BRITISH COLUMBIA
The Best Place on Earth

Ministry of Transportation and Infrastructure

Major Works

TENDER DOCUMENT PACKAGE

PROJECT No. 22198-0001
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

This Tender Closes At:
Ministry of Transportation and Infrastructure
South Coast Regional Office
Contract Administration – 3rd floor
7818 – 6th Street
BURNABY, BC V3N 4N8

MAJOR WORKS

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TENDER DOCUMENT PACKAGE

PROJECT No. 22198-0001
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

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NOTE

It is the Planholder's responsibility to ensure that the Tender Document Package is complete in accordance with the above Order of Contents – Tender Document Package, including any and all Addenda issued prior to Closing Time.

NOTICE TO BIDDERS

In Tenders issued after July 18, 2005, there have been a number of small but potentially significant changes to the Glossary of Terms, the Minor Works General Conditions and the Major Works General Conditions.

Recent changes to the statutes of British Columbia have been reflected in all three documents.

Minor Works has two new articles, GC 25.00 and GC 26, dealing respectively with co-operation with other contractors on the Site and with confidentiality and the *Protection of Privacy and Freedom of Information Act*.

Major Works has significant changes to GC 20.04, GC 29.06, GC 38.09 and GC 67.04, dealing with Stop Work Orders, Changes to Work and Confidentiality. A number of other changes of less significance have been made at a number of locations in the document, including without limitation GC 3.03 and 3.04, GC 10.05, GC 13.02, GC 38.07, GC 41.01 and GC 74.01.

Lastly, the documents have had hyperlinks inserted to allow users quick access to reference copies of the statutes and rules of arbitration. These links are for reference purposes only and are covered by a disclaimer clause.

Bidders are advised to read the entire Tender Document Package and all associated documents carefully to ensure they have a full understanding of the current conditions.

TENDER ADVERTISING INSERTION ORDER

Project No.: 22198-0001

Do Not publish before: September 29, 2009

1. Internet site - http: //www.bcbid.ca

Please invoice with the Tear Sheet to:

Ministry of Transportation and Infrastructure - Construction
7818 Sixth Street
Burnaby,British Columbia
V3N 4N8
Canada

Invitation to Tender - Supplemental Conditions of Tender
Ministry of Transportation and Infrastructure - Construction
Roads and Bridges
Construction

SCT1. ELIGIBILITY TO SUBMIT TENDER **2.2**

1.1 This Tender call is open to all Bidders capable of performing the Work and the Contract, and if a mandatory pre-Tender meeting is specified in these Invitation to Tender - Supplemental Conditions of Tender then this Tender Call is open to all Bidders capable of performing the Work and the Contract who have attended the mandatory pre-Tender meeting as indicated in the Ministry pre-Tender meeting attendance record.

Solicitation Number
22198MJ0001

Close Date & Time
2009/10/20 14:00

Time Zone
Pacific Time

Open Date & Time
2009/10/20 14:30

Time Zone
Pacific Time

SCT2. KEY TENDER INFORMATION

2.1 Project No: 22198-0001

Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

SCT3. GENERAL

3.1 The following summary information designated "Location" and "Description"are provided for convenience only and do not form a part of these Invitation to Tender - Supplemental Conditions of Tender or the Contract, and in no way define limit, alter or enlarge the scope or meaning of any provision of these Invitation to Tender - Supplemental Conditions of Tender or the Contract.

Location: Hwy 33 - Muir Road to Gallagher Road, Kelowna

Description: The project includes grading, pulverizing, superpave, curb & gutter, sidewalks, boulevards, and electrical Type "D" excavation 108,710 m3; Type "A" excavation 1,680 m3; SGSB 24,130 m3; 25mm WGB 25,410 m3; 7,550 m2 concrete sidewalk; Catch basin and manhole installations; Pulverize existing pavement 54,640 m2; Primer and tack coat 87,330 L; 28,590 t superpave; 5,340 m curb and gutter; Electrical works including installation of roadway lighting, modify existing traffic signals; install traffic loops.

SCT4. INVITATION TO TENDER - SUPPLEMENTAL CONDITIONS OF TENDER

4.1 These Invitation to Tender - Supplemental Conditions of Tender are incorporated into and form a part of the Conditions of Tender contained in the Tender Document Package, which package may be obtained by:

(a) click on the Attachments link below for a no charge download of the Tender Document Package:

(b) For Hardcopy Tender Document Packages:

(i) click here to order online http://www.publications.gov.bc.ca

(ii) click here for a Tender Document Package requisition form to order the Tender Document Package http://www.publications.gov.bc.ca/bcbid/orderform.pdf

(iii) Tender Document Packages are priced as follows:

1) Book $72.00 plus GST of 5.0% and PST of 7.0% for total of $80.64
2) Full Size Drawings $106.00 plus GST of 5.0% and PST of 7.0% for total of $118.72
plus shipping costs.

4.2 In these Invitation to Tender - Supplemental Conditions of Tender, unless otherwise expressly set out, a capitalized word shall have the meaning given to it in the Glossary of Terms which is incorporated by reference into and forms a part of these Supplemental Conditions of Tender.

SCT5. HARD COPY DELIVERY METHOD

5.1 Closing Location: Ministry of Transportation and Infrastructure - Construction
7818 Sixth Street
Burnaby,British Columbia
V3N 4N8
Canada

Ministry Fax Number for Revisions and Withdrawals (604) 660-8034

SCT6. CONTACT PERSON AND ADMINISTRATIVE CONTACT PERSON

6.1 Contact Person:

Helen Evans
300 - 1358 St. Paul Street
Kelowna, BC V1Y 2E1

Fax: (250) 712-3624
Email: Helen.Evans@gov.bc.ca

6.2 Admin Contact Address:

Ministry of Transportation and Infrastructure - Construction
7818 Sixth Street
Burnaby,British Columbia
V3N 4N8
Canada

Admin Contact Phone: (604) 660-0328

Admin Contact Fax: (604) 660-8034

SCT7. CONTRACT SPECIFIC REFERENCE DOCUMENTS

7.1 Contract Specific Reference Documents are:
Available electronically at http://www.th.gov.bc.ca/bchighways/contracts/suppdoc.htm

SCT8. PRE-TENDER MEETING AND SITE INVESTIGATIONS

8.1 A Pre-Tender Meeting: Will not be held.

8.2 Where a Pre-Tender meeting is scheduled, each Bidder should confirm its intention to attend the Pre-Tender meeting in writing to the Contact Person not less than 48 hours in advance of the scheduled Pre-Tender meeting time.

8.3 Subject to the express terms of the Special Provisions, all persons, including prospective Bidders, must obtain the consent of the Contact Person specified in SCT6.1 before carrying out any investigations on the Site.

TENDER FORM

PROJECT NUMBER: 22198- 0001

TENDER FOR PROJECT: HIGHWAY 33 – FOUR LANING, MUIR ROAD TO GALLAGHER ROAD

The Bidder hereby represents and warrants to the Ministry, with the knowledge that the Ministry will rely upon these representations and warranties in regard to the Bidder's Tender, that:

(a) the Bidder has received, ensured the completeness of, read, understood and accepted the Tender Document Package, including for greater clarity, the Conditions of Tender, the Invitation to Tender - Supplemental Conditions of Tender, any and all Addenda, and any documents incorporated by reference into the Tender Document Package; and

(b) the Bidder's Tender is made and delivered without collusion or fraud.

The Bidder hereby agrees that:

(a) the e-Bidding Key the Bidder submits is the Bidder's authorized signature;

(b) the Bidder is bound by all statements and representations in its Tender, including, without limitation, this Tender Form, the Unit Prices, Lump Sum Prices and Extended Amounts for each Tender Item stated on the Bidder's Schedule of Approximate Quantities and Unit Prices, as may be adjusted by Revision, and as calculated by the Ministry, in accordance with the Conditions of Tender;

(c) the Bidder is bound by the terms of the Conditions of Tender, including for greater clarity, the Invitation to Tender - Supplemental Conditions of Tender and any and all Addenda, and the terms set out in the Tender Document Package;

(d) the Bid Security shall be forfeited in whole or in part to the Ministry, in the sole discretion of the Ministry, if the Bidder fails to comply with the Conditions of Tender or with the agreements set out in this Tender Form, and

(e) the Bidder's Tender is irrevocable for sixty (60) days from the Closing Time.

The Bidder hereby offers to the Ministry that if the Ministry Awards the Contract to the Bidder, the Bidder shall:

(a) execute the Contract in the form specified in the Tender Document Package and deliver the Contract, executed by an Authorized Representative of the Bidder, to the Ministry on the earlier of, 14 days from the date shown on the Ministry cover letter delivering the Contract to the Bidder, and 3 days before commencement of Work on the Site;

(b) supply all labour, tools, equipment, materials, and other resources necessary to complete and perform the Work and the Contract;

(c) complete all Work in strict accordance with the Drawings, specifications, standards, terms and conditions contained in the Contract to the satisfaction of the Ministry;

(d) if the Bidder is not registered and in good standing with the Workers' Compensation Board ("WCB"), register with the WCB in regard to the Contract, and advise the Ministry Representative of the WCB registration number allotted to the Bidder in regard to the Contract on the earlier of, 14 days from the date shown on the Ministry Award letter to the Bidder, and 3 days before commencement of Work on the Site; and

(e) obtain, and deliver to the Ministry the Performance Security and insurance coverage required by the Contract, on the earlier of, 14 days from the date shown on the Ministry Award letter to the Bidder, and 3 days before commencement of Work on the Site,

for the Total Tender Cost (as defined below), as calculated by the Ministry in accordance with the Conditions of Tender on the basis of the Schedule of Approximate Quantities and Unit Prices, after making adjustments for any valid Revisions.

TOTAL TENDER COST $_____, as this amount may be adjusted by the Ministry pursuant to the Conditions of Tender.

Unless otherwise expressly set out, the capitalized terms in this Tender Form have the meaning given to them in the Glossary of Terms that form part of the Conditions of Tender.

DATE: _____

This Tender Form was signed in the presence of:

_____
Witness Signature

_____
Witness Name (*please print*)

_____
Mandatory - Name of Bidder (*the registered corporate name of the legal entity that is submitting the bid – please print*)

_____
Optional – Doing Business As Name *(please print)*

_____
Signature of Authorized Representative of the Bidder

_____
Name and Title of Authorized Representative of the Bidder (*please print*)

Bidder Business Address: _____

Bidder Phone Number: _____ Bidder Fax Number: _____

SCHEDULE T1

CONDITIONS OF TENDER

Conditions of Tender

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CT1. INTERPRETATION AND INVITATION TO TENDER – SUPPLEMENTAL CONDITIONS OF TENDER

1.1 In these Conditions of Tender, unless otherwise expressly set out, a capitalized word shall have the meaning given to it in the Glossary of Terms.

1.2 The Glossary of Terms is hereby incorporated by reference into and forms a part of these Conditions of Tender.

1.3 The Invitation to Tender - Supplemental Conditions of Tender contained in the Tender Document Package are hereby incorporated by reference into and form a part of these Conditions of Tender and where any term set out in the Invitation to Tender - Supplemental Conditions of Tender conflicts with any term set out in these Conditions of Tender, the term set out in these Conditions of Tender shall prevail.

CT2. USE OF BC BID ESERVICE

2.1 The BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions are hereby incorporated by reference into and form a part of these Conditions of Tender, and

(a) these Conditions of Tender are not in any way intended to, and do not in any way, limit or narrow the application, interpretation or operation of the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions, and

(b) the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions are not in any way intended to, and do not in any way, limit or narrow the application, interpretation or operation of these Conditions of Tender.

2.2 The Bidder must deliver its Tender, including for greater clarity, any and all Revisions, and any notice of withdrawal, by using one of the following two delivery methods, which the Bidder may, at its option, choose:

(a) the BC Bid eService Delivery Method; or

(b) the Hard Copy Delivery Method, and

except as expressly set out in these Conditions of Tender, the Bidder shall not combine aspects of the BC Bid eService Delivery Method with the Hard Copy Delivery Method.

2.3 **(a)** If the Bidder chooses the BC Bid eService Delivery Method, then the Bidder

(i) must deliver the Tender, including for greater clarity, and, subject to CT2.3(b), any and all Revisions, and any notice of withdrawal, using the BC Bid eService Delivery Method, and

(ii) must deliver the Bid Security using the Hard Copy Delivery Method.

(b) If the Bidder chooses the BC Bid eService Delivery Method, the Bidder may elect to deliver Revisions and any notice of withdrawal using the Hard Copy Delivery Method by

(i) delivering a Revision using such method, and if the Bidder makes such election then

(i) any and all subsequent Revisions, including any replacement Schedule of Approximate Quantities and Unit Prices, must be delivered using the Hard Copy Delivery Method, and

(ii) any subsequent Revisions submitted using the BC Bid eService Delivery Method will not be considered or evaluated, or

(ii) delivering a notice of withdrawal using such method.

(c) Determinations as to whether any Revision or notice of withdrawal submitted using BC Bid eService Delivery Method was delivered subsequent to delivery of a Revision using the Hard Copy Delivery Method will be governed by the calendar and clock at the Closing Location whether such calendar or clock, as the case may be, is accurate or not.

(d) If the Bidder chooses the Hard Copy Delivery Method, then the Bidder must deliver the Tender, including for greater clarity, any and all Revisions and the Bid Security, and any notice of withdrawal using the Hard Copy Delivery Method.

2.4 The Bidder must not deliver the Bid Security using the BC Bid eService Delivery Method. The Bidder must deliver the Bid Security, including any part of the Bid Security, in accordance with CT6, using only the Hard Copy Delivery Method.

2.5 If the Bidder chooses the BC Bid eService Delivery Method, then the Bidder must have an "e-Bidding Key" as defined in the BC Bid eService Terms and Conditions.

2.6 Without in any way whatsoever limiting the BC Bid Supplier Terms and Conditions, including without limitation, sections 8 and 9 set out therein, or the BC Bid eService Terms and Conditions, including without limitation, sections 13, 14, and 15 set out therein,

(a) the Bidder is solely responsible for reviewing any guidelines, the BC Bid Supplier Terms and Conditions and the BC Bid eService Terms and Conditions applying to and governing the use of the BC Bid eService; and

(b) the Ministry shall in no way whatsoever be responsible or liable, including in contract or tort, for any mistakes, errors, omissions, oversights, statements, representations, or warranties in any guideline, guidance or information, written or oral, given to Bidders by or on behalf of the Ministry regarding or in connection with the BC Bid eService, including without limitation, the use of the BC Bid eService or the BC Bid eService Delivery Method, further including without limitation, where such mistakes, errors, omissions, oversights, statements, representations, or warranties, lead or contribute, directly or indirectly, to a Bidder making mistakes, errors, omissions or oversights, or the Bidder's Tender being disqualified.

2.7 Without in any way whatsoever limiting the BC Bid eService Terms and Conditions or the BC Bid Supplier Terms and Conditions, or the responsibility of the Bidder to read and comply with the terms set out therein,

(a) the Bidder must take note of section 5 of the BC Bid eService Terms and Conditions that reads as follows:

"5. The Bidder agrees that if its e-Bidding Key is entered incorrectly, or is invalid at any applicable closing times or dates regardless of when received by Us, then any bids, proposals or other communications that the e-Bidding Key is associated with will not be considered or evaluated.", and

(b) the Bidder must take note of section 6 of the BC Bid Supplier Terms and Conditions that reads as follows:

"6. If you have a valid BC Bid® electronic signature key ("e-Bidding Key") and you are creating an electronic response to a posted opportunity, you will be given three attempts to enter the correct e-Bidding Key sequence. You agree that, if, on the third attempt, the e-Bidding Key is incorrectly entered, the BC Bid system will prohibit you from electronic bidding until such time that your account has been re-activated by the Service. You agree that your organization's primary contact will be

responsible for contacting the Service to reinstate a user account that has been suspended for whatever reason.”.

CT3. BASIS OF TENDERS

3.1 The Bidder, by delivering a Tender, irrevocably agrees that,

(a) the Bidder has received, read, examined and understood the entire Tender Document Package, including without limitation, all the terms of these Conditions of Tender and any and all Addenda,

(b) the Unit Prices, Lump Sum Prices and Extended Amounts for each Tender Item, and the Tendered Site Occupancy Days and the Tendered Site Occupancy Cost if any, stated on the Bidder’s Schedule of Approximate Quantities and Unit Prices, as may be adjusted by Revision, and as calculated by the Ministry, in accordance with these Conditions of Tender, shall be binding on the Bidder,

(c) the Bidder is bound by the terms of these Conditions of Tender and any and all Addenda, and

(d) the Bidder waives any right to clarification of any aspect of any information in the Tender Document Package, including without limitation, these Conditions of Tender and any and all Addenda.

3.2 The Bidder, by delivering a Tender, represents and warrants that:

(a) the Bidder has received, ensured the completeness of, read, understood and accepted the Tender Document Package, including for greater clarity, any documents incorporated by reference into the Tender Document Package, and any and all Addenda;

(b) except as set out in CT3.5 and CT3.6 and only to the extent expressly set out therein, the Bidder has not relied upon any representation or warranty by the Ministry with respect to the completeness, reliability, sufficiency, accuracy or relevance of any information, or any interpretation derived from any such information, set out in or otherwise provided in the Tender Document Package, or the General Reference Documents, or any analysis or interpretation thereof, and any reliance thereon or use made thereof by the Bidder shall be at the sole risk of the Bidder;

(c) the Bidder has had sufficient opportunity to investigate, has made all such investigations as the Bidder, in its sole discretion, has determined are necessary, and has fully investigated and satisfied itself of every condition relating to or affecting the Work, including but not limited to any design requirements, the Site conditions, or the labour, equipment, material and any other resources to be provided to perform the Work and the Contract, and the Bidder assumes any and all risks relating to or regarding all such conditions, whether or not any such conditions are revealed by any information available to, or investigations undertaken by, the Bidder;

(d) save and except for the specific information provided by the Ministry as set out in CT3.5 and CT3.6, the Bidder’s investigations have been based on its independent examination, experience, knowledge, information, and judgment, and not upon any statement, representation, or information made or given by or on behalf of the Ministry;

(e) the Tender, including for greater clarity, any part of the Tender Price, the Tendered Site Occupancy Cost, and the Total Tender Cost, is not based upon the anticipated approval of any Value Engineering Proposal; and

(f) the Bidder has the experience, knowledge, equipment, skills and resources necessary to perform and complete the Work and the Contract.

3.3 Any and all investigations shall be made at the Bidder’s own risk and the Bidder shall indemnify

and save harmless the Ministry, its officers, employees and agents, even where the Ministry or its officers, employees and agents are negligent, for any loss, damage, cost, expense (including without limitation, legal defence costs and expenses), claim, liability, demand, fine, penalty, assessment, or levy suffered or incurred by the Bidder, the Ministry, or any third party arising, either directly or indirectly, from the Bidder's investigation, including from any acts or omissions, negligent or otherwise, of the Ministry, its officers, employees and agents, which indemnity shall survive subsequent to any Award of the Contract, or any cancellation or termination of this Tender Call.

3.4 The Bidder shall be responsible for examining and inspecting the General Reference Documents and the Contract Specific Reference Documents, and for ensuring that all documents and materials listed are complete, available and present at the location or locations specified in the Invitation to Tender - Supplemental Conditions of Tender.

3.5 Any geotechnical investigation datum and test results provided in the borehole and test pit logs contained within the Tender Document Package and the Contract Specific Reference Documents are a reasonable representation of the conditions encountered at the specific locations investigated on the dates of the investigations, and may be relied upon by the Bidder solely to that extent and solely in that manner.

3.6 Any survey point datum, but not interpolated digital terrain models, contours and cross-sections derived therefrom, contained within the Tender Document Package and the Contract Specific Reference Documents are a reasonable representation of the individual points surveyed at the time of such survey, and may be relied upon by the Bidder solely to that extent and solely in that manner.

3.7 Except as set out in CT3.5 and CT3.6 and only to the extent expressly set out therein, the Ministry makes no representation or warranty and has no responsibility or liability, with respect to the completeness, reliability, sufficiency, accuracy or relevance of any information, or any interpretation derived from any such information, set out or otherwise provided in, including by accessing the URL's or the Web sites set out in, the Tender Document Package, the Contract Specific Reference Documents or the General Reference Documents, or any analysis or interpretation thereof, and any reliance thereon or use made thereof by the Bidder shall be at the sole risk of the Bidder.

3.8 Unless otherwise specified in the Tender Document Package, the General Reference Documents and the Contract Specific Reference Documents are available in the manner and at the locations described in the definitions of General Reference Documents and the Contract Specific Reference Documents set out in the Glossary of Terms. The Ministry will not provide copies of any General Reference Documents. The Ministry will provide copies for viewing by Bidders, of only those Contract Specific Reference Documents that the Tender Document Package expressly states will be provided by the Ministry.

3.9 Subject to the express terms of the Special Provisions, the Standard Specifications shall apply to the performance of the Contract, including without limitation, to the performance of and the measurement of the Work.

3.10 The Contract shall include the General Conditions set out in the Tender Document Package.

3.11 The Approximate Quantities stated in the Schedule of Approximate Quantities and Unit Prices, save and except for the Tendered Site Occupancy Days and the Daily Site Occupancy Cost if any, are estimates only and are prepared exclusively for use by the Ministry to establish the Tender Price for the purpose of comparing Tenders. The actual quantities may increase or decrease. The elimination of Tender Items, or an increase or decrease in quantities shall not invalidate the Tender, the Contract, or any Unit Price.

3.12 **(a)** If specified in the Invitation to Tender - Supplemental Conditions of Tender, a pre-Tender meeting shall be held.

(b) If the pre-Tender meeting is specified to be mandatory,

(i) a representative of the Bidder must attend the pre-Tender meeting and the Bidder must ensure that its full legal name, as it will appear on the face of the Tender Envelope, is listed on the Ministry pre-Tender meeting attendance record, and

(ii) any Tender, including any Revision, delivered by a Bidder whose name, as it appears on the face of the Tender Envelope, is not listed on the Ministry pre-Tender meeting attendance record, shall not be opened and shall be returned, or if opened, shall not be considered or evaluated but shall be disqualified.

(c) Any information, statements, representations, data or conclusions, verbal or otherwise, obtained from the Ministry or any other party, or made available, at any pre-Tender meeting is not stated, represented or warranted to be accurate, complete, relevant, or reliable by the Ministry and shall not be considered or treated as such, or relied upon by the Bidder. The Ministry may take notes at any such pre-Tender meeting for its sole use, and the Ministry shall be under no obligation whatsoever to make minutes or copies of such notes available to any Bidder and, may, in its sole discretion refuse to make minutes or copies of such notes available to any Bidder.

CT4. CLARIFICATION

4.1 Requests for clarification of any part of the Tender Document Package by the Bidder shall be delivered in writing by courier, fax, or electronic mail, not less than seven (7) days before the Closing Time, in accordance with the following:

(a) with respect to the Work, to the Contact Person identified in the Invitation to Tender - Supplemental Conditions of Tender; and

(b) with respect to the Tender Call, to the Administrative Contact Person identified in the Invitation to Tender - Supplemental Conditions of Tender.

4.2 The Ministry may in its sole discretion respond to any such requests for clarification. If the Ministry elects to respond to any such requests for clarification, it will do so in accordance with CT5.3, by Addenda which set out the request for clarification and the response to such requests in a "Question and Answer" format without setting out the name of the person who delivered the request.

4.3 Responses to requests for clarification made in any manner other than as described in CT4.2, including without limitation, verbal, in person, via mail, via fax, or electronic mail, by any employees, agents or representatives of the Ministry including without limitation, the Contact Person or the Administrative Contact Person, shall not constitute an official response by the Ministry and shall not be relied on in any way by any person for any purpose whatsoever and shall not be binding upon the Ministry in any way whatsoever.

4.4 It is the sole responsibility of the Bidder to monitor the BC Bid eService email notifications referenced in CT5.3(b), the BC Bid eService, and the BC Bid Website on an ongoing basis to keep itself informed of any such clarifications.

4.5 The Ministry shall have no responsibility or liability whatsoever, including in contract or in tort, in regard to or in connection with any decision to respond or not to respond to requests for

clarification, the timing of issuing any Addenda setting out the responses to any such requests, the quality or content of any such responses or the failure of a Bidder to keep itself informed of any such responses.

CT5 ADDENDA

5.1 The Ministry may, in its sole discretion, at any time and from time to time, amend any part or parts of the Tender Document Package by means of Addenda. If issued through the BC Bid eService, Addenda shall be identified as "Amendments". Other than by Addenda, including for greater clarity, BC Bid eService Amendments, no part of the Tender Document Package may be amended in any other way by any person.

5.2 Other than as set out in an Addendum, any information pertaining to the Tender Document Package, or this Tender Call, including without limitation, to the Work, or to the Contract, that is offered or obtained from any source, including from the Contact Person or from the Administrative Contact Person, is not official and shall not be relied on in any way by any person for any purpose whatsoever and shall not be binding upon the Ministry in any way whatsoever.

5.3 Subject to these Conditions of Tender,

(a) any and all Addenda shall be delivered to each Planholder, and

(b) if the Bidder has registered with the BC Bid eService to receive email notifications in accordance with the BC Bid eService requirements, or if the Bidder has confirmed that it wishes to be notified of Addenda by clicking on the "Send Me Amendments" option in the Invitation to Tender – Supplemental Conditions of Tender, then the BC Bid eService shall send the Bidder notifications of such Addenda, via e-mail containing a referring web-link to such Addenda.

5.4 Notwithstanding any other term of these Conditions of Tender, the Bidder shall be solely responsible to continually monitor the BC Bid eService email notifications referenced in CT5.3(b), the BC Bid eService, and the BC Bid Website on an ongoing basis to keep itself informed of any and all Addenda, and the Ministry shall be neither responsible nor liable in any way whatsoever, including in contract or in tort, for the failure of the Bidder to receive or to keep itself informed of any such Addenda, at all or in a timely manner.

CT6 BID SECURITY

6.1 The Bidder must deliver, as part of its Tender, Bid Security having a value and in a form that complies with the terms of the Schedule entitled "Tender Securities" as set out in the Tender Document Package.

6.2 If the Bidder delivers its Tender using, either, the BC Bid eService Delivery Method or the Hard Copy Delivery Method, the originals of the Bid Security must be delivered to the Closing Location before the Closing Time by hand or by courier, and

(a) if the Bidder delivers its Tender using the BC Bid eService Delivery Method, the Bid Security must be delivered in a sealed envelope that clearly and legibly has identified on its face:

(i) the heading "Tender Bid Security";

(ii) the full legal name of the Bidder; and

(iii) the Project Name and, or the Project Number, as specified in SCT2**,** and

(b) if the Bidder delivers its Tender using the Hard Copy Delivery Method, the Bid Security must be delivered in the sealed Tender Envelope.

CT7 COMPLETION OF TENDERS

Use of Forms Provided by the Ministry

7.1 The Bidder must deliver its Tender on original or unaltered copies of the forms specified by the Ministry. Any information provided by the Ministry on any form must not be altered by the Bidder, or any person, except the Ministry. If the Ministry amends the Tender Document Package by replacing any form or forms, the Bidder must deliver the replacement form or forms, as the case may be, as part of its Tender.

7.2 Unless otherwise expressly set out, the Bidder must complete all forms in full and,

(a) if the Bidder delivers its Tender using the Hard Copy Delivery Method, then the Bidder must complete all forms in full by typing or printing legibly in ink on all such forms, and any adjustments, changes, or corrections to information provided by the Bidder on any such form must be initialed by an Authorized Representative of the Bidder; or

(b) if the Bidder delivers its Tender using the BC Bid eService Delivery Method, then the Bidder must complete all forms in full by entering the required information.

Tender Form

7.3 If the Bidder delivers its Tender using the Hard Copy Delivery Method, then

(a) the Bidder must set out on the Tender Form,

(i) its full legal name,

(ii) the date of the Tender Form

(iii) the name of the Authorized Representative of the Bidder, and

(iv) the Total Tender Cost, and

the Tender Form must be signed by an Authorized Representative of the Bidder, and

(b) the Bidder should include the complete mailing address, phone number and fax number of the Bidder, on the Tender Form.

7.4 If the Bidder delivers its Tender using the BC Bid eService Delivery Method, then the use of the e-Bidding Key is the legal equivalent to its authorized signature and constitutes the Bidder's authorized signature confirming the Bidder's agreement to be bound by the terms and conditions of this Tender Call, including for greater clarity, these Conditions of Tender, and by the statements and representations to which the e-Bidding Key is affixed, including for greater clarity, the Bidder's Tender.

Schedule of Approximate Quantities and Unit Prices

7.5 All prices, including Unit Prices, Provisional Sums, and Lump Sum Prices shall be deemed to be inclusive of all applicable costs, including any and all license costs, fees, taxes or duties in effect at the Closing Time, cash allowances, and contingencies. All prices, including Unit Prices, Provisional Sums, and Lump Sum Prices must be stated in the lawful money of Canada. Conversion of Quantities is not permitted (e.g., conversion of "price per litre" to "price per kilolitre" is not permitted). Conversion of metric units to imperial units or vice versa is not permitted.

7.6 In the Schedule of Approximate Quantities and Unit Prices,

(a) the Bidder must complete,

(i) all blank spaces in the column under the heading "Unit Price" and all blank spaces in the column under the heading "Extended Amount" for each Unit Price Item; and

(ii) all blank spaces in the column under the heading “Extended Amount” for each Lump Sum Item; and

(iii) in a Tender Call in which the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy and the Ministry requires the submission of Tendered Site Occupancy Days and has provided a Daily Site Occupancy Cost, all blank spaces in the column entitled “Approximate Quantities” in Part B for the Tendered Site Occupancy Days and all blank spaces in the column entitled “Extended Amount” for the Tendered Site Occupancy Cost, and

(b) the Bidder should include the full legal name and complete mailing address, phone number and fax number of the Bidder, on the Schedule of Approximate Quantities and Unit Prices.

7.7 **(a)** If the Ministry amends the Tender Document Package by replacing the Schedule of Approximate Quantities and Unit Prices, the Bidder must deliver the replacement Schedule of Approximate Quantities and Unit Prices completed in accordance with these Conditions of Tender.

(b) If the Bidder delivers its Tender using the Hard Copy Delivery Method, the Bidder shall not deliver any replacement Schedule of Approximate Quantities and Unit Prices by facsimile transmission but may deliver the replacement Schedule of Approximate Quantities and Unit Prices, by hand or courier,

(i) enclosed in an envelope, that clearly and legibly has identified on its face,

(A) the heading "Schedule of Approximate Quantities and Unit Prices",

(B) the full legal name of the Bidder, and

(C) the Project Name and, or the Project Number, as specified in SCT2, and

that must be delivered to and received at the Closing Location before the Closing Time, or

(ii) as part of a replacement Tender in accordance with CT8.6,

Tender Envelope

7.8 If the Bidder delivers its Tender using the Hard Copy Delivery Method, then the Bidder must clearly and legibly print or type on the face of the Tender Envelope

(a) the full legal name of the Bidder; and

(b) the Project Name and, or the Project Number, as specified in SCT2, and

the Bidder must deliver its Tender in the Tender Envelope provided in the Tender Document Package.

7.9 If the Bidder delivers its Tender using the BC Bid eService Delivery Method, then the Bidder must ensure that the Tender Envelope contains a fully completed Schedule of Approximate Quantities and Unit Prices.

CT8 DELIVERY OF TENDERS

8.1 The Ministry may in its sole discretion, from time to time and at any time on or before the Closing Date and before the Closing Time, extend the Closing Date and Closing Time.

8.2 **(a)** Unless the Bidder has elected pursuant to CT2.3(b) to submit Revisions or any notice of withdrawal using the Hard Copy Delivery Method, the calendar and clock showing on the BC Bid Website whether accurate or not, shall govern the delivery of Tenders using the BC Bid eService Delivery Method with respect to whether the Bidder's Tender, including for greater clarity, any and all Revisions, has been delivered and received on or before the Closing Date and before the Closing Time, and the BC Bid Website clock shall be set as specified in the Invitation to Tender – Supplemental Conditions of Tender.

(b) The calendar and clock at the Closing Location whether accurate or not, shall govern the delivery of Tenders using the Hard Copy Delivery Method, and the delivery of the Bid Security in connection with a Tender that has been delivered using the BC Bid eService Delivery Method, with respect to whether the Bidder's Tender, including for greater clarity, any and all Revisions, or the Bidder's Bid Security in the case of a Tender delivered using the BC Bid eService Delivery Method, has been delivered and received before the Closing Time.

(c) If the Bidder has elected pursuant to CT2.3(b) to submit Revisions or any notice of withdrawal using the Hard Copy Delivery Method, then the calendar and clock at the Closing Location whether accurate or not, shall govern the delivery of any and all Revisions or any notice of withdrawal using the Hard Copy Delivery Method and relating to a Tender or to any previous Revisions submitted using BC Bid eService Delivery Method, with respect to whether the Bidder's Revisions or notice of withdrawal, as the case may be, were delivered and received before the Closing Time.

8.3 If the Bidder delivers its Tender using the Hard Copy Delivery Method, then the Bidder must ensure that,

(a) the Tender Form with the original execution by an Authorized Representative on behalf of the Bidder, and fully completed as required by these Conditions of Tender,

(b) the original of the Schedule of Approximate Quantities and Unit Prices, or, if the Ministry has amended the Tender Document Package by replacing the Schedule of Approximate Quantities and Unit Prices, the original of the replacement Schedule of Approximate Quantities and Unit Prices, completed as required on the form and by these Conditions of Tender, and

(c) the original of the Bid Security, and if the Bid Security is a Bid Bond, then the original of the Bid Bond duly executed on behalf of the Surety,

are included in the Tender Envelope prior to sealing and are delivered to and received at the Closing Location before the Closing Time.

8.4 If the Bidder delivers its Tender using the BC Bid eService Delivery Method, then the Bidder must ensure that,

(a) the Tender Form is fully completed as required on the form and by these Conditions of Tender,

(b) the Tender Envelope is fully completed as required on the form and by these Conditions of Tender,

(c) the Schedule of Approximate Quantities and Unit Prices, or if the Ministry has amended the Tender Document Package by replacing the Schedule of Approximate Quantities and Unit Prices, then the replacement Schedule of Approximate Quantities and Unit Prices, is fully

completed as required on the form and by these Conditions of Tender, unless the Bidder elects or has, prior to such Ministry amendment, elected pursuant to CT2.3(b) to submit Revisions using the Hard Copy Delivery Method, and if the Bidder so elects or has made such election, then the original of the replacement Schedule of Approximate Quantities and Unit Prices is completed and delivered as required on the form and by these Conditions of Tender, including without limitation, CT7.7(b),

(c) such Tender Form and Tender Envelope are delivered to and received by the BC Bid eService in accordance with these Conditions of Tender, including for greater clarity, the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions, before the Closing Time, and

(d) the original Bid Security duly executed on behalf of the Surety, is enclosed in a sealed envelope that clearly and legibly has identified on its face:

(i) the heading “Tender Bid Security”;

(ii) the full legal name of the Bidder; and

(iii) the Project Name and, or the Project Number, as specified in SCT2 and

such sealed envelope containing the original Bid Security is delivered to and received at the Closing Location before the Closing Time.

8.5 The Bidder’s Tender shall be considered to have been delivered on or after the Closing Time and shall not be considered or evaluated but shall be disqualified, if the transmission of the Tender using the BC Bid eService Delivery Method begins before the Closing Time and is completed on or after the Closing Time.

8.6 If the Bidder delivers more than one Tender, each Tender delivered in accordance with these Conditions of Tender and received by the BC Bid eService or at the Closing Location, as the case may be, before the Closing Time shall be deemed to have been delivered in the chronological order received, and each such Tender delivered by the same Bidder shall be considered to supercede and replace in its entirety any and all prior Tenders delivered by the same Bidder.

CT9 REVISION TO TENDER

9.1 The Bidder shall only amend its Tender by delivering a Revision in compliance with these Conditions of Tender.

Form and Content (Hard Copy Delivery Method)

9.2 If the Bidder delivers its Tender using the Hard Copy Delivery Method or if the Bidder elects pursuant to CT2.3(b) to submit Revisions using the Hard Copy Delivery Method, then Revisions must:

(a) be in writing;

(b) be clearly identified with,

(i) the heading "Revision to Tender",

(ii) the Bidder’s full legal name, and

(iii) the Project Name and, or Project Number specified in SCT2;

(c) clearly identify each form that the Bidder desires to amend,

(d) clearly identify each Tender Item that the Bidder desires to amend, and

(i) if the Tender Item is a Unit Price Item, then describe the amendment as the amount by which the Unit Price, as it may have been revised by a preceding Revision, should be increased or decreased,

(ii) if the Tender Item is a Lump Sum Item, then describe the amendment as the amount by which the corresponding Extended Amount, as it may have been revised by a preceding Revision, should be increased or decreased, and

(iii) if the amendment is to the Tendered Site Occupancy Days, then describe the amendment as the number of days by which the Tendered Site Occupancy Days, as it may have been revised by a preceding Revision, should be increased or decreased;

(e) be signed by an Authorized Representative on behalf of the Bidder, and

(f) be delivered to and received at the Closing Location before the Closing Time using the Hard Copy Delivery Method, and

Revisions should also state the total amount by which the Tender Price, the Tendered Site Occupancy Cost if any, or the Total Tender Cost, as the case may be, should be increased or decreased by each Revision, but the Ministry shall determine the actual increase or decrease to the Tender Price, the Tendered Site Occupancy Cost, if any, and the Total Tender Cost, in accordance with these Conditions of Tender, including by applying the information provided by the Bidder pursuant to CT9.2(c) and (d).

Revisions by Letter (Hard Copy Delivery Method)

9.3 If the Bidder delivers its Tender using the Hard Copy Delivery Method, or if the Bidder elects pursuant to CT2.3(b) to submit Revisions using the Hard Copy Delivery Method, then Revisions may be delivered by hand or courier, in which case, each such Revision must be in the form set out in CT 9.2 and must be delivered to and received at the Closing Location before the Closing Time enclosed in an envelope, that clearly and legibly has identified on its face,

(a) the heading "Revision to Tender",

(b) the full legal name of the Bidder, and

(c) the Project Name and, or the Project Number, as specified in SCT2.

Revisions by Facsimile (Hard Copy Delivery Method)

9.4 If the Bidder delivers its Tender using the Hard Copy Delivery Method, or if the Bidder elects pursuant to CT2.3(b) to submit Revisions using the Hard Copy Delivery Method, then Revisions may be delivered by facsimile, in which case, each such Revision must be in the form set out in CT 9.2 and must be delivered to the facsimile number specified in the Invitation to Tender - Supplemental Conditions of Tender as the facsimile number for Revisions, before the Closing Time, and each such Revision must have clearly and legibly identified on the first page of the facsimile,

(a) the heading "Revision to Tender",

(b) the full legal name of the Bidder, and

(c) the Project Name and, or the Project Number, as specified in SCT2.

9.5 **(a)** The Bidder's Revision shall be considered to have been delivered on or after the Closing Time, and shall not be considered or evaluated, but shall be disqualified, if the transmission of the Revision by facsimile begins before the Closing Time and is completed on or after the Closing Time.

(b) The Ministry does not in any way whatsoever guarantee, and makes no representation or warranty whatsoever, as to the confidentiality of any Revision delivered by facsimile.

Form and Content (BC Bid eService Delivery Method)

9.6 If the Bidder delivers its Tender using the BC Bid eService Delivery Method then, unless the Bidder has elected pursuant to CT2.3(b) to submit Revisions using the Hard Copy Delivery Method,

(a) any and all Revisions must be in writing, in the form of replacement amended Tender Forms and replacement amended Tender Envelopes provided for by clicking on the "Amendments" option in the Tender Envelope; and

(b) the Bidder must ensure that

(i) each such replacement amended Tender Form is fully completed, and

(ii) each such replacement amended Tender Envelope, including the Schedule of Approximate Quantities and Unit Prices, is fully completed, and

are delivered to and received by the BC Bid eService in accordance with these Conditions of Tender, including for greater clarity, the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions, before the Closing Time.

(c) If the Bidder has elected pursuant to CT2.3(b) to submit Revisions using the Hard Copy Delivery Method then CT9.6(a) and CT9.6(b) do not apply and CT9.2 to and including CT9.5 will apply to any and all Revisions delivered subsequent to such election and to the Tender, and the Bidder must ensure that the requirements set out in CT9.2 to and including CT9.5 are satisfied.

9.7 The Bidder's Revision shall be considered to have been delivered on or after the Closing Time and shall not be considered or evaluated but shall be disqualified, if the transmission of the Revision using the BC Bid eService Delivery Method begins before the Closing Time and is completed on or after the Closing Time.

Multiple Revisions

9.8 **(a)** Each Revision delivered using the Hard Copy Delivery Method, should be numbered sequentially.

(b) Unless the Bidder clearly and legibly specifies to the contrary on the face of each Revision each Revision shall be deemed to have been delivered by the Bidder in the chronological order received.

Amount of Bid Security

9.9 The Bidder must ensure that the total value of the Bid Security complies with the requirements of the Schedule entitled "Tender Securities" as set out in the Tender Document Package, and that the total value of the Bid Security reflects any change to the Tender Price as a result of any and all Revisions, including as a result of the delivery of any and all replacement forms, including any replacement Schedule of Approximate Quantities and Unit Prices.

9.10 If the terms of the Schedule entitled “Tender Securities” as set out in the Tender Document Package, permit the delivery of a bank draft, certified cheque or money order in connection with this Tender Call, then the Bidder may deliver additional bank drafts, certified cheques or money orders, as the case may be, in accordance with these Conditions of Tender, including for greater clarity CT6, to ensure that the total value of the Bid Security reflects any change to the Tender Price as a result of any and all Revisions, including any and all replacement Schedules of Approximate Quantities and Unit Prices.

9.11 If as a result of any Revisions, including any and all replacement Schedules of Approximate Quantities and Unit Prices, the total value of the Bid Security delivered by the Bidder exceeds the value required in the Schedule entitled “Tender Securities” as set out in the Tender Document Package, the Bidder shall not be permitted to withdraw any part of the Bid Security delivered.

CT10 WITHDRAWAL OF TENDERS

10.1 The Bidder shall only withdraw its Tender by delivering a notice of withdrawal in compliance with these Conditions of Tender on or before the Closing Date and before the Closing Time, and in such case, the Ministry shall return the withdrawn Tender, including any Bid Security, to the Bidder after the Closing Time.

10.2 Any Tender not withdrawn by the Bidder in accordance with these Conditions of Tender before the Closing Time, shall become irrevocable at the Closing Time, and shall remain irrevocable for the period of time specified on the Tender Form.

Form and Content (Hard Copy Delivery Method)

10.3 If the Bidder has delivered its Tender using the Hard Copy Delivery Method or if the Bidder has elected pursuant to CT2.3(b) to submit Revisions using the Hard Copy Delivery Method or elects pursuant to CT2.3(b) to submit the notice of withdrawal using the Hard Copy Delivery Method, then any notice of withdrawal must:

(a) be in writing;

(b) be clearly identified with

(i) the heading "Withdrawal of Tender",

(ii) the full legal name of the Bidder,

(iii) and the Project Name and, or Project Number as specified in SCT2;

(c) contain a clear statement that the Tender is withdrawn, and

(d) be signed by an Authorized Representative on behalf of the Bidder, and delivered to and received at the Closing Location before the Closing Time using the Hard Copy Delivery Method.

Withdrawals by Letter (Hard Copy Delivery Method)

10.4 If the Bidder has delivered its Tender using the Hard Copy Delivery Method or if the Bidder has elected pursuant to CT2.3(b) to submit Revisions using the Hard Copy Delivery Method or elects pursuant to CT2.3(b) to submit the notice of withdrawal using the Hard Copy Delivery Method, then the notice of withdrawal may be delivered by hand or courier, in which case, such notice of withdrawal must be delivered to and received at the Closing Location before Closing Time enclosed in an envelope, that has clearly and legibly identified on its face,

(a) the heading "Withdrawal of Tender",

(b) the full legal name of the Bidder, and

(c) the Project Name and, or the Project Number, as specified in SCT2.

Withdrawals by Facsimile (Hard Copy Delivery Method)

10.5 If the Bidder has delivered its Tender using the Hard Copy Delivery Method or if the Bidder has elected pursuant to CT2.3(b) to submit Revisions using the Hard Copy Delivery Method or elects pursuant to CT2.3(b) to submit the notice of withdrawal using the Hard Copy Delivery Method, then the notice of withdrawal may be delivered by facsimile, in which case, such notice of withdrawal must be delivered to the facsimile number specified in the Invitation to Tender - Supplemental Conditions of Tender as the facsimile number for withdrawals, on or before the Closing Date and before Closing Time, and must have clearly and legibly identified on the first page of the facsimile,

(a) the heading "Withdrawal of Tender",

(b) the full legal name of the Bidder, and

(c) the Project Name and, or the Project Number, as specified in SCT2.

10.6 **(a)** The Bidder's notice of withdrawal shall be considered to have been delivered on or after the Closing Time, and shall not be considered in any way whatsoever, if the transmission of the notice of withdrawal by facsimile begins before the Closing Time and is completed on or after the Closing Time.

(b) The Ministry does not in any way whatsoever guarantee, and makes no representation or warranty whatsoever, as to the confidentiality of any notice of withdrawal delivered by facsimile.

Form and Content (BC Bid eService Delivery Method)

10.7 If the Bidder delivers its Tender using the BC Bid eService Delivery Method then unless the Bidder has elected pursuant to CT2.3(b) to submit Revisions using the Hard Copy Delivery Method or elects pursuant to CT2.3(b) to submit the notice of withdrawal using the Hard Copy Delivery Method, any notice of withdrawal must be,

(a) in writing, in accordance with the withdraw option provided by the BC Bid eService, and

(b) delivered to and received by the BC Bid eService in accordance with these Conditions of Tender, including for greater clarity, the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions, on or before the Closing Date and before the Closing Time.

(c) If the Bidder has elected pursuant to CT2.3(b) to submit Revisions using the Hard Copy Delivery Method or elects pursuant to CT2.3(b) to submit the notice of withdrawal using the Hard Copy Delivery Method, then CT10.7(a) and CT10.7(b) do not apply and CT10.3 to and including CT10.6 will apply to the notice of withdrawal delivered subsequent to such

election and to the Tender and the Bidder must ensure that the requirements set out in CT10.3 to and including CT10.6 are satisfied.

10.8 Any notice of withdrawal shall be considered to have been delivered on or after the Closing Time and shall not be considered, if the transmission of such notice using the BC Bid eService Delivery Method begins before the Closing Time and is completed on or after the Closing Time.

CT11 DELIVERY AND RECEIPT

11.1 The Ministry assumes no risk, makes no guarantee, warranty or representation whatsoever, and shall have no responsibility or liability, including in contract or in tort, whatsoever, for or in connection with,

(a) the timely delivery of any information or documentation, including without limitation, these Conditions of Tender, or any and all Addenda, whether by BC Bid eService, by mail, by courier, by hand, by facsimile, or otherwise, in connection with this Tender Call,

(b) the timely receipt of any Tenders, Revisions, notice of withdrawals, or any other information or documentation from any Bidder or any person, or

(c) the working order, functioning or malfunctioning, of facsimile transmission equipment or electronic information system, including without limitation, BC Bid eService.

11.2 Any and all Addenda, and any other documentation delivered by or on behalf of the Ministry shall be conclusively deemed validly delivered to and received by the intended recipient, including any Bidder, at the time that such Addendum or documentation as the case may be, is issued

(a) by facsimile transmission to the facsimile number designated by the Bidder as the sole facsimile number for receipt of information in connection with this Tender Call, or

(b) in electronic form to the email address designated by the Bidder as the sole email address for receipt of information in connection with this Tender Call.

CT12 OPENING OF TENDERS

12.1 At the Tender Opening, subject to CT3.12,

(a) the Tender Envelopes and the Revisions delivered at the Closing Location before Closing Time using the Hard Copy Delivery Method shall be opened, and

(b) the Tender Forms and Tender Envelopes, or, if the Bidder has delivered replacement amended Tender Forms and replacement amended Tender Envelopes for the purpose of Revision of its Tender, then only such replacement amended Tender Forms and replacement amended Tender Envelopes, delivered to and received by the BC Bid eService before the Closing Time using the BC Bid eService Delivery Method, in accordance with these Conditions of Tender, including for greater clarity, the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions, shall be announced, and

the amounts stated on each such Tender Form, or replacement amended Tender Form, and in any and all Revisions delivered using the Hard Copy Delivery Method, as the Total Tender Cost, shall be read out.

12.2 The amount stated in connection with each Tender as the Total Tender Cost and read out at the

Tender Opening is unverified and shall not constitute the Total Tender Cost, but is subject to review, calculation, verification and adjustment, by the Ministry in accordance with these Conditions of Tender.

CT13 EVALUATION OF TENDERS

13.1 Except as expressly set out in these Conditions of Tender, after the Closing Time, no Bidder shall be permitted to supplement or clarify any information provided in or omitted from any Tender.

Disqualification

13.2 Any Tender, including for greater clarity, any and all Revisions, which, in the sole discretion, of the Ministry:

(a) is ambiguous or unclear as to meaning or intent;

(b) is incomplete, conditional, or contains a qualifier;

(c) fails to comply with any of the mandatory requirements of the Conditions of Tender;

(d) contains any alteration to the information provided by the Ministry; or

(e) otherwise fails to comply sufficiently with the Conditions of Tender to be considered a valid Tender

is subject to Disqualification and may be disqualified by the Ministry, in its sole discretion.

If a Tender is subject to Disqualification due to any one or more of the foregoing defects, which, in the sole discretion of the Ministry, is not material, then the Ministry may, in its sole discretion, waive the defect or defects, as the case may be, and not disqualify the Tender.

13.3 Without limiting the generality of CT13.2, any Revision which, in the sole discretion, of the Ministry contains one or more of the defects set out in CT13.2, is subject to Disqualification and may be disqualified by the Ministry, in its sole discretion. If such Revision is disqualified, then the Ministry may, subject to CT 13.2, continue with evaluation of the Tender and any other Revisions, in connection with which the disqualified Revision was delivered.

13.4 If a Revision is subject to Disqualification due to any one or more of the defects referenced in CT13.3, which, in the sole discretion of the Ministry, is not material, then the Ministry may, in its sole discretion waive the defect or defects, as the case may be, and not disqualify the Revision, but include the Revision in connection with the evaluation of the Tender of which such Revision forms a part.

Bid Security

13.5 If a Tender is subject to Disqualification due to the Bid Security containing any one or more of the defects listed in CT13.2, which in the sole discretion of the Ministry, is not material, then the Ministry may, in its sole discretion, deliver written notice to the Bidder requiring the Bidder that delivered the subject Bid Security to remedy the defect or defects, as the case may be, and to deliver to the Closing Location by not later than 2 business days after the date of the Ministry's notification replacement Bid Security with the subject defect or defects remedied. If the Bidder fails to so deliver originals of the replacement Bid Security, the Ministry may, in its sole discretion, disqualify the Bidder's Tender.

Determination of Tender Price

13.6 The Tenders that, in the sole discretion of the Ministry, comply with the Conditions of Tender shall be evaluated on the basis of the Total Tender Costs calculated by the Ministry in accordance with the following:

(a) adjustments to the Unit Prices, if the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy, the Tendered Site Occupancy Days, and the Extended Amounts, including Tendered Site Occupancy Cost, if any, shown on the Bidder's Schedule of Approximate Quantities and Unit Prices shall be made by the Ministry in accordance with the Revision(s) that have not been disqualified;

(b) if any Unit Price provided by the Bidder and its corresponding Extended Amount are at variance, the Unit Price shall be considered correct and the Ministry shall recalculate the Extended Amount by multiplying the Approximate Quantity by the Unit Price provided by the Bidder;

(c) if the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy, and any Tendered Site Occupancy Days provided by the Bidder and its corresponding Tendered Site Occupancy Cost are at variance, the Tendered Site Occupancy Days shall be considered correct and the Ministry shall recalculate the Tendered Site Occupancy Cost by multiplying the Tendered Site Occupancy Days by the Daily Site Occupancy Cost;

(d) if the sum of all Extended Amounts, including if the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy, the Tendered Site Occupancy Cost, and the amount stated as the Total Tender Cost on the Tender Form are at variance, then the amount stated as the Total Tender Cost on the Tender Form shall be deemed to be adjusted to be the sum of the Extended Amounts, including the Tendered Site Occupancy Cost, if any, as calculated by the Ministry; and

(e) if the sum of all Extended Amounts, including if the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy, the Tendered Site Occupancy Cost, as calculated by the Ministry, is at variance with the amount stated as the Total Tender Cost on the Tender Form, then the sum of the Extended Amounts, including the Tendered Site Occupancy Cost, if any, as calculated by the Ministry, shall be deemed to be the Total Tender Cost and the amount stated as the Total Tender Cost on the Tender Form shall be deemed to be adjusted to be the sum of the Extended Amounts, including the Tendered Site Occupancy Cost, if any, as calculated by the Ministry;

(f) the sum of all Extended Amounts, including if the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy, the Tendered Site Occupancy Cost, as calculated by the Ministry, shall be deemed to be the Bidder's Total Tender Cost.

13.7 If the Total Tender Cost of each of two or more Tenders, as calculated by the Ministry, is the same figure and if the Ministry decides to accept any Tender and award the Contract, then the Ministry shall determine the Bidder to which an Award letter will be delivered by applying a random method

chosen in the Ministry's sole discretion, which may consist of, without limitation, a coin toss or the drawing of one of the Bidder's names out of a box.

CT14 BIDDER'S CAPACITY TO PERFORM

14.1 The Ministry may, at any time and from time to time, after Closing Time, require any Bidder to satisfy the Ministry, in its sole discretion, that the Bidder has the necessary qualifications, equipment, material, and resources available to carry out the Work in a safe, competent manner, within the time limits, and any other requirements specified in the Tender Document Package, including by delivering information to the Ministry in writing which information may include any or all of the following:

(a) evidence that the Bidder is financially, or otherwise capable of performing and completing the Work or the Contract, including without limitation, an agreement to bond, consent of surety, or undertaking to provide requisite insurance;

(b) evidence that the Bidder has successfully carried out and completed works of a similar nature or is otherwise fully capable of performing the Work;

(c) a list of equipment, and its mechanical condition, that the Bidder is prepared to use on the Work;

(d) evidence that the personnel available to the Bidder have professional standing, technical and trade qualifications and licenses necessary to perform the Work;

(e) a detailed Project or Construction Schedule meeting all requirements of the Contract.

14.2 Any Bidder requested to provide such information shall comply with the request by not later than ten (10) days of the date on which the request was made or within such earlier time period, as specified by the Ministry. The Ministry reserves the right to reject the Tender of any Bidder that does not provide information to the satisfaction of the Ministry, in its sole and absolute discretion, in response to any such request.

CT15 RIGHT NOT TO AWARD

15.1 The Ministry reserves the right, in its sole and absolute discretion, to disqualify any or all Tenders, to cancel this Tender Call, to reject any or all Tenders, and to re-tender the same or similar Work at any time. The lowest or any Tender shall not necessarily be accepted.

CT16 ACCEPTANCE

16.1 An Award letter is the only form of acceptance that shall be binding on the Ministry.

CT17 PRIOR TO COMMENCEMENT OF WORK

17.1 If the Ministry delivers an Award letter to the Bidder,

(a) the Bidder shall on the earlier of:

(i) fourteen (14) days from the date shown of the Award letter; and

(ii) three (3) days before commencement of the Work on the Site,

obtain and deliver to the Ministry, the Performance Security, evidence of compliance with the Schedule of the Contract entitled the "Schedule of Insurance", and the Bidder's valid Workers' Compensation Board registration number, and

(b) the Bidder shall on the earlier of:

(i) fourteen (14) days from the date shown on the Ministry cover letter delivering the Contract to the Bidder; and

(ii) three (3) days before commencement of the Work on the Site,

deliver to the Ministry the Contract duly executed by an Authorized Representative, and commence to diligently and promptly fulfill its obligations under the Contract.

CT18 DEFAULT

Event of Default

18.1 Without limiting any and all rights of the Ministry to make demand on the Bid Security, if the Bidder does not comply with the requirements of CT17, then the Ministry may make demand on the Bid Security.

18.2 The rights and remedies of the Ministry under and in connection with this Tender Call are not limited to the Ministry's right to make demand on the Bid Security, and the right to make such demand is cumulative and in addition to every other right and remedy available to the Ministry under and in connection with this Tender Call, at law, and in equity. The exercise by the Ministry of any such right or remedy shall not preclude the simultaneous or later exercise of any other such right or remedy.

Demand on Bid Security

18.3 A demand on the Bid Security shall be the lesser of:

(a) the difference between the Tender Price of the Bidder that has been awarded the Contract by the Ministry, as calculated by the Ministry, and the amount for which the Ministry contracts with another party to perform the Work or substantially the same Work; and

(b) the full amount of the Bid Security.

CT19 DISPUTE RESOLUTION

19.1 In the event of a dispute arising out of this Tender Call:

(a) the Bidder shall, within fourteen (14) days of any issue in dispute first coming to the attention of the Bidder, deliver written notice to the Contact Person of such dispute arising out of this Tender Call; and

(b) all such disputes not resolved through negotiation between the parties within thirty (30) days of the dispute being presented in writing to the Contact Person may by agreement of the Ministry and the Bidder be referred to and finally resolved by binding arbitration in accordance with the *Commercial Arbitration Act*.

19.2 Notwithstanding any notice delivered under CT19.1, the Ministry may, but in no event will be obligated to, proceed with this Tender Call without prejudice to any ongoing dispute resolution proceedings or discussions, including any negotiations or binding arbitration as contemplated in CT19.1

CT20 TIME LIMITATION ON CLAIMS

20.1 Any claim or cause of action a Bidder may have against the Ministry arising out of or in connection with:

(a) the Tender;

(b) the Award; or

(c) this Tender Call

shall be absolutely barred after the expiration of one (1) year commencing from the Closing Time.

CT21 LIMITATION OF DAMAGES

21.1 The Bidder agrees that if the Ministry cancels this Tender Call, disqualifies all Tenders, rejects all Tenders, or does not Award the Contract to any Bidder, then

(a) the Bidder shall not claim against the Ministry, and

(b) the Ministry shall not be liable to the Bidder or to any person,

in contract, in tort, or otherwise, for any losses, costs, damages or expenses or anything whatsoever, including without limitation, for loss of revenue, opportunity, or anticipated profit, or for costs of preparation of the Bidder's Tender.

21.2 The Bidder agrees that in circumstances not described in CT21.1,

(a) the Bidder shall not claim against the Ministry, and

(b) the Ministry shall not be liable to the Bidder or to any person,

in contract, in tort, or otherwise, for any losses, costs, damages or expenses or anything whatsoever, including without limitation, for loss of revenue, opportunity, or anticipated profit, in excess of an amount equivalent to the actual and reasonable costs directly incurred by the Bidder to prepare the Bidder's Tender.

CT22 INTERPRETATION AND DISCRETION

22.1 The Ministry shall not be bound by industry custom and practice in the application or interpretation of these Conditions of Tender, the exercise of its discretion, or in the determination of materiality or compliance.

CT23 APPROPRIATION

23.1 Notwithstanding any other term of these Conditions of Tender, any Award of the Contract, and any financial obligations of the Ministry pursuant to these Conditions of Tender or the Contract shall be subject to:

(a) there being sufficient monies available in an Appropriation to enable the Ministry in any fiscal year or part thereof when any payment of money by the Ministry to the Bidder falls due under the Contract, to make that payment; and

(b) the Treasury Board, as defined in the Financial Administration Act, having not controlled or limited expenditure under any Appropriation contemplated to or referred to in the Contract.

CT24 CONFIDENTIALITY

24.1 All documents and records in the custody or under the control of the Ministry, including, without limitation, the Tender, any Revision, and all other information delivered by the Bidder pursuant to these Conditions of Tender shall become the property of the Ministry, and the Ministry may use any such information, including pricing information provided by the Bidder for the purpose of or in connection with preparing analyses of the Work and for the purpose of or in connection with cost estimating for other projects, and for such purposes, the Ministry may disclose such information to consultants retained by the Ministry.

24.2 Except as otherwise provided or otherwise contemplated in these Conditions of Tender, the Ministry shall treat as confidential and shall not, without the prior written consent of the Bidder, publish, or disclose, or permit to be published or disclosed, the Tender, any Revision, any documents, records or other information delivered by the Bidder pursuant to these Conditions of

Tender, except insofar as such publication or disclosure is required by law, including without limitation the *Freedom of Information and Protection of Privacy Act*, or is necessary to enable the Ministry to fulfill any obligations that the Ministry may have under or in connection with this Tender Call.

CT25 GENERAL

25.1 The headings and captions in these Conditions of Tender are inserted for convenience only and do not form a part of these Conditions of Tender and in no way define, limit, alter or enlarge the scope or meaning of any term of these Conditions of Tender.

25.2 If any provision of these Conditions of Tender or the application thereof to any person or circumstance is invalid or unenforceable to any extent, the remainder of these Conditions of Tender and the application of such provision to any other person or circumstance will not be affected or impaired thereby and shall be valid and enforceable to the extent permitted by law.

25.3 In these Conditions of Tender, the words "including" and "includes", when following any general term or statement, are not to be construed as limiting the general term or statement to the specific items or matters set forth or to similar items or matters, but rather as permitting the general term or statement to refer to all other items or matters that could reasonably fall within the broadest possible scope of the general term or statement.

SCHEDULE T2

TENDER SECURITIES

FOR MAJOR WORKS CONTRACTS AND DESIGN BUILD CONTRACTS

1. GENERAL INFORMATION ON TENDER SECURITIES

(a) Any and all costs related to or for any and all Bid Securities and Performance Securities must be included in the Tender Price because in no event will the Ministry be responsible for or pay for any such costs, including without limitation as separate or as extra items.

(b) The Ministry will not pay interest on any deposits/securities held by the Ministry.

2. TENDER REQUIREMENTS

The Bidder will deliver Bid Security in the form of a **Bid Bond** for a value of not less than ten percent **(10%) of the Tender Price**, in the format and containing the terms and conditions set out in the Specimen form of Bid Bond set out in this Schedule, and duly executed on behalf of the Surety and the Bidder.

3. CONTRACT REQUIREMENTS

If the Bidder is awarded the Contract the Bidder will, on the earlier of:

(i) fourteen (14) days from the date shown on the Award letter; and
(ii) three (3) days before commencement of the Work on the Site,

deliver to the Ministry at the address set out in the Award letter a Performance Bond and Labour and Material Payment Bond, each:

(iii) in the format and containing the terms and conditions set out in the Specimen form of Performance Bond and Labour and Material Payment Bond attached in the Schedule entitled “Contract Securities” to the Contract, and
(iv) in the amount of **fifty percent (50%)** of the Tender Price.

SPECIMEN

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS THAT **_____(CONTRACTOR NAME)_____** as Principal, hereinafter called the Principal, and **(SURETY/INSURANCE COMPANY NAME AND ADDRESS)_____**, a corporation created and existing under the laws of Canada and duly authorized to transact the business of Suretyship in Canada as Surety, hereinafter called the Surety, are held and firmly bound unto HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA AS REPRESENTED BY THE MINISTER OF TRANSPORTATION AND INFRASTRUCTURE, as Obligee, hereinafter called the Obligee, in the amount of ten percent (10%) of tender sum in lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a written tender to the Obligee in response to a tender call issued by the Obligee for **_____(DESCRIBE CONTRACT)** which tender call has a closing date of the _____day of _____ 20___(as this closing date may be amended from time to time by the Obligee by addenda).

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the aforesaid Principal shall have the tender accepted within sixty (60) days from the closing date of tender and the said Principal will within the time required, enter into a formal contract and give the specified security to secure the performance of the terms and conditions of the contract, then this obligation shall be null and void; otherwise the Principal and the Surety will pay unto the Obligee the difference in money between the amount of the bid of the said Principal and the amount for which the Obligee legally contracts with another party to perform the work if the latter amount be in excess of the former.

The Principal and Surety shall not be liable for a greater sum than the specified penalty of this Bond.

Any suit under this Bond must be instituted before the expiration of six months from the date of this Bond.

IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this Bond this
_____ day of _____ 20____

SIGNED and SEALED
In the presence of:

_____ SEAL
For the Principal

_____ SEAL
For the Surety Attorney-in-fact

SCHEDULE T3

CONTRACT SPECIFIC REFERENCE DOCUMENTS

Schedule T3 – Contract Specific Reference Documents

PROJECT NO. 22198-0001
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

The documents described and numbered in the following list comprise the Contract Specific Reference Documents for this Tender Document Package.

Where the list indicates that a document is an electronic copy, the document can be downloaded at:

www.th.gov.bc.ca/bchighways/contracts/suppdoc.htm

Document Number	Document Description	Check (✓) the Appropriate Column(s)	
		Electronic Copy	Hardcopy only
T3-1	Templated Cross Sections	✓	
T3-2	Geotechnical Investigation and Design, July 18, 2007– EBA Engineering Consultants	✓	
T3-3	Environmental Impact Assessment, March 10, 2009 – EBA Engineering Consultants	✓	
T3-4	Possible Construction Staging R2-699-801 to R2-699-806 SNC Lavalin	✓	

RETURN ADDRESS:

Bidder's Name: _____

Address: _____

_____

_____

Postage Required

FIRST CLASS MAIL

TENDER DOCUMENTS

TENDER FOR:

Project #: _____

Project Name: _____

_____

_____

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE

DO NOT OPEN

Ministry of Transportation and Infrastructure
Major Works

CONTRACT

PROJECT No. 22198-0001
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

Date of Contract:
Contractor:

MAJOR WORKS

ORDER OF CONTENTS
CONTRACT DOCUMENT PACKAGE

PROJECT No. 22198-0001
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

Cover Page – Contract Document Package

Order of Contents – Contract Document Package

Contract Cover Page

- Major Works General Conditions

Schedule 1 – Supplemental General Conditions and Glossary of Terms

- Glossary of Terms
- Supplemental General

Schedule 2 – Contract Securities

- INS-265 Contract Securities Requirements and Bond Specimens
- Specimen Performance Bond
- Specimen Labour and Material Payment Bond

Schedule 3 – Special Provisions and Appendices

Schedule 4 – Drawings

Schedule 5 – Time Schedule

Schedule 6 – Insurance

- INS-NOTICE - Notice to Contractors
- INS-152 - Insurance Specifications Major Works
- H0111 - Certificate of Insurance

Schedule 7 – Approximate Quantities and Unit Prices

Schedule 8 – Contract Addenda

Contractor	Ministry Official
Initials	Initials

CONTRACT

MAJOR WORKS GENERAL CONDITIONS

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Ministry of
Transportation
and Infrastructure

This Contract

BETWEEN:

HER MAJESTY THE QUEEN IN RIGHT OF
THE PROVINCE OF BRITISH COLUMBIA,
as represented by the Minister of Transportation and Infrastructure (the "Ministry")

OF THE FIRST PART

AND:

THE CONTRACTOR as identified on the execution page of this Contract

OF THE SECOND PART

WITNESSES THAT WHEREAS:

A. The Contractor has offered to perform the Work herein described at the price and on the terms herein set out; and

B. The Province has accepted the offer by Contractor to perform the Work at the price and on the terms herein set out;

Now therefore the Ministry and the Contractor agree as follows:

GC 1.00 ***GLOSSARY OF TERMS***

GC 1.01 A capitalized term shall have the meaning as set out in Schedule 1 – Supplemental General Conditions/Glossary of Terms.

GC 2.00 ***CONTRACTOR'S REPRESENTATIONS, WARRANTIES AND COVENANTS***

GC 2.01 The Contractor represents and warrants to the Ministry that, at the time of execution of the Contract and until the expiration of the Term:

(a) in the case of a limited company, it is a corporation within the meaning of the Business Corporations Act, duly organized and validly existing and legally entitled to carry on business in the Province of British Columbia and fully legally authorized, licensed and permitted to perform the Work and all necessary proceedings have been taken to authorize the execution and delivery of the Contract by the Contractor;

(b) the Contractor has no knowledge of any fact that materially and adversely affects or, so far as it can foresee, may materially and adversely affect its financial condition or its ability to fulfill its obligations under the Contract;

(c) the Contractor is not aware of any actual or contingent claims, actions, demands or suits which might adversely affect the Contractor's ability to carry out or complete the Work or any of its obligations under the Contract;

(d) the Contractor has filed all tax, corporate information, and other returns required to be filed by the laws of British Columbia and Canada, has complied with all workers' compensation legislation and other similar legislation to which it is subject, and has paid all taxes, fees, and assessments due by the Contractor under those laws as of the date of the Contract;

(e) the Contractor is not in breach of any law which might disqualify the Contractor from undertaking or completing the Work; and

(f) the Contractor holds all permits, licenses, consents, and authorities issued by any level of government or any agency of government, that are required by law to conduct its business.

GC 2.02 The representations and warranties contained in GC 2.01 are continuing representations or warranties and shall remain in effect until the completion of all of the Contractor's obligations under the Contract.

GC 2.03 The Contractor covenants to the Ministry that:

(a) it shall continue to file all tax, corporate information, and other returns required to be filed by the laws of British Columbia and Canada, and shall comply with all workers' compensation legislation and other similar legislation to which it is subject, and shall pay all taxes, fees, and assessments due by the Contractor under those laws;

(b) it shall pay punctually as they become due, all accounts, expenses, wages, salaries, taxes, rates, fees and assessments required to be paid by it on any of its undertakings;

(c) it shall ensure that the Work is carried out with all reasonable diligence and in particular, without limiting the foregoing, with due regard to public safety, and in accordance with the Contract;

(d) it shall comply with all laws, bylaws and regulations relating to the Work; and

(e) the Contract does not operate as a permit, license, approval or other statutory authority which the Contractor may be required to obtain from any competent government authority, branch or agency thereof, and the Contractor shall obtain, at its own expense, licenses, approvals or other statutory or regulatory authorizations which are applicable to the Work or the Contract, save and except any licenses and permits which are specified within the Contract to be obtained by the Ministry.

GC 2.04 The Contractor agrees that all representations, warranties, covenants, and agreements made in the Contract and all documents delivered by or on behalf of the Contractor to the Ministry are material and the Contractor acknowledges and agrees that the Ministry has relied on them, notwithstanding any prior or subsequent investigation by the Ministry.

GC 3.00 *INFORMATION PROVIDED BY THE MINISTRY*

GC 3.01 The geotechnical investigation datum and test results, but not the interpretations and analyses thereof, provided in the borehole and test pit logs contained within the Contract Document Package and the Contract Specific Reference Documents are a reasonable representation of the conditions encountered at the specific locations investigated on the dates of the investigations, and to that extent may be relied upon by the Contractor.

GC 3.02 The survey point datum, but not information derived or interpolated therefrom such as digital terrain models, contours and cross-sections, contained within the Contract Document Package and the Contract Specific Reference Documents are a reasonable representation of the individual points surveyed at the time of such survey, and to that extent may be relied upon by the Contractor.

GC 3.03 Except as provided by GC 3.01 and GC 3.02,

(a) the Ministry makes no representation and accepts no responsibility or liability, and

(b) the Contractor acknowledges and agrees that it has not relied upon any representation by the Ministry,

with respect to the completeness, accuracy or relevance of any information provided in, including by accessing the URL's or the Web sites set out in, the Contract Document Package, the Contract Specific Reference Documents or the General Reference Documents or any analysis or interpretation thereof, and any reliance thereon or use made thereof by the Contractor shall be at the sole risk of the Contractor.

GC 3.04 The Ministry does not provide any warranties whatsoever under this Contract.

GC 4.00 *TERM*

GC 4.01 The Term of the Contract shall commence on the date of the Award and shall end on the date on which all of the Contractor's obligations pursuant to GC 36.00 have been performed, save and except:

(a) provision of the indemnity pursuant to GC 14.00;

(b) maintenance of records pursuant to GC 64.00; and

(c) maintenance of the Bonds and insurance shall continue to remain in effect in accordance with the Contract.

GC 5.00 *MINISTRY APPOINTMENTS*

GC 5.01 The Ministry shall designate a Ministry Representative and a Ministry Manager and shall provide the Contractor with notice in writing as to such designations. The Ministry may change these designated personnel, and provide written notice of the change to the Contractor. The Ministry at its discretion may appoint one person as Ministry Manager and Ministry Representative.

GC 5.02 Notwithstanding any other provision of the Contract, the Ministry Representative and Ministry Manager, in carrying out their obligations under the Contract, may obtain and rely upon any technical, managerial, and other input and direction from the Ministry or any third party to aid them in carrying out such obligations.

GC 5.03 The Ministry Representative and Ministry Manager may delegate any of their duties and responsibilities under the Contract, and shall notify the Contractor in writing of any such delegation.

GC 6.00 ***EMPLOYEES OF THE CONTRACTOR***

GC 6.01 The Contractor shall provide and maintain at all times sufficient personnel, including without limitation, competent supervisory personnel in place and available to it to fully perform and complete the Work in accordance with the Contract.

GC 6.02 Prior to commencing any Work on the Site, the Contractor shall notify the Ministry Representative in writing of the appointment of:

(a) a Contractor Manager with full authority, as agent of the Contractor, to act on behalf of and legally bind the Contractor in connection with the Work and the Contract; and

(b) a Contractor Representative with full authority to supervise the Work, who shall be directly available to the Ministry Representative during all active periods of Work.

GC 6.03 The Contractor may, at its discretion, appoint one person as both Contractor Manager and Contractor Representative.

GC 6.04 In the event of any change(s) to these designated personnel, the Contractor shall promptly provide written notice to the Ministry Representative.

GC 6.05 The Contractor Representative and Contractor Manager may delegate any of their duties and responsibilities under the Contract, and shall notify in writing the Ministry Representative of any such delegation.

GC 6.06 The Contractor shall promptly comply with any written request by the Ministry Representative for full disclosure of the relevant knowledge, skills, prior experience, and professional standing or technical or trade certification of any person appointed, employed, or used by the Contractor in carrying out any part of the Work.

GC 6.07 If, at any time, the Ministry Representative does not consider any person appointed to discharge any of the functions of the Contractor Representative or the Contractor Manager to be acceptable, the Contractor shall forthwith replace such person with a person acceptable to the Ministry and notify the Ministry of the appointment of such replacement.

GC 7.00 ***LEGAL RELATIONSHIP***

GC 7.01 The Contractor is an independent contractor and not the servant, employee, partner, or agent of the Ministry.

GC 7.02 The Contractor shall not commit the Ministry to the payment of any money to any person.

GC 7.03 No partnership, joint venture, or agency involving the Ministry is created by the Contract or by any action of the parties under the Contract.

GC 7.04 All personnel employed by the Contractor to carry out the Work are at all times the employees of the Contractor and not of the Ministry. The Contractor is solely responsible for any and all labour relations and employment obligations with respect to the personnel including, without limitation, all matters arising, directly or indirectly from the relationship of employer and employee between the Contractor and the personnel employed by the Contractor.

GC 8.00 *ASSIGNMENT AND SUBCONTRACTING*

GC 8.01 The Contractor shall not, without the prior written consent of the Ministry, assign, either directly or indirectly, any right or obligation of the Contractor under the Contract to any person.

GC 8.02 The Contractor shall not, without the prior written consent of the Ministry, subcontract any obligation of the Contractor under the Contract to any person.

GC 8.03 The total value of subcontracted Work shall not exceed two-thirds (2/3) of the total Tender Price. Work involving off-Site fabrication and off-Site production of materials and trucking necessary to carry out the Work shall not be included in the calculation of the total value of subcontracted Work.

GC 8.04 The Contractor shall use:

(a) a purchase order agreement in form and content acceptable to the Ministry for the purchasing of materials; and

(b) a hired equipment agreement in form and content acceptable to the Ministry for the hiring of equipment.

GC 8.05 The Contractor shall provide a complete copy of every Subcontract having a value of twenty-five thousand dollars ($25,000) or more to the Ministry Representative severing the numeric portion of the pricing information only at the Contractor's option. All Subcontracts shall be substantially in the form of the latest edition of:

(a) the B.C. Road Builders and Heavy Construction Association Standard Form of Construction Contract Between Contractor and Subcontractor; or

(b) the Canadian Standard Construction Subcontract (Long Version) CCA L-1, or (Short Version) CCA S-1; or

(c) the BCCA 200 Construction Subcontract.

GC 8.06 The appointment of any Subcontractors by the Contractor does not relieve the Contractor of its responsibility hereunder or for the quality of work, materials and services provided by it.

GC 8.07 The Contractor is wholly responsible for the acts and omissions of the Subcontractors and persons employed by the Contractor and the Subcontractors. No Subcontract entered into by the Contractor imposes any obligation or liability upon the Ministry to the Subcontractor or any of the Subcontractor's employees.

GC 8.08 The Contractor shall make copies of the Labour and Material Payment Bond available to each Subcontractor and shall post and maintain copies of the Labour and Material Payment Bond at the Site.

GC 8.09 The Contractor shall ensure every Subcontractor observes the terms of the Contract so far as they apply to that portion of the Work to be performed by that Subcontractor.

GC 8.10 Nothing in the Contract creates any contractual relationship between the Ministry and a Subcontractor.

GC 9.00 *SUBCONTRACTOR AND SUPPLIER DISPUTES*

GC 9.01 The Contractor shall ensure every Subcontract, purchase order agreement, and hired equipment agreement contains the following provisions:

(a) the parties to any such Subcontract, purchase order agreement and/or hired equipment agreement shall immediately notify the Contractor in writing of any dispute which remains unresolved for a period of thirty (30) days or more;

(b) the parties to any such Subcontract, purchase order agreement and/or hired equipment agreement shall negotiate in good faith to resolve all disputes by providing frank, candid and timely disclosures of relevant information and documentation in their possession;

(c) all disputes which have not been resolved within forty-five (45) days after the delivery of the notice to the Contractor shall be referred to and finally resolved by a single Arbitrator following the rules of the British Columbia International Commercial Arbitration Centre for the conduct of domestic commercial arbitration; and

(d) the parties to any such Subcontract, purchase order agreement and/or hired equipment agreement agree to conduct the arbitration in an expeditious and efficient manner in accordance with the time lines established in the rules.

GC 10.00 ***DESIGNATED SUBCONTRACTOR(S) AND DESIGNATED SUPPLIER(S)***

GC 10.01 Prior to a Designated Subcontractor or Designated Supplier performing any portion of the Work at the Site, the Contractor shall deliver to the Ministry Representative a copy of each Designated Subcontractor's or Designated Supplier's Subcontract showing:

(a) that a written Subcontract as described in GC 8.05 exists;

(b) the total value of the Subcontract; and

(c) the scope of the Work being subcontracted.

GC 10.02 The Contractor shall ensure that each Subcontract with a Designated Subcontractor or Designated Supplier contains a requirement that the Designated Subcontractor or Designated Supplier provide a performance bond and labour and material payment bond each in the amount as specified in GC 10.04 as a part of that Subcontract.

GC 10.03 Prior to the Contractor allowing a Designated Subcontractor or Designated Supplier to perform any Work, the Contractor shall ensure that:

(a) a performance bond and labour and material payment bond which meet the requirements of GC 10.04 are in place;

(b) copies of the bonds referenced in GC 10.03(a) are provided to the Ministry Representative; and

(c) a copy of the performance bond, and the labour and material payment bond is securely and visibly posted at the Site.

GC 10.04 The Contractor shall ensure that the performance bond, and labour and material payment bond referenced in GC 10.03(a) for each Designated Subcontractor or Designated Supplier:

(a) is in the amount not less than fifty percent (50%) of such applicable Subcontract;

(b) is maintained in force during the term of the Subcontract;

(c) is validly executed by both the surety and the Designated Subcontractor or Designated Supplier;

(d) shows the business address of the surety for filing of claims and delivery of notices; and

(e) remains posted at the Site during the term of the Subcontract.

GC 10.05 If the Ministry becomes aware that a Designated Subcontractor or Designated Supplier is performing a Work activity but such Designated Subcontractor or Designated Supplier is not in compliance with GC 10.03 or GC 10.04, the Ministry Representative may issue a Stop Work Order for that Work activity. The Stop Work Order shall remain in effect until the Contractor brings itself into compliance with GC 10.03 and GC 10.04. The Stop Work Order shall not be treated as a Change to Work for the purposes of this Contract.

GC 10.06 The Contractor shall not be entitled to any compensation including without limitation an Extension of Time or compensation for Reimbursable Delay in connection with or as a result of a Stop Work Order under GC 10.05.

GC 10.07 The Contractor shall provide written notice to the Ministry Representative for:

(a) any change to or addition of a Designated Subcontractor or Designated Supplier; or

(b) any change to the scope of work for a Designated Subcontractor or Designated Supplier.

GC 11.00 ***CONDITIONS OF EQUIPMENT***

GC 11.01 All trucks and other equipment rented by the Contractor for use on the Work shall, as far as practicable, be obtained from local residents.

GC 11.02 To qualify under GC 11.01, equipment shall:

(a) where the Contractor has a collective agreement with its employees, have an operator who is a member of or has the permission of the appropriate union bargaining unit;

(b) fulfill, in the opinion of the Ministry Representative, the specialized needs as may be required to reasonably complete the Work of the Contractor; and

(c) be registered on the Ministry's hired equipment list for the geographic area encompassing the Site, or on the Ministry's hired equipment list for an adjacent area.

GC 12.00 ***BONDS AND INSURANCE***

GC 12.01 The Contractor shall comply with the requirements in Schedule 2 – Contract Securities and maintain the Bonds in force and effect until the Actual Completion Date and any longer period specified in Schedule 2 – Contract Securities.

GC 12.02 The Contractor shall comply with the requirements in Schedule 6 – Insurance and maintain the insurance in force and effect until the Actual Completion Date and any longer period specified in Schedule 6 – Insurance.

GC 12.03 If the Surety notifies either party that the Bonds are or are going to be terminated or cancelled for any reason whatsoever, the Contractor shall obtain and deliver to the Ministry forthwith upon receipt of such notification valid Bonds effective from the date of termination or cancellation of the Bonds, which comply with Schedule 2 – Contract Securities .

GC 12.04 The delivery of valid replacement Bonds by the Contractor under GC 12.03 is in addition to and does not preclude the Ministry from exercising any right, power or remedy available to the Ministry under the Contract, at law or in equity in connection with the cancellation or termination of the Bonds.

GC 13.00 ***THIRD PARTY CONSENTS TO CHANGES***

GC 13.01 The Ministry may require the Contractor to obtain the written consent of the Surety to any Work Order or Supplemental Agreement.

GC 13.02 The Contractor shall notify its insurer of any event or circumstances applicable to the insurance coverages stipulated in Schedule 6 - Insurance and of any Change to Work or Stop Work Order that could result in the unavailability or denial of insurance coverage in the absence of such notice. If any additional or amended insurance coverage is required pursuant to the notice then the Contractor shall obtain and maintain any such additional or amended insurance coverage.

GC 13.03 If an insurer or a Surety notifies either party that they decline coverage and consent for any Work Order or Supplemental Agreement, the Contractor shall obtain and provide the Ministry with valid additional Bonds or insurance, covering the Work specified in the Work Order, which comply with the Contract.

GC 14.00 ***INDEMNITY***

GC 14.01 The Contractor shall assume the defence of and shall indemnify and save harmless the Ministry, its agents and employees, from and against all claims, liabilities, demands, losses, damages, costs and expenses, fines, penalties, assessments and levies made against or incurred, suffered or sustained by the Ministry, its agents and employees, or any of them at any time or times before or after the completion of the Term or earlier termination of the Contract where the same or any of them are based upon or arise out of or from anything done or omitted to be done by the Contractor, its employees, agents or Subcontractors, in connection with the Contract or the Work, which indemnity shall survive the completion of the Term or earlier termination of the Contract.

GC 14.02 Notwithstanding the obligation of the Contractor to assume the defence of any claims under GC 14.01, the Ministry may retain its own counsel to represent it and the Contractor shall reimburse the Ministry for the cost of any such counsel.

GC 15.00 ***NOTICE OF LIABILITY AND PROPERTY INSURANCE CLAIMS***

GC 15.01 In addition to any obligation the Contractor may have to notify any insurer or insurers or any regulatory agency, the Contractor shall give written notice to the Ministry at the address provided in GC 15.02 or such other address as the Ministry may from time to time direct in writing:

(a) of any accident or occurrence, enclosing pertinent details of the accident or occurrence; within seven (7) days from the date on which the accident or occurrence arises or occurs; and

(b) within fifteen (15) days following final disposition of any such accident or occurrence, enclosing pertinent details.

GC 15.02 The address for notices required by GC 15.01 is:

The Manager, Claims
Ministry of Transportation and Infrastructure
4C - 940 Blanshard Street
PO Box 9850 Stn Prov Govt
Victoria, B.C. V8W 9T5.

GC 16.00 ***COMMENCEMENT OF THE WORK***

GC 16.01 Before commencing the Work the Contractor shall:

(a) purchase and deliver the Bonds to the Ministry in accordance with the requirements in Schedule 2 – Contract Securities;

(b) file with the Ministry originals or certified copies of all insurance policies and necessary endorsements to comply with the requirements contained in Schedule - 6 - Insurance;

(c) submit a preliminary Construction Schedule to the Ministry Representative showing:

(i) compliance with all Milestone Dates and the Completion Date;

(ii) anticipated timing and duration of all major work elements;

(iii) major traffic detours and disruptions;

(iv) submission dates for all quality, traffic, and environmental management plans;

(v) Environmental Windows and approval periods; and

(vi) details of all events anticipated to occur within sixty (60) days of commencing Work on Site; and

(d) provide the Ministry Representative with written confirmation of the names, addresses, and telephone numbers of all persons required to be appointed by the Contractor pursuant to the Contract.

GC 16.02 The Contractor shall not commence work on the Site until it has:

(a) provided not less than three (3) days prior written notice of intention to commence Work to the Ministry Representative; and

(b) obtained written authorization to commence Work on the Site from the Ministry Representative.

GC 17.00 ***PROSECUTION OF THE WORK***

GC 17.01 Unless otherwise specified in the Special Provisions or by a Work Order, the Contractor may prosecute the Work at the times and seasons, in the order of procedure, and in the manner and method the Contractor considers to be most conducive to economy of construction.

GC 18.00 ***STANDARD OF WORK***

GC 18.01 The Standard Specifications form a part of the Contract and the Contractor shall comply with the requirements of the Standard Specifications and all Schedules to the Contract in the performance of the Work.

GC 18.02 The Contractor shall ensure that all finished surfaces conform to the lines, grades, typical cross-sections, and dimensions as specified in the Contract.

GC 19.00 ***ERRORS OR OMISSIONS***

GC 19.01 The Contractor shall not be entitled to any additional compensation or Extension of Time because of any error, inconsistency or omission in the Contract which was, or ought to have been, apparent or known to the Contractor at the time of the Award. The Contractor shall forthwith bring to the attention of the Ministry Representative any such error, inconsistency or omission immediately upon it coming to the Contractor's attention.

GC 19.02 If the Contractor discovers any error, inconsistency or omission in the Contract which shall, or is likely to adversely affect the Work, the Construction Schedule or the Contract Price, the Contractor shall, within three (3) days of detecting the error, inconsistency or omission, report any such error, inconsistency or omission to the Ministry Representative and shall not proceed with any Work affected until the Ministry has determined how the error, inconsistency or omission should be corrected.

GC 20.00 ***INSPECTION OF THE WORK***

GC 20.01 The Contractor shall provide access to the Work and to the Site, to all persons designated by the Ministry Representative.

GC 20.02 The Ministry Representative may at any time or times inspect the Work. The Contractor shall provide the Ministry Representative with access to the Work at all times and shall provide all information and assistance required by the Ministry Representative.

GC 20.03 The Contractor shall comply forthwith, at the Contractor’s expense, with any order of the Ministry Representative to remove or replace any Unauthorized Work or Unacceptable Work.

GC 20.04 If the Ministry Representative deems any portion of the Work to be Unauthorized Work or Unacceptable Work, the Ministry Representative may issue a Stop Work Order covering that portion of the Work and any or all similar Work. The Stop Work Order shall not be treated as a Change to Work for the purposes of this Contract.

GC 20.05 An inspection by the Ministry Representative does not relieve the Contractor from any obligation to perform the Work in accordance with the requirements of the Contract.

GC 20.06 The Contractor shall do all things necessary to satisfy the Ministry Representative that the Work is being completed in accordance with the Contract, including, without limitation, removing or uncovering parts of the Work, and restoring those parts to conform to the Contract.

GC 20.07 If the uncovered Work is found acceptable to the Ministry Representative, the Contractor shall be compensated for the removal, uncovering, and restoration of that portion of the Work on a Force Account Basis.

GC 21.00 ***SAMPLES AND TESTING***

GC 21.01 The Contractor shall co-operate with the Ministry Representative in sampling, testing and inspecting materials that are used or are intended to be used in the Work.

GC 21.02 Unless the Contract contains a contrary provision, sampling, testing and inspecting of materials by the Ministry Representative shall be done at the expense of the Ministry.

GC 21.03 If requested, the Contractor shall obtain and provide to the Ministry Representative a complete written statement of the origin, composition, and manufacture of any materials supplied by the Contractor that are used or are intended to be used in the Work.

GC 22.00 ***CO-OPERATION OF THE CONTRACTOR***

GC 22.01 The Ministry may perform, or retain or permit others to perform other work on or near the Site and may permit public utility companies and others to do work on or near the Site during the progress of the Work. The Contractor shall conduct and schedule the Work and co-operate with those other parties so as to cause as little interference as possible with any such other work being carried out.

GC 23.00 ***UTILITIES***

GC 23.01 The Ministry shall be responsible for payment for the relocation of the infrastructure of utility companies or municipalities from their existing locations to their final locations, as well as to any interim locations identified on the Drawings or in the Special Provisions. Such infrastructure includes, without limitation, pole lines, conduits, gas pipes, oil pipes, water pipes, sewers and tile lines.

GC 23.02 Any interim Utility Relocation, where such moves are not indicated on the Drawings or in the Special Provisions, required to suit the design or the Contractor's work plan are to the Contractor's account.

GC 23.03 The Contractor shall schedule and co-ordinate the Work with respect to any Utility Relocation with the utility company or municipality.

GC 23.04 The Contractor shall preserve and protect the infrastructure affected by the Utility Relocation and shall assume full responsibility for all damage caused by the Contractor.

GC 23.05 The Ministry makes no representation or warranty and accepts no responsibility for the completeness, accuracy or relevance of any such information with respect to the infrastructure of the utility companies or municipalities, including without limitation, any underground utility information, or any analysis or interpretation thereof, and any reliance thereon or any use made thereof by the Contractor is at the sole risk of the Contractor.

GC 23.06 The Contractor acknowledges and agrees that it has not relied upon any representation or warranty of the Ministry with respect to the accuracy or completeness of any information with respect to the underground utility information, including, without limitation, the infrastructure of the utility companies, or municipalities.

GC 24.00 ***CONTAMINANTS***

GC 24.01 Before the Contractor commences Work, the Ministry shall:

(a) take all reasonable steps to determine whether any Contaminants are present at the Site;

(b) provide the Contractor with a written list of any such Contaminants which the Ministry determines at that time to be present at the Site; and

(c) be responsible for disposing of, storing, or otherwise remediating or rendering harmless any Contaminants present at the Site as is determined to be necessary by the Ministry, unless such Work is designated in the Contract to be performed by the Contractor.

GC 24.02 The Ministry and the Contractor shall take all reasonable steps, including stopping Work if necessary, to ensure that no person suffers injury, sickness, or death and that no property is injured or destroyed as a result of exposure to, or the presence of Contaminants on the Site.

GC 24.03 If the Contractor after commencing Work:

(a) encounters Contaminants at the Site beyond those designated as part of the Work; or

(b) has reasonable grounds to believe that Contaminants are present at the Site, which were not discovered or disclosed by the Ministry, as required under GC 24.01(b), or which were disclosed but have not been dealt with as required under GC 24.01(c);

the Contractor shall immediately provide Notice to the Ministry Representative.

GC 24.04 If the Contractor is delayed in performing the Work or incurs additional costs as a result of dealing with Contaminants which are not part of the Work, the Contractor may provide a Notice of a Reimbursable Delay, a request for an Extension of Time, and claims for costs in accordance with GC 38.00.

GC 25.00 ***PROTECTION OF SITE AND WORK DURING CONSTRUCTION***

GC 25.01 The Contractor shall protect the Site and the Work from any damage or injury for the period from the Contractor's effective date of occupancy of the Site until the date of Substantial Completion.

GC 25.02 The Contractor shall repair or restore, at its expense, any public or private property which the Contractor, or its employees, Subcontractors, agents, have damaged directly or indirectly in connection with the execution of the Work, to a condition equal to or better than what existed prior to the damage, or it shall compensate the owner in full for the damage caused.

GC 25.03 Where, pursuant to GC 25.02, the repair or restoration of any damage necessitates compliance with current standards, codes or laws, the Contractor shall, at its expense, perform all necessary work inclusive of any betterment necessary to comply with such current standards, codes or laws.

GC 26.00 ***MAINTENANCE OF WORK DURING CONSTRUCTION***

GC 26.01 The Contractor shall maintain all Disturbed Features in accordance with the Maintenance Specifications and to the satisfaction of the Ministry Representative, save and except that for all roadways open to the public, the routine winter maintenance services described in chapter 3 of the Maintenance Standards Manual shall be performed by, and at the cost of the road and bridge maintenance contractor engaged by the Ministry.

GC 26.02 Notwithstanding GC 26.01, where any roadway is a Disturbed Feature and has a surface condition that shall, in the opinion of the Ministry Representative, cost more to maintain than the surface as it existed at the time of the Award, the Contractor shall be responsible for the routine winter maintenance services or, at the option of the Ministry Representative, for any additional cost of maintenance, as determined by the Ministry Representative, resulting from the actual surface conditions.

GC 26.03 The requirements of GC 26.02 shall be met if the Contractor arranges directly with and pays the Ministry road and bridge maintenance contractor to perform all additional maintenance, and provides documentary evidence satisfactory to the Ministry Representative that such an arrangement is in place.

GC 26.04 If the Ministry Representative issues a Stop Work Order or authorizes a State of Suspension, the Contractor shall continue to provide maintenance in accordance with GC 26.00 unless otherwise instructed in the Work Order.

GC 27.00 *EMERGENCY WORK*

GC 27.01 The Ministry Representative may designate Emergency Work.

GC 27.02 Notwithstanding any other provisions in the Contract, the Ministry Representative may direct the Contractor to use its labour and equipment in any manner and to perform any work the Ministry Representative considers to be Emergency Work and the Contractor shall promptly perform any Emergency Work.

GC 27.03 Where in the opinion of the Ministry Representative the Emergency Work falls within the Contractor's responsibilities under the Contract, or where such Emergency Work arose as a result of:

(a) an event within the control of the Contractor; or

(b) any fault, failure, negligence, action or malfeasance on the part of the Contractor,

then the cost of the Emergency Work shall be to the Contractor's account. In all other cases payment for Emergency Work shall be made in accordance with GC 38.00.

GC 28.00 *WORK ORDERS*

GC 28.01 The Ministry may from time to time issue one or more Work Orders to require the Contractor to carry out or refrain from carrying out Work or, without limitation, to add or delete Work, alter the Drawings, Special Provisions or Standard Specifications, accelerate or delay Work, stop or resume Work, and remedy defects or deficiencies in the Work.

GC 28.02 The Contractor shall diligently comply with every Work Order.

GC 29.00 *STOP WORK ORDER*

GC 29.01 A Stop Work Order may be issued to:

(a) require the Contractor to cease work on all or any portion of the Work; or

(b) initiate a State of Suspension.

GC 29.02 The Contractor shall immediately comply with a Stop Work Order, and shall not resume the prohibited Work until:

(a) the Contractor has remedied any non-compliance on its part with respect to the Contract;

(b) the Contractor has removed or repaired any Unauthorized Work and Unacceptable Work and demonstrated to the Ministry Representative's satisfaction that the Contractor's materials and procedures have been modified as necessary to ensure that further Work meets the requirements of the Contract; and

(c) the Ministry Representative has issued a Resume Work Order.

GC 29.03 Notwithstanding a Stop Work Order, the Contractor shall for the duration of any Stop Work Order provide all services necessary to maintain and protect the Site and the Work, and protect the public and any other persons on Site.

GC 29.04 The Contractor shall resume Work on the date specified by the Ministry Representative in a Resume Work Order.

GC 29.05 No Stop Work Order shall relieve the Contractor of any obligation of the Contractor under the Contract.

GC 29.06 A Stop Work Order shall not be treated as a Change to Work for the purposes of this Contract.

GC 30.00 ***SEASONAL SHUT-DOWN***

GC 30.01 If the Work continues into the late fall or winter, or other such period as may be acceptable to the Ministry Representative, and the weather conditions are beginning to deteriorate, or have deteriorated, to the extent that the Contractor's performance of the Work may:

(a) fail to meet the quality requirements and specifications of the Contract; or

(b) pose an unwarranted risk to public safety;

the Contractor may submit a written request to the Ministry Representative for a State of Suspension.

GC 30.02 In response to a request from the Contractor pursuant to GC 30.01, or where the Ministry Representative believes that the anticipated weather conditions shall effectively prevent the Contractor from meeting the quality requirements and specifications of the Contract or believes that continued Work may pose an unwarranted risk to public safety, the Ministry Representative may issue a Stop Work Order to invoke a State of Suspension for such period as the Ministry Representative deems appropriate.

GC 30.03 A State of Suspension shall only be granted pursuant to GC 30.02 where the Ministry Representative anticipates that the weather may be poor for a period of twenty-eight (28) days or longer.

GC 30.04 Where the Ministry Representative issues a Stop Work Order to invoke a State of Suspension pursuant to GC 30.02, the Contractor shall immediately:

(a) suspend Work, except such Work as necessary to protect the Work and the Site for the period of the State of Suspension;

(b) bring the Site, all traffic control and safety measures, and all Disturbed Features to a condition satisfactory to the Ministry Representative;

(c) arrange and pay for monitoring and response to address any routine maintenance services, except routine winter maintenance services, that are required on the Site for the duration of the State of Suspension, all in accordance with the terms of the Maintenance Specifications; and

(d) comply with any additional and/or revised requirements or constraints that the Ministry Representative may deem appropriate under the conditions.

GC 30.05 During a State of Suspension, the Contractor shall not perform any Work other than that:

(a) stated on the Stop Work Order; and

(b) arising during the State of Suspension that is deemed by the Ministry Representative to have resulted from the incomplete Work or any Unacceptable Work.

GC 30.06 Notwithstanding any other provision of the Contract, a State of Suspension shall not entitle the Contractor to an Extension of Time or any other compensation.

GC 30.07 Unless the Ministry Representative deems otherwise, any payment of consideration under GC 33.02 that would otherwise accrue during the State of Suspension shall be waived.

GC 31.00 ***RESUME WORK ORDERS AND COMPENSATION***

GC 31.01 The Contractor shall resume Work and the full responsibilities under the Contract on the date specified by the Ministry Representative in a Resume Work Order.

GC 31.02 The Contractor may claim compensation for impacts where such impacts resulted solely from a Stop Work Order in accordance with and subject to GC 42.00.

GC 32.00 ***PROVISIONAL SUM AND CONDITIONAL ITEMS***

GC 32.01 The Contractor shall not proceed with any Work with respect to a Provisional Sum Item or a Conditional Item, nor be entitled to any payment for such Work, until the Ministry Representative has provided written authorization for the Contractor to proceed with such Work with respect to that Provisional Sum Item or Conditional Item, as the case may be.

GC 33.00 ***COMPLIANCE WITH THE TIME SCHEDULE***

GC 33.01 The Contractor shall complete the Work in accordance with Schedule 5 - Time Schedule and any amendment thereto.

GC 33.02 If the Contractor fails to achieve completion of any specified portion of the Work on or before the corresponding Milestone Date or the Completion Date, then without limiting any other remedy available to the Ministry under the Contract, the Ministry Representative may elect to proceed with one or more of the following:

(a) terminate the Contract;

(b) where the Contractor has failed to achieve completion of the corresponding Work on or before a Milestone Date, require the Contractor to pay consideration in the amount specified in the Supplemental General Conditions as consideration for late completion for each day or part thereof between the specified Milestone Date and the actual date upon which the corresponding portion of the Work is completed;

(c) where the Contractor has failed to complete the Work on or before the Completion Date, require the Contractor to pay consideration in the amount specified in the table below as consideration for late completion for each day or part thereof between the specified Completion Date and the Actual Completion Date;

Tender Price		**Amount Payable by the Contractor to the Ministry Per day**
Greater than	**But equal to or less than**	
$0	$1,000,000	$1,000
$1,000,000	$10,000,000	$2,500
$10,000,000	Unlimited	$3,500

and

(d) extend the Completion Date or Milestone Date, as the case may be, for such period as the Ministry Representative determines, without requiring the Contractor to pay any consideration during such extended time.

GC 33.03 Should the consideration periods associated with GC 33.02(b) and GC 33.02(c) overlap, the Ministry shall waive the lesser of the two daily amounts for the overlapping days.

GC 33.04 If the Ministry elects to extend a Milestone Date or the Completion Date pursuant to GC 33.02(d), and the Contractor does not complete the Work on or before such extended Milestone Date or Completion Date then, upon written notice by the Ministry Representative to the Contractor, the Ministry may avail itself of any remedy available to the Ministry under the Contract, including without limitation one or more of the remedies specified in GC 33.02.

GC 33.05 It is a condition of any extension to the Milestone Date or the Completion Date pursuant to GC 33.02(d) that the Contractor shall proceed diligently to complete the Work.

GC 33.06 Any payment to be made by the Contractor pursuant to GC 33.00 relates directly to the performance by the Contractor of a condition, covenant, or promise in the Contract and shall not be construed by the parties as punitive but as importing a reasonable measure by mutual consent of the minimum damages caused to the Ministry by the Contractor's failure or neglect.

GC 34.00 *SUBSTANTIAL COMPLETION*

GC 34.01 The Contractor may submit a written request for a Letter of Substantial Completion to the Ministry Representative.

GC 34.02 Substantial Completion occurs when the Contractor has requested a letter of Substantial Completion pursuant to GC 34.01, and in the opinion of the Ministry Representative, all of the following conditions have been met:

(a) the facility for which the Work is being done is in, or suitable for, full use by the public and is free of any deficiencies affecting the safety of motorists, pedestrians, or workers;

(b) the value of the remaining Work is less than two percent (2%) of the Contract Price; and

(c) the Contractor is not in breach of any provision of the Contract, including the requirement of completion of the Work by the Completion Date.

GC 34.03 If the Contractor requests a Letter of Substantial Completion pursuant to GC 34.01 the Ministry Representative may inspect the Work and, if in the opinion of the Ministry Representative, Substantial Completion has occurred, issue a Letter of Substantial Completion. Only one Letter of Substantial Completion may be issued pursuant to the Contract.

GC 35.00 *TOTAL COMPLETION*

GC 35.01 Total completion occurs when the Ministry Representative issues a Completion Certificate with respect to the Work.

GC 35.02 The Contractor may submit a written request for a Completion Certificate to the Ministry Representative.

GC 35.03 The Contractor shall be entitled to a Completion Certificate when:

(a) the Contractor has completed all Work, including correction of all deficiencies in that Work identified in GC 35.03(b) to (g), but excluding correction of defects in the Work that appear during the warranty period, to the satisfaction of the Ministry Representative;

(b) the Site and any borrow pits, gravel pits, or other property occupied by the Contractor in performing the Work are clean of rubbish, equipment, surplus materials, and temporary structures and the Site is left in a neat, tidy, and presentable condition;

(c) after completion of any gravel, base, or surfacing operations, the roadway, ditches, slopes and culverts are cleaned of accumulations and reconditioned and maintained;

(d) surplus or waste aggregates at gravel deposits are piled or disposed of, as directed by the Ministry Representative;

(e) any areas from which material is removed or where stripping takes place are left in a condition suitable for routine maintenance in accordance with the Maintenance Specifications Manual by the road and bridge maintenance contractor engaged by the Ministry;

(f) waste asphalt oil, crude oil, and any Contaminants deposited or left on, in or underneath the Site by the Contractor, the Subcontractors, or the Contractor or Subcontractor's respective agents or employees, are disposed of in accordance with applicable laws and regulations and with approval of the Ministry Representative; and

(g) the Contractor has, where applicable, submitted to the Ministry Representative such documentation as is required by the Contract including, without limitation, as-built plans and a statistical summary of health and safety records as required by the Standard Specifications.

GC 35.04 If the Contractor requests a Completion Certificate, but the Work is not completely acceptable to the Ministry, the Ministry Representative shall advise the Contractor, in writing, of particular defects in the Work preventing issuance of the Completion Certificate and the Contractor shall forthwith rectify the defects to the satisfaction of the Ministry Representative.

GC 36.00 ***WARRANTY***

GC 36.01 Notwithstanding any other provision of the Contract or the expiry or termination of the Contract, the Contractor warrants to the Ministry, for a period of one (1) year commencing on the earliest of the date of Substantial Completion, the Actual Completion Date, or any earlier termination date, that:

(a) all Work is free from any defect in materials and workmanship; and

(b) the Contractor shall, upon notification by the Ministry, promptly and diligently remedy any defect, to the satisfaction of the Ministry.

GC 36.02 The warranty period for the whole or a portion of the Work may be extended by a Supplemental Agreement when the Ministry approves an amendment or specific change to the requirements set out in the Contract.

GC 36.03 For any Work incomplete on the date of Substantial Completion, upon Notice from the Ministry Representative itemising the portion of incomplete Work and requiring a full warranty, the Contractor warrants to the Ministry for a period of one (1) year, commencing on the Actual Completion Date of the Work, for all such Work identified in the Notice that:

(a) it is free from any defect in materials and workmanship; and

(b) the Contractor shall, upon notification by the Ministry, promptly and diligently remedy any defect to the satisfaction of the Ministry.

GC 36.04 If a significant portion of the Work is complete and in use by the public well before the Completion Date, upon receipt of a written request from the Contractor specifying the portion of the Work which has been completed, the Ministry Representative may, by providing written confirmation to the Contractor, allow the warranty period to commence for the completed portion of the Work on the date that portion is put into use by the public.

GC 36.05 Unless the Special Provisions indicate otherwise, the Ministry shall consider a maximum of one (1) request for an early warranty start date in response to GC 36.04.

GC 37.00 ***NOTICES***

GC 37.01 Except as provided in GC 37.02, any Notice shall be in writing.

GC 37.02 In addition to the Notice required by GC 37.01 and GC 37.03, a verbal Notice shall be given as soon as the party giving the Notice becomes aware of the event or circumstances which give rise to the Notice being given.

GC 37.03 A Notice shall include all of the following information with respect to the event or circumstances giving rise to the Notice being given:

(a) a full and detailed description of the event or circumstances;

(b) the date upon which or the dates during which the event or circumstances is said to have occurred;

(c) the date upon which the event or circumstances first came to the attention of the party giving Notice;

(d) the claimed impact of the event or circumstances on the party giving Notice;

(e) the clauses of the Contract relied upon by the party giving Notice; and

(f) any proposed resolution.

GC 37.04 Compensation for any claim made in a Notice shall be limited to unavoidable costs and time impacts arising directly from the event or circumstances reported.

GC 37.05 In the event of the Contractor's failure to provide Notice within the Notice Period, the Contractor shall not be entitled to any compensation for unavoidable costs or time impacts unless the Ministry determines that it has not been prejudiced in its ability to assess the Contractor's claim by reason of the Contractor's failure.

GC 37.06 Any Notice Period in the Contract commences on the earlier of the date that the Contractor:

(a) first became aware of the event or circumstances giving rise to the Notice; and

(b) ought reasonably to have been aware of the event or circumstances giving rise to the Notice.

GC 37.07 The Notice Period for any Notice for which there is no specific Notice Period, shall be seven (7) days.

GC 37.08 Upon delivery of a Notice the parties shall make reasonable efforts to resolve the issue presented by the Notice in accordance with the terms of GC 58.00.

GC 38.00 ***CHANGES TO WORK***

GC 38.01 All claims for impacts arising from any Change to Work shall be in accordance with GC 38.00.

GC 38.02 If a provision of the Contract assigns the risk of a Change to Work, then all impacts arising from that Change to Work shall be for the account of the party to whom the risk is assigned.

GC 38.03 The Ministry may make a Change to Work by issuing a Work Order.

GC 38.04 The Contractor may request a Change to Work by giving Notice to the Ministry Representative.

GC 38.05 If a Work Order or Change to Work constitutes a Reimbursable Delay the Ministry shall pay the Contractor in accordance with GC 50.00.

GC 38.06 If a Reimbursable Delay results in a change in the quantity or nature of the Work, the Contractor may also request consideration under GC 38.07 or GC 38.08, whichever may be appropriate.

GC 38.07 If a Change to Work or Work Order increases, decreases or eliminates the quantity of Work covered by an Item, or if in the opinion of the Ministry Representative the Work resulting from the change is of similar nature to Work described for another existing Item:

(a) the Contractor shall perform the changed Work in accordance with the Contract; and

(b) the Ministry shall pay the Contractor:

(i) in accordance with the provisions of GC 40.00;

(ii) the Unit Price for the final quantity of Work, subject to the provisions of GC 39.00; or

(iii) in respect of an additional Lump Sum Item, compensation equal to that of the similar Lump Sum Item.

GC 38.08 If a Change to Work or Work Order does not fall under GC 38.07 and is of the nature that the costs and impacts can be assessed by the Contractor:

(a) the Ministry shall provide specifications for the performance of the Work;

(b) the Contractor shall offer a Lump Sum Price or Unit Price for the Work; and

(c) the Ministry Representative shall either:

(i) accept the Contractor's offer under GC 38.08(b) and add the Work to the Contract as a new Item, which shall be subject to all the provisions of the Contract; or

(ii) reject the Contractor's offer.

GC 38.09 If a Change to Work or Work Order does not fall under GC 38.07 and is of the nature that the costs and impacts cannot be assessed by the Contractor, or if the Contractor's offer under GC 38.08(b) is rejected, the Ministry Representative may:

(a) issue a Work Order to the Contractor authorizing the Work to be performed, in which event those components of the Item that in the opinion of the Ministry Representative have been materially impacted by the Change to Work or Work Order will be paid on a Force Account Basis;

(b) retain a third party to perform the Change to Work and, if applicable, eliminate the affected portion of the Work from the Contract; or

(c) terminate the Contract in accordance with GC 63.00, in which case the Ministry may re-tender the Work in whole or in part.

GC 38.10 Subject to GC 49.04, a Change to Work or Work Order that extends the Completion Date or a Milestone Date may give rise to an Extension of Time in accordance with GC 44.00. A Change to Work or Work Order that reduces the time required to carry out the Work or an applicable portion of the Work may give rise to a Reduction of Time in accordance with GC 45.00.

GC 38.11 The Contractor shall not proceed with any Change to Work or Work Order until instructed in writing by the Ministry Representative to do so.

GC 38.12 The Contractor shall not be entitled to payment for any Change to Work or Work Order or an Extension of Time for any Change to Work or Work Order except in accordance with a duly executed Supplemental Agreement.

GC 38.13 The Contractor shall not be entitled to receive compensation or payment for any loss of profits resulting from any Change to Work or Work Order.

GC 38.14 The Contractor shall, in accordance with GC 13.00, provide the Ministry with all third party consents for any Change to Work or Work Order.

GC 39.00 *CHANGES IN QUANTITIES FOR UNIT PRICE ITEMS*

GC 39.01 The provisions of GC 39.03 to GC 39.06 inclusive apply only to Unit Price Items. GC 39.06 shall not apply to Conditional Items.

GC 39.02 An increase or decrease in the quantity of an Item is determined as the difference between the final quantity of the Item, as measured or calculated in accordance with the Contract, and the Approximate Quantity of the Item specified in Schedule 7 - Approximate Quantities and Unit Prices.

GC 39.03 Where an Item is not a Major Item, the Unit Price shall apply to the entire quantity as measured or calculated in accordance with the Contract.

GC 39.04 If the quantity of a Major Item does or is anticipated by either the Ministry or the Contractor to increase by an amount exceeding twenty percent (20%) of the Approximate Quantity, either the Ministry or the Contractor may provide Notice to the other requesting that a new Unit Price be determined for the excess quantity.

GC 39.05 Where Notice has been provided under GC 39.04, the Unit Price for the Major Item may be adjusted, subject to the following:

(a) the unadjusted Unit Price applies on the quantity up to and including one hundred and twenty percent (120%) of the Approximate Quantity;

(b) any adjusted Unit Price applies only to the excess quantity, being that portion beyond one hundred and twenty percent (120%) of the Approximate Quantity;

(c) the Ministry shall not make an allowance for losses sustained or profits accrued on a quantity up to and including one hundred and twenty percent (120%) of the Approximate Quantity;

(d) the adjusted Unit Price for the excess quantity shall be determined as:

(i) negotiated by the Ministry and the Contractor, failing which; then

(ii) the actual cost of the excess Work divided by the excess quantity where the excess quantity can be measured separately, failing which; then

(iii) the same Unit Price for material which is similar in nature to other material being used within the Work being performed that has documented productivity and cost figures, failing which; then

(iv) where none of the above conditions are met, the cost to date divided by the quantity to date as assessed on the date of the first progress estimate in which the quantity to date exceeds one hundred and twenty percent (120%) of the Approximate Quantity;

(e) if the final costs applicable to that Major Item include fixed costs, those fixed costs are excluded from the Unit Price for the excess quantity.

GC 39.06 If the final quantity of a Major Item is less than eighty percent (80%) of the Approximate Quantity, the Contractor may submit a written request for compensation and the Ministry Representative shall consider that request, subject to the following:

(a) the request shall be considered:

(i) only if the total payments to the Contractor under the Contract are less than the Tender Price; and

(ii) only insofar as it compensates the Contractor for unrecovered actual fixed expenses which can be demonstrated to have been included within the original Unit Price of the Major Item by the production of original bid preparation documents and to the satisfaction of the Ministry Representative; and

(b) the compensation granted:

(i) shall not be more than eighty percent (80%) of the actual fixed expenses incurred with respect to the Major Item, less the actual fixed expenses recovered to date for the Major Item;

(ii) shall not, when added to the Unit Price payment for the final quantity, exceed the payment that would be made for eighty percent (80%) of the Approximate Quantity;

(iii) shall not make any allowance for loss of profits; and

(iv) shall not cause the total payments made to the Contractor under the Contract to exceed the Tender Price.

GC 40.00 ***ELIMINATED ITEM***

GC 40.01 The provisions of GC 40.02 to GC 40.05 inclusive do not apply to Conditional Items or to Provisional Sum Items.

GC 40.02 The Ministry, in its sole discretion, may, at any time by Work Order, eliminate one or more Items from the Work.

GC 40.03 In the event that any Item is eliminated from the Work the Contractor shall take all reasonable and necessary steps to mitigate the effect of any such action and to minimize or avoid any costs associated with the elimination of that Item and as such this shall include, without limitation:

(a) making reasonable efforts to immediately cancel all orders for materials, services or supplies in connection with the eliminated Item; and

(b) returning any materials that are returnable to the vendor.

GC 40.04 The Ministry shall pay the Contractor for materials which the Contractor ordered or received for an eliminated Item, which the Contractor cannot cancel or return to the vendor, in accordance with GC 40.05 and the materials shall then become the exclusive property of the Ministry.

GC 40.05 If any Items are eliminated from the Work, then, unless a contrary provision is contained in the Contract or, the Ministry shall pay the Contractor:

(a) the actual direct costs and overhead costs incurred and substantiated by the Contractor in connection with the elimination of the Item; and

(b) on a Force Account Basis for:

(i) materials ordered and received where the order cannot be cancelled and the materials are not returnable to the vendor, and

(ii) any handling costs to return the materials to the vendor or to deliver the materials to the Ministry, as applicable.

GC 40.06 The elimination of one or more Items may result in a Reduction of Time in accordance with GC 45.00.

GC 41.00 ***CHANGED CONDITIONS***

GC 41.01 The Contractor shall give seven (7) days Notice to the Ministry of a Changed Condition.

GC 41.02 If the Ministry determines that a Changed Condition has arisen, and such Changed Condition would cause an increase or decrease in the costs to be incurred by the Contractor or in the time required to perform the Work, the Ministry may enter into a Supplemental Agreement with the Contractor adjusting the payment required for the performance of the Work or adjusting the time required to perform the Work.

GC 41.03 With respect to any Changed Condition claim, the Contractor shall not claim for that portion of costs which could have been avoided by the Contractor.

GC 42.00 ***REIMBURSABLE DELAY***

GC 42.01 "Reimbursable Delay" means any material cessation or suspension of the Work or any portion thereof caused by:

(a) the Ministry and includes, without limitation, any of the following:

(i) failure of the Ministry to deliver materials, equipment, or information in the condition or within the time frame specified in the Special Provisions;

(ii) failure by the Ministry to provide a Ministry Representative; or

(iii) failure of the Ministry to provide access to the Site as reasonably contemplated in the Contract; or

(b) third parties, only for the following events:

(i) the establishment of an Environmental Window after the Closing Time;

(ii) failure to perform any Utility Relocation or other public works in a timely fashion that was unforeseeable by the Contractor;

(iii) failure of another Ministry contractor to perform its work in a timely fashion; and

(iv) a material change of any applicable law, code, statute or regulation.

GC 42.02 The following events are specifically excluded from the definition of "Reimbursable Delay":

(a) adverse weather, acts of God, or other natural conditions;

(b) preconsolidation and settlement of embankments, as may be contemplated in the Contract;

(c) failure of the Contractor to comply with a Work Order;

(d) strike (including, without limitation, illegal work stoppage or slow down), lockout, or other labour dispute, regardless of whether it is caused by a third party;

(e) failure of the Contractor to comply with the Contract or any part or provision thereof;

(f) failure of the Contractor to provide for the safety of the public;

(g) failure of the Contractor to protect the property of the Ministry;

(h) defects in connection with the Project which are caused by the Contractor whether or not such defects are being rectified at the time;

(i) quality control or quality assurance testing, inspecting, reviewing, or auditing by any person of components of the Work for compliance with the Contract;

(j) Utility Relocation work, except where a prior Reimbursable Delay has changed the timing of the actual Utility Relocation resulting in a material adverse effect on the Contractor's operations;

(k) failure of the Contractor to discharge any responsibility it may have for protecting the environment; and

(l) road restrictions.

GC 42.03 A Reimbursable Delay ends on the earliest of:

(a) the date on which the Ministry Representative issues a Resume Work Order requiring the Contractor to resume the Work;

(b) the date on which the Contractor becomes aware, or should reasonably have become aware, that the condition or cause of the Reimbursable Delay is corrected; or

(c) the date on which the Contractor resumes the portion of the Work impacted by the Reimbursable Delay.

GC 42.04 The Contractor shall take all reasonable and necessary steps to minimize or avoid the costs and impacts of any Reimbursable Delay, to recover all lost time, and to resume, as soon as possible, performance of its obligations under the Contract, and shall fully document the costs incurred.

GC 42.05 Compensation for the Contractor for a Reimbursable Delay shall be limited solely to an Extension of Time in accordance with GC 44.00 and any approved payments under GC 50.00 and GC 38.06.

GC 43.00 ***CHANGE IN TAXES***

GC 43.01 If prior to Completion Date a change occurs in any Sales Tax then the Contract Price shall be increased or decreased by an amount that is determined in the sole and absolute discretion of the Ministry to represent the amount that is demonstrably and directly attributable to that change in Sales Tax as set out in GC 43.03.

GC 43.02 Where the Contract Price is increased or decreased due to a change in Sales Tax, the costs of calculating the change in the Contract Price shall be borne by:

(a) the Contractor where the Contract Price is increased; or

(b) the Ministry where the Contract Price is decreased.

GC 43.03 Where a Sales Tax increases or decreases, the change in the Contract Price shall be limited to those Sales Taxes accruing on or after the date of such decrease or increase on materials incorporated into the Work and to Sales Taxes on those items totally consumed by the Contractor in the process of and for the sole purpose of carrying out the Work.

GC 43.04 An increase in Sales Tax shall be paid as a separate item to be added by the Ministry Representative to the progress estimate.

GC 43.05 Where a Sales Tax decreases, the Ministry may set-off against progress payments or any other money payable to the Contractor, the amount calculated pursuant to GC 43.01.

GC 43.06 The Contractor shall provide the Ministry with all information and documentation necessary, in the opinion of the Ministry Representative, to determine the amount by which the Contract Price is increased or decreased due to a change in Sales Tax.

GC 44.00 ***EXTENSION OF TIME***

GC 44.01 The Ministry may grant an Extension of Time for the impact on the Completion Date or on any Milestone Date of:

(a) a Change to Work;

(b) Changed Conditions; or

(c) a material delay, cessation or stoppage in the performance of the Work, or any part thereof, caused by any one of the following events:

(i) a Reimbursable Delay;

(ii) a strike (including, without limitation, illegal work stoppage or slow down), lockout, or other labour dispute;

(iii) an event arising in connection with conditions resulting from Abnormal or unexpected patterns of occurrence on the Site, including without limitation:

(A) Abnormal weather conditions,

(B) Abnormal river flow, or

(C) Abnormal road restrictions; or

(iv) any other event beyond the control of the Contractor.

GC 44.02 Notwithstanding GC 44.01, the Ministry shall only grant an Extension of Time where:

(a) the Contractor has diligently proceeded with the Work;

(b) the Contractor has applied all reasonable means to complete the Work by the Completion Date, or the portion thereof corresponding to the applicable Milestone Date; and

(c) the event is not an Event of Default, or in connection with an Event of Default.

GC 44.03 The Contractor may, not later than fourteen (14) days after the occurrence or the detection of any one of the events referenced in GC 44.01, submit to the Ministry Representative a Notice for an Extension of Time, specifying the event, describing how the requirements set out in GC 44.02 are satisfied, and proposing the period of time by which the Completion Date or the applicable Milestone Date, should be extended.

GC 44.04 Not later than fourteen (14) days after receiving the Notice for an Extension of Time, the Ministry Representative shall deliver a written reply to the Contractor:

(a) granting the Extension of Time for the time period proposed by the Contractor pursuant to GC 44.03; or

(b) refusing to grant the Extension of Time and setting out the reasons for such refusal.

GC 44.05 Forthwith upon receipt of any grant of an Extension of Time in writing from the Ministry Representative under GC 44.04(a), the Contractor shall obtain and deliver to the Ministry Representative written confirmation from the Surety that issued the Bonds, of the Surety's consent to the Extension of Time granted under GC 44.04(a), and the Surety's confirmation of the continued force and effect of the Bonds.

GC 44.06 Where a delay occurs because of two or more causes acting concurrently, one of which is the responsibility of the Contractor, and the other or others are the responsibility of the Ministry or a third party, then:

(a) where the delay for which the Contractor is responsible commences first, no Extension of Time shall be granted for the period commencing when such delay first occurred and ending when the said cause of such delay ceases to operate;

(b) where the delay for which the Ministry or a third party is responsible commences first, an Extension of Time shall, subject to GC 44.07 and GC 44.08, be granted for the period commencing when such delay first occurred and ending when the said cause of such delay ceases to operate; and

(c) where the delay commences as a result of concurrent causes, then an Extension of Time shall, subject to GC 44.07 and GC 44.08, be granted in the amount of one-half (1/2) of the duration between the date of commencement of the delay until the time the first of any one of the concurrent causes ceases to operate.

GC 44.07 An Extension of Time shall only be granted for the period of time that exceeds the available float time (the length of time an activity may be delayed without affecting completion by a Milestone Date or the Completion Date).

GC 44.08 Notwithstanding GC 44.07, where, in the opinion of the Ministry Representative, a significant portion of the said float time has been consumed by events for which the Ministry is responsible and the Contractor subsequently suffers a delay which consumes more time than can be accommodated within the remaining float time, the Ministry may give consideration to granting an Extension of Time.

GC 45.00 ***CHANGE OF COMPLETION DATE***

GC 45.01 Where the Ministry grants an Extension of Time pursuant to GC 44.00, any affected Milestone Date and, where affected, the Completion Date, shall be extended by the number of days in the Extension of Time.

GC 45.02 Where a Change to Work reduces the anticipated time required to complete the Work, the Ministry and the Contractor, subject to the written consent of the Surety, may negotiate a Reduction of Time for an earlier Completion Date and/or any affected Milestone Date.

GC 46.00 ***PAYMENT***

GC 46.01 Subject to the terms of the Contract the Ministry shall pay the Contract Price as full payment and reimbursement to the Contractor for all costs incurred for labour, materials, equipment, and overhead required to completely incorporate all the Items into the Work.

GC 46.02 Payment for individual Items shall be made, subject to the terms of the Contract, as follows:

(a) For Unit Price Items, the Ministry shall pay the Contractor only for actual quantities of Work furnished and incorporated into the Work, as measured or calculated in accordance with the Contract. The actual quantities of Work to be furnished and incorporated into the Work may be greater or less than the Approximate Quantities specified in Schedule 7 - Approximate Quantities and Unit Prices;

(b) For Lump Sum Items, the Ministry shall pay the Contractor the Lump Sum Price, regardless of the actual quantities of Work required to complete the Item;

(c) For each Provisional Sum Item, the Ministry shall pay the Contractor in accordance with the express method of payment as contemplated within the Contract, failing which, in accordance with each Work Order authorizing that part of the Work to proceed;

(d) For Conditional Items, the Ministry shall pay the Contractor only for actual quantities of Work furnished, as measured or calculated in accordance with the Contract, and only where the Contractor has been authorized by the Ministry Representative in accordance with the terms of the Contract. The actual quantities of Work to be furnished may be greater or less than the Approximate Quantities specified in Schedule 7 - Approximate Quantities and Unit Prices; and

(e) The Ministry shall pay the Contractor for any Change to Work in accordance with the Supplemental Agreement authorizing such Work.

GC 46.03 The Ministry is not obligated to pay the Contractor for Unauthorized Work or Unacceptable Work.

GC 46.04 The Ministry certifies that the property and/or services ordered and purchased pursuant to the Contract are for the use of, and are being purchased by, the Ministry with Crown funds and therefore are not subject to the Federal Goods and Services Tax (GST).

GC 46.05 The Ministry may set-off any consideration required to be paid by the Contractor from any current or future sums owed by the Ministry to the Contractor.

GC 47.00 ***PROVISIONAL SUM ITEMS***

GC 47.01 The Contractor shall not be entitled to any payment for Work against a Provisional Sum Item until the Ministry Representative has authorized that Work.

GC 47.02 The Ministry shall not pay the Contractor for any portion of a Provisional Sum Item which has not been authorized by the Ministry Representative.

GC 47.03 GC 40.00 does not apply to Provisional Sum Items.

GC 47.04 Any Provisional Sum Item for which no express method of payment is provided in the Contract shall be paid as authorized on the Work Order.

GC 48.00 ***CONDITIONAL ITEMS***

GC 48.01 The Contractor shall not be entitled to any payment for Work against a Conditional Item until the Ministry Representative has authorized that Work.

GC 48.02 GC 39.06 and GC 40.05 do not apply to Conditional Items.

GC 49.00 ***FORCE ACCOUNT***

GC 49.01 The Contractor shall not be entitled to compensation for any Work performed on a Force Account Basis prior to written authorization of such Work from the Ministry Representative.

GC 49.02 The Contractor shall submit a *"Daily Report for Extra Work"* to the Ministry Representative for any Work performed on a Force Account Basis no later than one day after such Work is performed.

GC 49.03 Payment to the Contractor on a Force Account Basis shall be made subject to the terms of this Contract, and shall be calculated as follows:

(a) for the cost of labour:

(i) an amount equal to the actual wages and salaries, including payroll burden, paid directly by the Contractor in respect of labour and for supervisory personnel actively and necessarily engaged on the particular item of Work on the Site, if supported by recorded time and hourly rates of pay for that labour and supervision, but not including any payment or costs paid for operators of All Found Equipment, the Contractor Manager and Contractor Representative(s) or their delegates under GC 6.05, administration, or management time spent on the Item; and

(ii) an amount for small tool allowance, plus any other similar items which the Ministry Representative considers appropriate;

(iii) plus any amount equal to twenty percent (20%) of the total costs referred to in GC 49.03(a)(i) and GC 49.03(a)(ii) in respect of the related costs and expenses described in GC 49.06;

(b) for food and lodging: an amount equal to the actual reasonable costs paid directly by the Contractor in respect of food and lodging for labour and for supervisory personnel actively and necessarily engaged on the particular Item plus ten percent (10%) in respect of the related costs and expenses described in GC 49.06;

(c) for materials supplied: an amount equal to the actual cost of materials supplied by the Contractor at invoice cost (which includes all freight and express charges, all taxes, and all other costs incurred to supply the materials to the Site) plus ten percent (10%) in respect of the related costs and expenses described in GC 49.06;

(d) Equipment:

(i) for All Found Equipment approved by the Ministry Representative prior to its use: an amount equal to the applicable Equipment Rental Rates as full payment and reimbursement for all fuel; oil; lubrication; repairs; maintenance; approved use of attachments; operator wages and benefits; and other costs incidental to owning and

operating the equipment plus fifteen percent (15%) of that amount to cover all costs related to such equipment and its operator;

(ii) for all other equipment approved by the Ministry Representative prior to its use: an amount equal to the applicable Equipment Rental Rates (less operator) as full payment and reimbursement for all fuel; oil; lubrication; repairs; maintenance; and other costs incidental to owning and operating the equipment plus fifteen percent (15%) of that amount to cover all costs related to such equipment;

(e) for preparatory work, provided the payment is preapproved in writing by the Ministry Representative prior to the preparatory work being performed: an amount equal to the actual costs of preparatory work performed by the Contractor including, without limitation, transportation of tools and equipment and the Contractor's personnel travel time (when personal travel time is included in a collective agreement) plus fifteen percent (15%) in respect of the related costs and expenses described in GC 49.06.

