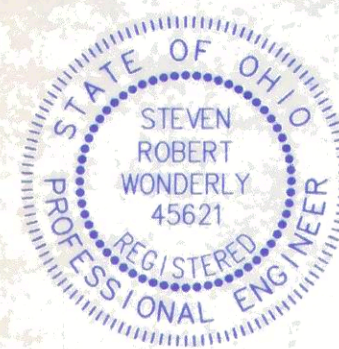


WASTEWATER TREATMENT PLANT ULTRAVIOLET DISINFECTION IMPROVEMENTS VILLAGE OF OAK HARBOR OTTAWA COUNTY, OHIO

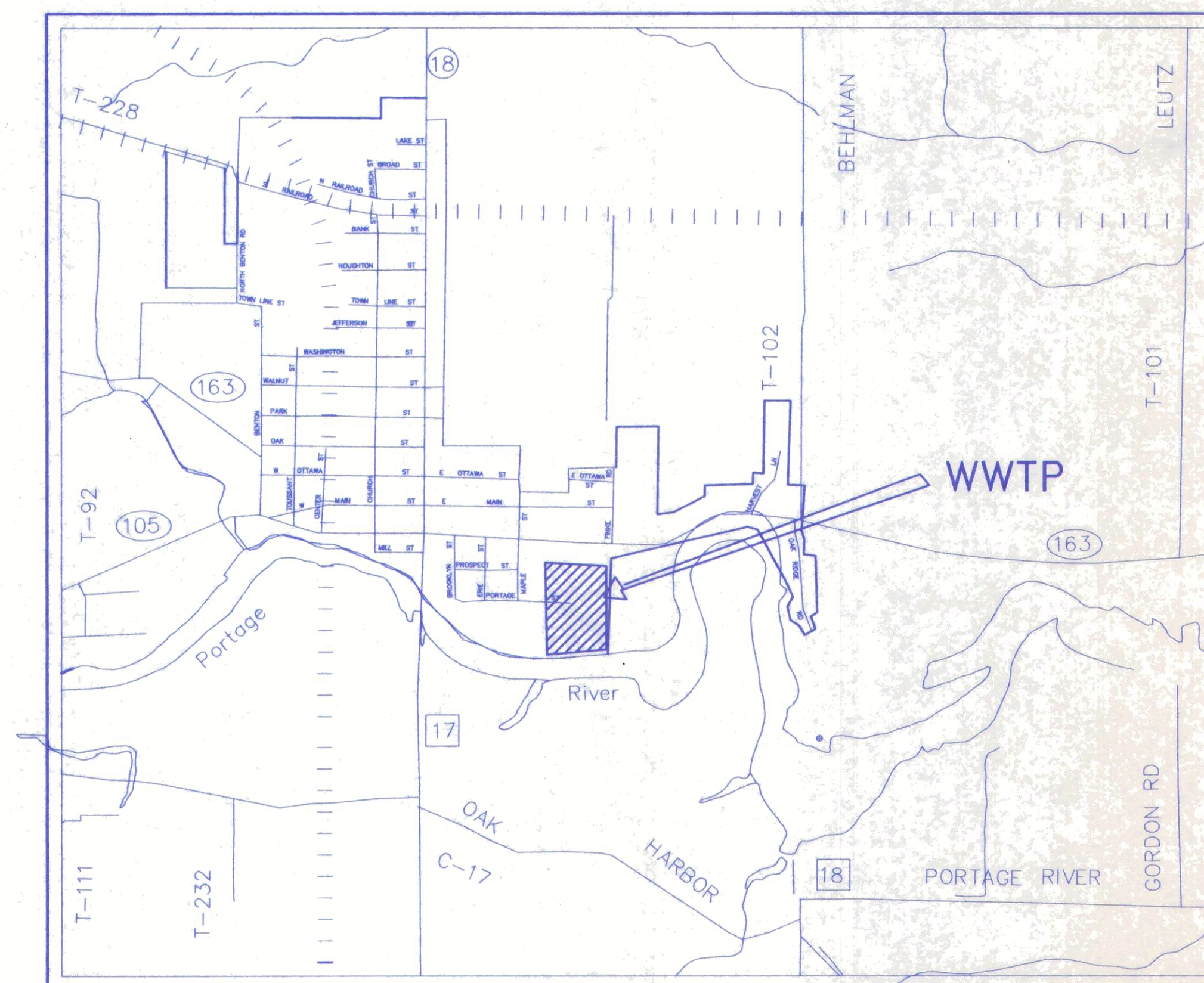
1998



Michael Atherine, Jr.
MICHAEL ATHERINE, JR., P.E. - 43597



Steven R. Wonderly
STEVEN ROBERT WONDERLY, P.E. - 45621



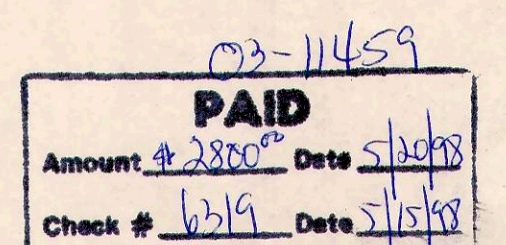
SITE MAP

APPROVED BY:

MAYOR - VILLAGE OF OAK HARBOR, OHIO DATE

APPROVED BY:

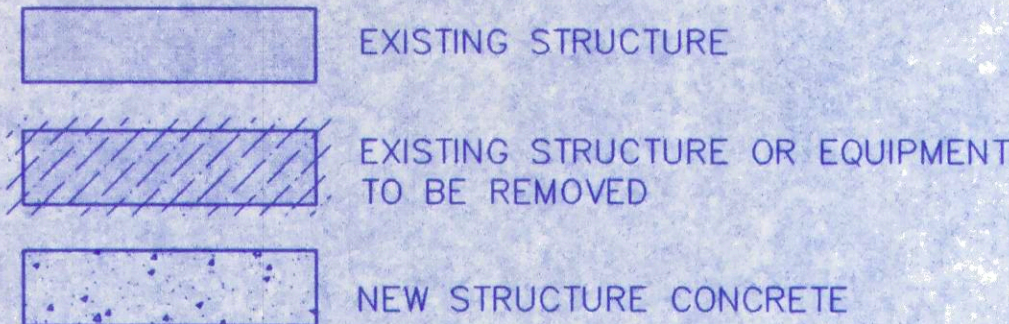
Jim Wilkin
VILLAGE ADMINISTRATOR 5-15-98
DATE



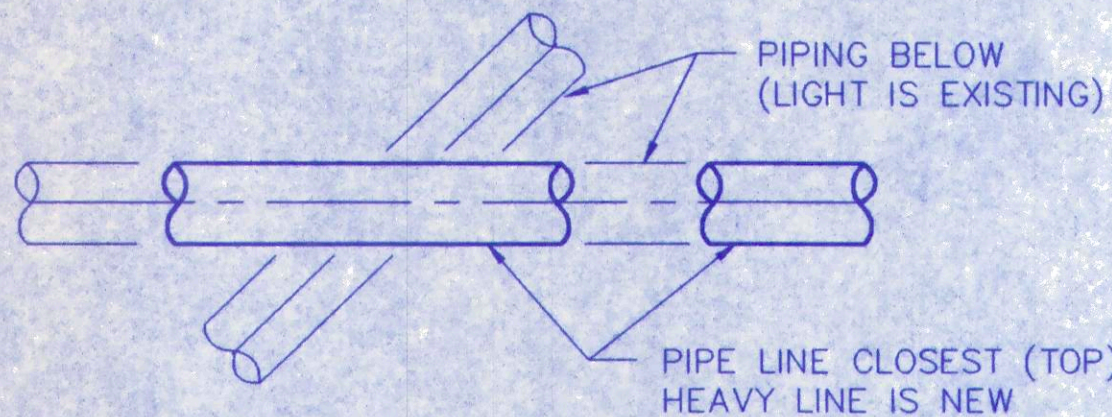
POGGEMEYER DESIGN GROUP, INC.
ARCHITECTS + ENGINEERS + PLANNERS
1168 NORTH MAIN STREET BOWLING GREEN, OHIO 43402
PHONE (419) 352-7537 (419) 244-8074

JOB NO.: 1590-023

BUILDING LEGEND

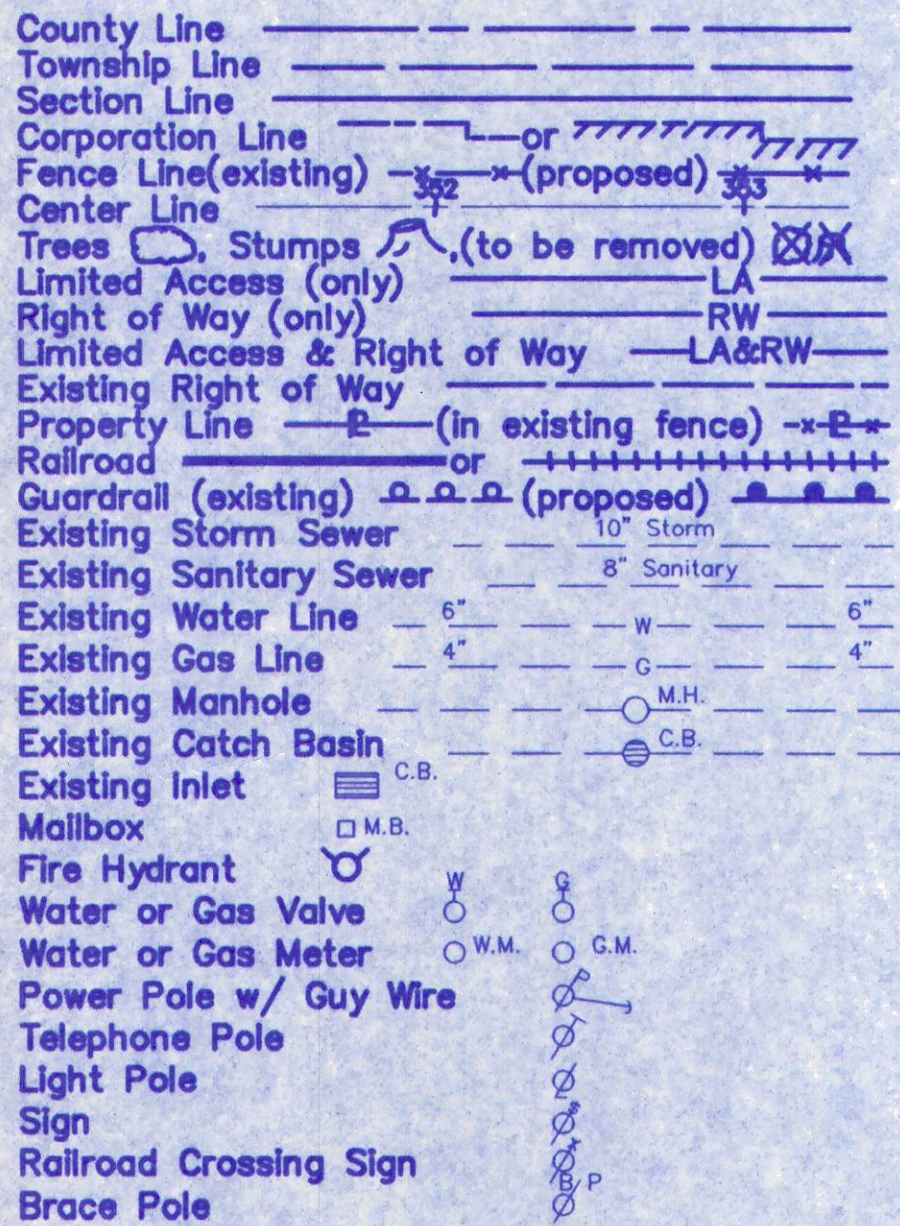


PIPING LEGEND

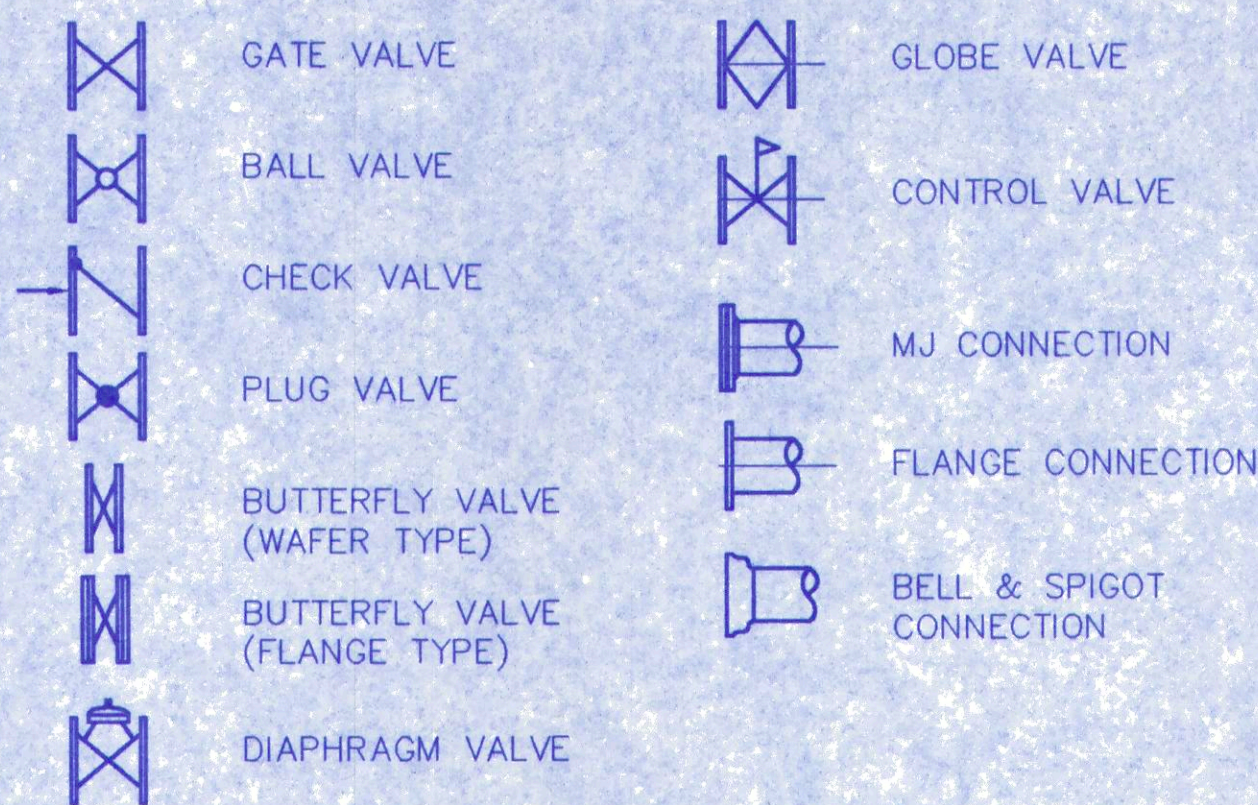


NEW PIPING AND EQUIPMENT UNDER CONTRACT LABEL "NEW" UNLESS OTHERWISE NOTED.

TOPOGRAPHY LEGEND



VALVE SYMBOL LEGEND



- NOTE 1.) VALVE DESIGNATION AND TYPE APPLIES TO SCALE DRAWINGS ONLY. SCHEMATIC DIAGRAMS DO NOT REPRESENT ALL TYPES.
- 2.) PROVIDE GEARED AND HANDWHEEL ACTUATOR FOR VALVES 6" AND LARGER UNLESS OTHERWISE NOTED. PROVIDE CHAIN WHEEL ON VALVES HIGHER THAN SIX (6) FEET.

PIPING ABBREVIATIONS

<u>MATERIAL</u>	<u>SERVICE</u>	
BLACK STEEL PIPE	NG	NATURAL GAS
CORRUGATED METAL PIPE	CW	CITY WATER
CONCRETE PRESSURE PIPE (PRESTRESSED)	HW	HOT CITY WATER
CHLORINATED POLYVINYL CHLORIDE PIPE	NPW	PLANT WATER (NON-DRINKABLE)
COPPER TUBING OR PIPING	PW	POTABLE WATER
DUCTILE IRON PIPE	CA	COMPRESSED AIR
GALVANIZED STEEL PIPE	SS	SANITARY SEWER
CONCRETE PIPE (PLAIN)	RW	RAW WATER
POLYVINYL CHLORIDE PIPE	DW	DIGESTED WATER
STEEL PIPE		
STAINLESS STEEL PIPE		
POLYETHYLENE		
FIBERGLASS REINFORCED POLYESTER		

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	INDEX AND LEGENDS
3.	SITE PLAN
4.	"UV" BUILDING - ELEVATION AND DETAILS
5.	"UV" BUILDING - PLANS
6.	STRUCTURAL DETAILS AND GENERAL NOTES
7.	MISCELLANEOUS DETAILS
8.	ULTRAVIOLET SYSTEM DETAILS AND SCHEMATIC
M1	"UV" BUILDING - HVAC PLAN, SCHEDULES
E1	ELECTRICAL SITE PLAN
E2	ELECTRICAL SYMBOL LEGEND AND SCHEDULES
E3	"UV" & WORKSHOP/BLOWER BLDG. PLANS

AS BUILT CERTIFICATION

ALL UTILITIES, PAVEMENT, AND OTHER WORK ON THIS PROJECT HAVE BEEN COMPLETED IN CONFORMITY TO THE PLANS, APPROVED BY:

VILLAGE OF OAK HARBOR, OHIO _____

CONTRACTOR _____ DATE _____

UNDERGROUND UTILITIES

TWO WORKING DAYS
BEFORE YOU DIG

Call 800-362-2764 (Toll Free)

OHIO UTILITIES PROTECTION SERVICE

NON-MEMBERS
MUST BE CALLED DIRECTLY

SEWERAGE
APPROVED

OHIO ENVIRONMENTAL PROTECTION AGENCY

AS EVIDENCED BY COPY OF
LETTER OF APPROVAL
HERETO ATTACHED

STATE OF OHIO

MICHAEL
ATHERINE, JR.
43597

REGISTERED
PROFESSIONAL ENGINEER

POGGEMEYER DESIGN GROUP, INC.
ARCHITECTS ENGINEERS PLANNERS
1168 NORTH MAIN STREET BOWLING GREEN, OHIO 43402
(419) 352-7537

