



## TOWN OF LUNENBURG

### WASTEWATER TREATMENT PLANT UPGRADES & EXPANSION

CONTRACT NO. 240800.00

#### ADDENDUM NO. 6

March 7, 2025

#### Clarifications:

1. As per Section 01 35 29.06 HEALTH AND SAFETY REQUIRMENTS, subsection 1.10, the designated Health and Safety Coordinator must be on site during execution of work. They do not need be to a person fulfilling only that role and no other.

The following changes or modifications shall be made to the Tender Documents:

#### TO THE SPECIFICATIONS

#### SECTION 00 21 13 – INFORMATION TO TENDERERS

#### Page 4 add new subsections 26 and 27 as follows:

26. A second non-mandatory site meeting will be held at the Site at 9:00am on Tuesday March 11th, 2025. Questions may be asked and description of the Work may be discussed during this meeting, however no minutes of the meeting will be distributed. Modifications made by way of addenda, to tendering requirements or the Contract Documents, shall be binding. Potential bidders planning to attend this meeting must state their intentions to do so to [purchasing@townoflunenburg.ca](mailto:purchasing@townoflunenburg.ca) no later than 4:30pm on Monday March 10<sup>th</sup>, 2025. This site visit is primarily for potential bidders wishing to view existing conditions or take measurements in a specific area of the site. No tour will be given.
27. Existing facility site drawings are included as Appendix D. The Owner and the Consultant express no guarantee of their accuracy and any extrapolation or interpretations of the content of these drawings are at the sole discretion of the Bidder/Contractor and the Owner or the Consultant accepts no liability for such extrapolations or interpretations.



## **SECTION 01 11 00 SUMMARY OF WORK**

**Page 3, delete subsection 1.7.5 and replace as follows:**

- .5 Coordinate the delivery of the pre-selected equipment with the Supplier as required. Confirm the equipment can be installed prior to arranging shipping. Pay for shipping from the delivery location coordinated with the manufacturer to the Site at no additional cost to the Contract. Site storage and transportation to/from site is the responsibility of the Contractor.

## **APPENDIX D – EXISTING FACILITY DRAWINGS**

Add Appendix D – Existing Facility Drawings, attached.

## **TO THE DRAWINGS**

### **DRAWING C02 – PROPOSED SITE GRADING**

DETAILS – See attached sketch CSK-01, dated March 4, 2025.

### **DRAWING P03 – P&ID SHEET 2 OF 3**

Add new butterfly valve V-422 immediately adjacent and below PIT-411 on the 150 DIA SS pipe, outside of the Section 46 53 53 package line (not included in package).

### **DRAWING P14 – PROCESS AREA PLAN AND SECTIONS**

PLAN – PROCESS BUILDING PROPOSED MODIFICATIONS - Apply changes to blower layout and air header from P16, Rev 1, attached.

### **DRAWING P16 – PROCESS AREA PLAN AND SECTIONS**

Delete P16 and replace with new P16 attached Rev 1, dated March 4, 2025.

CBCL Limited  
March 07, 2025

Contract 98001

LIST OF DRAWINGS

<u>DRAWING No.</u>	<u>DRAWING TITLE</u>
A1	- SITE PLAN
A2	- FLOOR PLAN AND REFLECTED CEILING PLAN
A3	- BUILDING ELEVATION
A4	- BUILDING SECTIONS
A5	- SECTION DETAILS
A6	- PLAN AND SECTIONS DETAIL/CABINETRY ELEVATIONS
A7	- SEWAGE PUMPING STATION #7
S1	- CONCRETE PLAN
S2	- CONCRETE SECTIONS SHEET 1
S3	- CONCRETE SECTIONS SHEET 2
S4	- CONCRETE SECTIONS SHEET 3
S5	- STRUCTURAL STEEL/ROOF PLAN
S6	- STRUCTURAL STEEL SECTIONS AND MASONRY DETAILS
S7	- ELEVATIONS SHEET 1
S8	- ELEVATIONS SHEET 2
S9	- AERATION BASIN PLAN SECTIONS AND DETAILS
S10	- AERATION BASIN SECTIONS
S11	- CONCRETE PLAN AND SECTIONS
S12	- PS#7 FOUNDATION, PLAN, SECTIONS AND DETAILS
S13	- AERATION BASIN BUILDING ELEVATION
P1	- HYDRAULIC PROFILE/PROCESS SCHEMATIC
P2	- HEADWORKS/BLOWER ROOM PLAN
P3	- HEADWORKS/BLOWER ROOM DETAILS
P4	- PROCESS ROOM PLAN
P5	- PROCESS ROOM DETAILS
P6	- EFFLUENT & CHEMICAL PUMPS/SLUDGE HOPPER DETAILS
P7	- AERATION BASIN PLAN
P8	- AERATION BASIN DETAILS
P9	- PUMP STATION #7 MECHANICAL DETAILS
M1	- PLUMBING AND DRAINAGE
M2	- VENTILATION LAYOUT
M3	- MECHANICAL SCHEDULES
M4	- PLUMBING SPECIFICATION NOTES
E1	- LIGHTING LAYOUT
E2	- POWER LAYOUT
E3	- SCHEDULES AND DETAILS
E4	- SINGLE LINE DRAWING
E5	- PUMP STATION#7 ELECTRICAL LAYOUT & DETAILS
E6	- PUMP STATION#3 ELECTRICAL LAYOUT & DETAILS
G1	- PLAN AND PROFILE - FALKLAND STREET 0+00 TO 9+85
G3	- PLAN AND PROFILE - YOUNG STREET 0+00 TO 4+20 LINCOLN STREET 0+00 TO 5+50
G4	- PLAN AND PROFILE - STARR STREET 0+00 TO 10+00
G5	- PLAN AND PROFILE - STARR STREET 10+00 TO 17+00
G6	- PLAN AND PROFILE - BROOK STREET 0+00 TO 10+00 MONTAGUE STREET 0+00 TO 3+00
G7	- YARD PIPING
G14	- CHAMBER, MANHOLE AND HYDRANT DETAILS

Town Of Lunenburg

Municipal Wastewater  
Collection and Treatment

ABL Environmental  
Consultants Ltd.



Date: Friday, Apr. 13, 2012 - 2:54pm Drawing: Model File: C:\98001 - Lunenburg STP 2002 Drawings\98001-A1.dwg User: mullison

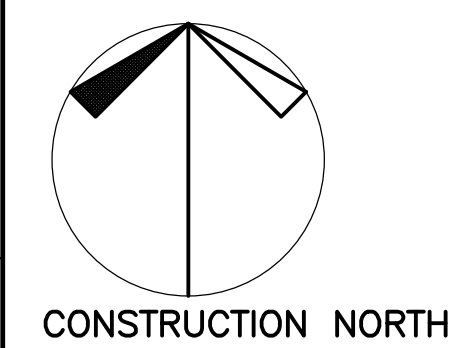
PLANT LIST

LEGEND	COMMON NAME	BOTANICAL NAME	SIZE/ROOT CONDITION	QUANTITY
AAA	NORWAY MAPLE	ACER PLATANOIDES	3" CAL - WIRE BASKET	5
BBB	GREEN ASH	FRAXINUS PENSYLVANICA LANCEOLATA	3" CAL - WIRE BASKET	8
CCC	RUGOSA ROSE	ROSA RUGOSA	2 GAL POT/3YR	47
DDD	GOLD DROP CINQUEFOIL	POTENTILLA FRUTICOSA GOLD DROP	3 GAL POT/60CM	60

ALL TREES DOUBLE STAKED TREE SUPPORTS - MULCH PLANTING SAUCER  
ALL SHRUBS IN PLANTING BEDS - MULCH MINIMUM 3" DEPTH - EDGE BED WITH SPADE  
CAL = CALIPER ; GAL = GALLON

- GENERAL NOTES:**
- DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED.
  - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.
  - FOR LOCATIONS, ELEVATIONS AND DETAILS OF PIPES SEE MECHANICAL AND PROCESS DRAWINGS.
  - ALL CONSTRUCTION SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NATIONAL BUILDING CODE LATEST EDITION.
  - ALL GRADE ELEVATION FOR ROUGH GRADE ONLY. FINAL GRADING DETERMINED IN FIELD BY ENGINEER.
  - EXCESS AND WASTE EXCAVATED MATERIAL TO BE DISPOSED ON OR WITHIN 10 KM OF SITE AT LOCATION APPROVED BY ENGINEER. SEE SPEC.
  - ALL OFFSET POINTS ARE IRON BARS AND ARE TO FOUNDATION CORNERS. OFFSET POINTS ARE TO BE PROTECTED DURING ALL PHASES OF CONSTRUCTION AND ONLY MOVED WITH THE APPROVAL OF THE ENGINEER.
  - ALL BENCHMARKS ARE BASED ON NSCM #27112 HAVING AN ELEVATION OF 54.96'.

- LEGEND**
- 12.89 EXISTING SPOT ELEVATIONS
  - 12.88 NEW SPOT ELEVATION
  - (12.88) EXISTING SPOT ELEV. TO REMAIN
  - (01) CONTROL POINT FOR LAYOUT
  - OP IRON BAR OFFSET POINTS
  - TBM TEMPORARY BENCHMARK
  - PIPE BOLLARD



No.	Description	Date	By
02	TRANSFORMER RELOCATED	MAY 14/02	JH
03	ISSUED FOR TENDER	APR/02	JH
01	ISSUED FOR REVIEW	DEC/98	JCL

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

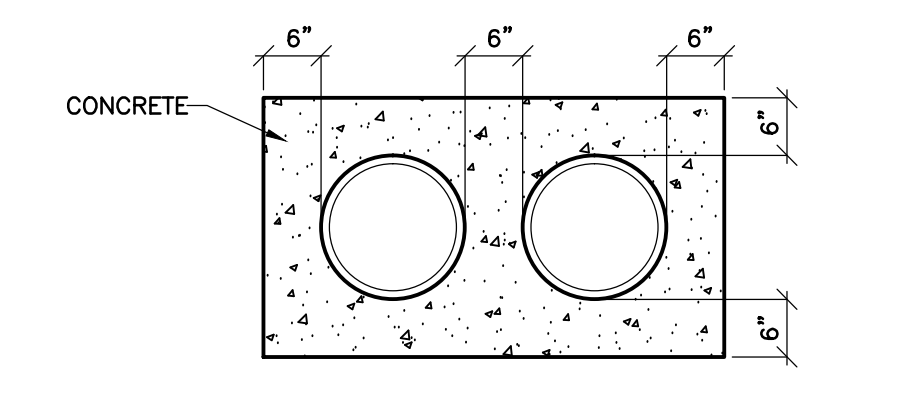
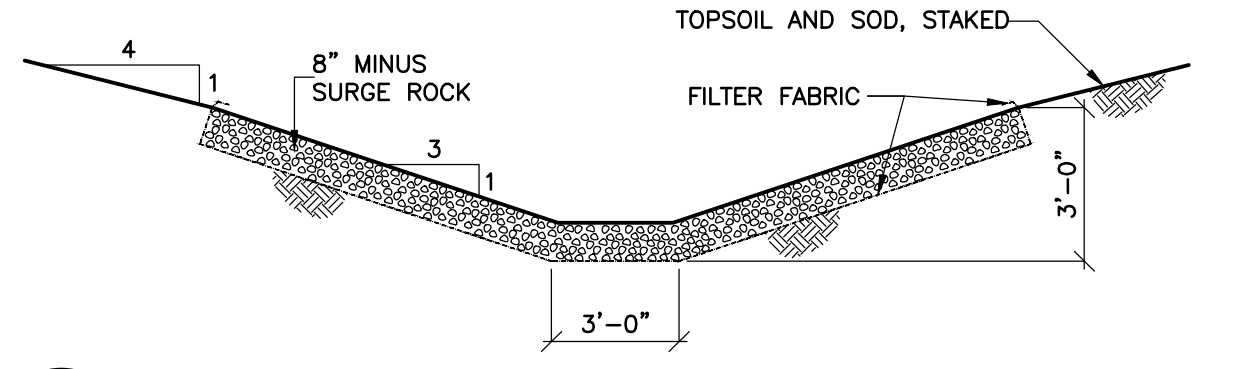
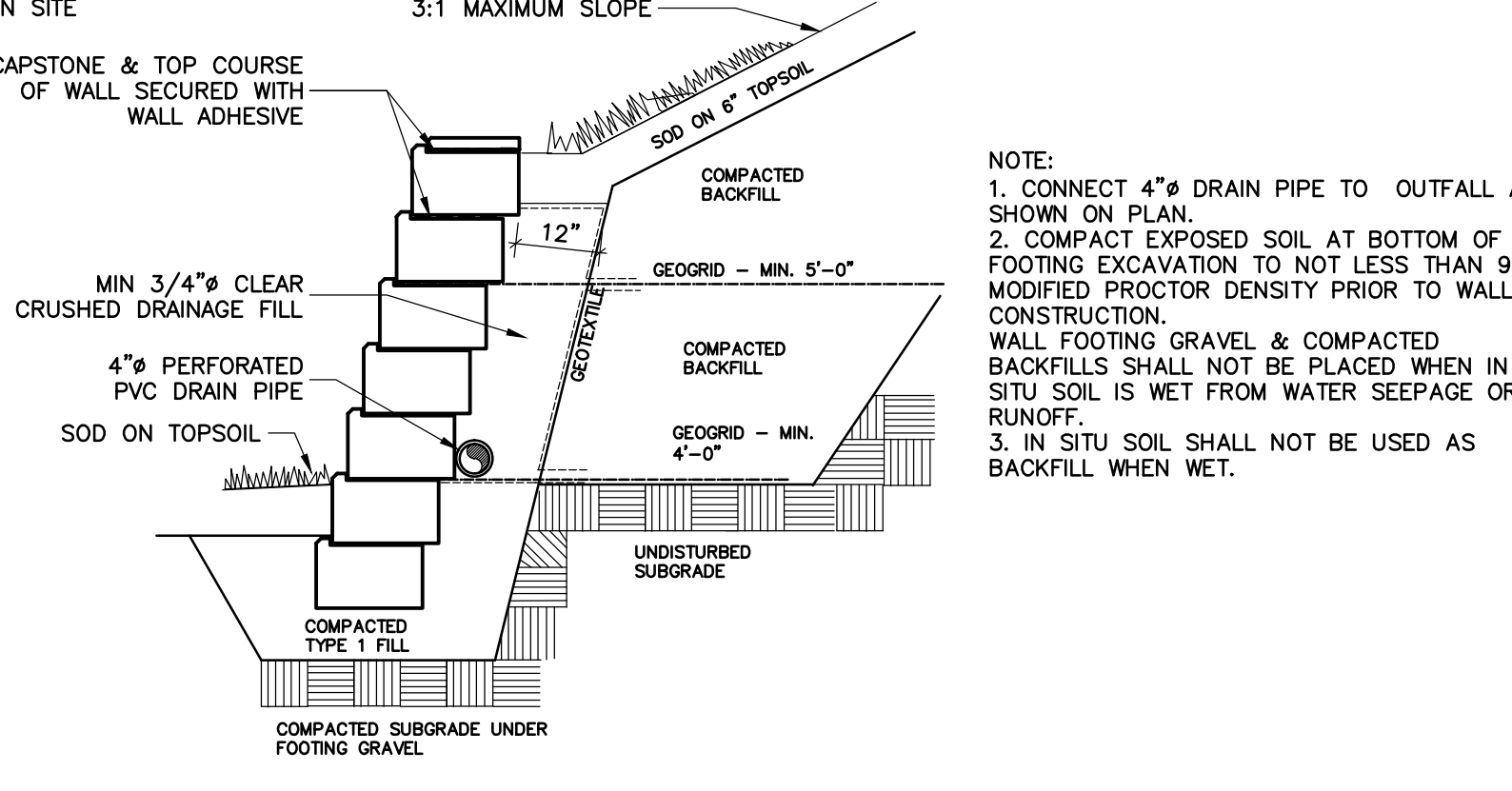
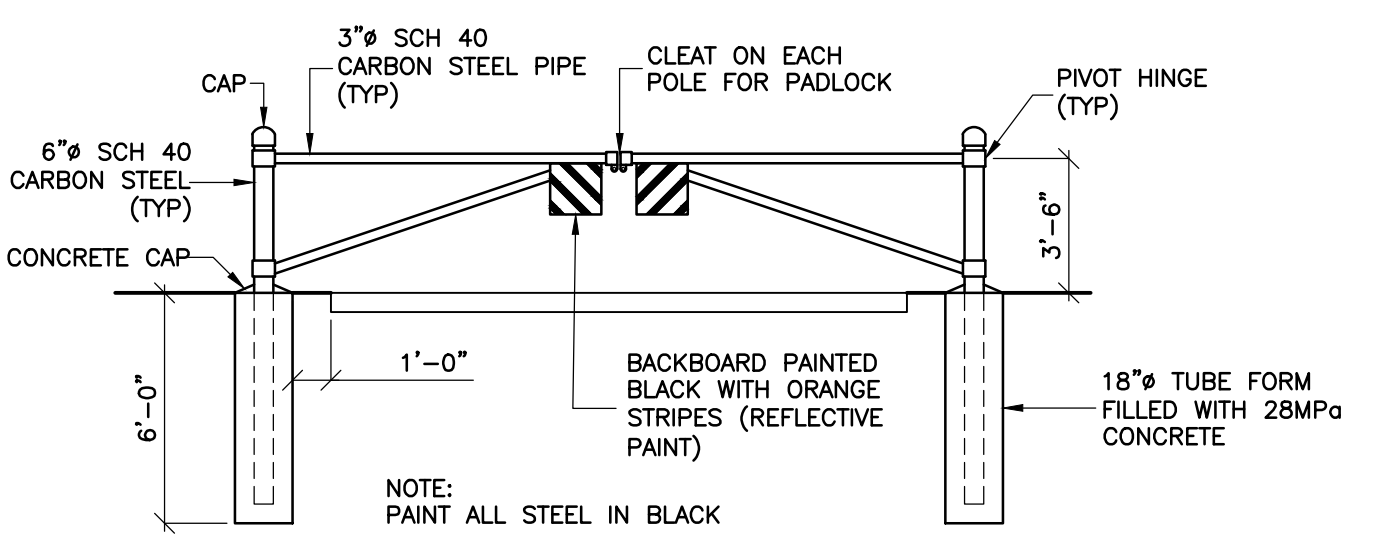
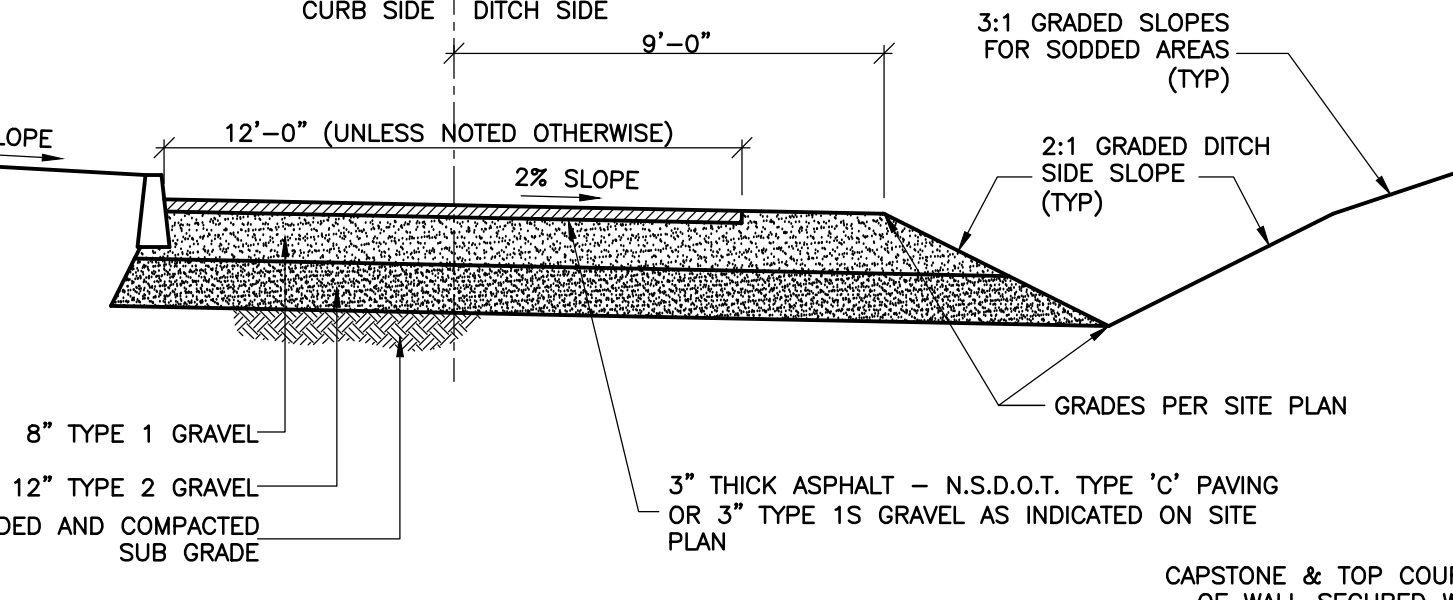
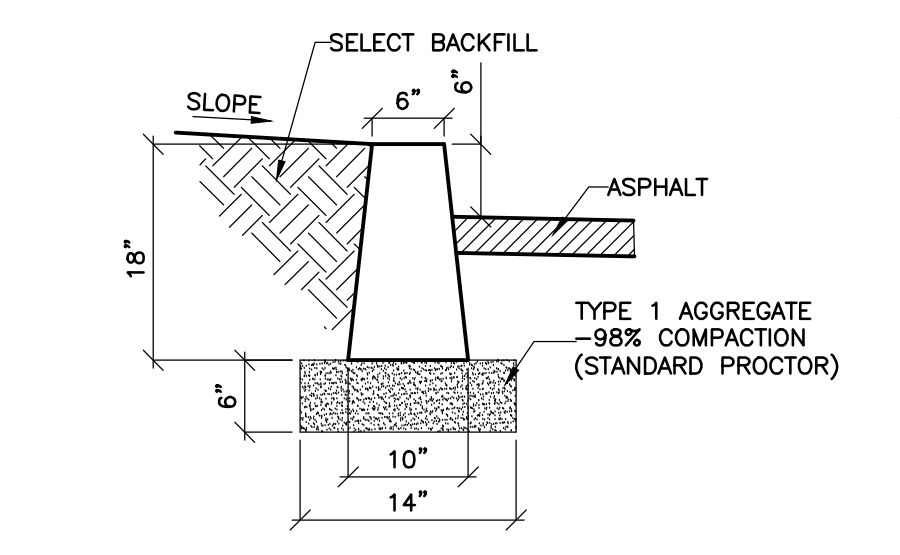
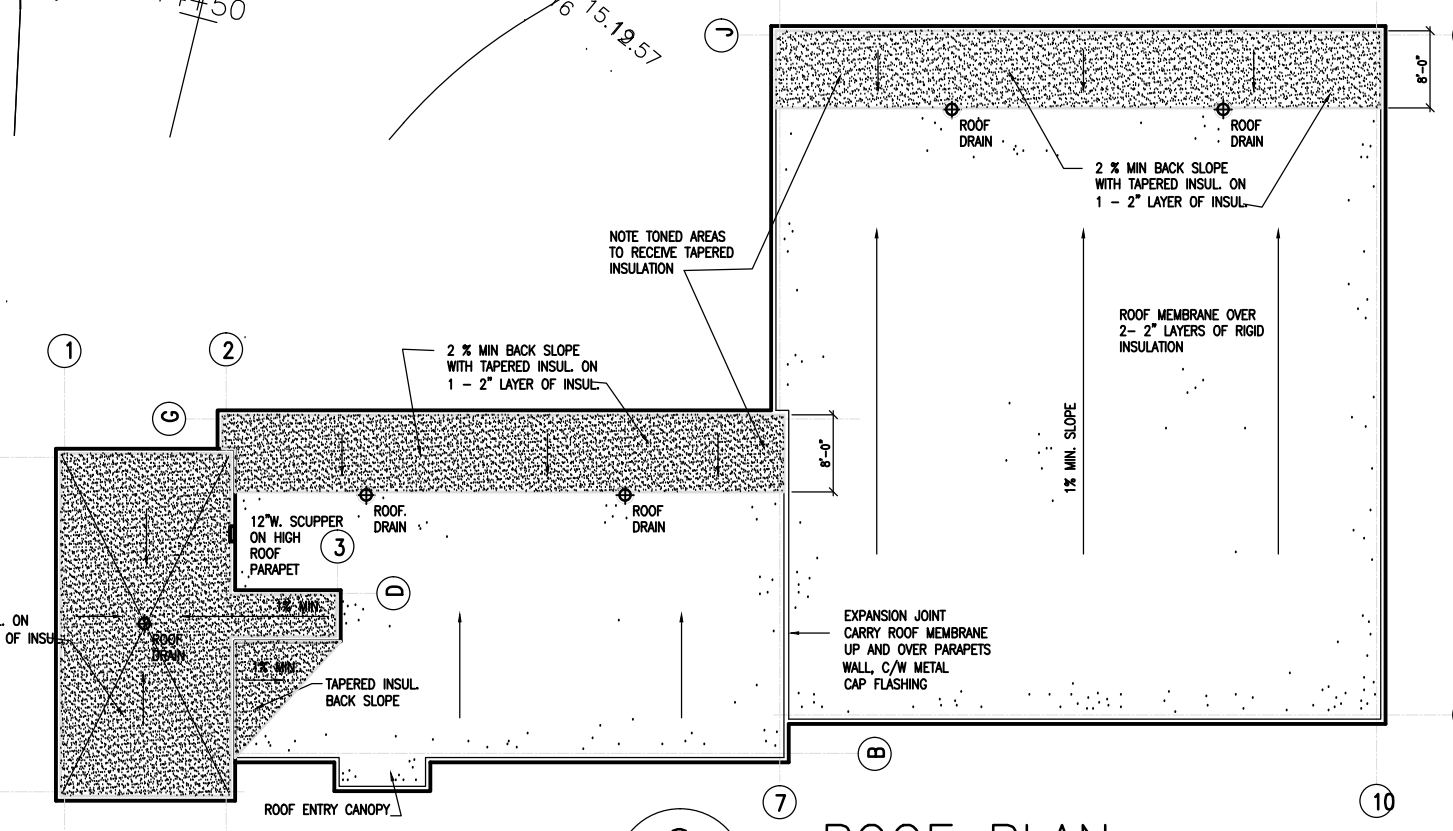
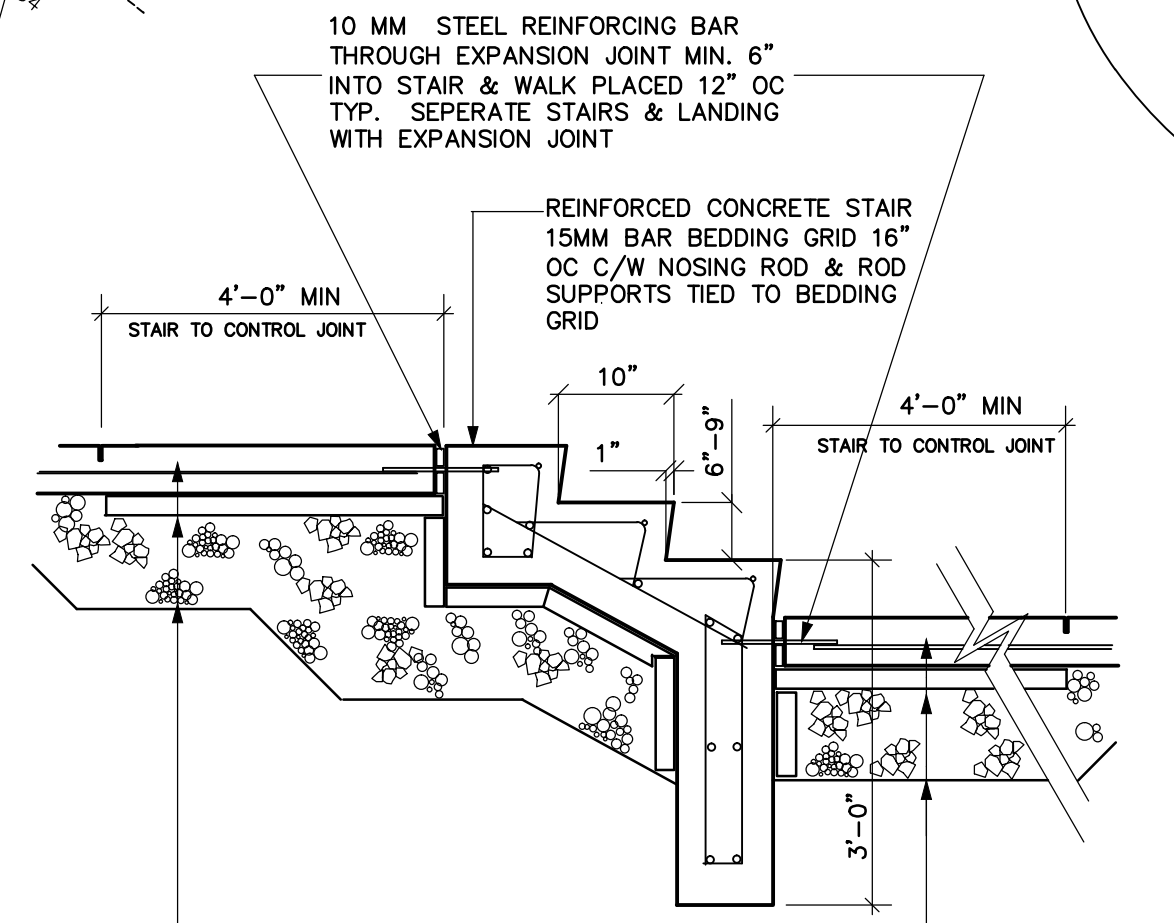
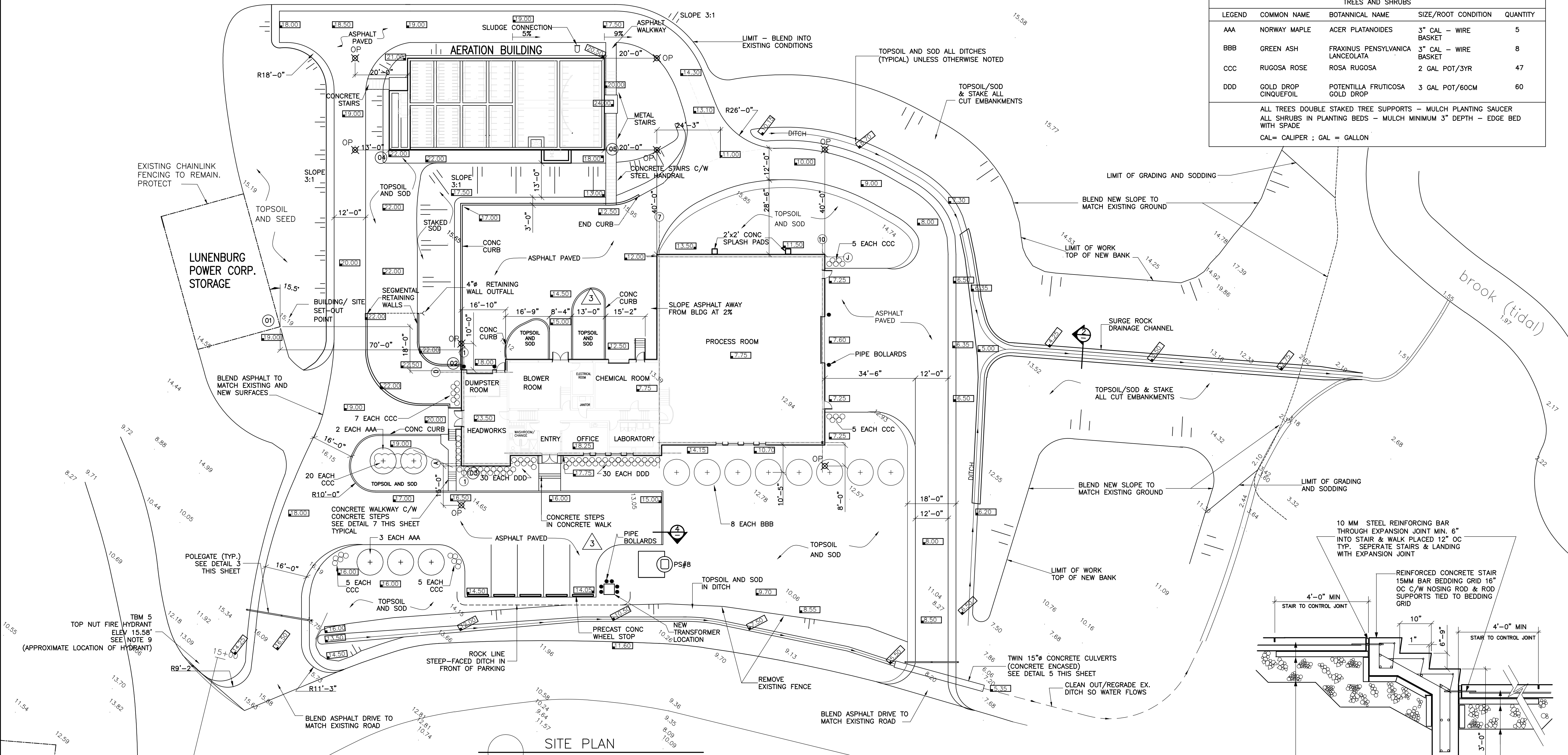
SITE & ROOF PLANS

**ABL ENVIRONMENTAL**  
consultants limited  
102 PORTLAND STREET  
DARTMOUTH, NOVA SCOTIA  
B3Y 1B8  
Tel: (902) 466-0050  
Fax: (902) 468-4399  
Email: ablenvironmental.com

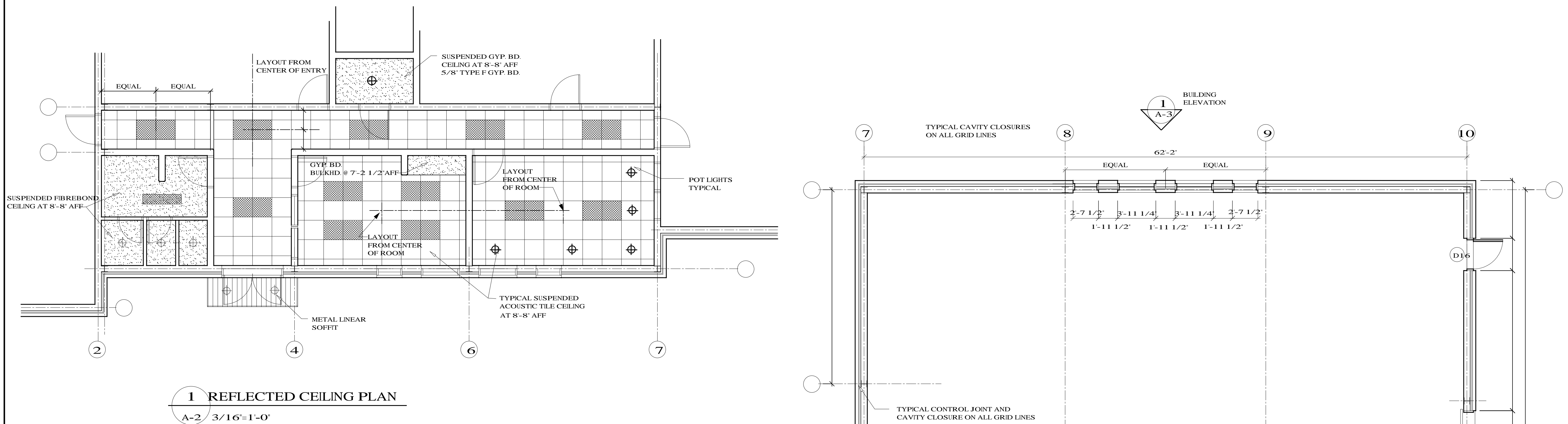
INNOVATIVE SOLUTIONS  
**SPERRY & PARTNERS LTD.**

Scale AS NOTED

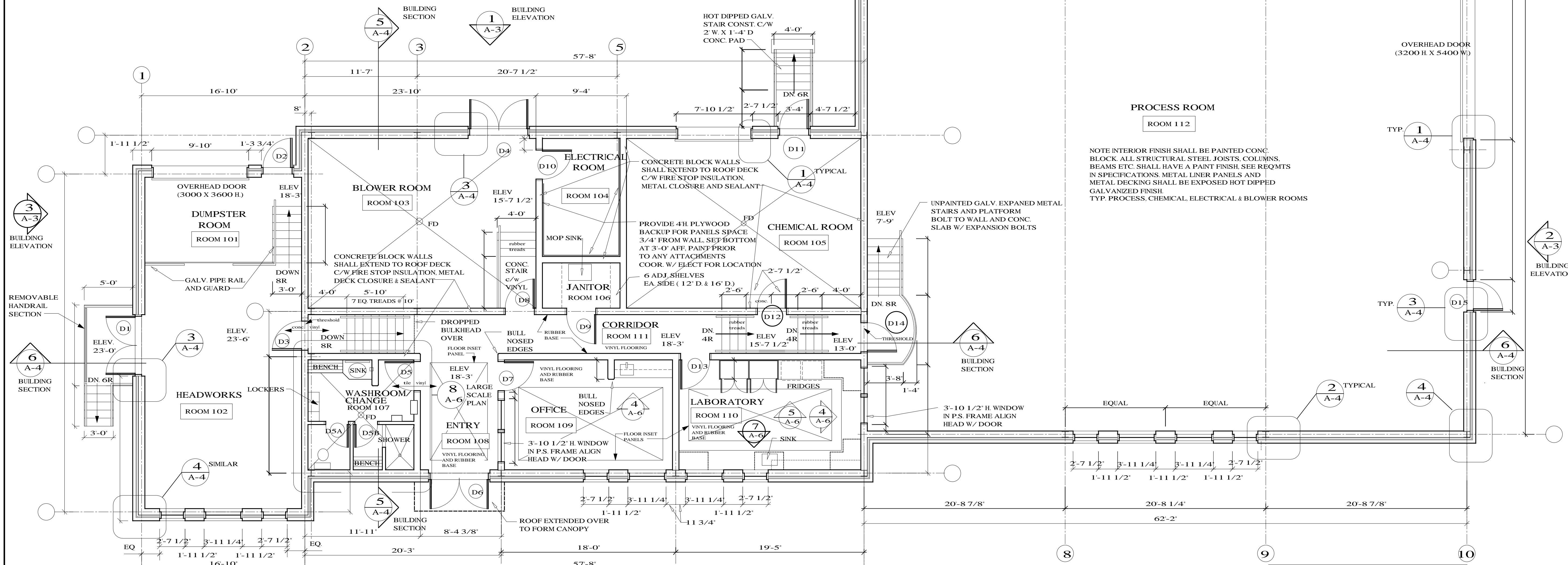
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APR 2002	JGM
Designed	Approved
JGM MB	GB
Contract No. 98001	Sheet of 1 / 43
Drawing No. A1	Revision



- GENERAL NOTES:
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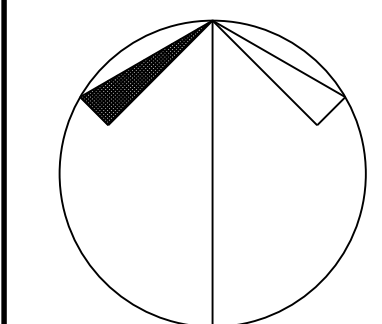


**1 REFLECTED CEILING PLAN**  
A-2 3/16"=1'-0"



**2 MAIN FLOOR PLAN**  
A-2 3/16"=1'-0"

NOTE COORDINATE PLACEMENT OF DOORS AND WINDOWS WITH EXT. MASONRY (METRIC) UNITS ADJUST TO SUIT. COORDINATE WITH ALL TRADES EFFECTED



CONSTRUCTION NORTH

No.	Description	Date	By
01	ISSUED FOR TENDER	FEB/02	JGM

Revision or Issue

TOWN OF LUNEBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

FLOOR PLAN AND  
REFLECTED CEILING PLAN

**ABL** Environmental  
Consultants Ltd.

102 PORTLAND STREET, P.O. BOX 501  
DARTMOUTH, N.S. B2Y 2T6 TEL: (902) 466-0200  
FAX: (902) 466-4399

INNOVATIVE SOLUTIONS

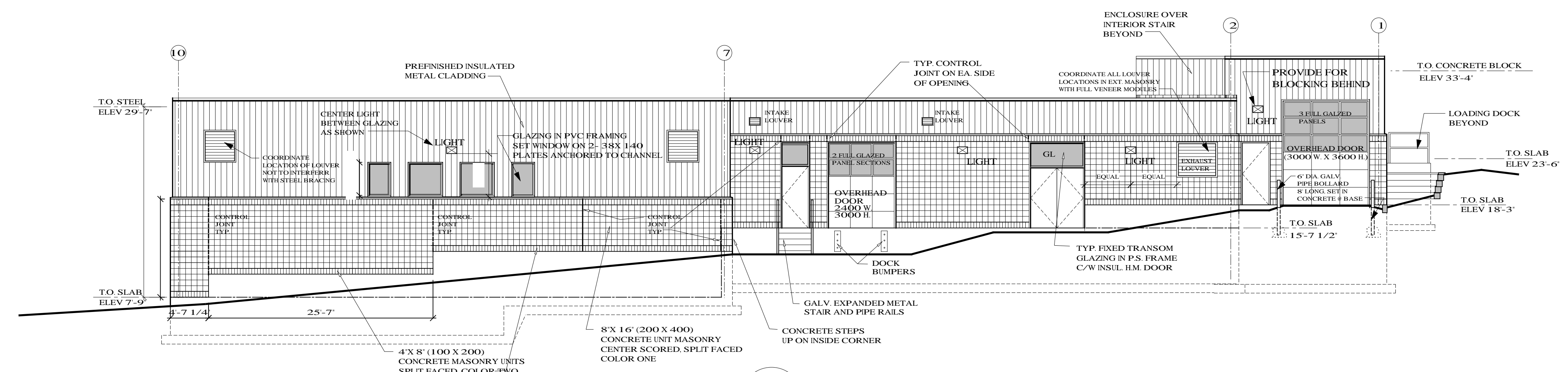


Scale 3/16" = 1'-0"

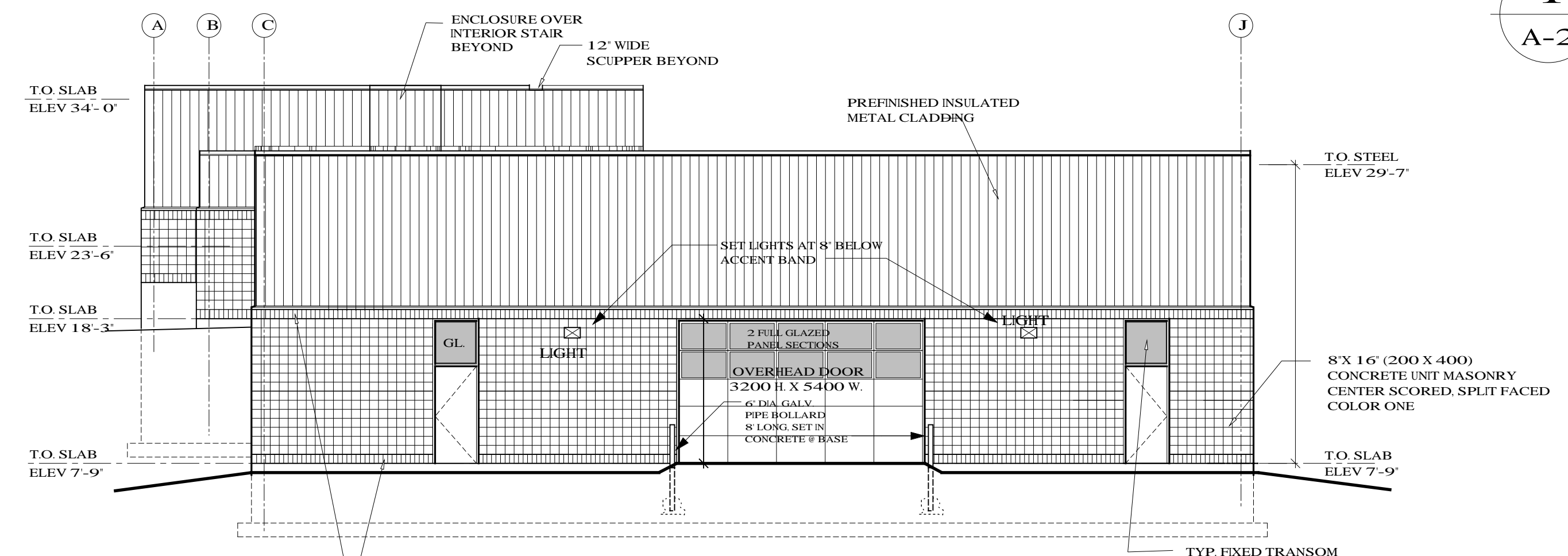
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Designed	JGM	Checked	J.C.R.
Contract No.	98001	Approved	GB
Drawing No.	A2	Sheet of	1
Revision			

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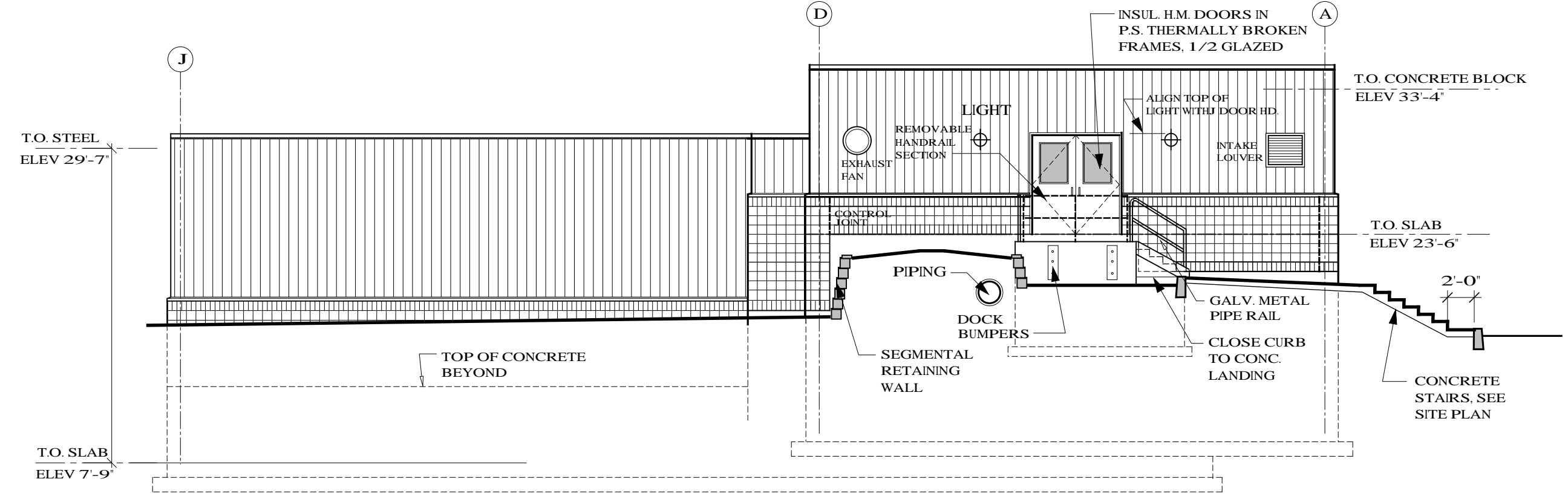
LEGEND



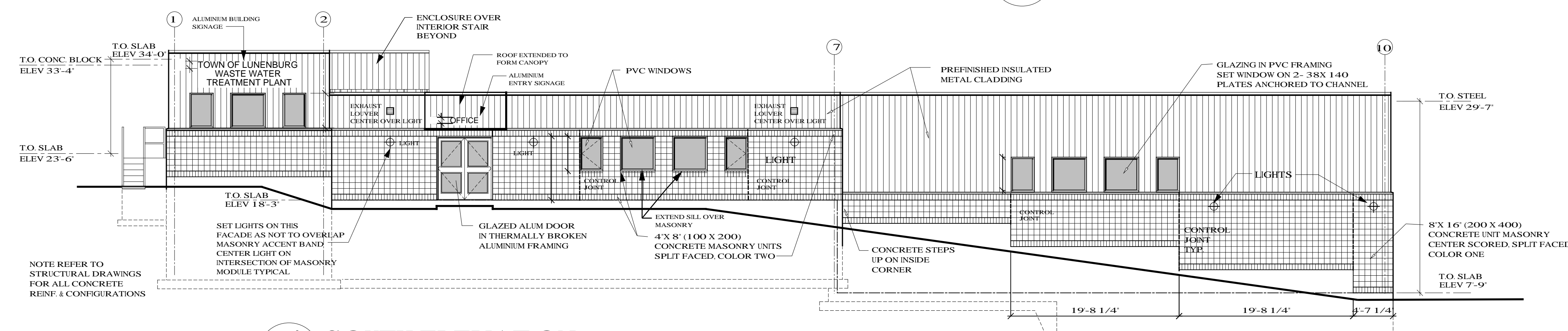
**1 NORTH ELEVATION**  
A-2 SCALE 1/8"=1'-0"



**2 EAST ELEVATION**  
A-2 SCALE 1/8"=1'-0"



**3 WEST ELEVATION**  
A-2 SCALE 1/8"=1'-0"



**4 SOUTH ELEVATION**  
A-2 SCALE 1/8"=1'-0"

No.	Description	Date	By
01	ISSUED FOR TENDER	FEB/02	JGM

Revision or Issue

TOWN OF LUNEBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

BUILDING ELEVATIONS

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Consultants Ltd.

102 PORTLAND STREET, P.O. BOX 501  
DARTMOUTH, NS, B2Y 3H8 TEL: (902)469-0000  
FAX: (902)469-4399

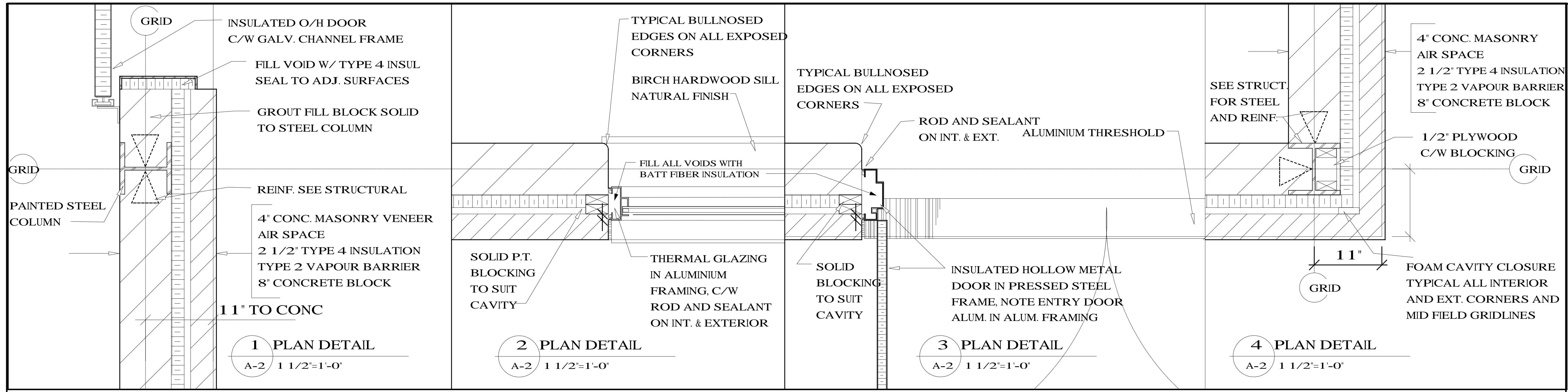
INNOVATIVE SOLUTIONS

102 Portland Street  
Dartmouth, Nova Scotia  
B2Y 1H8  
Tel: (902) 469-9000  
Fax: (902) 469-4399

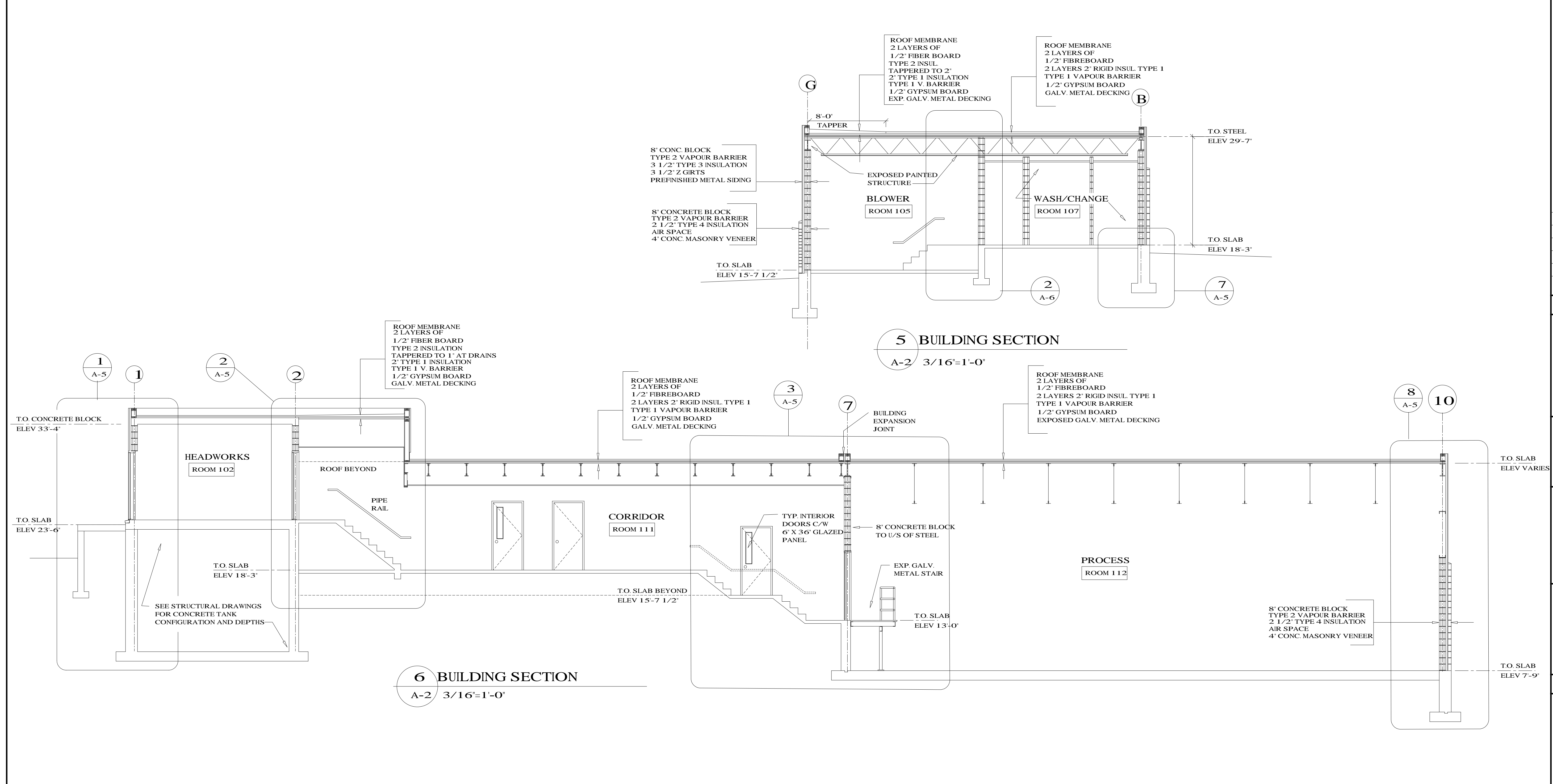


Scale  
1/8" = 1'-0"

	Date	DEC. 1998	Drawn	JGM
	Designed	JGM	Checked	M.B.
	Contract No	98001	Approved	GB
	Drawing No	A3	Sheet of	1



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01	ISSUED FOR TENDER	FEB/02	JGM
No.	Description	Date	By

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

BUILDING SECTIONS

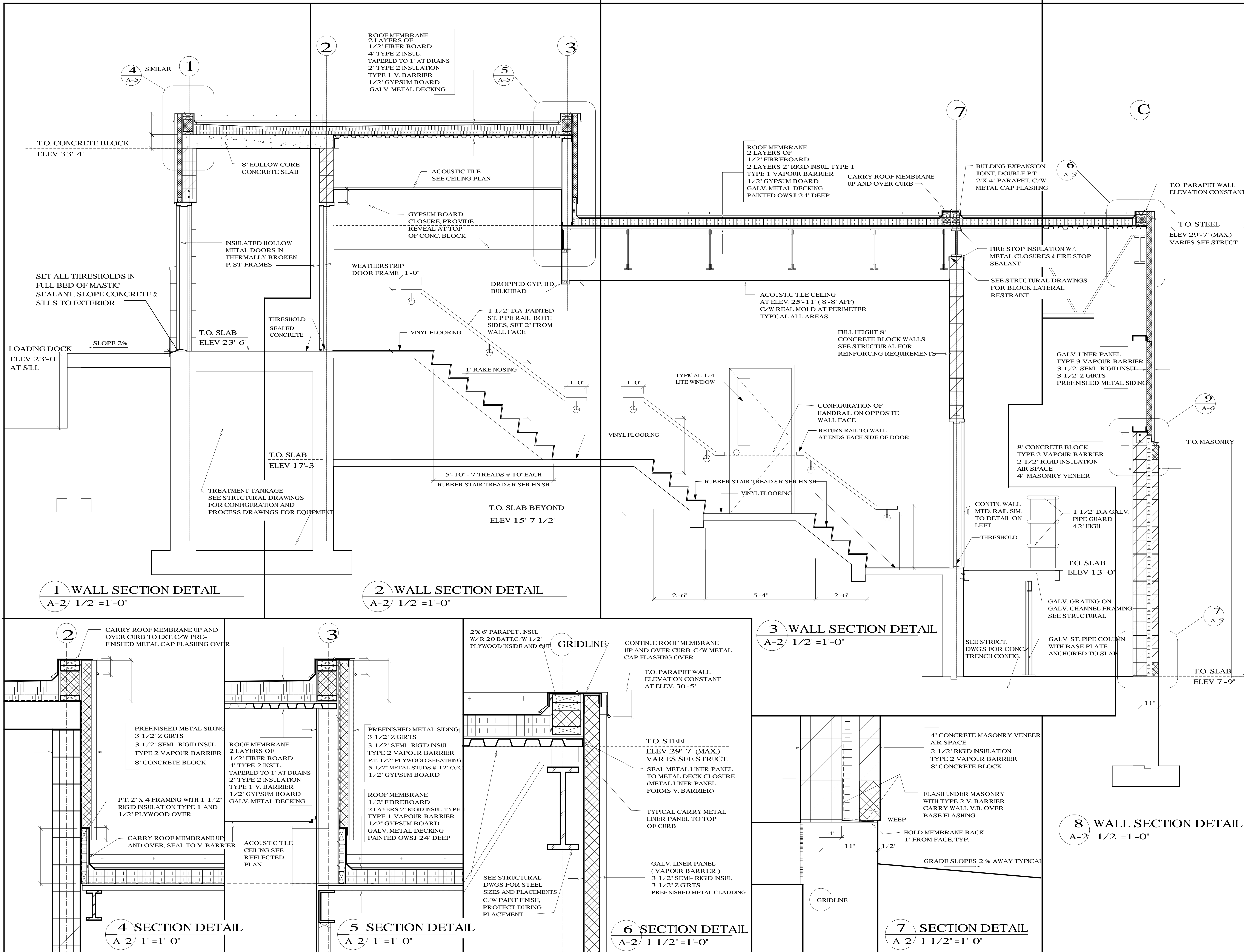
**ABL** Environmental  
Consultants Ltd.

102 PORTLAND STREET, P.O. BOX 501  
DARTMOUTH, NS B2Y 2T8

102 Portland Street  
Dartmouth, Nova Scotia  
B2Y 1H8  
Tel: (902) 469-9000  
Fax: (902) 469-4399

Scale AS NOTED

	Date DEC. 1998 Drawn JGM Designed JGM Checked JCR Approved GB Contract No. 98001 Drawing No. A4	Sheet of 1 Revision 
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No.	Description	Date	By
01	ISSUED FOR TENDER	FEB/02	JGM

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SECTION DETAILS

**ABL** Environmental  
Consultants Ltd.

102 PORTLAND STREET, P.O. BOX 501  
DARTMOUTH, NS. B2Y 3Y8 TEL: (902)466-0050  
FAX: (902)469-4399

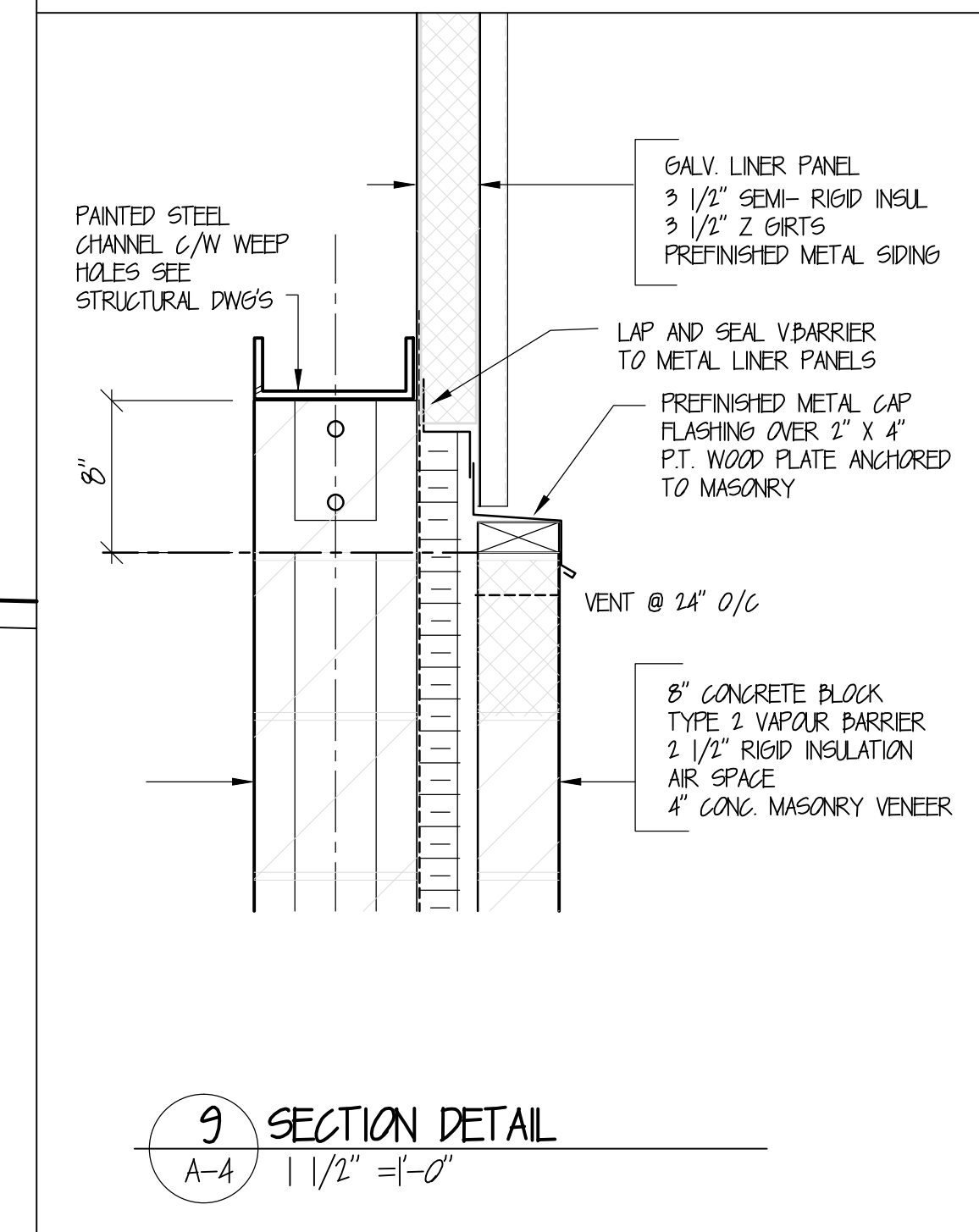
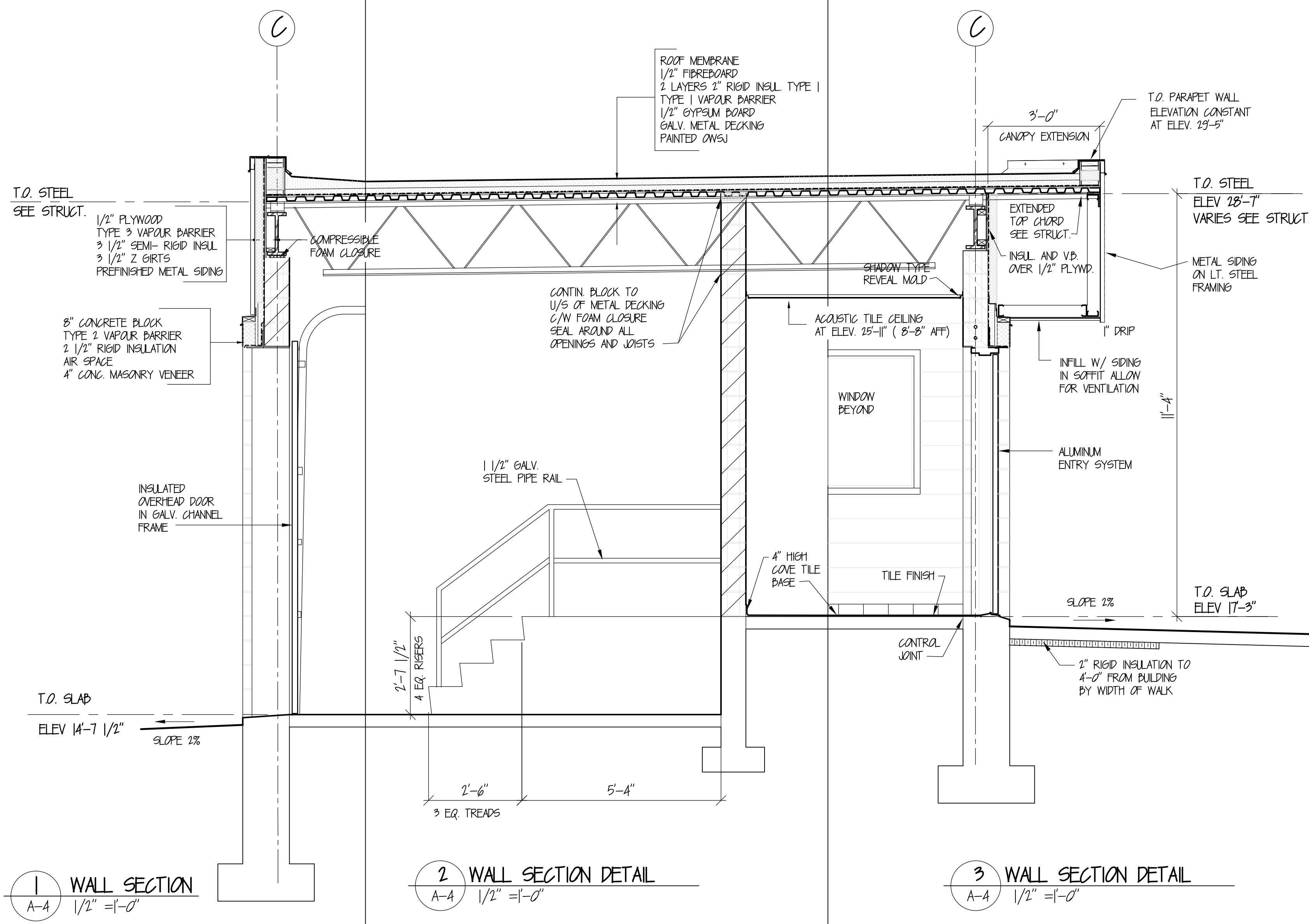
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Dartmouth, Nova Scotia  
B2Y 1H8  
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Fax: (902) 469-4399

Scale AS NOTED

Date	Drawn
DEC 1998	JGM
Designed	Checked
JGM	M.B.
Contract No.	Sheet of
98001	
Drawing No.	Revision
<b>A5</b>	1

Date: Friday, Apr. 13, 2012-2:53pm Drawing: Model File: C:\98001 - Lunenburg STP 2002\Drawings\98001-A6.DWG User: mallison



1 WALL SECTION  
A-A 1/2" = 1'-0"

2 WALL SECTION DETAIL  
A-A 1/2" = 1'-0"

3 WALL SECTION DETAIL  
A-A 1/2" = 1'-0"

9 SECTION DETAIL  
A-A 1/2" = 1'-0"

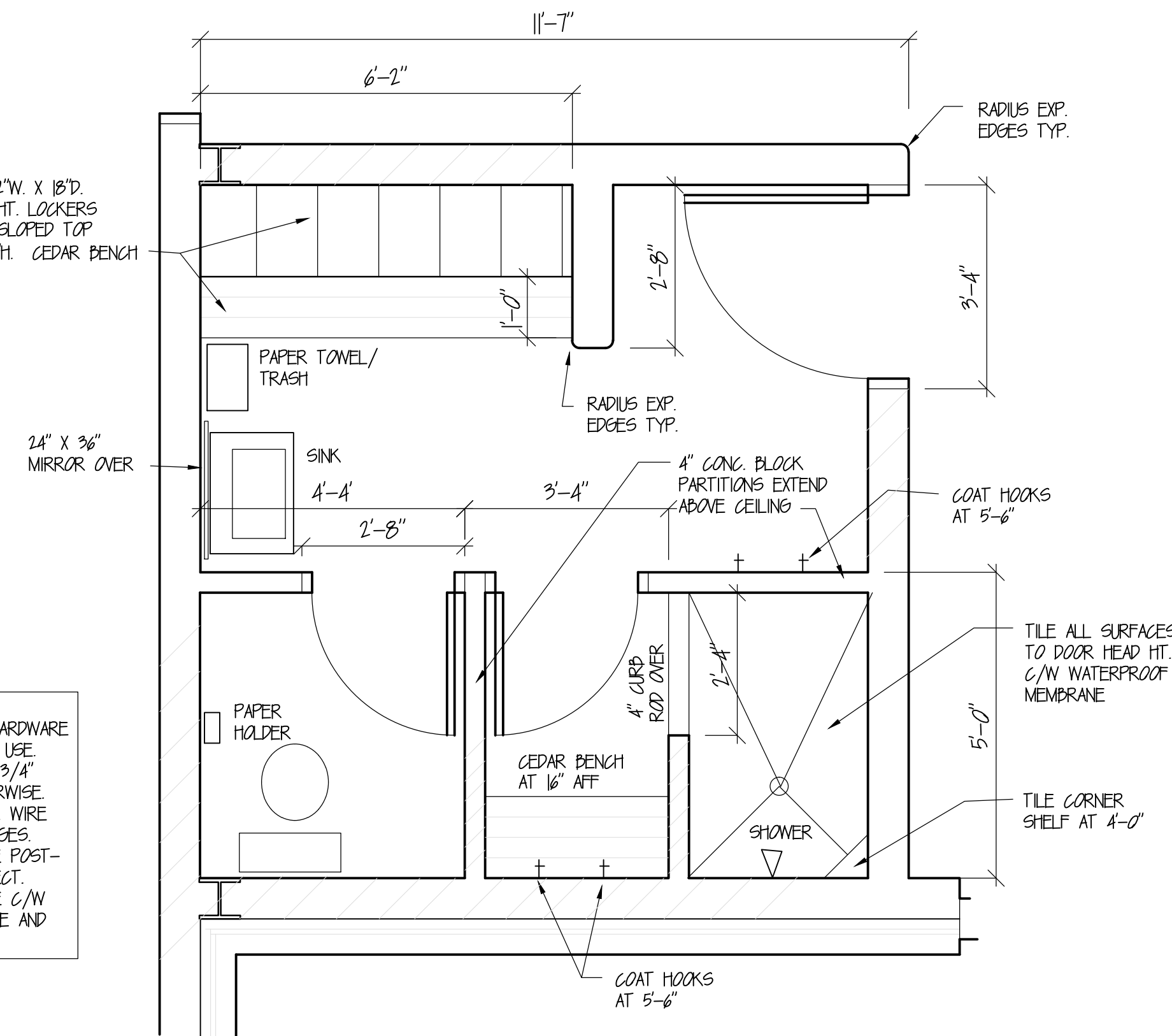
4 CABINETY ELEVATION  
A-A 3/8" = 1'-0"

5 CABINETY ELEVATION  
A-A 3/8" = 1'-0"

6 CABINETY ELEVATION  
A-A 3/8" = 1'-0"

7 CABINETY ELEVATION  
A-A 3/8" = 1'-0"

**GENERAL CABINET NOTES**  
 1. ALL CONSTRUCTION AND HARDWARE SHALL BE FOR HEAVY DUTY USE.  
 2. ALL PLYWOOD SHALL BE 3/4" BIRCH UNLESS NOTED OTHERWISE.  
 3. HARDWARE SHALL BE SS WIRE PULLS WITH CONCEALED HINGES.  
 4. COUNTER TOPS SHALL BE POST-FORMED, COLOR BY ARCHITECT.  
 5. EXPOSED WOOD SHALL BE C/W NATURAL SATIN FINISH, INSIDE AND OUT OF CABINETY.



8 LARGE SCALE PLAN  
A-A 1/2" = 1'-0"

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**LEGEND**

No.	Description	Date	By
01	ISSUED FOR REVIEW	XXXX	XXX

**Revision or Issue**

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

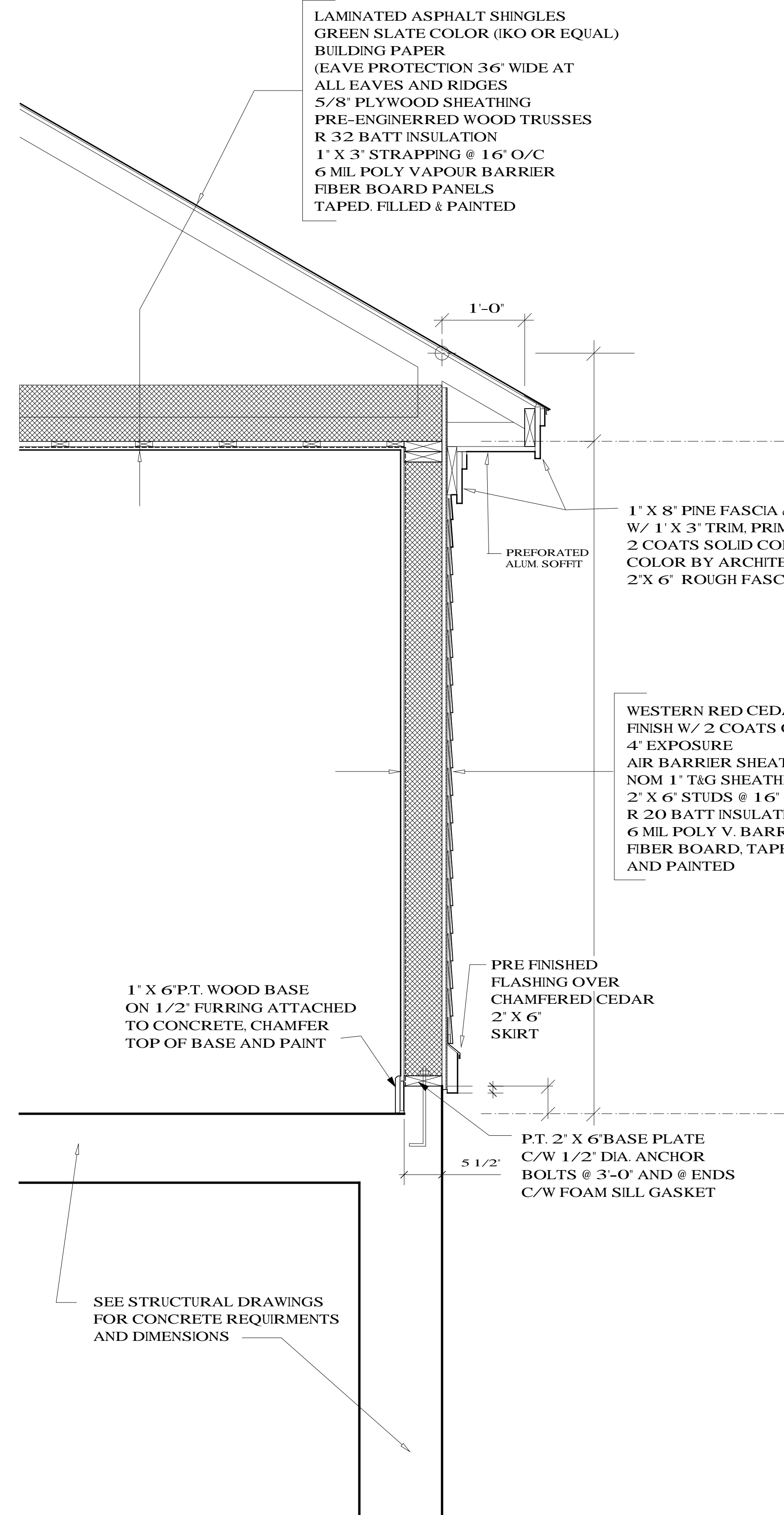
PLAN & SECTION DETAILS  
CABINETY ELEVATIONS

**ABL**  
ENVIRONMENTAL  
consultants limited  
 102 PORTLAND STREET  
DARTMOUTH, NOVA SCOTIA  
B2Y 1K6  
 Tel: (902) 466-0050  
Fax: (902) 469-4399  
Email: abl@ablenvironmental.com

INNOVATIVE SOLUTIONS  
**SPEARY & PARTNERS LTD.**

Scale AS NOTED

Date	Drawn
JULY 1998	JGM
Designed	Checked
JGM	MB
Contract No. XXXXX	Sheet of X/X
Drawing No. A6	Revision



LAMINATED ASPHALT SHINGLES  
GREEN SLATE COLOR (IKO OR EQUAL)  
BUILDING PAPER  
(EAVE PROTECTION 36" WIDE AT  
ALL EAVES AND RIDGES)  
5/8" PLYWOOD SHEATHING  
PRE-ENGINEERED WOOD TRUSSES  
R 32 BATT INSULATION  
1" X 3" STRAPPING @ 16" O/C  
6 MIL POLY VAPOUR BARRIER  
FIBER BOARD PANELS  
TAPED, FILLED & PAINTED

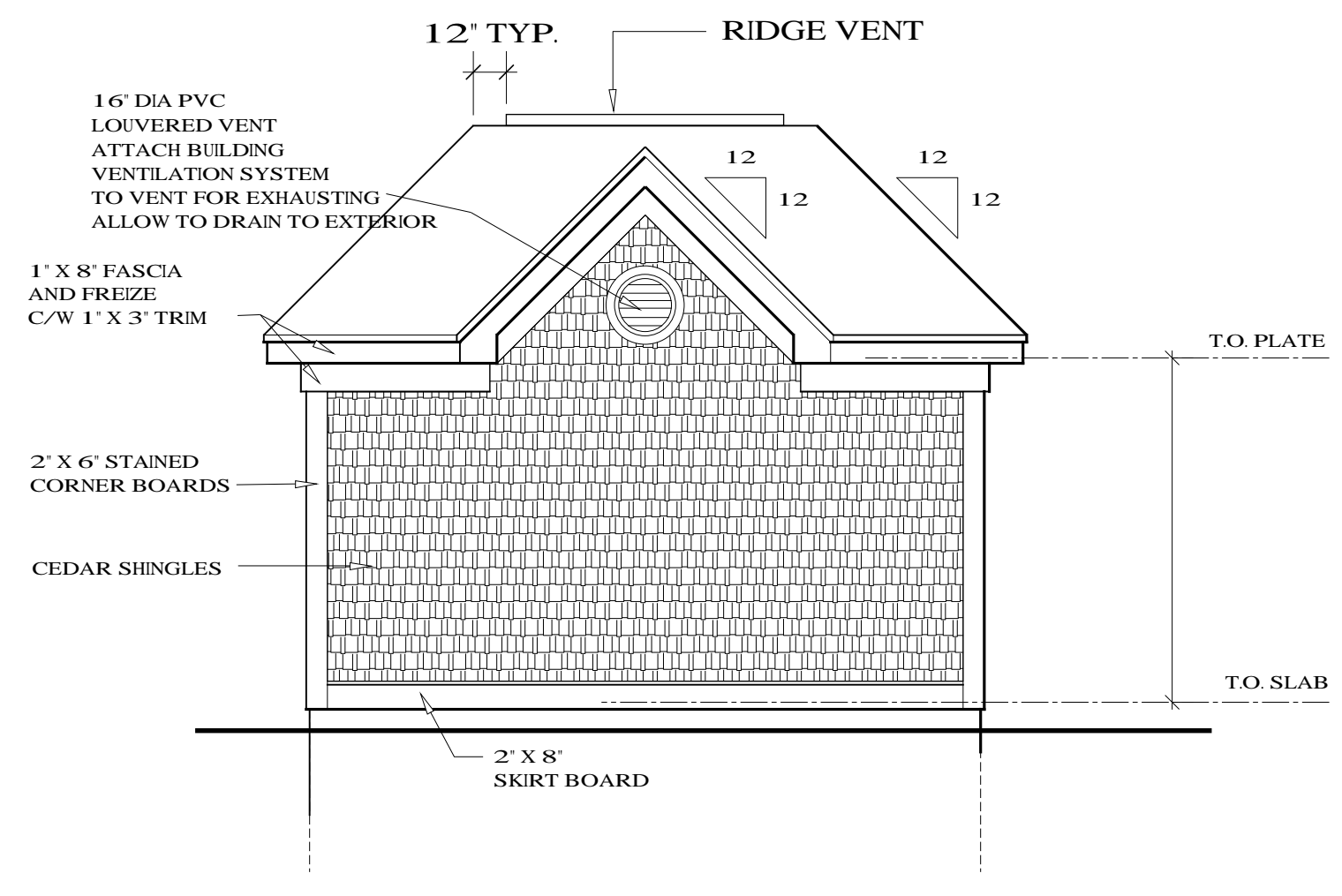
1" X 8" PINE FASCIA & FREIZE  
W/ 1" X 3" TRIM, PRIME AND  
2 COATS SOLID COLOR STAIN  
COLOR BY ARCHITECT. ON  
2" X 6" ROUGH FASCIA

WESTERN RED CEDAR SHINGLES SMOOTH FITS  
FINISH W/ 2 COATS OF CABOT BLEACHING STAIN  
4" EXPOSURE  
AIR BARRIER SHEATHING PAPER  
NOM 1" T&G SHEATHING  
2" X 6" STUDS @ 16" O/C  
R 20 BATT INSULATION  
6 MIL POLY V. BARRIER  
FIBER BOARD, TAPED, FILLED  
AND PAINTED

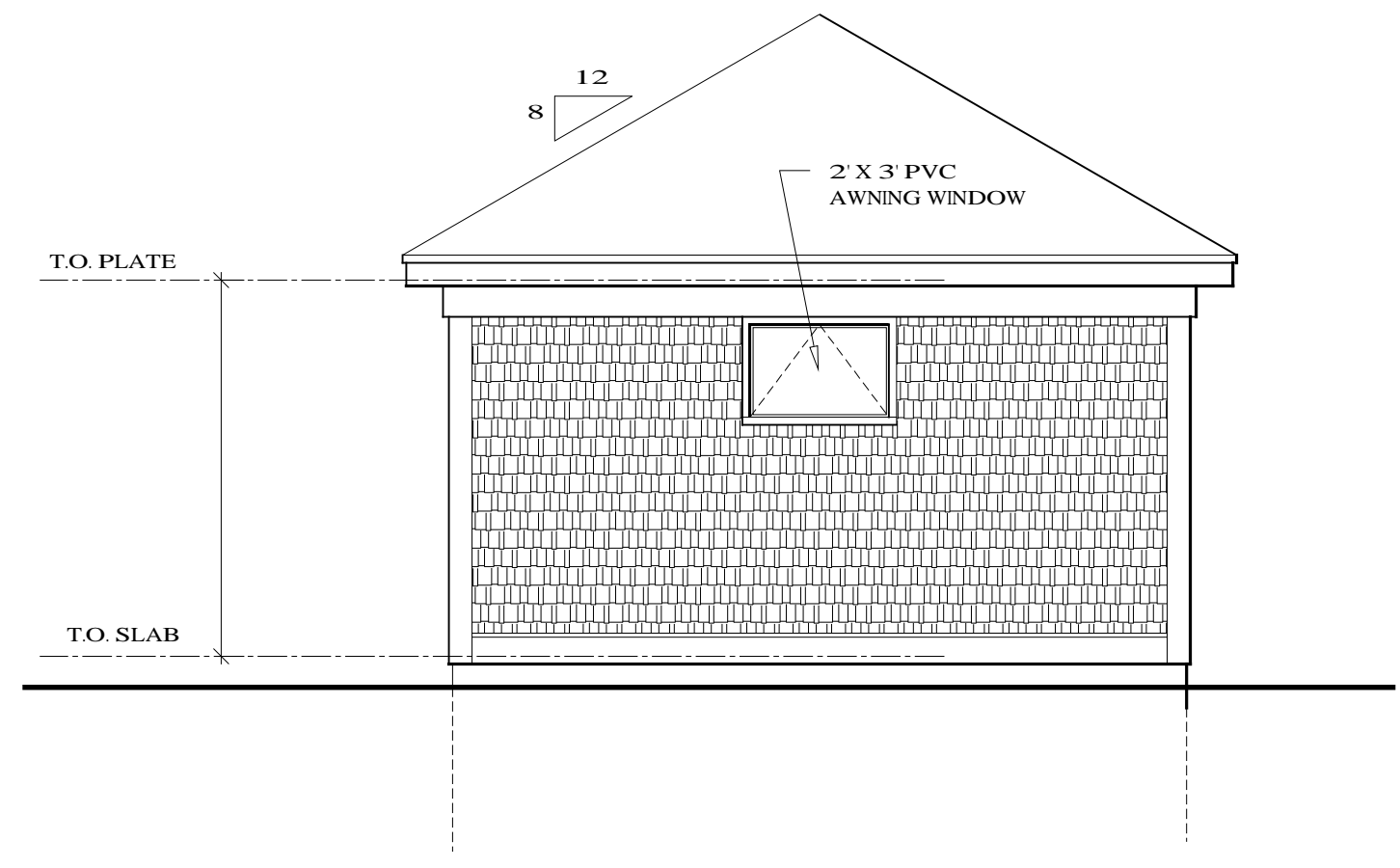
1" X 6" P.T. WOOD BASE  
ON 1/2" FURRING ATTACHED  
TO CONCRETE, CHAMFER  
TOP OF BASE AND PAINT

P.T. 2" X 6" BASE PLATE  
C/W 1/2" DIA. ANCHOR  
BOLTS @ 3'-0" AND @ ENDS  
C/W FOAM SILL GASKET

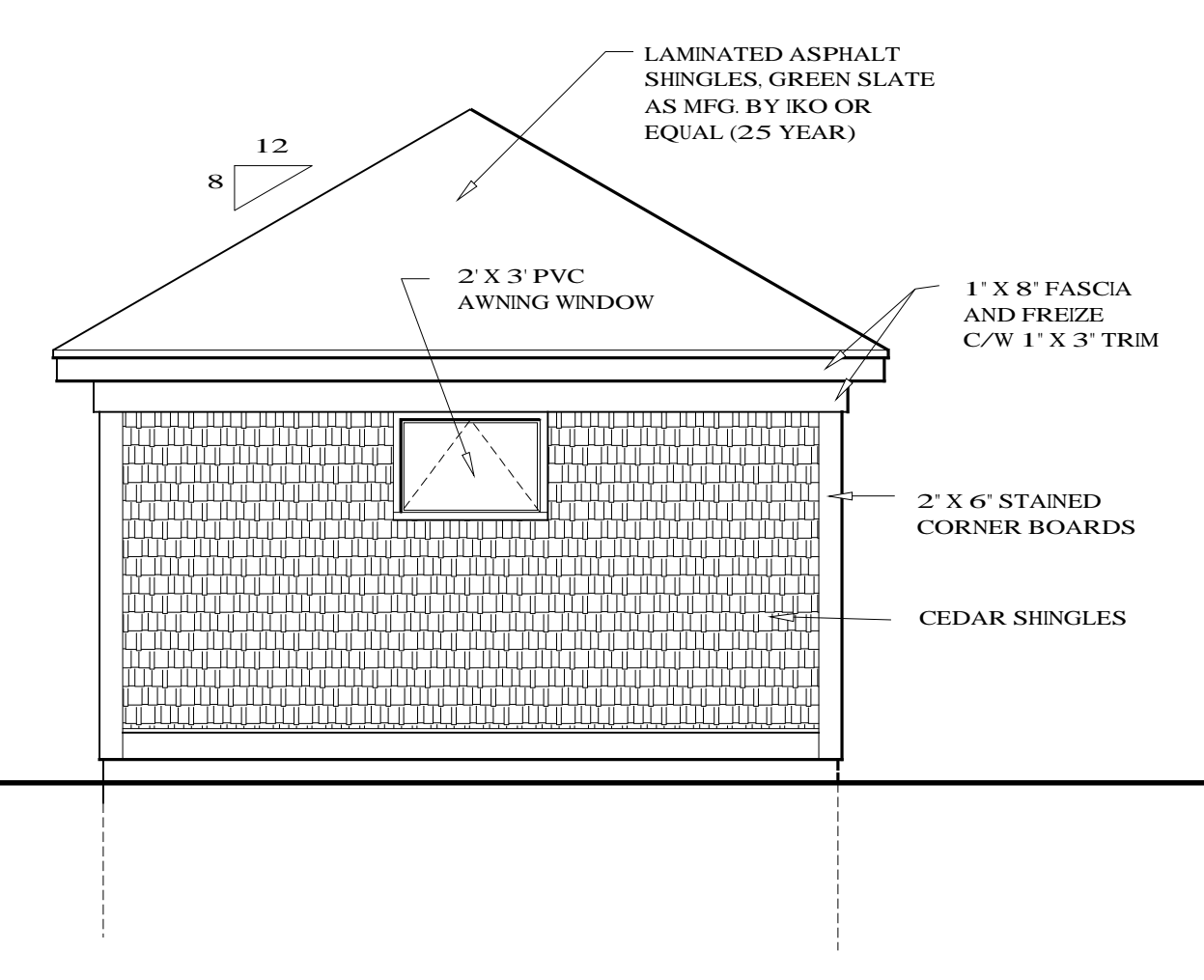
SEE STRUCTURAL DRAWINGS  
FOR CONCRETE REQUIRMENTS  
AND DIMENSIONS



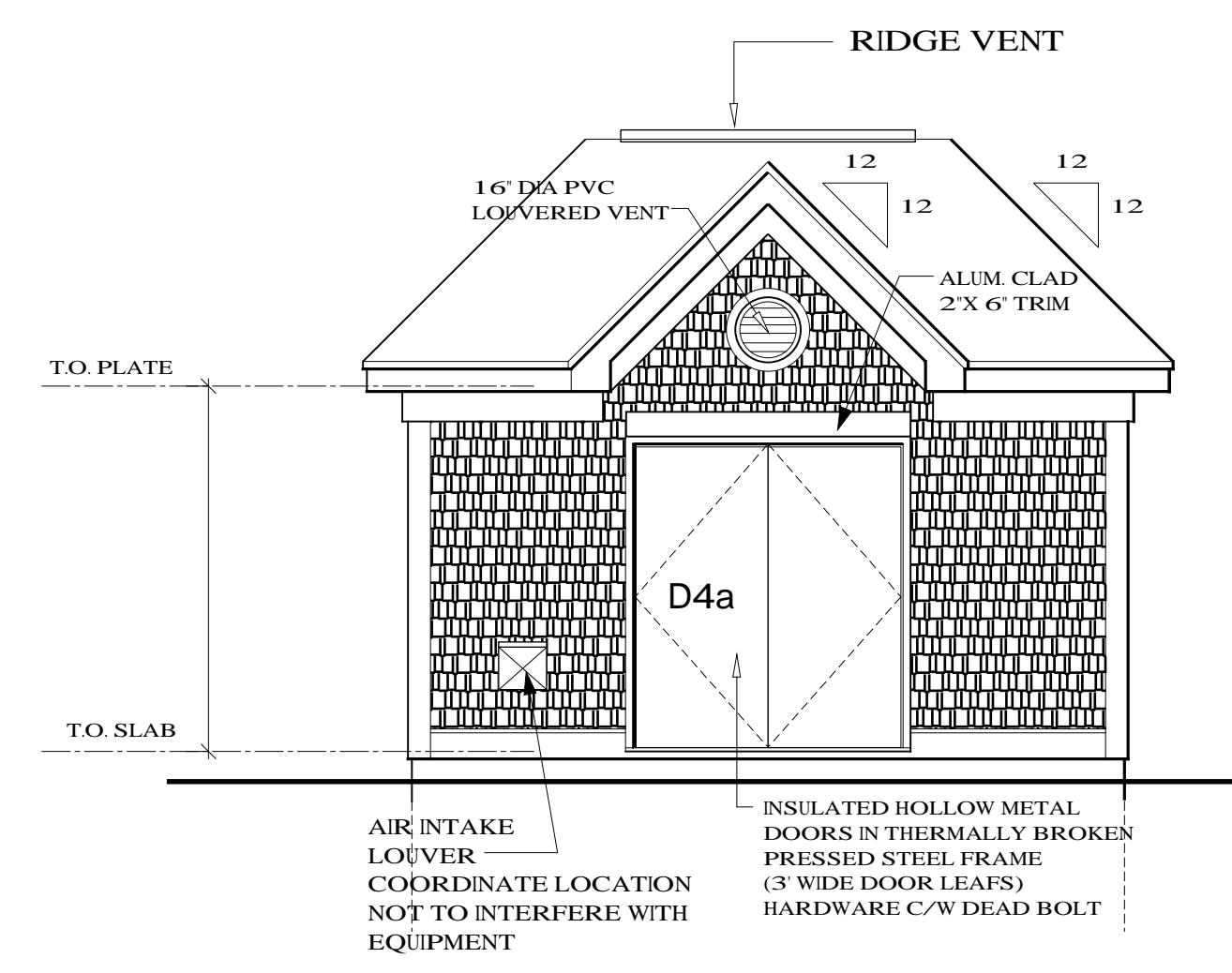
**1 REAR ELEVATION**  
A-7 SCALE 1/4"=1'-0"



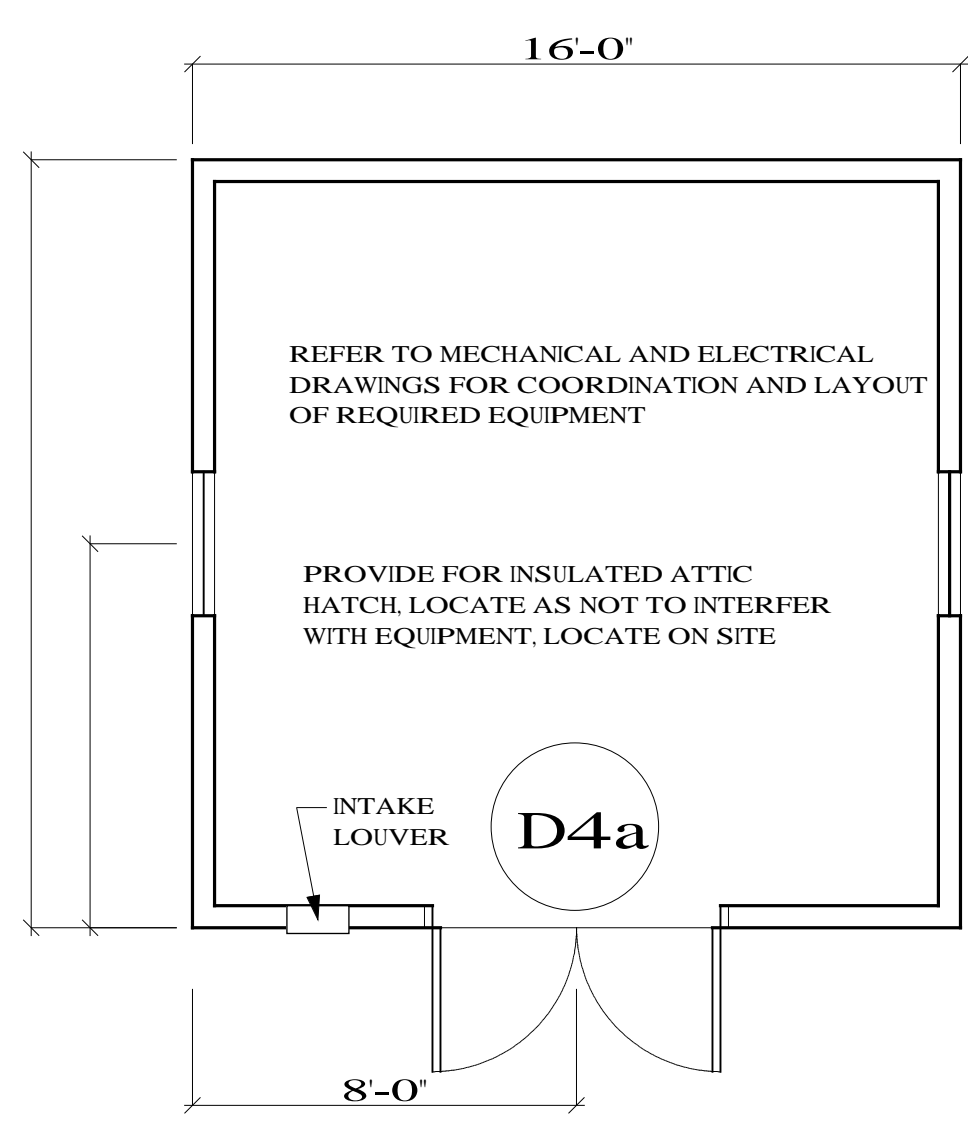
**2 RIGHT ELEVATION**  
A-7 SCALE 1/4"=1'-0"



**3 LEFT ELEVATION**  
A-7 SCALE 1/4"=1'-0"



**4 FRONT ELEVATION**  
A-7 SCALE 1/4"=1'-0"



**5 FLOOR PLAN PUMP STATION No. 7**  
A-7 SCALE 1/4"=1'-0"  
NOTE PUMPING STATION NO. 4 SIMILAR IN SIZE AND EXTERIOR TREATMENTS. SEE SITE PLAN OF LOCATION AND ORIENTATION

**6 WALL SECTION**  
A-7 SCALE 1"=1'-0"

- GENERAL NOTES:
1. DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED.
  2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.
  3. FOR LOCATIONS, ELEVATIONS AND DETAILS OF PIPES SEE MECHANICAL DRAWINGS.
  4. FOR LOCATIONS AND DETAILS INCLUDING ANCHORAGE REQUIREMENTS OF EQUIPMENT SEE MECHANICAL DRAWINGS.

