



**GEORGE MARLTON, JD**  
PROCUREMENT DIVISION DIRECTOR

**PROCUREMENT DIVISION**  
**PUBLIC SERVICES BUILDING**  
2051 KAEN ROAD | OREGON CITY, OR 97045

**REQUEST FOR PROPOSALS #2017-33**  
**Arrah Wanna Pump Station and**  
**Hoodland Water Resource Recovery Facility Modernization**  
**RESPONSE TO CLARIFYING QUESTIONS**  
May 11, 2017

Note that these are questions submitted by interested firms to the above referenced solicitation. The below answers are for clarification purposes only and in no way alter or amend the RFP as published.

1. Are original as-built drawings available for the Arrah Wanna pump station?

Answer: Original as-built drawings for the Arrah Wanna Pump Station are attached below for reference purposes only.

2. Is a copy of the Hoodland Master Plan available?

Answer: The Hoodland Master Plan document is available by request and is provided for reference purposes only. Due to file size, the document cannot be attached herein. To receive a copy of the document please email Guy Melton at [gmelton@clackamas.us](mailto:gmelton@clackamas.us) and a link to download the document will be sent to you.

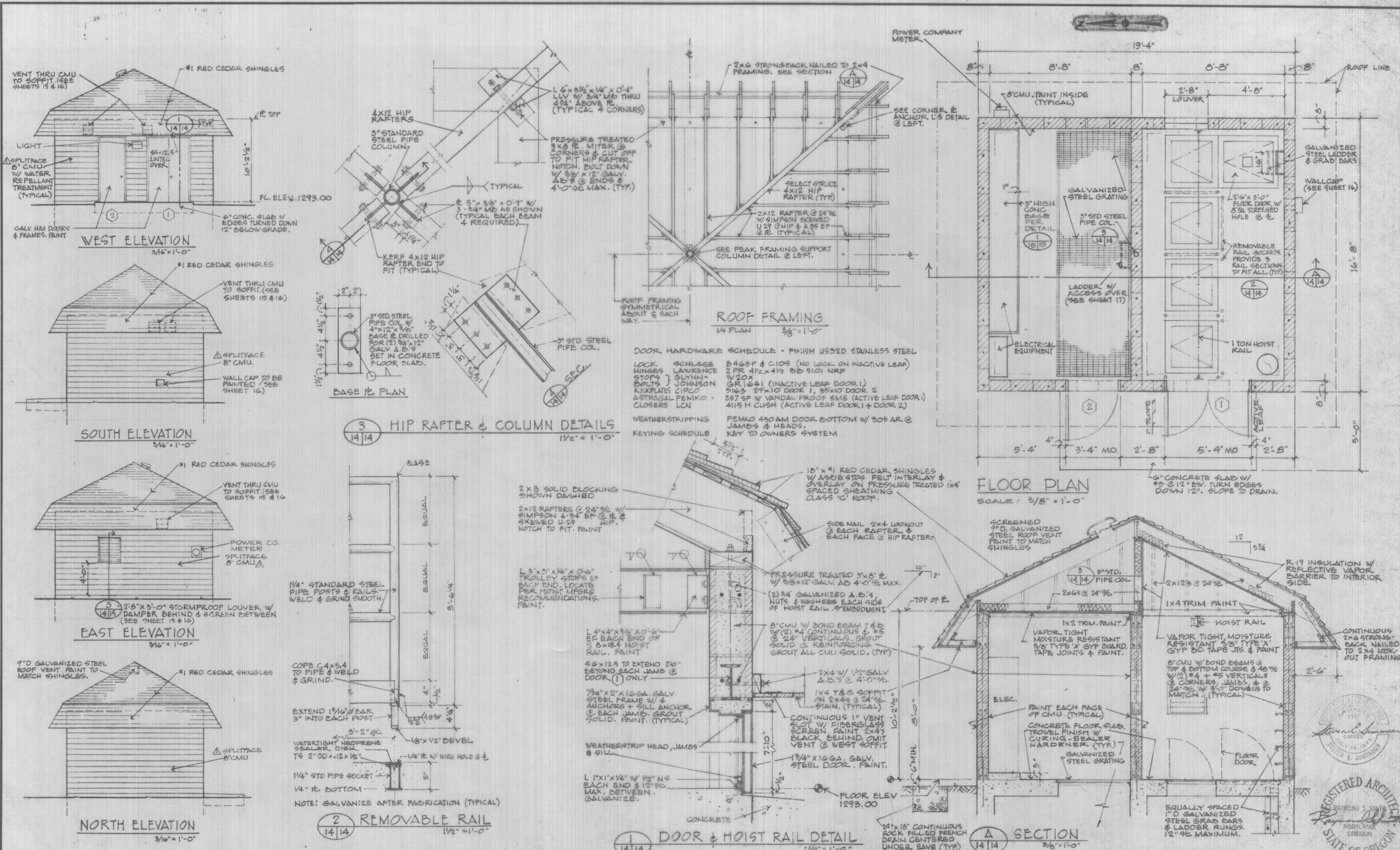
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End of Clarifying Questions





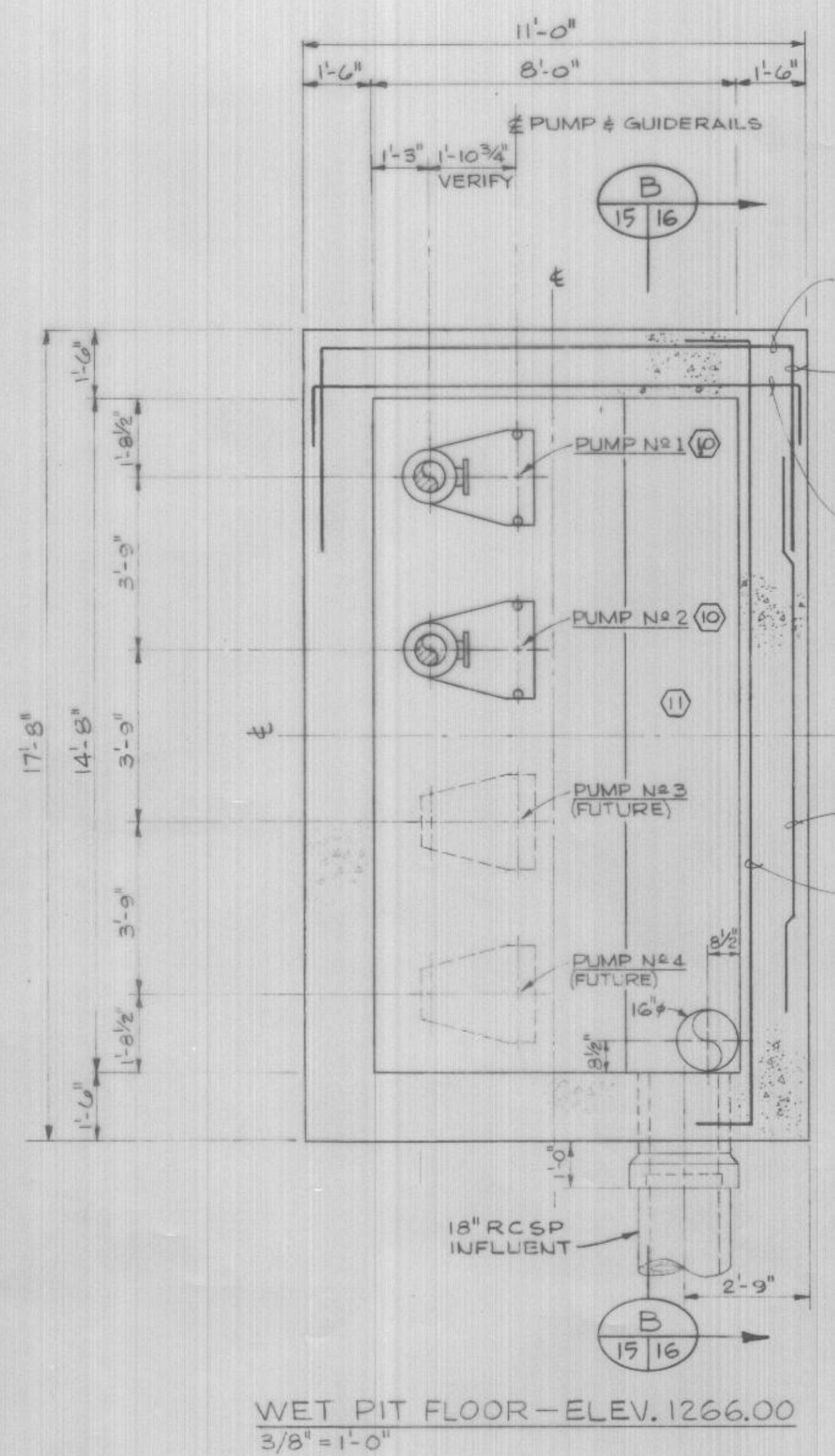
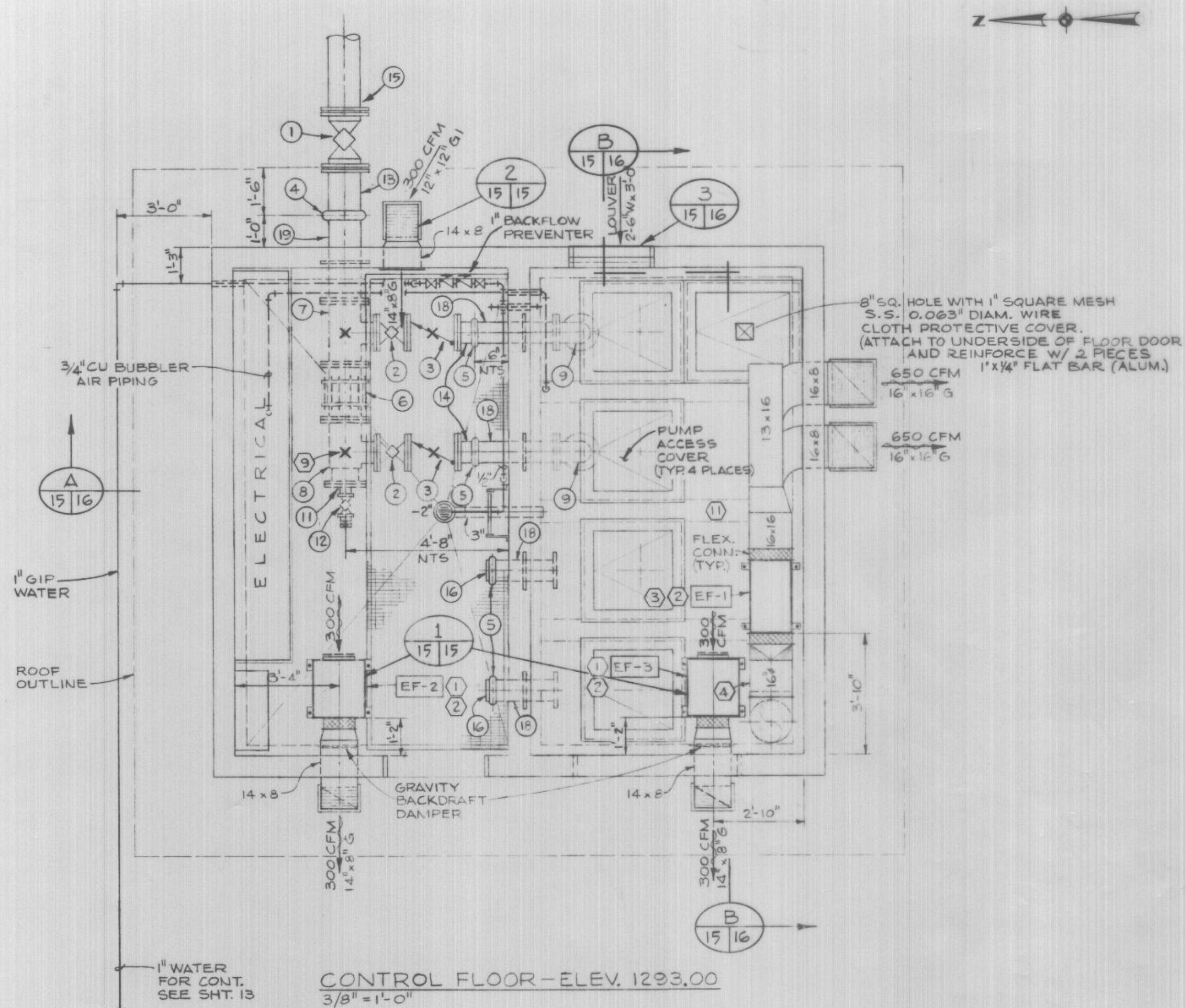




DESIGNED RGS		APPROVED		STRAAM Engineers, Inc.		HOODLAND SERVICE DISTRICT CLACKAMAS COUNTY OREGON WELCHES SEWERS AND PUMPING STATIONS		TREATMENT PLANT PUMP STATION ARCHITECTURAL DETAILS		14 29	
DRAWN DHOS		SCALE AS SHOWN		DATE FEB. 1980							
CHECKED RGS		FILE PT-C42-04-32		17300							