WASTEWATER TREATMENT PLANT
ULTRAVIOLET DISINFECTION
OAK HARBOR, OHIO

LEGENDS
AND INDEX

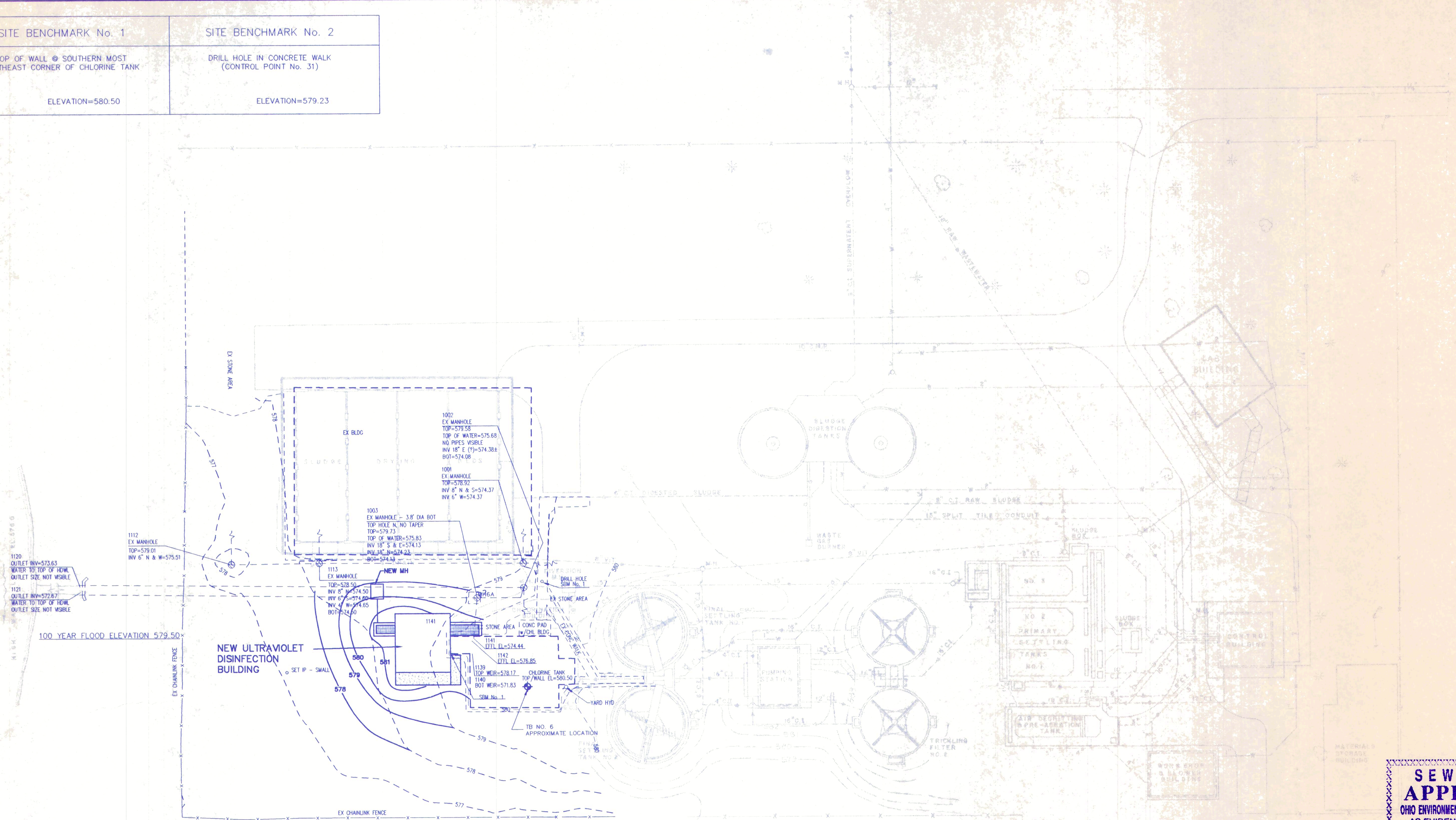
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OF
12

JOB NUMBER
1590-023

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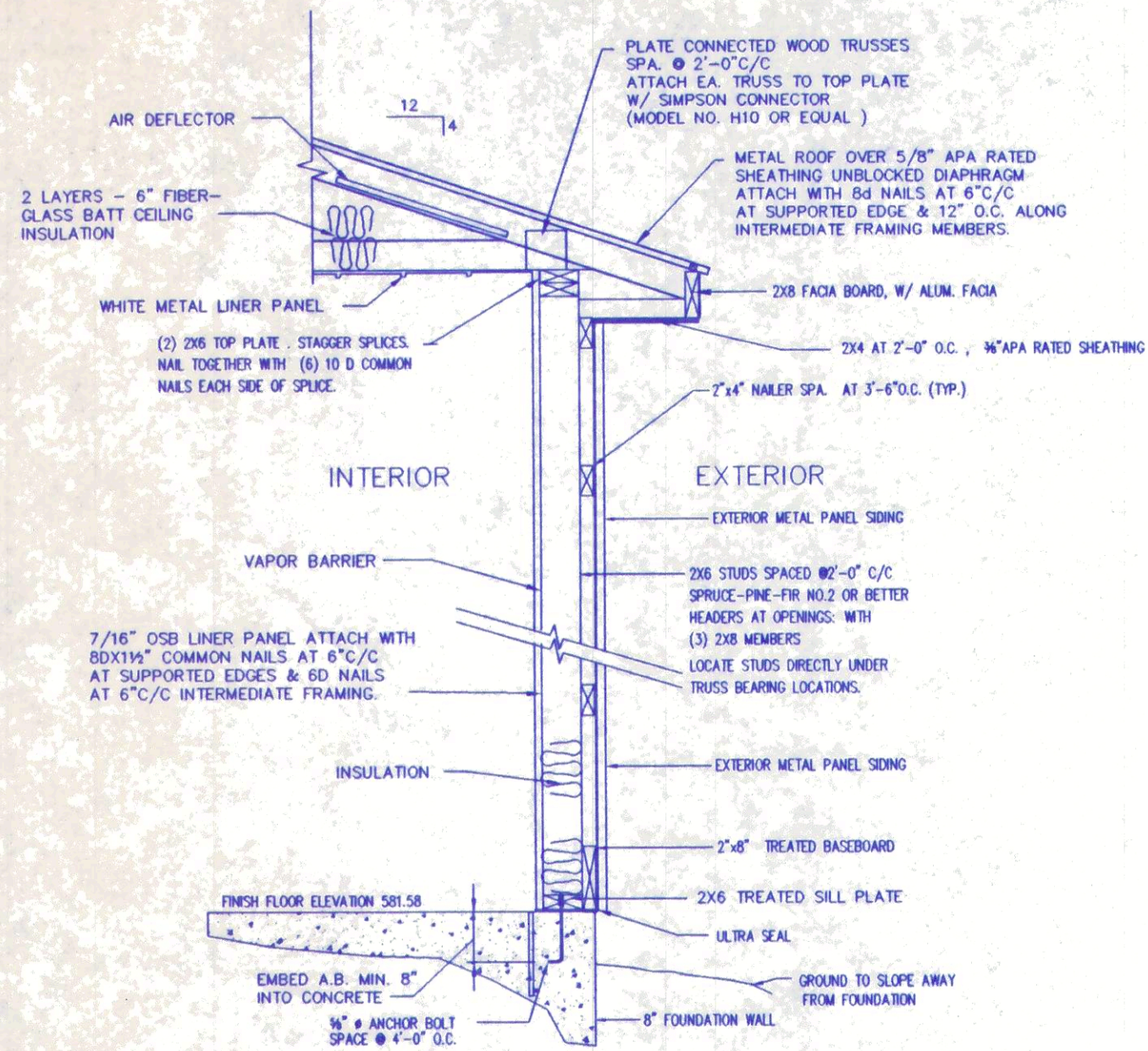
SHEET3.DWG 5-19-98 11:45:17 am EST

SITE BENCHMARK No. 1	SITE BENCHMARK No. 2
TOP OF WALL @ SOUTHERN MOST SOUTHEAST CORNER OF CHLORINE TANK	DRILL HOLE IN CONCRETE WALK (CONTROL POINT No. 31)
ELEVATION=580.50	ELEVATION=579.23

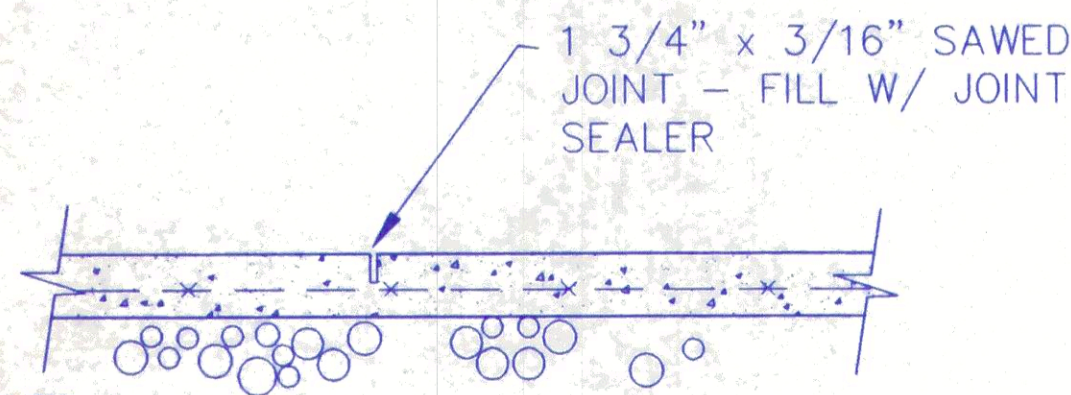


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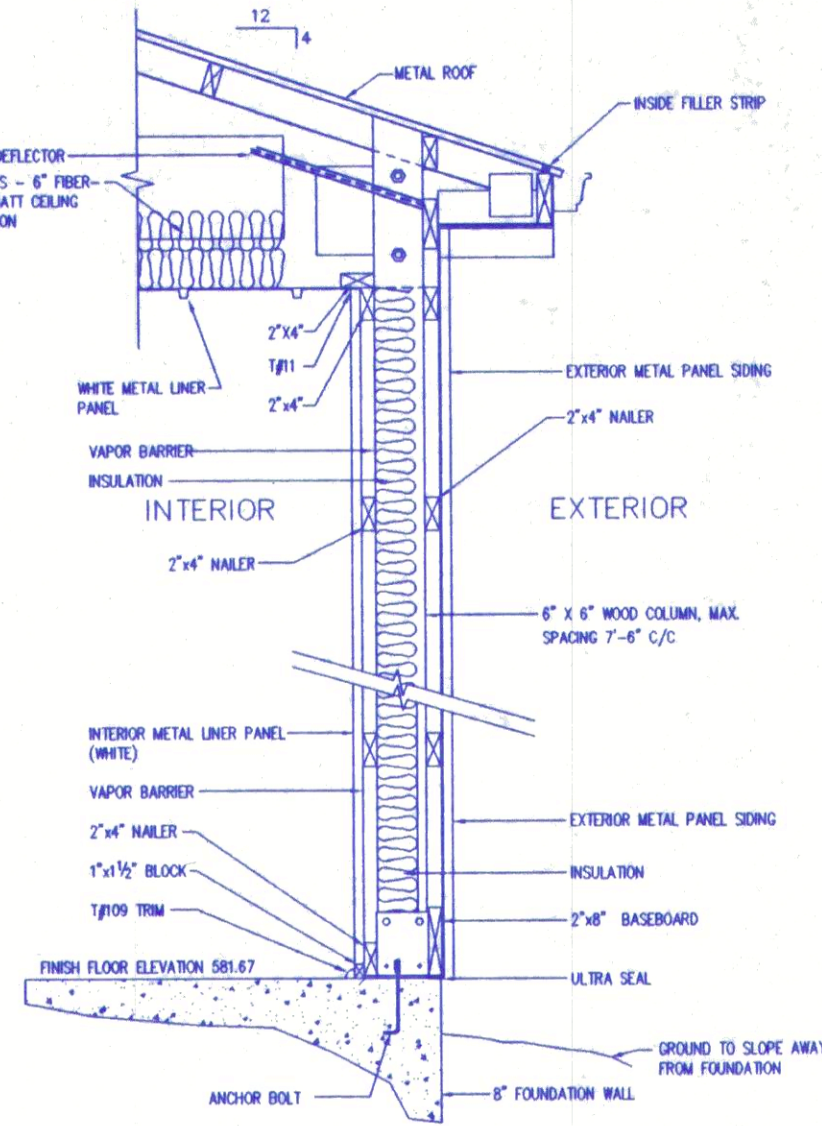


TYPICAL CONVENTIONAL WALL SECTION
NTS

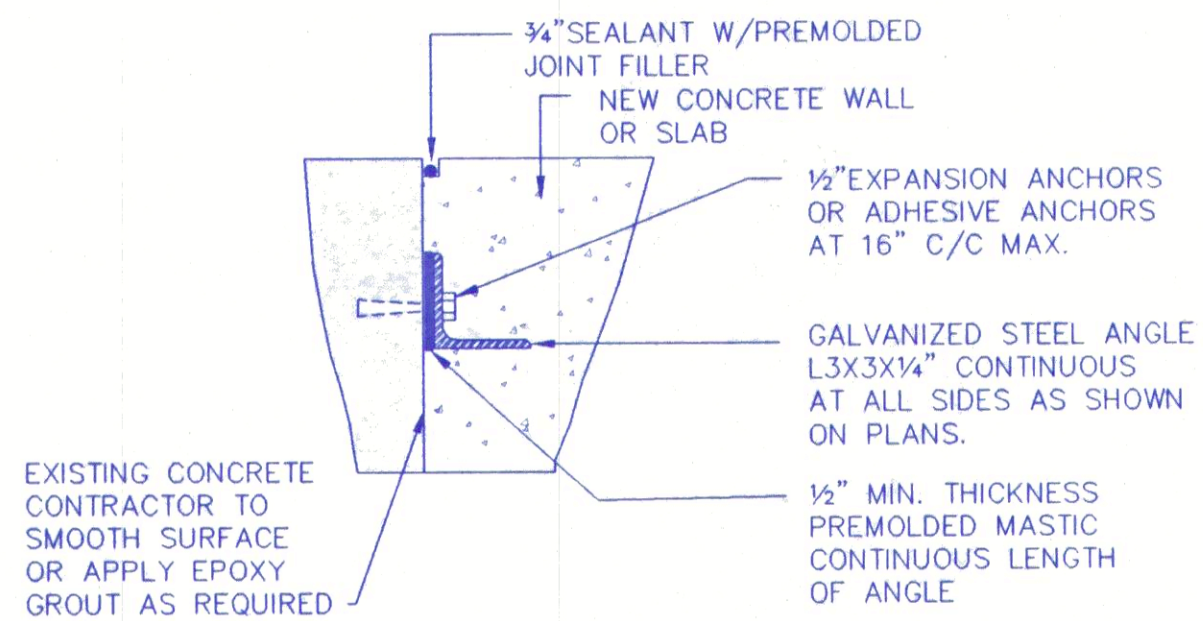


NOTE:
SEE PLANS FOR SLAB
& BASE THICK.

