNS. NOT MORE THAN 6 CIRCUITS ARE ALLOWED IN ONE HOMERUN CONDUIT.
12. PROVIDE MAXIMUM OF 3' FLEXIBLE CONDUIT FROM JUNCTION BOXES TO EQUIPMENT.
13. REFER TO EQUIPMENT SCHEDULES FOR EQUIPMENT SIZES AND REQUIREMENTS.
14. UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC ENCASED IN SCHEDULE 80 REINFORCED CONCRETE, MINIMUM OF 3 INCHES OF CONCRETE ENCASEMENT ON ALL SIDES, A MINIMUM OF 24 INCHES BELOW GRADE.
15. WHERE PVC CONDUITS PASS UNDER ROADWAY OR DRIVEWAY THEY SHALL BE PVC SCHEDULE 80.

GENERAL DEMOLITION NOTES:

1. CONTRACTORS PERFORMING DEMOLITION ARE REQUIRED TO VERIFY FIELD CONDITIONS PRIOR TO BIDDING. PLANS MAY NOT INDICATE EACH DEVICE TO BE REMOVED, OR INDICATE NECESSARY RELOCATION OF EQUIPMENT OR CONDUIT SYSTEMS.
2. REMOVAL OF ELECTRICAL EQUIPMENT INCLUDES THE REMOVAL OF THE BRANCH CIRCUIT SERVING IT. CONDUIT SHALL BE REMOVED IN ACCESSIBLE SPACES. DEDICATED CIRCUIT CONDUCTORS SHALL BE REMOVED TO THE POINT OF ORIGIN. CONDUCTORS SERVING OTHER LOADS MAY BE REMOVED TO AN AREA JUNCTION BOX TO MAINTAIN CIRCUIT INTEGRITY.
3. SHUTDOWNS AND SERVICE INTERRUPTIONS SHALL BE COORDINATED WITH CONTRACTING OFFICER AND BE APPROVED PRIOR TO WORK BEING PERFORMED.
4. EXISTING ELECTRICAL EQUIPMENT SHALL BE REMOVED OR DEMOLISHED ONLY AFTER PROPOSED ELECTRICAL EQUIPMENT IS INSTALLED AND OPERATIONAL.



ELECTRICAL SYMBOLS

	POLYMER CONCRETE (QUAZITE) JUNCTION BOX, 11" x 18" x 18"		EXISTING UNDERGROUND ELECTRIC CABLE IN CONDUIT TO BE REMOVED
	EXISTING TRANSFORMER		UNDERGROUND ELECTRIC CABLE IN CONDUIT, 6 AWG 4 WIRE COPPER THHN CABLE IN 2" PVC SCH 40
	PUMP STATION		
	WOOD POSTS		
	SANITARY SEWER GRINDING STATION		
	ELECTRICAL SERVICE		
	PUMP STATION CONTROL PANEL		

ELECTRICAL ABBREVIATIONS

A	AMPERE	MCB	MAIN CIRCUIT BREAKER
AFG	ABOVE FINISHED GRADE	MLO	MAIN LUG ONLY
AIC	AVAILABLE INTERRUPT CURRENT	MTG	MOUNTING
BFG	BELOW FINISHED GRADE	MTD	MOUNTED
BRKR	BREAKER	NA	NOT APPLICABLE
C	CONDUIT	NTS	NOT TO SCALE
EC	ELECTRICAL CONTRACTOR	PC	PHOTOCONTROL
EMT	ELECTRICAL METALLIC TUBING	PH	PHASE
ETR	EXISTING TO BE REMOVED	PNL	PANEL
ERL	EXISTING, RELOCATED	SPD	SURGE PROTECTION DEVICE
EX	EXISTING TO REMAIN	SS	STAINLESS STEEL
EXR	EXISTING TO BE REMOVED	TC	TIMECLOCK
FLA	FULL LOAD AMPERES	TYP	TYPICAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UG	UNDERGROUND
GFP	GROUND FAULT PROTECTION	UNO	UNLESS NOTED OTHERWISE
GRC	GALVANIZED RIGID CONDUIT	V	VOLTAGE
GND	GROUND	VP	VANDAL PROOF
KO	KNOCK OUT	WP	WEATHER PROOF
KVA	KILOVOLT-AMPERE	XFMR	TRANSFORMER
LV	LOW VOLTAGE		
KW	KILOWATT		



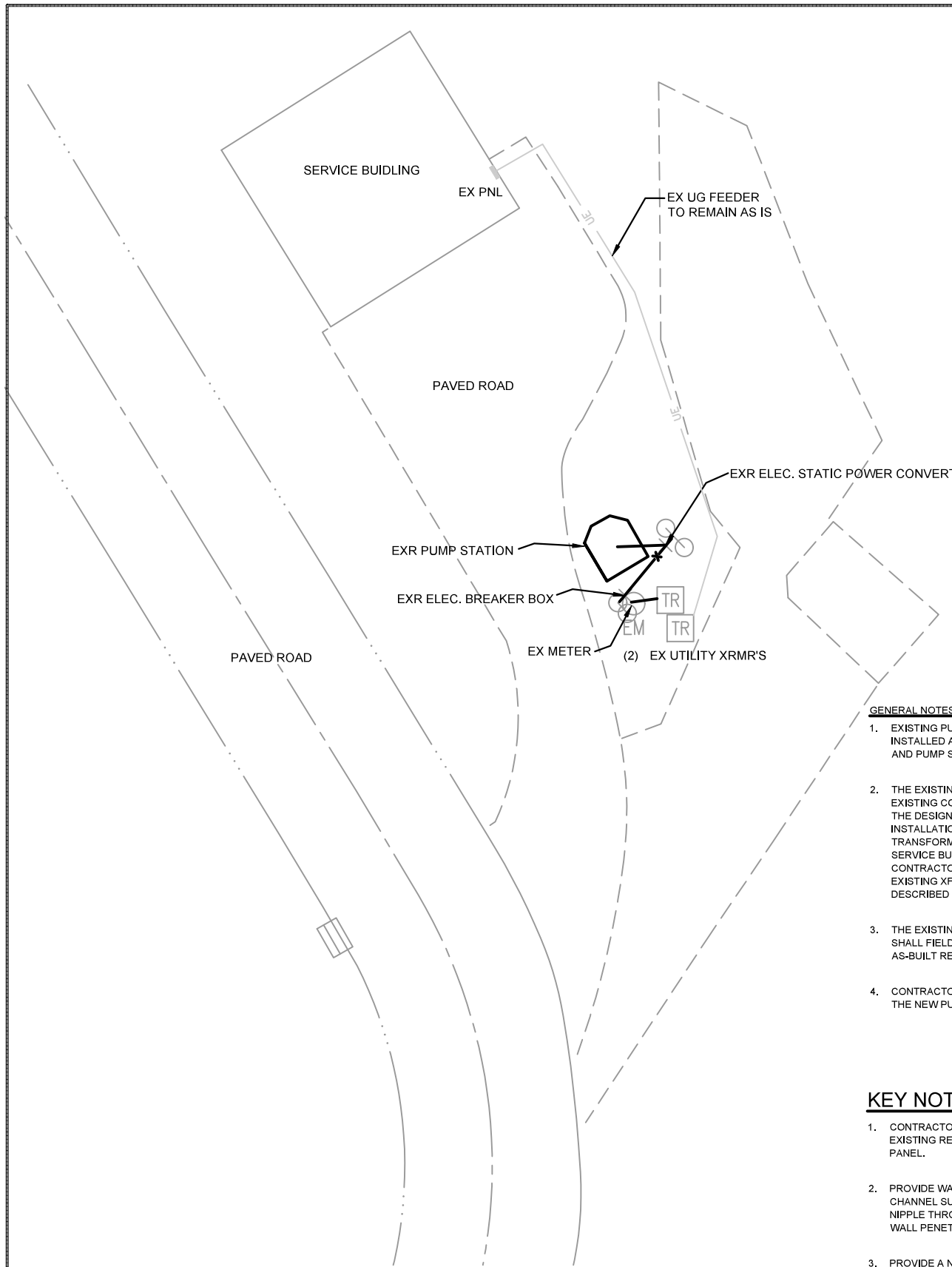
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PLOT DATE = 8/19/2022	DATE - 8/19/2022	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

ELECTRICAL CONNECTIONS

SCALE: N/A SHEET 1 OF 10 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-21)(2)RA	FRANKLIN	25	16
CONTRACT NO. 78962				
ILLINOIS FED. AID PROJECT				



