

ROCK RIVER WATER RECLAMATION DISTRICT

CHERRY VALLEY PUMP STATION UPGRADE

CAPITAL PROJECT 1911



Applied Technologies
Engineers - Architects

NO.	DATE	REVISIONS AND RECORD OF ISSUE	BY	APVD

ROCK RIVER WATER RECLAMATION DISTRICT
CHERRY VALLEY PUMP STATION
UPGRADE (CAPITAL PROJECT 1911)
ROCKFORD, ILLINOIS 61109

PROJECT REFERENCE
GENERAL
TITLE SHEET & INDEX

DESIGNED BY: G.A.G.	PROJECT NO. 6357
DRAWN BY: J.T.H.	DATE 8-5-19
CHECKED BY: J.J.S.	DRAWING NO. 10-G-1
APPROVED BY: J.J.S.	

DRAWING INDEX

PROJECT REFERENCE		
10-G-1	GENERAL	TITLE SHEET & INDEX
10-G-2	GENERAL	SITE PLAN
10-E-1	ELECTRICAL	LEGEND

CHERRY VALLEY PUMP STATION		
30-MR-1	MECHANICAL/REMOVAL PLAN	
30-M-1	MECHANICAL	REPLACEMENT PLAN
30-ER-1	ELECTRICAL/REMOVAL	ONE-LINE DIAGRAM
30-ER-2	ELECTRICAL/REMOVAL	PLAN
30-E-1	ELECTRICAL	ONE-LINE DIAGRAM
30-E-2	ELECTRICAL	PLAN

STANDARD DETAILS		
99-S-1	STRUCTURAL	DETAILS

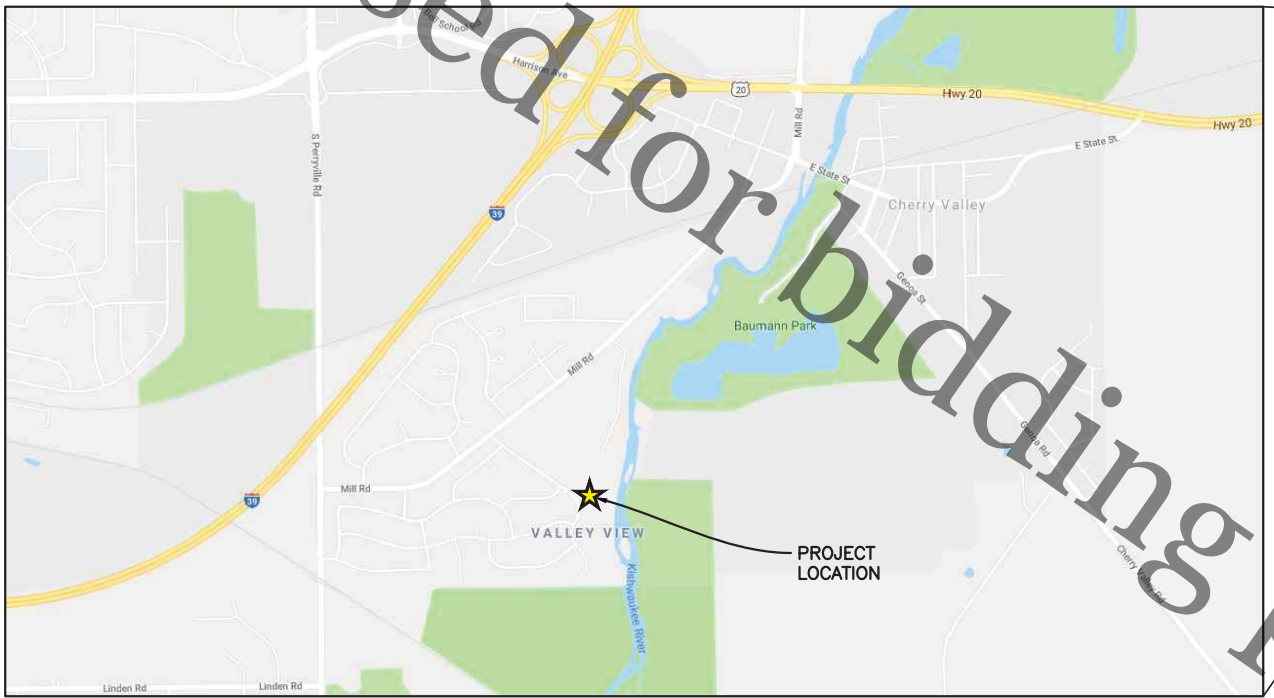
REFERENCE DRAWING		
I-1	INSTRUMENTATION & CONTROL (2011)	

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JOHN SWEENEY TRUSTEE
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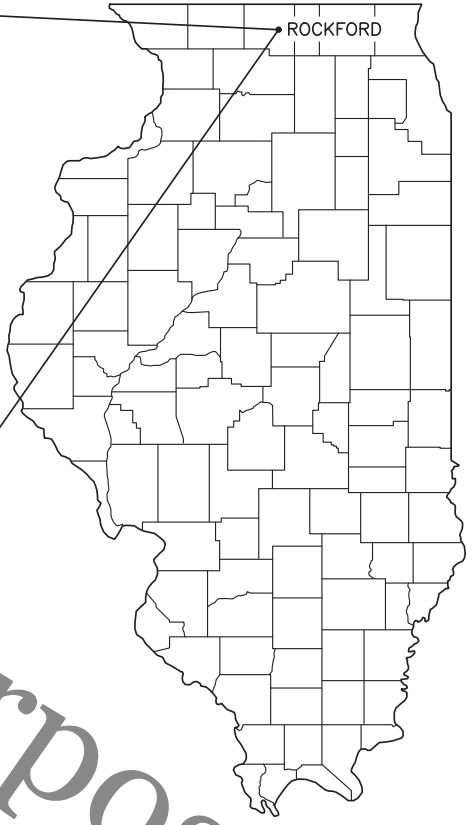
OFFICIALS

TIMOTHY S. HANSON DISTRICT DIRECTOR
CHRISTOPHER T. BAER, PE ENGINEERING MANAGER



★ 4020 BARLEY RIDGE TRAIL
CHERRY VALLEY, IL 61016

LOCATION MAP



DRAWING NUMBER DESIGNATION

20-G-1
40-SM-2

INDICATES FACILITY NUMBER
SEE LOCATION PLAN, DWG 20-G-1
INDICATES DRAWING NUMBER
INDICATES DISCIPLINE:
A ARCHITECTURAL
C CIVIL
E ELECTRICAL
G GENERAL
H HVAC
I I & C
M MECHANICAL
P PLUMBING
R REMOVAL
S STRUCTURAL
DUAL LETTERS INDICATE COMBINED DISCIPLINES

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SITE PLAN



GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE DISTRICT AND ALL LOCAL UTILITY COMPANIES INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

CONTACT: DISTRICT ENGINEERING DEPARTMENT 815-387-7635,
72 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION.

DISTRICT MAINTENANCE SUPERVISOR 815-871-0787,
72 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION.

2. THE CHERRY VALLEY PUMP STATION SHALL REMAIN IN CONTINUOUS OPERATIONAL SERVICE AT ALL TIMES DURING CONSTRUCTION, UNLESS OTHERWISE INDICATED IN THE PLANS OR DIRECTED BY THE DISTRICT. ANY PIPING THAT CAN BE REMOVED DURING CONSTRUCTION WITHOUT UNDUE INTERRUPTION OF SERVICE MAY BE REMOVED AND REPLACED BY THE CONTRACTOR WITH PRIOR PERMISSION FROM THE DISTRICT.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND LEGAL DISPOSAL OF ALL MATERIALS, EQUIPMENT AND DEBRIS ASSOCIATED WITH THIS PROJECT. THE DISTRICT SHALL HAVE FIRST SALVAGE RIGHTS TO ALL MATERIALS AND EQUIPMENT REMOVED AND THE CONTRACTOR SHALL EXERCISE CARE TO AVOID DAMAGING ITEMS TO BE SALVAGED DURING REMOVAL.