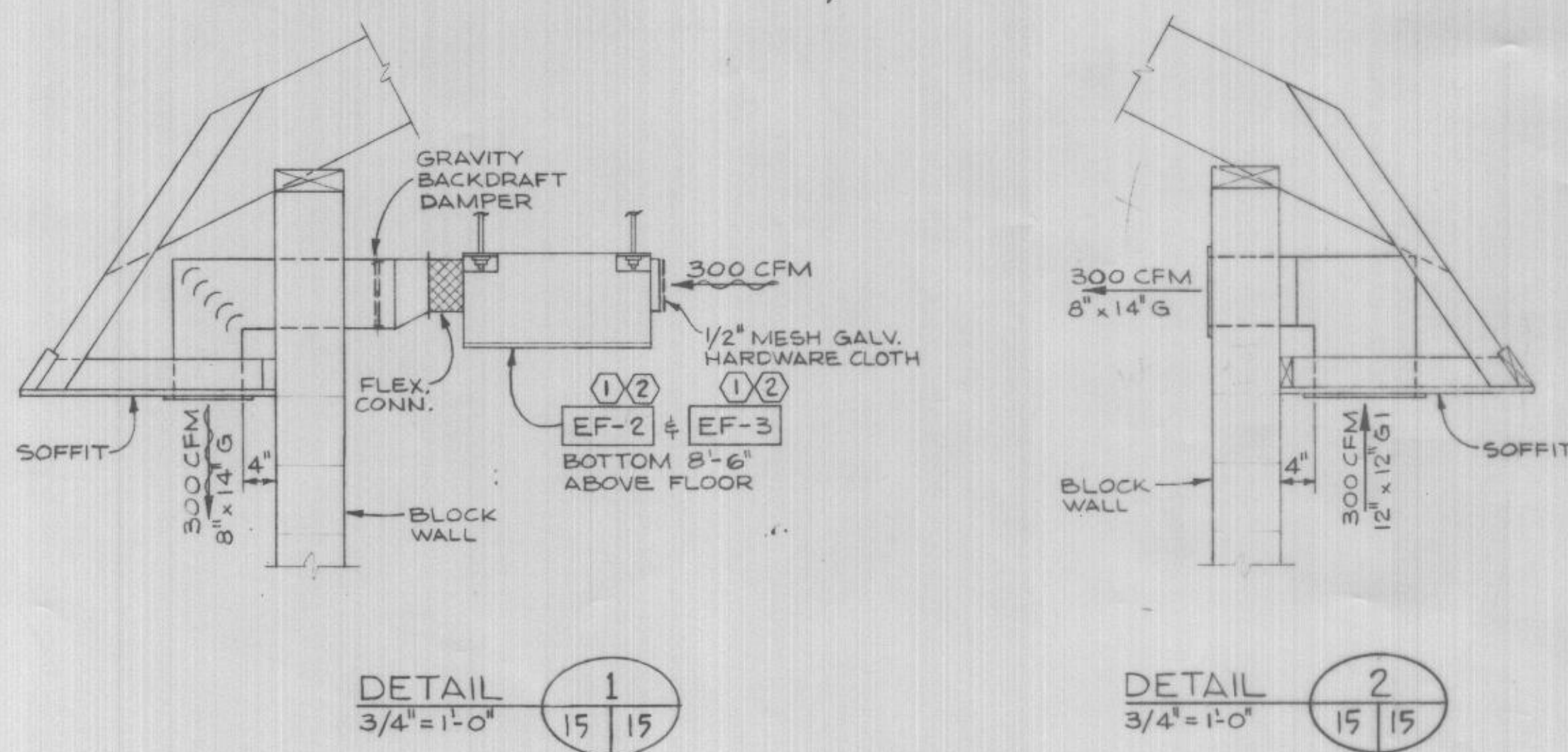




LIST OF FITTINGS AND APPURTENANCES

- 1 12" PLUG VALVE, MECHANICAL JOINT (MJ).
- 2 8" PLUG VALVE, FLANGED (FL'GD).
- 3 8" CUSHIONED CHECK VALVE, FL'GD.
- 4 12" VICTAULIC COUPLING.
- 5 8" VICTAULIC COUPLING.
- 6 12" LOCK COUPLING, DRESSER STYLE 167.
- 7 12" x 12" x 8" REDUCING TEE, FL'GD.
- 8 12" x 10" x 8" REDUCING TEE, FL'GD.
- 9 8" SHORT-RADIUS 90° ELBOW, FL'GD.
- 10 2" x 8" CONCENTRIC INCREASER, FL'GD.
- 11 4" x 16" REDUCING FLANGE.
- 12 4" PLUG VALVE, THREADED, WITH 1-4" SHORT NIPPLE & 1-4" x 6" LONG NIPPLE.
- 13 12" SPOOL WITH VICTAULIC FLEXIBLE GROOVE x LOCK TYPE MECHANICAL JOINT GROOVE.
- 14 8" SPOOL WITH VICTAULIC FLEXIBLE GROOVE x FL'GD.
- 15 12" CLASS 50 DIP WITH LOCK TYPE MECHANICAL JOINT GROOVE.
- 16 8" VICTAULIC CAP.
- 17 6" x 4" 90° DISCHARGE ELBOW AS FURNISHED BY PUMP SUPPLIER, TYPICAL 2 PLACES.
- 18 8" WALL SPOOL WITH VICTAULIC FLEXIBLE GROOVE x FL'GD.
- 19 12" WALL SPOOL WITH VICTAULIC FLEXIBLE GROOVE x FL'GD.

NOTE: HORIZONTAL WALL REINFORCING IS SYM. ABOUT BOTH E'S OF STRUCTURE



EQUIPMENT SCHEDULE	
EF-1	WET WELL VENTILATION EXHAUST AIR FAN GREENHECK SQB-10-7 1300 CFM @ 1.50-INCH S.P. 3/4 HP-460V-34-60~ EXPLOSION PROOF MOTOR/NON-SPARKING FAN WHEEL EXPLOSION PROOF AIR FLOW SWITCH, ETC.
EF-2	ROOM VENTILATION EXHAUST AIR FAN PACE SCF-57A (M) 300 CFM @ 0.75-INCH S.P. 1/8 HP-115V-14-60~
EF-3	ROOM VENTILATION EXHAUST AIR FAN PACE SCF-57A (M) 300 CFM @ 0.75-INCH S.P. 1/8 HP-115V-14-60~ EXPLOSION PROOF MOTOR NON-SPARKING FAN WHEEL
EF-4	WET WELL DEODORIZING EXHAUST AIR FAN GREENHECK SQD-3-A 132 CFM @ 0.375-INCH S.P. 1/8 HP-115V-14-60~ EXPLOSION PROOF MOTOR NON-SPARKING FAN WHEEL

- NOTES:
- 1 FAN, ELECTRIC MOTOR, AND BELT DRIVE SHALL BE CABINET INTERNALLY MOUNTED AND OPEN SPRING ISOLATED ON A COMMON BASE.
  - 2 HANG FROM UNDER SIDE OF ROOF ON STEEL ROD HANGERS.
  - 3 HANGERS WITH SPRINGS & RUBBER STOPS, FOR VIBRATION CONTROL.
  - 4 ROUND DUCT WORK AND FITTINGS SHALL BE 24-GAUGE GALVANIZED SPIRAL DUCT. SEE SPECIFICATIONS.
  - 5 ROUND DUCT WORK SHALL BE GLASS FILAMENT REINFORCED PLASTIC. SEE SPECIFICATIONS.
  - 6 SLOPE DRAIN PIPE 1/4"/FT. (MIN).
  - 7 INSTALL GUIDE RAILS MIN. 2" SCH. 40 S.S. AS FURNISHED BY PUMP SUPPLIER.
  - 8 FLOOR DRAIN - J.R. SMITH 2270 OR EQUAL, CAST IRON BODY AND LOOSE SET BAR GRATE.
  - 9 PIPE SUPPORT (TYR 4 PLACES)
  - 10 INSTALL SUBMERSIBLE PUMPS WITH BASES, DISCHARGE ELBOWS, GUIDE RAIL ASSEMBLIES AND ACCESS COVERS FURNISHED BY PUMP SUPPLIER.
  - 11 EXPLOSION PROOF DENOTES CLASS I, GROUP D, DIVISION 1.



DESIGNED J.R.S./P.B.B.	APPROVED [Signature]
DRAWN P.B.B.	SCALE AS SHOWN DATE FEB. 1980
CHECKED SES	FILE PT-C42-04-32, 17301