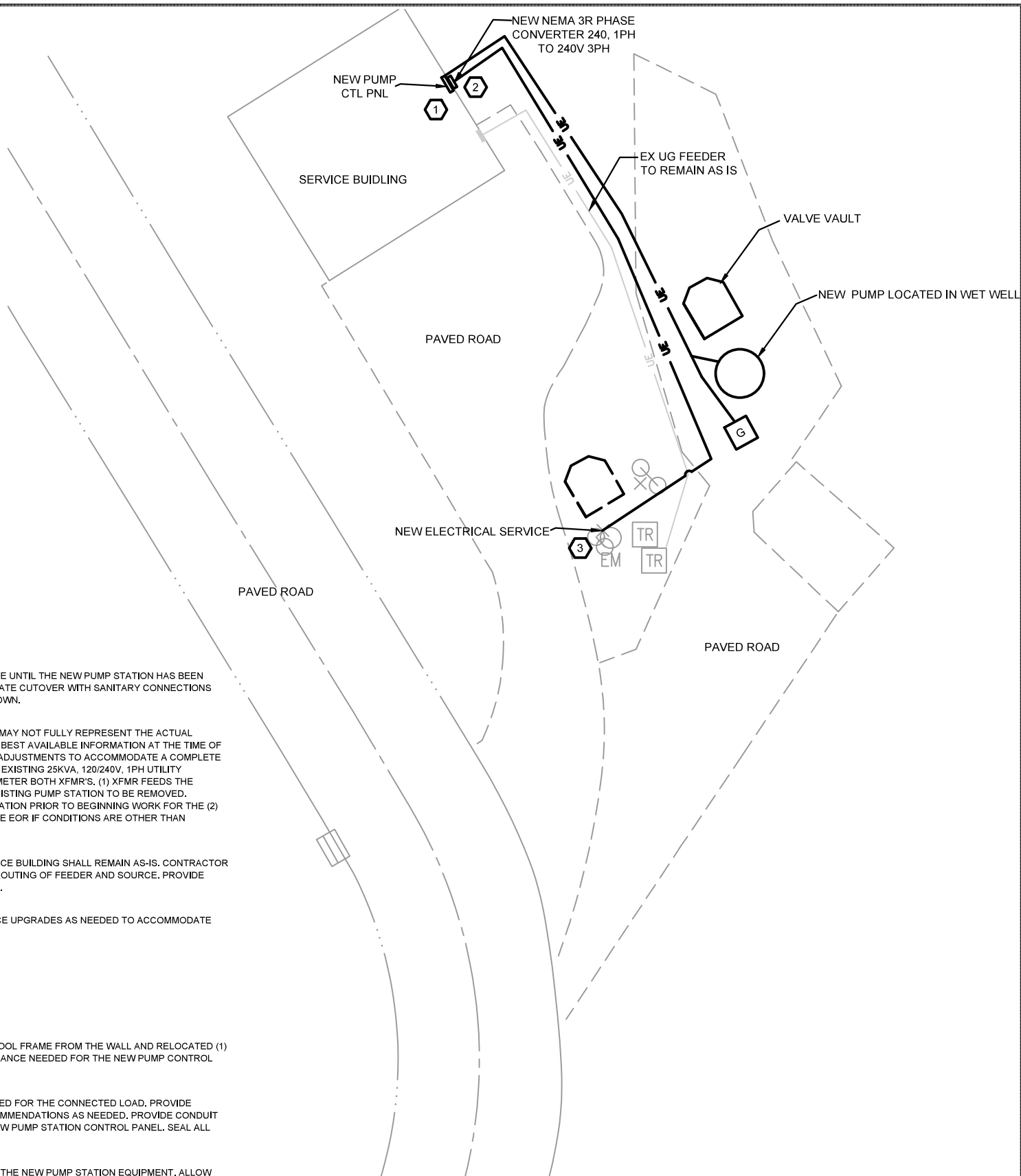
ELECTRICAL DEMO SITE PLAN
SCALE: 1/8"=1'-0"
NORTH

GENERAL NOTES:

- EXISTING PUMP STATION SHALL REMAIN IN SERVICE UNTIL THE NEW PUMP STATION HAS BEEN INSTALLED AND IS READY TO CUT OVER, COORDINATE CUTOVER WITH SANITARY CONNECTIONS AND PUMP STATION INSTALLER PRIOR TO SHUT DOWN.
- THE EXISTING ELECTRICAL DISTRIBUTION SHOWN MAY NOT FULLY REPRESENT THE ACTUAL EXISTING CONDITIONS. PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION AT THE TIME OF THE DESIGN. CONTRACTOR TO ALLOW FOR FIELD ADJUSTMENTS TO ACCOMMODATE A COMPLETE INSTALLATION. ASSUMPTION ARE AS FOLLOWS: (2) EXISTING 25KVA, 120/240V, 1PH UTILITY TRANSFORMERS, ONE METER AND PEDESTAL TO METER BOTH XFMR'S, (1) XFMR FEEDS THE SERVICE BUILDING AND THE OTHER FEEDS THE EXISTING PUMP STATION TO BE REMOVED. CONTRACTOR TO FIELD VERIFY METER CONFIGURATION PRIOR TO BEGINNING WORK FOR THE (2) EXISTING XFMR'S AND REPORT CONDITIONS TO THE EOR IF CONDITIONS ARE OTHER THAN DESCRIBED ABOVE.
- THE EXISTING ELECTRICAL SERVICE TO THE SERVICE BUILDING SHALL REMAIN AS-IS. CONTRACTOR SHALL FIELD VERIFY THE EXACT UNDERGROUND ROUTING OF FEEDER AND SOURCE. PROVIDE AS-BUILT REDLINES OF THE EXISTING CONDITIONS.
- CONTRACTOR SHALL COORDINATE UTILITY SERVICE UPGRADES AS NEEDED TO ACCOMMODATE THE NEW PUMP STATION AND GRINDER PUMP.

KEY NOTES: #

- CONTRACTOR SHALL REMOVE WOODEN CABLE SPOOL FRAME FROM THE WALL AND RELOCATED (1) EXISTING RECEPTACLE NORTH TO PROVIDE CLEARANCE NEEDED FOR THE NEW PUMP CONTROL PANEL.
- PROVIDE WALL MOUNTED PHASE CONVERTER RATED FOR THE CONNECTED LOAD, PROVIDE CHANNEL SUPPORTS PER MANUFACTURERS RECOMMENDATIONS AS NEEDED, PROVIDE CONDUIT NIPPLE THROUGH WALL INTO THE BACK OF THE NEW PUMP STATION CONTROL PANEL. SEAL ALL WALL PENETRATIONS.
- PROVIDE A NEW SERVICE RATED SWITCH TO FEED THE NEW PUMP STATION EQUIPMENT. ALLOW FOR MODIFICATIONS TO THE EXISTING WOODEN POST TO ACCOMMODATE THE NEW SWITCH. THE EXISTING SWITCH SHALL BE REMOVED AND REPLACED WITH THE NEW SWITCH AT THE TIME OF THE CUTOVER WHEN THE NEW PUMP STATION IS READY TO BE ENERGIZED. REWORK OR REPLACE METER SOCKET AND METER AS NEEDED FOR A COMPLETE INSTALLATION. PROVIDE NEW CODE COMPLIANT SERVICE GROUND SYSTEM FOR THE NEW ELECTRICAL SERVICE. MAINTAIN SERVICE FROM THE ADJACENT XFMR AND SERVICE BUILDING.



ELECTRICAL SITE PLAN
SCALE: 1/8"=1'-0"
NORTH



USER NAME = LKIDD	DESIGNED - LSK	REVISED -
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PLOT SCALE = N/A	CHECKED - JBH	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

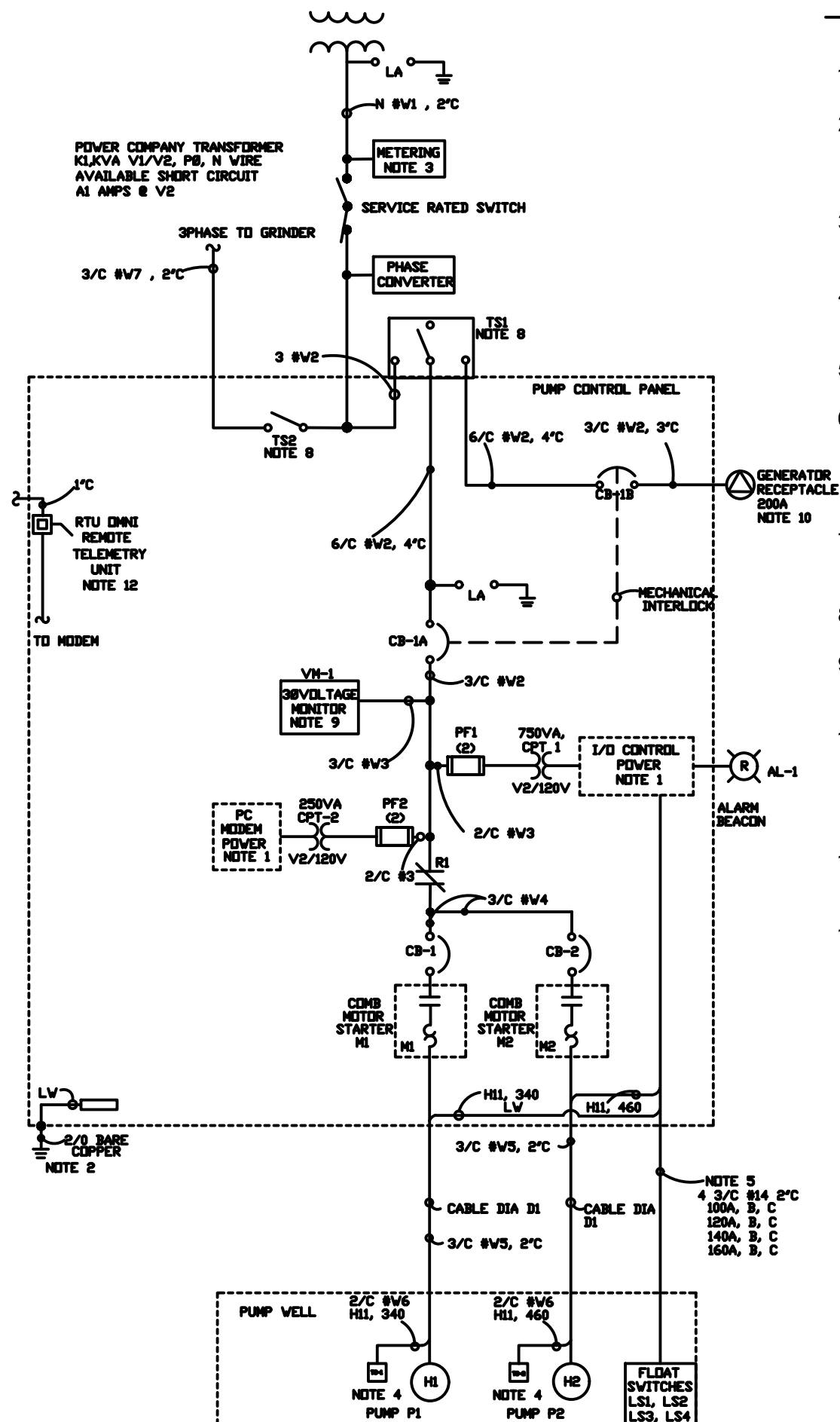
ELECTRICAL CONNECTIONS

SCALE: N/A SHEET 2 OF 10 STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(262-1)1-2/RA	FRANKLIN	25	17
CONTRACT NO. 78962				
ILLINOIS FED. AID PROJECT				

