

WASHINGTON COUNTY

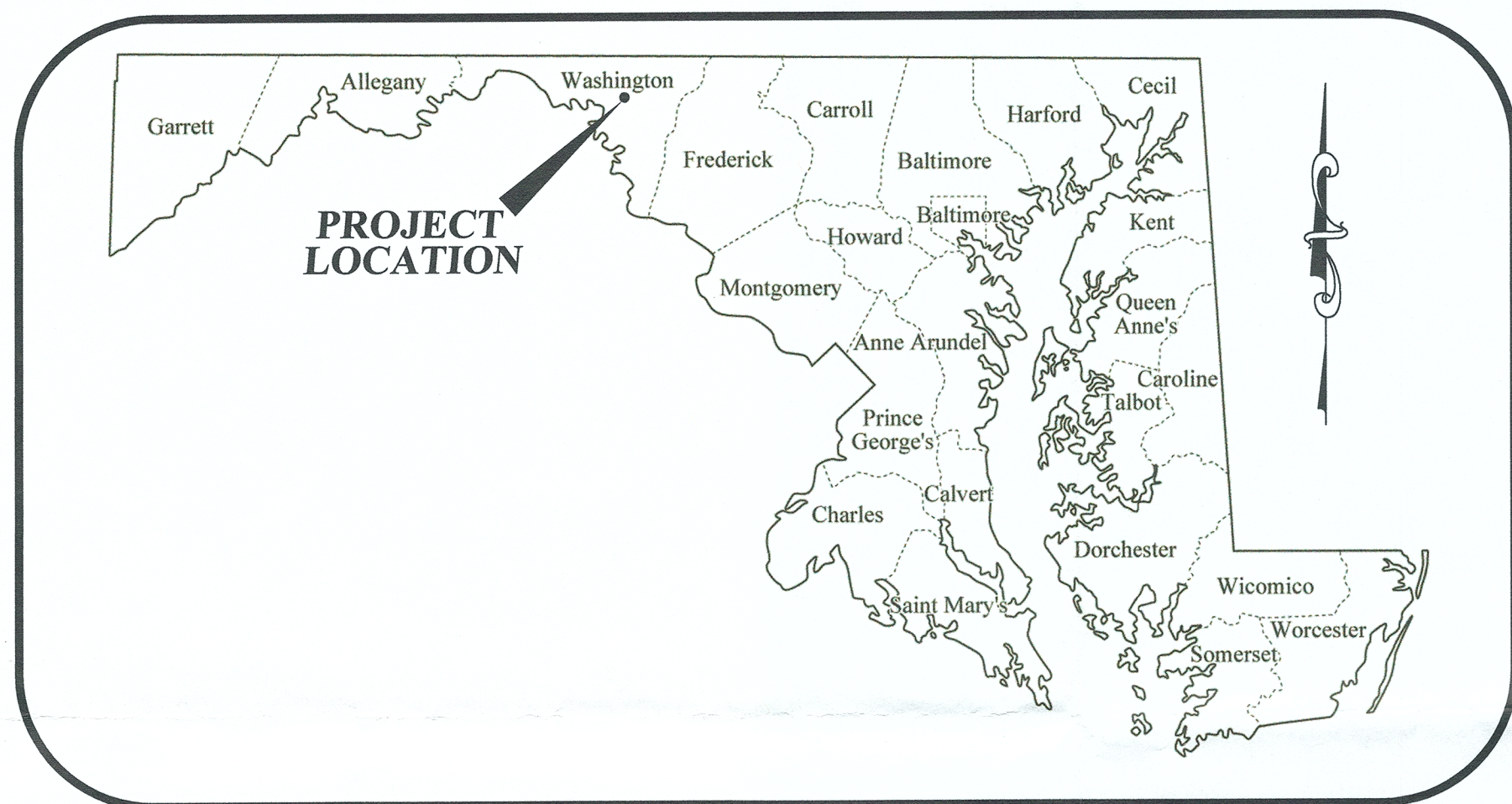
DIVISION OF ENVIRONMENTAL MANAGEMENT

DEPARTMENT OF WATER QUALITY

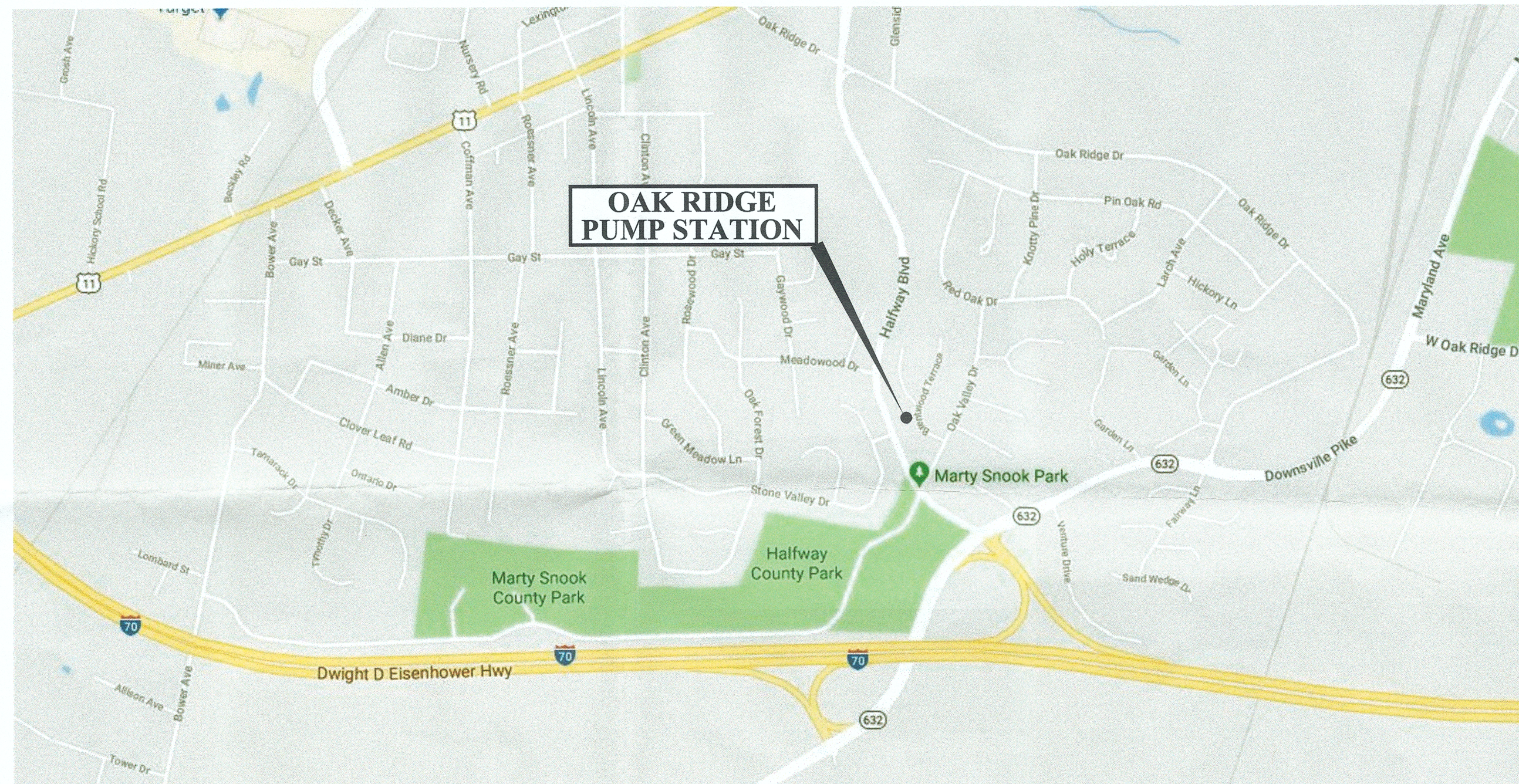
COPY NO. \_\_\_\_

OAK RIDGE

PUMP STATION UPGRADES



LOCATION MAP  
WASHINGTON COUNTY  
"NOT TO SCALE"



VICINITY MAP  
"NOT TO SCALE"

NOTE:

ALL DOCUMENTS INCLUDING DRAWINGS AND SPECIFICATIONS FURNISHED BY ENGINEER PURSUANT TO THIS AGREEMENT ARE INSTRUMENTS OF HIS SERVICES IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY THE OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT SPECIFIC WRITTEN VERIFICATION OR ADAPTATION BY ENGINEER WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ENGINEER, AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS ENGINEER FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING ATTORNEYS' FEES ARISING OUT OF OR RESULTING THEREFROM. ANY SUCH VERIFICATION OR ADAPTATION PERFORMED BY THE ENGINEER AT THE OWNER'S REQUEST WILL ENTITLE ENGINEER TO FURTHER COMPENSATION AT RATES TO BE AGREED UPON BY OWNER AND ENGINEER.

REFER TO SPECIFICATIONS PRIOR TO CONSTRUCTION. PLANS AND SPECIFICATIONS MUST BE READ TOGETHER TO UNDERSTAND FULLY WHAT MUST BE BUILT.

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STATE OF MARYLAND

PROFESSIONAL ENGINEER

37168

9/22/2020

UTILITIES ENCOUNTERED

ELECTRIC - Potomac Edison, Rick Usary: 301-582-5271  
GAS - Columbia, Vonda Griffin: 800-440-6111  
CABLE - Antietam Cable, Ken Buckler: 301-797-1835  
TELEPHONE - Verizon, Julie Ludwig: 301-790-7135

APPROVED FOR CONSTRUCTION

9-21-2020

JEREMY MOSE

DATE

DIRECTOR OF ENVIRONMENTAL MANAGEMENT FOR WASHINGTON COUNTY, MD

INDEX OF DRAWINGS

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NOTE : 36 SHEETS IN THIS PLAN SET

SEPTEMBER 14, 2020



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PROJECT NO.  
17220  
DATE  
DECEMBER 6, 2019  
DESIGNED JWC  
DRAWN RAS  
CHECKED JWC

REVISIONS

WASHINGTON COUNTY  
DEPARTMENT OF  
WATER QUALITY  
16232 ELLIOTT PARKWAY  
WILLIAMSPORT, MD 21795

OAK RIDGE  
PUMP STATION  
UPGRADES

TITLE PAGE

SHEET  
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OF...36...

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## GENERAL NOTES

### 1. PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF MODIFICATIONS TO AN EXISTING PUMP STATION WHEREBY INCREASING THE OVERALL WET WELL STORAGE CAPACITY WHILE REDUCING THE NUMBER OF EXISTING PUMPS FROM FOUR TO THREE PUMPS.

THE PLANS AND SPECIFICATIONS ARE INTENDED TO COVER A COMPLETE PROJECT AND IT SHALL BE THOROUGHLY UNDERSTOOD THAT A FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM THE WORK.

### 2. CONTRACTOR RESPONSIBILITIES

THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION TO CORRECT PROBLEMS ASSOCIATED WITH DUST CONTROL, TRAFFIC CONTROL, SEDIMENT AND EROSION, LOCATION OF STORED MATERIALS, EMERGENCY SITUATIONS, ETC. UPON AND IN ACCORDANCE WITH WRITTEN DIRECTIVE OF ENGINEER. THE OWNER RESERVES THE RIGHT TO PERFORM THIS WORK AND WITHHOLD COSTS OF WORK FROM CONTRACTOR'S PAYMENT UPON FAILURE OF THE CONTRACTOR TO TAKE ACTION.

### 3. BASE MAPPING

THESE PLANS HAVE BEEN PREPARED BY UTILIZING ORTHOPHOTOGRAPHY, PLANIMETRICS, AND TOPOGRAPHY FURNISHED BY WASHINGTON COUNTY AND AS-BUILT DRAWINGS PROVIDED BY THE COUNTY.

### 4. HORIZONTAL & VERTICAL CONTROL

MAPPING FURNISHED BY WASHINGTON COUNTY WAS USED TO DEVELOP THESE PLANS.

### 5. VERIFICATION OF DIMENSIONS

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL PLAN AND ELEVATION DIMENSIONS PRIOR TO ORDERING MATERIALS FOR THE CONSTRUCTION OF THE VARIOUS ITEMS ON THIS PROJECT.

### 6. CONTRACTOR LICENSES

PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL SECURE ALL NECESSARY WORK LICENSES AND PERMITS FROM THE APPROPRIATE MUNICIPALITY, COUNTY, OR STATE. THE OWNER SHALL HAVE THE NECESSARY PERMITS TO CONSTRUCT THE PROJECT AND SHALL FURNISH THEM TO THE CONTRACTOR.

### 7. PROPERTY LINE LOCATIONS

THE PROPERTY LINES SHOWN ON THESE PLANS WERE DETERMINED FROM THE WASHINGTON COUNTY MAPS.

### 8. PRESERVATION OF PROPERTY CORNERS OR OTHER MONUMENTS

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO PRESERVE AND MAINTAIN ALL CORNER STONES, IRON PINS, PIPES, CONCRETE MARKERS, OR OTHER MONUMENTS IDENTIFYING PROPERTY LINES OR OTHER FEATURES. HE SHALL HAVE ALL SUCH MONUMENTS IN THE PROXIMITY OF THE WORK REFERENCED. ANY MONUMENTS DAMAGED OR DESTROYED BY THE CONTRACTOR SHALL BE REPLACED AND A CERTIFICATION FURNISHED BY A REGISTERED SURVEYOR THAT THE MONUMENT HAS BEEN REPLACED. THE COST FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND INCLUDED IN THE VARIOUS BID ITEMS.

### 9. EXISTING UTILITIES

THE LOCATION AND OR ELEVATION OF ALL KNOWN UTILITIES AND SUBSURFACE FEATURES AS SHOWN ON THESE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION FROM EXISTING PLANS AND FIELD INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE LOCATION AND OR ELEVATION OF EACH UTILITY WHEN PERFORMING WORK WHICH MAY AFFECT THESE FACILITIES, INCLUDING PROBING, EXCAVATION, OR ANY OTHER PRECAUTION REQUIRED TO CONFIRM LOCATION AND OR ELEVATION AND THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS AGAINST DAMAGE TO THESE UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. HOWEVER, IN THE EVENT OF DAMAGE OR DISRUPTION TO UTILITIES WHICH ARE ACTIVE AND ARE TO REMAIN IN SERVICE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RESPONSIBLE OFFICIAL OF THE ORGANIZATION OPERATING THE UTILITY INTERRUPTED. THE CONTRACTOR SHALL END ALL POSSIBLE ASSISTANCE IN RESTORING SERVICES AND SHALL ASSUME ALL COST, CHARGES, OR CLAIMS IN CONNECTION WITH THE INTERRUPTIONS AND REPAIR OF SUCH SERVICES. PRIOR TO COMMENCING WORK ON THE PROJECT, CONTRACTOR SHALL SUBMIT DETAILED METHOD OF REPAIRING DAMAGED UTILITIES TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL UNCOVER AND DETERMINE THE ELEVATION OF ALL UTILITY LINES WHICH WILL BE CROSSED BY THE PROPOSED LINES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS TO THE RESOLUTION OF ANY CONFLICTS. COST FOR ALL LOCATIONS EXPOSED SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS BID ITEMS. IF IT IS DETERMINED BY THE ENGINEER THAT RELOCATION OF EXISTING UTILITIES IS NECESSARY, SUCH WORK SHALL BE CONDUCTED IN ACCORDANCE WITH "CHANGES IN THE WORK" IN THE GENERAL CONDITIONS. NO TEST PITS ARE SHOWN ON THE PLANS. THE TEST PIT QUANTITIES ARE APPROXIMATE AND TO BE USED FOR ESTIMATE PURPOSES. ALL TEST PITS SHALL BE APPROVED BY THE ENGINEER PRIOR TO STARTING TEST PIT.

### 10. UTILITY NOTIFICATION

THE CONTRACTOR SHALL NOTIFY MISS UTILITY OF MARYLAND 811 OR 1-800-257-7777 FOR LOCATING AND NOTIFICATION AT LEAST 3 WORKING DAYS PRIOR TO BEGINNING ANY WORK.

THE CONTRACTOR SHALL ALSO NOTIFY THE PROPER OFFICIALS OF AFFECTED UTILITIES AT LEAST 3 WORKING DAYS PRIOR TO BEGINNING ANY WORK THAT MAY AFFECT THEIR FACILITIES. THE UTILITIES AND THEIR CONTACT PERSON IF KNOWN ARE LISTED ON THIS SHEET.

THE APPROVAL OF THIS PLAN MAKES NO REPRESENTATION AS TO THE EXISTENCE OR NON EXISTENCE OF ANY UTILITIES AT THE SITE. IT IS THE RESPONSIBILITY OF THE LANDOWNERS OR OPERATORS AND CONTRACTORS TO ASSURE THAT NO HAZARD EXISTS OR DAMAGE WILL OCCUR TO UTILITIES. IT IS SUGGESTED THAT MISS UTILITY BE CONTACTED AT: PHONE 1-800-257-7777 EVERY 8 BUSINESS DAYS TO COMPLY DURING THE EXCAVATION PERIOD.

### 11. DRAINAGE

THE LOCATION OF CULVERTS, INLETS, AND OTHER DRAINAGE ITEMS HAVE BEEN DETERMINED FROM DATA AVAILABLE AT THE TIME OF DESIGN AND ARE NOT NECESSARILY COMPLETE. PROPER DRAINAGE MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. DRIVEWAY CULVERTS AND OTHER STORM DRAINAGE PIPES REMOVED DURING CONSTRUCTION MUST BE REPLACED AT THE SAME LOCATION, GRADE, AND ELEVATION UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL USE DUE DILIGENCE IN PROTECTING FROM DAMAGE ALL EXISTING CULVERTS WHETHER SHOWN ON THE PLANS OR NOT. IF DAMAGE IS CAUSED TO ANY DRAINAGE FEATURES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR RESTORATION OF SAME TO THE SATISFACTION OF THE ENGINEER.

### 12. SUBSURFACE INVESTIGATION

NO SUBSURFACE INVESTIGATIONS HAVE BEEN MADE. IT IS THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIS OWN INVESTIGATIONS PRIOR TO SUBMITTING HIS BID.

### 13. DISPOSAL OF EXCESS AND UNSUITABLE MATERIAL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL EXCESS OR UNSUITABLE MATERIAL FROM THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND COMPLYING WITH ALL LOCAL, STATE, AND FEDERAL LAWS PERTAINING TO DISPOSAL OF MATERIAL. THE COST OF THIS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND INCLUDED IN THE VARIOUS BID ITEMS.

### 14. SURFACE RESTORATION

ALL DISTURBED PROPERTY SHALL BE RESTORED TO ITS PRE-CONSTRUCTION CONDITION. COST SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

### 15. STANDARD SPECIFICATIONS

IN THE EVENT THERE ARE CONFLICTING REQUIREMENTS IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL FOLLOW THE MORE STRINGENT REQUIREMENTS. IN INTERPRETING THESE REQUIREMENTS, THE INTERPRETATION OF THE ENGINEER SHALL BE FINAL. IN ADDITION, RK&K'S STANDARD DETAILS AND THE WASHINGTON COUNTY DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAILS ARE BOTH INCLUDED IN THESE PROJECT PLANS. IN THE EVENT THERE ARE CONFLICTS BETWEEN THE TWO STANDARDS, THE WCDPU STANDARDS SHALL GOVERN.

### 16. AS-BUILT DRAWINGS

THE CONTRACTOR SHALL PERFORM MEASUREMENTS AND KEEP ADEQUATE RECORDS TO PROVIDE AS-BUILT DRAWINGS OF THE PROJECT. THE COST OF AS-BUILT DRAWINGS IS INCIDENTAL TO THE PROJECT. A SET OF AS-BUILT DRAWINGS SHALL BE KEPT CURRENT BY THE CONTRACTOR AS WORK PROGRESSES.

### 17. STAGING/ STOCKPILE AREAS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING AND PERMITTING NECESSARY STAGING AND/OR STOCKPILE AREAS THAT ARE OUTSIDE THE LIMITS OF DISTURBANCE FOR THIS CONTRACT.

### 18. DISPOSAL OF REMOVED EQUIPMENT AND MISCELLANEOUS ITEMS DURING DEMOLITION

THE OWNER RESERVES THE RIGHT TO KEEP ANY MECHANICAL EQUIPMENT, PIPING, VALVES, METERS, OR ANY OTHER ITEMS REMOVED DURING DEMOLITION, IF THEY CHOOSE. COORDINATE REMOVAL OF ITEMS DURING DEMOLITION WITH THE OWNER. ANY ITEMS THAT THE OWNER CHOOSES TO KEEP SHALL BE DELIVERED TO THE OWNER WITH MINIMAL DAMAGE. COORDINATE DELIVERY WITH THE OWNER. EQUIPMENT AND ITEMS THAT THE OWNER CHOOSES NOT TO KEEP SHALL BE DISPOSED OF BY THE CONTRACTOR.

## SEQUENCE OF OPERATIONS

NOTE: THIS SEQUENCE OF CONSTRUCTION PROVIDES A GENERAL DESCRIPTION ON HOW THIS PROJECT IS TO BE CONSTRUCTED. THE CONTRACTOR SHALL PREPARE AND SUBMIT FOR REVIEW A DETAILED SEQUENCE OF CONSTRUCTION FOR EACH AREA OF WORK AT LEAST TWO (2) WEEKS PRIOR TO STARTING SPECIFIC CONSTRUCTION ACTIVITY.

#### GENERAL

- CONTACT THE WASHINGTON COUNTY DEPARTMENT OF WATER QUALITY 72 HOURS PRIOR TO BEGINNING WORK TO SCHEDULE A PRE-CONSTRUCTION MEETING.
- VERIFY EXISTENCE, LOCATION AND CONDITION OF ALL UTILITIES WITH "MISS UTILITY" AND ALL OTHER APPLICABLE PARTIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SECURITY OF THE PROJECT FOR THE DURATION OF THE IMPROVEMENTS.
- THE CONTRACTOR SHALL BE PERMITTED TO COMMENCE CONSTRUCTION OF THE PROPOSED SIDEWALK; DOOR AND WINDOW MODIFICATIONS; PROPOSED INTERIOR CMU WALL; SELECT DEMOLITION; PORTABLE GANTRY CRANE INSTALLATION; HVAC INSTALLATION; AND ANY OTHER STATION MODIFICATIONS THAT DO NOT CHANGE THE CURRENT OPERATION OF THE STATION.

#### BYPASS PUMPING

- THE CONTRACTOR SHALL CONSTRUCT/INSTALL THE BYPASS PUMPING PROVISIONS, INCLUDING THE INSTALLATION OF THE ISOLATION VALVE, PRIOR TO ANY MODIFICATIONS TO THE PUMP STATION THAT RESULT IN CHANGES TO THE CURRENT OPERATION OF THE STATION.
- THE CONTRACTOR SHALL OPERATE THE BYPASS PUMPING FOR A MINIMUM OF THREE (3) DAYS TO ENSURE THE TEMPORARY BYPASS PROVISIONS OPERATE AND ARE ADEQUATE.

#### PUMP STATION MODIFICATIONS

- WITH APPROVAL OF THE BYPASS PUMPING OPERATION BY THE WASHINGTON COUNTY DEPARTMENT OF WATER QUALITY, THE CONTRACTOR SHALL COMMENCE THE REMAINING MODIFICATIONS TO THE EXISTING PUMP STATION AS NOTED WITHIN THE PLANS AND SPECIFICATIONS.

## SEDIMENT AND EROSION CONTROL NOTES

- THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIALS DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.
- THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN ALL EFFECTIVE OPERATING CONDITIONS ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS PERMANENT STABILIZATION OF EXPOSED SOIL OCCURS.
- THE APPLICANT IS RESPONSIBLE FOR OBTAINING ANY OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS WHICH MAY BE REQUIRED.

## STRUCTURAL GENERAL NOTES

- FOR MATERIAL SPECIFICATIONS, SEE CONTRACT SPECIFICATIONS.
- DESIGN CRITERIA:
  - ACI 318-14 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE".
- CONCRETE
  - ALL STRUCTURAL CONCRETE SHALL BE NORMAL WEIGHT, HAVING A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4500 PSI.
  - REINFORCED CONCRETE STRUCTURES SHALL CONFORM TO THE PROVISIONS OF THE CURRENT "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318-14), "SPECIFICATIONS FOR STRUCTURAL CONCRETE" (ACI 301-10), AND "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES" (ACI 350-06).
  - CONTRACTOR SHALL LOCATE EXISTING REINFORCING STEEL PRIOR TO INSTALLING THE PROPOSED REINFORCING STEEL FOR THE PROPOSED MODIFICATIONS. ALL PROPOSED ANCHORS AND REINFORCING STEEL SHALL BE LOCATED TO PREVENT CUTTING OF ANY EXISTING REINFORCING STEEL.
- REINFORCING STEEL
  - ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
  - CONCRETE COVER FOR REINFORCING SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE DRAWINGS:
    - UNFORMED CONCRETE BOTTOM BARS IN FOOTINGS AND SLABS ON EARTH, GRAVEL OR CRUSHED STONE.....3"
    - ALL OTHER CONCRETE.....2"
  - DO NOT WELD OR TACK REINFORCING STEEL.
  - REINFORCING STEEL, BAR SUPPORTS, AND SPACERS SHALL BE DETAILED IN ACCORDANCE WITH ACI 315-LATEST EDITION, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT", EXCEPT WHERE SHOWN OTHERWISE.
  - THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF REINFORCING STEEL BEFORE PROCEEDING WITH FABRICATION.
- MASONRY
  - MASONRY CONSTRUCTION SHALL CONFORM TO ACI 530-13/ASCE 5-11.
  - CONTRACTOR IS RESPONSIBLE FOR LATERAL BRACING OF MASONRY WALLS DURING CONSTRUCTION.
  - HOLLOW UNITS: MIN. 2,800 PSI AT 28-DAYS, ASTM C90, GRADE N, NORMAL WEIGHT, FM= 2,000 PSI.
  - MORTAR: ASTM C270, TYPE S, MIN. 1,800 PSI AT 28 DAYS, 3/8" FULL BEDDING. REMOVE MORTAR PROTRUDING INTO CELL CAVITIES TO BE REINFORCED AND GROUTED.
  - GROUT: ASTM C476, MIN. 2,000 AT 28 DAYS, 3/8" AGGREGATE MAX., 8"-10" SLUMP. CELLS TO BE GROUTED SHALL BE GROUTED FOR FULL WALL HEIGHT.
  - TYPE "S" MORTAR SHALL BE USED FOR ALL MASONRY CONSTRUCTION ABOVE GRADE.
  - REINFORCEMENT:
    - HORIZONTAL JOINTS: STD. DUR-O-WALL AT 16" OC, USE PREFABRICATED CORNERS AND TEES AT WALL INTERSECTIONS, OVERLAP DISCONTINUED ENDS AND EXTEND INTO COLUMNS 6" MIN.
    - VERTICAL AND HORIZONTAL REINFORCEMENT: ASTM A615, GRADE 60, PROVIDE MIN. #4 BARS TYP. AT WALL INTERSECTIONS, EACH SIDE OF OPENINGS, AND AT WALL ENDS, HOOK TOP OF ALL DISCONTINUED BARS, LAP CONTINUOUS REINFORCEMENT 48 BAR DIAMETERS UNLESS NOTED OTHERWISE.
    - USE BAR SPACERS IN EVERY 4TH COURSE WHERE CELLS ARE TO BE GROUTED.
- GENERAL REQUIREMENTS
  - TEMPORARY SUPPORT REQUIRED FOR INSTALLATION OR MODIFICATION OF STRUCTURAL MEMBERS, SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
  - CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS FOUND IN CONTRACT DOCUMENTS AND/OR FIELD CONDITIONS.
  - CONTRACTOR SHALL COORDINATE ALL REQUIRED OPENINGS WITH MECHANICAL, PROCESS MECHANICAL, AND ELECTRICAL DRAWINGS. CONTRACTOR SHALL COORDINATE FINAL SIZE AND LOCATION OF ALL OPENINGS WITH THE ACTUAL EQUIPMENT SUPPLIED, PROJECT REQUIREMENTS, AND WITH FIELD CONDITIONS.
  - BAND ALL EDGES AND OPENINGS IN GRATINGS.
  - PROVIDE A ROUGHENED CONSTRUCTION JOINT WHERE INDICATED IN THESE DRAWINGS AND FOR SURFACES WHERE NEW CONCRETE WILL BE PLACED AGAINST EXISTING CONCRETE. CONCRETE SURFACES SHALL BE ROUGHENED TO A FULL 1/4" AMPLITUDE AND AN EPOXY BONDING COMPOUND APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. ALL PVC AND HYDROPHILIC WATERSTOPS SHOWN SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
  - INTENTIONALLY ROUGHEN SURFACE OF HORIZONTAL CONSTRUCTION JOINTS IN WALLS AND AT BASE OF WALL TO 1/4" AMPLITUDE.
  - ALL FRP GRATINGS, STAIRS, HANDRAILS, AND STRUCTURAL COMPONENTS SHALL BE DESIGNED BY THE CONTRACTOR IN ACCORDANCE WITH SPECIFICATION SECTION 06500.
  - REINFORCING STEEL SHALL NOT PASS THROUGH WATERSTOPS.
- WET WELL LINING
  - WET WELL IS TO BE LINED WITH SPECTRASHIELD SPRAY-ON LINER.
  - LINER SHALL BE A TWO COMPONENT 100% SOLID MODIFIED POLYUREA PROVIDING SUPERIOR PERFORMANCE IN WATER/WASTEWATER APPLICATIONS. APPLY COATING PER MANUFACTURER'S SPECIFICATIONS.

## SEEDING AND MULCHING NOTES

- ALL AREAS WHICH ARE DISTURBED AND/OR FILLED SHALL BE PERMANENTLY TREATED WITH THE FOLLOWING:

SEED--192 LB/ACRE FORAGE FESCUE
48 LB/ACRE BLUEGRASS
FERTILIZER RATE (10-20-20)
N 50 LB/AC
P205 100 LB/AC
K20 100 LB/AC
MULCH
STRAW @ 2.0 TONS/ACRE
LIME--2 TONS GROUND LIMESTONE/ACRE
- FOR TEMPORARY SEEDING AND FALL PLANTING ADD 40 PERCENT WINTER WHEAT TO SEED MIX.
- ANCHOR MULCH IN PLACE WITH NON-ASPHALTIC LIQUID BINDER OR NETTING.
- SEED BED PREPARATION - IN ACCORDANCE WITH LATEST MDE STANDARDS FOR VEGETATIVE STABILIZATION METHODS AND MATERIALS.

## UTILITIES

- THE CONTRACTOR SHALL NOTIFY MISS UTILITY THREE (3) DAYS IN ADVANCE OF ANY WORK IN THE VICINITY OF ANY UTILITY LINES.

WORK IN THE STATE OF MARYLAND--TEL. 1-800-257-7777
--
- THE CONTRACTOR SHALL NOTIFY THE LISTED UTILITIES THREE (3) DAYS IN ADVANCE OF ANY WORK IN THE VICINITY OF THEIR UNDERGROUND OR OVERHEAD UTILITY.

VERIZON TELEPHONE CO.	WASHINGTON CO. DEPT. OF PUBLIC WORKS 100 WEST WASHINGTON STREET ROOM 238 HAGERSTOWN, MD 21740 TEL. 1-240-313-2257
POTOMAC EDISON	WASHINGTON COUNTY SOIL CONSERVATION DISTRICT 1260 MARYLAND AVENUE, SUITE 101 HAGERSTOWN, MD 21740 TEL. 1-301-797-6821 EXT. 3
COMCAST	DEPARTMENT OF WATER QUALITY 16232 ELLIOTT PARKWAY WILLIAMSPORT, MD 21795 TEL. 1-240-313-2600



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PROJECT NO.	17220
DATE	
DESIGNED	JWC
DRAWN	RAD
CHECKED	JWC

REVISIONS

WASHINGTON COUNTY  
DEPARTMENT OF  
WATER QUALITY  
16232 ELLIOTT PARKWAY  
WILLIAMSPORT, MD 21795

OAK RIDGE  
PUMP STATION  
UPGRADES

GENERAL NOTES  
AND  
SEDIMENT AND EROSION  
CONTROL NOTES

SHEET

NO...2...

OF...36...

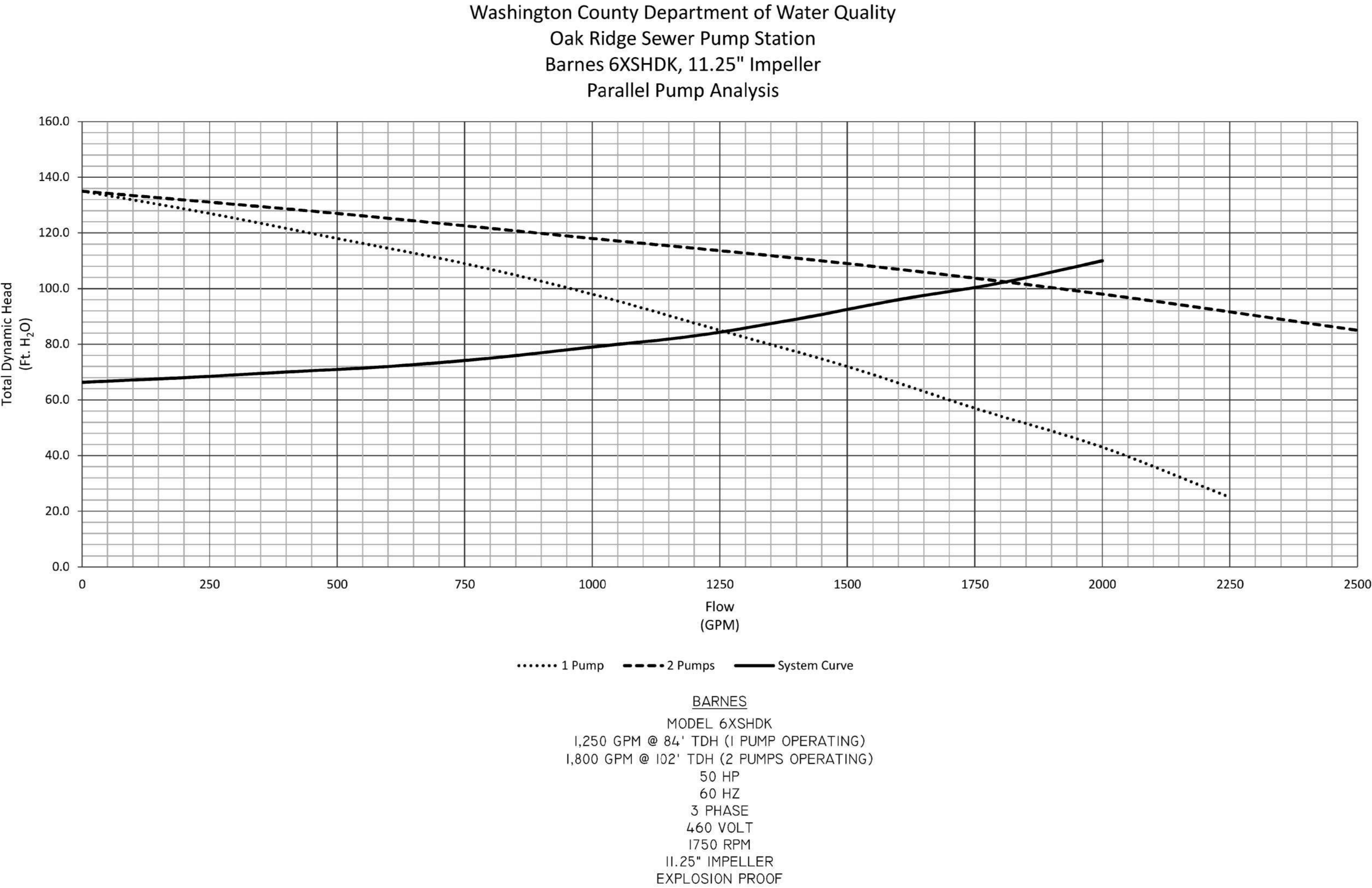
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LEGEND

EXISTING PROPERTY LINE	
INTERIOR BOUNDARY LINE	
EXISTING SANITARY SEWER MANHOLE	
EXISTING SANITARY SEWER	
EXISTING SANITARY FORCEMAIN SEWER	
EXISTING SANITARY SEWER CLEAN OUT	
EXISTING STORM SEWER	
EXISTING STORM SEWER INLET	
EXISTING WATER LINES	
EXISTING WATER VALVES	
EXISTING WATER METER	
EXISTING FIRE HYDRANT	
EXISTING GAS LINES	
EXISTING POWER POLE	
EXISTING GUY WIRE	
EXISTING LIGHT POLE	
EXISTING TELEPHONE TRANSFORMER	
EXISTING ELECTRICAL TRANSFORMER	
EXISTING CULVERT	
EXISTING FENCE	
EXISTING SINGLE POST SIGN	
EXISTING DOUBLE POST SIGN	
EXISTING TREES	
PROPOSED WATER VALVE	
PROPOSED PRESSURE REDUCING VALVE	
PROPOSED AIR RELEASE VALVE	
PROPOSED WATER LINES	
PROPOSED WATER METER	
PROPOSED FIRE HYDRANT	
PROPOSED CASING PIPE	
PROPOSED UTILITY EASEMENTS	



FLOW PROJECTIONS

FLOW AND HEAD DATA USED FOR SIZING NEW PUMPS WAS OBTAINED FROM FROM AS-BUILT PLANS DATED 5-21-79 FOR THE "OAK RIDGE AND WRIGHT ROAD PUMPING STATIONS MODIFICATIONS".

	UNITS	NUMBER
AVG DOMESTIC FLOW	GPD	820,000
PEAK DOMESTIC FLOW	GPD	2,132,000
PUMP RATE (1 PUMP OPERATING)	GPM	1,250
PUMP RATE (2 PUMPS OPERATING)	GPM	1,800
WET WELL DIMENSIONS	FT X FT	16.5 X 21.5
FINISHED GRADE	ELEV	545.75'±
TOP OF WET WELL	ELEV	547.00'
INVERT INTO WET WELL	ELEV	526.00'
C/P OUT OF WET WELL, 12" DIP FM	ELEV	540.00'
HIGH LEVEL ALARM	ELEV	532.50'
LAG ON	ELEV	532.00'
LEAD ON	ELEV	531.50'
ALL PUMPS OFF	ELEV	529.50'
LOW LEVEL ALARM	ELEV	528.50'
BOTTOM OF WET WELL	ELEV	526.00'
TOTAL STATIC HEAD	FT	66
TOTAL DYNAMIC HEAD	FT	84
FRICTION HEAD	FT	18
SIZE OF FORCE MAIN	IN	12
PEAK PUMP RATE (2 PUMPS IN OPERATION)	GPM	1,800
PEAK FM VELOCITY	FPS	5.0
PUMP CYCLE TIME	MINUTES	17
PUMP RUN TIME	MINUTES	4.25
PUMP TYPE	BARNES	MODEL 6XSHDK

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PROJECT NO.	17220
DATE	JULY 3, 2018
DESIGNED	JWC
DRAWN	BJF
CHECKED	JWC

REVISIONS

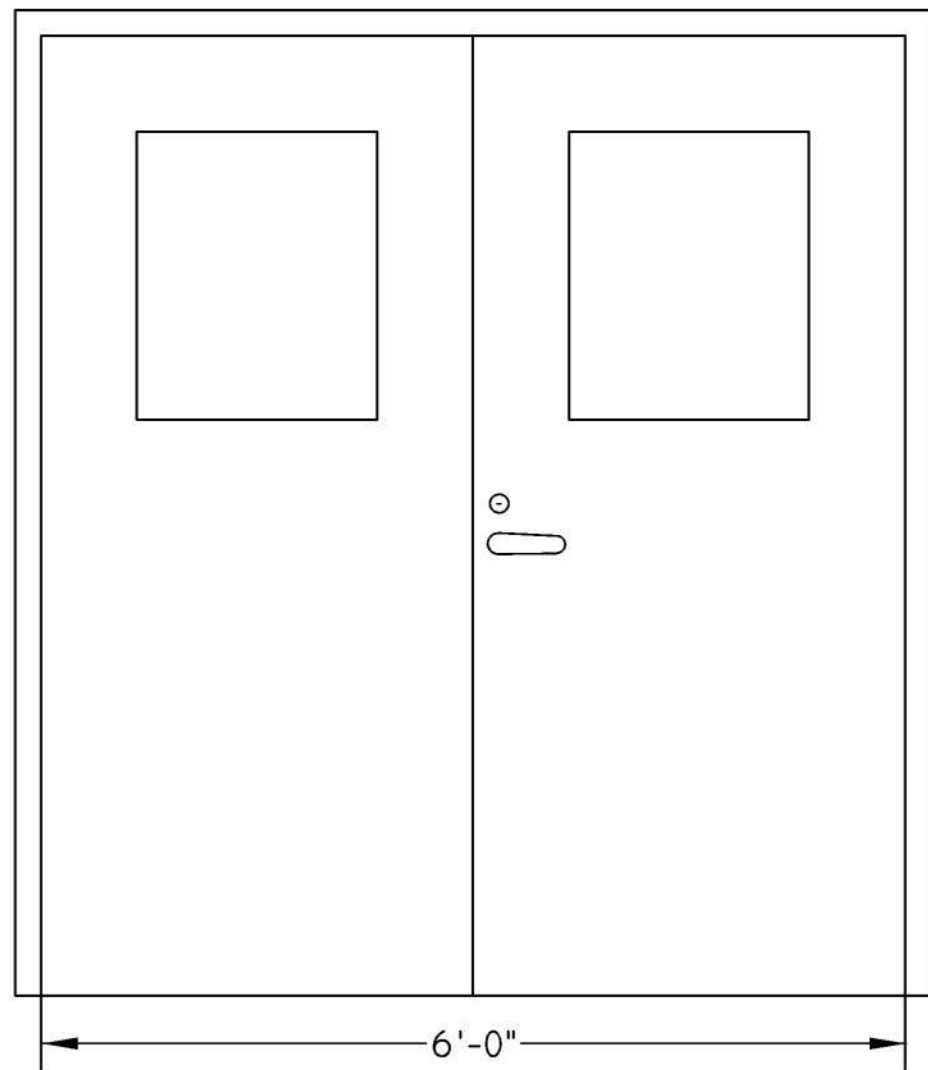
WASHINGTON COUNTY  
DEPARTMENT OF  
WATER QUALITY  
16232 ELLIOTT PARKWAY  
WILLIAMSPORT, MD 21795

OAK RIDGE  
PUMP STATION  
UPGRADES

LEGEND & PUMP DATA

SHEET	DRAWING
NO...3....	
OF...36...	NO...G-3....





EXTERIOR DOUBLE DOOR DETAIL  
NOT TO SCALE

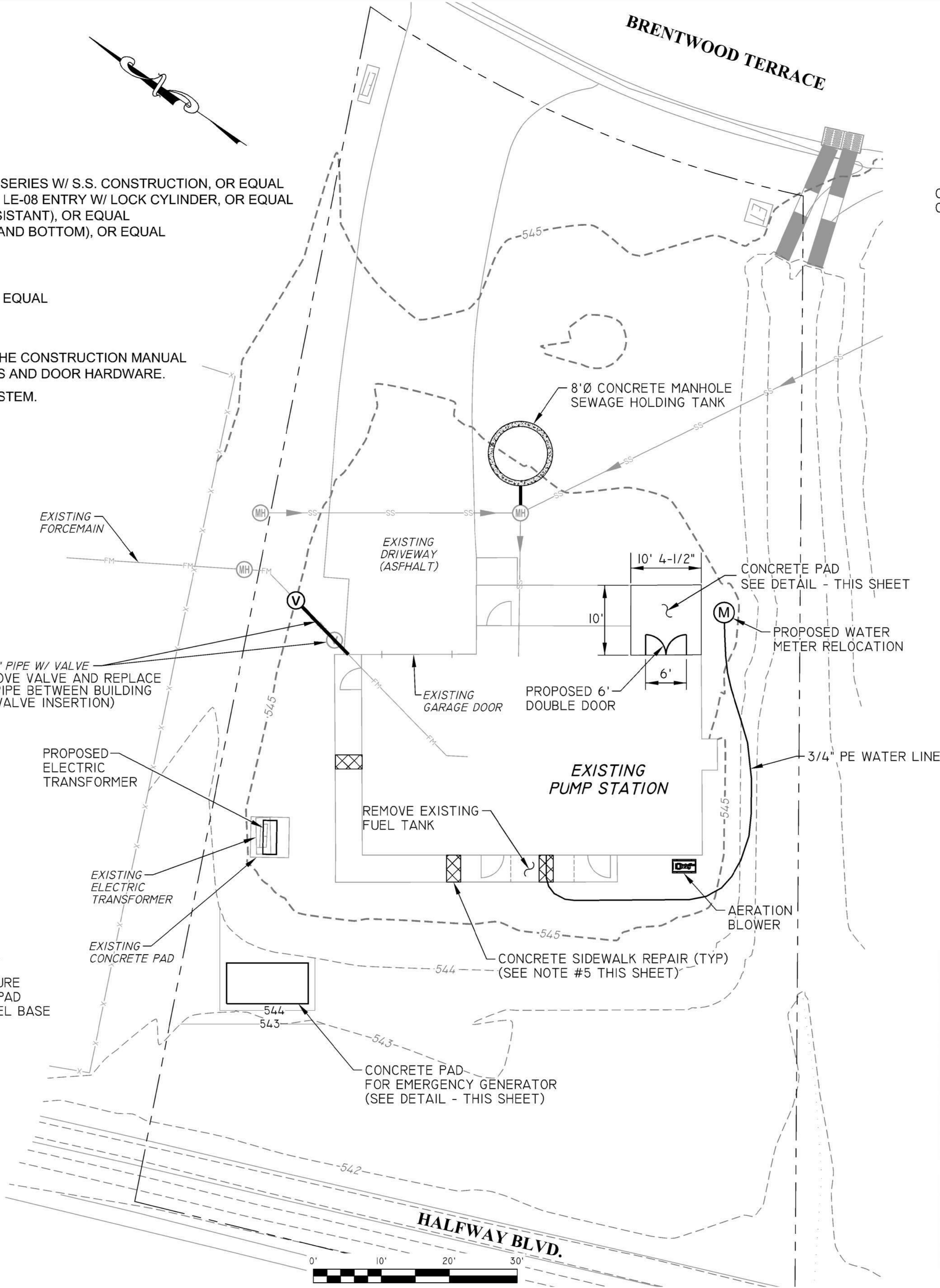
DOOR SCHEDULE  
SIZE: 7'-0" X 6'-0" X 1.75"  
MFG: CHEM-PRUF, EQUAL  
WINDOW: WXL RUGGED  
FRAME: STYLE 4 WITH 4" HEADER  
HANDING: LHR/RHR  
RIM PANIC DEVICE: DESIGN HARDWARE 1000 SERIES W/ S.S. CONSTRUCTION, OR EQUAL  
RIM PANIC DEVICE TRIM: DESIGN HARDWARE LE-08 ENTRY W/ LOCK CYLINDER, OR EQUAL  
CLOSERS: NORTON 7500SS (CORROSION RESISTANT), OR EQUAL  
SURFACE BOLTS: CAL-ROYAL ESBUL50 (TOP AND BOTTOM), OR EQUAL  
KICKPLATES: TRIMCO 1034 304SS, OR EQUAL  
GLAZING: 1/4" DIAMOND WIRE GLASS  
DOOR CORE: ELFOAM P200, OR EQUAL  
HINGE: HAGER BB1199 STAINLESS STEEL, OR EQUAL  
WEATHERSTRIP: CPH-W

- NOTES:
1. REFER TO SECTION 08220 AND 08710 OF THE CONSTRUCTION MANUAL FOR ADDITIONAL INFORMATION ON DOORS AND DOOR HARDWARE.
  2. DOORS ARE TO BE KEYED TO COUNTY SYSTEM.