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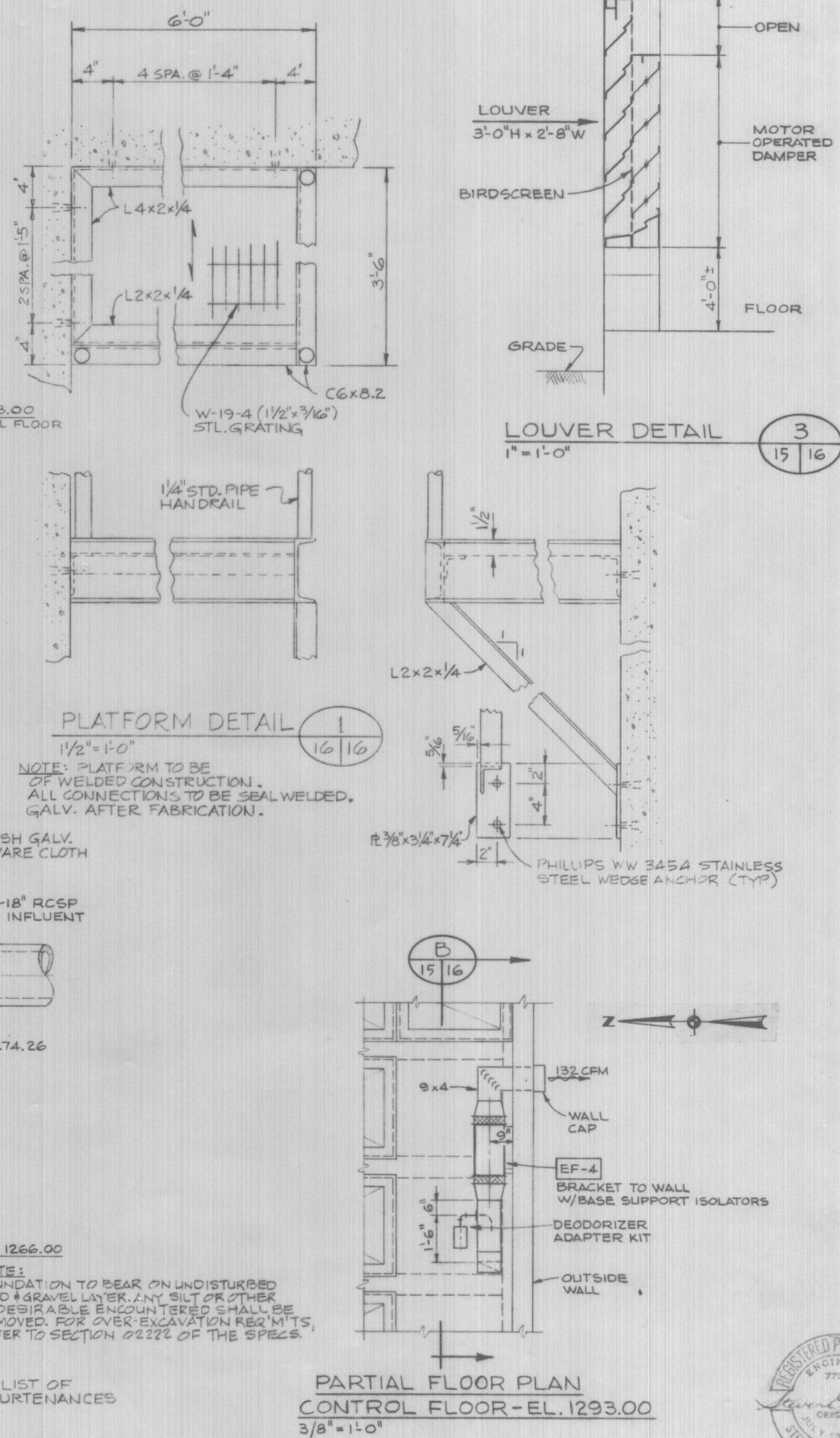
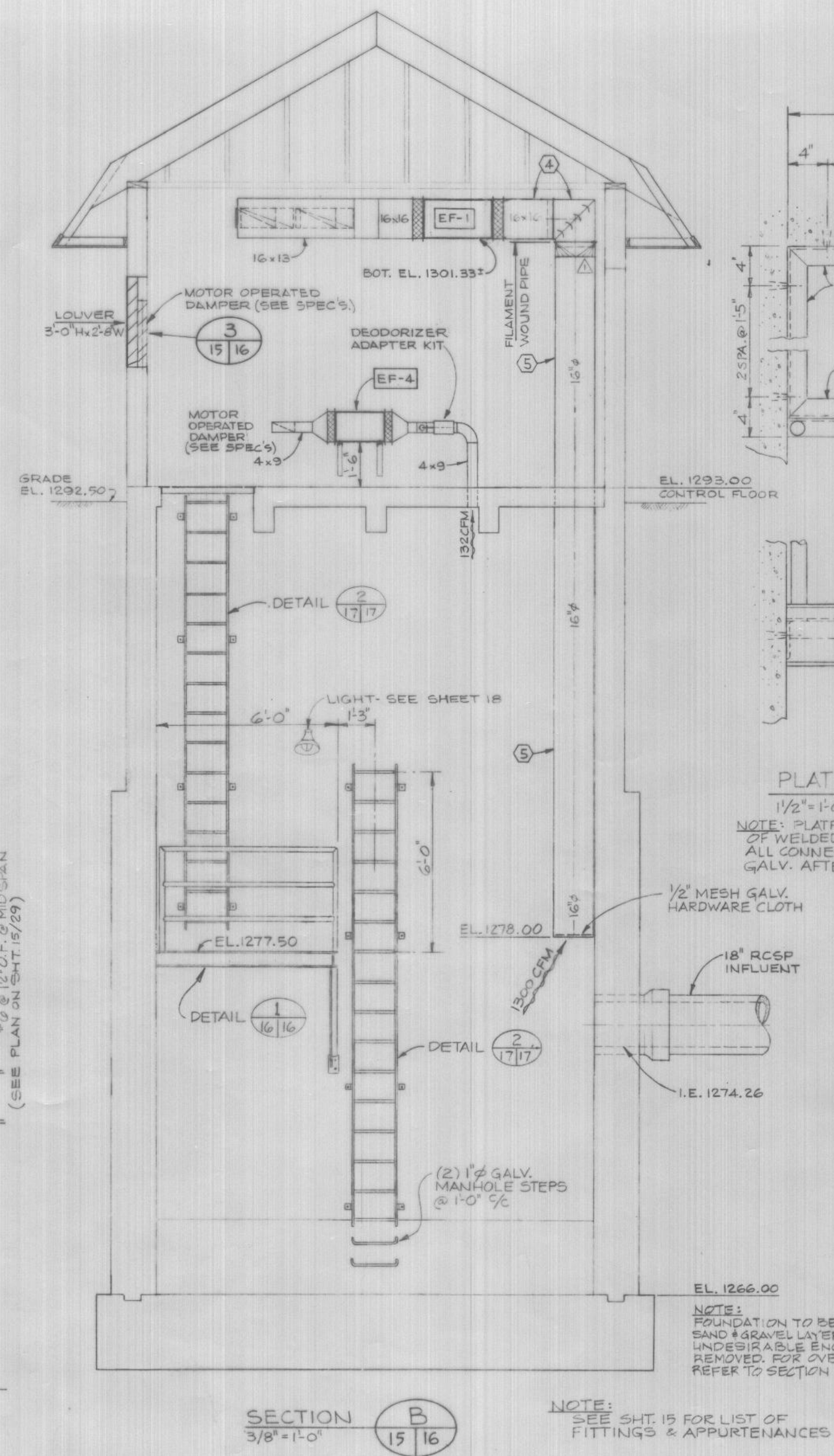
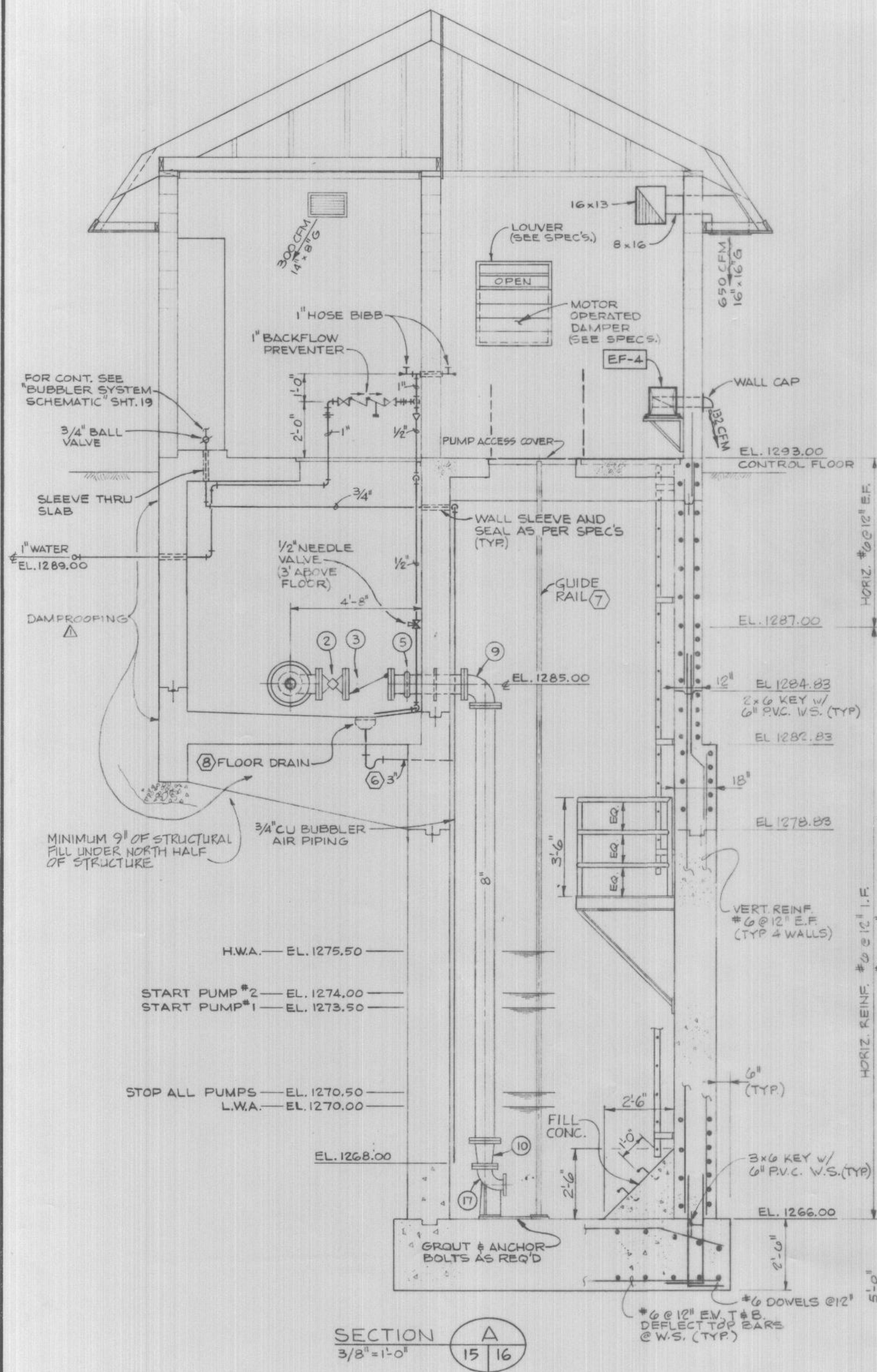
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HOODLAND SERVICE DISTRICT  
CLACKAMAS COUNTY OREGON  
WELCHES SEWERS AND PUMPING STATIONS

TREATMENT PLANT PUMP STATION  
PLANS AND DETAILS

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					DESIGNED JRS/PEK	APPROVED	
					DRAWN PBB	SCALE AS SHOWN	DATE FEB 1980
JULY 81	△		RECORD DRAWING	DWOS	CHECKED SES/AAP	FILE	PT-C42-04-32, 17302
DATE	NO.		REVISION	BY			

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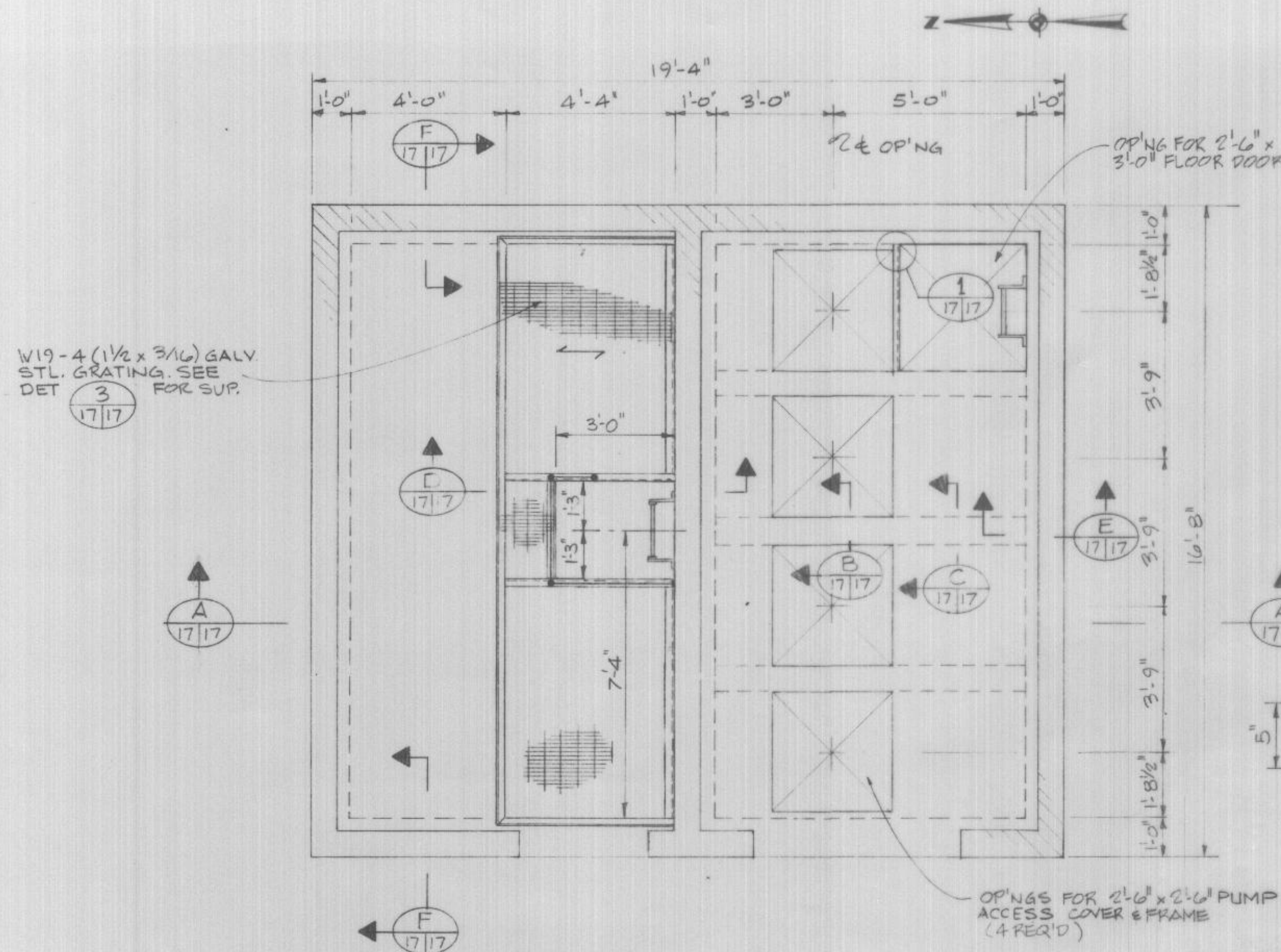
HOODLAND SERVICE DISTRICT  
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WELCHES SEWERS AND PUMPING STATIONS