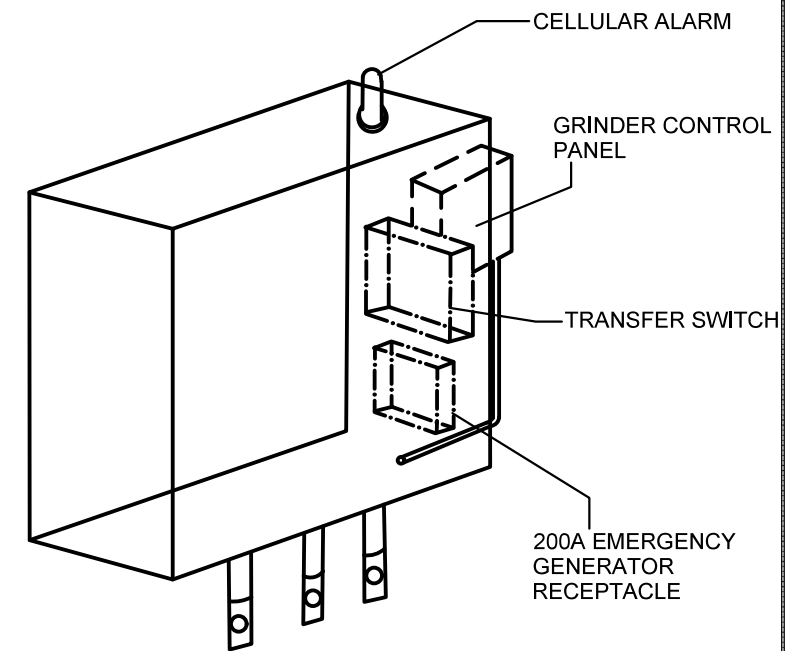


SINGLE LINE DIAGRAM



NOTES

- FOR CONTROL WIRING SEE ONELINE ON SHEET 20
- CONNECT GROUND BUS INSIDE THE PANEL WITH 2/Ø BARE COPPER. CADWELD CONNECTED TO A 3/4" - 10' COPPER CLAD GROUND ROD BURIED 2' BELOW GRADE.
- ELECTRICAL CONTRACTOR SHALL COORDINATE AND INSTALL POWER CO. METERING
- STATOR TEMPERATURE SWITCHES ARE TO BE WIRED WHEN SUPPLIED WITH PUMP MOTOR
- TAPE AND TIE BACK UNUSED CONDUCTORS
- ALL ENCLOSURES AND POWER SUPPLIES REQUIRING GROUNDING INSIDE THE PANEL ARE TO BE CONNECTED TO THE GROUND BUS BY GREEN INSULATED CABLE (MIN #12 AWG)
- ESTIMATED MOTOR HP. GET ACTUAL HP FROM PUMP MANUFACTURER
- DISCONNECT MUST BE LOCKABLE IN THE OFF POSITION
- VOLTAGE MONITOR SUPPLY FAULTS AND PHASE SEQUENCE
- GENERATOR CONNECTION TO BE OF THE CAMLOK 16 SERIES STYLE. EXTERIOR WALL MOUNTED TO THE EXISTING SERVICE BUILDING. SEAL ALL WALL PENETRATIONS.
- ALL CONDUIT RUN IN WETWELL TO BE SEALED WITH CLASS I, DIVISION I EXPLOSION-PROOF FITTINGS
- CELLULAR ALARM TO BE ATTACHED TO ALARM OUTPUT OF CONTROL PANEL



CONTROL PANEL

LAYOUT ON SHEET 21

SYMBOL LEGEND

	FUSE		PUSH TO TEST INDICATING LIGHT-LETTER INDICATES COLOR: A-AMBER R-RED, G-GREEN, V-WHITE
	SELECTOR SWITCH NO. CONTACT CLOSURES IN 'AUTO' POSITION		ELAPSED TIME METER
	CONTACT CLOSURES IN 'RUN' POSITION		INPUT TO PROGRAMMABLE CONTROLLER
	CONTACT CLOSURES IN 'AUTO' POSITION		OUTPUT FROM PROGRAMMABLE CONTROLLER
	SURGE SUPPRESSOR		OUTPUT FROM VOLTAGE MONITOR
	STARTER COIL		RELAY COIL
	REDUCED VOLTAGE START COIL		HEATER
	REDUCED VOLTAGE RUN COIL		PRESSURE SWITCH
	NORMALLY OPEN CONTACT		EXPOSED CONDUIT
	NORMALLY CLOSED CONTACT		CONCEALED CONDUIT
	CIRCUIT BREAKER		FLOAT SWITCH
	TEMPERATURE SWITCH		GROUND
			THERMAL OVERLOAD RELAY
			LIGHTNING ARRESTER
			CONTROL POWER TRANSFORMER



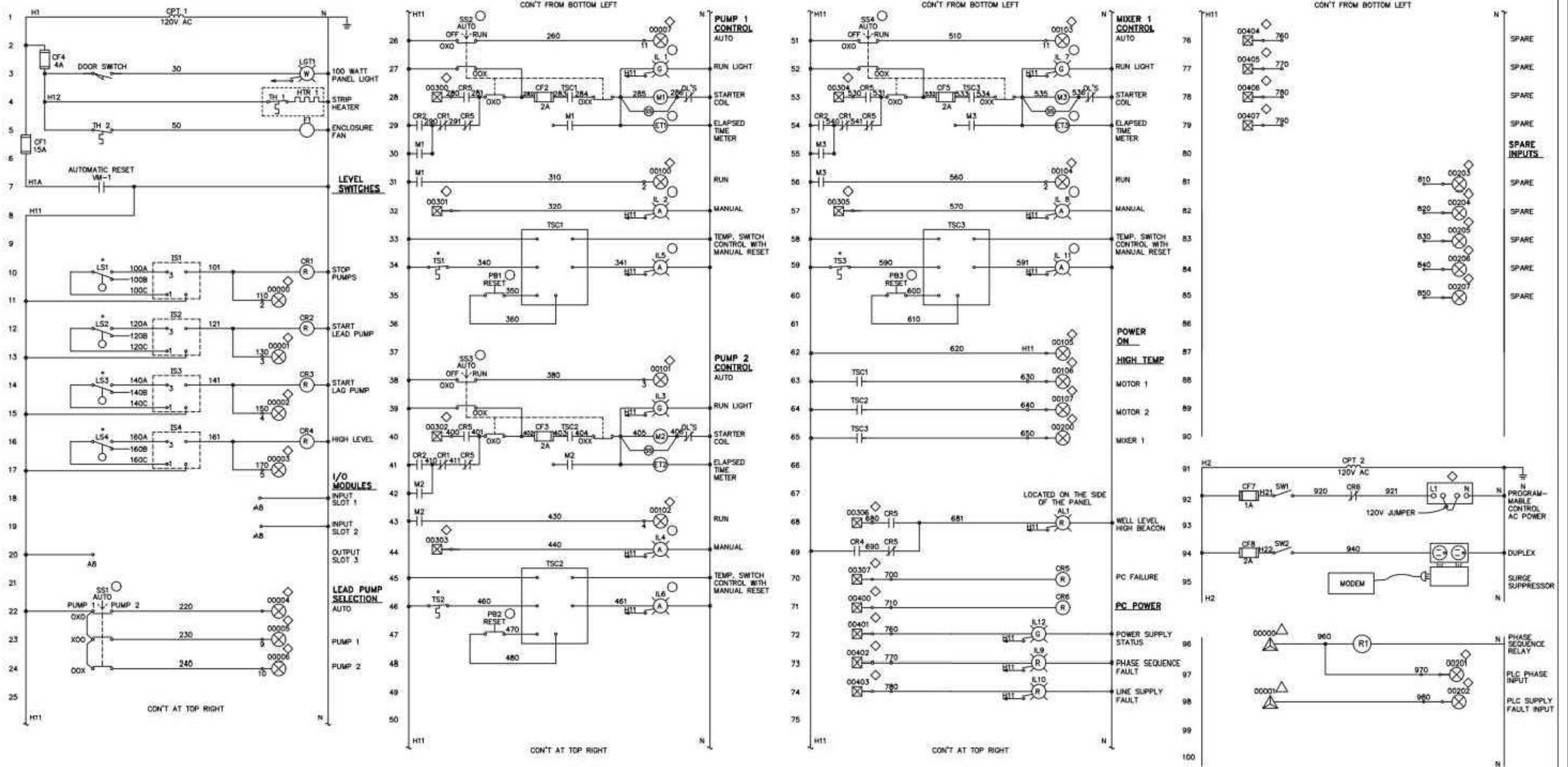
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	DATE - 8/19/2022	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAIL PLAN

SCALE: N/A SHEET 4 OF 10 SHEETS STA. TO STA.

F.A.I. RTE. 57	SECTION (282-1)(2)RA	COUNTY FRANKLIN	TOTAL SHEETS 25	SHEET NO. 19
ILLINOIS FED. AD PROJECT			CONTRACT NO. 78962	



- DEVICE LOCATION**
- ON PANEL DOOR
 - ◇ ON PROGRAMMABLE CONTROLLER
 - △ ON VOLTAGE MONITOR
 - * IN PUMP WELL

NOTE: EXCEPT WHERE NOTED, ALL DEVICES ARE LOCATED INSIDE PANEL.