LEGEND

No.	Description	Date	By
01	ISSUED FOR TENDER	FEB/ 02	JGM

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE PUMPING STATION  
PS # 7  
PS # 4 SIMILAR

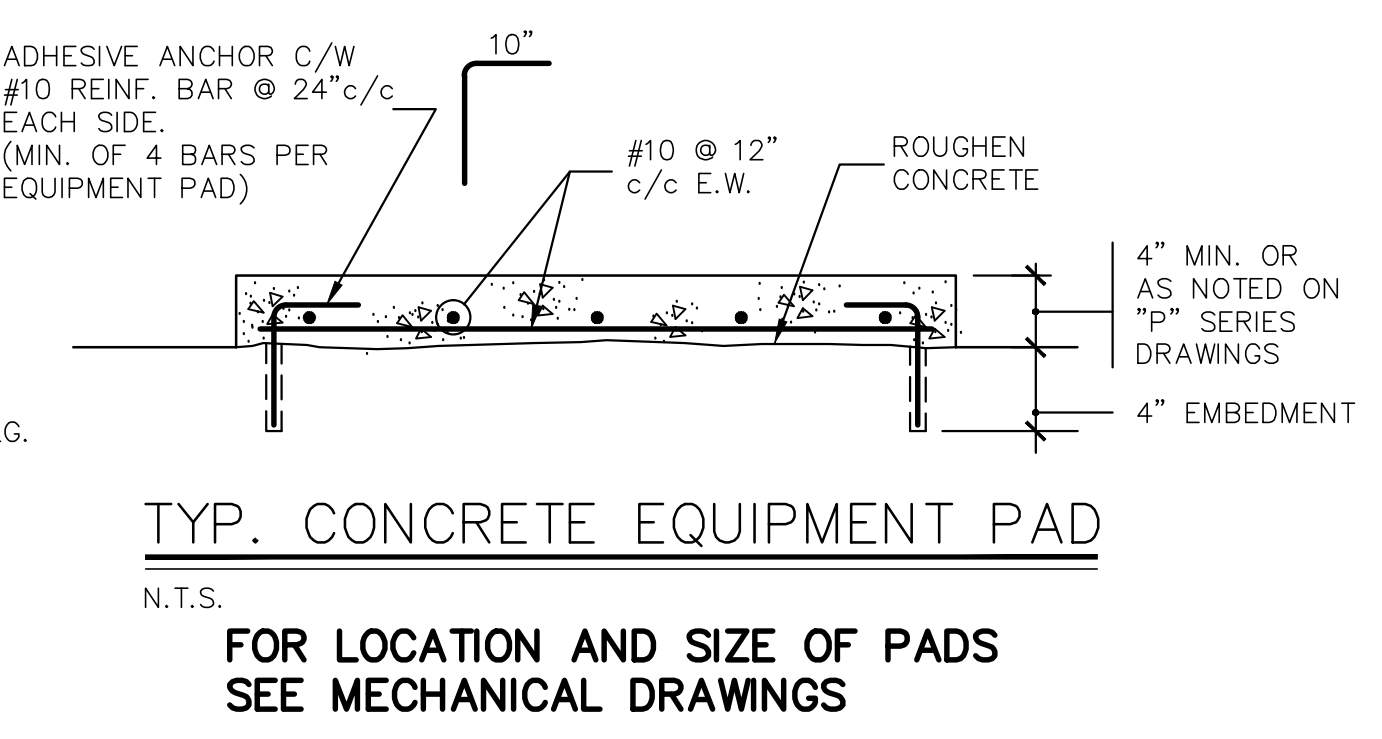
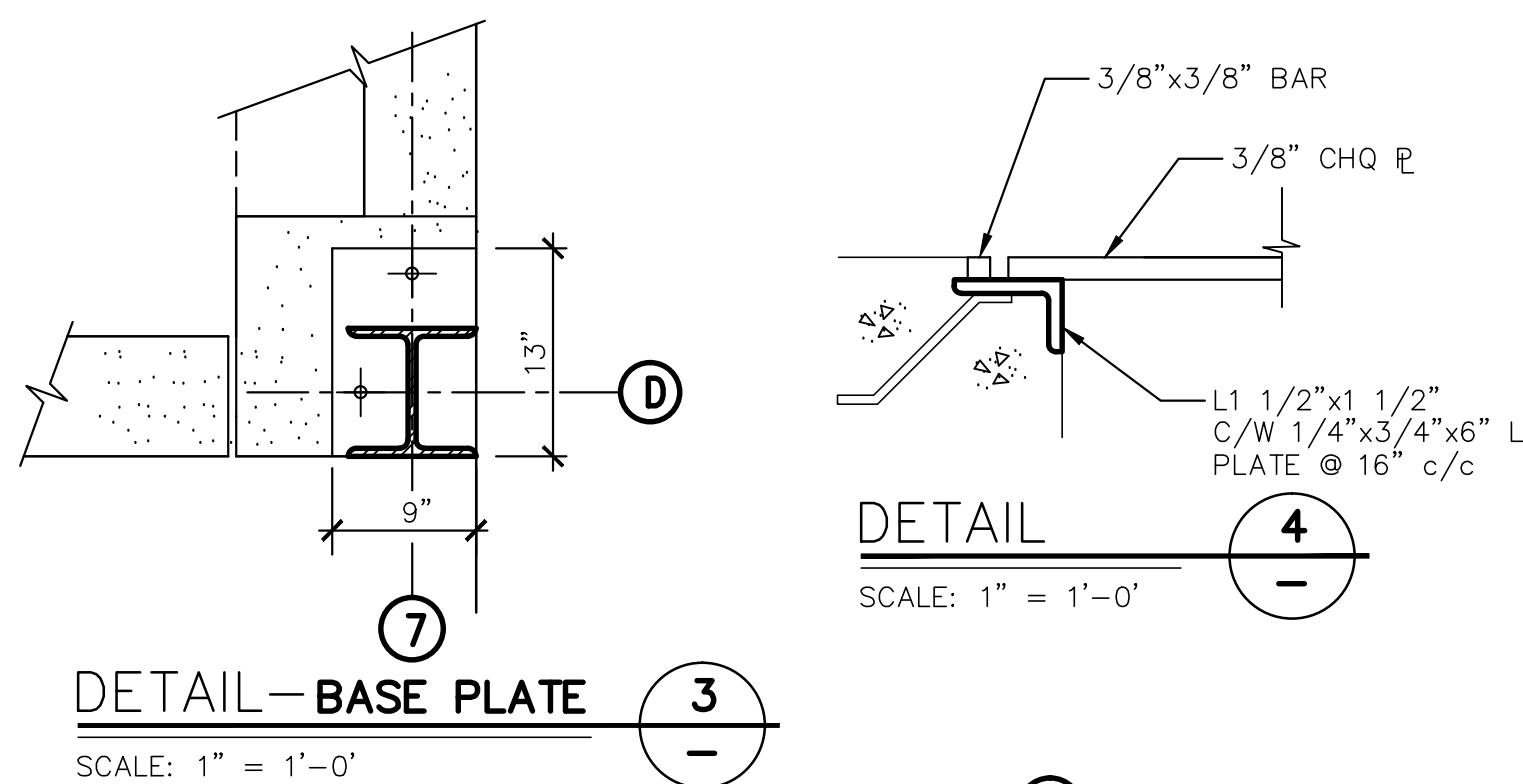
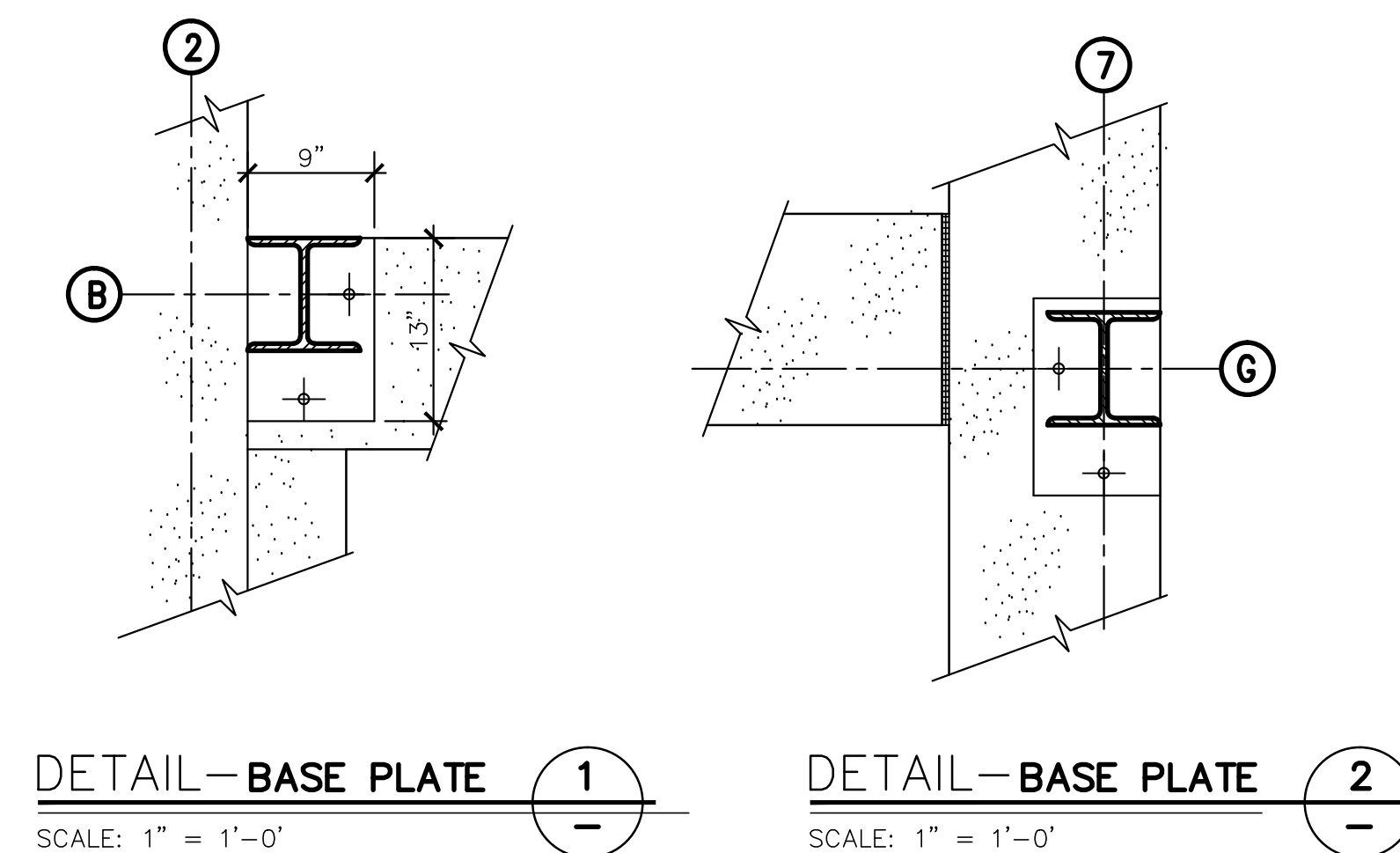
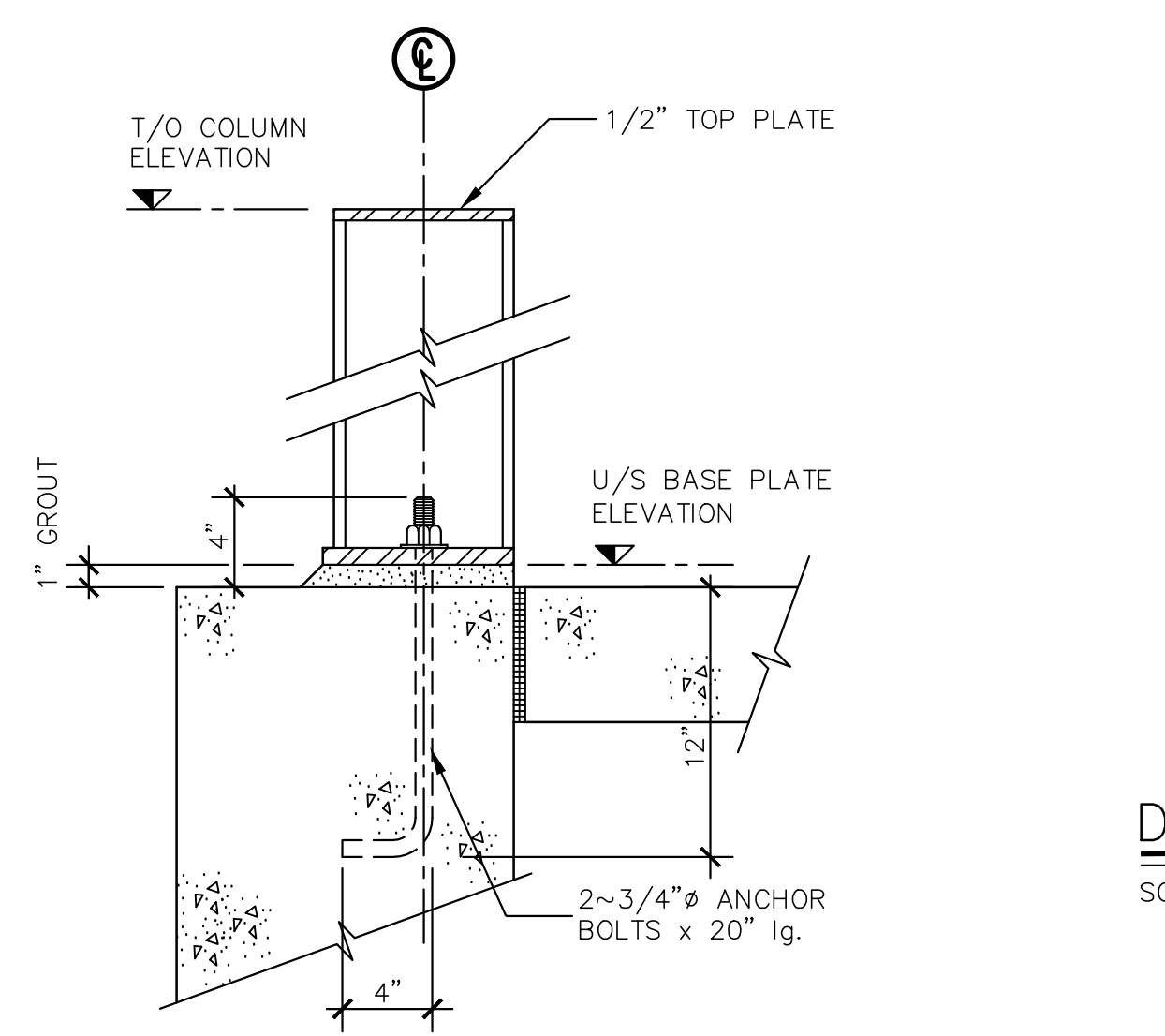
**ABL** Environmental  
Consultants Ltd.

102 PORTLAND STREET, P.O. BOX 501  
DARTMOUTH, NS, B2Y 3Y8 TEL: (902)466-0500  
FAX: (902)466-4399

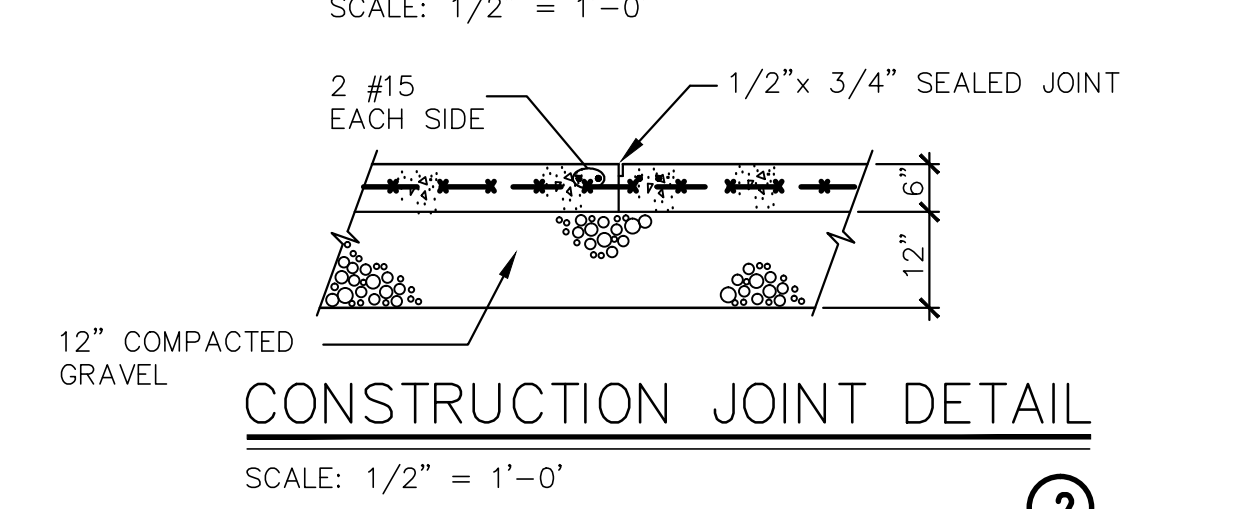
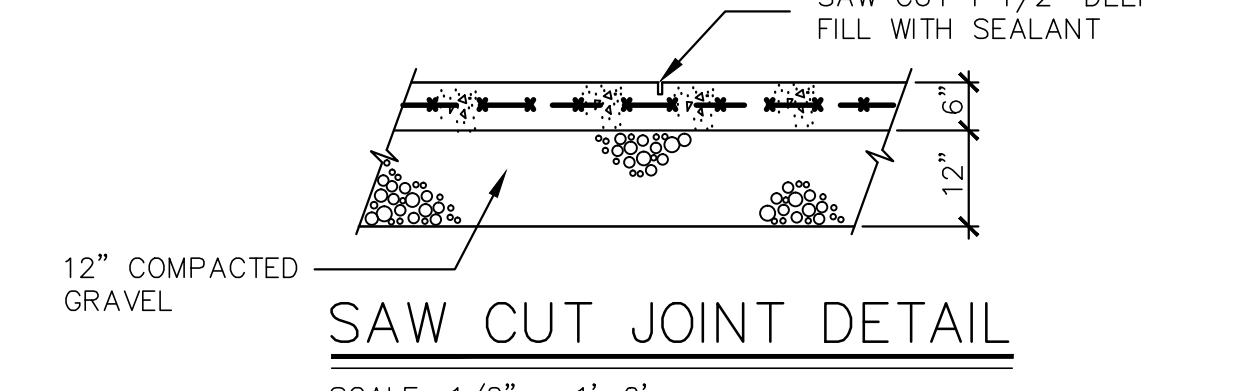
INNOVATIVE SOLUTIONS  
102 Portland Street  
Dartmouth, Nova Scotia  
B2Y 1H8  
Tel: (902) 469-9000  
Fax: (902) 469-4399  
**SPECIALTY & PARTNERS LTD.**

Scale AS NOTED

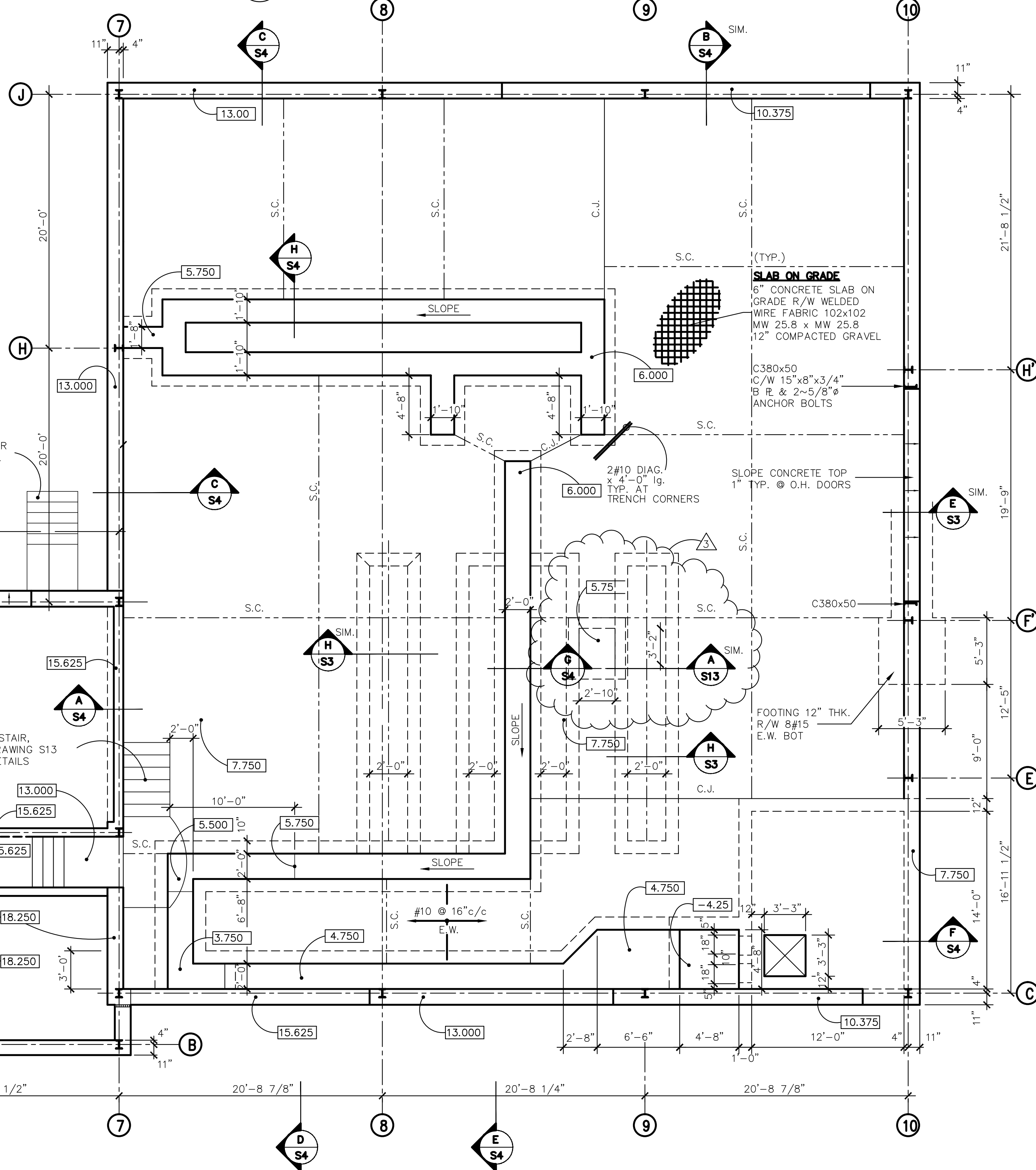
Date	DEC. 1998	Drawn	JGM
Designed	JGM	Checked	M.B.
Contract No	98001	Approved	GB
Drawing No	A7	Sheet of	1



TYP. STEEL COL. AND BASEPLATE DETAIL  
SCALE: 1/2" = 1'-0"



COLUMN LOCATION	U/S BASE PLATE ELEV.	T/O COLUMN ELEV.	COLUMN SIZE	BASE PLATE SIZE
B7	18.333	29.624	W200x46	8 1/2"x12"x3/4"
B4, B6	18.333	29.291	W200x46	8 1/2"x12"x3/4"
G2	18.333	29.275	W200x46	8 1/2"x12"x3/4"
B2	18.333	29.624	W200x46	13"x9"x3/4" DET. 1
G3	18.333	28.942	W200x46	8 1/2"x12"x3/4"
G5	15.708	28.942	W200x46	8 1/2"x12"x3/4"
G7	15.708	29.275	W200x46	13 1/2"x9"x3/4" DET. 2
H7	13.083	29.075	W200x46	8 1/2"x12"x3/4"
J7	13.083	28.875	W200x46	8 1/2"x12"x3/4"
J8	13.083	28.375	W200x46	8 1/2"x12"x3/4"
J9	10.458	28.375	W200x46	8 1/2"x12"x3/4"
J10	7.833	28.875	W200x46	8 1/2"x12"x3/4"
H10	7.833	29.092	W200x46	8 1/2"x12"x3/4"
G10	7.833	29.289	W200x46	8 1/2"x12"x3/4"
E10	7.833	29.413	W200x46	8 1/2"x12"x3/4"
C10	7.833	29.583	W200x46	8 1/2"x12"x3/4"
C9	10.458	29.083	W200x46	8 1/2"x12"x3/4"
C8	13.083	29.083	W200x46	8 1/2"x12"x3/4"
C7	18.333	29.583	W200x46	8 1/2"x12"x3/4"
D2	23.583	33.875	W200x46	8 1/2"x12"x3/4"
D3	18.333	33.875	W200x46	8 1/2"x12"x3/4"
D7	15.708	29.457	W200x46	13"x9"x3/4" DET. 3
D'2	23.583	33.875	W200x46	8 1/2"x12"x3/4"



MAIN FLOOR PLAN  
3/16" = 1'-0"

NOTE:  
SLIDE GATE CHANNELS TO BE CAST INTO CONCRETE

GENERAL NOTES:  
1. FOR GENERAL NOTES SEE DRAWING S7.  
2. LOCATE TRENCHES TO SUIT FINAL EQUIPMENT LOCATIONS.

LEGEND:  
4.750 FINISHED CONCRETE ELEVATIONS  
C.J. CONSTRUCTION JOINT IN SLAB ON GRADE  
S.C. SAW CUT JOINT IN SLAB ON GRADE

No.	Description	Date	By
04	ISSUED FOR CONSTRUCTION	JUNE/02	
03	DAF SUMP ADDED	MAY/02	
02	ISSUED FOR TENDER	APR./02	SWP
01	ISSUED FOR REVIEW	AUG./98	C.T.

Revision or Issue

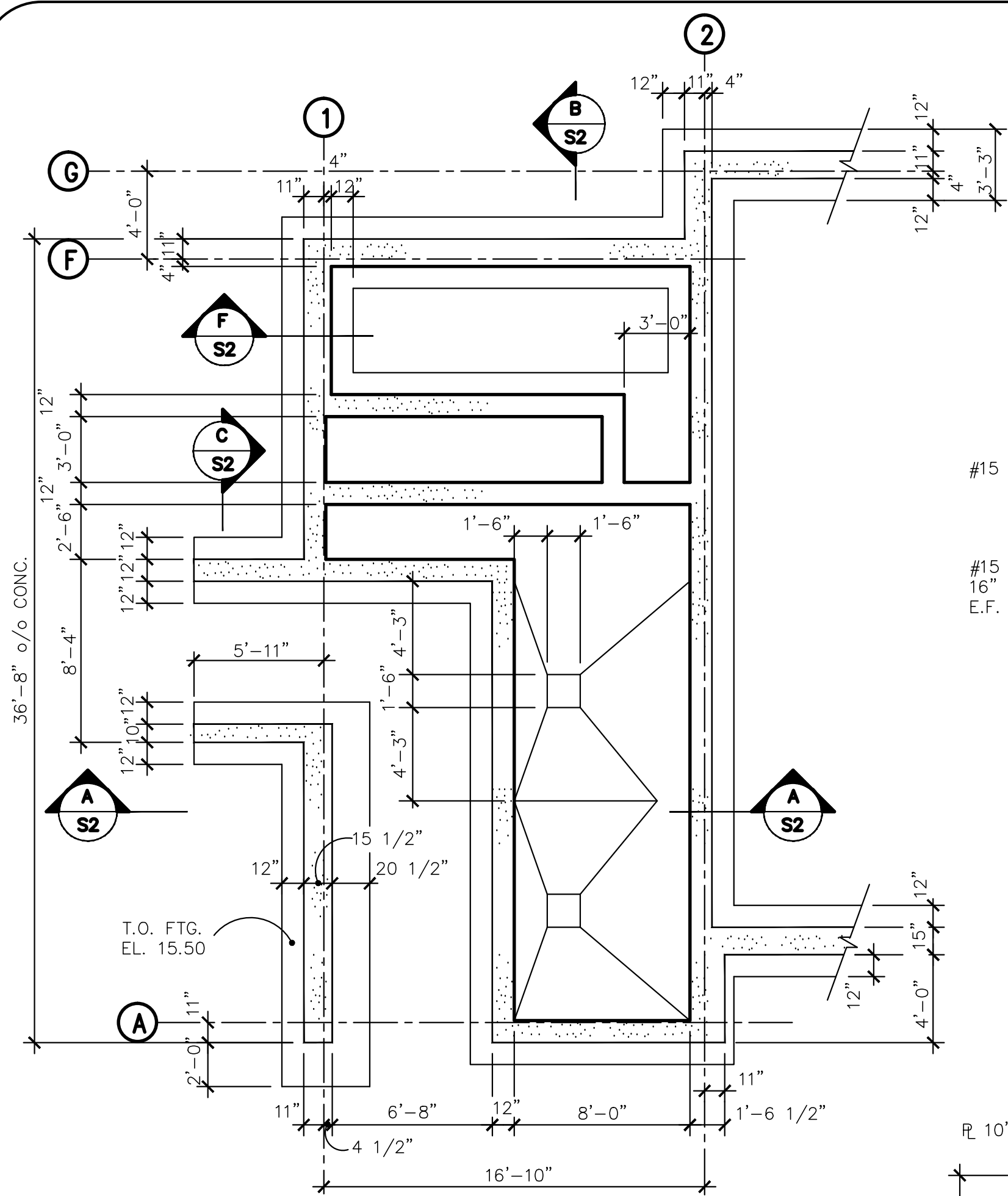
TOWN OF LUNEBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT  
SEWAGE TREATMENT PLANT  
CONCRETE PLAN

**ABL** Environmental  
Consultants Ltd.

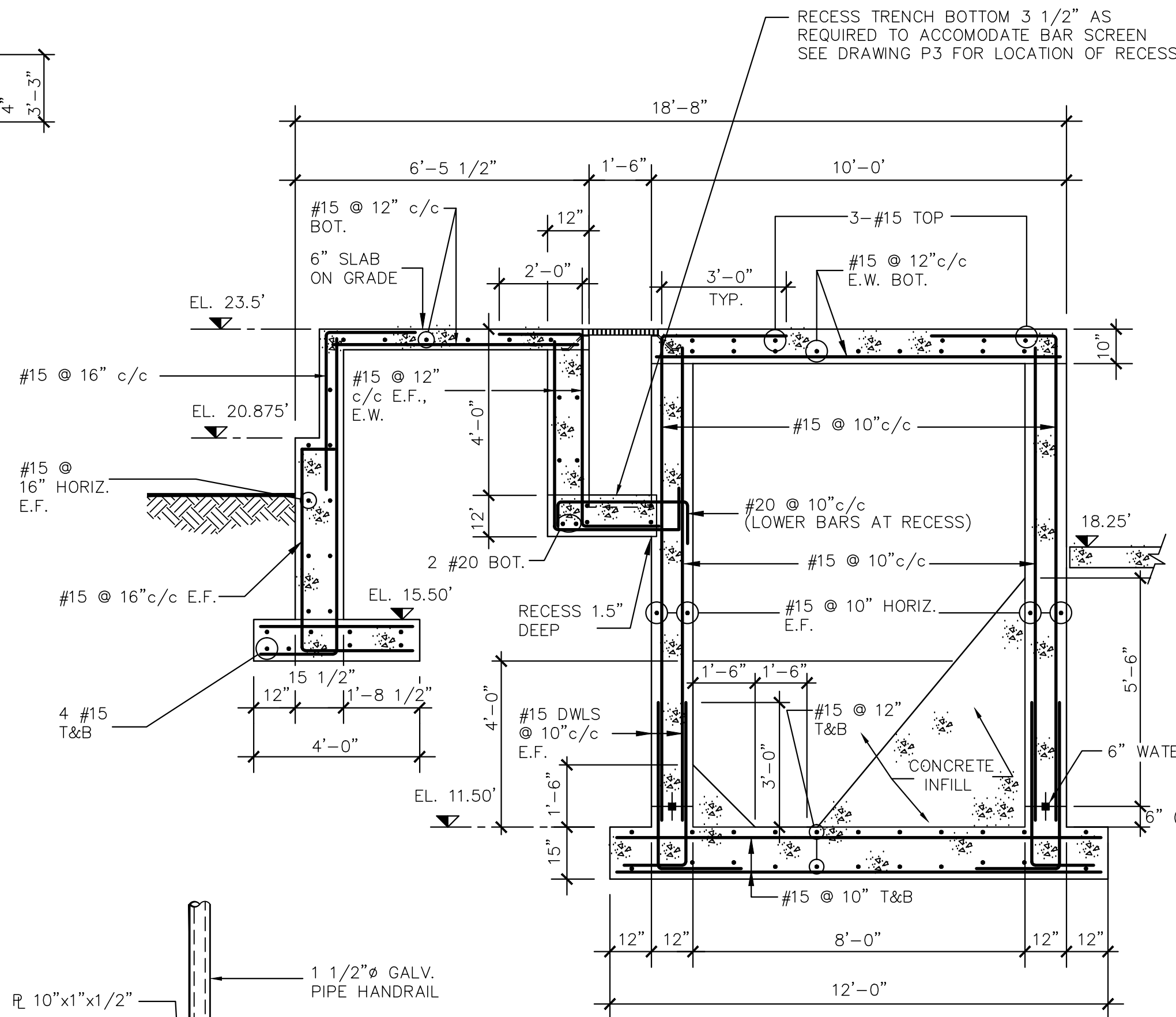
**YMCL**  
Engineering Limited

Scale AS SHOWN

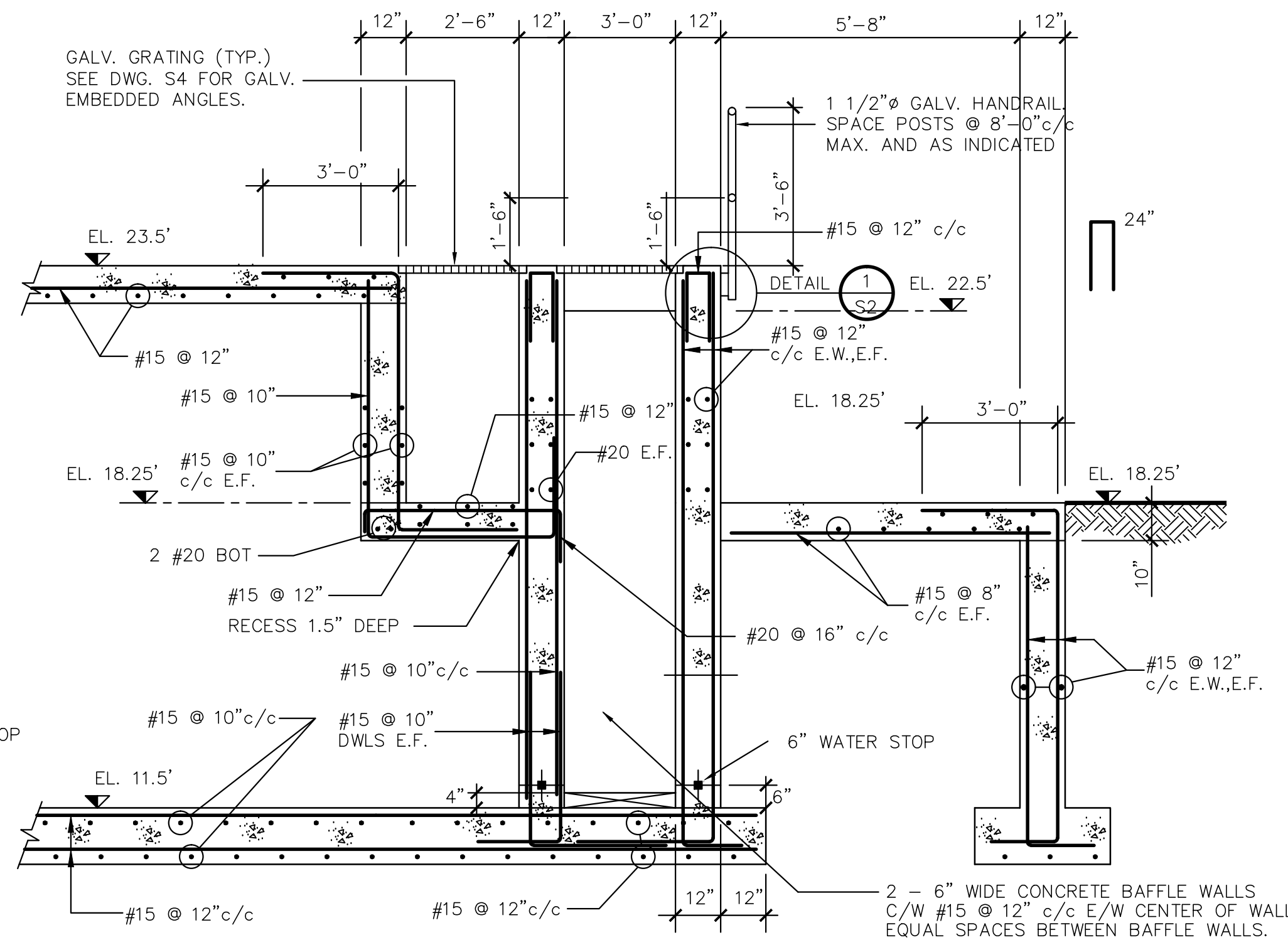
Date	AUG., 1998	Drawn	CT
Designed	TAM	Checked	TAM
Contract No.		Sheet	X OF X
Drawing No.	S1	Revision	



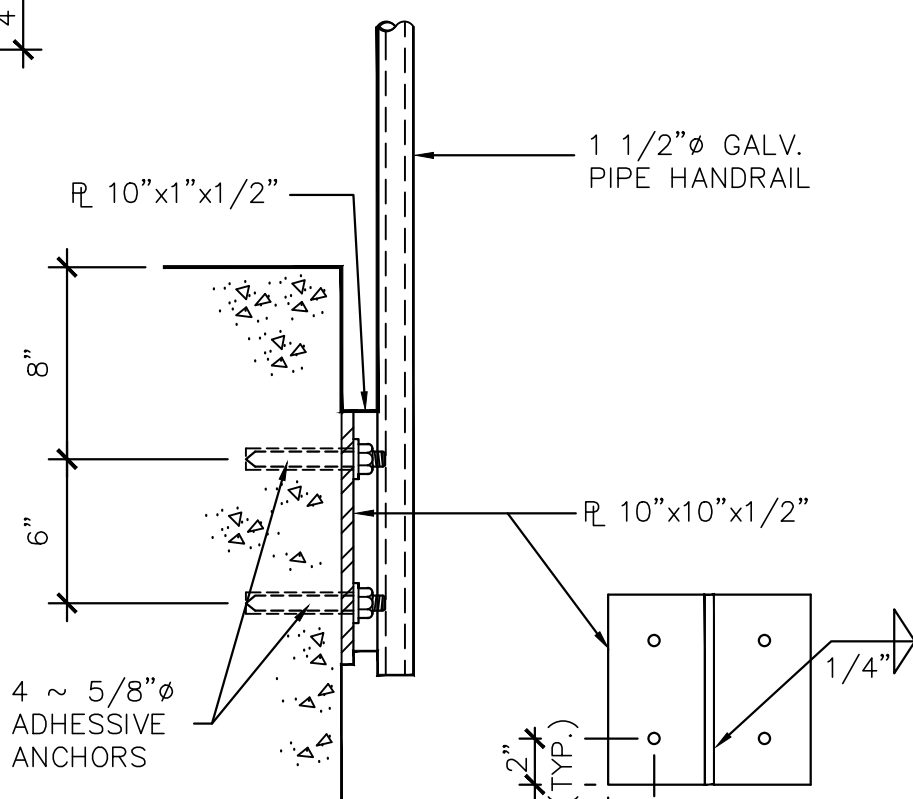
**FOUNDATION PLAN HEADWORKS AREA**  
SCALE: 3/16" = 1'-0" T.O. SLAB ELEV. 11.5' U/N



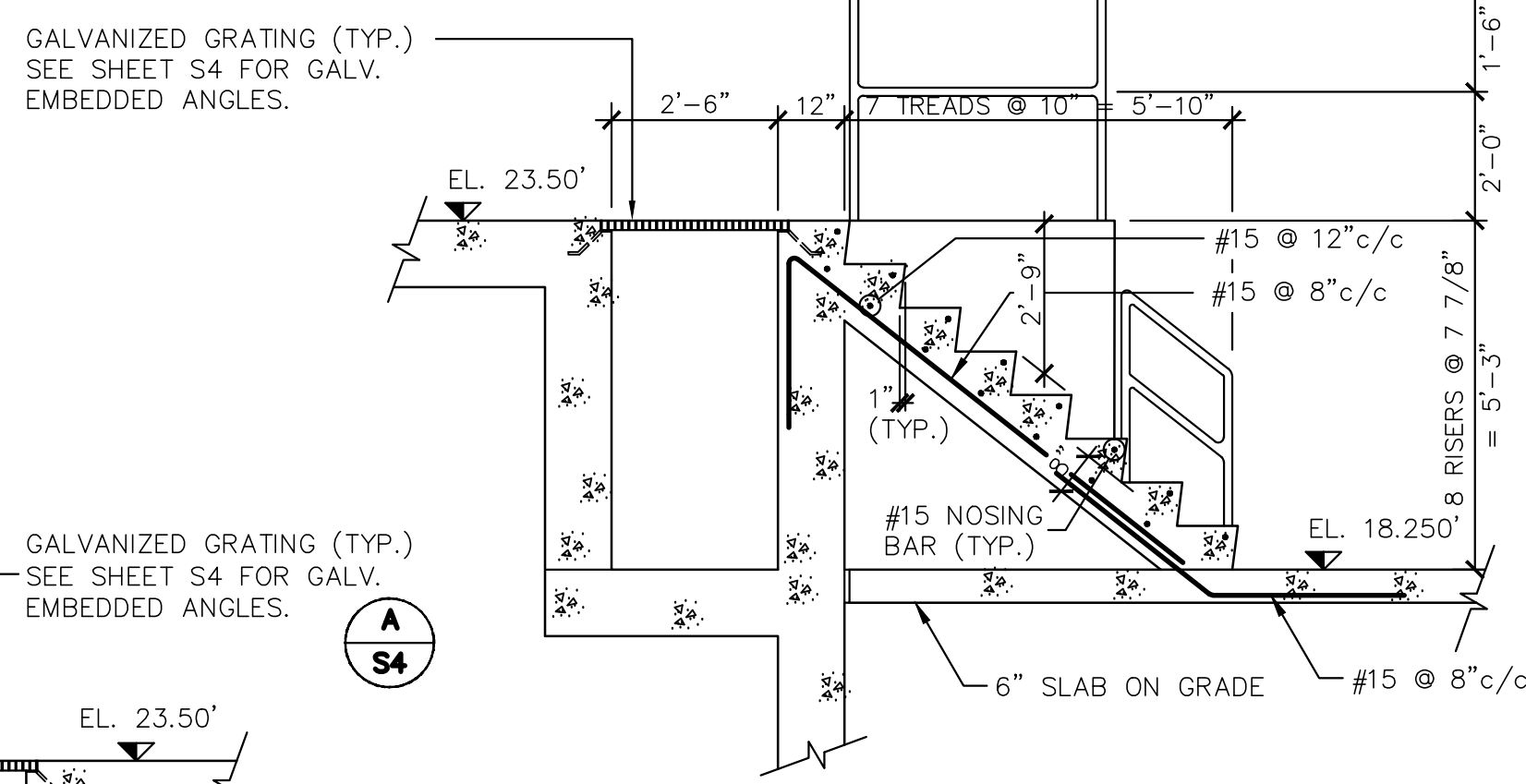
**SECTION A-A**  
SCALE: 3/8" = 1'-0"



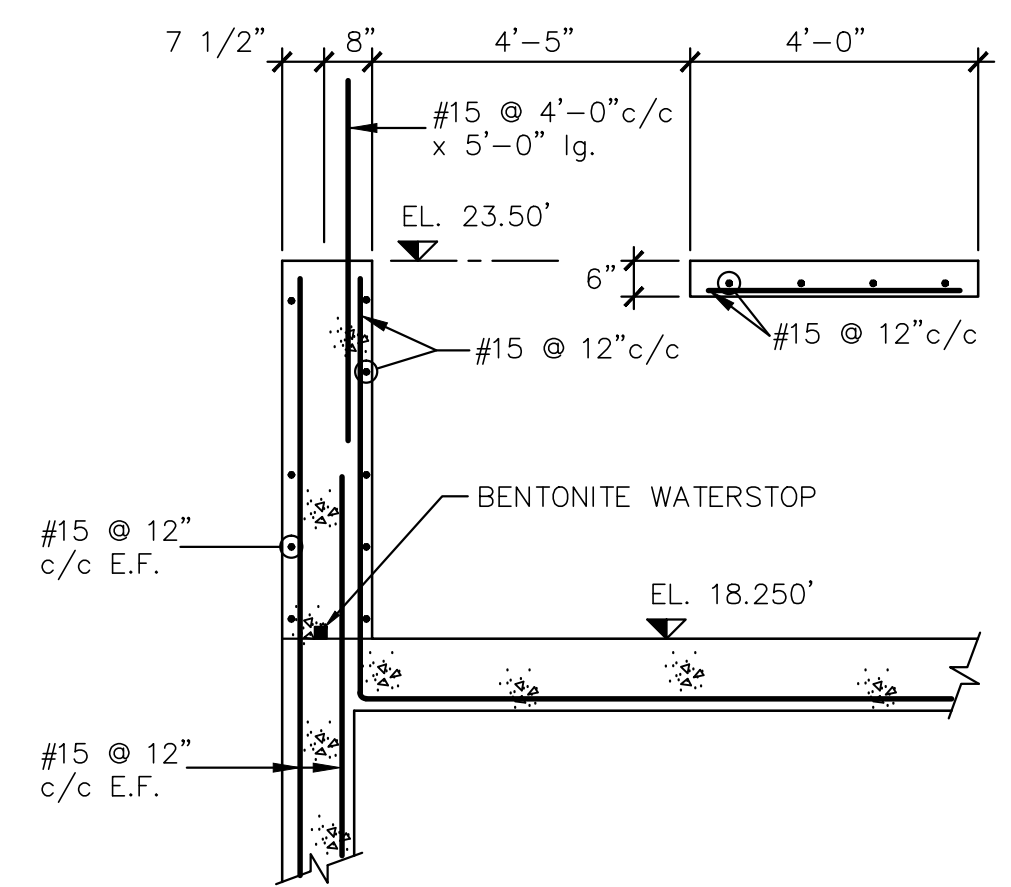
**SECTION B-B**  
SCALE: 3/8" = 1'-0"



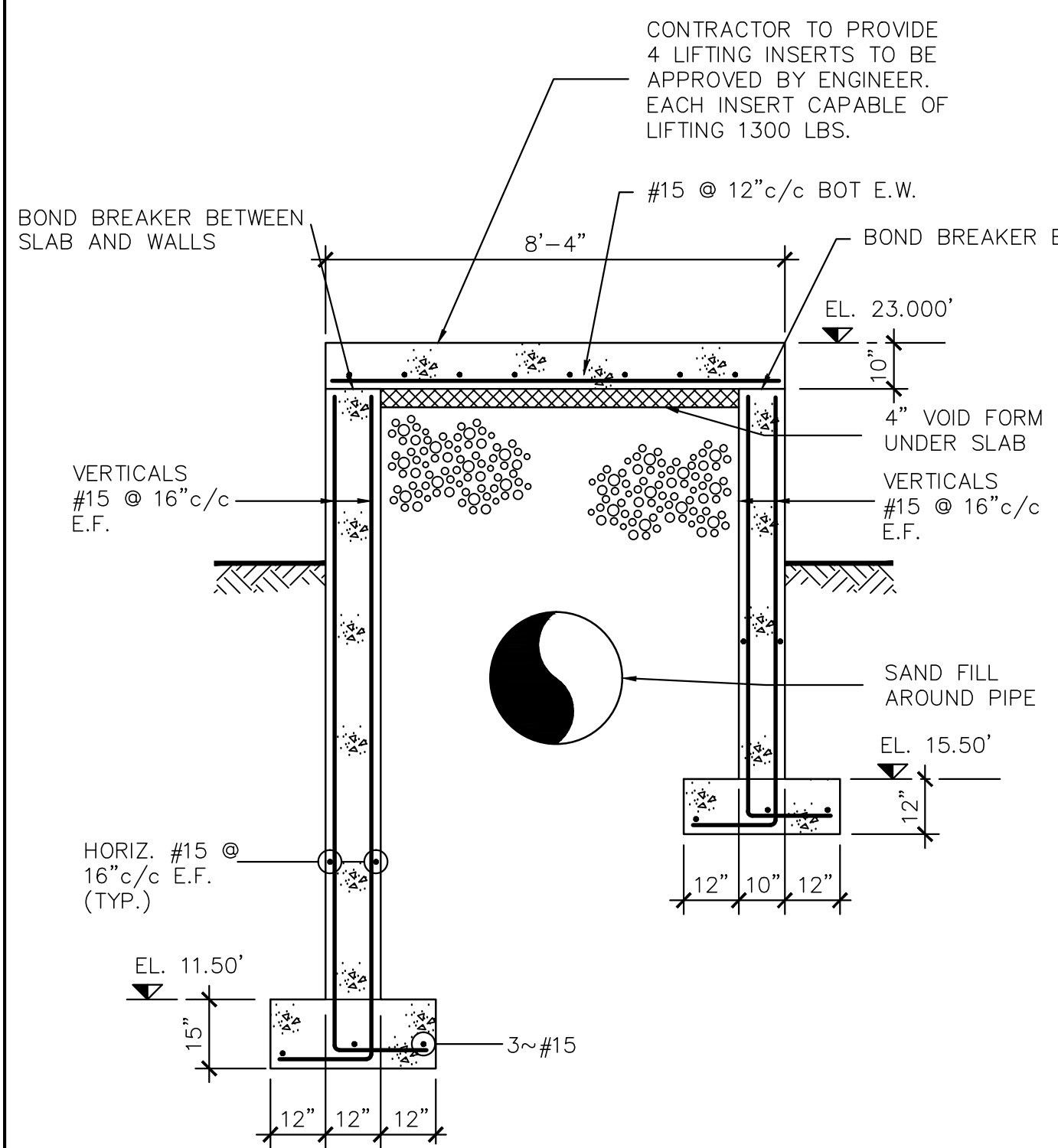
**DETAIL 1**  
N.T.S.



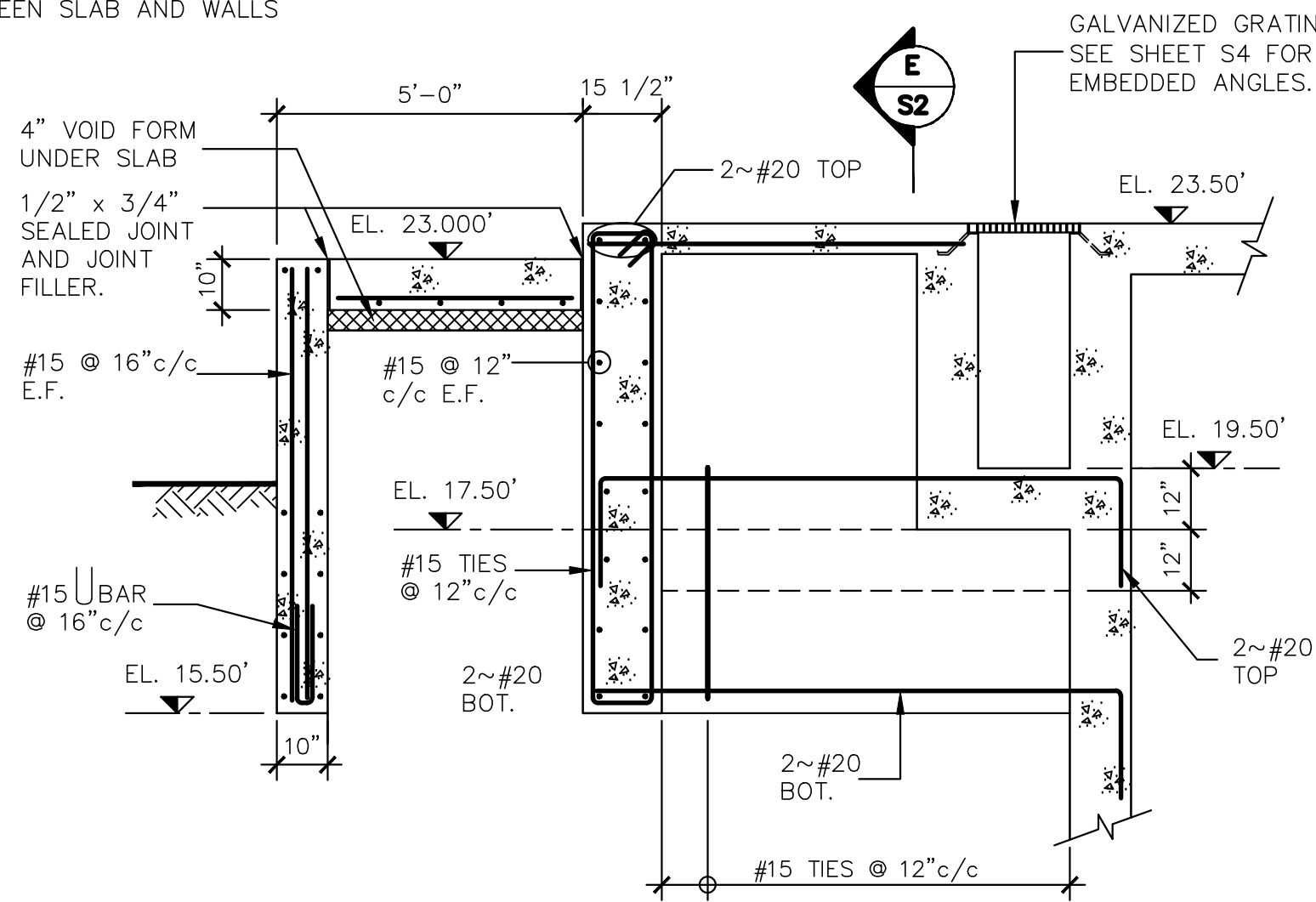
**SECTION G-G**  
SCALE: 3/8" = 1'-0"



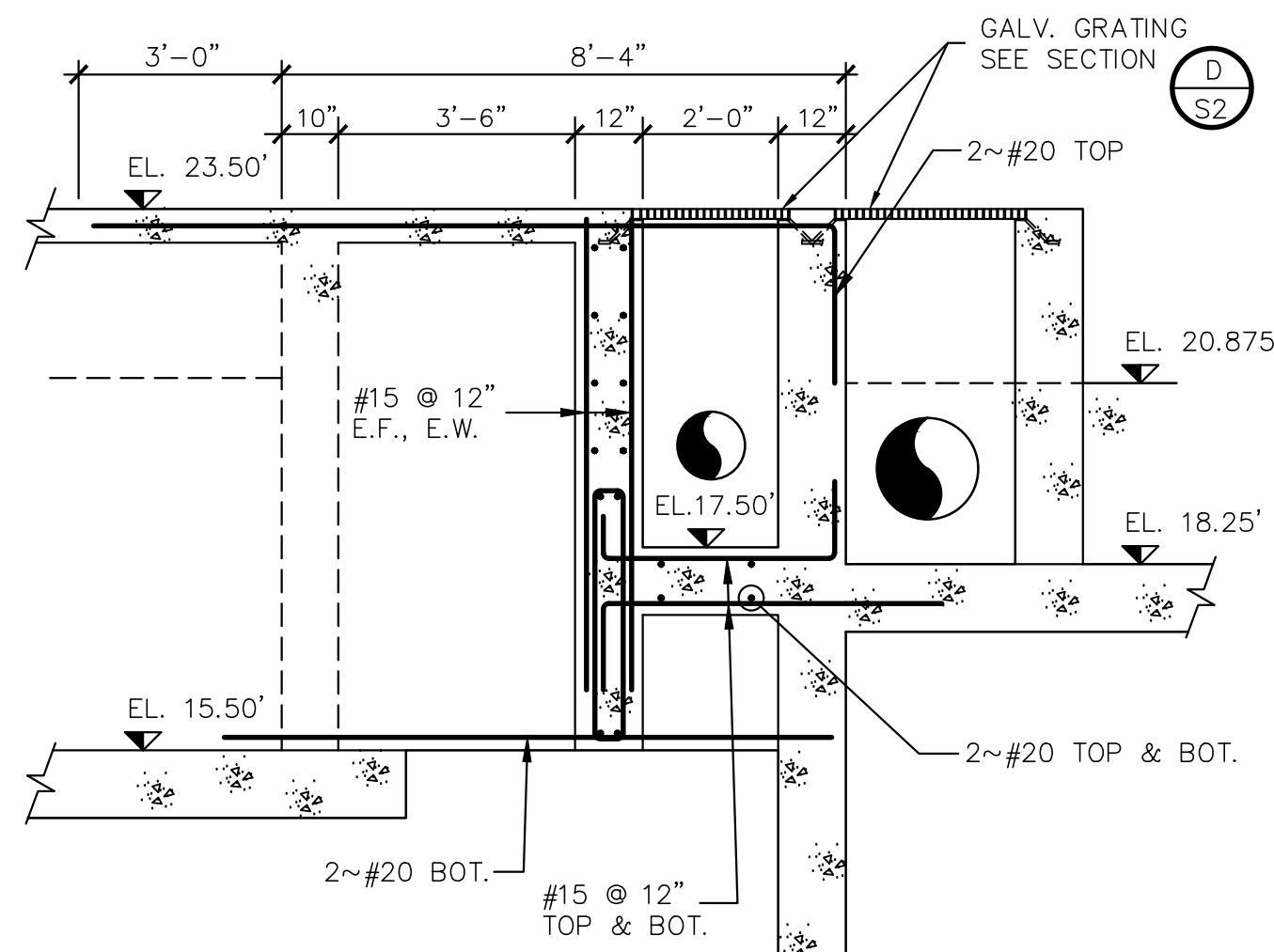
**SECTION H-H**  
SCALE: 3/8" = 1'-0"



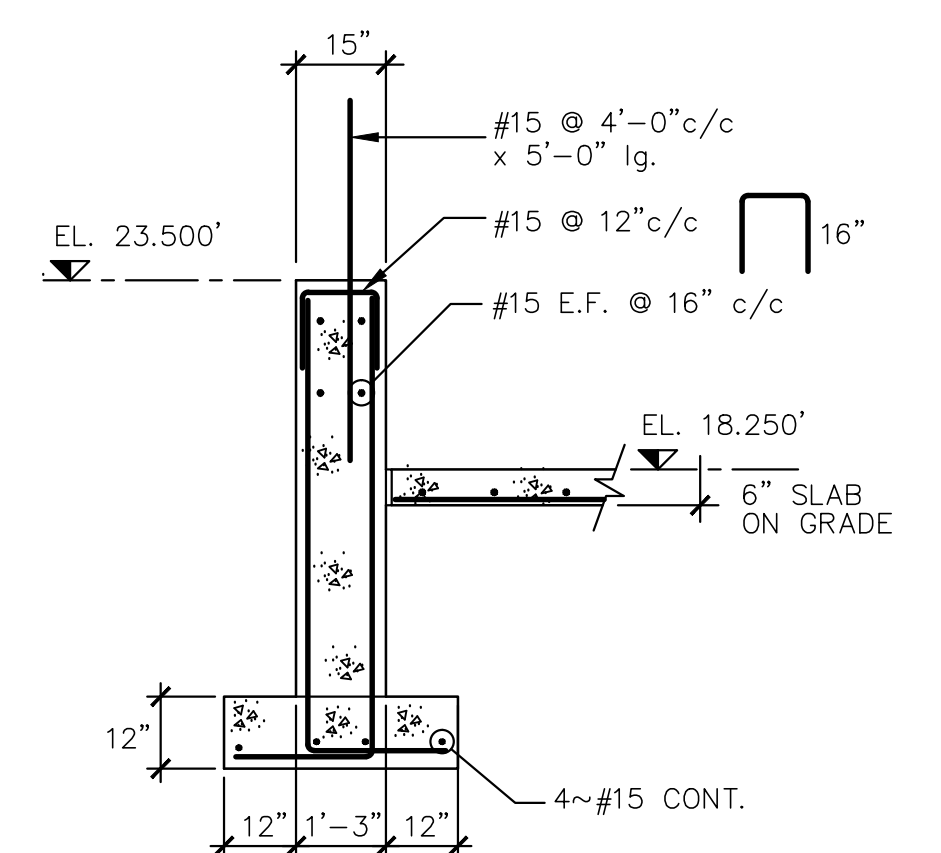
**SECTION C-C**  
SCALE: 3/8" = 1'-0"



**SECTION D-D**  
SCALE: 3/8" = 1'-0"



**SECTION E-E**  
SCALE: 3/8" = 1'-0"



**SECTION F-F**  
SCALE: 3/8" = 1'-0"

**GENERAL NOTES:**  
1. FOR NOTES SEE DRAWING S7.

No.	Description	Date	By
02	ISSUED FOR TENDER	APR./02	SWP
01	ISSUED FOR REVIEW	AUG./98	C.T.

**TOWN OF LUNEBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT**

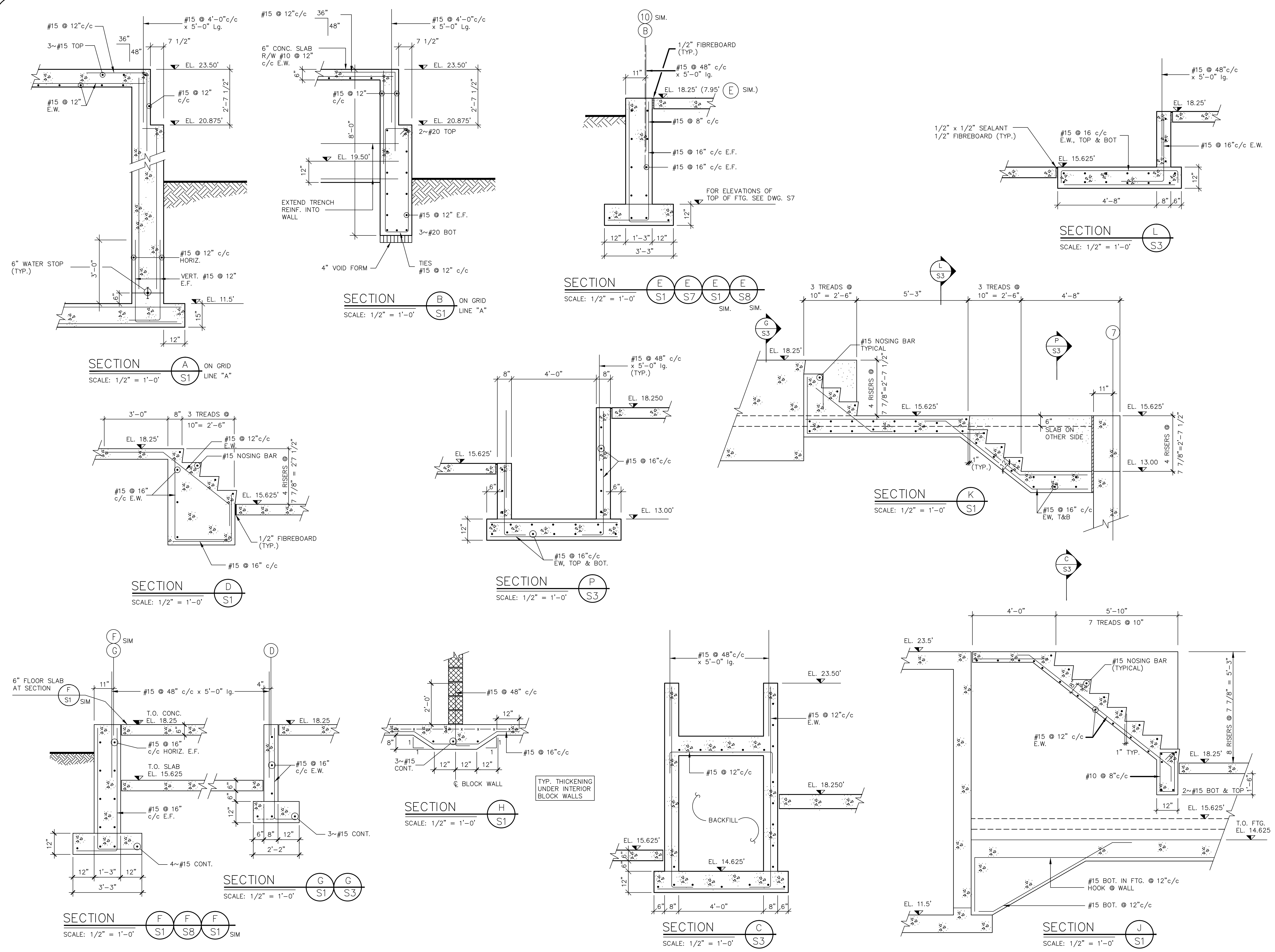
**SEWAGE TREATMENT PLANT  
CONCRETE SECTIONS  
SHEET 1**

**ABL Environmental  
Consultants Ltd.**

**YMCL  
Engineering Limited**

Scale AS SHOWN			
Date	Drawn	Checked	Approved
AUG. 1998	CT	TAM	TAM
Contract No.	Sheet of	X OF X	
Drawing No.	Revision		
S2			

Date: Tuesday, Apr. 17, 2012-12:26pm Drawing Model File: C:\98001 - Lunenburg STP 2002\Drawings\98001-S3.dwg User: mclison



**GENERAL NOTES:**  
 1. FOR NOTES SEE DRAWING S7.

No.	Description	Date	By
02	ISSUED FOR TENDER	APR/02	SWP
01	ISSUED FOR REVIEW	AUG./98	C.T.

Revision or Issue

TOWN OF LUNENBURG  
 MUNICIPAL WASTEWATER  
 COLLECTION AND TREATMENT

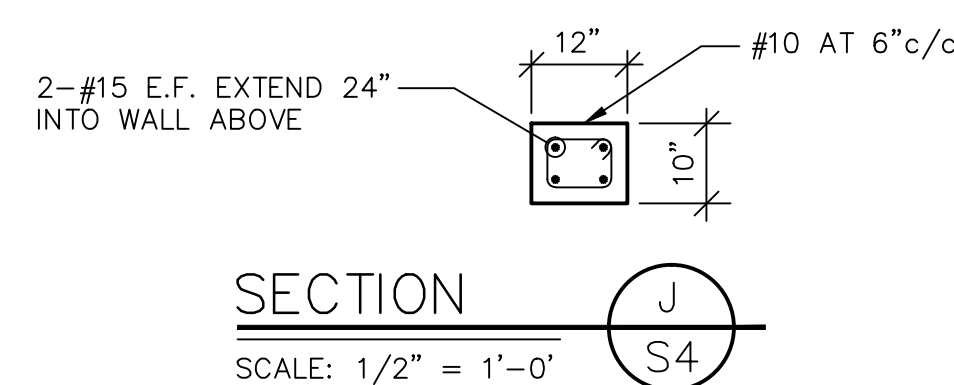
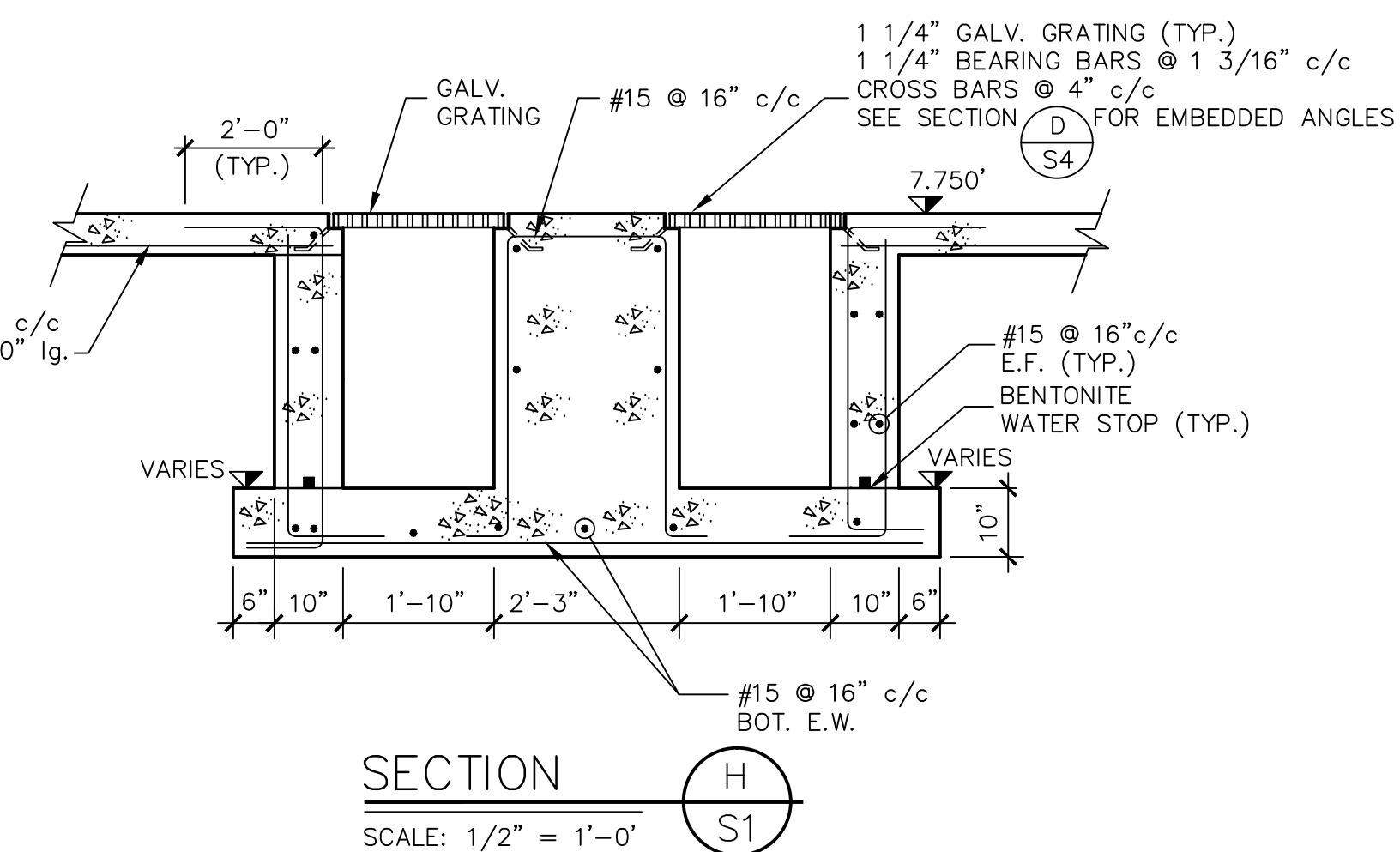
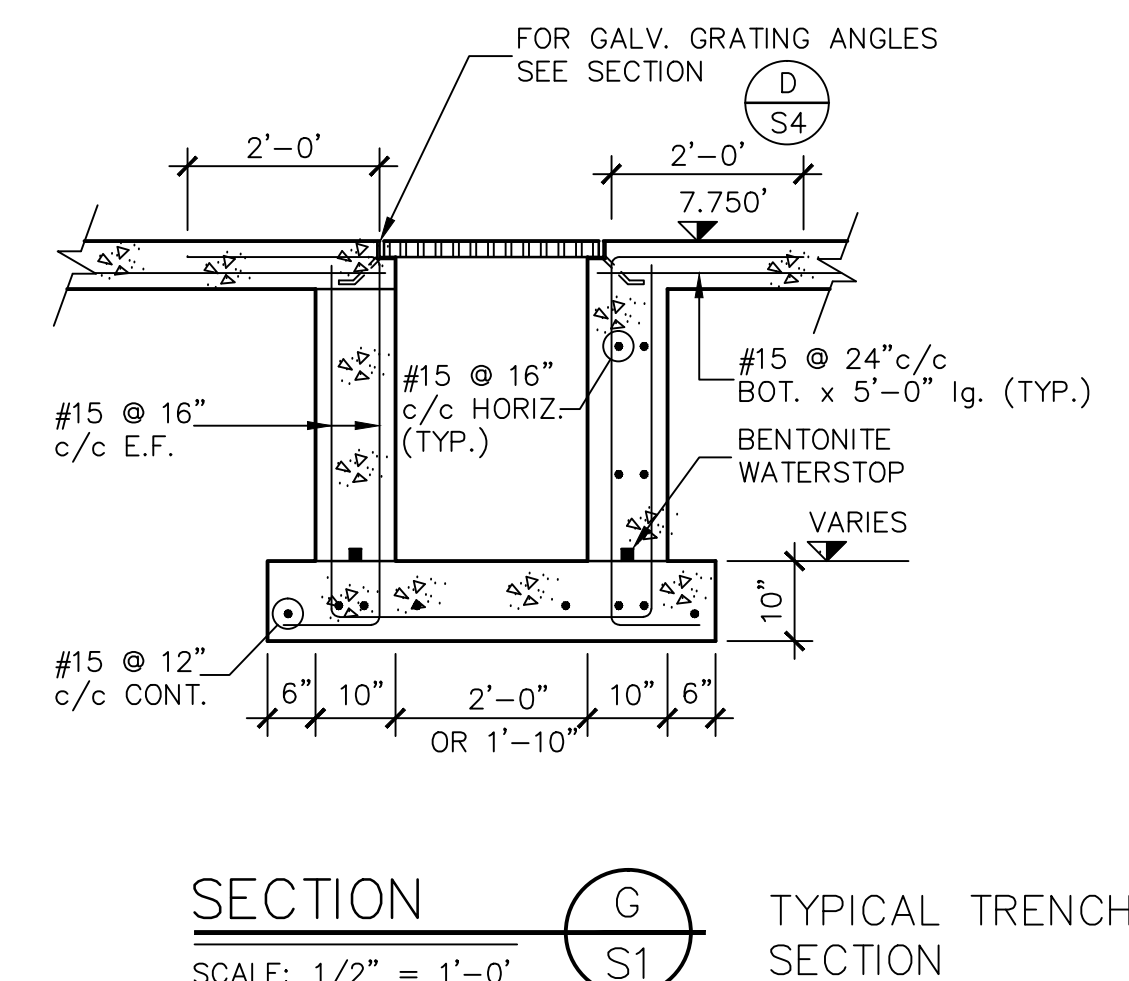
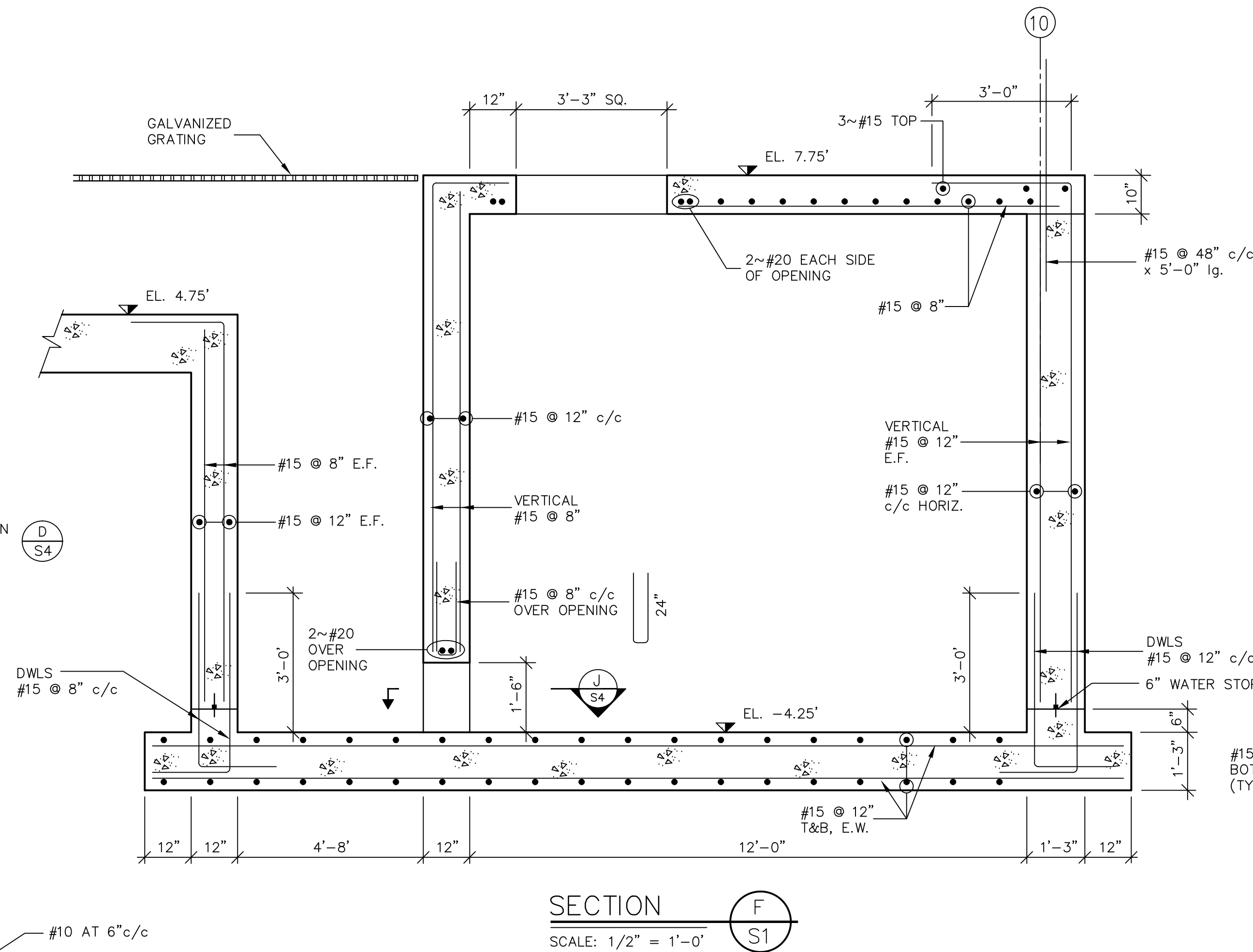
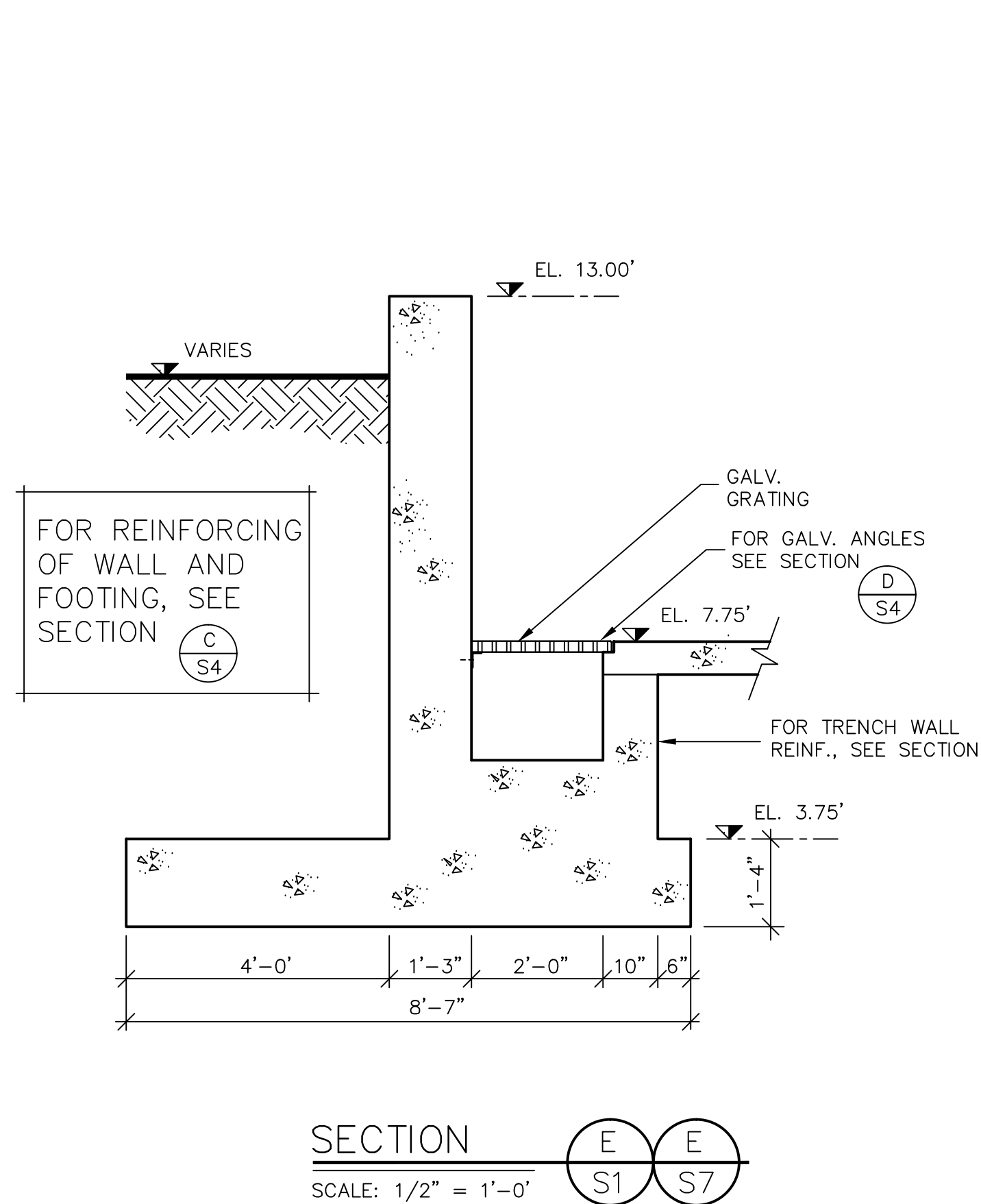
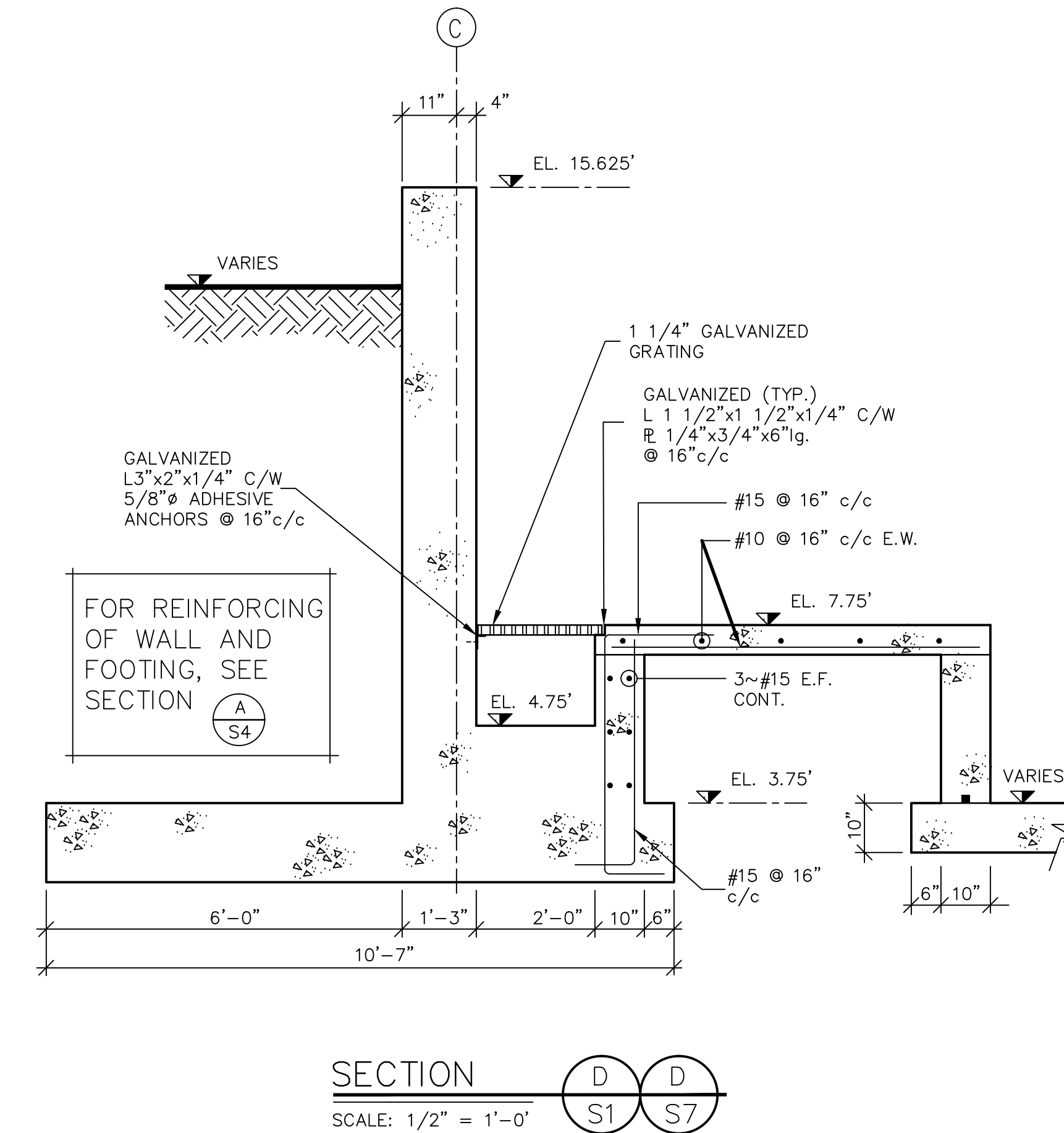
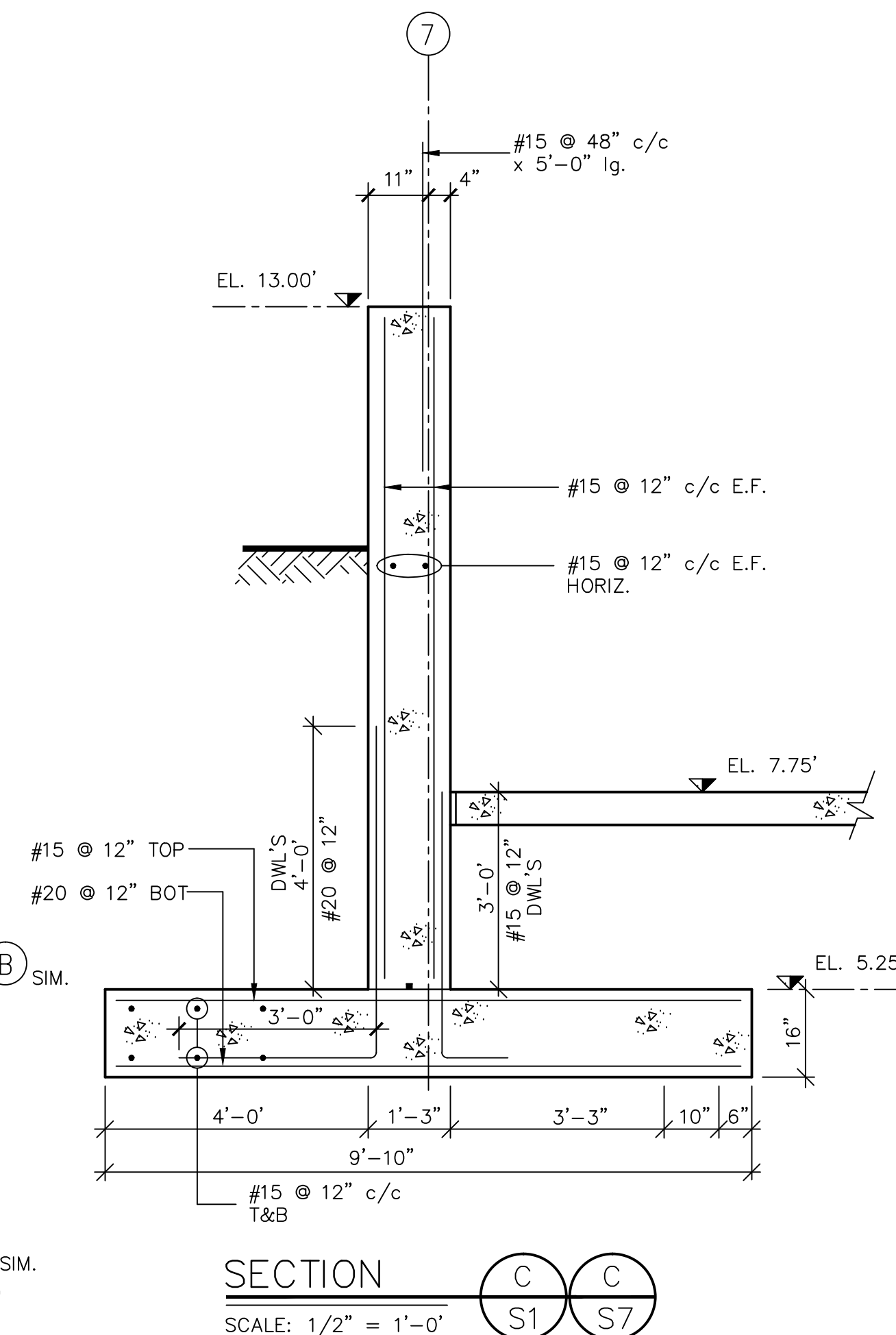
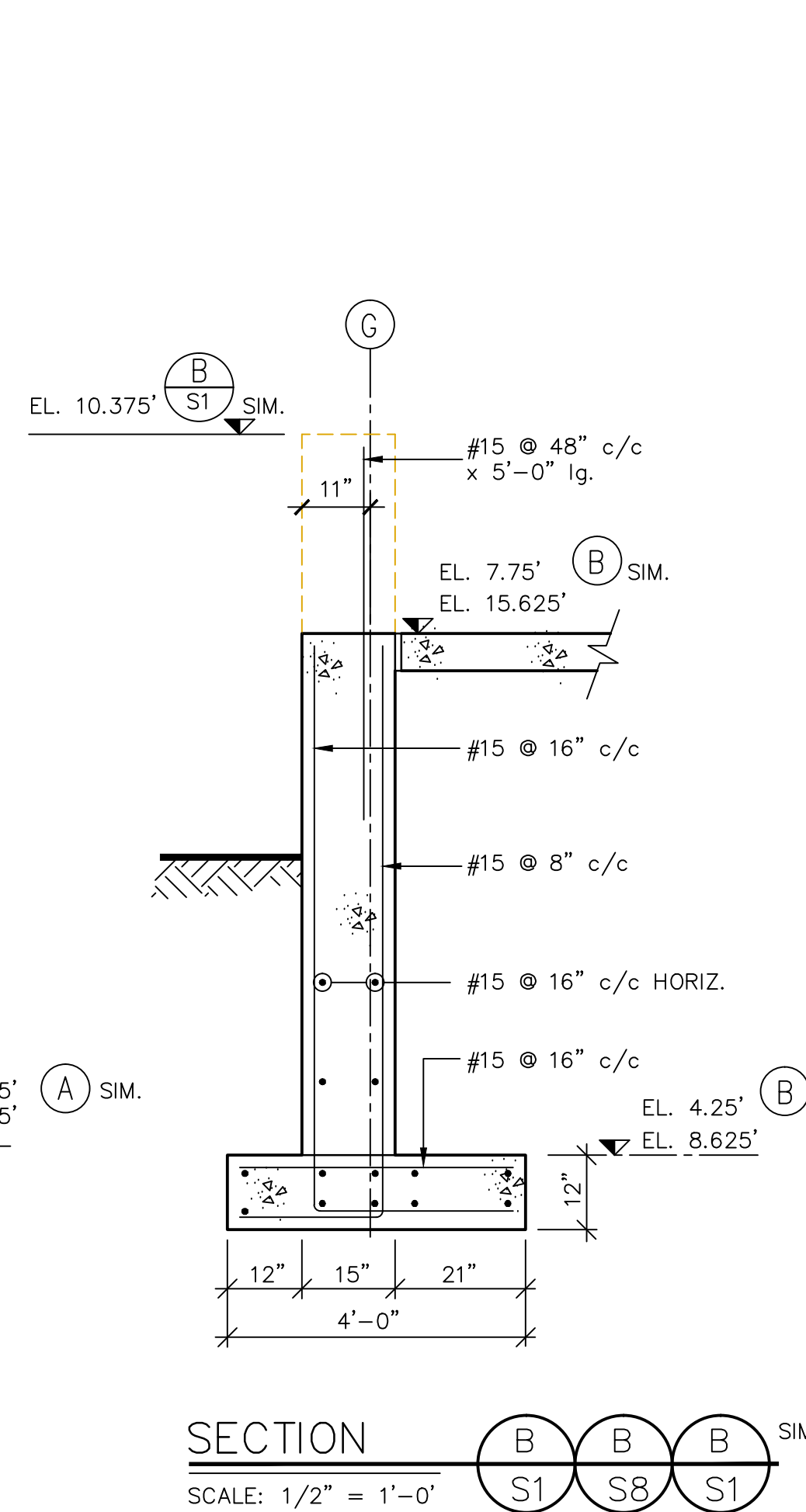
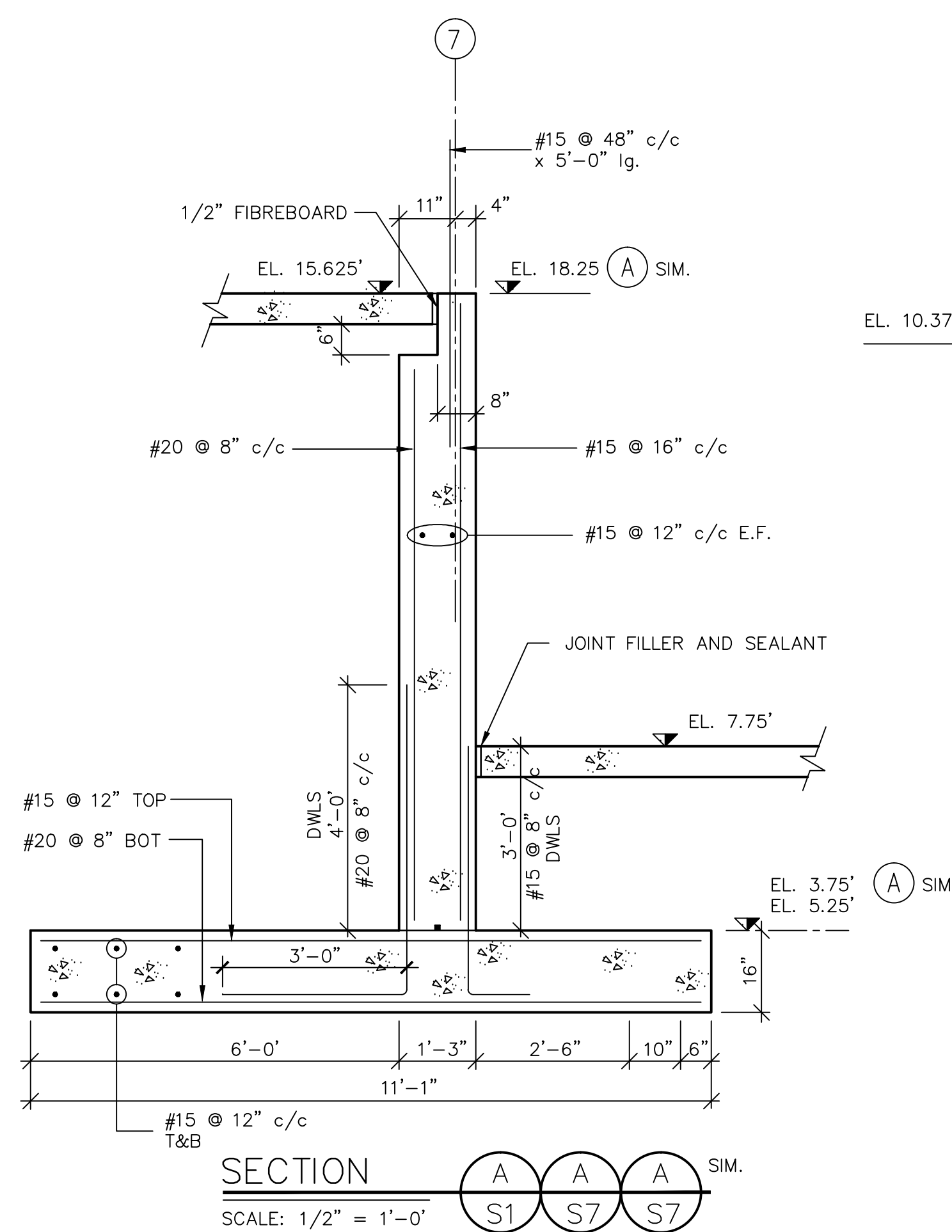
SEWAGE TREATMENT PLANT  
 CONCRETE SECTIONS  
 SHEET 2

**ABL** Environmental  
 Consultants Ltd.

**YMCL**  
 Engineering Limited

Scale AS SHOWN	
Date AUG., 1998	Drawn CT
Designed TAM	Checked TAM
Contract No.	Sheet of X OF X
Drawing No. S3	Revision A

Date: Tuesday, Apr. 17, 2012-12:25pm Drawing Model File: C:\98001 - Lunenburg STP 2002\Drawings\98001-S4.dwg User: molisson



GENERAL NOTES:  
1. FOR NOTES SEE DRAWING S7.