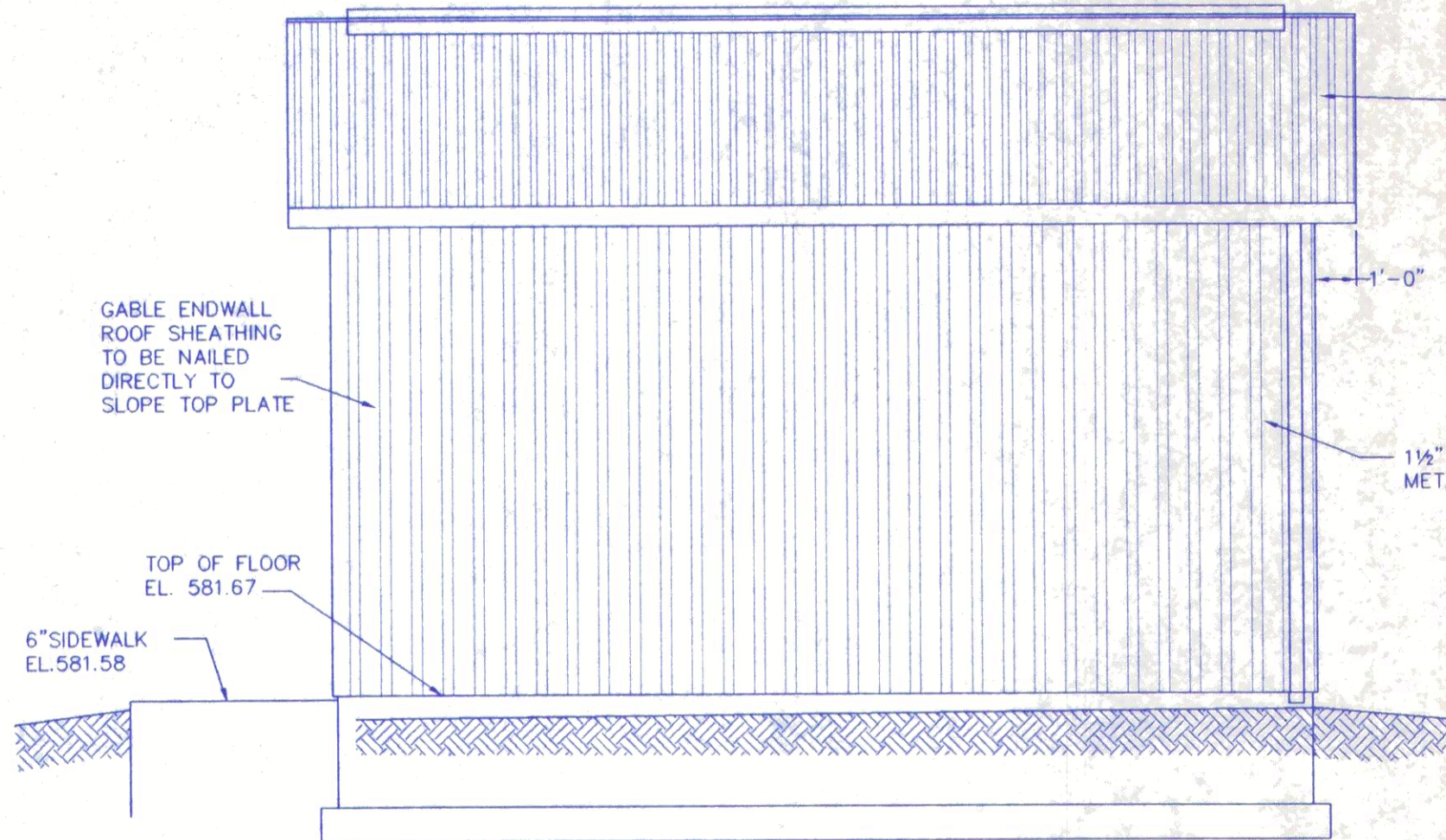
TYP. SLAB ON GRADE
CONTROL JOINT



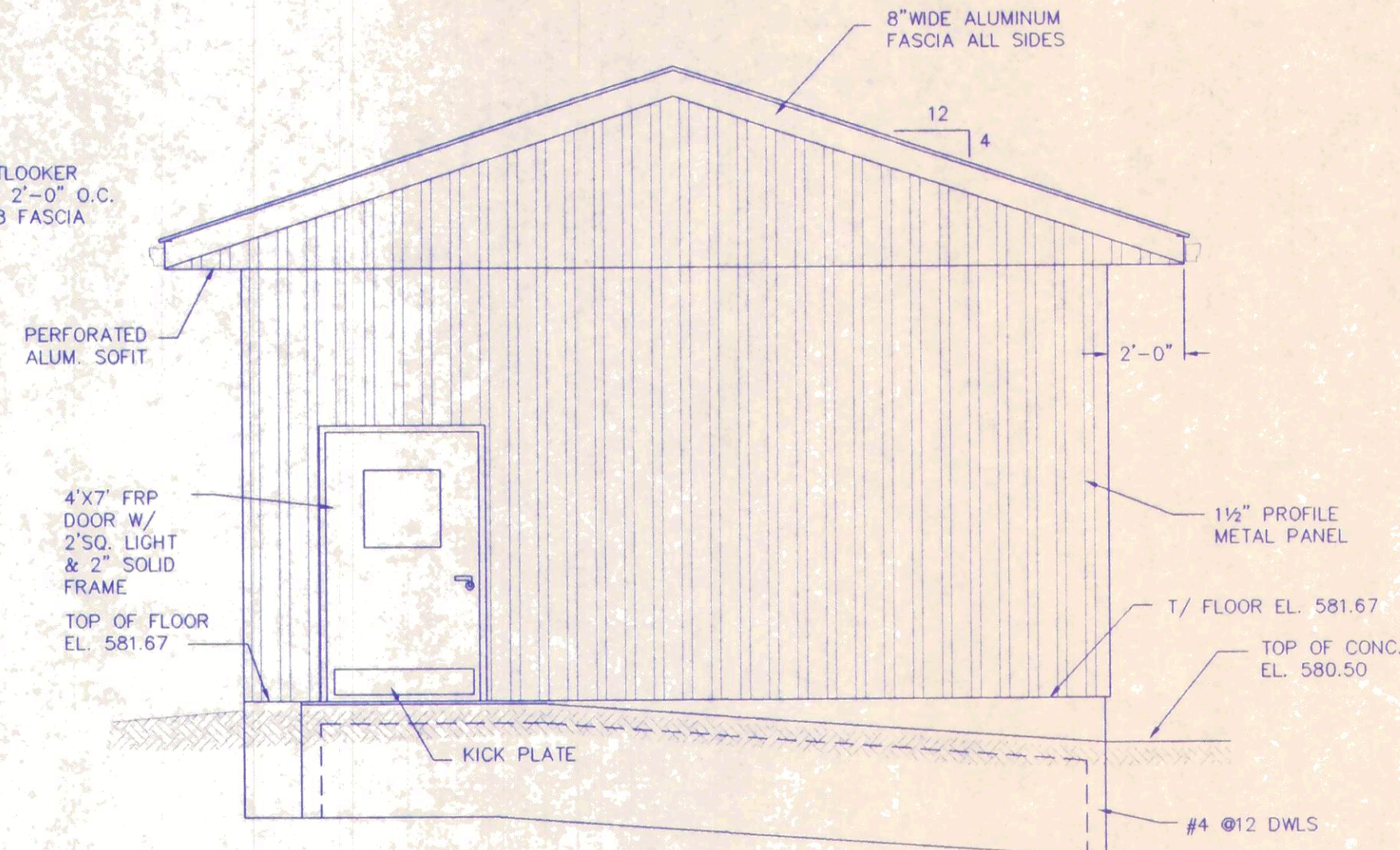
TYPICAL PRE-ENGINEER WALL SECTION
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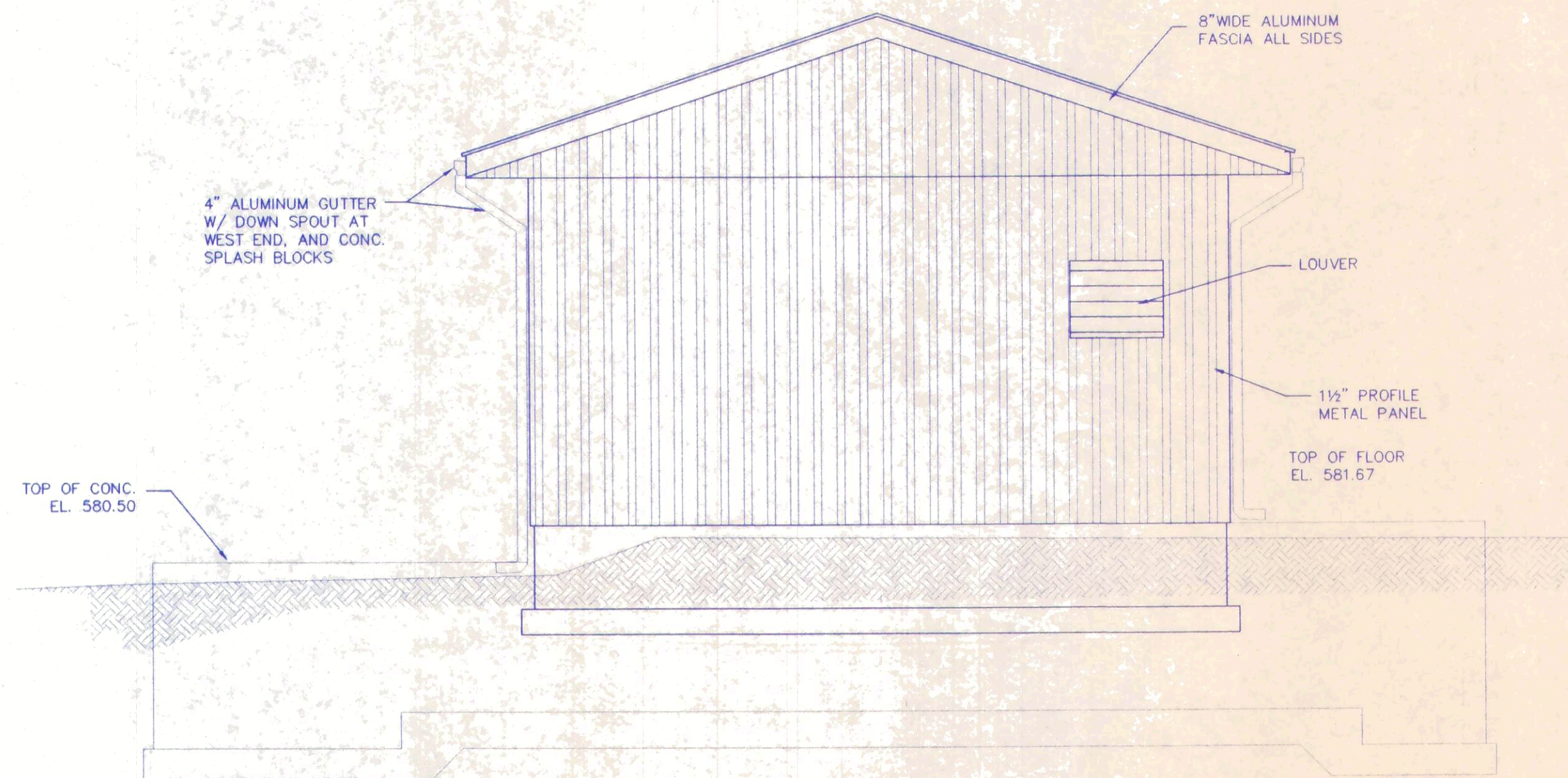
TYPE A STEEL WATERSTOP DETAIL
NTS



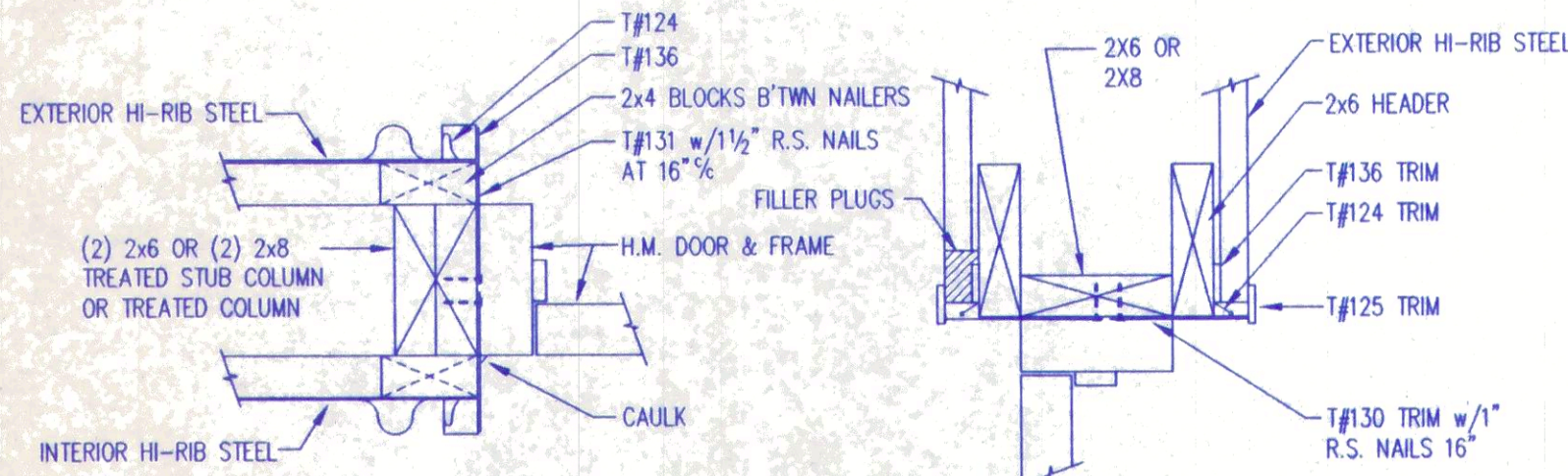
NORTH + SOUTH ELEVATION
SCALE: 1/4\"/>



EAST ELEVATION
SCALE: 1/4\"/>

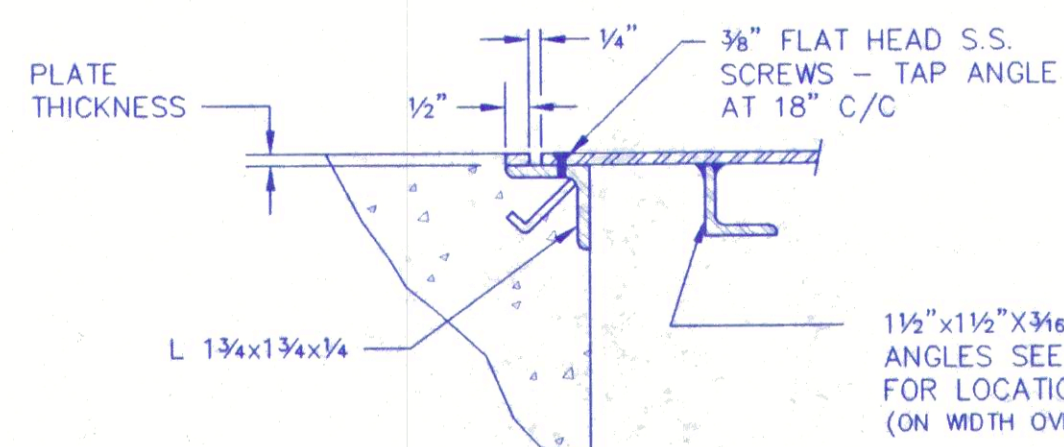


WEST ELEVATION
SCALE: 1/4\"/>

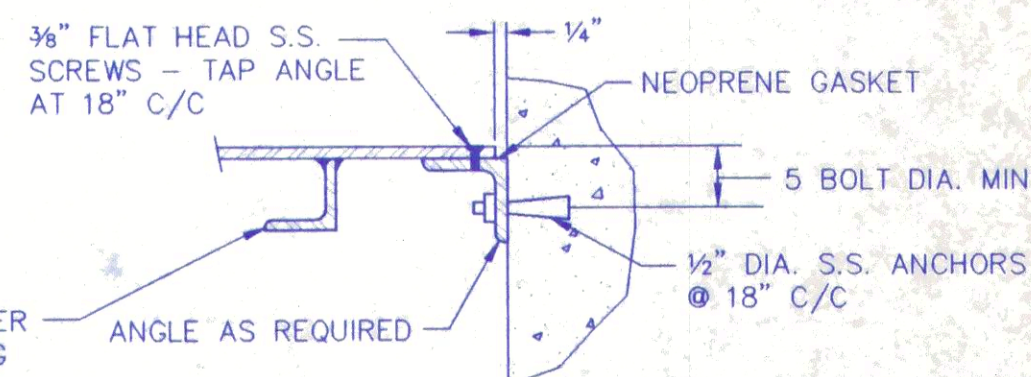


JAMB SECTION
NOT TO SCALE

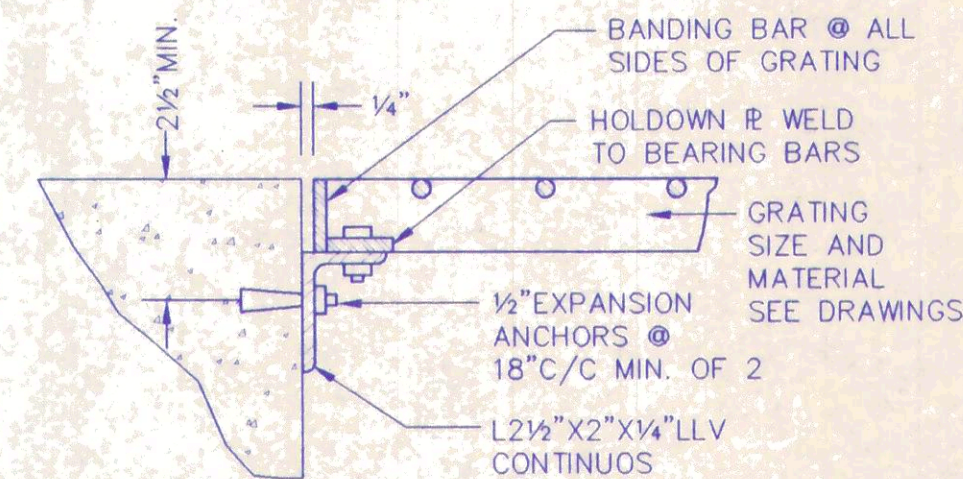
HEAD SECTION
NOT TO SCALE



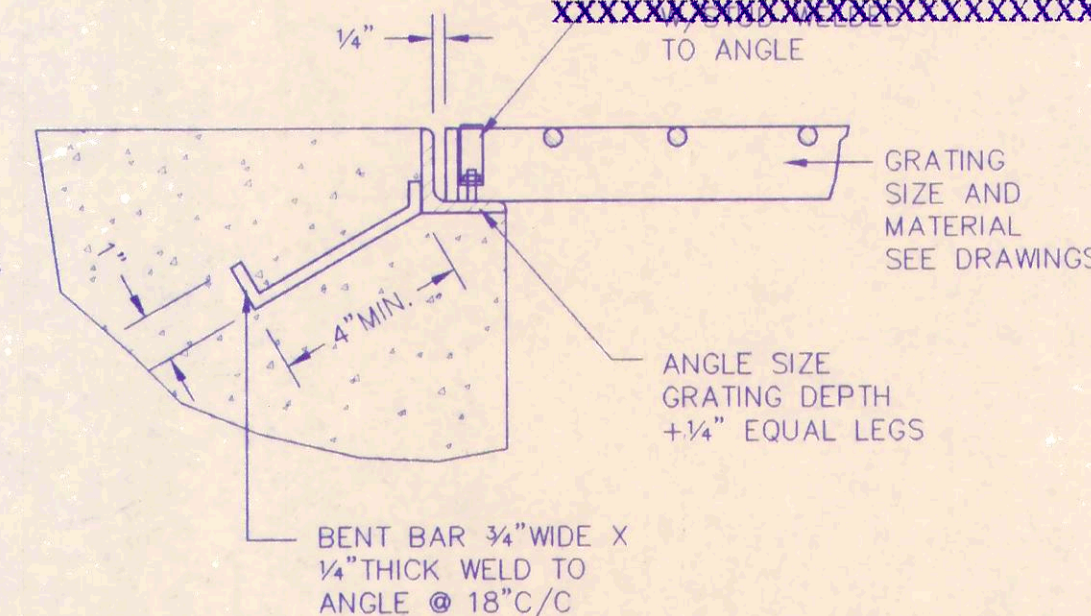
TYPE C1A



TYPE C2A



TYPE C1

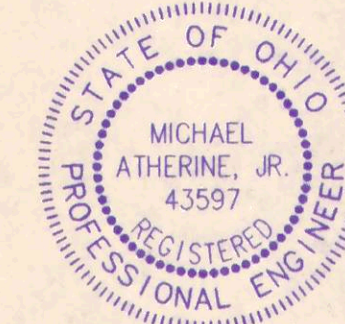


TYPE C2

NOTES: 1.-ALL BOLTS NUTS AND WASHERS
SHALL BE STAINLESS STEEL.
2.-APPLY BITUMINOUS PAINT TO
ALL ALUMINUM SURFACES IN
CONTACT WITH CONCRETE.
4.-FRAMING ANGLES TO BE
THE SAME MATERIAL AS GRATING.

GRATING FRAME DETAILS
NTS

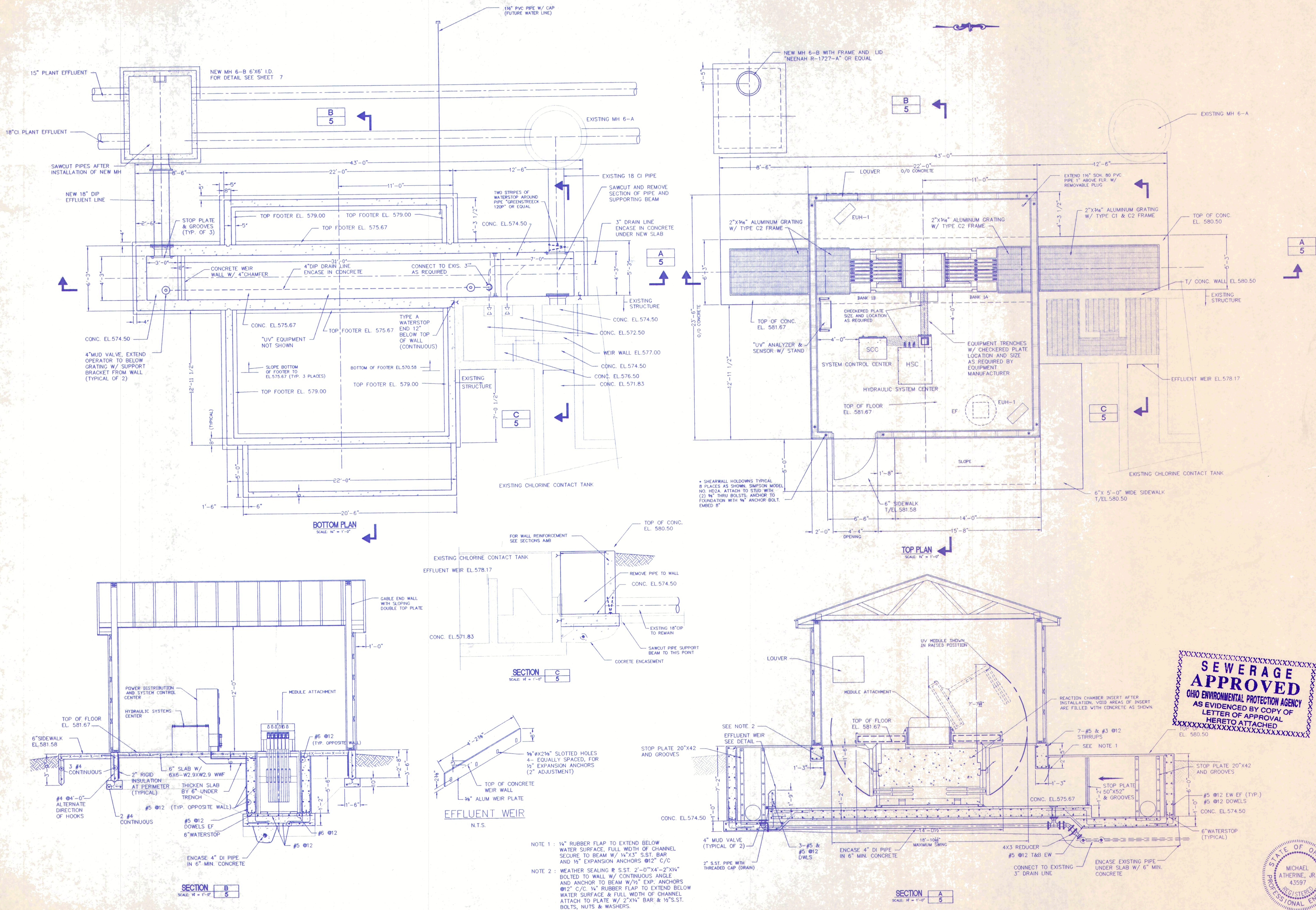
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**SEWERAGE
APPROVED**
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS EVIDENCED BY COPY OF
LETTER OF APPROVAL
HERE TO ATTACHED
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PLANNERS
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BOWLING GREEN, OHIO 43402
(419) 352-7537

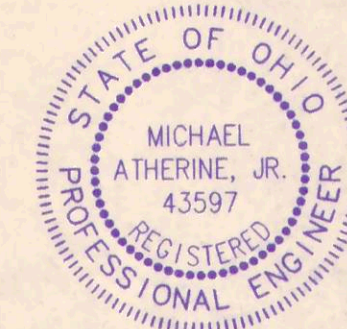
**WASTEWATER TREATMENT PLANT
ULTRAVIOLET DISINFECTION
OAK HARBOR, OHIO**

**'UV' SYSTEM
PLANS AND
SECTIONS**

DRAWN BY: CHECKED BY:
W.M.V. S.R.W.

REVISION
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JOB NUMBER
1590-023



FILE NAME: I:\590\023\ENV\SHET6.DWG 5-14-98 3:08:20 pm EST
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OR MODIFICATIONS OF THE ORIGINAL DESIGN. THE USER SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING AND ITS OCCUPANTS THROUGHOUT CONSTRUCTION.
FOR THE SPECIFIC PURPOSE. INTENDED WILL BE AT THE USER'S RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO THE ENGINEER, ARCHITECT OR SURVEYOR

GENERAL NOTES

- THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE WHEN COMPLETED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE PROCEDURES FOR ERECTION AND CONSTRUCTION SEQUENCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING AND ITS OCCUPANTS THROUGHOUT CONSTRUCTION.
- SHOP DRAWINGS REVIEWED BY THE CONTRACTOR AND STAMPED INDICATING APPROVAL SHALL BE SUBMITTED TO THE A/E FOR REVIEW PRIOR TO FABRICATION DETAILING ALL NECESSARY COMPONENTS. REPRODUCTIONS OF THE CONTRACT DOCUMENTS WILL NOT BE ACCEPTED WITHOUT PRIOR PERMISSION OF A/E.

