

Tender Documents

Resort Municipality of Whistler

November 2024

Sanitary Sewer Force Main Repairs E320-01



Owner: Resort Municipality of Whistler
(NAME OF OWNER)

Contract: Sanitary Sewer Force Main Repairs
(TITLE OF CONTRACT)

Reference No. E320-01
(OWNER'S CONTRACT REFERENCE NO.)

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Owner: Resort Municipality of Whistler
(NAME OF OWNER)

Contract: Sanitary Sewer Force Main Repairs
(TITLE OF CONTRACT)

Reference No. E320-01
(OWNER'S CONTRACT REFERENCE NO.)

The Owner invites tenders for: Project works described below:

- Bypass of sewer lift station
- Replacement of discharge header, bypass port, and downstream valve and fittings on the sewer force main

(BRIEF DESCRIPTION OF THE WORK)

Contract Documents are available during normal business hours at:

This Tender is being issued electronically through the RMOW website (www.bcbid.gov.bc.ca) where any interested party may download the Tender documents directly from the aforementioned website. No registration, tracking or other recording of Tender document holders will be performed by the Resort Municipality of Whistler. All addenda, amendments or further information will be published on the BC Bid website. It is the sole responsibility of the Tenderer to monitor the website regularly to check for updates.

(LIST ADDRESSES FOR DOCUMENT PICKUP)

The Contract Documents are available for viewing at:

Resort Municipality of Whistler
Municipal Hall
4325 Blackcomb Way
Whistler, BC V0N 1B4
(ADDRESS WHERE CONTRACT DOCUMENTS CAN BE VIEWED)

Tenders are scheduled to close:

Tender Closing Time: 2:00pm local time

Tender Closing Date: December 12, 2024

Address: Resort Municipality of Whistler
engineerbids@whistler.ca
(E-MAIL WHERE TENDERS MUST BE SUBMITTED ELECTRONICALLY)

Name of Owner's representative:

Graham Schulz, P.Eng.
Contract Administrator
gschulz@islengeering.com
604-815-4646
(PHONE)

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(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

(TO BE READ WITH “INSTRUCTIONS TO TENDERERS - PART II”
CONTAINED IN THE EDITION OF THE PUBLICATION
“MASTER MUNICIPAL CONSTRUCTION DOCUMENTS” SPECIFIED IN ARTICLE 2.2 BELOW)

Owner: Resort Municipality of Whistler
(NAME OF OWNER)

Contract: Sanitary Sewer Force Main Repairs
(TITLE OF CONTRACT)

Reference No. E320-01
(OWNER'S CONTRACT REFERENCE NO.)

1.0 Introduction

- 1.1 Project works described below:
- Bypass of sanitary sewer lift station
 - Replacement of discharge header, bypass port, and downstream valve and fittings on the sewer force main
- (BRIEF DESCRIPTION OF THE WORK)

- 1.2 Direct all technical inquiries regarding the *Contract*, to:
Graham Schulz, P.Eng.
Contract Administrator
(NAME AND POSITION OF INDIVIDUAL WHO WILL ANSWER INQUIRIES)

Address: ISL Engineering and Land Services Ltd.
101 – 38026 Second Avenue
Squamish, BC V8B 0C3

Phone: 604-815-4646

Fax: 604-815-4647

Email: gschulz@islengineering.com

Direct all general inquiries regarding the *Contract*, to:

Chelsey Roberts, AScT
Capital Projects Manager, Infrastructure Services
(NAME AND POSITION OF INDIVIDUAL WHO WILL ANSWER INQUIRIES)

Address: Resort Municipality of Whistler
4325 Blackcomb Way
Whistler, BC V0N 1B4

engineerbids@whistler.ca

(E-MAIL WHERE INQUIRIES MUST BE SUBMITTED ELECTRONICALLY)

Phone: 604-905-9462

Email: croberts@whistler.ca

2.0 Tender Documents

- 2.1 The tender documents which a tenderer should review to prepare a tender consist of all of the *Contract Documents* listed in Schedule 1 entitled “Schedule of Contract Documents”. Schedule 1 is attached to the Agreement which is included as part of the tender package. The *Contract Documents* include the drawings listed in Schedule 2 to the Agreement, entitled “List of *Contract Drawings*”.

- 2.2 A portion of the *Contract Documents* are included by reference. Copies of

these documents have not been included with the tender package. These documents are the Instructions to Tenderers - Part II, General Conditions, Specifications and Standard Detail Drawings. They are those contained in the publication entitled "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings". Refer to Schedule 1 to the Agreement or, if not specified in Schedule 1, then the applicable edition shall be the most recent edition as of the date of the *Tender Closing Date*. All sections of this publication are by reference included in the *Contract Documents*.

2.3 Any additional information made available to tenderers prior to the *Tender Closing Time* by the *Owner* or representative of the *Owner*, such as geotechnical reports or as-built plans, which is not expressly included in Schedule 1 or Schedule 2 to the Agreement, is not included in the *Contract Documents*. Such additional information is made available only for the assistance of tenderers who must make their own judgment about its reliability, accuracy, completeness and relevance to the *Contract*, and neither the *Owner* nor any representative of the *Owner* gives any guarantee or representation that the additional information is reliable, accurate, complete or relevant.

3.0 Submission of Tenders

3.1 Tenders must be submitted electronically to the email address noted below. The email should indicate the Contract Title and Contract No. (See Tender Documents cover page) in the subject line and the proponents full legal name in the body of the email.
Tenderers should note that the maximum acceptable email size is 8MB. If greater than 8GB the Tenderer should email response in multiple emails with each email indicating the total number of emails being sent. All emails must be received prior to the Submission Deadline.

on or before

Tender Closing Time: 2:00pm local time
Tender Closing Date: December 12, 2024

at

Address: Resort Municipality of Whistler
engineerbids@whistler.ca

(ADDRESS WHERE TENDERS MUST BE SUBMITTED)

Fax: n/a

3.2 Late tenders will not be accepted or considered.

3.3 Depending on the available funds to complete the work program, the scope of the work may be decreased due to budget constraints. The *Owner* reserves the right to reduce or remove projects based on available funds.

4.0 Supplemental Instructions to Tenderers

4.1 Completing the Form of Tender

The submitted Form of Tender must be legible, written in ink, or by typewriter and ALL ITEMS MUST BE BID, unless the Form of Tender specifically

permits otherwise, with the price for every item and other extras clearly shown. Each page must be initialed by the Tenderer.

The Tenderer shall be deemed to have satisfied himself/herself as to the sufficiency of his tender for the work and of the unit and lump sum prices stated in the Form of Tender. These unit prices shall cover all his costs including overhead, profit and tax, except for the Goods and Services Tax as explained in the following paragraphs of this section, for carrying out the works and his obligations under this Contract.

This document contains one extra separate set of the Form of Tender. The Contractor shall complete and submit the separate set of the Form of Tender, in accordance with the Instructions to Tenderers and keep the remaining documents for record purposes.

The "Amount" column shall be totaled in groups of items as shown and each total for a group of items shall be carried to the Summary Sheet for insertion in the appropriate place. The totals for all groups of items shall be added to give the Total Tender Price, Goods and Services Tax of 5% shall be calculated separately then added to arrive at the Total Tender Price including GST.

4.2 Right to Accept or Reject Tenders

The Owner reserves the right to reject any or all tenders or to accept any tender should it be deemed in the interest of Owner to do so. The lowest tender will not necessarily be accepted.

For each item listed in the Form of Tender, there shall be a reasonable unit price. Under no conditions will an unbalanced tender be considered. The Contract Administrator will be the sole judge of such matters. Any tender considered to be unbalanced shall be rejected by the Owner.

Without limiting the generality of the foregoing, any tender may be disqualified or rejected which is incomplete, obscure or irregular, which had erasures or corrections in the Form of Tender, in which prices are omitted or which has an insufficient or irregular Surety.

4.3 Award

The Owner will, following receipt of an acceptable tender, issue in writing a Notice of Award to the successful Tenderer. This notice will be given as soon as possible following the closing of tenders and, unless otherwise agreed to by the Tender, not later than sixty (60) days following the closing of tenders. The following amendments reference Instructions to Tenderers - Part II:

12.1S	Amendment of Tenders	Change "hand, mail or fax" to "hand" and add "An amendment by email or fax will not be accepted."
15.4S	Award	Insert the following clause:

“The lowest or any tender will not necessarily be accepted. Without limiting the generality of the foregoing, any tender which is incomplete, obscure or irregular may be rejected, any tender having erasures or corrections in the Form of Tender: Appendix 1, Schedule of Quantities & Prices may be rejected, any tender in which unit prices are omitted or in which unit prices are obviously unbalanced may be rejected, any tender accompanied by an insufficient bond may be rejected, any tender that has any deletions, alterations, or changes in the *Contract Documents* as listed in Schedule 1 and 2 of the Agreement may be rejected.”

15.5S

Insert the following clause:

In exercising its discretion, the *Owner* will have regard to the information provided by the tenderer in the Appendices to the Form of Tender as described under IT 5.3, and may also have regard to any information obtained by the *Owner* in evaluation of such tender information, any information obtained by the *Owner* from any other person, firm or corporation relating to their previous experience with the tenderer, as well as the *Owner's* previous relevant experience, if any, with the tenderer. In exercising this discretion the *Owner* may consider, but is not limited to, the following criteria in addition to the *Tender Price*.

- a) the proven experience of the tenderer, and any listed subcontractors to do the *Work*;
- b) the tenderer's ability to complete the *Work* within the *Preliminary Construction Schedule* including timeliness in completing deficiency works;

- c) the tenderer's ability to work effectively with the *Owner*, its consultants and representatives, and the public;
- d) the tenderer's ability to manage and do the work effectively using the named superintendent and submitted contractors and subcontractors;
- e) the tenderer's history on other projects including with respect to quality of work, changes in the work, force account work, cooperation with the *Owner*, and the contract administration costs of the *Owner*;
- f) the nature of any legal proceedings undertaken by the tenderer, or any officer or director of the tenderer directly (or indirectly through another corporation) against the *Owner* within the last five years of the Invitation to Tender.

In no event shall the *Owner* be liable for the tenderer's costs of preparing a tender.

The award of this Contract is subject to the availability of sufficient funds to complete the work.

Basis of Contract Award & Acceptance

In reviewing tenders and awarding the *Contract* for this project the *Owner* may consider not only the tendered prices but the overall value that the tender represents to the *Owner* based on quality, service and price, and the tenderer's experience and qualifications considered essential by the *Owner* for the satisfactory completion of this type and size of project, including:

- a) Bonding capability.
- b) Financial capability.
- c) Previous completed projects of this type and/or size.
- d) Major projects now being undertaken by the tenderer.
- e) Key office and site personnel to be assigned by the tenderer to this project.
- f) Time for completion of the *Work*.
- g) The past experience of the *Owner* and/or other project owners with respect to the tenderer's performance in completing projects in a timely, efficient and satisfactory manner, the tenderer's methods of doing business and the tenderer's ability to establish and maintain a good working relationship with a project owner.

The *Owner* reserves the right to award the *Contract* based on the above pre-requisites and to reject without further consideration, any tender which in its opinion, does not meet the criteria it considers essential for this project.

The tenderer, by submitting a tender, agrees that it will not make a claim against the *Owner*, for whatever reason, relating to the tender, the tender documents, or the competitive tender process. The tenderer, by submitting a tender, waives any claim or recovery for loss of profits or any prospective damages whatsoever if no *Contract* is entered into with the tenderer.

4.4 Contract Time

The Tenderer may alter the contract time noted in the Form of Tender; however, they shall be responsible for inspection costs incurred for each working day beyond the noted time subject to the Provisions of the General Conditions. The applicable cost will be \$1,500.00 per working day.

4.5 Hours of Work

The hours of work for all project sections must not extend beyond 0700h and 2000h, inclusive, daily. The Contractor shall schedule his work within these hours and will not be permitted to commence work earlier than 0700h and/or work later than 2000h, except as authorized by the Contract Administrator.

No work on Saturdays, Sundays, or Statutory Holidays will be permitted except in case of emergency and then only with written permission of the Contract Administrator and to such extent as he deems necessary.

The Owner reserves the right not to allow any work to be undertaken on Weekends or Statutory Holidays.

4.6 Budget Constraints

Depending on the available funds to complete the capital works program, the scope of work may be decreased due to budget constraints. The Owner reserves the right to reduce or remove projects based on available funds.

4.7 Note that the MMCD (this Contract is based on the **2009 Platinum Edition**) must be purchased separately from:

MMCD
102, 211 Columbia Street
Vancouver, BC V6A 2R5

Phone: 604-681-0295

Fax: 604-681-4545

Email: admin@mmcd.net

4.8 Contractor is to familiarize themselves with IT Part II – Section 10.0

Add IT Part II – Section 10.3

“It shall be the responsibility of the Tenderer to include in their tender sufficient amounts to cover the cost of the work and materials not listed in the Schedule of Quantities and Unit Prices and specifications by either direct mention or implication. All such amounts shall be included in the items to which they pertain most closely in the Schedule of Quantities and Unit Prices.

FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT - TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.

Owner: Resort Municipality of Whistler
(NAME OF OWNER)

Contract: Sanitary Sewer Force Main Repairs
(TITLE OF CONTRACT)

Reference No. E320-01
(OWNER'S CONTRACT REFERENCE NO.)

To Owner:

**WE, THE
UNDERSIGNED:**

1.1 have received and carefully reviewed all of the *Contract Documents*, including the Instructions to Tenderers, the specified edition of the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings" and the following Addenda:

(ADDENDA, IF ANY)

1.2 have full knowledge of the *Place of the Work*, and the *Work* required; and

1.3 have complied with the Instructions to Tenderers; and

**ACCORDINGLY WE
HEREBY OFFER:**

2.1 to perform and complete all of the *Work* and to provide all the labour, equipment and material all as set out in the *Contract Documents*, in strict compliance with the *Contract Documents*; and

2.2 to achieve Substantial Performance of the *Work* on or before July 31, 2025; and
(WORK DURATION OR DATE)

2.3 to do the *Work* for the price, which is the sum of the products of the actual quantities incorporated into the *Work* and the appropriate unit prices set out in Appendix 1, the "*Schedule of Quantities and Prices*", plus any lump sums or specific prices and adjustment amounts as provided by the *Contract Documents*. For the purposes of tender comparison, our offer is to complete the *Work* for the "*Tender Price*" as set out on Appendix 1 of this Form of Tender. Our *Tender Price* is based on the estimated quantities listed in the *Schedule of Quantities and Prices*, and excludes GST.

WE CONFIRM:

3.1 that we understand and agree that the quantities as listed in the *Schedule of Quantities and Prices* are estimated, and that the actual quantities will vary.

3.2 that we understand and agree that the *Owner* is in no way obligated to accept this Tender.

WE CONFIRM:

4.1 that the following appendices are attached to and form a part of this tender:

Tenderer's Initials _____

4.1.1 the appendices as required by paragraph 5.3 of the Instructions to Tenderers – Part II; and

4.1.2 the *Bid Security* as required by paragraph 5.2 of the Instructions to Tenderers – Part II.

4.1.3 the *Consent of Security* - Performance, Labour and Materials Payment filled and signed.

WE AGREE:

5.1 that this tender will be irrevocable and open for acceptance by the *Owner* for a period of 60 calendar days from the day following the *Tender Closing Date and Time*, even if the tender of another tenderer is accepted by the *Owner*. If within this period the *Owner* delivers a written notice ("*Notice of Award*") by which the *Owner* accepts our tender we will:

5.1.1 within 10 *Days* of receipt of the written *Notice of Award* deliver to the *Owner*:

1. a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the Contract Price, covering the performance of the Work including the Contractor's obligations during the Maintenance Period, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the *Owner*;
2. a Baseline Construction Schedule, as provided by GC 4.6.1;
3. a "clearance letter" indicating that the tenderer is in Worksafe BC compliance; and
4. a copy of the insurance policies as specified in GC 24 indicating that all such insurance coverage is in place and;

5.1.2 within 2 *Days* of receipt of written "*Notice to Proceed*", or such longer time as may be otherwise specified in the *Notice to Proceed*, commence the *Work*; and

5.1.3 sign the Contract Documents as required by GC 2.1.2.

WE AGREE:

6.1 that, if we receive written *Notice of Award* of this *Contract* and, contrary to paragraph 5 of this Form of Tender, we:

6.1.1 fail or refuse to deliver the documents as specified by paragraph 5.1.1 of this Form of Tender; or

6.1.2 fail or refuse to commence the *Work* as required by the *Notice to Proceed*, then such failure or refusal will be deemed to be a refusal by us to enter into the *Contract* and the *Owner* may, on written notice to us, award the *Contract* to another party. We further agree that, as full compensation on account of damages suffered by the *Owner* because of such failure or refusal, the *Bid Security* shall be forfeited to the *Owner*, in an amount equal to the lesser of:

Tenderer's Initials _____

6.1.3 the face value of the *Bid Security*; and

6.1.4 the amount by which our *Tender Price* is less than the amount for which the *Owner* contracts with another party to perform the *Work*.

OUR ADDRESS IS AS FOLLOWS:

Phone: _____
Fax: _____
Email: _____
Attention: _____

This Tender is executed this _____ day of _____, 20 _____.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

Tenderer's Initials _____

Form of Tender - Appendix 1
Sanitary Sewer Force Main Repairs

SCHEDULE OF QUANTITIES AND PRICES - TENDER

(See paragraph 5.3.1 of the Instructions to Tender - Part II)
 (All prices and *Quotations* including the *Contract Price* shall include all *Taxes*)

TENDER SUMMARY SHEET

ITEM NO.	DESCRIPTION	AMOUNT
1.0	Sanitary Sewer Force Main Repairs	
	TENDER PRICE	
	GST @ 5%	
	TENDER PRICE plus GST	

Tenderer's Initials _____

ITEM NO.	MMCD REF.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1.0		Sanitary Sewer Force Main Repairs				
		MMCD 01 55 00 - TRAFFIC CONTROL, VEHICLE ACCESS AND PARKING				
1.01	1.5.2S	Traffic Control	L.S.	1		
		MMCD 31 23 01 - EXCAVATING, TRENCHING, AND BACKFILLING				
1.02	1.10.9S	Overexcavation with Offsite Disposal - Includes Backfilling (<i>Optional</i>)	Cu.M.	20		
		MMCD 33 34 01 - SEWAGE FORCEMAINS				
1.03	1.8.2S	Replacement of Sewer Lift Station Discharge Header, Bypass Piping, Valves and Couplings as per Contract Drawings	L.S.	1		
1.04	1.8.2S	Replacement of 300mmØ 45° Bend and Replacement of 300mmØ Ductile Iron Piping with 300mmØ PVC C900 DR25 Piping as per Contract Drawings	L.S.	1		
1.05	1.8.2S	Replacement of 300mmØ x 250mmØ x 300mmØ WYE fitting and 300mmØ Gate Valve with 300mmØ 45° Bend as per Contract Drawings	L.S.	1		
1.06	1.8.2S	Exposing/Daylighting of 300mmØ 45° Bend for Inspection as per Contract Drawings	L.S.	1		
1.07	1.8.2S	Replacement of 300mmØ 45° Bend as per Contract Drawings (<i>Optional</i>)	L.S.	1		
1.08	1.8.2S	Exposing/Daylighting of 300mmØ 45° Bend for Inspection as per Contract Drawings	L.S.	1		
1.09	1.8.2S	Replacement of 300mmØ 45° Bend as per Contract Drawings (<i>Optional</i>)	L.S.	1		
1.10	1.8.10S	Bypass of 300mmØ Force Main to Facilitate Replacement of Items 1.03 to 1.09 as per Contract	L.S.	1		
Subtotal Carry Forward to Schedule of Quantities Summary Item 1.0						

Tenderer's Initials _____

**APPENDIX 3
EXPERIENCE OF SUPERINTENDENT**

See paragraph 5.3.3 of the Instructions to Tenderers – Part II.

Owner: Resort Municipality of Whistler
(NAME OF OWNER)

Contract: Sanitary Sewer Force Main Repairs
(TITLE OF CONTRACT)

Reference No. E320-01
(OWNER'S CONTRACT REFERENCE NO.)

Name: _____

Experience: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Tenderer's Initials _____

**APPENDIX 4
COMPARABLE WORK EXPERIENCE**

See paragraph 5.3.4 of the Instructions to Tenderers – Part II.

Owner: Resort Municipality of Whistler
(NAME OF OWNER)

Contract: Sanitary Sewer Force Main Repairs
(TITLE OF CONTRACT)

Reference No. E320-01
(OWNER'S CONTRACT REFERENCE NO.)

PROJECT	OWNER / CONTACT NAME PHONE and FAX	WORK DESCRIPTION	VALUE (\$)
	Owner / Contract _____ Email _____ Phone () _____ Fax () _____		
	Owner / Contract _____ Email _____ Phone () _____ Fax () _____		
	Owner / Contract _____ Email _____ Phone () _____ Fax () _____		
	Owner / Contract _____ Email _____ Phone () _____ Fax () _____		
	Owner / Contract _____ Email _____ Phone () _____ Fax () _____		
	Owner / Contract _____ Email _____ Phone () _____ Fax () _____		
	Owner / Contract _____ Email _____ Phone () _____ Fax () _____		
	Owner / Contract _____ Email _____ Phone () _____ Fax () _____		
	Owner / Contract _____ Email _____ Phone () _____ Fax () _____		
	Owner / Contract _____ Email _____ Phone () _____ Fax () _____		

Tenderer's Initials _____

(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

BETWEEN OWNER AND CONTRACTOR

This agreement made in duplicate this _____ day of _____, 20____

Owner: Resort Municipality of Whistler
(NAME OF OWNER)

Contract: Sanitary Sewer Force Main Repairs
(TITLE OF CONTRACT)

Reference No. E320-01
(OWNER'S CONTRACT REFERENCE NO.)

BETWEEN:

The Resort Municipality of Whistler
(NAME OF OWNER)
(the "Owner")

AND: _____

(NAME AND OFFICE ADDRESS OF CONTRACTOR)
(the "Contractor")

The Owner and the Contractor agree as follows:

- Article 1 The Work Start / Completion Dates**

 - 1.1 The Contractor will perform all Work and provide all labour, equipment and material and do all things strictly as required by the Contract Documents.
 - 1.2 The Contractor will commence the Work in accordance with the Notice to Proceed. The Contractor will proceed with the Work diligently, will perform the Work generally in accordance with the construction schedules as required by the Contract Documents and will achieve Substantial Performance of the Work on or before July 31, 2025 subject to (INSERT DATE OF SUBSTANTIAL PERFORMANCE) the provisions of the Contract Documents for adjustments to the Contract Time
 - 1.3 Time shall be of the essence of the Contract.

- Article 2 Contract Documents**

 - 2.1 The "Contract Documents" consist of the documents listed or referred to in Schedule 1, entitled "Schedule of Contract Documents", which is attached and forms a part of this Agreement, and includes any and all additional and amending documents issued in accordance with the provisions of the Contract Documents. All of the Contract Documents shall constitute the entire Contract between the Owner and the Contractor.

2.2 The *Contract* supersedes all prior negotiations, representations or agreements, whether written or oral, and the *Contract* may be amended only in strict accordance with the provisions of the *Contract Documents*.

Article 3 Contract Price

3.1 The price for the *Work* ("*Contract Price*") shall be the sum in Canadian dollars of the following:

1.1.1 the product of the actual quantities of the items of *Work* listed in the *Schedule of Quantities and Prices* which are incorporated into or made necessary by the *Work* and the unit prices listed in the *Schedule of Quantities and Prices*; plus

1.1.2 all lump sums, if any, as listed in the *Schedule of Quantities and Prices*, for items relating to or incorporated into the *Work*; plus

1.1.3 any adjustments, including any payments owing on account of *Changes* and agreed to *Extra Work*, approved in accordance with the provisions of the *Contract Documents*.

3.2 The *Contract Price* shall be the entire compensation owing to the *Contractor* for the *Work* and this compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing, and all other costs and expenses whatsoever incurred in performing the *Work*.

Article 4 Payment

4.1 Subject to applicable legislation and the provisions of the *Contract Documents*, the *Owner* shall make payments to the *Contractor*.

4.2 If the *Owner* fails to make payments to the *Contractor* as they become due in accordance with the terms of the *Contract Documents* then interest calculated at 2% per annum over the prime commercial lending rate of the Royal Bank of Canada on such unpaid amounts shall also become due and payable until payment. Such interest shall be calculated and added to any unpaid amounts monthly.

Article 5 Rights and Remedies

5.1 The duties and obligations imposed by the *Contract Documents* and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

5.2 Except as specifically set out in the *Contract Documents*, no action or failure to act by the *Owner*, *Contract Administrator* or *Contractor* shall constitute a waiver of any of the parties' rights or duties afforded under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach under the *Contract*.

Article 6 Notices

6.1 Communications among the *Owner*, the *Contract Administrator* and the *Contractor*, including all written notices required by the *Contract Documents*, may be delivered by hand, or by email, or by fax, or by pre-paid registered mail to the addresses as set out below:

The *Owner*:

Resort Municipality of Whistler

Municipal Hall

4325 Blackcomb Way

Whistler BC, V0N 1B4

Fax: n/a

Email: croberts@whistler.ca

Attention: Chelsey Roberts

The *Contractor*:

Fax: _____

Email: _____

Attention: _____

The *Contract Administrator*:

ISL Engineering and Land Services Ltd.

101, 38026 Second Avenue

Squamish BC, V8B 0C3

Fax: 604-815-4647

Email: gschulz@islengineering.com

Attention: Graham Schulz, P.Eng., Contract Administrator

6.2 A communication or notice that is addressed as above shall be considered to have been received

1.1.4 immediately upon delivery, if delivered by hand; or

1.1.5 at the date and time as shown in the recipients inbox, if sent by email; or

1.1.6 immediately upon transmission if sent by fax and received in hard copy; or

1.1.7 after 5 *Days* from date of posting if sent by registered mail.

6.3 The *Owner* or the *Contractor* may, at any time, change its address for notice by giving written notice to the other at the address then applicable. Similarly if the *Contract Administrator* changes its address for notice then the *Owner* will give or cause to be given written notice to the *Contractor*.

Article 7 General

- 6.4 The sender of a notice by fax or email assumes all risk that the fax or email is received.
- 7.1 This *Contract* shall be construed according to the laws of British Columbia.
- 7.2 The *Contractor* shall not, without the express written consent of the *Owner*, assign this *Contract*, or any portion of this *Contract*.
- 7.3 The headings included in the *Contract Documents* are for convenience only and do not form part of this *Contract* and will not be used to interpret, define or limit the scope or intent of this *Contract* or any of the provisions of the *Contract Documents*.
- 7.4 A word in the *Contract Documents* in the singular includes the plural and, in each case, vice versa.
- 7.5 This agreement shall ensure to the benefit of and be binding upon the parties and their successors, executors, administrators and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first written above.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

Owner:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

(INCLUDE IN LIST ALL DOCUMENTS INCLUDING, IF ANY, SUPPLEMENTARY GENERAL CONDITIONS, SUPPLEMENTARY SPECIFICATIONS, SUPPLEMENTARY STANDARD DETAIL DRAWINGS.)

Schedule 1 **Schedule of Contract Documents**

The following is an exact and complete list of the *Contract Documents*, as referred to in Article 2.1 of the Agreement.

NOTE: The documents noted with “*” are contained in the “Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings”, edition dated Platinum Edition, 2009. All sections of this publication are included in the *Contract Documents*.

- 8.1 Agreement, including all Schedules;
- 8.2 Supplementary General Conditions (for MMCD Volume II, Platinum Edition, 2009);
- 8.3 General Conditions*;
- 8.4 Supplementary Specifications (for MMCD Volume II, Platinum Edition, 2009);
- 8.5 Specifications*;
- 8.6 Supplementary Standard Detail Drawings (if any, insert title and edition date);
- 8.7 Standard Detail Drawings*;
- 8.8 Executed Form of Tender, including all Appendices;
- 8.9 *Contract Drawings* listed in Schedule 2 to the Agreement, –“List of *Contract Drawings*”;
- 8.10 Instructions to Tenderers - Part I;
- 8.11 Instructions to Tenderers - Part II*;
- 8.12 The following Addenda:

(ADDENDA, IF ANY)

- 8.13 MMCD Supplementary Updates:
 - 2022-04-07 2012-08-07
 - 2021-04-23 2012-06-08
 - 2020-08-04 2012-05-30
 - 2016-11-18 2011-08-08
 - 2015-11-02 2011-08-04
 - 2014-09-19 PVC C900 Pipe Specification Clarification
 - 2014-07-15 2010-05-18
 - 2014-02-28 2010-03-25
 - 2013-06-13 2009-11-19

As provided on website of tender closing date: www.mmcd.net

(COMPLETE LISTING OF ALL DRAWINGS, PLANS AND SKETCHES WHICH ARE TO FORM A PART OF THE CONTRACT,
OTHER THAN STANDARD DETAIL DRAWINGS AND SUPPLEMENTARY STANDARD DETAIL DRAWINGS.)

Schedule 2 List of Contract Drawings

TITLE	DRAWING NO.	DATE	REVISION NO.	REVISION DATE
GENERAL PROJECT LIMITS	N/A	N/A	N/A	N/A
SANITARY SEWER FORCE MAIN REPAIRS	33865-2025-SFM-001	22-Nov-24	1	22-Nov-24
SANITARY SEWER FORCE MAIN REPAIRS	33865-2025-SFM-002	22-Nov-24	1	22-Nov-24
SANITARY SEWER FORCE MAIN REPAIRS	33865-2025-SFM-003	22-Nov-24	1	22-Nov-24

Supplementary Specifications

SUPPLEMENTARY SPECIFICATIONS INDEX

DIVISION 01 – GENERAL REQUIREMENT

- 01 33 01S Project Record Documents
- 01 54 00S General Requirements
- 01 55 00S Traffic Control, Vehicle Access and Parking
- 01 57 01S Environmental Protection

DIVISION 31 – EARTHWORKS

- 31 05 17S Aggregate and Granular Materials
- 31 15 60S Dust Control
- 31 23 01S Excavating, Trenching, and Backfilling

DIVISION 33 – UTILITIES

- 33 34 01S Sewage Forcemains

- 1.3 **Submissions** .2 *(Replace clause 1.3.2 as follows)*
- Submit one copy of project record documents in final form prior to applying for Substantial Performance. Substantial Performance will not be issued until record documents (field mark-ups) have been submitted and accepted by the Contract Administrator.
- 1.7 **Recording Actual Site Conditions** .2S .1 After “appurtenances” insert:
- “including exact location of wyes along sanitary sewers and elevations of service connections at property lines”
- .5S ***(add clause 1.7.5 as follows)***
- The Contractor will keep one set of drawings on-site that will be marked up in red ink identifying all work completed and any changes made during the construction. This copy will be turned over to the Contract Administrator within 5 days of completion of all works.
- The Contractor shall be responsible for the detailed setting out of the work and recording all data required to compile record drawings.
- Payment for recording data for record drawings shall be considered incidental to the work performed and no additional payment will be made to the contractor.

END OF SECTION

1.0	Master Municipal Construction Documents	.1S	The Supplementary Specifications contained herein must be read in conjunction with the Master Municipal Specifications contained in the Master Municipal Construction Documents, Volume II (Platinum Edition 2009) as identified in the Instructions to Tender article 2.2.
2.0	Format and Numbering System	.1S	The Supplementary Contract Specifications follow the same format and numbering system as the Master Municipal Specifications, but is differentiated from it by having the letter "S" placed after the section number.
3.0	Construction Survey Layout	.1S	The Contractor shall be responsible for the detailed setting out of the work.
		.2S	Payment for survey layout shall be considered incidental to the work performed and no additional payment will be made to the contractor.
		.3S	All monuments, including but not limited to brass caps, iron pins, lead plugs, rock posts and wooden witness posts, disturbed by the Contractor shall be re-established by Registered British Columbia Land Surveyors, at the Contractor's cost, and the appropriate authorities advised of the revised elevation and coordinates. Contractors are advised that the Contract Administrator will monitor construction to ensure that disturbed monuments are replaced at the Contractor's expense prior to completion of the Contract.
4.0	Description of Work	.1S	Project works described below: <ul style="list-style-type: none"> • Bypass of sanitary lift station • Replacement of discharge header, bypass port, and downstream valve and fittings on the sewer force main
5.0	Safety Procedures	.1S	Entry Procedure for Confined Space: This procedure shall be used as a guideline only. The Contractor shall be responsible for familiarization with this and all WCB requirements. There must a minimum of two men: - One man always on the surface, and - One man in well. Man lift/retrieval devices must be used. 1. Open manhole lids, turn on blower/fan to ventilate wet well for approximately two to three minutes. <ol style="list-style-type: none"> a) Leave fan running until job is completed. b) Manhole must be circulated by a blower fan to allow fresh air into the confined space. Check levels on gas detector by lowering into well. If levels are not safe, portable fans must be used.

2. Turn gas detector "ON":
 - Oxygen levels should read between 20.0 and 21.0
 - H2S level should read 000
 - LEL levels should read 000

Note: - readings shall be taken before entering well
- record gas levels on "Confined Entry Space" forms and hand in daily.

3.
 - a) lower gas detector by rope/cord into lower portion of wet well where work shall be performed.
 - b) pull detector to surface and check gas levels. If levels are safe, entry into well is permitted.

4. Gas detector MUST be left "ON" and brought down into well with person(s) entering.

5. Check levels on gas detector when in well. Proceed with watching/repairing of station.

6. If at any time the gas detector goes "OFF" (ringing). EXIT WET WELL IMMEDIATELY and check levels.

- | | | | |
|------------|---|-----|---|
| 6.0 | Safety - Work Near Overhead and Underground Power Lines or Other Utilities | .1S | <p>All works shall be in strict compliance with WorkSafe BC Industrial and Safety Regulations Section 24 when working near or under any overhead power lines.</p> <p>The Contractor must be fully aware of the danger to workers and shall take all necessary safety precautions when working near to existing utilities, such as high pressure gas, water line and BC Hydro lines.</p> |
| 7.0 | Dust and Mud Control | .1S | <p>The Contractor shall make every reasonable effort to minimize the creation of dust or mud by his operations. Special measures may include, but shall not be limited to, frequent sweeping of existing roads used as haul routes; control of traffic speeds; frequent watering of dirt access and egress routes; watering of the construction areas; re-routing of traffic; and modification of construction procedures; and cleaning of off-site haul routes on a regular basis as required by the Municipality. Refer to MMCD Section 31 15 60, Dust Control, for General, Products and Execution.</p> <p>Payment for the above items will be considered to be incidental to the work performed and no additional payment will be made to the Contractor.</p> |

8.0	Materials Testing	.1S	<p>Materials and density Quality Assurance (QA) testing will be carried out as directed by the Contract Administrator. Initial QA testing carried out at the Contract Administrator's direction will be paid for by the Municipality. Where initial tests fail and subsequent QA testing is deemed necessary by the Contract Administrator, the cost of the subsequent testing shall be the responsibility of the Contractor.</p> <p>If the Contractor requests QA testing and upon arrival of the Municipality appointed testing agency, the contractor is not ready to conduct testing, any cost associated with the delay of testing i.e. standby or return trips will revert back to the contractor.</p> <p>The Contractor will perform Quality Control inspections at the Contractors discretion to ensure that the requirements of the Contract are being met.</p>
9.0	Grassed Areas Disturbed to be Hydro-seeded	.1S	<p>All areas disturbed by the construction shall be reinstated with 150mm compacted depth topsoil and hydro-seeded.</p> <p>No additional payment will be made to the Contractor for this work.</p>
10.0	Curb, Sidewalk and Driveway Restoration	.1S	<p>Existing curbs, sidewalks and driveways shall be reconstructed and reinstated to ensure proper drainage and appearance, to match existing finish, and in accordance with the Standard Drawings. All concrete curbs, pavers, sidewalks and driveways shall be 32 MPa strength concrete. Concrete curb and gutter to be reinstated between control joints. Concrete sidewalk and driveways to be reinstated to nearest panel joint for one complete panel.</p> <p>No additional payment will be made to the Contractor for this work.</p>
11.0	Interfering Services	.1	<p>.1S The Contractor shall, at his own expense, provide for the uninterrupted flow of all watercourses, sewers, drains, and any other utility encountered during the work.</p> <p>.2S When other utility structures are encountered, the Contractor shall support them to the satisfaction of the Contract Administrator so as to protect them from damage. The Contractor shall, at his own expense, at once repair and make good any damage which may occur to any watermains, service or utility pipes, or facilities, or to any electrical conductor or telephone facility or to any sidewalk, crosswalk as a</p>

result of this operation. The Contractor is also wholly responsible for all existing above ground structures (including any supporting sub-grade structures such as concrete bases or pads) within the area of construction including supporting those structures as necessary to permit the completion of the Works.

.3S It is the Contractor's responsibility wherever necessary to determine location of existing pipes, valves, or other underground structures. Wherever it is necessary to explore and excavate to determine the location of the existing underground structures, the Contractor at his own expense shall make explorations and excavations for such purposes.

.4S Where gas mains and/or service lines exist in the vicinity of the proposed work, the Contractor shall consult the officers of the gas company prior to commencing operations and arrange for a mutually agreeable procedure for their protection.

.5S When existing poles conflict with the proposed works, the Contractor shall consult MOTI, B.C. Hydro and Telus prior to commencing operations and advise the Contract Administrator with the works to be undertaken.

Costs associated with pole holding / support are incidental to the work.

.6S The Contractor shall respond and determine the cause of all service interruption and/or quality issues within the area of work. No additional payment will be made to the Contractor for this work.

.7S The Contractor shall pre-locate and expose all utilities prior to construction to confirm location, top and bottom elevations of the utility through whatever means are necessary. Pre-location efforts include temporary asphalt if located are within travelled surfaces.

12.0

Coordination with Other Contractors

.1S

The Contractor will be responsible for all coordination with all utility providers including but not limited to MOTI, BC Hydro, TELUS, Fortis, and BC Transit. The Contractor shall inform any utility/service provider of any planned disruption/adjustment to usual service in writing and receive written agreement of such disruption or adjustment prior to these disruptions or adjustments.

The Contractor is to coordinate with any other ongoing construction activities that may be proceeding at the

same time and in the same general vicinity of this project. No additional payment will be made for any expenses or delays incurred as a result of these concurrent construction activities.

13.0 Environmental Protection

.1S The Contractor is advised that they are responsible for all necessary measures required to prevent the transportation of any silt or other deleterious material from the site into any fish bearing watercourses or their tributaries. All requirements of the Ministry of Environment, Lands and Parks, Fish and Wildlife Branch and Fisheries & Oceans Canada, with respect to air, earth and water pollution, must be strictly adhered to.

Refer to Section 01 57 01S Environmental Protection and Appendix G – Environmental Management Plan for further information. If there are any discrepancies between this section, Section 01 57 01S, and Appendix G – Environmental Management Plan, then the following governing hierarchy will be used:

- **Environmental Management Plan;**
- **Section 01 57 01S;**
- **Section 01 54 00S Item 13.0**

14.0 Metric Units of Measurement

.1S All the units of measurement for payment in this Contract are metric units as modified by the internationally agreed S.I. Units (System International).

However, as the construction industry is not entirely converted to S.I. Units, some conversions will need to be made for purpose of month end and Final Progress Estimates.

The following conversion factors will be used in this Contract:

1 ton	=	0.907 tonnes
1 cubic yard	=	0.765 cubic metres
1 foot	=	0.3048 metres

15.0 Disposal Site

.1S The Contractor is responsible for the provision of all off-site disposal sites for materials that are to be removed from the construction sites in this Contract. The Contractor is responsible for all fees, permits and costs associated with the off-site disposal of materials.

The Resort Municipality of Whistler will not accept any material at municipal lands or facilities for this project.

16.0 Permits from Outside Agencies

.1S The Contractor is responsible to obtain and pay for all permits required from outside agencies including but not

			limited to MOTI, Ministry of Forests, BC Hydro, and DFO.
17.0	Temporary Drainage Facilities	.1S	<p>All required temporary drainage facilities, measures for control of ground water during construction and restoration of temporary drainage ditches after construction shall be considered as incidental to work being performed under this Contract and no separate payment will be made for this work.</p> <p>A trench dewatering plan shall be submitted to the Contract Administrator for review and approval prior to any excavation works. The dewatering plan must conform to the EMP in Appendix G and shall be considered as incidental to work being performed under this Contract and no separate payment will be made for this work.</p>
18.0	Notice to Residents	.1S	<p>Prepare and deliver a letter to all properties which may be affected by construction not less than one week (5 days) and not more than two weeks (10 days) prior to construction.</p> <p>Cost of notifying residents of ensuing construction and delivery of letters is incidental to the Contract.</p>
19.0	Weight Restriction	.1S	None unless otherwise required by agency permits.
20.0	Foreign Utility Adjustments	.1S	The Contractor will be responsible for adjusting all foreign utilities, unless noted otherwise on the drawings. All adjustments to foreign utilities must be completed to the satisfaction of the Utility Owner. The Contractor should note that certain Utility Owners may decide, after tender closing, to complete their own adjustments if personnel are available. If the Utility Owner decides to complete their own adjustments, the Contractor will not be compensated for these utility adjustments.
21.0	Material Supply	.1S	The Municipality will not supply materials.
22.0	Site offices	.1S	<p><i>(amend clause 1.12.1 as follows)</i></p> <p>A Contract Administrator's temporary office will not be required for this project.</p>
23.0	Construction Signage	.1S	<p><i>(amend clause 1.13.1 as follows)</i></p> <p>Construction project signs will be required for this project at a minimum at either end of each site.</p>

No additional payment will be made to the contractor to supply, erect and remove these signs.

24.0	Optional Work	.1S	<p>All items included in the Schedule of Quantities and Prices which shall be stated to be Optional Work shall be used only as directed and at the sole discretion of the Contract Administrator. All or any unused portion of these sums shall revert to the Municipality and shall be deducted from the Contract Price before final payment is made.</p>
25.0	Construction Sequencing	.1S	<p>The Contractor is required to submit a written detailed construction sequencing and tie-in plan and submit it to the Contract Administrator for review a minimum of two weeks prior to any anticipated construction works affecting stakeholders for approval. At a minimum the construction sequencing and tie-in procedure plan is to include the following:</p> <p><i>Overall Construction Sequencing</i></p> <ul style="list-style-type: none"> • Diagram of overall construction sequencing to the match the detailed Construction Schedule • Expected dates of each portion of the works • Expected dates and areas of impact for significant construction tasks such as hot taps and line stop installation, bypass construction and implementation, removal and reinstatement of discharge header, bypass piping, valve and fittings, etc. • Breakdown of all tasks in order to perform the work • List of materials to perform the installation • Timeline showing each task and expected start/completion time • Number of crew and equipment working on the tie in and which crew member and piece of equipment is assigned to each task. • "point of no return" tie-in abandonment time at which point the tie-in works will be abandoned and the contingency plan will begin • Sketch including staging areas and traffic management through the various phases of the Works including pedestrian/cyclist routing. <p>No tie-in is to take place until the Contract Administrator and Resort Municipality of Whistler representative approve the tie in plans. Hand sketches may only be accepted if they are clearly legible, to scale and reproducible.</p>
26.0	Hours of Work	.1S	<p>The hours of work for all project sections must not extend beyond 0700h and 2000h, inclusive, daily. The Contractor shall schedule his work within these hours</p>

and will not be permitted to commence work earlier than 0700h and/or work later than 2000h, except as authorized by the Contract Administrator.

No work on Saturdays, Sundays, or Statutory Holidays will be permitted except in case of emergency and then only with written permission of the Contract Administrator and to such extent as he deems necessary.

The Owner reserves the right not to allow any work to be undertaken on Weekends or Statutory Holidays.

- | | | | |
|-------------|---|-----|--|
| 27.0 | Business License | .1S | The Contractor shall have or otherwise obtain a current business license in the Resort Municipality of Whistler prior to commencement of the Works. |
| 28.0 | Location of Valves & Fittings | .1S | The Contractor shall locate all buried valves and fittings to be replaced in the Schedule of Quantities and Prices up to 1.5 meters in either direction of the location specified in the Contract Drawings. If the valve and/or fitting is not found within these limits the Contractor shall stop and notify the Contract Administrator. |
| 29.0 | Environmental Management Plan | .1S | A supplementary environmental management plan has been prepared for this project and included in Appendix G. The Contractor is responsible for ensuring they are familiar with the plan and that the work done by the Contractor will be consistent with the procedures stated in the plan. |
| 30.0 | Sewer Lift Station Wet Well Cleaning | .1S | The Contractor shall clean the sanitary sewer lift station wet well walls sufficiently while bypass is operational to enable liner inspection with a 3D camera. If Contract Administrator deems necessary, the Contractor will draw down sewage level to facilitate 3D camera inspection. This shall be considered as incidental to work being performed under this Contract and no separate payment will be made for this work. |
| 31.0 | Monthly Fuel Consumption Reporting | .1S | The Contractor shall report fuel consumption for all construction equipment with each monthly progress invoice to the Resort Municipality of Whistler for carbon credits compliance reporting. This shall be considered as incidental to work being performed under this Contract and no separate payment will be made for this work. |

END OF SECTION

1.0	General	.3S	<p><i>(delete 1.0.3 and replace with)</i></p> <p>“Unless alternative arrangements satisfactory to those adversely affected have been made by the Contractor, pedestrian and vehicular access to affected properties shall be maintained at all times.</p>
1.2	Temporary Access Roads	.1S	<p><i>(delete 1.2.1 and replace with)</i></p> <p>"Do not close any lanes of road or highway without approval of the Owner. Before re-routing traffic erect suitable signs and devices as approved by the Contract Administrator. Provide sufficient cold mix to ensure a smooth riding surface during work."</p>
1.5	Payment	.2S	<p><i>(add new clause 1.5.2)</i></p> <p>The Contractor is responsible for all temporary traffic control on the streets within this contract. The Contractor will meet all the standards and conditions of the Resort Municipality of Whistler, and the Ministry of Transportation and Highways Traffic Control Manual for Work on Roadways.</p> <p>At a minimum for all roadways single lane alternating traffic shall be maintained at all times unless otherwise directed by the Contract Administrator.</p> <p>The Municipality will not control or direct the traffic control or direct the traffic control activities of the Contractor, but may require an immediate stop to any work where, in the Contract Administrator’s opinion, the provided traffic control does not meet the requirements of the Agreement.</p> <p>The Contractor will prepare and submit a written Traffic Management Plan to the Resort Municipality of Whistler a minimum of ten (10) working days prior to commencement of any work affecting traffic. The Contractor will update and resubmit that plan for review as necessary for acceptance by the Municipality.</p> <p>Measurement of payment will be on a lump sum basis as shown in the schedule of quantities and prices.</p>

END OF SECTION

- 1.2 Temporary Erosion and Sediment Controls .1S ***(delete 1.2.1.1 and replace with)***
- Drainage, Erosion and Sediment Control*
- “Properly drain all portions of the site. Protect the site and the watercourses to which it drains, directly or indirectly, against erosion and siltation in accordance with the Sediment Control Plan approved by the Owner during construction and until the maintenance period is completed. Ensure no silt, gravel, debris or other deleterious substance resulting from construction activity discharges into existing drainage systems or watercourses or onto highways or adjacent property. The Contractor is responsible for all damage that may be caused by water backing up or flowing over, through, from or along any part of the work or otherwise resulting from his operations.
- “Keep existing culverts, drains, ditches and watercourses affected by the work clear of excavated material at all times. When it is necessary to remove or alter an existing drainage structure, provide suitable alternative measures for handling the drainage. Adequately support culverts and drainpipes across trenches to prevent displacement and interference with the proper flow of water due to trench settlement.
- “Sweep streets, and clean catch basins, manhole sumps, detention tanks, and maintain siltation controls as often as the Contract Administrator deems necessary.
- “Follow all Federal and Provincial regulations and guidelines respecting protection of fish, fish habitat, and watercourses.
- “The Contract Administrator is responsible for monitoring ongoing compliance with this section.”
- 1.4 Environmental Protection .3 ***(add clause 1.4.3.5S as follows)***
- Immediately contain and clean up any leaks and spills of prohibited materials on the job site.
- (add clause 1.4.3.6S as follows)***
- Ensure that a well-stocked spill kit is on-site at all times and that the Contractor’s employees are familiar with appropriate spill response techniques.

(add clause 1.4.3.7S as follows)

Immediately notify the Contract Administrator and the Director of any leaks or spills of prohibited materials that occur on the job site.

(add clause 1.4.3.8S as follows)

Ensure that any fuel stored on-site is located at least 15 metres from the nearest stream, and is placed within a bermed and lined area, in order to prevent leaks or spills into the environment

(add clause 1.4.3.9S as follows)

Ensure that no equipment fueling or servicing is conducted within 15 metres of a stream.”

**1.9S Archaeological /
Historical Resources**

(add)

Immediately cease work and inform the Contract Administrator and the Director, if any archaeological or historical resources are encountered during construction. Leave these resources in-place and do not disturb them in any way.”

END OF SECTION

2.7 Granular Pipe Bedding
and Surround Material

.1S *(delete 2.7.1 and replace with)*

"Crushed or graded gravels to conform to the following gradations"

and replace with:

"Crushed or graded gravel to conform to Type 1 gradation as specified on chart in clause 2.7.1."

END OF SECTION

2.1 **Materials**

.7S *(add)*

"Resin and Water: to Contract Administrator's approval."

.8S *(add)*

"All Dust Control materials to be environmentally friendly."

END OF SECTION

- 1.10 **Measurement of Payment** .9S ***(add new clause 1.10.9)***
- Payment for over-excavation including backfilling with 19mm base gravel and compaction to 95% modified proctor density will only be made for over excavation authorized by the Contract Administrator. Payment will be based on volume (Lx D x Max Width)
- 3.6 **Surface Restoration** .6 ***(replace clause 3.6.6.2)***
- .2S At a minimum, patch all other roads on the Friday of each week to provide asphalt surface for weekend traffic. At all other times, the Contractor is to maintain a smooth granular running surface free of rutting, potholes or other irregularities. All asphalt patches shall be to finished surface.
- .11S ***(add new clause 3.6.11)***
- Grassed Areas Disturbed to be Hydro-Seeded*
All areas disturbed by the construction shall be reinstated with 150mm compacted depth topsoil and hydro-seeded. No additional payment will be made to the contractor for this work.
- .12S ***(add new clause 3.6.12)***
- Existing curbs, sidewalks and driveways including pavers shall be reconstructed and reinstated to ensure proper drainage and appearance, to match existing finish, and in accordance with the Standard drawings. All concrete curbs, sidewalks and driveways shall be 32 MPa strength concrete. Concrete sidewalk to be reinstated to nearest panel joint for one complete panel. No additional payment will be made to the Contractor for this work.

END OF SECTION

1.8 Measurement and
Payment

.2S ***(replace clause 1.8.2 with the following)***

Payment for sanitary sewage forcemains includes saw cutting pavement & concrete, trench excavation, dewatering, disposal of surplus excavated materials, cutting existing pipe, draining pipe, disposal of sewage and supply/installation of all pipe, valves, discharge headers, couplings, fittings, HDPE fusion welding if required, bolts, gaskets, restraints, Denso wrap (paste, mastic and tape), thrust blocks including lock-block thrust blocks, restrainers, cleaning and pressure and leakage testing (if applicable), bedding and imported or native backfill as shown on the Contract Drawings, all surface restoration as specified under Section 31 23 01 – Excavating Trenching and Backfilling – 3.6 and all other work and materials necessary to complete the works as shown on the Contract Drawings and specified under this section.

All fittings, bolts, rods and any other metallic items used for this pay item shall be wrapped in Denso (paste, mastic and tape) in accordance with manufacturers' specifications and as specified in Contract Drawings.

Contractor to submit discharge header and bypass port shop drawings for review and approval prior to fabrication.

Removal of vegetation, trees, stumps, and roots, if required as part the of the works, shall be considered incidental to the Contract.

Payment will be made on a lump sum basis as specified in the Schedule of Quantities.

.10S ***(replace clause 1.8.10 with the following)***

The intent of this line item is to establish a pay item for supply, installation, and removal of the temporary forcemain bypass system which involves bypass pumping from existing sanitary sewer lift station wet well into hot tapped sewer forcemain. This is to facilitate the replacement of the lift station discharge header, bypass port and sanitary forcemain fittings as shown on Contract Drawings.

This pay item shall include but not be limited to:

- Pre-location of existing forcemain at proposed hot tap locations, saw cutting pavement (if required), trench excavation, dewatering, disposal of surplus excavated materials, supply and installation of all required hot taps, line stops, temporary bypass piping (no flexible lay flat piping permitted – hard pipe only), bends, fittings, valves, HDPE fusion welding, trenching for road and driveway crossings, cleaning and pressure and leakage testing (if applicable), bedding and imported or native

backfill, all surface restoration as specified under Section 31 23 01 – Excavating Trenching and Backfilling.

- Bypass pumping required for suction out of sewer lift station wet well and discharge into hot tapped sewer force main including supply of primary and backup pumps, settlement tanks, level controls, telemetry system, fuel, power sources and backup power sources, pipes and/or hoses, fittings, valves, plugs, all labor, and anything else required to facilitate the works.
- Bypass testing and monitoring for a minimum duration of 24 hours. Testing must be completed prior to any excavation to replace header, valves, and fittings.

Removal of vegetation, trees, stumps, and roots, if required as part the of the works, shall be considered incidental to the Contract.

Also included is submission of a schematic showing forcemain pre-location details. **The Contractor shall pre-locate the existing forcemain at proposed hot tap locations as part of this item and in advance of preparing the bypass plan. The schematic will be reviewed & approved by the Contract Administrator prior to any bypass works taking place.**

3.17 Sewer Flow
Management

.1S *(add clause 3.17.1)*

Contractor to prepare and submit bypass plan to Contract Administrator for review and approval prior to works proceeding.

This plan must be specific and complete including but not be limited to details of the following:

- Detailed schematic showing pumps, plugs (if required), suction and discharge pipe, level controls/alarms, telemetry systems, valves, fittings, thrust blocks, pipe supports, restraints, sewer force main hot taps/line stops or any other incidental items necessary and/or required for the bypass system. The schematic should include suction pipe depth and pump connections as well as discharge pipe depth into the sewer force main as verified from contractual pre-location efforts.
- Redundancy plan (back-up pump, power and piping equipment).
- Details on temporary pipe supports, thrust blocks and restraints as provided in schematic.
- Location/staging area(s) for all pumps and equipment at suction and discharge.
- Specification on bypass pumps.
- Specification on level controls.
- Details on telemetry system with auto-dialing notification capable of alerting municipal operations, contractor and bypass sub-contractor.
- Full specification on bypass pipe, bends, reducers,

couplings, or any other fittings on the suction or discharge line.

- Sewer plugging methods and types of plugs (if required).
- Noise control method for each pump and/or generator including but not limited to blankets and enclosures. Noise level should not exceed 50dBA @ 10m.
- Methods to protect suction manholes/wet wells and sewer force main from being damaged due to bypass operations.
- Procedures to monitor upstream mains for back-up impacts.
- Anticipated duration of bypass.
- Procedures for setting-up and dismantling pumping operations including bypass flushing.

END OF SECTION

Owner: Resort Municipality of Whistler
(NAME OF OWNER)

Contract: Sanitary Sewer Force Main Repairs
(TITLE OF CONTRACT)

Reference No. E320-01
(OWNER'S CONTRACT REFERENCE NO.)

General Conditions #	Paragraph #	Title	Action
3	.2	Authority	Delete GC3.2.2 and replace with: "Nothing contained in the <i>Contract Documents</i> shall create any contractual relationship or other relationship recognized by law between the <i>Contract Administrator</i> and the <i>Contractor</i> , subcontractors, suppliers, or their agents, employees or other persons performing any of the <i>Work</i> ."
3	3	Contract Administration	Delete GC3.3.5 and replace with: "The Owner shall provide the Contractor with three survey control points at the Place of the Work, and relative coordinates of the major portions of the Work. The Contract Administrator may conduct survey checks of the Work at their discretion. The Contractor shall provide a survey assistant, at the Contract Administrators request, for such survey checks. The Contractor shall protect and preserve such survey control points for so long as they are required for the Work and if any of them must be replaced because they are disturbed or destroyed by the Contractor, then the Contractor shall pay the costs of such replacement."
4.3	.1	Protection of Work, Property and the Public	Add: Within the terms of this clause, the <i>Contractor</i> is responsible for the protection of existing power and telephone poles during the term of the <i>Contract</i> .
	.4		Delete GC 4.3.4 and replace with the following: Before commencing any <i>Work</i> at the <i>Place of the Work</i> , the <i>Contractor</i> shall be responsible to locate in three dimensions all underground utilities and structures indicated on the <i>Contract Documents</i> as being at the <i>Place of the Work</i> . The <i>Contractor</i> shall also be responsible to consult with all utility corporations that provide electricity, communication, gas or other utility services in the area of the <i>Place of the Work</i> , to locate in three dimensions all underground utilities for which they have records. The <i>Contractor</i> shall also locate in three dimensions any other utilities or underground structures that are reasonably apparent in an inspection of the <i>Place of the Work</i> .

			The <i>Contractor</i> shall contact BC One Call at least 48 hours prior to excavating to advise of the Work.
4.5	.1	Errors, Inconsistencies or Omissions in the <i>Contract Documents</i>	GC4.5.1 are amended: (i) by deleting “or omission” wherever it appears and substituting “omission or any incorrect, inaccurate or misrepresented fact”, and (ii) by deleting “or omissions” wherever it appears and substituting “omissions or incorrect, inaccurate or misrepresented facts”.
	.4		Add GC4.5.4: “If Additional Instructions are required to address any error, inconsistency, omission or incorrect, inaccurate or misrepresented facts, the Contractor’s inefficiencies or mismanagement, if any, shall not be taken into account when determining any impact of those Additional Instructions on the Contract Price or the Contract Time.”
4.6	.2	Construction Schedule	GC4.6.2 is amended by deleting “monthly” and substituting “monthly or within a shorter time period specified in the <i>Contract Documents</i> ”.
4.12	.5	Tests and Inspections	GC4.12.2.5 (1) and (2) are amended by deleting “timely notice” and substituting “not less than two days”.
6.2	.1	Coordination and Connection	Add: The <i>Owner</i> or <i>Contract Administrator</i> will not be liable for claims for delay caused by applicable third parties, including, but not limited to BC Hydro, TELUS, Fortis BC, Shaw Cable, BC Transit, or Municipal Forces for work required to be undertaken on this <i>Contract</i> .
7.4	.2	Optional Work	Add GC 7.4.2: All items included in the <i>Schedule of Quantities and Prices</i> which stated to be Optional Work shall be used only as directed and at the sole discretion of the <i>Contract Administrator</i> .
	.3		Add GC 7.4.3 All or any unused portion of these sums shall revert to the RMOW and shall be deducted from the Contract Price before final payment is made. No claim for lost profit shall be made by the <i>Contractor</i> for the deletion of any or all of these optional items.
9.2	.4	Valuation Method	GC9.2.4 is amended by deleting “unless at the time of the agreement the <i>Contractor</i> expressly reserved in writing the right to claim for additional payment or Contract Time adjustments.”
11.1	.1	Concealed or Unknown Conditions Definition	GC 11.1.1(3) is deleted and the following substituted: “(3) differs materially and substantially from: i. the conditions of the Place of the Work that would have been evident to or reasonably foreseeable by a

			Contractor who was qualified to undertake the Work, and ii. any information in the Tender Documents or otherwise made available by the Owner with respect to any conditions of the Place of the Work that would not have been evident to or reasonably foreseeable by a contractor who was qualified to undertake the Work”.
13.1	.1	Delay by <i>Owner</i> or <i>Contract Administrator</i>	Add: The <i>Owner</i> or <i>Contract Administrator</i> will not be liable for claims for delay caused by applicable third parties, including, but not limited to BC Hydro, TELUS, Fortis BC, Shaw Cable, BC Transit, or Municipal forces for work required to be undertaken on this <i>Contract</i> .
13.9	.1	Liquidated Damages for Late Completion	GC 13.9.1.1 is amended by deleting “\$1000 per day” and substituting “\$1,500 per day”.
15.3	.1	Termination	GC 15.3.1 (1) is deleted and the following substituted: “(1) be entitled to: (i) take possession of the <i>Place of the Work</i> and the materials to be incorporated into the <i>Work</i> wherever they are located including materials ordered for the <i>Work</i> but not yet delivered, (ii) utilize the construction machinery and equipment, subject to the right of third parties, and (iii) complete the <i>Work</i> by whatever method the <i>Owner</i> may consider expedient, and
17	5	Referee	GC17.5.2(2) is deleted and the following substituted: 2) “if the parties have not agreed upon a Referee within 15 Days after the delivery of the Dispute Notice, then either party may make a written request to the Master Municipal Document Association to appoint the Referee within 10 Days of the written request. If after consultation with the parties, the Association is unable to appoint a Referee who is acceptable to both parties, the Association shall appoint as the Referee an individual who is qualified to act in that capacity under the Contract and who is independent and impartial.” GC17.5.3 is deleted and the following substituted: “If a Referee is selected for appointment as provided by this GC then the parties shall enter into an agreement with the Referee by signing a letter in the form as set out in Schedule 17.5.3 to these GC’s. If one party and the Referee sign the agreement and, after presentation, the other party fails or refuses to sign the agreement, the defaulting party shall be deemed to be a party to that agreement.” GC 17.5.8 is amended by adding after “The Referee” the following: “shall make decisions in a fair and impartial manner and”. GC17.5.II is amended

			<p>a) by renumbering it GC 17.5. 11.1 and by adding the following at the end “unless the parties agree otherwise.” and</p> <p>b) by adding the following: 17.5.11.2 Despite 17.5.1 1.1, on written application of a party, the Master Municipal Documents Association may revoke the appointment of the Referee if the Association is satisfied that the Referee is biased, unqualified to discharge the Referee’s duties, or has failed to diligently and conscientiously perform the Referee’s duties. A replacement Referee shall be selected for appointment as provided by this GC. GC17.5.13 is amended by deleting “by either party, or both parties,” and substituting the following: “by both parties but not by one party.”</p>
18.2	.1	Supporting Documentation	<p>Add:</p> <p>The <i>Contractor</i> shall not work on the <i>Site</i> or deliver materials for which delivery slips submitted to the <i>Owner</i> are the basis of payment unless the <i>Site Inspector</i> is present. However, if the <i>Contract Administrator</i> deems these requirements inappropriate then this requirement may be waived.</p>
18.9	.1	Waiver of Claims	<p>GC18.9.1 is amended by deleting the last sentence and substituting the following: This waiver of claims shall include without limitation those claims that might arise from: 1) the negligence or breach of contract by the <i>Owner</i>, its employees, agents or officials, or 2) the negligence or wrongful acts of the <i>Owner’s</i> consultants or the <i>Contract Administrator</i>, but does not include claims made by <i>the Contractor</i> in writing prior to such application in accordance with the provisions of the <i>Contract Documents</i> and delivered to the <i>Contract Administrator</i> prior to date of Substantial Performance and still unsettled.</p>
	.2		<p>GC 18.9.2 is amended by deleting the last sentence and substituting the following: This waiver of claims shall include without limitation those claims that might arise from: 1) the negligence or breach of <i>Contract</i> by the <i>Owner</i>, its employees, agents’, or officials, or 2) the negligence or wrongful acts of the <i>Owner’s</i> consultants or <i>Contract Administrator</i>, but does not include claims made by the <i>Contractor</i> in writing prior to such application in accordance with the provisions of the <i>Contract Documents</i> and delivered to the <i>Contract Administrator</i> and still unsettled.</p>
20.4	.2	Environmental Laws	<p>GC20.4 is amended by adding the following: 20.4.2 The <i>Contractor</i> shall indemnify the <i>Owner</i> for any costs, fines, expenses and penalties that the <i>Owner</i> is required to pay on account of the <i>Contractor</i> performing</p>

			the <i>Work</i> in breach of any applicable Federal or Provincial or municipal environmental laws, regulations, or orders.
21	.2		<p>Delete GC 2 1.2.1 and replace with the following As part of the <i>Work</i> the Contractor shall, to the extent reasonably possible, perform on behalf of the Owner the obligations which the Owner must undertake as “Prime Contractor” by virtue of the Workers’ Compensation Act and Regulations, or other statutes. The Contractor shall have a safety program acceptable to the Workers’ Compensation Board and shall ensure that all Workers’ Compensation Board safety rules and regulations are observed during performance of this contract, not only by the Contractor but by all sub-contractors, workers, material personnel and others engaged in the performance of this contract. The Contractor shall indemnify the RMOW and hold harmless the RMOW from all manner of claims, demand, costs, losses, penalties and proceedings arising out of or in any way related to unpaid Workers’ Compensation Board assessments owing from any person or corporation engaged in the performance of this contract, or arising out of or in any way related to the failure to observe safety rules, regulations and practices of the Workers’ Compensation Board, including penalties levied by the Workers’ Compensation Board.”</p>
24	.1	Required Insurance	<p>In addition to the MMCD insurance requirements, the <i>Contractor</i> shall also comply with the following requirements of the RMOW, which will take precedence: “The <i>Contractor</i> shall insure and keep insured while this contract is in force, with such companies and on such forms as are acceptable to the RMOW, at the <i>Contractor’s</i> expense, Comprehensive General Liability Insurance covering premises and operations liability; <i>Contractor’s</i> Contingency Liability with respect to the operations of Subcontractor’s Completed Operations Liability, Contractual Liability and Non-Owned Automobile Liability Insurance. The limits of liability for Personal Injury and Property Damage combined shall be for not less than \$5,000,000 each occurrence. The RMOW and ISL Engineering and Land Services shall be added as additional named insured under the Comprehensive General Liability. A Cross Liability Clause shall be made part of the Comprehensive General Liability Insurance. All policies shall provide that they cannot be cancelled, lapsed, or materially changed without at least thirty (30) days notice to the RMOW by Registered Mail. Prior to the commencement of any work hereunder, the <i>Contractor</i> shall file with the RMOW a certificate of insurance for each policy required.</p>

			<p>All such insurance shall be maintained until final completion of the work, including the making good of faulty work or materials, except that coverage for completed operations liability shall in any event be maintained for twelve (12) months from date of final acceptance.</p> <p>Should the <i>Contractor</i> neglect to obtain and/or maintain insurance as aforesaid, or deliver such policy or policies to the RMO, then it shall be lawful for the RMO to obtain and/or maintain such insurance and the <i>Contractor</i> hereby appoints the RMO their true and lawful attorney to do all things necessary for this purpose. All monies expended by the RMO for insurance premiums under the provisions of this clause shall be charged to the <i>Contractor</i>.”</p>
25.1	.2	Correction of Defects	<p>Add to Clause:</p> <p>“Where in the opinion of the <i>Owner</i>, delay would cause serious loss or damage, repairs may be made without notice being sent to the <i>Contractor</i> and all expenses incurred will be charged to the <i>Contractor</i>.”</p>
	.3		<p>GC25. 1.3 is deleted and the following substituted: 25.1.3 The <i>Owner</i> shall provide the <i>Contractor</i> with access, at all reasonable times, to the location of any defect or deficiency described in this GC to enable the <i>Contractor</i> to correct the defect or deficiency but the <i>Contractor</i> shall be responsible for</p> <ol style="list-style-type: none"> 1) exposure of the defect or deficiency in order to correct or repair the defect, deficiency, 2) the restoration of the <i>Work</i> or other property that is disturbed or damaged in the course of <ol style="list-style-type: none"> (i) exposing the defect or deficiency, or (ii) correcting or repairing the defect or deficiency, and 3) all risks associated with any activity described in paragraphs (1) and (2).
26.1	.1	Partial Use	<p>GC26. 1. 1 is amended by deleting “on written approval of the <i>Contract Administrator</i>” and substituting “with prior written notice to the <i>Contract Administrator</i>”.</p>

Appendix A
Contract Drawings

RESORT MUNICIPALITY OF WHISTLER

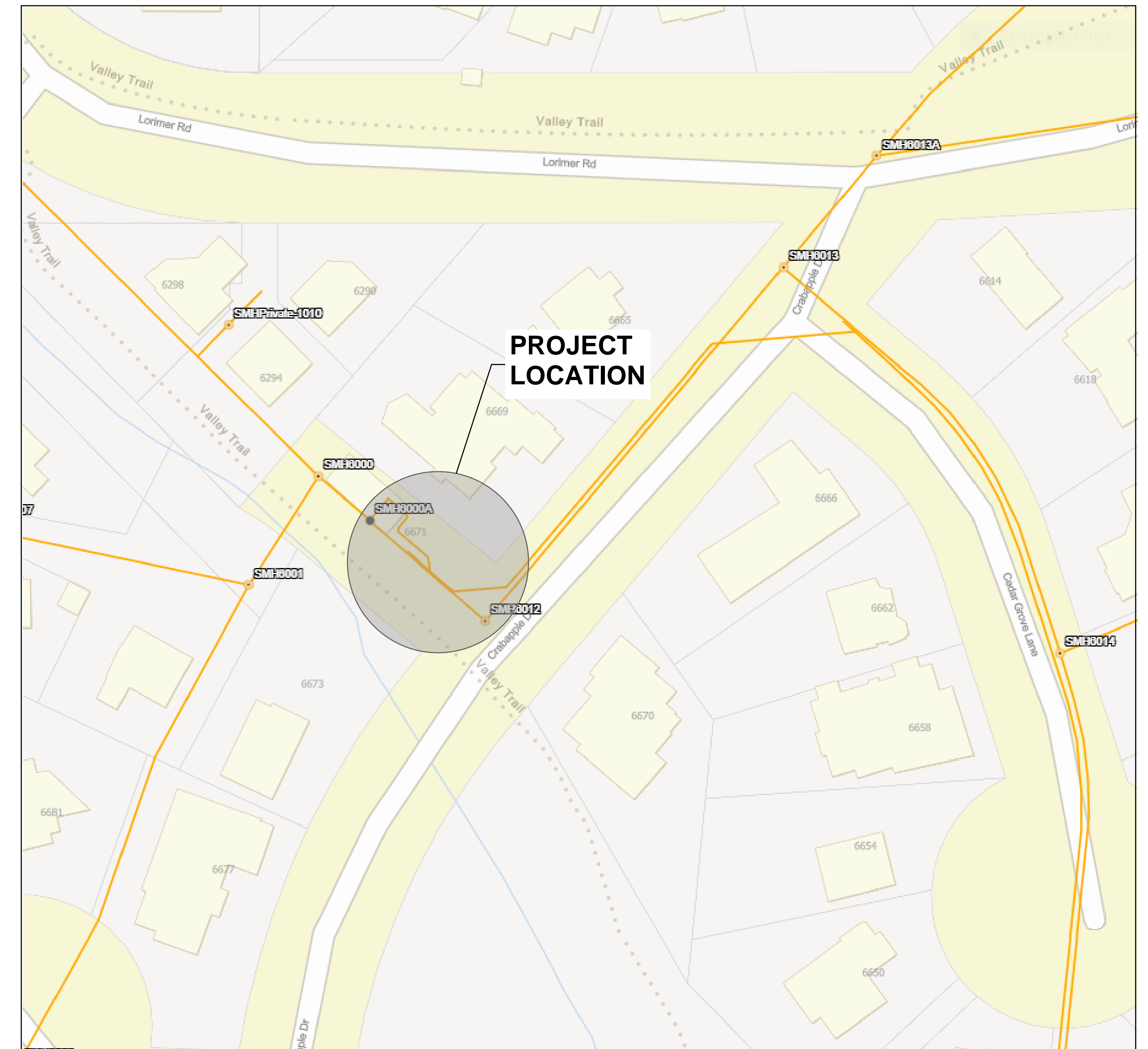
SANITARY SEWER FORCE MAIN REPAIRS

CONTRACT# E320-01

ISSUED FOR TENDER

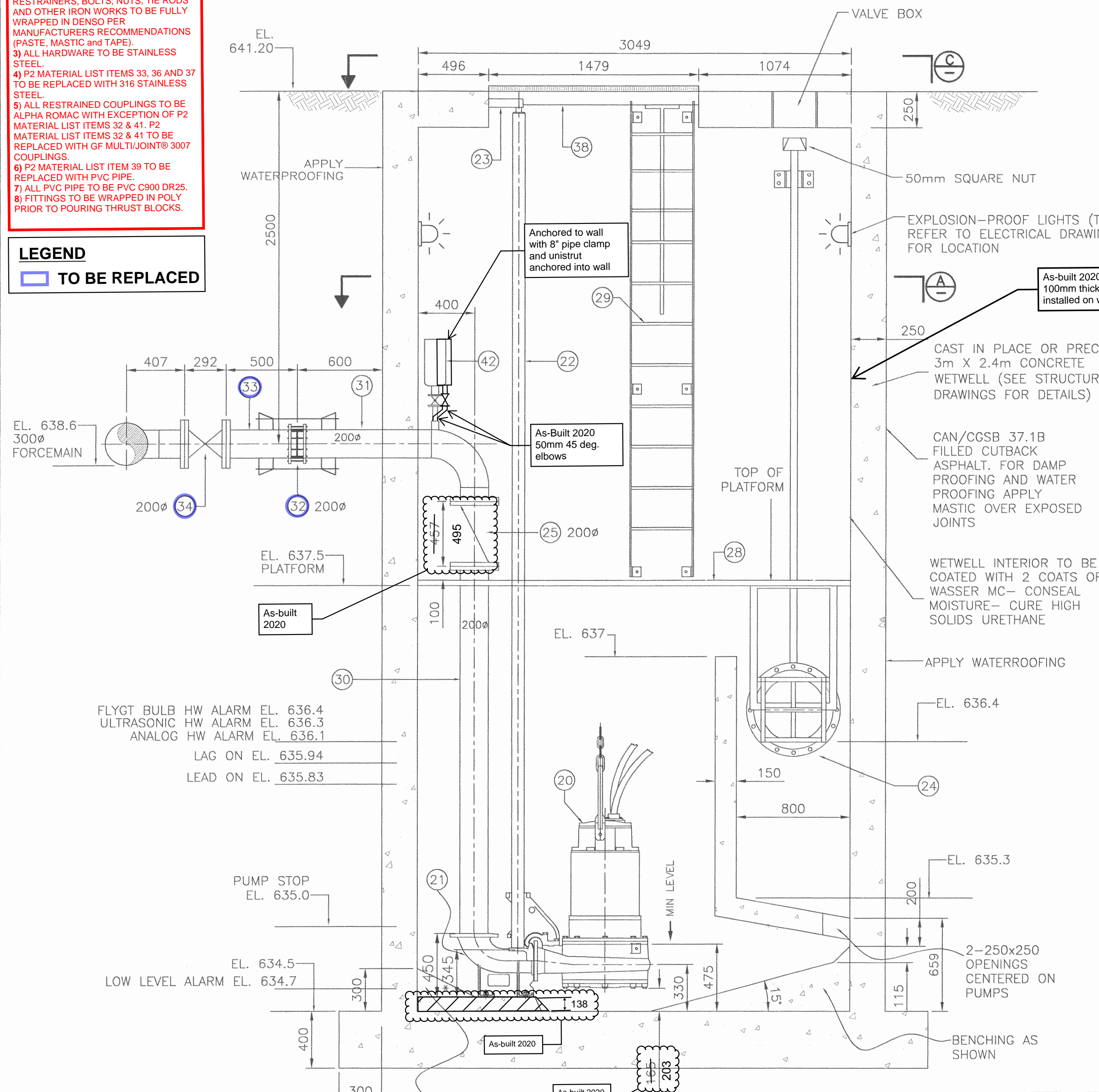
WHISTLER, BRITISH COLUMBIA

NOVEMBER 2024



- GENERAL NOTES:**
- 1) ALL FITTINGS AND CHANGES IN DIRECTION TO BE FULLY RESTRAINED C/W CONCRETE THRUST BLOCKS.
 - 2) ALL FITTINGS, VALVES, COUPLERS, RESTRAINERS, BOLTS, NUTS, TIE RODS AND OTHER IRON WORKS TO BE FULLY WRAPPED IN DENSO PER MANUFACTURERS RECOMMENDATIONS (PASTE, MASTIC and TAPE).
 - 3) ALL HARDWARE TO BE STAINLESS STEEL.
 - 4) P2 MATERIAL LIST ITEMS 33, 36 AND 37 TO BE REPLACED WITH 316 STAINLESS STEEL.
 - 5) ALL RESTRAINED COUPLINGS TO BE ALPHA ROMAC WITH EXCEPTION OF P2 MATERIAL LIST ITEMS 32 & 41. P2 MATERIAL LIST ITEMS 32 & 41 TO BE REPLACED WITH GF MULTI-JOINT® 3007 COUPLINGS.
 - 6) P2 MATERIAL LIST ITEM 39 TO BE REPLACED WITH PVC PIPE.
 - 7) ALL PVC PIPE TO BE PVC C900 DR25.
 - 8) FITTINGS TO BE WRAPPED IN POLY PRIOR TO POURING THRUST BLOCKS.