## TREATMENT PLANT PUMP STATION SECTIONS AND DETAILS

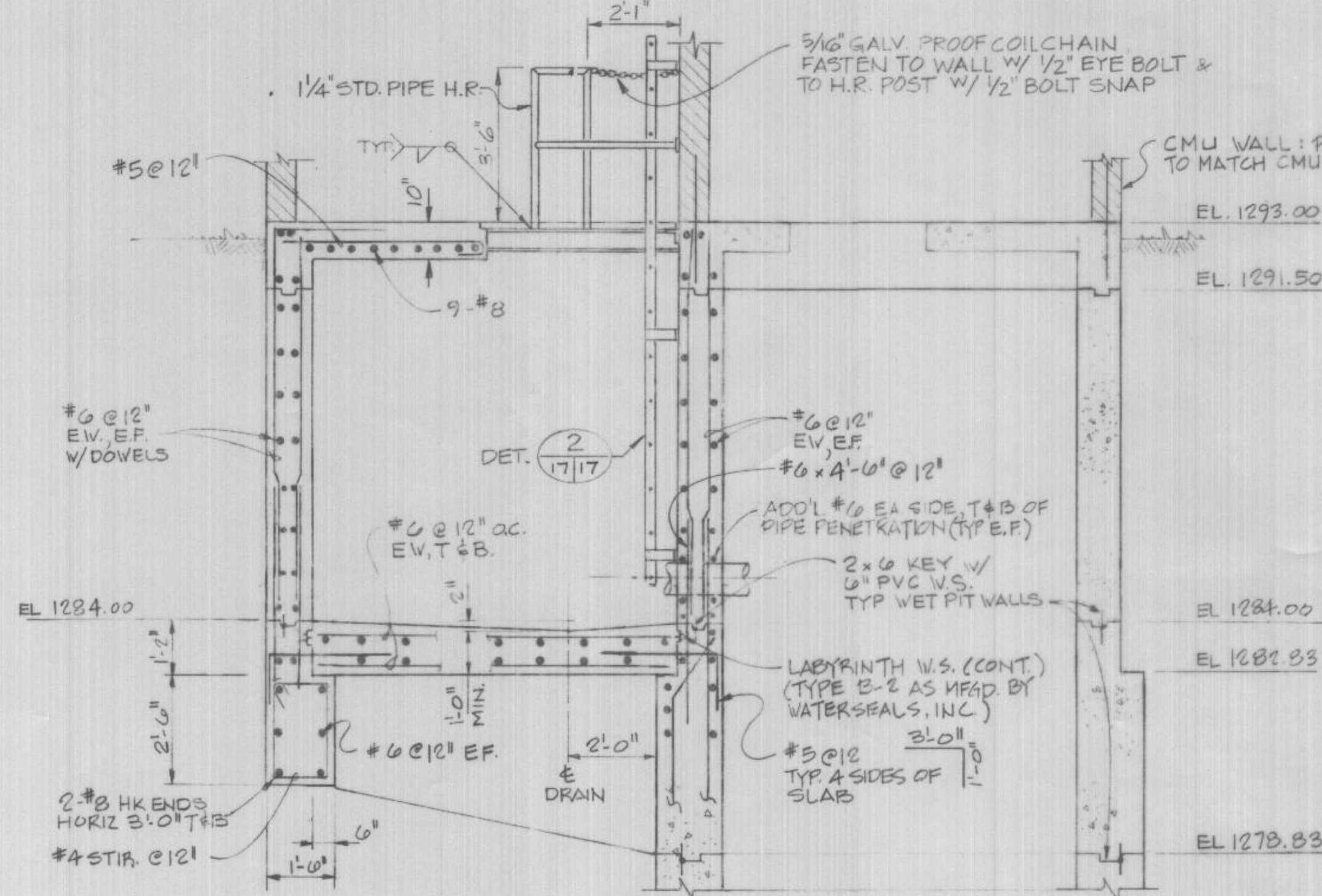
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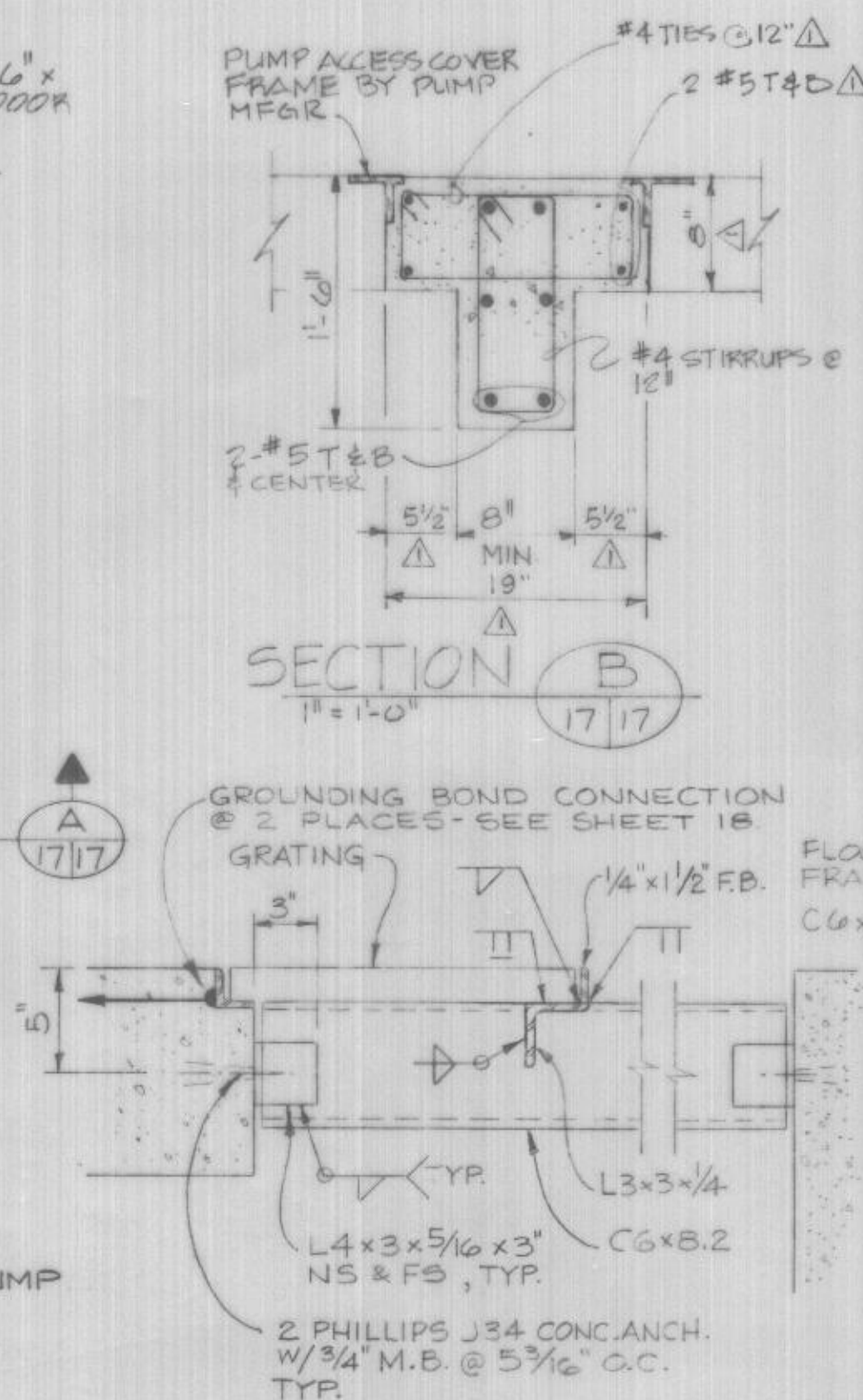




CONTROL ROOM PLAN  
3/8" = 1'-0"



SECTION A  
3/8" = 1'-0"

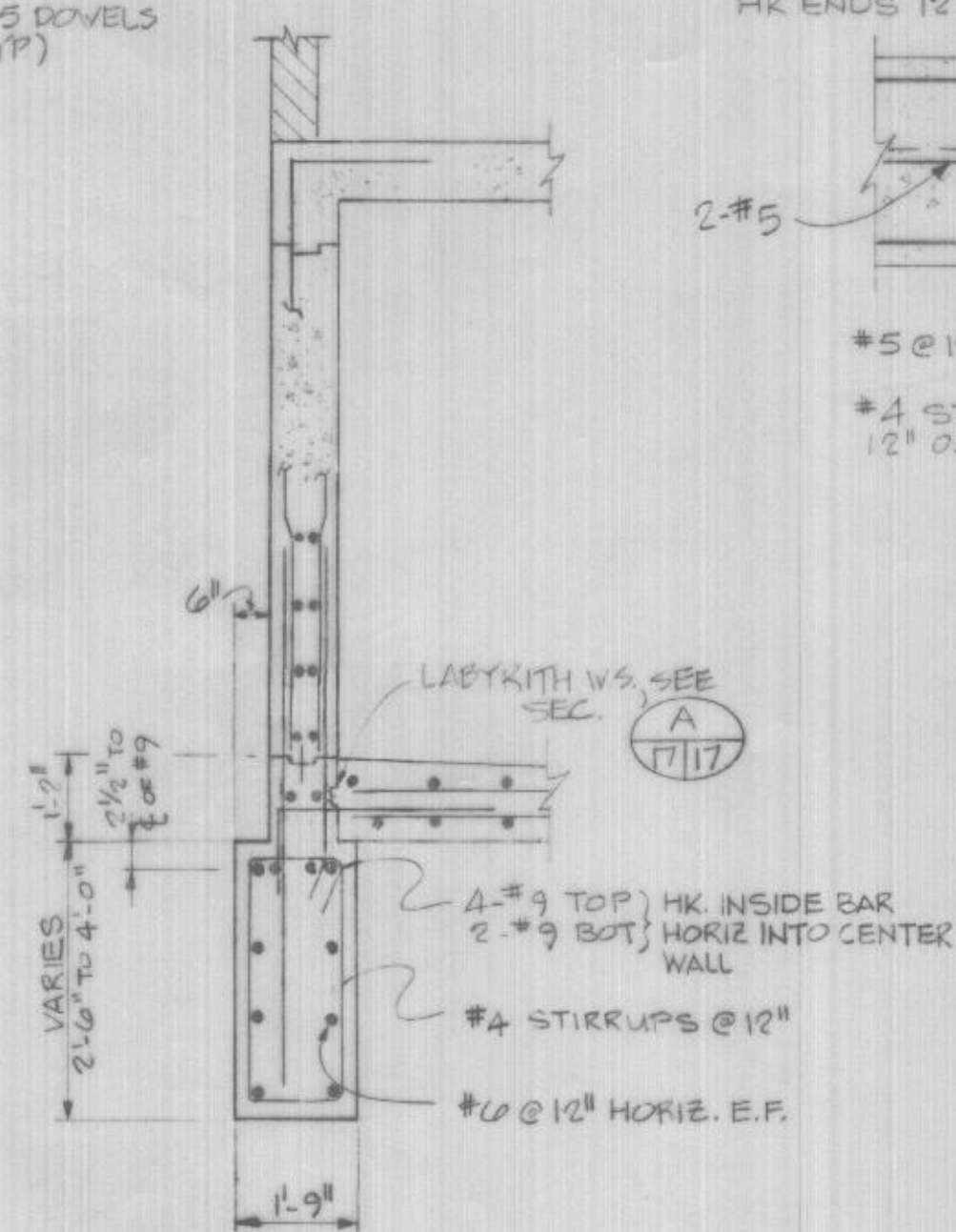


SECTION B  
1" = 1'-0"

SECTION C  
1" = 1'-0"

SECTION D  
1 1/2" = 1'-0"

DETAIL 1  
1 1/2" = 1'-0"



SECTION E  
3/4" = 1'-0"

SECTION F  
3/8" = 1'-0"

DETAIL 2  
3/4" = 1'-0"

DETAIL 3  
1 1/2" = 1'-0"