4. WHEN CONNECTIONS ARE TO BE MADE TO THE EXISTING PIPING AND STRUCTURES, THE LOCATION AND ELEVATION OF THE EXISTING PIPING SHALL BE FIELD VERIFIED AND NOTIFICATION GIVEN TO THE DISTRICT PRIOR TO WORK BEING PERFORMED. IF THE EXISTING PIPING IS FOUND TO BE SUBSTANTIALLY DIFFERENT THAN THAT SHOWN ON THE DRAWINGS, THE DISTRICT WILL PROVIDE WRITTEN DIRECTION FOR THE CORRECTIVE ACTION TO BE TAKEN.

5. COORDINATE WITH THE DISTRICT TO IDENTIFY EQUIPMENT/MATERIALS TO BE REMOVED AND DELIVERED TO THE DISTRICT WASTEWATER TREATMENT PLANT AT 3333 KISHWAUKEE ST., ROCKFORD, IL.. ALL COMPONENTS AND EQUIPMENT SLATED BY THE DISTRICT FOR SALVAGE SHALL BE TAGGED.

CONSTRUCTION SEQUENCING

1. THE CHERRY VALLEY PUMP STATION SHALL REMAIN IN OPERATION FOR THE DURATION OF CONSTRUCTION. REPLACEMENT OF THE PUMPS NO. 2 AND NO. 3 SHALL OCCUR SEQUENTIALLY SUCH THAT A MAXIMUM OF ONE (1) PUMP WILL BE OUT OF SERVICE AT ANY GIVEN TIME. EQUIPMENT SHUTDOWNS SHALL BE SCHEDULED 72 HOURS IN ADVANCE WITH THE DISTRICT PLANT MAINTENANCE SUPERVISOR.
2. CONTRACTOR SHALL HAVE ALL MATERIALS NEEDED FOR THE NEW PUMP EQUIPMENT INSTALLATION ON HAND PRIOR TO THE START OF DEMOLITION OF THE EXISTING PUMP EQUIPMENT.
3. DISCONNECT POWER TO PUMP NO. 2 AND REMOVE THE ASSOCIATED VARIABLE FREQUENCY DRIVE (VFD) PER ELECTRICAL PLANS AND SPECIFICATIONS.
4. REMOVE EXISTING PUMP MOTOR, PUMP BASE, PIPING AND APPURTENANCES AS SHOWN ON SHEET 30-MR- 1.
5. INSTALL NEW PUMP NO. 2, PIPING, VFD AND APPURTENANCES.
6. INSTALL NEW MOTOR SUPPORT PER SHEET 99-S-1. INSTALL NEW MOTOR.
7. PROVIDE NEW CONDUIT AND WIRING TO PUMP NO. 2. SEE ELECTRICAL PLANS AND SPECIFICATIONS FOR DETAIL.
8. COORDINATE PUMP TESTING AND STARTUP FOR PUMP NO. 2 PER MANUFACTURERS RECOMMENDATIONS AS IDENTIFIED IN APPENDIX A AND APPENDIX B.
9. WHEN PUMP NO. 2 INSTALLATION AND STARTUP IS COMPLETE, REPEAT SEQUENCE FOR PUMP NO. 3.

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**ROCK RIVER WATER
RECLAMATION DISTRICT**
3501 KISHWAUKEE STREET
ROCKFORD, ILLINOIS 61109
(815) 387-7660

No.	DATE	REVISION	INT.
	8/02/19		BD

**CHERRY VALLEY PUMP STATION PUMP REPLACEMENT
CAPITAL IMPROVEMENT PROJECT #1911**

SITE PLAN

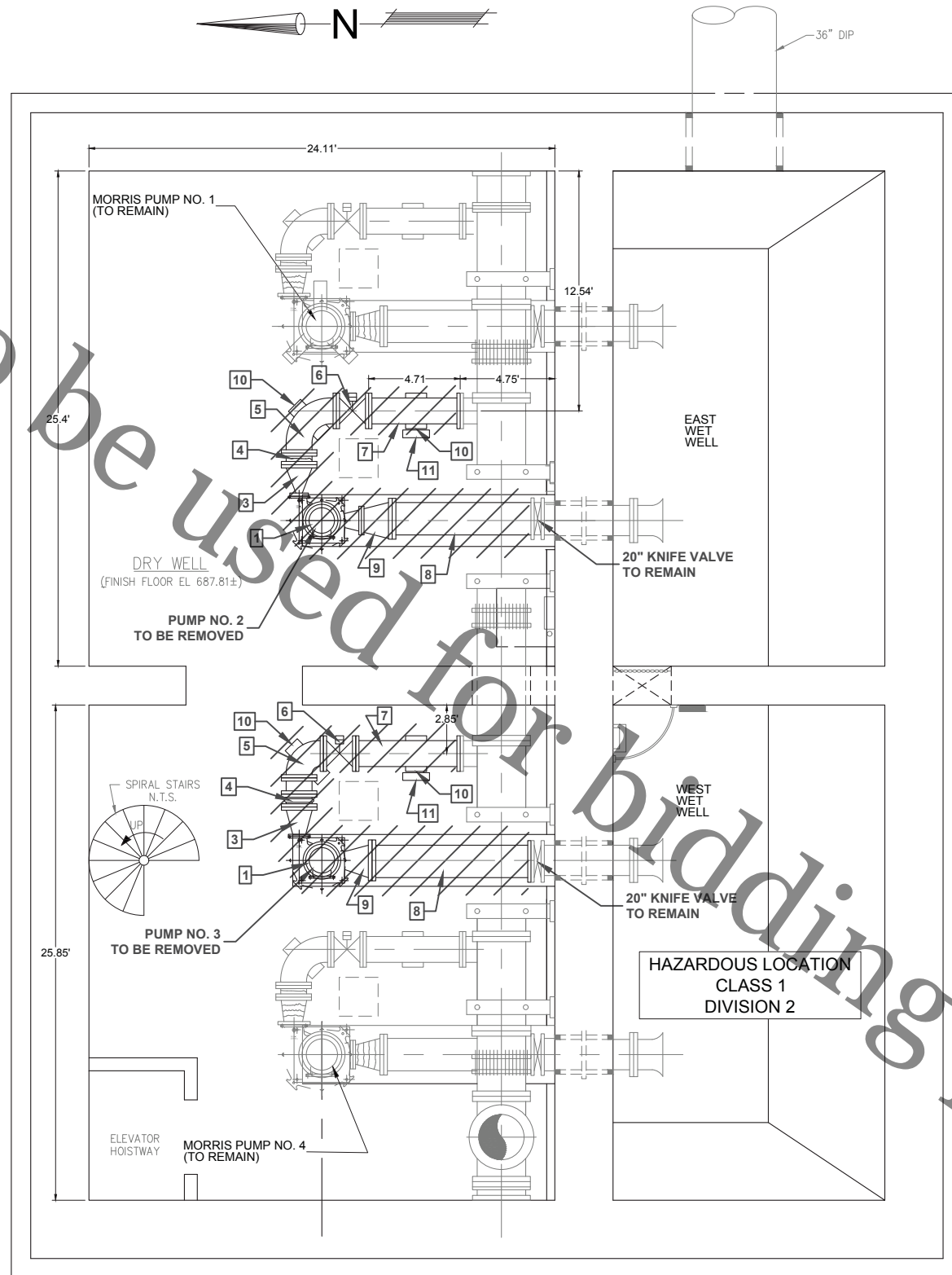
Sheet No.
10-G-2
Date
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NOTE: STATION SHALL REMAIN IN CONTINUOUS OPERATION DURING CONSTRUCTION.