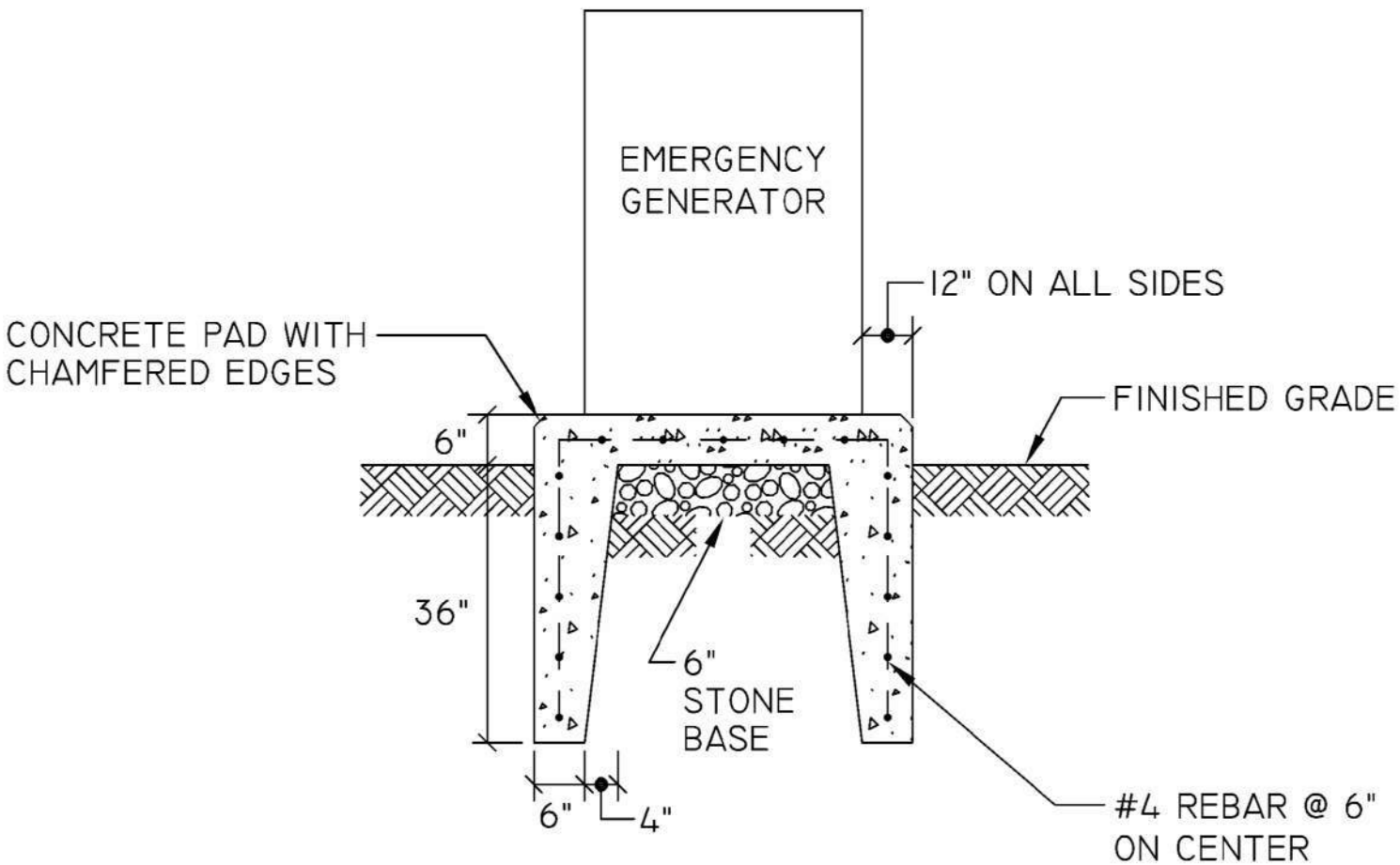


NOTES

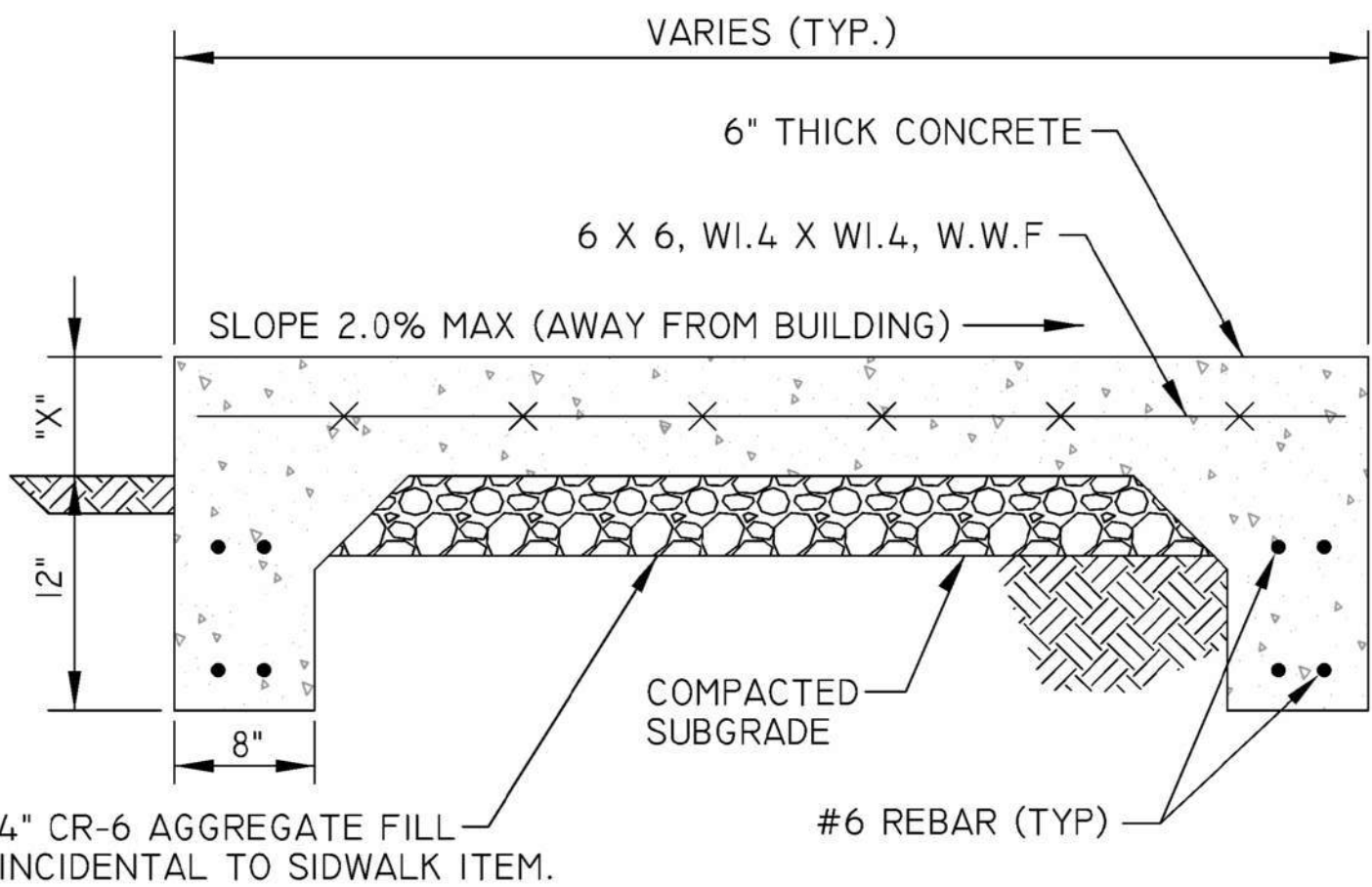
1. NO THRESHOLD ON NEW DOOR TO EASE TRANSPORT OF PUMPS.
2. NEW CONCRETE PAD SHALL BE FLUSH WITH THRESHOLD OF NEW 6' DOUBLE DOOR.
3. CONTRACTOR SHALL REMOVE EXISTING FUEL TANK, FUEL LINES AND PRIVACY SCREEN. FUEL TANK SHALL BE DELIVERED TO WASHINGTON COUNTY BY THE CONTRACTOR. WALL PENETRATIONS SHALL BE REPAIRED PER WASHINGTON COUNTY DIRECTION.
4. EXISTING WATER METER IS IN LOCATION OF PROPOSED CONCRETE PAD. RELOCATE WATER METER AND INSTALL NEW SERVICE LINE AS SHOWN ON THIS SHEET. COORDINATE METER PLACEMENT AND CONNECTION WITH WATER UTILITY.
5. SAW CUT AND PATCH/REPAIR CONCRETE SIDEWALK TO EXISTING CONDITION WHERE WATER LINE AND CONDUIT TRENCHES INTERFERE.



NOTE: COORDINATE THE SIZE OF THE CONCRETE GENERATOR PAD WITH THE ACTUAL GENERATOR BEING FURNISHED. CONCRETE PAD SHALL EXTEND 6" BEYOND ALL SIDES OF THE GENERATOR.

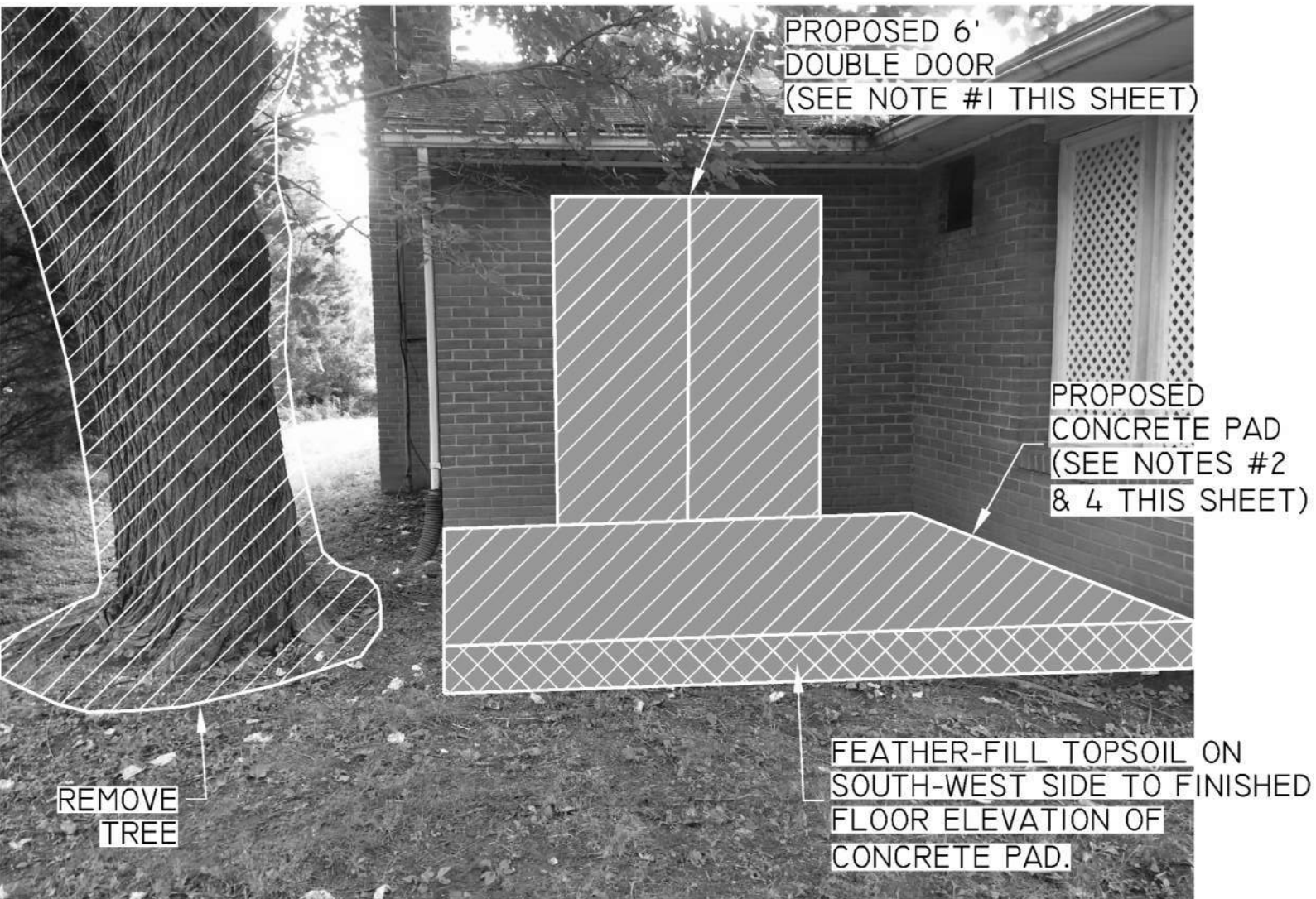


GENERATOR PAD DETAIL  
NOT TO SCALE



CONCRETE PAD DETAIL  
NOT TO SCALE

NOTE: ALL CONCRETE SHALL BE MARYLAND MIX #2



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DATE	DECEMBER 6, 2018
DESIGNED	JWC
DRAWN	RAS/RAD
CHECKED	JWC

REVISIONS

WASHINGTON COUNTY  
DEPARTMENT OF  
WATER QUALITY  
16232 ELLIOTT PARKWAY  
WILLIAMSPORT, MD 21795

OAK RIDGE  
PUMP STATION  
UPGRADES

SITE UPGRADES  
PLAN

SHEET

NO. 4

OF 36

DRAWING

NO. G-4



BYPASS PUMPING NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR BYPASS PUMPING DURING PUMP STATION REHAB CONSTRUCTION. BYPASS PUMP SUCTION HOSES SHALL BE DROPPED INTO PROPOSED 8'Ø SEWAGE HOLDING TANK. BYPASS PUMPING SYSTEM SHALL BE SET UP IN A MANNER THAT ALLOWS RELIABLE BYPASS PUMP OPERATION AND DOES NOT INTERFERE WITH NORMAL ACTIVITIES OF NEARBY RESIDENCES.
2. THE BYPASS PUMPING OPERATION SHALL BE CONTINUOUS DURING THE ENTIRE COURSE OF CONSTRUCTION FOR THE PUMP STATION REHABILITATION.
3. ALL TEST PITTING, VALVING/PLUMBING, PIPE THRUST SUPPORTS, DISCHARGE HEADER CRIBBING AND SUPPORTS, ETC. SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THREE ENGINE-DRIVEN BYPASS PUMPS SHALL BE UTILIZED IN ORDER TO PROVIDE A BACKUP (STAND-BY) PUMP AT ALL TIMES. TWO PUMPS OPERATING SIMULTANEOUSLY SHALL BE ABLE TO MEET THE PEAK FLOW DEMAND OF 1,800 GPM @ 110' TDH.
5. THE SUCTION AND DISCHARGE PIPING LAYOUT SHOWN ON THIS DRAWING IS FOR GUIDANCE PURPOSES ONLY. THE CONTRACTOR SHALL COORDINATE PIPING LAYOUT WITH THE ENGINE DRIVEN PUMP SUPPLIER.
6. DISCHARGE HEADER SHALL BE CONSTRUCTED OF FLANGE JOINT DUCTILE IRON PIPE.
7. 12" GRAVITY INFLUENT PIPE SHALL BE PLUGGED INSIDE LAST MANHOLE PRIOR TO GRAVITY SEWER ENTERING EXISTING PUMP STATION. A SECOND PLUG SHALL BE INSTALLED FROM THE PUMP STATION END OF THE 12" GRAVITY INFLUENT FOR REDUNDANCY IN THE EVENT THE FIRST PLUG SHALL FAIL. A MAINTENANCE AIR COMPRESSOR SHALL REMAIN IN OPERATION DURING THE ENTIRE COURSE OF CONSTRUCTION IN ORDER TO MAINTAIN CONSTANT AIR PRESSURE WITHIN BOTH PIPE PLUGS.
8. ENGINE DRIVEN PUMPS SHALL HAVE SOUND ATTENUATING ENCLOSURES TO MINIMIZE NOISE DISTURBANCES TO NEIGHBORING RESIDENCES.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE FUEL SUPPLY FOR BYPASS PUMP OPERATION.
10. IF REQUIRED, CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING A TEMPORARY RAMP OVER BYPASS PUMP/HOSE ACROSS PUMP STATION DRIVEWAY. RAMP SHALL BE CONSTRUCTED TO PROTECT DISCHARGE HOSE FROM CONSTRUCTION TRAFFIC.
11. BYPASS PUMP FLOAT CONTROL SHALL BE INSTALLED IN PROPOSED SEWAGE HOLDING TANK AS SHOWN IN DETAIL ON SHEET 17. CONTROL FLOATS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

A. PUMPING OFF (1.0' A.F.F. / EL. 526.17')

B. LEAD PUMP ON (4.0' A.F.F. / EL. 529.17')

C. LAG PUMP ON (4.5' A.F.F. / EL. 529.67')

D. HIGH LEVEL ALARM (5.0' A.F.F. / EL. 530.17')
12. AN AUTODIALER ALARM SYSTEM SHALL BE INCORPORATED INTO THE BYPASS PUMPING OPERATION TO ALERT THE CONTRACTOR OF CERTAIN PUMPING SYSTEM FAILURES INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

A. HIGH MANHOLE LEVEL ALARM

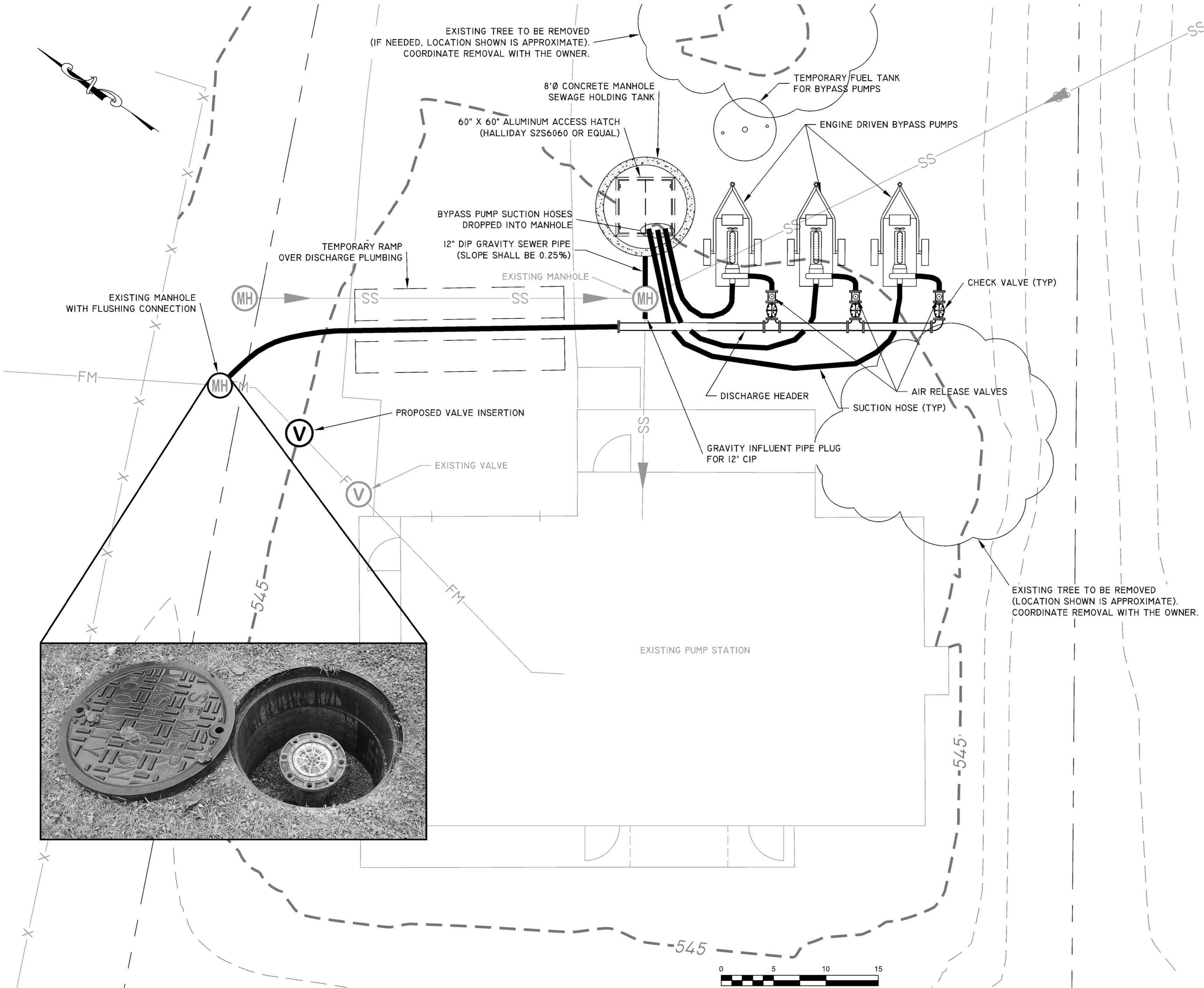
B. PUMP FAILURE
- THE CONTRACTOR SHALL HAVE AT LEAST TWO REPRESENTATIVES ON CALL 24/7 TO ANSWER AND CORRECT ALARM CALLOUTS. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING THE BYPASS PUMPING SYSTEM TO PROPER OPERATING CONDITION UPON NOTIFICATION OF ALARM SITUATIONS. IN ADDITION TO THE CONTRACTOR REPRESENTATIVES, THE AUTODIALER SHALL ALSO CONTACT TWO COUNTY REPRESENTATIVES UPON ALARM CONDITIONS. CONTRACTOR SHALL COORDINATE WITH WASHINGTON COUNTY ON WHO SHOULD BE CONTACTED ALONG WITH CORRESPONDING CONTACT INFORMATION.
13. THE FOLLOWING ARE REQUIRED ELEVATIONS FOR THE PROPOSED SEWAGE HOLDING TANK:

A. FINISHED FLOOR: 525.17'

B. INVERT IN: 531.65±

C. RIM: 545.17'

D. GRAVITY IN PIPE SLOPE: 0.25%
14. ELEVATIONS NOTED ON THIS SHEET ARE BASED ON SURVEY DATA PROVIDED TO RK&K BY WASHINGTON COUNTY. CONTRACTOR IS RESPONSIBLE FOR CHECKING ELEVATIONS PRIOR TO CONSTRUCTION AND ORDERING OF SEWAGE HOLDING TANK.
15. CONTRACTOR SHALL PROTECT PROPOSED SEWAGE TANK, ALONG WITH ENTIRE SITE, FROM PEOPLE FALLING INTO SEWAGE HOLDING TANK DURING CONSTRUCTION.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR INSULATING PUMPS AND PIPING DURING COLD WEATHER EVENTS.



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PROJECT NO.	17220
DATE	DECEMBER 6, 2019
DESIGNED	JWC
DRAWN	BJF
CHECKED	JWC

REVISIONS

WASHINGTON COUNTY  
DEPARTMENT OF  
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16232 ELLIOTT PARKWAY  
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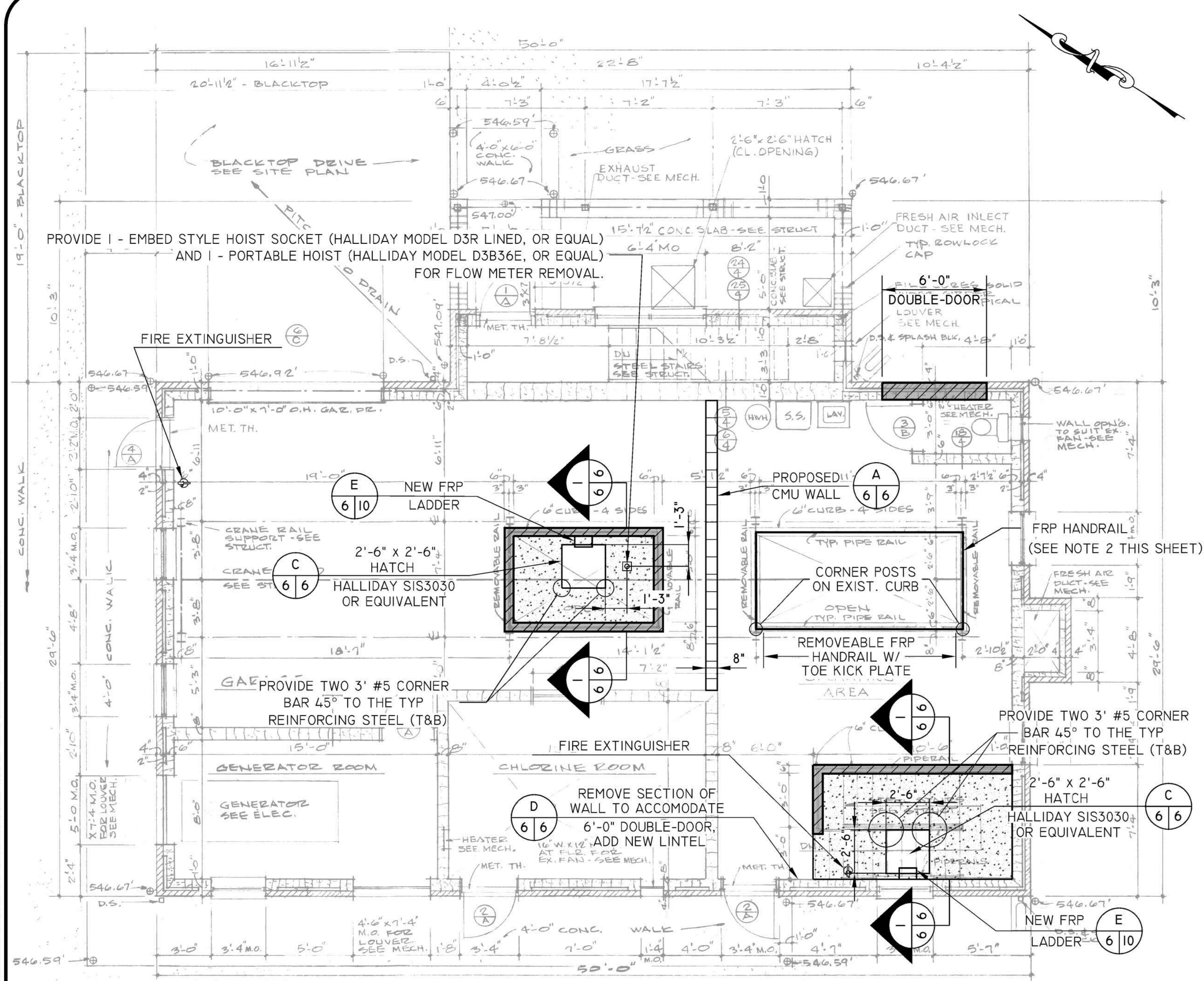
OAK RIDGE  
PUMP STATION  
UPGRADES

BYPASS PUMPING  
PLAN

SHEET	DRAWING
NO...5...	
OF...36...	NO...G-5...



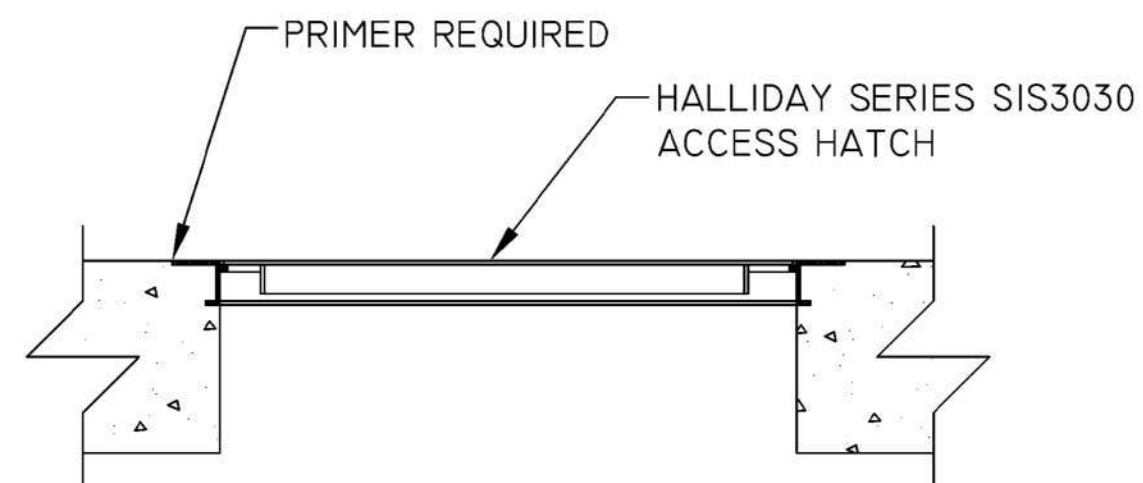
\\AD.RKK.COM\FS\Cloud\Projects\2017\17220-WASHCONCALL\17220\_000\_OAK\_RIDGE\_PUMPSTATION\ACAD\Drawings\06\_S-L-PS STRUCT UPPER LEVEL PLAN.DWG



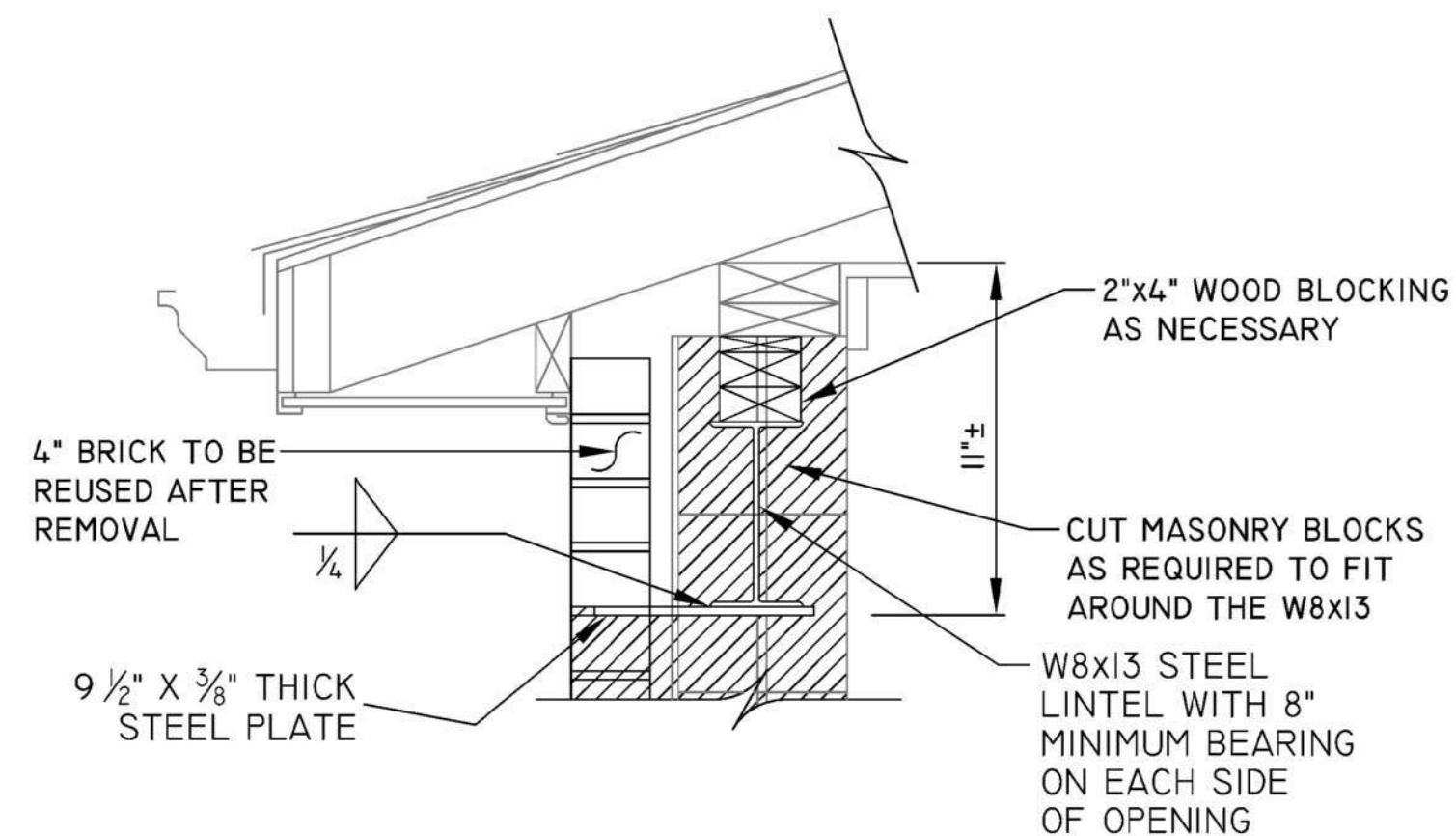
0 FIRST FLOOR PLAN 0 SCALE: 1/4" = 1'-0"  
ELEV. FIN. FLOOR = 547.00'

NOTES:

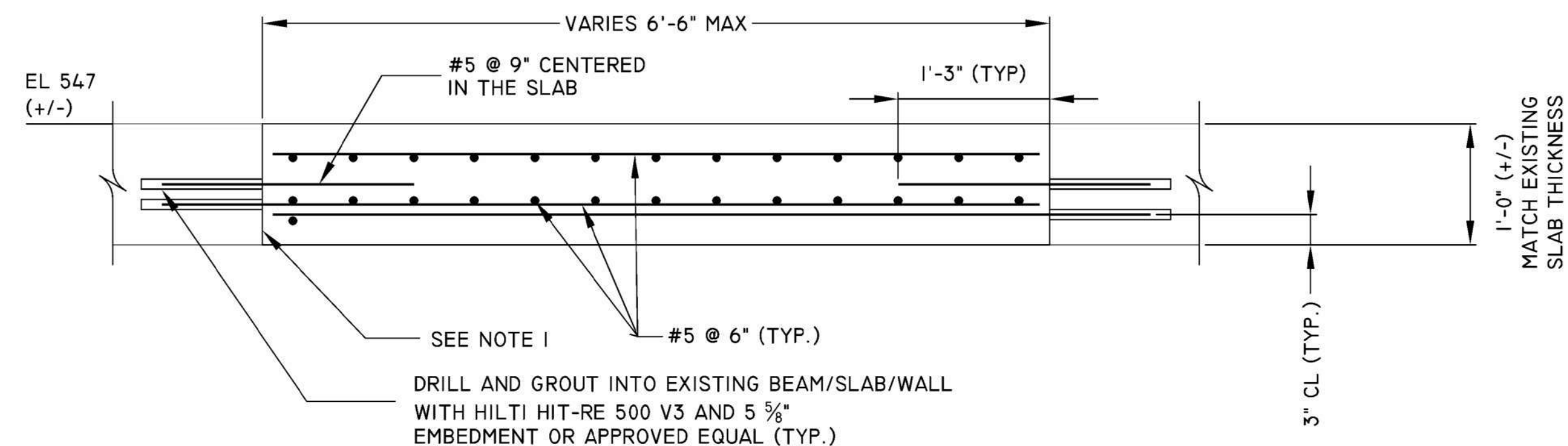
1. SURFACE OF EXISTING CONCRETE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF 1/4" AND AN EPOXY BONDING COMPOUND APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.
2. CONTRACTOR TO MATCH HANDRAIL SECTIONS ON EXISTING CONCRETE CURB WITH REMOVABLE HANDRAIL SECTION ON EXISTING CONCRETE FLOOR WHERE CONCRETE CURB WAS REMOVED. ALL CORNER POSTS ARE TO BE INSTALLED ON EXISTING CONCRETE CURB. REMOVABLE HANDRAIL SECTION SHALL HAVE A TOE KICK PLATE INSTALLED ON BOTTOM.



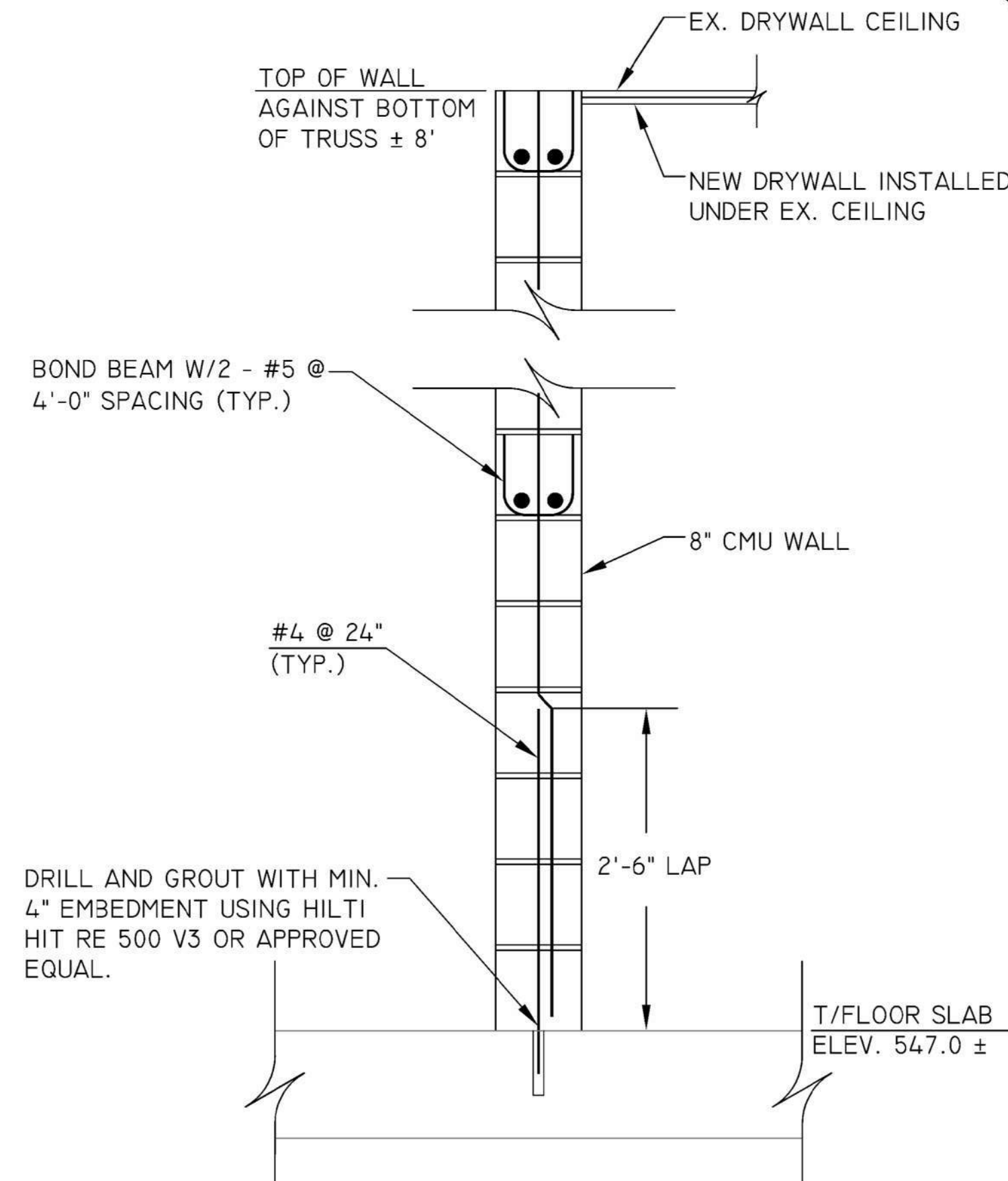
SLAB/HATCH DETAIL C  
SCALE: 1" = 1'



LINTEL DETAIL AT DOUBLE DOOR D  
SCALE: 1 1/2" = 1'



PROPOSED CONCRETE SLAB I  
SCALE: 1" = 1'



MASONRY WALL DETAIL A  
SCALE: 1" = 1'



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17220  
DATE  
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DESIGNED JWC  
DRAWN RAD/RAS  
CHECKED JWC

REVISIONS

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OAK RIDGE  
PUMP STATION  
UPGRADES

