

CITY OF ORRVILLE

ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE I

WAYNE COUNTY

OCTOBER 2026

OHIO 811 & UTILITY LIST:

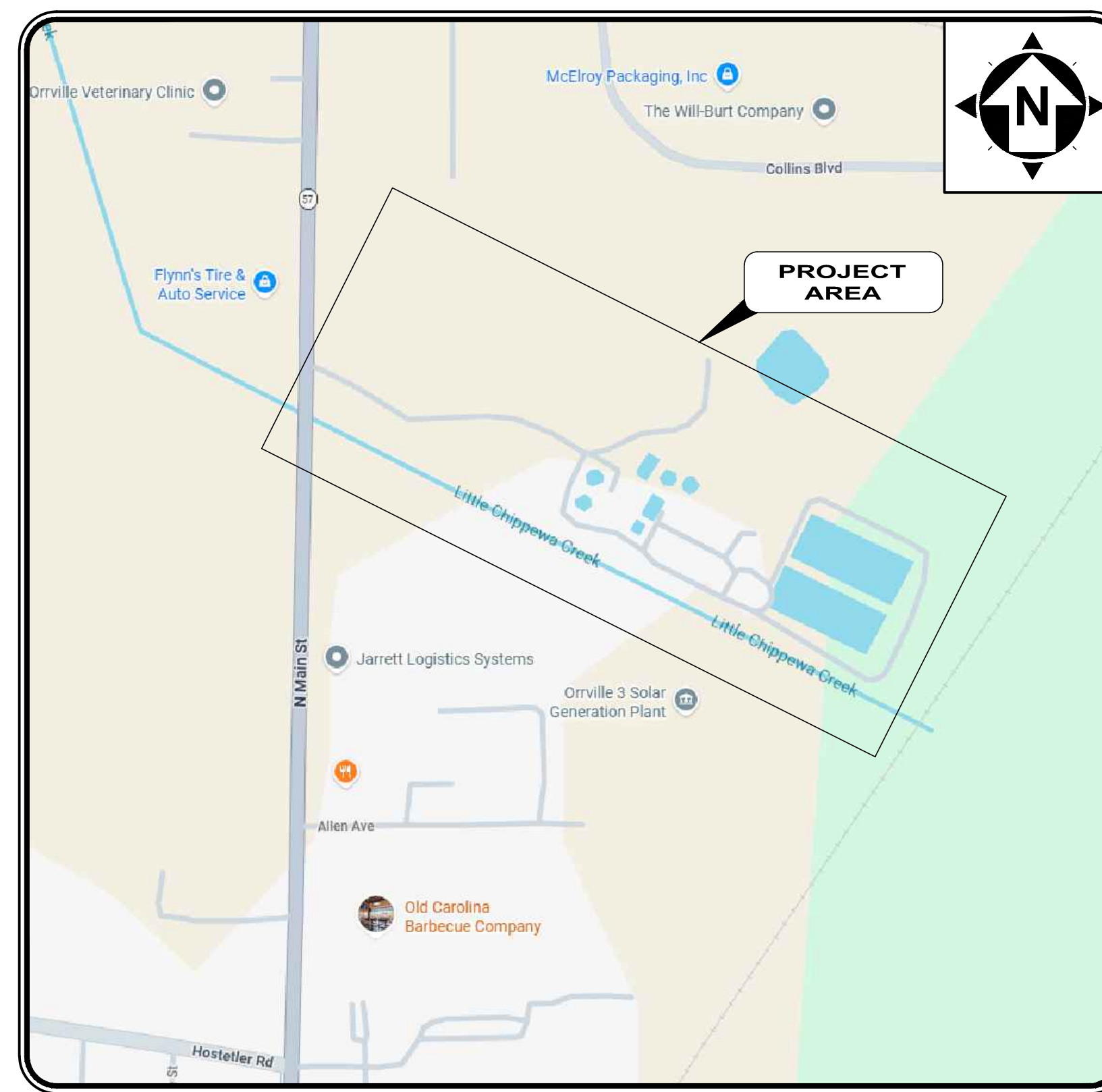
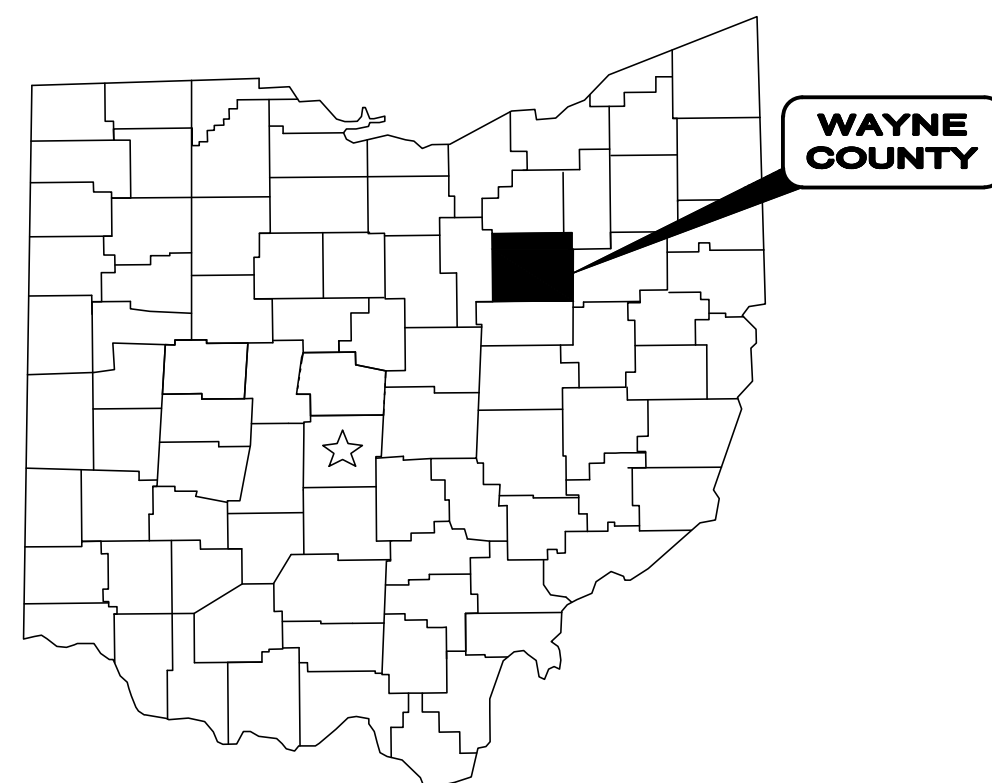
CITY OF ORRVILLE UTILITIES: 207 N Main Street
Orrville, OH 44667
(330)-684-5020

CITY OF ORRVILLE WASTEWATER: 207 N Main Street
Orrville, OH 44667
(330)-684-5160

CITY OF ORRVILLE WATER: 207 N Main Street
Orrville, OH 44667
(330)-684-5130



1. UNDERGROUND BUILDING SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE TO BUILDINGS.
2. THE CONTRACTOR IS RESPONSIBLE TO CALL OHIO UTILITIES PROTECTION SERVICE @ 1-800-362-2764, THREE WORKING DAYS PRIOR TO CONSTRUCTION.



LOCATION MAP
NOT TO SCALE



ENGINEER'S PROJECT No. 40948

COUNCIL

PAUL VANCE	PRESIDENT
C.J. HANDWERK	COUNCIL MEMBER
JASON LAX	COUNCIL MEMBER
PATTY CARR	COUNCIL MEMBER
BEVERLY SQUIRRELL	COUNCIL MEMBER
RICK ASPIRAS JR.	COUNCIL MEMBER
MORGAN MACE	COUNCIL MEMBER
REES DAVIES	COUNCIL MEMBER

ADMINISTRATIVE

MATTHEW R. PLYBON	MAYOR
DAVE FILIPPI	DIRECTOR OF UTILITIES

CITY OF ORRVILLE APPROVALS:

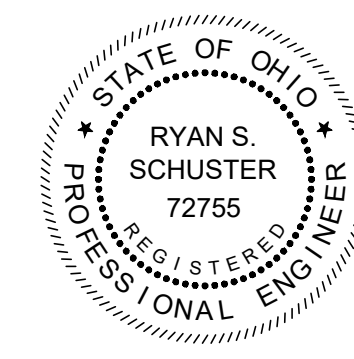
DIRECTOR OF UTILITIES	DAVE FILIPPI	DATE
WASTEWATER SUPERINTENDENT	STEVE CARATHERS	DATE

ENGINEER/ARCHITECT:

VERDANTAS
8150 STERLING COURT
MENTOR, OH 44060

(440) 951-9000 PHONE
(440) 951-7487 FAX

RYAN SCHUSTER



P.E. No. 72755

10/6/2026
DATE



8150 STERLING COURT
MENTOR, OH 44060
(440) 951-9000

DATE	REVISION	NO

SCALE:	AS NOTED	DATE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
		9/11/2026	RSS	CAS	RSS

CITY OF ORRVILLE, OHIO
ORRVILLE WWTP SCREW PUMP
IMPROVEMENTS - PHASE I
WAYNE COUNTY
OHIO
GENERAL - 00 SERIES
COVER SHEET

PROJECT NO:	40948
DRAWING NAME	00G-01
SHEET	OF
1	23

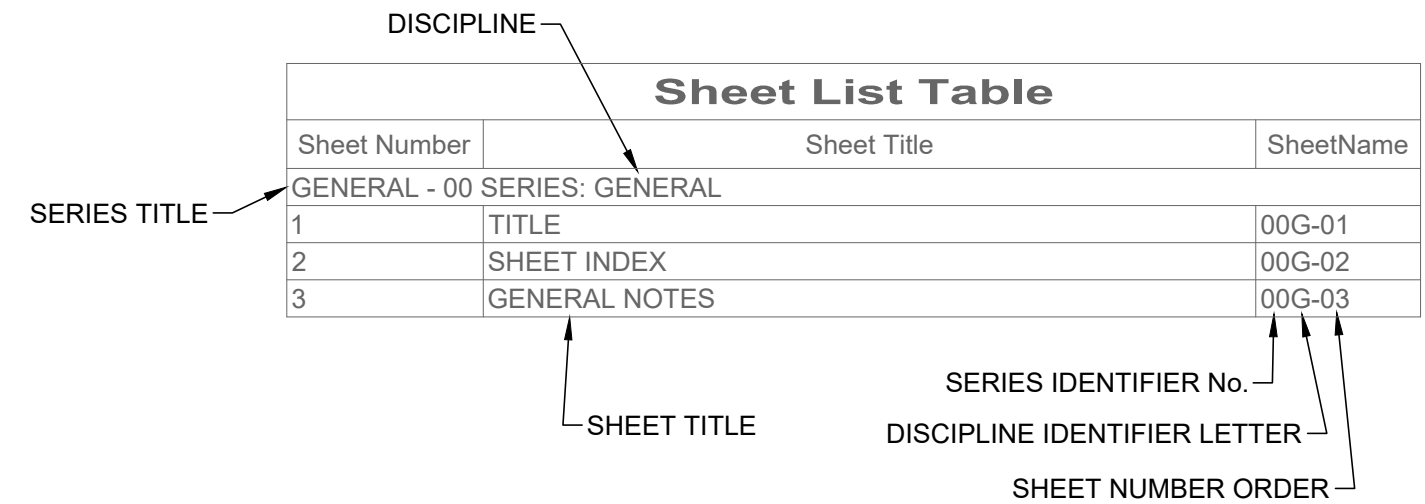
SERIES INFORMATION:

SERIES No:	DESCRIPTION:
00	GENERAL
01	SITE IMPROVEMENTS
10	HEADWORKS
20	PRIMARY TREATMENT FACILITY
30	LIFT STATION
SD	STANDARD DETAILS
M	MECHANICAL
E	ELECTRICAL
Y	INSTRUMENTATION

DISCIPLINE INFORMATION:

IDENTIFIER:	DISCIPLINE:
G	GENERAL
C	CIVIL
A	ARCHITECTURAL
S	STRUCTURAL
D	PROCESS
M	MECHANICAL (PLUMBING & HVAC)
E	ELECTRICAL
Y	INSTRUMENTATION

INDEX EXPLANATION:



GENERAL SYMBOLOGY NOTES:

- THIS IS A STANDARD SHEET SHOWING COMMONLY USED SYMBOLOGY.
- ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
- SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE NEW IMPROVEMENTS SO AS TO HIGHLIGHT SPECIFIC TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.
- SYMBOLOGY OR DIAGMATICAL LEGENDS MAY BE SHOWN ON INDIVIDUAL SHEETS FOR SCHEDULES, DIAGRAMS, DETAILS, SCHEMATICS OR EQUIPMENT.

DRAWING CODED NOTE TYPES:

- CT CONTRACTUAL NOTES ARE DEPICTED WITH A HEXAGON, SQUARE, CIRCLE OR TRIANGLE. ALL OTHER EXISTING WRITTEN CALLOUTS SHOWN ON THE REUSED SCANNED PLANS, SECTIONS & DETAILS ARE FOR EXISTING CONDITIONS AND REFERENCE ONLY. MANY OF THOSE NOTES FROM THE SCANNED DRAWINGS PERTAIN TO PREVIOUS WORK DONE.

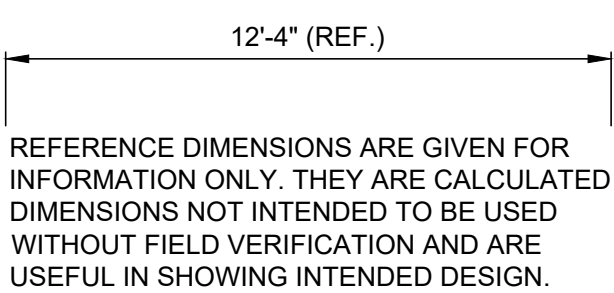
PLAN REVISIONS:

A	REVISION DESCRIPTION
B	REVISION DESCRIPTION

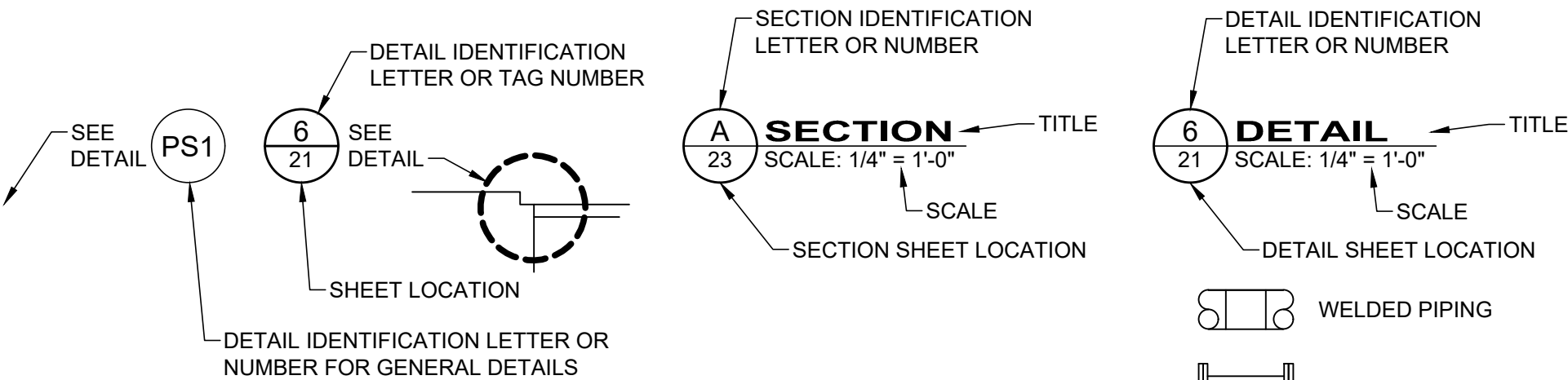
DEMOLITION CODED NOTES:

1	DEMOLITION DESCRIPTION
2	DEMOLITION DESCRIPTION

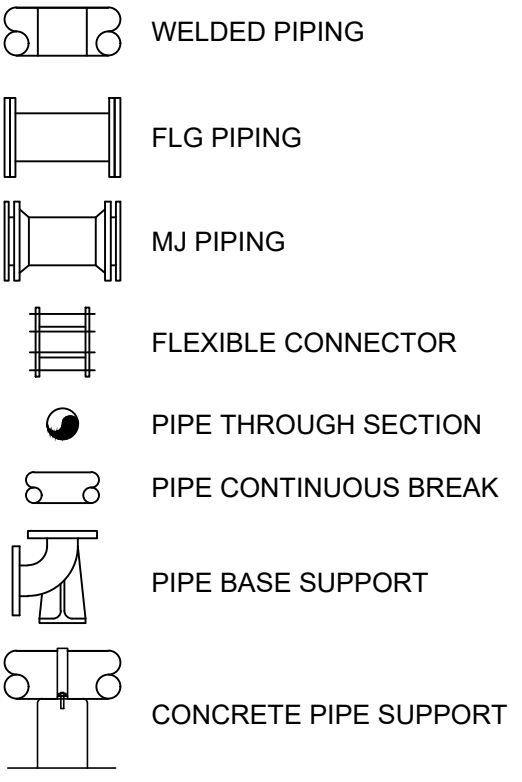
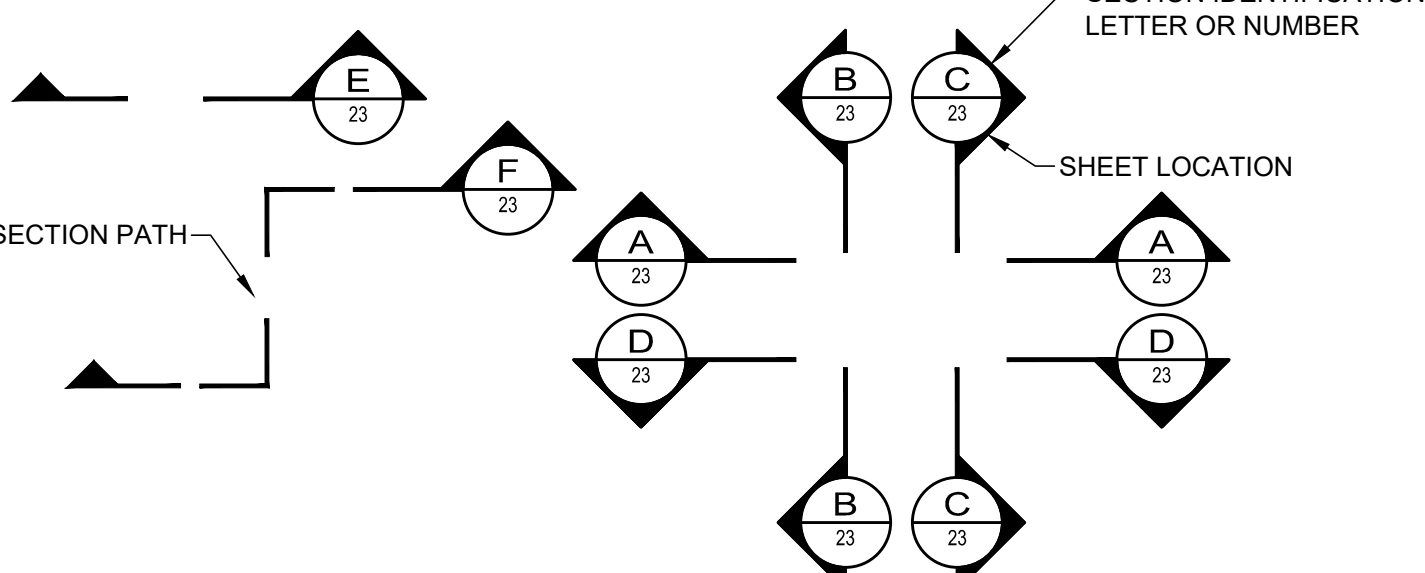
REFERENCE DIMENSION:



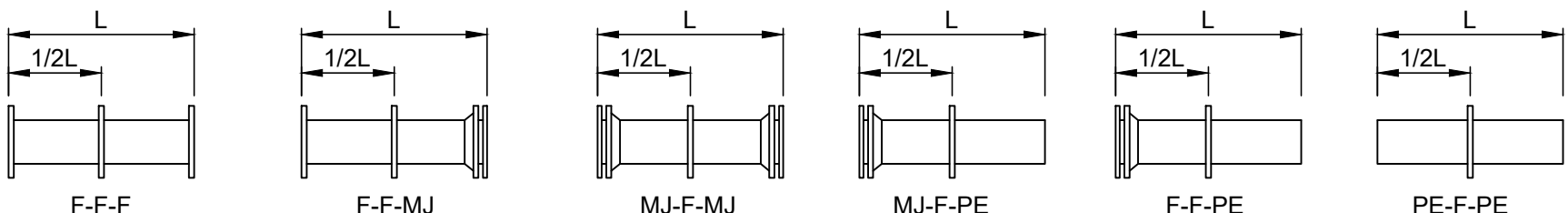
DETAIL REFERENCES:



MAJOR SECTION CUT CONVENTIONS:



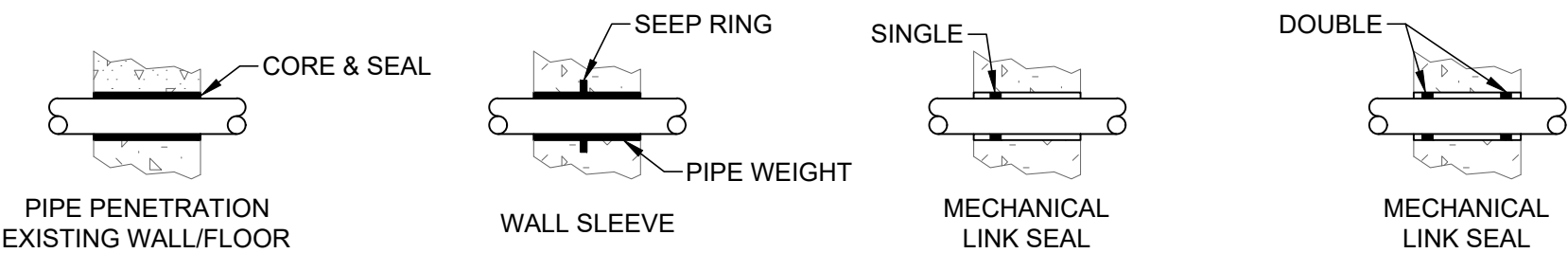
MISC PIPE SYMBOLOGY



NOTE:

WALL CASTINGS REQUIRING BELL ENDS IN LIEU OF MJ SHALL BE NOTED AS "B", ALL FLANGED (F) AND MECHANICAL JOINT (MJ) FLUSH WITH WALL ARE TO BE DRILLED, AND TAPPED FOR STUDS.

CAST IRON WALL CASTING ABBREVIATIONS



PIPE THROUGH WALLS & FLOORS

VALVE OPERATOR ID:

CH	= CHAIN
EM	= ELECTRIC MOTOR
ES	= EXTENSION STEM
FB	= FLOOR BOX
FS	= FLOOR STAND
GE	= GEAR
HC	= HYDRAULIC CYLINDER
HW	= HANDWHEEL
LE	= LEVER
LW	= "L" WRENCH
ON	= OPERATING NUT
PC	= PNEUMATIC CYLINDER
PD	= PNEUMATIC DIAPHRAGM
TW	= "T" WRENCH
VB	= VALVE BOX

PIPE END JOINT ID:

BE	= BELL
CM	= COMPRESSION
F	= FLARED
FL	= FLANGED
GR	= GROOVED
LU	= LUG
MJ	= MECHANICAL JOINT
NPT	= NATIONAL PIPE THREAD
RJ	= RESTRAINED JOINT
S	= SOLDERED
SJ	= SLIP JOINT (PUSH ON)
SW	= SOLVENT WELDED
TH	= THREADED
WE	= WELDED

PIPE MATERIAL ID:

BR	= BRASS
BS	= BLACK STEEL
BZ	= BRONZE
CI	= GRAY CAST IRON
CU	= COPPER
CS	= CAST IRON
CT	= CARBON STEEL TUBING
DIP	= DUCTILE IRON PIPE
DR	= DIAMETER RATIO
FRP	= FIBERGLASS REINFORCED PLASTIC
GS	= GALVANIZED STEEL
HDPE	= HIGH-DENSITY POLYETHYLENE PIPE
PVC	= POLYVINYL CHLORIDE PIPE
SS	= STAINLESS STEEL
STL	= STEEL PIPE
SDR	= STANDARD DIAMETER RATIO
SCH	= SCHEDULE

VALVE ID:

AC	= AIR CHECK VALVE
AN	= ANGLE VALVE
AR	= AIR RELEASE VALVE
AV	= AIR & VACUUM VALVE
BA	= BALL VALVE
BFV	= BUTTERFLY VALVE
BK	= BACKPRESSURE VALVE
BP	= BACKFLOW PREVENTER
CV	= CHECK VALVE
CO	= CONE VALVE
GV	= GATE VALVE
GL	= GLOBE VALVE
KG	= KNIFE GATE VALVE
KN	= KNIFE VALVE
MV	= MUD VALVE
PD	= PLUG DRAIN VALVE
PF	= PRESSURE RELIEF
PG	= PRESSURE REGULATOR
PI	= PINCH VALVE
PV	= PLUG VALVE
PRV	= PRESSURE REDUCING VALVE
PT	= PRESSURE TEMPERATURE RELIEF
RF	= RATE-OF-FLOW CONTROLLER
SV	= SOLENOID VALVE
SU	= SURGE VALVE
TE	= TELESOPING VALVE
TM	= TEMPERATURE CONTROL VALVE

EQUIPMENT ID:

AC	= AIR COMPRESSOR
AER	= AERATOR
B	= BLOWER
BFP	= BELT FILTER PRESS
CLS	= CLASSIFIER
C	= COMMUNITOR
CMP	= COMPACTOR
CFD	= CHEMICAL FEEDER
CNV	= CONVEYOR
CNT	= CENTRIGUGE
CC	= CALIBRATION CYLINDER
CFD	= CHEMICAL FEEDER
CP	= CONTROL PANEL
CR	= CRANE
D	= DECANTER
DR	= DRIVE
DFL	= DISC FILTER
F	= FAN
FL	= FILTER
FM	= FLOW METER
GBT	= GRAVITY BELT THICKENER
GR	= GRINDER
GEN	= GENERATOR
HB	= HOSE BIB
M	= MOTOR
MX	= MIXER
P	= PUMP
PS	= PUMP STATION
SMP	= SAMPLER
SCR	= SCREEN

GATE ABBREVIATIONS:

BG	= BULKHEAD GATE
SG	= SLIDE GATE
SP	= STOP PLATE
SL	= STOP LOG
ALUM	= ALUMINUM
SS	= STAINLESS STEEL
CI	= CAST IRON
POLY	= POLYMER
B/C	= BOTTOM OF CHANNEL
T/C	= TOP OF CHANNEL
A	= HEIGHT
B	= WIDTH

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE	SHEET NAME
GENERAL - 00 SERIES		
1	COVER SHEET	00G-01
2	SHEET INDEX AND LEGENDS	00G-02
3	GENERAL NOTES - 1	00G-03
4	GENERAL NOTES - 2	00G-04
CIVIL - 10 SERIES		
5	PUMP STATION LOCATIONS	10C-01
6	2ND STAGE INFLUENT PS PUMP RPLCMTS. - 01	10C-02
7	2ND STAGE INFLUENT PS PUMP RPLCMTS. - 02	10C-03
8	2ND STAGE EFFLUENT PS PUMP RPLCMTS. - 01	10C-04
9	2ND STAGE EFFLUENT PS PUMP RPLCMTS. - 02	10C-05
10	2ND STAGE ACTIVATED SLUDGE PS PUMP RPLCMTS. - 01	10C-06
11	2ND STAGE ACTIVATED SLUDGE PS PUMP RPLCMTS. - 02	10C-07
STRUCTURAL - 20 SERIES		
12	2ND STAGE INFLUENT PUMP STATION	20S-01
13	2ND STAGE EFFLUENT PUMP STATION	20S-02
14	2ND STAGE ACTIVATED SLUDGE PUMP STATION	20S-03
15	GENERAL NOTES	20S-04
16	STANDARD DETAILS 1	20S-05
17	STANDARD DETAILS 2	20S-06
ELECTRICAL - E SERIES		
18	ELECTRICAL LEGEND & GENERAL NOTES	E-01
19	PARTIAL SITE PLAN	E-02
20	2ND STAGE INFLUENT PS PLANS, DIAGRAMS & SCHEDULES	E-03
21	2ND STAGE EFFLUENT PS PLANS, DIAGRAMS & SCHEDULES	E-04
22	2ND STAGE ACTIVATED SLUGE PS PLANS, DIAGRAMS & SCHEDULES	E-05
23	MOTOR DIAGRAMS & PR. MCC-D ELEVATION	E-06



8150 STERLING COURT
MENTOR, OHIO 44060
(440) 951-9000

DATE	REVISION	NO	SCALE	AS NOTED	DATE	DESIGNED BY:	RSS	CAS	RSS
					9/11/2026				

CITY OF ORRVILLE, OHIO	OHIO
ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE I	WAYNE COUNTY
GENERAL - 00 SERIES	
SHEET INDEX AND LEGENDS	