LEGEND
 TO BE REPLACED



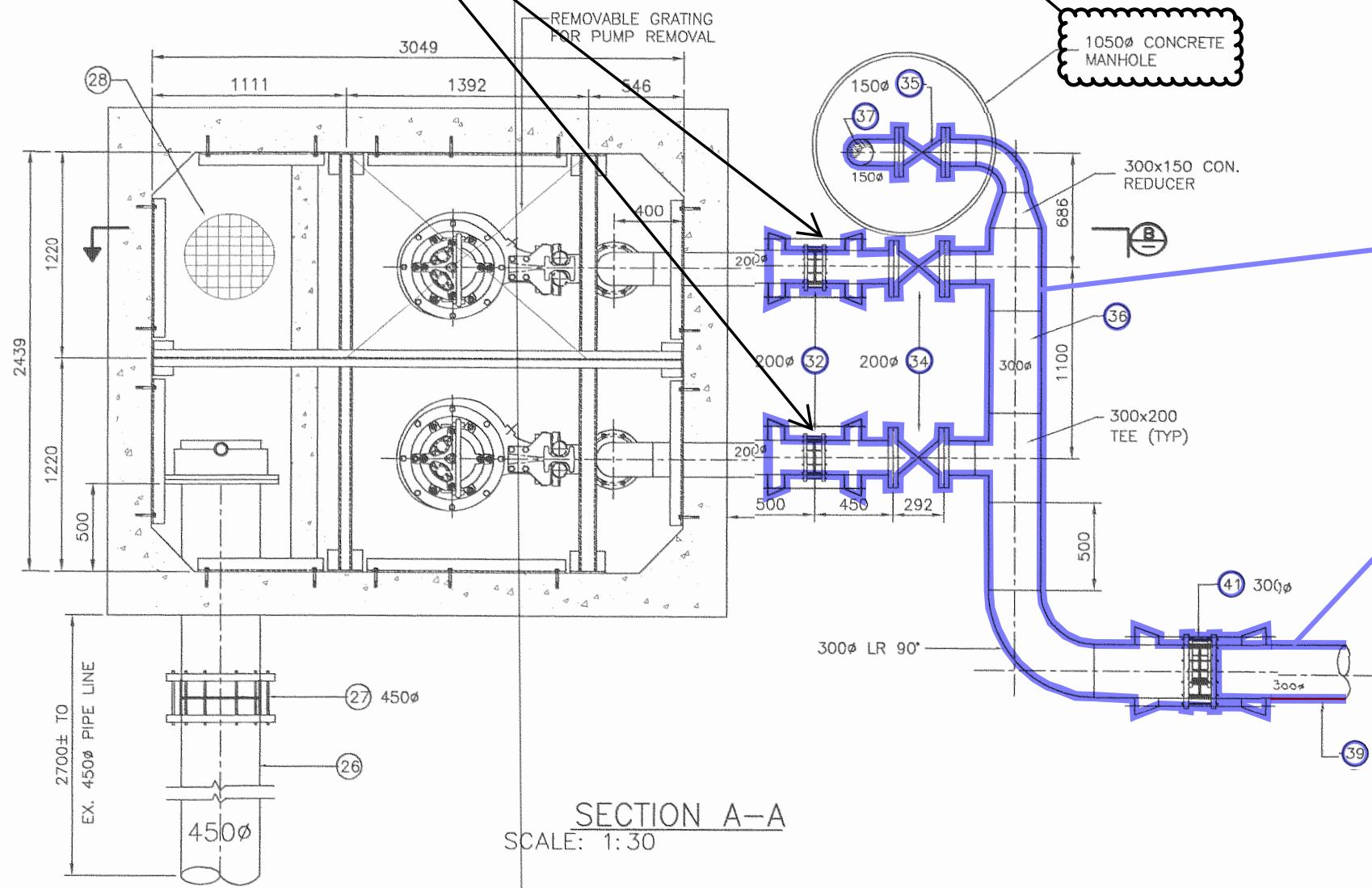
SECTION B-B ELEVATION

SCALE: 1:25

NOTE:
 ALL PIPING INSIDE WETWELL AND FIRST SECTION OUTSIDE WETWELL BE SCH. 10 316 STAINLESS STEEL

As-built 2023
 Replaced with Alpha Romac couplings during emergency repair.

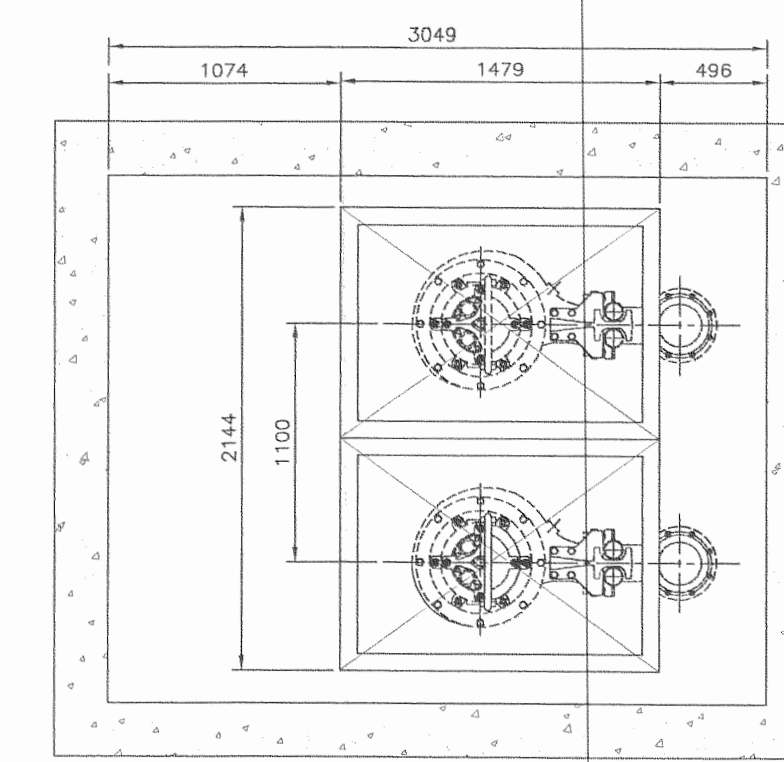
As-built 2020
 Replaced with chamber c/w access hatch.



SECTION A-A
 SCALE: 1:30

CONTRACT ITEM 1.03
 Replace discharge header, bypass piping/port, valves and couplings (Items 32, 33, 34, 35, 36 and 37 on material list). See general notes for further replacement details.

CONTRACT ITEM 1.04
 Replace 300mmØ ductile iron piping with 300mmØ PVC C900 DR25 piping, 300mmØ 45° ductile iron bend and connecting restrained couplings (Items 39, 40 and 41 on material list). See general notes for further replacement details.



SECTION C-C
 SCALE: 1:30

MATERIAL LIST

ITEM	QTY.	SIZE	DESCRIPTION
ODOUR CONTROL ROOM			
1	3	200# BPL -4x10	CALCON VENTISORB PE GRANULAR ACTIVATED CARBON
2	1	MODEL 125 316SS CONSTRUCTION	NEW YORK BLOWER COMPACT G1 FAN 400 CFM @ 8.75" WC C/W 2HP 576V 3PH 60HZ IFCO MOTOR SUITABLE VFD OPERATIONS, C/W FLEX. CONNECTORS.
2a	1	500x400x50	AIR CON KITCHEN GUARD DEGREASING FILTER MODEL A-20 KC-20.16 600CFM PER FILTER
3	6	100mm# PVC BFV	CHEMLINE PVC BODY BUTTERFLY VALVE MODEL TBA 040 BEL
4	10	12mm# PVC BALL VALVE	CHEMLINE PVC BODY BALL VALVES MODEL OAD0055
5	1	25# PRV	WATTS MODEL 223S PRV
6	1	38#	WATTS SERIES 909QT-S REDUCED PRESSURE BACKFLOW PREVENTOR
7	1	MODEL FR225	FANTECH MODEL FR225 INLINE DUCT FAN 400CFM @ 0.2" WC C/W TWO SPEED CONTROL AND FLEX CONNECTORS
8	1	200#	316SS RAIN CAP AND THIMBLE TO SUIT ROOFING MATERIAL AND STRUCTURE
9	1		316SS FRAME C/W 50mm FRP GRATING
10	1	300x300	INTAKE LOUVER - ALUMINUM CONSTRUCTION C/W INSECT SCREEN WEST VENT, AT-645-U OR EQUAL

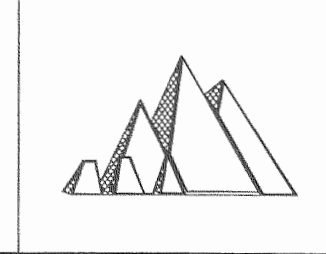
MATERIAL LIST

ITEM	QTY.	SIZE	DESCRIPTION
GENERATOR ROOM			
11	1	1500x1500	INTAKE LOUVER - ALUMINUM CONSTRUCTION C/W INSECT SCREEN WEST VENT, AT-645-U OR EQUAL
12	1	1500x1500	MOTORIZED DAMPER C/W BELIMO DAMPER ACTUATOR MODEL FM120-SR 120V AC
13	1	1500x2300 - 400mm BLANKED SECTION TOP AND BOTTOM	EXHAUST LOUVER - ALUMINUM CONSTRUCTED C/W INSECT SCREEN WEST VENT AT-645-U
14	1	1500x1500	BACKDRAFT DAMPER ACME, TAMCO OR EQUAL
15	1	400x400	EXHAUST FAN ACME MODEL F0129L0 120V C/W BACKDRAFT DAMPER AND EXHAUST LOUVER
16	1	400x400	DOOR GRILL C/W INSECT SCREEN AND BACKDRAFT DAMPER
17	1	200KW	ONAN 200KW GENERATOR PAR7# 200 DGAA C/W 200 GAL-SUB-BASE FUEL TANK (RELOCATE FROM EXISTING LOCATIONS TO INSIDE BUILDING)
18	1	125#	EXHAUST PIPE 316SS SCH. 10 C/W HANGERS AND 38mm CALCIUM SILICATE INSULATION C/W 38mm CERAMIC FILM WITH SS MOREL MESH
19	1	300#	EXHAUST PIPE 316SS WALL THIMBLE
*NOTE : CONTRACTOR TO CONFIRM SIZE OF EXHAUST LOUVER C/W REMOVAL SECTION TO ALLOW REMOVAL GENSET FROM BUILDING WITH EXISTING WEATHER ENCLOSURE INTACT.			
WETWELL			
20	2	CP-3300HT	FLYGT CP-3300HT C/W 454 IMPELLER 65KW (88HP) 575V 3PH 60HZ SUBMERSIBLE MOTOR (RELOCATE FROM EXISTING WETWELL) (87 L/S @ 45m TDH)
21	2	200# 125#FL	FLYGT PN 444-71-06 DISCHARGE ELBOW C/W 200mmØ 125# OUTLET CONNECTION (CONFIRM TO MATCH EXISTING PUMPS)
22	4	75mm#	75mm# 316SS SCH. 40 GUIDE RAILS (CONFIRM LENGTH)
23	2	75mm#	UPPER GUIDE BAR HATCH 316SS PN 13-52-06-05
24	1	450mm#	FONTAINE SERIES 50 450# SLUICE GATE 316L CONSTRUCTION MODEL 502-SF-N-R1 C/W 2" OPERATING NUT, FLOOR EL. 641.00 INVERT EL. 636.4.
25	2	200mm#-125#FL	GA INDUSTRIES FIGURE 220 SWING CHECK VALVE C/W OUTSIDE LEVER AND WEIGHT 125#FL - CL DISC
26	1	450mm#-125#FL	SLUICE GATE WALL THIMBLE 450# - FxPE 1.5M LONG, EPOXY COATED 8mm. WF. STEEL PIPE
27	1	450mm#	ROBAR 1506 DI COUPLING EPOXY COATED SS FASTENERS OR EQUAL
28	1	3000x2400	PLATFORM C/W FRP GRATING (SEE STRUCTURAL DWG.)
29	1	450mm	MARINE GRADE ALUMINUM LADDER x 3.5M LONG
30	2	200#	PUMP DISCHARGE PIPE 200# 316SS SCH. 10 FLxFL 2500mm APPROX. C/W PIPE SUPPORTS AS REQUIRED
31	2	200#	STATION DISCHARGE PIPE 200# 316SS SCH. 10 FLxPE C/W 90° ELBOW
32	2	200#	ROBAR 1506 DI COUPLING EPOXY COATED, SS FASTENER C/W TIE-RODS OR EQUAL
33	2	200#	PIPE 200# FLxPE 500mm LONG SS SCHED. 40 EPOXY COATED
34	2	200#	MULLER RESILIENT SEAT GATE VALVE AWWA C-509 C/W SS STEM 125#FL C/W 2" OPERATING NUT
35	1	150#	AS ABOVE
36	1	300#	DISCHARGE HEADER 300# STEEL SPECIAL A53 GRADE B EPOXY COATED
37	1	150#	BYPASS PIPE STEEL SPECIAL A53 GRADE B EPOXY COATED
38	2	1479x1072	FLYGT ALUMINUM ACCESS HATCH PN 13-43-00-43 C/W 13-52-04-10 CONNECTING ROD OR EQUAL
39	As Req'd	300#	DUCTILE IRON PIPE TO AWWA SPECIFICATIONS
40	1	300#	DUCTILE IRON CEMENT LINED 45° HWL BEND C/W TIE-RODS
41	1	300#	ROBAR 1506 DIxDI COUPLING EPOXY COATED
42	2	50#	VALMATIC VM 48 AIR VALVE C/W 50mm 316SS BALL VALVE AND 316SS NIPPLES OR EQUAL
43	1	50#	WATTS SERIES 007 DOUBLE CHECK VALVE

S6052-6

No	Date	Revision	By	Ch
2	2000.11.15	RECORD DRAWING	AYK	JSK
1	2000.06.05	ISSUED FOR TENDER	MLC	JSK

PARAGON ENGINEERING LTD.
 12442-205 STREET, MAPLE RIDGE, B.C. V2X 0A8
 TELEPHONE: (604) 465-3096 FAX: (604) 465-3055



RESORT MUNICIPALITY OF WHISTLER
 SANITARY LIFT STATION S-103 RECONSTRUCTION
 6671 CRABAPPLE DRIVE
 WETWELL & MECHANICAL DETAILS



Scale: AS STATED	Mun. Proj. No.	Dwg. No.
Drawn: M.L.C.	Mun. Dwg. No.	P2
Designed: J.S.K.	Job No. 2000-13	Revision 2
Approved:	Date JUN 05, 2000	Revision 2

ISL	DWG. NO.	33865-2025-SFM-001
	DATE	2024-11-22
	REVISION	1

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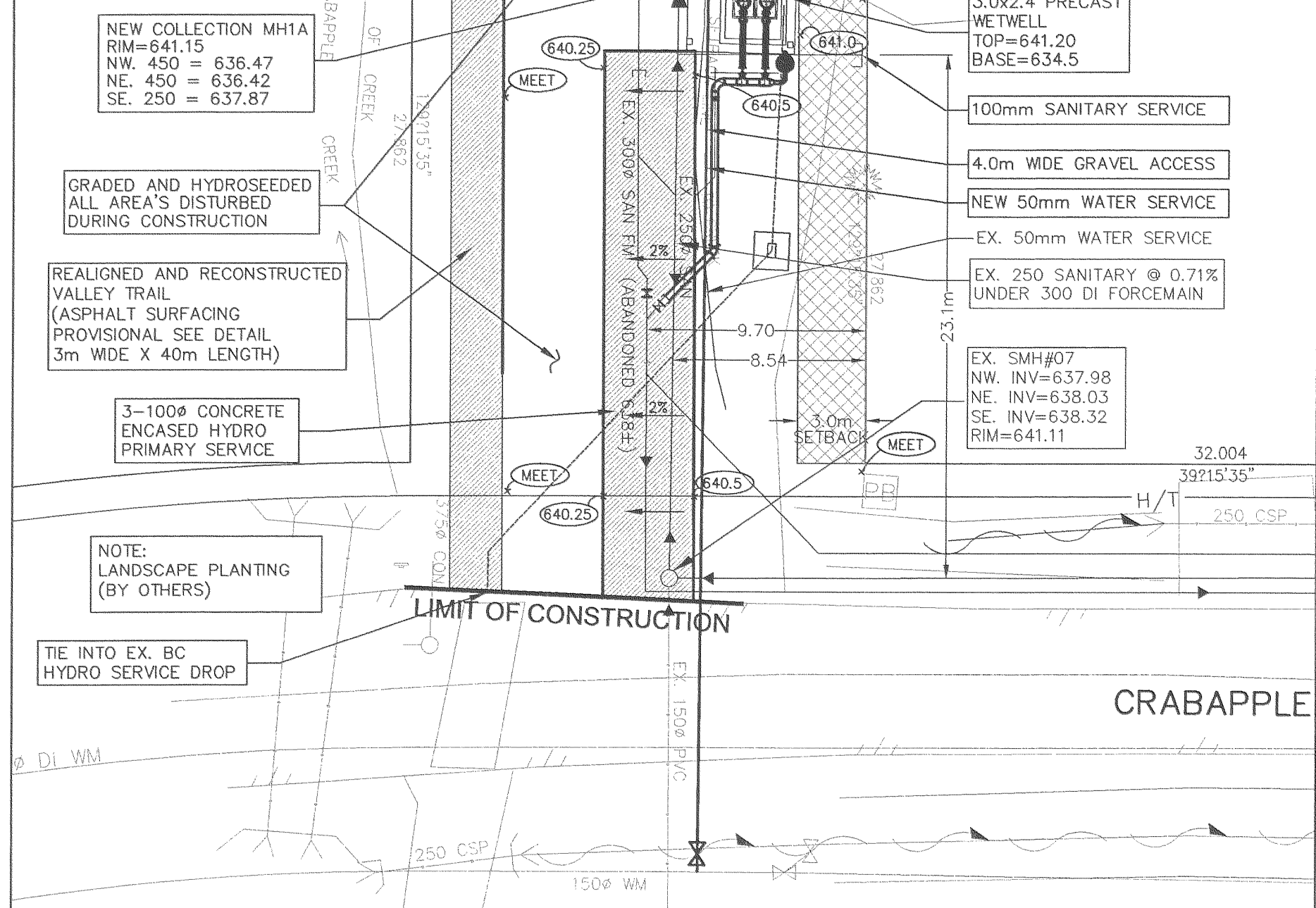
destroy all prints bearing previous number

S6052-3

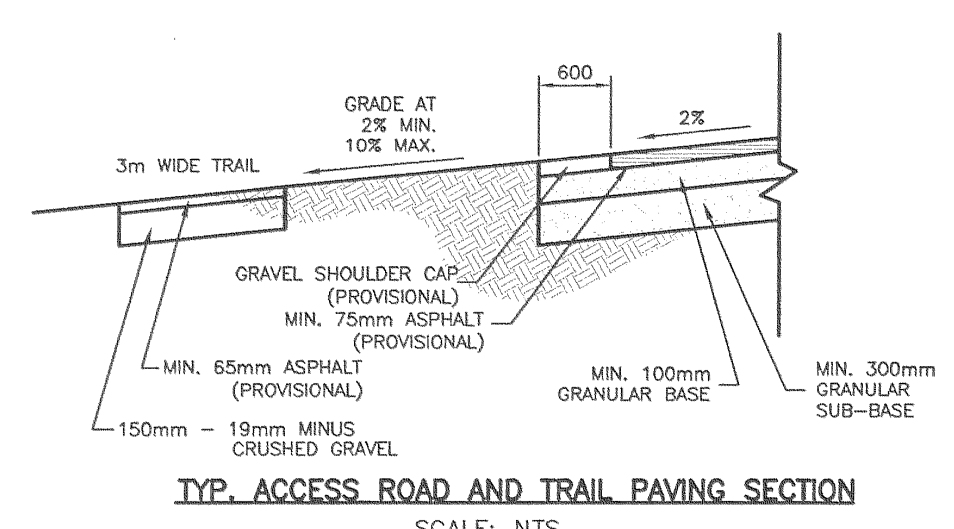
GENERAL NOTES:

- 1) ALL FITTINGS AND CHANGES IN DIRECTION TO BE FULLY RESTRAINED OR CONCRETE THRUST BLOCKS
- 2) ALL FITTINGS, VALVES, COUPLERS, RESTRAINERS, BOLTS, NUTS, TIE RODS AND OTHER IRON WORKS TO BE FULLY WRAPPED IN DENSO PER MANUFACTURERS RECOMMENDATIONS (PASTE, MASTIC AND TAPE)
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- 5) ALL RESTRAINED COUPLINGS TO BE ALPHA ROMAC WITH EXCEPTION OF P2 MATERIAL LIST ITEMS 32 & 41. P2 MATERIAL LIST ITEMS 32 & 41 TO BE REPLACED WITH GP MULTIJOINT® 3007 COUPLINGS
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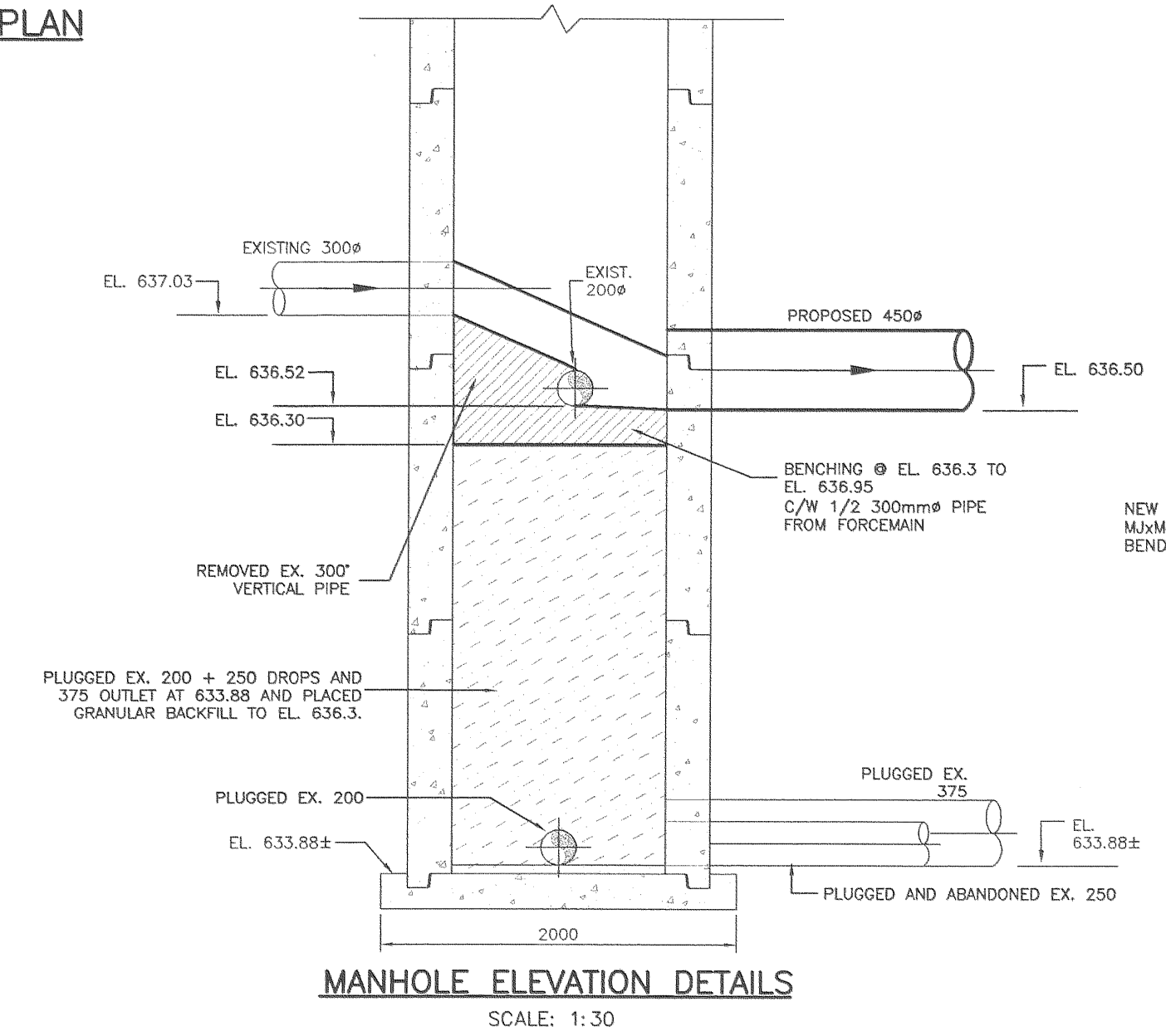
LEGEND
 TO BE REPLACED



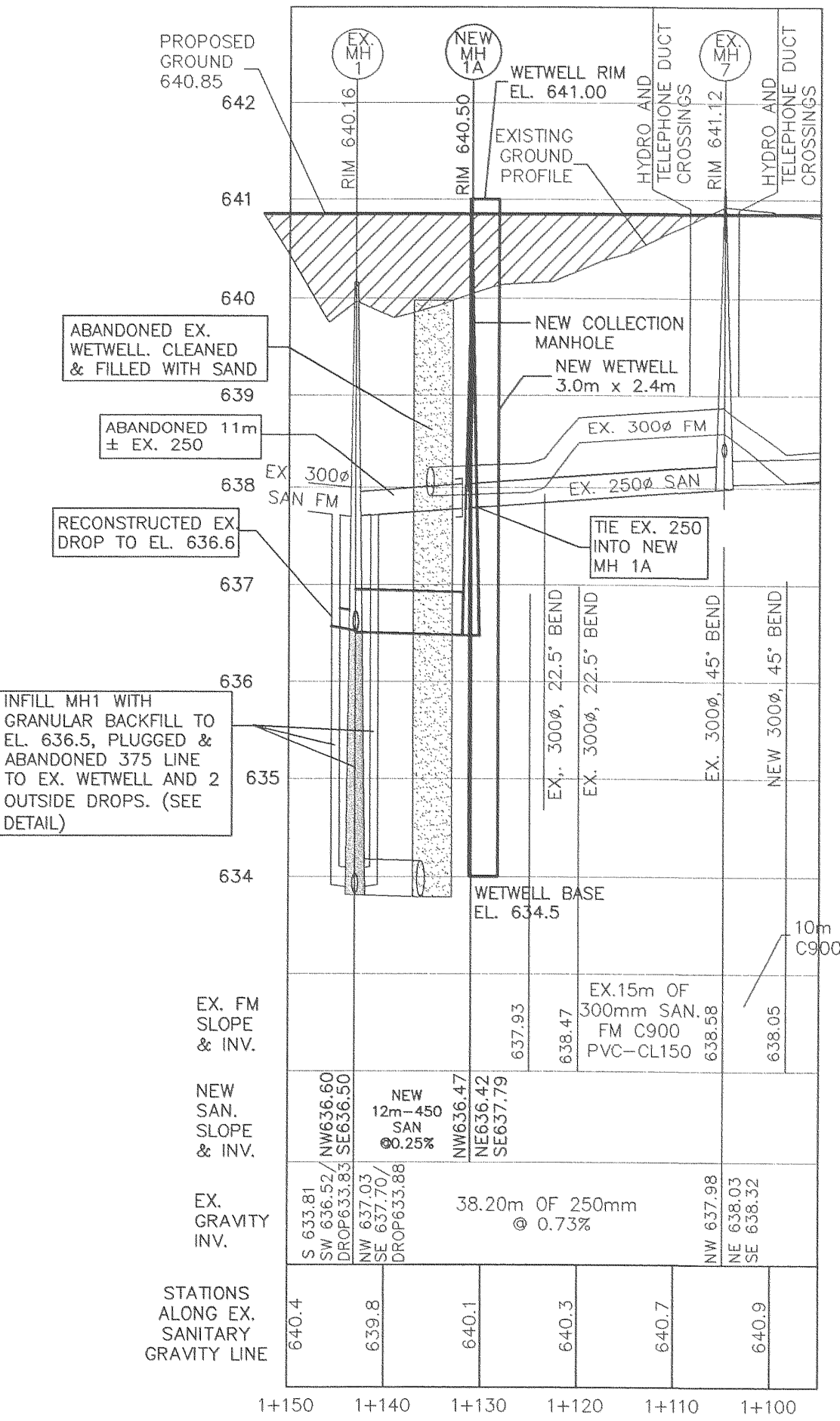
PROPOSED SITE PLAN
SCALE: 1:200



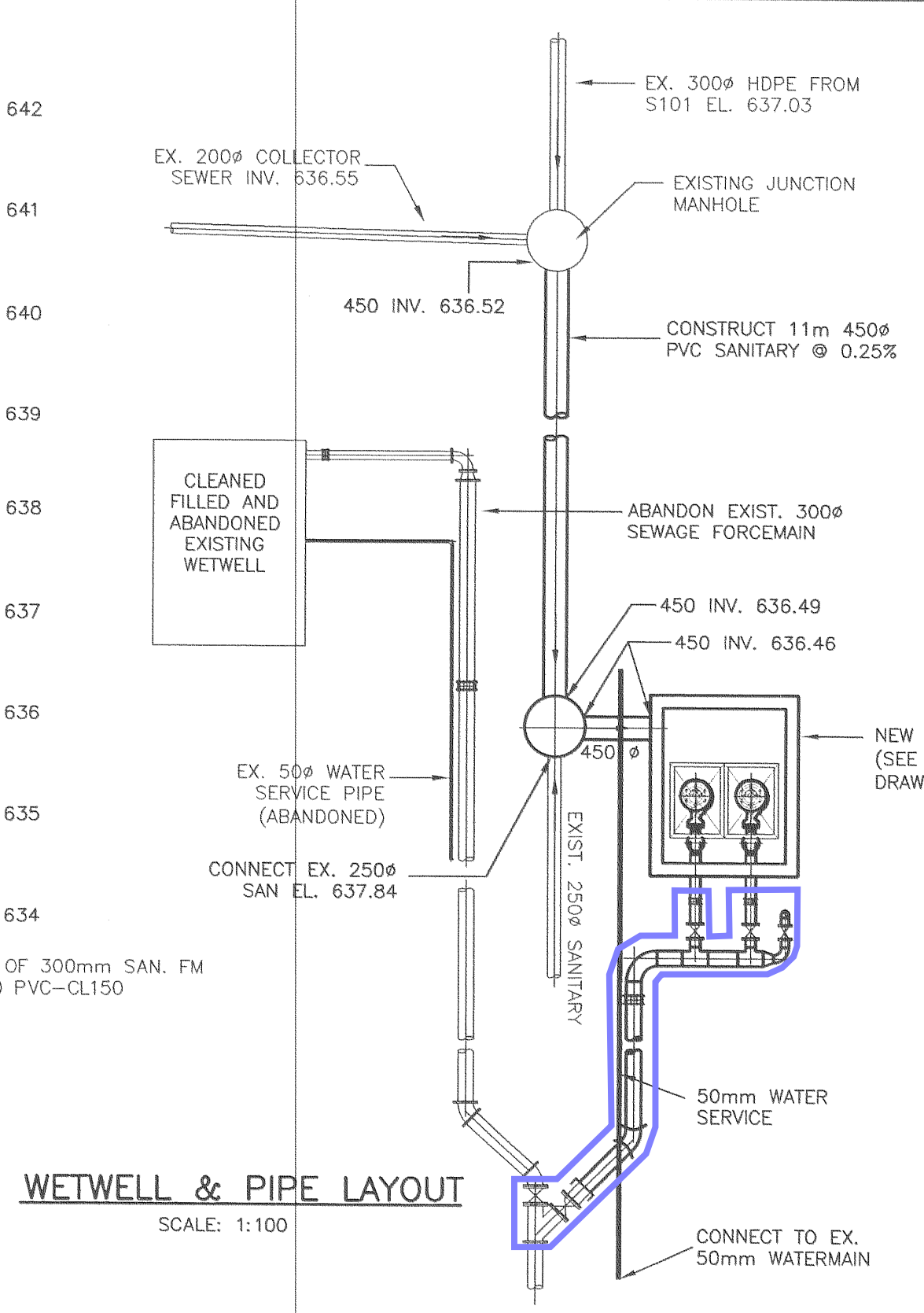
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SCALE: NTS



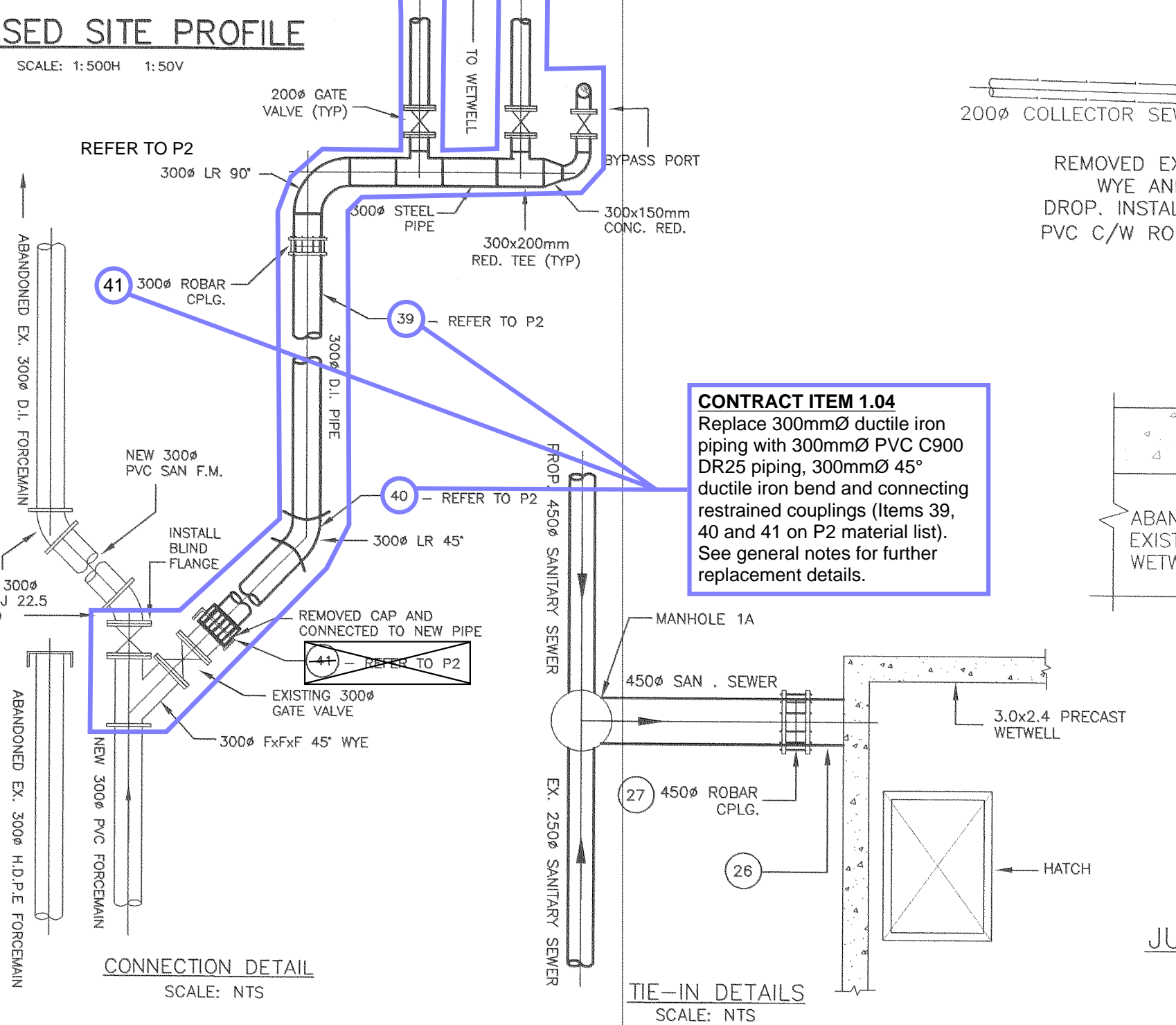
MANHOLE ELEVATION DETAILS
SCALE: 1:30



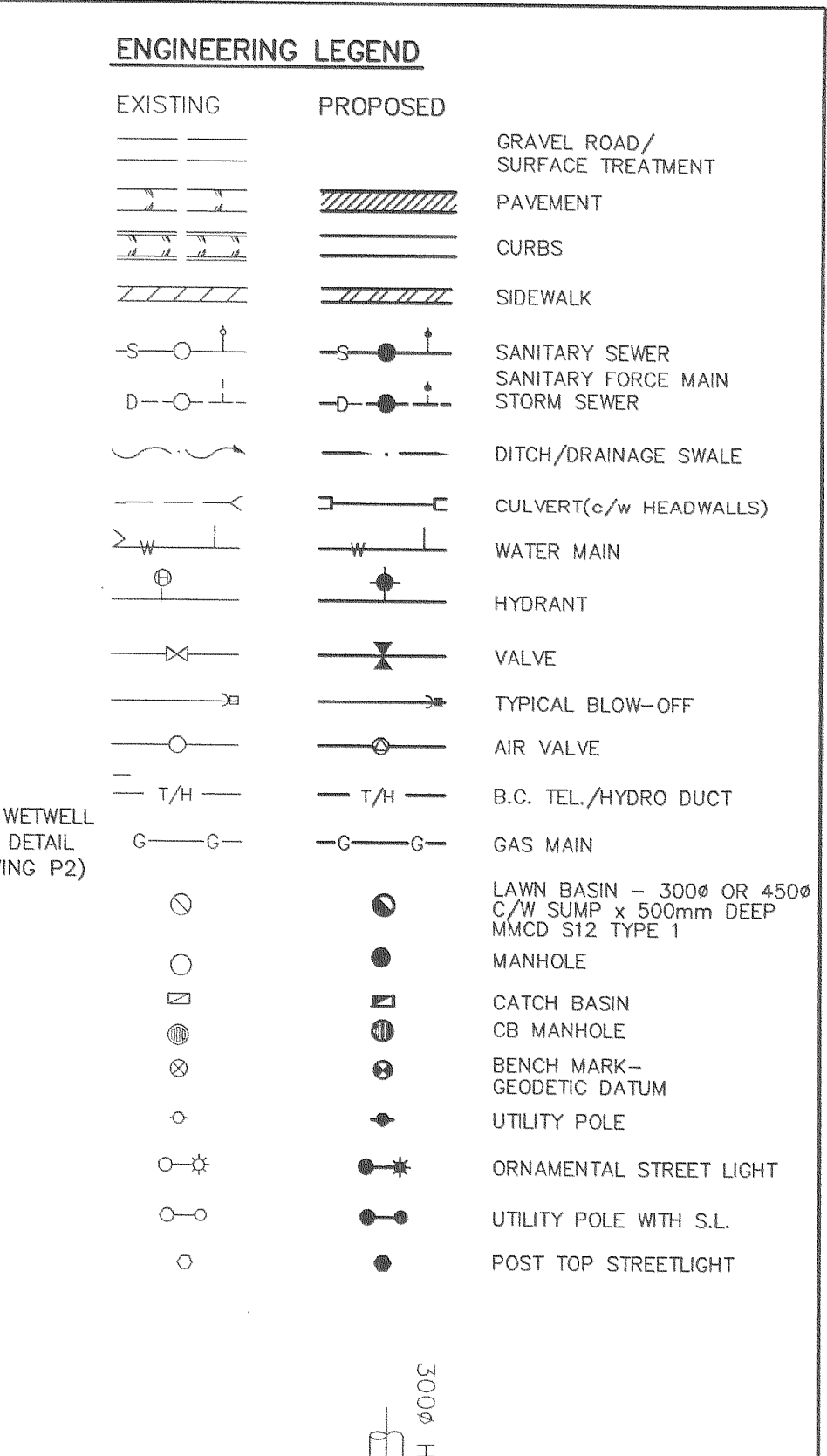
PROPOSED SITE PROFILE
SCALE: 1:500H 1:50V



WETWELL & PIPE LAYOUT
SCALE: 1:100



CONNECTION DETAIL
SCALE: NTS



JUNCTION MANHOLE DETAILS
SCALE: 1:50

ENGINEERING LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	GRAVEL ROAD/SURFACE TREATMENT
[Symbol]	[Symbol]	PAVEMENT
[Symbol]	[Symbol]	CURBS
[Symbol]	[Symbol]	SIDEWALK
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	SANITARY FORCE MAIN
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	DITCH/DRAINAGE SWALE
[Symbol]	[Symbol]	CULVERT (c/w HEADWALLS)
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	VALVE
[Symbol]	[Symbol]	TYPICAL BLOW-OFF
[Symbol]	[Symbol]	AIR VALVE
[Symbol]	[Symbol]	B.C. TEL./HYDRO DUCT
[Symbol]	[Symbol]	GAS MAIN
[Symbol]	[Symbol]	LAWN BASIN - 300Ø OR 450Ø C/W SLUMP x 500mm DEEP
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN
[Symbol]	[Symbol]	CB MANHOLE
[Symbol]	[Symbol]	BENCH MARK - GEODETIC DATUM
[Symbol]	[Symbol]	UTILITY POLE
[Symbol]	[Symbol]	ORNAMENTAL STREET LIGHT
[Symbol]	[Symbol]	UTILITY POLE WITH S.L.
[Symbol]	[Symbol]	POST TOP STREETLIGHT

No.	Date	Revision	Dr	Ch
2	2000.11.15	RECORD DRAWING	AJK	JSK
1	2000.08.05	ISSUED FOR TENDER	MLC	JSK

PARAGON ENGINEERING LTD.
 12442-205 STREET, MAPLE RIDGE, B.C. V2X 0A8
 TELEPHONE:(604) 465-3096 FAX:(604) 465-3055

RESORT MUNICIPALITY OF WHISTLER
 SANITARY LIFT STATION S-103 RECONSTRUCTION
 6671 CRABAPPLE DRIVE
 CIVIL WORKS DETAILS - PROPOSED

Scale: AS NOTED	Mun. Proj. No.	Dwg. No.
Drawn: M.L.C.	Mun. Dwg. No.	C2
Designed: J.S.K.	Job No. 2000-13	
P.W. P.U.	Date JUN 05, 2000	Revision 2
Approved:		destroy all prints bearing previous number

F:\Projects\2000\2000-13 pump station s-103\AS CONSTRUCTED DwgS\2000-13-C162.dwg Tue Jan 23 09:39:24 2001 Paragon Engineering

ISL	DWG. NO.	33865-2025-SFM-002
	DATE	2024-11-22
	REVISION	1

GENERAL NOTES:

- 1) ALL FITTINGS AND CHANGES IN DIRECTION TO BE FULLY RESTRAINED ON CONCRETE THRUST BLOCKS.
- 2) ALL FITTINGS, VALVES, COUPLERS, RESTRAINERS, BOLTS, NUTS, TIE RODS AND OTHER IRON WORKS TO BE FULLY WRAPPED IN DENSO PER MANUFACTURER'S RECOMMENDATIONS (PASTE, MASTIC and TAPE).
- 3) ALL HARDWARE TO BE STAINLESS STEEL.
- 4) ALL RESTRAINED COUPLINGS TO BE ALPHA ROMAC WITH EXCEPTION OF ITEM 32 & 41. ITEM 32 & 41 TO BE OF MULTIJOINT® 3007 COUPLINGS.
- 5) ALL PVC PIPE TO BE PVC C900 DR25.
- 6) FITTINGS TO BE WRAPPED IN POLY PRIOR TO POURING THRUST BLOCKS.

LEGEND

TO BE REPLACED

TO BE DAYLIGHTED

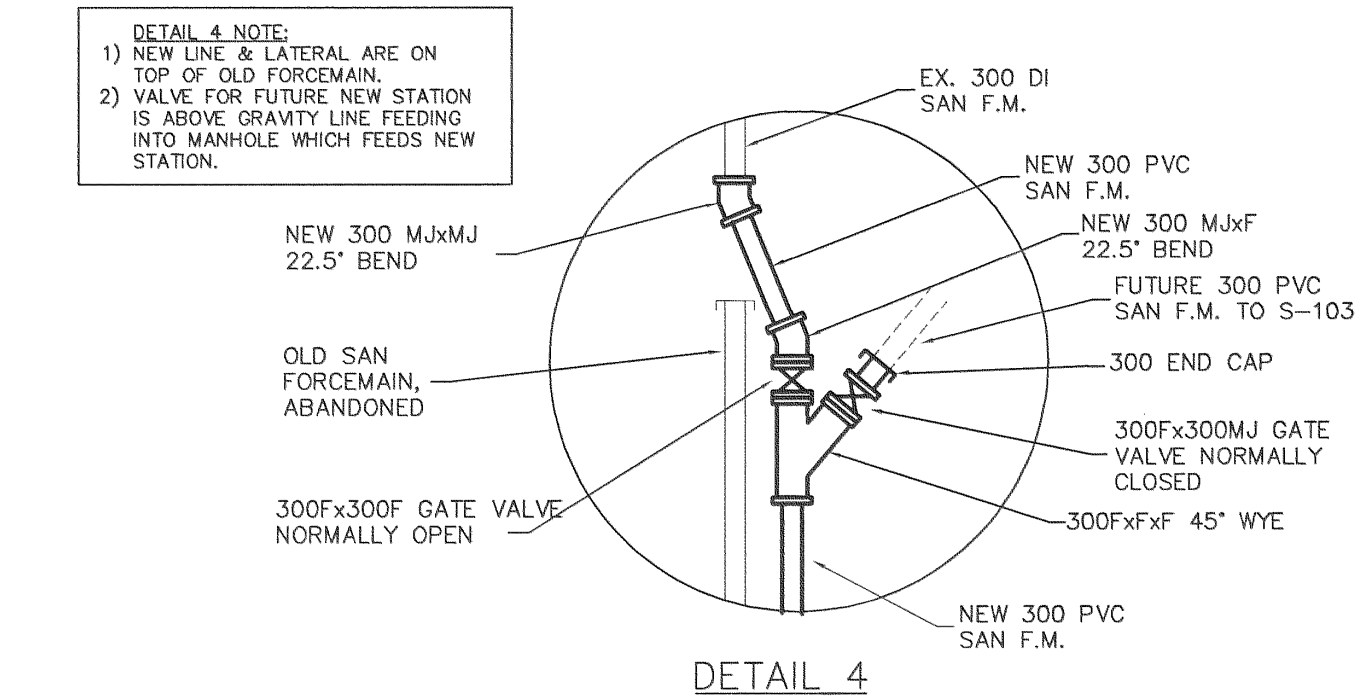
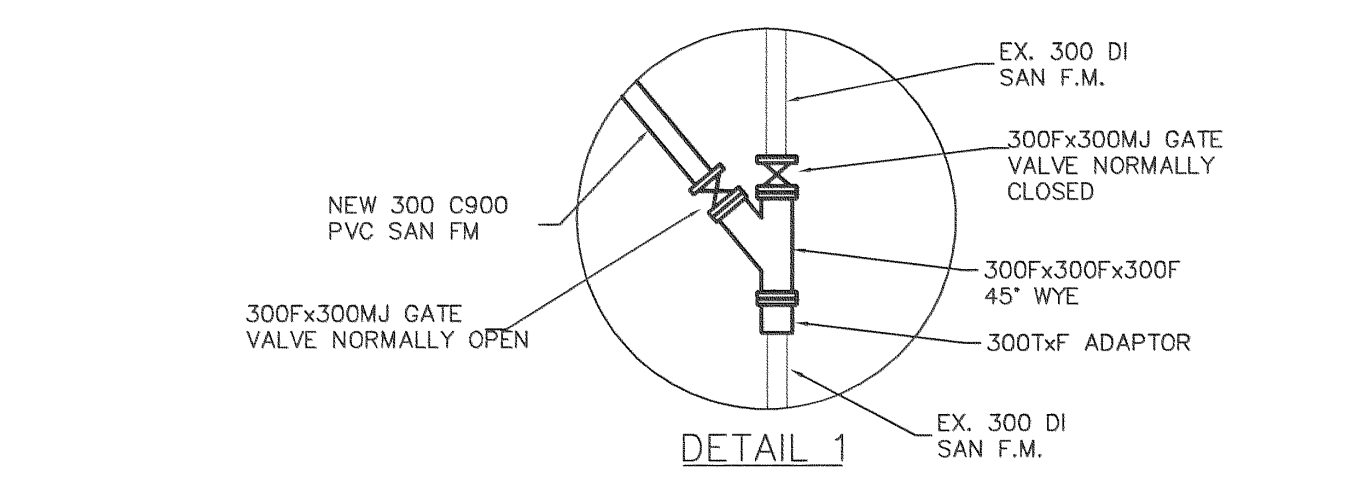
CONTRACT ITEM 1.05
 -REPLACE 300mmØ x 250mmØ x 300mmØ WYE AND 300mmØ GATE VALVE WITH 300mmØ 45° DUCTILE IRON BEND.
 -REMOVE 250mmØ BRANCH VALVE AND ABANDON EXISTING 250mmØ PIPE.

CONTRACT ITEM 1.06
 DAYLIGHT 300mmØ 45° BEND
CONTRACT ITEM 1.07 (OPTIONAL)
 REPLACE 300mmØ 45° BEND

CONTRACT ITEM 1.08
 DAYLIGHT 300mmØ 45° BEND
CONTRACT ITEM 1.09 (OPTIONAL)
 REPLACE 300mmØ 45° BEND

NOTE:

- CONTRACTOR EXPOSED CROSSING & TIE IN POINTS SUFFICIENTLY IN ADVANCE TO ALLOW ANY RE-DESIGN DUE TO CONFLICTS.
- THRUST BLOCKS HAVE MINIMUM BEARING AREA OF 1.1m FOR 45° BENDS, 2.0m FOR 90° BEND, AND 1.4m FOR CAPS AND TEES BASED ON 1380kpa WORKING PRESSURE AND 70kpa SOIL BEARING STRENGTH.
- THRUST BLOCKS OF 20mpa CONCRETE PLACED AGAINST UNDISTURBED GROUND.
- CONCRETE DID NOT COVER FITTINGS, BELLS, OR FLANGES.
- ELEVATIONS ARE GEODETIC NAD83 DERIVED FROM WATER RESOURCES MONUMENT No. 1685 LOCATED AT THE MONS OVERPASS EL. 640.702m

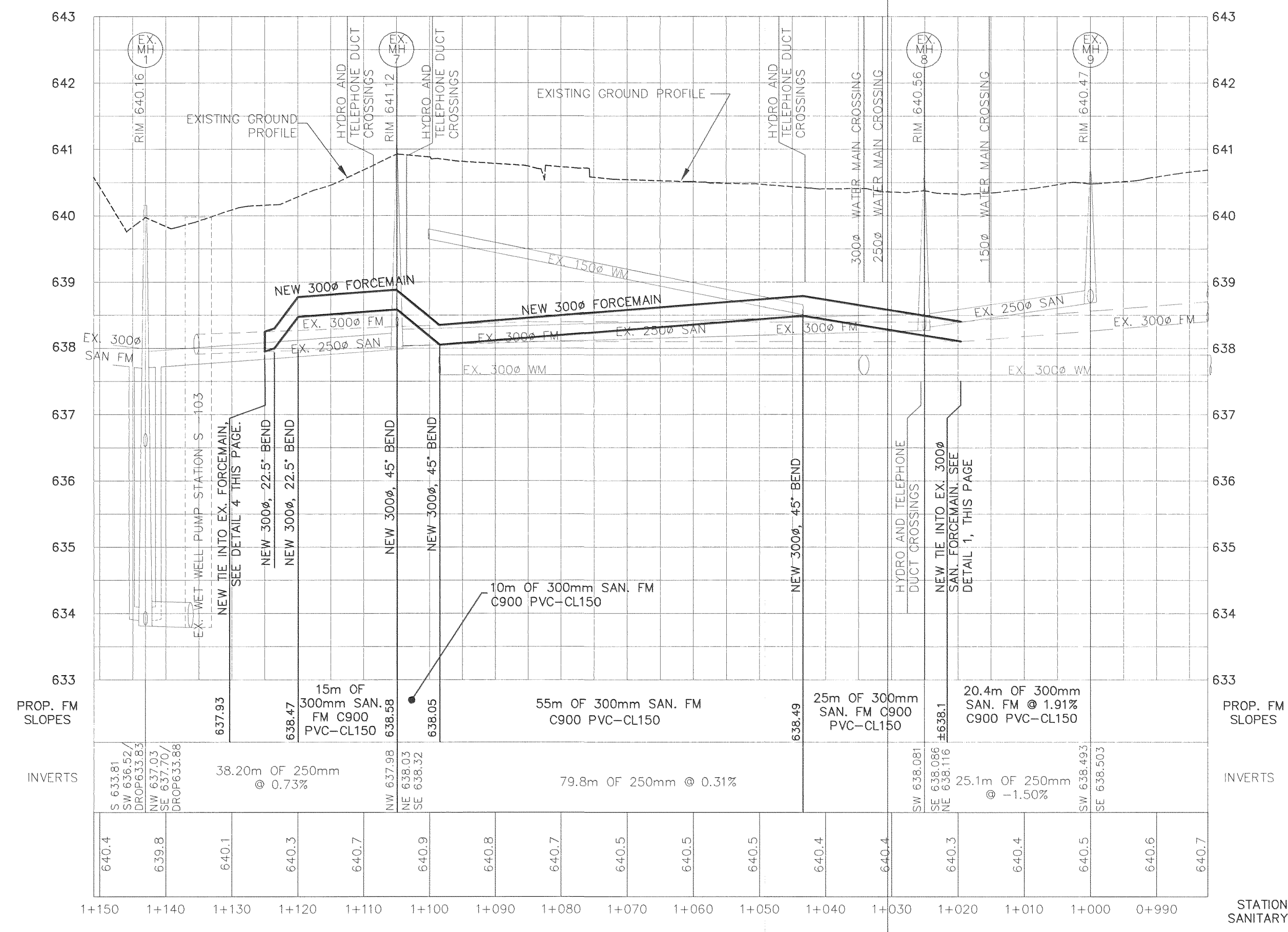


DETAIL 4 NOTE:

- 1) NEW LINE & LATERAL ARE ON TOP OF OLD FORCEMAIN.
- 2) VALVE FOR FUTURE NEW STATION IS ABOVE GRAVITY LINE FEEDING INTO MANHOLE WHICH FEEDS NEW STATION.

SANITARY FORCEMAIN TABLE OF FITTINGS

①	SEE DETAIL 1, ABOVE Wye has been replaced with 45 Deg. bend already.
②	1-300° T x T 45° BEND C/W THRUST BLOCK
③	2-300° T x T 45° BEND C/W THRUST BLOCK
④	SEE DETAIL 4, ABOVE



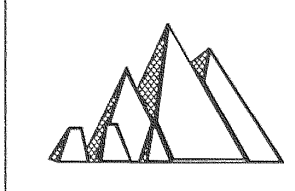
RESORT MUNICIPALITY OF WHISTLER
 PUBLIC WORKS DRAWING REVIEW

Correct and re-submit
 Approved for construction as noted
 As-builts accepted

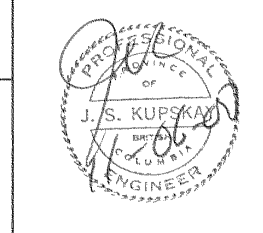
Signature: [Signature]
 Date: JULY 12/00

No.	Date	AS CONSTRUCTED INFO	ISS: JSK
1	JAN 2000	Revision	Dr. CH

PARAGON ENGINEERING LTD.
 12442-205 STREET, MAPLE RIDGE, B.C. V2X 0A8
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RESORT MUNICIPALITY OF WHISTLER
 WHISTLER, B.C.
**CRABAPPLE DRIVE
 SANITARY REPLACEMENT**
 WHISTLER, B.C.



Scale: 1:500 HORIZ. 1:50 VERT.	Mun. Proj. No.	Dwg. No.
Drawn: I.S.S.I.	Mun. Dwg. No.	1
Designed: JSK	Job No. 99027	Of
P.W. P.U.	Date JULY 1999	Revision 1
Approved:		

05095

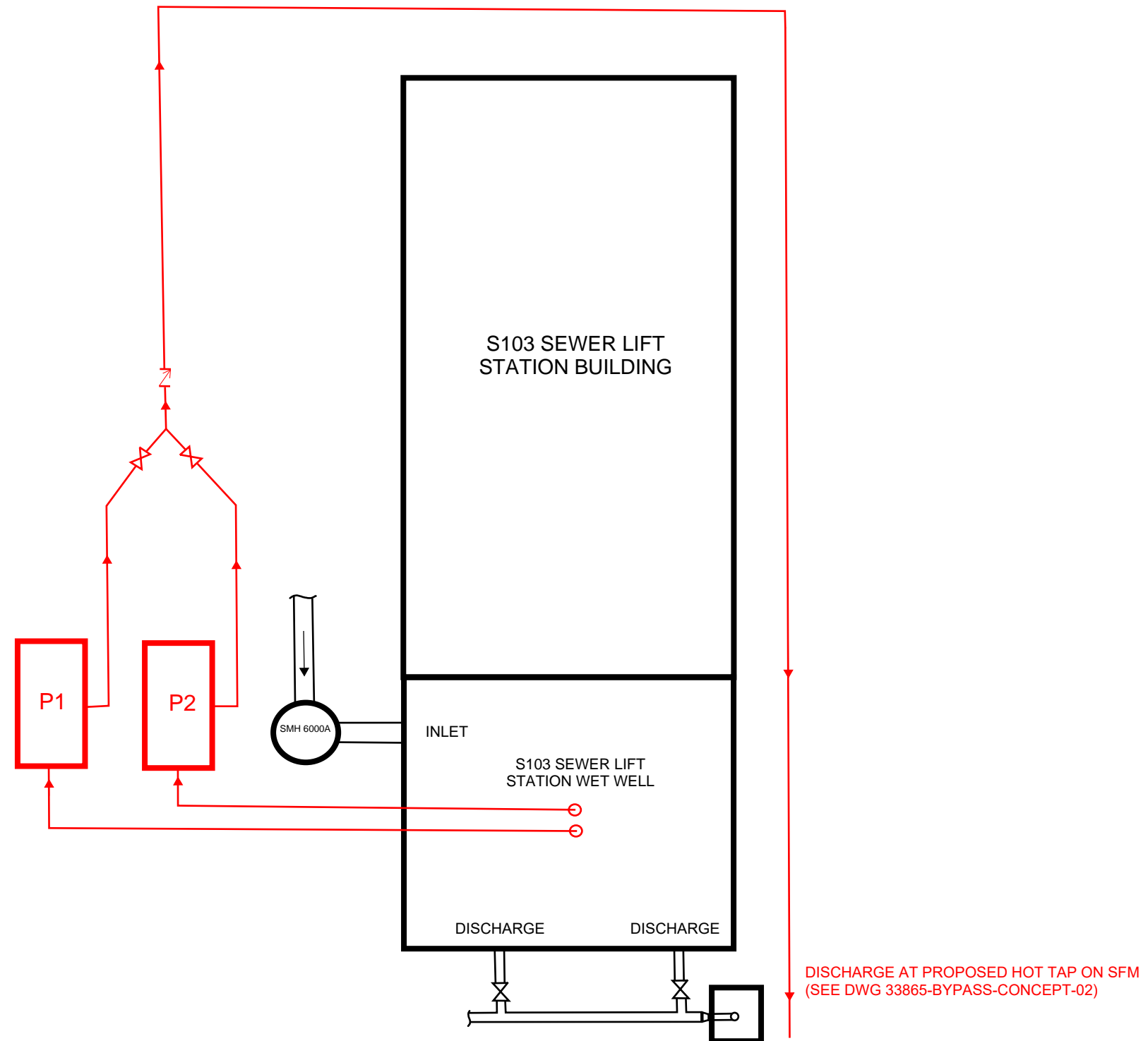
JUN 1 2000

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Appendix B
Sanitary Bypass
Concept Plans

NOTES:

1. BYPASS FOR ILLUSTRATIVE PURPOSES ONLY.
CONTRACTOR TO PREPARE BYPASS PLAN FOR
REVIEW AND APPROVAL BY ISL/RMOW.



**CRABAPPLE SANITARY SEWER LIFT
STATION CONCEPT BYPASS PLAN**

	DWG. NO.	33865-BYPASS-CONCEPT-01
	DATE	2024-11-22
	REVISION	1



NOTES:
 1. BYPASS FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR TO PREPARE BYPASS PLAN FOR REVIEW AND APPROVAL BY ISL/RMOW.

CONTINUATION FROM DWG 33865-BYPASS-CONCEPT-01

300mmØ VICTAULIC STEEL OR APPROVED EQUIVALENT RIGID BYPASS PIPE

HOT TAP/LINE STOP ASSEMBLY

CRABAPPLE SANITARY SEWER LIFT STATION CONCEPT BYPASS PLAN

ISL	DWG. NO.	33865-BYPASS-CONCEPT-02
	DATE	2024-11-22
	REVISION	1

Appendix C
Sewer Lift Station
Record Drawings

CLIENT : RESORT MUNICIPALITY OF WHISTLER
 4325 BLACKCOMB WAY
 WHISTLER B.C. V0N 1B0

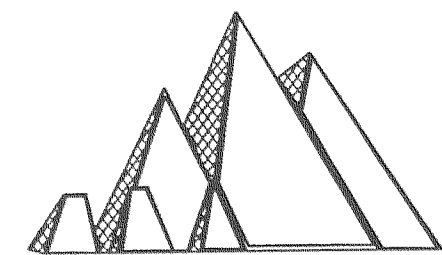
TEL.(604) 932-5535
 FAX.(604) 932-6734



PROJECT : SANITARY LIFT
 STATION S-103
 RECONSTRUCTION

LOCATION : 6671 CRABAPPLE DRIVE
 WHISTLER, B.C.

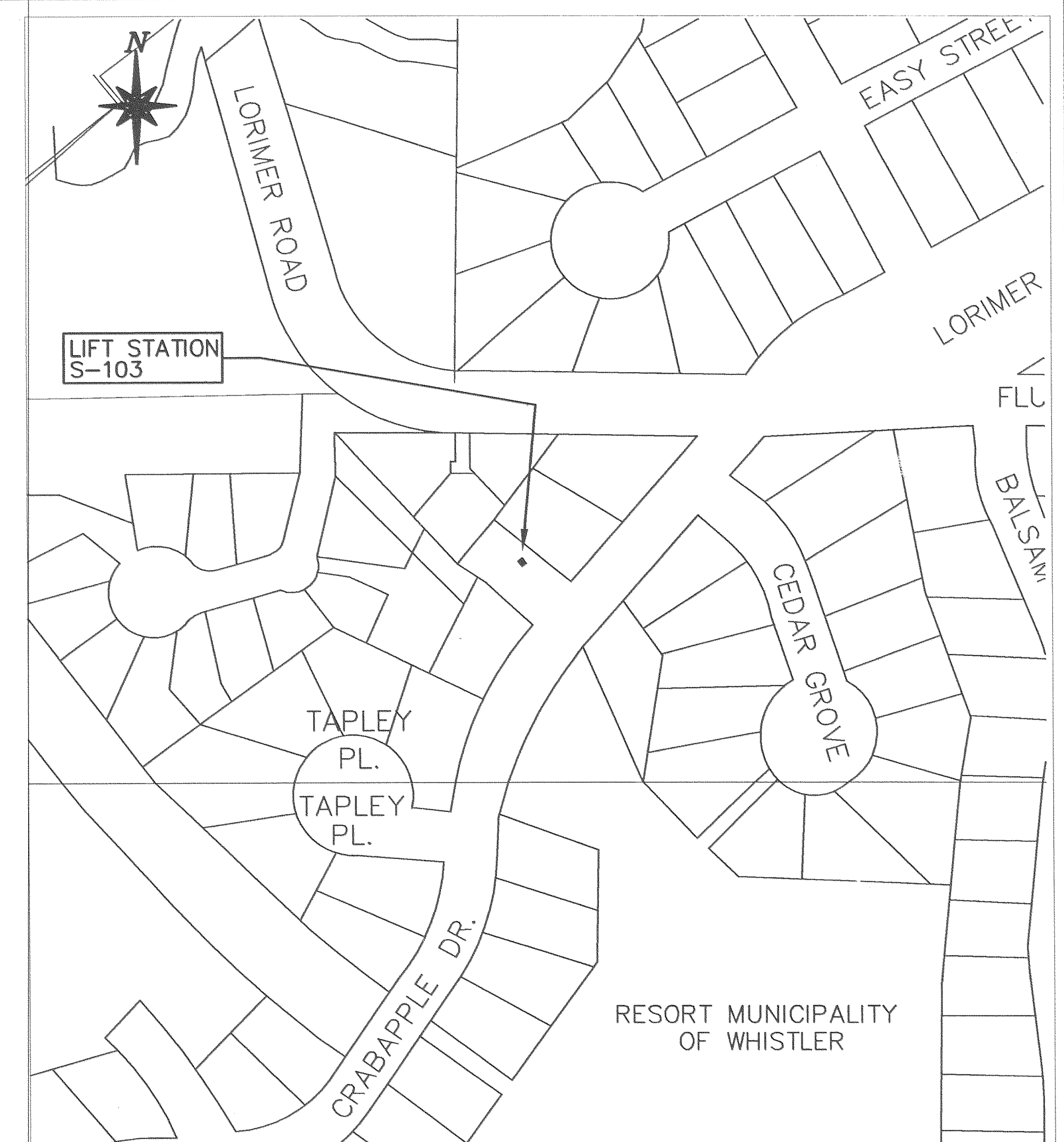
CONSULTANT :



PARAGON ENGINEERING LTD.

12442-205 STREET, MAPLE RIDGE, B.C. V2X 0A8

TELEPHONE:(604) 465-3096 FAX:(604) 465-3055



LOCATION PLAN
 N.T.S.