GC 49.04 When the cumulative entitlement to payment for Work performed on a Force Account Basis in accordance with GC 49.03 equals twenty-five percent (25%) of the Tender Price, then payment for all further entitlements for Work performed on a Force Account Basis shall be calculated in accordance with GC 49.05.

GC 49.05 For payment based on a Force Account Basis for Work performed after the day that the cumulative work-to-date value of such entitlements rises to an amount equal to twenty-five percent (25%) of the Tender Price:

(a) the costs claimed shall be limited to those incurred on the Site;

(b) the percentage indicated in GC 49.03(a)(iii) shall be reduced to twelve and one-half (12.5%);

(c) the percentages indicated in GC49.03(d)(i) and GC 49.03(d)(ii) shall be reduced to zero percent (0%); and

(d) the percentage indicated in GC 49.03(e) shall be reduced to ten percent (10%).

GC 49.06 Unless otherwise provided for in the Contract, payment on a Force Account Basis represents complete payment and reimbursement for all impacts, related costs and expenses, including, without limitation: time; labour; materials; equipment; mobilization; subcontracting; overhead; profit; general supervision; occupational tax and any other Federal or Provincial revenue legislation; premiums for public liability and property damage insurance policies; bonding; for the use of all tools and equipment for which no specific rental payment provision exists; and for all costs incurred by the Contractor in supplying the materials.

GC 49.07 Standby and overtime are not compensable for Work paid on a Force Account Basis unless agreed to in advance by the Ministry Representative.

GC 49.08 The Contractor shall not be eligible for payment for any part of Force Account Basis Work that is not recorded in accounting records as to the resources and hours attributable to the specific Work.

GC 49.09 The accounting records shall not establish entitlement to compensation.

GC 50.00 ***COMPENSATION FOR REIMBURSABLE DELAY***

GC 50.01 The Contractor may claim compensation for a Reimbursable Delay by:

(a) not later than seven (7) days following the start of a Reimbursable Delay, giving written Notice to the Ministry Representative of the intention of the Contractor to make a claim together with detailed reasons for the claim;

(b) notifying the Ministry Representative in writing as to its claim for compensation not later than seven (7) days after the Contractor's resumption of Work on the Project; and

(c) not later than thirty (30) days after the resumption of Work, giving the Ministry Representative full written particulars of the nature and magnitude of the claim including, without limitation, the following claim documentation:

(i) a description of the basis for the Reimbursable Delay citing the specific provision of the Contract under which the claim is being brought;

(ii) a list of all equipment on the Site as a result of the Reimbursable Delay;

(iii) a list of any equipment moved to other locations during the Reimbursable Delay;

(iv) a list of the Contractor's supervisory staff at the Site before and after the Reimbursable Delay began and details of applicable pay rates;

(v) a schedule of equipment operator costs;

(vi) the most recent Construction Schedule prior to the Reimbursable Delay and the impact of the Reimbursable Delay thereon; and

(vii) any other documents requested by the Ministry Representative.

GC 50.02 If a Reimbursable Delay occurs and the Contractor complies with GC 50.01, the Ministry shall, subject to the terms of the Contract, pay the Contractor only the following direct costs which in the opinion of the Ministry Representative were necessarily and properly incurred and documented by the Contractor pursuant to GC 42.04:

(a) costs of supervisory staff committed to the Project, excluding costs of time paid for greater than eight (8) hours in any one day and excluding costs for Saturdays, Sundays, and Holidays;

(b) costs of labour (other than supervisory staff), including All Found Equipment operators, approved in writing by the Ministry Representative;

(c) costs of equipment for equipment idled by the Reimbursable Delay determined as:

(i) in the case of equipment owned or leased by the Contractor on a long term basis:

(A) for the first twenty-one (21) contiguous days only the number of work days in which the equipment was idle multiplied by the Bare Equipment Rates for such idle equipment, and

(B) for the twenty-second (22nd) contiguous day and all subsequent work days; the actual loss which the Contractor demonstrates is wholly attributable to the Reimbursable Delay where the Contractor demonstrates that an actual loss was suffered by the Contractor with respect to other work being available to the Contractor which the Contractor was precluded from carrying out as a result of the costs of moving such idled equipment to the site of such other work;

(ii) in the case of rented equipment which is rented on a short term basis, the incremental rental costs that are wholly attributable to the Reimbursable Delay; and

(iii) in the case of hired equipment, the equipment idle time, to a maximum of three (3) days, multiplied by the Bare Equipment Rates;

(d) five percent (5%) of the sum of GC 50.02(a), GC 50.02(b), and GC 50.02(c) as overhead;

(e) reasonable board and lodging costs for supervisory and other staff authorized under GC 50.02(a) and GC 50.02(b) above;

(f) increases in materials costs wholly attributable to the Extension of Time if an Extension of Time has been granted pursuant to GC 44.00; and

(g) the reasonable costs of moving idled equipment off and back to the Site where the anticipated costs of moving the idled equipment would be less than anticipated costs which would be incurred pursuant to GC 50.02(c).

GC 50.03 The Ministry shall not pay the Contractor for equipment that is inoperative due to breakdown or for idled equipment which was not in use when the Reimbursable Delay started.

GC 51.00 ***CONSEQUENTIAL LOSSES***

GC 51.01 Under no circumstances shall the Contractor be entitled to any compensation or payment not specifically provided for in the Contract including, without limitation, any payment for loss of profits or consequential damage or loss.

GC 52.00 ***PROGRESS PAYMENTS***

GC 52.01 The Ministry Representative shall, subject to the terms of the Contract, no later than seven (7) days following the first day of each month or such later date and/or less frequent period as may be agreed to between the Ministry Representative and the Contractor, prepare and endorse a progress estimate of the amount of Work performed by the Contractor.

GC 52.02 Subject to the terms of the Contract, the Ministry shall, not earlier than thirty (30) days after the completion of any progress estimate, make a progress payment to the Contractor.

GC 52.03 The progress payment made under GC 52.02 shall be at the applicable rates set out in Schedule 7 - Approximate Quantities and Unit Prices, and be based upon the estimated amount of the Work performed under GC 52.01, as follows:

(a) the progress payment for any Unit Price Item shall be based on the total quantity of Work performed for the Item, as estimated by the Ministry Representative, less the amount paid for the Item pursuant to any previous progress estimate(s);

(b) the progress payment for any Lump Sum Item shall be based on the percentage complete of the Item, as estimated by the Ministry Representative, less the percentage complete pursuant to any previous progress estimate(s);

(c) the progress payment for any Provisional Sum Item shall be based on the total value of Work, which had been authorized in advance by the Ministry Representative, performed for the Provisional Sum Item less the amount paid for the Provisional Sum Item pursuant to any previous progress estimate(s);

(d) the progress payment for any Work paid on a Force Account Basis will be based on total value of the Work performed as documented by completed *"Daily Report for Extra Work"* forms received and approved by the Ministry Representative during the period covered by the progress estimate; and

(e) each progress payment shall be subject to the Holdback, pursuant to GC 54.00.

GC 52.04 Progress estimates and progress payments do not represent a final determination of quantities of Work or an acceptance of the Work by the Ministry.

GC 52.05 Before the Ministry makes any progress payment, other than the first progress payment, the Contractor shall deliver to the Ministry a statutory declaration in the form as supplied by the Ministry attesting that the Contractor has paid in full on all accounts for labour, subcontracts, products, materials, construction machinery, equipment and all other indebtedness or obligation incurred by the Contractor in the performance of the Work as incurred up to the date of the previous progress payment.

GC 52.06 The Ministry shall accept a facsimile copy of each statutory declaration on condition that the Contractor delivers the original statutory declaration to the Ministry Representative within twenty-eight (28) days. If the Contractor fails to deliver the original statutory declaration within the specified time period, all subsequent progress payments shall be withheld until such time as the original statutory declaration is received by the Ministry Representative.

GC 53.00 ***FINAL PROGRESS PAYMENT***

GC 53.01 The Ministry Representative shall, within ninety (90) days following the Actual Completion Date, prepare the final measurements and calculations of the amount of Work performed by the Contractor and deliver a draft of the final progress estimate for review by the Contractor.

GC 53.02 At the Contractor's request, the Ministry shall provide the Contractor with access to any back-up documentation which, in the Ministry Representative's opinion is applicable and relates to the final quantities of the Work performed.

GC 53.03 The Contractor shall review the draft final progress estimate and shall, within sixty (60) days of the delivery of the draft of the final progress estimate, provide Notice to the Ministry of any claims based upon the quantities or an indication of acceptance of the final quantities.

GC 53.04 During the sixty (60) day period referenced in GC 53.03, the Contractor and the Ministry Representative shall review any discrepancies noted by either party with respect to the draft final progress estimate and shall review the calculations and records, exchange information, and conduct discussions or negotiations in an effort to reach agreement and/or a resolution with respect to the final quantities of Work for any Item in dispute. The Ministry Representative shall revise the draft final progress estimate to reflect any adjustments to the quantities of disputed Items that may be agreed to between the Ministry Representative and the Contractor and shall endorse and issue the final progress estimate.

GC 53.05 The final progress payment pursuant to the Contract shall be made within thirty (30) days of the Ministry receiving the Contractor's acceptance of the final quantities, Notice of outstanding disputed Items and any other documentation required under the Contract.

GC 53.06 Payment for any disputed Items that are resolved after issuance of the final progress estimate shall be paid within thirty (30) days of receipt by the Ministry of a letter from the Contractor, in a form and content acceptable to the Ministry Representative, containing:

(a) a list of each resolved Item and the net amount payable for that Item;

(b) the total net amount owing;

(c) subject to GC 53.06(d), a statement indicating that payment of the agreed-upon amount shall release the Ministry for any and all liability associated with the claim for those items;

(d) any other conditions of the settlement; and

(e) the signature of an authorized signatory of the Contractor.

GC 54.00 ***HOLDBACK***

GC 54.01 Subject to GC 54.02, the Ministry shall retain from each progress payment a holdback equal to five percent (5%) of the amount approved by the Ministry Representative for payment by the Ministry to the Contractor (the "Holdback").

GC 54.02 The Ministry may, in the sole discretion of the Ministry, accept from the Contractor a substitute security, in a form and content satisfactory to the Ministry, in place of the Holdback, in which case the substitute security is deemed to be the Holdback.

GC 54.03 The Ministry shall not pay interest or other charges on any amounts retained pursuant to GC 54.01 or GC 54.02.

GC 55.00 ***INTERIM HOLDBACK RELEASE***

GC 55.01 In the sole discretion of the Ministry and subject to the terms and conditions of the Contract, the Ministry may release, one time only, a portion of the Holdback in accordance with GC 55.02, no sooner than the Ministry determines that all of the following conditions have been met:

(a) the Ministry Representative has issued a Letter of Substantial Completion;

(b) the Contractor has provided to the Ministry a clearance letter from the Workers' Compensation Board indicating that all current assessments due from the Contractor have been paid; and

(c) the Contractor has provided to the Ministry the applicable executed statutory declaration in the format set out in the Standard Specifications.

GC 55.02 An interim Holdback release shall be in the amount of the Holdback less two times the cost to complete the Work as estimated by the Ministry Representative. This amount shall be retained until such time as the conditions in GC 56.01 have been satisfied.

GC 55.03 If the Ministry has accepted a substitute form of security pursuant to GC 54.02, no portion of the security shall be released until the satisfaction of all conditions in GC 56.01.

GC 55.04 In the event of an interim Holdback release, the Ministry shall discontinue retaining Holdbacks from all subsequent progress payments.

GC 56.00 ***FINAL HOLDBACK RELEASE***

GC 56.01 Subject to the terms and conditions of the Contract, the Ministry shall release the Holdback, or the remaining balance thereof, within sixty (60) days following written acknowledgement by the Ministry that all of the following conditions have been satisfied:

(a) the Ministry Representative has issued a Completion Certificate;

(b) the Contractor has provided to the Ministry a clearance letter from the Workers' Compensation Board indicating that all current assessments due from the Contractor have been paid;

(c) the Contractor has provided to the Ministry the applicable originally executed statutory declaration in the format set out in the Standard Specifications; and

(d) the Contractor has provided to the Ministry:

(i) written confirmation of the final measurement quantities that the Contractor accepts; and

(ii) written confirmation of the final measurement quantities which the Contractor disputes.

GC 57.00 ***APPROPRIATION***

GC 57.01 Notwithstanding any other provision of the Contract, the obligation of the Ministry to pay money to the Contractor under the Contract is subject to:

(a) there being sufficient moneys available in an Appropriation to enable the Ministry, in any fiscal year or part thereof when any payment of money by the Ministry to the Contractor falls due under the Contract, to make that payment; and

(b) the Treasury Board as defined in the Financial Administration Act not having controlled or limited expenditure under any appropriation referred to in GC 57.01(a).

GC 58.00 ***DISPUTE RESOLUTION***

GC 58.01 A dispute occurs between the Ministry and the Contractor when a difference exists between the parties as to the interpretation, application, or administration of the Contract.

GC 58.02 If a dispute occurs as contemplated in GC 58.01, the Contractor shall abide by the Ministry's decision with respect to the dispute, proceed diligently with the Work without prejudice to the Contractor's right to advance any claim it may wish to assert with respect to the dispute, and closely track all costs and impacts associated therewith.

GC 58.03 The Ministry and the Contractor agree that, both during and after the performance of the Work, each of them shall:

(a) make bona fide efforts to resolve any dispute arising between them by negotiation; and

(b) provide frank, candid, and timely disclosure of all relevant facts, information, and documents to facilitate the resolution of any dispute.

GC 58.04 The Contractor Representative shall give the Ministry Representative Notice of a dispute within seven (7) days of the circumstance which gives rise to the dispute.

GC 58.05 If the Ministry Representative and the Contractor Representative fail to resolve the dispute, the Contractor Representative shall file a statement of dispute with the Ministry Representative no later than fourteen (14) days after the date of the Notice given pursuant to GC 58.04, and which a statement of dispute shall update the information provided in the Notice to reflect any change in the Contractor's position or proposed resolution and provide any additional information that may assist in the resolution of the dispute.

GC 58.06 The Ministry Representative shall provide a written reply to the Contractor's statement of dispute within fourteen (14) days of receiving the information specified in GC 58.05. The Ministry Representative's reply shall provide the Ministry's position in trying to resolve the dispute.

GC 58.07 If the dispute remains unresolved, the Contractor shall give a Written Protest respecting the dispute to the Ministry Representative no later than thirty (30) days following the date of the Ministry Representative's reply pursuant to GC 58.06. The Written Protest shall include, without limitation:

(a) a response to each point raised in the Ministry Representative's reply as provided pursuant to GC 58.06;

(b) relevant provisions of the Contract;

(c) relevant cost estimates; and

(d) estimates of any resulting changes to Schedule 5 – Time Schedule.

GC 58.08 The Ministry Representative shall give a written decision to the Contractor no later than forty-five (45) days following receipt by the Ministry Representative of the Written Protest described in GC 58.07 either:

(a) accepting the position of the Contractor as set out in the Written Protest, in which case the Ministry shall enter into a Supplemental Agreement, as necessary;

(b) making an offer to the Contractor to settle the dispute as set out in the Written Protest by entering into a Supplemental Agreement, as necessary; or

(c) addressing each point in the Contractor's protest and rejecting the position of the Contractor as set out in the Written Protest.

GC 58.09 A Supplemental Agreement entered into pursuant to GC 58.08, constitutes full and final settlement of the dispute.

GC 58.10 If the dispute is not resolved pursuant to GC 58.08, the Contractor shall, within thirty (30) days of the Ministry Representative's written decision, provide the Ministry Representative with Notice of intent to pursue a Formal Claim.

GC 59.00 *FORMAL CLAIM*

GC 59.01 If the dispute is not resolved by the decision of the Ministry Representative, pursuant to GC 58.08, and the Contractor has provided the Notice of intent pursuant to GC 58.10, the Contractor Manager may file a Formal Claim with the Ministry Manager no later than ninety (90) days following the issuance of the Completion Certificate.

GC 59.02 A Formal Claim shall be in writing, and shall set out in sufficient detail the particulars of the dispute so as to reasonably enable the Ministry Manager to ascertain the basis and the amount of the dispute. A Formal Claim shall include the following information:

(a) Project and contract number;

(b) description of the Work;

(c) detailed description of the dispute providing all necessary dates, location, and Items affected by the Formal Claim;

(d) date in which the circumstances which gave rise to the Formal Claim arose;

(e) name of each official or employee of the Ministry involved in or knowledgeable about the Formal Claim;

(f) relevant provisions of the Contract which support the Formal Claim and the reasons therefor;

(g) in the case of a Formal Claim relating to a decision of the Ministry Representative, a detailed description of all of the relevant facts supporting the position of the Contractor in connection with that decision;

(h) identification of any documents and particulars of any oral communications that support the Formal Claim;

(i) copies of any documents identified pursuant to GC 59.02(h), other than documents of the Ministry and documents previously furnished to the Ministry by the Contractor, that support the Formal Claim;

(j) if the Contractor seeks a modification to Schedule 5 - Time Schedule, the Contractor shall provide the particulars of the modification as well as the reasons therefor;

(k) if the Contractor seeks additional compensation, the exact amount and a breakdown of that amount separated into the following categories:

(i) direct labour;

(ii) direct materials;

(iii) direct Contractor and Subcontractor equipment with rates claimed for each described piece of equipment based on hours and dates of use and calculated in accordance with the Equipment Rental Rates (Less Operator);

(iv) direct All Found Equipment with rates claimed for each described piece of equipment based on the hours and dates of use and calculated in accordance with the Equipment Rental Rates;

(v) overhead (general and administrative);

(vi) claims of Subcontractors in detail as described in this paragraph;

(vii) standby; and

(viii) other categories, if specified by the Contractor or the Ministry.

GC 59.03 The Ministry Manager shall give a written decision to the Contractor Manager no later than ninety (90) days after receiving the Formal Claim stating either that:

(a) the Ministry accepts the position of the Contractor as set out in the Formal Claim, in which case the Ministry shall enter into a Supplemental Agreement;

(b) the Ministry makes an offer to the Contractor to settle the Formal Claim by entering into a Supplemental Agreement; or

(c) the Ministry rejects the position of the Contractor as set out in the Formal Claim.

GC 59.04 A Supplemental Agreement entered into pursuant to GC 59.03 constitutes full and final settlement of the Formal Claim.

GC 59.05 If the decision of the Ministry Manager does not resolve the dispute, the Contractor may, not later than thirty (30) days following receipt of the decision, file a written appeal to the Deputy Minister of Transportation and Infrastructure (the "Deputy Minister") or refer the dispute directly to arbitration.

GC 60.00 ***APPEAL***

GC 60.01 The Deputy Minister shall give a written decision to the Contractor not later than sixty (60) days following receipt by the Deputy Minister of the appeal described in GC 59.05, stating that:

(a) the decision of the Ministry Manager, pursuant to GC 59.03, is reversed, in which case the Ministry shall enter into a Supplemental Agreement, as necessary; or,

(b) the decision of the Ministry Manager, pursuant to GC 59.03, is affirmed.

GC 60.02 A Supplemental Agreement entered into pursuant to GC 60.01 constitutes a full and final settlement of the Formal Claim.

GC 60.03 If the decision of the Deputy Minister does not resolve the dispute, the Contractor may, not later than thirty (30) days following receipt of the decision, refer the dispute to arbitration.

GC 61.00 ***ARBITRATION***

GC 61.01 If the dispute is not resolved in accordance with GC 60.00 or in lieu of an appeal to the Deputy Minister as described in GC 60.00, the dispute shall be referred to and finally resolved by binding arbitration:

(a) by a single arbitrator appointed by the parties;

(b) at a place agreed to by the parties; and

(c) under the rules of the British Columbia International Commercial Arbitration Centre for the conduct of domestic commercial arbitration.

GC 62.00 ***DEFAULT***

GC 62.01 Any of the following events shall constitute an Event of Default whether any such event is voluntary, involuntary, or results from the operation of law or any judgment or order of any court or administrative or government body:

(a) an order is made, resolution passed, or petition filed, for the liquidation or winding up of the Contractor;

(b) the Contractor becomes insolvent, commits an act of bankruptcy, makes an assignment for the benefit of its creditors, or otherwise acknowledges its insolvency;

(c) a bankruptcy petition is filed against the Contractor, or a proposal under the Bankruptcy and Insolvency Act is made by the Contractor;

(d) a receiver or receiver-manager of any property of the Contractor is appointed;

(e) the Contractor ceases, in the opinion of the Ministry, to carry on business as a going concern;

(f) a floating charge granted by the Contractor crystallizes or becomes enforceable or any other action is taken to enforce any charge granted by the Contractor;

(g) the Contractor fails to perform any of its obligations or breaches any term of the Contract and has not corrected the failure, or is not, in the opinion of the Ministry Representative, diligently proceeding to correct the default, within the time period specified by the Ministry to correct the default, if any;

(h) the Contractor fails to give to the Ministry notice, specifying particulars, that there has occurred or is continuing a default under the Contract;

(i) any representation or warranty made by the Contractor in the Contract is materially incorrect;

(j) any information, or document furnished by or on behalf of the Contractor to the Ministry in connection with the Tender or as a result of the Contract is materially incorrect;

(k) there is any bona fide proceeding, pending or threatened against the Contractor, which would, in the opinion of the Ministry Representative, if successful, materially adversely affect the ability of the Contractor to fulfill its obligations under the Contract;

(l) a change occurs with respect to the property or business of the Contractor which, in the opinion of the Ministry Representative, materially adversely affects the ability of the Contractor to fulfill its obligations under the Contract; and

(m) the Contractor permits any sum pertaining to the Work to remain unpaid, which it does not in good faith dispute to be due from it, after legal proceedings have been commenced to enforce payment thereof.

GC 62.02 On the occurrence of any Event of Default, or at any time thereafter the Ministry may deliver written notice to the Contractor specifying the Event of Default and the Ministry may, at its option, elect to carry out any one or more of the following:

(a) pursue any remedy available to it at law or in equity;

(b) retain as a holdback any payment due to the Contractor under the Contract, including any sums currently being held-back by the Ministry;

(c) notify the Surety that the Contractor is in default under the Contract;

(d) take all actions in its own name or in the name of the Contractor that may reasonably be required to remedy the Event of Default, in which case any payments, costs and expenses incurred by the Ministry in remedying the Event of Default shall be payable by the Contractor to the Ministry on demand, and the Ministry may set off against any sums owing by the Ministry to the Contractor, including any amount retained by the Ministry as a holdback under GC 62.02(b);

(e) by written notice to the Contractor suspend the rights and obligations of the Contractor under the Contract, in whole or in part;

(f) waive the Event of Default in writing and on such conditions as the Ministry Representative may determine;

(g) provide written notice to the Contractor stating that it is in default under the Contract, providing a summary of the Event of Default and the time period in which the Event of Default must be remedied; and

(h) terminate the Contract.

GC 62.03 If any amounts have been retained as a holdback by the Ministry in accordance with GC 62.02(b) or GC 62.02(d), the subject funds shall continue to be held back and shall be dealt with as follows:

(a) where the Event of Default has been cured or remedied by the Contractor to the satisfaction of the Ministry within such time period as may be specified by the Ministry, then the Ministry shall pay the amount previously held back by the Ministry to the Contractor;

(b) where in the Ministry's reasonable opinion, the Event of Default is not curable, or has not been remedied by the Contractor to the satisfaction of the Ministry within such time period as may be specified by the Ministry, then the Ministry may, at its option, keep the amount retained as a holdback in reduction for payment otherwise payable to the Contractor under the Contract; and

(c) no interest shall be calculated or payable by the Ministry with respect to any amount being retained by the Ministry as a holdback in accordance with GC 62.02(b) or GC 62.02(d).

GC 62.04 The rights, powers and remedies conferred upon the Ministry under GC 62.02 and GC 62.03 are not intended to be exclusive and each such right, power and remedy referred to therein shall be cumulative and in addition to and not in substitution for every other right, power or remedy existing or available to the Ministry under the Contract, at law or in equity, and the exercise by the Ministry of any right, power or remedy shall not preclude the simultaneous or later exercise by the Ministry of any other right, power or remedy.

GC 62.05 No failure or delay on the part of the Ministry to complain of or provide notice to the Contractor of any act or failure on the part of the Contractor, or to declare the Contractor in default under GC 62.01, irrespective of how long such act or failure or Event of Default has continued, shall constitute a waiver by the Ministry of its rights hereunder.

GC 63.00 ***TERMINATION FOR REASONS OTHER THAN DEFAULT***

GC 63.01 Notwithstanding any other provision of the Contract, the Ministry may at any time, upon giving thirty (30) days prior written notice to the Contractor, terminate the Contract.

GC 63.02 Subsequent to receipt of Notice from the Ministry pursuant to GC 63.01, the Contractor shall only proceed with those portions of the Work specifically authorized in writing by the Ministry Representative.

GC 63.03 Upon the termination of the Contract in accordance with GC 63.01, the Ministry shall have no further obligation to the Contractor save and except to pay to the Contractor:

(a) the amount the Contractor is entitled to for Work completed satisfactorily on the Project to the date of termination; and

(b) other actual expenses of the Contractor, such as demobilization and compensation for unrecovered actual fixed expenses which are, in the opinion of the Ministry, reasonable in the circumstances.

GC 64.00 ***RECORDS***

GC 64.01 The Contractor shall, in connection with the Contract:

(a) establish and maintain, at a location within British Columbia, accurate books of account and records (including supporting documents) to the satisfaction of the Ministry;

(b) forthwith following the request of the Ministry, give written particulars of the location of the books of account and records; and

(c) permit the Ministry, at any time during normal business hours, to copy and audit any one or more of the books of account or records (including supporting documents),

for three (3) years following the Actual Completion Date or until the date any proceeding, claim, dispute, audit or litigation arising in connection with the Project is resolved or completed, whichever is later.

GC 65.00 ***REPORTS***

GC 65.01 The Contractor shall, upon the request of the Ministry, co-operate with the Ministry to:

(a) fully inform the Ministry of Work done and to be done by the Contractor including information related to the Contractor's performance of its obligations under the Contract and, if requested by the Ministry, submit that information in writing; and

(b) permit the Ministry at all reasonable times to inspect, and copy any findings, data, specifications, drawings, working papers, reports, documents and material whether complete or otherwise that have been produced, received or acquired by the Contractor, or provided by or on behalf of the Ministry to the Contractor as a result of the Contract.

GC 66.00 ***AUDIT***

GC 66.01 The Ministry may, in its sole discretion, conduct an audit of the Contractor and has all powers necessarily incidental to conducting an audit including, without limitation, the right to inspect and take copies of the books and records of the Contractor in connection with the Contract upon reasonable notice and at reasonable times.

GC 66.02 Without limiting the generality of GC 66.01, the Contractor shall make available to any auditors of the Ministry all information requested by them, including without limitation the following:

(a) daily time sheets and supervisors' daily reports and diaries;

(b) insurance, welfare and benefits records;

(c) payroll registers and tax forms;

(d) material invoices and requisitions;

(e) material cost distribution worksheets;

(f) equipment records (including, without limitation, hours of use and distribution);

(g) invoices from vendors, rental agencies, Subcontractors, suppliers of All Found Equipment and agents;

(h) payment certificates of Subcontractors, suppliers of All Found Equipment and agents;

(i) cancelled cheques (payroll and vendors);

(j) all documents relating to every Formal Claim; and

(k) worksheets used to establish the cost components for all items of each Formal Claim.

GC 66.03 The Contractor shall fully co-operate with and assist the Ministry, as necessary, to conduct an audit pursuant to GC 66.01 and GC 66.02.

GC 67.00 ***CONFIDENTIALITY***

GC 67.01 The Contractor shall treat as confidential and shall not, without the prior written consent of the Ministry, publish or disclose or permit to be published or disclosed, any information supplied to, obtained by, or which comes to the knowledge of the Contractor as a result of the Contract except insofar as such publication or disclosure is required by law or is necessary to enable the Contractor to fulfill any obligations that the Contractor may have under the Contract.

GC 67.02 Any documentation related to the Project that is in the custody or under the control of the Ministry is subject to the Freedom of Information and Protection of Privacy Act.

GC 67.03 Unless otherwise stated in the Contract and subject to the Freedom of Information and Protection of Privacy Act, all information submitted by the Contractor to the Ministry shall be considered confidential during the Term and the Ministry shall not, without the prior written consent of the Contractor, publish or disclose the information, except as insofar as such publication or disclosure is required by law.

GC 67.04 Notwithstanding GC 67.03, the Ministry may use any such information for the purposes of administration, analysis of and cost estimation of this and other projects and may disclose such information to its consultants for that purpose.

GC 68.00 ***ANNOUNCEMENTS***

GC 68.01 The Ministry shall arrange any public announcement relating to the Contract in consultation with the Contractor.

GC 69.00 ***PROVINCIAL PROPERTY***

GC 69.01 Any property provided by or on behalf of the Ministry to the Contractor as a result of the Contract is the exclusive property of the Ministry. The Contractor shall deliver the property to the Ministry forthwith following the completion or termination of the Contract.

GC 69.02 The Ministry may, prior to the completion or termination of the Contract, give written notice to the Contractor requiring the Contractor to deliver to the Ministry the property or any part of the property, in which event the Contractor shall forthwith comply with the request.

GC 70.00 ***ENTIRE CONTRACT***

GC 70.01 The Ministry and the Contractor acknowledge and agree that the Contract represents the entire contract and agreement between the Contractor and the Ministry and that the Contractor has not relied upon or been induced by any representation, promise or warranty whatsoever by the Ministry or any officer, employee or agent of the Ministry, in entering into the Contract or with respect to the Work, other than as set out in the Contract.

GC 70.02 Each Schedule, Appendix, Addendum and any Supplemental General Conditions attached to the Contract is an integral part of the Contract as if set out at length in the body of the Contract.

GC 71.00 ***AMENDMENTS***

GC 71.01 The Contract may be amended only by a duly executed Supplemental Agreement.

GC 72.00 ***ADDRESS FOR NOTICES***

GC 72.01 Any written notice, document, or payment desired or required to be given, delivered or made under the Contract will be conclusively deemed validly given, delivered or made to and received by the addressee, for the purposes of any time restrictions of the Contract,

(a) if delivered personally to the addressee, on the date of delivery, or

(b) if mailed in Canada with postage prepaid addressed to the party at the address set out on the execution page of the Contract, on the third day after its mailing, except in the event of disruption of postal services in Canada in which case it is deemed received by the addressee when actually delivered to the address for the addressee or as changed pursuant to GC 72.03.

GC 72.02 Any notice or document desired or required to be given under the Contract may be transmitted by facsimile transmission from either party and will be conclusively deemed validly given to and received by the intended recipient, for the purposes of any time restrictions of the Contract, when so transmitted to the numbers set out on the execution page.

GC 72.03 Either party may from time to time notify the other party in writing of a change in address, for the purposes of GC 72.01, or a change in facsimile number, for the purposes of GC 72.02, and the change in address or facsimile number will be effective upon receipt of the notice.

GC 73.00 ***FURTHER ASSURANCES***

GC 73.01 Each of the parties shall, upon the reasonable request of the other, do or cause to be done all further things for the better performance of the Contract.

GC 74.00 ***DUTY TO MITIGATE***

GC 74.01 The Contractor shall take all reasonable and necessary steps to minimize and avoid all costs and impacts arising out of the Contract.

GC 75.00 ***WAIVER***

GC 75.01 No waiver by either party of a right of that party or any breach by the other party in the performance of any of its obligations under the Contract is effective unless it is in writing.

GC 75.02 No waiver of any right or obligation is a waiver of any other right or obligation under the Contract.

GC 76.00 ***TIME***

GC 76.01 Time is of the essence of the Contract.

GC 77.00 ***INTERPRETATION***

GC 77.01 Where the Contract references a statute such reference is a reference to a statute of the Province of British Columbia unless otherwise stated, and includes every amendment to it, every regulation made under it, and any enactment passed in replacement or substitution for it.

GC 77.02 Unless the context otherwise requires, any reference in the Contract to any Article, Schedule, Section or Subsection, Paragraph or Subparagraph by number is a reference to the appropriate Article, Schedule, Section or Subsection, Paragraph or Subparagraph of the Contract.

GC 77.03 Head notes and indices in these General Conditions or any other part of the Contract are inserted for convenience of reference only, form no part of the Contract, and do not affect the interpretation of the Contract.

GC 77.04 In the Contract, a person includes a corporation, firm, association and other legal entity, and wherever the singular or masculine is used it is as if the plural, the feminine, or the neuter, as the case may be, had been used where the context or the parties requires.

GC 77.05 If any provision of the Contract or the application thereof to any person or circumstance is unenforceable, the remainder of the Contract and the application of that provision to any other person or circumstance are not affected and the Contract is enforceable to the extent permitted by law.

GC 77.06 If any one or more provisions of the Contract are in conflict, then the provisions apply in the following prioritized order:

(a) any Supplemental Agreements, in reverse chronological order;

(b) Schedule 8 – Contract Addenda, in reverse chronological order;

(c) the Supplemental General Conditions;

(d) the Glossary of Terms;

(e) these General Conditions;

(f) Schedule 3 - Special Provisions;

(g) appendices to Schedule 3 – Special Provisions;

(h) Schedule 4 – Drawings;

(i) the Standard Specifications;

(j) the Maintenance Specifications Manual; and

(k) the remaining provisions of the Contract and the remaining Schedules.

GC 77.07 In the Special Provisions and the Drawings, figured dimensions prevail over scaled dimensions.

GC 77.08 In the Contract, the units of measurement are:

(a) determined on the basis of the "International System of Units" established by the "General Conference of Weights and Measures"; and

(b) as defined by the Weights and Measures Act.

GC 77.09 A reference to a "day" or "days" means a calendar day or days, unless a contrary intention is expressed in the Contract.

GC 77.10 Where there is a time limitation under the Contract, and the time in question for performance of an obligation expires on a Saturday, Sunday or a Holiday, the time for performance of the obligation governed by the time limitation is extended to the next day that is not a Saturday, Sunday or Holiday.

GC 77.11 In the calculation of time, the first day shall be excluded and the last day included.

GC 77.12 The rights, powers, and remedies conferred on the Ministry under the Contract are not intended to be exclusive but are cumulative and are in addition to and not in substitution for any other right, power, and remedy existing under the Contract, under any other agreement, at law, or in equity. The exercise by the Ministry of any right, power, or remedy does not preclude the simultaneous or later exercise by the Ministry of any other right, power, or remedy.

GC 77.13 Approval or acceptance by the Ministry of any aspect of the Work does not relieve the Contractor of its obligation to perform all Work in accordance with the Contract.

GC 77.14 Where the Contract anticipates the use of a specific form, an alternative instrument may be used which clearly identifies the instrument as being a substitute for the specified form, and by such use, shall implicitly incorporate any terms and conditions pre-printed on the specified form.

GC 78.00 *SURVIVAL OF TERMS*

GC 78.01 All terms of the Contract in favour of the Ministry and all rights and remedies of the Ministry, either at law or in equity, survive the termination of the Contract.

GC 79.00 *SUCCESSORS AND ASSIGNS*

GC 79.01 The Contract continues to the benefit of and binds the Ministry and its assigns and the Contractor and its successors and permitted assigns, and the Ministry may, upon notice to the Contractor, assign any or all of its rights or obligations under the Contract to any third party.

GC 80.00 *GOVERNING LAW*

GC 80.01 The Contract shall be governed, construed, and interpreted in accordance with the laws of the Province of British Columbia.

GC 80.02 The Contractor hereby irrevocably attorns itself to the jurisdiction of the courts of the Province of British Columbia in all matters related to the Contract.

GC 81.00 *LIMITATIONS FOR CLAIMS*

GC 81.01 The Contractor's right to commence any legal proceedings or any action against the Ministry for any matter arising directly or indirectly out of the performance or non-performance of the

Contractor's or Ministry's obligations under the Contract, shall be absolutely barred upon the expiration of eighteen (18) months after the Actual Completion Date.

GC 81.02 The Contractor shall not assert any claim, file or commence any legal proceeding or any action of any kind whatsoever, in contract or in tort, or seek any other recourse against the Ministry's officers, employees or agents for any matter whatsoever in connection with this Contract.

IN WITNESS WHEREOF a duly authorized representative of the Minister of Transportation and Infrastructure, on behalf of Her Majesty the Queen in Right of the Province of British Columbia, has hereunto set his or her hand and the common seal of the Contractor has been hereunto affixed in the presence of its duly authorized signatories in that behalf on the date set out below:

Project Number: 22198-0001 Contract ID Number: 22198MJ0001

Project Description: HIGHWAY 33 – FOUR LANING, MUIR ROAD TO GALLAGHER ROAD

Date of Contract: _____

SIGNED on behalf of Her Majesty the Queen in Right of the Province of British Columbia

Ministry of Transportation and Infrastructure

Liz Hope, Manager, Financial Services

7818 6th Street, Burnaby, B.C. V3N 4N8

Phone: (604) 660-8040 Fax: (604) 660-8034

by a duly authorized representative of the Minister of Transportation and Infrastructure, this

_____ day of _____ , 20 _____ ,

in the presence of:

_____ _____

(Witness) For the Minister of Transportation and Infrastructure

Liz Hope, Manager, Financial Services

(Name and Title)

THE common seal of:

_____

(Name of Contractor)

_____

_____

(Address)

_____

(Telephone)

_____

(Fax)

was hereunto affixed in this _____ day of C/S

_____ , 20 , in the presence of:

_____ _____

(Witness) Authorized Signatory for the Contractor

_____

(Name and Title)

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SCHEDULE 1

GLOSSARY OF TERMS
&
SUPPLEMENTAL GENERAL CONDITIONS

GLOSSARY OF TERMS

1. Application

Unless otherwise expressly set out, this Glossary of Terms is incorporated into and forms a part of the Contract, the Tender Document Package, and the Contract Document Package, including without limitation, for purposes of greater clarity, the Conditions of Tender, the General Conditions, and the Schedules.

2. Cross References Abbreviations and Inclusions

To facilitate the cross referencing among the components of the Contract Document Package, unless the context by implication otherwise requires, the following is used: a reference to XX#.## means to article, section, subsection, or paragraph #.## of document XX, where "XX" refers to the following, as the case may be:

GC means General Conditions,

CT means Conditions of Tender,

SP means Special Provisions,

SS means Standard Specifications for Highway Construction,

SCT means Invitation to Tender - Supplemental Conditions of Tender,

SGC means Supplemental General Conditions.

A reference to a higher level clause includes a reference to any subclauses (e.g. XX#.00 includes XX#.01, XX#.02 etc.; XX#.01 includes XX#.01(a), XX#.01(b)(i), etc.).

In this Glossary of Terms, a reference to a statute whether or not that statute has been defined, means a statute of the Province of British Columbia unless otherwise stated and includes every amendment to it, every regulation made under it and any enactment passed in substitution therefor or in replacement thereof.

Any information, including statutes and regulations, that may be found by accessing the URL's or Web sites set out in the Contract, the Tender Document Package, and the Contract Document Package, including without limitation, for purposes of greater clarity, this Glossary of Terms, the Conditions of Tender, the General Conditions, and the Schedules, are not the official versions and may not be accurate, complete, current or reliable.

3. Definitions

In the Contract, the Tender Document Package, and the Contract Document Package, including without limitation, for purposes of greater clarity, the Conditions of Tender, the General Conditions, and the Schedules, unless the context otherwise requires including by express definition within any such documents, the following terms shall have the following definitions.

Abnormal means timing of road restrictions, extent of stream flow, or weather which, in any two (2) week period, differs from the statistical average for that condition in that period by more than one standard deviation, calculated based on relevant data covering the twenty (20) year period immediately preceding the Award as available from,

(a) with respect to road restrictions, the Ministry,

(b) with respect to stream flow, the Ministry of Water, Land and Air Protection, and

(c) with respect to weather, Environment Canada;

Actual Completion Date means the date specified in the Completion Certificate;

Addenda means the documents described in CT4 and CT5 and includes the documents entitled and designated "Amendments" that may be issued through the BC Bid eService, and **"Addendum"** means any one of such documents;

Administrative Contact Person means the person designated as such in the Invitation to Tender - Supplemental Conditions of Tender;

All Found Equipment Rates means the applicable Equipment Rental Rates including operator and all associated costs for All Found Equipment;

All Found Equipment means any equipment hired on a time basis inclusive of operator, unless such equipment is hired through a Subcontract, approved in advance, by the Ministry;

Appendix or Appendices means any appendix(ces) or supplement(s) to a Schedule of the Contract;
Appropriation means the same as in the *Financial Administration Act*;

Approximate Quantity(ies) means the Ministry's estimate as at Closing Time of the quantity of a Unit Price Item necessary for the Work, as specified in the applicable "Approx. Quantity" column of Schedule of Approximate Quantities and Unit Prices;

Authorized Representative for any Bidder, Contractor or company means the person or persons having the legal authority and agency to legally bind the Bidder, Contractor or company;

Award means the written notice to the Bidder from the Ministry, in the form of an award letter accepting the Bidder's Tender;

Bankruptcy and Insolvency Act means the *Bankruptcy and Insolvency Act*, R.S.C. 1985, c.B-3;

Bare Equipment Rates means the applicable Equipment Rental Rates (Less Operator) multiplied by thirty-five percent (35%);

BC Bid eService means the electronic procurement system defined in the BC Bid eService Terms and Conditions as the "Service";

BC Bid eService Delivery Method means the electronic delivery of a Tender, save and except for the accompanying Bid Security, using the BC Bid eService;

BC Bid eService Terms and Conditions means the Terms and Conditions set out in the BC Bid "e-Bidding Registration and Change of Information Form", as those terms and conditions may be amended, from time to time;

BC Bid Supplier Terms and Conditions means the terms and conditions of use that govern registration to receive electronic notification of information through the BC Bid eService, as those terms and conditions may be amended, from time to time;

BC Bid Website means the website maintained by BC Bid at WWW.BCBID.GOV.BC.CA or any replacement for that website maintained by BC Bid;

Bid Bond means a bond described in the Schedule entitled "Tender Securities" set out in the Tender Document Package, and to be delivered by the Bidder as Bid Security in accordance with the Conditions of Tender;

Bidder means a person (including a partnership, joint venture or company) who submits a Tender to the Ministry in accordance with the Conditions of Tender;

Bid Security means a Bid Bond or other security to be delivered by the Bidder as described in the Conditions of Tender and in the Schedule entitled "Tender Securities" as set out in the Tender Document Package;

Bonds means the Performance Bond and the Labour and Material Payment Bond for the Work, as required by the Contract, each in the form set out in the Schedule to the Contract entitled "Contract Securities";

Builders Lien Act means the *Builders Lien Act*, S.B.C. 1997, c.45;

Business Corporations Act means the *Business Corporations Act,* S.B.C. 2002, c. 57;

Changed Conditions means surficial or subsurface conditions at the Site materially different from those indicated in the Tender Document Package at the Closing Time of Tender which were not foreseen by the Contractor and which would not be reasonably foreseeable by a reasonably experienced contractor who, prior to submitting the Tender, conducted a thorough investigation and inspection of the Site and reviewed all information in the Tender Document Package, General Reference Documents and Contract Specific Reference Documents, but does not include any change in quantities or any change to the surficial or subsurface conditions caused by the weather, excepting Abnormal weather, or any natural event;

Change to Work means the deletion, extension, increase, decrease or alteration of lines, grades, dimensions, methods, drawings, substantial changes in geotechnical, subsurface, surface or other conditions, changes in the character of the Work to be done or material of the Work or part thereof, within the intended scope of the Contract;

Closing Date means the date specified in SCT2.2 of the Invitation to Tender – Supplemental Conditions of Tender, and designated as the “Close Date” on the BC Bid eService and the BC Bid Website, as such date may be extended from time to time and at any time, by the Ministry in its sole discretion;

Closing Location means the location specified in the Invitation to Tender - Supplemental Conditions of Tender as the only acceptable location for delivery of,

(a) Tenders, including for greater clarity, Revisions, and any notice of withdrawal, that are delivered using the Hard Copy Delivery Method, or

(b) the Bid Security required as part of any Tender delivered using the BC Bid eService Delivery Method;

Closing Time means the time, on the Closing Date, specified in SCT2.2 of the Invitation to Tender - Supplemental Conditions of Tender, and designated as the “Close Time” on the BC Bid eService and the BC Bid Website, on and after which no Tender or Revision will be accepted, as such time may be extended from time to time and at any time, by the Ministry in its sole discretion;

Commencement Date is the date on which the Contractor commences the Work pursuant to the Contract;

Completion Certificate means a written certificate issued by the Ministry in the form and subject to the conditions stipulated in the Contract;

Completion Date means the date specified in the Schedule to the Contract entitled “Time Schedule” for the completion of the Work as may be extended from time to time in accordance with the Contract;

Conditional Item means an Item in the description column of the Schedule of Approximate Quantities and Unit Prices with the notation “Conditional Item” for Work that requires approval from the Ministry Representative;

Conditions of Tender means the document of the same name, and includes any and all Addenda, and the Invitation to Tender - Supplemental Conditions of Tender, as set out in the Tender Document Package, and specifying the terms and conditions of the Tender Call;

Construction in relation to a Design Build Minor Project, means all things necessary to complete the Work, including any and all rehabilitation work, but does not include Design;

Construction Schedule means the time schedule provided by the Contractor in accordance with the terms of the Contract and includes any amendments thereto accepted by the Ministry;

Contact Person means the person designated as such in the Invitation to Tender - Supplemental Conditions of Tender;

Contaminants means any materials, substances or special (hazardous) wastes, the storage, manufacture, disposal, treatment, generation, use, transport, remediation, or release into the environment of which is now or hereafter prohibited, controlled, or regulated under the Environmental Management Act S.B.C. 2003, c. 53 and the *Contaminated Sites Regulations Reg. 375/96*;

Contract means,

(a) in regard to the Tender Document Package, the contract to be entered into by the Ministry and by the Bidder who is given the Award to perform the Work, including for greater clarity, the General Conditions, the Special Provisions, all Schedules and Appendices listed in the "Order of Contents" of the Contract, and all Addenda, as at the Closing Time, and

(b) in regard to the Contract Document Package, the contract executed on behalf of the Ministry and the Contractor, including for greater clarity, the General Conditions, the Special Provisions, all Schedules, Appendices and Addenda listed in the "Order of Contents" of the Contract, all as may be amended in accordance with the Contract;

Contract Document Package means the document package of the same name, containing amongst other things the Contract, the Drawings, all Schedules and other information as set out in the "Order of Contents" of the Contract, together with any and all Addenda issued prior to Closing Time;

Contract Price means the Tender Price, as specified in the Contract, as it may be adjusted from time to time pursuant to the Contract;

Contract Specific Reference Documents means the documents, listed in the Schedule entitled "Contract Specific Reference Documents" set out in the Tender Document Package, and provided or otherwise made available by the Ministry for viewing by Bidders, containing specific information related to the Project and the Work, including without limitation, as-built Drawings, geotechnical reports, borehole test logs and geotechnical and survey information relating to the Site;

Contractor means the Bidder with whom the Ministry executes the Contract for the performance of the Work;

Contractor Manager means the person, designated by the Contractor, having the authority specified in Major Works GC 6.02(a) or Design Build Minor GC 6.02(a);

Contractor Representative means the person, designated by the Contractor, having the authority specified in Major Works GC 6.02(b) or Design Build Minor GC 6.02(b);

Daily Site Occupancy Cost means the daily dollar value specified by the Ministry for Site Occupancy in the column entitled "Unit Price" in Part B of the Schedule of Approximate Quantities and Unit Prices;

Design in relation to a Design Build Minor Project, means the compendium of drawings, plans, calculations, specifications and other Project Material produced by the Designer to define the Work to be constructed;

Design Build Minor General Conditions means the General Conditions set out in the document having the title "Design Build Minor General Conditions";

Design Build Minor Specifications means the Standard Specifications as amended to make them suitable for a Design Build Minor Project as published by the Ministry;

Design Build Minor Project means a Project where the General Conditions contained in the Contract are the Design Build Minor General Conditions;

Design/Construct means Design/Build;

Design Schedule in regard to a Design Build Minor Project means the time schedule delivered by the Contractor in accordance with the Contract, detailing the various components of the Design and the anticipated milestone and completion dates and includes any amendments thereto accepted in writing by the Ministry;

Designated Subcontractor means any Subcontractor with one or more Subcontracts having an aggregate value of not less than two hundred thousand dollars ($200,000) but does not include a subcontractor who is solely providing one or more of the following professional services:

(a) engineering,

(b) surveying,

(c) material testing,

(d) geotechnical investigation, or

(e) environmental services;

Designated Supplier means any Supplier with one or more Subcontracts or purchase agreements used in or incorporated into the Work having an aggregate value of not less than two hundred thousand dollars ($200,000) who is not a Supplier of any of the following materials,

(a) liquid asphalt cement products,

(b) electrical materials,

(c) steel other than fabrications,

(d) manufactured Portland cement concrete, where delivered by the Supplier using its own trucks, or

(e) plastic, steel or concrete pipe;

Designer in regard to a Design Build Minor Project means a professional engineer, or other such professional as appropriate to the task, lawfully registered to practice in the Province of British Columbia, who is responsible for any portion of the Design;

Dispute means a difference between the Contractor and Ministry pursuant to Minor Works GC 16.01;

Disqualification means a decision by the Ministry to exclude a Tender, including for clarity, any and all Revisions, or a Revision, as the case may be, from or from continuing in the evaluation and Award process, as the case may be;

Disturbed Feature(s) means any feature, natural or man-made, whether within or outside the Site, which has been, in the opinion of the Ministry,

(a) disturbed, damaged, destroyed, modified, replaced, or constructed by the Contractor, or

(b) deleteriously affected by an action or inaction of the Contractor or by any Subcontractor or an element under the Contractor's control or responsibility,

including but not limited to detours, embankments, excavations, drainage ditches and systems, shoulders, signs, and existing roads to and within the Site;

Drawings means the drawings as set out in the Schedule to the Contract entitled “Drawings”;

e-Bidding Key means a valid BC Bid electronic signature key as defined in the BC Bid eService Terms and Conditions;

Emergency Work means work classified by the Ministry Representative as Emergency Work pursuant to Major Works GC 27.00 or Design Build Minor GC 36.00;

Environmental Management Act means the *Environmental Management Act*, S.B.C. 2003, c. 53;

Environmental Window means any period of time during the Term designated as such by the Ministry, or by any competent federal or provincial environmental government authority, branch or agency whose jurisdiction or authority may be applicable to the Contract;

Equipment Rental Rates means the applicable rates, including All Found Equipment Rental Rates and Equipment Rental Rates (Less Operator) for equipment rental established in accordance with the "Equipment Rental Rate Guide" published and distributed by the B.C. Road Builders and Heavy Construction Association in effect at the time the applicable Work is performed; or where the rates are not set out within the Equipment Rental Rate Guide, then through negotiation between the Ministry and the Contractor prior to use of the equipment on the Project;

Equipment Rental Rates (Less Operator) means the applicable Equipment Rental Rates for equipment provided without operators;

Event of Default means an event described as such in Major Works GC 62.01 or Design Build Minor GC 62.01;

Extended Amount means the amount in the "Extended Amount" column of the Schedule of Approximate Quantities and Unit Prices being,

(a) the product of the Unit Price for a Unit Price Item multiplied by the Approximate Quantity of that Item,

(b) the Lump Sum Price for a Lump Sum Item,

(c) the sum for the Provisional Sum Item as the context so requires and as calculated by the Ministry, or

(d) the product of the Tendered Site Occupancy Days multiplied by the Daily Site Occupancy Cost set out in Part B of the Schedule of Approximate Quantities and Unit Prices;

Extension of Time means an extension of time to complete the Work, pursuant to Major Works GC 44.00 or Design Build Minor GC 48.00;

Extra Work means any additional work, beyond the scope of the Work, which is authorized by the execution of a Work Order or a Supplemental Agreement;

Financial Administration Act means the *Financial Administration Act*, R.S.B.C. 1996, c.138;

Force Account Basis means the method of payment to the Contractor for the performance of the Work in the absence of any other stipulated or negotiated method of payment, as described in Major Works GC 49.00 or Design Build Minor GC51.00;

Force Account Rate means the rate calculated on a Force Account Basis, to be applied to the Work performed pursuant to Major Works GC 49.00 or Design Build Minor GC 51.00 for which payment is on a Force Account Basis;

Formal Claim means a claim filed by the Contractor pursuant to Major Works GC 59.00 or Design Build Minor GC 59.00;

Freedom of Information and Protection of Privacy Act means the *Freedom of Information and Protection of Privacy Act*, R.S.B.C. 1996, c.165;

General Conditions means,

(a) in regard to the Tender Document Package, the terms and conditions of the Contract set out in the document having any one of the following titles: "Major Works General Conditions", "Minor Works General Conditions", "Design Build Minor General Conditions", or "Operational Services Contract", that is set out in the Tender Document Package as the applicable General Conditions for the Contract, and

(b) in regard to the Contract Document Package, the terms and conditions set out in the document having any one of the following titles: “Major Works General Conditions”, “Minor Works General Conditions”, “Design Build Minor General Conditions”, or “Operational Services Contract”, that is set out in the Contract executed on behalf of the Ministry and the Contractor;

General Reference Documents means the following standard documents, as amended or replaced by the Ministry from time to time, which may relate to this and other Ministry contracts, and which, unless otherwise indicated, may be obtained from the Ministry of Management Services, Queen’s Printer, Publications Index at the address shown on http://www.publications.gov.bc.ca and which are available for viewing upon request at the Ministry's Regional offices:

(a) Standard Specifications,

(b) Traffic Control Manual for Work on Roadways,

(c) Maintenance Specifications Manual,

(d) Manual of Standard Traffic Signs and Pavement Markings (September 2000),

(e) Traffic Management Guidelines for Work on Roadways (September 2001),

(f) Manual of Control of Erosion and Shallow Slope Movement (August 1997),

(g) Ministry’s Recognized Products List (current version),

(h) Manual of Test Procedures for Paving Material and Mixes (1993),

(i) Manual of Test Procedures for Soils and Mineral Aggregates (May 2001),

(j) Equipment Rental Rate Guide (current edition, available only from the B.C. Road Builders and Heavy Construction Association);

Hard Copy Delivery Method means in regard the delivery of a Tender, the delivery of a Tender to the Closing Location by hand or courier, and in regard to the delivery of a notice of withdrawal, or a Revision, the delivery of a Revision or a notice of withdrawal to the Closing Location by hand, courier or by facsimile transmission;

Holdback means any or all sums retained by the Ministry from any progress payment pursuant to Major Works GC 54.01 or Design Build Minor GC 54.01;

Holiday has the meaning as set out in the *Interpretation Act*;

Insurance Specifications means the insurance specifications attached to the Contract in the Schedule to the Contract entitled “Insurance”;

Interpretation Act means the *Interpretation Act*, R.S.B.C. 1996, c.238;

Item means an item of the Work having both a separate identifier in the "Item #' column and an entry in the 'Unit of Measure' column, in the Schedule of Approximate Quantities and Unit Prices;

Invitation to Tender - Supplemental Conditions of Tender means the document entitled “Invitation to Tender Supplemental Conditions of Tender” as set out in the Tender Document Package and forming a part of the Conditions of Tender;

Letter of Substantial Completion means a letter issued to the Contractor by the Ministry acknowledging the occurrence of Substantial Completion for the Work, as described in Major Works GC 34.00 or Design Build Minor GC 41.00;

Limits of Construction means the geographic limits of the Project, as described in the Special Provisions or the Drawings, or both as the case may be;

Lump Sum Item means an Item identified in the Schedule of Approximate Quantities and Unit Prices by the notation “L.S.” in the column entitled “Unit of Measure”;

Lump Sum Price means the amount to be paid by the Ministry to the Contractor for the satisfactory completion of a Lump Sum Item;

Maintenance Specifications Manual means the manual published by the Ministry and titled "Maintenance Contracts – Maintenance Specifications (February 2003), or "Maintenance Services Manual: Standards for Road and Bridge Maintenance Services (June 28, 1996 revision)", as applicable, in effect between the Ministry and the applicable maintenance contractor, as it may be amended or replaced by the Ministry from time to time by written notice to the Contractor;

Maintenance Specifications has the same meaning as ascribed to it in the Maintenance Specifications Manual;

Major Item means an item that,

(a) is not a Provisional Sum Item or Conditional Item, and

(b) is an Item with a total cost exceeding $20,000 determined by multiplying the Unit Price for the Item by the greater of either the final quantity measured by the Ministry Representative or the estimated quantity in the Schedule of Approximate Quantities and Unit Prices;

Major Works General Conditions means the General Conditions set out in the document having the title "Major Works General Conditions";

Milestone Date means any one date, as specified in the Schedule to the Contract entitled "Time Schedule", for completion of the specific portion of the Work that corresponds to that date and that is generally described in such Schedule and more specifically described in the Special Provisions;

Ministry means Her Majesty the Queen in Right of the Province of British Columbia as represented by the Minister of Transportation and Infrastructure, and includes without limitation, the Minister of Transportation and Infrastructure and the officers, agents and employees of the Ministry of Transportation and Infrastructure;

Ministry Manager means the person designated as such by the Ministry;

Ministry Representative means the person designated as such by the Ministry;

Ministry Website means the website maintained by the Province of British Columbia at www.gov.bc.ca/tran;

Minor Works General Conditions means the General Conditions set out in the document having the title "Minor Works General Conditions";

Notice means notification in writing by one party to the Contract to the other party to the Contract, to make the second party aware that an event or circumstances have, or are anticipated to give rise to, cost or time impacts to the other party;

Notice Date means the date on which the Notice was received by the second party;

Notice Period means the time period specified in the Contract, for the appropriate circumstances, within which an aggrieved party to the Contract must provide Notice to the other party to the Contract;

Operational Services Contract means the General Conditions set out in the document having the title "Operation Services Contract";

Opportunity means the Tender Call, the Work and the Contract;

Performance Security means the Bonds and all other securities provided by the Contractor as specified in the Contract, to guarantee the Contractor's performance of its contractual obligations under the Contract;

Planholder means a person who has purchased a Tender Document Package before Closing Time;

Project Material in regard to a Design Build Minor Project means any findings, data, specifications, drawings, working papers, reports, documents and other material, whether complete or otherwise, that have been produced, received or acquired by the Contractor, or provided by or on behalf of the Ministry to the Contractor as a result of the Contract;

Project Schedule in relation to a Design Build Minor Project, means the first overall project time schedule, including the Design Schedule and the Construction Schedule, provided by the Contractor in accordance with the Contract and includes any amendments thereto accepted by the Ministry;

Project means the project being undertaken by the Ministry for which the Work is required;

Provisional Sum Item means an Item identified in the Schedule of Approximate Quantities and Unit Prices by the notation "P.S." in the column entitled "Unit of Measure", for Work or Extra Work that requires approval and further specification from the Ministry Representative;

Quality Assurance in regard to a Design Build Minor Project means the planned and systematic activities implemented in the quality system to provide adequate confidence that an entity will fulfill the requirements for quality;

Quality Control in regard to a Design Build Minor Project means operational techniques and activities that are used to fulfill requirements for quality;

Quality Management Plan in regard to a Design Build Minor Project means the plan of the same name as described in the Contract;

Quality Manager in regard to a Design Build Minor Project means the Contractor's Quality Manager appointed in accordance with the Contract;

Reduction of Time means a reduction of time to complete the Work, pursuant to Major Works GC 45.00;

Reimbursable Delay has the meaning ascribed to it in Major Works GC 42.00 or Design Build Minor GC 46.00;

Resume Work Order means a Work Order issued by the Ministry to the Contractor, requiring the Contractor to resume Work, in whole or in part as described in the Work Order, on the Project;

Revision means,

(a) in the case of a Tender delivered using the Hard Copy Delivery Method, an amendment, which may include one or more changes, made by the Bidder to its Tender in accordance with CT9, and

(b) in the case of a Tender delivered using the BC Bid eService Delivery Method, means an amendment, which may include one or more changes, made by the Bidder to its Tender and delivered in the form of a replacement amended Tender in accordance with CT9, and

delivered by the Bidder in compliance with the Conditions of Tender, as such compliance shall be determined by the Ministry in accordance with the Conditions of Tender;

Sales Tax means any federal or British Columbia tax arising from the provision or sale of either goods or services, or both;

Schedule means any schedule which forms a schedule to the Contract;

Schedule of Approximate Quantities and Unit Prices means,

(a) in regard to the Tender Call,

  (i) under the BC Bid eService Delivery Method, that part of the Tender Envelope, that is entitled "Schedule of Approximate Quantities and Unit Prices", and

(ii) under the Hard Copy Delivery Method, the document of the same name that is set out in Schedule 7 to the Contract,

(b) in regard to the Contract, the Schedule of Approximate Quantities and Unit Prices set out in Schedule 7 to the Contract;

Site means the areas:

(a) vested as highway, as defined in the *Transportation Act*, and

(i) on or within the Limits of Construction, and

(ii) outside the Limits of Construction, where described, referenced or designated in the Traffic Management Plan, the Special Provisions, the Standard Specifications, and the Traffic Control Manual for Work on Roadways, as the case may be,

(b) within the licenses to construct that are indicated or referenced in Drawings or the Special Provisions, and

(c) all additional areas as may, from time to time, be designated in writing or be depicted by Drawings by the Ministry pursuant to the Contract;

Site Occupancy means the same as described in the Special Provisions;

Special Provisions means the terms set out within the Schedule to the Contract entitled "Special Provisions" and, for greater clarity, includes the Appendices to that Schedule;

Standards in regard to a Design Build Minor Project means the compendium of the design requirements, specifications, and other technical reference documents set out in the Tender Document Package, which set out the technical requirements for the Design;

Standard Specifications means the Standard Specifications for Highway Construction so named and published by the Ministry and in effect on the date of first publication of the Tender Call for the Project unless a different version is specified in the Special Provisions or any Addenda, in which case the version so specified will prevail;

State of Suspension means an extended interruption of Work, approved or directed by the Ministry, in a Stop Work Order, but does not include a suspension pursuant to Major Works GC 62.00 or Design Build Minor GC 62.00;

Stop Work Order means a Work Order issued by the Ministry to the Contractor requiring the Contractor to stop Work, in whole or in part, on the Project;

Subcontract means any contract to perform any portion of the Work to which the Ministry is not a party;

Subcontractor means any person having a Subcontract;

Substantial Completion has the meaning as described in Major Works GC 34.00 or Design Build Minor GC 41.00;

Supplemental Agreement means a written agreement entered into by the parties to the Contract for the purpose of modifying the Contract, and in the case of a Major Works or Design Build Minor, means Ministry form H0177 "Work Order/Supplemental Agreement", and in the case of a Minor Works or Operational Services Contract, means Ministry form H0462 "Amending Agreement";

Supplemental General Conditions means the document of the same name as set out in the Tender Document Package and forming a part of the General Conditions and the Contract Document Package;

Supplier means any person supplying materials that are used in or incorporated into the Work;

Surety means a bonding company acceptable to the Ministry, which undertakes the obligations of the Bid Bond or the Bonds;

Tender means the offer to perform the Work delivered by the Bidder in compliance with the Conditions of Tender, and for greater clarity, includes any and all Revisions and other documents, including the Bid Security, delivered in compliance with the Conditions of Tender, as such compliance shall be determined by the Ministry in accordance with the Conditions of Tender;

Tender Call means the call for Tenders issued by the Ministry in connection with the Work and pursuant to the Conditions of Tender;

Tender Document Package means the document package of the same name, containing the Conditions of Tender, Invitation to Tender - Supplemental Conditions of Tender, the Contract Specific Reference Documents, the Contract, including for greater clarity, the General Conditions, Special Provisions, Drawings, and all Schedules, all Addenda and other information as set out in the "Order of Contents", but excluding the General Reference Documents;

Tender Envelope means,

(a) in regard to the BC Bid eService Delivery Method, the response form, entitled "Tender Envelope", or any such replacement amended forms entitled "Tender Envelope" submitted by the Bidder in connection with a Revision in accordance with CT9, as the case may be, and

(b) in regard to the Hard Copy Delivery Method, the envelope of the same name contained in the Tender Document Package;

Tender Form means,

(a) in regard to the BC Bid eService Delivery Method, the 'pop – up' screen form entitled "Tender Form", or any such replacement amended forms entitled "Tender Form" submitted by the Bidder in connection with a Revision in accordance with CT9, as the case may be, and

(b) in regard to the Hard Copy Delivery Method, the form of the same name contained in the Tender Document Package;

Tender Item means a Unit Price Item or a Lump Sum Item as listed in the Schedule of Approximate Quantities and Unit Prices;

Tender Opening means the formal, public event conducted by or on behalf of the Ministry after Closing Time at the time and place specified in the Invitation to Tender - Supplemental Conditions of Tender, during which the unverified Total Tender Cost as stated in each Tender, and any Revisions, received before Closing Time shall be read out;

Tender Price means the total of all Extended Amounts, excluding the Tendered Site Occupancy Cost, if any, as set out in the Schedule of Approximate Quantities and Unit Prices submitted by a Bidder as part of the Bidder's Tender, as calculated by the Ministry pursuant to the Conditions of Tender;

Tendered Site Occupancy Days means the number of days specified by the Bidder for Site Occupancy in the column entitled "Approximate Quantity" in Part B of the Schedule of Approximate Quantities and Unit Prices;

Tendered Site Occupancy Cost means the amount determined by multiplying the Tendered Site Occupancy Days by the Daily Site Occupancy Cost, as set out in the column entitled "Extended Amount" in Part B of the Schedule of Approximate Quantities and Unit Prices, as calculated by the Ministry pursuant to the Conditions of Tender;

Term means the term of the Contract as set out in Major Works GC 4.00, Design Build Minor GC 4.00, or Minor Works GC 3.01;

Total Tender Cost

(a) in a Tender Call in which the Schedule of Approximate Quantities and Unit Prices does not contain a Part B for Site Occupancy, means the Tender Price, and

(b) in a Tender Call in which the Schedule of Approximate Quantities and Unit Prices does contain a Part B for Site Occupancy means the aggregate of the Tendered Site Occupancy Cost and the Tender Price;

Traffic Control Manual for Work on Roadways means the manual published by the Ministry and entitled "Traffic Control Manual for Work on Roadways", 1999 update, as it may be amended or replaced by the Ministry from time to time;

Traffic Management Plan means the document of the same name to be delivered by the Contractor to the Minister pursuant to the Contract, as it may be amended from time to time by the Contractor, in accordance with the terms and conditions of the Contract;

Transportation Act means the *Transportation Act,* S.B.C. 2004, c.44;

Unacceptable Work means any work, workmanship, materials, or products produced or supplied by the Contractor or any Subcontractor which, in the opinion of the Ministry, does not conform to the requirements of the Contract;

Unauthorized Work means any work done,

(a) by a Bidder prior to the acceptance of the Tender,

(b) contrary to or regardless of the instructions of the Ministry,

(c) beyond the lines and dimensions shown on the Drawings, notwithstanding due consideration for permissible variations as determined by the Ministry, or

(d) other than the Work, without the approval of the Ministry;

Unit Price means the amount to be paid by the Ministry to the Contractor for the satisfactory completion of a specified unit of Unit Price Item;

Unit Price Item means a Tender Item which is neither a Lump Sum Item nor a Provisional Sum Item;

Utility Relocation means the relocation of the infrastructure of utility companies or municipalities as described in Major Works GC 23.01 or Design Build Minor GC 32.02;

Value Engineering Proposal means a proposal submitted by the Contractor in accordance with SS 125;

Warranty Period means the period defined in the Contract during which the Contractor is required to repair or otherwise remedy any deficiencies that arise in the Construction;

Weights and Measures Act means the *Weights and Measures Act*, R.S.C. 1985, c. W-6;

Work means the provision of all labour, services, material, and equipment as necessary, for the Contractor to complete and perform its obligations in accordance with the terms and conditions of the Contract;

Workers Compensation Act means *Workers Compensation Act,* R.S.B.C. 1996, c. 492;

Work Order means a written order by the Ministry in the form prescribed by the Ministry for the specific situation, requiring the Contractor to do Work or refrain from doing Work, whether covered by the Contract or not, and includes, without limitation, an order to,

(a) add, extend or delete Work,

(b) alter the Drawings and specifications,

(c) speed up or delay Work,

(d) stop or resume Work, and/or

(e) remedy defects or deficiencies in the Work,

and, without limiting the foregoing, includes a Work Order on one of the following forms,

(i) Stop Work Order,
(ii) Resume Work Order,
(iii) Work Order/Supplemental Agreement,
(iv) a Ministry's instruction, or
(v) any other document prepared by the Ministry clearly marked with one of the above titles and indicating the Ministry's intent to use it as a Work Order;

Written Protest has the meaning ascribed to it in Major Works GC 58.07 or Design Build Minor GC 58.07.

SUPPLEMENTAL GENERAL CONDITIONS

PROJECT NO. 22198-0001

HIGHWAY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

The General Conditions set out in the Contract Document Package, form an integral part of these Supplemental General Conditions and are incorporated herein. Where any condition or provision set out within the General Conditions conflicts with any of the conditions and provisions set out within these Supplemental General Conditions, the condition or provision set out in these Supplemental General Conditions shall govern.

A capitalized term when used herein shall have the meaning set out in the Glossary of Terms.

SGC 4 Interpretation of Master Municipal Contract Documents (MMCD)

GC 77.06(i) is deleted and replaced with the following:

> "(i) the Standard Specifications, Schedule 5 of Bylaw 790, City of Kelowna Construction Standards (Supplemental Standards to MMCD "Gold" Book) and the Master Municipal Construction Documents;"

SCHEDULE 2

CONTRACT SECURITIES

BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

CONTRACT SECURITIES REQUIREMENTS AND BOND SPECIMENS INS-265

FOR MAJOR WORKS, MINOR WORKS, DESIGN BUILD MINOR AND OPERATIONAL SERVICES CONTRACTS

1. GENERAL INFORMATION ON CONTRACT SECURITIES

(a) Any and all costs related to or for any and all Bid Securities and Performance Securities must be included in the Contract Price because in no event will the Ministry be responsible for or pay for any such costs, including without limitation as separate or as extra items.

(b) The Ministry will not pay interest on any deposits held by the Ministry.

2. REQUIREMENTS

(a) If the Bidder is awarded the Contract and if the Bidder delivered a Bid Bond as Bid Security in compliance with the Conditions of Tender and this Schedule, the Bidder will, on the earlier of:

(i) fourteen (14) days from the date shown on the Ministry cover letter delivering the Contract to the Bidder; and

(ii) three (3) days before commencement of the Work on the Site,

deliver to the Ministry at the address set out in the Award letter or in the letter referenced in clause 2(a)(i) above, a Performance Bond and Labour and Material Payment Bond, each

(iii) in the format and containing the terms and conditions set out in the Specimen form of Performance Bond and Labour and Material Payment Bond set out in this Schedule, and

(iv) in the amount of **fifty percent (50%)** of the Tender Price.

(b) If the Bidder is awarded the Contract and if the Bidder delivered a bank draft, certified cheque or money order as Bid Security in compliance with the Conditions of Tender and this Schedule, the Bidder may elect to apply one of the following options.

(i) The Bidder may deliver to the Ministry a Performance Bond and a Labour and Material Payment Bond, each

(1) in the format and containing the terms and conditions set out in the Specimen form of Performance Bond and Labour and Material Payment Bond set out in this Schedule, and

(2) in the amount of **fifty percent (50%)** of the Tender Price.

Upon receipt of the Performance Bond and the Labour and Material Payment Bond in compliance with this Schedule, the Ministry will return the Bid Security to the Contractor.

or

(ii) The Bidder may notify the Ministry in writing before execution of the Contract that the Bid Security may be retained by the Ministry as Performance Security in connection with the Contract. On receipt of such notice, the Ministry will deposit the bid security in the amount of **five percent (5%)** of the Contract Price and hold the funds as Performance Security in connection with the Contract.

(c) All Bonds must show the business address of the Surety for filing claims and delivery of notices by the Ministry.

(d) The Ministry may require the Contractor to obtain the written consent of the Surety to any Work Order or Supplemental Agreement.

(e) The Contractor must maintain the Bonds in force and effect during the Term. If the Surety notifies either party that the Bonds are no longer in force, the Contractor must obtain and deliver to the Ministry, forthwith, valid replacement Bonds that comply with the terms of this Schedule, including the Specimen forms of bonds set out in this Schedule.

SPECIMEN

PERFORMANCE BOND

NO. _____ $_____

KNOW ALL PERSONS BY THESE PRESENTS, that **_____(CONTRACTOR'S NAME)_____** as Principal, hereinafter called the Principal, and **(SURETY/INSURANCE COMPANY NAME AND ADDRESS)_____**, a corporation created and existing under the laws of Canada, and duly authorized to transact the business of Suretyship in Canada, as Surety, hereinafter called the Surety, are, subject to the conditions hereinafter contained, held and firmly bound unto HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA AS REPRESENTED BY THE MINISTER OF TRANSPORTATION AND INFRASTRUCTURE, as Obligee, hereinafter called the Obligee, in the amount of _____ Dollars ($_____), lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a contract with the Obligee, dated the_____ day of **__(DATE OF AWARD)__** 20___ for **_____(DESCRIBE CONTRACT)** _____which Contract Documents are by reference made a part hereof, and is hereinafter referred to as the contract.

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall well and faithfully observe and perform all the obligations on the part of the Principal to be observed and performed in connection with the contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

(1) Whenever the Principal shall be, and declared by the Obligee to be, in default under the contract, the Surety shall

- (a) if the work is not taken out of the Principal's hands, remedy the default of the Principal,
- (b) if the work is taken out of the Principal's hands, and the Obligee directs the Surety to undertake the completion of the work, complete the work in accordance with the contract provided that a contract is entered into for the completion of the work
  - (i) it shall be between the Surety and the completing contractor, and
  - (ii) the selection of such completing contractor shall be subject to the approval of the Obligee,
- (c) if the work is taken out of the Principal's hands and the Obligee, after reasonable notice to the Surety, does not direct the Surety to undertake the completion of the work, assume the financial responsibility for the cost of completion in excess of the moneys available to the Obligee under the contract,
- (d) be liable for and pay all the excess costs of completion of the contract, and
- (e) not be entitled to any contract moneys earned by the Principal, up to the date of Principal's default on the contract and any holdbacks relating to such earned contract moneys held by the Obligee, and the liability of the Surety under this Bond shall remain unchanged provided, however, and without restricting the generality of the foregoing, upon the completion of the contract to the satisfaction of the Obligee, any contract moneys earned by the Principal or holdbacks related thereto held by the Obligee may be paid to the Surety by the Obligee.

(2) The Surety shall not be liable for a greater sum than the amount specified in this Bond.

(3) No suit or action shall be instituted by the Obligee herein against the Surety pursuant to these presents after the expiration of two (2) years from the date on which final payment under the contract is payable.

IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this bond this _____ day of _____, 20 ____.

SIGNED and SEALED
In the presence of:

_____ SEAL
For the Principal

_____ SEAL
For the Surety Attorney-in-fact

SPECIMEN

LABOUR AND MATERIAL PAYMENT BOND
(British Columbia Government Form)

No. _____ $_____

Note: This Bond is issued simultaneously with another Bond in favour of the Obligee conditioned for the full and faithful performance of the contract.

KNOW ALL PERSONS BY THESE PRESENTS THAT **_____(CONTRACTOR NAME)_____** as Principal, hereinafter called the Principal, and **(____SURETY/INSURANCE COMPANY NAME AND ADDRESS)__** a corporation created and existing under the laws of Canada, and duly authorized to transact the business of Suretyship in Canada, as Surety, hereinafter called the Surety are, subject to the conditions hereinafter contained, held and firmly bound unto HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA AS REPRESENTED BY THE MINISTER OF TRANSPORTATION AND INFRASTRUCTURE, as Obligee, hereinafter called the Obligee, for the use and benefit of the Claimants, their and each of their heirs, executors, administrators, successors and assigns, in the amount of _____ Dollars ($ _____) of lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a written contract with the Obligee, dated the ___day of _____ 20___ for **_____(DESCRIBE CONTRACT)_____**which Contract Documents are by reference made a part hereof, and is hereinafter referred to as the contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Principal shall make payment to all Claimants for all labour and material used or reasonably required for use in the performance of the contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A Claimant for the purpose of this Bond is defined as one having a direct contract with the Principal for labour, material, or both, used or reasonably required for use in the performance of the contract, labour and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment directly applicable to the contract provided that a person, firm or corporation who rents equipment to the Principal to be used in the performance of the contract under a contract which provides that all or any part of the rent is to be applied towards the purchase price thereof, shall only be a Claimant to the extent of the prevailing industrial rental value of such equipment for the period during which the equipment was used in the performance of the contract. The prevailing industrial value of equipment shall be determined, insofar as it is practical to do so, in accordance with and in the manner provided for in the latest revised edition of the publication of the Canadian Construction Association titled "Rental Rates on Contractors Equipment" published prior to the period during which the equipment was used in the performance of the contract.

2. The Principal and the Surety, hereby jointly and severally agree with the Obligee, that every Claimant who has not been paid as provided for under the terms of their contract with the Principal, before the expiration of a period of ninety (90) days after the date on which the last of such Claimant's work or labour was done or performed or materials were furnished by such Claimant, may sue on this Bond, prosecute the suit to final judgment for such sum or sums as may be justly due to such Claimant under the terms of their contract with the Principal and have execution thereon. Provided that the Obligee is not obliged to do or take any act, action or proceeding against the Surety on behalf of the Claimants, or any of them, to enforce the provisions of this Bond. If any act, action or proceeding is taken either in the name of the Obligee or by joining the Obligee as a party to such proceeding, then such act, action or proceeding, shall be taken on the understanding and basis that the Claimants, or any of them, who take such act, action or proceeding shall indemnify and save harmless the Obligee against all costs, charges and expenses or liabilities incurred thereon and any loss or damage resulting to the Obligee by reason thereof. Provided still further that, subject to the foregoing terms and conditions, the Claimants, or any of them, may use the name of the Obligee to sue on and enforce the provisions of this Bond.

3. No suit or action shall be commenced hereunder by any Claimant:

   (a) unless such Claimant shall have given written notice within the time limits hereinafter set forth to each of the Principal, the Surety and the Obligee, stating with substantial accuracy the amount claimed. Such notice shall be served by mailing the same by registered mail to the Principal, the Surety and the Obligee, at any place where an office is regularly maintained for the transaction of business by such persons or served in any manner in which legal process may be served in the Province or other part of Canada in which the subject matter of the contract is located. Such notice shall be given

      (1) in respect of any claim for the amount or any portion thereof, required to be held back from the Claimant by the Principal, under either the terms of the Claimant's contract with the Principal or under the Mechanic's Liens Legislation applicable to the Claimant's contract with the Principal whichever is the greater, within one hundred and twenty (120) days after such Claimant should have been paid in full under the Claimant's contract with the Principal.

      (2) in respect of any claim other than for the holdback, or portion thereof, referred to above, within one hundred and twenty (120) days after the date upon which such Claimant did, or performed, the last of the work or labour or furnished the last of the materials for which such claim is made, under the Claimant's contract with the Principal;

   (b) after the expiration of one (1) year following the date on which the Principal ceased work on the contract, including work performed under the guarantees provided in the contract.

   (c) other than in a Court of competent jurisdiction in a Province or Territory of Canada in which the subject matter of the contract, or any part thereof, is situated and not elsewhere, and the parties hereto agree to submit to the jurisdiction of such Court.

4. The Surety agrees not to take advantage of Article 2365 of the Civil Code of the Province of Quebec in the event that, by an act or an omission of a Claimant, the Surety can no longer be subrogated in the rights, hypothecs and privileges of said Claimant.

5. The amount of this Bond shall be reduced by, and to the extent of any payment or payments made in good faith, and in accordance with the provisions hereof, inclusive of the payment by the Surety of Mechanics' Liens which may be filed of record against the subject matter of the contract, whether or not claim for the amount of such lien be presented under and against this Bond.

6. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this Bond this _____ day of _____ 20

SIGNED and SEALED
In the presence of:

_____ SEAL
For the Principal

_____ SEAL
For the Surety Attorney-in-fact

SCHEDULE 3

SPECIAL PROVISIONS
&
APPENDICES

PROJECT NO. 22198-0001

HIGHWAY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

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PROJECT NO. 22198-0001

HIGHWAY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

SECTION 1– GENERAL

1.01 Location of the Site

The Site is located on Highway 33 in the City of Kelowna. The project begins approximately 150m west of Muir Road and extends 4.5 km east to approximately 350m east of Gallagher Road.

1.02 Scope of Work

The general nature of the Work to be carried out under the Contract consists of but is not necessarily limited to the following:

- Mobilization
- Quality Management
- Traffic Management
- Layout
- Clearing and Grubbing
- Roadway and drainage excavation
- Existing pavement removal by pulverizing and use as roadbase
- Supply, hauling and placing sub-base and base course aggregate
- Drainage works including supply and installation of storm systems including catch basins, manholes and an Oil Grit Separator
- Construction of a detention pond
- Supply and installation of watermains
- Construction of curbs, gutters and sidewalks
- Retaining wall
- Construction of a Multiplate pedestrian underpass
- Production of paving aggregate, mixing, hauling and placement to end product specifications
- Signing and pavement markings
- Electrical
- Landscaping

1.03 Interpretation

Cross-reference abbreviations are defined in the Glossary of Terms.

Any reference to the Ministry of Transportation and Highways or the Ministry of Transportation shall mean the Ministry of Transportation and Infrastructure.

Any reference to

- the Ministry of Environment, MELP or MoELP shall mean the Ministry of Environment; and
- the Ministry of Sustainable Resource Management shall mean the Ministry of Agriculture and Lands as appropriate.

1.04 Standard Specifications

The 2009 Standard Specifications for Highway Construction and the attached Special Provisions Appendix for Amendments to the 2009 Standard Specifications for Highway Construction applies to this Contract.

1.05 Availability of Relevant Publications

The Equipment Rental Rate Guide is available from:

B.C. Road Builders and Heavy Construction Association
Suite #307 - 8678 Greenall Avenue
Burnaby, British Columbia
V5J 3M6
Phone Number: (604) 436-0220 Fax Number: (604) 436-2627

All other General Reference Documents and other relevant publications can be obtained through Queen"s Printer at:

Queen"s Printer
Government Publication Services
Box 9452, Stn Prov Govt
Victoria BC V8W 9V7

or

Phone toll free at: 1-800 663-6105

and can be accessed at:

www.publications.gov.bc.ca

If a relevant publication is not available from Queen"s Printer, please contact the Ministry Representative.

1.06 Limited Fiscal Funds

The Work on this Project is subject to the availability of funds.

1.07 Insurance

The contractor shall comply with the insurance requirements as described in Insurance Specifications – Major Works Contract – INS-152, Part 1 and Part 2, except the coverage limits for Part 2 shall be the total cost of the value of the Gopher Creek Pedestrian Underpass.

The following and any one of their employees, servants or agents shall be added to the liability policy as additional insureds:

- City of Kelowna
- FortisBC Inc
- Telus
- Terasen Gas Inc.
- Shaw Communications Inc
- Black Mountain Irrigation District

1.08 Construction Schedule and Cash Flow Projection Schedule

In addition to GC 16.01, the Construction Schedule shall also comply with the following requirements.

The Contractor will submit to the Ministry Representative prior to the pre-construction meeting or within seven (7) days of the Award date, whichever is sooner, the Construction Schedule.

The Construction Schedule will be consistent in all respects with the requirements of the Contract, and will make adequate provision for adverse weather which may be expected from records for the area.

The Contractor will identify the critical path in its Construction Schedule submissions. The start date and finish date of each item on the critical path will be identified in each Construction Schedule submission. The Construction Schedule will identify, include provision for and accommodate utility relocations.

The Construction Schedule will be submitted in one of the following formats:

(i) A network diagram which will, as a minimum, include all the operations listed below, logically linking them to show the manner in which the Project will be constructed. These operations will be further divided into locations within the Work, as also shown below; or

(ii) A bar chart derived from the network diagram, listing all of the same operations by subsection, and showing graphically the length of time needed for each.

Operation	**Subsections**
Mobilization	By Project
Quality Management Plan	By Project
Traffic Management Plan	By Project & Staging, paving
Environmental Management Plan	By Project
Survey Layout	By Station Range
Clearing & Grubbing	By Station Range & Staging
Pavement Reclamation	By Station Range & Staging
Roadway Excavation	By Individual Excavation & Station Range and Staging
Grading to subgrade	By Individual Excavation & Station Range and Staging
Storm Drainage	By Location and Staging
Granular sub-base	By Production, and Placement by Staging and Station Range
Crushed base courses	By Production, and Placement by Staging and Station Range
Concrete curb and gutter	By Station Range and Staging
Paving	By Production, and Placement by Staging and Station Range
Sidewalk	By Station Range & Staging
Traffic Islands	By Location
Electrical Street Lighting?	By Location & Staging
Electrical Traffic Signals	By Location & Staging
Boulevards/Landscaping	By Station Range & Staging
Signing	By Project & Staging
Pavement Marking	By Project & Staging

Operation	Subsections
Completion Date	

The Contractor will provide an updated Construction Schedule to the Ministry on a monthly basis. It will include the progress to date, with comparison to the Contractor's initial Construction Schedule, and a forecast for completion. The updated Construction Schedule will also include the Contractor's proposed operations for the next sixty (60) days. This information, in a form satisfactory to the Ministry, will be provided to the Ministry Representative within five (5) working days after the end of each month, and will also be provided at any other time, within ten working days of the Ministry Representative's request.

Where the monthly update shows that the Contractor's execution of the Work is falling behind the Construction Schedule to the extent that in the opinion of the Ministry Representative any one of the Milestone Dates or the Completion Date shown in Schedule 5 – Time Schedule may not be met, the Contractor will immediately submit to the Ministry Representative details of the action the Contractor proposes to take to bring the Work back on schedule.

The Contractor shall also submit, with the Construction Schedule and monthly updates a Cash Flow Projection Schedule based on the Construction Schedule and following the same format.

1.09 Mobilization

Mobilization will be in accordance with SS 145.08.

Payment for Mobilization will be made at a Lump Sum Price bid and in accordance with SS 145.08.01.

1.10 Hours of Work

The Contractor shall make himself aware of the City of Kelowna"s noise bylaws.

No Work that creates a noise disturbance shall be performed outside of bylaw times without the approval of the City of Kelowna and the Ministry Representative.

Night work may be required on Highway 33 to maintain required travel lane.

1.11 Availability of Site or Right-of-Way

The Site is available for the immediate commencement of construction except the listed right-of-way, licenses to construct, and purchases of properties which have not been completed. These properties may be entered only after confirmation by the Ministry Representative that purchases are complete.

The anticipated possession date of the parcels listed below is February 15, 2010:

Basran Properties Inc: 150 (Lot A), 250 (Lot B), 350 (Lot C) and 698 (amended Lot 8) Hwy 33 E., Kelowna. Lot A, B and C Section 24 Township 26 Osoyoos Division Yale District Plan KAP81726 and Amended Lot 8 (C93228F) Sec 24 Twp 26 ODYD Plan 1802 Except Plans 19310, H12752 and H8383

Appel: 1584 Hwy 33 E., Kelowna. Lot 2 Sec 13 Twp 26 ODYD Plan 17488

Fast: 1287 Hwy 33 E., Kelowna. Lot A Sec 13 Twp 26 ODYD Plan 22851

The Contractor will schedule its work accordingly.

Owner	Legal Description	Anticipated Possession Date
Basran Properties Inc.	Lot A Section 24 Township 26 Osoyoos Division Yale District Plan KAP81726	February 15, 2010
Basran Properties Inc.	Lot B Section 24 Township 26 Osoyoos Division Yale District Plan KAP81726	February 15, 2010
Basran Properties Inc.	Lot C Section 24 Township 26 Osoyoos Division Yale District Plan KAP81726	February 15, 2010
Basran Properties Inc.	Amended Lot 8 (C93228F) Sec 24 Twp 26 ODYD Plan 1802 Except Plans 19310, H12752	February 15, 2010
Appel	Lot 2 Sec 13 Township 26 ODYD Plan 17488	February 15, 2010
Fast	Lot A Sec 13 Township 26 ODYD Plan 22851	February 15, 2010
School District 23		July 1, 2010

The following conditions of entry are provided for the Contractor"s information:

School District No. 23 - Black Mountain Elementary School – All works involving the License Area are to be completed in July and August 2010 during the summer period while school is adjourned. During the construction the Contractor will maintain the utmost safety including temporary construction fencing, warning, spotters or protection on site commensurate with the protection of children, youth and others.

Van Ryswyk access (Okanagan Koi & Water Garden – 1605 Garner Road) – Work to construct new access is limited to Mondays and Tuesdays.

1.12 Access to Site

Access to the Site can be gained by Highway 33 in Kelowna .

1.13 Site Safety

Requirements and responsibilities for construction site safety are set out in SS 135 - Construction Site Safety, which has been significantly revised in the 2009 edition of the Standard Specifications.

Within the Site, the Contractor has all the responsibilities of an “employer” under the *Workers Compensation Act* and the *Occupational Health and Safety Regulation* and may, where designated as the “Prime Contractor” by the Ministry, have additional responsibilities for an “Area of Responsibility” as detailed in SS 135 and these Special Provisions.

The distinction between the geographic areas of the “Site” (where the Contractor is contracted to the Ministry to construct the works) and the “Area of Responsibility” (where the Contractor or another party has responsibilities for occupational health and safety issues between multiple employers) is important.

Area(s) of Responsibility:

The Area(s) of Responsibility encompassing the Site are as described below and may, if agreeable to the Ministry and with proper notice to the Workers Compensation Board by the Prime Contractor for each affected Area of Responsibility, include other such areas as required by the specific methodology and equipment used during the course of the Work.

The Area(s) of Responsibility are:

Area of Responsibility	*Description*
#1	The site including right of way and license areas as per the contract.

Prime Contractor Designations:

In accordance with SS 135, the Ministry intends to make the following appointments to fulfill the responsibilities of Prime Contractor in the Area(s) of Responsibility, commencing when the "Trigger" event occurs or for such time as the "Condition" specified exists.

The Ministry Representative will confirm the identity of the Prime Contractor(s) at the pre-construction meeting, or as soon as practical thereafter, and prior to any change in responsibility.

The Contractor shall not start Work on Site until the Ministry has provided written notice confirming the identity of the Prime Contractor.

Trigger / Condition	**Prime Contractor, by Area of Responsibility**			
	Area #1			
During the term of contract 22198-0001	The contractor			

1.14 Obscure Hazards

The Contractor will continually assess, investigate and evaluate the Work and Site for potential hazards.

The Ministry has recently learned that apparently some older, and at times abandoned, Terasen gas mains covered in what appears as coal tar coatings have been found to contain asbestos. As removal of these old mains may involve cutting of sections where the asbestos may be liberated and become friable, proper asbestos abatement protocols must be followed. Regulatory requirements regarding asbestos and resource information can be found at:

http://www2.worksafebc.com/publications/OHSRegulation/Part6.asp; and http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/asbestos.pdf respectively.

Should such gas mains be found and require cutting, the Ministry will compensate the Contractor for any additional works required for asbestos abatement in accordance with GC 24.00.

No specific locations have been identified.

1.15 Work by Others in Project Area

Further to GC 22.01, the following parties are anticipated to be working on or near the Site:

Company	Description of Work
Ministry of Transportation and Infrastructure	Day labour construction

Paul Shul, Project Supervisor 250-491-5443	
Black Mountain Irrigation District Bob Hrasko 285 Gray Street, Kelowna PH: 250-765-5169	Watermain tie-in work and supervision of crossing at Gopher Creek
Terasen Gas	Modifications to their existing gas distribution mains crossing and/or adjacent to Highway 33
Telus	Modifications to their existing pole lines and plant adjacent to and crossing Highway 33
Fortis	Modifications to their existing pole lines and plant crossing and/or adjacent to Highway 33
Shaw Communications	Modifications to their cable and plant paralleling and crossing Highway 33
Argo Road Maintenance 290 Waterloo Avenue Penticton, BC V2A 7N3 PH: 250-493-6969	Regular highway maintenance
MoT Pavement Marking Contractor	Application of permanent pavement markings
Westcana Electrical Inc. Jamie Hill 960 Unit A & B Alsgard Street Kelowna, BC V1X 7J2 PH: 250-491-9080	Regular Maintenance and connection of services, relocation of traffic controllers and inspections.

1.16 List of Subcontractors and Suppliers

The Contractor must complete the "List of Subcontractors and Suppliers" form H1108 (2008/07/14), in accordance with the instructions on the form, submit this form to the Ministry Representative at the preconstruction meeting, and provide updates of any subsequent changes. A copy of the form is attached herewith as an Appendix or, if not present, is available from the Ministry Representative.

1.17 Quality Management

(i) QC Plan Contract-Specific Work Submission Requirements

In accordance with SS 101.02.03(i), the Contractor"s QC Plan shall provide details of the means, methods, and frequencies of quality control measures for all elements of Work in the Contract.

(ii) Minimum Testing and Inspection Frequencies

Minimum QC testing and inspection frequencies shall meet or exceed those indicated in Table 1 below, elsewhere in these Special Provisions, and/or in the Standard Specifications.

Lump Sum Price payment for Quality Management will be in accordance with SS 101.07.

Table 1: Minimum Frequencies of Quality Control Testing / Inspection

Product	Description	Minimum QC Testing / Inspection Frequencies [1, 2, 3]	Acceptance Criteria
Survey/Layout	Staking Accuracy	1 per 20 stakes	SS 145 Benchmark Level loops: 2nd order: ±0.008 m √km Layout level loops: 3rd order: ±0.024 m √km Control Line Traverse: 1:10,000.
Traffic Control / Management		On-going monitoring during active work, spot check after hours.	SS 194 & SPs
Concrete Roadside Barrier	Per SS 941	Materials and Concrete tests per SS 211, with all plastic concrete tests performed on each batch of concrete	Per SS 941
Bridge End Fill	ASTM C 117, Sieve Analysis of Aggregates by Washing	1 per 750 m3	SS 201
Roadway Aggregate Quality (other than gradation and fracture)	ASTM D 2419 Sand Equivalent	1 per aggregate source	SS 202
	D 6928 Micro Deval	1 per aggregate source	SS 202
	ASTM C 88 Mg SO_4 Soundness	1 per aggregate source, if Micro Deval fails	SS 202
	SS 202 Appendix 2 - Petrographic Analysis Test	1 per source if the aggregate fails any of the above three tests	To the satisfaction of the Ministry Representative
Add'l test for High Fines Surfacing Aggregate	ASTM D 4318 Plastic Limit	1 per aggregate source	SS 202
During all Roadway Aggregate Production	ASTM C 136, Dry Sieve Analysis of Aggregates[2]	1 per hour per 300 t/hr or part thereof of production	SS 202 or SS 531
	ASTM C 117, Sieve Analysis of Aggregates by Washing	1 per shift	SS 202 or SS 531
	SS 202 Appendix 1 - Fracture Count on Coarse Aggregate (BCH 1-13)	1 for every second sample of dry sieve test for base aggregates	SS 202 or SS 531
Compaction:			
• **Embankment**	Proof Roll	As required by the Ministry Representative	To Ministry Representative's satisfaction
	Test Strip	1 per material, if required by the Ministry Representative	To Ministry Representative's satisfaction
	ASTM D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods	3 tests per 20 m per lift, on ℄ and on Lt & Rt fog lines	SS 201

[1] QC frequencies may be reduced below this level, subject to the Ministry Representative's approval, should the Contractor's QC Plan be proven very effective.
[2] For all standards based on production, specified frequencies are based on hours of crusher or plant production time.
[3] A *shift* is a production period of up to 10 hours duration.

Product	Description	Minimum QC Testing / Inspection Frequencies [1, 2, 3]	Acceptance Criteria
• **Bridge End Fill**	ASTM D 698 Standard Test Method for Laboratory Compaction	1 per 5,000 m3	
	ASTM D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods	1 per 100 m2 of each lift	SS 202
• **Top 300 mm of Subgrade**	ASTM D 698 Standard Test Method for Laboratory Compaction	1 per material	
	ASTM D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods	3 tests per 20 m per lift, on ℄ and on Lt & Rt fog lines.	SS 201
• **Base and sub-base aggregates**	ASTM D 698 Standard Test Method for Laboratory Compaction	1 per 25,000 m3 of each type of material and whenever the accepted gradation curve is changed.	SS 202
	ASTM D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods	3 tests per 50 m per lift, on ℄ and on Lt & Rt fog lines	SS 202
All other Items and Work	Per the Contract.	Per the Contract. Where frequencies are not specified in the Contract, as mutually agreed between the Ministry Representative and the Contractor as necessary to ensure conformance with the specified quality requirements.	Per the Contract.

1.18 Traffic Management

Traffic Management will comply with SS 194 except as specified below.

(a) Traffic Management Plan

In accordance with SS 194.11, this Project is a Category 4 as defined in the Traffic Management Guidelines for Work on Roadways manual. The Traffic Management Plan requires the following documentation:

- Traffic control plan

  The traffic control plan is to include but is not limited to:

  - A written description of all works that will affect the flow of traffic
  - A written description of the supply and posting of all advisory, warning and regulatory signing for the affected lanes of traffic
  - A written description of how pedestrian, wheelchair and cycle traffic will be accommodated

- A written description of how and when the changes to the traffic patterns for vehicles, cyclists and pedestrians will be advertised
- A plan to communicate with the emergency services and comply with their requirements
- Drawings showing the location and type of sign, lane configurations and width, methods of controlling traffic at intersections
- Accommodation for Black Mountain Elementary school children by providing a crossing guard at Gallagher Intersection in the morning (8:00 am to 8:45 am) and in the afternoon (2:30 pm to 3:15 pm) while Gallagher Intersection is under construction.

- Public information plan
- Incident management plan
- Implementation plan

(b) Provisions for Traffic

In accordance with SS 194.11, the following traffic engineering requirements must be incorporated into all traffic control plans unless otherwise approved by the Ministry Representative.

General

1. A flashing arrow board is to be used at all lane drop locations. A flashing arrow board must not be used on lane closures on two lane sections of a road or diversions. They are only to be used when closing one lane on a multi-lane roadway in the arrow mode.
2. Where excavations are made adjacent to a traveled lane, causing a drop off which is or could be hazardous to public traffic, the Contractor will either place CRB to separate the traffic from the hazard, or backfill the excavation and install Select Granular Sub-base shaped to eliminate the hazard prior to the end of each shift.
3. The Contractor will be required to provide two Portable Changeable Message Signs (PCMS), to be used to inform highway traffic of existing and anticipated conditions. PCMS and Changeable Message Signs (CMS) are to be used for the duration of the work and comply with SS 194.46. In addition, the Portable Changeable Message Signs shall be Precision Solar Controls, SMC full matrix (solar powered message centre) or equivalent.

   Portable Changeable Message Signs (PCMSs) shall be operated in accordance with Technical Circular T-16/06 http://www.th.gov.bc.ca/publications/Circulars/Current/T_Circ/2006/t16-06.pdf.
4. The Contractor shall supply and install the “Barrier Removed” (C-069 [http://www.th.gov.bc.ca/publications/eng_publications/signs/Construction_Signs.pdf]) signs in advance of construction zones on roadways where median and/or roadside barrier have been temporary removed. When used in advance of the construction zone, the C-069 sign may be tabbed with the C-139-Tu “FOR ____ km” sign that indicates the total distance covered by the construction project. On longer projects, confirmatory C-069 signs may be repeated at regular intervals, and/or at locations within the construction zone as specified by the Ministry Representative. These signs are not yet incorporated in the TCM, and shall meet the ASTM D4956-04 Type 9 sheeting requirement.

5. The Contractor shall supply and install the appropriate Idle Reduction Sign during daytime traffic stoppages at each stoppage zone or an approved alternative to discourage idling of engines. The P-081-Tb "Daylight Hours Only" tab shall be installed if traffic stoppages occur before or extend beyond daylight hours. Sign application and placement shall be in accordance with Technical Circular T-08/08 – Idle Reduction Signs, http://www.th.gov.bc.ca/publications/Circulars/Current/T_Circ/2008/t08-08.pdf.

   This is an initiative by the Ministry to reduce greenhouse gas emissions from the Project. These signs are to be included in the Contractor"s Traffic Management Plan and shown on Traffic Control Plans.

Speed Limits for Public Traffic and Safe Passage through the Work

Where the Ministry Representative and District Manager, Transportation and Infrastructure consider it appropriate, a construction speed zone giving an overall reduction in speed limit may be granted, to a speed of not less than km/h.

Route Hwy 33

1. Class of Roadway: Rural, Arterial, Undivided (RAU)
2. Minimum posted work zone speed limit: 60 km/h except where signed at 50 km/h
3. Minimum number of lanes opened in each direction: 1 lane each direction; must be paved with the exception of approved areas for a maximum period of 7 days.
4. Single Lane Alternating Traffic (SLAT) is only to be used for the construction of the Gopher Creek Pedestrian Underpass and for the BMID Pipe installation for a maximum duration of 10 days.
   i) design speed: 40 km/h
   ii) design vehicle: WB 20
   iii) Minimum lane width: 3.6m
   iv) Minimum shoulder width: 1.0m with CRB
   v) All necessary delineators and markers.
5. Provisions for Traffic during a seasonal shut down are to be in accordance with SS 194.29. The Site is to be left in a condition as specified below:
   - Design Speed: 60 km/h except where signed at 50 km/h
   - Design Vehicle: WB20; except HSU for L200, L225 and L250
   - Design pavement structure to top of bottom lift of asphalt
   - All necessary line painting
   - One pave lane of roadway in each direction
   - Lane and shoulder widths not less than existing condition
6. Traffic delays must be minimized by maintaining continuous two-way traffic (one lane in each direction) as much as possible during construction, and the Contractor shall maintain continuous two-way traffic when there is not work being performed on the highway.
7. Traffic Stoppages:

   To define Traffic Stoppages, the following are added to the Glossary of Terms:

Scheduled Stoppage(s) means stoppage of traffic in one or both directions for the purpose of blasting rock and paving activities. (Refer to Table)

Random Minor Interruptions(s) means a very brief stoppage of no more than 5 minutes in one or both directions

Queue Clearing Time means the time it takes from the last vehicle stopped in the queue to completely clear the work zone from the time the work zone is open to traffic (i.e. Time it takes from the last vehicle to begin moving due to queue lag + Time to travel the stored queue zone closed for the scheduled stoppage)

Allowable Scheduled Traffic Stoppage Windows			
Stoppage Duration	Stoppage Windows	Type of Stoppage	Maximum Queue Clearing Time
5 minutes	5:30 am to 9:00am & 2:30pm to 6:00pm	Random Minor Interruptions	5 minutes
20 minutes	9:00 am to 2:30pm & 6:00pm to 11:00pm	Scheduled Stoppage	10 minutes
30 minutes	11:00pm to 5:30am	Scheduled Stoppage	10 minutes

The Contractor"s Traffic Management Plan shall specifically include provisions to ensure that regularly scheduled public and school transportation is not interrupted and that emergency services (ambulance, fire, police) can be maintained in a timely and efficient manner.

For each pre-approved Scheduled Traffic Stoppage, the Contractor agrees to provide advance notification of the Scheduled Traffic Stoppage by means of advertisement, including but not limited to:

- The Provincial Highways Conditions Centre (PHCC);
- Drive BC (when available online)
- The local radio station(s);
- The local news paper;
- School District No. 23, Judy Shoemaker 250-491-4004 who will contact the necessary people i.e. Black Mountain Elementary, School Bus, etc.
- Two (2) Changeable Message Signs during the day of the scheduled stoppage in advance of the construction zone in each travelled direction (eastbound and westbound).

Traffic stoppage request submissions shall be submitted to the Ministry Representative 2 weeks prior to advertising and advertising should be 1 week prior to scheduled stoppage.

- Please contact Black Mountain Elementary School Principal: Linda Watson 250-765-1955 for unscheduled or emergency activities in the vicinity of the school.

(c) Safety Apparel and Traffic Control Retro-Reflectivity Signs and Devices

The safety apparel and traffic control retro-reflectivity signs and devices referenced in the Traffic Control Manual for Work on Roadways (TCM) have been revised as per Technical Circular T-09/05 http://www.th.gov.bc.ca/publications/Circulars/Current/T_Circ/2005/t09-05.pdf, and shall apply to all Work under this Contract.

(d) Payment

Lump Sum

Contrary to SS 194.61, the Contractor will be paid for Traffic Management. The payment of the Lump Sum Price bid will be made as follows:

- 25% of the Lump Sum when the Contractor has submitted the Traffic Management Plan, as described in paragraph (a) above, to the Ministry Representative.
- 65% of the Lump Sum paid prorated on a monthly basis based on the percentage of the Contract completed. The prorated amount will be adjusted as and when the Contractor revises their construction schedule.
- 10% of the Lump Sum when the Contractor has completed all Work and has left the Site in a condition acceptable to the Ministry Representative.

Construction and removal of detours and other temporary construction required to carry traffic will be considered incidental to the work and no extra payment will be made to the Contractor.

1.19 Materials Supplied by the Ministry and Others

Materials supplied by the Ministry

Notwithstanding any reference to the contrary in the Standard Specifications, the Ministry will supply only the materials as listed below at the locations specified:

Currently in Stockpile in Pyman Pit:

- 245 pieces 690mm CRB-H (SP 941-01.02.01)
- 245 pieces 690mm CRB-E (SP 941-01.02.02)
- Type “D” borrow end-dumped piles

Electrical materials will be available from Westcana"s Yard:

- 1 controller (Gallagher Rd/Hwy 33 Intersection)
- 1 Uninterrupted Power Supply (Gallagher Rd/Hwy 33 Intersection)

No other electrical materials will be supplied by the Ministry.

Materials Supplied by the City of Kelowna

- 40 manhole frames and lids
- Temporary rubber collars

Materials Supplied by Black Mountain Irrigation District

- 1050mm Watermain and Casing

1.20 Available Ministry Sources

There are no Ministry Pits available for use on this project.

1.21 Protection of the Environment

(a) General

Protection of the environment will be carried out according to SS 165, and SS 165 will apply to the Contract in its entirety unless otherwise specified in these Special Provisions.

(b) Environmental Approvals

Work shall be carried out in accordance with the British Columbia Section 9 Water Act Approval in Appendix Section 9 Water Act Approval.

(c) Designated Environmentally Sensitive Areas

The following are classified as a „Designated Environmentally Sensitive Area‟ (ESA‟s) in accordance with SS 165.01.04 and are subject to all the restrictions set out in SS 165 except as modified herein:

ESA 1. Francis Creek (station 101+20 to station 102+60)

ESA 2. Gopher Creek (station 141+00 to 142+00)

ESA 3. Garner Pond (station 124+20 to station 125+60)

(d) Construction Environmental Management Plan

Pursuant to SS 165.02, the Contractor shall provide, in a form acceptable to the Ministry, one hard copy and one digital pdf copy of a Construction Environmental Management Plan, and any subsequent updates to the plan. Any updates or addendums to the plan shall be numbered sequentially for clarity. The Construction environmental Management Plan shall be provided to and accepted by the Ministry prior to commencement of work on the site. The Construction Environmental management Plan shall be developed in accordance with and will adhere to the recommended mitigation measure outlined in Appendix Section 9 Water Act approval and the environmental reports (Environmental Impact Assessment of the Proposed Highway 33 Four Lane Project: Muir Road to Gallagher Road (70% Design) City of Kelowna, BC; EBA Engineering Consultants Ltd.; revised March 10, 2009 and Summary of Results of Turtle Monitoring at Garner Pond, April to July, 2009; Summit Environmental Consultants Ltd; July 31, 2009) provided as Schedule T3-Contract Specific Reference Documents outline in the Tender Document Package for this contract.

(e) Contractor‟s Environmental Monitor

Further to SS 165, the Contractor shall retain an Environmental Monitor who shall:

i) have suitable experience in grading and drainage construction and in the prevention and control of slope erosion and drainage sedimentation; and

ii) be a Registered professional Biologist (R.P.Bio).

The Environmental Monitor‟s required presence on site will be in accordance with SS 165.02. The Environmental Monitor will review and/or prepare and be a signatory to, the Construction Environmental Management Plan including all subsequent updates to the plan. The Registered Professional Biologist (R.P. Bio.) may appoint a suitably experienced alternate who is not an R.P. Bio to conduct environmental monitoring activities during construction however approval must be obtained from the Ministry

Representative and the R. P. Bio. must visit the site once during each bi-weekly reporting period.

Unless otherwise approved by the Ministry Representative, the Contractor"s Environmental Monitor or approved alternate must be on-site during clearing and grubbing, excavation and fill construction work in the Designated Environmentally Sensitive Areas. Prior to any earthwork activities within the Designated Environmentally Sensitive Areas, the Environmental Monitor will determine the need for additional site-specific mitigation measure and incorporate.

The Environmental Monitor will prepare a bi-weekly environmental monitoring report in accordance with the guidelines identified in the MoE Standards and Best practices for Instream Works at, (http://wlapwww.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf) during periods of active construction. The report will be typed and contain information including but not limited to, construction activities undertaken during the month, environmental issues encountered, mitigation measures implemented, effectiveness of mitigation measures undertaken, corrective action to be taken, summaries of any key correspondence and a schedule of planned activities for the coming month.

(f) Water Detention and Treatment Facilities

The extent of water detention and treatment facilities required by the Contractor to meet its responsibilities for protection of the aquatic environment while carrying out the Work will depend on a number of factors, including but not limited to the methods and schedule chosen by the Contractor for performing the Work, and the weather or other Site conditions encountered during the Work.

Where facilities for water detention or treatment are shown on the Drawings, or otherwise required as part of the Work, they have been designed only for conditions which will apply after the completion of the Work. Unless otherwise stated elsewhere in the Special Provisions or on the Drawings, such facilities may be used by the Contractor for runoff detention and treatment while carrying out the Work, subject to the Ministry Representative's approval and subject to the Contractor's discretion as to their effectiveness for this purpose. Whether intentionally so used or not, these facilities will be restored by the Contractor prior to completion of the Work to the lines and grades specified in the Contract Documents Package.

Whatever further water treatment facilities may be necessary will be provided, maintained and removed by the Contractor.

(g) Weed Control

In accordance with SS165.08.02, the Contractor shall develop a noxious weed management plan with provisions for monitoring construction equipment cleanliness and week eradication, in consultation with the Ministry Representative. This shall form part of the CEMP.

(h) Idle Reduction

The Ministry is taking initiatives to reduce greenhouse gas emissions from the Project and has identified reduced idling of construction vehicles and equipment as a reduction strategy. Further to SS 165.02.01 the Contractor"s Construction Environmental Management Plan shall include procedures outlining how drivers and equipment operators will be engaged in idle reduction practices.

The Contractor is encouraged to develop innovative and practical methods to influence workers to participate in this program. The following are sample idle reduction strategies grouped within four areas of opportunity which may be

applicable to the Project and that can be used as a basis for the Contractor to develop the Idle Reduction Plan:

Location of staging areas to minimize impact of emissions:

- Locate combustion engines away from sensitive receptors such as fresh air intakes, air conditioners, and windows.
- Establish a staging zone for trucks that are waiting to load or unload material in the Contract area, away from sensitive receptors

Idling time restrictions:

During periods of inactivity and while stopped within a queue formed under the direction of a traffic control person or device, idling of Contractor and Sub-Contractor off-road equipment shall be minimized and are not to exceed the following:

- Motor vehicles and light diesel trucks - 1 minute;
- Heavy duty diesel vehicles - 5 minutes;
- Diesel Vehicles involved in construction Site passenger transportation - 10 minutes; and
- Construction Equipment - exempt when actually employed at the Site for work intended.

Idling for more than the above times is permitted only under the following circumstances:

- When the vehicle or equipment is forced to remain motionless because of other traffic conditions or mechanical difficulties over which the operator has no control;
- To bring the vehicle or equipment to the manufacturer"s recommended operating temperature;
- When the outdoor temperature is below 0°C or above +30°C and the operator or passengers are inside the vehicle, and there are no auxiliary power sources available to provide temperature control;
- When it is necessary to operate auxiliary equipment that is located in or on the vehicle or equipment to accomplish the intended use of the vehicle or equipment (for example, cranes and cement mixers);
- When the vehicle is detaching or exchanging a trailer;
- When the vehicle or equipment is being repaired or engaged in repairing another vehicle, if idling is necessary for such repair;
- When the vehicle or equipment is queued for inspection, if idling is necessary for such inspection;
- For designated emergency vehicles or any vehicle or equipment assisting in police, fire or ambulance services; and/or
- When defrosting or defogging windows. Idling shall end when fog, frost, or ice conditions have been eliminated.

Outreach and Communications:

- The Contractor shall implement a system of education and training as part of Site orientation for all on-site staff and Sub-contractors.

- The Contractor shall reinforce the idle reduction initiative via signage and during toolbox, health and safety, and Ministry meetings.

Idle Reduction Technologies:

The Contractor is encouraged to utilize idle reduction technologies where appropriate and applicable. Some examples are available at:

http://www.epa.gov/otaq/retrofit/verif-list.htm

(i) Payment

In accordance with SS165, all costs resulting from the Contractor"s responsibility for protection of the environment will be deemed to be incidental to the Work.

1.22 Utilities

The following is a list of utility company representatives who are to be contacted regarding the co-ordination of scheduling of any Utility Relocation. The Contractor will provide the Ministry Representative and the appropriate utility company representatives listed below at least fourteen days notice prior to commencement of any portion of the Work being undertaken adjacent to any utility:

FortisBC
Rob Maschek
Distribution Designer
PH: (250) 717-0852
Email: rob.maschek@fortisbc.com

2850 Benvoulin Road
Kelowna, BC V1W 2E3

Telus
Ian Bishop
OP Engineering
PH: (250) 861-2769
Email: Ian.Bishop@telus.com

Floor 2 – 2002 Enterprise Way
Kelowna, BC V1Y 9S9

Terasen Gas
Ben Proskiw
PH: (250) 371-5026
Email: ben.proskiw@terasengas.com

1975 Springfield Road
Kelowna, BC V1Y 7V7

City Of Kelowna
Andrew Albiston, AScT
Special Projects Manager
PH: (250) 469-8569
Email: aalbiston@kelowna.ca

1435 Water Street
Kelowna, BC V1Y 1J4

Shaw Cable
Richard Muss
Design Technician
PH: (250) 808-1219
Email: Richard.Muss@sjrb.ca

2350 Hunter Road
Kelowna, BC V1X 7H6

Black Mountain Irrigation District

Kevin Burtch, Operations Superintendent PH: 250-765-5169	285 Gray Street, Kelowna, BC
Bob Hrasko Administrator PH: 250-765-5169	285 Gray Street, Kelowna, BC

The Contractor will be responsible for the coordination of any Utility Relocation necessary to facilitate the Work.

(a) Utilities Scheduling Constraints

Telus/Fortis/Shaw/Terasen/Black Mountain Irrigation/Relocations

The relocation of utilities by Terasen, Shaw, Fortis and Telus, Black Mountain Irrigation and the Contractor"s conduct of the Work will be interdependent. The Contractor shall cooperate with the utility companies to ensure:

- that the utility companies have access at all times to their work site;
- that the Construction Schedule submitted and maintained by the Contractor in accordance with Special Provisions clause is realistic, and that its schedule and the utility companies" relocation schedule are mutually consistent and are also consistent with the availability of property as detailed in Special Provisions Clause; and
- that the utility relocation is not being delayed by the Contractor"s scheduling and performance of the Work.

The Contractor shall notify the Ministry Representative immediately if it considers that its Work is being delayed by the failure of any utility company to relocate its services in a timely manner.

1.23 Trenching Existing Pavement Structures

Where trenches are cut into existing pavement structures, backfill will match the existing materials and thickness. Payment for imported backfill will be made under the appropriate Tender Items.

1.24 Haul and Overhaul

In accordance with SS 201.45, haul and overhaul is incidental to the Works and no payment will be made.

1.25 Project Signs

The Contractor shall supply all signs, including C-018"s, C-210"s and appropriate Idle Reduction Sign, with the exception of the C-035 project signs.

The C-035 project signs are already in place. Maintenance of these signs by the Contractor during the term of the Contract shall be incidental.

In accordance with Traffic Management Special Provisions sub-clause (c), the reflectivity standards on C- and TW- signs, channelizing devices, and barricades shall meet minimum levels of ASTM Type 6 or 9, as applicable.

All permanent, custom and construction signs shall meet Ministry"s specifications in accordance to the Sign Pattern Manual:
http://www.th.gov.bc.ca/publications/eng_publications/geomet/geometsigns.htm.

1.26 As-Built Drawings

Upon the completion of the Work and in accordance with the current Ministry "As-Built" Drawing standards (available from the Ministry Representative), the Contractor will provide one marked-up set of Contract Drawings as as-built drawings. These as-built drawings will show in a neat and accurate manner and to scale all changes, additions and deletions to the original contract Drawings to show the "as-built" installation. The record of changes and additions will include both horizontal and vertical layout and the location of equipment as installed. As construction progresses, changes will be submitted periodically to the Ministry Representative in (x, y, z) co-ordinates for review as directed by the Ministry Representative.

As-built drawing sets are required for all components of the Project including roadway location, drainage, structural, electrical and signing installations.

Final signed as-built drawings will be submitted to the Ministry Representative on completion of the Project. Pursuant to GC 53.05, final payment will not be released if the as-built drawings have not been received.

No separate payment will be made for this Work and the cost thereof will be considered incidental to the various items of Work to be performed.

1.27 Contractor Survey Layout

The Contractor is responsible for all staking and survey layout required for the completion of all Work, as shown on the Drawings or as directed by the Ministry Representative, and to affect incidental field adjustments, such as staking of embankments and culverts to match post-stripping ground lines and actual field drainage patterns.

All calculations necessary shall be performed by the Contractor and provided to the Ministry Representative at any time upon request. The Contractor will give the Ministry Representative a copy of the construction grades prior to the start of earthwork operations.

The Contractor's survey layout shall conform, as a minimum, to the requirements outlined in the **Appendix – Survey Layout Services and Products**.

Except as noted below, survey layout is incidental to the Work and no separate payment will be made.

The Contractor shall provide any additional or revised survey layout for any design change approved by the Ministry Representative and will be paid for such additional survey layout. Compensation will be determined in accordance with GC 38.00 and any approved payments will be made from the Provisional Sum for Site Modifications.

1.28 Provision of Electronic Information

At the Contractor"s request and at Ministry Representative"s option, the Ministry may provide the Contractor with electronic copies of the Drawings, design digital terrain model, or other such information.

If the Ministry does provide such information, it is provided "as is" and at the Contractor's request, without warranty of any kind, whether express or implied. All implied warranties, including, without limitation, implied warranties of accuracy, completeness, merchantability, fitness for a particular purpose, and non-infringement, are hereby expressly disclaimed.

Under no circumstances will the Ministry be liable to any person or business entity for any direct, indirect, special, incidental, consequential, or other damages based on any use of this information or any information referenced therein, including, without limitation,

any lost profits, business interruption, or loss of programs or information, even if the Ministry has been specifically advised of the possibility of such damages.

1.29 Acid Rock Drainage or Metal Leaching Potential in Private Quarries

Where the Contractor elects to obtain any materials from a private quarry, the Contractor or the quarry owner shall engage a professional engineer or geoscientist (P.Eng. or P.Geo.) who shall be responsible for field mapping of the quarry, collecting a minimum of three representative rock samples from the specific areas of the quarry being developed, and completing petrographic / mineralogical assessments of the potential for Acid Rock Drainage (ARD) or Metal Leaching (ML) conditions.

Where the assessment detects the presence of sulphate or acid producing mineralogy within the rock, the professional shall commission the necessary laboratory tests to evaluate the potential for ARD or ML. Testing shall be conducted in accordance with Ministry of Transportation Technical Circular T-10/04 ARD Testing At Quarry And Rock Cut Sites, available on-line at:
http://www.th.gov.bc.ca/publications/Circulars/lister.asp?set=Current&circ=T&year=2004

A report summarizing the results of the evaluation is to be certified by the professional and presented to the Ministry. The professional is responsible to ensure that the evaluation reasonably represents the conditions within the proposed quarry development areas.

Where the assessment indicates that sulphate or acid producing materials are not present, no further work is required.

Materials with ARD or ML characteristics exceeding the Canadian Council of Ministers for the Environment (CCME) criteria as specified in the "*Canadian Water Quality Guidelines for the Protection of Aquatic Life*" shall not be used in the Work.

1.30 Site Definition and Motor Vehicle Act Hours of Service

In accordance with the Glossary of Terms, the definition of "Site" shall include, solely for the purposes of the Motor Vehicle Act Section 120(b) and subject to the approval in writing of the Ministry Representative, any of the following areas as the Contractor may explicitly request in writing as desired "Extensions to the Site"

(a) any Contractor-provided pits, quarries, crusher or asphalt plant sites, and

(b) such highway rights-of-way for the entire distance from a Limit of Construction to the property boundary of a Ministry- or Contactor-provided pit, quarry, crusher or asphalt plant site, up to a maximum cumulative length of thirty (30) km,

In accordance with SS 145.29, overweight or oversize vehicles are not permitted on highway rights-of-way within any extension to the Site unless otherwise approved in writing by the Ministry Representative.

1.31 Site Modification

The Provisional Sum, "Site Modifications", has been included as a source of funds for payments for work as deemed necessary and as directed by the Ministry Representative.

Payment for such Work will be made at a negotiated rate or on a Force Account basis from the Provisional Sum for Site Modifications.

1.32 Illumination of Work

If work is to be carried out during hours of darkness then the Contractor shall supply, install and maintain adequate lighting to fully illuminate the works to the satisfaction of the Ministry Representative. The Contractor is advised that tower lighting will be

required. The rolling equipment shall be equipped with adequate individual auxiliary lighting units. The Contractor shall provide auxiliary lighting such that the lamps can be adjusted or tilted so as not be a safety hazard to traffic to the satisfaction of the Ministry Representative.

The Contractor is advised that tube cones and pylons must be equipped with reflective bands to provide maximum visibility.

The cost of lighting as indicated above will be considered incidental to the work performed and shall be include in the prices bid for the respective items of the Schedule 7 and no additional payment will be made.

SECTION 2 – SITE PREPARATION AND GRADING

2.01 Clearing and Grubbing

Clearing and grubbing shall be carried out as shown on the drawings and in accordance with SS 200.

The Contractor shall stake the limits of clearing and grubbing as defined on the Drawings. Prior to commencing clearing the Contractor shall notify the Ministry Representative of the areas to be worked. The Ministry Representative may adjust the limits of clearing and grubbing or eliminate grubbing in specific areas. The Contractor shall take special care during construction to protect and preserve all vegetation outside the clearing and grubbing limits.

Pursuant to the protection of active bird nests under the British Columbia Wildlife Act, tree and large shrub clearing activities shall not be carried out between April 1 and July 31 (the restricted period) unless authorized by the Ministry Representative. In this case the Contractor shall retain the services of an R.P. Bio., or other qualified professional to conduct a bird nest survey and to develop an appropriate mitigation strategy if nests are found that could be impacted by the clearing. The bird nest survey will be paid for from the Provisional Sum for Site Modifications.

Clearing and Grubbing limits adjacent to Designated Environmentally Sensitive Areas shall be to the toe of slope only or as directed by the Ministry Representative

The Contractor shall to retain as many existing trees and shrubs as possible in the Designated Environmentally Sensitive Areas.

The Contractor"s disposal of debris resulting from clearing and grubbing shall meet the requirements of SS 165.05.04 and SS 200.02. Contrary to SS 200, burning of clearing and grubbing debris will not be permitted, and the Contractor shall be responsible for the removal of debris to a Contractor supplied disposal site in accordance with SS 145, and as directed by the Ministry Representative.

The price bid per hectare for clearing and grubbing shall be full compensation for everything furnished and done in connection with clearing and grubbing the entire area shown on the Drawings.

2.02 Remove Existing CSP Culverts and Storm Pipes

The Contractor shall remove and dispose the existing corrugated steel culverts and storm mains as shown on the Drawings or as directed by the Ministry Representative.

Backfill shall be with approved native material or Select Granular Sub Base. Backfill shall be compacted to 95% of maximum laboratory density (ASTM D698 Method D).

The price bid per metre shall be accepted as full compensation for pavement cutting and patching, excavation, backfill, removal, haul and disposal of al material.

2.03 Remove Concrete Roadside Barriers

The Contractor shall remove and dispose the existing concrete roadside barrier where indicate on the Drawings or as directed by the Ministry Representative.

No separate payment will be made for the use of existing concrete barriers for interim traffic control.

The price bid per unit of existing concrete roadside barrier shall be full compensation for loading, hauling and disposal of the barrier to a contractor supplied disposal site.

2.04 Remove Existing Raised Medians, Islands and Curbs

The Contractor shall remove and dispose off-site concrete curb as shown on the Drawings or as directed by the Ministry Representative.

The price bid per square metre shall be full compensation for excavation, backfill, removal, haul and disposal of the medians, islands and concrete curbs.

2.05 Remove Existing Concrete Curb and Gutter

The Contractor shall remove and dispose off-site concrete curb & gutter as shown on the Drawings or as directed by the Ministry Representative.

The price bid per metre shall be full compensation for excavation, removal, haul and disposal of the concrete curb and gutter.

2.06 Remove Existing Sidewalk

The Contractor shall remove and dispose off-site existing concrete sidewalks as shown on the Drawings or as directed by the Ministry Representative.

The price bid per square metre shall be full compensation for excavation, removal, haul and disposal of the concrete sidewalks.

2.07 Remove Existing Concrete Block Retaining Wall

The Contractor shall remove and dispose the existing concrete block retaining wall located on the south side of Hwy 33 at approximately Station 101+20. The Contractor shall ensure the integrity of the roadway and safety to the travelling public during the removal and backfill of the relating wall.

The Lump Sum bid shall be full compensation for the excavation, removal and disposal of the concrete blocks to the Contractor"s disposal site.

2.08 Saw Cut Existing Asphalt Pavement

Pavement cutting shall be carried out at the locations shown on the Drawings or as directed by the Ministry Representative.

The existing pavement adjoining that to be removed shall be cut using a saw or other equipment which will leave a straight edge with a neat vertical face and without distortion of the remaining pavement. Generally these cuts shall be at the tie-in points of new pavement to existing pavement.

The Contractor shall layout all saw cut lines and areas to be removed.

The price bid per metre shall be full compensation for pavement cutting to the full-depth of the existing asphalt pavement.

2.09 Remove Existing Asphalt Pavement

All other pavement marked for removal on the Drawings that is deemed to be unsuitable for incorporation into the pavement structure by pulverizing shall become the property of the Contractor and shall be disposed of in accordance with SS 511.33 or used in embankment construction on approval of the Ministry Representative.

Existing pavement material that is used in embankment construction shall be thoroughly mixed with the embankment material and shall be embedded a minimum of 0.3m from the face of embankment fill and a minimum of 1m below subgrade or as directed by the Ministry Representative.

The price bid per square metre for pavement removal and disposal shall be full compensation for everything furnished and done for full-depth removal of the existing

pavement excavation, loading, hauling to a contractor supplied disposal site or placement in the embankment.

2.10 Roadway and Drainage Excavation

a) General

Rounding of the excavation slopes at the intersection with the existing ground shall conform to the intent of the typical section shown on SS SP201-01. Contrary to SS SP201-01, slope treatment including rounding is considered to be incidental to the excavation and embankments construction and no additional payment will be made.

The Contractor shall prevent standing water in the cuts and fills and at the end of each working day shall grade, roll and seal the materials with a smooth wheel roller weighing not less than 5,400 kg such that the water will not pond on the grade.

b) Organic Stripping

Organic material shall be removed from the roadway areas as indicated on the drawings or as directed by the Ministry Representative.

Organic stripping from the Toovey Pond detention excavation shall be placed back on the excavated slopes to promote revegetation. No additional payment will be made for replacing and trimming the topsoil.

Surplus stripping may be used for the production of Topsoil in accordance with SS751.

The price bid per cubic metre for Stripping shall be full compensation for everything furnished and done in accordance with SS 201.12 or for haul into stockpile.

c) Type A Excavation

Rock Excavation shall be carried out in accordance with SS 204 Rock Cuts.

The price bid per cubic metre for Type A Excavation shall be in accordance with SS 204.91. Contrary to SS 204.92 Excavation Backslope shall be included in the price bid for Type A excavation and no additional payment will be made.

d) Type D Excavation

Roadway and Drainage Excavation shall be carried out in accordance with SS 201.

The price bid per cubic metre for Type D Excavation shall include excavation, haul, placement and compaction or disposal.

e) Type D Borrow Excavation

Approximately 20,000 cubic metres of borrow material may be required to complete the construction of embankments. Borrow material is available from stockpile in Pyman Pit.

Measurement of payment quantities for Borrow Excavation used in the construction of the roadway will be based on design neat line quantities to be constructed, with no adjustment for shrinkage or settlement.