No.	Description	Date	By
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01	ISSUED FOR REVIEW	AUG./98	C.T.

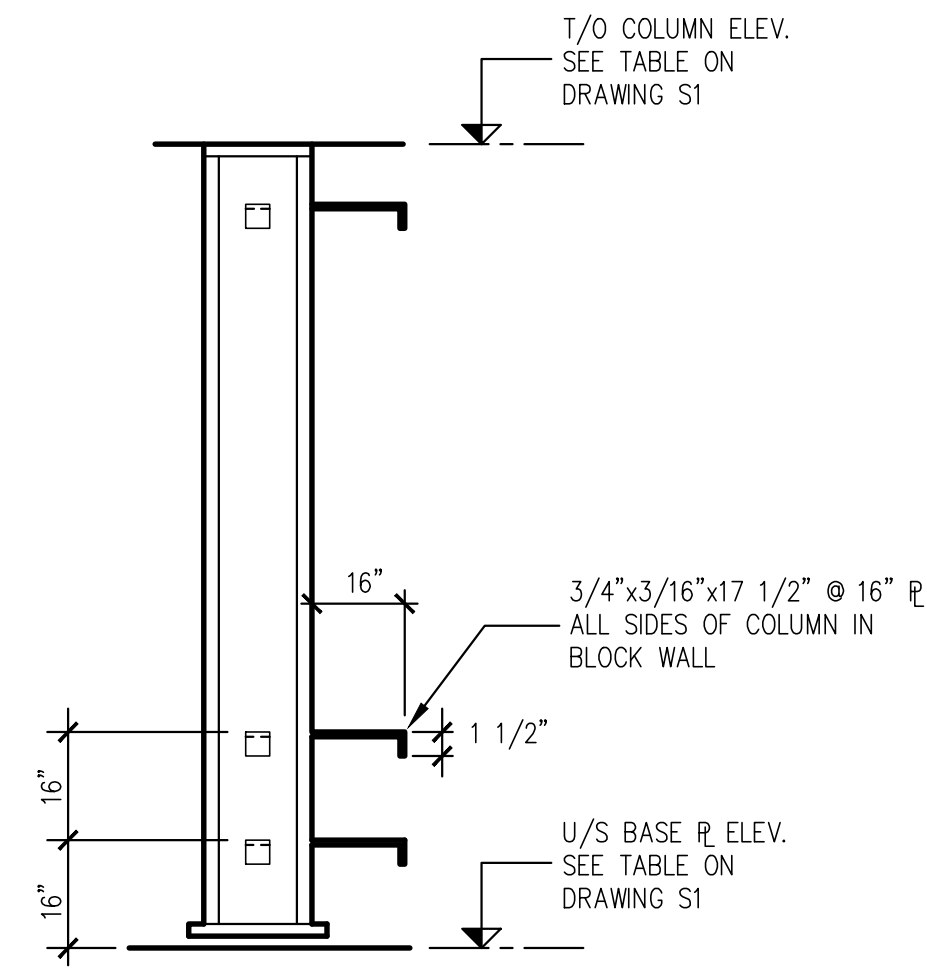
TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
CONCRETE SECTIONS  
SHEET 3

**ABL** Environmental  
Consultants Ltd.

**YMCL**  
Engineering Limited

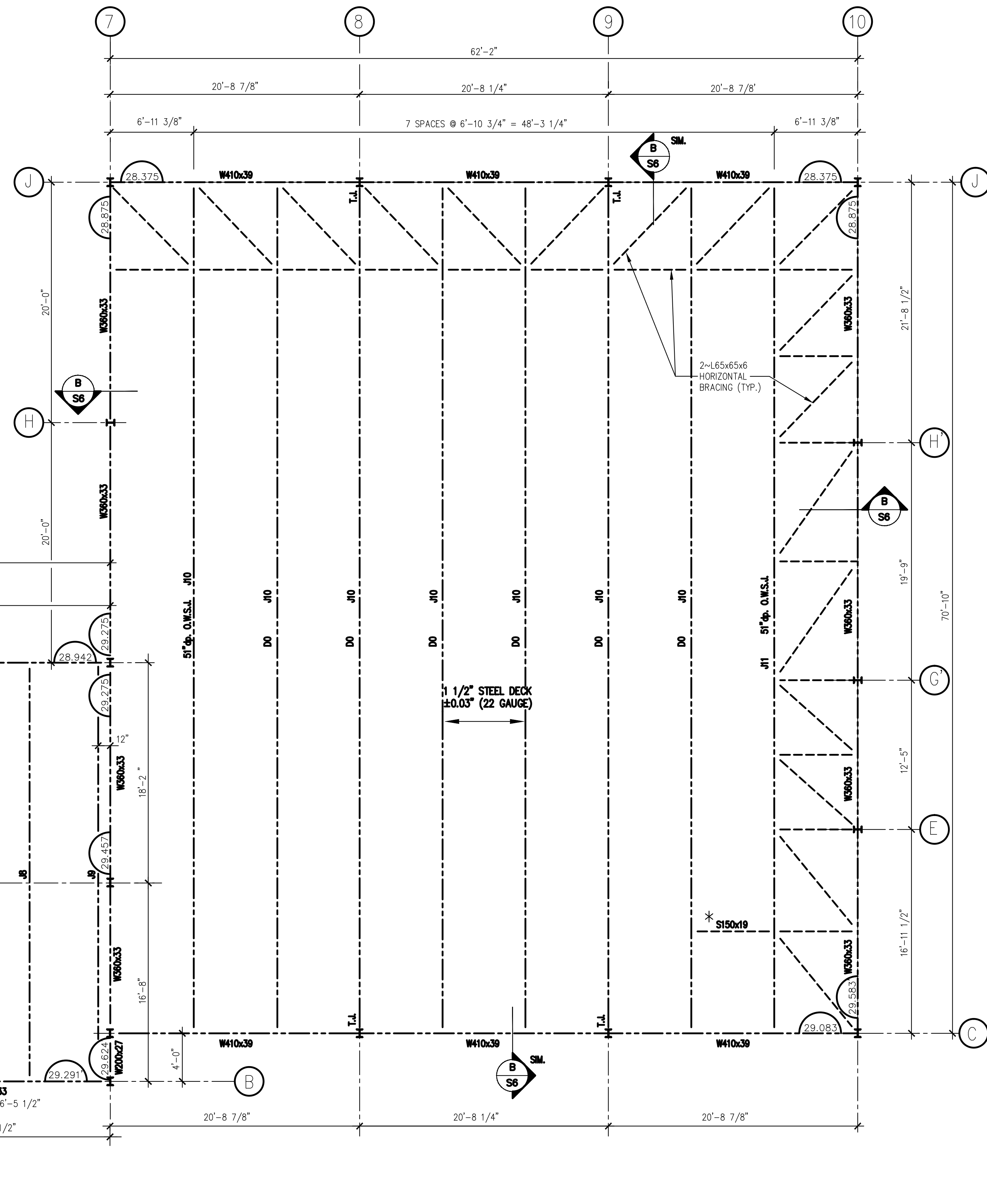
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AUG., 1998	CT	TAM	TAM
Contract No.	Sheet of	X OF X	
Drawing No.	Revision		
S4			



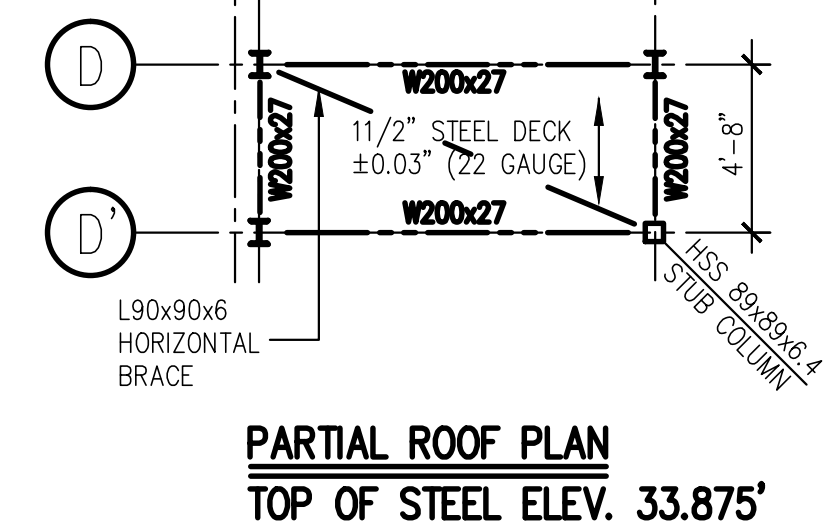
**TYP. BLOCK WALL TIES AT STEEL COLUMN**  
N.T.S.

OPEN WEB STEEL JOISTS			
JOIST	DEPTH	UNFACTORED DEAD LOAD (kN/m)	UNFACTORED LIVE LOAD (kN/m)
J1	24"	0.81	* 17 KN
J2	24"	0.81	* 17 KN
J3	24"	0.88	* 17 KN
J4	24"	0.95	* 17 KN
J5	24"	1.14	* 17 KN
J6	24"	1.32	3.3
J7	24"	1.37	3.5
J8	24"	1.42	3.6
J9	24"	0.71	1.8
J10	51"	1.52	3.8 (ADD 17KN POINT LOAD AT S150x19)
J11	51"	1.52	3.8 (ADD 17KN POINT LOAD AT S150x19)

\* S150x19 LOCATE OVER MECHANICAL EQUIPMENT. CONNECT TO O.W.S.J. WITH PLATES WELDED TO JOISTS.



**ROOF PLAN**  
SCALE: 3/16" = 1'-0"



**PARTIAL ROOF PLAN**  
TOP OF STEEL ELEV. 33.875'

- GENERAL NOTES:**
1. DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED.
  2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH THE WORK.
  3. FOR LOCATION, ELEVATIONS AND DETAILS OF PIPES SEE MECHANICAL DRAWINGS.
  4. FOR LOCATIONS AND DETAILS INCLUDING ANCHORAGE REQUIREMENTS OF EQUIPMENT SEE MECHANICAL DRAWINGS.
  5. FOR NOTES SEE DRAWING S7.

**LEGEND:**

28.375' - ELEVATION AT TOP OF STEEL BEAMS

T.L. - TIE JOIST EXTEND BOTTOM CHORD OF JOIST TO COLUMN AND CONNECT TO COLUMN

No.	Description	Date	By
02	ISSUED FOR TENDER	APR./02	SWP
01	ISSUED FOR REVIEW	AUG./98	C.T.

**Revision or Issue**

TOWN OF LUNEBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
STRUCTURAL STEEL  
ROOF PLAN

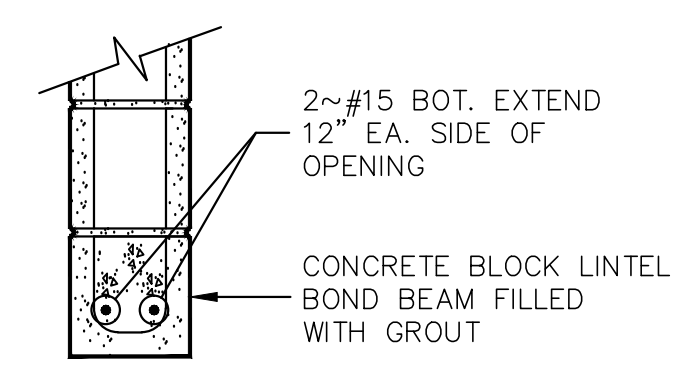
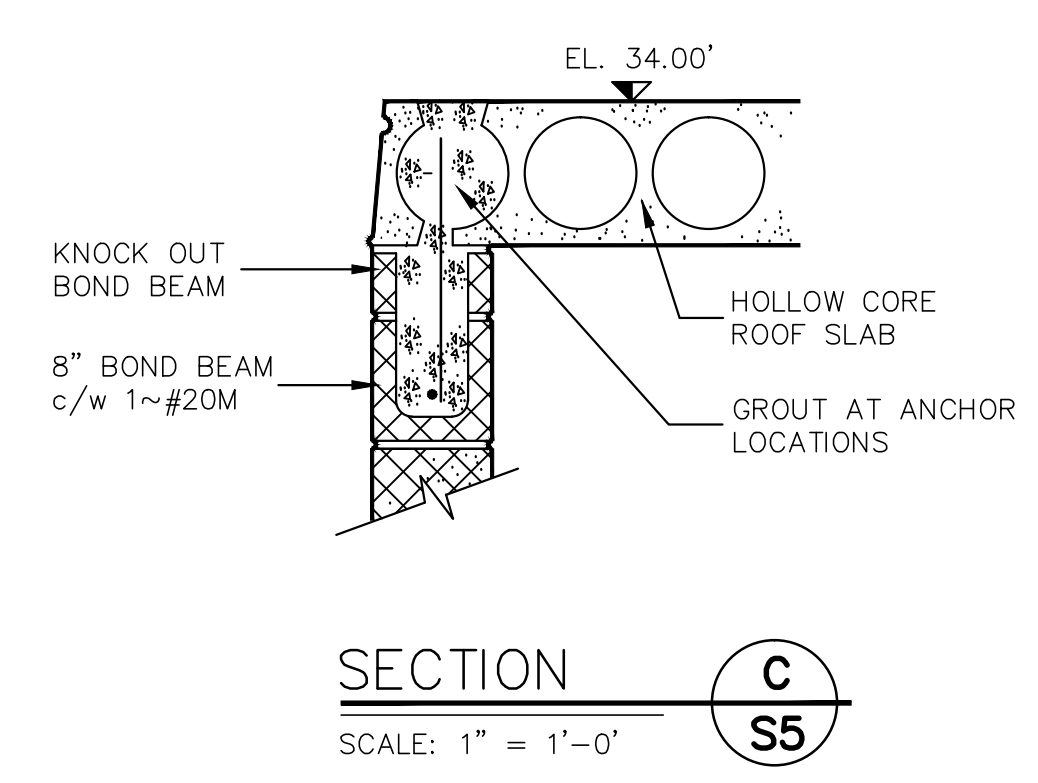
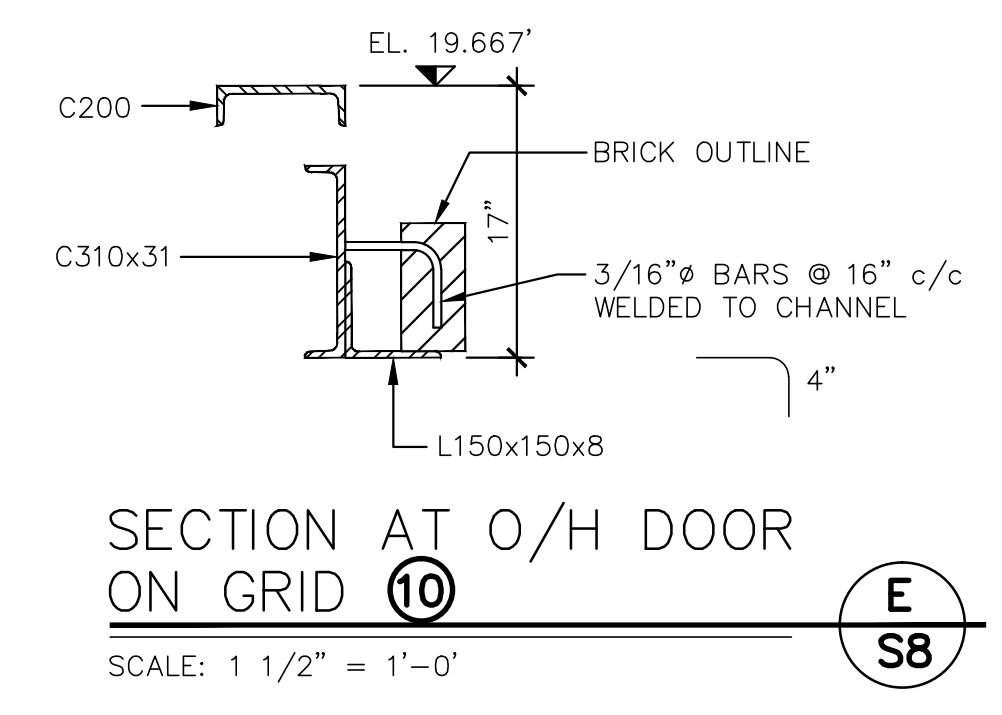
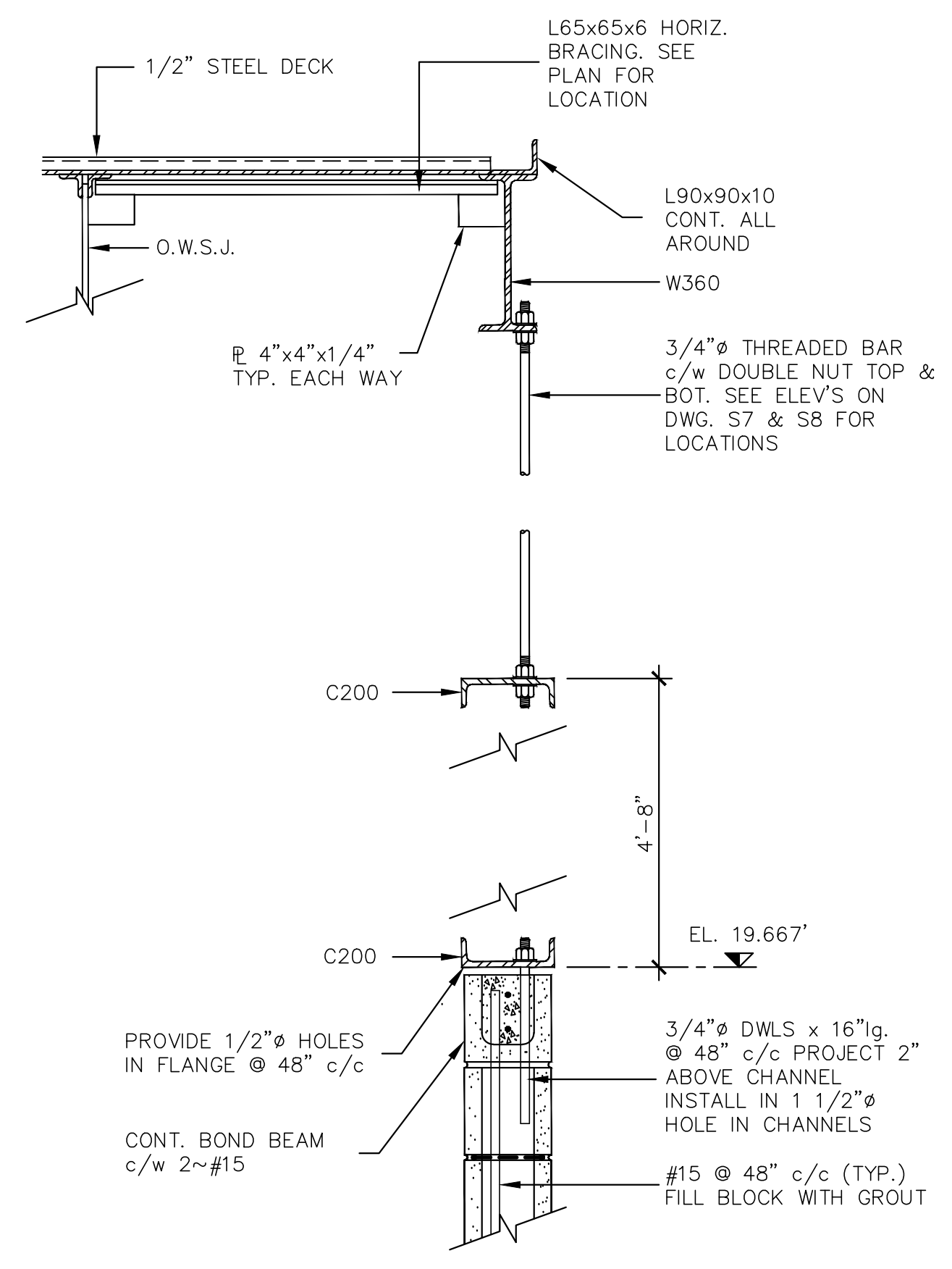
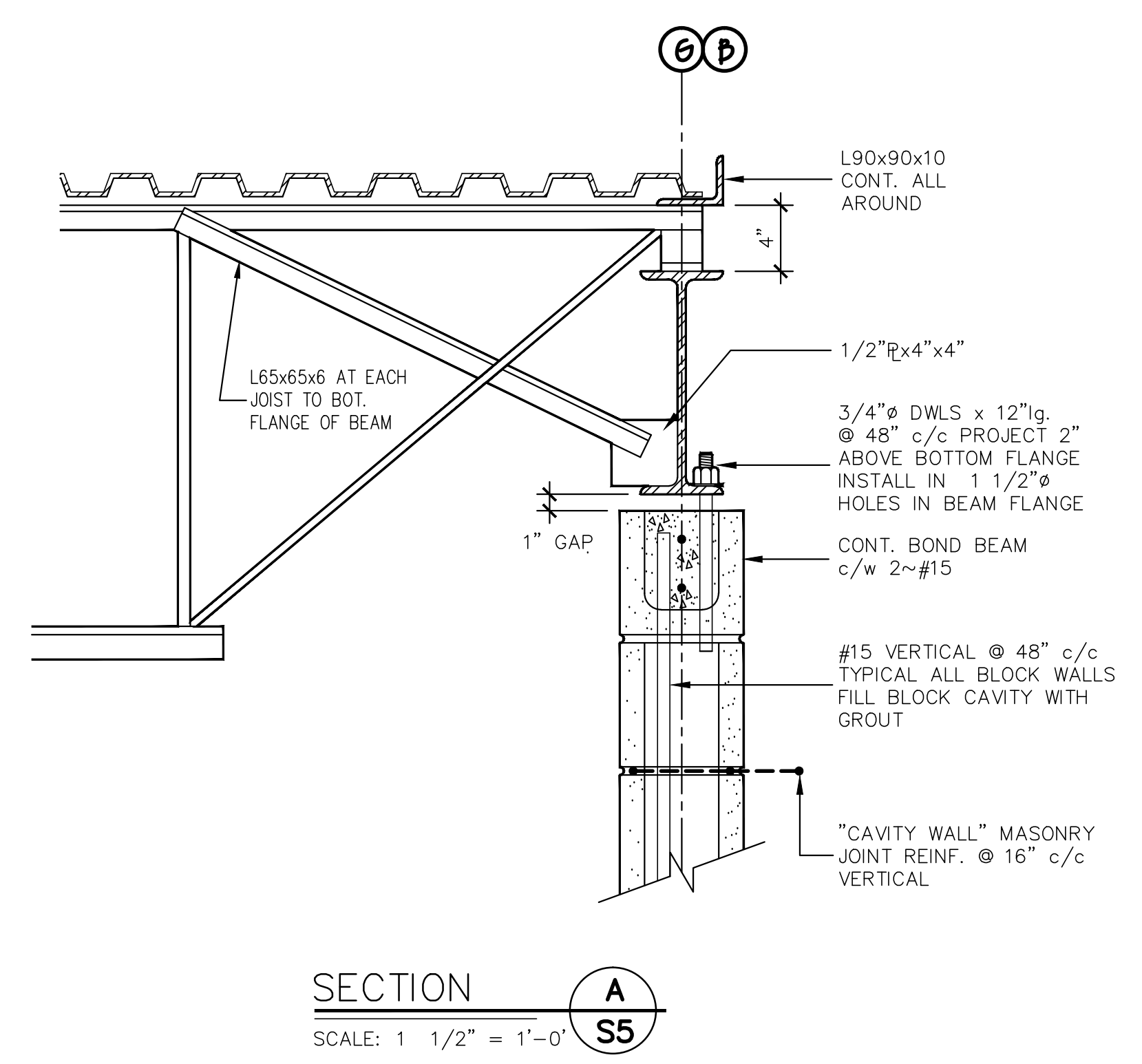
**ABL Environmental Consultants Ltd.**

**YMCL Engineering Limited**

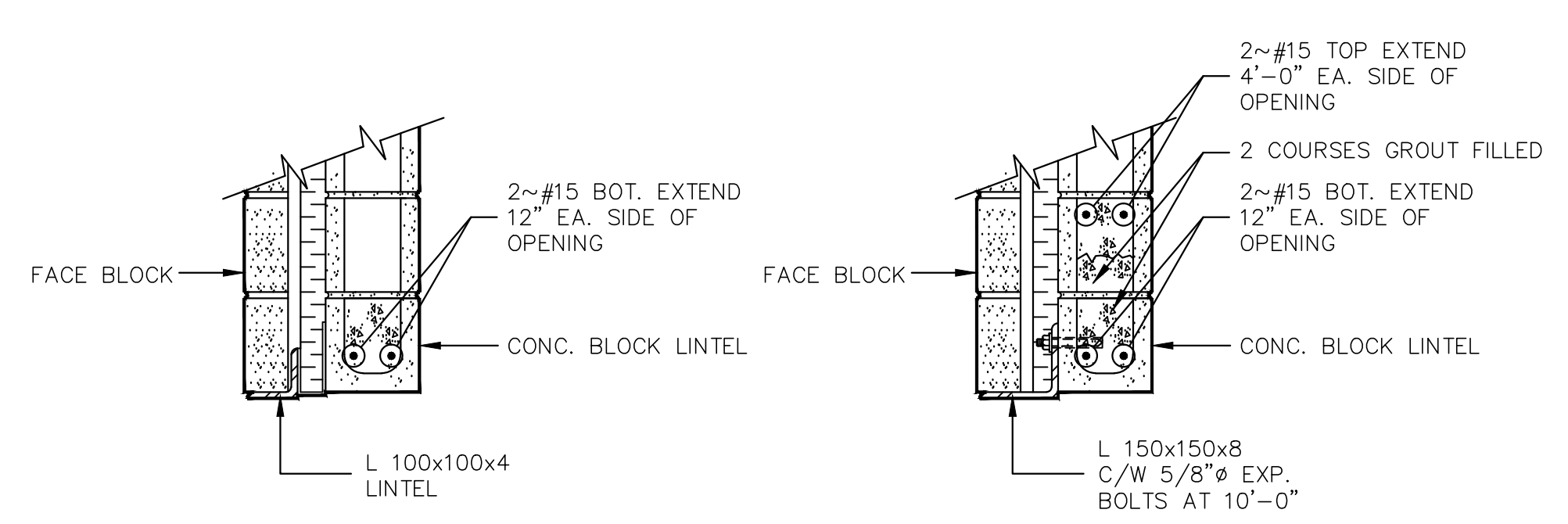
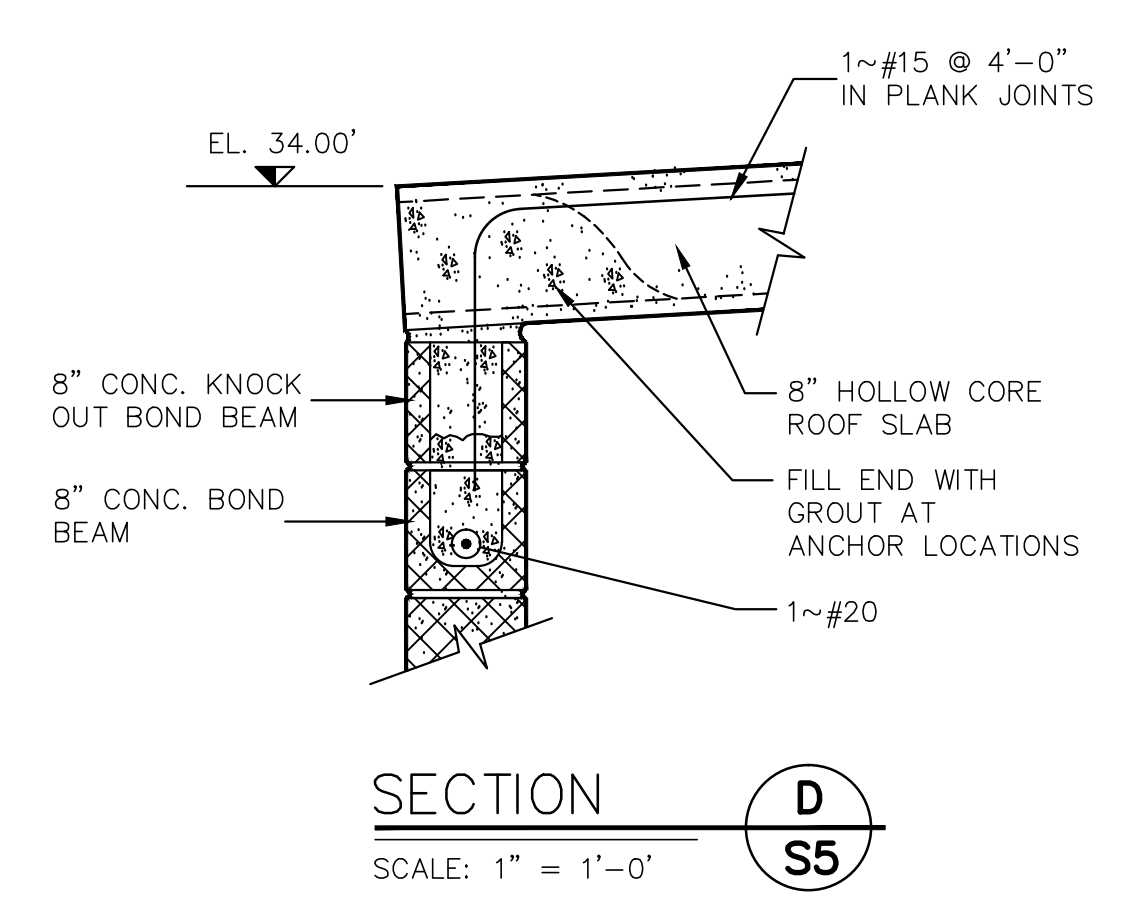
Scale 3/16" = 1'-0"

Date	AUG. 1998	Drawn	CT
Designed	TAM	Checked	TAM
Contract No.		Sheet of	X OF X
Drawing No.	S5	Revision	

GENERAL NOTES:  
1. FOR NOTES SEE DRAWING S7.



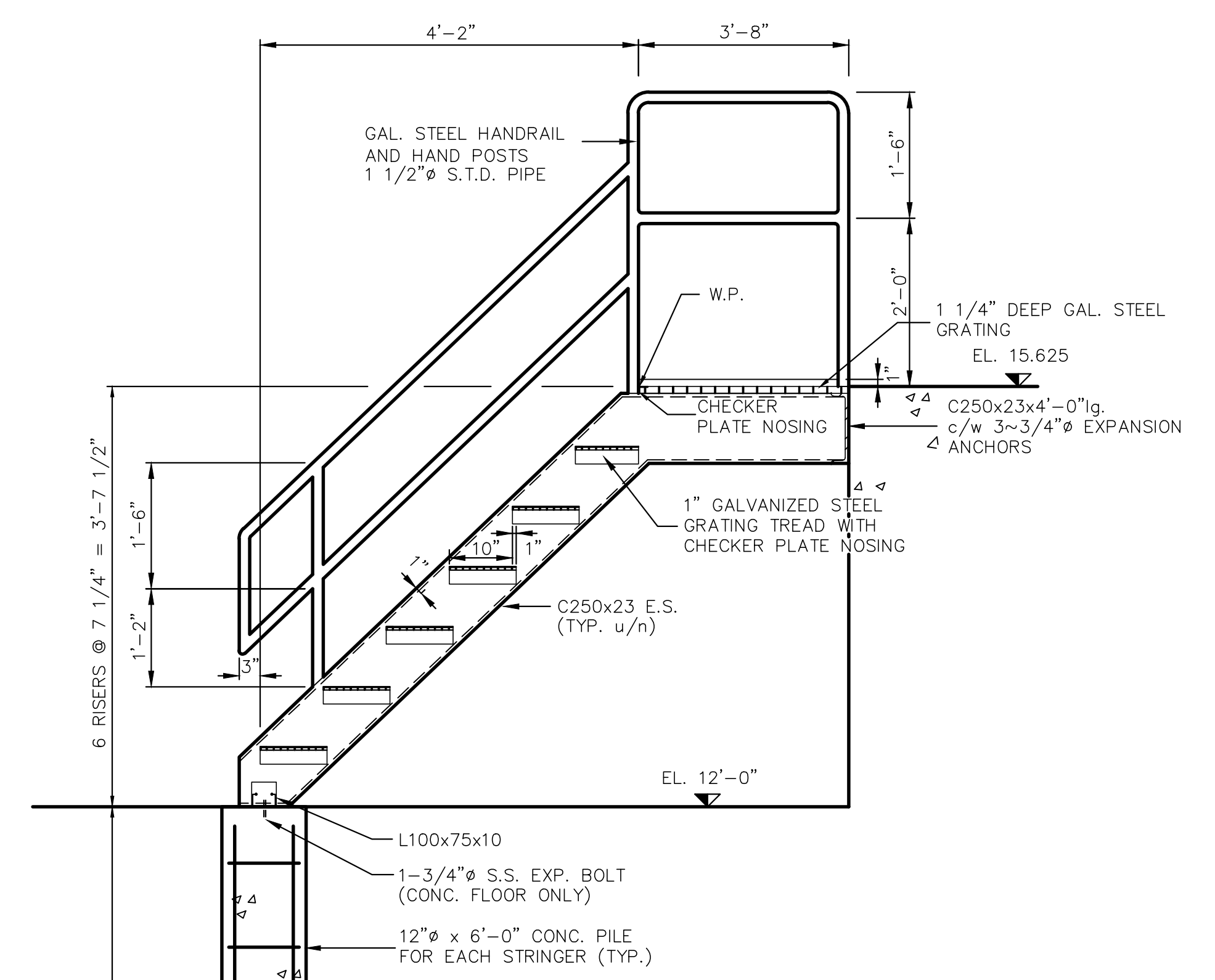
**UP TO 4'-0" INT. WALL OPENING**



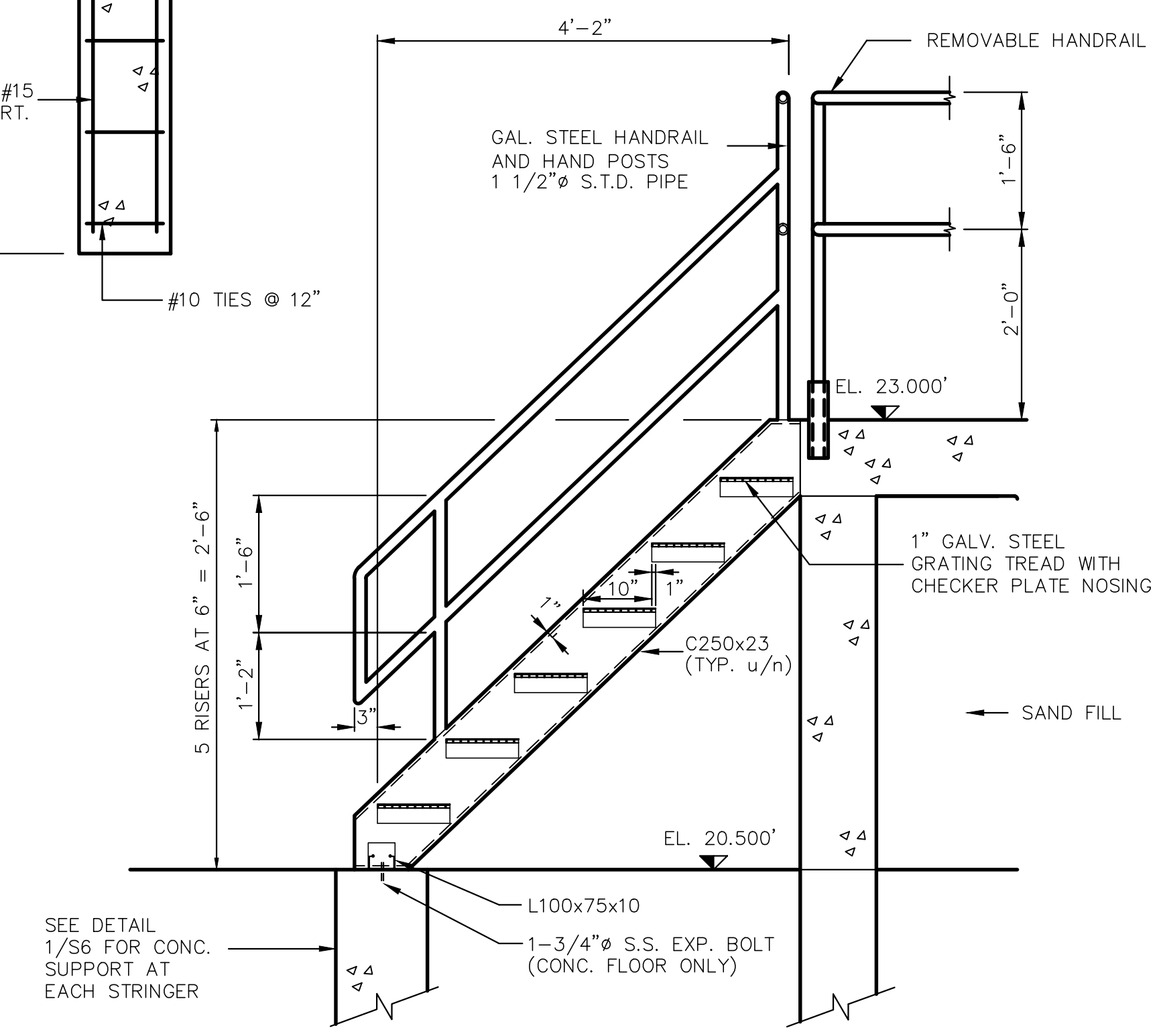
**UP TO 4'-0" OPENING**

**UP TO 10'-0" OPENING**

**TYP. LINTEL DETAILS**  
SCALE: 1" = 1'-0"



**DETAIL-STAIR AT CHEMICAL RM. S1**  
N.T.S.



**DETAIL-STAIR AT LOADING DOCK S1**  
N.T.S.

No.	Description	Date	By
02	ISSUED FOR TENDER	APR./02	SWP
01	ISSUED FOR REVIEW	AUG./98	C.T.

**Revision or Issue**

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
STRUCTURAL STEEL SECTIONS  
AND MASONRY DETAILS

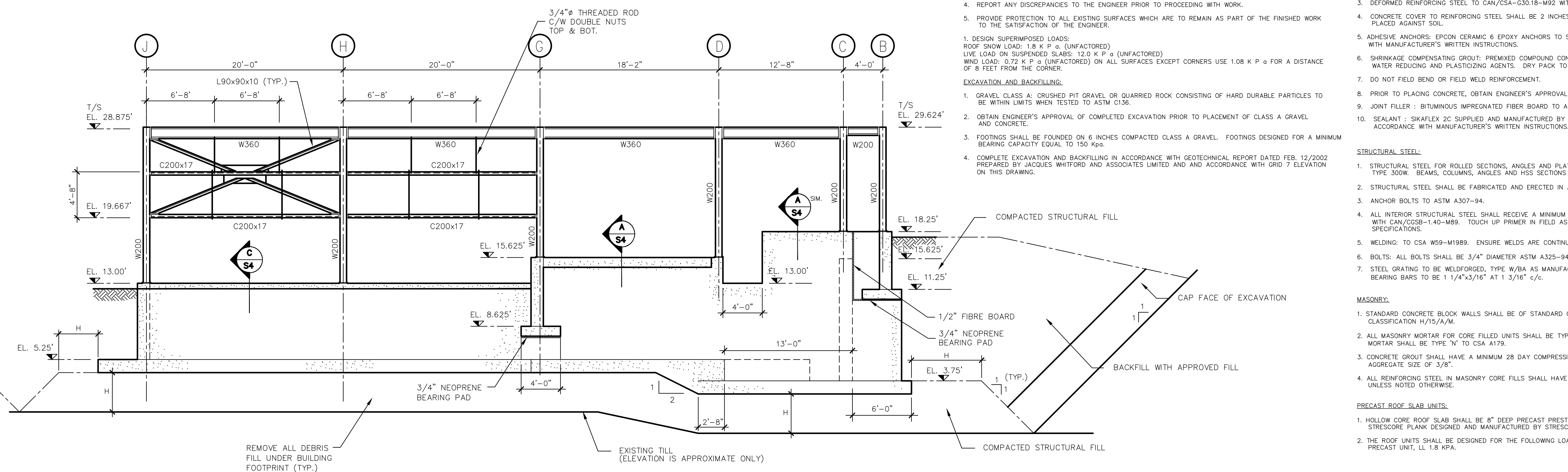
**ABL Environmental Consultants Ltd.**

**YMCL Engineering Limited**

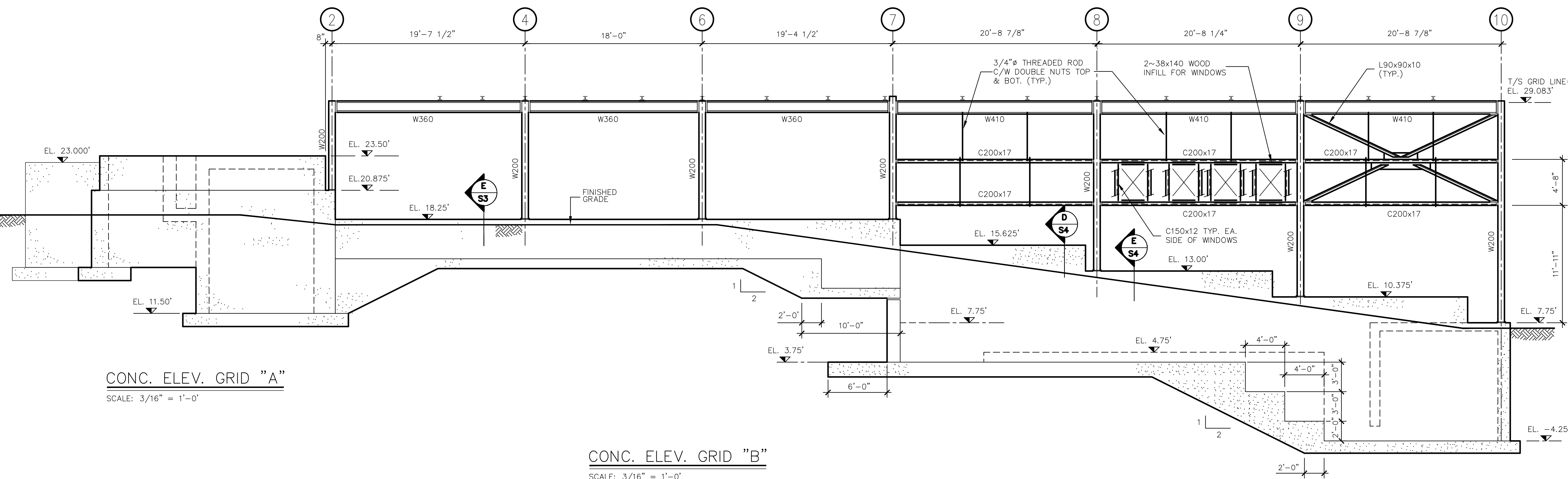
Scale AS SHOWN			
Date	Drawn		
AUG., 1998	CT	Designed	Approved
		TM/CTC	TM/CTC
Contract No.	Sheet of		
	X OF X		
Drawing No.	Revision		
S6			

- NOTES:**
- ALL DIMENSIONS IN FEET AND INCHES. ELEVATIONS IN FEET.
  - DESIGN IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA - 1995.
  - CONFIRM ALL DIMENSIONS TO EXISTING ON SITE.
  - REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
  - PROVIDE PROTECTION TO ALL EXISTING SURFACES WHICH ARE TO REMAIN AS PART OF THE FINISHED WORK TO THE SATISFACTION OF THE ENGINEER.
- DESIGN SUPERIMPOSED LOADS:**  
 ROOF SNOW LOAD: 1.8 K P  $\alpha$  (UNFACTORED)  
 LIVE LOAD ON SUSPENDED SLABS: 12.0 K P  $\alpha$  (UNFACTORED)  
 WIND LOAD: 0.72 K P  $\alpha$  (UNFACTORED) ON ALL SURFACES EXCEPT CORNERS USE 1.08 K P  $\alpha$  FOR A DISTANCE OF 8 FEET FROM THE CORNER.
- EXCAVATION AND BACKFILLING:**
- GRAVEL CLASS A: CRUSHED PIT GRAVEL OR QUARRIED ROCK CONSISTING OF HARD DURABLE PARTICLES TO BE WITHIN LIMITS WHEN TESTED TO ASTM C136.
  - OBTAIN ENGINEER'S APPROVAL OF COMPLETED EXCAVATION PRIOR TO PLACEMENT OF CLASS A GRAVEL AND CONCRETE.
  - FOOTINGS SHALL BE FOUNDED ON 6 INCHES COMPACTED CLASS A GRAVEL. FOOTINGS DESIGNED FOR A MINIMUM BEARING CAPACITY EQUAL TO 150 Kpa.
  - COMPLETE EXCAVATION AND BACKFILLING IN ACCORDANCE WITH GEOTECHNICAL REPORT DATED FEB. 12/2002 PREPARED BY JACQUES WHITFORD AND ASSOCIATES LIMITED AND ACCORDANCE WITH GRID 7 ELEVATION ON THIS DRAWING.

- CONCRETE:**
- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH CAN/CSA A23.1-94/A23.2-94.
  - MINIMUM COMPRESSIVE STRENGTH FOR CONCRETE AT 28 DAYS SHALL BE 30 Mpa. ALL CONCRETE SHALL CONTAIN 5-8% AIR ENTRAINMENT AND 3" SLUMP.
  - DEFORMED REINFORCING STEEL TO CAN/CSA-G30.18-M92 WITH A MINIMUM YIELD STRENGTH OF 400 Mpa.
  - CONCRETE COVER TO REINFORCING STEEL SHALL BE 2 INCHES ON FORMED SIDES AND 3 INCHES ON SIDES PLACED AGAINST SOIL.
  - ADHESIVE ANCHORS: EPON CERAMIC 6 EPOXY ANCHORS TO SIZES INDICATED. INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
  - SHRINKAGE COMPENSATING GROUT: PREMIXED COMPOUND CONSISTING OF NON-METALLIC AGGREGATE, PORTLAND CEMENT, WATER REDUCING AND PLASTICIZING AGENTS. DRY PACK TO MANUFACTURER'S REQUIREMENTS.
  - DO NOT FIELD BEND OR FIELD WELD REINFORCEMENT.
  - PRIOR TO PLACING CONCRETE, OBTAIN ENGINEER'S APPROVAL OF REINFORCING MATERIAL AND PLACEMENT.
  - JOINT FILLER: BITUMINOUS IMPREGNATED FIBER BOARD TO ASTM D1751.
  - SEALANT: SIKAFLEX 2C SUPPLIED AND MANUFACTURED BY SIKKA CANADA. INSTALL SEALANT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- STRUCTURAL STEEL:**
- STRUCTURAL STEEL FOR ROLLED SECTIONS, ANGLES AND PLATES SHALL CONFORM TO AN/CSA-G40.20/G40.21-M92 TYPE 300W. BEAMS, COLUMNS, ANGLES AND HSS SECTIONS INDICATED IN METRIC SIZES, PLATES IN INCHES.
  - STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH CAN/CSA-S16.1-M94.
  - ANCHOR BOLTS TO ASTM A307-94.
  - ALL INTERIOR STRUCTURAL STEEL SHALL RECEIVE A MINIMUM OF ONE COAT OF SHOP PRIMER IN ACCORDANCE WITH CAN/CGSB-1.40-M89. TOUCH UP PRIMER IN FIELD AS REQUIRED. PAINT IN ACCORDANCE WITH SPECIFICATIONS.
  - WELDING: TO CSA W59-M1989. ENSURE WELDS ARE CONTINUOUS.
  - BOLTS: ALL BOLTS SHALL BE 3/4" DIAMETER ASTM A325-94 BOLTS UNLESS INDICATED OTHERWISE.
  - STEEL GRATING TO BE WELDFORGED, TYPE W/BA AS MANUFACTURED BY IKG INDUSTRIES. BEARING BARS TO BE 1 1/4"x3/16" AT 1 3/16" c/c.
- MASONRY:**
- STANDARD CONCRETE BLOCK WALLS SHALL BE OF STANDARD CONCRETE MASONRY UNIT TYPE "A" TO CAN3 - A165. CLASSIFICATION H/15/A/M.
  - ALL MASONRY MORTAR FOR CORE FILLED UNITS SHALL BE TYPE "S" TO CSA A179, AND ALL OTHER MASONRY MORTAR SHALL BE TYPE "N" TO CSA A179.
  - CONCRETE GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 21 MPA WITH MAXIMUM AGGREGATE SIZE OF 3/8".
  - ALL REINFORCING STEEL IN MASONRY CORE FILLS SHALL HAVE A MINIMUM LAP OF 30 BAR DIAMETERS UNLESS NOTED OTHERWISE.
- PRECAST ROOF SLAB UNITS:**
- HOLLOW CORE ROOF SLAB SHALL BE 8" DEEP PRECAST PRESTRESSED CONCRETE HOLLOW CORE PLANKS, STRESCORE PLANK DESIGNED AND MANUFACTURED BY STRESCON LTD.
  - THE ROOF UNITS SHALL BE DESIGNED FOR THE FOLLOWING LOADS: DL 0.72 Kpa PLUS WEIGHT OF PRECAST UNIT, LL 1.8 Kpa.



**CONC. ELEV. GRID "7"** (AND TYPICAL EXCAVATION AND BACKFILLING REQUIREMENTS)  
 SCALE: 3/16" = 1'-0"



**CONC. ELEV. GRID "A"**  
 SCALE: 3/16" = 1'-0"

**CONC. ELEV. GRID "B"**  
 SCALE: 3/16" = 1'-0"

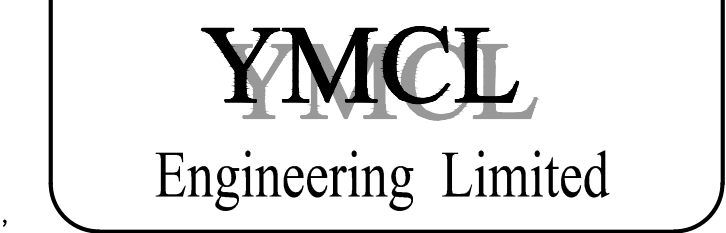
**CONC. ELEV. GRID "C"**  
 SCALE: 3/16" = 1'-0"

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01	ISSUED FOR REVIEW	AUG./98	C.T.

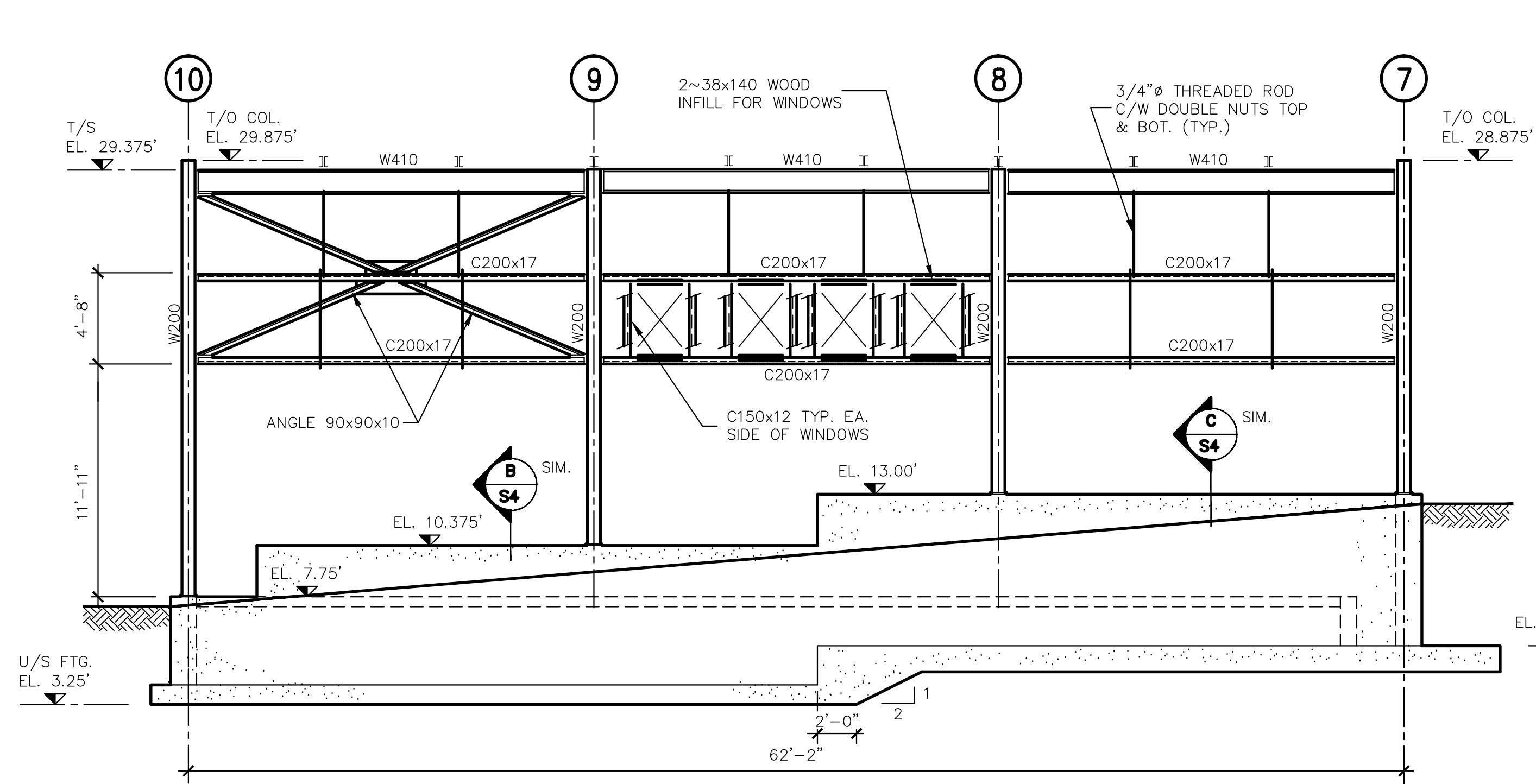
**Revision or Issue**

TOWN OF LUNENBURG  
 MUNICIPAL WASTEWATER  
 COLLECTION AND TREATMENT

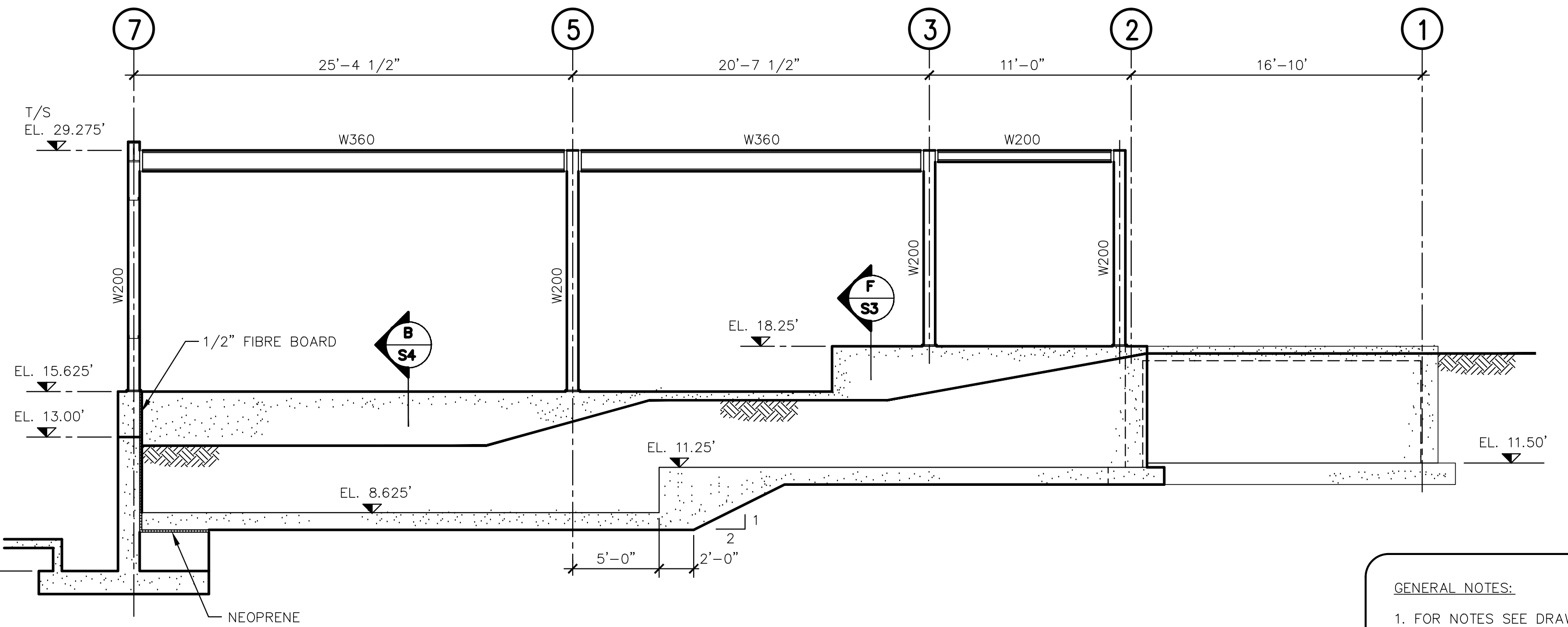
SEWAGE TREATMENT PLANT  
 ELEVATIONS  
 SHEET 1



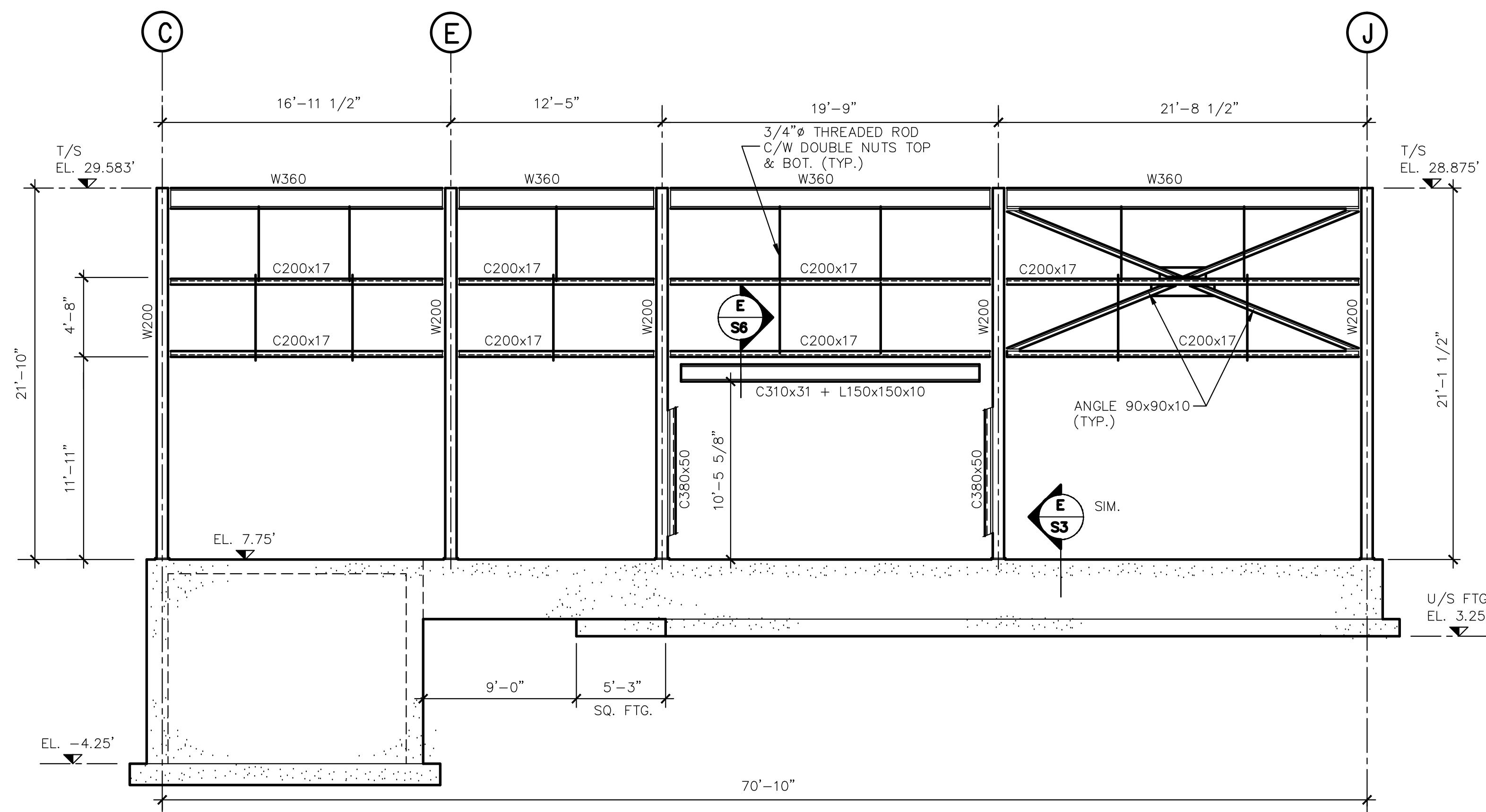
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Date	AUGUST 1998	Drawn	CT
Designed	TAM	Checked	TAM
Approved		Contract No	
Drawing No	S7	Sheet of	X OF X
Revision			



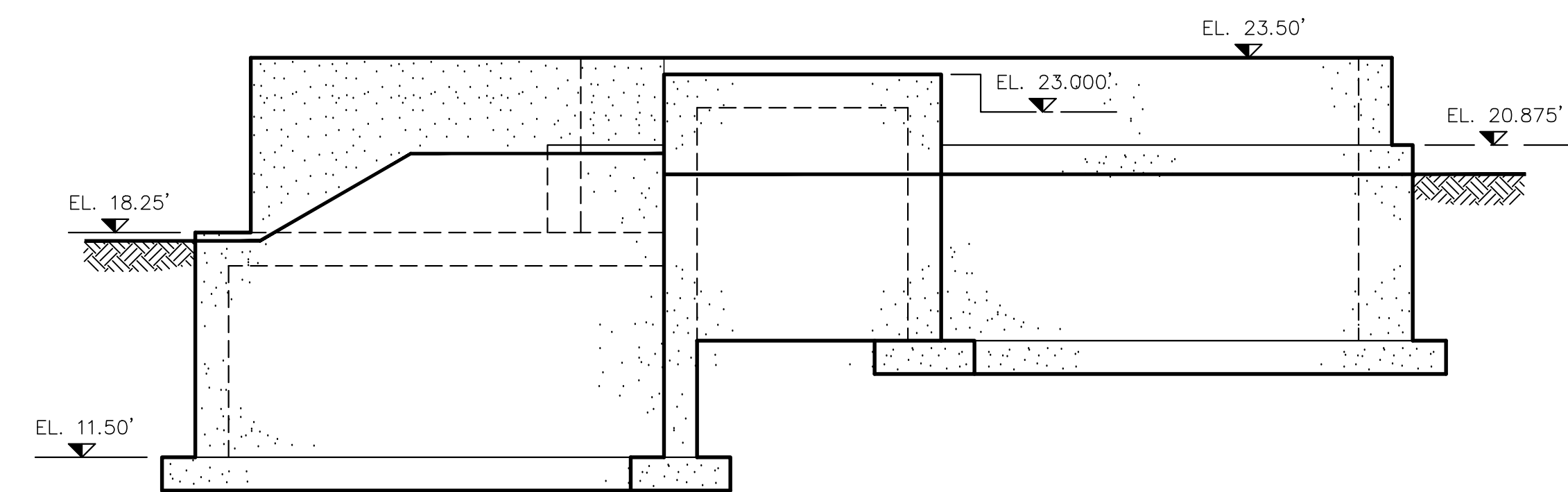
ELEV. @ GRID LINE "J"  
SCALE: 3/16" = 1'-0"



ELEV. @ GRID LINE "G"  
SCALE: 3/16" = 1'-0"



ELEV. @ GRID LINE "10"  
SCALE: 3/16" = 1'-0"



CONC. ELEV. GRID "1"  
SCALE: 3/16" = 1'-0"

GENERAL NOTES:  
1. FOR NOTES SEE DRAWING S7.

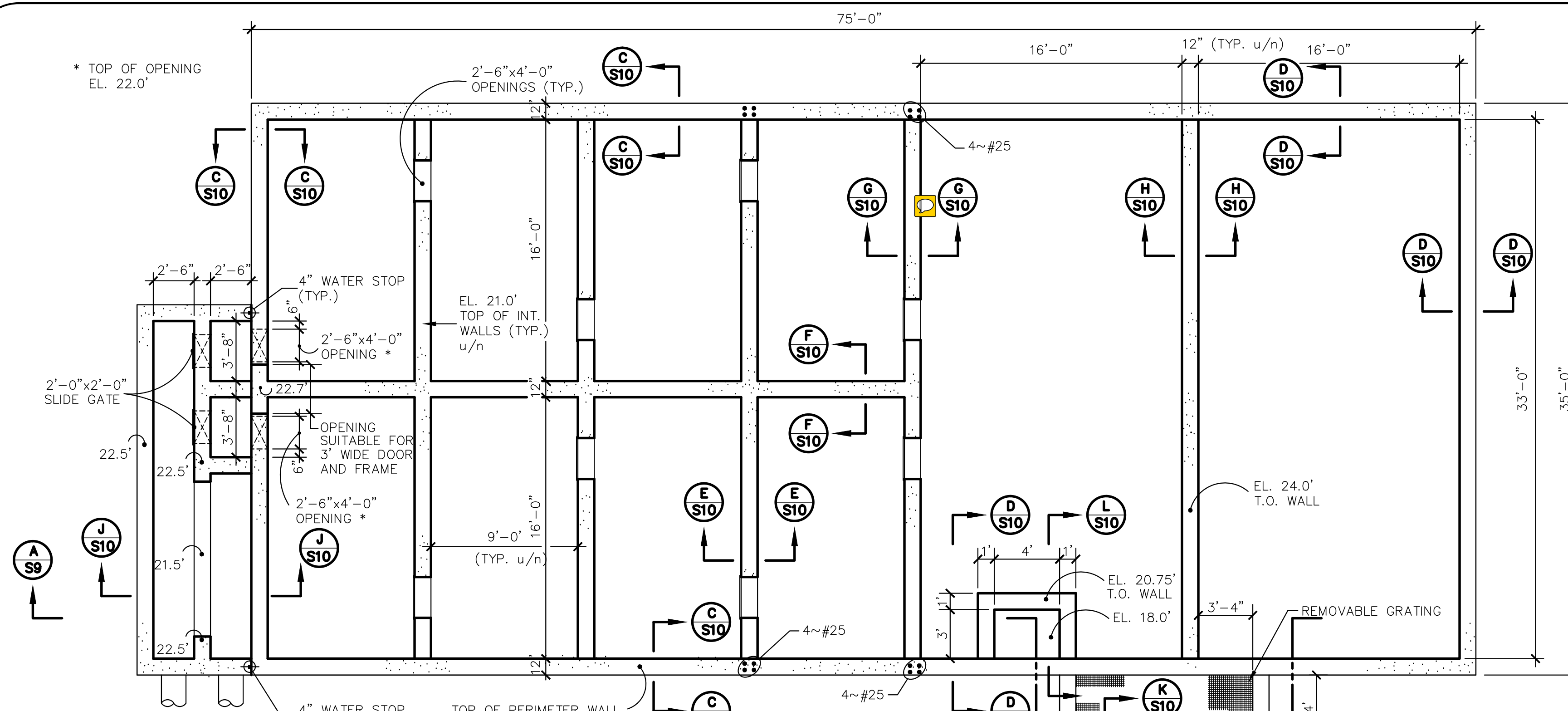
No.	Description	Date	By
02	ISSUED FOR TENDER	APR./02	SWP
01	ISSUED FOR REVIEW	AUG./98	C.T.

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT  
SEWAGE TREATMENT PLANT  
ELEVATIONS  
SHEET 2

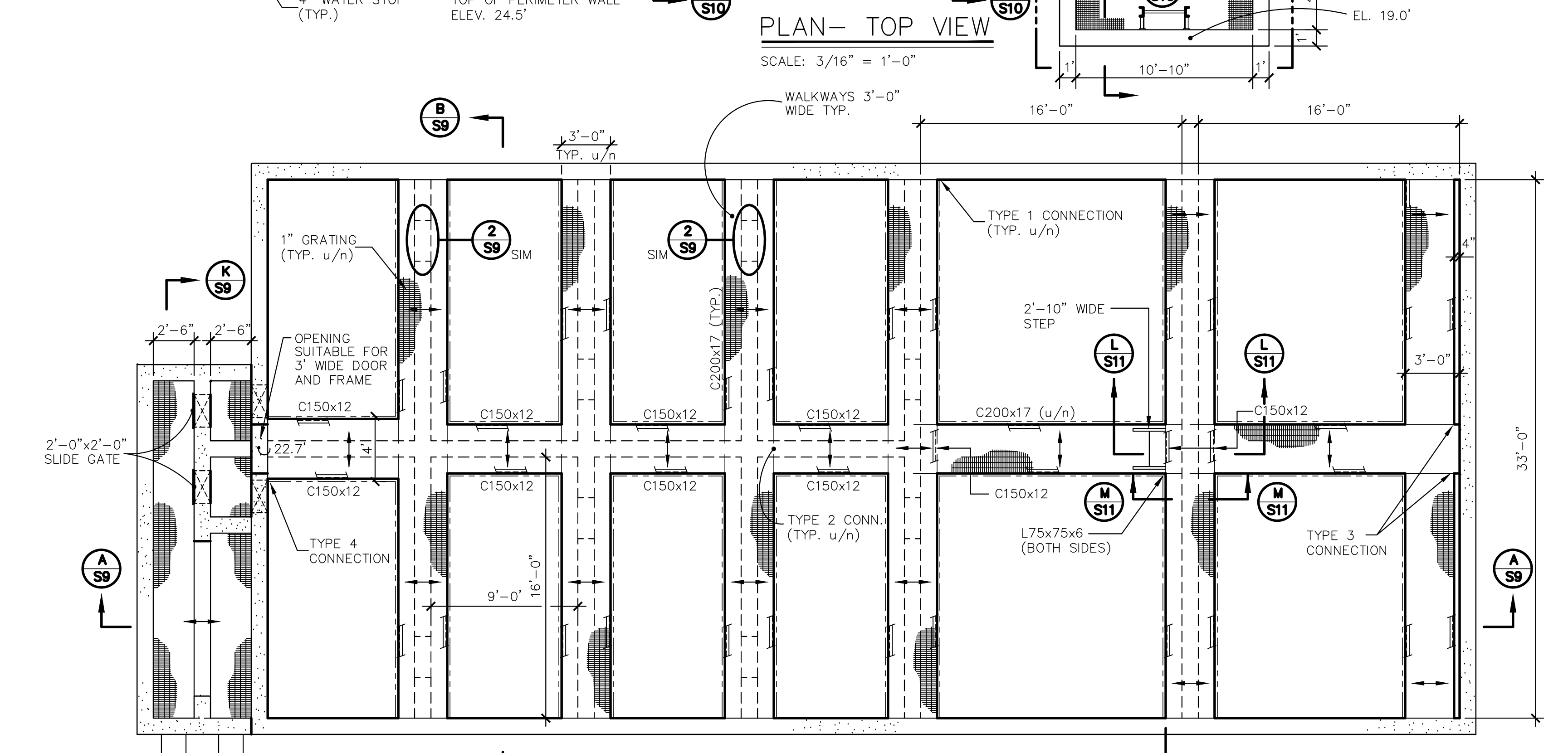
**ABL** Environmental  
Consultants Ltd.

**YMCL**  
Engineering Limited

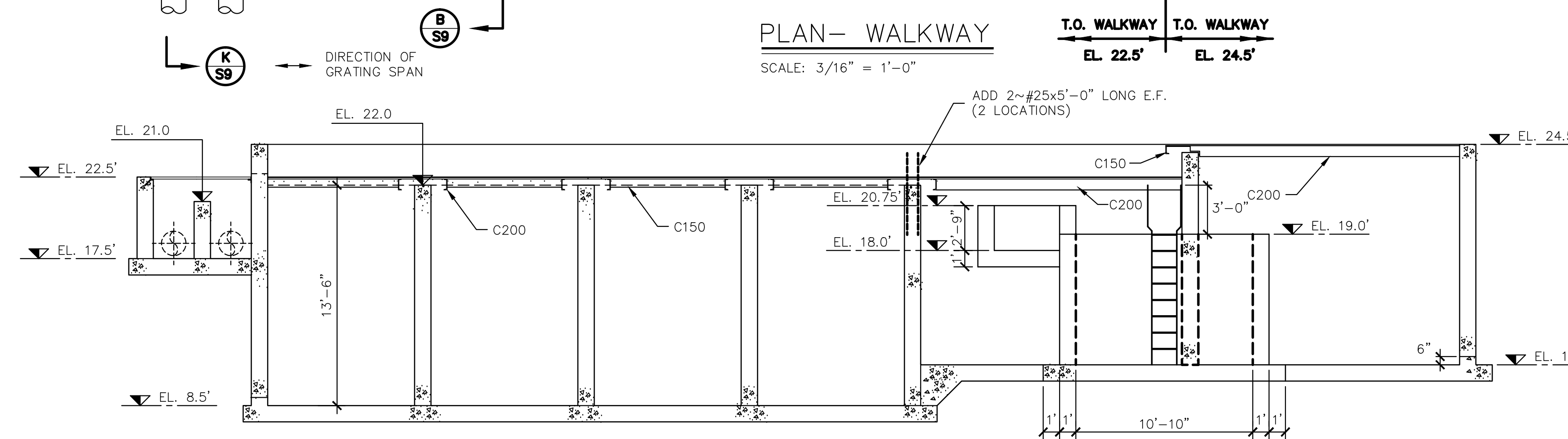
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Designed	TAM	Checked	TAM
Contract No		Sheet of	X OF X
Drawing No	S8	Revision	



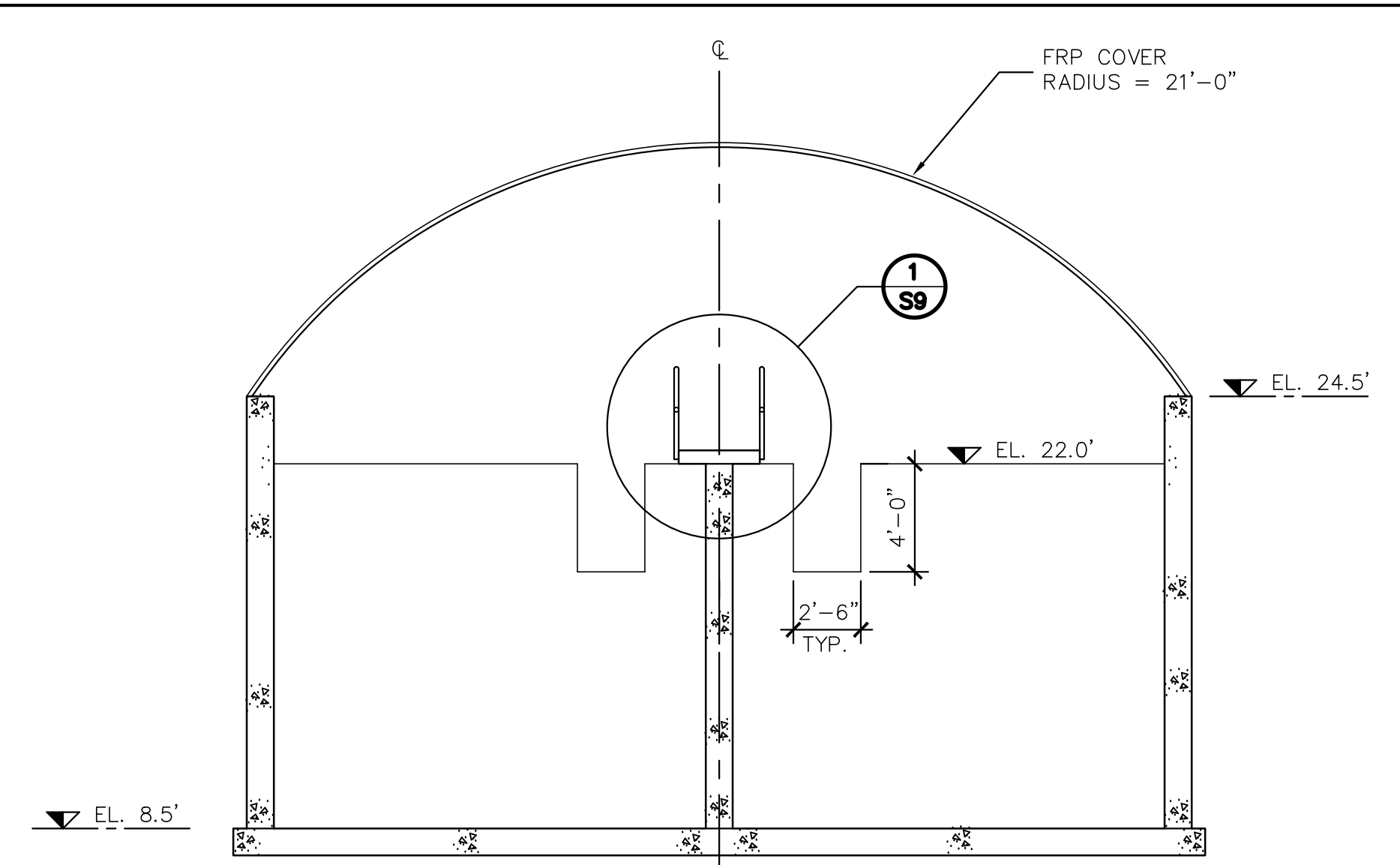
**PLAN - TOP VIEW**  
SCALE: 3/16" = 1'-0"



**PLAN - WALKWAY**  
SCALE: 3/16" = 1'-0"

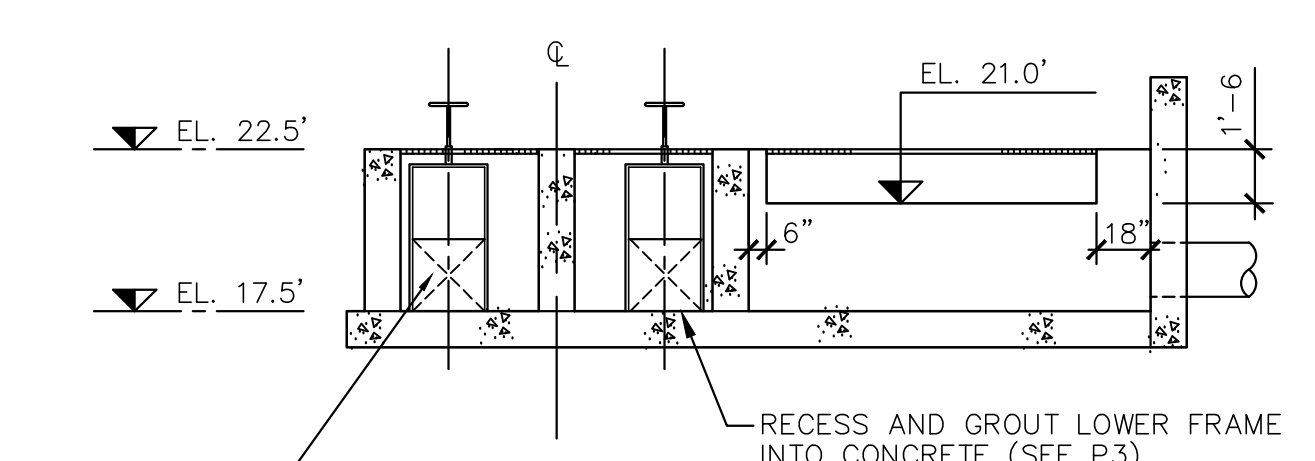


**SECTION A**  
SCALE: 3/16" = 1'-0"

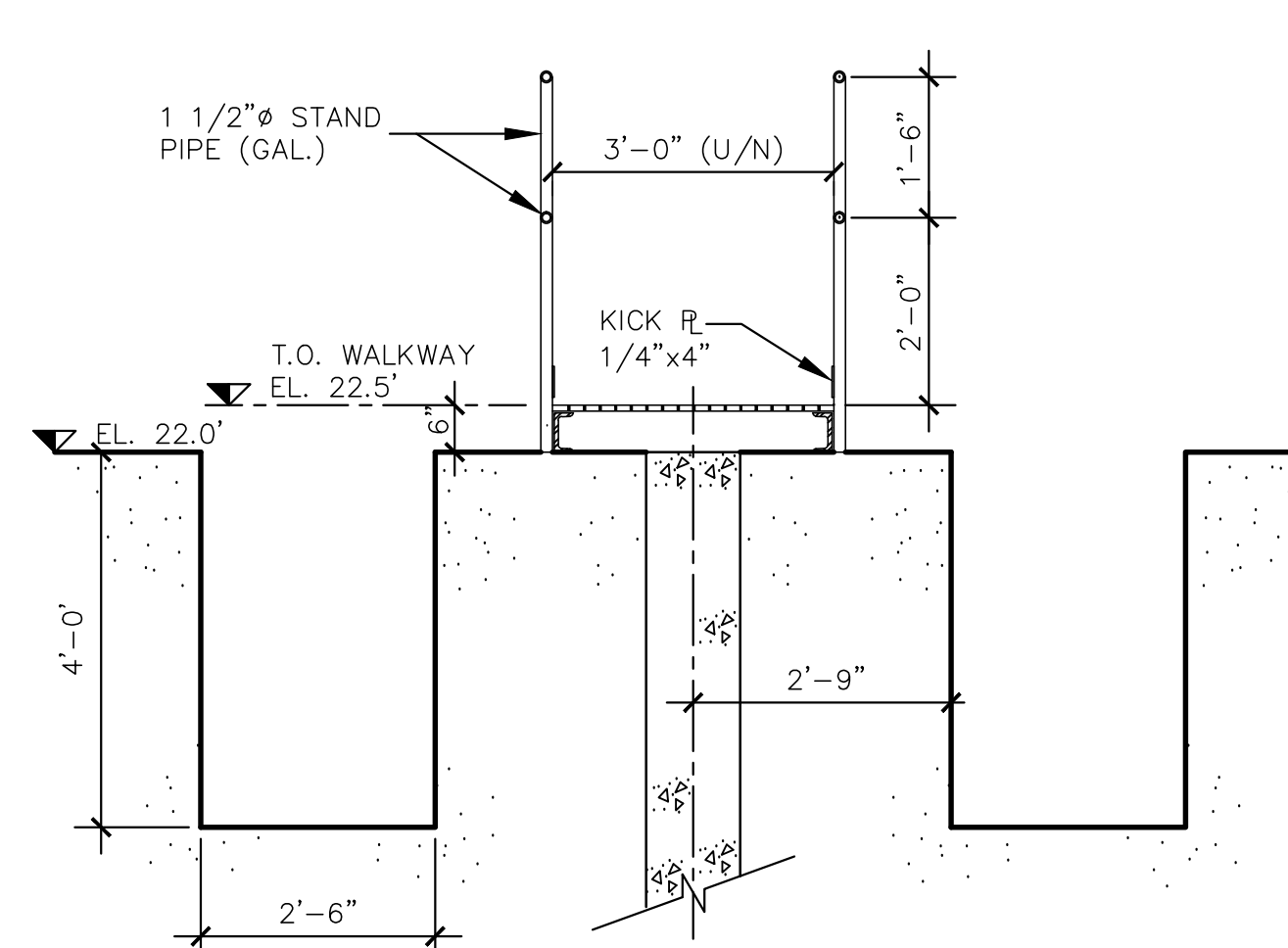


**SECTION B**  
SCALE: 3/16" = 1'-0"

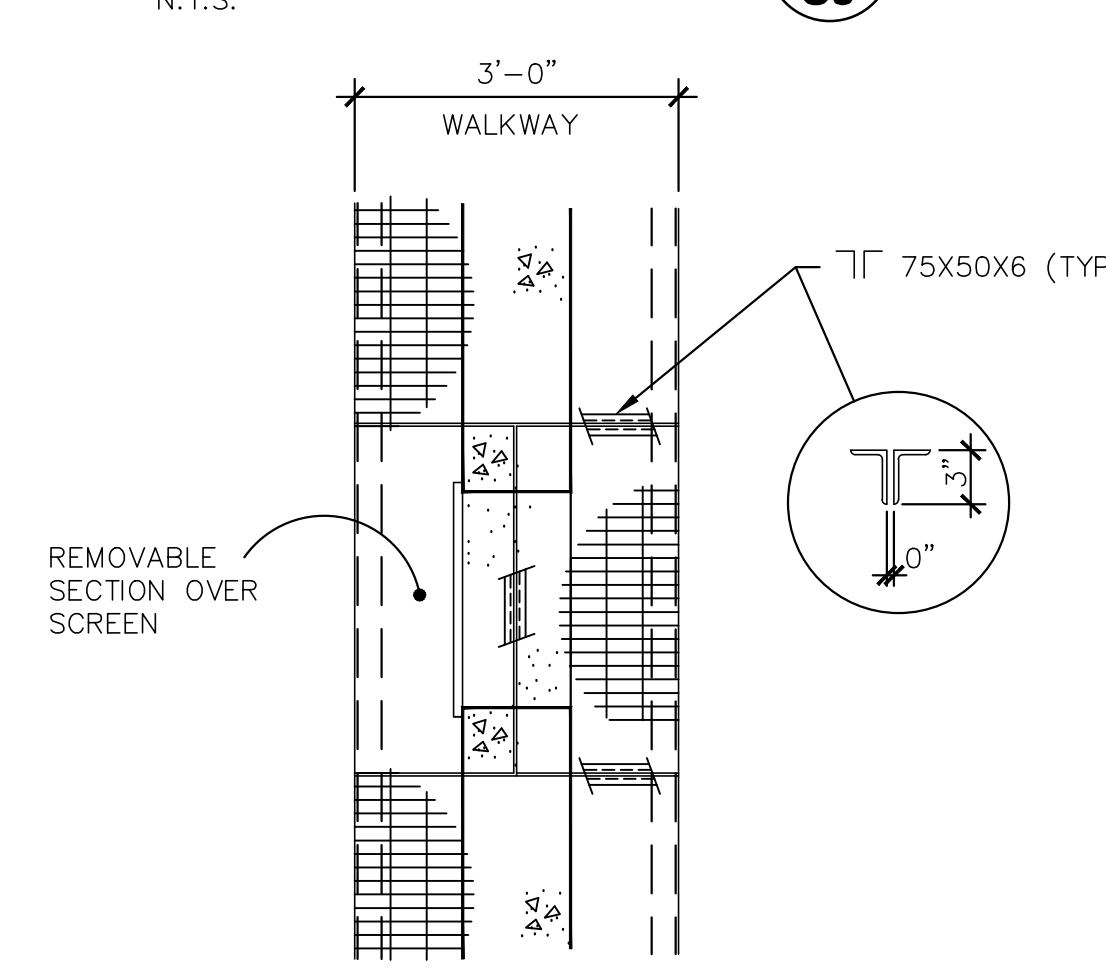
**FRP COVER NOTES:**  
1. SUPPLY & INSTALL 75' LONG FRP COVER AS SPECIFIED.  
2. FRP COVER TO HAVE DOUBLE DOOR EACH END & VENTILATION LOUVRES.