PUMP STATION  
STRUCTURAL  
UPPER LEVEL PLAN

SHEET  
NO. 6  
OF 36

DRAWING  
NO. S-1





SHEET NO. **7**  
OF **36**

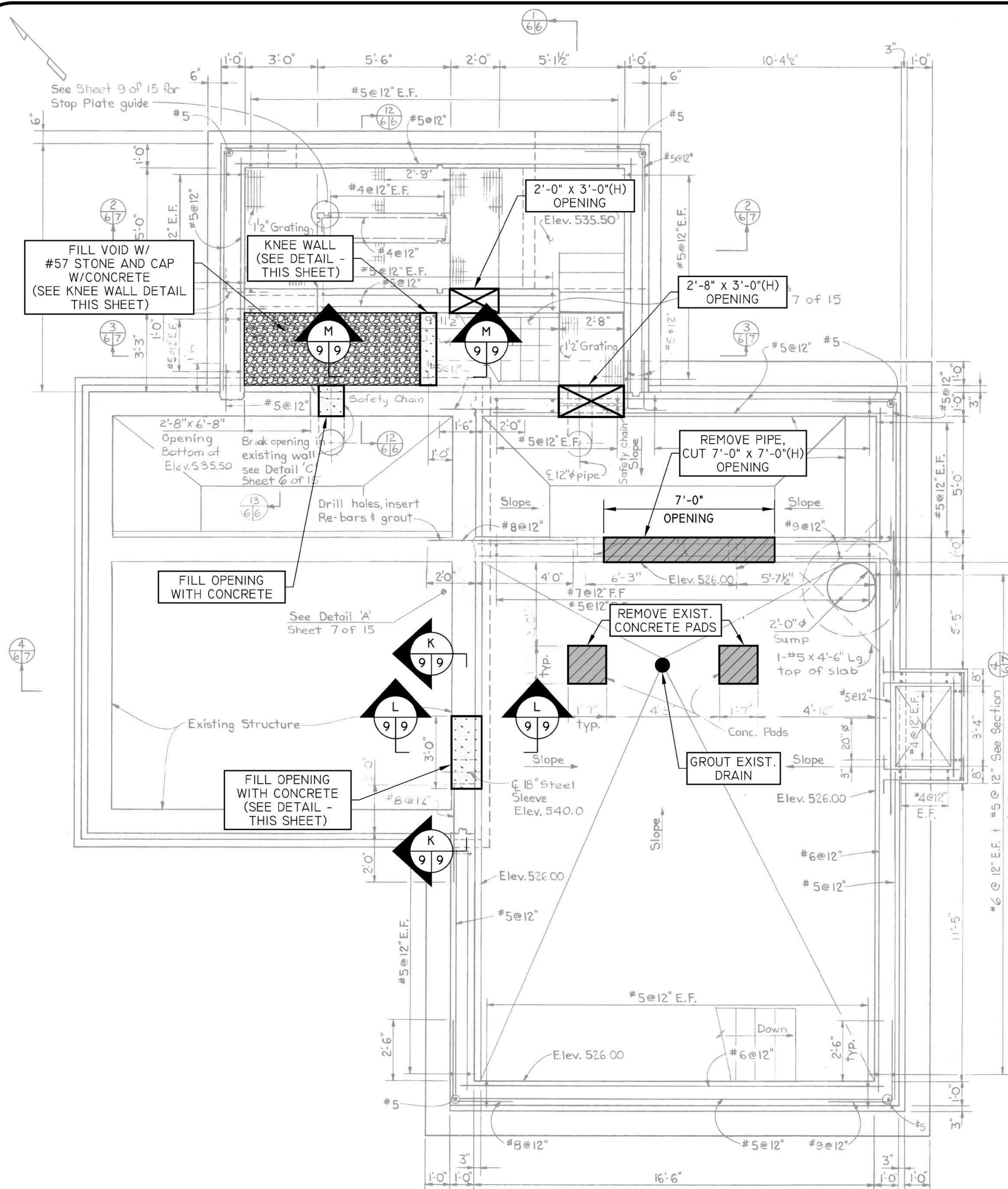
DRAWING NO. **S-2**



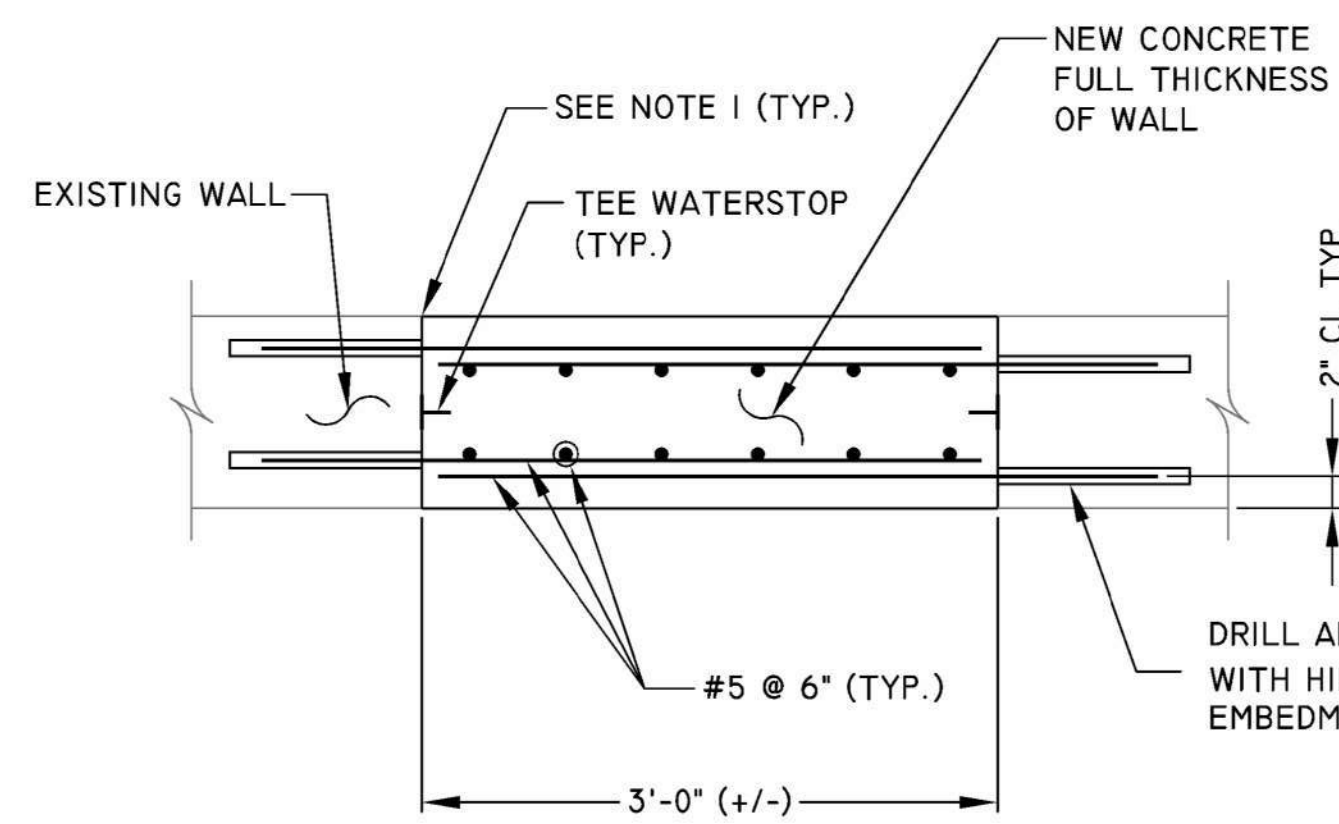




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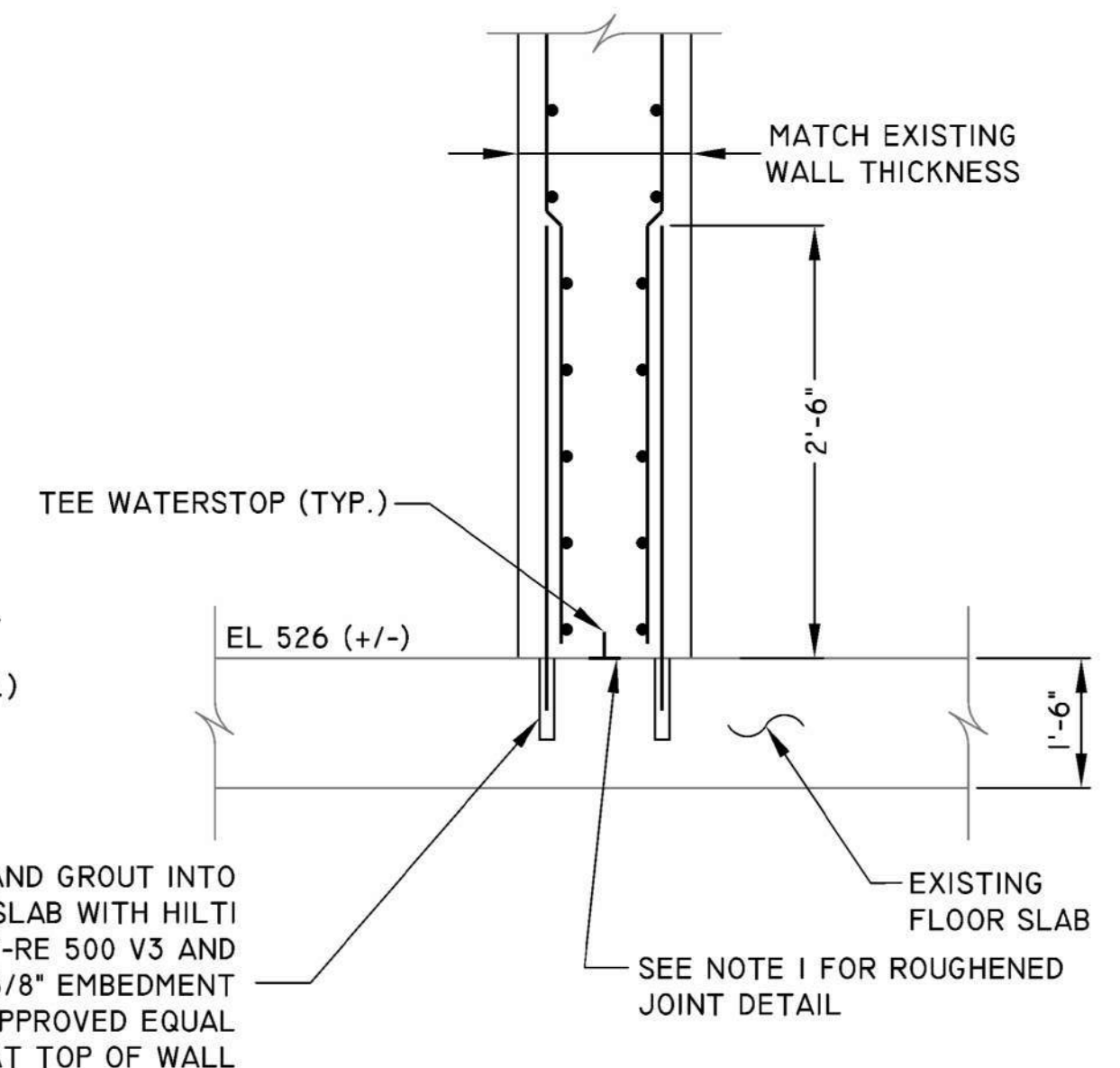


PLAN - ELEVATION 540.00  
SCALE: 3/8" = 1'-0"

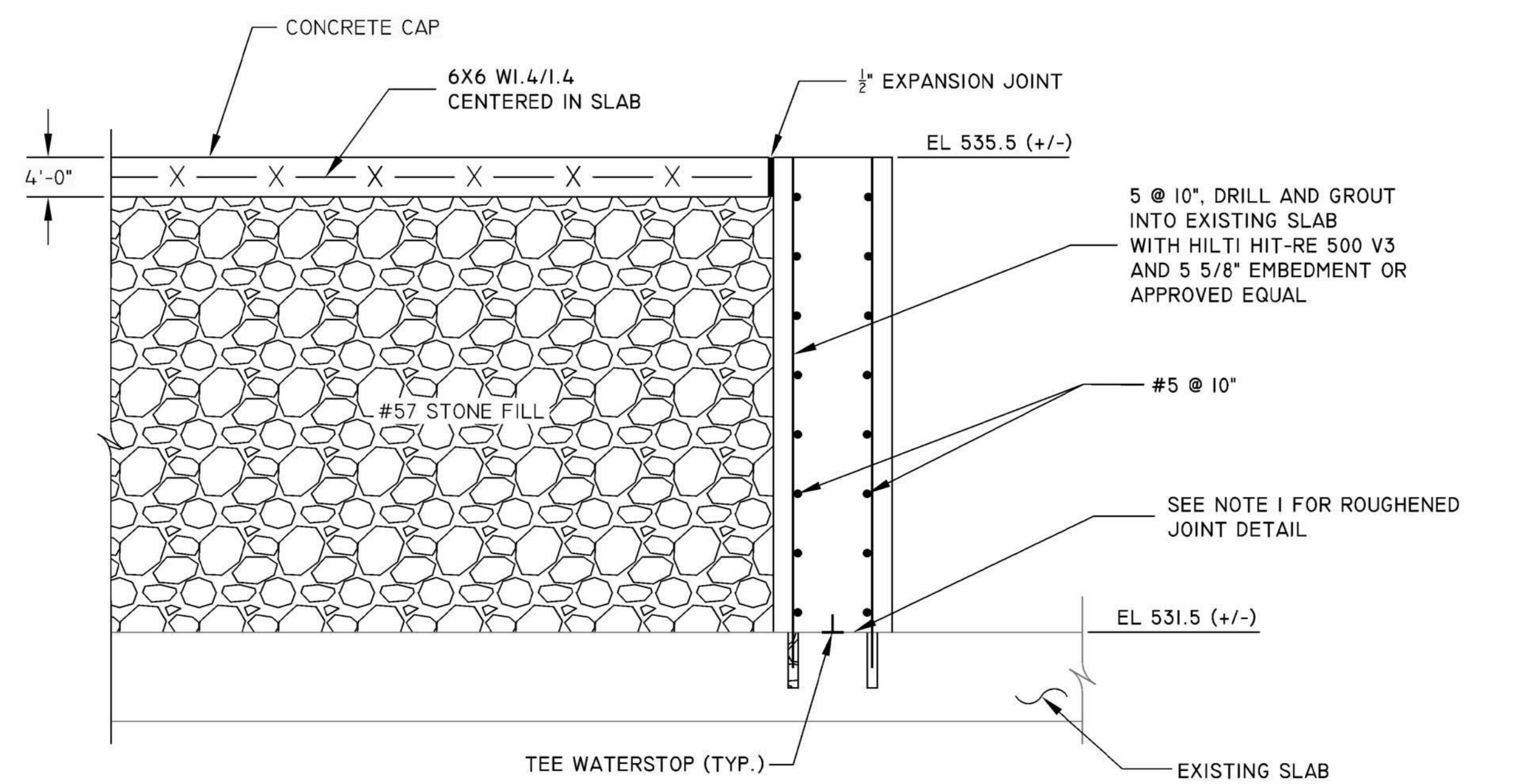


SECTION K  
9/9

DOORWAY DETAIL  
SCALE: 1" = 1'



SECTION L  
9/9



KNEE WALL DETAIL  
SCALE: 1" = 1'

NOTES:  
1. SURFACE OF EXISTING CONCRETE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF 1/4" AND AN EPOXY BONDING COMPOUND APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.



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PROJECT NO.  
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DATE  
JANUARY 26, 2018  
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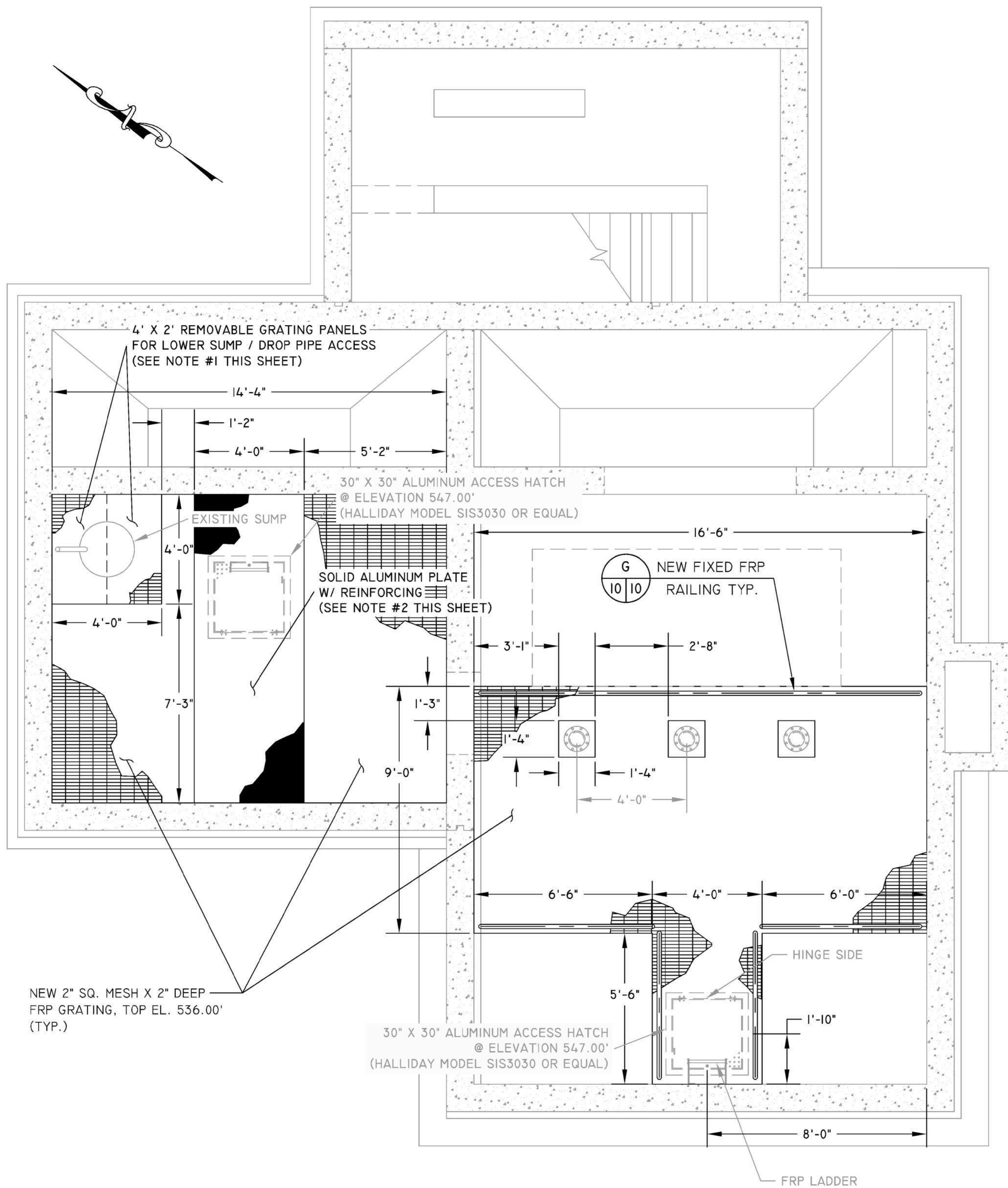
OAK RIDGE  
PUMP STATION  
UPGRADES

LOWER LEVEL  
DEMOLITION PLAN  
SHEET 2 OF 2

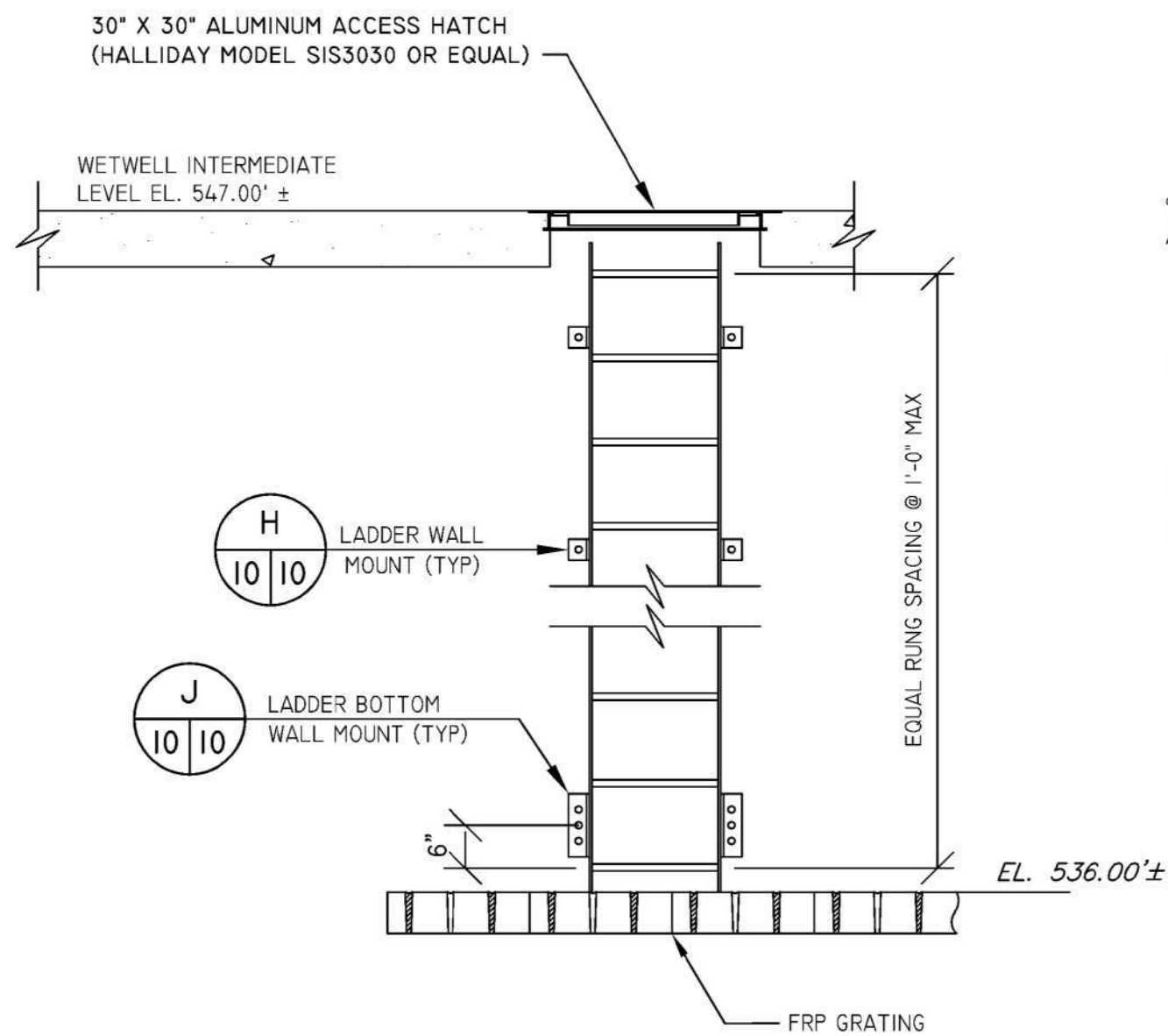
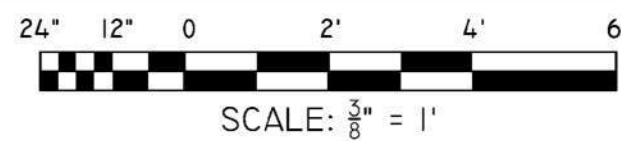
SHEET	DRAWING
NO. 9	
OF 36	NO. S-4



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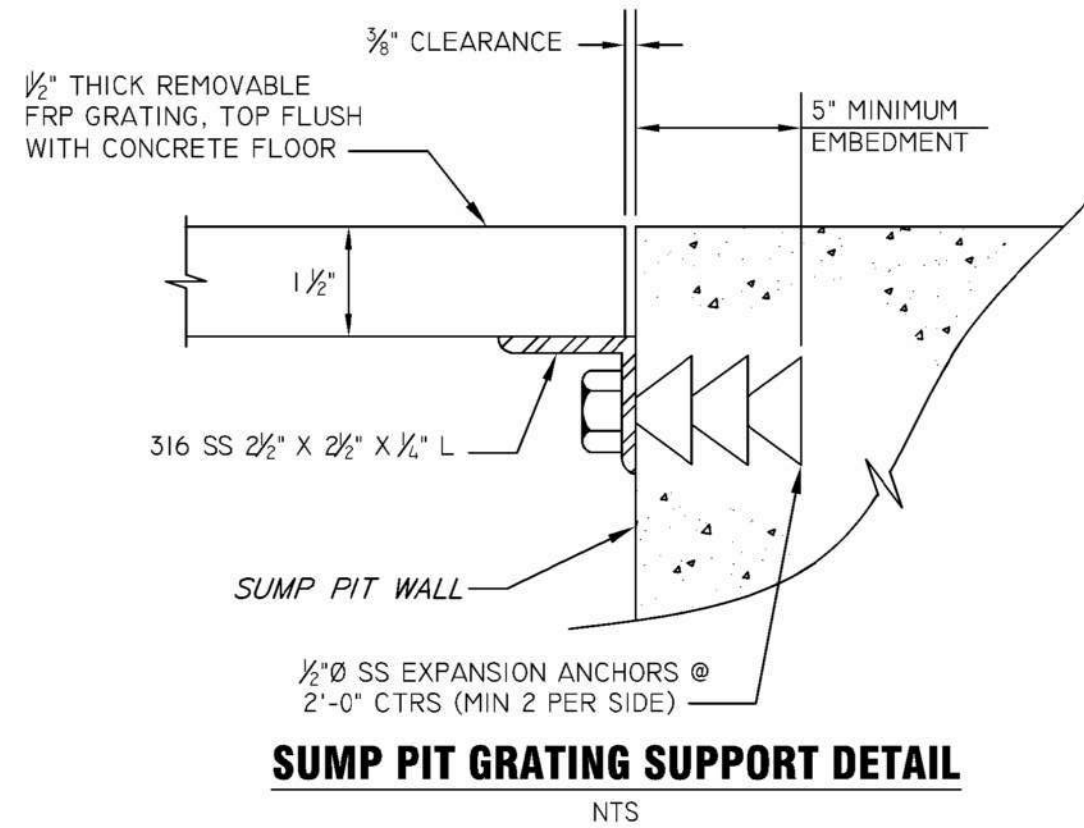
GRATING WALKWAY PLAN - ELEVATION 536.00'



NOTES:

- CONTRACTOR SHALL TAKE ACCURATE FIELD MEASUREMENTS AND SHALL DESIGN WALL MOUNTS FOR SUBMITTAL TO THE ENGINEER.
- THE DISTANCE FROM THE CENTERLINE OF THE RUNGS TO THE EDGE OF THE OPENING ON THE CLIMBING SIDE SHALL NOT BE LESS THAN 30-INCHES. IF LESS THAN 30-INCHES, AN FRP DEFLECTOR PLATE SHALL BE INSTALLED AT A 60-DEGREE ANGLE FROM HORIZONTAL.

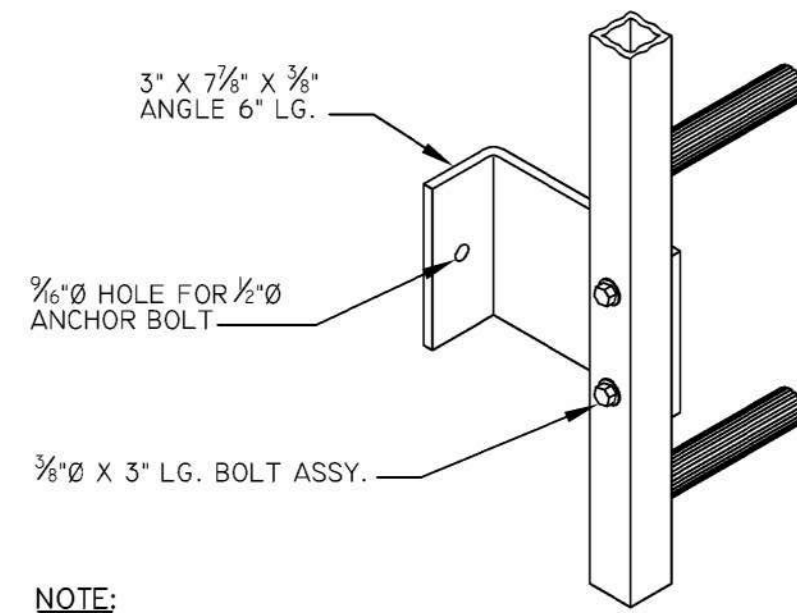
FRP LADDER DETAIL E 6/10 NTS



SUMP PIT GRATING SUPPORT DETAIL NTS

NOTES

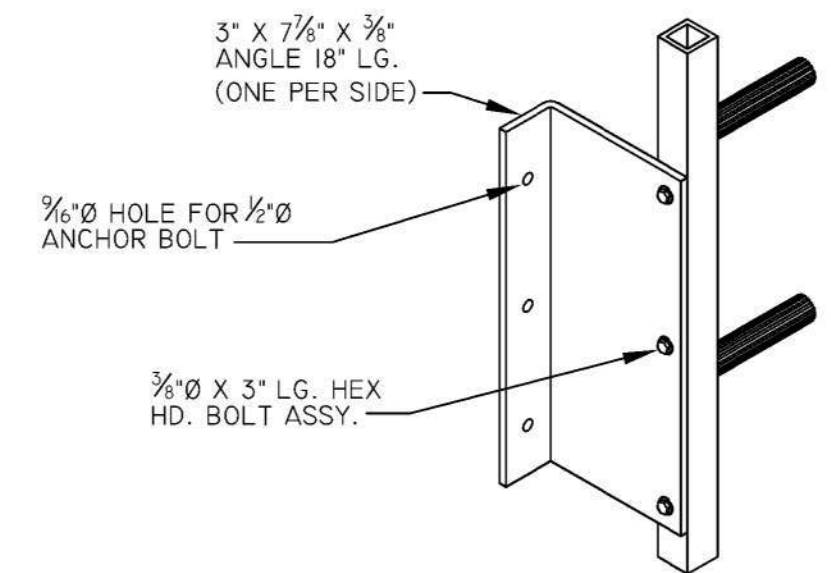
- PROVIDE A 4' X 4' OPENING IN THE FLOOR GRATING TO ALLOW ACCESS TO THE SUMP BELOW. OPENING SHALL BE COVERED WITH 2 - 2' X 4' REMOVABLE FRP GRATING PLANKS.
- PROVIDE A 4'-0" X 11'-3" SOLID ALUMINUM PLATE DECKING IN PLACE OF FRP GRATING WHERE SHOWN ON THE DRAWINGS. ALUMINUM PLATE SHALL BE ADEQUATELY REINFORCED TO SAME LOAD AND DEFLECTION SPECIFICATIONS AS THE FRP GRATING.
- FRP GRATING SHALL BE 1 1/2" DURADEK, OR APPROVED EQUAL.
- THE DESIGN OF THE FRP GRATING, LADDER, AND HANDRAILING, INCLUDING THE LOCATIONS, SIZES, AND NUMBER OF FRP SUPPORT BEAMS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL SUBMIT THE DESIGN TO THE ENGINEER FOR APPROVAL.
- ALL BOLTS AND HARDWARE SHALL BE STAINLESS STEEL.



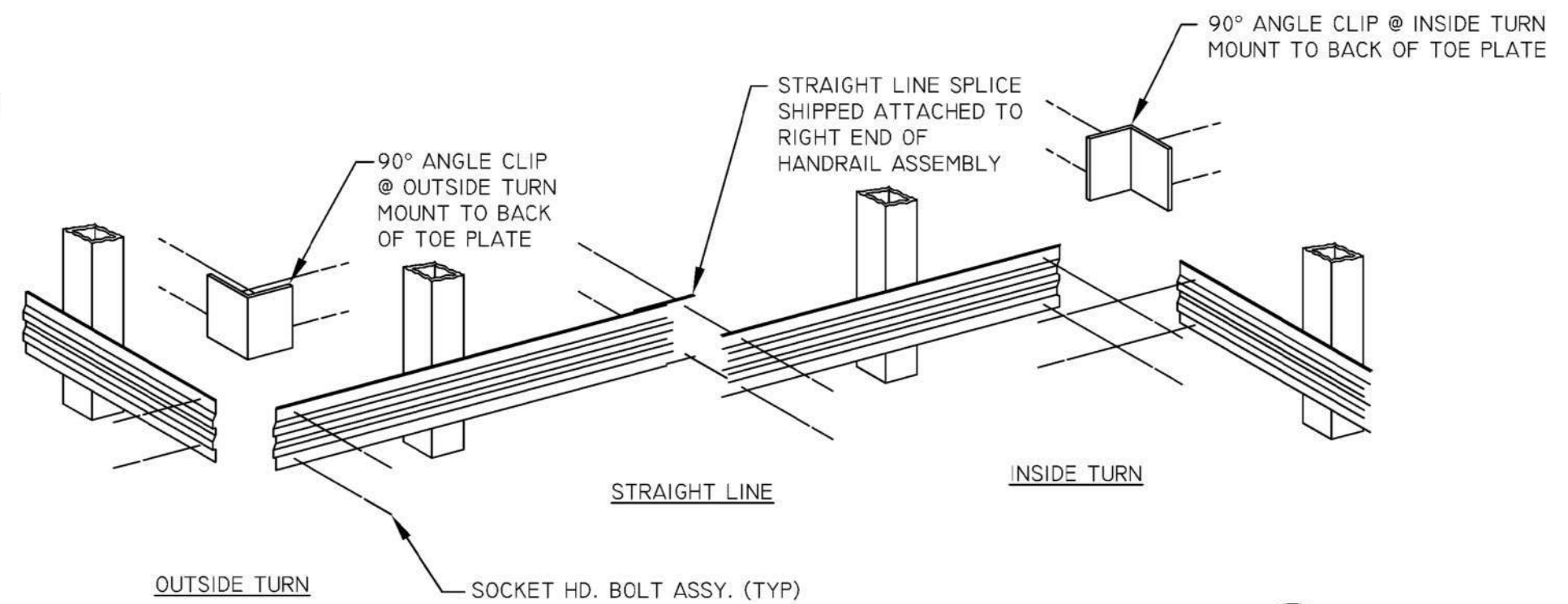
NOTE:

- WALL MOUNTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

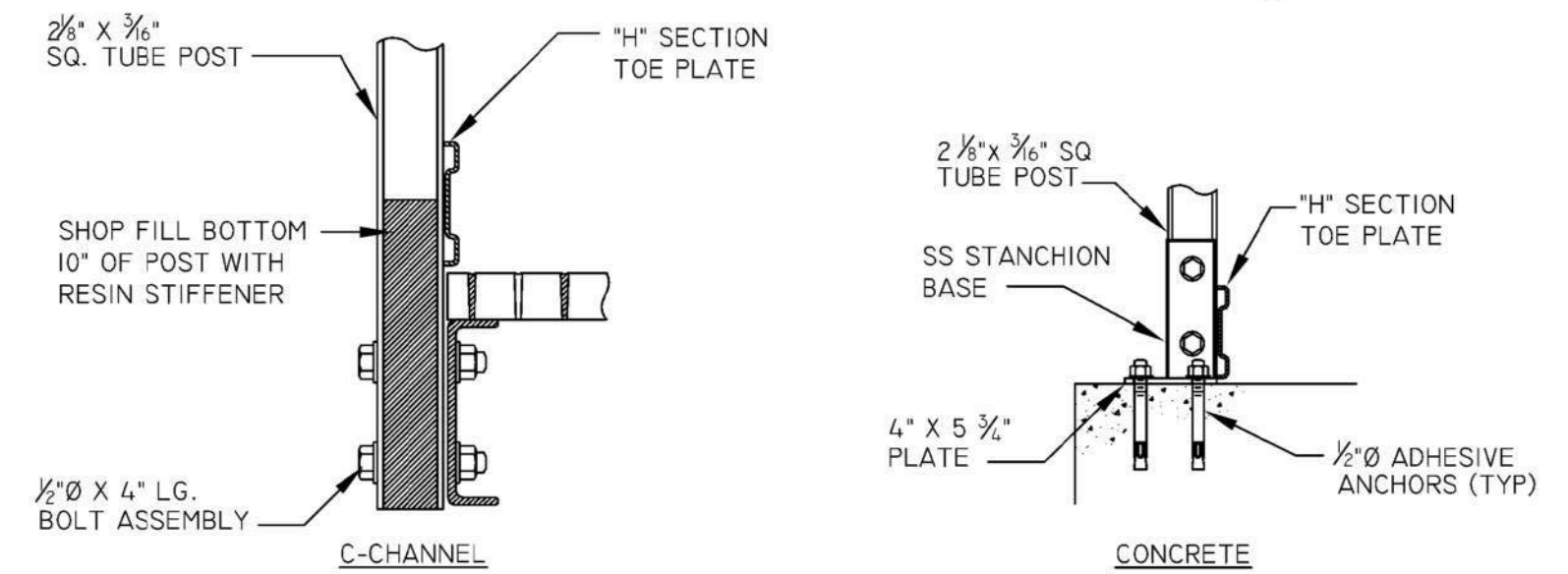
LADDER WALL MOUNT DETAIL H 10/10 NTS



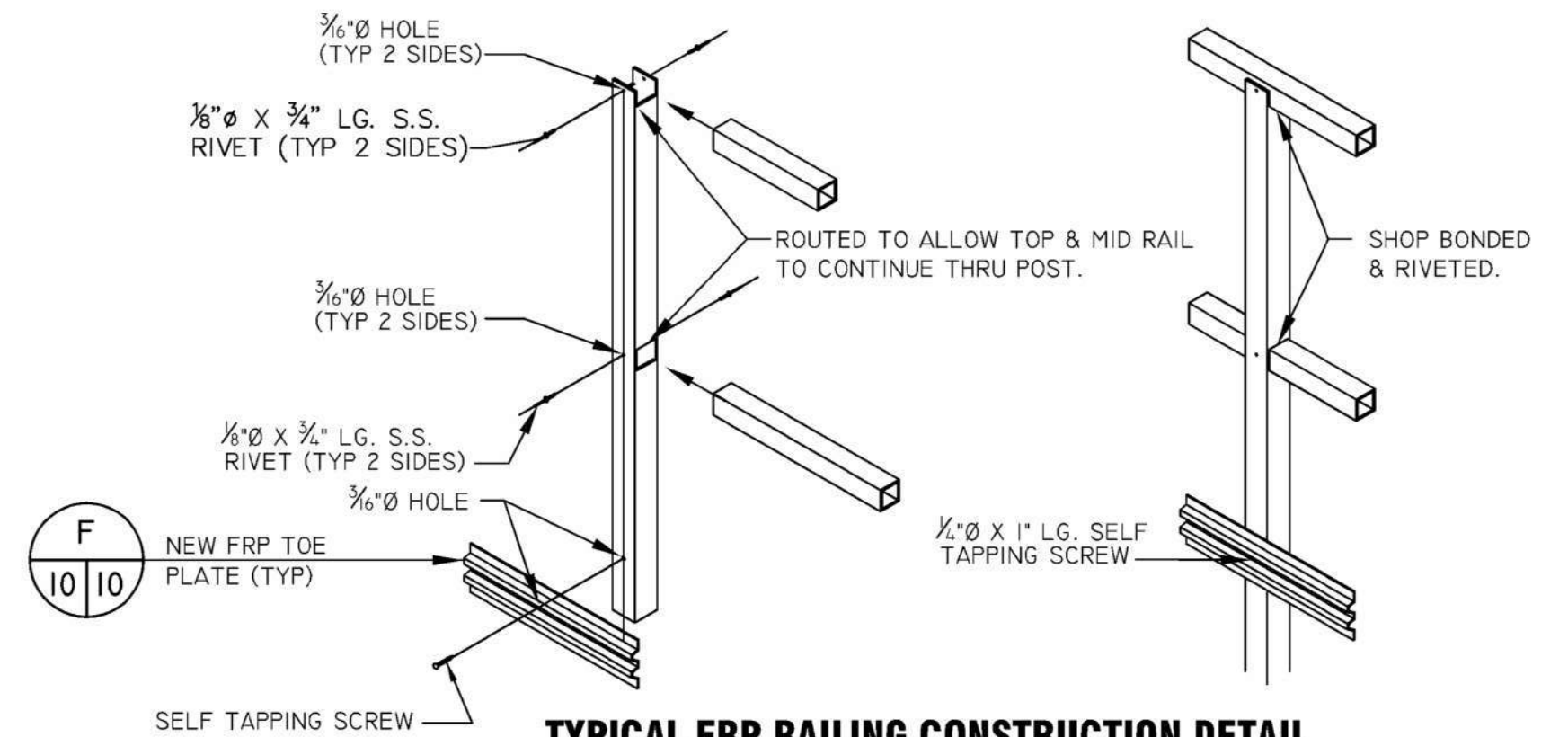
LADDER BOTTOM WALL MOUNT DETAIL J 10/10 NTS



TOE PLATE SPLICE ASSEMBLIES DETAIL F 10/10 NTS



FIXED FRP HANDRAIL DETAIL G 10/10 NTS



TYPICAL FRP RAILING CONSTRUCTION DETAIL NTS



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DATE  
JUNE 6, 2018  
DESIGNED JWC  
DRAWN RAS  
CHECKED JWC

REVISIONS

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OAK RIDGE  
PUMP STATION  
UPGRADES

FRP GRATING PLAN  
& DETAILS

SHEET

NO. 10

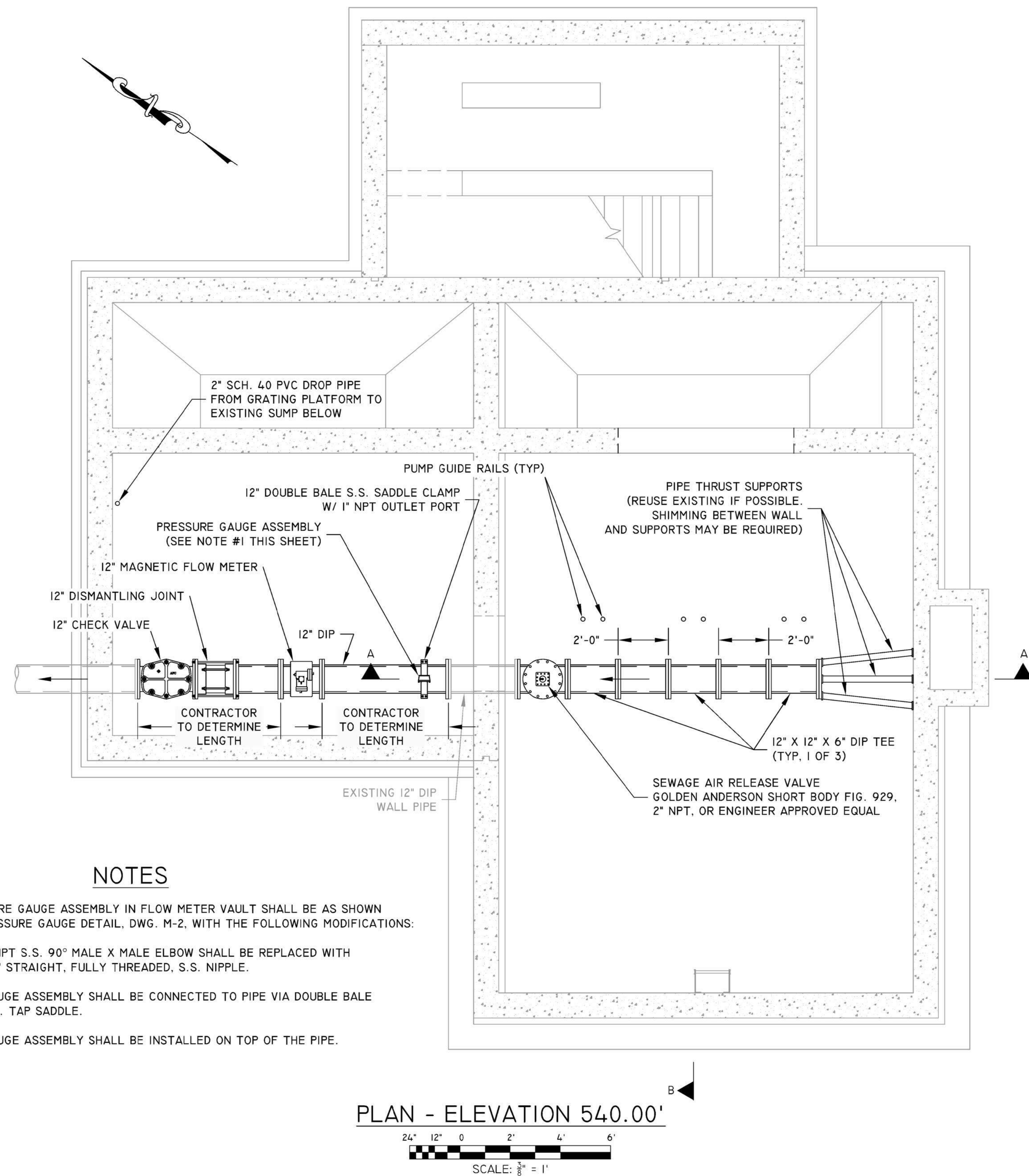
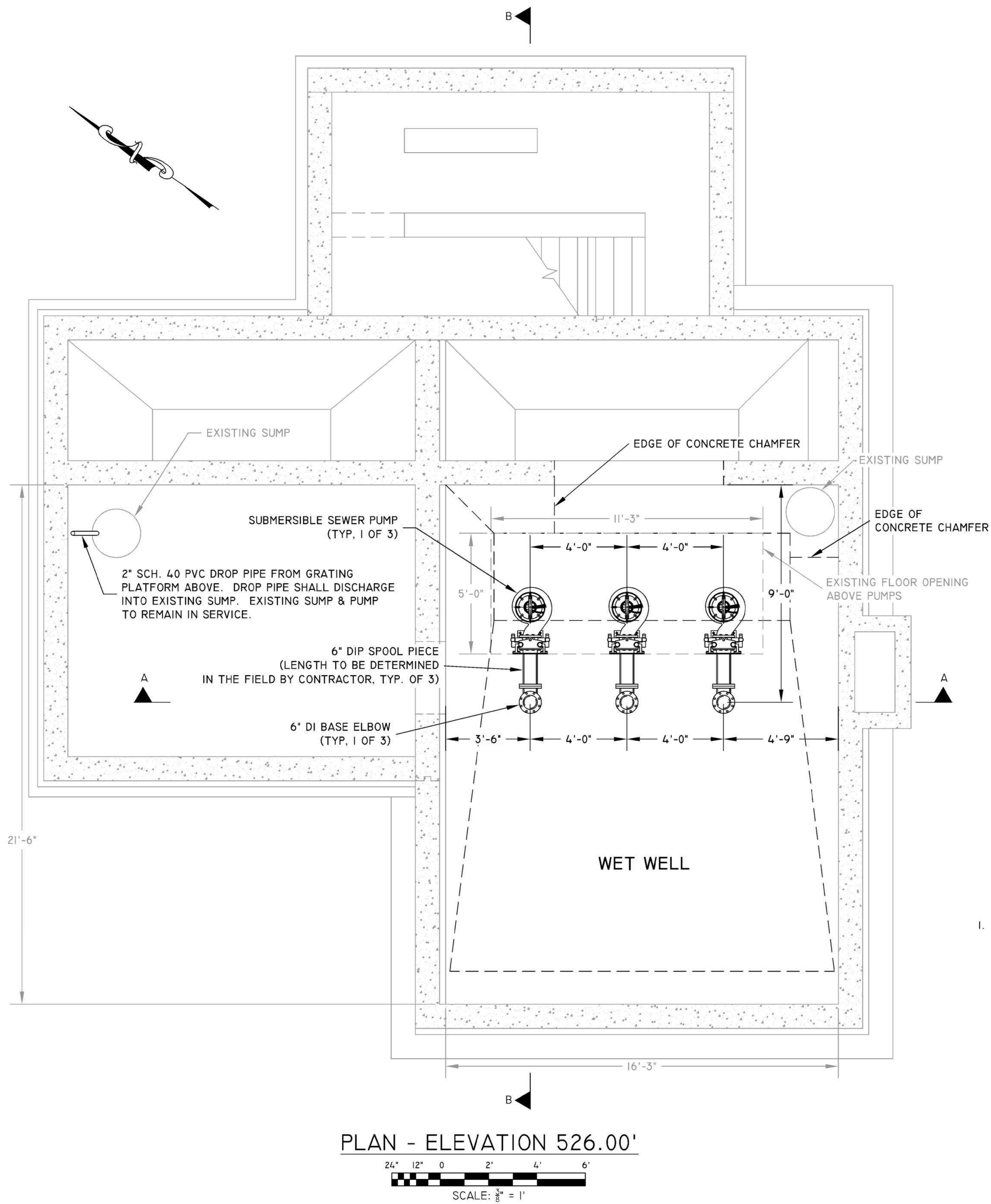
OF 36

DRAWING

NO. S-5



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### NOTES

- PRESSURE GAUGE ASSEMBLY IN FLOW METER VAULT SHALL BE AS SHOWN ON PRESSURE GAUGE DETAIL, DWG. M-2, WITH THE FOLLOWING MODIFICATIONS:
  - 1" NPT S.S. 90° MALE X MALE ELBOW SHALL BE REPLACED WITH A 1" STRAIGHT, FULLY THREADED, S.S. NIPPLE.
  - GAUGE ASSEMBLY SHALL BE CONNECTED TO PIPE VIA DOUBLE BALE S.S. TAP SADDLE.
  - GAUGE ASSEMBLY SHALL BE INSTALLED ON TOP OF THE PIPE.