PROJECT NO:	
40948	
DRAWING NAME	
00G-02	
SHEET	OF
2	23

GENERAL:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE PLANS AND TECHNICAL SPECIFICATIONS, VISIT THE PROJECT SITE, AND NOTIFY IN WRITING THE PROJECT ENGINEER OF ANY DISCREPANCIES IN THE PLANS OR SPECIFICATIONS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION AND SUBMIT ANY NECESSARY MODIFICATIONS TO THE ENGINEER FOR APPROVAL.
3. ANY REVISIONS TO THE ACCEPTED CONSTRUCTION PLANS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION IN THE FIELD.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A CURRENT SET OF "AS BUILT" DRAWINGS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES.
6. NO WORK MAY COMMENCE WITHOUT AN EXECUTED NOTICE TO PROCEED.
7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH OSHA AND ENGINEER SAFETY REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL VISITORS, EMPLOYEES AND WORKERS ON THE CONSTRUCTION SITE.
8. ANY DAMAGE TO UTILITIES DURING THIS WORK BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
9. THE CONTRACTOR SHALL CONSTRUCT THIS PROJECT IN COMPLIANCE WITH FEDERAL, STATE AND LOCAL BUILDING CODES.
10. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SECURITY OF ALL STORED MATERIALS ON OWNER'S SITE.
11. THE CONTRACTOR SHALL COORDINATE WITH OWNER THE STORAGE OF STORED MATERIALS AND REMOVED EXISTING EQUIPMENT TO BE RETAINED.
12. ACCESS MUST BE MAINTAINED FOR EMERGENCY VEHICLES AT ALL TIMES.
13. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN PEDESTRIAN, LOCAL ROADWAY, AND DRIVEWAY ACCESS AT ALL TIMES.
14. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE "UNIFORM MANUAL OF TRAFFIC CONTROL".
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SIGNING AND TRAFFIC CONTROL AS DIRECTED BY THE LOCAL MUNICIPALITY. ALL SIGNS AND MATERIAL USED SHALL CONFORM TO THE SPECIFICATIONS SET FORTH IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
16. ACCESS TO ALL DRIVEWAYS WILL BE MAINTAINED AT ALL TIMES EXCEPT THE TIME WHEN UTILITY INSTALLATION AND PAVEMENT REPLACEMENT WILL NOT PERMIT.
17. APPROVAL BY THE OWNER AND/OR THEIR REPRESENTATIVE CONSTITUTES NEITHER EXPRESSED NOR IMPLIED WARRANTIES AS TO THE FITNESS, ACCURACY, OR SUFFICIENCY OF PLANS, DESIGNS, OR SPECIFICATIONS.
18. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY AND ALL EXISTING WORK DAMAGED DURING OR DUE TO THE EXECUTION OF THIS CONTRACT AT HIS OWN EXPENSE. ALL SAID WORK TO BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER.
19. THE CONTRACTOR MUST COORDINATE HIS WORK WITH THE OWNER. THE CONTRACTOR MUST MAINTAIN ADEQUATE ACCESS FOR ALL MAINTENANCE VEHICLES.
20. THE CONTRACTOR SHALL FURNISH ALL TEMPORARY FACILITIES AS REQUIRED TO MAINTAIN SANITARY FLOWS DURING THE COURSE OF THE WORK.
21. THE INFORMATION PROVIDED WITHIN THESE PLANS IS SPECIFIC TO THE ANTICIPATED WORK AREAS AND IS NOT INCLUSIVE OF ALL TOPOGRAPHIC AND UTILITY FEATURES OUTSIDE OF THE AREA.
22. CONTRACTOR SHALL CLEAR ALL DEBRIS, DIRT, VEHICLES, AND EQUIPMENT FROM WALKWAY AND TRAFFIC ROUTES AT THE CONCLUSION OF WORK EACH DAY.
23. OSHA PROHIBITS CRANE AND BACKHOE OPERATIONS WITHIN 10 FEET OF ENERGIZED PRIMARY CONDUCTORS. TEMPORARY RELOCATION OF ELECTRICAL UTILITIES, INCLUDING RESTRAINT OF POLES, RELOCATION OF POLES, AND RUBBER COVERING OF ENERGIZED CONDUCTOS MAY BE REQUIRED. THE COORDINATION AND COST OF THESE SERVICES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MAY RESTRAIN POLES IF THE METHOD OF SUPPORT HAS BEEN SUBMITTED AND APPROVED BY THE UTILITY COMPANY.
24. THE REMOVAL AND DISPOSAL OF ALL CONSTRUCTION DEBRIS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOT FILL ANY WETLANDS, LOW LANDS, FLOOD PLAINS, OR DRAINAGE WAYS WITH SAID DEBRIS WITHOUT OBTAINING PROPER APPROVALS, PERMITS, LICENSES, ETC. FROM LOCAL, STATE, OR FEDERAL AGENCIES AND/OR PRIVATE LANDOWNERS.
25. NOTIFY THE CITY WWPT SUPERINTENDENT TWENTY-FOUR (24) HOURS PRIOR TO STARTING CONSTRUCTION.

NOISE CONTROL PRACTICES:

1. CONSTRUCTION EQUIPMENT WILL BE PROVIDED WITH INTAKE SILENCERS AND MUFFLERS AS REQUIRED BY SAFETY STANDARDS AND LOCAL NOISE ORDINANCE.
2. CONSTRUCTION ACTIVITIES WILL BE LIMITED TO DAYTIME HOURS UNLESS OTHERWISE DIRECTED BY THE OWNER.

PRESERVATION OF PROPERTY CORNERS AND SURVEY MARKERS:

1. THE CONTRACTOR SHALL CAREFULLY PRESERVE BENCH MARKS, PROPERTY CORNERS, REFERENCE POINTS AND STAKES AND IN CASE OF WILLFUL OR CARELESS DESTRUCTION, HE/SHE SHALL ENGAGE A REGISTERED SURVEYOR TO REPLACE THEM AT HIS/HER EXPENSE AND SHALL BE RESPONSIBLE FOR ANY MISTAKES THAT MAY BE CAUSED BY THEIR LOSS OR DISTURBANCE.

STATIONING AND LOCATIONS:

1. ALL LOCATIONS AND ITEMS CALLED OUT BY STATION ARE SUBJECT TO ADJUSTMENT IN THE FIELD AS APPROVED BY THE ENGINEER.

RESTORATION:

1. THE CONTRACTOR SHALL CLEAN UP ALL DEBRIS AND MATERIALS RESULTING FROM HIS/HER OPERATION AND RESTORE ALL SURFACES, STRUCTURES, DITCHES AND PROPERTY TO ITS ORIGINAL CONDITION TO THE SATISFACTION OF THE ENGINEER. RESTORATION SHALL INCLUDE SEEDING AND MULCHING DISTURBED AREAS, RESTORATION OF EXISTING DRIVES, AND FINAL CLEAN UP.
2. ALL EXISTING STORM AND SANITARY SEWER FACILITIES, INCLUDING TILE, DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR RECONNECTED TO THE EXISTING OR PROPOSED SYSTEM AS DIRECTED BY THE ENGINEER AT NO COST TO THE OWNER.

EXISTING UTILITIES:

1. EXISTING UTILITIES SHOWN ARE FROM BEST AVAILABLE RECORDS AND FIELD INVESTIGATIONS AND ARE NOT NECESSARILY COMPLETE OR EXACT. THE CONTRACTOR IS RESPONSIBLE FOR INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL EXPOSE BY PRE-EXCAVATING ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL EFFECT ON THE PROPOSED AND EXISTING UTILITIES. THE CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH THE UTILITY OWNER.

2. WHERE EXISTING POWER OR TELEPHONE POLES ARE IN CLOSE PROXIMITY TO WORK, THE CONTRACTOR SHALL COORDINATE HIS WORK EFFORTS WITH THOSE OF THE UTILITY COMPANIES SUCH THAT THEIR EXISTING FACILITIES CAN BE MAINTAINED AND PROTECTED DURING THE TIME WORK IS GOING ON ADJACENT TO THE POLE. THE COST FOR ANY REQUIRED PROTECTION OR RELOCATION OF EXISTING POWER OR TELEPHONE POLES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NOT THAT OF THE CITY.
3. THE CONTRACTOR SHALL BE REQUIRED, AT HIS EXPENSE, TO DO EVERYTHING NECESSARY TO PROTECT, SUPPORT AND SUSTAIN ALL SANITARY SEWERS, STORM DRAINS, WATER, PROCESS OR GAS PIPES, SERVICE PIPES, ELECTRIC LIGHTS, POWER AND TELEPHONE POLES, CONDUIT AND OTHER FIXTURES LAID ACROSS OR ALONG THE SITE OF THE WORK. THE ENGINEER AS WELL AS THE COMPANY OR CORPORATION OWNING SAID PIPES, POLES OR CONDUITS MUST BE NOTIFIED OF THE SAME BY THE CONTRACTOR, BEFORE ANY SUCH FIXTURES ARE REMOVED OR DISTURBED. IN CASE ANY OF THE SAID SEWER, DRAIN, GAS, PROCESS OR WATER PIPES, SERVICE PIPES, ELECTRIC LIGHT, POWER AND TELEPHONE POLES, CONDUITS OR OTHER FIXTURES ARE DAMAGED THEY SHALL BE REPAIRED BY THE AUTHORITIES HAVING CONTROL OF THE SAME AND THE EXPENSE OF SAID REPAIRS SHALL BE DEDUCTED FROM THE MONIES WHICH ARE DUE OR TO BECOME DUE THE CONTRACTOR UNDER THIS CONTRACT.
4. EXISTING UTILITY (GAS, ELECTRICAL, CABLE TELEVISION, TELEPHONE, WATER LINE, STORM OR SANITARY SEWER, WATER LINE OR STORM OR SANITARY SEWER APPURTENANCE, ETC.) IN OR OUTSIDE THE CONSTRUCTION LIMITS DAMAGED DURING THE CONSTRUCTION OF THE PROPOSED PROJECT, WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. INDIVIDUAL SANITARY, STORM, GAS, WATER, ELECTRIC AND TELEPHONE AND CABLE SERVICE CONNECTIONS ARE NOT SHOWN. THE CONTRACTOR SHALL LOCATE AND PROTECT SERVICE CONNECTIONS THROUGHOUT THE COURSE OF THE WORK. IN THE EVENT SERVICE CONNECTIONS ARE BROKEN OR DISTURBED, THE CONTRACTOR SHALL REPAIR OR REPLACE THE SERVICE CONNECTION TO THE SATISFACTION OF THE OWNER AT NO ADDITION COST TO THE OWNER
5. SHOULD IT BECOME NECESSARY TO CHANGE THE POSITION OR TEMPORARILY REMOVE ANY STORM DRAIN, SANITARY SEWER, ELECTRIC CONDUITS, WATER PIPES, GAS PIPES, PROCESS OR OTHER PIPES OR WIRES IN ORDER TO PERMIT THE CONTRACTOR TO USE A PARTICULAR METHOD OF CONSTRUCTION OR IN ORDER TO CLEAR THE STRUCTURES BEING BUILT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE LOCATION AND CIRCUMSTANCES IMMEDIATELY
6. NO SURFACE, GROUND OR TRENCH WATER SHALL BE ALLOWED TO FLOW INTO EXISTING SANITARY SEWERS.

CITY OF ORRVILLE, OHIO ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE I WAYNE COUNTY	OHIO	SCALE: DATE: 9/11/2026	AS NOTED	NO	REVISION	DATE
GENERAL - 00 SERIES		DESIGNED BY:	RSS			
		DRAWN BY:	CAS			
GENERAL NOTES - 1		CHECKED BY:	RSS			
PROJECT NO: 40948						
DRAWING NAME 00G-03						
SHEET 3		OF 23				
						
8150 STERLING COURT MENTOR, OHIO 44060 (440) 951-9000						

1. PROHIBITED CONSTRUCTION ACTIVITIES

1. DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOODPLAINS, EVEN WITH THE PERMISSION OF THE PROPERTY OWNER;
2. LOCATING STOCKPILE STORAGE AREAS IN ENVIRONMENTALLY SENSITIVE AREAS;
3. INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR OUTSIDE THE EASEMENT LIMITS;
4. PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS, OR STORM SEWERS; ALL SUCH WATER WILL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE;
5. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE AND OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS, OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO;
6. PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW LINE OF ANY STREAM;
7. DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA;
8. DISPOSAL OF TREES, BRUSH, AND OTHER DEBRIS IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS;
9. OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT;
10. DISCHARGING INJURIOUS SILICA DUST CONCENTRATIONS INTO THE ATMOSPHERE RESULTING FROM BREAKING, CUTTING, CHIPPING, RILLING, BUFFING, GRINDING, POLISHING, SHAPING OR SURFACING CLOSER THAN 200 FEET TO PLACES OF RESIDENCES OR COMMERCIAL, PROFESSIONAL, QUASI-PUBLIC OR PUBLIC PLACES OF HUMAN OCCUPATION;
11. STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED ON THE PLANS BY THE ENGINEER FOR SUCH PURPOSES;
12. RUNNING WELL POINT OR PUMP DISCHARGE LINES THROUGH PRIVATE PROPERTY OR PUBLIC PROPERTY AND RIGHTS-OF-WAY WITHOUT THE WRITTEN PERMISSION OF THE PROPERTY OWNER AND THE CONSENT OF THE ENGINEER;
13. OPERATIONS ENTAILING THE USE OF VIBRATORY HAMMERS OR COMPACTORS OUTSIDE THE HOURS OR 8:00 AM AND 5:00 P.M. OR OUTSIDE THE HOURS ALLOWED FOR CONSTRUCTION BY LOCAL ORDINANCES OR REGULATIONS; AND
14. CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE OR BOULEVARD WITHOUT THE PRIOR CONSENT OF MUNICIPAL OFFICIALS AND THE ENGINEER, AND CLOSING CLEAR ACCESS:

- BY FIRE PROTECTION EQUIPMENT AND EMERGENCY VEHICLES;

- BY THE PUBLIC TO ANY COMMERCIAL OR PROFESSIONAL PLACE OF BUSINESS, QUASI-PUBLIC OR PUBLIC ESTABLISHMENT, OR PLACE OF RESIDENCE; OR

- BY VEHICLES TO DRIVEWAYS WITHOUT THE PROVISION OF ALTERNATIVE MEANS OF BUILDING INGRESS AND EGRESS.
15. SOIL AND FILL SHALL NOT BE STOCKPILED IN THE FLOODPLAIN.

2. MITIGATIVE MEASURES

- EROSION/SEDIMENT CONTROL
1. SITE CLEARING AND GRUBBING SHALL NOT COMMENCE UNTIL SUCH TIME THAT THE CONTRACTOR IS PREPARED TO START CONSTRUCTION. REMOVE ONLY THOSE TREES, SHRUBS, AND GRASSES THAT MUST BE REMOVED FOR CONSTRUCTION OF ACTUAL FACILITIES; PROTECT THE REST TO PRESERVE THEIR AESTHETIC, HABITAT, AND EROSION CONTROL VALUES.
2. IMMEDIATELY FOLLOWING SITE AND ACCESS CLEARING, TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED. THEY WILL BE MAINTAINED IN EFFECTIVE OPERATING CONDITION DURING CONSTRUCTION UNTIL FINAL SEEDING AND SITE RESTORATION OCCURS.
3. AT THE WWTP CONSTRUCTION SITE, INSTALL SEDIMENT BASINS AND DIVERSION DIKES BEFORE DISTURBING THE LAND THAT DRAINS INTO THEM.
4. DIVERSION CHANNELS WILL BE CONSTRUCTED AROUND THE WWTP CONSTRUCTION SITE TO COLLECT RUNOFF AND PREVENT SILT AND OTHER ERODIBLE MATERIALS FROM ENTERING LOCAL DRAINAGE COURSES. DIVERSION CHANNELS WILL FLOW TO TEMPORARY SEDIMENT BASINS, AND ARE TO BE STABILIZED THROUGH SEEDING, RIP-RAPPING, OR LINING THEM WITH PLASTIC.
5. EXISTING TOPSOIL WILL BE STOCKPILED AND REPLACED UPON FINAL GRADING OF THE WWTP CONSTRUCTION SITE.
6. EXTENSIVE AREAS OF STOCKPILED TOPSOIL AT THE WWTP CONSTRUCTION SITE ARE TO BE PROTECTED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING OR COVERING SUCH AS WITH ANCHORED STRAW MULCH. SILT BARRIERS WILL BE INSTALLED DOWN GRADIENT OF THESE AREAS ON CONTOUR AND WITH THEIR ENDS UP SLOPE OF THE CONTOUR TO PREVENT SILT LADEN RUNOFF FROM ENTERING WATERWAYS OR STORM SEWERS. WITHIN 15 DAYS OF COMPLETION OF CONSTRUCTION, ANY REMAINING SOIL MUST EITHER BE REMOVED OR PERMANENTLY STABILIZED.
7. SILT FENCES SHOULD BE TRENCHED SIX TO TWELVE INCHES DEEP, THE FABRIC LAID IN THE TRENCH, AND THE SOIL PROPERLY BACKFILLED INTO THE TRENCH TO PREVENT UNDERCUTTING.
8. ANY DISTURBED AREA THAT WILL NOT BE ACTIVELY UNDER CONSTRUCTION FOR A PERIOD OF 15 DAYS OR MORE WILL BE TEMPORARILY STABILIZED IMMEDIATELY BY SEEDING AND MULCHING OR BY ANCHORED STRAW MULCH.
9. AS CONSTRUCTION IS COMPLETED, PERMANENTLY STABILIZE EACH DISTURBED AREA IN STAGES WITH PERENNIAL VEGETATION INSTALLED ACCORDING TO OHIO EPA (OR EQUIVALENT) STANDARDS AND SPECIFICATIONS. AFTER FINAL SOIL SETTLING OVER THE SANITARY SEWER, OUTFALL SEWER, AND FORCE MAIN ALIGNMENTS, THE CONTRACTOR SHALL BRING THE TRENCH BACK TO GRADE IF NECESSARY, PLACE TOPSOIL, AND FINE GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY ACTIVITIES ASSOCIATED WITH THE CONSTRUCTION OF THAT SECTION OF PIPE. FINAL GRADING WILL BE CONSISTENT WITH PRE-CONSTRUCTION TOPOGRAPHY FOR DRAINAGE AND AESTHETIC REASONS.
10. SLOPES EXCEEDING 15 PERCENT OR THAT TEND TO BE UNSTABLE REQUIRE SPECIAL TREATMENT SUCH AS WATER DIVERSION BERMS, SODDING, OR THE USE OF JUTE OR EXCELSIOR BLANKETS.
11. WHEN BORROW MATERIAL IS OBTAINED FROM OTHER THAN COMMERCIALLY OPERATED SOURCES, EROSION OF THE BORROW SITE WILL BE SO CONTROLLED BOTH DURING AND AFTER COMPLETION OF THE WORK THAT EROSION WILL BE MINIMIZED AND SEDIMENT WILL NOT ENTER STREAMS OR OTHER BODIES OF WATER. WASTE OR DISPOSAL AREAS AND CONSTRUCTION ROADS SHALL BE LOCATED AND CONSTRUCTED IN A MANNER THAT WILL KEEP SEDIMENT FROM ENTERING STREAMS. TEMPORARY EROSION CONTROL BARRIERS AND LIMITED SITE CLEARING WILL BE USED AS NEEDED.
12. IF WORK IS SUSPENDED FOR ANY REASON, THE CONTRACTOR SHALL MAINTAIN THE SOIL EROSION AND SEDIMENTATION CONTROLS IN GOOD OPERATING CONDITION DURING THE SUSPENSION OF THE WORK. ALSO, WHEN SEASONAL CONDITIONS PERMIT AND THE SUSPENSION OF WORK IS EXPECTED TO EXCEED A PERIOD OF ONE MONTH, THE CONTRACTOR SHALL SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS LEFT EXPOSED WHEN THE WORK IS STOPPED.
13. INSTALL THE ABOVE EROSION AND SEDIMENT CONTROL MEASURES, AS APPROPRIATE, REFERRING TO OHIO EPA, STORM WATER TECHNICAL ASSISTANCE, RAINWATER AND LAND DEVELOPMENT MANUAL STANDARDS AND SPECIFICATIONS (FORMERLY ODNR) OR EQUIVALENT FOR PARTICULAR TECHNIQUES. THESE MEASURES ARE TO BE MAINTAINED IN EFFECTIVE WORKING CONDITION DURING CONSTRUCTION AND UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

LINK:

HTTP://EPA.OHIO.GOV/PORTALS/35/STORM/TECHNICALASSISTANCE/RLD11-6-14All.pdf

2. MITIGATIVE MEASURES - CONTINUED

- AIR POLLUTION / NOISE CONTROL
1. CONSTRUCTION ACTIVITIES WILL BE LIMITED TO DAYTIME HOURS.
2. CONSTRUCTION EQUIPMENT WILL BE PROVIDED WITH INTAKE SILENCERS AND MUFFLERS, AS REQUIRED BY SAFETY STANDARDS.
3. ALL CONSTRUCTION VEHICLES SHOULD BE EQUIPPED WITH PROPER EMISSIONS CONTROL EQUIPMENT.
4. PERIODICALLY CHECK EQUIPMENT AND MACHINERY FOR PROPER TUNING TO MINIMIZE EXHAUST EMISSIONS AND NOISE.
5. UNPAVED AREAS WILL BE WET DOWN (AS NECESSARY) DURING CONSTRUCTION TO MINIMIZE DUST GENERATION.
- ARCHAEOLOGICAL / HISTORICAL RESOURCES
6. CONTRACTORS AND SUBCONTRACTORS ARE REQUIRED UNDER OHIO REVISED CODE SECTION 149.53 TO NOTIFY THE OHIO HISTORICAL SOCIETY AND THE OHIO HISTORIC SITE PRESERVATION BOARD OF ARCHAEOLOGICAL DISCOVERIES LOCATED IN THE PROJECT AREA, AND TO COOPERATE WITH THOSE ENTITIES IN ARCHAEOLOGICAL AND HISTORIC SURVEYS AND SALVAGE EFFORTS IF SUCH DISCOVERIES ARE UNCOVERED WITHIN THE PROJECT AREA.
- CONTACT: STATE HISTORIC PRESERVATION OFFICE

PHONE: 1-614-298-2000

verdantas

8150 STERLING COURT
MENTOR, OHIO 44060
(440) 951-9000

PROJECT NO:

40948

DRAWING NAME

00G-04

SHEET

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4

23

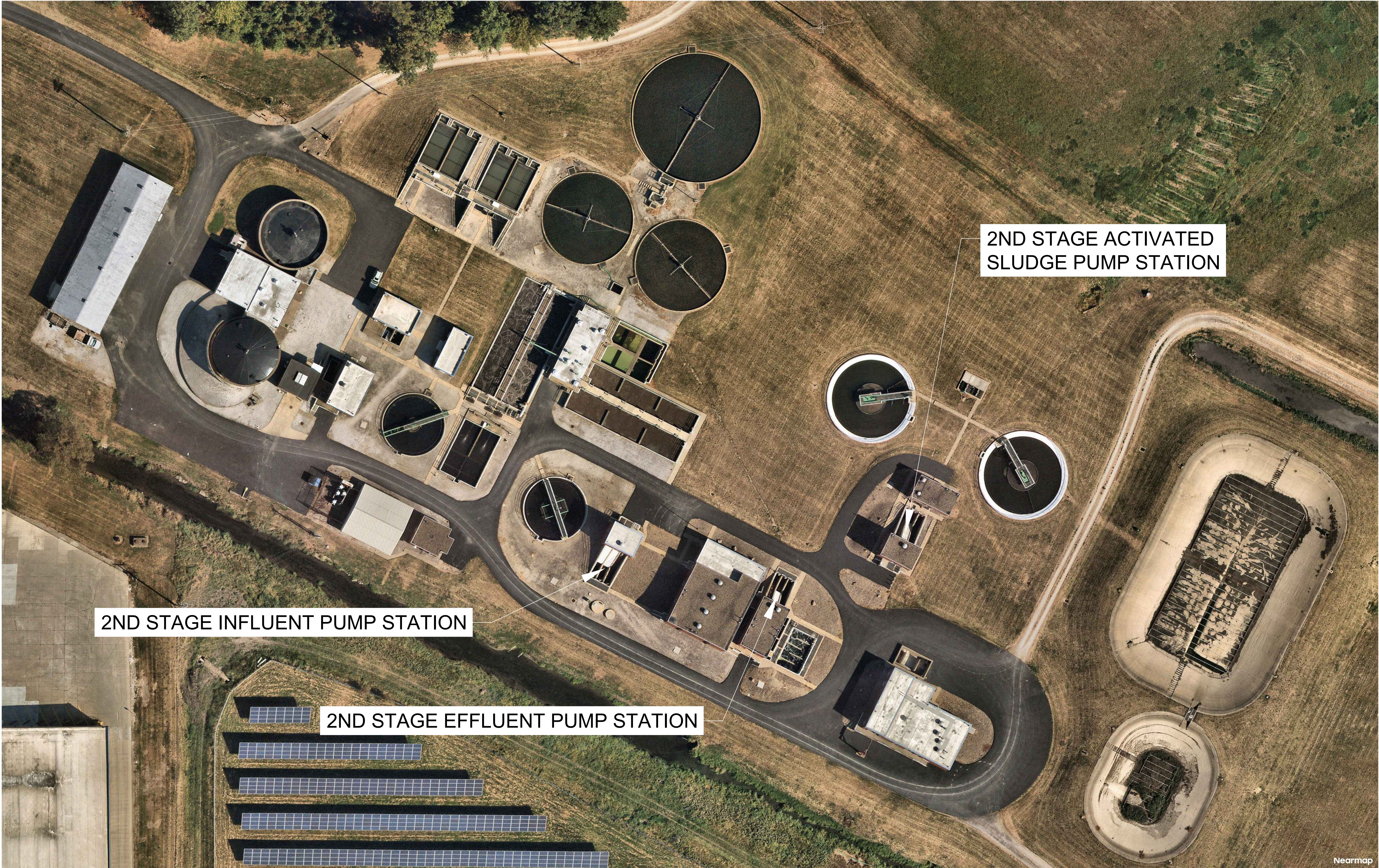
CITY OF ORRVILLE, OHIO
ORRVILLE WWTP SCREW PUMP
IMPROVEMENTS - PHASE I
WAYNE COUNTY

OHIO

GENERAL - 00 SERIES

GENERAL NOTES - 2

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2ND STAGE INFLUENT PUMP STATION

2ND STAGE EFFLUENT PUMP STATION

2ND STAGE ACTIVATED
SLUDGE PUMP STATION

CITY OF ORRVILLE, OHIO

ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE I

WAYNE COUNTY

OHIO

CIVIL - 10 SERIES

PUMP STATION LOCATIONS

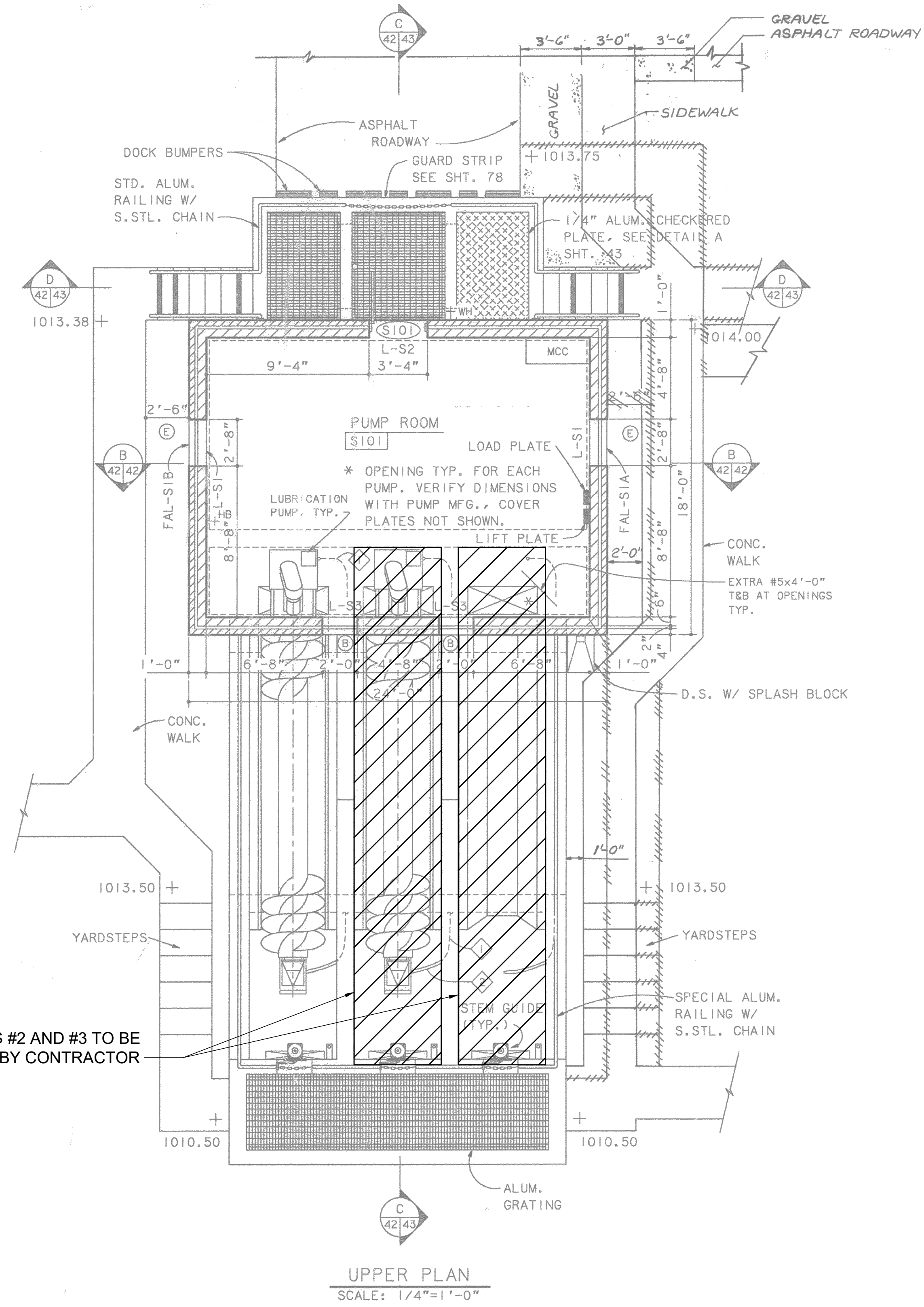
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DESIGNED BY:	RSS
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CHECKED BY:	RSS