REMOVAL NOTES

1. REMOVE EXISTING PUMP NO. 2, PUMP NO. 3 AND MOTORS.
2. REMOVE EXISTING PUMP BASES
3. REMOVE EXISTING 16" x 10" INCREASER
4. REMOVE EXISTING 16" FLEXIBLE JOINT
5. REMOVE EXISTING 16" PIPE ELBOW
6. REMOVE EXISTING 16" ECCENTRIC PLUG VALVE
7. REMOVE EXISTING 16" DUCTILE IRON PIPE
8. REMOVE EXISTING 20" DUCTILE IRON PIPE
9. REMOVE EXISTING 20" x 10" REDUCER
10. REMOVE EXISTING CONCRETE PIPE SUPPORTS
11. REMOVE EXISTING CONTROL PANEL AND SUPPORTS.
12. SEE SHEETS 30-ER-1 AND 30-ER-2 FOR ELECTRICAL DEMOLITION REQUIREMENTS.



PUMP NO. 2 AND PIPING



PUMP NO. 3 AND PIPING

LOWER LEVEL DEMOLITION PLAN

SCALE: 1"=4'

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ROCK RIVER WATER RECLAMATION DISTRICT
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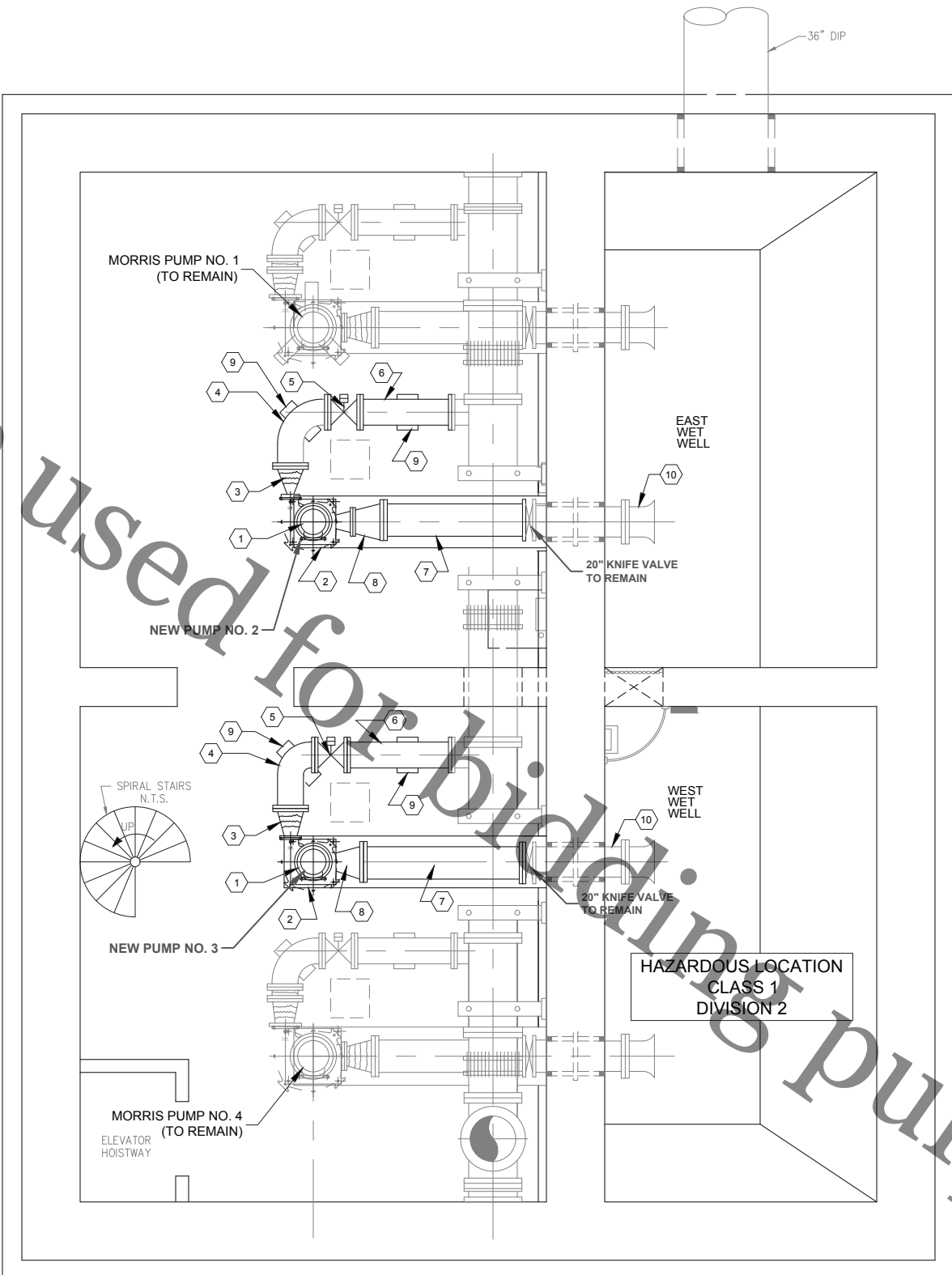
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CAPITAL IMPROVEMENT PROJECT #1911

MECHANICAL/REMOVAL PLAN

Sheet No.
30-MR- 1

Date
8/6/2019

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GENERAL NOTES

1. EXISTING PROCESS PIPING IN THE LOWER LEVEL IS BELIEVED TO BE DUCTILE IRON. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING.
2. ALL NEW PROCESS PIPING FROM THE EXISTING PIPING TO THE PROPOSED PUMPS (INCLUDING PIPES, FITTINGS, ETC.) SHALL BE PAINTED ANSI 70 GRAY.

KEY NOTES

1. NEW MORRIS 7100NC PUMP, TYPICAL OF 2, PUMP ASSEMBLY INCLUDING PUMP, MOTOR, SUCTION BASE, ELBOW, SOLE PLATE, AND SHAFTING WILL BE FURNISHED BY RRWRD. SEE APPENDIX A OF THE SPECIFICATIONS FOR APPROVED PUMP SUBMITTAL. NEW PUMP NO. 2 SHALL BE THE FIRST PUMP INSTALLED.
2. NEW PUMP BASES (SEE STRUCTURAL SHEET 99-S-1)
3. NEW 16"x12" FLEXIBLE ECCENTRIC REDUCER
4. NEW 16" PIPE ELBOW
5. NEW 16" OPERATED CYLINDER ECCENTRIC PLUG VALVE
6. NEW 16" DUCTILE IRON PIPE
7. NEW 20" DUCTILE IRON PIPE
8. NEW 20"x14" ECCENTRIC REDUCER
9. NEW CONCRETE PIPE SUPPORTS (SEE STRUCTURAL SHEET 99-S-1)
10. REMOVE DEBRIS FROM EXISTING 20" KNIFE VALVE TO END OF SUCTION LINE IN WET WELL. COORDINATE WITH OWNER, ACCESS TO THE WET WELL TO CLEAN THE 20" SUCTION LINE BY JETTING THE LINE. THE DEBRIS MAY BE LEFT IN THE WET WELL. EXCESS DEBRIS NEAR SUCTION LINE SHALL BE DISPERSED TO PREVENT INFLUX OF CONCENTRATED SOLIDS INTO PUMP DURING START-UP.