USER NAME = LKDD	DESIGNED - LSK	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONTROL WIRING ONE LINE

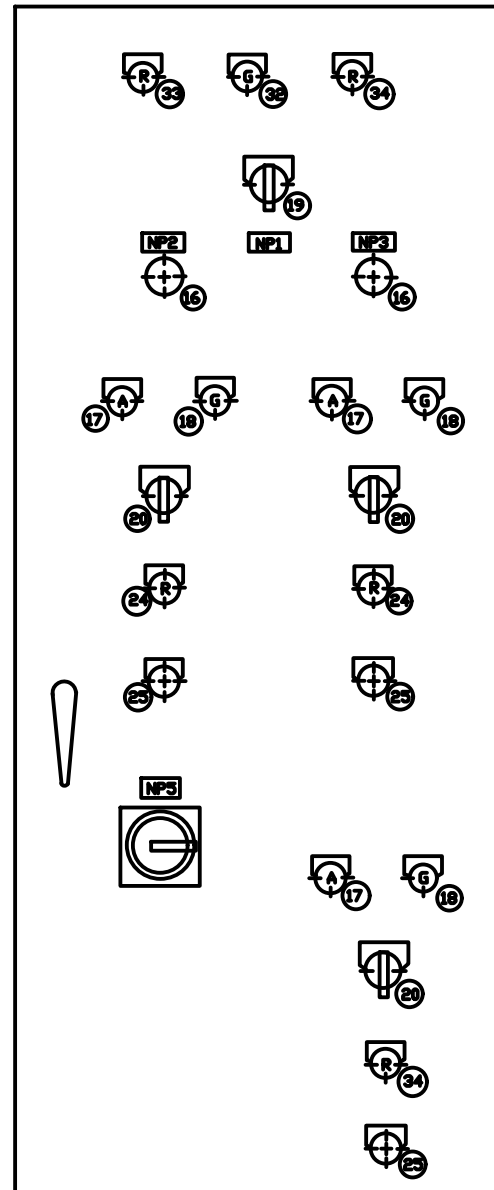
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)-2/RA	FRANKLIN	25	20
CONTRACT NO. 78962				
ILLINOIS FED. AID PROJECT				

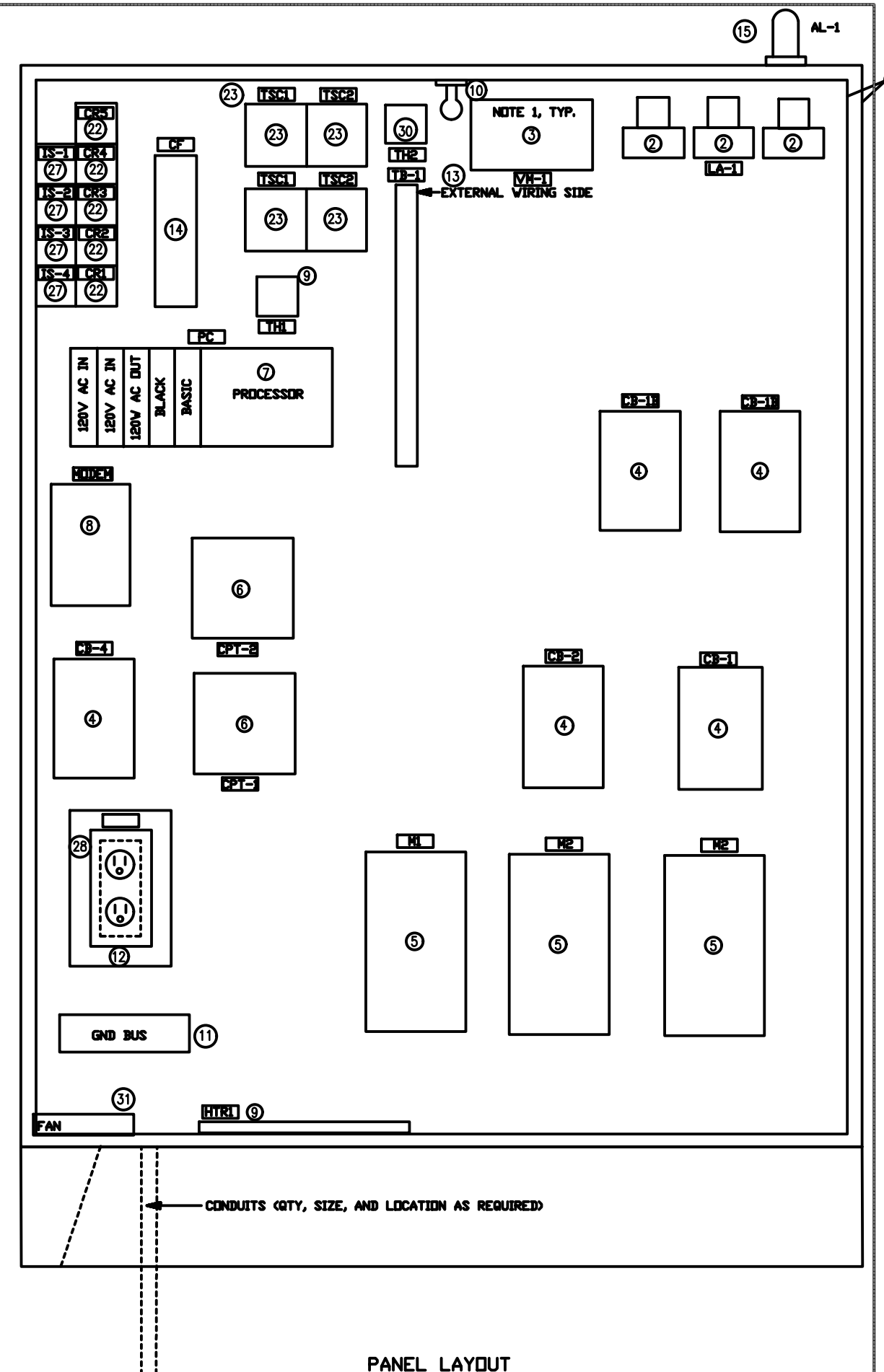
BILL OF MATERIALS		
MK. NO.	DESCRIPTION	ELEC. TAG NO.
1	NEMA 4X DEAD FRONT DOUBLE DOOR, OUTDOOR ENCLOSURE APPROX. SIZE 72"x48"x18", WITH 24" LEGS AND SKIRT ON BOTTOM, RAIN HOOD ON TOP TO EXTEND A MINIMUM OF 3" BEYOND FRONT. PANEL TO INCLUDE SUBPANEL.	
2	INCOMING LIFE LIGHTNING ARRESTOR, RATED 500V, VALUE TYPE, 1 FOR EACH PHASE.	LA1
3	3 PHASE VOLTAGE MONITOR RATED FOR LINE VOLTAGE WITH OUTPUT CONTACT RATED FOR AT LEAST 10A @ 120V AC	VM-1
4	MOULDED CASE, THERMAL MAGNETIC BREAKER, RATED @ 600V, MINIMUM INTERRUPTING RATING 18,000A, 250A/400A FRAME, AMPACITY AS REQUIRED.	CB-1A, CB-1, & 2
5	FULL VOLTAGE, NON-REVERSING MAGNETIC STARTER WITH 120V COIL INCLUDING OVERLOAD PROTECTION OPEN TYPE WITH 2 N-0 & 1N-C AUX. CONTRACT IN ADDITION TO HOLDING CONTRACT. SURGE SUPPRESSION MOUNTED ON COIL, CONTROL POWER FUSE.	M-1 & M-2
6	CONTROL POWER TRANSFORMER WITH BOTH LEGS ON PRIMARY SIDE FUSED. CPT-1: 750VA, CPT-2: 250VA	CPT-1 & CPT 2
7	PROGRAMMABLE CONTROLLER SYSTEM	PC
8	CELLULAR MODEM	MODEM
9	250W STRIP HEATER WITH PRESET THERMOSTAT.	HTR-1
10	100 WATT LED LIGHT FIXTURE WITH DOOR SWITCH	LGT 1
11	1/4"x2"x6" LONG COPPER BUS.	
12	120V AC DUPLEX GCFI RECEPTACLE - FOR PC AUXILIARIES ONLY	
13	60 POINT TERMINAL STRIP MOUNTED ON P1000 UNISTRUT, RATED 30A, 600V WITH BARRIERS AND PERMANENT MARKING STRIP.	TB1
14	612 POINT COMBINATION OF FUSE & SWITCH BLOCKS MOUNTED ON TERMINAL TRACKS ON P1000 UNISTRUT	CF
15	SIDE MOUNTED CELLULAR BEACON ALARM	AL1
16	ELAPSED TIME METER	ET1 & ET2
17	AMBER, 120V AC, PUSH TO TEST, INDICATING LIGHT WITH LEGEND PLATE "MANUAL"	IL2 & IL4
18	GREEN, 120V AC, PUSH TO TEST, INDICATING LIGHT WITH LEGEND PLATE "RUN"	IL1 & IL3
19	3 POSITION, MAINTAINED SELECTOR SWITCH WITH LEGEND PLATE PUMP 1- AUTO - PUMP 2,	SS1
20	3 POSITION, MAINTAINED SELECTOR SWITCH WITH LEGEND PLATE OFF - AUTO - RUN,	SS2 & SS3
22	CONTROL RELAY 120V AC COIL, 2-N.O., 2-N.C., ISOLATED, CONTACTS	CR1 THRU CR6
23	TEMP SWITCH CONTROL MODULE COMPLETE WITH CONTROL RELAYS AND PROVISION TO WIRE MANUAL RESET LIGHT AND PILOT CIRCUIT CONTACT OUTPUT RATED AT 10A, 230V	TSC1 & TSC2
24	RED, 120V AC, PUSH TO TEST, OVER TEMP INDICATING LIGHT WITH LEGEND PLATE "OVER TEMP"	OVER TEMP
25	BLACK PUSH BUTTON WITH IN-O & IN - C CONTACT BLOCK AND LEGEND RESET	PB1 & PB2
27	INTRINSICALLY SAFE ISOLATION SWITCH, 120V AC CONTROL POWER	IS1 THRU IS4
28	TELE. LINE SURGE SUPPRESSOR	TLS
29	MANUAL TRANSFER SWITCH(60A) 3-POLE WITH LEDGED PLATE NORMAL - OFF - GENERATOR	TS1
30	SERVICE ENTRANCE RATED DISCONNECT SWITCH	TS2
31	ENCLOSURE FAN WITH THERMOSWITCH	F1
32	GREEN, 120V AC, PUSH TO TEST, FAULT INDICATING LIGHT WITH LEGEND PLATE "POWER SUPPLY NORMAL"	IL7
33	RED, 120V AC, PUSH TO TEST, FAULT INDICATING LIGHT WITH LEGEND PLATE "POWER ROTATION FAULT"	IL8
34	RED, 120V AC, PUSH TO TEST, FAULT INDICATING LIGHT WITH LEGEND PLATE "POWER SUPPLY ABNORMAL"	IL9