- STRUCTURAL NOTES**
- GENERAL NOTES**
1. THESE NOTES ARE GENERAL IN NATURE, FOR FURTHER REQUIREMENTS AND AMPLIFICATION REFER TO THE SPECIFICATIONS.
  2. SEE MECHANICAL, ELECTRICAL, AND MANUFACTURER'S DRAWINGS FOR DETAILS AND DIMENSIONS NOT SHOWN. VERIFY OPENINGS, EQUIPMENT BASES, ANCHOR BOLT SETTINGS, PIPE PENETRATION AND SUPPORT LOCATIONS.
  3. DESIGN LOADS
    - LIVE LOADS
      - ROOF (SNOW) - 55 PSF
      - FLOORS - 150 PSF
      - GRATING - 75 PSF
      - WIND PRESSURE MAP AREA - 25 PSF
      - SEISMIC ZONE 2
      - REQUIRED SOIL BEARING PRESSURE - 2500 PSF
    - WALLS BELOW GRADE: 85 PCF EQUIV. FLD. MAX. GROUNDWATER - EL. 1292.50
  4. CODES AND STANDARDS
    - ALL WORK SHALL BE IN STRICT COMPLIANCE WITH THE FOLLOWING BUILDING AND SAFETY CODES:
      - a. FEDERAL, STATE, AND LOCAL CODES (VERIFY WITH LOCAL BUILDING OFFICIAL)
      - b. UNIFORM BUILDING CODE
  5. BACKFILL STRUCTURE WITH WELL GRADED GRANULAR MATERIAL, PLACE IN 12 INCH LIFTS AND COMPACT TO 85 PERCENT MAXIMUM DENSITY PER AASHTO T 99 (ASTM D 698) TESTS
  6. REFER TO SOILS REPORT ENTITLED "SUBSURFACE INVESTIGATION INTERCEPTOR SEWER AND PUMP STATION, HOODLAND SERVICE DISTRICT" DATED OCTOBER 23, 1979, BY SHANNON & WILSON, INC.
- REINFORCING STEEL**
1. REINFORCING STEEL BARS TO CONFORM TO ASTM A-615 GRADE 40, DETAIL AND PLACE PER CODE ACI 315 AND MANUAL ACI 318.
  2. UNLESS OTHERWISE SHOWN, REINFORCE ALL WALLS AND SLABS WITH 1/4 OF 1 PERCENT EACH WAY AND TWO NO. 5 BARS ADDITIONAL AT THE TOP, BOTTOM, AND SIDES OF ALL OPENINGS EXCEEDING 12" IN EITHER DIRECTION. PROVIDE 2'0" x 2'0" CORNER BARS OR TERMINATE HORIZONTAL WALL STEEL WITH A 90 DEGREE HOOK AT CORNERS AND INTERSECTIONS EXCEPT AS OTHERWISE NOTED.
  3. UNLESS OTHERWISE DETAILED, LAP CONTINUOUS BARS IN:
    - CONCRETE - 36 DIAMETER HORIZONTAL AND VERTICAL MIN. LAP 1'-3"
    - MASONRY - 36 DIAMETER HORIZONTAL, 30 DIAMETER VERTICAL
  4. CONCRETE REINFORCING SHALL HAVE THE MINIMUM COVER OF CONCRETE AS FOLLOWS:
    - 1" STRUCTURAL SLABS NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND
    - 1 1/2" BEAMS AND SLABS EXPOSED TO WEATHER
    - 2" WALLS
    - 3" BOTTOM BARS IN FOOTINGS AND BASE SLABS
- CONCRETE**
1. ALL STRUCTURAL CONCRETE SHALL DEVELOP A MINIMUM OF 3,000 PSI COMPRESSIVE STRENGTH IN 28 DAYS. ALL CONCRETE SHALL CONTAIN A WATER REDUCING ADMIX "POZZOLITH 300N" ADDED AS RECOMMENDED BY MANUFACTURER. CONCRETE PROPORTIONS TO BE DETERMINED FROM DESIGN MIXES TESTED AND APPROVED PRIOR TO USE. FIVE PERCENT AIR ENTRAINMENT FOR CONCRETE EXPOSED TO WEATHER OR LIQUID RETAINING.
  2. CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH ACI 614, IN CASE OF EXTREME WEATHER CONDITIONS ACI 605 OR ACI 306 SHALL BE FOLLOWED. MAXIMUM SLUMP FOR FLOORS 3", FOR WALLS AND OTHER CONCRETE 4".
  3. WALLS SHALL BE CAST WITHOUT VERTICAL CONSTRUCTION JOINTS UNLESS SPECIFICALLY APPROVED BY ENGINEER. HORIZONTAL JOINTS PERMITTED AS DETAILED. FLOOR SLABS TO BE PLACED IN ONE CONTINUOUS OPERATION.
- CONCRETE MASONRY**
1. CMU - GRADE N1, ASTM C-90, LOAD BEARING MORTAR - TYPE S, GROUT 2,000 PSI DESIGN BASED ON AN ULTIMATE COMPRESSIVE STRENGTH OF f'm = 1,350 PSI, NO SPECIAL INSPECTION REQUIRED.
  2. UNLESS OTHERWISE SHOWN, PROVIDE TWO NO. 4 HORIZONTAL IN GROUTED BOND BEAM UNITS AT 48" O.C., NO. 5 VERTICAL AT 24" O.C., AND ADDITIONAL NO. 5 BARS AT TOP, BOTTOM, AND EACH SIDE OF ALL OPENINGS, EXTEND BARS 2'0" BEYOND OPENING. VERTICAL BARS SHALL BE PLACED IN SAME CELLS AS DOWELS.
- MISCELLANEOUS STEEL**
1. STRUCTURAL STEEL ASTM A-36, DETAIL, FABRICATE, AND ERECT PER LATEST AISC STANDARDS
  2. WELDING TO BE DONE BY CERTIFIED WELDERS AND PER AISC AND AWS STANDARDS
  3. BOLTS, ANCHOR BOLTS, AND OTHER THREADED FASTENERS PER ASTM A-307
  4. PIPE PER ASTM A-53
  5. GALVANIZE ALL MISCELLANEOUS STEEL UNLESS NOTED OTHERWISE
- WOOD**
1. ALL LUMBER IN CONTACT WITH CONCRETE OR MASONRY TO BE PRESSURE TREATED WITH PRESERVATIVE SUITABLE FOR PAINTING
  2. FRAMING SHALL BE DOUGLAS-FIR NO. 2, KILN-DRIED TO 15 PERCENT MOISTURE CONTENT

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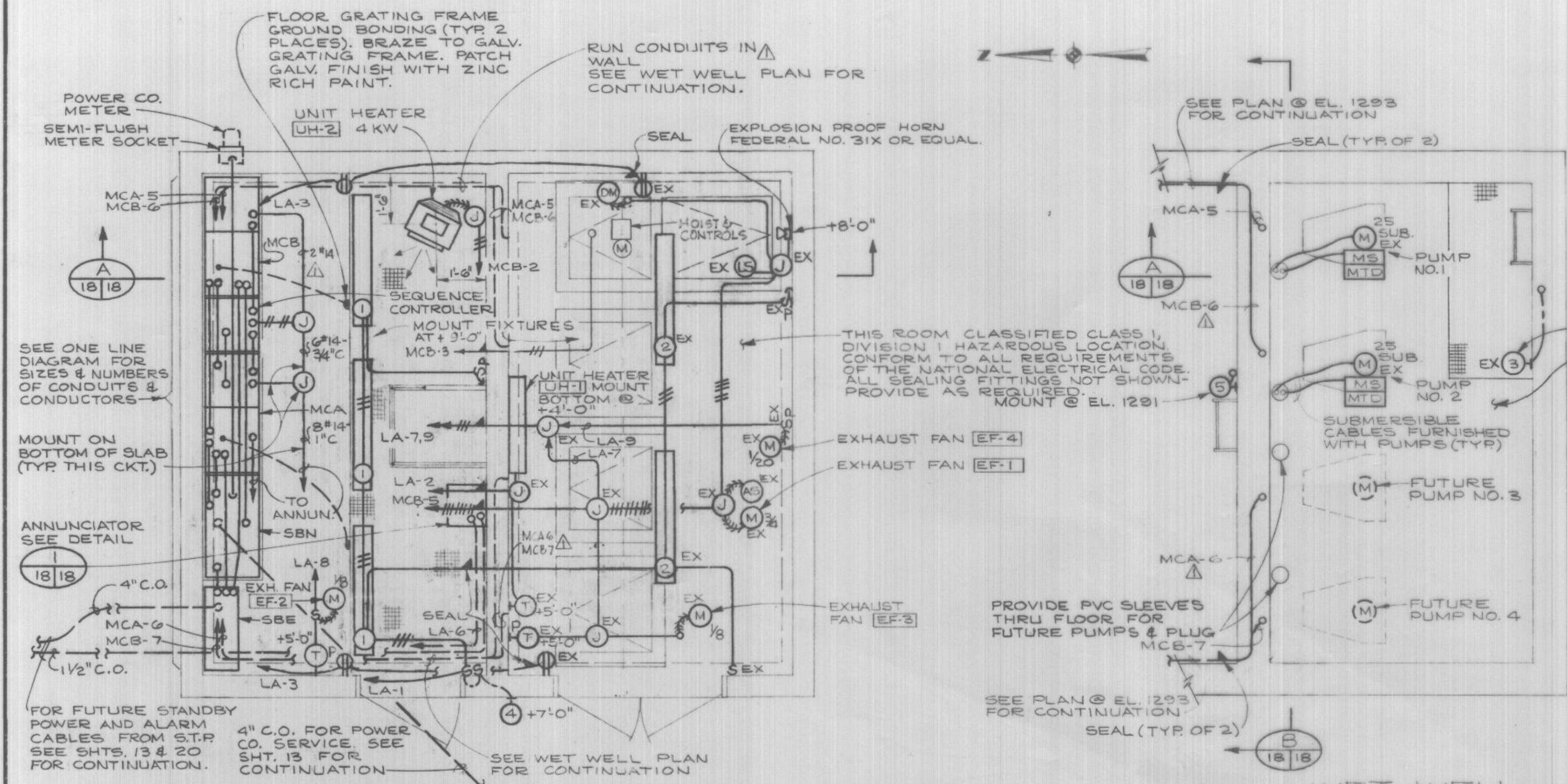
**HOODLAND SERVICE DISTRICT**  
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**WELCHES SEWERS AND PUMPING STATIONS**

**TREATMENT PLANT PUMP STATION**  
**STRUCTURAL DETAILS**

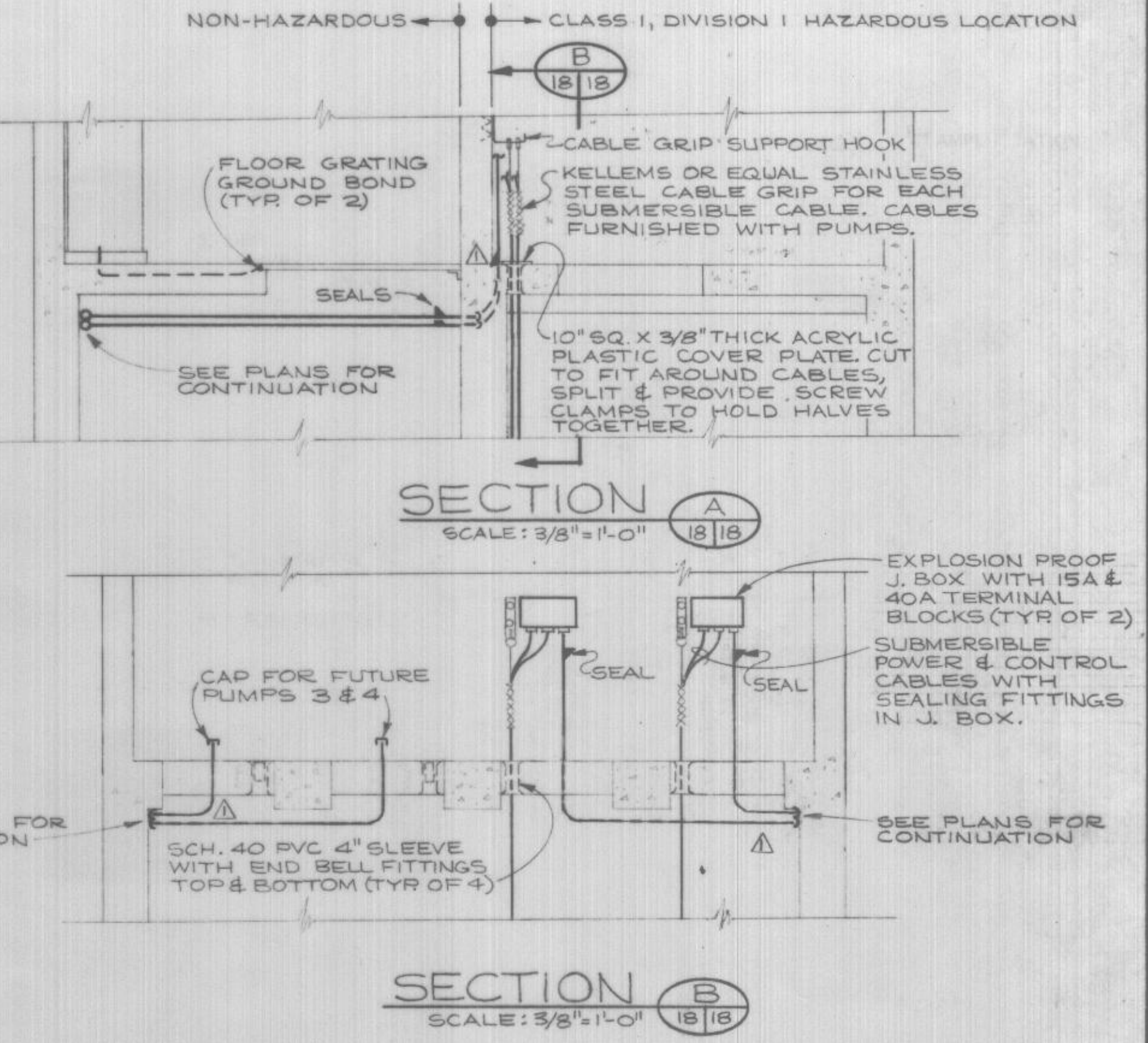
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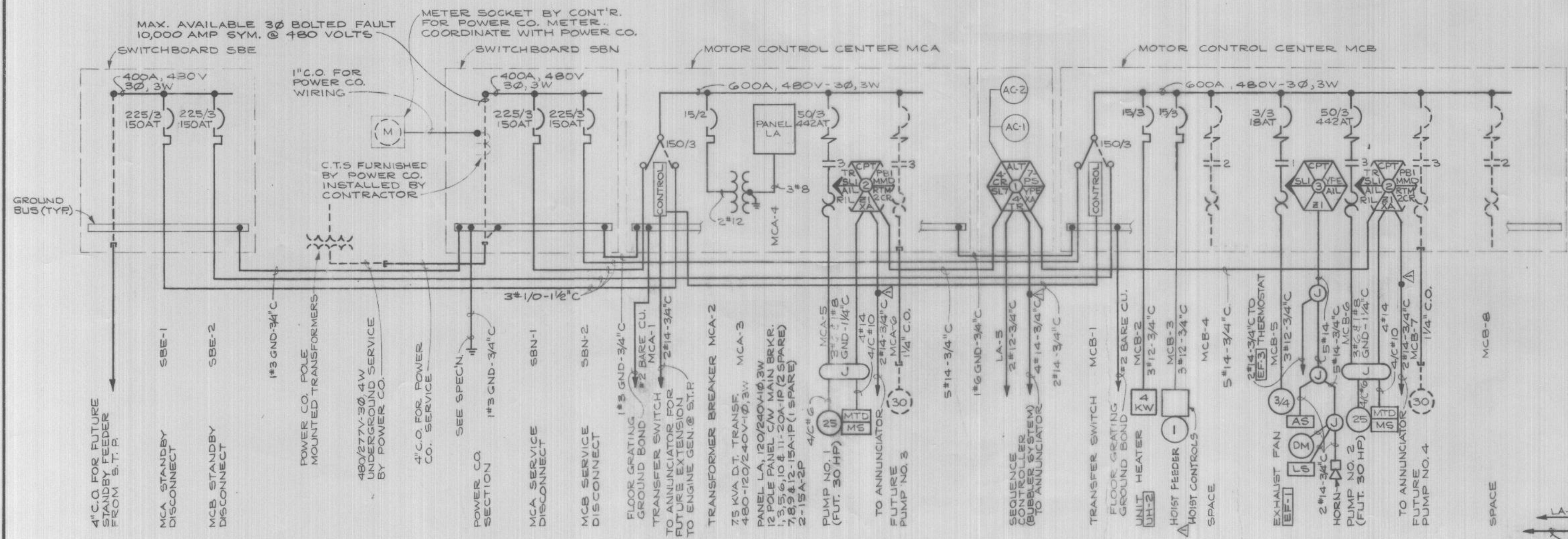


**NOTES:**  
 1. COLOR CODE ALL WIRING PER THE SPECIFICATIONS.  
 2. UTILIZE CAST METAL JUNCTION BOXES AS OUTLINED IN THE SPECIFICATIONS.  
 3. WET WELL CLASSIFIED CLASS I, DIVISION 1 HAZARDOUS LOCATION, CONFORM TO ALL REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.