The price bid per cubic metre and shall be full compensation for excavation, haul, placement and compaction of Type D Borrow Excavation.

f) Type D Unsuitable Material Excavation

It is estimated that approximately 5,000 cubic metres of excavation may be unsuitable for embankment construction as defined by SS 201.12.

The price bid per cubic metre for Unsuitable Excavation shall include excavation, haul, and disposal of the material to a contractor supplied site.

2.11 Foundation Excavation

Contrary to SS 407.05 Foundation Excavation will be included in the Unit Price for culverts, outfall pipes, riprap, ditch blocks and other installations for which it is required. No separate payment will be made for foundation excavation.

Foundation Sub Excavation shall be the excavation of unsuitable material beyond the design envelope for foundation excavation as defined on the Drawings or in the Standard Specifications. Foundation Sub Excavation shall only be carried out when approved or directed by the Ministry Representative.

Payment for foundation Sub Excavation will be made at the Unit Price bid for Type D excavation.

Backfill of Foundation Sub Excavation shall be Select Granular Sub Base. Payment will be made at the price bid for Select Granular Sub Base and shall include supply, haul, placement and compaction of the backfill.

2.12 Increased Compaction Watering and Dust Control

Earth embankments shall be constructed in accordance with SS 201.37. Contrary to SS 201.97, no separate payment will be made for increased compaction of earth embankments.

Notwithstanding anything to the contrary in the Standard Specifications, payment for watering will not apply to any Item in this Contract. All watering will be included in the prices bid for the various items in the Schedule of Approximate Quantities and Unit Prices. Costs related to watering for dust control, compaction, and the flushing and clean-up of existing paved surfaces or haul roads will be to the Contractor"s account and no additional payment will be made.

2.13 Granular Materials

(a) General

The Contractor shall be responsible for the supply and production of all granular materials each complying with the appropriate sections of the Standard Specifications for which the use is intended.

When crushing, stockpiling and handling granular materials, the Contractor shall comply with all provisions of the Mines Act and the Health, Safety and Reclamation Code for Mines in British Columbia, available from the Ministry of
Energy, Mines and Petroleum Resources at:

www.em.gov.bc.ca/Subwebs/mining/Healsafe/mxready/mxcode01.htm.

(b) Available Ministry Sources

There are no Ministry Sources available for the production of Granular Materials.

(c) Measurement and Payment

Measurement of payment quantities for the granular materials used in the construction of the roadway will be based on design neat line quantities to be constructed, with no adjustment for shrinkage or settlement.

The prices bid per cubic metre for the applicable items shall be accepted as full compensation for supply, production, loading, hauling, placement and compaction in place.

25 mm Well Graded Base Course Aggregate may be required to bring roadways to finished grade and super elevation in areas of pavement pulverization. Payment will be

made at the price bid per cubic metre for the material used and shall include shaping, grading and compacting of the grade.

2.14 Culverts

Culverts shall be installed in accordance with SS 303 and at locations, depths, grades and lengths as necessary to field fit the designed pipe to the actual post-stripping ditches and drainage patterns. Culverts shall be installed at a desirable grade of a least 2% and where this cannot be achieved, a minimum grade of not less than 0.5%.

Corrugated steel culverts shall have annular re-corrugated ends and bolted, corrugated couplers, in accordance with SS 320. Dimple couplers are not permitted.

Culverts shall be measured in metres and paid for each pipe size with no allowance for depth. Measurement shall be for the length of pipe installed after work has been completed. All work required to direct and maintain the drainage on a temporary basis shall be considered incidental to the work. No separate payment will be made.

Cutting pipes to amend the lengths shall be considered incidental and no additional payment will be made. All cut ends and exposed metal shall be repaired by the application of two coats of zinc rich paint.

At the completion of grading, and prior to removal of siltation control, the Contractor shall flush all culverts, storm drains and associated appurtenances to leave them clean and hydraulically efficient. Flushing of culverts and drains shall be considered incidental and no separate payment will be made.

Where existing culverts are to be extended, the Contractor shall ensure that the existing pipe, at the connection point, is true to shape and in good condition. Where necessary due to damage to the existing pipe ends, the pipe shall be cut back to sound material or the length of damaged pipe removed and disposed of before making the extension.

Trenching for culvert installations shall be done with consideration to traffic safety. All trenches across the traveled portion of the highway shall be backfilled prior to leaving the job each day. Temporary restoration of the existing road structure shall match existing gravel and asphalt thicknesses unless directed otherwise by the Ministry Representative.

The price bid per lineal metre for each culvert type shall be full compensation for the supply and installation of all corrugated steel pipe, watertight gaskets, fittings and connections, foundation excavation and disposal, field-fitting the location, trench shoring, dewatering, supply and placement of approved bedding and backfill material, and temporary restoration of the existing road structure including hot mix asphalt.

2.15 Concrete Curb and Gutter

Extruded or cast in place combined curb and gutter shall be constructed at the locations shown on the Drawings and shall conform to drawings SP582-01.01.

Curb let-downs will be constructed at all driveway and pedestrian crosswalk location shown on the Drawings or as directed by the Ministry Representative. This work will be considered incidental to the construction of the curb and gutter and no additional payment will be made.

The supply and placing of the granular material beneath the curbs will be considered incidental to the work and no extra payment will be made.

The price bid per metre shall include everything furnished and done including granular materials, form setting or extrusion, supply and placing of air entrained concrete, finishing and curing protection.

2.16 Concrete Sidewalk

a) Concrete Sidewalk

Concrete sidewalks shall be constructed at the locations shown on the Drawings and shall conform to drawings SP582-07.01 and SP582-07.02.

The construction of sidewalk ramps and letdowns will be considered incidental to the work and no additional payment will be made.

The Contractor shall erect and maintain suitable barriers to protect the sidewalk form traffic. Any portion damaged before final acceptance shall be replaced or repaired at the Contractor"s expense.

The supply and placing of the granular material beneath the sidewalk will be considered incidental to the work and no extra payment will be made.

The price bid per square metre shall include everything furnished and done including granular materials, form setting, supply and placing of air entrained concrete, finishing, curing and protection.

b) Concrete Sidewalk and Driveway Entrances

Concrete driveway entrances shall be constructed in accordance with SP582.07.01.

The Lump Sum price bid per installation shall be full compensation for additional labour and materials to form and shape driveway entrances regardless of the driveway area or width.

2.17 Concrete Median Curb

Extruded concrete curb shall be in accordance with SP582-01.04.

The shaping of median and island ramps at all pedestrian crosswalk locations shall be in accordance with SP582-07.02 and SP582-07.03 shall be considered incidental work.

The Contractor shall apply Sikadur-32 Hi-Mod" adhesive or equivalent between the bottom of the island curb and asphalt and the back of the island curb and the median concrete. The supply and application of the adhesive will be considered incidental to the work and no additional payment will be made.

The price bid per metre shall include everything furnished and done in connection with the supply and placing of air entrained concrete, joints, finishing, curing and protection.

2.18 Concrete Median and Quadrant Island Surfacing

Concrete for medians and quadrant islands shall be supplied and placed to a minimum thickness of 75mm. Concrete shall comply with SS 211 and shall have a broom finish.

Control joints shall be at 2.5m on centre to a 6mm width and 28mm depth.

Measurement for payment will be to the neat line design quantities between the back of the extruded concrete curbs for medians and traffic islands.

The shaping of median and island ramps at all pedestrian crosswalk locations shall be in accordance with SP582-07.02 and SP582-07.02 and shall be considered incidental to the work.

Granular infill will be 25mm Well Graded Base Course and will be considered incidental to the work.

The price bid per square metre shall be for all things furnished and done including the supply, placing and finishing of the concrete.

2.19 Type D Fencing

The Contractor shall supply and install Standard Height, Type D Fencing (1.8m) in accordance with SP741-05.01 at the locations shown on the Drawings or as directed by the Ministry Representative.

The price bid per metre for Type D Fence shall include all things furnished and done in accordance with SS 741-05.01.

2.20 Relocate Type D School Fence

The contractor shall relocate existing chain link fence along the Black Mountain Elementary School as shown on the Drawings or as directed by the Ministry Representative.

The Contractor is advised that work on the school property is restricted to the times and durations specified in SP Clause „Availability of Site or Right-of-Way" of these Special Provisions.

The price bid per metre for relocating the Type D Fence shall be full compensation for all things furnished and done for the removal of the existing fence and for the installation as shown on the Drawings or as directed by the Ministry Representative.

2.21 Supply and Install Walkway Gate

The Contractor shall supply and install a Walkway Gate in accordance with the City of Kelowna Standard Detail Drawing SS-R28 at the location shown on the Drawings or as directed by the Ministry Representative.

The Lump Sum price bid pr installation shall be full compensation the supply of all materials and for things furnished and done to complete the installation.

SECTION 3 - STORM DRAINAGE CONSTRUCTION

3.01 Description of Work

Storm Drainage Construction consists of the following major items:

- Highway 33 storm drainage,
- Gallagher Road storm drainage,
- Toovey detention pond drainage,
- Replacement of existing storm and sanitary manhole frames and covers,
- Adjustment of existing storm and sanitary manholes to grade.

3.02 Removals and Adjustments

a) Remove Existing Manholes

The Contractor shall remove and dispose off-site existing manholes as shown on the Drawings or as directed by the Ministry Representative.

The price bid per removal shall be full compensation for all things furnished and done including pavement cutting and patching, excavation, backfill, removal, haul and disposal of all material.

b) Remove Existing Catch Basins

The Contractor shall remove and dispose off-site all existing catch basins as shown on the Drawings or as directed by the Ministry Representative.

The price bid per removal shall be full compensation for all things furnished and done including pavement cutting and patching, excavation, backfill, removal, haul and disposal of all material.

c) Remove Existing Inlet Structures

The Contractor shall remove and dispose off-site all existing inlet structures as shown on the Drawings or as directed by the Ministry Representative.

The price bid per removal shall be full compensation for all things furnished and done including pavement cutting and patching, excavation, backfill, removal, haul and disposal or stockpiling of all material.

d) Replace Existing Manhole Frames and Covers

The contractor shall replace existing Sanitary and Storm Manhole frames and covers at the locations shown on the drawings or as directed by the Ministry Representative.

The Contractor shall be responsible for locating and marking all manholes on the project and submitting their list to the Ministry Representative.

All existing Manhole covers and frames shall be removed and replaced to the City of Kelowna standard as shown on Detail Drawing SS-S1b Manhole Frame and Cover. These frames and covers will be supplied in stockpile at the City Works Yard in Kelowna.

Frames shall be installed according to the manufacturer"s guidelines available from the supplier or from the Ministry Representative. The supply of concrete grade rings, if required will be paid at a negotiated rate or on a force account basis from the Provisional Sum Item for Site Modifications. The Contractor will be required to place temporary rubber collars around each manhole until top lift is in place thus allowing the traffic to safely flow through the affected areas. The City will supply the temporary rubber collars

to be used prior to top lift paving. The Contractor will provide two weeks written notice to the Ministry Representative and the City of Kelowna Representative prior to the picking up of these items. The Contractor shall arrange for pickup, and return of the collars to the City upon completion of the work. The Contractor shall be responsible to replace lost or damaged collars.

The City of Kelowna contact is:

Wayne Nadasde:
Construction Supervisor
Phone: (250) 469-8917

The elevation of the top of the new manhole covers shall be to the same grade and crossfall as the surface elevation of the adjacent new Top Lift with a tolerance of 4.0mm below but never higher.

Payment for "Replace Existing Manholes Frames and Covers" will be at the unit price bid. Payment will be considered full compensation for, but not limited to, the removal and stockpile of the existing frames, disposal of the old bricking, arranging for pickup and delivery of the new manhole frames, covers and rubber collars, installing concrete grade rings, setting and adjusting the frame, concrete into place, grouting the interior, installing temporary rubber collar and returning to the City and all other things necessary for the completion of the work.

e) Adjust Existing Storm and Sanitary Manholes to Grade

The Contractor shall adjust existing manholes to the finished grade as shown on the drawing and as directed by the Ministry Representative. Manholes shall be adjusted in accordance with the City of Kelowna Construction Standards.

The price bid per adjustment shall be full compensation for the supply of all materials required for the adjustment and for all things all things furnished and done to complete the installation.

3.03 Storm Drains

Storm Drains shall be constructed in accordance with SS582 at the locations and to invert levels shown on the Drawings or as directed by the Ministry Representative.

PVC Plastic Drainage Pipe shall meet the requirements of SS318.

Corrugated Steel Pipe shall meet the requirements of SS320.

Concrete Pipe shall meet the requirements of CSA A257.

The price bid per lineal metre of storm drain shall include trenching, the supply and installation of storm pipe and watertight gaskets, the supply and placing of bedding, backfill, disposal of surplus excavation and restoration of gravels and asphalt pavement.

Connections to complete a fully sealed and operational sewer such as elbows, reducers, wyes, tees, seal and associated hardware are considered incidental to the supply and installation of the storm drains and no additional payment will be made.

3.04 Perforated Corrugated Steel Pipe Subdrain

The Contractor shall supply and install a perforated subdrain in accordance with SS 303-06 at locations shown on the Drawings and as directed by the Ministry Representative.

The price bid per metre shall be full compensation for trenching, supply and installation of the corrugated steel perforated pipe, filter gravel, filter fabric, subdrain flushout and backfill.

3.05 Oil Grit Separators

a) Garner Pond

Contractor shall supply and install an oil / grit separator prior to the Garner Pond outfall at approximately Station 126+45.

The oil / grit separator shall be CDS Unit PMSU40_40 or equivalent and provide 80% TSS removal for particles 50 microns or larger and treatment for flows up to 0.105m3/s (50% of the 2-year 1-hour event). Installation shall be in accordance with the manufacturer"s instructions.

The Lump Sum price bid for the oil / grit separator shall be considered full compensation for all work required to supply and install the oil / grit separator, including excavation, backfill and connections.

b) Gallagher Road

Contractor shall supply and install an oil / grit separator on Gallagher Rd prior to the Gopher Creek outfall at approximately Station 126+45.

The oil / grit separator shall be CDS Unit PMSU30_35 or equivalent and provide 80% TSS removal for particles 50 microns or larger and treatment for flows up to 0.073m3/s (50% of the 2-year 1-hour event)

Installation shall be in accordance with the manufacturer"s instructions.

The Lump Sum price bid for the Oil / Grit Separator shall be considered full compensation for all work required to supply and install the oil / grit separator, including excavation, backfill and connections.

3.06 Precast Concrete Manholes

Precast Reinforced Concrete Manholes shall be in accordance with the City of Kelowna Standard Detail Drawing SS-S1a and SS-S1b and shall be installed at the locations and to invert levels shown on the Drawings or as directed by the Ministry Representative.

Manholes shall be installed in accordance with the City of Kelowna Supplemental to the Master Municipal Specifications.

The price bid per installation shall include the supply of all materials for the complete installation and for all things furnished and done. No additional payment will be made for depth adjustment.

Payment for constructing manholes onto an existing sewer system will be made at the price bid per installation for all things furnished and done. No additional payment will be made for depth adjustment.

3.07 Precast Concrete Catch Basins

Precast Concrete Catch Basins shall be in accordance with the City of Kelowna Standard Detail Drawing SS-S11a and SS-S11b and shall be installed at the locations and to invert levels shown on the Drawings or as directed by the Ministry Representative.

Catch Basins shall be installed in accordance with the City of Kelowna Supplemental to the Master Municipal Specifications.

The price bid per installation shall include the supply of all materials for the complete installation and for all things furnished and done.

3.08 Precast Variable Depth Catch Basins

Precast Concrete Variable Depth Catch Basins shall be installed in accordance with SS582-02.02 at the locations and to invert levels shown on the Drawings or as directed by the Ministry Representative.

Payment will be made at the price bid per installation in accordance with SS582.92 for all things furnished and done with no additional payment for depth adjustment.

3.09 Precast Lawn Basin with Concrete Surround

Precast Concrete Lawn Catch Basins shall be installed in accordance with SS582-02.01 at the locations and to invert levels shown on the Drawings or as directed by the Ministry Representative.

The price bid per installation shall be full compensation for all things furnished and done in accordance with SS582.92 including the concrete surround.

3.10 Head Walls

The Contractor shall supply and install head walls at drainage structure inlets and outfalls at locations shown on the Drawings or as directed by the Ministry Representative.

Headwalls shall be constructed in accordance with MMCD Standard Detail Drawings S13.

The price bid per headwall shall be full compensation for all things furnished and done to install the headwall in accordance with the manufacture"s specifications.

3.11 Inlet Structures

Cast in place concrete inlet structures shall be constructed around the ends of pipe inlets at the locations shown on the Drawings The inlet structures shall be constructed in accordance with SP582-04.01 and shall meet the requirements of Class A concrete.

Precast inlet structures may be provided as alternative with the Ministry Representative"s prior approval.

The price bid per installation shall be full compensation for all things furnished and done including excavation, supply and forming of concrete, backfilling, setting in of pipe drains, setting and securing steel grate and all other things necessary to complete the work.

3.12 Erosion Protection

a) Rip Rap

Riprap shall meet SS 205 for the Classes indicated on the Plans and shall be placed in accordance with the Drawings and as directed by the Ministry Representative. Riprap shall be underlain with non-woven geotextile fabric.

Riprap shall be used for ditch lining, slope armoring and splash pads at culvert inlets and outlets, spillway outfalls, and biofiltration swale outfalls.

The price bid per cubic metre for the respective classes of rip rap shall be in accordance with SS 205.09 and SS 205.10 and shall include the supply and installation of Geotextile Fabric where specified on the drawings.

Contrary to SS 205.10 foundation excavation will be included in the unit price for riprap and no additional payment will be made.

b) Geotextile Fabric

Geotextile shall conform to the following values for the appropriate application.

Non-Woven Geotextile Specifications:

Grab Tensile Strength (N)[1]	>670
Mullen Burst Strength (MPa)[2]	>1.7
Equivalent Opening Size (microns)[3]	120<EOS<400

Test Requirements:

(1) ASTM-D-4632
(2) ASTM-D-3786
(3) ASTM-D-4751

A minimum 0.5 m overlap is required between adjacent strips of geotextile. Securing pins shall be installed along a line through the midpoint of each joint overlap at 1.5 m maximum intervals. Securing pins shall be 5 mm diameter steel pins, pointed at one end and with a fabricated head. A steel washer not less than 75 mm in diameter shall be provided with each pin. Pins shall be a minimum 300 mm in length, and shall be supplied by the Contractor.

The Contractor shall exercise care during placement of material to avoid damage or displacement of the geotextile. Construction equipment shall not be permitted to operate directly on the surface of the geotextile. Geotextile that is damaged or displaced shall be replaced by the Contractor at the Contractor's own expense.

Supply and installation of geotextile will be included in the Unit Price bid for Riprap.

SECTION 4 - PROPRIETARY STRUCTURES

4.01 Mechanically Stabilized Earth Retaining Walls

a) General

A Mechanically Stabilized Earth (MSE) retaining wall system shall be supplied and installed under this Contract as a proprietary structure.

The Contractor shall ensure that the proprietary structure is designed, fabricated and constructed in accordance with the Contract Documents and that the structures meet all of the Project requirements. As shown on the Drawings, the proprietary structures shall consist of:

- Mechanically Stabilized Earth retaining wall system;
- All cast-in-place concrete leveling pads and copings (if required);
- All sidewalk fences at the top of the wall;
- All granular backfill materials;
- Related drainage materials including piping, geotextiles and drain rock;

The Mechanically Stabilized Earth retaining wall supplied for this Project shall be either a “modular block” or an “interlocking concrete block” system. MoT Recognized product suppliers include Allan Block, Keystone, and United Lock Block.

Modular block systems shall not use drypack (zero slump) concrete products.

Interlocking concrete block systems shall not be manufactured with return concrete.

b) Project Requirements

The MSE retaining walls must be designed and constructed to satisfy the following:

- The MSE retaining walls shall include precast concrete facing panels.
- Soil reinforcement shall be inextensible galvanized steel strips or galvanized steel wire grids. The reinforcement length shall be uniform throughout the entire height of the wall.
- The MSE retaining walls must be supplied from one of the pre-qualified proprietors listed in the current MOT Recognized Products List including Allan Block, Keystone, and United Lock Block.
- The precast concrete facing panel exposed surfaces shall have an architectural finish similar to United Lock Block"s “Textured Lock” or an alternative approved by the Ministry Representative.
- The top of the retaining wall shall be finished with coping or capping units to provide a visually smooth line.
- The structures shall conform to the general arrangement shown on the Drawings. All references to horizontal and vertical alignments shall be maintained as shown. All details, including minimum footing embedment depths, reinforced backfill, sidewalk fence and drainage conduits etc., shall be incorporated in the final design.
- Concrete for the Interlocking concrete block systems shall meet the requirements of SS 211.04 and the following:

Classification	Minimum Compressive Strength at 28 days (MPa)	Nominal Maximum Size of Coarse Aggregate (mm)	Air Content (%)	Slump (mm)	Maximum W/C_m Ratio by Mass
Interlocking Modular Block concrete	30	28	5 ± 1	50 ± 20	0.45

- The backfill in the reinforced structural granular fill zone shall be constructed as shown on the Drawings and in accordance with the material, placement and compaction requirements of SS 201.40 „Bridge End Fill".

c) Design Criteria:

1.	**Service Life**	100 years minimum
2.	**Design Codes**	CAN/CSA-S6-06, including the limit states approach. For items not covered by CAN/CSA-S6-06, or unless noted otherwise, AASHTO Standard Specifications for Highway Bridges, 17th Edition, 2002 including interim revisions shall be the governing code. In the case of any discrepancies between the specified design codes and these MOT specifications and/or Drawings, these MOT specifications and/or Drawings shall govern.
3.	**Allowable Bearing Pressure and Internal / External Design Soil Parametres***	The allowable bearing pressure under the MSE wall is 500 kPa when founded on rock, and 200 kPa when founded on prepared subgrade. Backfill will be used in the reinforced soil zone and can be assumed to have a unit weight (γ) = 21 kN/m^3 and a friction angle (Φ) = 36^o. The retained earth can be assumed to have a unit weight (γ) = 19 kN/m^3 and a friction angle (Φ) = 33^o. The foundation soil will be a sub fill of variable thickness or native embankment which can be assumed to have a unit weight (γ) = 21 kN/m^3 and a friction angle (Φ) = 36^o.
4.	**Minimum Soil Reinforcement Length**	The minimum soil reinforcement length provided for the MSE walls shall be 70% (Refer to AASHTO 2002 Cl. 5.8.1) of the distance from the top of the levelling pad to the top of the wall.

5.	**Corrosion and Protection**	All soil reinforcement corrosion protection shall be in accordance with AASHTO Standard Specifications for Highway Bridges, 17th Edition, 2002, clause 5.8.6.1. *Galvanization loss is equal to :* 15 micrometres/year for first 2 years 4 micrometres/year for subsequent years *Carbon steel loss is equal to:* 12 micrometres/year after zinc depletion Service Life = 100 years
6.	**Aesthetics**	The wall coping shall be cast in place concrete finished to a Class 2 finish in accordance with the SS 211. The coping shall be formed to suit the alignment of the top of the MSE wall and finished to the elevations shown on the Drawings. The wall system shall include precast concrete facia panels which shall be supplied with a Class 3 finish in accordance with the SS 211. Alternatively, suitable architecturally treated concrete facia panels may be used with Ministry approval.

** Note: The Contractor shall be responsible for confirmation of internal and external wall stability. The Ministry will be responsible for determining the global stability of the wall system. Therefore, as part of its design review process, the Ministry may impose specific limits on some parametres such as; footing location, size and shape, pressure distribution on the footing and backfill, stress/strain/deformation parametres and drainage assumptions.*

d) Proprietary Structure Design Report

The Contractor shall prepare and submit a Proprietary Structure Design Report consisting of all information necessary for the project specific design, fabrication, transportation, quality control and installation of the proprietary structures, including but not limited to the following:

1. Complete set of design calculations;
2. Design methodology and applicable design standards;
3. A list of all assumptions made in the design;
4. Geotechnical constraints;
5. Force diagrams showing the magnitude, location and direction of all forces for each load case;
6. Diagrams showing all foundation loads including load inclination angle, effective width of footing and bearing pressure for each load case;
7. Service life calculation in accordance with the design criteria for corrosion rates;
8. Wall drainage details;
9. Complete material and construction specifications;
10. Fabrication and installation drawings; (as specified below)
11. Fabrication location and schedule;
12. Delivery details and schedule;
13. Detailed backfill procedures including a determination of allowable deflections and procedures for monitoring deflections during construction;

14. Details for temporary construction bracings if required;
15. Concrete quality control procedures.

e) Fabrication and Installation Drawings:

Fabrication and installation drawings shall conform to the following:

1. Format:

- Full size reproducible drawings, approximately 600 mm by 850 mm (one set).
- Lettering for notes and dimensions to be at least 2.5 mm, for headings 4 mm.
- Drawings to be legible when half-sized.

2. Contents:

- Plan views, showing information required to lay out the structure.
- Elevation views, with elevations and dimensions required to construct the work.
- Details and typical sections of all proprietary and associated components.
- Notes listing design codes, design criteria, unfactored applied loads, and material and construction specifications.
- Soil reinforcement types and lengths.
- Limits of excavations and backfill required by the wall designer.
- Component layout, coping, movement joints, typical details.
- Equipment to be used and any temporary support and bracings if required for installation including details of any excavation protection works.
- Identification of the materials and other work required under this Item, identifying, where applicable;
  i) materials and work which will be provided by a proprietary structure supplier and are included in their price quotation to the Contractor, and
  ii) materials and other work which will not be provided by a proprietary structure supplier, and which the Contractor will have to supply and install

The Contractor shall submit four (4) complete copies of the Proprietary Structure Design Report to the Ministry Representative a minimum of six (6) weeks prior to commencement of the wall component fabrication work. The Proprietary Structure Design Report shall be sealed by the proprietor"s design engineer, who shall be a Professional Engineer, registered in the province of British Columbia, with experience in the design and construction of similar structures.

The Ministry will review the submissions for general compliance with the Contract requirements and complete an assessment of the global stability of the proposed wall system.

If modifications are required, the Ministry Representative will return one marked up copy of the Proprietary Structure Design Report to the Contractor. The Contractor shall make the appropriate revisions and resubmit four (4) complete copies of the revised Proprietary Structure Design Report to the Ministry Representative for further review.

If no exceptions are taken, the Ministry Representative will return one set of the reviewed Proprietary Structure Design Report to the Contractor. The Contractor shall forward an additional two (2) copies of the reviewed report to the Ministry Representative.

Any work done or materials ordered prior to the completion of the review process shall be at the Contractor's risk. Installation of the Mechanically Stabilized Earth (MSE) walls will not be allowed to proceed prior to the completion of the Ministry's review of the Proprietary Structure Design Report.

The Ministry"s review of the Proprietary Structure Design Report will not relieve the Contractor from its obligation to perform the work in accordance with the Contract.

f) Quality Control

The Contractor shall implement a quality control program to the following requirements:

COMPONENT	REQUIREMENT
Cast-in-place Concrete	The Contractor shall provide concrete mix designs and strength test results to the Ministry Representative in accordance with these Special Provisions.
Precast Concrete	The Contractor shall provide concrete mix designs, aggregate test results and strength test results to the Ministry Representative and perform Quality Control as required in SS 415.
Steel	The Contractor shall provide copies of: • mill certificates giving chemical and physical properties; • test reports confirming galvanizing to CAN/CSA G164
Reinforced Backfills	The Contractor shall provide tests results to the Ministry Representative to verify that the reinforced backfills meet all material, placement and compaction criteria as specified in the Contract Documents and are in compliance with the requirements of the proprietary structure designer. Tests on reinforced backfill materials shall include but may not necessarily be limited to sieve analysis, electrochemical tests, laboratory proctor density tests, aggregate density tests and in-situ density tests.

The completed structure shall meet the following tolerances:

Horizontal Dimensions	±25 mm
Elevations	±25 mm
Variations from plumb	1:100 but not more that 30 mm
Line on coping	such that no abrupt deviations are visible

A minimum of two (2) weeks prior to installation, the Contractor shall submit a detailed program for monitoring construction for both erection safety and structural integrity of the completed installation. The program must be approved and endorsed by the proprietary structure supplier and the MSE wall designer, who must indicate that the proprietor"s site representative will comply with the procedure.

The monitoring program shall include but may not be limited to:

- Stages at which monitoring is to be performed;
- Method and frequency of measurement and testing;
- Allowable deflections or movement;
- Procedures to be followed if allowable deflection or tolerances are exceeded and, if procedures include a stoppage of work, details of corrective action to be taken as a prerequisite to resuming work;

- Availability of on site documentation for review and reference including: Letters or Certification of Inspection of formwork, WCB Inspection Reports, Site Erection Procedures and Quality Control Reports for off-site precast concrete or fabrication shops;
- Identification and relevant experience of the proprietor"s designated site representative(s);
- A detailed schedule updated at the start of each work week, indicating when inspections will be performed and when the designated site representative(s) will be on site.

The work shall be inspected and supervised by the proprietor"s site representative who shall be Professional Engineer registered in the province of British Columbia with a minimum of five years experience in the design and construction of the applicable proprietary structure or, who is a technician, with a minimum of five years experience in the design and construction of the specific proprietary structure and who is designated in writing by and working under the direct supervision of a Professional Engineer registered in the province of British Columbia with a minimum of five years experience in the design and construction of the applicable proprietary structure.

The qualifications of the proprietor"s site representative(s) whether they be an engineer or technician shall be subject to review by the Ministry Representative.

The proprietor"s site representative must be on site to inspect and supervise the installation of the proprietary structure on the following basis:

- As required by the Professional Engineer who has sealed the Proprietary Structure Design Report, and;
- After foundation excavation is complete and prior to placement of any Mechanically Stabilized Earth (MSE) retaining wall material (including structural backfill and sub fills), and;
- Continuously during the installation of the Mechanically Stabilized Earth (MSE) retaining walls.

The proprietor"s site representative shall record all changes, additions and deletions to the accepted Fabrication and Installation Drawings to reflect the "as constructed" installation. The Contractor"s proprietor shall modify the accepted Fabrication and Installation Drawings, using the same format as the accepted submission, and noting the revision as the “As-Built Installation”. The record drawings shall be signed and sealed by the Professional Engineer who performed, or was responsible for supervising, the site inspections.

g) Letter of Certification and Record Drawings

The Contractor shall provide a Letter of Certification and a complete set of Record Drawings from the proprietor. The Letter of Certification shall state that the proprietor has reviewed the MSE backfill materials, the insitu test results and has monitored the installation of the structural components and certifies that the in-situ structures are in accordance with its requirements. The Record Drawings shall show the as-built details of the completed installation.

The Letters of Certification shall be on the proprietor"s letterhead and shall be sealed by the Professional Engineer who performed, or was responsible for supervising, the site inspections. The Record Drawings shall be prepared, signed and sealed by the proprietor in accordance with these provisions.

h) Quality Assurance

The Ministry will implement a quality assurance program, by auditing the Contractor"s

quality control program and by inspection and testing at its discretion. Quality assurance by the Ministry shall not relieve the Contractor from its obligation to perform the Work in accordance with the Contract.

The Ministry Representative may reject any component of the work which, in its opinion, does not comply with the requirements of the Contract. The Contractor shall bear the cost of re-inspection of any rejected component of the Work.

The Contractor shall notify the Ministry Representative at least fourteen (14) days prior to fabrication or installation of each component of the Work. The Contractor shall allow the Ministry Representative access to all components the Work and shall supply such information and assistance as is required. The Contractor shall provide samples of any materials as requested by the Ministry Representative.

i) Supply and Installation

The Contractor shall perform the Work in accordance with the Ministry reviewed Proprietary Structure Design Report, the Contractor"s quality control and construction monitoring program and all other Contract requirements.

- Cast-in-Place Concrete Components:

  All cast-in-place concrete supplied under this Item shall meet the requirements of SS 211.

- Precast Concrete Components:

  SS 415 shall apply to supply and installation of precast concrete components.

- Metal Components:

  SS 422 shall apply to metal components, as modified by this clause.

  Steel shall be galvanized in accordance with CAN/CSA-G164. The Contractor shall provide 610 g/m^2 per side minimum mass of zinc coating to all metal fabrications.

- Backfill:

  Backfill is defined as the volume of backfill material that extends from the back face of the MSE wall precast panels to a vertical plane intersecting the ends of the longitudinal MSE wall soil reinforcement between the underside of the MSE leveling pad and a horizontal plane intersecting the underside of the roadway gravels or embankment as shown on the Drawings.

  Backfill material shall be a clean, free draining material with low fines content and also meet the requirements of the Proprietary Structure Design Report. When steel is used in contact with water or soil, the following electrochemical requirements shall also be met:

  - pH of 5 to 10
  - resistively not less than 3,000 ohm/centimetre
  - chlorides not greater than 100 PPM; and
  - sulfates not greater than 200 PPM

  Backfill shall be placed concurrently with roadway embankment such that the vertical difference between the two does not exceed 300mm.

  Subfill below the MSE wall, if required, shall be rock embankment fill as specified in SS 201.36 and similar to adjacent roadway embankment.

- Drainage Pipe:

The Contractor shall supply and install all perforated PVC drainage pipes, drain rock and geotextiles as shown on the Drawings.

- Sidewalk Fence:

  The sidewalk fence shall be supplied, fabricated and installed as shown on the Drawings and in accordance with SS741 and drawing SS741-7.01 – Welded Fence. All steel work shall be hot dipped galvanized after fabrication.

  The sidewalk fence shall be adjusted to produce a uniform height and alignment.

j) Payment

Payment for each Mechanically Stabilized Earth Retaining Wall will be made at the applicable Lump Sum Price bid.

Payment shall be for all works associated with the design, supply, installation, quality control, record drawings for and certification of Mechanically Stabilized Earth Retaining Walls within the payment envelope shown on the Drawings. Payment shall include:

- Submission of an acceptable Proprietary Structure Design Report including complete Fabrication and Installation Drawings;
- Design, supply and installation of cast-in-place concrete leveling pad for the first row of pre-cast panels;
- Design, supply and installation of all components of the MSE Retaining Walls including, but not necessarily limited to, the precast concrete face panels, soil reinforcement, connection pins and filter fabric;
- Design, supply, loading, hauling, placement, compaction, watering, laboratory and insitu testing of all structural backfill materials;
- Design, supply and installation of all reinforced, cast-in-place concrete copings at the top of the uppermost row of precast MSE Wall panels;
- Design, supply and installation of all required drainage works behind the MSE Walls and extending to the outlets;
- Design supply and installation of all required sidewalk fences at the tops of the retaining walls;
- Design and implementation of a quality control program for the component fabrication and installation of the Mechanically Stabilized Earth Wall;
- Submission of Record Drawings and Letters of Certification for each installed retaining wall.

No separate payment will be made for work such as foundation preparation for MSE wall construction, including stripping and excavation, payment for these Items will be considered incidental to the Lump Sum Price bid.

4.02 Pedestrian Underpass

Not available at the time of tendering. An addendum will be issued.

SECTION 5 - WATERMAIN CONSTRUCTION

5.01 Master Municipal Construction Document ("MMCD")

Portions of the Master Municipal Construction Documents Volume 2 (2000 edition, as amended prior to the Closing Date) apply to this Contract.

Only those MMCD excerpts specifically called up in this Contract are applicable to the Work and, except as noted below, no other portion of the MMCD is applicable. The intent is that the MMCD technical requirements be met, but that they are executed within the framework of the Ministry's General Conditions, the Standard Specifications, and contract administration procedures.

The Master Municipal Construction Documents are available for purchase from:

Support Services Unlimited
102 - 211 Columbia Street,
Vancouver, B.C. V6A 2R5
Tel: 604-681-0295 Fax: 604-681-4545
http://www.MMCD.net

Supplementaries to the MMCDs are available for download from the above web site.

"Measurement and Payment" provisions in the MMCDs do not apply to this Contract, unless otherwise indicated in the Special Provisions.

Any abbreviation in the MMCD excerpts which rely upon MMCD Section 02000 "References" shall be to the corresponding specification referenced therein save as follows:

- ASTM C131 (LA Abrasion) shall be replaced with ASTM D 6928 (Micro-Deval) with acceptance criteria as specified in SS 202.

References to "Standard Detail Drawings" in a MMCD specification are to the corresponding drawings found in MMCD Volume 2, as amended by any supplementaries or by the Special Provisions.

For any MMCD Section called up in "Related Work" (normally found in Article 1.1 of a MMCD Section) but not included in this Contract, the more stringent of the referenced MMCD specification and the comparable MoT Standard Specification shall apply, unless otherwise noted in the Special Provisions.

The MMCDs rely upon Capitalized words to indicate defined terminology. Those terms, which are defined in the MMCD General Conditions (which do not apply to this Contract), are to be read as follows [*italic emphasis* added to MMCD terms for clarity]:

- *Contract Administrator* shall be read as Ministry Representative;
- *Contract Drawings* shall be read as Drawings
- *Day* shall be read in accordance with GC 77.09;
- *Maintenance Period* shall be read as Warranty Period;
- *Owner* shall be read as Ministry, or in the sole determination of the Ministry Representative, as the municipality or other entity which will be the ultimate owner of the plant being constructed;
- *Schedule of Quantities and Prices* shall be read as Schedule 7 - Approximate Quantities and Unit Prices;
- *Substantial Performance* shall be read as Substantial Completion;

- *Supplementary Specifications* shall be read as Special Provisions; and
- *Site Inspector* shall be read as Ministry Representative.

Any defined term which is not listed above, but is used within the MMCD specifications incorporated into this Contract, shall be read as the similar term defined in the Glossary of Terms in Schedule 1 to this Contract. As examples, "*Subcontractor* shall be read as Subcontractor" and "*Place of Work* shall be read as Site".

Any MMCD General Condition referenced applies only to the extent that it places additional obligations on the Contractor, and does not reduce or invalidate any of the Contractor"s responsibilities under the Contract or entitle the Contractor to make any claim beyond those eligible under the Ministry"s General Conditions.

Should there be any issue with respect to the meaning or application of any MMCD defined term, a "Related Work" specification, or a MMCD General Conditions reference, the issue shall be determined by the Ministry Representative.

5.02 Operation of Main Line Water Valves

When it is necessary to isolate a section of the water distribution system the Contractor shall request, after having given a minimum of 48 hours notice, that the Black Mountain Irrigation District (BMID) close the isolating valves and arrange for the BMID to open the isolating valves at the conclusion of the interruption of service.

Where the BMID operations staff are requested to operate isolation valves outside of their normal working hours, 8:00 am to 4:00 pm, Monday through Friday, their hours shall be invoiced to the Contractor.

5.03 Black Mountain Irrigation District Watermain Crossing Works

a) Scope of BMID Works

As part of the Ministry of Transportation Highway 33 Widening Project, the Black Mountain Irrigation District (BMID) requires the crossing of Highway 33 with two large 1050mm diameter steel transmission main pipes. The works include 1600 mm diameter Corrugated Steel Pipe (CSP) casings. The scope of work includes the following components:

- Integrating the BMID pipe crossing works within the larger contract traffic control works;
- Excavation of pipe, installation and assembly, and backfilling with half of the works being done, then traffic diversion being moved to the other side of the road and the remainder completed. Works to include replacement of works to surface of asphalt including backfill, road sub-base, base and asphalt material replacement for the disturbed areas;
- Flushing and pressure testing of the works as per this section.

b) BMID Supplied Materials

Please allow 7 working days notification to BMID for pick-up of materials. BMID has within their works yard at 1200 Belgo Road the following materials available for pick up by the successful contractor:

- Four (4) sections of 1050mm steel pipe to lengths shown on the drawings are provided. Steel pipe lengths are 17.43 m and 13.19 m for each crossing. Pipe is coated with exterior tank and lining coating and interior potable water coating to meet NSF 61 and IHA Health criteria. The ends of all four steel pipes have

welded-on flanges. Pipes are strapped with 150mmx150mm fir timber with alignment marked for top-dead-centre;

- 1050mm pipe has 50mm threaded weldolets at two locations to allow for air release at the highest point of the pipe installations;
- Hardware for six (6) steel flanged connections is supplied by BMID. Each connection has 37 nuts and bolts to Grade 304 stainless;
- Six (6) seal gasket rings for flanged steel connections;
- Four (4) steel blind flanges for end caps to installation.
- 1600mm Corrugated Steel Pipe casing to the lengths shown on the detailed drawings. In total, 60m of casing pipe is supplied. There are four sections 10.0 m in length, two sections 7.3 m in length and two sections 2.7 m in length. Pipe corrugation profile is 68x13;
- Six (6) 1600mm diameter CSP couplings are supplied for the centre connections and pipe joints.

Contractor is to provide truck to BMID yard to pick up materials. BMID has 966 Loader and/or hyab to load materials. Contractor takes ownership and insures materials received once material is loaded on truck. Tie-down and securing load is the responsibility of Contractor.

Steel welds on flanges have gone through magnetic particle testing at all flanges and at all field and flanged welds. Test results are available upon request.

c) Materials Viewing and BMID Contacts

BMID has pre-assembled wood strapping for the 1050mm steel transmission main pipe. 1050mm steel pipe, 1600mm casing pipe, and associated fittings are available for viewing at the BMID works yard located at the southeast corner of Belgo and Springfield Roads in Kelowna, address 1200 Belgo Road, Kelowna, BC. Please coordinate a viewing time with the contact persons below. Provide 48 hours notice to BMID.

d) BMID Contacts

The BMID contacts persons are as follows:

Primary Contact Person	Secondary Contact Person
Kevin Burtch	Bob Hrasko
Operations Superintendent	Administrator
Cell: (250) 868-7096	Cell (250) 212-3266

e) Contractor Supplied Materials

All materials necessary to complete the works that are not specifically listed in previous section are to be supplied by the Contractor.

100mm diameter, small diameter fittings and connection to air release chamber, air release chamber and incidental items are to be provided by the contractor.

f) Pipe Installation Procedure

Contractor is to determine weight of the heaviest section of pipe and casing. Steel pipe weight is 215 lbs/foot. Contractor is to use appropriately sized equipment when lifting and placing pipe. Strapping for lifting pipe must be certified and inspected for safety and weight capacity.

Recommended procedure for assembly is provided below. Contractor may have alternate installation procedure and must present this to BMID and the Ministry Representative for review and approval 7 days prior to installation.

1. Carry out shoulder widening and overall embankment works as part of the larger highway widening project.
2. Set up staging area within Highways Right-of-way on south side of highway to allow for pushing of pipe through casing.
3. At the appropriate time, divert traffic in accordance with overall traffic management plan to one side of the highway.
4. Excavate open cut trench for first half of pipe installation. Prepare base to grade.
5. Install casing pipe, lay in trench, backfill with plate tampers, no hoe packs are permitted.
6. Backfill on both sides of casing pipe in 200mm thick lifts. Casing pipes are to remain supported and round with backfill material elevations not to be more than 300mm difference on either side of the casing pipes. Obtain densities required in Ministry specifications.
7. Restore road subbase and base gravels and provide temporary pavement in the interim before final paving.
8. Repeat installation procedures for second half of pipe installation.
9. Set up steel transmission main on south side for push and winch set up from the south side. Push longer pipe first with air weldolet set up on true centreline upwards. Connect bolted flange assembly once first pipe is in. Push/pull connected pipe assembly in until pipe is in final location
10. Utilize low density concrete fill to seal off area between steel and CSP pipe.
11. As there is no means to flush the large pipe with sufficient volumes of water, washing of pipe interior must be carried out. Remove end blind flanges and pressure-wash pipe interior. Wash nozzles with high pressure are to be kept at 450mm back of epoxy painted interior surface. Inside of blind flanges also to be washed prior to installation. Pipe is to be inspected for cleanliness by BMID and the Ministry Representative prior to allowing blind flange installations to be sealed. Utilize a calm day when carrying out this procedure.

Any coating defects or scratches are to be brought to the attention of BMID staff. BMID staff will coordinate recoating procedure for any defects found in exterior or interior coatings.

g) Flushing and Pressure Testing

At the completion of the road crossing, the end caps on the water transmission main are to be removed and the pipe interior is to be inspected for scratches or any compromises to the interior pipe coating. While opened, the water transmission pipe is to be flushed with clean disinfected water. Contractor is to use a water truck or local water source for washing and flushing the interior of the 1050mm diameter transmission main.

Once flushed, the end blind flanges are to be cleaned and then reinstalled. Care is to be taken so as not to allow any debris to enter the main. Main is to be bolted shut and main is to be pressure tested with air. Air test is to be at 1034 kPa for a duration of 2.0 hours. No drop in pressure is permitted over this timeframe. If possible, bolted flanged joints are to be exposed (not backfilled) to be able to locate possible leak.

There is no requirement for bacteriological testing of the 1050mm diameter water transmission main.

h) Payment

The Lump Sum price bid shall be full compensation for materials supplied by the Contractor, installation of watermain and casing and flushing and pressure testing.

5.04 Removals and Adjustments

a) Remove Exiting Fire Hydrants

The Contractor shall remove fire hydrant assemblies where shown on the drawing or as directed by the Ministry Representative. Fire hydrants are the property of the Black Mountain Irrigation District and shall be transported to the BMID yard located at 1200 Belgo Road in as found condition.

The Lump Sum price bid per removal shall be for the removal and delivery of the fire hydrant assembly and restoration of the roadway.

b) Cap Abandoned Watermain

The Contractor shall cap existing watermains where shown on the drawings or as directed by the Ministry Representative.

The Lump Sum price bid per installation shall be full compensation for the supply of the ductile iron cap and for all labour and materials to complete the installation.

c) Adjust Valve Covers to Grade

The Contractor shall adjust existing water valve covers to the finished grade at locations shown on the Drawings or as directed by the Ministry Representative.

The Lump Sum price bid shall be full compensation for everything furnished and done to adjust the water valve covers.

5.05 Supply and Install Watermains

The Contractor shall supply and install watermains at locations shown on the Drawings or as directed by the Ministry Representative

Watermains shall be PVC Class 150 C905 pipe supplied, installed, tested, and disinfected in accordance with Section 02666 of the MMCD Specifications.

Supply and installation of watermain fittings such as wyes, tees and reducers shall be considered incidental to the supply of the watermain and no additional payment will be made.

The Contractor will supply all materials required for tie–in assemblies to BMID"s watermain. BMID will only do the actual tie-ins to their main, all other labour and equipment to complete the installation will be supplied by the Contractor.

The price bid per metre shall be full compensation for all things furnished and done in accordance with MMCD 02666 Clause 18.1 and 18.2 including spacers and joint restrainers to the neat lines and grades shown on the Drawings.

5.06 Supply and Install Watermain Casings

The Contractor shall supply and install watermain casing to the alignment and grades shown on the Drawings. The Contractor must locate the existing watermain at the tie-in points and confirm with the Ministry Representative that minimum cover requirements are being met for the proposed watermain.

The water pipe within the casing shall be supported with Raci Spacers at 2 metre intervals with double spacers at each end of the casing. Each end of the casing shall be sealed with Raci End Seal heat shrinkable sleeves.

Casing installation may be by open trenching or by auguring.

The price bid per metre shall be full compensation for the supply and installation of the casing and spacers and for all things furnished and done in accordance with MMCD 0266 Clause 18.2.

5.07 Supply and Install Fire Hydrants

The Contractor shall supply and install Fire Hydrants complete with fittings, and thrust blocks as shown on the drawings and as directed by the Ministry Representative.

The price bid per installation shall be full compensation the supply and installation of the complete hydrant assembly.

5.08 Supply and Install Fittings and Valves

The Contractor shall supply and install fittings and valves at locations shown on the drawings or as directed by the Ministry Representative.

The price bid per fitting or valve type shall be full compensation for the supply and installation of all fittings and thrust blocks to complete each assembly.

5.09 Supply and Install Service Connections

The Contractor shall supply and install all fittings and pipe to provide irrigation and domestic services at locations shown on the drawings to MMCD specifications or as directed by the Ministry Representative.

The Lump Sum bid per installation shall be full compensation to supply and install each service connection.

SECTION 6 – PAVING CONSTRUCTION

6.01 Superpave Asphalt Mix Aggregate into Stockpile

The contractor shall supply a Superpave Asphalt Mix Aggregate in split stockpiles at the Contractor"s plant site. This aggregate will be used for all pavement production for this project.

The gradation of the Superpave aggregate shall conform to TABLE 502-C-1 for Superpave Nominal 12.5 mm except that the maximum size shall be 16.0 mm. The 12.5 mm sieve shall have a target of 95% passing plus or minus (+/-) 2%.

The price bid per tonne shall be full compensation for all things furnished and done in accordance with SS 502.35.

6.02 Pulverize Existing Asphalt Pavement

The existing asphalt shall be pulverized to a depth of approximately 400mm so the existing gravels and asphalt are thoroughly blended. The asphalt thickness ranges from 145mm to 260mm.

Compaction must be accomplished in accordance with Appendix – Compaction Method (Control Strip Method).

The Contractor shall grade, shape and compact the pulverized material to the design and roadway widths and grades as shown on the Drawings. Water required for compaction and for dust control shall be considered incidental to the bid price for Pulverizing Existing Asphalt Pavement.

The Contractor is hereby notified that the pulverizing operation shall be limited to a maximum of seven (7) days production ahead of the paving operation so as not to compromise the safety of the travelling public. Should the Contractor show that they have the necessary dust control, grading and compacting equipment necessary to maintain the opened road base the Ministry Representative will consider increasing the limits of the clause to a degree that will maintain a safe, smooth, compacted riding surface. The Contractor will continually monitor and make any repairs needed, promptly, to the satisfaction of the Ministry Representative. No additional compensation will be made for maintenance and repair costs.

The price bid per square metre for Pulverize Existing Asphalt Pavement will be full compensation for everything furnished and done to complete the Work including but not limited to pulverizing, grading, shaping, compacting, watering, dust control and maintenance.

If additional 25mm WGB is required to meet the design and/or specifications for the project, the 25mm WGB applied on top of the existing asphalt pavement prior to pulverizing will be paid at the applicable unit price in the Schedule 7.

6.03 Emulsified Primer and Tack Coat

General

The Contractor shall exercise caution before spraying tack or primer on the roadways to ensure absolutely no contamination may occur to any watercourse. This will mean not spraying when the weather forecast or visual assessment indicates the potential for rain.

Supply Emulsified Primer and Tack Coat

The emulsified primer supplied by the Contractor shall be a product listed on the Ministry"s Recognized Products List for July 2006 Edition for “Tack Coat & Primers”.

The Contractor will not dilute the product before spraying, unless approved by the Ministry Representative.

Payment for the supply of primer for priming and tack coating will be made at the applicable Unit Price bid for Supply of Spray Primer and Tack Coat in accordance with SS 502.34.01.

Apply Primer and Tack Coat

Gravel areas to be paved will require a primer at an application rate of approximately 1.50 l/m2. The Contractor shall exercise caution to avoid over spraying outside of the new edge of pavement.

Existing or newly placed pavement, including milled surfaces to be re-paved, shall be tack coated at an application rate of approximately 0.25 l/m2.

Payment for application of primer for priming and tack coating will be made at the applicable Unit Price for Application of Spray Primer and Tack Coat in accordance with SS 502.34.02

No separate payment will be made, under any circumstances, for the supply and application, or the removal, of blinding sand.

6.04 Superpave Asphalt Pavement EPS 502

a) General

All Asphalt Pavement for this contract shall be Superpave Mix meeting the requirements of SS 502 unless otherwise stated in these Special Provisions.

b) Design Properties for Superpave Asphalt:

During Superpave production, the Contractor is required to provide Superpave gyratory volumetric properties for each lot within 48 hours of completion of the lot. The lot mean Gyratory air voids @ Ndes shall not vary from the approved mix design value by more than 1.0% (i.e. 4.0 + 1.0%). Other properties such as VMA, VFA and Dust to Binder Ratio shall continue to meet the criteria outlined in the Asphalt Institutes SP-2 Mix Design Manual Table 5.2. Mix adjustments may be required periodically based on the Quality Control volumetric properties obtained but must first be reviewed by the Ministry Representative.

Asphalt pavement for bottom Lift and Top Lift shall be Superpave Asphalt Mix and shall meet the requirements of SS 502-EPS unless otherwise stated in these Special Provisions.

Contrary to SS 502 – End Product Specification, Table 502-C-2, Marshall Design Criteria, the Job Mix Formula asphalt content for all the Asphalt Mix shall be based on 3.0% air voids, designed and produced.

c) Asphalt Cement:

The Contractor shall supply PG 64-22 graded asphalt cement from an approved supplier.

d) Asphalt Mix Anti-strip Additives

An anti-strip additive, chosen by the Contractor from the Ministry"s "Recognized Products List", shall be added to all asphalt mix used in the Work, at an application rate of 0.3% additive by weight of asphalt cement.

All costs associated with supplying, storing, and blending the additive into the asphalt mixes shall be incidental to the prices bid for the varying classes of asphalt mix.

e) Bottom Lift

Bottom Lift shall be Superpave Asphalt Mix and shall be paver laid at an average Application Rate of 120 kg/m² at the locations and dimensions shown on the drawings.

For Bottom Lift paving, the following 502-EPS bonus/penalty criteria will apply:

- Gradation
- Asphalt Content
- Application Rate
- Density

The following 502-EPS bonus/penalty criteria will not or does not apply to Bottom Lift:

- Segregation
- Smoothness

Payment for "Bottom Lift" will be made at the Unit Price bid per tonne in accordance with SS 502-EPS.

f) Top Lift

Top Lift shall be Superpave Asphalt Mix and shall be paver laid at an average Application Rate of 120 kg/m² at the at the locations and dimensions shown on the drawings.or as directed by the Ministry Representative:

The following 502-EPS bonus/penalty criteria will apply to Top Lift:

- Application Rate
- Density
- Asphalt Content
- Gradation
- Smoothness
- Segregation

Payment for "Top Lift" will be made at the Unit Price bid per tonne in accordance with SS 502-EPS.

g) Allowance for Payment Adjustments, SS 502

Notwithstanding any other provision of the Contract, including full or partial waivers of EPS payments adjustments for any or all of the six characteristics (density, smoothness, AC content, gradation, application rate, and segregation), the rejection limits for each and every characteristic will apply to the Work.

Payment for Unit Price adjustments will be made from the Provisional Sum allotted.

6.05 Shouldering

Shouldering shall be in accordance with SS 502.27.

Measurement for payment shall be to the design neat lines to be constructed with no allowance for shrinkage or settlement.

The price bid per cubic metre, shall be full compensation for all things furnished and done in accordance with SS 502.40 Shouldering.

6.06 Precast Concrete Roadside Barriers

a) General

The contractor shall install concrete roadside barriers (CRB) as shown on the drawings and as directed by the Ministry Representative.

To prevent water flowing underneath concrete barriers, a seal shall be placed under barrier installations in areas listed below and as directed by the Ministry Representative. The seal shall be 25 mm Ethofoam rod, placed continuously, with ends overlapped not

less than 300 mm. Supply and placement of the seal will be incidental to the barrier installation and not additional payment will be made.

- Station 100+88 to 103+00
- Station 115+72 to 117+80
- Station 126+80 to 128+00

No separate payment will be made for the relocation of concrete barriers used for interim traffic control and this work shall be considered incidental to the Lump Sum Price bid for Traffic Management.

b) Relocate Concrete Roadside Barriers

The Contractor shall relocate existing CRB as indicated on the Drawings or as directed by the Ministry Representative.

c) Ministry Supplied Concrete Roadside Barrier

The Ministry has acquired approximately 490 units of CRB for use on the project. The CRB is located in Pyman Pit and is available to the Contractor at no cost.

d) Contractor Supplied CRB

The Contactor shall supply and install all remaining CRB in accordance with SS941 where shown on the Drawings or as directed by the Ministry Representative.

e) Payment

The price bid per unit shall be full compensation for each type of installation noted in Schedule 7 and shall include the supply and installation of reflectors.

f) Reflector Installation Procedure

The Contractor shall supply and install yellow or white top mounted reflectors on concrete barriers in accordance with the colour, spacing, and mounting locations outlined in the Ministry's Manual of Standard Traffic Signs and Pavement markings, or as directed by the Ministry Representative.

The barrier reflectors shall be Davidson PCBM T12 or such other type acceptable to the Ministry Representative. Approved top mounted barrier reflectors are listed in the Ministry's "Recognized Products List".

TRS 600 Adhesive or an equivalent Ministry approved epoxy shall be applied to the entire bottom of the reflector which is then affixed to the designated area of the barrier, which must be clean and dry. A minimum of one 300 ml tube of epoxy shall be used for every 15 reflectors. A wire brush must be used to ensure cleanliness. The ambient air temperature must be a minimum of 5° C when doing the work.

The supply and installation of reflectors to concrete barrier shall be considered incidental to the installation of precast concrete barrier and no additional payment will be made.

SECTION 7– SIGNING and PAVEMENT MARKING

7.01 Scope of Signing Work

The work generally involves, but is not limited to the following:

- Removal of existing signs,
- Installation of new posts and signs

7.02 Remove and Dispose Existing Signs

The Contractor shall remove existing regulatory and warning signs and their associated structure as shown on the Drawings, or as directed by the Ministry Representative. The Contractor must obtain permission from the Ministry Representative prior to removing any signing equipment and, if so directed by the Ministry Representative, existing signs shall not be removed until new signs or temporary signs have been installed.

The Contractor will remove and dispose of all existing posts and bases to a site obtained by the Contractor in accordance with SS 145.27.02.

Existing Ministry signs, which are not marked for removal or relocation but are in conflict with the progress of the Project, shall be removed and temporarily relocated as approved by the Ministry Representative. No compensation will be paid for this temporary relocation.

Payment for sign removal and disposal shall be made at the Unit Price bid, and shall be full compensation for everything furnished and done including but not limited to excavation, removal, hauling, and disposal or storage of the appropriate identified signs, including the removal and disposal of existing posts and bases, and backfilling the excavation to the satisfaction of the Ministry Representative.

Payment for removal of signs shall be based on the number of supporting posts only and no additional payment shall be made for installations supporting more than one sign.

7.03 Supply and Install New Signs

a) General

All sign posts shall be supplied and installed in accordance with the Ministry"s Manual of Standard Traffic Signs and Pavement Markings and SS 635.

The Contractor shall supply and install all plywood, aluminum or extruded aluminum signs as shown on the Drawings or as directed by the Ministry Representative in accordance with SS 635 Part D and the current edition of the Ministry"s Manual of Standard Traffic Signs and Pavement Markings and in accordance with the Ministry"s Specification for Standard Highway Sign Materials, Fabrication and Supply.

New signs must have anti-graffiti film applied as specified in T circular T-03/07. Dated August 7, 2007.

No separate payment will be made for temporary signs required during construction.

b) Supply and Install Sign Post and Base

Sign posts shall be perforated square Steel sign posts with an outside diameter of 1 ¾ inches. Perforated Square Steel Sign posts shall be installed in accordance with SS 635.28 and SS Drawings SP635-1.1.35 and SP635-3.6.1

c) Payment

Payment for new installations shall be based on the number of supporting posts or supporting assembly only and no additional payment shall be made for installations requiring more than one sign board.

The price bid per each type of installation shall be full compensation for all things furnished and done.

7.04 Maintenance of Signs

The Contractor shall maintain all signs within the project area for the duration of the project.

Sign maintenance shall include the straightening, placing, repairing and cleaning of all signs found or as directed by the Ministry Representative. Signs shall be maintained in accordance with the Ministry"s Manual of Standard Traffic Signs and Pavement Markings Section 1.10. Signs shall be regularly inspected to ensure consistent maintenance for maximum visibility.

Chemical washing of sign faces is not approved.

Power washing or steam cleaning of signs shall be undertaken using pressures not exceeding 1000 psi and temperatures not exceeding 65ºC.

Maintenance of signs shall be considered incidental to the Work and no additional payment will be made.

7.05 Staking of Locations

The Contractor shall stake the exact location of all proposed roadside signs. The staked locations must be approved by the Ministry Representative prior to sign installation.

Staking of sign locations shall be considered incidental to the Work and no additional payment will be made.

7.06 Excavation and Backfill for Sign Posts

Further to SS 635, the top 300mm of backfill under pavement, sidewalk, and shoulder areas shall be 25mm Well Graded Base Course aggregate.

Payment for excavation and backfill for sign bases shall be included in the unit price for the installation of posts and signs.

7.07 Temporary Pavement Markings

The Contractor shall supply and place temporary line markings on newly constructed hard surfaces (pavement, hot-in-place recycled pavement, sealcoat, etc.) throughout the project, in accordance with SS 194.22 and TCM 2.2.1, re-establishing centreline and all lane-dividing lines prior to being opened to traffic, and shall maintain such markings until the earlier of the Actual Completion Date or the date permanent markings have been placed. Temporary line markings are not required for lane edge lines (fog lines) unless otherwise directed for specific areas by the Ministry Representative.

Marking dimensions, spacing, colour, layout and other characteristics shall follow the recommendations of the TCM unless otherwise specified herein or approved by the Ministry Representative, and must be placed on each lift of pavement.

Temporary lines on the final surface shall be laid within ±100 mm of the permanent line design location, so as to not detract from the permanent lines when laid.

Centerline of undivided highway shall be marked throughout as “no passing” unless otherwise directed by the Ministry Representative.

For surfaces other than sealcoat, painted temporary lines are not permitted on the final surface.

On sealcoated areas, temporary markings shall be placed as soon as excess aggregate has been removed. Contrary to the TCM, lines shall be painted on using rapid-drying, water-borne pavement paint, rather than temporary marking tape or "L" shaped flexible markers, and shall have an application of reflective glass bead applied prior to the paint drying.

In those areas where permanent markings have been applied prior to the Actual Completion Date, the Contractor shall remove the temporary pavement marking tape. Where the permanent marking has been sprayed on top of temporary tape, that piece of tape may be left in place.

No separate payment will be made for the placement or removal of temporary pavement markings and this work will be considered incidental to the Lump Sum Price Bid for Traffic Management.

7.08 Permanent Pavement Marking Layout

The Contractor shall, upon completion of the final hard surfacing, lay out all key control points throughout the Project, in accordance with the design Drawings.

For any portions of the Project where line marking designs are not included in the Contract, the Ministry Representative shall provide direction as to what specific services are required. Generally, such services will be laying out to a generic design or a pick-up survey of existing key control prior to disturbing the roadway in those areas and, upon completion of the final hard surfacing, re-establishing those points.

Key control points are as follows on all paint lines, including centreline, lane lines, islands, etc.:

- Curvature points: EC, BC, TS, SC, CS, ST, and any other points of deflection.
- Intersections and Interchanges: PI for design control lines; curvature points (EC, BC, TS, SC, CS, ST) and any other points of deflection; all points as indicated on the "Typical Intersection Pavement Markings Control Points" (see Appendix) drawing and such additional points as may be required for more complex situations.
- Intermediate points (on centreline only for undivided highway; one lane line for each direction on a divided highway): On tangents, curves and spirals, at maximum 100 m spacing.
- Lane widening: Where the design incorporates pavement and lane widening designed into the curves and spirals to accommodate off-tracking of large vehicles, additional intermediate points shall be marked on centerline and all lane lanes at maximum 50 m spacing.

All layout markings shall be done with white or yellow centreline paint which will be clearly visible after exposure to all Site conditions for a minimum period of 2 months past the Actual Completion Date.

Key control points shall be marked at their design location within tolerances of ±50 mm transversely and ±100 mm longitudinally. Longitudinal tolerances for intermediate points, when required, are ±10 m.

The Lump Sum price bid for permanent pavement marking layout shall include all costs and work necessary to complete the layout for the final pavement markings to the satisfaction of the Ministry Representative including the removal of any temporary marking tape from the final lift of pavement.

The removal of all other temporary markings will be considered incidental and no additional payment will be made.

7.09 Permanent Pavement Markings

(a) Thermoplastic Pavement Markings

Stop bars, turn arrows and crosswalks shall be inlaid thermoplastic pavement markings supplied and installed as shown on the Drawings and in accordance with the Manual of Standard Traffic Signs and Pavement Markings.

The price bid per square metre shall be full compensation for the supply and application of the thermoplastic pavement markings.

(b) Painted Pavement Markings

Chevrons and gore areas shall consist of traffic paint installed to the neat lines shown on the Drawings in accordance with SS 321 and the Manual of Standard Traffic Signs and Pavement Markings.

The price bid per square metre shall be full compensation for the supply and application of the permanent pavement markings.

(c) Lane Line Pavement Markings

Permanent pavement line painting shall be done by a pavement marking contractor retained by the Ministry. The Contractor shall coordinate with the Ministry Representative to identify the earliest possible opportunity for such markings to be placed and to accommodate the line painting services within their schedule.

SECTION 8 – LANDSCAPING

8.01 Supply and Place Topsoil

The Contractor shall supply and place imported topsoil in accordance with SS 751 and as directed by the Ministry Representative.

Topsoil shall be placed to a depth of 0.10m, measured perpendicular to the constructed slope, in the following areas:

Gopher Creek (station 141+00 to 142+00)	2200 m2
Garner Pond (station 124+20 to station126+00)	1800 m2

The Ministry Representative will approve the placement of the topsoil once it has met the required specifications at the source

The price bid per square metre for Topsoil Placement shall be full compensation for all things furnished and done in accordance with 751.91 and shall include the supply and Topsoil Spreading.

8.02 Revegetation Seeding and Mulching

a) General

The Contractor shall carry out revegetation seeding in accordance with SS 757.

b) Materials

The seed mix for all hydroseeding shall be Thompson-Okanagan, Interior Dryland Mix as shown in Standard Grass Seed Mixes for Revegetation Of British Columbia Roadsides (By Weight) in accordance with SS 757.

Further to SS 757.12.03, the contractor shall provide the Ministry Representative with copies of certificate of analysis for each lot of seed at least 5 working days prior to the purchase or blending of mixes and shipping of seed from the supplier to the contractor.

c) Application

Contrary to Table 757.1, the Grass Seed Mix application rate shall be 150 kg/ha.

d) Record of Application

The following supplements SS 757.36. A copy of the “Daily Seeding/Application Record” shall be completed in conjunction with the Ministry Representative, and signed by both parties at the end of each seeding

e) Scheduling of Seeding

Further to SS 754.35, seeding shall only occur between the time periods extending from April 1 to June 30 and September 1 to October 30. The Contractor shall obtain special permission from the Ministry Representative to seed outside this timeframes. If permission is granted, it does not exclude the Contractor"s responsibility for warranty and, if necessary the re-application of hydroseeding at no additional cost to the Ministry.

f) Watering

The Ministry representative may direct the Contractor to apply water to seeded slopes on an as-needed basis during periods of dry or inclement weather to facilitate seed germination.

g) Payment

The price bid per hectare for Revegetation Seeding and Mulching shall be full compensation for all things furnished and done in accordance with SS757.81 and 757.91.

Payment for watering, if required, will be made from the Provisional Sum Item for Site Modifications.

8.03 Tree and Shrub Planting

The Contractor shall supply and install the following plant species, within the areas indicated below and as directed by the Ministry representative.

Gopher Creek, Station, (Station 141+00 to 142+00)

Species	No. of Plants	Latin Name
Prickly rose	1000 - #1 pot size	Rosa acicularis
Trembling Aspen	25 - #1 pot size	Populus tremuloides
Black Cottonwood	25 - #1 pot size	Populus balsamifera
Water birch	25 - #1 pot size	Betula occidentalis

Garner Pond, (Station 124+20 to 125+60)

Species	No. of Plants	Latin Name
Ponderosa Pine	50 - #1 pot size	Pinus ponderosa
Saskatoon	400 - #1 pot size	Amelanchier alnifolia
Prickly rose	300 - #1 pot size	Rosa acicularis
Red-osier dogwood	50 - #1 pot size	Cornus stolonifera
Cattail	200 - 50 plug size	Typha latifolia

Any substitutions to the plant list will require the approval of the Ministry Representative.

Soils to receive trees or shrubs shall be loosened to a minimum depth of 300mm. Individual holes to be constructed for trees or shrubs shall be in accordance with SS 754.34.03. Backfill medium will conform to the topsoil requirements above and shall be augmented (in accordance with the manufacturer"s written instructions) with “Soilmoist” hydrophilic acrylic polymer or equivalent. The top of the root ball shall be flush with the backfill medium.

Planting shall not occur within 2m of the concrete roadside barrier. Orientation of plants will mimic natural spacing (no more than 1 plant in any 2 square metre) and the Contractor"s Environmental Monitor shall ensure that plants are located in areas of suitable soil and moisture conditions. Ponderosa pine shall be placed so as not to impede overhead utilities. Within ESA 3, Prickly rose shall be mainly concentrated at the western portion of the planting area.

The planting will be undertaken in accordance with SS 165 and SS 754 except that SS 754.71 shall not apply. The Contractor"s Environmental Monitor shall oversee the site planting and ensure all works are carried out to the satisfaction of the Ministry Representative. The Contractor"s Environmental Monitor will also ensure all botanical material is health and free of disease prior to being planted.

The price bid per plant will be full compensation for all things furnished and done.

8.04 Additional Environmental Mitigation

The Contractor"s Environmental Monitor will select 2 basking logs approximately 15m long from the coniferous trees removed adjacent to Garner Pond. The logs will be placed in the pond between station 125+20 and 125+40 and suitably anchored to the shoreline.

A painted turtle nesting platform consisting of approximately $10m^3$ of sand (medium to coarse sand-particle size 0.25mm to 1.0mm) will be placed above the high water mark between stations 125+00 and 125+40 as directed by the ministry representative to provide nesting substrate. The sand will be placed over an approximate 2m x 10m area cleared of all but tree vegetation and contoured to provide a depth of approximately 0.50m.

Payment for Additional Environmental Mitigation will be made from the Provisional Sum allotted.

SECTION 9 – ELECTRICAL

9.01 Scope of Electrical Work

The work generally involves, but is not limited to the following:

- Installation of roadway lighting;
- Modifications of existing traffic signals;
- Removal of existing electrical equipment;
- Installation of Traffic Loops.

9.02 Materials Supplied by the Ministry

Notwithstanding any reference to the contrary in the Standard Specifications, the Ministry will supply only the materials as listed below at the location specified:

- UPS for traffic controller installed by others
- Traffic controller for Hwy 33 @ Gallagher installed by others

Materials supplied by the Ministry will be made available from the Ministry Representative upon 45 days written notice by the Contractor.

9.03 Materials Supplied by the Contractor

The contractor shall supply all materials necessary for the satisfactory completion of the project other than those listed as being supplied by the Ministry. Electrical materials required include but are not limited to:

a) Plastic Junction boxes including steel lids and drain plates;

b) Anchor bolts and/or anchor bolt cages;

c) Luminaire poles, including luminaire arms and bolt kits;

d) Roadway luminaires including lamps"

e) Traffic signal and pedestrian heads including backboards c/w reflective tape, LED"s and mounting hardware. All secondary traffic signal heads are to be green in colour. Pedestrian push buttons and signs shall be same style and type for all intersections;

f) Photocells and photocell receptacles;

g) Frangible luminaire pole bases;

h) Service/Distribution Panels including breakers, contactors, test switches, mounting hardware and conduit hubs;

i) 25mm Well Graded Base Course Aggregate;

The Contractor shall provide suitable storage and protection for materials until they are installed. All materials, with the exception of poles, junction boxes and Well Graded Base Course Aggregate shall be stored under cover.

All electrical materials provided by the contractor shall conform to all applicable CSA Standards and shall meet the approval of the British Columbia Safety Authority Inspector.

All electrical materials supplied by the contractor shall be supplied form the Ministry"s Recognized Products List. The Ministry"s Manager of Electrical Services shall approve

the materials for the project. Materials supplied shall be consistent with standards for the project and that in the electrical service area.

9.04 Work Undertaken by the Ministry

All final connections and terminations in the traffic controller will be provided by Ministry forces.

The Contractor shall provide 96 hour notice prior to the work being required to:

Ross Matthews, Division Manager,
Westcana Electrical Inc.
1485 Lorne St.
Kamloops, BC V2C 2V1
Office 250-372-9378, Cell 250-682-3583, Fax 250-372-9375

9.05 Inspections

The Ministry Manager, Electrical Services or their designate will undertake periodic inspections of the installation through construction. Prior to signal start-up, the Contractor shall contact the Ministry Senior Electrical Supervisor for final inspection. Upon completion of the inspection, the Ministry Manager, Electrical Services or their designate will provide the Contractor with a list of deficiencies. The Contractor shall correct all deficiencies to the satisfaction of the Ministry Senior Electrical Supervisor prior to signal start-up.

The Contractor shall schedule the work to allow for inspections and correction of deficiencies.

All costs related to inspection will be included in the various pay items of work involved in the contract. No additional compensation will be made for inspections.

9.06 Coordination of Work

The Contractor shall co-ordinate the electrical work to the satisfaction of the Ministry Representative in order that there is no interruption of existing traffic signals and night-time roadway lighting.

The Contractor shall contact the local Road Maintenance Contractor to ensure no conflicts exist in each other"s work schedule.

All costs related to co-ordination of work will be included in the various pay items of work involved in the contract. No additional compensation will be made for the above work.

9.07 Removal of Existing Electrical Equipment

The Contractor shall remove existing electrical equipment as shown on the Drawings, or as directed by the Ministry Representative.

The Contractor must obtain permission from the Ministry Representative prior to removing any electrical equipment.

Removal of existing electrical equipment shall include:

a) Removal of the existing concrete bases, their disposal off site and the supply and installation of 25mm Well Graded Base Course Aggregate material to fill the resulting holes. Where existing bases and foundations cannot be removed without undermining or damaging the existing asphalt, the Contractor may jackhammer off the top of the concrete base or foundation to 600mm below the finished grade. This shall only apply where specifically indicated on the Drawings. The excavation and backfill shall meet the requirements but not the payment provisions of Subsection 635.07.01.

b) Removal of the existing junction boxes, their disposal off site and the supply and installation of 25mm Well Graded Base Course Aggregate to fill the resulting holes. The excavation and backfill shall meet the requirements but not the payment provisions of Subsection 635.07.01.

c) The removal, disassembly, pick-up, delivery and off-loading of any luminaire poles, wiring and any electrical devices (as noted on the plans) to *(location to be determined by Ross Matthews, Division Manager, Westcana Electrical Inc. Phone 250-372-9378, Cell 250-682-3583, Fax 250-372-9375).*

All existing wiring removed shall be disposed off site by the Contractor.

Prior to construction, the Contractor shall provide the Ministry Representative with an itemized spreadsheet of all items to be removed and returned to the designated Works Yard. Prior to returning any equipment, the Contractor shall confirm the exact quantity of each item being returned.

Payment will be made at the applicable item listed in Schedule 7 and shall be considered full compensation for everything furnished and done in connection therewith and shall include the additional 25mm Well Graded Base Course Aggregate used to fill resulting holes.

9.08 Modifications to Existing Traffic Signal Poles and other equipment

The contractor shall modify existing traffic signal poles as identified on the electrical drawings. All unused holes shall be filled to the satisfaction of the Ministry Representative.

The contractor shall maintain the existing condition of relocated electrical equipment and hardware for the project.

9.09 Installation of Detector Loops

The Contractor shall co-ordinate the installation of Detector Loops with the Ministry Representative. Detector Loops are to be installed below asphalt pavement top lift where applicable. Detector Loop locations are to be confirmed with the Ministry Representative prior to installation.

All costs related to co-ordination of the work will be incidental to other payments.

The price bid per installation shall be full compensation for the supply and installation of the Detector Loops.

APPENDIX - SURVEY LAYOUT SERVICES AND PRODUCTS ❶

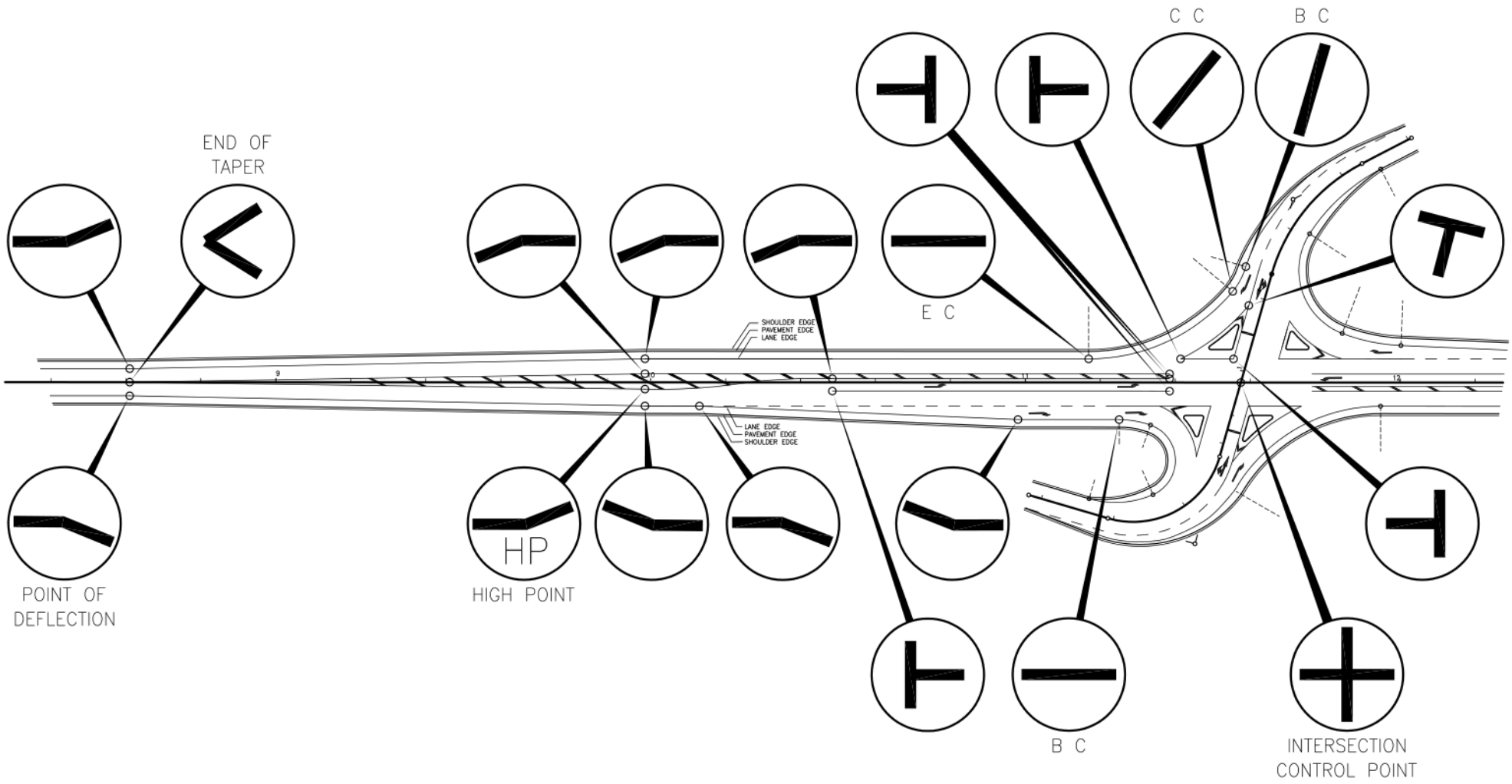
Survey Layout	Maximum Interval	Product
Right-of-way ❷	At each point of deflection and at sufficient points between as to be continuously visible.	Stake showing station and offset, or flagging.
Clearing and Grubbing	Same as Right-of-way.	Same as Right-of-way.
Grading - Slope Stakes	10 m in rock cuts; 20 m in all other cases.	One slope stake each side, at top of cut or bottom of fill, showing station, offset, vertical dimension to subgrade, and slope, plus cut/fill transition stake. Non-standard ditches will be staked separately. An additional slope stake, where applicable, at the top of a rock cut after the removal of overburden.
Grading - Subgrade	20 m.	One stake at each side of the subgrade, showing station, offset and grade at the stake location, one at each break point, and one at centreline.
Top of Sub-base	20 m.	One stake at each side of the sub-base course, showing station, offset and grade at the stake location, one at each break point, and one at centreline.
Each Base Course	20 m.	One stake at each side of the base course, showing station, offset and grade at the stake location, one at each break point, and one at centreline.
Final Base Course only	10 m.	"Blue tops" ❸ at each break point across the base course surface, or final grade stakes.
Culverts	Inlet and outlet.	One stake at each end of the culvert, plus an offset line, showing invert elevation.
Storm Drainage, Subdrain, Watermain or Sanitary Sewer		Stakes showing locations of manholes, catch basins and other structures, and invert locations of pipe inlets and outlets.
Retaining Walls	Not more than 10 m, and at alignment changes.	One stake showing control line location and either the elevation at the top of wall or the elevation at the bottom of footing excavation.
Paving	100 m on tangent, 20 m on curves, and at each deflection point.	Reference points.
Concrete Barriers	Same as paving.	Same as paving.
Signs		Stake at each sign location.
Curb and Gutter	10 m and at alignment changes. Curb returns: 5 m or at quarter points, whichever is less.	Offset hub and nail with cut/fill to gutter grade.
Median/Island Curb	Continuous.	Paint line at face/edge of curb.

APPENDIX - SURVEY LAYOUT SERVICES AND PRODUCTS ❶

Survey Layout	Maximum Interval	Product
Sidewalk or Path	5 m and at alignment changes. No layout required if parallel to curb.	Offset stake or nail with cut/fill to grade.
Electrical Pedestal, Junction Box, Sign Structure	Per installation.	Offset stake or nail with cut/fill to top of pedestal, or junction box; with additional stake to show orientation.
Detection Loops	Per installation.	Survey crew will lay out locations of cross walks, lane lines and stop bars; Contractor to derive location of loop.
Irrigation Preduct	Per installation	One stake at each end of the preduct, and offset line showing lowest elevation.
Pavement Marking (temporary and permanent)	at all alignment break points; 100 m maximum on tangent; 20 m maximum on curves; gores.	Reference points.

Notes:

❶	This table shows layout details for general situations; particular circumstances may require more or less staking.
❷	The right-of-way limit will be laid out only where there is work, including utility relocation, to be performed within three metres of it.
❸	"Blue top" - a stake driven so that its top surface is at the required elevation for the finished surface of the work.



TYPICAL INTERSECTION PAVEMENT MARKING CONTROL POINTS

SCHEDULE 3 - SPECIAL PROVISIONS AND APPENDICES

PROJECT NO. 22198-0001
HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

Appendix - Compaction Method (Control Strip Method)

Compaction control will be by conformance with a “Control Strip”.

A “Control Strip” is a typical 400 metre section to the depth specified in the Special Provisions or by the Ministry Representative. The method shall apply to granular course, pulverized asphalt pavement with/without granular aggregate and with/without stabilizer added, recycled asphalt pavement with the addition of emulsion, or cold in place recycled pavement with the addition of an emulsion. The material used for construction will be compacted using the minimum specified compaction equipment and methods to establish a maximum density called the “Control Density”. To determine the Control Density, nuclear density readings are taken by the Contractor"s quality control personnel as herein described until a maximum density is achieved.

The Control Density thus obtained for each material will be used unless there is a significant change in a given material that warrants a new Control Strip.

The minimum compactive effort required for each Control Strip is as follows:

(i) One rubber tired roller having a minimum mass of 15 tonnes and a double drum vibratory steel roller with a minimum mass of 10 tonnes having a vibratory capacity of at least 1,500 VPM with a minimum dynamic or centrifugal force of 10,000 kg., and operated at a speed of less than 8 km/hr.

(ii) Any other combination of vibratory steel and pneumatic rollers acceptable to the Ministry Representative.

(iii) A water truck capable of applying water to granular materials to achieve optimum moisture content.

(iv) The Control Strip shall be compacted using the specified equipment.

(v) The Contractor must compact the entire width of the prepared surface with a minimum of 8 „passes" with the specified compaction equipment. After the material has been placed to the specified dimensions and to the correct grade and cross section, the measurements for Control Density will commence. A minimum of 2 nuclear density readings will be taken across the width of the surface being constructed at 100 metre intervals along the length of the Control Strip. Nuclear density readings will be taken after each „pass" until a maximum density is achieved. One density reading is defined as the average of 4 readings taken at 90 degrees to one another at one location. A „pass" is considered to be one complete coverage of the Control Strip with each unit of the specified compaction

equipment This maximum dry density will be used as the Control Density for subsequent construction unless otherwise directed by the Ministry Representative. The number of tests as described above, may be reduced, only with the approval of the Ministry Representative.

(vi) Compact the constructed road surface to an average density of 100% of the Control Density with no test being lower than 95% of the Control Density.

(vii) The Contractor may substitute compaction equipment provided that density is achieved as per (vi) above.

(viii) The Contractor"s quality control personnel will monitor, record and report the density results for each material used according to the approved Quality Control Plan. The Contractor will adjust his operations based on the density results. The results will be available for review by the Ministry Representative at any time. Summaries of the results for each material must be forwarded to the Ministry Representative on a weekly basis throughout the duration of the Project.

(ix) The minimum frequency of testing is 5 random locations at varying offsets from centerline per lane/kilometre for each material used.

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SOUTHERN INTERIOR REGION
Ministry of Transportation

JUN 17 2009

KAMLOOPS, B.C.

June 15, 2009

File: A8-6546

Ministry of Transportation and Infrastructure
#2310-0447 Columbia St.
Kamloops, BC, V2C 2T3

Attention: Donna Falat

Re: Section 9 Water Act Approval – Road Widening near Francis Brook, Garner Pond, and Gopher Creek in Kelowna

Approval for the above has been granted, and the approval document verifying this is attached. This Approval or copy of it must be kept on the work site so that it may be shown to a Ministry official upon request. You should contact your local or municipal government to determine if there are any additional requirements such as a Riparian Area Regulations assessment. The holder of the attached Approval is also obligated to observe provisions under the Federal Fisheries Act. A memorandum from our Ecosystem Biologist is attached with comments for work requirements at this site. Kirk Safford, Ecosystems Biologist (250) 490-8252, is the person to contact with questions regarding those comments.

If you have any other questions or concerns regarding this Approval, please contact me in Penticton at (250) 490-8229.

Yours truly,

Shaun Reimer

Shaun Reimer, P.Eng.
Engineer under the Water Act,
Water Stewardship Division - Okanagan Region

Attachments
pc: Fisheries & Oceans Canada, Salmon Arm, Attn: Bruce Runciman
Ecosystems Section, Penticton, Attn: Kirk Safford
Conservation Officer Service, Kelowna, Attn: Ed Seitz
Front Counter BC, Kamloops,

Ministry of Environment | Water Stewardship Division, Okanagan Region | Mailing/Location Address: 102 Industrial Place, Penticton BC V2A 7C8 | Telephone: (250) 490-8200 | Facsimile: (250) 490-2231 | Website: www.gov.bc.ca/env

File: A8-6546
Proponent: Ministry of Transportation
Works: Expansion of Hwy 33
Location: Muir road to Gallagher Road

The Ecosystem Section (ES) has reviewed the above noted Water Act approval application and has the following comments:

Our primary concern with the proposed highway expansion is impacts to species and ecological communities at risk. A number of species at risk are known or potentially occur at Garner pond and Gopher Creek including painted turtle, great basin spadefoot, blue heron, and great basin pocket mouse. The Kelowna Wetland Inventory, Classification, Evaluation and Mapping (WIM), prepared by Ecoscape Environmental Consultants Ltd, has identified the common cattail marsh ecological community (blue listed) at Garner Pond and Gopher Creek, and the water-birch/roses ecological community (red-listed, critically imperiled) at Gopher Creek. Recent research has found that over 90% of the wetlands have been lost in the Okanagan valley since 1800, and 96% within the city of Kelowna boundaries. Thus, minimizing the incursion into these wetlands is critical, and compensation must be adequate to replace or increase the functioning area of these wetland ecological communities. Since any restored ecological community does not become fully functional immediately, an area based compensation ratio at a minimum of 2:1 per ecological community is recommended. The species composition for replanting should be consistent with what occurs in the respective ecological community. Re-planted areas will need to be monitored, invasive plants removed, and additional planting conducted as required, to ensure success of restoration. Lastly, maintenance of the wetland communities requires the hydrology of the site remain unchanged. The proponent should ensure the hydrology of these wetlands is not altered as a result of the proposed activities.

It is the proponent's responsibility to ensure that their activities are in compliance with all legislation, including the *Fisheries Act*. ES recommends that the proponent follow all the recommendations as outlined in EBA Engineering Consultants report " Environmental Impact Assessment of the proposed highway 33 four lane project: Muir road to Gallagher Rd" and that a the QP be engaged to:

- Ensure a HADD will not occur as a result of the proponent's proposal
- Develop strategies to avoid a HADD, where there is potential for a HADD
- Develop a compensation package for submission to DFO where a HADD cannot be avoided
- Ensure no impacts will occur to wildlife, listed species (CDC and COSEWIC) and their habitats
- Develop an appropriate mitigation plan where there is a potential to impact wildlife or listed species or their habitats

The proponent should adhere to Best Management Practices for Instream Works (http://wlapwww.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf).

The proponent is responsible for following the Habitat Officer's Terms and Conditions for changes in and about a stream (http://www.env.gov.bc.ca/wsd/regions/okr/wateract/terms_conditions_okanagan.pdf).

Kirk Safford, RPBio
Ecosystem Biologist
Environmental Stewardship Division
Ministry of Environment, Okanagan Region
250-490-8252

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APPROVAL

Changes in and about a stream

WATER ACT - SECTION 9 (1)

The Ministry of Transportation and Infrastructure is hereby authorized to make changes in and about a stream as follows:

A. The streams are Francis Brook, Garner Pond, and Gopher Creek near Kelowna.

B. The changes to be made in and about the stream are general road widening and include construction of drainage works, relocation of waterlines, installation of culverts, clearing and grubbing, some infilling, and re-vegetation and re-seeding, as submitted with the application.

C. All works shall comply with description of work to be performed as submitted by the Ministry of Transportation and Infrastructure for the application.

D. The works authorized shall be completed on or before November 30, 2010.

E. A qualified environmental professional (QEP) shall be onsite at all times of the work. The qualified environmental professional shall have the authority to suspend work at any time that negative impacts to wildlife, listed species (CDC and COSEWIC) and/or their habitats are observed

F. Instream work shall be undertaken during a period determined by the QEP to ensure the least possible impact(s) to fish, amphibians, birds, and other biota.

G. This Approval or copy of it must be kept on the work site so that it may be shown to a Ministry of Environment official upon request.

H. Mitigation shall follow recommendations as described in the *Environmental Impact Assessment of the Proposed Highway 33 Four Lane Project: Muir Road to Gallagher*

Ministry of Environment
Water Stewardship Division
Regional Operations
Okanagan Region
Mailing/Location Address:
102 Industrial Place
Penticton, BC, V2A 7C8
Telephone: (250) 490-8200
Facsimile: (250) 490-2231
http://www.gov.bc.ca//

Road (70% Design) City of Kelowna, BC, dated march 10, 2009 (revised) and prepared by EBA Engineering Consultants Ltd.

I. Re-vegetation and re-seeding shall follow an area based compensation ratio at a minimum of 2:1 per ecological community being disturbed. **The proponent shall establish a monitoring plan to ensure that seeded and planted vegetation becomes adequately established. The plan should also take into consideration the removal of invasive weeds and shall be made available to Ministry of Environment staff upon request. Additional planting shall be conducted as required.**

J. No silt, or other deleterious substances, shall be allowed to enter the water. This must be ensured through the use of appropriate silt curtain and/or cofferdam materials.

K. The holder of this Approval shall take reasonable care to avoid damaging any land, works, trees or other property, and shall make full compensation to the owners for any damage or loss resulting from the exercise of the rights granted with this Approval.

L. This Approval does not authorize entry onto privately held land.

M. Vegetation along the banks of the streams shall be disturbed as little as possible.

N. Where possible, disturbed areas of the stream banks shall be restored to their original condition and protected from erosion.

O. All excavated material and debris shall be placed in a stable area above the high water mark and protected from erosion by planting grass and/or vegetation.

P. Fuelling and servicing of vehicles and equipment must occur away from all streams, lakes and water bodies and any spills must be properly cleaned up and reported as required by the Spill Reporting Regulation (B.C. Reg. 263/90).

Q. Any machinery operated on the site shall be in good repair and be free of hydraulic leaks and excess surface oil and grease.

R. All reasonable effort will be made to avoid any negative impacts to the stream's ecosystem.

S. Appropriate design methods and construction techniques for the site conditions shall be utilized.

T. Upon completion of this project, the streambed shall be left in as smooth a condition as possible with no depressions or protrusions that could trap fish or initiate erosion.

U. Upon commencement of the project, the works shall be pursued to completion as quickly as possible.

V. Adequate riprap or wing walls shall be placed at the upstream and downstream of each culvert to protect the road embankment and the channel of the stream from erosion.

W. All disturbed areas of the stream channel shall be protected from erosion.

X. The backfill around the culverts shall be placed and compacted in accordance with standard engineering procedures.

Y. The bottom of the outlet of the culvert shall be placed such that it will be submerged under all flow conditions, thus, permitting the free passage of fish.

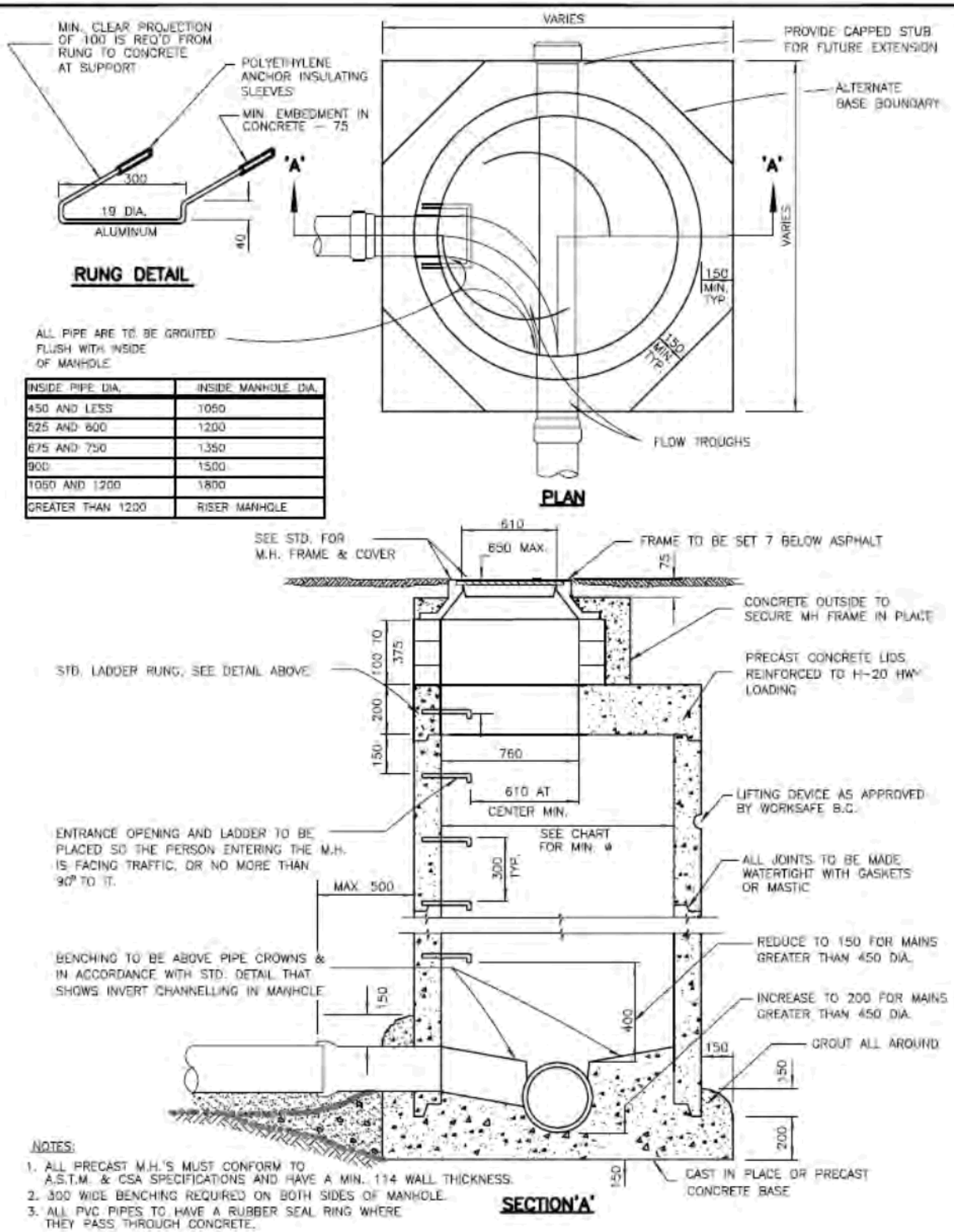
Shaun Reimer

Shaun Reimer, P.Eng.
Engineer under the Water Act,
Water Stewardship Division, Okanagan Region

Approval: A806546 Date: June 15, 2009

BL10124 replaced drawing SS-S1a:

STANDARD DETAIL DRAWINGS



INSIDE PIPE DIA.	INSIDE MANHOLE DIA.
450 AND LESS	1050
525 AND 600	1200
675 AND 750	1350
900	1500
1050 AND 1200	1800
GREATER THAN 1200	RISER MANHOLE

NOTES:

1. ALL PRECAST M.H.'S MUST CONFORM TO A.S.T.M. & CSA SPECIFICATIONS AND HAVE A MIN. 114 WALL THICKNESS.
2. 300 WIDE BENCHING REQUIRED ON BOTH SIDES OF MANHOLE.
3. ALL PVC PIPES TO HAVE A RUBBER SEAL RING WHERE THEY PASS THROUGH CONCRETE.

MANHOLES

SS–S1a

APRIL 15/08

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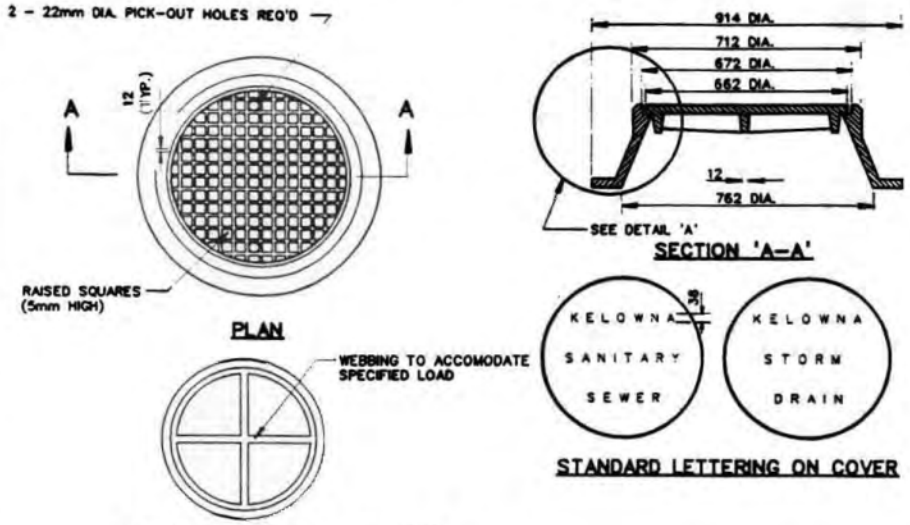
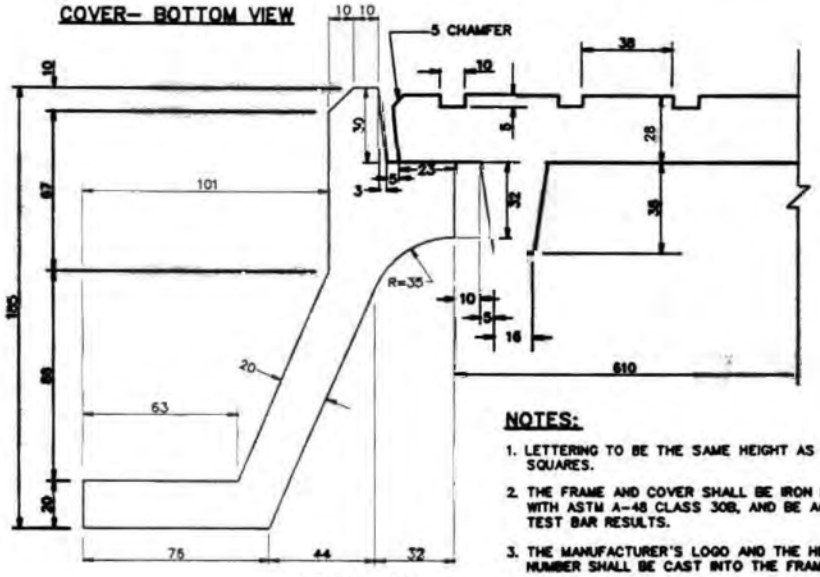
STANDARD DETAIL DRAWINGS



COVER– BOTTOM VIEW

STANDARD LETTERING ON COVER



DETAIL 'A'

NOTES:

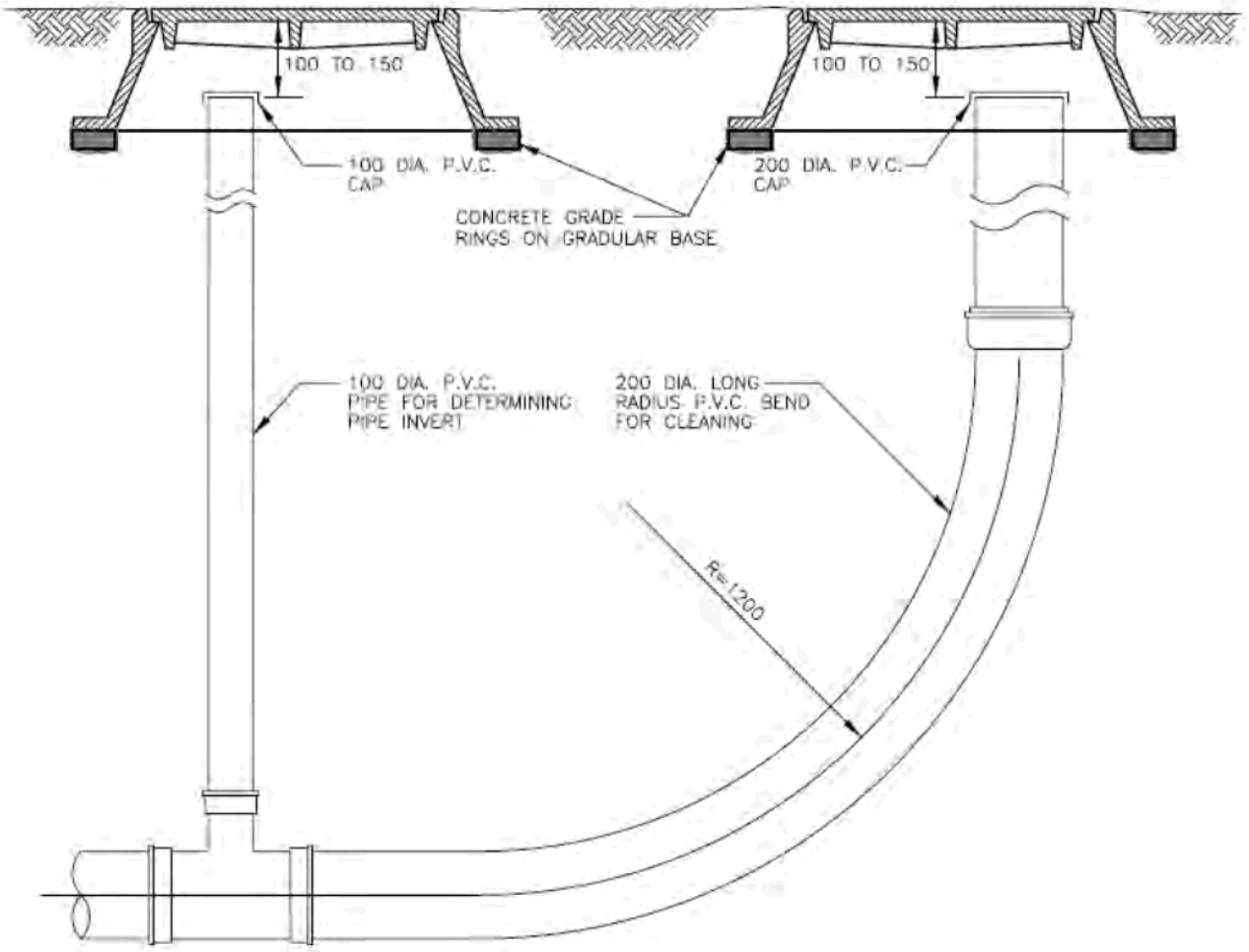
1. LETTERING TO BE THE SAME HEIGHT AS THE RAISED SQUARES.
2. THE FRAME AND COVER SHALL BE IRON IN ACCORDANCE WITH ASTM A-48 CLASS 30B, AND BE ACCOMPANIED BY TEST BAR RESULTS.
3. THE MANUFACTURER'S LOGO AND THE HEAT SERIES NUMBER SHALL BE CAST INTO THE FRAME AND COVER.
4. COVER AND FRAME TO BE ABLE TO WITHSTAND 175 kN (40 000LBS) LOAD APPLIED AT THE CENTER OF THE COVER ON A 50mm THICK 250 x 250 RUBBER PAD.
5. THE CONTACT SURFACES BETWEEN THE FRAME AND THE COVER ARE TO BE MACHINED SMOOTH.

NOV. 2/98

MANHOLE FRAME AND COVER | SS–S1b

BL10124 replaced drawing SS-S6.

STANDARD DETAIL DRAWINGS



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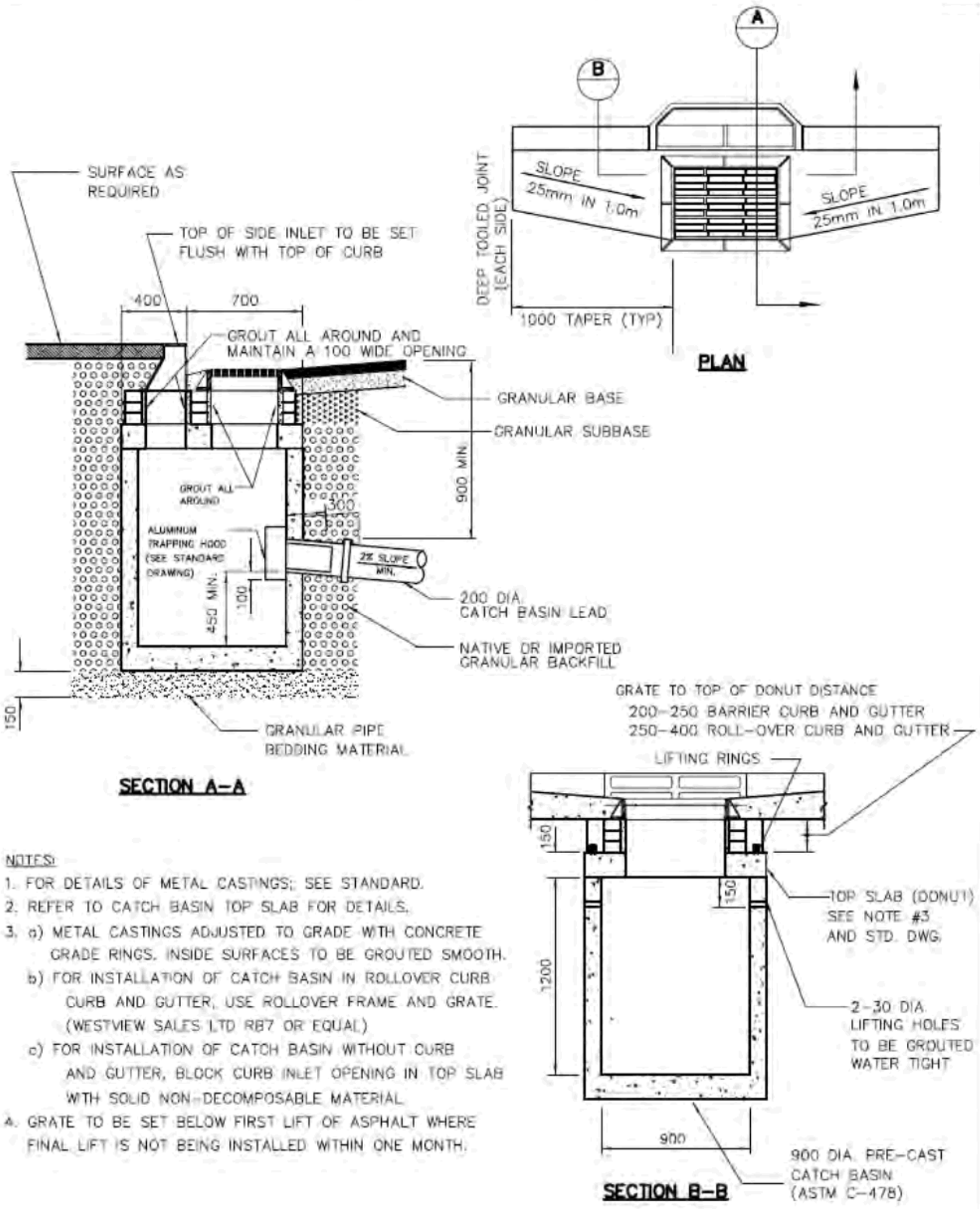
CLEANOUT DETAIL (TEMPORARY)

SS-S6

APRIL 15/08

BL10124 replaced drawing SS-S11a:

STANDARD DETAIL DRAWINGS



NOTES:

1. FOR DETAILS OF METAL CASTINGS; SEE STANDARD.
2. REFER TO CATCH BASIN TOP SLAB FOR DETAILS.
3. a) METAL CASTINGS ADJUSTED TO GRADE WITH CONCRETE GRADE RINGS. INSIDE SURFACES TO BE GROUTED SMOOTH.
   b) FOR INSTALLATION OF CATCH BASIN IN ROLLOVER CURB CURB AND GUTTER, USE ROLLOVER FRAME AND GRATE. (WESTVIEW SALES LTD RB7 OR EQUAL)
   c) FOR INSTALLATION OF CATCH BASIN WITHOUT CURB AND GUTTER, BLOCK CURB INLET OPENING IN TOP SLAB WITH SOLID NON-DECOMPOSABLE MATERIAL.
4. GRATE TO BE SET BELOW FIRST LIFT OF ASPHALT WHERE FINAL LIFT IS NOT BEING INSTALLED WITHIN ONE MONTH.

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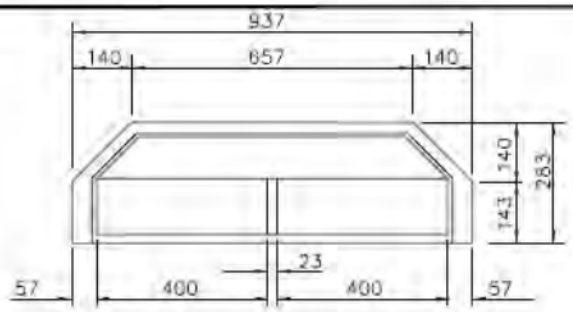
CATCH BASIN (900mm DIA.)

APRIL 15/08

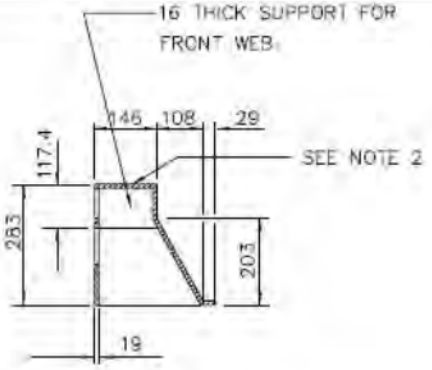
SS-S11a

BL10124 replaced drawing SS-S11b.

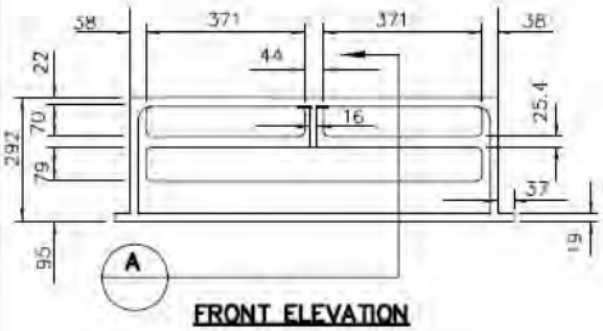
STANDARD DETAIL DRAWINGS



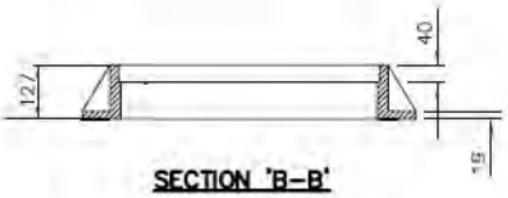
BOTTOM VIEW
(BARRIER CURB ONLY)



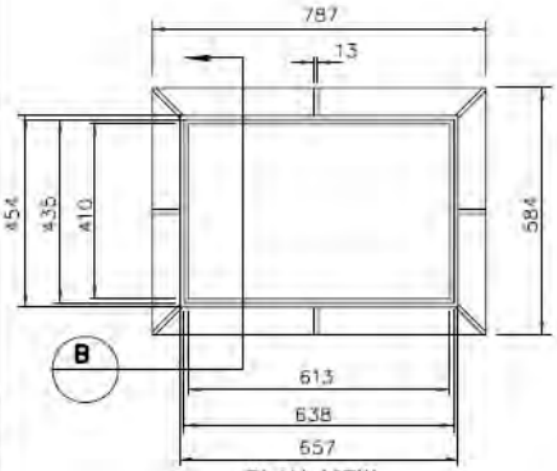
SECTION 'A-A'



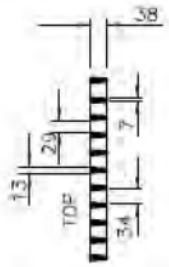
FRONT ELEVATION
(BARRIER CURB ONLY)



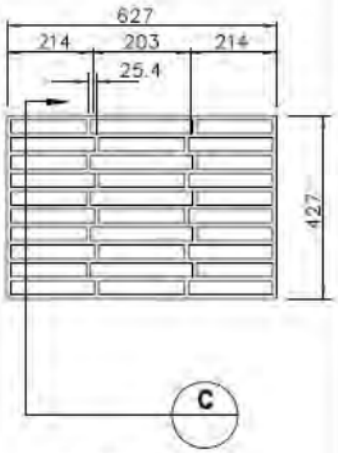
SECTION 'B-B'



PLAN VIEW
(CATCH BASIN FRAME CASTING)



SECTION C-C



PLAN VIEW
(CATCH BASIN GRATE)

NOTE:
1. CURB INLET CASTING GRATE AND FRAME CASTING TO BE DUCTILE IRON (DESIGNED FOR H-20 LOADING)
2. FISH DESIGN CAN BE ADDED TO TOP OF SIDE INLET BUT MUST BE APPROVED BY THE CITY ENGINEER PRIOR TO CONSTRUCTION.
3. FOR ROLL CURB USE ROLLOVER FRAME & GRATE (WESTVIEW SALES L10 RB7 OR EQUAL)

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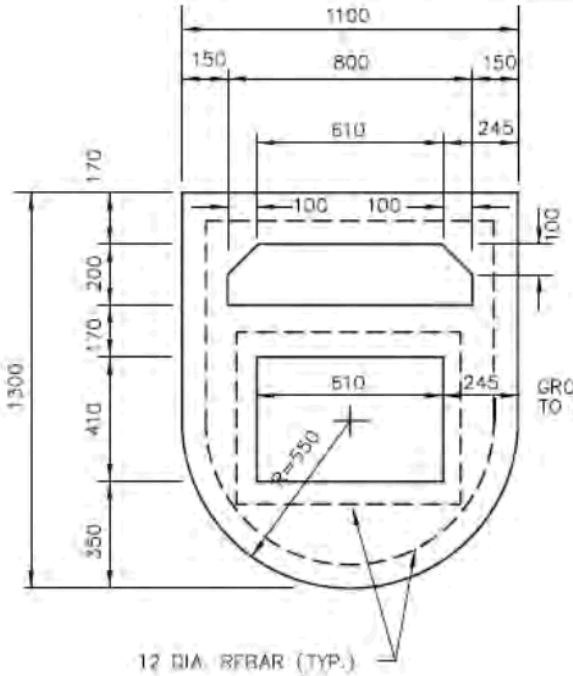
CATCH BASIN CASTINGS
COMBINED SIDE & GUTTER INLET

APRIL 15/08

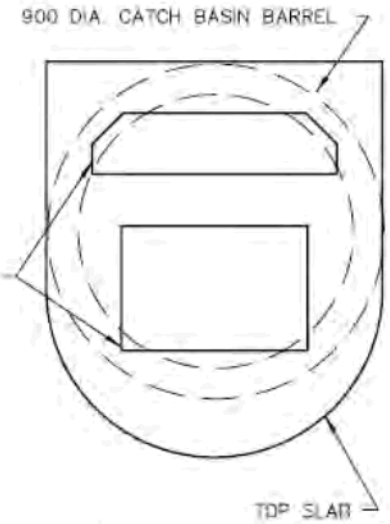
SS-S11b

BL10124 replaced drawing SS-S11c:

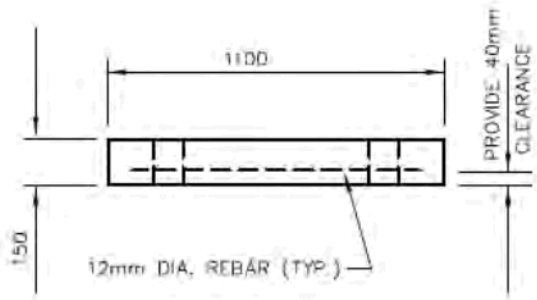
STANDARD DETAIL DRAWINGS



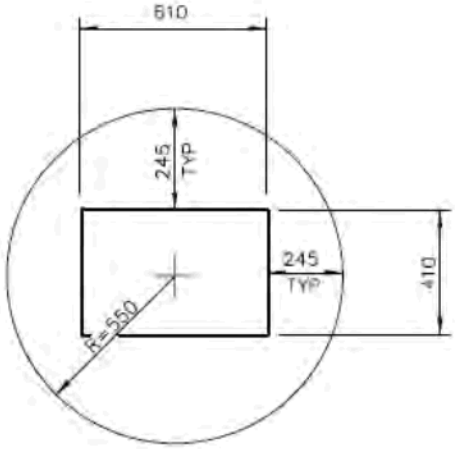
PLAN TOP SLAB



POSITION OF TOP SLAB
ON 900mm DIA. CATCH BASIN



FRONT ELEVATION



TOP SLAB
(WITHOUT CURB INLET OPENING)

NOTES:

1. ALL CONCRETE WORK TO BE A MINIMUM OF 30MPa STRENGTH AND DESIGNED FOR H-20 LOADING.
2. MODIFY OPENINGS FOR ROLLOVER FRAME AND GRATE.

P:\DRAFTING\STD-DWGS\WMCD-STD\SS-s11C.dwg

CATCH BASIN – TOP SLAB

APRIL 15/08

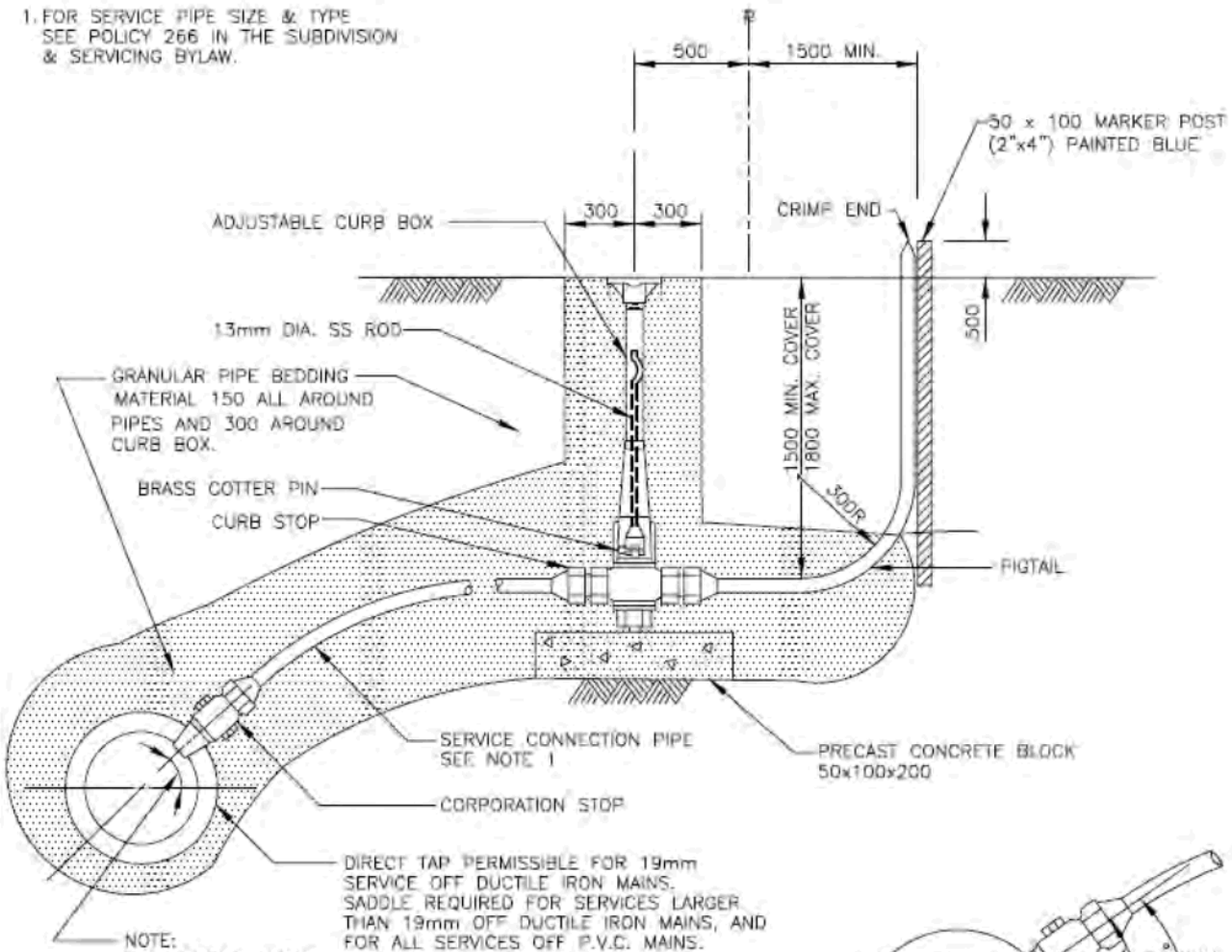
SS-S11c

SS-W2 replaced drawing SS-W2:

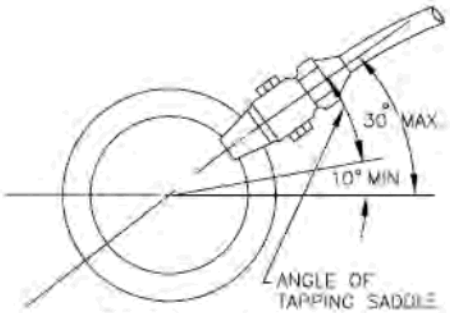
STANDARD DETAIL DRAWINGS

NOTES:

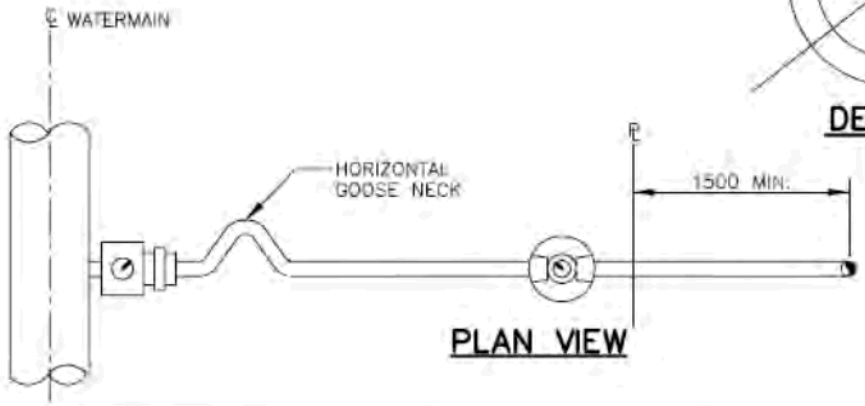
1. FOR SERVICE PIPE SIZE & TYPE SEE POLICY 266 IN THE SUBDIVISION & SERVICING BYLAW.



CROSS SECTION



DETAIL-A
N.T.S.



PLAN VIEW

WATER SERVICE CONNECTION	SS-W2
APRIL 15/08	

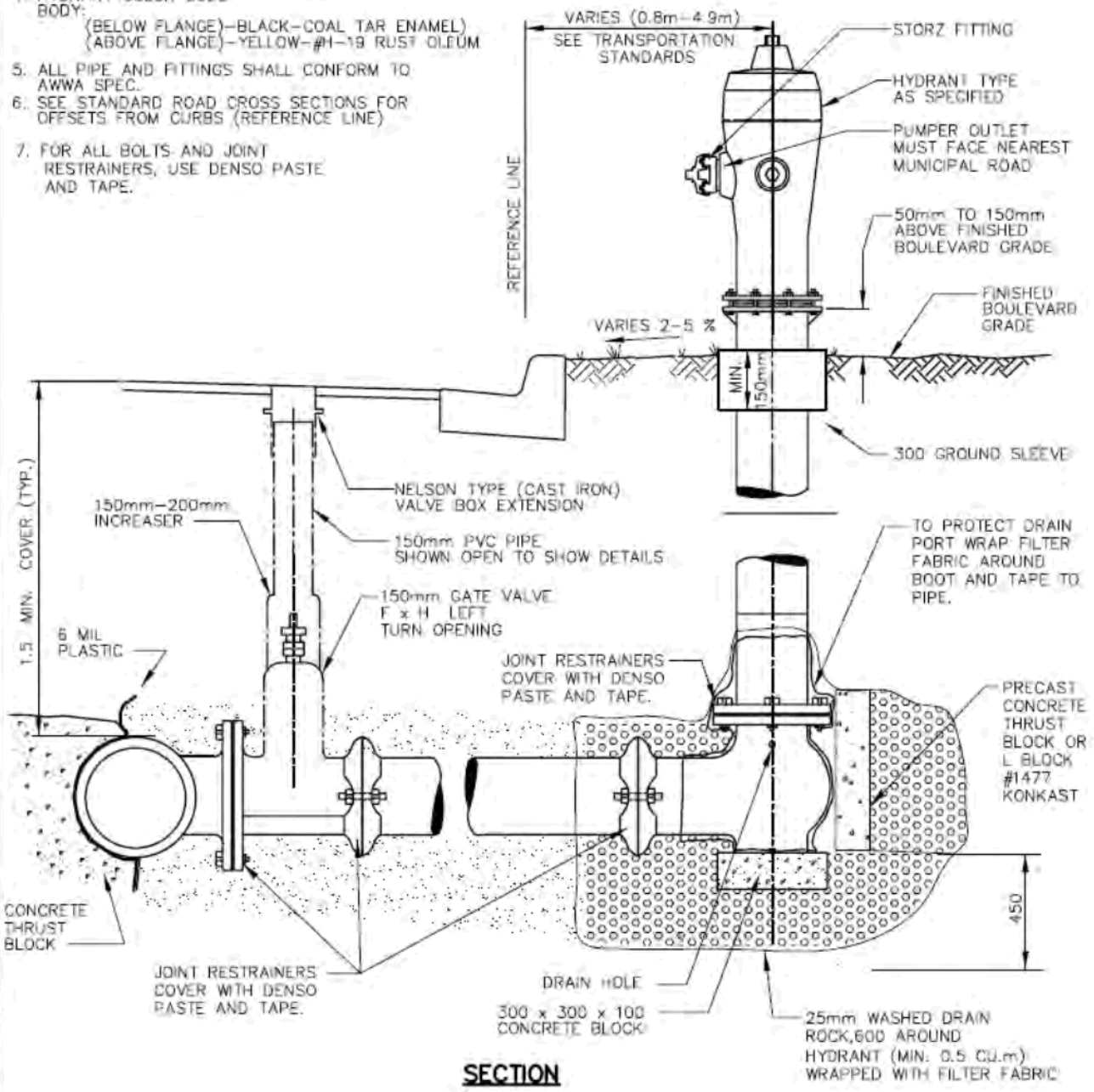
P:\DRAFTING\SID-DWGS\WMCU\SS-W2

BL10124 replaced drawing SS-W4.

STANDARD DETAIL DRAWINGS

NOTES:

1. HYDRANTS – IN ACCORDANCE WITH APPROVED PRODUCTS LIST.
2. HYDRANTS SHALL HAVE 2 – 63.5mm OUTLETS B.C. STANDARD
   1 – 100mm PUMPER OUTLET WITH STORZ FITTING
3. ALL HYDRANTS TO HAVE 300DIA. GROUND SLEEVE (SDR 35 PVC)
4. HYDRANT COLOR CODE
   BODY:
   (BELOW FLANGE)–BLACK–COAL TAR ENAMEL)
   (ABOVE FLANGE)–YELLOW–#H–19 RUST OLEUM
5. ALL PIPE AND FITTINGS SHALL CONFORM TO AWWA SPEC.
6. SEE STANDARD ROAD CROSS SECTIONS FOR OFFSETS FROM CURBS (REFERENCE LINE)
7. FOR ALL BOLTS AND JOINT RESTRAINERS, USE DENSO PASTE AND TAPE.