**SECTION K**  
SCALE: 3/16" = 1'-0"



**DETAIL - TYP. WALKWAY 1**  
N.T.S.



**DETAIL - TYP. WALKWAY OPENING 2**  
N.T.S.

**GENERAL NOTES:**  
1. FOR NOTES SEE DRAWING S7.

No.	Description	Date	By
02	ISSUED FOR TENDER	APR./02	SWP
01	ISSUED FOR REVIEW	AUG./98	C.T.

**Revision or Issue**

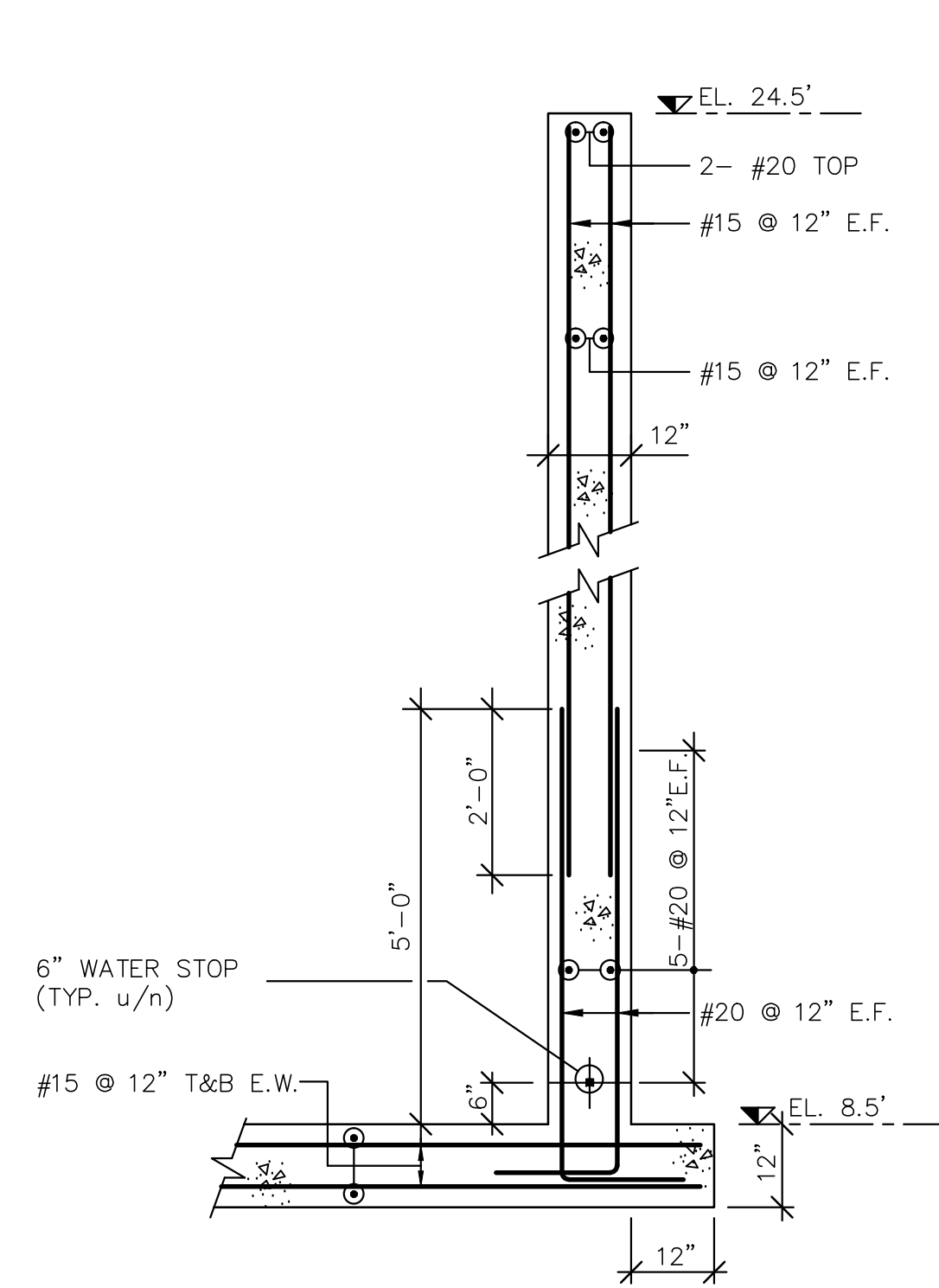
TOWN OF LUNEBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
AERATION BASIN PLANS,  
SECTIONS AND DETAILS

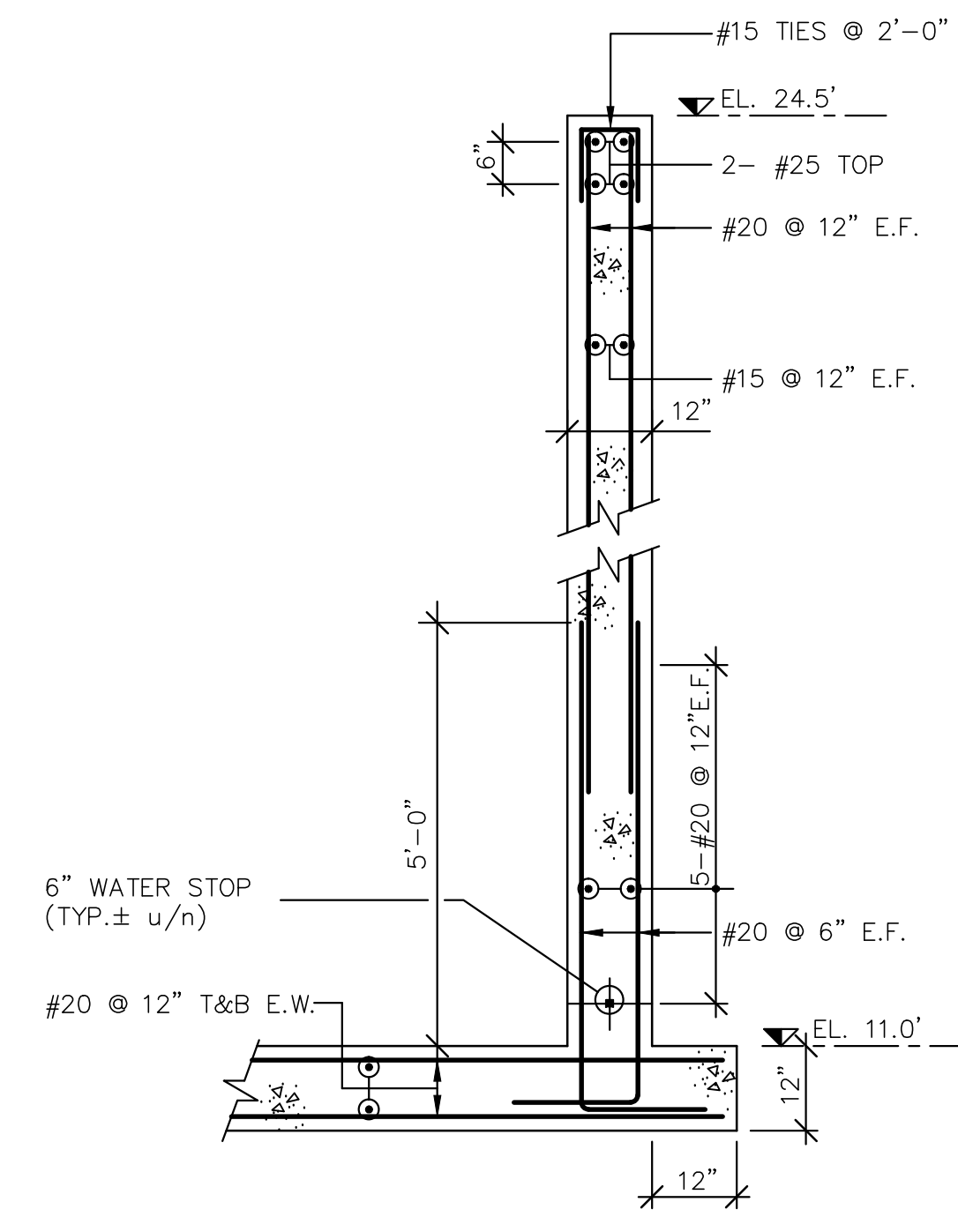
**ABL Environmental Consultants Ltd.**

**YMCL Engineering Limited**

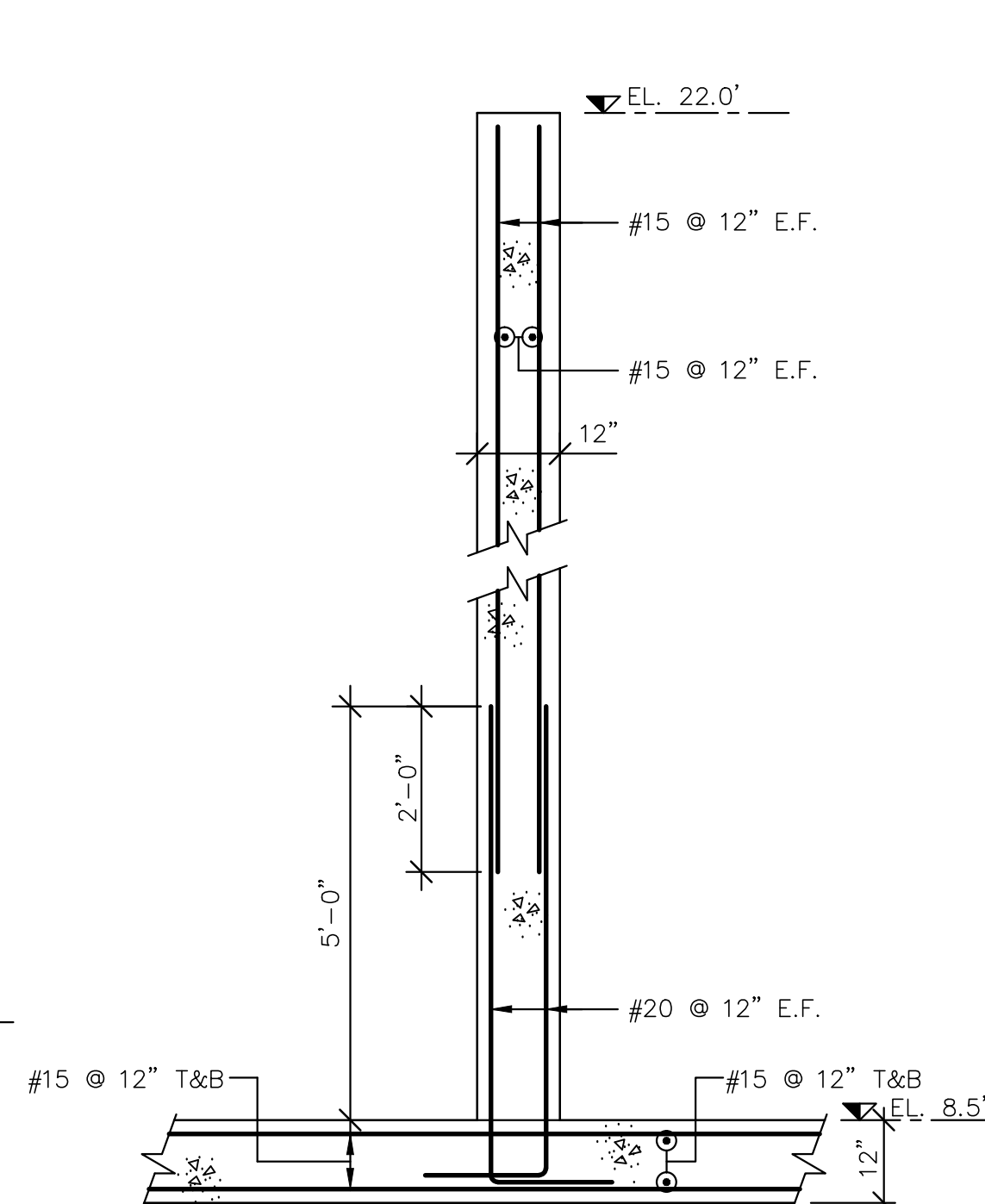
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Date	Drawn		
AUG., 1998	CT	Designed	Checked
		TM/CTC	TM/CTC
Contract No.	Sheet of		
	X OF X		
Drawing No.	Revision		
S9			



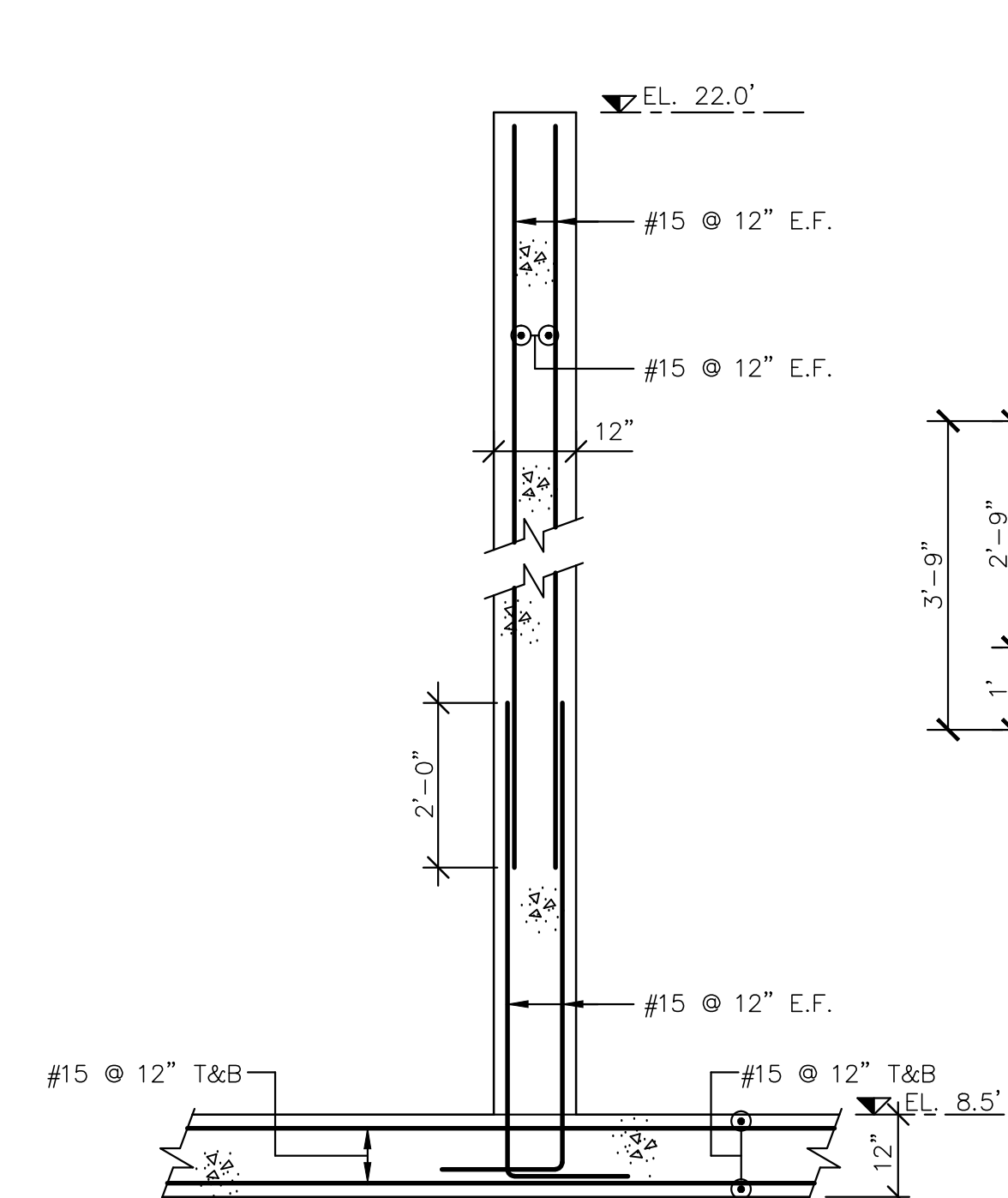
SECTION C  
SCALE: 1/2" = 1'-0"



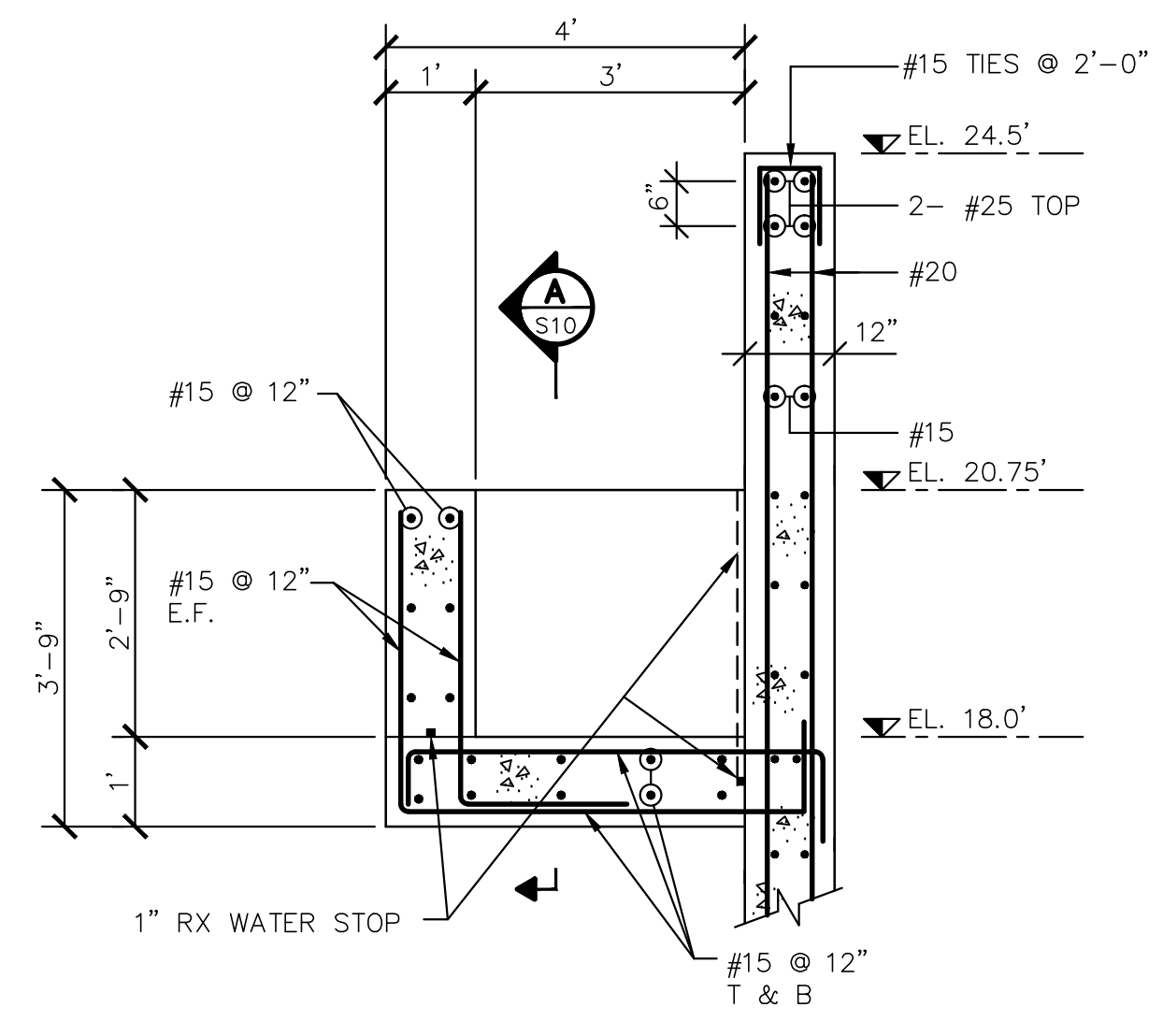
SECTION D  
SCALE: 1/2" = 1'-0"



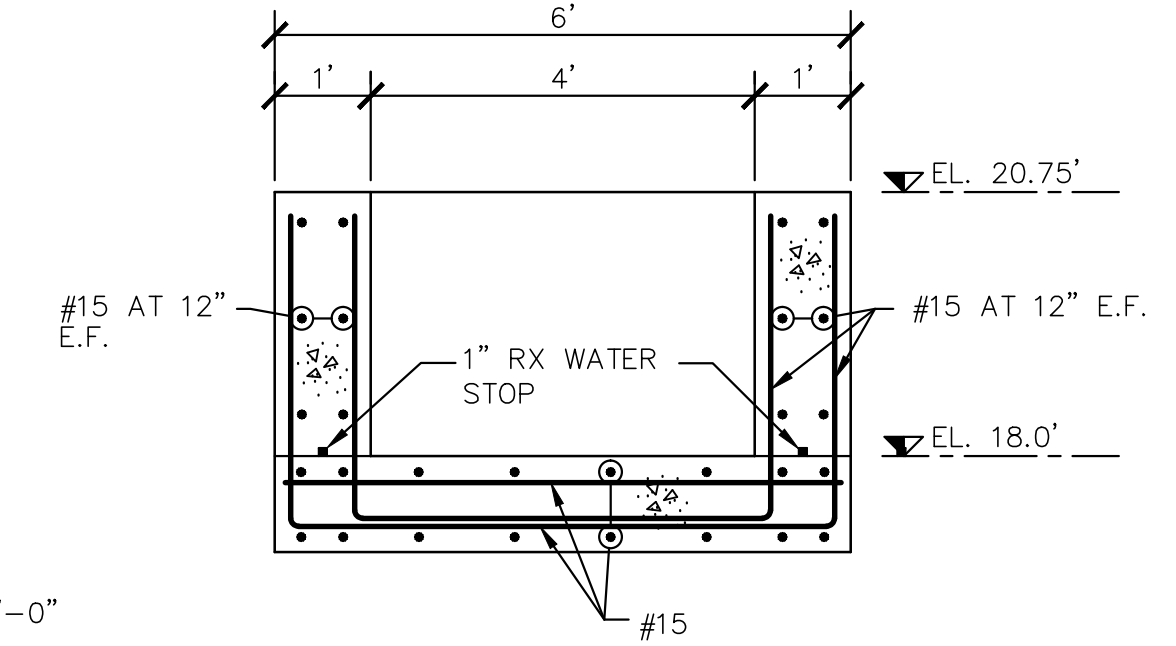
SECTION E  
SCALE: 1/2" = 1'-0"



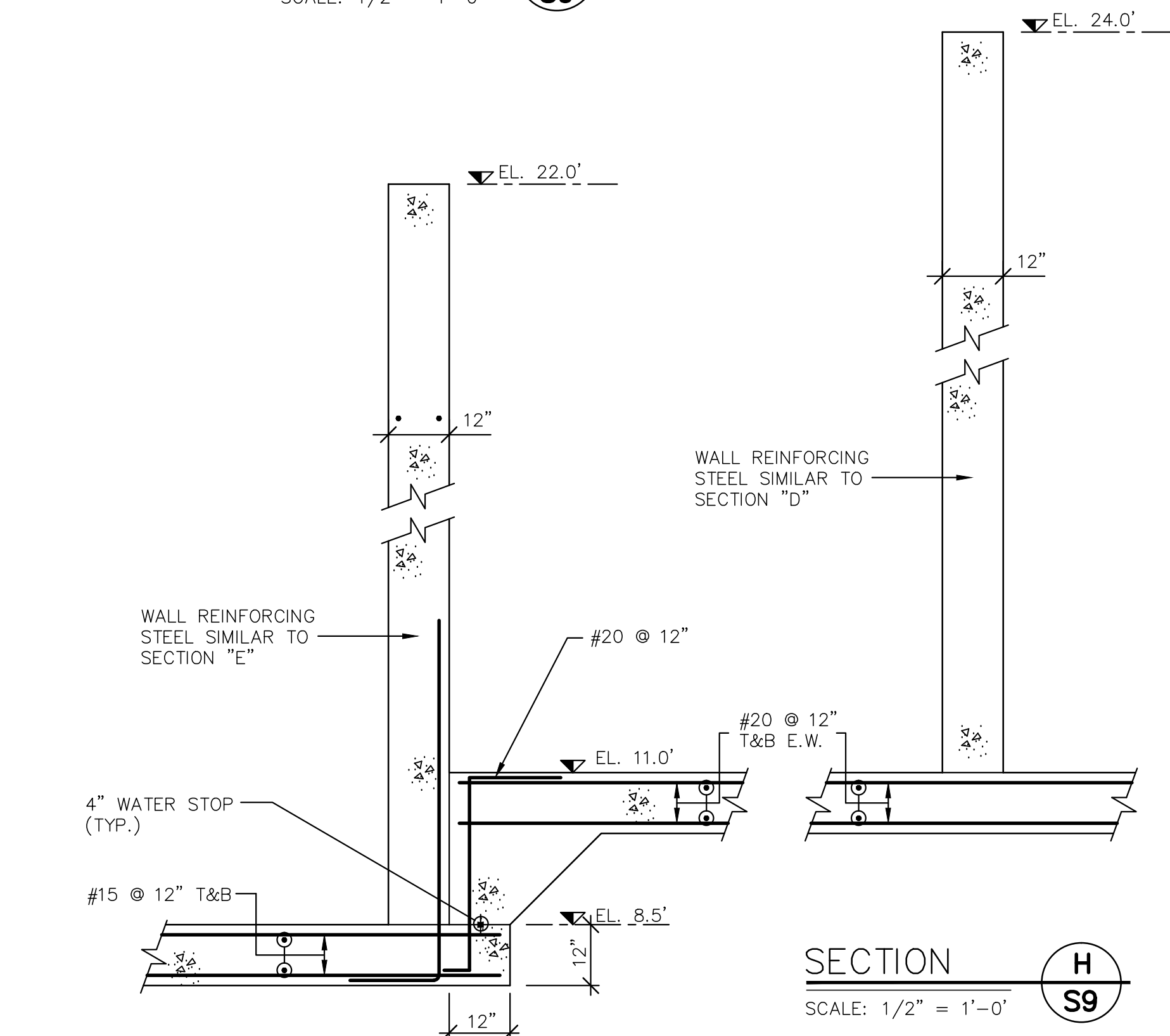
SECTION F  
SCALE: 1/2" = 1'-0"



SECTION L  
SCALE: 1/2" = 1'-0"

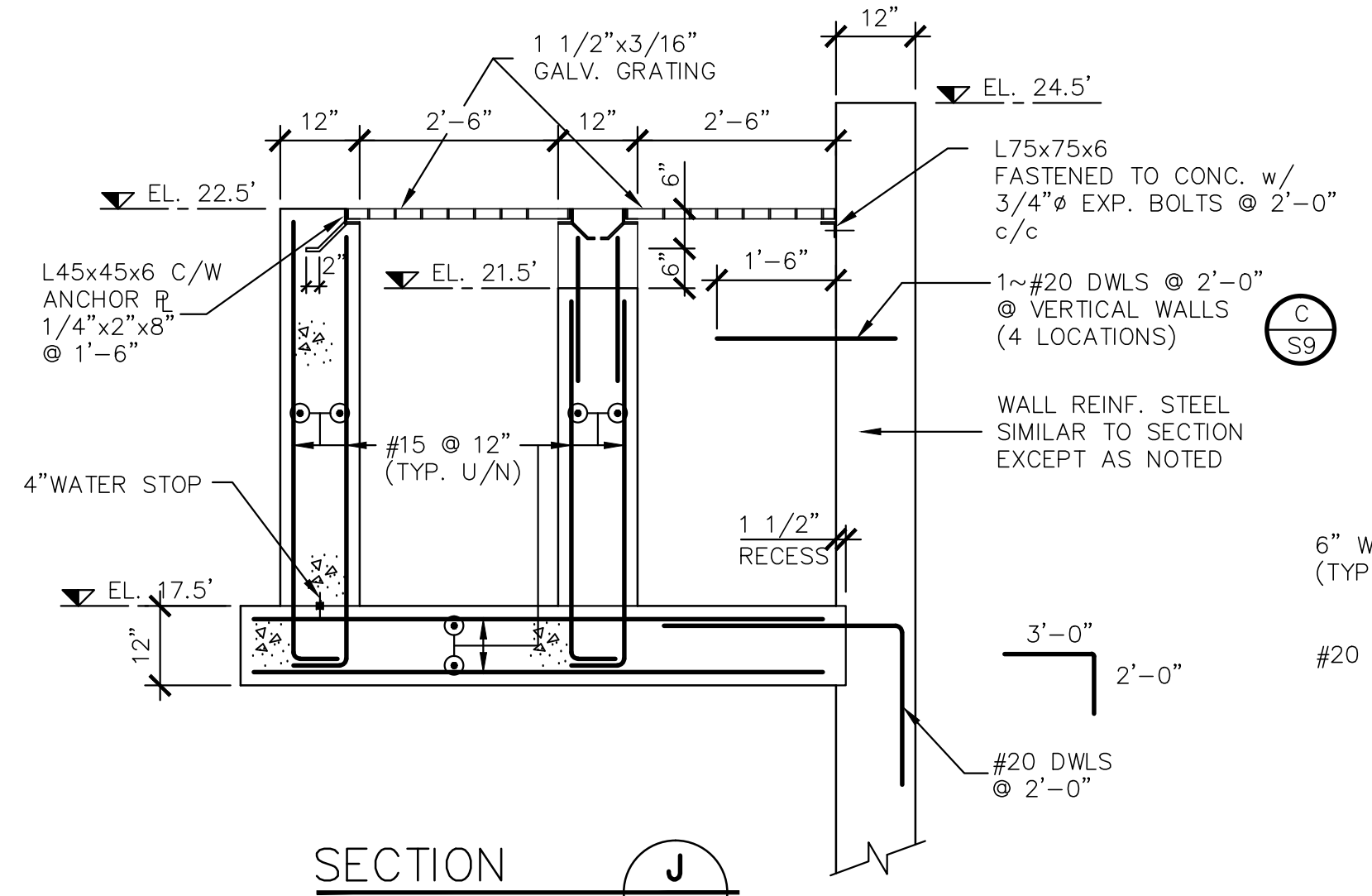


SECTION A  
SCALE: 1/2" = 1'-0"

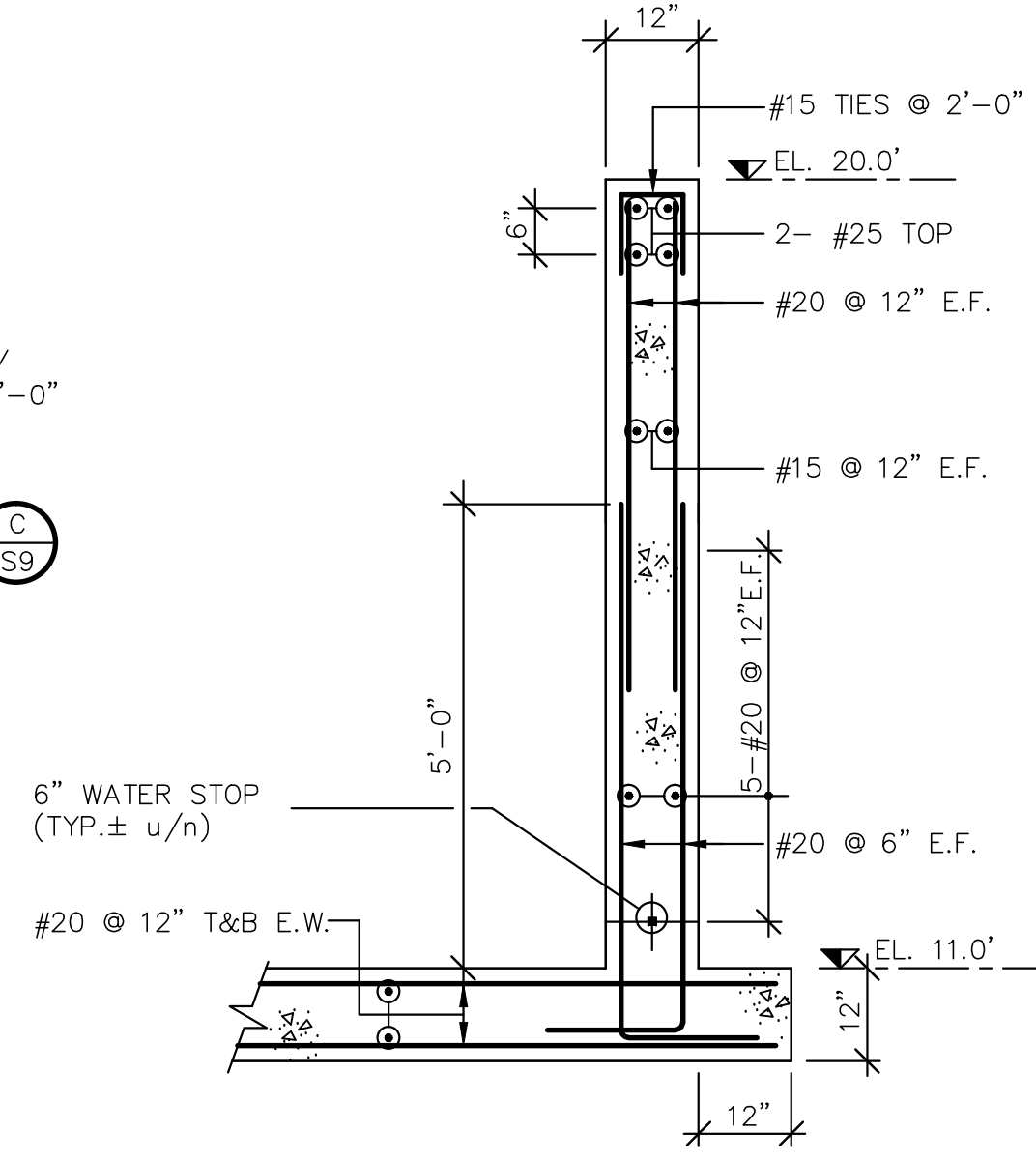


SECTION G  
SCALE: 1/2" = 1'-0"

SECTION H  
SCALE: 1/2" = 1'-0"



SECTION J  
SCALE: 1/2" = 1'-0"



SECTION K  
SCALE: 1/2" = 1'-0"

GENERAL NOTES:  
1. FOR NOTES SEE DRAWING S7.

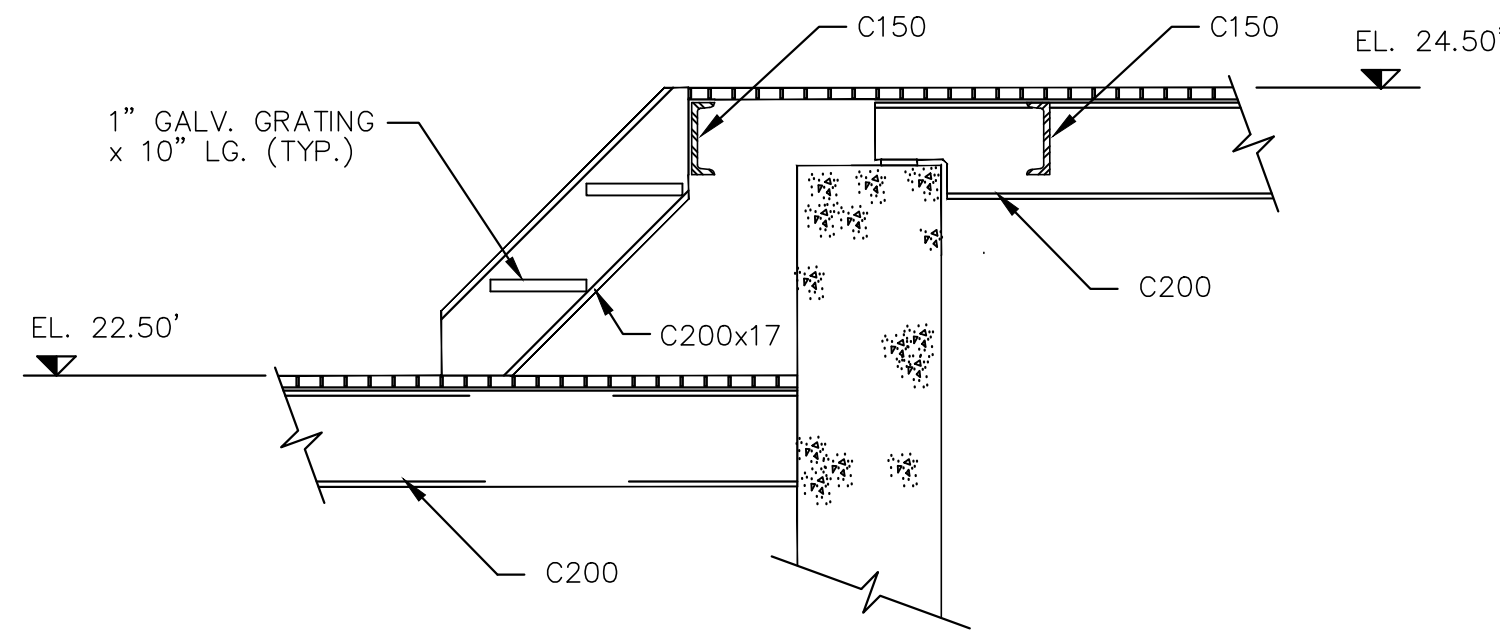
No.	Description	Date	By
02	ISSUED FOR TENDER	APR./02	SWP
01	ISSUED FOR REVIEW	AUG./98	C.T.

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT  
SEWAGE TREATMENT PLANT  
AERATION BASIN  
SECTIONS

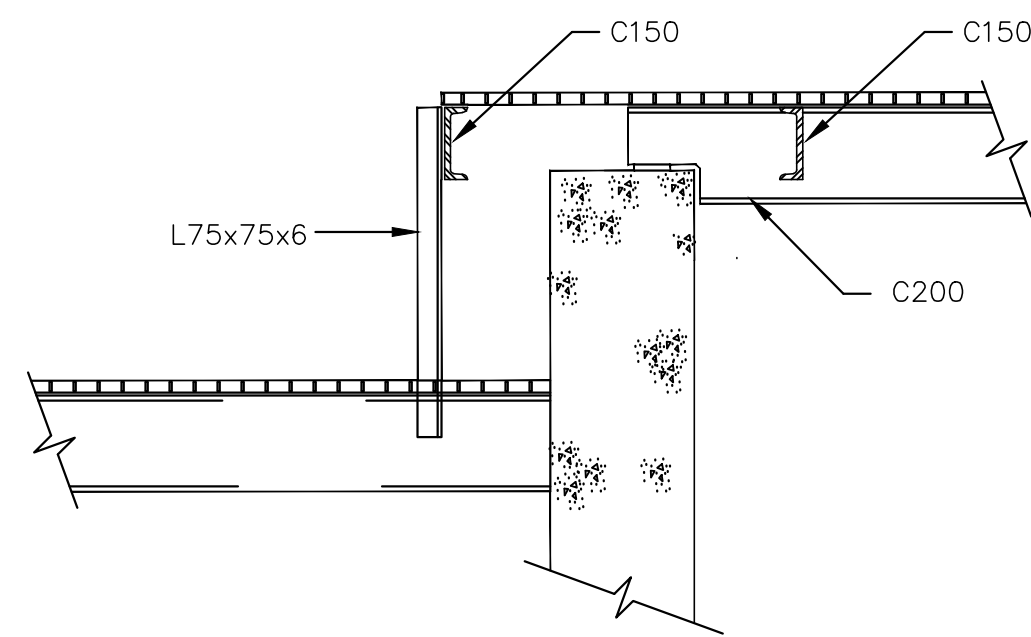
**ABL** Environmental  
Consultants Ltd.

**YMCL**  
Engineering Limited

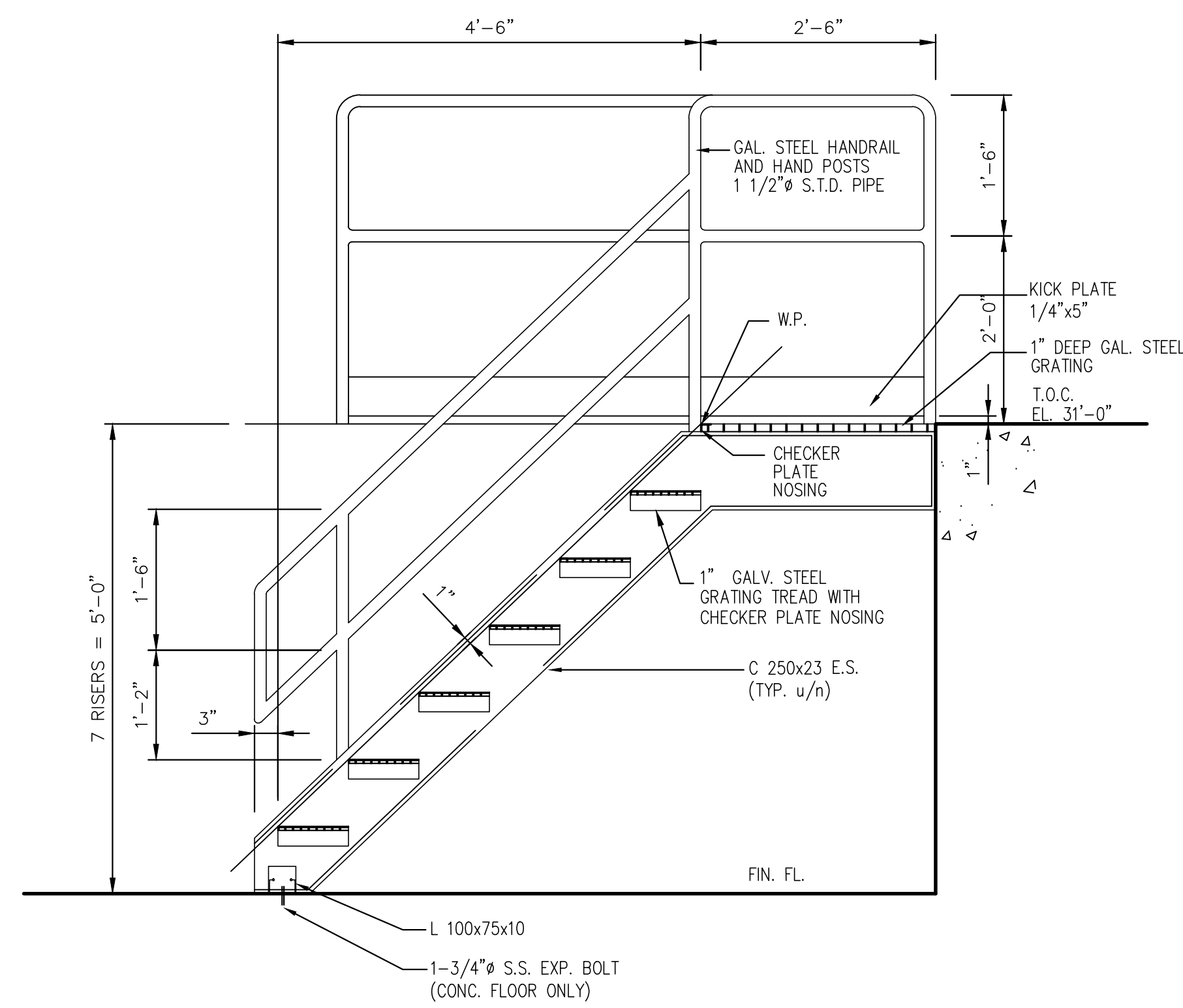
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Designed	CTC	Checked	CTC
Contract No.		Sheet of	X OF X
Drawing No.	S10	Revision	



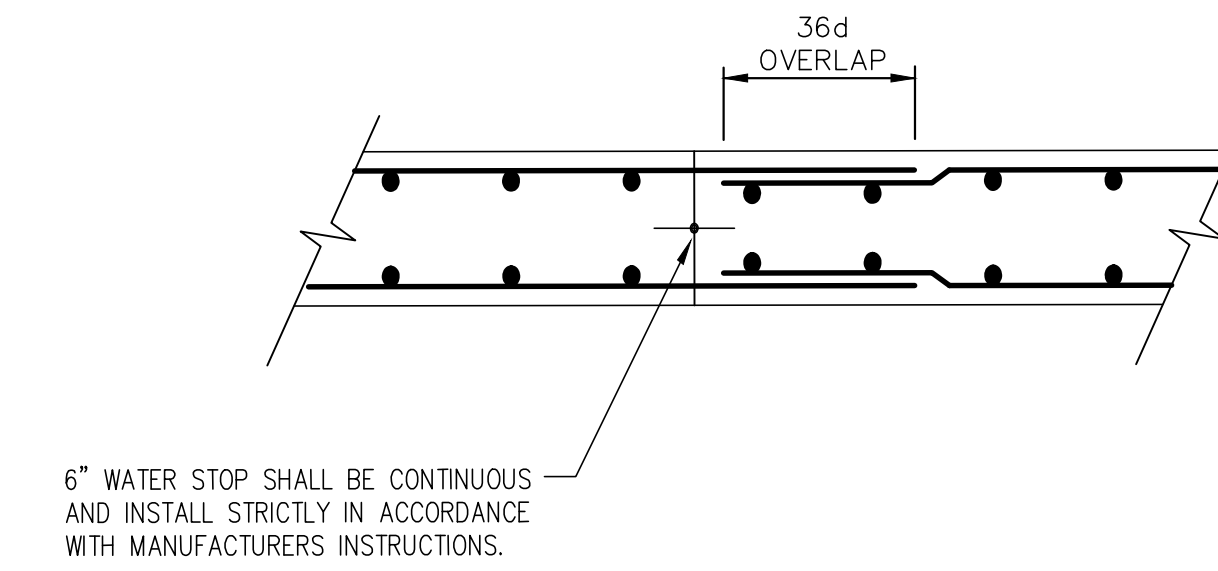
SECTION **L**  
SCALE: 3/4" = 1'-0"  
**S9**



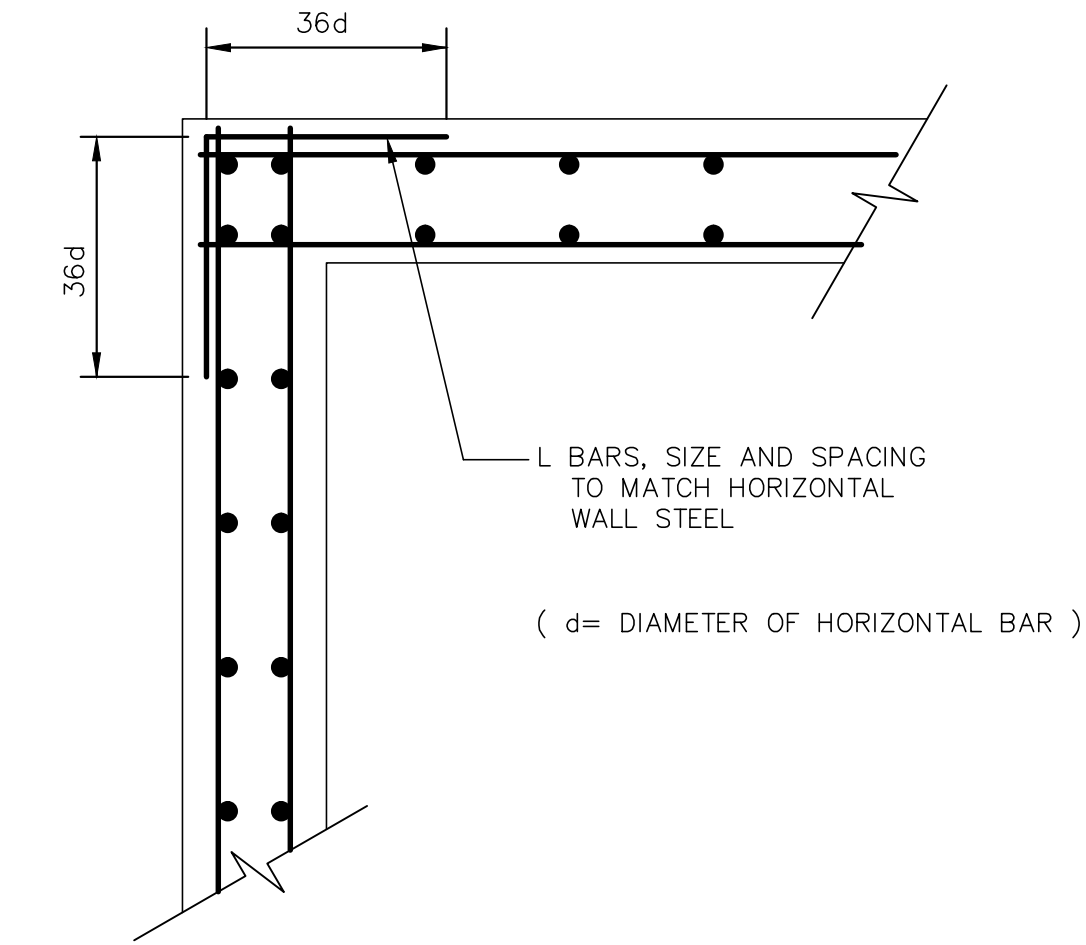
SECTION **M**  
SCALE: 3/4" = 1'-0"  
**S9**



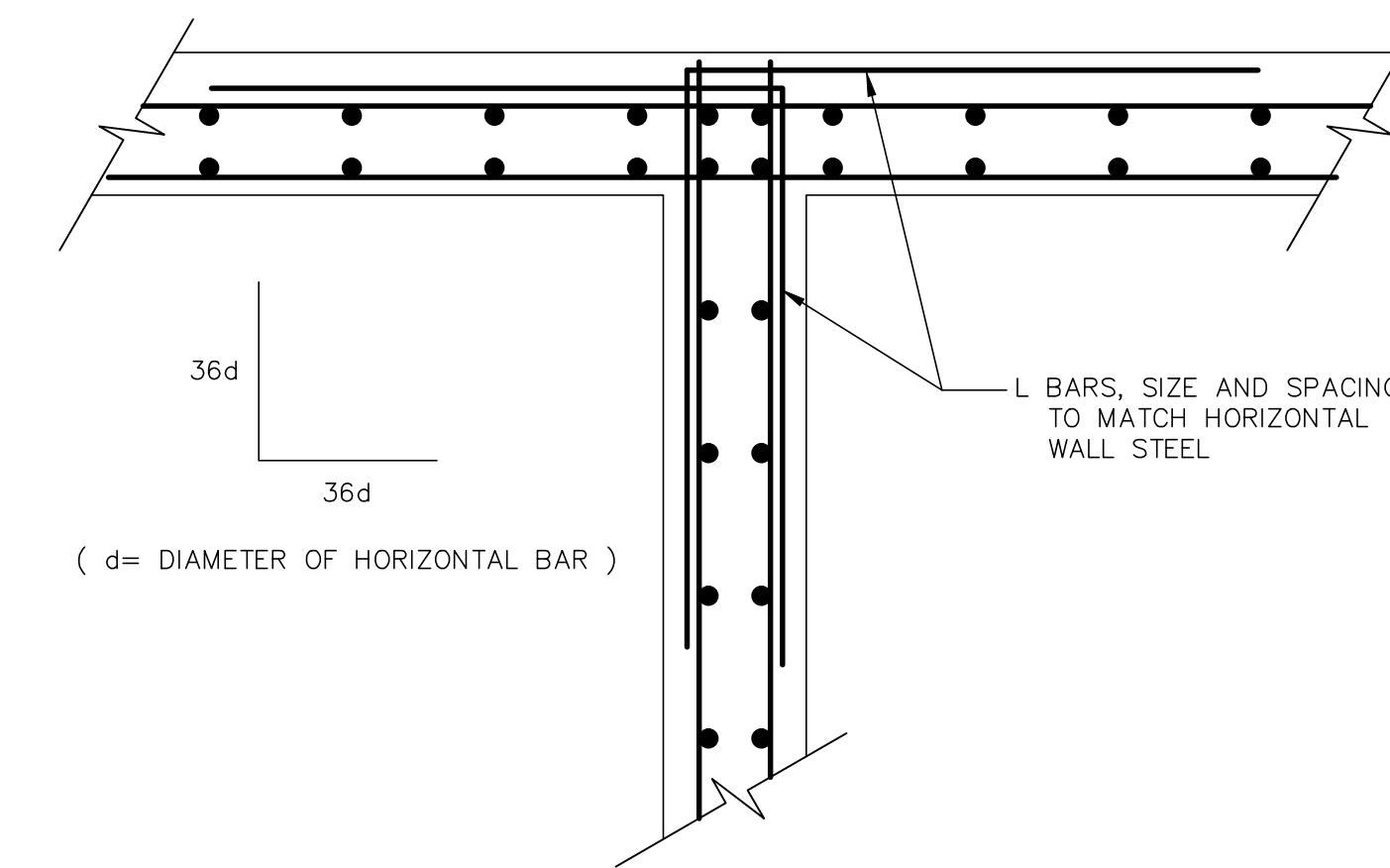
**TYP. STAIR ARRANGEMENT**  
N.T.S.



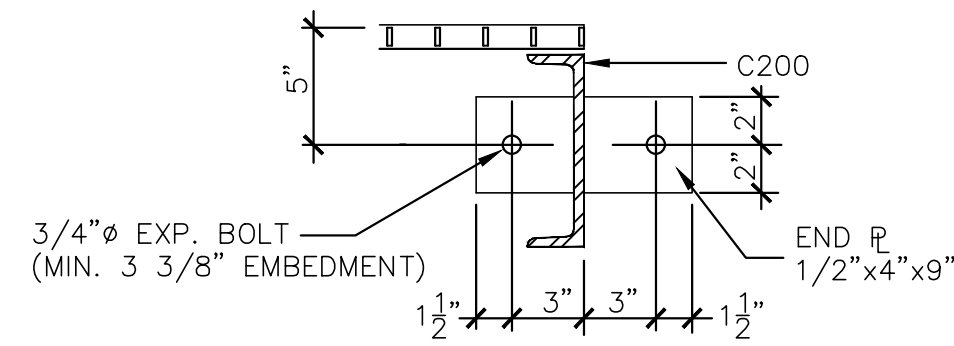
**TYP. CONSTRUCTION JOINT (VERT./HOR.)**  
N.T.S.



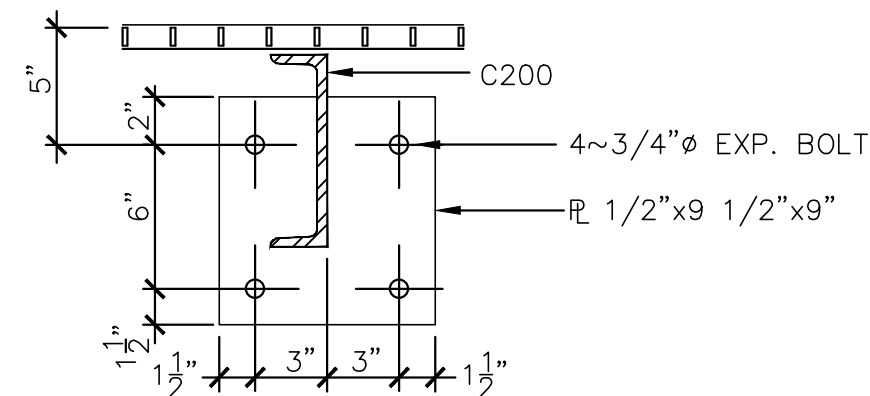
**TYP. CORNER REIN. U/N**  
N.T.S.



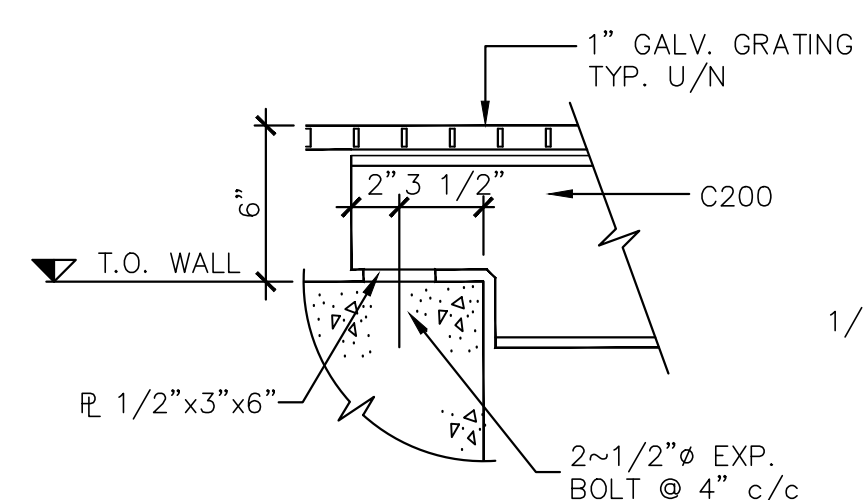
**TYP. INTERSECTION REIN. STEEL U/N**  
N.T.S.



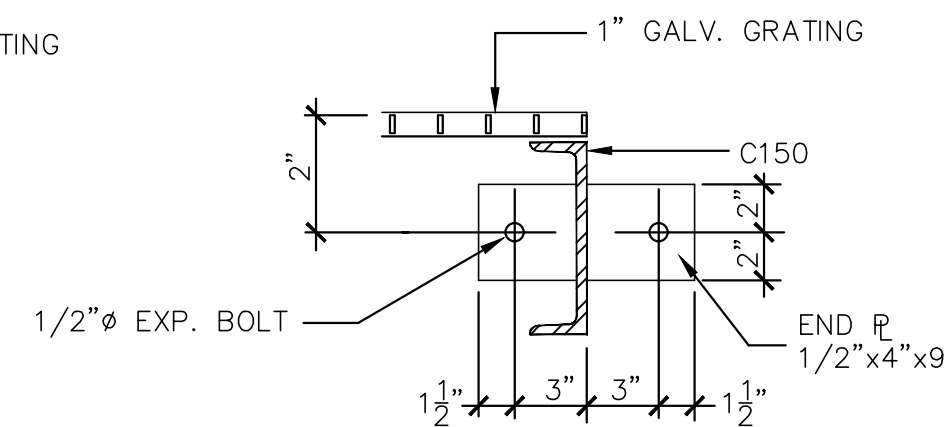
**TYPE 1 CONNECTION**  
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(26 REQ'D)



**TYPE 3 CONNECTION**  
SCALE: 1 1/2" = 1'-0"  
(2 REQ'D)



**TYPE 2 CONNECTION**  
SCALE: 1 1/2" = 1'-0"  
(18 REQ'D)



**TYPE 4 CONNECTION**  
SCALE: 1 1/2" = 1'-0"  
(2 REQ'D)

GENERAL NOTES:  
1. FOR NOTES SEE DRAWING S7.

No.	Description	Date	By
02	ISSUED FOR TENDER	APR./02	SWP
01	ISSUED FOR REVIEW	AUG./98	C.T.

**Revision or Issue**

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
MISCELLANEOUS DETAILS  
AND SECTIONS

**ABL Environmental Consultants Ltd.**

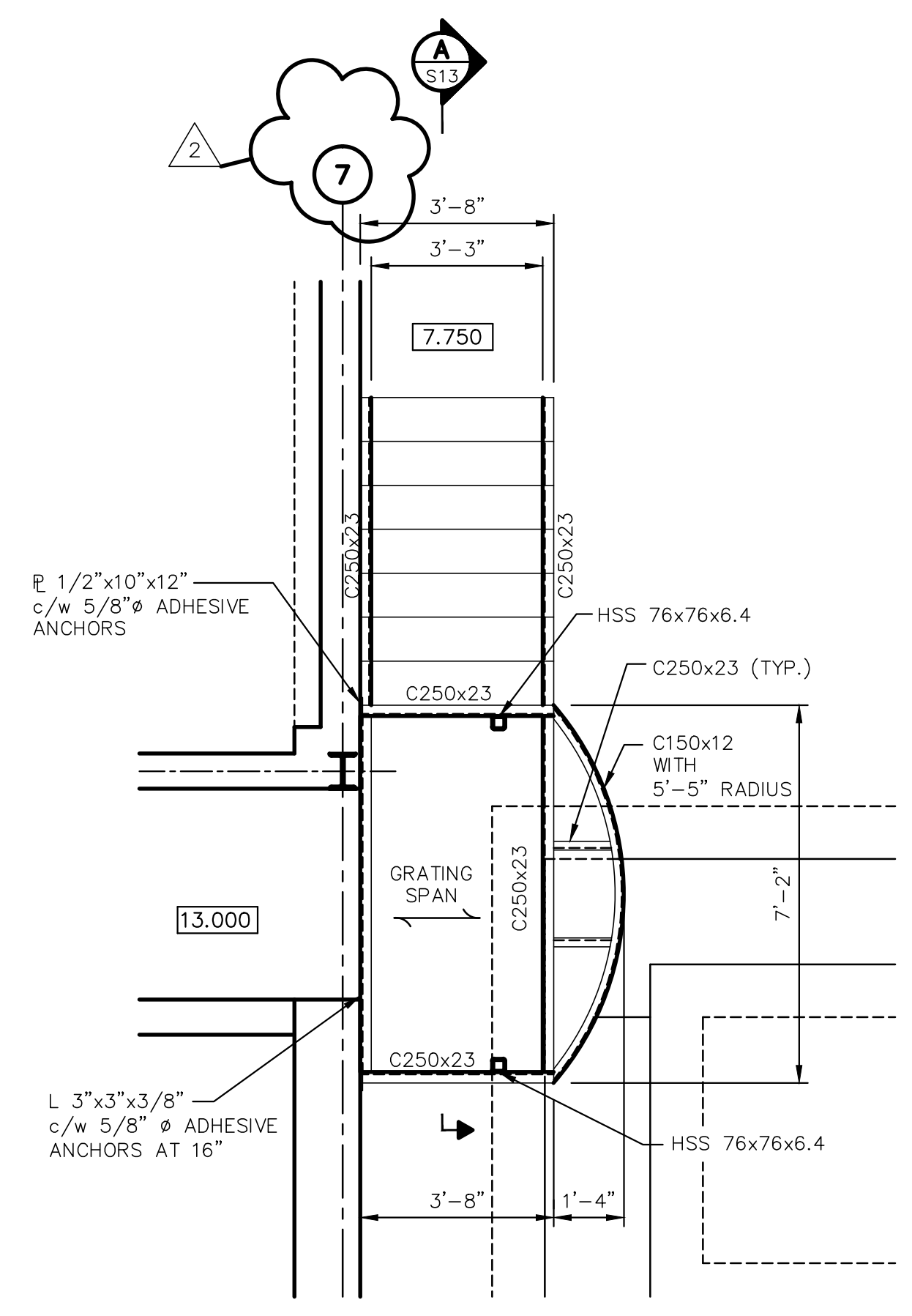
**YMCL Engineering Limited**

Scale AS SHOWN

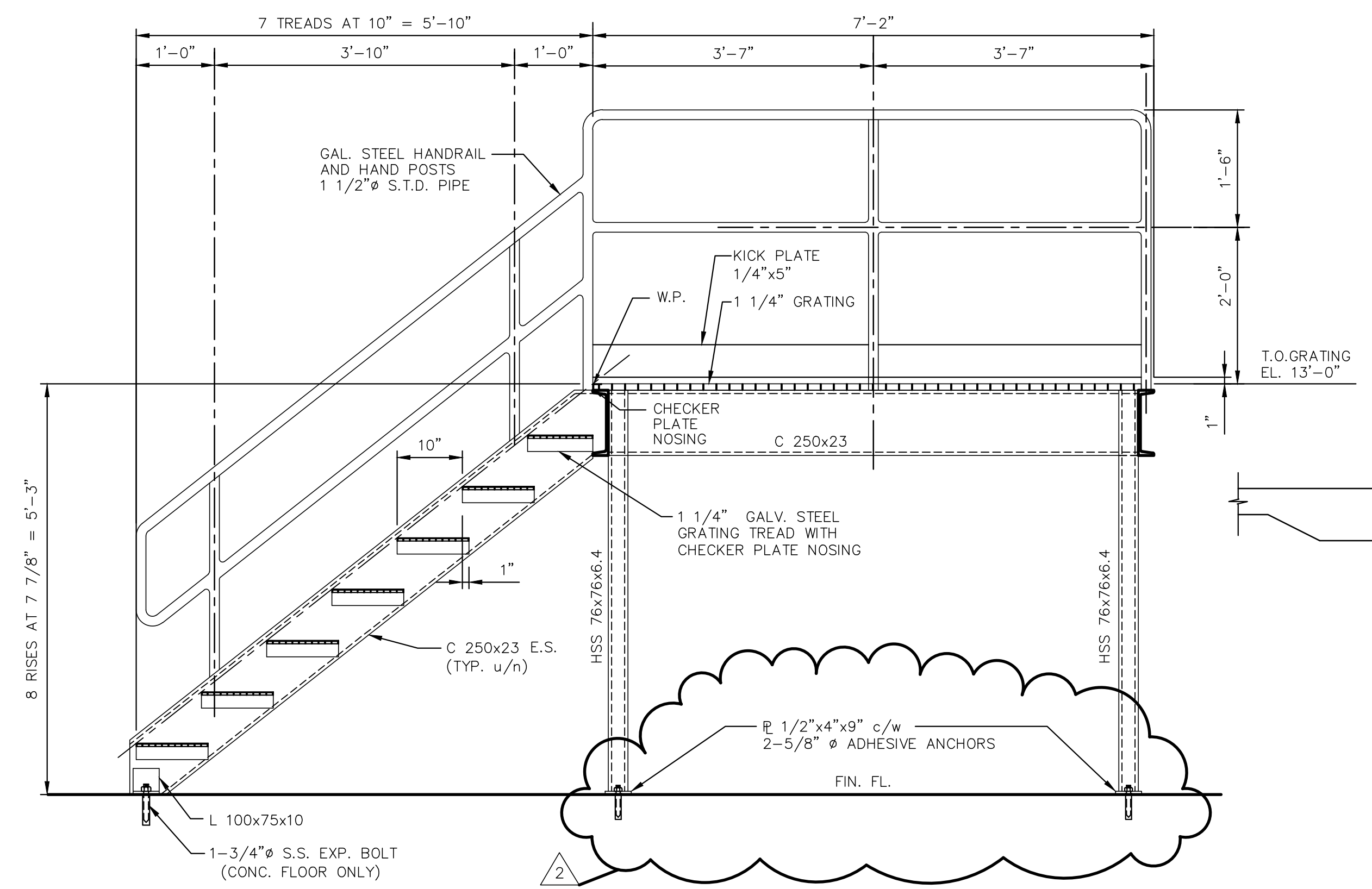
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Designed	CTC	Checked	CTC
Contract No		Sheet of	X OF X
Drawing No	S11	Revision	



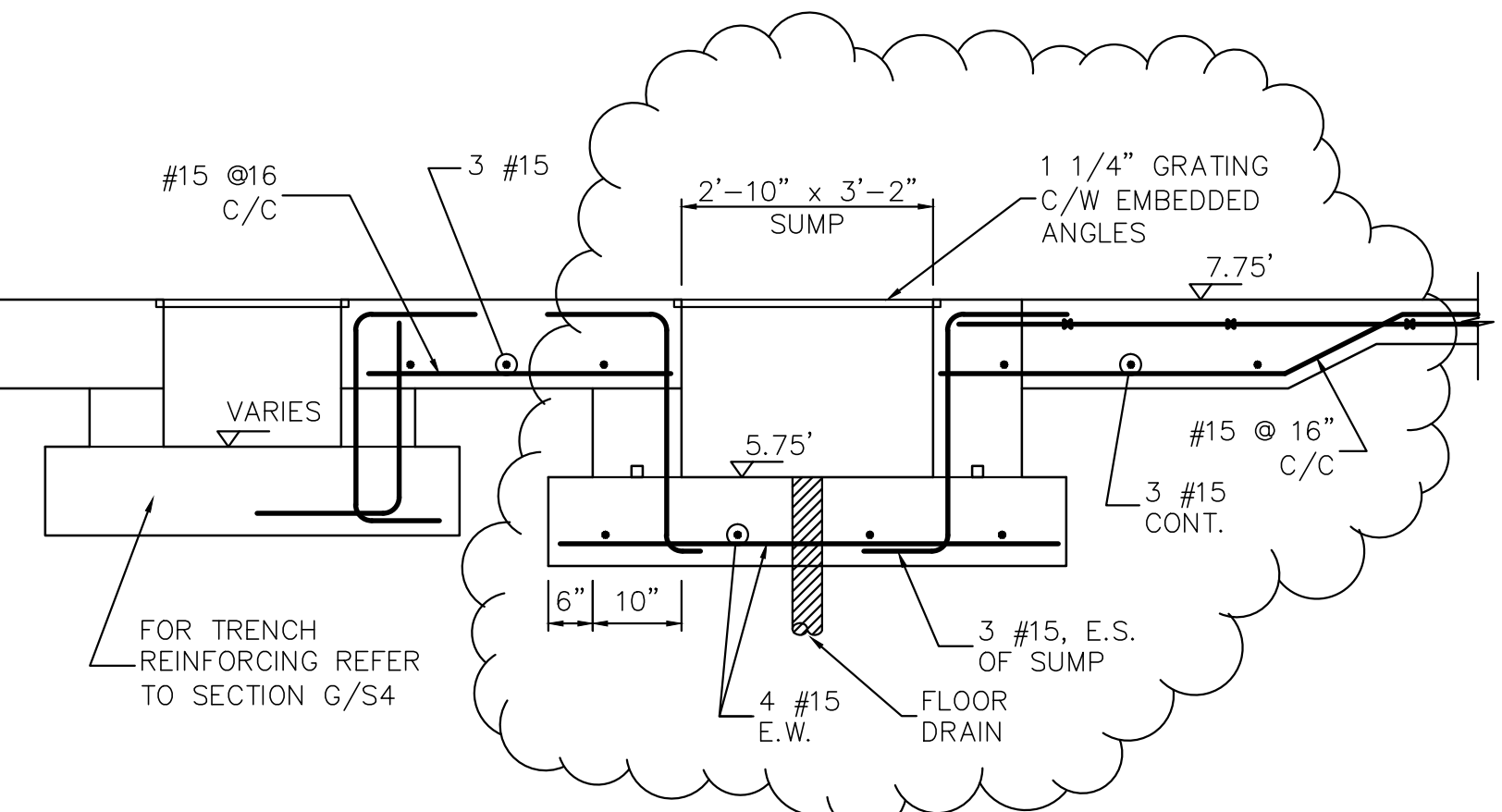
GENERAL NOTES:  
 1. FOR NOTES SEE DRAWING S7.



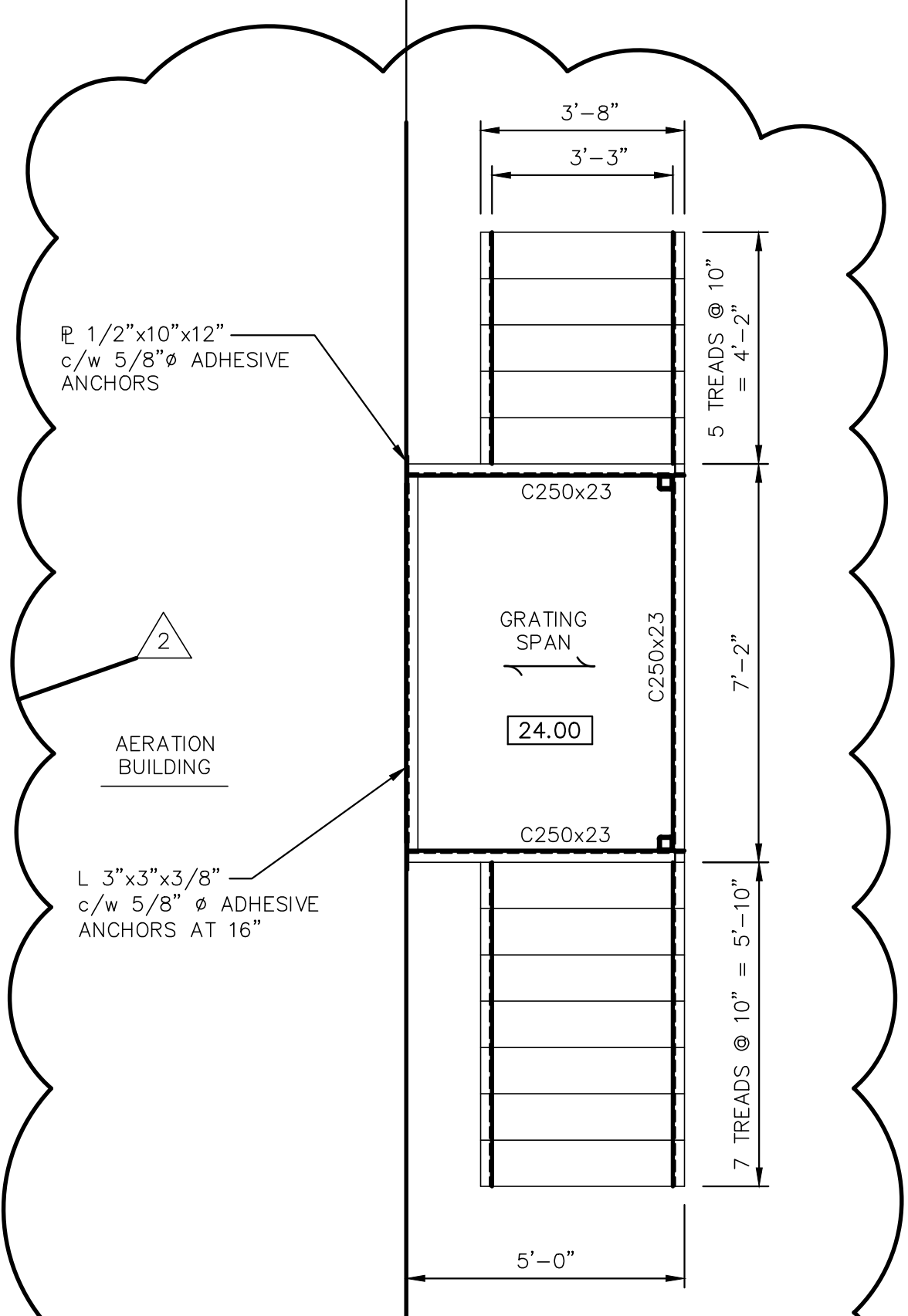
PLAN  
 SCALE: 3/8" = 1'-0"



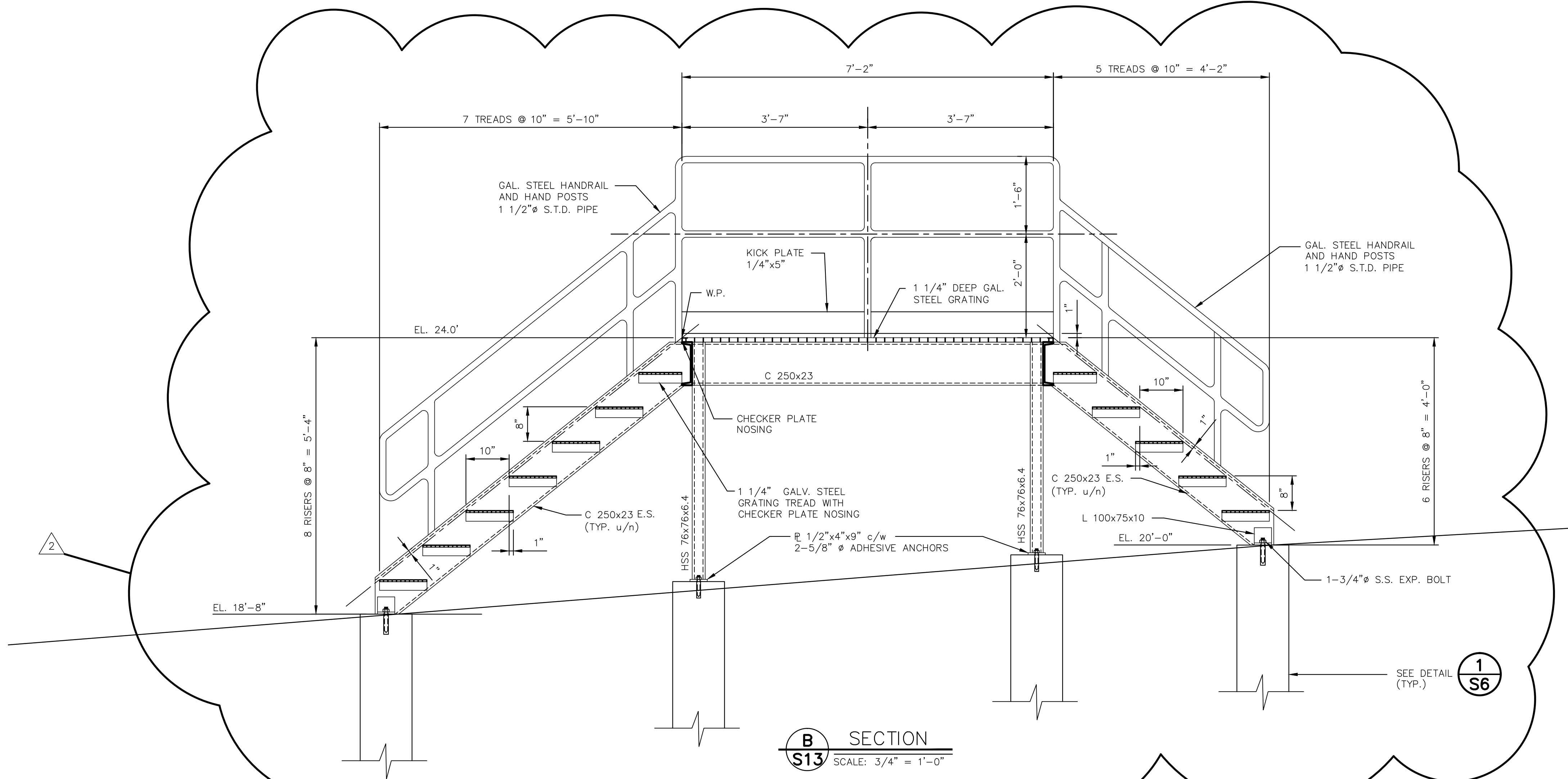
SECTION  
 S13 SCALE: 3/4" = 1'-0"



SECTION  
 S1 SCALE: 1/2" = 1'-0"



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



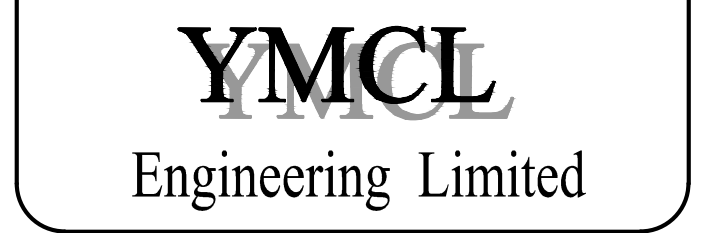
SECTION  
 S13 SCALE: 3/4" = 1'-0"

No.	Description	Date	By
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02	ADDENDUM #1	APR./02	SWP
01	ISSUED FOR TENDER	APR./02	SWP

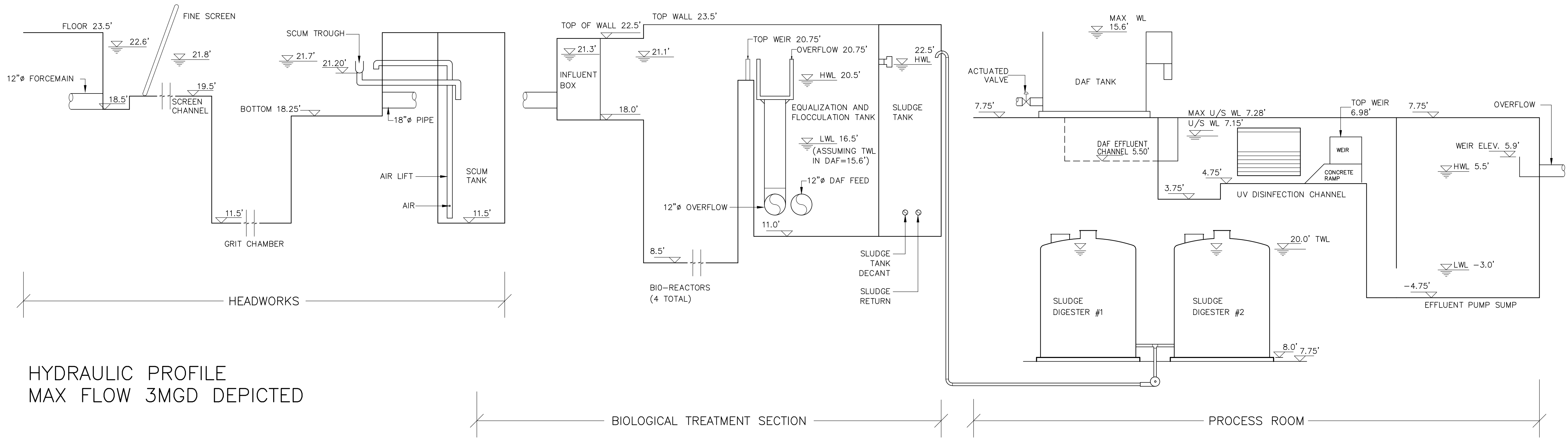
**Revision or Issue**

TOWN OF LUNEBURG  
 MUNICIPAL WASTEWATER  
 COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
 MISCELLANEOUS DETAILS  
 AND SECTIONS



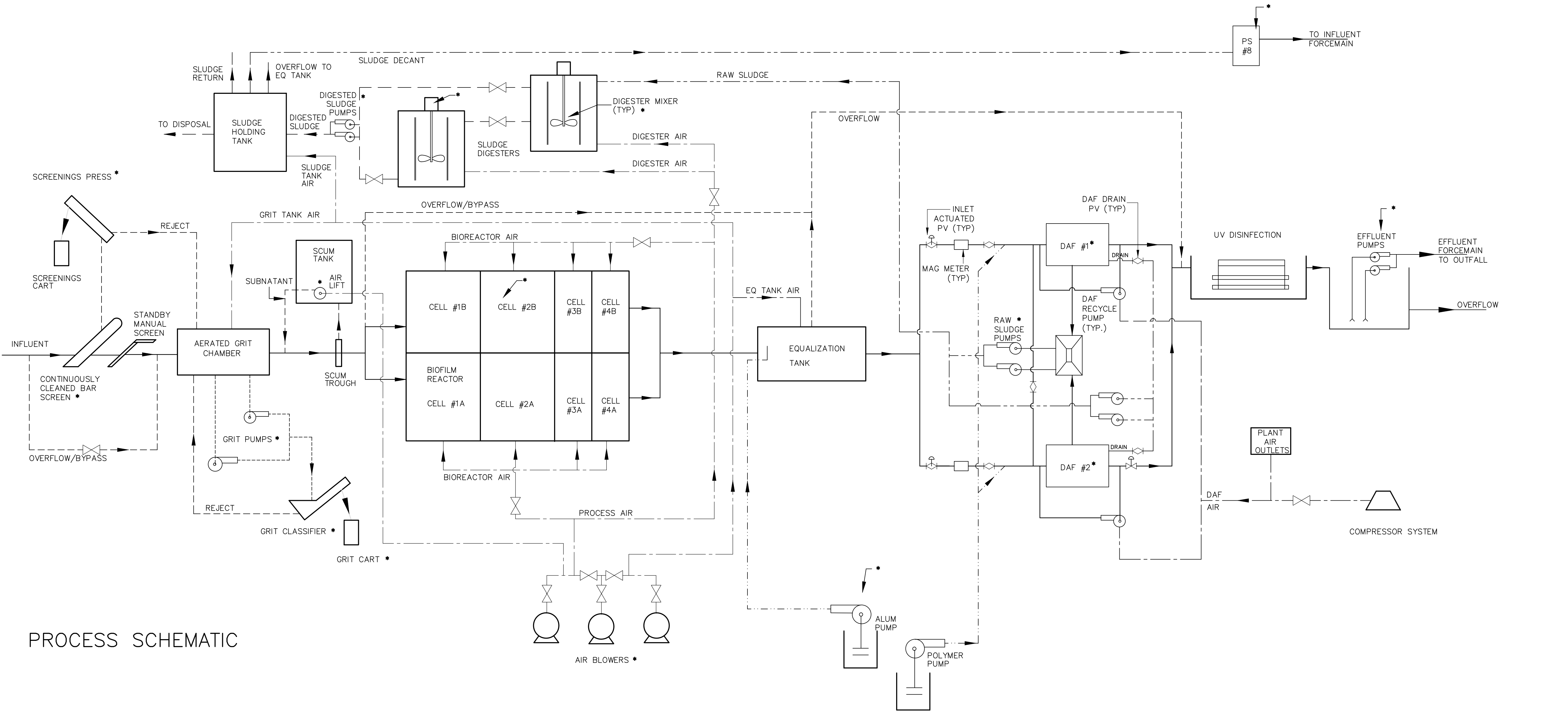
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Date	JUNE 2002	Drawn	SWP
Designed	TAM	Checked	TAM
Contract No		Sheet of	X OF X
Drawing No	S13	Revision	



HYDRAULIC PROFILE  
MAX FLOW 3MGD DEPICTED

- GENERAL NOTES:**
1. DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED.
  2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.
  3. PREPURCHASED EQUIPMENT DENOTED WITH " \* " SYMBOL.
  4. THIS DRAWING IS FOR INDICATION AND INFORMATION ONLY. FOR SPECIFIC PRE-PURCHASE REQUIREMENTS, REFER TO THE SPECIFICATIONS.

- LEGEND**
- WELD
  - VIC COUPLING
  - FLANGED
  - UNION
  - PLANT AIR OUTLET
  - BV - BALL VALVE
  - BFV - BUTTERFLY VALVE
  - GV - GATE VALVE
  - GLV - GLOBE VALVE
  - PV - PLUG VALVE
  - PNV - PINCH VALVE
  - CV - CHECK VALVE
  - BV - BALL VALVE
  - KGV - KNIFE GATE VALVE
  - VC - VICTAULIC COUPLING MAINTENANCE JOINT



PROCESS SCHEMATIC

No.	Description	Date	By
04	RE-ISSUED FOR TENDER	APR/02	JH
03	RE-ISSUED FOR DAF PRE-PURCHASE	JAN/02	JH
02	ISSUED FOR EQUIPMENT PRE-PURCHASE	OCT 3/01	JH
01	ISSUED FOR REVIEW	DEC/98	JCL

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

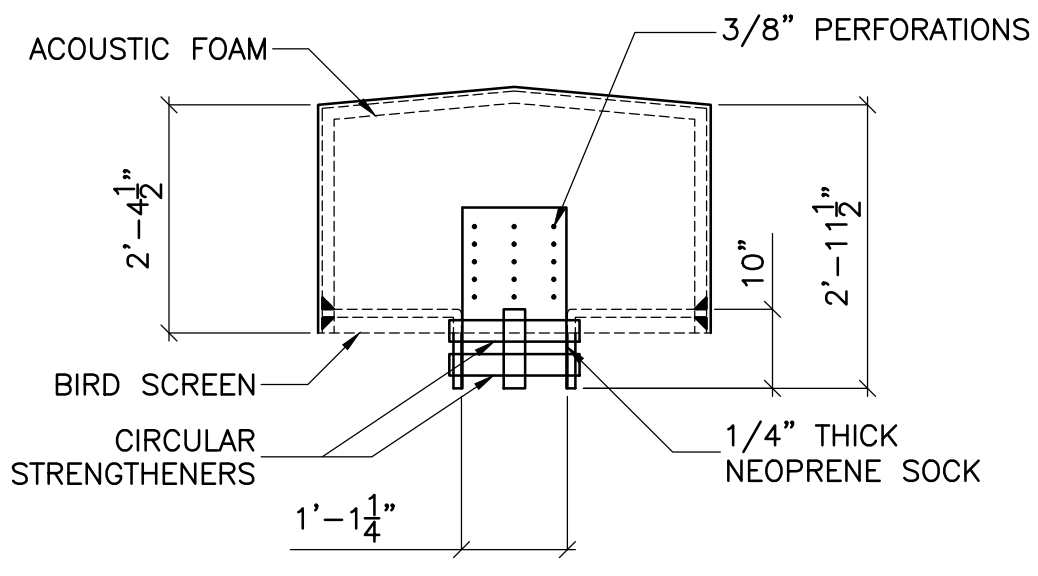
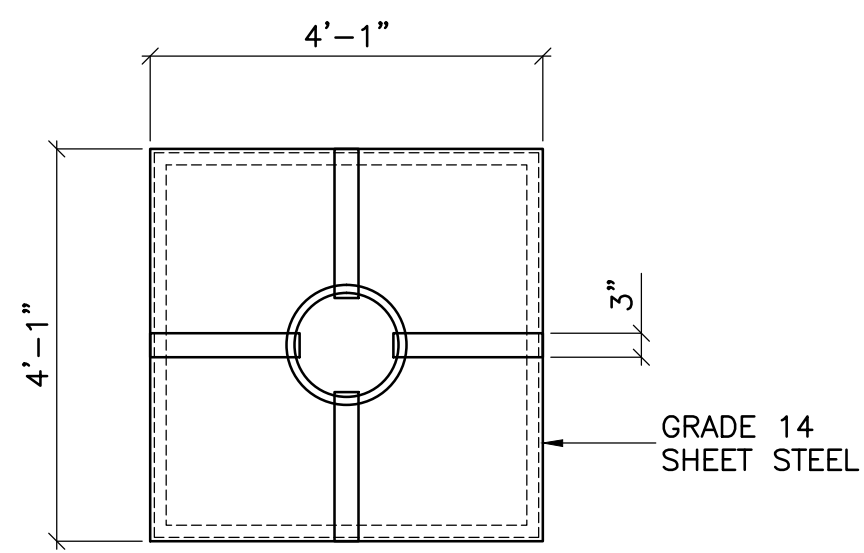
SEWAGE TREATMENT PLANT  
HYDRAULIC PROFILE  
PROCESS SCHEMATIC



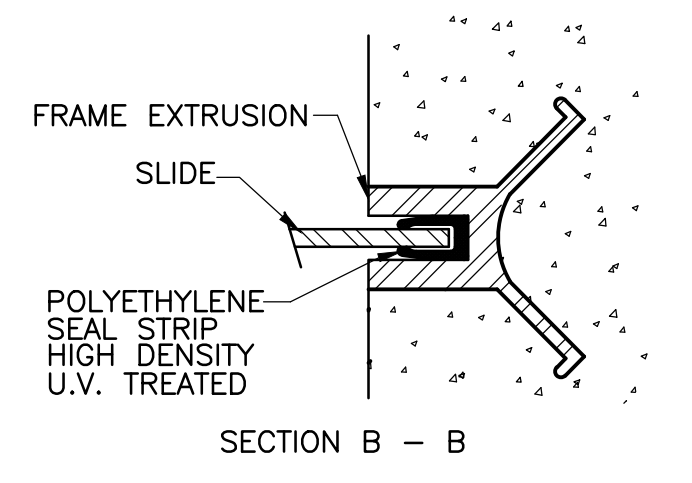
Scale NOT TO SCALE

Date	OCT 2001	Drawn	GP
Designed	JCL	Checked	TA
Contract No.	98001	Sheet of	21 / 43
Drawing No.	P1	Revision	3

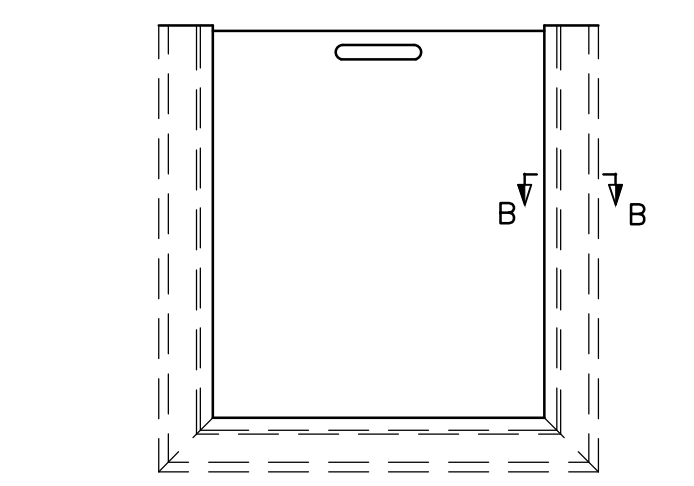
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15/O4/2002 B-41 AM  
ABL Environmental Consultants Ltd.



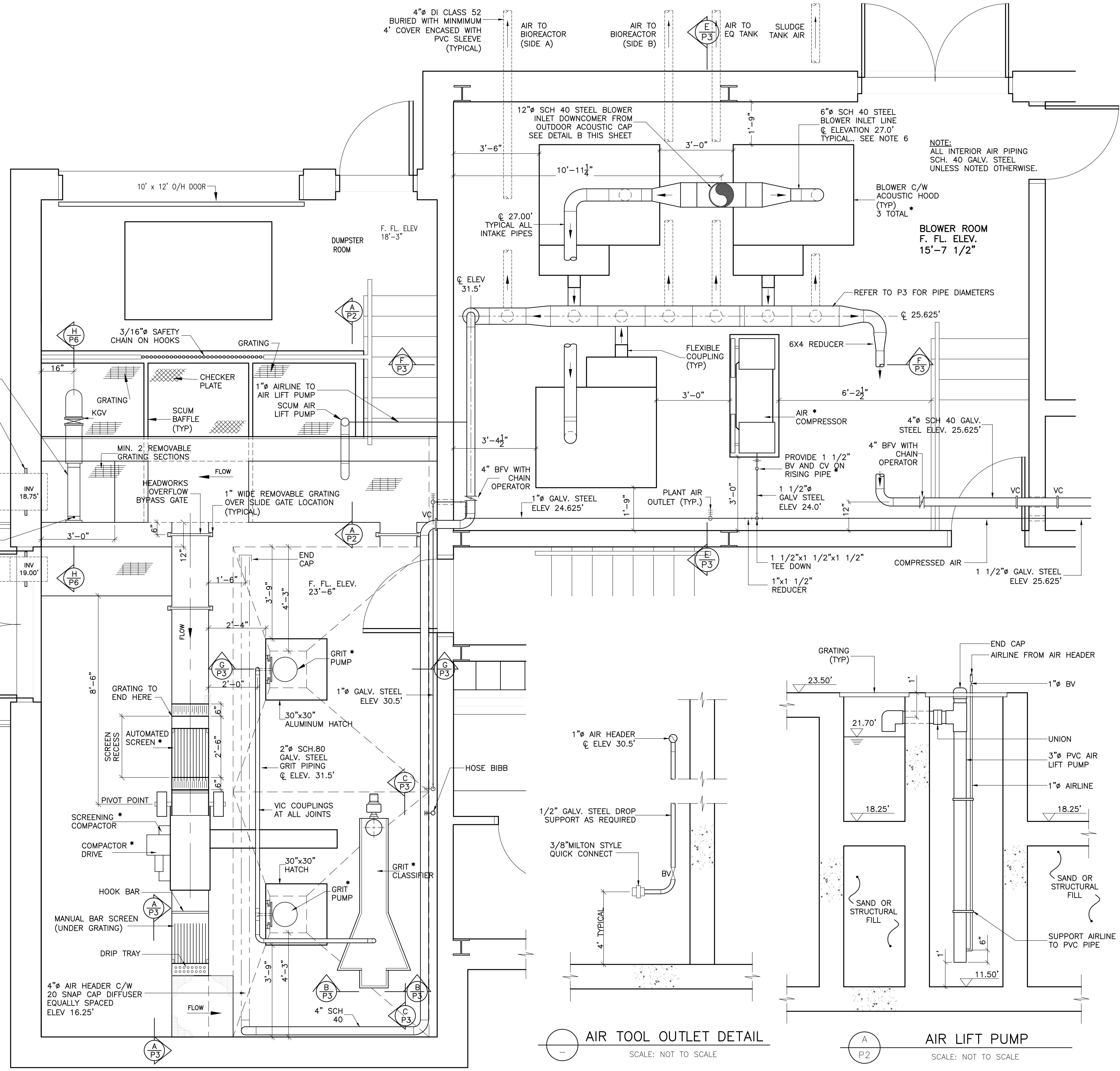
**B** **OUTDOOR ACOUSTIC CAP**  
SCALE: NOT TO SCALE



SECTION B - B



**SLIDE GATE**  
SCALE: NOT TO SCALE



**AIR TOOL OUTLET DETAIL**  
SCALE: NOT TO SCALE

**AIR LIFT PUMP**  
SCALE: NOT TO SCALE

- GENERAL NOTES:**
- DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED.
  - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.
  - PIPE ELEVATION ARE TO CENTRELINE UNLESS OTHERWISE NOTED.
  - WHEN PIPE CONFLICTS OCCUR THE LARGER DIAMETER PIPE WILL HAVE ROUTING PRIORITY.
  - \* - INDICATES PRE-PURCHASED EQUIPMENT.
  - INSULATE ALL INTAKE PIPE WITH MINIMUM 1" THICK INSULATED WRAP.