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PROJECT NO.  
17220  
DATE  
MARCH 26, 2018  
DESIGNED JWC  
DRAWN BJF  
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### REVISIONS

WASHINGTON COUNTY  
DEPARTMENT OF  
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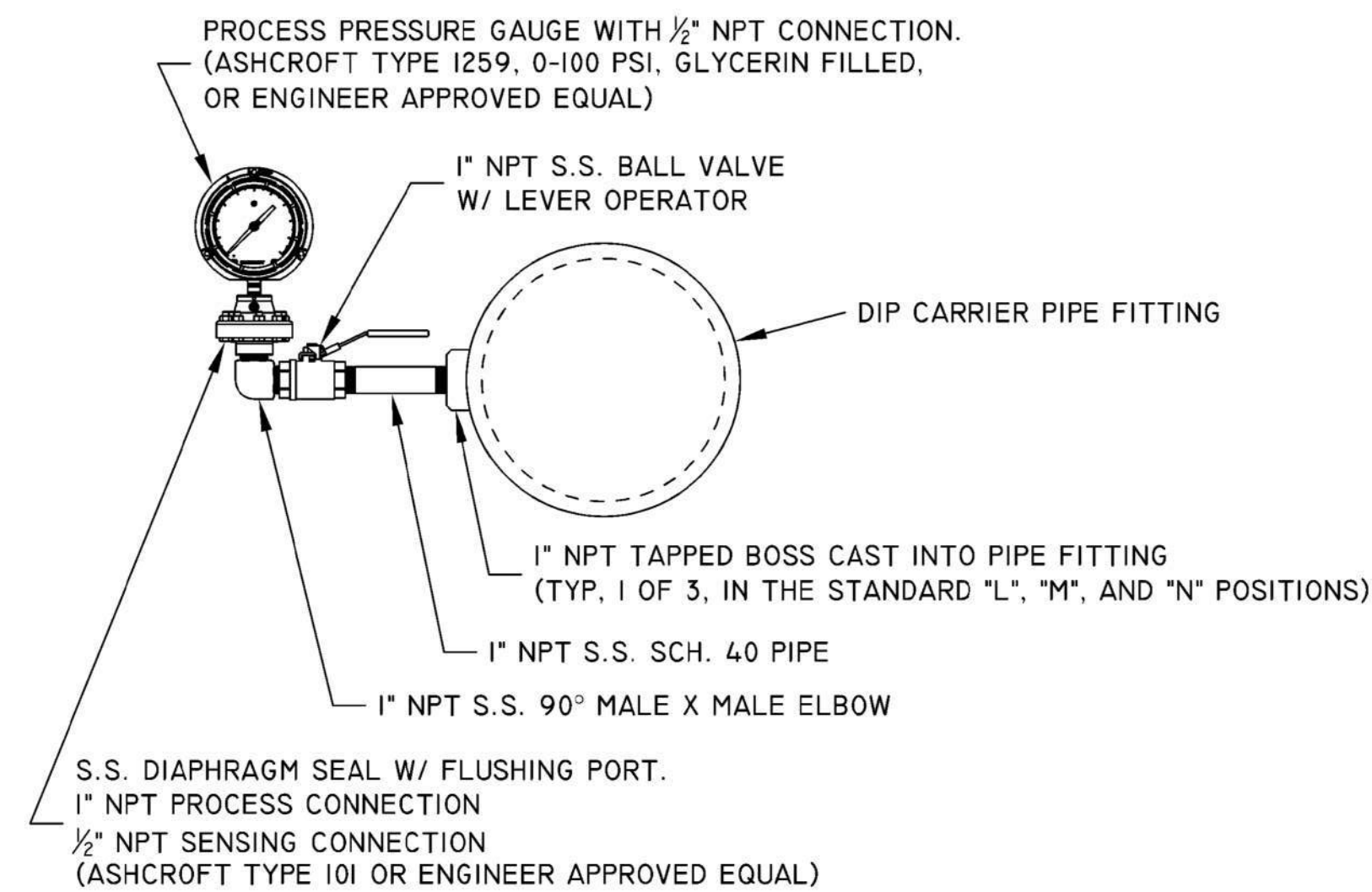
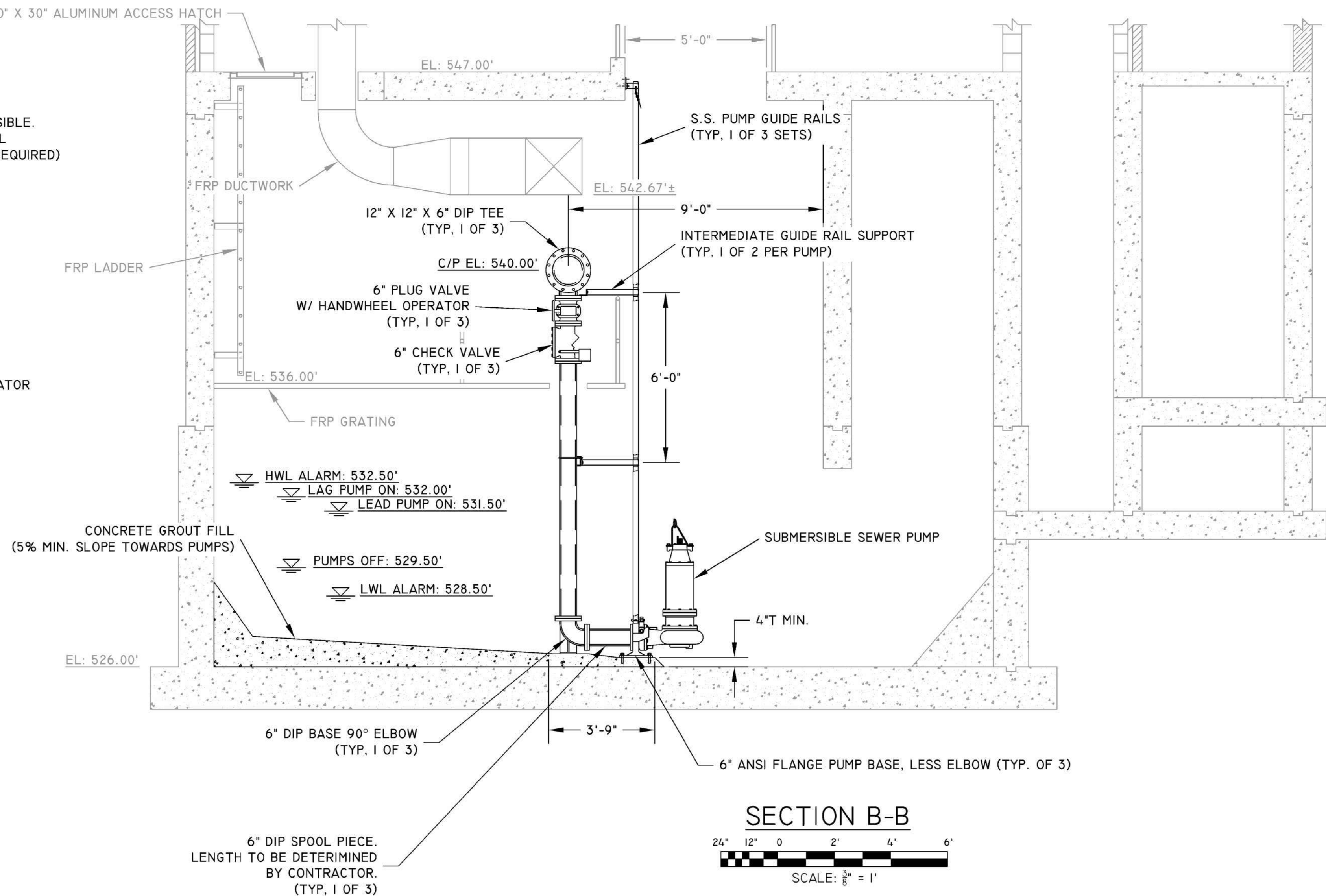
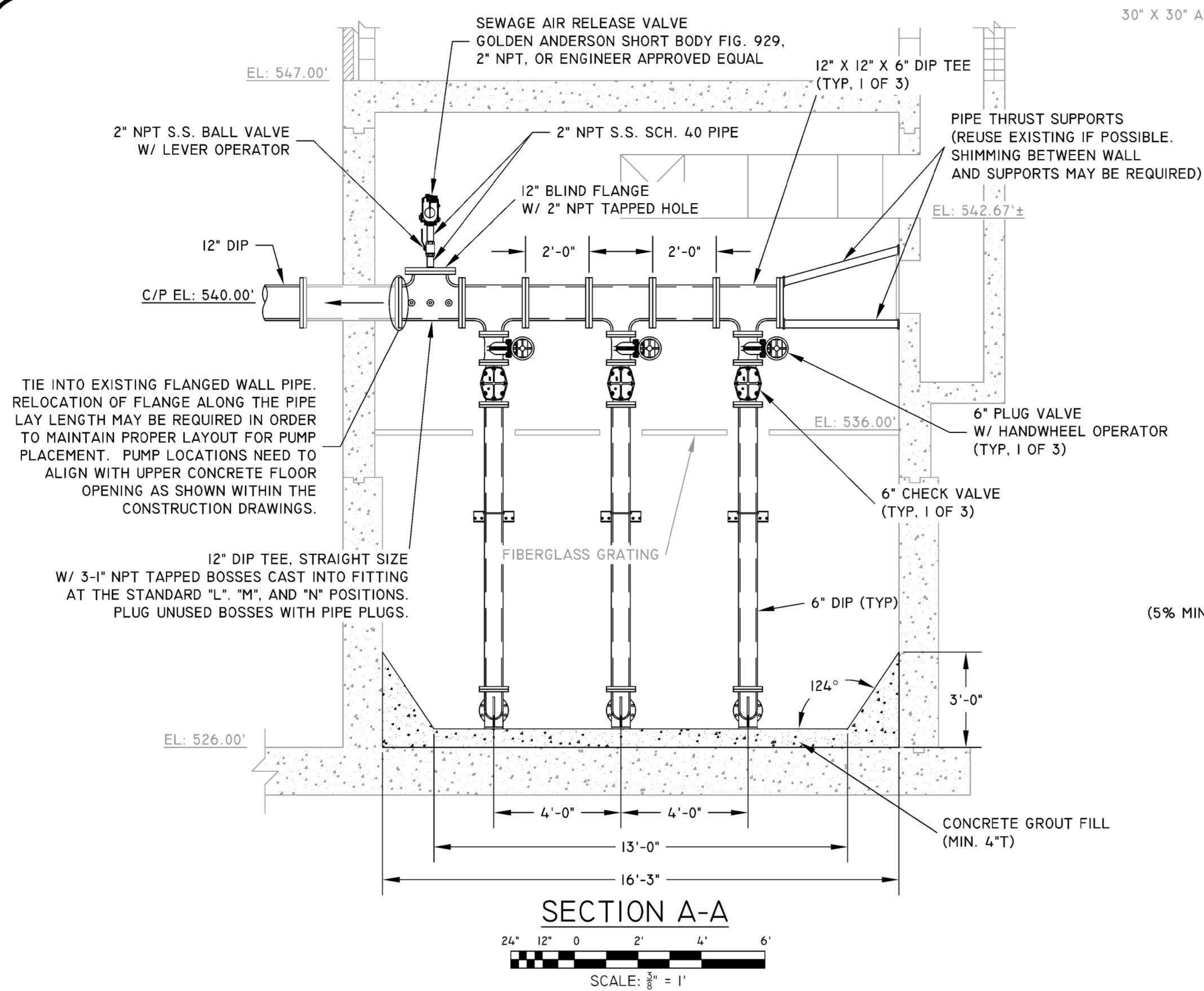
OAK RIDGE  
PUMP STATION  
UPGRADES

LOWER LEVEL  
MECHANICAL PLAN

SHEET  
NO. **11**  
OF **36**  
DRAWING  
NO. **M-1**



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### PRESSURE GAUGE FOR SEWER APPLICATIONS

NOT TO SCALE

### GENERAL NOTES

- ANCHOR PIPE AND RAILING IN WET WELL PER MANUFACTURER'S RECOMMENDATIONS.
- ALL HARDWARE MUST BE STAINLESS STEEL.
- PUMP OPERATION SHALL BE CONTROLLED VIA PRESSURE TRANSDUCER WITH EMERGENCY BACKUP FLOATS.
- CONTROL ELEVATIONS SHOWN ARE APPROXIMATE AND MAY NEED TO BE FIELD ADJUSTED.
- ALL PIPING LOCATED IN PUMP STATION SHALL BE FLANGE JOINT PAINTED DUCTILE IRON CLASS 53. PAINT COLOR SHALL BE DARK GRAY.
- PUMP STATION PLANS DESIGNED AND DRAWN AROUND A STRAIGHT-THRU, ANSI FLANGE, ELBOW-LESS PUMP DISCHARGE BASE. ALTERNATE STYLE DISCHARGE BASE SYSTEMS WILL NOT BE ACCEPTED.
- A SPOOL PIECE MATCHING THE LENGTH OF THE FLOW METER SHALL BE FURNISHED TO ALLOW EASY REMOVAL OF FLOW METER FOR SERVICE, ETC.
- ALL CHECK VALVES SHALL HAVE AN EXTERNAL CUSHIONED LEVER & WEIGHT AND BE SUITABLE FOR VERTICAL UP-FLOW INSTALLATION. ALL PLUG VALVES SHALL HAVE HANDWHEEL ACTUATORS.
- ITEMS IN DARK ARE PROPOSED ITEMS THAT ARE TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR.
- ITEMS IN GRAY ARE EXISTING ITEMS THAT ARE TO REMAIN IN PLACE.



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PROJECT NO.  
17220  
DATE  
DECEMBER 6, 2019  
DESIGNED JWC  
DRAWN BJF  
CHECKED JWC

#### REVISIONS

WASHINGTON COUNTY  
DEPARTMENT OF  
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16232 ELLIOTT PARKWAY  
WILLIAMSPORT, MD 21795

OAK RIDGE  
PUMP STATION  
UPGRADES

LOWER LEVEL  
MECHANICAL SECTIONS  
& GENERAL NOTES

SHEET

NO. 12

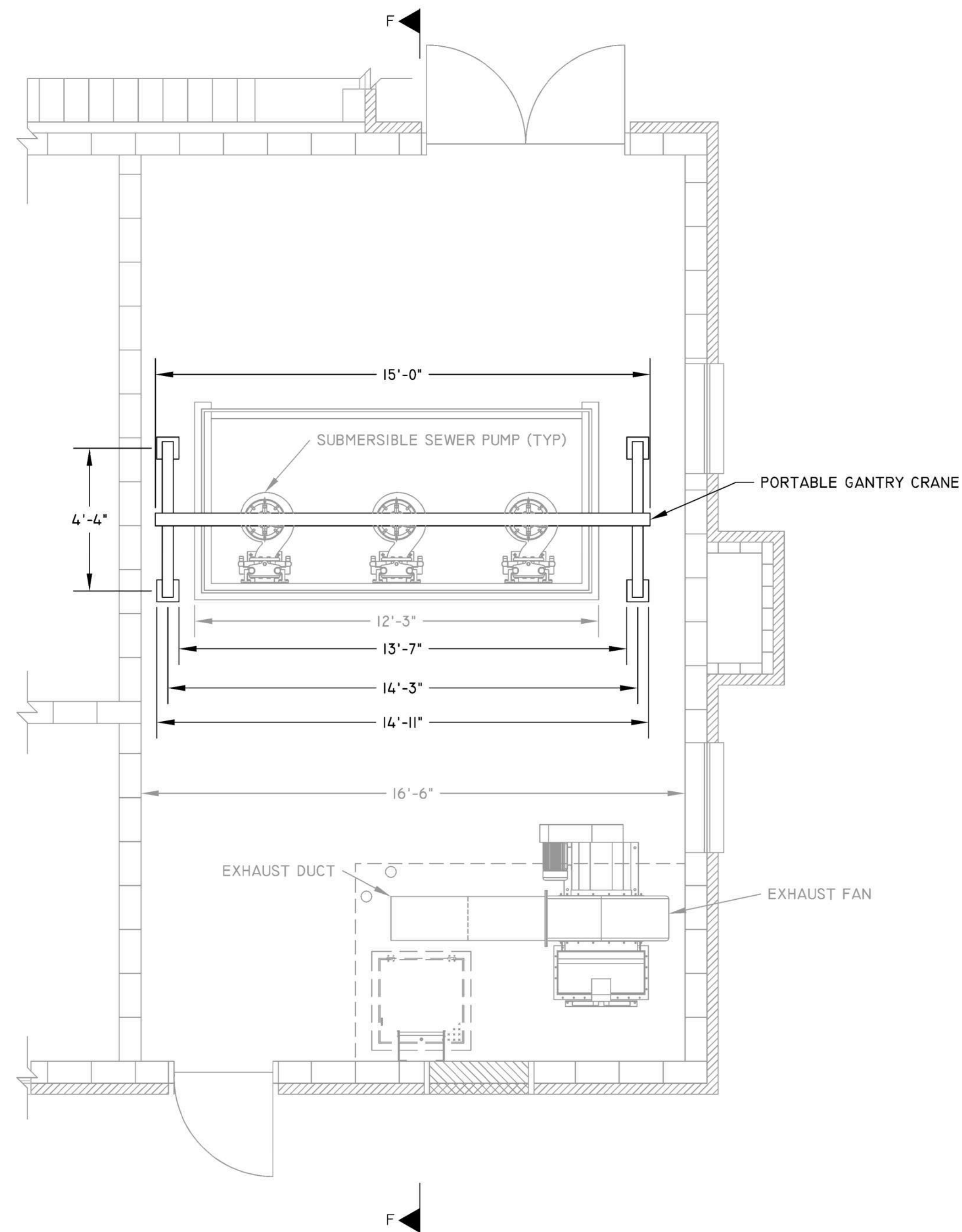
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DRAWING

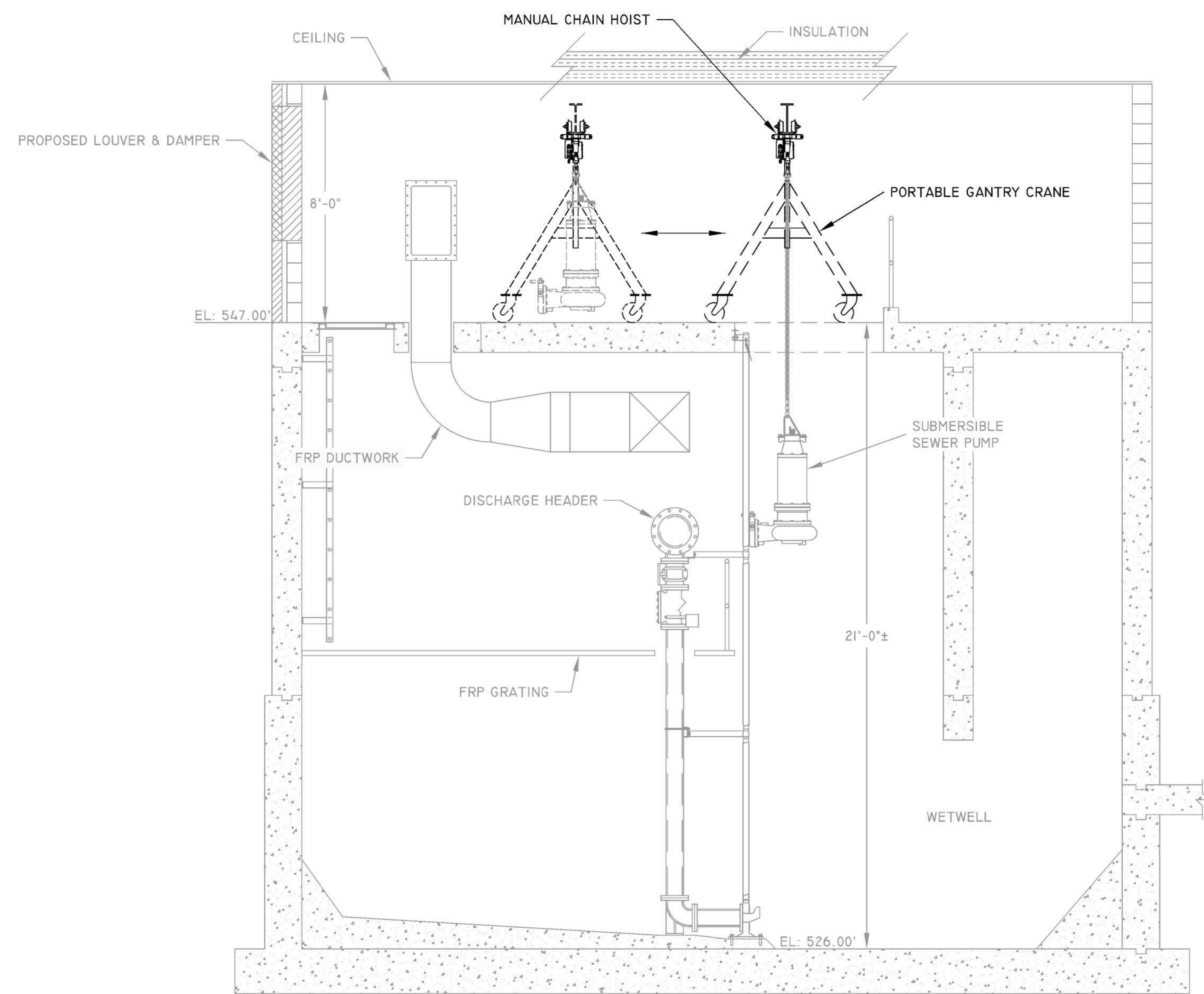
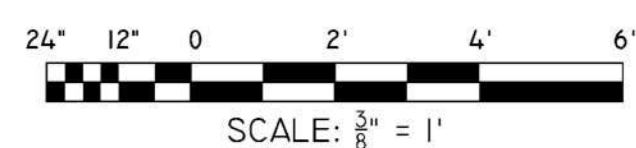
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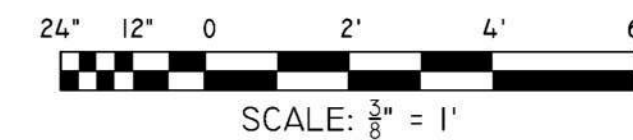
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PORTABLE GANTRY CRANE PLAN



SECTION F-F



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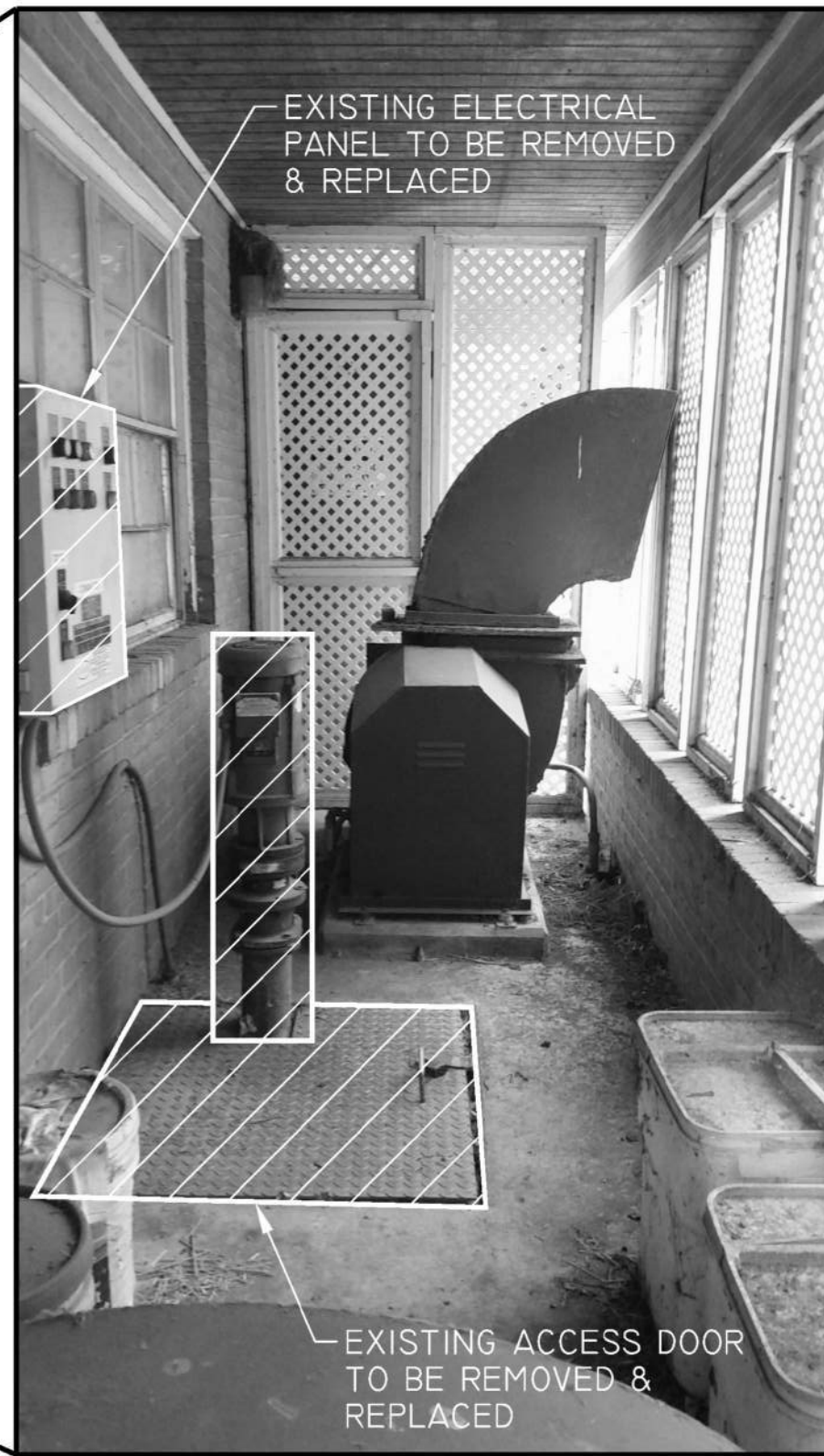
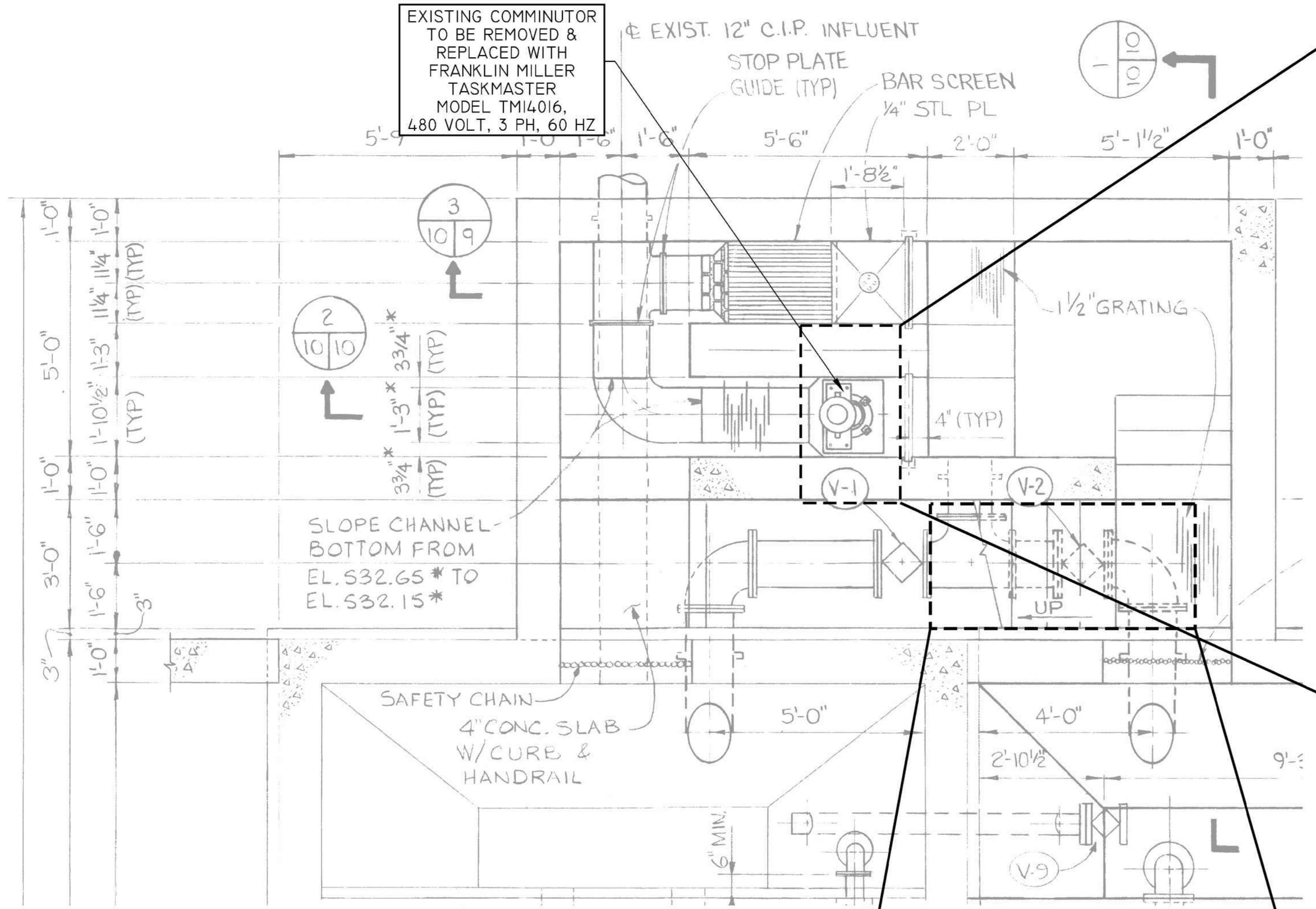
OAK RIDGE  
PUMP STATION  
UPGRADES

PORTABLE GANTRY CRANE  
LAYOUT

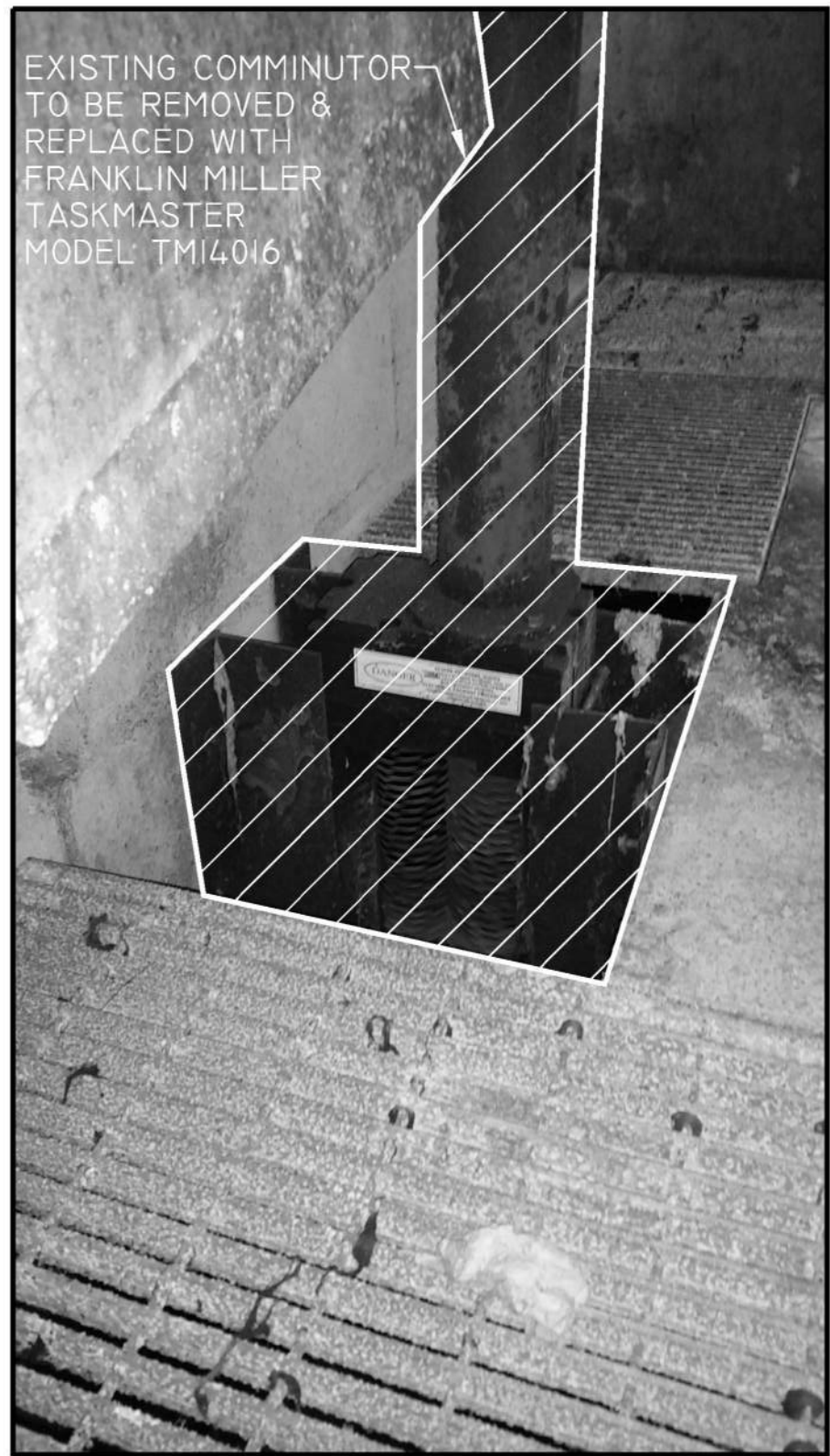
SHEET	DRAWING
NO. 13	NO. M-3
OF 36	



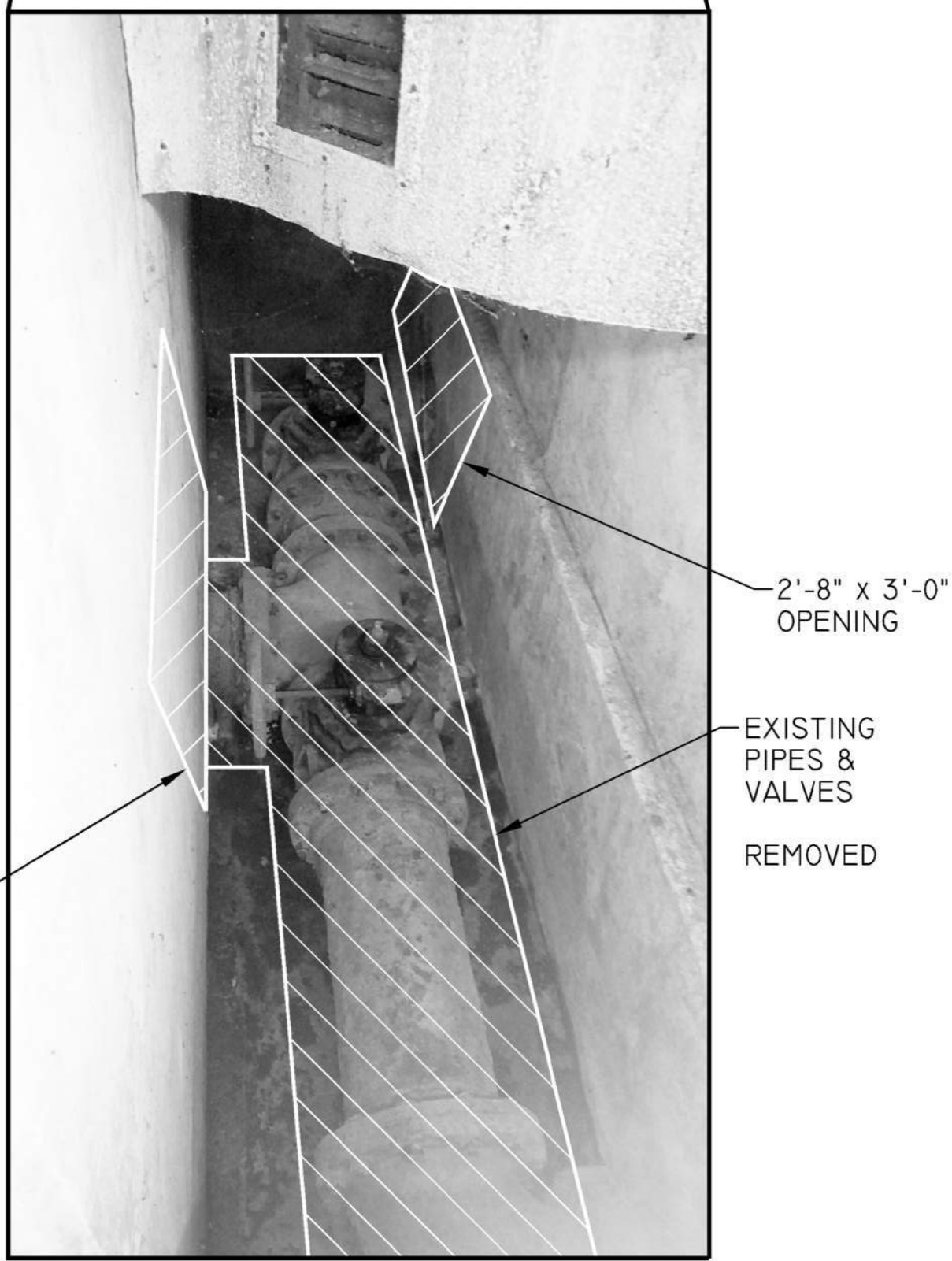
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UPPER LEVEL  
NO SCALE



LOWER LEVEL  
NO SCALE



### GENERAL NOTES

1. COMMUNOTOR SHALL BE FRANKLIN-MILLER TASKMASTER, TITAN SERIES, MODEL TMI4016.
2. COMMUNOTOR SHALL BE RATED FOR A FLOW OF 1.4 MGD.
3. COMMUNOTOR SHALL BE EQUIPPED WITH A HYDRAULIC DRIVE. EQUIPMENT MANUFACTURER SHALL BE RESPONSIBLE FOR PROPERLY SIZING THE HYDRAULIC MOTOR AND HYDRAULIC POWER PACK UNIT. HYDRAULIC POWER PACK SHALL BE MOUNTED ON UPPER LEVEL WITH HYDRAULIC HOSES CONNECTING THE POWER PACK TO THE HYDRAULIC MOTOR MOUNTED ON THE COMMUNOTOR ON THE LOWER LEVEL. THERE SHALL BE NO DRIVESHAFT BETWEEN THE HYDRAULIC MOTOR AND THE COMMUNOTOR.
4. MINOR CHANNEL MODIFICATIONS, INCLUDING BUT NOT LIMITED TO, GROUTING BETWEEN CHANNEL AND COMMUNOTOR, CHISELING OF CONCRETE, ETC., ARE RESPONSIBILITY OF THE CONTRACTOR.
5. COMMUNOTOR DRIVE EXTENSION SHALL BE SUPPORTED PER MANUFACTURER'S SPECIFICATIONS. ALL SUPPORTS ARE RESPONSIBILITY OF THE CONTRACTOR.
6. COMMUNOTOR SHALL BE INSTALLED, GROUTED, AND SEALED WITH CHANNEL PER MANUFACTURER'S SPECIFICATIONS.