NOTES

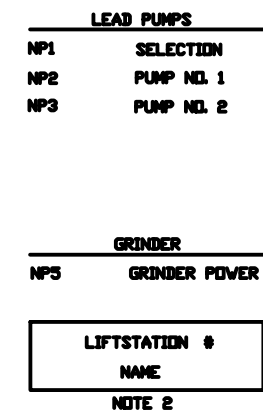
- NAME PLATES INSIDE PANELS ARE TO BE LOCATED SUCH THAT THEY ARE CLEARLY VISIBLE.
- FASTEN MAIN NAMEPLATE TO OUTSIDE DOOR.
- FOR SWITCH CONTACT DEVELOPMENT SEE ONE LINE ON SHEET 20



RIGHT HAND, INSIDE DOOR LAYOUT
NOT TO SCALE



PANEL LAYOUT
NOT TO SCALE



USER NAME = LKIDD	DESIGNED - LSK	REVISED -
PLOT SCALE = N/A	DRAWN - LSK	REVISED -
PLOT DATE = 8/19/2022	CHECKED - JHB	REVISED -
	DATE - 8/19/2022	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONTROL PANEL LAYOUT

F.A.I. RTE. 57	SECTION (282-1)4-2)RA	COUNTY FRANKLIN	TOTAL SHEETS 25	SHEET NO. 21
			CONTRACT NO. 78962	

UNCONTROLLED COPY

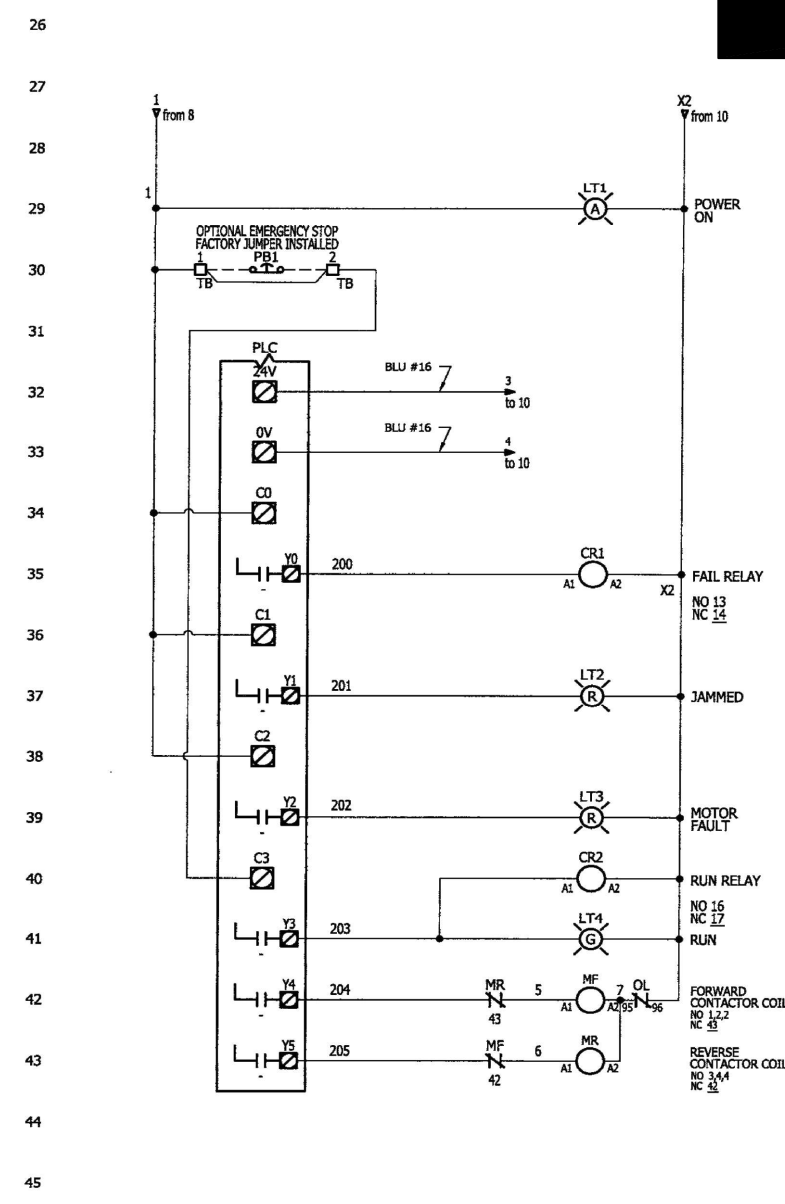
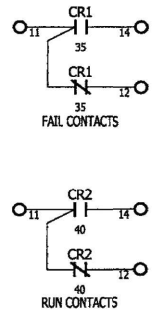
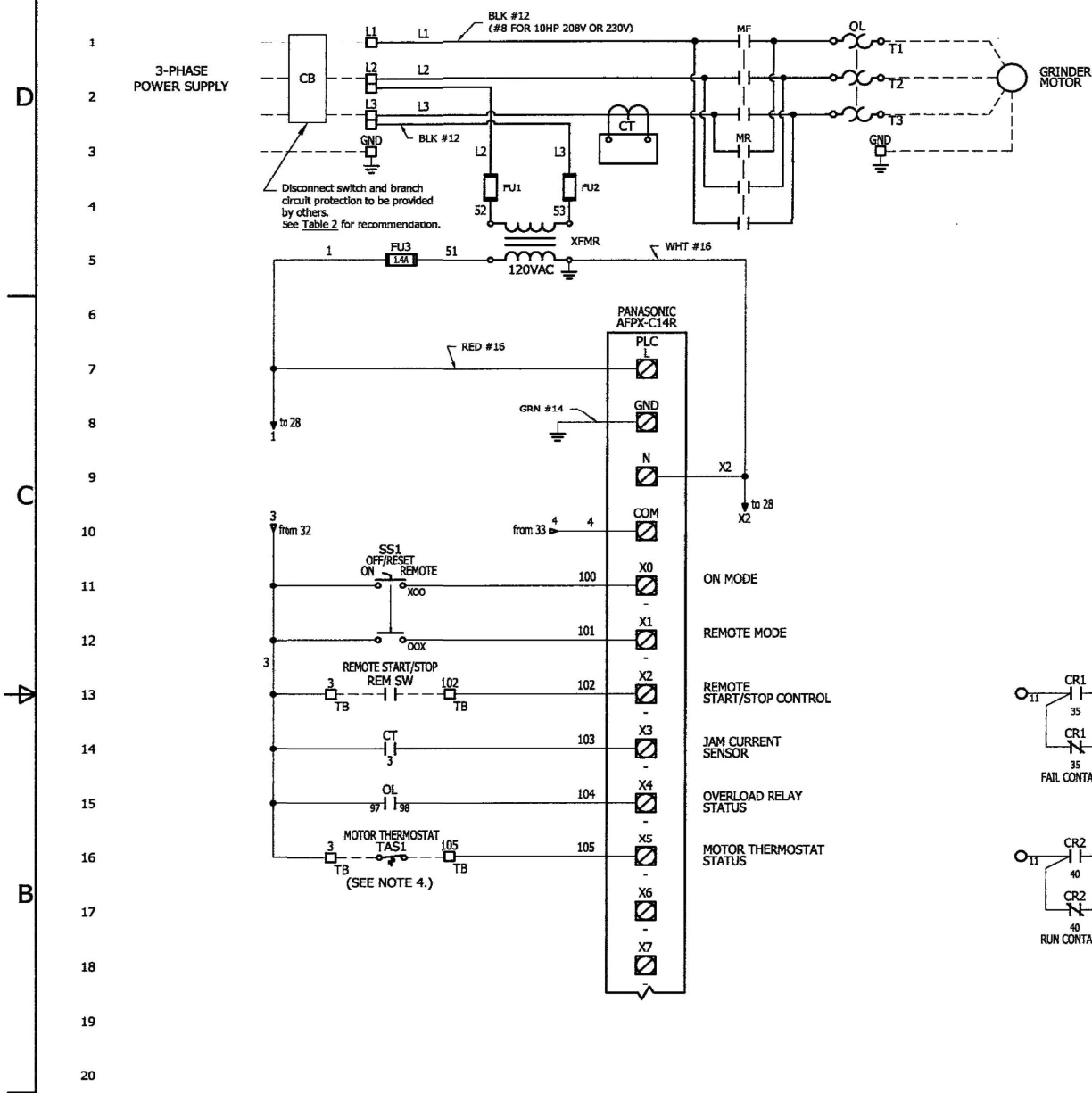
DRAWING NO. **PC2200-000-1**