LOWER LEVEL REPLACEMENT PLAN

SCALE: 1"=4'

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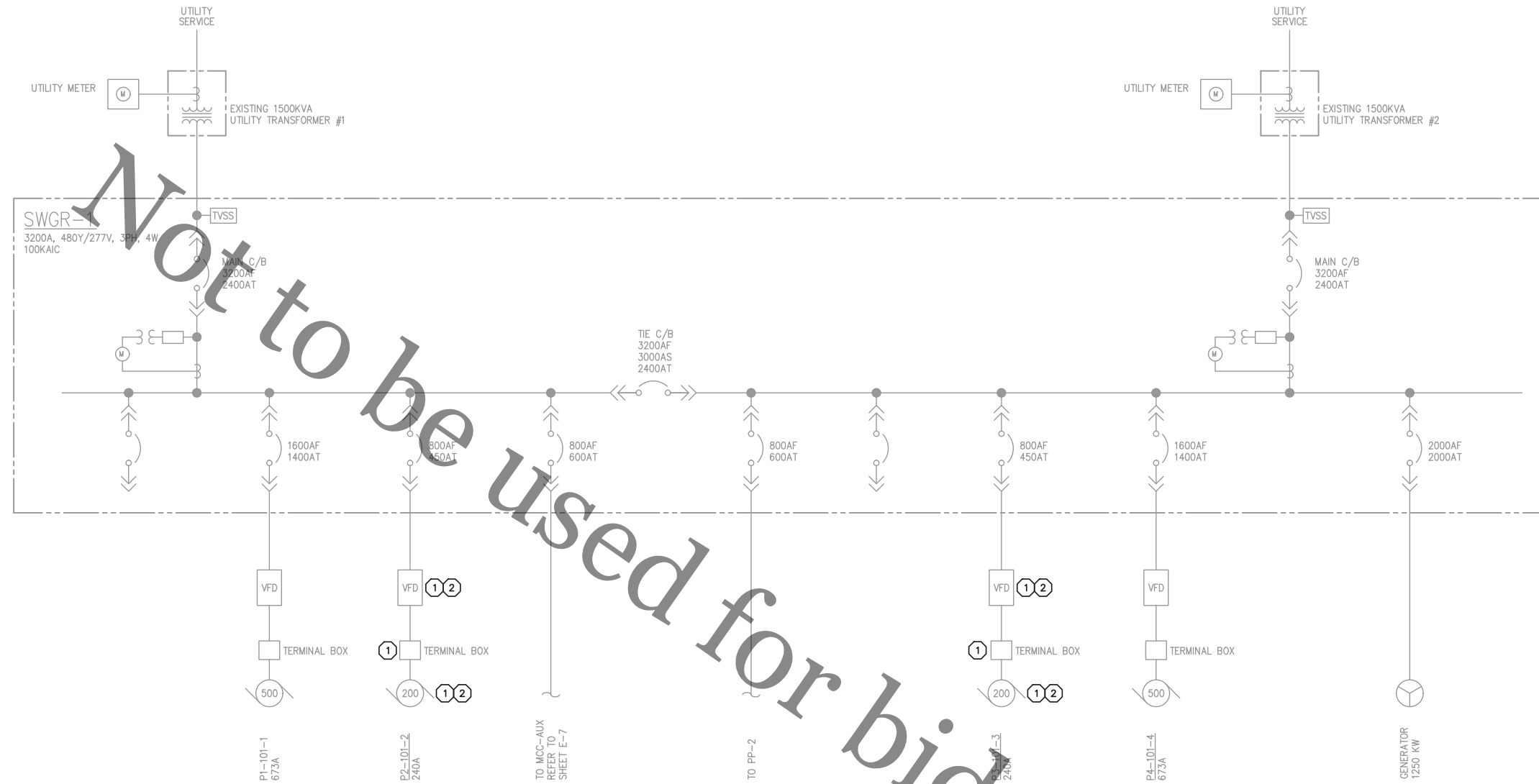
ROCK RIVER WATER RECLAMATION DISTRICT
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No.	DATE	REVISION	INT.
	8/02/19		BD

CHERRY VALLEY PUMP STATION PUMP REPLACEMENT
CAPITAL IMPROVEMENT PROJECT #1911

MECHANICAL REPLACEMENT PLAN

Sheet No.
30-M- 1
Date
8/6/2019



SWGR-1 ONE-LINE DIAGRAM - REMOVALS

NTS



PUMP NO. 2
TERMINAL BOX



PUMP NO. 3
TERMINAL BOX

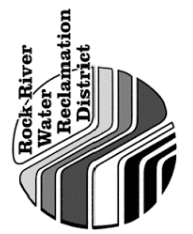
KEYED NOTES:

- ① REMOVE EACH ITEM REFERENCING THIS NOTE. OWNER SHALL HAVE FIRST RIGHT OF SALVAGE.
- ② LABEL ALL LOW-VOLTAGE SIGNAL AND MONITORING WIRING PRIOR TO DISCONNECTION (FOR RE-USE BY REPLACEMENT EQUIPMENT).

1600AF PROVISION	SPD	DISPLAY	SPD	PP-2 FEEDER	PROTECTIVE RELAY
PUMP 1 FEEDER	MAIN #1	TIE	MAIN #2	1600AF PROVISION	GENERATOR
PUMP 2 FEEDER				PUMP 4 FEEDER	
MCC-AUX		NEW UPS		PUMP 3 FEEDER	

SWGR-1 ELEVATION

NTS



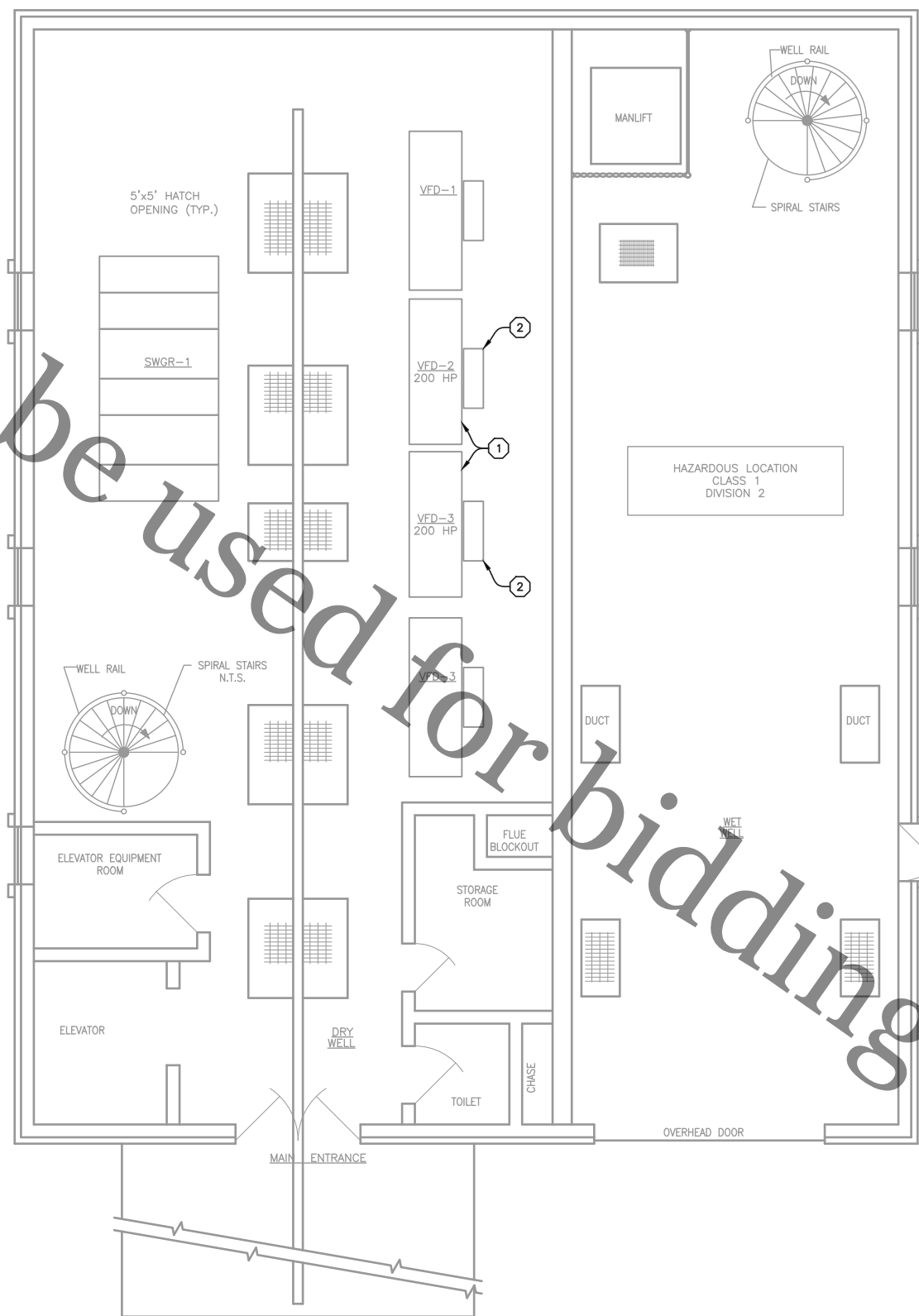
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ROCK RIVER WATER RECLAMATION DISTRICT
CHERRY VALLEY PUMP STATION
UPGRADE (CAPITAL PROJECT 1911)
ROCKFORD, ILLINOIS 61109
CHERRY VALLEY PUMP STATION
ELECTRICAL/REMOVAL
ONE-LINE DIAGRAM