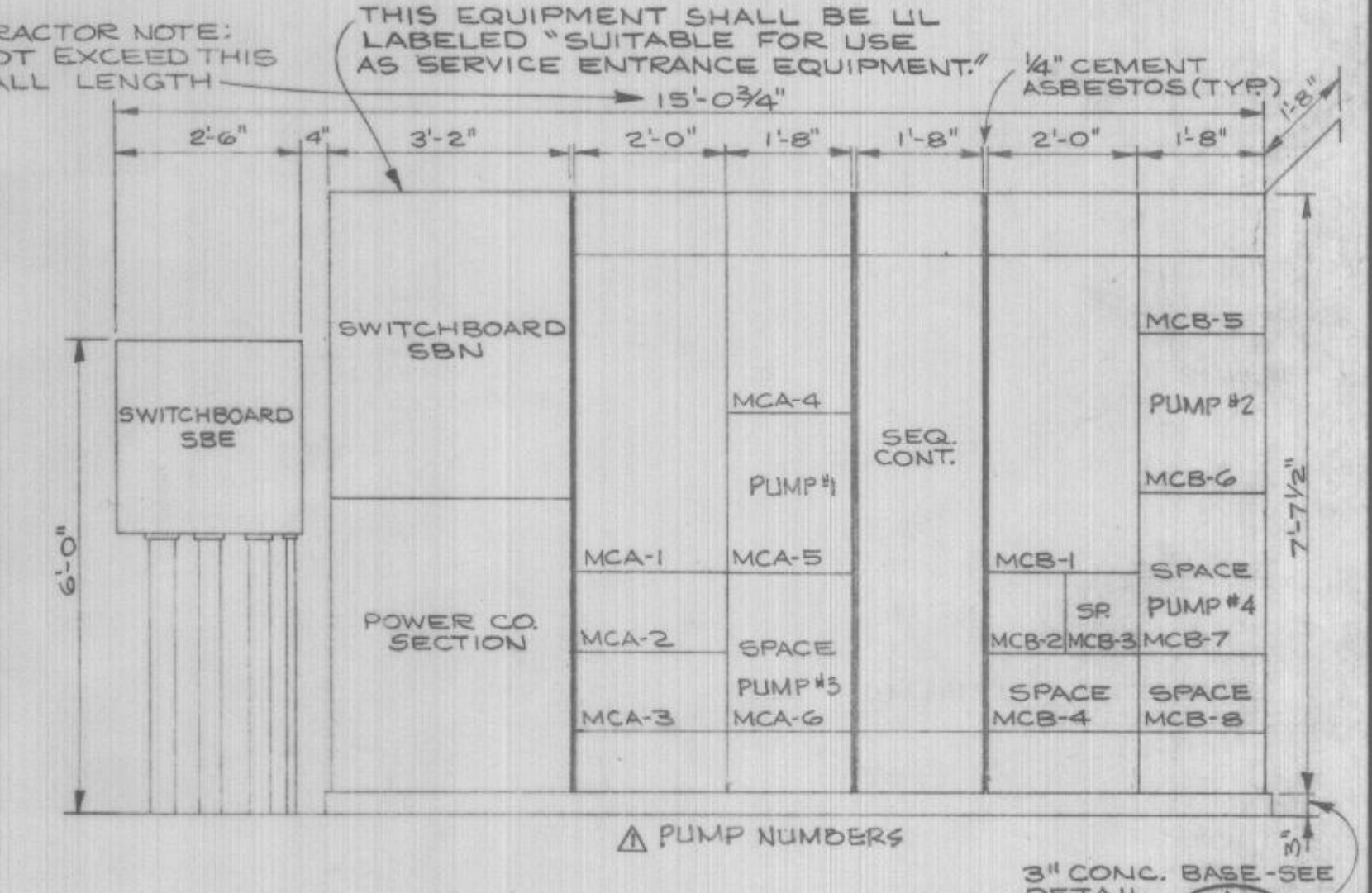


**POWER AND LIGHTING PLAN @ EL. 1293**  
 SCALE: 3/8"=1'-0"

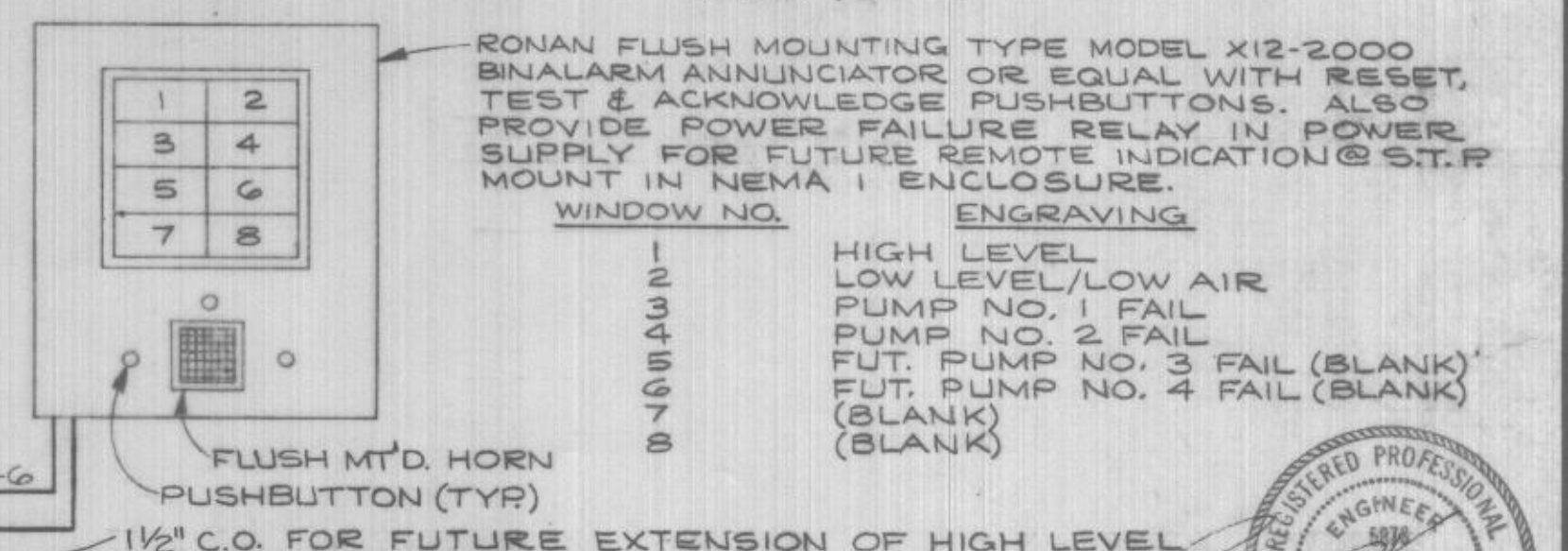
**WET WELL POWER AND LIGHTING PLAN**  
 SCALE: 3/8"=1'-0"