- LEGEND**
- WELD
  - VIC COUPLING
  - FLANGED
  - UNION
  - PLANT AIR OUTLET

- BV - BALL VALVE
- BFV - BUTTERFLY VALVE
- GV - GATE VALVE
- GLV - GLOBE VALVE
- PV - PLUG VALVE
- PNV - PINCH VALVE
- CV - CHECK VALVE
- BV - BALL VALVE
- KGV - KNIFE GATE VALVE
- VC - VICTAULIC COUPLING MAINTENANCE JOINT

No.	Description	Date	By
04	RE-ISSUED FOR TENDER	APR/02	JH
03	RE-ISSUED FOR DAF PRE-PURCHASE	JAN/02	JH
02	ISSUED FOR EQUIPMENT PRE-PURCHASE	OCT 3/01	JH
01	ISSUED FOR REVIEW	DEC./98	TA

**Revision or Issue**

**TOWN OF LUNENBURG**  
**MUNICIPAL WASTEWATER COLLECTION AND TREATMENT**

**SEWAGE TREATMENT PLANT HEADWORKS / BLOWER ROOM PLAN**



Scale 1/2" = 1'-0"

Date	Drawn
OCT 2001	GP
Designed	JCL
Checked	TA
Contract No. 98001	Sheet of 22/43
Drawing No. P2	Revision

**GENERAL NOTES:**

- DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.
- \* - INDICATES PRE-PURCHASED EQUIPMENT.

**LEGEND**

- WELD
- VIC COUPLING
- FLANGED
- UNION
- PLANT AIR OUTLET
- LIMIT OF GENERAL CONTRACTOR.

- BV - BALL VALVE
- BFV - BUTTERFLY VALVE
- GV - GATE VALVE
- GLV - GLOBE VALVE
- PV - PLUG VALVE
- PNV - PINCH VALVE
- CV - CHECK VALVE
- BV - BALL VALVE
- KGV - KNIFE GATE VALVE
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No.	Description	Date	By
03	RE-ISSUED FOR TENDER	APR/02	JH
02	ISSUED FOR EQUIPMENT PRE-PURCHASE	OCT 3/01	TA
01	ISSUED FOR REVIEW	DEC./98	TA

**Revision or Issue**

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
HEADWORKS / BLOWER ROOM  
DETAILS

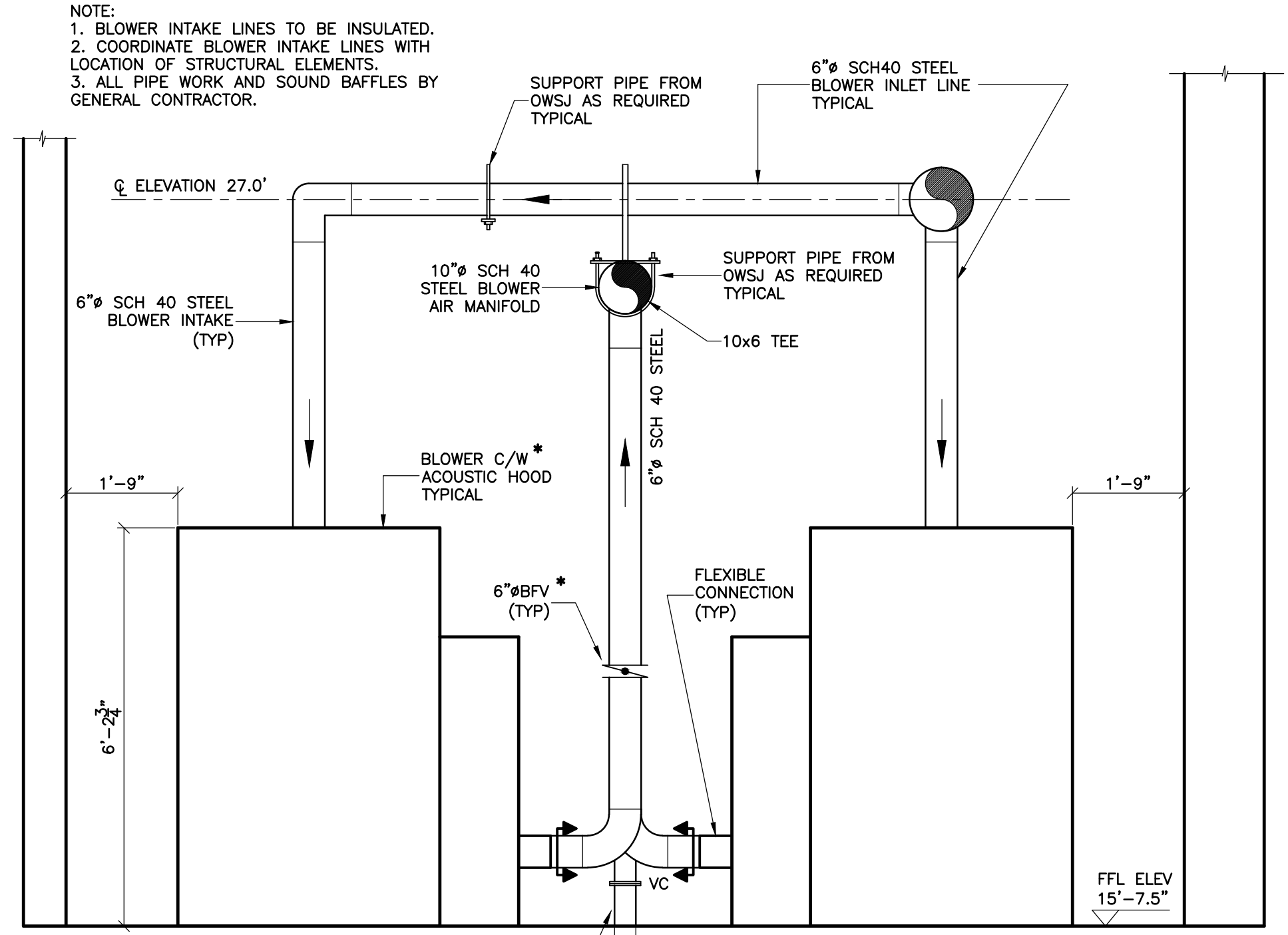
**ABL Environmental Consultants Ltd.**

102 PORTLAND STREET, P.O. BOX 501  
DARTMOUTH, NS, B2Y 3Y8 TEL: (902)468-0050  
FAX: (902)468-4399

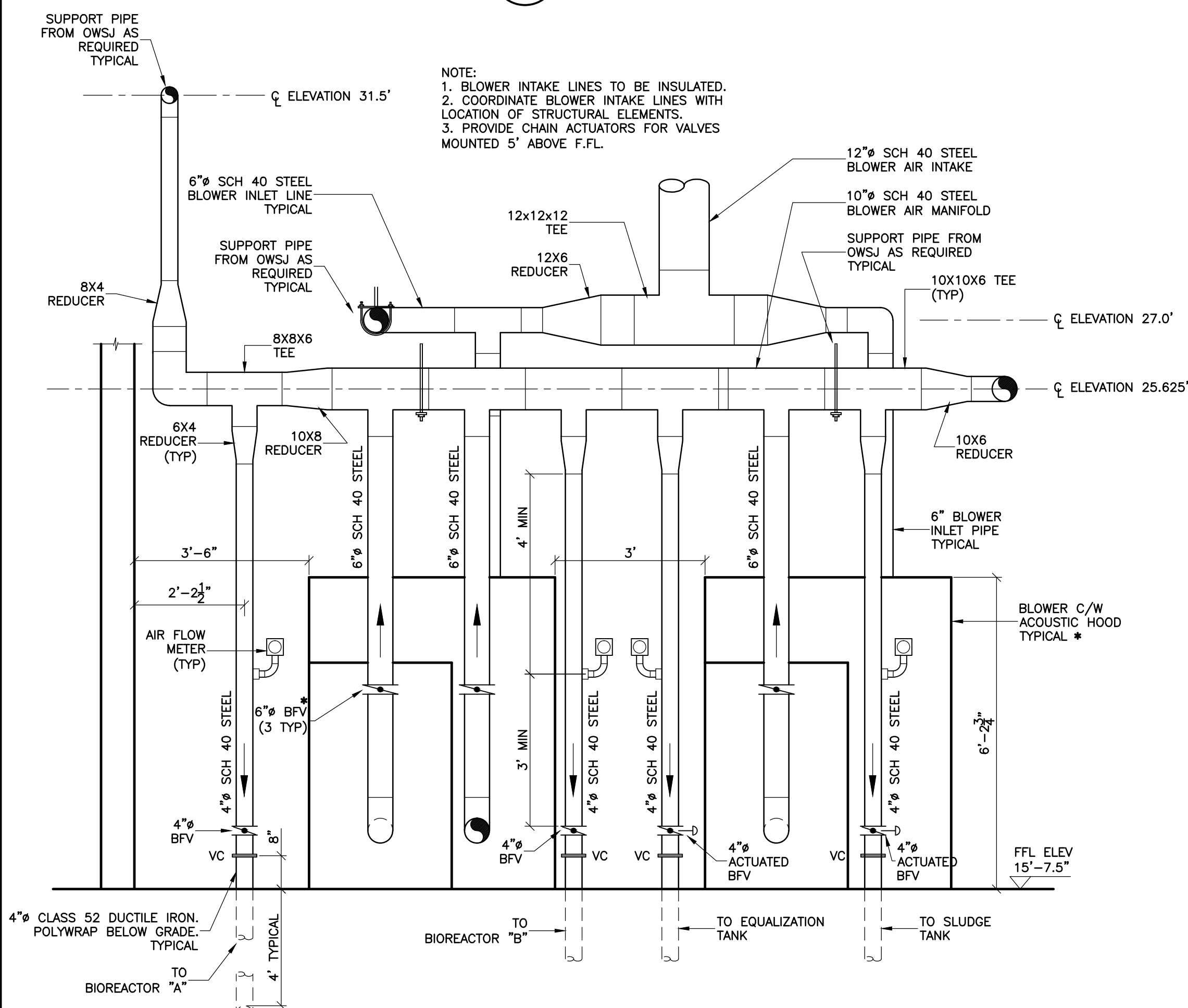
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Date	Drawn
OCT 2001	GP
Designed	Checked
GFB	TA
Contract No	Approved
98001	JCL
Drawing No	Sheet of
	23/43
	Revision

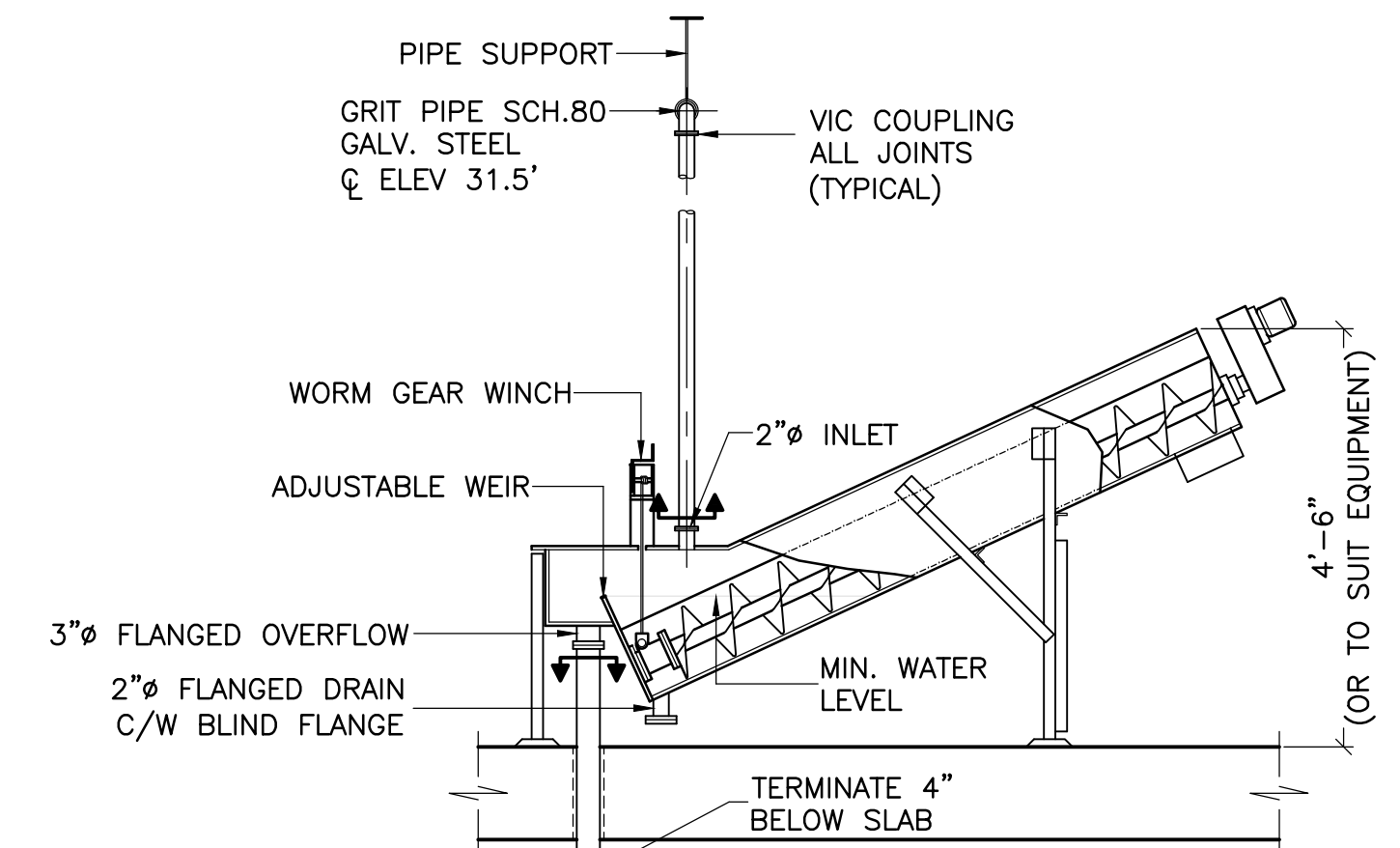
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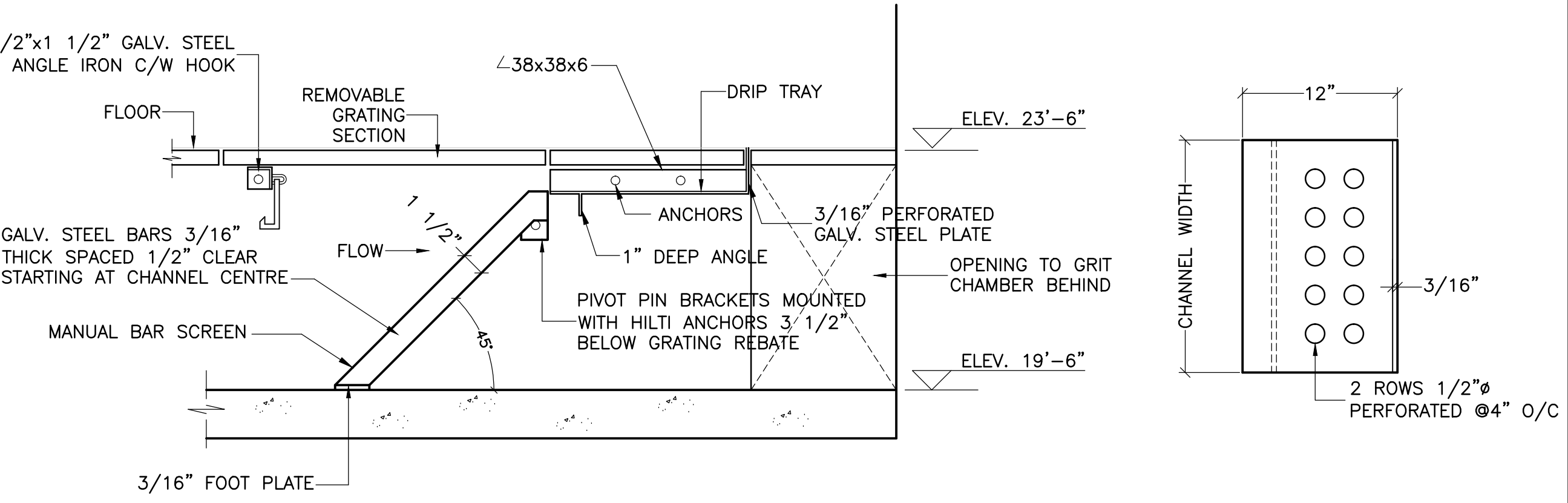
**E BLOWER AIR MANIFOLD**  
P2 N.T.S.



**F BLOWER AIR MANIFOLD**  
P2 N.T.S.

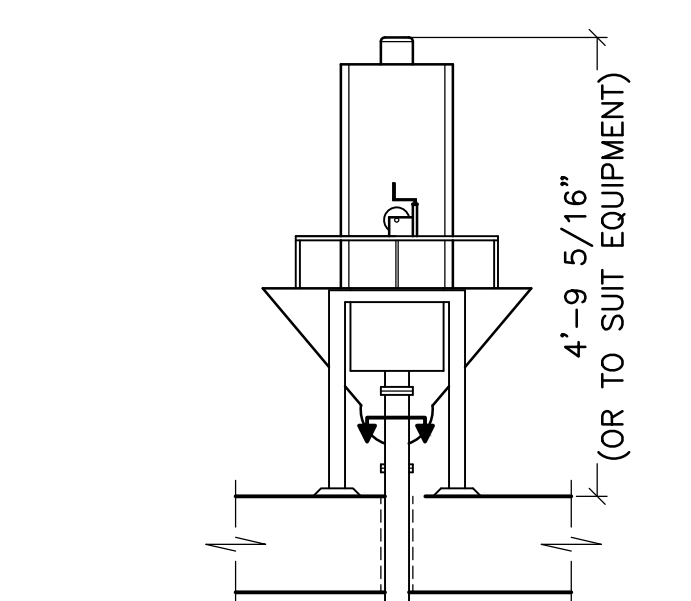


**C GRIT CLASSIFIER - SECTION\***  
P2 N.T.S.

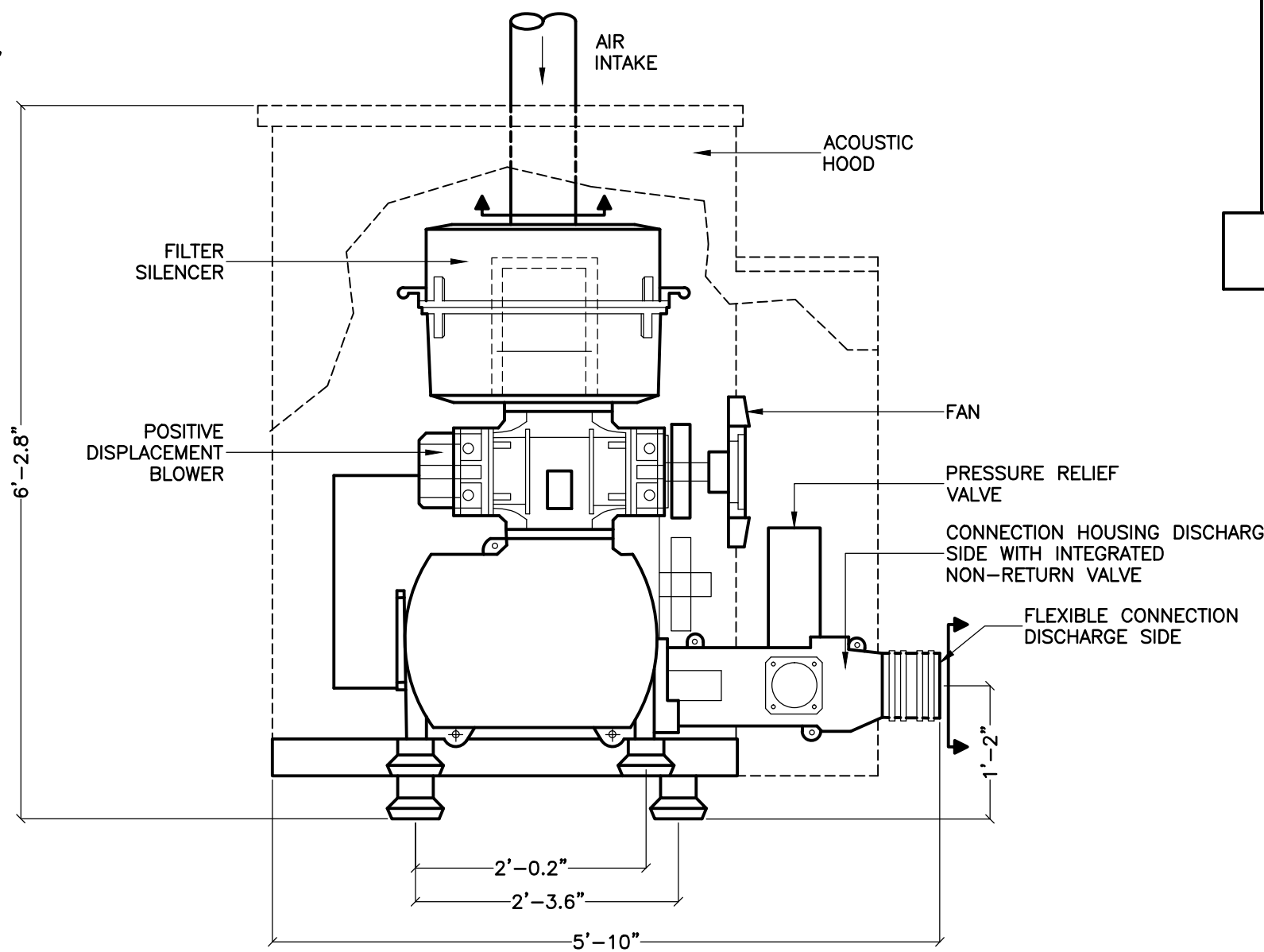


**A BAR SCREEN - SECTION**  
P2 SCALE: NOT TO SCALE

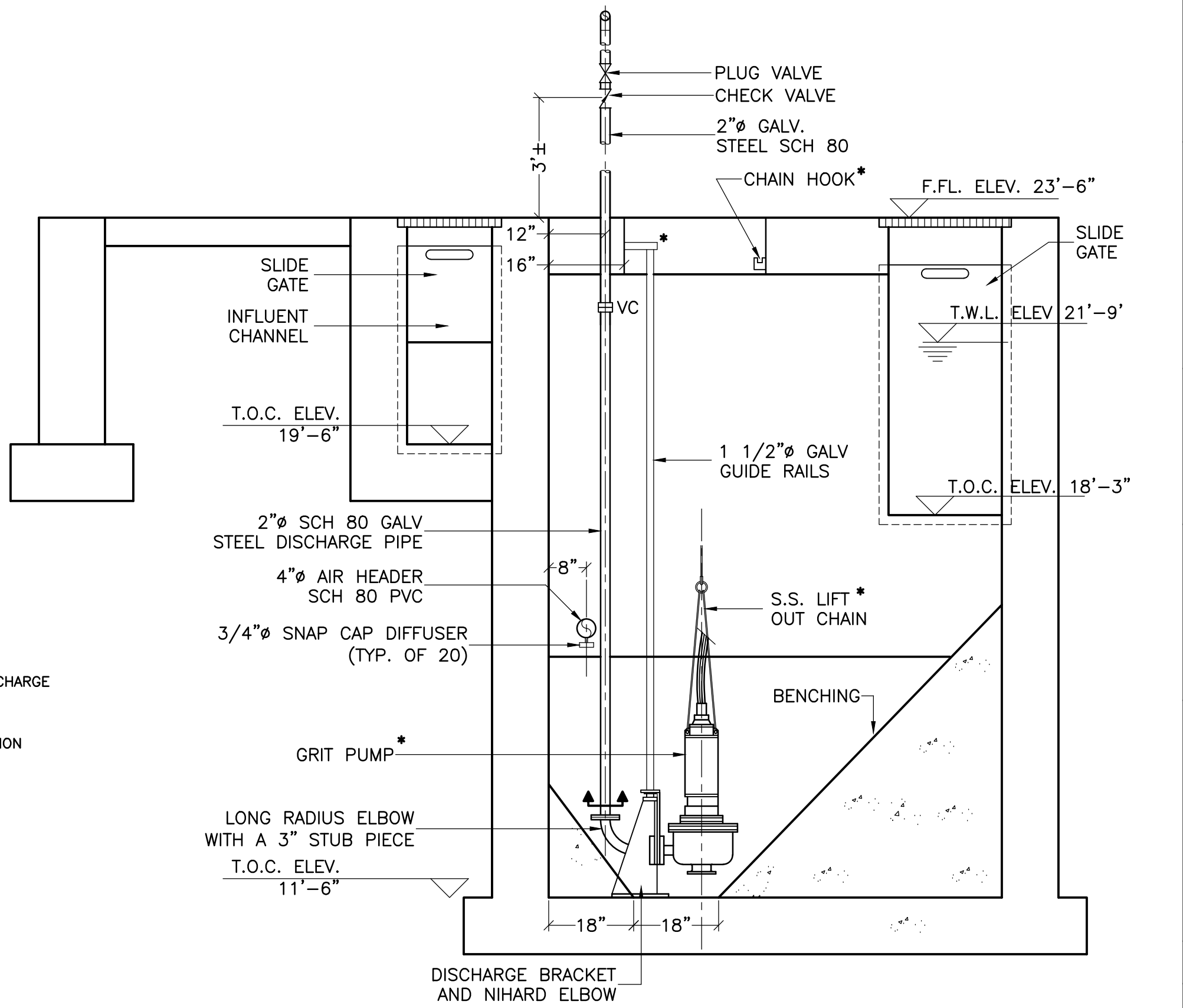
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SCALE: NOT TO SCALE



**B GRIT CLASSIFIER\***  
P2 N.T.S.

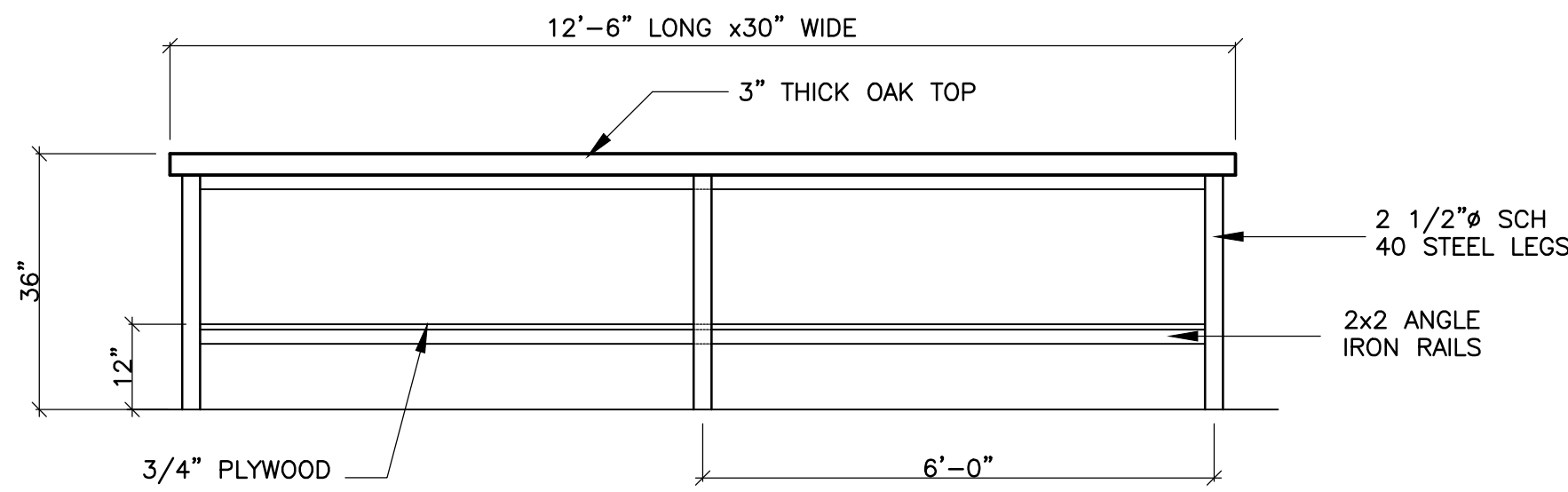


**D BLOWER ARRANGEMENT\***  
P2 N.T.S.

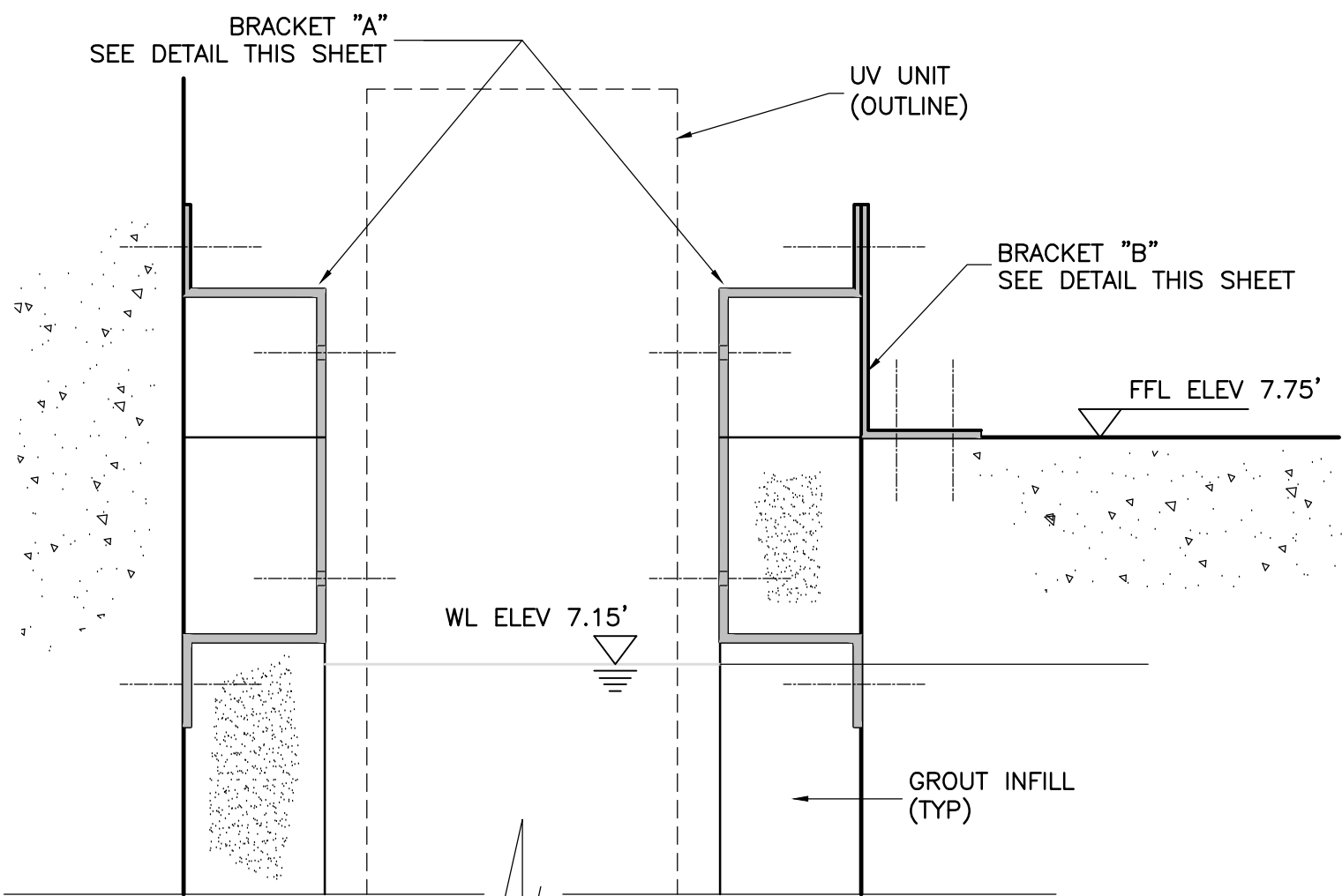


**G GRIT PUMP\***  
P2 1/2" = 1'-0"

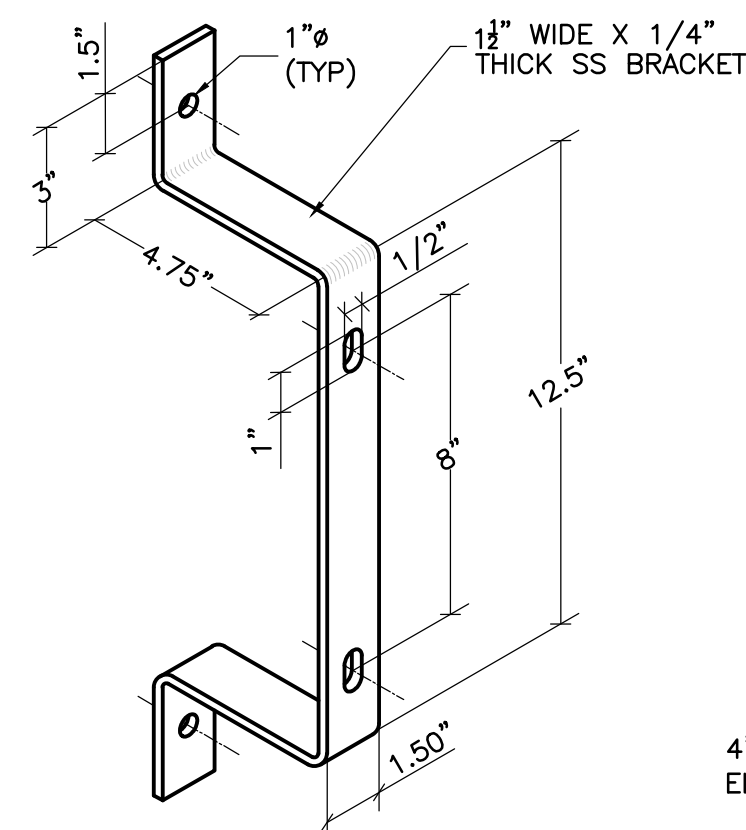
ABL Environmental Consultants Ltd. 98001/P3.dwg 15/04/2002 8:55 AM



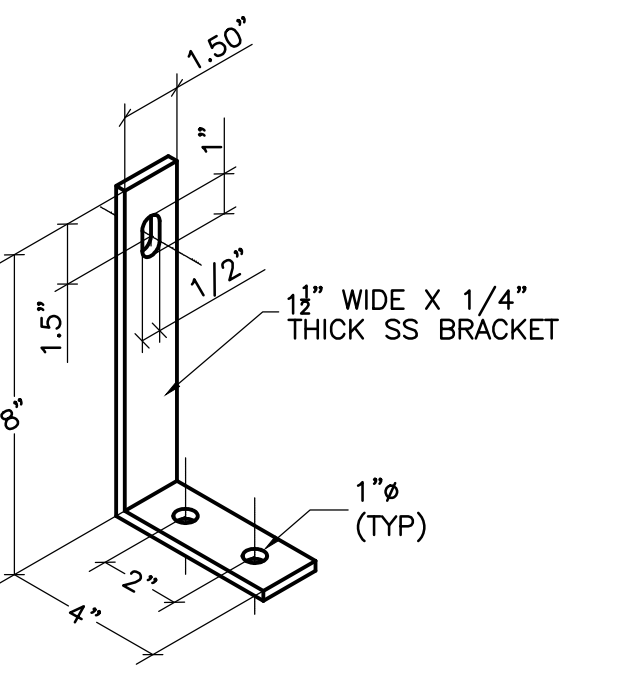
**WORKSHOP BENCH**  
SCALE: 1/2" = 1'-0"



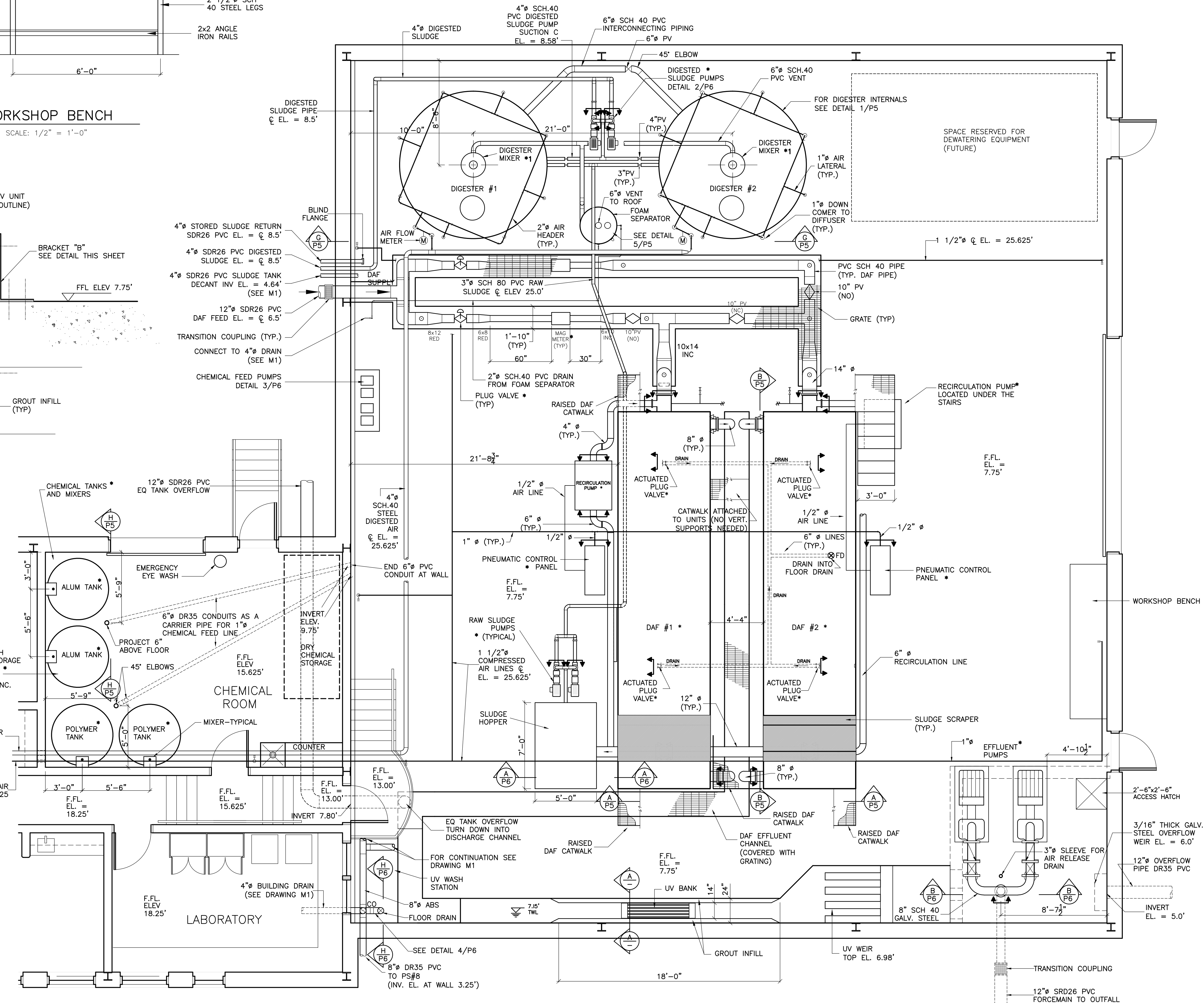
**UV SUPPORT BRACKETS**  
SCALE: NTS



**BRACKET "A"**



**BRACKET "B"**



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  - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.
  - CHANNELS AND PIPE TRENCHES TO BE PROVIDED WITH GRATING (BY OTHERS).
  - PRE-PURCHASED EQUIPMENT DENOTED WITH SYMBOL.
  - FOR SPECIFIC PRE-PURCHASE REQUIREMENTS, REFER TO THE SPECIFICATIONS.

- LEGEND**
- WELD
  - VIC COUPLING
  - FLANGED
  - UNION
  - PLANT AIR OUTLET
  - LIMIT OF PRE-PURCHASE SUPPLY
  - 1/2" TAP & NIPPLE, PLUGGED
- BV - BALL VALVE  
 BFV - BUTTERFLY VALVE  
 GV - GATE VALVE  
 GLV - GLOBE VALVE  
 PV - PLUG VALVE  
 PNV - PINCH VALVE  
 CV - CHECK VALVE  
 BV - BALL VALVE  
 KGV - KNIFE GATE VALVE  
 VC - VICTAULIC COUPLING MAINTENANCE JOINT

No.	Description	Date	By
04	RE-ISSUED FOR TENDER	APR/02	JH
03	RE-ISSUED FOR DAF PRE-PURCHASE	JAN/02	JH
02	ISSUED FOR EQUIPMENT PRE-PURCHASE	OCT/01	JH
01	ISSUED FOR REVIEW	DEC./98	TA

**Revision or Issue**

**TOWN OF LUNENBURG**  
MUNICIPAL WASTEWATER COLLECTION AND TREATMENT

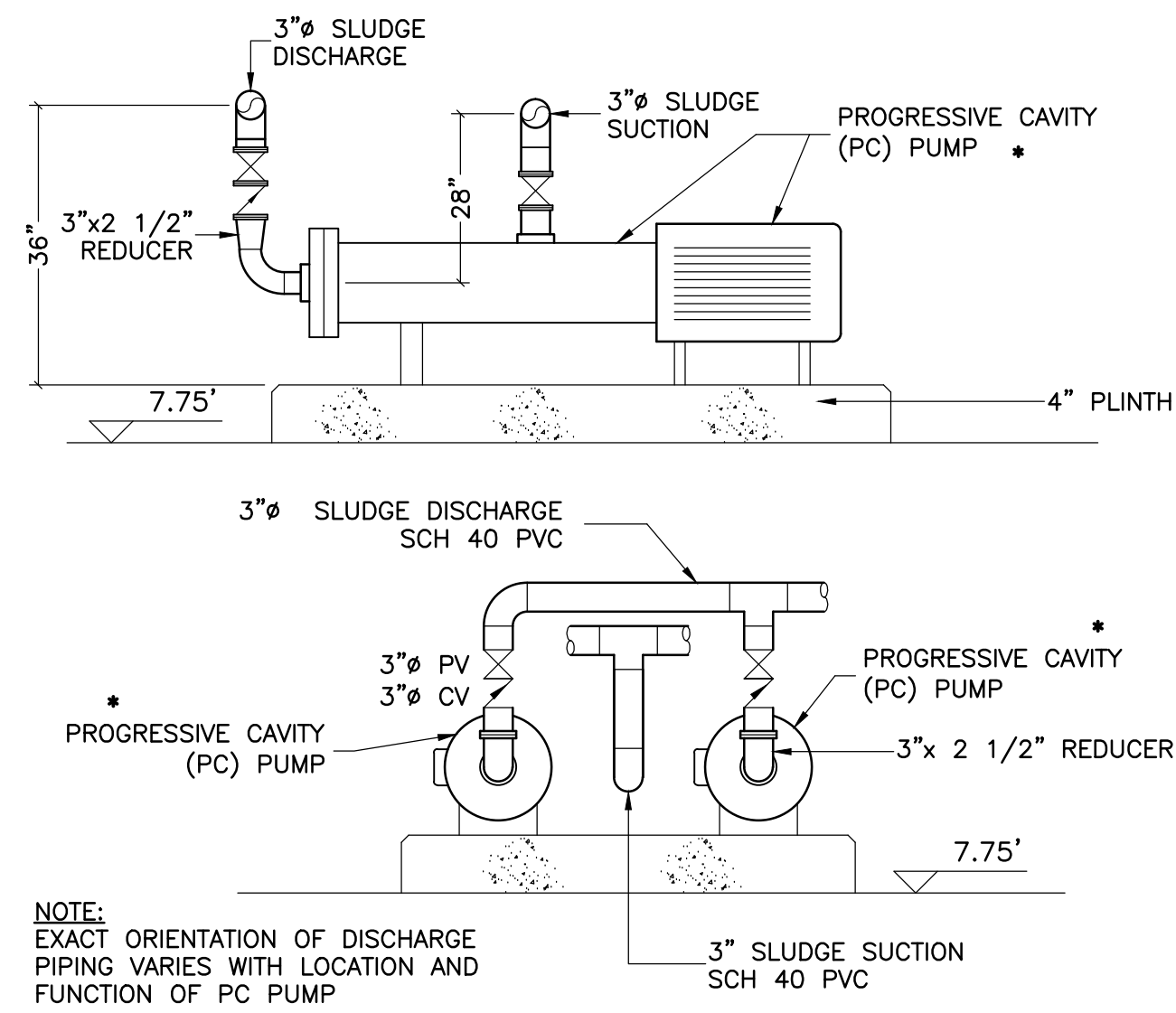
**SEWAGE TREATMENT PLANT**  
PROCESS ROOM PLAN



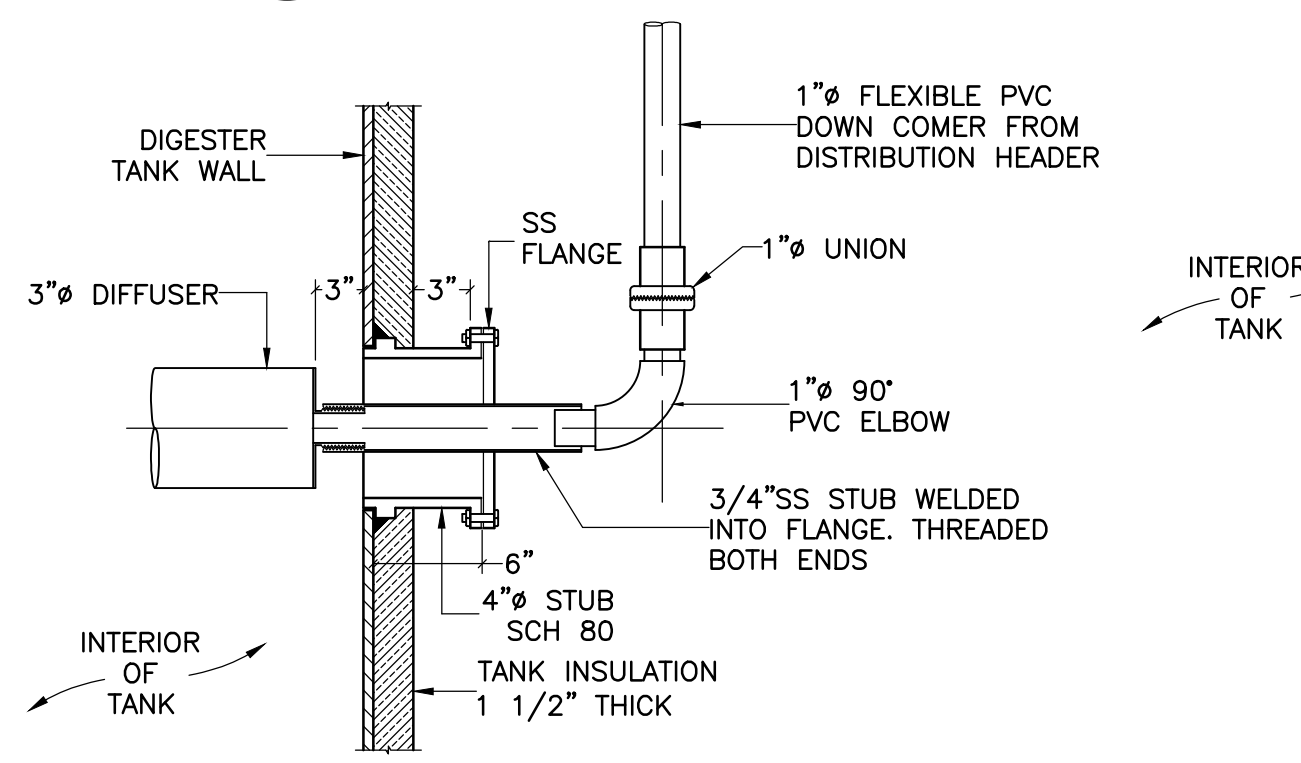
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Date	Drawn
OCT 2001	GP
Designed	Checked
GFB	TA
Contract No	Sheet of
98001	24/43
Drawing No	Revision
P4	4

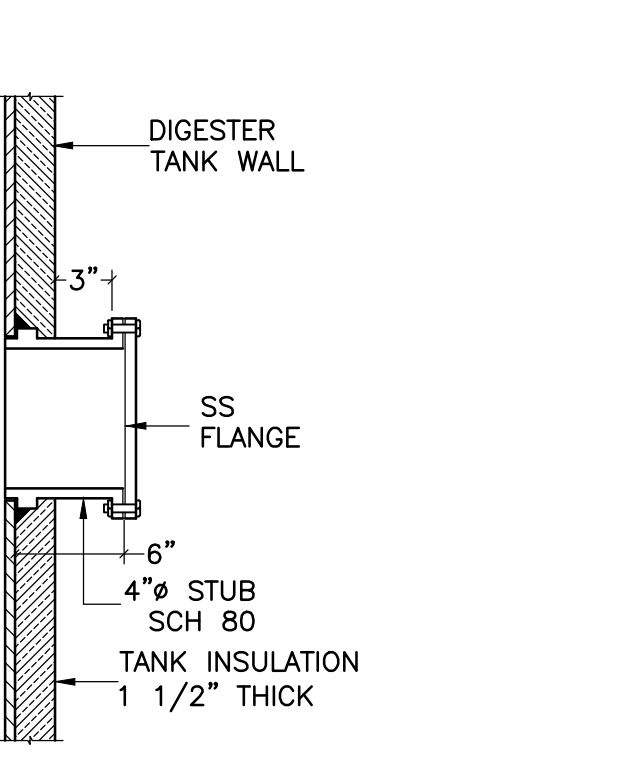
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 ABL Environmental Consultants Ltd.



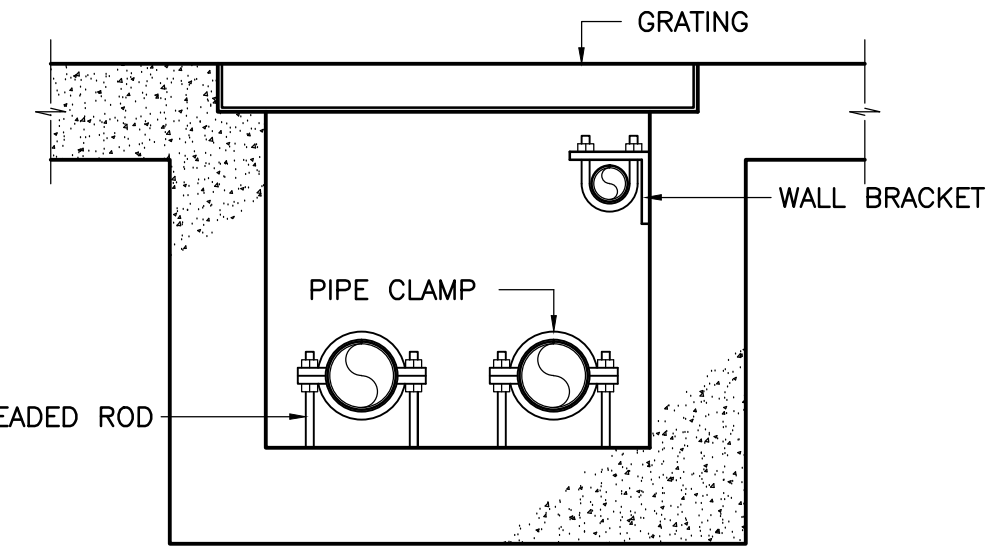
2 TYPICAL PC PUMP INSTALLATION  
P4 N.T.S.



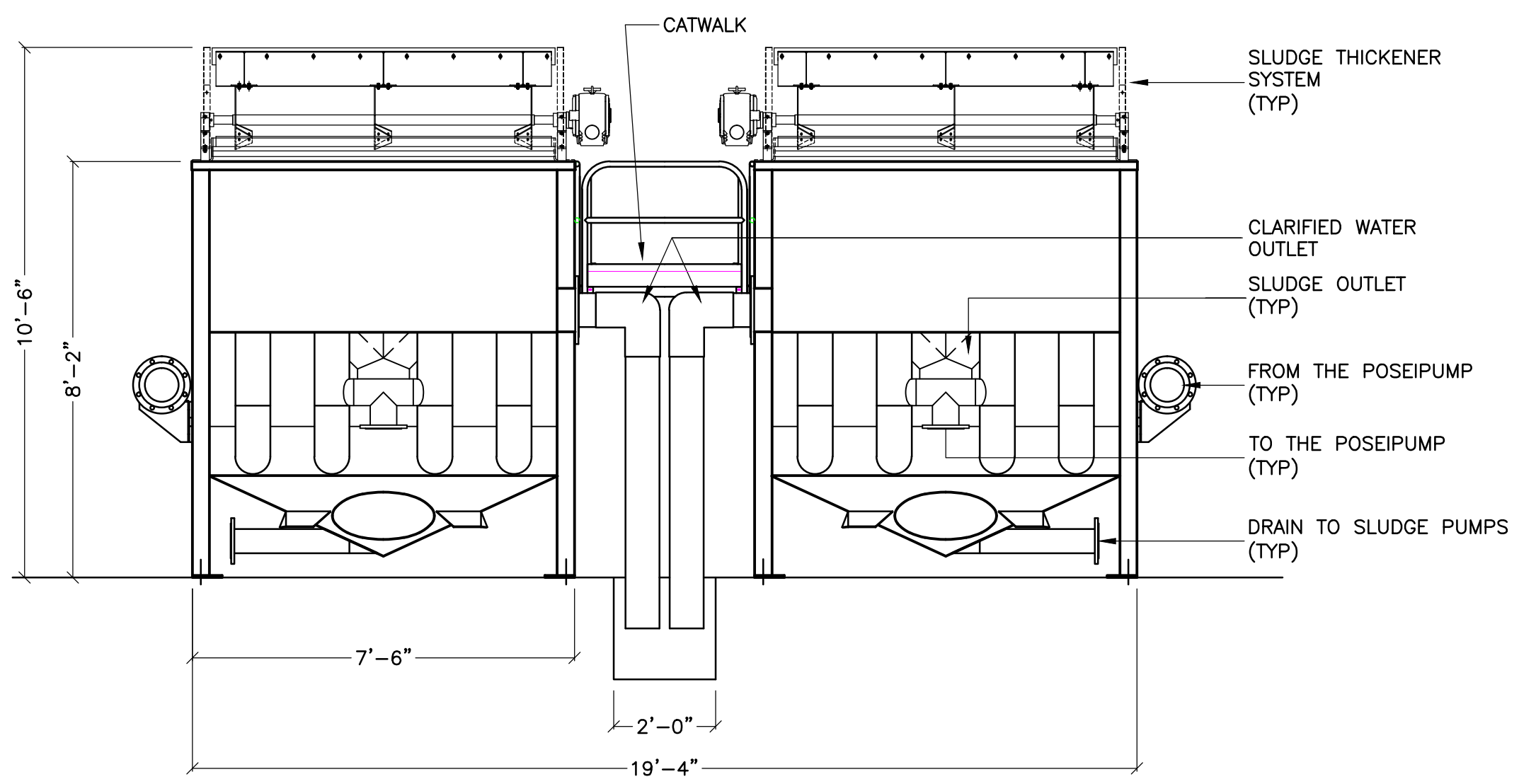
4 DIFFUSER MOUNTING DETAIL  
N.T.S.



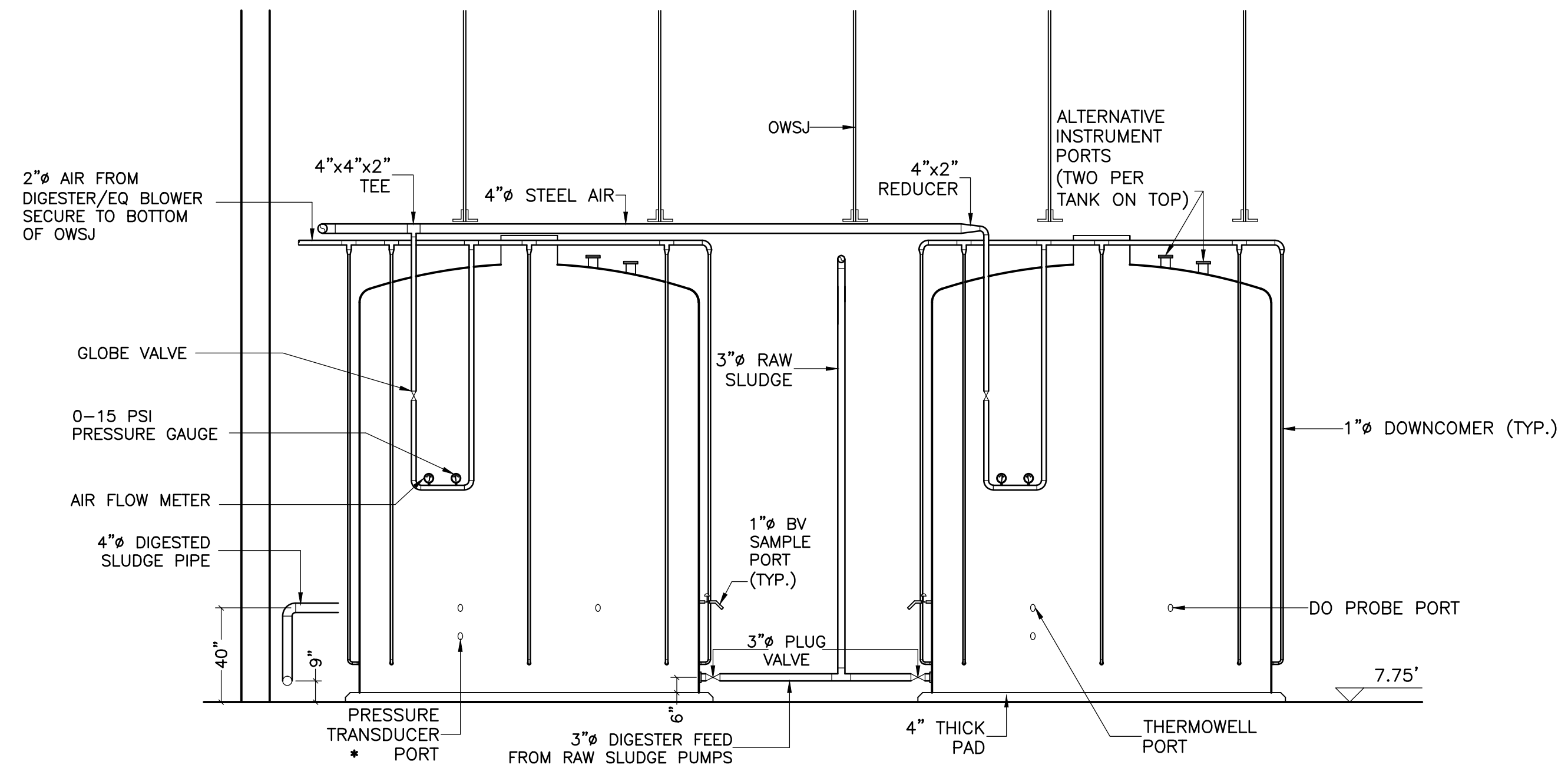
6 TYPICAL INSTRUMENT PORT  
N.T.S.



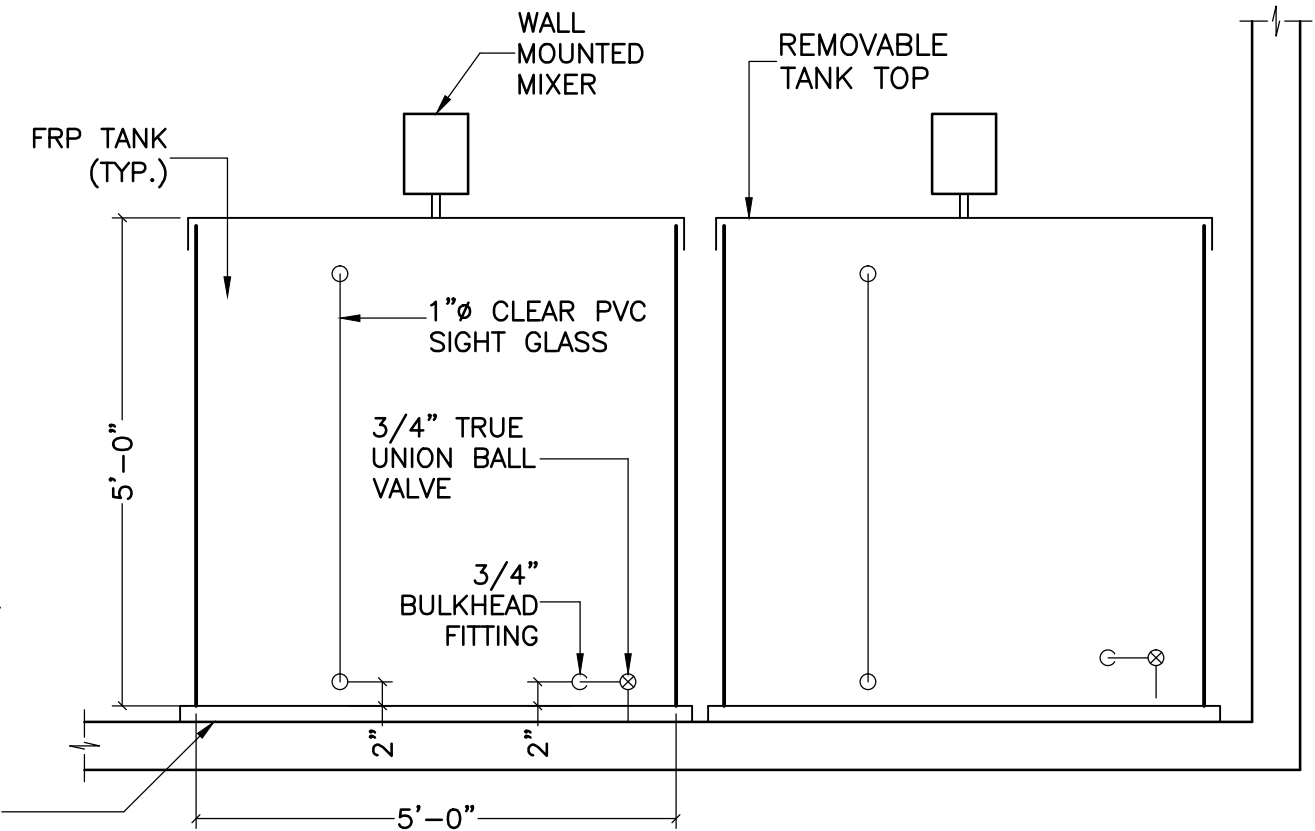
4 PIPE SUPPORT IN TRENCH  
N.T.S.



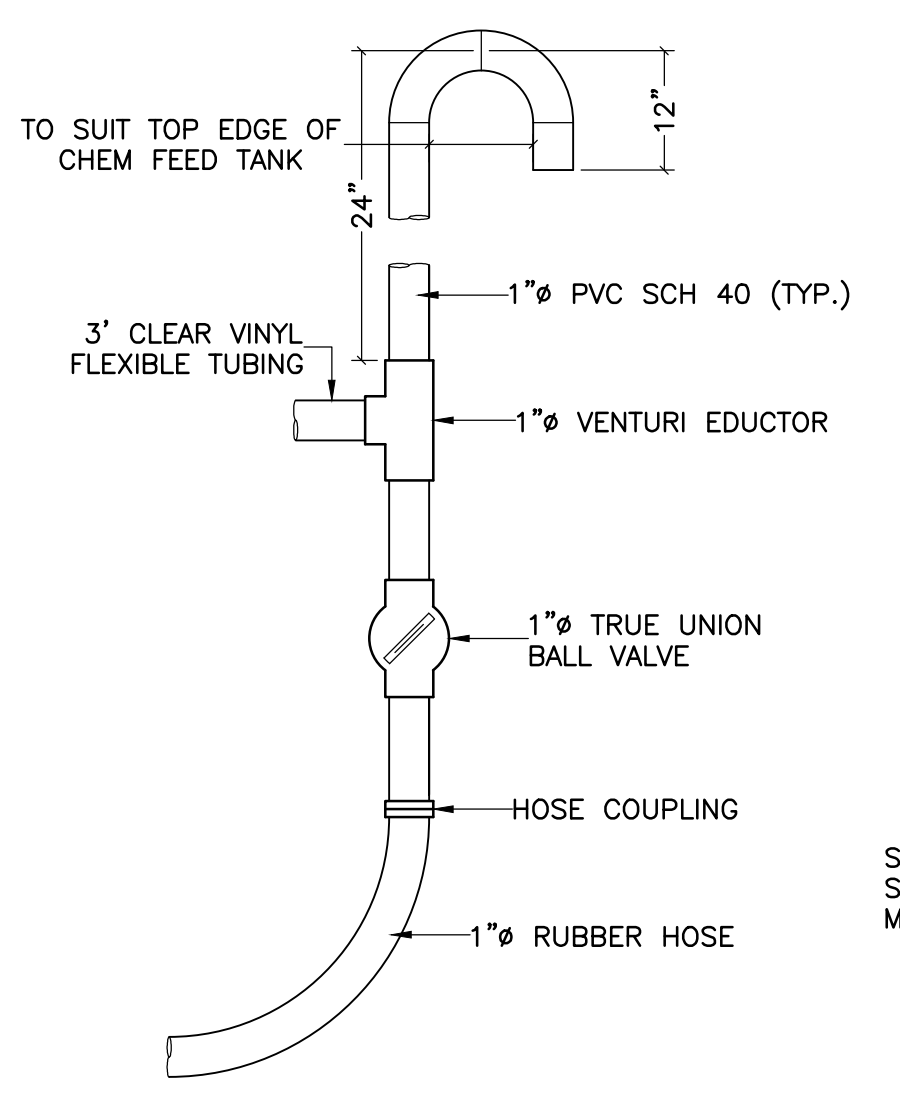
A DAF ASSEMBLY SECTION \*  
P4 N.T.S.



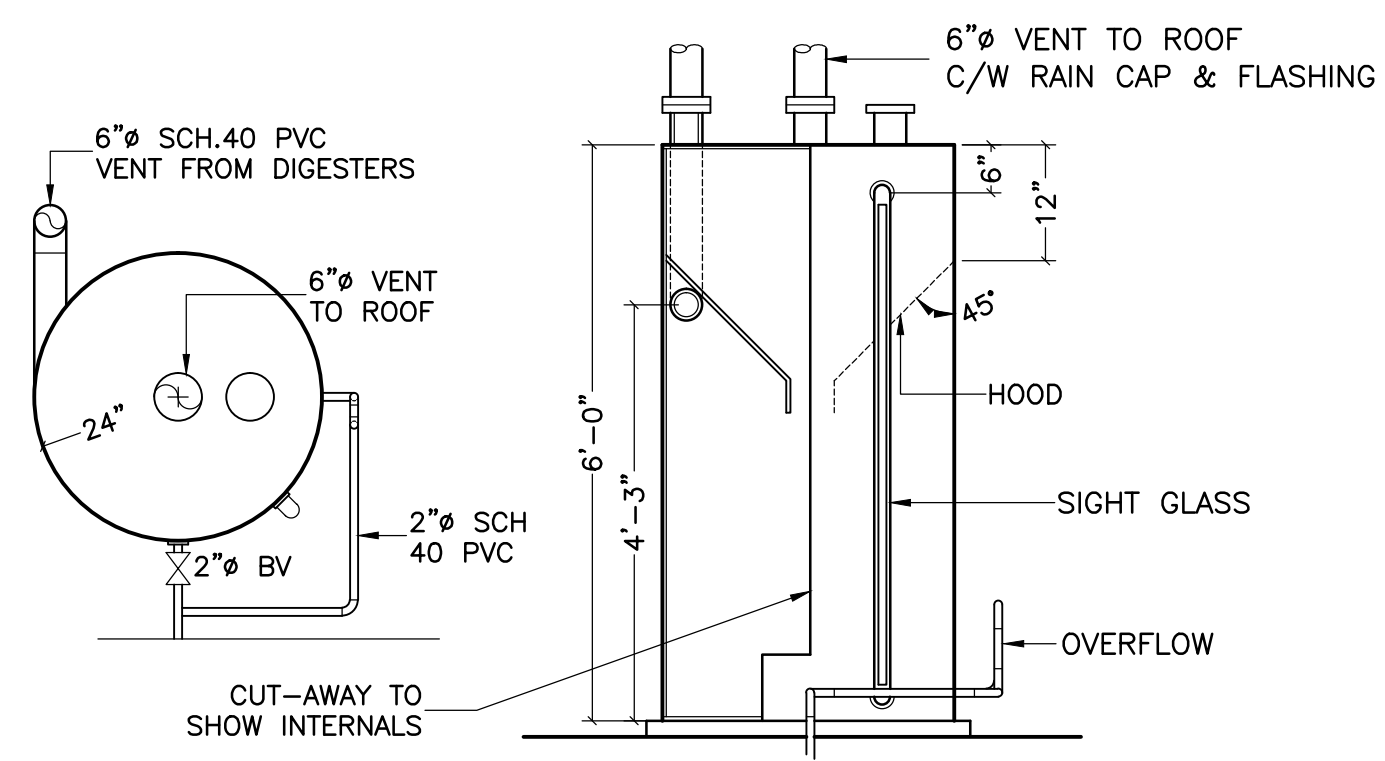
G DIGESTERS  
P4 SCALE: 1/4"=1'-0"



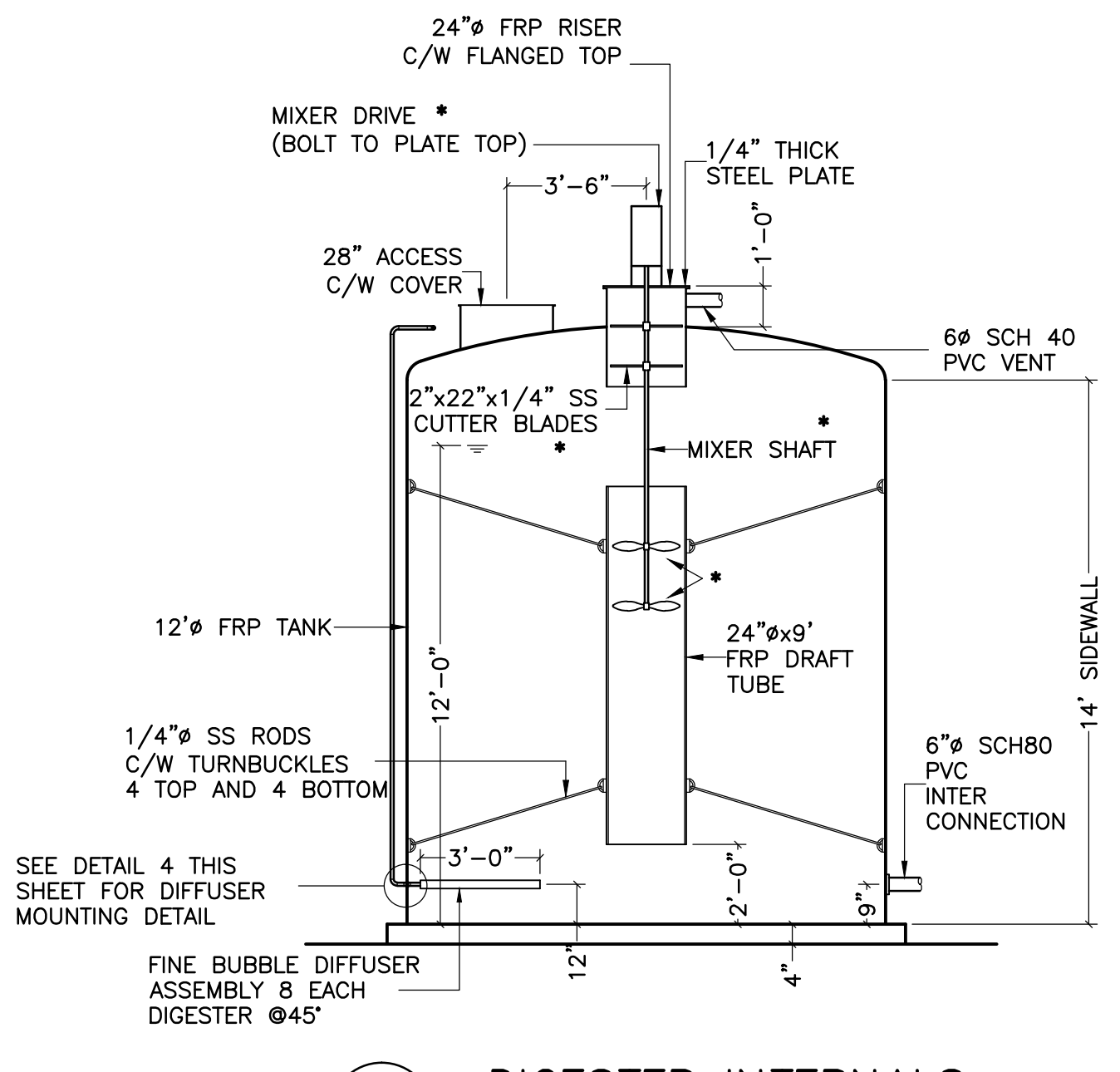
H CHEMICAL STORAGE TANKS \*  
P4 N.T.S.



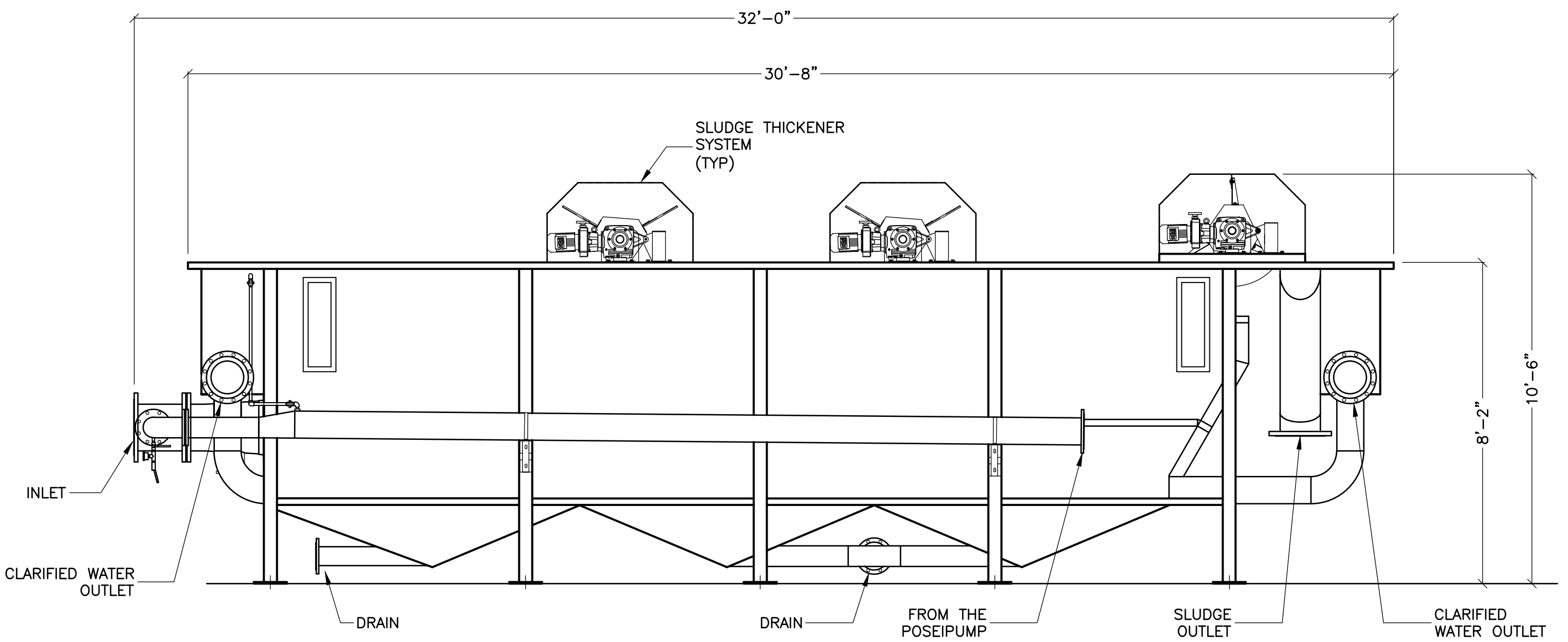
CHEMICAL MAKE-UP SYSTEM  
N.T.S.



5 FOAM SEPARATOR  
P4 SCALE: 1/2"=1'-0"



1 DIGESTER INTERNALS  
P4 SCALE: 1/4"=1'-0"



B DAF ASSEMBLY SECTION \*  
P4 N.T.S.

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  - PREPURCHASED EQUIPMENT DEMOTED WITH " \* " SYMBOL.
  - THIS DRAWING IS FOR INDICATION AND INFORMATION ONLY. FOR SPECIFIC PRE-PURCHASE REQUIREMENTS, REFER TO THE SPECIFICATIONS.

- LEGEND**
- WELD
  - VIC COUPLING
  - FLANGED
  - UNION
  - PLANT AIR OUTLET

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- BFV - BUTTERFLY VALVE
- GV - GATE VALVE
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- PV - PLUG VALVE
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No.	Description	Date	By
04	RE-ISSUED FOR TENDER	APR/02	JH
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02	ISSUED FOR EQUIPMENT PRE-PURCHASE	OCT 3/01	JH
01	ISSUED FOR REVIEW	DEC./98	TA

Revision or Issue

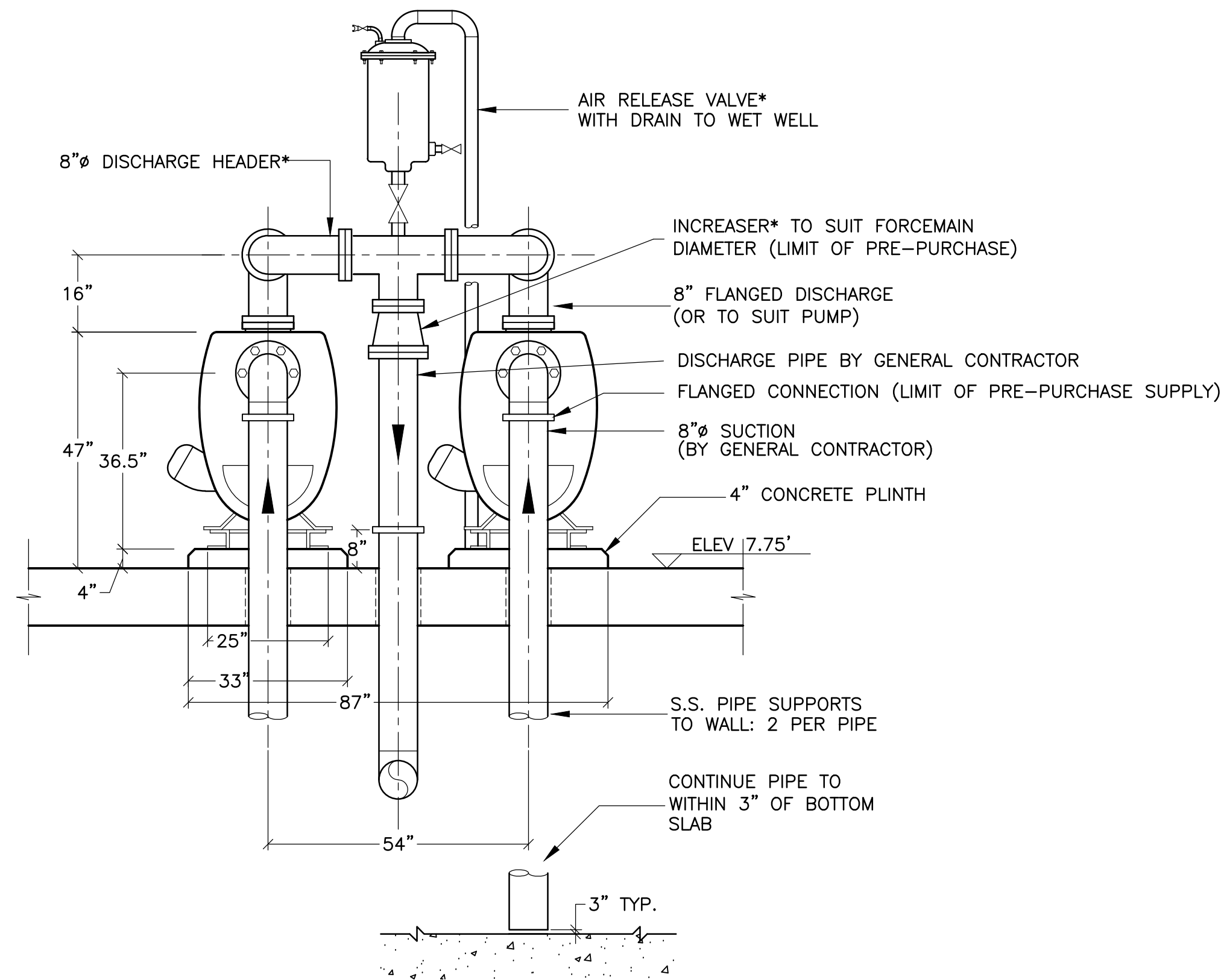
TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
PROCESS ROOM DETAILS

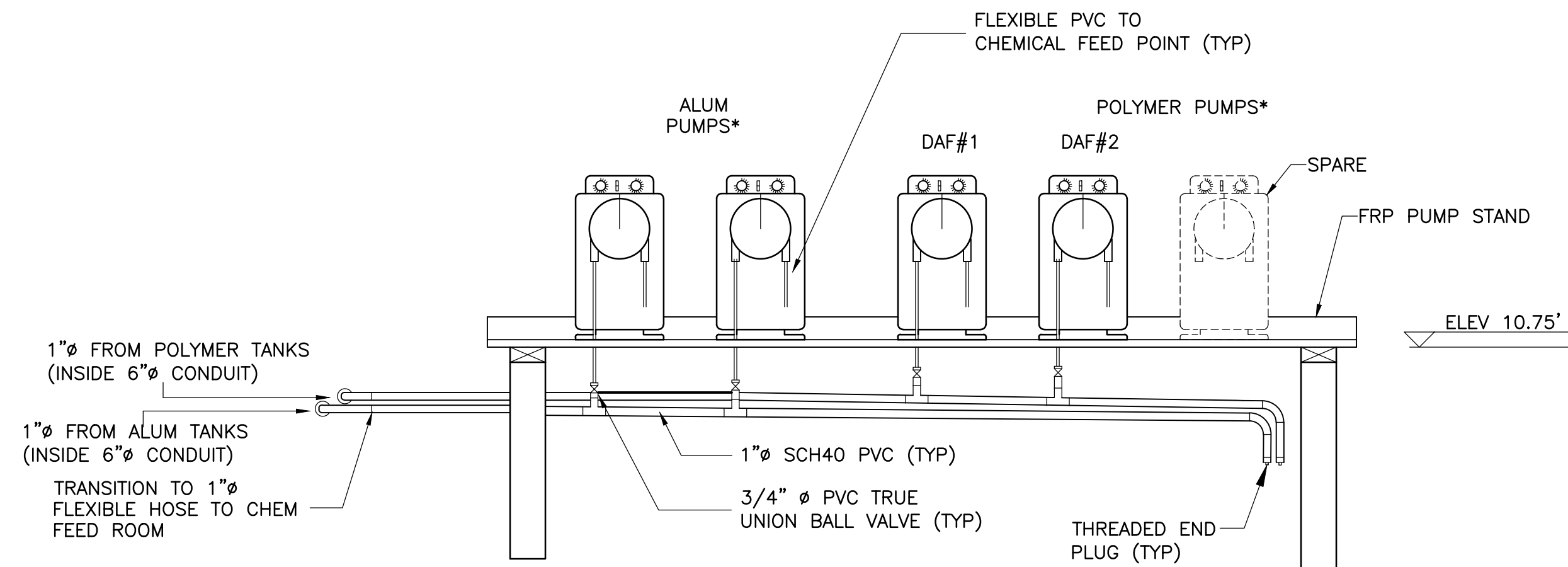


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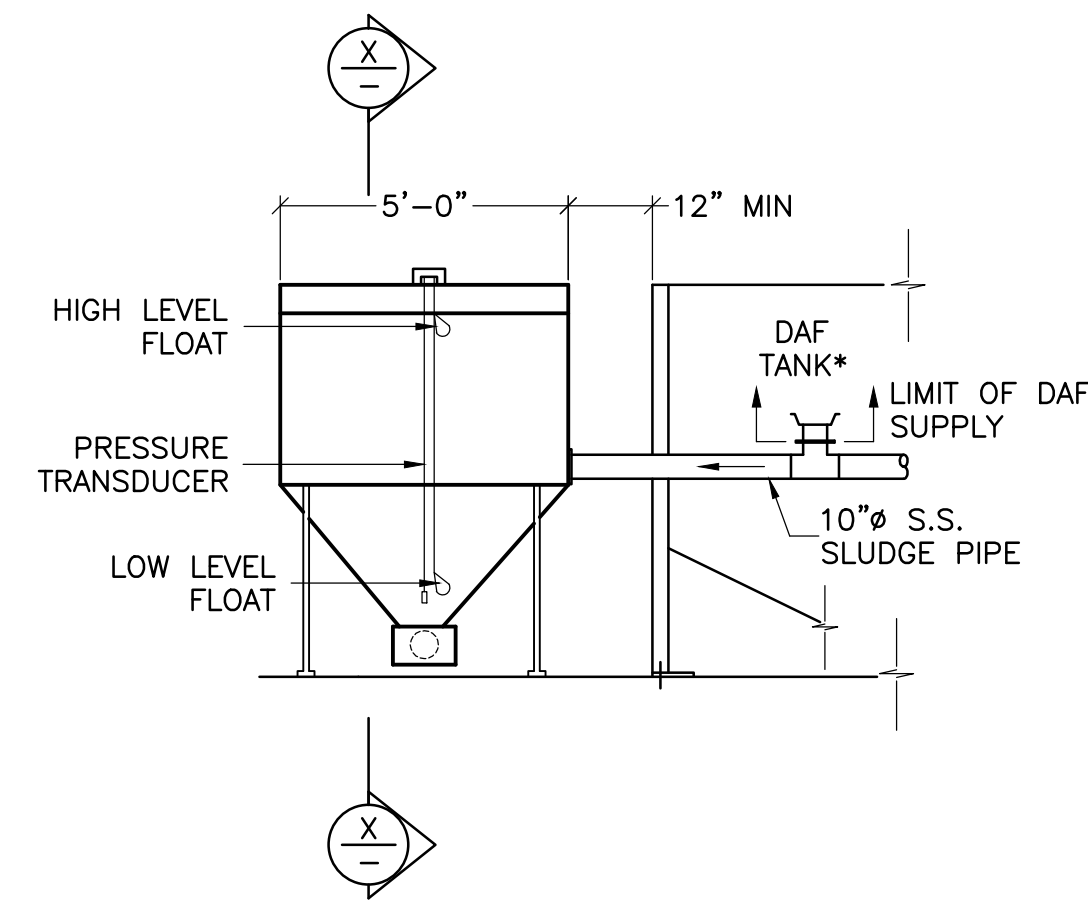
Date	Drawn
OCT 2001	GP
Designed	Checked
GFB	TA
Contract No.	Sheet of
98001	25/43
Drawing No.	Revision
P5	4



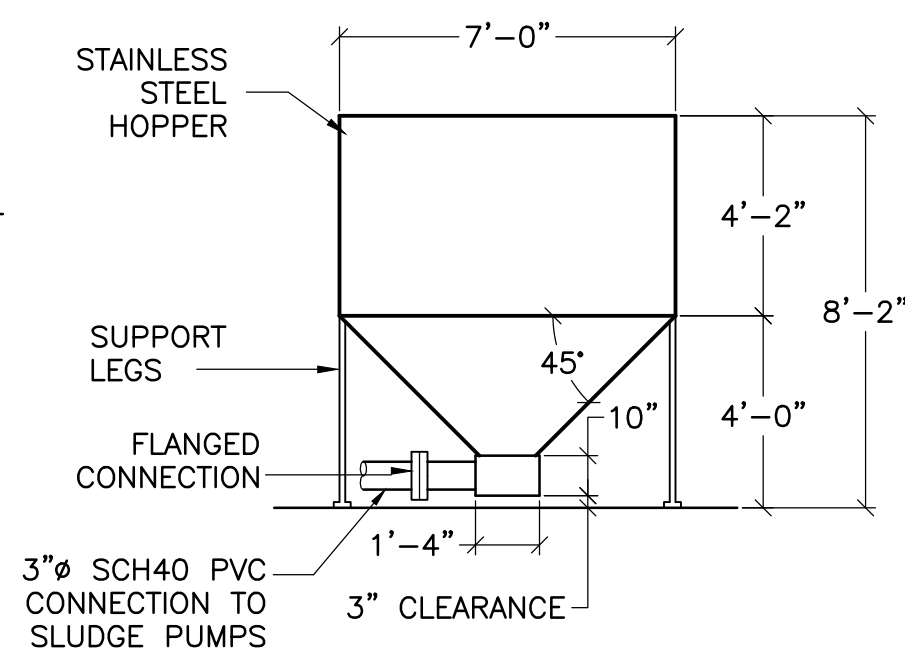
**B SECTION - EFFLUENT PUMPS\***  
SCALE: 1/2"=1'-0"



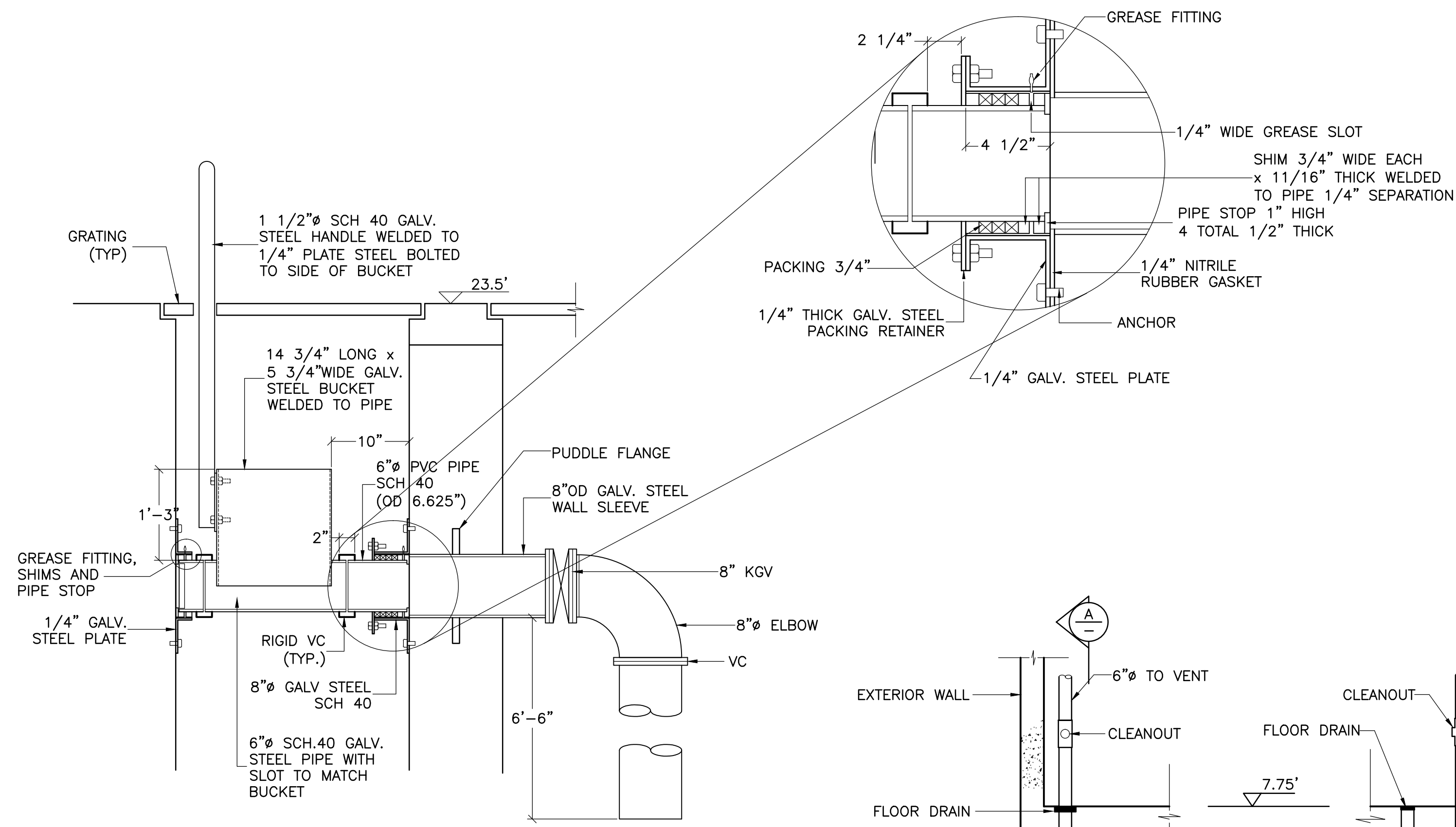
**3 CHEMICAL FEED PUMPS\***  
SCALE: N.T.S.