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verdantas

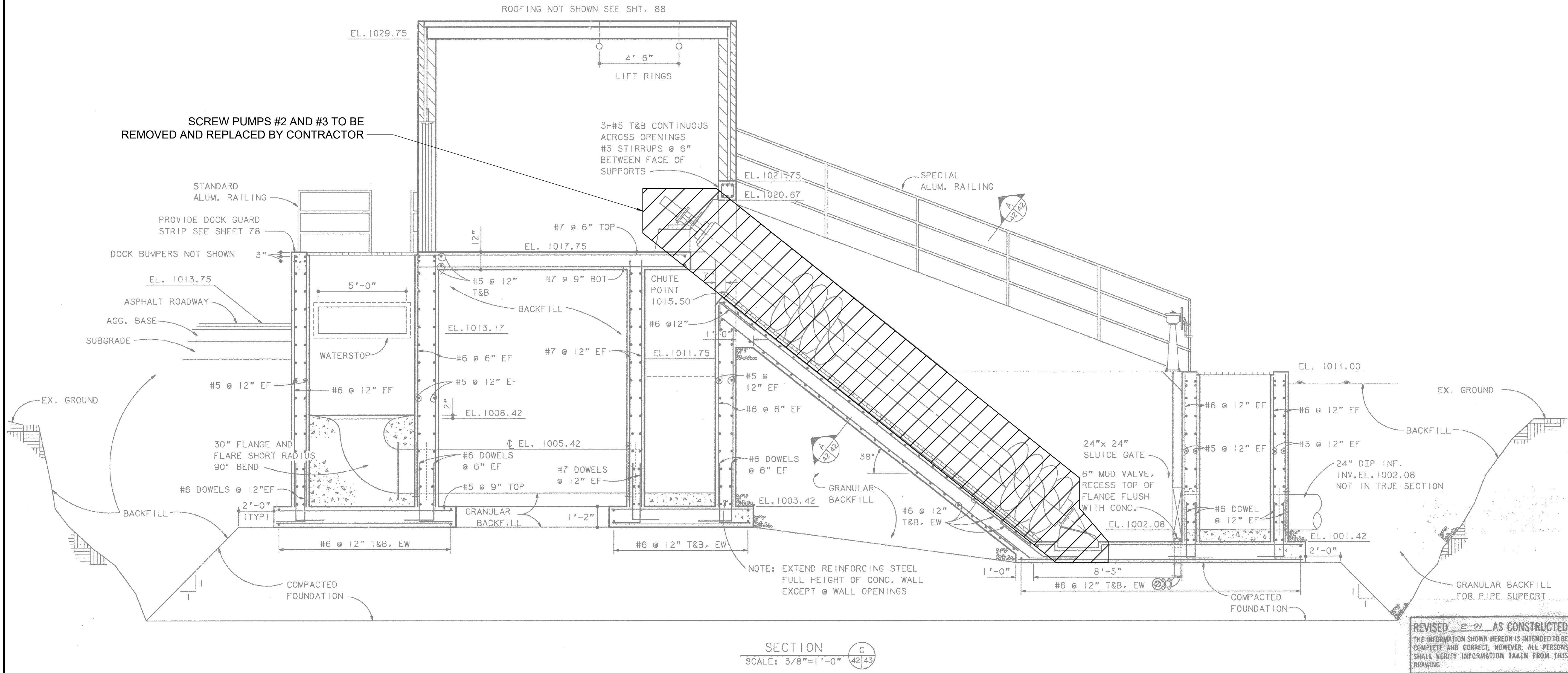
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MENTOR, OHIO 44060
(440) 951-9000

PROJECT NO:	
40948	
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SHEET	OF
5	23



NOTES:

1. CONTRACTOR SHALL REMOVE AND REPLACE THE SCREW, FLIGHTS, MOTORS, REDUCER, STEEL DEFLECTOR, AND ALL APPURTENANCES OF THE SCREW PUMPS.
2. CONTRACTOR TO REMOVE GROUT WITHIN TROUGH AS REQUIRED TO FACILITATE INSTALLATION OF NEW SCREW PUMPS BASED ON MANUFACTURER RECOMMENDATIONS.
3. EXISTING INFORMATION IS FROM RECORD DRAWINGS PROVIDED BY THE CITY. CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS AND DIMENSIONS.



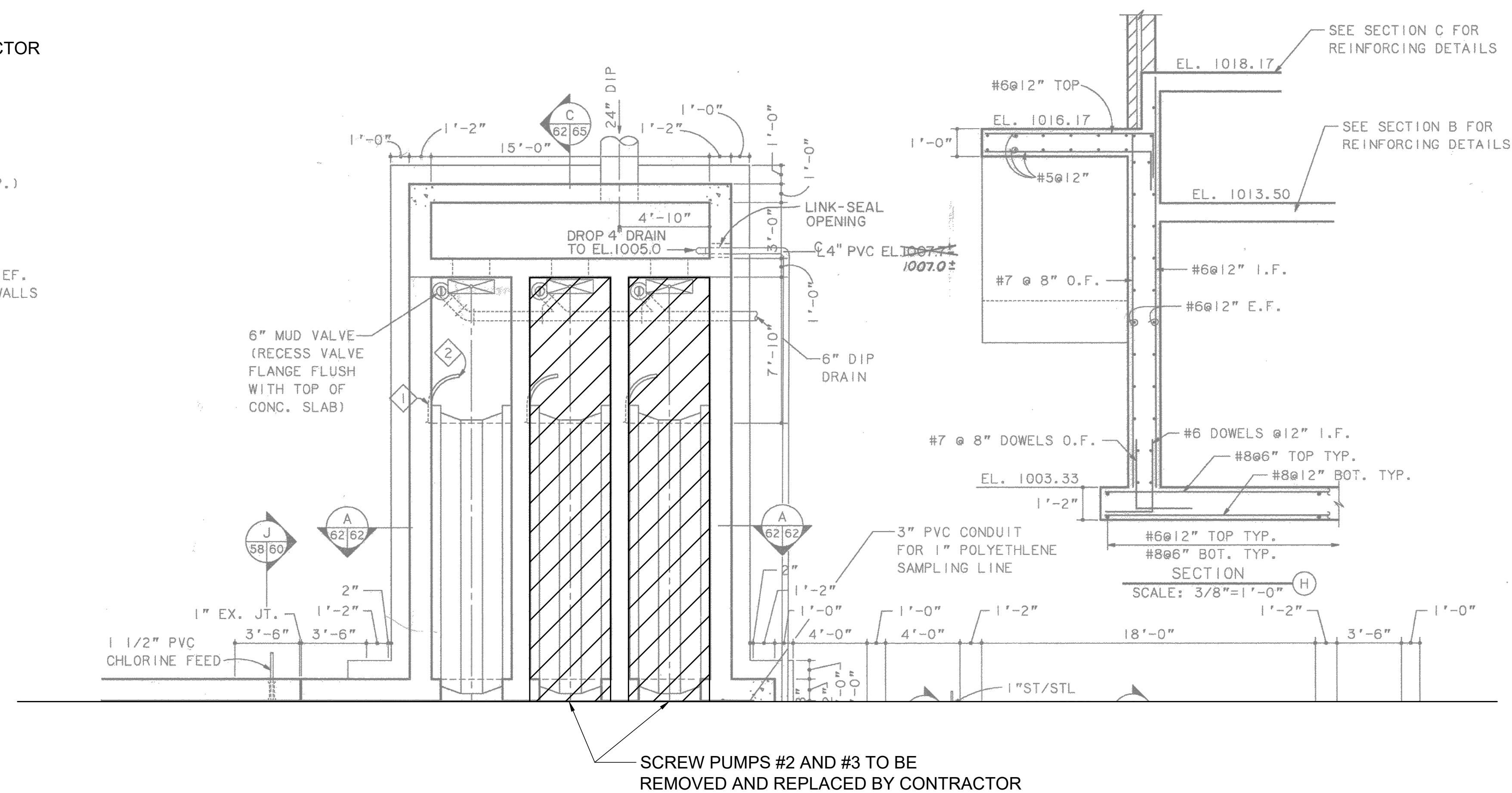
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NO.	REVISION	DATE

SCALE:	AS NOTED	DATE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
		9/11/2026	RRS	CAS	RRS

CITY OF ORRVILLE, OHIO	OHIO	CIVIL - 10 SERIES	2ND STAGE INFLUENT PS PUMP REPLCMTS. - 02
ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE I	WAYNE COUNTY		

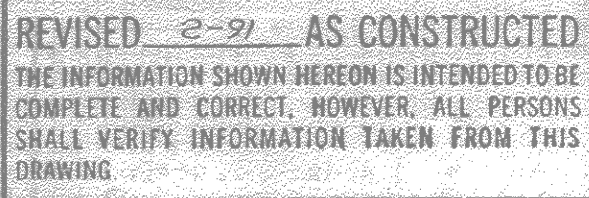
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DRAWING NAME	10C-03
SHEET	7
OF	23



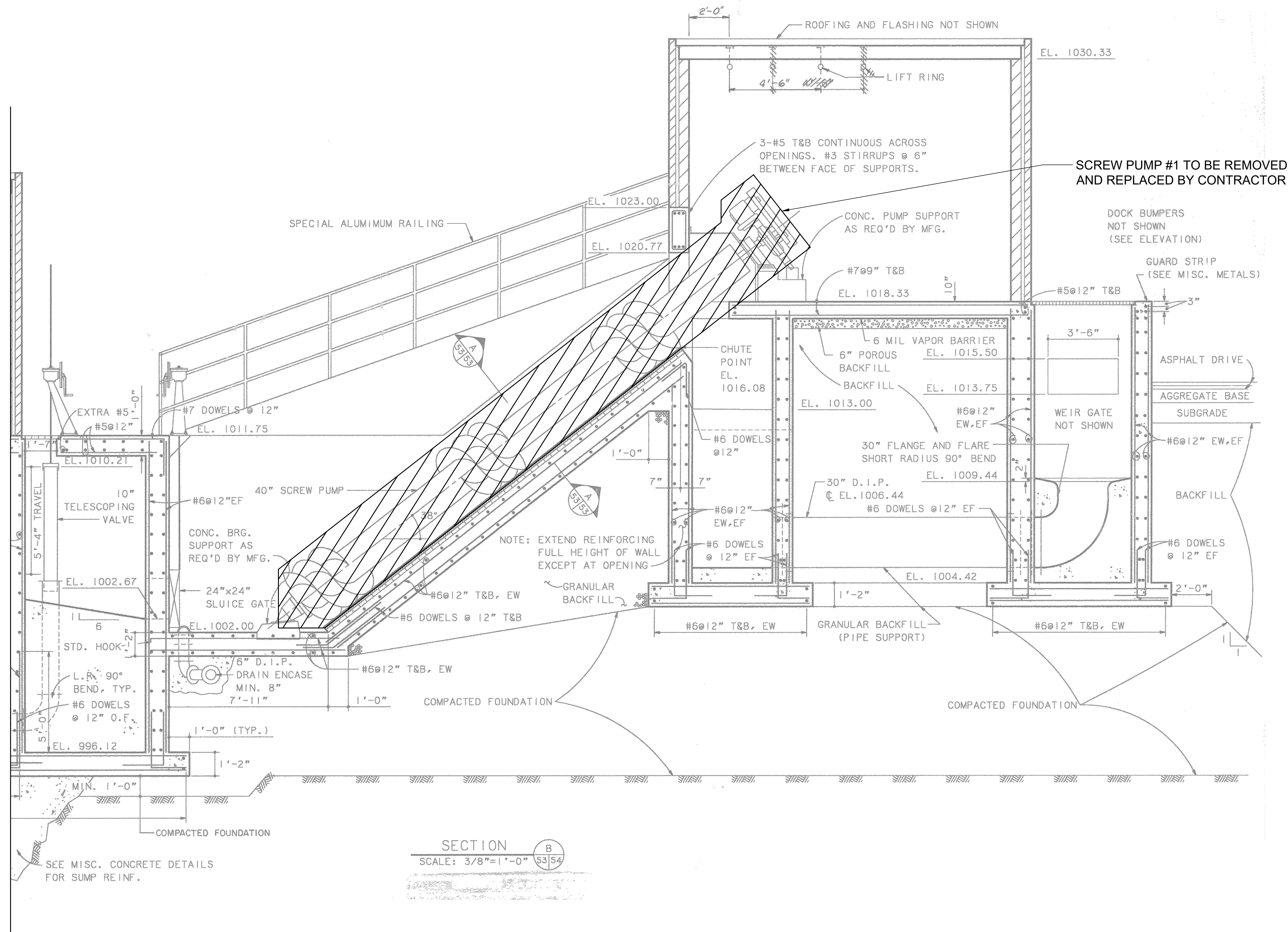
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2ND STAGE EFFLUENT PUMP STATION	
TYPE	SCREW
FLOW RATE	2,143 GPM
FLIGHTS	3
PUMP SPEED	49 RPM
HORSEPOWER	15 HP
SCREW DIAMETER	36 IN
QUANTITY	2

CITY OF ORRVILLE, OHIO		SCALE:	AS NOTED	NO.	REVISION	DATE
ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE I		DATE:	9/11/2026			
WAYNE COUNTY		DESIGNED BY:	RSS			
OHIO		DRAWN BY:	CAS			
CIVIL - 10 SERIES		CHECKED BY:	RSS			
2ND STAGE EFFLUENT PS PUMP RPLCMTS. - 01						
PROJECT NO:						
40948						
DRAWING NAME						
10C-04						
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PROJECT NO:	
40948	
DRAWING NAME	
10C-05	
SHEET	OF
9	23



- NOTES:
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 - CONTRACTOR TO REMOVE GROUT WITHIN TROUGH AS REQUIRED TO FACILITATE INSTALLATION OF NEW SCREW PUMPS BASED ON MANUFACTURER RECOMMENDATIONS.
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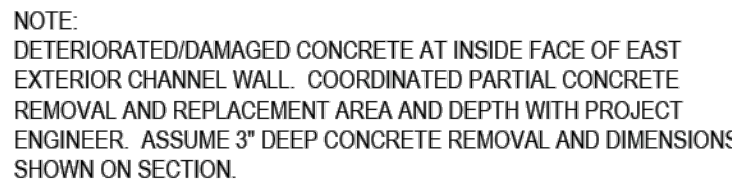
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					9/11/2026					

CITY OF ORRVILLE, OHIO
ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE I
WAYNE COUNTY

OHIO
CIVIL - 10 SERIES

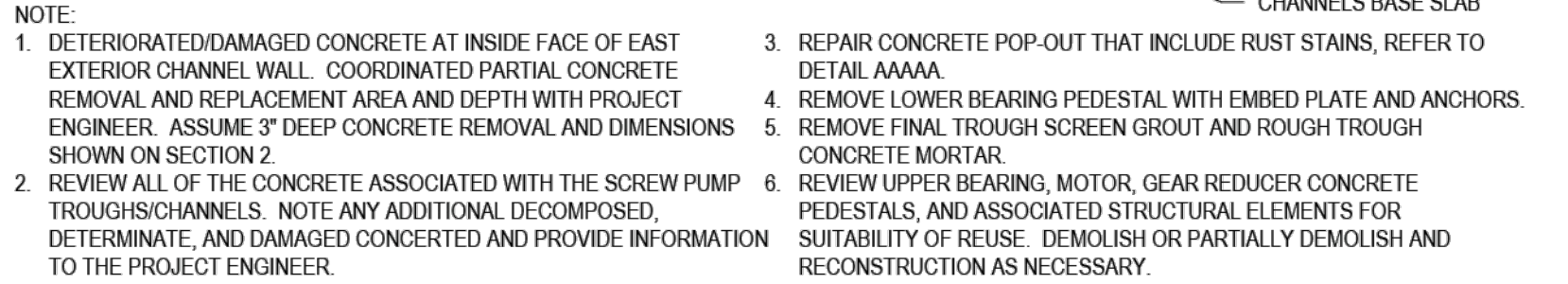
2ND STAGE ACTIVATED SLUDGE PS PUMP RPLCMTS. - 02

PROJECT NO:	
40948	
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4 SECTION
10S-01 SCALE: 1/4" = 1'-0"

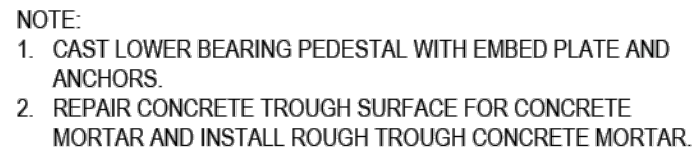
1. ONLY TWO SCREW PUMPS ARE BEING REPLACED AT THIS PUMP STATION AS PART OF ORVILLE WTP/S CREW PUMP IMPROVEMENTS - PHASE 1 PROJECT. COORDINATE WITH CIVIL AND ELECTRICAL FOR ADDITIONAL INFORMATION.
2. SEE SHEET 10S-04 FOR GENERAL STRUCTURAL NOTES.
3. SEE SHEETS 10S-05 THRU 10S-06 FOR TYPICAL CONCRETE REMOVAL, CONCRETE REPAIR, CONCRETE DETAILS AND TYPICAL DETAILS.
4. VERIFY ALL DIMENSIONS AND ELEVATIONS, SEE AS-BUILT DRAWINGS AND PROCESS DRAWINGS FOR ALL MEASUREMENTS AND ELEVATIONS. ALL DIMENSIONS SHALL CONFORM TO THE AS-BUILT DRAWINGS AND PROCESS DRAWINGS.
5. CONCRETE REMOVAL SHALL NOT DAMAGE EXISTING CONCRETE TO REMAIN. REFER TO STANDARD DETAILS FOR ADDITIONAL INFORMATION. EXPOSED REINFORCING, DUE TO DEMOLITION SHALL BE ENCAPSULATED PRIOR TO COMPLETION OF CONSTRUCTION. REMOVE OXIDATION PRIOR TO CONCRETE PLACEMENT.
6. REMOVE GRATING, PLATES, SHIELDS GUARDRAILS, ETC AS NEEDED TO FACILITIES CONSTRUCTION. CLEAN, STORE AND REINSTALL AFTER CONSTRUCTION IS COMPLETED.
7. EMBEDDED THREADED RODS (CONCRETE ANCHORS) EXPOSED TO EFFLUENT OR EXPOSED TO THE WEATHER SHALL BE STAINLESS STEEL (ASTM 304). EMBEDDED THREADED RODS (CONCRETE ANCHORS) IN CONDITIONED SPACES SHALL BE HOT DIPPED GALVANIZED THREADED ROD (ASTM F-1445 GR 38). UNDO. POST INSTALLED CONCRETE ANCHORS SHALL BE ADHESIVE ANCHORS.
8. AT SCREW PUMP TROUGHS (PUMP CHANNELS), REMOVE FINAL TROUGH SCREEN GROUT AND ROUGH TROUGH CONCRETE. ROUGHEN INTERFACE BETWEEN SCREW PUMP TROUGHS AND NEW ROUGH TROUGH CONCRETE MORTAR. NOTE BEARING OIL LINE. ROUGHEN INTERFACE BETWEEN NEW ROUGH TROUGH CONCRETE MORTAR AND NEW FINAL TROUGH SCREEN GROUT. FOLLOWING INSTALLATION AND ALIGNMENT OF THE SCREW PUMP, PLACE A HIGH-STRENGTH CEMENTITIOUS SCREEN GROUT AND PERFORM TROUGH SCREENING USING THE SCREW PUMP ASSEMBLY TO FORM THE FINAL TROUGH PROFILE AND OPERATING CLEARANCE BETWEEN THE SCREW FLIGHTS AND TROUGH SURFACE. FINAL SCREENING OF THE TROUGH SHALL BE PERFORMED BY THE SCREW PUMP MANUFACTURER. EPOXY BONDING AGENT SHALL BE USED AT CONCRETE INTERFACE PRIOR TO CONCRETE MORTAR PLACEMENT.
9. THE ARCHIMEDES SCREW PUMP MANUFACTURER SHALL PROVIDE ALL DESIGN INFORMATION REQUIRED FOR THE COMPLETE INSTALLATION, INCLUDING BUT NOT LIMITED TO EQUIPMENT WEIGHTS, OPERATING LOADS, REACTIONS, BEARING LOADS, ANCHOR BOLT LOADS, ANCHOR BOLT LAYOUTS, EMBEDMENT REQUIREMENTS, BASE PLATE DIMENSIONS, SOLE PLATE REQUIREMENTS, GROUT PAD DIMENSIONS, EMBEDDED ITEMS, MAINTENANCE CLEARANCES, AND INSTALLATION TOLERANCES.
10. THE CONTRACTOR SHALL COORDINATE THE SELECTED SCREW PUMP EQUIPMENT WITH EXISTING CONDITIONS PRIOR TO FABRICATION/MODIFICATION OF STRUCTURAL ELEMENTS. EXISTING DRAWINGS ARE PROVIDED FOR REFERENCE ONLY. FIELD VERIFICATION OF ALL EXISTING DIMENSIONS, ELEVATIONS, EQUIPMENT LOCATIONS, ANCHOR BOLT LOCATIONS, CONCRETE DIMENSIONS, AND STRUCTURAL SUPPORT CONDITIONS SHALL BE PERFORMED PRIOR TO COMMENCEMENT OF WORK.
11. THE SCREW PUMP MANUFACTURER ALONG WITH THE CONTRACTOR SHALL REVIEW THE EXISTING UPON BEARING, MOTOR, GEAR REDUCER CONCRETE PEDESTALS, AND ASSOCIATED STRUCTURAL ELEMENTS AND SHALL DETERMINE THE SUITABILITY FOR REUSE WITH THE NEW EQUIPMENT. WHERE EXISTING SUPPORTS ARE DETERMINED TO BE INADEQUATE, THE MANUFACTURER SHALL IDENTIFY THE REQUIRED MODIFICATIONS. CONTRACTOR SHALL DEMOLISH OR PARTIALLY DEMOLISH AND RECONSTRUCTION AS NECESSARY TO ACCOMMODATE THE PROPOSED EQUIPMENT. SUBMIT SHOP DRAWING FOR ALL MODIFICATIONS.
12. THE SCREW PUMP MANUFACTURER SHALL DESIGN AND SUPPLY ALL EQUIPMENT-SPECIFIC COMPONENTS, INCLUDING SCREW PUMPS, UPPER AND LOWER BEARING ASSEMBLIES, DRIVE EQUIPMENT, MOTOR SUPPORTS, GEAR REDUCERS, BASE PLATES, SOLE PLATES, ANCHOR BOLTS EMBEDDED ITEMS, DEFLECTOR PLATES, COVER PLATES, BRACKETS, CONNECTION HARDWARE, AND OTHER APPURTENANCES REQUIRED FOR A COMPLETE AND OPERABLE INSTALLATION.
13. ANCHOR BOLT SIZE, QUANTITY, MATERIAL, EMBEDMENT, PROJECTION, EDGE DISTANCES, SPACING, LAYOUT, AND DESIGN LOADS SHALL BE PROVIDED BY THE SCREW PUMP MANUFACTURER. THE CONTRACTOR SHALL COORDINATE ANCHOR BOLT INSTALLATION AND PLACEMENT TOLERANCES WITH THE EQUIPMENT SUPPLIER PRIOR TO CONCRETE PLACEMENT.
14. EQUIPMENT BASE PLATES, SOLE PLATES, BEARING SUPPORTS, AND OTHER LOAD-BEARING COMPONENTS SHALL BE FULLY GROUTED WITH NON-SHRINK GROUT CONFORMING TO ASTM C1107, UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED BY THE EQUIPMENT MANUFACTURER.
15. NO CONCRETE PLACEMENT OR STRUCTURAL MODIFICATIONS SHALL COMMENCE UNTIL APPROVED EQUIPMENT SUBMITTALS HAVE BEEN REVIEWED AND COORDINATED WITH THE CONTRACT DOCUMENTS. THIS REQUIREMENT INCLUDES BEARING PEDESTALS, EQUIPMENT FOUNDATIONS, GROUT PADS, EMBEDDED PLATES, ANCHOR BOLTS, ANCHOR BOLT TEMPLATES, AND ASSOCIATED STRUCTURAL WORK.
16. PRIOR TO FABRICATION OR CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS AND MANUFACTURER-PROVIDED STRUCTURAL DESIGN DATA FOR REVIEW. SUBMITTALS SHALL INCLUDE EQUIPMENT DIMENSIONS, SUPPORT REACTIONS, ANCHOR BOLT LOADS, BEARING LOADS, FOUNDATION REQUIREMENTS, CLEARANCE REQUIREMENTS, EMBEDDED ITEMS, AND ALL OTHER INFORMATION NECESSARY TO VERIFY COMPATIBILITY WITH THE EXISTING AND PROPOSED STRUCTURES.
17. WHERE EXISTING CONCRETE STRUCTURES ARE MODIFIED OR REUSED, THE CONTRACTOR SHALL VERIFY THE CONDITION OF THE EXISTING CONCRETE AND REPAIR OR REPLACE ANY DETRIORATION, CRACKING, VOIDS, CORROSION, DIMENSIONAL DISCREPANCIES, OR CONDITIONS AFFECTING THE INSTALLATION SHALL BE REPORTED TO THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL DISCIPLINES AND EQUIPMENT SUPPLIERS TO ENSURE THAT STRUCTURAL, MECHANICAL, ELECTRICAL, AND PROCESS REQUIREMENTS ARE COMPATIBLE AND FULLY INTEGRATED INTO THE FINAL INSTALLATION.
19. ALL EQUIPMENT AND STRUCTURAL MODIFICATIONS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS AND REQUIREMENTS OF THE SCREW PUMP MANUFACTURER.
20. AFTER DEMOLITION AND PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL REVIEW ALL OF THE CONCRETE ASSOCIATED WITH THE SCREW PUMP TROUGHS/CHANNELS WITH THE PROJECT ENGINEER. DECOMPOSED, DETERMINATE, AND DAMAGED CONCERTED SHALL BE NOTED. CONCRETE POUGH THAT INCLUDE RUST STAINS SHALL BE REPAIRED, REFER TO DETAIL 3 ON 10S-05 FOR ADDITIONAL INFORMATION.
21. PROVIDE RE-ENTRY REINFORCING AT ALL RE-ENTRY CORNERS.
22. CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO UNDERMINE, DISTURB, DAMAGE OR, IN ANY WAY, CAUSE UNDESIRABLE MOVEMENT, CRACKING, AND/OR SETTLEMENT OF THE ADJACENT STRUCTURE(S).