**ONE LINE DIAGRAM**



**ELECTRICAL EQUIPMENT ELEVATION**  
 SCALE: 1/2"=1'-0"



**ANNUNCIATOR DETAIL**  
 N.T.S.

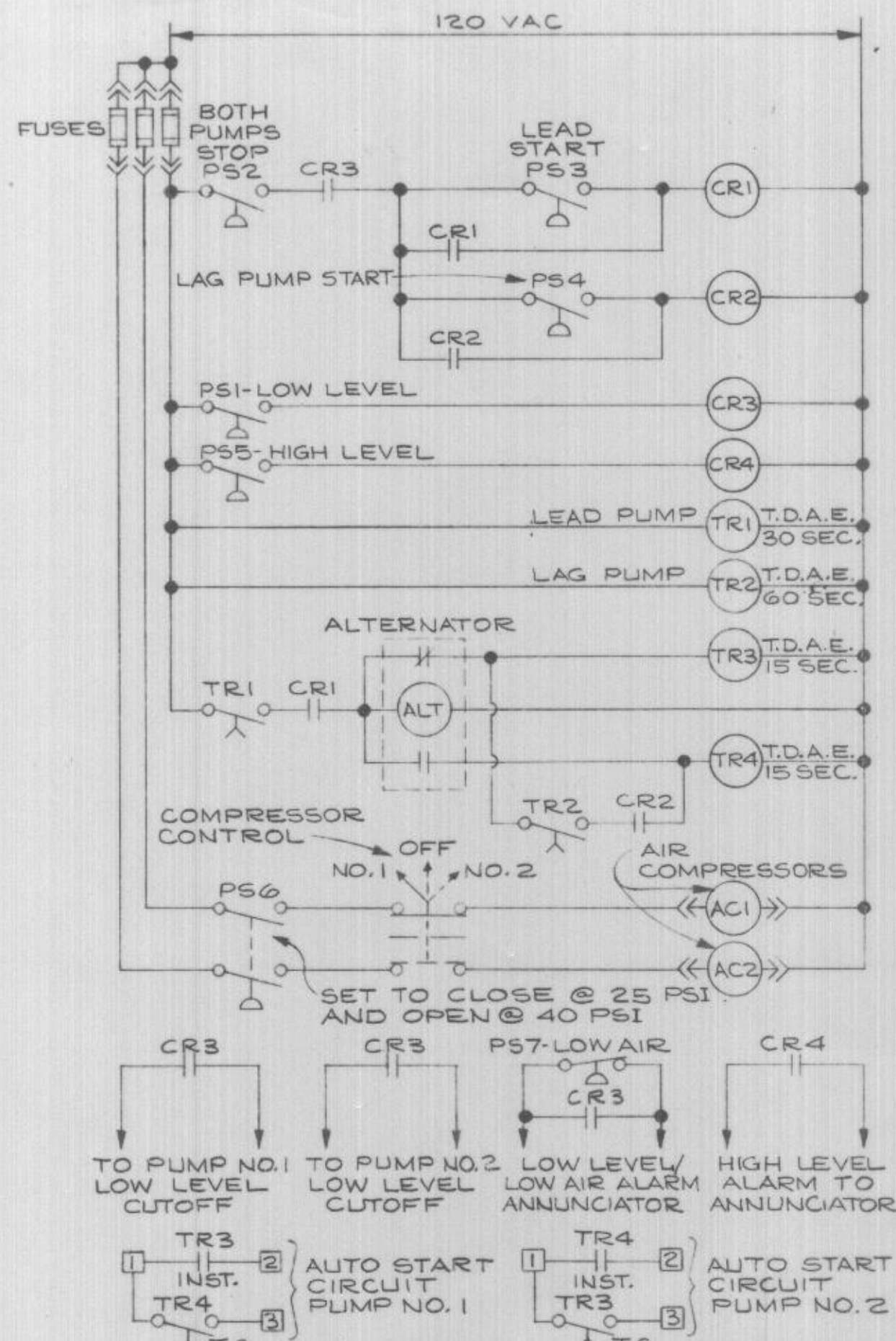
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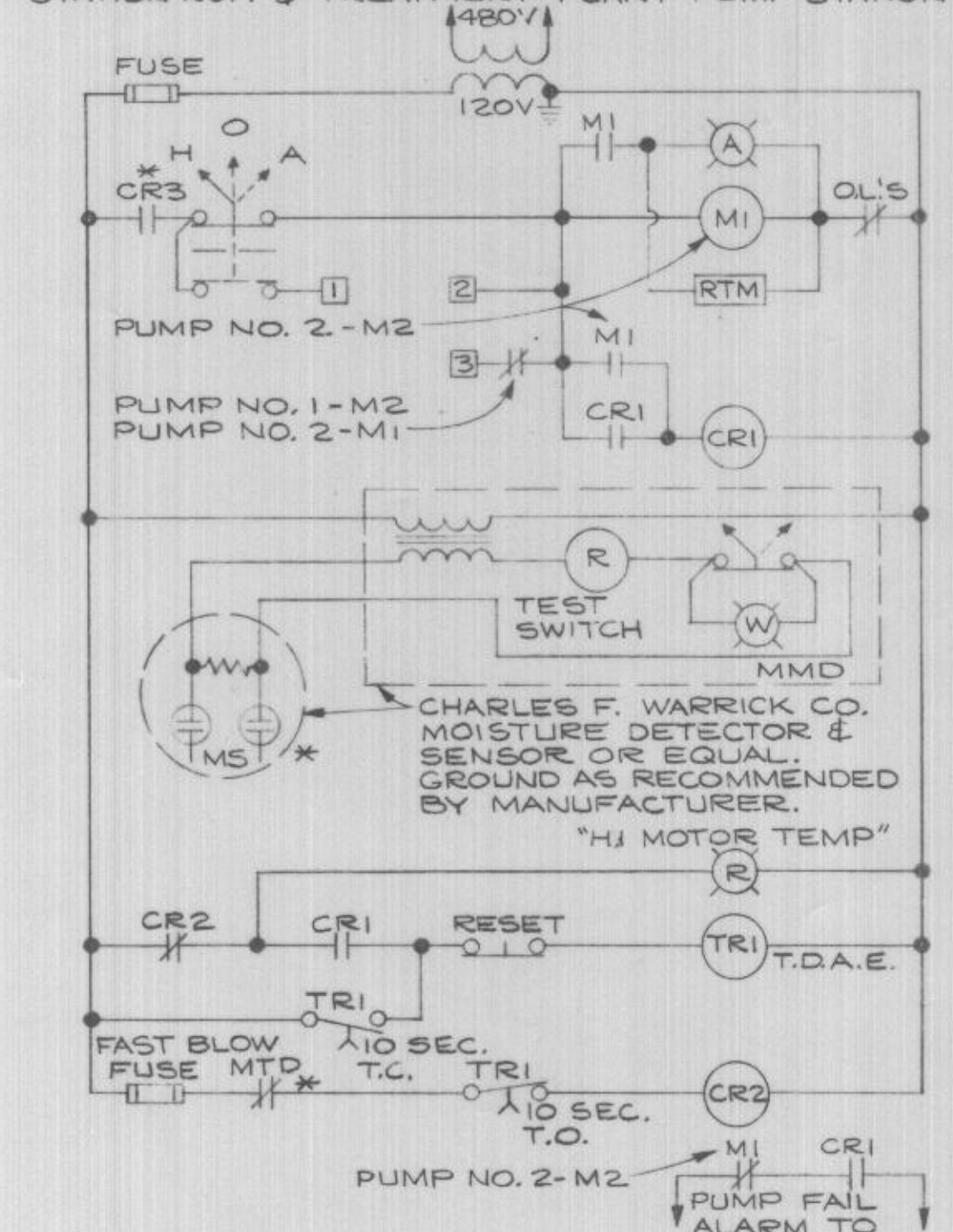
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**TREATMENT PLANT PUMP STATION**  
**ELECTRICAL DETAILS**  
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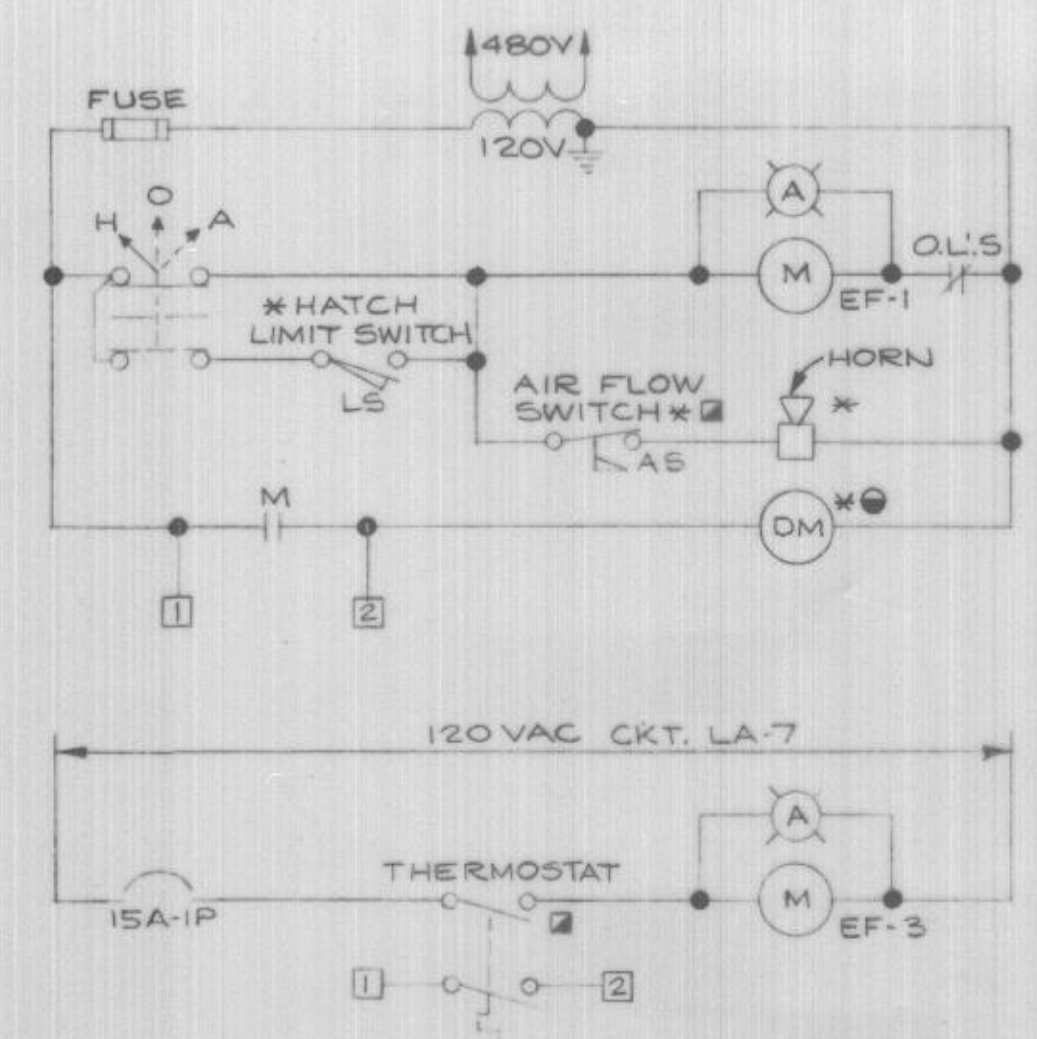




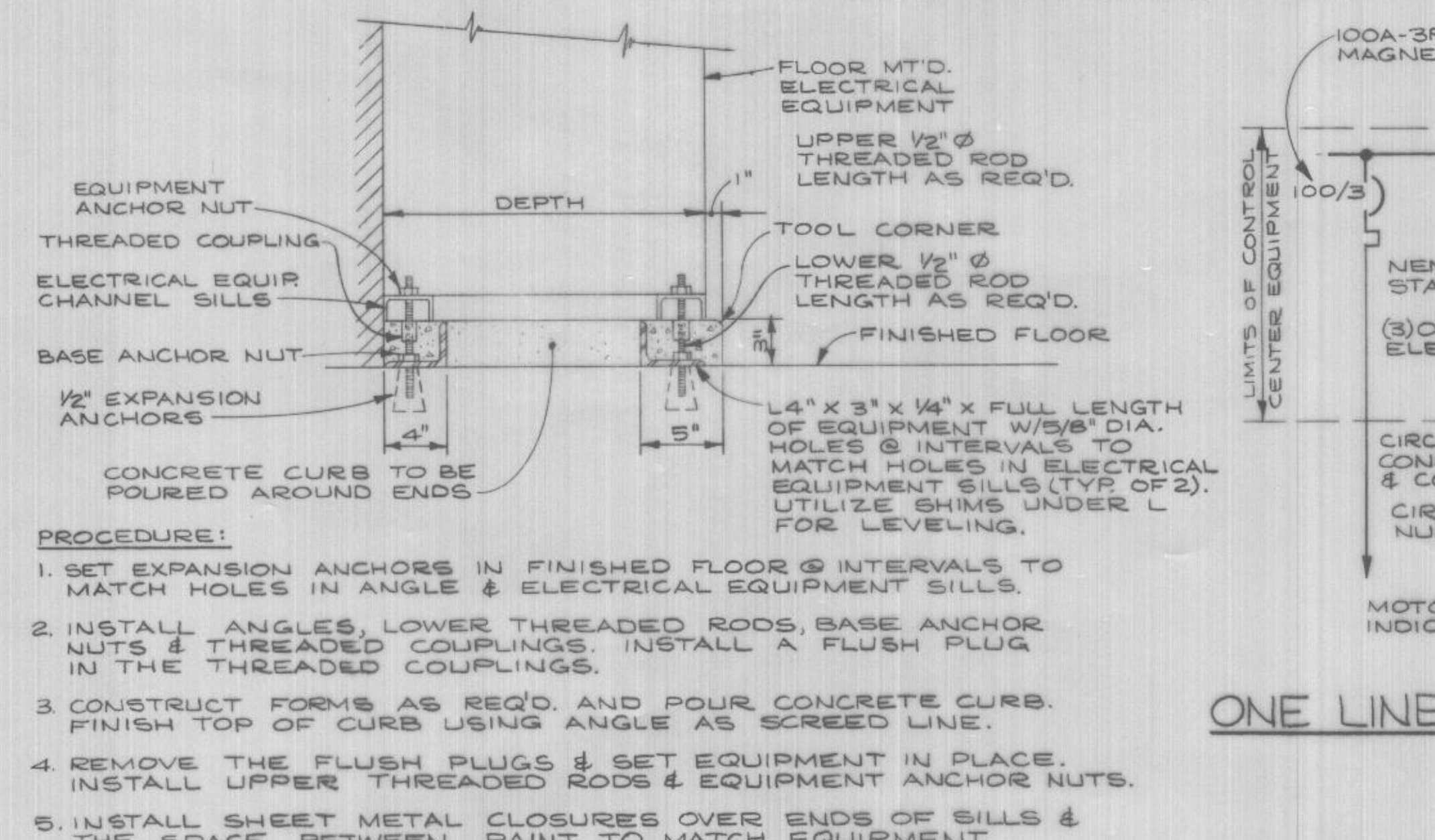
**CONTROL DIAGRAM NO. 1**  
SEQUENCE CONTROLLER - WELCHES PUMP STATION NO. 1 & TREATMENT PLANT PUMP STATION



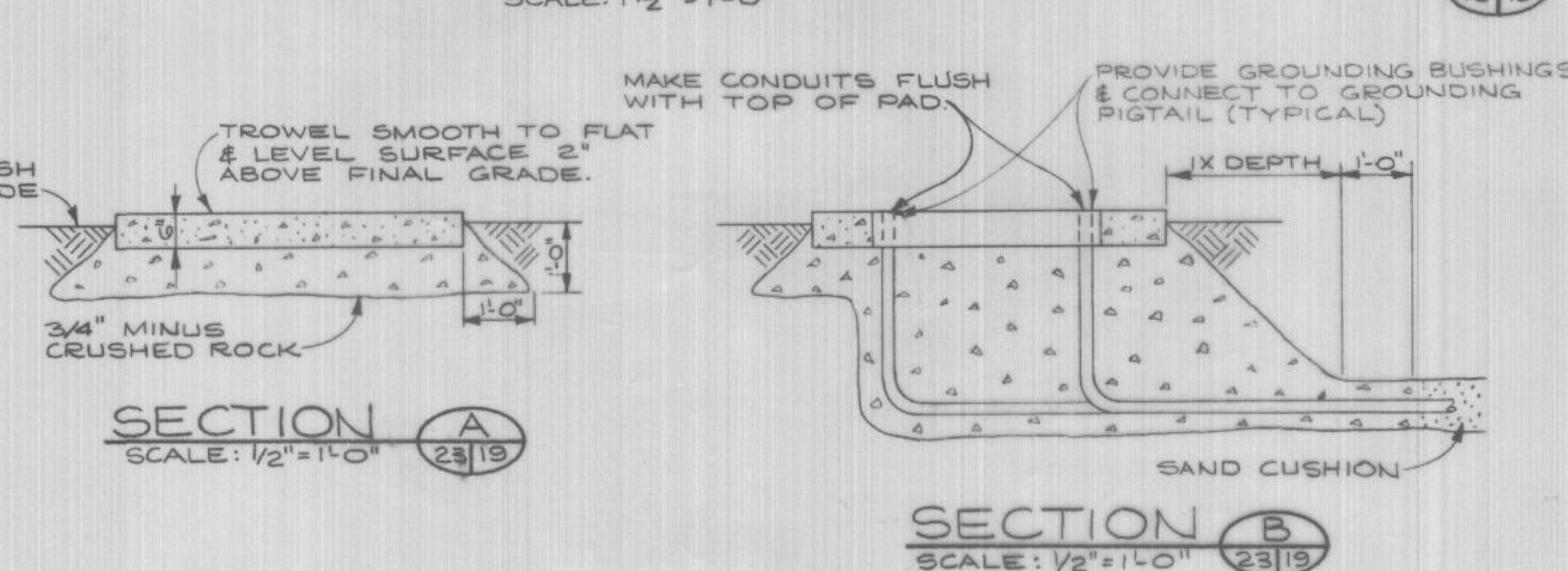
**CONTROL DIAGRAM NO. 2**  
PUMP NO. 1 & 2 - WELCHES PUMP STATION NO. 1 & TREATMENT PLANT PUMP STATION