SECTION

P:\DRAFTING\STD-DWGS\MMCD-STD\Ss-w4.dwg

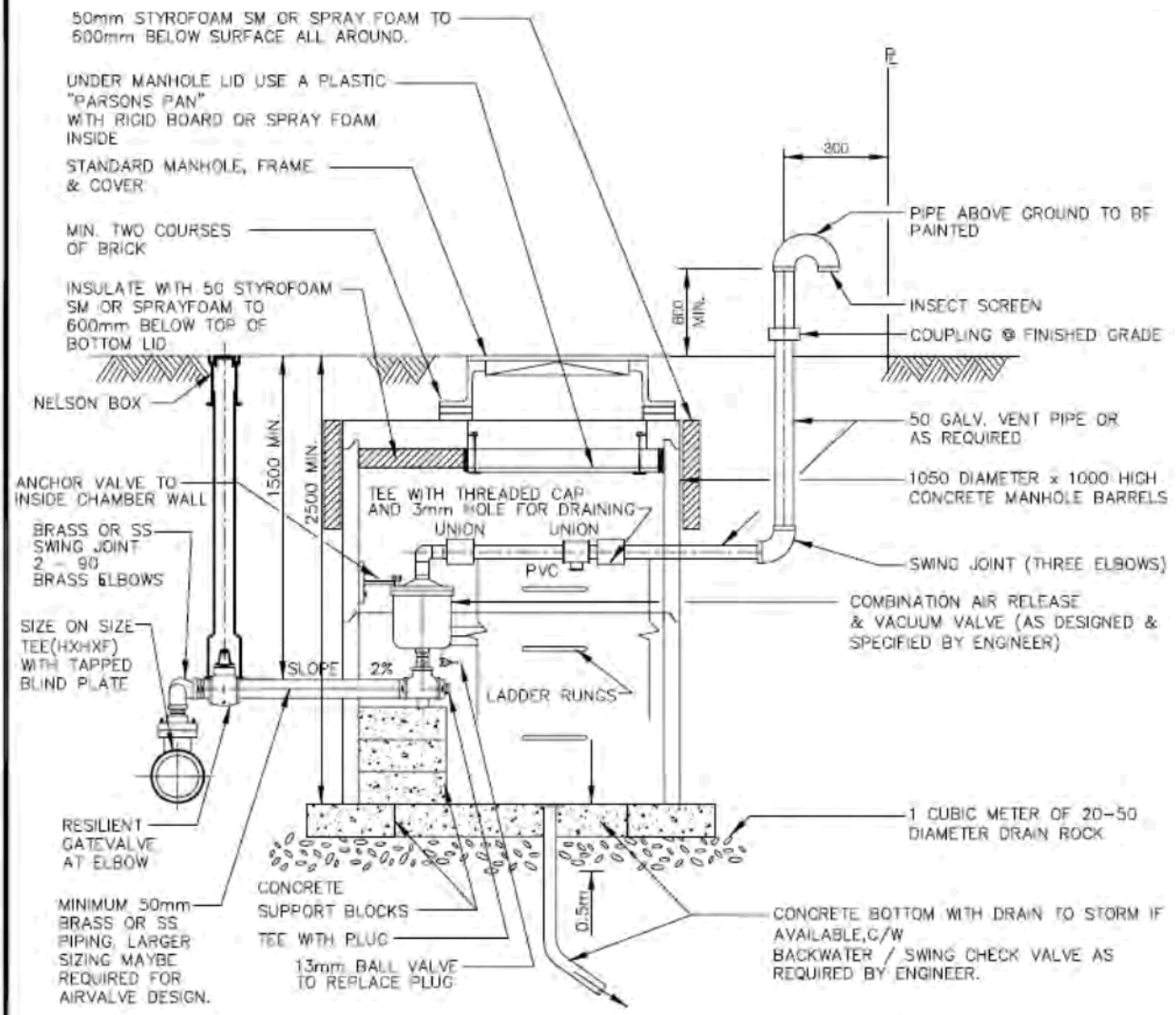
HYDRANT

APRIL 15/08

SS–W4

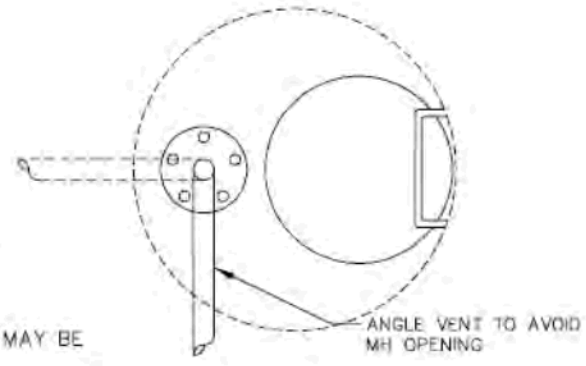
BL10124 replaced drawing SS-W6:

STANDARD DETAIL DRAWINGS



NOTES:

1. AIR VALVE ASSEMBLY IS FOR 25 OR 50 AIR VALVES
2. LOCATE AIR VALVE AWAY FROM TRAFFIC (i.e. BOULEVARD)
3. LOCATE VENT PIPE AWAY FROM LADDER RUNGS.
4. ABOVE GROUND INSTALLATIONS (SHUCH AS "HOT BOXES") MAY BE REQUIRED BY THE UTILITY.



PLAN VIEW

P:\DRAFTING\STD-DWGS\MMCD-STD\SS-W6.DWG

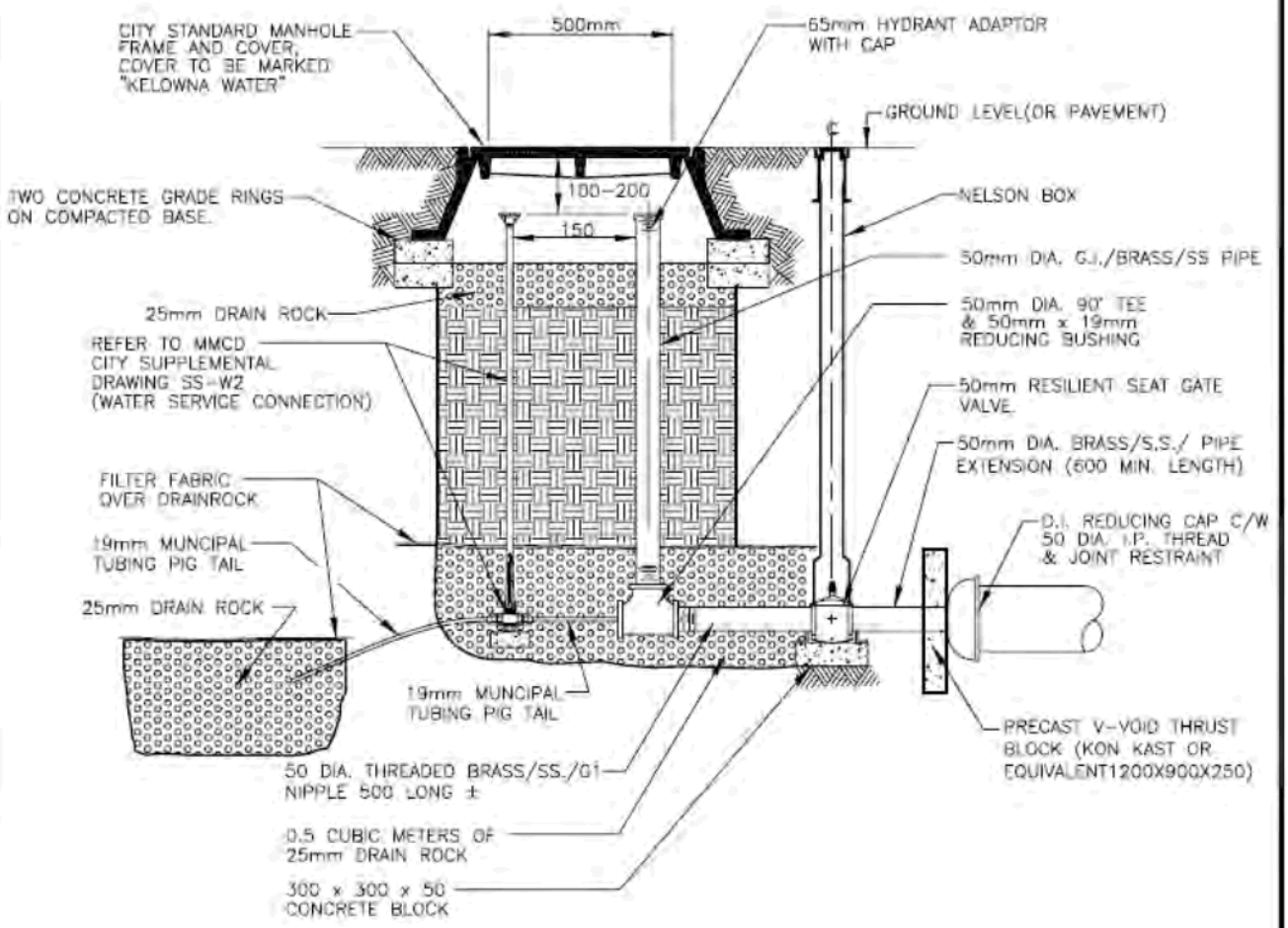
AIR VALVE ASSEMBLY

SS-W6

APRIL 15/08

BL10124 replaced drawing SS-R26:

STANDARD DETAIL DRAWINGS



NOTES:

1. SIZE BLOW-OFF ASSEMBLY TO ACHIEVE SPECIFIED MAIN FLUSHING VELOCITY.
2. ENTIRE ASSEMBLY TO BE PRESSURE TESTED.
3. FOR ALL BOLTS AND JOINT RESTRAINERS USE DENSO PASTE AND TAPE.

P:\DRAFTING\STD-DWGS\MMCD-STD\SS-W8a.dwg

50mm BLOW-OFF

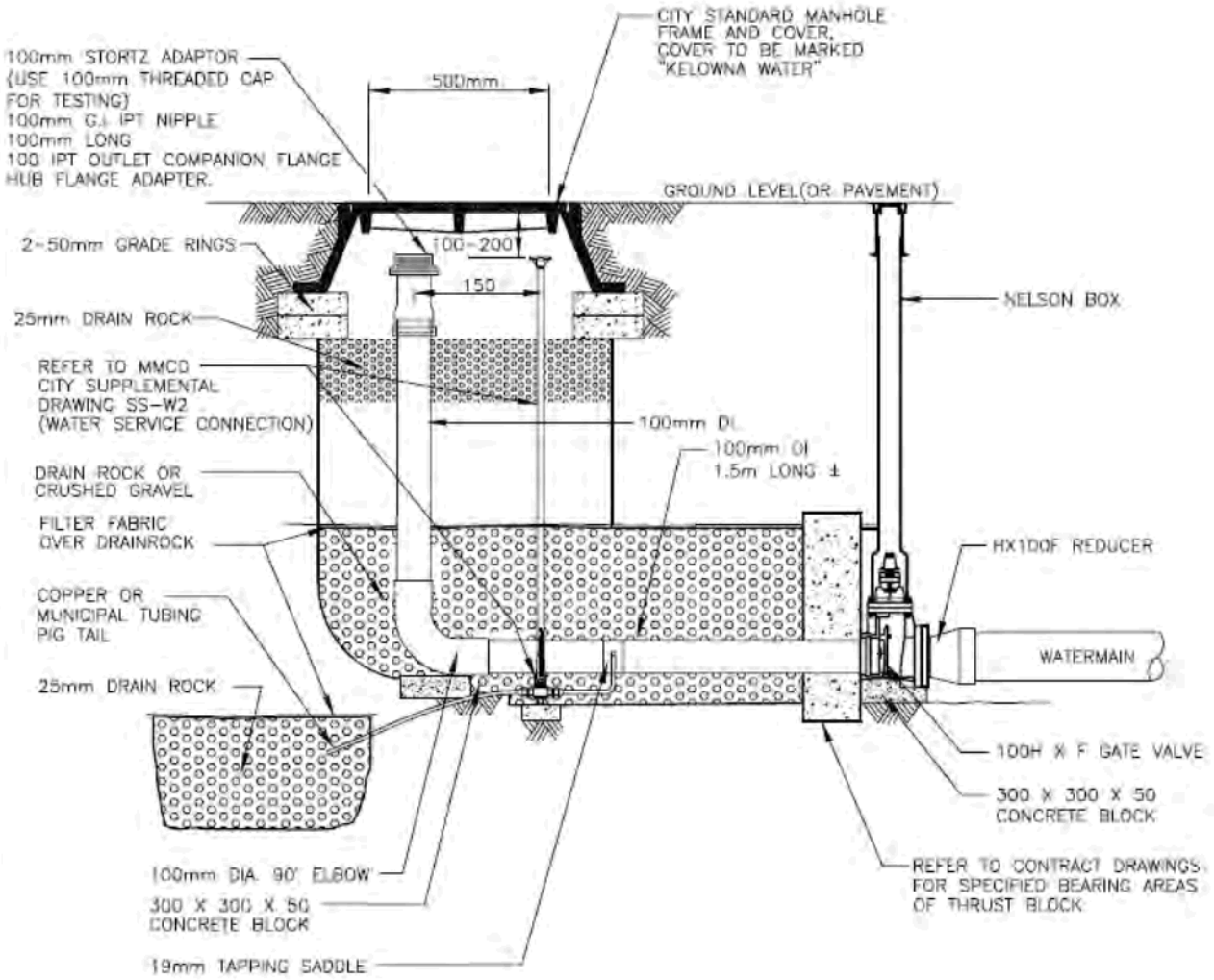
(FOR MAINS 100mm & SMALLER)

APRIL 15/08

SS-W8a

BL10124 replaced drawing SS-W8b:

STANDARD DETAIL DRAWINGS



NOTES:

1. USE JOINT RESTRAINTS FOR ALL JOINTS.
2. ALL JOINT RESTRAINERS TO BE APPROVED AS PER POLICY 266 IN THE CITY OF KELOWNA SUBDIVISION AND SERVICING BYLAW.
3. ALL JOINTS TO BE RESTRAINED AS PER MMCD 02666, 2.2.13 AND THE CITY OF KELOWNA SUBDIVISION AND SERVICING BYLAW SCHEDULE 4 WATER, SECTION 1.13, AND/OR AS SPECIFIED IN THE CONTRACT DOCUMENTS OR DRAWINGS.
4. ENTIRE ASSEMBLY TO BE PRESSURE TESTED.
5. FOR ALL BOLTS AND JOINT RESTRAINERS, USE DENSO PASTE AND TAPE.
6. PVC C900 PIPE MAYBE APPROVED BY UTILITIES OTHER THAN THE CITY

P:\DRAFTING\STD-DWGS\MMCD-STD\SS-W8b.dwg

100mm BLOW-OFF

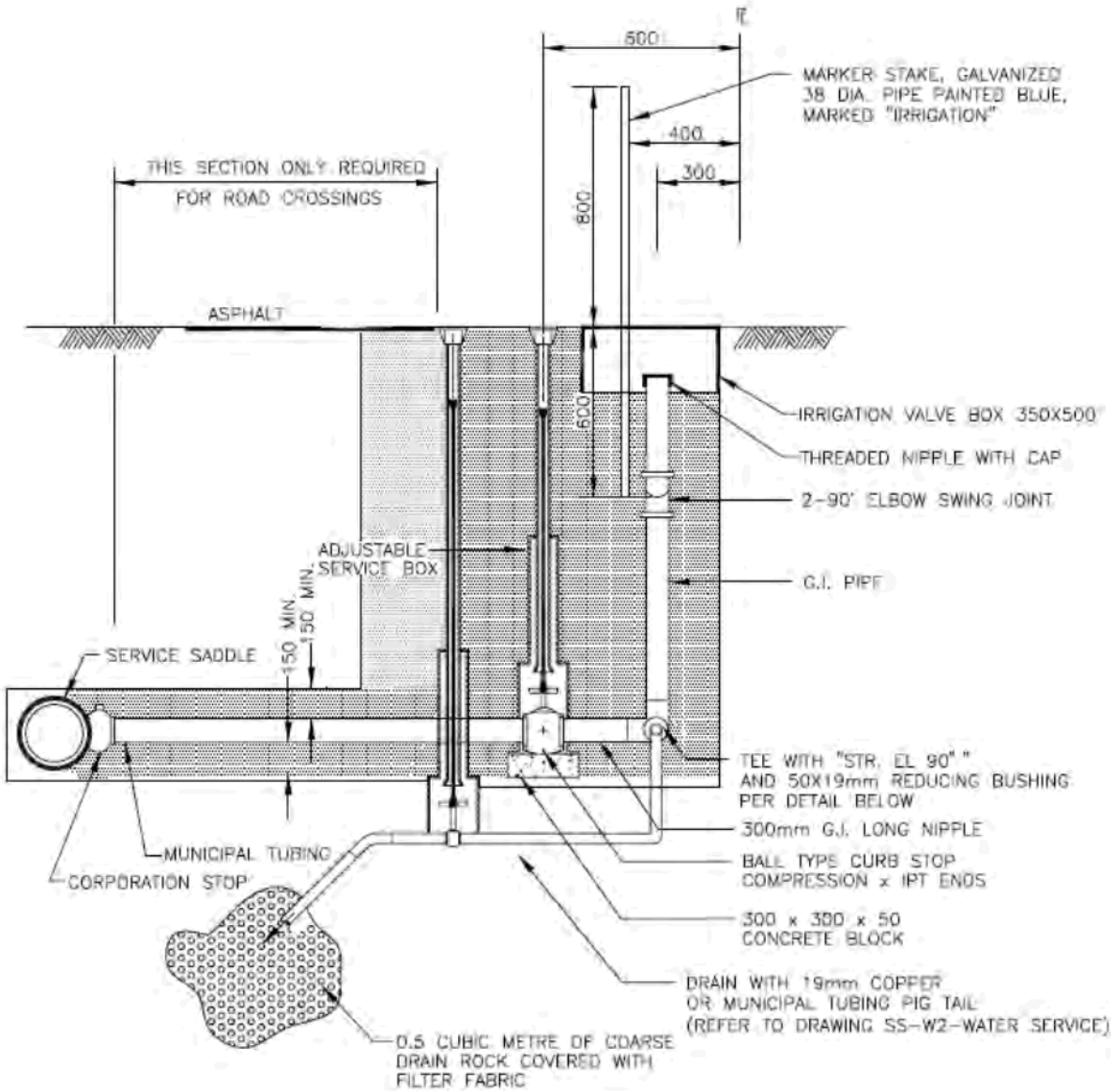
(FOR MAINS 150mm & LARGER)

APRIL 15/08

SS-W8b

BL10124 replaced drawing SS-W50:

STANDARD DETAIL DRAWINGS



NOTES:

1. REFER TO BEDDING AND BACKFILL STANDARDS FOR DETAILS.

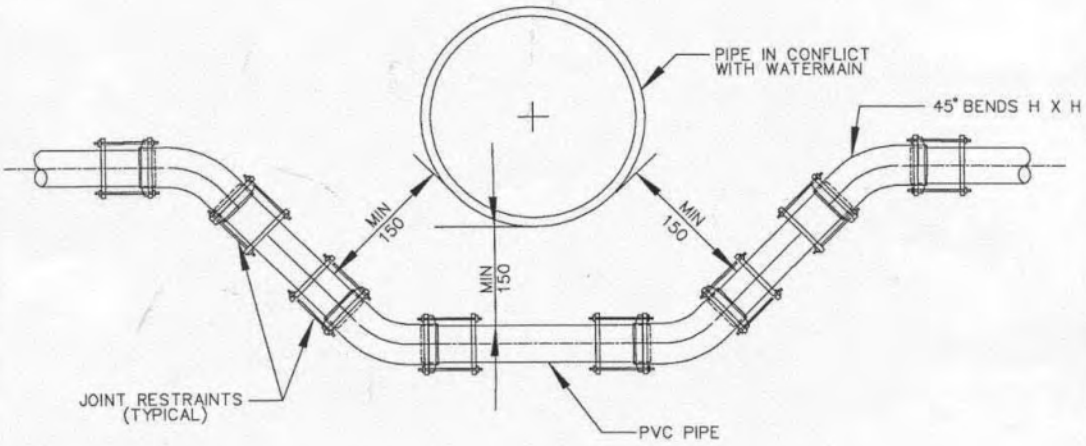
P:\DRAFTING\STD-DWGS\MMCD-STD\SS-W50.dwg

IRRIGATION SERVICE

APRIL 15/08

SS-W50

STANDARD DETAIL DRAWINGS



TYPICAL SECTION

NOTES:

1. ALL JOINT RESTRAINERS TO BE APPROVED AS PER POLICY 266 IN THE CITY OF KELOWNA SUBDIVISION AND SERVICING BYLAW.
2. ALL JOINTS TO BE RESTRAINED AS PER MMCD 02666, 2.2.13 AND THE CITY OF KELOWNA SUBDIVISION AND SERVICING BYLAW SCHEDULE 4 WATER, SECTION 1.13, AND/OR AS SPECIFIED IN THE CONTRACT DOCUMENTS OR DRAWINGS.

\WU\DRAFTING\STD-DWGS\MMCD-STD\SS-W51.dwg

U-BEND DETAIL
(PIPE CROSSING CONFLICT)

REV. SEPT. 27/01

SS-W51

BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

LIST OF SUBCONTRACTORS AND SUPPLIERS
(including Designated Subcontractors and Designated Suppliers)

Project Number 22198-0001 Contract ID 22198MJ0001

Project Description Highway 33 - Four Laning

Muir Road to Gallagher Road

1) The Contractor shall complete this list and submit it to the Ministry Representative at the preconstruction meeting.
2) The list shall identify each Subcontractor and Supplier for:
   (a) supply or fabrication of precast or prestressed concrete components (if applicable);
   (b) supply or fabrication of structural steelwork (if applicable); and/or
   (c) any other portion of the Work valued at $25,000 or more.
3) For Major Works contracts, indicate with "Yes" in the last column where the aggregate value of the Subcontractor or Supplier's portion of the Work is $200,000 or more, invoking bonding under Major Works GC 10.00.
4) The Contractor shall promptly notify the Ministry Representative of any change to the information provided herein.

No.	Subcontractor / Supplier Name & Address	Portion of Work	Is the value of this Sub's Work $200,000 or more?
1		Precast / Prestressed Concrete (if applicable)	
2		Structural Steelwork (if applicable)	
3			
4			
5			
6			
7			
8			
9			
10			

Contractor's Name	Phone Number	Fax Number	Date (yyyy/mm/dd)
Address	City		Postal Code

Attach additional copies of this form as necessary.

SPECIAL PROVISIONS APPENDIX

FOR AMENDMENTS TO THE 2009 STANDARD SPECIFICATIONS

FOR HIGHWAY CONSTRUCTION

The Amendments to the 2009 Standard Specifications for Highway Construction are as follows:

SECTION 145 – GENERAL REQUIREMENTS FOR HIGHWAY, BRIDGE AND MARINE CONSTRUCTION

Issued Date: February 12, 2009

SS 145.33.03 a) and b) – Traffic Control Signs are amended in their entirety and are replaced with the following:

SS 145.33.03 - Traffic Control Signs:

The Contractor is required to use:

a) Prismatic lens sheeting (identified by the diamond shaped pattern) on:

C-27 – Stop/Slow Paddle; and

b) ASTM D 4956-04 Type 9 sheeting on all other traffic control signs in the Work zone, including:

Crew Working;

Single Lane Traffic;

Traffic Control Person Ahead; and

Prepare to Stop Ahead.

Signs should meet the specifications outlined in the Traffic Control Manual for Work on Roadways under:

http://www.th.gov.bc.ca/publications/eng_publications/TCM/Traffic_Control_Manual.htm

and, the Sign Pattern Manual under:

http://www.th.gov.bc.ca/publications/eng_publications/geomet/geometsigns.htm

All costs to provide, replace and use the required traffic control signs in the Work zone shall be included in the price bid for Traffic Management/Control and no additional compensation will be made.

SECTION 207: SLOPE MESH FOR ROCK CUTS

Issued Date: April 29, 2009

SS 207.32 - Soil Anchors, last paragraph is amended in its entirety to read as:

The Contractor shall load test 10% of the overburden soil anchors or as specified by the Ministry Representative. Soil anchors shall be tested by applying a lateral load of 10 kN or as specified by the Ministry Representative.

SECTION 211: PORTLAND CEMENT CONCRETE

Issued Date: March 05, 2009

The following Sub-section was inadvertently omitted and is added after SS 211.05.04 – Other Materials:

SS 211.05.05 – Aggregates: Each nominal size of aggregate, including coarse and fine shall be separately stockpiled, stored and handled in a manner that will prevent contamination, intermixing and segregation. A minimum of 10 m^3 of each aggregate size, in excess of the requirements of the daily concrete operations, shall be maintained in identifiable stockpiles at the batch site in order to ensure proper continuity of the work with approved aggregates.

SECTION 232: METAL BIN WALL

Issued Date: November 26, 2008

The following have been omitted and are attached to these Special Provisions:

1-SP 232 (Nov. 26, 2008) – Type 2 Metal Bin Wall Designs A, B, & C

2-SP 232 (Nov. 26, 2008) – Type 2 Metal Bin Wall Designs D, E & F

3-SP 232 (Nov. 26, 2008) – Metal Bin Wall Type 1

SECTION 303: CULVERTS

Issued Date: February 12, 2009

Section 303 – Culverts is amended in its entirety to include the Standard Specifications drawings which were inadvertently omitted and is attached to these Special Provisions.

SECTION 316: STEEL AND WIRE FENCE MATERIALS

Issued Date: April 29, 2009

SS 316.06, f), iii) - Coating Mass, last line, the reference to "SS 16.06 (c)" should read as "SS 316.06 (c)".

SECTION 508: GRADED AGGREGATE SEAL COAT (EPS)

Issued Date: November 26, 2008

The Pot Hole and Streaking [pages 18 of 20 to 20 of 20] photographs have been omitted and are attached to these Special Provisions:

With the addition of the Pot Hole photograph as page 18 of 20, the Raveling or Stripping photographs is now numbered as page 19 of 20.

SECTION 635 – ELECTRICAL AND SIGNING

Issued Date: February 12, 2009

The following Subsections are amended to read as:

SS 635.26 – Breakaway Sign Structures, paragraph eight, the word "and" before the words "pressure treated" is deleted and replaced with the word "or".

SS 635.27 – Wood Post Sign Structures, paragraphs four and twelve, the word "and" before the words "pressure treated" is deleted and replaced with the word "or".

SECTION 741 – FENCE CONSTRUCTION

Issued Date: February 12, 2009

SS 741.38 – Steel Sidewalk Fencing, the "Note: These are guide fences only, not intended for use adjacent to drop-offs or high slopes." is deleted.

SP741-07.01: Sidewalk Fence – Welded for Slip-on is outdated and is replaced with SP741-07-01: Pedestrian Sidewalk Fence – Welded or Slip-on and is attached to these Special Provisions.

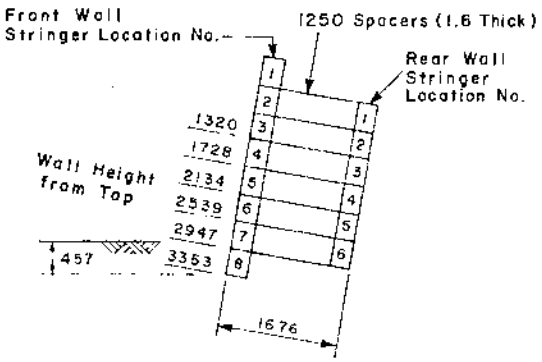
SP741-07.02: Bicyclist Sidewalk Fence – Welded or Slip-on is revised to remove the wording "Suitable for locations where gathering of many people improbable" and is attached to these Special Provisions.

SECTION 941 – PRECAST REINFORCED CONCRETE BARRIERS

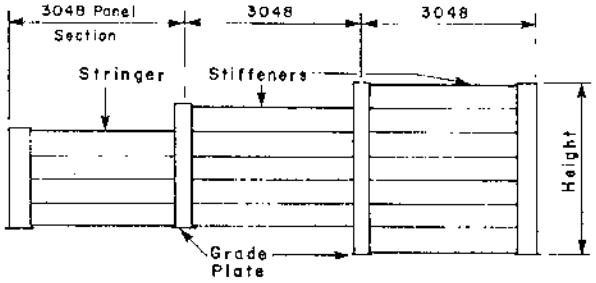
Precast Concrete Median Barrier 810 mm – CMB-E Details, SP941-02.01.04 [941 (8 of 28)] is deleted as it is duplicated [see 941 (13 of 28)].

Precast Concrete Roadside Barrier 690 mm – CRB-E Details, SP941-01.02.04 [941 (8 of 28)] (Nov. 26, 2008) has been omitted and is attached to these Special Provisions.

DESIGN A

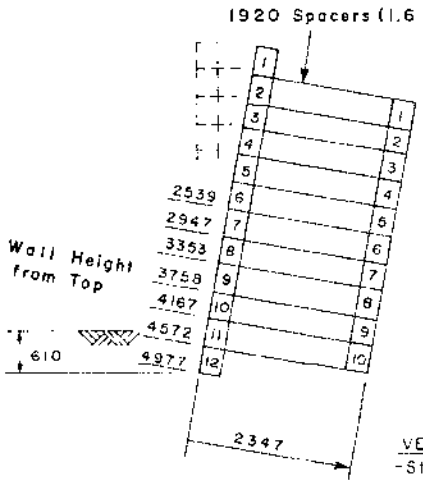


ELEVATION

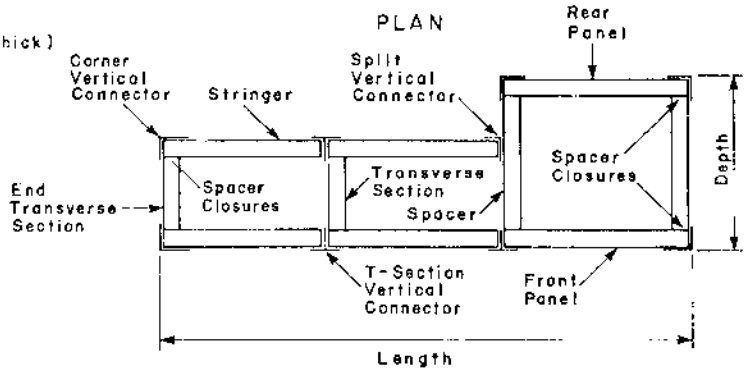


Front Wall Stringer Location No.	Rear Wall Stringer Location No.	Thickness
1 through 8	1 through 6	1.6
9 through 12	7 through 10	2.0
13 through 16	11 through 14	2.8

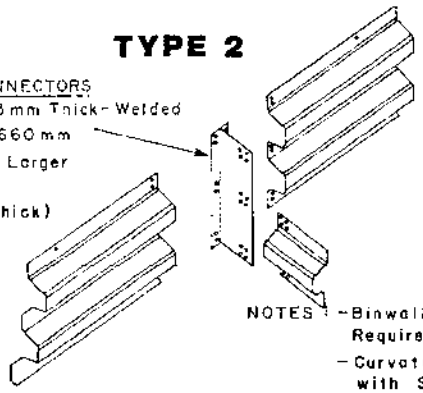
DESIGN B



PLAN

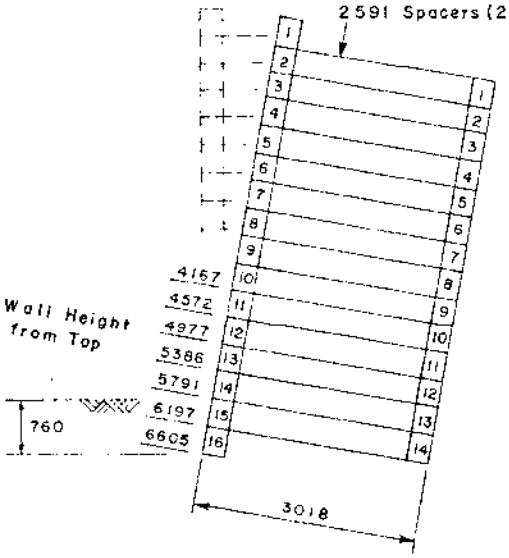


TYPE 2



VERTICAL CONNECTORS
- Steel Plate 6.3 mm Thick - Welded
- Max. Length 3660 mm
- Splice Plate if Larger

DESIGN C

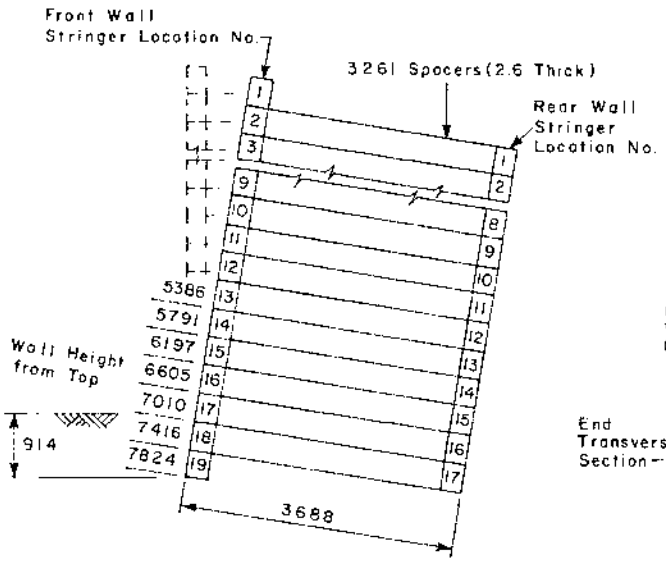


NOTES:
- Binwall Batter = 1:6 or Vertical as Required by Contract Drawings.
- Curvature Detail in accordance with Suppliers Manual.
- All measurements in millimetres.
- For Type 1 see Dwg. 3-SP 232.

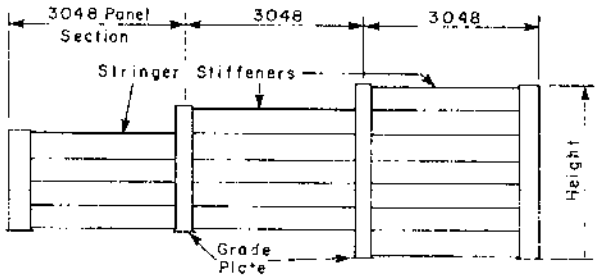
Province of British Columbia
Ministry of Transportation and Highways

Revisions	TYPE 2 METAL BIN WALL DESIGNS A, B & C	
	Date 1985 11 06 — Approved M.G. Elston — Exec. Dir. of Engineering	SPECIFICATION DRAWING No. 1-SP 232

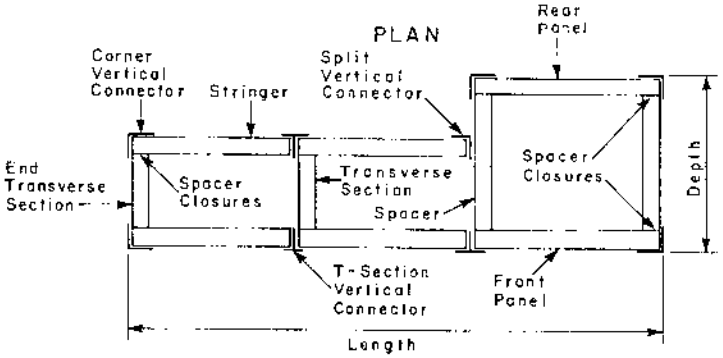
DESIGN D



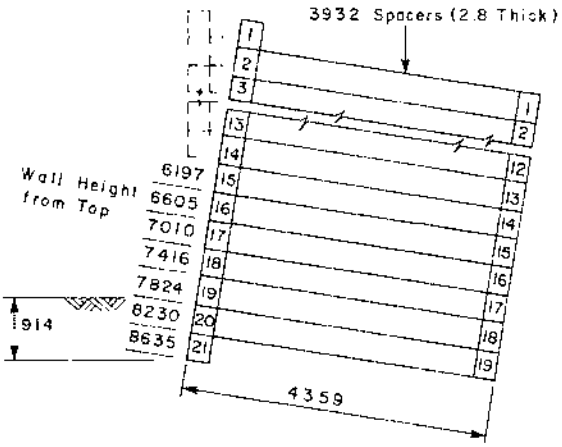
ELEVATION



PLAN



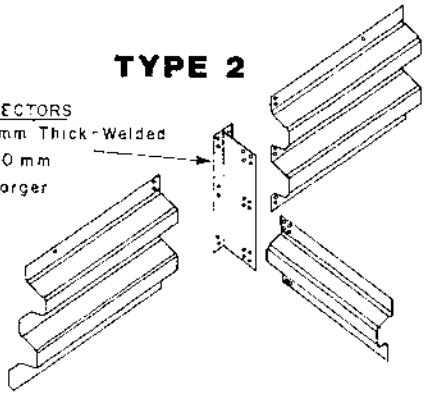
DESIGN E



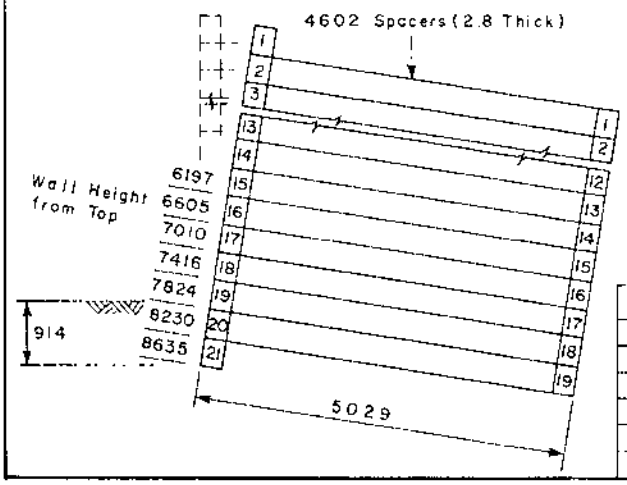
Front Wall Stringer Location No	Rear Wall Stringer Location No.	Thickness
1 through 8	1 through 6	1.6
9 through 12	7 through 10	2.0
13 through 19	11 through 17	2.8
20 and 21	18 and 19	3.5

TYPE 2

VERTICAL CONNECTORS
- Steel Plate 6.3mm Thick - Welded
- Max. Length 3660 mm
- Splice Plate if Larger



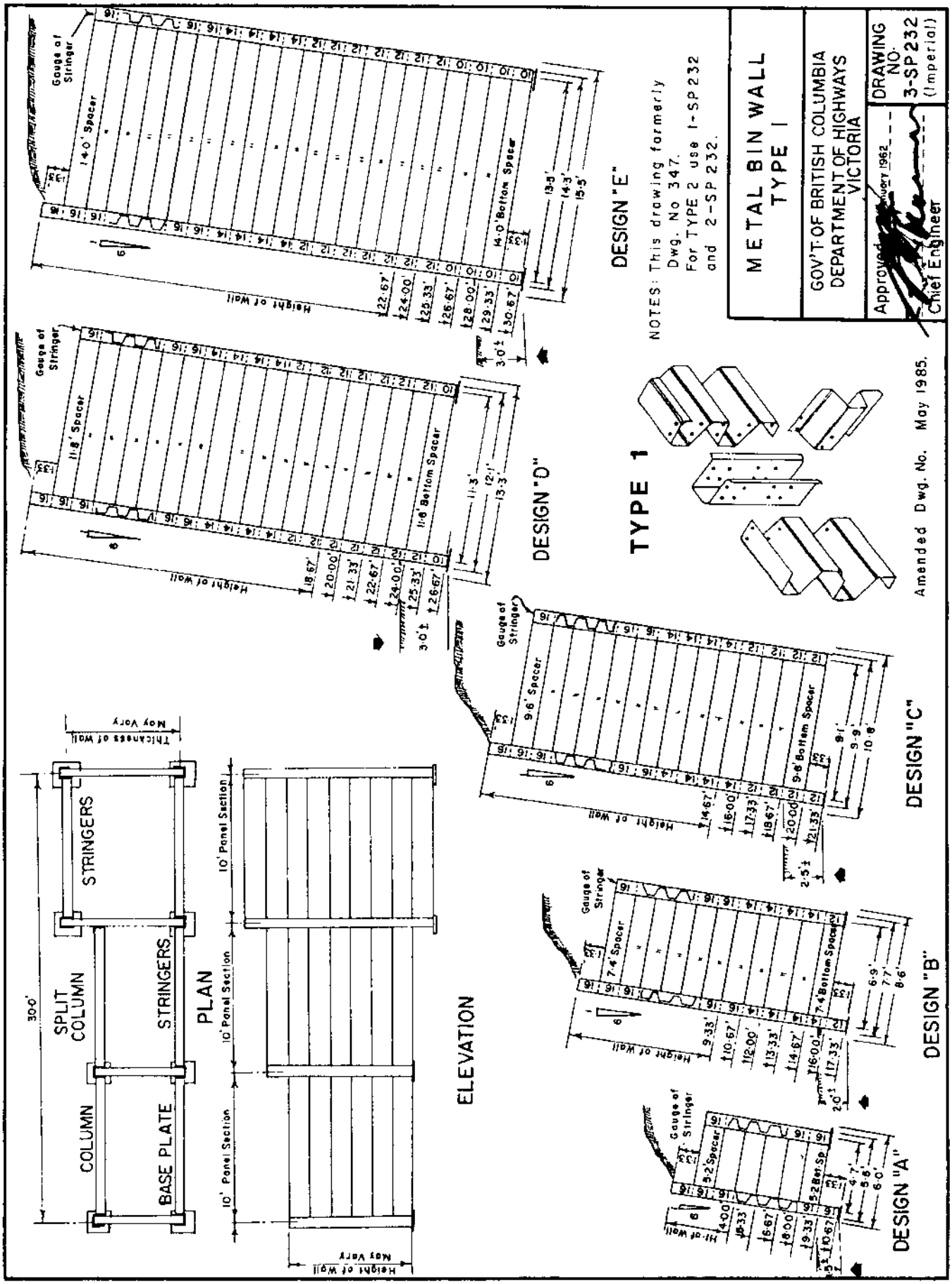
DESIGN F



NOTES :- Sinwall Batter = 1:6 or Vertical as Required by Contract Drawings.
- Curvature Detail in accordance with Suppliers Manual.
- All Measurements in Millimetres
- For Type 1 see Dwg. 3-SP232.

Province of British Columbia Ministry of Transportation and Highways

Revisions	TYPE 2 METAL BIN WALL DESIGNS D, E & F	
	Date 1985 11 06 — Approved MGElston — Exec. Dir. of Engineering	SPECIFICATION DRAWING No. 2-SP 232


METAL BIN WALL
TYPE I
GOV'T OF BRITISH COLUMBIA
DEPARTMENT OF HIGHWAYS
VICTORIA
DRAWING NO. 3-SP232 (Imperial)
Approved January 1962
Chief Engineer
NOTES: This drawing formerly Dwg. No 347.
For TYPE 2 use 1-SP 232 and 2-SP 232.
Amended Dwg. No. May 1985.
TYPE 1
DESIGN "E"
DESIGN "D"
DESIGN "C"
DESIGN "B"
DESIGN "A"
ELEVATION
PLAN
STRINGERS
SPLIT COLUMN
COLUMN
BASE PLATE
10' Panel Section
Height of Wall
Thickness of Wall
May Vary

SECTION 303
CULVERTS

303.01 Scope - This section covers the construction of pipe culverts.

303.01.01 Definitions – for the purposes of this section, the following general terms are defined as follows:

a) Backfilling means the operation of filling the embedment and backfill material.

b) Backfill Material means fill material used above the embedment material and below the lower of the subgrade or finished grade or the original ground.

c) Bedding Material means the material used to support the pipe culvert.

d) Embedment Material means material from the bottom of the bedding to the bottom of the backfill.

e) Subgrade means the grade upon which the first layer of select granular sub-base or base material is laid.

303.02 Materials The Contractor shall supply all material in accordance with SS 145.15 and the following:

a) Concrete Pipe (CP) **-** supplied in accordance with CSA A257.

b) Corrugated Steel Pipe (CSP) **-** supplied in accordance with SS 320.

c) Structural Plate Corrugated Steel Pipe (SPCSP) **-** supplied in accordance with SS 320.

d) Polyethylene Pipe (PP) **–** supplied in accordance with SS 317.

e) PVC Pipe **–** supplied in accordance with SS 318.03.

303.03 Construction

303.03.01 Backfill Material – construction shall conform to SS 201 Roadway and Drainage Excavation.

303.03.02 Freezing Temperatures - When the air temperature is below 0°C, no backfilling is allowed unless otherwise accepted by the Ministry Representative. When acceptance is granted, all backfill materials shall be in a thawed state when placed and compacted. Frozen granular backfill materials will not be permitted. No backfill material will be permitted to be placed directly on frozen substrate.

303.04 Concrete, Corrugated Steel, Polyethylene and PVC Pipes (this subsection does not cover SPCSP).

303.04.01 Layout – All culverts shall be laid out and constructed in general accordance with the lines, grades, and locations specified in the Drawings, or as directed by the Ministry Representative. Culverts are to be field fit by the Contractor, to reflect actual conditions encountered on-Site, and approved by the Ministry Representative prior to installation.

Such field fits will normally involve minor changes in location, elevation, grade, skew, depth and/or length resulting from actual local drainage course locations, post-stripping surface elevations, final ditch depths, and other factors.

Some culverts may be designed to control drainage, and are not to be field fit without the approval of the designer and Ministry Representative. Any such culverts will be identified in advance for the Contractor, through a note on the Drawings, in the Special Provisions, or by the Ministry Representative.

303.04.02 Flow Obstructions – Any obstacles to flow, such as filter cloth used for siltation control, shall not be place directly on the end of any culvert. Where practicable, there shall be a minimum spacing of 1 m between the end of the culvert and any obstacles to flow.

Any obstructed culvert shall be cleaned out in accordance with SS 165.10.07.

303.04.03 Inlet and Outlet Ditches - Inlet and outlet ditches to culverts shall be constructed to the lines and grades as shown in the design.

303.04.04 Trenching - The trench and other preparatory work shall be approved by the Ministry Representative before actual placing starts.

A full trench condition shall be provided wherever possible; a minimum trench depth shall be 50% of the pipe culvert diameter. If, in the opinion of the Ministry Representative, the material in the bottom of the excavation is of such a character as to cause unequal settlement along the length of the culvert, the trench shall be dug below the grade to such depth as ordered, backfilled with gravel or other suitable material, and compacted to ensure a firm and uniform foundation.

303.04.05 Placing - Concrete pipe culvert shall be laid beginning at the downstream end with the bell end pointing upstream. Pipe culvert with elliptical reinforcement shall be laid with the minor axis of the reinforcement as marked by the manufacturer in a vertical position.

When jointing concrete pipe culverts the trench shall be in a dry condition and the joints shall be cleaned and wetted before sealing with mortar. The mortar shall consist of one part Portland Cement to two parts fine sand, mixed to the proper consistency. Sealing shall be neatly and thoroughly done, and the interior of the pipe culvert cleaned of all surplus mortar. Joints shall be kept damp

with burlap or earth for at least three days after sealing.

CSP shall be laid beginning at the downstream end. With riveted CSP, the outside laps shall point upstream and the longitudinal joint shall be on the side. There is no directional restriction with helical CSP.

303.04.06 Backfilling - Embedment Material shall consist of mineral aggregate and shall meet the gradation specified in Table 303-A.

Bedding material shall extend a minimum of 150 mm below the culvert invert. The top of the bedding, upon which the pipe culvert is to be laid, shall be shaped so that at least 25% of the circumference of the pipe culvert is in contact with the prepared bedding for the whole of its length.

Embedment material for embankment installation shall extend a minimum of two-thirds of the span or 0.9 m beyond the culvert span on each side, whichever is greater. Embedment material for trench installation shall extend a minimum of 0.3 m on either side.

Embedment material shall be placed in layers not exceeding 150 mm in depth when compacted. Embedment material shall be compacted to a minimum 95% (100% within 300 mm of subgrade elevation) of the laboratory density as determined in accordance with ASTM D 698. Backfilling shall be done symmetrically. The differential height of backfilling material on either side of the culvert shall not exceed 300 mm.

The material within 450 mm directly above the crown of the pipe culvert shall be laid and compacted as one lift. For a culvert with crown within 300 mm of subgrade, installation methods shall be approved by the Ministry Representative.

TABLE 303-A: EMBEDMENT MATERIAL GRADATION REQUIREMENTS FOR CONCRETE, CORRUGATED STEEL, POLYETHYLENE AND PVC PIPE CULVERTS

SIEVE SIZE (mm)	PERCENTAGE PASSING
31.5	100
25	60-100
19	15-100
2.36	10-100
0.075	0-5

303.05 Structural Plate Corrugated Steel Pipe/Pipe-Arch Culverts (SPCSP)

303.05.01 Excavation – shall conform to SS 407 Foundation Excavation. If a coarse boulder material or solid rock is encountered when preparing the bed of the SPCSP, the material shall be excavated to a minimum depth of 300 mm below the SPCSP invert and backfilled with granular material having a maximum size of 75 mm.

303.05.02 Assembling - All bolted plates shall be in contact for the full width and length of the seam lap. The bolts in the valley of each longitudinal seam shall be nearer to the visible edge of the plate than the bolts in the crest. The torque on the bolts prior to backfilling shall be between 200 and 340 Nm, or as directed by Ministry Representative. A minimum of 5% randomly selected bolts shall be tested in each longitudinal and circumferential connection. The installation shall not be accepted if 10% or more of tested bolts do not meet the specified torque requirements.

Rotation of the pipe culvert and/or spiralling of the longitudinal seams shall not be permitted. The upward or downward crown deflection shall not exceed 2% of the rise.

303.05.03 Backfilling –Backfilling shall extend to the limits as noted on the drawings. For multiple SPCSP structures, structural backfill shall be provided between adjacent SPCSP structures.

The diameter or the span and rise of SPCSP shall not vary from the manufactured dimensions by more than 5% during backfilling operations.

The embedment material shall be free draining, well graded, granular material approved by the Ministry Representative.

The top surface of the bedding upon which the pipe culvert is to be laid shall be constructed to the true grade and alignment as shown in the Drawings.

The embedment material shall be placed and compacted in lifts not exceeding 200 mm compacted thickness, with each lift to a minimum of 95% of Standard Proctor Density prior to addition of the next lift. The bedding layer of a 200 mm thickness in direct contact with the invert shall be shaped to the pipe culvert curved invert and shall be left uncompacted.

Backfilling shall be done symmetrically. The differential height of backfilling material on either side of the SPCSP at any transverse section shall not exceed 400 mm.

The embedment material within 300 mm of the pipe culvert walls shall be free of stones exceeding 75 mm size. Heavy equipment shall not be allowed within 1 m of the pipe culvert walls.

End dumped or loose pushed material shall not be piled closer than 3 m from the pipe culvert. Hauling equipment shall not be operated over the pipe culvert until backfilling

operations have completed a suitable cover approved by the Ministry Representative.

303.06 Culvert Endwalls – shall be constructed in accordance with the details shown on the Drawings. For concrete end walls, construction and materials for concrete and reinforcement shall conform to SS 211 and SS 412 and excavation shall conform to the requirements of SS 407.

If specified on the Drawings, the Contractor may provide an alternative endwall product from the Ministry's Recognized Products List.

303.07 MEASUREMENT

303.07.01 Pipe Culverts - Pipe culverts will be measured by the METRE along its invert length as installed.

303.07.02 Concrete Endwalls - Concrete end walls will be measured by the CUBIC METRE.

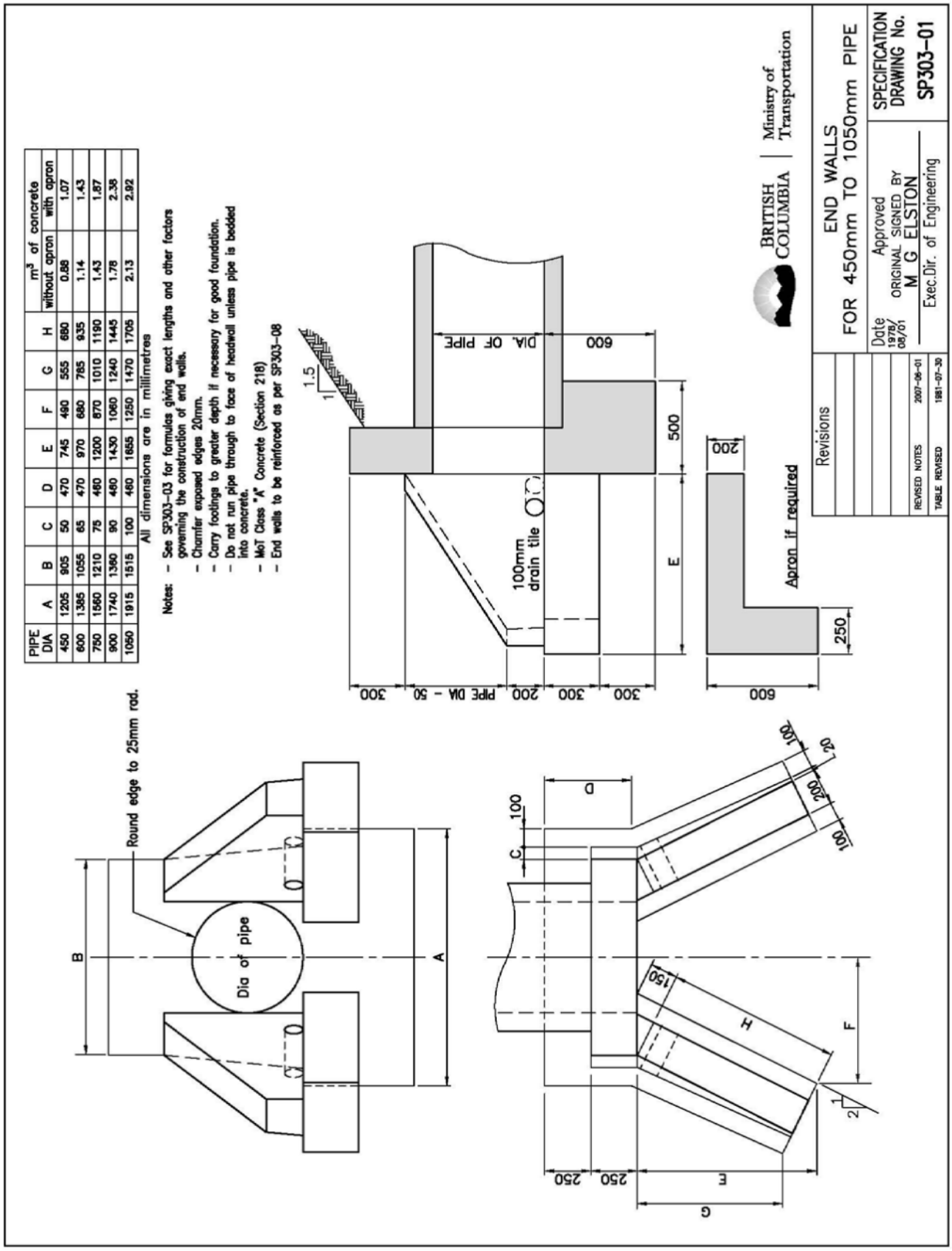
303.08 PAYMENT

303.08.01 Pipe Culverts - Payment for excavation, pipe culvert assembling, placing, and backfilling shall be at the Contract Unit or Lump Sum Price bid for each of these items of work, or at the Contract Unit Price bid per metre of pipe culvert.

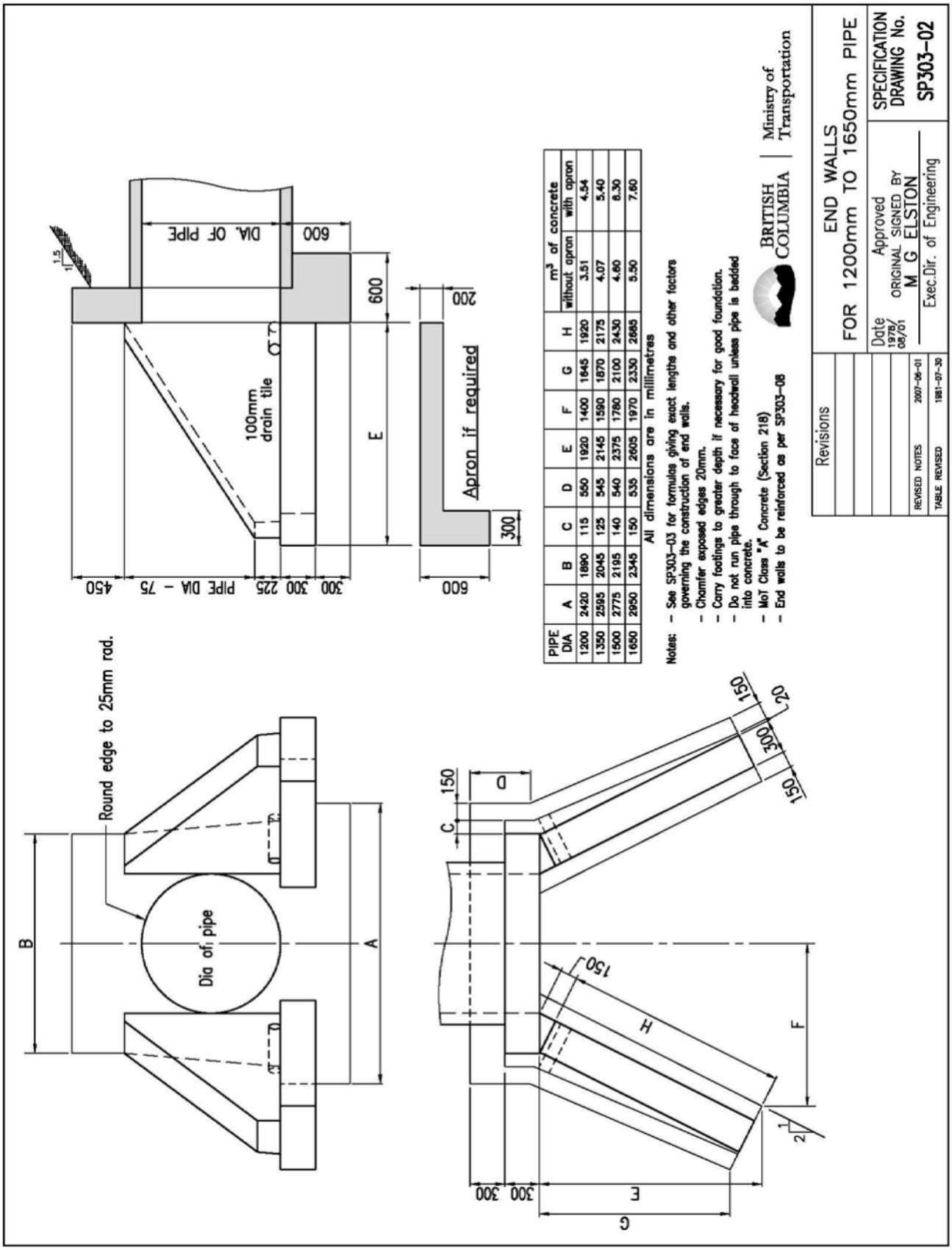
303.08.02 Concrete Endwalls - Payment for CONCRETE END WALLS will be at the Contract Unit or Lump Sum Price bid per size of endwall required. The Contract Unit Price shall include provision of everything necessary; precast or cast-in-place endwall, formwork, reinforcement, air entrained concrete, placing and tamping, stripping and cleaning, curing and any other work necessary in connection therewith, including excavation and backfilling, but excluding riprap.

303.08.03 Full Compensation - The price(s) bid shall be full compensation for the cost of furnishing all labour, materials, equipment, tools and incidentals necessary to complete the work as specified in the Contract.

303.08.04 Type A Excavation - Excavation of Type A material encountered in the trench or endwall excavation will be paid at the Contract Unit Price for Type A, or where such an Item is not included in the Contract, at a negotiated price or on a Force Account Basis.



PIPE DIA	A	B	C	D	E	F	G	H	m^3 of concrete	
									without apron	with apron
450	1205	905	50	470	745	490	555	680	0.88	1.07
600	1385	1055	65	470	970	680	785	935	1.14	1.43
750	1560	1210	75	480	1200	870	1010	1190	1.43	1.87
900	1740	1360	90	480	1430	1060	1240	1445	1.78	2.38
1050	1915	1515	100	480	1655	1250	1470	1705	2.13	2.92



PIPE DIA	A	B	C	D	E	F	G	H	m^3 of concrete without apron	m^3 of concrete with apron
1200	2420	1890	115	550	1920	1400	1645	1920	3.51	4.54
1350	2595	2045	125	545	2145	1590	1870	2175	4.07	5.40
1500	2775	2195	140	540	2375	1780	2100	2430	4.80	6.30
1650	2950	2345	150	535	2605	1970	2330	2685	5.50	7.60

All dimensions are in millimetres

Notes:
- See SP303-03 for formulas giving exact lengths and other factors governing the construction of end walls.
- Chamfer exposed edges 20mm.
- Carry footings to greater depth if necessary for good foundation.
- Do not run pipe through to face of headwall unless pipe is bedded into concrete.
- MoT Class "A" Concrete (Section 218)
- End walls to be reinforced as per SP303-08

BRITISH COLUMBIA | Ministry of Transportation

Revisions

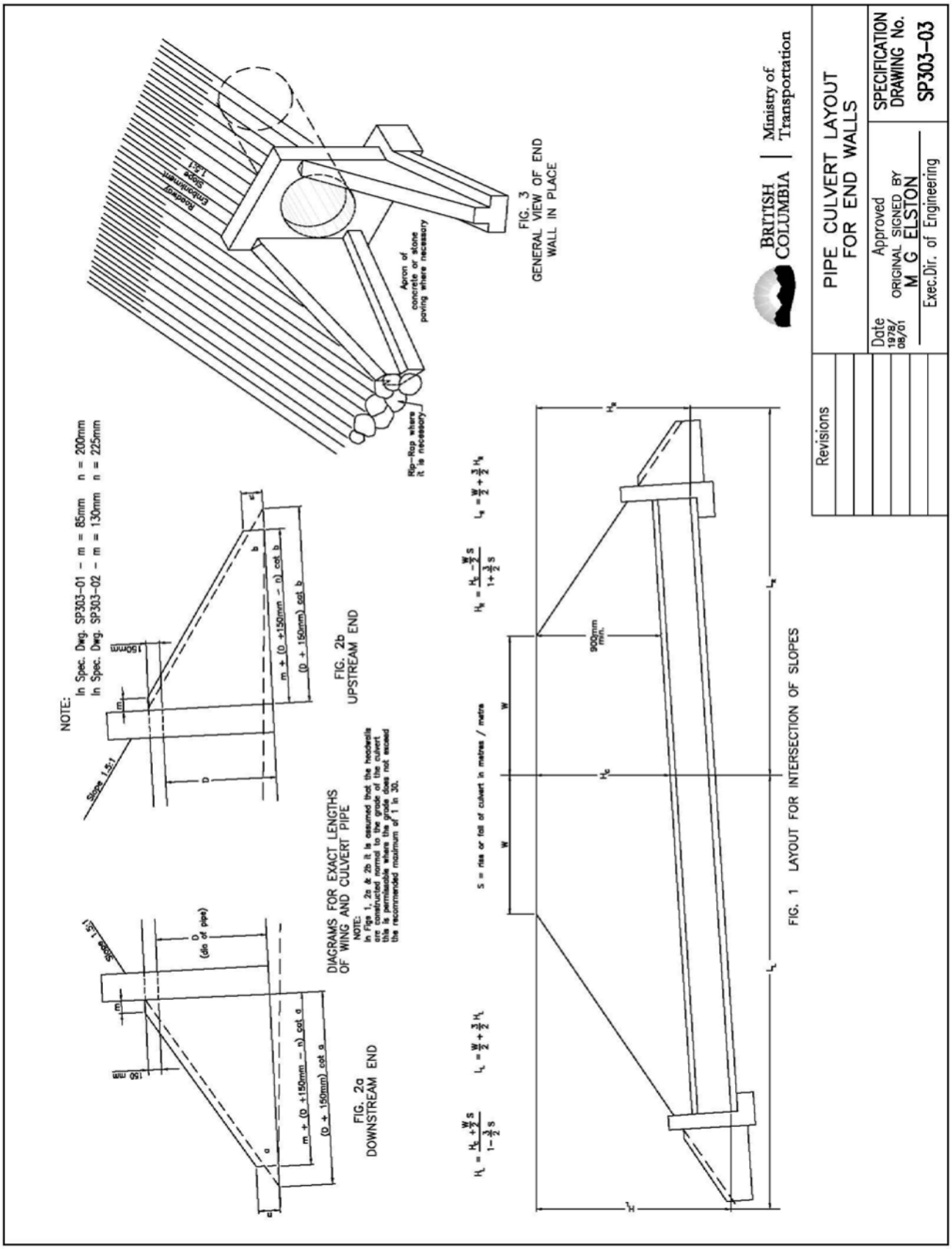
REVISED NOTES	2007-06-01
TABLE REVISED	1981-07-30

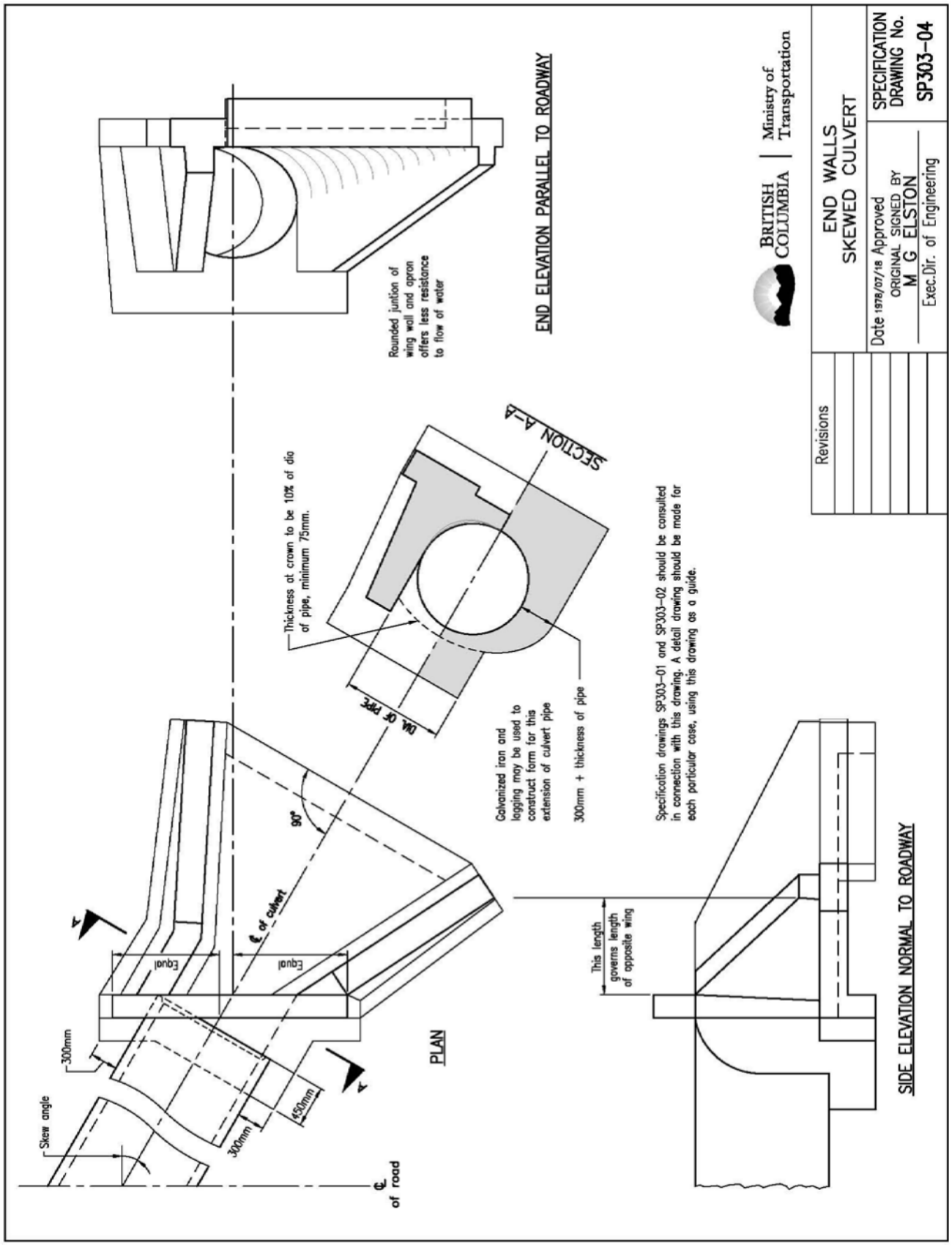
END WALLS FOR 1200mm TO 1650mm PIPE

Date 1978/08/01

Approved ORIGINAL SIGNED BY M G ELSTON
Exec.Dir. of Engineering

SPECIFICATION DRAWING No. **SP303-02**


Ministry of Transportation
BRITISH COLUMBIA
PIPE CULVERT LAYOUT FOR END WALLS
Revisions
Date 1978/08/01
Approved ORIGINAL SIGNED BY M G ELSTON Exec.Dir. of Engineering
SPECIFICATION DRAWING No. SP303-03
FIG. 3 GENERAL VIEW OF END WALL IN PLACE
Apron of concrete or stone paving where necessary
Rip-Rap where it is necessary
Roadway Embankment Slope 1:1
NOTE:
In Spec. Dwg. SP303-01 - m = 85mm n = 200mm
In Spec. Dwg. SP303-02 - m = 130mm n = 225mm
Slope 1.5:1
150mm
m + (D +150mm - n) cot b
(D + 150mm) cot b
FIG. 2b UPSTREAM END
DIAGRAMS FOR EXACT LENGTHS OF WING AND CULVERT PIPE
NOTE: In Figs 1, 2a & 2b it is assumed that the headwalls are constructed normal to the grade of the culvert this is permissable where the grade does not exceed the recommended maximum of 1 in 30.
D (dia of pipe)
m + (D +150mm - n) cot a
(D + 150mm) cot a
FIG. 2a DOWNSTREAM END
S = rise or fall of culvert in metres / metre
900mm min.
FIG. 1 LAYOUT FOR INTERSECTION OF SLOPES

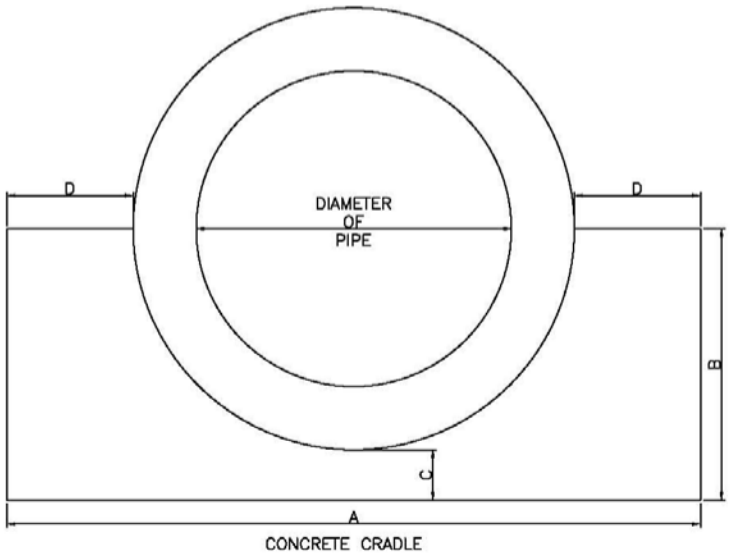

END ELEVATION PARALLEL TO ROADWAY
Rounded junction of wing wall and apron offers less resistance to flow of water
SECTION A-A
Thickness at crown to be 10% of dia of pipe, minimum 75mm.
DIA OF PIPE
Galvanized iron and lagging may be used to construct form for this extension of culvert pipe
300mm + thickness of pipe
Specification drawings SP303-01 and SP303-02 should be consulted in connection with this drawing. A detail drawing should be made for each particular case, using this drawing as a guide.
PLAN
Skew angle
300mm
300mm
450mm
℄ of road
℄ of culvert
90°
Equal
Equal
SIDE ELEVATION NORMAL TO ROADWAY
This length governs length of opposite wing
BRITISH COLUMBIA
Ministry of Transportation
END WALLS SKEWED CULVERT
SPECIFICATION DRAWING No. SP303-04
Date 1978/07/18 Approved
ORIGINAL SIGNED BY M G ELSTON
Exec.Dir. of Engineering
Revisions

PIPE DIMENSIONS		CONCRETE CRADLES				
Inside Diameter mm	Wall Thickness mm	A mm	B mm	C mm	D mm	m^3 per m
600	95	1400	500	100	300	0.45
750	108	1580	605	115	300	0.58
900	121	1755	695	115	300	0.69
1050	133	1935	795	130	300	0.84
1200	146	2110	895	140	300	0.99
1350	159	2290	995	150	300	1.16
1500	172	2470	1100	165	300	1.35
1650	184	2645	1200	180	300	1.53
1800	197	2825	1300	190	300	1.73

Notes:
Lower part of cradle to be a stiff mix of concrete, lay pipe to established line and grade.
Follow immediately with concrete of a workable consistency to the required height.
Cradles of these dimensions are for concrete pipes only.

Use concrete cradles under the following conditions.
High fill.
Steep culvert grade.
Rock formations.

M.O.H. Class "A" Concrete (Section 218)



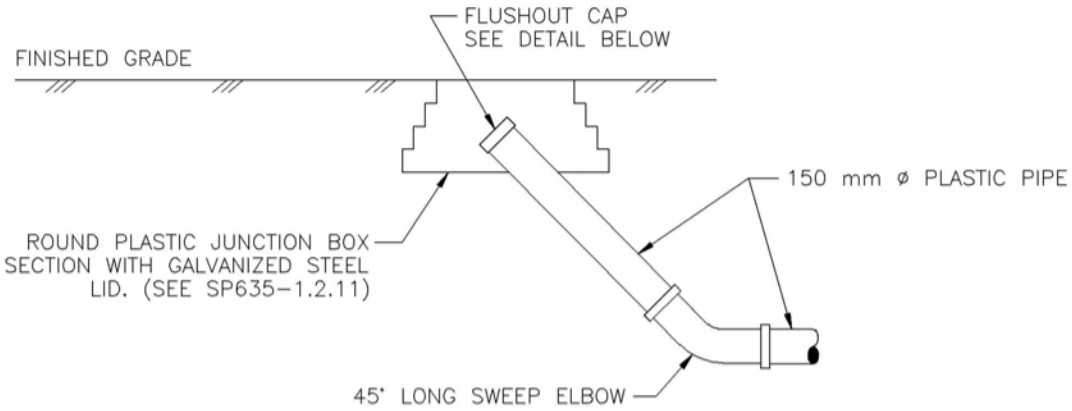
CONCRETE CRADLE

BRITISH COLUMBIA | Ministry of Transportation

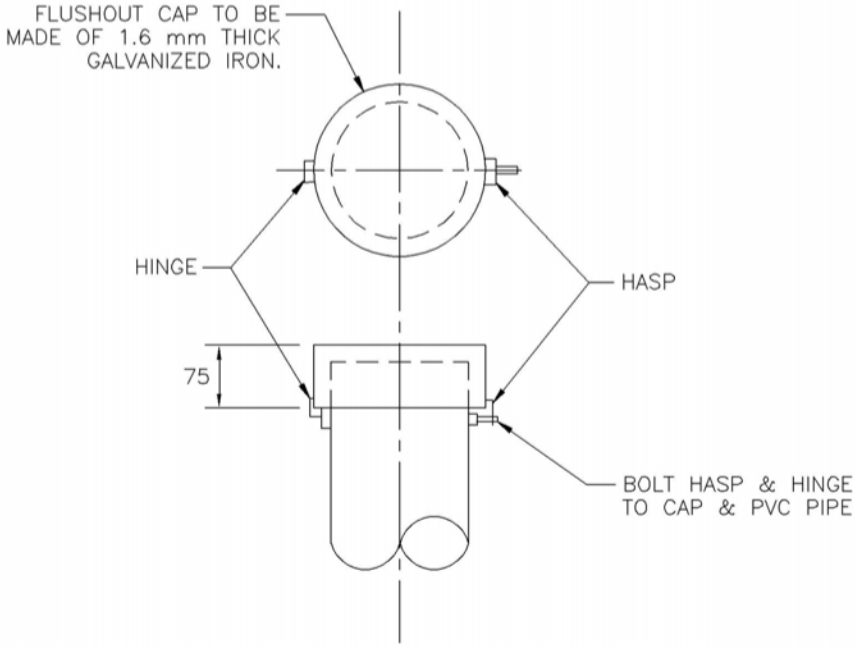
Revisions	CONCRETE CRADLE FOR CULVERT PIPE	
	Date 1978/07/18 Approved ORIGINAL SIGNED BY M G ELSTON Exec.Dir. of Engineering	SPECIFICATION DRAWING No. SP303-05
TABLE REVISED 1981-07-30		

Compacted native backfill or Type 2 filter gravel
Minimum filter fabric overlap, 0.30m
Compacted filter gravel Type 2
Perforated pipe as specified (See note No.2)
Compacted impervious backfill
Compacted filter gravel Type 1
0.30m
Depth 1.50m or as specified (minimum 1.00m)
0.05m
Compacted bedding layer (Filter gravel Type 1 or 19mm crushed gravel)
pipe diameter + 0.30m (perforations down)
SUB – DRAIN
SUB – DRAIN WITH FILTER FABRIC
GENERAL
1. FILTER GRAVEL GRADATION LIMITS
SIEVE SIZE (mm) | PERCENTAGE PASSING | TYPE 1 | TYPE 2
37.5 | | 100
25.0 | 100 | 65–100
12.5 | – | 20–100
9.5 | 70–100 | 0–70
4.75 | 55–100 | 0–20
1.18 | 25–80 | 0–10
0.30 | 5–30 | 0–5
0.075 | 0–5 | 0–2
2. MINIMUM PIPE GRADE 0.25%
3. PROVIDE ACCESS STUBS AT:
a) 75m intervals when grade is 0.25% to 1%
b) 100m intervals when grade is 1% to 2%
c) 125mm intervals when grade is over 2%
1. FILTER FABRIC SPECIFICATIONS
i) Minimum grab tensile strength 0.4kN (ASTMD4632)
ii) Minimum Permittivity 2.1sec⁻¹ (ASTMD4491)
2. PIPE ARE REQUIRED WHEN FILTER FABRIC SUB-DRAINS LENGTHS EXCEED:
a) 30m – in clean gravels & sands
b) 50m – in silty sands
c) 100m – in clays
BRITISH COLUMBIA | Ministry of Transportation
SUBDRAIN
Revisions
REVISED FILTER FABRIC SPEC. -09/2007
Approved
ORIGINAL SIGNED BY
M G ELSTON
Exec.Dir. of Engineering
Date
1984/01/18
SPECIFICATION DRAWING No.
SP303-06

SUBDRAIN FLUSHOUT	SP303–07

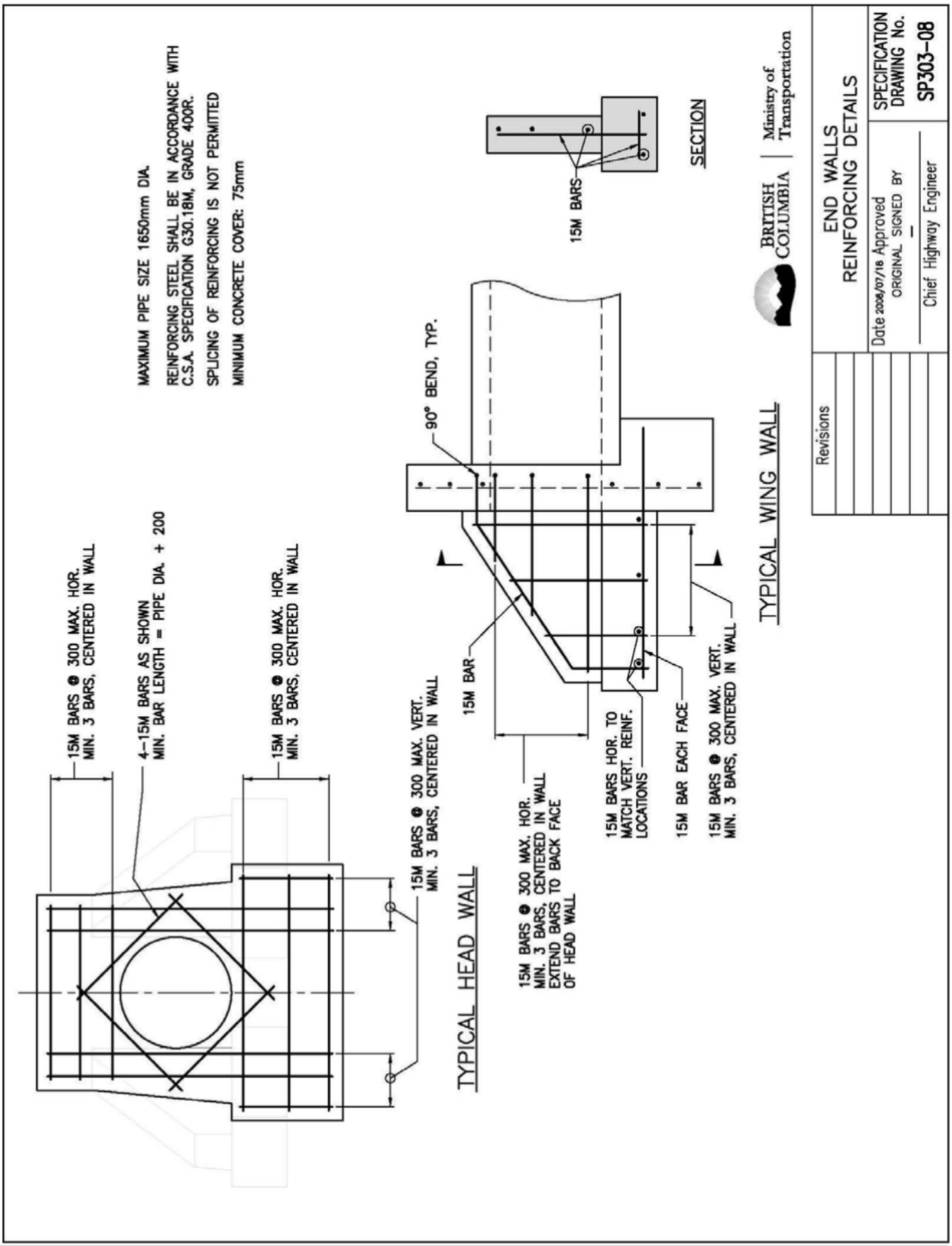


FLUSHOUT AND COVER DETAIL



FLUSHOUT CAP DETAIL

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED


MAXIMUM PIPE SIZE 1650mm DIA.
REINFORCING STEEL SHALL BE IN ACCORDANCE WITH C.S.A. SPECIFICATION G30.18M, GRADE 400R.
SPLICING OF REINFORCING IS NOT PERMITTED
MINIMUM CONCRETE COVER: 75mm
15M BARS @ 300 MAX. HOR. MIN. 3 BARS, CENTERED IN WALL
4–15M BARS AS SHOWN MIN. BAR LENGTH = PIPE DIA. + 200
15M BARS @ 300 MAX. HOR. MIN. 3 BARS, CENTERED IN WALL
15M BARS @ 300 MAX. VERT. MIN. 3 BARS, CENTERED IN WALL
TYPICAL HEAD WALL
90° BEND, TYP.
15M BAR
15M BARS @ 300 MAX. HOR. MIN. 3 BARS, CENTERED IN WALL EXTEND BARS TO BACK FACE OF HEAD WALL
15M BARS HOR. TO MATCH VERT. REINF. LOCATIONS
15M BAR EACH FACE
15M BARS @ 300 MAX. VERT. MIN. 3 BARS, CENTERED IN WALL
TYPICAL WING WALL
15M BARS
SECTION
BRITISH COLUMBIA
Ministry of Transportation
END WALLS
REINFORCING DETAILS
Revisions
Date 2008/07/18 Approved
ORIGINAL SIGNED BY
—
Chief Highway Engineer
SPECIFICATION DRAWING No.
SP303-08

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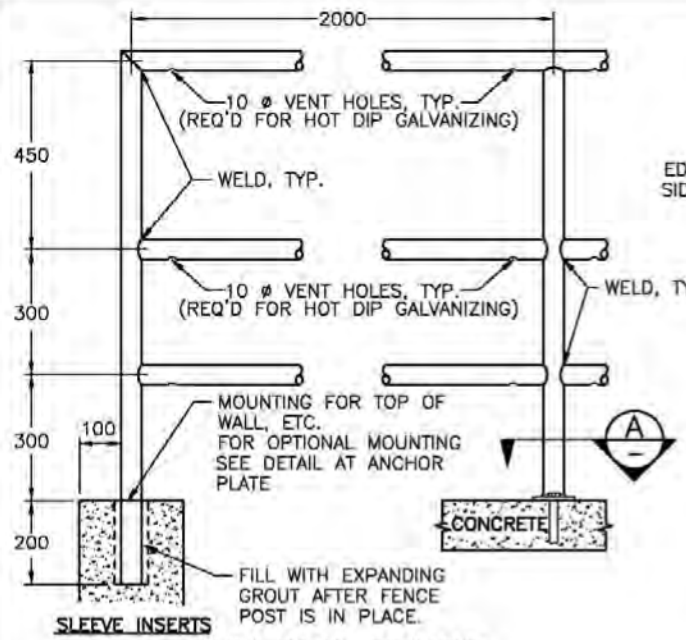
Pot Hole

Raveling or Stripping

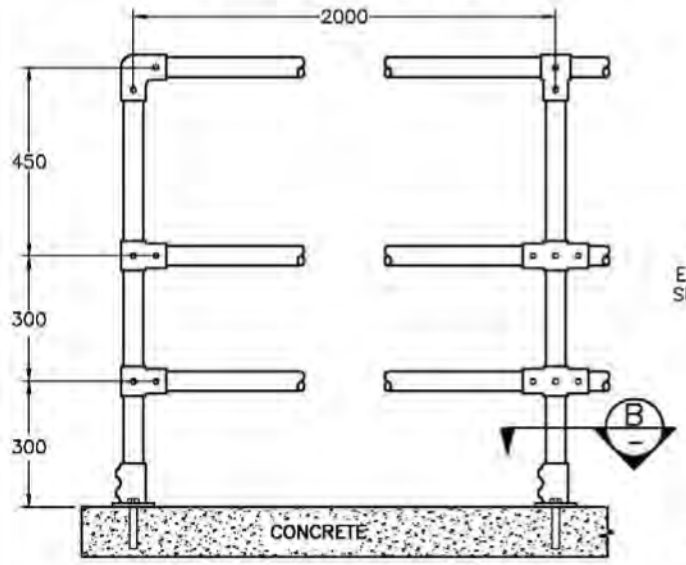
Streaking

PEDESTRIAN SIDEWALK FENCE – WELDED OR SLIP–ON

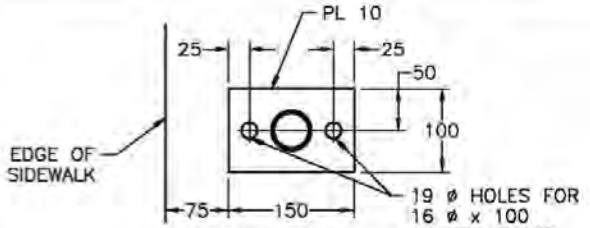
SP741–07.01

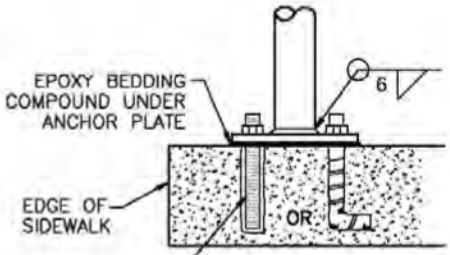


WELDED FENCE

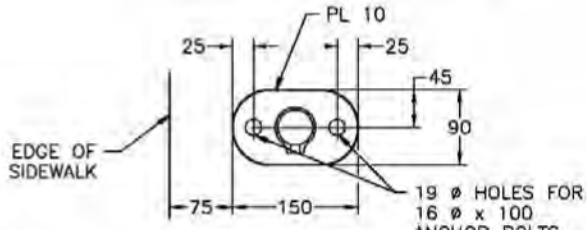


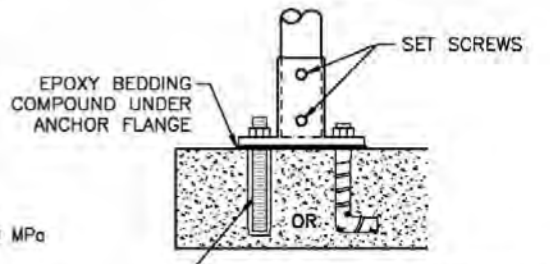
SLIP–ON FENCE





DETAIL AT ANCHOR PLATE





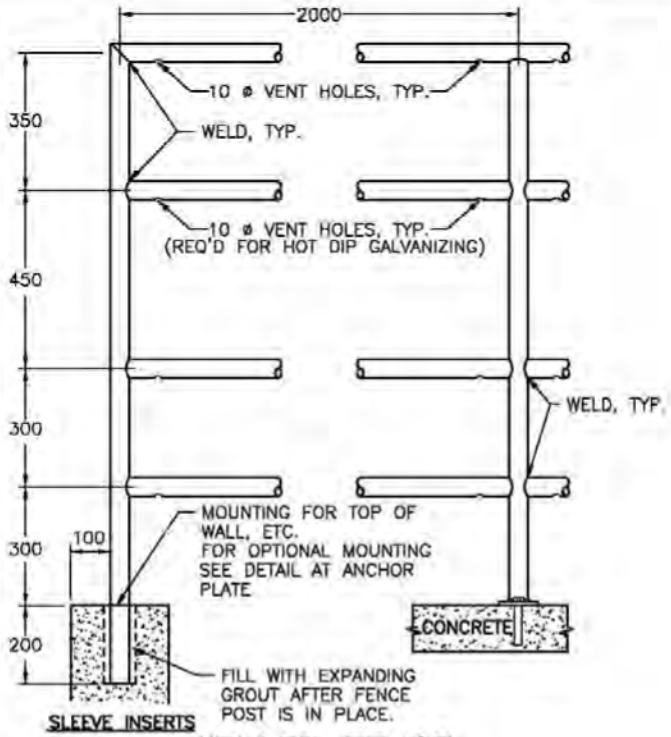
DETAIL AT ANCHOR FLANGE

NOTES:

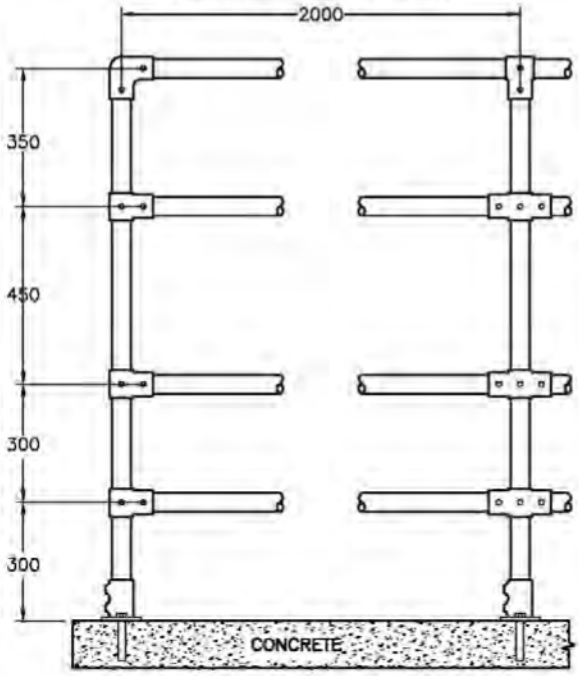
1. ALL RAILS AND POSTS TO BE 48 mm O.D. TO ASTM A 53 GRADE 240 MPa GALVANIZED PIPE. RAILS TO BE STANDARD WEIGHT (SCHEDULE 40). POSTS TO BE 'XS' (SCHEDULE 80).
2. WELDS SHALL BE FULL BEAD.
3. FIELD WELDS SHALL HAVE ROUGH EDGES GROUND SMOOTH IMMEDIATELY FOLLOWED BY TWO APPLICATIONS OF A ZINC RICH COATING CONFORMING TO CGSB 1–GP–181 M.
4. PIPE FITTINGS SHALL BE GALVANIZED MALLEABLE IRON WITH CASE HARDENED SET SCREWS CONFORMING TO ASTM A 47 GRADE 32510 AND ASTM A 153.
5. WELDED FENCE TO BE GALVANIZED AFTER FABRICATION.
6. GALVANIZING SHALL BE IN ACCORDANCE WITH CSA SPECIFICATION G164, TABLE 1.
7. FENCE DESIGNED FOR 1 kN SINGLE POINT LOAD APPLIED ANYWHERE.

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

BICYCLIST SIDEWALK FENCE – WELDED OR SLIP–ON	SP741–07.02



WELDED FENCE



SLIP–ON FENCE

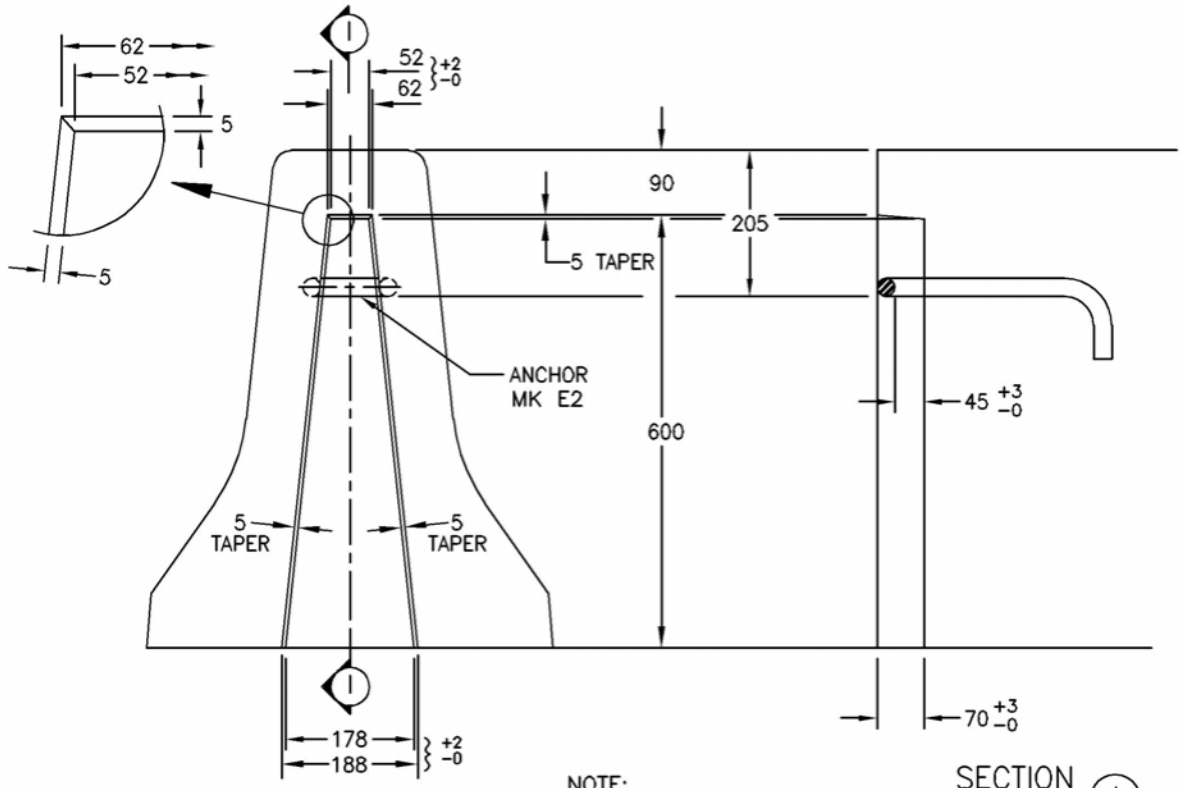
NOTES:

1. ALL DETAILS NOT SHOWN SIMILAR TO SP741–07.01.
2. BASE PLATES TO BE 12.7 mm THICK.
3. ALL POSTS TO BE 48 mm O.D. TO ASTM A53 GRADE 240 MPa 'XXS' (SCHEDULE 160).

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

PRECAST CONCRETE ROADSIDE BARRIER 690 mm – CRB–E DETAILS

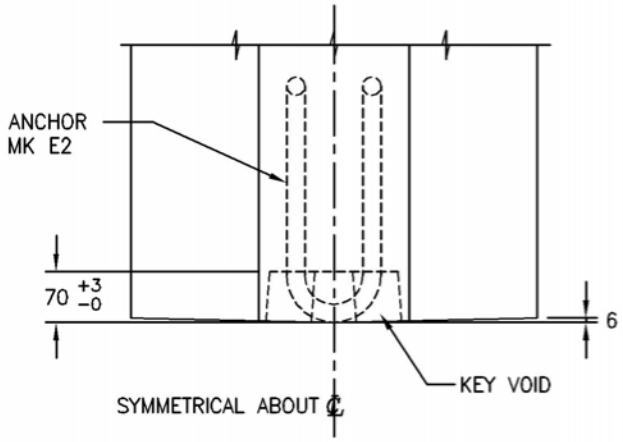
SP941–01.02.04



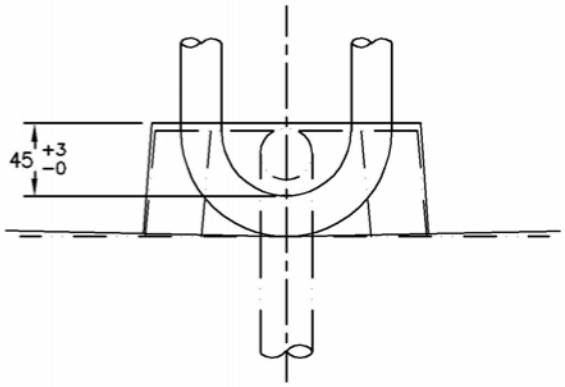
VIEW (EYE UNIT) G

NOTE:
FOR DIMENSIONS NOT SHOWN SEE SECTION E SP941–01.02.02

SECTION I



PLAN – END – EYE UNIT



CONNECTION DETAIL

NOTES:

1. FOR LOCATION OF VIEW (G) SEE SP941–01.02.02, SP941–01.02.05 & SP941–03.01.01.
2. FOR GENERAL NOTES SEE SP941–01.02.01.
3. FOR DETAILS OF ANCHORS SEE SP941–04.01.01.
4. THE CONNECTION DIMENSIONS ON A CRB–E UNIT PERMIT INSTALLATION TO A MINIMUM HORIZONTAL CURVE RADIUS OF 51 METRES. FOR TIGHT CURVATURE INSTALLATION SEE SP941–02.01.08 & SP941–02.01.09.

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

SCHEDULE 4

DRAWINGS

SCHEDULE 4 - DRAWINGS

PROJECT NO. 22198-0001
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

The following Drawings form part of the Tender Document Package/Contract Document Package and apply to this Contract:

Drawing Number	Drawing Title
R2-699-001	Key Plan
R2-699-002	Legend
R2-699-101 – 113	Plans
R2-699-201 – 215	Profiles
R2-699-301 – 304	Typical Sections and Details
R2-699-401 – 413	Geometrics and Lanings
R2-699-501 – 516	Drainage and Utilities
R2-699-521 – 534	Strom Sewer Profiles
R2-699-541 – 545	Watermain Relocations
R2-699-560 – 562	Wat Main Crossing
R2-699-601 – 604	Spot Elevations
R2-699-701 – 714	Signing and Pavement Markings
4028R-2	Hwy 33 Retaining Wall – 4028R
4028R-3	Bore Hole Log
TE-07031-1	Site Plan – Legend – Notes
TE-07031-2	Site Plan
TE-07031-3	Site Plan
TE-07031-4	Site Plan
TE-07031-5	Site Plan
TE-07031-6	Site Plan
TE-07031-7	Site Plan – Wiring Diagrams
TE-07031-8	Elevations – Wiring Diagram
TE-07031-9	Site Plan- Signal Display - Loop Table – Colour Code
TE-07031-10	Wiring Diagram – Elevations
TE-07031-11	Site Plan- Signal Display - Loop Table – Colour Code
TE-07031-12	Wiring Diagram – Elevations

SCHEDULE 5

TIME SCHEDULE

Schedule 5 – Time Schedule

PROJECT NO. 22198-0001

HIGHWAY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

Completion Date:

The Contractor will complete construction of the Work to the satisfaction of the Ministry Representative on or before the Completion Date of **October 1, 2010**, as may be extended from time to time in accordance with the Contract.

SCHEDULE 6

INSURANCE

BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

NOTICE TO CONTRACTORS
ENSURING COMPLIANCE WITH INSURANCE, BONDS and WCB REQUIREMENTS

Major Works, Minor Works, Operational Services, Design Build Minor and Consulting Services Contracts General Information:

- The ONLY acceptable Certificate of Insurance is a Ministry of Transportation and Infrastructure **Certificate of Insurance (H0111).**
- BOTH pages of the **Ministry Certificate of Insurance** must be submitted and the form conditions on page one and two must **NOT** be altered or added to.
- Ensure that the effective award date of the Certificate of Insurance is the earlier of the date of contract award or contract start date.
- DO NOT add the Ministry of Transportation and Infrastructure as an Additional Insured on page 1 of the Certificate of Insurance as the Ministry of Transportation and Infrastructure is an Additional Named Insured (as per the insurance specifications and page 2 of the Certificate of Insurance).
- Always examine your Ministry Certificate of Insurance for policy effective dates and expiry dates and renewal dates in relationship to your contract.
- Ensure that the Certificate of Insurance includes all required information (name of Insurer, policy numbers, policy effective dates, expiry dates, policy limits, deductibles and aggregates).
- Double check all documentation to ensure that the project number and description are correct.
- Always give the sample Ministry of Transportation and Infrastructure **Certificate of Insurance**—again BOTH pages—**the Insurance Specifications, the Special Provisions and the Bond Specimens** in your tender document to your Insurance Broker as it enables him/her to produce documentation and pricing in accordance with the contract requirements.
- Ensure that Ministry Certificate is duly signed and are originals or certified copies.
- If Automobile Liability insurance is required in the Ministry Agreement one of the following must be provided:
  - duly completed H0111 form AND/OR
  - a completed APV47 (ICBC Form) OR
  - a completed APV250L (ICBC Form)

*Note: Combination of Primary ICBC insurance and other Excess insurance is acceptable but must be clearly evidenced. If Certificate ONLY evidences private insurance coverage, evidence of mandatory ICBC coverage is required.

Major Works, Minor Works, Operational Service and Design Build Minor Contracts Only:

- Insurance requirements are found in BOTH Schedule 3- Special Provisions and Schedule 6- Insurance Specifications.
- Specimen Bonds are found in Schedule T2 Tender Securities Document INS0264 and Schedule 2 Contract Securities INS0265. Please ensure the bonds provided match the specimen.

Questions should be directed to the Corporate Insurance and Bonds Manager – (250) 387-7580

WCB

Workers' Compensation Board (WorkSafeBC) coverage is required.

- The general WCB of BC information site is http://www.worksafebc.com/
- Registration and insurance coverage can be completed online with details found at http://www.worksafebc.com/insurance/registering_for_coverage/register_with_worksafebc/default.asp. To report applicable payroll online, use http://www.worksafebc.com/online_services/reporting_and_remitting/default.asp
- Ensure that your premiums are paid so a clearance letter will be obtainable by the Ministry. For estimating your insurance costs, you may wish to consult the rate guide at http://www.worksafebc.com/insurance/premiums/rate_setting/default.asp.

BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

INSURANCE SPECIFICATIONS
MAJOR WORKS CONTRACTS
INS-152

PART 1

It is a condition of this contract that the Contractor shall, at the Contractor's expense, obtain and maintain insurance coverage in wording and in amounts as hereinafter specified. Such insurance shall remain in full force and effect until all conditions of the contract have been fully complied with and until acceptance by the Ministry of all works and appurtenances pertaining to the contract, of which these insurance specifications are a part.

1. ISSUANCE OF INSURANCE

All insurance coverage shall be issued with insurers acceptable to the Ministry, and issued by companies licensed to transact business in the Province of British Columbia and Canada.

2. EVIDENCE OF COVERAGE

The Contractor shall file evidence of insurance issued to comply with the requirements outlined in these insurance specifications prior to starting work on the contract and before any payments are made under the contract.

Evidence shall be as follows:

a) For all policies, except Automobile Liability, by way of a duly completed Ministry Certificate of Insurance (H0111), which will be considered to be part of this Schedule.

b) For Automobile Liability insurance, either a duly executed I.C.B.C. APV47 or APV250L form, or a Ministry Certificate of Insurance.

The Contractor shall, upon request by the Ministry, file originals or signed, certified copies of all current policies and any endorsements necessary to comply with these insurance specifications and any other requirements outlined elsewhere in the contract. Failure to provide the required insurance may result in payments to the Contractor being withheld.

All documentation shall be filed with:

The Corporate Insurance and Bonds Manager, Ministry of Transportation and Infrastructure, PO Box 9850, Stn Prov Govt, 940 Blanshard Street, Victoria, BC V8W 9T5.

NO OTHER CERTIFICATES OF INSURANCE ARE ACCEPTABLE.

Payments to the Contractor may be withheld and/or all work on the site of the contract may be ordered to cease if the Contractor fails to obtain or maintain insurance as required herein, or if the Ministry does not approve any insurance policy or policies submitted to them and the Contractor does not comply with the insurance requirements of the contract and, the Ministry shall also have the right, but not the obligation, to place and maintain such insurance in the name of the Contractor and the Ministry. The cost thereof shall be payable by the Contractor to the Ministry on demand, and the Ministry may deduct the cost thereof from any monies which are due, or may become due to the Contractor.

3. THIRD PARTY LIABILITY INSURANCE

Commercial General Liability insurance including non-owned automobile and contractual liability insurance shall be arranged with inclusive limits of not less than **TWO MILLION DOLLARS ($2,000,000.00)** for bodily injury, death, and property damage arising from any one accident or occurrence. The insurance policy shall indemnify the named insureds under the policy for any sum or sums which the insured may become liable to pay or shall pay for bodily injury, death or property damage or for loss of use thereof, arising out of or resulting from the work of the Contractor or the Ministry under this contract, anywhere within Canada and the United States of America. In addition to the above limits, such liability insurance shall also pay all costs, charges, and expenses in connection with any claims that may require to be contested by the insureds anywhere within Canada and the United States of America.

EXTENSION OF COVERAGE

Such liability insurance shall also include all liability arising out of completed operations, blanket written contractual, contingent employers liability, non-owned automobile liability and liability assumed by the Contractor in connection with and applicable to the contract.

EXCLUSIONS NOT PERMITTED

Claims arising out of the legal liability imposed upon the insured at common law and extended by Statute for bodily injury or death to employees of the Insured. However, exclusions applicable to liability imposed upon or assumed by the Insured under any Workers' Compensation Statutes of for assessment by any Workers' Compensation Board will be allowed.

Liability assumed by the insured under contract with railroad companies for the use and operation of railway sidings or crossings.

Hazardous operations such as excavation, pile driving, shoring, blasting, under-pinning, or demolition work or any other operation or work to be performed by the Ministry or the Contractor shall not be excluded from insurance coverage, where such type of work or operation is to be performed by either party under the contract.

DEDUCTIBLES
A property damage deductible will be allowed for any one accident or per occurrence for up to **FIVE THOUSAND DOLLARS ($5,000.00)** or **ONE PERCENT (1%)** of the contract amount, whichever is greater. Payment of any deductible shall be the responsibility of the Contractor.

A BODILY INJURY OR DEATH DEDUCTIBLE IS NOT ALLOWED

ADDITIONAL CONDITIONS
Each policy (except Automobile Liability Insurance) shall be endorsed as follows:

Notwithstanding any other terms, conditions, or exclusions elsewhere in this policy, it is understood and agreed that this policy is extended to include insurance coverages and clauses as follows:

Her Majesty the Queen in Right of the Province of British Columbia as represented by the Minister of Transportation and Infrastructure, together with the employees, agents, and servants of the Minister, hereinafter referred to as the Additional Named Insured, is added as an Additional Named Insured, in respect of liability arising from the work or operations of the Insured and the Additional Named Insured, in connection with contracts entered into between the Insured and the Additional Named Insured.

The insurance as is afforded by this policy shall apply in the same manner and to the same extent as though a separate policy had been issued to each insured. Any breach of a condition of the policy by any Insured shall not affect the protection given by this policy to any other insured. The inclusion herein of more than one Insured shall not operate to increase the limit of liability under this policy.

Products and Completed Operations Hazard coverage shall be provided and such coverage shall remain in full force and effect for a period of **twelve (12)** months after the work has been completed, irrespective of the expiry date of the policy.

4. AUTOMOBILE LIABILITY INSURANCE
IF any licensed vehicles are owned, leased, rented or used in the performance of this contract, then Automobile Liability coverage with inclusive limits of not less than **TWO MILLION DOLLARS ($2,000,000.00)** providing third party liability and accident benefits insurance must be provided for all these vehicles.

5. PROTECTION AND INDEMNITY INSURANCE
IF vessels are operated in the course of the contract and are not covered under the general liability policy, then the Contractor shall provide Protection and Indemnity insurance applying to all vessels operated in the course of the contract with limits of not less than **TWO MILLION DOLLARS ($2,000,000.00)** for such vessels. Such Protection and Indemnity insurance shall include four-fourths collision liability insurance.

6. AIRCRAFT INSURANCE
IF aircraft (including helicopters) are owned, leased, rented or used in the performance of this contract, then third party liability coverage with inclusive limits of not less than **FIVE MILLION DOLLARS ($5,000,000.00)** must be provided.

7. EVIDENCE OF RENEWAL
The Contractor shall furnish evidence of the renewal or extension of the required policy(s) by certified copy of a renewal certificate(s) or by endorsement(s) to the policy(s) which is to be received by The Corporate Insurance and Bonds Manager at least **thirty (30)** days prior to the expiry date of the policy.

8. NOTICE OF CANCELLATION, ETC.
The required insurance shall not be cancelled, removed, reduced, materially changed or altered without thirty (30) days prior notice in writing by Registered Mail to: **The Corporate Insurance and Bonds Manager, Ministry of Transportation and Infrastructure, PO Box 9850, Stn Prov Govt, 940 Blanshard Street, Victoria, BC V8W 9T5.**

9. USE AND OCCUPANCY
Use and occupancy of the work or any part thereof prior to the date of completion shall not be cause for any termination of insurance coverage shown in the applicable sections.

THE PROVINCE ASSUMES NO RESPONSIBILITY FOR THE ADEQUACY OF THE INSURANCE EFFECTED IN FAVOUR OF THE CONTRACTOR OR THE MINISTRY UNDER THIS AGREEMENT.

PART 2

BUILDERS RISK, DIRECT DAMAGE, INSTALLATION FLOATER, "ALL-RISK" INSURANCE

The Contractor shall, at the Contractor's expense, obtain and maintain insurance against all risks of physical loss or damage including but not limited to, structural collapse and transit risks by any conveyance to and/or from the site, while there, awaiting and/or during erection, installation and testing, occurring anywhere within Canada or the continental United States of America, and until handed over and accepted by the Ministry.

The insurance policy shall provide coverage for and limits to the full value of the contract and include the value of any material and/or structure and/or property destined for or entering into or forming part of the work, whether belonging to the Contractor, sub-contractors and/or the Ministry and/or the Engineers and/or otherwise and including automatically any changes in design or method of construction occurring during the term of the policy.

COVERAGE FOR FLOOD AND EARTHQUAKE MUST BE INCLUDED IN THE INSURANCE POLICY.

DEDUCTIBLES PER OCCURRENCE

i) Flood - **TWENTY-FIVE THOUSAND ($25,000.00)** Maximum.

ii) Earthquake - up to **TEN PERCENT (10%)** of actual value at time of loss, **maximum** of **TWO HUNDRED AND FIFTY THOUSAND ($250,000.00)**.

NOTE: In the event of an insured earthquake loss occurring, the earthquake insurance policy deductible will be shared between the Contractor and the Ministry on the following basis:

- The first $25,000 of the deductible will be payable by the Contractor;
- The remaining portion, up to but not exceeding the maximum deductible for earthquake losses shown above, will be payable by the Ministry.

iii) All other losses up to **FIVE THOUSAND ($5,000.00)** or **ONE PERCENT (1%)** of the contract amount, whichever is greater.

iv) The payment of any deductible shall be the responsibility of the Contractor except for earthquake which will be shared as stated above.

ADDITIONAL NAMED INSURED

Where coverage is provided under the requirements of this Part, the policy(s) shall be endorsed as follows: "Her Majesty the Queen in Right of the Province of British Columbia as represented by the Minister of Transportation and Infrastructure is added as an Additional Named Insured."

LOSS PAYABLE

The insurance policy must contain a loss payable clause directing payment to: "Her Majesty the Queen in Right of the Province of British Columbia as represented by the Minister of Transportation and Infrastructure".

WAIVER OF SUBROGATION

The following Waiver of Subrogation is required: "In the event of any physical loss or damage to the work, or contractor's equipment, the settlement or payment of the subsequent claim shall be made without the right of subrogation against Her Majesty the Queen as represented by the Minister of Transportation and Infrastructure or any employees, servants or agents of the Minister."

THE PROVINCE ASSUMES NO RESPONSIBILITY FOR THE ADEQUACY OF THE INSURANCE EFFECTED IN FAVOUR OF THE CONTRACTOR OR THE MINISTRY UNDER THIS AGREEMENT.

BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

CERTIFICATE OF INSURANCE

Contracts/Leases/Agreements/Permits Number, Location and Description:	Brokers' Reference No.
	Award or Effective Date _____ (yyyy/mm/dd)

INSURED Name _____

Business Address _____

BROKER Name _____

Business Address _____

Type of Insurance	Company and Policy Number	Policy Dates yyyy/mm/dd Effective	Expiry	Limits of Liability / Amounts
Commercial General Liability (including Non-Owned Automobile Liability)				Bodily Injury and Property Damage $ _____ Inclusive $ _____ Aggregate $ _____ Deductible
Additional Insureds:				
Automobile Liability				Bodily Injury and Property Damage $ _____ Inclusive
Umbrella/Excess Liability				$ _____ Limits excess of $ _____ General Liability excess of $ _____ Automobile
☐ Builders Risk ☐ Installation Floater ☐ Other:				$ _____ Site $ _____ Other Location $ _____ Transit
Equipment Insurance				$ _____ Limit
Professional Liability Errors and Omissions				$ _____ Each Claim $ _____ Aggregate $ _____ Deductible
☐ Protection & Indemnity ☐ Hull & Machinery ☐ Builders Risk (Vessels) ☐ Ship Repairers' Liability				$ _____ Limit $ _____ Limit $ _____ Limit $ _____ Limit
Other:				$ _____ Limit

The undersigned certifies the undersigned has reviewed the policies of insurance described above and Page 2 of this certificate and further certify that those policies have been issued to the insured named above and are in full force and effect and comply with the insurance requirements set out in the agreement / contract / lease / permit identified above, including the requirements set out on Page 2 of this certificate.

Signature of person authorized to sign on behalf of Insurers certifying Page 1 and Page 2 of this Certificate

Print or Type Name

Date (yyyy/mm/dd)

ADDITIONAL CONDITIONS ARE SHOWN ON PAGE 2 OF THIS CERTIFICATE OF INSURANCE

Notwithstanding any other terms, conditions or exclusions elsewhere in the insurance policy(s), it is understood and agreed that the insurance policy(s) are extended to include insurance conditions as follows:

CONDITIONS APPLICABLE TO:
COMMERCIAL GENERAL LIABILITY

1. Additional Named Insured Clause for Ministry Contracts
Her Majesty the Queen in right of the Province of British Columbia as represented by the Minister of Transportation and Infrastructure, together with the employees, agents, and servants of the Minister, hereinafter referred to as the Additional Named Insured, is added as an Additional Named Insured, in respect of liability arising from the work or operations of the Insured and the Additional Named Insured, in connection with contracts, entered into between the Insured and the Additional Named Insured.

2. Extension of Coverage
Such liability insurance shall also include all liability arising out of completed operations, blanket written contractual, contingent employers liability, non-owned automobile liability, and liability assumed by the Contractor in connection with and applicable to the contract.

3. Cross Liability
The insurance as is afforded by this policy shall apply in the same manner and to the same extent as though a separate policy had been issued to each Insured. Any breach of a condition of the policy by any Insured shall not affect the protection given by this policy to any other Insured. The inclusion herein of more than one Insured shall not operate to increase the limit of liability under this policy.

4. Exclusions Not Permitted
If hazardous operations such as excavation, pile driving, shoring, blasting, underpinning, or demolition work or any other operation or work is to be performed by the Ministry or the Contractor, then this type of work or operation shall not be excluded from insurance coverage where such type of work or operation is to be performed by either party under the contract, subject to prior notification to the insurer by the Contractor.

Claims arising out of the legal liability imposed upon the Insured at common law and extended by Statute for bodily injury or death to employees of the Insured. However, exclusions applicable to liability imposed upon or assumed by the Insured under any Workers' Compensation Statutes or for assessment by any Workers' Compensation Board will be allowed.

Liability assumed by the Insured under contract with railroad companies for the use and operation of railway sidings or crossings.

5. Products and Completed Operations Hazard
Products and Completed Operations Hazard coverage shall be provided and such coverage shall remain in full force and effect for a period of twelve (12) months after the contracted work has been completed (twenty four (24) months for Design Build Minor Contracts), irrespective of the expiry date of the policy.

CONDITIONS APPLICABLE TO:
PROPERTY TYPE OF INSURANCE POLICIES
(WHERE IT IS A REQUIREMENT OF THE CONTRACT, AGREEMENT, LEASE OR PERMIT)

1. Additional Named Insured Clause
Her Majesty the Queen in right of the Province of British Columbia as represented by the Minister of Transportation and Infrastructure, is added as an Additional Named Insured.

2. Loss Payable Clause
Her Majesty the Queen in right of the Province of British Columbia as represented by the Minister of Transportation and Infrastructure.

3. Waiver of Subrogation
In the event of any physical loss or damage to the work or Contractor's equipment, the settlement or payment of the subsequent claim shall be made without the right of subrogation against Her Majesty the Queen in right of the Province of British Columbia as represented by the Minister of Transportation and Infrastructure or any of the employees, servants or agents of the Minister.

CONDITIONS APPLICABLE TO:
ALL POLICIES EXCEPT AUTOMOBILE LIABILITY INSURANCE ISSUED BY I.C.B.C. AND PROFESSIONAL LIABILITY (E&O) INSURANCE

1. Cancellation
This policy shall not be cancelled, removed, reduced, materially changed or altered without thirty (30) days prior notice in writing by Registered Mail to:

CORPORATE INSURANCE AND BONDS MANAGER
MINISTRY OF TRANSPORTATION & INFRASTRUCTURE
PO BOX 9850 STN PROV GOVT
VICTORIA BC V8W 9T5
or
Ministry Representative, as noted in the contract.

CONDITION APPLICABLE TO:
PROFESSIONAL LIABILITY / ERRORS AND OMISSIONS INSURANCE

1. Cancellation
The required insurance shall not be cancelled, or endorsed to reduce limits of liability, without thirty (30) days notice in writing by Registered Mail to: The Corporate Insurance and Bonds Manager, Ministry of Transportation and Infrastructure, PO Box 9850, Stn Prov Govt, 940 Blanshard Street, Victoria, B.C. V8W 9T5. Notification of the policy being endorsed to restrict coverage mid-term, must be provided in writing by Registered Mail to the same address, no later than the effective date of such change.

Issuance of this certificate shall not limit or restrict the right of the Ministry of Transportation and Infrastructure to request any time certified copies of any insurance policy(s).

SCHEDULE 7

APPROXIMATE QUANTITIES AND UNIT PRICES

Revision: **Revision Date:**

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
01	**SECTION 1 - GENERAL**				
01.01	Mobilization	L.S.	100%	L.S.	$_____
01.02	Quality Management	L.S.	100%	L.S.	$_____
01.03	Traffic Management	L.S.	100%	L.S.	$_____
01.04	Provisional Sum for Site Modifications (SP 1.31)	P.S.	$50,000.00	P.S.	$50,000.00
02	**SECTION 2 - SITE PREPARATION AND GRADING**				
02.01	**Clearing and Grubbing**				
02.01.01	Clearing and Grubbing	Hectare	25.60	$_____	$_____
02.02	**Removals and Relocations**				
02.02.01	Remove Existing CSP Culverts and Storm Pipes	Metre	810	$_____	$_____
02.02.02	Remove Concrete Roadside Barrier	Each	13	$_____	$_____
02.02.03	Remove Existing Raised Medians, Islands and Curbs	Square Metre	170	$_____	$_____
02.02.04	Remove Existing Curb and Gutter	Metre	455	$_____	$_____
02.02.05	Remove Existing Sidewalk	Square Metre	410	$_____	$_____
02.02.06	Remove Existing Concrete Block Retaining Wall	L.S.	100%	L.S.	$_____
02.02.07	Sawcut Existing Asphalt Pavement	Metre	600	$_____	$_____
02.02.08	Remove Existing Asphalt Pavement	Square Metre	10,300	$_____	$_____

Revision: **Revision Date:**

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.03	**Roadway and Drainage Excavation**				
02.03.01	Organic Stripping	Cubic Metre	40,320	$_____	$_____
02.03.02	Type A Excavation	Cubic Metre	1,680	$_____	$_____
02.03.03	Type D Excavation	Cubic Metre	108,710	$_____	$_____
02.03.04	Type D Borrow	Cubic Metre	20,000	$_____	$_____
02.03.05	Type D Unsuitable Material Excavation	Cubic Metre	5,000	$_____	$_____
02.04	**Granular Materials**				
02.04.01	High Fines Surfacing Aggregate	Cubic Metre	820	$_____	$_____
02.04.02	25mm Well Graded Base Course (WGB)	Cubic Metre	25,410	$_____	$_____
02.04.03	Select Granular Sub Base (SGSB)	Cubic Metre	24,130	$_____	$_____
02.05	**Corrugated Steel Pipe Culverts**				
02.05.01	400mm Diameter CSP 1.6mm W.T.	Metre	30	$_____	$_____
02.05.02	600mm Diameter CSP 2.0mm W.T.	Metre	30	$_____	$_____
02.05.03	900mm Diameter CSP 2.0mm W.T.	Metre	5	$_____	$_____
02.06	**Concrete Curbs and Sidewalks**				
02.06.01	Concrete Curb and Gutter	Metre	5,340	$_____	$_____
02.06.02	Concrete Sidewalk	Square Metre	7,550	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.06.03	Concrete Driveway Entrances	Each	9	$_____	$_____
02.06.04	Concrete Median Curb	Metre	6,185	$_____	$_____
02.06.05	Concrete Median and Quadrant Island Surfacing	Square Metre	5,300	$_____	$_____
02.07	**Fencing**				
02.07.01	Type "D" Fencing 1.8m	Metre	65	$_____	$_____
02.07.02	Relocate Type D School Fence	Metre	305	$_____	$_____
02.07.03	Walkway Gate	L.S.	100%	L.S.	$_____
03	**SECTION 3 - STORM DRAINAGE**				
03.01	**Removals and Adjustments**				
03.01.01	Remove Existing Manholes	Each	10	$_____	$_____
03.01.02	Remove Existing Catch Basins	Each	12	$_____	$_____
03.01.03	Remove Exiting Inlet Structures	Each	2	$_____	$_____
03.01.04	Replace Existing Manhole Frames and Cover San and Storm	Each	40	$_____	$_____
03.01.05	Adjust Existing Storm and Sanitary Manholes to Grade	Each	29	$_____	$_____
03.02	**Storm Drains**				
03.02.01	200mm SDR 35 PVC	Metre	1,590	$_____	$_____
03.02.02	250mm SDR 35 PVC	Metre	1,430	$_____	$_____
03.02.03	300mm SDR 35 PVC	Metre	280	$_____	$_____
03.02.04	375mm SDR 35 PVC	Metre	365	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.02.05	450mm C14-3 Concrete	Metre	510	$_____	$_____
03.02.06	525mm C14-3 Concrete	Metre	650	$_____	$_____
03.02.07	600mm C14-3 Concrete	Metre	225	$_____	$_____
03.02.08	675mm C14-3 Concrete	Metre	780	$_____	$_____
03.02.09	Perforated Sub Drain	Metre	590	$_____	$_____
03.03	**Oil-Grit Separators**				
03.03.01	Oil-Grit Separator at Garner Pond	L.S.	100%	L.S.	$_____
03.03.02	Oil-Grit Separator at Gallagher Road	L.S.	100%	L.S.	$_____
03.04	**Precast Concrete Manholes**				
03.04.01	1050mm Concrete Manhole	Each	32	$_____	$_____
03.04.02	1200mm Concrete Manhole	Each	16	$_____	$_____
03.04.03	1350mm Concrete Manhole	Each	14	$_____	$_____
03.04.04	1350mm Concrete Manhole over Existing Storm Main	Each	2	$_____	$_____
03.04.05	1350mm Concrete Flow Control Manhole	Each	1	$_____	$_____
03.04.06	1050mm Concrete Outside Drop Manhole	Each	3	$_____	$_____
03.04.07	1200mm Concrete Outside Drop Manhole	Each	1	$_____	$_____
03.04.08	1350mm Concrete Outside Drop Manhole	Each	2	$_____	$_____
03.04.09	1500mm Concrete Outside Drop Manhole	Each	1	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.05	**Precast Concrete Catch Basins**				
03.05.01	Side Inlet Catch Basin	Each	113	$_____	$_____
03.05.02	Variable Depth Side Inlet Catch Basin	Each	15	$_____	$_____
03.05.03	Lawn Basin with Concrete Apron	Each	28	$_____	$_____
03.06	**Headwalls**				
03.06.01	Headwall (300mm)	Each	1	$_____	$_____
03.06.02	Headwall (375mm)	Each	1	$_____	$_____
03.06.03	Headwall (450mm)	Each	1	$_____	$_____
03.06.04	Headwall (600mm)	Each	4	$_____	$_____
03.06.05	Headwall (675mm)	Each	3	$_____	$_____
03.07	**Inlet Structures**				
03.07.01	Concrete Inlet Structure (200mm)	Each	6	$_____	$_____
03.08	**Erosion Protection**				
03.08.01	Class 10 kg Rip Rap	Cubic Metre	155	$_____	$_____
03.08.02	Class 25 kg Rip Rap	Cubic Metre	135	$_____	$_____
03.08.03	Class 50 kg Rip Rap	Cubic Metre	30	$_____	$_____
04	**SECTION 4 - PROPRIETARY STRUCTURES**				
04.01	MSE Retaining Wall	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.02	Pedestrian Underpass - Conditional Item	L.S.	100%	L.S.	$_____
05	**SECTION 5 - WATERMAINS**				
05.01	**BMID Watermain and Casing**				
05.01.01	Install 1050mm Watermain and Casing	L.S.	100%	L.S.	$_____
05.02	**Removals and Adjustments**				
05.02.01	Remove Fire Hydrant	Each	5	$_____	$_____
05.02.02	Cap Abandoned Watermain	Each	10	$_____	$_____
05.02.03	Adjust Valve Covers to Grade	Each	12	$_____	$_____
05.03	**Watermains**				
05.03.01	100mm PVC Class 150 C900	Metre	53	$_____	$_____
05.03.02	150mm PVC Class 150 C900	Metre	385	$_____	$_____
05.03.03	200mm PVC Class 150 C900	Metre	350	$_____	$_____
05.03.04	250mm PVC Class 150 C900	Metre	290	$_____	$_____
05.03.05	300mm PVC Class 150 C900	Metre	120	$_____	$_____
05.03.06	400mm PVC Class 150 C905	Metre	100	$_____	$_____
05.04	**Watermain Casing**				
05.04.01	200mm Steel Casing	Metre	40	$_____	$_____
05.04.02	300mm Steel Casing	Metre	55	$_____	$_____
05.04.03	450mm PVC Ultra Rib	Metre	30	$_____	$_____
05.04.04	525mm PVC Ultra Rib	Metre	20	$_____	$_____
05.04.05	600mm PVC Ultra Rib	Metre	65	$_____	$_____

Revision: **Revision Date:**

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
05.05	**Watermain Fittings and Hydrants**				
05.05.01	Fire Hydrant Assembly	Each	6	$_____	$_____
05.05.02	150mm Blow Off Assembly	Each	1	$_____	$_____
05.05.03	100mm Gate Valve	Each	1	$_____	$_____
05.05.04	150mm Gate Valve	Each	2	$_____	$_____
05.05.05	200mm Gate Valve	Each	2	$_____	$_____
05.05.06	250mm Gate Valve	Each	1	$_____	$_____
05.05.07	300mm Gate Valve	Each	1	$_____	$_____
05.06	**Service Connections**				
05.06.01	25mm Service Connection	Each	14	$_____	$_____
05.06.02	32mm Service Connection	Each	1	$_____	$_____
05.06.03	38mm Service Connection	Each	1	$_____	$_____
05.06.04	65mm Service Connection	Each	1	$_____	$_____
05.06.05	75mm Service Connection	Each	3	$_____	$_____
06	**SECTION 6 - PAVING**				
06.01	**Superpave Asphalt Mix Aggregate into Stockpile**				
06.01.01	Superpave Asphalt Mix Aggregate into Stockpile	Tonne	28,590	$_____	$_____
06.02	**Pulverize Existing Asphalt Pavement**				
06.02.01	Pulverize Existing Asphalt Pavement	Square Metre	54,640	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.03	**Emulsified Primer and Tack Coat**				
06.03.01	Supply Emulsified Primer and Tack Coat	Litre	178,260	$_____	$_____
06.03.02	Spray Emulsified Primer and Tack Coat	Litre	178,260	$_____	$_____
06.04	**Superpave Asphalt Pavement**				
06.04.01	Bottom Lift	Tonne	14,290	$_____	$_____
06.04.02	Top Lift	Tonne	14,970	$_____	$_____
06.04.03	Allowance for Payment Adjustments - SS502	P.S.	$135,000.00	P.S.	$135,000.00
06.04.04	Shouldering	Cubic Metre	200	$_____	$_____
06.05	**Concrete Roadside Barrier**				
06.05.01	Relocate Existing CRB	Each	363	$_____	$_____
06.05.02	Install Ministry Supplied CRB	Each	490	$_____	$_____
06.05.03	Supply and Install CRB	Each	475	$_____	$_____
07	**SECTION 7 - SIGNING and PAVEMENT MARKINGS**				
07.01	**Sign Removals**				
07.01.01	Remove Existing Signs	Each	65	$_____	$_____
07.02	**Supply and Install New Signs**				
07.02.01	Supply and Install Single Post and Sign Boards	Each	98	$_____	$_____
07.02.02	Supply and Install Two Posts and Sign Boards	Each	6	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
07.02.03	Supply and Install Signs on Luminaires	Each	11	$_____	$_____
07.02.04	Supply and Install CRB Mounted Signs	Each	4	$_____	$_____
07.03	**Pavement Markings**				
07.03.01	Permanent Pavement Markings Layout	L.S.	100%	L.S.	$_____
07.03.02	Intersection Pavement Markings	Square Metre	640	$_____	$_____
07.03.03	Thermoplastic Pavement Markings	Square Metre	50	$_____	$_____
08	**SECTION 8 - LANDSCAPE AND ENVIRONMENT**				
08.01	Supply and Place Topsoil	Square Metre	4,000	$_____	$_____
08.02	Revegetation Seeding and Mulching	Hectare	12.50	$_____	$_____
08.03	Tree and Shrub Planting (No. 1 pot size)	Each	1,875	$_____	$_____
08.04	Cattails (50 plug size)	Each	200	$_____	$_____
08.05	Additional Environmental Mitigation (SP 8.04)	P.S.	$10,000.00	P.S.	$10,000.00
09	**SECTION 9 - ELECTRICAL**				
09.01	**Concrete Bases (SS 635.07.06)**				
09.01.01	Type C Concrete Bases	Each	95	$_____	$_____
09.01.02	Type L2 Concrete Bases	Each	13	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.01.03	Post Mounted Flasher Concrete Base (SS 635.07.06)	Each	4	$_____	$_____
09.01.04	Controller Bases for Type S Cabinet (SS 635.07.06)	Each	2	$_____	$_____
09.02	**Junction Boxes (SS 635.08.01)**				
09.02.01	Type 10 Junction Box	Each	89	$_____	$_____
09.02.02	Type 11 Junction Box	Each	13	$_____	$_____
09.02.03	Type 12 Junction Box	Each	24	$_____	$_____
09.02.04	Type 14 Junction Box	Each	2	$_____	$_____
09.03	**Concrete Junction Boxes (SS 635.08.02)**				
09.03.01	Concrete Junction Box	Each	7	$_____	$_____
09.04	**Concrete Vaults (SS 635.08.02**				
09.04.01	Concrete Vault	Each	2	$_____	$_____
09.05	**Conduits (SS 635.09.01)**				
09.05.01	25mm RPVC Conduit	Metre	50	$_____	$_____
09.05.02	50mm RPVC Conduit	Metre	9,090	$_____	$_____
09.06	**Trenching and Backfilling (SS 635.10.01**				
09.06.01	Trenching and Backfilling	Metre	6,450	$_____	$_____
09.07	**Signal Poles (SS 635.17.09)**				
09.07.01	**Highway 33 at Loseth Road**				
09.07.01.01	Signal Pole 1	Each	1	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.07.01.02	Signal Pole 2	Each	1	$_____	$_____
09.07.01.03	Signal Pole 3	Each	1	$_____	$_____
09.07.01.04	Signal Pole 4	Each	1	$_____	$_____
09.07.01.05	L Pole Adv. Warn. Flash. A1 (w/o Roadway Luminaire)	Each	1	$_____	$_____
09.07.01.06	L Pole Adv. Warn. Flash. A2 (w/Roadway Luminaire)	Each	1	$_____	$_____
09.07.01.07	Pedestrian Push button Posts	Each	2	$_____	$_____
09.07.02	**Highway 33 at Gallagher Road**				
09.07.02.01	Signal Pole 1	Each	1	$_____	$_____
09.07.02.02	Signal Pole 2	Each	1	$_____	$_____
09.07.02.03	Signal Pole 3	Each	1	$_____	$_____
09.07.02.04	Signal Pole 4	Each	1	$_____	$_____
09.07.02.05	L Pole Adv. Warn. Flash. A1 (w/Roadway Luminaire)	Each	1	$_____	$_____
09.07.02.06	Relocate Adv. Warn. Flash. A2	Each	1	$_____	$_____
09.07.02.07	Pedestrian Push button Posts	Each	1	$_____	$_____
09.08	**Luminaire Poles (SS 635.17.10)**				
09.08.01	9.0m Luminaire Pole	Each	1	$_____	$_____
09.08.02	11.0m Luminaire Pole	Each	90	$_____	$_____
09.08.03	Relocate Existing 11m Luminaire Pole c/w communications system	Each	1	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.08.04	Replace Existing 150W Drop Lens with New 150W Flat Glass Lens	Each	1	$_____	$_____
09.09	**Service Equipment (635.18.01)**				
09.09.01	Service Area No. 1	L.S.	100%	L.S.	$_____
09.09.02	Service Area No. 2	L.S.	100%	L.S.	$_____
09.09.03	Service Area No. 3	L.S.	100%	L.S.	$_____
09.09.04	Service Area No. 4	L.S.	100%	L.S.	$_____
09.09.05	Service Area No. 5	L.S.	100%	L.S.	$_____
09.09.06	Service Area No. 6	L.S.	100%	L.S.	$_____
09.09.07	Service Area No. 7	L.S.	100%	L.S.	$_____
09.09.08	Service Area No. 8	L.S.	100%	L.S.	$_____
09.10	**Wiring (SS 635.19.01)**				
09.10.01	Service Area No. 1	L.S.	100%	L.S.	$_____
09.10.02	Service Area No. 2	L.S.	100%	L.S.	$_____
09.10.03	Service Area No. 3	L.S.	100%	L.S.	$_____
09.10.04	Service Area No. 4	L.S.	100%	L.S.	$_____
09.10.05	Service Area No. 5	L.S.	100%	L.S.	$_____
09.10.06	Service Area No. 6	L.S.	100%	L.S.	$_____
09.10.07	Service Area No. 7	L.S.	100%	L.S.	$_____
09.10.08	Service Area No. 8	L.S.	100%	L.S.	$_____
09.11	**Detector Loops (SS 635.22.01)**				

Revision: **Revision Date:**

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.11.01	1.8m Round Detector Loop	Each	32	$_____	$_____
09.11.02	Rectangular Detector Loop	Each	8	$_____	$_____
09.12	**Flasher Post (SS 635.24.01)**				
09.12.01	Flasher Post	Each	4	$_____	$_____
09.13	**Overhead Signs (SS 635.25.01)**				
09.13.01	High Level Warning Sign	Each	1	$_____	$_____
09.14	**Removal of Existing Electrical Equipment**				
09.14.01	Highway 33 from Molnar Road to East of Gallagher Road	L.S.	100%	L.S.	$_____
	TENDER PRICE				**$_____**
	TOTAL TENDER COST (Tender Price plus Site Occupancy (if applicable))				**$_____**

Contractors

Name: _____

Address: _____

_____

City: _____

Postal Code: _____

Phone: _____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Fax: _____

Date: _____

SCHEDULE 8

CONTRACT ADDENDA

PROJECT No. 22198-0001

HIGHWAY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

ADDENDUM NO. 1

NOTICE TO BIDDERS

1. INVITATION TO TENDER – SUPPLEMENTAL CONDITIONS OF TENDER

SCT2.2. Tender Closing / Opening Date Extended to October 28, 2009. Time and place remain unchanged.