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OAK RIDGE  
PUMP STATION  
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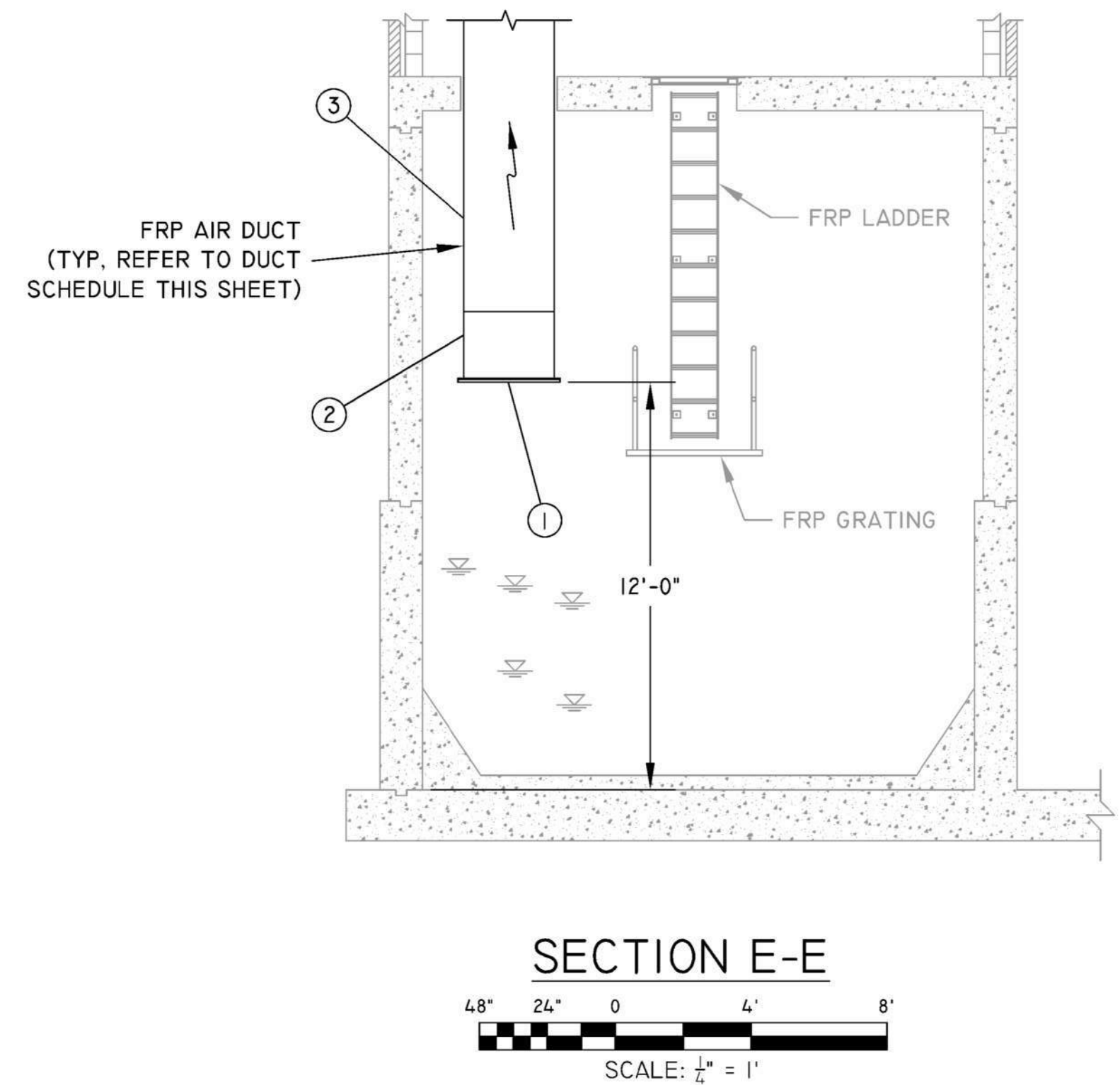
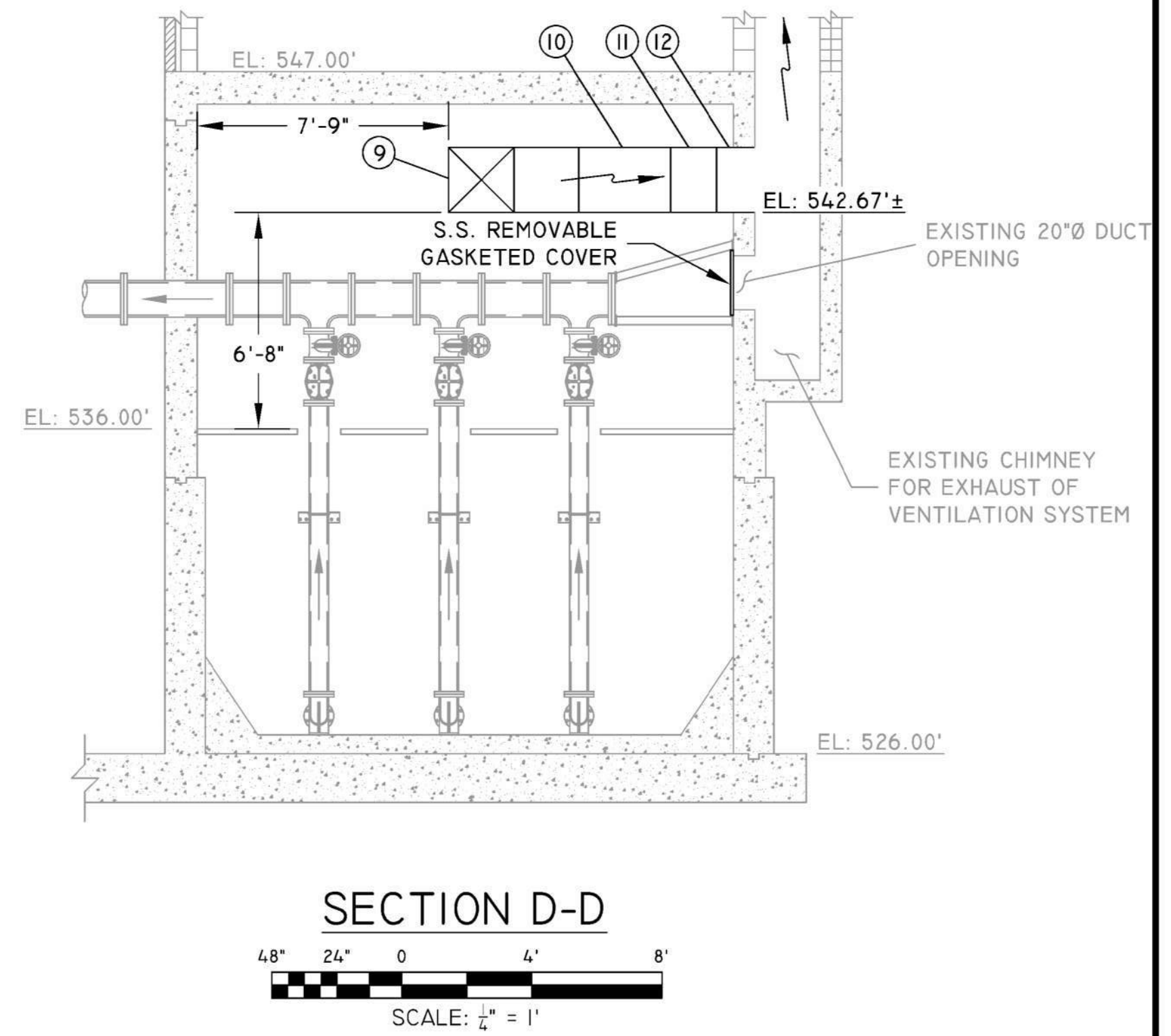
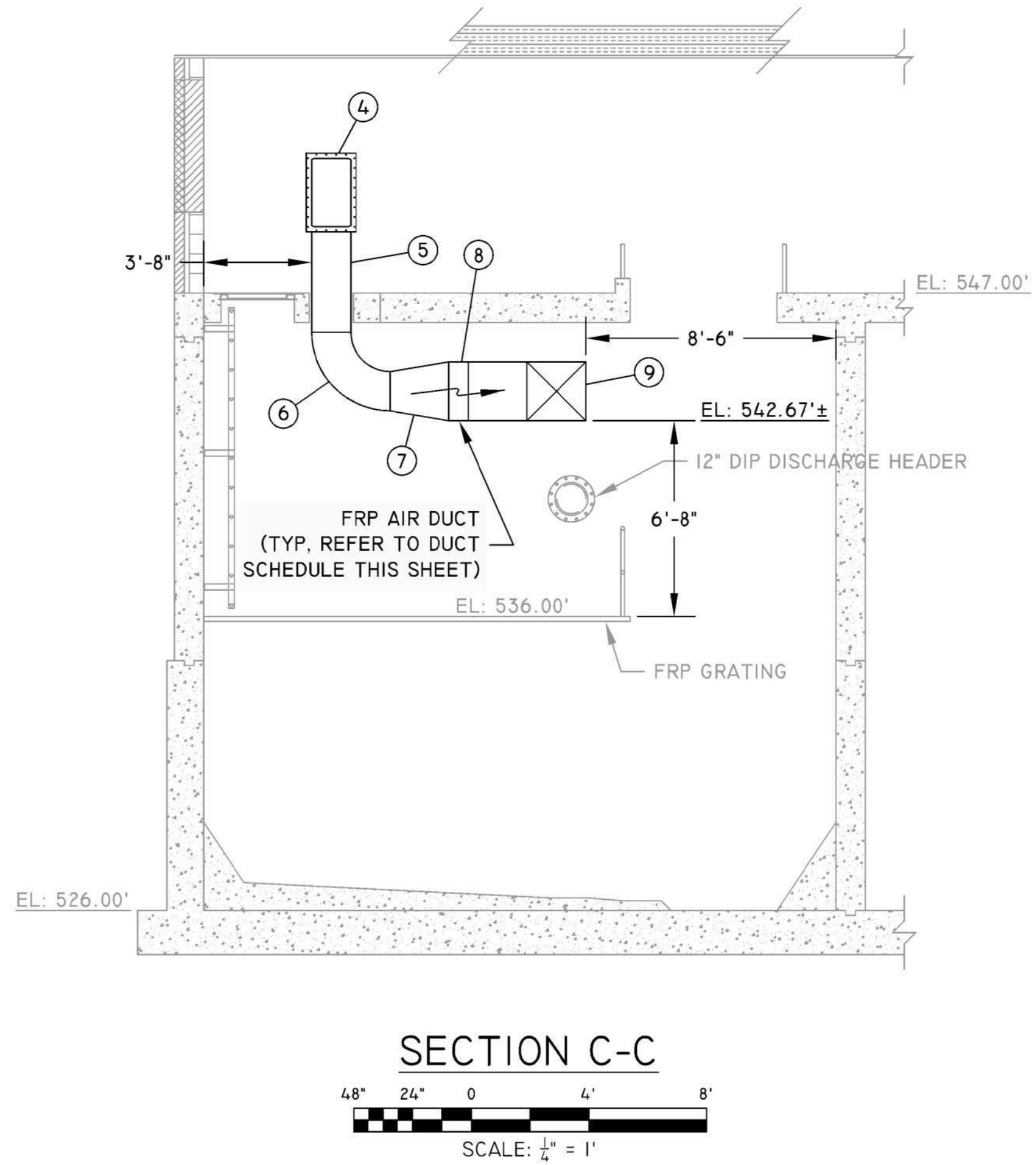
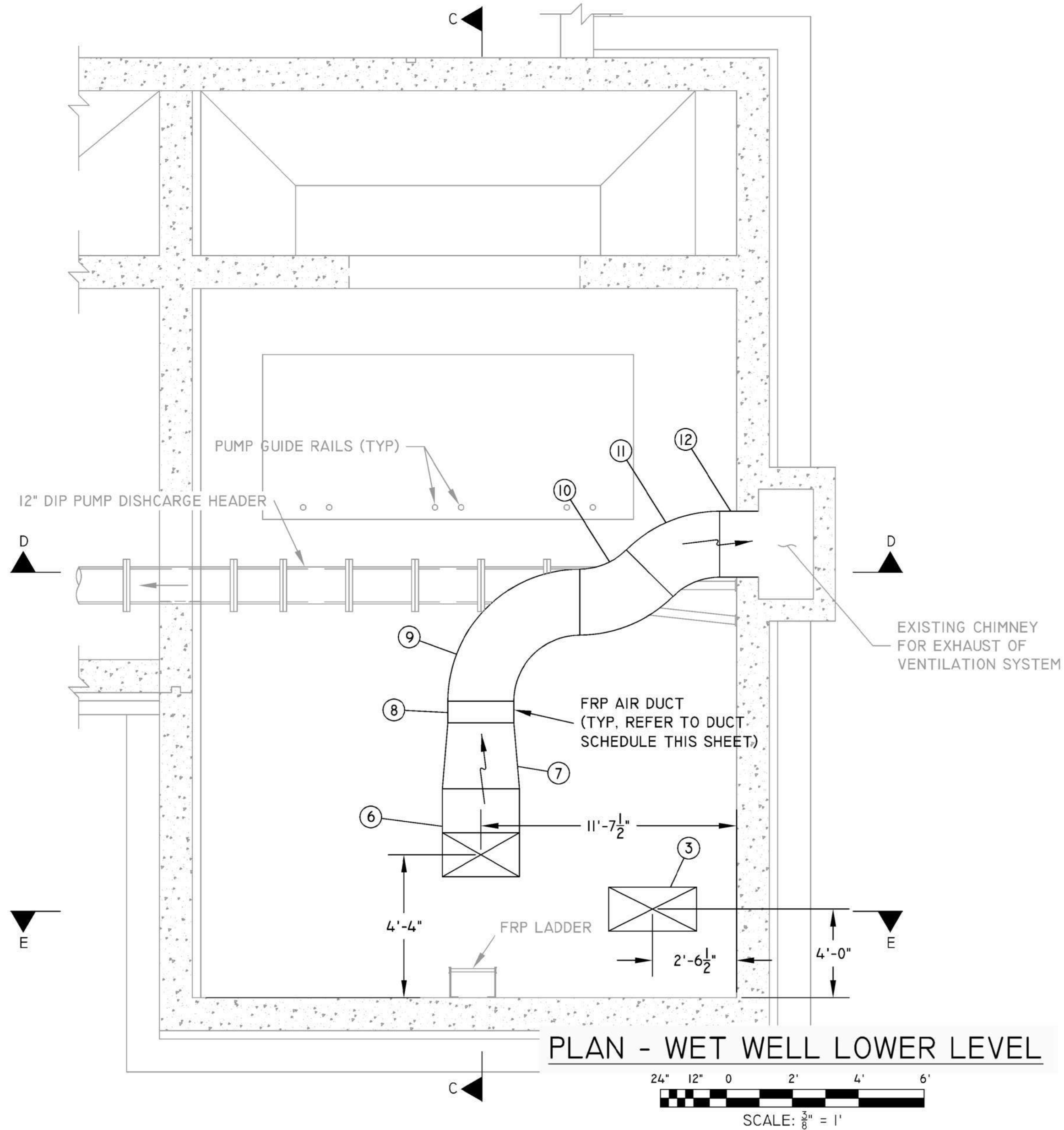
COMMUNOTOR REPLACEMENT  
PLAN

SHEET  
NO. 14  
OF 36

DRAWING  
NO. M-4



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LOWER LEVEL DUCT WORK SCHEDULE						
NO.	ITEM DESCRIPTION	HEIGHT (INCHES)	WIDTH (INCHES)	LENGTH (INCHES)	MANUFACTURER & MODEL NO.	REMARKS
1	PERFORATED INTAKE (RETURN) GRILLE	36	36	-	TUTTLE AND BAILEY, SERIES APG	-
2	FRP DUCT TRANSITION	-	-	-	VIRON INTL., PERRY FIBERGLASS, UNITED FIBERGLASS, OR EQUAL	CONTRACTOR TO DETERMINE DIMENSIONS. TRANSITION FROM INTAKE REGISTER TO 32" X 16" FRP DUCT, FLANGED AS REQUIRED.
3	FRP DUCT	32	16	108±	VIRON INTL., PERRY FIBERGLASS, UNITED FIBERGLASS, OR EQUAL	CONTRACTOR TO DETERMINE FINAL LENGTH IN FIELD. FLANGE TO MATCH FAN INLET BOX.
4	FRP 90° LONG RADIUS BEND	28	16	-	VIRON INTL., PERRY FIBERGLASS, UNITED FIBERGLASS, OR EQUAL	-
5	FRP DUCT	28	16	40±	VIRON INTL., PERRY FIBERGLASS, UNITED FIBERGLASS, OR EQUAL	CONTRACTOR TO DETERMINE FINAL LENGTH IN FIELD
6	FRP 90° LONG RADIUS BEND	16	28	-	VIRON INTL., PERRY FIBERGLASS, UNITED FIBERGLASS, OR EQUAL	-
7	FRP DUCT TRANSITION	-	-	-	VIRON INTL., PERRY FIBERGLASS, UNITED FIBERGLASS, OR EQUAL	CONTRACTOR TO DETERMINE FINAL LENGTH IN FIELD. TRANSITION FROM 16" X 28" TO 24" X 24".
8	FRP DUCT	24	24	8±	VIRON INTL., PERRY FIBERGLASS, UNITED FIBERGLASS, OR EQUAL	CONTRACTOR TO DETERMINE FINAL LENGTH IN FIELD
9	FRP 90° LONG RADIUS BEND	24	24	-	VIRON INTL., PERRY FIBERGLASS, UNITED FIBERGLASS, OR EQUAL	-
10	FRP 45° BEND	24	24	-	VIRON INTL., PERRY FIBERGLASS, UNITED FIBERGLASS, OR EQUAL	-
11	FRP 45° BEND	24	24	-	VIRON INTL., PERRY FIBERGLASS, UNITED FIBERGLASS, OR EQUAL	-
12	FRP DUCT	24	24	16±	VIRON INTL., PERRY FIBERGLASS, UNITED FIBERGLASS, OR EQUAL	CONTRACTOR TO DETERMINE FINAL LENGTH IN FIELD



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WILLIAMSPORT, MD 21795

OAK RIDGE  
PUMP STATION  
UPGRADES

LOWER LEVEL  
HVAC LAYOUT  
& SECTIONS

SHEET  
NO. **15**  
OF **36**

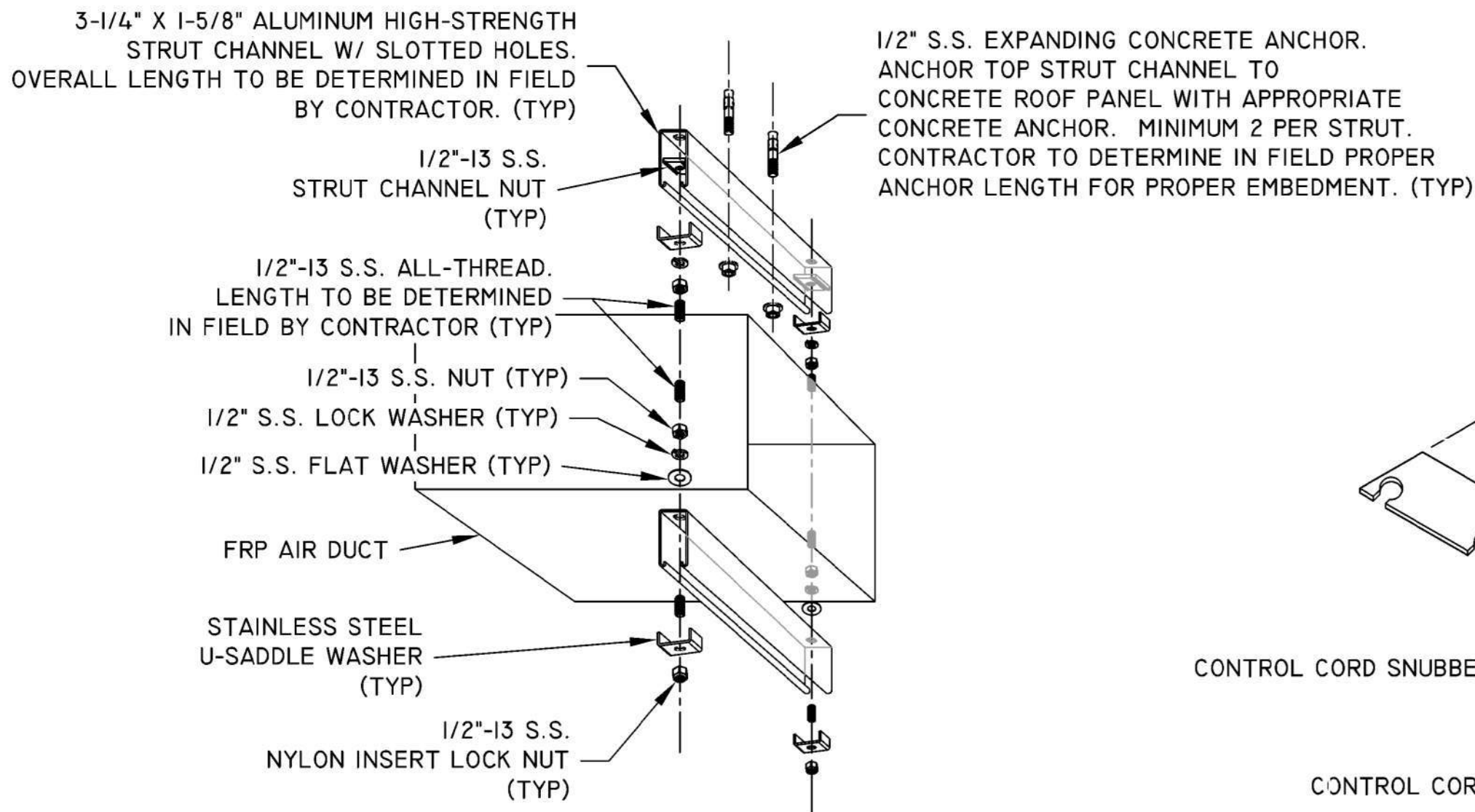
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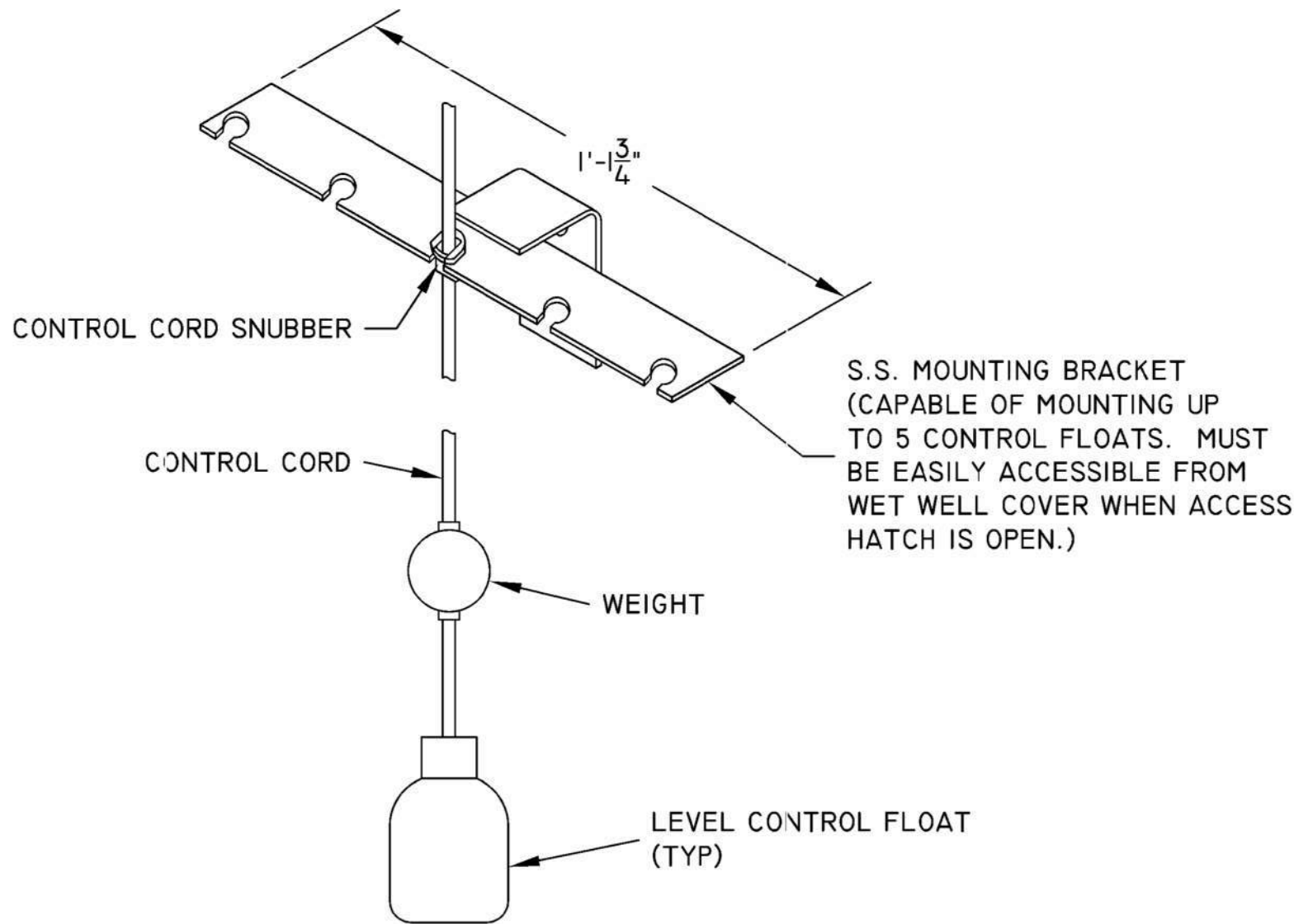




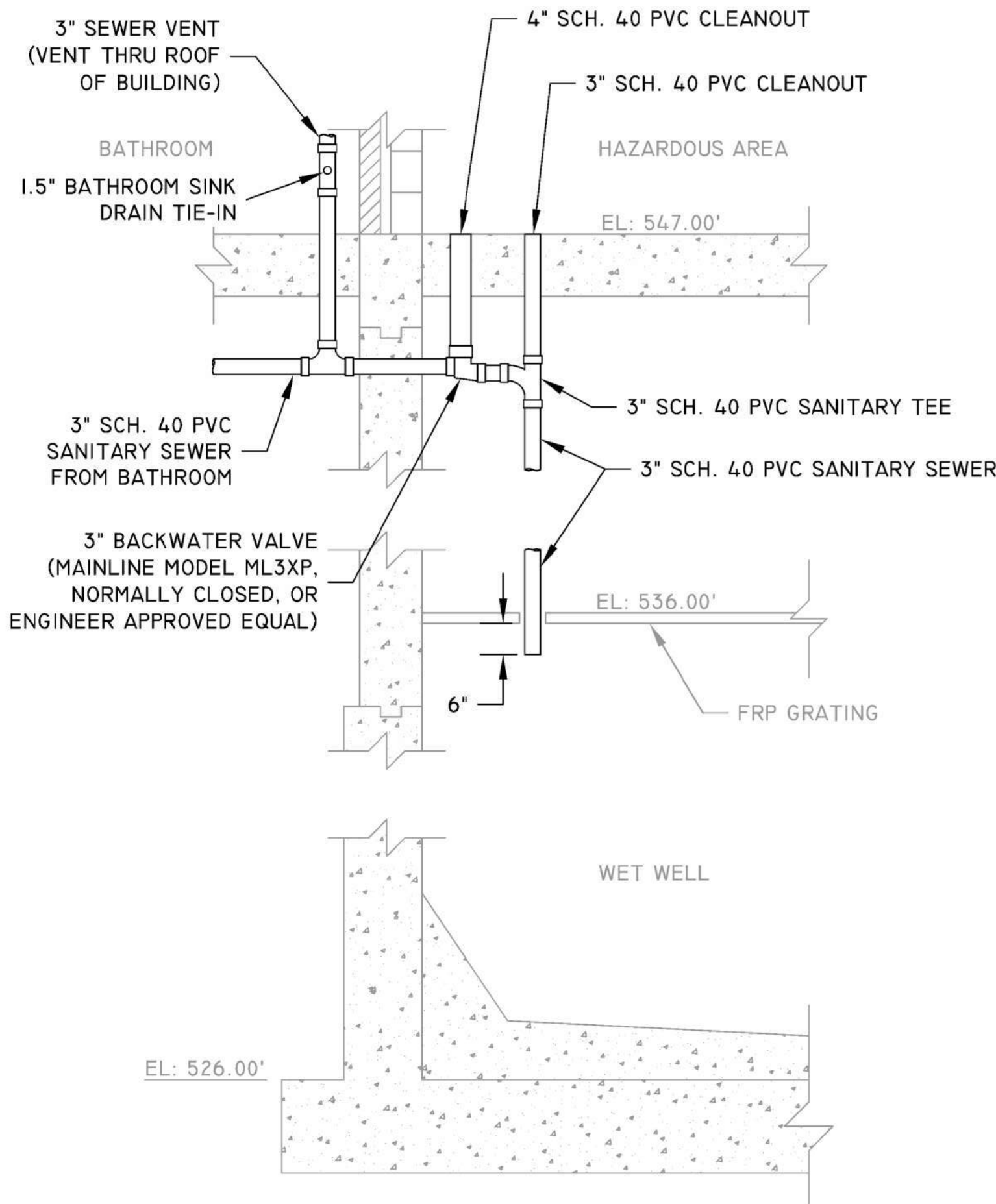
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FRP DUCT SUPPORT DETAIL  
NOT TO SCALE



CONTROL FLOAT BRACKET  
NOT TO SCALE



BACKWATER VALVE DETAIL  
NOT TO SCALE

### LOUVER SCHEDULE

NO.	APPROXIMATE SIZE	DEPTH (INCHES)	CFM	S.P. (IN W.G.)	FREE AREA (SQ. FT.)	VELOCITY (FPM)	MATERIAL	COLOR	TYPE	MANUFACTURER & MODEL NO.	REMARKS
L-I	36"W x 54"H	4	5,200	0.142	7.25	717	ALUMINUM	PER OWNER	INTAKE	RUSKIN ELF375DX	FEEDS DAMPER D-I

NOTES:  
I. LOUVERS SHALL INCLUDE THE FOLLOWING OPTIONS:  
A. EXTENDED SILL      B. BIRD SCREEN      C. KYNAR FINISH

### EXHAUST FAN/VENTILATOR SCHEDULE

NO.	SERVICE	FAN TYPE	DRIVE	CFM	S.P. (IN W.G.)	FAN RPM	MOTOR HP	VOLTAGE/ PHASE	MANUFACTURER & MODEL NO.
EF-1	EXHAUST	24" BACKWARD-INCLINED FRP FUME EXHAUSTER, HP	BELT	5,200 (MIN)	0.8	1,006	2	480/3	NEW YORK BLOWER, MODEL GFE
EF-2	EXHAUST	8" WALL EXHAUST FAN	DIRECT	180	0.125	1,625	FRAC.	120/1	BROAN, MODEL 509

NOTES:  
I. FUME EXHAUSTER SHALL INCLUDE THE FOLLOWING OPTIONS:  
A. FLANGED OUTLET DRILLING      F. SHAFT AND BEARING GUARDS  
B. UNITARY BASE W/ RUBBER ISOLATERS      G. INLET BOX  
C. 1" NPT DRAIN      H. CLEANOUT DOOR  
D. POSITIVE SCREW ADJUSTMENT FOR MOTOR PLATFORM/V-BELT ADJUSTMENT      I. VITON SHAFT SEAL  
E. BELT GUARDS      J. EXPLOSION PROOF CONSTRUCTION, INCLUDING MOTOR

### DAMPER SCHEDULE

NO.	APPROXIMATE SIZE	DEPTH (INCHES)	CFM	FREE AREA (SQ. FT.)	MATERIAL	COLOR	TYPE	MANUFACTURER & MODEL NO.	REMARKS
D-I	36"W x 54"H	4	5,200	0.20	ALUMINUM	PER OWNER	INTAKE	RUSKIN CD40	OPENS W/ EF-I

NOTES:  
I. DAMPERS SHALL INCLUDE THE FOLLOWING OPTIONS:  
A. CLEAR ANODIZED FINISH      B. MOTOR OPERATED (EXPLOSION-PROOF)      C. KYNAR FINISH

### HVAC GENERAL NOTES

- ALL HVAC EQUIPMENT TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS.
- REFER TO ELECTRICAL DRAWINGS FOR EQUIPMENT ELECTRICAL CONNECTION DETAILS.
- REFER TO PROJECT/CONSTRUCTION MANUAL FOR DETAILED EQUIPMENT SPECIFICATIONS.
- LOUVERS AND DAMPERS SHALL BE INSTALLED SO BOTTOM OF FRAMES ARE 8" ABOVE FINISH FLOOR ELEVATION. EXHAUST FANS SHALL BE INSTALLED SO TOP OF FRAMES ARE 8" BELOW CEILING, UNLESS SHOWN OTHERWISE.
- WHERE REQUIRED, MASONRY BLOCK WALLS WILL NEED TO BE MODIFIED WITH THE INSTALLATION OF LINTEL BEAMS ABOVE LOUVERS, DAMPERS, AND EXHAUST FANS.
- EXTERIOR LINESETS SHALL BE ENCLOSED IN WEATHER-RESISTANT PVC COVERS TO PROTECT WIRING, REFRIGERANT LINES, AND DRAIN LINES FROM UV, WEATHER, AND OTHER ELEMENTS.
- REFRIGERANT LINESETS SHALL BE ENCLOSED IN SCH. 40 PVC CONDUIT ABOVE ALL ELECTRICAL EQUIPMENT. CONDUIT SHALL BE PROPERLY SIZED TO ALLOW EASY PULLING OF VAPOR AND LIQUID LINES (MINI-SPLIT LINESET), POWER CABLE, AND COMMUNICATION CABLE THRU THE CONDUIT. CONDUIT SHALL BE OPEN ON EACH END TO ALLOW LEAKING REFRIGERANT TO ESCAPE THE CONDUIT CONTAINMENT.
- LINESETS AND LINESET/CONDUIT COMBINATIONS SHALL BE PROPERLY SUSPENDED FROM EXISTING ROOF TRUSSES PER THE MANUFACTURER'S SPECIFICATIONS.

### HEATER SCHEDULE

NO.	TYPE	KW	CFM	VOLTAGE/PHASE	MANUFACTURER & MODEL NO.	ZONE
UH-I	UNIT HEATER	1.5	-	208/1	MARELY LFK204F	BATHROOM

NOTES:  
1. SEE ELECTRICAL DRAWINGS FOR CONNECTION REQUIREMENTS.  
2. MOUNT HEATING UNIT PER MANUFACTURER RECOMMENDATIONS.  
3. HEATERS SHALL BE THERMOSTATICALLY CONTROLLED VIA INTEGRAL THERMOSTAT.  
4. HEATERS SHALL BE WALL MOUNTED USING THE HEATER MANUFACTURER'S STANDARD WALL MOUNTING BRACKET KIT. BRACKETS SHALL BE ANCHORED SECURELY INTO CONCRETE MASONRY WALL USING APPROPRIATE ANCHORS AS SPECIFIED BY THE HEATER MANUFACTURER.  
5. HEATER MOUNTING HEIGHT SHALL BE PER MANUFACTURER'S RECOMMENDATIONS IN ORDER TO MAINTAIN MANUFACTURER'S SPECIFIED MINIMUM CLEARANCES.



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#### REVISIONS

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OAK RIDGE  
PUMP STATION  
UPGRADES

DETAILS &  
HVAC SCHEDULES

SHEET

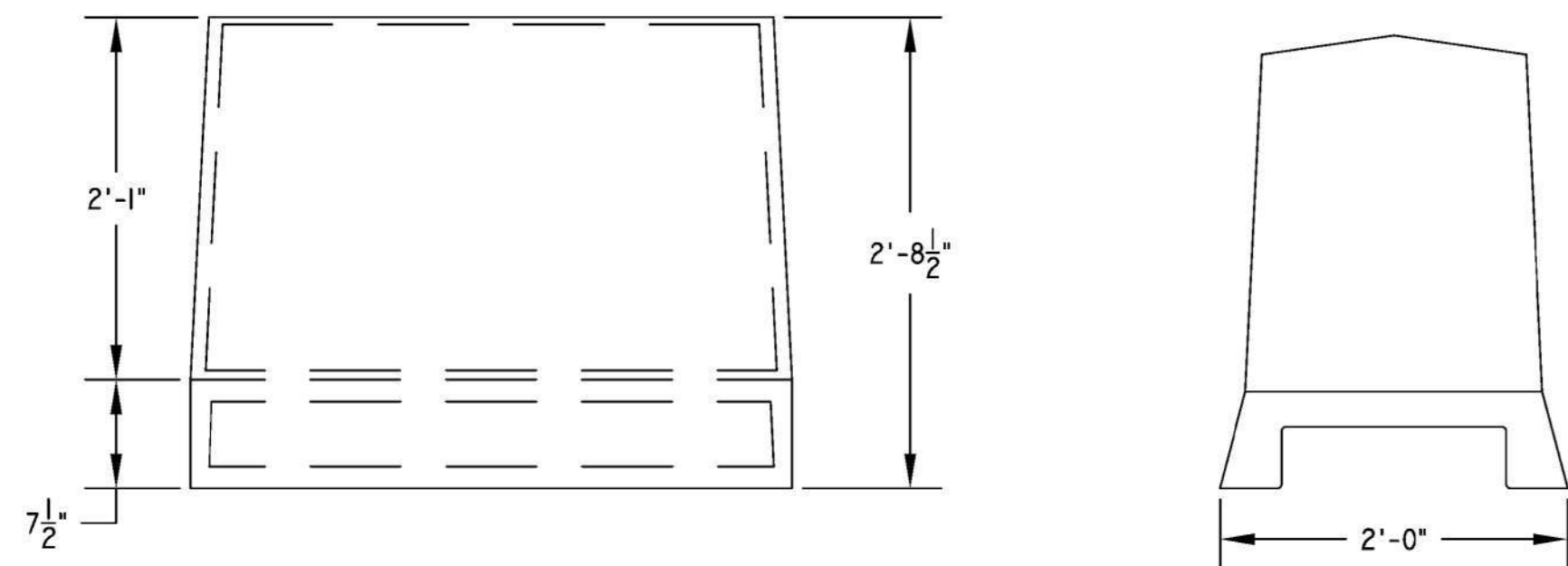
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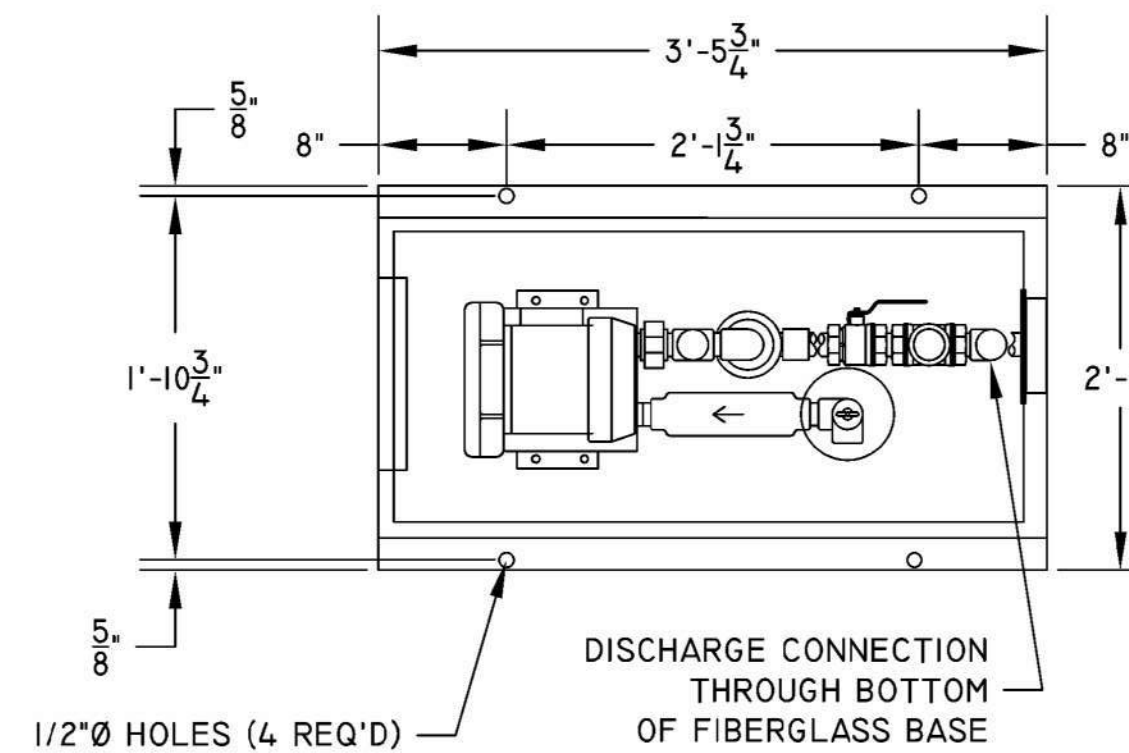
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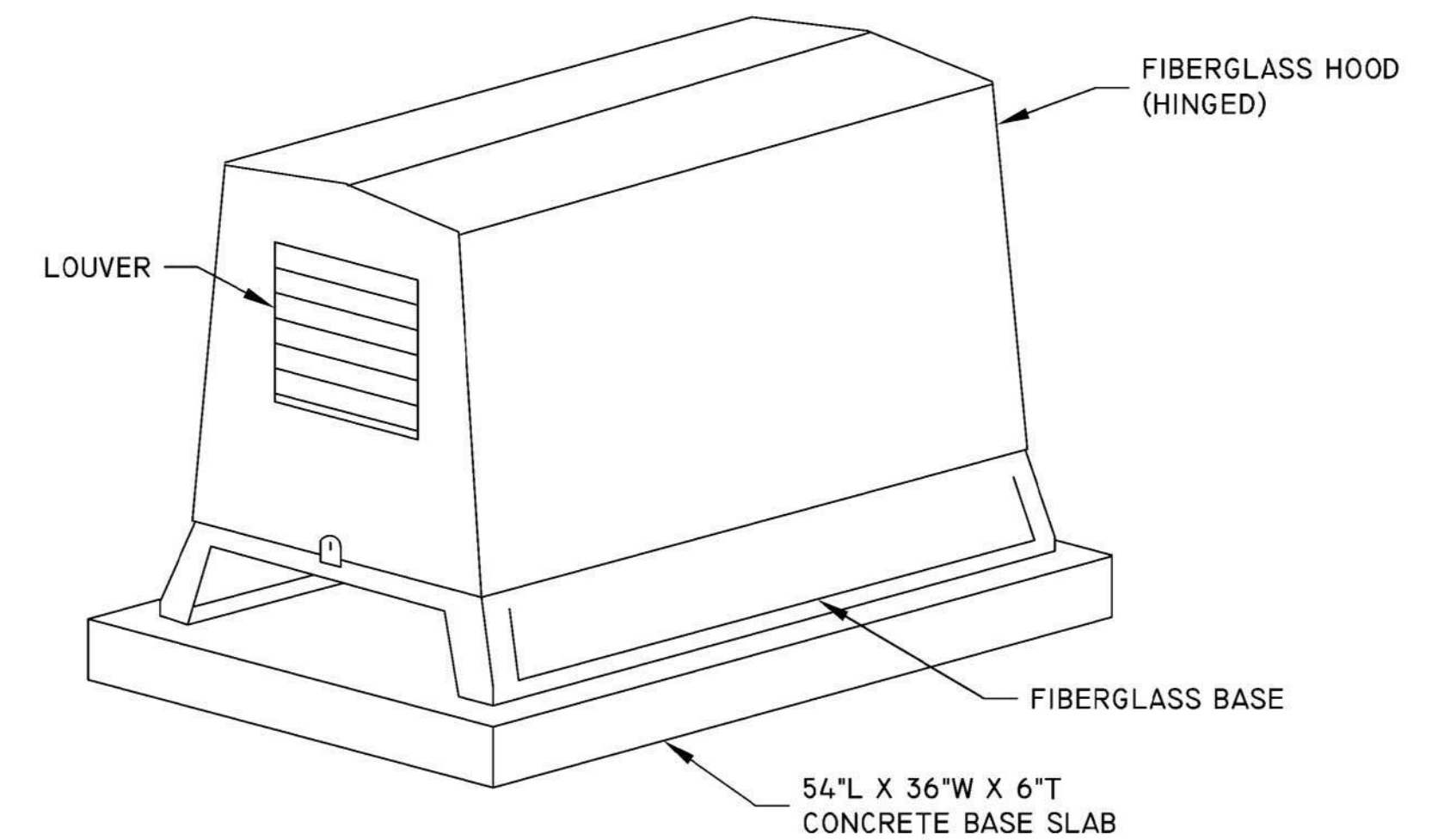




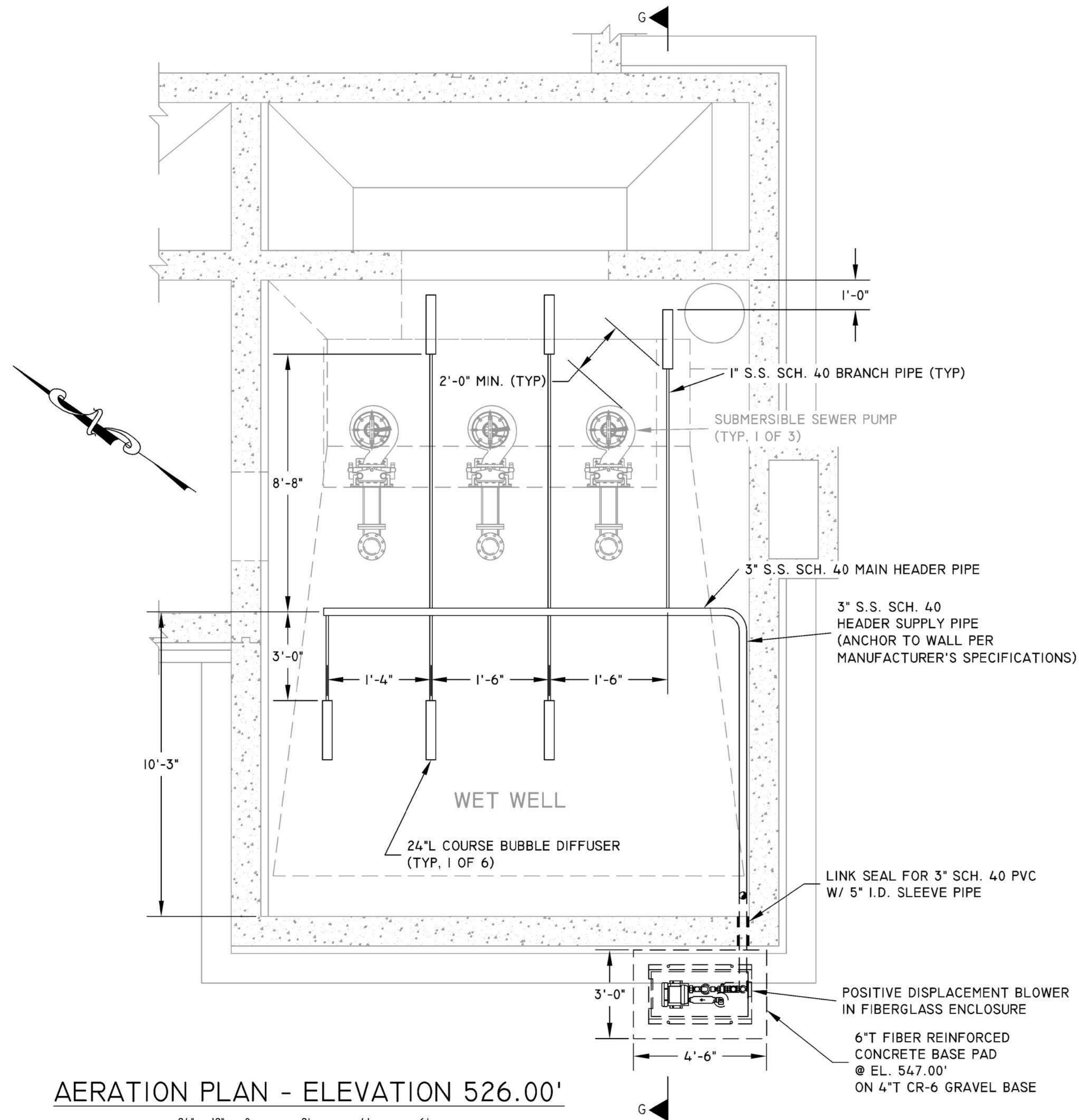
BLOWER ELEVATION VIEWS  
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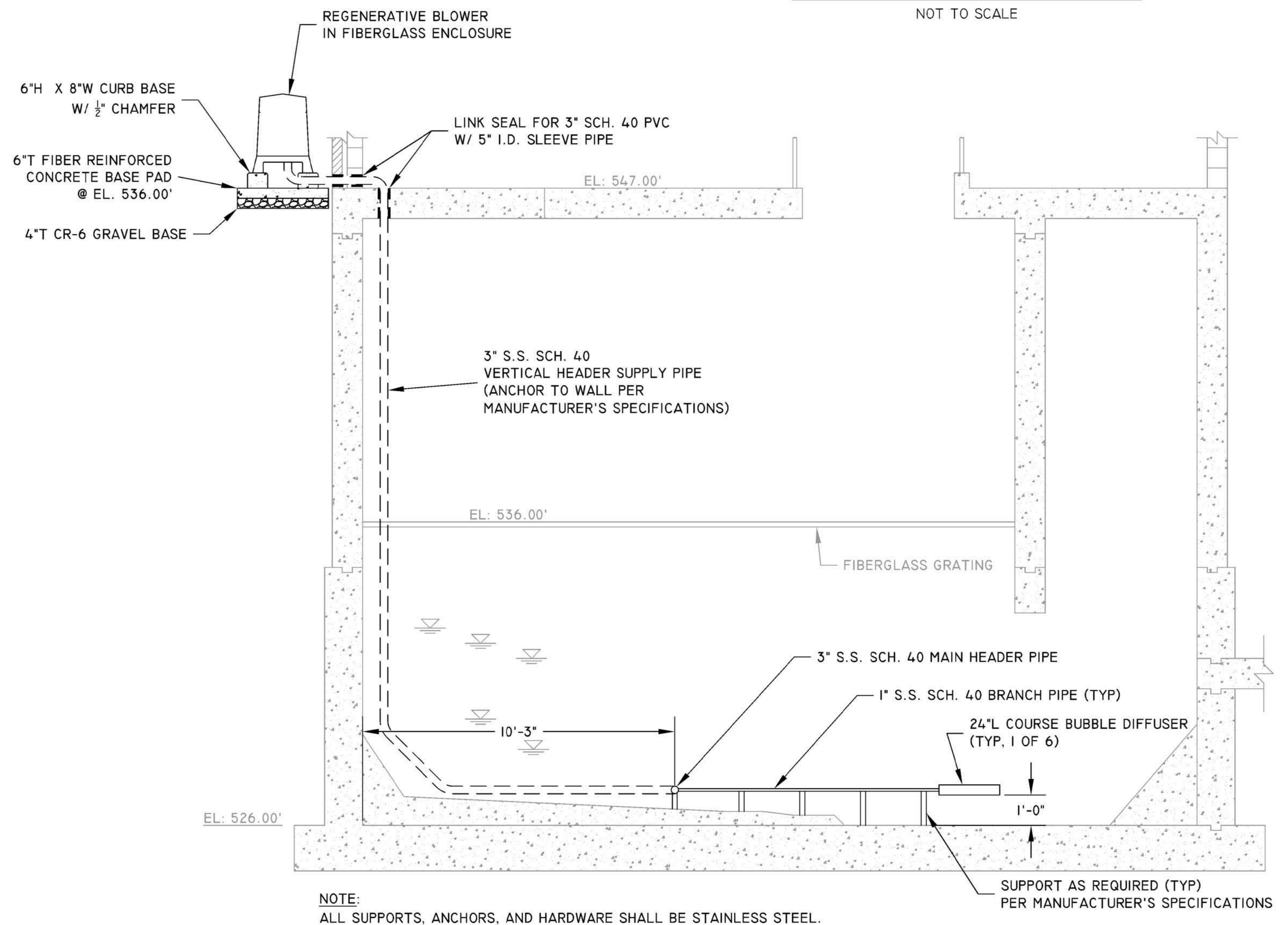
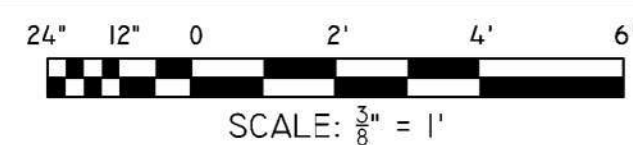
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BLOWER ISOMETRIC VIEW  
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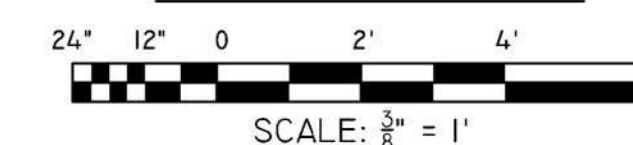


AERATION PLAN - ELEVATION 526.00'



NOTE:  
ALL SUPPORTS, ANCHORS, AND HARDWARE SHALL BE STAINLESS STEEL.