**CONTROL DIAGRAM NO. 3**  
EXHAUST FAN EF-1 & EF-3 - TREATMENT PLANT PUMP STATION



**TYPICAL ELECTRICAL EQUIPMENT PAD DETAIL**  
SCALE: 1 1/2" = 1'-0"



**CONTROL KEY**

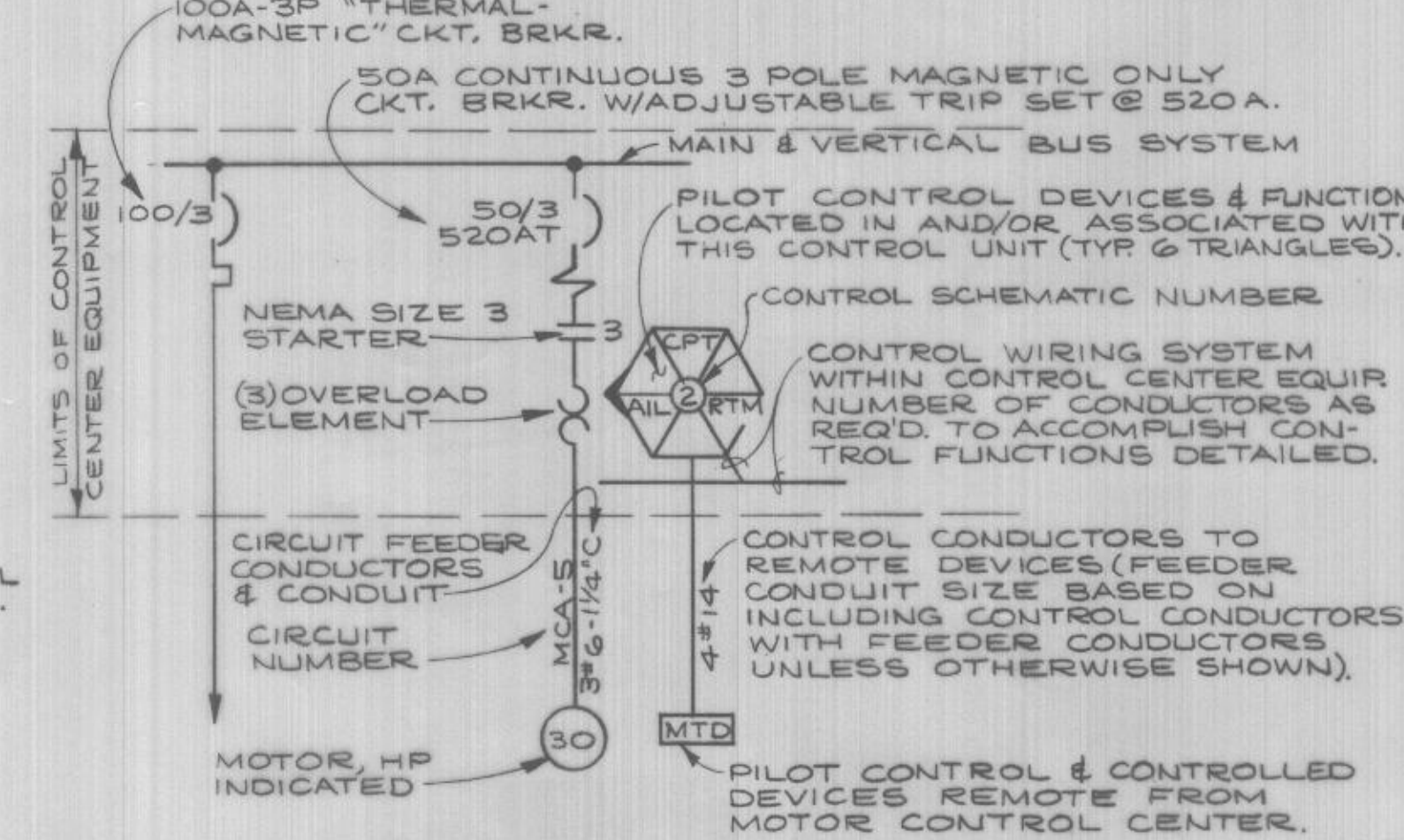
- AIL - AMBER INDICATING LIGHT
- ALT - ALTERNATOR
- AS - AIR FLOW SWITCH
- CR - CONTROL RELAY
- CPT - CONTROL POWER TRANSFORMER
- DM - DAMPER MOTOR
- LS - LIMIT SWITCH
- MTD - MOTOR THERMAL DETECTOR
- MMD - MOTOR MOISTURE DETECTOR
- MS - MOISTURE SENSOR
- PBI - RESET PUSHBUTTON
- PS - PRESSURE SWITCH
- RIL - RED INDICATING LIGHT
- RTM - RUNNING TIME METER
- SLI - HAND-OFF-AUTOMATIC SELECTOR SWITCH
- SL7 - NO.1-OFF-NO.2 SELECTOR SWITCH
- TR - TIMING RELAY
- XA - REMOTE ALARM
- YPE - REMOTE INTERLOCK OR RELAY CONTACTS CONNECTED AS A PERMISSIVE ELEMENT IN THIS DEVICE.
- ZI - AUXILIARY CONTACT FOR FUNCTION DETAILED.
- \* - LOCATED REMOTE
- - SPECIFIED UNDER DIVISION 15 OF THE SPECIFICATION.
- - SPECIFIED UNDER DIVISION 10 OF THE SPECIFICATION.

**FIXTURE SCHEDULE**

FIXT. NO.	MANUFACTURER	CATALOG NUMBER	LAMP QTY.	DESCRIPTION	MOUNTING	REMARKS
1	GUTH	ACR6762/120	2	F40 CW	C R W P	
2	CROUSE-HINDS	EVF 220B	2	F40CW		
3	CROUSE-HINDS	EVBX 215	1	300M/IF	X	EXPLOSION PROOF GUARD & RA-63 30° ANGLE REFLECTOR
4	HOLOPHANE	419-120-PR-010B-TP	1	LU 70	X	C/W PHOTOELECTRIC CONTROL, CAST GUARD & TAMPER RESISTANT HARDWARE
5	CROUSE-HINDS	VXMBF22GP	1	200A	X	C/W GUARD

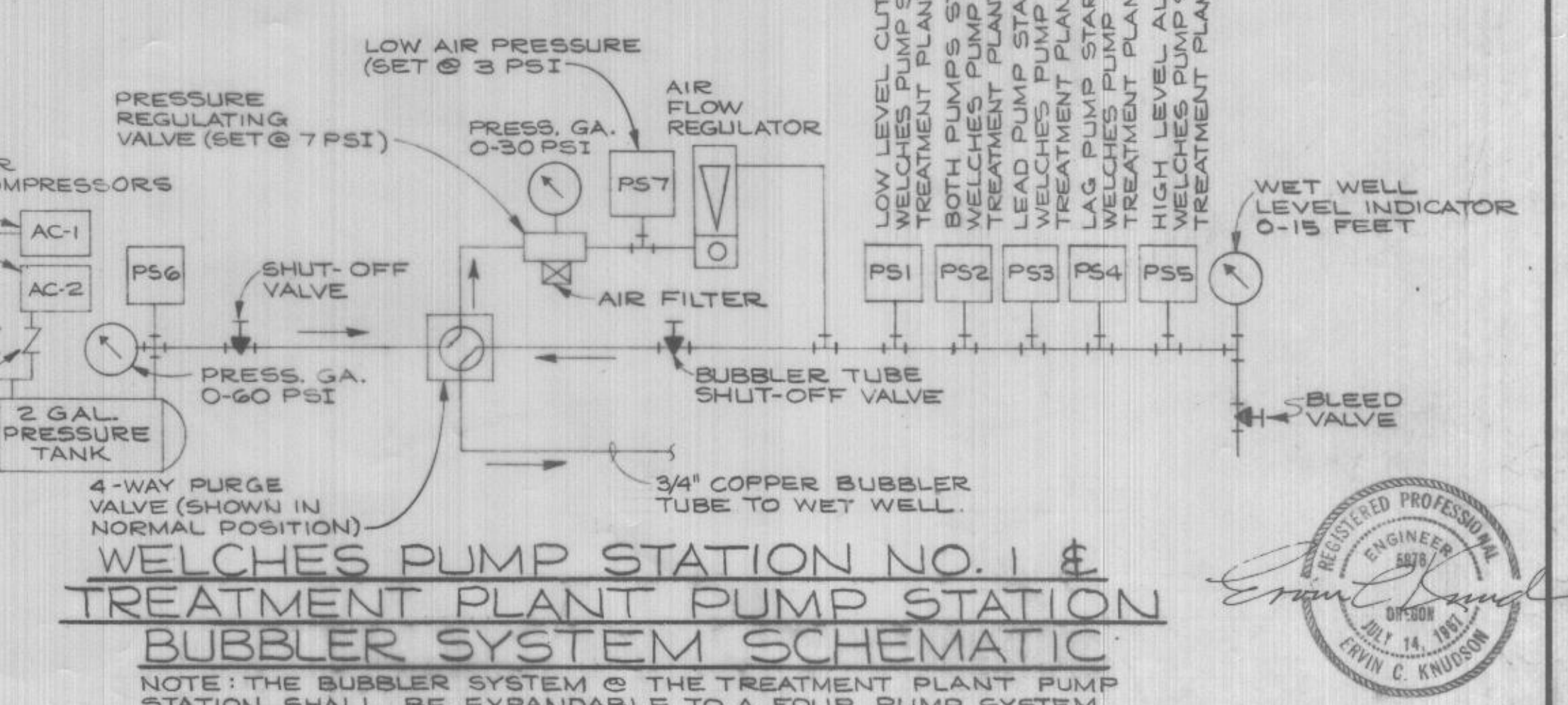
C - CEILING R - RECESSED W - WALL P - PENDANT

**ONE LINE DIAGRAM DESCRIPTION**



**ELECTRICAL LEGEND**

- - FLUORESCENT FIXTURE OUTLET } NUMERAL DENOTES FIXTURE TYPE - SEE SCHEDULE
- - WALL MTD. FIXTURE OUTLET } NUMERAL DENOTES FIXTURE TYPE - SEE SCHEDULE
- - BRANCH CIRCUIT OR FEEDER EXPOSED WITH GENERAL ROUTE INDICATED.
- - BRANCH CIRCUIT OR FEEDER CONCEALED IN SLAB OR EARTH.
- - BRANCH CIRCUIT OR FEEDER CONCEALED IN WALL OR CEILING.
- - HOME RUN TO PANEL WITH PANEL DESIGNATION & CIRCUIT NUMBER INDICATED. CROSSBARS DENOTE THE NUMBER OF CONDUCTORS. NO CROSSBARS DENOTES 2 CONDUCTORS UNLESS OTHERWISE NOTED.
- - FLEXIBLE CONDUIT
- - CONDUIT UP OR TOWARD
- - CONDUIT DOWN OR AWAY
- - EXPLOSION PROOF CONDUIT SEAL
- UH-1 - 3KW, 240V-1Ø SURFACE MOUNTING EXPLOSION PROOF WALL CONVECTOR - CHROMALOX CAT. NO. FTES-3 WITH REMOTE MOUNTING EXPLOSION PROOF THERMOSTAT CHROMALOX CAT. NO. WR-80-EP
- UH-2 - 4 KW, 480V-3Ø HORIZONTAL DISCHARGE UNIT HEATER WITH BUILT-IN THERMOSTAT - CHROMALOX CAT. NO. UH-04-06 & CEILING SWIVEL MT'G. BRACKET - CHROMALOX CAT. NO. WUH-04.
- - DUPLEX RECEPTACLE, 20A, 125V-2P, 3W.
- S - SINGLE POLE SWITCH
- M - MOTOR, HP INDICATED
- DM - DAMPER MOTOR
- T - THERMOSTAT
- LS - LIMIT SWITCH
- AS - AIR FLOW SWITCH
- PS - PRESSURE SWITCH
- MS - MOTOR MOISTURE SENSOR
- MTD - MOTOR THERMAL DETECTOR
- J - JUNCTION BOX
- S.T.P. - SEWAGE TREATMENT PLANT
- RGS - RIGID GALVANIZED STEEL
- PVC - NON-METALLIC PLASTIC CONDUIT, SCHEDULE 40 PVC
- C.O. - CONDUIT ONLY WITH NYLON PULLWIRE
- EHH - ELECTRICAL HANDHOLE - SEE SPEC'N.
- SUBSCRIPT ADDED TO ANY SYMBOL DENOTES:
  - +5'-0" - MOUNTING HEIGHT ABOVE FLOOR
  - WP - WEATHER PROOF, NEMA 4 OR EQUIVALENT
  - SUB. - SUBMERSIBLE
  - P - PILOT LIGHT
  - EX - EXPLOSION PROOF



**WELCHES PUMP STATION NO. 1 & TREATMENT PLANT PUMP STATION BUBBLER SYSTEM SCHEMATIC**  
NOTE: THE BUBBLER SYSTEM @ THE TREATMENT PLANT PUMP STATION SHALL BE EXPANDABLE TO A FOUR PUMP SYSTEM.