VERIFY SCALES LENGTH OF BAR IS 1" ON ORIGINAL DRAWING	
1:1 PLOT SCALE, ADJUST SCALE(S) ACCORDINGLY	
DESIGNED BY:	G.A.G.
DRAWN BY:	J.T.H.
CHECKED BY:	J.J.S.
APPROVED BY:	J.J.S.
PROJECT NO.	6357
DATE	8-5-19
DRAWING NO.	30-ER-1

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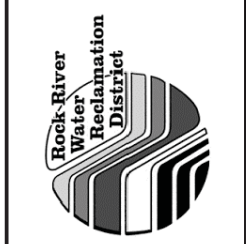
KEYED NOTES:

- ① REMOVE VFD FROM SERVICE. SCHEDULE REMOVAL TIME WITH OWNER IN ADVANCE.
- ② CONTRACTOR SHALL DISCONNECT, BUT SAVE PULL-BOX FOR RE-USE WITH REPLACEMENT VFDS.



UPPER FLOOR PLAN - REMOVALS (EL 742.8)

1/4" = 1'-0"



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 ROCKFORD, ILLINOIS 61109
 CHERRY VALLEY PUMP STATION
 ELECTRICAL/REMOVAL
 PLAN

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APPROVED BY:	J.J.S.
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DRAWING NO.	30-ER-2

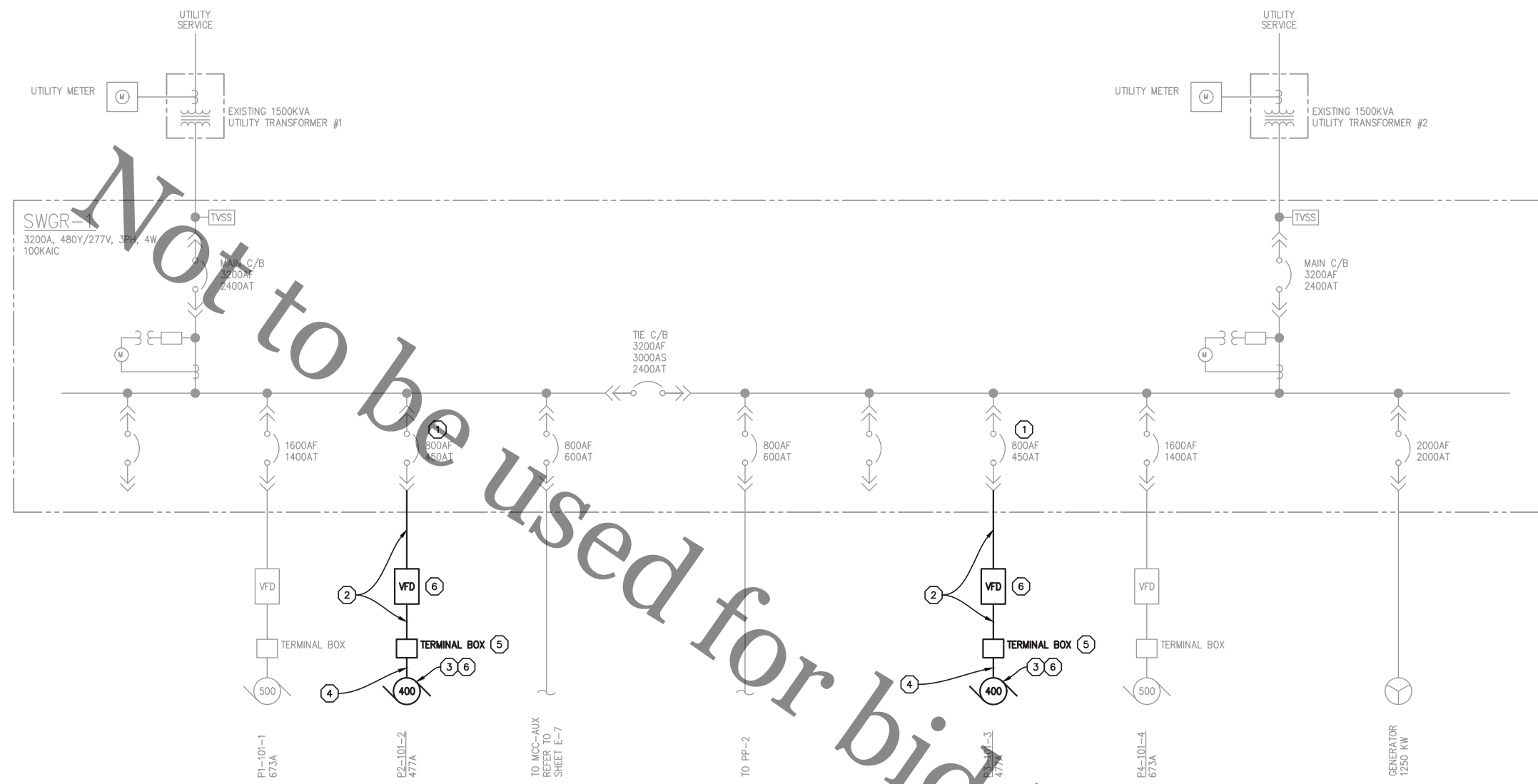


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ELECTRICAL
ONE-LINE DIAGRAM

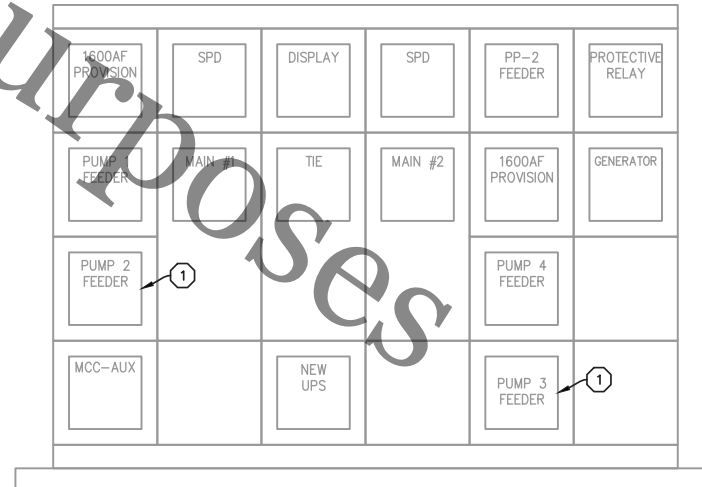
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DRAWN BY:	J.T.H.
CHECKED BY:	J.J.S.
APPROVED BY:	J.J.S.
PROJECT NO.	6357
DATE	8-5-19
DRAWING NO.	30-E-1