1
10S-01

DEMOLITION

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



2 CONSTRUCTION STAGE I

10S-01 SCALE: 1/4" = 1'-0"



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SCALE:			
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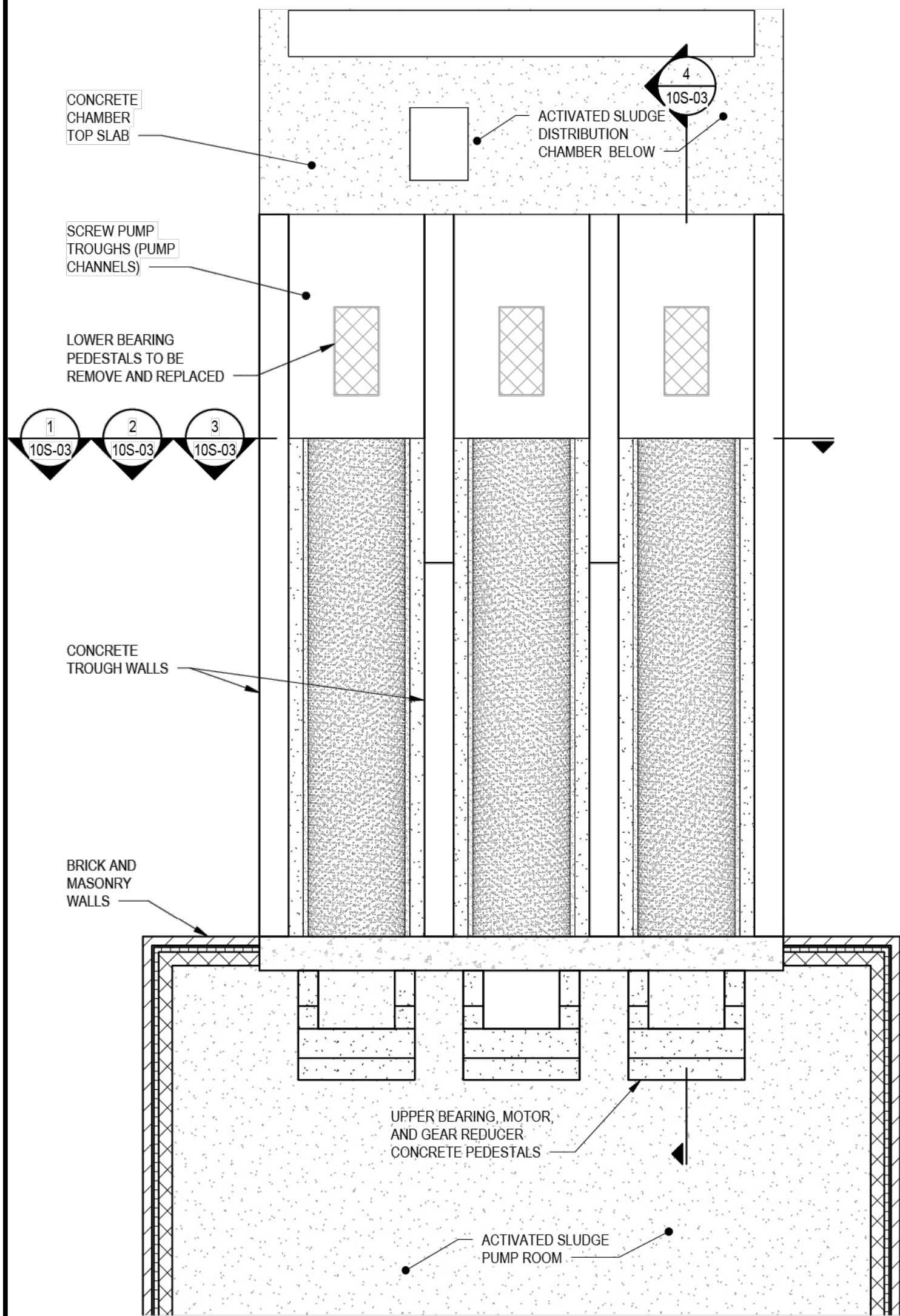
CITY OF ORRVILLE, OHIO
ORRVILLE WWTP SCREW PUMP
IMPROVEMENTS - PHASE I
WAYNE COUNTY

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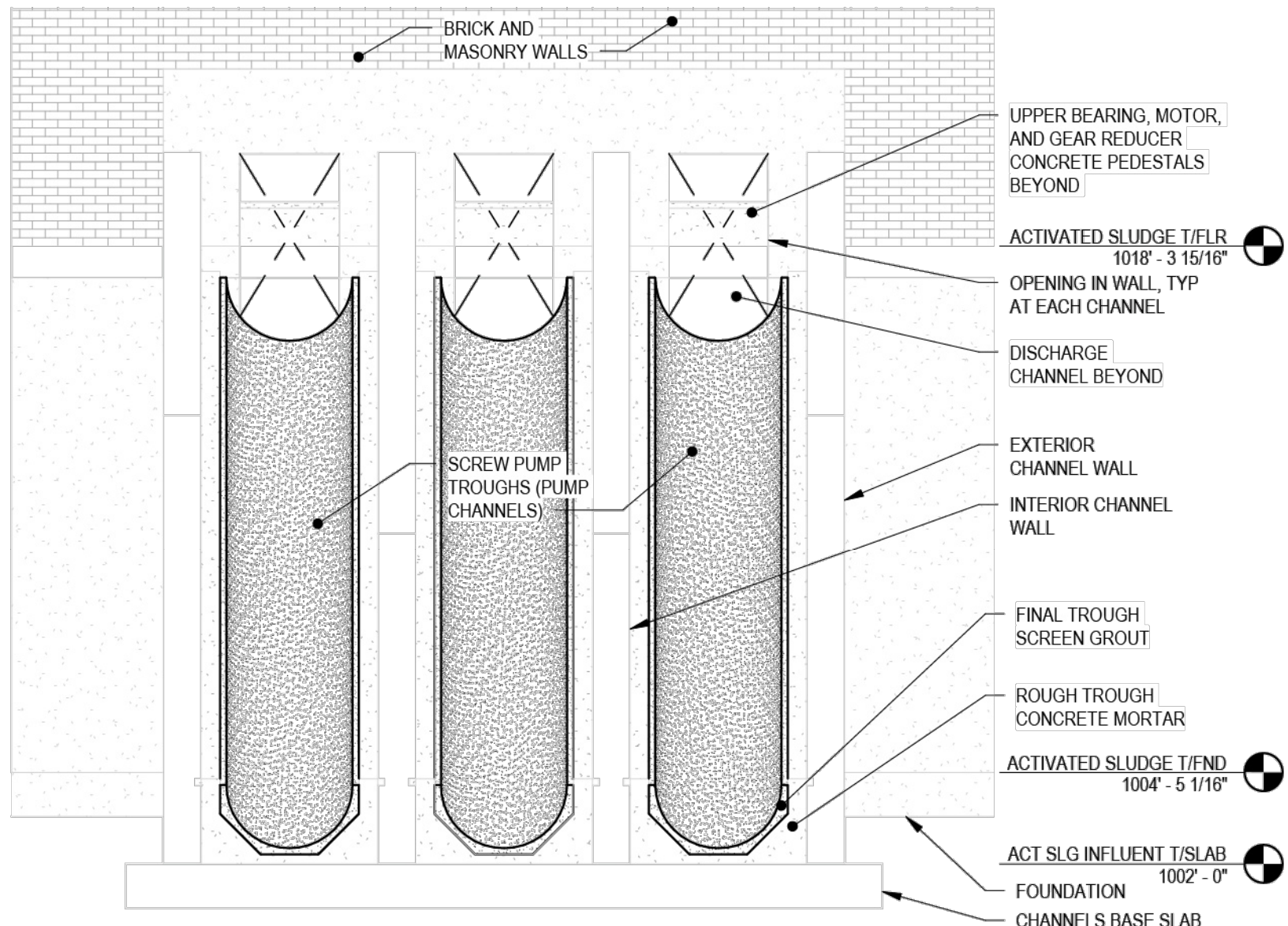
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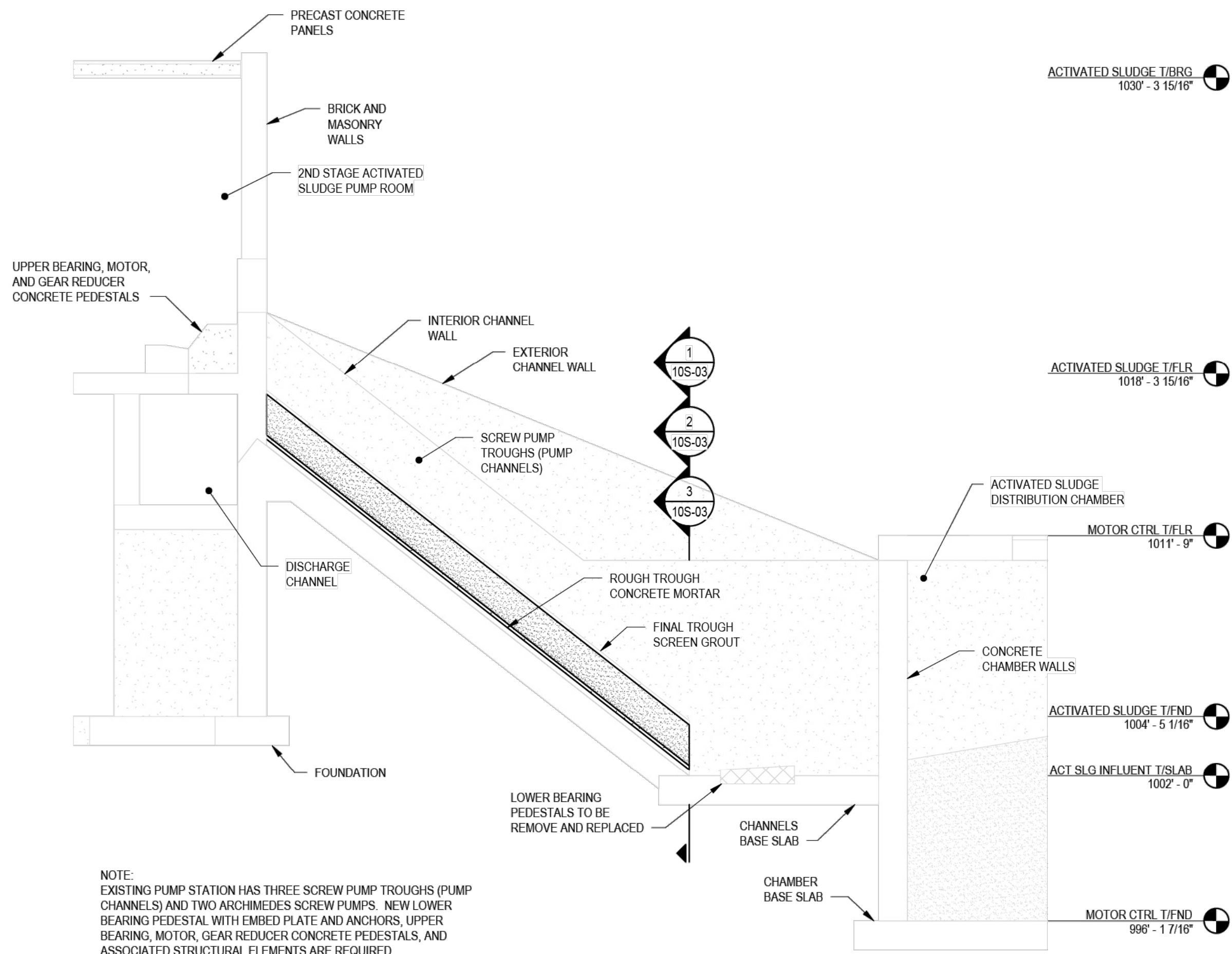


2ND STAGE ACTIVATED SLUDGE PS PLAN
SCALE: 1/4" = 1'-0"



NOTE:
1. REPAIR ROUGH TROUGH CONCRETE MORTAR SURFACE FOR FINAL TROUGH GROUT AND INSTALL FINAL TROUGH SCREEN GROUT.

3
10S-03
CONSTRUCTION STAGE II
SCALE: 1/4" = 1'-0"

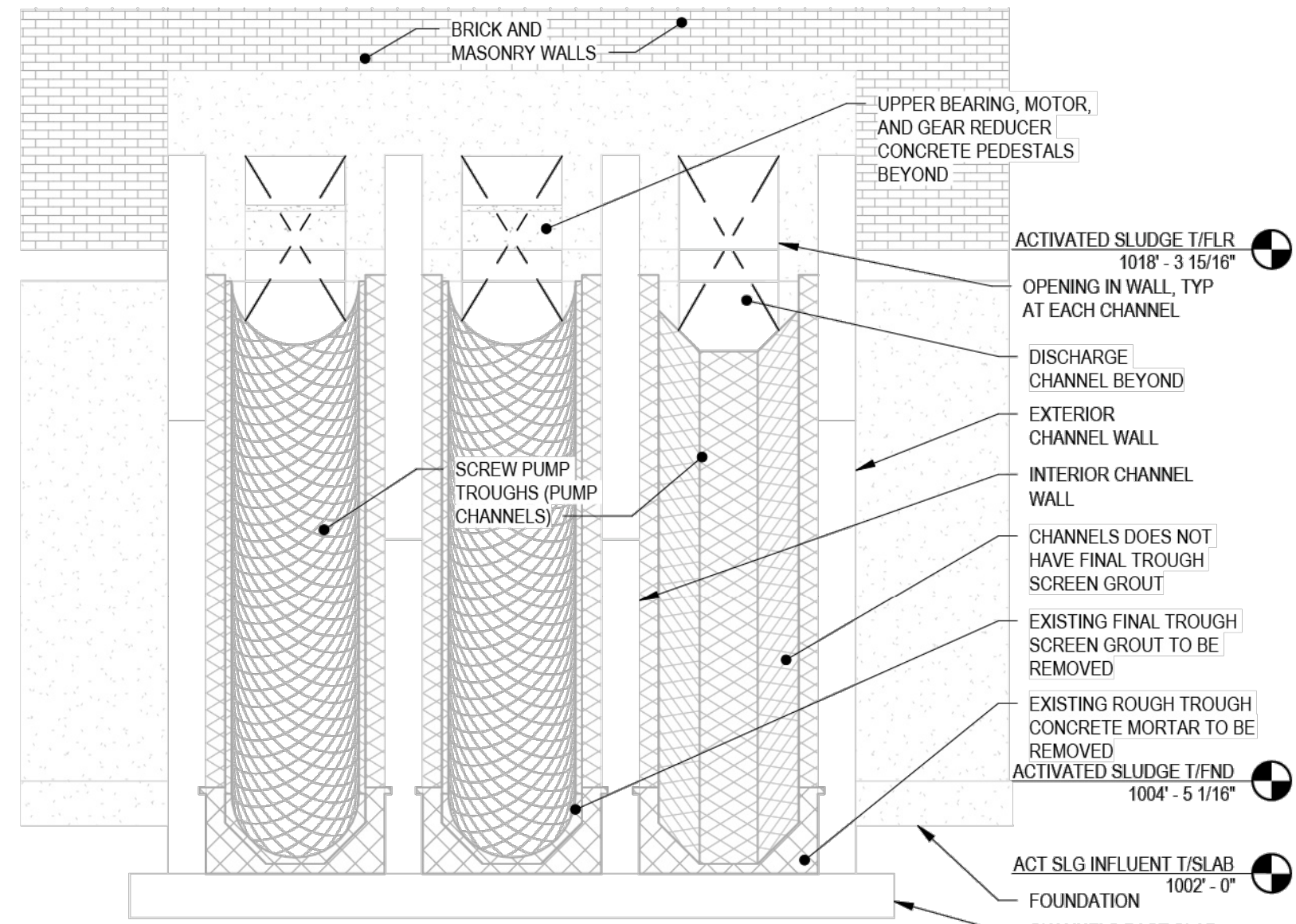


NOTE:
EXISTING PUMP STATION HAS THREE SCREW PUMP TROUGHS (PUMP CHANNELS) AND TWO ARCHIMEDES SCREW PUMPS. NEW LOWER BEARING PEDESTAL WITH EMBED PLATE AND ANCHORS, UPPER BEARING, MOTOR, GEAR REDUCER CONCRETE PEDESTALS, AND ASSOCIATED STRUCTURAL ELEMENTS ARE REQUIRED.

4
10S-03
SECTION
SCALE: 1/4" = 1'-0"

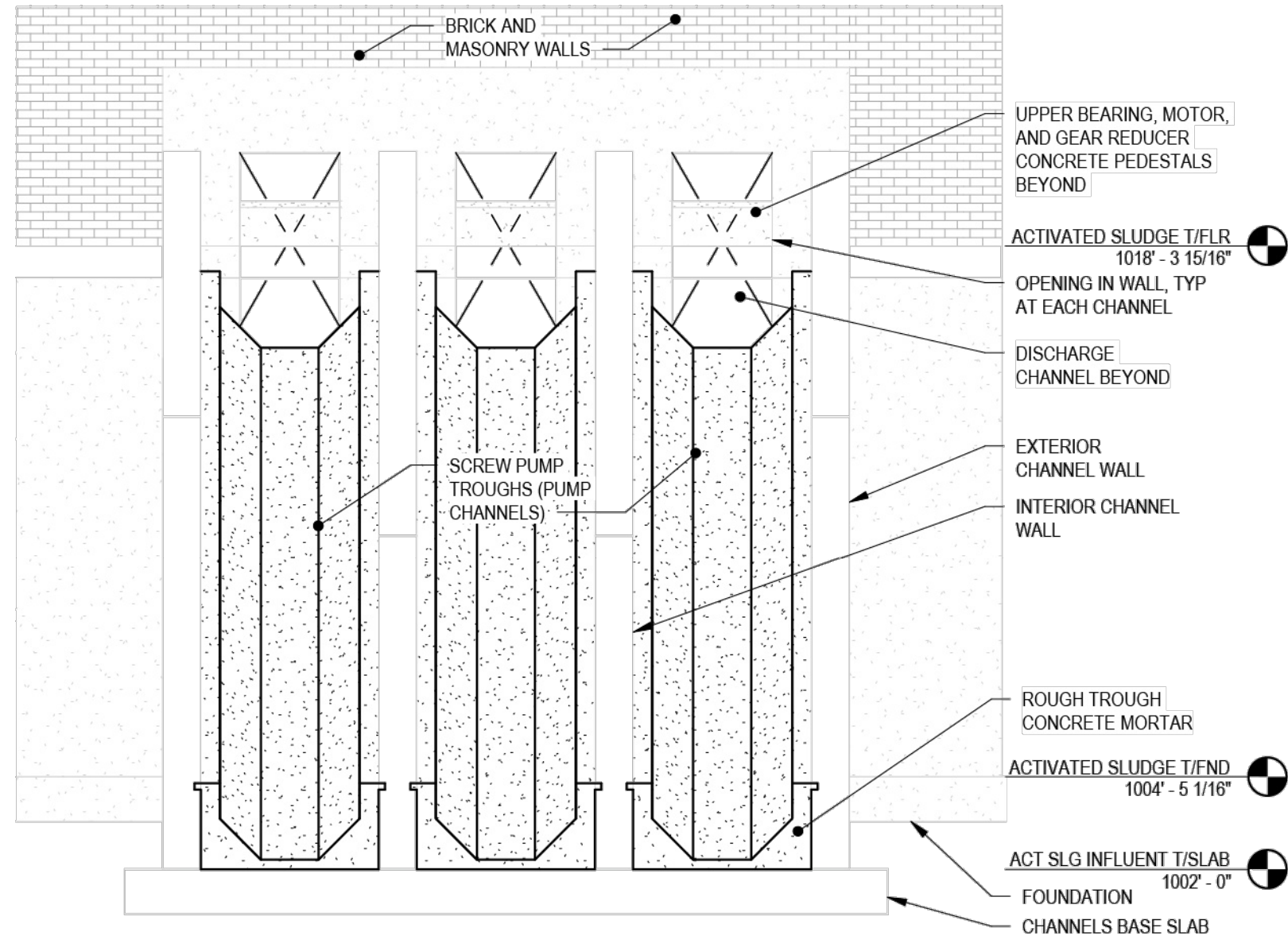
SHEET NOTES:

- ONLY TWO SCREW PUMPS ARE BEING REPLACED AT THIS PUMP STATION AS PART OF ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE 1 PROJECT. COORDINATE WITH CIVIL AND ELECTRICAL FOR ADDITIONAL INFORMATION.
- SEE SHEET 10S-04 FOR GENERAL STRUCTURAL NOTES.
- SEE SHEETS 10S-05 THRU 10S-06 FOR TYPICAL CONCRETE REMOVAL, CONCRETE REPAIR, CONCRETE DETAILS AND TYPICAL DETAILS.
- VERIFY ALL DIMENSIONS AND ELEVATIONS. SEE AS-BUILT DRAWINGS AND PROCESS DRAWINGS FOR ALL MEASUREMENTS AND ELEVATIONS. ALL DIMENSIONS SHALL CONFORM TO THE AS-BUILT DRAWINGS AND PROCESS DRAWINGS.
- CONCRETE REMOVAL SHALL NOT DAMAGE EXISTING CONCRETE TO REMAIN, REFER TO STANDARD DETAILS FOR ADDITIONAL INFORMATION. EXPOSED REINFORCING, DUE TO DEMOLITION SHALL BE ENCAPSULATED PRIOR TO COMPLETION OF CONSTRUCTION. REMOVE OXIDATION PRIOR TO CONCRETE PLACEMENT.
- REMOVE GRATING, PLATES, SHIELDS GUARDRAILS, ETC AS NEED TO FACILITIES CONSTRUCTION. CLEAN, STORE AND REINSTALL AFTER CONSTRUCTION IS COMPLETED.
- EMBEDDED THREADED RODS (CONCRETE ANCHORS) EXPOSED TO EFFLUENT OR EXPOSED TO THE WEATHER SHALL BE STAINLESS STEEL (ASTM 304), UNO. EMBEDDED THREADED RODS (CONCRETE ANCHORS) IN CONDITIONED SPACES SHALL BE HOT DIPPED GALVANIZED THREADED ROD (ASTM F-1445 GR 36), UNO. POST INSTALLED CONCRETE ANCHORS SHALL BE ADHESIVE ANCHORS.
- AT SCREW PUMP TROUGHS (PUMP CHANNELS), REMOVE FINAL TROUGH SCREEN GROUT AND ROUGH TROUGH CONCRETE. ROUGHEN INTERFACE BETWEEN SCREW PUMP TROUGHS AND NEW ROUGH TROUGH CONCRETE MORTAR. NOTE BEARING OIL LINE. ROUGHEN INTERFACE BETWEEN NEW ROUGH TROUGH CONCRETE MORTAR AND NEW FINAL TROUGH SCREEN GROUT. FOLLOWING INSTALLATION AND ALIGNMENT OF THE SCREW PUMP, PLACE A HIGH-STRENGTH CEMENTITIOUS SCREENED GROUT AND PERFORM TROUGH SCREENING USING THE SCREW PUMP ASSEMBLY TO FORM THE FINAL TROUGH PROFILE AND OPERATING CLEARANCE BETWEEN THE SCREW FLIGHTS AND TROUGH SURFACE. FINAL SCREENING OF THE TROUGH SHALL BE PERFORMED BY THE SCREW PUMP MANUFACTURER. EPOXY BONDING AGENT SHALL BE USED AT CONCRETE INTERFACE PRIOR TO CONCRETE MORTAR PLACEMENT.
- THE ARCHIMEDES SCREW PUMP MANUFACTURER SHALL PROVIDE ALL DESIGN INFORMATION REQUIRED FOR THE COMPLETE INSTALLATION, INCLUDING BUT NOT LIMITED TO EQUIPMENT WEIGHTS, OPERATING LOADS, REACTIONS, BEARING LOADS, ANCHOR BOLT LOADS, ANCHOR BOLT LAYOUTS, EMBEDMENT REQUIREMENTS, BASE PLATE DIMENSIONS, SOLE PLATE REQUIREMENTS, GROUT PAD DIMENSIONS, EMBEDDED ITEMS, MAINTENANCE CLEARANCES, AND INSTALLATION TOLERANCES.
- THE CONTRACTOR SHALL COORDINATE THE SELECTED SCREW PUMP EQUIPMENT WITH EXISTING CONDITIONS PRIOR TO FABRICATION OR MODIFICATION OF STRUCTURAL ELEMENTS. EXISTING DRAWINGS ARE PROVIDED FOR REFERENCE ONLY. FIELD VERIFICATION OF ALL EXISTING DIMENSIONS, ELEVATIONS, EQUIPMENT LOCATIONS, ANCHOR BOLT LOCATIONS, CONCRETE DIMENSIONS, AND STRUCTURAL SUPPORT CONDITIONS SHALL BE PERFORMED PRIOR TO COMMENCEMENT OF WORK.
- THE SCREW PUMP MANUFACTURER ALONG WITH THE CONTRACTOR SHALL REVIEW THE EXISTING UPPER BEARING, MOTOR, GEAR REDUCER CONCRETE PEDESTALS, AND ASSOCIATED STRUCTURAL ELEMENTS AND SHALL DETERMINE THE SUITABILITY FOR REUSE WITH THE NEW EQUIPMENT. WHERE EXISTING SUPPORTS ARE DETERMINED TO BE INADEQUATE, THE MANUFACTURER SHALL IDENTIFY THE REQUIRED MODIFICATIONS. CONTRACTOR SHALL DEMOLISH OR PARTIALLY DEMOLISH AND RECONSTRUCTION AS NECESSARY TO ACCOMMODATE THE PROPOSED EQUIPMENT. SUBMIT SHOP DRAWING FOR ALL MODIFICATIONS.
- THE SCREW PUMP MANUFACTURER SHALL DESIGN AND SUPPLY ALL EQUIPMENT-SPECIFIC COMPONENTS, INCLUDING SCREW PUMPS, UPPER AND LOWER BEARING ASSEMBLIES, DRIVE EQUIPMENT, MOTOR SUPPORTS, GEAR REDUCERS, BASE PLATES, SOLE PLATES, ANCHOR BOLTS, EMBEDDED ITEMS, DEFLECTOR PLATES, COVER PLATES, BRACKETS, CONNECTION HARDWARE, AND OTHER APPURTENANCES REQUIRED FOR A COMPLETE AND OPERABLE INSTALLATION.
- ANCHOR BOLT SIZE, QUANTITY, MATERIAL, EMBEDMENT, PROJECTION, EDGE DISTANCES, SPACING, LAYOUT, AND DESIGN LOADS SHALL BE PROVIDED BY THE SCREW PUMP MANUFACTURER. THE CONTRACTOR SHALL COORDINATE ANCHOR BOLT INSTALLATION AND PLACEMENT TOLERANCES WITH THE EQUIPMENT SUPPLIER PRIOR TO CONCRETE PLACEMENT.
- EQUIPMENT BASE PLATES, SOLE PLATES, BEARING SUPPORTS, AND OTHER LOAD-BEARING COMPONENTS SHALL BE FULLY GROUTED WITH NON-SHRINK GROUT CONFORMING TO ASTM C1107, UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED BY THE EQUIPMENT MANUFACTURER.
- NO CONCRETE PLACEMENT OR STRUCTURAL MODIFICATIONS SHALL COMMENCE UNTIL APPROVED EQUIPMENT SUBMITTALS HAVE BEEN REVIEWED AND COORDINATED WITH THE CONTRACT DOCUMENTS. THIS REQUIREMENT INCLUDES BEARING PEDESTALS, EQUIPMENT FOUNDATIONS, GROUT PADS, EMBEDDED PLATES, ANCHOR BOLTS, ANCHOR BOLT TEMPLATES, AND ASSOCIATED STRUCTURAL WORK.
- PRIOR TO FABRICATION OR CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS AND MANUFACTURER-PROVIDED STRUCTURAL DESIGN DATA FOR REVIEW. SUBMITTALS SHALL INCLUDE EQUIPMENT DIMENSIONS, SUPPORT REACTIONS, ANCHOR BOLT LOADS, BEARING LOADS, FOUNDATION REQUIREMENTS, CLEARANCE REQUIREMENTS, EMBEDDED ITEMS, AND ALL OTHER INFORMATION NECESSARY TO VERIFY COMPATIBILITY WITH THE EXISTING AND PROPOSED STRUCTURES.
- WHERE EXISTING CONCRETE STRUCTURES ARE MODIFIED OR REUSED, THE CONTRACTOR SHALL VERIFY THE CONDITION OF THE EXISTING CONCRETE AND REINFORCEMENT. ANY DETEIORATION, CRACKING, VOIDS, CORROSION, DIMENSIONAL DISCREPANCIES, OR CONDITIONS AFFECTING THE INSTALLATION SHALL BE REPORTED TO THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL DISCIPLINES AND EQUIPMENT SUPPLIERS TO ENSURE THAT STRUCTURAL, MECHANICAL, ELECTRICAL, AND PROCESS REQUIREMENTS ARE COMPATIBLE AND FULLY INTEGRATED INTO THE FINAL INSTALLATION.
- ALL EQUIPMENT AND STRUCTURAL MODIFICATIONS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS AND REQUIREMENTS OF THE SCREW PUMP MANUFACTURER.
- AFTER DEMOLITION AND PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL REVIEW ALL OF THE CONCRETE ASSOCIATED WITH THE SCREW PUMP TROUGHS/CHANNELS WITH THE PROJECT ENGINEER. DECOMPOSED, DETERMINATE, AND DAMAGED CONCERTED SHALL BE NOTED. CONCRETE POP-OUT THAT INCLUDE RUST STAINS SHALL BE REPAIRED, REFER TO DETAIL 3 ON 10S-05 FOR ADDITIONAL INFORMATION.
- PROVIDE RE-ENTRY REINFORCING AT ALL RE-ENTRY CORNERS.
- CONTRACTOR SHALL EXERCISE EXTREME CAUTION SO AS NOT TO UNDERMINE, DISTURB, DAMAGE OR, IN ANY WAY, CAUSE UNDESIRABLE MOVEMENT, CRACKING, AND/OR SETTLEMENT OF THE ADJACENT STRUCTURE(S).