SECTION G-G



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AERATION PLAN

SHEET  
NO. 18  
OF 36  
DRAWING  
NO. M-8



W:\Projects\2017\17220\_WashonCall\17220.000\_Oak\_Ridge\_PSV\ACAD\480V - Drawings\110% Submission\E-1 LEGENDS.DWG

GENERAL ELECTRICAL NOTES (APPLICABLE TO ALL DRAWINGS)

1. EXISTING EQUIPMENT IS SHOWN IN A LIGHT WEIGHT AND IDENTIFIED WITH SLANTED TEXT. NEW EQUIPMENT AND WIRING IS SHOWN BOLD.
2. ALL FASTENERS AND MOUNTING HARDWARE USED FOR THE INSTALLATION OF ALL ELECTRICAL ITEMS SHALL BE 316 STAINLESS STEEL.
3. ALL ALUMINUM BACKBOARDS SHALL BE 3/16 INCH THICK, AND SIZED AS REQUIRED TO ACCOMMODATE EQUIPMENT. EDGES OF BACKBOARDS SHALL BE BEVELED SO THEY ARE SMOOTH.
4. ALL ALUMINUM IN CONTACT WITH CONCRETE SHALL BE COATED WITH TWO COATS OF ZINC CHROMATE PRIMER OR BITUMINOUS PAINT TO PREVENT A REACTION BETWEEN THE ALUMINUM AND CONCRETE.
5. ALL FLOOR MOUNTED EQUIPMENT SHALL BE INSTALLED ON A CONCRETE PAD. THE PAD SHALL BE 3" HIGH WITH CHAMFERED EDGES AND EXTEND 2" BEYOND THE EDGES OF THE EQUIPMENT.
6. CONTRACTOR SHALL FURNISH AND INSTALL A SEPARATE INSULATED GROUND CONDUCTOR IN ALL CONDUITS. ALL GROUND CONDUCTORS SHALL BE #12 UNLESS NOTED OTHERWISE ON DRAWINGS.
7. WIRING SHOWN TO MOTOR DISCONNECT SWITCHES SHALL CONTINUE TO THE MOTOR.
8. ALL CONDUITS SHALL BE LABELED INDICATING THE VOLTAGE OF THE WIRING IN THE CONDUIT.

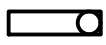
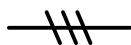





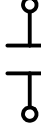





ELECTRICAL DEMOLITION NOTES (APPLICABLE TO ALL DRAWINGS)

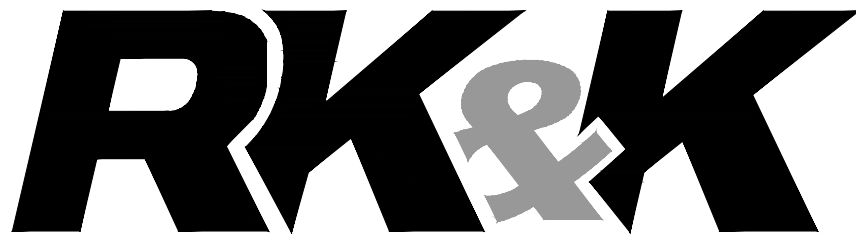
1. ALL EXISTING ELECTRICAL EQUIPMENT, CONDUIT AND WIRE BEING REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR, UNLESS NOTED OTHERWISE. THE COUNTY WOULD LIKE TO KEEP ALL OF THE ELECTRICAL EQUIPMENT, INCLUDING THE TRANSFER SWITCH, GENERATOR, S&L PUMPS, HEATERS UPSTAIRS, SURGE PROTECTOR, GRAYLINE EQUIPMENT AND PANELS.
2. WHERE EXISTING EQUIPMENT IS INDICATED TO BE REMOVED, ALL CONDUITS AND WIRING TO THIS EQUIPMENT SHALL BE REMOVED BACK TO THEIR SOURCE.
3. CONDUITS BEING REMOVED THAT PENETRATE EXISTING FLOORS OR WALLS SHALL BE CUT OFF FLUSH WITH EXISTING SURFACE AND SEALED WITH NON-SHRINK GROUT.
4. INSTALL A STAINLESS STEEL COVER PLATE OVER ALL RECESSED OUTLET BOXES WHERE WIRING DEVICE HAS BEEN REMOVED.
5. PATCH HOLES IN WALLS REMAINING FROM REMOVAL OF EQUIPMENT WITH NON-SHRINK GROUT.

ELECTRICAL ABBREVIATIONS

A	—	AMPERES	NO.	—	NUMBER
A.F.F.	—	ABOVE FINISHED FLOOR	P	—	POLE
ATS	—	AUTOMATIC TRANSFER SWITCH	PCS	—	PUMP CONTROL SYSTEM
C	—	CONDUIT	PH	—	PHASE
DC	—	DIRECT CURRENT	PR.	—	PAIR
DISC.	—	DISCONNECT	SHLD.	—	SHIELDED
DWG.	—	DRAWING	S.S.	—	STAINLESS STEEL
G.F.I.	—	GROUND FAULT INTERRUPTER	T-M	—	THERMAL MAGNETIC
GRD.	—	GROUND	TYP.	—	TYPICAL
HP	—	HORSEPOWER	V	—	VOLTS
J-BOX	—	JUNCTION BOX	VFD	—	VARIABLE FREQUENCY DRIVE
KW	—	KILOWATT	W	—	WIDE
MCC	—	MOTOR CONTROL CENTER	WP	—	WEATHERPROOF
MCP	—	MOTOR CIRCUIT PROTECTOR			
M.O.D.	—	MOTOR OPERATED DAMPER			

ELECTRICAL SYMBOL SCHEDULE

	—	LED LIGHT FIXTURE		—	TICKS INDICATE NUMBER OF WIRES - NOT INCLUDING GROUND CONDUCTOR
	—	20A-120V DUPLEX RECEPTACLE		—	WIRING CONCEALED IN CONDUIT
	—	MOTOR (NUMBER INDICATES HP)		—	CIRCUIT BREAKER
	—	DISCONNECT SWITCH		—	MOTOR STARTER
	—	SINGLE POLE SWITCH		—	THERMAL OVERLOAD
	—	MANUAL STARTER SWITCH			
	—	THERMOSTAT			
	—	HOME RUN TO PANEL			



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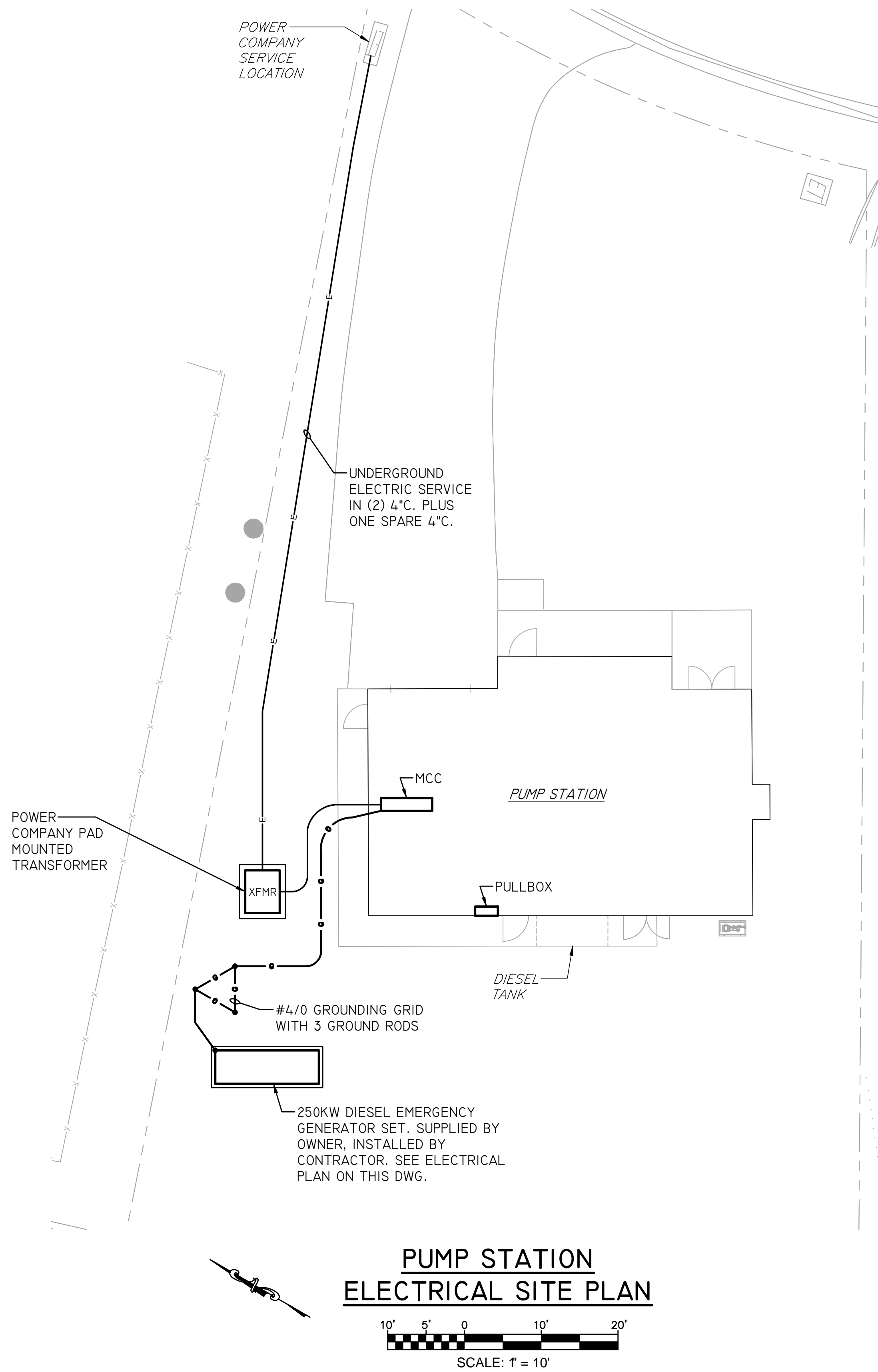
OAK RIDGE  
PUMP STATION  
UPGRADES

ELECTRICAL NOTES,  
ABBREVIATIONS AND  
SYMBOLS

SHEET	DRAWING
NO... <b>19</b> ...	
OF... <b>36</b> ...	NO... <b>E-1</b> ...

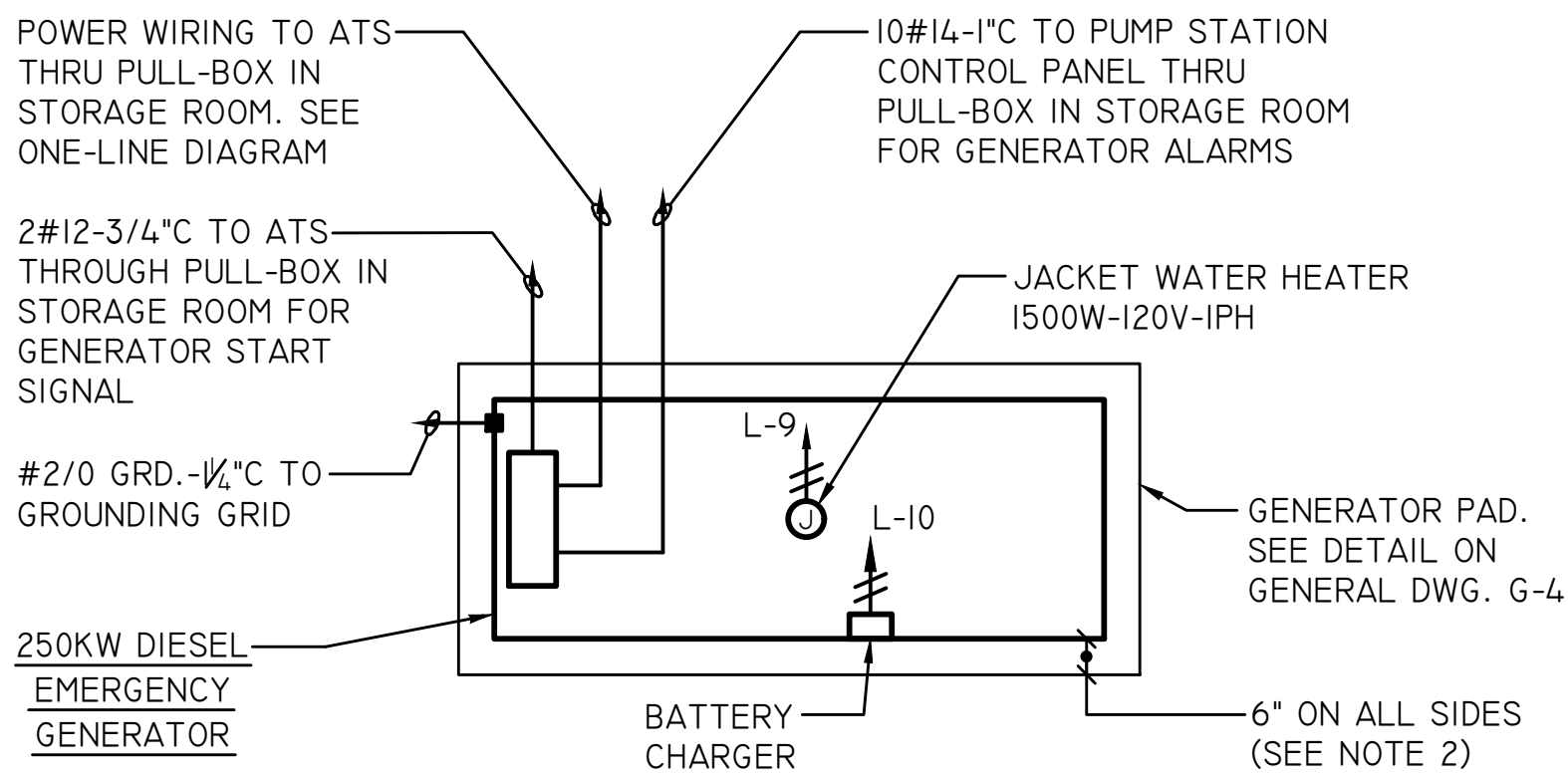


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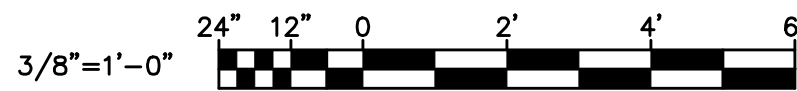


#### NOTES

- ALL DIRECT BURIED CONDUITS SHALL BE PVC SCHEDULE 80 AND INSTALLED A MINIMUM OF 30" BELOW FINISHED GRADE, UNLESS NOTED OTHERWISE.
- COORDINATE SIZE OF GENERATOR PAD WITH GENERATOR BEING FURNISHED BY OWNER.

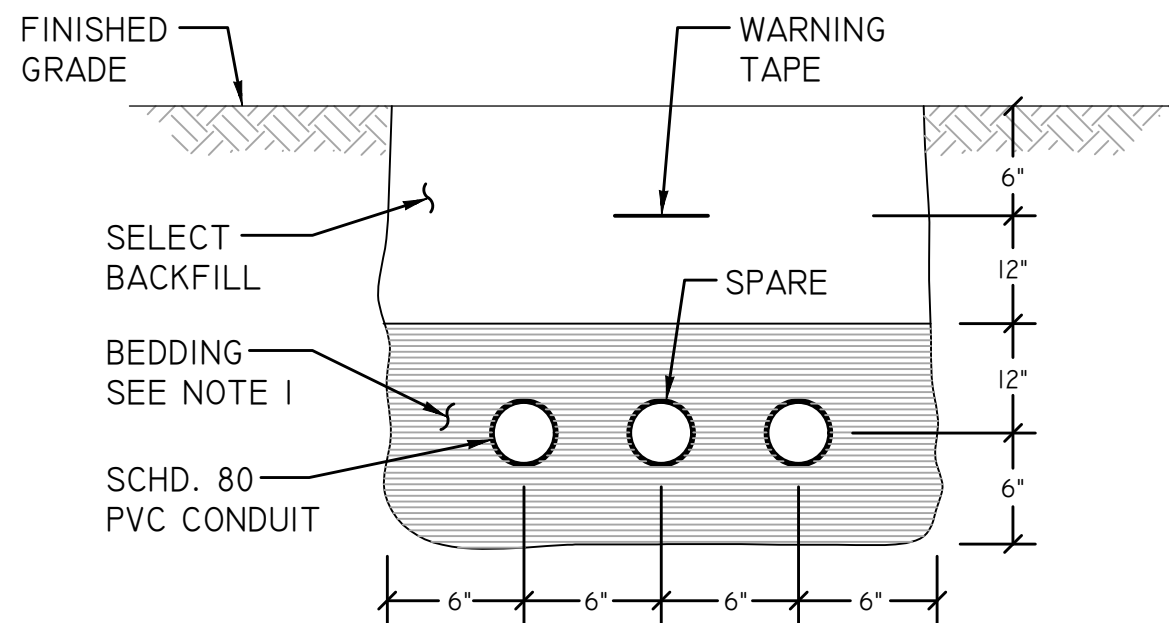


**EMERGENCY GENERATOR ELECTRICAL PLAN**

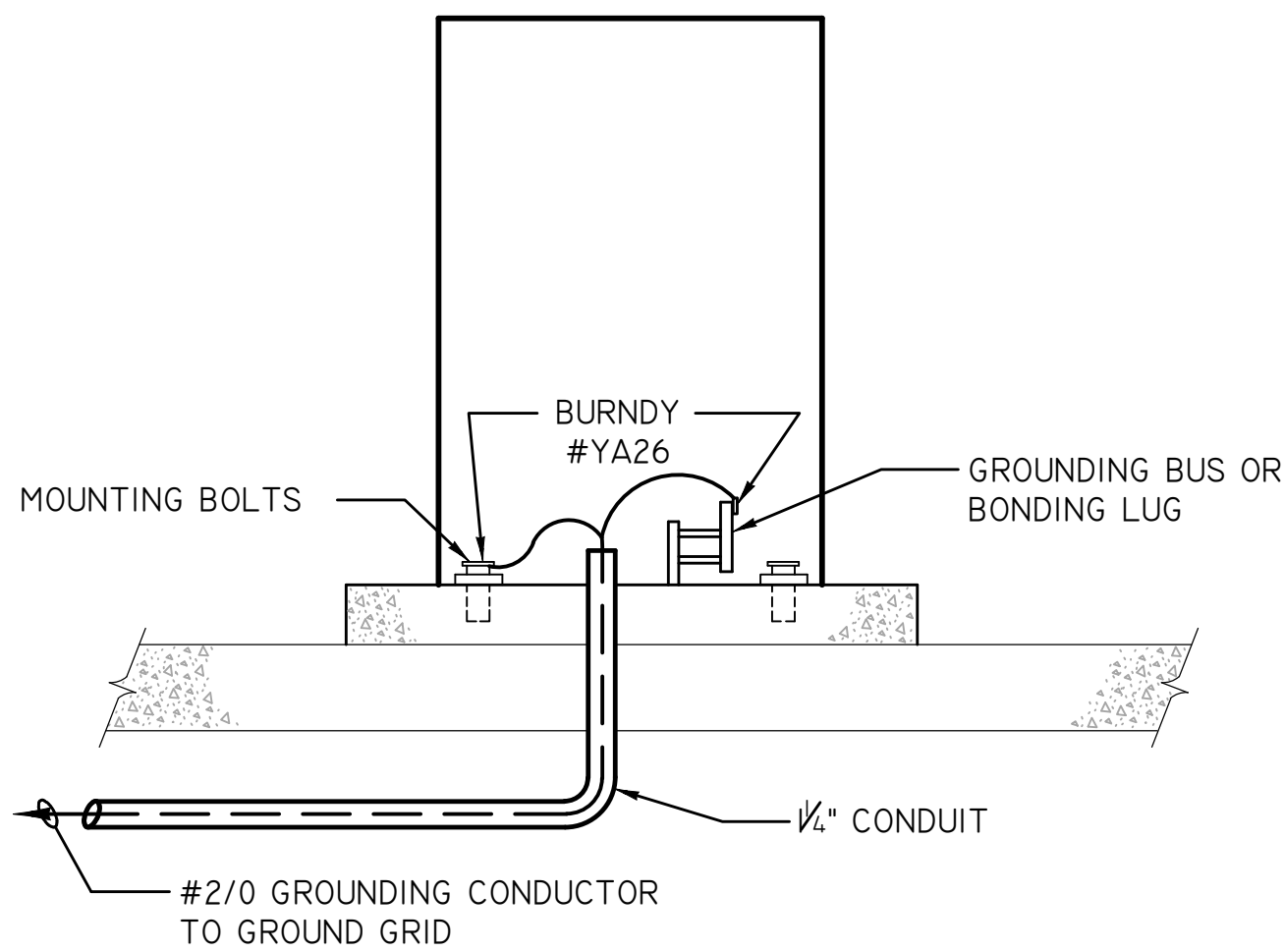


#### NOTES

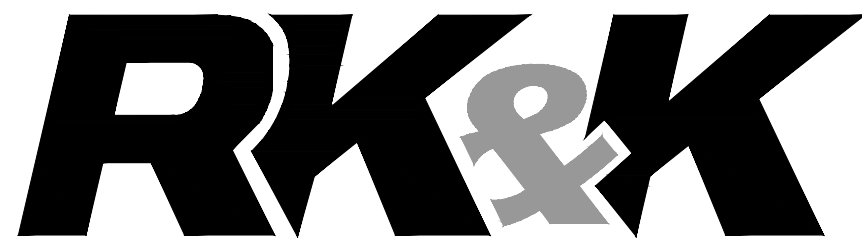
- CONDUIT BEDDING SHALL BE SAND, CRUSHER RUN OR LIMESTONE DUST.



**ELECTRIC SERVICE CONDUIT TRENCH DETAIL**  
NO SCALE



**MCC GROUNDING DETAIL**  
NO SCALE



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OAK RIDGE  
PUMP STATION  
UPGRADES

ELECTRICAL SITE PLAN

SHEET

NO...20...

OF...36...

DRAWING

NO...E-2...



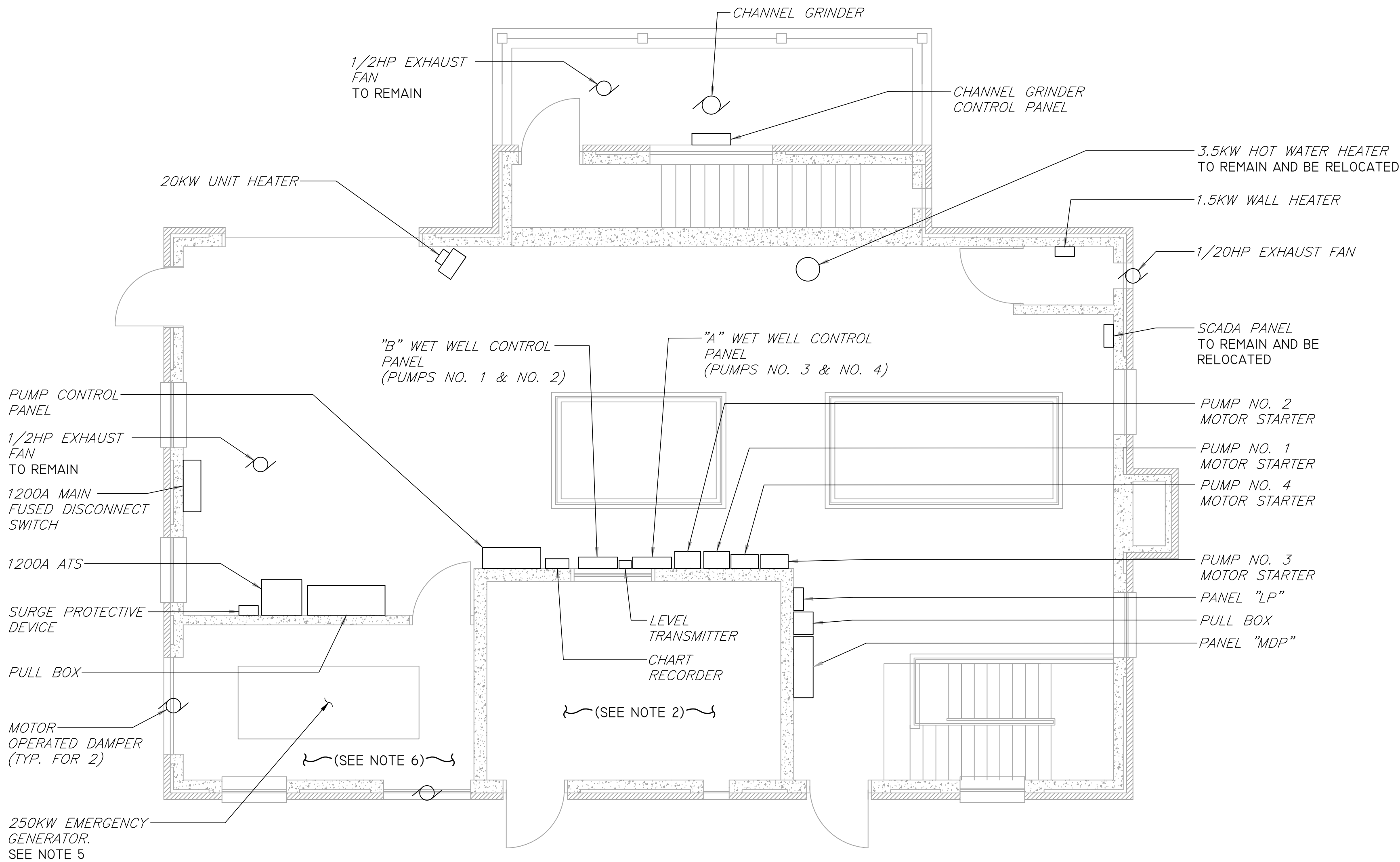
DEMOLITION NOTES

1. ALL EXISTING EQUIPMENT NOTED WITH SLANTED TEXT AND LIGHT WEIGHT IS TO BE REMOVED UNLESS NOTED OTHERWISE. REMOVE ALL ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE.

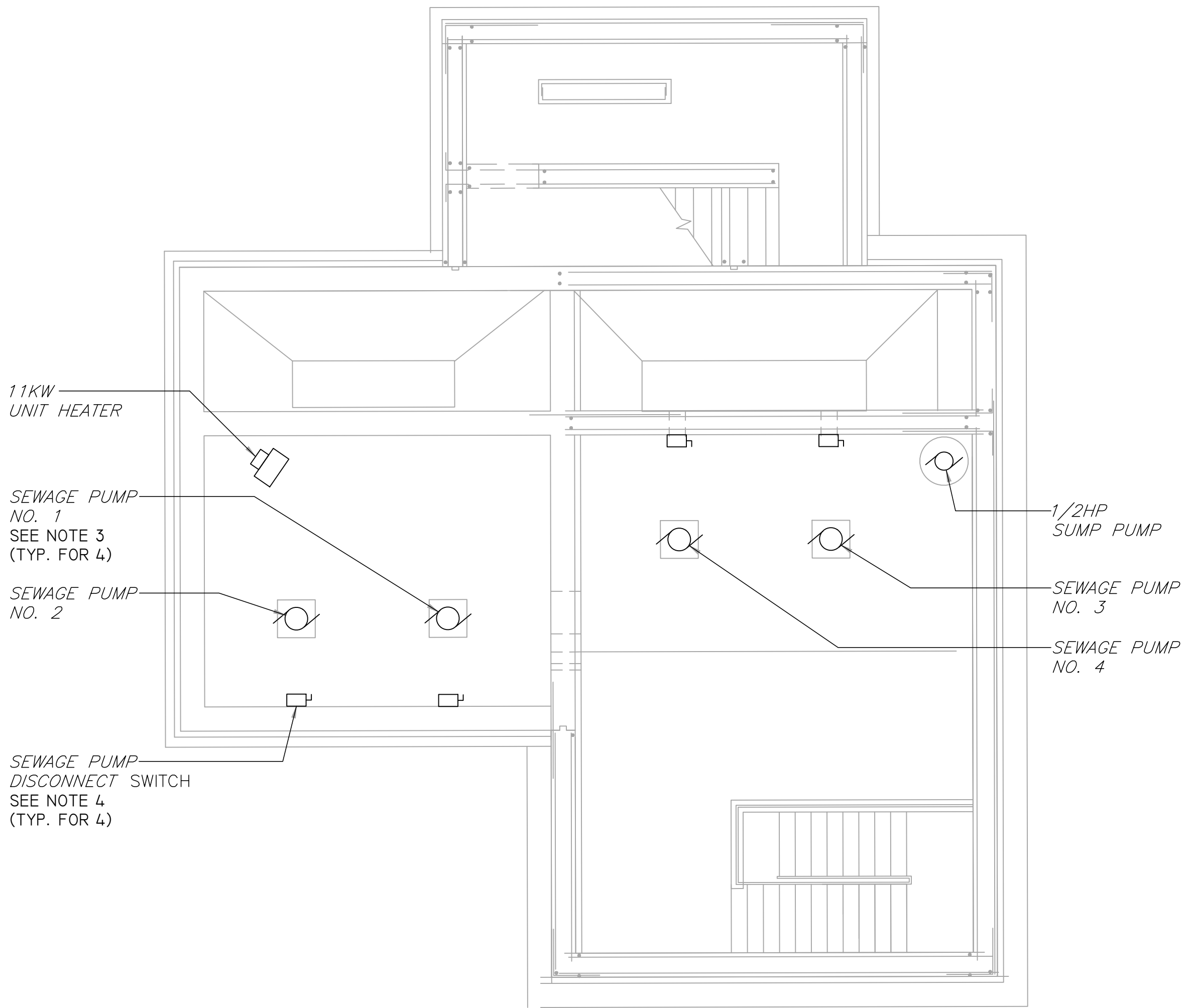
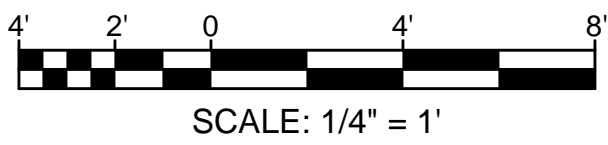
2. REMOVE ALL EXISTING LIGHT FIXTURES, RECEPTACLES AND ALL ASSOCIATED CONDUIT AND WIRING.
3. REMOVE SEWAGE PUMPS, ALL ASSOCIATED ELECTRICAL EQUIPMENT, CONDUIT AND WIRING BACK TO THEIR SOURCE.

4. REMOVE SEWAGE PUMP DISCONNECT SWITCHES AND ALL ASSOCIATED CONDUIT AND WIRING BACK TO THEIR SOURCE.
5. REMOVE EMERGENCY GENERATOR AND ALL ASSOCIATED CONDUIT AND WIRING BACK TO THEIR SOURCE.

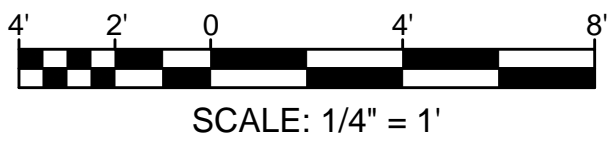
6. EXISTING LIGHTING, SWITCHES, RECEPTACLES AND CONDUIT ARE TO REMAIN IN THIS AREA.



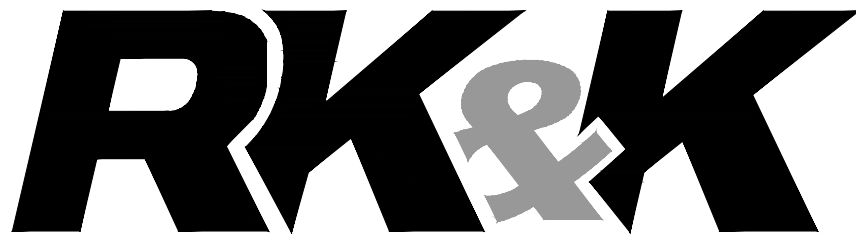
PUMP STATION - MAIN FLOOR  
ELECTRICAL DEMOLITION PLAN



PUMP STATION - DRY WELL  
ELECTRICAL DEMOLITION PLAN



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OAK RIDGE  
PUMP STATION  
UPGRADES

PUMP STATION  
ELECTRICAL  
DEMOLITION PLANS

SHEET

NO...21...

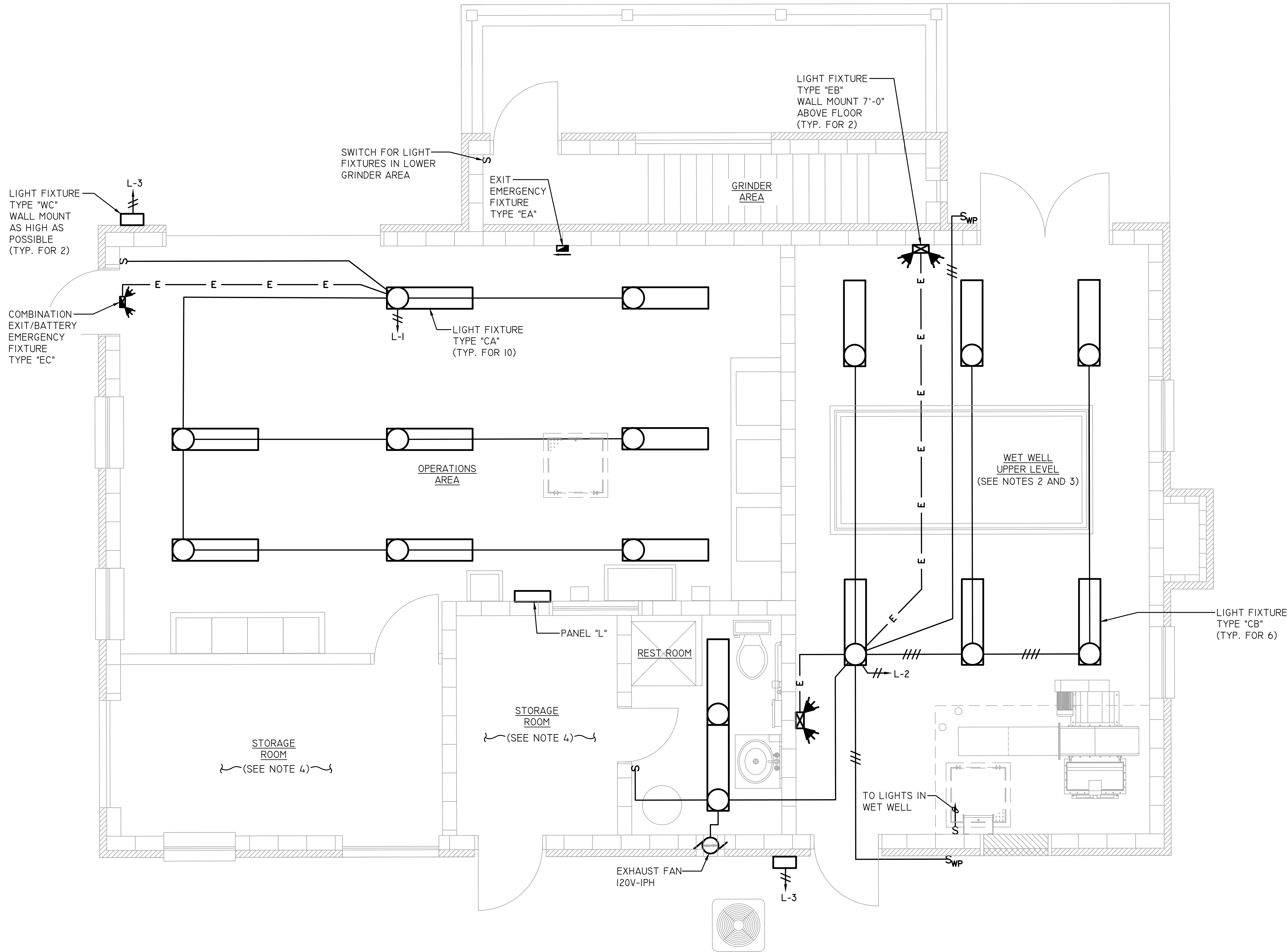
OF...36...

DRAWING

NO...E-3...



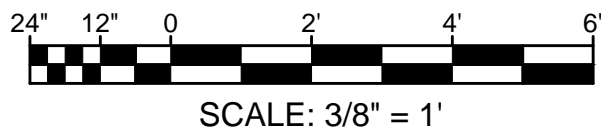
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NOTES

1. COORDINATE LOCATION OF LIGHT FIXTURES WITH PROCESS PIPING AND HVAC DUCT WORK TO AVOID INTERFERENCES.
2. ALL EQUIPMENT AND WIRING IN THE GRINDER AREA AND WET WELL UPPER LEVEL SHALL BE RATED FOR A CLASS I, DIVISION I GROUP D ATMOSPHERE. PROVIDE SEAL-OFF FITTINGS AS REQUIRED BY THE NEC.
3. ALL CONDUITS IN THE WET WELL UPPER LEVEL SHALL BE PVC COATED GALVANIZED STEEL.
4. RECONNECT EXISTING LIGHTING TO A 20A-IP CIRCUIT BREAKER IN PANEL "L". CIRCUIT NO. 28

PUMP STATION - MAIN FLOOR  
LEVEL LIGHTING PLAN



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OAK RIDGE  
PUMP STATION  
UPGRADES

PUMP STATION  
MAIN FLOOR  
LIGHTING PLAN

SHEET

NO. 22

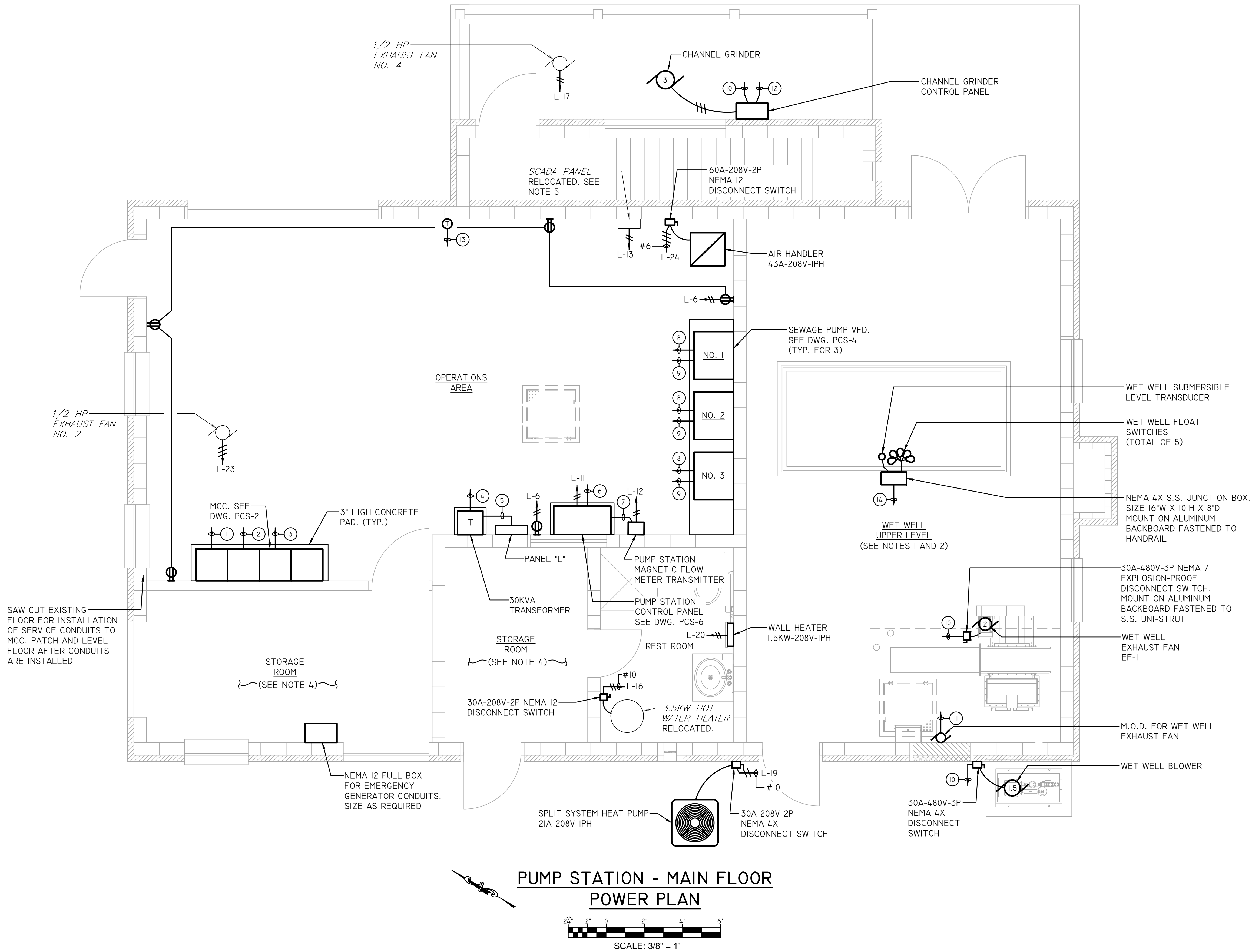
OF 36

DRAWING

NO. E-4



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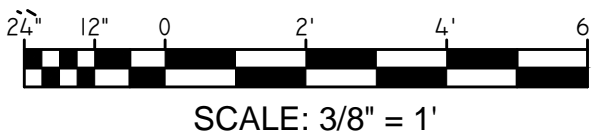
NOTES

1. ALL EQUIPMENT AND WIRING IN THE WET WELL SHALL BE RATED FOR A CLASS I, DIVISION I GROUP D ATMOSPHERE. PROVIDE SEAL-OFF FITTINGS AS REQUIRED BY THE NEC.
2. ALL CONDUIT IN THE WET WELL UPPER LEVEL SHALL BE PVC COATED GALVANIZED RIGID STEEL.
3. MOUNT RECEPTACLES AT 36" A.F.F.
4. RECONNECT EXISTING RECEPTACLES IN THIS AREA TO PANEL "L". CIRCUIT NO. 29
5. RECONNECT EXISTING ANTENNA CABLE TO EXISTING SCADA PANEL. EXTEND CABLE AS REQUIRED.

WIRING LEGEND

- ① 2 SETS OF 4#350MCM, #3/0 GRD.-4°C AND ONE (1) SPARE 4°C TO PAD MOUNTED POWER COMPANY TRANSFORMER
- ② 14#14-½°C TO PUMP STATION CONTROL PANEL (24VDC)
- ③ 4#14-3/4°C TO PUMP STATION CONTROL PANEL (120VAC)
- ④ 3#8, #10 GRD.-1°C TO MCC
- ⑤ 4#3, #8 GRD.-½°C
- ⑥ 20#14-½°C TO EXISTING SCADA PANEL
- ⑦ 1 PR. #18 SHLD.-3/4°C
- ⑧ 3#3, #8 GRD.-½°C TO MCC
- ⑨ 12#14 AND (2) 1 PR. #18 SHLD.-½°C TO PUMP STATION CONTROL PANEL (24VDC)
- ⑩ 3#12-3/4°C TO MCC
- ⑪ 2#14-3/4°C TO MCC
- ⑫ 6#14-3/4°C TO PUMP STATION CONTROL PANEL (24VDC)
- ⑬ 2#14-3/4°C TO AIR HANDLER
- ⑭ 10#14 AND 1 PR. #18 SHLD.-½°C TO PUMP STATION CONTROL PANEL (INTRINSICALLY SAFE)

PUMP STATION - MAIN FLOOR  
POWER PLAN



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OAK RIDGE  
PUMP STATION  
UPGRADES

PUMP STATION  
MAIN FLOOR  
POWER PLAN

SHEET

NO. **23**...