SWGR-1 ONE-LINE DIAGRAM - NEW WORK
NTS

KEYED NOTES:

- ① REPLACE EXISTING TRIP MODULE WITH NEW 700 AMP UNIT FOR THIS SQUARE-D MASTERPACT BREAKER.
- ② PROVIDE 2[(3)350KCMIL, #1/0G, 3" GRS CONDUIT]. AN EMPTY 3" CONDUIT RUNS PART WAY BETWEEN EACH VFD AND THE EXISTING TERMINAL BOX. CONTRACTOR TO FIELD-VERIFY EXTENT.
- ③ RECONNECT THE FOLLOWING SIGNALS FROM THE NEW PUMP/MOTOR ASSEMBLIES TO THE PLC PANEL:
 - A. HIGH VIBRATION
 - B. PUMP BEARING HIGH TEMPERATURE
 - C. MOTOR WINDING HIGH TEMPERATURE
 EXTEND EXISTING CIRCUITS AND CONDUIT, IF NECESSARY.
- ④ PROVIDE 2[(3)350KCMIL, #1/0G, 3" LIQUID-TIGHT CONDUIT].
- ⑤ SIZE OF REPLACEMENT TERMINAL BOX SHALL MEET N.E.C. REQUIREMENTS.
- ⑥ RECONNECT EXISTING LOW VOLTAGE SIGNAL AND MONITORING CIRCUITS. REFER TO P&ID SHEET NO. 10 DATED JAN 2011 (CAPITAL PROJECT NO. 1032)

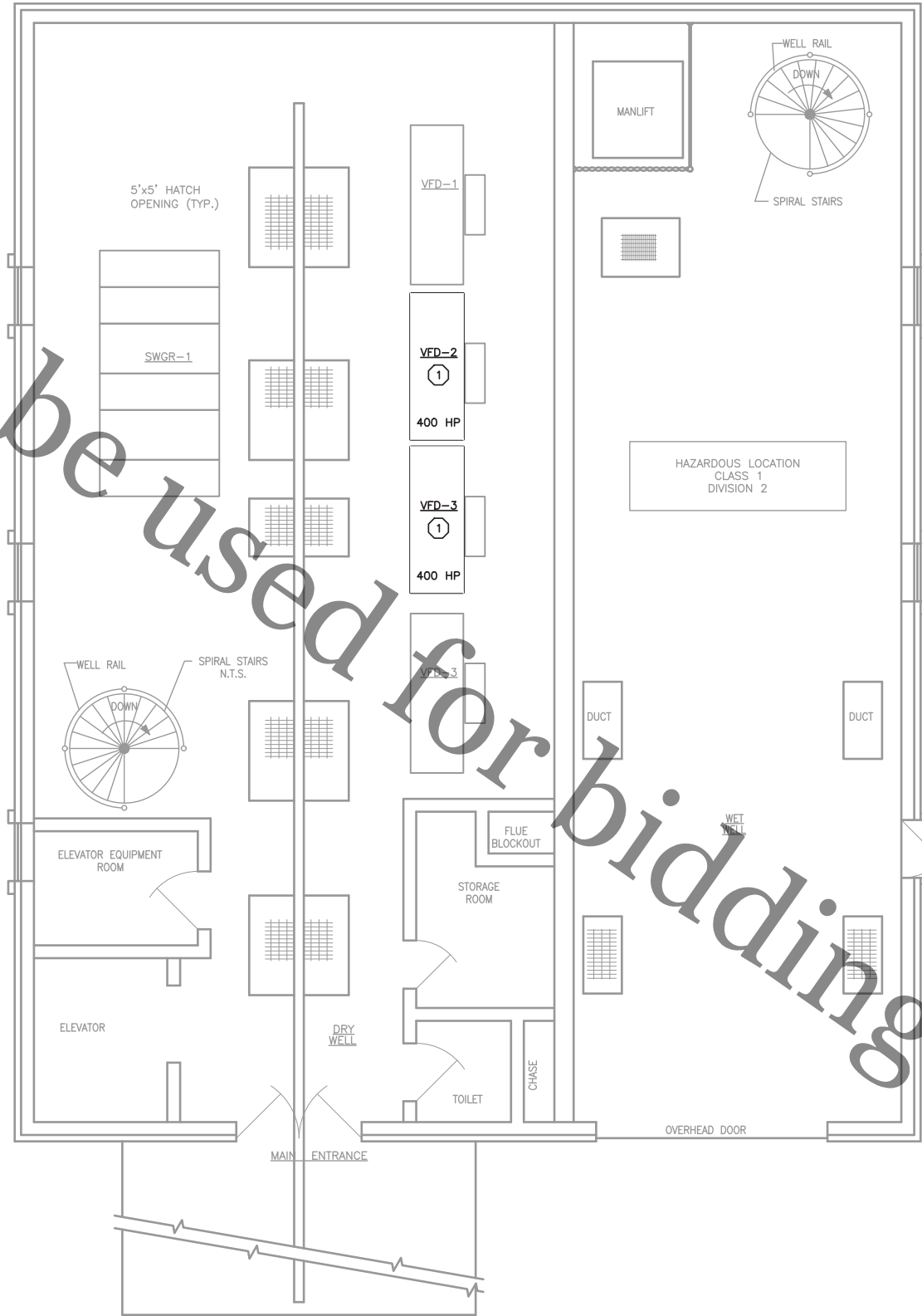


SWGR-1 ELEVATION
NTS

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KEYED NOTES:
 ① FOOTPRINT OF VFD MAY VARY FROM WHAT SHOWN, DEPENDING ON SUCCESSFUL BIDDERS PRODUCT.

UPPER FLOOR PLAN - NEW WORK
 1/4" = 1'-0"