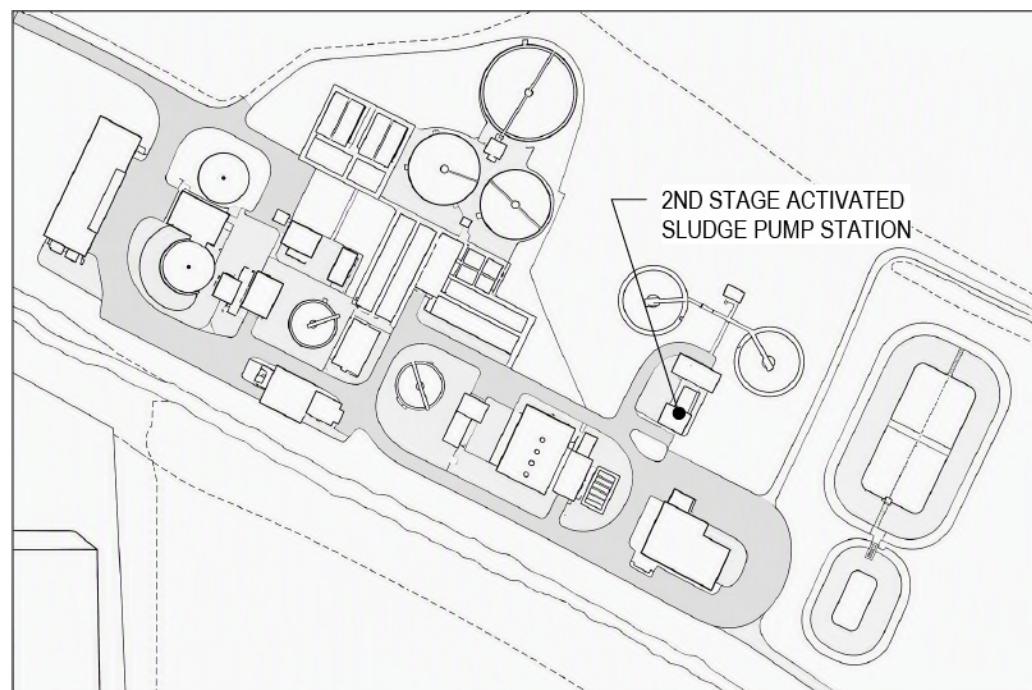
- NOTE:
- EXISTING PUMP STATION HAS THREE SCREW PUMP TROUGHS (PUMP CHANNELS) AND TWO ARCHIMEDES SCREW PUMPS. NEW LOWER BEARING PEDESTAL WITH EMBED PLATE AND ANCHORS, UPPER BEARING, MOTOR, GEAR REDUCER CONCRETE PEDESTALS, AND ASSOCIATED STRUCTURAL ELEMENTS ARE REQUIRED.
 - REVIEW ALL OF THE CONCRETE ASSOCIATED WITH THE SCREW PUMP TROUGHS/CHANNELS. NOTE ANY ADDITIONAL DECOMPOSED, DETERMINATE, AND DAMAGED CONCERTED AND PROVIDE INFORMATION TO THE PROJECT ENGINEER.
 - REPAIR CONCRETE POP-OUT THAT INCLUDE RUST STAINS, REFER TO DETAIL AAAAA.
 - REMOVE LOWER BEARING PEDESTAL WITH EMBED PLATE AND ANCHORS.
 - REMOVE FINAL TROUGH SCREEN GROUT AND ROUGH TROUGH CONCRETE MORTAR.
 - REVIEW UPPER BEARING, MOTOR, GEAR REDUCER CONCRETE PEDESTALS, AND ASSOCIATED STRUCTURAL ELEMENTS FOR SUITABILITY OF REUSE. DEMOLISH OR PARTIALLY DEMOLISH AND RECONSTRUCTION AS NECESSARY.

1
10S-03
DEMOLITION
SCALE: 1/4" = 1'-0"



- NOTE:
- CAST LOWER BEARING PEDESTAL WITH EMBED PLATE AND ANCHORS.
 - REPAIR CONCRETE TROUGH SURFACE FOR CONCRETE MORTAR AND INSTALL ROUGH TROUGH CONCRETE MORTAR.
 - MODIFY UPPER BEARING, MOTOR, GEAR REDUCER CONCRETE PEDESTALS, AND ASSOCIATED STRUCTURAL ELEMENTS AS NECESSARY.

2
10S-03
CONSTRUCTION STAGE I
SCALE: 1/4" = 1'-0"



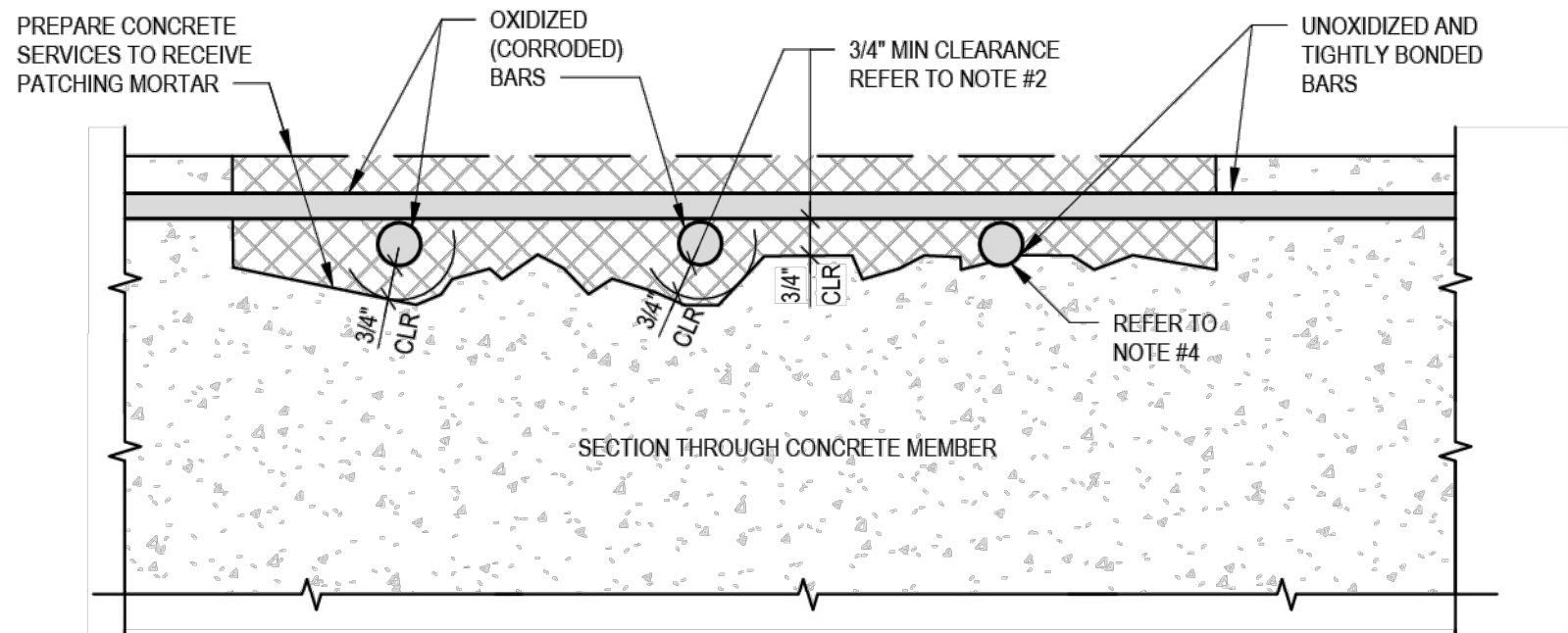
KEY PLAN

DATE	REVISION	NO

SCALE	DATE	DESIGNED BY:	DRAWN BY:	CHECKED BY:

CITY OF ORRVILLE, OHIO	OHIO
ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE I	WAYNE COUNTY
STRUCTURAL - 20 SERIES	2ND STAGE ACTIVATED SLUDGE PUMP STATION

PROJECT NO:	40948
DRAWING NAME	
SHEET	OF
14	23

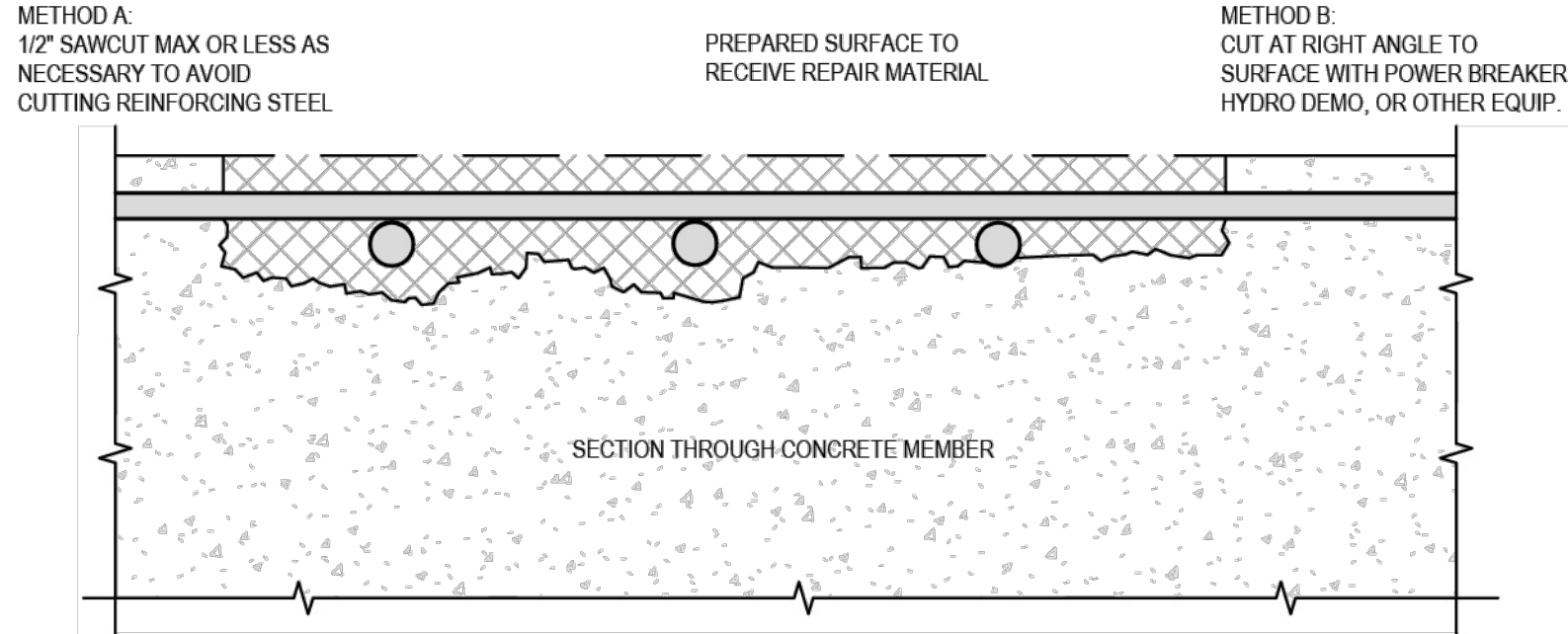


APPLICABLE TO HYDRODEMOLITION, HYDROMILLING, AND PNEUMATIC, HYDRAULIC, AND ELECTRIC BREAKERS
APPLICABLE TO HORIZONTAL, VERTICAL AND OVERHEAD LOCATIONS

CAUTION:
BEFORE STARTING REMOVAL, REVIEW EFFECT OF REMOVALS ON STRUCTURAL INTEGRITY. PROVIDE SHORING OF MEMBERS AS NECESSARY. PARTICULAR CARE SHALL BE EXERCISED AT SLAB/BREAM CONECTIONS TO COLUMNS

1. REMOVE LOOSE OR DELAMINATED CONCRETE ABOVE OXIDIZED REINFORCING STEEL. ONCE INITIAL REMOVALS ARE MADE, PROCEED WITH THE UNDERCUTTING OF ALL EXPOSED OXIDIZED (CORRODED) BARS. UNDERCUTTING WILL PROVIDE CLEARANCE FOR UNDER BAR CLEANING, FULL BAR CIRCUMFERENCE BONDING TO SURROUNDING CONCRETE, AND WILL SECURE THE PATCH STRUCTURALLY.
2. PROVIDE MINIMUM 3/4" CLEARANCE BETWEEN EXPOSED REBARS AND SURROUNDING CONCRETE OR 1/4" LARGER THAN LARGEST AGGREGATE IN REPAIR MORTAR, WHICH EVER IS GREATER.
3. CONCRETE REMOVALS SHALL EXTEND ALONG THE BARS TO LOCATIONS ALONG THE BAR FREE OF BOND INHIBITING CORROSION, AND WHERE THE BAR IS WELL BONDED TO SURROUNDING CONCRETE.
4. IF UNOXIDIZED REINFORCING STEEL IS EXPOSED DURING UNDERCUTTING PROCESS, CARE SHALL BE TAKEN NOT TO DAMAGE THE BARS BOND TO SURROUNDING CONCRETE IF BOND BETWEEN BAR AND CONCRETE IS BROKEN, UNDERCUTTING OF THE BAR SHALL BE REQUIRED.
5. ANY REINFORCEMENT WHICH IS LOOSE SHALL BE SECURED IN PLACE BY TYING TO OTHER SECURED BARS OR BY OTHER APPROVED METHODS.

APPLICABLE TO HORIZONTAL, VERTICAL, AND OVERHEAD LOCATIONS

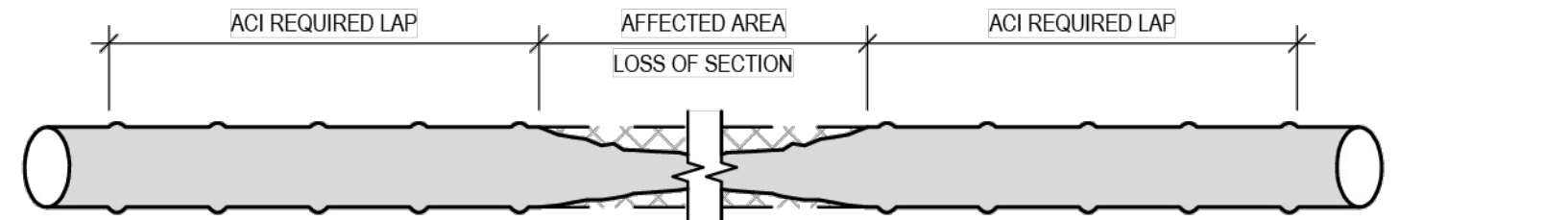


APPLICABLE TO HYDRODEMOLITION, HYDROMILLING, AND PNEUMATIC, HYDRAULIC, AND ELECTRIC BREAKERS
APPLICABLE TO HORIZONTAL, VERTICAL AND OVERHEAD LOCATIONS

CAUTION:
BEFORE STARTING REMOVAL, REVIEW EFFECT OF REMOVALS ON STRUCTURAL INTEGRITY. PROVIDE SHORING OF MEMBERS AS NECESSARY. PARTICULAR CARE SHALL BE EXERCISED AT SLAB/BREAM CONECTIONS TO COLUMNS

1. REMOVE DELAMINATED CONCRETE, UNDERCUT REINFORCING STEEL (REFER TO REINFORCING STEEL UNDERCUTTING GUIDELINE). REMOVE ADDITIONAL CONCRETE AS REQUIRED TO PROVIDE MINIMUM REQUIRED THICKNESS OF REPAIR MATERIAL.
2. AT EDGE LOCATIONS PROVIDE EITHER METHOD A OR METHOD B RIGHT ANGLE CUTS. AVOID FEATHER EDGES. FOR SHOTCRETE REPAIRS REFER TO ACI 506 EDGE PREPARATION GUIDELINES. PATCH CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE. FOR EXAMPLE:

PREFERRED
3. AFTER REMOVALS AND EDGE CONDITIONING ARE COMPLETE, REMOVE BOND INHIBITING MATERIALS (DIRT, CONCRETE SLURRY, LOOSELY BONDED AGGREGATES) BY ABRASIVE BLASTING OR HIGH PRESSURE WATERBLASTING WITH OR WITHOUT ABRASIVE. CHECK THE SURFACES AFTER CLEANING TO INSURE THAT SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE, OR THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.
4. IF HYDRODEMOLITION IS USED, CEMENT AND PARTICULATE SLURRY MUST BE REMOVED FROM THE PREPARED SURFACES BEFORE SLURRY HARDENS.



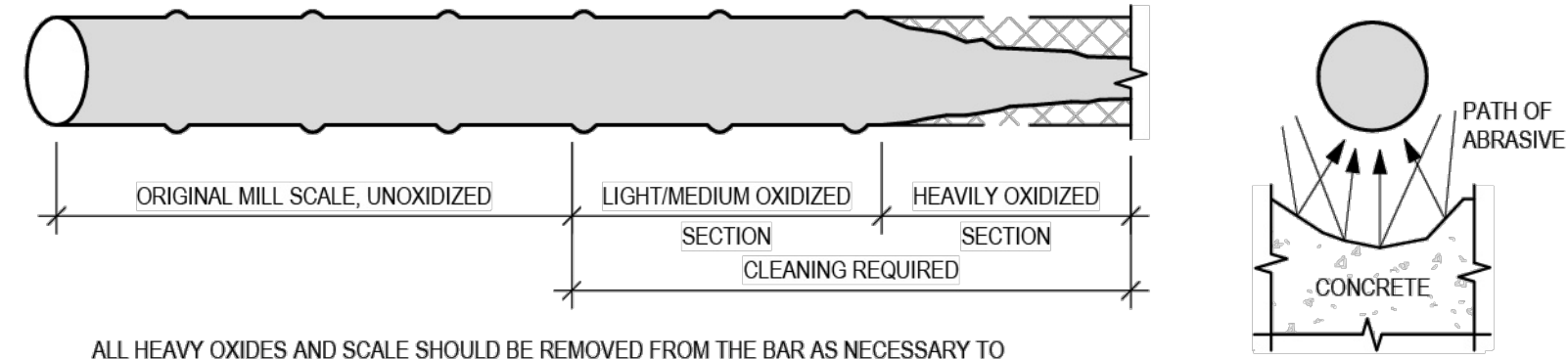
IF REBAR HAS LOST MORE THAN 25% OF ITS CROSS SECTION (20% IF 2 OR MORE CONSECUTIVE PARALLEL BARS ARE AFFECTED), A STRUCTURAL ENGINEER SHOULD BE CONSULTED.

IF REPAIRS ARE REQUIRED TO THE REINFORCING STEEL ONE OF THE FOLLOWING REPAIR METHODS SHOULD BE USED:

1. COMPLETE BAR REPLACEMENT, OR
2. ADDITION OF SUPPLEMENTAL BAR OVER AFFECTED SECTION. NEW BAR MAY BE MECHANICALLY SPLICED TO OLD BAR OR PLACED PARALLEL TO AND APPROXIMATELY 3/4" FROM EXISTING BAR.

LAP LENGTH SHALL BE DETERMINED IN ACCORDANCE WITH ACI 318, ALSO REFER TO CRSI AND AASHTO MANUAL.

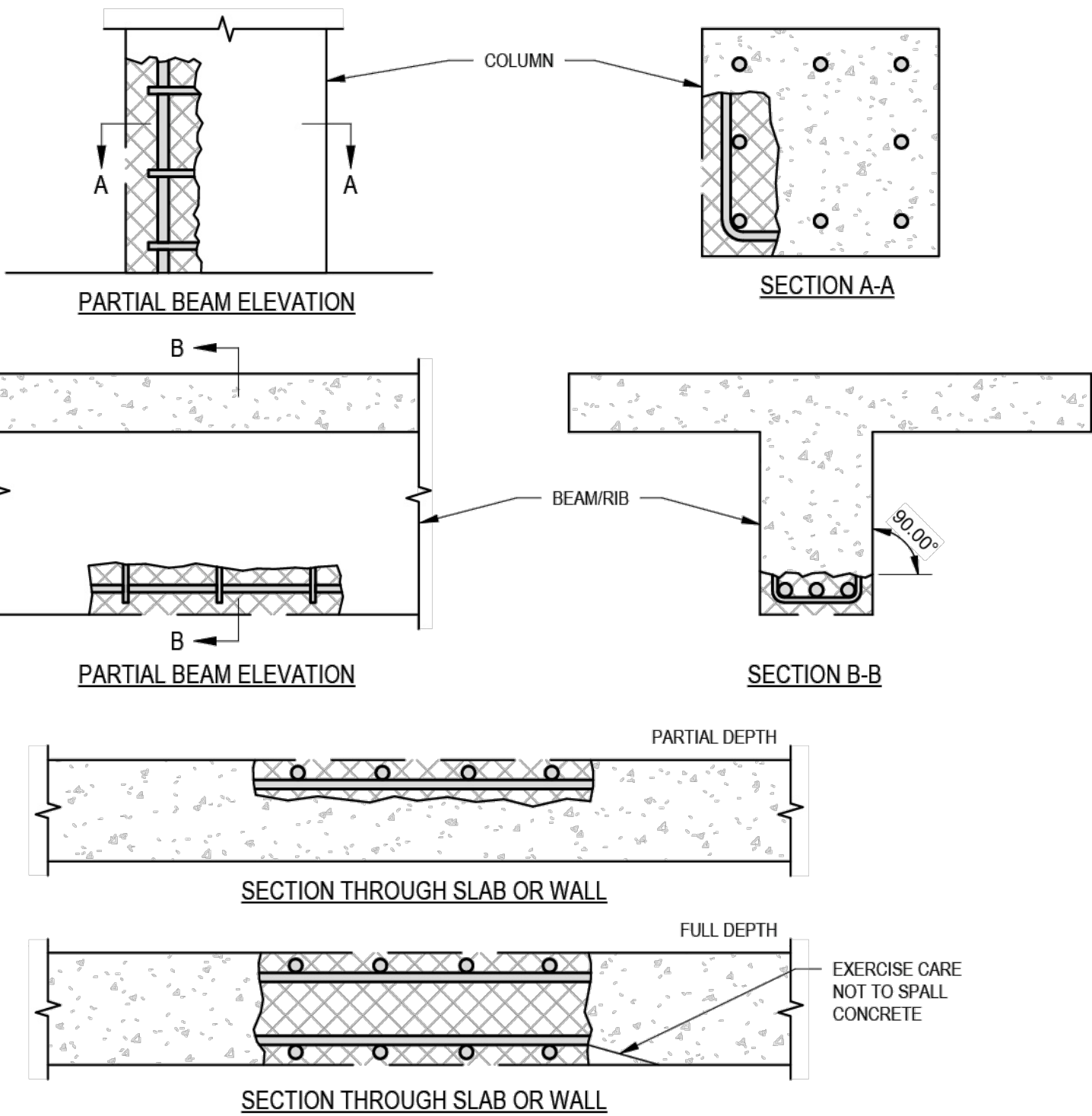
CLEANING OF REINFORCING STEEL



ALL HEAVY OXIDES AND SCALE SHOULD BE REMOVED FROM THE BAR AS NECESSARY TO PROMOTE MAXIMUM BOND OF REPLACEMENT MATERIAL. OIL FREE ABRASIVE BLAST IS THE PREFERRED METHOD. A TIGHTLY BONDED LIGHT OXIDE BUILD-UP ON THE SURFACE MAY RESULT FROM HIGH-PRESSURE WATERBLASTING, WITH OR WITHOUT ABRASIVE. THIS IS USUALLY NOT DETRIMENTAL TO BOND, UNLESS A PROTECTIVE COATING IS BEING APPLIED TO THE BAR SURFACE, IN WHICH CASE THE COATING MANUFACTURER'S RECOMMENDATIONS FOR SURFACE PREPARATION SHOULD BE FOLLOWED.

5 EXPOSING & UNDERCUTTING REINFORCING STEEL

10S-05 SCALE: 1" = 1'-0"



CAUTION:
BEFORE STARTING REMOVAL, REVIEW EFFECT OF REMOVALS ON STRUCTURAL INTEGRITY. PROVIDE SHORING OF MEMBERS AS NECESSARY. PARTICULAR CARE SHALL BE EXERCISED AT SLAB/BREAM CONECTIONS TO COLUMNS

7 REMOVAL GEOMETRY

10S-05 SCALE: 1" = 1'-0"

6 EDGE AND SURFACE CONDITIONING

10S-05 SCALE: 1" = 1'-0"

PARTIAL DEPTH CONCRETE REPAIR SEQUENCE

1. CLEAN AND DISINFECT THE CONCRETE STRUCTURE.
2. VERIFY LOCATION OF CONCRETE DETERIORATION WITH PROJECT ENGINEER.
3. PARTIAL DEPTH SAWCUT(S). PROVIDE 1" DEEP VERTICAL SAWCUT BEYOND THE PERIMETER OF THE CONCRETE DETERIORATION. SAW CUT SHALL BE IN SOUND CONCRETE. PRIOR TO SAWCUT VERIFY CONCRETE COVER WITH AS-BUILT DRAWING, DO NOT CUT EXISTING REINFORCING. MODIFY SAWCUT DEPTH AS NEEDED, PROVIDE AT LEAST 1/2" CLEARANCE FROM REINFORCING.
 - A. SAW CUTTING OF CONCRETE SHALL BE PERFORMED WITHOUT OVERCUTTING AT CORNERS. AT RE-ENTRY (INSIDE) CORNERS, SAW CUTS SHALL TERMINATE AT THE PERPENDICULAR SAWCUT LINE AND SHALL NOT EXTEND BEYOND THE INTERSECTION.
 - B. OVERCUTS BEYOND CORNER INTERSECTIONS ARE NOT PERMITTED.
 - C. AT RE-ENTRY CORNERS, DRILL OR CORE SAW CORNER.
4. REMOVE CONCRETE WITHIN THE SAWCUT AREA, FROM THE TOP SLAB TO THE SAWCUT.
5. REMOVE DELETERIOUS MATERIALS, LOOSE CONCRETE AND/OR DECOMPOSED CONCRETE WITH LOW-IMPACT METHODS UNTIL A SOUND SUBSTRATE IS REACHED. SELECTIVELY REMOVING UNSOUND CONCRETE WHILE PRESERVING SOUND CONCRETE AND REINFORCING STEEL. DO NOT USE METHODS THAT WILL CAUSE CRACKING OR MICROCRACKS IN THE REMAINING CONCRETE SUBSTRATE. DO NOT CHIP DEEPER THAN 3/4" OF THE CONCRETE MEMBER THICKNESS WITHOUT APPROVAL OF THE ENGINEER. FOR CONCRETE REPAIR PROJECTS, HYDRODEMOLITION IS GENERALLY CONSIDERED THE PREFERRED METHOD WHEN PRESERVATION OF REINFORCING STEEL AND PREVENTION OF SUBSTRATE DAMAGE ARE IMPORTANT.
 - A. APPROVED LOW-IMPACT CONCRETE SURFACE REMOVAL METHODS:
 - a. HYDRODEMOLITION: HIGH-PRESSURE WATER OR ULTRA-HIGH-PRESSURE WATER JETTING.
 - b. HYDROMILLING: HIGH-PRESSURE WATER JETTING.
 - c. CONTROLLED HAND CHIPPING WITH SMALL CHIPPING HAMMERS. USING 14 LBS. OR SMALLER CHIPPING HAMMERS, ACI 502 COMPLIANT. DO NOT USE CHIPPING HAMMERS LARGER THAN 15 LBS. FOR THIS WORK.
 - PNEUMATIC BREAKERS: COMPRESSED-AIR-POWERED IMPACT TOOLS.
 - HYDRAULIC BREAKERS: HYDRAULIC-POWERED IMPACT HAMMERS.
 - ELECTRIC BREAKERS: ELECTRICALLY POWERED IMPACT HAMMERS.
 - d. LOW-ENERGY GRINDING/SCARIFYING.
 - B. NOT APPROVE HIGH-IMPACT SURFACE REMOVAL METHODS, HEAVY MECHANICAL IMPACT CONCRETE REMOVAL.
 - a. JACKHAMMERS > 20 LBS
 - b. HYDRAULIC BREAKERS.
 - c. DROP HAMMERS.
 - d. PERCUSSIVE MECHANICAL MILLING.
 - e. SANDBLASTING.
 - f. SHOTBLASTING.
 6. PRESSURE WASH ALL SURFACES WITH CLEAN, POTABLE WATER TO REMOVE ALL SOLUBLE SALTS, AND RINSE WELL.
 7. SOUND ALL CONCRETE SURFACES TO ENSURE THERE ARE NO ADDITIONAL DEBONDED AREAS. REMOVE ANY DEBONDED AREAS IF FOUND. NONDESTRUCTIVE VERIFICATION WITH HAMMER SOUNDINGS, GPR, UT, OR CHAIN DRAG SHOULD BE USED TO ENSURE THE SUBSTRATE IS SOUND AND THAT REMOVAL DID NOT CAUSE MICROCRACKING.
 8. FINAL CONCRETE SURFACE PROFILE SHALL BE ROUGHENED TO 3/8" AMPLITUDE OR CONFORM TO ICRI CSP 6 TO CSP 9 PROFILE TO MAXIMIZE CONCRETE BONDING.
 9. EXPOSED STEEL REINFORCING SHALL BE CLEANED TO SSPC SP16/NACE 3.
 10. COAT ALL SURFACES WITH LONG-OPEN-TIME (EXTENDED WORKING TIME) EPOXY BONDING AGENTS (SIKA ARMATEC 110 EPOCEM). TYPICAL EPOXY BONDING AGENTS REQUIRE WET-ON-WET PLACEMENT OR MANDATE RE-COATING IF TACK IS LOST. REFER TO THE BONDING AGENT MANUFACTURER'S APPLICATION INSTRUCTIONS.
 11. APPLY REPAIR MORTAR.