DESIGN CRITERIA

- ALL DESIGN LOADS SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE BUILDING CODE USED BY THE AUTHORITY HAVING JURISDICTION OVER BUILDING WHERE THE PROJECT IS LOCATED.

ROOF	20psf (MIN) LIVE LOAD
SNOW	UNIFORM AND DRIFTING BASED ON 25psf GROUND SNOW LOAD Pf = 17.5 PSF Ce = 0.7 I = 1.0
WIND	80mph BASIC WIND SPEED I = 1.0 EXPOSURE C P = 16.4 PSF
SEISMIC	Av = 0.077 Ag = 0.10 EXPOSURE GROUP 1 PERFORMANCE CATEGORY B SITE COEFFICIENT, S = 2.00 R = 6-1/2 Cd = 4

FOUNDATIONS AND EARTHWORK

- FOUNDATIONS SHALL BEAR ON UNDISTURBED SOIL OR ENGINEERED FILL PROVIDING A SAFE BEARING CAPACITY OF 1500 psf (MIN). MATERIAL AT BEARING ELEVATIONS WHICH DOES NOT CONFORM WITH THESE REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE A/E FOR REVIEW AND DETERMINATION.
- FILL UNDER BUILDING SLABS, PAVINGS, CURBS, WALKS, ETC. SHALL BE MADE WITH COARSE SAND, GRAVEL OR CRUSHED STONE COMPACTED TO NOT LESS THAN 100% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698.
- THE STABILITY AND POSITION OF WALLS SHALL BE MAINTAINED DURING BACKFILLING BY BRACING OF THE WALL OR PLACEMENT OF THE FILL SHALL BE SUCH THAT THE HEIGHT OF FILL ON EACH SIDE OF THE WALL IS APPROXIMATELY EQUAL.
- FOR WALLS SPANNING FROM GROUND FLOORS TO THE FIRST SUPPORTED FLOOR OR ROOF (BASEMENTS), THE GROUND FLOOR SLAB AND THE FLOOR OR ROOF STRUCTURE AT THE TOP SHALL BE IN PLACE BEFORE BACKFILL IS PLACED AGAINST THE WALL.
- UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS FOUNDATIONS SHALL EXTEND BELOW LOCAL FROST DEPTHS.

CONCRETE

- DESIGN, FURNISH, AND PLACE CONCRETE IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF THE ACI.
- UNLESS NOTED OR SPECIFIED OTHERWISE, CONCRETE SHALL HAVE THE FOLLOWING MINIMUM 28 DAY COMPRESSIVE STRENGTHS:

UNEXPOSED FOUNDATIONS	3000psi
FLOORS AND EXPOSED WORK	4000psi

- EXTERIOR CONCRETE OR CONCRETE SUBJECT TO FREEZE-THAW CYCLING SHALL BE AIR-ENTRAINED (6 ± 1%).
- DESIGN, DETAIL, FABRICATE, AND ERECT REINFORCING STEEL ACCORDING TO THE LATEST ACI AND CRSI SPECIFICATIONS FROM ASTM A-615, GRADE 60 MATERIAL.
- WALL AND FOOTING REINFORCING SHALL BE HOOKED AROUND CORNERS A MINIMUM OF 30 BAR DIAMETERS OR SEPARATE CORNER BARS SHALL BE PROVIDED.
- REINFORCING BARS SHALL LAP A MINIMUM OF 30 BAR DIAMETERS (U.N.O.) , BUT NOT LESS THAN 12".
- PROVIDE A 1" NOMINAL CHAMFER AT ALL EXPOSED CORNERS OF BEAMS, COLUMNS, AND WALLS.
- AT ALL CONSTRUCTION JOINTS PROVIDE KEYWAYS 1 1/2" DEEP BY 1/3 THE WIDTH OF THE MEMBER (3 1/2" MIN).
- PROVIDE CONTROL JOINTS IN FLOOR SLABS AT 20' c/c MAXIMUM EACH WAY UNLESS OTHERWISE NOTED ON DRAWINGS.
- PROVIDE THE FOLLOWING PROTECTION (COVER) OVER REINFORCING:

COLUMNS, BEAMS, AND GIRDERS	1 1/2"
SLABS AND WALLS	3/4"
MEMBERS IN CONTACT WITH OR OVER WATER	2"
FORMED MEMBERS IN CONTACT WITH EARTH	2"
MEMBERS PLACED AGAINST EARTH	3"

MISCELLANEOUS METALS

- UNLESS OTHERWISE SHOWN ON THE DRAWINGS, PROVIDE LOOSE ANGLE LINTELS OVER ALL MASONRY OPENINGS AND RECESSES AS REQUIRED. LINTELS NOT SCHEDULED ON DRAWINGS SHALL CONSIST OF A SINGLE ANGLE WITH A 3 1/2" HORIZONTAL LEG FOR EACH FOUR INCHES OF WALL THICKNESS. ANGLES SHALL BE AS FOLLOWS:

MASONRY OPENING	ANGLE SIZE	BEARING EACH END
4'-0" OR LESS	3 1/2 x 3 1/2 x 5/16	4"
4'-0" - 6'-0"	4 x 3 1/2 x 5/16	6"
6'-0" - 8'-0"	5 x 3 1/2 x 5/16	8"
8'-0" - 10'-0"	6 x 3 1/2 x 5/16	8"

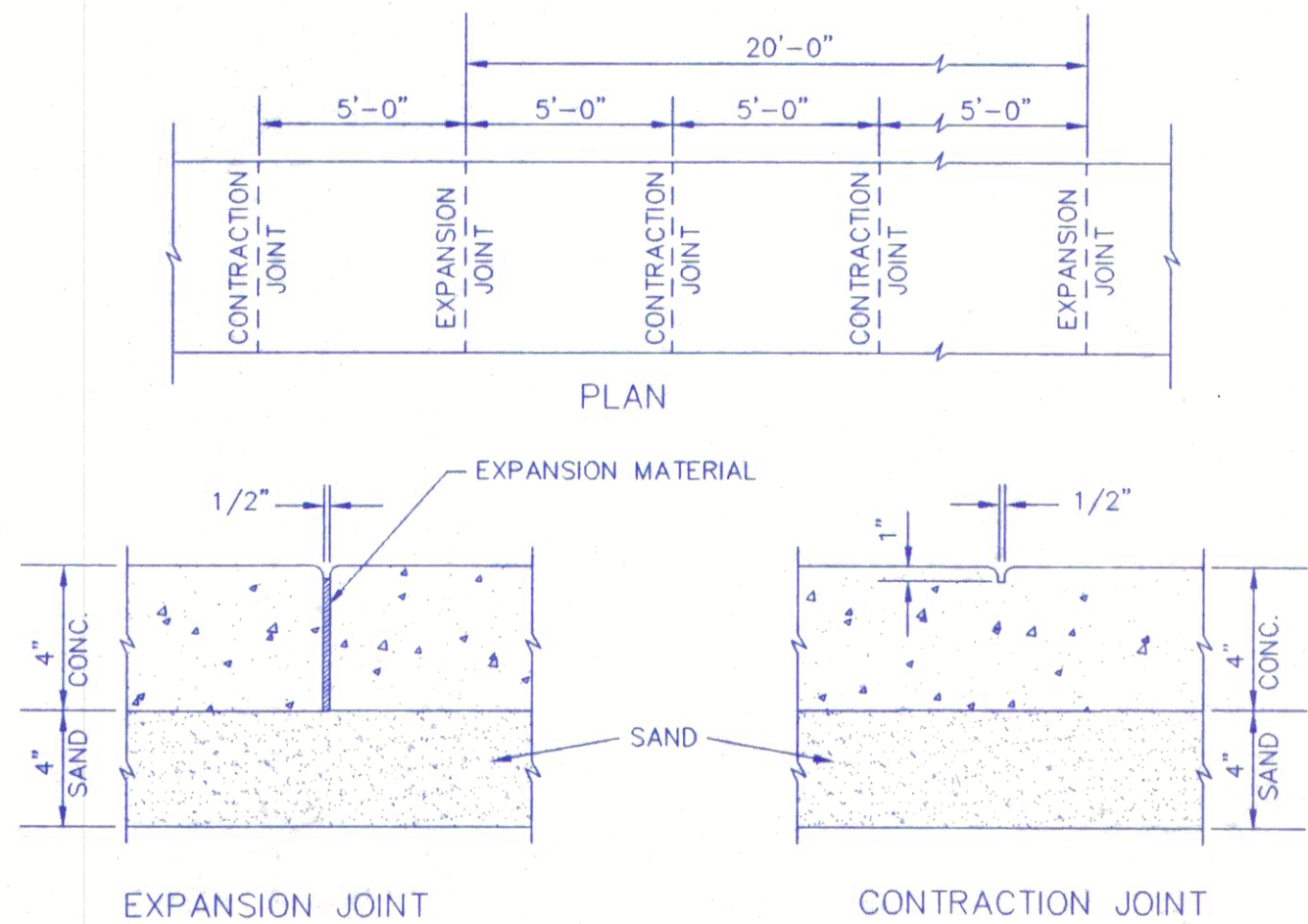
- ALUMINUM IN CONTACT WITH CONCRETE OR A DISSIMILAR METAL SHALL BE COATED WITH A BITUMASTIC PAINT.

CARPENTRY

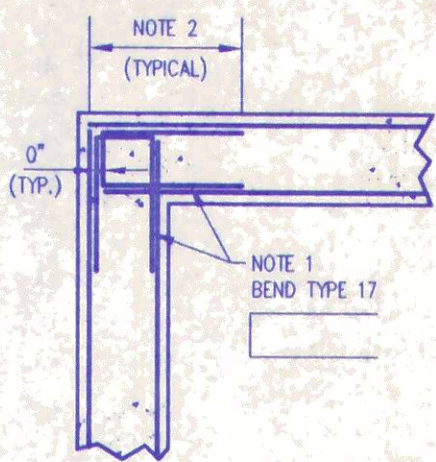
- ALL WOOD CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION".
- LUMBER AND WOOD FRAMING SHALL NOT HAVE A MOISTURE CONTENT GREATER THAN 19% BY WEIGHT WHEN PLACED INTO THE CONSTRUCTION.
- LUMBER FOR FRAMING SHALL BE SPRUCE-PINE-FIR #2 OR BETTER.
- PRESERVATIVE OR FIRE RETARDANT TREATED LUMBER SHALL BE SOUTHERN PINE #2 OR BETTER.
- PROVIDE WOOD FRAMING AS SHOWN AND AS REQUIRED TO COMPLETE THE PROJECT.
 - STUDS SHALL BE OF SIZE AND SPACING AS SHOWN ON THE DRAWINGS, DOUBLED AROUND OPENINGS AND TRIPLED AT CORNERS.
 - PROVIDE PLATES TOP AND BOTTOM OF STUD WALLS (DOUBLE TOP PLATES). SPLICES IN TOP PLATES SHALL BE MADE OVER STUDS AND STAGGERED.
- JOIST, RAFTERS, AND OTHER FRAMING MEMBERS SHALL BE SECURELY ANCHORED TO THEIR SUPPORTING MEMBERS AND BLOCKED TO PREVENT ROTATION. PROVIDE GALVANIZED METAL CONNECTORS WHERE INDICATED.

WOOD ROOF TRUSSES

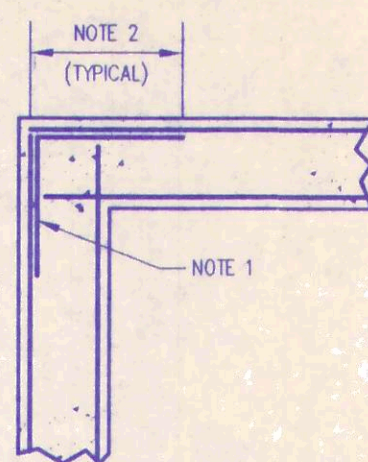
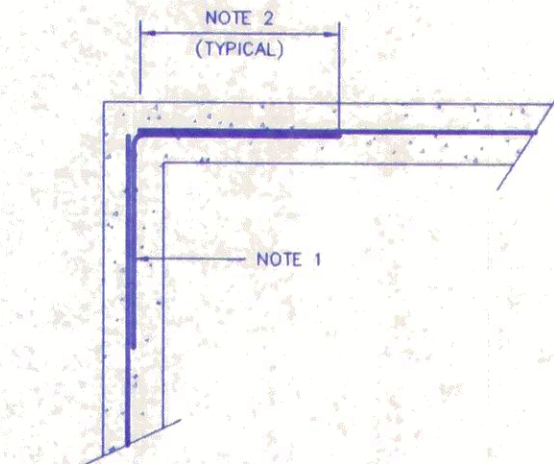
- ROOF TRUSSES SHALL BE DESIGNED AND FABRICATED IN ACCORDANCE WITH THE LATEST TRUSS PLATE INSTITUTE SPECIFICATIONS.
- STRUCTURAL COMPUTATIONS AND DETAILS SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE LOCALITY OF THE PROJECT SHALL BE SUBMITTED FOR EACH TRUSS CONFIGURATION.
- TRUSSES SHALL BE DESIGNED FOR 10psf DEAD LOAD AND 20psf LIVE LOAD ALL ON THE TOP CHORD, AND 10psf DEAD LOAD ON THE BOTTOM CHORD, PLUS ANY ADDITIONAL LOADING SHOWN ON THE DRAWINGS. SNOW LOADS SHALL BE APPLIED ACCORDING TO THE APPLICABLE BUILDING CODE INCLUDING INCREASES DUE TO DRIFTING OR SLIDE OFF FROM AN ADJACENT ROOF.
- PROVIDE GALVANIZED METAL TRUSS CLIPS TO ANCHOR EACH END OF TRUSS.
- ALL TRUSS HANGERS SHALL BE DESIGNED AND SUPPLIED BY THE TRUSS MANUFACTURER TO ACCOMMODATE TRUSSES SUPPLIED.
- PROVIDE TRUSS BRACING CONFORMING TO TRUSS PLATE INSTITUTE STANDARDS. PROVIDE TEMPORARY BRACING DURING ERECTION. PROVIDE PERMANENT BRACING AS REQUIRED IN THE DESIGN OF THE TRUSS AS INDICATED. IN ADDITION TO THE ABOVE PROVIDE PERMANT BRACING AS FOLLOWS UNLESS OTHERWISE NOTED:
 - UNLESS SHEATHED WITH APA RATED SHEATHING, PROVIDE CONTINUOUS LATERAL BRACING OF THE TOP CHORD AS INDICATED ON THE DRAWINGS. PROVIDE DIAGONAL BRACING ON BOTH SIDES OF THE RIDGE AT END BAYS AND AT 20' INTERVALS FOR BUILDINGS OVER 60' IN LENGTH.
 - PROVIDE DIAGONAL BRACING IN THE PLANE OF WEB MEMBERS AT 12-16' INTERVALS ALONG THE LENGTH OF TRUSSES AT END BAYS AND AT 20' INTERVALS ALONG THE LENGTH OF THE BUILDING.
 - UNLESS CONTINUOUSLY SHEATHED PROVIDE CONTINUOUS LATERAL BRACING OF THE BOTTOM CHORD @ 8-10' INTERVALS @ OR NEAR PANEL POINTS, OR AS INDICATED ON THE DRAWINGS. PROVIDE DIAGONAL BRACING ON BOTH SIDES OF THE RIDGE AT END BAYS AND AT 20' INTERVALS FOR BUILDINGS OVER 60' IN LENGTH.



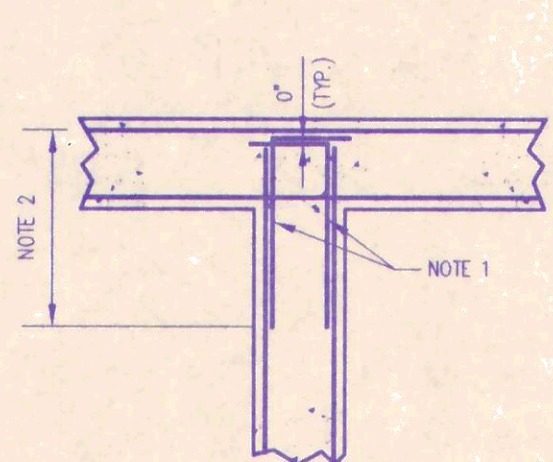
SIDEWALK DETAILS



LIQUID-RETAINING STRUCTURES



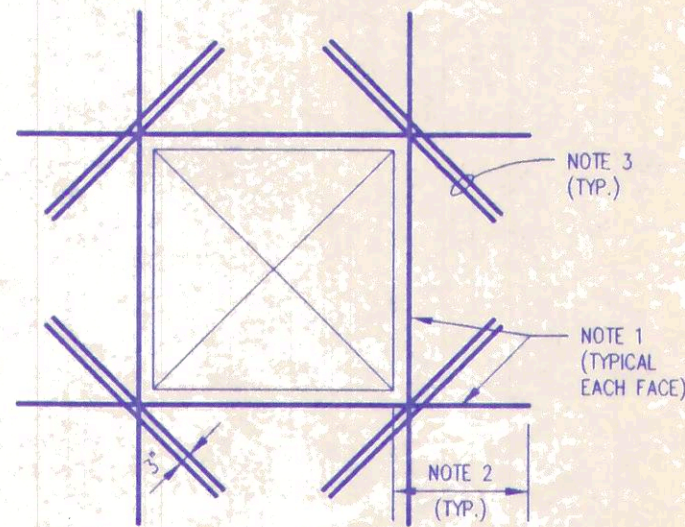
OTHER STRUCTURES



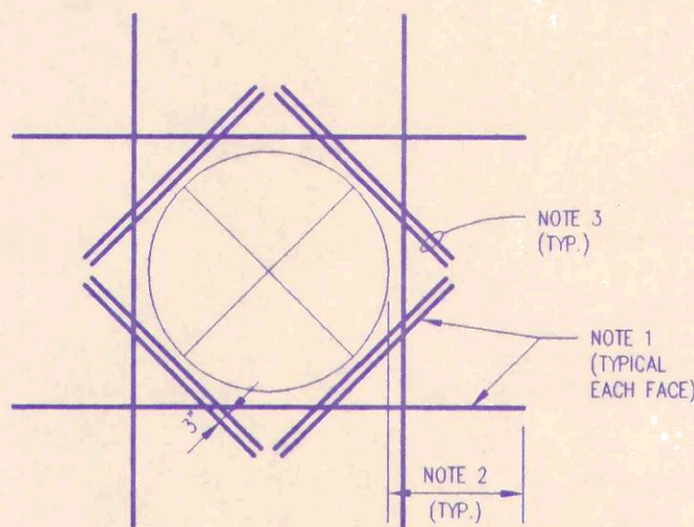
ALL STRUCTURES

TYPICAL CORNER REINFORCEMENT WALL TYPICAL

NOT TO SCALE



RECTANGULAR



CIRCULAR

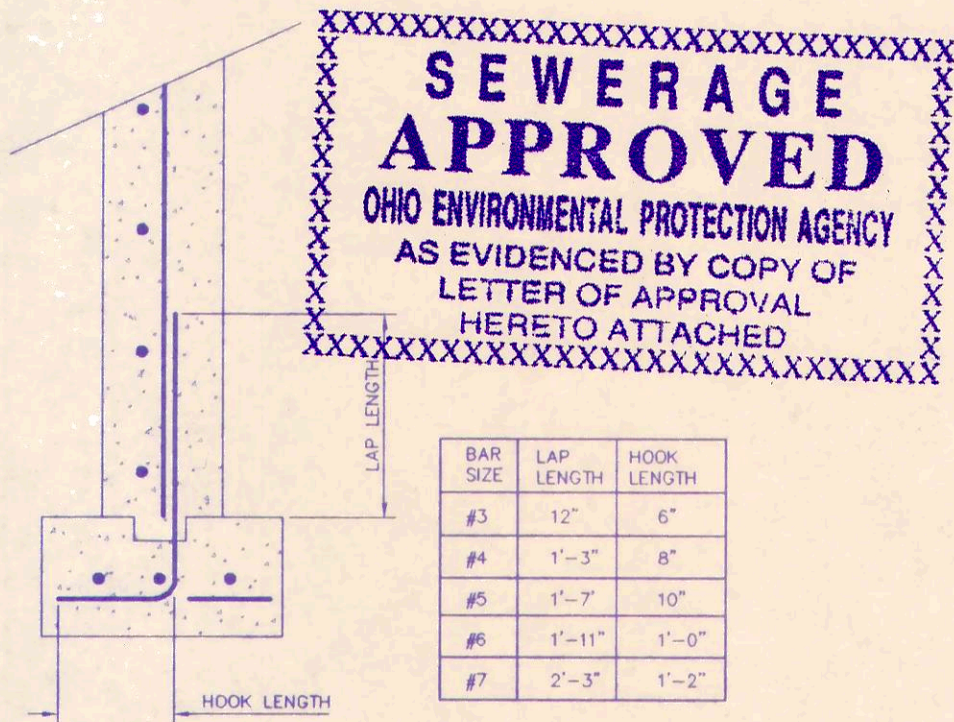
REINFORCEMENT AT OPENING NOTES:

- ADDITIONAL REINFORCEMENT EQUAL IN AREA TO REINFORCEMENT CUT BY OPENING.
- LAP SPlice LENGTH FOR TOP BARS. (40 BAR DIAMETERS)
- DIAGONAL BARS - EACH FACE, 2 EACH CORNER - SIZE AS FOLLOWS:

CONC. THICKNESS	BAR SIZE	LENGTH
LESS THAN 12"	#4	3'-0"
12" TO 16"	#5	3'-6"
GREATER THAN 18"	#6	4'-0"

TYPICAL ADDITIONAL REINFORCEMENT AT OPENINGS LARGER THAN 12"

NOT TO SCALE



STANDARD LAP AND HOOK

NOT TO SCALE



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(419) 352-7557

WASTEWATER TREATMENT PLAN
ULTRAVIOLET DISINFECTION
OAK HARBOR, OHIO

STRUCTURAL
DETAILS AND
GENERAL NOTES

DRAWN BY: CHECKED BY:
W.M.V. S.R.W.