DRAWING INDEX	
SHEET TITLE	SHEET No.
COVER PAGE, LOCATION PLAN & DRAWING INDEX	
CIVIL WORKS DETAILS - EXISTING	2000-13-C1
CIVIL WORKS DETAILS - PROPOSED	2000-13-C2
GENERAL AND CONSTRUCTION NOTES	2000-13-C3
MECHANICAL DETAILS OF GENERATOR AND BUILDING	2000-13-P1
WETWELL AND MECHANICAL DETAILS	2000-13-P2
STRUCTURAL - GENERAL NOTES	00060-S1
STRUCTURAL - ELEVATIONS	00060-S2
STRUCTURAL - PLAN SECTION 1-1	00060-S3
STRUCTURAL - PRECAST CONCRETE WETWELL, PLATFORM SECTIONS	00060-S4
STRUCTURAL - CAST IN PLACE CONCRETE WETWELL, PLATFORM SECTIONS	00060-S4a
STRUCTURAL - ROOF PLAN DETAILS	00060-S5
STRUCTURAL - ARCHITECTURAL & STRUCTURAL SECTIONS & DETAILS	00060-S6
ELECTRICAL DISTRIBUTION	P-0-014-E1
ELECTRICAL ELEMENTARY	P-0-014-E2
ELECTRICAL CONTROL WIRING	P-0-014-E3

PARAGON

ALL-SPAN

L.R. PEARSON

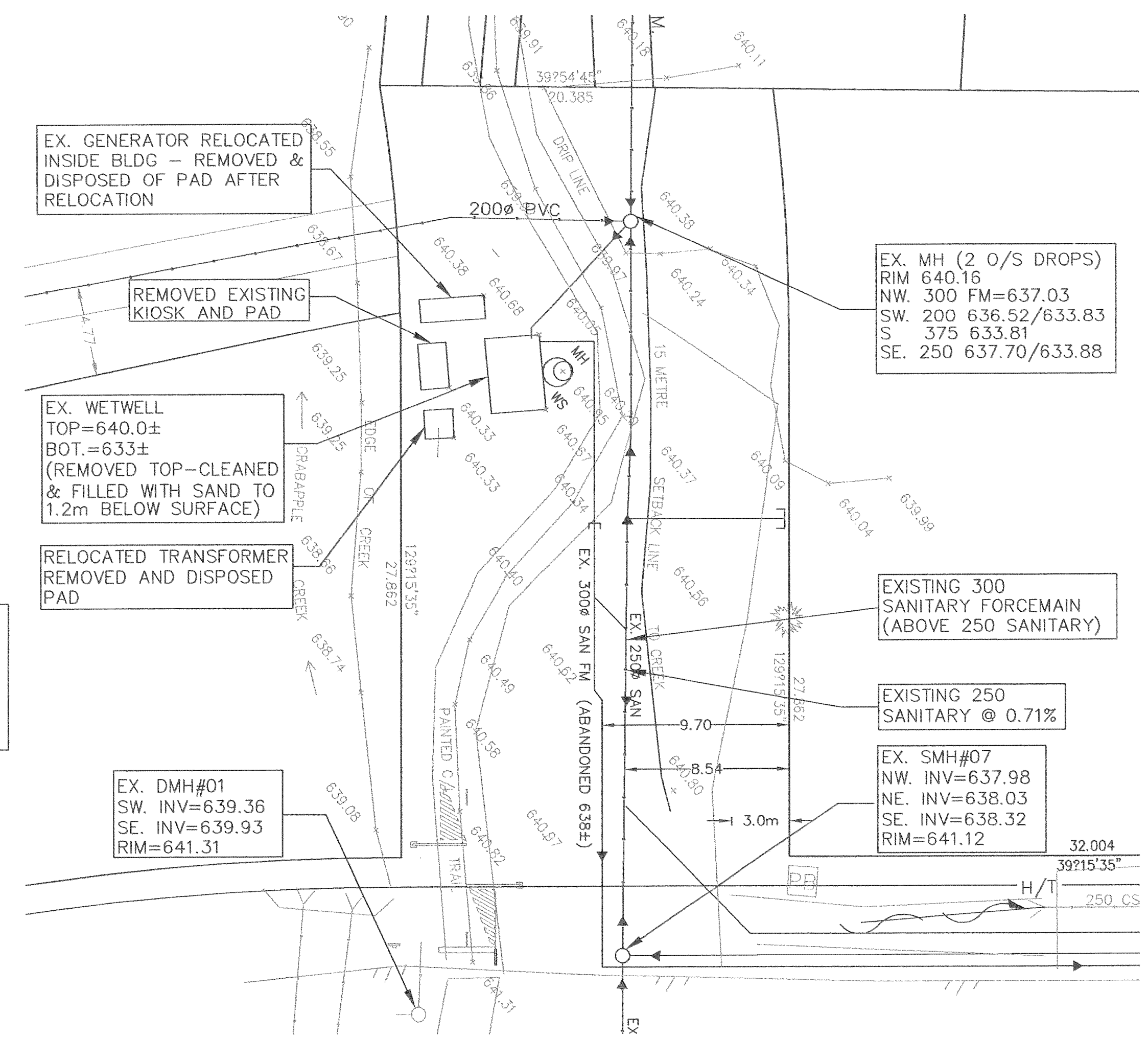
Paragon No. 2000-13

RECORD DRAWINGS

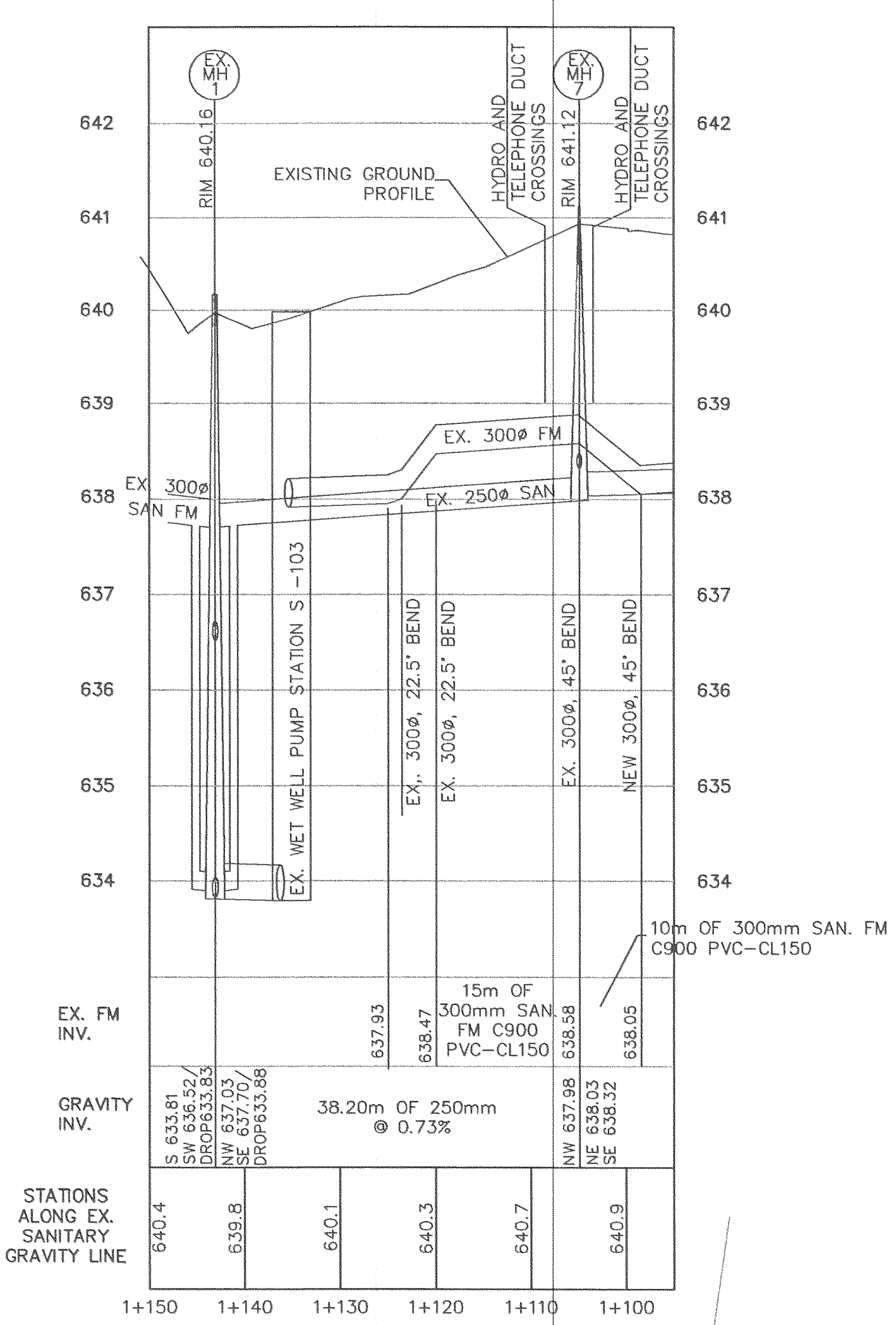


56052-1

S6052-2



EXISTING SITE PLAN
SCALE: 1:200

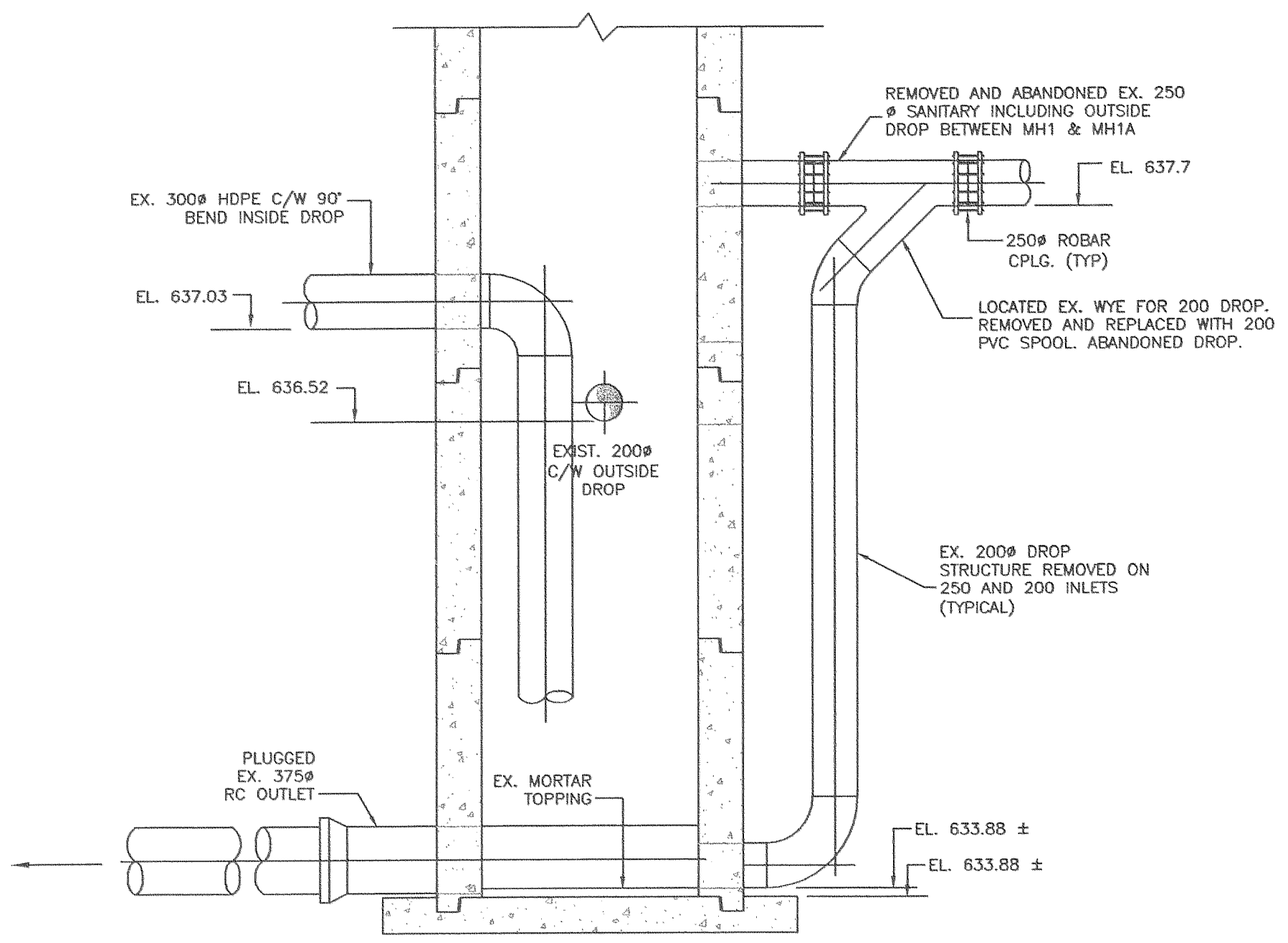


EXISTING SITE PROFILE
SCALE: 1:500H 1:50V

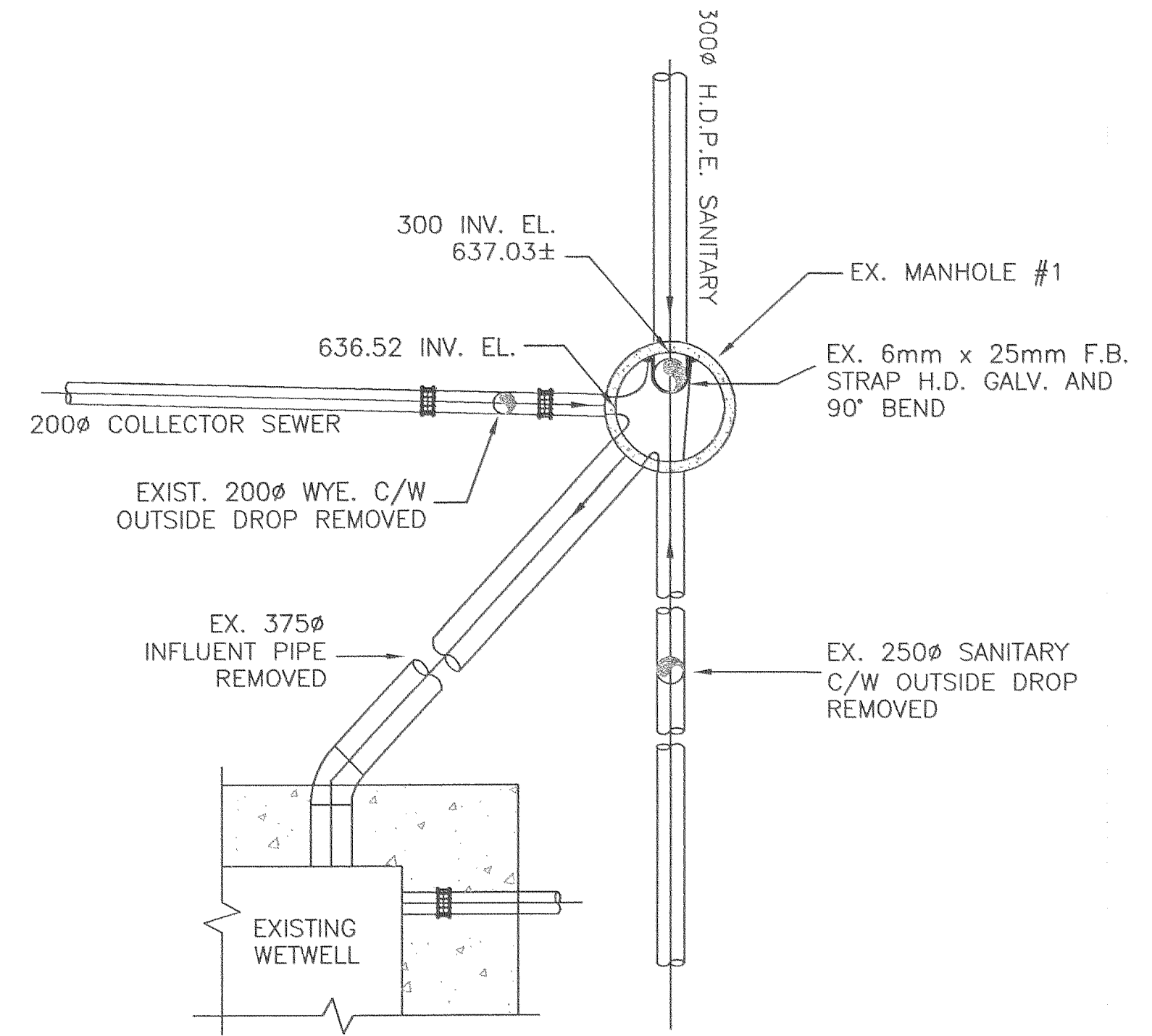
ENGINEERING LEGEND

EXISTING	PROPOSED	
[Symbol]	[Symbol]	GRAVEL ROAD/SURFACE TREATMENT
[Symbol]	[Symbol]	PAVEMENT
[Symbol]	[Symbol]	CURBS
[Symbol]	[Symbol]	SIDEWALK
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	SANITARY FORCE MAIN
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	DITCH/DRAINAGE SWALE
[Symbol]	[Symbol]	CULVERT(c/w HEADWALLS)
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	VALVE
[Symbol]	[Symbol]	TYPICAL BLOW-OFF
[Symbol]	[Symbol]	AIR VALVE
[Symbol]	[Symbol]	B.C. TEL./HYDRO DUCT
[Symbol]	[Symbol]	GAS MAIN
[Symbol]	[Symbol]	LAWN BASIN - 300Ø OR 450Ø C/W SUMP x 500mm DEEP MMCD S12 TYPE 1
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN
[Symbol]	[Symbol]	CB MANHOLE
[Symbol]	[Symbol]	BENCH MARK - GEODETIC DATUM
[Symbol]	[Symbol]	UTILITY POLE
[Symbol]	[Symbol]	ORNAMENTAL STREET LIGHT
[Symbol]	[Symbol]	UTILITY POLE WITH S.L.
[Symbol]	[Symbol]	POST TOP STREETLIGHT

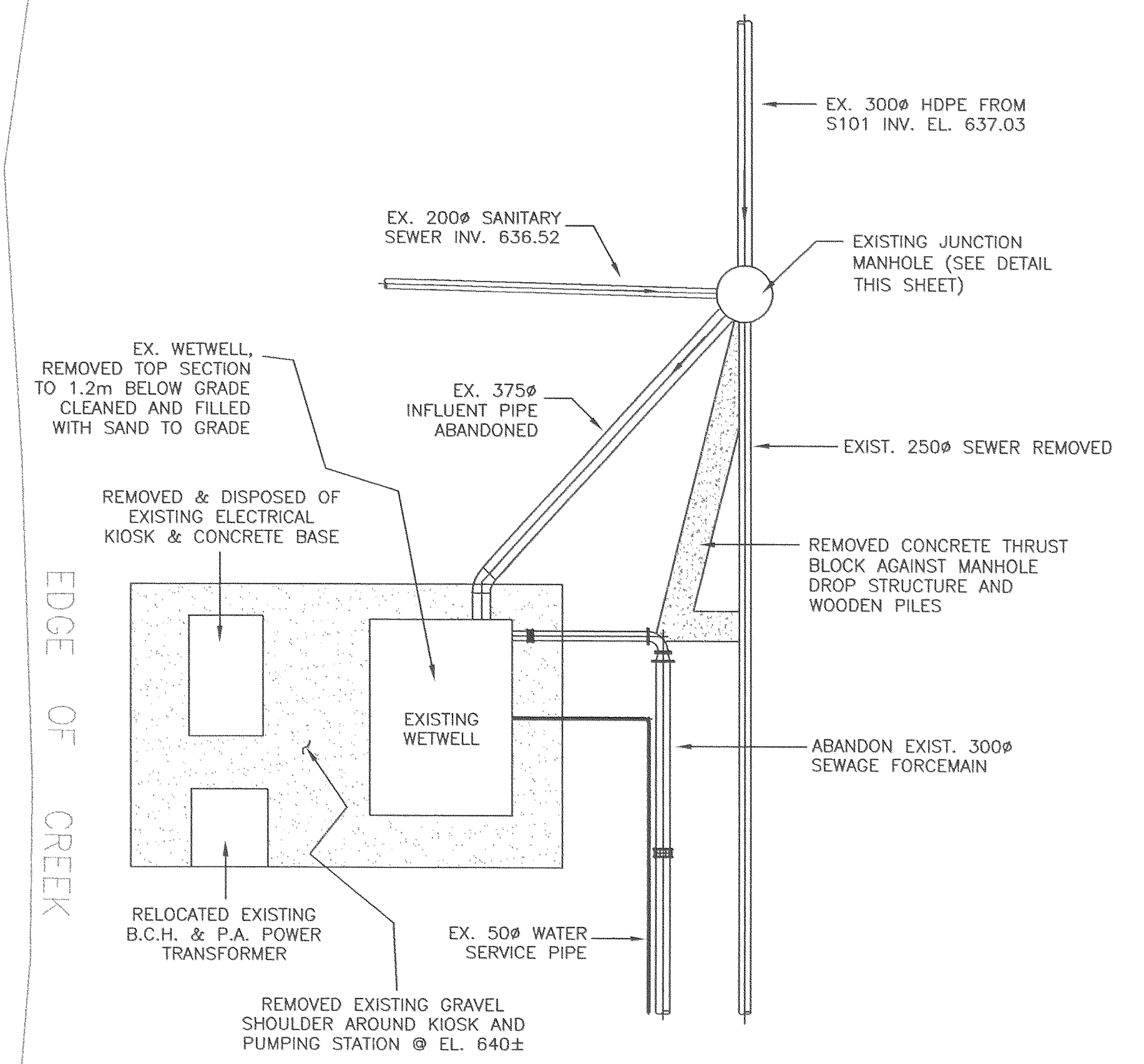
NOTE:
REMOVED KIOSK AND TRANSFORMER PADS, REGRADED, AND RESTORED SURFACE AFTER RELOCATION.



MANHOLE ELEVATION DETAILS
SCALE: 1:30



EXISTING JUNCTION MANHOLE DETAILS
SCALE: 1:50



WETWELL & PIPE LAYOUT
SCALE: 1:100

No	Date	Revision	Dr	Ch
2	2001.01.17	RECORD DRAWINGS	AYK	JSK
1	2000.06.05	ISSUED FOR TENDER	MLC	JSK

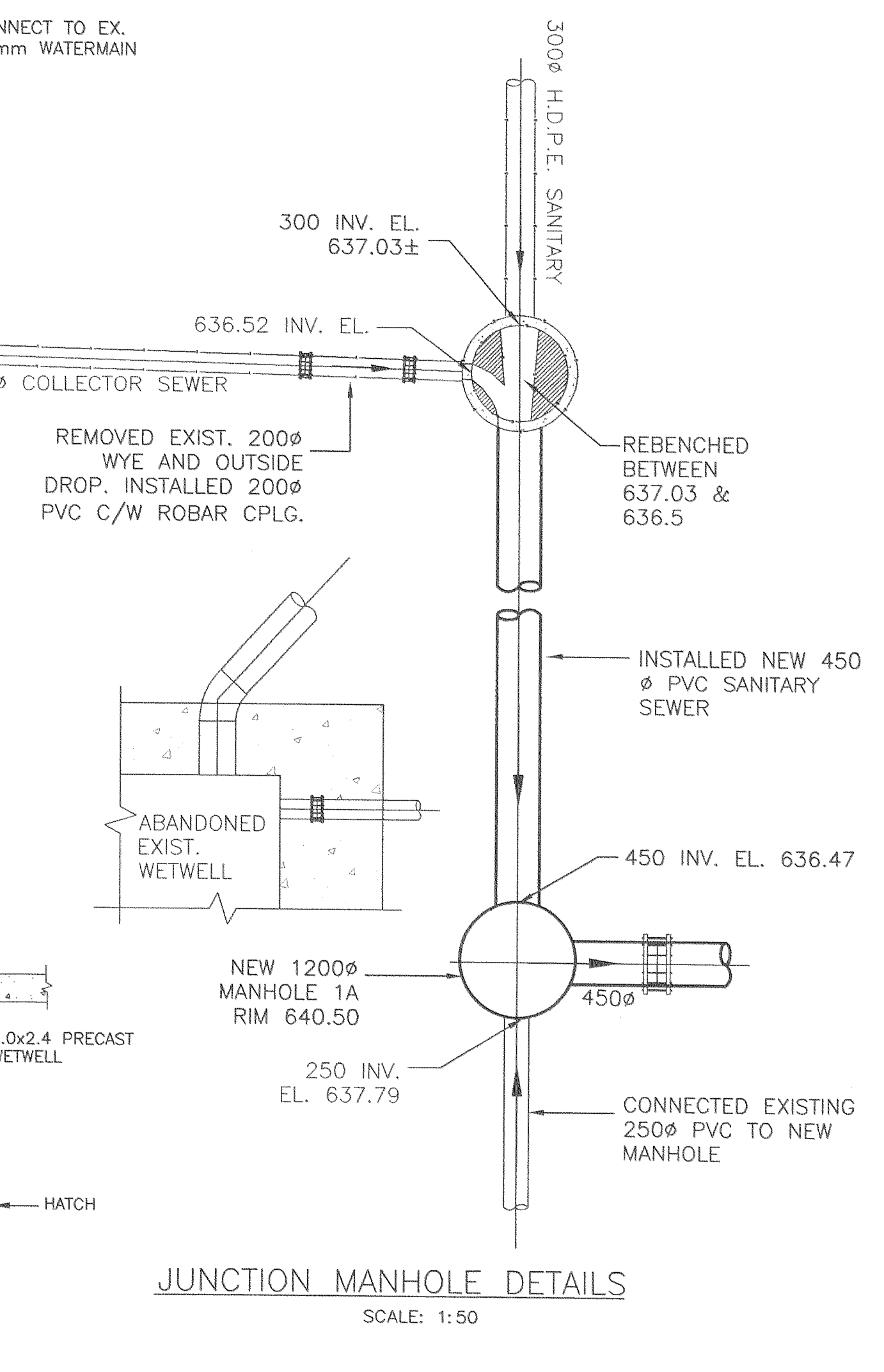
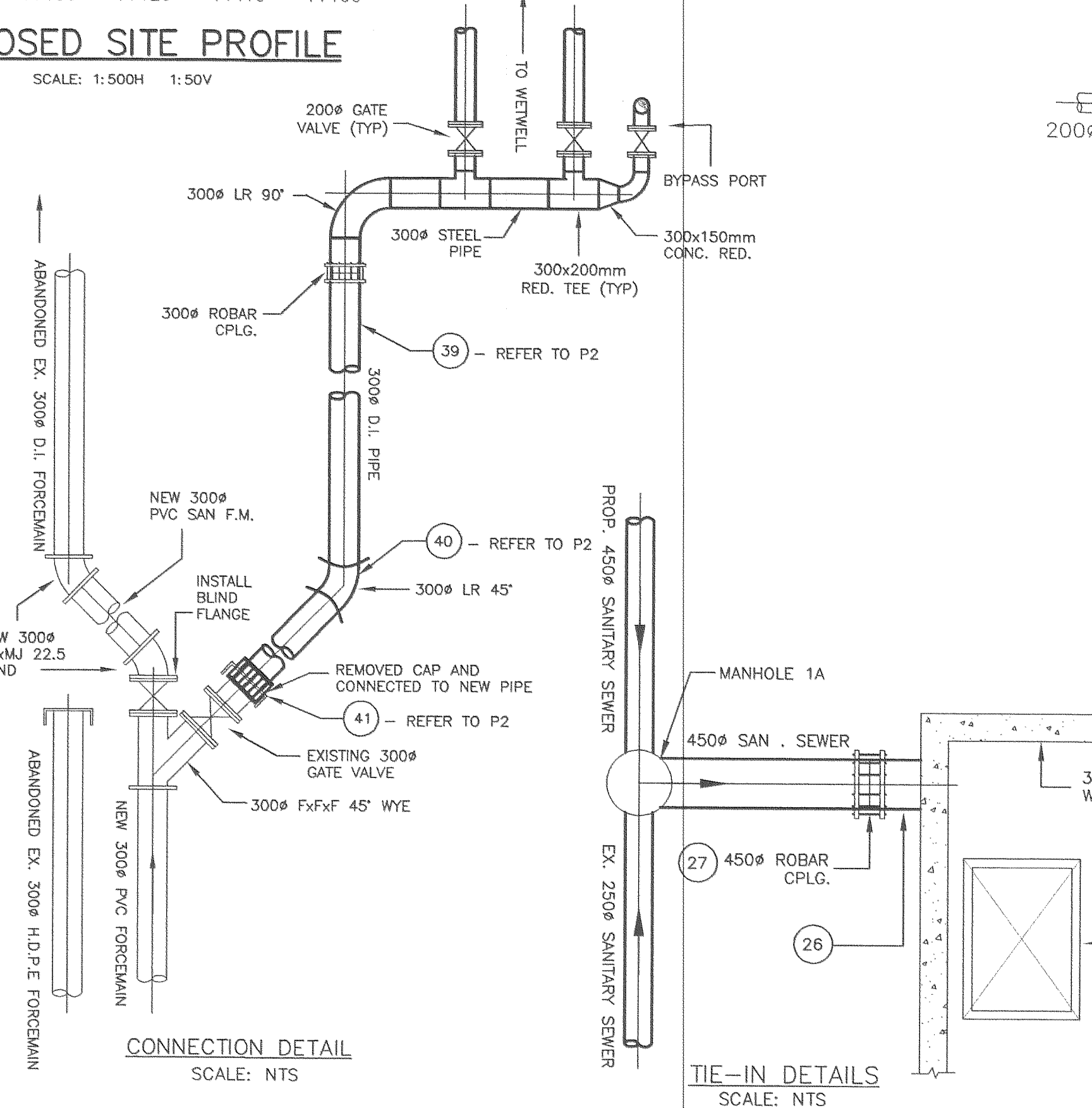
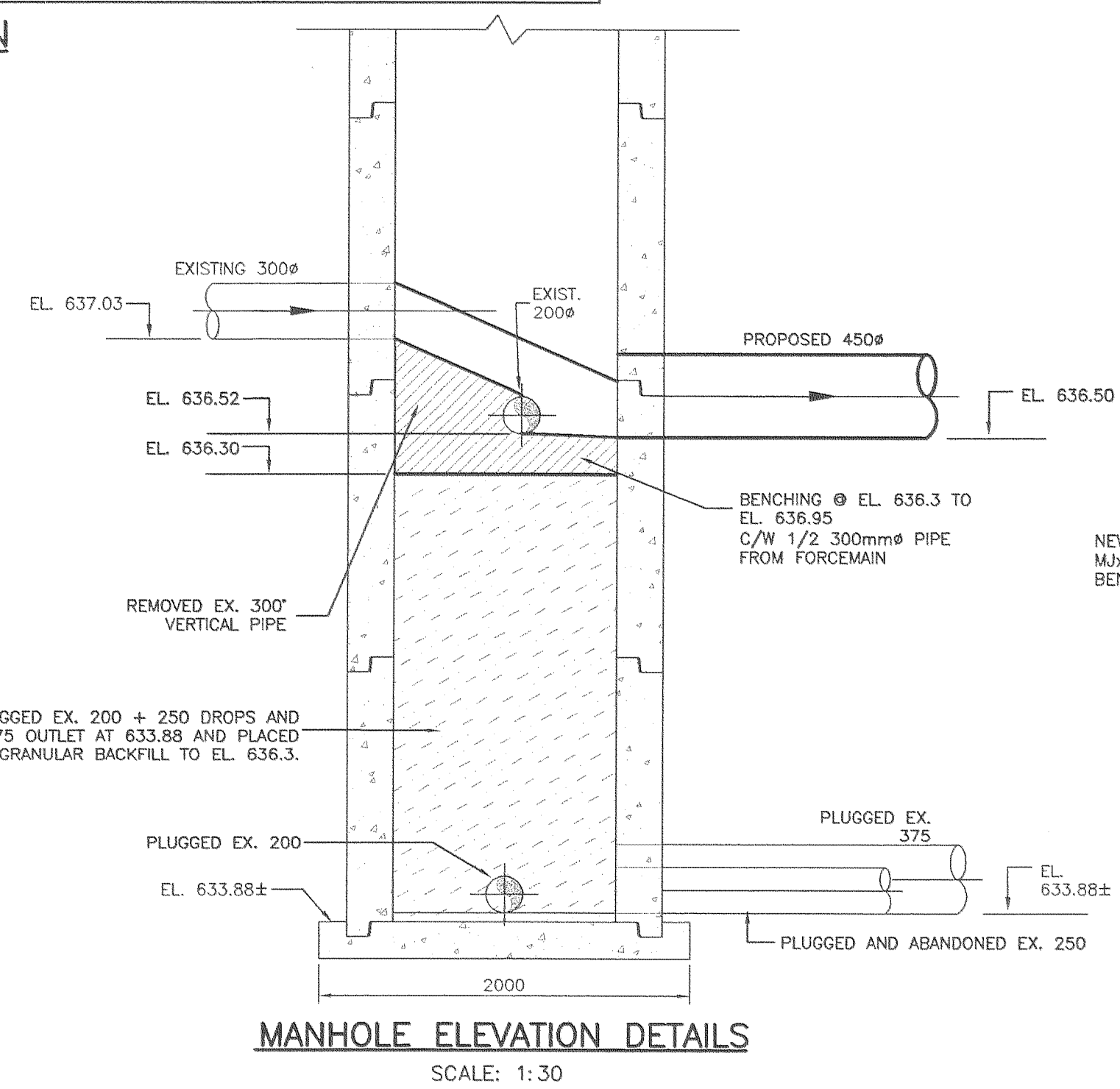
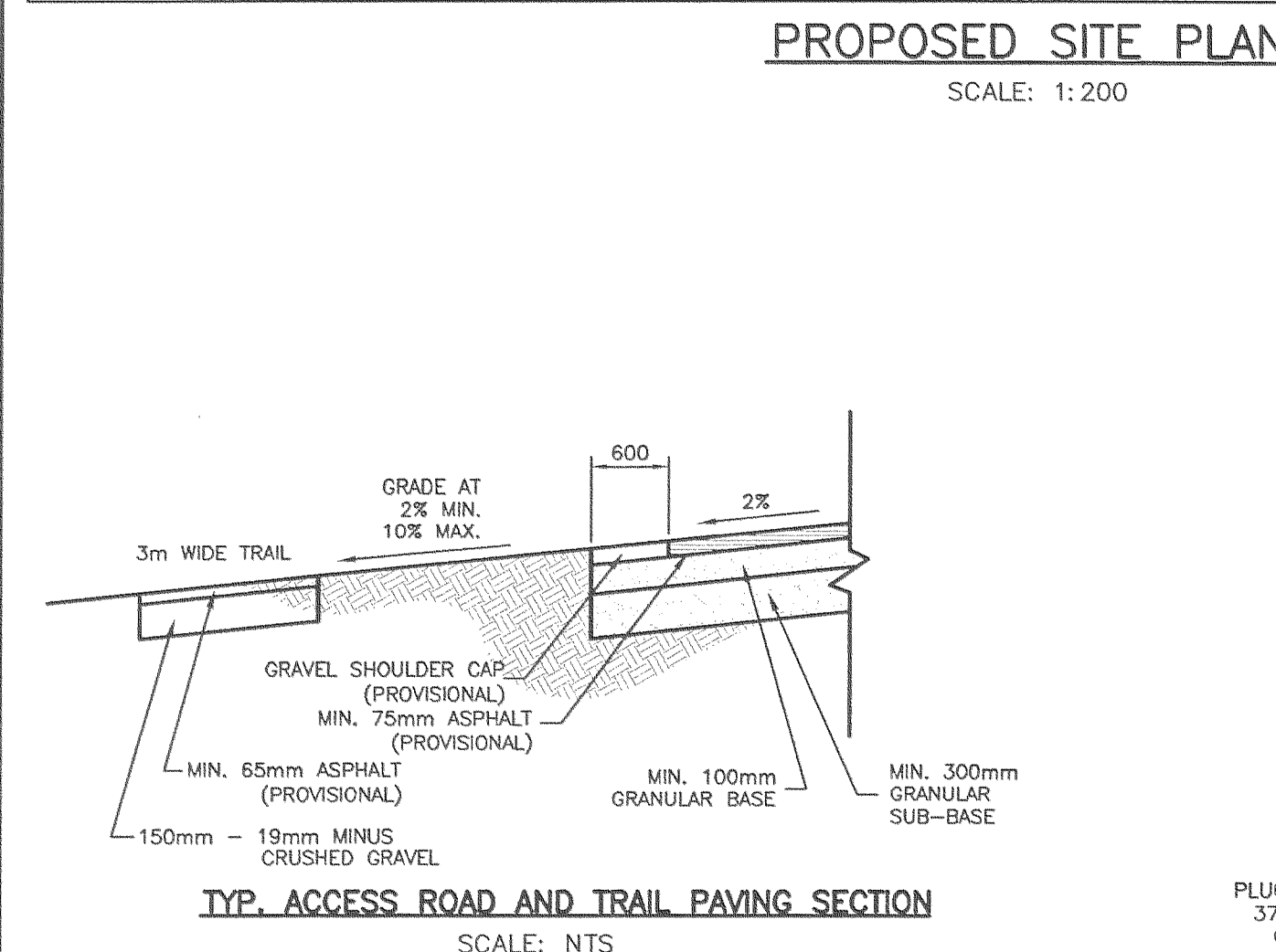
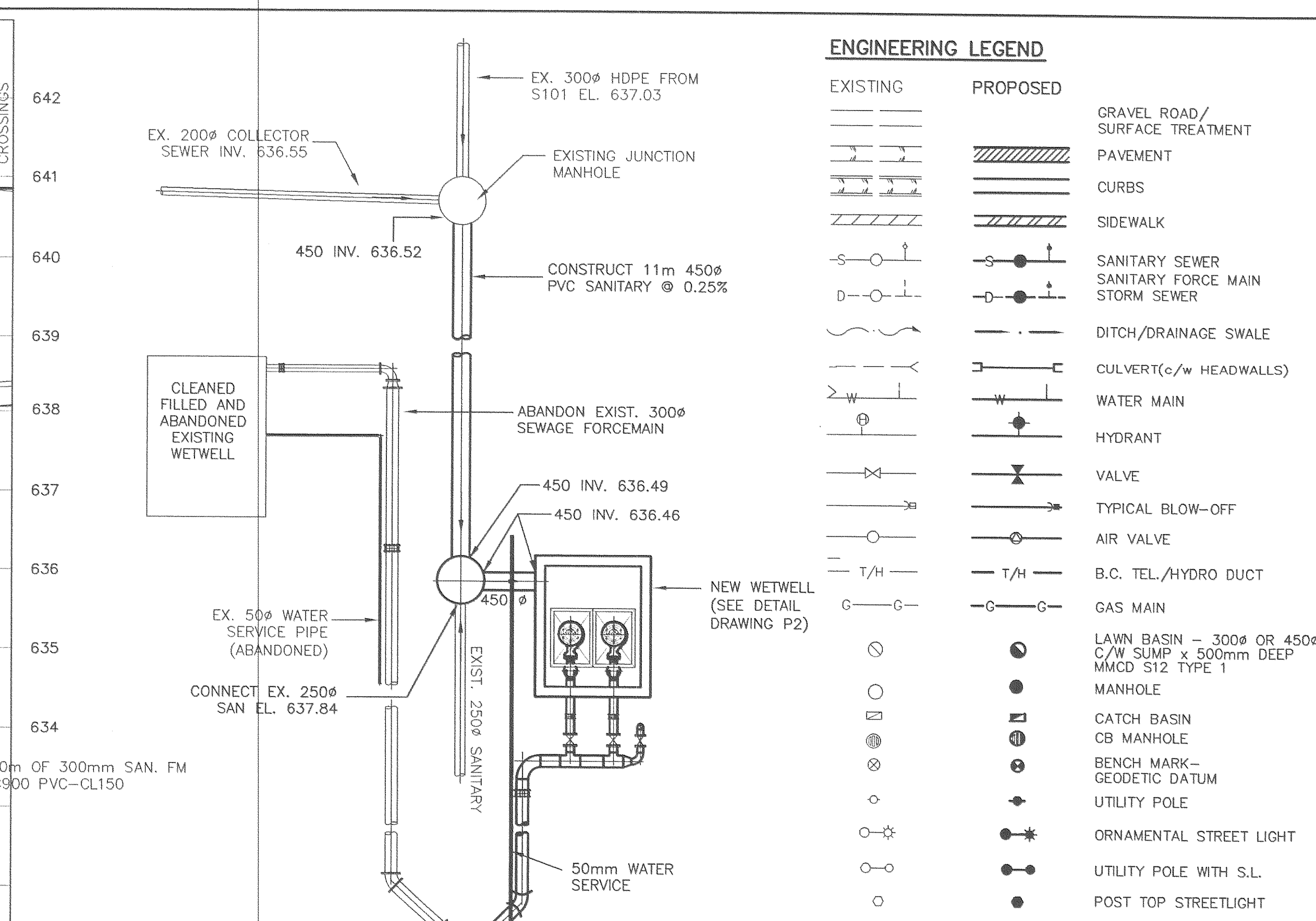
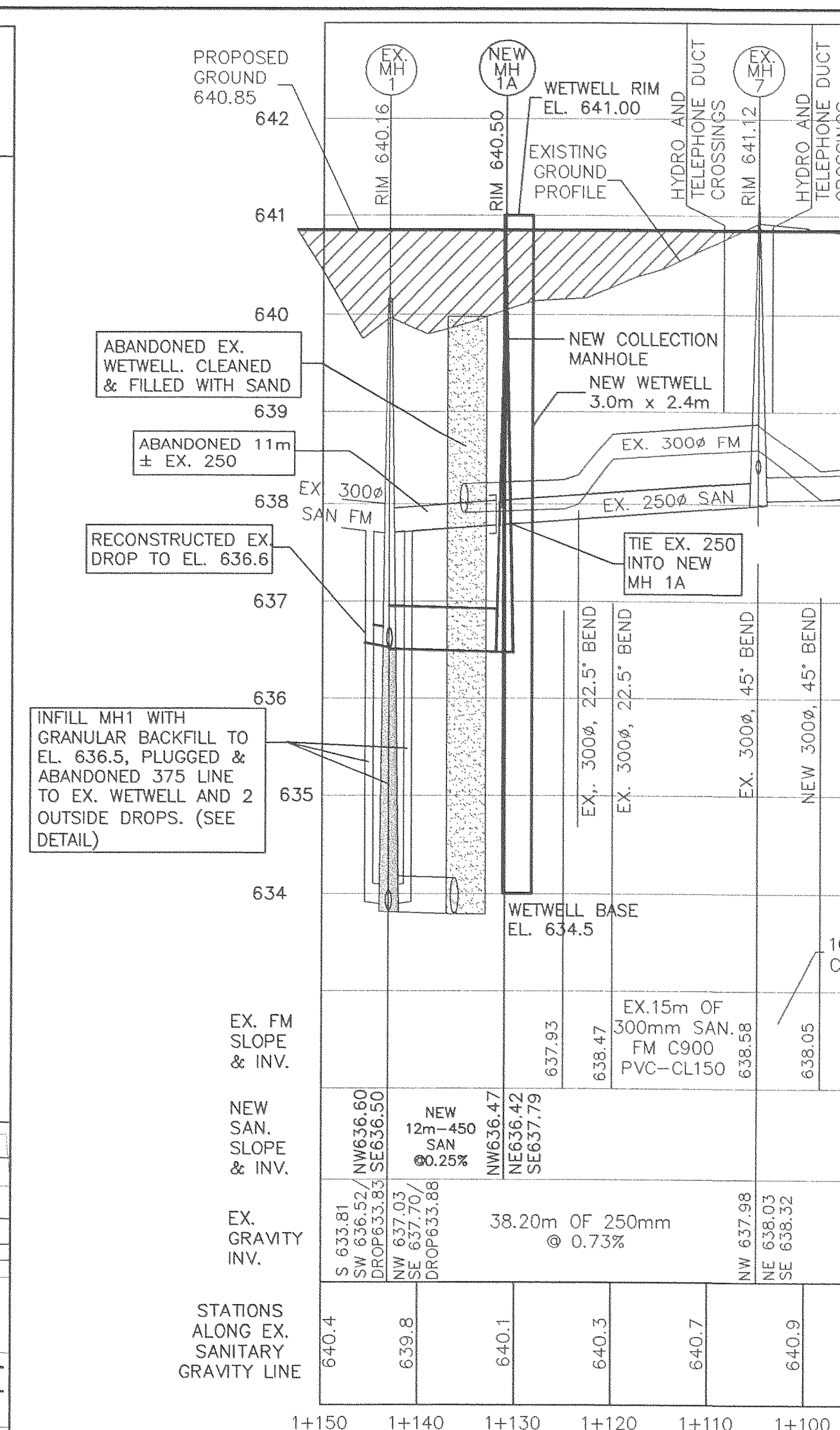
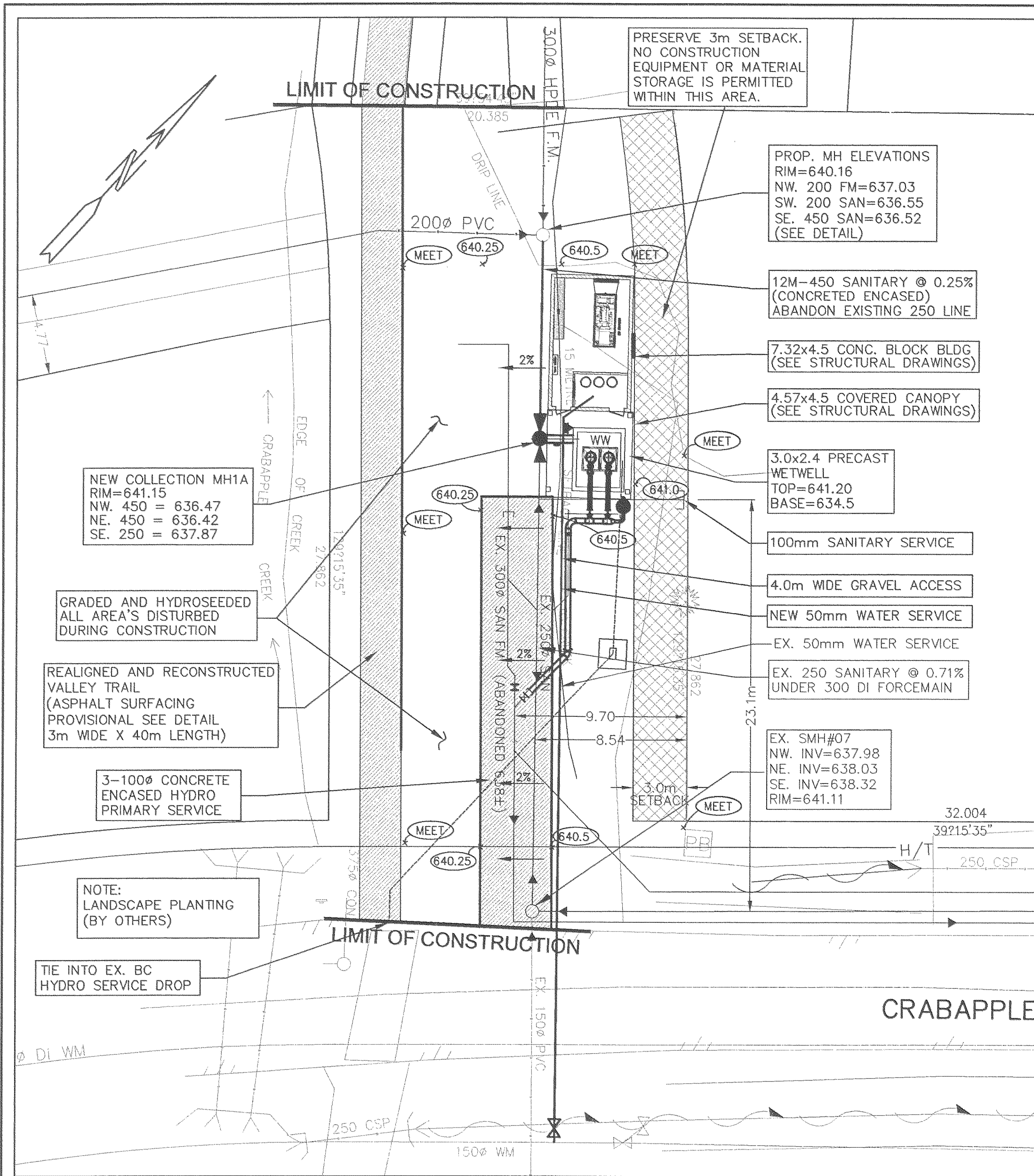
PARAGON ENGINEERING LTD.
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TELEPHONE:(604) 465-3096 FAX:(604) 465-3055

RESORT MUNICIPALITY OF WHISTLER
SANITARY LIFT STATION S-103 RECONSTRUCTION
6671 CRABAPPLE DRIVE
CIVIL WORKS DETAILS - EXISTING

Scale: AS NOTED	Mun. Proj. No.	Dwg. No.
Drawn: M.L.C.	Mun. Dwg. No.	C1
Designed: J.S.K.	Job No. 2000-13	
P.W. P.U.	Date JUN. 05, 2000	Revision 2
Approved:		destroy all prints bearing previous number

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S6052-3



No.	Date	Revision	Dr.	Ch.
2	2000.11.15	RECORD DRAWING	AYK	JSK
1	2000.06.05	ISSUED FOR TENDER	MLC	JSK

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TELEPHONE:(604) 465-3096 FAX:(604) 465-3055

RESORT MUNICIPALITY OF WHISTLER
SANITARY LIFT STATION S-103 RECONSTRUCTION
6671 CRABAPPLE DRIVE
CIVIL WORKS DETAILS - PROPOSED

Scale: AS NOTED	Mun. Proj. No.	Dwg. No.
Drawn: M.L.C.	Mun. Dwg. No.	C2
Designed: J.S.K.	Job No. 2000-13	
P.W. P.U.	Date JUN 05, 2000	Revision 2
Approved:		destroy all prints bearing previous number

F:\Projects\2000\2000-13 pump station s-103\AS CONSTRUCTED DWS\2000-13-C162.dwg Tue Jun 23 09:33:24 2001 Paragon Engineering

A. GENERAL NOTES:

- CONSTRUCTION IS TO BE IN ACCORDANCE WITH APPLICABLE MUNICIPAL MASTER CONSTRUCTION DOCUMENTS AND STANDARD DETAIL DRAWINGS (MMCD 1996).
- TRAFFIC CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR AND THE CONTRACTOR SHALL COMPLY WITH SECTION 52 OF THE WORKER'S COMPENSATION BOARD OF B.C. AND THE INSTRUCTIONS OUTLINED ON THE CITY ROAD AND RIGHT-OF-WAY PERMIT AND TRAFFIC OBSTRUCTION PERMIT ISSUED BY THE MUNICIPALITY.

THE CONTRACTOR IS TO HAVE, ON SITE, A COPY OF THE CURRENT "B.C. TRAFFIC CONTROL MANUAL FOR WORK ON ROADWAYS" AS PUBLISHED BY THE MINISTRY OF TRANSPORTATION AND HIGHWAYS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FROM OBTAINING ALL PERMITS FOR WORK WITHIN THE MUNICIPAL ROAD ALLOWANCE.
- WHERE UTILITY OR SERVICE CROSSINGS ARE REQUIRED ACROSS EXISTING PAVEMENTS, AN UNDERGROUND METHOD OF INSTALLATION IS REQUIRED UNLESS SPECIAL APPROVAL IS GIVEN FROM THE MUNICIPALITY FOR AN OPEN CUT OPERATION. ALL EXISTING PAVEMENTS, BOULEVARDS, DRIVEWAYS, ETC. ARE TO BE REINSTATED TO ORIGINAL OR BETTER CONDITION AND IN ACCORDANCE WITH SPECIFICATIONS.
- WHERE INFILLING OF EXISTING DITCHES IS REQUIRED OR WHERE SERVICES ARE CONSTRUCTED IN A FILL MATERIAL IS TO BE IN ACCORDANCE WITH SPECIFICATIONS AND IS TO BE COMPACTED TO 95% OF MODIFIED PROCTOR DENSITY.
- DRIVEWAY BOULEVARD CROSSINGS TO EACH OF THE PROPOSED LOTS ARE TO BE INSTALLED IN ACCORDANCE WITH THE MUNICIPAL STANDARD DRAWINGS.
- RESIDENTS DIRECTLY AFFECTED BY CONSTRUCTION OF THIS PROJECT MUST BE GIVEN 48 HOUR WRITTEN NOTICE OF THE START OF THE CONSTRUCTION.
- THE CONTRACTOR SHALL FACILITATE AND SUPPLY SAFETY EQUIPMENT REQUIRED UNDER THE WCB REGULATIONS FOR THE MUNICIPALITY OR ITS REPRESENTATIVE OR THE ENGINEER OF RECORD TO INSPECT THE SANITARY SEWER AND STORM SEWER SYSTEMS. THE EQUIPMENT SHALL BE SUPPLIED UNTIL SUCH TIME AS A CERTIFICATE OF COMPLETION IS ISSUED BY THE MUNICIPALITY.
- CONTRACTOR IS TO VERIFY THE LOCATION AND ELEVATION OF ALL PIPES, OR OTHER UTILITY CROSSINGS, PRIOR TO CONSTRUCTION AND SHALL NOTIFY THE ENGINEER OF RECORD OF ANY CONFLICTS A MINIMUM OF 48 HRS. PRIOR TO CONSTRUCTION.

EXISTING UTILITY INFORMATION WAS TAKEN FROM SURVEY AND RECORD DRAWINGS. ALL UTILITY LOCATIONS AND ELEVATIONS TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
- NO PERSON TO ENTER OR PLACE ANY OBJECT IN ANY POWER OR TELEPHONE VAULT WITHOUT THE AUTHORIZATION FROM THE PROPER UTILITY DEPARTMENT.
- ADJUST ALL VALVES AND MANHOLES TO FINISHED DESIGN GRADE.
- TRENCH BACK FILL AND SURFACE RESTORATION TO COMPLY WITH STANDARD DETAIL DRAWINGS G4 AND G5 OF THE MASTER MUNICIPAL SPECIFICATIONS, WITH THE FOLLOWING PERMANENT RESTORED PAVEMENT STRUCTURE UNLESS OTHERWISE NOTED:
65mm ASPHALTIC CONCRETE
100mm BASE COURSE(MMS SEC. 02233)
200mm SUBBASE (MMS SEC. 02234)
- ALL PAVEMENT REMOVALS TO BE NEATLY SAW CUT.
- INSTALL TEMPORARY PUMPS OR OTHER DEWATERING SYSTEMS AS NECESSARY TO CONTROL WATER INFILX INTO EXCAVATIONS.
- MAINTAIN ACCESS OR PROVIDE TEMPORARY ACCESS TO ALL PROPERTIES DURING CONSTRUCTION.
- A MINIMUM OF 72 HOURS NOTICE TO BE GIVEN TO GOVERNING AUTHORITIES PRIOR TO COMMENCING WORK ON ROAD RIGHTS-OF-WAY.
- CONTRACTOR TO ENSURE THAT MONUMENTS ARE NOT DISTURBED DURING CONSTRUCTION. (ANY MONUMENT IN DANGER OF DISTURBANCE TO BE REFERENCED BY AND, IF DISTURBED, BE REPLACED BY A B.C.L.S. AT THE CONTRACTOR'S EXPENSE).

B. ROADWORK NOTES:

- EXISTING VALVE BOXES, MANHOLES, ETC. WITHIN THE ROAD ALLOWANCE MUST BE ADJUSTED TO SUIT THE PROPOSED FINISHED GRADE.
- ALL LOOSE, ORGANIC, OTHERWISE DELETERIOUS MATERIALS OR SOFT SPOT(S) ARE TO BE EXCAVATED AND REMOVED FROM THE ROADWAY AND UTILITY TRENCHES IN THE ROADWAY AS PER GEOTECHNICAL CONSULTANT'S REPORT OR AS DIRECTED BY THE MUNICIPALITY.

C. SANITARY SEWER AND STORM SEWER NOTES:

- ALL SERVICE CONNECTIONS SHALL BE MADE TO THE MAIN WHEREVER POSSIBLE. SHOULD A CONNECTION HAVE TO BE MADE TO A MANHOLE, THE CONNECTION INVERT SHALL BE AT THE SAME ELEVATION AS THE CROWN OF THE HIGHEST SEWER MAIN.
- ALL MANHOLES ARE TO BE MINIMUM OF 1050mm DIAMETER UNLESS OTHERWISE NOTED.
- ALL GRANULAR PIPE BEDDING SHALL BE EITHER TYPE 1 OR TYPE 2 ONLY AS PER THE SPECIFICATIONS.
- ALL PVC FORCEMAIN TO BE PVC SCH 40 ALL EMBEDMENT MATERIAL COMPACTED TO MINIMUM 95% MODIFIED PROCTOR DENSITY. BACK FILL IN LANDSCAPED AREAS NATIVE, COMPACTED TO 90%. TRENCHES IN ALL OTHER AREAS BACK FILLED WITH IMPORTED GRANULAR BASE PER MMS SECTION 02233. ALL BENDS TO BE COMPLETE WITH CONCRETE THRU BLOCKS. TESTING TO BE IN ACCORDANCE WITH MMS SECTION 02732-3.15-TEST PRESSURE = 100psi. ALLOWABLE LEAKAGE PER MMCD SECTION 02732-3.15.2.
- SANITARY SERVICES TO CROSS UNDER WATERMAIN WITH A MINIMUM 0.5m VERTICAL CLEARANCE.

- ASSURANCE OF PROTECTION OF WATERMAIN:
 - 0.5 METRES VERTICAL SEPARATION OF THE WATERMAIN FROM ANY STORM OR SANITARY SEWER - WITH THE WATERMAIN BEING ABOVE;
 - 3.0m HORIZONTAL SEPARATION OF THE WATERMAIN FROM ANY STORM OR SANITARY SEWER;
 WHERE THE ABOVE WAS NOT POSSIBLE THE FOLLOWING MEASURES TO BE TAKEN:
 - WHEN THE FORCEMAIN IS CLOSER THAN 0.5m TO THE WATERMAIN BUT ABOVE THE WATERMAIN, THE FORCEMAIN TO BE LAID IN SUCH A MANNER THAT CROSSING IS MADE MIDWAY BETWEEN JOINTS ON A FULL LENGTH OF FORCEMAIN.
 - WHEN THE FORCEMAIN IS BENEATH THE WATERMAIN, TO HAVE A MINIMUM 300mm SEPARATION. CROSSINGS TO BE MADE MIDWAY ON A FULL LENGTH OF FORCEMAIN PIPE.

D. WATER WORKS NOTES:

- THE DEVELOPER SHALL SUPPLY ALL MATERIALS AND FITTINGS REQUIRED FOR THE TIE-IN OF THE NEW WATER MAINS BY THE MUNICIPALITY.
- THE PROPOSED WATER MAIN IS TO BE SET AT THE LINE AND GRADE TO MEET THE EXISTING WATER MAIN.
- TIE-INS TO EXISTING WATER MAINS AND FINAL TESTING AND CHLORINATION OF NEW MAINS IS TO BE PERFORMED BY THE CONTRACTOR.

E. SEDIMENT CONTROL NOTES:

- THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF ALL REGULATORY AUTHORITIES, FEDERAL AND PROVINCIAL GOVERNMENT DEPARTMENTS INCLUDING THE DEPARTMENT OF THE ENVIRONMENT; IN THE PRODUCTION OF FISH AND WILDLIFE DURING THE CONSTRUCTION OF THE WORKS.

SPECIFICALLY, THE CONTRACTOR SHALL ENSURE THAT ALL EXCAVATION AND CONSTRUCTION PROCEDURES ARE UNDERTAKEN IN SUCH A MANNER AS TO PREVENT SILT-LADEN RUNOFF DOWNSTREAM DRAINAGE SYSTEM, AND SHALL FOLLOW PROCEDURES AS RECOMMENDED IN THE PUBLICATION "LAND DEVELOPMENT GUIDELINES" FOR THE PROTECTION OF AQUATIC HABITAT" AS ISSUED BY THE MINISTRY OF ENVIRONMENT, LAND AND PARKS.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL ENSURE THAT ALL DISTURBED AREAS ARE KEPT DEWATERED WITH CONCENTRATED SURFACE RUNOFF EITHER DIRECTED AROUND WORK AREAS OR TEMPORARILY CONTAINED WITHIN CLOSED CONDUITS.
- WHERE CUTOFF TRENCHES ARE CONSTRUCTED AND THE GRADE EXCEED 5% TRENCH INVERTS ARE TO BE RIP-RAP ARMURED ON GEOFABRIC WITH CHECK WEIRS FILTER BERMS INSTALLED AT MAX. 30.0m O.C.
- ALL CATCH BASINS TO HAVE UPSTREAM SEDIMENT TRAPS.
- WHERE INDIVIDUAL UNIT CONSTRUCTION INTERFERES WITH CUT-OFF TRENCHES AND SWALES, CONTRACTOR TO ARRANGE FRO DIVERSION OR ENCLOSURE OF THESE DRAINAGE FACILITIES TO PERMANENT STORM SEWER SYSTEM.
- CONTRACTOR TO INSPECT SEDIMENT CONTROL FACILITIES WEEKLY DURING SERVICING AND BUILDING STAGES AND CLEAN OUT, MAINTAIN OR IMMEDIATELY REPLACE FAILING SYSTEMS AS NECESSARY OR PROPER OPERATION.
- CONTRACTOR TO ENSURE THAT ALL PERMITS ARE IN PLACE PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR TO INSTALL SILT FENCE AT TOP FISHERIES RESTRICTIVE COVENANT BOUNDARY. (AS SHOWN ON DRAWINGS).
- SILTATION CONTROL IS TO REMAIN IN PLACE UNTIL 90% OF THE SITE LANDSCAPING HAS BEEN COMPLETED AND CONFIRMATION OR REMOVAL HAS BEEN PROVIDED BY THE ENGINEER.
- REMOVAL OF THE SEDIMENT CONTROL SYSTEM SHALL BE COMPLETED AS FOLLOWS:
 - ALL INLET AND OUTLET STRUCTURES SHALL BE REMOVED. INLET AND OUTLET PIPING SHALL BE REMOVED TO EDGE OF PAVEMENT AND CAPPED. INLET AND OUTLET PIPES AT MANHOLES SHALL BE PLUGGED WITH CONCRETE AND THE MANHOLES REBENCHED FOR THE ULTIMATE FLOW CONFIGURATION.
 - ALL SILT FENCES AND SECURITY FENCING SHALL BE REMOVED.
- THE CONTRACTOR SHALL ENSURE TO COMPLY WITH ALL THE REQUIREMENTS OF THE ENVIRONMENTAL MONITOR THAT WILL BE ASSIGNED TO THE PROJECT.

CONSTRUCTION NOTES :

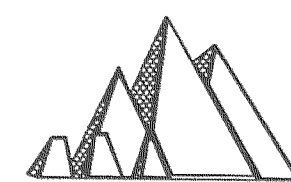
- NO WORKS, EQUIPMENT OR MATERIALS STORAGE TO ENCR OACH WITHIN 3m SETBACK ZONE FROM EXISTING PROPERTY TO EAST. TEMPORARY WORKING EASEMENT MAY BE GRANTED THROUGH OWNER'S REPRESENTATIVE.
 - CONTRACTOR WILL BE RESPONSIBLE FOR TRANSPORT (TO RMOW WORKS YARD) OF DISCHARGE ELBOW, CHECK VALVES, GATE VALVES AND OTHER MECHANICAL EQUIPMENT DEEMED SALVABLE BY THE OWNER'S REPRESENTATIVE.

CONTRACTOR BE RESPONSIBLE FOR DISPOSAL OF ALL OTHER ITEMS NOT IDENTIFIED.
 - VALLEY TRAIL BETWEEN CRABAPPLE DRIVE AND LORIMER ROAD WILL BE UNDER CONSTRUCTION BY OTHERS AND CLOSED DURING RECONSTRUCTION OF S-103. SECTION THROUGH LIFT STATION SITE TO BE REALIGNED BY CONTRACTOR.
 - SUGGESTED CONSTRUCTION SEQUENCE :
 - EXPOSE ALL PIPING TO CONFIRM ELEVATIONS ON CRITICAL LOCATIONS.
 - CONSTRUCT NEW WETWELL C/W INLET AND OUTLET PIPING AND BYPASS PORT. (C/W DEWATERING AS NECESSARY)
 - PLUG N.W. INVERT AT EX. SMH07. BYPASS PUMP FLOW FROM MH07 TO EXISTING WETWELL (OVERLAND TEMPORARY PIPING).
 - CONSTRUCT NEW OVERFLOW MH1A TIE-IN EX. 250 FROM CRABAPPLE DRIVE.
 - CONSTRUCT NEW 450 INLET PIPE FROM EX. COLLECTION MH1 TO NEW COLLECTION MH1A (CONCRETE ENCASE BESIDE BUILDING).
 - BLOCK FLOW FROM 200 GRAVITY LINE TO COLLECTION MH1 AND BYPASS FLOW TO EXISTING WETWELL (OVERLAND BYPASS).
 - CONTACT RMOW OPERATIONS 932-2423. TO ARRANGE ACCESS TO LIFT STATION S101 AT 8330 RAINBOW DRIVE. ARRANGE FOR STATION S101 SHUTDOWN AND PUMP TO TANKER TRUCK (TO STOP FLOW FROM 300mm PIPE IN COLLECTION MH1).
 - COMPLETE TIE-IN OF FLOW 450 LINE AT EX. COLLECTION MH1.
 - PLUG ALL PIPES IN EX. MH1 BELOW ELEVATION 636 AND INFILL MH1 WITH QUICK SETTING CONCRETE. TEMPORARILY BENCH MH1. COMPLETE CONNECTIONS TO NEW MH1 AND NEW FORCEMAIN.
 - REBENCH AS REQUIRED. BYPASS PUMP FROM EX. MH TO BYPASS PORT
 - RELOCATE 1 PUMP FROM EX. WETWELL IN NEW WETWELL.
 - RE-ESTABLISH FLOW THROUGH NEW 450 PIPE TO NEW COLLECTION MH AND WETWELL.
 - REMOVE PUMPS AND PIPING FROM EX. WETWELL, REMOVE LID AND TOP SECTION, BACKFILL AND ABANDON.
 - INSTALL PUMP 2 IN NEW WETWELL.
 - USE EXISTING LIFT STATION FOR DISCHARGE OF GROUND WATER OR PUMP INTO BYPASS PORT OR CONNECT TO SEPARATE BYPASS PORT TO FORCEMAIN. DISCHARGE INTO CRABAPPLE CREEK WILL NOT BE PERMITTED.
- * THE ABOVE SEQUENCE IS SUGGESTED FOR PURPOSES OF FAMILIARIZING TENDERER WITH CONTRACT REQUIREMENTS. ACTUAL CONSTRUCTION SEQUENCE AND PLAN OF WORK TO BE SUBMITTED BY THE CONTRACTOR AND ACCEPTED BY THE MUNICIPALITY BEFORE STARTING WORK. CONTRACTOR WILL BE RESPONSIBLE FOR MANAGING, COORDINATING, AND IMPLEMENTING ACCEPTED CONSTRUCTION SEQUENCE. ANY EXTRA COSTS RELATED TO ACCEPTED CONSTRUCTION SEQUENCE WILL BE THE CONTRACTOR'S RESPONSIBILITY. NO PAYMENT WILL BE MADE FOR EXTRA WORKS ASSOCIATED WITH CHANGES TO CONSTRUCTION SEQUENCE.