RUST-STAINED CONCRETE POP-OUT REPAIR

1. THE CONTRACTOR SHALL IDENTIFY CONCRETE POP-OUT AND COORDINATE ALL REPAIR LOCATIONS WITH THE ON-SITE PROJECT ENGINEER PRIOR TO COMMENCING WORK. PERFORM REPAIRS IN ACCORDANCE WITH THE FOLLOWING MINIMUM REQUIREMENTS.
2. REPAIR AREA IDENTIFICATION: MARK EACH REPAIR LOCATION IN THE FIELD AND OBTAIN APPROVAL FROM THE PROJECT ENGINEER PRIOR TO BEGINNING REPAIRS.
3. CONCRETE CORING: CENTER A 4-INCH DIAMETER CORE DRILL OVER EACH POP-OUT. CORE DRILL TO A DEPTH OF 1 INCH MINIMUM. DO NOT DAMAGE REINFORCING STEEL OR ADJACENT SOUND CONCRETE. SIMILAR REPAIR PRACTICES REQUIRING SAW-CUT BOUNDARIES AND PROTECTION OF SOUND CONCRETE ARE DOCUMENTED IN INTERNAL CONCRETE REPAIR SPECIFICATIONS.
4. CONCRETE REMOVAL: REMOVE ALL CONCRETE WITHIN THE CORED AREA TO A MINIMUM DEPTH OF 2 INCHES BELOW THE EXISTING CONCRETE SURFACE. EXTEND REMOVAL AS NECESSARY TO REMOVE ALL LOOSE, UNSOUND, DELAMINATED, OR DETERIORATED CONCRETE. CONCRETE REMOVAL METHODS SHALL NOT CRACK, LOOSEN, OR OTHERWISE DAMAGE THE SURROUNDING SOUND SUBSTRATE. INTERNAL WWTP REPAIR NOTES SIMILARLY REQUIRE METHODS THAT AVOID DAMAGE TO REMAINING CONCRETE.
5. SURFACE PREPARATION: ROUGHEN THE REPAIR CAVITY SURFACES TO EXPOSE SOUND CONCRETE AND PROVIDE A MECHANICAL BOND. REMOVE ALL DUST, LANTANCE, LOOSE PARTICLES, DEBRIS, OILS, AND CONTAMINANTS BY WIRE BRUSHING, ABRASIVE BLASTING, VACUUMING, OR OTHER APPROVED MEANS. THE FINAL SUBSTRATE SHALL BE CLEAN AND SOUND. INTERNAL REPAIR SPECIFICATIONS REQUIRE CLEANING REPAIR AREAS AND REMOVING CONTAMINANTS THAT COULD INHIBIT REPAIR MORTAR BONDING TO THE SUBSTRATE.
6. REINFORCING STEEL CLEANING: CLEAN ALL EXPOSED REINFORCING STEEL OF RUST, SCALE, AND BOND-INHIBITING CORROSION PRODUCTS USING WIRE BRUSHING OR ABRASIVE BLASTING. CONTINUE CLEANING UNTIL FIRM, SOUND STEEL IS EXPOSED. NOTIFY THE PROJECT ENGINEER IF REINFORCING STEEL SECTION LOSS IS OBSERVED.
7. EPOXY BONDING AGENT: APPLY AN APPROVED EPOXY BONDING AGENT TO ALL EXPOSED CONCRETE AND REINFORCING STEEL SURFACES WITHIN THE REPAIR CAVITY. INSTALL THE BONDING AGENT STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PLACE REPAIR MORTAR WHILE THE EPOXY REMAINS WITHIN THE MANUFACTURER'S RECOMMENDED BONDING WINDOW. INTERNAL SPECIFICATIONS REQUIRE COATING ALL REPAIR INTERFACES AND PLACING REPAIR MATERIAL WHILE THE BONDING AGENT REMAINS TACKY OR OTHERWISE WITHIN MANUFACTURER REQUIREMENTS.
8. REPAIR MORTAR PLACEMENT: FILL THE REPAIR CAVITY WITH A NON-SHRINK, CEMENTITIOUS REPAIR MORTAR SUITABLE FOR WASTEWATER SERVICE AND OVERHEAD, VERTICAL, OR HORIZONTAL INSTALLATION AS APPLICABLE. COMPACT AND CONSOLIDATE THE REPAIR MATERIAL TO ELIMINATE VOIDS. FINISH FLUSH WITH THE ADJACENT CONCRETE SURFACE AND MATCH SURROUNDING SURFACE TEXTURE.
9. CURING: CURE THE REPAIR MATERIAL IN STRICT ACCORDANCE WITH THE REPAIR MORTAR MANUFACTURER'S RECOMMENDATIONS. PROTECT REPAIRS FROM FREEZING, RAPID DRYING, PRECIPITATION, IMPACT, VIBRATION, AND PREMATURE LOADING UNTIL FULLY CURED.
10. FINAL INSPECTION: UPON COMPLETION OF REPAIRS, NOTIFY THE PROJECT ENGINEER FOR INSPECTION AND ACCEPTANCE.
11. ANY REPAIRS EXHIBITING CRACKING, DEBONDING, SHRINKAGE DEFECTS, OR SURFACE DEFECTS SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER.

SPECIFICATION CONCRETE REMOVAL DEFINITIONS

1. HYDRODEMOLITION: REMOVAL OF CONCRETE USING HIGH-PRESSURE WATER JETS CAPABLE OF SELECTIVELY REMOVING UNSOUND CONCRETE WHILE PRESERVING SOUND CONCRETE AND REINFORCING STEEL.
2. HYDROMILLING: REMOVAL OF THIN LAYERS OF CONCRETE OR SURFACE CONTAMINANTS USING HIGH-PRESSURE WATER JETS TO PRODUCE A CLEAN, SOUND SUBSTRATE SUITABLE FOR REPAIR OR OVERLAY PLACEMENT.
3. PNEUMATIC BREAKERS: COMPRESSED-AIR-POWERED IMPACT TOOLS USED FOR CONCRETE REMOVAL.
4. HYDRAULIC BREAKERS: HYDRAULIC-POWERED IMPACT HAMMERS, TYPICALLY MOUNTED ON EQUIPMENT, USED FOR CONCRETE DEMOLITION AND REMOVAL.
5. ELECTRIC BREAKERS: ELECTRICALLY POWERED IMPACT HAMMERS USED FOR CONTROLLED CONCRETE DEMOLITION AND REMOVAL OPERATIONS.
6. FOR WWTP, TANK, AND STRUCTURAL REPAIR PROJECTS, HYDRODEMOLITION IS GENERALLY CONSIDERED THE PREFERRED METHOD WHEN PRESERVATION OF REINFORCING STEEL AND PREVENTION OF SUBSTRATE DAMAGE ARE IMPORTANT.

3 CONCRETE POP-OUT REPAIR PROCEDURE

10S-05 SCALE: 1" = 1'-0"

4 CONCRETE REMOVAL DEFINITIONS

10S-05 SCALE: 1" = 1'-0"

DATE									
REVISION									
NO									

SCALE					
DATE					
DESIGNED BY					
DRAWN BY					
CHECKED BY					

CITY OF ORRVILLE, OHIO	OHIO
ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE I	WAYNE COUNTY
STRUCTURAL - 20 SERIES	STANDARD DETAILS
PROJECT NO:	40948
DRAWING NAME	
SHEET	OF
16	23

ELECTRICAL SYMBOLS - PLAN:

	HOME RUN TO PANEL
	MOTOR
	MOTOR CONTROLLER
	FUSIBLE SAFETY SWITCH
	NON-FUSIBLE DISCONNECT SWITCH
	SIMPLEX RECEPTACLE, EXPLOSION PROOF
	DUPLEX RECEPTACLE
	QUADPLEX RECEPTACLE
	DATA PORT, RJ45
	SPECIAL RECEPTACLE, NEMA TYPE NOTED
	SINGLE-POLE SWITCH, "3" INDICATES 3-WAY, "OS" INDICATES OCCUPANCY SENSING
	DRY-TYPE TRANSFORMER
	PUSHBUTTON STATION
	LOUVER OPERATOR
	JUNCTION BOX
	SOLENOID VALVE
	LIMIT SWITCH
	FLOW: SWITCH, SENSOR, TRANSMITTER W / DISPLAY
	LEVEL: SWITCH, SENSOR, TRANSMITTER W / DISPLAY
	PRESSURE: SWITCH, SENSOR, TRANSMITTER W / DISPLAY
	TEMPERATURE: SWITCH, SENSOR, TRANSMITTER W / DISPLAY
	OTHER SENSOR / INDICATING TRANSMITTER AS NOTED
	HAZARDOUS AREA LIGHT FIXTURE
	OUTDOOR CANOPY LIGHT FIXTURE
	EXTERIOR WALL-PACK LIGHT FIXTURE
	HIGH BAY LIGHT FIXTURE
	LINEAR LED LIGHT FIXTURE
	EXIT SIGN
	EMERGENCY REMOTE HEAD
	EMERGENCY WALL-PACK
	FIRE ALARM PULL STATION, STROBE, HORN-STROBE
	FIRE ALARM AREA SMOKE DETECTOR

ELECTRIC SYMBOLS - UTILITIES:

EX:	PR:
	AIR CONDITIONING UNIT
	ELECTRIC CONTROL BOX
	ELECTRIC JUNCTION BOX
	ELECTRIC PULL BOX
	ELECTRIC RISER BOX
	ELECTRIC VAULT BOX
	ELECTRIC LIGHT - GROUND
	ELECTRIC LIGHT - POST
	ELECTRIC MARKER POST
	ELECTRIC METER
	ELECTRIC MANHOLE - 48"
	ELECTRIC MANHOLE - 48" - ADJUST
	ELECTRIC MANHOLE - LID
	ELECTRIC PAINT MARK
	ELECTRIC PEDESTAL
	ELECTRIC TRANSFORMER

SINGLE LINE, ELEMENTARY, & INTERCONNECTION DIAGRAMS (ONLY) SYMBOLOGY:

	DISCONNECT SWITCH - AMP RATING		N.O. LIMIT SWITCH		CONTACT - NORMALLY OPEN
	FUSE - AMP RATING		N.O. FLOW SWITCH		CONTACT - NORMALLY CLOSED
	CIRCUIT BREAKER - AMP RATING		N.O. LEVEL SWITCH		SOLENOID COIL
	TRANSFORMER		N.O. PRESSURE SWITCH		PILOT LIGHT - PUSH TO TEST (COLOR)
	RELAY COIL		N.O. TEMPERATURE SWITCH		GROUND
	TIMING RELAY COIL		N.O. TIME DELAY AFTER ENERGIZATION		CAPACITOR
	MOTOR STARTER COIL		N.C. TIME DELAY AFTER ENERGIZATION		2 POSITION SELECTOR SWITCH
	ELAPSED TIME TOTALIZER		N.C. TIME DELAY AFTER DE-ENERGIZATION		3 POSITION SELECTOR SWITCH
	GROUNDING BUS		N.O. TIME DELAY AFTER DE-ENERGIZATION		EQUIPMENT FIELD TERMINAL
	TRANSIENT VOLTAGE SURGE SUPPRESSOR		N.O. SWITCH (GENERAL)		LOCAL PANEL / BLDG WIRING
			START PUSHBUTTON NORMALLY OPEN		EXTERNAL / FIELD WIRING
			STOP PUSHBUTTON NORMALLY CLOSED		

ABBREVIATIONS:

x-CSC	x-CONDUCTOR SHIELDED CABLE	IAW	IN ACCORDANCE WITH
A	AMPS	ICP	INSTRUMENTATION & CONTROL PANEL
AF	AMPERE FRAME	IPP	INSTRUMENT POWER PANEL
AFF	ABOVE FINISHED FLOOR	JB	JUNCTION BOX
AFG	ABOVE FINISHED GRADE	JBC	JUNCTION BOX - CONTROL
AI	ANALOG INPUT (PLC)	JBM	JUNCTION BOX - METERING
AL	ALUMINUM	JBP	JUNCTION BOX - POWER
AM	AMMETER	KCM	KILO (1000) CIRCULAR MILL
AO	ANALOG OUTPUT (PLC)	kVA	KILOVOLT AMPERES
AP	ALARM PANEL	KVAR	KILOVOLT AMPERES-REACTIVE
AT	AMPERE TRIP	kW	KILOWATT
AWG	AMERICAN WIRE GAUGE	LA	LIGHTNING ARRESTOR
C	CONDUIT	LGT	LIGHT
CAP	CAPACITOR	LOR	LOCAL/OFF/REMOTE SELECTOR SWITCH
CB	CIRCUIT BREAKER	LP	LIGHTING PANEL
CJB	CONTROL JUNCTION BOX	LS	LEVEL SWITCH
CP	CONTROL PANEL	LT	PILOT LIGHT
CPT	CONTROL POWER TRANSFORMER	MCC	MOTOR CONTROL CENTER
CR	CORROSION RESISTANT	MCP	MOTOR CIRCUIT PROTECTOR
CS	CONTROL STATION	MDP	MAIN DISTRIBUTION PANEL
CT	CURRENT TRANSFORMER	MJB	METERING JUNCTION BOX
Cu	COPPER	NEC	NATIONAL ELECTRICAL CODE
DB	DUCT BANK	NEMA	NATIONAL ELECTRICAL MFR ASSOC.
DI	DIGITAL INPUT (PLC)	NEU	NEUTRAL
DO	DIGITAL OUTPUT (PLC)	NFDS	NON-FUSED DISCONNECT SWITCH
EAG	ELECTRICALLY ACTIVATED GATE	OCSS	OPEN/CLOSE SELECTOR SWITCH
EAV	ELECTRICALLY ACTIVATED VALVE	OL	OVERLOAD
EF	EXHAUST FAN	O-O	ON/OFF SELECTOR SWITCH
ESPB	EMERGENCY STOP PUSHBUTTON (MAINTAINED)	OS	OCCUPANCY SENSING
ETM	ELAPSED TIME MONITOR	OTS	OVER TORQUE SWITCH
EWD	ELEMENTARY WIRING DIAGRAM	P	POLE
FDS	FUSED DISCONNECT SWITCH	PB	PULL BOX; PUSHBUTTON
FLA	FULL LOAD AMPERES	PBC	PULL BOX - CONTROL
FS	FLOW SWITCH	PBM	PULL BOX - METERING
FVC	FULL VOLTAGE CONTACTOR	PBP	PULL BOX - POWER
FVNR-1	FULL VOLTAGE NON-REVERSING STARTER, SIZE 1	PC	PHOTO CONTROL
GFI	GROUND FAULT INTERRUPTER	PF	POWER FACTOR
GND	GROUND	PH	PHASE
GFR	GROUND FAULT RELAY	PJB	POWER JUNCTION BOX
HOA	HAND/OFF/AUTO SELECTOR SWITCH	PLC	PROGRAMMABLE LOGIC CONTROLLER
HP	HORSEPOWER	PP	POWER PANEL
HTR	HEATER	PRI	PRIMARY
HTS	HIGH TORQUE SWITCH	PS	PRESSURE SWITCH
HZ	HERTZ	PT	POTENTIAL TRANSFORMER

ELECTRICAL LINE SYMBOLOGY:

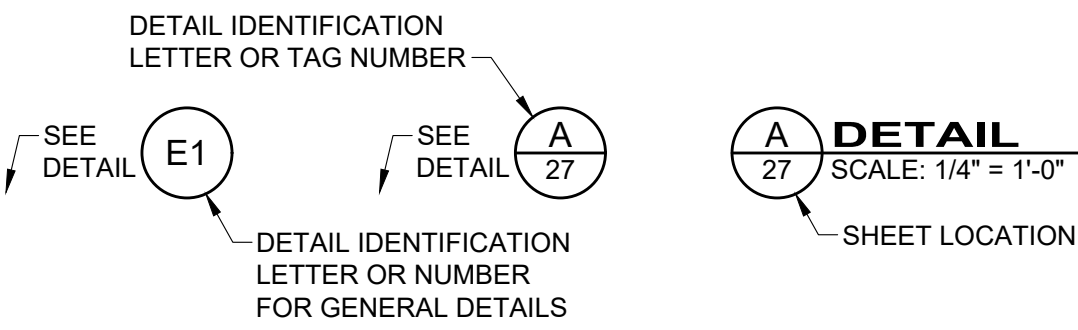
PROPOSED:	
	CONDUIT AND WIRE RUN EXPOSED
	CONDUIT AND WIRE BELOW GRADE
	ELECTRIC LINE
	ELECTRIC LINE - OVERHEAD
	ELECTRIC LINE - UNDERGROUND
	ELEC SERVICE
	ELEC SERVICE - OVERHEAD
	ELEC SERVICE - UNDERGROUND
	ELEC LIGHTING - OVERHEAD
	ELEC LIGHTING - UNDERGROUND

EXISTING:	
	ELECTRIC LINE
	ELECTRIC LINE - ABANDONED
	ELECTRIC LINE - OVERHEAD
	ELECTRIC LINE - UNDERGROUND
	ELECTRIC SERVICE
	ELECTRIC SERVICE - OVERHEAD
	ELECTRIC SERVICE - UNDERGROUND
	ELECTRIC LIGHTING - OVERHEAD
	ELECTRIC LIGHTING - UNDERGROUND
	ELECTRIC DUCT

ELECTRICAL CODED NOTES:

	NEW WORK - NOTE 1		DEMOLITION - NOTE 1		REVISION - NOTE 1
	NEW WORK - NOTE 2		DEMOLITION - NOTE 2		REVISION - NOTE 2
	NEW WORK - NOTE 3		DEMOLITION - NOTE 3		REVISION - NOTE 3

ELECTRICAL DETAIL REFERENCE:



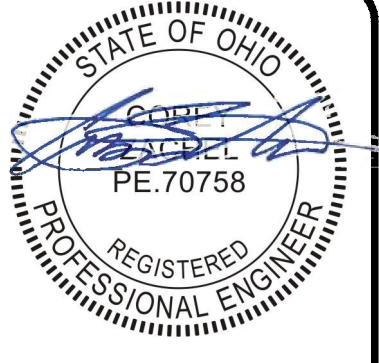
R	RELAY
RCP	REINFORCED CONCRETE PIPE
RGS	RIGID GALVANIZED STEEL
RL	RUN LIGHT
SCP	SURGE CONTROL PANEL
SCR	SILICON-CONTROLLED RECTIFIER
SEC	SECONDARY
SF	SUPPLY FAN
SHLD	SHIELDED
SPK	SPEAKER
SPS	SHEAR PIN SWITCH
SS	SELECTOR SWITCH / STAINLESS STEEL
SSOR	SOLID STATE OVERLOAD RELAY
SSPB	START/STOP PUSHBUTTON
SSS	SOLID STATE STARTER
STD	STANDARD
STP	SHIELDED TWISTED PAIR
STR	STARTER
SV	SOLENOID VALVE
SW	SWITCH
T	TELEPHONE
TB	TERMINAL BLOCK
TC	TIME CLOCK
TD	TRENCH DUCT
TEB	TELEPHONE EQUIPMENT BACKBOARD
TEMP	TEMPERATURE
TOC	TOP OF CONCRETE
TOR	THERMAL OVERLOAD RELAY
TR	TIMING RELAY
TSTAT	THERMOSTAT
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
V	VOLTS
VC	VOLUME CONTROL
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLT METER
XP	EXPLOSION PROOF
XF	TRANSFORMER
WP	WEATHERPROOF
ZS	LIMIT SWITCH

ELECTRICAL GENERAL NOTES:

- ALL ELECTRICAL EQUIPMENT AND MATERIALS WILL BE SELECTED AND INSTALLED IN COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL FIRE CODES, INCLUDING BUT NOT LIMITED TO ALL PERTINENT NFPA REGULATIONS. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLIANCE WITH THESE CODES.
- DO NOT INSTALL DEVICES SCALED FROM THESE DRAWINGS. ALL DEVICES SHALL BE INSTALLED AT LOCATIONS SHOWN IN THE APPROVED CONDUIT/DEVICE LAYOUT DRAWINGS AND WITH DIMENSIONS TAKEN IN THE FIELD.
- ELECTRICIAN TO VISIT SITE AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID.
- NO DUCTWORK OR PIPING TO BE RUN ABOVE ELECTRICAL PANELS OR THROUGH ELECTRICAL EQUIPMENT ROOMS. ELECTRICIAN SHALL COORDINATE WITH ALL TRADES FOR EQUIPMENT LAYOUTS PRIOR TO ROUGH-IN OF ALL SYSTEMS.
- MANUFACTURERS AND CATALOG NUMBERS SHOWN IN THE LIGHT FIXTURE SCHEDULE ARE PROVIDED TO INDICATE DESIRED LIGHT FIXTURE CHARACTERISTICS. IT IS THE INTENT OF THE DOCUMENTS TO ALLOW ALTERNATE MANUFACTURERS TO PROVIDE LIGHTING PRODUCTS FOR THE PROJECT, AS LONG AS PROPOSED ALTERNATES PROVIDE THE SAME GENERAL DESIGN AND LIGHTING CHARACTERISTICS AS NOTED IN THE LIGHT FIXTURE DESCRIPTION.
- ELECTRICIAN TO CONFIRM LOCATIONS OF ALL ELECTRICAL EQUIPMENT AND ELECTRICAL CHARACTERISTICS OF PROCESS EQUIPMENT PROVIDED BY OTHER TRADES PRIOR TO INSTALLING ROUGH-INS AS SHOWN ON THE ELECTRICAL PLANS. ALL SHOP DRAWING REQUIREMENTS WILL BE CONSIDERED AS THE MEANS AND METHODS OF INSTALLATION.
- THIS PROJECT INVOLVES WORK AT AN INDUSTRIAL FACILITY AND THE CONTRACTOR IS EXPECTED TO PROVIDE CRAFTSMANSHIP REFLECTING THE NATURE OF THE FACILITY. CONDUITS IN PROCESS AREAS ARE TO BE SURFACE MOUNTED RIGID GALVANIZED STEEL (RGS). IN CLASSIFIED AREAS SEAL ALL CONDUITS TO RESTRICT THE PASSAGE OF GASSES AND VAPORS, AND ARRANGE SEALING FITTING DRAINS IN CONDUIT SYSTEMS TO PREVENT ACCUMULATION OF CONDENSATE ABOVE SEALS. ALL CONDUITS ENTERING OR LEAVING A MOTOR CONTROL CENTER, CONTROL PANEL, VALVE ACTUATOR, INSTRUMENT, A BUILDING, OR A PANELBOARD SHALL BE MADE WATERTIGHT USING AN INFLATABLE SEALED BLADDER DUCT SEALING SYSTEM, RAYCHEM 'RAYFLATE' DUCT SEALING SYSTEM RDSS OR APPROVED EQUAL. ALL HARDWARE IS TO BE STAINLESS STEEL UNLESS OTHERWISE DIRECTED.

ALL ENCLOSURES ARE TO BE RATED AS FOLLOWS (UON):

 - OUTDOORS: NEMA 4X (STAINLESS STEEL)
 - CLASSIFIED AREAS: NEMA 7
 - INDOORS (CORROSIVE AREAS): NEMA 4X (STAINLESS STEEL)
 - INDOORS (CONTROLLED ENVIRONMENT) NEMA 12
- ELECTRICIAN SHALL REVIEW ALL OTHER TRADES' CONSTRUCTION DOCUMENTS AND/OR COORDINATE WITH OTHER TRADES AND VERIFY IF THERE ARE ANY ADDITIONAL ELECTRICAL REQUIREMENTS NOT SHOWN ON ELECTRICAL DRAWINGS. COST FOR WORK SHOWN ON OTHER TRADES' DRAWINGS SHALL BE INCLUDED IN BASE BID. ALL FIELD WIRING AND TERMINATIONS OF PROCESS EQUIPMENT AND INSTRUMENTATION AND CONTROLS SHALL BE THE RESPONSIBILITY OF THE ELECTRICIAN. ALL CABLES AND WIRES PROVIDED BY VENDORS SHALL BE INSTALLED AND TERMINATED BY THE ELECTRICIAN. WIRE ALL MISCELLANEOUS POWER AND CONTROLS AS REQUIRED TO PROVIDE A COMPLETE FUNCTIONING SYSTEM.
- A 4-20mA SIGNAL IS AN ANALOG SIGNAL USED TO TRANSMIT DATA (LEVEL, FLOW, ETC.) FOR PROCESS CONTROLS. THE ELECTRICIAN SHALL PROVIDE, INSTALL, AND TERMINATE x-CONDUCTOR SHIELDED CABLE (x-CSC) WIRING IN RIGID GALVANIZED STEEL CONDUIT (RGS). RGS IS USED IN AN ATTEMPT TO REDUCE THE DISTORTION AFFECT FROM EMI AND RFI. BELOW GRADE CONDUITS SHALL BE PVC SCH-40. PARALLEL RUNS OF DATA CONDUITS AND POWER CONDUITS SHALL BE SEPARATED BY 2 FEET. THE x-CSC SHIELD SHALL BE GROUNDED AT THE CONTROL PANEL ONLY (DO NOT GROUND AT BOTH ENDS).
- THE ELECTRICIAN SHALL BE RESPONSIBLE FOR LAYOUT AND COORDINATION OF OPENINGS AND CHASES AND SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED TO INSTALL THEIR WORK. ALL CONCRETE HOUSE KEEPING PADS SHALL BE FRAMED AND POURED BY THE ELECTRICIAN. PADS SHALL HAVE A 45 DEGREE, 1" CHAMFER AROUND UPPER EDGE.
- THE ELECTRICIAN SHALL INSTALL & DISTRIBUTE TEMPORARY POWER SERVICE FOR THE DURATION OF THIS PROJECT AS DEFINED IN DIVISION 1 SPECIFICATIONS. ALL COSTS ASSOCIATED WITH THE INSTALLATION, DISTRIBUTION AND MAINTENANCE OF THE TEMPORARY POWER IS THE RESPONSIBILITY OF THE ELECTRICIAN. THERE SHALL BE 480/277V, 3ø, 4-W; 208/120V, 3ø, 4-W; AND 120/240V, 1ø, 3-W POWER AVAILABLE AT ALL LOCATIONS OF CONSTRUCTION AS DIRECTED IN FIELD AND AS SPECIFIED. ALL TEMPORARY EQUIPMENT, CONDUITS & CONDUCTORS SHALL BE COMPLETELY REMOVED AT COMPLETION OF PROJECT.
- ALL ELECTRICAL EQUIPMENT, DEVICES, LIGHTING FIXTURES, CONDUIT, AND WIRING SHOWN ON THE ELECTRICAL DRAWINGS IS NEW UNLESS CLEARLY CALLED OUT AS EXISTING. ALL EXISTING ELECTRICAL EQUIPMENT THAT IS CALLED OUT TO BE REUSED SHALL BE INSPECTED IN THE FIELD BY THE ELECTRICIAN AND THE CONSTRUCTION MANAGER TO DETERMINE ITS CONDITION PRIOR TO STARTING ANY WORK. PROVIDE DOCUMENTATION TO OWNER INDICATING CONDITION OF THE EXISTING EQUIPMENT, AND REUSE EXISTING EQUIPMENT ONLY IF ALL PARTIES AGREE THE CONDITION IS ACCEPTABLE. ALL EXISTING EQUIPMENT DETERMINED TO BE UNUSABLE SHALL BE REPLACED WITH LIKE KIND AS DIRECTED BY THE OWNER. ANY OF THE OWNERS EQUIPMENT DETERMINED TO BE REUSED THAT IS DAMAGED BY ANY CONTRACTOR DURING SWITCHOVER SHALL BE REPLACED BY THAT CONTRACTOR. ALL EXISTING EQUIPMENT IS THE PROPERTY OF THE OWNER (NOT THE CONTRACTOR) AND SHALL BE TREATED ACCORDINGLY.
- THE ELECTRICIAN SHALL BE HELD RESPONSIBLE TO ENSURE ALL CONTROLLERS TO BE INSTALLED ARE CAPABLE OF LOCKOUT / TAGOUT PRIOR TO INSTALLATION.
- CONFORM TO THE NEC, OSHA, FIRE MARSHAL, BUILDING DEPARTMENT AND OTHER APPLICABLE CODES AND REGULATIONS. OBTAIN PERMITS, PAY ALL FEES, AND ARRANGE FOR REQUIRED INSPECTIONS.
- ALL LIGHTING AND RECEPTACLE WIRING TO BE #12 XHHW WITH EQUIPMENT GROUND IN 3/4" C UNLESS OTHERWISE NOTED.
- DO NOT MOUNT ANY LIGHT FIXTURE DIRECTLY OVER PIPING OR EQUIPMENT THAT WILL INTERFERE WITH NORMAL LIGHTING DISTRIBUTION.
- SIZE JUNCTION BOXES AS REQUIRED PER NEC. PROVIDE BARRIER TYPE TERMINAL STRIPS, AND ALL WIRING TO BE IN CONDUIT.
- SIZE PULL BOXES AS REQUIRED PER NEC.
- PROVIDE SEPARATE PULL BOXES FOR CONTROL AND POWER CONDUCTORS.
- MOTOR OVERLOAD SETTING SHALL BE FIELD SELECTED PER MOTOR NAME PLATE CURRENT AND INSTALLED ACCORDINGLY.
- MOUNT LOCAL CONTROLS AND SERVICE DISCONNECTS ON WALL NEAREST EQUIPMENT WHERE POSSIBLE. (MAXIMUM 60" ABOVE FINISHED FLOOR OR FINAL GRADE, MAXIMUM LATERAL DISTANCE FROM WALL TO EQUIPMENT - 10 FEET).
- ALL FEEDERS RUN BELOW GRADE SHALL BE RUN IN PVC CONDUIT AT MINIMUM 3'-0" BELOW FINISHED GRADE. TRANSITION TO ABOVE GRADE SHALL BE MADE USING FACTORY PVC COATED RIGID STEEL CONDUIT SWEEPS.