6

3

2

1



Control Philosophy

- Power On indicator lamp**
 - illuminates when control power transformer is energized and fuses are good
- Grinder selector switch, ON**
 - energize grinder motor forward contactor, Run relay & Run indicator lamp
- Grinder selector switch, OFF/RESET**
 - de-energize grinder motor contactor, Run relay & Run indicator lamp
 - clear any alarm conditions
- Grinder selector switch, REMOTE**
 - energize grinder motor forward contactor when Remote Run Permissive input to PLC is On; energize the Run relay & Run indicator lamp
- Jammed indicator lamp**
 - illuminates when a jam condition is set by the PLC (see Grinder Jam Clearing Sequence below)
- Motor Fault indicator lamp**
 - illuminates when either a motor overload fault or motor over-temperature fault occurs
- Fail Relay**
 - energized when an alarm condition is set for any of the following: (i) grinder jam; (ii) grinder motor overload, or; (iii) grinder motor overtemp
- Emergency stop switch, open, (optional)**
 - de-energizes control power to PLC outputs that drive the motor starter and Run indicator lamp
- Grinder Jam Clearing Sequence**
 - when the current sensor detects a jam, the motor forward contactor will be momentarily de-energized
 - the motor reverse contactor will be energized for a pre-determined period of time and de-energized
 - the motor forward contactor will be re-energized
 - this sequence is repeated, as required, to clear the jam for a total of no more than 3 reversals in a 30-second period
 - if the jam is not cleared in accordance with this sequence, an alarm condition is set
 - in order to avoid nuisance trips, the inrush current is ignored for a pre-defined period when the motor is energized

- NOTES: UNLESS OTHERWISE SPECIFIED
- PROGRAM NUMBER: **PC2200-001-A**
 - SHORT CIRCUIT CURRENT RATING (SCCR) FOR THE CONTROLLER IS 5kA
 - CT TRIP SETPOINT SHALL BE CALIBRATED TO 0.8 TIMES OF THE MOTOR'S LOCKED ROTOR AMPERES (LRA).
 - A WIRE JUMPER IS REQUIRED, IF THE MOTOR IS NOT EQUIPPED WITH THE THERMOSTAT.

ALL RIGHTS RESERVED

JWC ENVIRONMENTAL
290 PAULARINO AVE, COSTA MESA, CA 92626

PC2200
NEMA 4X FRP - SINGLE MOTOR
MOTOR CONTROLLER - SERIES PC2200

SIZE	DRAWING NO.	REV
D	PC2200-000-1	D
SCALE:		1 OF 3



USER NAME = LKIDD	DESIGNED - LSK	REVISED -
	DRAWN - LSK	REVISED -
PLOT SCALE = N/A	CHECKED - JBH	REVISED -
PLOT DATE = 8/19/2022	DATE - 8/19/2022	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

CONTROL WIRING ONE LINE

SCALE: N/A SHEET 7 OF 10 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)-2/RA	FRANKLIN	25	22
CONTRACT NO. 78962				
ILLINOIS FED. AID PROJECT				

TABLE 1: PARTS LIST

TAG	QTY	PART NUMBER	DESCRIPTION	MFG	CATALOG
	2	E10-003-214	SCREW CENTER JUMPER - 2 POLE	AB	1492-CJ38-2
	5	E10-003-210	SCREW CONNECTION TERMINAL BLOCK; 1492-J	AB	1492-J6
	2	E10-003-213	SCREW CONNECTION TERMINAL BLOCK; 1492-J	AB	1492-JG6
	4	E10-003-201	END BARRIER; 1492-J	AB	1492-EBJ3
	1	E10-003-205	SCREW CENTER JUMPER - 2 POLE	AB	1492-CJ36-2
	6	E10-003-200	SCREW CONNECTION TERMINAL BLOCK; 1492-J	AB	1492-J4
TB	3	E10-003-207	END ANCHOR	AB	1492-EAJ35
SS1-NP	1	E13-043-095	NAMEPLATE "ON-OFF/RESET-REMOTE", FOR 22mm PILOT DEVICE	JWCE	E13-043-095
SS1	1	E08-001-410	SELECTOR SW - 3 POS MAINT, IP66 NEMA 4/4X/13	AB	800FP-SM32PX20
PLC	1	E19-007-079	PROGRAMMABLE CONTROLLER, 8 24Vdc INPUTS 6 RELAY OUTPUTS	PANASONIC	AFPX-C14R
LT4-NP	1	E13-043-004	NAMEPLATE "RUN", FOR 22mm PILOT DEVICE	JWCE	E13-043-004
LT4	1	E07-001-402	GREEN LED PILOT LIGHT, IP66 NEMA 4/4X/13	AB	800FP-P3PN5G
LT3-NP	1	E13-043-145	NAMEPLATE "MOTOR FAULT", FOR 22mm PILOT DEVICE	JWCE	E13-043-145
LT3	1	E07-001-403	RED LED PILOT LIGHT, IP66 NEMA 4/4X/13	AB	800FP-P4PN5R
LT2-NP	1	E13-043-066	NAMEPLATE "JAMMED", FOR 22mm PILOT DEVICE	JWCE	E13-043-066
LT2	1	E07-001-403	RED LED PILOT LIGHT, IP66 NEMA 4/4X/13	AB	800FP-P4PN5R
LT1-NP	1	E13-043-001	NAMEPLATE "POWER ON", FOR 22mm PILOT DEVICE	JWCE	E13-043-001
LT1	1	E07-001-404	AMBER LED PILOT LIGHT, IP66 NEMA 4/4X/13	AB	800FP-POPNSA
FU3	2	E06-130-0140	GENERAL PURPOSE FUSE / MIDGET, 1.4A 250V TIME DELAY	FERRAZ SHAWMUT	TRM1-4/10
END_CLIP	4	E05-022-002	DIN RAIL END CLIP	IDEC	BNL-5
ENCL-PNL	1	E01-044-002V	16"x14" BACK PANEL FOR DIAMOND SERIES ENCL.	STAHLIN	BP1614AL
		E01-028-014	MOUNTING FEET FOR DIAMOND SERIES ENCL.	STAHLIN	DSMGFTKIT
ENCL	1	E01-028-010	ENCL NEMA 4X FIBERGLASS 16X14X8 CUSTOM, HINGED OPAQUE COVER WITH STAINLESS STEEL PULL LATCHES	STAHLIN	DS161408HPL
CT	1	E04-007-001	CURRENT SENSING SWITCH, 0-135 AMP INPUT, 30V MAX. SOLID-STATE OUTPUT	VERIS	H-701
CR1, CR2	2	E05-004-015	RELAY, 6mm RV8H SERIES, 6A SPDT 120V COIL, LED	IDEC	RV8H-L-AD110
TAG	QTY	PART NUMBER	DESCRIPTION	MFG	CATALOG

NOTE:
ONE SET OF SPARE FUSES ARE INCLUDED IN QUANTITIES.

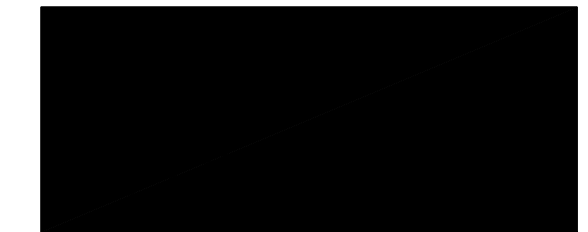
TABLE 3: PARTS LIST SUPPLEMENT TO TABLE 2

F1-F2	4	E06-110-0100	FUSE, 1.0A, 600V TIME DELAY CLASS CC	FERRAZ SHAWMUT	ATQR1
F1-F2	4	E06-110-0075	FUSE, .75A, 600V TIME DELAY CLASS CC	FERRAZ SHAWMUT	ATQR3/4
F1-F2	4	E06-110-0050	FUSE, .5A, 600V TIME DELAY CLASS CC	FERRAZ SHAWMUT	ATQR1/2
XFMR	1	E03-001-027	CONTROL CIRCUIT TRANSFORMER, TYPE 1497, 130VA, 600:120	AB	1497-C-CXSX-3-N
XFMR	1	E03-001-013	CONTROL CIRCUIT TRANSFORMER, TYPE 1497, 130VA, 208:120	AB	1497-C-HXDX-3-N
XFMR	1	E03-001-010	CONTROL CIRCUIT TRANSFORMER, TYPE 1497, 130VA, 240/480:120	AB	1497-C-BASX-3-N
XFMR	1	E03-001-009	CONTROL CIRCUIT TRANSFORMER, TYPE 1497, 130VA, 380/400/415:230/115	AB	1497-C-M4-3-N
OL	1	E02-020-245	IEC E1 PLUS SOLID-STATE OVERLOAD RELAY, 3-PHASE, SCREW TYPE CONTROL TERMINALS, 9.0-45 AMPS	AB	193-EEFD
OL	1	E02-020-243	IEC E1 PLUS SOLID-STATE OVERLOAD RELAY, 3-PHASE, SCREW TYPE CONTROL TERMINALS, 5.4-27 AMPS	AB	193-EEEB
OL	1	E02-020-242	IEC E1 PLUS SOLID-STATE OVERLOAD RELAY, 3-PHASE, SCREW TYPE CONTROL TERMINALS, 3.2-16 AMPS	AB	193-EEDB
OL	1	E02-020-241	IEC E1 PLUS SOLID-STATE OVERLOAD RELAY, 3-PHASE, SCREW TYPE CONTROL TERMINALS, 1.0-5.0 AMPS	AB	193-EECB
MF/MR	1	E02-020-101	IEC CONTACTOR, AC REVERSING, 23 AMPS	AB	104-C23D22
MF/MR	1	E02-020-103	IEC CONTACTOR, AC REVERSING, 37 AMPS	AB	104-C37D02
TAG	QTY	PART NUMBER	DESCRIPTION	MFG	CATALOG