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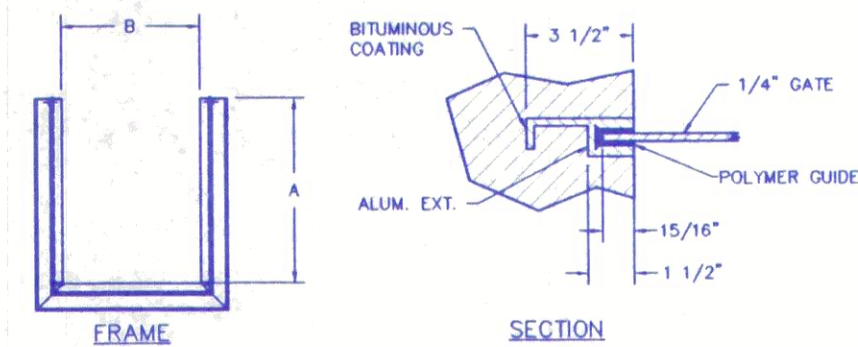
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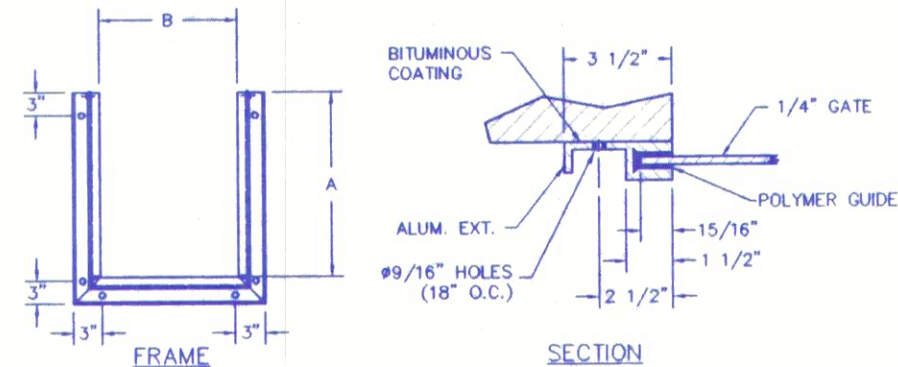
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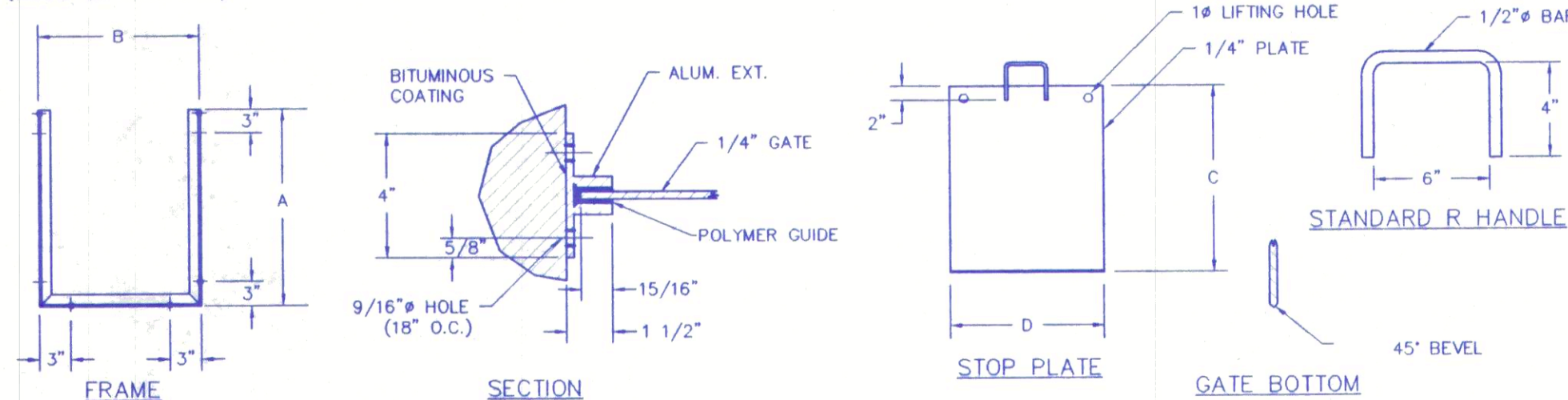
MODEL 202 (BY HALLIDAY OR EQUAL)
(EMBEDDED GATE)



MODEL 201 (BY HALLIDAY OR EQUAL)
(WALL MOUNTED GATE)



MODEL 203 (BY HALLIDAY OR EQUAL)
(INSIDE MOUNTING GATE)



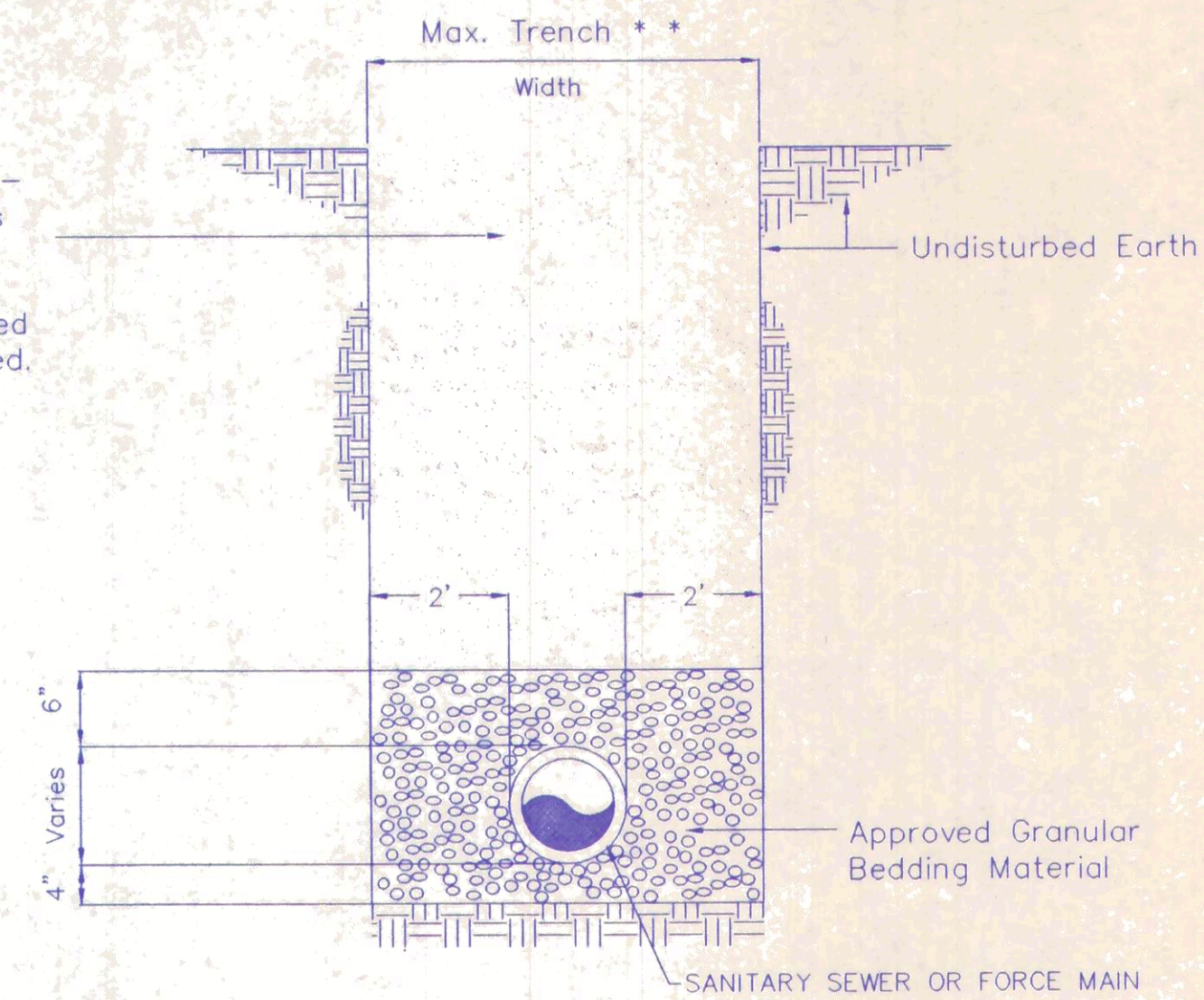
STANDARD FEATURES:

- 1.- ONE-PIECE 6061-T6 EXTRUDED ALUMINUM FRAME
- 2.- ONE-PIECE POLYMER GUIDE
- 3.- 1/4" THICK 6061-T6 ALUMINUM GATE
- 4.- REINFORCED TO DEFLECT NO MORE THAN 1/360th OF SPAN

STOP PLATE AND GROOVE DETAILS

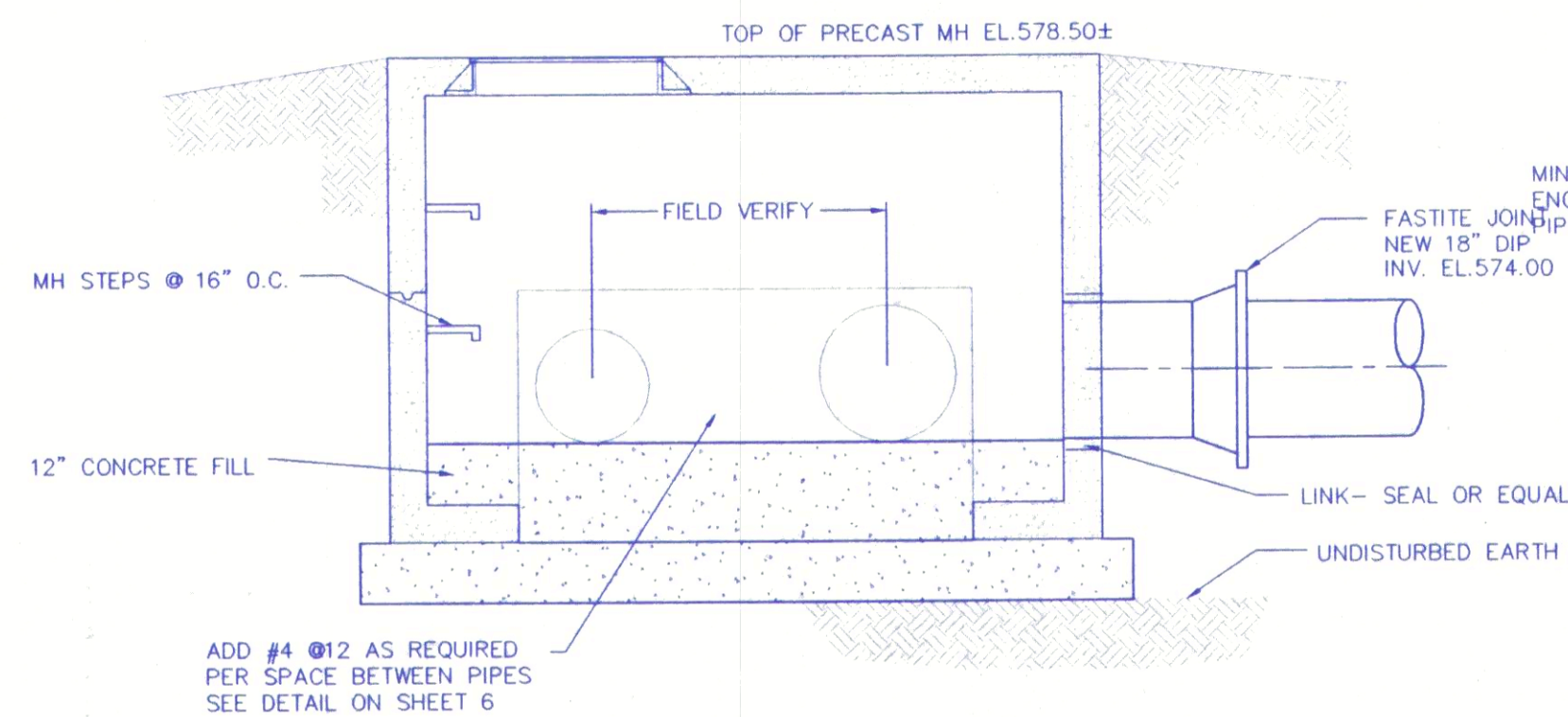
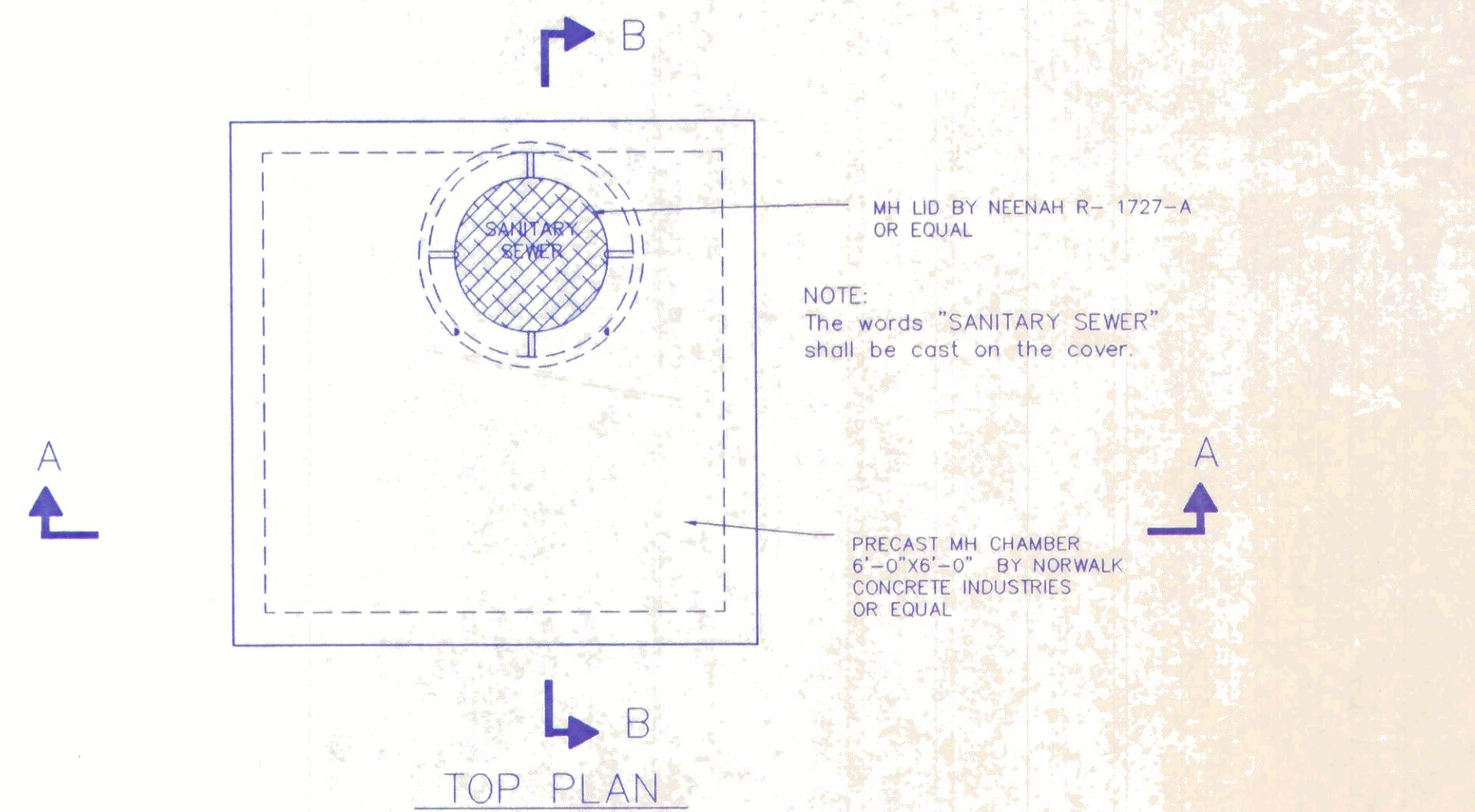
N.T.S.

NOTE: Finely Divided Earth Backfill, Tamped-Except In Paved Areas And 5' Beyond Where Approved Granular Backfill Material Tamped In Layers Shall be Used.