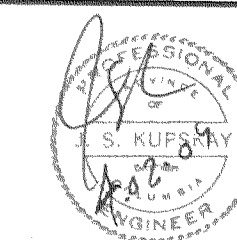
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No	Date	Revision	Or	Ch
1	2000.06.05	ISSUED FOR TENDER	JSK	

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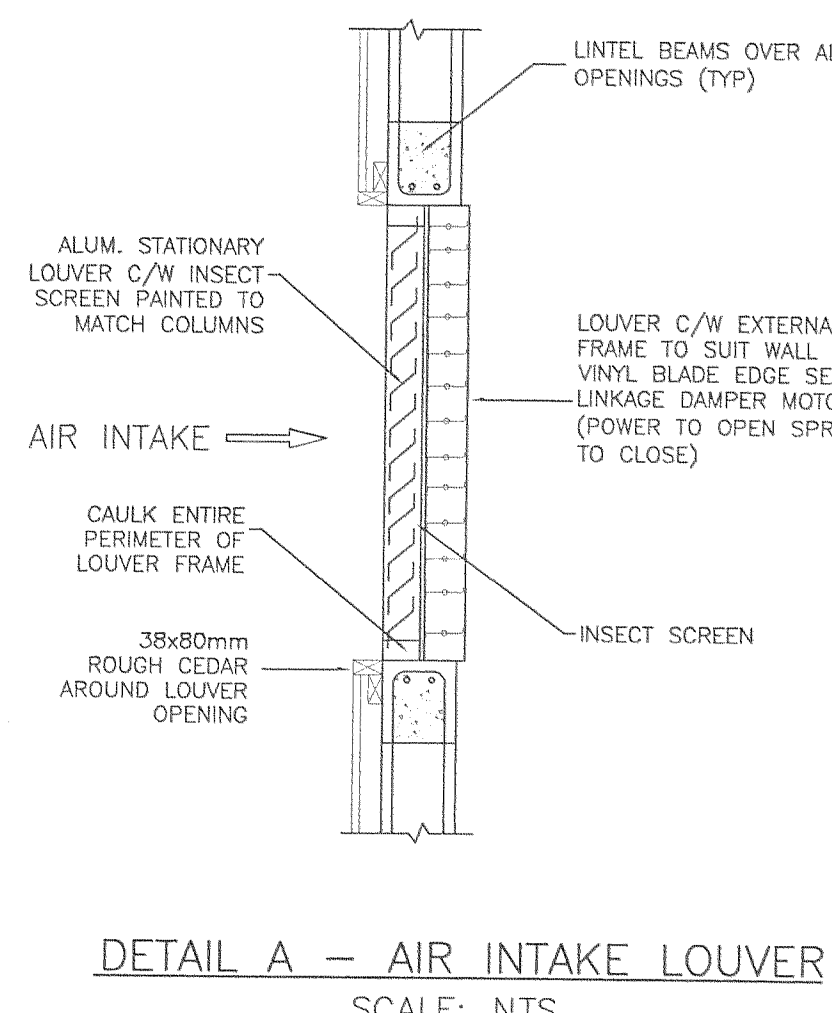
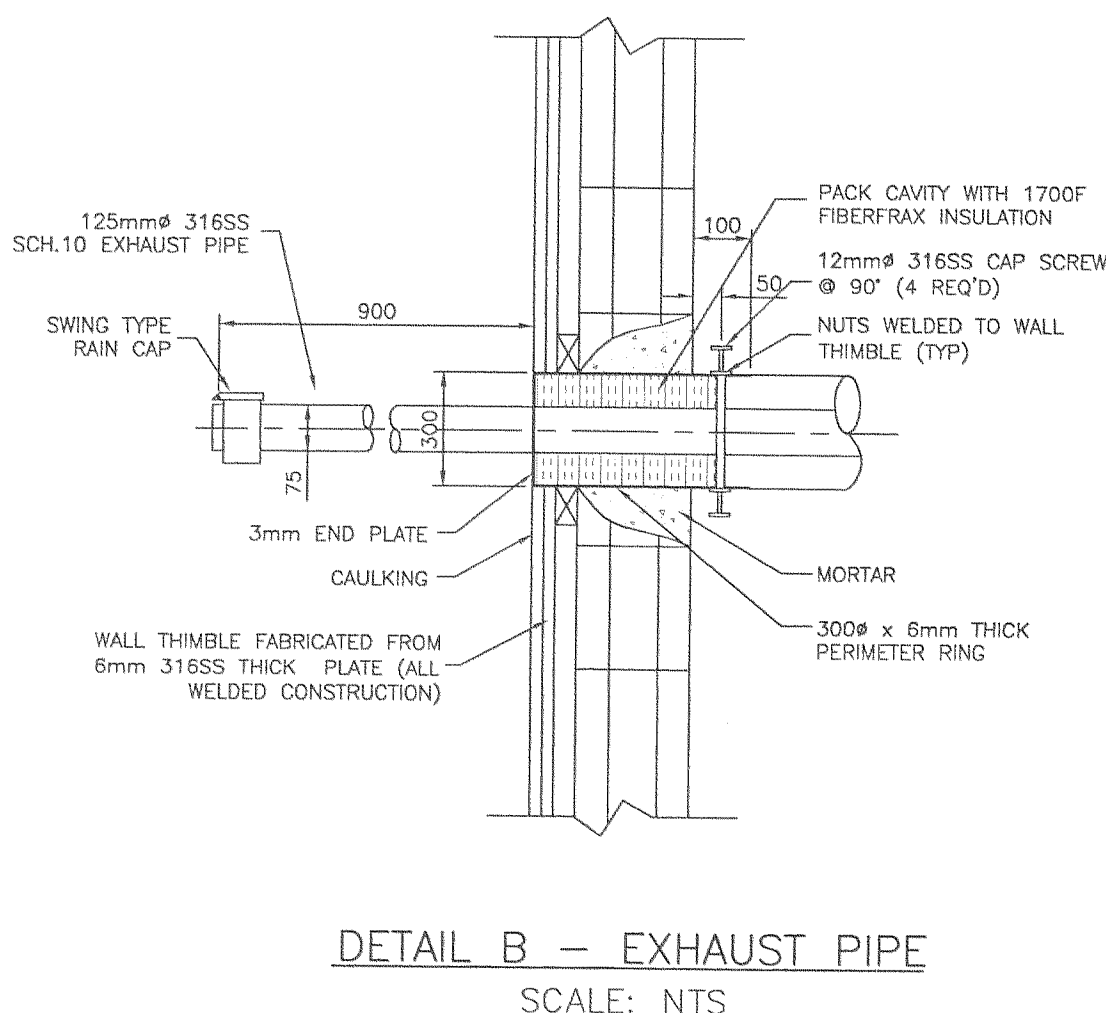
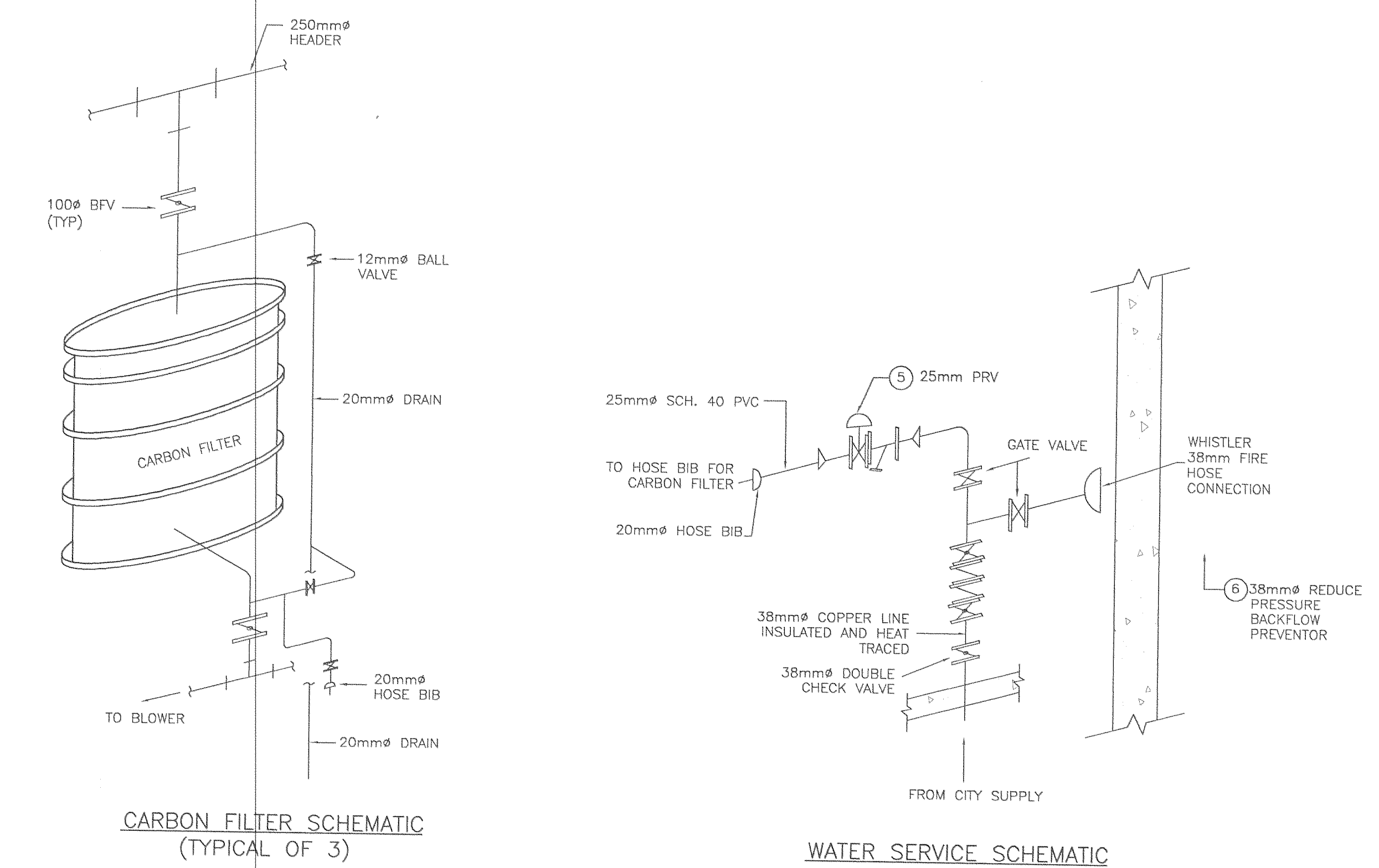
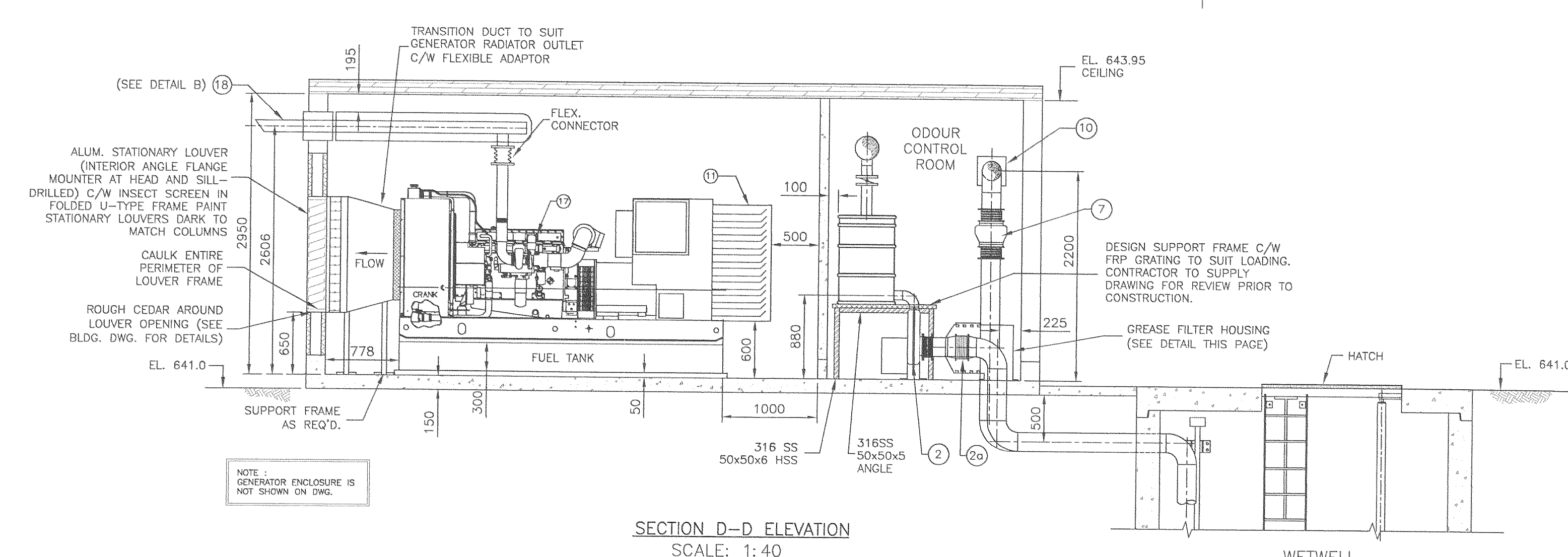
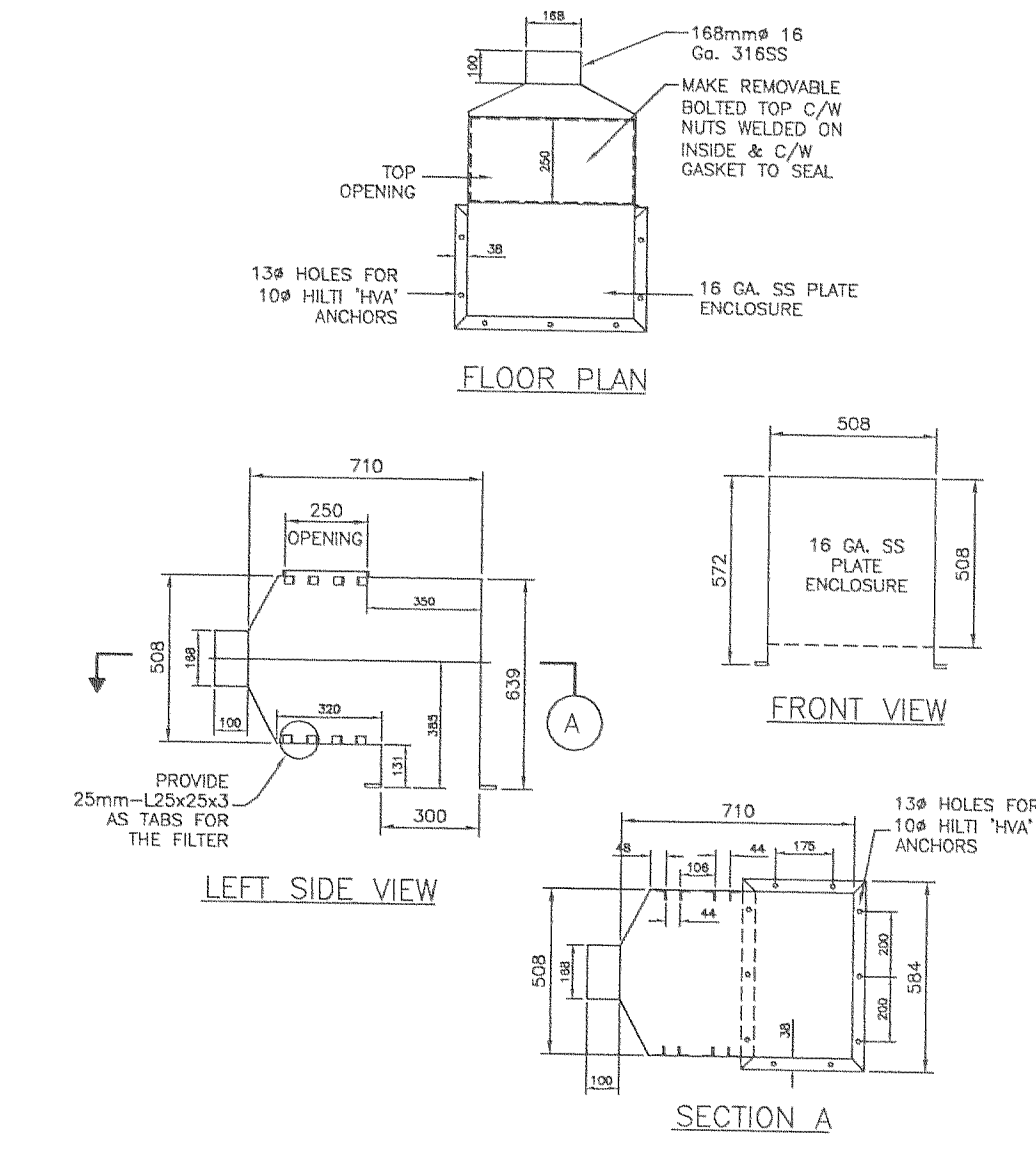
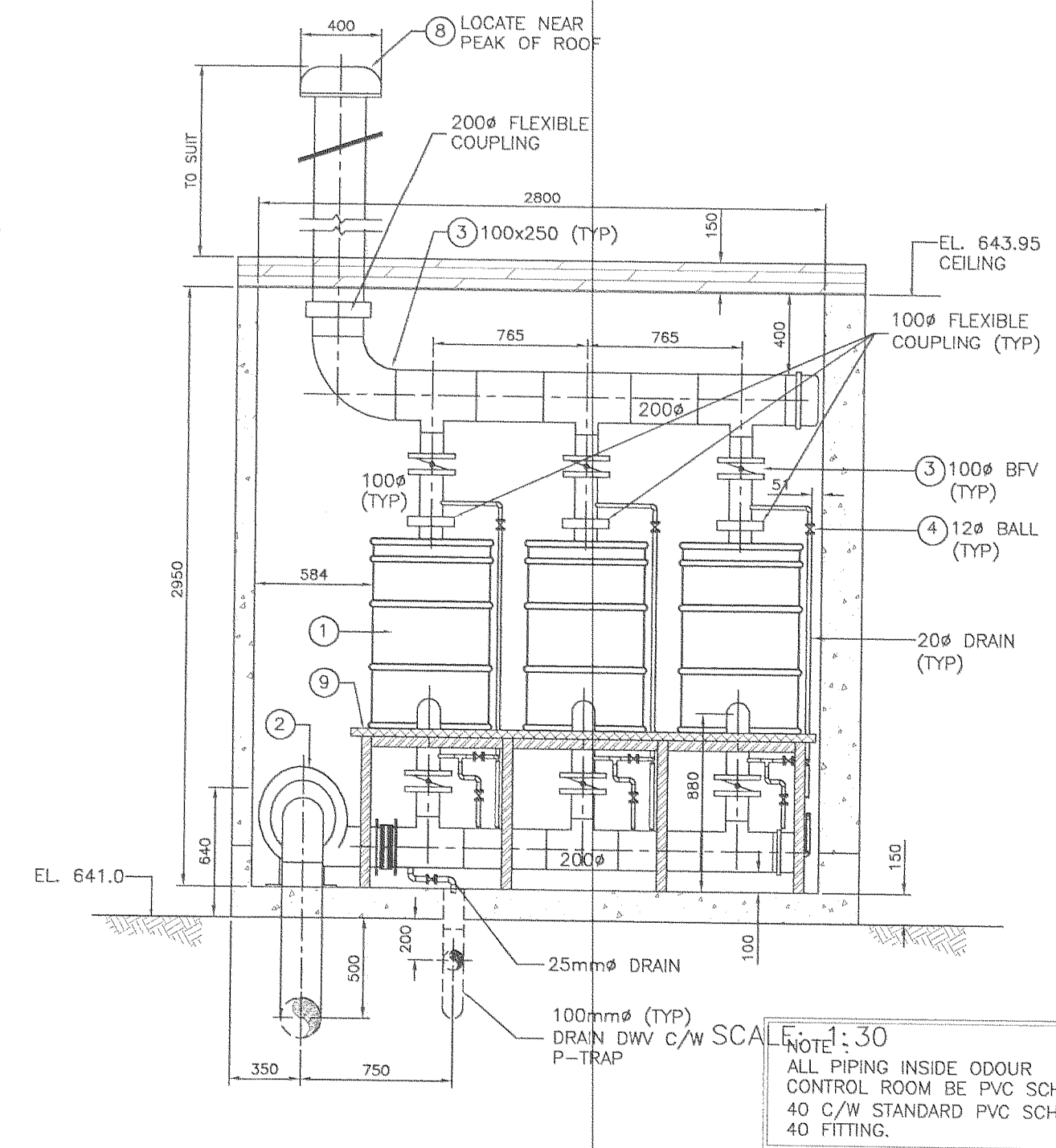
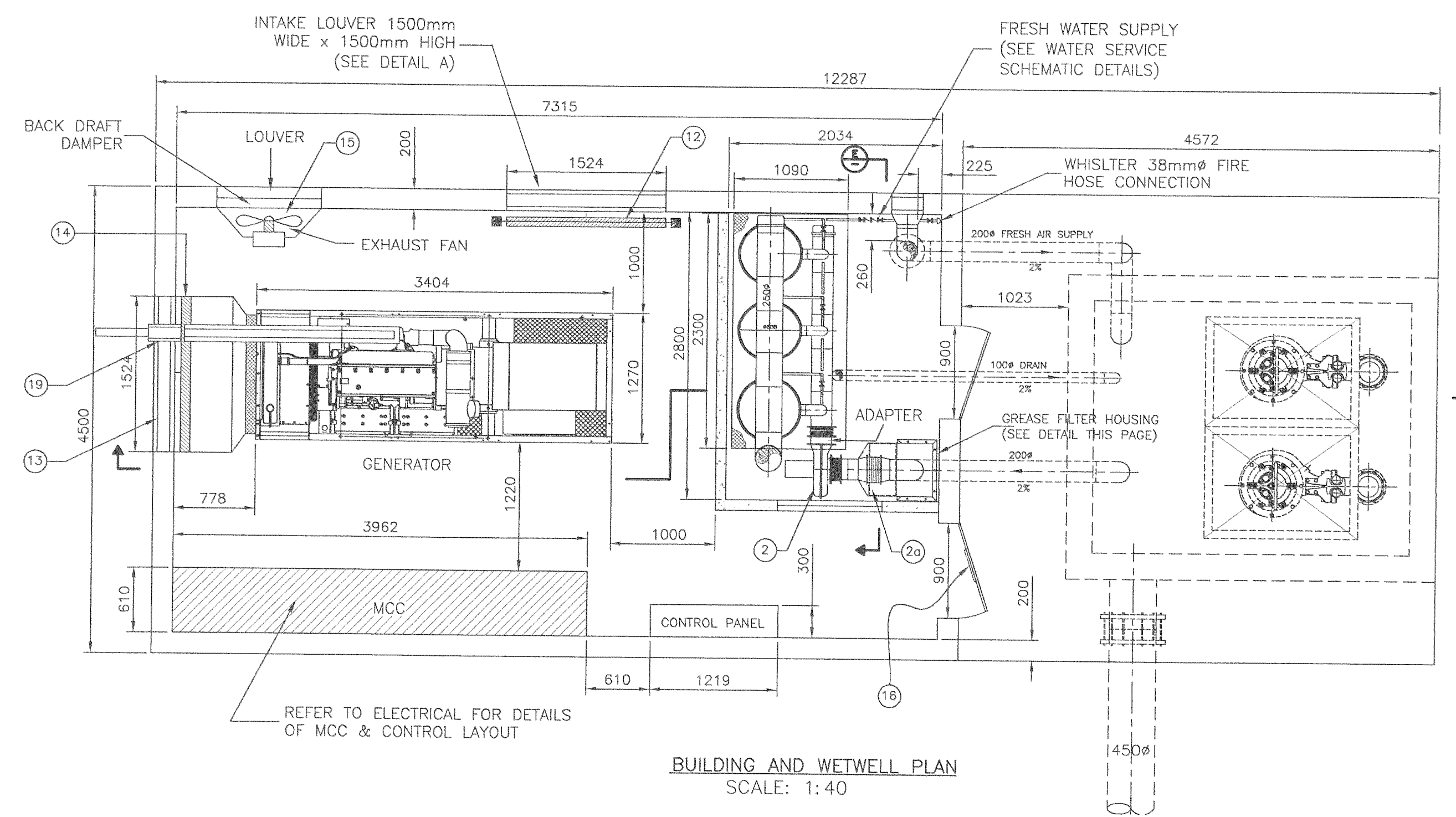


RESORT MUNICIPALITY OF WHISTLER
SANITARY LIFT STATION S-103 RECONSTRUCTION
6671 CRABAPPLE DRIVE
GENERAL AND CONSTRUCTION NOTES



Scale: 1:250	Mun. Proj. No.	Dwg. No.
Drawn: M.L.C.	Mun. Dwg. No.	C3
Designed: J.S.K.	Job No. 2000-13	Of 1
P.W. P.U.	Date JUN 05, 2000	Revision 1
Approved:		destroy all prints bearing previous number

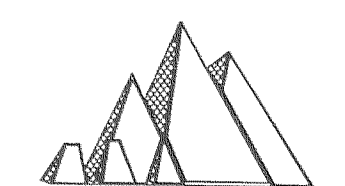
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No	Date	Revision	Dr	Ch
2	2000.11.15	RECORD DRAWING	AYK	JSK
1	2000.06.05	ISSUED FOR TENDER	MLC	JSK

PARAGON ENGINEERING LTD.
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RESORT MUNICIPALITY OF WHISTLER
 SANITARY LIFT STATION S-103 RECONSTRUCTION
 6671 CRABAPPLE DRIVE
 MECHANICAL DETAILS OF GENERATOR & BUILDING

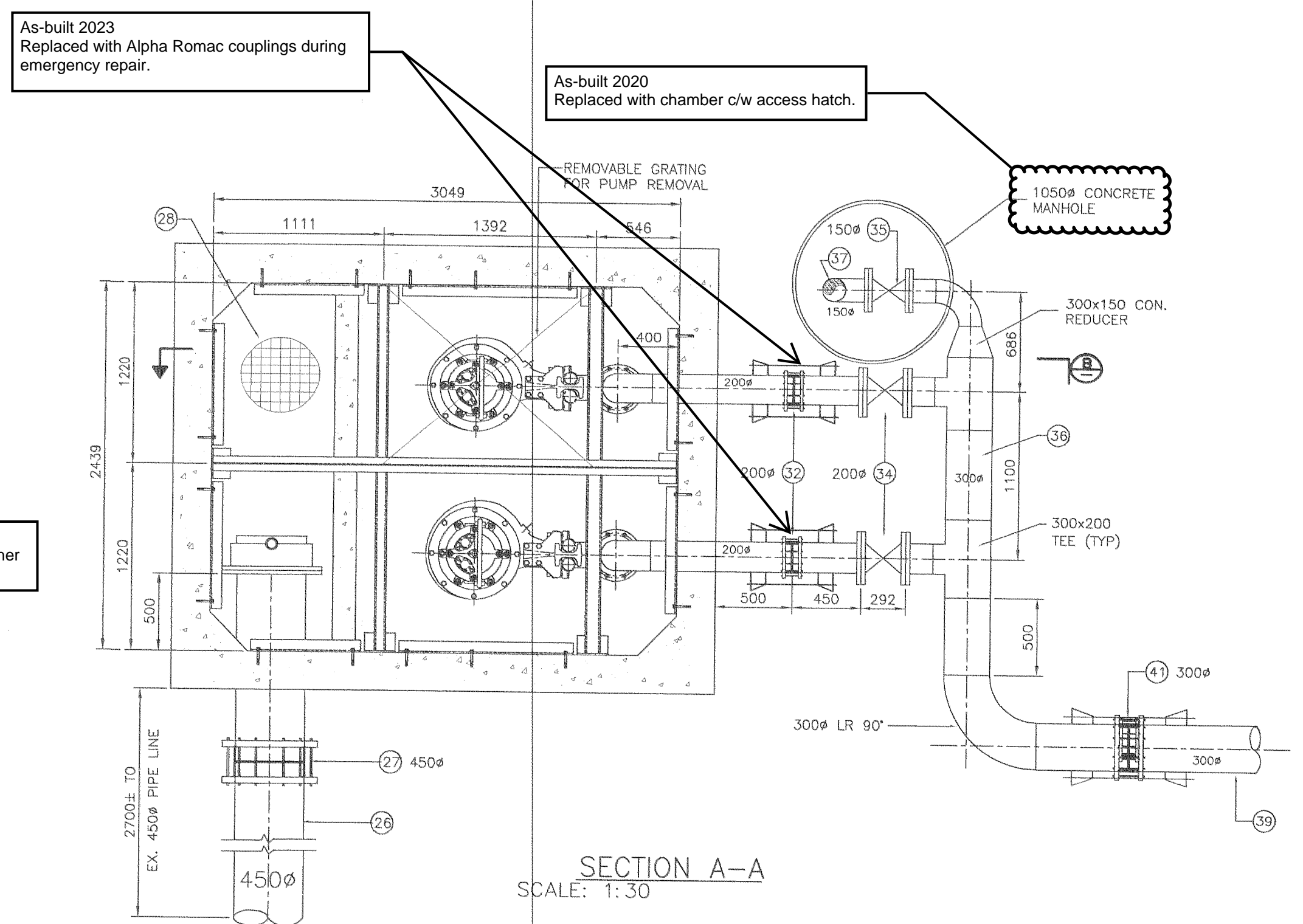
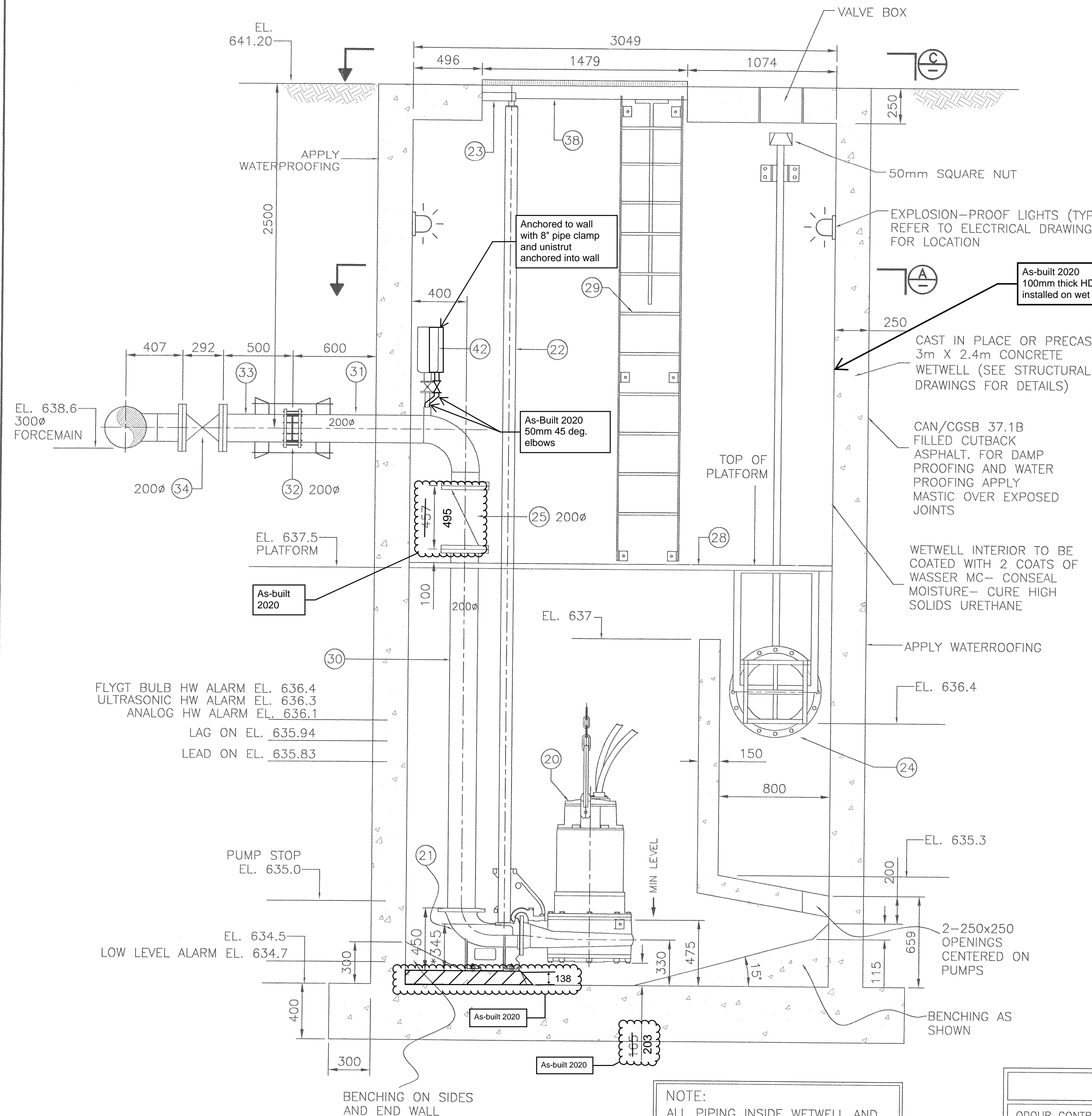
Scale: AS STATED	Mun. Proj. No.	Dwg. No.
Drawn: M.L.C.	Mun. Dwg. No.	P1
Designed: J.S.K.	Job No. 2000-13	
P.W. P.U.	Date MAY 19, 2000	Revision 2

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JAN 21 2001

S6052-6



MATERIAL LIST			
GENERATOR ROOM			
ITEM	QTY.	SIZE	DESCRIPTION
11	1	1500x1500	INTAKE LOUVER - ALUMINUM CONSTRUCTION C/W INSECT SCREEN WEST VENT, AT-645-U OR EQUAL
12	1	1500x1500	MOTORIZED DAMPER C/W BELIMO DAMPER ACTUATOR MODEL FM120-SR 120V AC
13	1	1500x2300 - 400mm	EXHAUST LOUVER - ALUMINUM CONSTRUCTED C/W INSECT SCREEN WEST VENT AT-645-U
14	1	1500x1500	BLANKED SECTION TOP AND BOTTOM
15	1	400x400	BACKDRAFT DAMPER ACME, TAMCO OR EQUAL
16	1	400x400	EXHAUST FAN ACME MODEL FQ129L0 120V C/W BACKDRAFT DAMPER AND EXHAUST LOUVER
17	1	200KW	DOOR GRILL C/W INSECT SCREEN AND BACKDRAFT DAMPER ONAN 200KW GENERATOR PART# 200 DQAA C/W 200 GAL-SUB-BASE FUEL TANK (RELOCATE FROM EXISTING LOCATIONS TO INSIDE BUILDING)
18	1	125#	EXHAUST PIPE 316SS SCH. 10 C/W HANGERS AND 38mm CALCIUM SILICATE INSULATION C/W 38mm CERAMIC FILM WITH SS MOREL MESH
19	1	300#	EXHAUST PIPE 316SS WALL THIMBLE
*NOTE: CONTRACTOR TO CONFIRM SIZE OF EXHAUST LOUVER C/W REMOVAL SECTION TO ALLOW REMOVAL GENSET FROM BUILDING WITH EXISTING WEATHER ENCLOSURE INTACT.			
WETWELL			
20	2	CP-3300HT	FLYGT CP-3300HT C/W 454 IMPELLER 65KW (88HP) 575V 3PH 60HZ SUBMERSIBLE MOTOR (RELOCATE FROM EXISTING WETWELL) (87 L/S @ 45m TDH)
21	2	200# 125#FL	FLYGT PN 444-71-06 DISCHARGE ELBOW C/W 200mm# 125# OUTLET CONNECTION (CONFIRM TO MATCH EXISTING PUMPS)
22	4	75mm#	75mm# 316SS SCH. 40 GUIDE RAILS (CONFIRM LENGTH)
23	2	75mm#	UPPER GUIDE BAR HATCH 316SS PN 13-52-06-05
24	1	450mm#	FONTAINE SERIES 50 450# SLUICE GATE 316L CONSTRUCTION MODEL 502-SF-N-NR1 C/W 2" OPERATING NUT, FLOOR EL. 641.00 INVERT EL. 636.4
25	2	200mm#-125#FL	GA INDUSTRIES FIGURE 220 SWING CHECK VALVE C/W OUTSIDE LEVER AND WEIGHT 125# - CI DISC
26	1	450mm#-125#FL	SLUICE GATE WALL THIMBLE 450# - FxPE 1.5M LONG, EPOXY COATED 8mm WT. STEEL PIPE
27	1	450mm#	ROBAR 1506 DI COUPLING EPOXY COATED SS FASTENERS OR EQUAL
28	1	3000x2400	PLATFORM C/W FRP GRATING (SEE STRUCTURAL DWG.)
29	1	450mm	MARINE GRADE ALUMINUM LADDER 4.35M LONG
30	2	200#	PUMP DISCHARGE PIPE 200# 316SS SCH. 10 FLXFL 2500mm APPROX. C/W PIPE SUPPORTS AS REQUIRED
31	2	200#	STATION DISCHARGE PIPE 200# 316SS SCH. 10 FLXPE C/W 90° ELBOW
32	2	200#	ROBAR 1506 DI COUPLING EPOXY COATED, SS FASTENER C/W TIE-RODS OR EQUAL
33	2	200#	PIPE 200# FLXPE 500mm LONG SS SCHED. 40 EPOXY COATED
34	2	200#	MULLER RESILIENT SEAT GATE VALVE AWWA C-509 C/W SS STEM 125#EL C/W 2" OPERATING NUT
35	1	150#	AS ABOVE
36	1	300#	DISCHARGE HEADER 300# STEEL SPECIAL A53 GRADE B EPOXY COATED
37	1	150#	BYPASS PIPE STEEL SPECIAL A53 GRADE B EPOXY COATED
38	2	1479x1072	FLYGT ALUMINUM ACCESS HATCH PN 13-43-00-43 C/W 13-52-04-10 CONNECTING ROD OR EQUAL
39	As Req'd	300#	DUCTILE IRON PIPE TO AWWA SPECIFICATIONS
40	1	300#	DUCTILE IRON CEMENT LINED 45° HH BEND C/W TIE-RODS
41	1	300#	ROBAR 1506 DI/DI COUPLING EPOXY COATED
42	2	50#	VALMATIC VM 48 AIR VALVE C/W 50mm 316SS BALL VALVE AND 316SS NIPPLES OR EQUAL
43	1	50#	WATTS SERIES 007 DOUBLE CHECK VALVE

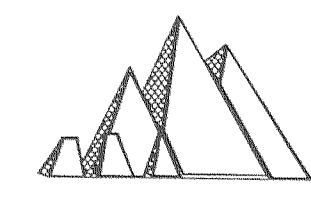
MATERIAL LIST			
ODOUR CONTROL ROOM			
ITEM	QTY.	SIZE	DESCRIPTION
1	3	200# BPL 4x10	CALGON VENTSORB PE GRANULAR ACTIVATED CARBON
2	1	MODEL 125	NEW YORK BLOWER COMPACT G1 FAN 400 CFM @ 8.75" WC C/W 2HP 575V 3PH 60HZ TEFC MOTOR SUITABLE VFD OPERATIONS C/W FLEX CONNECTORS
2a	1	500x400x50	AIR CON KITCHEN GUARD DEGREASING FILTER MODEL A-20 KG-2016 600CFM PER FILTER
3	6	100mm# PVC BFV	CHEMLINE PVC BODY BUTTERFLY VALVE MODEL TBA 040 BEL
4	10	12mm# PVC BALL VALVE	CHEMLINE PVC BODY BALL VALVES MODEL OAD055
5	1	25# PRV	WATTS MODEL 223S PRV
6	1	38#	WATTS SERIES 9090T-S REDUCED PRESSURE BACKFLOW PREVENTOR
7	1	MODEL FR225	FANTECH MODEL FR225 INLINE DUCT FAN 400CFM @ 0.2" WC C/W TWO SPEED CONTROL AND FLEX CONNECTORS
8	1	200#	316SS RAIN CAP AND THIMBLE TO SUIT ROOFING MATERIAL AND STRUCTURE
9	1		316SS FRAME C/W 50mm FRP GRATING
10	1	300x300	INTAKE LOUVER - ALUMINUM CONSTRUCTION C/W INSECT SCREEN WEST VENT, AT-645-U OR EQUAL

SECTION B-B ELEVATION

SCALE: 1:25

NOTE:
ALL PIPING INSIDE WETWELL AND FIRST SECTION OUTSIDE WETWELL BE SCH. 10 316 STAINLESS STEEL

PARAGON ENGINEERING LTD.
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RESORT MUNICIPALITY OF WHISTLER
SANITARY LIFT STATION S-103 RECONSTRUCTION
6671 CRABAPPLE DRIVE
WETWELL & MECHANICAL DETAILS

Scale: AS STATED	Mun. Proj. No.	Dwg. No.
Drawn: M.L.C.	Mun. Dwg. No.	P2
Designed: J.S.K.	Job No. 2000-13	
Approved:	Date JUN 05, 2000	Revision 2

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No	Date	Revision	Dr	Ch
2	2000.11.15	RECORD DRAWING	AYK	JSK
1	2000.06.05	ISSUED FOR TENDER	MLC	JSK
No	Date	Revision	Dr	Ch

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JAN 21 2001

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GENERAL NOTES

- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE BRITISH COLUMBIA BUILDING CODE 1998, AND N.B.C. 1995. ALL-SPAN ENGINEERING & CONSTRUCTION LTD. ACCEPTS NO RESPONSIBILITY FOR THE STRUCTURAL ADEQUACY FOR THE EXISTING BUILDINGS.
- CONSTRUCT TO BC BUILDING CODE REQUIREMENTS. ALL REFERENCE STANDARDS ARE THE LATEST EDITION INCLUDING SUBSEQUENT REVISIONS.
- SPECIFIED DESIGN LOADS :
LIVE LOADS
WIND $q_{1.06} = 48 \text{ kPa}$
SNOW $S_s = 9.0 \text{ kPa}$
RAIN $S_r = .8 \text{ kPa}$
SEISMIC $Z_a = 2.0 \text{ kPa}$
 $Z_v = 3.0 \text{ kPa}$
 $v = .15 \text{ kPa}$
 $F_s = 3.0 \text{ kPa}$
 $I = 1.0 \text{ kPa}$
 $U = 0.6 \text{ kPa}$
 $R = 1.5 \text{ kPa}$
- READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS AND DOCUMENTS. REPORT ALL CONFLICTS TO THE ENGINEER BEFORE COMMENCING WORK.
- DO NOT INSTALL OPENINGS, SET INSERTS, DRILL OR ATTACH TO STRUCTURAL FRAME WITHOUT AUTHORIZATION FROM STRUCTURAL ENGINEER, EXCEPT AS NOTED ON DRAWINGS.
- ALL STRUCTURAL ITEMS MUST BE INSPECTED BY A STRUCTURAL ENGINEER OR BY ANOTHER SUITABLY QUALIFIED PERSON RESPONSIBLE TO THE STRUCTURAL ENGINEER.
- NOTIFY ENGINEER 24 HOURS IN ADVANCE FOR INSPECTION OF THE FOLLOWING:
a) REINFORCING STEEL AND POUR CONDITIONS: BEFORE EACH CONCRETE POUR.
b) MASONRY AND REINFORCING STEEL: BEFORE EACH GROUT POUR.
c) TIMBER: BEFORE COVERING UP.
- CHECK AND CONFIRM THAT WORK IS COMPLETED IN ACCORDANCE WITH CONTRACT DOCUMENTS PRIOR TO INSPECTIONS. WORK FOR INSPECTIONS IS TO BE COMPLETED IN REASONABLY SIZED SEGMENTS.
- BRACE THE STRUCTURE UNTIL ALL STRUCTURAL COMPONENTS INCLUDING INFILL MASONRY IS COMPLETED. BRACING SHOWN IS DESIGNED FOR LOADS TO COMPLETE STRUCTURE ONLY.
- VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. REPORT DISCREPANCIES TO THE ENGINEER.
- DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION".
- THIS SET OF DRAWINGS SHOWS THE COMPLETE PROJECT. THEY DO NOT INCLUDE COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION SAFETY. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY STRUCTURES, FORM WORK, FALSE WORK, SHORING, ETC. REQUIRED TO COMPLETE THE WORK.
- REVIEW OF THE WORK OR ANY PORTION THEREOF, BY THE ENGINEER SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY AND OBLIGATION TO COMPLY WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS. NO OMISSION BY THE ENGINEER TO EXERCISE HIS RIGHTS HEREUNDER SHALL IMPOSE LIABILITY ON THE ENGINEER OR OWNER.
- ALL-SPAN ENGINEERING WILL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTORS, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- ALL-SPAN ENGINEERING WILL REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON ALL-SPAN DRAWINGS. THE EXTENT OF THIS REVIEW IS AT THE SOLE DISCRETION OF THE ALL-SPAN ENGINEER AND IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMANCE WITH THE STRUCTURAL DESIGN CONCEPT. THE REVIEW IS NOT AN APPROVAL OF THE DESIGN, DETAILS, AND DIMENSIONS INHERENT IN THE SHOP DRAWINGS, RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR SUBMITTING THEM. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS OR FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS IN THE FIELD TO SUIT EXISTING CONDITIONS. HE SHALL SITE MEASURE AND CONTROL THE PRODUCTION OF WORK ON SITE AND ELSEWHERE TO FULFILL THE INTENT OF THE DRAWINGS, NOTIFY THE ENGINEER OF ANY DIMENSIONAL VARIATION FROM THE PLANS.
- CONTRACTOR SHALL RECORD AND REPORT ANY VARIATIONS IN EXISTING CONDITIONS WHICH MAY AFFECT THE STRUCTURE.
- ALL-SPAN PROVIDES FIELD REVIEW ONLY FOR THE WORK SHOWN ON THESE STRUCTURAL DRAWINGS. THIS REVIEW IS A PERIODIC REVIEW TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS PREPARED BY ALL-SPAN ENGINEERING AND CONSTRUCTION LTD. IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO BUILD THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE PERFORMANCE OF ALL TEMPORARY WORKS TO BE CARRIED OUT UNDER THE SUPERVISION OF A STRUCTURAL PROFESSIONAL ENGINEER FAMILIAR WITH THE WORK AND REGISTERED TO PRACTICE IN THE PROVINCE OF BRITISH COLUMBIA.
- SHOP DRAWINGS SHALL BE COMPLETE AT THE TIME OF SUBMISSIONS, AND SHALL BEAR THE SEAL OF THE PROFESSIONAL ENGINEER RESPONSIBLE FOR THE WORK.
- CONTRACTORS, SUPPLIERS, SUB-TRADES, ETC. ARE TO ENSURE THEY ARE WORKING ON CURRENT PLANS AND SHOULD VERIFY THAT THEY ARE IN POSSESSION OF LATEST ISSUE. DISCARD OBSOLETE DRAWINGS.
- ALL DIMENSIONS TO TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS, AND DETAILS.

GENERAL NOTES (CONTINUED)

- STRUCTURE DESIGNED ACCORDING TO 1998 B.C. BLDG. CODE PART 9 GROUP F, DIVISION 3, LOW HAZARD INDUSTRIAL OCCUPANCIES.

PREPARATION FOR FOUNDATIONS

1. GENERAL

- PREPARE FOR FOUNDATIONS AS RECOMMENDED IN GEOTECHNICAL REPORT BY GEOPACIFIC CONSULTANTS DATED APRIL 4th, 2000.
- DESIGN SOIL BEARING PRESSURE 96.0 kPa.
- AFTER EXCAVATION AND BEFORE CONSTRUCTING FOUNDATIONS, HAVE THE GEOTECHNICAL ENGINEER THAT PREPARED THE ABOVE REPORT OR ANOTHER SUITABLY QUALIFIED PERSON RESPONSIBLE TO HTE GEOTECHNICAL ENGINEER INSPECT AND CONFIRM THE DESIGN SOIL BEARING PRESSURE AND STABILITY OF THE FOUNDATION BEARING SOILS.

CONCRETE

1. GENERAL

- PROVIDE CONCRETE AND PERFORM WORK TO CAN/CSA-A23.1-94. MAINTAIN A COPY OF THIS STANDARD ON SITE FOR REFERENCE.
- SUBMIT PROPOSED CONCRETE MIX DESIGNS FOR APPROVAL TO THE ENGINEER AND TESTING AGENCY RETAINED OF THE OWNER. EACH MIX DESIGN IS TO HAVE ITS AREA OF USE CLEARLY IDENTIFIED ACCORDING TO TABLE 2(h) BELOW.
- CONCRETE QUALITY IS TO BE TESTED BY THE OWNER'S AGENCY ACCORDING TO CAN/CSA-A23.2-M94 INCLUDING STRENGTH, AIR CONTENT, AND SLUMP TESTS FOR EACH CONCRETE POUR, WITH REPORTS SUBMITTED TO THE ENGINEER.
- THE CONTRACTOR SHALL NOT PROCEED WITH PLACING CONCRETE THAT FAILS TO MEET THE SPECIFIED SLUMP OR AIR CONTENT REQUIREMENTS.
- LINE CONCRETE IN A ACCORDANCE W/ CSA-A23.1-94

2. PRODUCTS

- CEMENT: TYPE 10 "NORMAL PORTLAND CEMENT", U.N.O.
- REINFORCING STEEL: NEW DEFORMED BARS TO CSA G30.18-M1992 - GRADE 400.
- AGGREGATE AND WATER: TO CAN/CSA-A23.1-M90.
- ADMIXTURES: TO THE CSA A266 SERIES OF STANDARDS. ADMIXTURES OTHER THAN AIR ENTRAINING ARE NOT TO BE USED UNLESS ACCEPTED BY THE ENGINEER.
- FORMWORK: SMOOTH, SQUARE EDGED PLYWOOD PANELS FOR CONCRETE EXPOSED TO VIEW; SHIPLAP FOR CONCRETE NOT EXPOSED TO VIEW IS ACCEPTABLE.
- MIX DESIGN:
A: BUILDING FOUNDATION, SLAB ON GRADE
-EXPOSURE CLASS F-1
-MIN. 28 DAY STRENGTH: 30 MPa.
-MAX. W/ CE RATIO: 0.50
-20mm MAX. AGGREGATE.
-AIR CONTENT: 5 TO 8%
-MAX. SLUMP: 80mm ± 20mm
B: CAST-IN-PLACE AND PRE-CAST WET WELL, CONCRETE WALLS, TOP SLAB, FOUNDATION IN ACCORDANCE WITH ACI 308R, EXCEPT AS NOTED FOR CAST-IN-PLACE CONCRETE:
-28 DAY COMPRESSIVE STRENGTH: 35 MPa
-MAX. AGGREGATE SIZE: 20mm
-AIR CONTENT: 5-7%
-SLUMP: 25mm MIN.
WALLS AND FOOTINGS 75mm MAX.
SLAB 100mm MAX.

3. EXECUTION

- CONSTRUCT FORMWORK IN A MANNER SUITABLE FOR THE TOLERANCE AND FINISHES REQUIRED OF THE CONCRETE.
- MIX AND PLACE CONCRETE TO CAN/CSA-A23.1-M94.
- VERTICAL DROP OF CONCRETE NOT TO EXCEED 1500mm.
- COMPACT CONCRETE WITH INTERNAL TYPE MECHANICAL VIBRATORS. WORK CONCRETE AROUND ALL EMBEDDED MATERIAL AND INTO CORNERS OF FORMS.
- WHEN TEMPERATURE IS BELOW 4°C, PROVIDE HEAT AND PROTECTION IN ACCORDANCE WITH CAN/CSA-A23.1-M94, SECTION 21.2.3.
- PROVIDE CLEAR CONCRETE COVER OVER REINFORCING STEEL AND TIES:
SURFACES POURED AGAINST GROUND 75 mm
FORMED SURFACES:
EXPOSED TO GROUND OR WEATHER 50 mm
NOT EXPOSED TO GROUND OR WEATHER, EXCEPT WHERE SHOWN OTHERWISE
- SLABS, WALLS 20 mm
- BEAMS, COLUMNS 40 mm
- REINFORCING DETAILS SHALL CONFORM TO 1988 DETAILING MANUAL OR AS NOTED ON DRAWINGS. COLUMNS, PEDESTALS, PILASTERS TO HAVE TIES HOOKED 135 DEGREES UNLESS DETAILED OTHERWISE ON DRAWINGS. WELDING OF REINFORCING IS NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
- EMBEDDED MATERIAL SHALL BE FREE FROM GREASE, SCALE, AND OTHER COATINGS. PLACE REBAR IN ACCORDANCE WITH CSA CAN3-A23.1 AND SECURE WITH CLIPS OR WIRE TIES NOT LESS THAN 1.5mm DIAMETER.
- CONTINUE WALL STEEL AROUND CORNERS; STRIP FOOTING STEEL TO CROSS-LAP MINIMUM 300mm AT CORNERS OR PROVIDE CORNER BARS.
- SPLICE REINFORCING AS FOLLOWS (UNLESS NOTED OTHERWISE):
BAR SIZE 15M
LAP SPLICE 700mm
INCREASE LAP 25% FOR BAR SPACING LESS THAN 150mm, OR LESS THAN 75mm CONCRETE COVER. LAP WELDED WIRE FABRIC END CROSS WIRES 200mm.
- SUPPORT WALLS, BEAMS AND SUSPENDED SLABS UNTIL CONCRETE HAS HARDENED SUFFICIENTLY TO CARRY LOADS.
- FORM ACCURACY TOLERANCE 6mm IN PLAN AND ELEVATION. SLAB FINISH TOLERANCE 6mm IN ANY 3000mm LENGTH AND MAXIMUM 10mm TOTAL DEVIATION IN OVERALL ELEVATION.
- PROVIDE 20mm CHAMFER TO ALL EXPOSED CORNERS. HAND TOOL EDGES OF SLABS AND CURBS.
- INSTALL PLASTIC CONE SNAP TIES IN SYMMETRICAL PATTERN FOR EXPOSED CONCRETE.

CONCRETE

3.EXECUTION (CONTINUED)

- TIE ALL HOOKED DOWELS BEFORE PLACING CONCRETE.
- CURE AND PROTECT IN ACCORDANCE WITH A23.1. CURING COMPOUNDS NOT ACCEPTABLE WHERE FUTURE TOPPING OR ADHESIVES TO BE APPLIED.
- OPENINGS, PIPE SLEEVES, ETC. IN STRUCTURAL CONCRETE ARE NOT PERMITTED EXCEPT AS SPECIFICALLY APPROVED BY THE ENGINEER.
- MINIMUM DETAILS AND REINFORCING FOR CONCRETE SUMPS, PITS AND TRENCHES:
SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATION AND SIZES. CONCRETE SUMPS, PITS AND TRENCHES WHICH ARE NOT PREMANUFACTURED SHALL BE CONSTRUCTED WITH MINIMUM 150mm THICK WALLS AND BASE, REINFORCED WITH 10M BARS AT 200 o/c EACH WAY. TOPS SHALL BE 100mm THICK REINFORCED WITH 10M AT 150mm E.W. BOTTOM OR 10mm THICK STEEL PLATE, UNLESS NOTED OTHERWISE.
- PLACE GROUT UNDER FULL BASEPLATE ARE IN ACCORDANCE WITH GROUT MANUFACTURERS' INSTRUCTIONS AFTER THOROUGH CLEANOUT.

MASONRY

1. GENERAL

- COMPLY WITH CSA CAN3 S304-M94 AND CSA CAN3 A371-M94.


2. PRODUCTS

- HOLLOW CONCRETE LOAD BEARING UNITS: NEW UNITS TO CSA A165-M94.
EXTERIOR WALLS: TYPE H/15/A/M
INTERIOR WALLS: TYPE H/15/A/M
- MASONRY MORTAR: TO CSA A179-M1994. LOAD BEARING-TYPE S; ONE PART PORTLAND CEMENT, 1/2 PART HYDRATED LIME, 4 1/2 PARTS AGGREGATE. MASONRY CEMENT BASED MORTARS ARE NOT PERMITTED.
- GROUT: SITE MIXED GROUT SHALL BE COARSE GROUT TO CSA A179-M1994. ONE PART PORTLAND CEMENT; 2 PARTS FINE AGGREGATE; 2 PARTS COARSE AGGREGATE. PUMPED GROUT SHALL BE 20 MPa PORTLAND CEMENT GROUT. SLUMP 200 TO 250 mm. MAXIMUM AGGREGATE SIZE 10mm.
- REINFORCING STEEL: CSA G30.18-M92 - GRADE 400.
- MASONRY CONNECTORS: TO CSA/CAN3-A370-M94.
- REINFORCING 200mm BLOCK AS FOLLOWS:
-2-15M VERT. ALL CORNERS/OPENINGS.
-15M@600 VERT o.c., CENTERED.
-HEAVY DUTY LADDER REINFORCING x HORIZONTAL @ 200 o.c.
- GROUT ALL VOIDS IN ALL MASONRY.
- 200mm BLOCK WALL BOND BEAM @ T.O. WALL/DOORS.
RW/ 2/15M x HORIZ. x CONT.

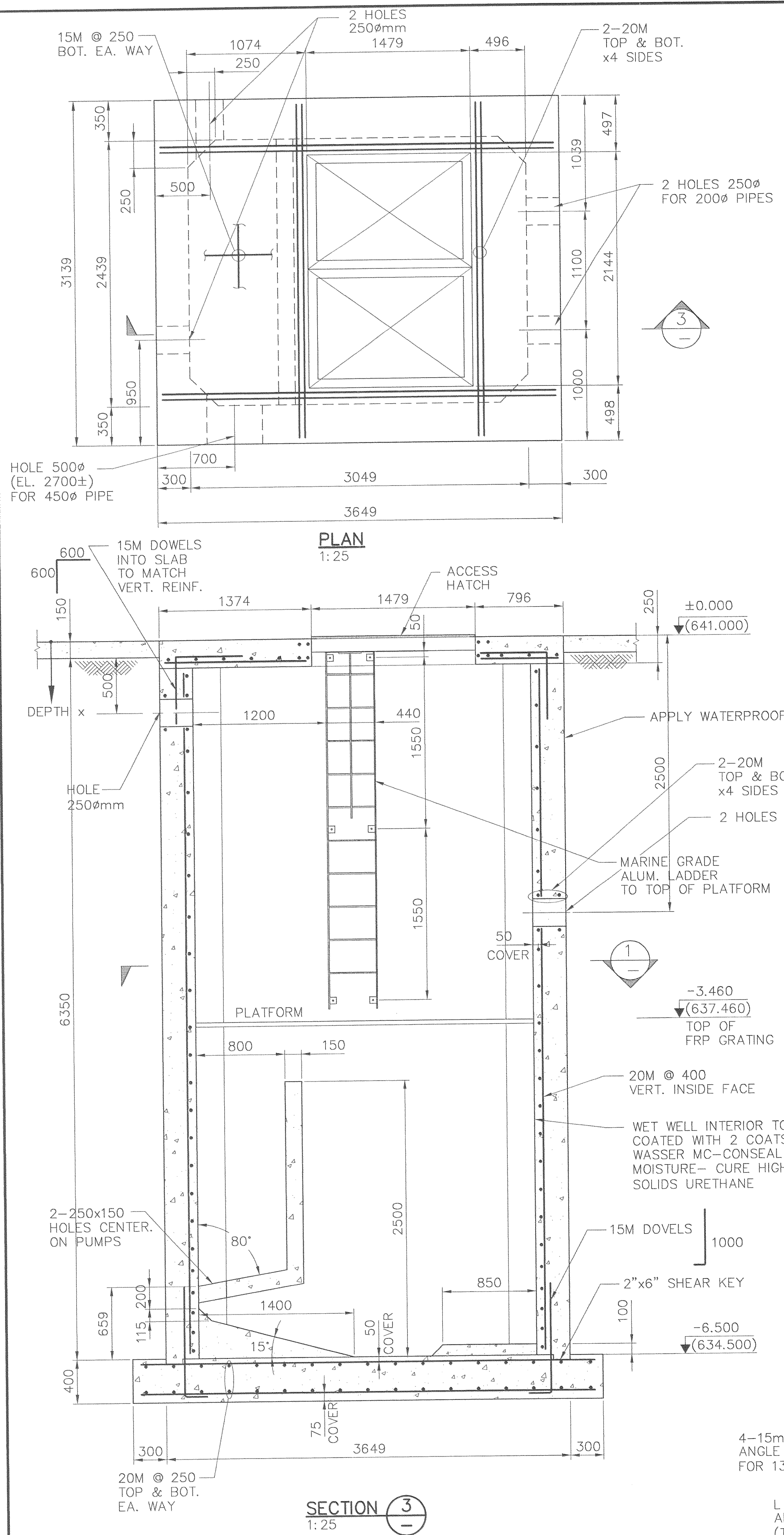
3. EXECUTION

- HEAT MATERIAL AND PROTECT WORK IN ACCORDANCE WITH CSA/CAN3 A371-M94 WHEN TEMPERATURE IS BELOW 4°C.
- AVOID TEMPERATURE LOSS OF MOISTURE FROM MORTAR AT TEMPERATURES HIGHER THAN 27°C. KEEP MOIST AFTER CONSTRUCTION TO PREVENT DRYING OUT OF MORTAR.
- PROVIDE VERTICALLY REINFORCED CORES WITH MINIMUM 1-25M CENTERED IN CORE, AT SPACINGS NOTED ON DRAWINGS, AT WALL ENDS, INTERSECTIONS, CORNERS, JAMBS, EACH SIDE OF CONTROL JOINTS, AND AT MAXIMUM 1200mm, U.N.O.
- CONTINUE ALL VERTICAL REINFORCING THROUGH BOND BEAMS, LINTELS, ETC. TO WITHIN 50mm FROM TOP OF WALL.
- REINFORCING SPLICES: LAP 15M - 600mm.
- FILL ALL LINTELS, BOND BEAMS, REINFORCED CORES AND AROUND ANCHORS AND BOLTS WITH GROUT. MINIMUM 100mm GROUT COVER AROUND BOLTS.
- GROUT VERTICAL CORES IN 2400mm LIFTS MAXIMUM. PROVIDE CLEANOUTS AT BOTTOM OF FILLED CORES FOR INSPECTION. ALL VERTICAL REINFORCEMENT SHALL BE CENTERED IN CORES, UNLESS NOTED OTHERWISE, AND TIED IN PLACE.
- BRACE MASONRY ADEQUATELY DURING CONSTRUCTION.
- WHEN CONSTRUCTION IS NOT IN PROGRESS, COVER THE TOP SURFACE OF UNCOMPLETED MASONRY EXPOSED TO THE WEATHER WITH A WATER PROOFING MATERIAL EXTENDING MINIMUM 600mm DOWN BOTH SIDES OF WALL AND SECURELY HELD IN PLACE.
- INTERLOCK ALTERNATE BLOCKS AT CORNERS OF WALLS, PILASTERS, AND LOAD BEARING WALL INTERSECTIONS AND CORNERS.

S6052-7

DATE	23/05/00	SCALE	N.T.S.	DRAWN BY	O.S.	DESIGN BY	G.A.	CHECKED BY	D.M.	APPROVED	PROJECT No.	00060	REV.	DRAWING No.	S1	B
	DATE		BY		DATE		BY									
H	C	F	E	D	C	B	A	REV.								
CLIENT RESORT MUNICIPALITY OF WHISTLER																
PROJECT SANITARY LIFT STATION S-103 RECONSTRUCTION																
DRAWING TITLE GENERAL NOTES																
 #201 - 7198 VANTAGE WAY DELTA, B.C. V4G 1K7 PHONE: (604) 940-2212 FAX: (604) 940-1516																

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WET WELL REINFORCING

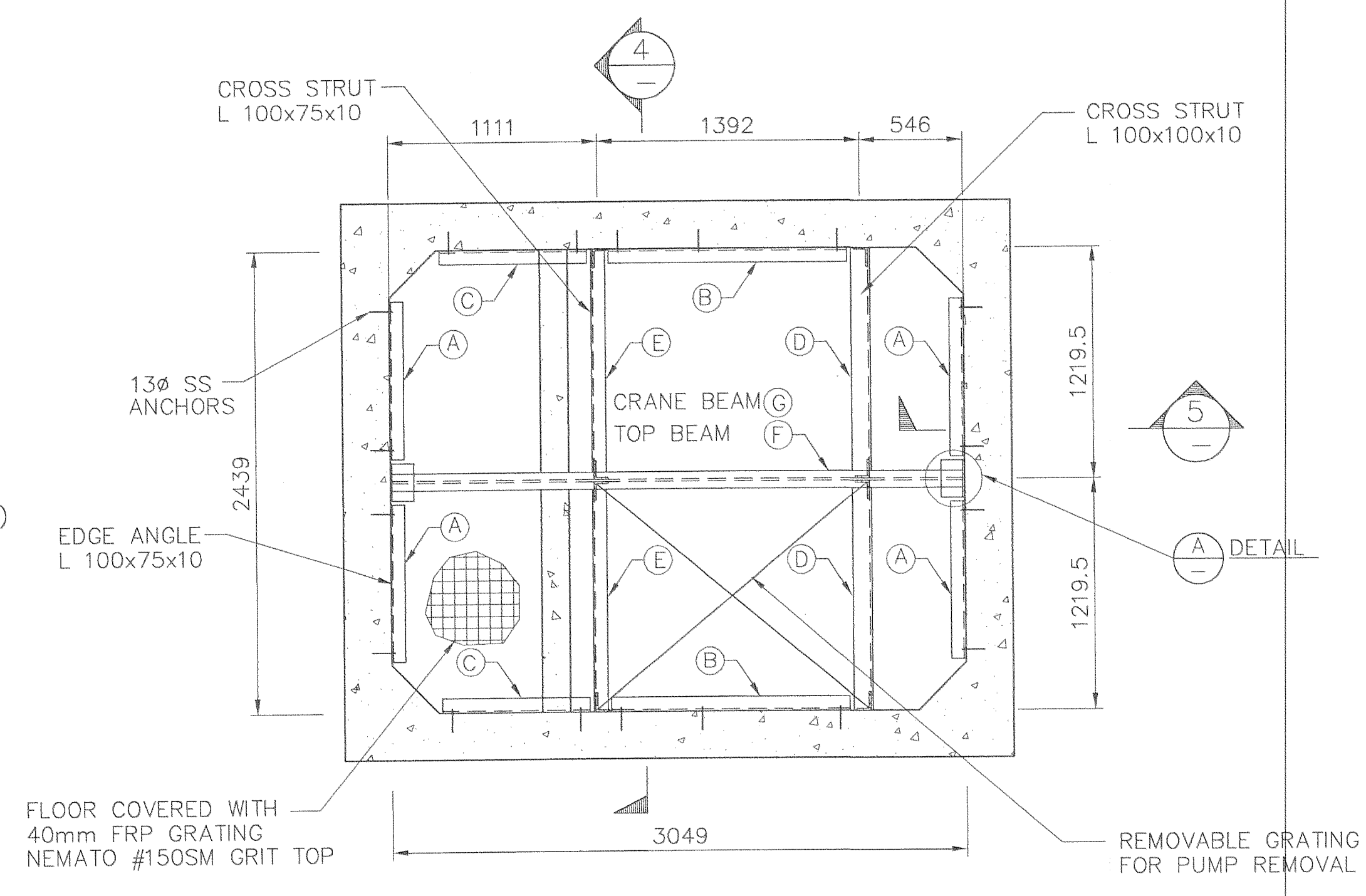
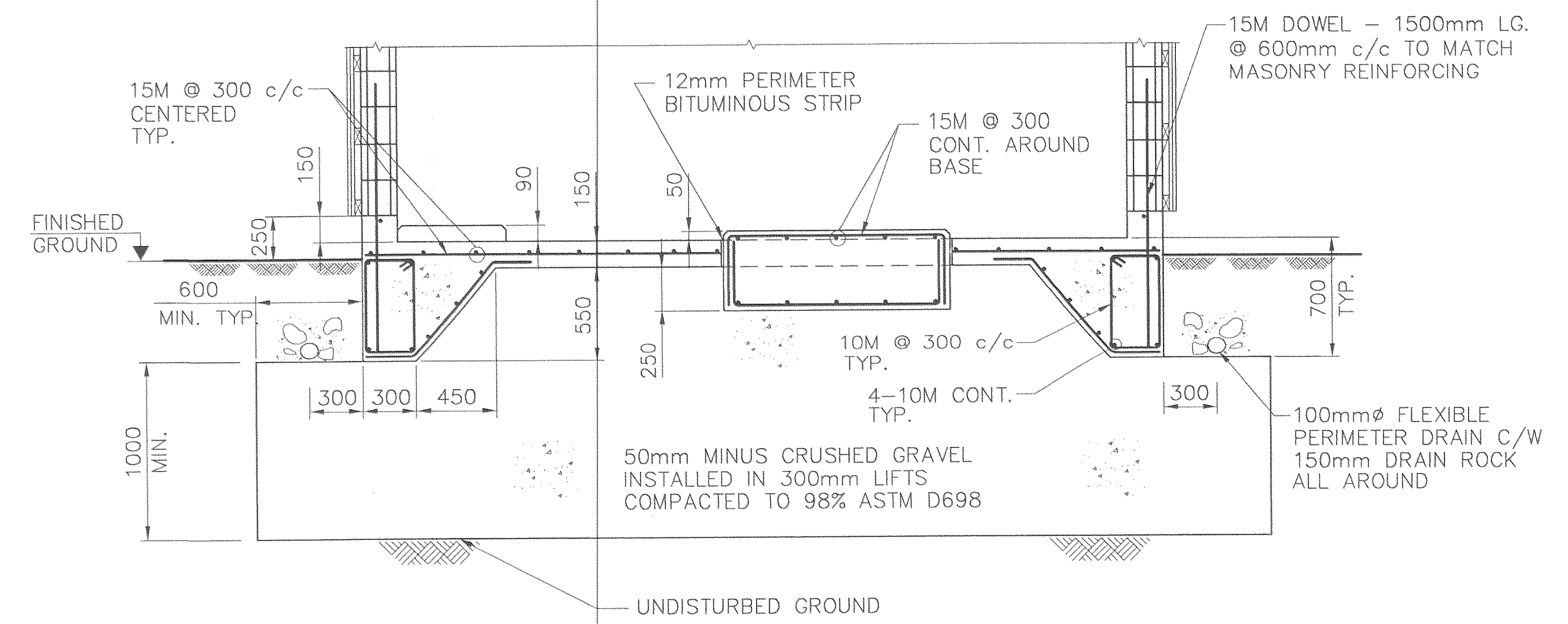
DEPTH	300mm WALLS	350mm WALLS
	HORIZ. INSIDE FACE REINF.	HORIZ. INSIDE FACE REINF.
0-1000	5-20M	5-20M
1000-2500	6-20M	8-20M
2500-3500	5-20M	6-20M
3500-4500	6-20M	6-20M
4500-5500	6-20M	8-20M
5500-6500	8-20M	9-20M

WET WELL:

- REINFORCEMENT 400 MPa YIELD GRADE
- REINFORCEMENT LAP SPLICES
- 15M : 500mm
- 20M : 650mm

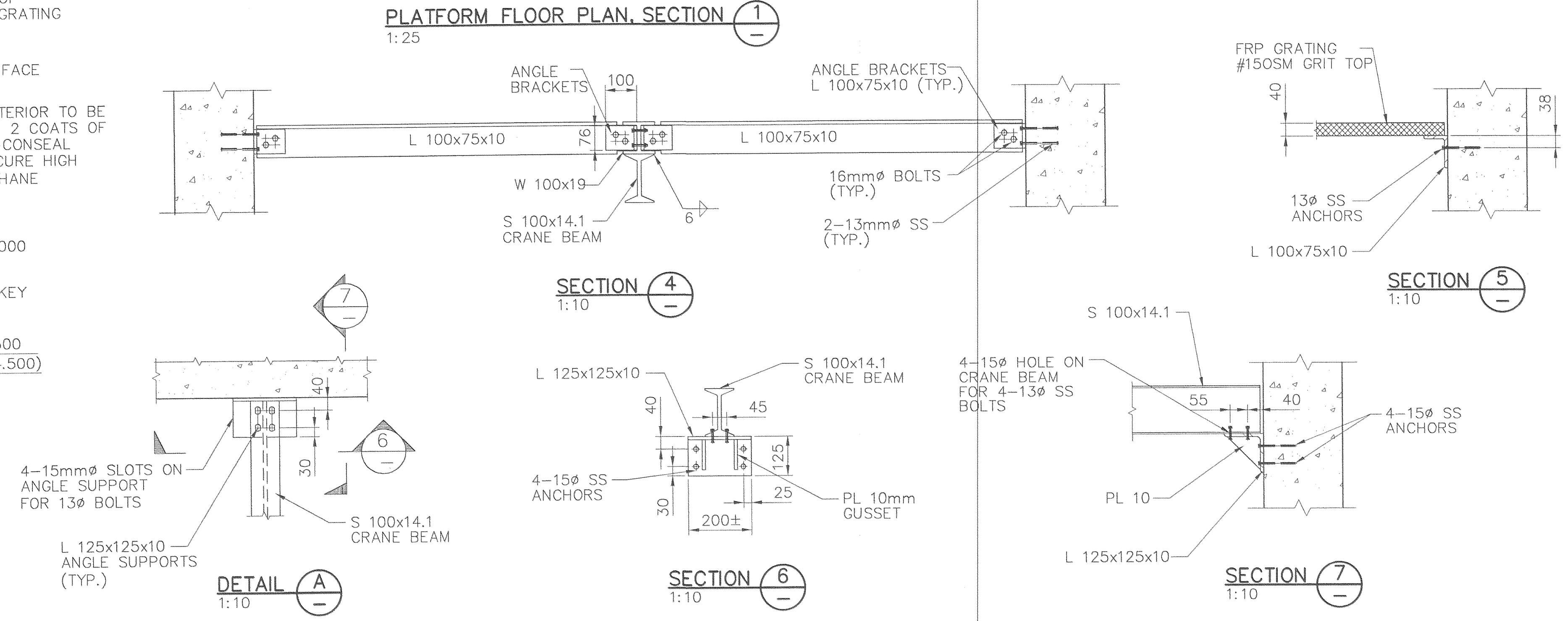
BOTH WALLS:

- 20M @ 400 VERTICAL INSIDE FACE



ITEM	QTY	LENGTH	MATERIAL
A	4	830	L100x75x10
B	2	1260	L100x75x10
C	2	780	L100x75x10
D	2	1160	L100x100x10
E	2	1160	L100x75x10
F	1	3030	W 100x19 (TOP BEAM)
G	1	3030	S 100x14.1 (CRANE BEAM)

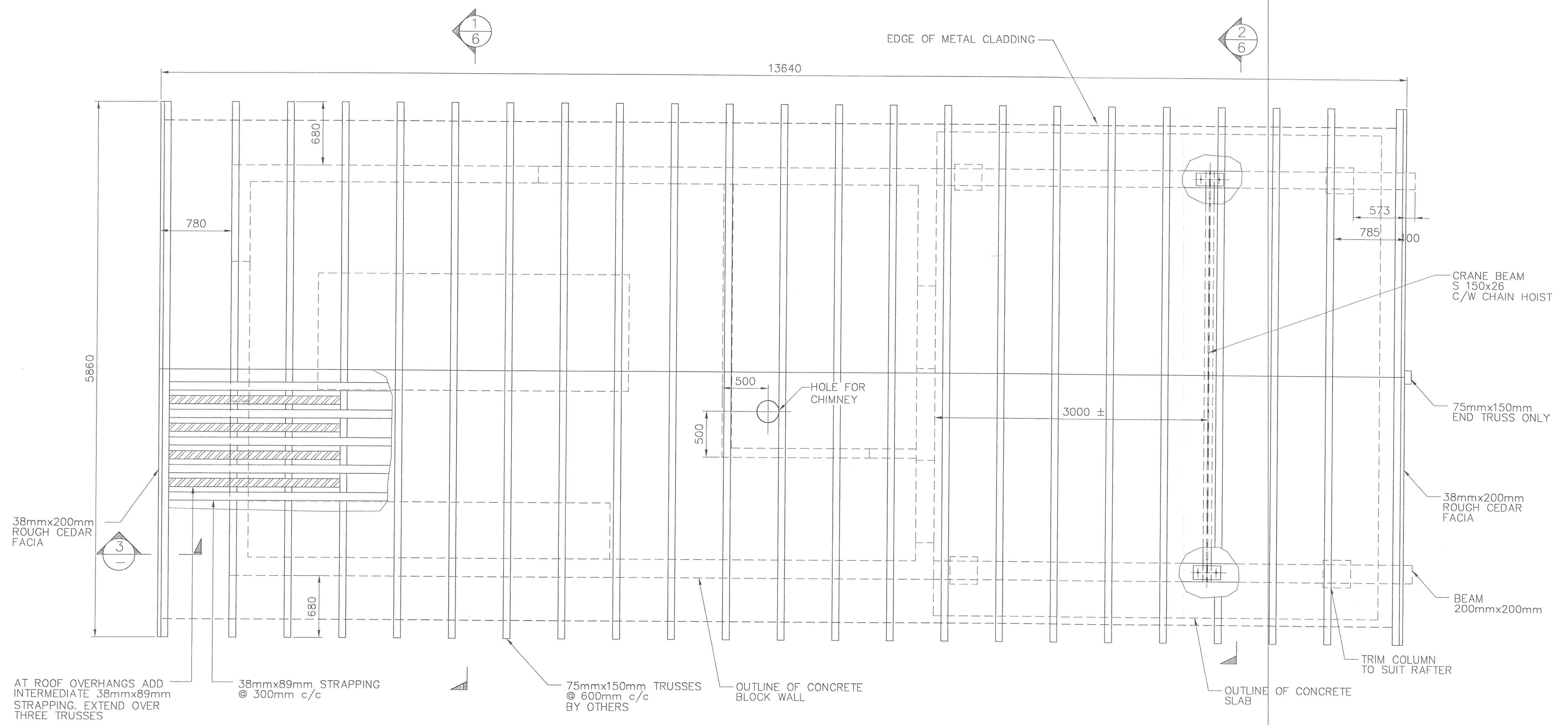
- NOTES:**
- DESIGN LOAD: 5kPa LIVELOAD, 075 kPa DEADLOAD, 4kN CRANE.
 - ALL STRUCTURAL MEMBERS "A" TO "E" ARE 6061-T6 ALUMINUM EXCEPT FOR "F" & "G"-BEAM AND BEAMS SUPPORT.
 - "F" & "G"-BEAMS AND BEAMS SUPPORT WILL BE STEEL TO CSA G40.21 300W, HOT DIPPED GALVANIZED AFTER FABRICATION.
 - ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE TO BE PAINTED WITH BLACK BITUMINOUS PAINT.
 - ALL WELDING TO CSA W59.
 - ALL BOLTS AISI 316 SS.
 - ALL CONCRETE ANCHORS, HILTI STAINLESS STEEL HDI'S.



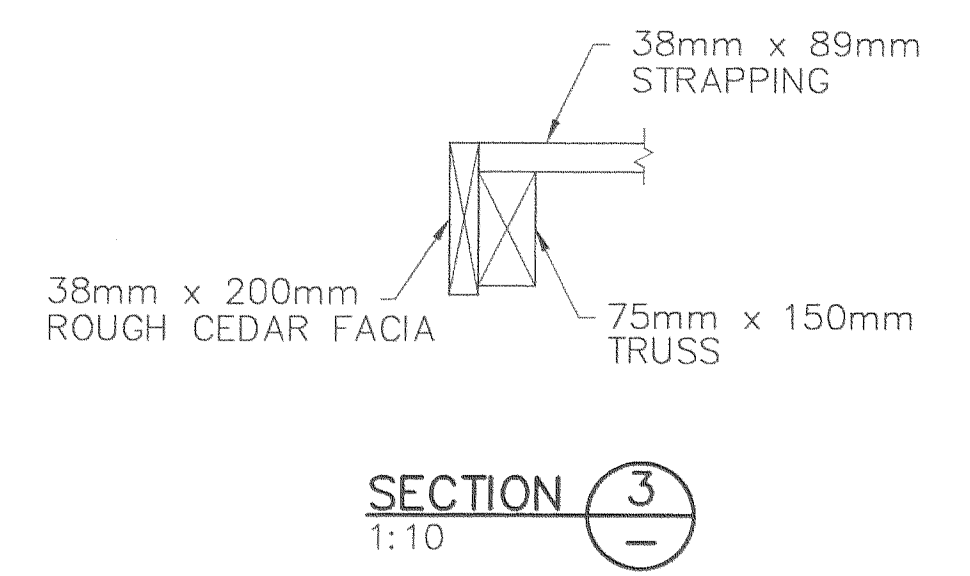
S6052-11

DATE	17/05/00	SCALE	AS NOTED	DRAWN BY	O.S.	DESIGNED BY	G.A.	CHECKED BY	D.M.	APPROVED		ISSUED FOR TENDER	05/06/00	G.A.	PROJECT No.	00060	REV.				
H		G		F		E		D		C		B		A		ISSUED FOR CLIENT REVIEW	23/05/00	G.A.			
											CLIENT	RESORT MUNICIPALITY OF WHISTLER		PROJECT		SANITARY LIFT STATION S-103 RECONSTRUCTION		DRAWING TITLE		CAST-IN-PLACE CONCRETE WET WELL PLATFORM.	
											ENGINEERING & CONSTRUCTION LTD.		ALL-SPAN		#201 - 7198 VANTAGE WAY DELTA, B.C. V4G 1K7 PHONE: (604) 940-2212 FAX: (604) 940-1516		JAN 21 2004				

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ROOF PLAN
1:25



SECTION 3-1
1:10

S6052-12

DATE	SCALE	DRAWN BY	DESIGN BY	CHECKED BY	APPROVED	PROJECT No.	DRAWING No.
19/05/00	AS NOTED		O.S.	G.A.	D.I.M.		
						05/06/00 G.A.	00060 REV
						23/05/00 G.A.	00060 REV
							S5

REV.	DESCRIPTION
B	ISSUED FOR TENDER
A	ISSUED FOR CLIENT REVIEW

CLIENT
RESORT MUNICIPALITY OF WHISTLER

PROJECT
SANITARY LIFT STATION S-103 RECONSTRUCTION

DRAWING TITLE
ROOF PLAN. DETAILS

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ENGINEERING & CONSTRUCTION LTD.