PROJECT No. 22198-0001

HIGHWAY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

ADDENDUM NO. 2

1. SCHEDULE T3 – CONTRACT SPECIFIC REFERENCE DOCUMENTS

Add *the following as Document Number T3-5 and T3-6 to the list of reference documents:*

Document Number	Document Description	Check (✓) the Appropriate Column(s)	
		Electronic Copy	Hardcopy only
T3-5	Templated Cross Sections **(Revised Cross Sections for L425 – Sta. 425+20 to 425+80)**	✓	
T3-6	**Geotechnical Report – Proposed Hwy 33 Gopher Creek Underpass, EBA, August 26, 2009**	✓	

2. SCHEDULE 3 – SCHEDULE OF SPECIAL PROVISIONS AND APPENDICES

TABLE OF CONTENTS – APPENDIX/APPENDICES

Remove the words "Part 1 and Part 2" for Appendix – City of Kelowna Standard Detail Drawings.

Add **Appendix:** Appendix Black Mountain Neighbourhood

SECTION 1 – GENERAL

1.02 Scope of Work

Delete bullet: Construction of a detention pond

1.15 Work by Others in Project Area

Delete the following work by others:

Company	Description of Work
Ministry of Transportation and Infrastructure Paul Shul, Project Supervisor 250-491-5443	Day labour construction

1.18 Traffic Management
(b) Provisions for Traffic

Speed Limits for Public Traffic and Safe Passage through the Work

Replace first paragraph with:

Where the Ministry Representative and District Manager, Transportation and Infrastructure consider it appropriate, a construction speed zone giving an overall reduction in speed limit may be granted, to a speed of not less than 50 km/h.

Route Hwy 33

7. Traffic Stoppages:

Replace first line with:

For the purpose of these Special Provisions the following are the definitions for Traffic Stoppages.

1.19 Materials Supplied by the Ministry and Others

Materials supplied by the Ministry

Add the following paragraph:

Pyman Pit is located just off Highway 33 approximately 8.2 km east of the Highway 97/33 junction. Legal description: SE ¼ of Section 17, Township 27, ODYD.

1.23 Trenching Existing Pavement Structures

Delete last sentence and replace with:

All trenching work will be included in the prices bid for the various items in the Schedule of Approximate Quantities and Unit Prices.

SECTION 2 – SITE PREPARATION AND GRADING

2.10 Roadway and Drainage Excavation

(a) General

Add the following paragraph:

The Contractor shall endeavour to prevent damage to existing property improvements. Existing landscaped areas and irrigation systems disturbed by the Contractor's work shall be restored to their original conditions. The costs for this restoration work shall be considered incidental to the items listed in the Schedule of Approximate Quantities and Unit Prices.

(b) Organic Stripping

Delete second paragraph.

Add the following paragraph:

A soil salvage plan is being prepared for the Ministry of Transportation and Infrastructure as per the Agricultural Land Commission's request. It is anticipated that there will be a requirement to stockpile topsoil on the adjacent (previous) owner's property for their use particularly where it is evident that the property is being used for agricultural purposes.

e) Type D Borrow Excavation

In first sentence replace "20,000 cubic metres" with **10,000** cubic metres.

g) Rock Embankment – ***Add New Clause***

Contrary to what is shown on the originally tendered drawings the Contractor shall construct rock embankment at the locations indicated below utilizing material furnished

by the Ministry FOB from a source located within 3.6 kms of Garner Road. The rock sizes are such that it can be hauled by dump trucks. Payment for rock embankment will be made at the unit price bid in Schedule 7 and will include all things furnished and done to construct the rock embankments.

Rock Embankment Construction

1) Station 115+20 to 120+50
2) 126+00 to Garner Road

Rock Supply Information

1) Rock will be supplied and loaded at a rate of 800 cubic metres per day
2) Available Monday through Friday from 7:30 am to 4:00 pm
3) Rock is available starting November 15, 2009
4) The rock is located off of Road D in the Uplands development at Black Mountain.
   Directions: Highway 33 east to Black Mountain Drive, Black Mountain Drive north to Birkdale Avenue, Birkdale Avenue west to Prestwick Street, Prestwick southwest to Road D (See Appendix Black Mountain Neighbourhood for map)
5) Contact: Larry Gawne – 250-765-0330

2.15 Concrete Curb and Gutter

Delete third paragraph.

Replace last paragraph with the following:

The price bid per metre shall include everything furnished and done including form setting or extrusion, supply and placing of air entrained concrete, finishing and curing protection.

2.16 Concrete Sidewalk

b) Concrete Sidewalk and Driveway Entrances

Replace the last paragraph with the following:

The price bid per each installation shall be full compensation for everything furnished and done to form and shape driveway entrances regardless of the driveway area or width.

2.21 Supply and Install Walkway Gate

Replace the last paragraph with the following:

The price bid per each installation shall be full compensation for the supply of all materials and for all things furnished and done to complete the installation.

SECTION 3 – STORM DRAINAGE CONSTRUCTION

3.03 Storm Drains

Add sentence to fifth paragraph (payment clause)

The unit price bid per lineal metre of storm drain shall include breaking and entering into existing storm facilities where required and shall be full compensation for all things furnished and done.

SECTION 4 – PROPRIETARY STRUCTURES

4.02 Pedestrian Underpass

The above heading and clause are deleted and replaced with the following:

4.02 Gopher Creek Pedestrian Tunnel

(a) General

Drawings have been included in the Contract Document Package and show the general arrangement of the Pedestrian Underpass which consists of a proprietary Steel Pipe Arch Culvert. The scope of work for the Steel Pipe Arch Culvert shall include all works required to design, supply, and install the pipe arch culvert within the payment envelope specified on Drawings 7804-2, 7804-3, and 7804-4.

(b) Project Requirements

The pipe arch culvert must be designed and constructed to satisfy the following:

- The proprietary arch structure must be supplied from one of the following pre-qualified proprietors included in the current edition of the MoT Recognized Products List under the heading “Proprietary Structures” in the category for “Steel Arches and Pipes”:
    - AIL Super-Cor Bolt-a-Plate (655)
    - Armtec Multi-Plate Super Span
    - Armtec Bridge-Plate (821)
- Backfill envelope shall conform to the requirements of CAN/CSA S6-06 except that the backfill material shall meet the gradation requirements of SS 202 for Bridge End Fill;
- The structure shall conform to the general arrangements shown on the Drawings. All references to horizontal and vertical alignments shall be maintained as shown. All details, including cast-in-place concrete coping, etc., shall be incorporated into the final design; and
- Design Criteria:

1. Service Life	100 years minimum
2. Design Codes	• CAN / CSA S6-06; • BC MoT Supplement to CHBDC S6-06; • Duncan’s Method as described in ‘Design Procedures for Buried Flexible Metal Culvert Structures’, by Professor Peter Byrne, UBC; • ATC-6, Seismic Design Guidelines for Highway Bridges. CAN / CSA-S6-06, including the limit states design approach, shall govern. For items not covered by CAN/CSA S6-06 or the BC MoT Supplement to CHBDC, AASHTO shall govern, except that ATC-6 shall govern for seismic design.

3. Corrosion	Corrosion rate shall be computed for each exposed surface in contact with backfill: Galvanization loss is equal to: • 15 micrometres / year for first 2 years • 4 micrometres / year for subsequent years Carbon steel loss is equal to: • 12 micrometres / year after zinc depletion
4. Reference Information	Reference Geotechnical reference documents as applicable and list in Schedule T3 – Contract Specific Reference Documents.

(c) Proprietary Structure Design Report

The Contractor shall prepare and submit a Proprietary Structure Design Report consisting of all information necessary for the design, fabrication, transportation, quality control and installation of the proprietary structures, including but not limited to the following:

- Complete set of design calculations;
- Design methodology and applicable design codes and standards;
- A list of all assumptions made in the design;
- Geotechnical constraints;
- Force diagrams showing the magnitude, location and direction of all forces for each load case;
- Diagrams showing all foundation loads including load inclination angle, effective width of footing and bearing pressure for each load case;
- Service life calculation in accordance with the design criteria for corrosion rates;
- Backfill envelope details;
- Complete material and construction specifications;
- Fabrication and installation drawings (as specified below);
- Fabrication location and schedule;
- Delivery details and schedule;
- Detailed backfill procedures including a determination of allowable deflections and procedures for monitoring deflections during construction;
- Details for temporary construction bracings if required; and
- Quality control procedures.

Fabrication and installation drawings shall conform to the following:

1. Format:
   - Full size reproducible drawings, approx. 22” x 34” (559 mm x 864 mm) (one set).
   - Lettering for notes and dimensions shall be at least 2.5 mm, for headings 4 mm.
   - Drawings shall be legible when half-sized.

2. Contents:

   - Plan views showing information required for the layout of the structure.
   - Elevation views with elevations and dimensions required to construct the work.
   - Details and typical sections of all proprietary and associated components.
   - Notes listing design codes, design criteria, unfactored applied loads and material and construction specifications.
   - Backfill specifications.
   - Limits of excavation and structural backfill required by the pipe arch culvert designer.
   - Component layout.
   - Equipment to be used and any temporary support and bracings if required for installation including details of any excavation protection works.
   - Identification of the materials and other work required under this time, identifying, where applicable:

     (i) Materials and work which will be provided by a proprietary structure supplier and are included in their price quotation to the Contractor, and

     (ii) Materials and other work which will not be provided by a proprietary structure supplier and which the Contractor will have to supply and install.

The Contractor shall submit four (4) complete copies of the Proprietary Structure Design Report to the Ministry Representative a minimum of six (6) weeks prior to commencement of the pipe arch culvert component fabrication work. The Proprietary Structure Design Report shall be sealed by the proprietor's design engineer, who shall be a professional engineer, registered in the province of British Columbia, with experience in the design and construction of similar structures.

Incomplete Proprietary Structure Design Report submissions may, at the sole discretion of the Ministry Representative, be returned to the Contractor for resubmission without review. Any delays to the Contractor's work schedule caused by incomplete submissions shall be the sole responsibility of the Contractor to remedy.

The Ministry will review the submissions for general compliance with the Contract requirements.

If modifications are required, the Ministry Representative will return one (1) marked up copy of the Proprietary Structure Design Report to the Contractor. The Contractor shall make the appropriate revisions and resubmit four (4) complete copies of the revised Proprietary Structure Design Report to the Ministry Representative for further review.

If no exceptions are taken, the Ministry Representative will return one (1) set of the reviewed Proprietary Structure Design Report to the Contractor. The Contractor shall forward an additional two (2) copies of the reviewed report to the Ministry Representative.

Any work done or materials ordered prior to the completion of the review process shall be at the Contractor's risk. Installation of the pipe arch culvert will not be allowed to proceed prior to the completion of the Ministry's review of the Proprietary Structure Design Report.

The Ministry's review of the Proprietary Structure Design Report will not relieve the Contractor from its obligation to perform the work in accordance with the Contract.

(d) Quality Control

The Contractor shall implement a quality control program to the following requirements:

COMPONENT	REQUIREMENT
Cast-in-Place Concrete	The Contractor shall provide concrete mix designs and strength test results to the Ministry Representative in accordance with SS 211.
Steel	The Contractor shall provide copies of the following to the Ministry Representative: • Mill certificates giving chemical and physical properties. • Test reports confirming galvanizing to CAN/CSA G164.
Structural Backfill	The Contractor shall provide test results to the Ministry Representative to verify that the structural backfills meet all material, placement and compaction criteria as specified in the Contract Documents and are in compliance with the requirements of the proprietary structure designer. Tests on structural backfill materials shall include but may not necessary be limited to sieve analysis, electrochemical tests, laboratory proctor density tests, aggregate density tests and in-situ density tests.

The complete structure shall meet the following tolerances:

Horizontal Dimensions	±6 mm
Elevations	±6 mm
Line on Coping	such that no abrupt deviations are visible

A minimum of two (2) weeks prior to installation, the Contractor shall submit a detailed program for monitoring construction for both erection safety and structural integrity of the completed installation. The program must be approved and endorsed by the proprietary structure supplier and the pipe arch culvert designer, who must indicate that the proprietor's site representative will comply with the procedure.

The monitoring program shall include but may not be limited to:

- Stages at which monitoring is to be performed;
- Method, frequency and location of measurement and testing;
- Allowable deflections or movement;
- Procedures to be followed if allowable deflection or tolerances are exceeded and, if procedures include a stoppage of work, details of corrective action to be taken as a prerequisite to resuming work;
- Availability on site of documentation for review and reference including Letters of Certification of Inspection of formwork, WCB Inspection Reports, Site Erection Procedures and Quality Control Reports for off-site precast concrete or fabrication shops;
- Identification and relevant experience of the proprietor's designated site representative(s);

- A detailed schedule updated at the start of each work week indicating when inspections shall be performed and when the designated site representative(s) will be on site.

The work shall be inspected and supervised by the proprietor's site representative who is to be a Professional Engineer registered in the province of British Columbia with a minimum of five (5) years experience in the design and construction of the applicable proprietary structure or who is a technician with a minimum of five (5) years experience in the design and construction of the specific proprietary structure and who is designated in writing by and working under the direction of a Professional Engineer registered in the province of British Columbia with a minimum of five (5) years experience in the design and construction of the applicable proprietary structure.

The qualifications of the proprietor's site representative shall be subject to review by the Ministry Representative.

The proprietor's site representative must be on site to inspect and supervise and inspect the installation of the proprietary structure on the following basis:

- As required by the Professional Engineer who has sealed the Proprietary Structure Design Report; and
- Continuously during the installation of the proprietary pipe arch culvert structure.

(e) Letter of Certification

The Contractor shall provide a Letter of Certification from the proprietor stating that the proprietor has reviewed the pipe arch culvert structural backfill materials, in-situ test results and has monitored the installation of the structural components and certifies that the in-situ structure is in accordance with all installation requirements.

The Letter of Certification shall be on the proprietor's letterhead and shall be sealed by the Professional Engineer who performed or was responsible for supervising the site inspections.

(f) Quality Assurance

The Ministry will implement a quality assurance program by auditing the Contractor's quality control program and by inspection at its discretion. Quality assurance by the Ministry shall not relieve the Contractor from its obligation to perform the Work in accordance with the Contract.

The Ministry Representative may reject any work which, in its opinion, does not comply with the requirements of the Contract. The Contractor shall bear the cost of re-inspection of any rejected components of the Work.

The Contractor shall notify the Ministry Representative at least fourteen (14) days prior to fabrication or installation of each component of the Work. The Contractor shall allow the Ministry Representative access to all parts of the Work and shall supply such information and assistance as is required. The Contractor shall provide samples of any materials as requested by the Ministry Representative.

(g) Supply and Installation

The Contractor shall perform the Work in accordance with the Ministry accepted Proprietary Structure Design Report, the Contractor's quality control and construction monitoring program and all other contract requirements.

1. Cast-in-Place Concrete Components

   All cast-in-place concrete supplied under this item shall meet the requirements of SS 211 and the following:

Classification	Minimum Compressive Strength at 28 days (MPa)	Nominal Maximum Size of Coarse Aggregate (mm)	Air Content (%)	Slump (mm)	Maximum W/C Ratio by Mass
Collar	30	20	5 ± 1	50 ± 20	0.45

   Notes:

   - The maximum proportion of aggregate passing the 5mm screen shall be 35% of the total mass of aggregate.
   - No silica fume or fly ash shall be used.
   - Superplasticizer shall not be used.
   - Concrete surface finishes shall meet the Class 2 requirements.

2. Metal Components

   SS 320 shall apply to metal components, as modified by this clause.

   Steel shall be galvanized in accordance with CAN/CSA G164. The Contractor shall provide 610 g/m2 total both sides minimum mass of zinc coating to all metal fabrications.

3. Excavation to Accommodate Structural Fill

   All materials shall be removed and disposed of as necessary to facilitate the construction of the pipe arch culvert system. Foundation excavations shall be no larger than reasonably necessary to permit access and construction.

   Excavations, adjacent highways and other facilities shall be protected as necessary by barricades, shoring, dikes and/or berms. The design of back slopes and any excavation protection schemes shall be the responsibility of the Contractor and shall be constructed in compliance with the applicable WCB regulations.

   Upon completion of the excavation and prior to erection of the proprietary pipe arch culvert structure or placement of backfill, the excavation shall be inspected and approved by the proprietor's design engineer of record or his site designate. Also the Contractor shall allow appropriate time in its work schedule to permit a site visit by the Ministry's geotechnical engineer prior to commencing backfill, if required by the Ministry Representative.

4. Structural Backfill

   For pipe/arch installations with no end-wall treatment:

   Structural backfill is defined as the volume of backfill material that extends from the exterior face of the pipe arch culvert to the bottom of the foundation excavation, to vertical planes at the extent of the backfill envelope, to the underside of SGSB and to the extend of fill daylight at the ends of the pipe arch culvert, as defined on Drawing No. 7804-2, 7804-3, and 7804-4.

Structural backfill material shall meet the requirements for bridge end fill material as specified in SS 201.40. When steel is used in contact with water or soil, the following electrochemical requirements shall also be met:

- pH of 5 to 10;
- Resistivity not less than 3,000 ohm centimetres;
- Chlorides not greater than 100 ppm; and
- Sulphates not greater than 200 ppm.

(h) Payment

Payment for "Gopher Creek Pedestrian Underpass Tunnel – Design, Supply, and Install" will be made at the Lump Sum Price bid and as a Conditional Item.

Payment shall be for all works associated with the design, supply, installation, quality control and certification of the pipe arch culvert systems within the payment envelopes as shown on Drawing 7804-2, 7804-3, and 7804-4.

Payment under this item shall include:

- Submission of an acceptable Proprietary Structure Design Report including complete Fabrication and Installation Drawings;
- All excavations and backfilling required for the installation of the pipe arch culvert;
- Design, installation and removal of any temporary staging requirements;
- Design and construction of all back slopes including excavation protection schemes;
- Design, supply and installation of the pipe arch culvert system, including but not necessarily limited to, the pipe arch culvert, connection elements and bedding material;
- Design, supply and installation of the concrete collar, including but not necessarily limited to, connection to the pipe arch culvert, reinforcing, formwork, concrete, finishing and curing;
- Design, supply, loading, hauling, placement, compaction, watering, laboratory and in-site testing of all structural backfill materials;
- Design, supply and installation of any required drainage works behind the pipe arch extending to the outlets;
- Design and implementation of a quality control program for the component fabrication and installation of the pipe arch culvert system;
- Supply and installation of the fence along the concrete collar;
- Supply and installation of the path way and fill slope for the future path extension including but not necessarily limited to stripping, embankment fill, hydroseeding, and gravel surfacing;
- Design, installation, and removal of any temporary detour construction including signals, traffic control devices, embankment fills, retaining walls, and pavement structures;
- Prepare Traffic Management Plan for any detours in accordance with SP1.18 Traffic Management;
- Supply material, equipment and labour to remove the existing sanitary pipe across the excavation and replace with pre-manufactured insulated pipe and tie-in manholes;
- Submission of a Letter of Certification for the completed works.

Progress payments will be made on the following basis:

- 10% for accepted Proprietary Structure Design Report;
- 30% for delivery of pipe arch culvert components to site;
- 50% for installation of pipe arch culvert components and backfill; and
- 10% for accepted Letter of Certification.

SECTION 5 – WATERMAIN CONSTRUCTION

5.04 Removals and Adjustments

a) Remove Existing Fire Hydrants

Delete last paragraph and replace with the following:

The unit price bid per removal shall be for the removal and delivery of the fire hydrant assembly and restoration of the roadway.

b) Cap Abandoned Watermain

Delete last paragraph and replace with the following:

The unit price bid per installation shall be full compensation for the supply of the ductile iron cap and for all labour and materials to complete the work.

c) Adjust Valve Covers to Grade

Delete last paragraph and replace with the following:

The unit price bid per adjustment shall be full compensation for everything furnished and done to adjust the water valve covers.

5.09 Supply and Install Service Connections

Delete last paragraph and replace with the following:

The price bid per installation shall be full compensation to supply and install each service connection.

SECTION 6 – PAVING CONSTRUCTION

6.02 Pulverize Existing Asphalt Pavement

Delete existing language in its entirety and replace with the following:

Road Reclamation Equipment

The equipment shall be manufactured as a Reclaimer/Stabilizer type machine.

- The equipment shall be a Terex RS600, Wirtgen WR 2400 or approved demonstrated equivalent self contained Reclaimer/Recycler unit capable of pulverizing, crushing, mixing and blending asphalt surfaces with existing base course materials up to a total depth of 400mm in one pass.
- The reclaimer must be capable of pulverizing and blending a 2.4metre width, to a depth of 400mm, in a single pass to produce an aggregate meeting current Ministry gradation specifications for a 25mm Well Graded Base Course Aggregate.
- The reclaimer is to be equipped with a sizing bar graded to 25mm.

- The reclaimer must be capable of pulverizing and blending asphalt pavement depths that can range from 150mm to 260mm in depth with base aggregates of depths of up to 150mm to 250mm in a single pass.
- The reclaimer must be self-propelled and shall be capable of automatic longitudinal and transverse grade control to maintain constant depth.
- The reclaimer must be equipped with a reclamation depth metre.

Pave ment and Base Gravel Reclamation

Within the limits shown on the contract drawings or as directed by the Ministry Representative the existing asphalt pavement and the underlying base course aggregates are to be processed to a depth such that the blended material shall conform, as a minimum, to the gradation specifications for 25mm Well Graded Base Course Aggregate and be free of any oversized materials.

In any areas where it is impractical to pulverize the full width of existing pavement, such as paved shoulders and \or areas where there is existing concrete curb and gutter or asphalt curb, the remaining pavement and adjacent gravel shoulder shall be removed in such a way as to not contaminate the asphalt and pavement structure and shall be utilized in embankment construction in accordance with SP 2.09. Gravel shoulder excavation shall be paid for in accordance with SP 2.10 Type-D Excavation. The Contractor shall grade, shape and compact the pulverized material to the design roadway widths and grades as shown on the Drawings. If additional 25mm WGB is required to meet the design and/or specifications for the project, the 25mm WGB will be applied on top of the existing asphalt pavement prior to pulverizing. Water required for compaction shall be considered incidental to the bid price for Pulverizing Existing Asphalt Pavement.

Grade control for the reclamation areas shall be established by the Contractor at a minimum interval of 10 metres. At locations where the reclaimed material adjoins the existing pavement, a stepped joint (1.0m wide horizontal step per lift of new asphalt) shall be provided at the interface of the two pavement structures.

The Contractor is hereby notified that the pulverizing operation shall be limited to a maximum of seven (7) days production ahead of the paving operation so as not to compromise the safety of the traveling public. Should the Contractor demonstrate that they have the necessary dust control, grading and compacting equipment to diligently maintain a safe, smooth compacted riding surface, the Ministry Representative may consider increasing the limits of this clause. The Contractor will continually monitor the opened road base and make any repairs needed, promptly, to the satisfaction of the Ministry Representative on a 24/7 bases. No additional compensation will be made for any maintenance and repair costs.

Dust control for pulverized areas shall be considered incidental to the unit price bid for Pulverizing Existing Asphalt Pavement.

Excessive Depths of Asphalt Pavement Surfacing

In areas where the asphalt pavement is greater than 200mm in depth the Contractor may reduce the depth of asphalt pavement by a cold planer/milling operation. The millings are not suitable for use in base or sub base aggregates and are to be recycled elsewhere on the project as fill. This milling is incidental to the bid price for Pulverizing Existing Asphalt Pavement.

Gradation of Reclaimed Material

The existing asphalt pavement and base material shall be pulverized and blended so that the entire material mass is of uniform 25mm crushed Well Graded Base gradation. The reclaimed asphalt pavement/base aggregate mixture shall meet the current Ministry Standard Specifications for Highway Construction; Section 202 as applicable.

Compaction of Reclaimed Material

Optimum densities of reclaimed materials are to be determined by proof rolling the grade in accordance with Appendix - Compaction Method (Control Strip Method). Quality Control Monitoring of grade compaction will include confirmation with a Nuclear Densometer Gauge.

Payment

The price bid per square metre for Pulverize Existing Asphalt Pavement will be full compensation for everything furnished and done to complete the Work including but not limited to pulverizing, loading, hauling, grading, shaping, compacting, watering, dust control and maintenance.

If additional 25mm WGB is required to meet the design and/or specifications for the project, the 25mm WGB applied on top of the existing asphalt pavement prior to pulverizing will be paid at the unit price bid for 25mm Well Graded Base Course (WGB) in the Schedule 7.

6.04 Superpave Asphalt Pavement EPS 502

f) Top Lift

Add sentence to last paragraph (payment clause)

Additional work and handwork required for letdowns and tie-ins to side streets shall be considered to be incidental to the price bid per tonne.

SECTION 7 – SIGNING and PAVEMENT MARKING

7.02 Remove and Dispose Existing Signs

In the first paragraph, delete first sentence and replace with the following:

The Contractor shall remove existing signs and their associated structure as directed by the Ministry Representative.

In the third paragraph, delete first sentence and replace with the following:

Existing Ministry signs that are in conflict with the progress of the Project shall be removed and temporarily relocated as approved by the Ministry Representative.

7.03 Supply and Install New Signs

a) General

Delete the second paragraph and replace with the following:

The Contractor shall supply and install aluminum signs as shown on the Drawings or as directed by the Ministry Representative in accordance with SS 635 Part D and the current edition of the Ministry's Manual of Standard Traffic Signs and Pavement Markings and in accordance with the Ministry's Specification for Standard Highway Sign Materials, Fabrication and Supply.

b) Supply and Install Sign Post and Base

Delete paragraph and replace with the following:

The Contractor shall provide Concrete Single Sing Post Bases meeting the following criteria:

The sign bases shall be as specified in SP635-1.1.44 with a sleeve configuration of 2 ¼ inch outside diameter.

The Contractor shall be responsible for the supply and installation of all new posts and signs as indicated on the Drawings and in accordance with SS 635 and SP635-3.6.3. The minimum size shall be 1 ¾ inch outside diameter.

7.09 Permanent Pavement Markings

a) Thermoplastic Pavement Markings

Remove the word* "inlaid" *from the first sentence.

SECTION 9 – ELECTRICAL

9.03 Materials Supplied by the Contractor

The first paragraph is amended by the addition of the following:

j) Road name Signs

9.04 Work Undertaken by the Ministry

Replace contact information with the following:

Jamie Hill
Westcana Electrical Inc.
960 Unit A & B Alsgard Street
Kelowna, BC V1X 7J2
Phone: 250-491-9080

9.07 Removal of Existing Electrical Equipment

Delete paragraph c) and replace with the following:

The removal, disassembly, pick-up, delivery and off-loading of any luminaire poles, wiring and any electrical devices (as noted on the plans) to the local Electrical Maintenance Contractor Works Yard. Contact Jamie Hill, Westcana.

Add the following paragraphs:

Removal of electrical equipment shall include the removal, disassembly, pick-up and delivery to the local Electrical Maintenance Contractor Works Yard and off-loading of all luminaire signal and sign poles, service equipment and post mounted flashers and any other electrical devices, as noted on the drawings.

The Contractor shall return all Ministry equipment as directed by the Ministry Representative.

The Contractor shall note that the traffic controller cabinets will be removed or relocated by others.

9.10 Record Drawings – *Add New Clause*

The Contractor shall record on a current set of plans, in a neat manner, all changes, additions and deletions to reflect the "as constructed" installation. This shall include the location of equipment as installed. This set of plans shall be returned to the Ministry Representative at the completion of the installation and prior to the issuance of a Completion Certificate.

All costs related to Record Drawings will be included in the various pay items of work involved in the contract. No additional compensation will be made for the above work.

3. SCHEDULE 4 – DRAWINGS

Corrections:

Drawing R2-699-108:
Remove Note: Start 3m Thick Rock Embankment At Sta 126+00 (By others)
Replace with: Start Rock Embankment at Sta 126+00

Drawing R2-699-109:
Remove Note: 3m Thick Rock Embankment. For Details See DWG. R2-699-302 (By Others)
Replace with: Rock Embankment. For details see Dwg. R2-699-302.

Remove Note: End 3m Thick Rock Embankment (By Others)
Replace with: End Rock Embankment

Drawing R2-699-104 & 105:
Delete Detention Pond

Drawing R2-699-302:
Typical Section Highway No. 33 Four Lane Section (Sta 126+00 to Garner Road)
Remove Note: 3.0m Thick Rock Embankment by Others
Clarification: The embankment shall be constructed entirely of rock from Sta 126+00 to Garner Road.

Drawing R2-699-304:
Catch Basin at Concrete Roadside Barrier
Remove references to MoT Standard Specifications. Catch Basins shall be to COK specifications.

R2-699-504 & 505:
Delete Detention Pond Works

R2-699-514:
Delete Drawing

Revised Drawings: Revision to Driveway Access – L425 Line
R2-699-107-A, R2-699-206-A, R2-699-407-A, R2-699-507-A, R2-699-541-A, R2-699-707-A

New Drawings: Gopher Creek Pedestrian Tunnel
Drawing Number: 7804-2 to 7804-7

4. SCHEDULE 5 – TIME SCHEDULE

The Time Schedule is replaced in its entirety with the new time schedule attached.

5. SCHEDULE 7 – SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

The following Detention Pond Works are deleted from Schedule 7 quantities:

- Clearing and Grubbing 1.2 hectares
- Organic Stripping 350 cubic metres
- Type D Excavation 29,750 cubic metres
- High Fines Surfacing Aggregate 730 cubic metres
- 1350mm Concrete Flow Control Manhole 1 each
- Class 25kg Rip Rap 100 cubic metres
- 450mm C14-3 Concrete Storm Drain 46 metres
- 600mm C14-3 Concrete Storm Drain 20 metres
- 675mm C14-3 Concrete Storm Drain 31 metres

The following Items are amended:

02.01.01	Revised quantity
02.03.01	Revised quantity
02.03.03	Revised quantity
02.03.04	Revised quantity
02.03.06	Item added
02.04.01	Revised quantity
03.02.05	Revised quantity
03.02.07	Revised quantity
03.02.08	Revised quantity
03.04.05	Item deleted
03.08.02	Revised quantity
04.02	Revised Item description

A REVISED SCHEDULE 7, DATED OCTOBER 20, 2009, AND MARKED 'REVISION A' IS ATTACHED AND MUST BE USED FOR TENDER PURPOSES.

LOT 2
PLAN KAP62397

LOT B
PLAN 80286

LOT 1
PLAN 33849

PLAN 87744
PLAN 87745
PLAN 87742

BIRKDALE AVE

PRESTWICK LANE

PRESTWICK ST

TURNBERRY ST

ROAD D

PUBLIC PARK ACCESS

2.40 WALKWAY

50mm WATER SERVICE

LOT B
PLAN 80286

GENERAL NOTES

1. ALL WORK CONSTRUCTED IN ACCORDANCE WITH MMCD VOLUME II AND THE CITY OF KELOWNA SUBDIVISION, DEVELOPMENT AND SERVICING CONTROL BY-LAW No. 7900 AND AMENDMENTS.
2. UTILITY INSTALLATION — LOCATIONS AND OFFSETS OF UTILITIES SHOWN ON THESE PLANS ARE COMPILED FROM THE MOST RECENT INFORMATION AVAILABLE, BUT ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE AND MUST BE FIELD VERIFIED.
3. ELECTRICAL – ALL CONSTRUCTION CONFORMS TO FORTIS BC SPECIFICATIONS AND THEIR DRAWINGS.
4. TELUS — ALL CONSTRUCTION CONFORMS TO TELUS SPECIFICATIONS AND THEIR DRAWINGS.
5. CABLE T.V. – ALL CONSTRUCTION CONFORMS TO SHAW CABLE T.V. SPECIFICATIONS AND THEIR DRAWINGS.
6. GAS – CARRIER PIPE ARE AT ALL ROAD CROSSINGS TO FACILITATE GAS MAIN INSTALLATION.
7. SURVEY CONTROL – ELEVATION BASED ON GEODETIC MONUMENTS # 75H2859 AND # 75H2447

JD BLACK MOUNTAIN DRIVE

RECORD DRAWING

"I HEREBY CERTIFY THE NEW WORKS SHOWN ON THIS DRAWING WERE INSPECTED DURING CONSTRUCTION AND INSTALLED IN ACCORDANCE WITH THIS DRAWING, AND THE SUBDIVISION, DEVELOPMENT & SERVICING BYLAW No. 7900, INCLUDING AMENDMENTS."

CITY FILE # S07-0022 03090-40

CTQ Consultants Ltd

Legend

existing / proposed

Water, San. Sewer, Storm Sewer, Gas, U.G. Telephone, U.G. Electrical, U.G. Cable TV, Hydrant, Water Valve, Trees

existing: BO Blowoff, S San Manhole, D Storm Manhole, CO Cleanout, CB Catch Basin, DW Drywell, PP Power Pole, LS Lamp Standard, Edge of Asphalt, Survey Monument

proposed: BO, S, D, CO, CB, DW, PP, LS

Design Invert of Sanitary Service at property line
Design Invert of Storm Service at property line
Existing Invert of Sanitary Service at property line
Existing Invert of Storm Service at property line

No.	MM.DD.YY	By	Issued
2	07.15.09	GJT	FOR RECORD DRAWING
1	08.16.07	GJT	FOR APPROVAL

No.	MM.DD.YY	By	Revision	Chkd
4	07.15.09	TF	RECORD DRAWING	HB
3	10.06.08	LT	LOT NUMBERS AND EASEMENTS AND SIDEWALKS	GJT
2	08.19.08	TF	CHANGED LANE 1 WIDTH	GJT
1	01.18.08	TF	ROAD D SAN, STM & WAT LOCATION	GJT

PROFESSIONAL ENGINEER — M.H. CAMERON # 20718 — BRITISH COLUMBIA — 15 Jul 2009

Drawn TF
Design GJT/TF
Approved
Date JUNE 2009
Scale 1:500

THE CITY OF KELOWNA
ENGINEERING DEPARTMENT
BLACK MOUNTAIN NEIGHBOURHOOD
COMPOSITE UTILITY PLAN
1 OF 2
PHASE 4

Division: MUNICIPAL
Drawing No.: G-402
Rev No.: 4

L:\General Data\Projects\03090-40-BLACK MOUNTAIN PH 4\4-CAD\RECORD DRAWINGS\03090-40G-402-403.dwg July 15, 2009 Tabi Friesen

Schedule 5 – Time Schedule

PROJECT NO. 22198-0001

HIGHWAY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

Milestone Dates:

For each Milestone listed below, the Contractor will complete, to the satisfaction of the Ministry Representative, all Work necessary to meet the applicable Acceptance Criteria, in accordance with the Contract, on or before the corresponding Milestone Date:

#	Milestone Description	Milestone Date
1	Complete Rock Embankment Construction - Sta. 126+00 to Garner Road	February 28, 2010
2	Complete Top Lift Paving	September 30, 2010

Completion Date:

The Contractor will complete construction of the Work to the satisfaction of the Ministry Representative on or before the Completion Date of October 31, 2010, as may be extended from time to time in accordance with the Contract.

Revision: A **Revision Date:** 2009/10/20

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
01	**SECTION 1 - GENERAL**				
01.01	Mobilization	L.S.	100%	L.S.	$_____
01.02	Quality Management	L.S.	100%	L.S.	$_____
01.03	Traffic Management	L.S.	100%	L.S.	$_____
01.04	Provisional Sum for Site Modifications (SP 1.31)	P.S.	$50,000.00	P.S.	$50,000.00
02	**SECTION 2 - SITE PREPARATION AND GRADING**				
02.01	**Clearing and Grubbing**				
02.01.01	Clearing and Grubbing	Hectare	24.40	$_____	$_____
02.02	**Removals and Relocations**				
02.02.01	Remove Existing CSP Culverts and Storm Pipes	Metre	810	$_____	$_____
02.02.02	Remove Concrete Roadside Barrier	Each	13	$_____	$_____
02.02.03	Remove Existing Raised Medians, Islands and Curbs	Square Metre	170	$_____	$_____
02.02.04	Remove Existing Curb and Gutter	Metre	455	$_____	$_____
02.02.05	Remove Existing Sidewalk	Square Metre	410	$_____	$_____
02.02.06	Remove Existing Concrete Block Retaining Wall	L.S.	100%	L.S.	$_____
02.02.07	Sawcut Existing Asphalt Pavement	Metre	600	$_____	$_____
02.02.08	Remove Existing Asphalt Pavement	Square Metre	10,300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.03	**Roadway and Drainage Excavation**				
02.03.01	Organic Stripping	Cubic Metre	39,970	$_____	$_____
02.03.02	Type A Excavation	Cubic Metre	1,680	$_____	$_____
02.03.03	Type D Excavation	Cubic Metre	78,960	$_____	$_____
02.03.04	Type D Borrow	Cubic Metre	10,000	$_____	$_____
02.03.05	Type D Unsuitable Material Excavation	Cubic Metre	5,000	$_____	$_____
02.03.06	Rock Embankment	Cubic Metre	54,000	$_____	$_____
02.04	**Granular Materials**				
02.04.01	High Fines Surfacing Aggregate	Cubic Metre	90	$_____	$_____
02.04.02	25mm Well Graded Base Course (WGB)	Cubic Metre	25,410	$_____	$_____
02.04.03	Select Granular Sub Base (SGSB)	Cubic Metre	24,130	$_____	$_____
02.05	**Corrugated Steel Pipe Culverts**				
02.05.01	400mm Diameter CSP 1.6mm W.T.	Metre	30	$_____	$_____
02.05.02	600mm Diameter CSP 2.0mm W.T.	Metre	30	$_____	$_____
02.05.03	900mm Diameter CSP 2.0mm W.T.	Metre	5	$_____	$_____
02.06	**Concrete Curbs and Sidewalks**				
02.06.01	Concrete Curb and Gutter	Metre	5,340	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.06.02	Concrete Sidewalk	Square Metre	7,550	$_____	$_____
02.06.03	Concrete Driveway Entrances	Each	9	$_____	$_____
02.06.04	Concrete Median Curb	Metre	6,185	$_____	$_____
02.06.05	Concrete Median and Quadrant Island Surfacing	Square Metre	5,300	$_____	$_____
02.07	**Fencing**				
02.07.01	Type "D" Fencing 1.8m	Metre	65	$_____	$_____
02.07.02	Relocate Type D School Fence	Metre	305	$_____	$_____
02.07.03	Walkway Gate	L.S.	100%	L.S.	$_____
03	**SECTION 3 - STORM DRAINAGE**				
03.01	**Removals and Adjustments**				
03.01.01	Remove Existing Manholes	Each	10	$_____	$_____
03.01.02	Remove Existing Catch Basins	Each	12	$_____	$_____
03.01.03	Remove Exiting Inlet Structures	Each	2	$_____	$_____
03.01.04	Replace Existing Manhole Frames and Cover San and Storm	Each	40	$_____	$_____
03.01.05	Adjust Existing Storm and Sanitary Manholes to Grade	Each	29	$_____	$_____
03.02	**Storm Drains**				
03.02.01	200mm SDR 35 PVC	Metre	1,590	$_____	$_____
03.02.02	250mm SDR 35 PVC	Metre	1,430	$_____	$_____
03.02.03	300mm SDR 35 PVC	Metre	280	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.02.04	375mm SDR 35 PVC	Metre	365	$_____	$_____
03.02.05	450mm C14-3 Concrete	Metre	464	$_____	$_____
03.02.06	525mm C14-3 Concrete	Metre	650	$_____	$_____
03.02.07	600mm C14-3 Concrete	Metre	205	$_____	$_____
03.02.08	675mm C14-3 Concrete	Metre	749	$_____	$_____
03.02.09	Perforated Sub Drain	Metre	590	$_____	$_____
03.03	**Oil-Grit Separators**				
03.03.01	Oil-Grit Separator at Garner Pond	L.S.	100%	L.S.	$_____
03.03.02	Oil-Grit Separator at Gallagher Road	L.S.	100%	L.S.	$_____
03.04	**Precast Concrete Manholes**				
03.04.01	1050mm Concrete Manhole	Each	32	$_____	$_____
03.04.02	1200mm Concrete Manhole	Each	16	$_____	$_____
03.04.03	1350mm Concrete Manhole	Each	14	$_____	$_____
03.04.04	1350mm Concrete Manhole over Existing Storm Main	Each	2	$_____	$_____
03.04.05	Item Deleted				
03.04.06	1050mm Concrete Outside Drop Manhole	Each	3	$_____	$_____
03.04.07	1200mm Concrete Outside Drop Manhole	Each	1	$_____	$_____
03.04.08	1350mm Concrete Outside Drop Manhole	Each	2	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.04.09	1500mm Concrete Outside Drop Manhole	Each	1	$_____	$_____
03.05	**Precast Concrete Catch Basins**				
03.05.01	Side Inlet Catch Basin	Each	113	$_____	$_____
03.05.02	Variable Depth Side Inlet Catch Basin	Each	15	$_____	$_____
03.05.03	Lawn Basin with Concrete Apron	Each	28	$_____	$_____
03.06	**Headwalls**				
03.06.01	Headwall (300mm)	Each	1	$_____	$_____
03.06.02	Headwall (375mm)	Each	1	$_____	$_____
03.06.03	Headwall (450mm)	Each	1	$_____	$_____
03.06.04	Headwall (600mm)	Each	4	$_____	$_____
03.06.05	Headwall (675mm)	Each	3	$_____	$_____
03.07	**Inlet Structures**				
03.07.01	Concrete Inlet Structure (200mm)	Each	6	$_____	$_____
03.08	**Erosion Protection**				
03.08.01	Class 10 kg Rip Rap	Cubic Metre	155	$_____	$_____
03.08.02	Class 25 kg Rip Rap	Cubic Metre	35	$_____	$_____
03.08.03	Class 50 kg Rip Rap	Cubic Metre	30	$_____	$_____
04	**SECTION 4 - PROPRIETARY STRUCTURES**				
04.01	MSE Retaining Wall	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.02	Gopher Creek Pedestrian Tunnel	L.S.	100%	L.S.	$_____
05	**SECTION 5 - WATERMAINS**				
05.01	**BMID Watermain and Casing**				
05.01.01	Install 1050mm Watermain and Casing	L.S.	100%	L.S.	$_____
05.02	**Removals and Adjustments**				
05.02.01	Remove Fire Hydrant	Each	5	$_____	$_____
05.02.02	Cap Abandoned Watermain	Each	10	$_____	$_____
05.02.03	Adjust Valve Covers to Grade	Each	12	$_____	$_____
05.03	**Watermains**				
05.03.01	100mm PVC Class 150 C900	Metre	53	$_____	$_____
05.03.02	150mm PVC Class 150 C900	Metre	385	$_____	$_____
05.03.03	200mm PVC Class 150 C900	Metre	350	$_____	$_____
05.03.04	250mm PVC Class 150 C900	Metre	290	$_____	$_____
05.03.05	300mm PVC Class 150 C900	Metre	120	$_____	$_____
05.03.06	400mm PVC Class 150 C905	Metre	100	$_____	$_____
05.04	**Watermain Casing**				
05.04.01	200mm Steel Casing	Metre	40	$_____	$_____
05.04.02	300mm Steel Casing	Metre	55	$_____	$_____
05.04.03	450mm PVC Ultra Rib	Metre	30	$_____	$_____
05.04.04	525mm PVC Ultra Rib	Metre	20	$_____	$_____
05.04.05	600mm PVC Ultra Rib	Metre	65	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
05.05	**Watermain Fittings and Hydrants**				
05.05.01	Fire Hydrant Assembly	Each	6	$_____	$_____
05.05.02	150mm Blow Off Assembly	Each	1	$_____	$_____
05.05.03	100mm Gate Valve	Each	1	$_____	$_____
05.05.04	150mm Gate Valve	Each	2	$_____	$_____
05.05.05	200mm Gate Valve	Each	2	$_____	$_____
05.05.06	250mm Gate Valve	Each	1	$_____	$_____
05.05.07	300mm Gate Valve	Each	1	$_____	$_____
05.06	**Service Connections**				
05.06.01	25mm Service Connection	Each	14	$_____	$_____
05.06.02	32mm Service Connection	Each	1	$_____	$_____
05.06.03	38mm Service Connection	Each	1	$_____	$_____
05.06.04	65mm Service Connection	Each	1	$_____	$_____
05.06.05	75mm Service Connection	Each	3	$_____	$_____
06	**SECTION 6 - PAVING**				
06.01	**Superpave Asphalt Mix Aggregate into Stockpile**				
06.01.01	Superpave Asphalt Mix Aggregate into Stockpile	Tonne	28,590	$_____	$_____
06.02	**Pulverize Existing Asphalt Pavement**				
06.02.01	Pulverize Existing Asphalt Pavement	Square Metre	54,640	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.03	**Emulsified Primer and Tack Coat**				
06.03.01	Supply Emulsified Primer and Tack Coat	Litre	178,260	$_____	$_____
06.03.02	Spray Emulsified Primer and Tack Coat	Litre	178,260	$_____	$_____
06.04	**Superpave Asphalt Pavement**				
06.04.01	Bottom Lift	Tonne	14,290	$_____	$_____
06.04.02	Top Lift	Tonne	14,970	$_____	$_____
06.04.03	Allowance for Payment Adjustments - SS502	P.S.	$135,000.00	P.S.	$135,000.00
06.04.04	Shouldering	Cubic Metre	200	$_____	$_____
06.05	**Concrete Roadside Barrier**				
06.05.01	Relocate Existing CRB	Each	363	$_____	$_____
06.05.02	Install Ministry Supplied CRB	Each	490	$_____	$_____
06.05.03	Supply and Install CRB	Each	475	$_____	$_____
07	**SECTION 7 - SIGNING and PAVEMENT MARKINGS**				
07.01	**Sign Removals**				
07.01.01	Remove Existing Signs	Each	65	$_____	$_____
07.02	**Supply and Install New Signs**				
07.02.01	Supply and Install Single Post and Sign Boards	Each	98	$_____	$_____
07.02.02	Supply and Install Two Posts and Sign Boards	Each	6	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
07.02.03	Supply and Install Signs on Luminaires	Each	11	$_____	$_____
07.02.04	Supply and Install CRB Mounted Signs	Each	4	$_____	$_____
07.03	**Pavement Markings**				
07.03.01	Permanent Pavement Markings Layout	L.S.	100%	L.S.	$_____
07.03.02	Intersection Pavement Markings	Square Metre	640	$_____	$_____
07.03.03	Thermoplastic Pavement Markings	Square Metre	50	$_____	$_____
08	**SECTION 8 - LANDSCAPE AND ENVIRONMENT**				
08.01	Supply and Place Topsoil	Square Metre	4,000	$_____	$_____
08.02	Revegetation Seeding and Mulching	Hectare	12.50	$_____	$_____
08.03	Tree and Shrub Planting (No. 1 pot size)	Each	1,875	$_____	$_____
08.04	Cattails (50 plug size)	Each	200	$_____	$_____
08.05	Additional Environmental Mitigation (SP 8.04)	P.S.	$10,000.00	P.S.	$10,000.00
09	**SECTION 9 - ELECTRICAL**				
09.01	**Concrete Bases (SS 635.07.06)**				
09.01.01	Type C Concrete Bases	Each	95	$_____	$_____
09.01.02	Type L2 Concrete Bases	Each	13	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.01.03	Post Mounted Flasher Concrete Base (SS 635.07.06)	Each	4	$_____	$_____
09.01.04	Controller Bases for Type S Cabinet (SS 635.07.06)	Each	2	$_____	$_____
09.02	**Junction Boxes (SS 635.08.01)**				
09.02.01	Type 10 Junction Box	Each	89	$_____	$_____
09.02.02	Type 11 Junction Box	Each	13	$_____	$_____
09.02.03	Type 12 Junction Box	Each	24	$_____	$_____
09.02.04	Type 14 Junction Box	Each	2	$_____	$_____
09.03	**Concrete Junction Boxes (SS 635.08.02)**				
09.03.01	Concrete Junction Box	Each	7	$_____	$_____
09.04	**Concrete Vaults (SS 635.08.02**				
09.04.01	Concrete Vault	Each	2	$_____	$_____
09.05	**Conduits (SS 635.09.01)**				
09.05.01	25mm RPVC Conduit	Metre	50	$_____	$_____
09.05.02	50mm RPVC Conduit	Metre	9,090	$_____	$_____
09.06	**Trenching and Backfilling (SS 635.10.01**				
09.06.01	Trenching and Backfilling	Metre	6,450	$_____	$_____
09.07	**Signal Poles (SS 635.17.09)**				
09.07.01	**Highway 33 at Loseth Road**				
09.07.01.01	Signal Pole 1	Each	1	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.07.01.02	Signal Pole 2	Each	1	$_____	$_____
09.07.01.03	Signal Pole 3	Each	1	$_____	$_____
09.07.01.04	Signal Pole 4	Each	1	$_____	$_____
09.07.01.05	L Pole Adv. Warn. Flash. A1 (w/o Roadway Luminaire)	Each	1	$_____	$_____
09.07.01.06	L Pole Adv. Warn. Flash. A2 (w/Roadway Luminaire)	Each	1	$_____	$_____
09.07.01.07	Pedestrian Push button Posts	Each	2	$_____	$_____
09.07.02	**Highway 33 at Gallagher Road**				
09.07.02.01	Signal Pole 1	Each	1	$_____	$_____
09.07.02.02	Signal Pole 2	Each	1	$_____	$_____
09.07.02.03	Signal Pole 3	Each	1	$_____	$_____
09.07.02.04	Signal Pole 4	Each	1	$_____	$_____
09.07.02.05	L Pole Adv. Warn. Flash. A1 (w/Roadway Luminaire)	Each	1	$_____	$_____
09.07.02.06	Relocate Adv. Warn. Flash. A2	Each	1	$_____	$_____
09.07.02.07	Pedestrian Push button Posts	Each	1	$_____	$_____
09.08	**Luminaire Poles (SS 635.17.10)**				
09.08.01	9.0m Luminaire Pole	Each	1	$_____	$_____
09.08.02	11.0m Luminaire Pole	Each	90	$_____	$_____
09.08.03	Relocate Existing 11m Luminaire Pole c/w communications system	Each	1	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.08.04	Replace Existing 150W Drop Lens with New 150W Flat Glass Lens	Each	1	$_____	$_____
09.09	**Service Equipment (635.18.01)**				
09.09.01	Service Area No. 1	L.S.	100%	L.S.	$_____
09.09.02	Service Area No. 2	L.S.	100%	L.S.	$_____
09.09.03	Service Area No. 3	L.S.	100%	L.S.	$_____
09.09.04	Service Area No. 4	L.S.	100%	L.S.	$_____
09.09.05	Service Area No. 5	L.S.	100%	L.S.	$_____
09.09.06	Service Area No. 6	L.S.	100%	L.S.	$_____
09.09.07	Service Area No. 7	L.S.	100%	L.S.	$_____
09.09.08	Service Area No. 8	L.S.	100%	L.S.	$_____
09.10	**Wiring (SS 635.19.01)**				
09.10.01	Service Area No. 1	L.S.	100%	L.S.	$_____
09.10.02	Service Area No. 2	L.S.	100%	L.S.	$_____
09.10.03	Service Area No. 3	L.S.	100%	L.S.	$_____
09.10.04	Service Area No. 4	L.S.	100%	L.S.	$_____
09.10.05	Service Area No. 5	L.S.	100%	L.S.	$_____
09.10.06	Service Area No. 6	L.S.	100%	L.S.	$_____
09.10.07	Service Area No. 7	L.S.	100%	L.S.	$_____
09.10.08	Service Area No. 8	L.S.	100%	L.S.	$_____
09.11	**Detector Loops (SS 635.22.01)**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.11.01	1.8m Round Detector Loop	Each	32	$_____	$_____
09.11.02	Rectangular Detector Loop	Each	8	$_____	$_____
09.12	**Flasher Post (SS 635.24.01)**				
09.12.01	Flasher Post	Each	4	$_____	$_____
09.13	**Overhead Signs (SS 635.25.01)**				
09.13.01	High Level Warning Sign	Each	1	$_____	$_____
09.14	**Removal of Existing Electrical Equipment**				
09.14.01	Highway 33 from Molnar Road to East of Gallagher Road	L.S.	100%	L.S.	$_____
	TENDER PRICE				**$**_____
	TOTAL TENDER COST (Tender Price plus Site Occupancy (if applicable))				**$**_____

Contractors

Name: _____

Address: _____

_____

City: _____

Postal Code: _____

Phone: _____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Fax: _____

Date: _____

PROJECT No. 22198-0001

HIGHWAY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

ADDENDUM NO. 3

NOTICE TO BIDDERS

1. INVITATION TO TENDER – SUPPLEMENTAL CONDITIONS OF TENDER

SCT2.2. Tender Closing / Opening Date Extended to November 3, 2009.
Time and place remain unchanged.

2. With the deletion of the detention pond works it has become apparent that a redesign of the drainage will be required between Springfield Road and Toovey Road approximately. This will not be forthcoming before the close of tenders. Bidders are to submit their bids based on the most current documents and Schedule of Approximate Quantities and Unit Prices.

3. SCHEDULE 3 – SCHEDULE OF SPECIAL PROVISIONS AND APPENDICES

TABLE OF CONTENTS – APPENDIX/APPENDICES

Add Appendix: Appendix Summary of Results of Turtle Monitoring at Garner Pond, April to July 2009, Summit Environmental, July 31, 2009

SECTION 1 - GENERAL

1.21 Protection of the Environment

d) Construction Environmental Management Plan

For clarification:
The report "Summary of Results of Turtle Monitoring at Garner Pond, April to July, 2009; Summit Environmental Consultants Ltd; July 31, 2009 is now included as an appendix and is not posted as a reference document.

Add the following sentence:
Section 9 Water Act Approval for the works required within the Gopher Creek channel to install the stormwater outfall at station 598+20 on the L600 line is expected by the Ministry on or before February 28, 2010.

SECTION 2 – SITE PREPARATION AND GRADING

2.16 Concrete Sidewalk

b) Concrete Sidewalk and Driveway Entrances

Replace the last paragraph with the following:
The price bid per each installation shall be full compensation for additional labour and materials to form and shape driveway entrances regardless of the driveway area or width.

SECTION 3 – STORM DRAINAGE CONSTRUCTION

3.07 Precast Concrete Catch Basins

Add the following paragraph:
Side gutter inlets are to be used at curb and gutter and at island/median curb areas.
Top gutter inlets are to be used at roadside barrier locations.
The unit price bid will apply to both side and top entry catch basins.

SECTION 5 – WATERMAIN CONSTRUCTION

5.03 Black Mountain Irrigation District Watermain Crossing Works

a) Scope of BMID Works

Add Fourth Bullet

- Supply and installation of 100mm watermains and 1500mm diameter manhole barrel to house future Air Release valves as shown on Drawing R2-699-560.

h) Payment

Add the following sentence:
The lump sum price will also include the supply and installation of 100mm watermains and 1500mm diameter manhole barrel.

4. SCHEDULE 4 - DRAWINGS

Corrections:

Drawing R2-699-302:
Typical Section (Sta. 109+60 to Sta. 128+20) left side
Change: the location of the subdrain (c/w filter fabric) at back of pavement structure to back of the 1m wide support strip at base of the cut slope.

Drawing R2-699-504:
Add Note to text box for DMH 504-3A:
Contractor to locate existing pipe inlet and file fit MH as directed by the Ministry Representative

Drawing R2-699-504:
Add Note to text box for headwall and inlet pipe into DMH 504-3A:
Contractor to locate existing spring source and field fit as directed by the
Ministry Representative

Drawing R2-699-509:
Revise text box for DMH 509-4 to read:
1350mmØ precast conc. MH with ex. stm sewer from detention pond as outside drop to MMCD S3”

Drawing R2-600-509:
Revise text boxes for CB 509-3 and 509-6;
Add note: Gutter Inlet Only

Drawing R2-699-511:
Revise text boxes for the two inlet structures and pipes into DMH 511-7;
Revise pipe material description: 450mmØ concrete pipe

Drawing R2-699-512:
Revise text boxes for CB 512-8 and 512-10;
Add note: Gutter Inlet Only

Drawing R2-699-516:
Storm sewer detail (Station 137+00);
Revise the size of the two inlet pipes: 450mmØ STM

Drawing R2-699-516:
Storm sewer detail (Station 135+00) right side;
Revise note "12m - 600Ø culvert at 1.71%" to read:
600mmØ culvert already extended to edge of Lot 1 by others.

Drawing R2-699-525:
Revise note at DMH 505-1;
Revise MH description: 1350mmØ Outside Drop Manhole

Drawing R2-699-531:
Revise note at DMH 511-7;
Revise MH description: 1350mmØ Manhole

Drawing R2-699-542: **Add symbol and note at waterline highpoint at Sta 14+33.01**
25mmØ Air Valve Assembly (refer to SS-W6)

Drawing R2-699-543:
Irrigation Service at approx. sta. 0+070 south side of Hwy 33
Change: tie-in location sta. 0+025 in order to move it out of the casing.
Delete note in text box and replace with: Abandon existing irrigation service; provide new 38mm irrigation service at sta. 0+025, tie-into prop. pipe with service saddle (refer to 22-W2)

5. SCHEDULE 7 - SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

The following items are amended:

Revise Description of Work:

03.02.09	150mm Perforated Sub Drain
03.05.01	Side and Top Inlet Catch Basins
05.05.02	100mm Blow Off Assembly

Add Item:

05.05.08	Air Valve Assembly

A REVISED SCHEDULE 7, DATED OCTOBER 26, 2009, AND MARKED ‚REVISION B "IS ATTACHED AND MUST BE USED FOR TENDER PURPOSES.

SUMMIT
ENVIRONMENTAL CONSULTANTS LTD.
ISO 9001 AND 14001 CERTIFIED
#200 - 2800 29th Street
Vernon, BC V1T 9P9
TEL 250 545-3672 FAX 250 545-3654
www.summit-environmental.com

July 31, 2009

Reference: 5610-037.03

Ms. Donna Falat, R.P. Bio.
Environmental Services Coordinator
Ministry of Transportation and Infrastructure
231-447 Columbia Street
Kamloops, B.C., V2C 2T3

Dear Ms. Falat:

Re: Summary of Results of Turtle Monitoring at Garner Pond, April to July, 2009

MOT is proposing to expand Highway 33 to a four-lane configuration, between Muir Road and Gallagher Road, east of Kelowna, B.C ("the project"). Summit Environmental Consultants Ltd. (Summit) is pleased to provide to the B.C Ministry of Transportation and Infrastructure (MOT) this letter summarizing the results of turtle monitoring at Garner Pond, on Highway 33, near Kelowna, B.C.

Background

For the majority of the project length (approximately 3.8 km), the surrounding terrestrial habitat is disturbed, with the exception of a small pond, known as Garner Pond. At MOT's request, Summit conducted a detailed assessment of the local Western painted turtle (*Chrysemys picta bellii*)[1] at the pond. The assessment determined that habitat appropriate for turtle nesting was within the proposed expansion of the existing highway (the project area).

Turtle breeding begins within days of emerging from hibernation, in the muddy substrates at the bottom of deep ponds, and continues well through the summer months (COSEWIC 2006). Nesting activities typically commence shortly thereafter and can continue from approximately June to September. Hatching of juvenile turtles from the previous year commence in mid to late June, when temperatures are typically higher.

Upon Summit's recommendation, exclusion fencing with one-way funnel traps was erected surrounding the identified habitat to prevent nesting within the project area. This style of fencing was recommended because of turtle biology, where eggs require one year to mature, thus hatching the following summer, potentially delaying or preventing construction. The one-way funnel traps

[1] The Western painted turtle (*Chrysemys picta bellii*) is currently a provincially blue-listed and federal Species of Special Concern (MOE 2007).

(half of a minnow or 'G'-trap), served to allow any hatchlings, small mammals or other wildlife to access the pond from the upland habitat.

In conjunction with the exclusion fencing, monitoring of the turtle population and their nesting and breeding activities commenced April 21 and ended July 16, 2009. This monitoring was intended to determine if any active nests from 2008 were within the project area; as well as, to determine if any reproductively-active turtles attempted to enter into the identified nesting habitat in 2009.

Methods

Summit conducted weekly monitoring visits to the pond, from approximately April 21, 2009 through to July 16, 2009. Upon each visit, the number of turtles basking, swimming or foraging within the project area was counted; and age class was also recorded. All surveys were conducted to the methods outlined in Inventory Methods for Pond-breeding Amphibians and Painted Turtles (RISC 1998). Additionally, any turtle activity within the project area, or within the aquatic habitat adjacent to the project area, was noted specifically.

In addition to the fenced project area, other terrestrial habitats deemed suitable for nesting outside of the project area were also observed for nesting or hatching. This was done to provide insight into the local turtle breeding activity; as well as to provide indication of where remediated or restored nesting habitat could be located, once project activities were complete.

The results of these weekly monitoring visits are summarized in Table 1.

Results

Table 1, below, summarizes the results of each monitoring event, conducted between April 21 and July 16.

Table 1. Summary of Monitoring at Garner Pond, April 22 – July 16, 2009.

MONITORING DATE	OBSERVER/MONITOR	OBSERVATIONS AND COMMENTS
April 22	A. de Jong Westman & B. Rozander (Summit)	Project fence erected April 21, with 1-way funnel traps. Turtles in water near area. Some sand mounds within excluded area, but no eggs found.
May 7	A. de Jong Westman (Summit)	Turtles in water; none observed near project area.
May 13	A. de Jong Westman (Summit)	Turtles in water; none observed near project area.
May 22	A. de Jong Westman (Summit)	Turtles in water; none observed near project area.
June 3	A. de Jong Westman (Summit)	Turtles in water; none observed near project area. Red winged blackbird (*Agelaius phoeniceus*) nest at fenceline. All eggs hatched.
June 9	A. de Jong Westman (Summit)	Turtles in water; none observed near project area.
June 19	A. de Jong Westman	Single adult male turtle at edge of fencing, foraging in cattails.

	(Summit)	
June 24	A. de Jong Westman (Summit)	Young hatchling turtles observed in red-osier dogwood (*Cornus stolonifera*) at west-end of pond. None observed within project area.
July 9	A. de Jong Westman (Summit)	12 young hatchling turtles observed in cattails at west-end of pond.
July 16	A. de Jong Westman (Summit)	Turtles in water; none observed in project area. Pair of sora rails (*Porzana carolina*) actively foraging and calling in red-osier dogwood thicket and cattails at west-end of pond.

Discussion

The primary purpose of the monitoring was to determine whether turtle hatching was occurring within the project area. Secondary purposes of the monitoring were to determine where hatching was occurring, if not within the project area. Although no hatchlings were observed within the project area, the funnel traps were placed such that these small animals would be able to migrate to the pond unhindered. Therefore, the lack of turtle observations within the project area should not be seen as a lack of nesting within the project area. Direct observations of hatching turtles were not made during any of the monitoring visits. However, several sand mounds were noted in the initial April assessment.

In addition to monitoring of the excluded habitat within the project area, additional appropriate nesting habitats were monitored. Throughout the monitoring period, sand mounds indicative of turtle nesting on the sandy banks around Garner Pond increased in number and density. These mounds were particularly prevalent on the southwest and eastern banks of the pond. Approximately 12 hatchling turtles were observed in the July 9, 2009 monitoring visit.

Conclusions and Recommendations

As discussed during the April 21, 2009 site meeting, we recommend the creation and restoration of nesting habitat outside of the project area as mitigation for the pending loss of nesting habitat is recommended (Figure 1). This includes the placement of sand-loam material within the identified nest restoration area, outside of the major activity window (i.e. October to March). Material should only be deposited once a thorough but sensitive excavation of the area has been completed, to safely salvage and relocate any turtle eggs already deposited within the area. This should be conducted or monitored by a qualified biologist.

In addition to restoring and creating nesting habitat, long-term monitoring of the Garner Pond turtle population is recommended. Detailed surveys during the major activity window (April to October), at least three (3) times per season, should be conducted over a period of a minimum of five (5) years (RISC 1998). Timing of surveys should aim to observe the nesting, breeding and hatching periods. This intensity will provide an accurate depiction of the status and viability of the turtle population, post-construction.

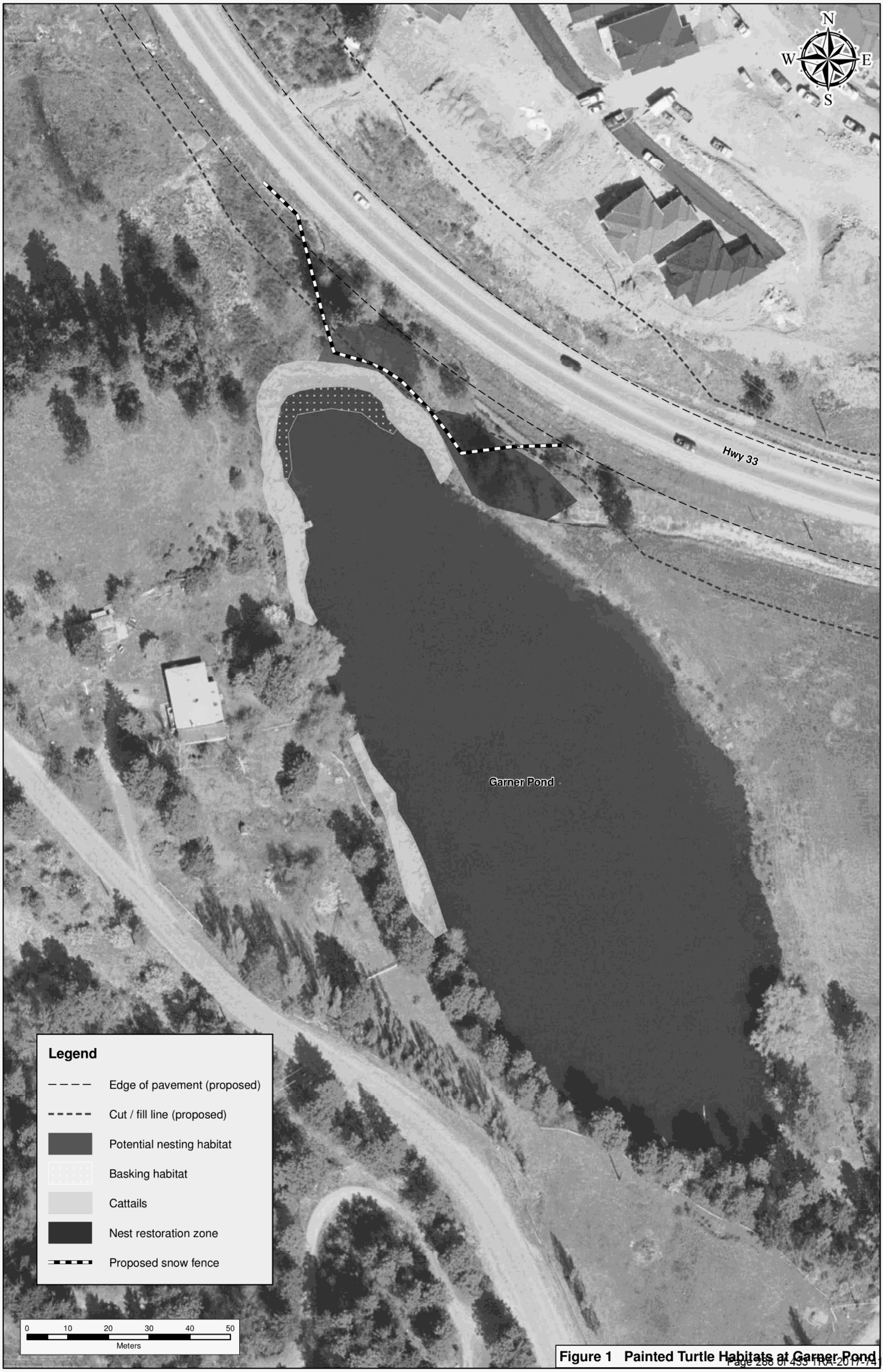


Figure 1 Painted Turtle Habitats at Garner Pond

We trust that this summary letter meets your needs. Please contact me with any questions or comments that you may have.

Yours truly,

Summit Environmental Consultants Ltd.

Alexandra de Jong Westman, M.Sc., CEPIT
Biologist

Reviewed By:

Corinna Hoodicoff, M.Sc., R.P.Bio
Senior Biologist

Attachment 1: Photo-documentation of Monitoring Activities

References

COSEWIC 2006. COSEWIC assessment and status report on the Western Painted Turtle *Chrysemys picta bellii* (Pacific Coast population, Intermountain-Rocky Mountain population and Prairie/Western Boreal - Canadian Shield population) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 40 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

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Resource Inventory Standards Committee (RISC). 1998. Survey Methods for Pond-Breeding Amphibians and Painted Turtles. Standards for Components of British Columbia's Biodiversity No. 37. Ministry of Environment, Lands and Parks. Victoria, B.C.

Revision: B **Revision Date:** 2009/10/26

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
01	**SECTION 1 - GENERAL**				
01.01	Mobilization	L.S.	100%	L.S.	$_____
01.02	Quality Management	L.S.	100%	L.S.	$_____
01.03	Traffic Management	L.S.	100%	L.S.	$_____
01.04	Provisional Sum for Site Modifications (SP 1.31)	P.S.	$50,000.00	P.S.	$50,000.00
02	**SECTION 2 - SITE PREPARATION AND GRADING**				
02.01	**Clearing and Grubbing**				
02.01.01	Clearing and Grubbing	Hectare	24.40	$_____	$_____
02.02	**Removals and Relocations**				
02.02.01	Remove Existing CSP Culverts and Storm Pipes	Metre	810	$_____	$_____
02.02.02	Remove Concrete Roadside Barrier	Each	13	$_____	$_____
02.02.03	Remove Existing Raised Medians, Islands and Curbs	Square Metre	170	$_____	$_____
02.02.04	Remove Existing Curb and Gutter	Metre	455	$_____	$_____
02.02.05	Remove Existing Sidewalk	Square Metre	410	$_____	$_____
02.02.06	Remove Existing Concrete Block Retaining Wall	L.S.	100%	L.S.	$_____
02.02.07	Sawcut Existing Asphalt Pavement	Metre	600	$_____	$_____
02.02.08	Remove Existing Asphalt Pavement	Square Metre	10,300	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.03	**Roadway and Drainage Excavation**				
02.03.01	Organic Stripping	Cubic Metre	39,970	$_____	$_____
02.03.02	Type A Excavation	Cubic Metre	1,680	$_____	$_____
02.03.03	Type D Excavation	Cubic Metre	78,960	$_____	$_____
02.03.04	Type D Borrow	Cubic Metre	10,000	$_____	$_____
02.03.05	Type D Unsuitable Material Excavation	Cubic Metre	5,000	$_____	$_____
02.03.06	Rock Embankment	Cubic Metre	54,000	$_____	$_____
02.04	**Granular Materials**				
02.04.01	High Fines Surfacing Aggregate	Cubic Metre	90	$_____	$_____
02.04.02	25mm Well Graded Base Course (WGB)	Cubic Metre	25,410	$_____	$_____
02.04.03	Select Granular Sub Base (SGSB)	Cubic Metre	24,130	$_____	$_____
02.05	**Corrugated Steel Pipe Culverts**				
02.05.01	400mm Diameter CSP 1.6mm W.T.	Metre	30	$_____	$_____
02.05.02	600mm Diameter CSP 2.0mm W.T.	Metre	30	$_____	$_____
02.05.03	900mm Diameter CSP 2.0mm W.T.	Metre	5	$_____	$_____
02.06	**Concrete Curbs and Sidewalks**				
02.06.01	Concrete Curb and Gutter	Metre	5,340	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
02.06.02	Concrete Sidewalk	Square Metre	7,550	$_____	$_____
02.06.03	Concrete Driveway Entrances	Each	9	$_____	$_____
02.06.04	Concrete Median Curb	Metre	6,185	$_____	$_____
02.06.05	Concrete Median and Quadrant Island Surfacing	Square Metre	5,300	$_____	$_____
02.07	**Fencing**				
02.07.01	Type "D" Fencing 1.8m	Metre	65	$_____	$_____
02.07.02	Relocate Type D School Fence	Metre	305	$_____	$_____
02.07.03	Walkway Gate	L.S.	100%	L.S.	$_____
03	**SECTION 3 - STORM DRAINAGE**				
03.01	**Removals and Adjustments**				
03.01.01	Remove Existing Manholes	Each	10	$_____	$_____
03.01.02	Remove Existing Catch Basins	Each	12	$_____	$_____
03.01.03	Remove Exiting Inlet Structures	Each	2	$_____	$_____
03.01.04	Replace Existing Manhole Frames and Cover San and Storm	Each	40	$_____	$_____
03.01.05	Adjust Existing Storm and Sanitary Manholes to Grade	Each	29	$_____	$_____
03.02	**Storm Drains**				
03.02.01	200mm SDR 35 PVC	Metre	1,590	$_____	$_____
03.02.02	250mm SDR 35 PVC	Metre	1,430	$_____	$_____
03.02.03	300mm SDR 35 PVC	Metre	280	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.02.04	375mm SDR 35 PVC	Metre	365	$_____	$_____
03.02.05	450mm C14-3 Concrete	Metre	464	$_____	$_____
03.02.06	525mm C14-3 Concrete	Metre	650	$_____	$_____
03.02.07	600mm C14-3 Concrete	Metre	205	$_____	$_____
03.02.08	675mm C14-3 Concrete	Metre	749	$_____	$_____
03.02.09	150mm Perforated Sub Drain	Metre	590	$_____	$_____
03.03	**Oil-Grit Separators**				
03.03.01	Oil-Grit Separator at Garner Pond	L.S.	100%	L.S.	$_____
03.03.02	Oil-Grit Separator at Gallagher Road	L.S.	100%	L.S.	$_____
03.04	**Precast Concrete Manholes**				
03.04.01	1050mm Concrete Manhole	Each	32	$_____	$_____
03.04.02	1200mm Concrete Manhole	Each	16	$_____	$_____
03.04.03	1350mm Concrete Manhole	Each	14	$_____	$_____
03.04.04	1350mm Concrete Manhole over Existing Storm Main	Each	2	$_____	$_____
03.04.05	Item Deleted				
03.04.06	1050mm Concrete Outside Drop Manhole	Each	3	$_____	$_____
03.04.07	1200mm Concrete Outside Drop Manhole	Each	1	$_____	$_____
03.04.08	1350mm Concrete Outside Drop Manhole	Each	2	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
03.04.09	1500mm Concrete Outside Drop Manhole	Each	1	$_____	$_____
03.05	**Precast Concrete Catch Basins**				
03.05.01	Side and Top Inlet Catch Basins	Each	113	$_____	$_____
03.05.02	Variable Depth Side Inlet Catch Basin	Each	15	$_____	$_____
03.05.03	Lawn Basin with Concrete Apron	Each	28	$_____	$_____
03.06	**Headwalls**				
03.06.01	Headwall (300mm)	Each	1	$_____	$_____
03.06.02	Headwall (375mm)	Each	1	$_____	$_____
03.06.03	Headwall (450mm)	Each	1	$_____	$_____
03.06.04	Headwall (600mm)	Each	4	$_____	$_____
03.06.05	Headwall (675mm)	Each	3	$_____	$_____
03.07	**Inlet Structures**				
03.07.01	Concrete Inlet Structure (200mm)	Each	6	$_____	$_____
03.08	**Erosion Protection**				
03.08.01	Class 10 kg Rip Rap	Cubic Metre	155	$_____	$_____
03.08.02	Class 25 kg Rip Rap	Cubic Metre	35	$_____	$_____
03.08.03	Class 50 kg Rip Rap	Cubic Metre	30	$_____	$_____
04	**SECTION 4 - PROPRIETARY STRUCTURES**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
04.01	MSE Retaining Wall	L.S.	100%	L.S.	$_____
04.02	Gopher Creek Pedestrian Tunnel	L.S.	100%	L.S.	$_____
05	**SECTION 5 - WATERMAINS**				
05.01	**BMID Watermain and Casing**				
05.01.01	Install 1050mm Watermain and Casing	L.S.	100%	L.S.	$_____
05.02	**Removals and Adjustments**				
05.02.01	Remove Fire Hydrant	Each	5	$_____	$_____
05.02.02	Cap Abandoned Watermain	Each	10	$_____	$_____
05.02.03	Adjust Valve Covers to Grade	Each	12	$_____	$_____
05.03	**Watermains**				
05.03.01	100mm PVC Class 150 C900	Metre	53	$_____	$_____
05.03.02	150mm PVC Class 150 C900	Metre	385	$_____	$_____
05.03.03	200mm PVC Class 150 C900	Metre	350	$_____	$_____
05.03.04	250mm PVC Class 150 C900	Metre	290	$_____	$_____
05.03.05	300mm PVC Class 150 C900	Metre	120	$_____	$_____
05.03.06	400mm PVC Class 150 C905	Metre	100	$_____	$_____
05.04	**Watermain Casing**				
05.04.01	200mm Steel Casing	Metre	40	$_____	$_____
05.04.02	300mm Steel Casing	Metre	55	$_____	$_____
05.04.03	450mm PVC Ultra Rib	Metre	30	$_____	$_____
05.04.04	525mm PVC Ultra Rib	Metre	20	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
05.04.05	600mm PVC Ultra Rib	Metre	65	$_____	$_____
05.05	**Watermain Fittings and Hydrants**				
05.05.01	Fire Hydrant Assembly	Each	6	$_____	$_____
05.05.02	100mm Blow Off Assembly	Each	1	$_____	$_____
05.05.03	100mm Gate Valve	Each	1	$_____	$_____
05.05.04	150mm Gate Valve	Each	2	$_____	$_____
05.05.05	200mm Gate Valve	Each	2	$_____	$_____
05.05.06	250mm Gate Valve	Each	1	$_____	$_____
05.05.07	300mm Gate Valve	Each	1	$_____	$_____
05.05.08	Air Valve Assembly	Each	1	$_____	$_____
05.06	**Service Connections**				
05.06.01	25mm Service Connection	Each	14	$_____	$_____
05.06.02	32mm Service Connection	Each	1	$_____	$_____
05.06.03	38mm Service Connection	Each	1	$_____	$_____
05.06.04	65mm Service Connection	Each	1	$_____	$_____
05.06.05	75mm Service Connection	Each	3	$_____	$_____
06	**SECTION 6 - PAVING**				
06.01	**Superpave Asphalt Mix Aggregate into Stockpile**				
06.01.01	Superpave Asphalt Mix Aggregate into Stockpile	Tonne	28,590	$_____	$_____
06.02	**Pulverize Existing Asphalt Pavement**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
06.02.01	Pulverize Existing Asphalt Pavement	Square Metre	54,640	$_____	$_____
06.03	**Emulsified Primer and Tack Coat**				
06.03.01	Supply Emulsified Primer and Tack Coat	Litre	178,260	$_____	$_____
06.03.02	Spray Emulsified Primer and Tack Coat	Litre	178,260	$_____	$_____
06.04	**Superpave Asphalt Pavement**				
06.04.01	Bottom Lift	Tonne	14,290	$_____	$_____
06.04.02	Top Lift	Tonne	14,970	$_____	$_____
06.04.03	Allowance for Payment Adjustments - SS502	P.S.	$135,000.00	P.S.	$135,000.00
06.04.04	Shouldering	Cubic Metre	200	$_____	$_____
06.05	**Concrete Roadside Barrier**				
06.05.01	Relocate Existing CRB	Each	363	$_____	$_____
06.05.02	Install Ministry Supplied CRB	Each	490	$_____	$_____
06.05.03	Supply and Install CRB	Each	475	$_____	$_____
07	**SECTION 7 - SIGNING and PAVEMENT MARKINGS**				
07.01	**Sign Removals**				
07.01.01	Remove Existing Signs	Each	65	$_____	$_____
07.02	**Supply and Install New Signs**				
07.02.01	Supply and Install Single Post and Sign Boards	Each	98	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
07.02.02	Supply and Install Two Posts and Sign Boards	Each	6	$_____	$_____
07.02.03	Supply and Install Signs on Luminaires	Each	11	$_____	$_____
07.02.04	Supply and Install CRB Mounted Signs	Each	4	$_____	$_____
07.03	**Pavement Markings**				
07.03.01	Permanent Pavement Markings Layout	L.S.	100%	L.S.	$_____
07.03.02	Intersection Pavement Markings	Square Metre	640	$_____	$_____
07.03.03	Thermoplastic Pavement Markings	Square Metre	50	$_____	$_____
08	**SECTION 8 - LANDSCAPE AND ENVIRONMENT**				
08.01	Supply and Place Topsoil	Square Metre	4,000	$_____	$_____
08.02	Revegetation Seeding and Mulching	Hectare	12.50	$_____	$_____
08.03	Tree and Shrub Planting (No. 1 pot size)	Each	1,875	$_____	$_____
08.04	Cattails (50 plug size)	Each	200	$_____	$_____
08.05	Additional Environmental Mitigation (SP 8.04)	P.S.	$10,000.00	P.S.	$10,000.00
09	**SECTION 9 - ELECTRICAL**				
09.01	**Concrete Bases (SS 635.07.06)**				
09.01.01	Type C Concrete Bases	Each	95	$_____	$_____
09.01.02	Type L2 Concrete Bases	Each	13	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.01.03	Post Mounted Flasher Concrete Base (SS 635.07.06)	Each	4	$_____	$_____
09.01.04	Controller Bases for Type S Cabinet (SS 635.07.06)	Each	2	$_____	$_____
09.02	**Junction Boxes (SS 635.08.01)**				
09.02.01	Type 10 Junction Box	Each	89	$_____	$_____
09.02.02	Type 11 Junction Box	Each	13	$_____	$_____
09.02.03	Type 12 Junction Box	Each	24	$_____	$_____
09.02.04	Type 14 Junction Box	Each	2	$_____	$_____
09.03	**Concrete Junction Boxes (SS 635.08.02)**				
09.03.01	Concrete Junction Box	Each	7	$_____	$_____
09.04	**Concrete Vaults (SS 635.08.02**				
09.04.01	Concrete Vault	Each	2	$_____	$_____
09.05	**Conduits (SS 635.09.01)**				
09.05.01	25mm RPVC Conduit	Metre	50	$_____	$_____
09.05.02	50mm RPVC Conduit	Metre	9,090	$_____	$_____
09.06	**Trenching and Backfilling (SS 635.10.01**				
09.06.01	Trenching and Backfilling	Metre	6,450	$_____	$_____
09.07	**Signal Poles (SS 635.17.09)**				
09.07.01	**Highway 33 at Loseth Road**				

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.07.01.01	Signal Pole 1	Each	1	$_____	$_____
09.07.01.02	Signal Pole 2	Each	1	$_____	$_____
09.07.01.03	Signal Pole 3	Each	1	$_____	$_____
09.07.01.04	Signal Pole 4	Each	1	$_____	$_____
09.07.01.05	L Pole Adv. Warn. Flash. A1 (w/o Roadway Luminaire)	Each	1	$_____	$_____
09.07.01.06	L Pole Adv. Warn. Flash. A2 (w/Roadway Luminaire)	Each	1	$_____	$_____
09.07.01.07	Pedestrian Push button Posts	Each	2	$_____	$_____
09.07.02	**Highway 33 at Gallagher Road**				
09.07.02.01	Signal Pole 1	Each	1	$_____	$_____
09.07.02.02	Signal Pole 2	Each	1	$_____	$_____
09.07.02.03	Signal Pole 3	Each	1	$_____	$_____
09.07.02.04	Signal Pole 4	Each	1	$_____	$_____
09.07.02.05	L Pole Adv. Warn. Flash. A1 (w/Roadway Luminaire)	Each	1	$_____	$_____
09.07.02.06	Relocate Adv. Warn. Flash. A2	Each	1	$_____	$_____
09.07.02.07	Pedestrian Push button Posts	Each	1	$_____	$_____
09.08	**Luminaire Poles (SS 635.17.10)**				
09.08.01	9.0m Luminaire Pole	Each	1	$_____	$_____
09.08.02	11.0m Luminaire Pole	Each	90	$_____	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.08.03	Relocate Existing 11m Luminaire Pole c/w communications system	Each	1	$_____	$_____
09.08.04	Replace Existing 150W Drop Lens with New 150W Flat Glass Lens	Each	1	$_____	$_____
09.09	**Service Equipment (635.18.01)**				
09.09.01	Service Area No. 1	L.S.	100%	L.S.	$_____
09.09.02	Service Area No. 2	L.S.	100%	L.S.	$_____
09.09.03	Service Area No. 3	L.S.	100%	L.S.	$_____
09.09.04	Service Area No. 4	L.S.	100%	L.S.	$_____
09.09.05	Service Area No. 5	L.S.	100%	L.S.	$_____
09.09.06	Service Area No. 6	L.S.	100%	L.S.	$_____
09.09.07	Service Area No. 7	L.S.	100%	L.S.	$_____
09.09.08	Service Area No. 8	L.S.	100%	L.S.	$_____
09.10	**Wiring (SS 635.19.01)**				
09.10.01	Service Area No. 1	L.S.	100%	L.S.	$_____
09.10.02	Service Area No. 2	L.S.	100%	L.S.	$_____
09.10.03	Service Area No. 3	L.S.	100%	L.S.	$_____
09.10.04	Service Area No. 4	L.S.	100%	L.S.	$_____
09.10.05	Service Area No. 5	L.S.	100%	L.S.	$_____
09.10.06	Service Area No. 6	L.S.	100%	L.S.	$_____
09.10.07	Service Area No. 7	L.S.	100%	L.S.	$_____
09.10.08	Service Area No. 8	L.S.	100%	L.S.	$_____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Item#	Description of Work	Unit of Measure	Approx Quantity	Unit Price	Extended Amount
09.11	**Detector Loops (SS 635.22.01)**				
09.11.01	1.8m Round Detector Loop	Each	32	$_____	$_____
09.11.02	Rectangular Detector Loop	Each	8	$_____	$_____
09.12	**Flasher Post (SS 635.24.01)**				
09.12.01	Flasher Post	Each	4	$_____	$_____
09.13	**Overhead Signs (SS 635.25.01)**				
09.13.01	High Level Warning Sign	Each	1	$_____	$_____
09.14	**Removal of Existing Electrical Equipment**				
09.14.01	Highway 33 from Molnar Road to East of Gallagher Road	L.S.	100%	L.S.	$_____
	TENDER PRICE				**$**_____
	TOTAL TENDER COST (Tender Price plus Site Occupancy (if applicable))				**$**_____

Contractors **Name:** _____

Address: _____

_____

City: _____

SCHEDULE OF APPROXIMATE QUANTITIES AND UNIT PRICES

Project No: 22198-0001
Project Name: Highway 33 - Four Laning, Muir Road to Gallagher Road

Postal Code: _____

Phone: _____

Fax: _____

Date: _____

BRITISH COLUMBIA
The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

PROJECT No. 22198–0001

HIGHWAY No. 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

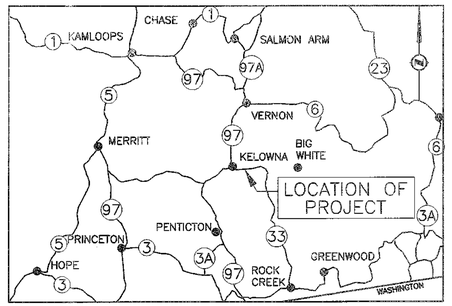
STA. 99+00.000 to STA. 143+60.000

(4.460 kilometres)

GRADING & PAVING CONTRACT

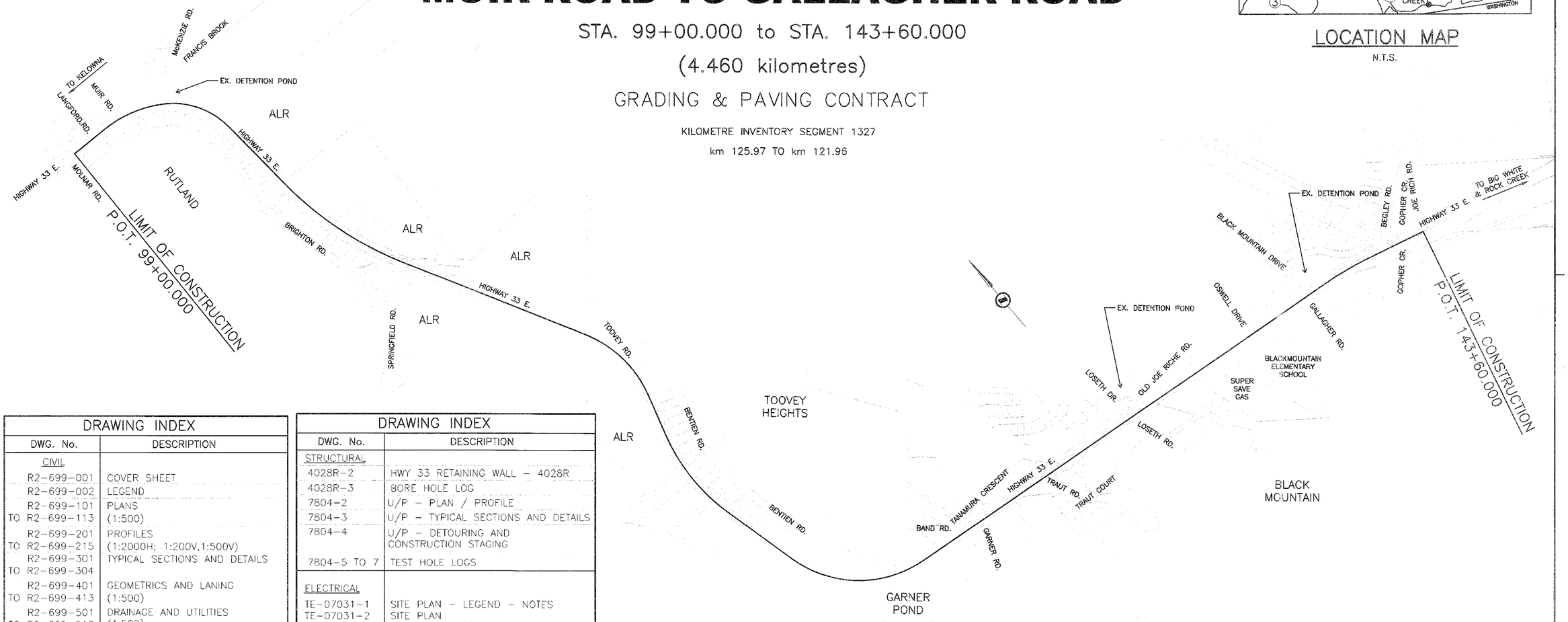
KILOMETRE INVENTORY SEGMENT 1327

km 125.97 TO km 121.96



LOCATION MAP

N.T.S.



KEY MAP

0 1:5000 250

DRAWING INDEX

DWG. No.	DESCRIPTION
CIVIL	
R2–699–001	COVER SHEET
R2–699–002	LEGEND
R2–699–101 TO R2–699–113	PLANS (1:500)
R2–699–201 TO R2–699–215	PROFILES (1:2000H; 1:200V,1:500V)
R2–699–301 TO R2–699–304	TYPICAL SECTIONS AND DETAILS
R2–699–401 TO R2–699–413	GEOMETRICS AND LANING (1:500)
R2–699–501 TO R2–699–516	DRAINAGE AND UTILITIES (1:500)
R2–699–521 TO R2–699–534	STORM SEWER PROFILES (1:500H; 1:125V)
R2–699–541 TO R2–699–545	WATERMAIN RELOCATION (1:500H; 1:125V)
R2–699–560 TO R2–699–562	BMID 2–1050mmø WAT CROSSING
R2–699–601 TO R2–699–604	SPOT ELEVATIONS (1:500)
R2–699–701 TO R2–699–714	SIGNING AND PAVEMENT MARKINGS (1:500)

DRAWING INDEX

DWG. No.	DESCRIPTION
STRUCTURAL	
4028R–2	HWY 33 RETAINING WALL – 4028R
4028R–3	BORE HOLE LOG
7804–2	U/P – PLAN / PROFILE
7804–3	U/P – TYPICAL SECTIONS AND DETAILS
7804–4	U/P – DETOURING AND CONSTRUCTION STAGING
7804–5 TO 7	TEST HOLE LOGS
ELECTRICAL	
TE–07031–1	SITE PLAN – LEGEND – NOTES
TE–07031–2	SITE PLAN
TE–07031–3	SITE PLAN
TE–07031–4	SITE PLAN
TE–07031–5	SITE PLAN
TE–07031–6	SITE PLAN
TE–07031–7	SITE PLAN – WIRING DIAGRAM
TE–07031–8	ELEVATIONS – WIRING DIAGRAM
TE–07031–9	SITE PLAN – SIGNAL DISPLAY – LOOP TABLE – COLOUR CODE
TE–07031–10	WIRING DIAGRAM – ELEVATIONS
TE–07031–11	SITE PLAN – SIGNAL DISPLAY – LOOP TABLE – COLOUR CODE
TE–07031–12	WIRING DIAGRAM – ELEVATIONS

SNC·LAVALIN

REGIONAL MANAGER OF HIGHWAY ENGINEERING	REGIONAL DIRECTOR
DATE SEPT 17, 2009	DATE Sept 18, 2009

NOTE:
HIGHWAY 33 FOR THIS PROJECT IS CONSIDERED TO RUN WEST TO EAST.

DRAWING No.
R2–699–001

CANCEL PRINTS BEARING PREVIOUS LETTER

H–2598

LEGEND

EXISTING

- POWER POLE
- TELEPHONE POLE
- POWER/TELEPHONE POLE
- POWER POLE w/TRANSFORMER
- POWER/TEL POLE w/TRANSFORMER
- HIGH TENSION POWER
- UTILITY POLE
- LAMP STANDARD
- GUY POLE POWER
- GUY POLE TELEPHONE
- GUY WIRE
- TELEPHONE PEDESTAL TERMINAL
- HIGHWAYS MONUMENT
- STANDARD BRASS CAP
- IRON PIN
- CAPPED IRON PIN
- GEODETIC BENCHMARK
- WATER VALVE
- FIRE HYDRANT
- NATURAL GAS METER
- REFERENCE HUB ▲
- DECORATIVE TREE
- FUEL TANK
- GATE POST
- MANHOLE
- TEST HOLE, AUGER HOLE, BORE HOLE TH, AH, BH
- TEST PIT TP
- UNDERGROUND MARKER
- DELINEATOR POST
- CATCH BASIN
- ASPHALT SPILLWAY
- WELL
- ROAD SIGN

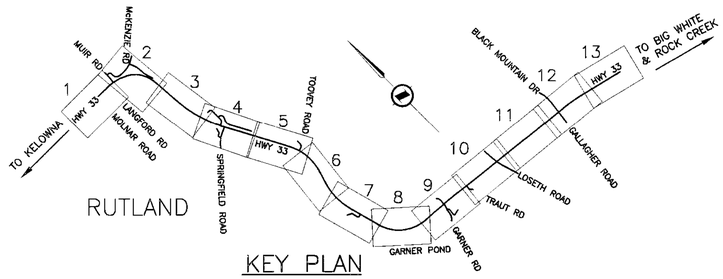
EXISTING

- BUILDING
- CONCRETE PAD
- RETAINING WALL
- GRASS/LAWN EDGE
- UNDERGROUND NATURAL GAS
- UNDERGROUND WATER
- UNDERGROUND TELEPHONE
- UNDERGROUND ELECTRICAL
- PVC PIPE
- DISTRICT LOT BOUNDARY
- QUARTER SECTION BOUNDARY
- LEGAL LOT BOUNDARY
- EASEMENT BOUNDARY
- TREE LINE
- FENCE
- PAINTED CENTRE LINE
- PAVEMENT EDGE
- SHOULDER EDGE
- GRAVEL ROAD (RE)
- PRESENT WATER LEVEL
- HIGH WATER MARK
- CREEK/DITCH CENTRE
- SWAMP
- CULVERT

PROPOSED

- CONTROL CENTRE LINE
- RIGHT OF WAY
- TEMPORARY CONSTRUCTION LICENCE ACCESS
- CLEARING AND GRUBBING — CL & GR
- TOES — C — C/F — F
- FENCE
- DITCHING
- SWALE
- CULVERT
- CATCHBASIN (CB) OR LAWN BASIN (LB)
- ASPHALT SPILLWAY
- VARIABLE DEPTH CATCH BASIN (VDCB)
- MANHOLE (MH)
- HEADWALL
- WATER QUALITY POND
- RIPRAP
- CONCRETE ROADSIDE BARRIER (CRB)
- RETAINING WALL
- REMOVE EXISTING ASPHALT ONLY
- REMOVE EXISTING ASPHALT AND RECONSTRUCT ROAD STRUCTURE
- ASPHALT DRAINAGE CURB (ADC)
- TRANSFORMER ON POLE
- HYDRO POLE
- STORM LINE — S — S — S
- WATER LINE — W — W — W
- POWER LINE — P — P — P
- UNDERGROUND TELEPHONE LINE — UT — UT — UT
- POWER TELEPHONE LINE — P/T — P/T — P/T
- GRAVEL ROAD EDGE
- ROAD SIGN
- 2 POST ROAD SIGN
- ENVIRONMENTALLY SENSITIVE AREA TO BE FLAGGED IN FIELD

BEARINGS AND COORDINATES WERE DERIVED FROM THE MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE SURVEY. ELEVATIONS FOR THE PROJECT WERE DERIVED FROM THE MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE SURVEY.



RUTLAND

KEY PLAN

PROFESSIONAL SEAL

Sept 4, 2009

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth — Ministry of Transportation and Infrastructure

City of Kelowna

SCALE

DESIGNED	V. WANG V.W.	DATE 2007-03-30
DRAWN	N. KRUCKENBERG	DATE 2007-03-30
CHECKED	T.STEVENS	DATE 2007-04-13
APPROVED	R. LEE	DATE 2008-06-26

Rev	Date	Description	Signature

REVISIONS

LEGEND

HIGHWAY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER

Sept 4 2009

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-002

AVAILABLE SURVEY CONTROL POINTS			
DESCRIPTION	NORTHING	EASTING	ELEVATION
kel11	N. 529480.542	E. 328986.486	Z. 417.444
H2357	N. 529491.542	E. 329271.743	Z. 417.896
G380	N. 529366.373	E. 329451.902	Z. 428.510
G381	N. 528982.042	E. 329484.683	Z. 454.727
kel12	N. 528703.904	E. 329582.897	Z. 474.862
G382	N. 528229.895	E. 329836.464	Z. 500.727
kel13	N. 527942.798	E. 329831.350	Z. 513.291
G384	N. 527554.395	E. 329840.099	Z. 527.595
G385	N. 527330.836	E. 329925.150	Z. 533.335
G386	N. 527211.114	E. 330225.954	Z. 546.955
G387	N. 527164.357	E. 330653.561	Z. 573.521
kel14	N. 527183.923	E. 330798.069	Z. 577.681
G388	N. 527129.319	E. 330996.215	Z. 578.097
G389	N. 527092.323	E. 331457.817	Z. 579.977
H2387	N. 526894.847	E. 332171.836	Z. 609.570

GIBBS RD. W

GIBBS RD. E

PLAN 15377 A

PLAN 43753

PLAN 15377

LANGFORD RD.

PLAN 15377

RETAIN EXISTING CURB & GUTTER

RETAIN EXISTING CURB & GUTTER

TO KELOWNA

HWY 33 "L100" LINE

91°07'55"

92°32'21"

CL & GR

PLAN 37996

CL & GR

PLAN 37996

kel11
N. 529480.542
E. 328986.486
Z. 417.444

MALLACH RD.

PLAN 32793

PLAN 17606

MOLNAR ROAD

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303

LIMIT OF CONSTRUCTION

POT 99+00.000 TIE TO EXISTING

REMOVE AND DISPOSE OF EXISTING CURB

PULVERIZE EXISTING ASPHALT ON HWY 33. FOR DETAILS SEE DRAWING R2-699-303

PLAN 38876

TS 99+97.651

Ls 40
Qs 3°53'04"

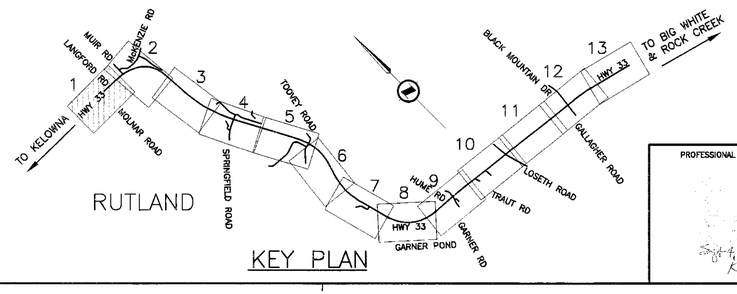
MATCHLINE SEE DRAWING R2-699-102

PLAN 32836

FOR PROFILES SEE DWG. R2-699-201 THRU 215
FOR TYPICAL SECTIONS AND DETAILS SEE DWG. R2-699-301 THRU 304
FOR GEOMETRICS AND LANING SEE DWG. R2-699-401 THRU 413
FOR DRAINAGE AND UTILITIES SEE DWG. R2-699-501 THRU 516
CL & GR TOTAL THIS SHEET: 0.346 ha

GENERAL NOTES:

1. UNLESS OTHERWISE NOTED, ALL EXISTING BARRIERS WITHIN THE LIMITS OF PROJECT, AND NOT NEEDED FOR SAFE AND ORDERLY DIRECTION OF TRAFFIC, TO BE SALVAGED AND DELIVERED TO THE DESIGNATED HIGHWAY WORKS YARD.
2. UNLESS OTHERWISE NOTED, EXISTING PAVEMENT WITHIN THE LIMITS OF PROJECT MARKED TO BE REMOVED SHALL BE DISPOSED OFF THE SITE.
3. UNLESS OTHERWISE NOTED, ALL EXISTING ROAD SIGNS WITHIN THE LIMITS OF PROJECT, AND NOT NEEDED FOR THE SAFE AND ORDERLY DIRECTION OF TRAFFIC, TO BE REMOVED, SALVAGED AND DELIVERED TO THE DESIGNATED HIGHWAY WORKS YARD.
4. ALL UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE ONLY, AND MUST BE FIELD CONFIRMED PRIOR TO CONSTRUCTION.



KEY PLAN

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED V. WANG / R.S. BRAR DATE 2007-11-23
DRAWN N. KRUCKENBERG DATE 2007-11-23
CHECKED K. MacDONALD/R. LEE DATE 2007-11-23
APPROVED R. LEE DATE 2008-08-28

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

PLAN

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 99+000.000 TO STA. 100+30.000

SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REC.	DRAWING No.
2064	22198-0001	2	R2-699-101

FOR GENERAL NOTES
SEE DWG. R2-699-101

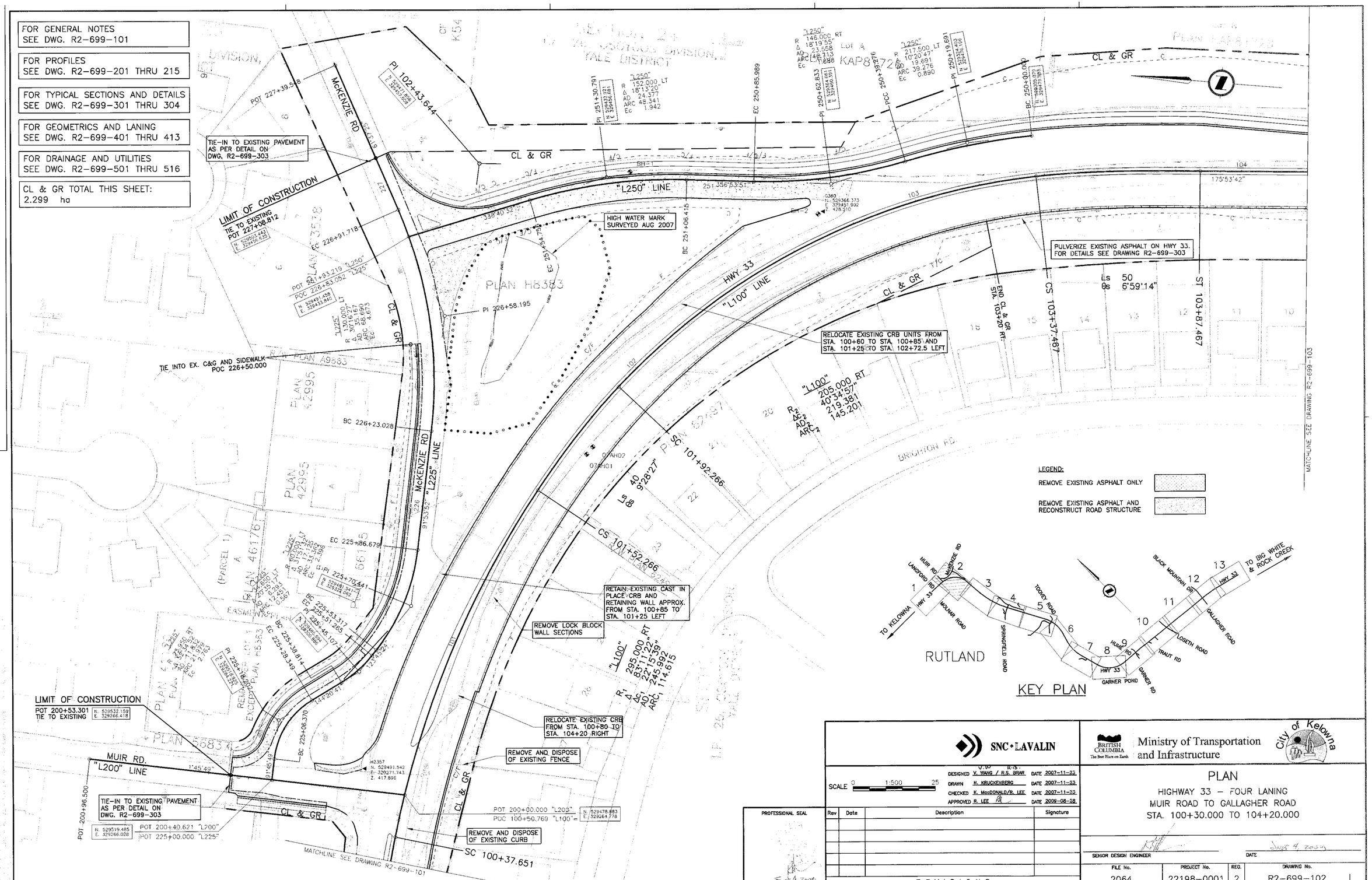
FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

FOR DRAINAGE AND UTILITIES
SEE DWG. R2-699-501 THRU 516

CL & GR TOTAL THIS SHEET:
2.299 ha



SNC·LAVALIN

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	V. WANG / R.S. BRAR	DATE 2007-11-23
DRAWN	N. KRUCKENBERG	DATE 2007-11-23
CHECKED	K. MacDONALD/R. LEE	DATE 2007-11-23
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

PLAN

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 100+30.000 TO 104+20.000

SENIOR DESIGN ENGINEER

Sept 4, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-102

SECTION 24
TP. 26, OSOYOOS DIVISION,
YALE DISTRICT

"L100"
R 920.000 m LT
Δ 24°00'53"
Δc 21°31'25"
AD 215.691
ARC 345.605
Es 20.653

Lot C
PLAN KAP81726

TS 105+49.938
Ls 40
θs 1°14'44"
SC 105+89.938

PLAN 1802
REM LOT B

PLAN 19310

CL & GR

MATCHLINE SEE DRAWING R2-699-102

105 HWY 33 106 107

175°53'42"

"L100" LINE

07TP01

PLAN 48583

MATCHLINE SEE DRAWING R2-699-104

C/E F/C

6381
N. 528982.042
E. 329484.683
Z. 454.727

RELOCATE EXISTING CRB FROM STA. 104+20 TO STA. 107+90 RIGHT

PULVERIZE EXISTING ASPHALT ON HWY 33. FOR DETAILS SEE DRAWING R2-699-303

START CL & GR STA. 107+60 Rt.

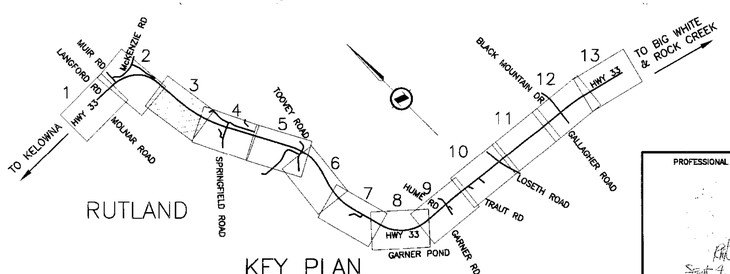
PI 107+55.628
N 528980.847
E 329830.352

PLAN 62497

PLAN 24631

BRIGHTON RD.

FOR GENERAL NOTES SEE DWG. R2-699-101
FOR PROFILES SEE DWG. R2-699-201 THRU 215
FOR TYPICAL SECTIONS AND DETAILS SEE DWG. R2-699-301 THRU 304
FOR GEOMETRICS AND LANING SEE DWG. R2-699-401 THRU 413
FOR DRAINAGE AND UTILITIES SEE DWG. R2-699-501 THRU 516
CL & GR TOTAL THIS SHEET: 1.564 ha



KEY PLAN

PROFESSIONAL SEAL

Sept 9, 2009

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED	V. WANG / R.S. BRAR	DATE 2007-11-23
DRAWN	N. KRUCKENBERG	DATE 2007-11-23
CHECKED	K. MacDONALD/R. LEE	DATE 2007-11-23
APPROVED	R. LEE	DATE 2009-08-28

Rev	Date	Description	Signature

REVISIONS

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Ministry of Transportation and Infrastructure

City of Kelowna

PLAN

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 104+20.000 TO STA. 107+90.000

SENIOR DESIGN ENGINEER

Sept 9 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-103

LIMIT OF CONSTRUCTION
POT 350+00.000
TIE TO EXISTING
N 528860.457
E 329586.261

TEMPORARY CONSTRUCTION LICENSE ACCESS

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303

TEMPORARY CONSTRUCTION LICENSE ACCESS

REMOVE EXISTING BUILDING (BY OTHERS)

LIMIT OF CONSTRUCTION
POT 750+55.000
TIE TO EXISTING
N 528640.5777
E 329723.285

REMOVE EXISTING BUILDING (BY OTHERS)
TEMPORARY CONSTRUCTION LICENSE ACCESS

LIMIT OF CONSTRUCTION
POT 327+10.000
N 528557.374
E 329761.757

REMOVE EXISTING CRB's

PULVERIZE EXISTING ASPHALT ON HWY 33. FOR DETAILS SEE DRAWING R2-699-303

RELOCATE EXISTING CRB FROM STA. 107+90 TO STA. 108+80 RIGHT

RETAIN EXISTING WEATHER STATION

REMOVE EXISTING CRB's

REMOVE AND DISPOSE OF EXISTING ISLANDS

LIMIT OF CONSTRUCTION
POT 300+20.194
TIE TO EXISTING
N 528708.972
E 329541.320

TEMPORARY CONSTRUCTION LICENSE ACCESS

LIMIT OF CONSTRUCTION
POT 376+00.000
TIE TO EXISTING
N 528651.739
E 329507.143

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303

POT 325+00.000 "L325"
POT 375+00.000 "L375"
POS 109+60.188 "L100"= N. 528699.182 E. 329594.808

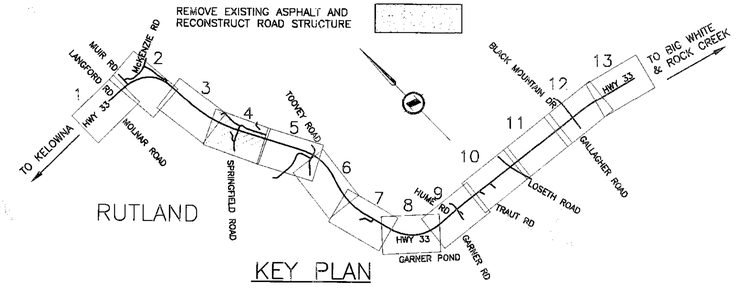
POT 300+78.333 "L300"
POT 375+80.408 "L375" N. 528663.418 E. 329522.861

CS 109+35.542
ST 109+75.542
Ls 40
θs 1°14'44"

MATCHLINE SEE DRAWING R2-699-103

MATCHLINE SEE DRAWING R2-699-105

LEGEND:
REMOVE EXISTING ASPHALT ONLY
REMOVE EXISTING ASPHALT AND RECONSTRUCT ROAD STRUCTURE



KEY PLAN

FOR GENERAL NOTES
SEE DWG. R2-699-101

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

FOR DRAINAGE AND UTILITIES
SEE DWG. R2-699-501 THRU 516

CL & GR TOTAL THIS SHEET:
3.522 ha

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED V. WANG / R.S. BRAR DATE 2007-11-23
DRAWN N. KRUCKENBERG DATE 2007-11-23
CHECKED K. MacDONALD/R. LEE DATE 2007-11-23
APPROVED R. LEE DATE 2009-06-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA The Best Place on Earth
Ministry of Transportation and Infrastructure
City of Kelowna

PLAN
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 107+90.000 TO STA. 111+80.000

SENIOR DESIGN ENGINEER DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-104

PROP. DETENTION POND SEE DETAIL ON DWG. R2-699-514

CL & GR

PLAN 28356

Lot B

PLAN H8385

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303

TS 114+18.016

SC 114+68.016

Ls 50
θs 3°58'44"

HWY 33
"L100" LINE

112

151°52'50"

115

114

CL & GR

PULVERIZE EXISTING ASPHALT ON HWY 33. FOR DETAILS SEE DRAWING R2-699-303

CLOSE

PI 677+71.914
N 528293.677
E 329791.607

CL & GR

Lot A
PLAN 23321

Lot 2
PLAN 1802

MATCHLINE SEE DRAWING R2-699-104

POT 400+80.000

"L400" LINE
TOOVEY ROAD
3°11'43"

POT 400+53.749
TIE TO EXISTING
LIMIT OF CONSTRUCTION

N 528201.941
E 329850.884

"L400"
R 275.000
AD 45°21'15" LT
ARC 217.715
EC 400+52.282

PI 400+39.142
N 528212.642
E 329888.534

BC 400+21.330

CL & GR

PLAN 1

CL & GR

MATCHLINE SEE DRAWING R2-699-106

74°0'58"

25°10'58"

N 528201.941
E 329850.884

POS 415+20.980 "L100"
POT 400+00.000 "L400"
PC 650+00.000 "L650"

CLOSE

675

"L675" LINE

162°05'08"

CL & GR

POT 650+28.835 "L650"
POT 678+60.000 "L675"
N 528194.230
E 329823.756

BC 650+38.214

PI 650+52.921
N 528187.472
E 329799.980

EC 650+68.821

"L650"
R 250.000
AD 32°46'54" LT
ARC 14.707
EC 28.807
2.118

"L650" LINE

TEMPORARY CONSTRUCTION LICENSE ACCESS

MATCHLINE SEE DRAWING R2-699-106

"L675"
150.000
28°52'13"
57.913
4.273
4.717

"L675"
R 150.000
AD 45°21'15" LT
ARC 118.788
EC 16.881
1.924

LIMIT OF CONSTRUCTION
POT 675+00.000
TIE TO EXISTING
N 528218.457
E 329536.928

BC 675+18.881

94°22'04"

676

EC 675+35.762

TEMPORARY CONSTRUCTION LICENSE ACCESS

EC 676+37.864

PI 676+75.778
N 528263.239
E 329702.934

MATCHLINE

PI 675+27.861
N 528265.286
E 329553.807

"L675" LINE

INSERT

EC 677+12.137

TEMPORARY CONSTRUCTION LICENSE ACCESS

CL & GR

CL & GR

MATCHLINE SEE INSERT THIS DRAWING

BC 677+38.544

"L675"
R 150.000
AD 28°52'13" RT
ARC 75.591
EC 14.873
4.717

POT 677+88.855

FOR GENERAL NOTES
SEE DWG. R2-699-101

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

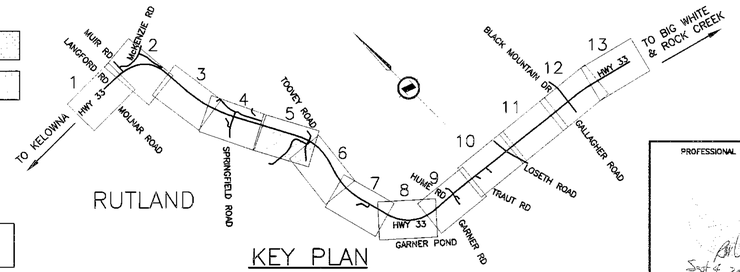
FOR DRAINAGE AND UTILITIES
SEE DWG. R2-699-501 THRU 516

LEGEND:

REMOVE EXISTING ASPHALT ONLY

REMOVE EXISTING ASPHALT AND RECONSTRUCT ROAD STRUCTURE

CL & GR TOTAL THIS SHEET:
3.219 ha


TO KELOWNA
HWY 33
MUIR RD
LANGFORD RD
MOUNTAIN RD
MOUNTAIN VIEW RD
MOUNTAIN RD
MOUNTAIN VIEW RD
MOUNTAIN RD
MOUNTAIN VIEW

PLAN A8769 PLAN A8665

PLAN 18536

PI 115+92.273
N. 528441.992
E. 529831.992

CL & GR

MATCHLINE SEE DRAWING R2-699-105

PLAN 17257

PLAN H5753

Easement
PLAN 32015

TS 118+03.932

Ls 40
θs 2°32'47"

SC 118+43.932

CL & GR

MATCHLINE SEE DRAWING R2-699-107

HWY 33
"L100" LINE
196°53'13"

07AH03
07AH04
07AH05

kel13
N. 527947.798
E. 529831.350
Z. 513.291

116
117
118
119

CL & GR

PLAN 33567
Lot B

CS 117+00.800

Ls 50
θs 3°58'44"

ST 117+50.800

CL & GR

PULVERIZE EXISTING ASPHALT ON HWY 33.
FOR DETAILS SEE DRAWING R2-699-303

PLAN 33567
Lot B

"L100"
R 360.000 RT
Δ 45°00'23"
Δc 37°02'55"
AD 174.256
ARC 232.784
Es 29.983

TEMPORARY
CONSTRUCTION
LICENSE
ACCESS

BST
221°21'04"

"L650" LINE

BC 651+36.155

PI 651+41.634
N. 528137.271
E. 529738.853

LIMIT OF CONSTRUCTION
POT 651+45.000
TIE TO EXISTING

N. 528134.295
E. 529738.857

"L650"
R 650.000 RT
Δ 5°00'33"
Δc 0°38'33"
AD 29.016
ARC 58.065
Es 0.416

EC 651+47.071

AUK

FOR GENERAL NOTES
SEE DWG. R2-699-101

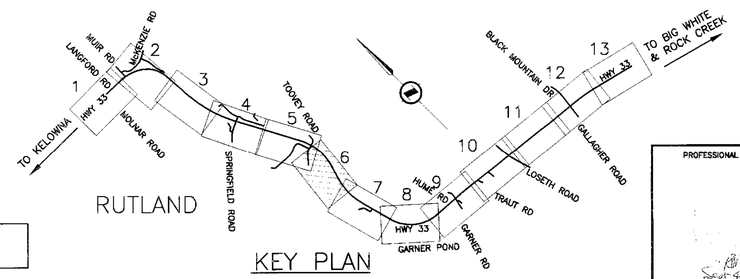
FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

FOR DRAINAGE AND UTILITIES
SEE DWG. R2-699-501 THRU 516

CL & GR TOTAL THIS SHEET:
1.973 ha



RUTLAND

KEY PLAN

SNC·LAVALIN

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	V. WANG / R.S. BRAR	DATE 2007-11-23
DRAWN	N. KRUCKENBERG	DATE 2007-11-23
CHECKED	K. MacDONALD/R. LEE	DATE 2007-11-23
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

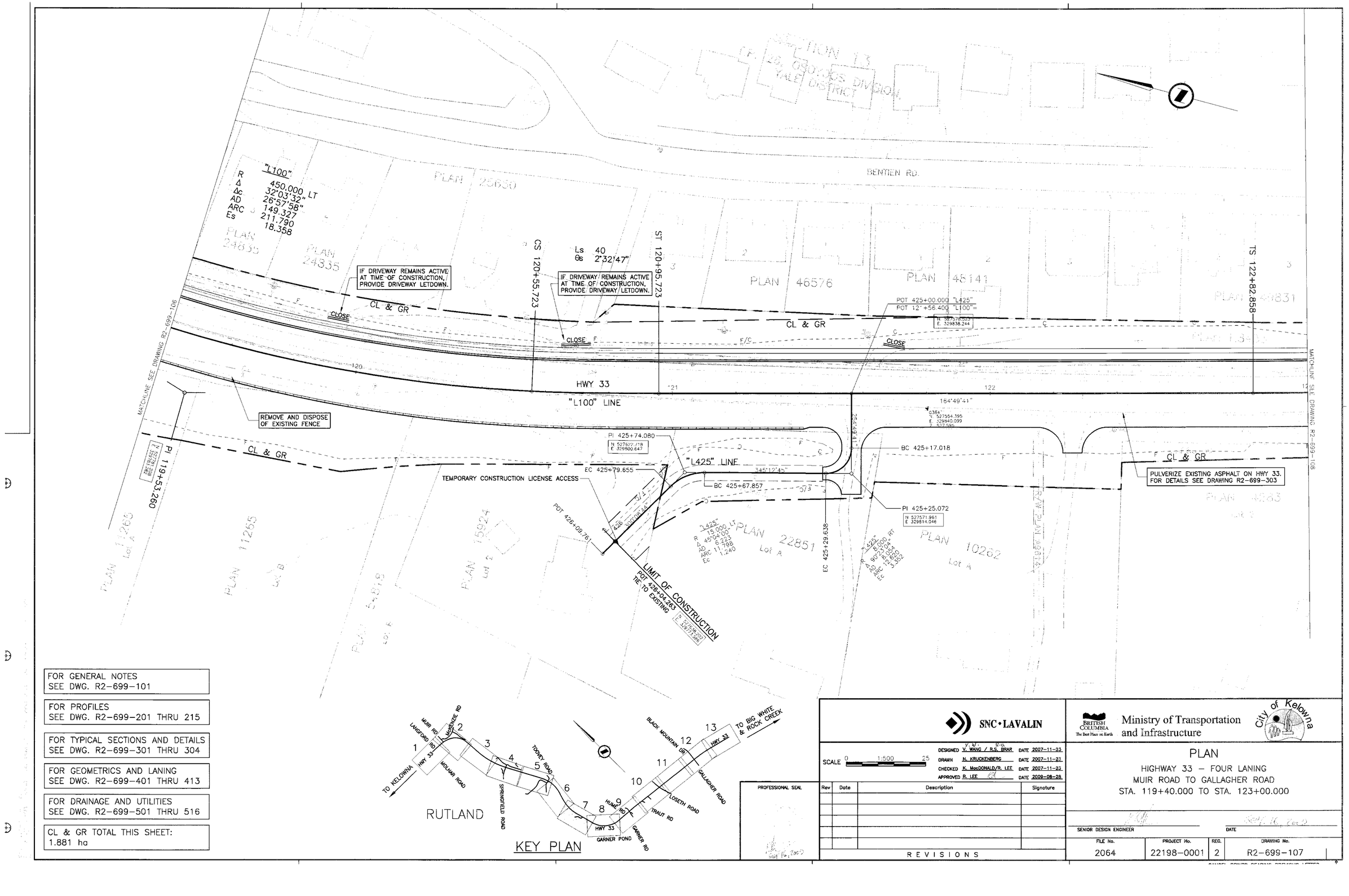
PLAN

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 115+60.000 TO STA. 119+40.000

SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-106



FOR GENERAL NOTES
SEE DWG. R2-699-101

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

FOR DRAINAGE AND UTILITIES
SEE DWG. R2-699-501 THRU 516

CL & GR TOTAL THIS SHEET:
1.881 ha

KEY PLAN

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED V. WANG / R.S. BRAR DATE 2007-11-23.
DRAWN N. KRUCKENBERG DATE 2007-11-23.
CHECKED K. MacDONALD/R. LEE DATE 2007-11-23.
APPROVED R. LEE DATE 2009-08-28.