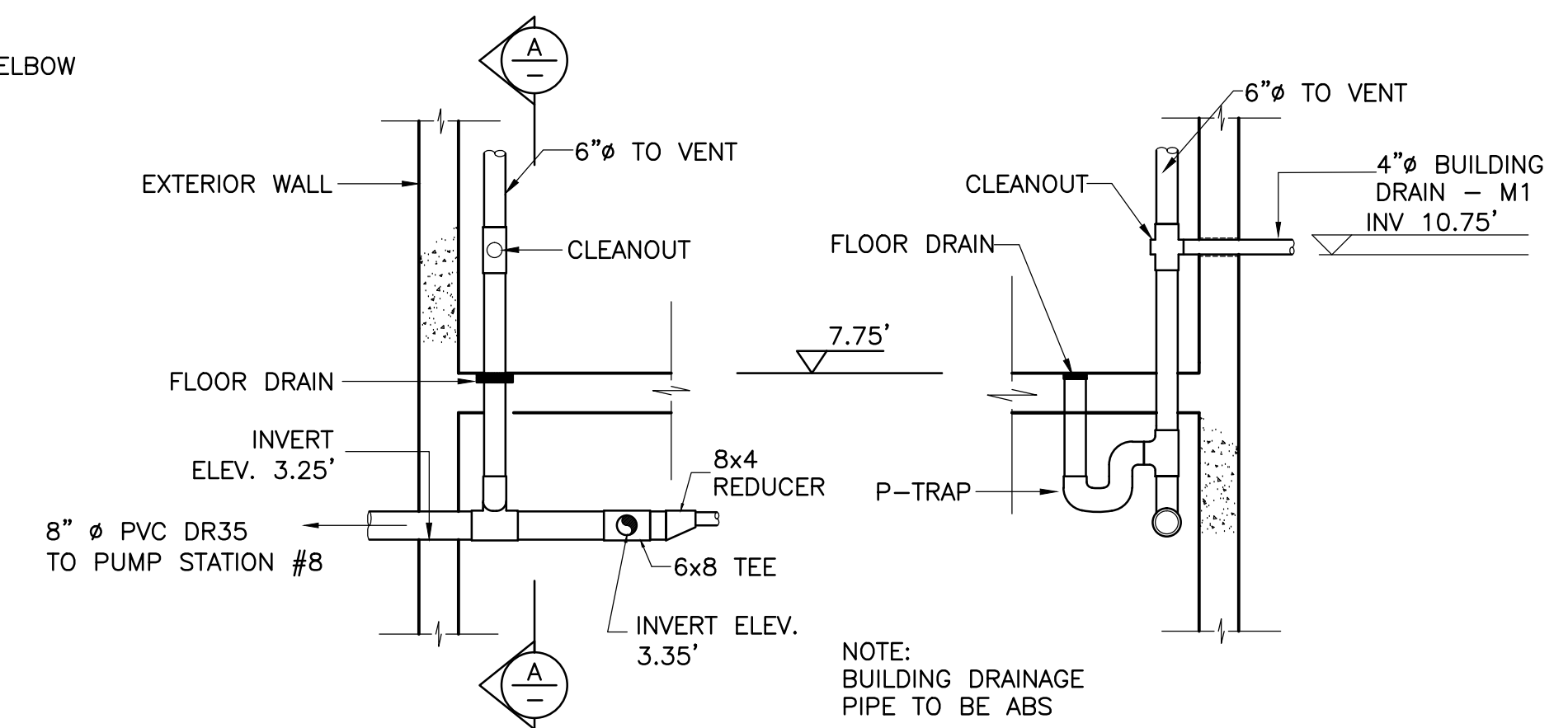
**A SECTION - SLUDGE HOPPER**  
SCALE: 1/2"=1'-0"



**X SECTION X - X**  
SCALE: 1/2"=1'-0"



**H ROTATING SCUM TROUGH**  
SCALE: N.T.S.



**4 DRAIN DETAIL**  
SCALE: N.T.S.

**A SECTION A-A**  
SCALE: N.T.S.

NOTE:  
FLEXIBLE PIPE IS TO BE  
FIELD LOCATED AND LOCALLY  
SUPPORTED AS REQUIRED  
BY ENGINEER.

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**LEGEND**

- WELD
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No.	Description	Date	By
04	RE-ISSUED FOR TENDER	APR/02	JH
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02	ISSUED FOR EQUIPMENT PRE-PURCHASE	OCT 3/01	JH
01	ISSUED FOR REVIEW	DEC/98	TA

**Revision or Issue**

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
EFFLUENT & CHEMICAL PUMPS  
SLUDGE HOPPERS DETAILS

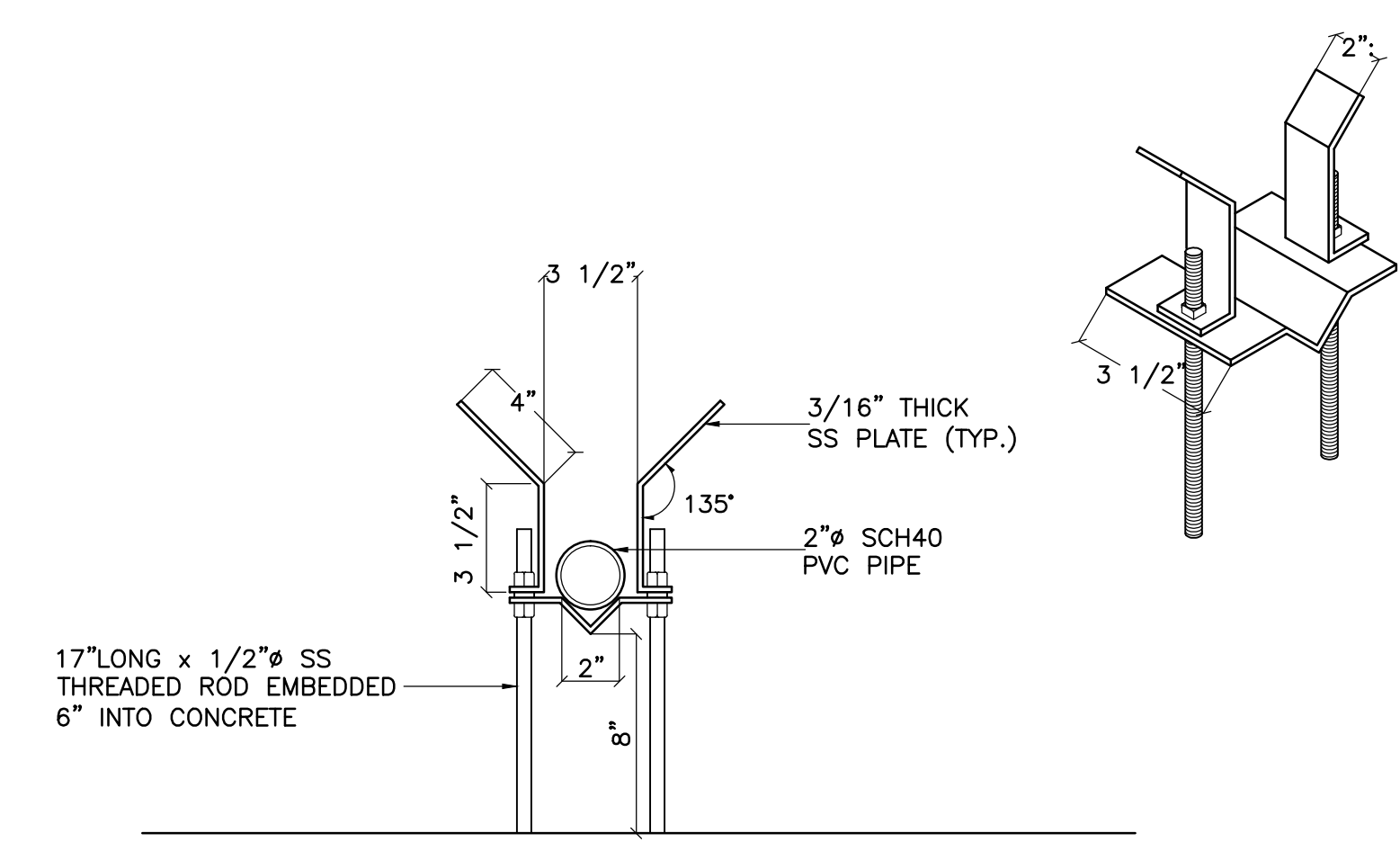
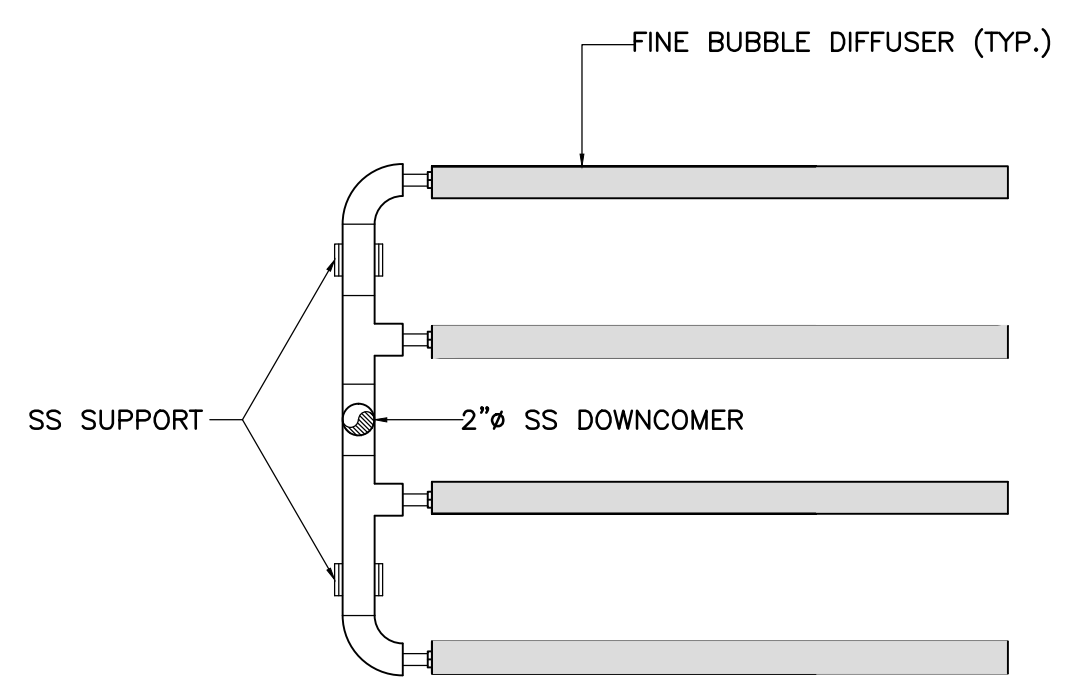
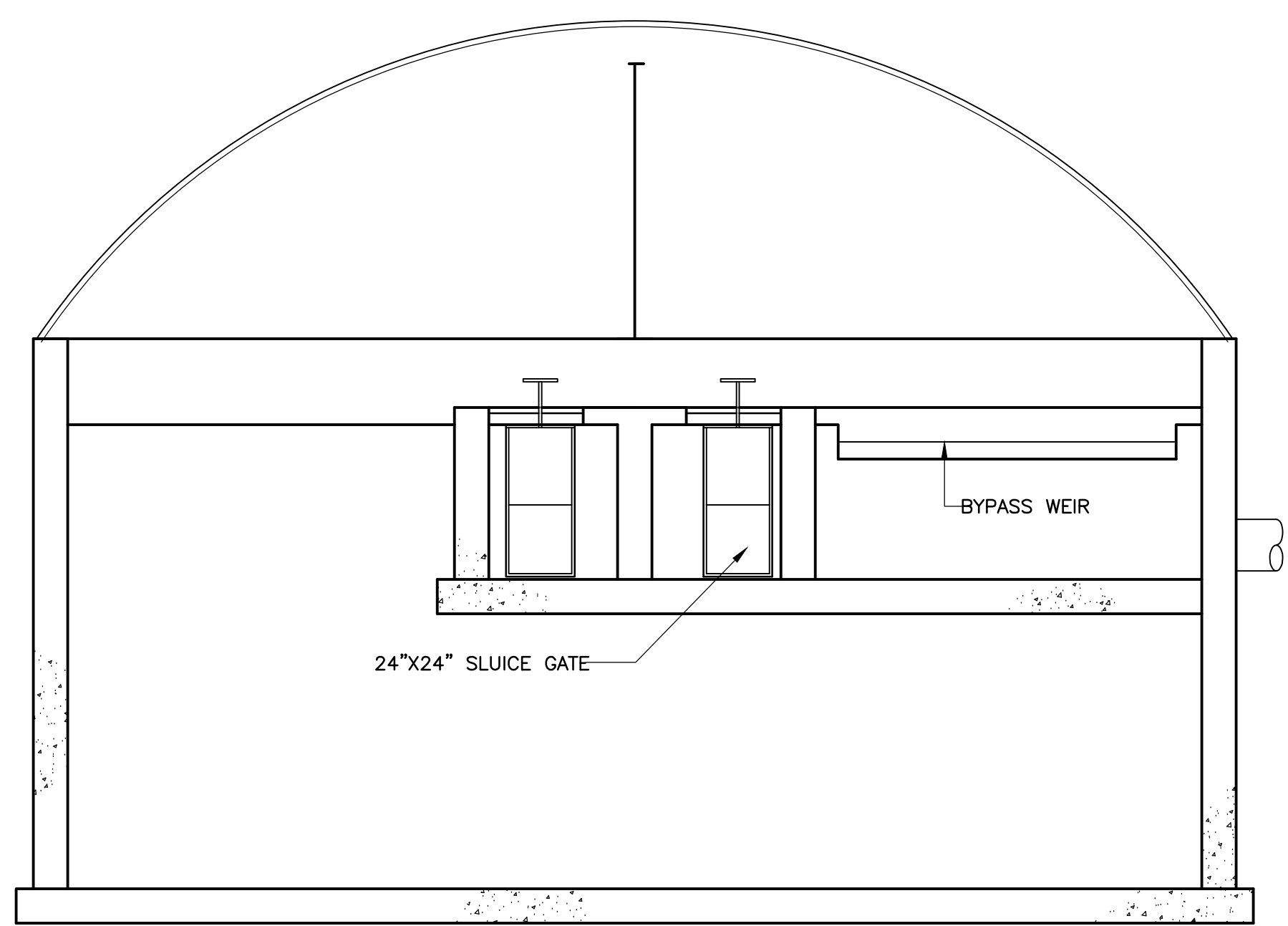
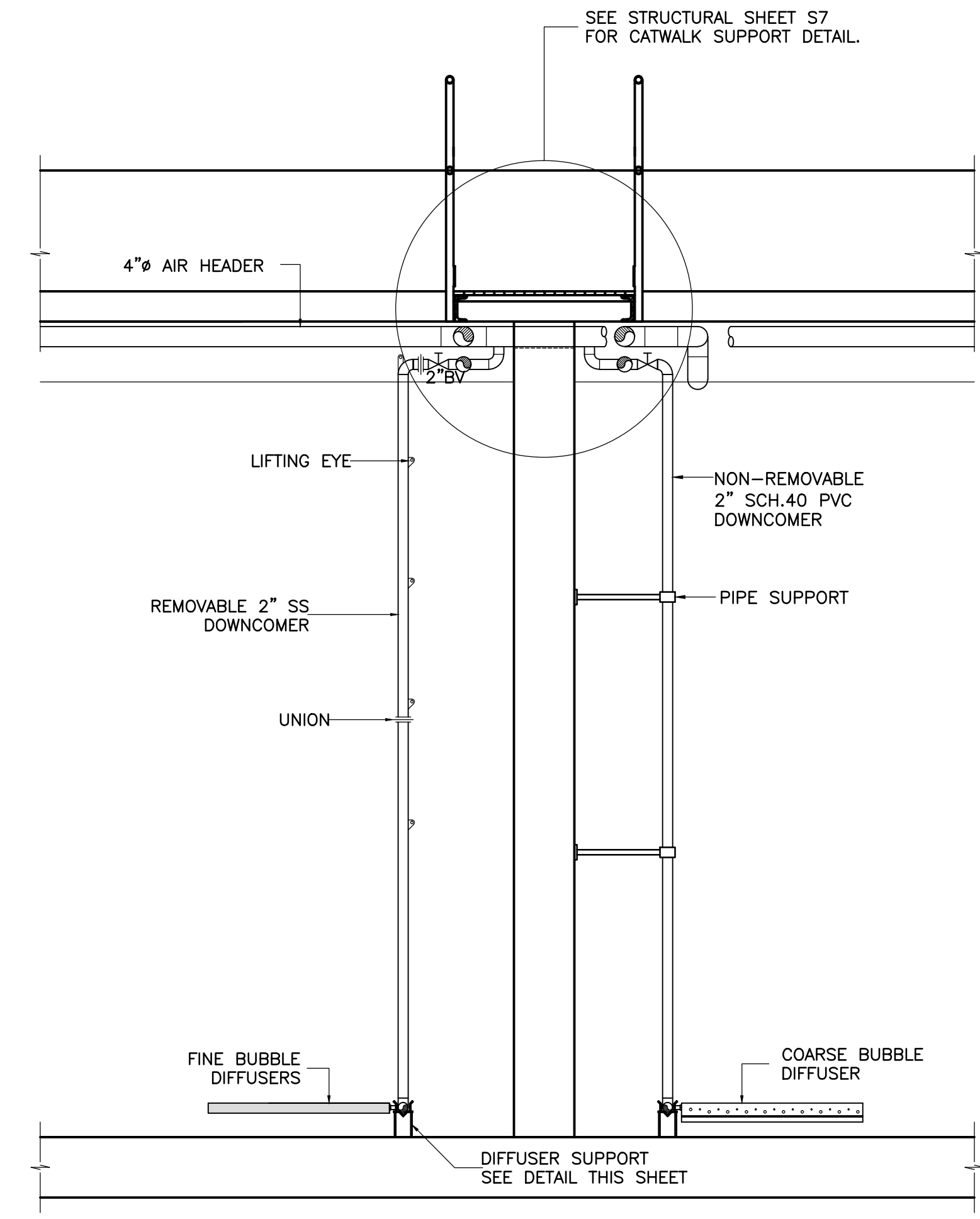
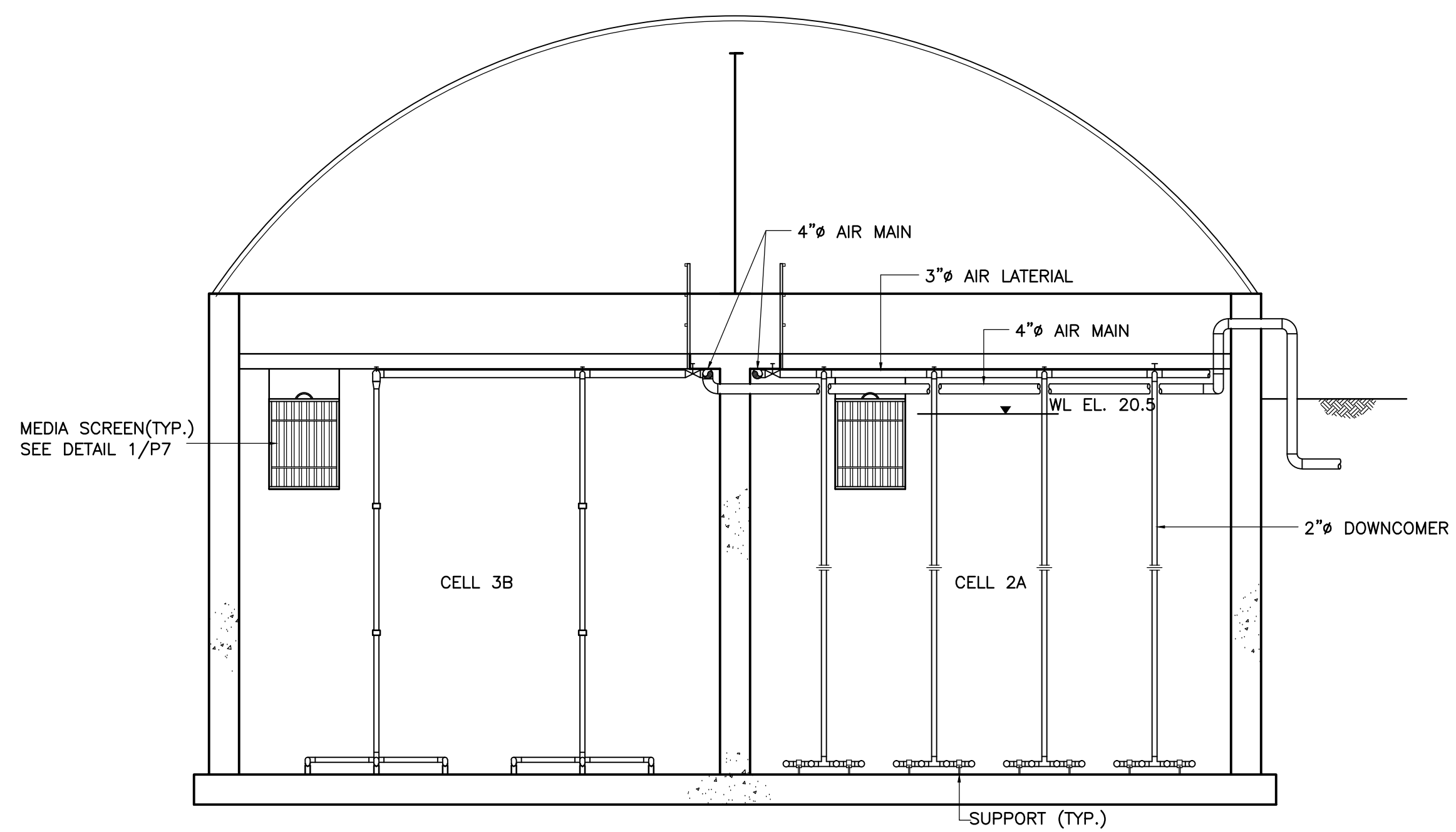


Scale AS NOTED

Date	Designed	Checked	Drawn
APR 2002	GFB	TPA	GP
Contract No. 98001	Sheet of 26	Approved JCL	43
Drawing No. P6	Revision No. 4		

98001/P6.dwg  
15/04/2002 9:21 AM  
ABL Environmental Consultants Ltd.





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  - CV - CHECK VALVE
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  - KGV - KNIFE GATE VALVE
  - VC - VICTAULIC COUPLING MAINTENANCE JOINT

No.	Description	Date	By
02	ISSUED FOR TENDER	APR/02	JH
01	ISSUED FOR REVIEW	DEC./98	TA

**Revision or Issue**

TOWN OF LUNENBURG  
 MUNICIPAL WASTEWATER  
 COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
 AERATION BASIN  
 DETAILS

**ABL ENVIRONMENTAL**  
 consultants limited

102 PORTLAND STREET  
 DANFORTH, NOVA SCOTIA  
 B2W 1Y6

Tel: (902)466-0050  
 Fax: (902)466-4398  
 Email: abl@ablenvironmental.com

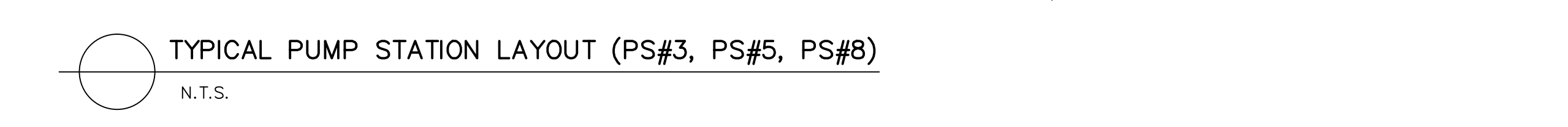
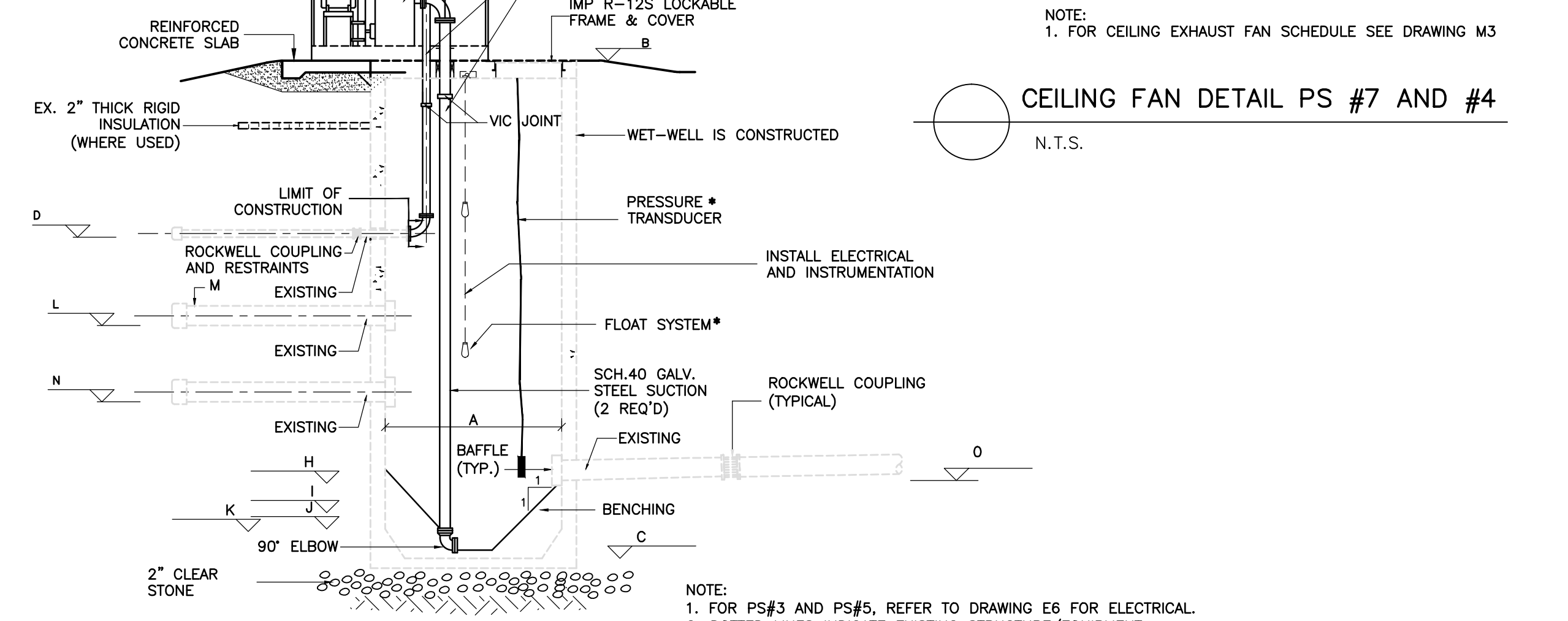
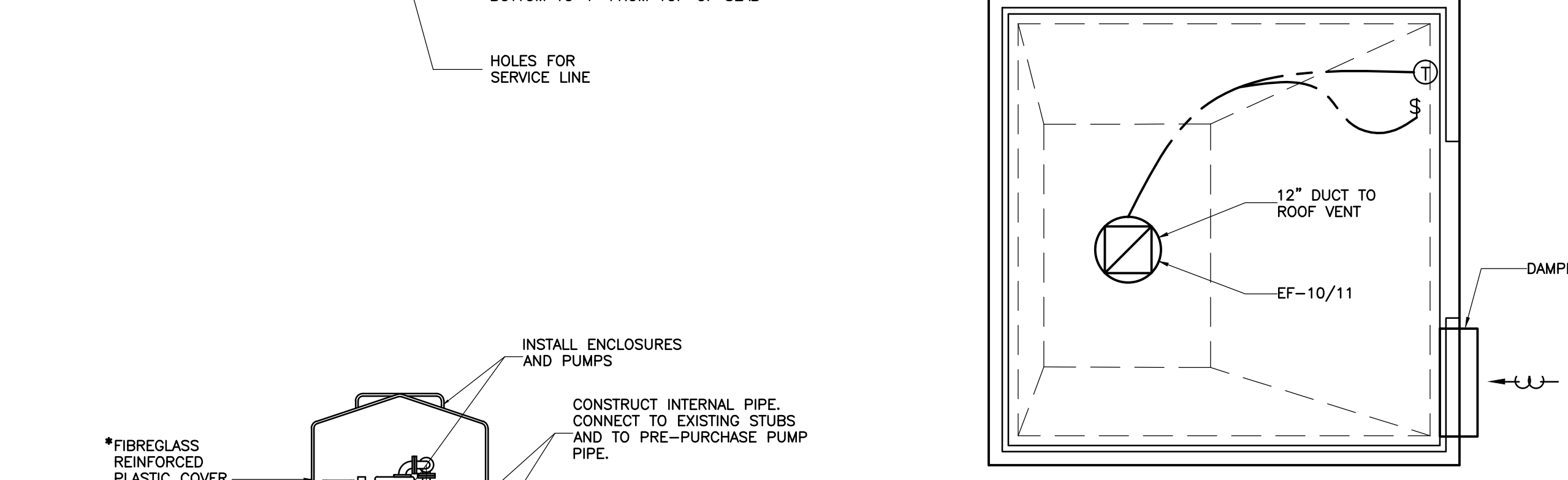
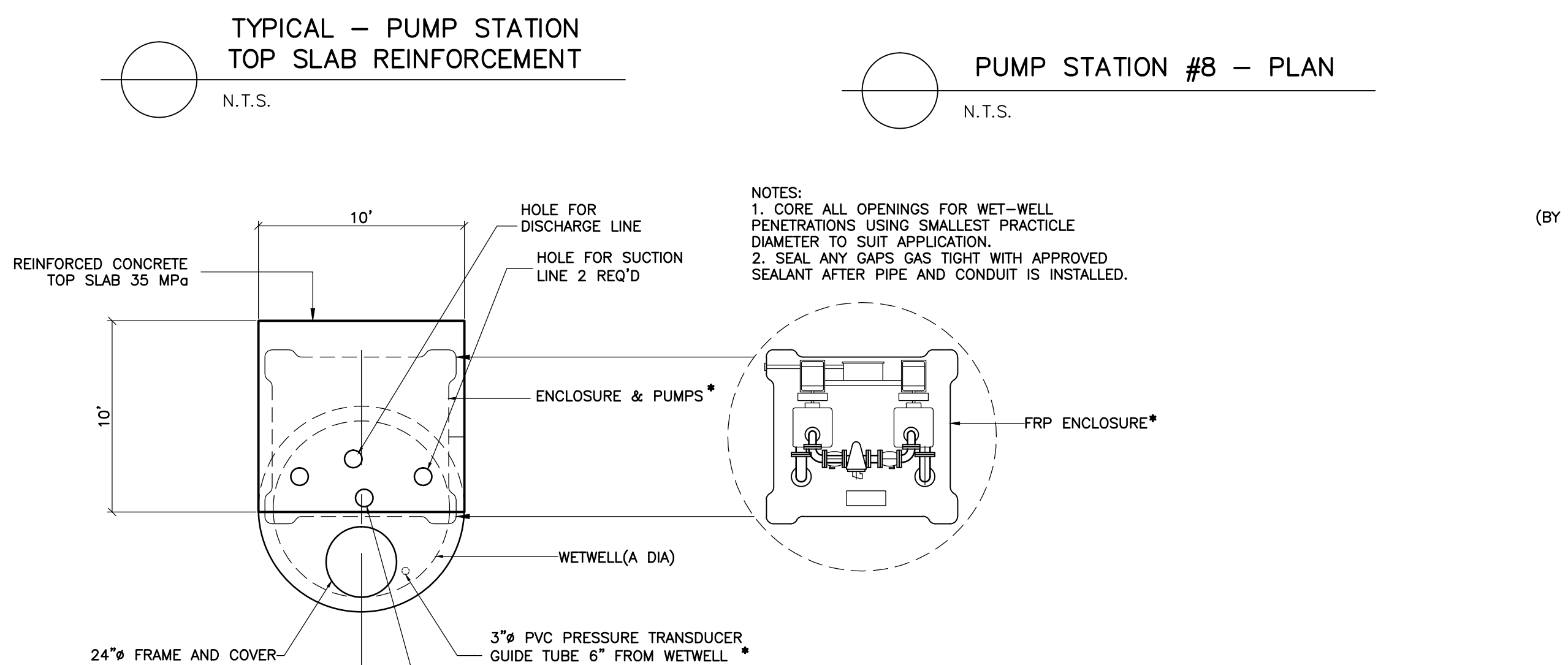
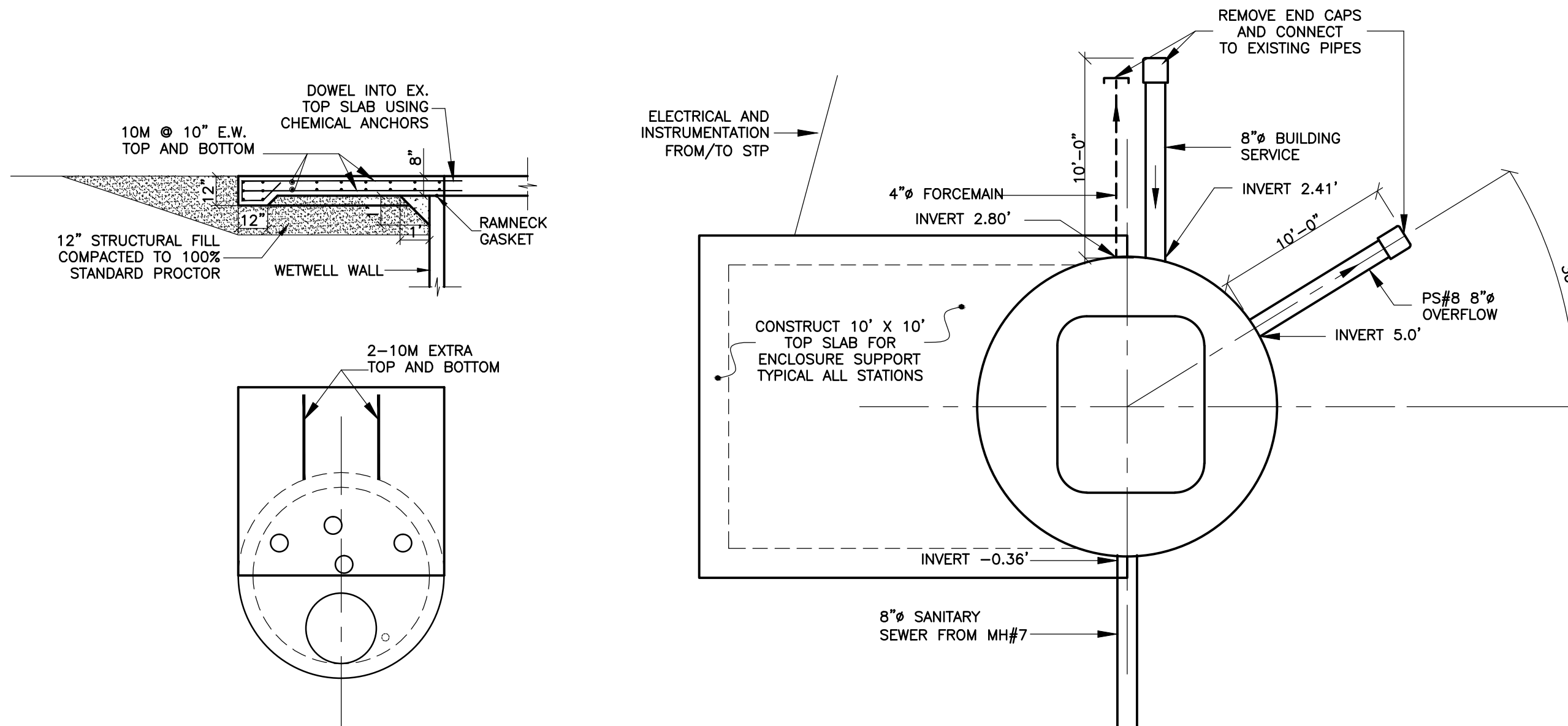
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Date	DEC.1998	Drawn	GP
Designed	GFB	Checked	JCL
Contract No.	98001	Sheet of	28/43
Drawing No.	P8	Revision	2

98001.P8.dwg

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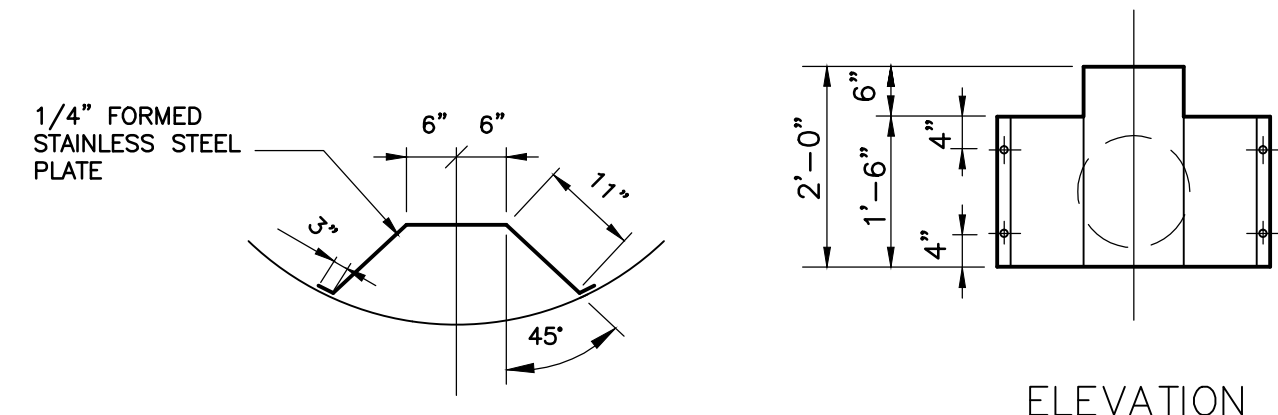
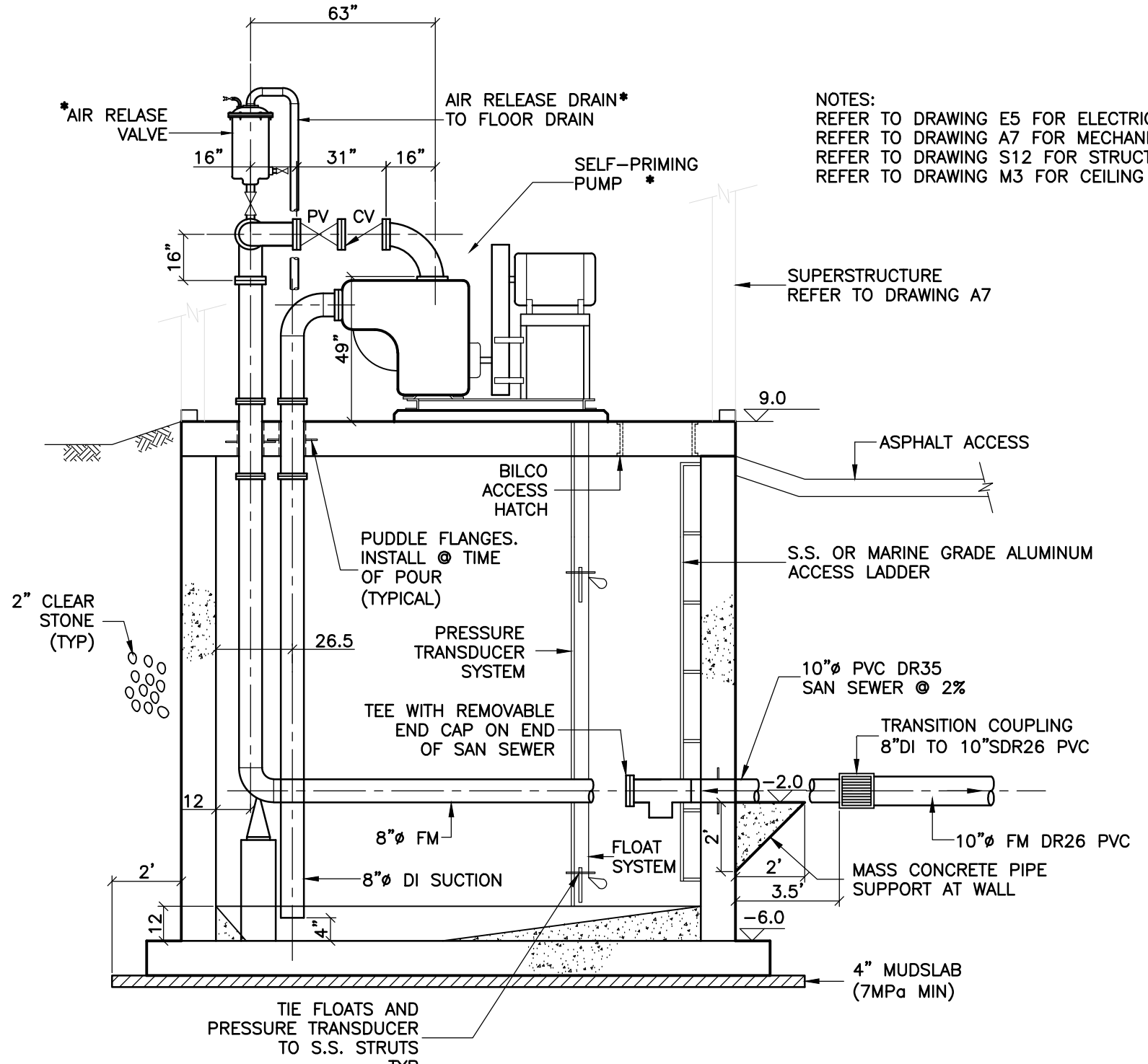
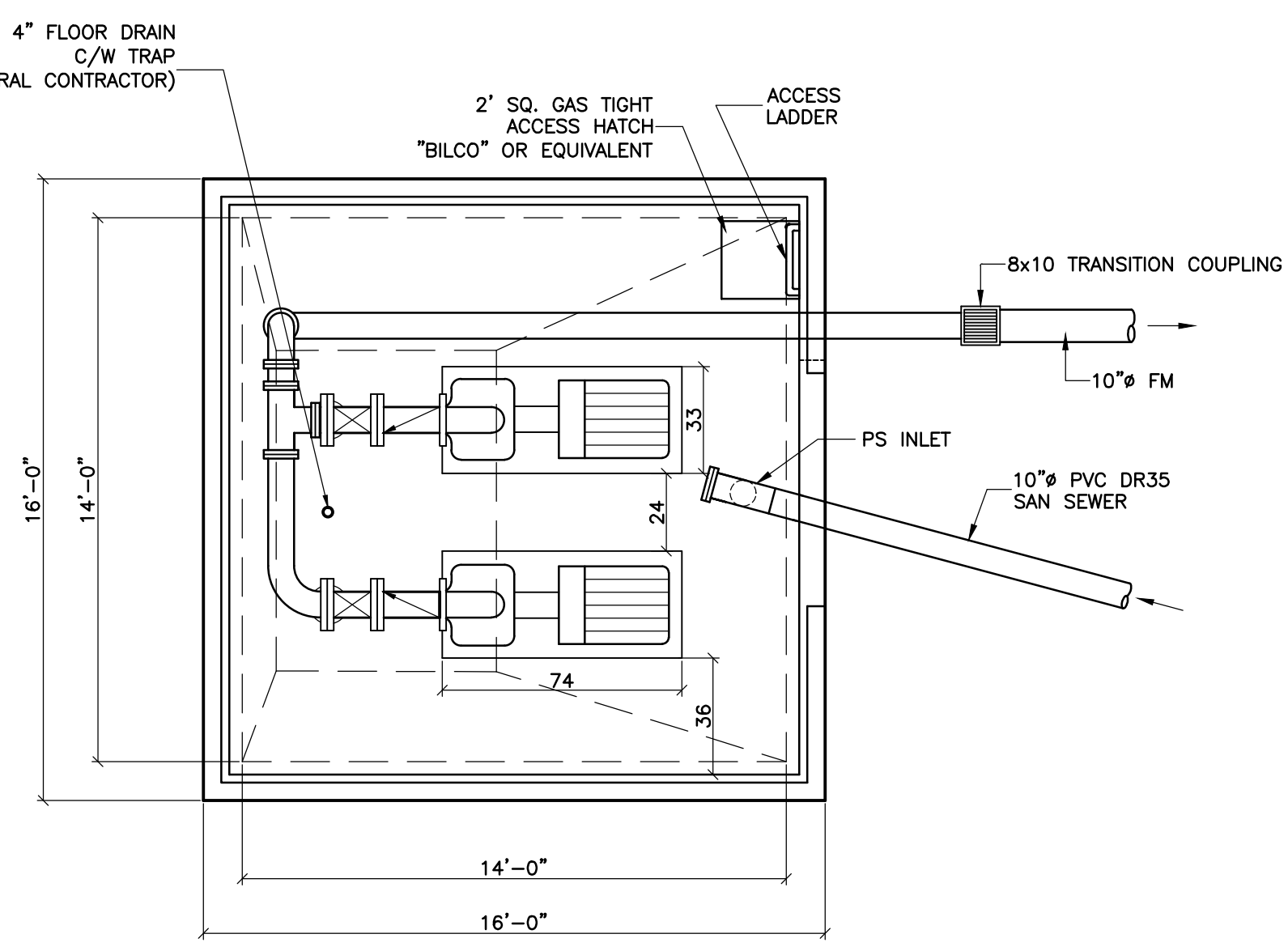


**PUMP STATION SCHEDULE**

ALL MEASURES IN FEET (UNLESS OTHERWISE NOTED)	PS#2	PS#3	PS#4	PS#5	PS#7	PS#8
1. WETWELL DIA./SIZE	A	4 ft.	6 ft.	14 ft. x 14 ft.	4 ft.	14 ft. x 14 ft.
2. TOP WETWELL ELEV.	B	23.0 ft.	8.20 ft.	8.52 ft.	17.5 ft.	9.0 ft.
3. WETWELL BOTTOM T.O.C. ELEV.	C	6.50 ft.	-3.70 ft.	-7.48 ft.	3.0 ft.	-6.00 ft.
4. FORCEMAIN INVERT	D	12.39 ft.	5.20 ft.	2.50 ft.	12.0 ft.	-2.00 ft.
5. DESIGN FLOW RATE (USGPM)	E	60	210	1000	123	1460
6. TOTAL DYNAMIC HEAD (ft.)	F	24	53	70	94	58
7. FORCEMAIN DIA. (in.)	G	4	3	8	4	8
8. FLOAT ELEV.	H	N.I.C.				
(a) ULTRA HIGH LEVEL ALARM	I	8.50 ft.	1.40 ft.	6.5 ft.	7.25 ft.	4.00 ft.
(b) PUMP ON	J	7.90 ft.	0.90 ft.	-3.50 ft.	8.25 ft.	-1.50 ft.
(c) PUMP OFF	K	7.20 ft.	-1.64 ft.	-5.9 ft.	3.0 ft.	-4.10 ft.
(d) ULTRA LOW LEVEL ALARM	L	7.00 ft.	-2.14 ft.	-6.5 ft.	2.5 ft.	-5.0 ft.
9. OVERFLOW INVERT	M	8 ft.	4.05 ft.	4.52 ft.	N/A	N/A
10. OVERFLOW DIA.	N	8"	8"	18"	3' LG WEIR	N/A
11. SANITARY SEWER DIA./INVERT	O	8"/8.19'	8"/4.30'	36"/-4.04'	8"/6.25'	10"/-2.0'
12. SANITARY SEWER DIA./INVERT	P		8"/1.4'			8"/-0.36'

N.I.C.

**NOTE:**  
WETWELL AND TOP FOR PS#3, PS#4, PS#5 AND PS#8 IS EXISTING.



**DETAIL 1 - BAFFLE (N.I.C. - EXISTING)**  
SCALE: NOT TO SCALE

- GENERAL NOTES:**
- DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED.
  - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.
  - "\*" INDICATE PRE-PURCHASE EQUIPMENT. FOR A COMPLETE LIST OF REQUIREMENTS, REFER TO THE SPECIFICATIONS.

- LEGEND**
- WELD
  - VIC COUPLING
  - FLANGED
  - UNION

- BV - BALL VALVE
- BFV - BUTTERFLY VALVE
- CV - CHECK VALVE
- GV - GATE VALVE
- GLV - GLOBE VALVE
- KGV - KNIFE GATE VALVE
- PV - PLUG VALVE
- PNV - PINCH VALVE
- VC - VICTAULIC COUPLING MAINTENANCE JOINT

No.	Description	Date	By
05	ISSUED FOR TENDER	APR/02	JH
04	ISSUED FOR STP CONTRACT	FEB 04/02	JH
03	ISSUED FOR EQUIPMENT PRE-PURCHASE	OCT 3/01	JH
02	ISSUED FOR TENDER	SEP.9/99	JCL
01	ISSUED FOR REVIEW	JULY/99	TA

**Revision or Issue**

**TOWN OF LUNEBURG**

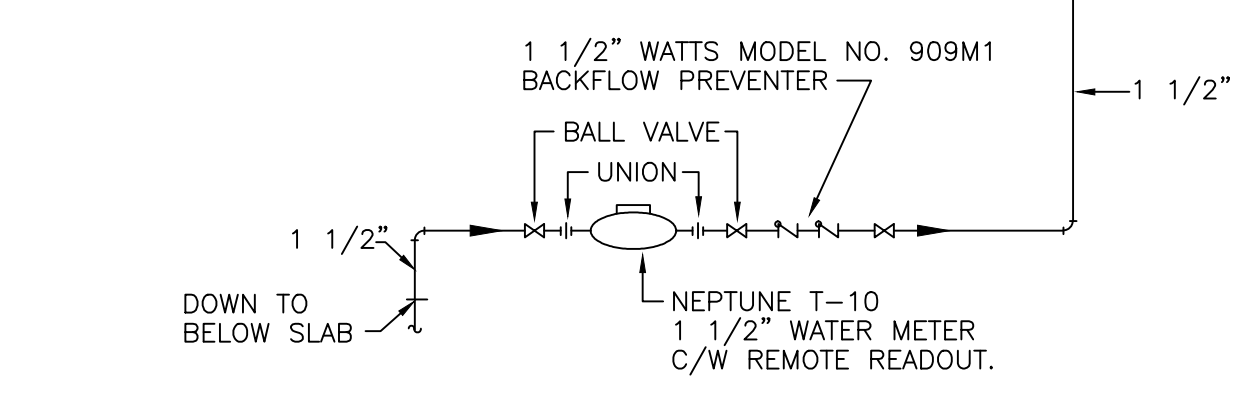
**MUNICIPAL WASTEWATER COLLECTION AND TREATMENT PUMP STATIONS #3, #5, #7 & #8**

**PUMP STATION DETAILS**

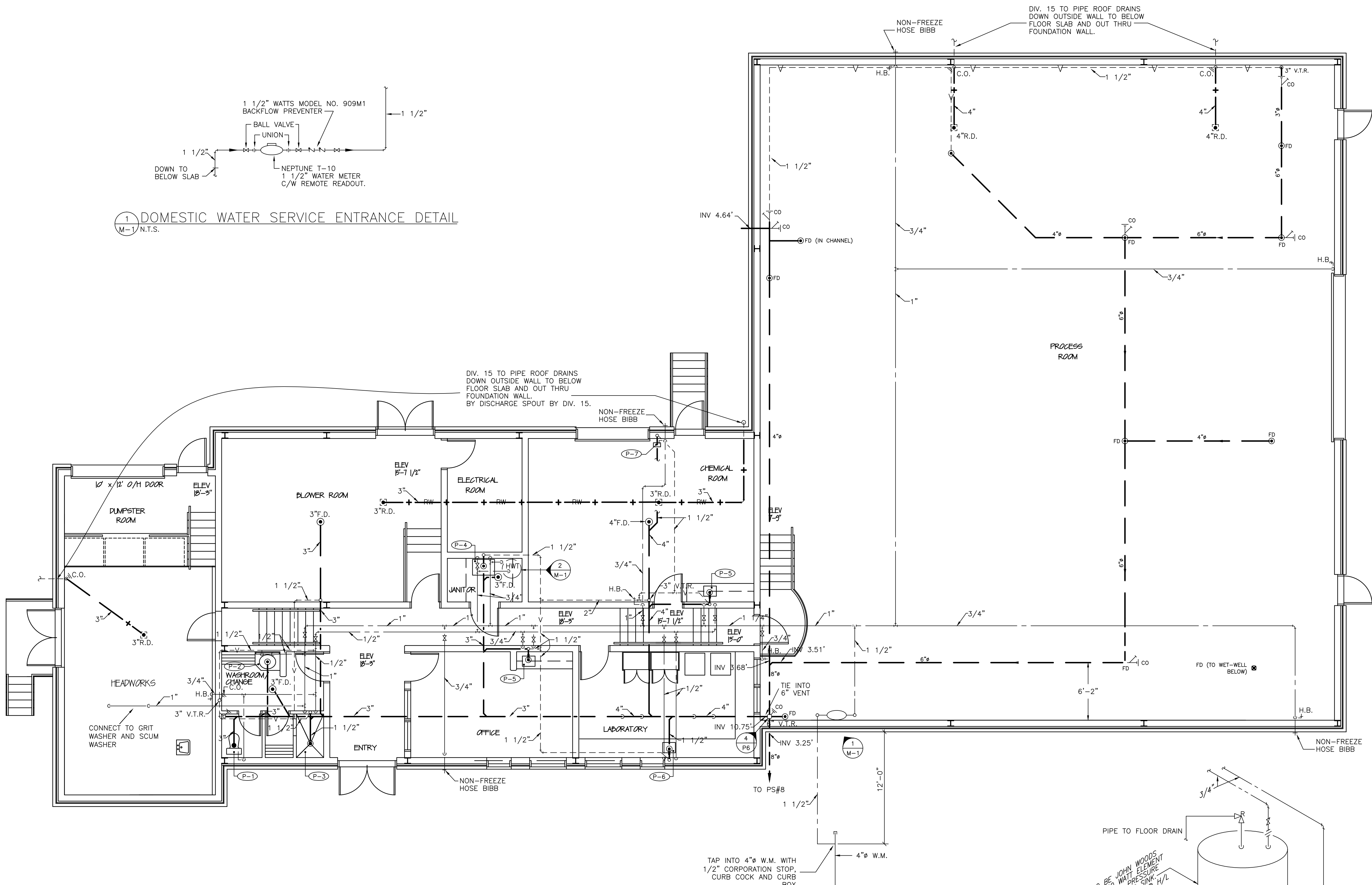


Scale AS NOTED

Date	Oct 2001	Drawn	GP
Designed	JH/GFB	Checked	Approved
Contract No.	98001	Sheet	29/43
Drawing No.	P9	Revision	5



1 DOMESTIC WATER SERVICE ENTRANCE DETAIL  
M-1/N.T.S.



**LEGEND**

- - - SAN. DRAIN BELOW FLOOR
- + - SAN. DRAIN ABOVE FLOOR
- - - VENT
- F.D. FLOOR DRAIN
- S.D. SHOWER DRAIN
- R.D. ROOF DRAIN
- C.O. CLEANOUT
- RW - RAINWATER BELOW FLOOR
- RW + - RAINWATER ABOVE FLOOR
- - - DOMESTIC COLD WATER PIPING
- - - DOMESTIC HOT WATER PIPING
- BALL VALVE
- GLOBE VALVE
- CHECK VALVE
- H.B.+ - WALL HYDRANT
- PRESSURE RELIEF VALVE
- L/LAV LAVATORY
- W.C. WATER CLOSET
- J.S. JANITOR SINK
- K.S. KITCHEN SINK
- R.W.L. RAIN WATER LEADER
- V.T.R. VENT THRU. ROOF

03	RE-ISSUED FOR TENDER	APR. 02	WEF
02	ISSUED FOR TENDER	NOV. 01	WEF
01	ISSUED FOR REVIEW	DEC. 98	WEF
No.	Description	Date	By

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
BUILDING MECHANICAL

**ABL ENVIRONMENTAL**  
consultants limited

102 PORTLAND STREET  
DARTMOUTH, NOVA SCOTIA  
B2Y 1H8

Tel: (902)468-0050  
Fax: (902)468-4399  
Email: abl@ablenvironmental.com

**BURNSIDE CONSULTANTS LIMITED**  
CONSULTING ENGINEERS

SUITE 200, TOWER 2  
202 BROWNLOW AVE.  
DARTMOUTH N.S.

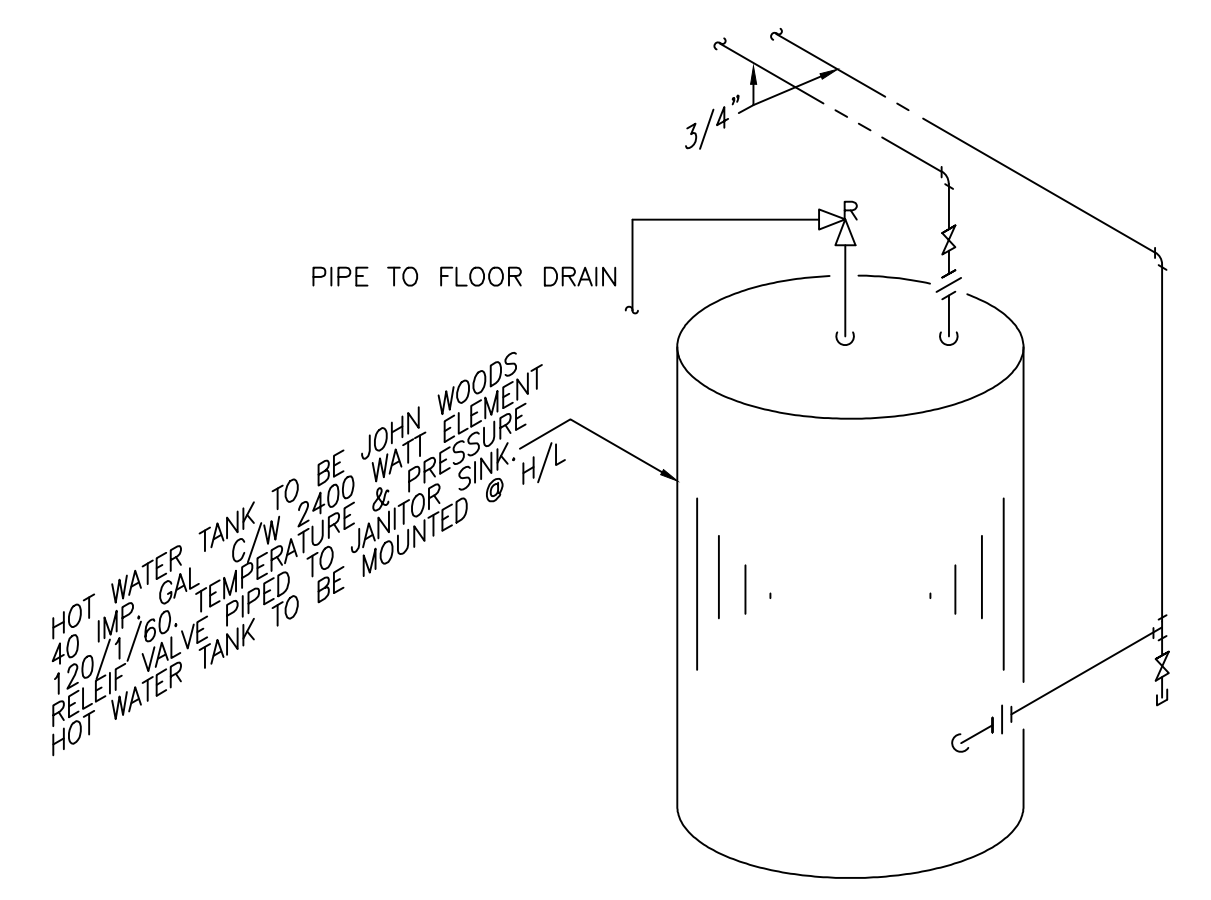
FACSIMILE (902)468-0729  
TELEPHONE (902)468-0735

PLUMBING & DRAINAGE

Scale 3/16" = 1'-0"

Date	DEC 1998	Drawn	J.M.R.
Designed	J.M.R.	Checked	W.E.F.
Contract No	98001	Sheet of	39 / 43
Drawing No		Revision	

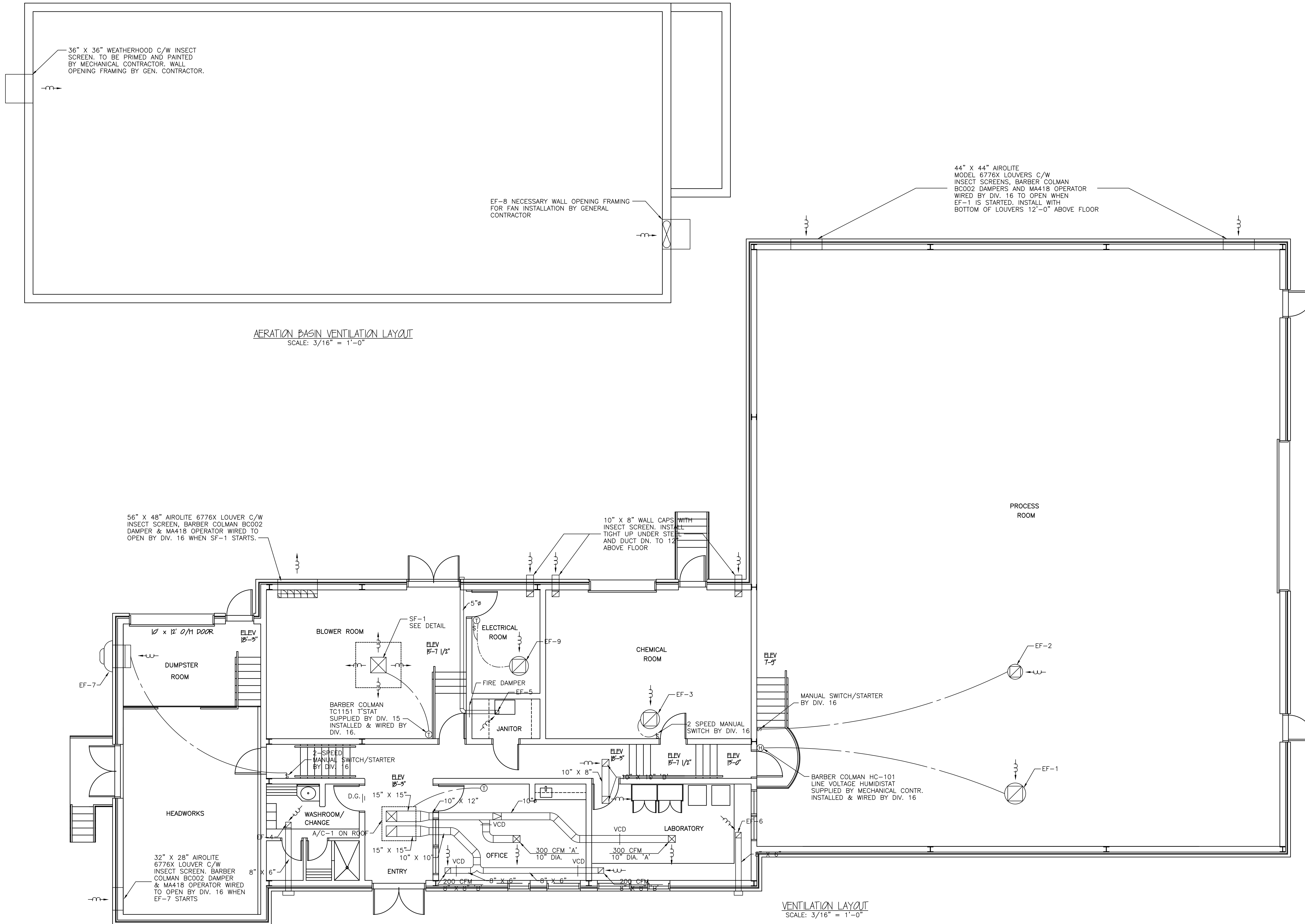
M1



2 HOT WATER HEATER DETAIL  
M-1/N.T.S.

Date: Friday, Apr. 13, 2012 - 4:39pm Drawing: Model File: C:\98001 - Lunenburg STP 2002\Drawings\98001-M1.dwg User: mallison

Date: Friday, Apr. 13, 2012 4:35pm Drawing: Model File: C:\98001 -Lunenburg STP 2002\Drawings\98001-M2.dwg User: mallison



AERATION BASIN VENTILATION LAYOUT  
SCALE: 3/16" = 1'-0"

VENTILATION LAYOUT  
SCALE: 3/16" = 1'-0"

No.	Description	Date	By
03	RE-ISSUED FOR TENDER	APR. 02	WEF
02	ISSUED FOR TENDER	NOV. 01	WEF
01	ISSUED FOR REVIEW	DEC.98	WEF

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
BUILDING MECHANICAL



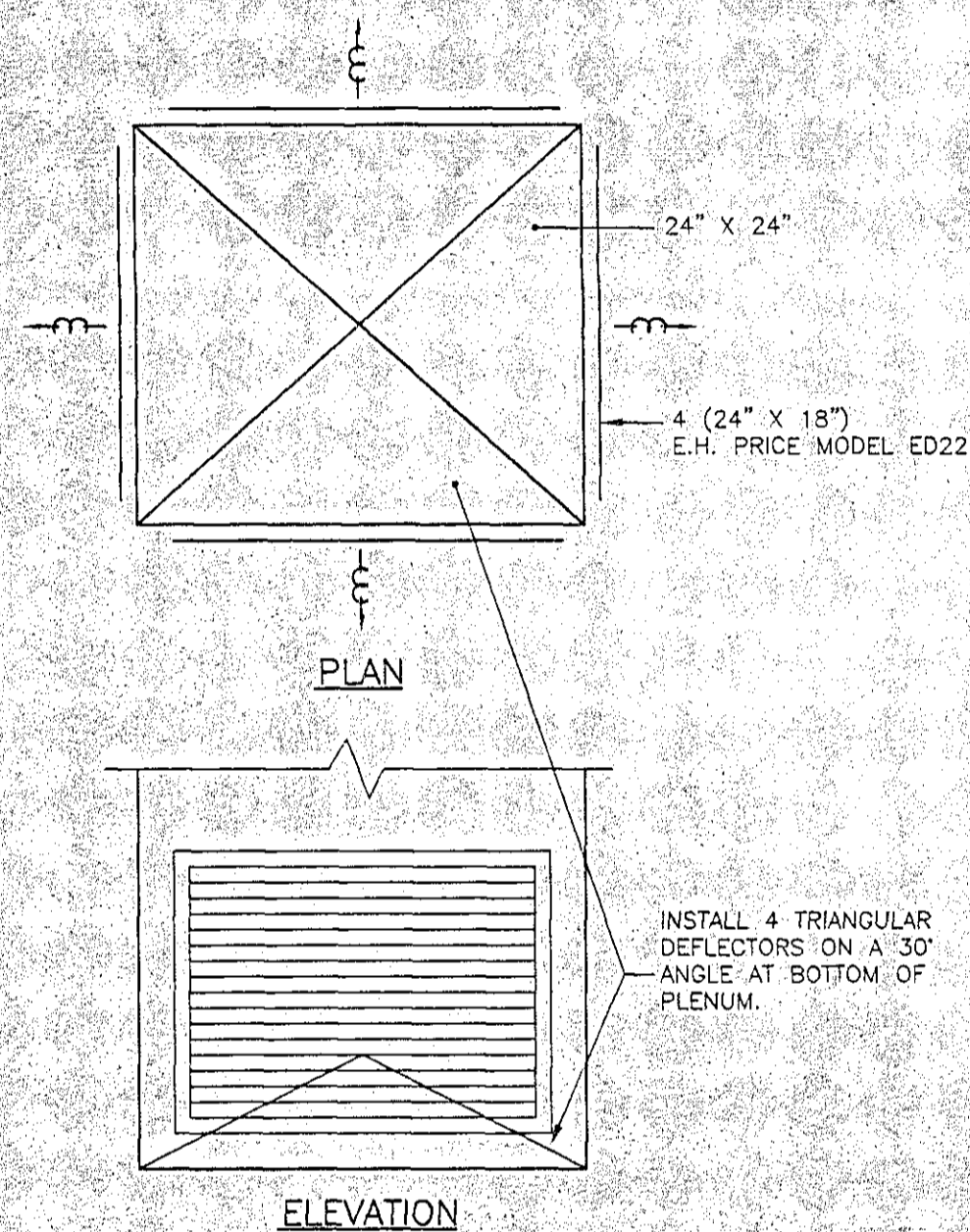
BURNSIDE CONSULTANTS  
LIMITED  
CONSULTING ENGINEERS

SUITE 200, TOWER 2  
202 BROWNLOW AVE.,  
DARTMOUTH N.S.  
FACSIMILE (902)468-0729  
TELEPHONE (902)468-0735

VENTILATION LAYOUT

Scale AS SHOWN

Date	Drawn
DEC. 1998	WHL
Designed W.E.F.	Checked W.E.F.
Contract No 98001	Sheet of 31/43
Drawing No	Revision
	<b>M2</b>



SUPPLY AIR DETAIL - BLOWER  
N.T.S.

CEILING EXHAUST FAN SCHEDULE			
DESIGNATION	EF-4	EF-5	EF-6
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK
MODEL	SP-226	SP-210	SP-226
EXHAUST AIR (CFM)	250	88	257
ESP	0.25"	0.25"	0.25"
MOTOR (H.P.)	81 WATTS	49 WATTS	81 WATTS
ELECTRICS	120/1/60	120/1/60	120/1/60
DISCONNECT	--	--	--
RPM	1050	950	1050
CONTROL	LIGHT SWITCH	MANUAL	TIMER
BACKDRAFT DAMPER	YES	YES	YES
CEILING RADIATION DAMPER	--	YES	--
ALTERNATES	COOK	COOK	COOK
WALL CAP	WC-8 X 8	WC-6	WC-8 X 8
REMARKS	WIRING TO LIGHT SWITCH BY DIV. 16	MANUAL SWITCH & WIRING BY DIV. 16	TIMER & WIRING BY DIV. 16

PACKAGED ROOFTOP A/C UNIT SCHEDULE	
SPEC. SECTION	15782
DESIGNATION	AC-1
MANUFACTURER	YORK
MODEL	DEB01B
CAPACITY (MBH)	16.1
EAT (°F)	80° WB/67° DB
AMBIENT TEMP. (°F)	95°F
SUPPLY AIR (CFM)	600
ESP (INCHES)	0.6
EVAP. FAN MOTOR (H.P.)	0.5
ELECTRICS	208/1/60
MIN. FRESH AIR (CFM)	200
FILTERS	2" LA
ROOF CURB	YES
SINGLE SOURCE POWER ENTRY	YES
ANTI SHORT CYCLE TIMER	YES
ECONOMIZER	YES
DIFFERENTIAL ENTHALPY	YES
OVERSIZED MOTOR	--
TIME DELAY RELAY	--
ELECTRIC HEAT (K.W.)	5.0
ELECTRIC HEAT STAGES	1
CONTROL	HONEYWELL T7300
DISCONNECT	DIV. 16
POWER EXHAUST	--
WEIGHT (LBS)	325
ALTERNATES	

NOTE:  
1. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR STARTUP AND COMMISSIONING OF UNIT AND WIRING OF THERMOSTAT TO AIR CONDITIONING UNIT AND TO ELECTRIC BASEBOARD IN OFFICE.

WALL EXHAUST FAN SCHEDULE	
DESIGNATION	EF-8
MANUFACTURER	GREENHECK
MODEL	SC3-24-315-A7
EXHAUST AIR (CFM)	5746
ESP	0.375"
MOTOR (H.P.)	3/4
ELECTRICS	575/3/60
DISCONNECT	DIV. 16
WALL HOUSING	YES
STARTER	BY DIV. 16
STARTER TYPE	MANUAL
CONTROL	MANUAL
BACKDRAFT DAMPER	YES
GUARD	YES
WEATHERHOOD	YES

ROOF SUPPLY FAN SCHEDULE	
DESIGNATION	SF-1
MANUFACTURER	GREENHECK
MODEL	RPBR-24
SUPPLY AIR (CFM)	5300
ESP	0.5"
MOTOR (H.P.)	1.5
ELECTRICS	575/3/60
DISCONNECT	YES
ROOF CURB	YES
STARTER	DIV. 16
STARTER TYPE	MAGNETIC
CONTROL	T'STAT BY DIV. 15
DAMPER	YES
RPM	1550
FILTERS	YES
TALL BASE	YES

EXHAUST FAN SCHEDULE				
DESIGNATION	EF-1	EF-2	EF-3	EF-7
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK
MODEL	GB-240	GB-130	GB-80	GW-100-A
EXHAUST AIR (CFM)	6000	1500	500	1120
ESP	0.5"	0.5"	0.5"	0.5"
MOTOR (H.P.)	1.5	1/3	1/4 (2 SPEED)	1/4 (2 SPEED)
ELECTRICS	575/3/60	120/1/60	120/1/60	120/1/60
DISCONNECT	YES	YES	YES	YES
ROOF CURB	YES	YES	YES	--
STARTER	BY DIV. 16	BY DIV. 16	BY DIV. 16	BY DIV. 16
STARTER TYPE	MAGNETIC	MANUAL	MANUAL	MANUAL
CONTROL	HUMIDISTAT	MANUAL	2 SPEED MANUAL	2 SPEED MANUAL
BACKDRAFT DAMPER	YES	YES	YES	YES
ALTERNATES	COOK	COOK	COOK	COOK
REMARKS	--	--	2 SPEED MOTOR	EXPLOSION PROOF MOTOR & SPARK RESISTANT WHEEL 2 SPEED MOTOR

GRILLE AND DIFFUSER SCHEDULE		
DESIGNATION	A	B
FUNCTION	SUPPLY	RETURN
MANUFACTURER	E.H. PRICE	E.H. PRICE
MODEL	SCD	TB-80
DAMPER	DUCT MOUNTED	DUCT MOUNTED
SIZE	24" X 24"	AS NOTED
FINISH	B12	B12
REMARKS	SURFACE	SURFACE
ALTERNATES	TITUS TMS	TITUS 50F

No.	Description	Date	By
01	ISSUED FOR REVIEW	DEC-98	WEP

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
BUILDING MECHANICAL

**ABL Environmental Consultants Ltd.**

152 FERRAND STREET, P.O. BOX 501  
DARTMOUTH, N.S. B2Y 3J8

Tel: (902)449-0050  
Fax: (902)449-4399

**BURNSIDE CONSULTANTS LIMITED**  
CONSULTING ENGINEERS

SUITE 1000  
METROPLEX PLACE  
99 WISE RD. DARTMOUTH, N.S.

FUNDALE (902)445-4186  
TELEPHONE (902)443-4480

MECHANICAL SCHEDULES

Scale: N.T.S.

Date	DEC. 1998	Drawn	WHL
Designed	W.E.P.	Checked	W.E.P.
Approved	W.E.P.	Approved	W.E.P.
Contract No.	98001	Sheet of	32/46
Drawing No.	5083	Revision	

**M3**

**SPECIFICATION - GENERAL**

- SUBMIT SIX (6) SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING EQUIPMENT. THE FOLLOWING ITEMS ARE REQUIRED: PLUMBING FIXTURES & TRIM, PLUMBING ACCESSORIES, GRILLES & DIFFUSERS, EXHAUST FANS, AIR CONDITIONERS, LOUVERS, CONTROLS.
- BEFORE SUBMITTING A BID, EACH BIDDER SHALL CAREFULLY EXAMINE THE DRAWINGS, READ THE SPECIFICATION AND OTHER CONTRACT DOCUMENTS, AND VISIT THE SITE OF WORK. THE CONTRACTOR SHALL INCLUDE IN HIS BID A SUM TO COVER ALL COSTS OF ALL ITEMS NECESSARY TO PERFORM THE WORK. NO ALLOWANCE WILL BE MADE TO ANY BIDDER BECAUSE OF LACK OF SUCH EXAMINATION OR KNOWLEDGE. THE SUBMISSION OF A BID WILL BE CONSTRUED AS CONCLUSIVE EVIDENCE THAT THE BIDDER HAS MADE SUCH EXAMINATION.
- PROVIDE OPERATION AND MAINTENANCE DATA FOR INCORPORATION INTO A MANUAL. BIND CONTENTS INTO A THREE-RING, HARD-COVERED, PLASTIC-JACKETED BINDER.
- PROVIDE SCHEDULE 40 PIPE SLEEVES AT POINTS WHERE PIPES PASS THROUGH MASONRY, CONCRETE OR FIRE RATED ASSEMBLIES. WHERE SLEEVES PASS THROUGH WALLS OR FLOORS, PROVIDE SPACE FOR FIRESTOPPING. WHERE PIPES/DUCTS PASS THROUGH FIRE RATED WALLS, FLOORS AND PARTITIONS, MAINTAIN FIRE RATING INTEGRITY.
- FIRESTOPPING MATERIAL AND INSULATION WITHIN ANNULAR SPACE BETWEEN PIPES, DUCTS, INSULATION AND ADJACENT FIRE SEPARATION: ONE-PART, INTUMESCENT, LATEX ELASTOMER, ASTM, FM AND UL TESTED FOR 3 HOUR FIRE RATING. 3M CP25WB CAULK, METACAULK 950.
- PROVIDE ACUDOR UF-500, WILLIAMS WB-6P, NAILOR 0900-2 ACCESS DOORS, WHERE REQUIRED, FOR INSTALLATION BY GENERAL CONTRACTOR, IN FIRE RATED WALLS AND CEILINGS. USE ACUDOR FW155, WILLIAMS WB-FR, NAILOR 0900-1. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR WALL AND CEILING FIRE RATINGS.
- SUBSTITUTIONS OF PRODUCTS SPECIFIED WILL BE CONSIDERED IF REQUESTED IN WRITING AND SUBMITTED NOT LATER THAN 7 DAYS PRIOR TO CLOSE OF TENDER. IF THE PROPOSED SUBSTITUTION IS CONSIDERED ACCEPTABLE BY THE ENGINEER, AN ADDENDUM WILL BE ISSUED. SUBSTITUTIONS OF MATERIAL AND EQUIPMENT WILL NOT BE PERMITTED AFTER TENDER CLOSE.
- GIVE ALL NOTICES, OBTAIN ALL PERMITS, ARRANGE FOR INSPECTIONS OF WORK BY INSPECTION AUTHORITY, AND PAY FOR ALL FEES IN ORDER THAT THE WORK HEREIN SHOWN AND SPECIFIED MAY BE CARRIED OUT. RETAIN ALL INSPECTION CERTIFICATES AND SUBMIT TO ARCHITECT.
- FURNISH A WRITTEN GUARANTEE STATING THAT ALL EQUIPMENT SUPPLIED AND ALL WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE OF THE COMPLETED CONTRACT. THIS GUARANTEE SHALL BOND THE CONTRACTOR TO CORRECT, REPAIR OR REPLACE PROMPTLY DEFECTIVE EQUIPMENT OR WORKMANSHIP WITH NO COST TO THE OWNER.
- ALL EXCAVATION AND BACKFILLING FOR MECHANICAL WORK WILL BE BY THE GENERAL CONTRACTOR.
- ALL CUTTING AND PATCHING SHALL BE BY THE GENERAL CONTRACTOR.

**SPECIFICATION - VENTILATION & AIR CONDITIONING**

- INSTALL DUCTWORK IN ACCORDANCE WITH ASHRAE AND SMACNA.
- SEAL ALL TRANSVERSE JOINTS AND CONNECTIONS WITH DURO DYNE S-2 (TCE MULTI-PURPOSE, BETTER VENT DUCTBOND) SEALANT AND DURO DYNE FT-2 (TCE MULTI-PURPOSE) TAPE. BED TAPE IN SEALANT AND RECOAT WITH MINIMUM OF ONE COAT OF SEALANT.
- FABRICATE DUCTWORK FITTINGS TO SMACNA. USE STANDARD RADIUS ELBOWS. SQUARE ELBOWS TO 16" COMPLETE WITH SINGLE THICKNESS VANES. SQUARE ELBOWS OVER 16" WITH DOUBLE THICKNESS VANES.
- SUB BRANCH DUCT WITH 45 DEG. ENTRY AND BALANCING DAMPER ON BRANCH.
- GALVANIZED STEEL: TO ASTM A525M-86, Z90 ZINC COATING. THICKNESS AS NOTED BELOW:

MAX. ANY SIZE	GAUGE
UP TO 12"	26
13" TO 18"	24
19" TO 30"	24
- DUCTWORK JOINTS: TO ASHRAE AND SMACNA OR PROPRIETARY MANUFACTURER DUCT JOINT, DUCTMATE CANADA OR EXANNO NEXUS.
- ROUND DUCTWORK: LOCK FORMING QUALITY TO ASTM A525M, Z90 ZINC COATING, THICKNESS AS NOTED BELOW:

DUCT DIAMETER	GAUGE
UP TO 12"	28
OVER 12"	26
- STRAP HANGERS: TO ASHRAE AND SMACNA. MAXIMUM SIZE DUCT SUPPORTED BY STRAP HANGER: 20".
- HANGERS: GALVANIZED STEEL ANGLE WITH GALVANIZED STEEL RODS TO FOLLOWING TABLE:

DUCT SIZE	ANGLE SIZE	ROD SIZE
UP TO 30"	1"x1"x1/8"	1/4"

MAXIMUM SPACING: 10'-0".
- FLEXIBLE DUCTWORK (INSULATED): FLEXMASTER FAB 3T, TCE SIMPLE FLEX P.I., THERMAFLEX MKE.
- ACCESS DOORS (NON-INSULATED DUCTS): CONTROLLED AIR ADR, NEXUS PDQ. ACCESS DOORS (INSULATED DUCTS): CONTROLLED AIR ADR-1, NAILOR HART 0810. INSTALL ACCESS DOORS ADJACENT EACH FIRE DAMPER, VOLUME CONTROL DAMPER, REHEAT COIL AND WHERE NOTED.
- SINGLE BLADE BALANCING DAMPERS, SIZE AND CONFIGURATION TO SMACNA, EXCEPT MAXIMUM HEIGHT: 8". CONTROLLED AIR MBD-S, RUSKIN MD-25. ROUND DUCT: CONTROLLED AIR MBD-RD-88, RUSKIN MDRS-25.
- MOTORIZED DAMPERS: AS SPECIFIED ON DRAWINGS
- DUCT INSULATION: FIBERGLAS FACED FLEXIBLE DUCT INSULATION, KNAUF FIBER GLASS DUCT WRAP MULTI-PURPOSE FSK, MANSON ALLEY WRAP FSK. THICKNESS: 1".

APPLICATION:

  - ALL AIR CONDITIONING SUPPLY DUCTWORK.
  - ALL FRESH AIR INTAKE DUCTS.
- MULTI-BLADE BALANCING DAMPERS: OPPOSED BLADE TO SMACNA. CONTROLLED AIR MBD-0, NAILOR 1020, RUSKIN MD-35/OB.
- FIRE DAMPERS: CONTROLLED AIR VB-80, NAILOR TYPE B, RUSKIN IBD2.
- ENGAGE THE SERVICES OF AN INDEPENDENT BALANCING CONTRACTOR TO PERFORM THE AIR BALANCE. ASSIST THE BALANCING CONTRACTOR AS REQUIRED.

**SPECIFICATION - PLUMBING & DRAINAGE**

- CONFORM TO THE CANADIAN PLUMBING CODE - 1995 AND LOCAL AUTHORITY HAVING JURISDICTION.
- DOMESTIC HOT AND COLD WATER PIPING: COPPER TUBE, HARD DRAWN, TYPE L TO ASTM B88M.
- SOLDER/BRAZING: LEAD FREE TO SUIT APPLICATION.
- BOLTS, NUTS, HEX HEAD AND WASHERS: TO ASTM A307, HEAVY SERIES. TEFLON TAPE: FOR THREADED JOINTS.
- CHECK VALVES, NPS 2 AND UNDER, SCREWED: JENKINS 4092J, CRANE 37, TOYO 236, KITZ 22. CHECK VALVES, NPS 2 AND UNDER, SOLDERED: JENKINS 4093J, CRANE 1342, TOYO 237, KITZ 23.
- BALL VALVES, NPS 2 AND UNDER, SOLDERED: JENKINS 902J, CRANE F9222, MAS B-4, KITZ 69. BALL VALVES, NPS 2 AND UNDER, SCREWED: JENKINS 901J, CRANE F9202, MAS B-3, KITZ 68.
- BURIED STORM, SANITARY AND VENT PIPING: CAST IRON MJ, OR PLASTIC. ABOVE GROUND STORM, SANITARY AND VENT PIPING: CAST IRON MJ, COPPER TYPE DWV, OR PVC.
- FLOOR DRAINS C/W TRAP PRIMER CONNECTION. GENERAL: ZURN ZXN-415-A, ANCON FD-300, SMITH 2005A
- CLEANOUTS - PLUGS: ZURN Z-1440-BP, ANCON CO-200. SMITH 4280. COVER (UNFINISHED CONCRETE FLOORS): ZURN ZN-1602-SP, ANCON CO-200-RX, SMITH 4020. COVER (TILE FLOORS): ZURN ZN-1602-X-SP, ANCON CO-200-T, SMITH 4140. COVER (CARPET): ZURN ZN-1602-CM-SP, ANCON CO-200-RC, SMITH 4020X.
- WATER HAMMER ARRESTORS: ZURN Z-1700, ANCON SG, ENPOCO HT.
- TRAP SEAL PRIMERS: ZURN Z-1022A, ANCON MS-810, ENPOCO TSP.
- THERMALLY INSULATE ALL HORIZONTAL STORM DRAINAGE, DOMESTIC HOT & COLD WATER PIPING, VALVES AND FITTINGS WITH 1/2" THICKNESS OF FIBERGLAS 850 PIPE INSULATION C/W ASJ/SSL, KNAUF FIBER GLAS ASJ/SSL, MASON ALLEY K APT. INSULATE BOTTOM OF ROOF DRAIN ASSEMBLIES. ALL EXPOSED PIPING TO HAVE PVC JACKET, 0.02" MINIMUM THICKNESS. PROVIDE SAMPLE WITH SHOP DRAWINGS. ZESTON 2000 PVC, KNAUF FIBERGLAS 20-SMOKE PVC, CHILDERS PVC COVERING SYSTEM. FOLLOW MANUFACTURERS INSTALLATION INSTRUCTIONS.

THERMALLY INSULATE UNDERSIDE OF ROOF DRAIN BODIES WITH 1" FLEXIBLE MINERAL INSULATION C/W VAPOUR BARRIER: JOHN MANVILLE MICROLITE, FIBER GLASS DUCT WRAP MULTI-PURPOSE FSK, MANSON ALLEY WRAP FSK.
- TEST DRAINAGE, WASTE AND VENT PIPING TO NATIONAL BUILDING CODE AND AUTHORITIES HAVING JURISDICTION. TEST DOMESTIC HOT AND COLD WATER PIPING AT 1-1/2 TIMES SYSTEM OPERATING PRESSURE OR MINIMUM 125 PSI, WHICHEVER IS GREATER. MAINTAIN TEST PRESSURE WITHOUT LOSS FOR 4 HOURS.
- ROOFDRAINS, CAST IRON WITH ALUMINUM DOME, UNDERDECK CLAMPS: ZURN ZA-121-CERA, ANCON RD-100-BE-D-K80, SMITH 1310-CERA
- NON-FREEZE WALL HYDRANTS, RECESSED WITH INTEGRAL VACUUM BREAKER, REMOVABLE OPERATING KEY: ZURN ZN-1300, ANCON HY-725.
- HOSE BIBBS C/W INTEGRAL BACKFLOW PREVENTER: CAMBRIDGE 32W201, EMCO: 10741
- PLUMBING FIXTURES:

(P-1) WATER CLOSET  
ELONGATED BOWL, INSULATED TANK  
AMERICAN STANDARD AF-2660-L, CRANE 3-254 RADCLIFFE  
SEAT (WHITE), ELONGATED WITHOUT COVER: OLSONITE 95CCSS, CENTOCO 500CCSS, BENEKE 523SS/CH  
SUPPLIES: CHROME PLATED, FLEXIBLE, LOCKSHIELD STOP, ESCUTCHEON.

(P-2) LAVATORY- COUNTERTOP  
BASIN: VITREOUS CHINA: CRANE NORWICH AMERICAN STANDARD AF-0476.  
BRASS: CAMBRIDGE BRASS 23T333, POWERS CRANE P1420VA, CHICAGO FAUCET 404A-369-VP  
WASTE: CAMBRIDGE BRASS 33T290, POWERS CRANE P3906, MCGUIRE 155WC  
SUPPLIES: CHROME PLATED, FLEXIBLE, LOCKSHIELD STOP, ESCUTCHEON.  
CARRIER: ZURN ZX-1231, ANCON CA-411

(P-3) SHOWER  
SHOWER: FIAT MODEL 36T (PILOT SHOWER)  
OVERALL DIMENSIONS: 30" X 30" X 75"  
TRIM: THERMOSTATIC MIXING VALVE, INTEGRAL STOPS, SHOWER HEAD, ARM & FLANGE, LEVEL HANDLES.  
MCC POWERS T425-C-K-1, LEONARD LVC-5B-H-02  
DRAIN: ZURN ZXN-415-B

(P-4) SET TUB/JANITOR'S SINK  
WHITE, PORCELAIN ENAMELLED STEEL, BAKED ENAMEL STEEL  
STAND WITH FRONT APRON  
TUB: CRANE 6-296 STRATFORD  
TRIM: CAMBRIDGE BRASS 28T2343, POWERS CRANE P2430-VB  
CHICAGO FAUCET 540-LD-8975-WXF  
TRAP: POWER CRANE P4005, MCGUIRE 8089

(P-5) STAINLESS STEEL SINK, TYPE 302SS, SELF RIMMING, LEDGE BACK, CRUMP CUP STRAINER  
ARISTALINE LBS6807, KINDRED QSC2120, AMI 1017  
TRIM: CAMBRIDGE BRASS 26T2233, POWERS CRANE P2720, CHICAGO FAUCET 1100-L9-VP  
TRAP: POWERS CRANE P4005, MCGUIRE 8089  
SUPPLIES: CHROME PLATED, FLEXIBLE, LOCKSHIELD STOP, ESCUTCHEON.

(P-6) STAINLESS STEEL SINK  
TYPE 316SS, SELF RIMMING, LEDGE BACK, SS DRAIN ASSEMBLY WITH PERFORATED GRID  
ARISTALINE LBS8610316-C  
KINDRED QSL2120/316, AMI 1017-C  
TRIM: CAMBRIDGE BRASS W6700-10C  
CHICAGO FAUCET 930 C/W LEVER HANDLES  
TRAP: POWERS CRANE P4005, MCGUIRE 8089  
SUPPLIES: CHROME PLATED, FLEXIBLE, LOCKSHIELD STOP, ESCUTCHEON.

(P-7) EMERGENCY EYEWASH  
SS RECEPTOR, SS PUSH HANDLE, AERATED SPRAY HEADS  
SPEAKMAN SE-582, HAUS 7360, BRADLEY S19-220T

03	RE-ISSUED FOR TENDER	APR. 02	WEF
02	ISSUED FOR TENDER	NOV. 01	WEF
01	ISSUED FOR REVIEW	DEC.98	WEF
No.	Description	Date	By

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
BUILDING MECHANICAL



BURNSIDE CONSULTANTS  
LIMITED  
CONSULTING ENGINEERS

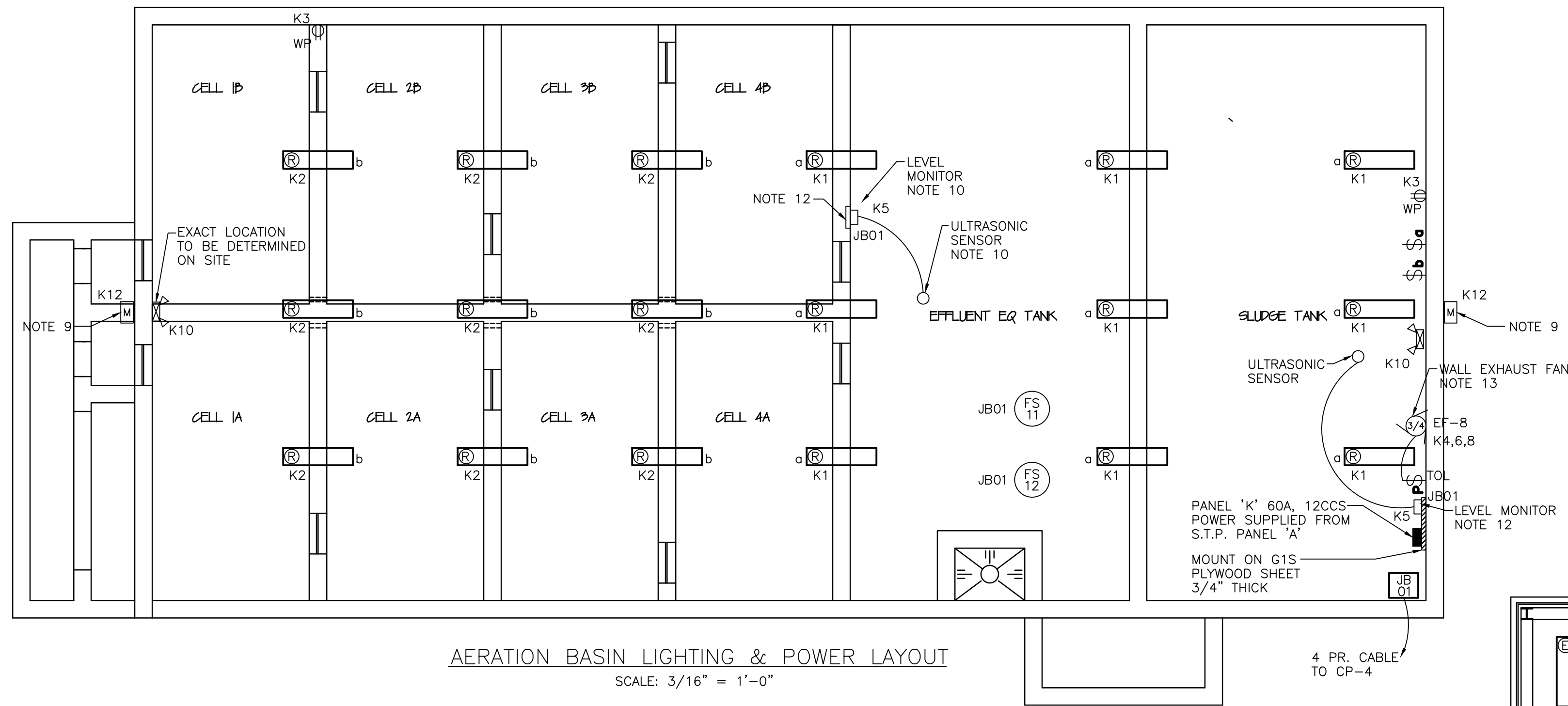
SUITE 200, TOWER 2  
202 BROWNLOW AVE.,  
DARTMOUTH N.S. FACSIMILE (902)468-0729  
TELEPHONE (902)468-0735

MECHANICAL SPECIFICATION

Scale N.T.S.