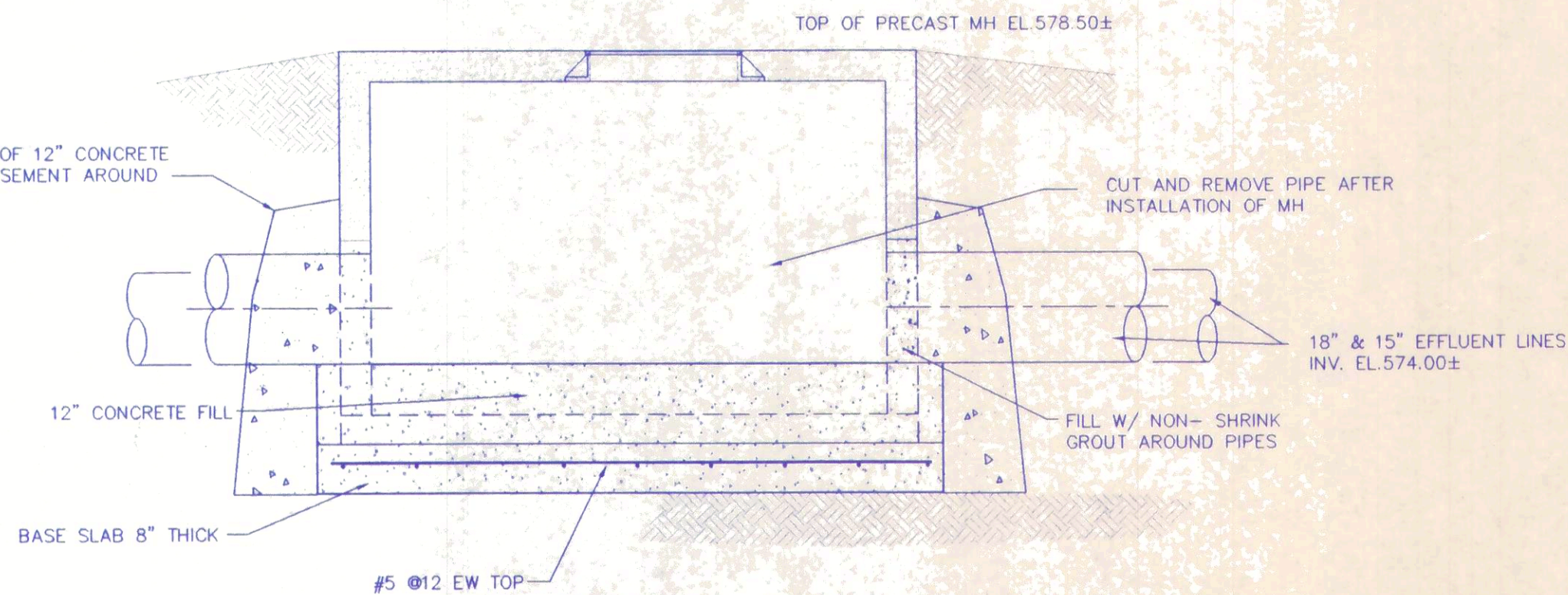


** Pay Limits Only, Maximum Trench Width Shall Be The Same As The Trench Width At The Top Of The Pipe.

GRAVITY SANITARY SEWER TRENCH DETAIL

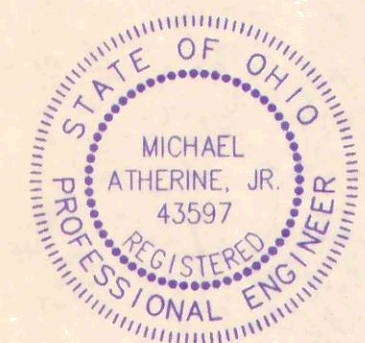


SECTION B-B



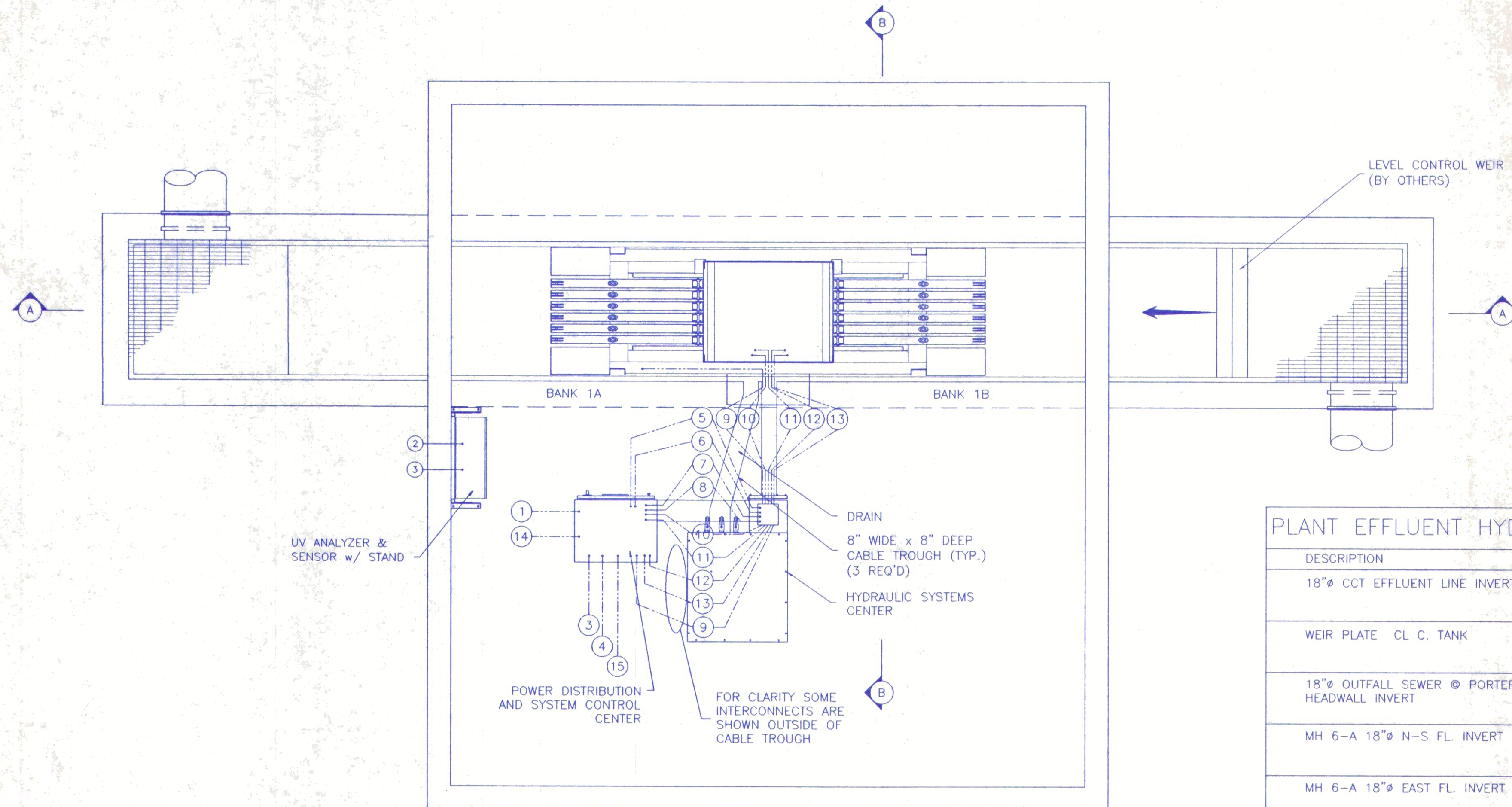
SECTION A-A

EFFLUENT MANHOLE DETAIL
(PLACEMENT OVER EXISTING SEWERS)



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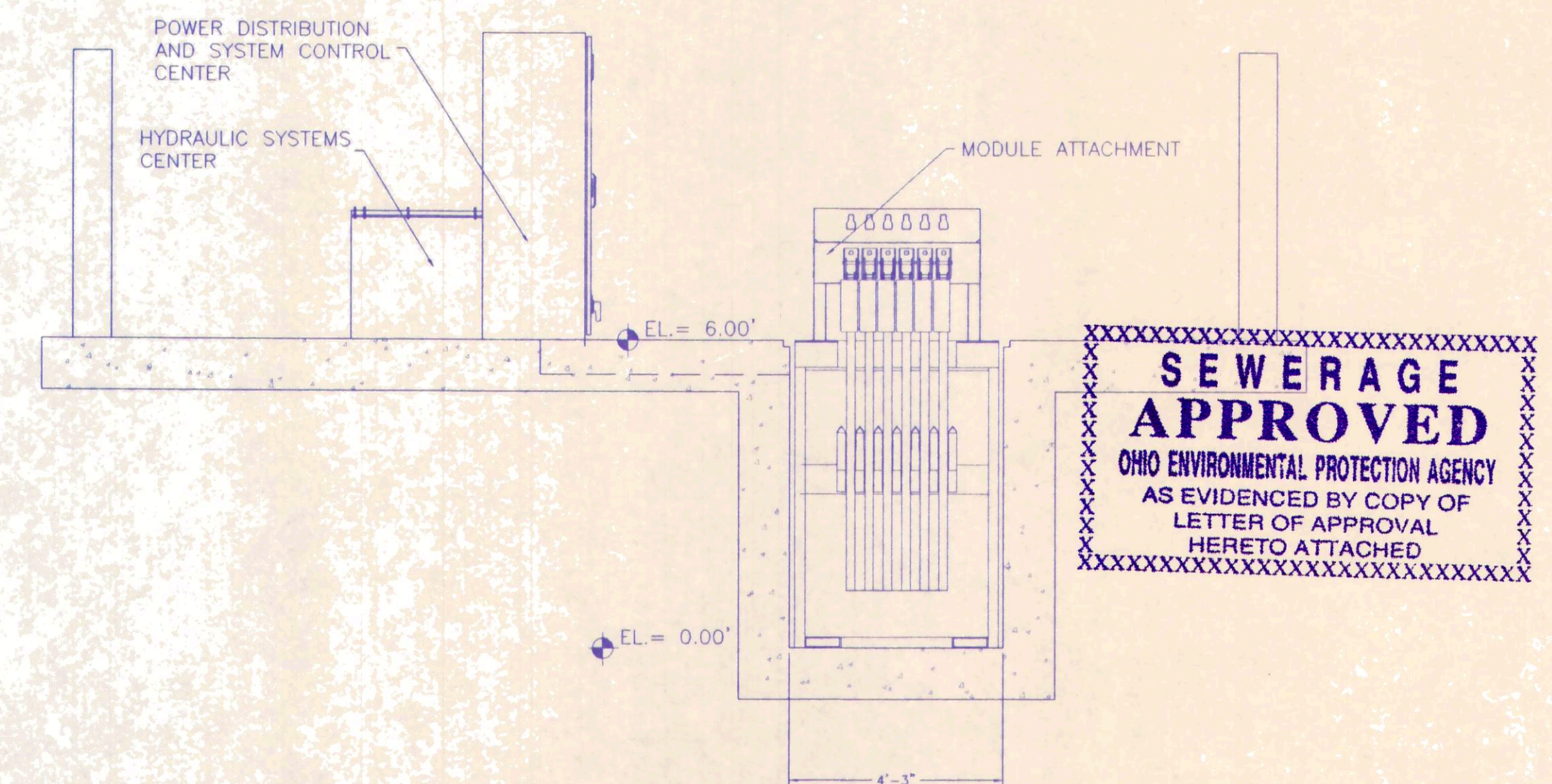
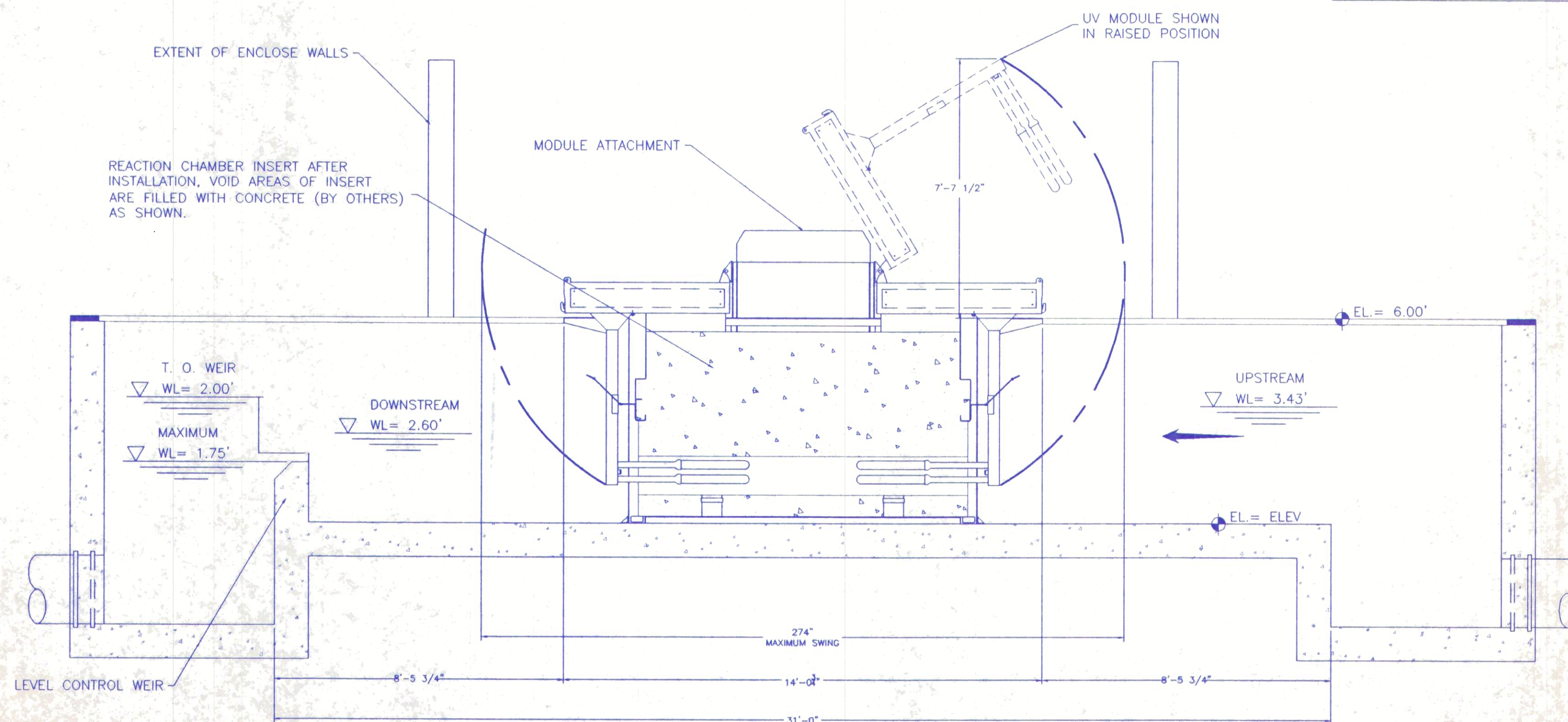
PLANT EFFLUENT HYDRAULIC ELEVATIONS	
DESCRIPTION	ELEVATION
18"Ø CCT EFFLUENT LINE INVERT	574.50
WEIR PLATE CL. C. TANK	578.17
18"Ø OUTFALL SEWER @ PORTER RIVER HEADWALL INVERT	573.73
MH 6-A 18"Ø N-S FL. INVERT	573.98 ±
MH 6-A 18"Ø EAST FL. INVERT	574.47 ±
EXISTING GROUND ELEVATIONS AT PROPOSED "UV" STRUCTURES	580.00 TO 577.00
100 YEAR FLOOD ELEVATION AT PORTAGE RIVER (OAK HARBOR)	579.00± TO 580.00±

NOTES:

- : DO NOT SLOPE CHANNEL FLOOR
- : CHANNEL WIDTH AND DEPTH MUST BE KEPT WITHIN A TOLERANCE OF + OR - 1/4 in.
- : ANCHOR BOLTS ARE NOT SUPPLIED BY TROJAN TECHNOLOGIES INC.
- : SYSTEM CONDUIT, WIRING, DISTRIBUTION PANELS AND INTERCONNECTIONS BY OTHERS

UV4000 EQUIPMENT INTERCONNECTIONS

No.	DESCRIPTION	FROM	TO
1	POWER DISTRIBUTION CENTER POWER 480V, 3 PHASE, 4 WIRE, 75 kVA	DISTRIBUTION PANEL (NOT SHOWN)	POWER DISTRIBUTION CENTER (PDC)
2	UVT SAMPLER POWER SUPPLY 120V, 1 PHASE, 2 WIRE, 500VA	DISTRIBUTION PANEL (NOT SHOWN)	UV SAMPLER
3	UVT SAMPLER 1 TWISTED, 18 Ga. SHIELDED PAIR (2 CONDUCTORS)	UV SAMPLER	SYSTEM CONTROL CENTER (SCC)
4	FLOW METER (BY OTHERS) 4-20 mA, DC ANALOG INPUT	FLOW METER PANEL (NOT SHOWN)	SYSTEM CONTROL CENTER (SCC)
5	COOLANT PUMP POWER SUPPLY 480V, 3 PHASE, 3 WIRE, 2 REQUIRED 2.0 HP (SUPPLIED BY TROJAN)	SYSTEM CONTROL CENTER / POWER DISTRIBUTION CENTER	HYDRAULIC SYSTEM CENTER (HSC)
6	HYDRAULIC PUMP 480V, 3 PHASE, 3 WIRE, 1 REQUIRED 0.5 HP (SUPPLIED BY TROJAN)	SYSTEM CONTROL CENTER / POWER DISTRIBUTION CENTER	HYDRAULIC SYSTEM CENTER (HSC)
7	MONITORING OF PRESSURE AND CCLANT LEVELS 4 CABLES OF 2 CONDUCTORS (SUPPLIED BY TROJAN)	SYSTEM CONTROL CENTER / POWER DISTRIBUTION CENTER	HYDRAULIC SYSTEM CENTER (HSC)
8	HYDRAULIC SOLENOID CONTROL 1 CABLE, 5 CONDUCTORS (SUPPLIED BY TROJAN)	SYSTEM CONTROL CENTER / POWER DISTRIBUTION CENTER	HYDRAULIC SYSTEM CENTER (HSC)
9	HIGH/LOW EFFLUENT LEVEL MONITORING 2 LOW LEVEL DISCRETE INPUTS 2 HIGH LEVEL DISCRETE INPUTS (SUPPLIED BY TROJAN)	LEVEL SENSOR	SYSTEM CONTROL CENTER / POWER DISTRIBUTION CENTER
10	UV INTENSITY MONITORING 2- 4-20mA ANALOG INPUT 1/ BANK (SUPPLIED BY TROJAN)	UV INTENSITY PROBES	SYSTEM CONTROL CENTER / POWER DISTRIBUTION CENTER
11	UV MODULE POWER CABLES 12 TOTAL (SUPPLIED BY TROJAN)	SYSTEM CONTROL CENTER / POWER DISTRIBUTION CENTER	UV MODULES
12	LAMP MONITORING & CONTROL COMMUNICATION LINE (2/ MODULE) (12 TOTAL SUPPLIED BY TROJAN)	SYSTEM CONTROL CENTER / POWER DISTRIBUTION CENTER	UV MODULES
13	MODULE WIPER CONTROL (1/ MODULE) (6 TOTAL SUPPLIED BY TROJAN)	SYSTEM CONTROL CENTER / POWER DISTRIBUTION CENTER	UV MODULES
14	TELEPHONE LINE (SUPPLY BY OTHERS)	LOCAL SUPPLY	SYSTEM CONTROL CENTER (SCC)
15	SCC POWER SUPPLY 120V, 15AMP	DISTRIBUTION PANEL	SYSTEM CONTROL CENTER (SCC)



NOTE: FOR BUILDING, AND STRUCTURE DETAILS SEE SHEETS 4 & 5



POGEMEYER DESIGN GROUP, INC.
PLANNERS
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1168 NORTH MAIN STREET
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**WASTEWATER TREATMENT PLANT
ULTRAVIOLET DISINFECTION
OAK HARBOR, OHIO**

**ULTRAVIOLET
SYSTEM
SCHEMATIC**

DRAWN BY: W.M.V.
CHECKED BY: S.R.W.
REVISION:

8
OF
12
JOB NUMBER
1590-023

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LAST UPDATED ON 05-13-1998 15:12

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OUTLINE MECHANICAL SPECIFICATIONS

1.0 GENERAL

- 1.01 These are Outline Specifications and not intended to cover all necessary items, but are to serve only as a guide. It is intended that complete Mechanical Systems as described herein will be furnished and installed.
- 1.02 All work shall be installed in accordance with local and state codes and regulations and shall receive the approval of the inspection department having jurisdiction.
- 1.03 All work specified herein shall carry the Contractor's Warranty for workmanship and materials for a period of one year minimum from the date of final acceptance. The Contractor shall remedy the defects and reimburse the Owner for all damage to other work, whether caused by the defects or the work of correcting same.
- 1.04 All work shall be done by mechanics skilled in the particular trade involved, under responsible supervision and with the best modern practices.
- 1.05 All materials shall be new and of the grade and quality specified. Only the best material of each class specified shall be used.
- 1.06 In new construction, the General Contractor will provide duct openings where shown on the architectural or structural drawings and also where indicated and sized by this Contractor.
- 1.07 This Contractor shall provide all miscellaneous steel and hardware as required to support, hang and secure all equipment as furnished by him.
- 1.08 All work installed under this contract shall be tested in the presence of and to the satisfaction of the inspecting authority having jurisdiction and the Owner's Representative.
- 1.09 Mechanical Shop Drawings, and schedules shall be submitted for review, in general before starting the work involved. A minimum of six copies shall be submitted and all shall bear the stamp of approval of the Contractor as evidence that the submittals have been approved by him.

2.0 SCOPE OF WORK

Ventilation.

3.0 ELECTRICAL

- 3.01 The Electrical Contractor will provide all power wiring and starters. The Mechanical Contractor shall furnish all control items, control and interlock wiring, and motors required for the operation of all equipment provided under his section of work.
- 3.02 In general, all motors under 1/2 horsepower will be 120/1/60.