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PLAN

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 119+40.000 TO STA. 123+00.000

SENIOR DESIGN ENGINEER

DATE Sept. 16, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-107

"L100"
R 285.000 LT
Δ 70°37'20"
Δc 60°34'13"
AD 227.127
ARC 301.288
Es 64.701

HUME AVE (ROAD)

PLAN 49331

PLAN 79228

PLAN 54?
AMPHLE
LOT 1
(REF 2435?)

PLAN 4283
LOT 2

PLAN 4283
LOT 1

PLAN 4283

PLAN 4283

PLAN 4283

PLAN 13386
LOT 2
SRW PLAN 79555 EASEMENT A21051
PLAN 80400 Lot A
PLAN H8433
PLAN 4636 Lot 2
PLAN 6189
BAND ROAD
JOE RICHTE ROAD
HUME RD
"L450" LINE
TANEMURA CRESCENT
HWY 33
"L100" LINE
"L625" LINE
"L475" LINE
GARNER RD
ALR
RUTLAND

PI 450+60.450
N 527498.287
E 330304.972
EC 450+68.194
PCC 450+52.657
PI 450+44.583
N 527255.260
E 330310.333
N 527253.941
E 330311.899
PI 129+13.205
N 527203.867
E 330385.741
RC 450+36.018
DRIVEWAY LETDOWN
N 527209.478
E 330308.630
POT 128+35.885 "L100"
POT 450+00.000 "L450"
Ls 50
θs 5°01'33"
ST 128+84.146
TS 128+60.931
SC 129+00.931
CS 129+25.464
ST 129+65.464
94°12'21"
97°03'00"
0386
N 527211.114
E 330225.954
Z 546.955
BH-5
BH-6

LIMIT OF CONSTRUCTION
START C&G AND SIDEWALK
POC 450+45.984
TIE TO EXISTING

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303

PULVERIZE EXISTING ASPHALT ON HWY 33. FOR DETAILS SEE DRAWING R2-699-303

REMOVE AND DISPOSE OF EXISTING CURB

REMOVE AND DISPOSE OF EXISTING FENCE
POT 625+00.000 "L625"
POT 475+25.014 "L475"
N 527185.492
E 330301.534

TYPE "D" FENCE
N 527157.098
E 330293.136

3 m THICK ROCK EMBANKMENT. FOR DETAILS SEE DWG. R2-699-302 (BY OTHERS)

END 3 m THICK ROCK EMBANKMENT (BY OTHERS)

LIMIT OF CONSTRUCTION
STA. 475+71.000
TIE TO EXISTING
N 527140.754
E 330291.459

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303

TEMPORARY CONSTRUCTION LICENSE ACCESS

"L625"
R 8.000 RT
Δ 87°54'59"
AD 7.714
ARC 12.275
Ec 3.113
N 527181.470
E 330316.991
PI 625+15.972
CC 625+20.533
PI 625+29.307
EC 625+38.000
BC 625+08.257
BC 475+45.328
EC 475+63.864
POT 475+85.000

LIMIT OF CONSTRUCTION
POC 625+26.400
TIE TO EXISTING
N 527168.188
E 330314.279

"L100"
R 1300.000 RT
Δ 2°50'39"
Δc 1°04'53"
AD 52.274
ARC 24.533
Es 0.452

"L450"
R 100.000 LT
Δ 10°37'14"
AD 9.374
ARC 18.535
Ec 0.431

"L625"
R 174.000 LT
Δ 13°27'24"
AD 20.518
ARC 17.467
Ec 0.518

Ls 40
θs 0°52'53"

07AH06
07AH07

MATCHLINE SEE DRAWING R2-699-108
MATCHLINE SEE DRAWING R2-699-110

FOR GENERAL NOTES
SEE DWG. R2-699-101

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

FOR DRAINAGE AND UTILITIES
SEE DWG. R2-699-501 THRU 516

CL & GR TOTAL THIS SHEET:
2.116 ha

LEGEND:
REMOVE EXISTING ASPHALT ONLY
REMOVE EXISTING ASPHALT AND RECONSTRUCT ROAD STRUCTURE

KEY PLAN
1 TO KELOWNA
2 MISSION RD
3 MUIR RD
4 LANGFORD RD
5 HWY 33
6 MOLNAR ROAD
7 SPRINGFIELD ROAD
8 TOOKEY ROAD
9 HUME RD
10 GARNER POND
11 GARNER RD
12 TRAUT RD
13 LOSETH ROAD
14 BLACK MOUNTAIN DR
15 GALLAGHER ROAD
16 HWY 33
17 TO BIG WHITE & ROCK CREEK

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City of Kelowna

SCALE 0 1:500 25

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APPROVED R. LEE DATE 2009-08-28

PROFESSIONAL SEAL
Sept 18, 2009

Rev	Date	Description	Signature

REVISIONS

PLAN
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 126+40.000 TO STA. 130+20.000

SENIOR DESIGN ENGINEER
DATE Sept 18, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-109

CANCEL PRINTS BEARING PREVIOUS LETTER

PLAN 75730

Rem. Lot B

Lot 7

PLAN 80032

PLAN

80033 SRW

SRW (unregistered) FOR UTILITY
Location approximate

PLAN 80032

Lot 1

SRW PLAN 74113 FOR UTILITY

SECTION 13
T.P. 26, OSOYOOS DIVISION
YALE DISTRICT

POT 527+86.228

LOSETH ROAD
"L525" LINE
36°50'38"

PLAN 64911
Lot 33

170

"L100"
R 3000.000 LT
Δ 1°02'22"
AD 27.214
ARC 54.427
Ec 0.123

SRW PLAN 76099 FOR UTILITY

LIMIT OF CONSTRUCTION
TIE TO EXISTING
POT 527+56.891
N 527240.913
E 330791.133

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303

STA. 527+27.250
LIMIT OF PAVEMENT RECONSTRUCTION

EC 527+20.002

JOE RICHE RD

PLAN 17448
Lot 2

PLAN 75908

SRW

PULVERIZE EXISTING ASPHALT ON HWY 33. FOR DETAILS SEE DRAWING R2-699-303

N 527176.804
E 330604.091
POT 700+00.000 "L700"
POT 131+33.203 "L100"=

BC 131+63.493

EC 132+17.920

RELOCATE EXISTING FENCE TO NEW PROPERTY LINE

CLOSE

N 527156.386
E 330788.070
POT 133+18.317 "L100"=
POG 526+72.848 "L525"

CL & GR

BH-7

Lot 8 Lot 9 Lot 10 Lot 11 Lot 12 Lot 13 Lot

POT 775+00.000 "L775"
POT 130+37.600
N 527188.875
E 330508.815

CL & GR

C/F

REMOVE AND DISPOSE OF EXISTING ISLANDS

MATCHLINE SEE DRAWING R2-699-109

PLAN H8433

97°03'00"

131 132 133

96°00'38"

PLAN H8433

MATCHLINE SEE DRAWING R2-699-111

HWY 33
"L100" LINE

C387
N 527164.357
E 330365.581
Z 573.521

"L775" LINE

TRAUT RD

POT 775+40.000

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303

TEMPORARY CONSTRUCTION LICENSE ACCESS

PLAN 23518

Lot 2 Lot 3

"L700" LINE

LIMIT OF CONSTRUCTION
STA. 700+36.200
TIE TO EXISTING
N 527140.675
E 330606.351

PLAN 202

Lot A

PI 131+90.707
N 527139.136
E 330691.186

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303

PLAN 18629

PI 526+61.922
N 527144.732
E 330786.639

"L525" LINE
R 3000.000 RT
Δ 2°29'19"
AD 65.081
ARC 130.424
Ec 0.707

REMOVE AND DISPOSE OF EXISTING FENCE

REMOVE AND DISPOSE OF EXISTING CURB

REMOVE AND DISPOSE OF EXISTING CURB AND SIDEWALK

LOSETH ROAD

"L525" LINE

CL & GR

BH-8

LIMIT OF CONSTRUCTION
TIE TO EXISTING
POC 700+50.000
N 527160.683
E 330519.348

LIMIT OF CONSTRUCTION
TIE TO EXISTING
POC 525+95.000
N 527080.829
E 330906.515

REMOVE EXISTING RETAINING WALL WITHIN LICENCE-TO-CONSTRUCT
-SAW-CUT ASPHALT AT EDGE OF TLTC

POT 700+50.000

Lot 4

PLAN 20272
Lot A

BC 526+03.310

A
PLAN KAP84781

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-301

FOR GENERAL NOTES
SEE DWG. R2-699-101

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

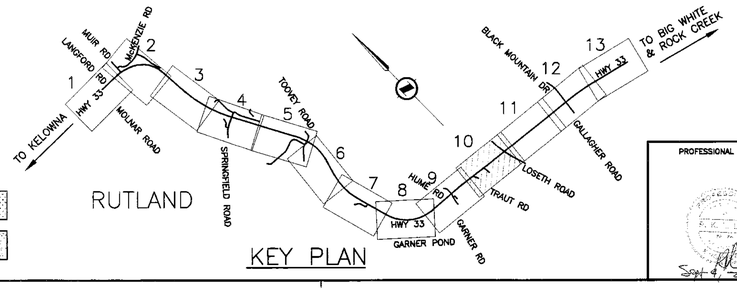
FOR DRAINAGE AND UTILITIES
SEE DWG. R2-699-501 THRU 516

CL & GR TOTAL THIS SHEET:
2.320 ha

LEGEND:

REMOVE EXISTING ASPHALT ONLY

REMOVE EXISTING ASPHALT AND RECONSTRUCT ROAD STRUCTURE



KEY PLAN

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SCALE 0 1:500 25

DESIGNED	V. WANG / R.S. BRAR	DATE 2007-11-23
DRAWN	N. KRUCKENBERG	DATE 2007-11-23
CHECKED	K. MacDONALD/R. LEE	DATE 2007-11-23
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

PLAN

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 130+20.000 TO STA. 134+00.000

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-110

PLAN 24361

PLAN 48833
Lot A

PLAN B5439

PLAN 24361

PLAN 29386
Lot B

PLAN 29386
Lot A
SUPER SAVE GAS

SUPER SAVE GAS

PLAN KAP84781

PLAN 41437

PLAN 51224

"L100"
R 3000.000 LT
Δ 1°52'24"
AD 49.048
ARC 98.087
Ec 0.401

"L100"
R 3000.000 RT
Δ 1°52'24"
AD 49.048
ARC 98.087
Ec 0.401

OSWELL DRIVE

PI 135+12.100
N 527158.693
E 330968.788

BC 135+85.405

EC 136+83.492

PI 136+34.453
N 527119.309
E 331101.993

BC 134+63.052

EC 135+61.139

CL & GR

HWY 33
"L100" LINE

CLOSE

PEDESTRIAN ACCESS GATE
PER CoK SS_R28

PULVERIZE EXISTING ASPHALT ON HWY 33.
FOR DETAILS SEE DRAWING R2-699-303

REMOVE AND DISPOSE OF EXISTING FENCE

START TYPE "D" FENCE

TYPE "D" FENCE

END TYPE "D" FENCE

TEMPORARY CONSTRUCTION LICENSE ACCESS

REMOVE AND DISPOSE OF EXISTING FENCE

START TYPE "D" FENCE

RELOCATE EXISTING FENCE

RELOCATE EXISTING FENCE

TYPE "D" FENCE

TEMPORARY CONSTRUCTION LICENSE ACCESS

MATCHLINE SEE DRAWING R2-699-110

MATCHLINE SEE DRAWING R2-699-112

FOR GENERAL NOTES
SEE DWG. R2-699-101

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

FOR DRAINAGE AND UTILITIES
SEE DWG. R2-699-501 THRU 516

CL & GR TOTAL THIS SHEET:
1.825 ha

LEGEND:

REMOVE EXISTING ASPHALT ONLY

REMOVE EXISTING ASPHALT AND RECONSTRUCT ROAD STRUCTURE

KEY PLAN

RUTLAND

TO KELOWNA

TO BIG WHITE & ROCK CREEK

HWY 33

MUIR RD

LANGFORD RD

MOLNAR ROAD

SPRINGFIELD ROAD

TOOMEY ROAD

HUME RD

GARNER POND

GARNER RD

TRAUT RD

LOSETH ROAD

GALLAGHER ROAD

BLACK MOUNTAIN DR

BLACK MOUNTAIN ELEMENTARY SCHOOL

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED V. WANG / R.S. BRAR DATE 2007-11-23
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APPROVED R. LEE DATE 2009-08-28

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City of Kelowna

PLAN

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 134+00.000 TO STA. 137+90.000

SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-111

BEGLEY ROAD

BLACK MOUNTAIN DR.

"L600" L
R 250.000 LT
Δ 25°02'45"
AD 55.283
ARC 109.283
Es 6.093

"L600" LINE

LIMIT OF CONSTRUCTION
BC 601+77.369
END TAPER
TIE TO EXISTING
N. 527177.404
E. 331358.012

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303

LIMIT OF PAVEMENT RECONSTRUCTION
POT 601+51.658
N. 527152.882
E. 331354.829

SEDIMENT POND

PLAN 1991

REMOVE AND DISPOSE OF EXISTING CONC. CURB AND SIDEWALK

PROTECT EXISTING SIGN

BEGLEY RD.

PI 140+10.401
N. 527079.943
E. 331478.984

SEGMENT PLAN 11693

PLAN 28536

PLAN 29301

CL & GR

E/S S/E E/S

N.W. PEARL ROAD

CL & GR

MATCHLINE SEE DRAWING R2-699-111

MATCHLINE SEE DRAWING R2-699-113

HWY 33
"L100" LINE

REMOVE AND DISPOSE OF EXISTING ASPHALT CURB

138
96°00'38"
139
140
141
104°19'22"

RELOCATE EXISTING FENCE

N. 527093.504
E. 331347.076
POC 138+80.884 "L100"
POT 600+92.759 "L600"

BH-10
BH-11

CL & GR

REMOVE AND DISPOSE OF EXISTING CONC. CURB AND SIDEWALK

TEMPORARY CONSTRUCTION LICENSE ACCESS

TS 139+28.629

SC 139+68.629

PULVERIZE EXISTING ASPHALT ON HWY 33. FOR DETAILS SEE DRAWING R2-699-303

CS 140+51.946

ST 140+91.946

PLAN 22256

"L100"
R 850.000 RT
Δ 8°18'45"
Δc 5°36'58"
AD 81.772
ARC 83.317
Es 2.320

Ls 40
θs 1°20'53"

Ls 40
θs 1°20'53"

TYPE "D" FENCE

PLAN 31123

TEMPORARY CONSTRUCTION LICENSE ACCESS

GALLAGHER ROAD

"L600" LINE

CL & GR

TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303

EC 600+12.974

END TYPE "D" FENCE

LIMIT OF PAVEMENT RECONSTRUCTION
TIE TO EXISTING
POC 600+00.000
N. 527001.478
E. 331335.569

"L600"
R 200.000 RT
Δ 19°02'14"
AD 33.495
ARC 66.455
Es 2.792

PLAN B4CA9

JOE RICHE ROAD

LEGEND:

REMOVE EXISTING ASPHALT ONLY

REMOVE EXISTING ASPHALT AND RECONSTRUCT ROAD STRUCTURE

KEY PLAN

RUTLAND

TO KELOWNA

HWY 33

MUIR RD

LANGFORD RD

MCENDIE RD

MOLNAR ROAD

TOOVEY ROAD

SPRINGFIELD ROAD

HUME RD

HWY 33

GARNER POND

GARNER RD

TRAUT RD

LOSETH ROAD

GALLAGHER ROAD

BLACK MOUNTAIN DR

HWY 33

TO BIG WHITE & ROCK CREEK

1 2 3 4 5 6 7 8 9 10 11 12 13

FOR GENERAL NOTES SEE DWG. R2-699-101	FOR GEOMETRICS AND LANING SEE DWG. R2-699-401 THRU 413
FOR PROFILES SEE DWG. R2-699-201 THRU 215	FOR DRAINAGE AND UTILITIES SEE DWG. R2-699-501 THRU 516
FOR TYPICAL SECTIONS AND DETAILS SEE DWG. R2-699-301 THRU 304	CL & GR TOTAL THIS SHEET: 1.766 ha

PROFESSIONAL SEAL

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City of Kelowna

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APPROVED	R. LEE	DATE 2009-08-28

Rev	Date	Description	Signature

REVISIONS

PLAN

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 137+90.000 TO STA. 141+20.000

SENIOR DESIGN ENGINEER

DATE Sept. 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-112

PLAN 5152
Lot B
PLAN 25442
2
BEGLEY ROAD
JOE RICHE ROAD
STEEL ARCH PEDESTRIAN UNDERPASS. FOR DETAILS SEE DRAWINGS 7804-1 TO 7804-7
PROPOSED 2 – 1050mmø WM's WITH CSP CASINGS. FOR DETAILS SEE BMID DRAWINGS R2-699-560 TO 562
TP-1
CL & GR
POT 144+00.000
N 5368345.505
E 331953.593
PLAN H6433
MATCHLINE SEE DRAWING R2-699-112
CL & GR
F/C
TP-2
C/E
CL & GR
104°19'22"
142
BH-1
"L100" LINE
143
HWY 33
BH-2
07AH12
07AH13
07AH14
07AH15
PULVERIZE EXISTING ASPHALT ON HWY 33. FOR DETAILS SEE DRAWING R2-699-303
TIE-IN TO EXISTING PAVEMENT AS PER DETAIL ON DWG. R2-699-303
TO BIG WHITE & ROCK CREEK
TP-3
CL & GR
07AH10
07AH11
CL & GR
07AH09
TP-4
TP-5
EASEMENT PLAN A8477
PLAN 2736
POT 143+60.000 TIE TO EXISTING
N 5368183.836
E 331853.836
LIMIT OF CONSTRUCTION

FOR GENERAL NOTES
SEE DWG. R2-699-101

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

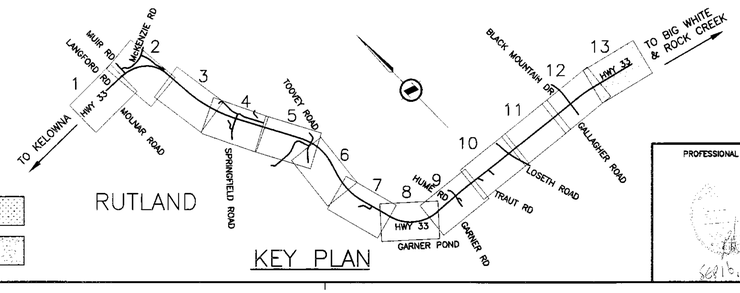
FOR DRAINAGE AND UTILITIES
SEE DWG. R2-699-501 THRU 516

CL & GR TOTAL THIS SHEET:
1.114 ha

LEGEND:

REMOVE EXISTING ASPHALT ONLY

REMOVE EXISTING ASPHALT AND RECONSTRUCT ROAD STRUCTURE



KEY PLAN

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

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SCALE 0 1:500 25

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APPROVED R. LEE DATE 2009-08-20

PLAN

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 141+20.000 TO STA. 143+60.000

SENIOR DESIGN ENGINEER

DATE Dec 16, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-113

TYPE-A	m³	NIL
TYPE-D	m³	42,084
EMBANKMENT	m³	12,403
STRIPPING	m³	6,399
SGSB DEPTH	mm	NIL

TO KELOWNA

H2357
STA. 100+55.421
O/S 13.643 L
ELEV. 417.896

G380
STA. 102+73.076
O/S 7.114 L
ELEV. 428.510

G381
STA. 106+57.540
O/S 12.353 R
ELEV. 454.727

kel12
STA. 109+50.461
O/S 8.335 R
ELEV. 474.862

DESIGN SPEED 60 km/h

DESIGN SPEED 70 km/h

LIMIT OF CONSTRUCTION
STA 99+00.000
TIE TO EXISTING

+0.002 %

BVC 417.547 m

POG 417.679 m
POC 101+50.769 "L100"=
POT 200+00.000 "L200"
MUIR ROAD

180 VC
K = 26.5

EVC 423.672 m

+6.804 %

EXISTING GROUND LINE

PROPOSED DESIGN
PROFILE AT CONTROL LINE

POG 475.359 m
POT 109+60.168 "L100"=
POT 325+00.000 "L325"
POT 375+00.000 "L375"
SPRINGFIELD RD.

BVC 483.036 m

STA 111+43.000
PIVC 487.799 m

140 VC
K = 48.7

EVC 490.547 m

+3.926 %

STA 99+00.000
POG 417.545 m

STA 101+10.500
PIVC 417.549 m

LEFT SIDE SUPERELEVATION

SUPERELEVATION RIGHT SIDE

| | | |

TYPE-A	m³	NIL
TYPE-D	m³	16,019
EMBANKMENT	m³	300
STRIPPING	m³	1,599
SGSB DEPTH	mm	2,351
		74,465

G382
STA. 114+88.704
O/S 4.887 R
ELEV. 500.727

kel13
STA. 117+84.674
O/S 0.944 R
ELEV. 513.291

G384
STA. 121+80.173
O/S 4.525 R
ELEV. 527.595

G385
STA. 124+19.811
O/S 3.269 R
ELEV. 533.335

G386
STA. 127+53.312
O/S 4.432 R
ELEV. 546.955

STA 115+00.000
PIVC 501.816 m

POC 115+20.000 "L100"=
POT 650+00.000 "L650"
POT 400+00.000 "L400"
TOOVEY ROAD
POG 502.569 m

BVC 500.245 m

EVC 503.329 m

80 VC
K = 559.5

+3.783 %

BVC 507.113 m

80 VC
K = 95.7

EVC 510.474 m

+4.619 %

STA: 116+80.000
PIVC 508.626 m

BVC 512.321 m

STA 118+00.000
PIVC 514.169 m

80 VC
K = 104.1

EVC 515.709 m

+3.851 %

EXISTING GROUND LINE

STA 120+40.000
PIVC 523.411 m

BVC 521.871 m

80 VC
K = 142.6

+3.290 %

EVC 524.727 m

BVC 525.385 m

POG 527.15 m
POT 121+56.400 "L100"=
POT 425+00.000 "L425"
ACCESS RIGHT

STA 122+00.000
PIVC 528.675 m

200 VC
K = 179.4

EVC 530.850 m

+2.175 %

BVC 534.874 m

PROPOSED DESIGN
PROFILE AT CONTROL LINE

250 VC
K = 55.9

STA 126+10.000
PIVC 537.593 m

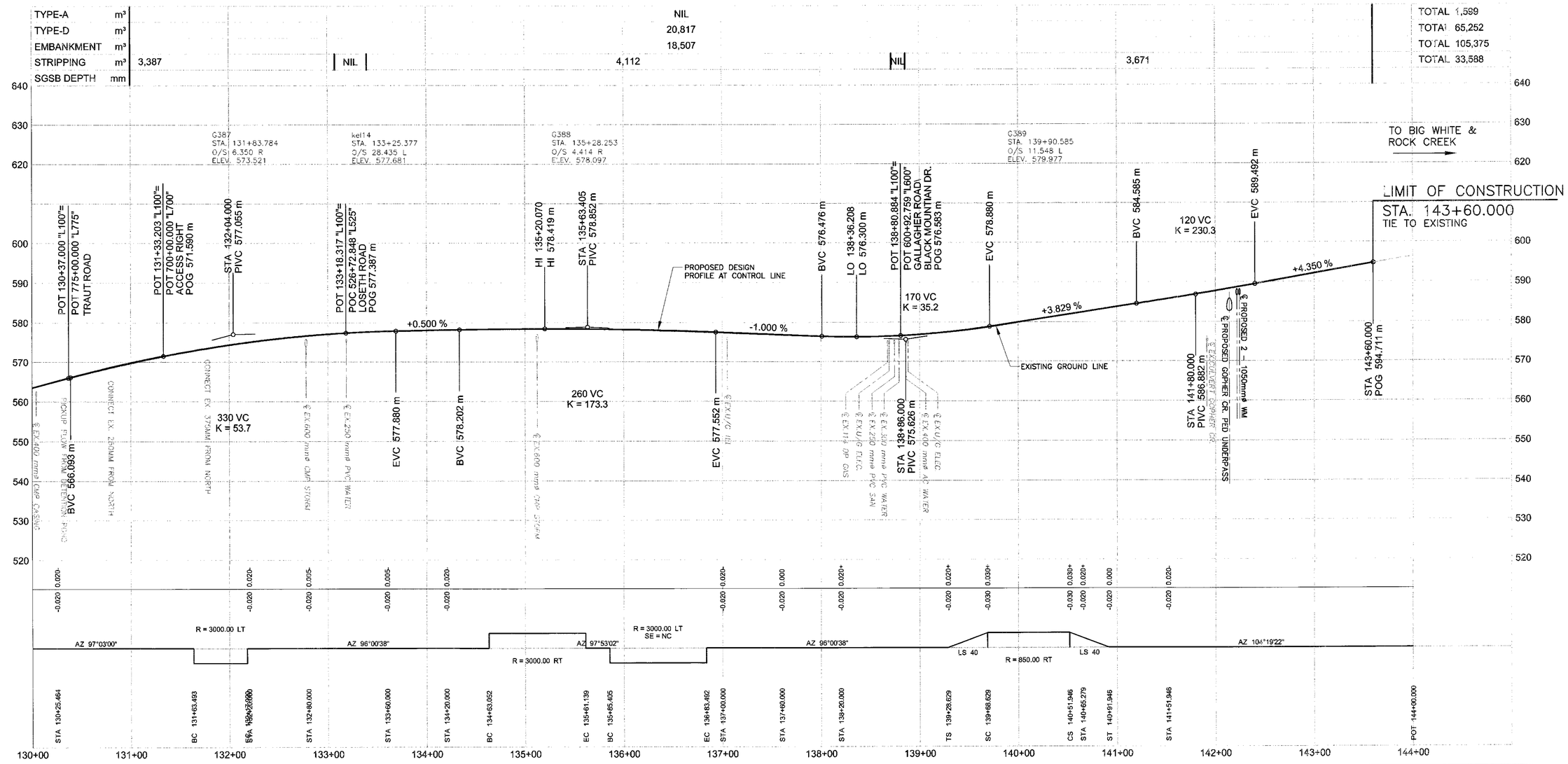
EVC 545.897 m

POT 128+35.885 "L100"=
POT 450+00.000 "L450"
HUME ROAD POG 552.600 m

+6.643 %

POT 128+38.799 "L100"=
POT 475+00.000 "L475"
GARNER ROAD
POG 552.793 m

| | | |



"L100" LINE
HIGHWAY 33 PROFILE

DESIGN SPEED 70 km/h

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

FOR STORM DRAINAGE PROFILES
SEE DWG. R2-699-501 THRU 516

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City of Kelowna

SCALE 0 Horiz. 1:2000 100
0 Vert. 1:500 25

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DRAWN	N. KRUCKENBERG	DATE 2007-03-30
CHECKED	T. STEVENS	DATE 2007-04-16
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

PROFILE "L100" – HIGHWAY 33

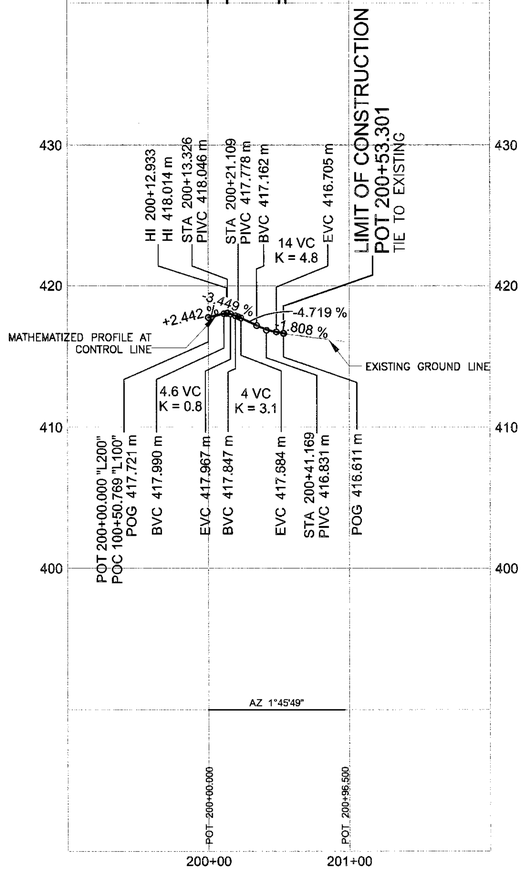
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 130+00.000 TO STA. 146+00.000

SENIOR DESIGN ENGINEER

Sept 4, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-203

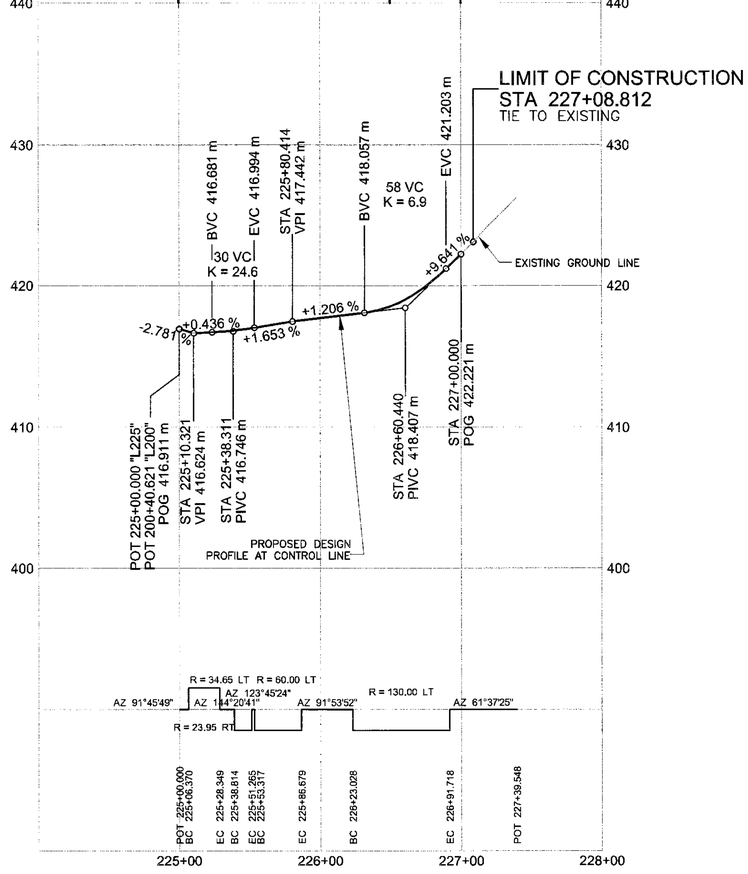
TYPE-D	m³	43	TOTAL 43
EMBANKMENT	m³	NIL 7	TOTAL 7
STRIPPING	m³	NIL	TOTAL 0
SGSB DEPTH	mm	300	



"L200" LINE
MUIR ROAD

DESIGN SPEED 50 km/h

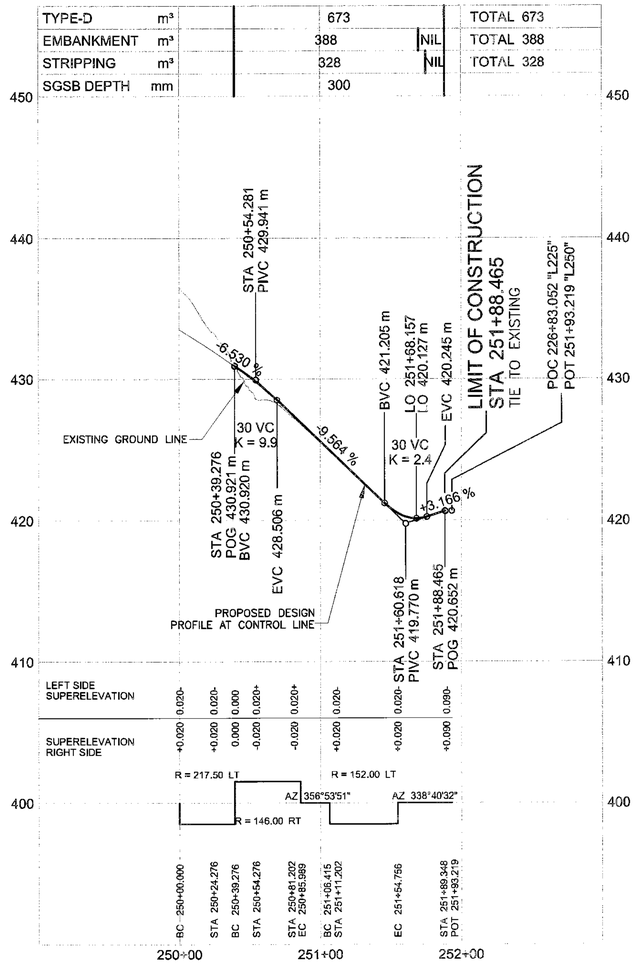
TYPE-D	m³	276	TOTAL 276
EMBANKMENT	m³	39	TOTAL 39
STRIPPING	m³	NIL	TOTAL 0
SGSB DEPTH	mm	300	



"L225" LINE
McKENZIE ROAD

DESIGN SPEED 50 km/h

TYPE-D	m³	673	TOTAL 673
EMBANKMENT	m³	388 NIL	TOTAL 388
STRIPPING	m³	328 NIL	TOTAL 328
SGSB DEPTH	mm	300	



"L250" LINE
OFF-RAMP PROFILE

DESIGN SPEED 50 km/h

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

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DRAWN N. KRUCKENBERG DATE 2007-03-30
CHECKED T. STEVENS DATE 2007-04-16
APPROVED R. LEE DATE 2009-08-28

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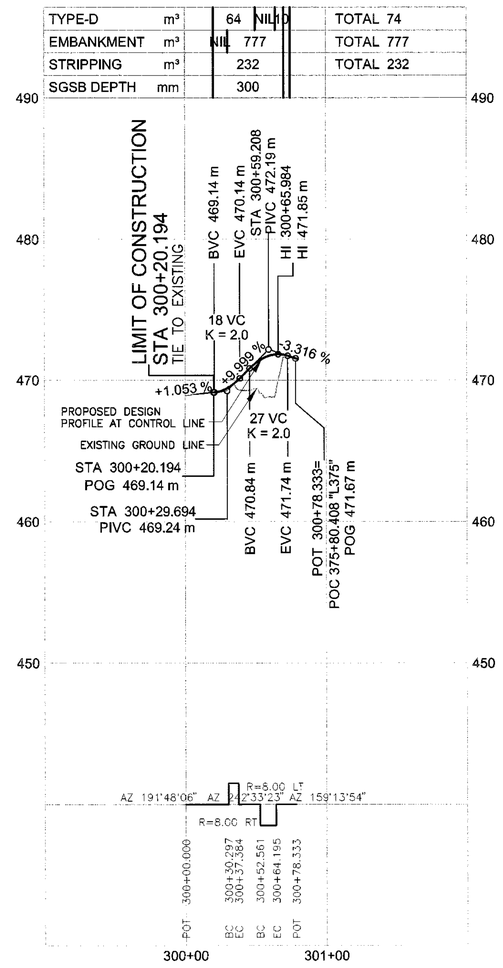
REVISIONS

PROFILE "L200", "L225" & "L250"
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER

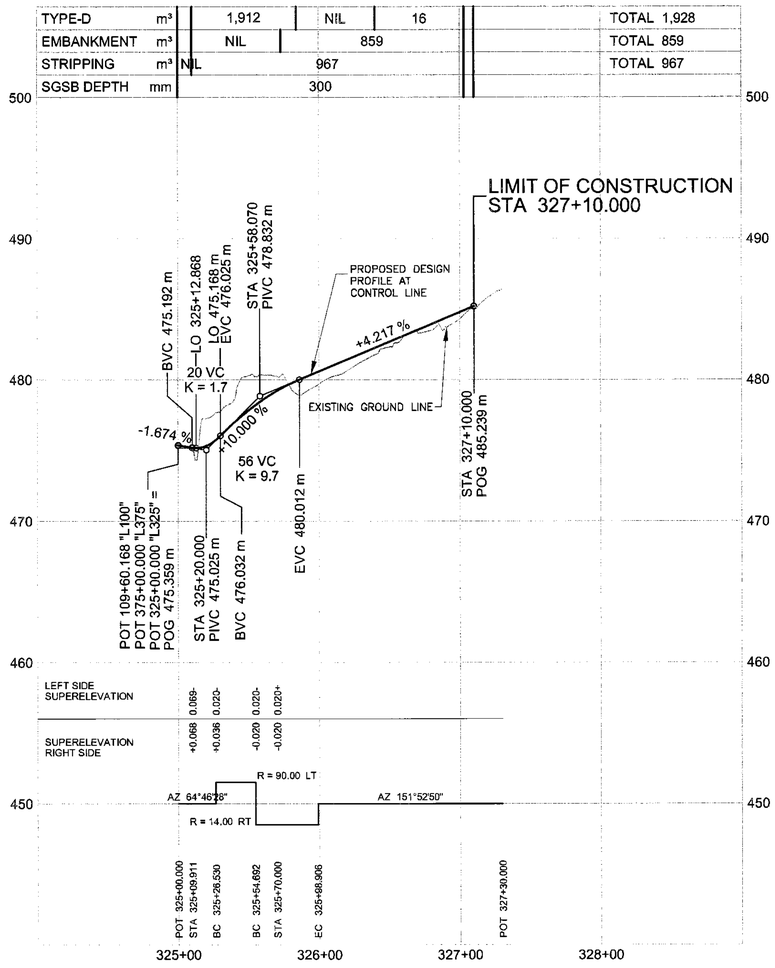
DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-204



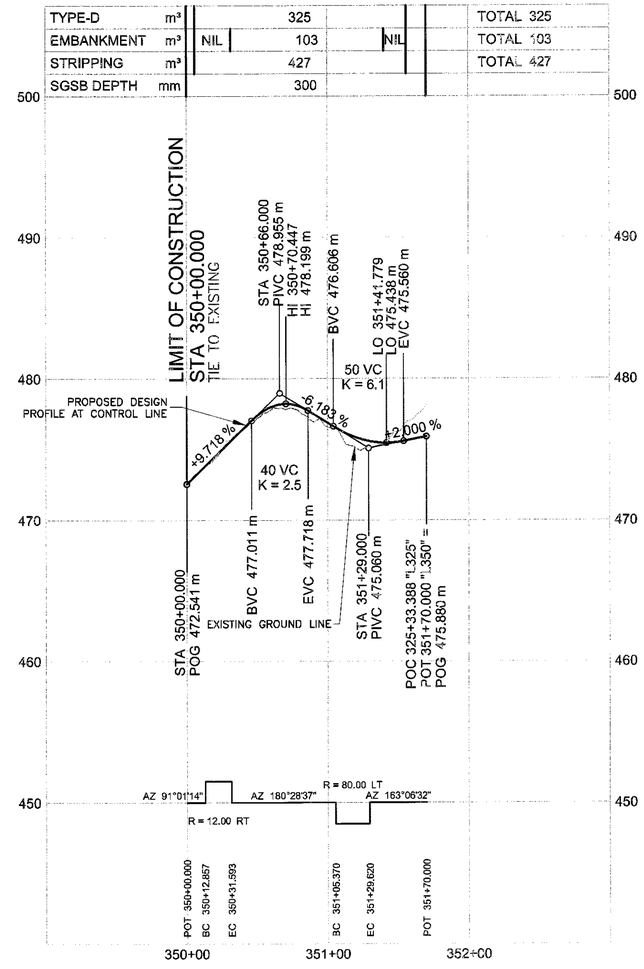
"L300" LINE
DRIVEWAY PROFILE
SPRINGFIELD SOUTH

DESIGN SPEED 20 km/h



"L325" LINE
ACCESS ROAD PROFILE
SPRINGFIELD NORTHEAST

DESIGN SPEED 20 km/h



"L350" LINE
ACCESS ROAD PROFILE
SPRINGFIELD NORTHWEST

DESIGN SPEED 20 km/h

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

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APPROVED R. LEE DATE 2009-08-26

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

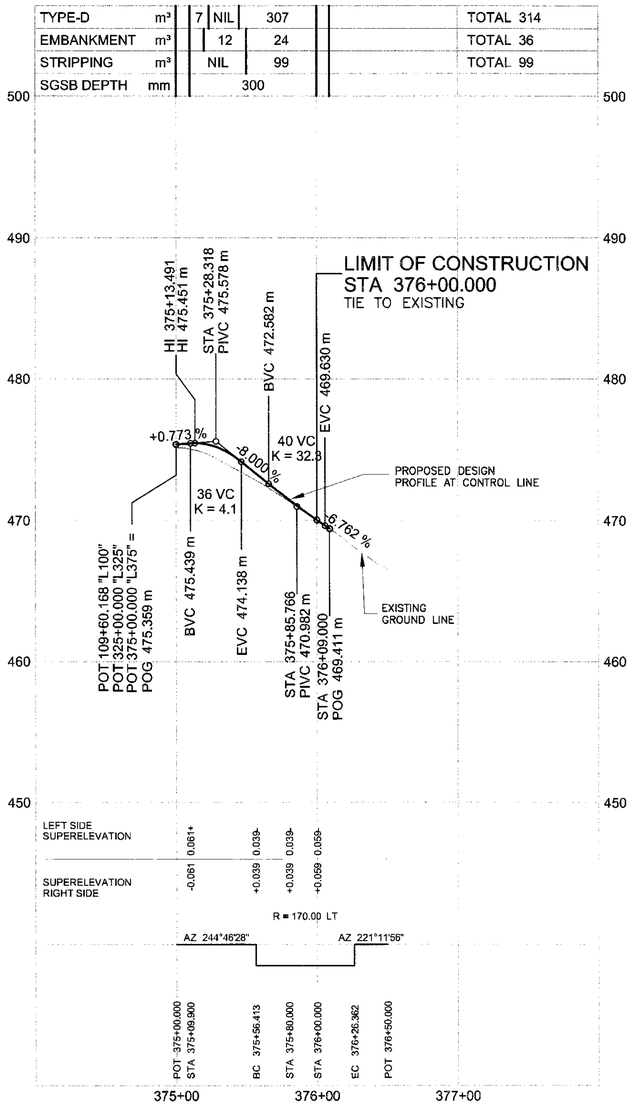
PROFILE "L300", "L325" & "L350"
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER

DATE Sept 9, 2009

FILE No.	PROJECT No.	REC.	DRAWING No.
2064	22198-0001	2	R2-699-205

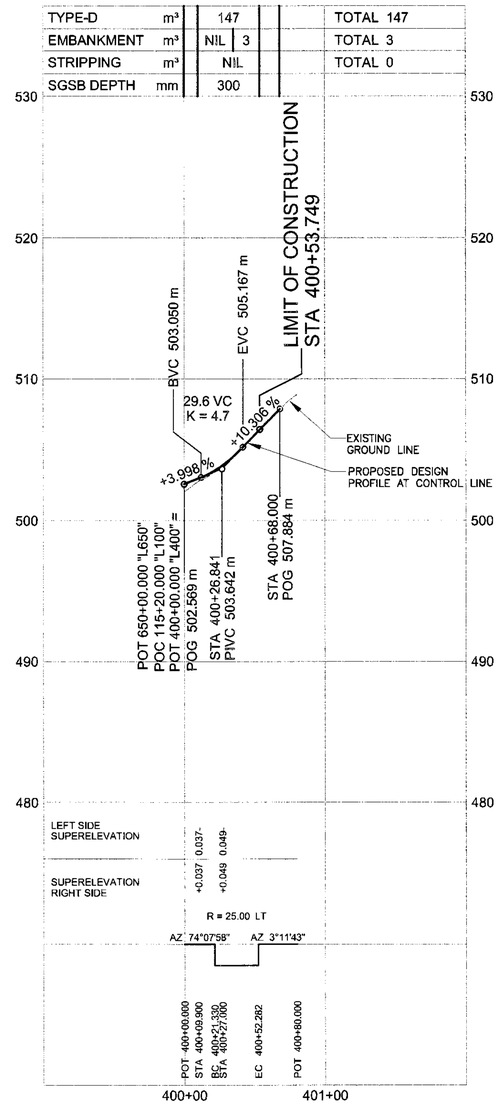
TYPE-D	m³	7	NIL	307	TOTAL 314
EMBANKMENT	m³		12	24	TOTAL 36
STRIPPING	m³		NIL	99	TOTAL 99
SGSB DEPTH	mm		300		



"L375" LINE
SPRINGFIELD ROAD PROFILE

DESIGN SPEED 40 km/h

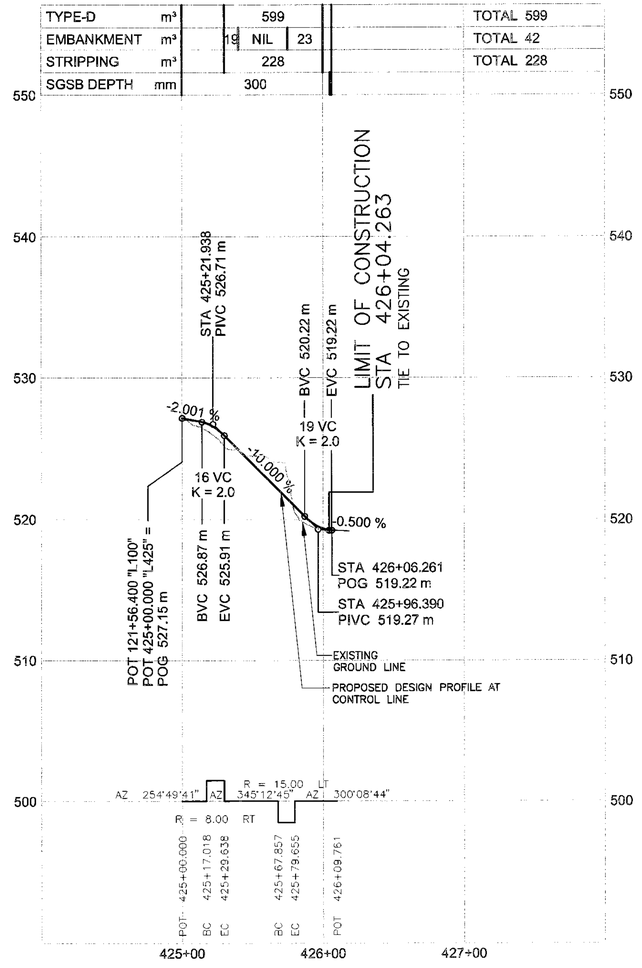
TYPE-D	m³		147		TOTAL 147
EMBANKMENT	m³		NIL	3	TOTAL 3
STRIPPING	m³		NIL		TOTAL 0
SGSB DEPTH	mm		300		



"L400" LINE
TOOVEY ROAD PROFILE

DESIGN SPEED 40 km/h

TYPE-D	m³		599		TOTAL 599
EMBANKMENT	m³	19	NIL	23	TOTAL 42
STRIPPING	m³		228		TOTAL 228
SGSB DEPTH	mm		300		



"L425" LINE
DRIVEWAY PROFILE

DESIGN SPEED 20 km/h

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

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APPROVED R. LEE DATE 2009-08-28

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Rev	Date	Description	Signature

REVISIONS

PROFILE "L375", "L400" & "L425"

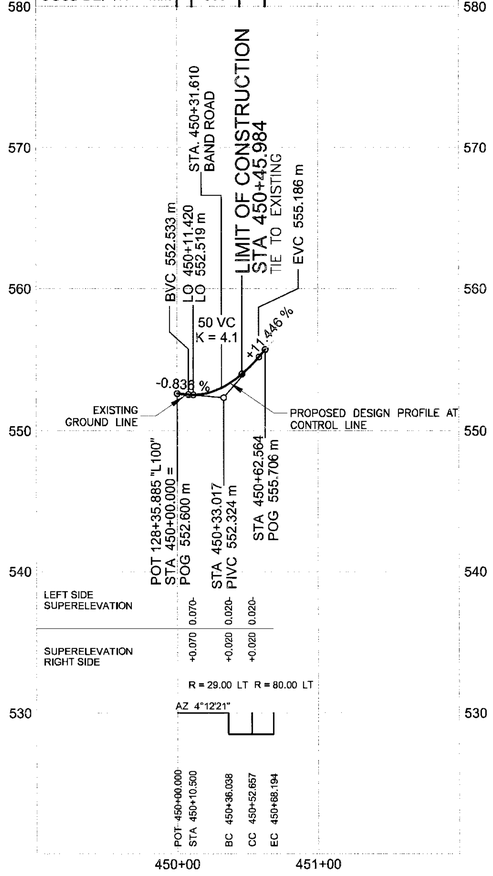
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-206

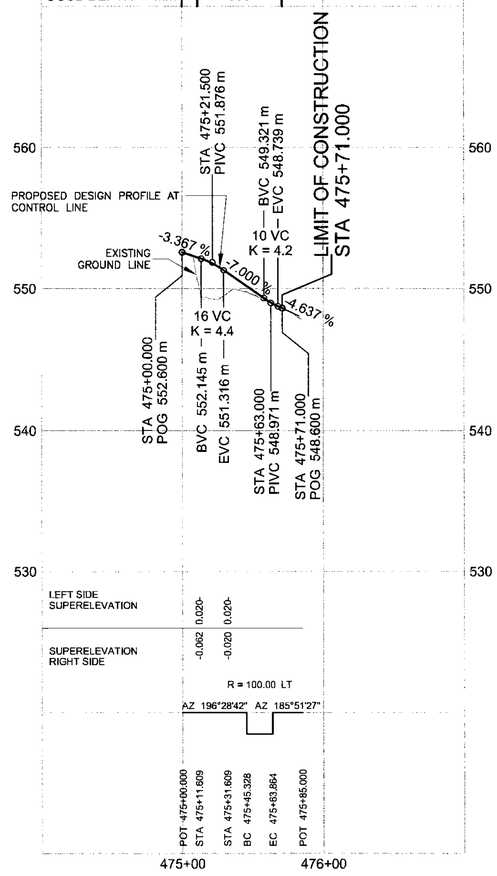
TYPE-D	m³	123	TOTAL 123
EMBANKMENT	m³	NIL 3	TOTAL 3
STRIPPING	m³	NIL 15	TOTAL 15
SGSB DEPTH	mm	300	



"L450" LINE
HUME ROAD PROFILE

DESIGN SPEED 30 km/h

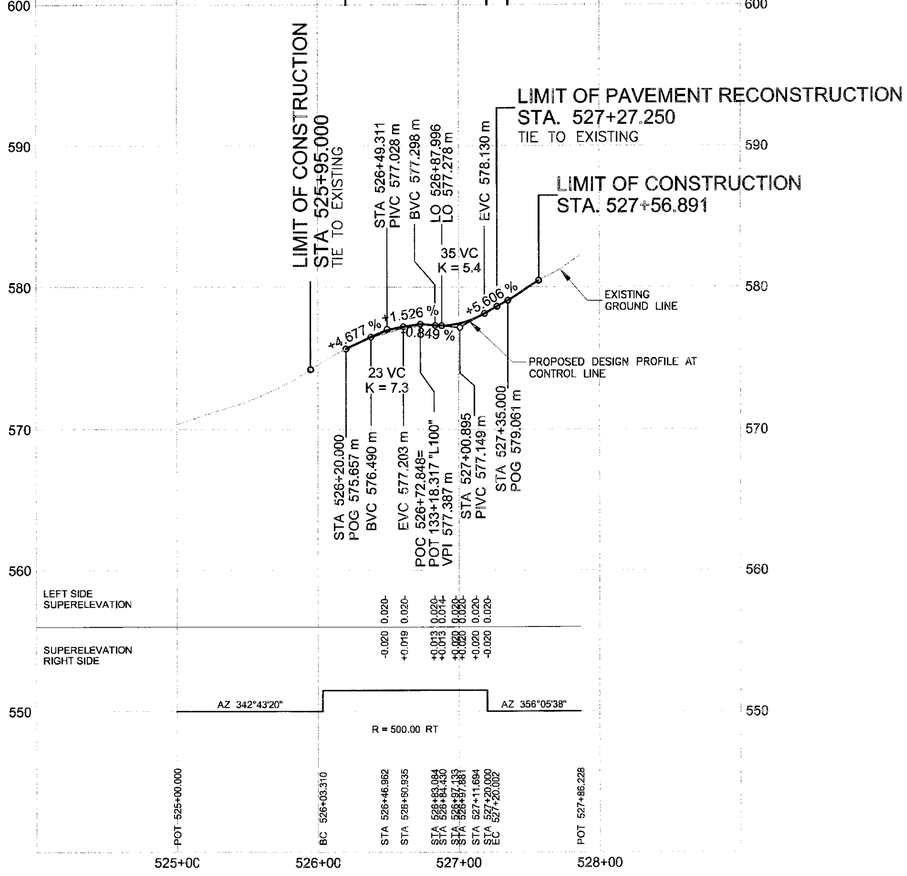
TYPE-D	m³	NIL 115	TOTAL 115
EMBANKMENT	m³	522 NIL	TOTAL 522
STRIPPING	m³	135	TOTAL 135
SGSB DEPTH	mm	300	



"L475" LINE
GARNER ROAD PROFILE

DESIGN SPEED 40 km/h

TYPE-D	m³	744	TOTAL 744
EMBANKMENT	m³	NIL	TOTAL 0
STRIPPING	m³	NIL	TOTAL 0
SGSB DEPTH	mm	300	



"L525" LINE
LOSETH ROAD PROFILE

DESIGN SPEED 40 km/h

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

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REVISIONS

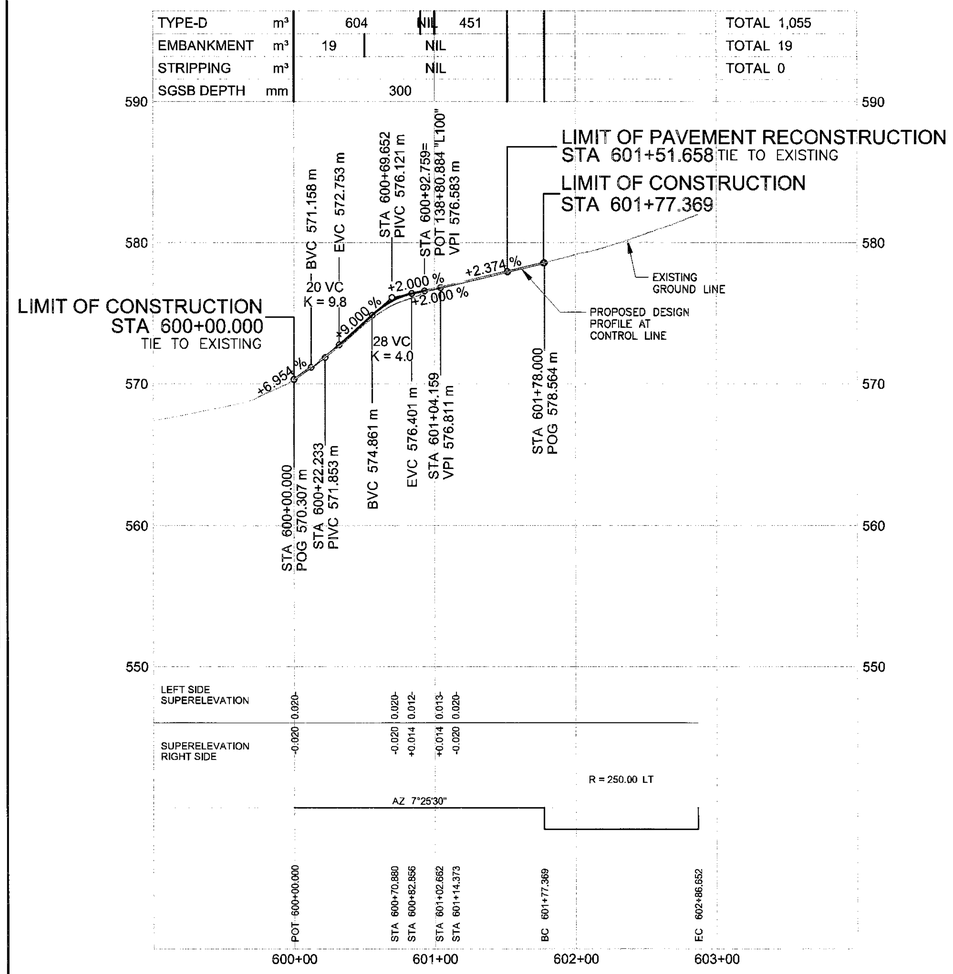
PROFILE "L450", "L475" & "L525"

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER

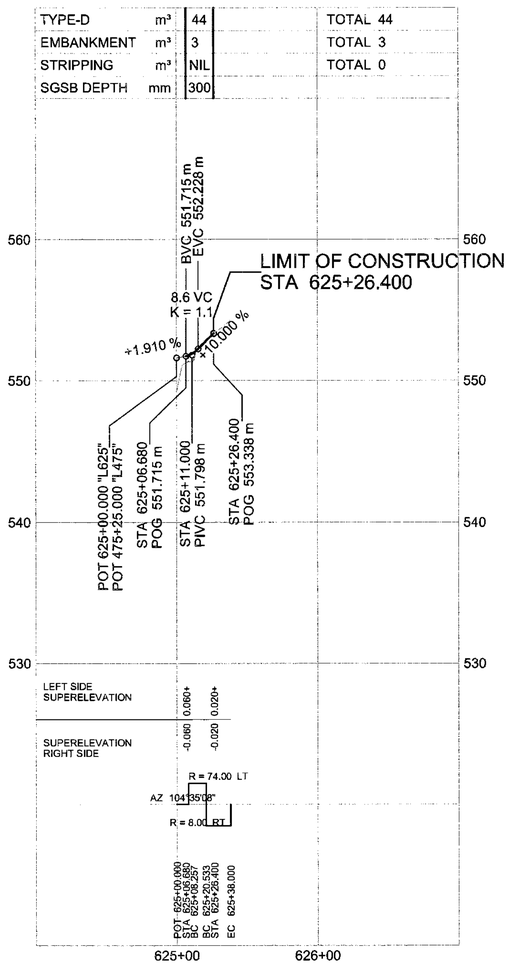
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-207



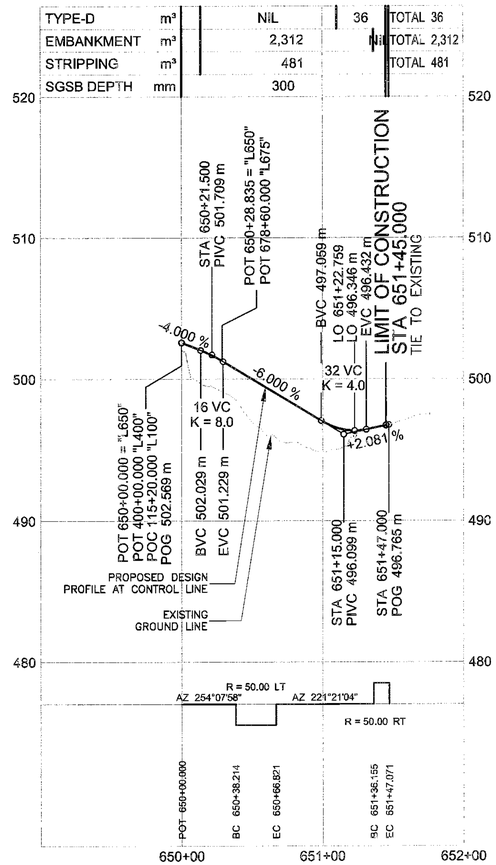
"L600" LINE
GALLAGHER RD./BLACK MOUNTAIN DRIVE
PROFILE

DESIGN SPEED 40 km/h



"L625" LINE
DRIVEWAY PROFILE
SOUTH OF GARNER

DESIGN SPEED 20 km/h



"L650" LINE
DRIVEWAY PROFILE
SOUTH OF TOOVEY

DESIGN SPEED 20 km/h

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

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APPROVED R. LEE DATE 2009-08-26

PROFESSIONAL SEAL

Rev	Date	Description	Signature

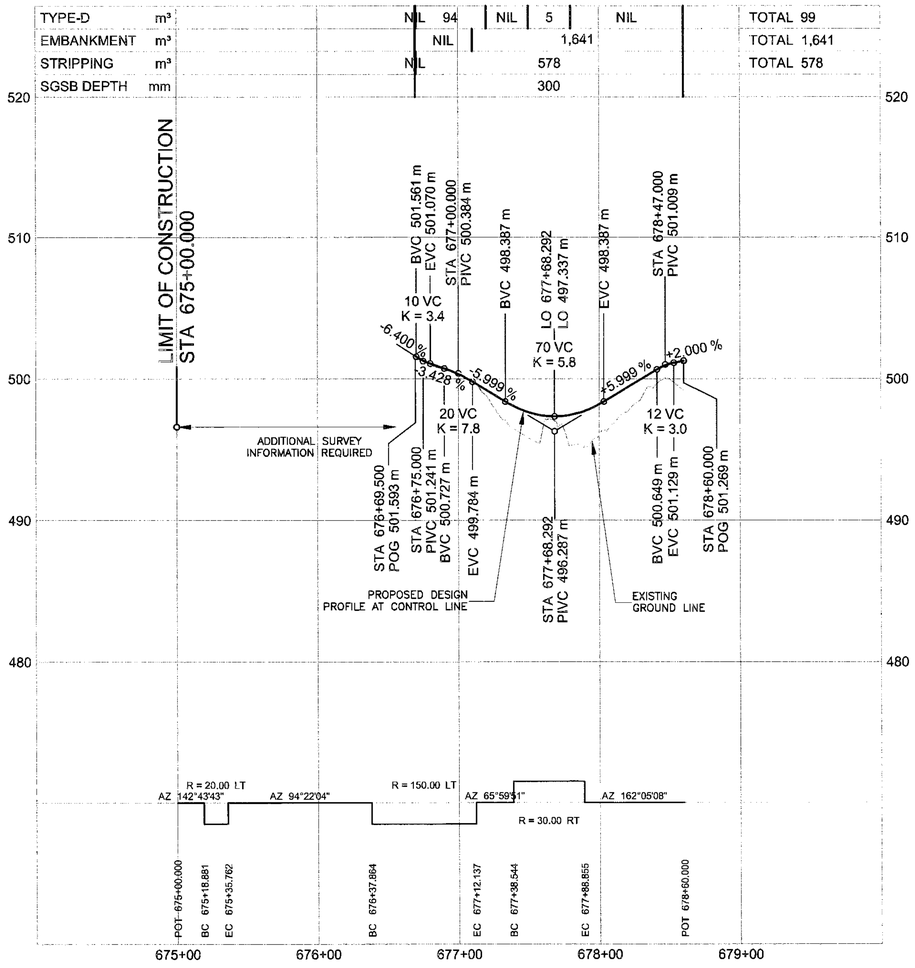
REVISIONS

PROFILE "L600", "L625" & "L650"
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

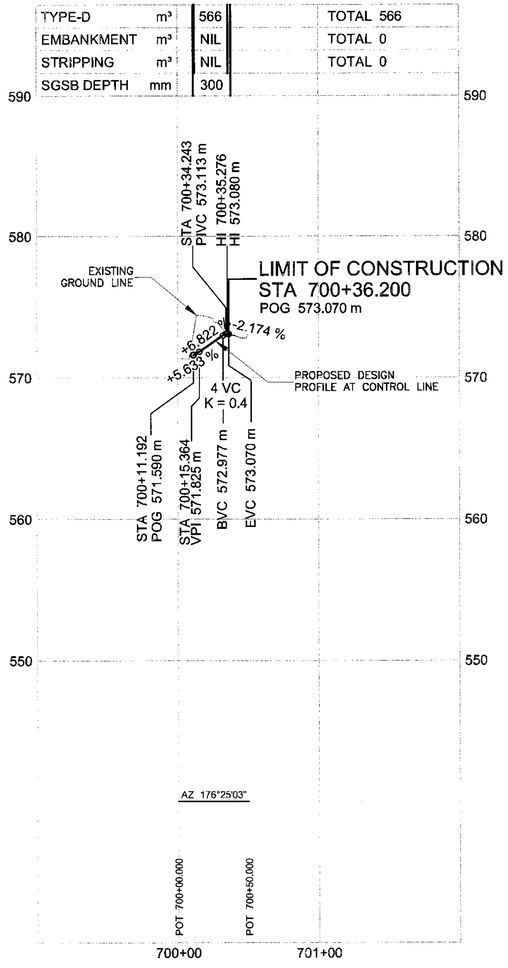
SENIOR DESIGN ENGINEER

DATE Sept 9, 2009

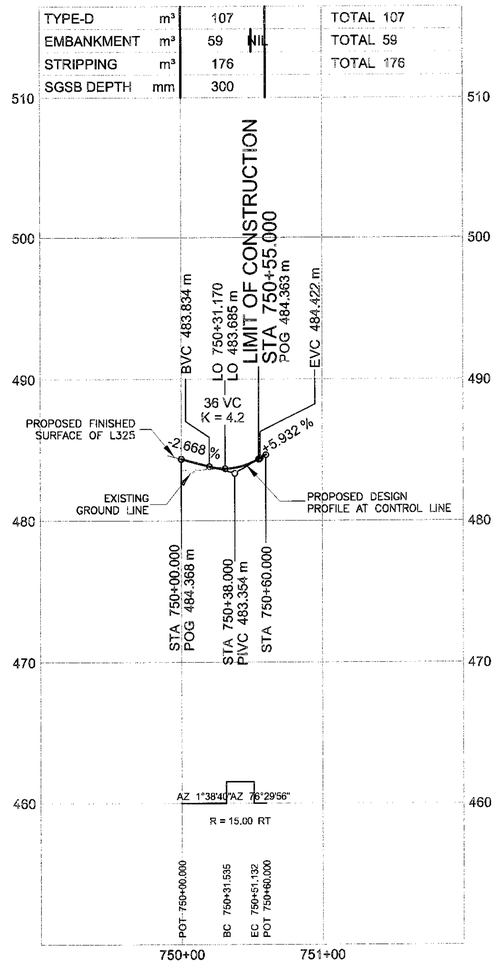
FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-208



"L675" LINE
DRIVEWAY PROFILE
SOUTH OF TOOVEY



"L700" LINE
DRIVEWAY PROFILE



"L750" LINE
DRIVEWAY PROFILE

DESIGN SPEED 20 km/h

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

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APPROVED R. LEE DATE 2009-08-26

PROFESSIONAL SEAL
Sept 9 2009

Rev	Date	Description	Signature

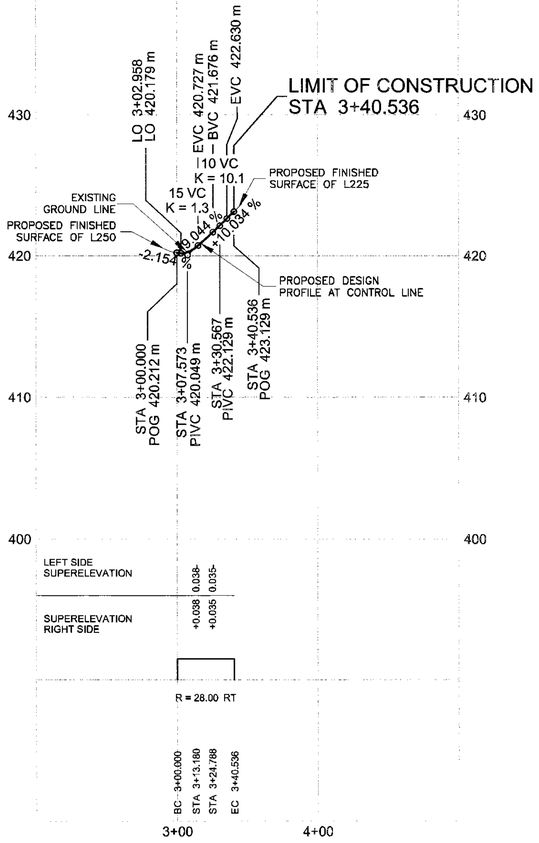
REVISIONS

PROFILE "L675", "L700" & "L750"
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER
DATE Sept 9, 2009

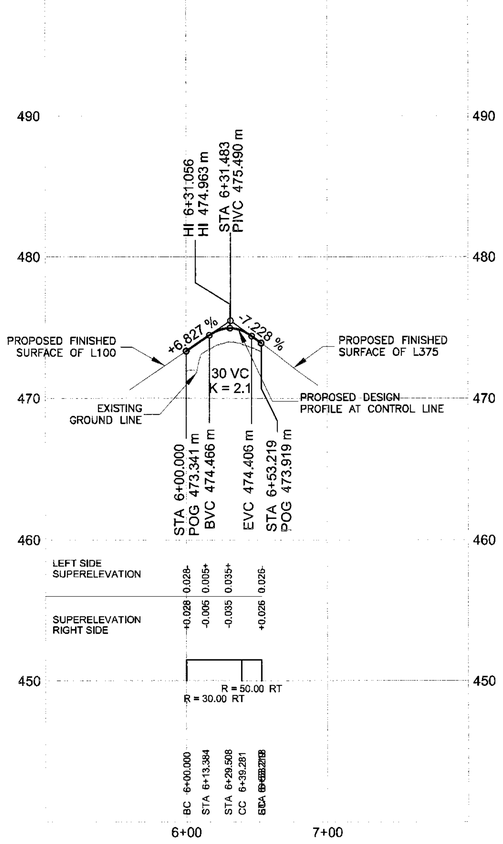
FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-209

TYPE-D	m³	139		TOTAL 139
EMBANKMENT	m³	4		TOTAL 4
STRIPPING	m³	NIL		TOTAL 0
SGSB DEPTH	mm	300		



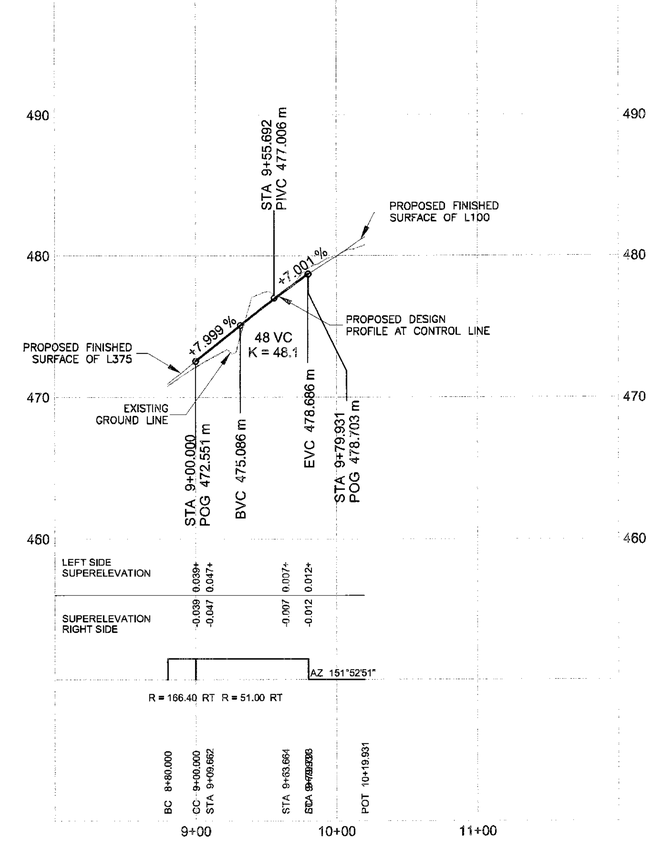
"C3" LINE
CURB RETURN PROFILE
McKENZIE OFFRAMP

TYPE-D	m³	17	NIL	TOTAL 17
EMBANKMENT	m³	325		TOTAL 325
STRIPPING	m³	108		TOTAL 108
SGSB DEPTH	mm	300		



"C6" LINE
CURB RETURN PROFILE
SPRINGFIELD ROAD
NORTHWEST CORNER

TYPE-D	m³	666		TOTAL 666
EMBANKMENT	m³	207		TOTAL 207
STRIPPING	m³	309		TOTAL 309
SGSB DEPTH	mm	300		



"C9" LINE
CURB RETURN PROFILE
SPRINGFIELD ROAD
SOUTHWEST CORNER

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

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DRAWN	N. KRUCKENBERG	DATE 2007-03-30
CHECKED	I. STEVENS	DATE 2007-04-16
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL
Sept 4, 2009

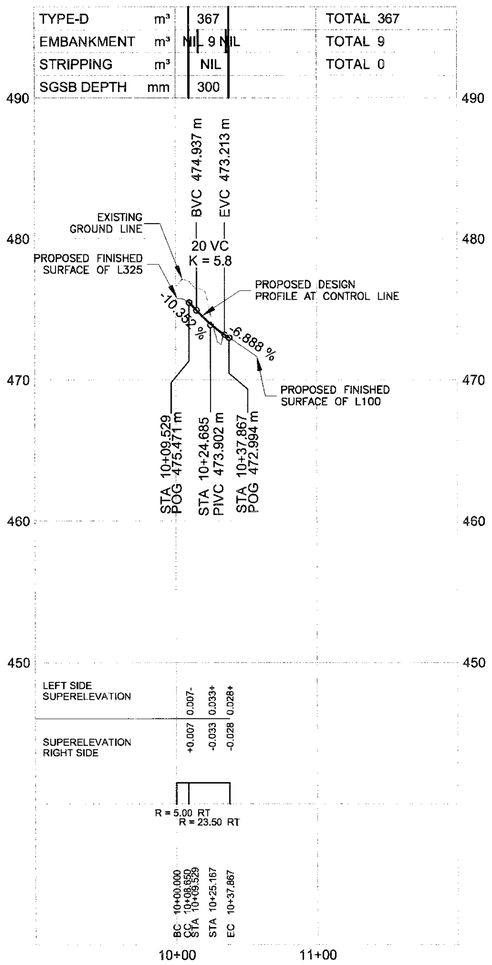
Rev	Date	Description	Signature

REVISIONS

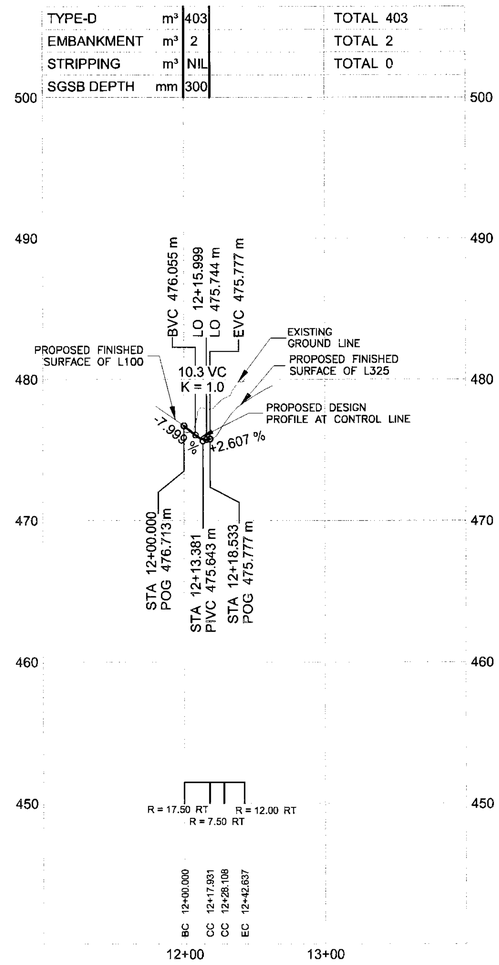
PROFILE "C3", "C6" & "C9"
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER
DATE Sept 4, 2009

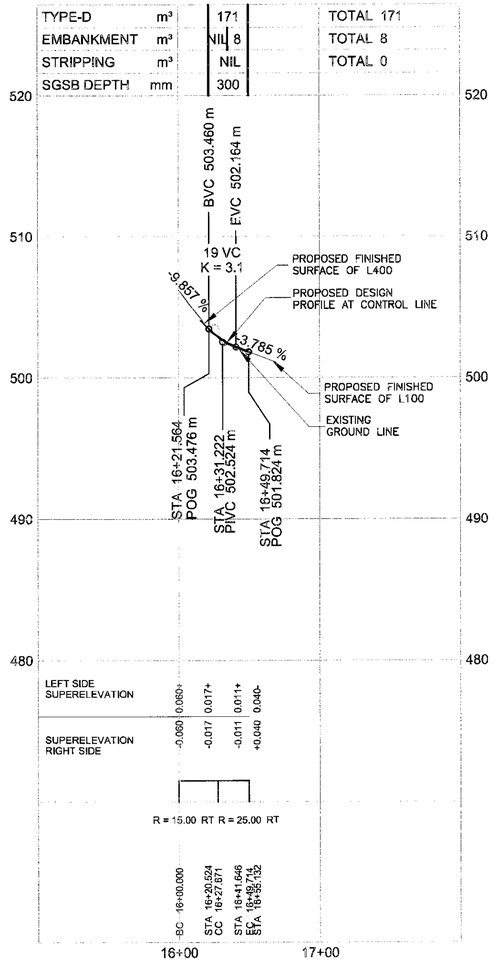
FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-210



"C10" LINE
CURB RETURN PROFILE
"L325" LINE NORTH CORNER



"C12" LINE
CURB RETURN PROFILE
SPRINGFIELD ROAD
SOUTHEAST CORNER



"C16" LINE
CURB RETURN PROFILE
TOOVEY ROAD
NORTHEAST CORNER

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

PROFESSIONAL SEAL

Sept 9 2009

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 Horiz. 1:2000 100
0 Vert. 1:200 10

DESIGNED	V. WANG V.W.	DATE 2007-03-30
DRAWN	N. KRUCKENBERG	DATE 2007-03-30
CHECKED	I. STEVENS	DATE 2007-04-18
APPROVED	R. LEE	DATE 2009-08-28

Rev	Date	Description	Signature

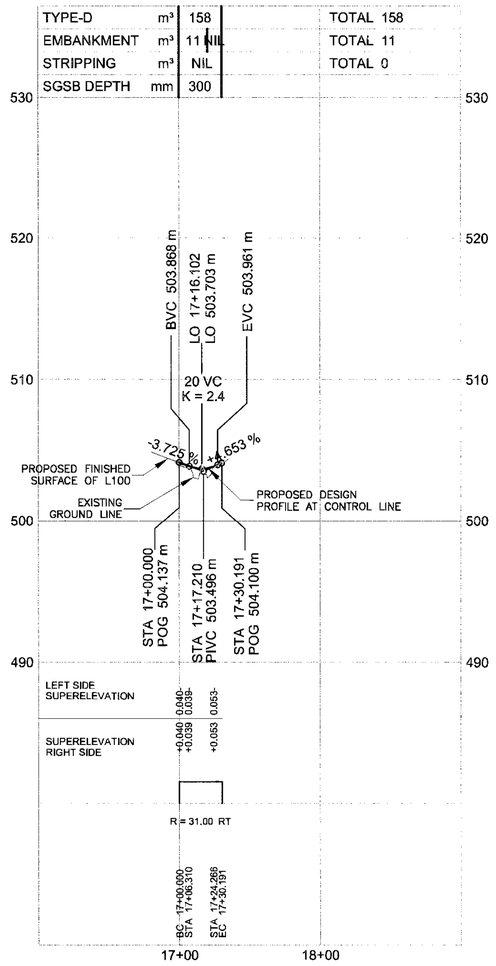
REVISIONS

PROFILE "C10, "C12" & "C16"
HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

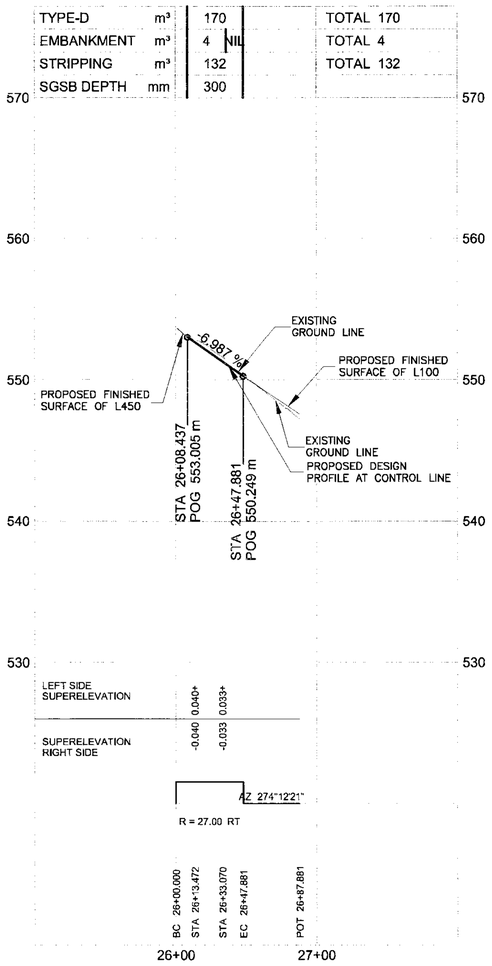
SENIOR DESIGN ENGINEER

Sept 9 2009
DATE

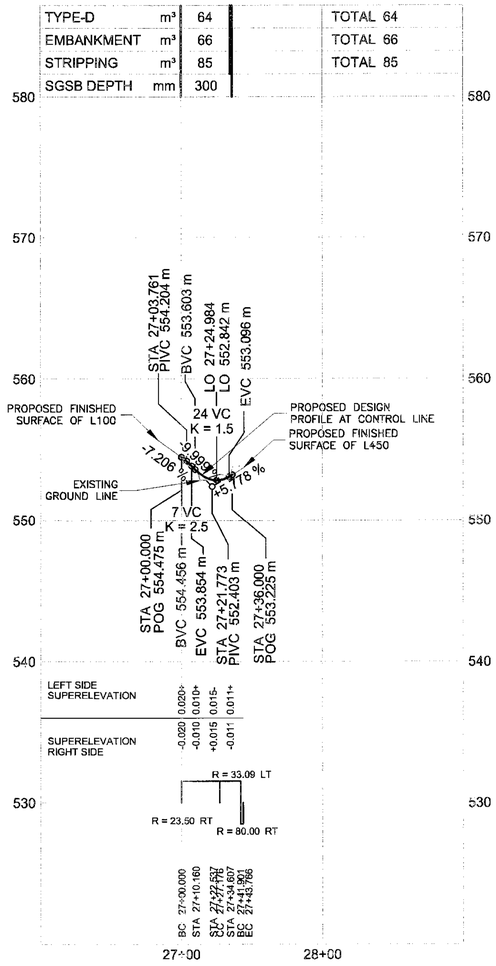
FILE No.	PROJECT No.	REC.	DRAWING No.
2064	22198-0001	2	R2-699-211



"C17" LINE
CURB RETURN PROFILE
TOOVEY ROAD
SOUTHEAST CORNER



"C26" LINE
CURB RETURN PROFILE
HUME ROAD
NORTHWEST CORNER



"C27" LINE
CURB RETURN PROFILE
HUME ROAD
NORTHEAST CORNER

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

PROFESSIONAL SEAL

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SCALE 0 Horiz. 1:2000 100
0 Vert. 1:200 10

DESIGNED	V. WANG	DATE 2007-03-30
DRAWN	N. KRUCKENBERG	DATE 2007-03-30
CHECKED	T. STEVENS	DATE 2007-04-19
APPROVED	R. LEE	DATE 2009-08-28

Rev	Date	Description	Signature

REVISIONS

PROFILE "C17", "C26" & "C27"

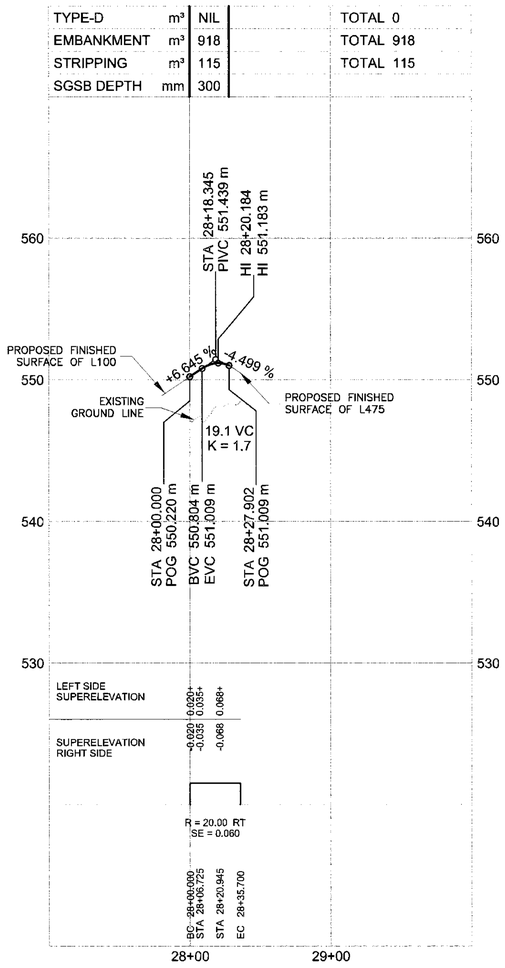
HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER

DATE

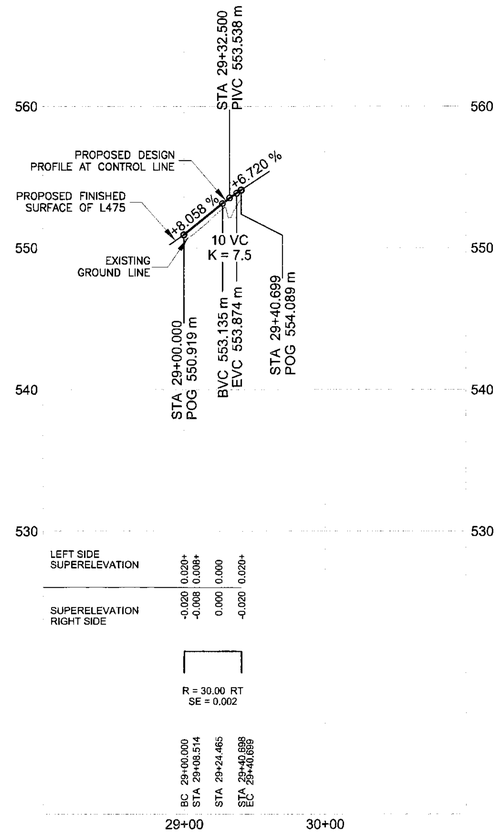
FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-212

TYPE-D	m³	NIL	TOTAL 0
EMBANKMENT	m³	918	TOTAL 918
STRIPPING	m³	115	TOTAL 115
SGSB DEPTH	mm	300	



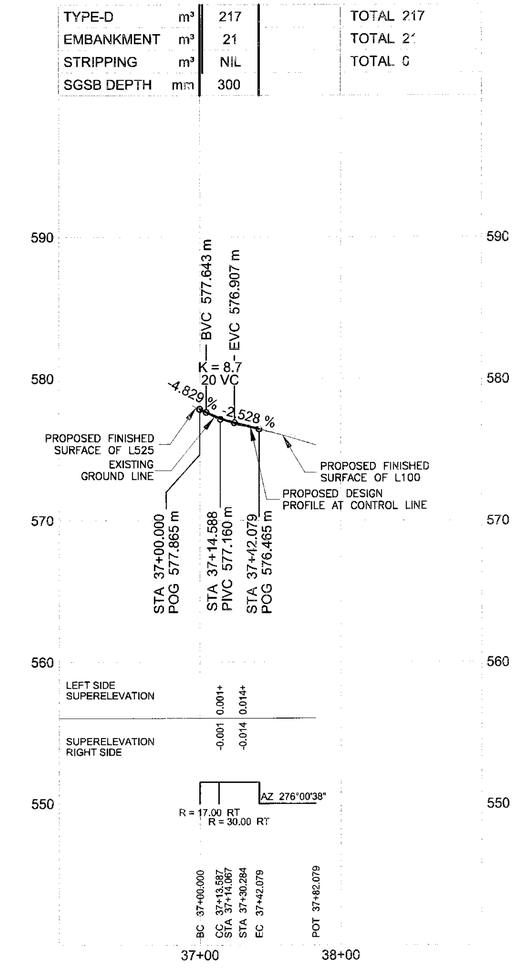
"C28" LINE
CURB RETURN PROFILE
GARNER ROAD
SOUTHWEST CORNER

TYPE-D	m³	36 NIL	TOTAL 36
EMBANKMENT	m³	229	TOTAL 229
STRIPPING	m³	73	TOTAL 73
SGSB DEPTH	mm	300	



"C29" LINE
CURB RETURN PROFILE
GARNER ROAD
SOUTHEAST CORNER

TYPE-D	m³	217	TOTAL 217
EMBANKMENT	m³	21	TOTAL 2'
STRIPPING	m³	NIL	TOTAL 0
SGSB DEPTH	mm	300	



"C37" LINE
CURB RETURN PROFILE
LOSETH ROAD
NORTHWEST CORNER

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

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SCALE 0 Horiz. 1:2000 100
0 Vert. 1:200 10

DESIGNED	V. WANG	DATE 2007-03-30
DRAWN	N. KRUCKENBERG	DATE 2007-03-30
CHECKED	T. STEVENS	DATE 2007-04-16
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature

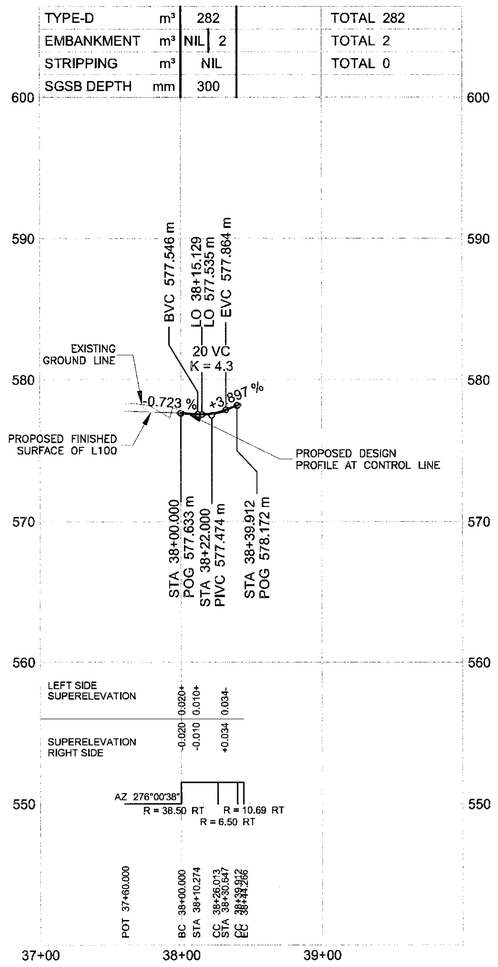
REVISIONS

PROFILE "C28", "C29" & "C37"
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

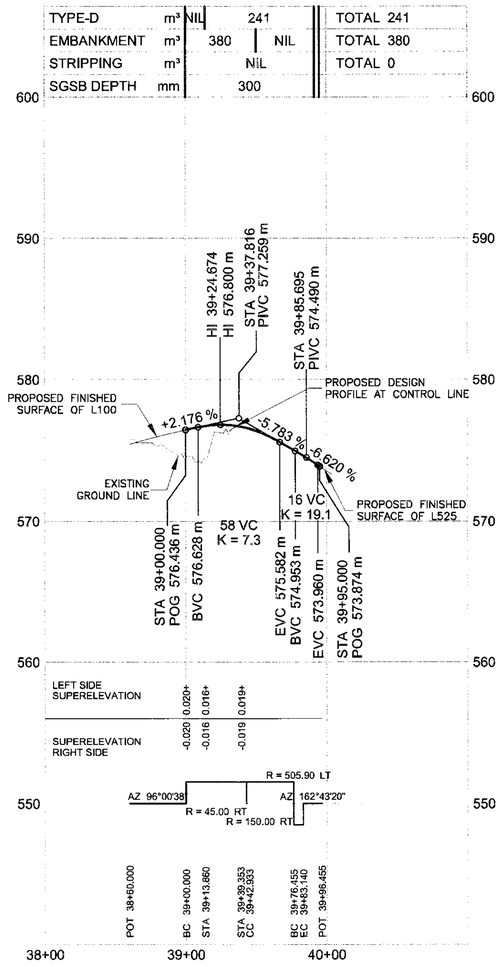
SENIOR DESIGN ENGINEER

Sept 16, 2009
DATE

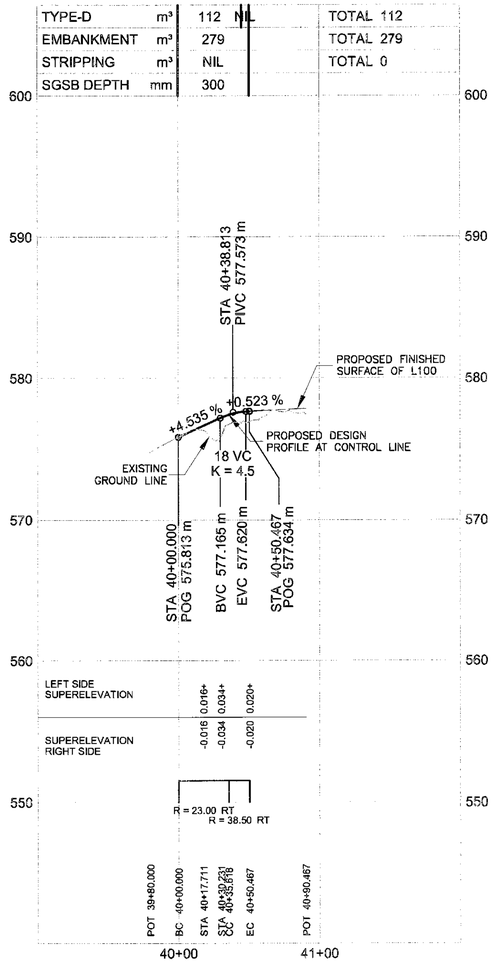
FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-213



"C38" LINE
CURB RETURN PROFILE
LOSETH ROAD
NORTHEAST CORNER



"C39" LINE
CURB RETURN PROFILE
LOSETH ROAD
SOUTHWEST CORNER



"C40" LINE
CURB RETURN PROFILE
LOSETH ROAD
SOUTHEAST CORNER

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

PROFESSIONAL SEAL

Sept 9, 2009

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0 Vert. 1:200 10

DESIGNED V. WANG DATE 2007-03-30
DRAWN R. KRUCKENBERG DATE 2007-03-30
CHECKED T. STEVENS DATE 2007-04-16
APPROVED R. LEE DATE 2009-08-26

Rev	Date	Description	Signature

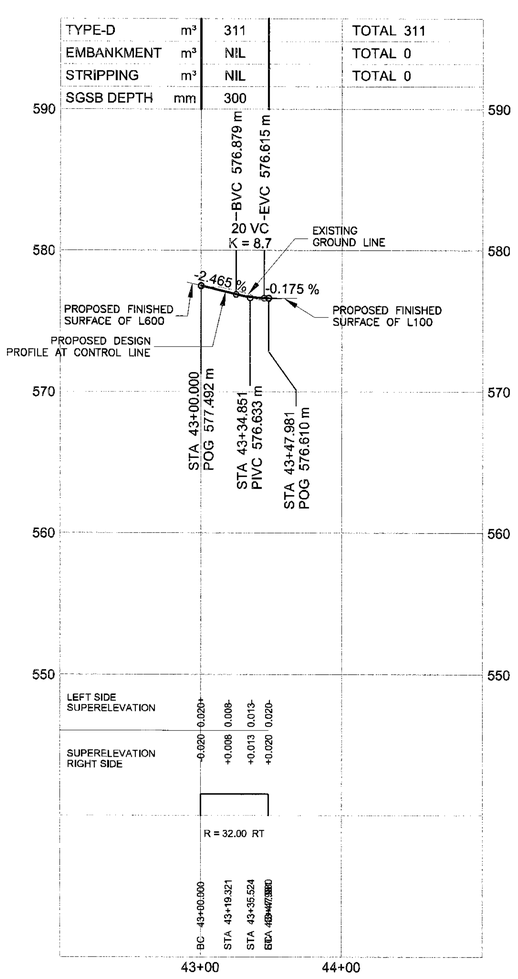
REVISIONS

PROFILE "C38", "C39" & "C40"
HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

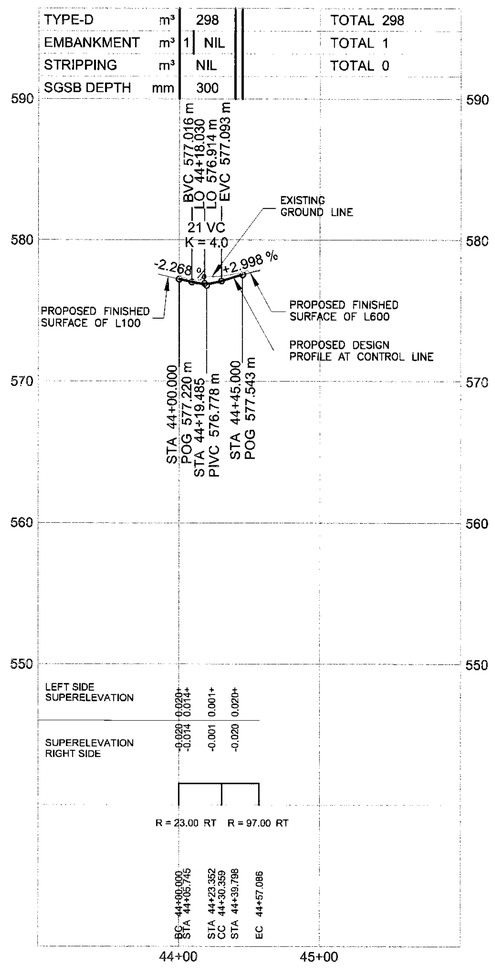
SENIOR DESIGN ENGINEER

Sept 9, 2009
DATE

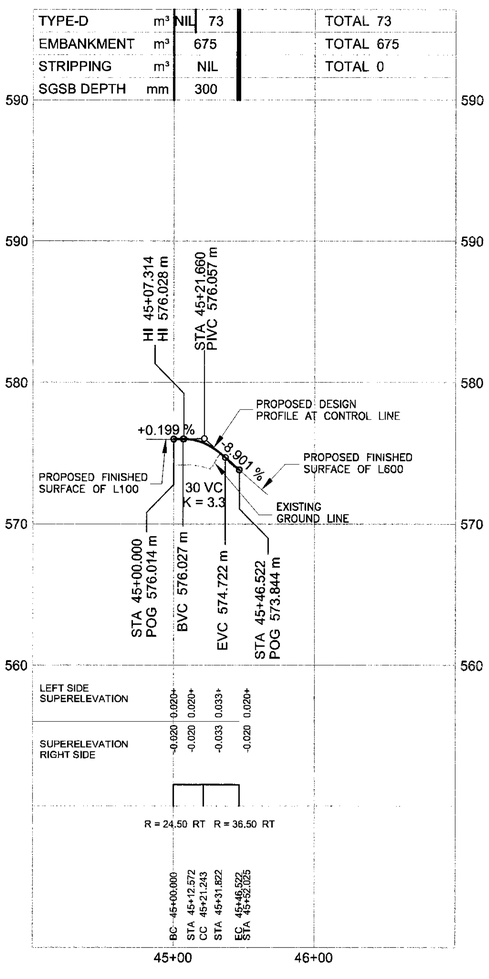
FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-214



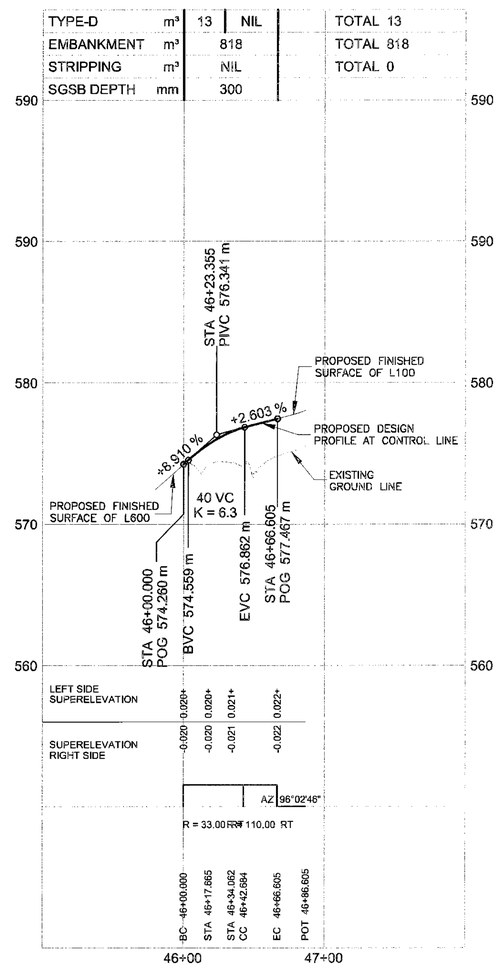
"C43" LINE
CURB RETURN PROFILE
BLACK MOUNTAIN DR.
NORTHWEST CORNER



"C44" LINE
CURB RETURN PROFILE
BLACK MOUNTAIN DR.
NORTHEAST CORNER



"C45" LINE
CURB RETURN PROFILE
GHALLAGHER ROAD
SOUTHWEST CORNER



"C46" LINE
CURB RETURN PROFILE
GHALLAGHER ROAD
SOUTHEAST CORNER

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

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City of Kelowna

SCALE 0 Horiz. 1:2000 100
0 Vert. 1:200 10

DESIGNED V. WANG DATE 2007-03-30
DRAWN N. KRUCKENBERG DATE 2007-03-30
CHECKED T. STEVENS DATE 2007-04-16
APPROVED R. LEE DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

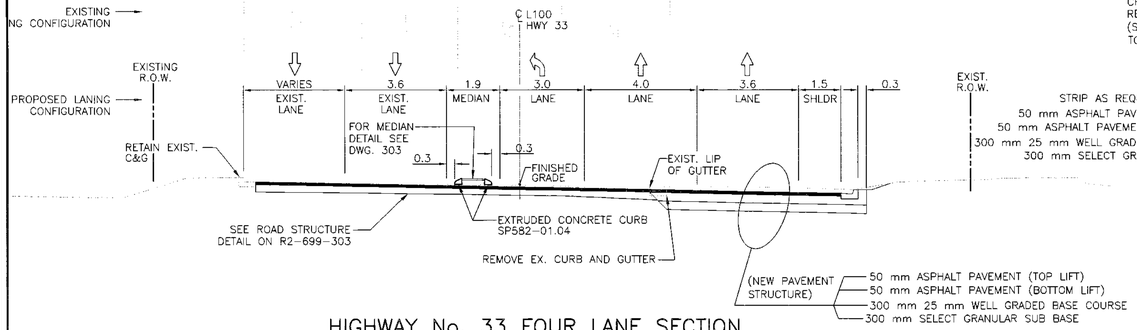
PROFILE "C43", "C44", "C45" & "C46"

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER

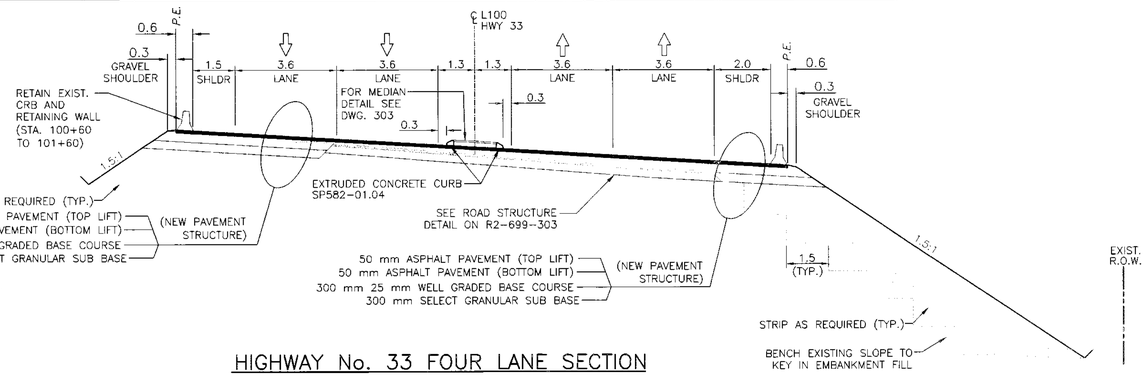
DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-215



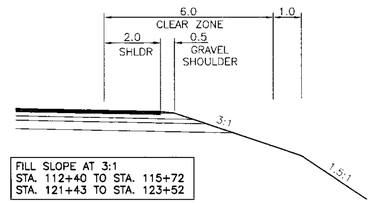
HIGHWAY No. 33 FOUR LANE SECTION
"L100" LINE
LOOKING EAST @ STA. 100+00, MOLNAR ROAD TO MUIR ROAD
(STA. 99+00 TO STA. 100+60)

0 1:100 5

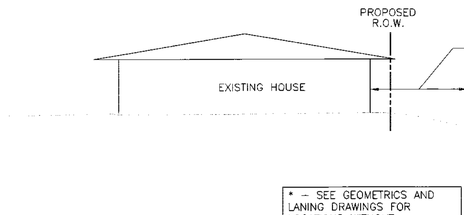


HIGHWAY No. 33 FOUR LANE SECTION
"L100" LINE
LOOKING EAST @ STA. 102+40, MUIR ROAD TO McKENZIE ROAD
(STA. 100+60 TO STA. 103+00)

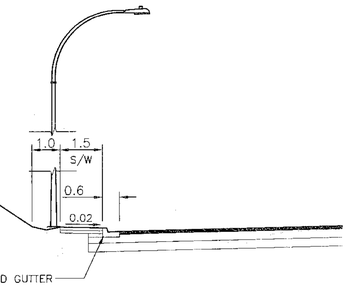
0 1:100 5



FILL SLOPE AT 3:1
STA. 112+40 TO STA. 115+72
STA. 121+43 TO STA. 123+52

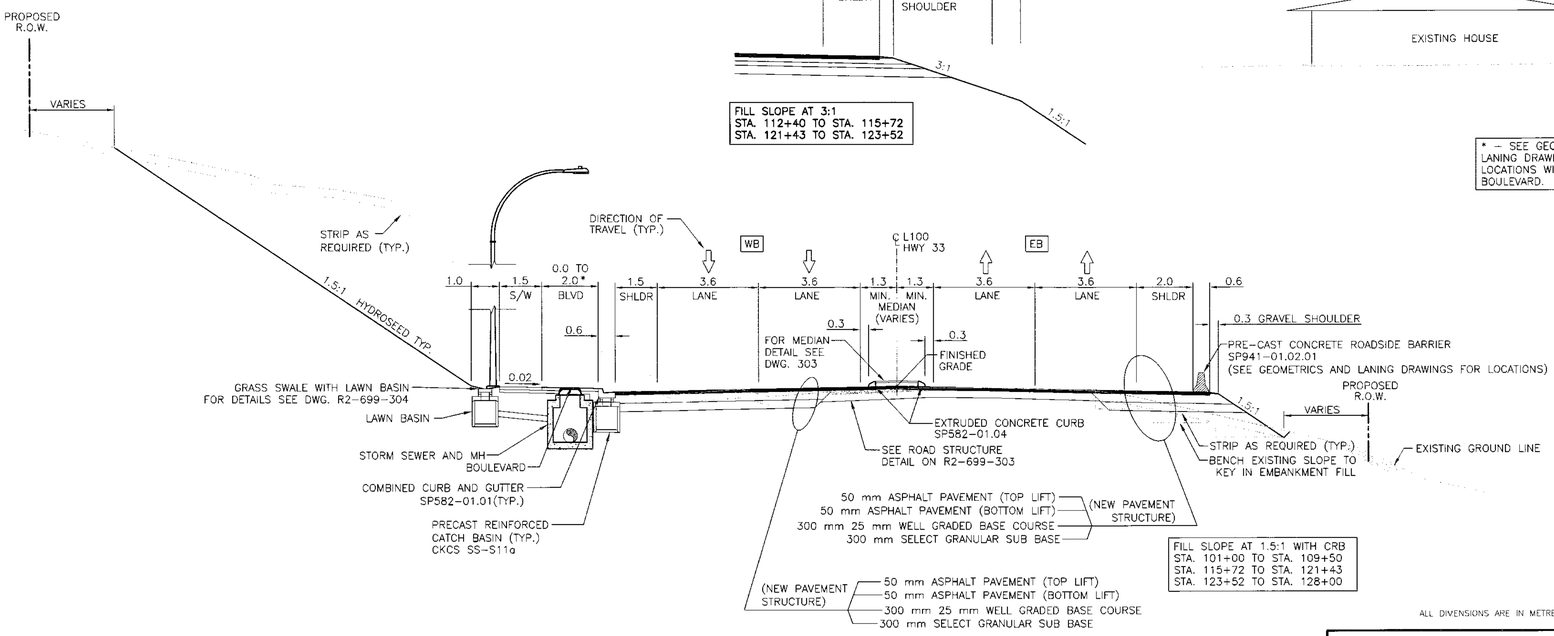


* - SEE GEOMETRICS AND LANING DRAWINGS FOR LOCATIONS WITHOUT BOULEVARD.



LOOKING EAST @ STA. 108+80 TO 109+30

0 1:100 5



FILL SLOPE AT 1.5:1 WITH CRB
STA. 101+00 TO STA. 109+50
STA. 115+72 TO STA. 121+43
STA. 123+52 TO STA. 128+00

HIGHWAY No. 33 FOUR LANE SECTION
"L100" LINE
LOOKING EAST @ SPRINGFIELD ROAD WEST TO SPRINGFIELD ROAD
(STA. 103+00 TO STA. 109+60)

0 1:100 5

ALL DIMENSIONS ARE IN METRES (m) UNLESS OTHERWISE SHOWN.

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SCALE AS SHOWN

DESIGNED V. WANG DATE 2007-11-23
DRAWN N. KRUCKENBERG DATE 2007-11-23
CHECKED K. MacDONALD/R. LEE DATE 2007-11-23
APPROVED R. LEE DATE 2009-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature

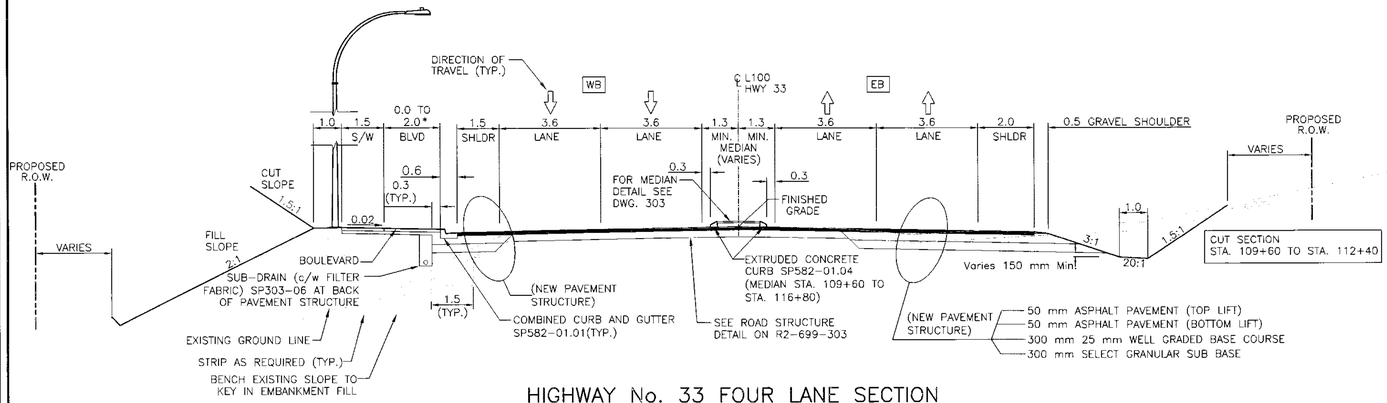
REVISIONS

TYPICAL SECTIONS AND DETAILS
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER — DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-301

CANCEL PRINTS BEARING PREVIOUS LETTER

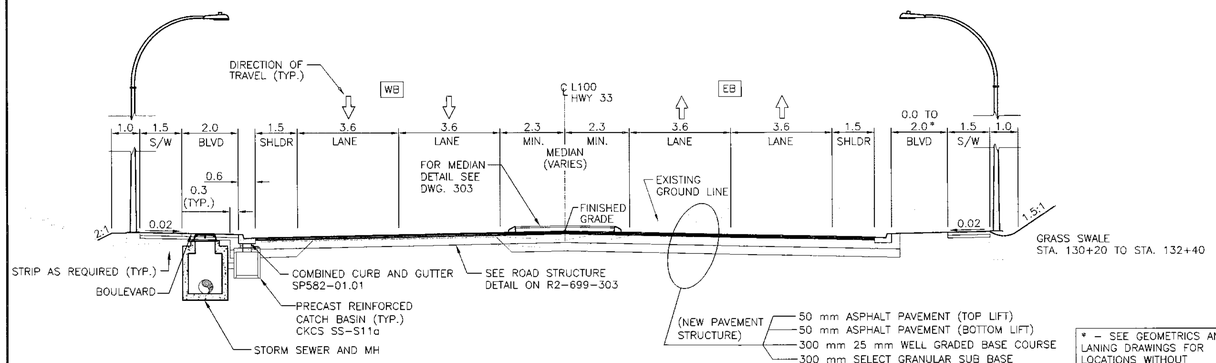


HIGHWAY No. 33 FOUR LANE SECTION
"L100" LINE
LOOKING EAST @ SPRINGFIELD ROAD TO GARNER ROAD
(STA. 109+60 TO STA. 128+20)
0 1:100 5

SUBDRAIN:
STA. 122+85 TO STA. 126+85 LT

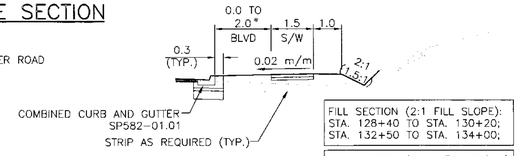
SUBDRAIN FLUSHOUTS TO SP303-07
STA. 123+55
STA. 124+35
STA. 125+15
STA. 125+95
STA. 126+85

SUBDRAIN TIE INTO:
DMH 507-5
DMH 508-1
DMH 508-2
DMH 508-3
DMH 508-4



* – SEE GEOMETRICS AND LANING DRAWINGS FOR LOCATIONS WITHOUT BOULEVARD.

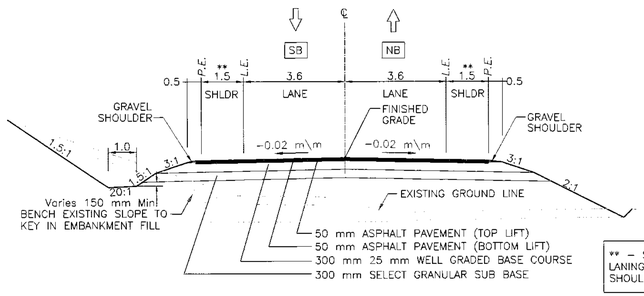
HIGHWAY No. 33 FOUR LANE SECTION
"L100" LINE
LOOKING EAST @ GARNER ROAD TO GALLAGHER ROAD
(STA. 128+20 TO STA. 138+80)
0 1:100 5



FILL SECTION (2:1 FILL SLOPE):
STA. 128+40 TO STA. 130+20;
STA. 132+50 TO STA. 134+00;

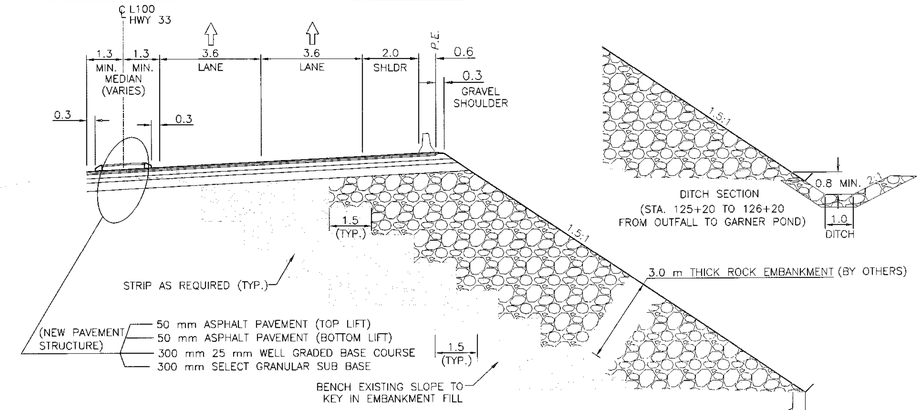
FILL SECTION (1.5:1 FILL SLOPE):
STA. 134+00 TO STA. 136+00

FILL SECTION (4:1 FILL SLOPE):
STA. 136+00 TO STA. 138+80



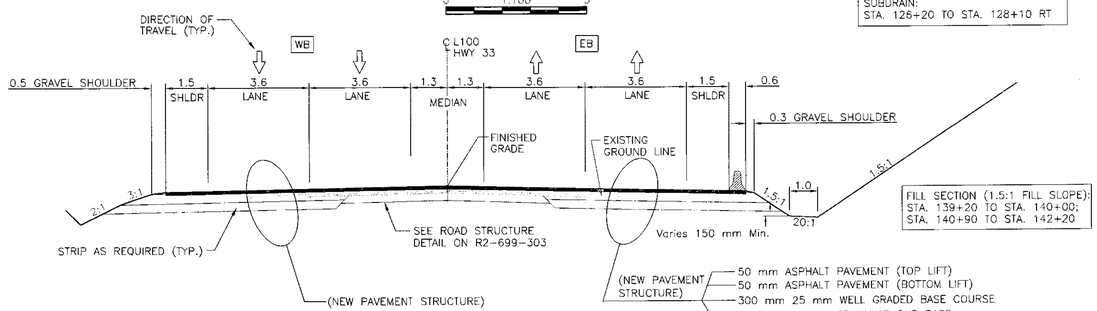
** – SEE GEOMETRICS AND LANING DRAWINGS FOR SHOULDER WIDTHS.

SPRINGFIELD ROAD, TOOVEY ROAD & GALLAGHER ROAD
"L375", "L400", "L450" & "L600" LINES
0 1:100 5



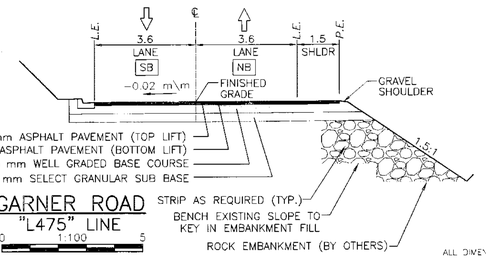
HIGHWAY No. 33 FOUR LANE SECTION
"L100" LINE
LOOKING EAST @ GARNER POND
(STA. 126+00 TO GARNER ROAD)
0 1:100 5

SUBDRAIN:
STA. 126+20 TO STA. 128+10 RT



FILL SECTION (1.5:1 FILL SLOPE):
STA. 139+20 TO STA. 140+00;
STA. 140+90 TO STA. 142+20

HIGHWAY No. 33 FOUR LANE SECTION
"L100" LINE
LOOKING EAST @ GALLAGHER ROAD TO JOE RICHE ROAD
(STA. 138+80 TO STA. 141+80)
141+80 TO 143+60 SIMILAR EXCEPT
NO WIDENING ON LEFT SIDE
0 1:100 5



GARNER ROAD
"L475" LINE
0 1:100 5

ALL DIMENSIONS ARE IN METRES (m) UNLESS OTHERWISE SHOWN.

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City of Kelowna

SCALE AS SHOWN

DESIGNED V. WANG V.W. DATE 2007-11-23
DRAWN N. KRUCKENBERG DATE 2007-11-23
CHECKED K. MacDONALD/R. LEE DATE 2007-11-23
APPROVED R. LEE DATE 2009-09-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature

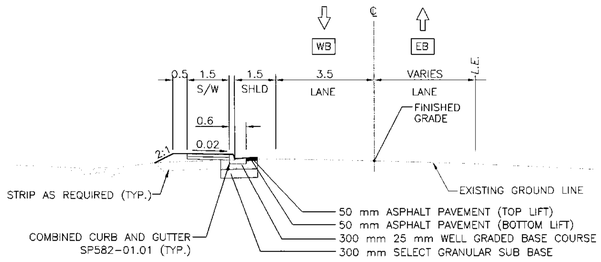
REVISIONS

TYPICAL SECTIONS AND DETAILS
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER — DATE

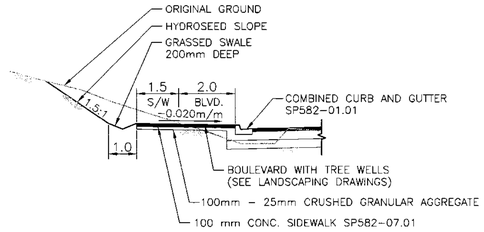
FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-302

CANCEL PRINTS BEARING PREVIOUS LETTER



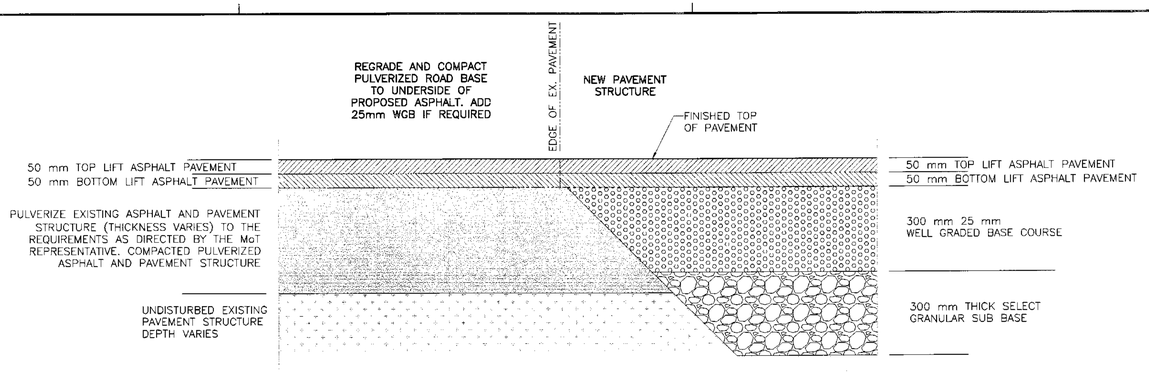
MUIR ROAD CONNECTION
"L225" LINE
(STA. 225+00 TO STA. 226+50)

0 1:100 5



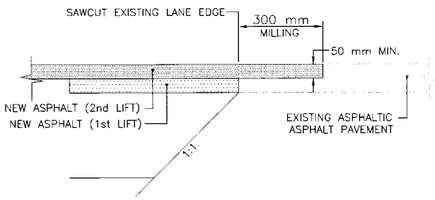
TYPICAL ROAD SIDE TREATMENT DETAIL

0 1:50 2

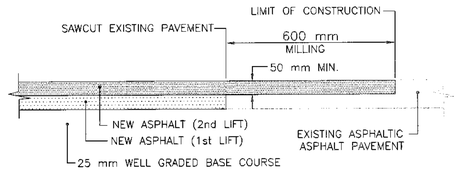


SECTION OF PAVEMENT STRUCTURE TO BE PULVERIZED

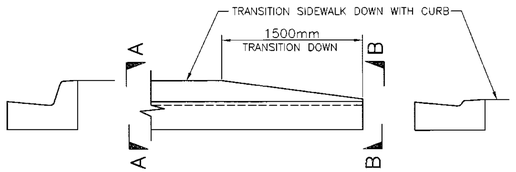
0 1:10 0.5



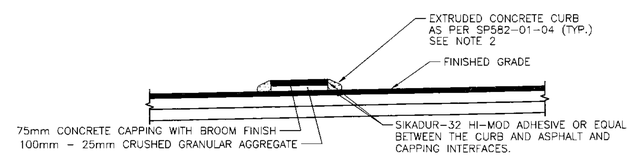
LONGITUDINAL PAVEMENT JOINT DETAIL
STA. 104+80.000 TO STA. 106+13.000
SCALE: N.T.S.



TRANSVERSE PAVEMENT JOINT DETAIL
SCALE: N.T.S.

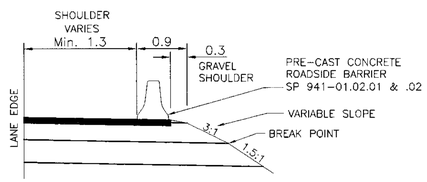


SECTION A CURB TRANSITION DETAIL SECTION B
SCALE: N.T.S.



TYPICAL MEDIAN AND TRAFFIC ISLAND TREATMENT DETAIL

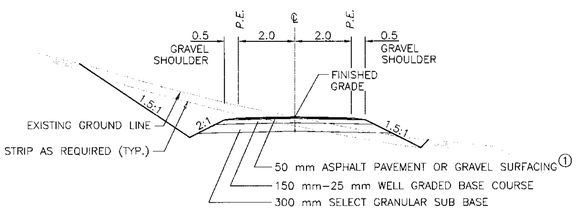
0 1:50 2



CONCRETE ROADSIDE BARRIER

0 1:50 2

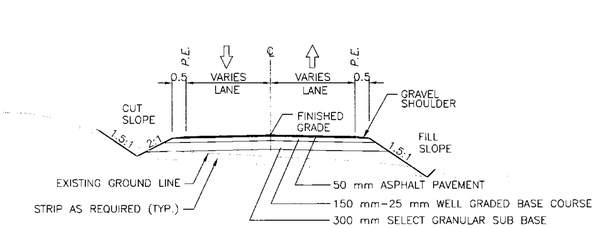
TABLE 303-1 FWD STRUCTURAL ASSESSMENT				
LANE	FROM	TO	ASPHALT CONCRETE THICKNESS (mm)	GRANULAR BASE AND SUB-BASE THICKNESS (mm)
EASTBOUND	99+76	101+56	150	480
	101+56	104+36	150	300
	104+36	121+56	220	300
	121+56	128+76	220	350
	128+76	130+56	150	350
	130+56	139+96	150	420
	139+96	141+76	150	320
WESTBOUND	99+76	101+36	180	420
	101+36	104+56	180	320
	104+56	108+76	260	320
	108+76	116+96	260	270
	115+96	115+96	260	320
	116+96	125+96	220	320
	125+96	126+96	220	320
	126+96	133+96	220	350
	133+96	141+77	145	390



TYPICAL DRIVEWAY SECTION
"L300", "L350", "L425", "L625"
"L650" & "L675" LINES

0 1:100 5

① GRAVEL SURFACING TO MEET MoT SS 202 HIGH FINES SURFACING AGGREGATE REQUIREMENTS.



PAVED APPROCH TO FRONTAGE ROADS SECTION
"L325" LINE

0 1:100 5

ALL DIMENSIONS ARE IN METRES (m) UNLESS OTHERWISE SHOWN.