TABLE 2: BRANCH CIRCUIT COMPONENT SELECTION

VOLTAGE	TAG	MOTOR HORSE POWER (HP)				
		1HP	2HP	3HP	5HP	10HP
208V	XFMR	E03-001-013	E03-001-013	E03-001-013	E03-001-013	E03-001-013
	FU1-FU2	E06-110-0100	E06-110-0100	E06-110-0100	E06-110-0100	E06-110-0100
	MF/MR	E02-020-101	E02-020-101	E02-020-101	E02-020-101	E02-020-103
	OL	E02-020-241	E02-020-242	E02-020-242	E02-020-243	E02-020-245
	CB	15 AMPS	15 AMPS	25 AMPS	40 AMPS	60 AMPS
230V	XFMR	E03-001-010	E03-001-010	E03-001-010	E03-001-010	E03-001-010
	FU1-FU2	E06-110-0100	E06-110-0100	E06-110-0100	E06-110-0100	E06-110-0100
	MF/MR	E02-020-101	E02-020-101	E02-020-101	E02-020-101	E02-020-103
	OL	E02-020-241	E02-020-242	E02-020-242	E02-020-243	E02-020-245
	CB	15 AMPS	15 AMPS	20 AMPS	30 AMPS	60 AMPS
380-415V	XFMR	E03-001-009	E03-001-009	E03-001-009	E03-001-009	E03-001-009
	FU1-FU2	E06-110-0075	E06-110-0075	E06-110-0075	E06-110-0075	E06-110-0075
	MF/MR	E02-020-101	E02-020-101	E02-020-101	E02-020-101	E02-020-101
	OL	E02-020-241	E02-020-241	E02-020-242	E02-020-242	E02-020-242
	CB	15 AMPS	15 AMPS	15 AMPS	15 AMPS	35 AMPS
460V	XFMR	E03-001-010	E03-001-010	E03-001-010	E03-001-010	E03-001-010
	FU1-FU2	E06-110-0050	E06-110-0050	E06-110-0050	E06-110-0050	E06-110-0050
	MF/MR	E02-020-101	E02-020-101	E02-020-101	E02-020-101	E02-020-101
	OL	E02-020-241	E02-020-241	E02-020-242	E02-020-242	E02-020-242
	CB	15 AMPS	15 AMPS	15 AMPS	15 AMPS	35 AMPS
575V	XFMR	E03-001-027	E03-001-027	E03-001-027	E03-001-027	E03-001-027
	FU1-FU2	E06-110-0050	E06-110-0050	E06-110-0050	E06-110-0050	E06-110-0050
	MF/MR	E02-020-101	E02-020-101	E02-020-101	E02-020-101	E02-020-101
	OL	E02-020-241	E02-020-241	E02-020-241	E02-020-242	E02-020-242
	CB	15 AMPS	15 AMPS	15 AMPS	15 AMPS	25 AMPS

CB - INVERSE-TIME CIRCUIT BREAKER OR EQUIVALENT
(REF. NATIONAL ELECTRICAL CODE, ARTICLE 430.52)



JWC JWC ENVIRONMENTAL
290 PAULARINO AVE, COSTA MESA, CA 92626

PC2200
NEMA 4X FRP - SINGLE MOTOR
MOTOR CONTROLLER - SERIES PC2200

SIZE	DRAWING NO.	REV
D	PC2200-000-1	D
SCALE:	NTS	2 OF 3

ALL RIGHTS RESERVED



USER NAME = LKDD	DESIGNED - LSK	REVISED -
	DRAWN - LSK	REVISED -
PLOT SCALE = N/A	CHECKED - JBH	REVISED -
PLOT DATE = 8/19/2022	DATE - 8/19/2022	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

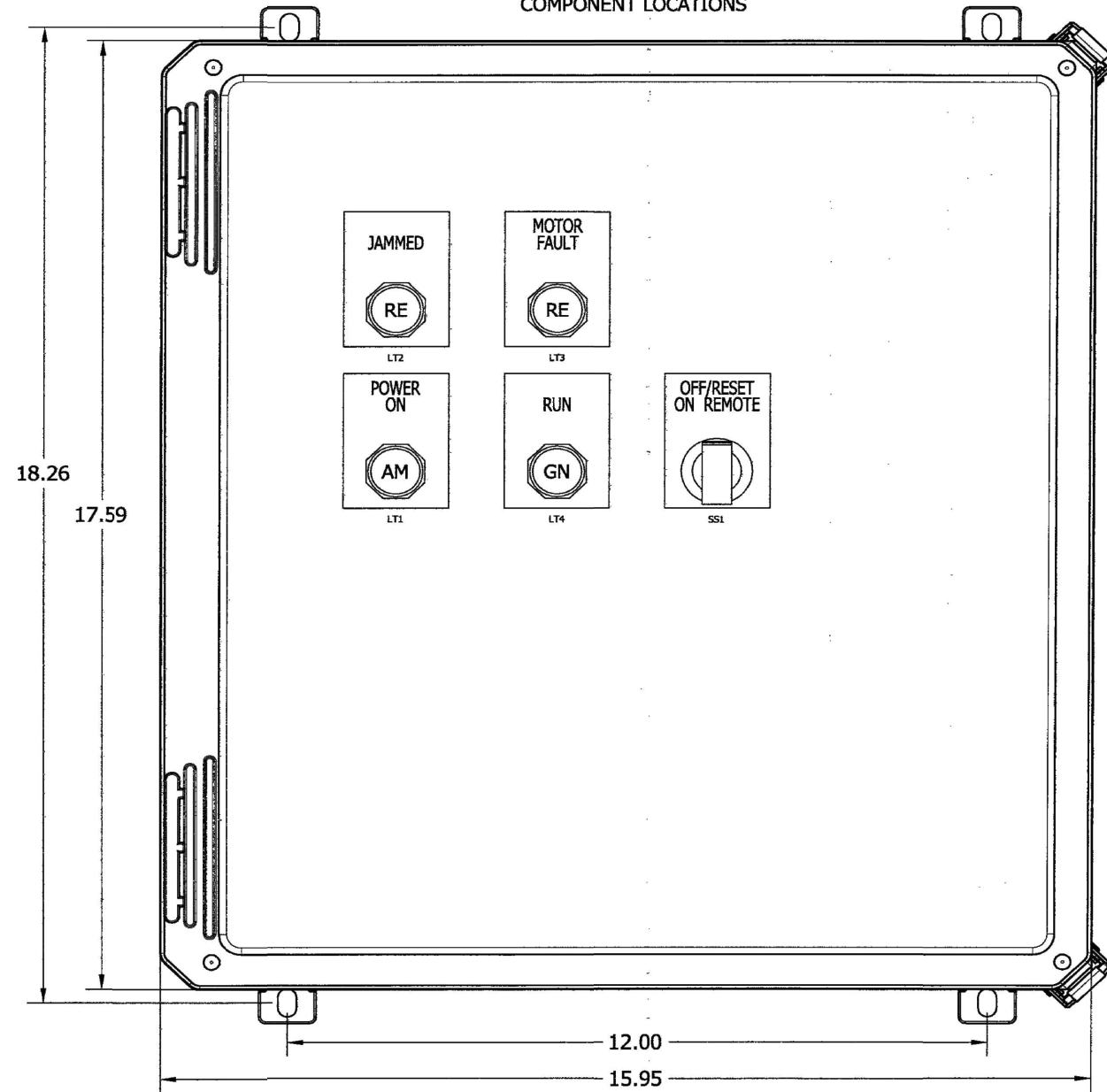
CONTROL WIRING ONE LINE

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1) 2/RA	FRANKLIN	25	23
CONTRACT NO. 78962				

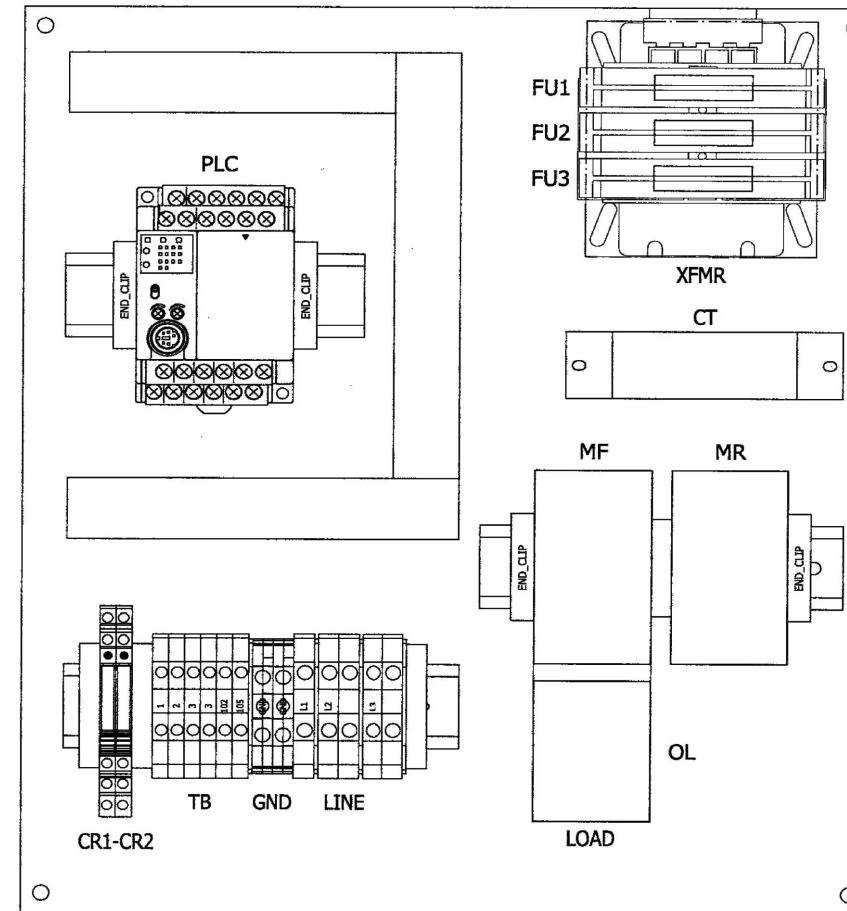
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DRAWING NO. PC2200-000-1

FRONT PANEL
COMPONENT LOCATIONS



BACK PANEL
COMPONENT LOCATIONS



- ASSEMBLY NOTES:
- USE SELF-TAPPING SCREWS 8-32 FOR MOUNTING OF COMPONENTS.
 - REFER TO DRAWING CB-350 FOR PANEL MACHINING INSTRUCTION.