4.0 CONTRACT CLOSE-OUT

4.01 Testing and Adjustment

Contractor shall operate all parts of the entire system, make any and all adjustments and repairs, and shall leave the entire work tested and ready for operation by the Owner.

4.02 Operating Instructions

Contractor shall provide four (4) complete manuals in hardbacked binders, each containing all operating, servicing, lubrication, etc. information and parts lists for all equipment installed under his Contract. Where diagrams are too large for the binder, arrange Manila pockets with reinforced holes to hold folded drawings. Manuals to be submitted for approval at least thirty (30) days before completion of the work.

Contractor shall arrange for technical instruction of the Owner's Maintenance Personnel for such time as is reasonably required to acquaint them with their duties. Instruction period shall be after all systems are in operation, and have been tested, balanced and adjusted.

4.03 Record Drawings

Contractor shall keep an accurate record of all deviations from Contract Drawings. He shall neatly and correctly enter, in colored pencil, any deviations on Drawings affected during the progress of the project and shall keep Drawings available for inspection. At completion of job and before final acceptance, make any final corrections to Drawings and deliver same to the Owner's Representative.

4.04 Balancing

The Contractor shall operate all parts of the entire ventilating system, making any and all adjustments and repairs, balance air delivery, and leave the work tested and ready for operation.

The Contractor shall check out all controls and wiring to insure the operation of the equipment under all modes of operations.

5.0 AIR DISTRIBUTION SYSTEM

- 5.01 Sheet Metal Ductwork ... shall be fabricated and installed in accordance with the latest ASHRAE and SMACNA recommendations and in the best practices of good workmanship. All ductwork shall be constructed of prime hot dip galvanized sheet steel.
- 5.02 Motor-Operated Damper ... shall be American Warming and Ventilating Type VC-2 low leakage, parallel blade operation with heavy galvanized steel frame, 16 gauge galvanized steel blades, and self-lubricating bearings. The damper shall be anti-leak construction with aluminum jamb seals and vinyl blade edge seals. Equivalent dampers by Airoilite, Vent Products or Ruskin are acceptable.
- 5.07 Grille ... Unit shall be by Tuttle & Bailey, Trus, Carnes, Amemostat or Krueger.
- 5.08 Louvers ... American Warming Type LF-31 extruded aluminum with 1/2" aluminum birdscreen in an extruded

aluminum frame on inside of louver, and having a 204-R1 etch and anodized aluminum finish with one coat of lacquer. Louver shall bear the AMCA certified rating seal.

Equivalent louvers by Airoilite, Vent Products or Ruskin will be acceptable. Paint duct behind louver dull black.

6.0 EXHAUST FANS

- 6.01 All fans shall be AMCA rated for airflow.

The maximum sound level, represents the highest acceptable value for each fan. The same value represents loudness levels obtained at (5') from the fan inlet.

All disconnect switches supplied shall be horsepower rated per the National Electrical Code.

Fans shall be as manufactured by Penn, Carnes, Jenn-Aire, Acme, Power-Line, Loren Cook, Ammerman or Greenheck.

- 6.02 Roof Mounted Fan ... Direct driven and shall have birdscreen, automatic back draft shutter and factory mounted and wired safety disconnect switch.

7.0 ROOF CURB AND SUPPORT

- 7.01 Provide a roof curb for exhaust air fan. Verify curb size with equipment furnished. Curb shall be constructed to conform to the roof pitch and form a level top surface. Curb shall be of box section design, eighteen (18) gauge galvanized steel with continuous welded corner seams and factory installed 1-1/2 x 1-1/2 wood nailer. Curb shall be insulated with 1-1/2", three (3) pound density rigid fiberglass board with internal metal liner.

- 7.02 In general, the top of the installed curb shall be approximately 12 inches above finished roof.

- 7.03 For metal roofs, curb shall be the standard curb as manufactured by the metal building and roofing manufacturer. If the size curb required is not available from the building manufacturer, a curb with necessary configurations to fit the roof panels as manufactured by Pate, Thybor, Addison, Illinois; Custom Curb, Inc., Chattanooga, Tennessee; Geske Sheet Metal Company, Kansas City, Missouri; or Standard Sheet Metal Company, Kansas City, Missouri may be provided. In addition, it will be necessary to provide on the high side of the curb a cricket to divert the rain water around the curb edges. All necessary gaskets, caulking, etc. to provide a water tight installation is the responsibility of this Contractor.

8.0 TEMPERATURE CONTROL

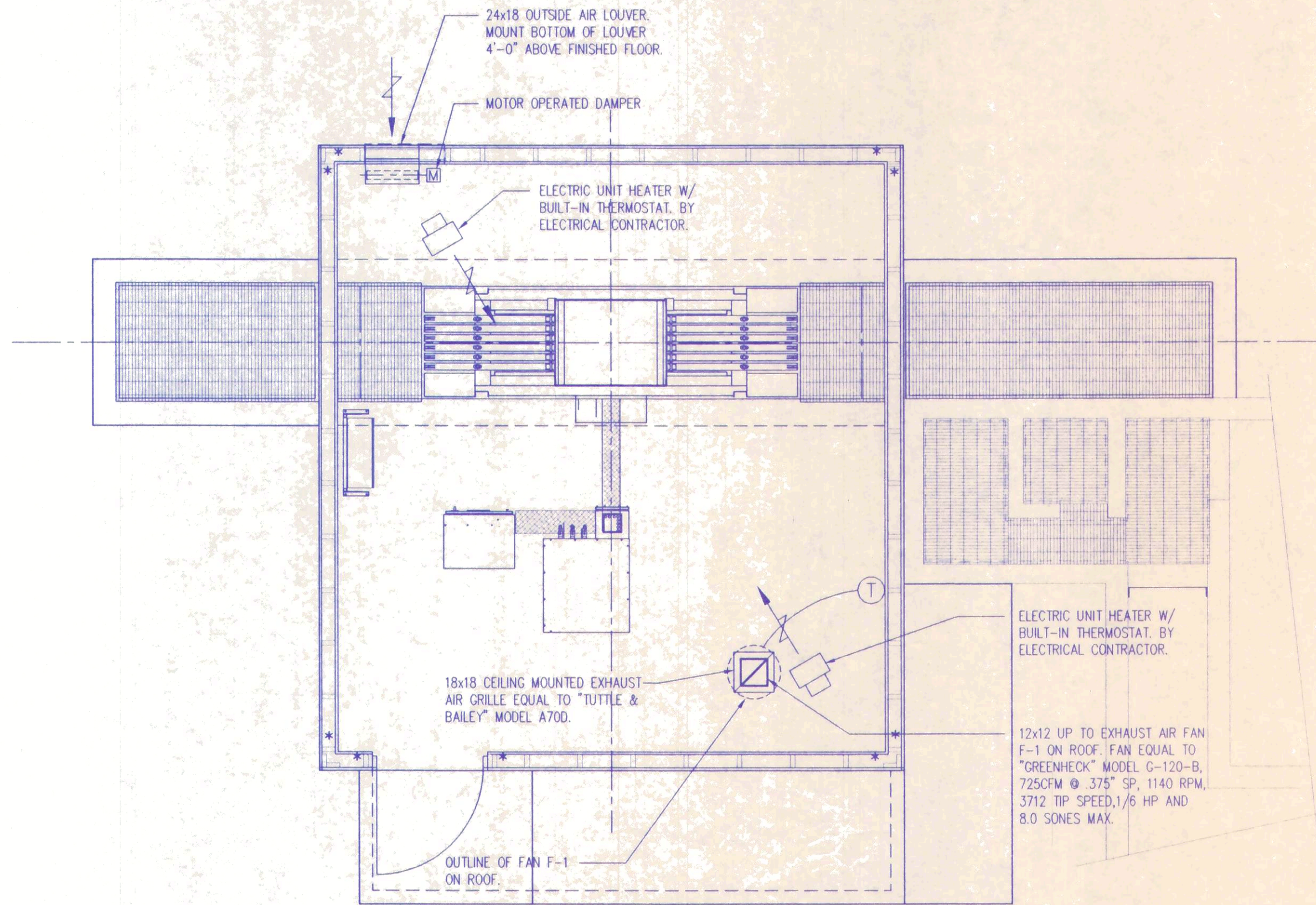
- 8.01 Furnish and install as described a complete system of temperature controls as manufactured by Honeywell, Siebe Environmental Controls, Belimo, Penn, Johnson Controls, or Landis & Staefa. This system shall be installed complete in all respects by competent mechanics.

- 8.02 All electrical wiring to be in accordance with the National Electrical Code. The Mechanical Contractor is responsible for all control and interlock wiring required for the complete installation.

- 8.03 On completion of the job, the Control Contractor shall provide a complete instruction manual covering the function and operation of all control components on the job. This manual shall be furnished to the Owner's operating personnel and a competent technician shall be provided for instruction purposes after the system is substantially complete and ready for operation.

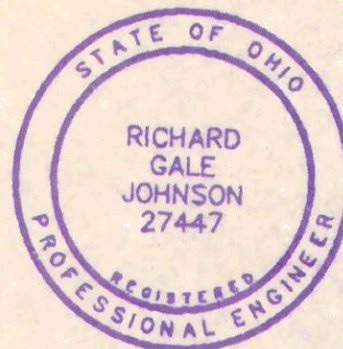
- 8.04 Sequence of operation shall be as follows:

On a call for cooling, the outside air damper shall open. On a further call for cooling, exhaust air Fan F-1 shall be energized. Set cooling thermostat to maintain 80° F and heating thermostat shall be set at least 10° F cooler.



"UV" BUILDING FLOOR PLAN
SCALE 1/4"=1'-0"

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**WASTEWATER TREATMENT PLANT
ULTRAVIOLET DISINFECTION
OAK HARBOR, OHIO**

**"UV" BUILDING
HVAC PLAN &
GEN. NOTES**

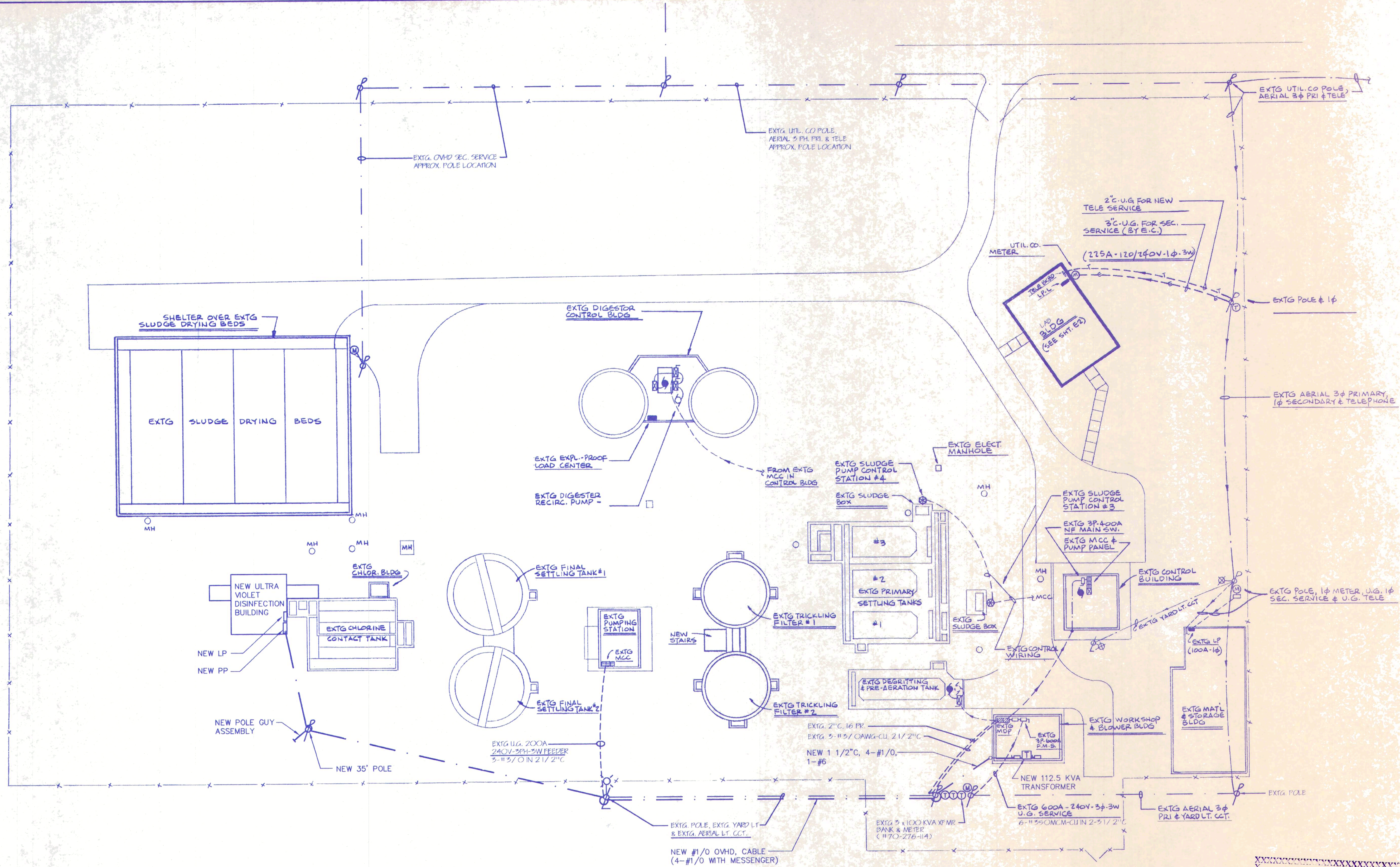
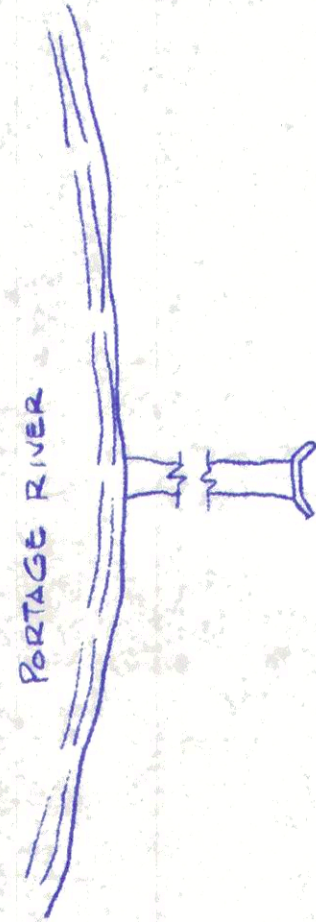
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R.J.A.	
REVISION	

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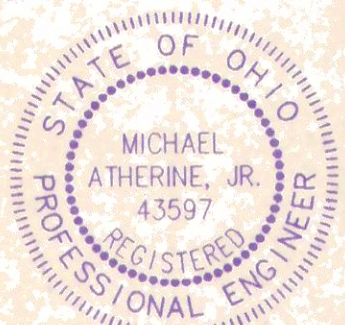
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SITE PLAN
SCALE 1" = 20'

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WASTEWATER TREATMENT PLANT
ULTRAVIOLET DISINFECTION
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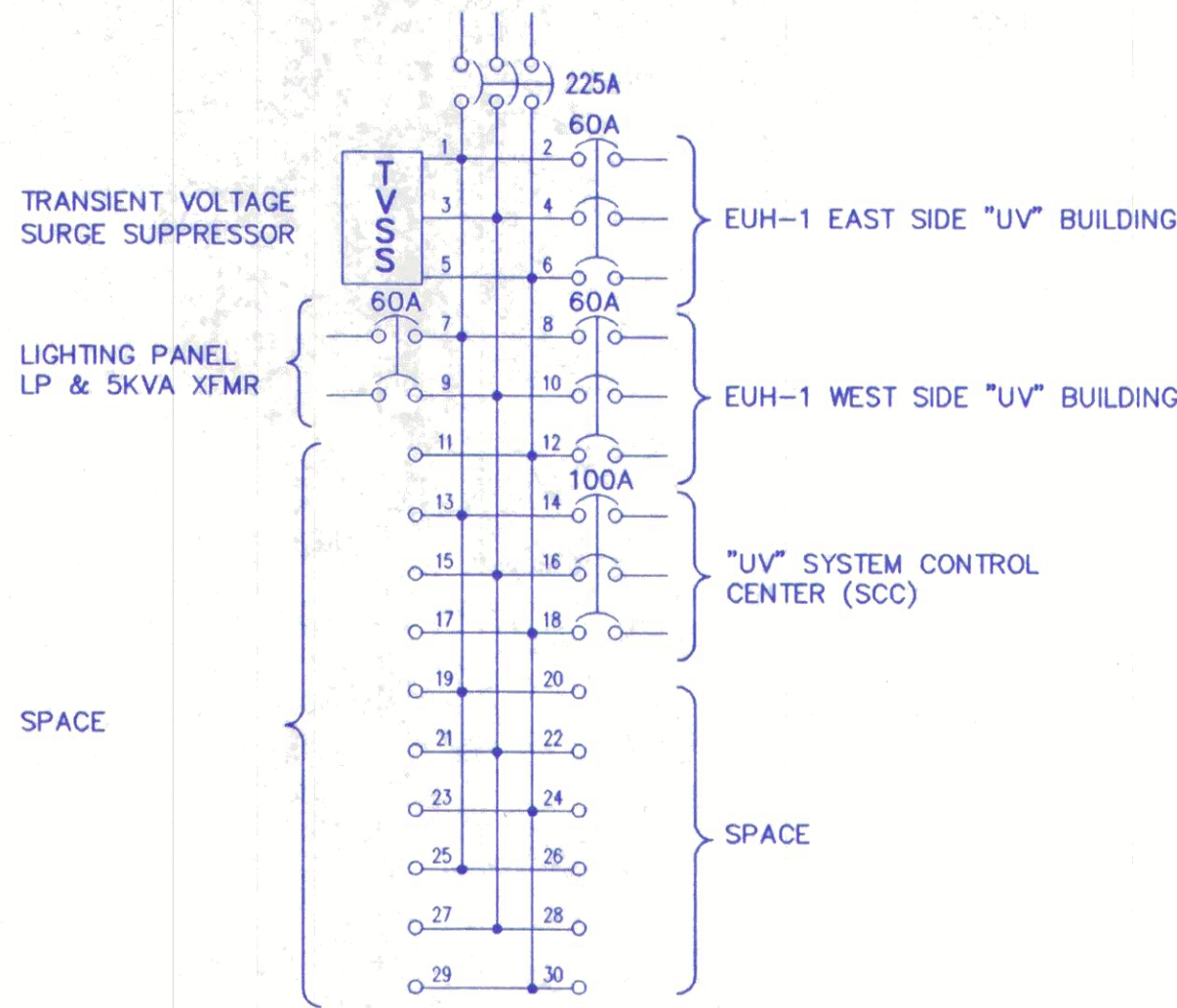
ELECTRICAL
SITE
PLAN

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G.N.C.	G.M.W.
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12
JOB NUMBER
1590-023

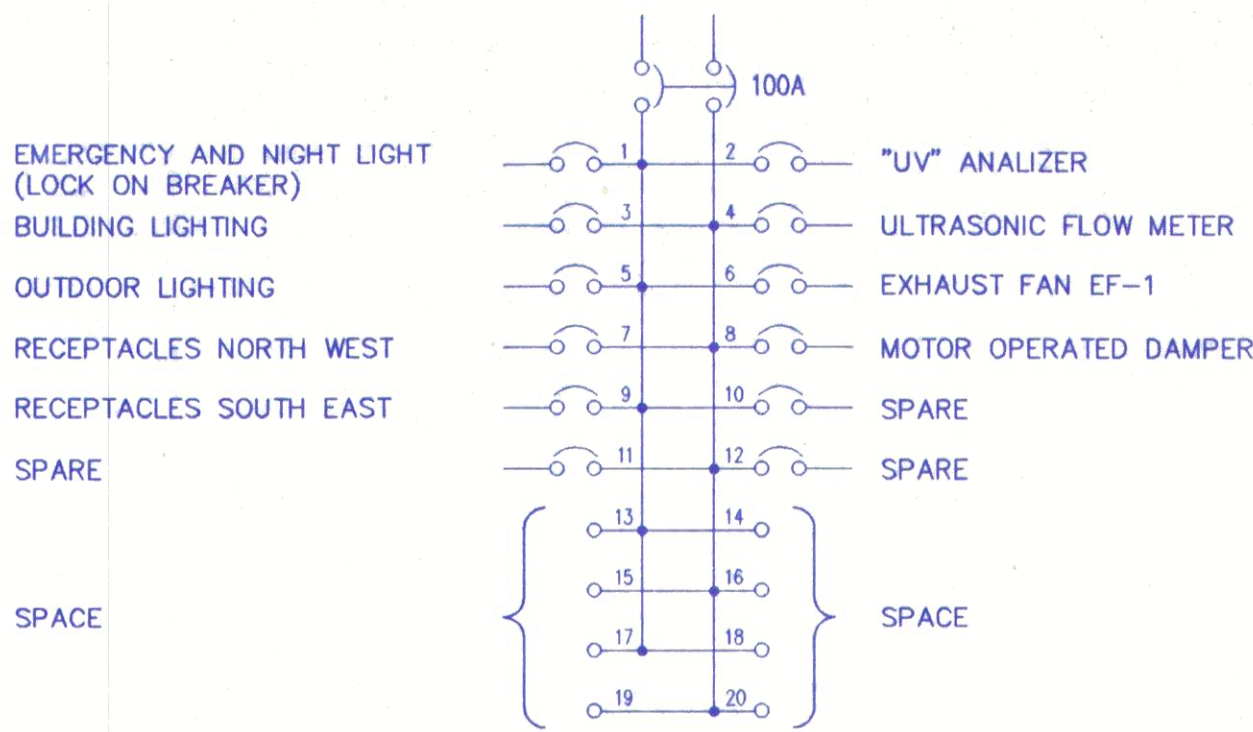
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ALL CIRCUIT BREAKERS 20 AMP UNLESS NOTED.