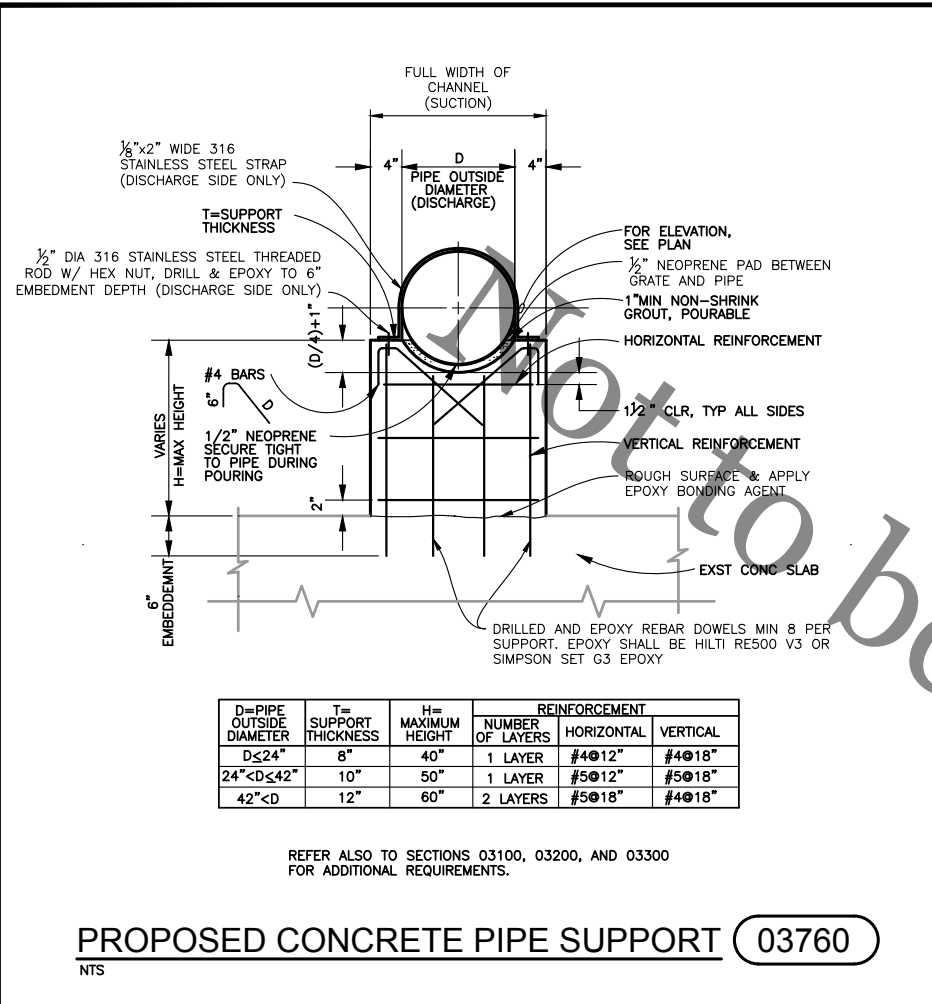


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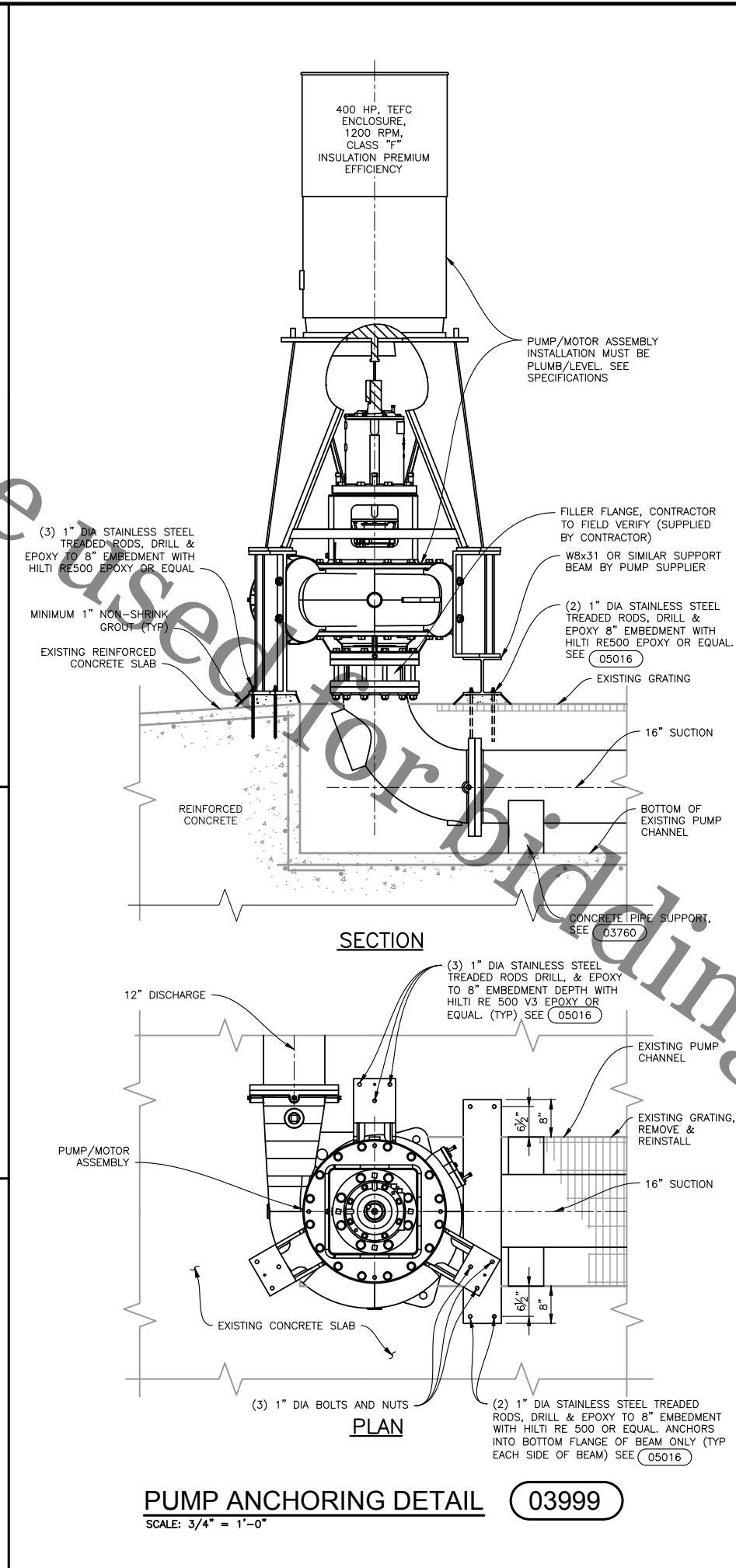
ROCK RIVER WATER RECLAMATION DISTRICT
 CHERRY VALLEY PUMP STATION
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 ELECTRICAL
 PLAN

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DRAWN BY: J.C.S.	
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APPROVED BY: J.J.S.	
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DRAWING NO.	30-E-2

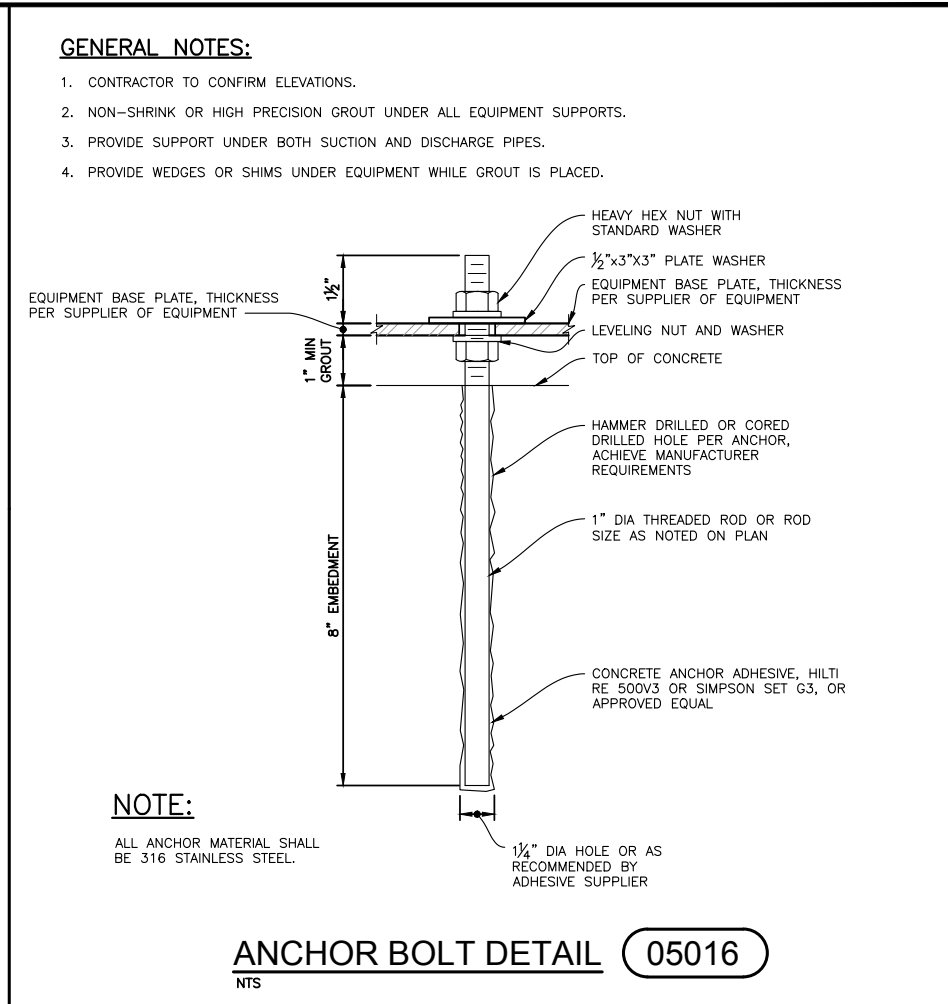
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PROPOSED CONCRETE PIPE SUPPORT 03760
NTS