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CHECKED K. MacDONALD/R. LEE DATE 2007-11-23
APPROVED R. LEE DATE 2009-08-28

TYPICAL SECTIONS AND DETAILS
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

PROFESSIONAL SEAL

Sept 4, 2009

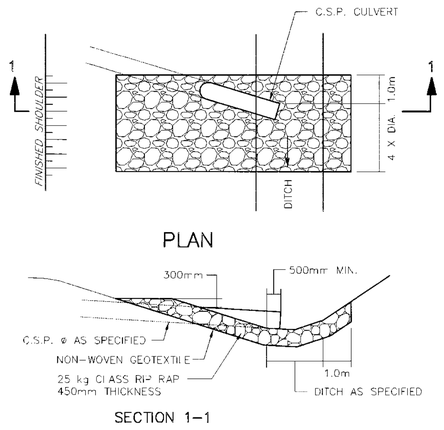
Rev	Date	Description	Signature

REVISIONS

SENIOR DESIGN ENGINEER

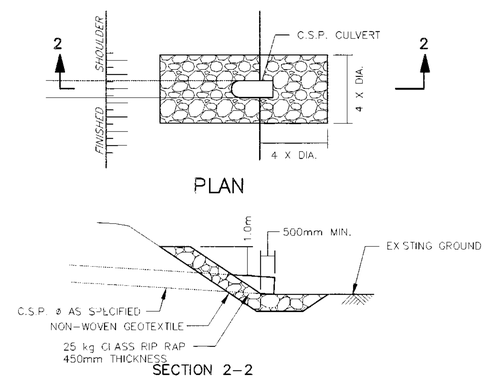
DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-303



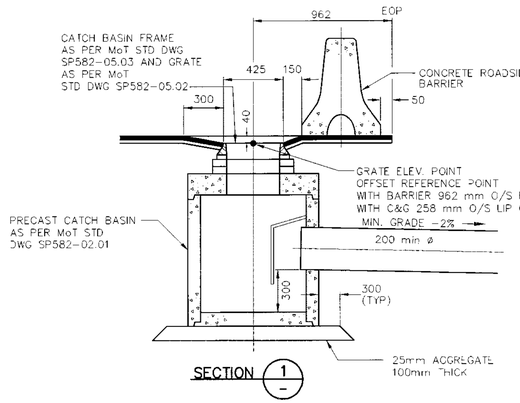
CULVERT OUTLET PROTECTION IN DITCH

N.T.S.



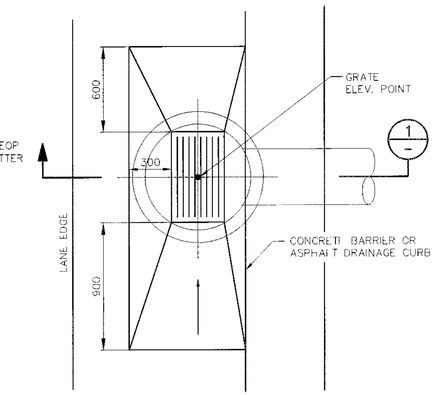
CULVERT OUTLET PROTECTION IN FILL

N.T.S.



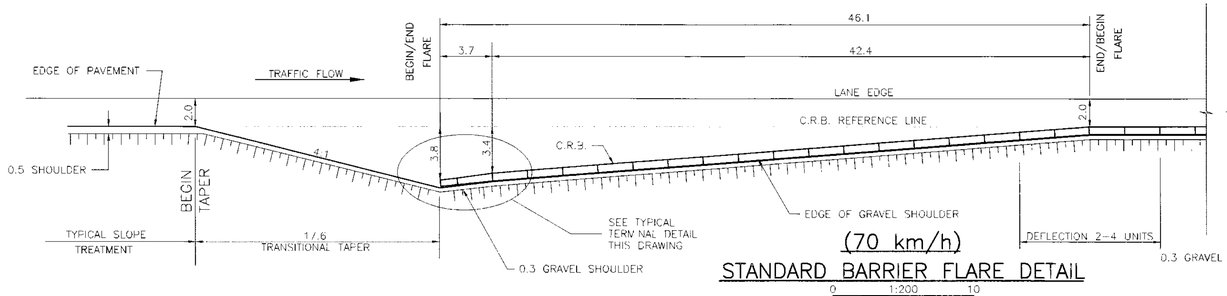
CATCH BASIN AT CONCRETE ROADSIDE BARRIER

N.T.S.



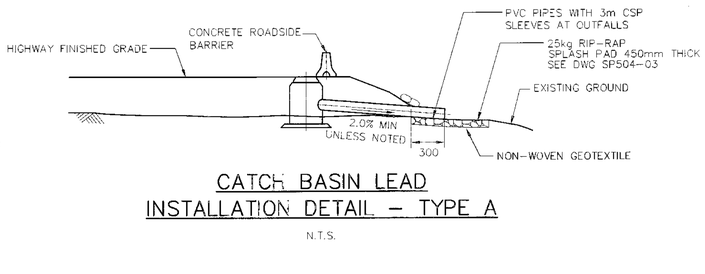
PLAN

N.T.S.



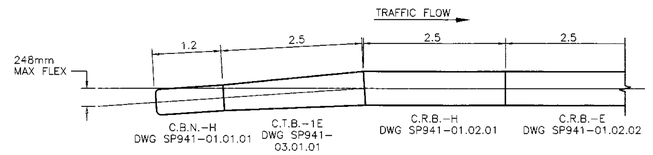
(70 km/h) STANDARD BARRIER FLARE DETAIL

0 1:200 10



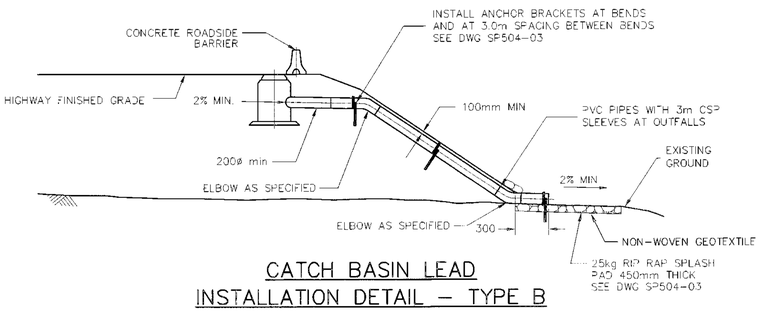
CATCH BASIN LEAD INSTALLATION DETAIL – TYPE A

N.T.S.



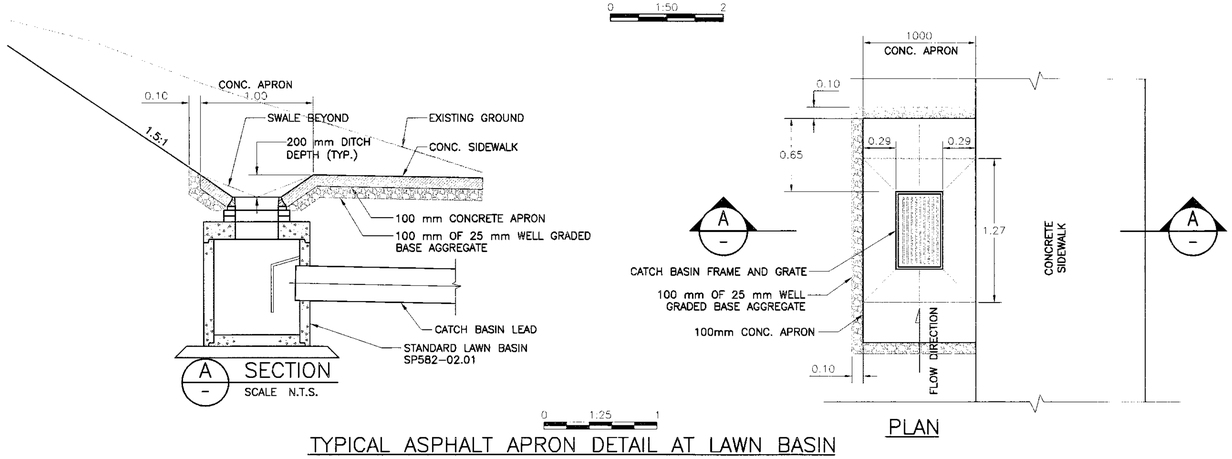
TYPICAL BARRIER TERMINAL DETAIL

0 1:50 2



CATCH BASIN LEAD INSTALLATION DETAIL – TYPE B

N.T.S.



TYPICAL ASPHALT APRON DETAIL AT LAWN BASIN

ALL DIMENSIONS ARE IN METRES (m) UNLESS OTHERWISE SHOWN.

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City of Kelowna

SCALE AS SHOWN

DESIGNED	V. WANG	DATE 2007-11-23
DRAWN	N. KRUCKENBERG	DATE 2007-11-23
CHECKED	K. MacDONALD/R. LEE	DATE 2007-11-23
APPROVED	R. LEE	DATE 2009-08-28

TYPICAL SECTIONS AND DETAILS

HIGHWAY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

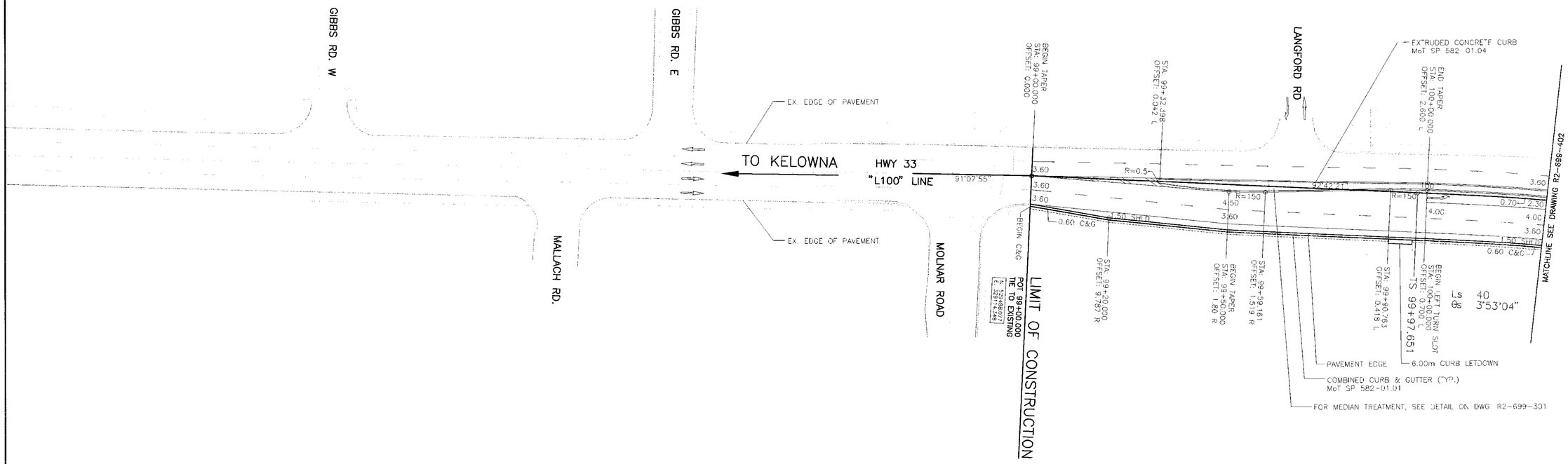
SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-304

BARRIER LOCATION CHART									
LOCATION				NUMBER OF UNITS					
ALIGNMENT	START OF BARRIER	END OF BARRIER	COMMENTS	CBN SP941-01.01.01	CTB-1E SP941-03.01.01	CRB-E SP941-01.02.02		CRB-H SP941-01.02.01	
"L100"	100+88.154	375+47.223	DWG. R2-699-402 TO 404	2	2	99	74•	101	73•
"L100"	100+60.116	102+50.495	DWG. R2-699-402	2	2	38		39	
"L100"	115+72.083	121+41.277	DWG. R2-699-406 TO 407	2	2	112		113	
"L100"	123+52.596	128+00.109	DWG. R2-699-408 TO 409	2	2	113		113	
"L100"	139+09.968	142+21.093	DWG. R2-699-412 TO 413	2	2	21	39•	22	39•
"L100"	141+46.473	142+63.620	DWG. R2-699-413	2	2		22•		22•
			TOTAL	12	12	383	135•	387	135•

• DENOTES BARRIERS WITH DRAINAGE SLOTS



FOR PLANS
SEE DWG. R2-699-101 THRU 113

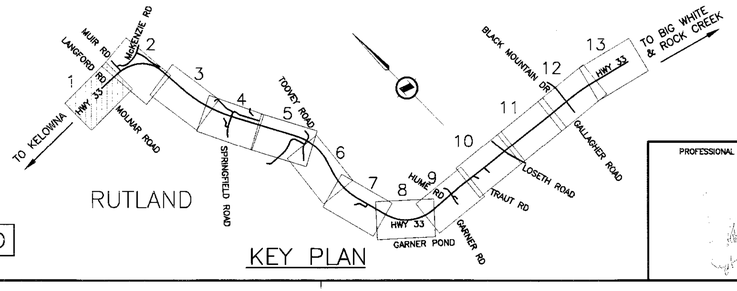
FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

DESIGN SPEED 60 km/h "L100"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED



KEY PLAN

PROFESSIONAL SEAL

Rev	Date	Description	Signature

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DESIGNED V. WANG / R.S. BRAR DATE 2007-03-30
DRAWN N. KRUCKENBERG DATE 2007-03-30
CHECKED T. STEVENS DATE 2007-04-16
APPROVED R. LEE DATE 2009-08-28

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GEOMETRICS AND LANING

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 99+00.000 TO STA. 100+30.000

SENIOR DESIGN ENGINEER DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-401

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

FOR BARRIER LOACTION CHART
SEE DWG. R2-699-401

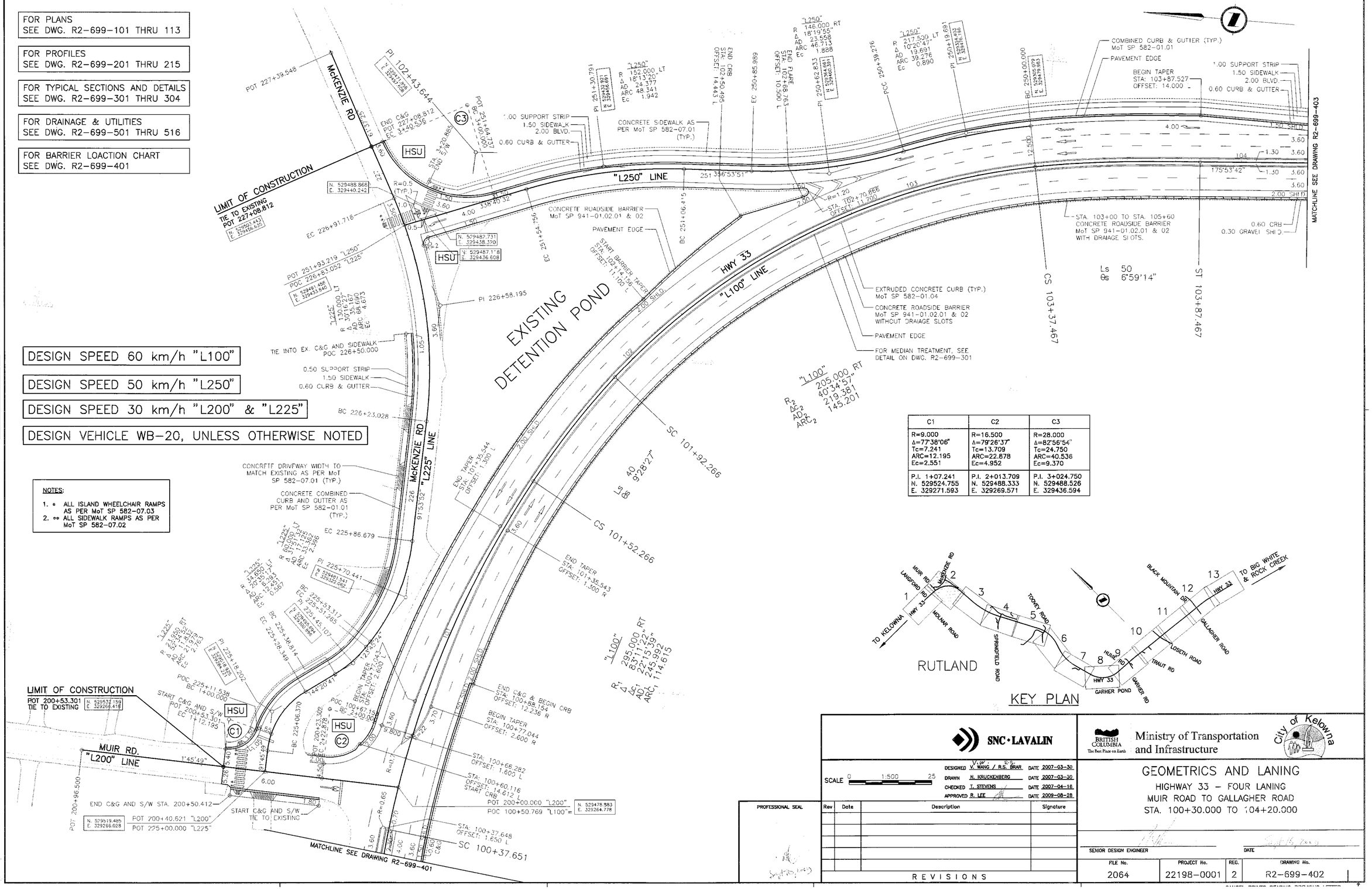
DESIGN SPEED 60 km/h "L100"

DESIGN SPEED 50 km/h "L250"

DESIGN SPEED 30 km/h "L200" & "L225"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED

NOTES:
1. ∘ ALL ISLAND WHEELCHAIR RAMPS AS PER MoT SP 582-07.03
2. ∞ ALL SIDEWALK RAMPS AS PER MoT SP 582-07.02



C1	C2	C3
R=9.000 Δ=77°38'06" Tc=7.241 ARC=12.195 Ec=2.551	R=16.500 Δ=79°26'37" Tc=13.709 ARC=22.878 Ec=4.952	R=28.000 Δ=82°56'54" Tc=24.750 ARC=40.536 Ec=9.370
P.I. 1+07.241 N. 529524.755 E. 329271.593	P.I. 2+013.709 N. 529488.333 E. 329269.571	P.I. 3+024.750 N. 529488.526 E. 329436.594

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SCALE 0 1:500 25

DESIGNED	V. WANG / R.S. BRAR	DATE	2007-03-30
DRAWN	N. KRUCKENBERG	DATE	2007-03-30
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APPROVED	R. LEE	DATE	2009-08-28

GEOMETRICS AND LANING
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 100+30.000 TO 104+20.000

PROFESSIONAL SEAL

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SENIOR DESIGN ENGINEER — DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-402

"L100"
R 920.000 LT
Δ 24°00'53"
Δs 21°31'25"
AD 215.691
ARC 345.605
Es 20.653

END TAPER STA. 104+37.527 OFFSET: 10.000 L

TS 105+49.938

Ls 40
θs 1°14'44"

SC 105+89.938

STA. 107+42.501 OFFSET 1.000 L

MATCHLINE SEE DRAWING R2-699-402

MATCHLINE SEE DRAWING R2-699-404

1.00 SUPPORT STRIP
1.50 SIDEWALK
2.00 BLVD.
0.60 CURB & GUTTER

FOR MEDIAN TREATMENT, SEE DETAIL ON DWG. R2-699-301

CONCRETE SIDEWALK AS PER (TYP.) MoT SP 582-07.01

COMBINED CURB & GUTTER (TYP.) SP 582-01.01

PAVEMENT EDGE

1.50 SHLD
3.60
3.60
1.30 (FOR DETAIL SEE DWG. 301)
3.60
1.30 (FOR DETAIL SEE DWG. 301)
3.60
2.00 SHLD

105 HWY 33 106 107

"L100" LINE

175°53'42"

3.60
3.60
3.60
1.50 SHLD
2.00 SHLD
0.60
0.30

0.60 CRB
0.30 GRAVEL SHLD.

STA. 103+00 TO STA. 105+60
CONCRETE ROADSIDE BARRIER
MoT SP 941-01.02.01 & 02
WITH DRAAGE SLOTS.

EXTRUDED CONCRETE CURB (TYP.) MoT SP 582-01.04

CONCRETE ROADSIDE BARRIER MoT SP 941-01.02.01 & 02 WITHOUT DRAINAGE SLOTS

PAVEMENT EDGE

STA. 107+42.499 OFFSET 1.000 R

PI 107+65.628
N 5539635.355
E 338635.382

DESIGN SPEED 60 km/h (L100)

DESIGN SPEED 70 km/h (L100)

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

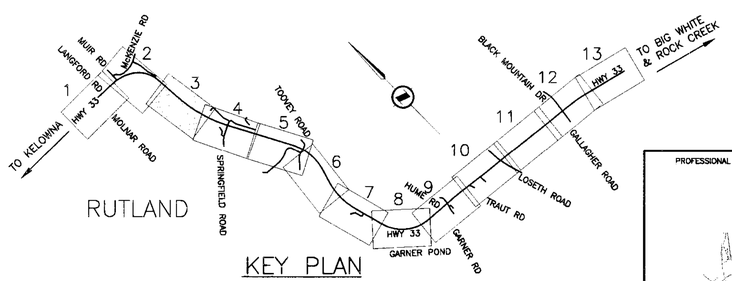
FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

FOR BARRIER LOCATION CHART
SEE DWG. R2-699-401

DESIGN SPEED 70 km/h "L100"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED



KEY PLAN

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DESIGNED V. WANG / R.S. BRAR DATE 2007-03-30
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APPROVED R. LEE DATE 2009-06-20

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GEOMETRICS AND LANING

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 104+20.000 TO STA. 107+90.000

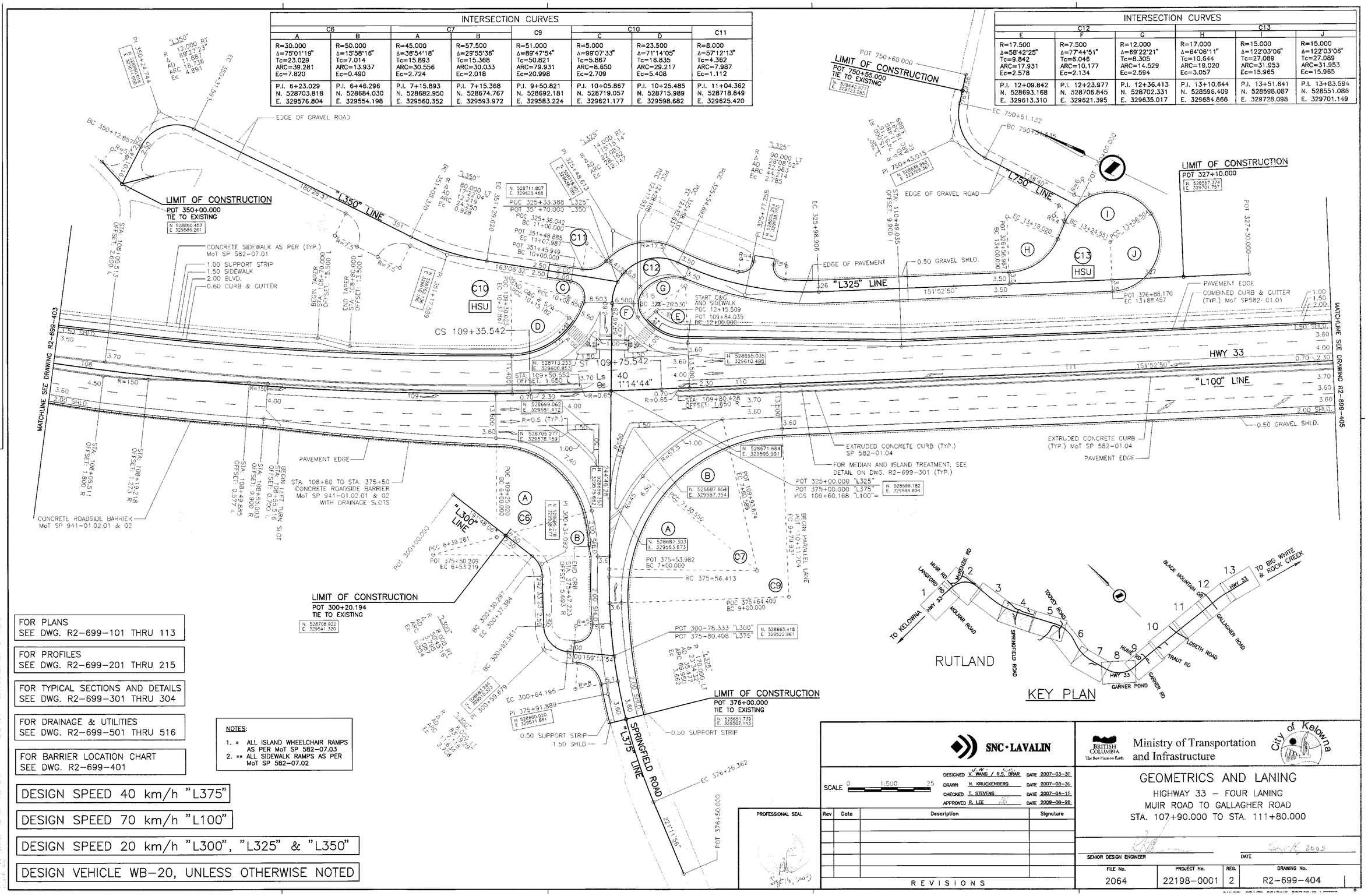
SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-403

INTERSECTION CURVES							
C6		C7		C9	C10		C11
A	B	A	B		C	D	
R=30.000 Δ=75°01'19" Tc=23.029 ARC=39.281 Ec=7.820	R=50.000 Δ=15°58'16" Tc=7.014 ARC=13.937 Ec=0.490	R=45.000 Δ=38°54'18" Tc=15.893 ARC=30.556 Ec=2.724	R=57.500 Δ=29°55'36" Tc=15.368 ARC=30.033 Ec=2.018	R=51.000 Δ=89°47'54" Tc=50.821 ARC=79.931 Ec=20.998	R=5.000 Δ=99°07'33" Tc=5.867 ARC=8.650 Ec=2.709	R=23.500 Δ=71°14'05" Tc=16.835 ARC=29.217 Ec=5.408	R=8.000 Δ=57°12'13" Tc=4.362 ARC=7.987 Ec=1.112
P.I. 6+23.029 N. 528703.818 E. 329576.804	P.I. 6+46.296 N. 528684.030 E. 329554.198	P.I. 7+15.893 N. 528682.950 E. 329560.352	P.I. 7+15.368 N. 528674.767 E. 329593.972	P.I. 9+50.821 N. 528692.181 E. 329583.224	P.I. 10+05.867 N. 528719.057 E. 329621.177	P.I. 10+25.485 N. 528715.989 E. 329598.682	P.I. 11+04.362 N. 528718.849 E. 329625.420

INTERSECTION CURVES					
C12			C13		
E	F	G	H	I	J
R=17.500 Δ=58°42'25" Tc=9.842 ARC=17.931 Ec=2.578	R=7.500 Δ=77°44'51" Tc=6.046 ARC=10.177 Ec=2.134	R=12.000 Δ=69°22'21" Tc=8.305 ARC=14.529 Ec=2.594	R=17.000 Δ=64°06'11" Tc=10.644 ARC=19.020 Ec=3.057	R=15.000 Δ=122°03'06" Tc=27.089 ARC=31.953 Ec=15.965	R=15.000 Δ=122°03'06" Tc=27.089 ARC=31.953 Ec=15.965
P.I. 12+09.842 N. 528693.168 E. 329613.310	P.I. 12+23.977 N. 528706.845 E. 329621.395	P.I. 12+36.413 N. 528702.331 E. 329635.017	P.I. 13+10.644 N. 528598.409 E. 329684.866	P.I. 13+51.641 N. 528598.087 E. 329728.098	P.I. 13+83.594 N. 528551.086 E. 329701.149



FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

FOR BARRIER LOCATION CHART
SEE DWG. R2-699-401

DESIGN SPEED 40 km/h "L375"

DESIGN SPEED 70 km/h "L100"

DESIGN SPEED 20 km/h "L300", "L325" & "L350"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED

NOTES:
1. * ALL ISLAND WHEELCHAIR RAMPS AS PER MoT SP 582-07.03
2. ** ALL SIDEWALK RAMPS AS PER MoT SP 582-07.02

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED V. WANG / R.S. BRAR DATE 2007-03-30
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PROFESSIONAL SEAL

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REVISIONS

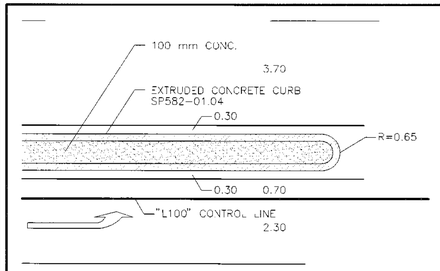
GEOMETRICS AND LANING

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 107+90.000 TO STA. 111+80.000

SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-404



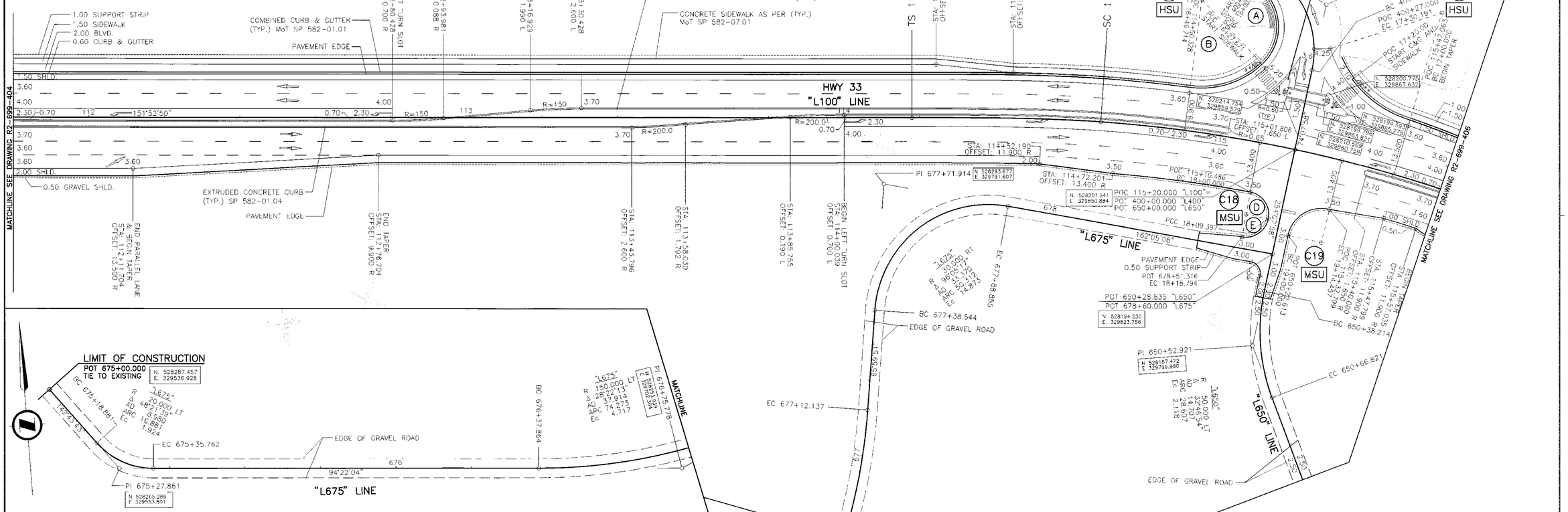
MEDIAN END DETAIL

INTERSECTION CURVES		
C16		
A	B	C17
R=15.000 Δ=105°41'50" Tc=19.797 Arc=27.671 Ec=9.838	R=25.000 Δ=50°31'05" Tc=11.796 Arc=22.043 Ec=2.643	R=31.000 Δ= 55°48'01" Tc=16.414 Arc=30.191 Ec=4.077
P.I. 16+19.797 N. 528212.326 E. 329884.911	P.I. 16+39.467 N. 528222.555 E. 329855.021	P.I. 17+16.414 N. 528194.441 E. 329867.235

C18		C19
D	E	
R=6.000 Δ=89°44'01" Tc=5.972 ARC=9.397 Ec=2.466	R=6.000 Δ=89°44'01" Tc=5.972 ARC=9.397 Ec=2.466	R=9.000 Δ=92°02'13" Tc=9.326 ARC=14.457 Ec=3.960
P.I. 18+05.972 N. 528201.354 E. 329837.158	P.I. 18+15.369 N. 528197.733 E. 329825.776	P.I. 19+09.326 N. 528195.422 E. 329838.923

NOTES:

1. * ALL ISLAND WHEELCHAIR RAMPS AS PER MoT SP 582-07.03
2. ** ALL SIDEWALK RAMPS AS PER MoT SP 582-07.02



FOR BARRIER LOCATION CHART SEE DWG. R2-699-401

FOR PLANS SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS SEE DWG. R2-699-301 THRU 304

FOR PROFILES SEE DWG. R2-699-201 THRU 215

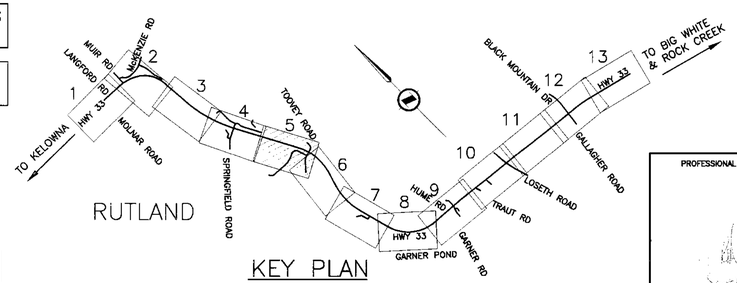
FOR DRAINAGE & UTILITIES SEE DWG. R2-699-501 THRU 516

DESIGN SPEED 70 km/h "L100"

DESIGN SPEED 40 km/h "L400"

DESIGN SPEED 20 km/h "L650" & "L675"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED



KEY PLAN

PROFESSIONAL SEAL

SNC·LAVALIN

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	V. WANG / R.S. BRAR	DATE 2007-03-30
DRAWN	M. KRUCKENBERG	DATE 2007-03-30
CHECKED	T. STEVENS	DATE 2007-04-16
APPROVED	R. LEE	DATE 2009-08-28

Rev	Date	Description	Signature

REVISIONS

GEOMETRICS AND LANING

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 111+80.000 TO STA. 115+60.000

SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-405

PI 115+92.273
N 5298141.692
E 5506814.982
STA. 115+79.692 L
OFFSET: 14.419 L
STA. 116+98.287
OFFSET: 14.894 L
END TAPER
STA. 116+14.221
OFFSET: 9.900 L
1.00 SUPPORT STRIP
1.50 SIDEWALK
2.00 BLVD
0.60 CURB & GUTTER
END LEFT TURN SLOT
STA. 116+50.000
OFFSET: 0.700 R
STA. 116+52.595
OFFSET: 0.668 R
STA. 117+76.737
OFFSET: 0.732 L
STA. 117+60.000
OFFSET: 1.800 L
STA. 117+60.000
OFFSET: 1.300 L
TS 118+03.932
Ls 40
θs 2°32'47"
SC 118+43.932
CONCRETE SIDEWALK AS PER (TYP.)
MoT SP 582-07.01
COMBINED CURB & GUTTER (TYP.)
MoT SP 582-01.01
PAVEMENT EDGE
MATCHLINE SEE DRAWING R2-699-405
1.50 SHLD
3.60
4.00
2.30
0.70
3.70
3.60
116
2.00 SHLD
0.60 CRB
0.30 GRAVEL SHLD.
R=150
0.70
2.30
4.00
R=150
4.50
117
HWY 33
"L100" LINE
R=0.5
4.00
3.60
3.60
196°53'13"
118
119
1.00
1.50
2.00
1.50 SHLD
3.60
3.60
1.30
3.60
3.60
2.00 SHLD
0.50
MATCHLINE SEE DRAWING R2-699-407
EXTRUDED CONCRETE CURB
MoT SP 582-01.04
FOR MEDIAN AND ISLAND TREATMENT, SEE
DETAIL ON DWG. R2-699-301 (TYP.)
BEGIN CRB
STA. 115+72.063
OFFSET: 13.841 R
END FLARE
STA. 116+20.043
OFFSET: 12.500 R
CS 117+00.800
Ls 50
θs 3°58'44"
STA. 117+30.820
OFFSET: 1.132 R
ST 117+50.800
STA. 117+60.000
OFFSET: 1.300 R
CONCRETE ROADSIDE BARRIER (TYP.)
MoT SP 941-01.02.01 & 02
PAVEMENT EDGE

"L100"
R 360.000 RT
Δ 45°00'23"
Δc 37°02'55"
AD 174.256
ARC 232.784
Es 29.983

EDGE OF GRAVEL ROAD
BC 651+36.155
PI 651+41.634
N 5298237.211
E 5506760.848
LIMIT OF CONSTRUCTION
POT 651+45.000
TIE TO EXISTING
N 5298218.585
E 5506765.553
EC 651+47.071
"L650" LINE
3.50
2.50
22°12'04"
651
FB 335°-18'-22"
CB 350°-50'-00"
0.0°-31'-38"
0.0°-31'-38"
1.650"
0.0°-31'-38"
33.RT

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

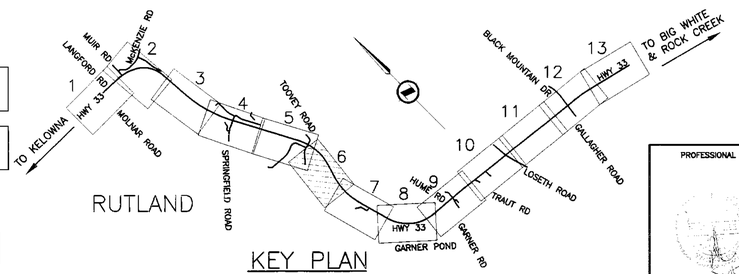
FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR BARRIER LOCATION CHART
SEE DWG. R2-699-401

DESIGN SPEED 70 km/h "L100"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED



KEY PLAN

PROFESSIONAL SEAL

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED V. WANG / R.S. BRAR DATE 2007-03-30
DRAWN N. KRUCKENBERG DATE 2007-03-30
CHECKED T. STEVENS DATE 2007-04-16
APPROVED R. LEE DATE 2009-08-26

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA The Best Place on Earth
Ministry of Transportation and Infrastructure
City of Kelowna

GEOMETRICS AND LANING

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 115+60.000 TO STA. 119+40.000

SENIOR DESIGN ENGINEER

Sept 16, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-406

INTERSECTION CURVES		
C22		C23
A	B	
R=6.000 Δ=90°00'00" Tc=6.000 ARC=9.425 Ec=2.485	R=6.000 Δ=90°23'04" Tc=6.040 ARC=9.465 Ec=2.514	R=8.000 Δ=90°00'00" Tc=8.000 ARC=12.566 Ec=3.314
P.I. 22+06.000 N. 527578.670 E. 329827.325	P.I. 22+15.977 N. 527575.385 E. 329815.211	P.I. 23+08.000 N. 527572.879 E. 329828.895

"L100"
R 450.000 LT
Δ 32°03'32"
Δc 26°57'58"
AD 149.327
ARC 211.790
Es 18.358

CS 120+55.723
Ls 40
θs 2°32'47"
ST 120+95.723
TS 122+82.858

1.00 SUPPORT STRIP
1.50 SIDEWALK
2.00 BLVD.
0.60 CURB & GUTTER
CONCRETE SIDEWALK AS PER (TYP.) MoT SP 582-07.01
COMBINED CURB & CUTTER (TYP.) MoT SP 582-01.01
PAVEMENT EDGE
CONCRETE DRAINAGE BARRIER MoT SP 941-01.02.05
POT 425+00.000 "L425"
POT 121+56.400 "L100"=
N 527578.523
E 329836.244

MATCHLINE SEE DRAWING R2-699-406
1.50 SHLD.
3.60
3.60
1.30
3.60
3.60
2.00 SHLD.
120
HWY 33
"L100" LINE
121
122
164°49'41"
1.00
1.50
2.00
1.50 SHLD.
3.60
1.30
3.60
3.60
2.00 SHLD.
0.50
MATCHLINE SEE DRAWING R2-699-406

PI 119+53.260
ARC 18.000 R
ARC 18.000 L

0.60 CRB
0.30 GRAVEL SHLD.
PAVEMENT EDGE
CONCRETE ROADSIDE BARRIER (TYP.) MoT SP 941-01.02.01 & 02
PI 425+74.080
N 527622.718
E 329800.647
POT 121+47.400
BC 22+100.000
2.00 SHLD.
END CRB
STA. 121+41.277
OFFSET: 11.100 R
C22 A B
POT 425+30.638
EC 22+19.401
345°12'46"
2.50
2.50
EC 425+79.655
BC 425+67.857
EDGE OF GRAVEL ROAD
R=5.0
EC 425+29.638
"L425" LINE
POT 426+09.761
"L425"
15.000 LT
45°04'00"
6.221
AD 11.795
ARC 1.240
Es
LIMIT OF CONSTRUCTION
POT 426+04.283
TIE TO EXISTING
N 527551.922
E 329793.948
10.500
254°49'41"
10.500
2.00 SHLD.
C23
POT 121+67.400
EC 23+12.566
BC 425+17.018
POC 425+18.089
BC 23+00.000
POT 425+16.500
EC 22+09.425
POT 425+17.012
BC 22+09.936
PAVEMENT EDGE
PI 425+25.072
N 527571.961
E 329814.046
"L425" RT
R 8.000
90°23'04"
AD 5.081
ARC 12.623
Es 3.502
STA: 122+14.994
R=8.0
6.00
R=8.0
STA: 122+36.994
STA: 122+25.994
OFFSET: 18.500 R

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

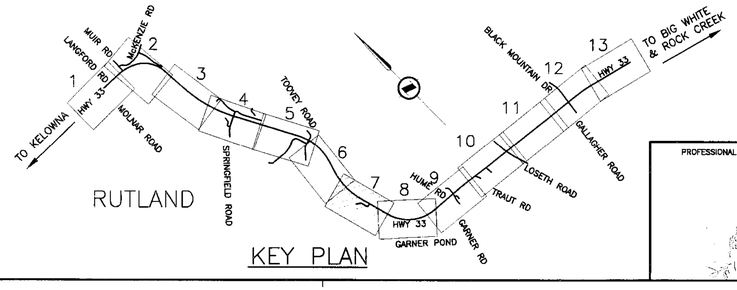
FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

FOR BARRIER LOCATION CHART
SEE DWG. R2-699-401

DESIGN SPEED 70 km/h "L100"

DESIGN SPEED 20 km/h "L425"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED



KEY PLAN

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

SNC·LAVALIN

SCALE 0 1:500 25

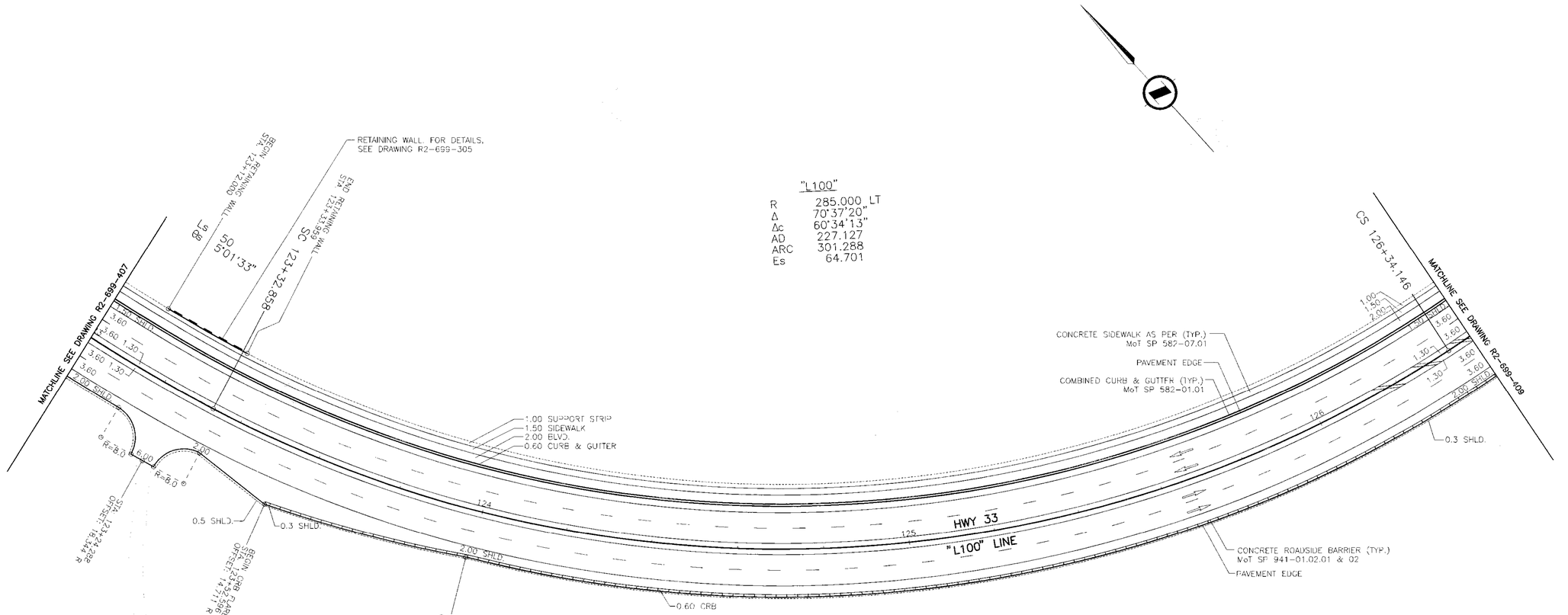
DESIGNED V. WANG / R.S. BRAR DATE 2007-03-30
DRAWN N. KRUCKENBERG DATE 2007-03-30
CHECKED T. STEVENS DATE 2007-04-18
APPROVED R. LEE DATE 2009-08-28

BRITISH COLUMBIA The Best Place on Earth
Ministry of Transportation and Infrastructure
City of Kelowna

GEOMETRICS AND LANING
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 119+40.000 TO STA. 123+00.000

SENIOR DESIGN ENGINEER DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-407



PI 125+09.984
N 527537.364
E 279930.783

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

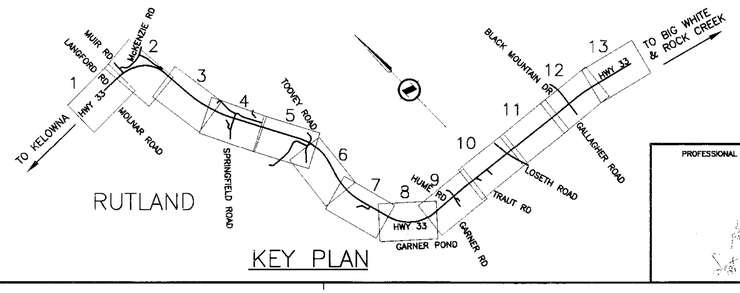
FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

FOR BARRIER LOCATION CHART
SEE DWG. R2-699-401

DESIGN SPEED 70 km/h "L100"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED



KEY PLAN

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED V. WANG / R.S. BRAR DATE 2007-03-30
DRAWN N. KRUCKENBERG DATE 2007-03-30
CHECKED T. STEVENS DATE 2007-04-18
APPROVED R. LEE DATE 2009-08-28

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

GEOMETRICS AND LANING

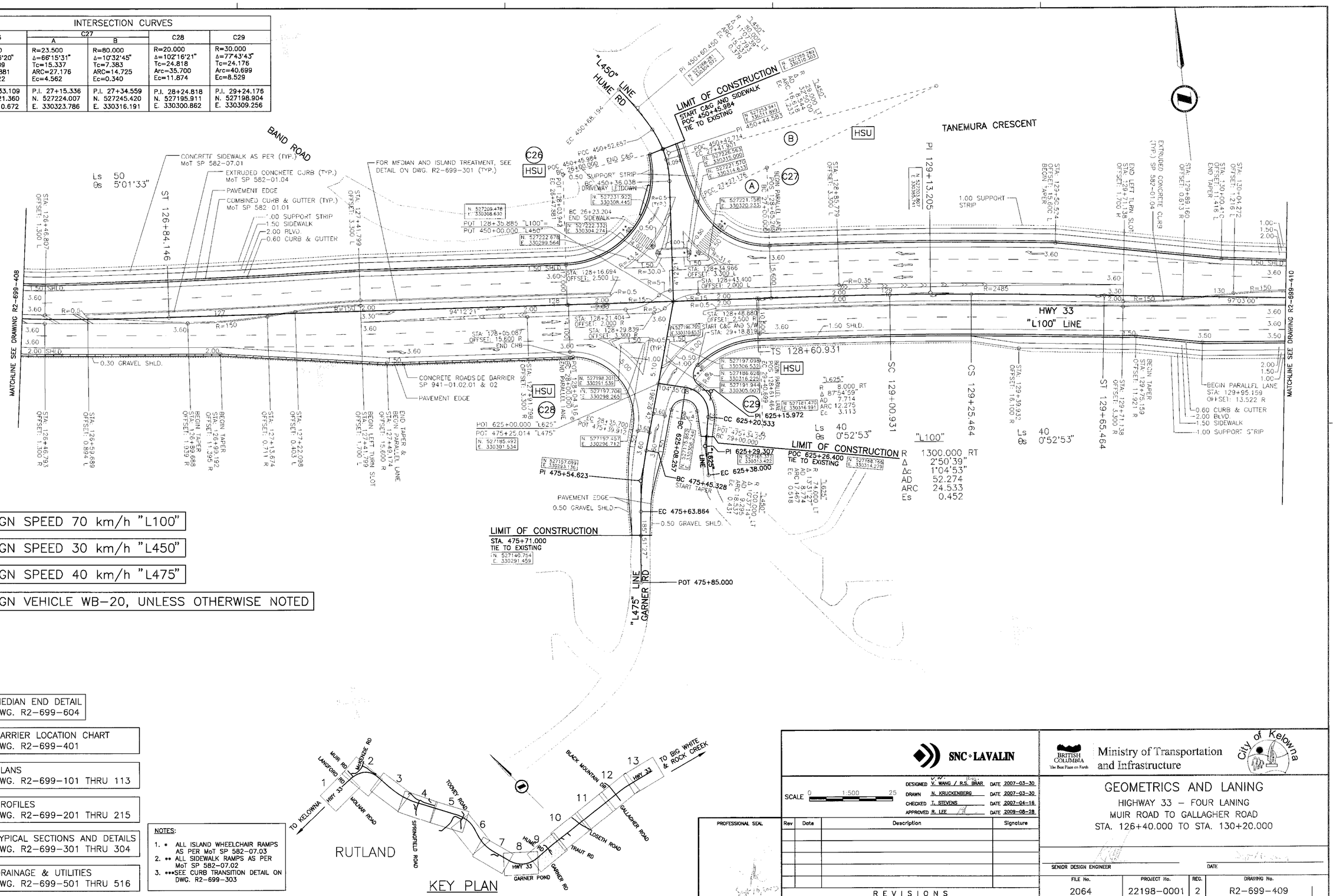
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 123+00.000 TO STA. 126+40.000

SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-408

INTERSECTION CURVES				
C26	C27 A	C27 B	C28	C29
R=27.000 Δ=101°36'20" Tc=33.109 ARC=47.881 Ec=15.722	R=23.500 Δ=66°15'31" Tc=15.337 ARC=27.176 Ec=4.562	R=80.000 Δ=10°32'45" Tc=7.383 ARC=14.725 Ec=0.340	R=20.000 Δ=102°16'21" Tc=24.818 Arc=35.700 Ec=11.874	R=30.000 Δ=77°43'43" Tc=24.176 Arc=40.699 Ec=8.529
P.I. 26+33.109 N. 527221.360 E. 330310.672	P.I. 27+15.336 N. 527224.007 E. 330323.786	P.I. 27+34.559 N. 527245.420 E. 330316.191	P.I. 28+24.818 N. 527195.911 E. 330300.862	P.I. 29+24.176 N. 527198.904 E. 330309.256


BAND ROAD
"L450" LINE HUME RD
TANEMURA CRESCENT
LIMIT OF CONSTRUCTION
START C&G AND SIDEWALK
POC 450+45.984
TIE TO EXISTING
CONCRETE SIDEWALK AS PER (TYP.) MoT SP 582-07.01
EXTRUDED CONCRETE CURB (TYP.) MoT SP 582-01.04
PAVEMENT EDGE
COMBINED CURB & GUTTER (TYP.) MoT SP 582 01.01
1.00 SUPPORT STRIP
1.50 SIDEWALK
2.00 BLVD
0.60 CURB & GUTTER
FOR MEDIAN AND ISLAND TREATMENT, SEE DETAIL ON DWG. R2-699-301 (TYP.)
Ls 50
θs 5°01'33"
ST 126+84.146
MATCHLINE SEE DRAWING R2-699-408
MATCHLINE SEE DRAWING R2-699-410
HWY 33
"L100" LINE
TS 128+60.931
SC 129+00.931
CS 129+25.464
ST 129+65.464
PI 129+13.205
Ls 40
θs 0°52'53"
"L100"
R 1300.000 RT
Δ 2°50'39"
Δc 1°04'53"
AD 52.274
ARC 24.533
Es 0.452
"L625"
R 8.000 RT
Δ 87°54'59"
AD 7.714
ARC 12.275
Ec 3.113
PI 625+15.972
CC 625+20.533
PI 625+29.307
EC 625+38.000
LIMIT OF CONSTRUCTION
POC 625+26.400
TIE TO EXISTING
"L625" LINE
"L450" LINE
"L475" LINE GARNER RD
PI 475+54.623
BC 475+45.328
START TAPER
EC 475+63.864
0.50 GRAVEL SHLD.
LIMIT OF CONSTRUCTION
STA. 475+71.000
TIE TO EXISTING
POT 475+85.000
CONCRETE ROADSIDE BARRIER SP 941-01.02.01 & 02
0.30 GRAVEL SHLD.
2.00 SHLD.
1.50 SHLD.
BEGIN PARALLEL LANE STA: 129+95.159 OFFSET: 13.522 R
BEGIN TAPER STA: 129+75.153 OFFSET: 11.921 R
END LEFT TURN SLOT STA: 129+71.138 OFFSET: 3.300 R
EXTRUDED CONCRETE CURB (TYP.) SP 582-01.04
STA: 129+99.160 OFFSET: 0.613 R
STA: 130+04.272 OFFSET: 1.216 L
STA: 130+00.410 OFFSET: 3.300 L
END TAPER STA: 129+39.932 OFFSET: 16.100 R
BEGIN PARALLEL LANE STA: 128+85.279 OFFSET: 3.300 L
STA: 123+50.574 OFFSET: 3.300 L
BEGIN TAPER
1.00 SUPPORT STRIP
STA: 126+46.807 OFFSET: 1.300 L
STA: 126+46.793 OFFSET: 1.300 R
STA: 126+53.689 OFFSET: 0.894 L
STA: 126+53.688 OFFSET: 11.939 R
BEGIN TAPER STA: 126+93.192 OFFSET: 11.395 R
STA: 127+13.674 OFFSET: 0.711 R
STA: 127+22.098 OFFSET: 0.403 L
STA: 127+41.799 OFFSET: 3.300 L
BEGIN LEFT TURN SLOT STA: 127+41.799 OFFSET: 1.700 L
STA: 127+48.077 OFFSET: 15.600 R
END TAPER & BEGIN PARALLEL LANE STA: 127+48.077 OFFSET: 15.600 R
STA: 127+41.799 OFFSET: 3.300 R
STA: 128+16.694 OFFSET: 2.500 L
STA: 128+34.966 OFFSET: 3.300 L
STA: 128+43.400 OFFSET: 2.000 L
STA: 128+48.880 OFFSET: 2.500 R
STA: 128+21.404 OFFSET: 2.000 R
STA: 128+29.839 OFFSET: 3.300 R
STA: 128+05.067 OFFSET: 15.600 R
END CRB
POT 128+35.885 "L100"=
POT 450+00.000 "L450"
POT 128+03.942
EC 26+47.881
BC 26+23.204
END SIDEWALK
BC 450+35.038
DRIVEWAY LEDTDOWN
0.50 SUPPORT STRIP
POC 450+52.657
POC 450+45.984
25+00.000 DWG - END C&G
PI 450+60.450
PI 450+44.565
EC 450+68.194
POT 128+04.316
POT 128+28+00.000
POT 625+00.000 "L625"
POT 475+25.014 "L475"
PAVEMENT EDGE
0.50 GRAVEL SHLD.
94°12'21"
04°55'06"
R=150
R=30.0
R=80.0
R=15
R=5
R=0.5
R=0.35
R=2485
97°03'00"
1.50 SHLD.
3.60
3.30
2.00
1.00
0.50
5.00
5.10
4.094
4.124
4.127
4.131
4.134
4.137
4.140
4.143
4.146
4.149
4.152
4.155
4.158
4.161
4.164
4.167
4.170
4.173
4.176
4.179
4.182
4.185
4.188
4.191
4.194
4.197
4.200
4.203
4.206
4.209
4.212
4.215
4.218
4.221
4.224
4.227
4.230
4.233
4.236
4.239
4.242
4.245
4.248

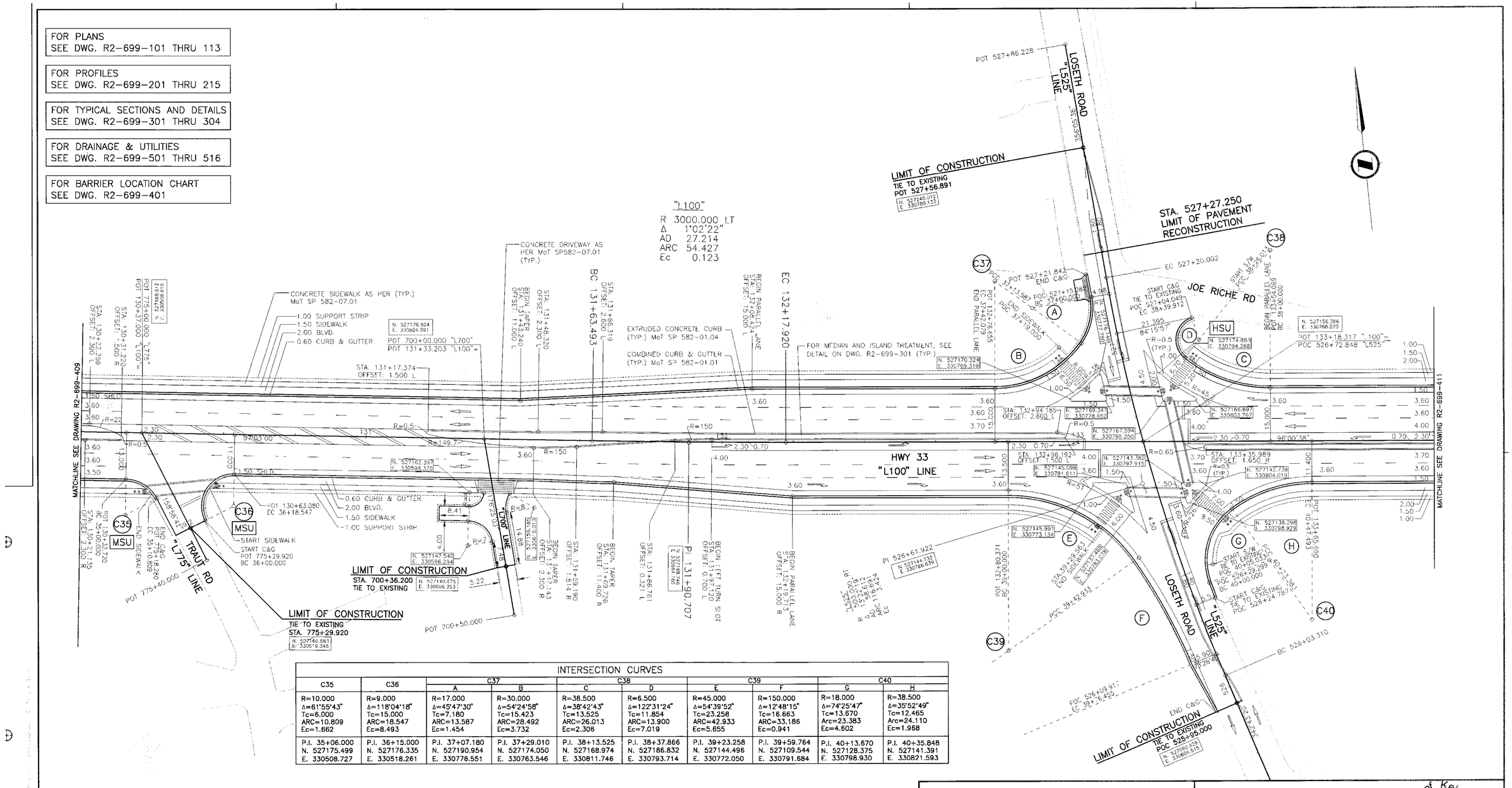
FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

FOR BARRIER LOCATION CHART
SEE DWG. R2-699-401



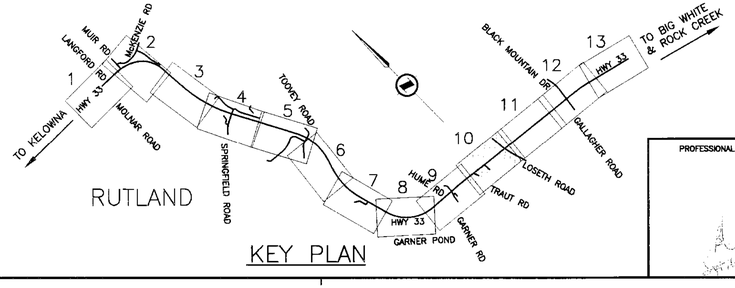
INTERSECTION CURVES										
C35	C36	C37		C38		C39			C40	
		A	B	C	D	E	F		G	H
R=10.000 Δ=61°55'43" Tc=6.000 ARC=10.809 Ec=1.662	R=9.000 Δ=118°04'18" Tc=15.000 ARC=18.547 Ec=8.493	R=17.000 Δ=45°47'30" Tc=7.180 ARC=13.587 Ec=1.454	R=30.000 Δ=54°24'58" Tc=15.423 ARC=28.492 Ec=3.732	R=38.500 Δ=38°42'43" Tc=13.525 ARC=26.013 Ec=2.306	R=6.500 Δ=122°31'24" Tc=11.854 ARC=13.900 Ec=7.019	R=45.000 Δ=54°39'52" Tc=23.258 ARC=42.933 Ec=5.655	R=150.000 Δ=12°48'15" Tc=16.663 ARC=33.186 Ec=0.941		R=18.000 Δ=74°25'47" Tc=13.670 Arc=23.383 Ec=4.602	R=38.500 Δ=35°52'49" Tc=12.465 Arc=24.110 Ec=1.968
P.I. 35+06.000 N. 527175.499 E. 330508.727	P.I. 36+15.000 N. 527176.335 E. 330518.261	P.I. 37+07.180 N. 527190.954 E. 330778.551	P.I. 37+29.010 N. 527174.050 E. 330763.546	P.I. 38+13.525 N. 527168.974 E. 330811.746	P.I. 38+37.866 N. 527186.832 E. 330793.714	P.I. 39+23.258 N. 527144.496 E. 330772.050	P.I. 39+59.764 N. 527109.544 E. 330791.684		P.I. 40+13.670 N. 527128.375 E. 330798.930	P.I. 40+35.848 N. 527141.391 E. 330821.593

NOTES:
1. * ALL ISLAND WHEELCHAIR RAMPS AS PER MoT SP 582-07.03
2. ** ALL SIDEWALK RAMPS AS PER MoT SP 582-07.02

DESIGN SPEED 70 km/h "L100"

DESIGN SPEED 40 km/h "L525"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED



KEY PLAN

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED V. WANG / R.S. BRAR DATE 2007-03-30
DRAWN N. KRUCKENBERG DATE 2007-03-30
CHECKED T. STEVENS DATE 2007-04-16
APPROVED R. LEE DATE 2009-08-25

PROFESSIONAL SEAL

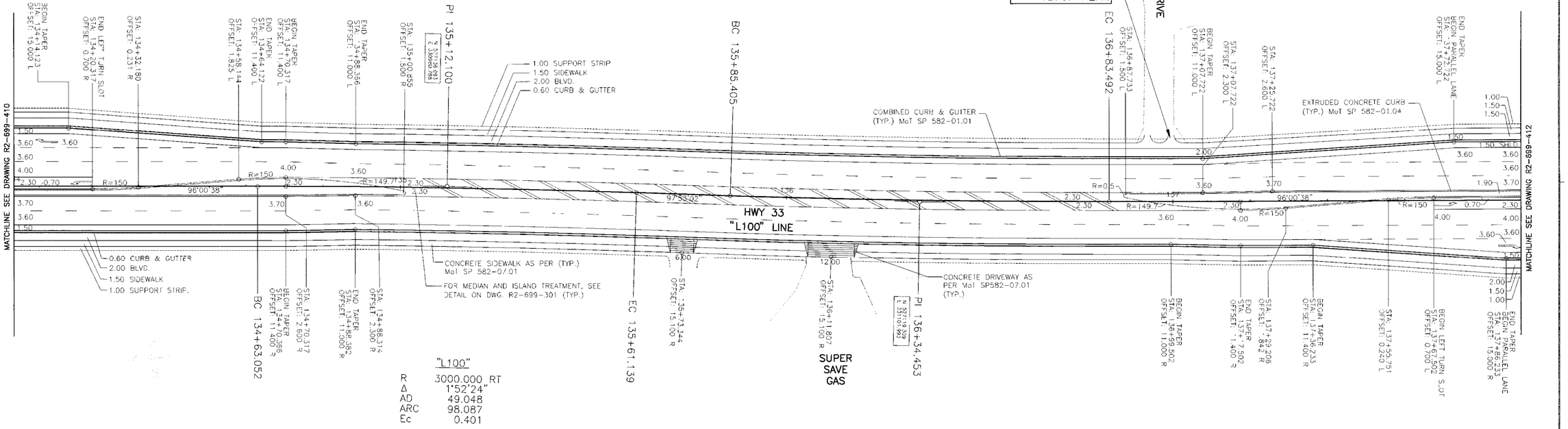
Rev	Date	Description	Signature

REVISIONS

GEOMETRICS AND LANING
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 130+20.000 TO STA. 134+00.000

SENIOR DESIGN ENGINEER DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-410



FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

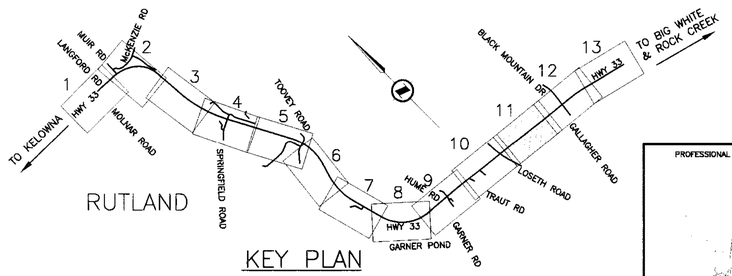
FOR BARRIER LOCATION CHART
SEE DWG. R2-699-401

DESIGN SPEED 70 km/h "L100"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED

NOTES:

1. * ALL ISLAND WHEELCHAIR RAMPS AS PER MoT SP 582-07.03
2. ** ALL SIDEWALK RAMPS AS PER MoT SP 582-07.02



KEY PLAN

BLACK MOUNTAIN ELEMENTARY SCHOOL

SNC·LAVALIN

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	V. WANG / R.S. BRAR	DATE 2007-03-30
DRAWN	N. KRUCKENBERG	DATE 2007-03-30
CHECKED	T. STEVENS	DATE 2007-04-11
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

GEOMETRICS AND LANING

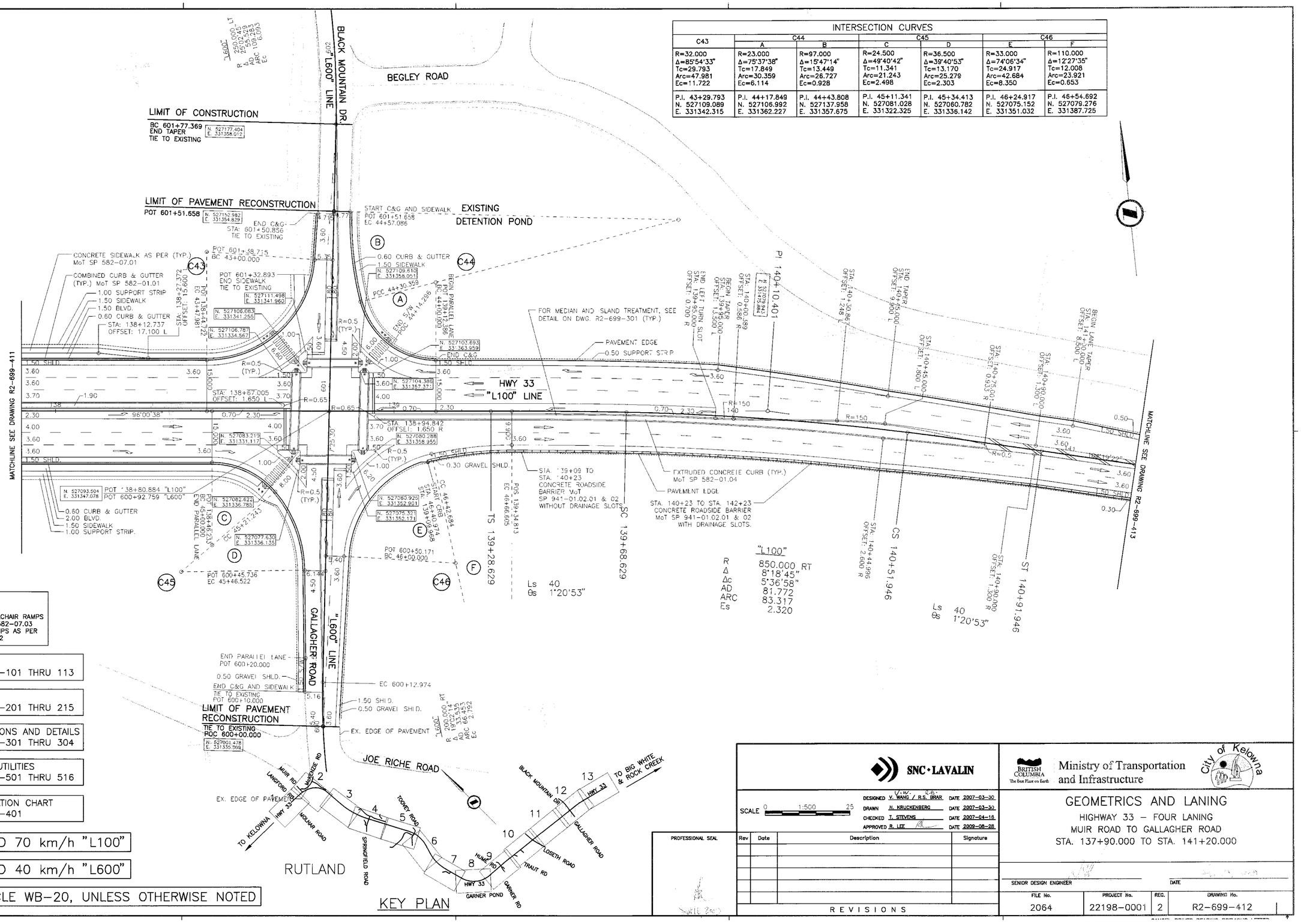
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 134+00.000 TO STA. 137+90.000

SENIOR DESIGN ENGINEER

DATE:

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-411

INTERSECTION CURVES						
C43	C44 A	C44 B	C45 C	C45 D	C46 E	C46 F
R=32.000 Δ=85°54'33" Tc=29.793 Arc=47.981 Ec=11.722	R=23.000 Δ=75°37'38" Tc=17.849 Arc=30.359 Ec=6.114	R=97.000 Δ=15°47'14" Tc=13.449 Arc=26.727 Ec=0.928	R=24.500 Δ=49°40'42" Tc=11.341 Arc=21.243 Ec=2.498	R=36.500 Δ=39°40'53" Tc=13.170 Arc=25.279 Ec=2.303	R=33.000 Δ=74°06'34" Tc=24.917 Arc=42.684 Ec=8.350	R=110.000 Δ=12°27'35" Tc=12.008 Arc=23.921 Ec=0.653
P.I. 43+29.793 N. 527109.089 E. 331342.315	P.I. 44+17.849 N. 527106.992 E. 331362.227	P.I. 44+43.808 N. 527137.958 E. 331357.675	P.I. 45+11.341 N. 527081.028 E. 331322.325	P.I. 45+34.413 N. 527060.782 E. 331336.142	P.I. 46+24.917 N. 527075.152 E. 331351.032	P.I. 46+54.692 N. 527079.276 E. 331387.725



NOTES:

1. • ALL ISLAND WHEELCHAIR RAMPS AS PER MoT SP 582-07.03
2. •• ALL SIDEWALK RAMPS AS PER MoT SP 582-07.02

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

FOR BARRIER LOCATION CHART
SEE DWG. R2-699-401

DESIGN SPEED 70 km/h "L100"

DESIGN SPEED 40 km/h "L600"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	V. WANG / R.S. BRAR	DATE 2007-03-30
DRAWN	N. KRUCKENBERG	DATE 2007-03-30
CHECKED	T. STEVENS	DATE 2007-04-18
APPROVED	R. LEE	DATE 2009-08-28

GEOMETRICS AND LANING

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 137+90.000 TO STA. 141+20.000

PROFESSIONAL SEAL

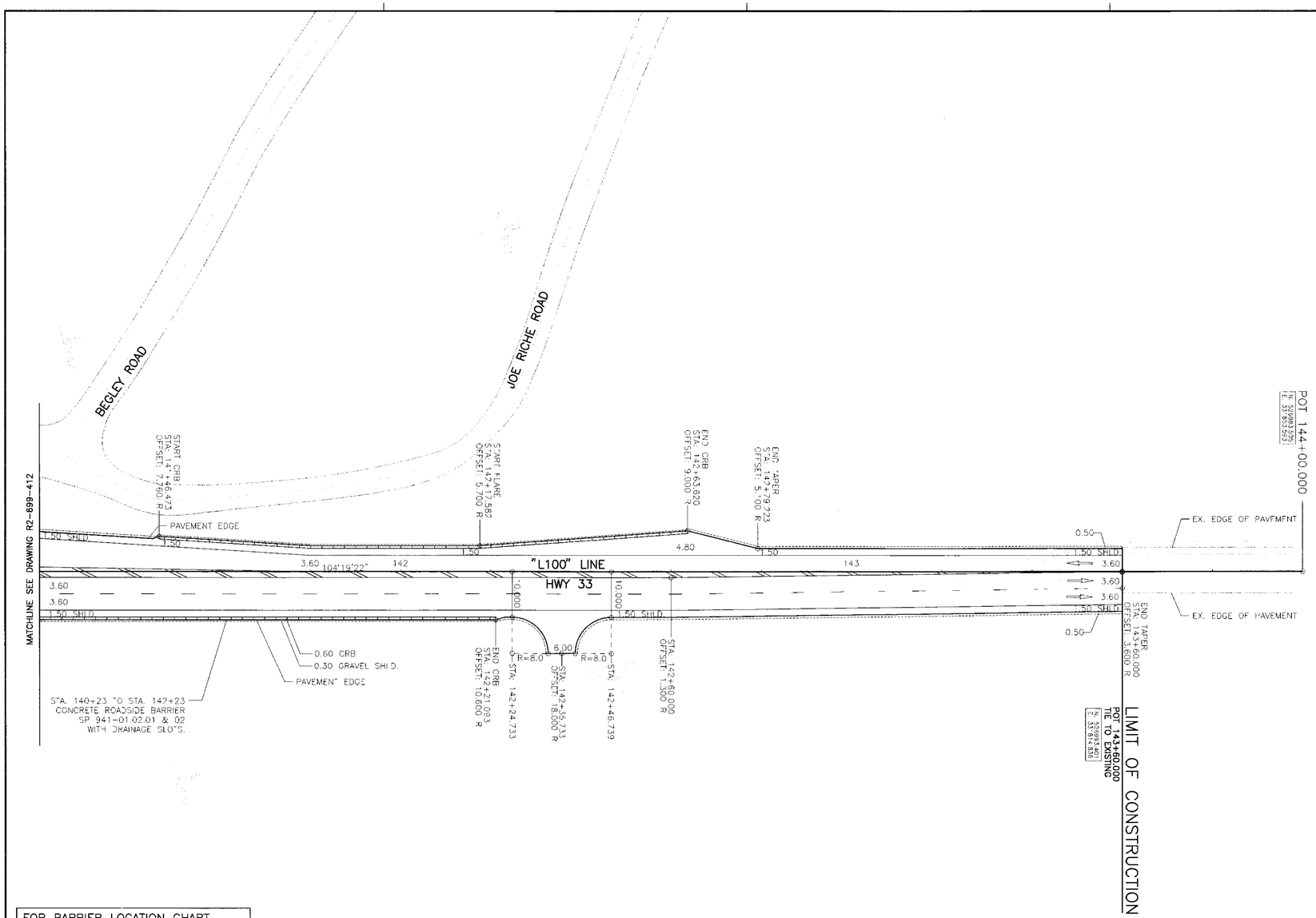
Rev	Date	Description	Signature

REVISIONS

SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-412



FOR BARRIER LOCATION CHART
SEE DWG. R2-699-401

FOR PLANS
SEE DWG. R2-699-101 THRU 113

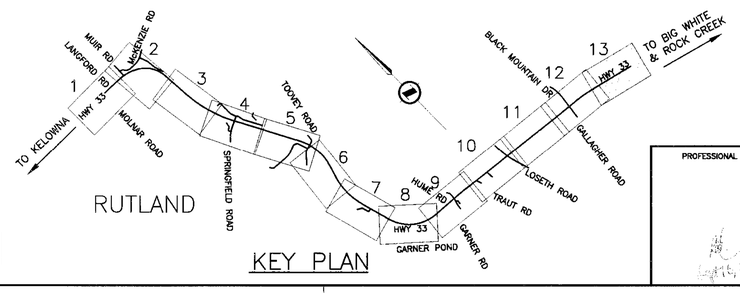
FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

DESIGN SPEED 70 km/h "L100"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED



KEY PLAN

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City of Kelowna

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DESIGNED V. WANG / R.S. BRAR DATE 2007-03-30
DRAWN N. KRUCKENBERG DATE 2007-03-30
CHECKED T. STEVENS DATE 2007-04-16
APPROVED R. LEE DATE 2009-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

GEOMETRICS AND LANING

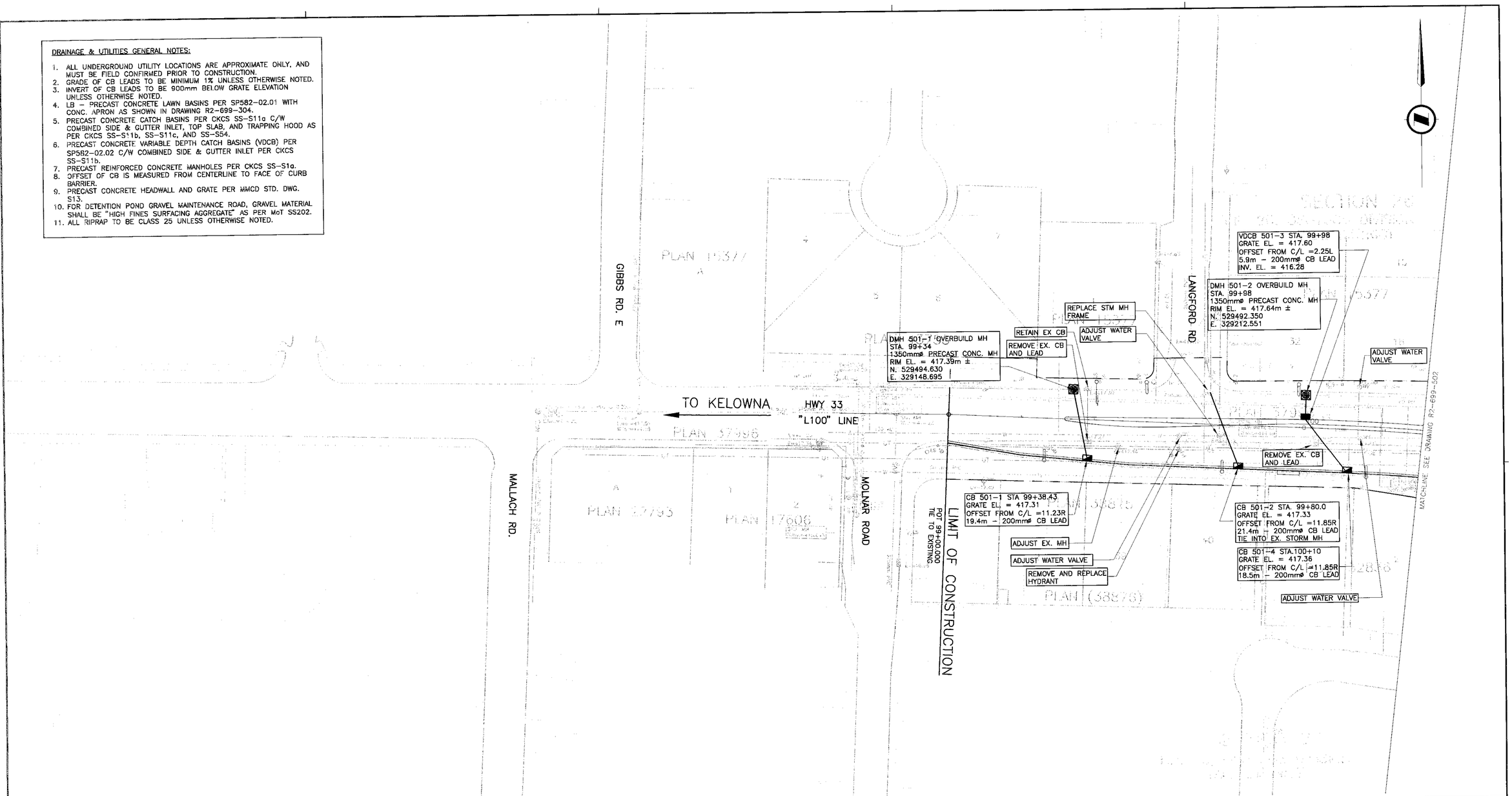
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 141+20.000 TO STA. 143+60.000

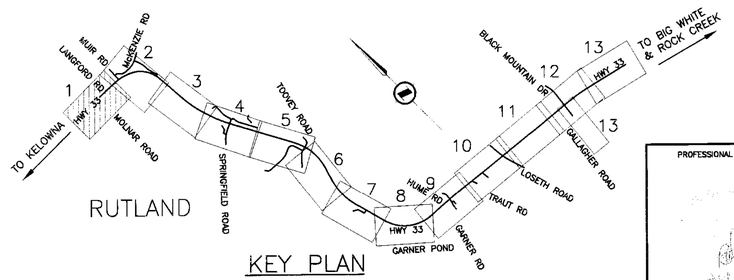
SENIOR DESIGN ENGINEER DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-413

DRAINAGE & UTILITIES GENERAL NOTES:

1. ALL UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE ONLY, AND MUST BE FIELD CONFIRMED PRIOR TO CONSTRUCTION.
2. GRADE OF CB LEADS TO BE MINIMUM 1% UNLESS OTHERWISE NOTED.
3. INVERT OF CB LEADS TO BE 900mm BELOW GRATE ELEVATION UNLESS OTHERWISE NOTED.
4. LB – PRECAST CONCRETE LAWN BASINS PER SP582–02.01 WITH CONC. APRON AS SHOWN IN DRAWING R2–699–304.
5. PRECAST CONCRETE CATCH BASINS PER CKCS SS–S11a C/W COMBINED SIDE & GUTTER INLET, TOP SLAB, AND TRAPPING HOOD AS PER CKCS SS–S11b, SS–S11c, AND SS–S54.
6. PRECAST CONCRETE VARIABLE DEPTH CATCH BASINS (VDCB) PER SP582–02.02 C/W COMBINED SIDE & GUTTER INLET PER CKCS SS–S11b.
7. PRECAST REINFORCED CONCRETE MANHOLES PER CKCS SS–S1a.
8. OFFSET OF CB IS MEASURED FROM CENTERLINE TO FACE OF CURB BARRIER.
9. PRECAST CONCRETE HEADWALL AND GRATE PER MMCD STD. DWG. S13.
10. FOR DETENTION POND GRAVEL MAINTENANCE ROAD, GRAVEL MATERIAL SHALL BE "HIGH FINES SURFACING AGGREGATE" AS PER MoT SS202.
11. ALL RIPRAP TO BE CLASS 25 UNLESS OTHERWISE NOTED.





KEY PLAN

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED	K. PUN	DATE 2008–02–22
DRAWN	N. KRUCKENBERG	DATE 2008–02–22
CHECKED	R. LEE	DATE 2008–02–22
APPROVED	R. LEE	DATE 2009–08–26

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 99+00.000 TO STA. 100+30.000

SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198–0001	2	R2–699–501

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532

LIMIT OF CONSTRUCTION
TIE TO EXISTING POT 227+08.812

HEADWALL
N. 529476.48
E. 329447.64
INV=419.68
RIPRAP AT INLET

27.4m-600ø CSP CULVERT @ 1.0%

REMOVE EX. CULVERT

SWALE SEE DETAILS ON R2-699-303 (TYP.)

HEADWALL
INV.=426.40±
N. 529388.21
E. 329449.14

CB 502-12 STA. 251+90
GRATE EL. =426.49
OFFSET FROM C/L = 3.90R
10.6m - 200mmø CB LEAD

DMH 502-1
1050mmø PRECAST CONC. MH
N. 529329.11
E. 329477.08

65.4m - 375mm ø PVC PIPE.

LB 502-8 STA. 103+15
GRATE EL. =432.05
OFFSET FROM C/L = 18.60L
3.0m - 200mmø CB LEAD

85.6m - 375mm ø PVC PIPE.

DMH 502-2
1050mmø PRECAST CONC. MH
N. 529244.58
E. 329488.80

LB 502-11 STA. 104+00
GRATE EL. =437.04
OFFSET FROM C/L = 17.60L
4.1m - 200mmø CB LEAD

MATCHLINE SEE DRAWING R2-699-503

CB 502-10 STA. 104+00
GRATE EL. =437.12
OFFSET FROM C/L = 13.46L
3.6m - 200mmø CB LEAD

CB 502-9 STA. 103+60
GRATE EL. = 434.51
OFFSET FROM C/L = 1.00L
13.8m - 200mmø CB LEAD

RIPRAP AT OUTLET

HIGH WATER MARK SURVEYED AUG 2007

HEADWALL
N. 529468.25
E. 329421.49
INV=419.40
RIPRAP AT OUTLET

REPLACE SAN MH FRAME

FRANCIS BROOK

CB 502-15 STA. 226+37.21
GRATE EL. = 417.93
OFFSET FROM C/L = 5.0L
17.8 - 200mmø CB LEAD
TIE INTO EX. STORM MH

REMOVE EX. CB

VDCB 502-5 STA. 102+40
GRATE EL. = 426.38
OFFSET FROM C/L = 1.00L
12.0m - 250mmø CB LEAD
INV. EL. = 424.76

CB 502-7 STA. 103+15
GRATE EL. = 431.48
OFFSET FROM C/L = 1.00L
14.6m - 200mmø CB LEAD

CB 502-6 STA. 102+40
GRATE EL. = 425.77
OFFSET FROM C/L = 10.50R
11.5m - 200mmø CB LEAD
GUTTER INLET ONLY

"L250" LINE
"L100" LINE
"L225" LINE
"L200" LINE
HWY 33
McKENZIE RD
MUIR RD.
BRIGHTON RD.

REPLACE 2 STM MH FRAMES

ADJUST MH RIM

ADJUST MH RIM

REMOVE EX. CB

ADJUST MH RIM

CB 502-14 STA. 225+52.9
GRATE EL. = 416.65
OFFSET FROM C/L = 5.0L
6.0 - 200mmø CB LEAD
TIE INTO EX. STORM MH

CB 502-13 STA. 225+12.19
GRATE EL. = 416.54
OFFSET FROM C/L = 5.0L
32.4 - 200mmø CB LEAD
TIE INTO EX. STORM

LIMIT OF CONSTRUCTION
POT 200+53.301
TIE TO EXISTING

REMOVE EX. CB

REPLACE STORM MH FRAME

ADJUST MH RIM

MATCHLINE SEE DRAWING R2-699-501

VDCB 502-4 STA. 101+40
GRATE EL. = 420.24
OFFSET FROM C/L =1.00L
17.3m - 250mmø CB LEAD
TIE INTO EX. STORM MH
INV. EL. = 418.71

CB 502-3 STA. 101+40
GRATE EL. = 419.72
OFFSET FROM C/L = 10.5R
11.5m - 200mmø CB LEAD
GUTTER INLET ONLY

150ø WM RELOCATION SEE DWG. R2-699-544 FOR DETAILS

RELOCATE TELUS JUNCTION BOX AND MH (BY OTHERS)

REMOVE EX. TWIN CBs

CB 502-2 STA. 100+67.5
GRATE EL. = 418.08
OFFSET FROM C/L = 2.28L
25.4 - 200mmø CB LEAD
TIE INTO EX. STORM MH

CB 502-1 STA. 100+50
GRATE EL. = 417.22
OFFSET FROM C/L = 11.85R
22.9m - 200mmø CB LEAD
TIE INTO EX. STORM MH

ADJUST WATER VALVE

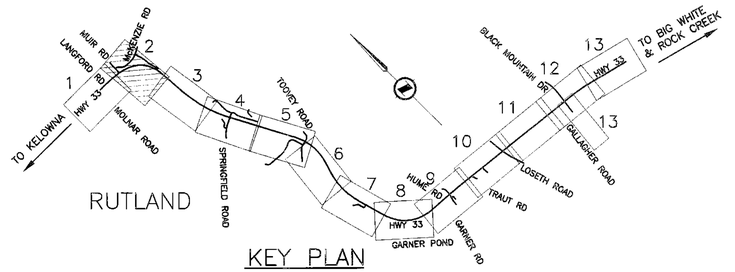
REMOVE EX. CB

REVIEW WITH TERASEN FOR POTENTIAL CONFLICTS BETWEEN CB LEADS AND EX. 114ø GAS MAIN
CB 502-1, CB 502-3 & CB 502-4

PLAN KAP81726
PLAN 75538
PLAN 42365
PLAN 22837
PLAN 46176
PLAN 61175
PLAN 11586
PLAN 63537
PLAN 63537 EXCEPT PLAN H53

STORM PIPE FLOW TABLE

FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/S)
503-1	502-2	375 PVC	6.34	0.522	0.218	0.444
502-2	502-1	375 PVC	6.21	0.528	0.254	0.519
502-1	OUTLET	375 PVC	5.26	0.475	0.254	0.519



KEY PLAN

SNC·LAVALIN

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	K. PUN	DATE 2008-02-22
DRAWN	N. KRUCKENBERG	DATE 2008-02-22
CHECKED	R. LEE	DATE 2008-02-22
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

DRAINAGE AND UTILITIES

HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 100+30.000 TO 104+20.000

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-502

STORM PIPE FLOW TABLE						
FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/S)
504–1	503–4	250 PVC	6.84	0.184	0.088	0.180
503–4	503–3	250 PVC	6.94	0.185	0.120	0.246
503–3	503–2	300 PVC	6.81	0.298	0.152	0.311
503–2	503–1	375 PVC	6.82	0.541	0.201	0.411

SECTION 24
LD. 28, OSOYOOS DIVISION,
YALE DISTRICT

Lot C
PLAN KAP81726

PLAN 1802
REM. LOT B

PLAN B 1930

PLAN 62497

PLAN 48355

40.7m – 375mm ø PVC PIPE.

CB 503–1 STA. 104+40
GRATE EL. = 439.73
OFFSET FROM C/L = 10.45L
3.1m – 200mmø CB LEAD

CB 503–2 STA. 105+00
GRATE EL. = 443.79
OFFSET FROM C/L = 10.45L
3.6m – 200mmø CB LEAD

LB 503–3 STA. 105+57
GRATE EL. = 447.57
OFFSET FROM C/L = 14.60L
3.0m – 200mmø CB LEAD

CB 503–5 STA. 105+60
GRATE EL. = 447.87
OFFSET FROM C/L = 10.45L
3.6m – 200mmø CB LEAD

119.41m – 300mm ø PVC PIPE.

80.0m – 300mm ø PVC PIPE.

PROP. SWALE (TYP.)

LB 503–9 STA. 106+37
GRATE EL. = 452.94
OFFSET FROM C/L = 14.6L
3.0m – 200mmø CB LEAD

CB 503–8 STA. 106+40
GRATE EL. = 453.23
OFFSET FROM C/L = 10.45L
3.6m – 200mmø CB LEAD

80.0m – 250mm ø PVC PIPE.

LB 503–13 STA. 107+17
GRATE EL. = 458.38
OFFSET FROM C/L = 14.6L
2.9m – 200mmø CB LEAD

CB 503–12 STA. 107+20
GRATE EL. = 458.68
OFFSET FROM C/L =10.45L
3.2m – 200mmø CB LEAD

77.0m – 250mm ø PVC PIPE.

MATCHLINE SEE DRAWING R2–699–502

MATCHLINE SEE DRAWING R2–699–504

HWY 33
"L100" LINE

DMH 503–1
1050mmø PRECAST CONC. MH
N. 529203.87
E. 329488.47

CB 503–4 STA. 105+60
GRATE EL. = 448.10
OFFSET FROM C/L = 1.00R
13.0m – 200mmø CB LEAD

DMH 503–2
1050mmø PRECAST CONC. MH
N. 529084.78
E. 329497.07

CB 503–6 STA. 106+00
GRATE EL. = 450.84
OFFSET FROM C/L = 1.00R
12.6m – 200mmø CB LEAD

CB 503–7 STA. 106+40
GRATE EL. = 453.56
OFFSET FROM C/L = 1.00R
13.0m – 200mmø CB LEAD

DMH 503–3
1050mmø PRECAST CONC. MH
N. 529006.06
E. 329505.22

CB 503–10 STA. 106+80
GRATE EL. = 456.29
OFFSET FROM C/L = 1.00R
12.6m – 200mmø CB LEAD

CB 503–11 STA. 107+20
GRATE EL. = 459.01
OFFSET FROM C/L = 1.00R
12.9m – 200mmø CB LEAD

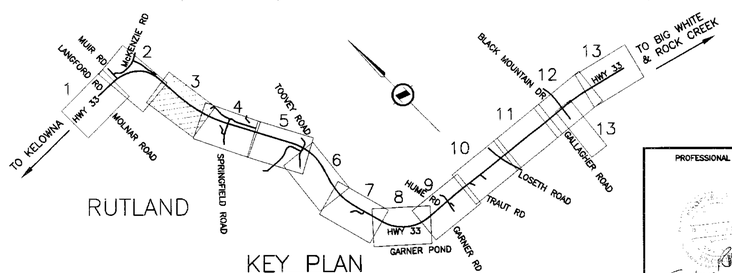
DMH 503–4
1050mmø PRECAST CONC. MH
N. 528928.48
E. 329519.92

CB 503–14 STA. 107+60
GRATE EL. = 461.73
OFFSET FROM C/L = 1.16R
13.3m – 200mmø CB LEAD

BRIGHTON RD.

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2–699–501

FOR STORM DRAINAGE PROFILES SEE DWG. R2–699–522 TO 532



KEY PLAN

PROFESSIONAL SEAL

Sept 4, 2009

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED	K. PUN	DATE 2008–02–22
DRAWN	N. KRUCKENBERG	DATE 2008–02–22
CHECKED	R. LEE	DATE 2660–02–22
APPROVED	R. LEE	DATE 2009–08–28

Rev	Date	Description	Signature

REVISIONS

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City of Kelowna

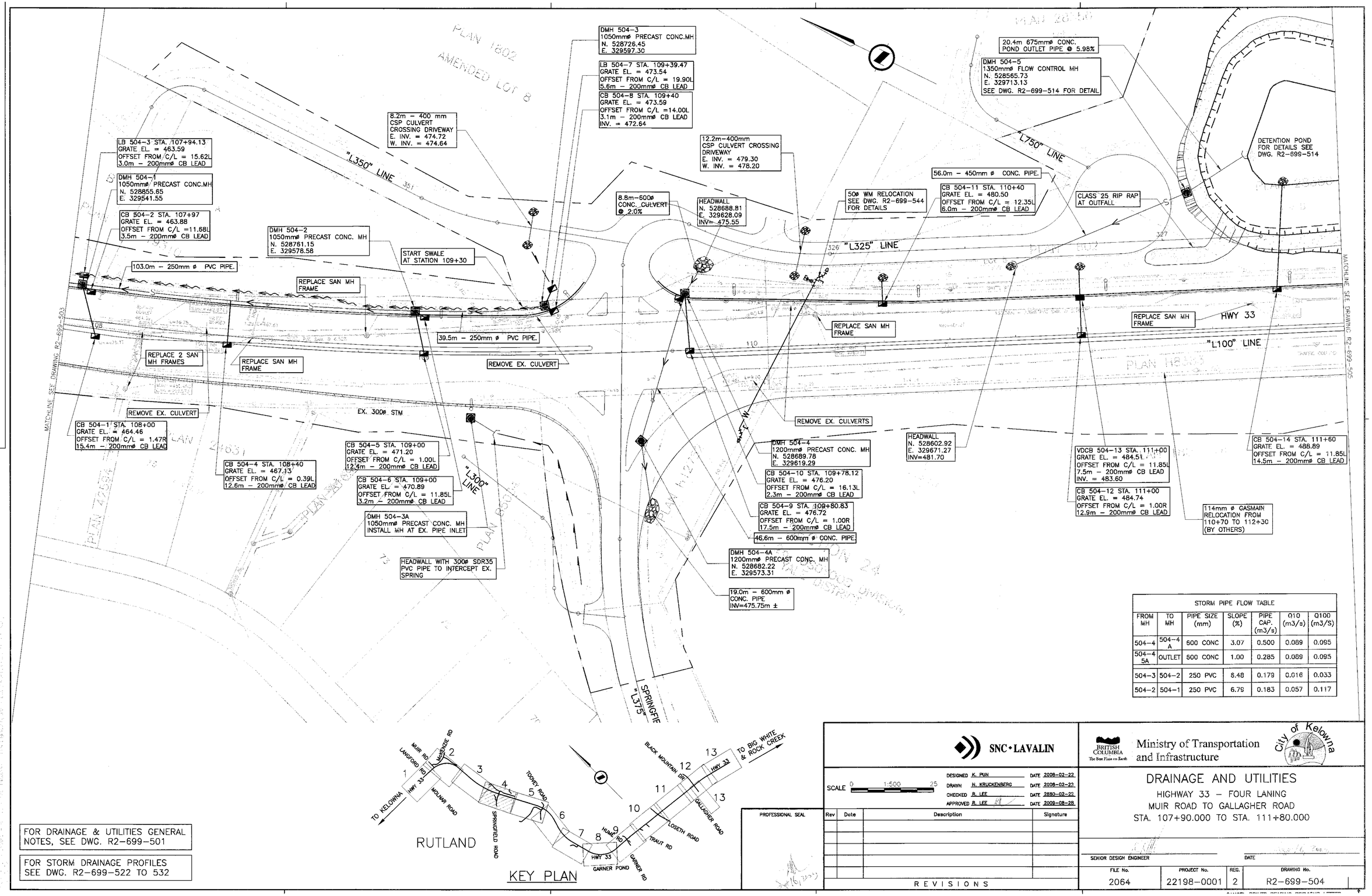
DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLACHER ROAD
STA. 104+20.000 TO STA. 107+90.000

SENIOR DESIGN ENGINEER

SEPT 4, 2009
DATE

FILE No.	PROJECT No.	REC.	DRAWING No.
2064	22198–0001	2	R2–699–503


DMH 504-3
1050mmø PRECAST CONC.MH
N. 528726.45
E. 329597.30
LB 504-7 STA. 109+39.47
GRATE EL. = 473.54
OFFSET FROM C/L = 19.90L
5.6m – 200mmø CB LEAD
CB 504-8 STA. 109+40
GRATE EL. = 473.59
OFFSET FROM C/L =14.00L
3.1m – 200mmø CB LEAD
INV. = 472.64
8.2m – 400 mm
CSP CULVERT
CROSSING DRIVEWAY
E. INV. = 474.72
W. INV. = 474.64
20.4m 675mmø CONC.
POND OUTLET PIPE @ 5.98%
DMH 504-5
1350mmø FLOW CONTROL MH
N. 528565.73
E. 329713.13
SEE DWG. R2-699-514 FOR DETAIL
"L750" LINE
DETENTION POND
FOR DETAILS SEE
DWG. R2-699-514
LB 504-3 STA. 107+94.13
GRATE EL. = 463.59
OFFSET FROM C/L = 15.62L
3.0m – 200mmø CB LEAD
DMH 504-1
1050mmø PRECAST CONC.MH
N. 528855.65
E. 329541.55
CB 504-2 STA. 107+97
GRATE EL. = 463.88
OFFSET FROM C/L =11.68L
3.5m – 200mmø CB LEAD
"L350" LINE
12.2m–400mm
CSP CULVERT CROSSING
DRIVEWAY
E. INV. = 479.30
W. INV. = 478.20
56.0m – 450mm ø CONC. PIPE.
8.8m–600ø
CONC. CULVERT
@ 2.0%
HEADWALL
N. 528688.81
E. 329628.09
INV= 475.55
50ø WM RELOCATION
SEE DWG. R2-699-544
FOR DETAILS
CB 504-11 STA. 110+40
GRATE EL. = 480.50
OFFSET FROM C/L = 12.35L
6.0m – 200mmø CB LEAD
CLASS 25 RIP RAP
AT OUTFALL
DMH 504-2
1050mmø PRECAST CONC. MH
N. 528761.15
E. 329578.58
START SWALE
AT STATION 109+30
103.0m – 250mm ø PVC PIPE.
REPLACE SAN MH
FRAME
39.5m – 250mm ø PVC PIPE.
REMOVE EX. CULVERT
REPLACE SAN MH
FRAME
REPLACE SAN MH
FRAME
HWY 33
"L100" LINE
REPLACE 2 SAN
MH FRAMES
REPLACE SAN MH
FRAME
REMOVE EX. CULVERT
EX. 300ø STM
REMOVE EX. CULVERTS
CB 504-1 STA. 108+00
GRATE EL. = 464.46
OFFSET FROM C/L = 1.47R
15.4m – 200mmø CB LEAD
CB 504-4 STA. 108+40
GRATE EL. = 467.13
OFFSET FROM C/L = 0.39L
12.6m – 200mmø CB LEAD
CB 504-5 STA. 109+00
GRATE EL. = 471.20
OFFSET FROM C/L = 1.00L
12.4m – 200mmø CB LEAD
CB 504-6 STA. 109+00
GRATE EL. = 470.89
OFFSET FROM C/L = 11.85L
3.2m – 200mmø CB LEAD
"L300" LINE
DMH 504-3A
1050mmø PRECAST CONC. MH
INSTALL MH AT EX. PIPE INLET
HEADWALL WITH 300ø SDR35
PVC PIPE TO INTERCEPT EX.
SPRING
DMH 504-4
1200mmø PRECAST CONC. MH
N. 528689.78
E. 329619.29
CB 504-10 STA. 109+78.12
GRATE EL. = 476.20
OFFSET FROM C/L = 16.13L
2.3m – 200mmø CB LEAD
CB 504-9 STA. 109+80.83
GRATE EL. = 476.72
OFFSET FROM C/L = 1.00R
17.5m – 200mmø CB LEAD
46.6m – 600mm ø CONC. PIPE
DMH 504-4A
1200mmø PRECAST CONC. MH
N. 528682.22
E. 329573.31
19.0m – 600mm ø
CONC. PIPE
INV=475.75m ±
HEADWALL
N. 528602.92
E. 329671.27
INV=481.70
VDCB 504-13 STA. 111+00
GRATE EL. = 484.51
OFFSET FROM C/L = 11.85L
7.5m – 200mmø CB LEAD
INV. = 483.60
CB 504-12 STA. 111+00
GRATE EL. = 484.74
OFFSET FROM C/L = 1.00R
12.9m – 200mmø CB LEAD
CB 504-14 STA. 111+60
GRATE EL. = 488.89
OFFSET FROM C/L = 11.85L
14.5m – 200mmø CB LEAD
114mm ø GASMAIN
RELOCATION FROM
110+70 TO 112+30
(BY OTHERS)
"L375" LINE
SPRINGFIELD
MATCHLINE SEE DRAWING R2-699-503
MATCHLINE SEE DRAWING R2-699-505
PLAN 1602
AMENDED LOT 8
PLAN 24631
PLAN 26330
PLAN KAP80055
PLAN KAP80055
PLAN KAP80055

DETENTION POND
FOR DETAILS SEE
DWG. R2-699-514

CLASS 50kg RIP RAP AT OUTLET

HEADWALL
N. 528492.79
E. 329746.55
INV=485.00

24.0m – 675mm ø CONC. PIPE

2.0:1
1.5:1
5.0:1
1.5:1
2.0:1

SECTION 24
TP 29 UPLANDS DIVISION
YALE DISTRICT

PLAN 2834

Lot B

DMH 505-2
1350mmø PRECAST CONC. MH
N. 528372.95
E. 329783.86

CB 505-5 STA. 113+80
GRATE EL. = 496.90
OFFSET FROM C/L = 11.85L
3.5m – 200mmø CB LEAD

CB 505-2 STA. 112+20
GRATE EL. = 490.53
OFFSET FROM C/L = 11.85L
3.2m – 200mmø CB LEAD

REPLACE SAN MH FRAME

88.0m-675ø CONC. PIPE

REPLACE SAN MH FRAME

DMH 505-3
1350mmø PRECAST CONC. MH
N. 528295.30
E. 329825.35

LB 505-7 STA. 114+30
GRATE EL. = 498.96
OFFSET FROM C/L = 15.43L
3.0m – 200mmø CB LEAD

SWALE
START STATION 114+30
END STATION 115+00

CB 505-9 STA. 400+33
GRATE EL. = 503.84
OFFSET FROM C/L = 9.58L
16.7m – 200mmø CB LEAD

CB 505-8 STA. 114+60
GRATE EL. = 500.28
OFFSET FROM C/L = 2.30L
3.3m – 200mmø CB LEAD

11.9m – 450mm ø PVC PIPE.

REMOVE EX. 45m STORM CULVERT, PIPE & MH

PLAN A13301

PCL A

"L400" LINE
TOOVEY ROAD

POT 400+53.749
TIE TO EXISTING
LIMIT OF CONSTRUCTION

REPLACE STM MH FRAME

REPLACE SAN MH FRAME

STA. 400+34.53 (L-400)
INLET STRUCTURE TO
SP582-04.01
OFFSET FROM C/L =9.58R
18.9m – 200mmø LEAD
INV. = 504.60±

DMH 505-5A
REPLACE EX. STM MH WITH
1050mmø PRECAST CONC. MH .
N. 528203.65
E. 329871.08
SEE DWG. R2-699-515 FOR DETAILS

HWY 33
"L100" LINE

120m – 675mm ø CONC. PIPE

REPLACE SAN MH FRAME

33.4m – 675mm ø CONC. PIPE

67.8m – 675mm ø CONC. PIPE

END OF SWALE AT STATION 115+60

STA. 115+36.41
INLET STRUCTURE TO
SP582-04.01
OFFSET FROM C/L =20.98L
13.5m – 200mmø LEAD
INV. = 503.65±

42.2m – 600mm ø CONC. PIPE

150mmø WM RELOCATION
SEE DWG. R2-699-544
FOR DETAILS

INLET
N. 528247.96
E. 329811.16
INV=496.94

10.9m – 400mm ø
CSP. CULVERT @ 2.0%

REPLACE SAN MH FRAME

CB 505-10 STA. 115+40.4
GRATE EL. = 503.27
OFFSET FROM C/L = 1.00R
18.8m – 200mmø CB LEAD

DMH 505-1
1350mmø PRECAST CONC.
OUTSIDE DROP MH PER
MMCD STD. DWG. S3
SEE DWG. R2-699-514
FOR DETAIL
N. 528478.79
E. 329727.31

Lot 5
PLAN 1802

POTENTIAL 114mm ø
GASMAIN RELOCATION
FROM 110+70 TO
112+30 (BY OTHERS)

CB 505-1 STA. 112+20
GRATE EL. = 490.76
OFFSET FROM C/L = 1.00R
13.6m – 200mmø CB LEAD

CB 505-3 STA. 112+80
GRATE EL. = 492.89
OFFSET FROM C/L = 11.85L
3.2m – 200mmø CB LEAD

CB 505-4 STA. 113+40
GRATE EL. = 495.24
OFFSET FROM C/L = 11.85L
3.6m – 200mmø CB LEAD

Lot A
PLAN 23321

REMOVE STORM PIPE AND
MH's BETWEEN STA. 112+30
TO STA. 114+10

"L675" LINE

DMH 505-4
1350mmø PRECAST CONC. MH
N. 528262.64
E. 329832.49

OUTLET
N. 528245.49
E. 329800.52
INV=495.00

CB 505-6 STA. 114+24.95
GRATE EL. = 498.83
OFFSET FROM C/L = 2.30L
10.0m – 200mmø CB LEAD

DMH 505-5
1350mmø PRECAST CONC. MH
N. 528200.50
E. 329859.59
DETAIL SEE DWG. R2-699-516

PLAN A13564

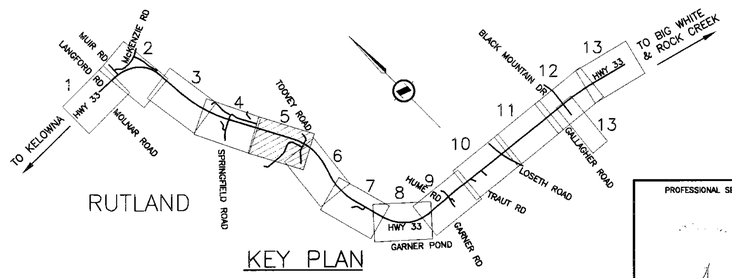
MATCHLINE SEE DRAWING R2-699-504

MATCHLINE SEE DRAWING R2-699-506

PIPE FLOW TABLE						
FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/S)
506-1	505-5	600 CONC	1.97	0.862	0.535	0.915
505-5	505-4	675 CONC	4.04	1.690	1.055	1.759
505-4	505-3	675 CONC	3.62	1.599	1.057	1.762
505-3	505-2	675 CONC	3.90	1.660	1.061	1.771
505-2	505-1	675 CONC	3.92	1.664	1.066	1.783
505-5A	505-5	450 PVC	8.22	0.711	0.654	1.062

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532



KEY PLAN

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED	K. PUN	DATE 2008-02-22
DRAWN	N. KRUCKENBERG	DATE 2008-02-22
CHECKED	R. LEE	DATE 2008-02-22
APPROVED	R. LEE	DATE 2009-08-28

BRITISH COLUMBIA The Best Place on Earth

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City of Kelowna

DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 111+80.000 TO STA. 115+60.000

SENIOR DESIGN ENGINEER

Sept 4, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-505

PLAN A8769 PLAN A8666

PLAN 18636

PLAN 11257

Easement PLAN 37915

DMH 506-1
1200mmø PRECAST CONC. MH
N. 528159.22
E. 329868.46

LB 506-5 STA. 116+20
GRATE EL. = 505.70
OFFSET FROM C/L = 20.20L
7.2m – 200mmø CB LEAD

DMH 506-2
1200mmø PRECAST CONC. MH
N. 528103.20
E. 329877.60

DMH 506-3
1200mmø PRECAST CONC. MH
N. 528031.61
E. 329868.21

LB 506-8 STA. 116+92.90
GRATE EL. = 509.07
OFFSET FROM C/L =16.25L
6.3m – 200mmø CB LEAD

SWALE
START STATION 116+90
END STATION 118+60

LB 506-10 STA. 117+90
GRATE EL. = 513.39
OFFSET FROM C/L =14.85L
8.7m – 200mmø CB LEAD

CB 506-9 STA. 117+90
GRATE EL. = 513.48
OFFSET FROM C/L = 10.45L
4.2m – 200mmø CB LEAD

CB 506-11 STA. 118+30
GRATE EL. = 514.90
OFFSET FROM C/L = 10.45L
3.0m – 200mmø CB LEAD

LB 506-13 STA. 119+00
GRATE EL. = 516.79
OFFSET FROM C/L =17.48L
11.2m – 200mmø CB LEAD

CB 506-12 STA. 119+00
GRATE EL. = 517.53
OFFSET FROM C/L = 10.45L
4.2m – 200mmø CB LEAD

56.8m – 600mm ø CONC. PIPE

72.2m – 525mm ø CONC. PIPE

REPLACE 2 SAN MH FRAMES

REPLACE SAN MH FRAME

REPLACE 2 SAN MH FRAMES

REPLACE SAN MH FRAME

REPLACE SAN MH FRAME

REPLACE SAN MH FRAME

HWY 33

"L100" LINE

98m – 525mm ø CONC. PIPE

110.0m – 525mm ø CONC. PIPE

78.8m – 525mm ø CONC. PIPE

MATCHLINE SEE DRAWING R2-699-505

MATCHLINE SEE DRAWING R2-699-507

CB 506-2 STA. 115+80
GRATE EL. = 504.76
OFFSET FROM C/L = 1.00R
17.3m – 200mmø CB LEAD

CB 506-1 STA. 115+72.50
GRATE EL. = 503.80
OFFSET FROM C/L = 15.24R
23.8m – 200mmø CB LEAD
GUTTER INLET ONLY

VDCB 506-4 STA. 116+30
GRATE EL. = 506.66
OFFSET FROM C/L = 1.00R
16.7m – 250mmø CB LEAD
INV. = 505.22

CB 506-3 STA. 116+30
GRATE EL. = 506.23
OFFSET FROM C/L = 11.90R
10.9m – 200mmø CB LEAD
GUTTER INLET ONLY

VDCB 506-7 STA. 117+00
GRATE EL. = 509.59
OFFSET FROM C/L = 1.50L
13.2m – 250mmø CB LEAD
INV. = 508.03

CB 506-6 STA. 117+00
GRATE EL. = 509.06
OFFSET FROM C/L = 11.90R
12.6m – 200mmø CB LEAD
GUTTER INLET ONLY

DMH 506-4
1200mmø PRECAST CONC. MH
N. 527938.35
E. 329837.99

DMH 506-5
1200mmø PRECAST CONC. MH
N. 527832.70
E. 329812.17

150mm ø W/M SEE DWG. R2-699-541 FOR DETAILS.

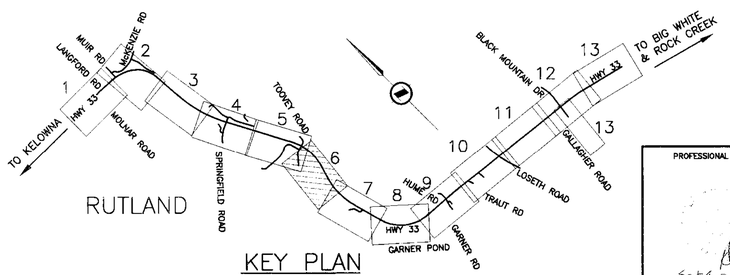
PLAN 33567
Lot B

LIMIT OF CONSTRUCTION
POT 851+45.000
TIE TO EXISTING

"L650" LINE

PIPE FLOW TABLE

FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/S)
507-1	506-5	525 CONC	3.91	0.850	0.477	0.817
506-5	506-4	525 CONC	3.77	0.835	0.493	0.845
506-4	506-3	525 CONC	4.37	0.899	0.508	0.870
506-3	506-2	525 CONC	3.91	0.850	0.520	0.889
506-2	506-1	600 CONC	4.47	1.298	0.528	0.904



KEY PLAN

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532

PROFESSIONAL SEAL

Sept 4, 2009

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED K. PUN DATE 2008-02-22
DRAWN N. KRUCKENBERG DATE 2008-02-22
CHECKED R. LEE DATE 2008-02-22
APPROVED R. LEE DATE 2009-08-28

Rev	Date	Description	Signature

REVISIONS

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Ministry of Transportation and Infrastructure

City of Kelowna

DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 115+60.000 TO STA. 119+40.000

SENIOR DESIGN ENGINEER

DATE Sept. 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-506

DMH 507-2A
1050mmø PRECAST CONC. MH
OUTSIDE DROP MH TO MMCD S3
RIM EL. 525.20
N. 527660.20
E. 329836.21
SEE DWG. R2-699-515 FOR DETAILS

LB 507-2 STA. 119+80
GRATE EL. = 519.62
OFFSET FROM C/L =17.38L
11.0m - 200mmø CB LEAD

13.2m - 375mm ø PVC PIPE

DMH 507-4
1050mmø PRECAST CONC. MH
N. 527571.33
E. 329852.21

CB 507-5 STA. 121+20
GRATE EL. = 525.77
OFFSET FROM C/L = 10.45L
3.2m - 200mmø CB LEAD

LB 507-7 STA. 121+67
GRATE EL. = 527.11
OFFSET FROM C/L = 14.60L
3.0m - 200mmø CB LEAD

CB 507-8 STA. 122+30
GRATE EL. = 528.93
OFFSET FROM C/L =10.45L
3.2m - 200mmø CB LEAD

LB 507-10 STA. 122+87
GRATE EL. = 530.21
OFFSET FROM C/L = 14.60L
3.0m - 200mmø CB LEAD

DMH 507-5
1050mmø PRECAST CONC. MH
N. 527455.52
E. 329883.62

REPLACE SAN MH FRAME

CB 507-1 STA. 119+80
GRATE EL. = 520.61
OFFSET FROM C/L = 10.45L
4.2m - 200mmø CB LEAD

LB 507-4 STA. 120+70
GRATE EL. = 523.94
OFFSET FROM C/L = 14.85L
8.7m - 200mmø CB LEAD

SWALE
START STATION 120+20
END STATION 126+00

CB 507-6 STA. 121+70
GRATE EL. = 527.28
OFFSET FROM C/L = 10.45L
3.2m - 200mmø CB LEAD

CB 507-3 STA. 120+70
GRATE EL. = 524.03
OFFSET FROM C/L = 10.45L
4.2m - 200mmø CB LEAD

REMOVE EX. CULVERT

REPLACE SAN MH FRAME

REMOVE EX. CULVERTS

REMOVE EX. CULVERT

94.5m - 525mm ø CONC. PIPE

REPLACE SAN MH FRAME

REPLACE SAN MH FRAME

HWY 33

"L100" LINE

44.2m - 300mm ø PVC PIPE.

50.0m - 250mm ø PVC PIPE.

REPLACE SAN MH FRAME

120m - 250mm ø PVC PIPE.

REPLACE SAN MH FRAME

150mm ø W/M SEE DWG. R2-699-541 FOR DETAIL

"L425" LINE

DMH/507-1
1200mmø PRECAST CONC. MH
N. 527754.07
E. 329808.75

DMH 507-2
1200mmø PRECAST CONC. MH
N. 527660.78
E. 329822.99

DMH 507-3
1050mmø PRECAST CONC. MH
N. 527619.59
E. 329839.13

RELOCATE EX. 150mm ø AND 200 ø AC WATERMAIN FROM STATION 119+16 TO 124+67
SEE DWG. R2-699-541 FOR DETAILS

CB 507-9 STA. 122+90
GRATE EL. = 530.37
OFFSET FROM C/L = 10.45L
3.2m - 200mmø CB LEAD

200mm ø W/M SEE DWG. R2-699-541 FOR DETAIL

LIMIT OF CONSTRUCTION
POT 426.04.263
TIE TO EXISTING

BENTIEN RD.

PLAN 46576

PLAN 22851 Lot A

PLAN 10262 Lot A

PLAN 11265 Lot A

PLAN 5535 Lot B

PLAN 15424 Lot C

PLAN 24835 Lot A

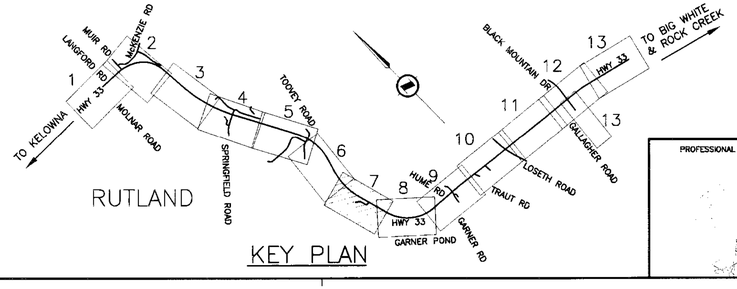
MATCHLINE SEE DRAWING R2-699-506

MATCHLINE SEE DRAWING R2-699-508

PIPE FLOW TABLE						
FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/S)
508-1	507-5	250 PVC	2.21	0.104	0.076	0.135
507-5	507-4	250 PVC	2.58	0.113	0.084	0.149
507-4	507-3	250 PVC	5.01	0.157	0.088	0.155
507-3	507-2	300 PVC	2.76	0.190	0.111	0.173
507-2	507-1	525 CONC	3.78	0.836	0.465	0.797
507-2A	507-2	375 PVC	3.41	0.383	0.368	0.614

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532



KEY PLAN

SNC·LAVALIN

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED K. PUN DATE 2008-02-22
DRAWN N. KRUCKENBERG DATE 2008-02-22
CHECKED R. LEE DATE 2008-02-22
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PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

DRAINAGE AND UTILITIES

HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 119+40.000 TO STA. 123+00.000

SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-507

PIPE FLOW TABLE						
FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/S)
508-4	508-3	250 PVC	3.61	0.134	0.013	0.022
508-3	508-2	250 PVC	2.39	0.108	0.026	0.045
508-2	508-1	250 PVC	1.90	0.097	0.040	0.068
508-1A	508-1	250 PVC	3.30	0.128	0.042	0.071

LB 508-1 STA. 123+50
GRATE EL. = 531.26
OFFSET FROM C/L = 14.60L
4.9m – 200mmø CB LEAD

CB 508-2 STA. 123+50
GRATE EL. = 531.35
OFFSET FROM C/L =10.45L
4.1m – 200mmø CB LEAD

DMH 508-1A
1050mmø PRECAST CONC. MH
RIM EL. 533.75
OUTSIDE DROP MH TO MMCD S3
N. 527398.04
E. 329912.51
SEE DWG. R2-699-515 FOR DETAILS

LB 508-3 STA. 124+37
GRATE EL. = 533.15
OFFSET FROM C/L = 10.60L
3.0m – 200mmø CB LEAD

DMH 508-2
1050mmø PRECAST CONC. MH
N. 527327.18
E. 329947.39

REPLACE 2 SAN MH FRAMES

REMOVE EX. CULVERT

REPLACE SAN MH FRAME

INSTALL SUBDRAIN BETWEEN STATION 122+85 AND 126+85
SEE DWG. R2-699-302 FOR DETAILS

DMH 508-3
1050mmø PRECAST CONC. MH
N. 527277.18
E. 330005.27

SWALE
START STATION 120+20
END STATION 126+00

LB 508-5 STA. 125+17
GRATE EL. = 534.99
OFFSET FROM C/L =14.60L
3.0m – 200mmø CB LEAD

CB 508-6 STA. 125+20
GRATE EL. = 535.16
OFFSET FROM C/L = 10.45L
3.1m – 200mmø CB LEAD

LB 508-7 STA. 126+05
GRATE EL. = 538.50
OFFSET FROM C/L =15.88L
8.8m – 200mmø CB LEAD

65.2m – 250mm ø PVC PIPE.

76.8m – 250mm ø PVC PIPE

76.7m – 250mm ø PVC PIPE

DMH 508-1
1200mmø PRECAST CONC. MH
N. 527393.85
E. 329904.43

79.6m – 250mm ø PVC PIPE.

200mm ø W/M SEE DWG. R2-699-541 FOR DETAIL

CB 508-4 STA. 124+40
GRATE EL. = 533.31
OFFSET FROM C/L = 10.45L
3.1m – 200mmø CB LEAD

HIGH WATER MARK SURVEYED AUG 2007

ENVIRONMENTAL MITIGATION AS PER SPECIAL PROVISIONS

CB 508-8 STA. 126+00
GRATE EL. = 539.97
OFFSET FROM C/L = 10.45L
3.1m – 200mmø CB LEAD

DMH 508-4
1050mmø PRECAST CONC. MH
N. 527245.17
E. 330074.75

RIP-RAP DITCH CHANNEL WITH CLASS 10 RIP-RAP FROM OUTFALL TO GARNER POND.