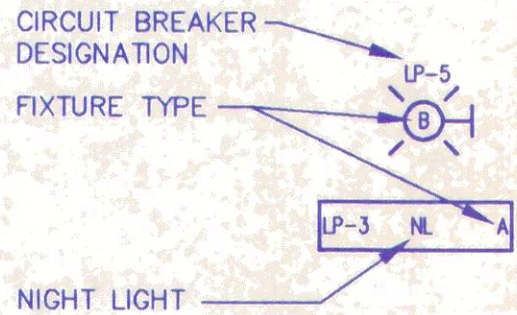
POWER PANEL PP
277/480 VOLT AC, 3PH, 4 WIRE



ALL CIRCUIT BREAKERS 20 AMP UNLESS NOTED.

LIGHTING PANEL LP
120/240 VOLT AC, 1PH, 3 WIRE

LIGHTING FIXTURE SCHEDULE		
TYPE	DESCRIPTION	MANUFACTURE
A	FLUORESCENT 2-32 WATT, T-8 LAMP, ENCLOSED AND GASKETED 4' 120 VOLT FIXTURE WITH STIPPLED ACRYLIC LENS, ELECTRONIC BALLAST, STAINLESS STEEL LATCHES, SUSPENSION BRACKETS AND GMF FUSE	HUBBELL #EWL042R-SPDR-FM-B1
AA	SAME AS TYPE "A" WITH BODINE B90 BATTERY PACK	HUBBELL #EWL042R-SPDR-FM-B1-4B
B	70 WATT HIGH PRESSURE SODIUM EXTERIOR WALL MOUNTED FIXTURE POLYCARBONATE PRISMATIC LENS, DIE-CAST HOUSING WITH BRONZE FINISH, INTEGRAL TRI-TAP BALLAST AND PHOTOCONTROL	HUBBELL #PVL-0070S-116-PBT-234/PVL-PK-FUSE-10A
EX	C SERIES DIE CAST INCANDESCENT/LED 120 VOLT EXIT SIGN WITH SEALED MAINTENANCE FREE NICKEL CADMIUM BATTERY AND LED AC/CHARGER INDICATOR WITH DIFFUSED LIGHT SOURCE & RED LETTERS	HUBBELL #CWP-R-W-L-1



SYMBOL LEGEND

HIGH PRESSURE SODIUM WALL MOUNTED LIGHTING FIXTURE TYPE AS INDICATED, REFER TO LIGHTING FIXTURE SCHEDULE THIS DRAWING

FLUORESCENT LIGHTING FIXTURE TYPE AS INDICATED, REFER TO LIGHTING FIXTURE SCHEDULE THIS DRAWING

120-277 VOLT AC, 20A, SINGLE POLE, HEAVY DUTY TOGGLE SWITCH. HUBBELL #HBL-1221, PROVIDE COVER PLATE.

120-277 VOLT AC, 20A, THREE WAY, HEAVY DUTY TOGGLE SWITCH. HUBBELL #HBL-1223, PROVIDE COVER PLATE.

DUPLEX GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE, 125 VOLT, 20A, 3 WIRE GROUNDING TYPE. HUBBELL #GF5362, PROVIDE COVER PLATE.

THREE PHASE MOTOR, HORSE POWER AS INDICATED.

SINGLE PHASE MOTOR, HORSE POWER AS INDICATED

FUSED SAFETY SWITCH-MP SIZE AS INDICATED, VOLTAGE AS REQUIRED. NEMA 1 ENCLOSURE

THERMOSTAT

FLOW ELEMENT

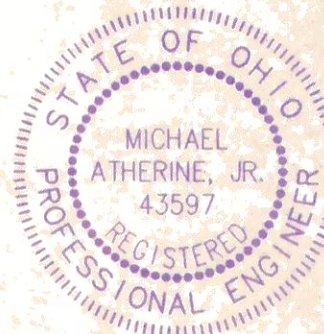
CONDUIT OR CABLE

CONDUIT INSTALLED UNDER FINISHED FLOOR

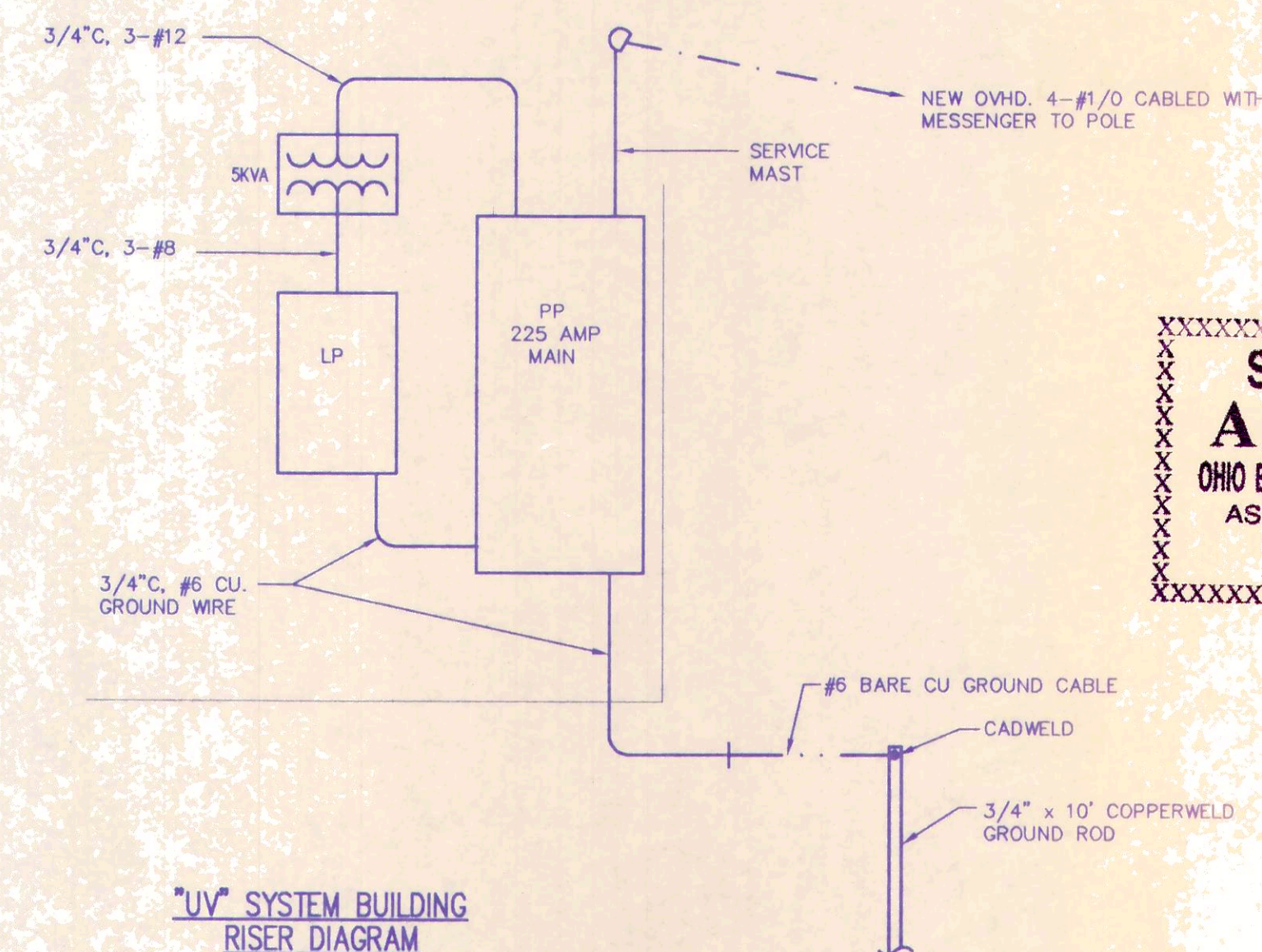
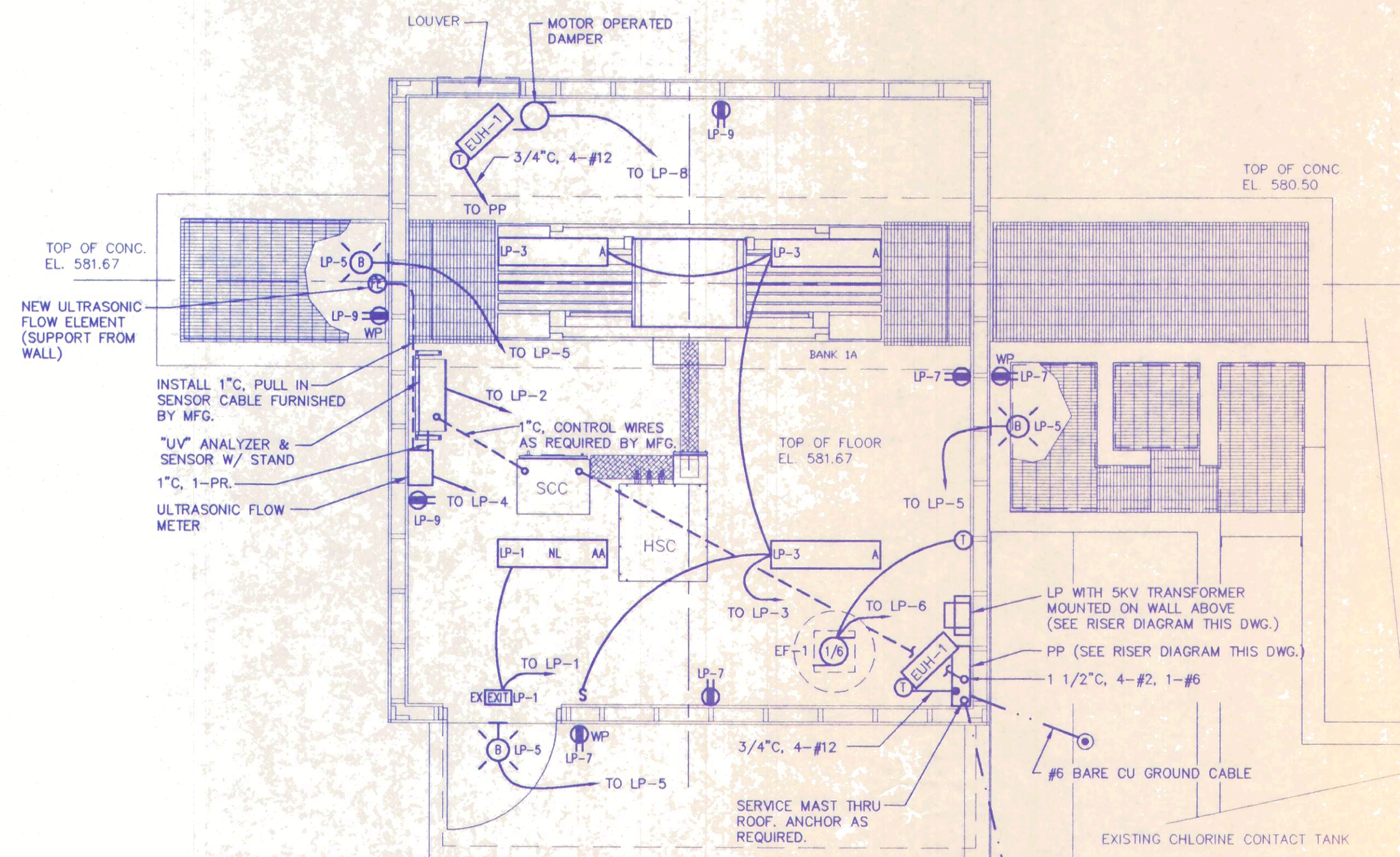
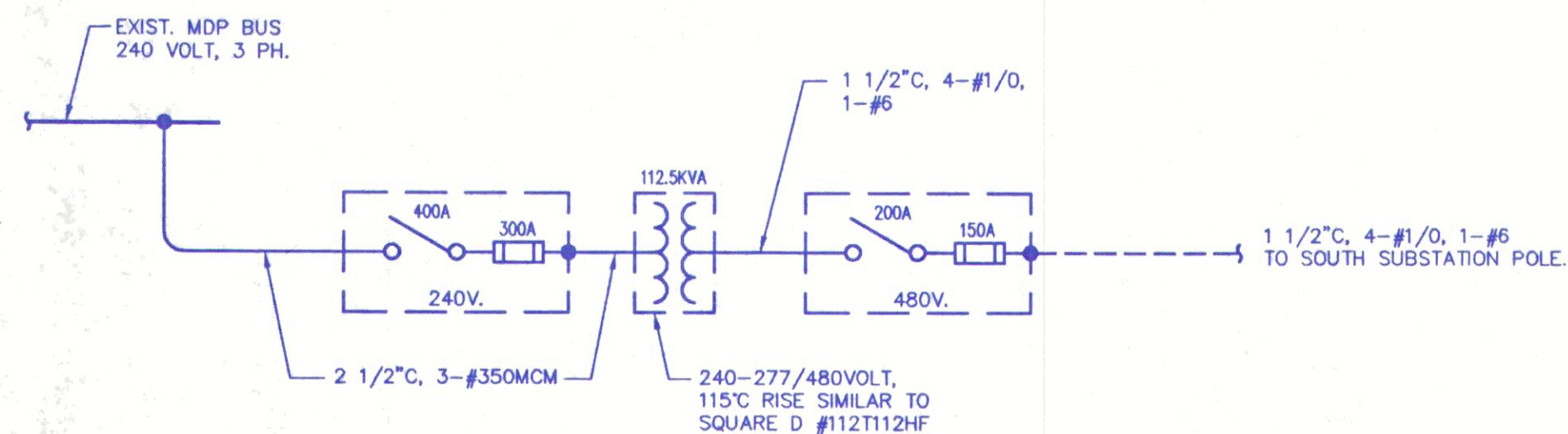
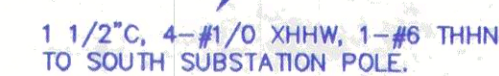
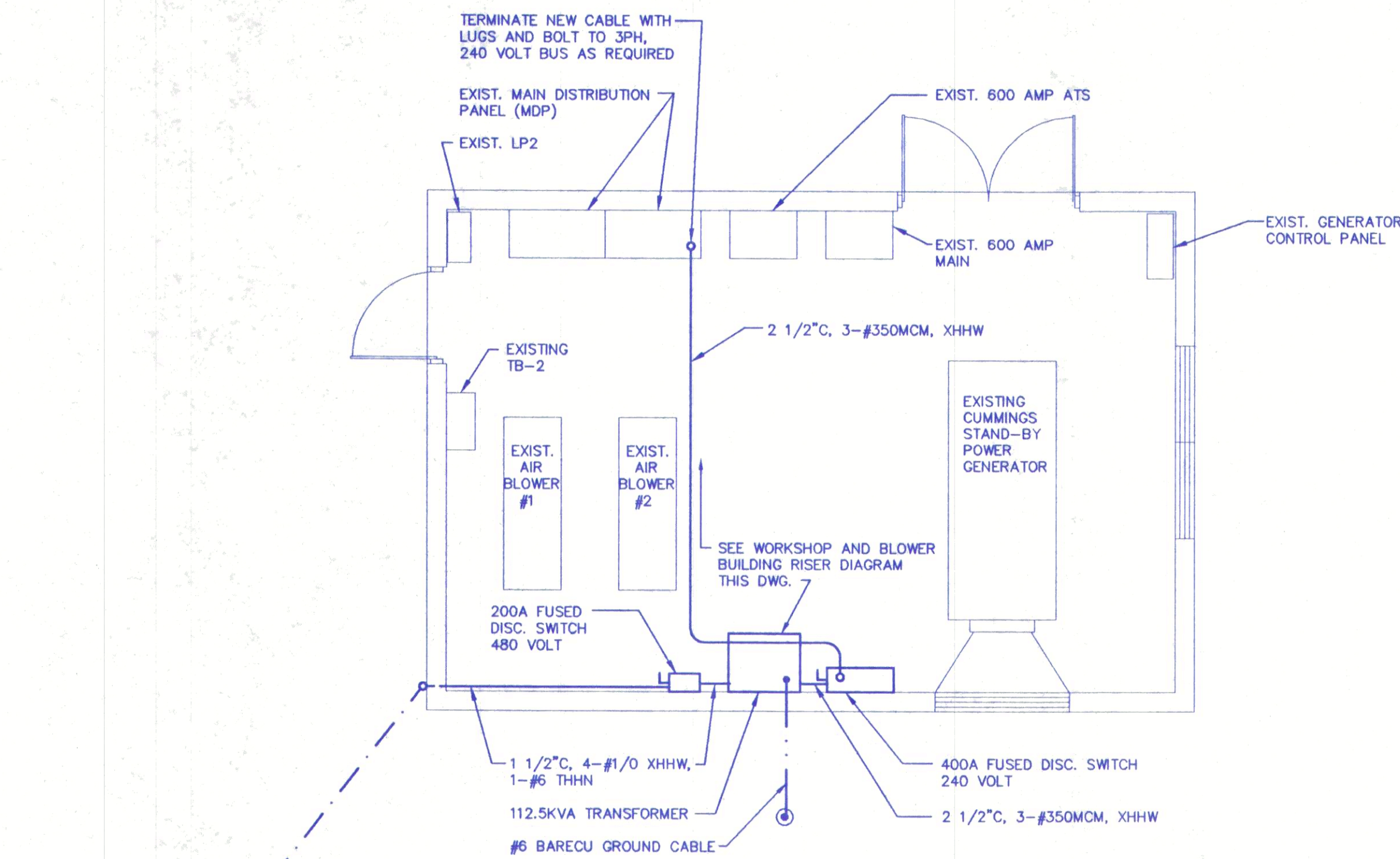
OVERHEAD CABLE

GROUND CABLE, SIZE AS INDICATED.

GROUND ROD, 3/4" x 10'-0" COPPER, UNLESS NOTED.



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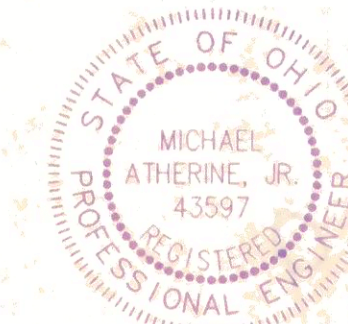
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**SEWERAGE
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**WASTEWATER TREATMENT
ULTRAVIOLET DISINFECTION
OAK HARBOR, OHIO**

**'UV' & WORKSHOP /
BLOWER BLDG'S.
ELECT. PLANS**

DRAWN BY	CHECKED BY
G.N.C.	G.M.W.
REVISION	

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