JWC JWC ENVIRONMENTAL
290 PAULARINO AVE, COSTA MESA, CA 92626

PC2200
NEMA 4X FRP - SINGLE MOTOR
MOTOR CONTROLLER - SERIES PC2200

SIZE: **D** DRAWING NO. **PC2200-000-1** REV **D**

SCALE: NTS 3 OF 3

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8 7 6 5 4 4 3 2 1



USER NAME = LKIDD	DESIGNED - LSK	REVISED -
	DRAWN - LSK	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONTROL WIRING ONE LINE

SCALE: N/A SHEET 9 OF 10 SHEETS STA. TO STA.

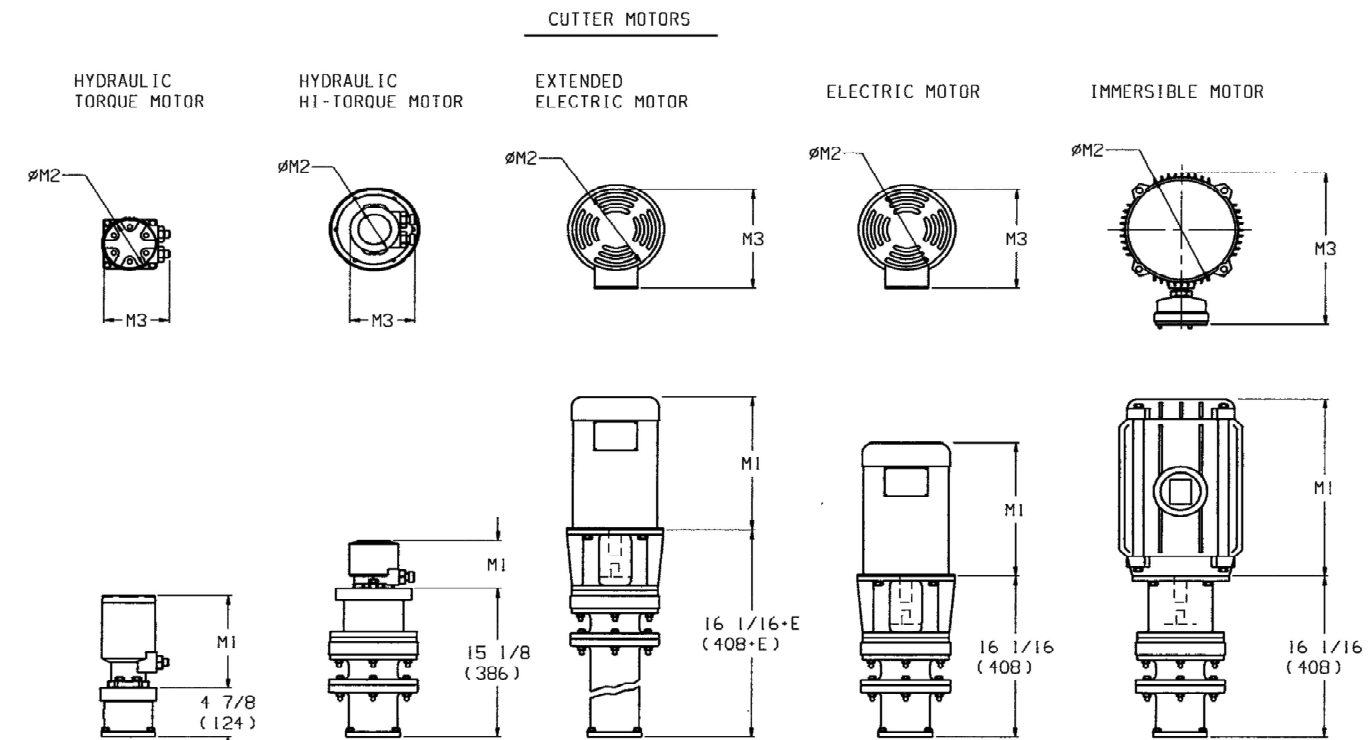
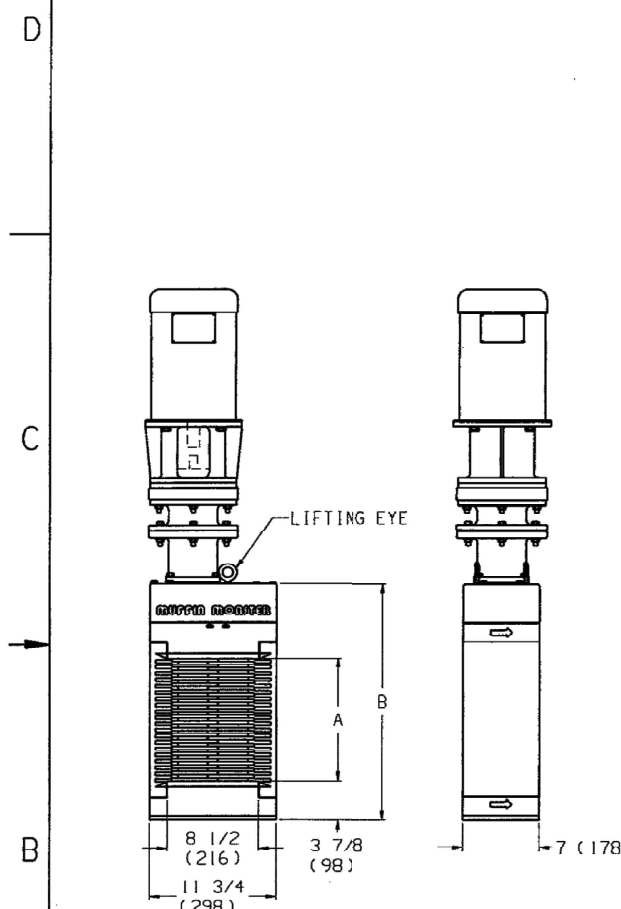
F.A.I. RTE. 57	SECTION (28-2-1)(2)RA	COUNTY FRANKLIN	TOTAL SHEETS 25	SHEET NO. 24
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78962	

DRAWING NO. 30005-CD

NOTES UNLESS OTHERWISE SPECIFIED:

1. DIMENSIONS ARE IN INCHES (MM)

2. WEIGHT OF UNITS EQUIPPED WITH TEFC ELECTRIC MOTORS.



STANDARD APPLICATION HEIGHTS			
MODEL	A	B	WEIGHT Δ
30005-8	8 (203)	19 1/2 (495)	330 (149)
30005-12	12 (305)	23 5/8 (600)	370 (167)
30005-18	1E (457)	29 1/2 (749)	425 (192)
30005-24	24 (610)	35 1/4 (895)	480 (217)
30005-32	32 (813)	43 (1092)	540 (244)
30005-40	40 (1016)	51 (1295)	610 (276)

SPECIAL APPLICATION HEIGHTS			
MODEL	A	B	WEIGHT Δ
30005-50	50 (1270)	61 (1549)	700 (317)
30005-60	60 (1524)	71 3/8 (1813)	805 (365)

EXTENDED SHAFT LENGTHS (E)																		
12 (305)	18 (457)	24 (610)	30 (762)	36 (914)	42 (1069)	48 (1219)	54 (1372)	60 (1524)	66 (1676)	72 (1829)	78 (1981)	84 (2134)	90 (2286)	96 (2438)	102 (2591)	108 (2743)	114 (2896)	120 (3048)

CUTTER MOTOR OPTIONS			
ELECTRIC	M1	M2	M3
5 HP			
TEFC	14 (356)	8 7/8 (225)	11 1/4 (286)
SUPER-E	13 3/8 (340)	9 (229)	12 (305)
XPFC	16 1/4 (413)	9 (229)	12 (305)
CHEM PRCS EXTRM SRVC	14 1/4 (362)	10 1/4 (260)	12 1/4 (311)
IMMERSIBLE	15 3/4 (400)	11 7/16 (291)	17 1/4 (438)
HYDRAULIC			
STANDARD	9 1/4 (235)	5 1/8 (130)	6 1/8 (156)
HI-TORQUE	4 3/4 (121)	4 1/2 (114)	5 1/2 (140)

CONTROLLED

ALL RIGHTS RESERVED

SANITARY SEWER GRINDING STATION CONFIGURATION MODEL 30005			
SIZE	CODE IDENT NO.	DRAWING NO.	REVISION
D	53242	30005-CD	F
SCALE 1/8"	SHEET 1 OF 1		



USER NAME = LKDD	DESIGNED - LSK	REVISED -
	DRAWN - LSK	REVISED -
PLOT SCALE = N/A	CHECKED - JBH	REVISED -
PLOT DATE = 8/19/2022	DATE - 8/19/2022	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONTROL WIRING ONE LINE

SCALE: N/A SHEET 10 OF 10 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-2-1)/2RA	FRANKLIN	25	25
CONTRACT NO. 78962				
ILLINOIS FED. AID PROJECT				