PUMP ANCHORING DETAIL 03999
SCALE: 3/4" = 1'-0"



ANCHOR BOLT DETAIL 05016
NTS

GENERAL NOTES:

1. CONTRACTOR TO CONFIRM ELEVATIONS.
2. NON-SHRINK OR HIGH PRECISION GROUT UNDER ALL EQUIPMENT SUPPORTS.
3. PROVIDE SUPPORT UNDER BOTH SUCTION AND DISCHARGE PIPES.
4. PROVIDE WEDGES OR SHIMS UNDER EQUIPMENT WHILE GROUT IS PLACED.

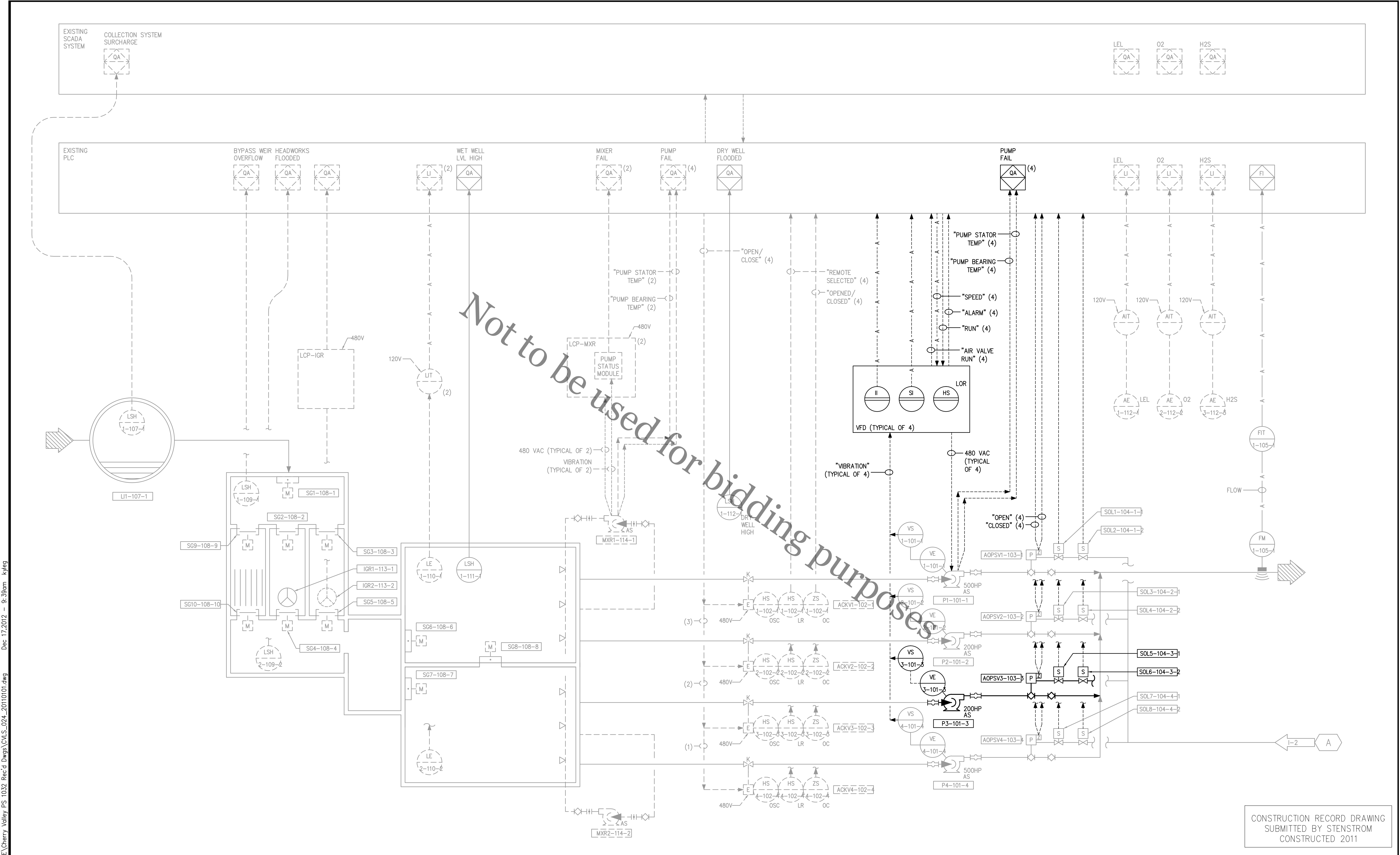


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	REVISIONS AND RECORD OF ISSUE	
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 ROCKFORD, ILLINOIS 61109
 STANDARD DETAILS
 STRUCTURAL
 DETAILS

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VERIFY SCALES
 LENGTH OF BAR IS 1" ON ORIGINAL DRAWING
 1:2 PLOT SCALE, ADJUST SCALE(S) ACCORDINGLY



CONSTRUCTION RECORD DRAWING
 SUBMITTED BY STENSTROM
 CONSTRUCTED 2011

SYMBIONT
 6737 West Washington Street, Suite 3440
 West Allis, Wisconsin 53214
 (414)-291-8840
 FAX 291-8841

- WASTEWATER TREATMENT/CONVEYANCE
- FACILITIES ENGINEERING
- ENVIRONMENTAL MANAGEMENT
- AIR QUALITY
- DESIGN/BUILD CONSTRUCTION MANAGEMENT
- INVESTIGATION, REMEDIATION & SITE CLOSURE
- PROCESS ENGINEERING
- WATER SUPPLY AND DISTRIBUTION
- SOLID AND HAZARDOUS WASTE MANAGEMENT
- WATER RESOURCES PLANNING/DESIGN
- STORM WATER MANAGEMENT
- GIS SERVICES
- BROWNFIELDS

VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING.
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DSGN	TRS				
DR	JRH				
CHK					
APVD					

CHERRY VALLEY PUMP STATION UPGRADE
 PHASE 1 IMPROVEMENTS
 (CAPITAL PROJECT NO. 1032)
 ROCK RIVER WATER RECLAMATION DISTRICT
 ROCKFORD, ILLINOIS 61109

INSTRUMENTATION AND CONTROLS

SHEET NO.	10
DWG NO.	I-1
DATE	JAN 2011
PROJ NO.	W101771