#201 - 7198 VANTAGE WAY
DELTA, B.C. V4G 1K7
PHONE: (604) 940-2212 FAX: (604) 940-1516

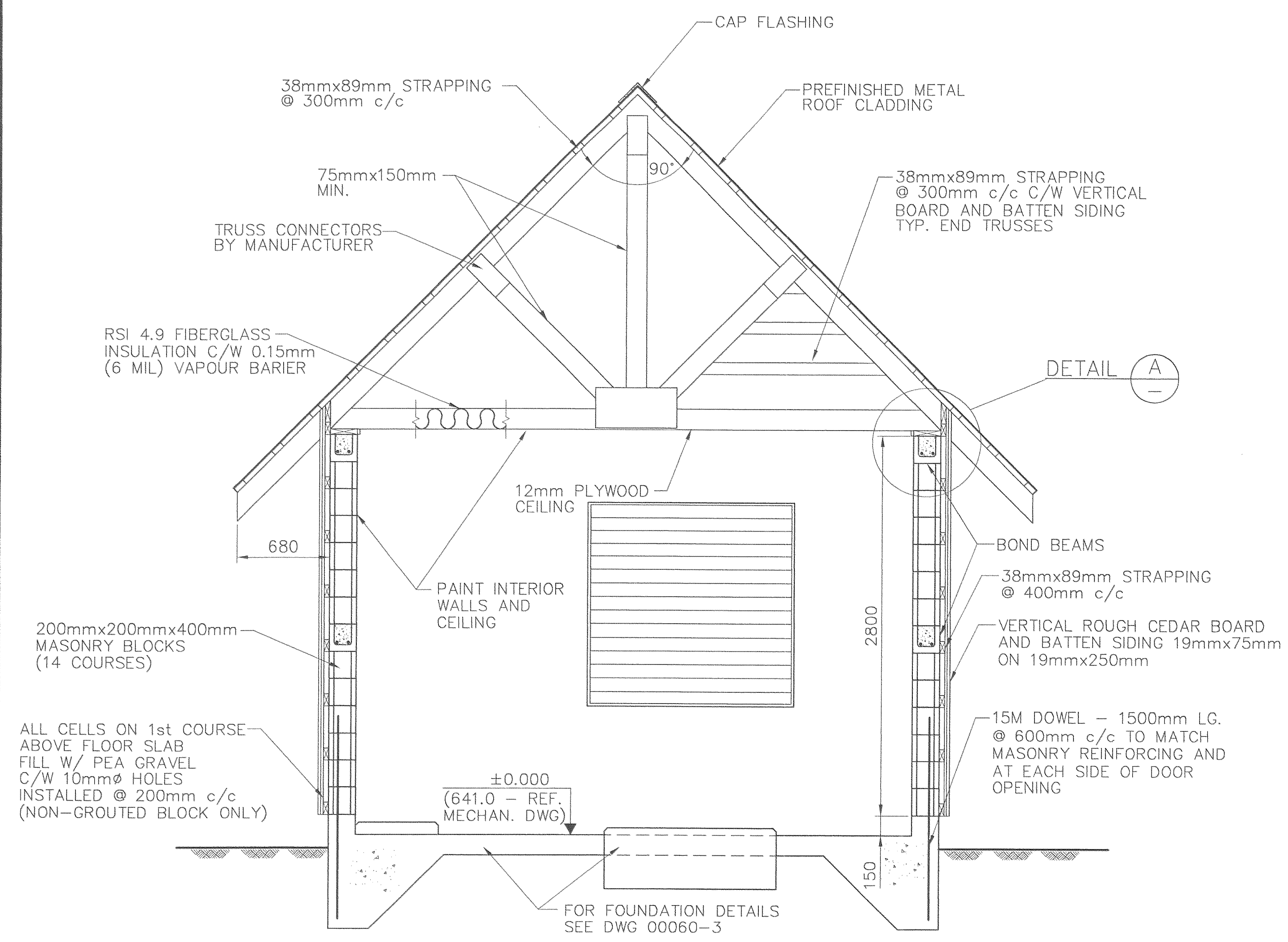
JAN 7 1 2004

S6052-13

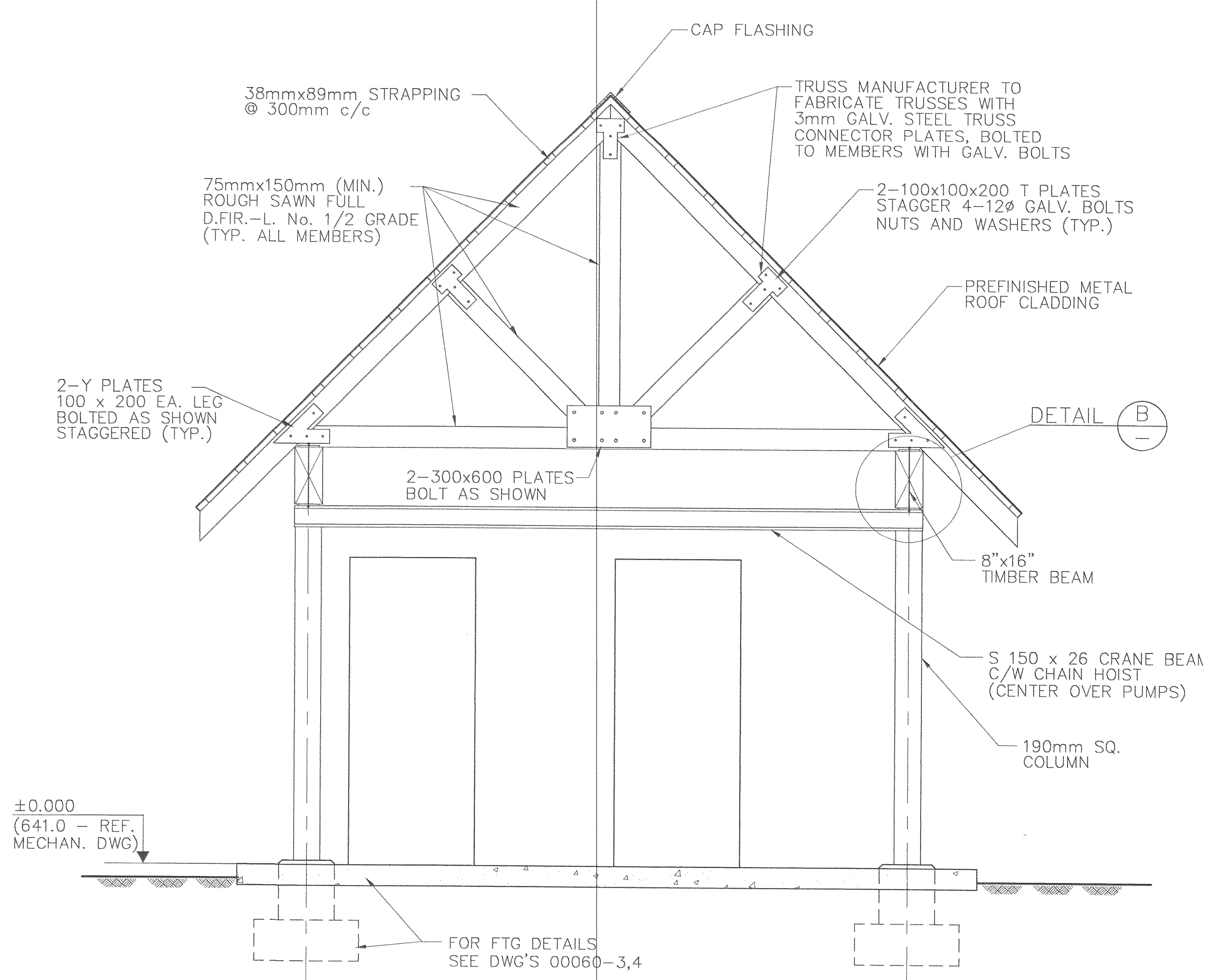
REV.	DATE	DESCRIPTION
A	02/06/00	ISSUED FOR TENDER
B	23/05/00	ISSUED FOR CLIENT REVIEW
C		
D		
E		
F		
G		
H		

CLIENT	RESORT MUNICIPALITY OF WHISTLER
PROJECT	SANITARY LIFT STATION S-103 RECONSTRUCTION
DRAWING TITLE	ARCHITECTURAL & STRUCTURAL SECTIONS & DETAILS

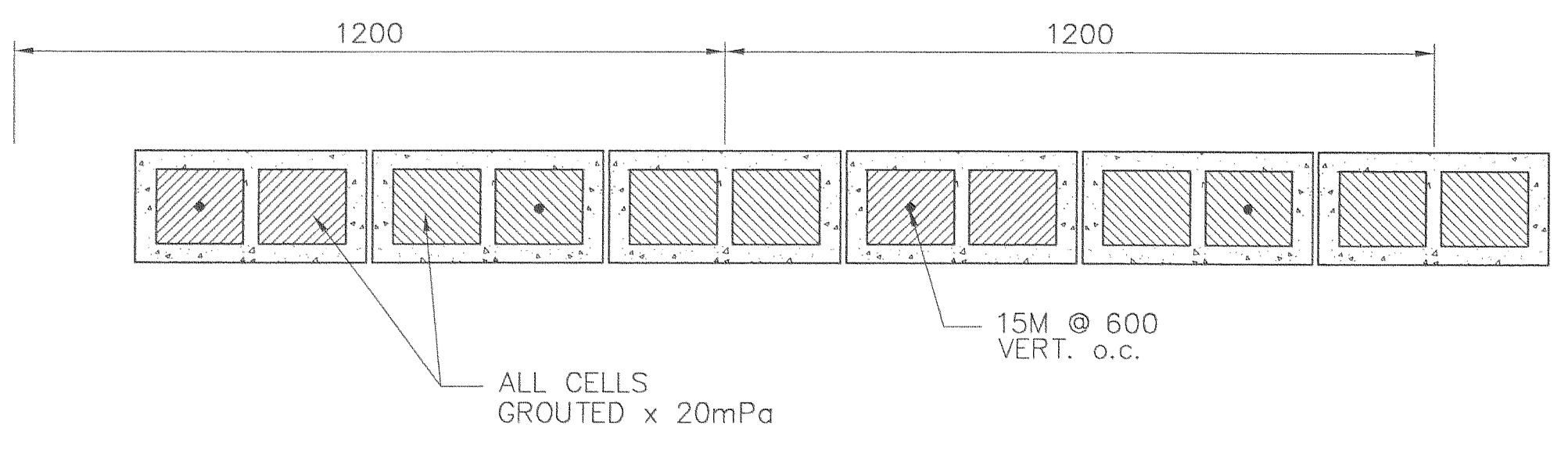
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#201 - 7198 VANTAGE WAY
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PHONE: (604) 940-2212 FAX: (604) 940-1516



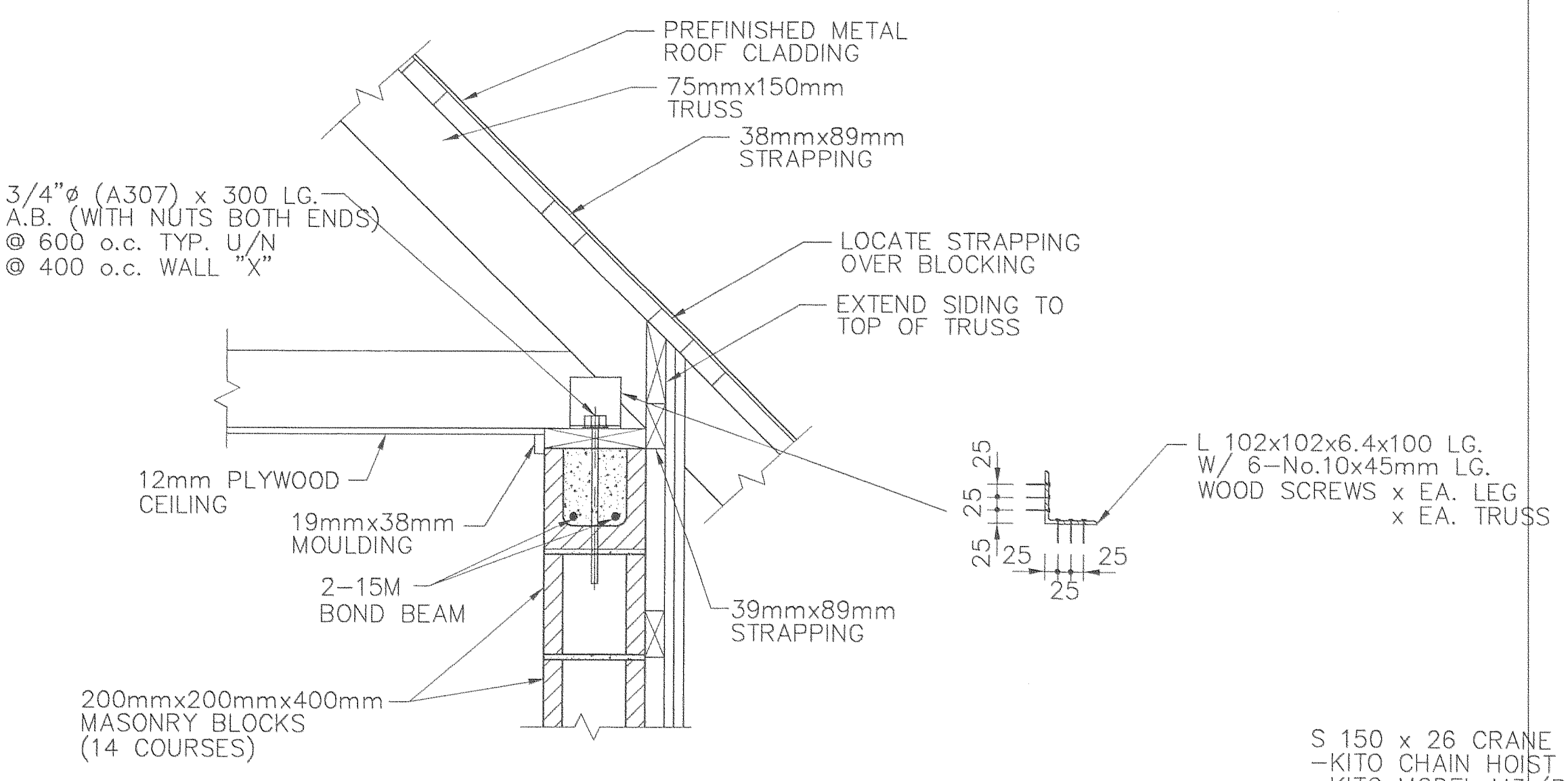
SECTION 1
1:25



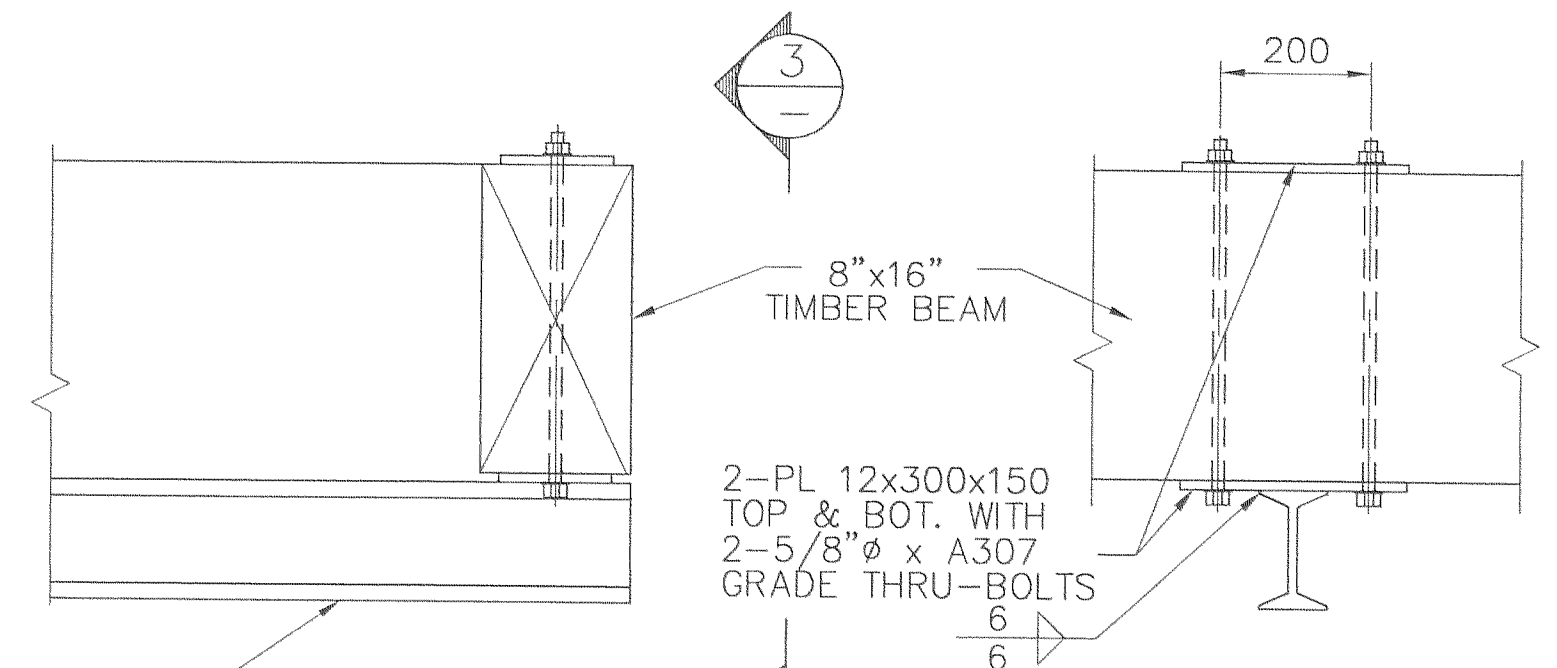
SECTION 2
1:25



MASONRY DETAIL
1:10



DETAIL A
1:10

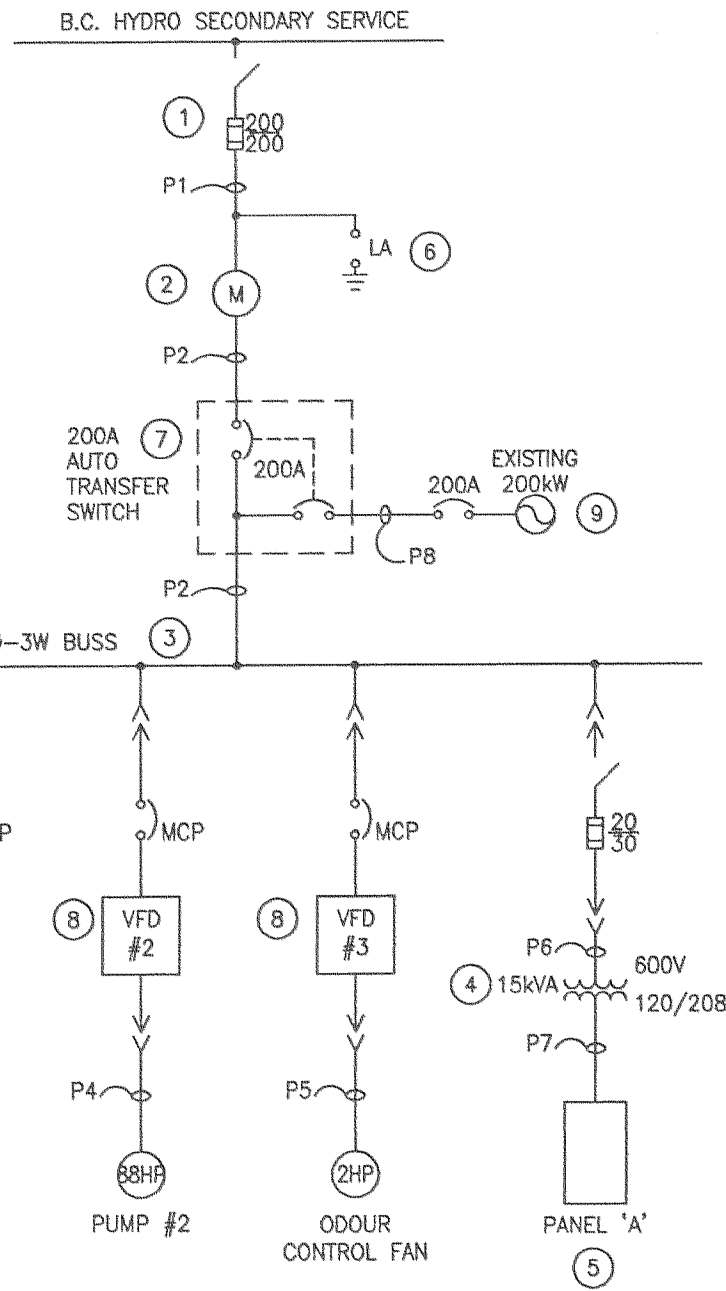


DETAIL B
1:10

SECTION 3
1:10

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S6052-14



SINGLE LINE DIAGRAM

- DISTRIBUTION BILL OF MATERIAL**
- DESCRIPTION
- SWITCH DISCONNECT: 200A, 600V, 3Φ-4W IN AN EEMAC 1 ENCLOSURE C/W HRC CLASS AJT FUSES AS SHOWN ON DRAWINGS. SQUARE-D CAT.# CH364 C/W SOLID NEUTRAL CH200-SN. CUTLER-HAMMER CAT.# 1HD364 C/W SOLID NEUTRAL CAT.# N200.
 - METER ENCLOSURE TO UTILITY STANDARDS.
 - MOTOR CONTROL CENTRE WITH 600A HORIZONTAL BUS AND 4200DA SYM. BRACINGS. MOTOR STARTER UNITS TO BE AS SPECIFIED IN MOTOR CONTROL CENTRE EQUIPMENT DESCRIPTION C/W FUSED DISCONNECT SWITCHES. SQUARE-D, CUTLER-HAMMER, ALLEN-BRADLEY.
 - TRANSFORMER: 15KVA, 600-120/208, 3Φ, AIR CORE TYPE, OPEN VENTILATED C/W 2-2 1/2% FCAN AND 2-2 1/2% FCBN TAPS. DELTA CAT.# DT 3015 MARCUS CAT.# MT 15A1 HAMMOND CAT.# K159K
 - PANELBOARD: 225A BUS, 3Φ-4W, 120/208 C/W 24 SINGLE CIRCUIT SPACES, SURFACE MOUNT TRIM AND DOOR. SQUARE-D CAT.# N009-24-4L. CUTLER-HAMMER CAT.# P114C2-24.
 - SECONDARY LIGHTNING ARRESTOR, 3P, 650V. MCGRAW-EDISON CAT.# AS650B3, JOSLYN CAT.# Z3-650-0A.
 - AUTO TRANSFER SWITCH: 200A, 600V 3Φ-3W. REFER TO SPECIFICATION.
 - VFD: 600V, 3Φ-3W. REFER TO SPECIFICATIONS.
 - GENERATOR: REFER TO SPECIFICATIONS.

HEATING FIXTURE SCHEDULE

TYPE	DESCRIPTION	CATALOG NUMBER	COUNT
A	1.25 kW BASEBOARD HEATER, 208V, 1Φ C/W INTEGRAL 2-P THERMOSTAT.	CHROMALOX CAT.# BL5712W21 C/W BLTOW STELPRO CAT.# N12-V-8 C/W N2T1 OUELLET CAT.# F1258 C/W F-1B2	1
B	3.0 kW CONVECTION HEATER, 208V, 1Φ C/W INTEGRAL 2-P THERMOSTAT.	CHROMALOX CAT.# AF203302102A9, STELPRO CAT.# QWS00-930-122-W-8 OUELLET CAT.# GLA3008-BL C/W OLA-12	1

LIGHTING FIXTURE SCHEDULE

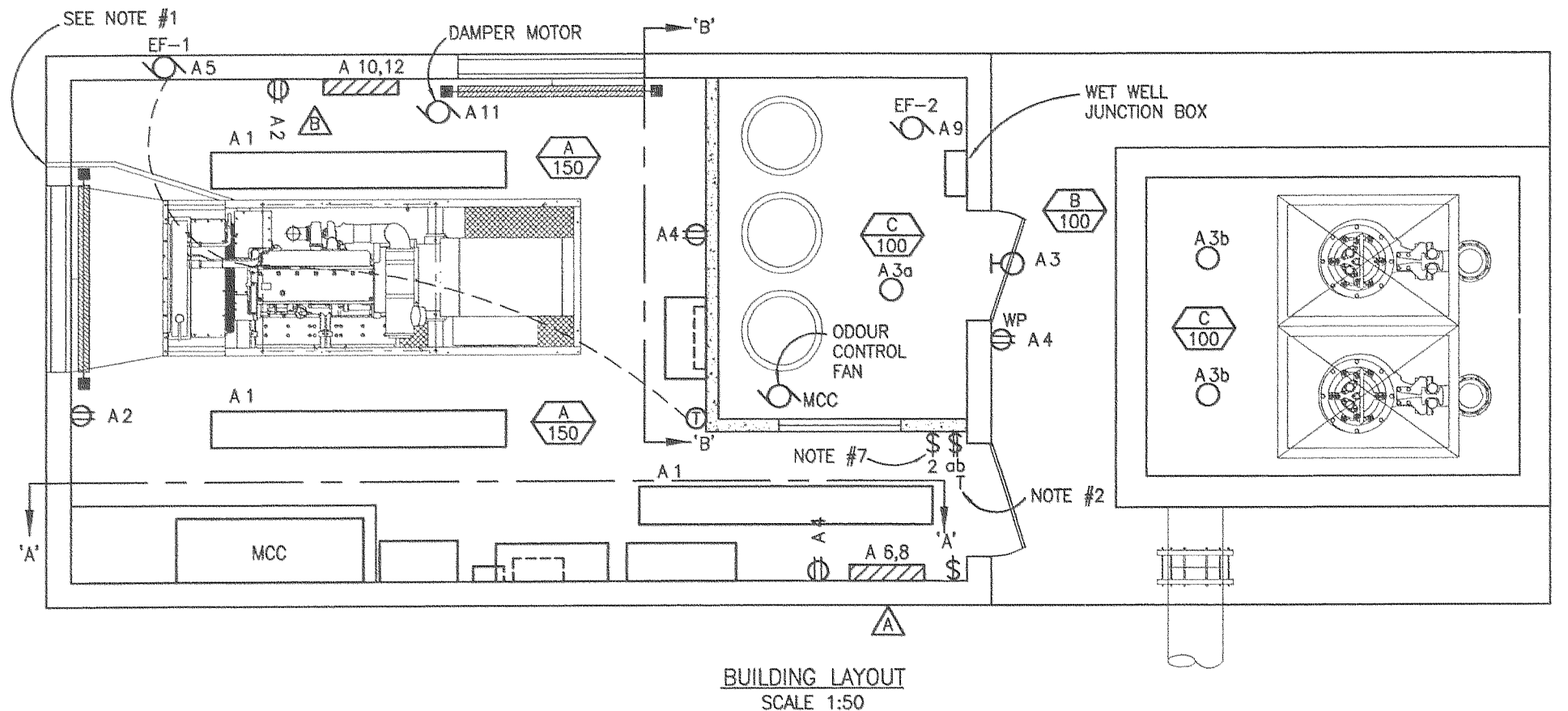
TYPE	DESCRIPTION	CATALOG NUMBER	COUNT
A	INDUSTRIAL 8' FLUORESCENT FIXTURE C/W 120 BALLAST, SLOTTED REFLECTOR AND 2-F8T812 CW/HO LAMPS.	METALUX CAT.# 1A-296HO, LITHONIA CAT.# RU296HO120, THOMAS CAT.# AHR-2-96-120E5.	3
B	WALL MOUNT H.P.S. FIXTURE C/W 120V BALLAST, CAST ALUMINUM HOUSING, HIGH-IMPACT RESISTANT POLYCARBONATE LENS, 100W, COATED H.P.S. LAMP AND PHOTOCCELL.	MCGRAW-EDISON CAT.# W2101-LP-V-120V	1
C	CEILING MOUNT EXPLOSION PROOF FIXTURES C/W 100W INCANDESCENT LAMP.	CROUSE-HINDS CAT.# EYBx240.	3

MOTOR CONTROL CENTER EQUIPMENT DESCRIPTION

SPACE	DESCRIPTION	LOAD (HP)	STARTER SIZE	BKR. OR FUSE SIZE	CONTROL VOLTAGE	H.O.A.	H.O.	START	STOP	LT.	E.T.	CONT. TXF.	REMARKS
F1 AC	INCOMING SECTION												
F1 DE	SPACE												
F1 FG	15KVA TRANSFORMER			20A/30A AJT									
F1 HN	VFD #3	2HP		MCP	120V								(REFER TO SPECIFICATION)
F2 AN	VFD #1	88HP		MCP	120V								(REFER TO SPECIFICATION) 100HP MIN. CAPACITY
F3 AN	VFD #2	88HP		MCP	120V								(REFER TO SPECIFICATION) 100HP MIN. CAPACITY

PANEL 'A' LOCATION

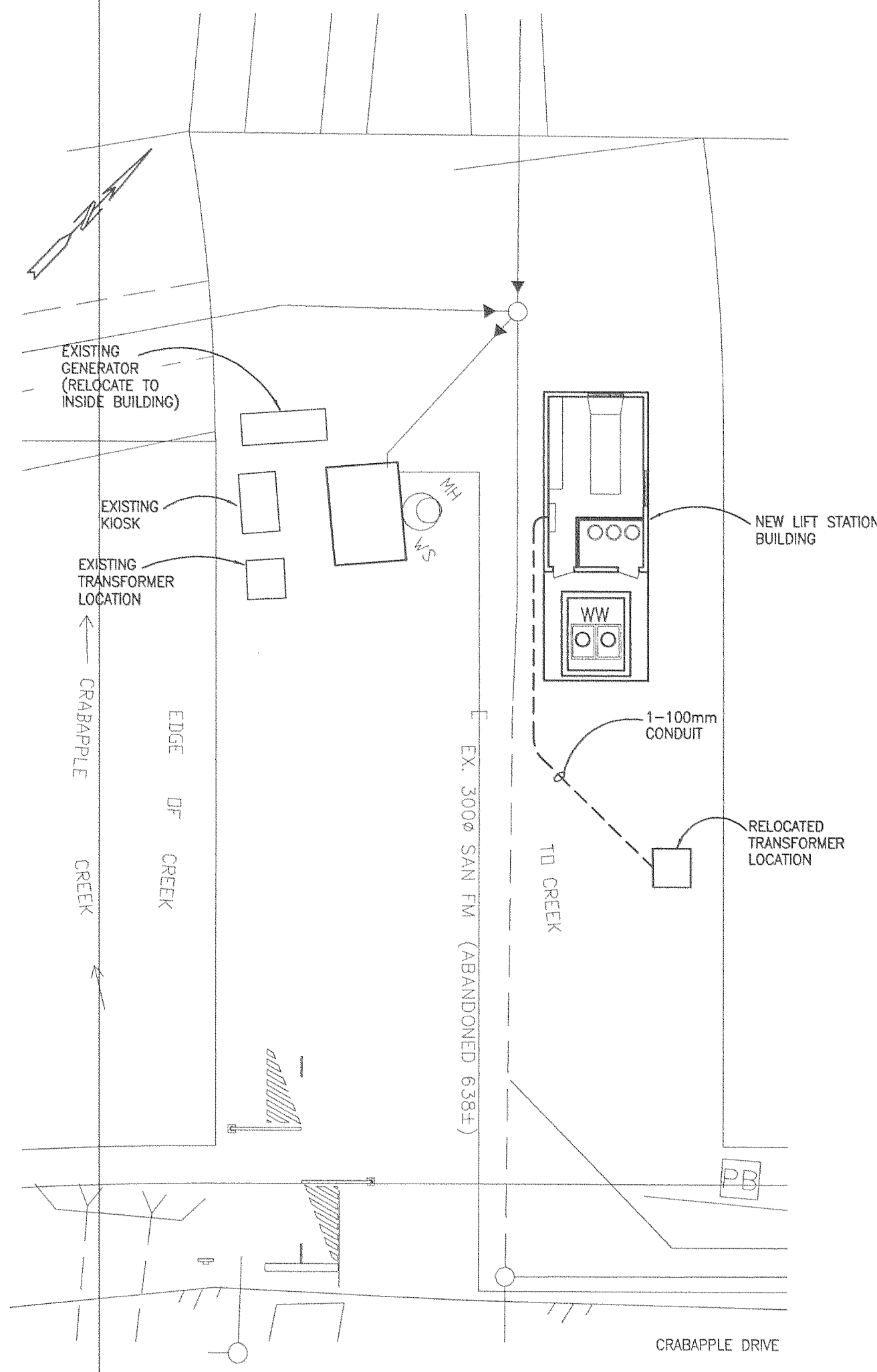
DESIGNATION	LOAD (W)	NO. RECP.	NO. TRIP	NO. TRIP	NO. TRIP	NO. TRIP	LOAD (W)	DESIGNATION
INTERIOR LTG.	450	15	1	A	2	15	2	RECEPTACLES
EXTERIOR LTG.	400	15	3	B	4	15	3	RECEPTACLES
EF-1	1/4HP	15	5	C	6	15	3	B.B. HEATER
BLOCK HEATER		20	7	A	8			
EF-2	1/4HP	15	9	B	10	20		CONVECTION HTR.
DAMPER MOTOR		15	11	C	12			
BATTERY CHARGER		15	13	A	14			
				B	16			
				C	18			
				A	20			
				B	22			
				C	24	15		CONTROL PANEL



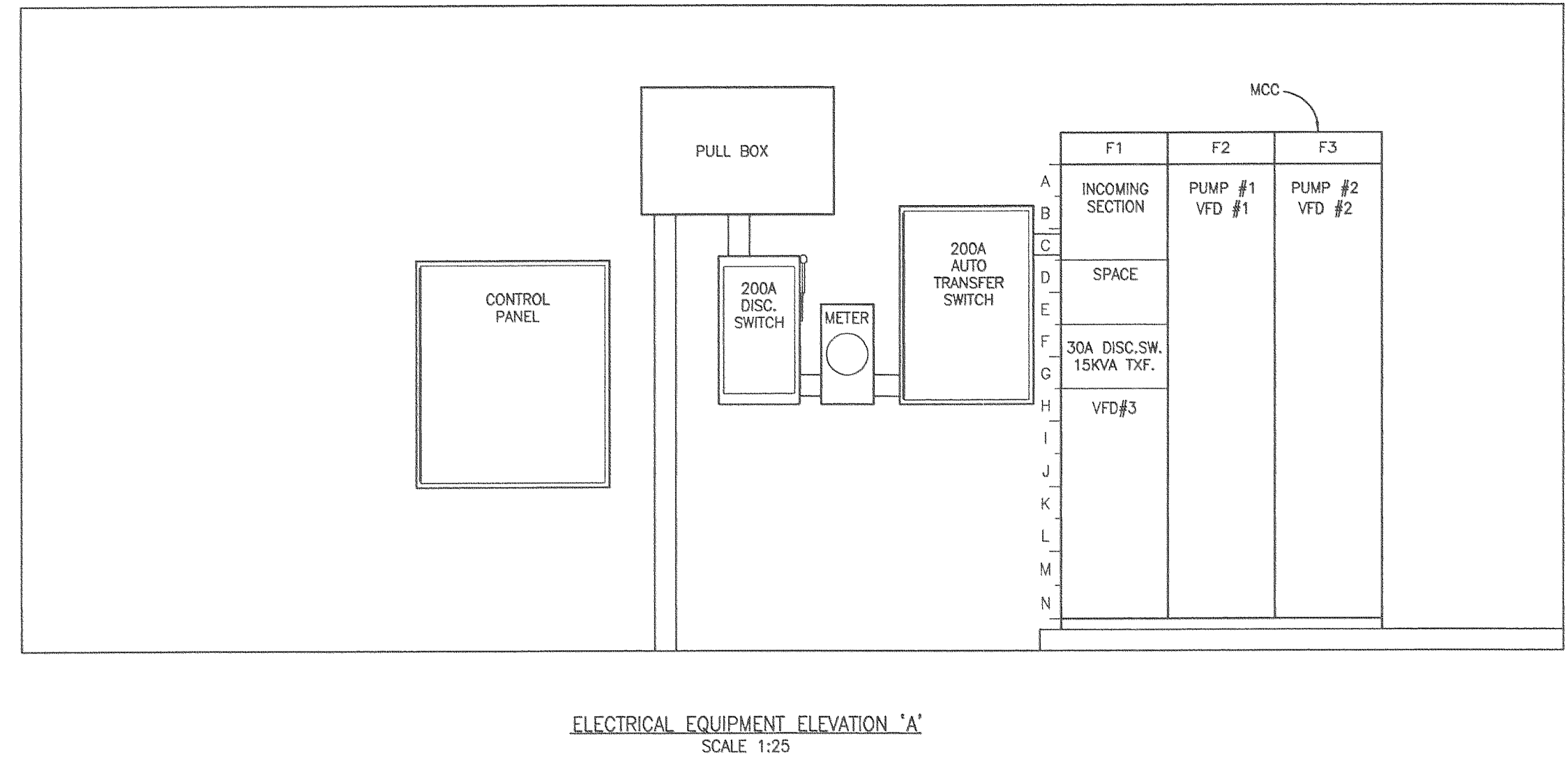
BUILDING LAYOUT SCALE 1:50

CABLE SCHEDULE

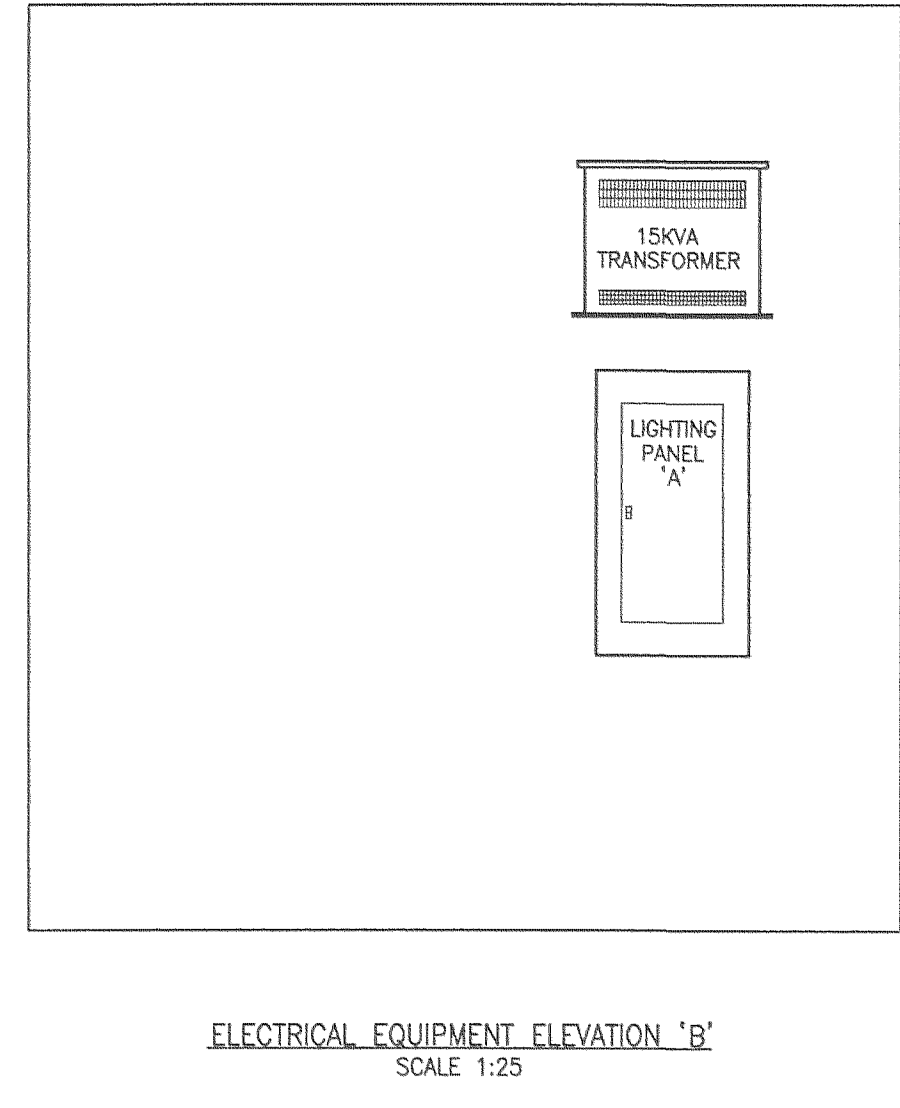
CABLE NO.	NO. CONDUCT.	CONDUCT. SIZE	CONDUIT SIZE	TO	FROM	REMARKS
P1	4	3/0	100mm	METER/CT/PT/MAIN SWITCH	B.C. HYDRO SERVICE	
P2	3	3/0	75mm	TRANSFER SW./MCC	CT/PT	
P3	3	#2	32mm	PUMP #1	MCC	
P4	3	#2	32mm	PUMP #2	MCC	
P5	3	#12	19mm	ODOUR CONTROL FAN	MCC	
P6	3	#12	19mm	15KVA TXF.	MCC	
P7	4	#6	25mm	PANEL 'A'	15KVA TXF.	
P8	3	3/0	50mm	200KW GENERATOR	TRANSFER SW.	
C1	2	#12	19mm	PUMP CONTROL PNL.	DIST. PANEL	TA(L1A,N)
C2	14	#14	32mm	PUMP #1 VFD #1	PUMP CONTROL PNL.	TA(1,53,54,55,56,57,58,59,200,N1)
C3	14	#14	32mm	PUMP #2 VFD #2	PUMP CONTROL PNL.	TA(1,83,84,85,86,87,88,89,300,N1)
C4	14	#14	32mm	ODOUR CONTROL FAN VFD #3	PUMP CONTROL PNL.	TA(1,83,84,85,86,87,88,89,300,N1)
C5	2	#14	19mm	FS1	PUMP CONTROL PNL.	TA(74,75)
C6	3	#18	19mm	ODOUR CONTROL FAN	PUMP CONTROL PNL.	TA(88,89,90) BELDEN SHIELDED CABLE
C7	2	#12	19mm	DAMPER MOTOR	PUMP CONTROL PNL.	TA(401,N1)
C8	2	#14	19mm	GENERATOR ON	PUMP CONTROL PNL.	TA(1,400)
C9	6	#14	25mm	GENERATOR	TRANSFER SWITCH	
C101	1	COAX	19/25mm	LEVEL TXMTR.	PCP	COAX ATTACHED TO TRANSDUCER



SITE PLAN SCALE 1:200



ELECTRICAL EQUIPMENT ELEVATION 'A' SCALE 1:25



ELECTRICAL EQUIPMENT ELEVATION 'B' SCALE 1:25

THE COMPLETENESS OF THIS AS-BUILT DRAWING IS DEPENDENT SOLELY ON INFORMATION PROVIDED BY THE CONTRACTOR.

- SYMBOLS SCHEDULE**
- ⊙ SINGLE RECEPTACLE, WALL MOUNTED
 - ⊕ DUPLEX RECEPTACLE, WALL MOUNTED
 - ⊗ WEATHERPROOF DUPLEX RECEPTACLE, WALL MOUNTED
 - ⊙ SPECIAL RECEPTACLE
 - ⊕ DUPLEX GFCI OUTLET, WALL MOUNTED
 - ⊖ TELEPHONE OUTLET IN WALL
 - ⊖ DATA WALL OUTLET
 - ⊖ DATA/TEL WALL OUTLET
 - ⊖ POWER PAC POLE
 - ⊖ PANEL BOARD
 - ⊖ THERMOSTAT
 - ⊖ MOTOR
 - ⊖ DISCONNECT SWITCH
 - ⊖ ELECTRIC HEATER
 - ⊖ ELECTRIC HEATER DESIGNATION (ie. TYPE A)
 - ⊖ JUNCTION BOX
 - ⊖ SINGLE POLE SWITCH
 - ⊖ TIMER SWITCH
 - ⊖ DIMMER SWITCH
 - ⊖ 3-POLE SWITCH
 - ⊖ SWITCH DESIGNATION
 - ⊖ TIMER SWITCH
 - ⊖ 2 SPEED SWITCH
 - ⊖ LIGHTING FIXTURE DESIGNATION (ie. TYPE A, 100W)
 - ⊖ SURFACE/ PENDANT/ RECESSED FLUORESCENT FIXTURE
 - ⊖ BARE FLUORESCENT STRIP FIXTURE
 - ⊖ CEILING MOUNT FIXTURE
 - ⊖ RECESSED CEILING MOUNT FIXTURE
 - ⊖ WALL MOUNT FIXTURE

No.	Description	Date	By
4	ISSUED FOR AS-BUILT	01.01.15	GT
3	ISSUED FOR CONSTRUCTION	00.07.28	GT
2	ISSUED FOR TENDER	00.06.05	GT
1	ISSUED FOR REVIEW	00.05.19	GT

L. R. PEARSON & ASSOCIATES LTD.
 CONSULTING ENGINEERS
 P.O. BOX 3022
 KAMLOOPS, B.C. V2C 6B8
 Phone No. (250) 374-9234
 Fax No. (250) 374-3902
 PROJECT NO. P-0-014

Project
RESORT MUNICIPALITY OF WHISTLER LIFT STATION S-103

Title
ELECTRICAL DISTRIBUTION

Drawn: G.T.
 Date: 00.05.17
 Chk'd: L.R.P.
 Scale: AS NOTED

DRAWING No. **P-0-014-E1** REV. 4

ACAD FILE NAME: 014-E1.DWG
 LAST PLOT DATE: 01.01.15

S6052-15

- ELEMENTARY SYMBOL SCHEDULE**
- TERMINAL
 - NORMALLY OPEN CONTACT
 - NORMALLY CLOSED CONTACT
 - STOP
 - START
 - NORMALLY OPEN PUSHBUTTON
 - INDICATING LIGHT (RED LIGHT #2)
 - ELAPSED TIME METER
 - FUSE
 - RELAY (SOCKET TERMINALS 13,14)
 - PANEL MOUNTED BREAKER
 - ON TIME DELAY 'NC'
 - OFF TIME DELAY 'NO'
 - HORN
 - TIME DELAY RELAY
 - SELECTOR SWITCH
 - INDICATING LIGHT IN LAMP CABINET PANEL
 - FIELD WIRING

ELEMENTARY SYMBOL SCHEDULE

No.	Description	Date	By
4	ISSUED FOR AS-BUILT	01.01.15	G.T.
3	ISSUED FOR CONSTRUCTION	00.07.28	G.T.
2	ISSUED FOR TENDER	00.06.05	G.T.
1	ISSUED FOR REVIEW	00.05.19	G.T.

Issue/Revisions		
	L. R. PEARSON & ASSOCIATES LTD. CONSULTING ENGINEERS P.O. BOX 3582 VANCOUVER, B.C. V2C 6B8 (604) 374-8234 FAX: NO. 372-2241	PROJECT NO. P-0-014

Project
RESORT MUNICIPALITY OF WHISTLER LIFT STATION S-103

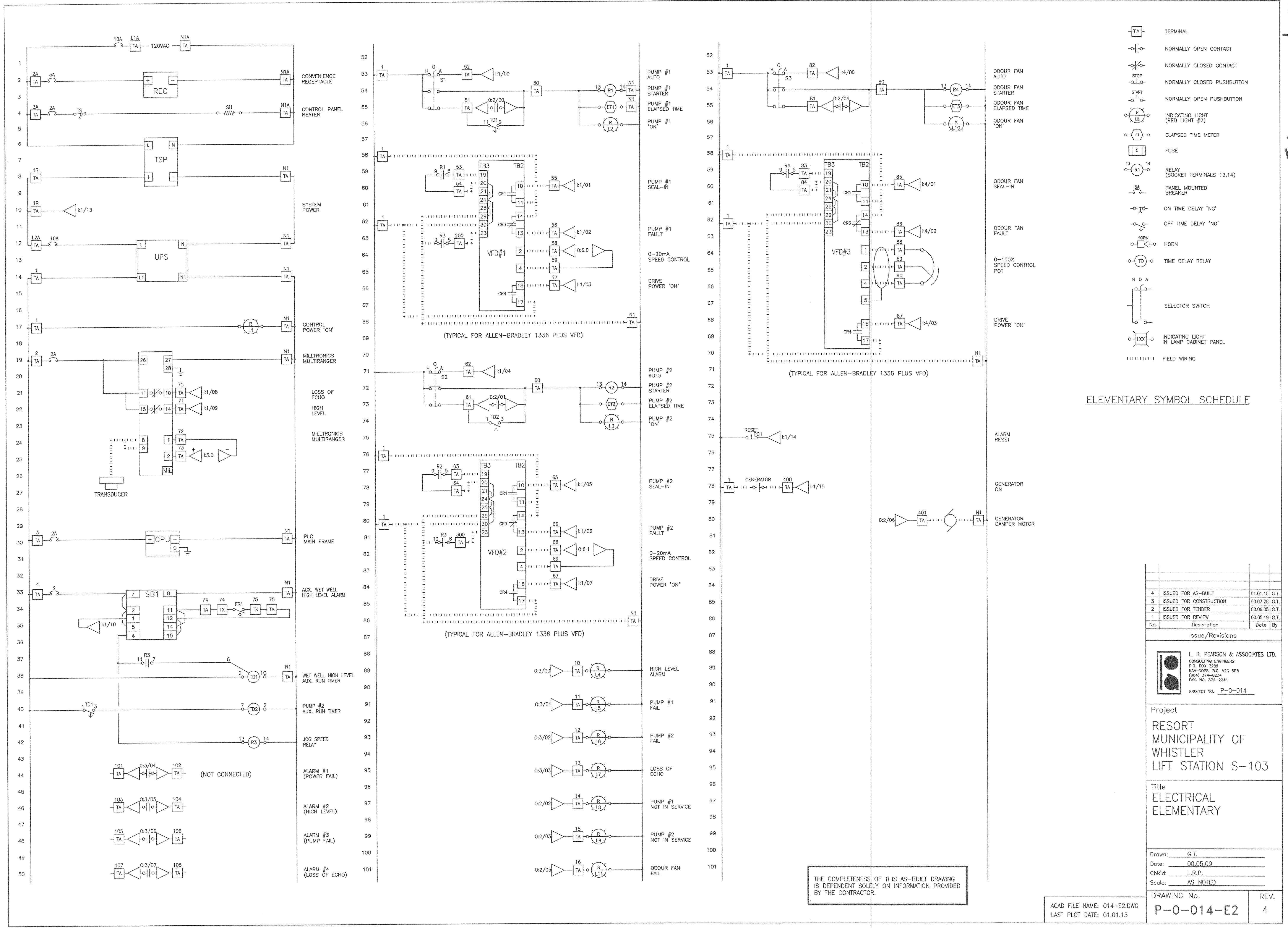
Title
ELECTRICAL ELEMENTARY

Drawn: G.T.
Date: 00.05.09
Chk'd: L.R.P.
Scale: AS NOTED

DRAWING No. **P-0-014-E2** REV. **4**

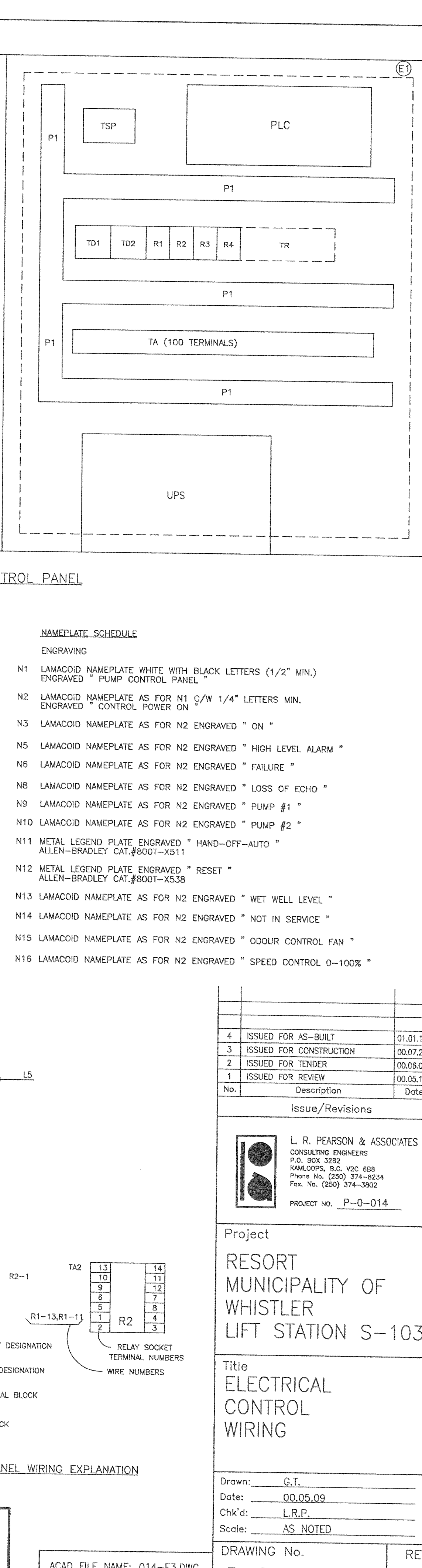
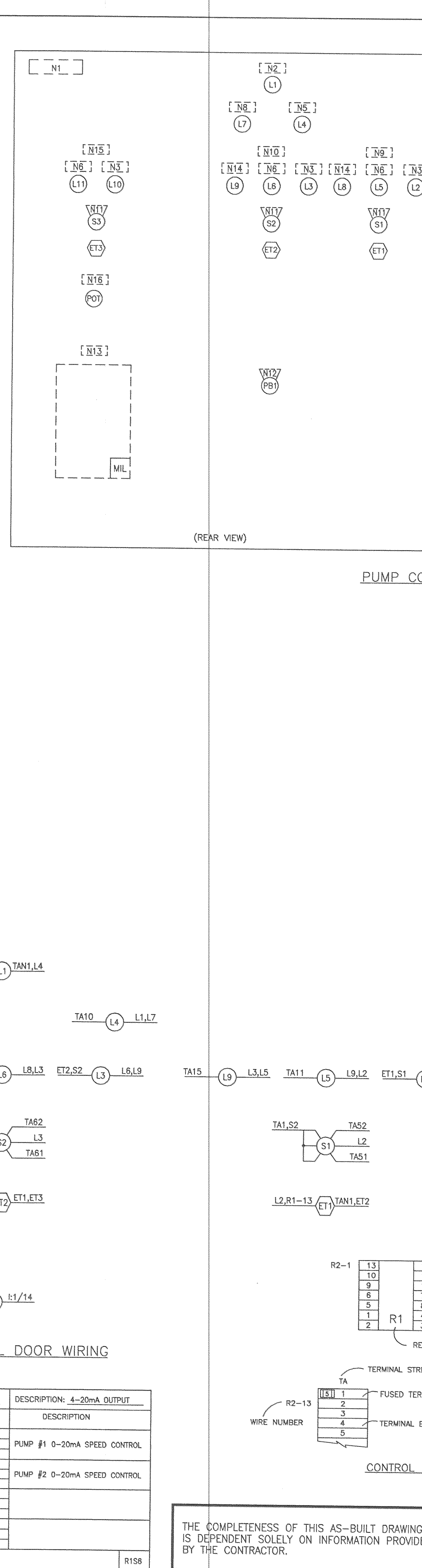
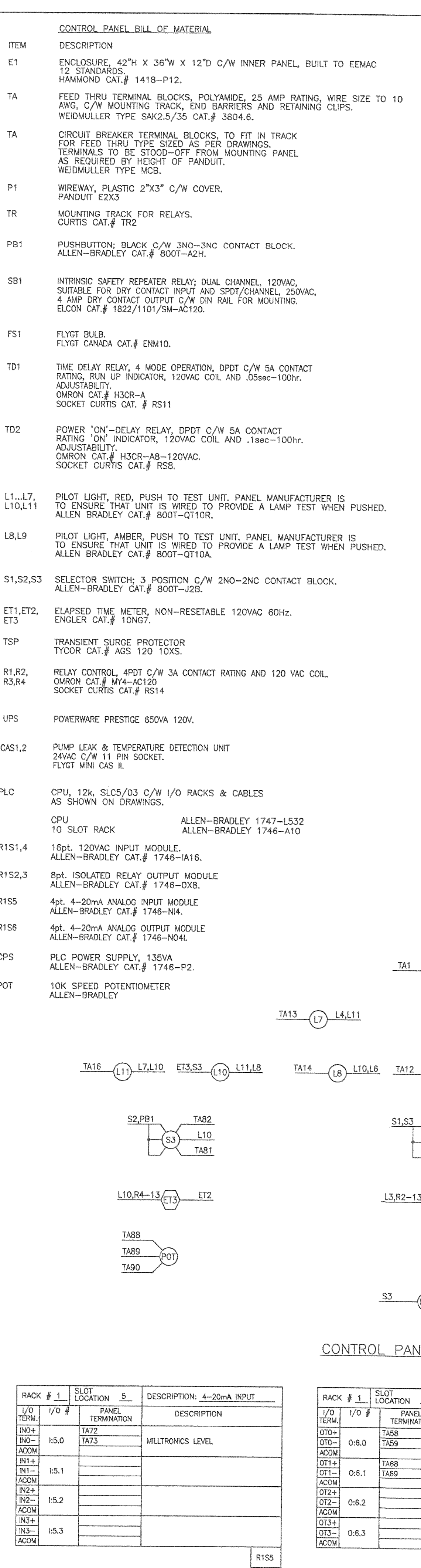
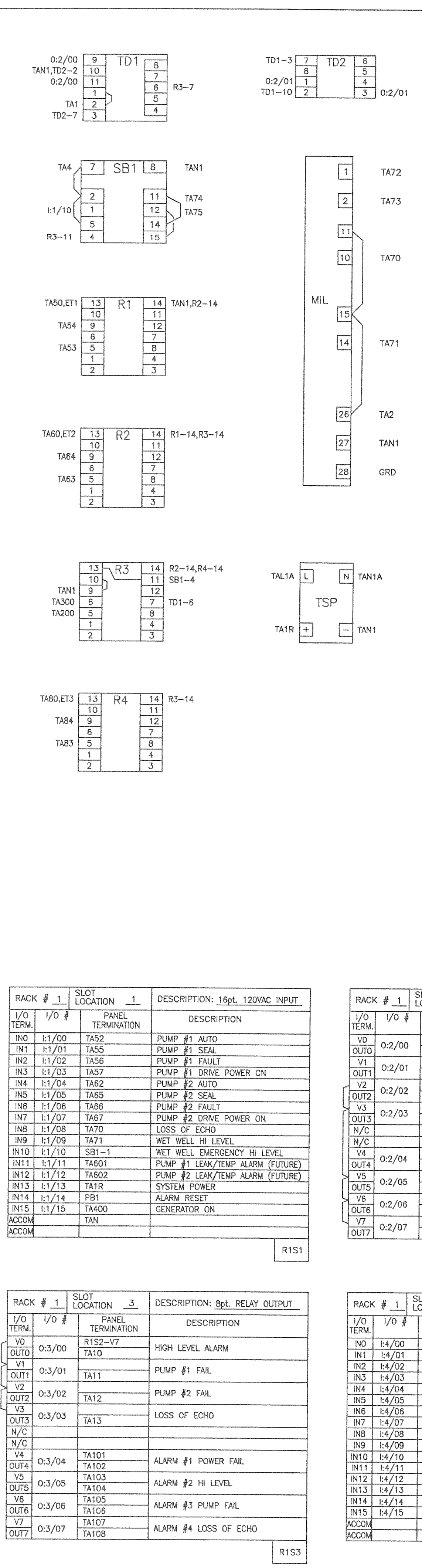
ACAD FILE NAME: 014-E2.DWG
LAST PLOT DATE: 01.01.15

THE COMPLETENESS OF THIS AS-BUILT DRAWING IS DEPENDENT SOLELY ON INFORMATION PROVIDED BY THE CONTRACTOR.



S6052-16

F:\Projects\2000\2000-13 pump station s-103\AS CONSTRUCTED DWGS\ELECTRICAL AS BUILT\014-e3.dwg wed Jan 17 16:24:17 2001 Paragon Engineering



CONTROL PANEL BILL OF MATERIAL

ITEM	DESCRIPTION
E1	ENCLOSURE, 42" X 36" X 12" D C/W INNER PANEL, BUILT TO EEMAC 12 STANDARDS. HAMMOND CAT.# 1418-P12.
TA	FEED THRU TERMINAL BLOCKS, POLYAMIDE, 25 AMP RATING, WIRE SIZE TO 10 AWG, C/W MOUNTING TRACK, END BARRIERS AND RETAINING CLIPS. WEIDMULLER TYPE SAK2.5/35 CAT.# 3804.6.
TA	CIRCUIT BREAKER TERMINAL BLOCKS, TO FIT IN TRACK FOR FEED THRU TYPE SIZED AS PER DRAWINGS. TERMINALS TO BE STOOD-OFF FROM MOUNTING PANEL AS REQUIRED BY HEIGHT OF PANDUIT. WEIDMULLER TYPE MCB.
P1	WIREWAY, PLASTIC 2"x3" C/W COVER. PANDUIT EZ33
TR	MOUNTING TRACK FOR RELAYS. CURTIS CAT.# TR2
PB1	PUSHBUTTON, BLACK C/W 3NO-3NC CONTACT BLOCK. ALLEN-BRADLEY CAT.# 800T-A2H.
SBI	INTRINSIC SAFETY REPEATER RELAY; DUAL CHANNEL, 120VAC, SUITABLE FOR DRY CONTACT INPUT AND SPDT/CHANNEL, 250VAC, 4 AMP DRY CONTACT OUTPUT C/W DIN RAIL FOR MOUNTING. ELCON CAT.# 1822/1101/SM-AC120.
FS1	FLYGT BULB. FLYGT CANADA CAT.# ENM10.
TD1	TIME DELAY RELAY, 4 MODE OPERATION, DPDT C/W 5A CONTACT RATING, RUN UP INDICATOR, 120VAC COIL AND .05sec-100hr. ADJUSTABILITY. OMRON CAT.# H3CR-A H3CR-A SOCKET CURTIS CAT.# RS11
TD2	POWER 'ON'-DELAY RELAY, DPDT C/W 5A CONTACT RATING 'ON' INDICATOR, 120VAC COIL AND .1sec-100hr. ADJUSTABILITY. OMRON CAT.# H3CR-AB-120VAC. SOCKET CURTIS CAT.# RS8.
L1..L7, L10,L11	PILOT LIGHT, RED, PUSH TO TEST UNIT. PANEL MANUFACTURER IS TO ENSURE THAT UNIT IS WIRED TO PROVIDE A LAMP TEST WHEN PUSHED. ALLEN-BRADLEY CAT.# 800T-G110.
L8,L9	PILOT LIGHT, AMBER, PUSH TO TEST UNIT. PANEL MANUFACTURER IS TO ENSURE THAT UNIT IS WIRED TO PROVIDE A LAMP TEST WHEN PUSHED. ALLEN-BRADLEY CAT.# 800T-G110A.
S1,S2,S3	SELECTOR SWITCH; 3 POSITION C/W 2NO-2NC CONTACT BLOCK. ALLEN-BRADLEY CAT.# 800T-J2B.
ET1,ET2, ET3	ELAPSED TIME METER, NON-RESETABLE 120VAC 60Hz. ENGLER CAT.# 10NG7.
TSP	TRANSIENT SURGE PROTECTOR TYCOR CAT.# AGS 120 10XS.
R1,R2, R3,R4	RELAY CONTROL, 4PDT C/W 3A CONTACT RATING AND 120 VAC COIL. OMRON CAT.# MY4-AC120 SOCKET CURTIS CAT.# RS14
UPS	POWERWARE PRESTIGE 650VA 120V.
CAS1,2	PUMP LEAK & TEMPERATURE DETECTION UNIT 24VAC C/W 11 PIN SOCKET. FLYGT MINI CAS II.
PLC	CPU, 12k, SLC5/03 C/W I/O RACKS & CABLES AS SHOWN ON DRAWINGS.
CPU	ALLEN-BRADLEY 1747-L532 ALLEN-BRADLEY 1746-A10
R1S1,4	16pt. 120VAC INPUT MODULE. ALLEN-BRADLEY CAT.# 1746-IA16.
R1S2,3	8pt. ISOLATED RELAY OUTPUT MODULE ALLEN-BRADLEY CAT.# 1746-0X8.
R1S5	4pt. 4-20mA ANALOG INPUT MODULE ALLEN-BRADLEY CAT.# 1746-N4.
R1S6	4pt. 4-20mA ANALOG OUTPUT MODULE ALLEN-BRADLEY CAT.# 1746-NO4.
OPS	PLC POWER SUPPLY, 135VA ALLEN-BRADLEY CAT.# 1746-P2.
POT	10K SPEED POTENTIOMETER ALLEN-BRADLEY

PUMP CONTROL PANEL

NAMEPLATE SCHEDULE

ENGRAVING	DESCRIPTION
N1	LAMACOID NAMEPLATE WHITE WITH BLACK LETTERS (1/2" MIN.) ENGRAVED " PUMP CONTROL PANEL "
N2	LAMACOID NAMEPLATE AS FOR N1 C/W 1/4" LETTERS MIN. ENGRAVED " CONTROL POWER ON "
N3	LAMACOID NAMEPLATE AS FOR N2 ENGRAVED " ON "
N5	LAMACOID NAMEPLATE AS FOR N2 ENGRAVED " HIGH LEVEL ALARM "
N6	LAMACOID NAMEPLATE AS FOR N2 ENGRAVED " FAILURE "
N8	LAMACOID NAMEPLATE AS FOR N2 ENGRAVED " LOSS OF ECHO "
N9	LAMACOID NAMEPLATE AS FOR N2 ENGRAVED " PUMP #1 "
N10	LAMACOID NAMEPLATE AS FOR N2 ENGRAVED " PUMP #2 "
N11	METAL LEGEND PLATE ENGRAVED " HAND-OFF-AUTO " ALLEN-BRADLEY CAT.#800T-X511
N12	METAL LEGEND PLATE ENGRAVED " RESET " ALLEN-BRADLEY CAT.#800T-X538
N13	LAMACOID NAMEPLATE AS FOR N2 ENGRAVED " WET WELL LEVEL "
N14	LAMACOID NAMEPLATE AS FOR N2 ENGRAVED " NOT IN SERVICE "
N15	LAMACOID NAMEPLATE AS FOR N2 ENGRAVED " ODOUR CONTROL FAN "
N16	LAMACOID NAMEPLATE AS FOR N2 ENGRAVED " SPEED CONTROL 0-100% "

No.	Description	Date	By
4	ISSUED FOR AS-BUILT	01.01.15	G.T.
3	ISSUED FOR CONSTRUCTION	00.07.28	G.T.
2	ISSUED FOR TENDER	00.08.05	G.T.
1	ISSUED FOR REVIEW	00.03.19	G.T.

Issue/Revisions

L. R. PEARSON & ASSOCIATES LTD.
CONSULTING ENGINEERS
P.O. BOX 3282
VANCOUVER, B.C. V2C 6S8
Phone No. (250) 374-8234
Fax: No. (250) 374-3802
PROJECT NO. P-0-014

Project
RESORT MUNICIPALITY OF WHISTLER LIFT STATION S-103

Title
ELECTRICAL CONTROL WIRING

Drawn: G.T.
Date: 00.05.09
Chk'd: L.R.P.
Scale: AS NOTED

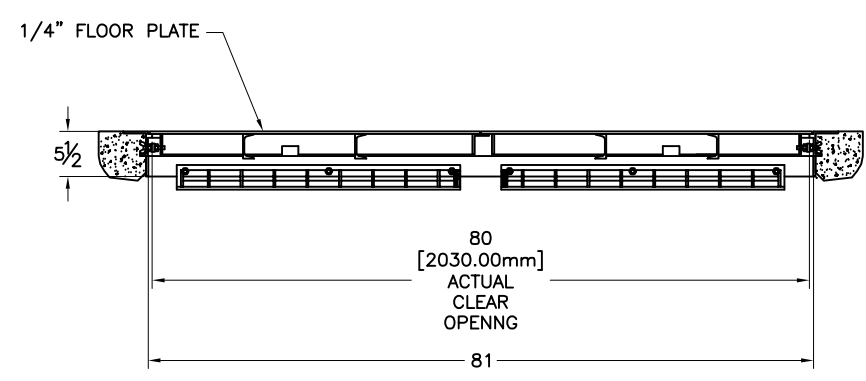
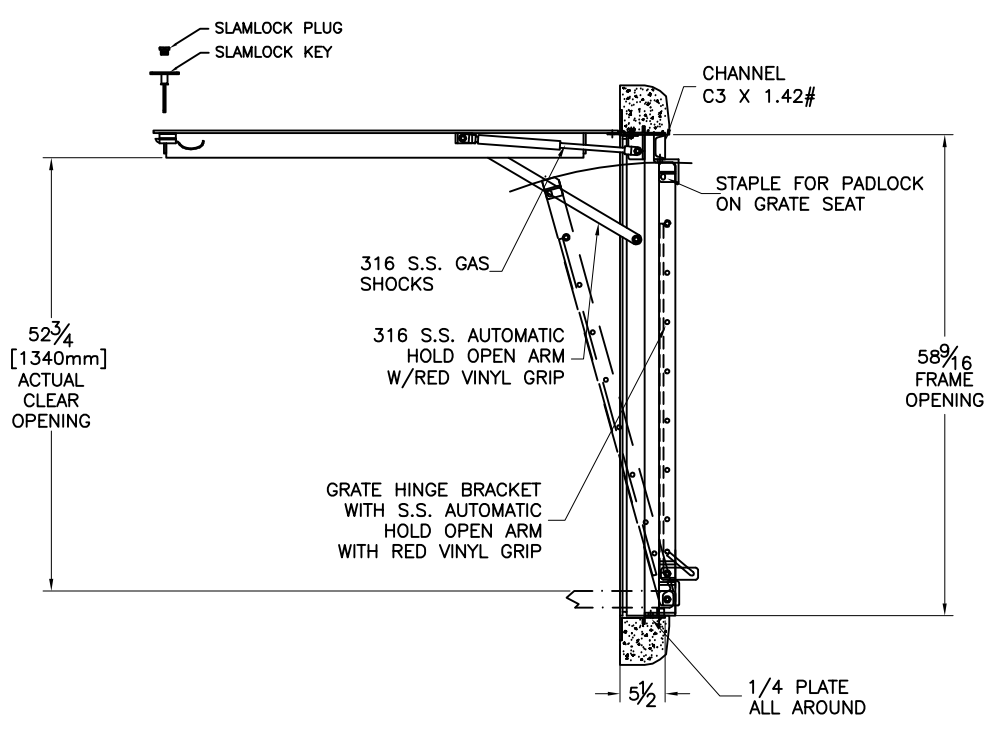
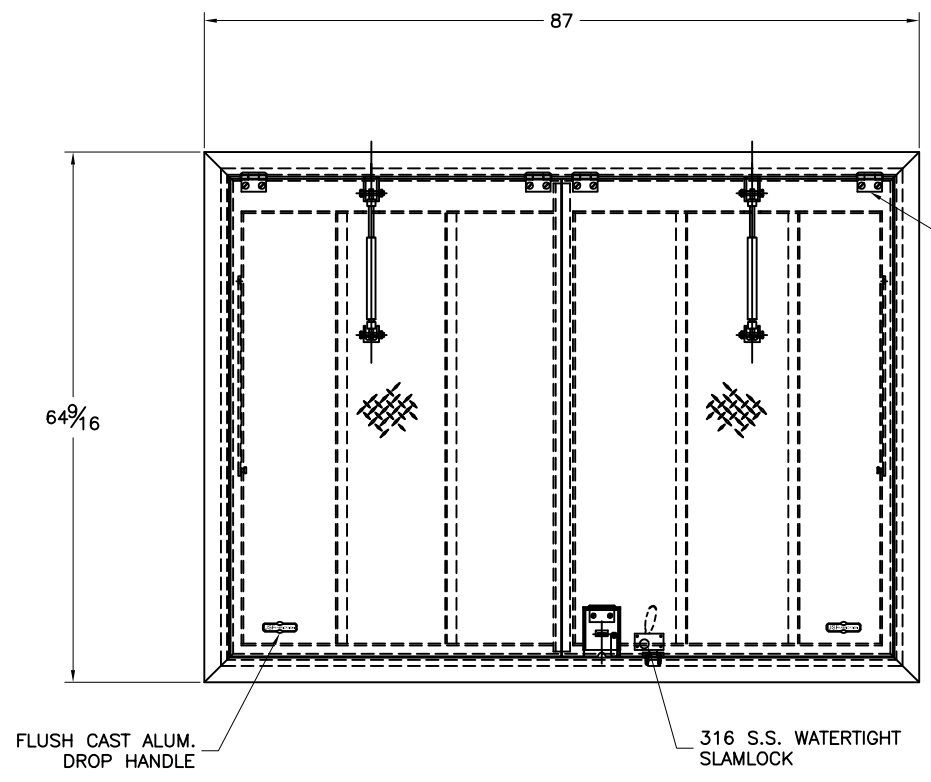
DRAWING No. **P-0-014-E3** REV. 4

ACAD FILE NAME: 014-E3.DWG
LAST PLOT DATE: 01.01.15

THE COMPLETENESS OF THIS AS-BUILT DRAWING IS DEPENDENT SOLELY ON INFORMATION PROVIDED BY THE CONTRACTOR.