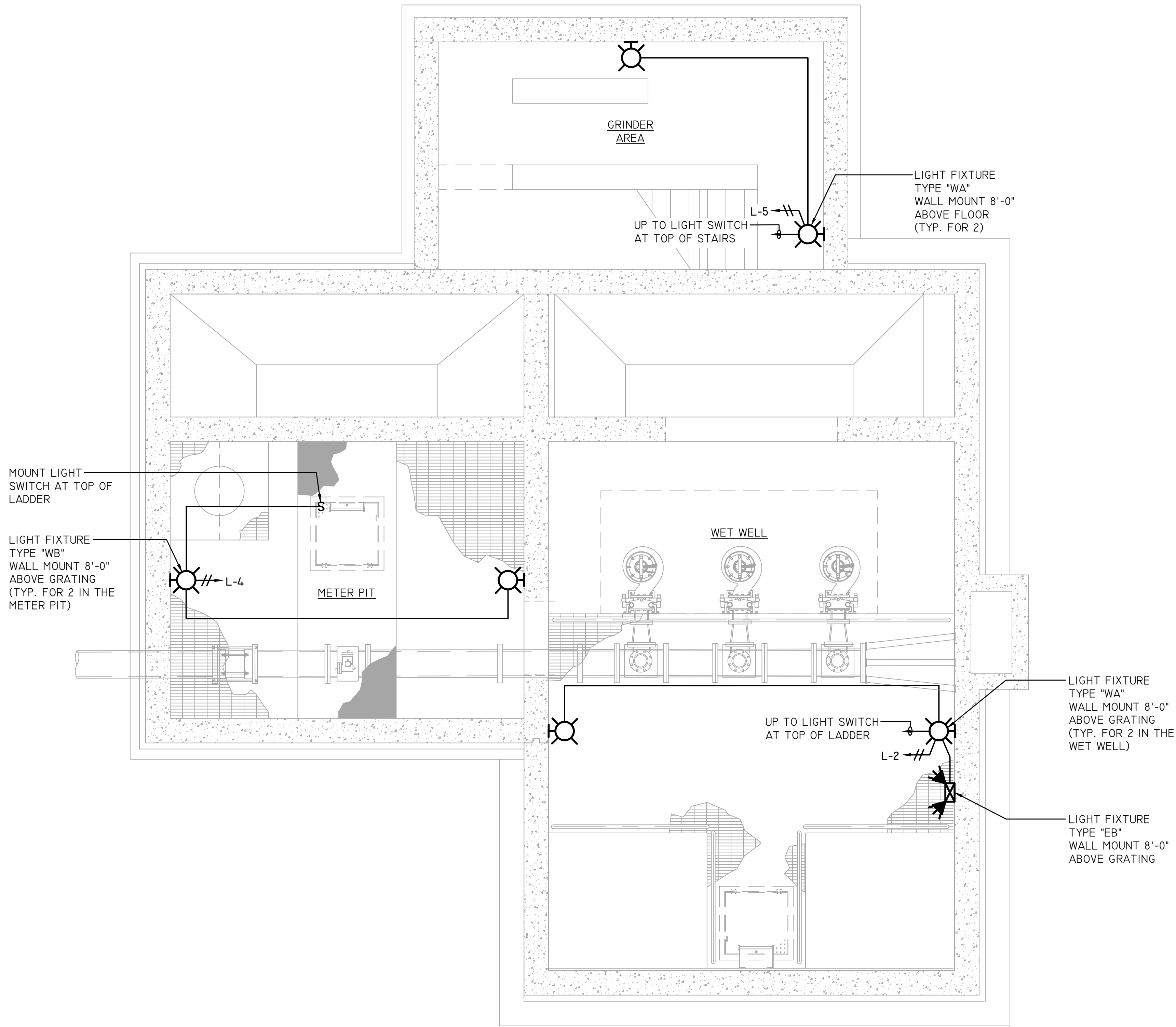
OF...**36**...

DRAWING

NO. **E-5**...



W:\Projects\2017\17220\_WashonCall\17220.000\_Oak\_Ridge\_PSA\ACAD\480V - Drawings\110% Submission\E-6 WET WELL LIGHTING.DWG



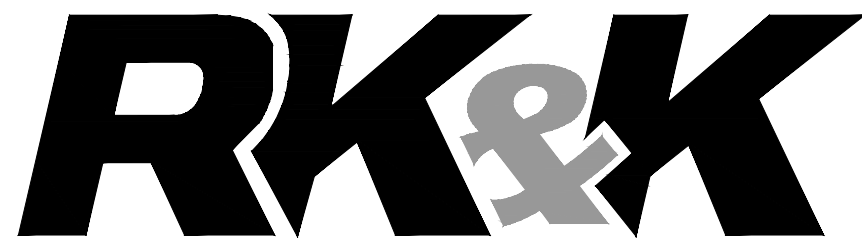
NOTES

1. ALL EQUIPMENT AND WIRING IN THE WET WELL AND GRINDER AREA SHALL BE RATED FOR A CLASS I, DIVISION I, GROUP D ATMOSPHERE. PROVIDE SEAL-OFF FITTINGS AS REQUIRED BY THE NEC.
2. ALL EQUIPMENT AND WIRING IN THE METER PIT SHALL BE RATED FOR A CLASS I, DIVISION 2 ATMOSPHERE. PROVIDE SEAL-OFF FITTINGS AS REQUIRED BY THE NEC.
3. ALL CONDUIT IN THE WET WELL, METER PIT AND GRINDER AREA SHALL BE PVC COATED GALVANIZED RIGID STEEL.

**WET WELL / METER PIT  
LIGHTING PLAN**

24" 12" 0 2' 4' 6'

SCALE: 3/8" = 1'



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OAK RIDGE  
PUMP STATION  
UPGRADES

WET WELL / METER PIT  
LIGHTING PLAN

SHEET

NO...24...

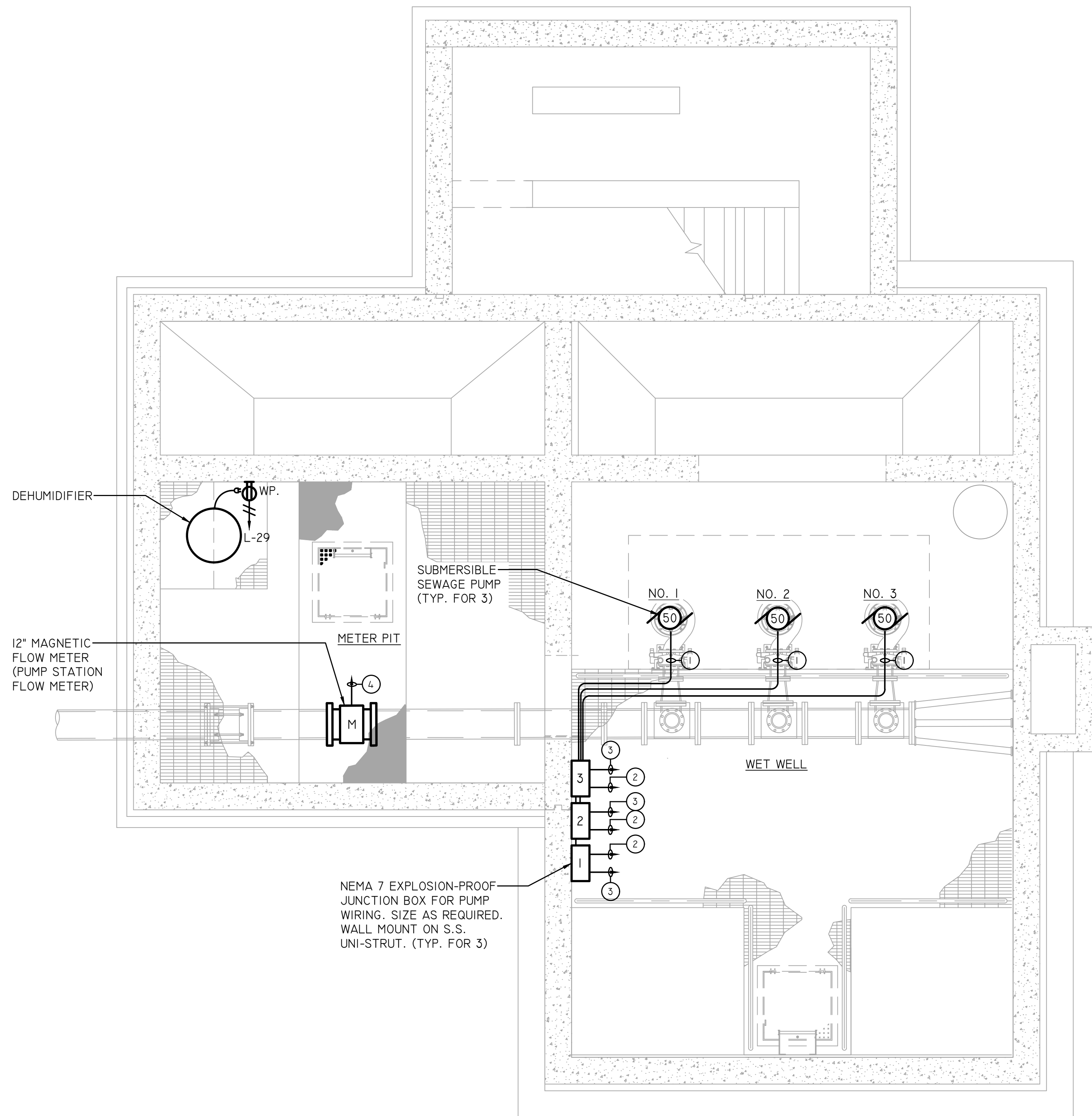
OF...36...

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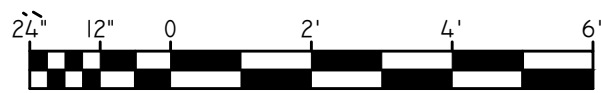
NOTES

1. ALL EQUIPMENT AND WIRING IN THE WET WELL SHALL BE RATED FOR A CLASS I, DIVISION 1 GROUP D ATMOSPHERE. PROVIDE SEAL-OFF FITTINGS AS REQUIRED BY THE NEC.
2. ALL EQUIPMENT AND WIRING IN THE METER PIT SHALL BE RATED FOR A CLASS I, DIVISION 2 ATMOSPHERE. PROVIDE SEAL-OFF FITTINGS AS REQUIRED BY THE NEC.
3. ALL CONDUIT IN THE WET WELL AND METER PIT SHALL BE PVC COATED GALVANIZED RIGID STEEL.

WIRING LEGEND

- ① PUMP POWER AND CONTROL CABLES TO JUNCTION BOX.
- ② 3#3, #8 GRD.-1/2" TO PUMP VFD IN OPERATIONS AREA
- ③ 4#14-3/4" FOR PUMP SENSOR WIRING TO PUMP VFD IN OPERATIONS AREA
- ④ SIGNAL CABLES IN (2) 3/4" TO FLOW METER TRANSMITTER IN OPERATIONS ROOM.

WET WELL / METER PIT  
POWER PLAN



SCALE: 3/8" = 1'



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OAK RIDGE  
PUMP STATION  
UPGRADES

WET WELL / METER PIT  
POWER PLAN

SHEET

NO. 25

OF 36

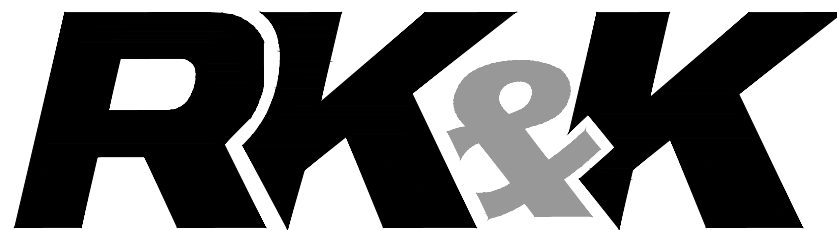
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NO. E-7



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PANELBOARD "L" SCHEDULE													
VOLTAGE: 120/208V-3PH-4W							PANEL TYPE: SURFACE MOUNTED						
MAIN BUS BARS AND LUGS: 100A							MIN. A.I.C. RATING: 30,000						
MAIN BREAKER: 100A-3P							LOCATION: OPERATIONS AREA						
NOTES	HP	WATTS	LOCATION	POLE	AMP/TRIP		AMP/TRIP	POLE	LOCATION	WATTS	HP	NOTES	
LIGHTING		700	OPERATIONS AREA	1	20	1	20	1	WET WELL	500		LIGHTING	
LIGHTING		200	OUTSIDE	1	20	3	20	1	METER PIT	200		LIGHTING	
LIGHTING		200	GRINDER AREA	1	20	5	20	1	OPERATIONS AREA	1000		RECEPTACLES	
SPARE				1	20	7	20	1				SPARE	
JACKET WATER HEATER		1500	GENERATOR	1	20	9	20	1	GENERATOR		10A	BATTERY CHARGER	
PUMP CONTROL PANEL		1000	OPERATIONS AREA	1	20	11	20	1	OPERATIONS AREA	200		MAGNETIC FLOW METER TRANSMITTER	
SCADA PANEL		200	OPERATIONS AREA	1	20	13	20	1				SPARE	
SPARE				1	20	15	30	2	BATHROOM	3,500		HOT WATER HEATER	
EXHAUST FAN NO. 4	1/2		GRINDER AREA	1	20	17							
HEAT PUMP		21A	OPERATIONS AREA	2	30	19	20	2	BATHROOM	1,500		WALL HEATER	
EXHAUST FAN NO. 2	1/2		OPERATIONS AREA	3	20	23	60	2	OPERATIONS AREA	43A		AIR HANDLER	
							28	1	STORAGE ROOMS			STORAGE ROOMS LIGHTING	
DEHUMIDIFIER		500	METER PIT	1	20	29	20	1	STORAGE ROOMS			STORAGE ROOMS RECEPTACLES	
SPARE				1	20	31	20	1				SPARE	
SPARE				1	20	33	20	1				SPARE	
SPARE				1	20	35	20	1				SPARE	
SPARE				1	20	37	20	1				SPARE	
SPARE				1	20	39	20	1				SPARE	
SPARE				1	20	41	20	1				SPARE	



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OAK RIDGE  
PUMP STATION  
UPGRADES

PANEL SCHEDULE

SHEET

NO...26...

OF...36...

DRAWING

NO...E-8...



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ABBREVIATIONS

A	—	AMPS	N	—	NEUTRAL
AC	—	ALTERNATING CURRENT	NO.	—	NUMBER
ALT.	—	ALTERNATE	P	—	POLE
AUX.	—	AUXILIARY	PCS	—	PUMP CONTROL SYSTEM
BLDG.	—	BUILDING	PH	—	PHASE
D	—	DEEP	PLC	—	PROGRAMMABLE LOGIC CONTROLLER
DC	—	DIRECT CURRENT	RAS	—	RETURN ACTIVATED SLUDGE
DISC.	—	DISCONNECT	SEC.	—	SECONDARY
DWG.	—	DRAWING	SHLD.	—	SHIELDED
EXIST.	—	EXISTING	SPD	—	SURGE PROTECTIVE DEVICE
H	—	HIGH	S.S.	—	STAINLESS STEEL
H/O/A	—	HAND/OFF/AUTO	TEMP.	—	TEMPERATURE
HP	—	HORSEPOWER	T-M	—	THERMAL MAGNETIC
I/O	—	INPUT/OUTPUT	TVSS	—	TRANSIENT VOLTAGE SURGE SUPPRESSOR
J-BOX	—	JUNCTION BOX	TYP.	—	TYPICAL
KV	—	KILOVOLT	UPS	—	UNINTERRUPTIBLE POWER SUPPLY
L	—	LOW, LINE	V	—	VOLTS
MA	—	MILLIAMP	VFD	—	VARIABLE FREQUENCY DRIVE
MCC	—	MOTOR CONTROL CENTER	W	—	WIDE, WIRE
MCP	—	MOTOR CIRCUIT PROTECTOR	WAS	—	WASTE ACTIVATED SLUDGE
MS.	—	MOTOR STARTER			

ALLEN-BRADLEY CompactLogix LEGEND

1769-L33ER	—	PROGRAMMABLE CONTROLLER
1769-PA4	—	POWER SUPPLY
1769-IQI6	—	16 POINT 24VDC INPUT MODULE
1769-OB16	—	16 POINT 24VDC OUTPUT MODULE
1769-IF8	—	8 POINT ANALOG INPUT MODULE
1769-OF8C	—	8 POINT ANALOG OUTPUT MODULE

SYMBOLS

	3 POSITION SELECTOR SWITCH (X INDICATES CLOSED POSITION)		PUSH BUTTON - BUTTON COLOR IS INDICATED BY LETTER INSIDE B - BLUE G - GREEN R - RED O - ORANGE W - WHITE Y - YELLOW BLANK - BLACK
	NORMALLY OPEN PUSH BUTTON		ELAPSED TIME METER
	NORMALLY CLOSED PUSH BUTTON		ENGRAVED NAMEPLATE
	NORMALLY OPEN CONTACT		CONTROL PANEL CIRCUIT BREAKER
	NORMALLY CLOSED CONTACT		MOTOR (NUMBER INDICATES HP)
	MOTOR STARTER COIL		SOLENOID VALVE
	CONTACTOR COIL		INTRINSICALLY SAFE RELAY
	CONTROL RELAY		CONTROL TRANSFORMER
	MOTOR THERMAL SWITCH		FUSE
	PRESSURE SWITCH-NORMALLY OPEN		THERMOSTAT
	PRESSURE SWITCH-NORMALLY CLOSED		FLOAT SWITCH
	SELECTOR SWITCH		FLOW SWITCH
	PILOT LIGHT-LENS COLOR IS INDICATED BY LETTER INSIDE A - AMBER B - BLUE G - GREEN R - RED W - WHITE		MOTOR STARTER
	PUMP NO. 1 NAMEPLATE WITH 1/4" MINIMUM TEXT		THERMAL OVERLOAD
	LEGEND PLATE (TYP.)		CIRCUIT BREAKER
	PILOT DEVICE (TYP.)		DISCONNECT SWITCH

TYPICAL PILOT DEVICE LAYOUT

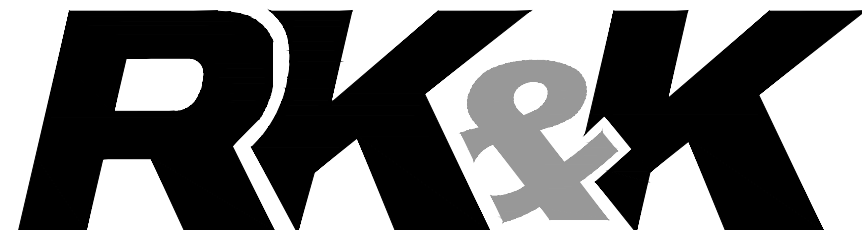
LEGEND

	TERMINAL IN MCC FOR FIELD WIRING
	TERMINAL IN VFD FOR FIELD WIRING
	TERMINAL IN PLC PANEL FOR FIELD WIRING
	TERMINAL IN CONTROL PANEL FOR FIELD WIRING
	TERMINAL IN VALVE ACTUATOR FOR FIELD WIRING
	INDICATES WIRING IN CONTROL PANEL
	INDICATES FIELD WIRING
	GROUND
	CONNECTING WIRES

NOTES

- COORDINATE SIZE OF ALL BREAKERS, MOTOR STARTERS AND VFDs WITH ACTUAL HORSEPOWERS OF EQUIPMENT BEING FURNISHED.
- ALL WIRING SHALL CONFIRM TO THE FOLLOWING COLOR CODE:

120 VOLT, 1 PHASE:	BLACK - PHASE WIRE WHITE - NEUTRAL WIRE
CONTROL WIRES:	120VAC - RED 24VDC - BLUE EXTERNAL POWER SOURCE - YELLOW
INTRINSICALLY SAFE WIRES:	PURPLE
GROUND WIRES:	GREEN



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OAK RIDGE  
PUMP STATION  
UPGRADES

PCS ABBREVIATIONS,  
SYMBOLS AND LEGENDS

SHEET

NO...27...

OF...36...

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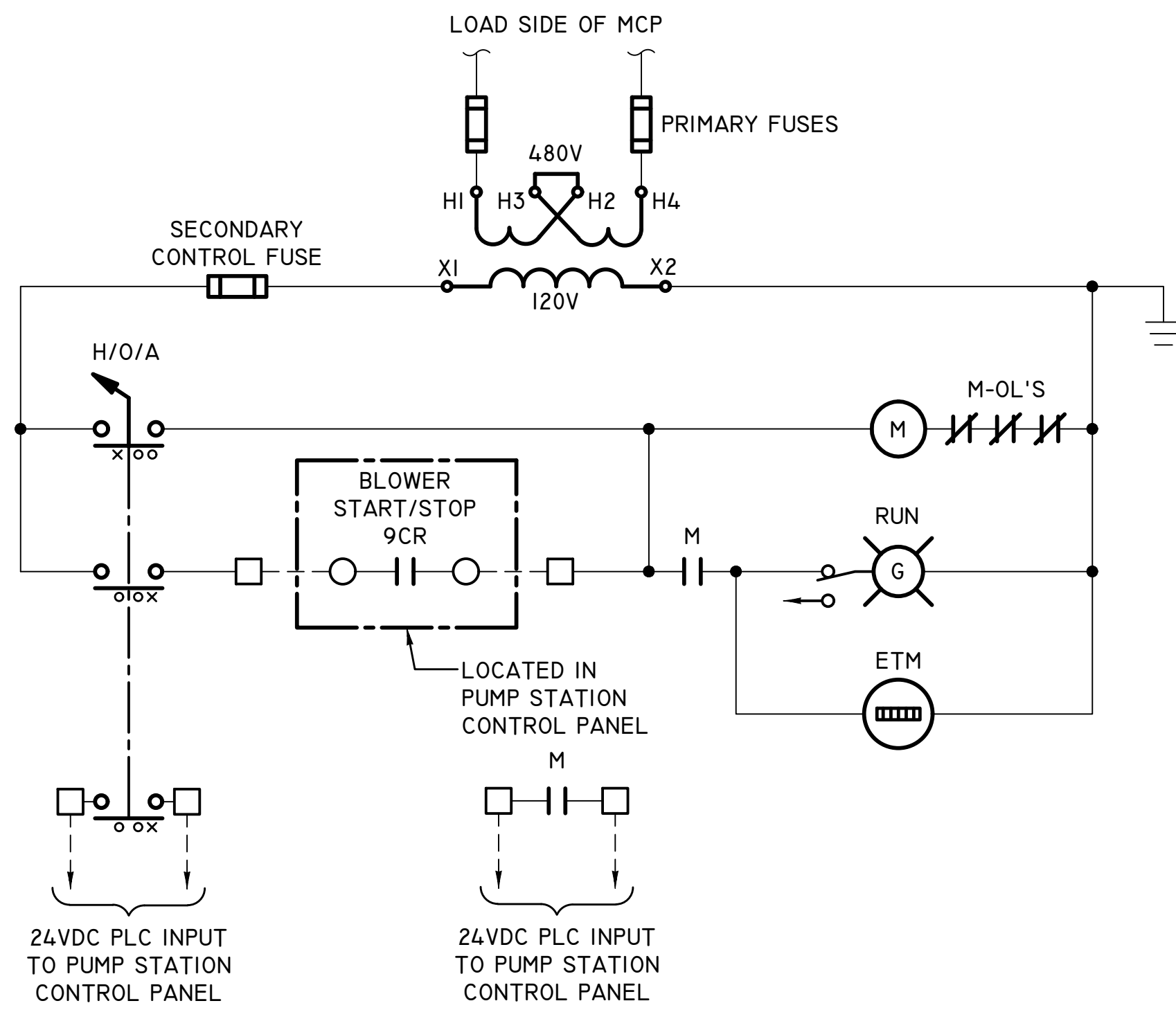
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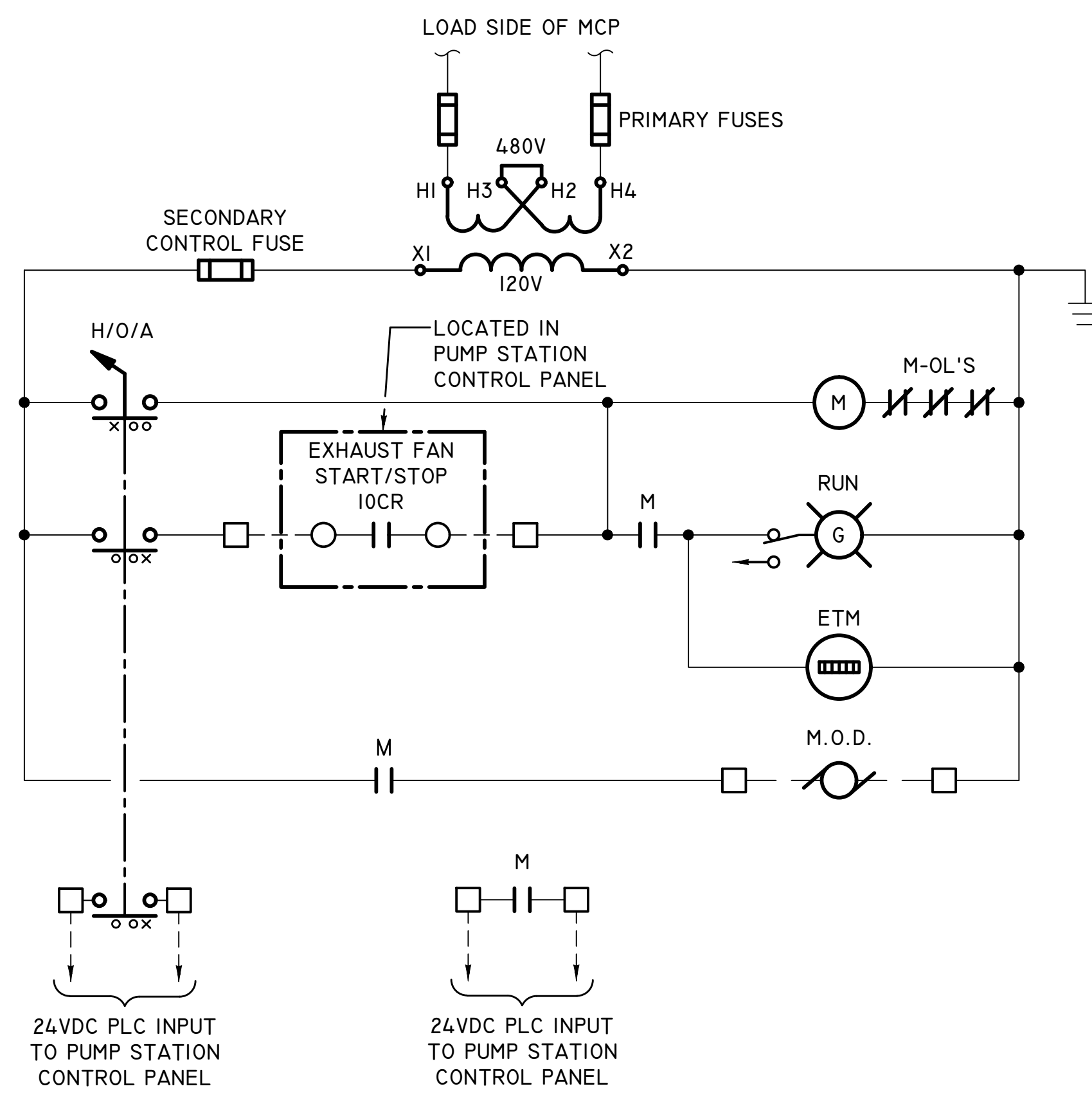




W:\Projects\2017\17220\_WashonCall\17220.000\_Oak\_Ridge\_PSV\ACAD\480V - Drawings\110% Submission\PCS-3 WIRING DIAGRAMS.dwg



WET WELL BLOWER  
CONTROL WIRING DIAGRAM



WET WELL EXHAUST FAN EF-1  
CONTROL WIRING DIAGRAM



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PUMP STATION  
UPGRADES

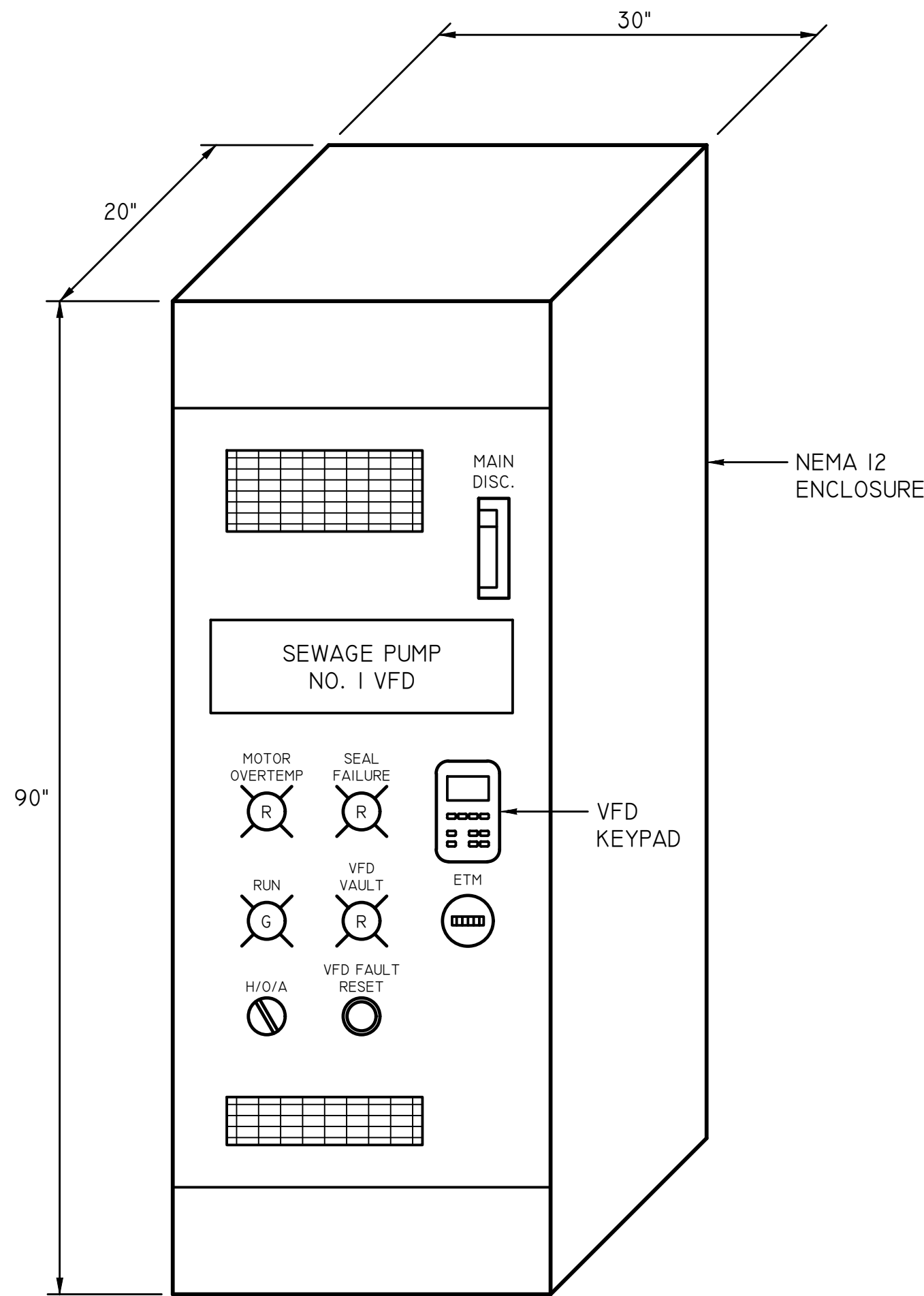
MCC CONTROL  
WIRING DIAGRAMS

SHEET	DRAWING
NO...29...	
OF...36...	NO...PCS-3...

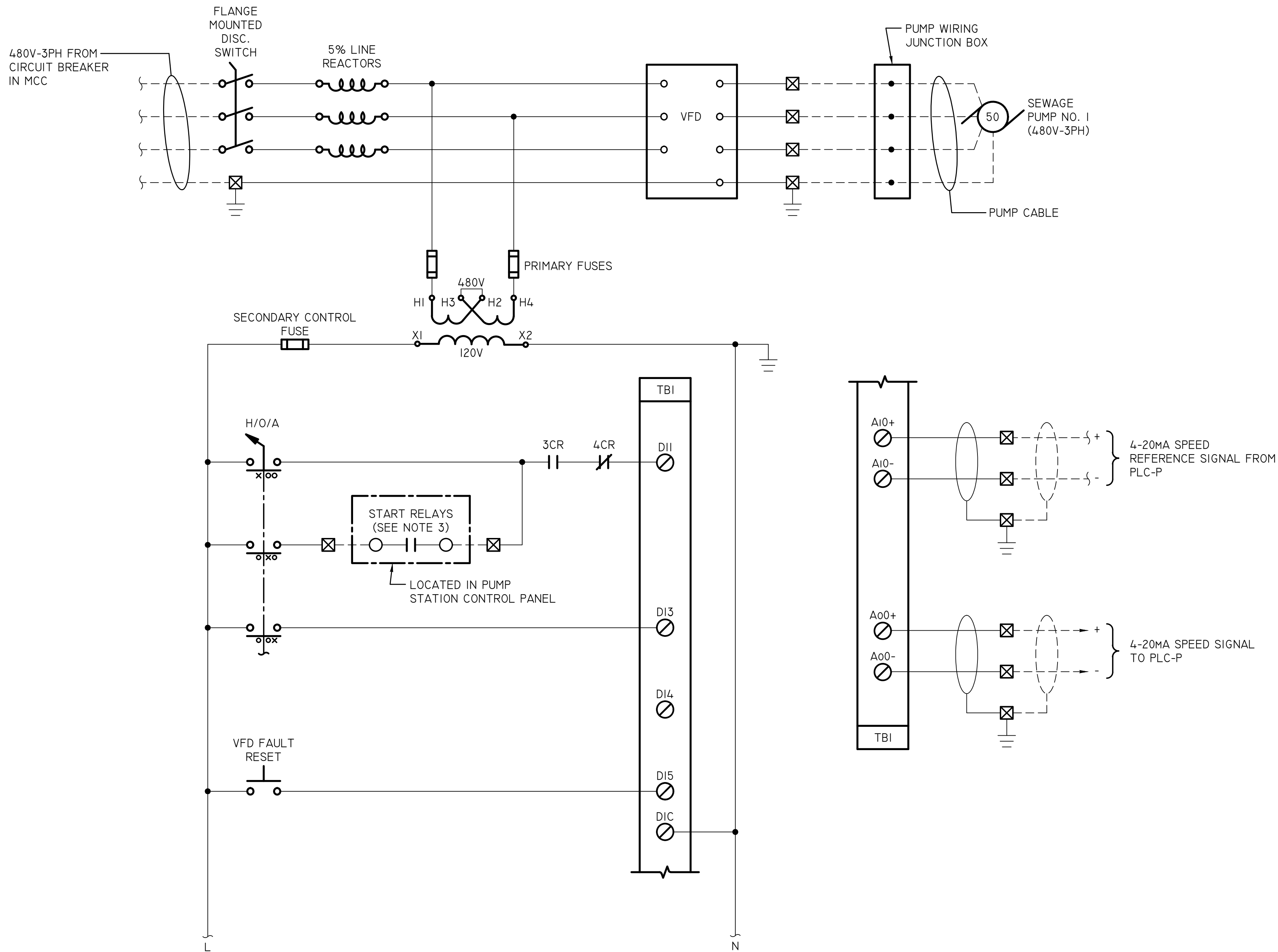


NOTES

1. THE VFD ELEVATION AND WIRING DIAGRAM FOR SEWAGE PUMP NO. 1 IS TYPICAL FOR THE FOLLOWING THREE (3) SEWAGE PUMP VFDs:
- SEWAGE PUMP NO. 1 VFD  
SEWAGE PUMP NO. 2 VFD  
SEWAGE PUMP NO. 3 VFD
2. COORDINATE VFD CONTROL WIRING WITH THE VFD MANUFACTURER. REFER TO THE DESCRIPTION OF OPERATION IN THE SPECS FOR THE AUTO START/STOP AND SPEED CONTROL SEQUENCE.
3. THE PUMP START RELAY CONTACTS ARE AS FOLLOWS:
- SEWAGE PUMP NO. 1 - 3CR AND 6CR  
SEWAGE PUMP NO. 2 - 4CR AND 7CR  
SEWAGE PUMP NO. 3 - 5CR AND 8CR

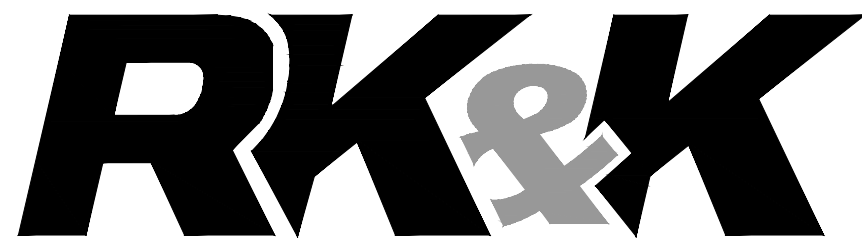


SEWAGE PUMP  
VFD ELEVATION



SEWAGE PUMP  
VFD WIRING DIAGRAM

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OAK RIDGE  
PUMP STATION  
UPGRADES

SEWAGE PUMP VFDs

SHEET

NO...30...

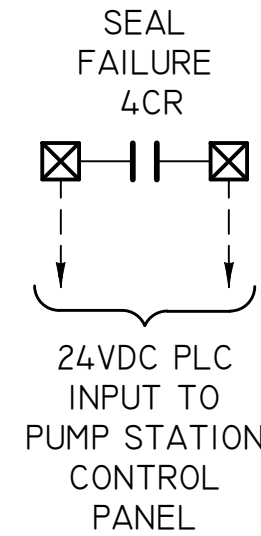
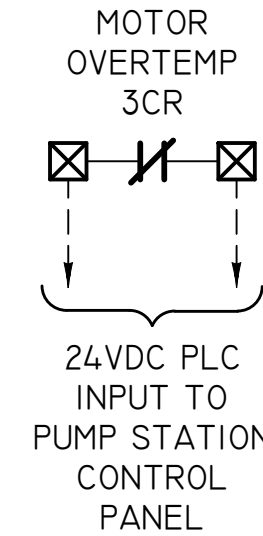
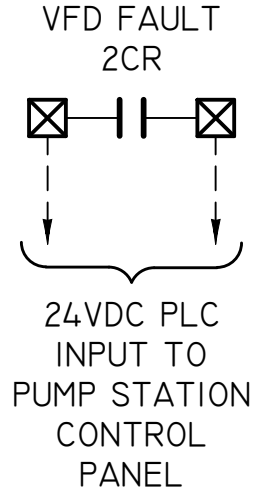
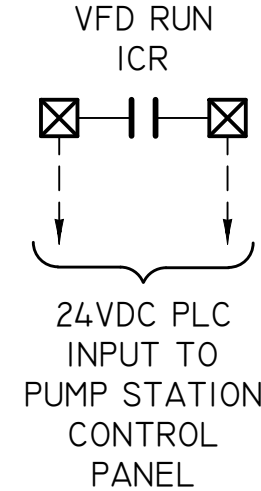
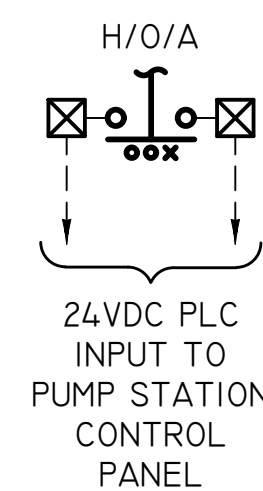
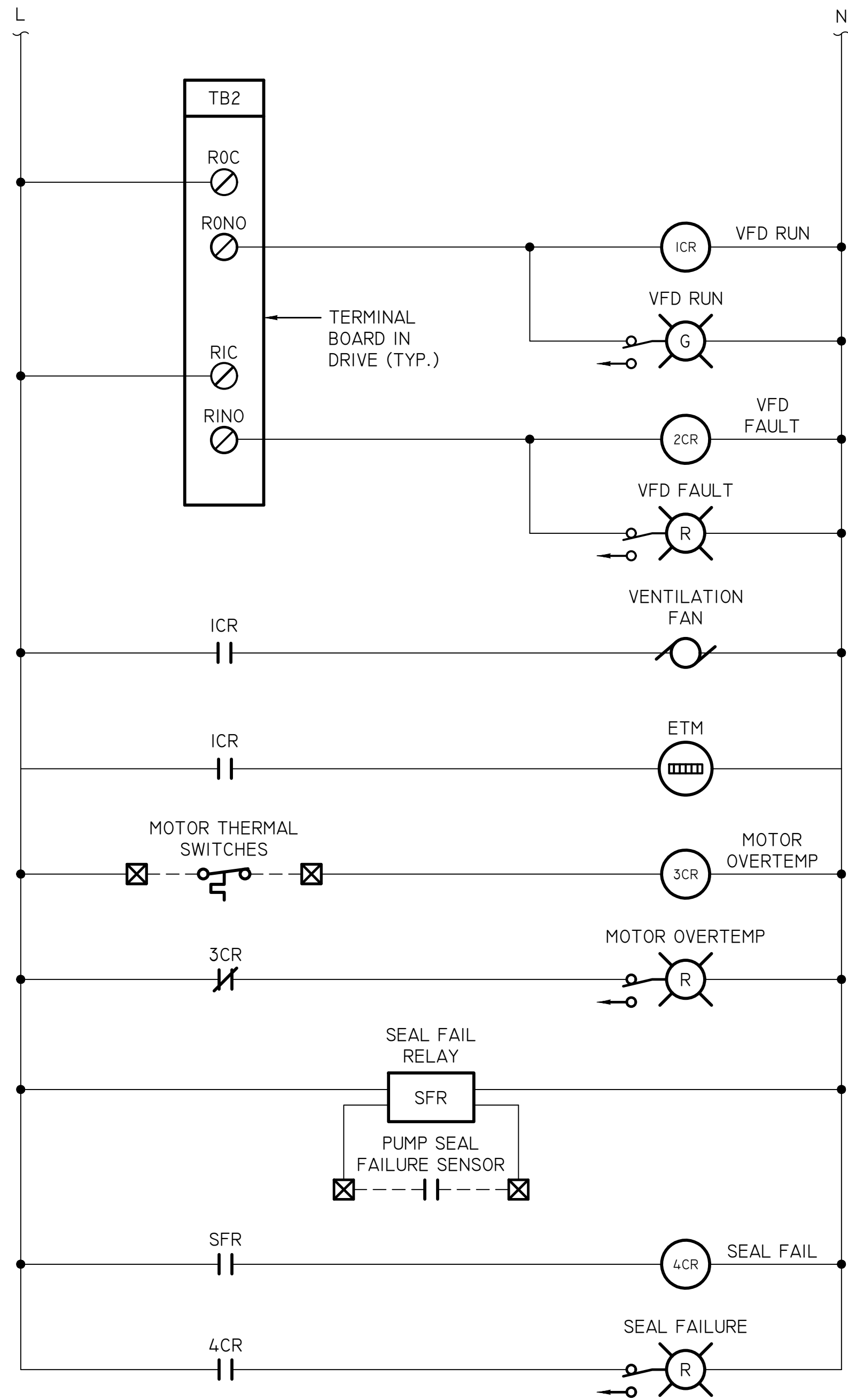
OF...36...

DRAWING

NO...PCS-4...



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## NOTES

- COORDINATE INSTALLATION OF SEAL FAILURE RELAY WITH PUMP MANUFACTURER.



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PUMP STATION  
UPGRADES

SEWAGE PUMP VFDS

SHEET

NO...31...

OF...36...