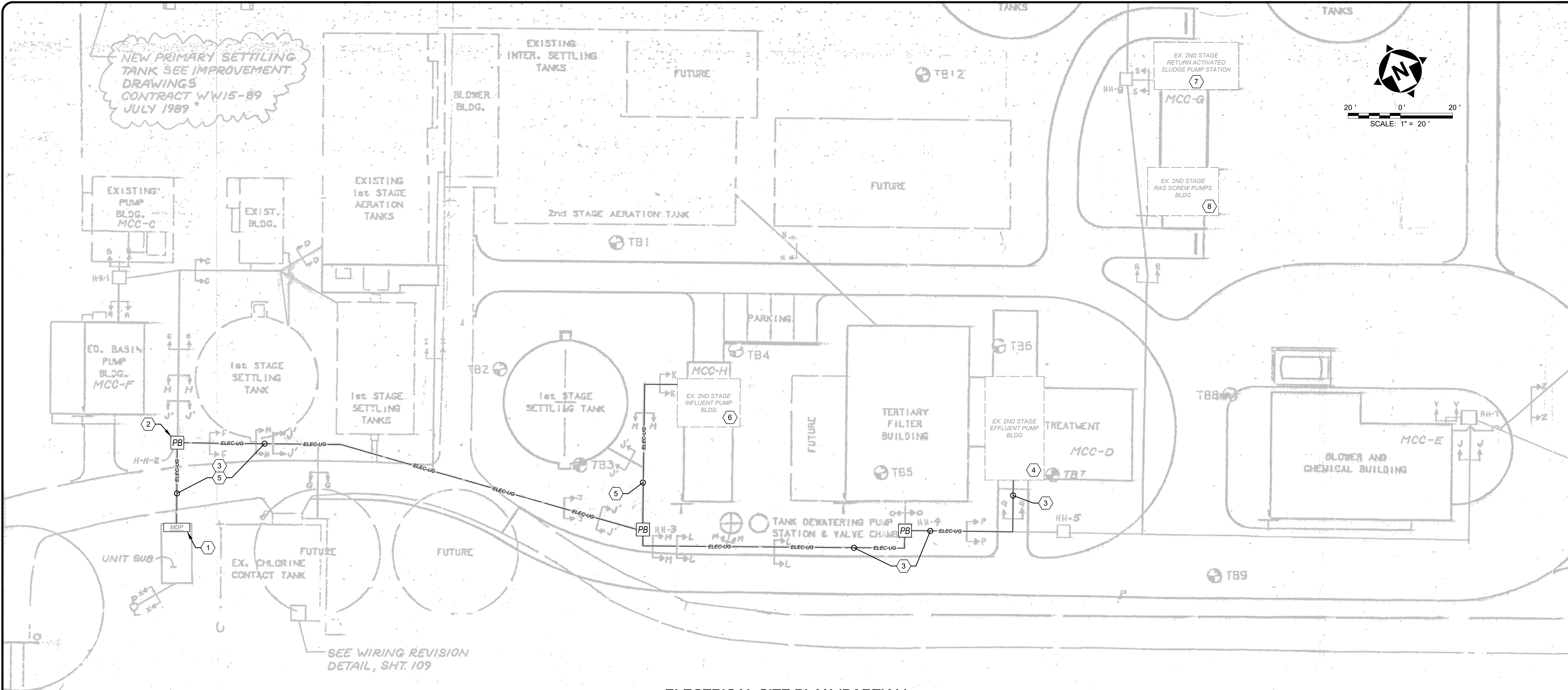


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CITY OF ORRVILLE, OHIO ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE I WAYNE COUNTY OHIO		ELECTRICAL - E SERIES		ELECTRICAL LEGEND & GENERAL NOTES
		PROJECT NO:		
		40948		
		DRAWING NAME		
		E-01		
SHEET	OF			
18	23			



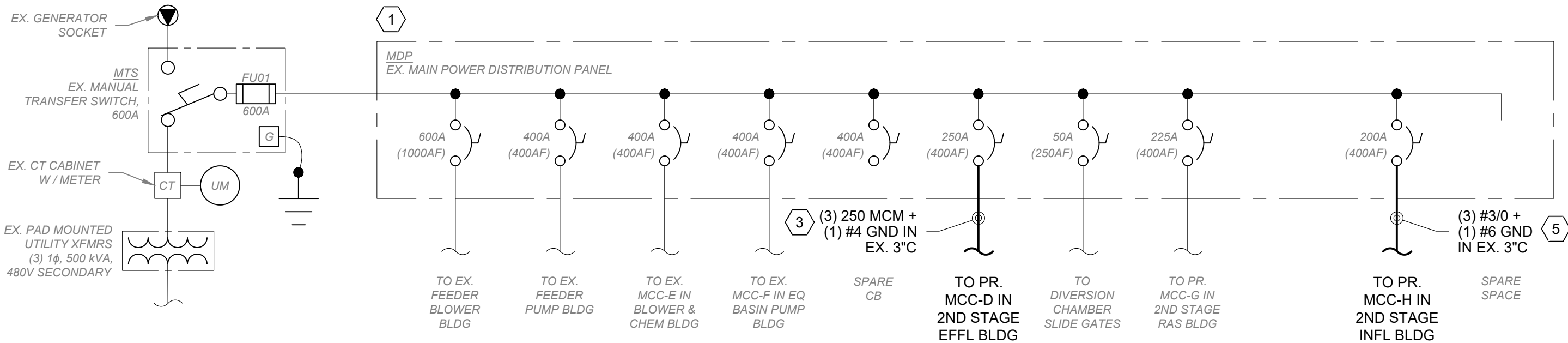
ELECTRICAL SITE PLAN (PARTIAL)

GENERAL NOTES:

- EXISTING EQUIPMENT BASED ON DRAWING SET BY BURGESS & NIPLE DATED FEBRUARY, 1987, AS WELL AS CHANGES NOTED DURING SITE VISITS.

CODED NOTES:

- EXISTING MAIN DISTRIBUTION PANEL WITH MANUAL TRANSFER SWITCH, EQUIPPED WITH MERLIN GERIN CIRCUIT BREAKERS, COMPACT CJ 400L MODELS WITH DIFFERENT RATING PLUGS PER AMPACITY RATINGS FOR MCC FEEDERS. SEE ONE-LINE DIAGRAM THIS SHEET FOR REFERENCE.
- EXISTING DUCT BANK PULL BOX, TYPICAL OF (5) WITHIN SCOPE OF PROJECT, OTHER BOXES TO BE UNDISTURBED.
- EXISTING UG CONDUIT TO BE USED TO DEMOLISH EXISTING AND ROUTE NEW FEEDER TO PR. MCC-D IN 2ND STAGE EFFLUENT BLDG. SEE ONE-LINE DIAGRAM THIS SHEET FOR FEEDER DETAILS.
- EXISTING 2ND STAGE EFFLUENT PUMP STATION CONTAINING PR. MCC-D. SEE SHEET E-05 FOR DETAILS.
- EXISTING UG CONDUIT TO BE USED TO DEMOLISH EXISTING AND ROUTE NEW FEEDER TO PR. MCC-H IN 2ND STAGE INFLUENT BLDG. SEE ONE-LINE DIAGRAM THIS SHEET FOR FEEDER DETAILS.
- EXISTING 2ND STAGE INFLUENT PUMP STATION CONTAINING PR. MCC-H. SEE SHEET E-04 FOR DETAILS.
- EXISTING 2ND STAGE RETURN ACTIVATED SLUDGE PUMP STATION CONTAINING PR. MCC-G. SEE SHEET E-06 FOR DETAILS.
- EXISTING 2ND STAGE RAS SCREW PUMP BUILDING. SEE SHEET E-06 FOR DETAILS.



WWTP ONE-LINE DIAGRAM (PARTIAL)



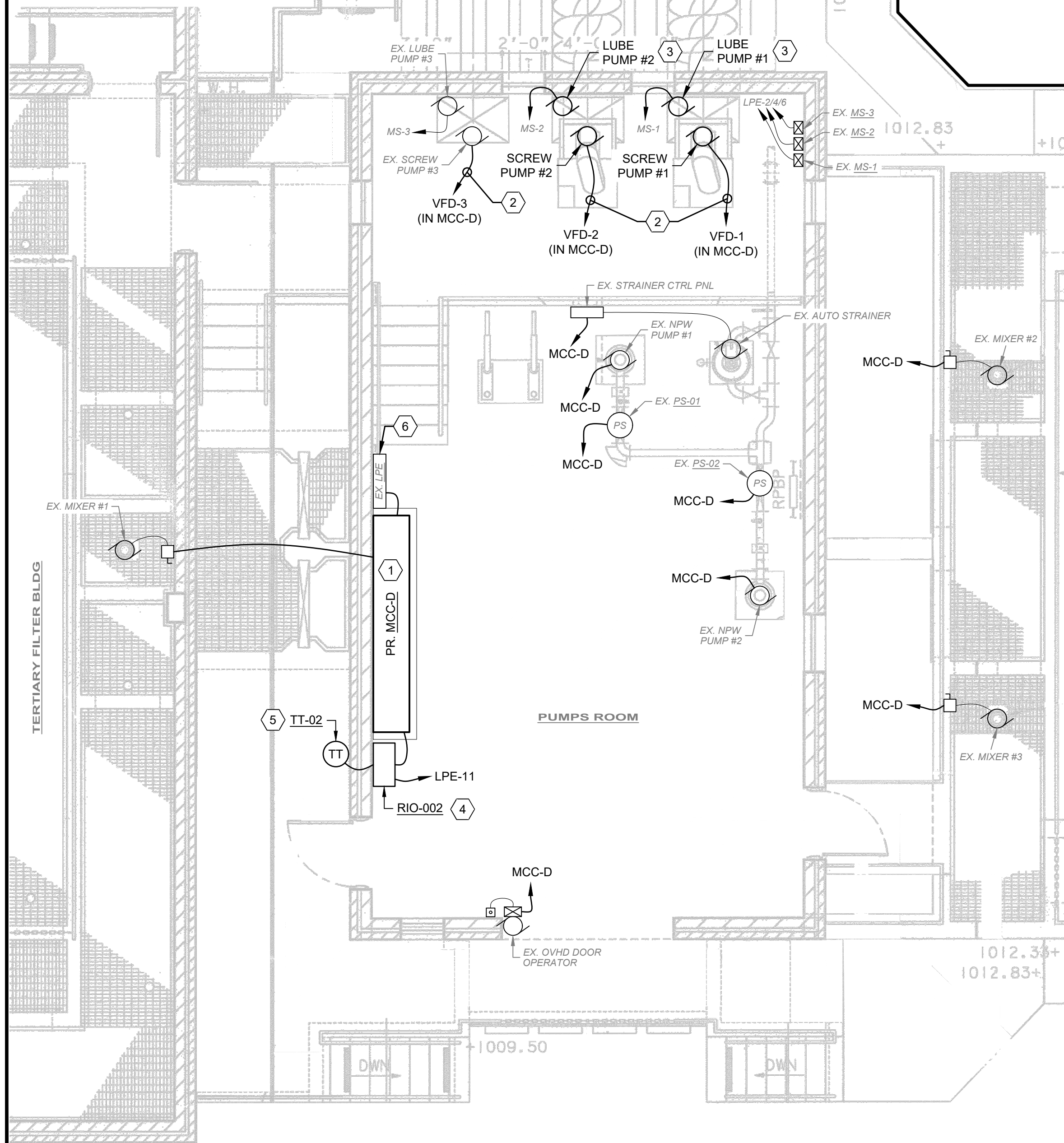
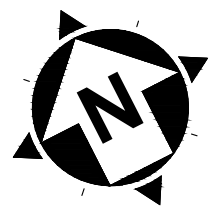
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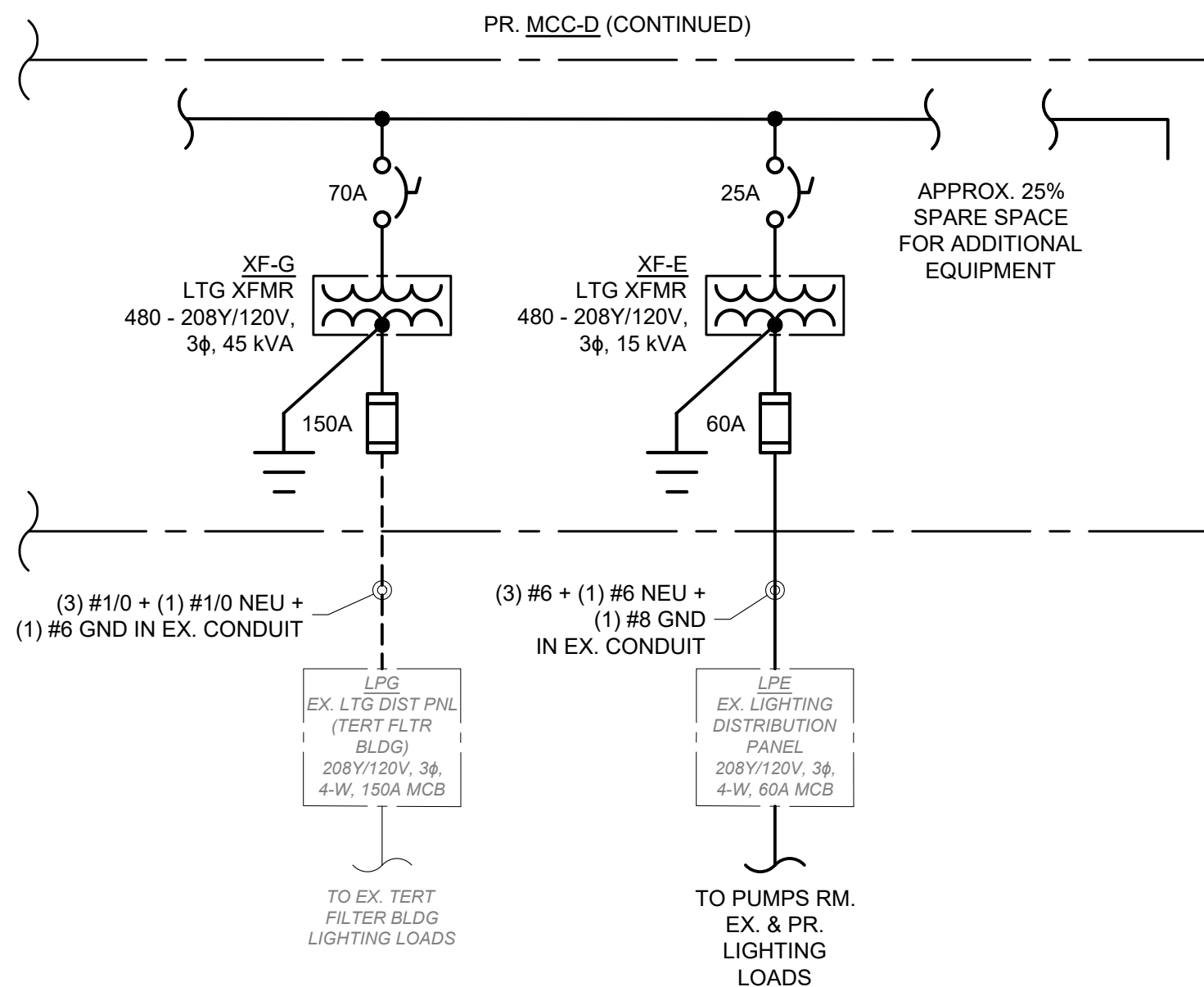
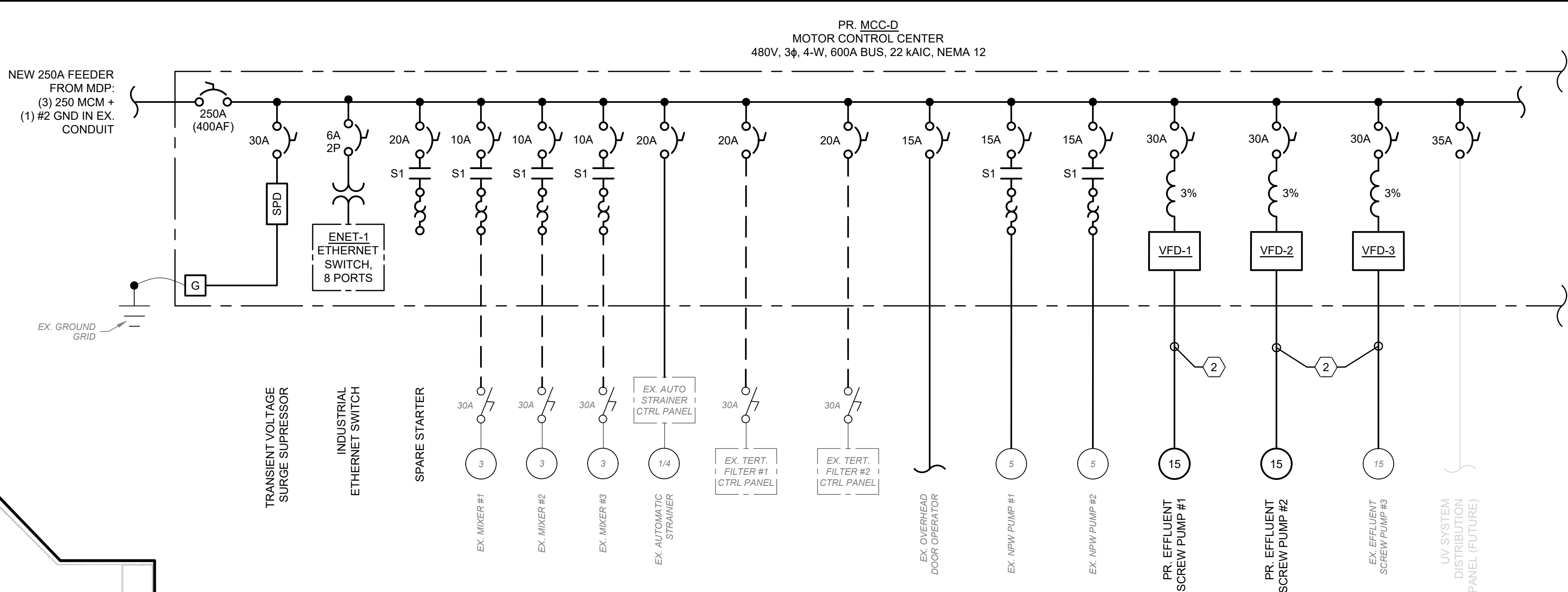
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CITY OF ORRVILLE, OHIO
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IMPROVEMENTS - PHASE I
WAYNE COUNTY
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ELECTRICAL - E SERIES
PARTIAL SITE PLAN

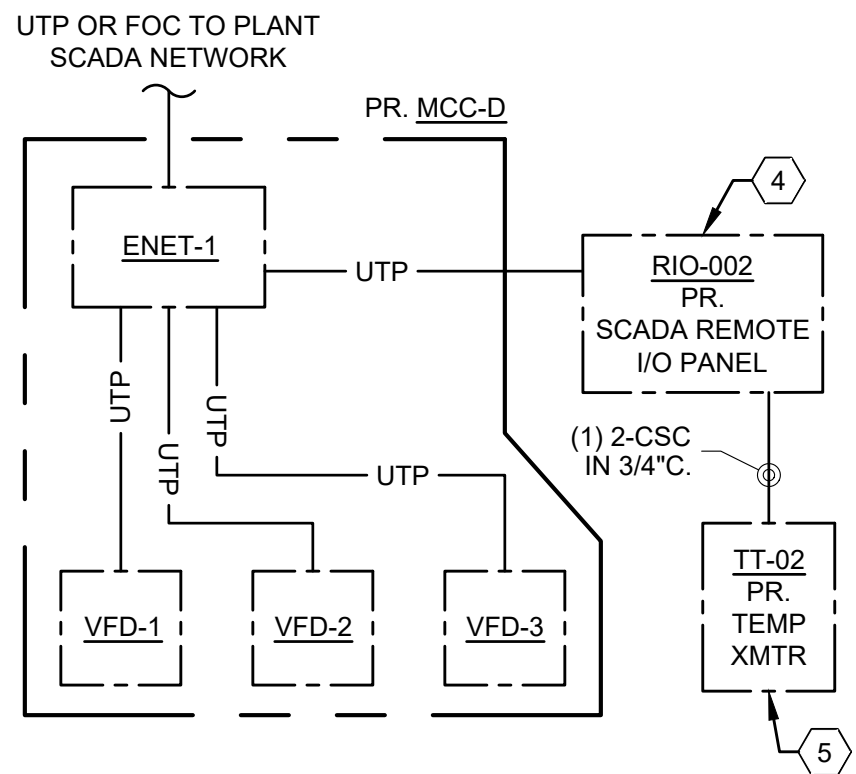
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E-02	
SHEET	OF
19	23



2ND STAGE EFFLUENT PUMP STATION POWER & INSTRUMENTATION PLAN
SCALE: 1/4" = 1'-0"



2ND ST. EFFLUENT PUMP STATION ONE-LINE DIAGRAM



LEGEND
— UTP — PR. UNSHIELDED TWISTED PAIR COPPER
— — — ETHERNET CABLE

2ND ST. EFFLUENT PUMP STATION
CONTROL NETWORK DIAGRAM

GENERAL NOTES:

- EXISTING EQUIPMENT BASED ON DRAWING SET BY BURGESS & NIPLE DATED FEBRUARY, 1987, AS WELL AS CHANGES NOTED DURING SITE VISITS.
- ALL FEEDERS ARE (3) #12 + (1) #12 GND AND INSTALLED IN EXISTING CONDUIT, UNO.

CODING NOTES:

- REPLACE EXISTING MOTOR CONTROL CENTER, "MCC-D", INCLUDING REPLACING EXISTING SCREW PUMP MOTOR STARTERS WITH NEW VFDs. EXTEND CONCRETE HOUSEKEEPING PAD TO ACCOMMODATE DEEPER UNIT. ARRANGE MCC SECTIONS TO MINIMIZE CONDUCTOR RUNS UTILIZING EXISTING IN-SLAB CONDUIT. MCC TO INCLUDE ETHERNET SWITCH WITH INTEGRATED POWER UNIT. SEE ONE-LINE DIAGRAM THIS SHEET FOR LOAD DETAILS, NETWORK DIAGRAM THIS SHEET FOR CONTROL WIRING, AND SPEC SECTIONS 262419 & 262923 FOR FULL REQUIREMENTS.
- REPLACE SCREW PUMP FEEDERS AND TERMINATE IN NEW VFDs INSIDE MCC-D, 460V / 3Φ / 60 Hz / 15 HP. (3) #10 + (1) #10 GND IN EX. 3/4"C.
- REPLACE SCREW PUMP LUBRICATION PUMPS; 208V, 3Φ, 60 Hz, 1/2 HP; WIRE TO RESPECTIVE EXISTING MOTOR STARTERS, "MS-X", (3) #12 + (1) #12 GND IN EX. 3/4"C. INTERLOCK STARTER COILS WITH HARDWIRED "RUNNING" SIGNAL FROM NEW SCREW PUMP VFDs. FINAL LOCATION TO BE DETERMINED IN THE FIELD.
- NEW SCADA REMOTE I/O PANEL "RIO-002", CONTAINS THE FOLLOWING AND FED WITH (2) #12 + (1) #12 GND IN 3/4"C.
 - NEMA 12 WALL-MOUNTED ENCLOSURE
 - SUPPLEMENTAL CIRCUIT BREAKER APPROPRIATELY SIZED FOR THE PANEL LOAD, 120V, 1-POLE
 - 24VDC POWER SUPPLY WITH LINE AND LOAD OCP DEVICES
 - PLC REMOTE I/O MODULES PER OWNER'S REQUIREMENTS:
 - ETHERNET COMMUNICATION ADAPTER
 - ANALOG INPUT, 4-CHANNEL MINIMUM
 - DIGITAL INPUT, 8-CHANNEL MINIMUM
 - EXPANDABLE AS NEEDED
 - DOOR-MOUNTED DISPLAY(S) SHOWING EXTERIOR TEMPERATURE, AND ACTIVE ALARMS
- NEW EXTERIOR TEMPERATURE TRANSMITTER "TT-02", LOOP-POWERED 4-20 mA SIGNAL TO RIO-002. SEE CONTROL NETWORK DIAGRAM THIS SHEET FOR WIRING DETAILS.
- EXISTING LIGHTING PANEL "LPE", SEE SCHEDULE CHANGES THIS SHEET.