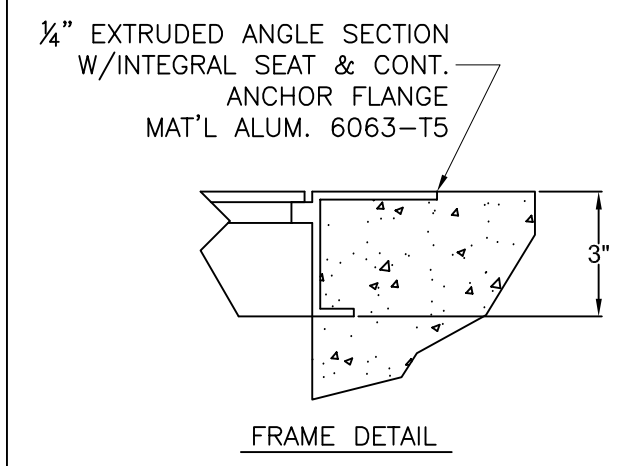
JAN 21 2004

New wet well access hatch S103 (2020)



- SELECTED FEATURES**
1. HINGED SAME SIDE
 2. S.S GAS SHOCKS
 3. SLAMLOCK
 4. SAFETY GRATING
 5. OVERSIZED RECESSED PADLOCK
 6. BITUMINOUS COATING

- NOTES**
1. MATERIAL: ALUMINUM
 2. FINISH: MILL
 3. LOADING: 300 PSF
 4. 316 SS NUTS & BOLTS
 5. AREA OF FRAME IN CONTACT WITH CONCRETE TO BE PAINTED WITH BITUMINOUS COATING
 6. SAFETY GRATING TO BE PAINTED WITH SAFETY ORANGE POWDER COAT
 7. APPROX HATCH WT: 383.88 LBS



NOTE:
 AS AN AUTOMATED DRAWING, THE DESIGN HAS NOT BEEN REVIEWED BY USFF ENGINEERING AND IS THEREFORE TO BE USED FOR REFERENCE ONLY. USFF RESERVES THE RIGHT TO ADJUST DIMENSIONS TO INSURE ADHERENCE TO CUSTOMER REQUIREMENTS AND PROPER OPERATION OF THE PRODUCT.

REV.	DATE	BY	APP'D	DESCRIPTION
1	12/11/18	T.A	T.A	SAFETY GRATES HINGED OPPOSITE LONG SIDE

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INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M

BREAK ALL SHARP CORNERS & EDGES TO 0.01

TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL

INCHES = ± 1/16
 1/16 = ± 1/32
 1/32 = ± 1/64

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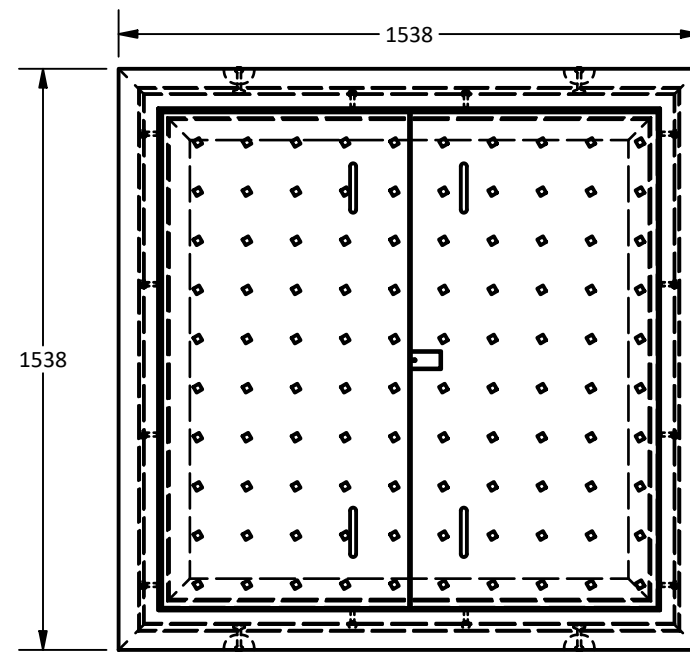
 **U.S.F. FABRICATION INC.**
 HIALEAH, FLORIDA

HATCH APD 300 57 X 86 ALUM

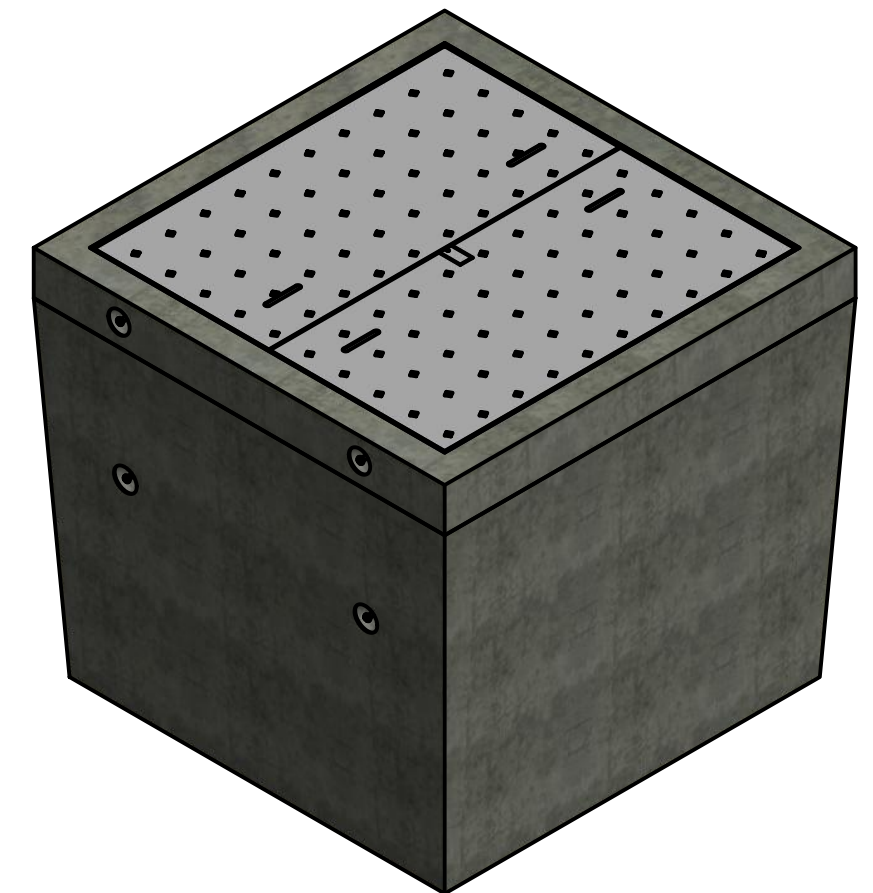
DWN. BY: BOB	SCALE: 1:24	SHEET: 1 OF 1	DATE: 12/05/18
CHK. BY: BOB	DWG.# 1000115082	SHEET SIZE: B	REV: 1

New bypass chamber S103 (2020)

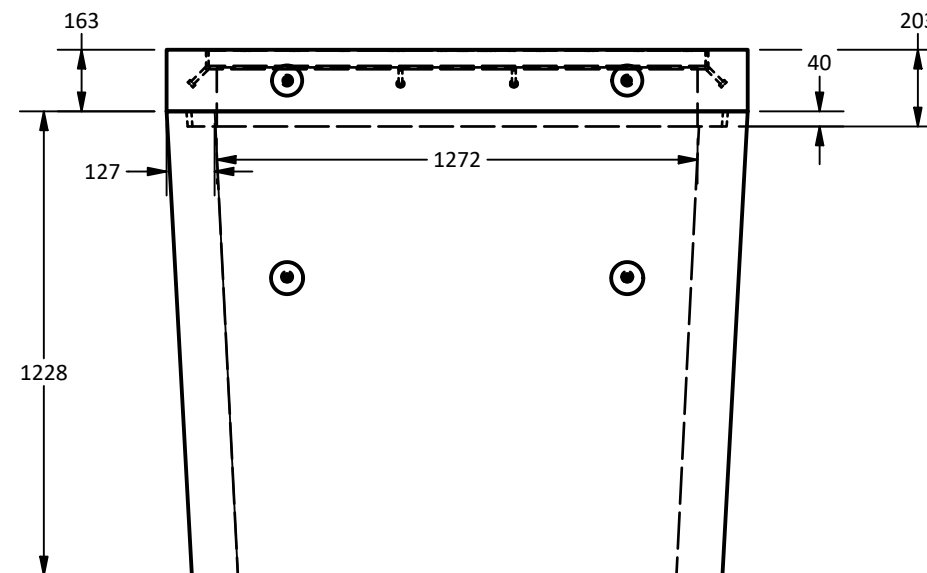
PART LIST			
ITEM	QTY	PART NUMBER	WEIGHT
1	1	1.5 x 1.5 Vault Riser Section	1,980 kg.
2	1	1.5 x 1.5 LID w/ Double Door Hatch	350 kg.
3	8	2.5T x 68mm Lifting Inserts	



Plan View



Isometric View



Elevation View

The LCG steel access lid provided on this vault is designed for off-street locations that may occasionally receive a AASHTO H20 wheel load. This manufactured lid has been proof of design tested by applying a loading excess of 16,000 lbs. over a 10" x 20" area plus a 30% impact factor [minimum 20,800 lbs. or 104 lbs. per sq. in.]. This lid is not designed for "Direct Traffic or for use in a road way exposed to repetitive traffic loading or vehicles traveling in speeds in excess of 10MPH.

By accepting and returning an approved shop drawing provided by the Langley Concrete Group for a specific product or project, the responsibility for the final product manufactured and provided in accordance with the drawings shall be borne by the customer. The Langley Concrete Group bears no responsibility, financial or otherwise, for errors in the finished product received unless proven it differs from the approved shop drawing. Langley Concrete Group responsibility is limited to the structural design and fabrication of the product to required engineering and relevant specifications related to the product and/or project.

- Notes:
- 1.5 x 1.5 Vault is built as shown.
 - Unit designed to withstand AASHTO HS20/BCL-625 occasional live load.
 - Unit supplied w/ lifting insert as required. Starcon style min. 2.5T/68 mm lifting inserts to be used.
 - Minimum rebar yield strength: 414 MPa. (Steel Grade: CSA G30.18-400 Weldable)
 - Minimum concrete strength: 30 MPa.
 - Lid supplied with opening for access as shown.
 - All dimensions are in millimeters unless otherwise specified.

Langley Concrete Group is a certified Q-Cast Plant, an American Concrete Pipe Association Third Party Certification for the manufacture of Pipe, Manhole, Box Culvert & Precast Items.



Quality Assurance of products manufactured by The Langley Concrete Group has been verified by the following third party certification programs



All Dimensions are in Millimeters. Unless otherwise Stated

Projection Method: THIRD ANGLE



The LANGLEY CONCRETE Group of Companies
 www.langleyconcretegroup.com
 LANGLEY (604) 533-1656
 VICTORIA (250) 478-9581
 CHILLIWACK 1-800 667-9600

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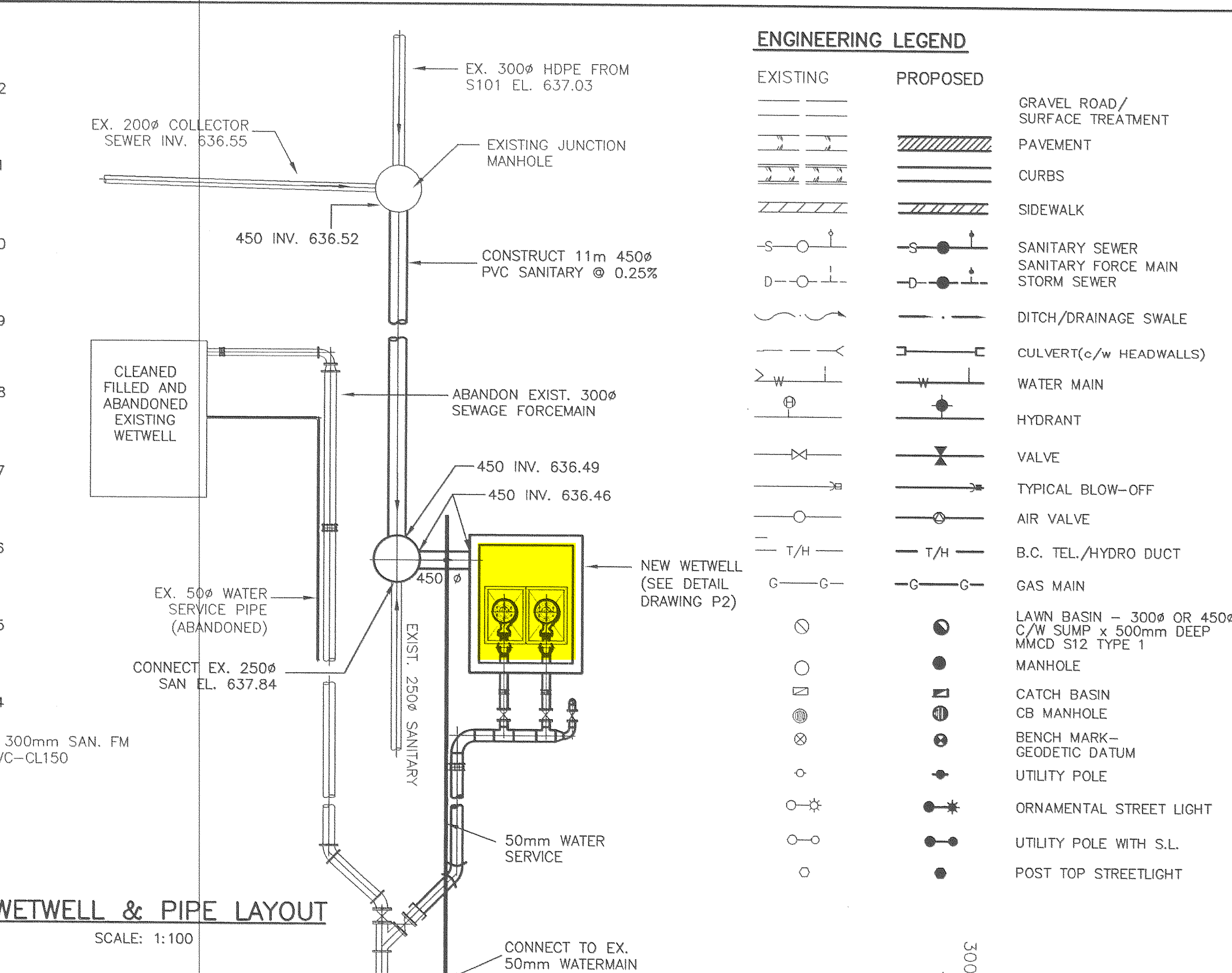
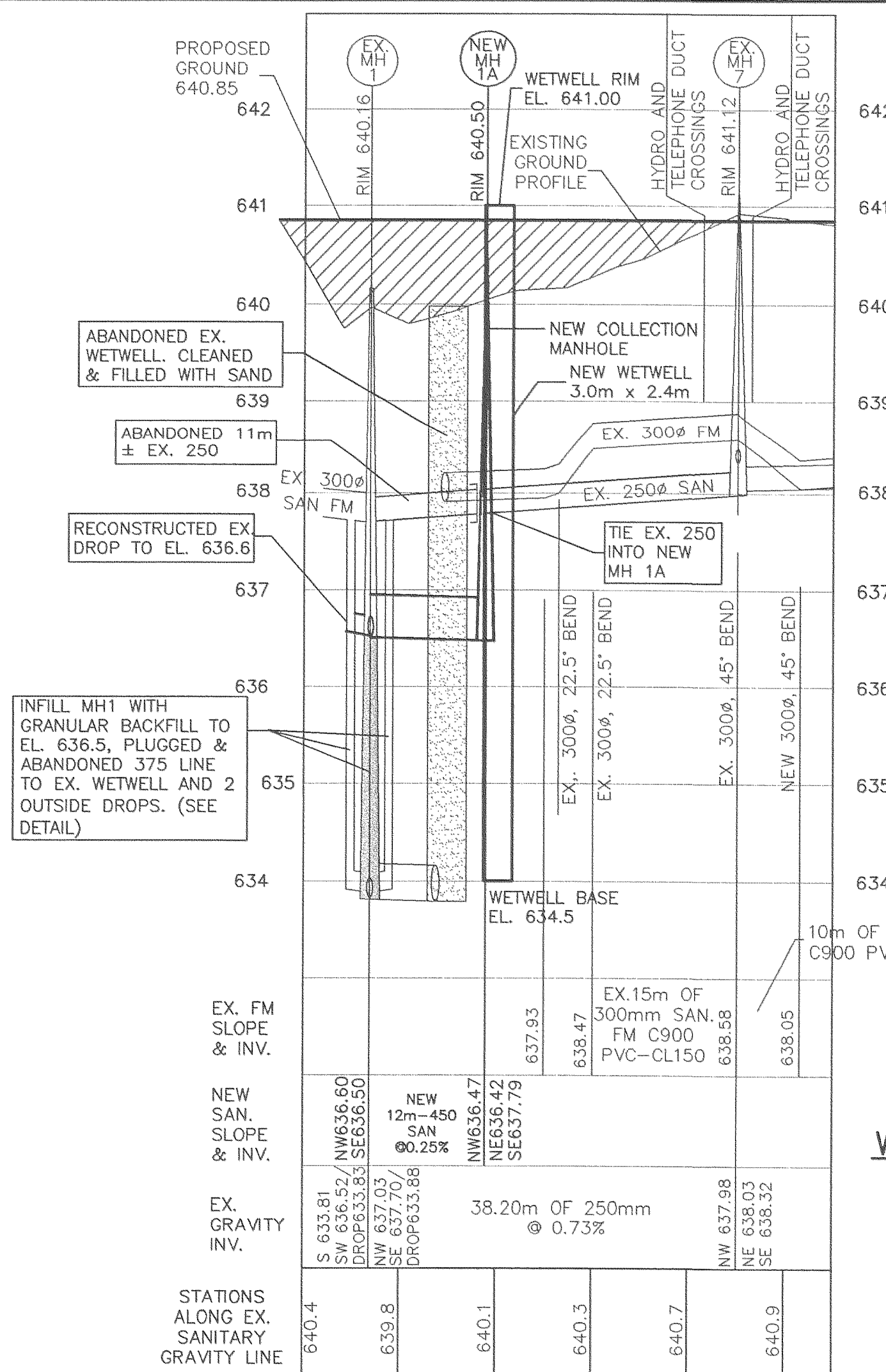
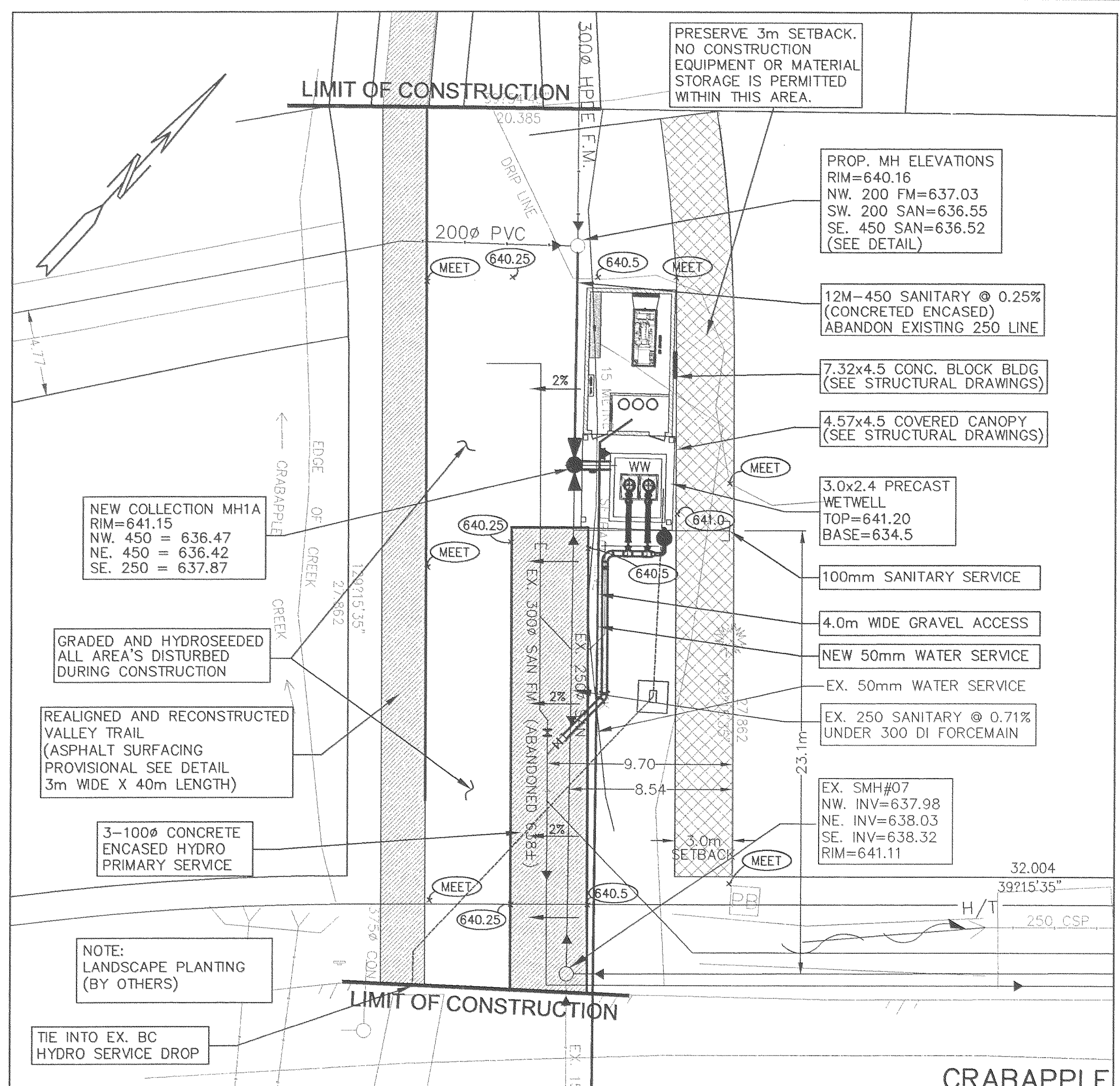
DESCRIPTION:

1.5 x 1.5 Vault Riser Section w/ Lid & Double Door Hatch
 Luxton Construction
 6671 Crabapple Drive, Whistler, BC

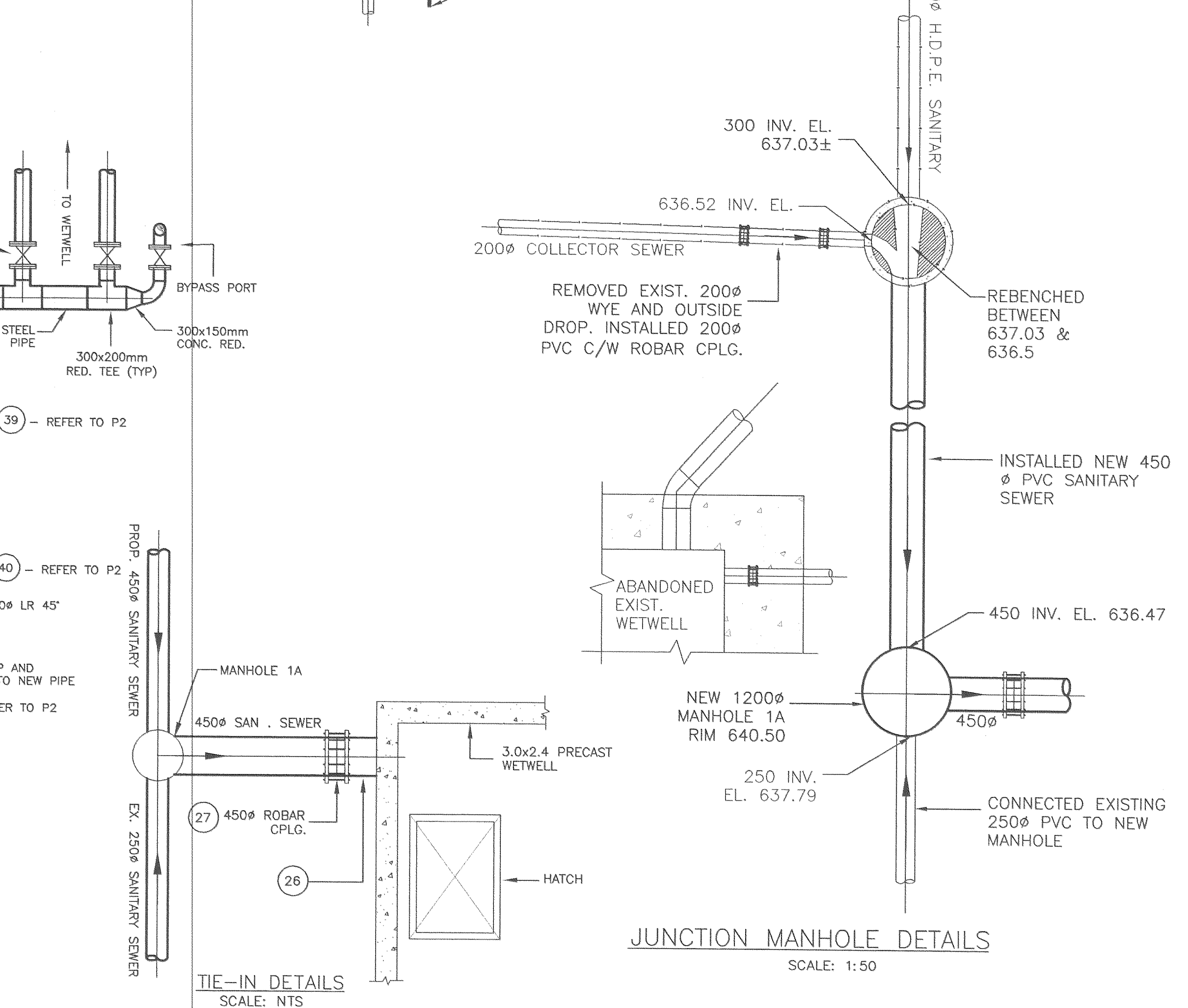
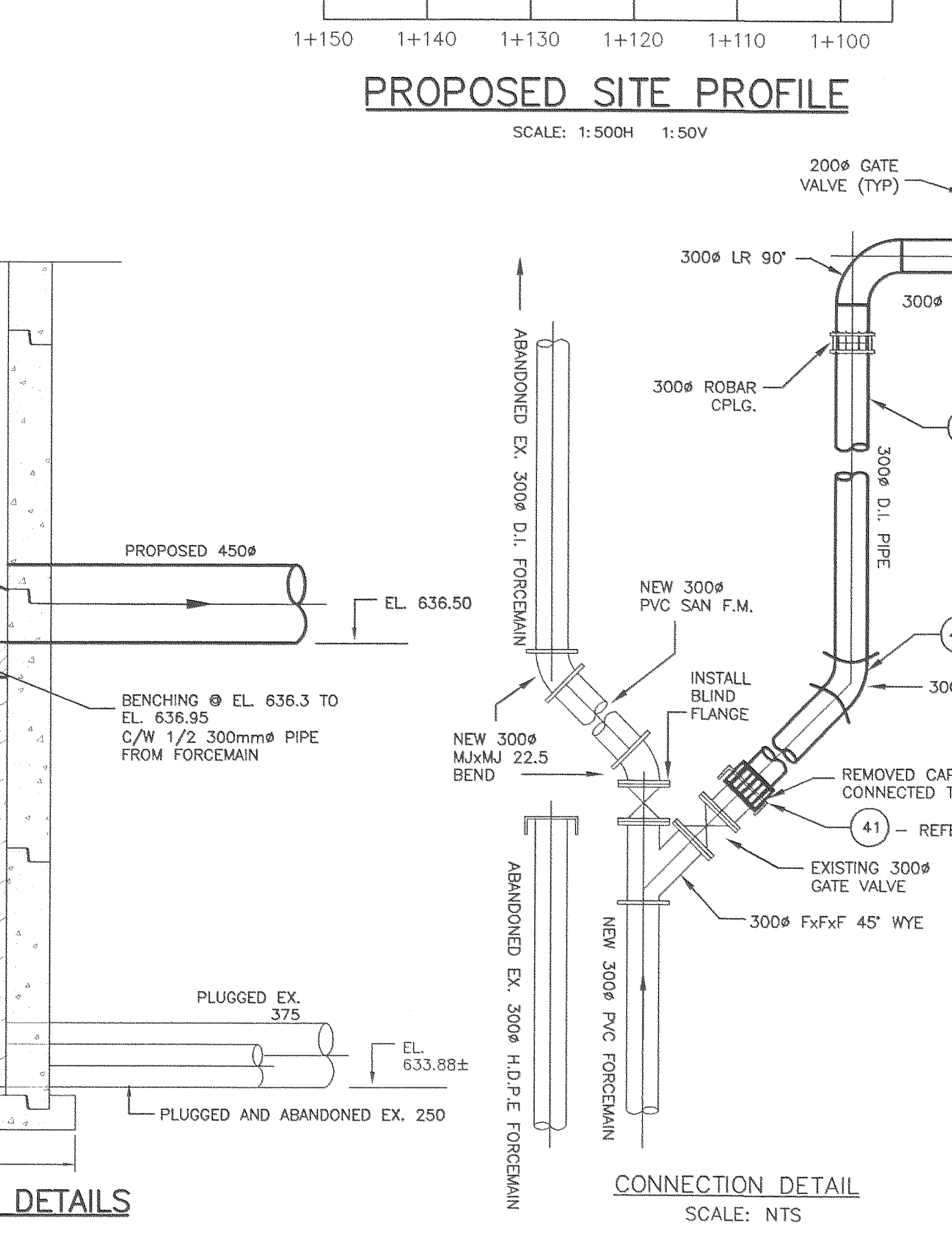
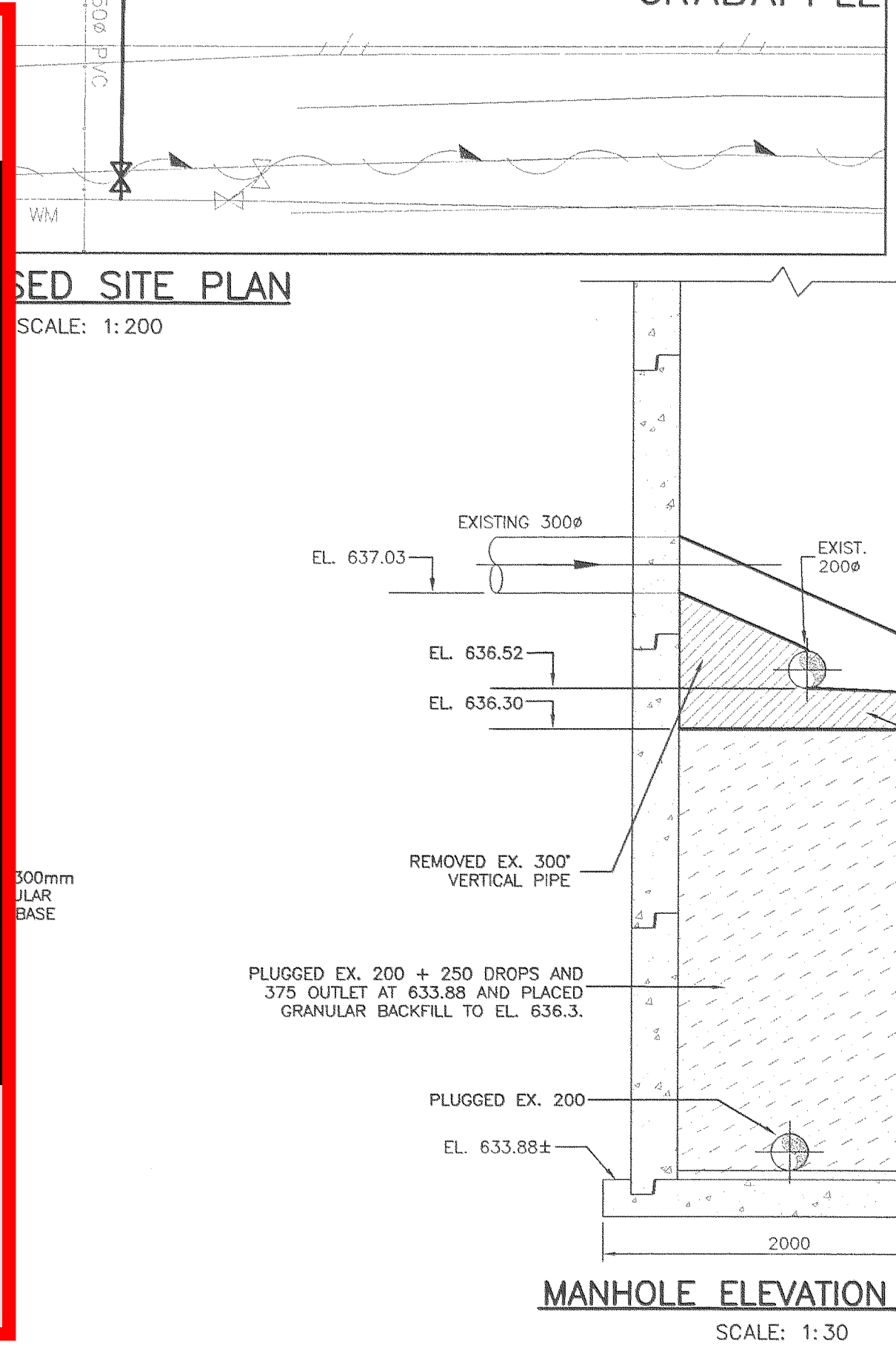
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CHK BY: KS		DWG NO: DWG20-1004	
DATE: 16-Sep, 2020		LC NO: LC20-656	
SCALE: 1:20		MU NO: MU20-512	
SIZE: 11 x 17	REV.	SHEET 1 OF 1	

Appendix D
Sewer Force Main
Record Drawings

S6052-3



Ex Forcemain			
S103 (Crabapple SLS - Bishop Way)			
MH Low	MH Up	Approx Dist (m)*	Approx Elev (m)
1A			634.5
1A	7	15	
7	8	80.5	
8	9	85.5	
9	10	98	
10	11	46	
11	12	43	
12	13	53	
13	14	156	
14	15	56	
15	1A (S6032)	111	
1A	1B	33	
1B	2	40	
2	2-2 (S6031)	76	
2-2	9	46	
9-1	13-2	26.5	
	13-2		670
Total Length:		965.5	
Total Elevation Difference:			35.5
*all measurements should be verified prior to reliance			



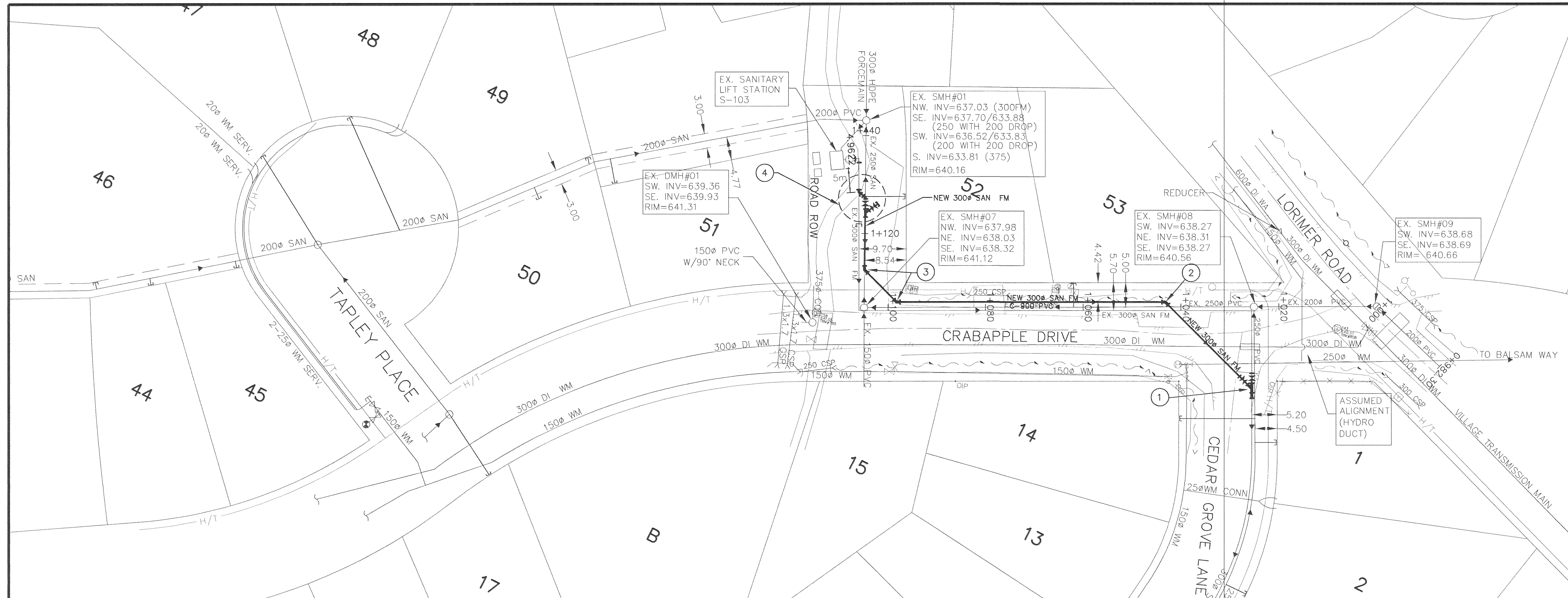
No	Date	Revision	Dr	Ch
2	2000.11.15	RECORD DRAWING	AYK	JSK
1	2000.06.05	ISSUED FOR TENDER	MLC	JSK

PARAGON ENGINEERING LTD.
12442-205 STREET, MAPLE RIDGE, B.C. V2X 0A8
TELEPHONE:(604) 465-3096 FAX:(604) 465-3055

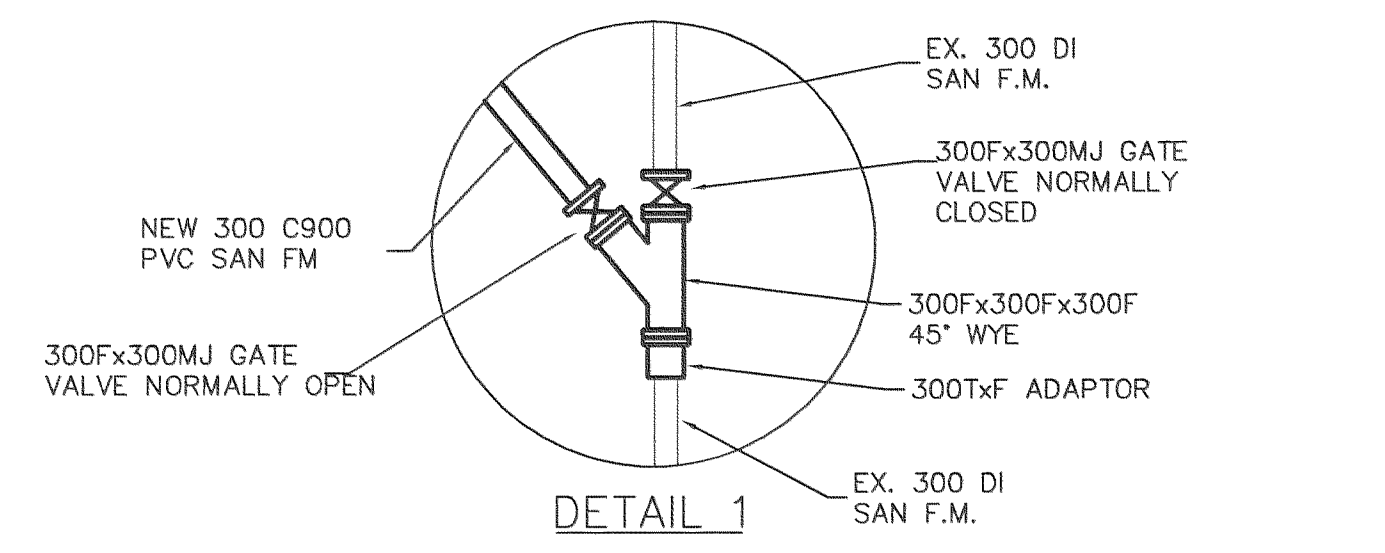
RESORT MUNICIPALITY OF WHISTLER
SANITARY LIFT STATION S-103 RECONSTRUCTION
6671 CRABAPPLE DRIVE
CIVIL WORKS DETAILS - PROPOSED

Scale: AS NOTED	Mun. Proj. No.	Dwg. No.
Drawn: M.L.C.	Mun. Dwg. No.	C2
Designed: J.S.K.	Job No. 2000-13	
P.W. P.U.	Date JUN 05, 2000	Revision 2
Approved:		destroy all prints bearing previous number

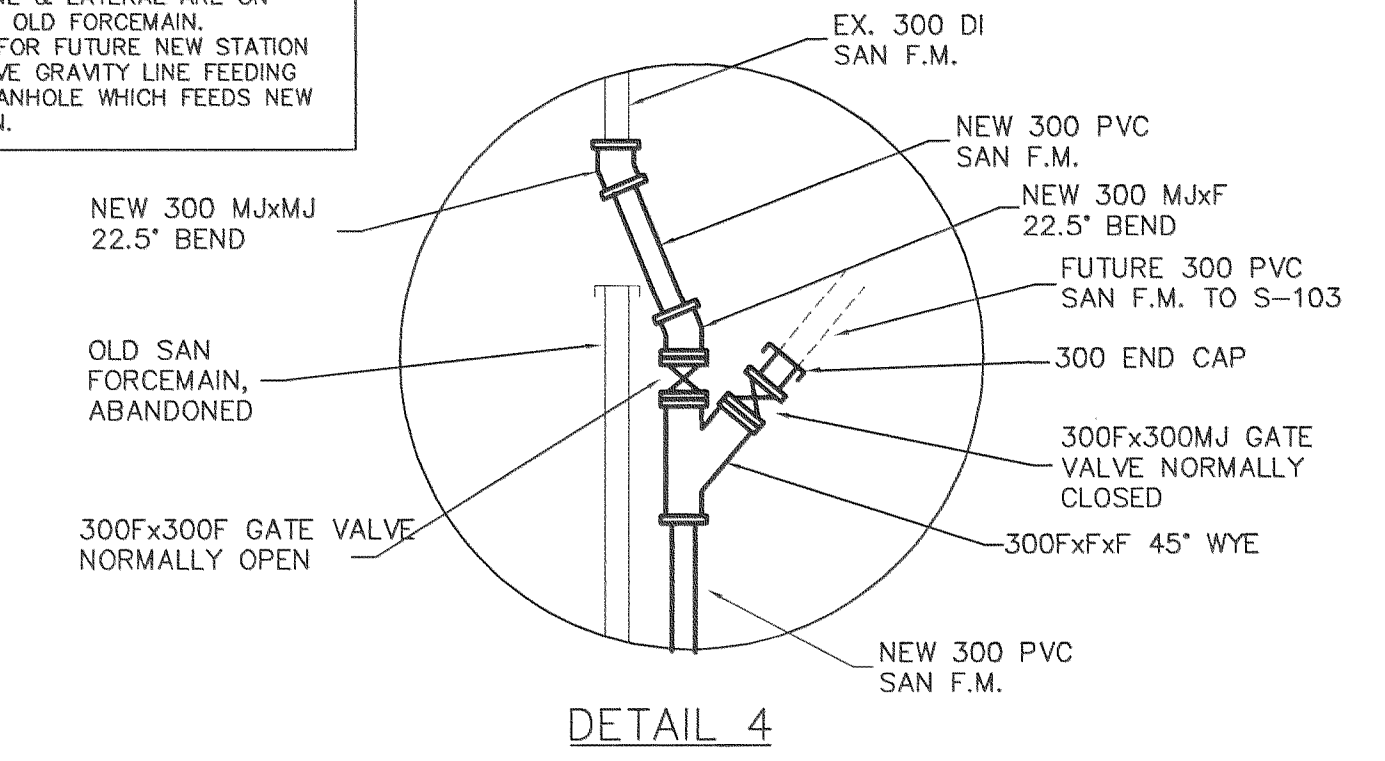
F:\Projects\2000\2000-13 pump station s-103\AS CONSTRUCTED DWS\2000-13-C162.dwg Tue Jun 23 09:33:24 2001 Paragon Engineering



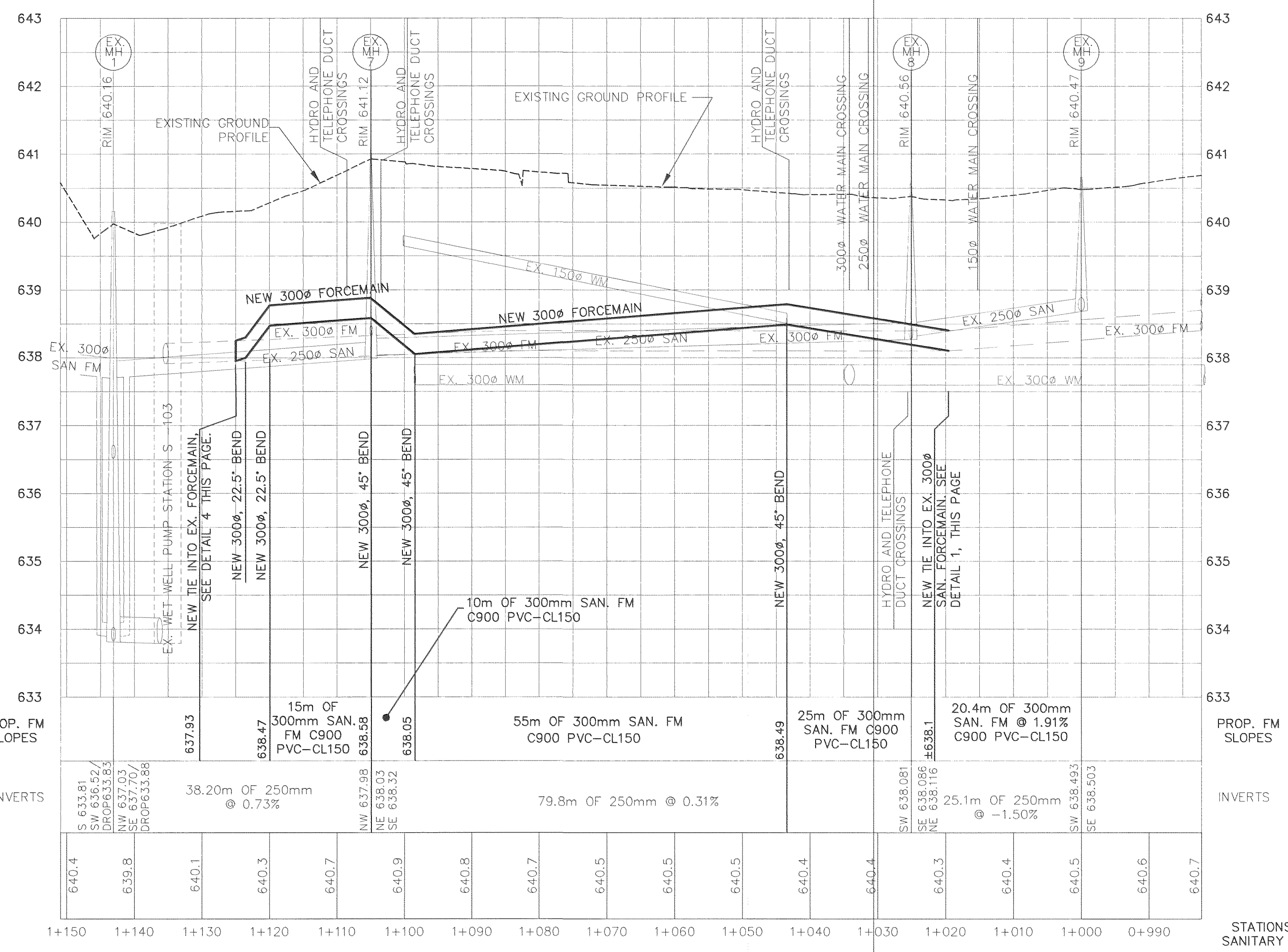
- NOTE:**
- CONTRACTOR EXPOSED CROSSING & TIE IN POINTS SUFFICIENTLY IN ADVANCE TO ALLOW ANY RE-DESIGN DUE TO CONFLICTS.
 - THRUST BLOCKS HAVE MINIMUM BEARING AREA OF 1.1m FOR 45° BENDS, 2.0m FOR 90° BEND, AND 1.4m FOR CAPS AND TEES BASED ON 1380kpa WORKING PRESSURE AND 70kpa SOIL BEARING STRENGTH.
 - THRUST BLOCKS OF 20mpa CONCRETE PLACED AGAINST UNDISTURBED GROUND.
 - CONCRETE DID NOT COVER FITTINGS, BELLS, OR FLANGES.
 - ELEVATIONS ARE GEODETIC NAD83 DERIVED FROM WATER RESOURCES MONUMENT No. 1685 LOCATED AT THE MONS OVERPASS EL. 640.702m



DETAIL 4 NOTE:
 1) NEW LINE & LATERAL ARE ON TOP OF OLD FORCEMAIN.
 2) VALVE FOR FUTURE NEW STATION IS ABOVE GRAVITY LINE FEEDING INTO MANHOLE WHICH FEEDS NEW STATION.



SANITARY FORCEMAIN TABLE OF FITTINGS	
①	SEE DETAIL 1, ABOVE
②	1-300° T x T 45° BEND C/W THRUST BLOCK
③	2-300° T x T 45° BEND C/W THRUST BLOCK
④	SEE DETAIL 4, ABOVE



RECORD INFORMATION DISCLAIMER: Record information provided by the RMOW is to be used as a reference material only. The RMOW makes every reasonable effort to ensure the accuracy of the information. However, some record information inherently contains errors to some degree. It is the duty of the property owner, engineer, contractor, designer or other licensed professional to determine the suitability of the record information prior to construction. Measurements should be field confirmed before commencing construction. The RMOW accepts no liability for any loss or damage as a result of the use of this information.

RESORT MUNICIPALITY OF WHISTLER
 PUBLIC WORKS DRAWING REVIEW
 Correct and re-submit
 Approved for construction as noted
 As-built accepted

C:\dwgs\paragon\99027-crabapple\as_built\99027-base AS CONSTRUCTED.dwg Tue Apr 11 12:52:59 2000 Paragon Engineering Ltd.

No	Date	Revision	Dr	Ch
1	JAN 2000	AS CONSTRUCTED INFO	JSS	JSK

PARAGON ENGINEERING LTD.
 12442-205 STREET, MAPLE RIDGE, B.C. V2X 0A8
 TELEPHONE:(804) 465-3096 FAX:(804) 465-3055

RESORT MUNICIPALITY OF WHISTLER
 WHISTLER, B.C.
**CRABAPPLE DRIVE
 SANITARY REPLACEMENT**
 WHISTLER, B.C.

Scale: 1:500 HORZ. 1:50 VERT.	Mun. Proj. No.	Dwg. No.
Drawn: I.S.S.I.	Mun. Dwg. No.	1
Designed: JSK	Job No. 99027	Of 1
Approved:	Date JULY 1999	Revision 1

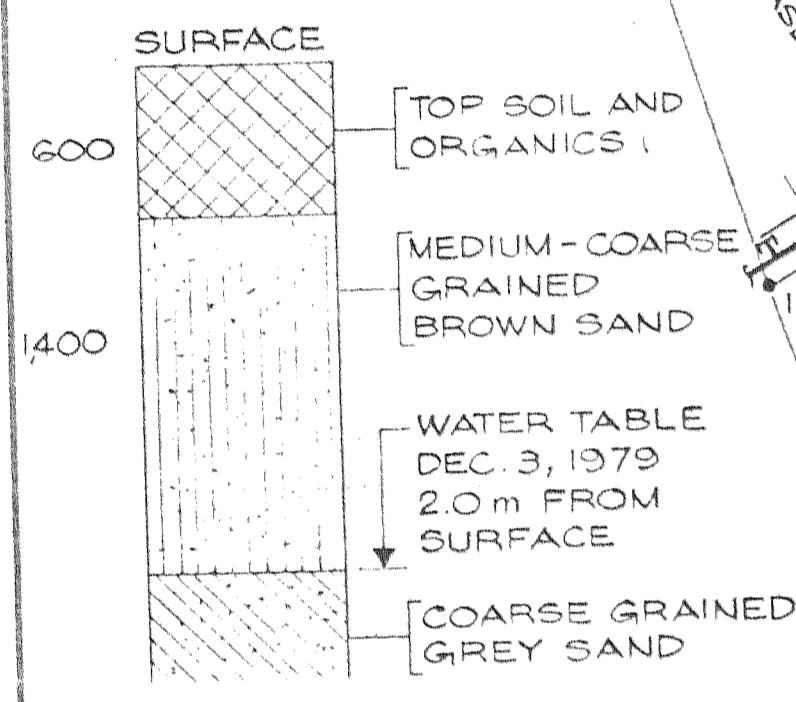
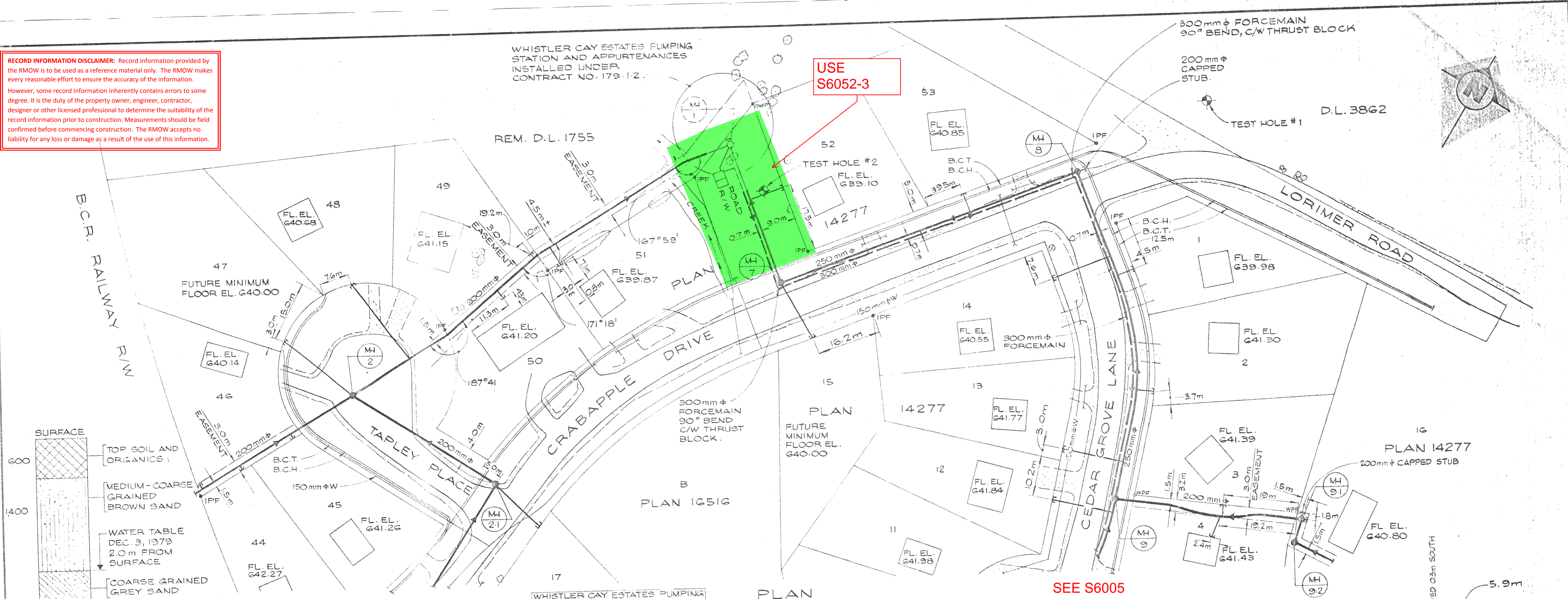
560505

JUN 11 2000
 09-C-0163-04-Base
 09-C-1398

20095

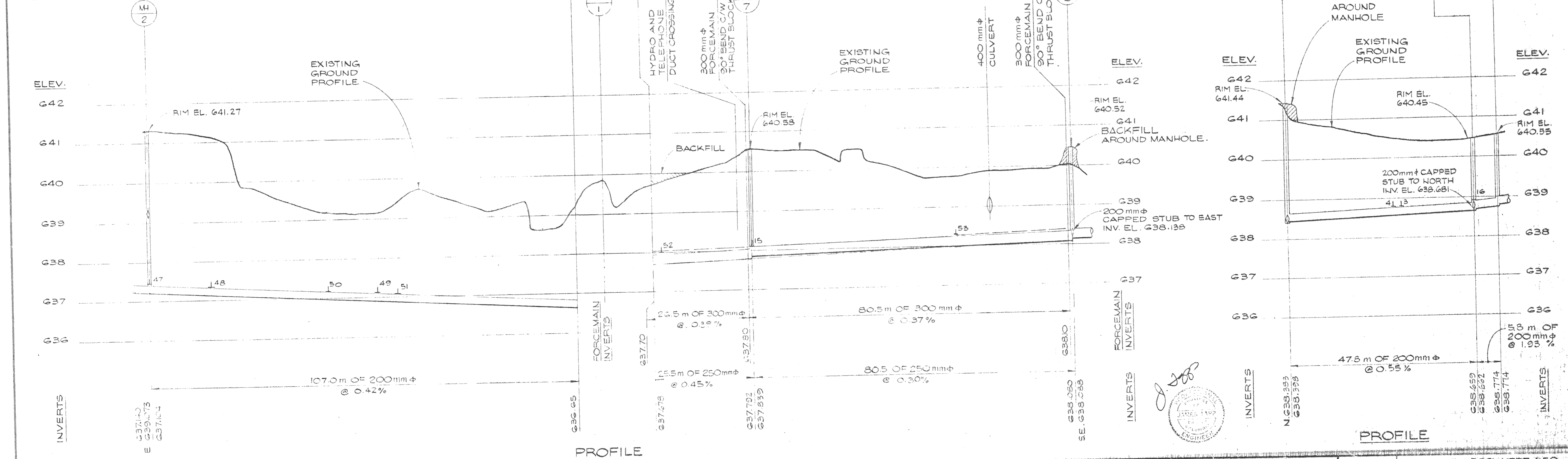
20095

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NO ROCK ENCOUNTERED TO 3,500 BELOW SURFACE

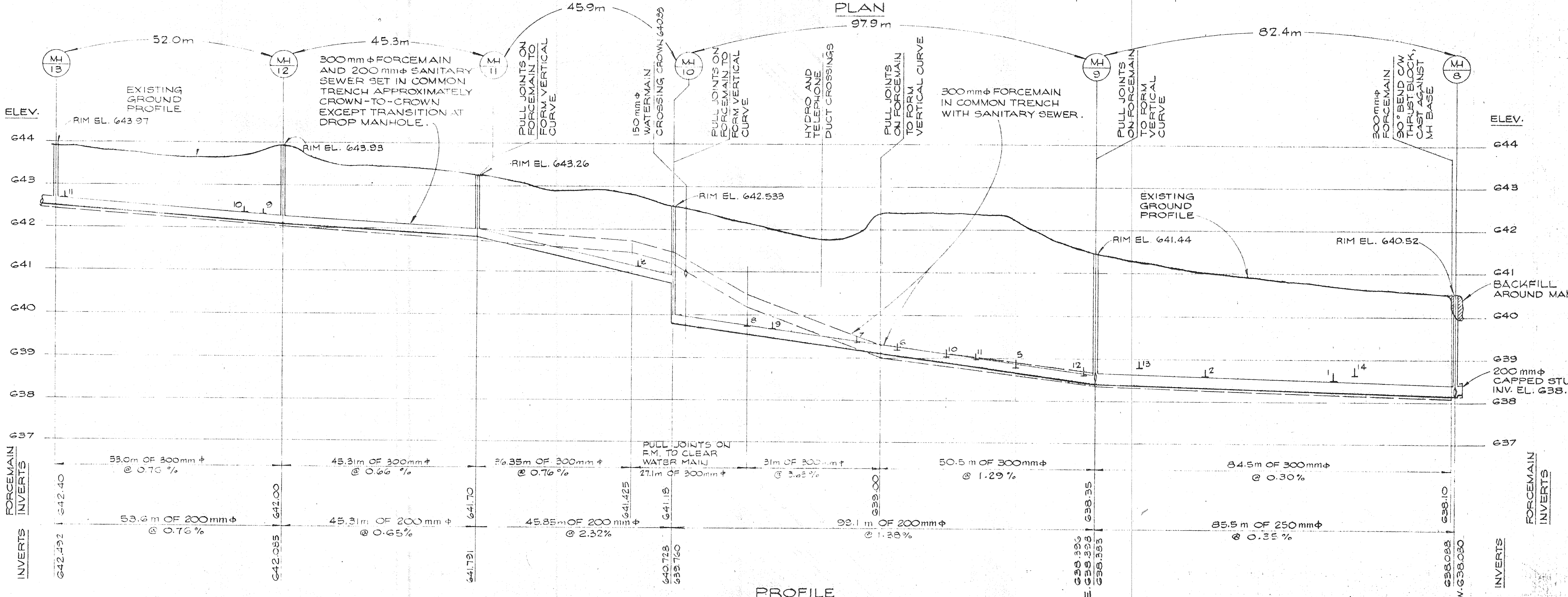
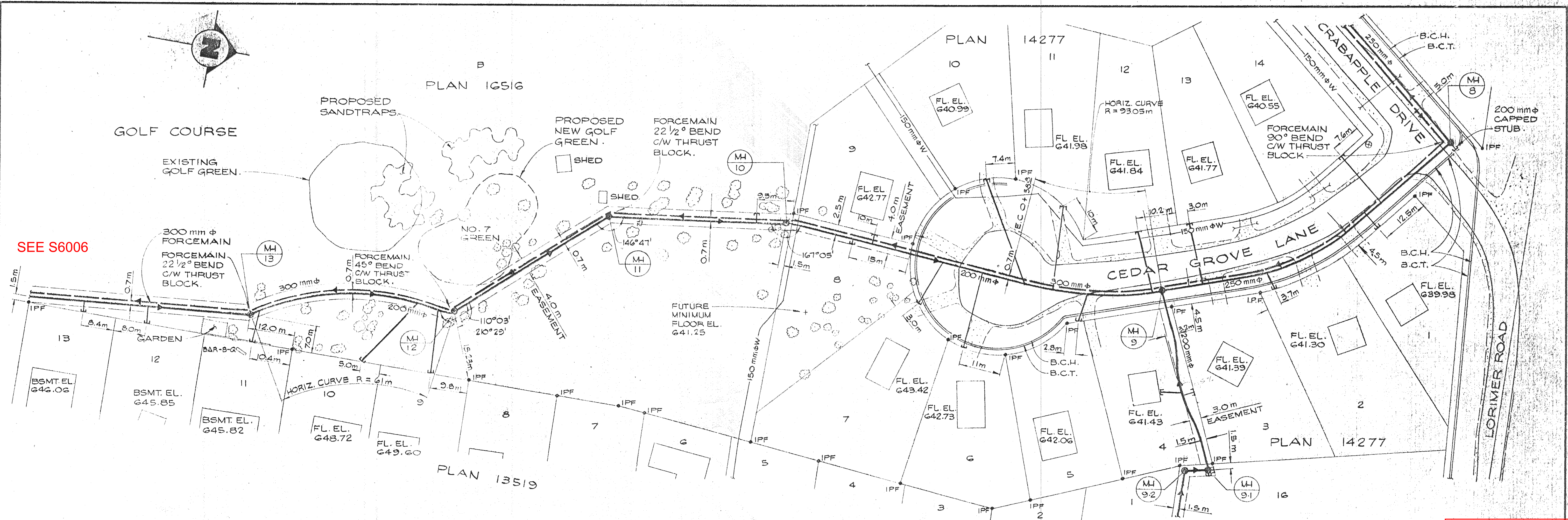
TEST HOLE #2



ISSUE	DATE	DRN	CHD	APP'D	DESCRIPTION	ISSUE	DATE	DRN	CHD	APP'D	DESCRIPTION	DESIGNED	DAYTON & KNIGHT LTD.	RESORT MUNICIPALITY OF WHISTLER	SCALE: HORIZ. 1:500, VERT. 1:50
B	NOV. 24/80	J.S.	J.T.		RECORD DRAWING							J.T.	CONSULTING ENGINEERS	WHISTLER CAY ESTATES COLLECTOR SEWERS	DRAWING No. 179-1.1
														ROAD R/W TO TAPLEY PLACE	SHEET 2 OF 6 ISSUE B

SEE S6002

S6005



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ISSUE	DATE	DRN	CHD	APPD	DESCRIPTION	ISSUE	DATE	DRN	CHD	APPD	DESCRIPTION
B	NOV.28/80	J.S.	JT		RECORD DRAWING						

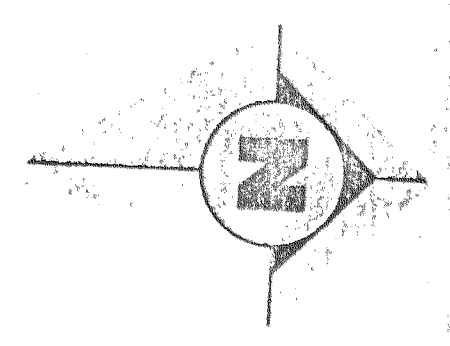
DESIGNED J.T.
 DRAWN V.A.B.
 CHECKED BW
DAYTON & KNIGHT LTD.
 CONSULTING ENGINEERS
 June 5/80

RESORT MUNICIPALITY OF WHISTLER
 WHISTLER CAY ESTATES COLLECTOR SEWERS
 CEDAR GROVE LANE AND GOLF COURSE

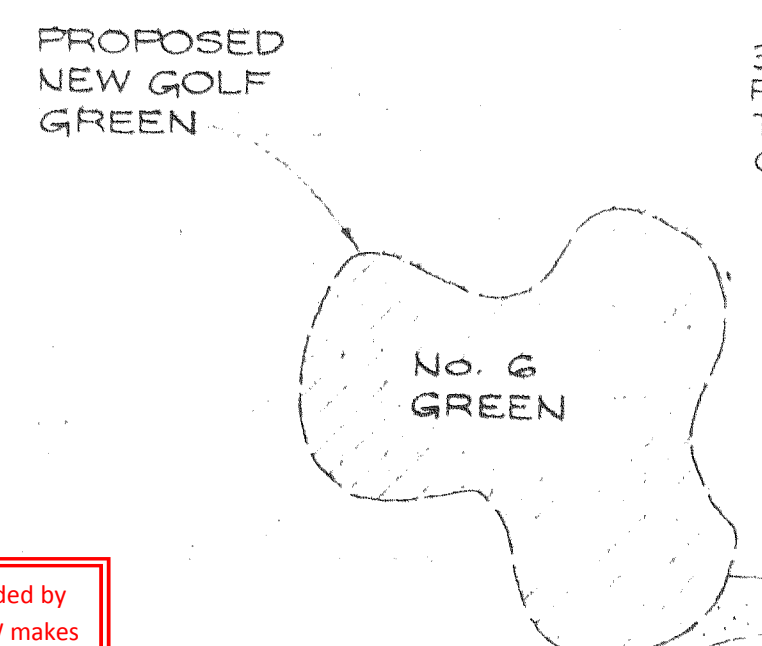
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 SHEET 5 OF 8 ISSUE B

2002

56006



PLAN 16516

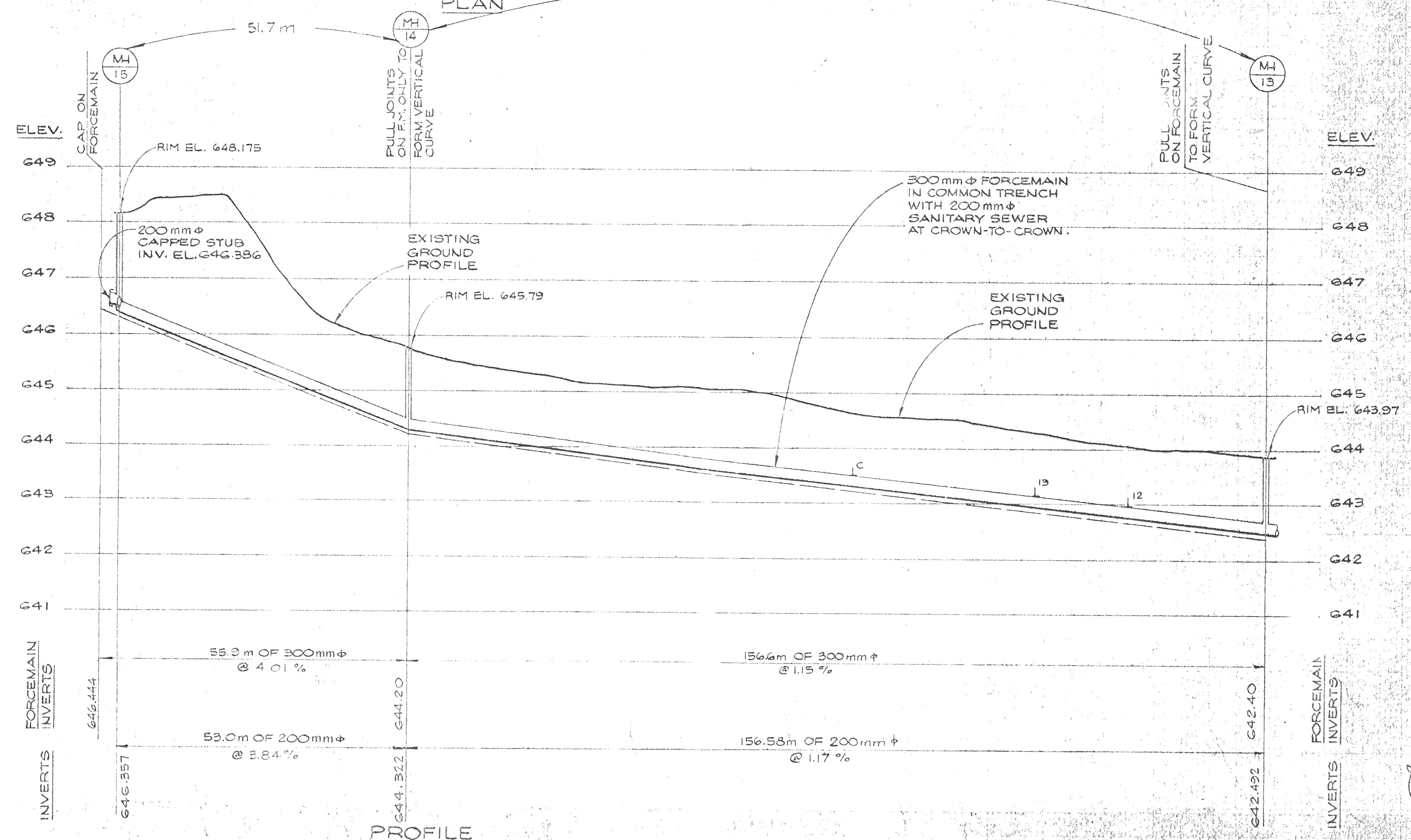
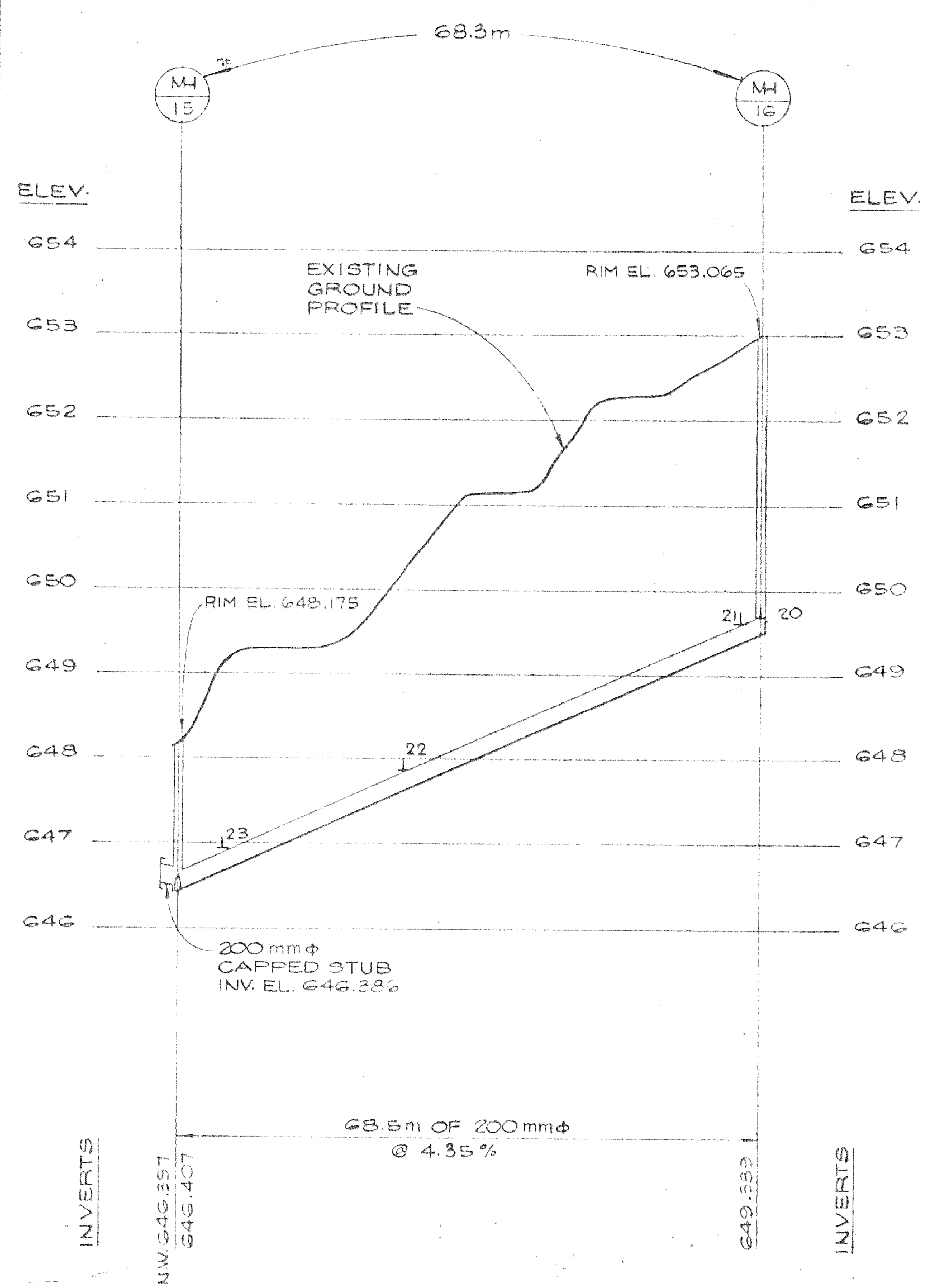
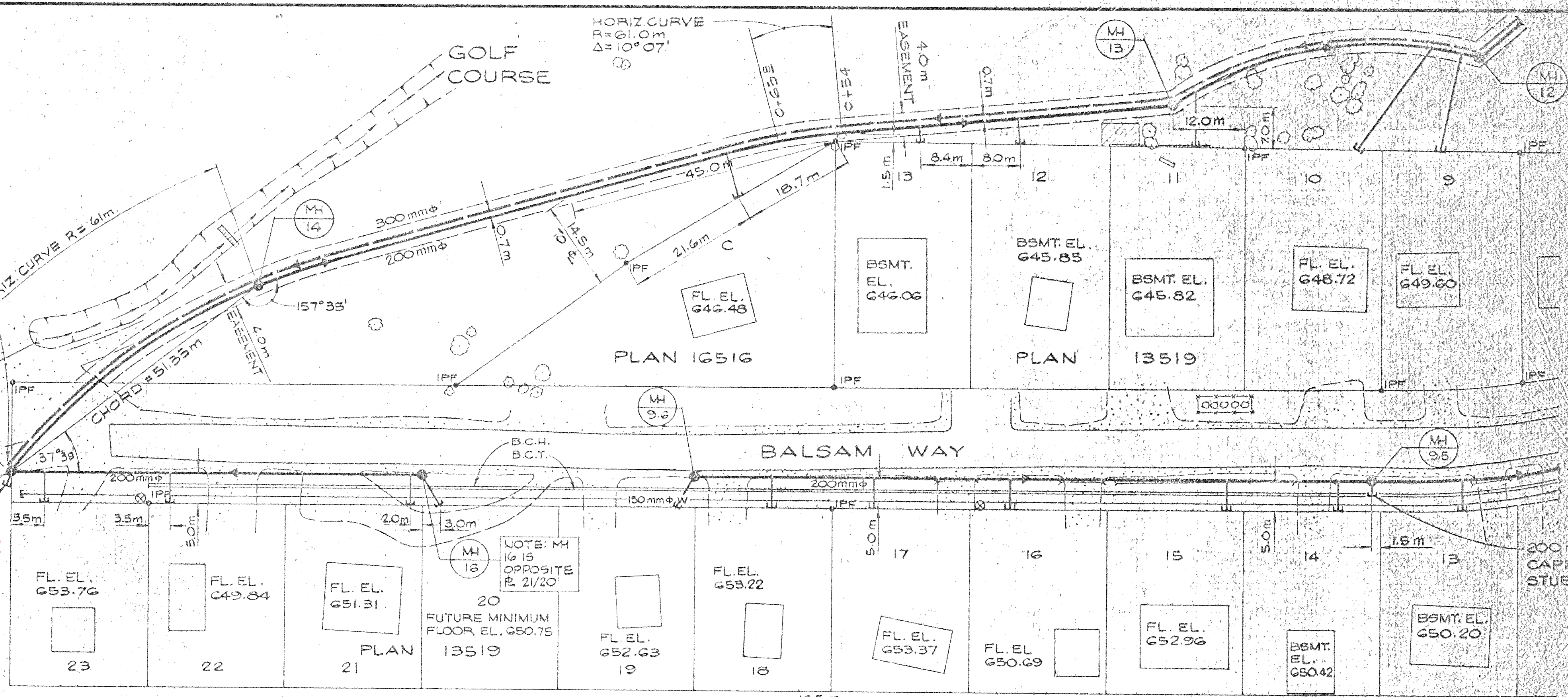


300 mm ϕ FORCEMAIN TYPICAL JOINT CAP.