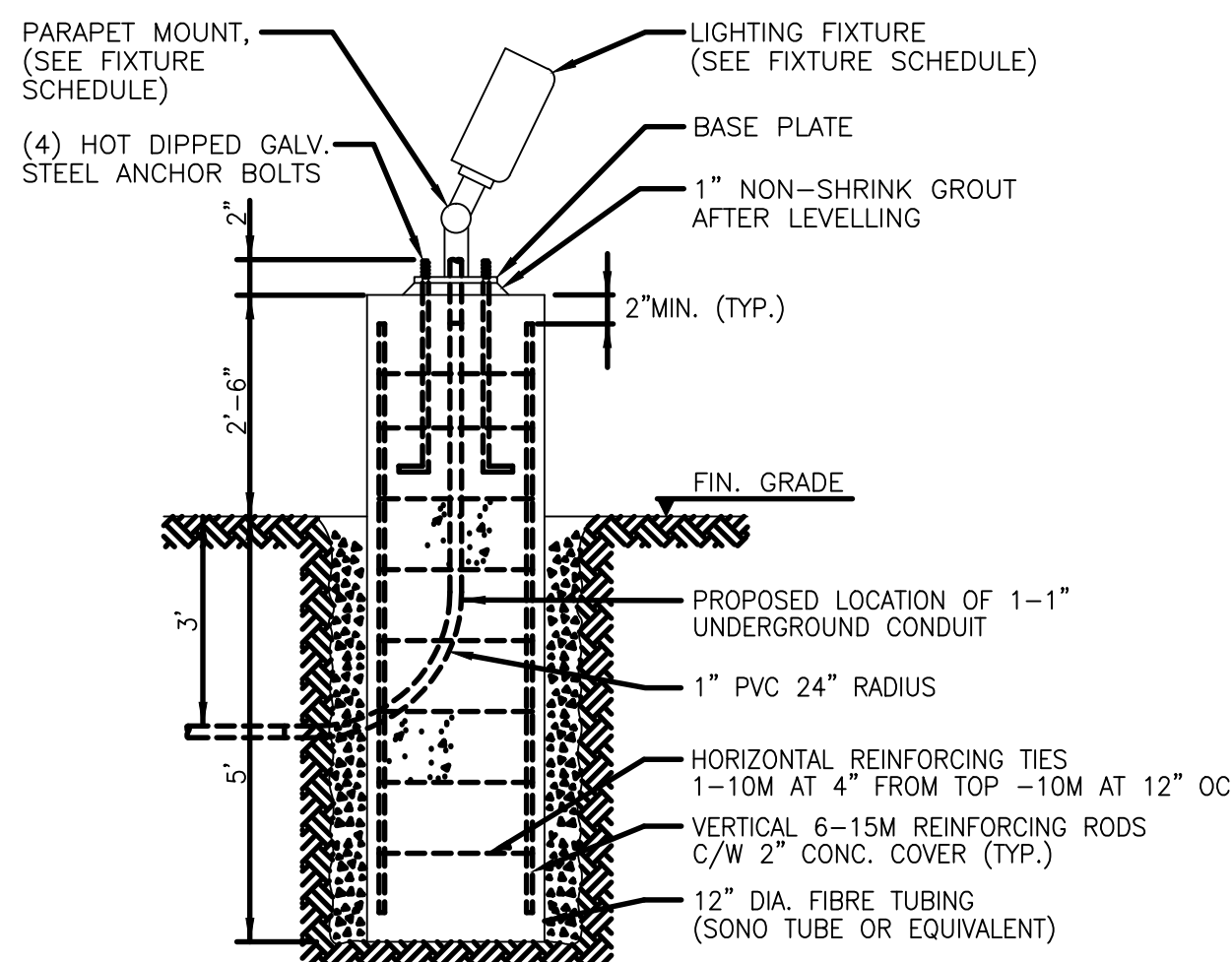
Date	DEC. 1998	Drawn	J.M.R.
Designed	J.M.R.	Checked	W.E.F.
Contract No	98001	Sheet of	33 / 43
Drawing No	M4	Revision	

Date: Tuesday, Apr. 17, 2012 12:38pm Drawing: Layout1 File: C:\98001 - Lunenburg STP 2002 Drawings\98001-E1.dwg User: mallison



AERATION BASIN LIGHTING & POWER LAYOUT

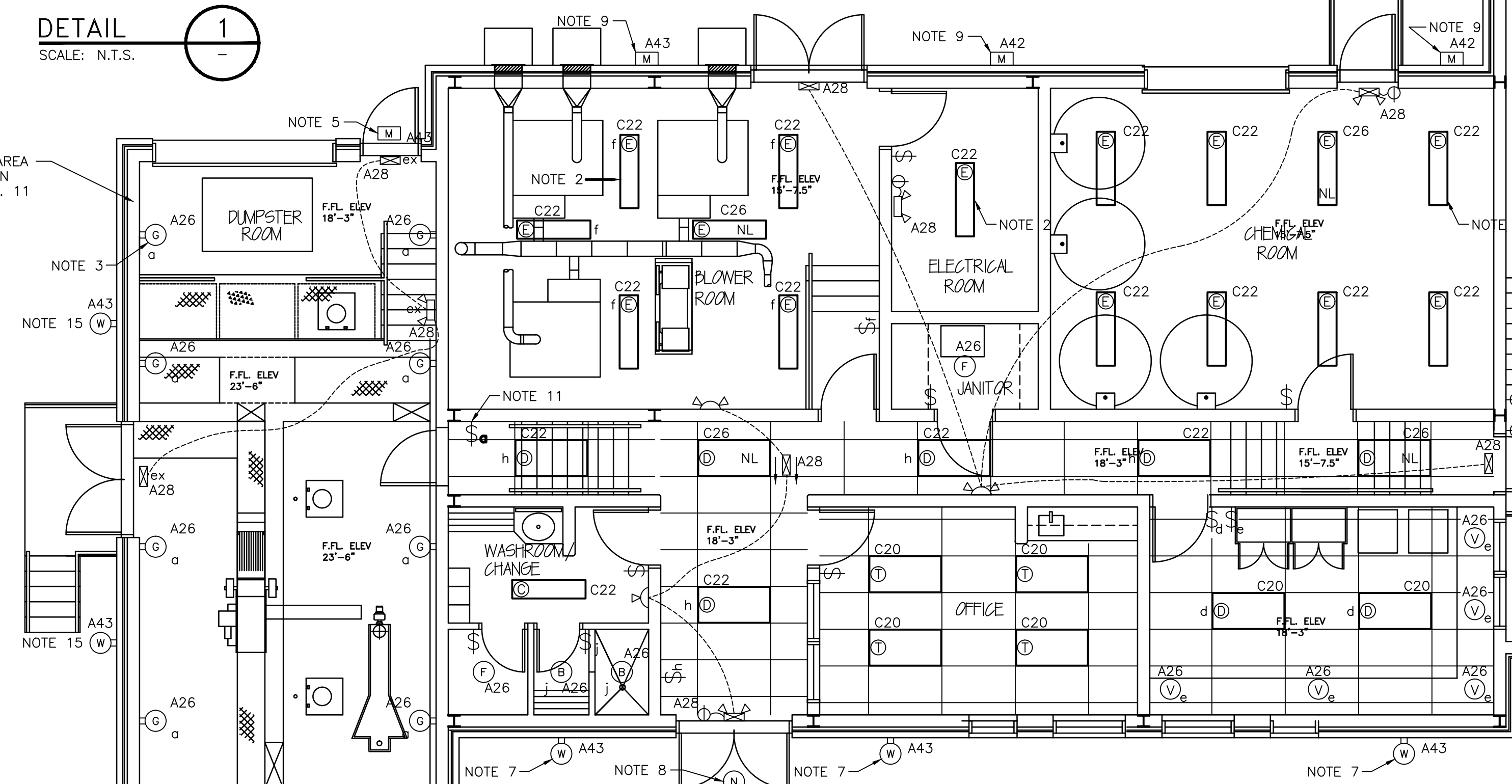
SCALE: 3/16" = 1'-0"



SIGN LIGHTING BASE DETAIL

DETAIL 1 SCALE: N.T.S.

HAZARDOUS AREA CLASSIFICATION CLASS 1, DIV. 11 NOTE 4



LIGHTING LAYOUT

SCALE: 3/16" = 1'-0"

NOTES:

1. FIXTURES IN CHEMICAL ROOM TO BE MOUNTED 10'-0" A.F.F. FIXTURES THAT MAY BE EFFECTED BY OVERHEAD DOORS SHALL BE HUNG/MOUNTED ABOVE THE DOOR.
2. FIXTURES IN BLOWER ROOM & ELECTRICAL ROOM TO BE MOUNTED 8'-6" A.F.F.
3. EXPLOSION PROOF FIXTURES IN DUMPSTER ROOM & HEADWORKS ROOM TO BE MOUNTED 8'-6" A.F.F.
4. ALL CONDUIT AND FITTINGS THAT SUPPLY POWER IN DUMPSTER AND HEADWORKS ROOM SHALL BE EXPLOSION PROOF, CLASS 1 DIV. 2, GROUP D, RATED. ALL CONDUITS ENTERING OR EXITING THIS AREA SHALL HAVE SUITABLE SEALS.
5. WALL PACK TO BE MOUNTED 2'-0" ABOVE FINISHED DOOR CASING, ON METAL SIDING, PROVIDE BLOCKING TO SUPPORT FIXTURE.
6. WALL PACK TO BE MOUNTED 6'-0" BELOW FINISHED ROOF, ON METAL SIDING, PROVIDE BLOCKING TO SUPPORT FIXTURE.
7. FIXTURE IS TO BE MOUNTED RECESSED IN MASONRY SO THAT TOP OF FIXTURE IS 8" BELOW MASONRY ACCENT BAND. CO-ORDINATE OPENINGS IN MASONRY WITH MASONRY CONTRACTOR. SEE ELEVATIONS SHOWN ON ARCHITECTURAL DRAWING A3.
8. FIXTURE TO BE MOUNTED RECESSED IN CANOPY.
9. FIXTURES TO BE MOUNTED ON MASONRY SO THAT THE TOP OF THE FIXTURE IS 8" BELOW ACCENT BAND. SEE ARCHITECTURAL DRAWINGS FOR EXACT PLACEMENT.
10. SUPPLIED BY OTHERS. INSTALLATION AND WIRING BY DIV 16.
11. SWITCH TO BE LIGHTED WHEN OFF. PASS & SEYMOUR PART NUMBER 15AC1-ISL.
12. FIELD FABRICATE INSTRUMENT STAND USING PAINTED 1-5/8" GALV. STEEL STRUT, 1200mm INST. HEIGHT.(MOUNT TO RAILING)
13. SUPPLIED BY MECHANICAL, WIRING BY DIV. 16
14. PROVIDE CONCRETE BASE TO MOUNT SIGN LIGHTING FIXTURE. LOCATE AT BACK OF CURB APPROX. 9'-0" AWAY FROM THE BUILDING. ADJUST AIMING AND OPTICS TO BEST ILLUMINATE THE BUILDING SIGN.
15. MOUNT FIXTURE ON METAL SIDING AT HEIGHT EQUAL TO TOP OF DOOR. PROVIDE BLOCKING TO SUPPORT THE FIXTURE.

GENERAL NOTES:

- G1. LIGHTING IS PROVIDED AT BOTH 120 AND 347VAC. PROVIDE SWITCHES FOR LIGHTING WITH VOLTAGE RATINGS AS PER LIGHTING FIXTURE SCHEDULE (E3)
- G2. SUPPLY ALL EMERGENCY/EXIT LIGHTING BATTERY PACKS FROM LOCKABLE BREAKERS.
- G3. AIM EMERGENCY LIGHTING HEADS TO BEST SUIT PATH TO EXITS.
- G4. INSTALL ALL ELECTRICAL EQUIPMENT IN THE AERATION BASIN BUILDING IN WATER & CORROSION RESISTANT ENCLOSURES, RATED NEMA 4X.
- G5. ALLOW FOR UP TO 10' MOVEMENT FROM LOCATION INDICATED FOR FIXTURES, OUTLETS, SWITCHES AND THE LIKE TO AVOID CONFLICTS WITH OTHER TRADES AND TO PRESERVE DESIGNED LIGHTING INTENSITY.
- G6. SUPPLY AND INSTALL ALL EQUIPMENT SHOWN UNLESS NOTED OTHERWISE.

LEGEND

- ⊙ H INDICATES THE TYPE OF FIXTURE AS INDICATED ON LIGHTING FIXTURE SCHEDULE. 'Q' INDICATES QUARTZ RESTRIKE. 'o' INDICATES CONTROLLING SWITCH.
- M M INDICATES THE TYPE OF EXTERIOR LIGHTING FIXTURE.
- A42 A42 REPRESENTS THE CIRCUIT NUMBER. (PANEL 'A', CIRCUIT 42)
- ⊙ SINGLE POLE SWITCH, 'o' INDICATES CONTROLLED FIXTURE  
15A, 120V, HUBBELL HBL-1201-ICN  
20A, 120V, HUBBELL HBL-1221-ICN  
15A, 347V, HUBBELL HBL-18201-ICN  
20A, 347V, HUBBELL HBL-18221-ICN
- ⊙ THREE WAY SWITCH, 'o' INDICATES CONTROLLED FIXTURE  
15A, 347V, HUBBELL HBL-18203-ICN  
20A, 347V, HUBBELL HBL-18223-ICN
- ⊙ FOUR WAY SWITCH, 'o' INDICATES CONTROLLED FIXTURE  
15A, 347V, HUBBELL HBL-18204-ICN
- NL "A" INDICATES THE TYPE OF FLUORESCENT LIGHT FIXTURE AS INDICATED ON LIGHTING FIXTURE SCHEDULE. 'NL' INDICATES NIGHT LIGHT SUPPLIED FROM LOCKABLE BREAKER.
- EMERGENCY REMOTE LIGHT SINGLE HEAD.
- EMERGENCY REMOTE LIGHT DOUBLE HEAD.
- EMERGENCY/EXIT, BATTERY PACK, 1 LED EXIT SIGN, 2 HALOGEN LIGHTS.
- EMERGENCY BATTERY PACK, 2 LIGHTS. 'ex' INDICATES EXPLOSION PROOF, CLASS 1, DIV 2.
- LED EXIT LIGHT, SURFACE MOUNTED, NO ARROWS. 'ex' INDICATES EXPLOSION PROOF, CLASS 1, DIV 2.
- LED EXIT LIGHT, DOUBLE SIDED CEILING MOUNT, SNAP OUT ARROWS.
- FS 11 FLOAT SWITCH (SUPPLIED BY OWNER) WIRE TO JB01
- ⊙ 120V, 15A, SINGLE RECEPTACLE, MOUNTED AT 84".
- ⊙ 120V, 15A, DUPLEX RECEPTACLE, WITH WEATHERPROOF COVER.

No.	Description	Date	By
03	ISSUED FOR TENDER	04/16/02	
02	ISSUED FOR REVIEW	11/13/01	RGB
01	ISSUED FOR REVIEW	JAN/99	JCL

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER COLLECTION AND TREATMENT

AERATION BASIN LIGHTING, POWER AND SEWAGE TREATMENT PLANT LIGHTING LAYOUT

**ABL Environmental Consultants Ltd.**

102 PORTLAND STREET, P.O. BOX 501 DARTMOUTH, NS, B2Y 3Y6 TEL: (902)468-0050 FAX: (902)468-4399

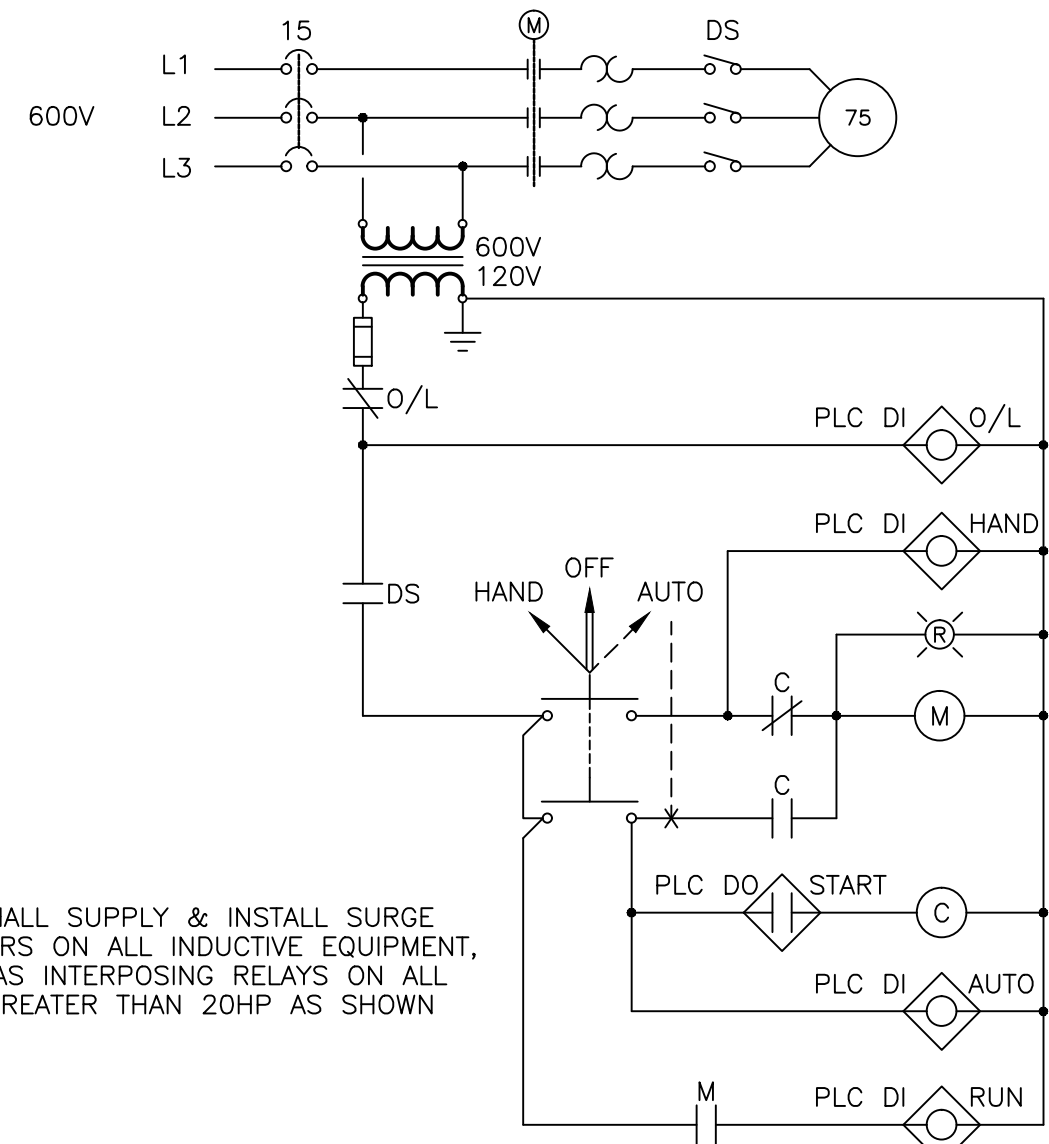
**Neill and Gunter**  
DARTMOUTH, N.S., CANADA

NGNS JOB NO. 16770

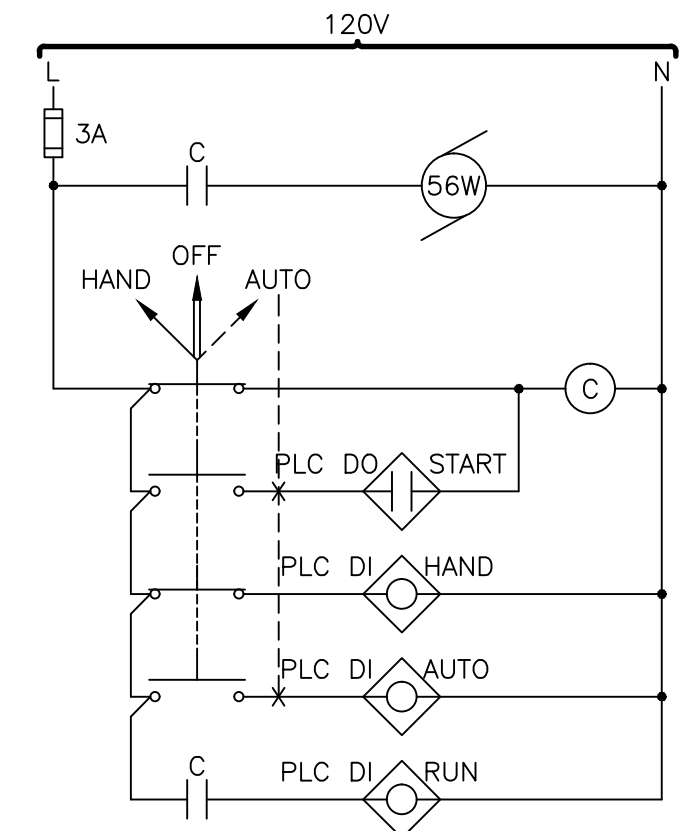
Scale 3/16" = 1'-0"

Date	Drawn
JULY 1998	WHL
Designed	Checked
Approved	Approved
Contract No. 98001	Sheet of 34/46
Drawing No. E1	Revision 3

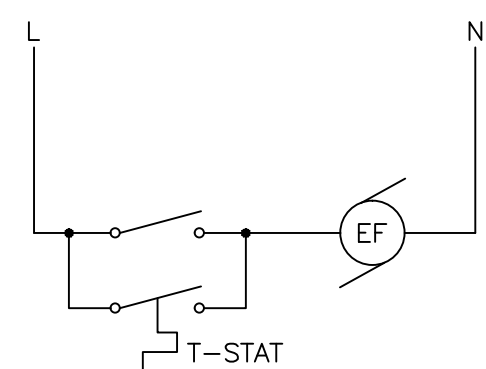
NOTE  
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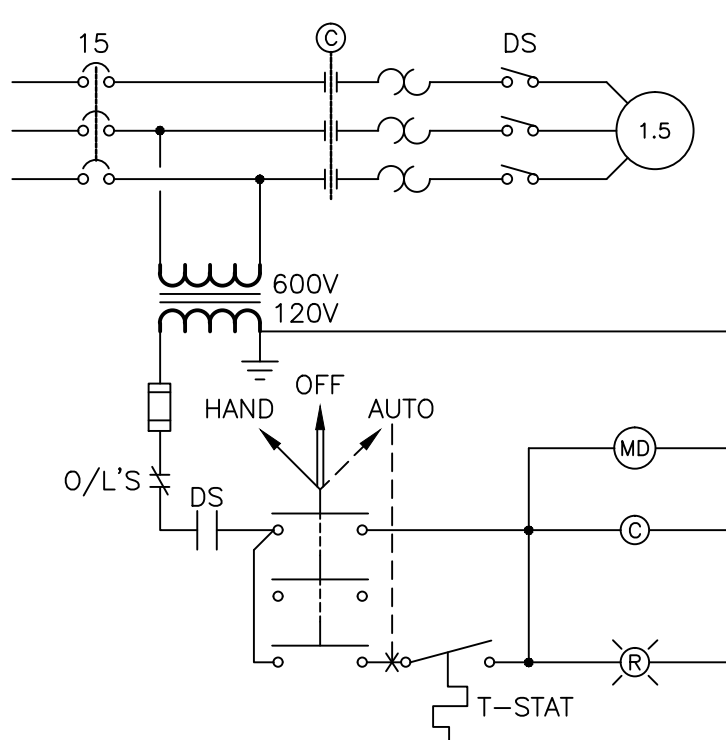
TYPICAL CONTROL DIAGRAM PUMP N.T.S.



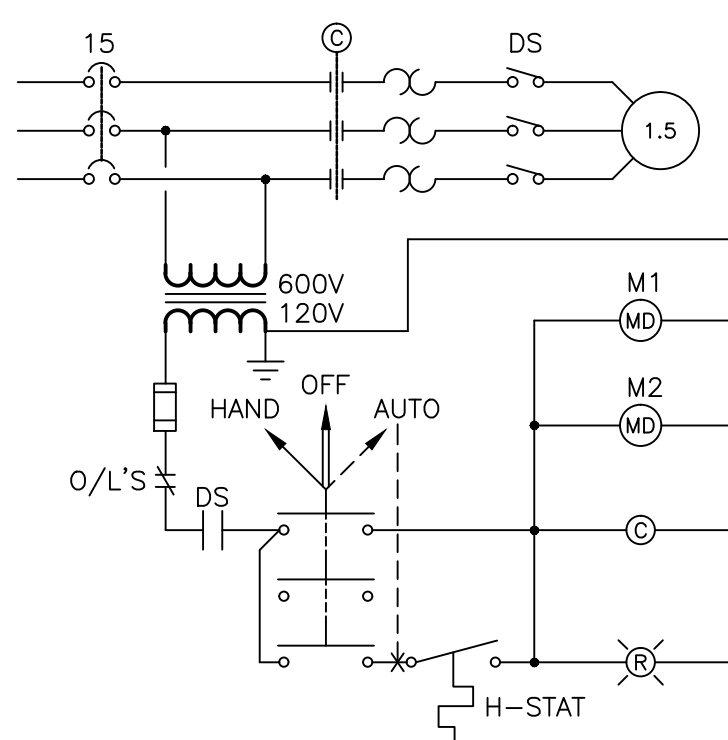
CONTROL DIAGRAM FOR CHEMICAL FEED PUMPS N.T.S.



CONTROL DIAGRAM FOR EF-9 N.T.S.

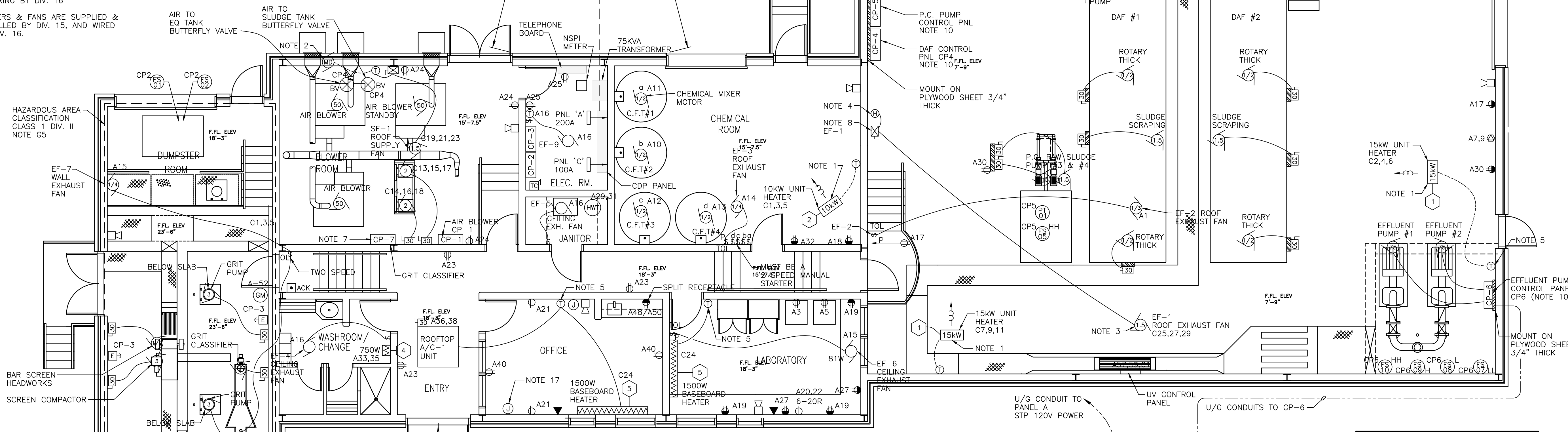


CONTROL DIAGRAM FOR SF-1 N.T.S.



CONTROL DIAGRAM FOR EF-1 N.T.S.

- NOTES:**
- HEATERS SUPPLIED BY DIV. 16 TO BE MOUNTED 10"-0" A.F.F. WIRED BY DIV. 16.
  - THE MOTORIZED DAMPER WILL OPERATE WHEN SF-1 SUPPLY FAN IS STARTED.
  - THE MOTORIZED DAMPERS WILL OPERATE WHEN EF-1 EXHAUST FAN IS STARTED.
  - HUMIDISTAT SUPPLIED AND INSTALLED BY DIV. 15, WIRED BY DIV. 16.
  - THERMOSTATS, SUPPLY BY DIV. 15, INSTALLED AND WIRED BY DIV. 16.
  - MOUNT TO JOIST NEAREST DIGESTER TANK.
  - ALL EQUIPMENT CONTROL PNLS IN THIS ROOM SHALL BE MOUNTED ON THIS WALL AND EXACT LOCATION SHALL BE CONFIRMED AT SITE.
  - SUPPLY & INSTALL COMBINATION MOTOR STARTER FOR EF-1 SUPPLY & INSTALL CONDUIT & WIRING TO DAMPERS AND HUMIDISTAT AS SHOWN IN CONTROL DIAGRAM.
  - ALL DISCONNECTS AND INSTRUMENT MONITORS SHALL BE MOUNTED ON STANDS FABRICATED FROM 1-5/8"x1-5/8" GALV. STEEL STRUT, MOUNTED ON NEAREST WALL OR ANCHORED TO FLOOR ON LOCATIONS SHOWN ON THE DRAWING.
  - SUPPLIED BY OWNER, INSTALLATION & WIRING BY DIV. 16.
  - HEATERS & FANS ARE SUPPLIED & INSTALLED BY DIV. 15, AND WIRED BY DIV. 16.
  - P CONDUITS TO UTILITY PADMOUNT TRANSFORMER FOR SECONDARY CABLES. INSTALL TWO 4" PVC CONDUITS TO UTILITY POLE FOR PRIMARY CABLES. ENCASE U/G CONDUITS IN CONCRETE. INSTALL REINFORCED CONCRETE TRANSFORMER PAD. INSTALL 4/0 COPPER GROUND WIRE AROUND PERIMETER OF PAD WITH GROUND RODS AT EACH CORNER. INSTALL TRANSFORMER PAD BOLLARD PROTECTION IF REQUIRED BY UTILITY. MAKE ARRANGEMENTS WITH UTILITY FOR APPROVED LOCATION OF PAD & UTILITY PRIMARY SUPPLY POLE. INSTALL DUCTS, PAD & GROUNDING TO N.S.P.I. STANDARDS AS A MINIMUM.
  - GAS MONITOR PROVIDES MONITORING OF HYDROGEN SULPHIDE AND EXPLOSIVE GASES. WIRE ANALOG CABLE TO CONTROL PANEL CP-3. 1 PR. #18 AWG. ANIXTER TYPE 323521-1801.
  - INSTALL A 4 PR. #18 AWG. INSTRUMENT CABLE TO CP-5. TO MONITOR: LOW DO ALARM LOW TEMP. ALARM MEMBRANE FAILURE ALARM ANIXTER CABLE TYPE 323531-1804. AND INSTALL A 2 PR. #18 AWG. INSTRUMENT CABLE TO CP-5 TO MONITOR ANALOG READINGS FOR: DISSOLVED OXYGEN TEMPERATURE ANIXTER CABLE TYPE 323531-1802.
  - MAG FLOW METERS ARE INSTALLED BY OTHERS. WIRING BY DIV. 16.
  - PROVIDE 3/4" CONDUIT FROM JUNCTION BOX IN PROCESS ROOM TO JUNCTION BOX IN THE OFFICE FOR RADIO SIGNAL CABLE. INSTALL NYLON PULL CORD IN CONDUIT.
  - INSTALL 3/4" CONDUIT C/W PULL CORD FROM EACH CONTROL PANEL TO THE STP OFFICE FOR COMMUNICATION CABLE.



POWER LAYOUT SCALE: 3/16" = 1'-0"

- GENERAL NOTES:**
- CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.
  - DRAWINGS IN GENERAL ARE TO SCALE, BUT THE FIGURED DIMENSIONS SHALL BE FOLLOWED WHERE GIVEN.
  - VERIFY EQUIPMENT LOCATIONS ON SITE AND ADJUST ELECTRICAL INSTALLATION TO ACCOMMODATE CHANGES MADE UNDER MECHANICAL CONTRACT.
  - ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE, NATIONAL BUILDING CODE, & NATIONAL FIRE CODE. LATEST EDITIONS.
  - ALL EQUIPMENT LOCATED WITHIN THE HAZARDOUS AREA SHALL BE SUITABLE FOR USE IN CLASS 1 DIV. 2 ENVIRONMENT. FOR CONDUITS ENTERING OR EXITING THIS AREA SHALL HAVE SUITABLE SEALS.
  - DIV. 16 SHALL SUPPLY AND INSTALL ALL ELECTRICAL DISTRIBUTION EQUIPMENT INCLUDING BUT NOT LIMITED TO METERS, PANELS, SWITCHBOARD, MOTOR DISCONNECTS, STARTERS, HUMIDISTAT, SUPPLIED BY DIV. 15.
  - DIV. 16 SHALL SUPPLY AND INSTALL A COMPLETE SIGNALING SYSTEM WITH SPEAKER AND PUSHBUTTON ON EACH EXTERIOR DOOR AND MAIN CONTROL UNIT IN THE PLANT OFFICE.

- LEGEND**
- HH FS FLOAT SWITCH (NOTE 10)
  - HH = HIGH HIGH LEVEL ALARM
  - LL = LOW LEVEL ALARM
  - L = LOW LEVEL CONTROL
  - H = HIGH LEVEL CONTROL
  - CP-X (PT) PRESSURE TRANSDUCER (NOTE 10), CP-X= WIRE TO CONTROL PANEL 'X'
  - COMBINATION MOTOR STARTER
  - UNFUSED INSTALLATION TO ACCOMMODATE CHANGES MADE UNDER MECHANICAL CONTRACT.
  - ELECTRICAL HEATING FIXTURE SEE SCHEDULE SHEET E3
  - SINGLE PHASE MOTOR
  - THREE PHASE MOTOR
  - SINGLE POLE SWITCH
  - TIME CLOCK 1 = EF-6
  - TIME CLOCK 2 = EXTERIOR LIGHTING
  - MANUAL MOTOR STARTER C/W PILOT LIGHT & O/L'S
  - THERMOSTAT, SUPPLIED BY DIV. 15.
  - HUMIDISTAT, SUPPLIED BY DIV. 15.
  - MOTORIZED DAMPER, SUPPLIED BY DIV. 15.
  - TELEPHONE
  - INDICATES LOW VOLTAGE
  - 15A, 120V DUPLEX RECEPTACLE
  - RECEPTACLE ABOVE COUNTER
  - C.F.T.#1 CHEMICAL FEED TANK #1
  - FLOOR STAND SEE NOTE 9
  - VARIABLE FREQUENCY DRIVE (NOTE 10)
  - PLC, DI=DIGITAL INPUT
  - PLC, DO=DIGITAL OUTPUT
  - 30A, 240V RECEPTACLE
  - DISCONNECT SWITCH
  - EMERGENCY STOP, PUSH BUTTON RED MUSHROOM HEAD RATED FOR CLASS 1, DIV. 11.
  - CONTROL VALVE SUPPLIED BY OTHERS WIRING BY DIV. 16 WIRE TO CONTROL PANEL INDICATED.
  - DISSOLVED OXYGEN AND TEMPERATURE SENSOR (NOTE 10)
  - GAS MONITOR (NOTE 13)
  - ACKNOWLEDGE BUTTON C/W PILOT LIGHT FOR GAS MONITOR. SUPPLY & INSTALL BY DIV. 16.
  - SELECTONE SIGNALING DEVICE SUPPLIED AND WIRED BY DIV. 16

No.	Description	Date	By
03	ISSUED FOR TENDER	04/16/02	
02	ISSUED FOR REVIEW	11/13/01	RGB
01	ISSUED FOR REVIEW	JAN/99	JCL

Revision or Issue

TOWN OF LUNENBURG

MUNICIPAL WASTEWATER COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT POWER LAYOUT

**ABL Environmental Consultants Ltd.**

102 PORTLAND STREET, P.O. BOX 501  
DARTMOUTH, N.S. B2Y 3T6

TEL: (902) 468-0050  
FAX: (902) 468-4399

**Neill and Gunter**

DARTMOUTH, N.S., CANADA

NGNS JOB NO. 16770

Scale 3/16" = 1'-0"

Date	Drawn
AUGUST 1998	WHL
Designed	Checked
Contract No. 98001	Sheet of 39/46
Drawing No. E2	Revision 3

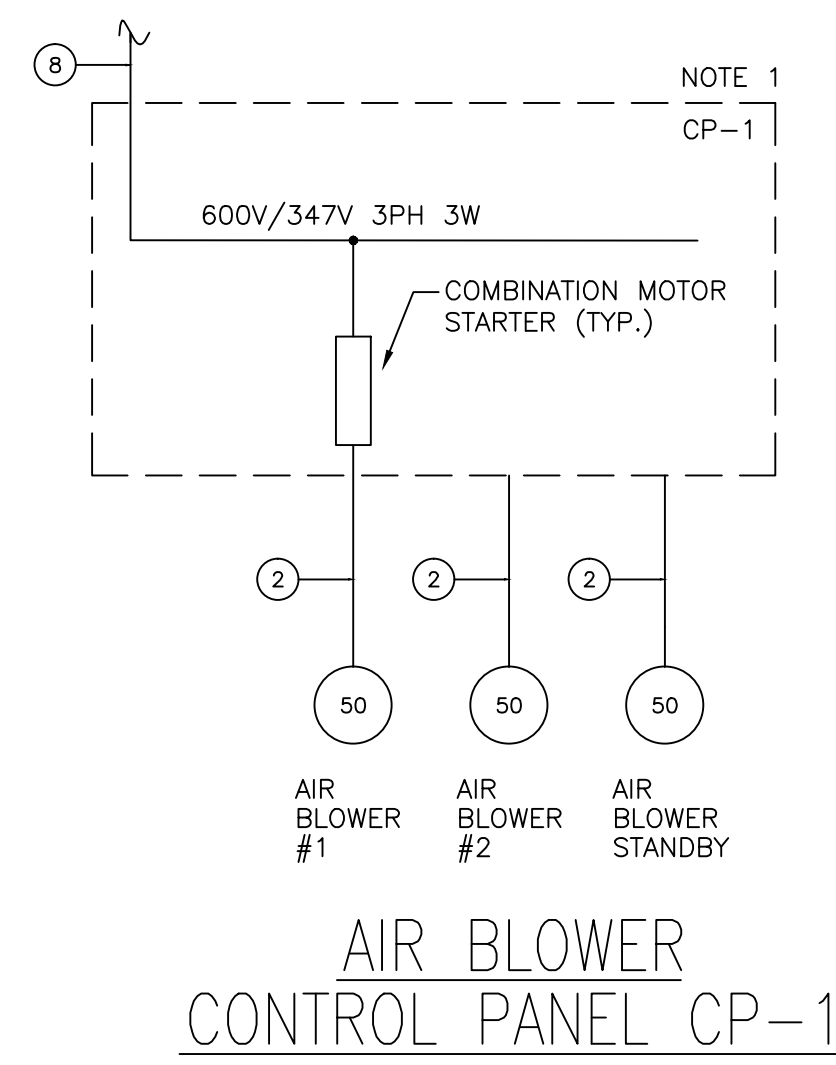
**NOTE**

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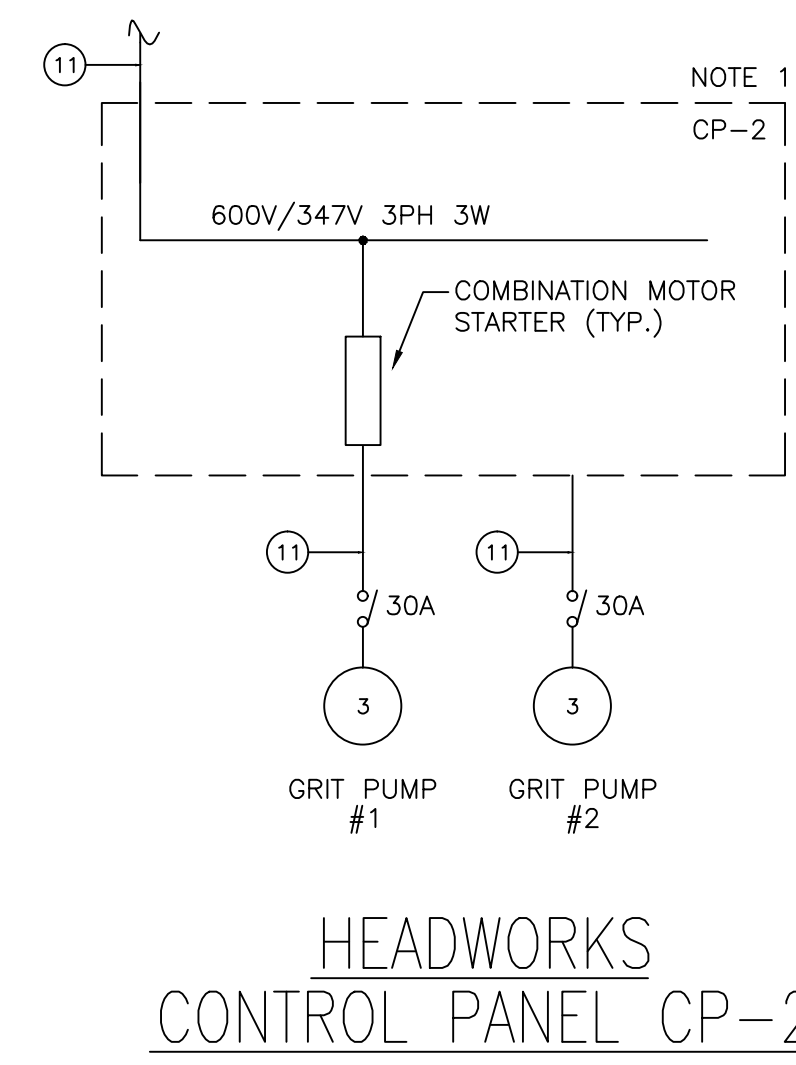
NOTE: SEE SITE PLAN FOR ACTUAL LOCATION SEE DRAWING E6 FOR PUMP STATION DIV.16 WORK



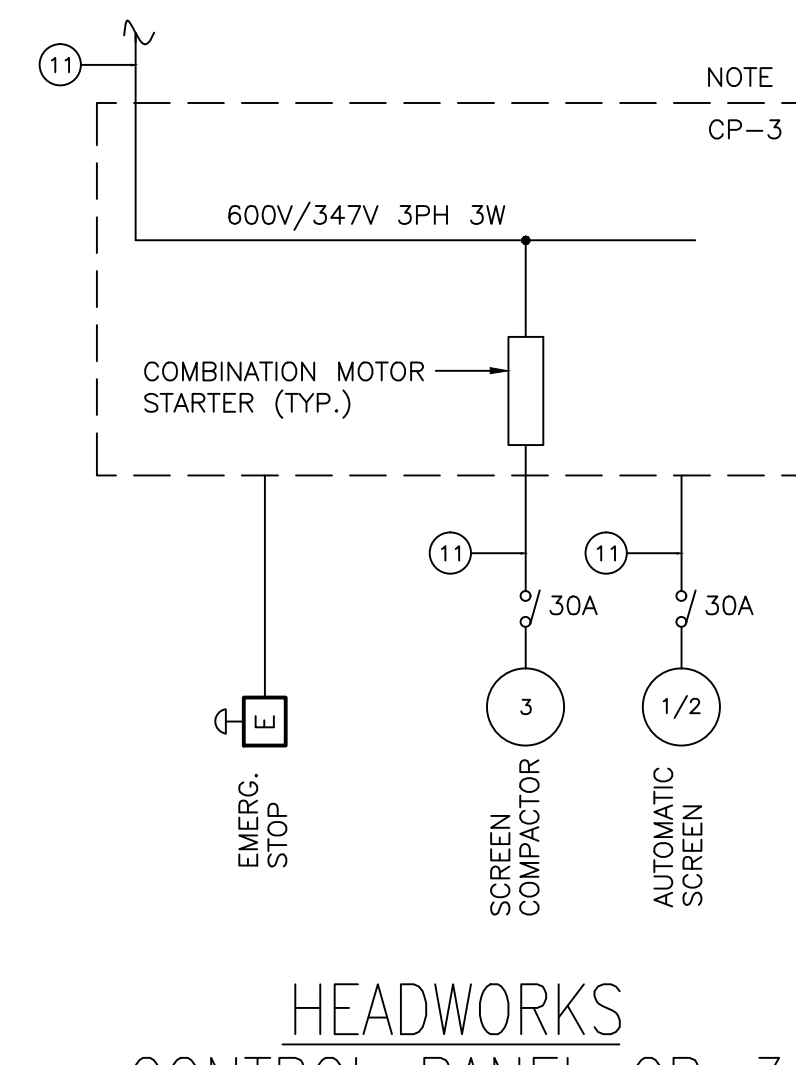
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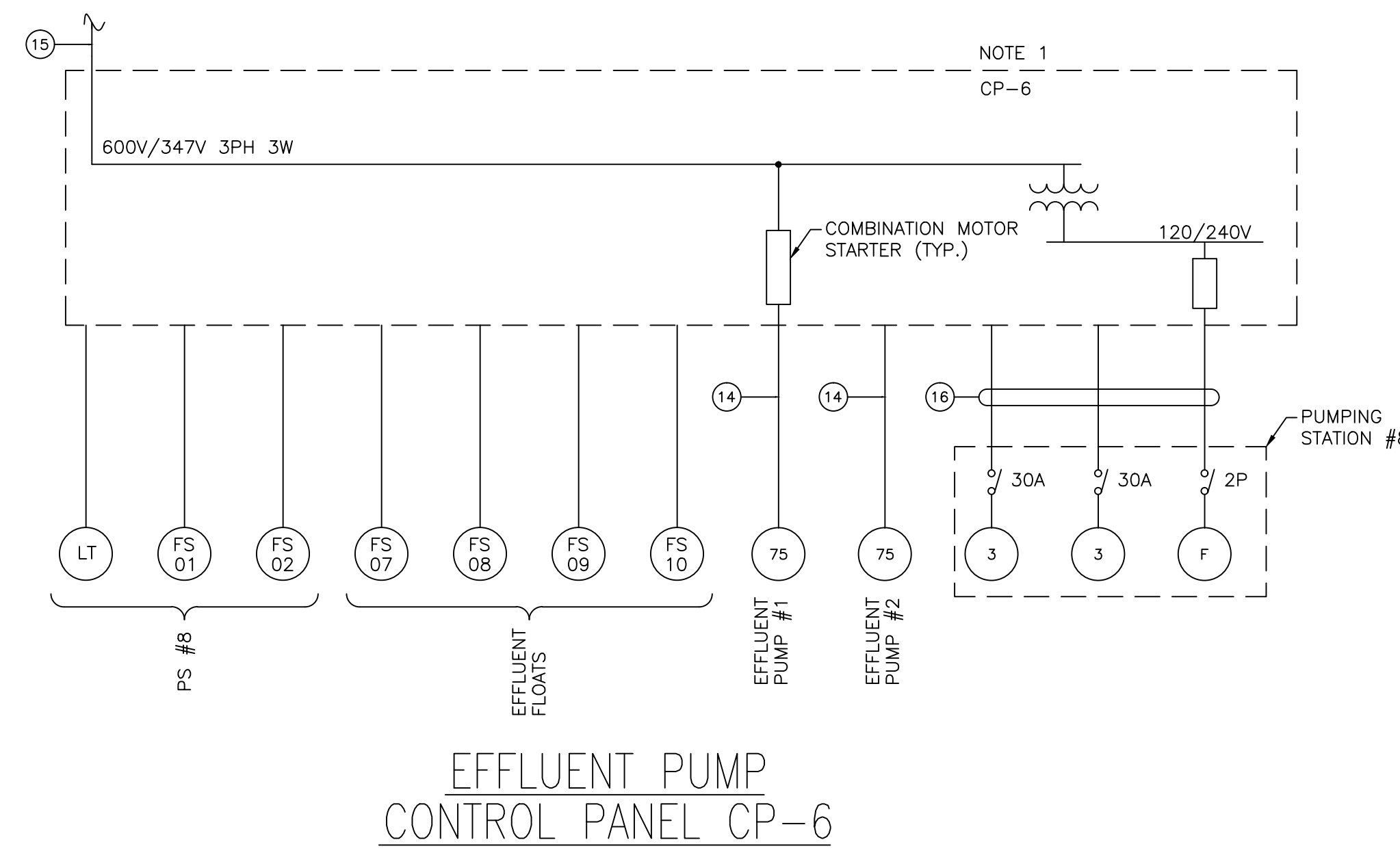
AIR BLOWER CONTROL PANEL CP-1



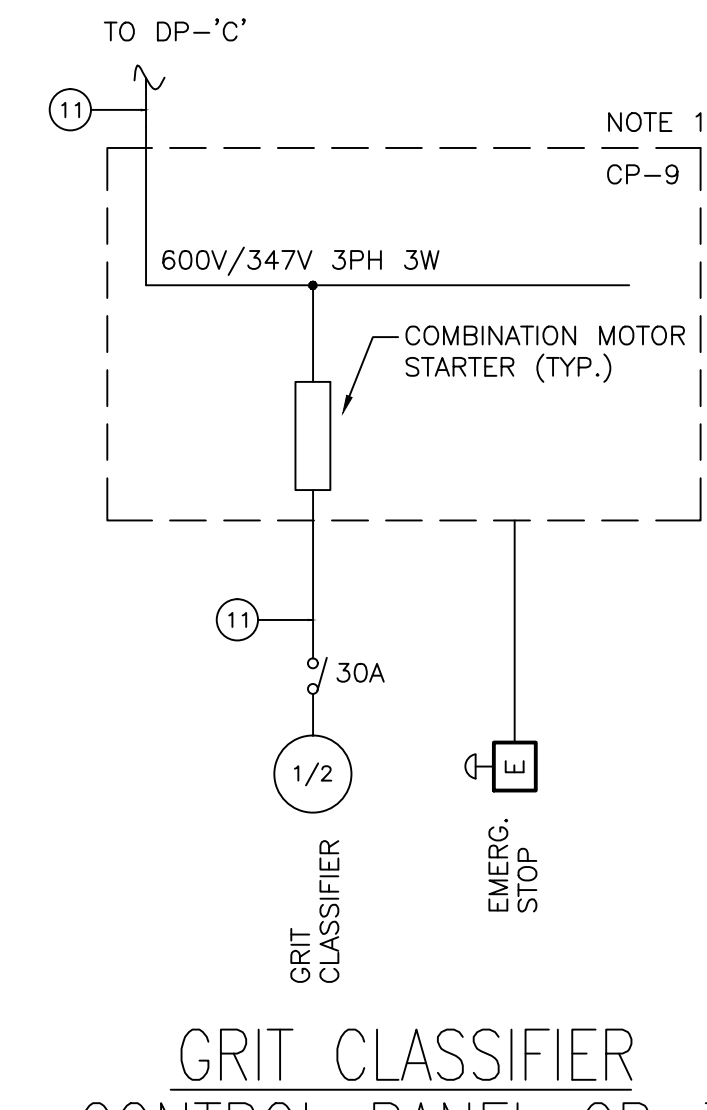
HEADWORKS CONTROL PANEL CP-2



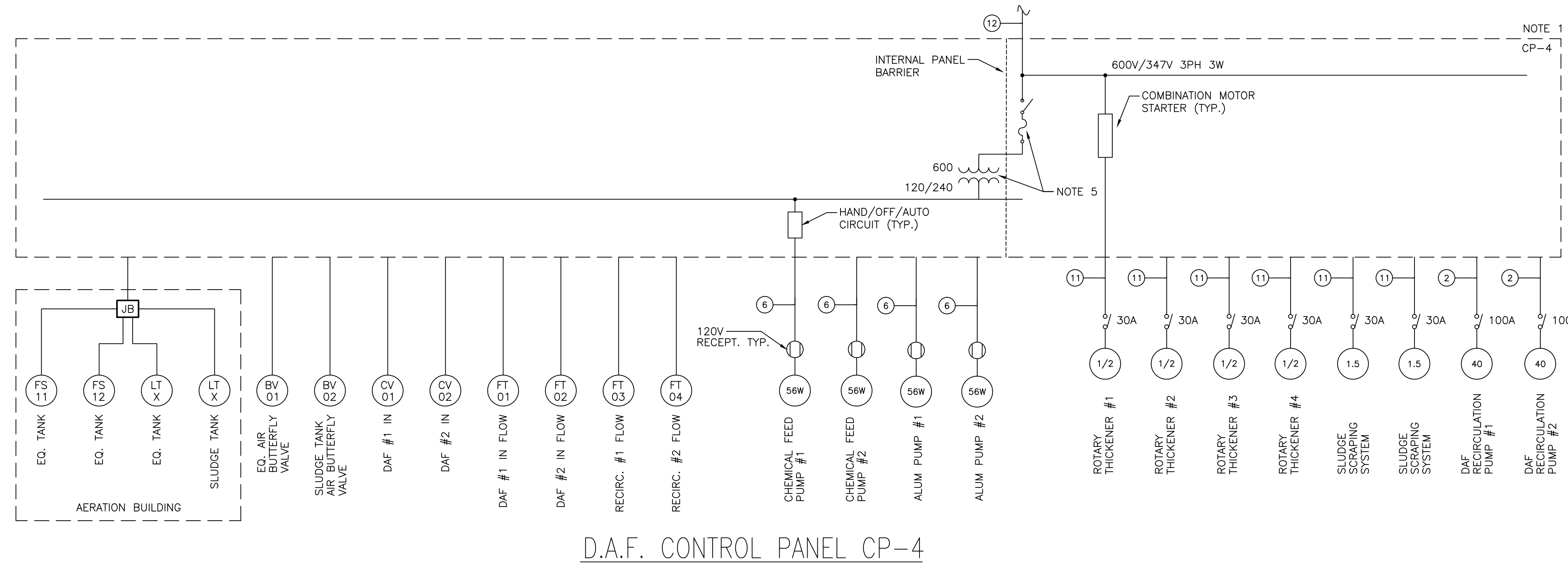
HEADWORKS CONTROL PANEL CP-3



EFFLUENT PUMP CONTROL PANEL CP-6



GRIT CLASSIFIER CONTROL PANEL CP-7



D.A.F. CONTROL PANEL CP-4

**CABLE SCHEDULE**

- ① 4 RUNS OF 4-1/C 300KCMIL IN 2 x 4-1/2" PVC CONDUIT
- ② 3-1/C #6 + 1 #10 GND IN 1-1/4" PVC CONDUIT
- ③ 4-1/C #3/0 + 1 #6 GND IN 2-1/2" PVC CONDUIT
- ④ 4-1/C #6 + 1 #10 GND IN 1-1/4" PVC CONDUIT
- ⑤ 4-1/C #4/0 + 1 #6 GND IN 2-1/2" PVC CONDUIT
- ⑥ 2-1/C #12 + 1 #12 GND IN 3/4" PVC CONDUIT
- ⑦ 3-1/C #10 + 1 #12 GND IN 3/4" PVC CONDUIT
- ⑧ 3-1/C #1/0 + 1 #6 GND IN 1-1/2" PVC CONDUIT
- ⑨ 3-1/C #12 + 1 #12 GND IN 3/4" PVC CONDUIT
- ⑩ 3-1/C #2 + 1 #6 GND IN 1-1/2" PVC CONDUIT
- ⑪ 3-1/C #2/0 + 1 #6 GND IN 2-1/2" PVC CONDUIT
- ⑫ 3-1/C #3 + 1 #8 GND IN 1-1/4" PVC CONDUIT
- ⑬ 3-1/C #3/0 + 1 #6 GND IN 2-1/2" PVC CONDUIT
- ⑭ 8-1/C #10 + 1 #12 GND IN 1-1/4" PVC CONDUIT
- ⑮ 4-1/C #250 MCM + 1 #2 GND IN 3" PVC CONDUIT

**NOTE**  
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- NOTES:**
1. CONTROL PANELS C/W STARTERS SUPPLIED BY OWNER, INSTALLED AND WIRED BY DIV.16.
  2. SUPPLY AND INSTALL SERVICE ENTRANCE SWITCHBOARD WITH UTILITY METERING CT'S AND PT'S AND BREAKERS AS SHOWN.
  3. DIV. 16 CONTRACTOR SHALL INSTALL AND WIRE THE ASSOCIATED INSTRUMENTS AND CONTROL DEVICES TO THE PROCESS CONTROL PANELS AS INDICATED ON DIV. 15 PROCESS CONTROL SPECIFICATIONS AND SHOWN ON THE DRAWINGS. (C2)
  4. INSTALL SERVICE ENTRANCE CABLES IN TWO 4-1/2" PVC CONDUITS, UNDERGROUND TO PADMOUNT TRANSFORMER.
  5. SIZE CONTROL TRANSFORMER AND FUSED DISCONNECT FOR 120V PUMP LOAD AND CP-4 CONTROL LOAD.
  6. ALL CONTROL PANELS ALSO CONTAIN 120/240V CONTROL TRANSFORMERS & CONTROLLERS. DIV 16 CONTRACTOR WILL BE RESPONSIBLE TO INSTALL CONDUIT & COMMUNICATIONS WIRING (ETHERNET) FROM EACH CONTROL PANEL TO A MAIN HUB IN THE STP OFFICE.
  7. SEE DRAWING E2 FOR LOCATION OF DEVICES WIRED TO CONTROL PANELS.

**LEGEND:**  
DP - DISTRIBUTION PANEL  
CP - CONTROL PANEL  
CDP - CENTRAL DISTRIBUTION PANEL

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03	ISSUED FOR TENDER	04/16/02	
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Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER COLLECTION AND TREATMENT

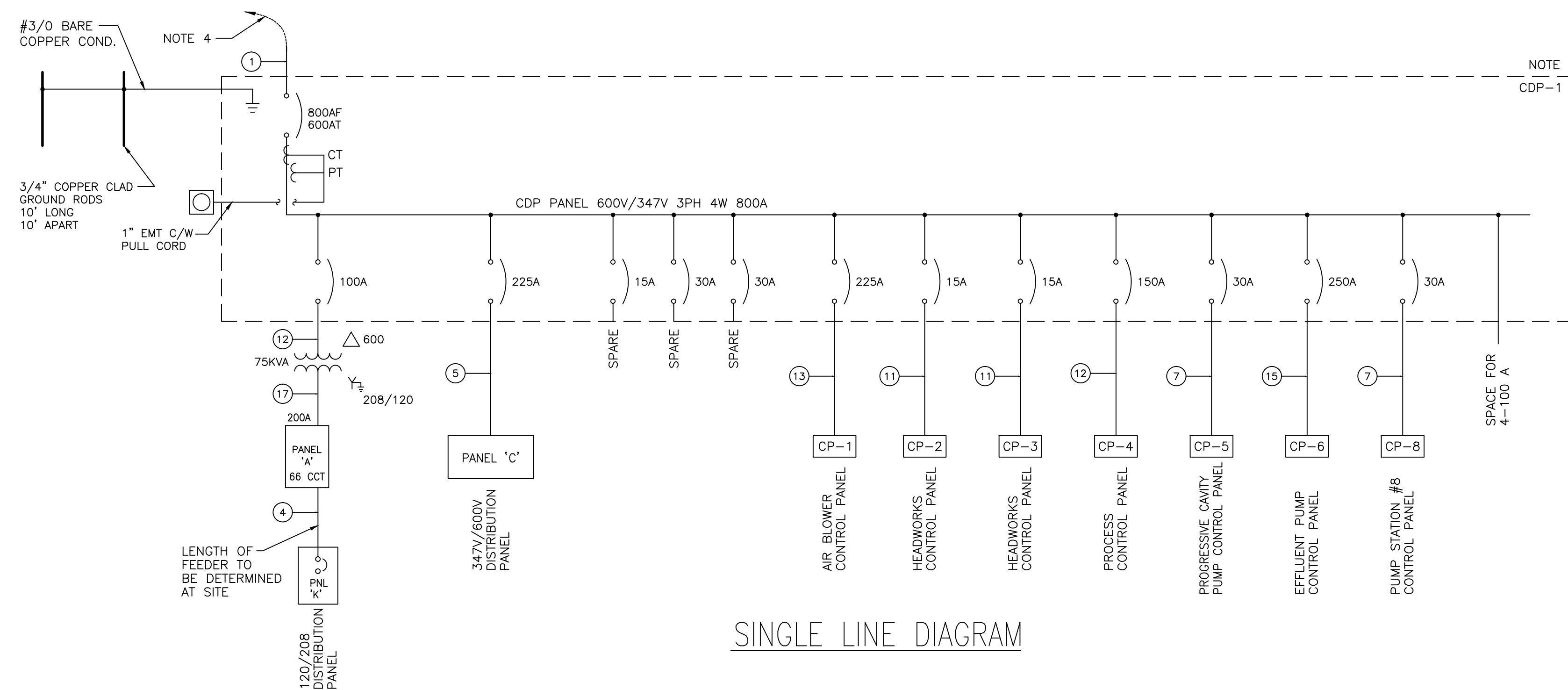
SEWAGE TREATMENT PLANT SINGLE LINE DIAGRAM AND CTRL. PANEL INTERFACING



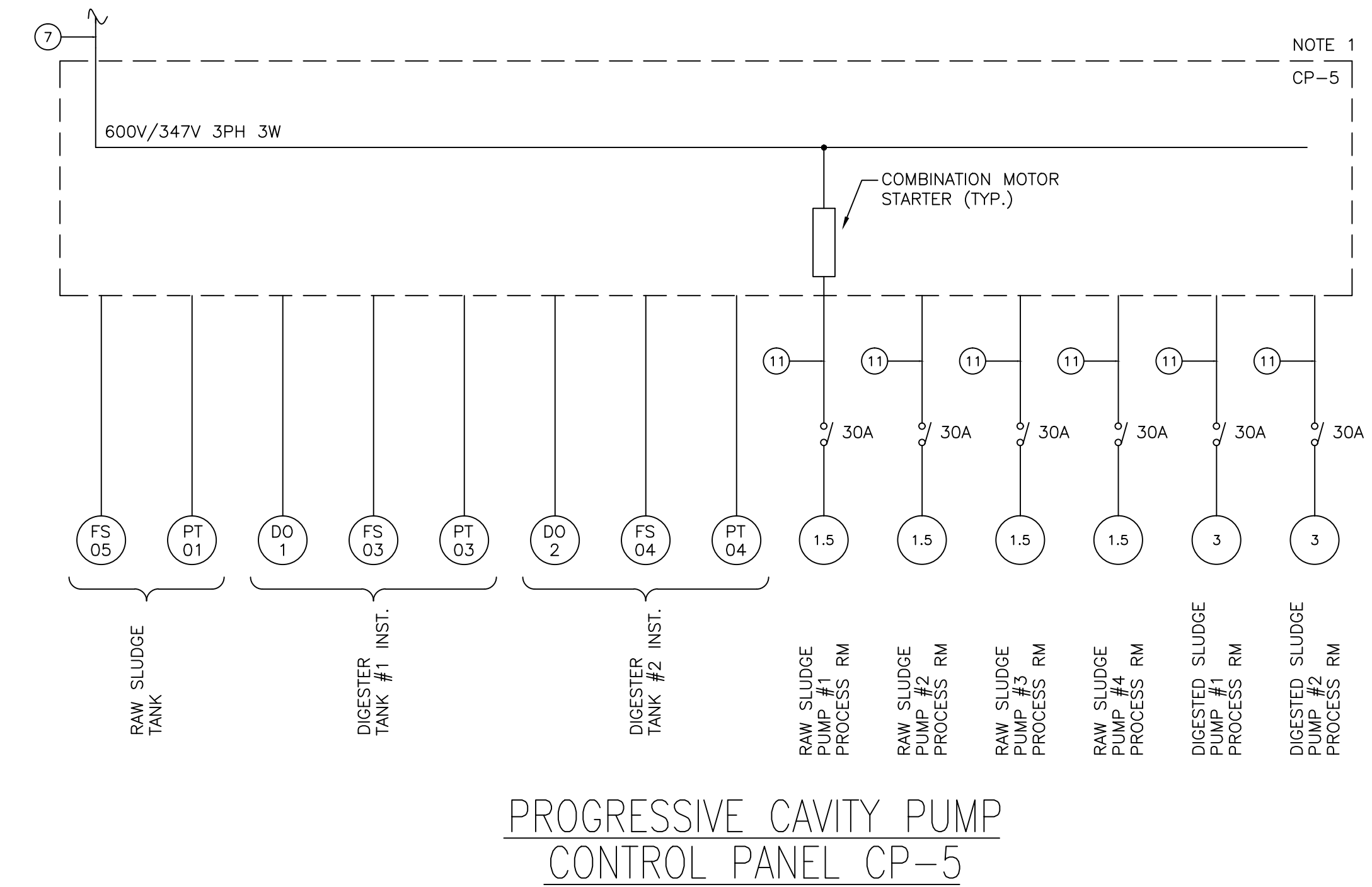
NGNS JOB NO. 16770

Scale N.T.S.

Date	Drawn
JULY 1998	AM
Designed	Checked
Approved	Approved
Contract No. 98001	Sheet of 37/46
Drawing No. E4	Revision 3



SINGLE LINE DIAGRAM



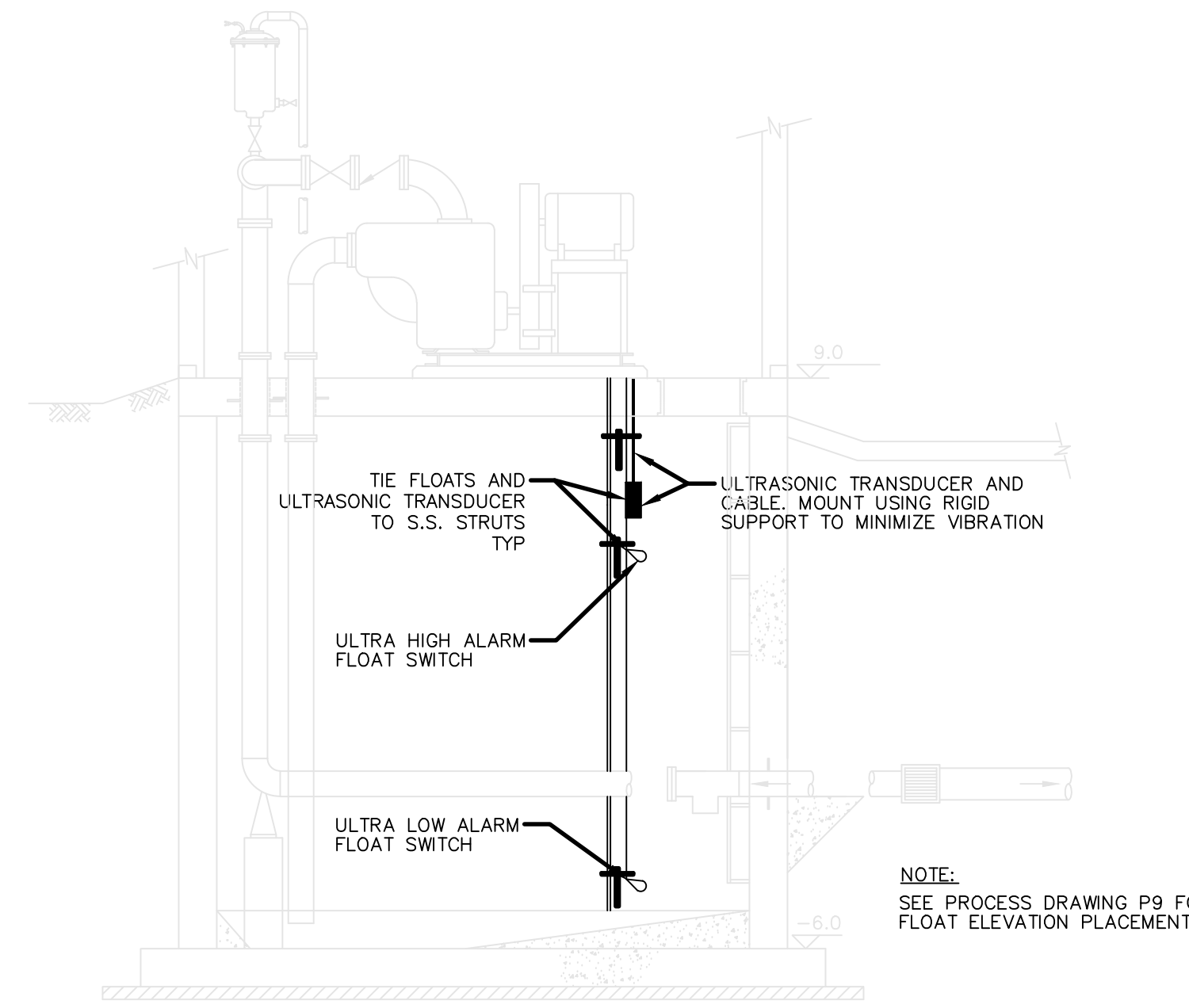
PROGRESSIVE CAVITY PUMP CONTROL PANEL CP-5

PANEL 'A'		LOCATION : PUMP STATION		MOUNTING : RECESSED		100 AMP. LUGS	
SERVICE : SEE TABLE 1		BRANCH BREAKER I.C. 10,000 AMPS		RMS SYM			
LOAD DESCRIPTION	LOAD	WIRE	BKR	CIRCUIT	BKR	WIRE	LOAD
LIGHTING	500	#12	15A	1	2	30A	#10 2500
RECEPTACLES	1000	#12	15A	3	4	2P	#10 2500
---	---	---	---	5	6	15A	#12 300
---	---	---	---	7	8	---	---
---	---	---	---	9	10	---	---
---	---	---	---	11	12	---	---
COMMENTS :				CONNECTED LOAD 7 KW.		TOTAL WATTS 3300	
				ESTIMATED DEMAND 4 KW.		TOTAL AMPS 28	

LIGHTING FIXTURE SCHEDULE			
TAG	A	B	C
MANUFACTURER	METALUX	LUMARK	HUBBELL
CAT. NO.	VT2-232DR	HPS-50-H-120-PE-LL-WHT	V SERIES
SHIELDING	ACRYLIC PRISMATIC	POLYCARBONATE PRISMATIC	RED TEMPERED GLOBE
LAMP/FIX	2	1	1
LAMP WATTS	32	50	100
LAMP DESIGN	F32T8SP41	HPS	A21 MAX
LOCATION	CEILING	WALL	WALL
METHOD	SURFACE	SURFACE	
MTG. HEIGHT	---	---	7'-0" A.F.G.
CEILING OR WALL FIN.	GYPROC	CEDAR SHINGLES	CEDAR SHINGLES
FIX. VOLTS.	120	120	120
BALLAST TYPE	ELECTRONIC	HIGH POWER FACTOR	---
FIX. WATTS	75	60	100
REMARKS			VAPORITE, WALL MOUNT WITH WALL BOX ADAPTER AND GLOBE GUARD. SUPPLY A19 TRAFFIC LAMP.

PUMP STATION	PUMP STATION LOCATION	PUMP DESIGN HP	SUPPLY VOLTAGE	APPROX. DIST. (FT) TO UTILITY POLE	MAIN SWITCH	MAIN SWITCH (1)	GROUND (2)	MAINSWITCH LOAD SIDE (3)	DISTRIBUTION PANEL DISC. (4)	DISTRIBUTION PANEL FEED (5)	MOTOR FEEDER (6)	FLOAT LEVEL CONTROL (7)	VENT FAN & LIGHT (8)	U.T. LEVEL CONTROL (9)	CONTROL PANEL DISC. (10)
#4	BLUENOSE DRIVE	50	600V	120	600V 200A	4C #2/0 2"	#2	3C #2/0+#6B 2"	2C #10+1 #12B 3/4"	3C #6+1 #10B 1"	3C #6 +#10B 3/4"	MFG. SUPPLIED 1"	2C #12 3/4"	MFG. SUPPLIED 1"	3C #1/0+ #6B 2"
#7	BROOK STREET EXT.	60	600V	NEW POLE	600V 200A	4C #2/0 2"	#2	3C #2/0+ #6B 2"	2C #10+1 #12B 3/4"	3C #6+1 #10B 1"	3C #4+ #8B 1"	MFG. SUPPLIED 1"	2C #12 3/4"	MFG. SUPPLIED 1"	3C #2/0 + #6B 2"

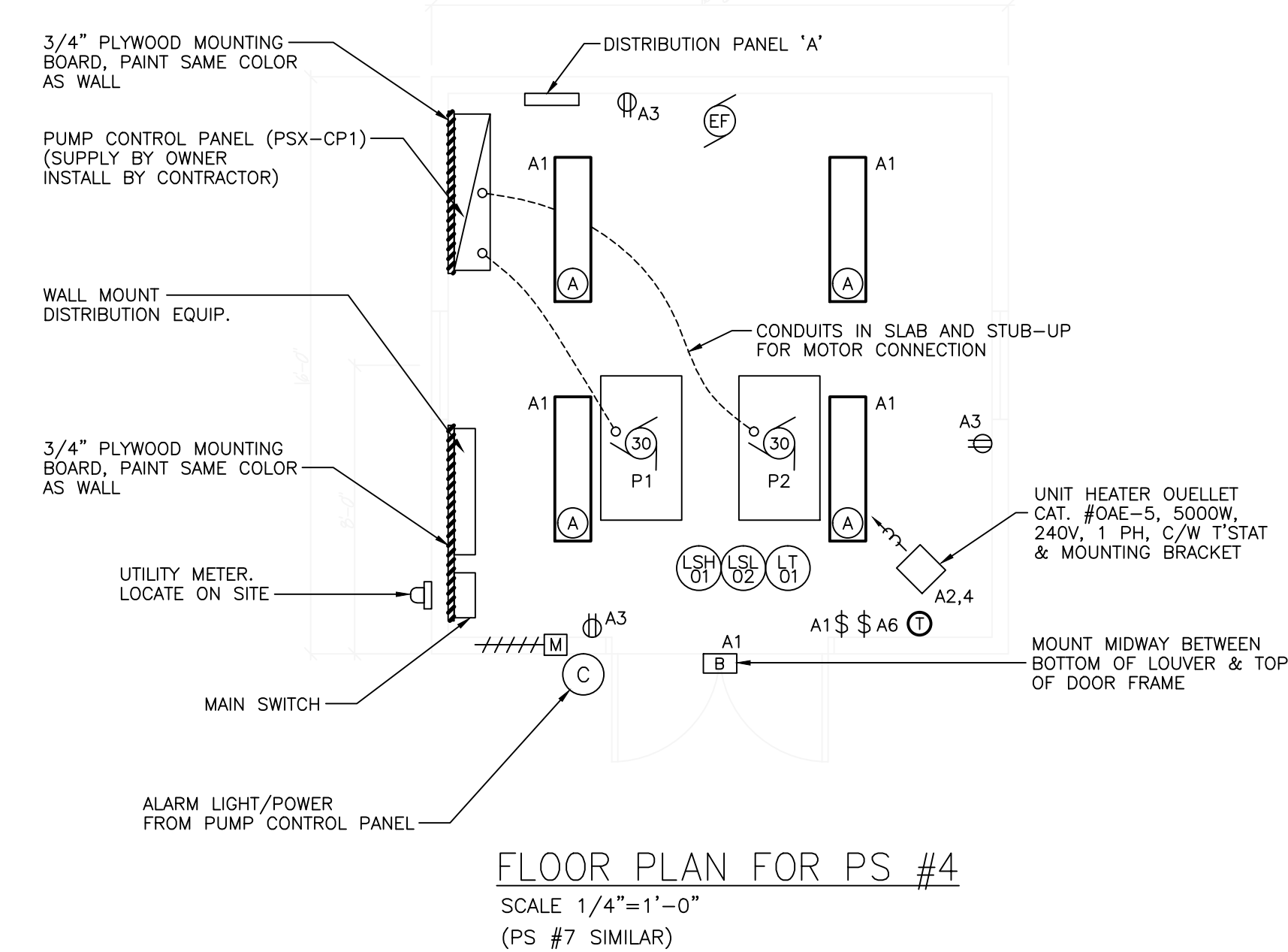
TABLE 1  
EQUIPMENT/CABLE SCHEDULE



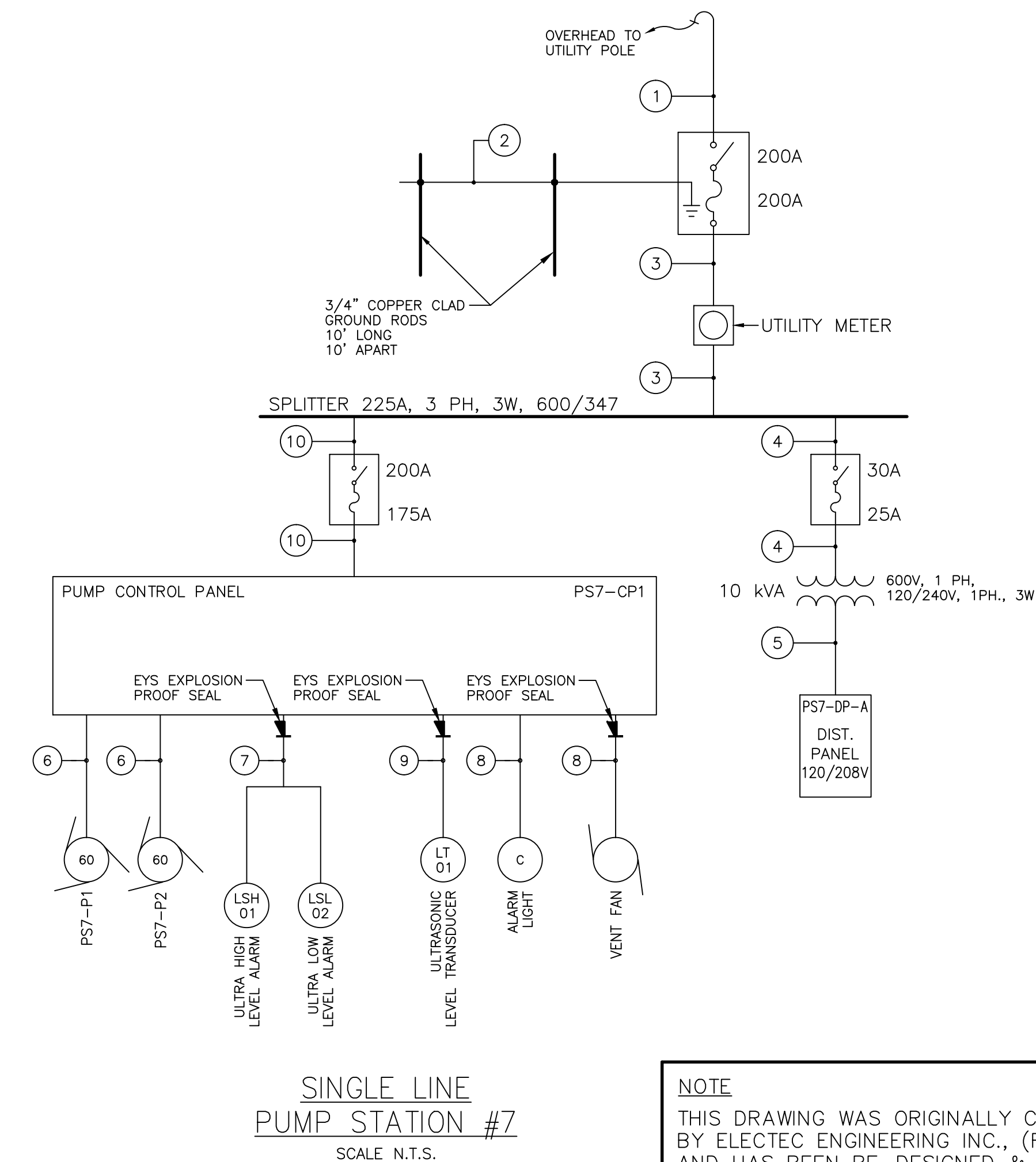
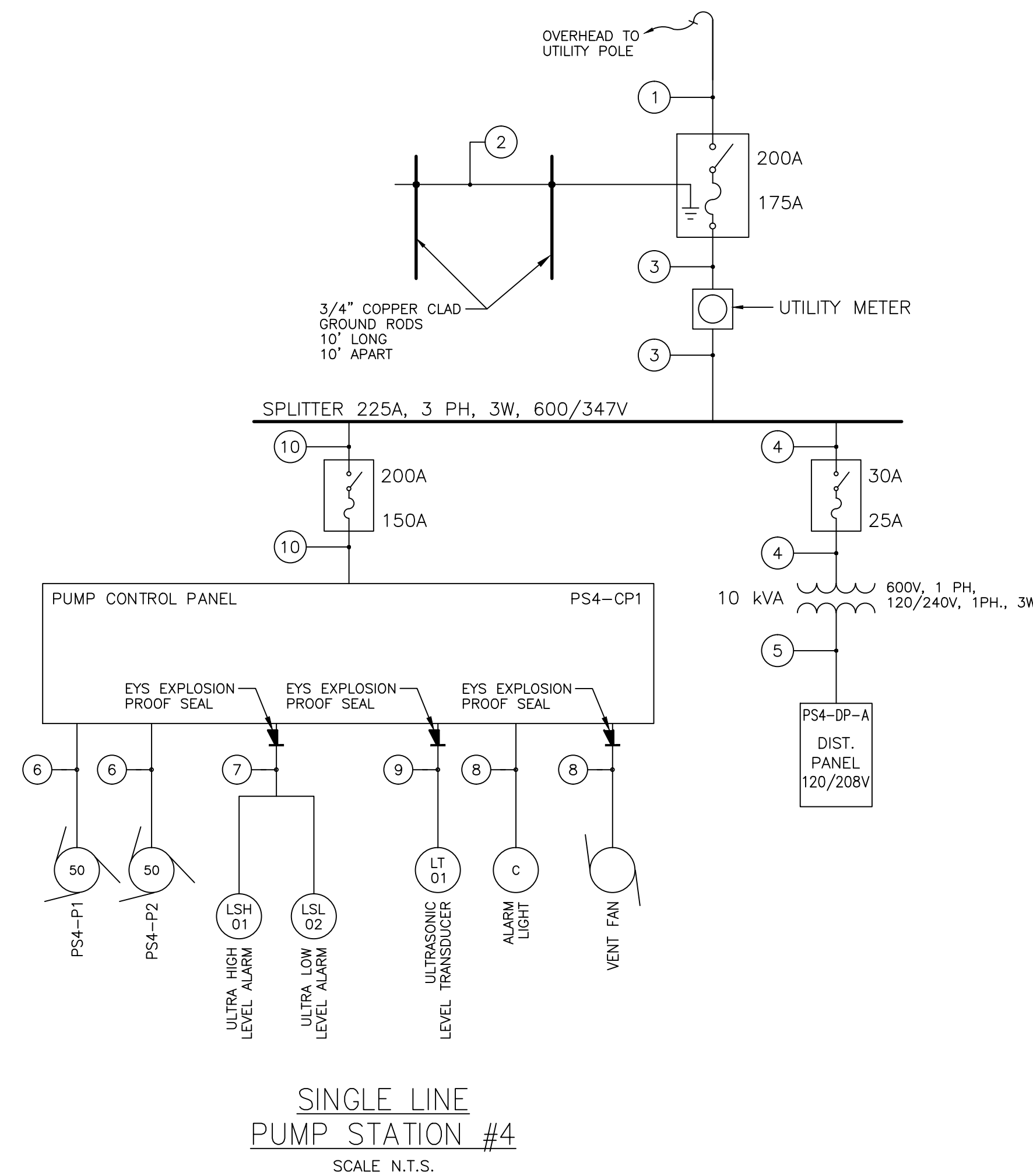
ELEVATION: FLOAT/TRANSDUCER LOCATIONS  
SCALE N.T.S.

- GENERAL NOTES:
- DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED. DIMENSIONS ARE IN MILLIMETERS UNLESS INDICATED OTHERWISE.
  - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.
  - ALL CABLE & CONDUIT ENTRIES INTO THE PUMP CONTROLLER SHALL BE ON THE BOTTOM OF THE ENCLOSURE.
  - SEAL ALL CONDUITS BETWEEN THE WET WELL & THE PUMP CONTROLLER WITH EXPLOSION PROOF SEALS, RATED FOR CLASS 1, DIV. 2, GROUP D.
  - VERIFY PUMP MOTOR HP & VOLTAGE WITH MFG. & CO-ORDINATE STARTER & OVERLOAD SIZE PROVIDED BY CONTROLLER MFG.
  - SUPPLY AND INSTALL ALARM LIGHT TO MOUNT ON EXTERIOR OF BUILDING. ALARM LIGHT SHALL BE VAPOUR TIGHT RED GLOBE WITH GUARD INCANDESCENT c/w A19 TRAFFIC LAMP. FIELD INSTALL ALARM LIGHT IN A SUITABLE LOCATION THAT IS VIEWABLE FROM THE ROADWAY.
  - USE FLEXIBLE LIQUID TIGHT CONDUIT FOR CONNECTION TO PUMPS, ALARM LIGHT, & VENT FAN. ALL OTHER CONDUITS SHALL BE RIGID PVC.
  - INSTALL FLOAT CABLES & ULTRASONIC TRANSDUCER CABLE IN PVC CONDUIT TO WETWELL. INSTALL EXPLOSION PROOF SEALS BEFORE THE PUMP CONTROLLER.
  - PUMP CONTROL PANELS, PUMP MOTORS VENT FAN, FLOATS & ULTRASONIC TRANSDUCER SUPPLIED BY OTHERS, WIRING & INSTALLATION BY ELECTRICAL CONTRACTOR. ALL OTHER ITEMS TO BE SUPPLIED & INSTALLED BY ELECTRICAL CONTRACTOR.
  - SEE SITE PLAN FOR PUMPING STATION LOCATIONS & UTILITY POWER LOCATIONS. POLE LOCATIONS SHALL BE CONFIRMED WITH UTILITY.
  - CONTRACTOR SHALL ARRANGE PICK-UP OF OWNER SUPPLIED MATERIAL & TRANSPORT TO JOB SITE.
  - INSTALL SERVICE MAST TO N.S.P.I. STANDARDS LEAVE 5' OF CABLE FROM WEATHERHEAD FOR CONNECTION OF CABLES BY UTILITY.
  - ALL ELECTRICAL EQUIPMENT ENCLOSURES TO BE RATED NEMA 3R.

- LEGEND
- SINGLE PHASE MOTOR
  - ⊕ THREE PHASE MOTOR
  - ⊕ EXHAUST FAN SUPPLIED BY DIV.15, WIRED BY DIV. 16
  - ⊕ SINGLE POLE SWITCH
  - ⊕ 120V DUPLEX RECEPTACLE
  - ⊕ H INDICATES THE TYPE OF FIXTURE AS INDICATED ON LIGHTING FIXTURE SCHEDULE.
  - ⊕ M INDICATES THE TYPE OF EXTERIOR LIGHTING FIXTURE.
  - ⊕ "A" INDICATES THE TYPE OF FLUORESCENT LIGHT FIXTURE AS INDICATED ON LIGHTING FIXTURE SCHEDULE.
  - A42 REPRESENTS THE CIRCUIT NUMBER.
  - //////M MOTORIZED DAMPER SUPPLIED BY DIV.15, WIRED BY DIV. 16
  - ⊕ REVERSE ACTING LINE VOLTAGE THERMOSTAT SUPPLIED BY DIV.15, WIRED BY DIV. 16



EXHAUST FAN AND DAMPER CONTROL SCHEMATIC



NOTE  
THIS DRAWING WAS ORIGINALLY CREATED BY ELECTEC ENGINEERING INC., (REV. 1) AND HAS BEEN RE-DESIGNED & MODIFIED BY NGNS USING THE EXISTING FORMATING.

No.	Description	Date	By
03	ISSUED FOR TENDER	04/16/02	
02	ISSUED FOR REVIEW	11/13/01	RGB
01	ISSUED FOR REVIEW	DEC/98	

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER COLLECTION AND TREATMENT

PUMPING STATIONS #4 & #7  
ELECTRICAL LAYOUT & DETAILS

**ABL**  
ENVIRONMENTAL  
consultants limited  
102 PORTLAND STREET  
DARTMOUTH, NOVA SCOTIA  
B2Y 1H8  
Tel: (902)466-0050  
Fax: (902)466-4399  
Email: abl@ablenvironmental.com

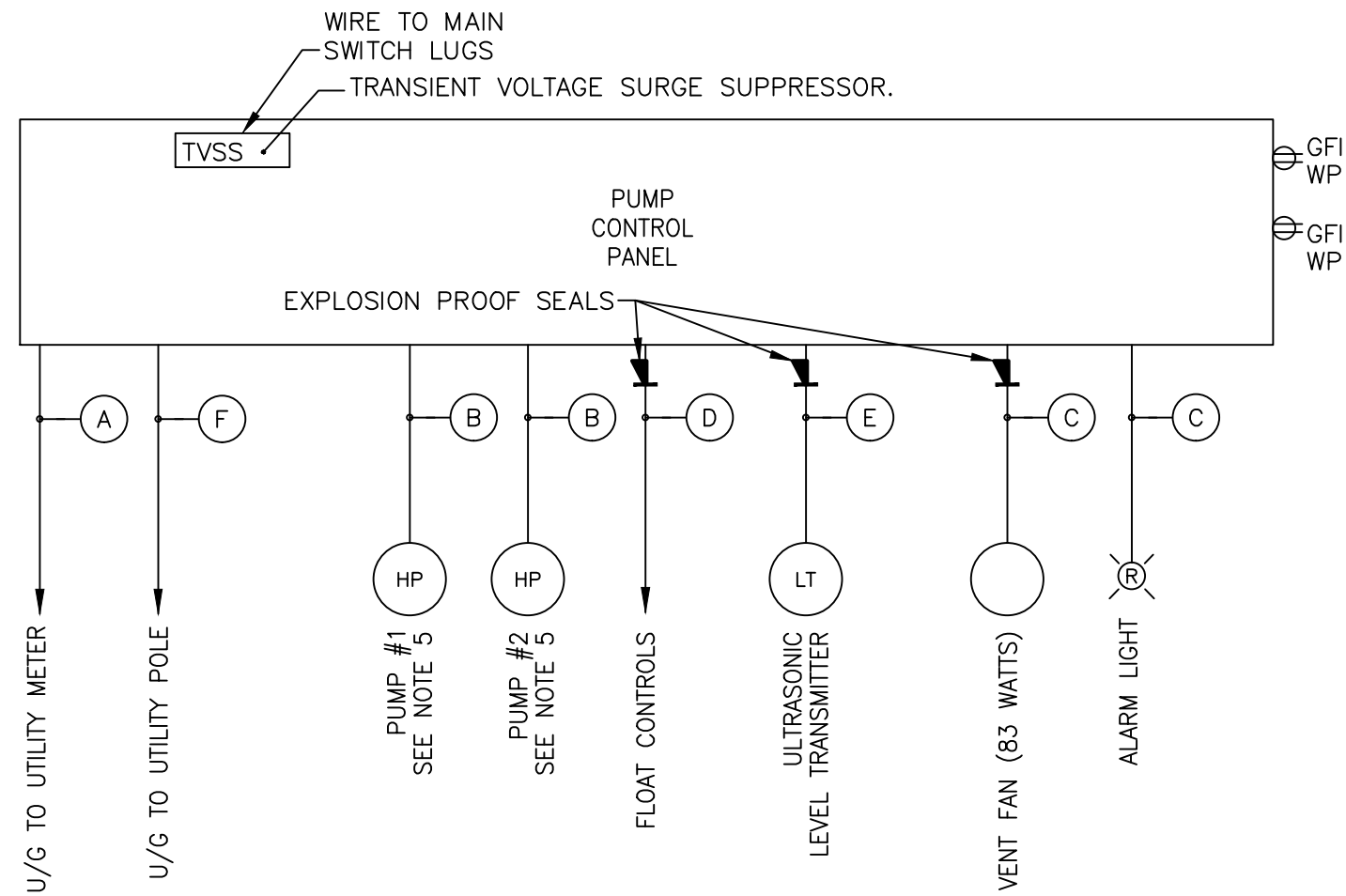
**NG** Neill and Gunter  
DARTMOUTH, N.S., CANADA

NGNS JOB NO. 16770

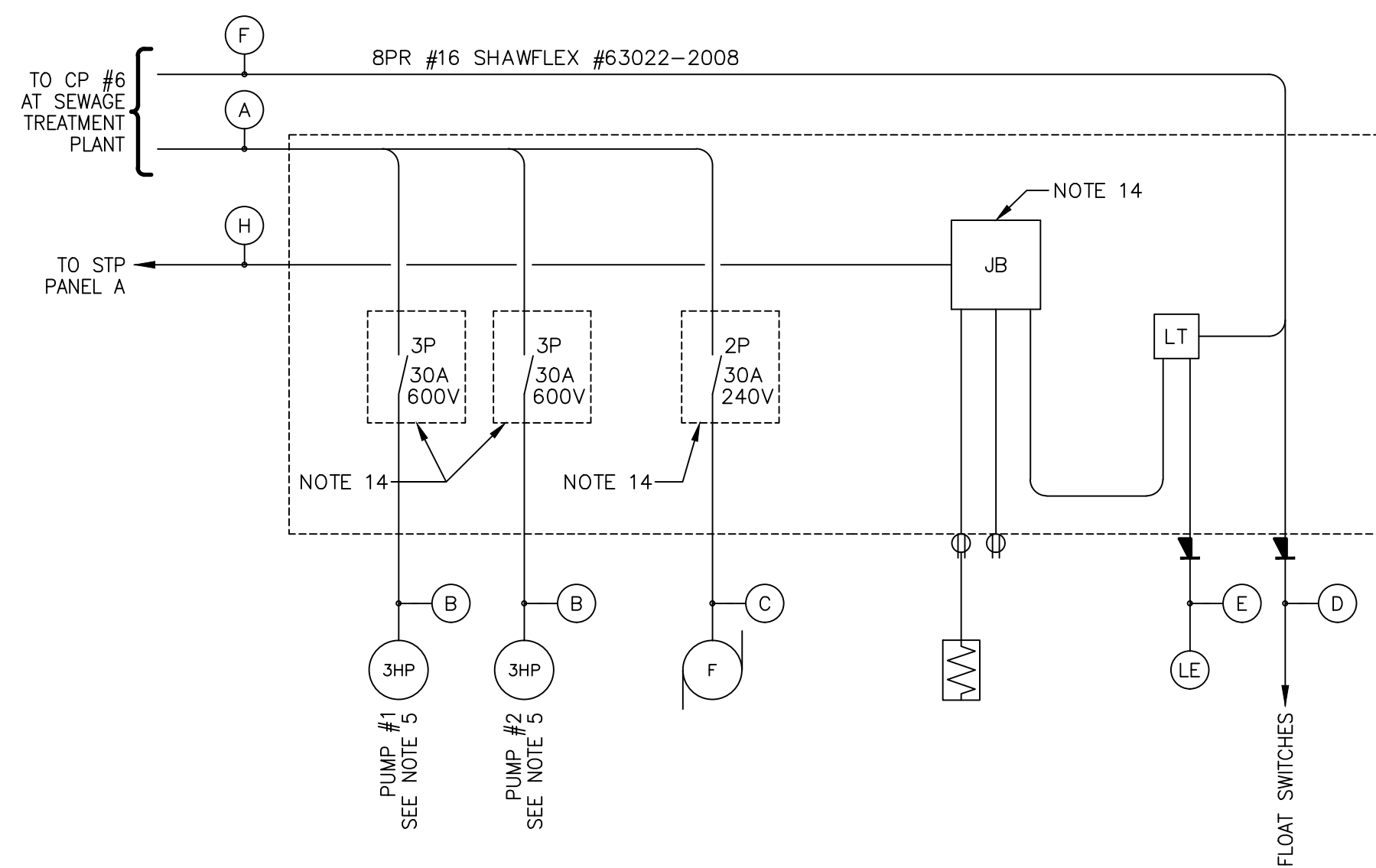
Scale AS SHOWN

Date	Drawn
DEC. 1998	AM
Designed	Checked
Approved	Approved
Contract No 98001	Sheet of 39/46
Drawing No E5	Revision

Date: Friday, Apr. 13, 2012 - 4:45pm Drawing: Model File: C:\98001 - Lunenburg STP\_2002\Drawings\98001-E5.dwg User: mallison



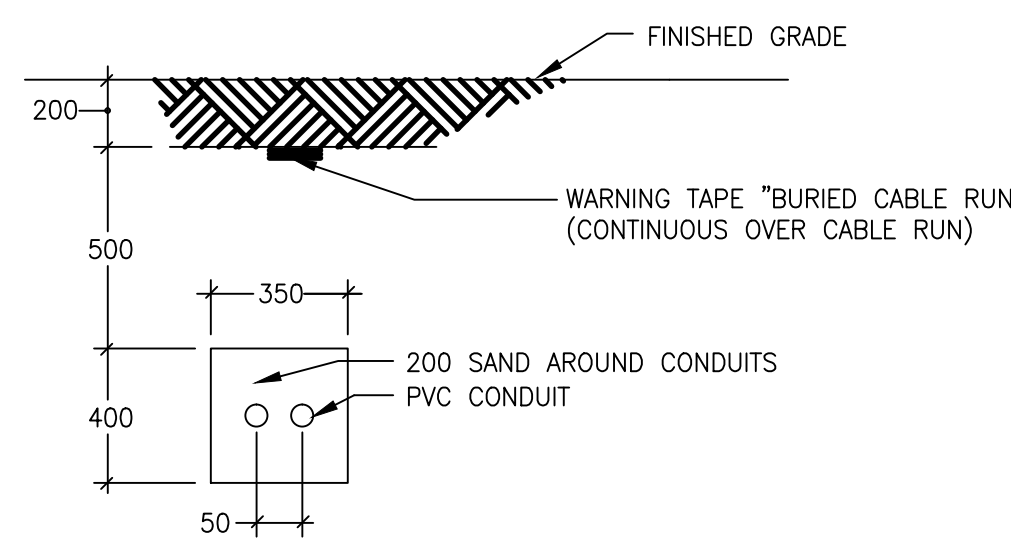
SINGLE LINE DIAGRAM  
PUMPING STATIONS #3 & #5  
N.T.S.