PANELBOARD E										PANEL LOADING SCHEDULE				
208Y/120 VOLT, 3 PHASE, 4 WIRE, 18 CIRCUIT										CONNECTED				
60 AMP MAIN CB										PHASE A PHASE B PHASE C TOTAL				
POST TREATMENT BUILDING										AMPS	19.1	21.4	8.5	
										KVA	2.3	2.6	1.0	5.9
CIRCUIT DESCRIPTION	WIRE	LOAD KVA	LOAD AMPS	BKR POLE	CKT NO.	BKR POLE	LOAD AMPS	LOAD KVA	WIRE	CIRCUIT DESCRIPTION				
LIGHTING	12	6.3	20/1	1	2		3.6			12 LUBRICATION PUMPS				
RECEPTACLES	12	6.0	20/1	3	4	20/3	3.6							
RECEPTACLES	12	4.5	20/1	5	6		3.6							
EXP-P1 & FAL-P1	12	4.6	20/1	7	8	20/1	4.6			12 EXP-P2 & FAL-P2				
HEATING UNITS HU-P1	12	2.0	20/1	9	10	20/1	9.8			12 SAMPLER & PUMP				
PR. SCADA REMOTE I/O PANEL, RIO-002	12					20/1	11	12	20/1	12 FLOW AND PH XMTR'S				
SPARE						20/1	13	14	20/1	SPARE				
SPARE						20/1	15	16	20/1	SPARE				
SPARE						20/1	17	18	20/1	SPARE				

EX. LIGHTING PANEL "LPE" SCHEDULE



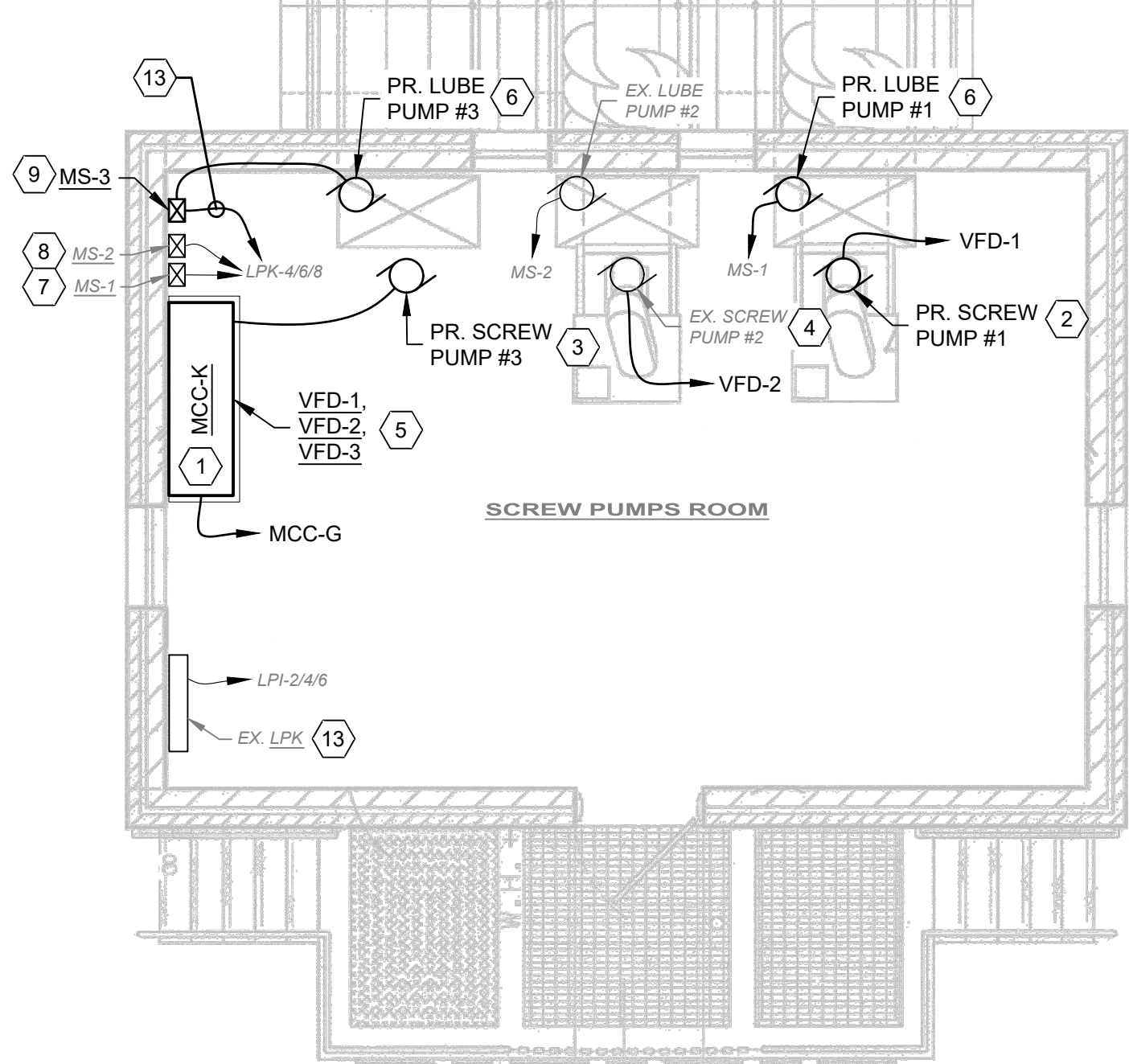
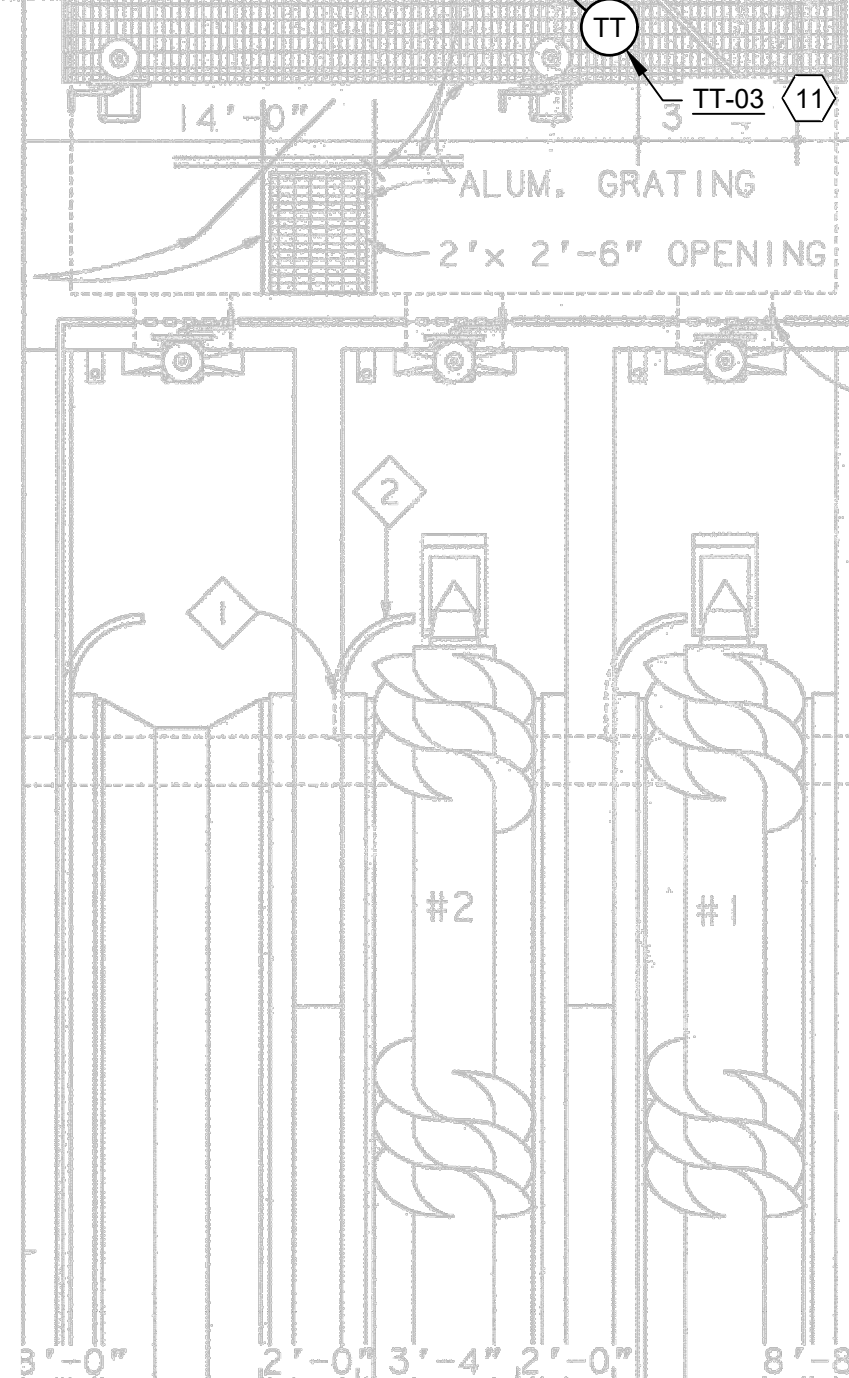
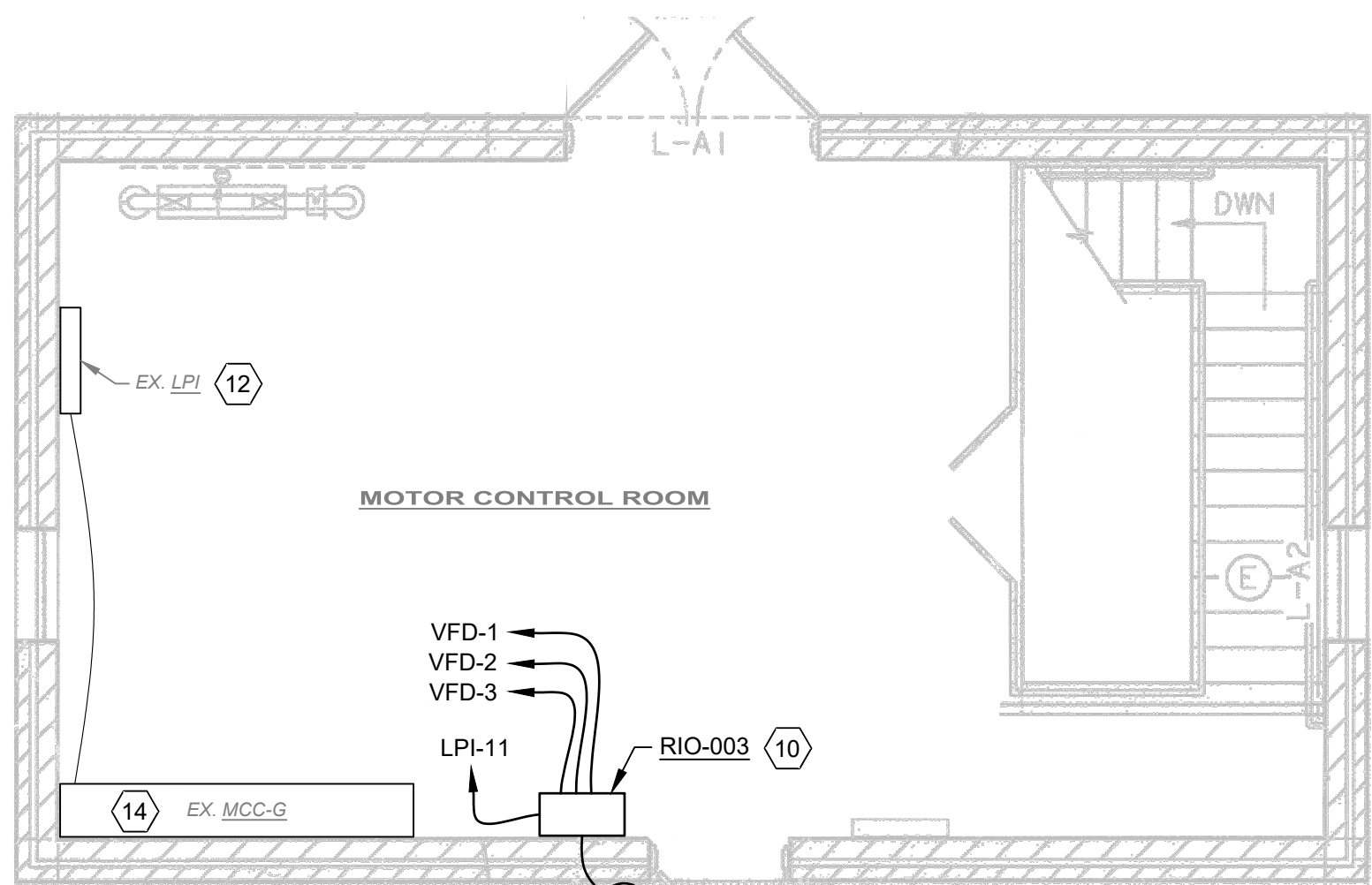
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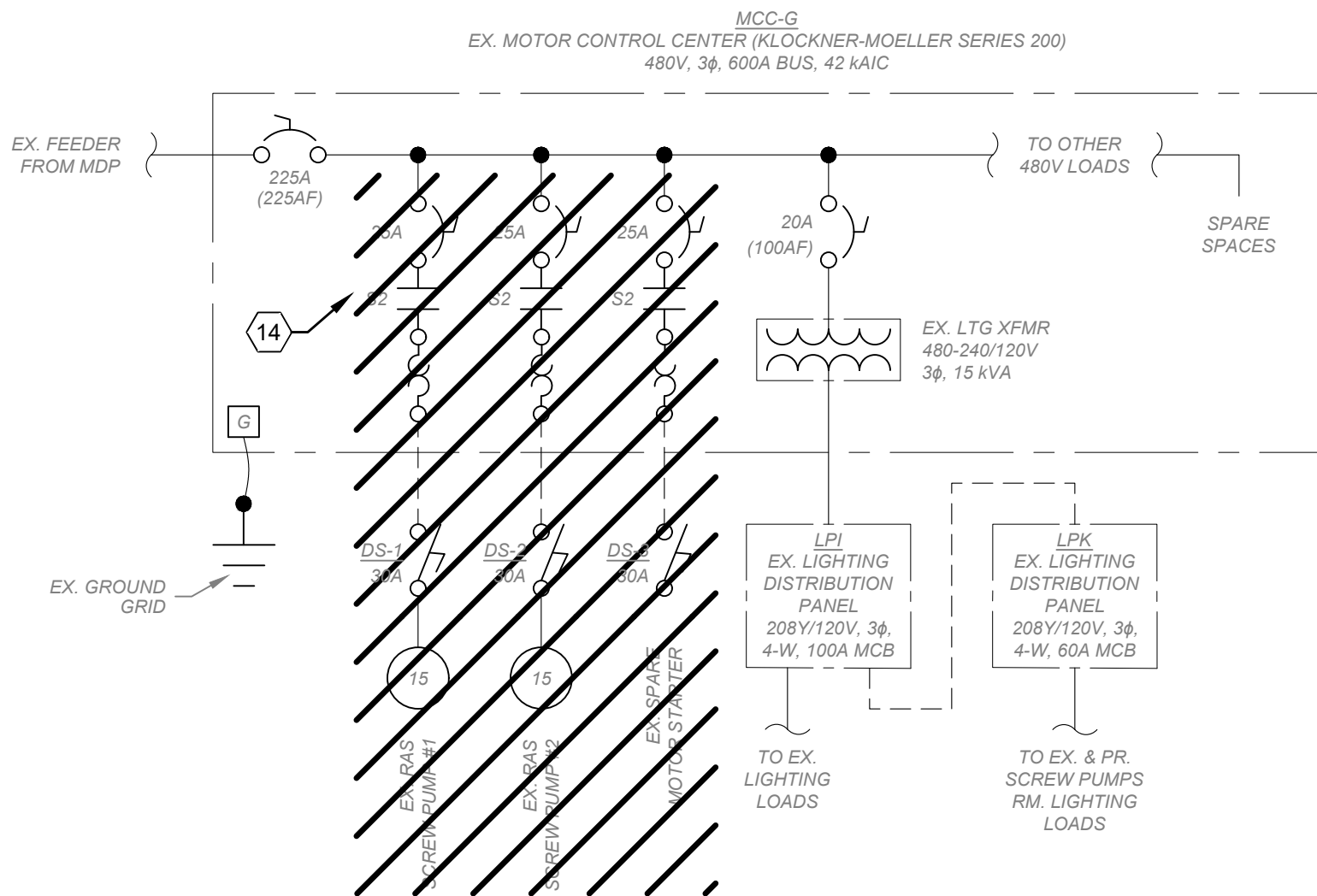
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CITY OF ORRVILLE, OHIO
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ELECTRICAL - E SERIES
2ND ST EFFLUENT PS PLANS, DIAGS & SCHEDULES

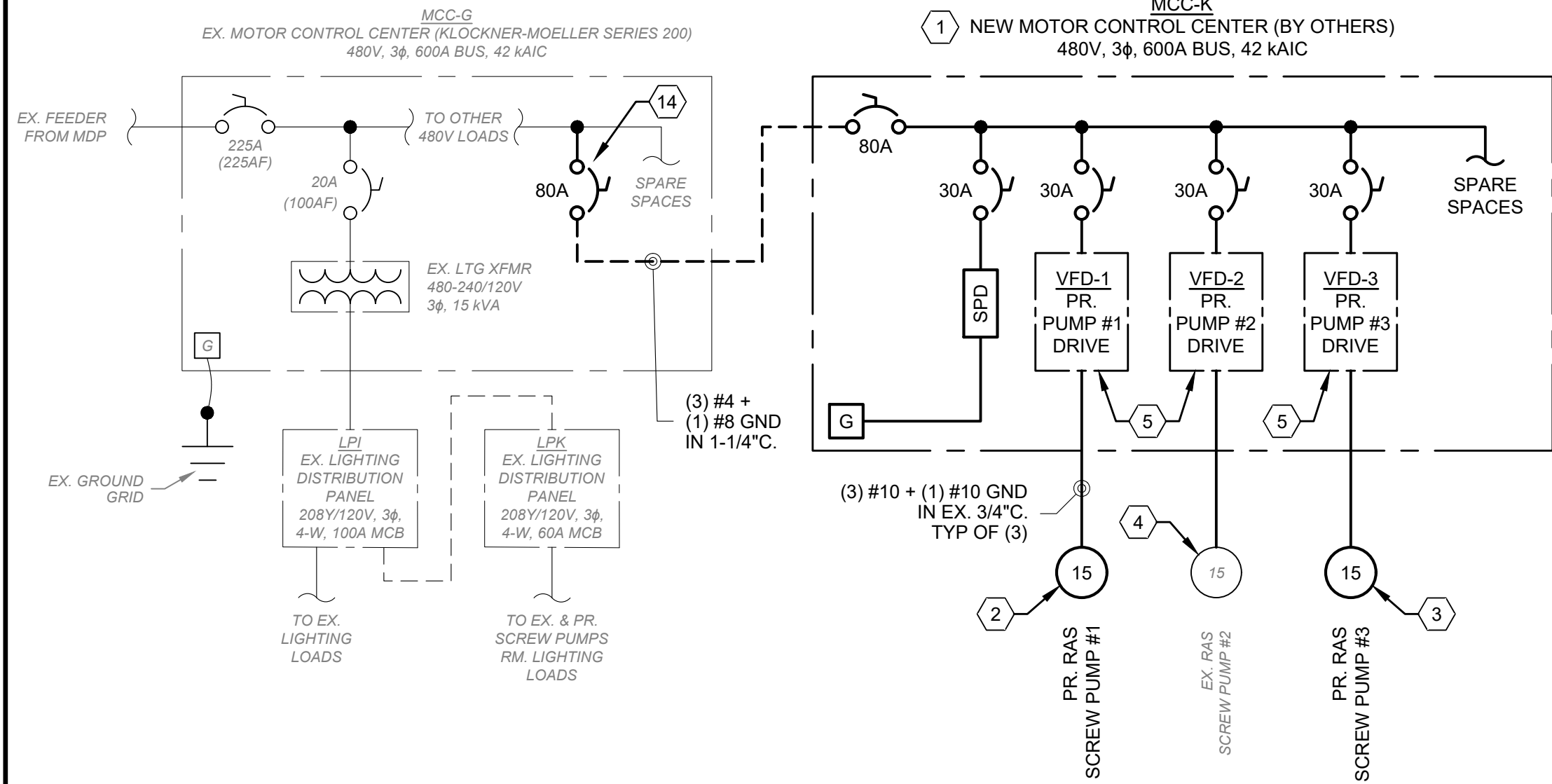
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**2ND STAGE RAS PUMP STATION
PARTIAL POWER & INSTRUMENTATION PLAN**
SCALE: 1/4" = 1'-0"



**2ND STAGE RAS PUMP STATION
EXISTING PARTIAL ONE-LINE DIAGRAM - DEMOLITION**



**2ND STAGE RAS PUMP STATION
EXISTING PARTIAL ONE-LINE DIAGRAM - PROPOSED**

PANELBOARD I									
208Y/120 VOLT, 3 PHASE, 4 WIRE, 18 CIRCUIT									
100 AMP MAIN CB									
SECOND STAGE ACTIVATED SLUDGE METER BUILDING									
PANEL LOADING SCHEDULE									
CONNECTED									
PHASE A PHASE B PHASE C TOTAL									
AMPS	29.6	21.6	14.1						
KVA	3.6	2.6	1.7	7.9					
CIRCUIT DESCRIPTION									
LIGHTING-UPPER LEVEL	12	5.2	20/1	1	2	9.2			
LIGHTING-LOWER LEVEL	12	4.4	20/1	3	4	6.6			
RECEPTACLES-UPPER LEVEL	12	6.0	20/1	5	6	6.9			
RECEPTACLES-LOWER LEVEL	12	6.0	20/1	7	8	9.2			
HEATING UNITS HU-A1 AND A2	12	1.4	20/1	9	10	9.2			
PR. SCADA REMOTE I/O PANEL, RIO-003	12	4.2	20/1	11	12	1.2			
SPARE			20/1	13	14	20/1			
SPARE			20/1	15	16	20/1			
SPARE			20/1	17	18	20/1			

EX. LIGHTING PANEL "LPI" SCHEDULE

PANELBOARD K									
208Y/120 VOLT, 3 PHASE, 4 WIRE, 12 CIRCUIT									
60 AMP MAIN CB									
SECOND STAGE ACTIVATED SLUDGE SCREW PUMP BUILDING									
PANEL LOADING SCHEDULE									
CONNECTED									
PHASE A PHASE B PHASE C TOTAL									
AMPS	9.2	6.6	6.9						
KVA	1.1	0.8	0.8	2.7					
CIRCUIT DESCRIPTION									
HEATING UNIT HU-A3	12	0.7	20/1	1	2	7.6			
LIGHTING	12	5.7	20/1	3	4				
RECEPTACLES		6.0	20/1	5	6	20/3			
SPARE			20/1	7	8				
SPARE			20/1	9	10	20/1			
SPARE			20/1	11	12	20/1			

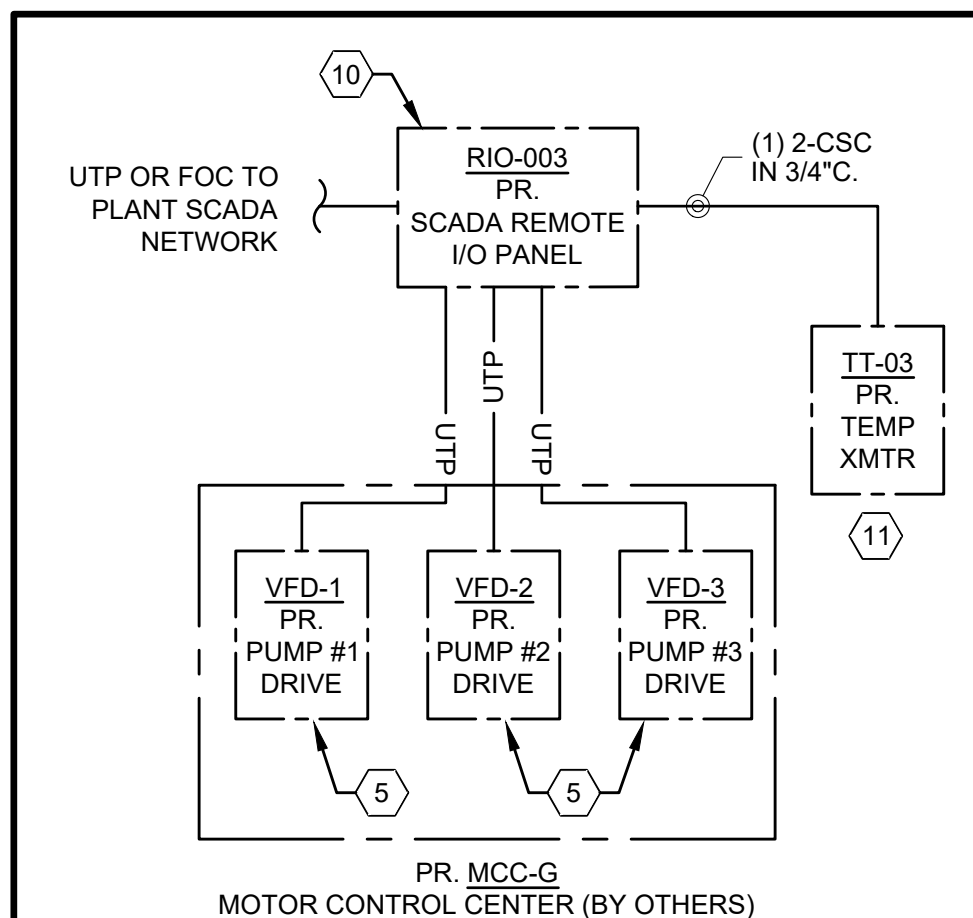
EX. LIGHTING PANEL "LPK" SCHEDULE

(X) CODED NOTES:

- NEW MOTOR CONTROL CENTER "MCC-K" BY OTHERS, DEMOLISH EXISTING DISCONNECT SWITCHES, PULL BOX, AND CONDUIT DOWN TO APPROXIMATELY 4" ABOVE TOP OF NEW 4" HOUSEKEEPING PAD BEFORE INSTALLING NEW MCC. SEE ONE-LINE DIAGRAM THIS SHEET FOR DETAILS.
- DISCONNECT EXISTING SCREW PUMP AND DEMOLISH FEEDER CONDUCTORS BACK TO MCC-G BEFORE RUNNING NEW FEEDERS TO VFD-1 INSIDE PR. MCC-K, 460V / 3 ϕ / 60 Hz / 15 HP. SEE ONE-LINE DIAGRAM THIS SHEET FOR CONDUIT & CONDUCTOR SIZES.
- PR. SCREW PUMP #3 AND FEEDER CONDUCTORS TERMINATED IN VFD-3 INSIDE PR. MCC-K, 460V / 3 ϕ / 60 HZ / 15 HP. SEE ONE-LINE DIAGRAM THIS SHEET FOR CONDUIT & CONDUCTOR SIZES.
- EX. SCREW PUMP #2, DEMOLISH EXISTING FEEDER AND REPLACE WITH CONDUCTORS TERMINATED IN VFD-2.
- NEW SCREW PUMP MOTOR VFDs, 480V / 3 ϕ / 15 HP, HEAVY DUTY IN MCC-K. REMOTE CONTROL SIGNALS WIRED TO RIO-003 VIA CAT6 CABLE WITH A HARDWIRED INTERLOCK ENABLING THE RESPECTIVE LUBRICATION PUMP (NOTES #7-9).
- NEW SCREW PUMP LUBRICATION PUMP; 208V, 3 ϕ , 60 Hz, 1/2 HP; (1) NEW AND (1) REPLACING EXISTING SYSTEM, WIRE TO RESPECTIVE EXISTING AND PROPOSED MOTOR STARTERS, MS-X. (3) #12 + (1) #12 GND IN EX. 3/4"C.
- EXISTING LUBRICATION PUMP MOTOR STARTER "MS-1", REPLACE LOAD FEEDERS TO NEW PUMP AND INTERLOCK STARTER COIL WITH "RUNNING" SIGNAL FROM NEW SCREW PUMP VFDs.
- EXISTING LUBRICATION PUMP MOTOR STARTER "MS-2", MOVE STARTER COIL INTERLOCK TO "RUNNING" SIGNAL FROM NEW VFD-2.
- PROPOSED LUBRICATION PUMP MOTOR STARTER "MS-3", MATCH EXISTING TYPE & LOAD CONDUCTORS TO NEW PUMP AND INTERLOCK STARTER COIL WITH "RUNNING" SIGNAL FROM NEW SCREW PUMP VFD-3.
- NEW SCADA REMOTE I/O PANEL "RIO-003" CONTAINS THE FOLLOWING AND FED WITH (2) #12 + (1) #12 GND IN 3/4"C. TERMINATED IN CIRCUIT #7 IN LPK:
 - 10.1. NEMA 12 WALL-MOUNTED ENCLOSURE
 - 10.2. SUPPLEMENTAL CIRCUIT BREAKER APPROPRIATELY SIZED FOR THE PANEL LOAD, 120V, 1-POLE
 - 10.3. 24VDC POWER SUPPLY WITH LINE AND LOAD OCP DEVICES
 - 10.4. PLC REMOTE I/O MODULES PER OWNER'S REQUIREMENTS:
 - 10.4.1. ETHERNET COMMUNICATION ADAPTER
 - 10.4.2. ANALOG INPUT, 4-CHANNEL MINIMUM
 - 10.4.3. DIGITAL INPUT, 8-CHANNEL MINIMUM
 - 10.4.4. EXPANDABLE AS NEEDED
 - 10.5. INDUSTRIAL ETHERNET SWITCH, (4) RJ45 PORTS MINIMUM, WITH ADDITIONAL PORT(S) FOR PLANT SCADA NETWORK AND POSSIBLE LOCAL DISPLAY
 - 10.6. DOOR-MOUNTED DISPLAY(S) SHOWING EXTERIOR TEMPERATURE, AND ACTIVE ALARMS
- NEW EXTERIOR TEMPERATURE TRANSMITTER "TT-03", LOOP-POWERED 4-20 mA SIGNAL TO RIO-003. SEE CONTROL NETWORK DIAGRAM THIS SHEET FOR WIRING DETAILS.
- EXISTING LIGHTING PANEL "LPI", SEE SCHEDULE CHANGES THIS SHEET.
- EXISTING LIGHTING PANEL "LPK", SEE SCHEDULE CHANGES THIS SHEET.
- EX. MOTOR CONTROL CENTER "MCC-G", DEMOLISH EXISTING SCREW PUMP FEEDERS ABANDON EXISTING STARTERS IN PLACE. ADD NEW FEEDER CIRCUIT BREAKER FOR NEW MOTOR CONTROL CENTER "MCC-K" AND RUN CONDUIT CONDUCTORS AS SHOWN IN THE ONE-DIAGRAM THIS SHEET.

GENERAL NOTES:

- EXISTING EQUIPMENT BASED ON DRAWING SET BY BURGESS & NIPLE DATED FEBRUARY, 1987, AS WELL AS CHANGES NOTED DURING SITE VISITS.
- RELEVANT HAZARDOUS AREAS:
 - 2.1. CLASS I, DIVISION 1 - ENTIRE WET WELL INTERIOR AND ANY OTHER CHANNEL CONVEYING SLUDGE
 - 2.2. CLASS I, DIVISION 2 - EXTENDS 18" VERTICALLY & HORIZONTALLY FROM THE TOP OF THE WET WELL CONCRETE AND 10' FROM THE OUTER EDGE OF THE WELL'S WALLS AT A HEIGHT OF 18" ABOVE GRADE.
 - 2.3. ALL DEVICES AND METHODS INSTALLED IN THESE AREAS MUST MEET THE REQUIREMENTS OF NEC ARTICLES 500 & 501.



LEGEND

— UTP — PR. UNSHIELDED TWISTED PAIR COPPER
ETHERNET CABLE

**2ND ST. RAS PUMP STATION
CONTROL NETWORK DIAGRAM**



verdantas

8150 STERLING COURT
MENTOR, OHIO 44060
(440) 951-9000

DATE									
REVISION									
NO									

SCALE:	AS NOTED			
DATE:	9/11/2026	JPB	JPB	CZ
DESIGNED BY:	JPB			
DRAWN BY:	JPB			
CHECKED BY:	CZ			

CITY OF ORRVILLE, OHIO ORRVILLE WWTP SCREW PUMP IMPROVEMENTS - PHASE I WAYNE COUNTY	OHIO	
	ELECTRICAL - E SERIES	
	2ND ST RAS PS PLANS, DIAGS & SCHEDULES	

PROJECT NO:	
40948	
DRAWING NAME	
E-05	
SHEET	OF
22	23



2ND STAGE EFFLUENT PUMP STATION
PR. MOTOR CONTROL CENTER "D" - ELEVATION VIEW

**CITY OF ORRVILLE, OHIO
ORRVILLE WWTP SCREW PUMP
IMPROVEMENTS - PHASE I
WAYNE COUNTY
OHIO**

ELECTRICAL - E SERIES

MOTOR DIAGRAMS & PR. MCC-D ELEVATION