200 mm ϕ CAPPED STUB.

SEE S60032

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PROFILE

ISSUE	DATE	DRN	CHD	APPD	DESCRIPTION
B	NOV 28/80	J.S.	JT		RECORD DRAWING

DESIGNED: J.T.
 DRAWN: V.A.B.
 CHECKED: J. G. Kalin
 DAYTON & KNIGHT LTD.
 CONSULTING ENGINEERS
 June 5/80

RESORT MUNICIPALITY OF WHISTLER
 WHISTLER CAY ESTATES COLLECTOR SEWERS
 GOLF COURSE TO BALSAM WAY

SCALE: HORIZ. 1"=500' VERT. 1"=50'
 DRAWING No. 179-111
 SHEET 2 of 6 ISSUE B

20022

56032



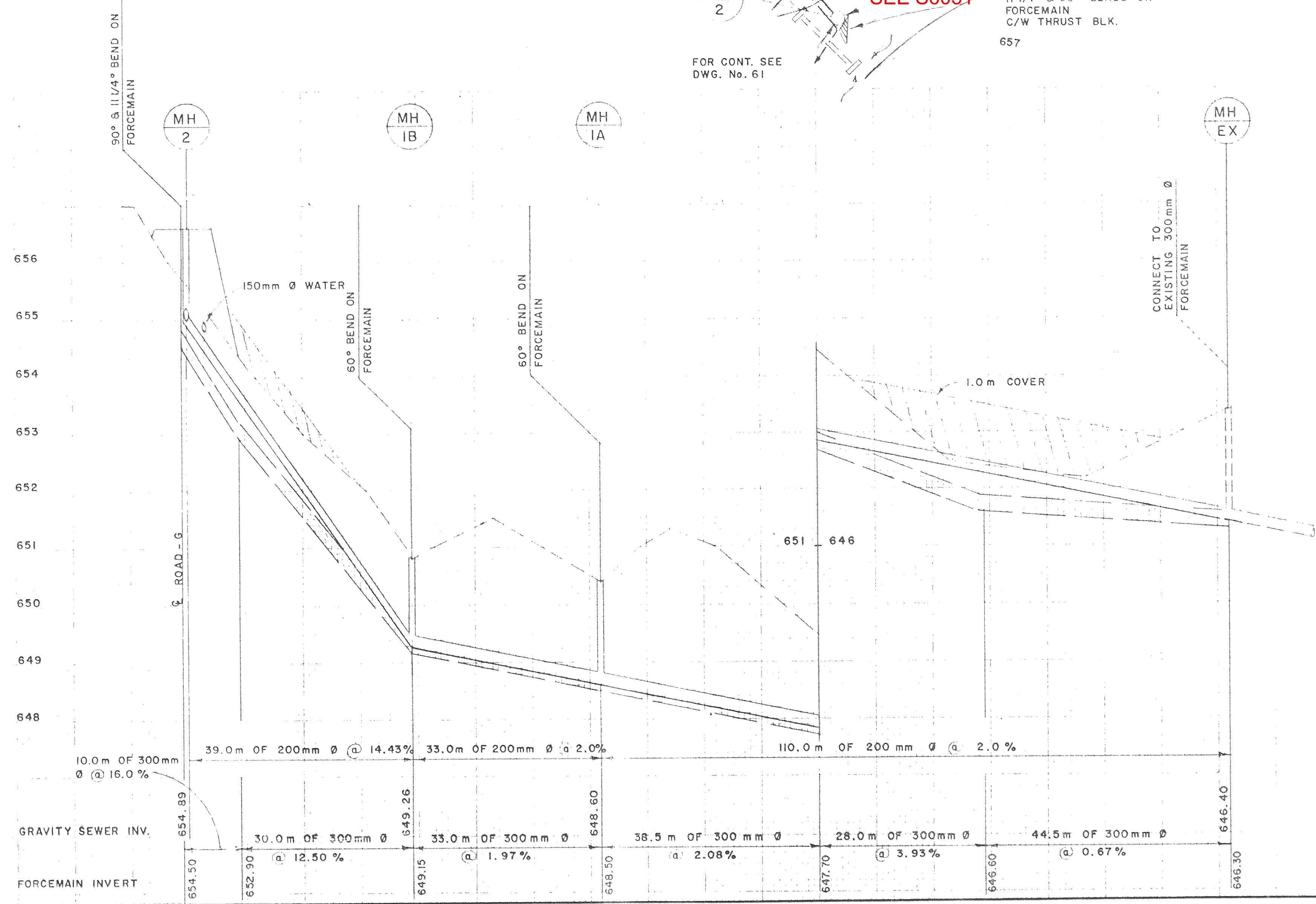
BLOCK - E

SEE S6006

SEE S6031

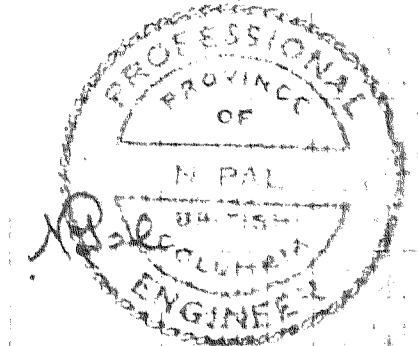
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NOTE:
TRENCH DAMS REQUIRED WHERE PIPE SLOPE > 10%



AS-BUILT		SEPT./82	
No.	REMARKS	DATE	MADE SUBD.
REVISIONS			

PAL ENGINEERING LTD.
RESORT MUNICIPALITY OF WHISTLER
WHISTLER CAY ESTATES - STAGE II
EASEMENT FROM ROAD-G TO
BALSAM ROAD - SANITARY SEWER

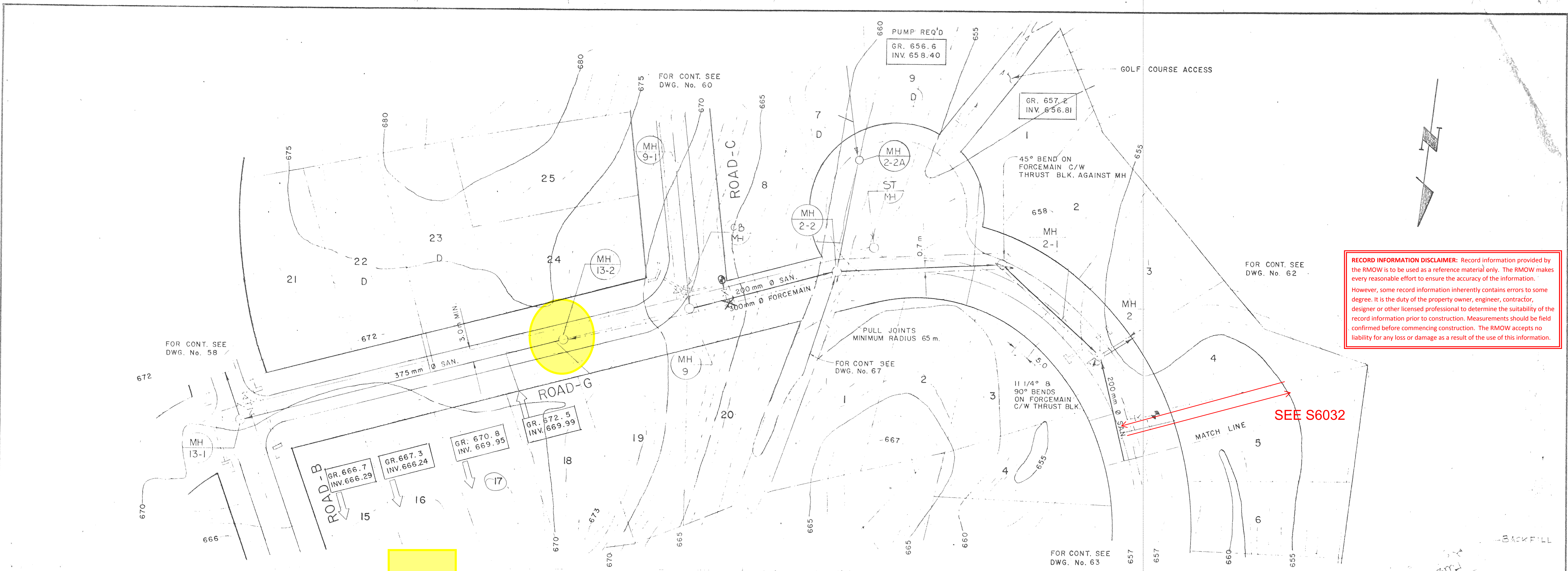


DES. NP. DWN. MH. DATE JUNE, 1980
SCALE H. 1:500 V. 1:50 DWG. No. 62 R

56032

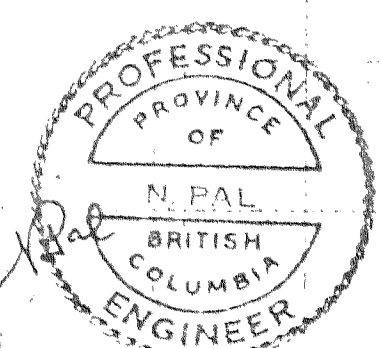
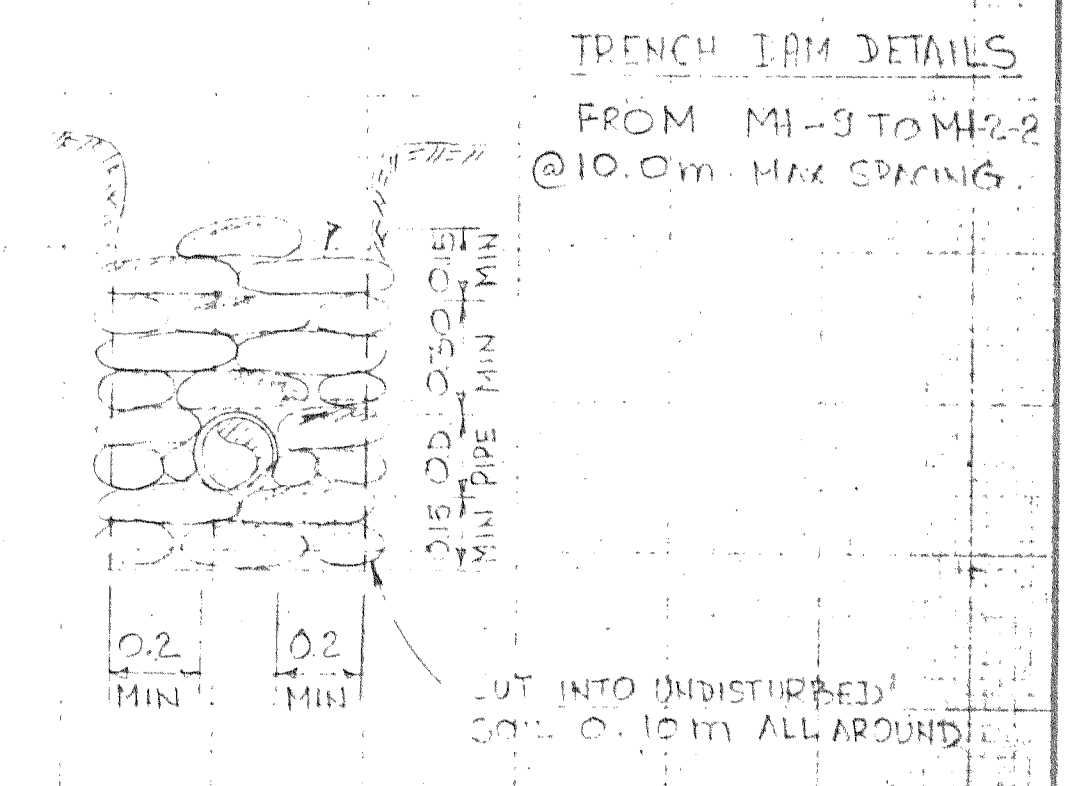
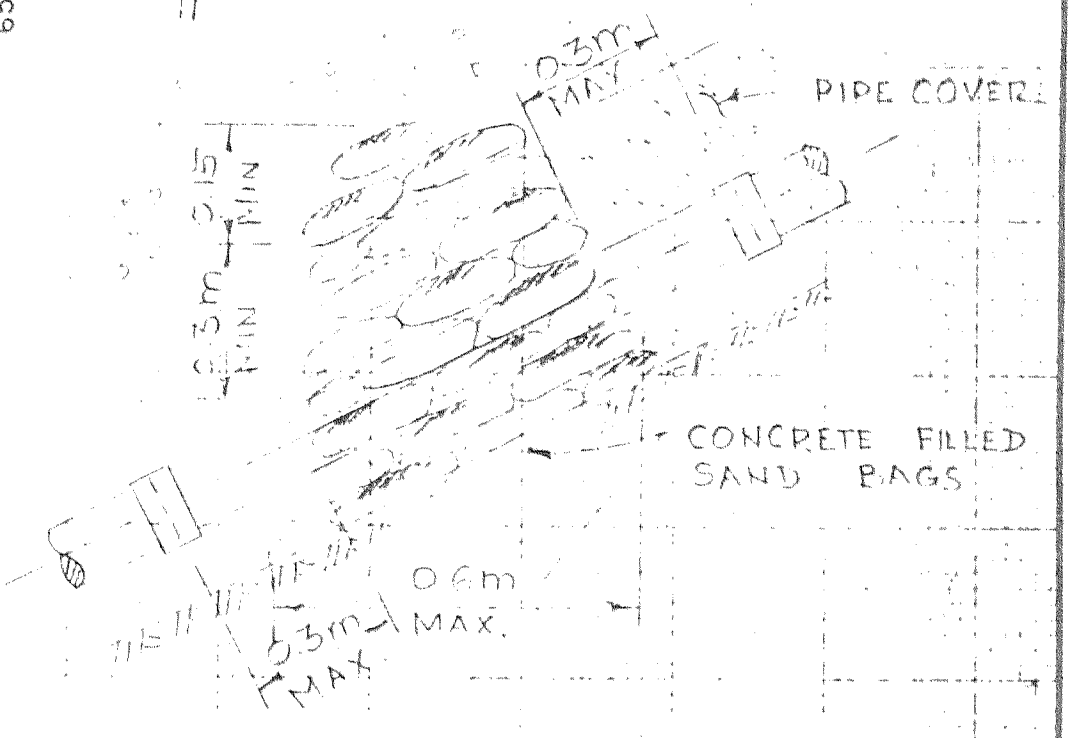
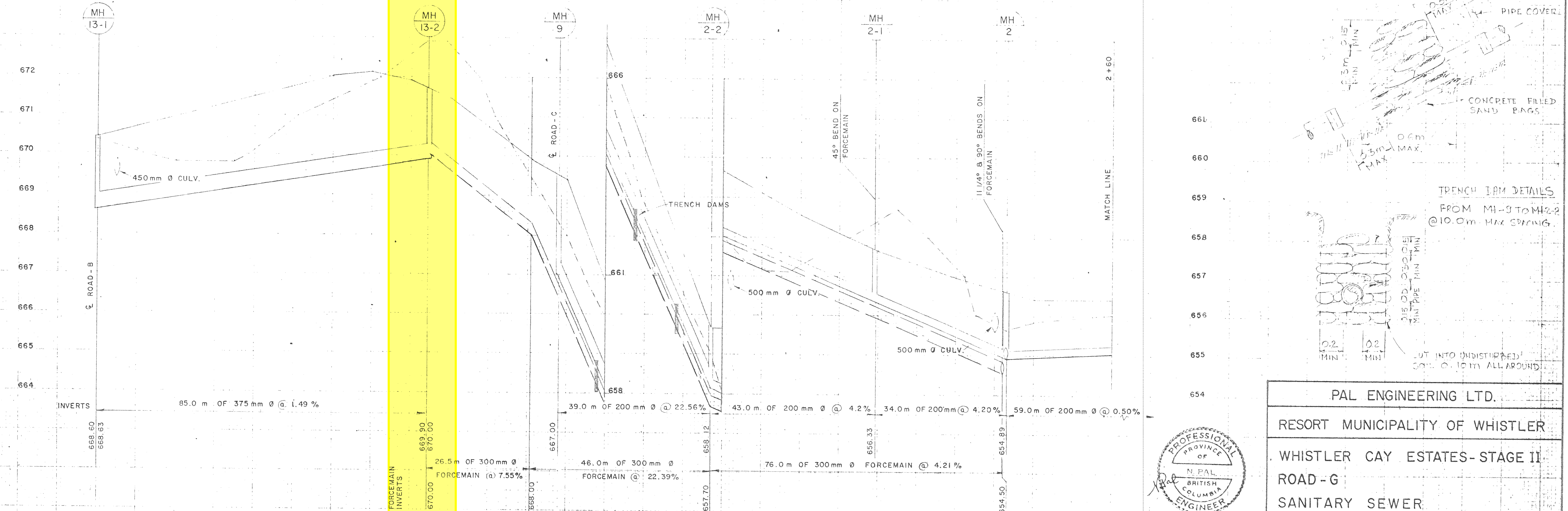
56031

56032



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However, some record information inherently contains errors to some degree. It is the duty of the property owner, engineer, contractor, designer or other licensed professional to determine the suitability of the record information prior to construction. Measurements should be field confirmed before commencing construction. The RMOW accepts no liability for any loss or damage as a result of the use of this information.



PAL ENGINEERING LTD.
 RESORT MUNICIPALITY OF WHISTLER
 WHISTLER CAY ESTATES-STAGE II
 ROAD-G
 SANITARY SEWER

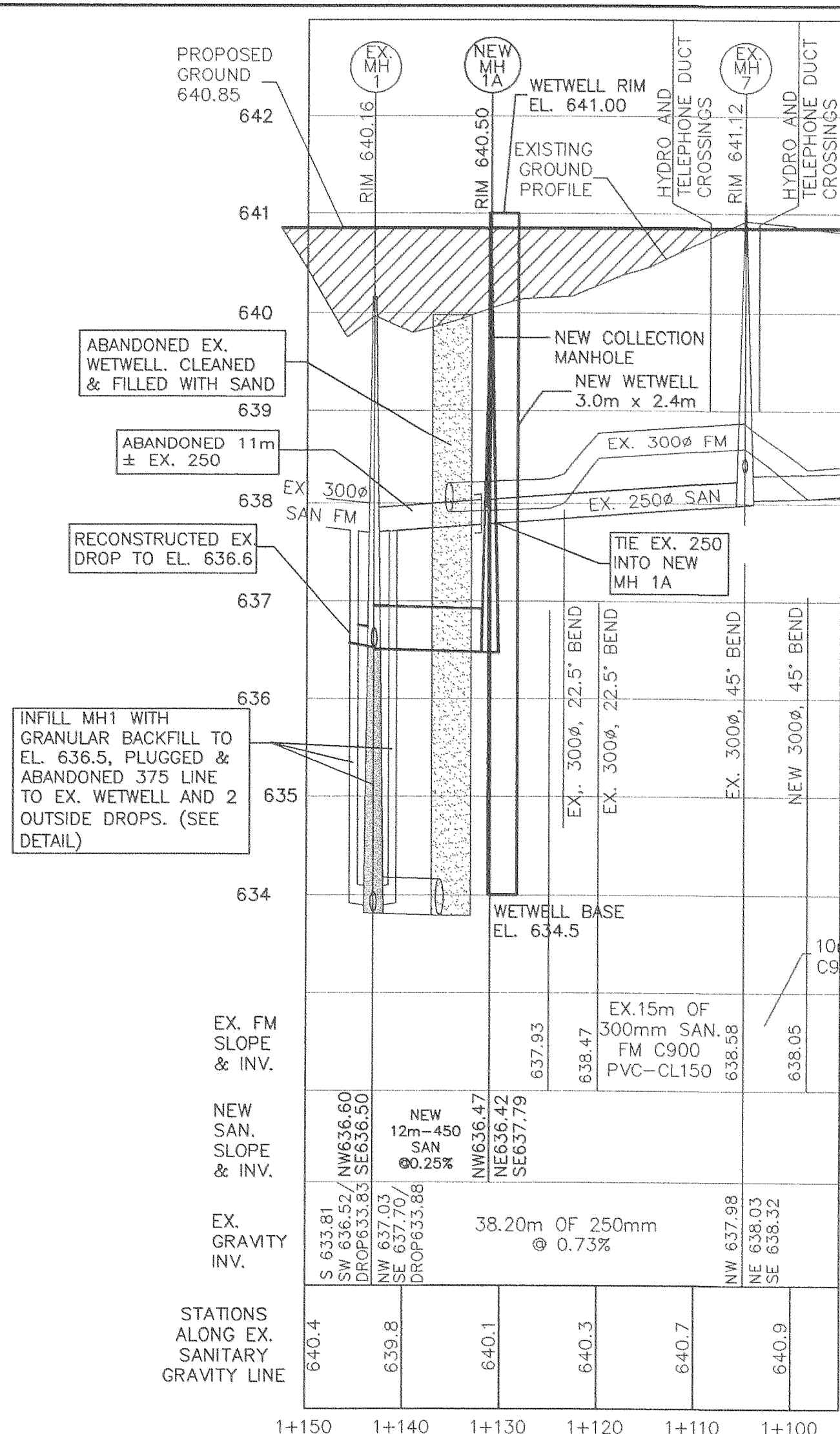
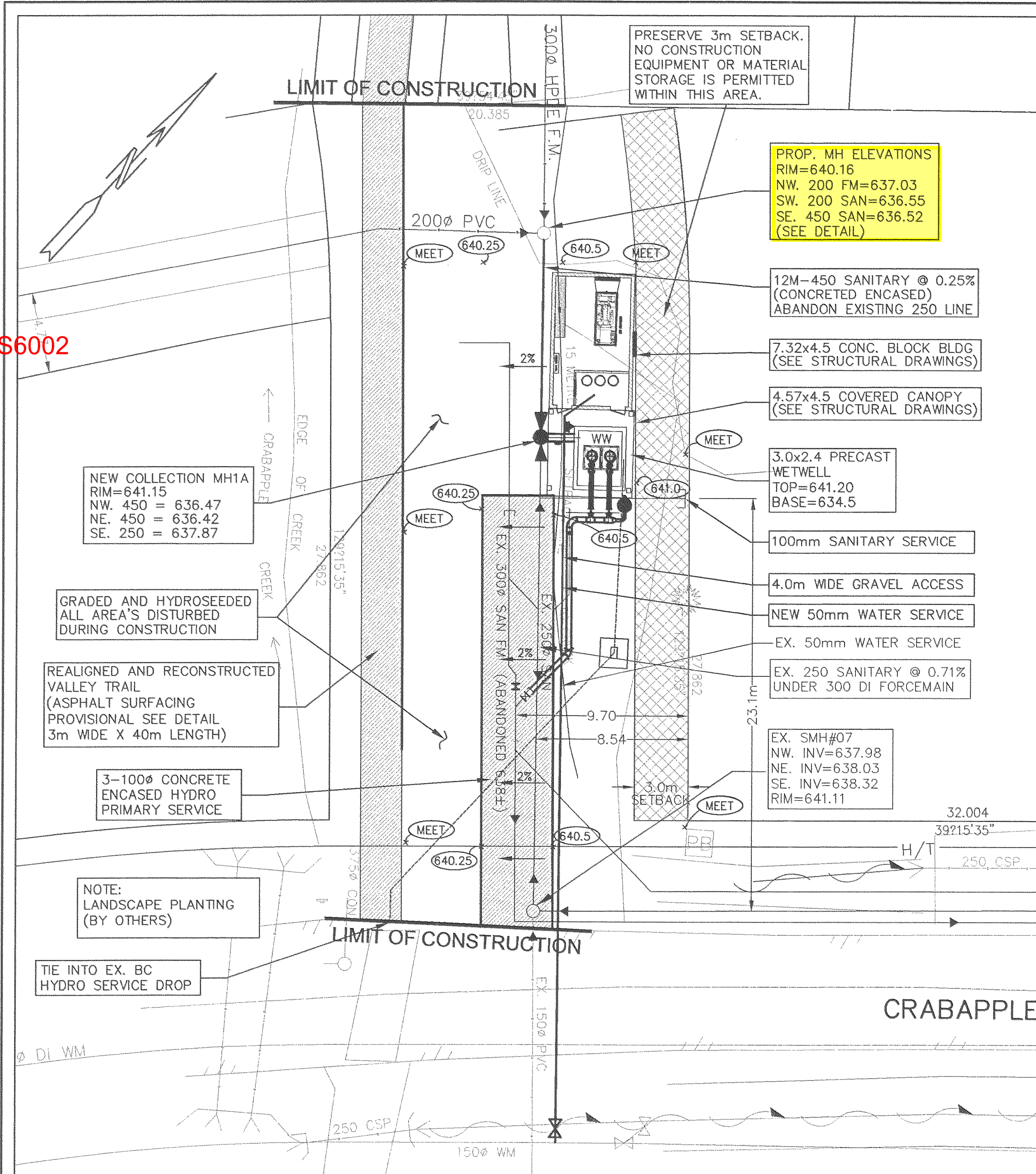
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No.	REMARKS	DATE	MADE	SUBD.				
REVISIONS								
					SCALE	H. 1:500 V. 1:50	DWG. No. 61	R

Appendix E
Gravity Main Record
Drawings

SEE S6025

SEE S6002

S6052-3

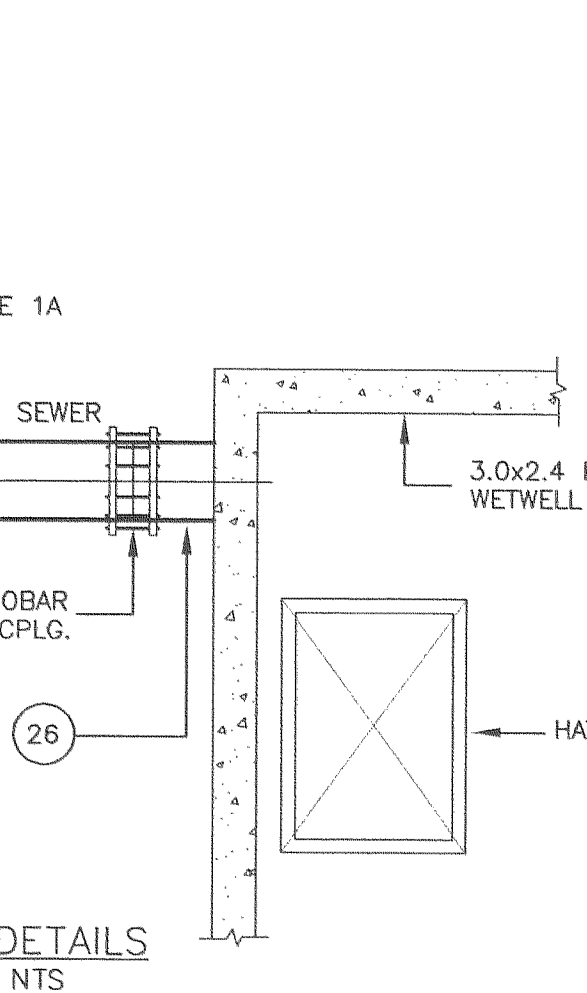
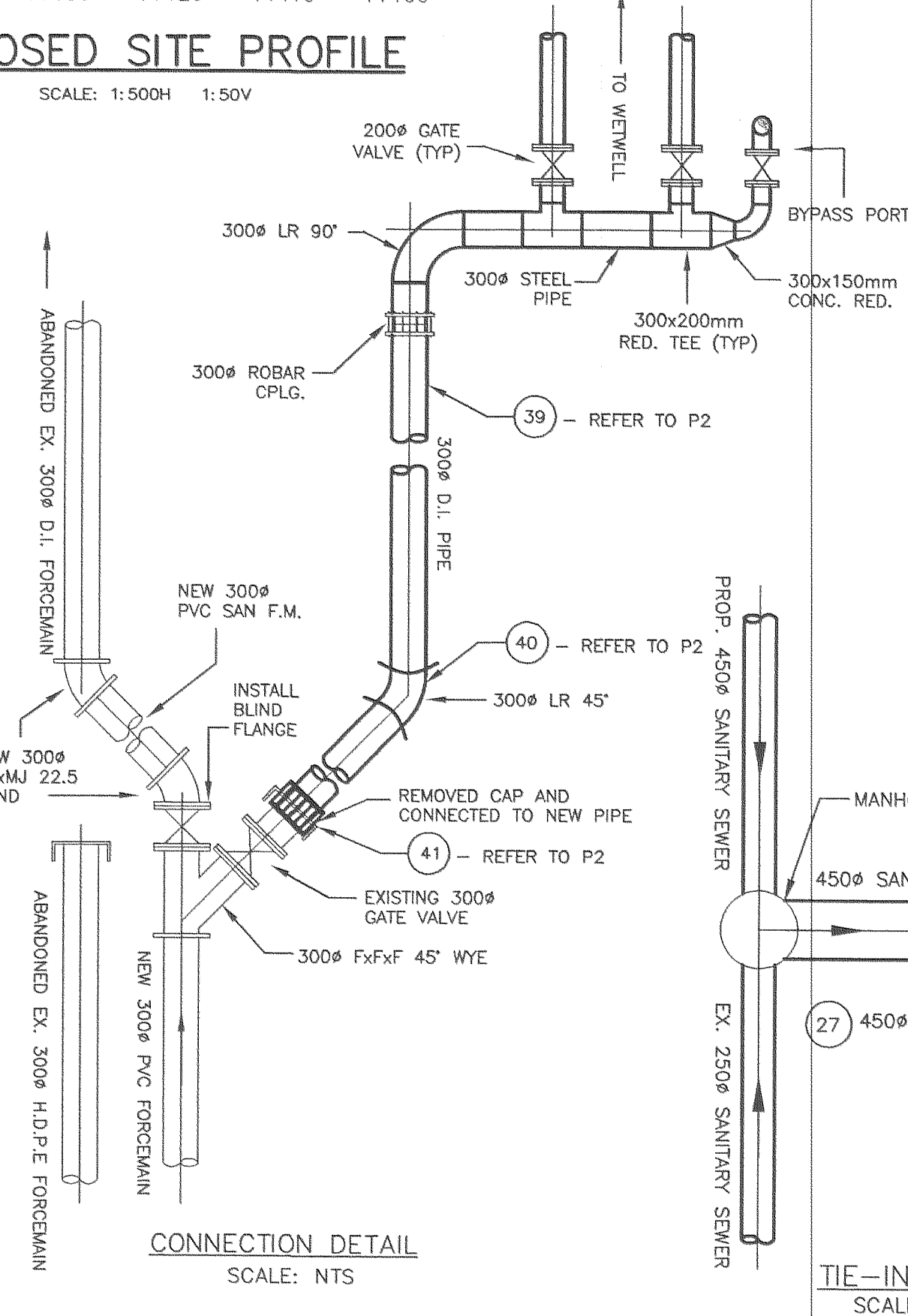
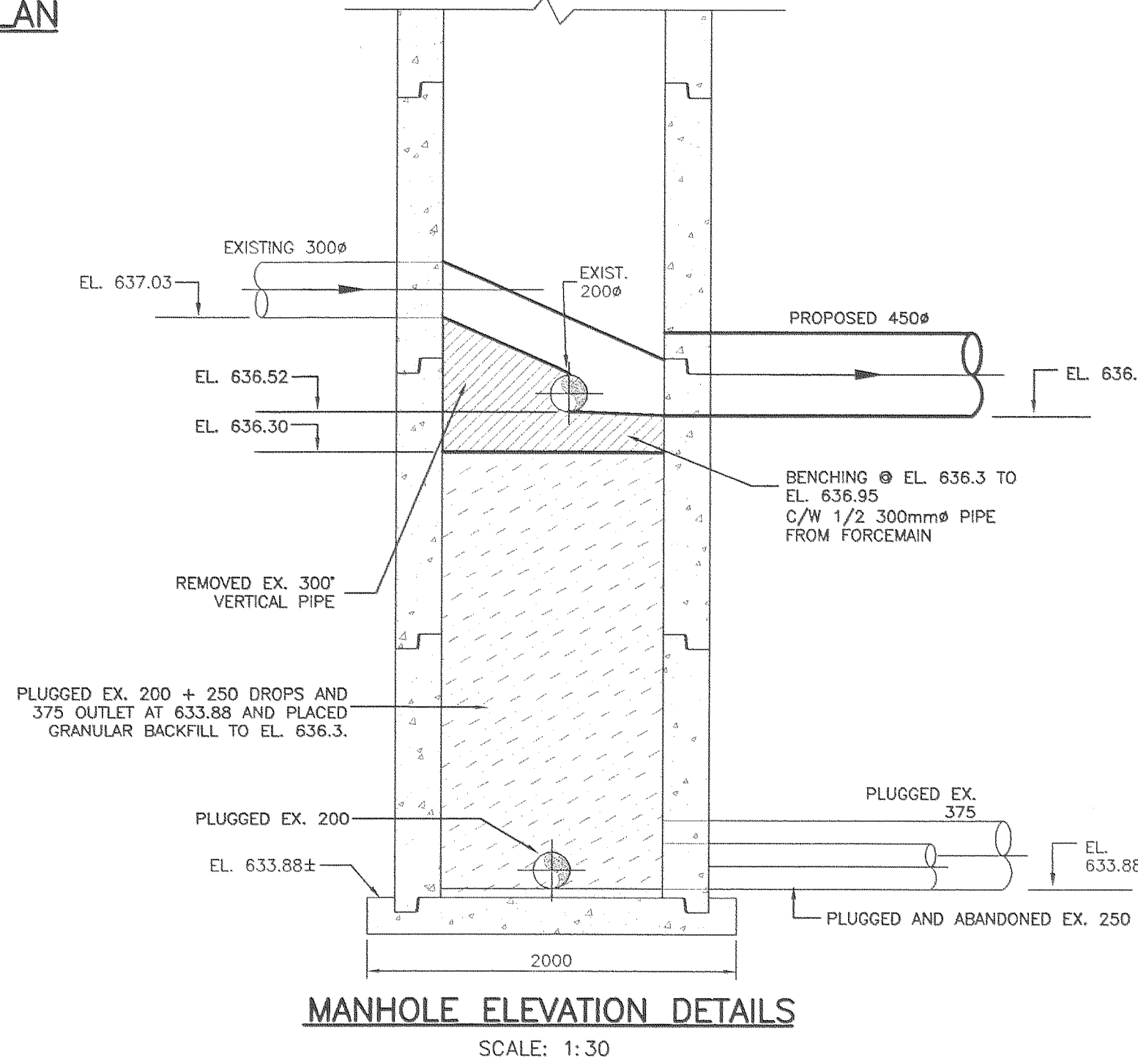
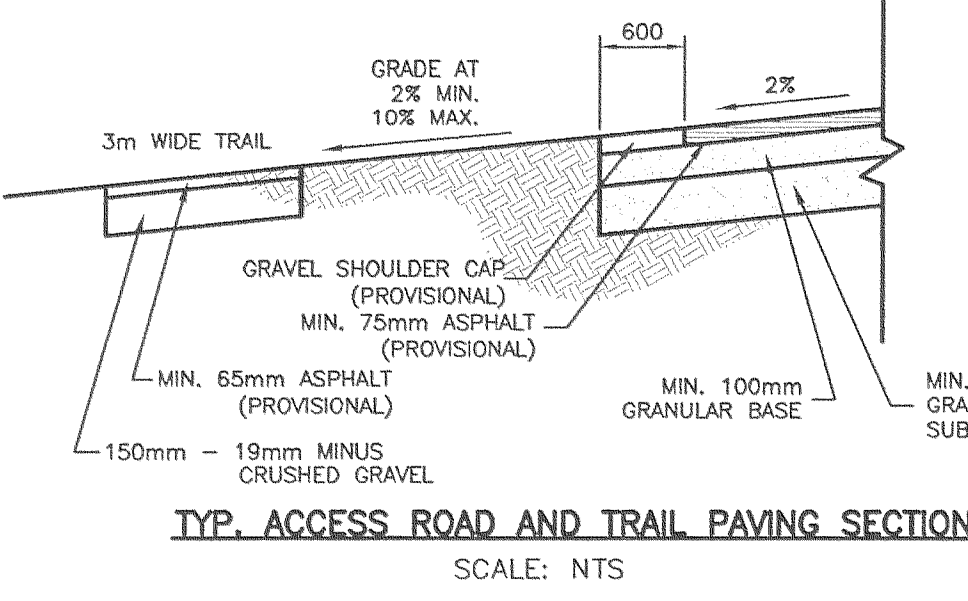
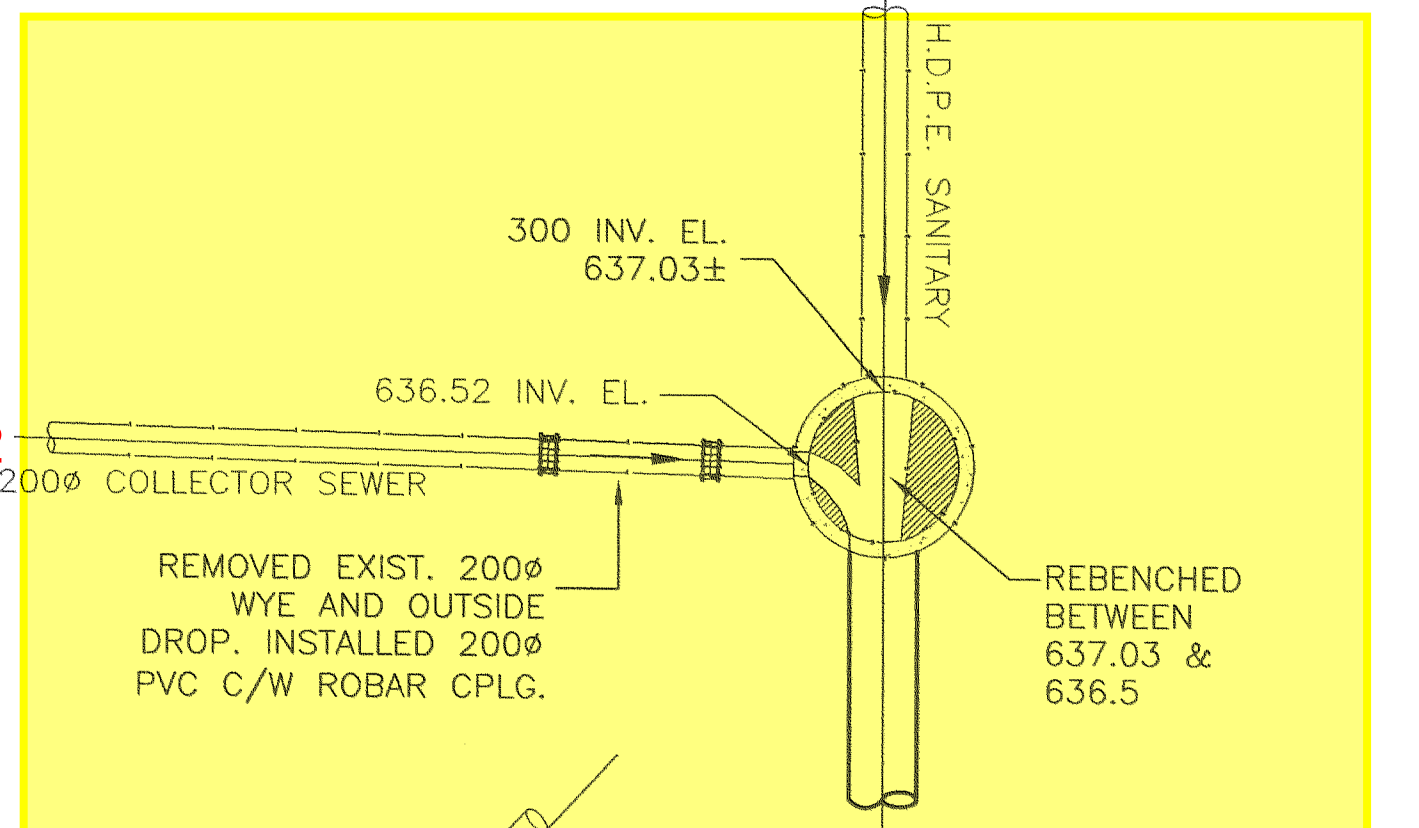


WETWELL & PIPE LAYOUT

SCALE: 1:100

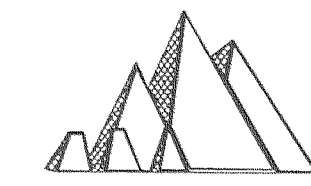
ENGINEERING LEGEND

- | EXISTING | PROPOSED | |
|----------|----------|---|
| [Symbol] | [Symbol] | GRAVEL ROAD / SURFACE TREATMENT |
| [Symbol] | [Symbol] | PAVEMENT |
| [Symbol] | [Symbol] | CURBS |
| [Symbol] | [Symbol] | SIDEWALK |
| [Symbol] | [Symbol] | SANITARY SEWER |
| [Symbol] | [Symbol] | SANITARY FORCE MAIN |
| [Symbol] | [Symbol] | STORM SEWER |
| [Symbol] | [Symbol] | DITCH / DRAINAGE SWALE |
| [Symbol] | [Symbol] | CULVERT (c/w HEADWALLS) |
| [Symbol] | [Symbol] | WATER MAIN |
| [Symbol] | [Symbol] | HYDRANT |
| [Symbol] | [Symbol] | VALVE |
| [Symbol] | [Symbol] | TYPICAL BLOW-OFF |
| [Symbol] | [Symbol] | AIR VALVE |
| [Symbol] | [Symbol] | T/H |
| [Symbol] | [Symbol] | B.C. TEL. / HYDRO DUCT |
| [Symbol] | [Symbol] | GAS MAIN |
| [Symbol] | [Symbol] | LAWN BASIN - 300# OR 450# C/W SUMP x 500mm DEEP MMCD S12 TYPE 1 |
| [Symbol] | [Symbol] | MANHOLE |
| [Symbol] | [Symbol] | CATCH BASIN |
| [Symbol] | [Symbol] | CB MANHOLE |
| [Symbol] | [Symbol] | BENCH MARK - GEODETIC DATUM |
| [Symbol] | [Symbol] | UTILITY POLE |
| [Symbol] | [Symbol] | ORNAMENTAL STREET LIGHT |
| [Symbol] | [Symbol] | UTILITY POLE WITH S.L. |
| [Symbol] | [Symbol] | POST TOP STREETLIGHT |

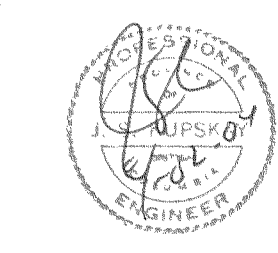


No	Date	Revision	Dr	Ch
2	2000.11.15	RECORD DRAWING	AYK	JSK
1	2000.06.05	ISSUED FOR TENDER	MLC	JSK

PARAGON ENGINEERING LTD.
 12442-205 STREET, MAPLE RIDGE, B.C. V2X 0A8
 TELEPHONE:(604) 465-3096 FAX:(604) 465-3055



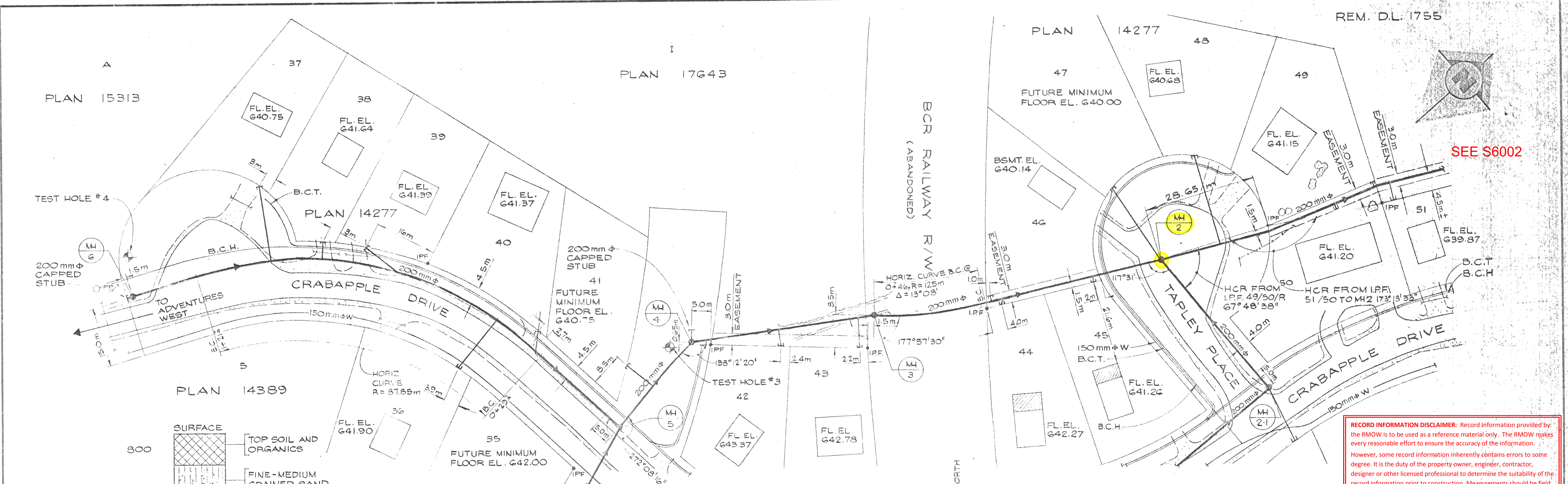
RESORT MUNICIPALITY OF WHISTLER
 SANITARY LIFT STATION S-103 RECONSTRUCTION
 6671 CRABAPPLE DRIVE
 CIVIL WORKS DETAILS - PROPOSED



Scale: AS NOTED	Mun. Proj. No.	Dwg. No.
Drawn: M.L.C.	Mun. Dwg. No.	C2
Designed: J.S.K.	Job No. 2000-13	
P.W. P.U.	Date JUN 05, 2000	Revision 2
Approved:		destroy all prints bearing previous number

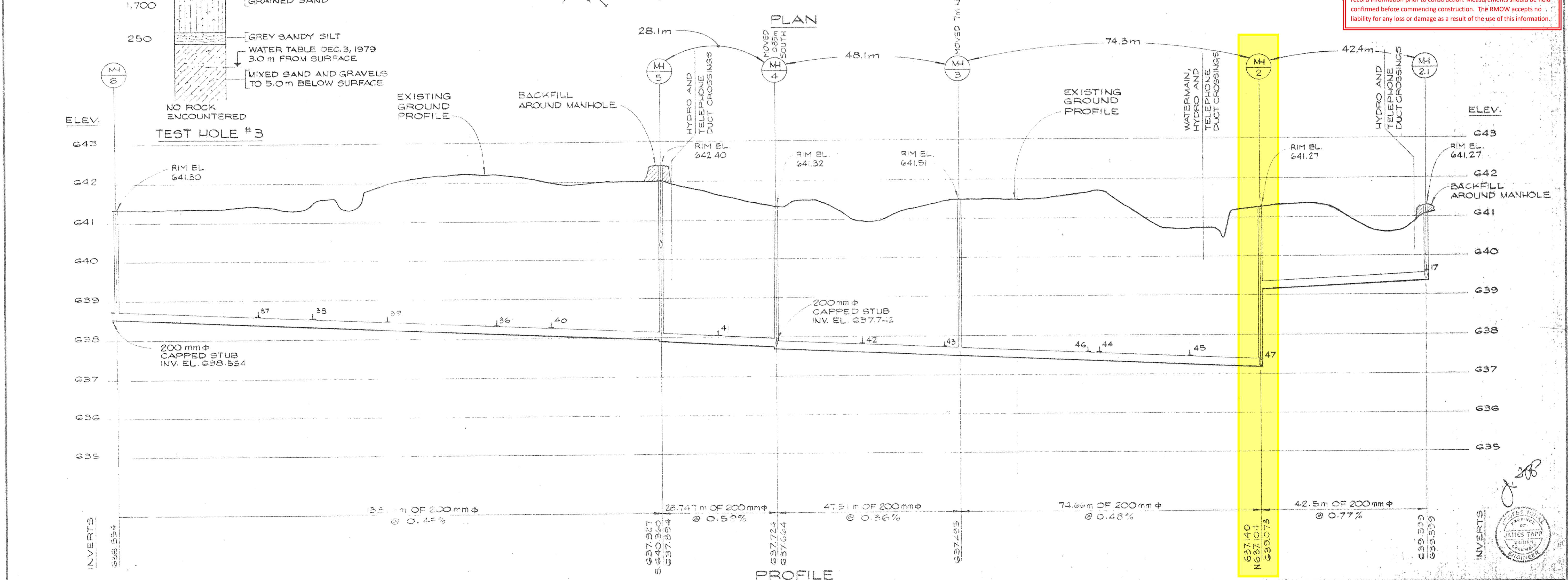
F:\Projects\2000\2000-13 pump station s-103\AS CONSTRUCTED DWS\2000-13-C162.dwg Tue Jun 23 09:33:24 2001 Paragon Engineering

S6003



SEE S6002

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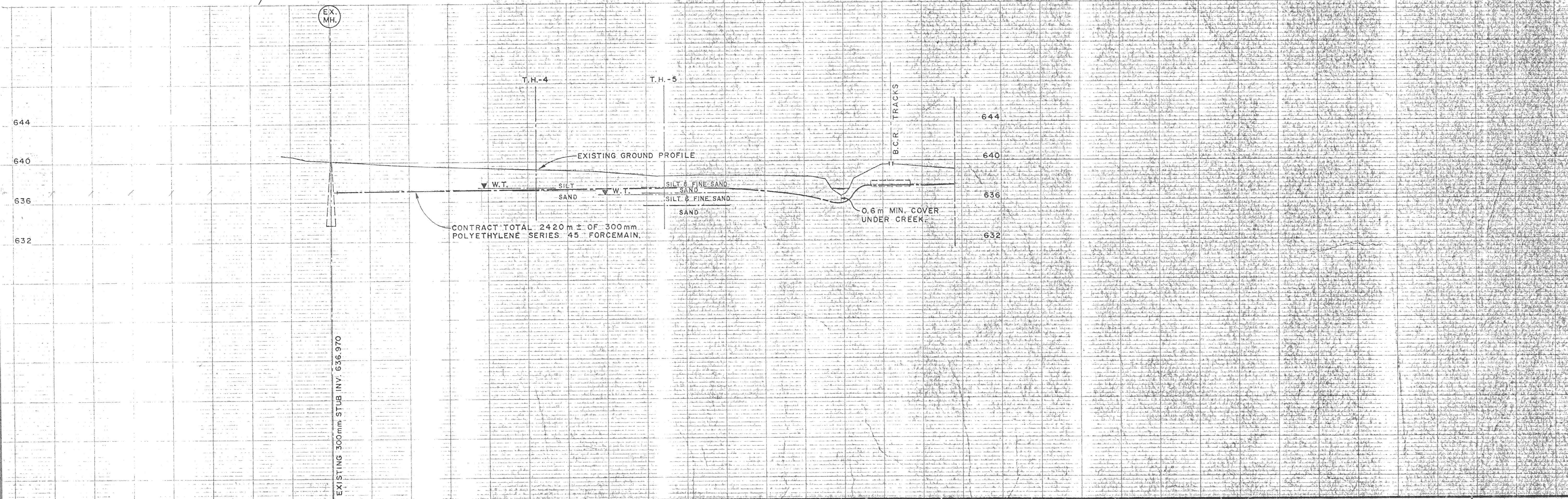
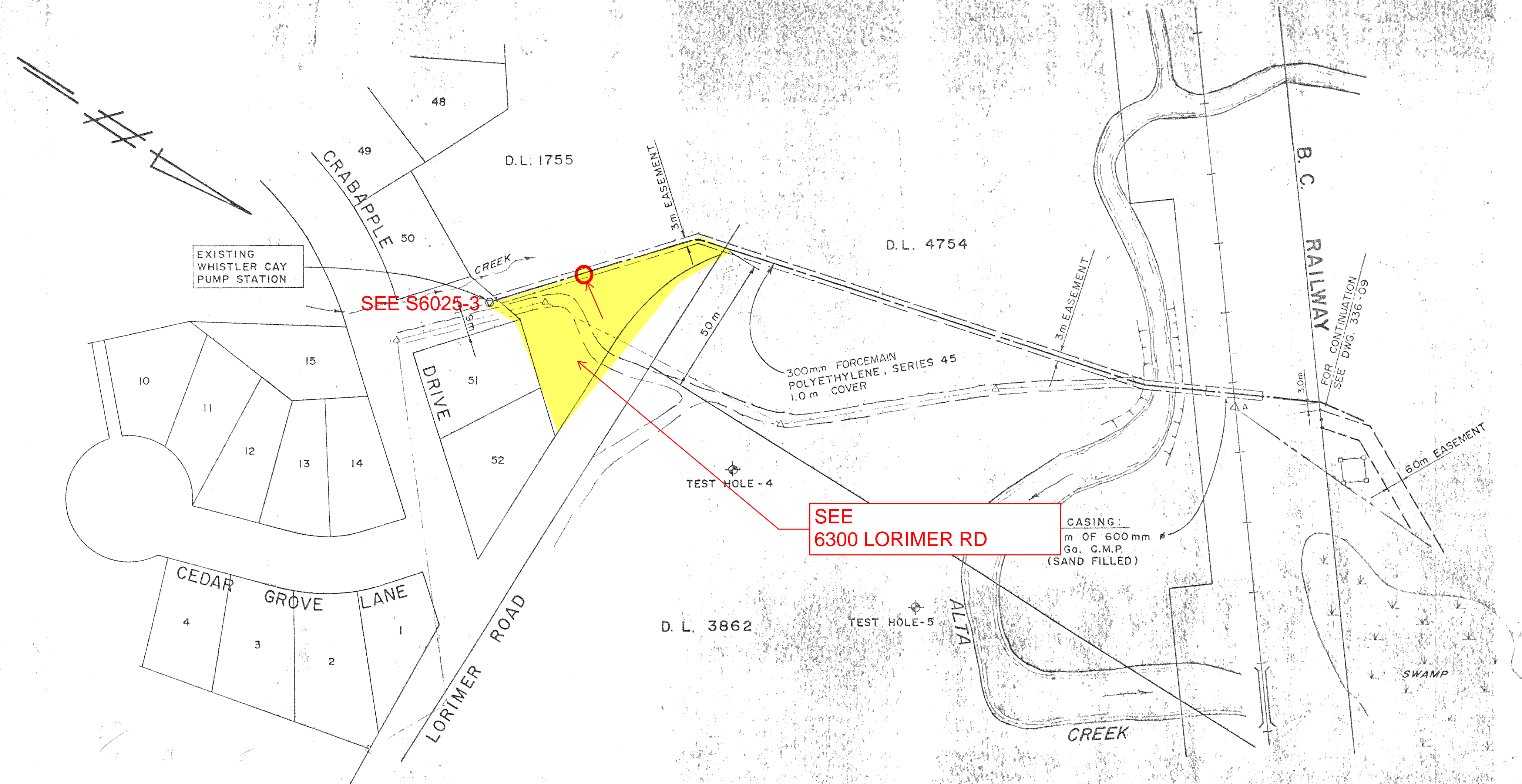
ISSUE	DATE	DRN	CHD	APPD	DESCRIPTION	ISSUE	DATE	DRN	CHD	APPD	DESCRIPTION	DESIGNED	DRAWN	CHECKED	DATE	SCALE: HORIZ. 1:500 VERT. 1:50
B	NOV 26/80	J.S.	J.T.		RECORD DRAWING							U.T.	V.A.B.		June 5/82	DRAWING No. 179-1-1 SHEET 5 OF 5 ISSUE B

S6003

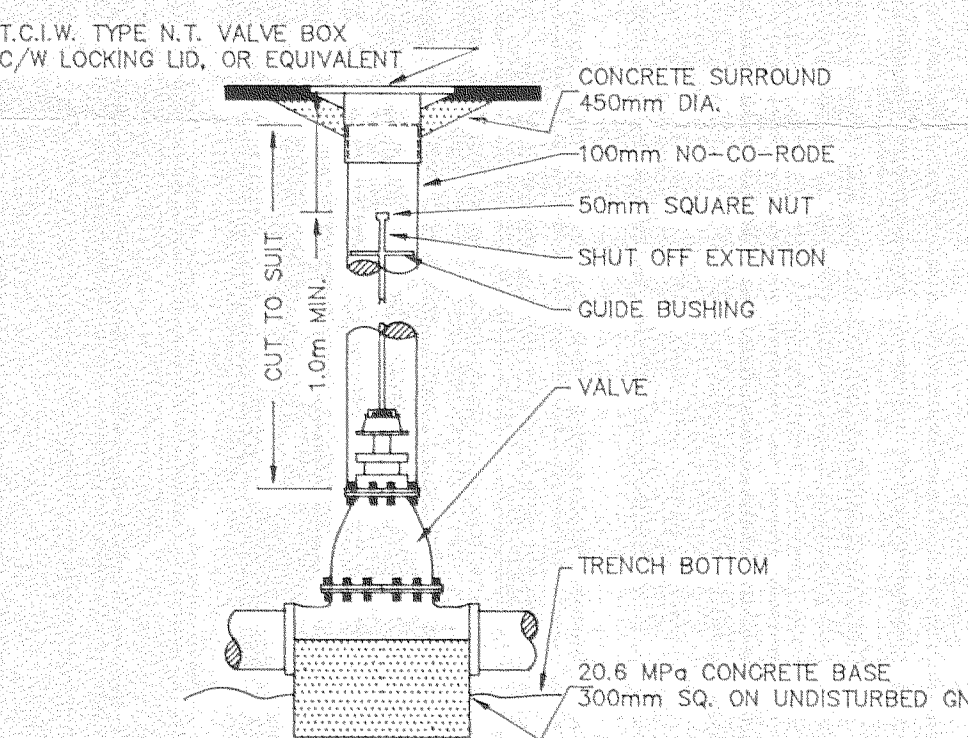
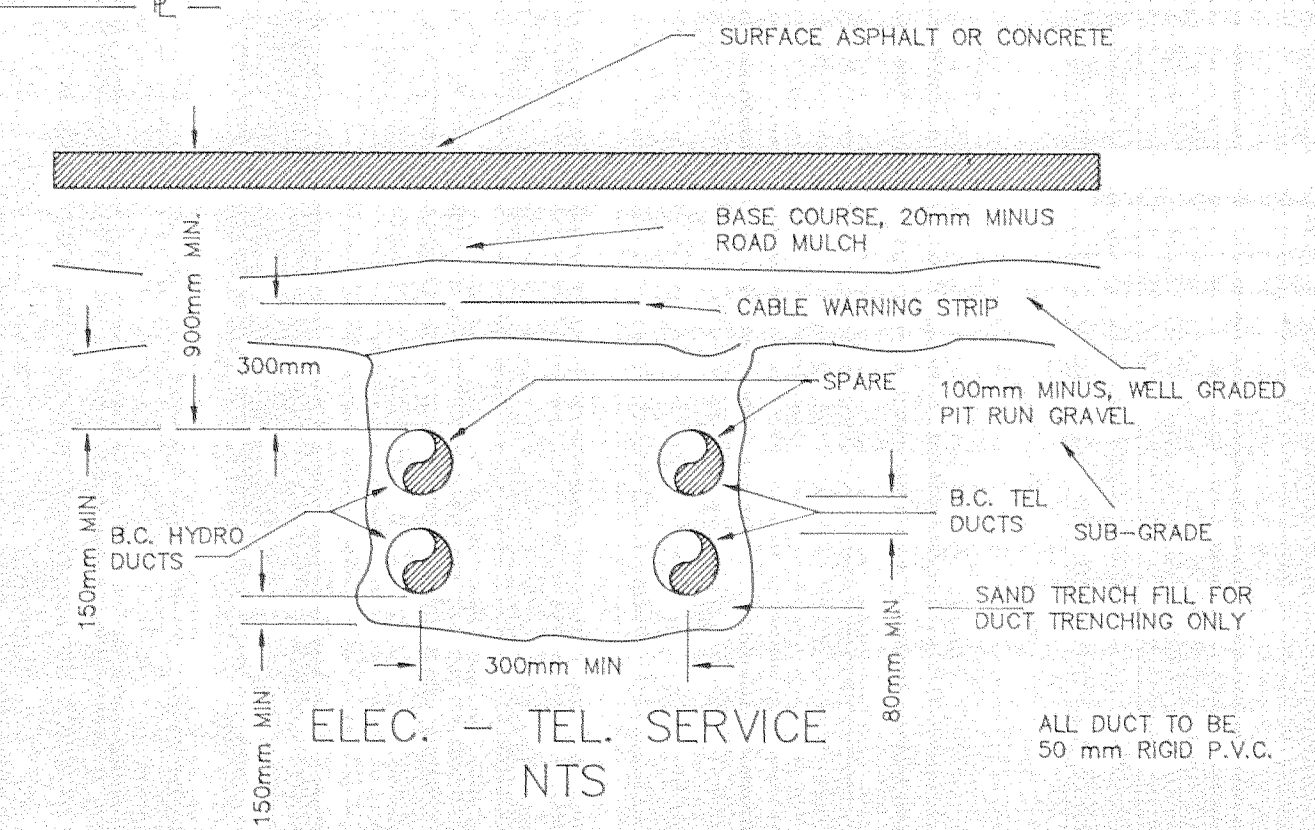
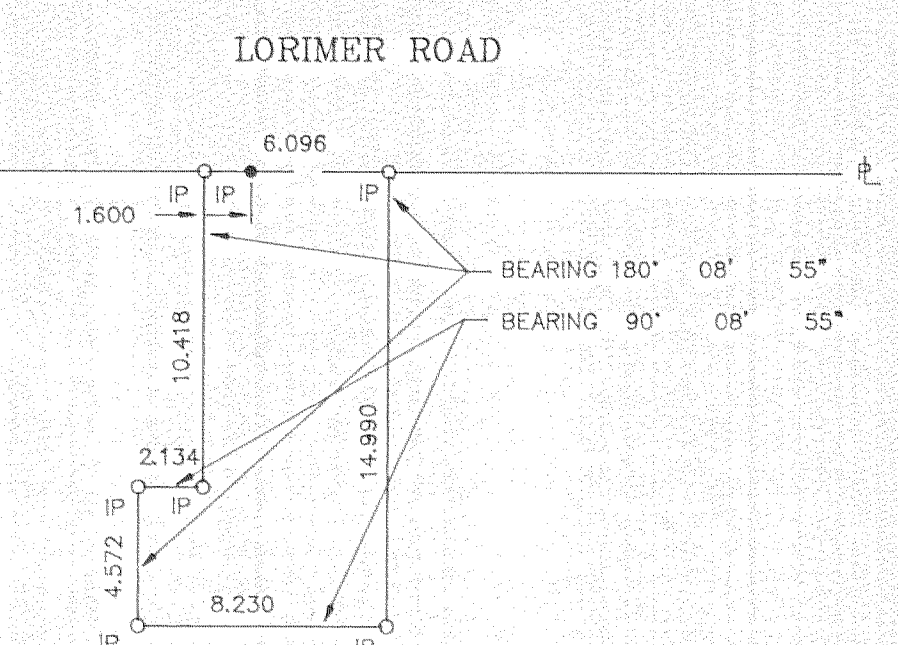
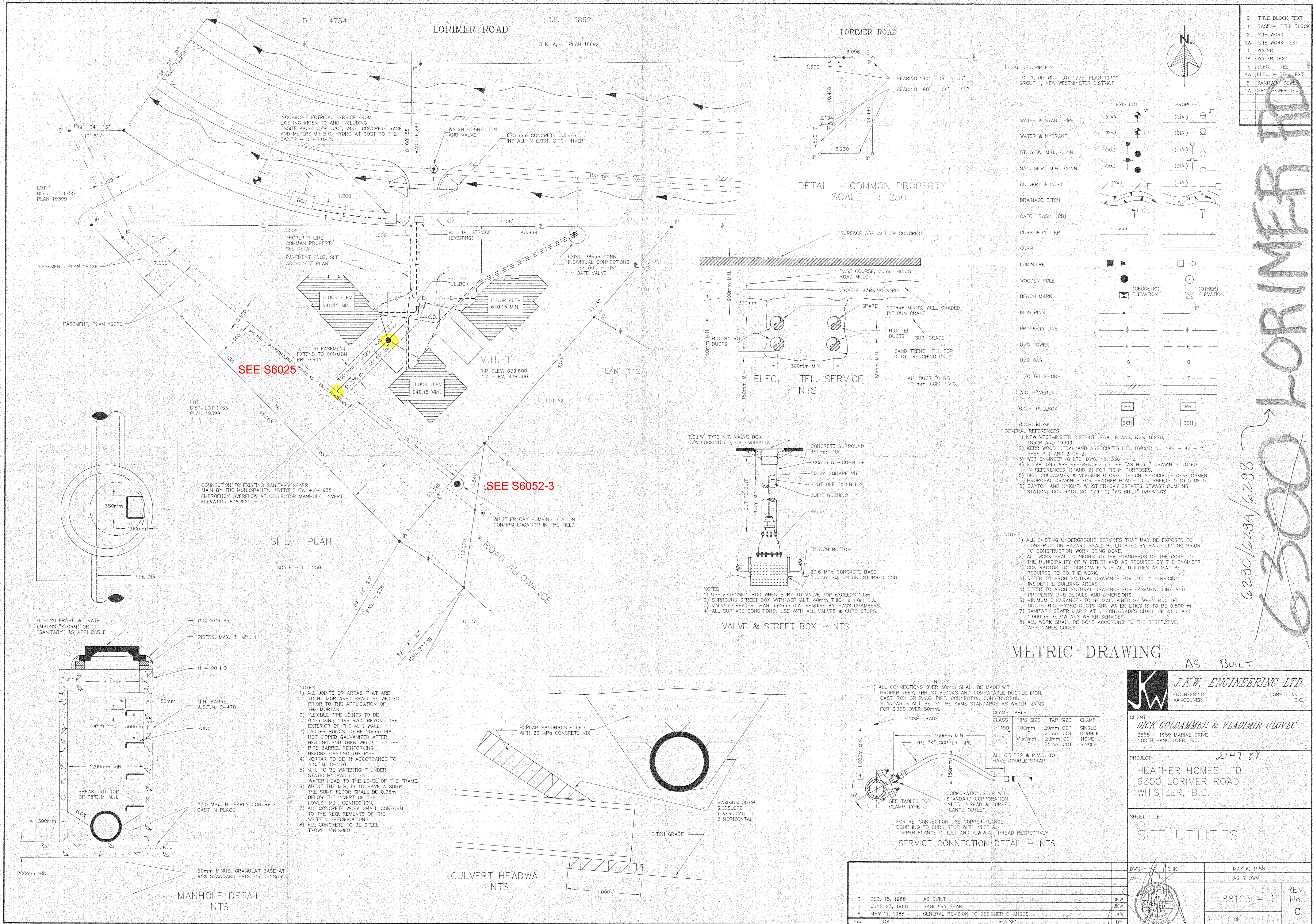
52095 56025

52095

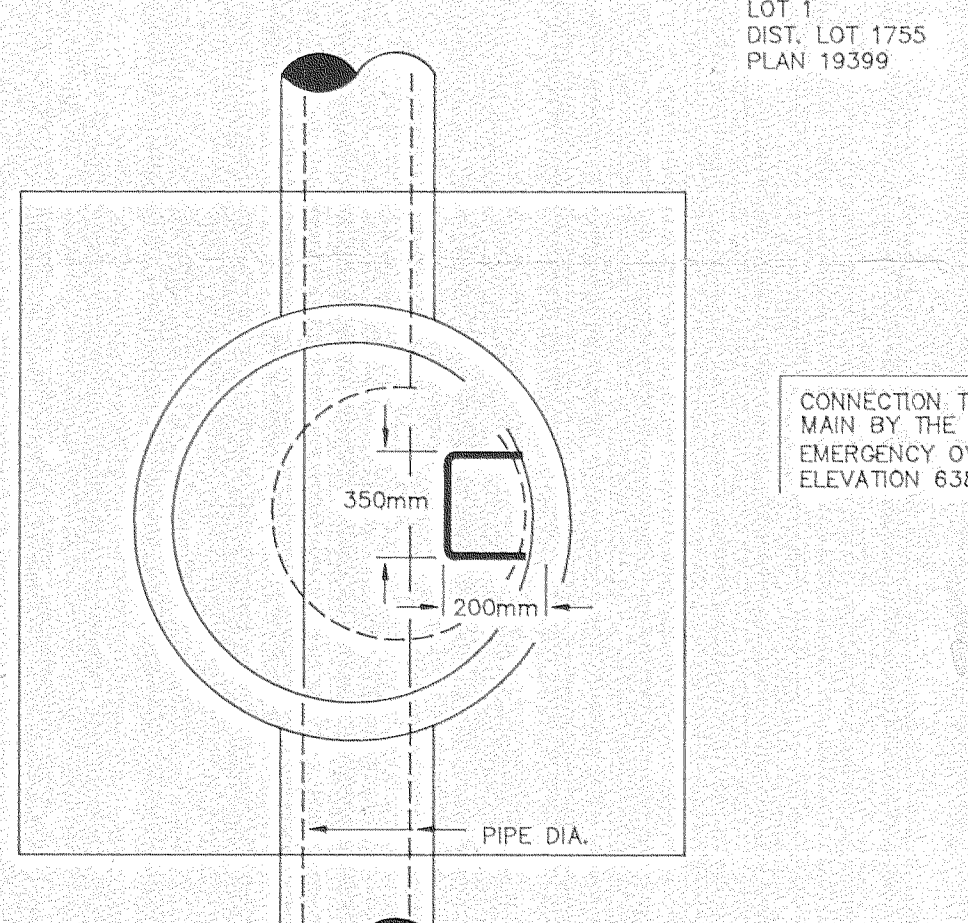
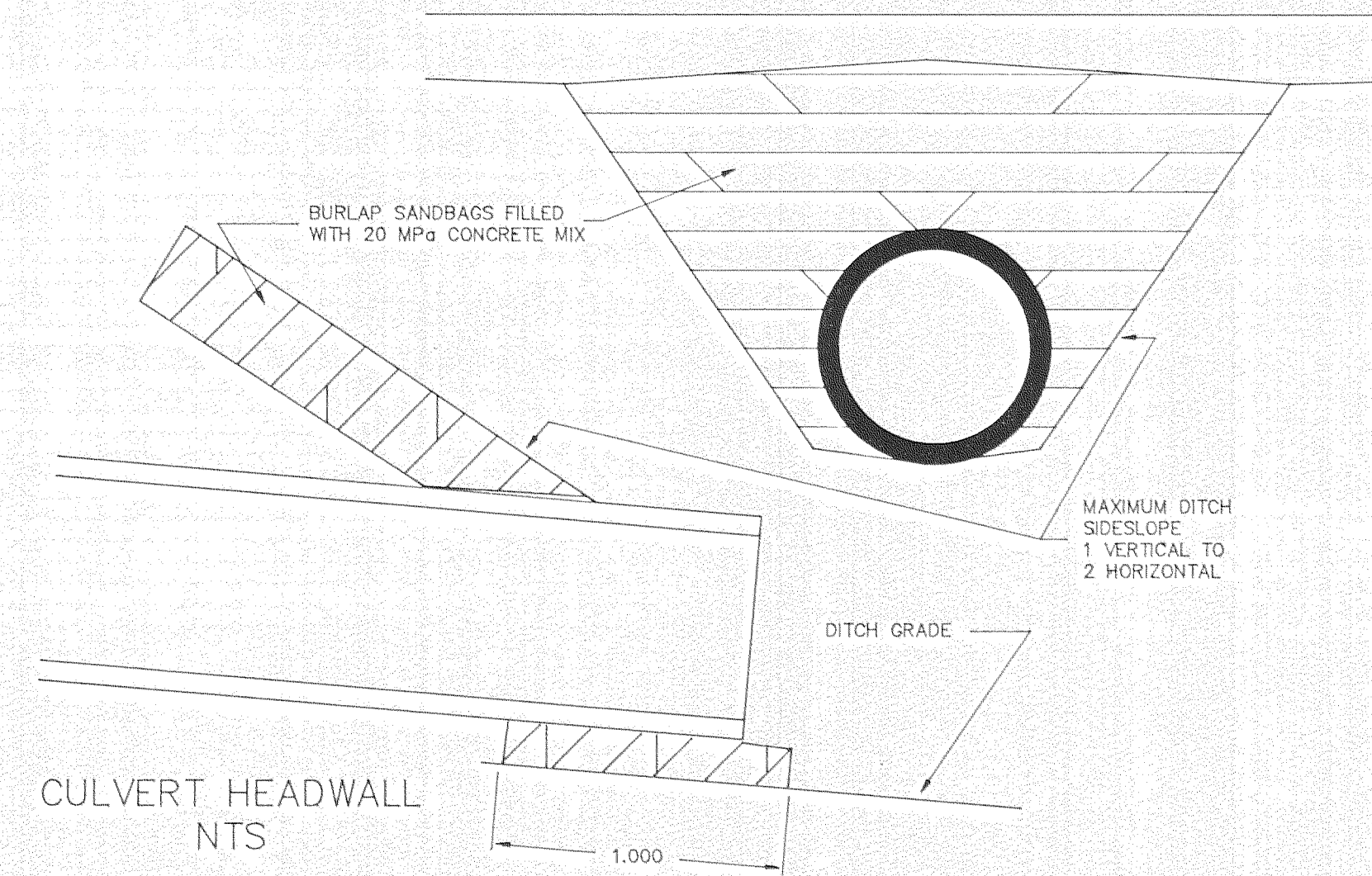
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NO.	REFERENCE DRAWINGS	NOTES	LEGEND	NO.	REVISIONS	BY	DATE	APPR. SEAL	WEB ENGINEERING LTD. consulting civil engineers STE 101-186 WELCH STREET North Vancouver, B.C.	DRWN: R.L./G.S. DSGN: CHKD: DATE: NOV. 80	RESORT MUNICIPALITY OF WHISTLER SANITARY SEWER FORCEMAIN	SCALE: HORZ 1:1000 VERT 1:200 SHEET OF DRAWING NO. 336-10	REV. NO. 1
	AS CONSTRUCTED									L.T. 07-82	NOV. 80		



NOTES
 1) USE EXTENSION ROD WHEN BURY TO VALVE TOP EXCEEDS 1.0m.
 2) SURROUND STREET BOX WITH ASPHALT, 40mm THICK x 1.0m DIA.
 3) VALVES GREATER THAN 350mm DIA. REQUIRE BY-PASS CHAMBERS.
 4) ALL SURFACE CONDITIONS, USE WITH ALL VALVES & CURB STOPS.