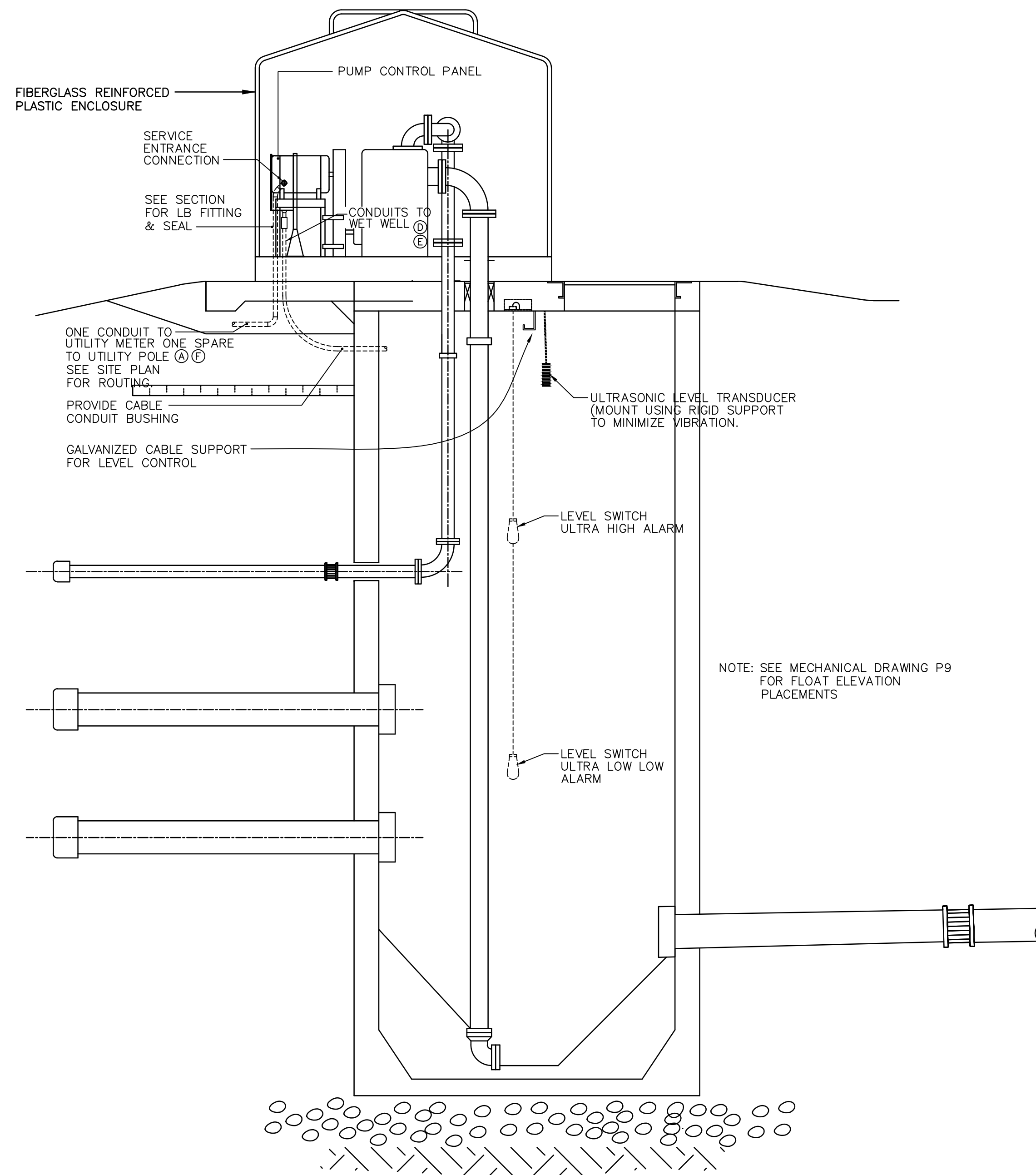
SINGLE LINE DIAGRAM  
PUMPING STATION #8  
N.T.S.

PUMP STATION	PUMP STATION LOCATION	PUMP DESIGN HP	SUPPLY VOLTAGE	APPROX. DIST. (FT) TO UTILITY POLE	MAIN SWITCH	MAIN SWITCH (A)	MOTOR FEEDER (B)	VENT FAN & LIGHT (C)	FLOAT LEVEL CONTROL (D)	U.S. LEVEL CONTROL (E)	SPARE (F)	GROUND (G)	120 VAC POWER (H)
#3	LINDEN AVE.	10	600V	120	600V 60A	4C #6 1-1/4" C	3C #12 + #12B 3/4" C	2C #12 3/4" C	MFG. SUPPLIED 1" C	MFG. SUPPLIED 1" C	1-1/4" C PVC CONDUIT	#8	N.A.
#5	ROUSE BROOK	7.5	600V	90	600V 60A	4C #6 1-1/4" C	3C #12 + #12B 3/4" C	2C #12 3/4" C	MFG. SUPPLIED 1" C	MFG. SUPPLIED 1" C	1-1/4" C PVC CONDUIT	#8	N.A.
#8	STARR ST.	3	600V	FROM STP	-	8C #10 + #12B 1-1/4" C	3C #12 + #12B 3/4" C	2C #12 3/4" C	MFG. SUPPLIED 1" C	MFG. SUPPLIED 1" C	8PR #16 IN 1" C PVC CONDUIT	N.A.	6C #10+ #12B IN 1" C PVC CONDUIT

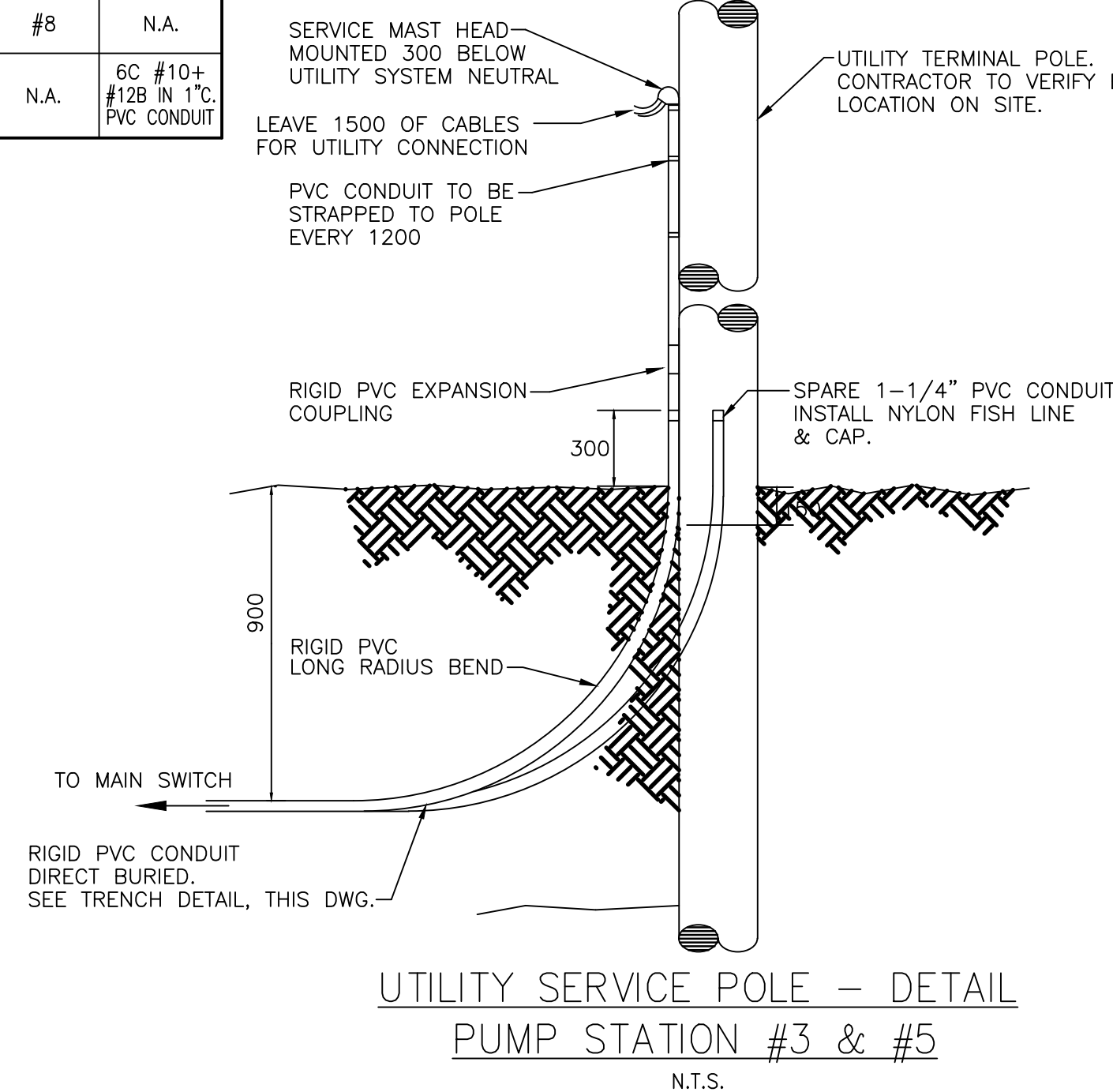
TABLE 1  
EQUIPMENT SCHEDULE



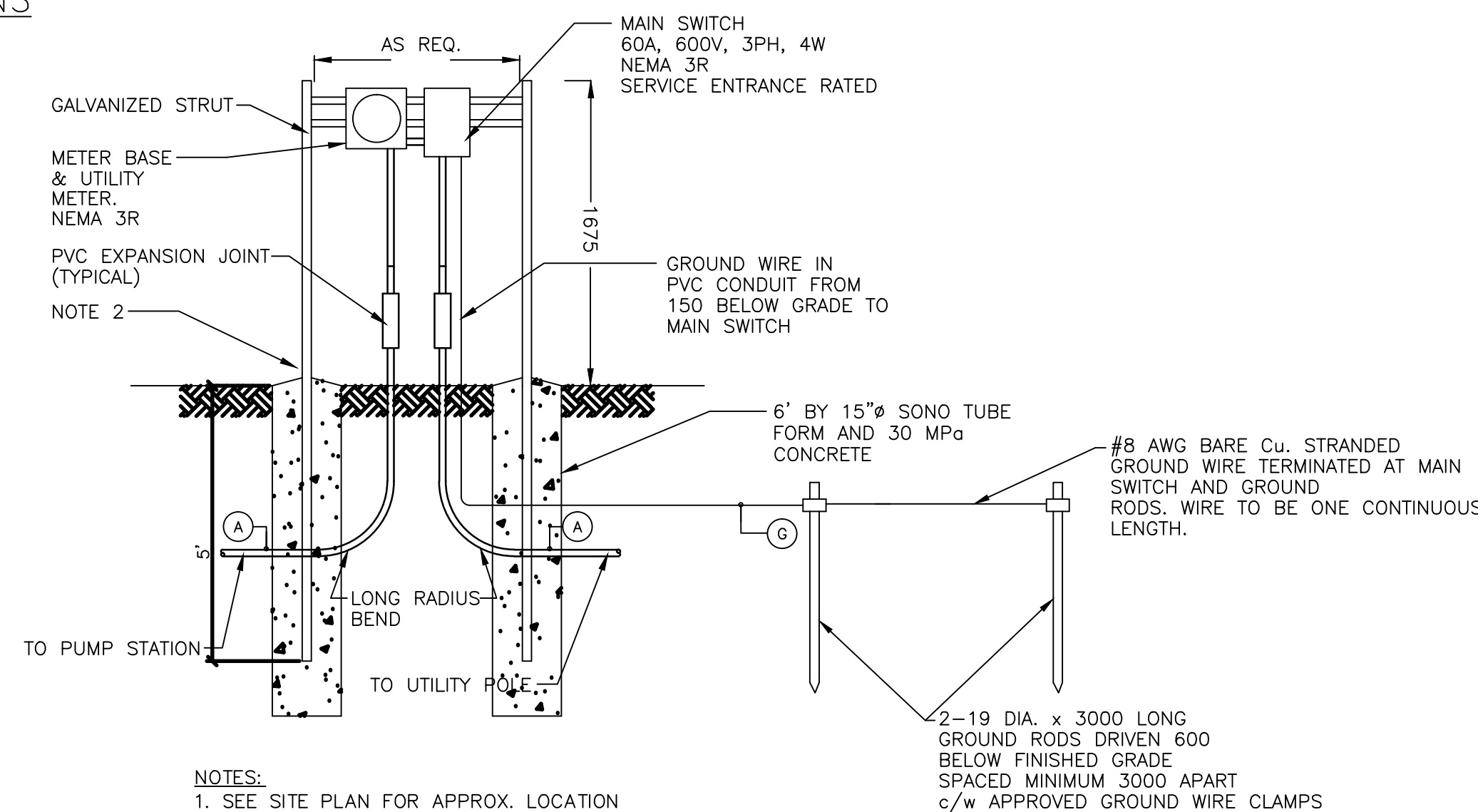
UNDERGROUND ELECTRICAL CONDUIT (TYP.)  
N.T.S.



ELEVATION TYPICAL EQUIPMENT  
ARRANGEMENT AT PUMP STATIONS  
N.T.S.

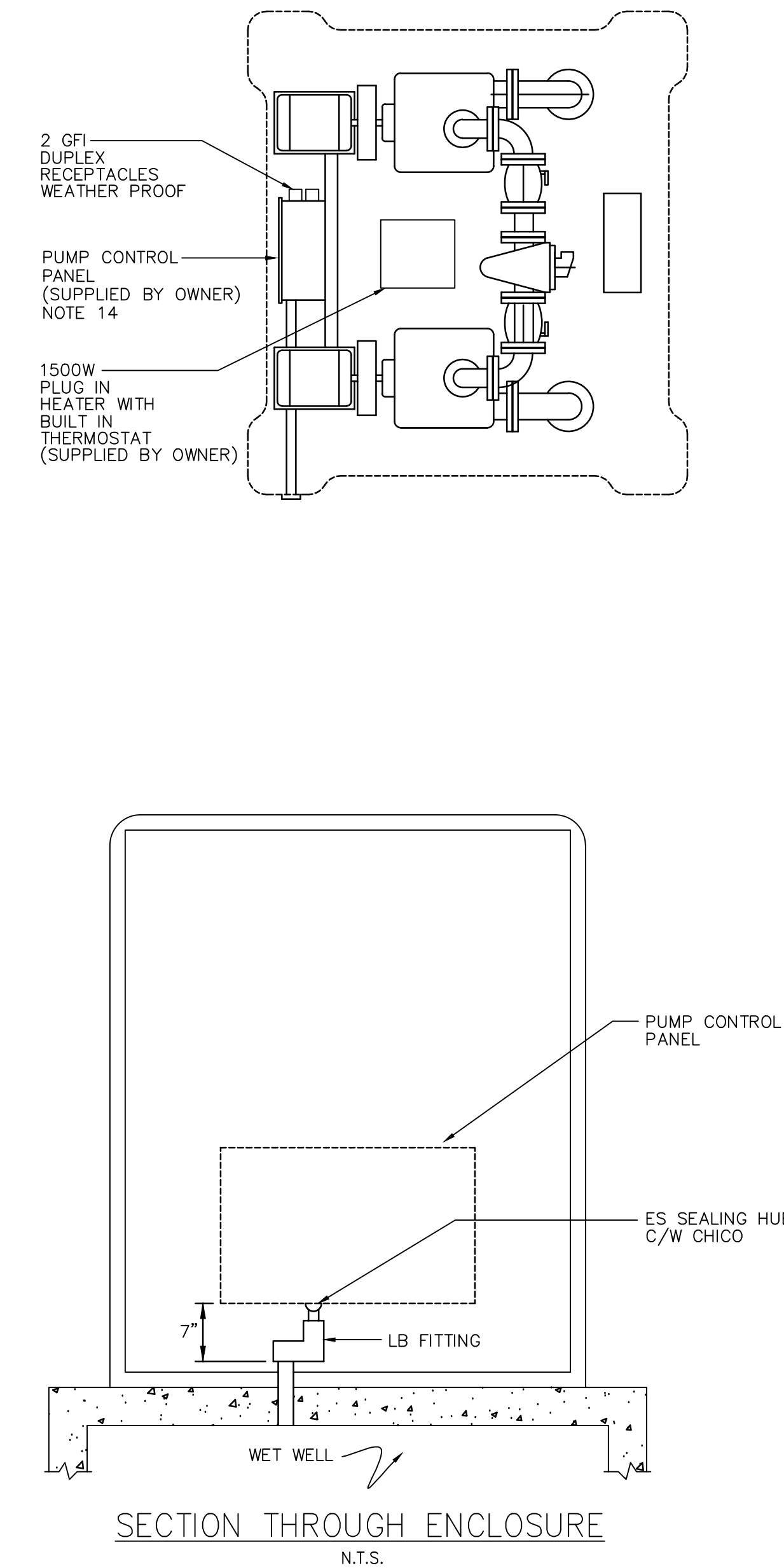


UTILITY SERVICE POLE - DETAIL  
PUMP STATION #3 & #5  
N.T.S.



- NOTES:
- SEE SITE PLAN FOR APPROX. LOCATION
  - CONSTRUCT SUPPORT FROM GALVANIZED STRUT 41mm\*41mm C/W GALVANIZED FASTENERS. PAINT ALL CUT ENDS WITH GALVANIZED FINISH.
  - ADD 45 DEGREE STRUT SUPPORT BACK SIDE ONLY.

NOTE  
THIS DRAWING WAS ORIGINALLY CREATED BY ELECTEC ENGINEERING INC., (REV. 1) AND HAS BEEN RE-DESIGNED & MODIFIED BY NGNS USING THE EXISTING FORMATING.



SECTION THROUGH ENCLOSURE  
N.T.S.

GENERAL NOTES:

- DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED. DIMENSIONS ARE IN MILLIMETERS UNLESS INDICATED OTHERWISE
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.
- ALL CABLE & CONDUIT ENTRIES INTO THE PUMP CONTROLLER SHALL BE ON THE BOTTOM OF THE ENCLOSURE.
- SEAL ALL CONDUITS BETWEEN THE WET WELL & THE PUMP CONTROLLER WITH EXPLOSION PROOF SEALS, RATED FOR CLASS 1, DIV. 2, GROUP D.
- VERIFY PUMP MOTOR HP & VOLTAGE WITH MFG. & CO-ORDINATE STARTER & OVERLOAD SIZE PROVIDED BY CONTROLLER MFG.
- SUPPLY & INSTALL A 120V, 1P, 1500W UNIT HEATER COMPLETE WITH CORD & PLUG FOR USE WITH GFI DUPLEX RECEPTACLE.
- SUPPLY AND INSTALL ALARM LIGHT TO MOUNT ON EXTERIOR OF FIBERGLASS REINFORCED PLASTIC ENCLOSURE. ALARM LIGHT SHALL BE VAPOR TIGHT RED GLOBE WITH GUARD INCANDESCENT c/w A19 TRAFFIC LAMP. FIELD INSTALL ALARM LIGHT IN A SUITABLE LOCATION THAT IS VIEWABLE FROM THE ROADWAY.
- INSTALL TWO PVC CONDUITS, ONE FOR POWER, ONE SPARE. ALL CONDUIT SHALL BE CLEANED & SWABBED, THEN CAPPED AFTER INSTALLATION. INSTALL A NYLON FISH LINE IN BOTH CONDUITS TO FACILITATE PULLING IN CABLES.
- USE FLEXIBLE LIQUID TIGHT CONDUIT FOR CONNECTION TO PUMPS, ALARM LIGHT, & VENT FAN. ALL OTHER CONDUITS SHALL BE RIGID PVC.
- INSTALL FLOAT CABLES AND LEVEL TRANSMITTER IN 1" CONDUITS TO WETWELL. INSTALL AN EXPLOSION SEAL BEFORE THE PUMP CONTROLLER. INSTALL A BELL END ON THE DUCT AT THE WET WELL AND SEAL AROUND CABLES AT THE WETWELL WITH DUCTSEAL.
- FIBERGLASS ENCLOSURE, CONTROLLER, MOTORS VENT FAN, PUMPS, LEVEL TRANSMITTER & LEVEL FLOATS SUPPLIED BY OTHERS. WIRING & INSTALLATION BY ELECTRICAL CONTRACTOR. ALL OTHER ITEMS TO BE SUPPLIED & INSTALLED BY ELECTRICAL CONTRACTOR.
- SEE SITE PLAN FOR PUMPING STATION LOCATIONS & UTILITY POWER LOCATIONS. POLE LOCATIONS SHALL BE CONFIRMED WITH UTILITY.
- CONTRACTOR SHALL ARRANGE PICK UP OF OWNER SUPPLIED MATERIAL & TRANSPORT TO JOB SITE.
- POWER SUPPLY & CONTROL FOR P.S. #8 WILL BE FROM THE MAIN S.T.P. SUPPLY AND INSTALL LOCAL JUNCTION BOXES, DISCONNECT SWITCHES, CONDUIT AND WIRING.

No.	Description	Date	By
03	ISSUED FOR TENDER	16/04/02	
02	ISSUED FOR REVIEW	11/13/01	RGB
01	ISSUED FOR REVIEW	DEC/98	

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

PUMPING STATION  
#3, #5, & #8  
ELECTRICAL LAYOUT  
& DETAILS

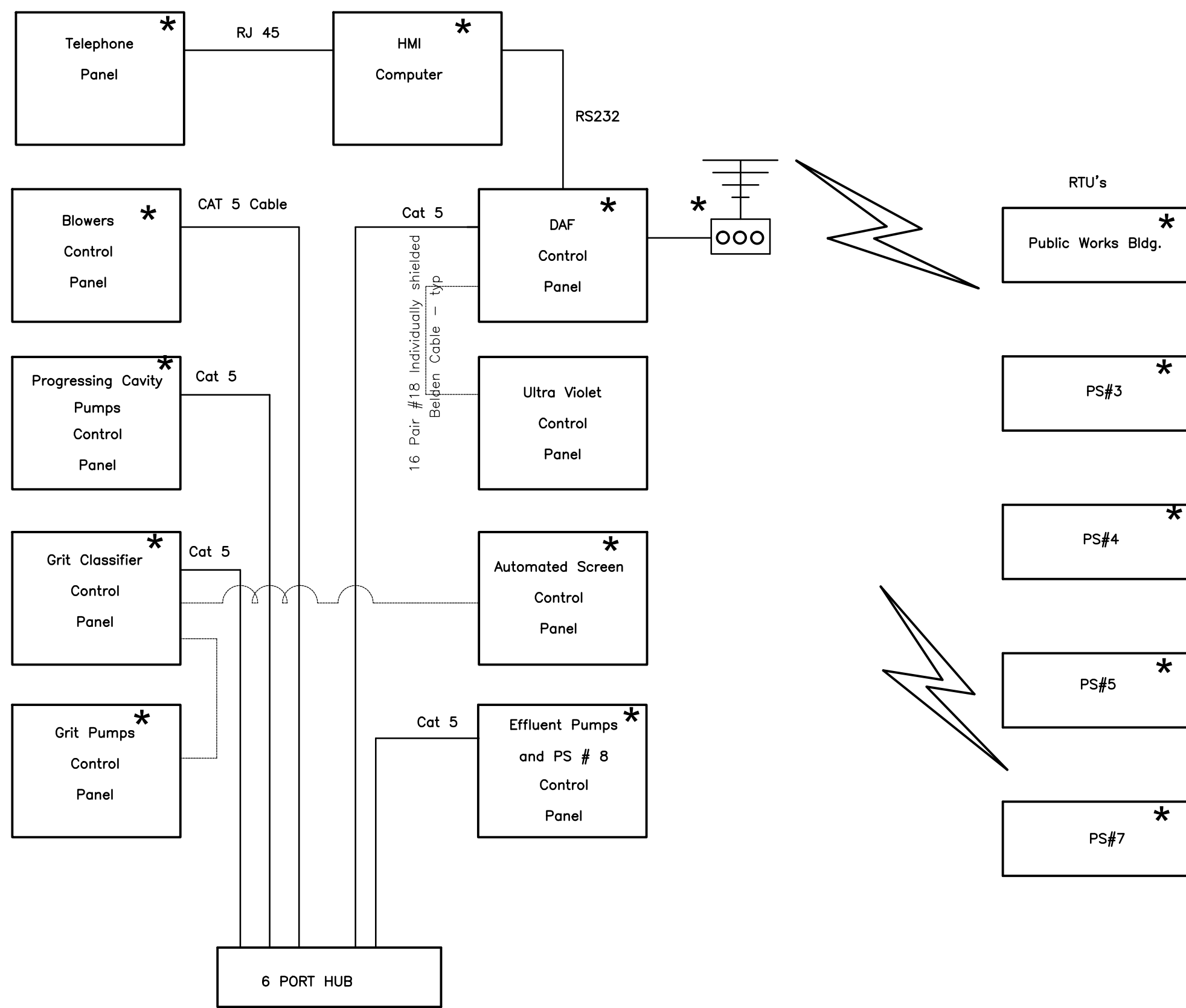
**ABL**  
ENVIRONMENTAL  
consultants limited  
102 PORTLAND STREET  
DARTMOUTH, N.S. SC00A  
B2Y 1H8  
Tel: (902)466-0050  
Fax: (902)466-4399  
Email: ablobrien@environmental.com

**NG** Neill and Gunter  
DARTMOUTH, N.S., CANADA

NGNS JOB NO. 16770

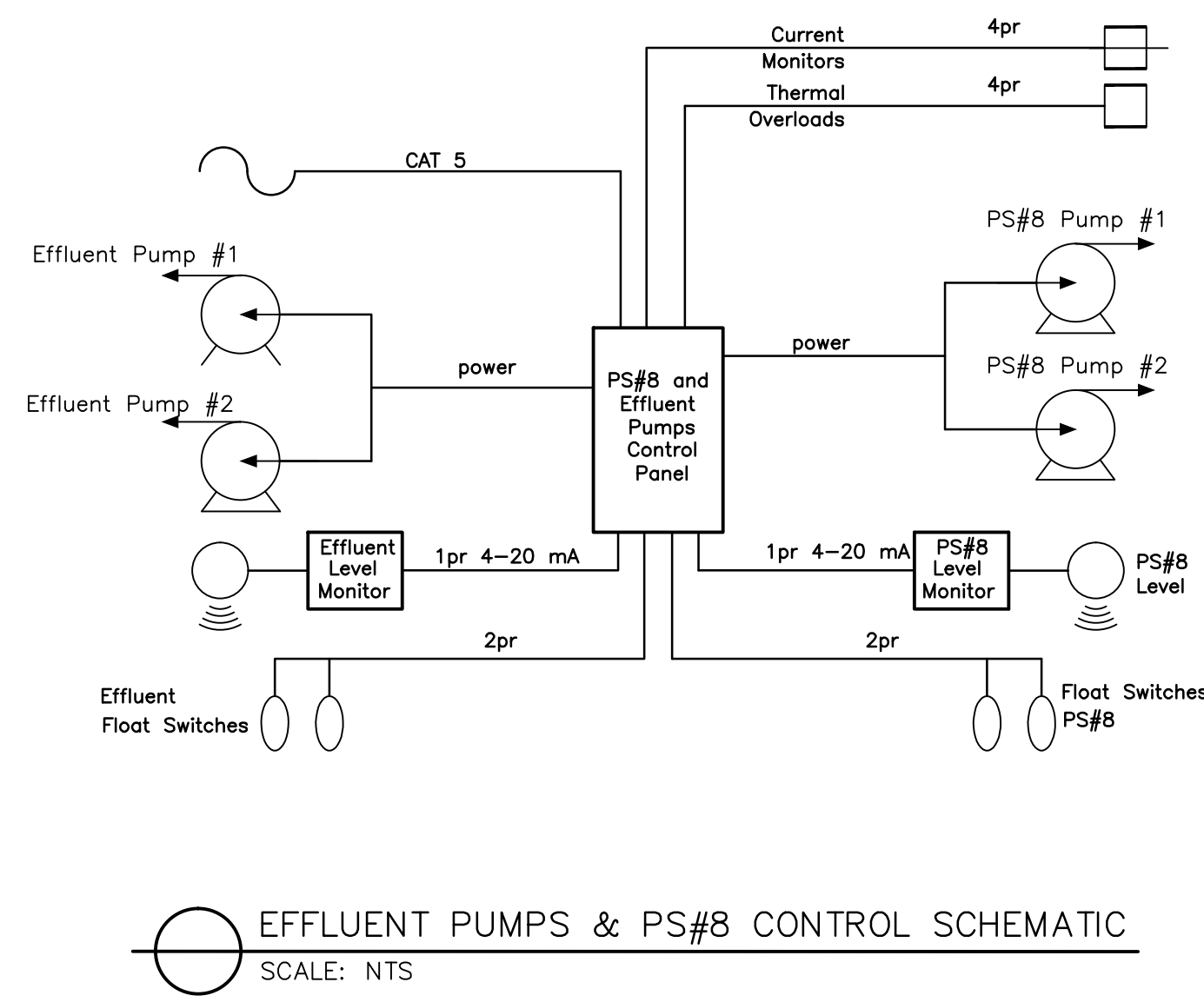
Scale AS SHOWN

Date	Drawn
Dec. 1998	AM
Designed	Checked
Contract No. 98001	Sheet of 39/46
Drawing No. E6	Revision 3

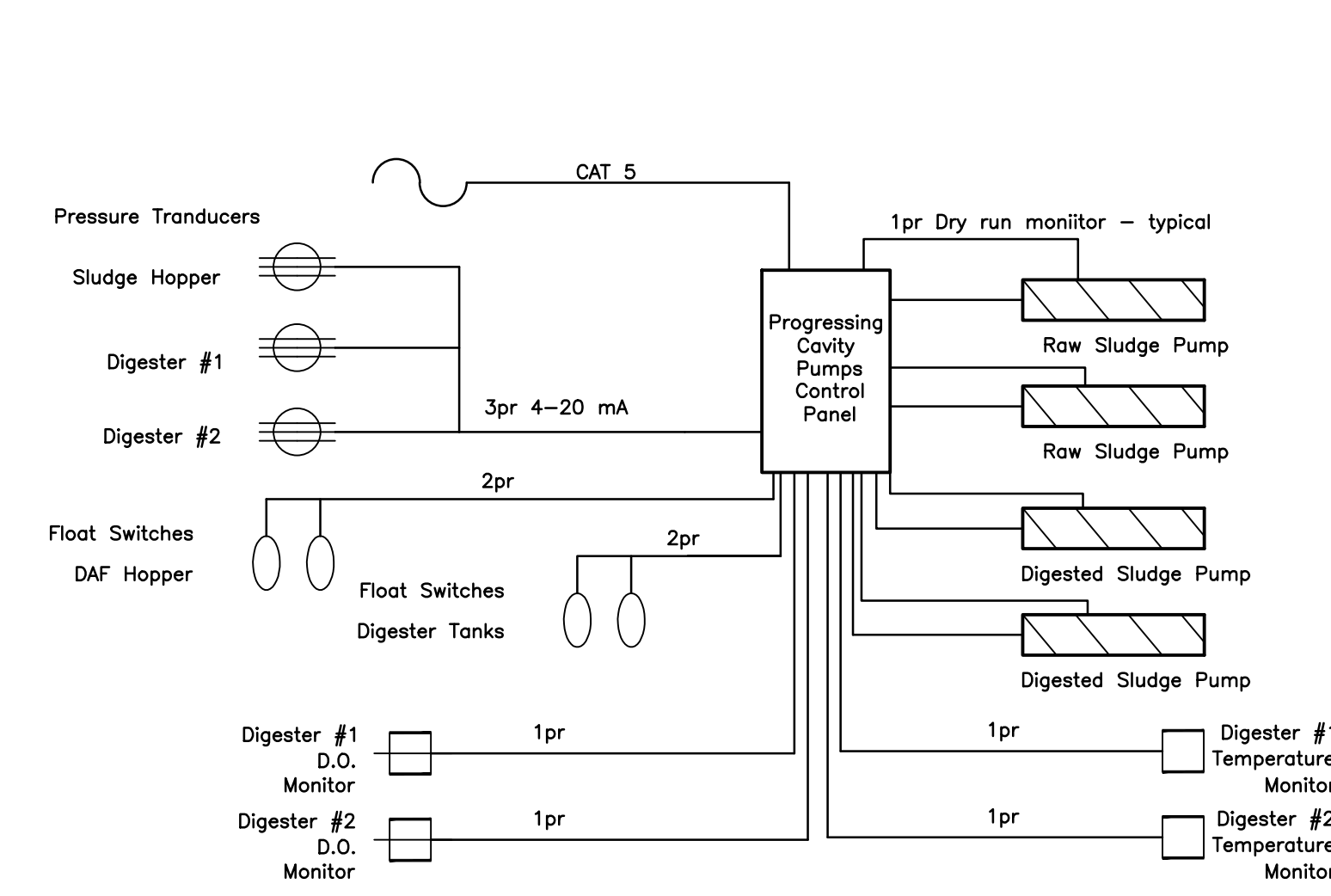


HMI COMMUNICATION SCHEMATIC  
SCALE: NTS

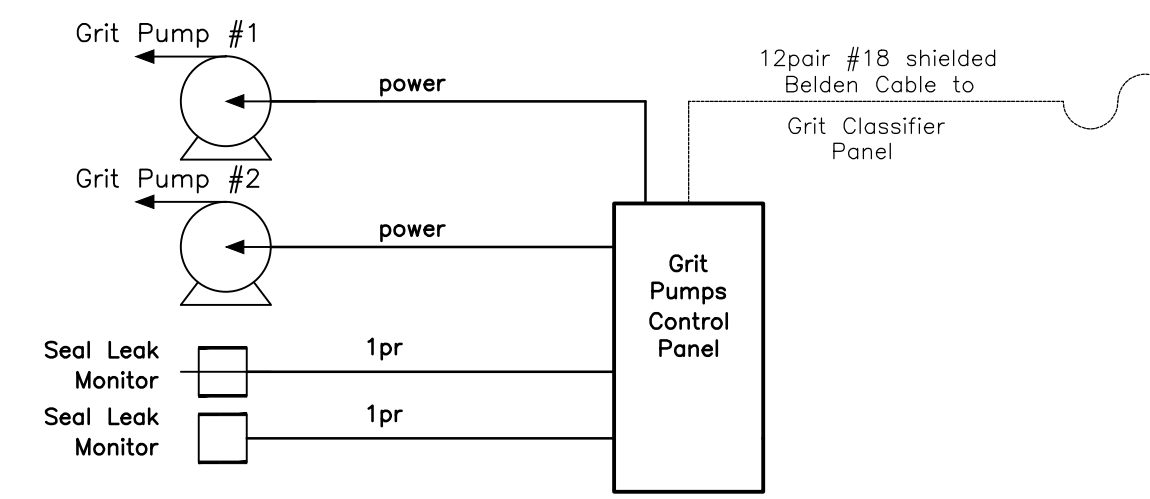
\* - by others; connections and cabling by this contractor



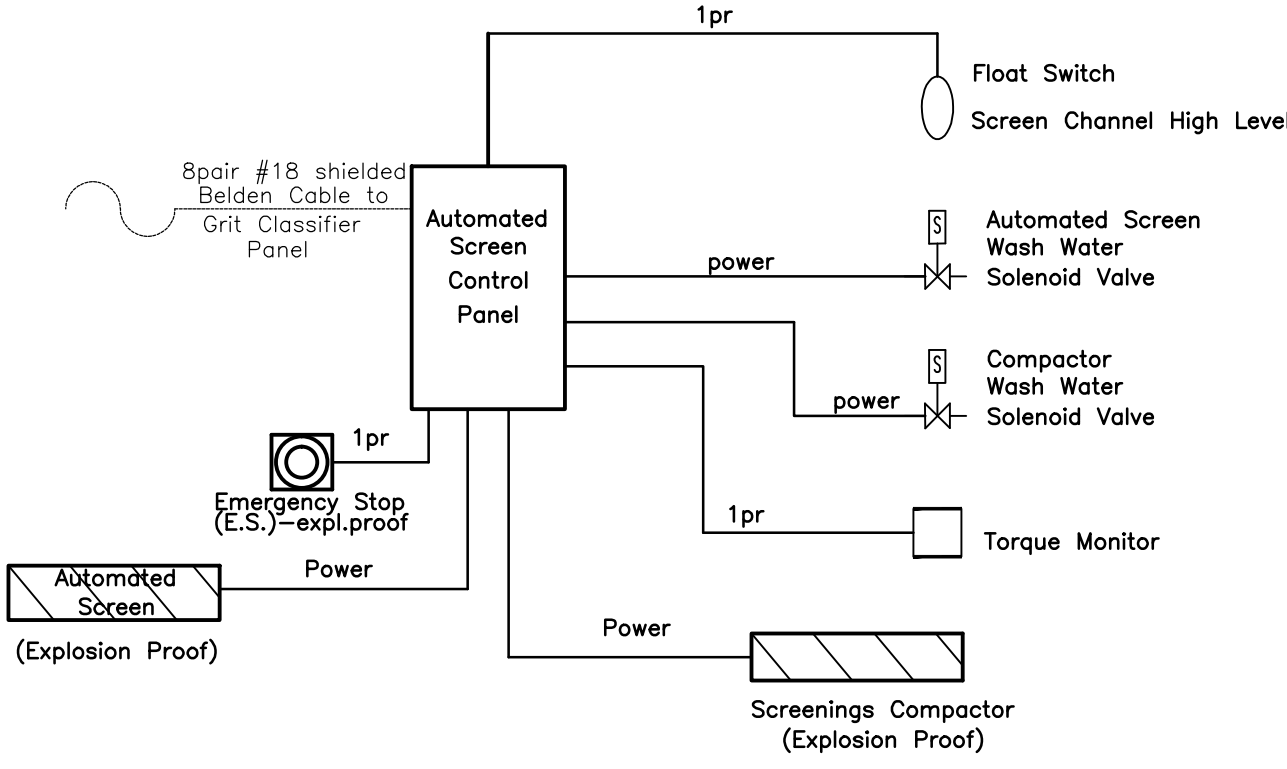
EFFLUENT PUMPS & PS#8 CONTROL SCHEMATIC  
SCALE: NTS



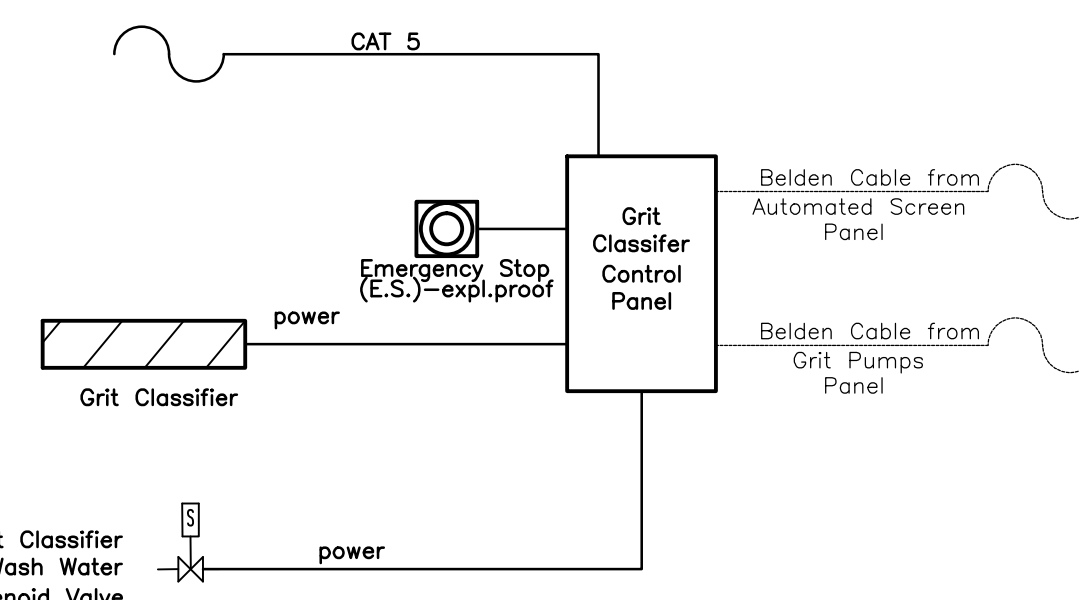
PROG. CAVITY PUMPS CONTROL SCHEMATIC  
SCALE: NTS



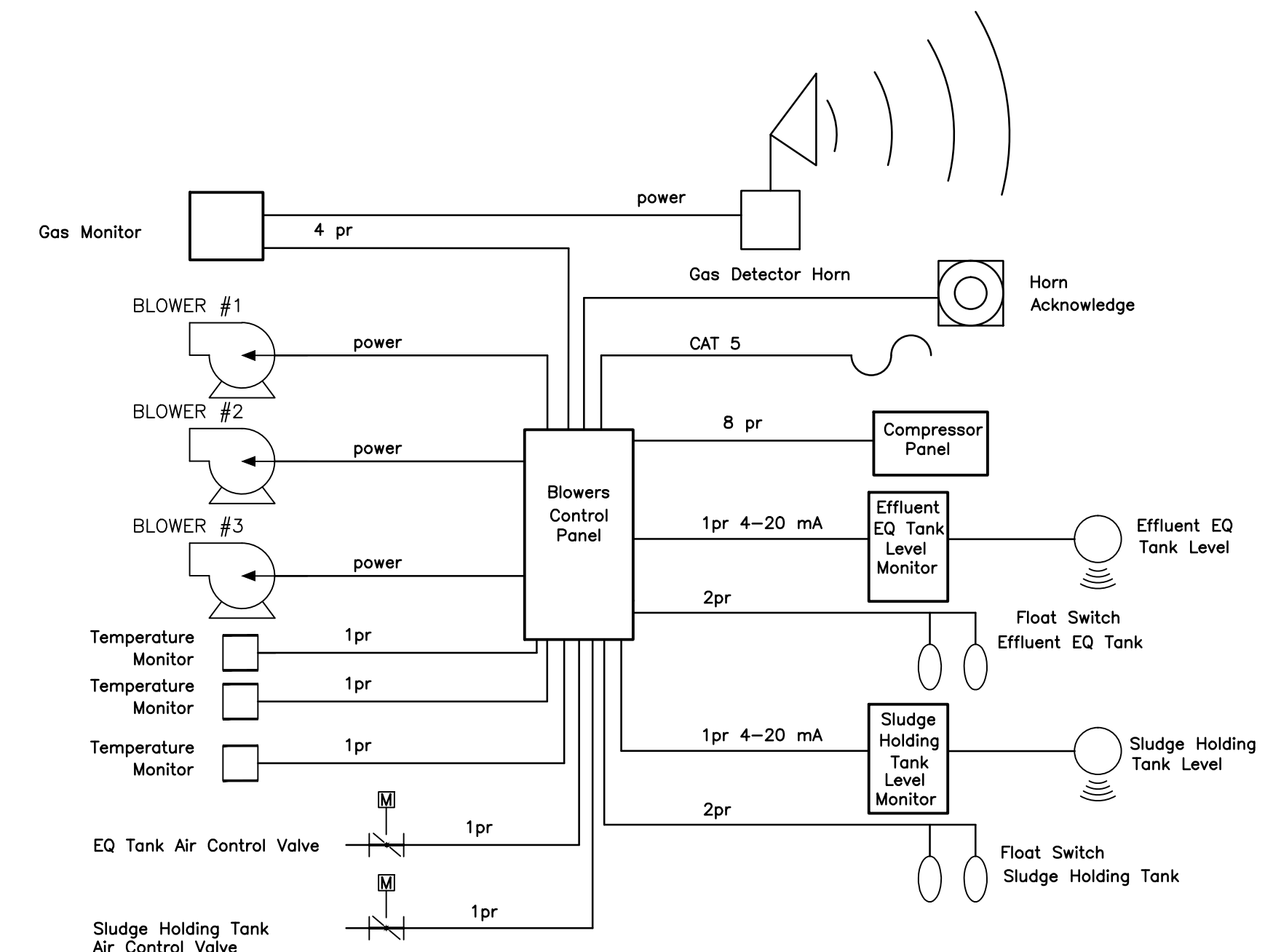
GRIT PUMPS CONTROL SCHEMATIC  
SCALE: NTS



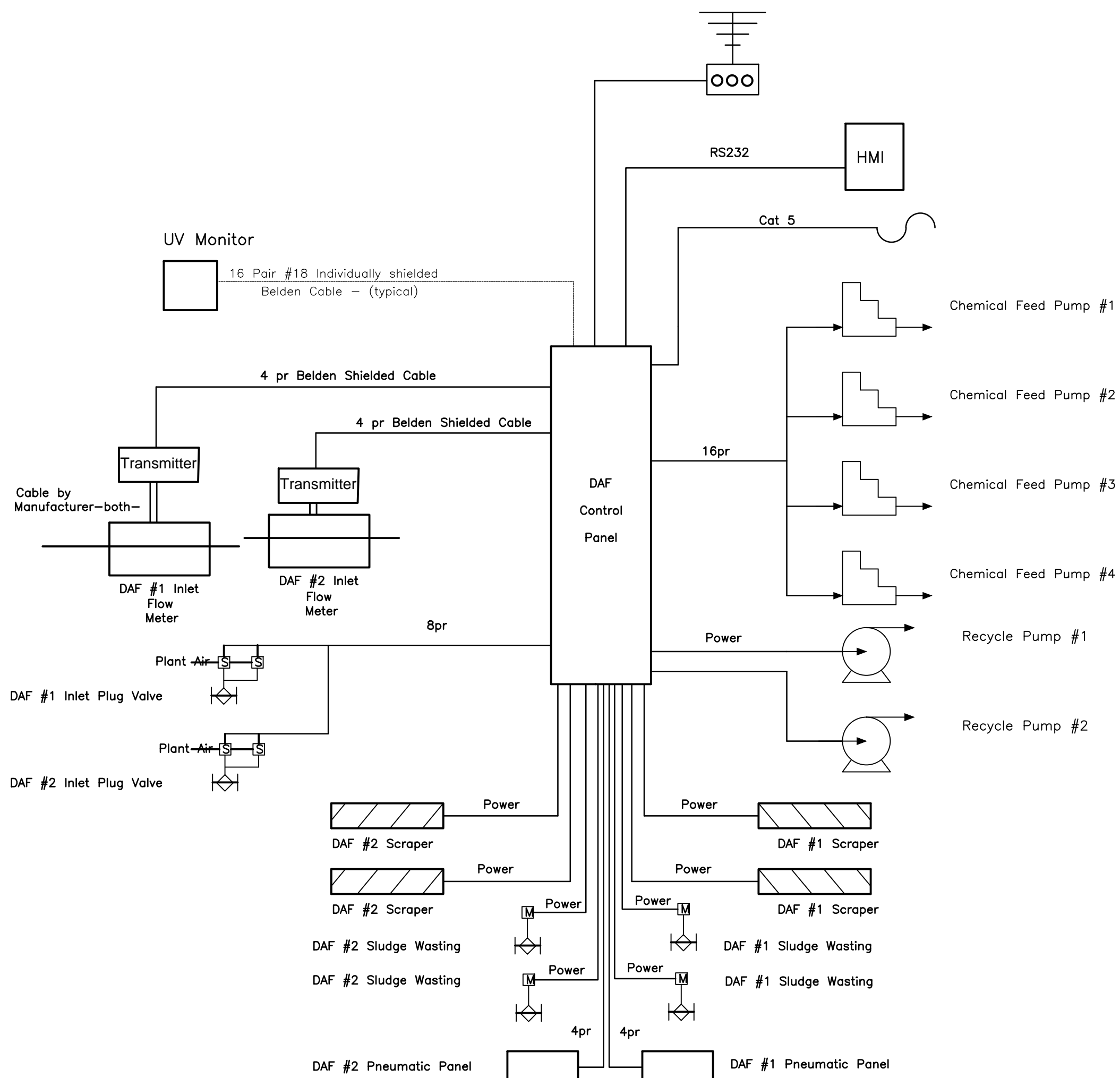
AUTOMATED SCREEN CONTROL SCHEMATIC  
SCALE: NTS



GRIT CLASSIFIER CONTROL SCHEMATIC  
SCALE: NTS



BLOWER PANEL CONTROL SCHEMATIC  
SCALE: NTS



DAF CONTROL SCHEMATIC  
SCALE: NTS

GENERAL NOTES:

1. DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.
3. THE CONTRACTOR SHALL PROVIDE ALL WIRING IN ACCORDANCE WITH DIVISION 16 ELECTRICAL.
4. CONSULT WITH EQUIPMENT SUPPLIER TO ESTABLISH INSTALLATION AND SUPPLY REQUIREMENTS UNDER THIS CONTRACT.
5. COMMUNICATION CABLE SHALL BE INDIVIDUALLY SHIELDED BELDEN CABLE UNLESS NOTED OTHERWISE

LEGEND

No.	Description	Date	By
00	ISSUED FOR TENDER	APR 19/02	JCL

Revision or Issue

LUNENBURG SEWAGE TREATMENT PLANT

PROCESS CONTROL AND COMMUNICATION

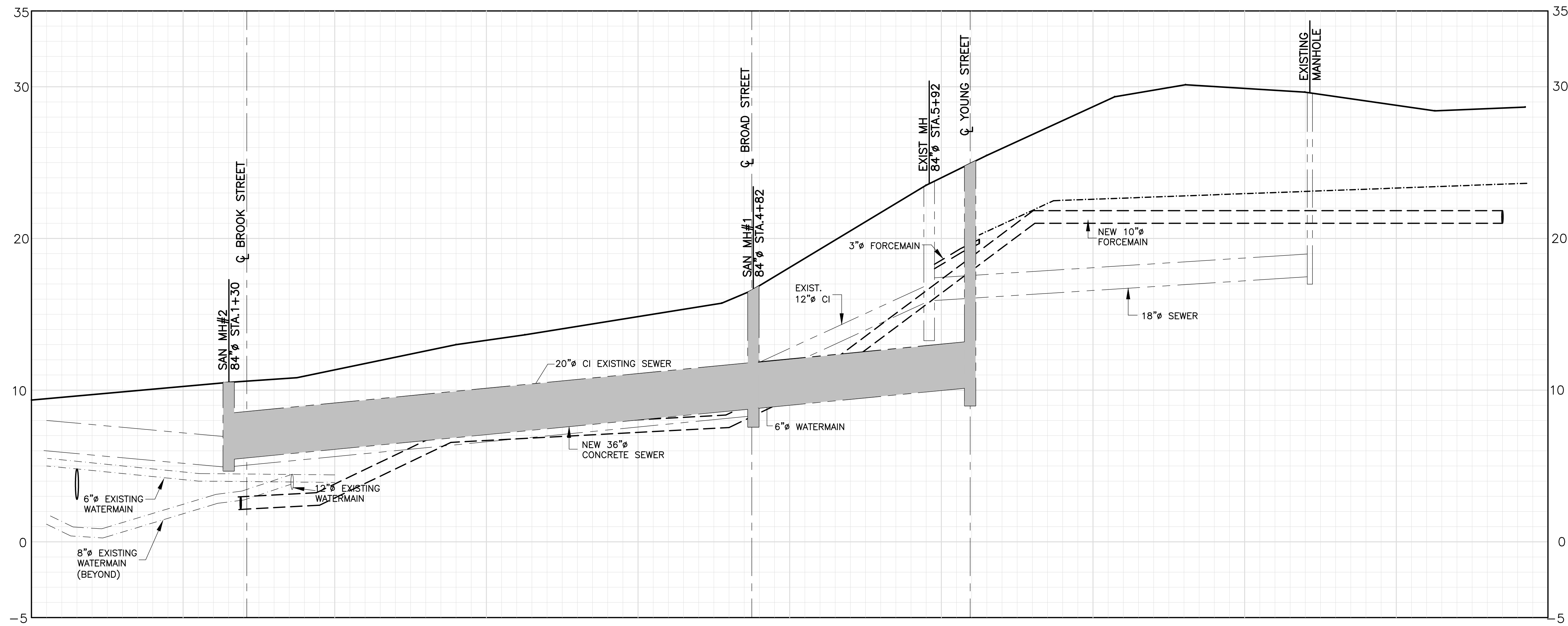


Scale NOT TO SCALE

Date	Drawn
APR 19/02	RM
Designed JCL	Checked JH
Contract No. 98001	Approved JCL
Sheet of 47	Revision

11

0



C.L. ROADWAY CHAINAGE	0+00	1+00	2+00	3+00	4+00	5+00	6+00	7+00	8+00	9+00	10+00
SANITARY SEWER INVERT ELEV.			5.47			8.73	10.07	10.15			
			36" CONC. SAN 345.0' @1.9%			36" CONC. SAN 144.0' @1.9%					

- GENERAL NOTES:**
- DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS **SHALL NOT BE SCALED.**
  - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.

**LEGEND**

EXISTING	PROPOSED
--- (dashed line)	--- (solid line)
--- (dashed line)	--- (solid line)
--- (dashed line)	--- (solid line)
--- (dashed line)	--- (solid line)
○ (circle)	● (filled circle)
⊗ (circle with cross)	⊗ (circle with cross)
⊙ (circle with dot)	⊙ (circle with dot)
□ (square)	■ (filled square)
⊗ (circle with cross)	⊗ (circle with cross)
⊙ (circle with dot)	⊙ (circle with dot)
X-X (line with X)	X-X (line with X)
⊕ (circle with cross)	⬥ (filled diamond)

01	ISSUED FOR REVIEW	DEC/98	JCL
No.	Description	Date	By

**Revision or Issue**

**TOWN OF LUNENBURG**  
MUNICIPAL WASTEWATER COLLECTION AND TREATMENT

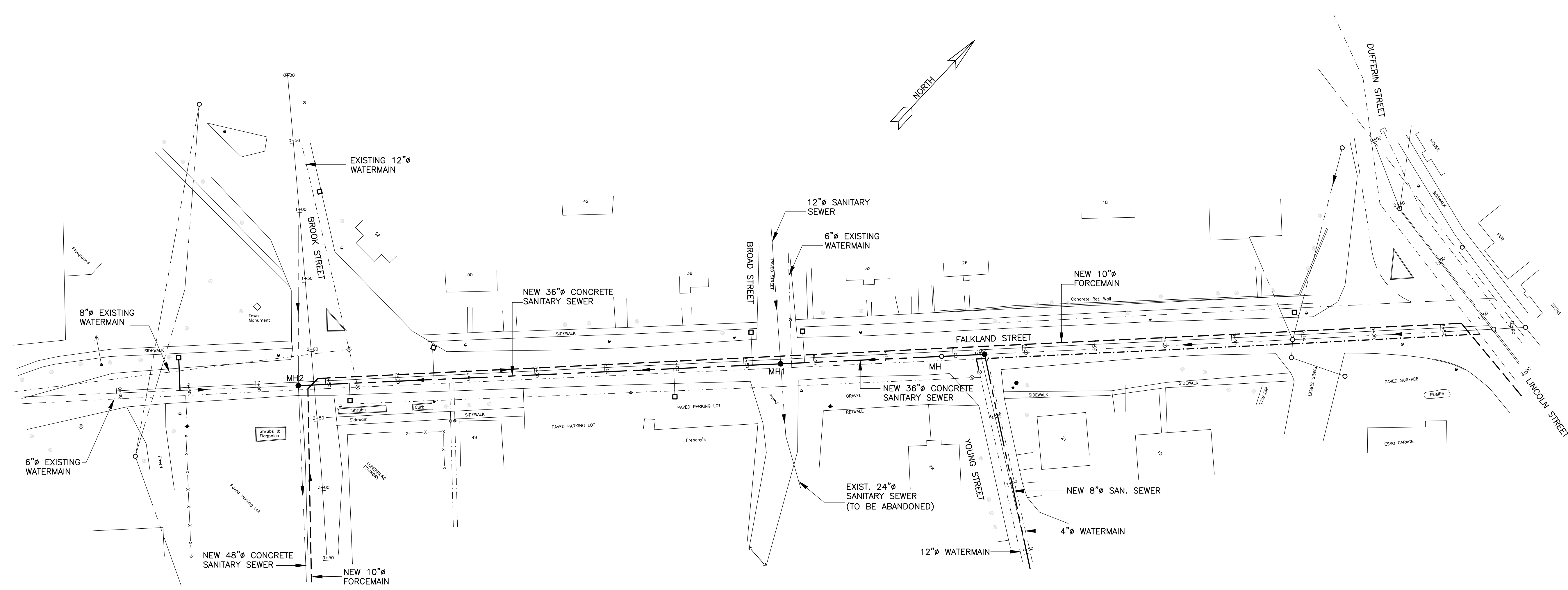
**FALKLAND STREET**  
PLAN AND PROFILE  
0+00 TO 9+85

**ABL Environmental Consultants Ltd.**

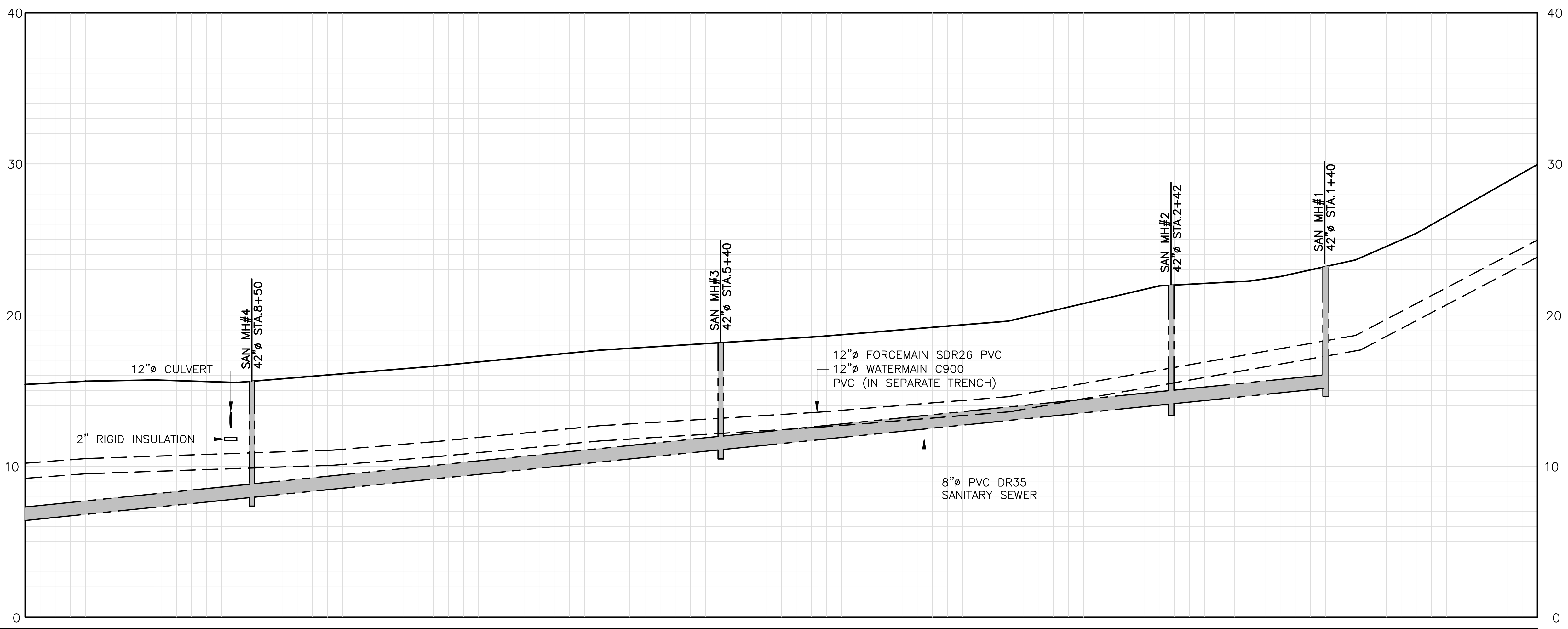
102 PORTLAND STREET, P.O. BOX 501  
DARTMOUTH, NS, B2Y 3Y8 TEL: (902)466-0050  
FAX: (902)466-4399

Scale: H: 1" = 40' V: 1" = 4'

Date	DEC 1998	Drawn	GP
Designed	JCL	Checked	TA
Contract No.	98001	Approved	JCL
Drawing No.	G1	Sheet of	40 / 46
		Revision	







C.L. ROADWAY CHAINAGE	10+00	9+00	8+00	7+00	6+00	5+00	4+00	3+00	2+00	1+00	0+00
SANITARY SEWER INVERT ELEV.											
	8" PVC DR35 SANITARY SEWER 300' @1.0%		8" PVC DR35 SANITARY SEWER 310' @1.0%			8" PVC DR35 SANITARY SEWER 298' @1.0%			8" PVC DR35 SANITARY SEWER 102' @1.0%		
	8.08	8.14	11.21	11.26	14.22	14.26	15.26				

- GENERAL NOTES:**
- DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED.
  - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.

**LEGEND**

EXISTING	PROPOSED
—	—
---	---
---	---
---	---
○	○
⊗	⊗
⊙	⊙
⊠	⊠
⊡	⊡
⊢	⊢
⊣	⊣
⊤	⊤
⊥	⊥
⊦	⊦
⊧	⊧
⊨	⊨
⊩	⊩
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01	ISSUED FOR REVIEW	DEC./98	JCL
No.	Description	Date	By

**Revision or Issue**

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

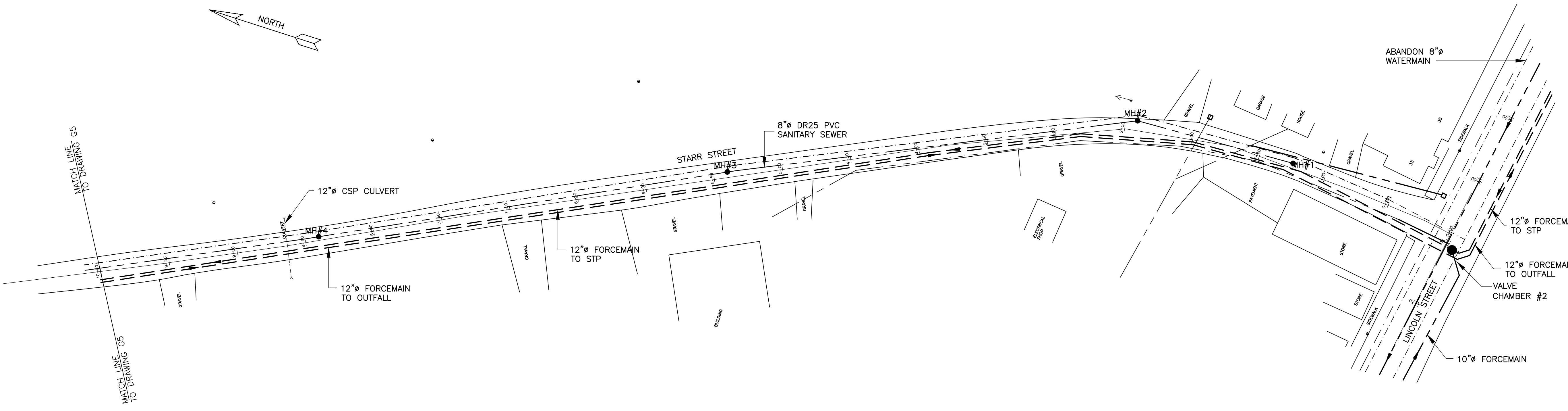
STARR STREET  
PLAN AND PROFILE  
0+00 TO 10+00

**ABL Environmental Consultants Ltd.**

102 PORTLAND STREET, P.O. BOX 501  
DARTMOUTH, NS, B2Y 3Y8 TEL: (902)466-0050  
FAX: (902)466-4399

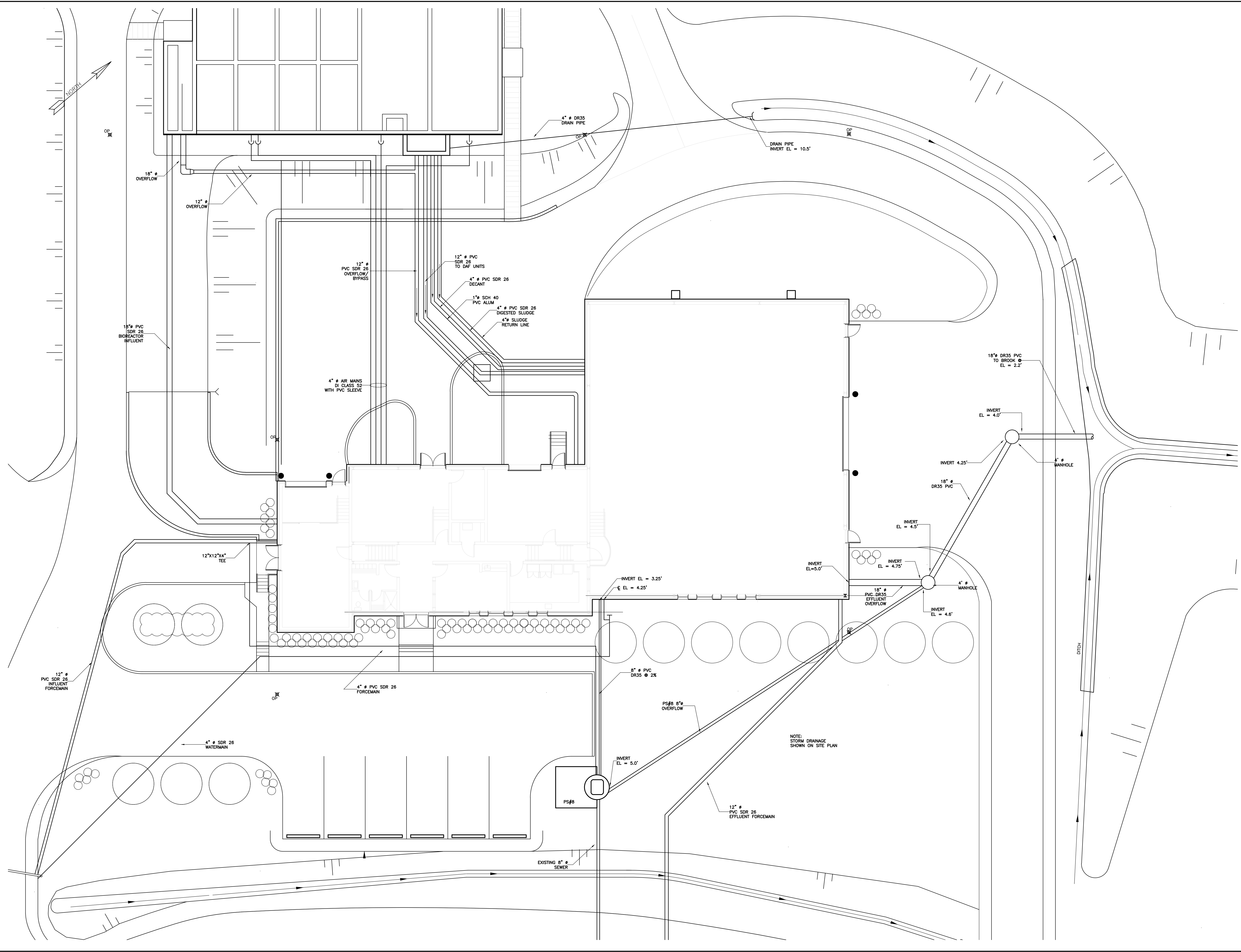
Scale H: 1" = 40' V: 1" = 4'

Date	DEC 1998	Drawn	GP
Designed	JCL	Checked	JCL
Contract No.	98001	Approved	JCL
Drawing No.	G4	Sheet of	42/46
		Revision	





Date: Tuesday, Apr. 17, 2012-12:46pm Drawing: G7 File: C:\98001 -Lunenburg STP 2002\Drawings\98001-G7.dwg User: mallison



- GENERAL NOTES:**
- DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED.
  - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.
  - FOR LOCATIONS, ELEVATIONS AND DETAILS OF PIPES SEE MECHANICAL AND PROCESS DRAWINGS.
  - FOR LOCATIONS AND DETAILS INCLUDING ANCHORAGE REQUIREMENTS OF EQUIPMENT SEE MECHANICAL DRAWINGS.
  - PIPES 4" OR SMALLER SHOWN AS SINGLE LINE.

- LEGEND**
- 12.88 EXISTING SPOT ELEVATIONS
  - 12.88 NEW SPOT ELEVATION
  - (12.88) EXISTING SPOT ELEV. TO REMAIN
  - OP CONTROL POINT FOR LAYOUT
  - OP IRON BAR OFFSET POINTS
  - TBM TEMPORARY BENCHMARK
  - PIPE BOLLARD

No.	Description	Date	By
03	ISSUED FOR ADDENDUM #1	MAY/02	JH
02	ISSUED FOR TENDER	APR/02	JH
01	ISSUED FOR REVIEW	DEC/98	JCL

**Revision or Issue**

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

SEWAGE TREATMENT PLANT  
YARD PIPING

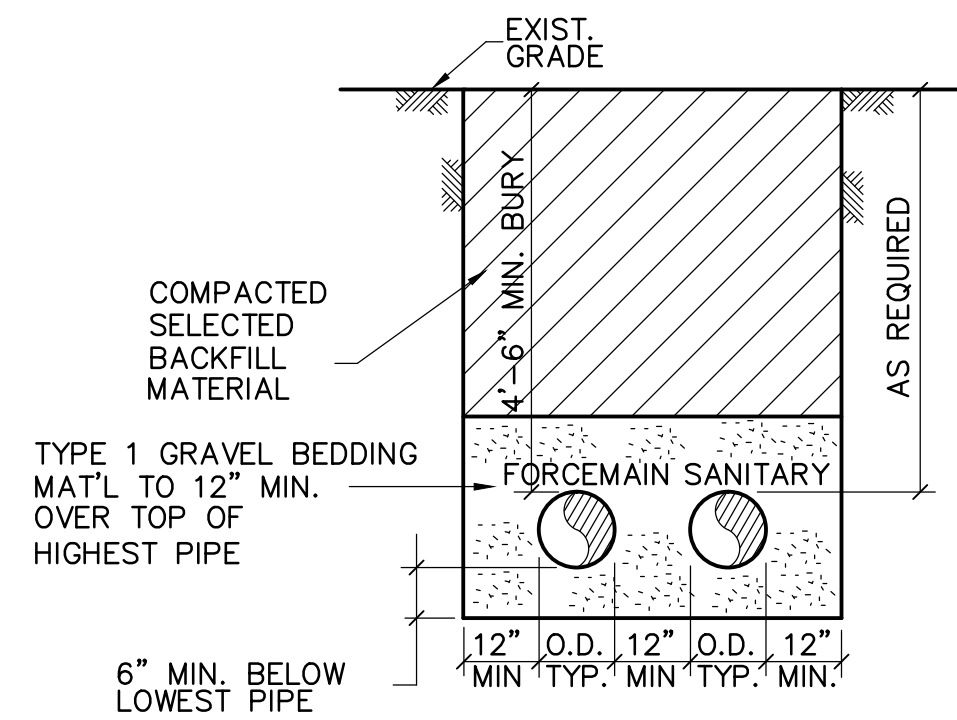
**ABL**  
ENVIRONMENTAL  
consultants limited

102 PORTLAND STREET  
DARTMOUTH, NOVA SCOTIA  
B2Y 1H8

Tel: (902)466-0050  
Fax: (902)466-4399  
Email: abl@ablenvironmental.com

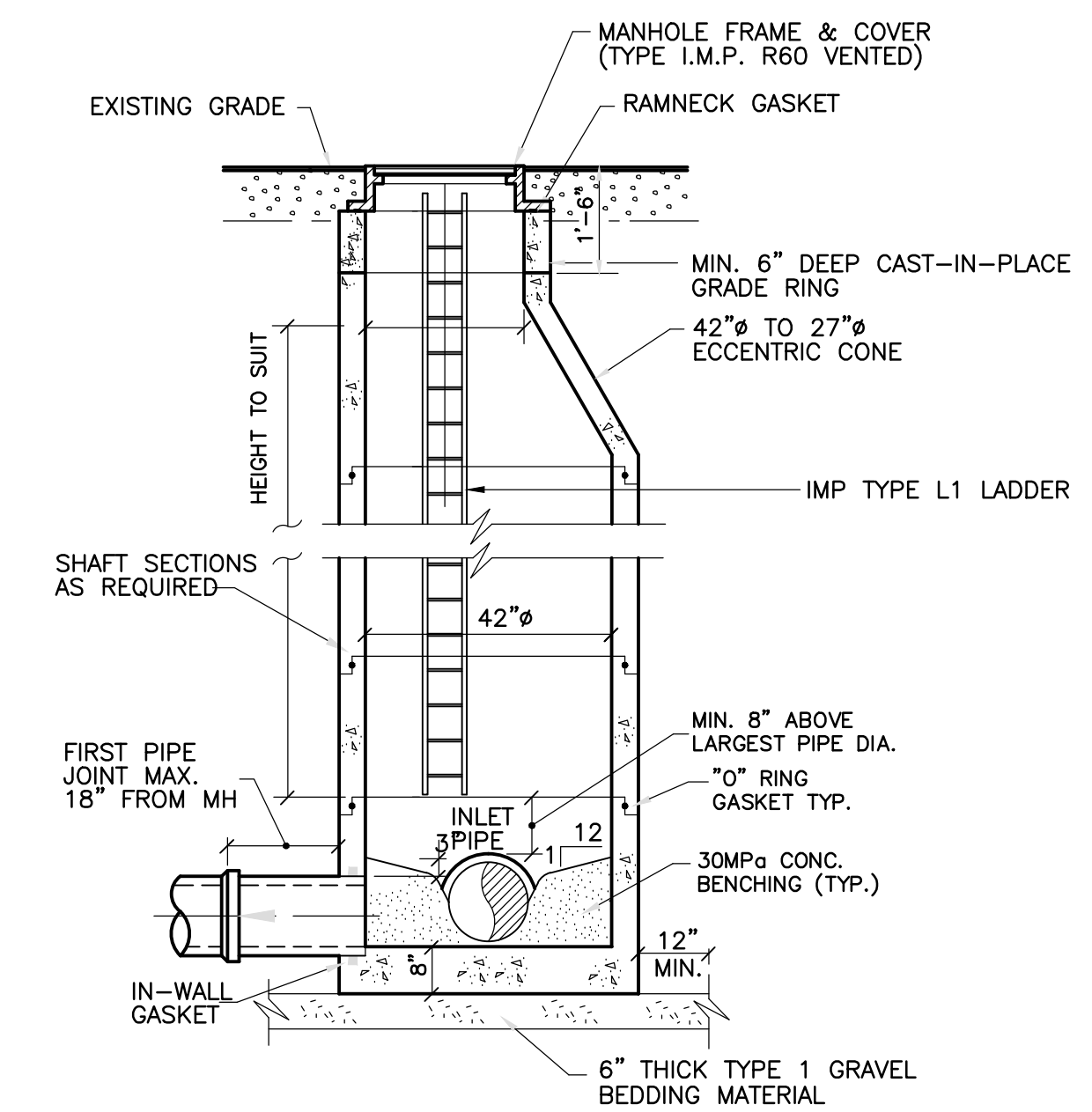
Scale 1" = 10'-0"

Date	Designed	Checked	Approved	Drawn
MAY 2002	GFB	TA	JCL	AEA
Contract No.	Drawing No.		Sheet of	Revision
98001	G7		49	43

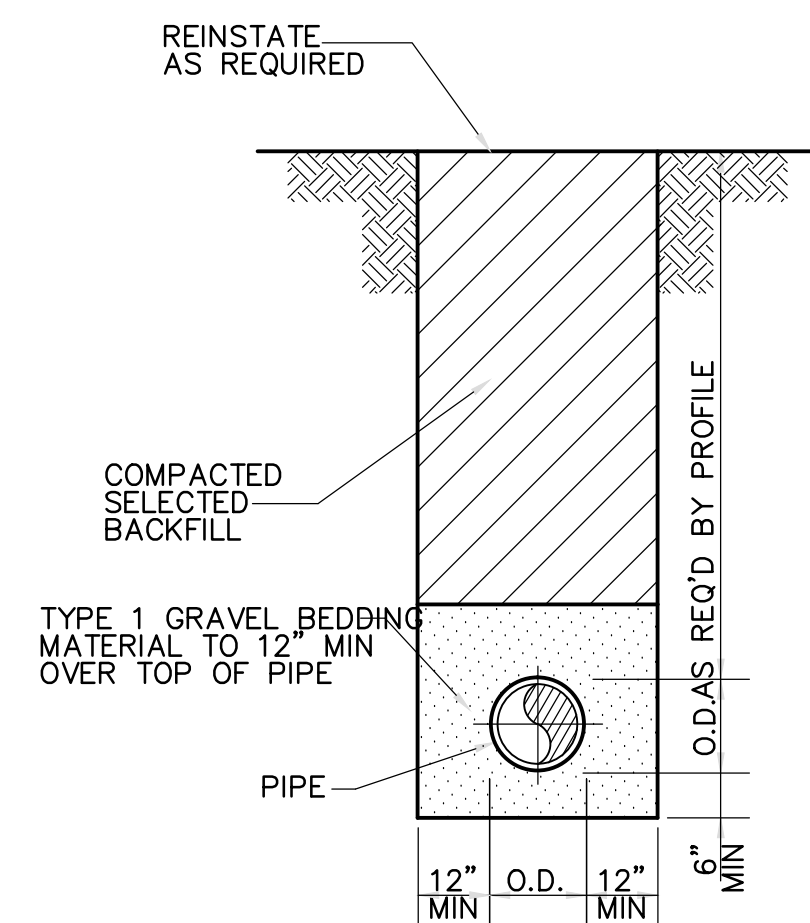


NOTE:  
WATERMAIN SHALL BE IN SEPARATE TRENCH.

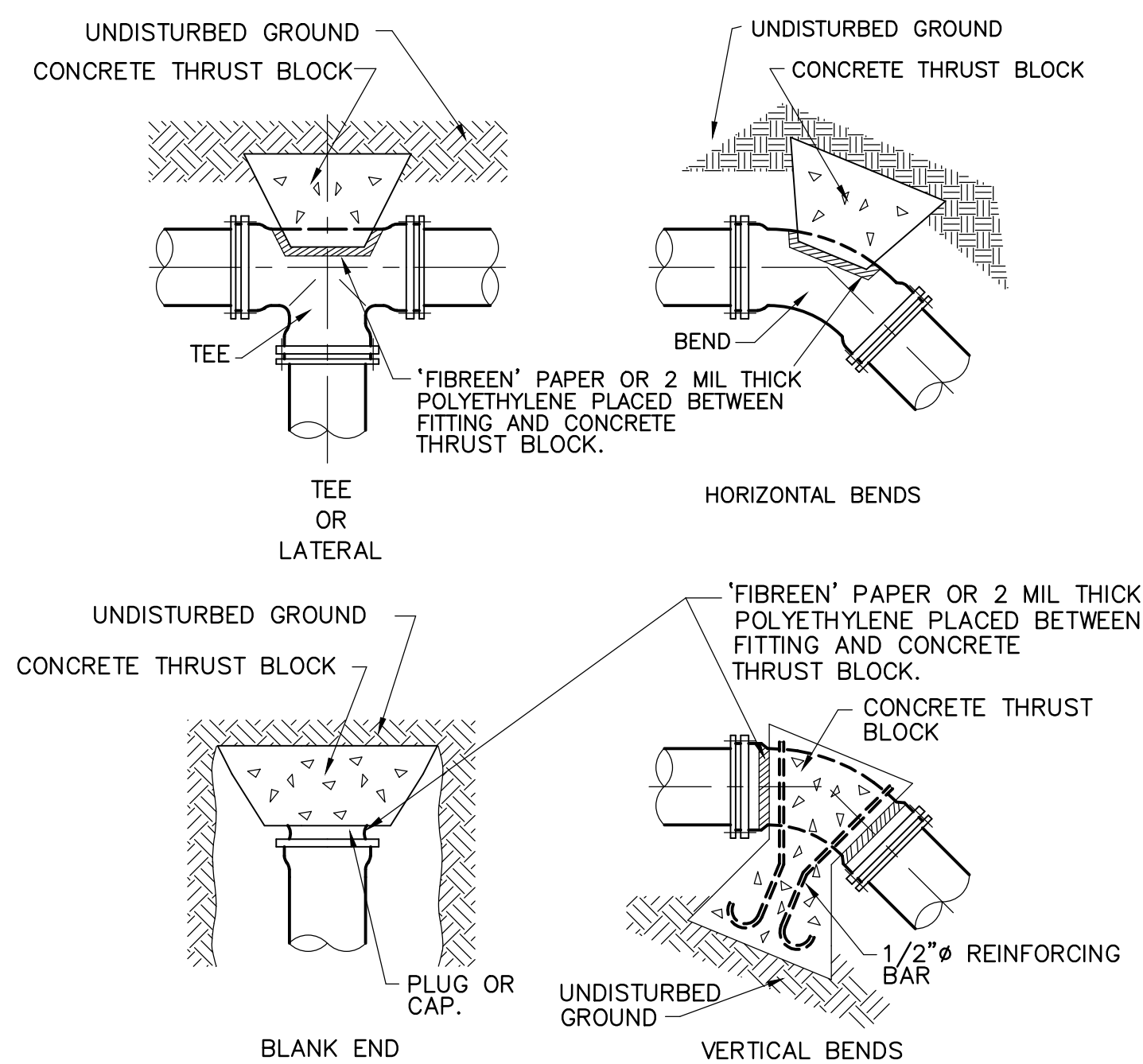
⊖ TRENCH DETAIL - TWO PIPES  
N.T.S.



⊖ 42" Ø PRECAST MANHOLE  
SCALE: N.T.S.

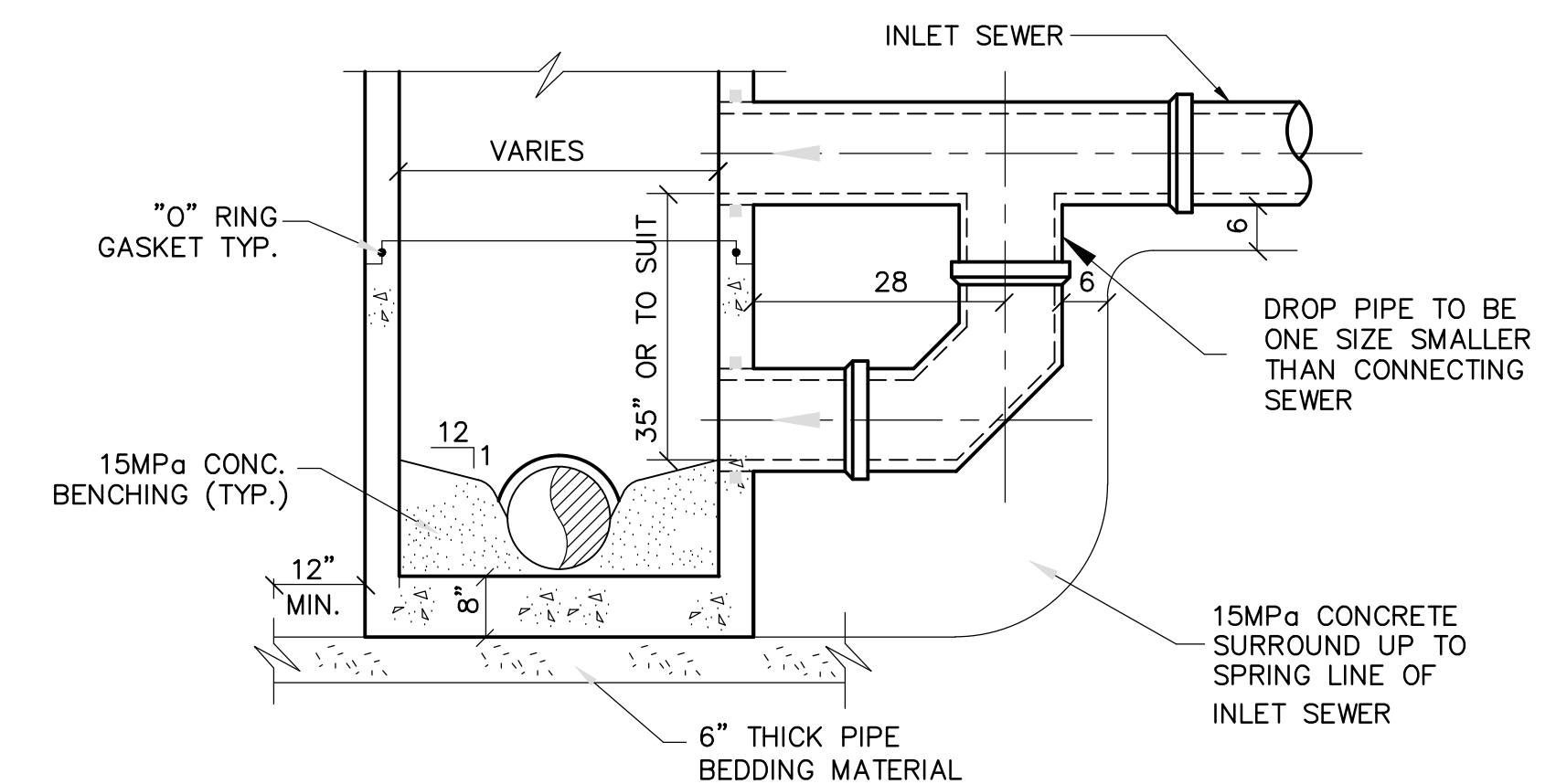


⊖ TYPICAL TRENCH DETAIL  
SCALE: N.T.S.



NOTE: SIZE THRUST BLOCKS AS PER STANDARD DETAIL 02518-E5

⊖ CONCRETE THRUST BLOCK DETAILS  
N.T.S.



⊖ PRECAST MANHOLE WITH OUTSIDE DROP  
SCALE: N.T.S.

GENERAL NOTES:

- DRAWINGS IN GENERAL ARE TO SCALE BUT THE FIGURED DIMENSIONS SHALL ALWAYS BE FOLLOWED AND THE DRAWINGS SHALL NOT BE SCALED.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO PROCEEDING WITH ANY WORK.

LEGEND

No.	Description	Date	By
01	ISSUED FOR REVIEW	DEC./98	JCL

Revision or Issue

TOWN OF LUNENBURG  
MUNICIPAL WASTEWATER  
COLLECTION AND TREATMENT

CHAMBERS, MANHOLE  
AND HYDRANT DETAILS

ABL Environmental  
Consultants Ltd.

102 PORTLAND STREET, P.O. BOX 501  
DARTMOUTH, NS, B2Y 3Y8 TEL: (902)466-0050  
FAX: (902)469-4399

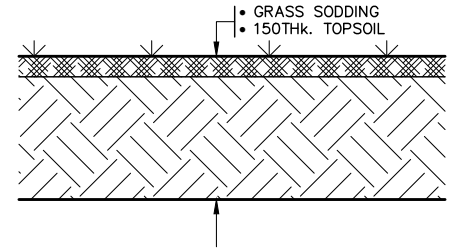
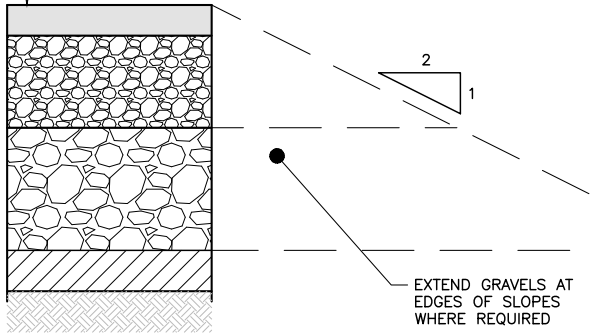
Scale NOT TO SCALE

Date	Drawn
DEC.1998	GP
Designed JCL	Checked JCL
Approved JCL	Approved JCL
Contract No. 98001	Sheet of 49/46
Drawing No.	Revision

G14



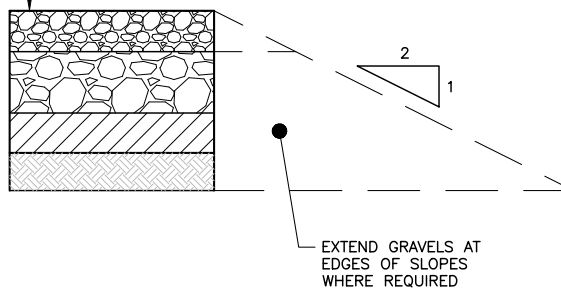
- 75mm ASPHALT (TYPE C-HF)
- 225mm GRAVEL (TYPE 1)
- 300mm GRAVEL (TYPE 2)
- IMPORTED/SELECT SITE FILL MATERIAL (WHERE REQUIRED)  
COMPACTED IN MAX. 300mm LIFTS
- GRUBBED/EXCAVATED AND PROOF ROLLED SUBGRADE



**1** DETAIL— ASPHALT ROADWAY CONSTRUCTION & REINSTATEMENT  
- NTS

**3** DETAIL— GRASSED AREA REINSTATEMENT  
- NTS

- 100mm GRAVEL (TYPE 1)
- 150mm GRAVEL (TYPE 2)
- IMPORTED/SELECT SITE FILL MATERIAL (WHERE REQUIRED)  
COMPACTED IN MAX. 300mm LIFTS
- GRUBBED/EXCAVATED AND PROOF ROLLED SUBGRADE



**2** DETAIL— GRAVEL SURFACE REINSTATEMENT  
- NTS (FOR DISTURBED AREA OUTSIDE OF ROAD SURFACE)

Date MAR 04/2025	Scale AS NOTED	Designed RWM	Drawn RWM	Checked JAB	Approved	CBCL No. 240800	Contract -
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WASTEWATER TREATMENT PLANT  
UPGRADES & EXPANSION

REINSTATEMENT DETAILS - REFERENCE DRAWING C02

Drawing

**CSK01**