DRAWING

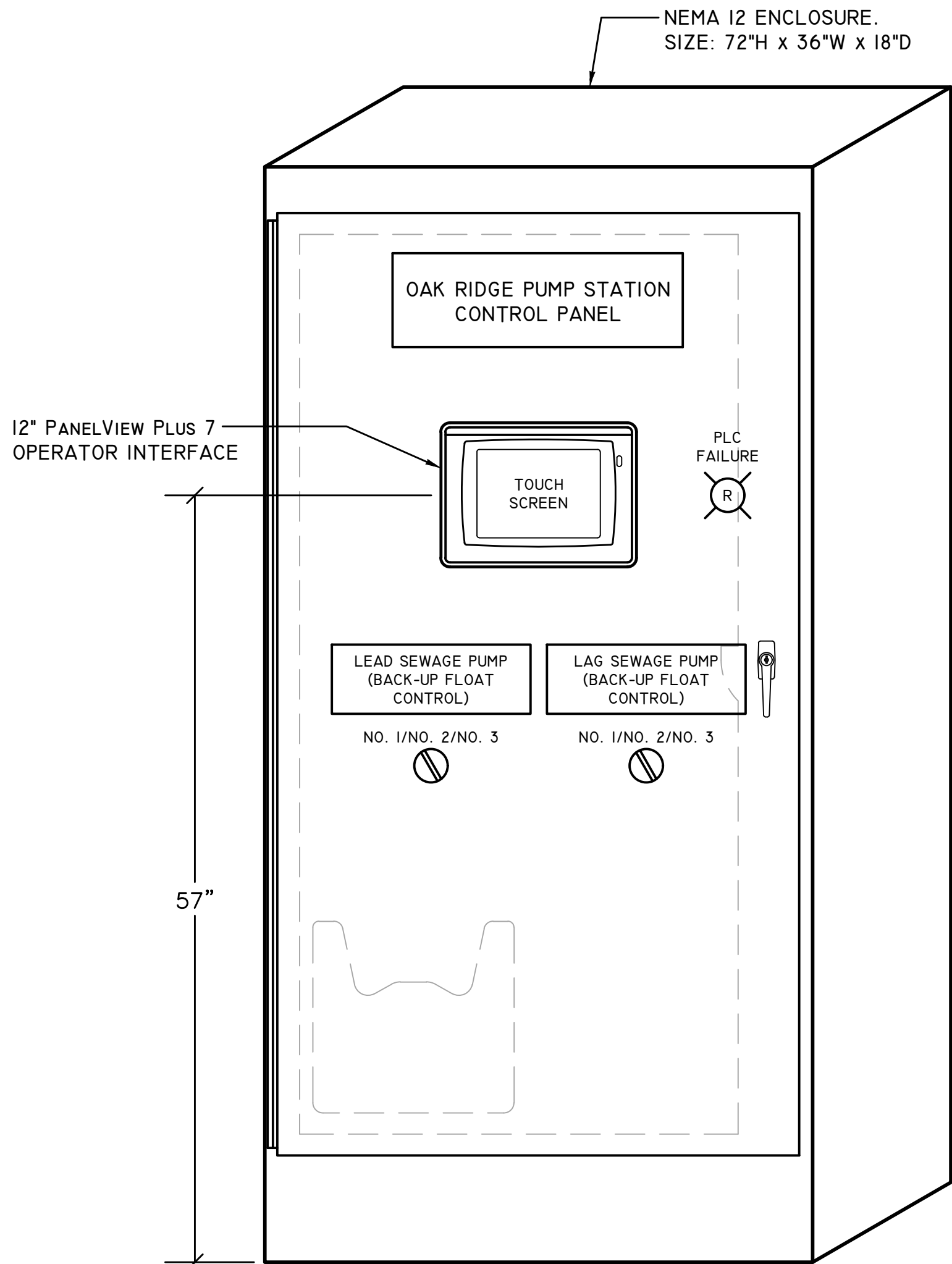
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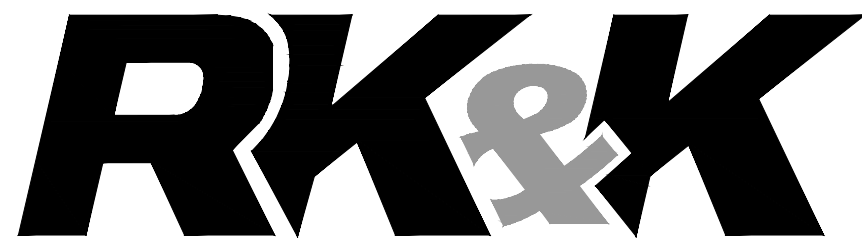
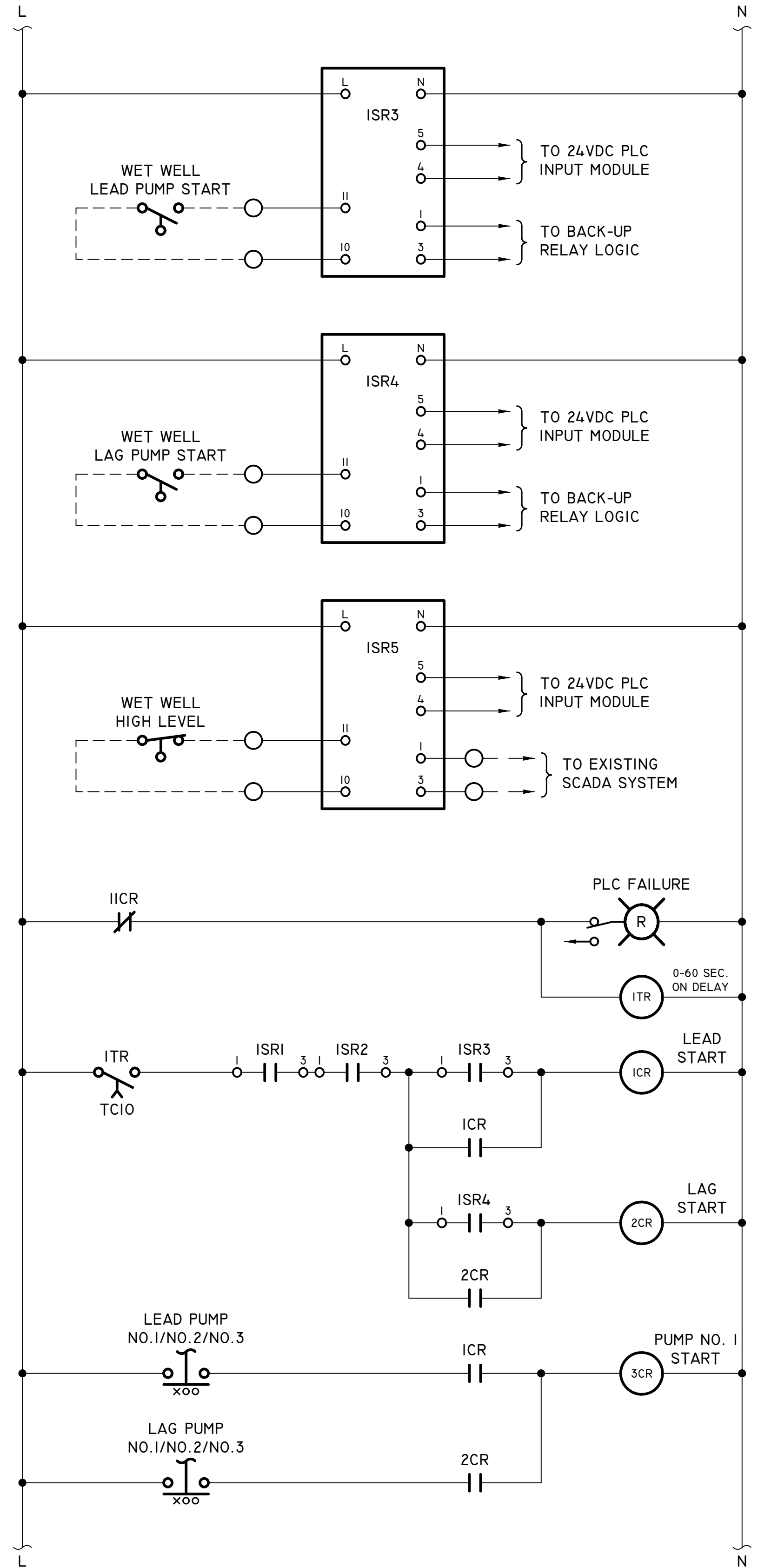
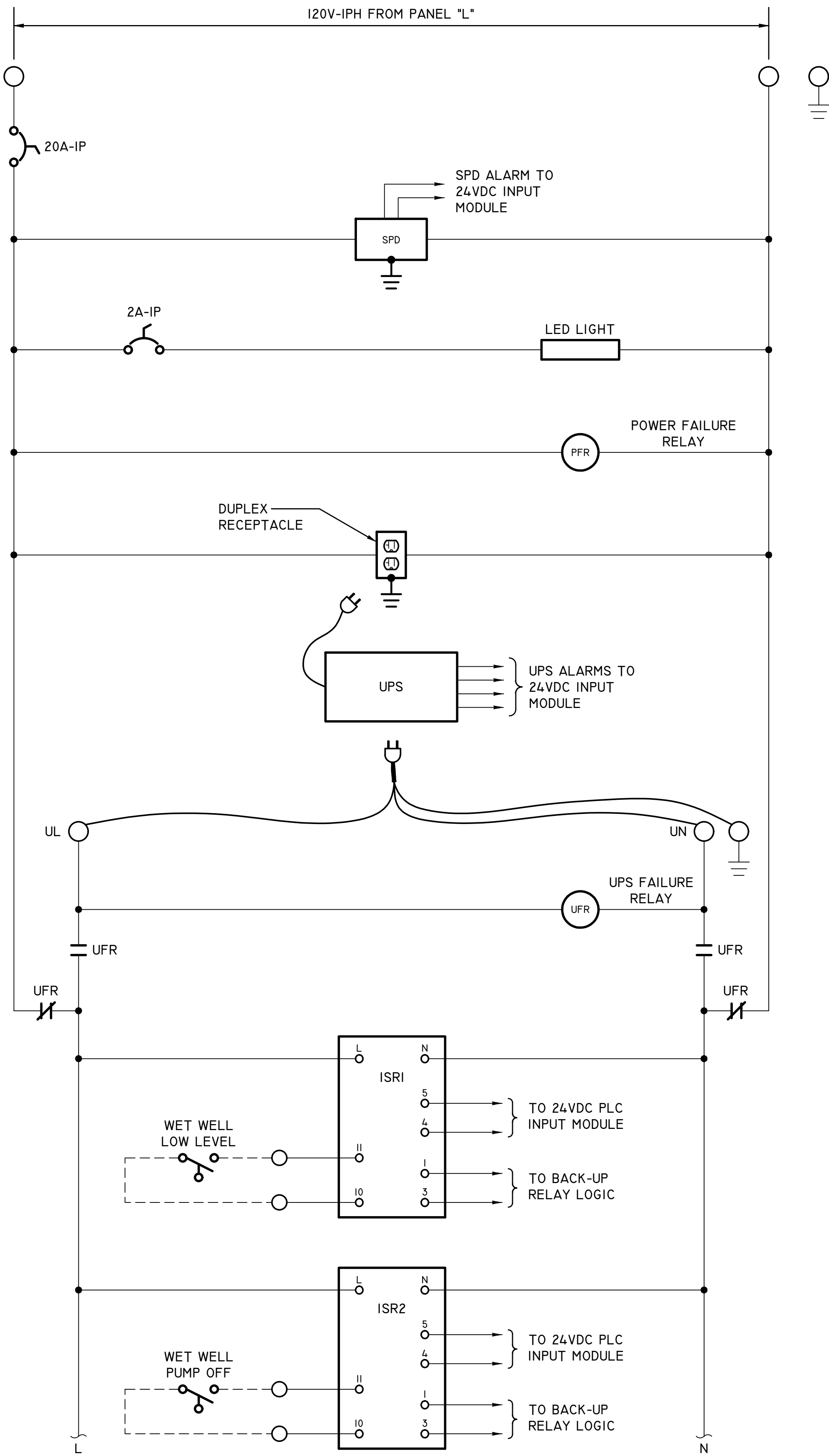
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## NOTES

- CONTROL PANEL NAMEPLATE SHALL BE ENGRAVED WITH 1" HIGH LETTERS.



PUMP STATION CONTROL PANEL  
PANEL LAYOUT



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PUMP STATION  
UPGRADES

PUMP STATION  
CONTROL PANEL

SHEET

NO...32...

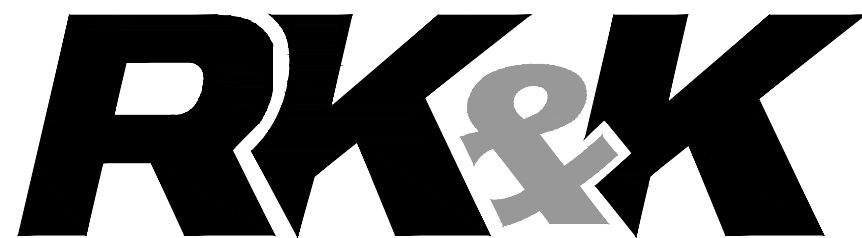
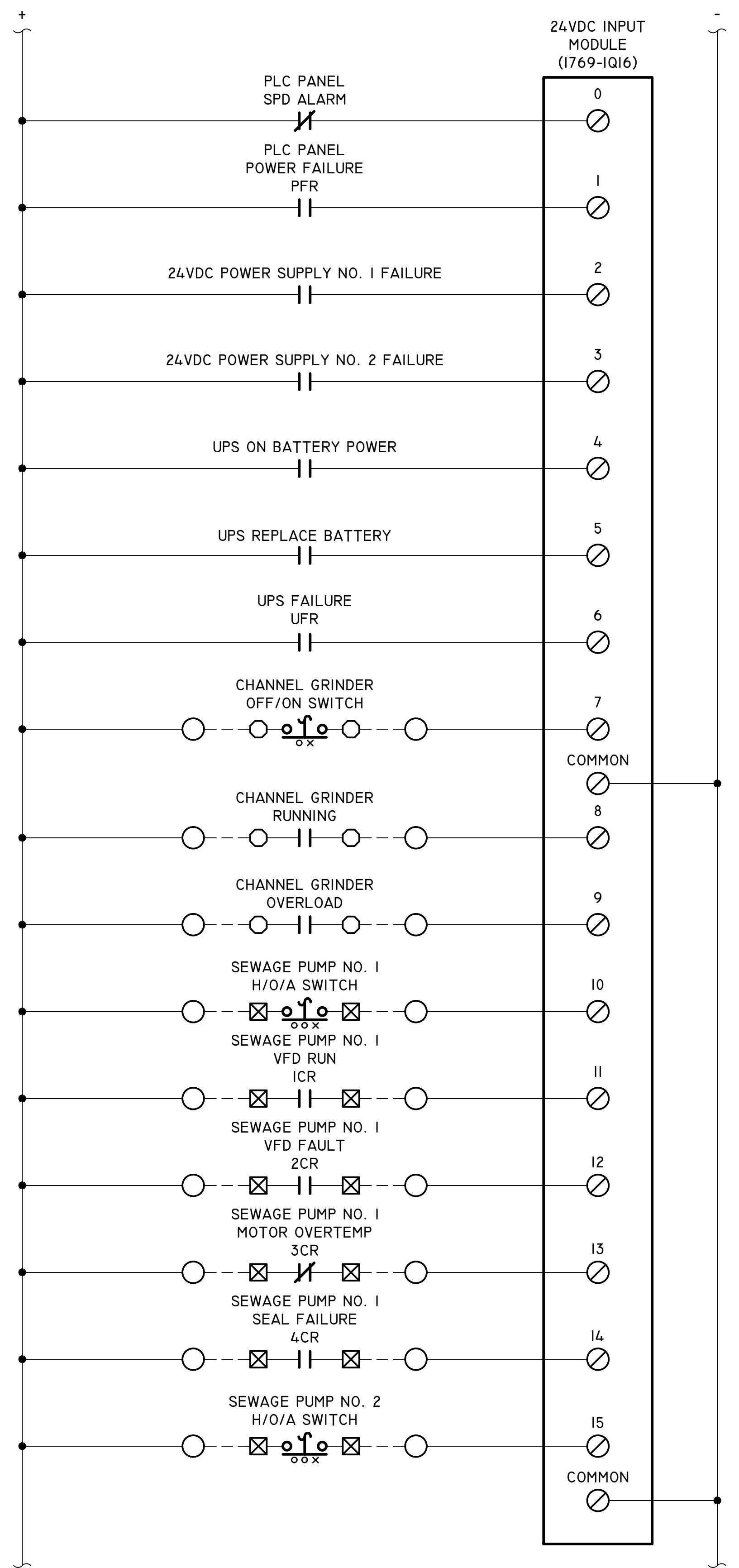
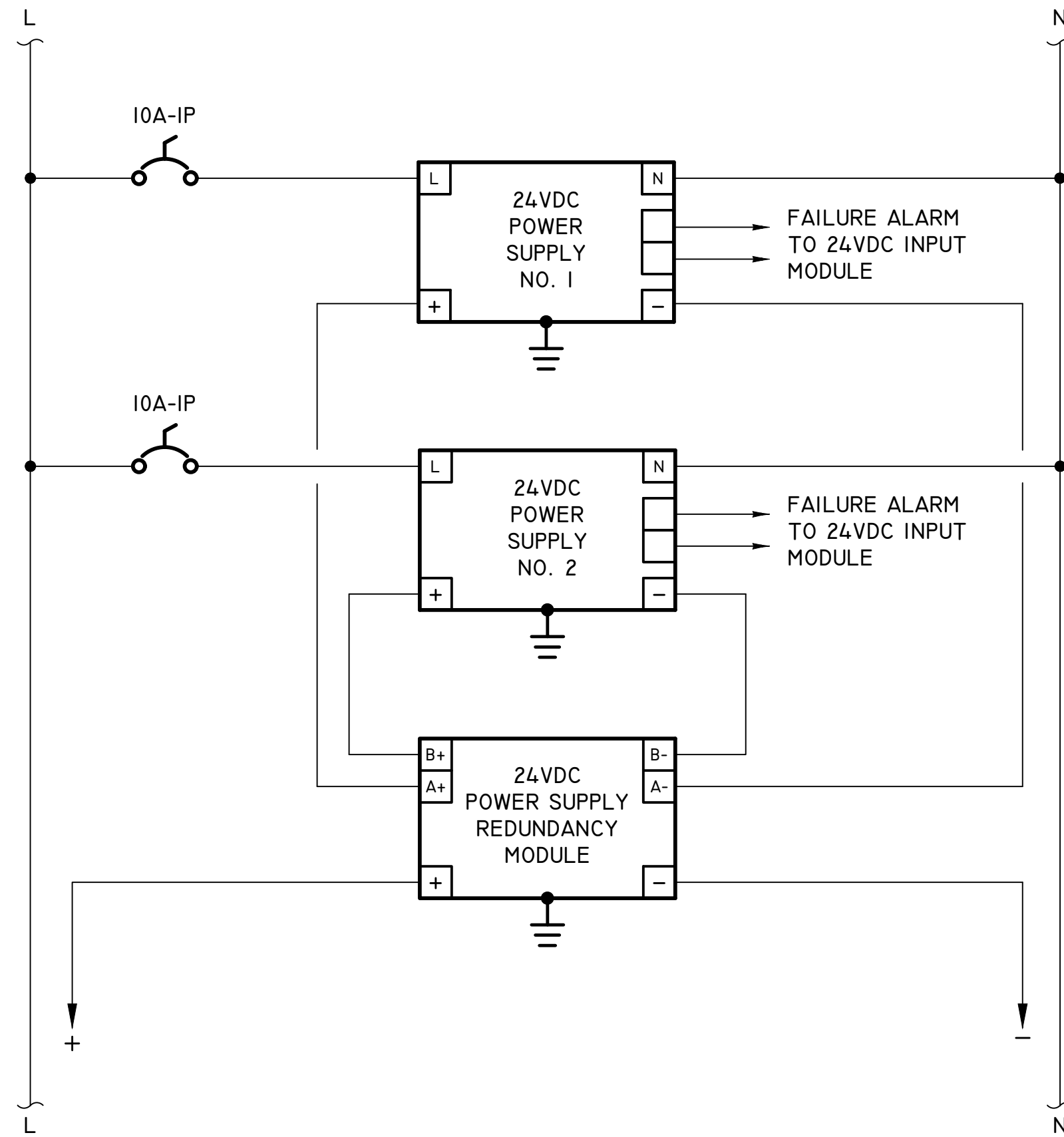
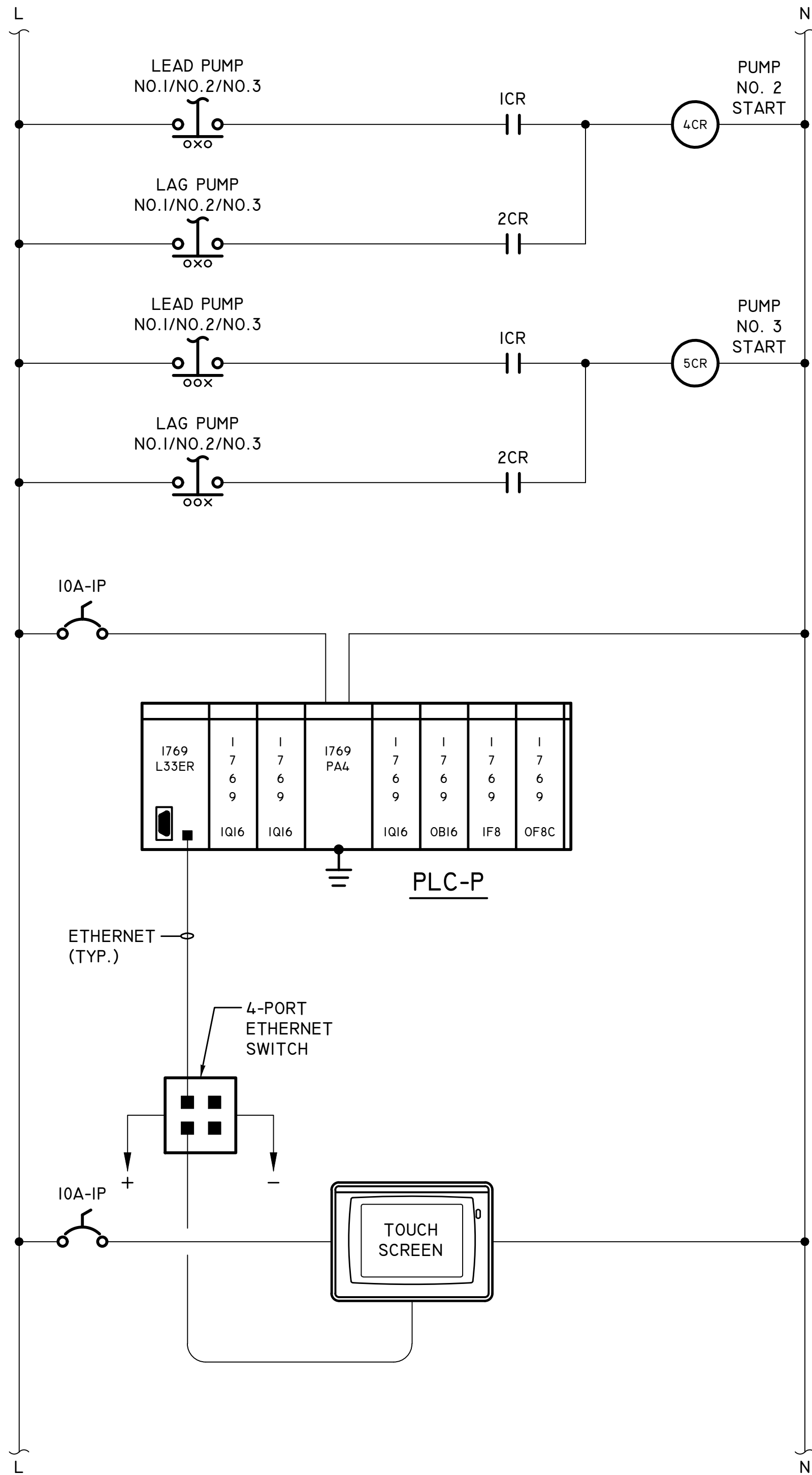
OF...36...

DRAWING

NO. PCS-6



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OAK RIDGE  
PUMP STATION  
UPGRADES

PUMP STATION  
CONTROL PANEL  
WIRING DIAGRAM

SHEET

NO...33...

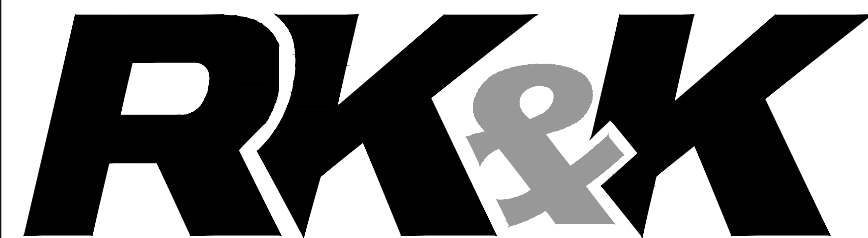
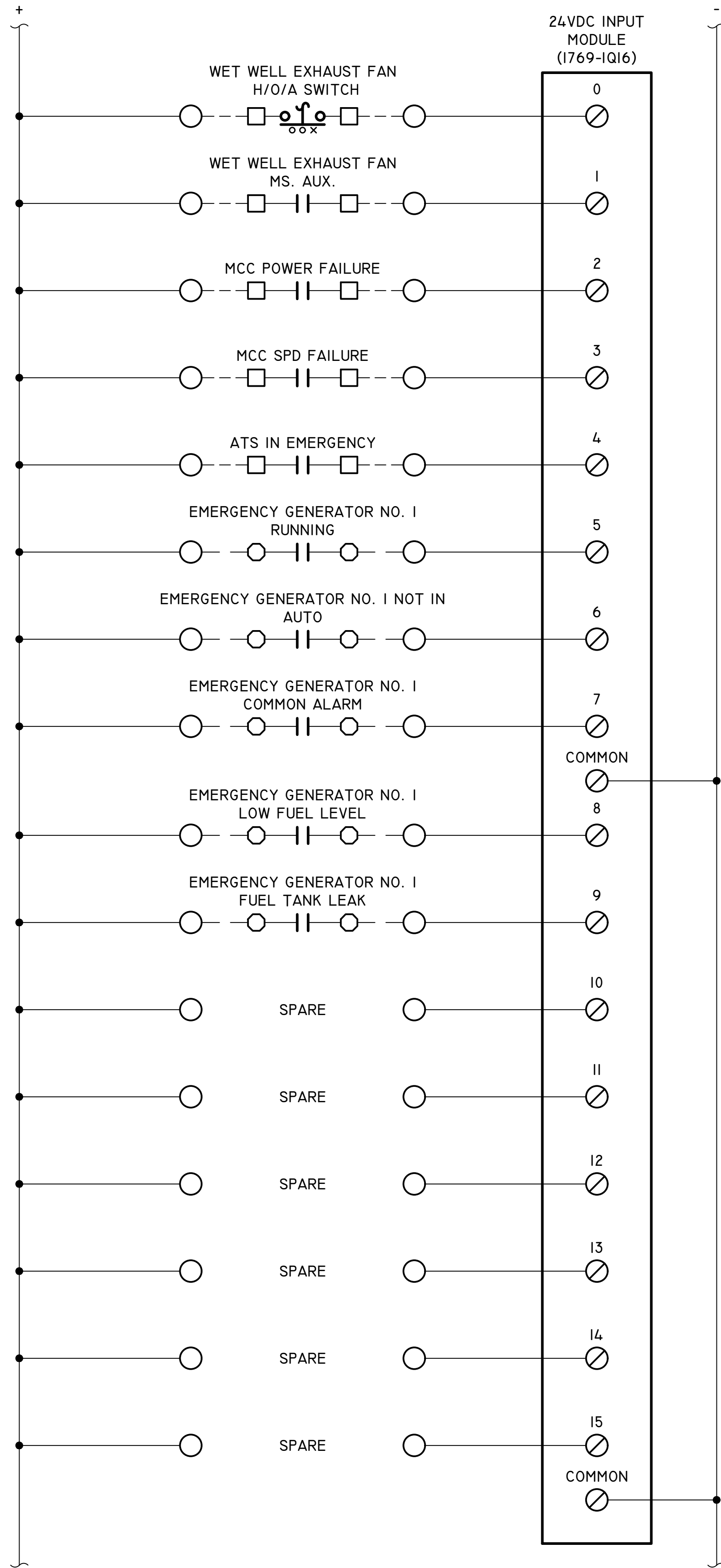
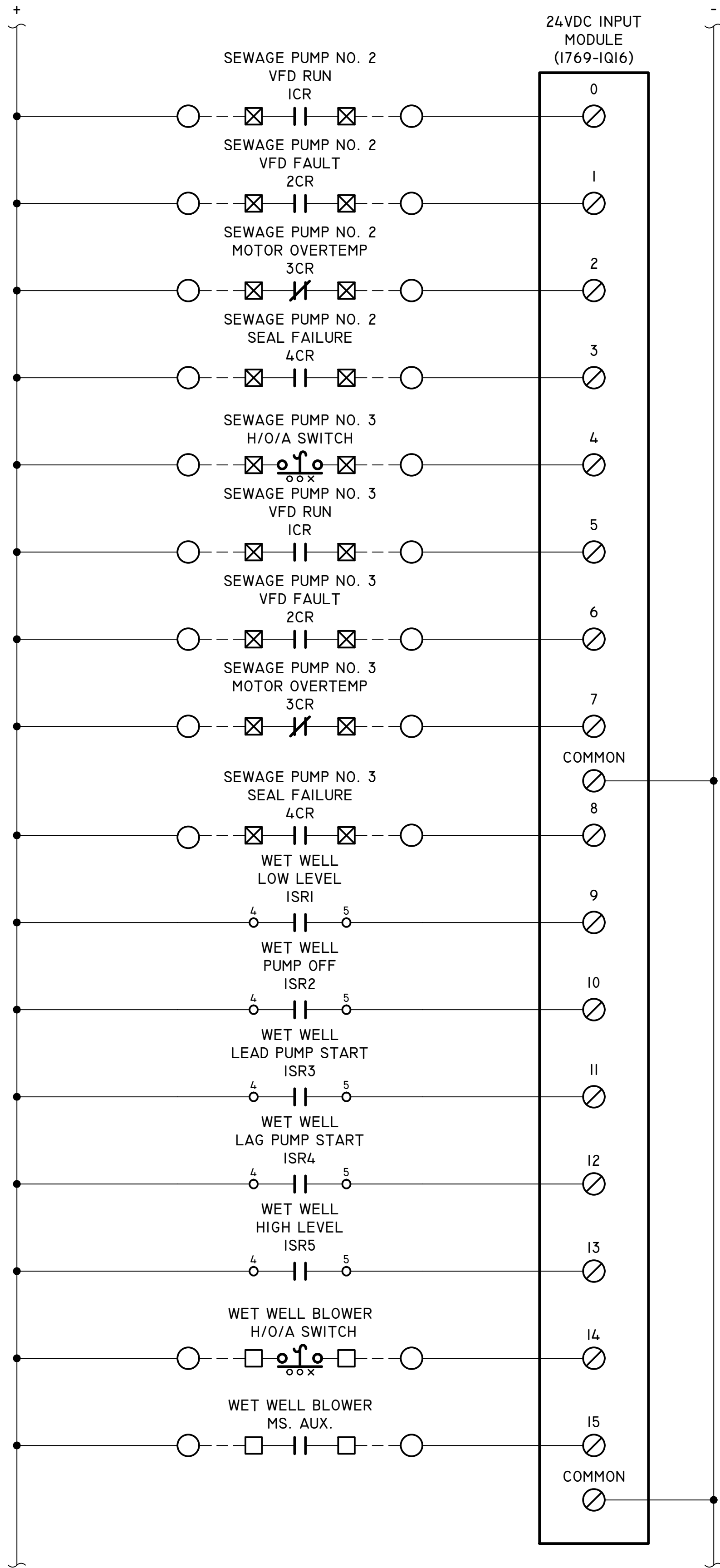
OF...36...

DRAWING

NO.PCS-7..



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PUMP STATION  
UPGRADES

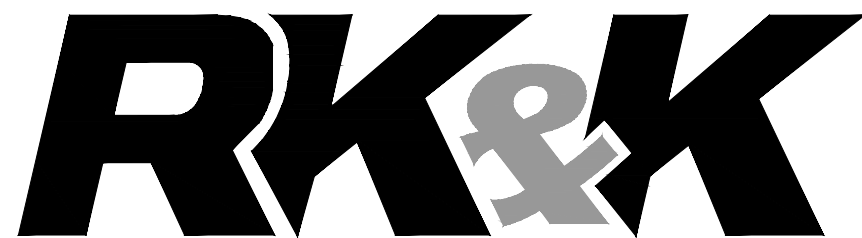
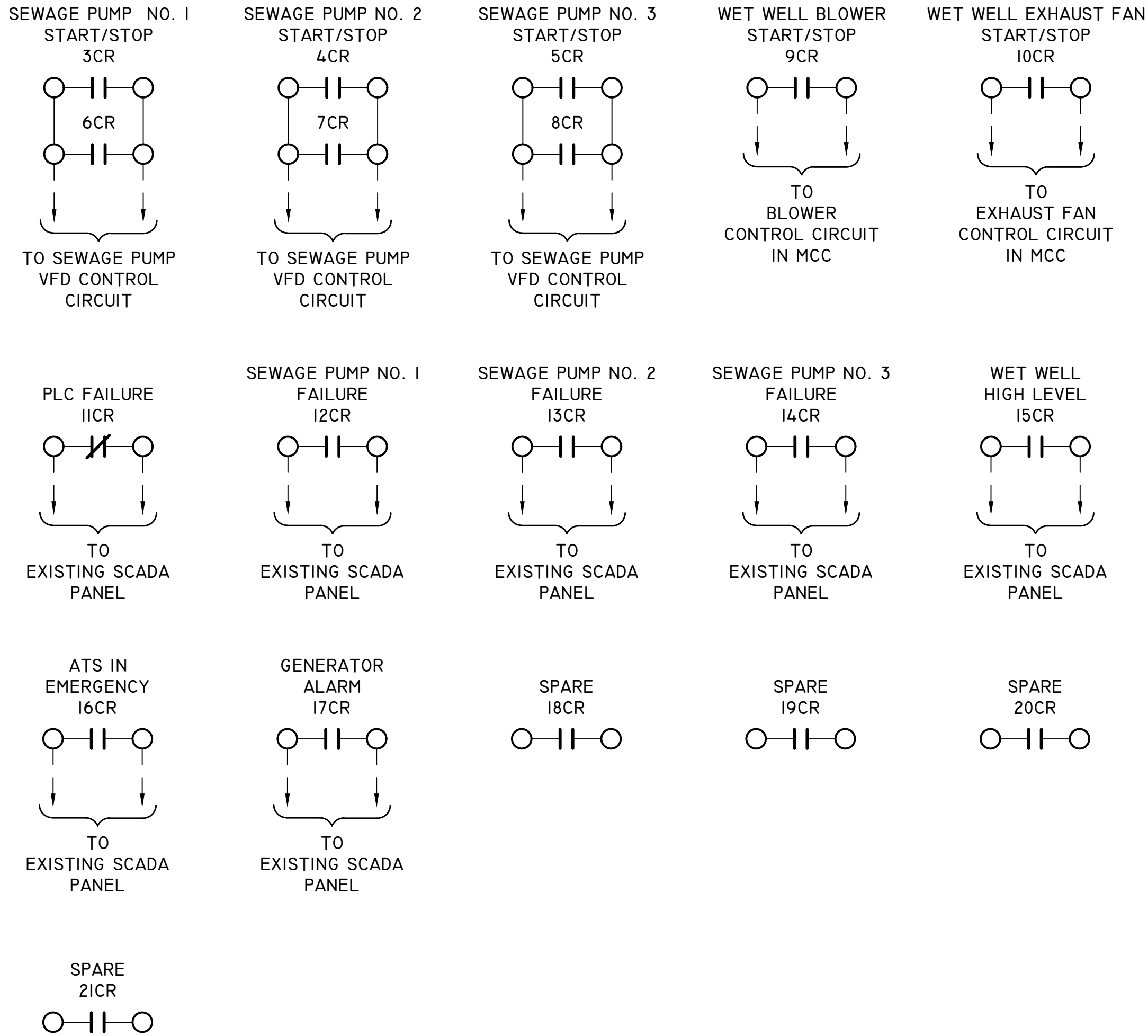
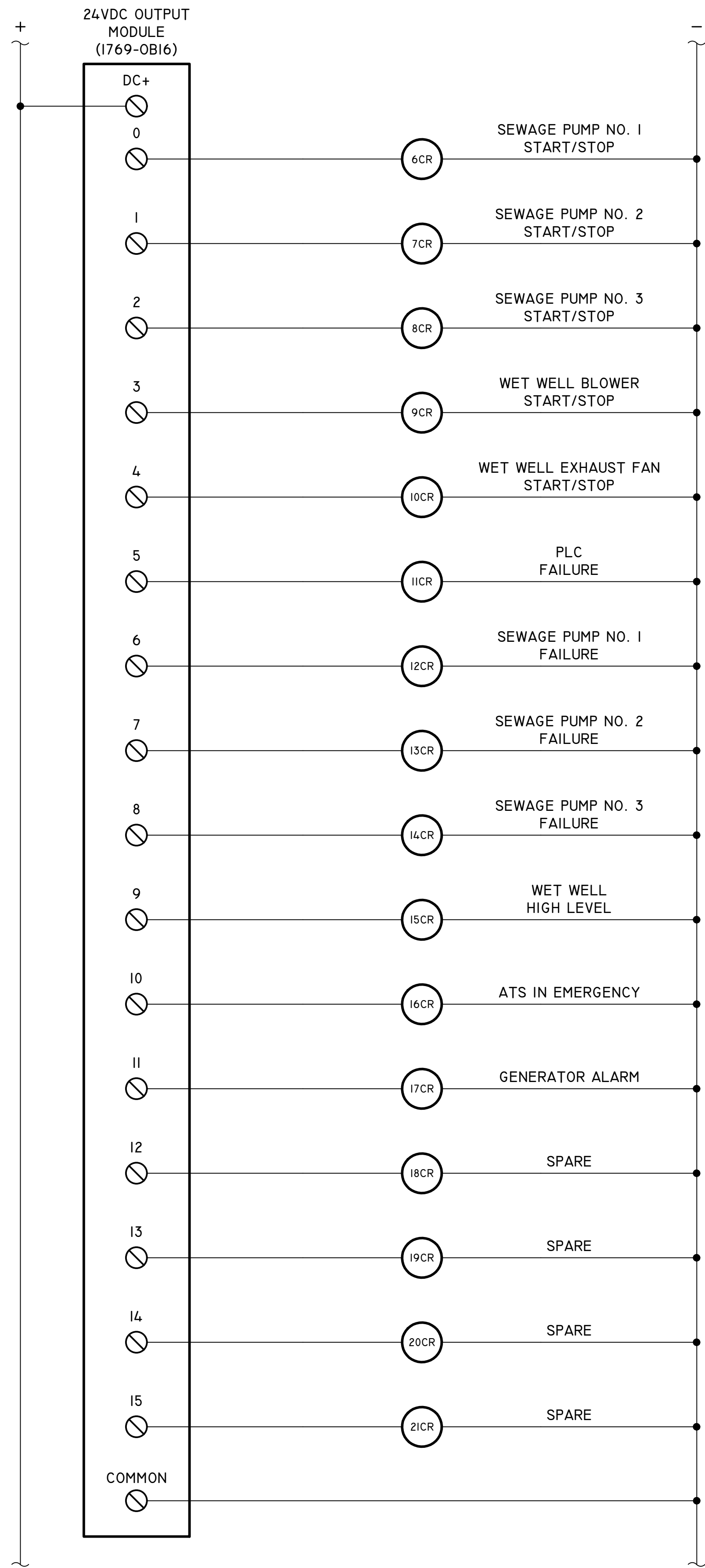
PUMP STATION  
CONTROL PANEL  
WIRING DIAGRAM

SHEET  
NO...**34**...  
OF...**36**...

DRAWING  
NO...**PCS-8**...



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UPGRADES

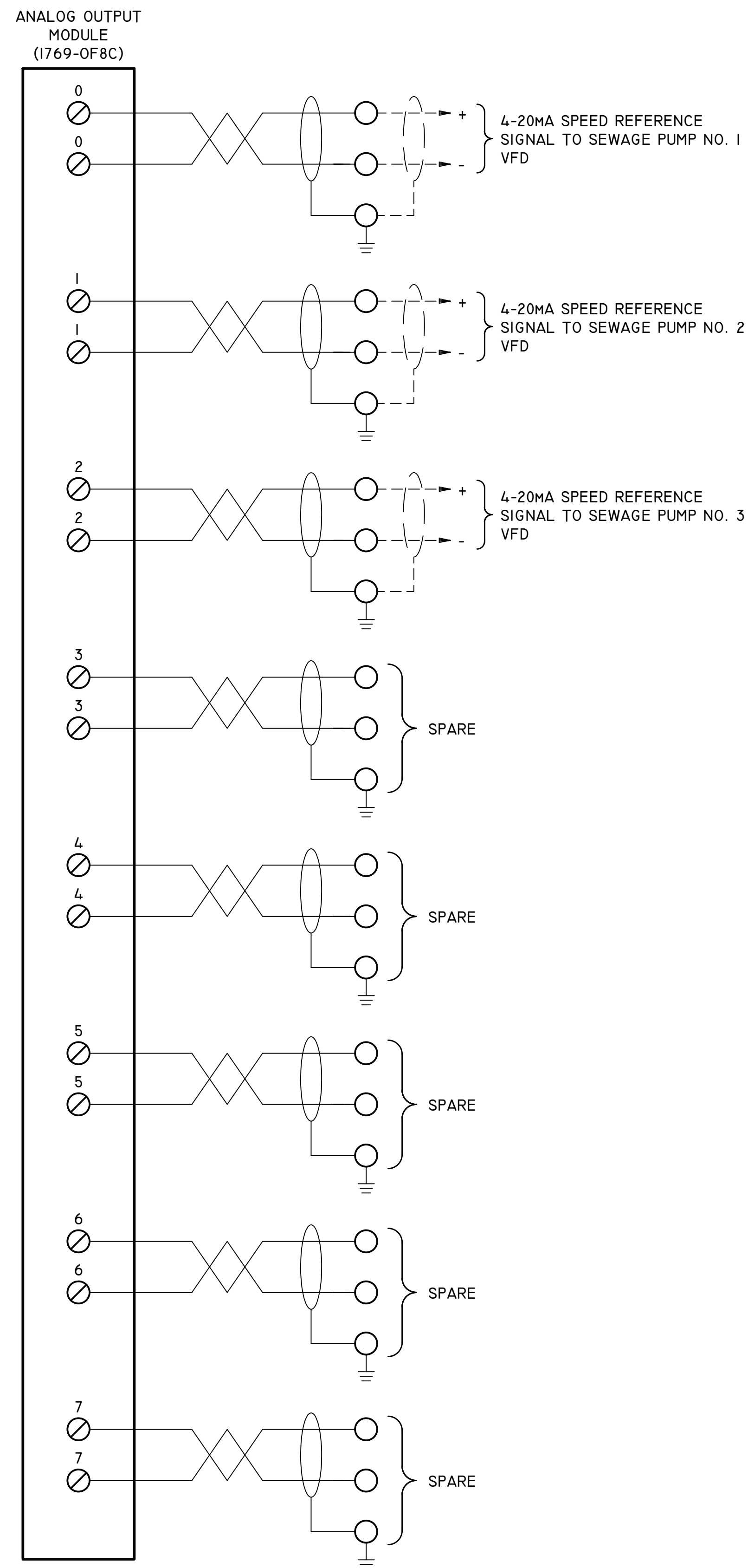
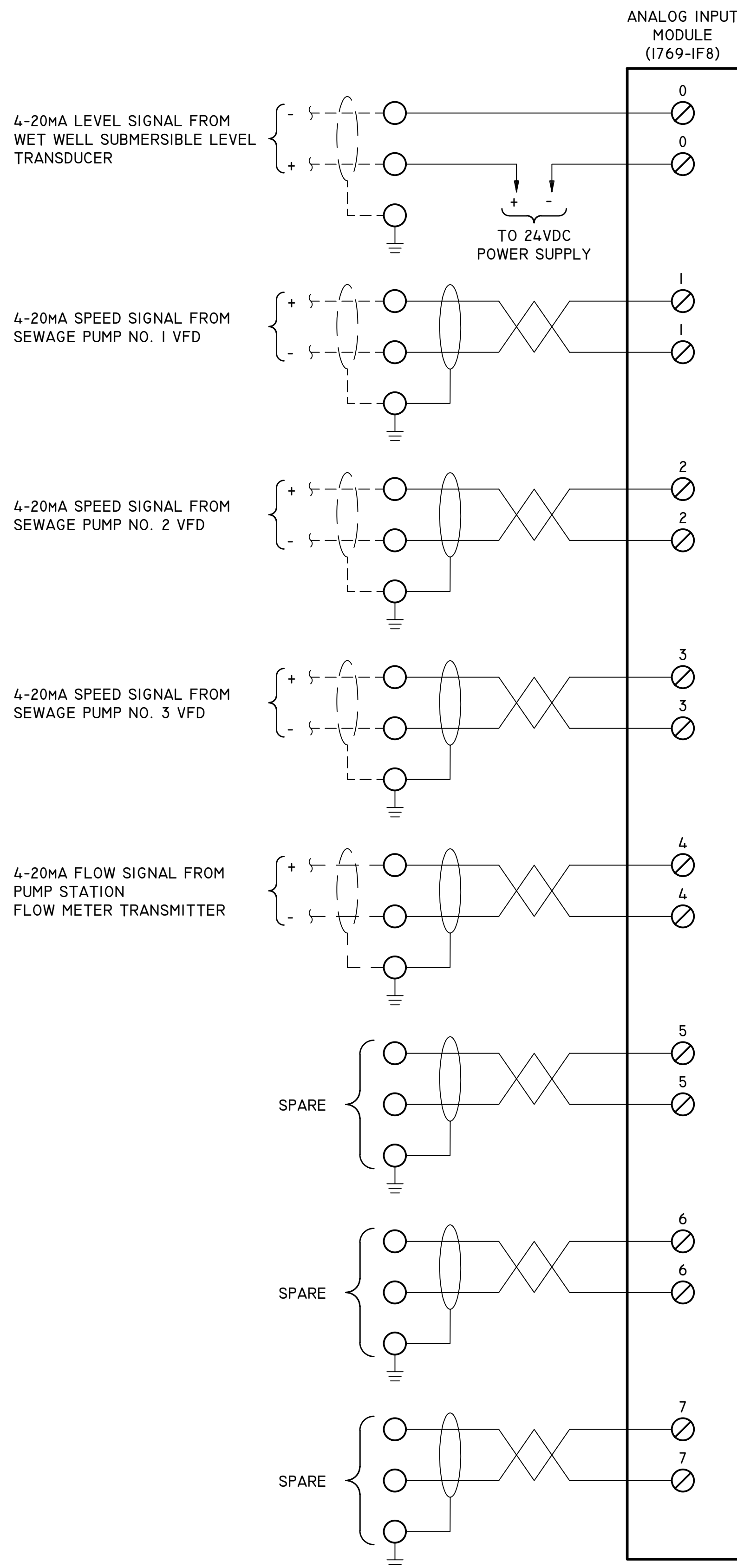
PUMP STATION  
CONTROL PANEL  
WIRING DIAGRAM

SHEET  
NO...**35**...  
OF...**36**...

DRAWING  
NO...**PCS-9**...



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PUMP STATION  
UPGRADES

PUMP STATION  
CONTROL PANEL  
WIRING DIAGRAM

SHEET

NO...36...

OF...36...

DRAWING

NO...PCS-10...