NOTES
 1) ALL JOINTS OR AREAS THAT ARE TO BE MORTARED SHALL BE WETTED PRIOR TO THE APPLICATION OF THE MORTAR.
 2) FLEXIBLE PIPE JOINTS TO BE 0.5m MIN.; 1.0m MAX. BEYOND THE EXTERIOR OF THE M.H. WALL.
 3) LADDER RUNGS TO BE 20mm DIA., HOT DIPPED GALVANIZED AFTER BENDING AND THEN WELDED TO THE PIPE BARREL REINFORCING BEFORE CASTING THE PIPE.
 4) MORTAR TO BE IN ACCORDANCE TO A.S.T.M. C-270
 5) M.H. TO BE WATERTIGHT UNDER STATIC HYDRAULIC TEST.
 6) WHERE THE M.H. IS TO HAVE A SUMP THE SUMP FLOOR SHALL BE 0.75m BELOW THE INVERT OF THE LOWEST M.H. CONNECTION.
 7) ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE WRITTEN SPECIFICATIONS.
 8) ALL CONCRETE TO BE STEEL TROWEL FINISHED

LEGAL DESCRIPTION

LOT 1, DISTRICT LOT 1755, PLAN 19399
 GROUP 1, NEW WESTMINSTER DISTRICT

LEGEND

	EXISTING	PROPOSED
WATER & STAND PIPE	(DIA.)	(DIA.)
WATER & HYDRANT	(DIA.)	(DIA.)
ST. SEW., M.H., CONN.	(DIA.)	(DIA.)
SAN. SEW., M.H., CONN.	(DIA.)	(DIA.)
CULVERT & INLET	(DIA.)	(DIA.)
DRAINAGE DITCH		
CATCH BASIN (CB)		
CURB & OUTTIER		
CURB		
LUMINAIRE		
WOODEN POLE		
BENCH MARK	(GEODETIC) ELEVATION	(OTHER) ELEVATION
IRON PINS	IP	IP
PROPERTY LINE		
U/G POWER	E	E
U/G GAS	G	G
U/G TELEPHONE	T	T
A.C. PAVEMENT		
B.C.H. PULLBOX	PB	PB
B.C.H. KIOSK	BCH	BCH

GENERAL REFERENCES

- 1) NEW WESTMINSTER DISTRICT LEGAL PLANS, Nos. 16270, 18326 AND 19399.
- 2) KERR WOOD LUEDAL AND ASSOCIATES LTD. DWG(S) No. 148 - 82 - 2, SHEETS 1 AND 2 OF 2.
- 3) WEB ENGINEERING LTD. DWG. No. 338 - 10.
- 4) ELEVATIONS ARE REFERENCED TO THE "AS BUILT" DRAWINGS NOTED IN REFERENCES 1) AND 2) FOR THE PURPOSES.
- 5) DICK GOLDAMMER & VLADIMIR ULOVEC DESIGN ASSOCIATES DEVELOPMENT PROPOSAL DRAWINGS FOR HEATHER HOMES LTD., SHEETS 1 TO 5 OF 5.
- 6) DAYTON AND KNIGHT, WHISTLER GAY ESTATES SEWAGE PUMPING STATION; CONTRACT NO. 179.1.2, "AS BUILT" DRAWINGS

NOTES

- 1) ALL EXISTING UNDERGROUND SERVICES THAT MAY BE EXPOSED TO CONSTRUCTION HAZARD SHALL BE LOCATED BY HAND DIGGING PRIOR TO CONSTRUCTION WORK BEING DONE.
- 2) ALL WORK SHALL CONFORM TO THE STANDARDS OF THE CORP. OF THE MUNICIPALITY OF WHISTLER AND AS REQUIRED BY THE ENGINEER.
- 3) CONTRACTOR TO COORDINATE WITH ALL UTILITIES AS MAY BE REQUIRED TO DO THE WORK.
- 4) REFER TO ARCHITECTURAL DRAWINGS FOR UTILITY SERVICING INSIDE THE BUILDING AREAS.
- 5) REFER TO ARCHITECTURAL DRAWINGS FOR EASEMENT LINE AND PROPERTY LINE DETAILS AND DIMENSIONS.
- 6) MINIMUM CLEARANCES TO BE MAINTAINED BETWEEN B.C. TEL. DUCTS, B.C. HYDRO DUCTS AND WATER LINES IS TO BE 0.500 m.
- 7) SANITARY SEWER MAINS AT DESIGN GRADES SHALL BE AT LEAST 1.000 m. BELOW ANY WATER SERVICES.
- 8) ALL WORK SHALL BE DONE ACCORDING TO THE RESPECTIVE, APPLICABLE CODES.

METRIC DRAWING

AS BUILT

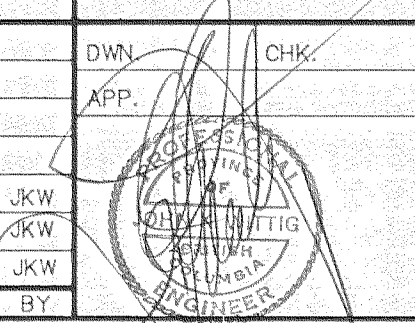
J.K.W. ENGINEERING LTD.
 ENGINEERING CONSULTANTS
 VANCOUVER B.C.

CLIENT
DICK GOLDAMMER & VLADIMIR ULOVEC
 2565 - 1959 MARINE DRIVE
 NORTH VANCOUVER, B.C.

PROJECT
 2147-87
HEATHER HOMES LTD.
 6300 LORIMER ROAD
 WHISTLER, B.C.

SHEET TITLE
SITE UTILITIES

DWN.	CHK.	MAY 6, 1988
APP.		AS SHOWN
C	DEC. 15, 1988	AS BUILT
B	JUNE 23, 1988	SANITARY SEWR
A	MAY 11, 1988	GENERAL REVISION TO DESIGNER CHANGES
No.	DATE	REVISION



6300 LORIMER RD
 6290/6294/6298

Appendix F
S103 Sewer Lift
Station Drawdown
Calculations

S103 Sewer Lift Station Draw Down Calculations (March 2023)

Pump Draw Down Test	S103	Units	Length m	Width m	Total Number of pumps/guide rails	Radius meters
Mar-23						
Tank Shape	rectangle		2.5	3		
Pumped Well Volume Measured	5.775	m3				
Pocket Wall Volume	0.000	m3	0	0		
Guide Rails Volume	0.015	m3			4	0.04
Pump Volume	0.302	m3			2	0.25
Discharge Pipe Volume	0.082	m3			2	0.13
Total well volume	5.375	m3				
Discharge Pressure		psi	If known			
Span of level Tx	2.200	m	Total span in m from level Tx			
RTU start level	0.700	%	% of full span. if 40% input 0.40			
RTU stop level	0.350	%	% of full span. if 40% input 0.40			
Start Level	1.540	m				
Stop Level	0.770	m				
Total Pumped Hieght Distance	0.770	m				
Inflow rise time 1	Period Average Pump Stop Time	s	Time taken from pump stop to pump run			
Averaged inflow time	320.512	s				
Draw Down Time 1	Period Average Pump Run Time	s	Time taken from pump start to pump stop			
Average Draw Down Time	88.497	s				
Calculated off pump Inflow rate	1.006	m3m	Inflow rate of tank when pumps are off			
Calculated on pump total inflow	1.484	m3	Total volume of inflow during pump run			
Calculated pumped outflow	4.651	m3m				

Appendix G
Environmental
Management Plan



CASCADE ENVIRONMENTAL
RESOURCE GROUP LTD

Environmental Management Plan

Sewer Force Main Repairs – Crabapple Sewer Lift Station, 6671 Crabapple Drive, Whistler, BC

Prepared by:

Cascade Environmental Resource Group Ltd.
Unit 3 – 1005 Alpha Lake Road
Whistler, BC
V8E 0H5

Prepared for:

Resort Municipality of Whistler
4325 Blackcomb Way
Whistler, BC
V8E 0X5

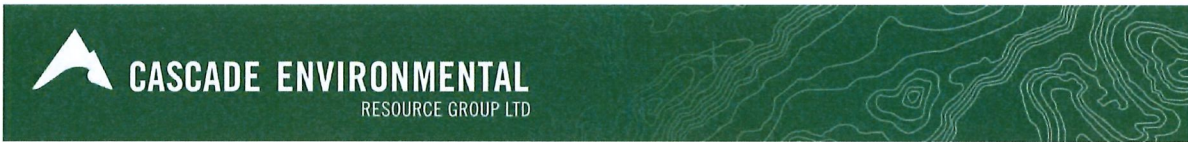
File No.: 013-64-06-01

Date: November 18, 2024

WWW.CERG.CA

WHISTLER: UNIT 3 - 1005 ALPHA LAKE ROAD WHISTLER BC CANADA V8E 0H5
SQUAMISH: UNIT 205 - 39480 QUEENS WAY SQUAMISH BC CANADA V8B 0Z5

TEL 604.938.1949
TEL 604.815.0901



Emergency Contact List

NAME	COMPANY	POSITION	CONTACT
Cascade Contact Numbers	Office		604-938-1943
Candace Rose-Taylor	Cascade Environmental	QEP	604-902-4009
Victoria Legris	Cascade Environmental	QEP	604-905-9391
RMOW Contact Numbers			
Chelsey Roberts	RMOW	Manager of Infrastructure Projects	778-997-9425
Scott Morphet	RMOW	Capital Projects Supervisor	604-905-8944
Engineer Contact Numbers			
Grant Wilburn	ISL Engineering	Project Engineer	604-849-5543
Spill Contact Personnel			
Emergency Management BC (EMBC)	24 Hour Spill Reporting		1-800-663-3456
DFO Spill Reporting Line			1-800-465-4336
Emergency Medical Services		EMERGENCY	911
Emergency – Whistler			911
Fire – Whistler			911 or 604-935-8260
Ambulance – Whistler			911 or 604-932-5894
Whistler RCMP			604-932-3044
BC Poison Control Centre	BC Drug & Poison Info Center		1-800-567-8911 or 604-682-5050
Whistler Health Care Centre	Vancouver Coastal Health		604-932-4911
Environmental/ Conservation			
Environment and Climate Change Canada			1-800-668-6767
Bear Conservation Officer			604-905-2327
BC Natural Resource Officer			1-877-952-7277



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1 Introduction

1.1 Location of Site

The project site is located at 6671 Crabapple Drive in Whistler, BC. The site lies northeast of a paved municipal trail and Crabapple Creek.

1.2 Project Description

Cascade Environmental Resource Group Ltd. (Cascade) was retained by the Resort Municipality of Whistler (RMOW) to provide an Environmental Management Plan (EMP) in support of proposed repairs to the sewer force main at the Crabapple sewer lift station. Proposed works consist of installing a bypass of the sewer lift station, excavation and replacement of piping, valves and fittings within the driveway south of the lift station at 6671 Crabapple Drive.

1.3 Goals and Objectives

This EMP provides measures to avoid and mitigate potential adverse environmental impacts associated with the proposed works. Adherence to the protocols described in the EMP should ensure that all environmental issues including, but not limited to, air and water quality, wildlife and wildlife habitats, aquatic ecosystems and riparian vegetation are protected and maintained.

1.4 Environmental Permitting

The EMP is designed to meet all applicable municipal, provincial and federal legislation, regulations, orders, standards and guidelines. The EMP assumes that all necessary permits, permissions, allowances and licenses issued by governing bodies are obtained and their provisions complied with. As the subject site is located within 30 m of Crabapple Creek, proposed works are located within the Riparian Assessment Area (RAA) designated by the Riparian Areas Protection Regulation (RAPR) and the Riparian Ecosystems Protection Area (REPA) designated by the Whistler Official Community Plan (OCP).

The RAPR applies to all residential, commercial and industrial development activities proposed within 30m of a watercourse that is fish-bearing or connected by surface flow to a fish-bearing watercourse (BC Gov, 2019). As proposed sewer repairs are considered institutional use and do not constitute residential, commercial or industrial development, the RAPR does not apply to the proposed works. However, the Whistler OCP may apply to the proposed works, and it is the responsibility of RMOW to determine the application of the OCP.

Additionally, the provincial *Water Sustainability Act* (WSA) protects all watercourses from top of bank to top of bank, and regulates diversion and use of surface or groundwater. However, local governments are exempt from requiring WSA authorization to divert groundwater using drainage works under Section 32 of the Act, and any dewatering of the excavation pit should comply with this exemption to avoid the requirement for an Approval application.

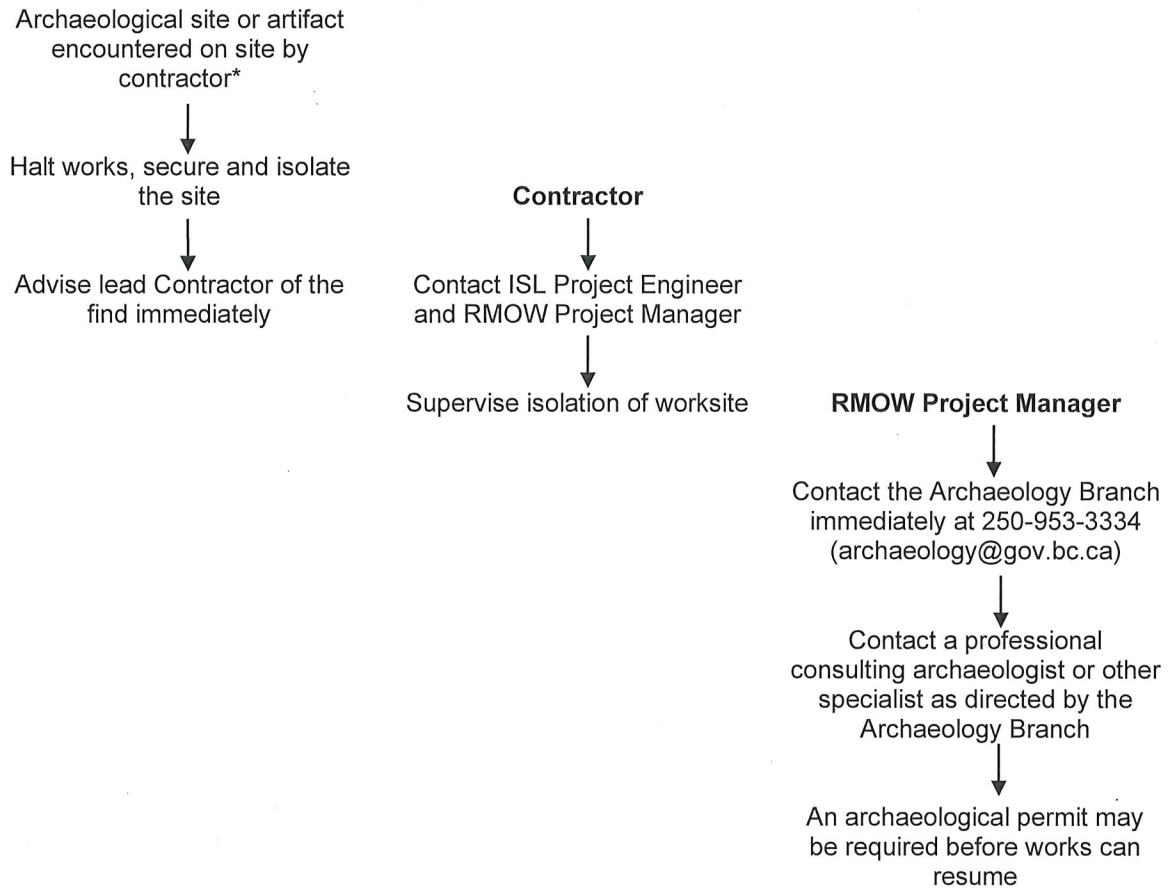
1.5 First Nation's Interests

The project area lies within the vicinity of the Lil'wat First Nation and the Squamish First Nation traditional territories. Land Use Planning Agreements between the Province of BC and the Squamish Nation and the Lil'wat Nation were signed in 2007 and 2008 respectively. The intent of these agreements is to recognise First Nations land use plans and interests, and to encourage engagement on land and resource issues.

An archeological investigation was not conducted as part of this study. The site of the sewer repairs is within the footprint of the existing lift station and driveway and an archaeological site is unlikely to be located within the development area. However, if an archaeological site is encountered during works, the

following steps must be taken activities must be halted, and the appropriate authorities consulted as per Table 1 below as archaeological sites are protected under the *Heritage Conservation Act*.

Table 1: Archaeological Site Discovery Response Plan



*Evidence of possible archaeology sites includes:

- Rock art (including pictographs and petroglyphs).
- Surface features such as depressions created by former habitations, earthen fortifications, rock cairns, fish traps and clam gardens.
- Stone, bone, antler, wood or shell artifacts that have become visible on the land surface owing to erosion or recent land altering activity.
- Buried cultural or human remains that may be sighted in a cutbank, excavation, eroded shoreline, or other exposed deposit (BC Arch Branch, 2021).

1.6 Recreation and Public Use of the Project Area

The subject site is located northeast of a section of the Valley Trail, a paved non-motorized municipal trail. The Contractor will communicate with the RMOW to manage traffic within the project area to protect public and worker safety. The Contractor will use signage, barriers and flagging to control or prevent public access to the project area during works.



2 Sediment and Erosion Control Plan

The objective of the Sediment and Erosion Control Plan is to minimize site erosion and protect water quality and fish habitat during the project. The following describes the measures that will be used to minimize site erosion and the transport of sediments into the Crabapple Creek.

2.1 Sediment and Erosion Control Procedures

The Sediment and Erosion Plan includes the following mitigation measures to minimize soil erosion and impacts to water quality, fish and fish habitat around the project area. These measures are standard erosion control practices in British Columbia and are based on guidelines and recommendations from the Land Development Guidelines for the Protection of Aquatic Habitat (Chilibeck *et al.*, 1992) and Section 3 of Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia (MOE, 2014a).

Soil exposed or stockpiled during land clearing activities is subject to erosion and transportation by water and wind. The amount of erosion can be controlled by proper planning of project activities, covering disturbed soils, revegetating slopes and by minimizing the amount of exposed soil available on site. Exposed, erodible soils and/or stockpile materials shall be protected from erosion by one or more of the following methods:

- Installation of perimeter silt fence.
- Grading to achieve low angle and less susceptible slopes.
- Surface roughening with machine tracks or woody debris.
- Covering with a suitable material such as polyethylene plastic liner, or geotextile.
- Establishment of a temporary cover of vegetation.
- Application of a soil binding spray or mulch.
- Establishment of permanent vegetation or temporary graminoid cover.

The proposed worksite is located within 30 m of Crabapple Creek. Excavation works may result in exposure of sediment, and sediment fencing should be installed around the perimeter of the worksite to prevent sediment-laden stormwater entering Crabapple Creek during inclement weather conditions. Sediment fencing should be installed in accordance with Appendix 1 (Sediment Fence Installation) and should tie into areas of higher ground to prevent sediment-laden water from flowing around the sediment fencing into Crabapple Creek. Sediment fence should be inspected regularly by the Contractor and ISL Project Engineer, and before and after a significant rainfall event (see Section 2.3 below). Energy dissipaters, straw mats, geotextiles, and interception ditches may also be used as needed on a site-specific basis to control erosion.

2.2 Stockpiles and Material Disposal Areas

Temporary stockpiles of excavated material or backfill may be kept on-site. Any piles of earth or erodible construction materials stockpiled on site must be placed in a location where erosion into Crabapple Creek cannot occur and the stockpile will not impede any drainage. Stockpiles and material disposal areas should be covered with tarpaulins or plastic sheeting as required.

2.3 Wet Weather Contingency Planning

Rainfall events can result in significant erosion due to the impact of the water and the runoff generated. It will be the responsibility of both the Contractor and the ISL Project Engineer to monitor current weather predictions. In the event of heavy run-off, sediment fencing, diversion berms, check dams made of sand bags or straw bales may be used. Materials required to handle excess runoff during a rainfall event should be on-site at all times. A storm event is defined as the forecast or actual exceedance of 25 mm of rainfall in a 24-hour period.



3 Water Quality Protection Plan

Protection of water quality is an essential component to healthy ecosystems. In addition, Section 36 of the Federal *Fisheries Act* prohibits the discharge of deleterious substances in a watercourse, or in any place where those substances might enter a watercourse (DFO, 2018). To avoid water quality problems, best management practices (BMPs) outlined for protecting water quality in the Environmental Guidelines for Urban and Rural Land Development in BC (MOE, 2014a) as well as the Requirements and Best Management Practices for Making Changes In and About a Stream in BC (BC Gov, 2022) will be implemented, which includes the following aspects:

- Protecting water sources, through the maintenance of buffers and healthy riparian areas.
- Minimizing the release of sediment and silt into the water column (see Sediment and Erosion Control Plan, Section 2).
- Encouraging groundwater recharge.

Further to the application of BMPs, specific water quality protection measures will be implemented during project activities. Water quality protection measures include:

- Work will be completed as soon as possible once initiated.
- Sediment fencing should be installed around the perimeter of the worksite as detailed in Section 2.1 to prevent sediment, sediment-laden stormwater, or construction debris from entering Crabapple Creek during works.
- Any waters leaving the work site that contain oil and grease, or any other material, should be detained, treated or otherwise processed to remove these materials before release into the environment.
- All equipment and machinery involved in the works will be in good operating condition, free of leaks; machinery will be power washed prior to works to eliminate excessive oil or grease. All refuelling and servicing will take place at least 30 meters from watercourses.

Preliminary site investigations determined that groundwater is likely to be encountered during excavation works (Grant Wilburn, ISL Project Engineer, pers.comm.). Groundwater pumped from the excavation pit during works is expected to be highly sediment-laden, and should be released to a vegetated area to infiltrate the ground prior to entering a watercourse. As the subject site is located in a residential area without suitable vegetated areas for release of turbid water from the excavation pit, the Crabapple Drive ditch may present an acceptable alternative location if conditions are dry and groundwater pumped to the ditch infiltrates the ground within the ditch prior to entry into any watercourse.

During a site visit to the subject site at 6671 Crabapple Drive on November 13, 2024, it was noted that the roadside ditch on the northwestern side of Crabapple Drive east of the subject site drains northeast towards Lorimer Road, west along Lorimer Road, and outlets into Alta Creek (a.k.a. the River of Golden Dreams) approximately 350m from the subject site. This ditch is not culverted under the 6671 Crabapple Drive driveway and is not connected to Crabapple Creek. Dewatering the worksite excavation pit into this ditch is not expected to result in any adverse environmental impacts if the following recommendations are adhered to:

- The Contractor is responsible for ensuring that turbid groundwater pumped into the Crabapple Drive ditch infiltrates the ground prior to entry into any watercourse.
- The Project Engineer shall be onsite for most project activities, and will also conduct regular inspections of the Crabapple Drive ditch during dewatering activities.
- During the inspections conducted by the Contractor and Project Engineer, the Crabapple Drive ditch should be reviewed to determine the extent of surface flow of groundwater pumped to the ditch. As the extent to which water will flow along the ditch before infiltrating the ground is



dependent on the ditch substrate, weather conditions and other additional flow inputs to the ditch, regular inspections will be required (hourly inspections are recommended).

- Dewatering activities should be halted during heavy rain, or if a rainfall event (defined as more than 25mm of rain within 24 hours) is forecast.
- No turbid groundwater should be pumped to ditches west or south of the worksite as these ditches may flow directly into Crabapple Creek.
- If turbid water from dewatering activities reaches within 100m of Alta Creek, dewatering activities should be halted and an alternative dewatering location established.
- If no alternative dewatering location can be established, it is recommended that turbid groundwater from the excavation pit is pumped into a containment tank, or into the municipal sanitary sewer if permitted by RMOW.
- If turbid water from dewatering activities enters a watercourse at any time during project activities, dewatering must be halted and a Qualified Environmental Professional (QEP) should be contacted to provide water quality sampling services and recommendations.

4 Air Quality and Dust Control Plan

Proposed project activities may reduce air quality at a local scale during slope stabilisation works. Impacts are generally of short-term duration but may still cause adverse air quality impacts. Typical activities for the project include earthmoving (cut and fill operations, trenching, soil compaction and grading) and paving. Emissions generated from these activities could include:

- Combustion emissions from heavy-duty diesel and gasoline powered vehicles and equipment.
- Combustion emissions from worker commute trips.
- Fugitive dust from soil disturbance and land clearing.

No land clearing works are proposed for the pump station upgrade project; however, installation of mini-piles and the perimeter drain may result in exposed soil and dust. To minimize potentially significant emissions, the following measures will be implemented.

4.1 Mitigation Measures

Sources of pollution from project activities include heavy construction vehicles and equipment, emissions from worker commuter trips and fugitive dust.

4.1.1 Heavy Construction Vehicles and Equipment

The contractor will implement the following mitigation measure to minimize the release of air pollutants from construction related heavy-duty vehicle and equipment.

- All equipment shall be fitted with standard emission control devices appropriate to the equipment and in compliance with Federal and Provincial regulations and standards.

4.1.2 Dust and Silt Control

Dust emissions during works are typically associated with excavation, earth moving, material storage and handling, and vehicle movement. The extent of these impacts would depend on the existing air quality, the size of the affected area and the level of construction. Section 3 outlines sediment control measures to be implemented in the vicinity of watercourses.

To minimize the potential impacts from fugitive dust, the contractor will implement to following:

- Minimize hauling of construction materials, including "one trip" handling procedures during cut and fill activities.



- Control of dust through the duration of construction works using environmentally acceptable dust suppressants or water. Water will be preferred, with consideration for water conservation, drainage and sediment control where appropriate.
- Covering or wetting of dry soil piles during periods of extended exposure.
- Conduct regular visual inspections of site perimeter to check for dust deposition on vegetation, cars and other objects to gauge effectiveness of dust control activities.

5 Vegetation Management Plan

The area of proposed development is located within an existing gravel driveway and sewer lift station. No vegetation removal is proposed for works; however, if vegetation removal is determined to be required during the songbird nesting season of April 1 to September 1, a QEP should conduct a nest survey prior to vegetation removal to ensure compliance with the provincial *Wildlife Act* and the federal *Migratory Birds Convention Act*.

6 Solid Waste Management Plan

Project related sources of waste include tools and parts packaging, food scraps and packaging, fuel containers and construction waste and garbage (e.g. wooden pallets, plastics). Waste and litter have a negative impact on the environment and may injure wildlife if not handled properly.

Contractors will adhere to the requirements of the RMOW Solid Waste Bylaw (RMOW, 2017) and the following solid waste best management protocols:

- Provide clearly labeled receptacles, describing types of materials that can and cannot be deposited into the receptacle. By organizing the waste, materials to be reused will remain stockpiled on site, and recyclable materials will be picked up by designated recycling companies.
- Ensure that packing materials such as crates / pallets, or materials that can be reused by materials suppliers, are returned rather than disposed of.
- Ensure that potentially hazardous waste materials such as oily rags or used spill pads are separated from regular waste.
- Ensure that hazardous waste, such as lubricants, fuels, chemical, and their receptacles are properly disposed of.
- Separate food waste from regular construction waste. Food waste will only be stored in designated bear proof receptacles and emptied regularly.
- Conduct regular visual inspections of the waste receptacles to ensure that recyclable materials are not being deposited into waste receptacles, and waste is not being deposited into the recycling receptacles.
- All waste that cannot be re-used on site will be shipped off site for disposal.
- All contractors and sub-contractor staff will be advised to properly dispose of personal garbage.
- Portable toilets will be provided where necessary and will be emptied regularly.
- Vegetation debris that cannot be used on site will be shipped off site for disposal.

Through the implementation of the Solid Waste Management Plan, waste will be organized to the effect that recycling and reusing of construction materials will be maximized while waste requiring disposal will be minimized. Upon completion of work in a particular part of the site, the site will be cleaned up to the satisfaction of the ISL Project Engineer and RMOW Project Manager.

7 Hazardous Waste Management Plan

Disposal of all hazardous wastes generated during project activities will be conducted by a qualified contractor in compliance with appropriate regulations and documentation requirements. Hazardous



wastes are defined as any substance that poses a significant human safety, or any substance toxic to aquatic or terrestrial life, and include fuel and petroleum products, contaminated soil or water, batteries, solvents, anti-freeze, explosives, concrete wash water/leachate or other wastes containing pesticides, corrosives, poisons or dioxins. Hazardous wastes will be stored in appropriate containment areas, properly labelled and stored with secondary containment, located away from watercourses.

7.1 Fuel Storage and Handling

- Petroleum storage, including propane storage, fuel storage, lubricant storage and storage of other petroleum products shall be designed to meet or exceed the existing safety regulations of the Provincial Petroleum Association, the National Fire Code and the Workers' Compensation Board. All storage tanks associated with the project will be installed and operated in compliance with the CCME Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products (2003) and the BC Field Guide to Fuel Handling, Transportation and Storage (MWLAP, 2002b).
- Underground storage of petroleum products shall not be permitted.
- The refuelling of equipment will be conducted in the designated areas, isolated from creeks and surface water drainages. Refuelling will take place a minimum distance of 30 m from the top of bank of all watercourses or surface drainages.
- Where possible fuelling and lubricating of equipment should only be conducted after the equipment to be serviced is moved to a constructed service pad with a separate drainage collection system, as far as possible from detention or sedimentation facilities and leave strips.
- Equipment is to be in good operating condition and free of any leaks, excessive oil and grease.
- All equipment must be checked daily to ensure there are no leaks of any fluids.
- Petroleum storage facilities shall be located away from watercourses. Storage facilities shall be located at a minimum distance of 30 m from any watercourse.
- Any fuel or lubricants stored on site must have secondary containment capable of holding 110% of the contents of the container. This may be achieved through use of double-walled storage tanks or by constructing a polyethylene-lined containment berm beneath fuel containers.
- Fuel storage areas must be covered with polyethylene tarps to prevent the accumulation of rainwater.
- Gravity fed storage tanks shall not be permitted. Construction personnel shall be instructed to hand hold the fuel nozzle rather than lock the nozzle open, to minimize the potential for fuel spillage.
- Care will be taken not to overfill any vehicle or equipment fuel tanks.
- Waste fuel, oil, solvents, and other petroleum products shall be disposed of off-site at a location that is approved by the regulatory authorities.
- Any spill of petroleum products shall be reported immediately to the Project Manager. Clean up of such spills shall commence immediately. Reporting of petroleum spills to authorities shall be as set out in the appropriate legislation and regulations. Such reporting is the responsibility of the contractor. The contractor is also responsible for reporting all spills larger than 100 litres of flammable liquids to Emergency Management BC (EMBC) of the Ministry of the Solicitor General. Where it is not practical to report to EMBC within a reasonable time, the spill shall be reported to the nearest detachment of the Royal Canadian Mounted Police.

8 Spill Prevention and Emergency Response Plan (SPERP)

There is the potential for environmental damage from the accidental spillage of petroleum products and chemicals during project activities. Additionally, as the sewer force main will be bypassed during works, there is the potential for the accidental leak of sewage. To minimize the possible adverse effects on the environment of such a spill, this Spill Prevention and Emergency Response Plan (SPERP) outlines mitigative action to be taken to deal with a possible emergency situation. The SPERP includes guidelines



for the reporting of a spill, training procedures, resource allocations and the supervision of containment and restoration procedures.

The SPERP will be presented to all workers and contractors working on the project. In addition, a detailed site map will be provided to all contractors identifying all water courses and other potentially environmentally sensitive areas.

In accordance with the *Spill Reporting Regulation* of the *BC Environmental Management Act* (MOE, 2017) the following spills will be reported immediately to and EMBC as per the protocol outlined below in Table 3:

- A spill or release of any amount of materials which impacts water ways
- Hydrocarbons; 100 litres where the hydrocarbon contains no toxic materials and does not impact water ways
- Produced/salt water; 200 litres where the fluid contains no toxic materials
- Fresh water; 10,000 litres
- Drilling or invert mud; 100 litres
- Sour Natural gas; 10kg or 15 m³ by volume where operating pressure is >100 PSI
- Condensate; 100 litres
- Any fluid including hydrocarbons, drilling fluids, invert mud, effluent, emulsions, etc. which contain toxic substances; 25 litres

8.1 Sewage-specific Response Plan

Untreated sewage can contain parasites, bacteria, viruses and toxins that may adversely affect aquatic life should a sewage leak into a watercourse occur. Additionally, nutrients and organic matter in sewage can cause rapid bacterial reproduction and respiration, reducing the dissolved oxygen in a watercourse (MOECCS, n.d.). Low levels of dissolved oxygen can lead to the depletion of fish stocks and other aquatic life.

The sewer force main will be bypassed during proposed works, using a pump and a backup pump. As a sewage leak would have potentially significant adverse impacts on ecologically sensitive areas, and the worksite is adjacent to Crabapple Creek, the following recommendations should be implemented to prevent a sewage leak:

- The Contractor shall be responsible for conducting a 24 hour pump test of the primary and back up pump systems; testing shall be conducted to the satisfaction of the ISL Project Engineer and the RMOW Project Manager.
- Pumps should be monitored at all times during operation to ensure that any pump failure or leak is mitigated promptly. Monitoring may be conducted by appropriately qualified personnel or via a telemetry system that sends an alarm to appropriate personnel if an issue with the sewage bypass system is detected.
- The Contractor shall prepare a response plan clearing detailing the names of appropriately qualified personnel that will respond to an alarm generated by the telemetry system, required actions and acceptable response times.
- Mitigation resources should be kept onsite in case of a sewage leak, including sandbags and other barriers to prevent the spread of sewage to Crabapple Creek.
- Sediment fencing should be installed around the perimeter of the worksite, encompassing the pumps and sewage bypass infrastructure, and should tie into areas of higher ground to prevent sewage from flowing around the sediment fencing into Crabapple Creek in case of a leak. Sediment fence should be inspected regularly by the Contractor and ISL Project Engineer.
- The Contractor should prepare a list of potential vacuum excavation truck providers that could be contacted in case of a spill, and keep the list available and accessible onsite.



In the event of a sewage leak, the general spill response plan outlined in Section 8.2 should be implemented, along with the following additional recommendations:

- Identify the source of the leak and, if possible and safe, stop or reduce the spill.
- Immediately alert the ISL Project Engineer and RMOW Project Manager.
- Utilize all possible resources, including sandbags, sediment fencing, vacuum excavation trucks and excavators to divert the spill to a low-risk area where possible, e.g. a downgradient manhole, or within a sump or sediment-fence contained area unconnected to downgradient watercourses.
- Transport all collected waste to an appropriate wastewater treatment facility.
- Inform the public, as the leak could contaminate private property and/or drinking water.
- Assess the amount of sewage spilled, the amount (if any) that entered a watercourse, and the size of the area impacted.
- Retain an appropriately-qualified clean-up company with experience mitigating spills to the aquatic environment.
- Retain a QEP to monitoring mitigation and clean-up works and conduct water sampling for contaminants and dissolved oxygen levels in any watercourses impacted.
- Excavate and replace contaminated soil, particularly if it could contaminate groundwater flowing subsurface to Crabapple Creek.
- Use disinfectants where appropriate to reduce contaminants in the soil.
- Aeration systems may be used to restore oxygen levels to Crabapple Creek if aquatic life is impacted.
- Restoration of fish habitat may be required, including planting of aquatic or riparian vegetation, or removal of solid waste from a watercourse.

8.2 General Spill Response Plan

8.2.1 Pre-Emergency Planning

Hazardous Identification: The contractor will identify the potential hazards on the project site. A Safety Data Sheet will identify all hazardous compounds coming on site and this information will be available to all personnel. Hazardous compounds will be stored in secure locked containers on site in secured enclosures.

Resources Available: The contractor will use its own resources to clean up a spill. If required, emergency response for larger spills will be available. First responders such as fire departments have the capability to clean up a variety of spills. Other resources such as local environment spill clean-up companies can also be called upon on an emergency basis.

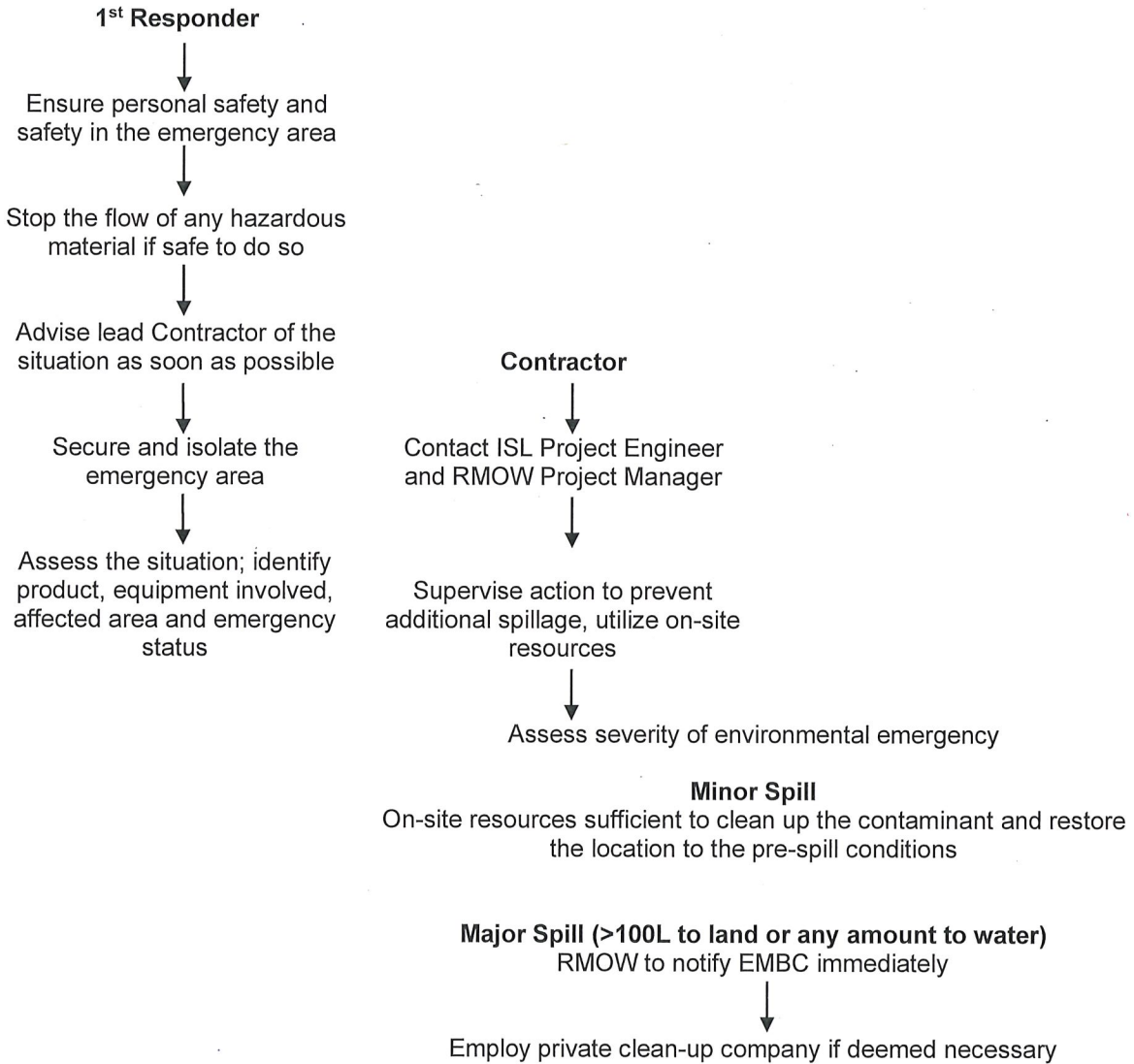
Internal Alerting: Because timely and accurate reporting of an accidental spill can help to ensure quick and efficient response, this plan includes detailed information regarding notification and emergency response procedures.

8.2.2 Emergency Response Plan

Any environmental emergency observed on the project site must be reported and responded to appropriately as per Table 2 below. A list of emergency contacts is provided at the beginning of this Environmental Management Plan. Examples of environmental emergencies include the following:

- Fuel spills
- Sewage leaks
- Encounters with aggressive wildlife, or collisions with wildlife
- Large sediment release into watercourses
- Wildfires
- Accidents involving large machinery

Table 2: Environmental Emergency Response Plan





Spills on Land

The first action for clean-up of land-based spills is to prevent the spread to watercourses or drainage ditches through containment and damming. Second, limit the saturation of the material deep into the soils by removal of the liquid by absorbents or pumping. When the free liquid is contained, steps can then be taken to collect all contaminated soil for later disposal.

Spills into Drainage Ditches or Water Bodies

These spills have the potential for causing environmental damage. All spills near or into water require immediate attention and reporting to the EM and the RMOW for external reporting. The first response should be to immediately stop the spread of the spilled material downstream. This can be accomplished with the use of absorbent booms and absorbent material designed to pick up oil. These spills will be immediately reported to EMBC by the RMOW.

8.2.3 Internal and Other Spill Response Resources

Spill kits must be available in every vehicle and piece of equipment operating on the right of way or project site. All spill kits must be fully stocked and restocked as soon as possible if used. Example contents of a spill kit may include but are not limited to:

- 2 each - 10' Oil Only Socks
- 15 each - Polypropylene Sorbent Pads (oil only) 18" x 18" x 3/8"
- 2 each - 10 Quart Cellulose Sorbent Material, Oil Only
- 1 each - Barrier Ribbon, Yellow "Caution Do Not Enter"
- 1 each - Poly Disposal Bags (45 gallon drum size, minimum 6 mil)
- 1 each - Blank Labels for Plastic Bags
- 1 each - Plastic Bag Tie
- 1 each - Epoxy Plug Compound (hydrocarbon compatible)
- 1 each Spill Kit Container Marked "Spill Response Kit"

In the case of a very large spill, Spill Kit inventory and off-site materials can be called upon. Other materials available for spill response from outside and on-site contractors include:

- Shovels
- Vacuum trucks
- Booms
- Excavators
- Bags of absorbent
- Loaders

Emergency Back-up

It is assumed that in the case of large spills, the RMOW Project Manager will call on the resources of commercial spill clean-up companies, EMBC, and local fire response teams.

8.2.4 Plan Communication

The Plan will be made available to all employees and sub-contractors on site. It will also be discussed at the initial site meeting and safety training sessions.

8.2.5 Monitoring of Clean up and Restoration

The clean up and restoration of every spill will be monitored by the ISL Project Engineer. The Project Engineer and RMOW Project Manager will be in contact with the appropriate government agencies, as required. The Contractor will be responsible for restoring the contaminated site to its previous state.



8.2.6 Report Filing

At the end of the clean-up, a detailed environmental report will be filed with the government regulatory agencies, if required.

9 Wildlife Management Plan

9.1 Overview

As project activities occur within a developed residential area, the potential for wildlife to be encountered in the project area is low. However, birds and small mammals may utilize the existing tree and shrub vegetation around the project site. Additionally, black bear are known to frequent the adjacent Whistler Golf Course in the spring.

The area of proposed development is mostly devoid of vegetation and no vegetation removal is required for the proposed works. Detrimental effects to local wildlife populations and their habitat can be avoided, minimized and/or managed through implementation of the recommendations outlined below. Particular attention is paid to species during vulnerable periods of the life cycle (e.g. denning bears and breeding birds), and to species at risk.

9.2 Mammals

Large mammal species that are known to visit the general area are limited to black bear (*Ursus americanus*). Mid-size mammal species that may utilize the general area include the snowshoe hare (*Lepus americanus*), coyote (*Canis latrans*), and raccoon (*Procyon lotor*). Smaller species include Douglas squirrels (*Tamiasciurus douglasii*), little brown myotis and the yellow-pine chipmunk (*Tamias amoenus*).

Impacts to mammals potentially occurring in the project area will be mitigated by the following methods:

- Managing attractants to bears and other mammals during project activities (see Sections 6 and 9.2.1).
- Implementing the Wildlife Avoidance Response Protocol (WARP) for large mammals and all species of concern as outlined above in Section 9.2.1 below.

9.2.1 Potentially Dangerous Wildlife

The wildlife management plan for potentially dangerous wildlife is intended to ensure public and worker safety as well as to protect wildlife that may be dangerous to humans from activities associated with the project. Black bears may access the project area if they are attracted to human food/garbage left at the lookout location. Potentially dangerous wildlife management objectives related to project activities include:

- Provide guidelines for eliminating attractants
- Provide guidelines for responding to wildlife encounters

When human food attractants are secured away from wildlife, potential human-wildlife conflicts and unnecessary deaths of wildlife can be avoided. Wildlife that learn to associate humans and human developments with food (food-conditioning) tend to react more boldly with humans and are more likely to cause human injury and property damage than wildlife that are not food-conditioned. Some wildlife, particularly bears, may only need to access human food attractants once or twice to change their behavior toward humans. It is therefore imperative that all potentially attractive sources of food for wildlife are secured using tested and approved wildlife-resistant containers, as per the RMOW Solid Waste Bylaw (RMOW, 2017).

Potential wildlife attractants on site may include human food, garbage, recycling, compost, and petroleum products. Bears in particular will tip over garbage cans, break into sheds, and hang around garbage



compactor sites. Common bear proofing procedures include using tested and approved wildlife-resistant containers and ensuring that the receptacles are emptied at the end of the work day.

Any worker that observes potentially “dangerous wildlife” should immediately notify their supervisor. All workers should avoid that location for at least 30 minutes. If it is safe to do so (i.e. from a vehicle or inside a building), making noise may scare the animal off the site. The person in charge of safety should record all wildlife sightings and their corresponding location.

Wildlife Avoidance Response Protocol (WARP)

Wildlife avoidance strategies are employed as appropriate to ensure minimal disturbance to wildlife. A policy of avoidance/withdrawal will be in effect for all wildlife encounters with all large mammals and species of concern in order to minimize the effects of project activities.

A Wildlife Avoidance Response Protocol (WARP) will be initiated by contractors on sighting a bear or other large mammal on or near the project area. This initiative corresponds to guidelines put forth by the Ministry of Environment in *Wildlife Guidelines for Backcountry Tourism/Commercial Recreation in British Columbia, May 2006* and the *Human-Bear Conflicts Reduction Guidelines for River Rafting, March 31, 1998*.

A WARP is initiated at first sighting of a large mammal, within a 50 m buffer (as recommended by the BC Bear Viewing Association). When a bear, or other large mammal, is observed within 50 m of the worksite, contractors will halt what they are doing and not approach the bear. Contractors will make a wide detour or leave the area immediately. If in close proximity to the animal, contractors will be trained to remain calm, keep the animal in view, avoid direct eye contacts and move away without running. Contractors will cease work (if safe to do so) in the 50 m buffer until the animal retreats out of sight. Contractors should be aware that a single animal may be accompanied by young.

In addition, all contractors will adhere to the following BC MOE Safety Guide to Bears in the Wild:

- Avoid conflict by practicing prevention.
- Be alert.
- Look for signs of recent bear activity. These include droppings, tracks, evidence of digging, and claw or bite marks on trees.
- Make your presence known by talking loudly, clapping, or occasionally calling out. Whatever you do, be heard! It doesn't pay to surprise a bear.
- There is no guaranteed minimum safe distance from a bear - the further, the better.
- Stay away from dead animals. Bears may attack to defend such food.

9.3 Amphibians and Reptiles

Amphibians and reptiles may occur in the riparian and rocky habitats adjacent to the subject site. The best management practices listed below will protect any amphibians or reptiles that may occur in or around the project area:

- Work will be completed as soon as possible once it is initiated.
- Silt fencing will be installed around the project area to prevent any sediment run-off into the creek.
- The project areas will be restored to their pre-works condition upon completion of the works.
- All equipment and machinery involved in the works will be in good operating condition, free of leaks, excessive oil or grease, and power washed. All refuelling and servicing will take place at least 30 meters from the creek.

9.4 Birds

No vegetation removal is expected to be required for the proposed works. If vegetation removal is determined to be required, to ensure compliance the Migratory Birds Regulations of the federal *Migratory*



Birds Convention Act (Government of Canada, 1994) and the provincial *Wildlife Act* (BC Gov, 1996), any vegetation removal should occur prior to or after the breeding bird season of April 1 to September 1. If vegetation removal is necessary during this period, a songbird nest survey should be conducted by a QEP prior to clearing.

Active nests of all song birds legally protected, and active or inactive nests of great blue heron, bald eagle, golden eagle, peregrine falcon, gyrfalcon, osprey and burrowing owl are similarly protected (BC Gov, 1996). Additionally, pileated woodpecker nesting cavities are protected when active, and for a period of 36 months after reported unoccupied (Government of Canada, 2024). If active or the above specified inactive nests are identified, they must be protected by species-specific vegetation buffers depending on the species of bird that occupies or created the nest.

10 Wildfire Prevention and Response Plan

As project activities are located adjacent to a creek, the potential for works to cause a wildfire is considered to be low. However, should works take place during a moderate, high or extreme fire danger rating, or should the RMOW require it, the contractor will ensure that all project staff and sub-contractors are trained in fire prevention and preparedness. Firefighting and fire suppression equipment on site will comply with the *BC Forest Fire and Suppression Regulation*, and the local Fire Danger Rating and associated restrictions will be monitored by the Project Manager.

The BC Parks Fire Response Plan details fire prevention measures and actions to be taken in the event of a fire outbreak resulting from project activities. The purpose of this plan is to:

- Identify fire prevention measures and train staff accordingly, thus reducing the risk of accidental wildfire starts.
- Clearly define the course of action in the event of a fire.
- Ensure contractors are aware of the correct fire response action.

Fire Prevention Measures:

- Smoking shall be limited to designated smoking areas only.
- Smokers must ensure that cigarettes and matches are fully extinguished before discarding, and are disposed of in appropriate containers.
- Ensure that garbage, and oily rags are properly disposed of and that refuse does not accumulate on site.
- Spills of oil and other combustible material is promptly cleaned up using absorbent materials and properly disposed of.
- Storage of flammable liquids such as lubricants or gasoline shall only occur in government approved receptacles.
- Fire extinguishers must be cached in visible and accessible locations around the site, especially around area of potential concern (e.g. flammable materials storage areas).
- The Project Manager will monitor the Canadian Fire Weather Index to identify daily hazard class listings.

Canadian Fire Weather Index

The Canadian Forest Fire Index provides a numerical rating of relative fire potential. Calculation of the daily hazard class is based on consecutive daily observations of temperature, relative humidity, wind speed and 24-hour rainfall. The Daily Fire Hazard Class ratings are available on the internet at <http://www.for.gov.bc.ca/protect/>. The Daily fire hazard Classes are defined below;

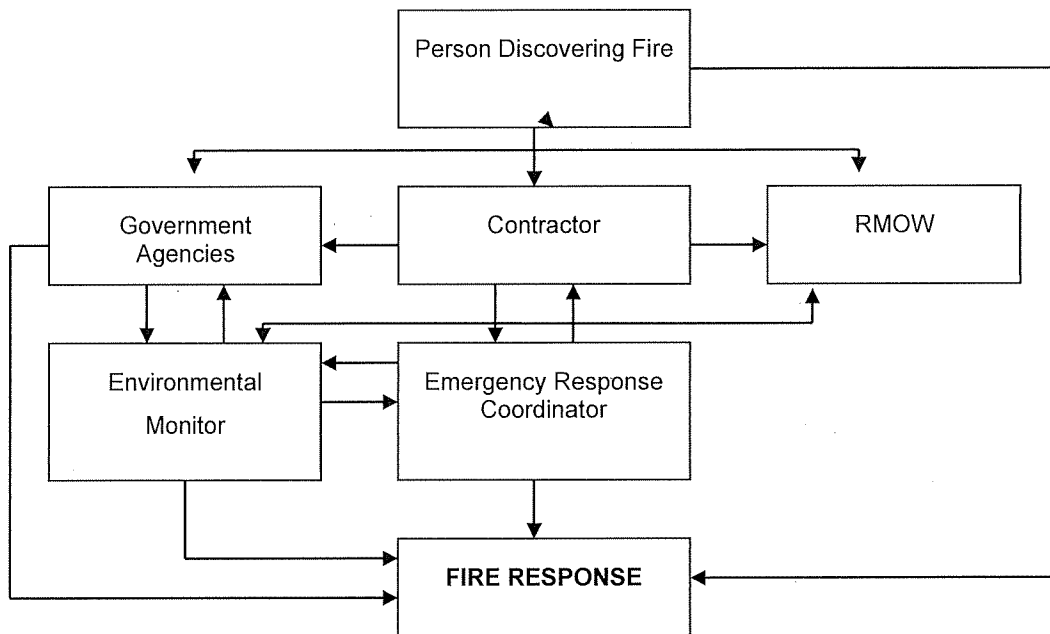
- Very Low: Normal Operations
- Low: Normal Operations



- Moderate: Fire watch to be conducted for the period of 1 hour after daily site operations have ceased.
- High: Daily fire watch to be conducted after each work shift for the period of 1 hour. Early work shift to commence after 4th consecutive day of high fire danger.
- Extreme: Daily fire watch to be conducted after each work shift for the period of 1 hour. Operations on the site must stop after 3 consecutive operating days under extreme fire hazard.

The Project Manager will be responsible for obtaining the daily hazard class ratings, communicating with contractors to determine appropriate operations given the daily fire hazard class rating, and reporting daily fire hazard class ratings to the contractor. All project staff and sub-contractors will be responsible for acknowledging the current daily fire hazard class, and adjusting their daily operations accordingly.

Table 3: Onsite Chain of Command for Reporting and Responding to a Wildland Fire



Contractor Fire Identification Instructions

1. Identify ignition and/or fuel source for fire, and remove if possible.
2. Notify Emergency Response Coordinator of the fire and provide the following details.
 - Location of Fire – using site specific landmarks; what is the easiest access to the fire.
 - Fuel type – What caused the fire, what fire fuel is present, are there any natural fire breaks
 - Size of Fire – What is the current size of the fire, and how fast is it spreading.
 - Wind - current wind direction and speed
3. Respond to fire with personal fire suppression kit. Personal fire suppression kit will include;
 - 2.5 Gal Piss can or 10 lb Fire extinguisher
 - Shovel and/or Pulaski
4. Goals of initial fire fighting response



- Remove ignition source for fire and or fuel source of fire if possible
- Extinguish the fire using personal fire extinguisher or piss can
- Contain the fire. Remove potential fuel sources surrounding the fire, including machinery, trucks, and or fuel storage containers
- Ensure personal safety, and the safety of others working around you
- Report back to Emergency Response Coordinator with results of the initial fire fighting response.

Emergency Coordinator Instructions Assessments and Actions

1. Assess situation and be aware that:
 - Safety of you and fellow responders is priority.
 - There may be hazardous or explosive material on site.
 - You may not be able to safely access the site
2. Determine the following:
 - Fire location.- Latitudes and Longitudes
 - Size - note rate of spread.
 - Nature of fire – standing timber, slash, smoking, blazing, crowning
 - Wind - direction, speed.
 - Access - road, air.
 - Water – nearest location and quantity.
 - Resources – What resources are on site or near site
 - Hazards – Identify Explosive and Fuel storage areas
 - Values at Risk – Identify any other values at risk, people, residences, buildings
3. Designate a staging area containing a first aid station (as practical)
4. Take a head count of responding staff.
5. Tell team members:
 - Where staging area is
 - That if they get lost during the event report to staging immediately.
 - Where the safe escape route is from fire.
6. Direct staff to determine fire source and action fire with extinguisher, hose and other equipment.
7. Confer with contractor
 - Is it safe to proceed?
 - Size and spread of fire.
 - Further equipment required?
 - Do we need to call on outside help?
 - Do we need to consider evacuating site?
8. Direct resources as they arrive. Ensure you keep a record of who is on scene responding.
9. If injured are present, appoint most qualified staff member as Medical Supervisor. If greater than 3 people are injured, appoint a Triage Leader and Transport Supervisor as resources allow (have the Medical Supervisor combine roles as practical).
10. Ensure all staff are accounted for at the end of operation.



11 References

- BC Government. 2022. Requirements and Best Management Practices for Making Changes In and About a Stream in BC. <https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/working-around-water/wsa-cias-requirements-bmps.pdf>. Website accessed November 18, 2024.
- BC Government. 2019. Riparian Areas Protection Regulation Technical Assessment Manual. https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/fish-fish-habitat/riparian-areas-regulations/rapr_assessment_methods_manual_for_web_11.pdf. Website accessed November 18, 2024.
- BC Government. 2014a. Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia. <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/laws-policies-standards-guidance/best-management-practices/develop-with-care>. Website accessed November 18, 2024.
- BC Government. 2014b. Guidelines for Amphibian and Reptile Conservation during Urban and Rural Land Development in British Columbia. Website accessed November 18, 2024. http://www.env.gov.bc.ca/wld/documents/bmp/HerptileBMP_complete.pdf
- BC Government. 1996. *Wildlife Act*. Website accessed November 18, 2024. http://www.bclaws.ca/Recon/document/ID/freeside/00_96488_01#section34
- BC Archaeology Branch. <https://www2.gov.bc.ca/gov/content/industry/natural-resource-use/archaeology/report-a-find#Recognizing%20a%20possible%20site>. Website accessed November 18, 2024.
- BC Ministry of Environment. Environmental Management Act. 2017. http://www.bclaws.ca/civix/document/id/oic/oic_cur/m329_2017. November 18, 2024.
- BC Ministry of Environment. Fish Inventories Data Query (FIDQ). November 18, 2024. <http://a100.gov.bc.ca/pub/fidq/searchSingleWaterbody.do>
- BC Ministry of Environment. 1996. Safety Guide to Bears in the Wild. https://www.hummingbirdlodge.ca/site/assets/files/3067/safety_guide_to_bears_in_the_wild.pdf. Website accessed November 18, 2024.
- BC Ministry of Environment and Climate Change Strategy. N.D. Water Quality – Clean Water... It Starts with You. https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-reference-documents/clean_waterit_starts_with_you_-_pleasure_boating.pdf. Website accessed November 18, 2024.
- BC Ministry of Forests, Lands and Natural Resource Operations. 2012. Forest Fire Danger Rating Tool. <http://www.nrcan.gc.ca/forests/fire-insects-disturbances/fire/14470>. Website accessed November 18, 2024.
- BC Ministry of Water, Land and Air Protection. 2002b. A Field Guide to Fuel Handling, Transportation and Storage. <https://www2.gov.bc.ca/gov/content/environment/waste-management/industrial-waste/fuel-tanks>. Website accessed November 18, 2024.
- BC Ministry of Water Land and Air Protection. 2002a. Stormwater Planning: A guidebook for British Columbia. Website accessed November 18, 2024. <https://waterbucket.ca/rm/sites/wbcrim/documents/media/242.pdf>.
- Chilibeck, B., G. Chislett and G. Norris. 1992. Land Development Guidelines for the Protection of Aquatic Habitat. Published by the Department of Fisheries and Oceans and Ministry of Environment, Lands and Parks. 128 pp

Environment Canada. 2003. CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.

<https://www.canada.ca/content/dam/eccc/documents/pdf/cepa/ccme-pn-1326-eng.pdf>. Website accessed November 18, 2024.

Environment Canada. 2001. CCME Water Quality Guidelines for the Protection of Aquatic Life.

<https://ccme.ca/en/resources/water-aquatic-life>. Website accessed November 18, 2024.

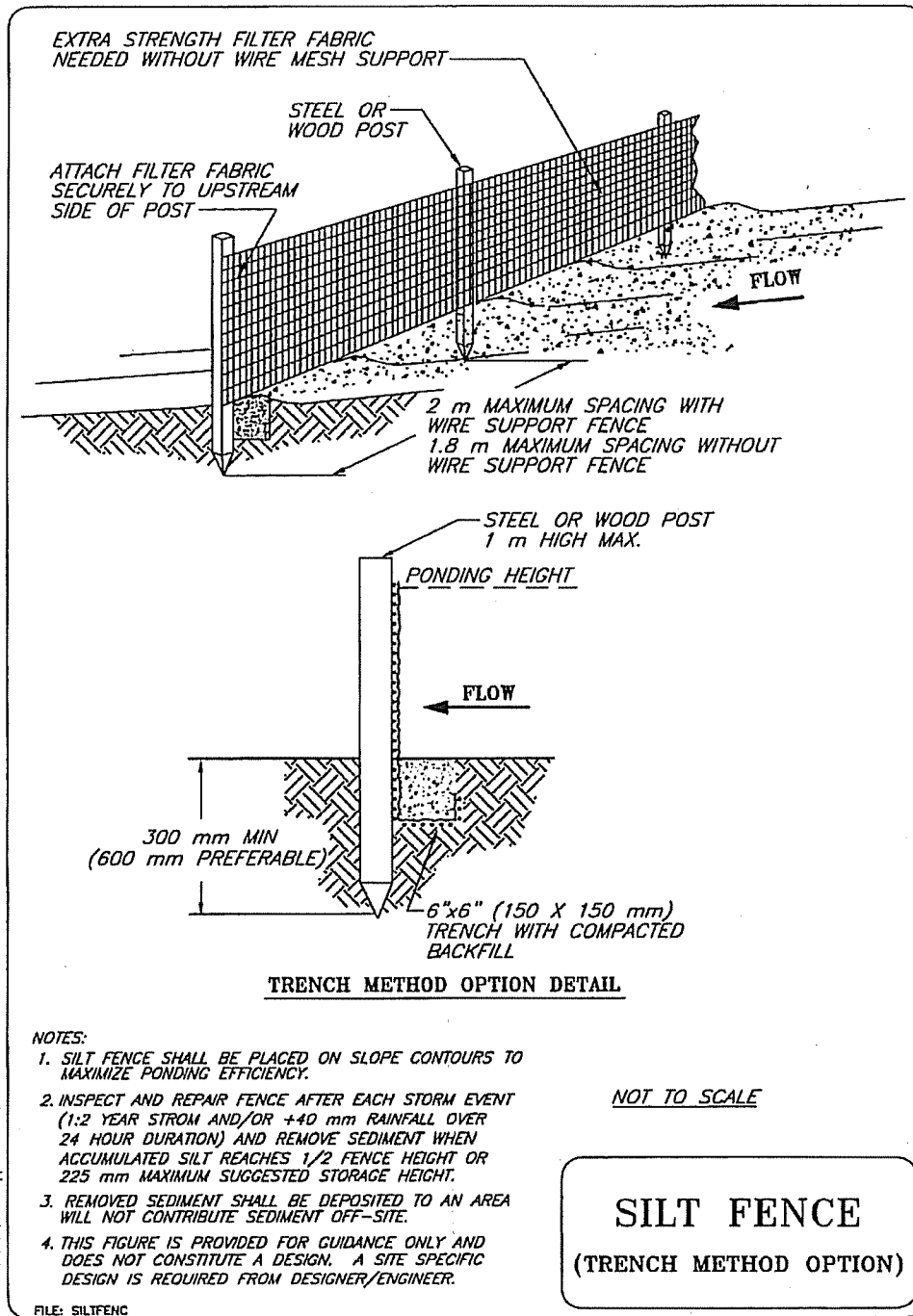
Government of Canada. 2024. Damage or Danger Permits for Nest Destruction: Pileated Woodpecker nesting cavities. <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/dod-permits-nest-destruction-pileated-woodpecker-nesting-cavities.html>.

Website accessed November 18, 2024.

RMOW. Solid Waste Bylaw No. 2139, 2017. <https://www.whistler.ca/municipal-gov/bylaws-and-regulations/bylaw/solid-waste-bylaw>.

Website accessed November 18, 2024.

Figure SC BMP #1.6. Sediment Fence Installation – Trench Method Typical Drawing (Alberta Transport, 2003)



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