INSTALL SUBDRAIN BETWEEN STATION 126+20 AND 128+10
SEE DWG. R2-699-302 FOR DETAILS

HUME AVE (ROAD)

HWY 33
"L100" LINE

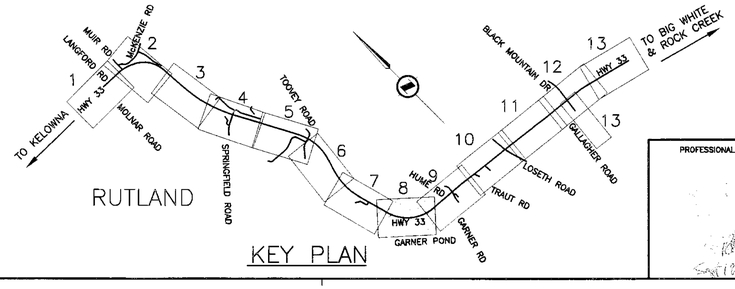
MATCHLINE SEE DRAWING R2-699-507

MATCHLINE SEE DRAWING R2-699-509

GARNER POND

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532



KEY PLAN

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth — Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	K. PUN	DATE 2008-02-22
DRAWN	N. KRUCKENBERG	DATE 2008-02-22
CHECKED	R. LEE	DATE 2008-02-22
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature

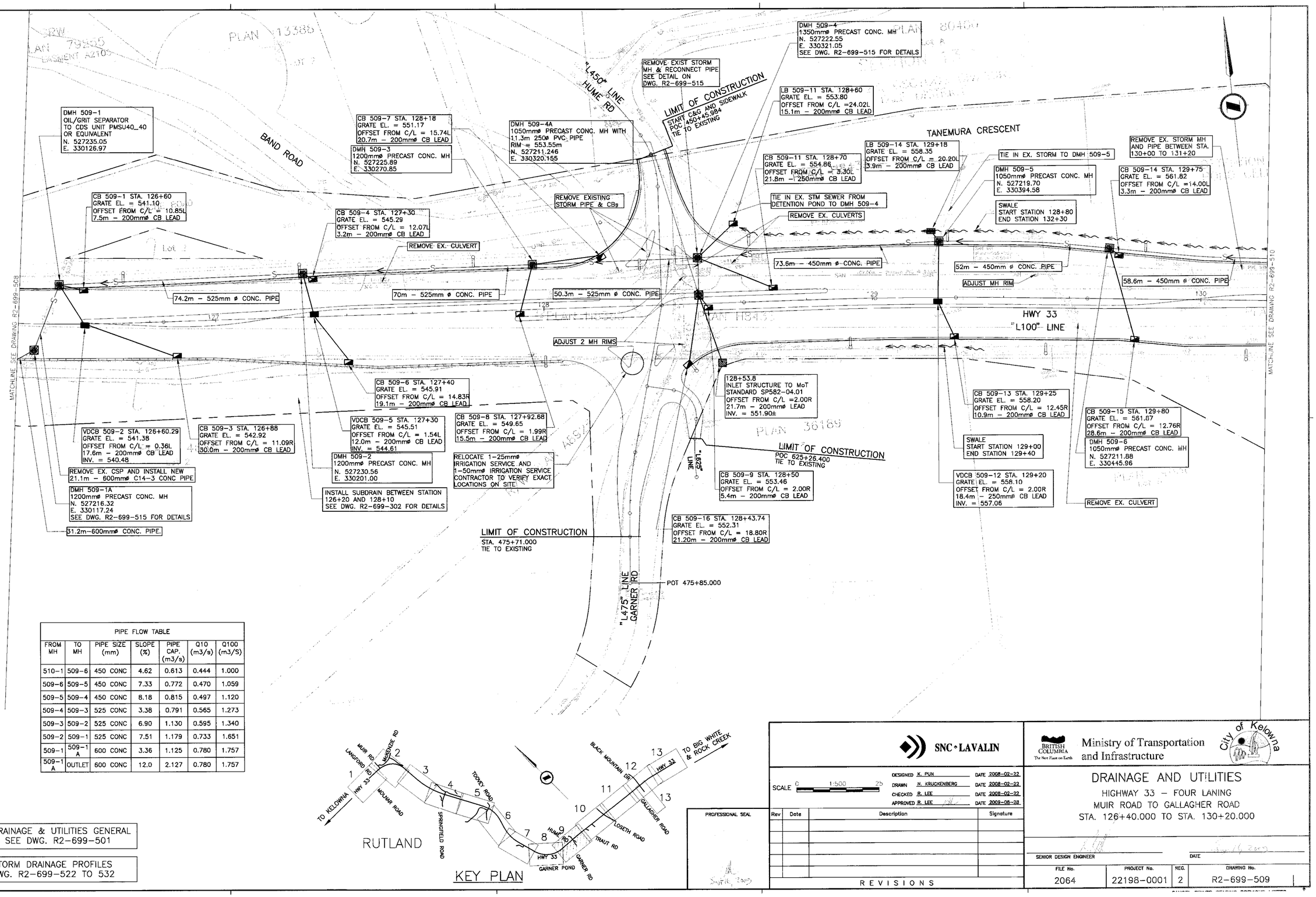
REVISIONS

DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 123+00.000 TO STA. 126+40.000

SENIOR DESIGN ENGINEER — DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-508



PIPE FLOW TABLE						
FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/S)
510-1	509-6	450 CONC	4.62	0.613	0.444	1.000
509-6	509-5	450 CONC	7.33	0.772	0.470	1.059
509-5	509-4	450 CONC	8.18	0.815	0.497	1.120
509-4	509-3	525 CONC	3.38	0.791	0.565	1.273
509-3	509-2	525 CONC	6.90	1.130	0.595	1.340
509-2	509-1	525 CONC	7.51	1.179	0.733	1.651
509-1	509-1A	600 CONC	3.36	1.125	0.780	1.757
509-1A	OUTLET	600 CONC	12.0	2.127	0.780	1.757

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532

SNC·LAVALIN

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	K. PUN	DATE 2008-02-22
DRAWN	N. KRUCKENBERG	DATE 2008-02-22
CHECKED	R. LEE	DATE 2008-02-22
APPROVED	R. LEE	DATE 2009-06-26

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

DRAINAGE AND UTILITIES

HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 126+40.000 TO STA. 130+20.000

SENIOR DESIGN ENGINEER — DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-509

CB 510-1 STA. 130+25
GRATE EL. = 564.90
OFFSET FROM C/L = 11.45L
5.6m – 200mmø CB LEAD

TIE-IN TO EX. 450ø STM
DMH 510-1
1200mmø PRECAST CONC. MH
N. 527201.92
E. 330503.65

LB 510-2 STA. 130+35
GRATE EL. = 565.46
OFFSET FROM C/L = 15.60L
5.5m – 200mmø CB LEAD

CB 510-4 STA. 130+76
GRATE EL. = 568.14
OFFSET FROM C/L =11.45L
3.1m – 200mmø CB LEAD

DMH 510-2
1050mmø PRECAST CONC. MH
N. 527198.29
E. 330532.99

29.6m – 375mm ø PVC PIPE

TIE INTO EXISTING 250ø STM
DMH 510-3
1050mmø PRECAST CONC. MH
RIM EL. 568.48
N. 527195.92
E. 330551.75

41.1m – 375mm ø PVC PIPE

DMH 510-4
1200mmø PRECAST CONC. MH
N. 527190.93
E. 330592.53

LB 509-6 STA. 131+25
GRATE EL. = 570.73
OFFSET FROM C/L = 15.60L
5.8m – 200mmø CB LEAD

CB 509-7 STA. 131+25
GRATE EL. = 570.83
OFFSET FROM C/L = 11.45L
5.1m – 200mmø CB LEAD

SWALE
START STATION 128+80
END STATION 132+30

REMOVE EX. STORM PIPE BETWEEN STA. 131+20 TO 131+80

CB 510-8 STA. 131+73
GRATE EL. = 572.99
OFFSET FROM C/L = 13.42L
5.5m – 200mmø CB LEAD

DMH 510-5A
1050mmø PRECAST CONC. MH
RIM EL.=575.31
OUTSIDE DROP MH TO MMCD S3
N. 527191.75
E. 330646.53

12.2m – 375mm ø CONC. PIPE

REMOVE EX. CULVERT

CB 510-11 STA. 132+30
GRATE EL. = 575.05
OFFSET FROM C/L = 15.45L
6.6m – 200mmø CB LEAD

EX. ABANDONED
150mmø AC WM

LIMIT OF CONSTRUCTION
TIE TO EXISTING
POT 527+56.891

CB 510-13 STA. 132+76
GRATE EL. = 576.46
OFFSET FROM C/L = 15.45L
16.4m – 200mmø CB LEAD

DMH 510-6
1050mmø PRECAST CONC. MH
N. 527173.69
E. 330701.06

13.5m-250ø
PVC PIPE @ 3.0%

CB 510-15 STA. 132+02.70
GRATE EL. = 577.65
OFFSET FROM C/L=36.25
TYPE B, GRATE
EXTEND EX. CB LEAD 3.4m

ADJUST 2 WATER VALVES

CB 510-16 STA. 133+28.01
GRATE ELEV. 577.84
OFFSET FROM C/L=28.50
TYPE B, GRATE
EXTEND EX. CB LEAD 3.4m

CB 510-18 STA. 133+39.94
GRATE ELEV.= 577.50
OFFSET FROM C/L=18.17L
3.1m – 200mmø CB LEAD

CB 510-20 STA. 133+80
GRATE EL. = 577.72
OFFSET FROM C/L = 15.45L
3.2m – 200mmø CB LEAD

JOE RICHE RD

DMH 510-9
1050mmø PRECAST CONC. MH
N. 527166.75
E. 330848.17

REMOVE 2 EX. CB's

ADJUST MH RIM

30m – 250mm ø
PVC PIPE.

ADJUST WATER VALVE

34.1m – 250mm ø
PVC PIPE.

ADJUST 2 MH RIMS

18.9m – 375mm ø
PVC PIPE

53.7m – 250mm ø PVC PIPE.

56.3m – 375mm ø PVC PIPE

HWY 33
"L100" LINE

REMOVE EX. CULVERT

REMOVE EX. STORM MH AND PIPE BETWEEN STA. 130+00 TO 131+20

TRAUT RD
"L700" LINE

ADJUST WATER VALVE

SWALE
START STATION 130+60
END STATION 131+30

LIMIT OF CONSTRUCTION
STA. 700+36.200
TIE TO EXISTING

LIMIT OF CONSTRUCTION
TIE TO EXISTING
STA. 775+29.920

SWALE
START STATION 131+45
END STATION 132+20

LB – STA. 131+45
GRATE ELEV = 571.60
OFFSET FROM C/L = 15.77R
20.6m – 200mmø CB LEAD

POTENTIAL 114mm ø
GASMAIN RELOCATION
FROM 131+50 TO
132+50 (BY OTHERS)

ADJUST WATER VALVE

CB 510-10 STA. 132+00
GRATE EL. = 574.05
OFFSET FROM C/L = 13.93R
16.6m – 200mmø CB LEAD

CB 510-12 STA. 132+40
GRATE EL. = 575.33
OFFSET FROM C/L = 15.45R
24.9m – 200mmø CB LEAD

132+61.5
INLET STRUCTURE TO MoT
STANDARD SP582-04.01
OFFSET FROM C/L=21.54L
INV. = 575.23±

ADJUST WATER VALVE
COVER

CB 510-14 STA. 132+78.52
GRATE EL. = 576.30
OFFSET FROM C/L = 15.45R
29.4m – 200mmø CB LEAD

ADJUST 2-GAS VALVE
COVERS(BY OTHERS)

LOSETH ROAD
"L525" LINE

CB 510-19 STA. 133+66.94
GRATE EL. = 577.58
OFFSET FROM C/L = 11.85R
29.5m – 200mmø CB LEAD

DMH 510-8
1050mmø PRECAST CONC. MH
N. 527172.00
E. 330814.53

VDCB 510-17 STA. 133+36.39
GRATE EL. = 577.58
OFFSET FROM C/L =1.00R
19.7m – 200mmø CB LEAD
INV. = 576.09

LB – STA. 130+81.40
GRATE ELEV = 567.05
OFFSET FROM C/L = 15.87R
4.9m – 200mmø CB LEAD

PROTENTIAL 114ø
GAS MAIN RELOCATION
(BY OTHERS)

VDCB 510-3 STA. 130+51
GRATE EL. = 567.10
OFFSET FROM C/L = 14.03R
26.8m – 250mmø CB LEAD
INV. = 566.20

VDCB 510-5 STA. 131+25
GRATE EL. = 570.83
OFFSET FROM C/L = 11.45R
23.8m – 250mmø CB LEAD
INV. = 569.93

VDCB 510-9 STA. 131+90
GRATE EL. = 573.94
OFFSET FROM C/L = 0.82L
15.0m – 250mmø CB LEAD
INV. = 572.99

DMH 510-5
1200mmø PRECAST CONC. MH
N. 527179.60
E. 330647.67
SEE DWG. R2-699-516 FOR DETAILS

DMH 510-7
1050mmø PRECAST CONC. MH
N. 527170.55
E. 330730.92
SEE DWG. R2-699-516 FOR DETAILS

ADJUST WATER VALVE

LIMIT OF CONSTRUCTION
TIE TO EXISTING
POC 525+95.000

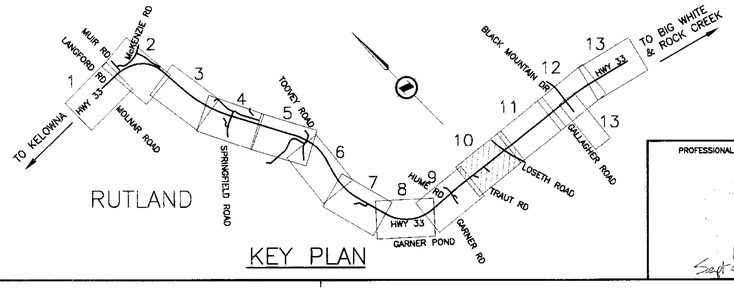
MATCHLINE SEE DRAWING R2-699-509

MATCHLINE SEE DRAWING R2-699-511

PIPE FLOW TABLE						
FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/S)
510-7	510-6	250 PVC	3.50	0.131	0.074	0.167
510-6	510-5	250 PVC	4.08	0.142	0.104	0.234
510-5	510-4	375 PVC	4.35	0.432	0.357	0.804
510-4	510-3	375 PVC	5.52	0.487	0.365	0.822
510-3	510-2	375 PVC	5.77	0.498	0.436	0.982
510-2	510-1	375 PVC	6.86	0.543	0.439	0.989
510-5A	510-5	375 PVC	3.69	0.398	0.267	0.779
510-8	510-9	250 PVC	2.23	0.105	0.009	0.022
510-9	511-1	250 PVC	1.19	0.077	0.034	0.081

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532



SNC·LAVALIN

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	K. PUN	DATE 2008-02-22
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CHECKED	R. LEE	DATE 2008-02-22
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 130+20.000 TO STA. 134+00.000

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-510

CB 511-2 STA. 134+20
GRATE EL. = 577.78
OFFSET FROM C/L = 15.03L
3.2m – 200mmø CB LEAD

CB 511-4 STA. 134+60
GRATE EL. = 578.02
OFFSET FROM C/L = 12.15L
3.2m – 200mmø CB LEAD

DMH 511-1
1050mmø PRECAST CONC. MH
N. 527161.30
E. 330893.85

DMH 511-2
1050mmø PRECAST CONC. MH
N. 527154.25
E. 330933.33

EX. ABANDONED
150mm ø AC WM

CONNECT EX. STORM TO DMH 511-3

DMH 511-3
1200mmø PRECAST CONC. MH
OUTSIDE DROP MH TO MMCD S3
N. 527149.41
E. 330972.30
FOR DETAILS SEE DWG.
R2-699-516

40.1m – 250mm ø PVC PIPE

39.3m – 300mm ø PVC PIPE.

46.0m – 250mm ø PVC PIPE

RETAIN EX. 600ø CMP PIPE

CB 511-1 STA. 134+20
GRATE EL. = 577.85
OFFSET FROM C/L = 11.85R
27.2m – 200mmø CB LEAD

CB 511-3 STA. 134+60
GRATE EL. = 578.02
OFFSET FROM C/L = 11.85R
24.4m – 200mmø CB LEAD

DMH 511-4
1050mmø PRECAST CONC. MH
N. 527141.04
E. 331036.91

CB 511-6 STA. 135+70
GRATE EL. = 578.06
OFFSET FROM C/L = 11.45L
3.2m – 200mmø CB LEAD

SWALE
START STATION 136+00
END STATION 136+80

REPLACE 250mm ø AC W/M
WITH 250ø PVC W/M
SEE DWG. R2-699-545 FOR
DETAIL

65.1m – 250mm ø PVC PIPE

49.9m – 250mm ø PVC PIPE

REMOVE AND REPLACE HYDRANT

CB 511-5 STA. 135+67
GRATE EL. = 578.07
OFFSET FROM C/L = 11.45R
23.3m – 200mmø CB LEAD

DMH 511-6
1050mmø PRECAST CONC. MH
N. 527128.47
E. 331135.76

DMH 511-5
1050mmø PRECAST CONC. MH
N. 527134.37
E. 331086.31

CB 511-8 STA. 136+20
GRATE EL. = 577.85
OFFSET FROM C/L = 11.45L
3.2m – 200mmø CB LEAD

REPLACE SAN MH
FRAME

49.8m – 250mm ø PVC PIPE

REMOVE AND
REPLACE HYDRANT

CB 511-7 STA. 136+21.20
GRATE EL. = 577.84
OFFSET FROM C/L = 11.45R
23.7m – 200mmø CB LEAD

LB-STA. 136+77
GRATE ELEV = 577.50
OFFSET FROM C/L = 15.60L
10.4m – 200mmø CB LEAD

INLET STRUCTURE TO MoT
STANDARD SP582-04.01
N. 527140.71
E. 331160.59
11.4m – 450mm PVC PIPE
INV. = 577.45

CB 511-9 STA. 136+70
GRATE EL. = 577.49
OFFSET FROM C/L = 11.45L
3.2m – 200mmø CB LEAD

CB 511-10 STA. 136+81
GRATE EL. = 577.54
OFFSET FROM C/L = 11.45R
27.8m – 200mmø CB LEAD

42.8m – 675mm ø
CONC. PIPE

INLET STRUCTURE TO MoT
STANDARD SP582-04.01
N. 527140.92
E. 331172.03
2.8m – 450mm PVC PIPE
INV. = 577.70

DMH 511-7
1350mmø PRECAST CONC.
N. 527138.10
E. 331171.70
SEE DWG. R2-699-516 FOR
DETAILS

CB 511-11 STA. 137+20
GRATE EL. = 577.07
OFFSET FROM C/L = 12.22L
24.3m – 200mmø CB LEAD

REMOVE EX. CULVERT

40.1m – 675mm ø CONC. PIPE

DMH 511-8
1350mmø PRECAST CONC. MH
N. 527087.63
E. 331185.65

CB 511-12 STA. 137+17
GRATE EL. = 577.03
OFFSET FROM C/L = 11.84R
3.1m – 200mmø CB LEAD

POTENTIAL 114mm ø
GASMAIN RELOCATION
FROM 137+50 TO
138+60 (BY OTHERS)

CB 511-13 STA. 137+50
GRATE EL. = 576.96
OFFSET FROM C/L = 14.06L
30.1m – 200mmø CB LEAD

DMH 511-9
1350mmø PRECAST CONC. MH
N. 527091.10
E. 331225.27

SWALE
START STATION 137+60
END STATION 138+60

ADJUST MH RIM

40m-675mm ø
CONC. PIPE

CB 511-14 STA. 137+63
GRATE EL. = 576.51
OFFSET FROM C/L = 14.21R
3.2m – 200mmø CB LEAD

HWY 33
"L100" LINE

EX. STM LOCATION
TO BE CONFIRMED
BY CONTRACTOR

OSWELL DRIVE

SUPER
SAVE
GAS

SUPER SAVE
GAS

BLACK MOUNTAIN
ELEMENTARY SCHOOL

PLAN 29386
Lot A

PLAN 29386
Lot B

PLAN KAP84781

PLAN 21161

SECTION 15
T.P. 27, OSOYOOS DIVISION
YALE DISTRICT

R/W PLAN A14137

R/W PLAN 51225

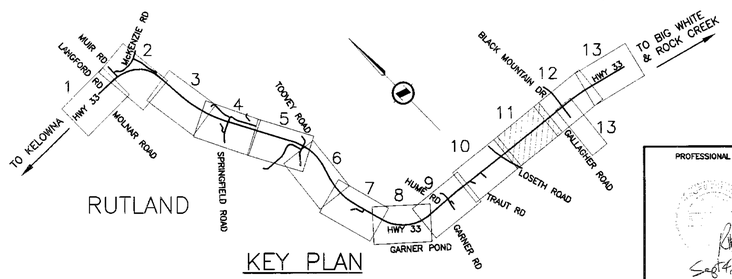
MATCHLINE SEE DRAWING R2-699-510

MATCHLINE SEE DRAWING R2-699-512

PIPE FLOW TABLE						
FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/S)
511-1	511-2	250 PVC	1.19	0.662	0.047	0.112
511-2	511-3	300 PVC	1.17	0.124	0.069	0.165
511-6	511-5	250 PVC	0.96	0.069	0.019	0.044
511-5	511-4	250 PVC	0.96	0.069	0.033	0.077
511-4	511-3	250 PVC	0.95	0.068	0.047	0.110
511-3	OUTLET	600 CONC	1.80	0.824	0.420	0.585
511-7	511-8	675 CONC	0.61	0.657	0.533	1.252
511-8	511-9	675 CONC	0.65	0.678	0.541	1.270
511-9	512-1	675 CONC	0.83	0.766	0.553	1.298

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532



KEY PLAN

SNC·LAVALIN

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

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REVISIONS

DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 134+00.000 TO STA. 137+90.000

SENIOR DESIGN ENGINEER

Sept 4, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-511

BLACK MOUNTAIN DR.

"L600" LINE

BEGLEY ROAD

LIMIT OF CONSTRUCTION
BC 601+77.369
END TAPER
TIE TO EXISTING

LIMIT OF PAVEMENT RECONSTRUCTION
POT 601+51.658

RELOCATE EX. CBs AS REQUIRED

FROM CTQ CONSULTANTS DWG. G-209(1):
DETENTION OUTFALL DRAINS INTO ENCLOSED SYSTEM THAT FLOWS SOUTH DOWN GALLAGHER RD.

ADJUST GAS VALVE COVER (BY OTHERS)

SEDIMENT POND

EXTEND 600ø CULVERT 3.0m TO THE NORTH C/W HEADWALL STRUCTURE
INV=575.92±
N. 527110.04
E. 331393.91
SEE DWG. R2-699-516 FOR DETAILS

RELOCATE 250mm ø W/M FROM 138+89 TO 140+93 DUE TO FUTURE ROAD CUT

114mm ø GASMAIN RELOCATION FROM 139+70 TO 140+70 (BY OTHERS)

LB 512-7 STA. 138+35
GRATE ELEV.= 576.41
OFFSET FROM C/L=17.60L
14.8m - 200mmø CB LEAD

DMH 512-1
1350mmø PRECAST CONC. MH
N. 527085.47
E. 331264.90

CB 512-3 STA. 138+36.21
GRATE EL. = 576.32
OFFSET FROM C/L = 2.30L
19.5m - 200mmø CB LEAD
VDCB 512-4 STA. 138+36.21
GRATE EL. = 576.32
OFFSET FROM C/L = 2.30L
19.2m - 250mmø CB LEAD
INV. = 575.42

POTENTIAL 114mm ø GASMAIN RELOCATION FROM 137+50 TO 138+60 (BY OTHERS)

ADJUST 2 MH RIMS

CB 512-13 STA. 138+96.41
GRATE EL. = 576.87
OFFSET FROM C/L = 22.09L
23.1m - 200mmø CB LEAD

DMH 512-5
1050mmø PRECAST CONC. MH
N. 527075.80
E. 331434.62

250mm ø W/M SEE DWG. R2-699-543 FOR DETAIL

SWALE
START STATION 137+60
END STATION 138+60

REPLACE 250mm ø AC W/M WITH 250ø PVC W/M SEE DWG. R2-699-545 FOR DETAIL

ADJUST MH RIM

CB 512-1 STA. 137+90
GRATE EL. = 576.56
OFFSET FROM C/L = 2.30L
21.4m - 200mmø CB LEAD

REMOVE AND REPLACE HYDRANT

ADJUST 2 MH RIMS

REMOVE EX. CULVERT

HWY 33
"L100" LINE

REPLACE SAN MH FRAME

REPLACE STM MH FRAME

40.1m - 675mm ø CONC. PIPE

42.6m-675mm ø CONC. PIPE

51.0m-250mm ø PVC PIPE

REPLACE SAN MH FRAME

CB 512-2 STA. 138+03
GRATE EL. = 576.10
OFFSET FROM C/L = 15.45R
3.2m - 200mmø CB LEAD

CB 512-9 STA. 139+40
GRATE EL. = 577.77
OFFSET FROM C/L = 1.00R
22.4m - 200mmø CB LEAD

38m-675mm ø CONC. PIPE

CB 512-11 STA. 139+90
GRATE EL. = 579.54
OFFSET FROM C/L = 1.00R
16.4m - 200mmø CB LEAD

CB 512-8 STA. 139+22
GRATE EL. = 577.06
OFFSET FROM C/L = 12.14R
5.2m - 200mmø CB LEAD

CB 512-5 & 6 STA. 138+36.21
GRATE EL. = 575.95
OFFSET FROM C/L = 15.45R
12m - 200mmø 2 CB LEADS

ADJUST 2 MH RIMS

VDCB 512-7 STA. 138+95.24
GRATE EL. = 576.75
OFFSET FROM C/L = 1.00R
23m - 200mmø CB LEAD
INV. = 575.74

DMH 512-4
1350mmø PRECAST CONC. MH
N. 527081.48
E. 331383.93

CB 512-10 STA. 139+70
GRATE EL. = 578.46
OFFSET FROM C/L = 11.40R
3.3m - 200mmø CB LEAD

CB 512-12 STA. 140+40
GRATE EL. = 581.53
OFFSET FROM C/L = 1.43L
14.8m - 200mmø CB LEAD

DMH 512-2
1350mmø PRECAST CONC. MH
N. 527081.40
E. 331304.83

FOR DRAINAGE SEE DRAWING R2-699-513

DMH 512-3
1500mmø PRECAST CONC. OUTSIDE DROP MH PER MMCD STD. DWG. S3
N. 527073.944
E. 331346.827

REPLACE 400mm ø AC W/M WITH 400ø PVC W/M SEE DWG. R2-699-543 FOR DETAIL

ADJUST MH RIM

GALLAGHER ROAD

"L600" LINE

LIMIT OF PAVEMENT RECONSTRUCTION
TIE TO EXISTING
POC 600+00.000

JOE RICHE ROAD

HWM

MATCHLINE SEE DRAWING R2-699-511

MATCHLINE SEE DRAWING R2-699-513

PLAN 45061

PLAN 51223

PLAN 28538

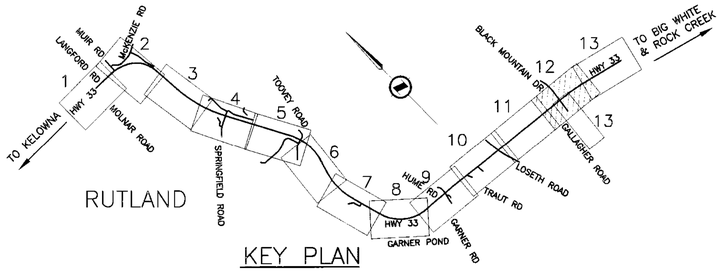
PLAN 22026

PLAN B4079

PLAN 55?

PIPE FLOW TABLE

FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/s)
512-1	512-2	675 CONC	0.82	0.662	0.564	1.354
512-2	512-3	675 CONC	0.54	0.618	0.589	1.383
512-3	OUTFALL	675 CONC	5.37	1.948	0.598	1.404
512-5	512-4	250 PVC	3.19	0.106	0.013	0.022
512-4	512-3	675 CONC	3.19	0.594	0.015	0.024



KEY PLAN

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532

PROFESSIONAL SEAL

Sept 9, 2009

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	K. PUN	DATE 2008-02-22
DRAWN	N. KRUCKENBERG	DATE 2008-02-22
CHECKED	R. LEE	DATE 2008-02-22
APPROVED	R. LEE	DATE 2009-08-30

Rev	Date	Description	Signature

REVISIONS

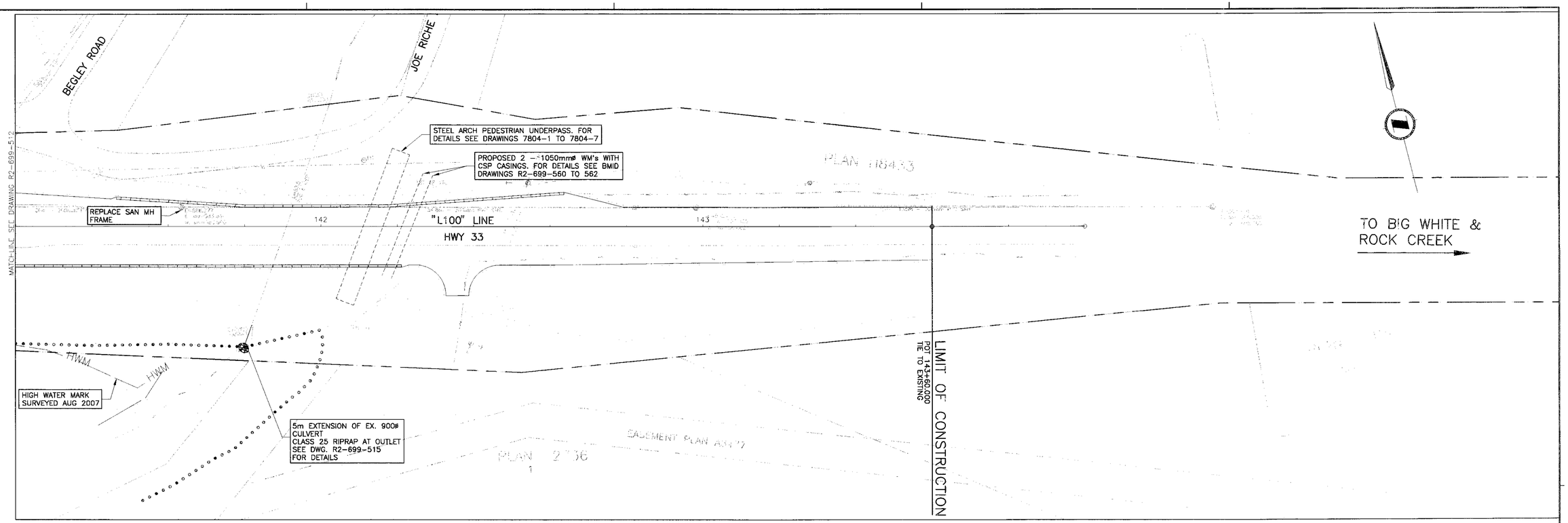
DRAINAGE AND UTILITIES

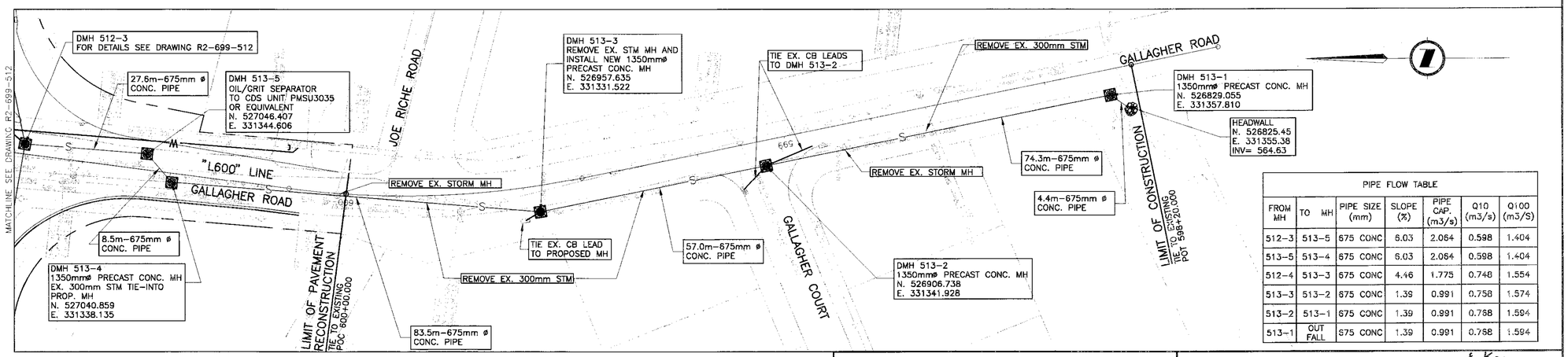
HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 137+90.000 TO STA. 141+20.000

SENIOR DESIGN ENGINEER

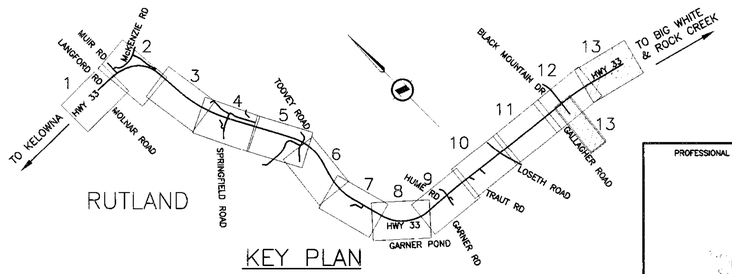
Sept 9, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-512





PIPE FLOW TABLE						
FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/S)
512-3	513-5	675 CONC	6.03	2.064	0.598	1.404
513-5	513-4	675 CONC	6.03	2.064	0.598	1.404
512-4	513-3	675 CONC	4.46	1.775	0.748	1.554
513-3	513-2	675 CONC	1.39	0.991	0.758	1.574
513-2	513-1	675 CONC	1.39	0.991	0.758	1.594
513-1	OUT FALL	675 CONC	1.39	0.991	0.758	1.594



KEY PLAN

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532

PROFESSIONAL SEAL

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City of Kelowna

SCALE 0 1:500 25

DESIGNED	X. PUN	DATE 2009-07-31
DRAWN	D. NISSILA	DATE 2009-07-31
CHECKED	R. LEE	DATE 2009-07-31
APPROVED	R. LEE	DATE 2009-08-26

Rev	Date	Description	Signature

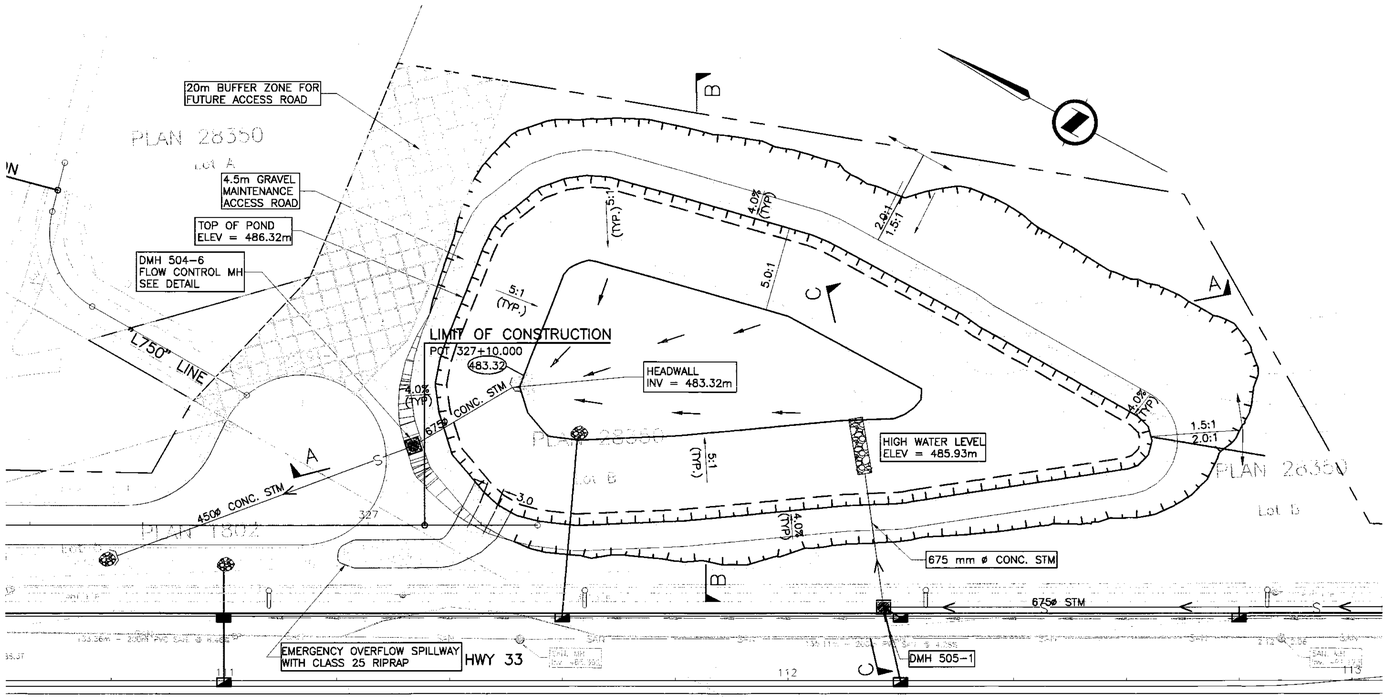
REVISIONS

DRAINAGE AND UTILITIES

HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 141+20.000 TO STA. 143+60.000

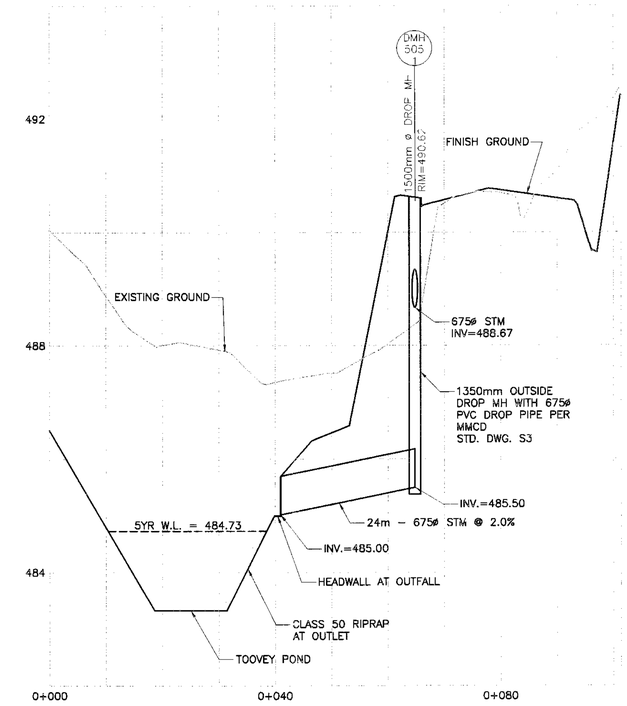
SENIOR DESIGN ENGINEER — DATE

FILE No.	PROJECT No.	REC.	DRAWING No.
2064	22198-0001	2	R2-699-513



DETENTION POND

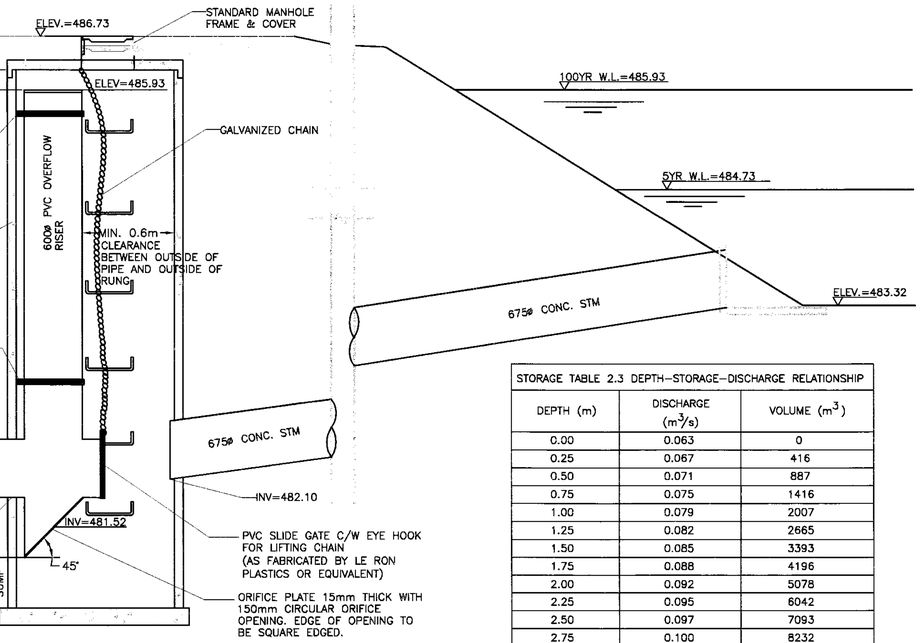
SCALE; 1:500



SECTION C-C

1:500 HOR

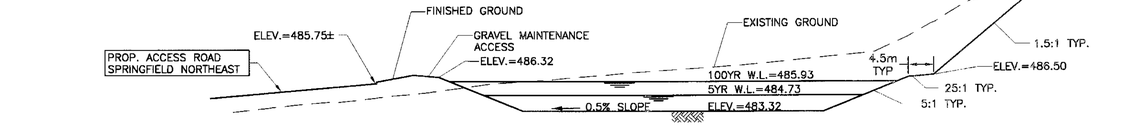
1:250 VER



DMH 504-6 FLOW CONTROL MANHOLE DETAIL

N.T.S

STORAGE TABLE 2.3 DEPTH-STORAGE-DISCHARGE RELATIONSHIP		
DEPTH (m)	DISCHARGE (m^3/s)	VOLUME (m^3)
0.00	0.063	0
0.25	0.067	416
0.50	0.071	887
0.75	0.075	1416
1.00	0.079	2007
1.25	0.082	2665
1.50	0.085	3393
1.75	0.088	4196
2.00	0.092	5078
2.25	0.095	6042
2.50	0.097	7093
2.75	0.100	8232
3.00	0.479	9463



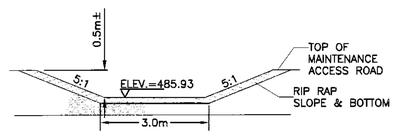
PLACE 100mm STRIPPING SOIL ON ALL DISTURBED SURFACE /SLOPES AND HYDROSEED (TYP.)

SECTION A-A

1:500 HOR

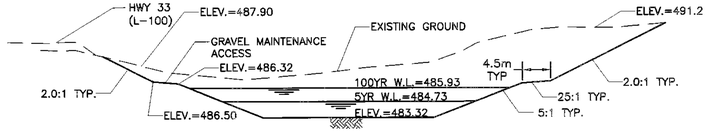
1:250 VER

PLACE 150mm OF HFSA FOR MAINTENANCE GRAVEL ROAD



EMERGENCY OVERFLOW SPILLWAY

N.T.S



SECTION B-B

1:500 HOR

1:250 VER

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532

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City of Kelowna

SCALE 0 1:500 25

DESIGNED	K. PUN	DATE 2008-02-22
DRAWN	N. KRUCKENBERG	DATE 2008-02-22
CHECKED	R. LEE	DATE 2008-02-22
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 16, 2009

Rev	Date	Description	Signature

REVISIONS

DRAINAGE AND UTILITIES

HIGHWAY 33 - FOUR LANING

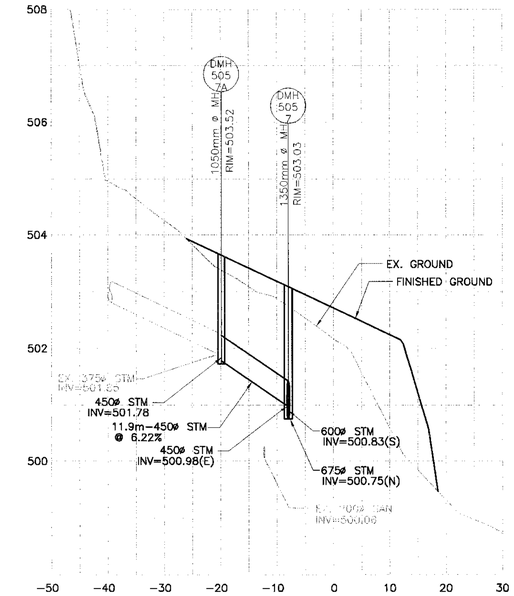
MUIR ROAD TO GALLAGHER ROAD

DETENTION POND DETAIL

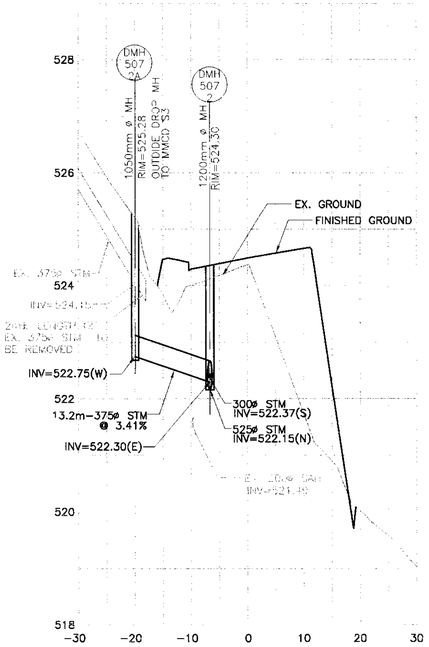
SENIOR DESIGN ENGINEER

DATE Sept 16, 2009

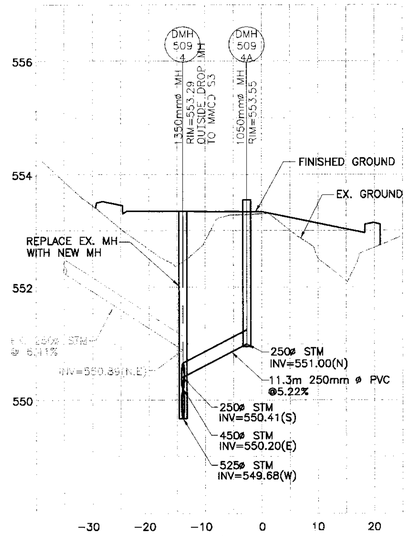
FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198	2	R2-699-514



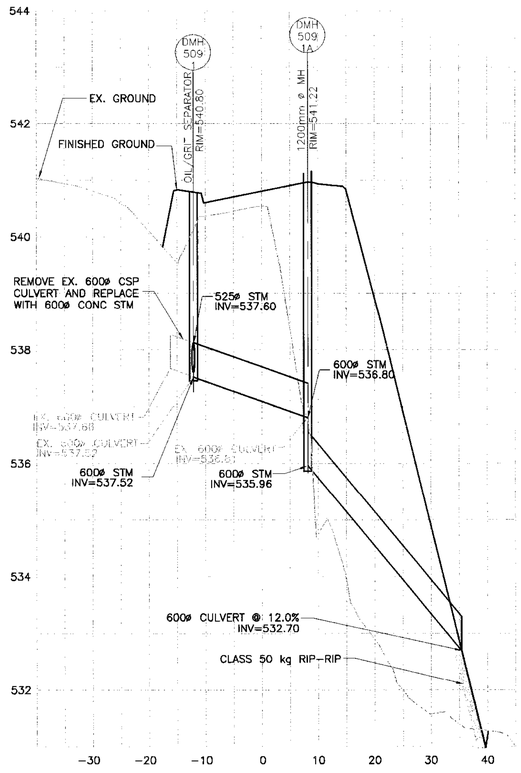
(STATION 115+24) R2-699-505



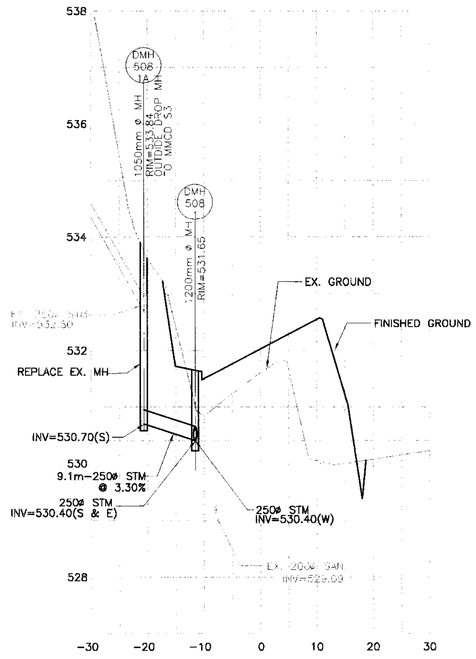
(STATION 120+72) R2-699-507



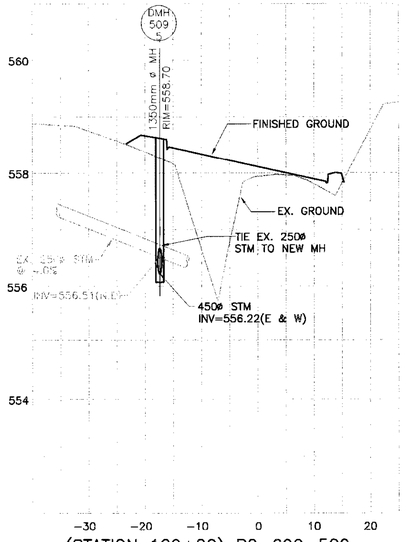
(STATION 128+50) R2-699-509



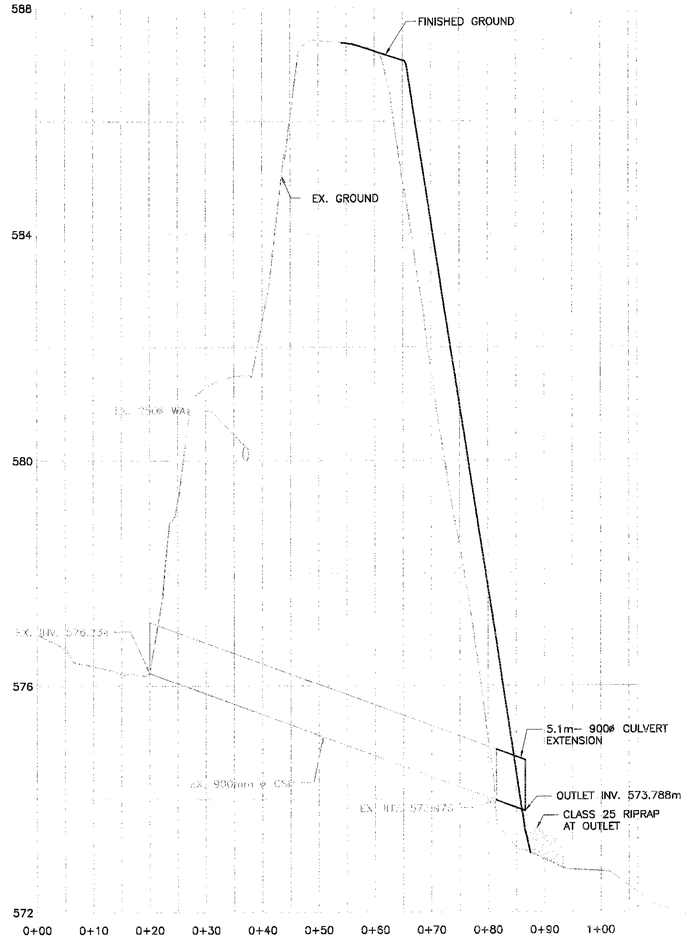
(STATION 126+40) R2-699-509



(STATION 123+54) R2-699-508



(STATION 129+20) R2-699-509



(STATION 141+90) R2-699-513
GOPHER CREEK

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

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City of Kelowna

SCALE 0 Horiz. 1:500 25 / 0 Vert. 1:50 2.5

DESIGNED	K. PUN	DATE 2007-03-30
DRAWN	N. KRUCKENBERG	DATE 2007-04-13
CHECKED	R. LEE	DATE 2007-04-13
APPROVED	R. LEE	DATE 2009-08-20

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

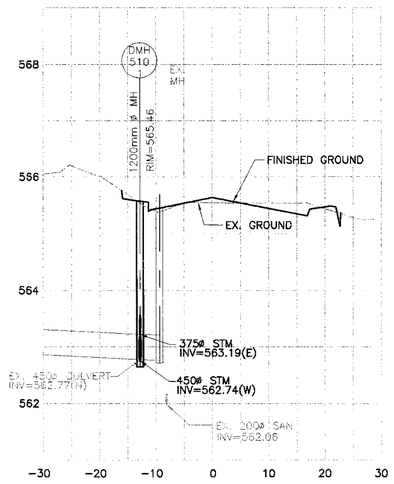
REVISIONS

DRAINAGE AND UTILITIES

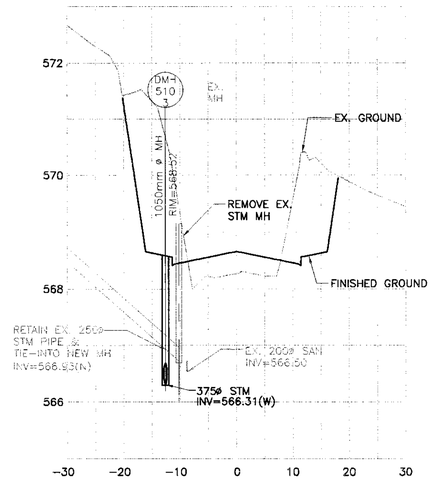
HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER DETAIL

SENIOR DESIGN ENGINEER — DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-515



(STATION 130+31) R2-699-510



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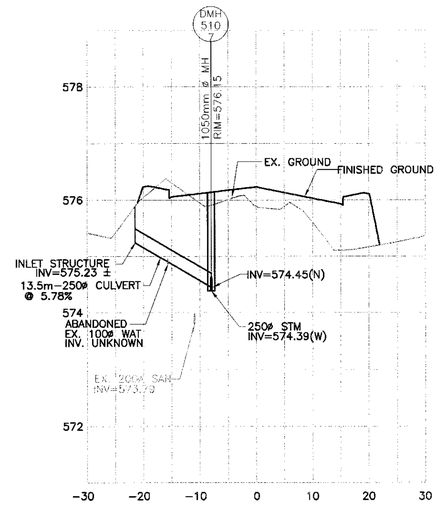

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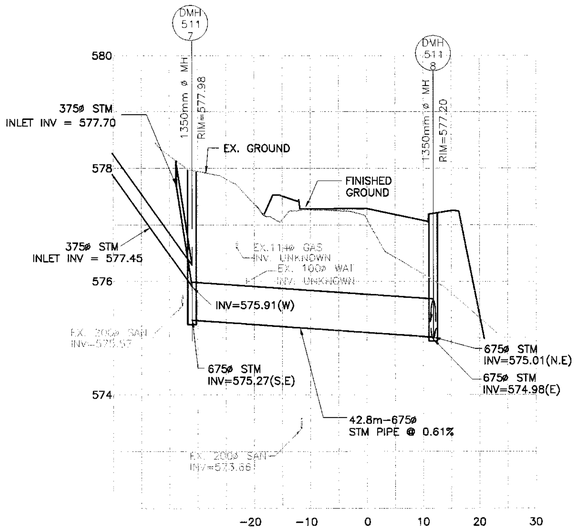
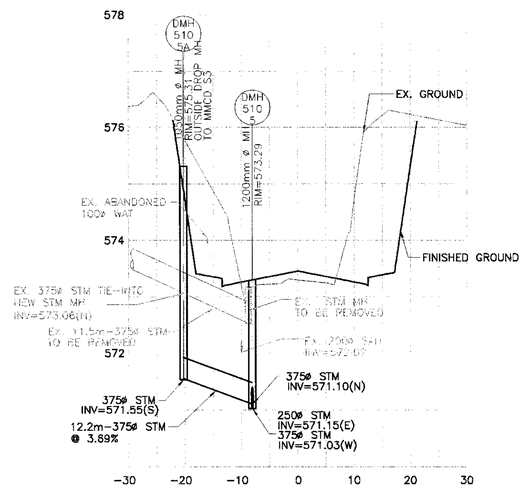


(STATION 137+00) R2-699-511



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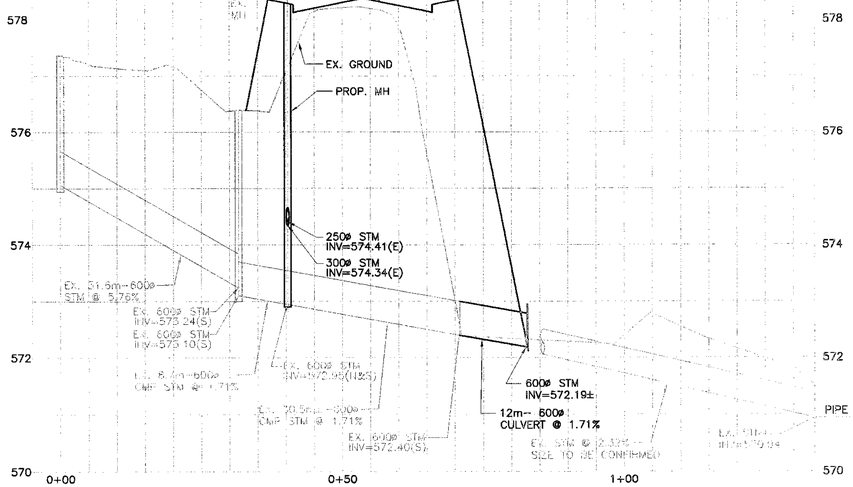

(STATION 135+00) R2-699-511

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

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City of Kelowna

SCALE	0 Horiz. 1:500 25 / 0 Vert. 1:50 2.5	
DESIGNED	K. PUN	DATE 2007-03-30
DRAWN	N. KRUCKENBERG	DATE 2007-04-13
CHECKED	R. LEE	DATE 2007-04-13
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER DETAIL

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
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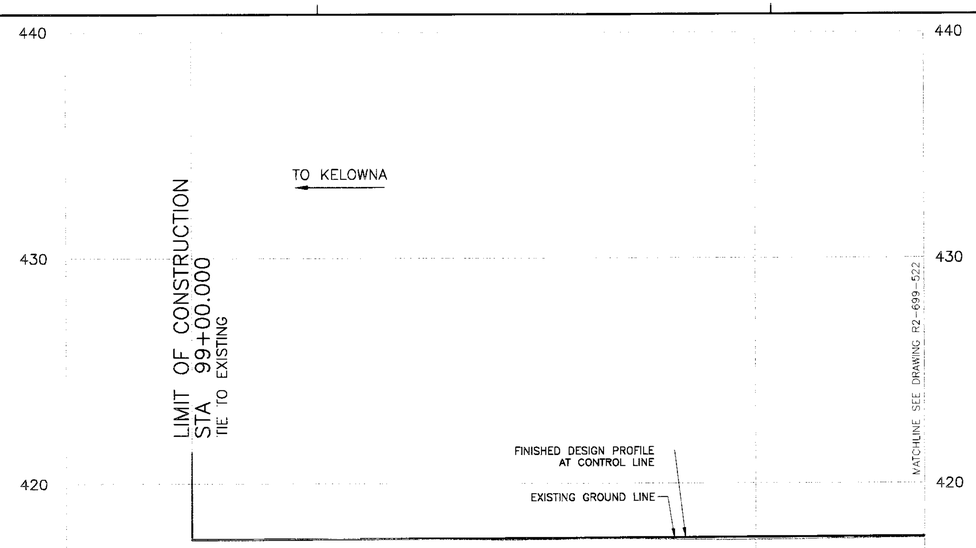

"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
SEE DWG. R2-699-501 THRU 513

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

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SCALE 0 Horiz. 1:500 20
0 Vert. 1:125 5

DESIGNED K. PUN DATE 2007-03-30
DRAWN B. YANG DATE 2007-06-04
CHECKED R. LEE DATE 2007-06-28
APPROVED R. LEE DATE 2009-06-26

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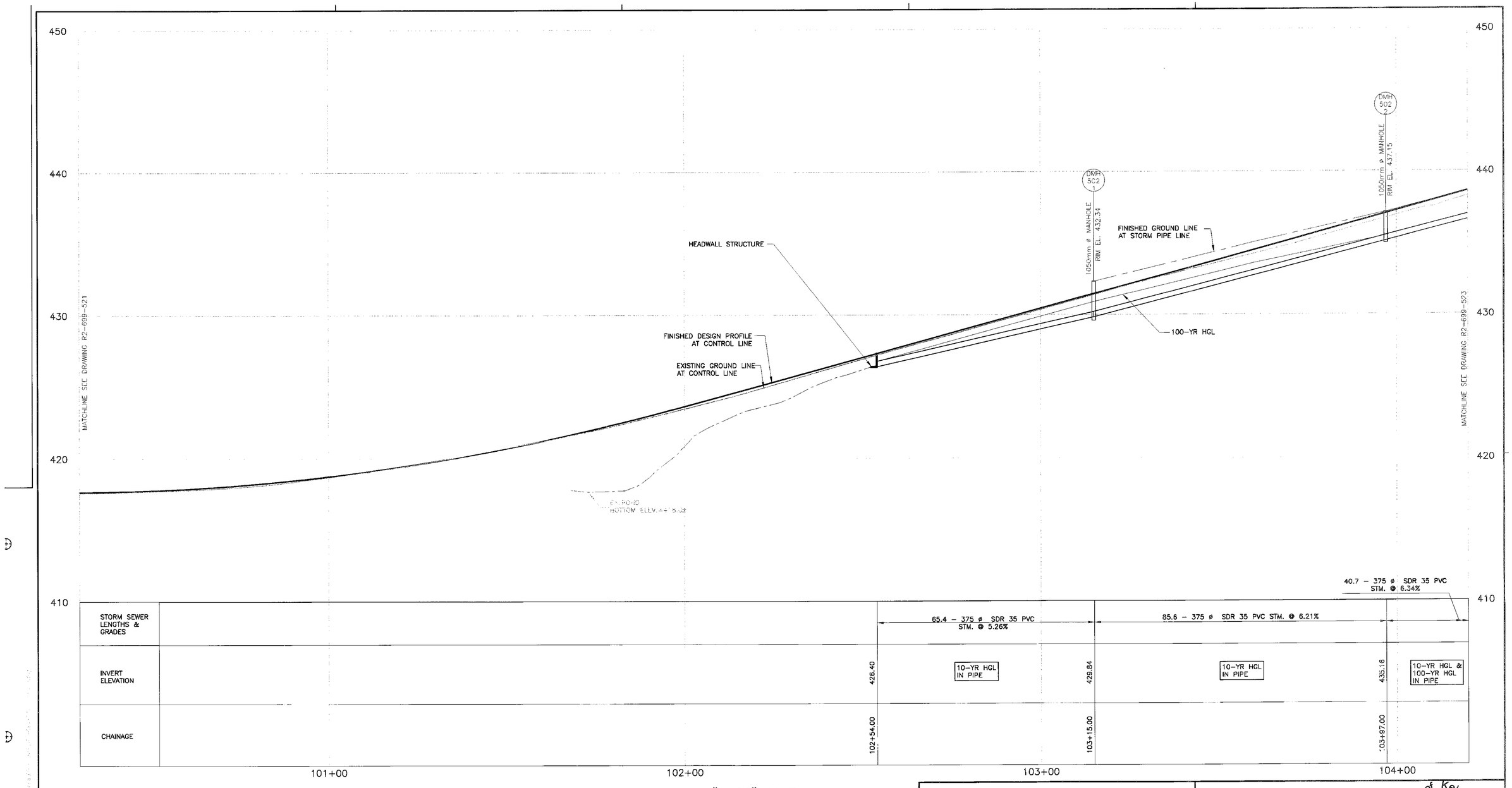
City of Kelowna

DRAINAGE AND UTILITIES
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 99+00.000 TO STA. 100+30.000

SENIOR DESIGN ENGINEER

DATE Sept. 4, 2009

FILE No.	PROJECT No.	REC.	DRAWING No.
2064	22198-0001	2	R2-699-521



"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
SEE DWG. R2-699-501 THRU 513

PROFESSIONAL SEAL

Sept 4, 2009

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City of Kelowna

SCALE 0 Horiz. 1:500 20
0 Vert. 1:125 5

DESIGNED	K. PUN	DATE 2007-03-30
DRAWN	B. YANG	DATE 2007-06-04
CHECKED	R. LEE	DATE 2007-06-29
APPROVED	R. LEE	DATE 2009-08-26

Rev	Date	Description	Signature

REVISIONS

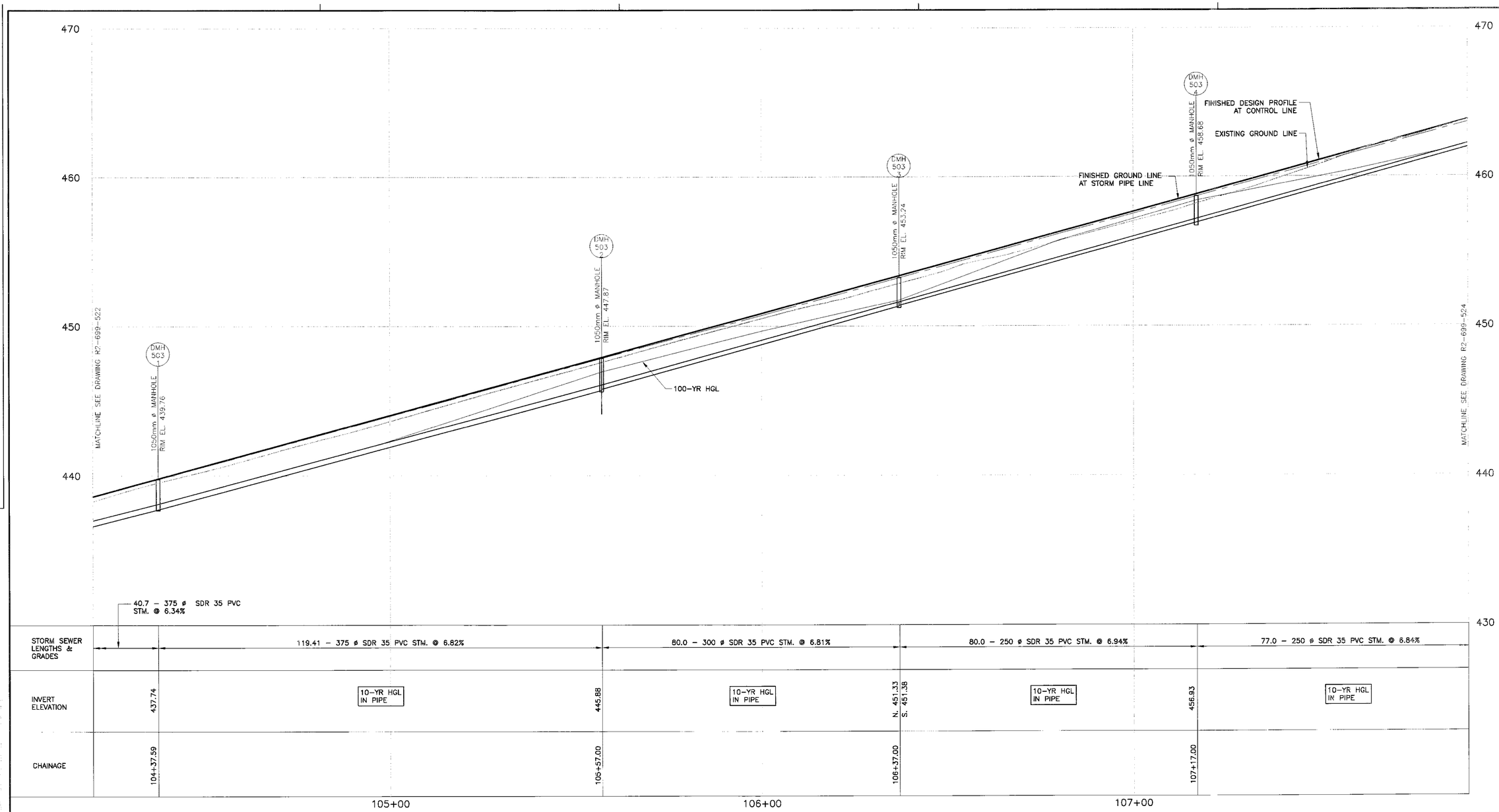
DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 100+30.000 TO 104+20.000

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-522



"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
SEE DWG. R2-699-501 THRU 513

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

SNC·LAVALIN

SCALE 0 Horiz. 1:500 20
0 Vert. 1:125 5

DESIGNED	K. PUN	DATE 2007-03-30
DRAWN	B. YANG	DATE 2007-08-04
CHECKED	R. LEE	DATE 2007-08-29
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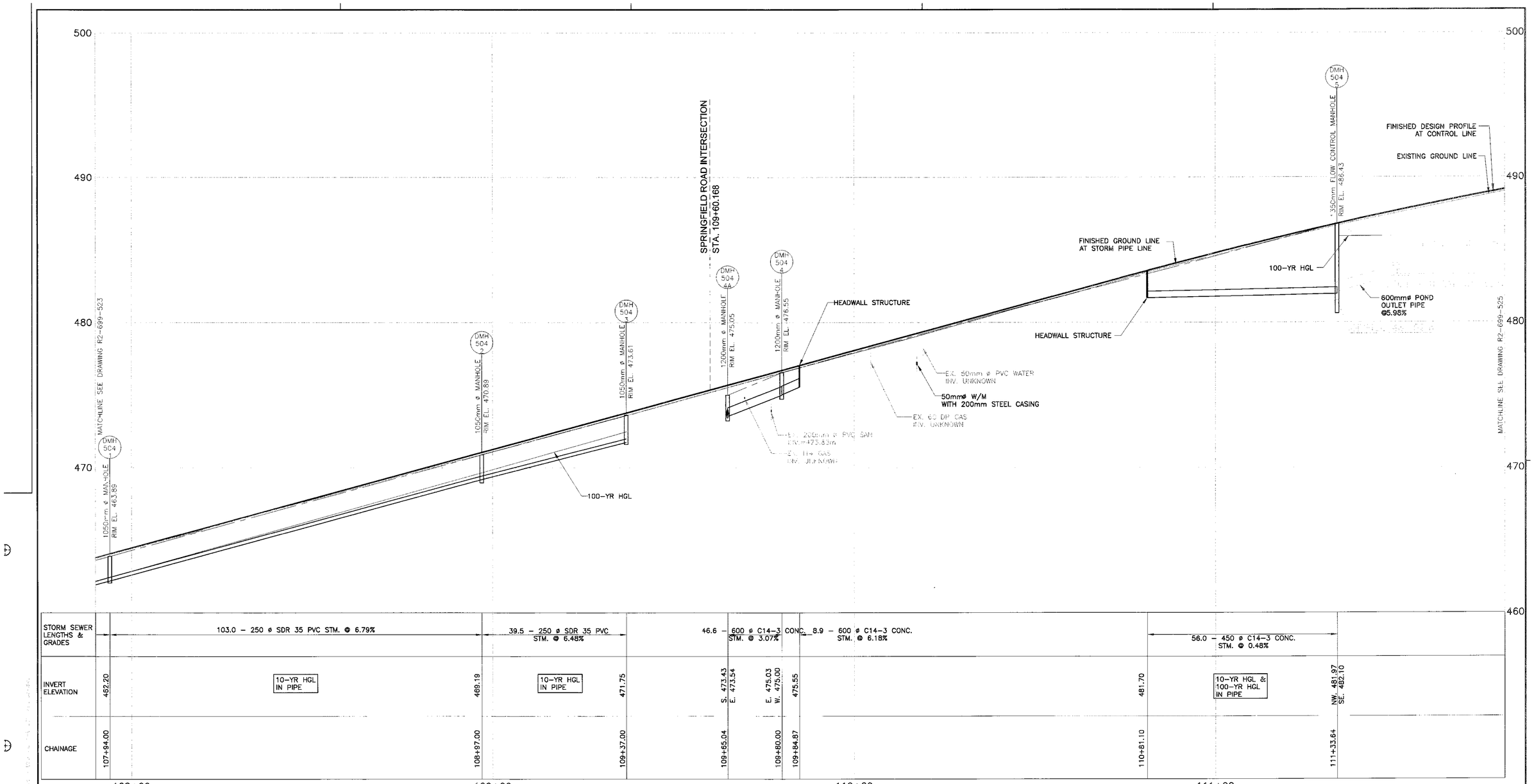
DRAINAGE AND UTILITIES
HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 104+20.000 TO STA. 107+90.000

SENIOR DESIGN ENGINEER

Sept 4, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-523



"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
SEE DWG. R2-699-501 THRU 513

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SCALE 0 Horiz. 1:500 20
0 Vert. 1:125 5

DESIGNED	K. PUN	DATE 2007-03-30
DRAWN	B. YANG	DATE 2007-08-04
CHECKED	R. LEE	DATE 2007-08-29
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REVISIONS

DRAINAGE AND UTILITIES

HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 107+90.000 TO STA. 111+80.000

SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
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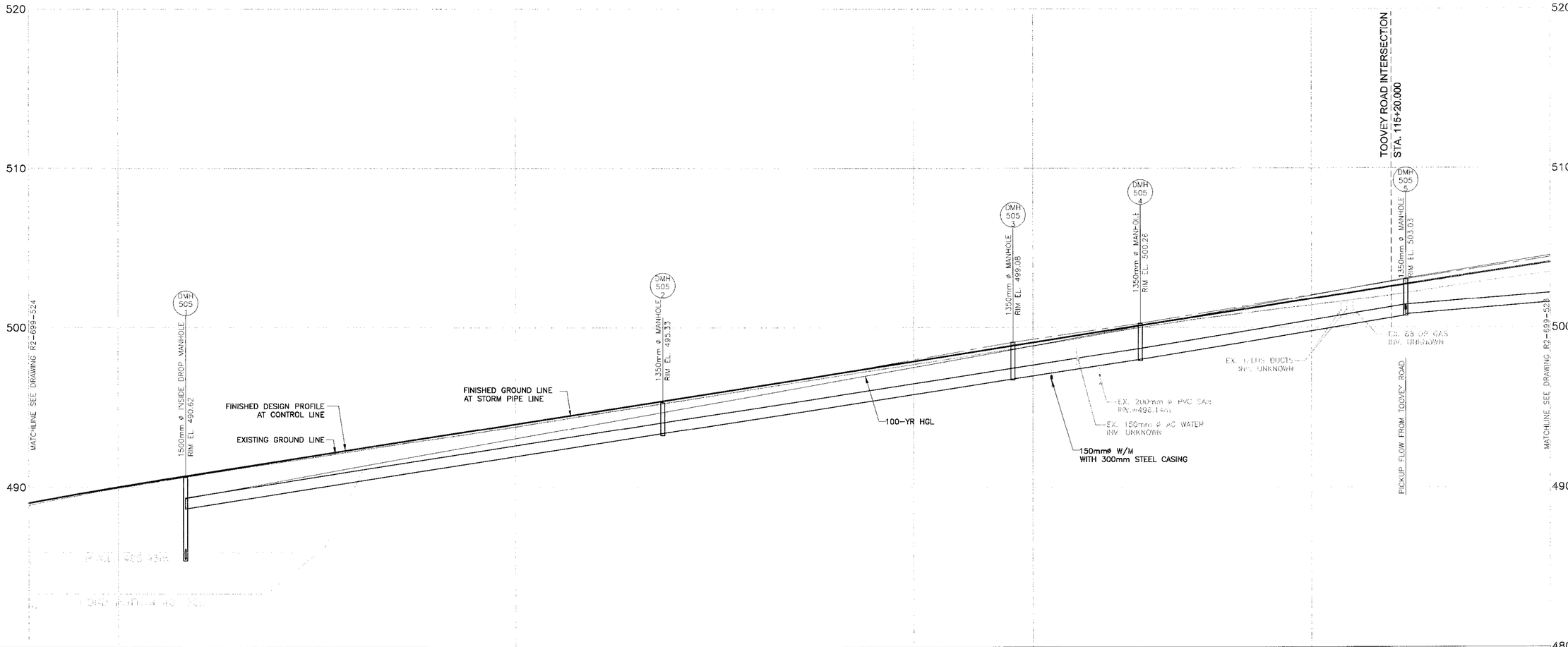

STORM SEWER LENGTHS & GRADES		120.0 – 675 ø C14-3 CONC. STM. @ 3.92%	88.0 – 675 ø C14-3 CONC. STM. @ 3.90%	33.4 – 675 ø C14-3 CONC. STM. @ 3.62%	67.8 – 675 ø C14-3 CONC. STM. @ 4.04%	42.2 – 600 ø C14-3 CONC. STM. @ 1.97%
INVERT ELEVATION	SE 488.67 NE 485.50	10-YR HGL IN PIPE	493.38 10-YR HGL IN PIPE	496.81 10-YR HGL IN PIPE	498.02 10-YR HGL IN PIPE	N. 500.75 E. 501.05 S. 500.83 10-YR HGL IN PIPE
CHAINAGE	112+17.00		113+37.00	114+25.00	114+57.00	115+23.68

112+00 113+00 114+00 115+00

"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
SEE DWG. R2-699-501 THRU 513

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City of Kelowna

SCALE 0 Horiz. 1:500 20 / 0 Vert. 1:125 5

DESIGNED K. PUN DATE 2007-03-30
DRAWN B. YANG DATE 2007-06-04
CHECKED R. LEE DATE 2007-06-29
APPROVED R. LEE DATE 2009-08-28

PROFESSIONAL SEAL
Sept 4, 2009

Rev	Date	Description	Signature

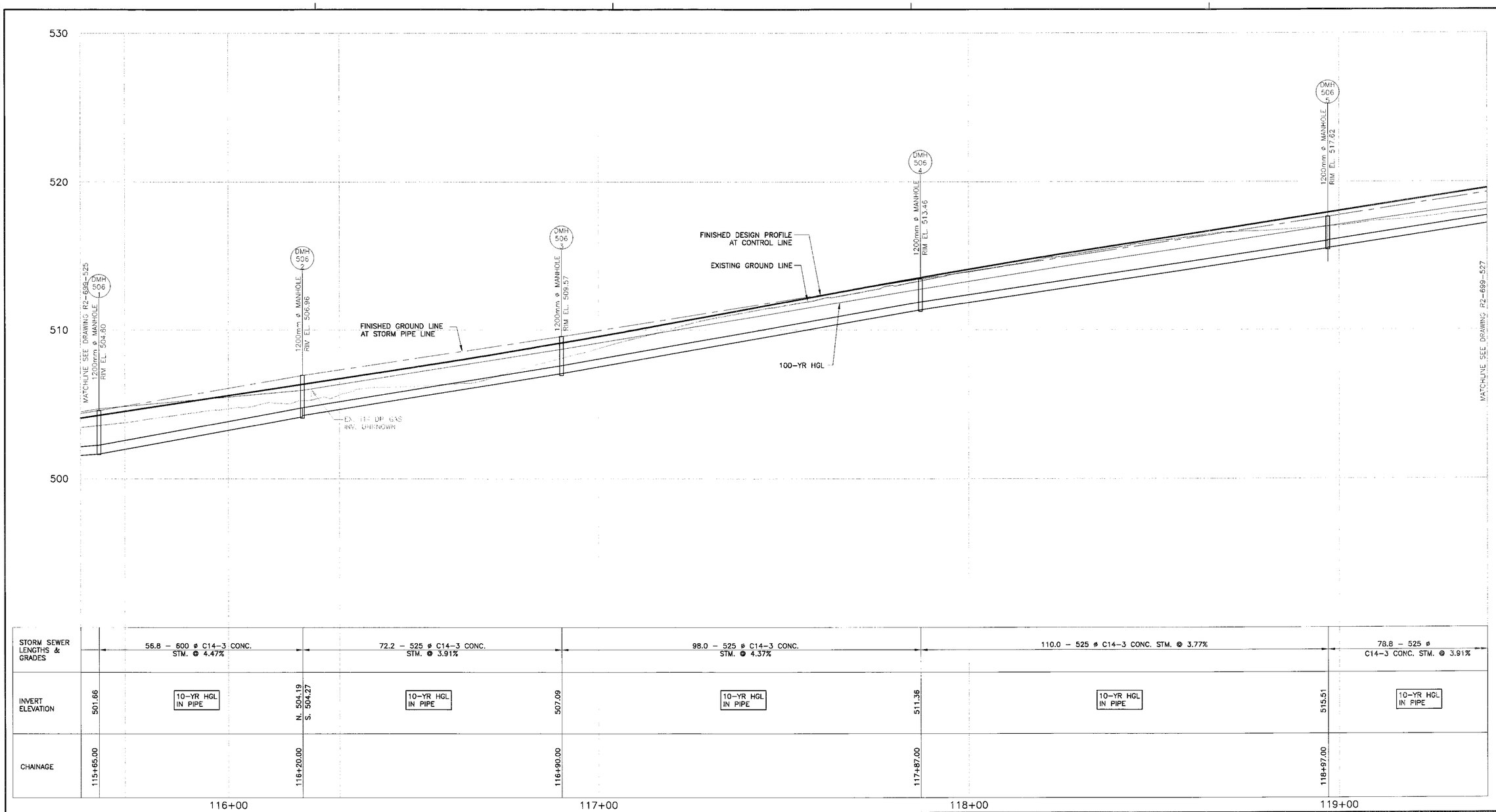
REVISIONS

DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 111+80.000 TO STA. 115+60.000

SENIOR DESIGN ENGINEER — DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-525



"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
SEE DWG. R2-699-501 THRU 513

PROFESSIONAL SEAL
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0 Vert. 1:125 5

DESIGNED	K. PUN	DATE 2007-03-30
DRAWN	B. YANG	DATE 2007-06-04
CHECKED	R. LEE	DATE 2007-06-29
APPROVED	R. LEE	DATE 2009-08-28

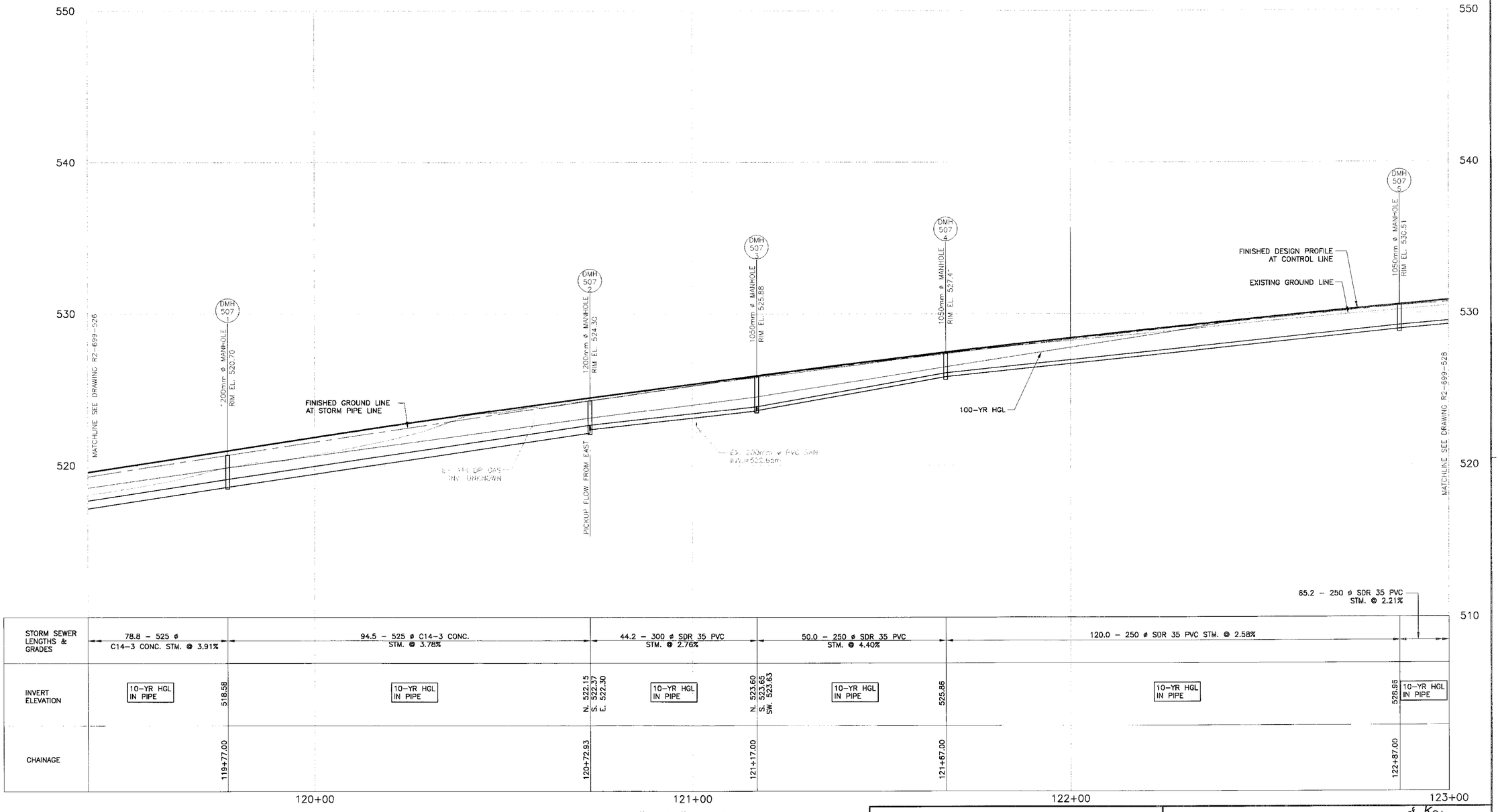
Rev	Date	Description	Signature

REVISIONS

DRAINAGE AND UTILITIES
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 115+60.000 TO STA. 119+40.000

SENIOR DESIGN ENGINEER
DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-526



"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
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DESIGNED K. PUN DATE 2007-03-30
DRAWN B. YANG DATE 2007-06-04
CHECKED R. LEE DATE 2007-06-26
APPROVED R. LEE DATE 2009-08-26

DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 119+40.000 TO STA. 123+00.000

PROFESSIONAL SEAL

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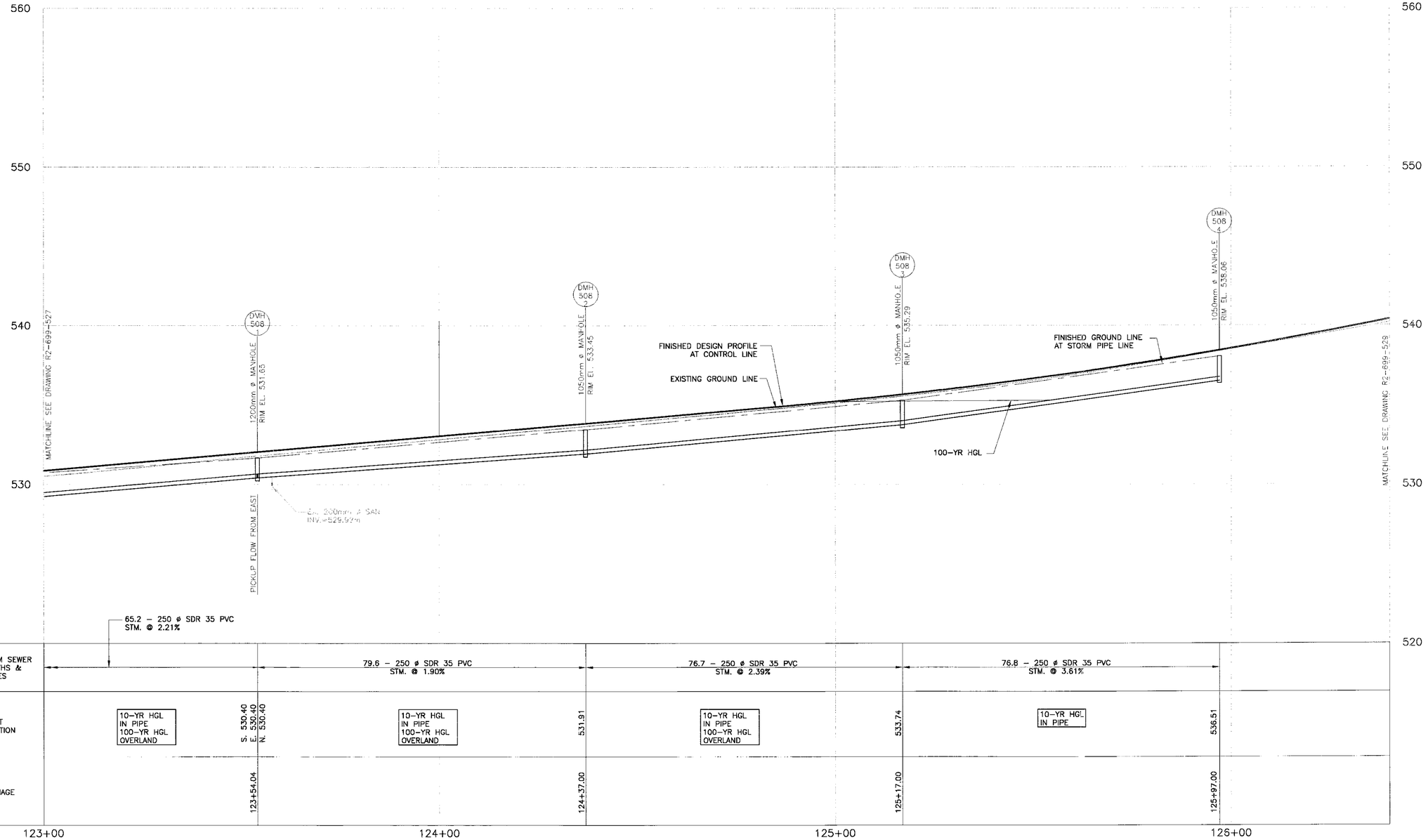
REVISIONS

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-527



"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
SEE DWG. R2-699-501 THRU 513

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SCALE 0 Horiz. 1:500 20
0 Vert. 1:125 5

DESIGNED	K. PUN	DATE 2007-03-30
DRAWN	B. YANG	DATE 2007-06-05
CHECKED	R. LEE	DATE 2007-06-29
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

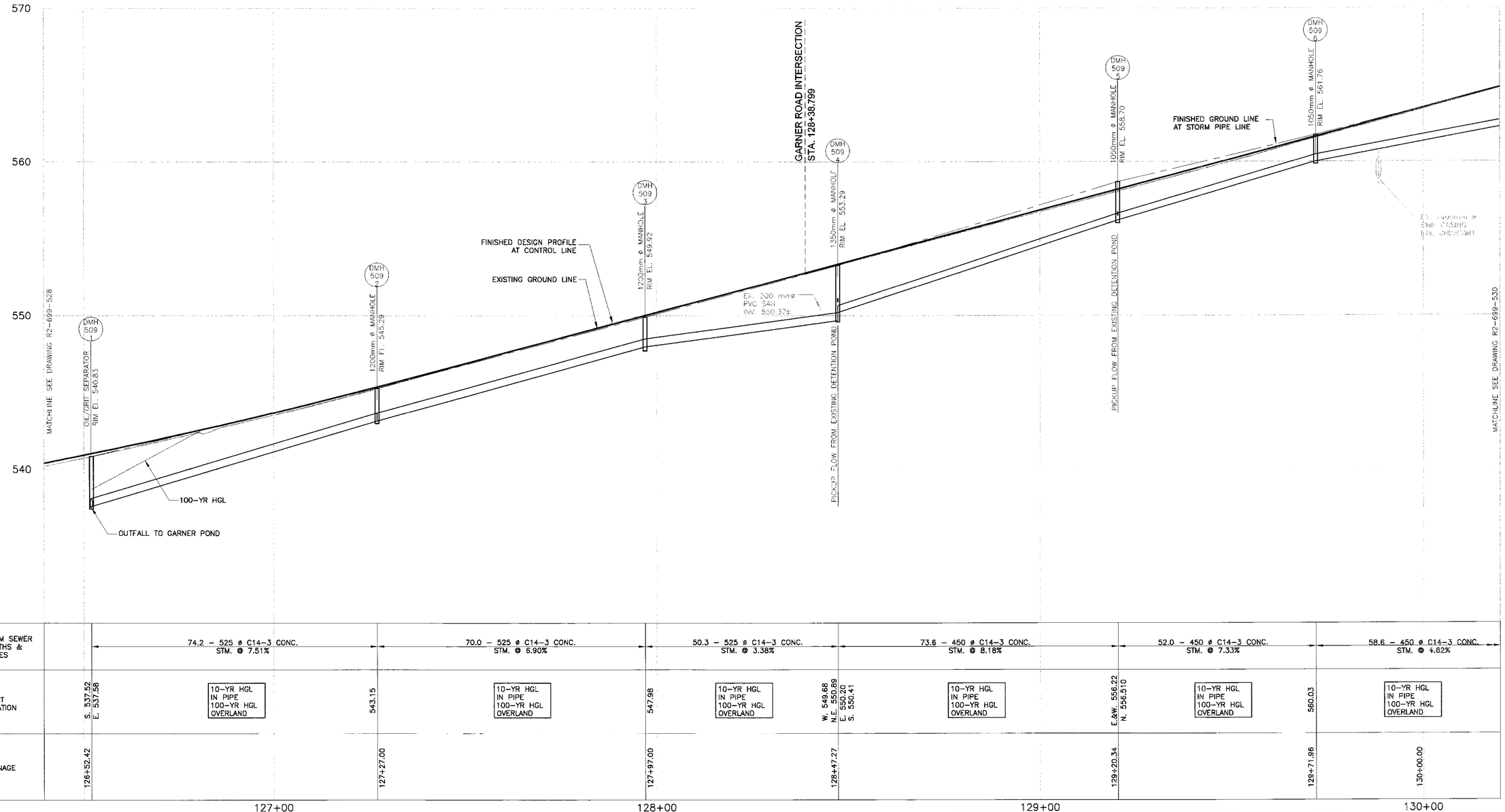
DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 123+00.000 TO STA. 126+40.000

SENIOR DESIGN ENGINEER

Sept 4, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-528



"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
SEE DWG. R2-699-501 THRU 513

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0 Vert. 1:125 5

DESIGNED K. PUN DATE 2007-03-30
DRAWN B. YANG DATE 2007-08-04
CHECKED R. LEE DATE 2007-08-29
APPROVED R. LEE DATE 2009-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

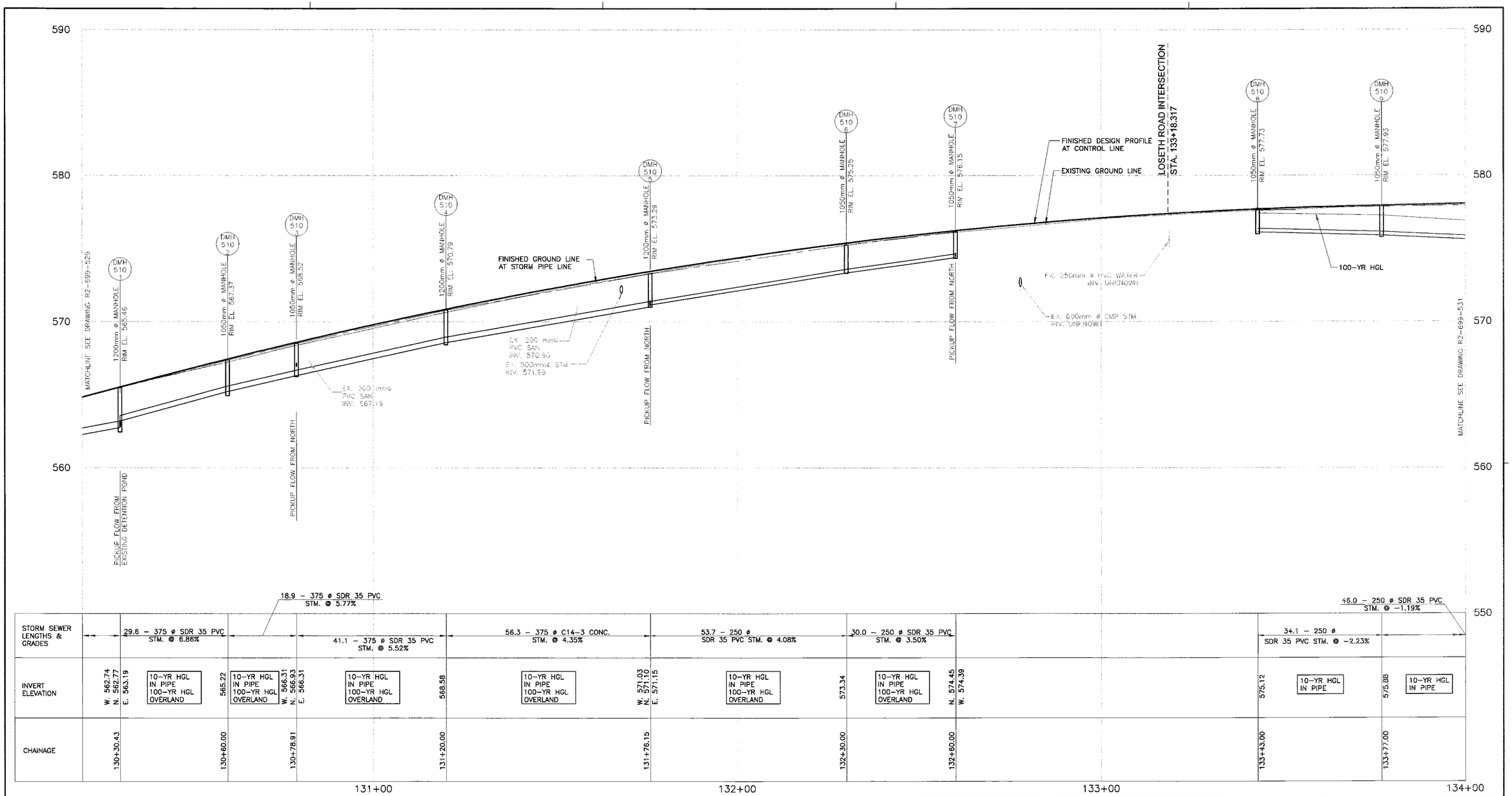
DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 126+40.000 TO STA. 130+20.000

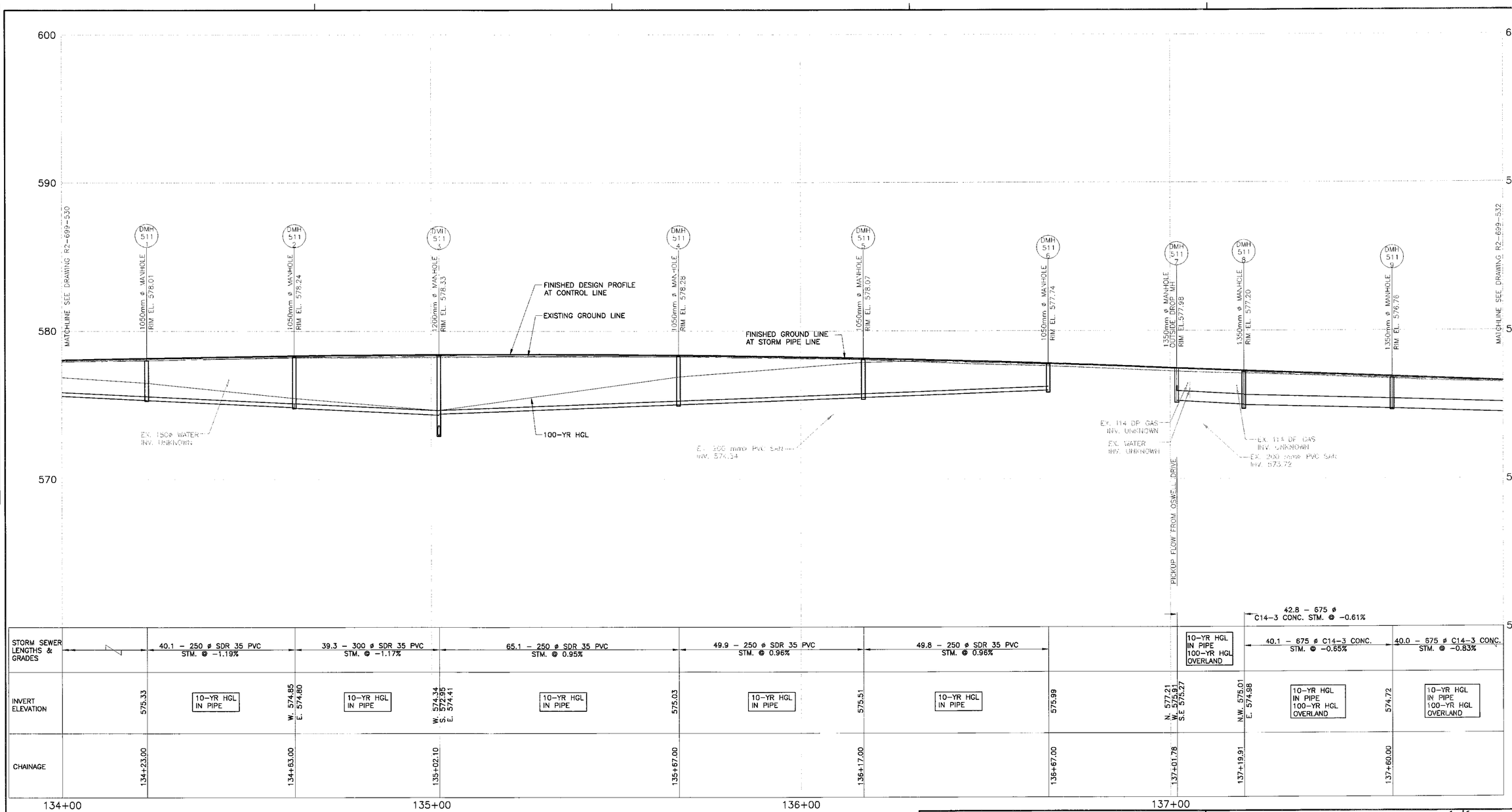
SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-529


590
580
570
560
550
MATCHLINE SEE DRAWING R2-699-529
MATCHLINE SEE DRAWING R2-699-531
DMH 510 1
1200mm ø MANHOLE
RIM EL. 565.46
DMH 510 2
1050mm ø MANHOLE
RIM EL. 567.37
DMH 510 3
1050mm ø MANHOLE
RIM EL. 568.52
DMH 510 4
1200mm ø MANHOLE
RIM EL. 570.79
DMH 510 5
1200mm ø MANHOLE
RIM EL. 573.29
DMH 510 6
1050mm ø MANHOLE
RIM EL. 575.25
DMH 510 7
1050mm ø MANHOLE
RIM EL. 576.15
DMH 510 8
1050mm ø MANHOLE
RIM EL. 577.73
DMH 510 9
1050mm ø MANHOLE
RIM EL. 577.93
FINISHED GROUND LINE AT STORM PIPE LINE
FINISHED DESIGN PROFILE AT CONTROL LINE
EXISTING GROUND LINE
LOSETH ROAD INTERSECTION
STA. 133+18.317
100-YR HGL
EX. 250mm ø PVC WATER
INV. UNKNOWN
EX. 600mm ø CMP STM.
INV. UNKNOWN
EX. 200 mmø PVC SAN INV. 567.19
EX. 200 mmø PVC SAN INV. 570.90
EX. 500mmø STM INV. 571.98
PICKUP FLOW FROM NORTH
PICKUP FLOW FROM NORTH
PICKUP FLOW FROM NORTH
PICKUP FLOW FROM EXISTING DETENTION POND
18.9 – 375 ø SDR 35 PVC STM. @ 5.77%
46.0 – 250 ø SDR 35 PVC STM. @ -1.19%

| | | |



"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
SEE DWG. R2-699-501 THRU 513

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SCALE 0 Horiz. 1:500 20
0 Vert. 1:125 5

DESIGNED	K. PUN	DATE 2007-03-30
DRAWN	B. YANG	DATE 2007-06-06
CHECKED	R. LEE	DATE 2007-06-22
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

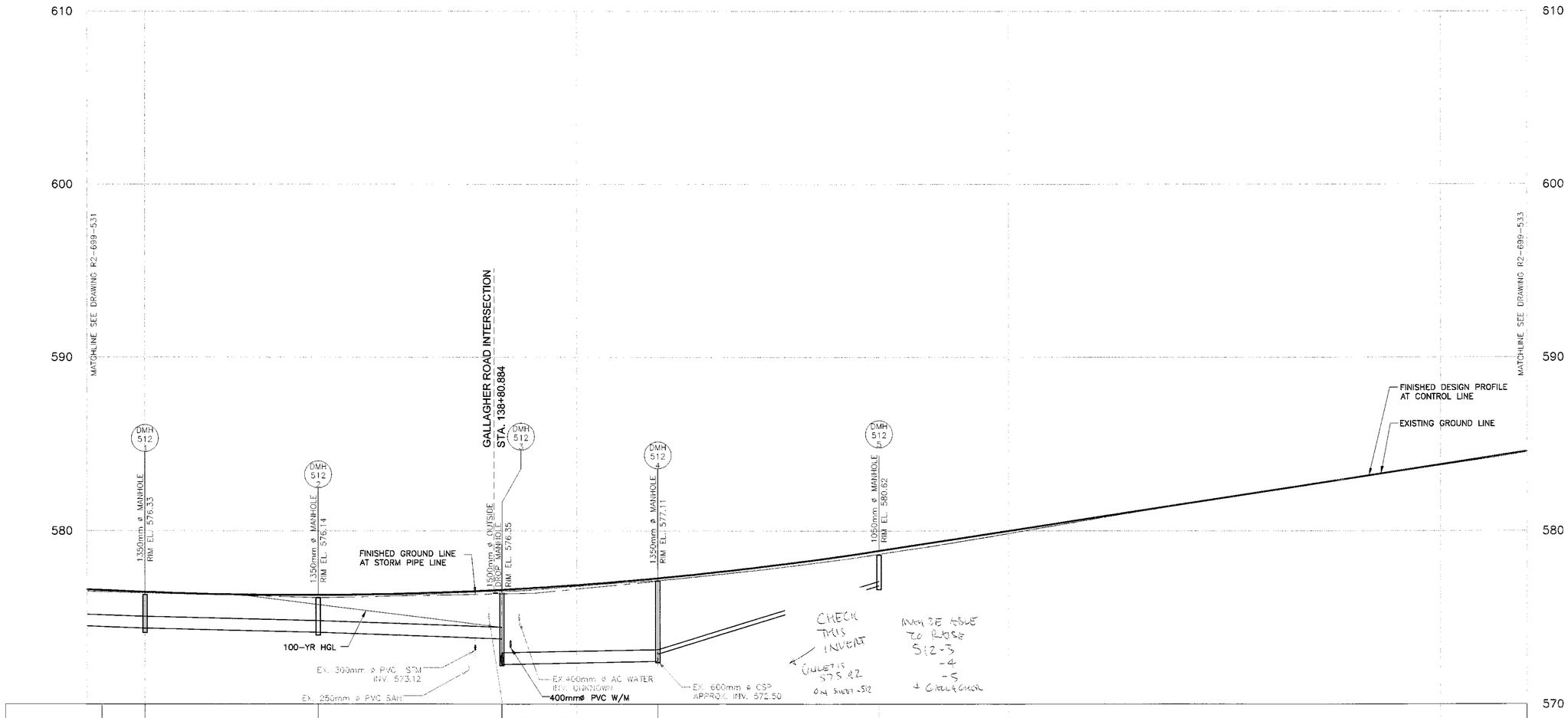
DRAINAGE AND UTILITIES

HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 134+00.000 TO STA. 137+90.000

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-531



"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
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DESIGNED	K. PUN	DATE 2007-03-30
DRAWN	B. YANG	DATE 2007-06-04
CHECKED	R. LEE	DATE 2007-06-29
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

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REVISIONS

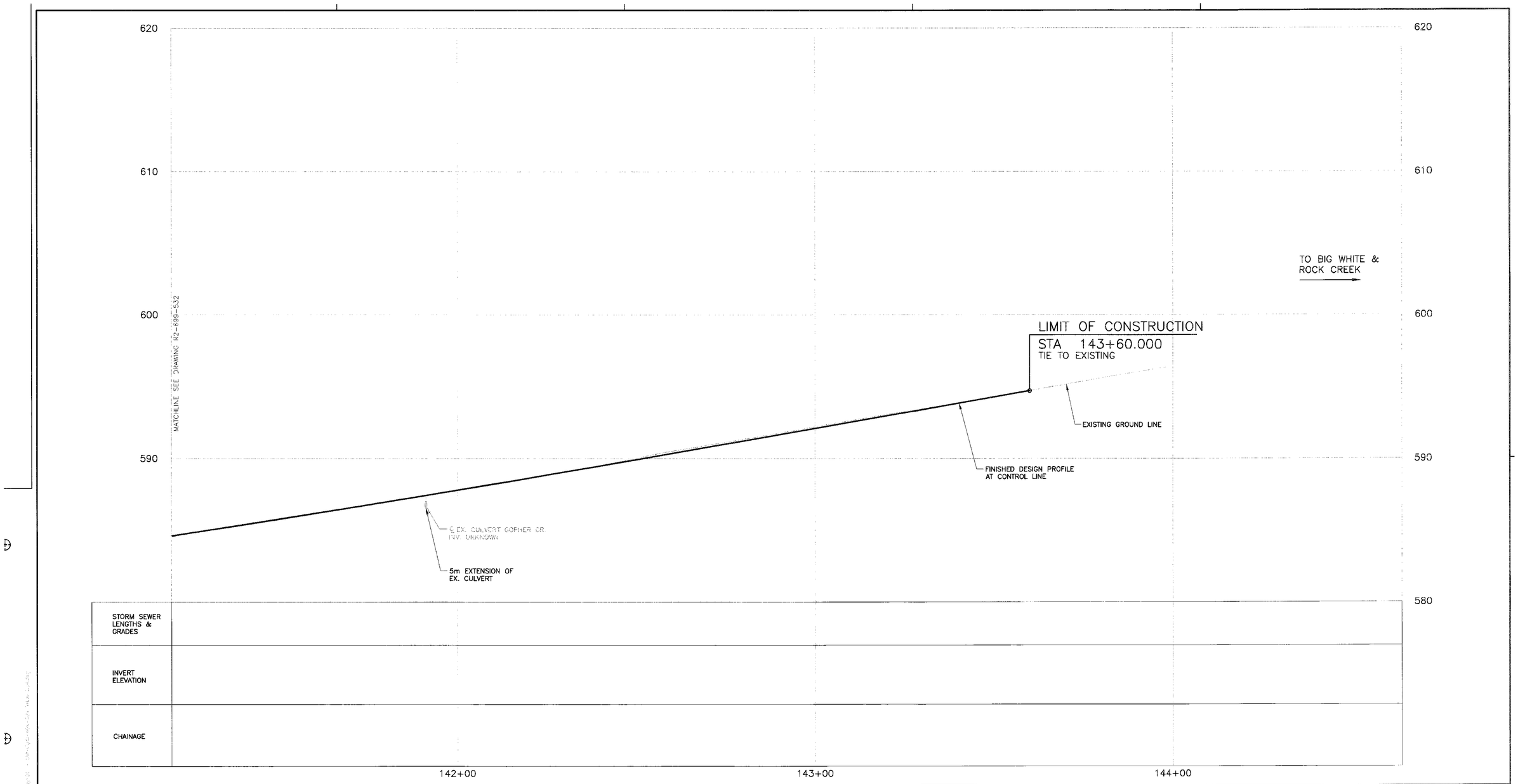
DRAINAGE AND UTILITIES

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 137+90.000 TO STA. 141+20.000

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-532



"L100" LINE
HIGHWAY 33 PROFILE

FOR DRAINAGE & UTILITIES PLAN
SEE DWG. R2-699-501 THRU 513

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APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

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Rev	Date	Description	Signature

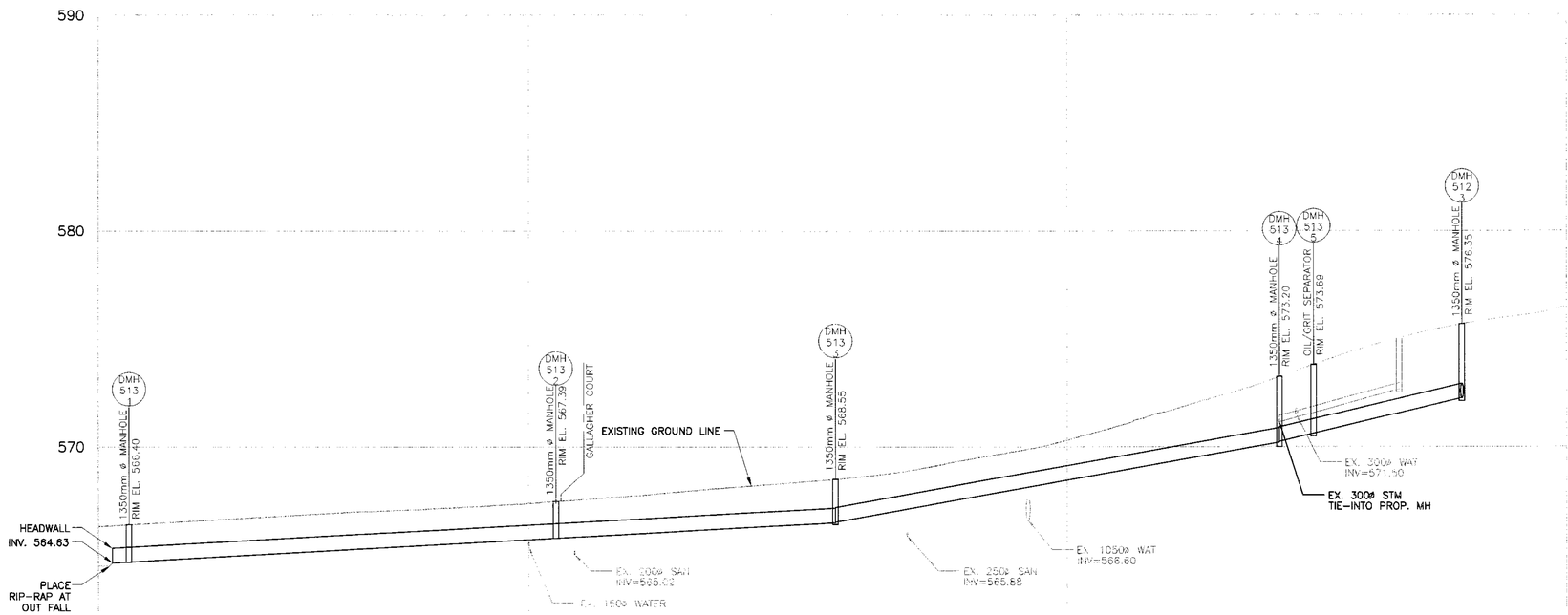
REVISIONS

DRAINAGE AND UTILITIES
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STORM SEWER PROFILES
STA. 141+20.000 TO STA. 143+60.000

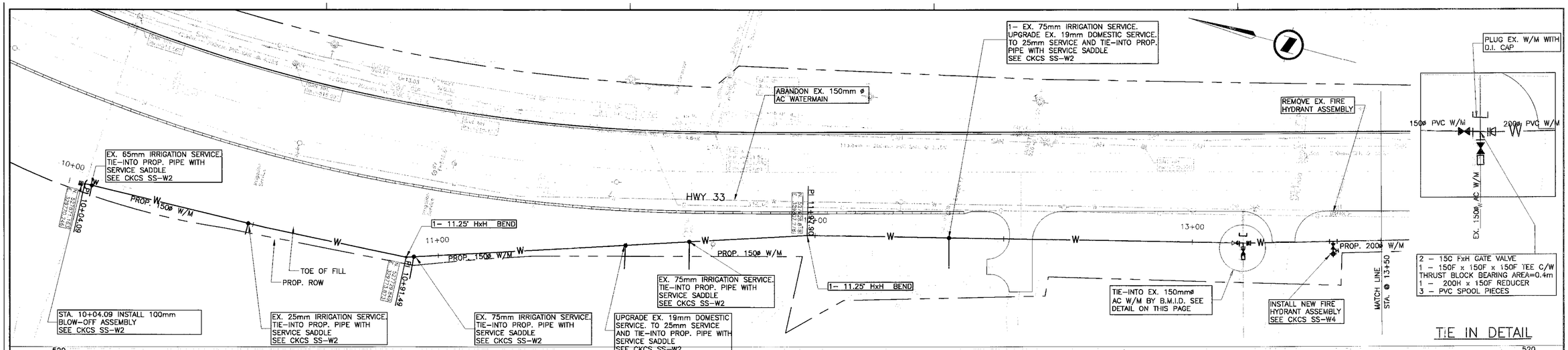
SENIOR DESIGN ENGINEER

Sept 4, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-533


590
580
570
560
DMH 513
1350mm ø MANHOLE
RIM EL. 566.40
HEADWALL
INV. 564.63
PLACE RIP-RAP AT OUT FALL
DMH 513
1350mm ø MANHOLE
RIM EL. 567.39
GALLAGHER COURT
EXISTING GROUND LINE
EX. 200ø SAN INV=565.62
EX. 150ø WATER
DMH 513
1350mm ø MANHOLE
RIM EL. 568.55
EX. 250ø SAN INV=565.68
EX. 1050ø WAT INV=568.60
DMH 513
1350mm ø MANHOLE
RIM EL. 573.20
DMH 513
OIL/GRIT SEPARATOR
RIM EL. 573.69
EX. 300ø WAT INV=571.50
EX. 300ø STM TIE-INTO PROP. MH
DMH 512
1350mm ø MANHOLE
RIM EL. 576.35

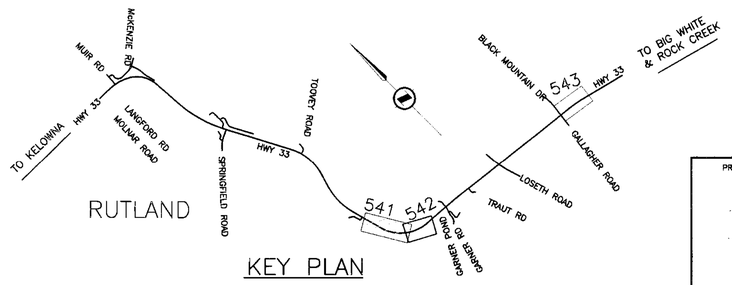
| | | |



FOR STORM PROFILES SEE DWG. R2-699-521 THRU 531

FOR TYPICAL SECTIONS AND DETAILS SEE DWG. R2-699-301 THRU 303

FOR GEOMETRICS AND LANING SEE DWG. R2-699-401 THRU 413



KEY PLAN

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 Horiz. 1:500 20 / 0 Vert. 1:125 5

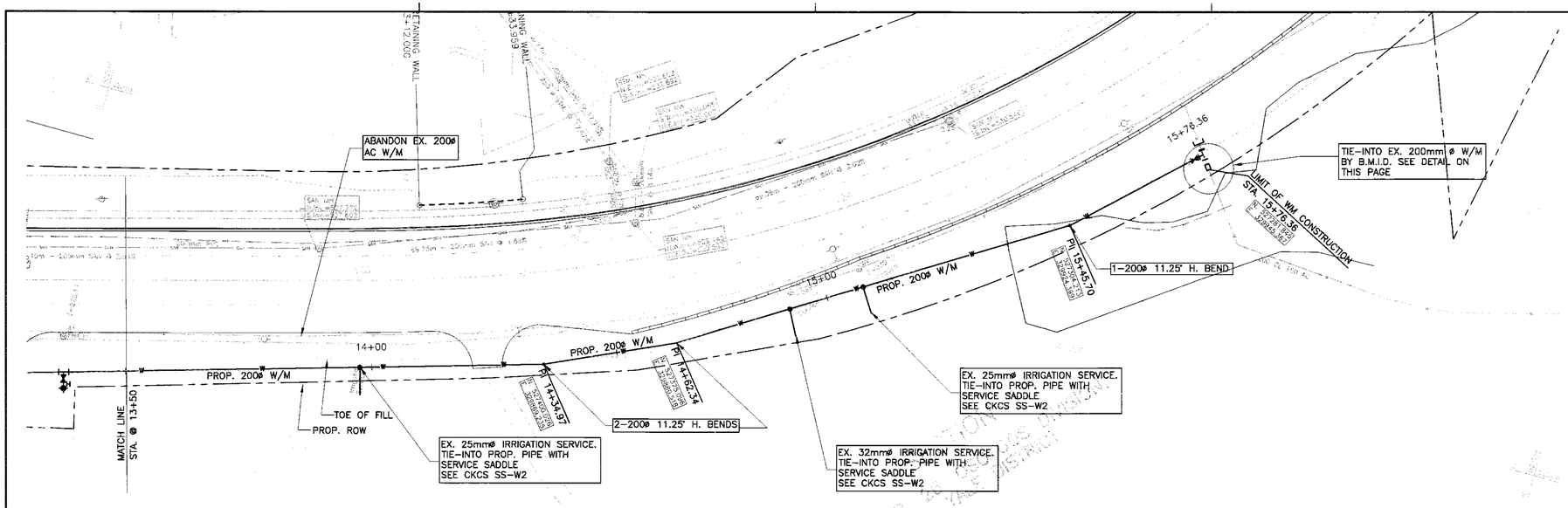
DESIGNED	K. PUN/B. YANG	DATE 07-11-23
DRAWN	B. YANG	DATE 07-11-23
CHECKED	R. LEE	DATE 07-11-23
APPROVED	R. LEE	DATE 2009-08-26

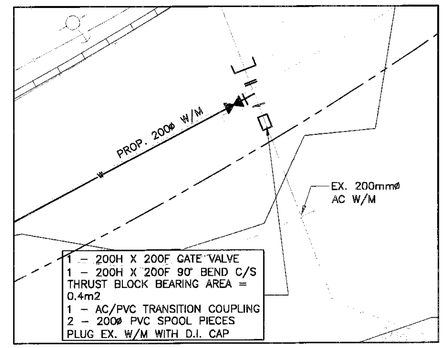
WATERMAIN RELOCATION

HIGHWAY 33 - FOUR LANING
TOOVEY ROAD TO GARNER ROAD
PLAN / PROFILE

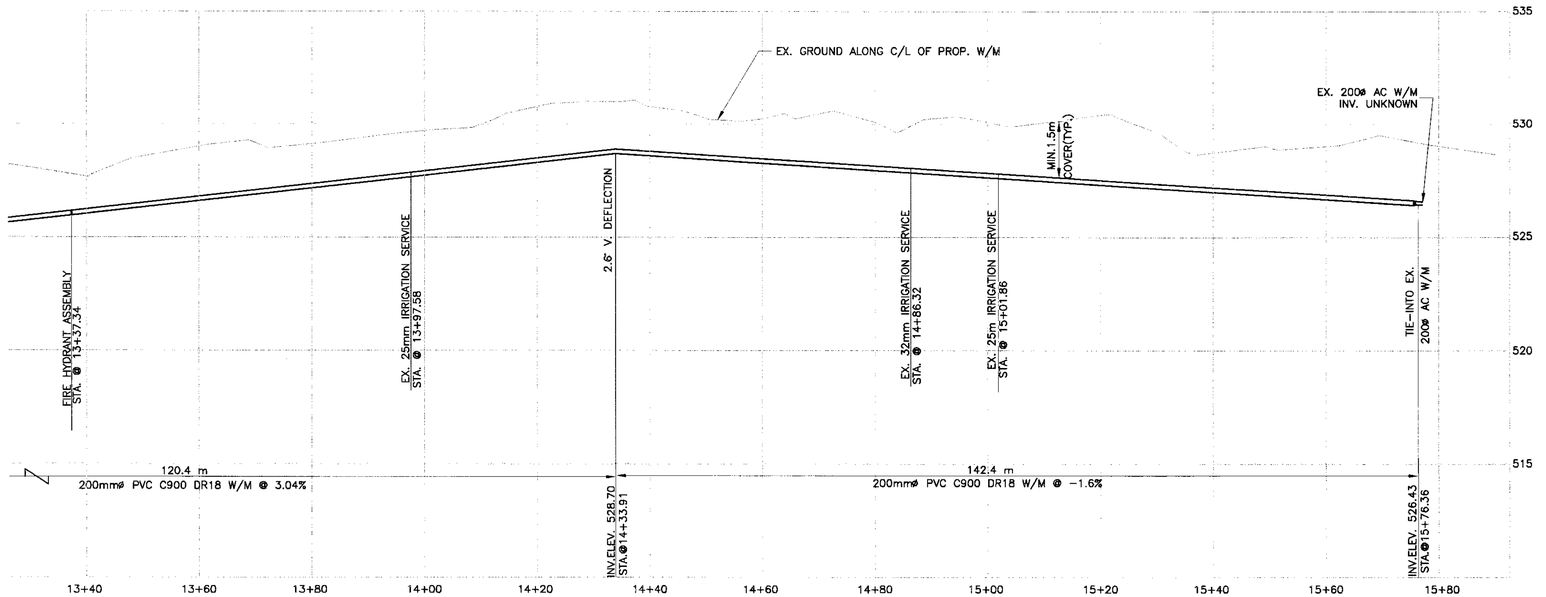
SENIOR DESIGN ENGINEER — DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-000:	2	R2-699-541





TIE IN DETAIL



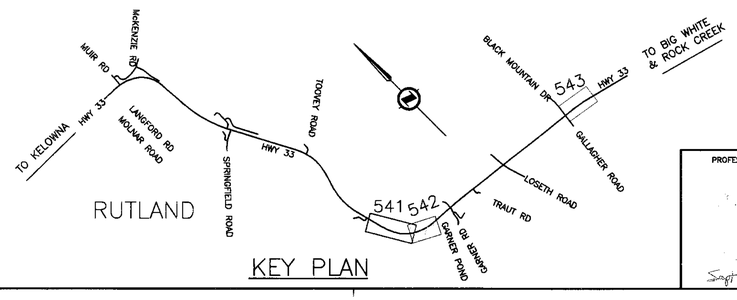
NOTES:

1. EXISTING UNDERGROUND UTILITIES ARE TO BE LOCATED PRIOR TO INSTALLING ANY NEW UNDERGROUND SERVICES. ALL EXISTING UNDERGROUND UTILITY LOCATIONS SHOWING IN THE DRAWINGS ARE APPROXIMATE ONLY.
2. WATERMAIN MATERIALS SHALL CONFORM TO THE CITY OF KELOWNA COUNCIL POLICY MANUAL 266.
3. FOR TYPICAL TRENCH SECTION DETAILS SEE MMCD STANDARD DETAIL DRAWING G4.
4. PIPE JOINT SHALL NOT BE DEFLECTED MORE THAN ½ OF THE MANUFACTURER'S RECOMMENDED DEFLECTION.
5. MINIMUM COVER ON WATERMAINS SHALL BE 1.5m.
6. FOR FIRE HYDRANT DETAILS SEE CKCS SS-W4.
7. FOR GATE VALVE INSTALLATION DETAIL SEE MMCD STANDARD DETAIL DRAWING W3.
8. FOR SERVICE CONNECTION DETAIL SEE CKCS SS-W2
9. FOR BLOWOFF DETAIL SEE CKCS SS-W8a AND SS-W8b.
10. THRUST BLOCKS AS SHOWN ON MMCD STANDARD DETAIL DRAWING W1 ARE TO BE LOCATED AT ALL FITTING LOCATIONS. BEARING AREA SHOWN ON THE DRAWINGS ARE BASED ON A SOIL BEARING STRENGTH OF 70 KPa AT 1380 KPa WORKING PRESSURE. CONTRACTOR SHALL ENSURE ALL SECTIONS OF LINES HAVE TEST POINTS AND TEMPORARY BLOWOFFS SUITABLE TO ENSURE ADEQUATE PRESSURE TESTING, CHLORINATION AND FLUSHING. TESTING AND DISINFECTION OF WATERMAINS SHALL CONFORM TO MMCD SECTION 2666.
11. ALL JOINTS WITHIN CASING PIPES SHALL BE MECHANICALLY RESTRAINED.

FOR STORM PROFILES SEE DWG. R2-699-521 THRU 531

FOR TYPICAL SECTIONS AND DETAILS SEE DWG. R2-699-301 THRU 303

FOR GEOMETRICS AND LANING SEE DWG. R2-699-401 THRU 413



KEY PLAN

PROFESSIONAL SEAL

Sept 4, 2009

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SCALE 0 Horiz. 1:500 20 / 0 Vert. 1:125 5

DESIGNED	K. PUN/B. YANG	DATE 07-08-28
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CHECKED	R. LEE	DATE 07-11-23
APPROVED	R. LEE	DATE 2009-08-28

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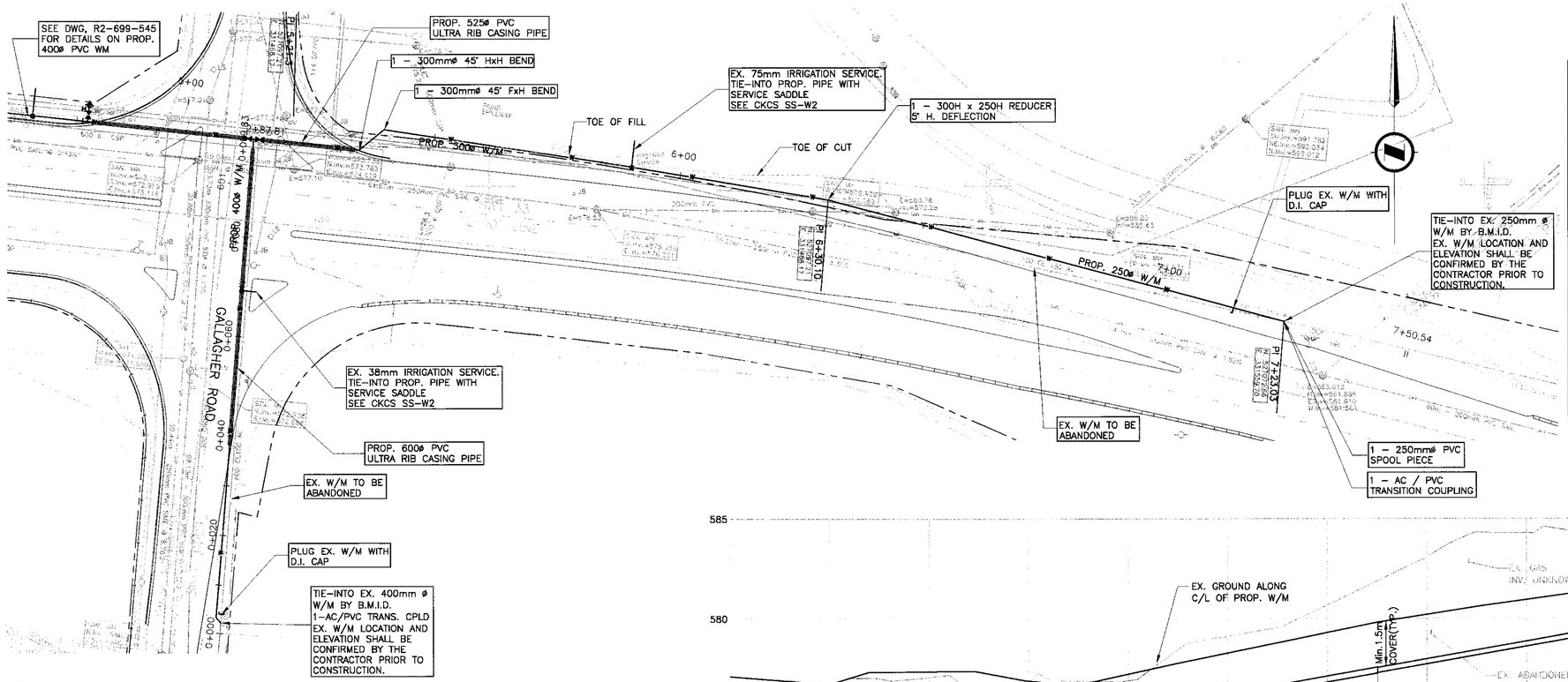
WATERMAIN RELOCATION

HIGHWAY 33 - FOUR LANING
TOOVEY ROAD TO GARNER ROAD
PLAN / PROFILE

SENIOR DESIGN ENGINEER

Sept 4, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-542


SEE DWG. R2-699-545 FOR DETAILS ON PROP. 400ø PVC WM
PROP. 525ø PVC ULTRA RIB CASING PIPE
1 – 300mmø 45° HxH BEND
1 – 300mmø 45° FxH BEND
TOE OF FILL
TOE OF CUT
EX. 75mm IRRIGATION SERVICE. TIE-INTO PROP. PIPE WITH SERVICE SADDLE SEE CKCS SS-W2
1 – 300H x 250H REDUCER 5° H. DEFLECTION
PROP. 300ø W/M
PROP. 400ø W/M
PROP. 250ø W/M
GALLAGHER ROAD
EX. 38mm IRRIGATION SERVICE. TIE-INTO PROP. PIPE WITH SERVICE SADDLE SEE CKCS SS-W2
PROP. 600ø PVC ULTRA RIB CASING PIPE
EX. W/M TO BE ABANDONED
PLUG EX. W/M WITH D.I. CAP
TIE-INTO EX. 400mm ø W/M BY B.M.I.D. 1-AC/PVC TRANS. CPLD EX. W/M LOCATION AND ELEVATION SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
PLUG EX. W/M WITH D.I. CAP
TIE-INTO EX. 250mm ø W/M BY B.M.I.D. EX. W/M LOCATION AND ELEVATION SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
EX. W/M TO BE ABANDONED
1 – 250mmø PVC SPOOL PIECE
1 – AC / PVC TRANSITION COUPLING
PI 7+23.03
7+50.54
2.0m OFFSET
EX. 250ø AC W/M
EX. 300ø AC W/M
PROP. 250 ø PVC W/M.
PROP. 300ø PVC W/M
1-250 FXH GATE VALVE
1-250FX300FX400H TEE
1-300 FXH GATE VALVE
PROP. 400ø PVC W/M.
EX. 400ø AC W/M.
1.0m OFFSET
TIE IN DETAIL
FOR WATERMAIN GENERAL NOTES, SEE DWG. R2-699-542(TYP.)
EX. GROUND ALONG C/L OF PROP. W/M
PROP. GROUND ALONG C/L OF PROP. W/M
EX. 600ø STM TO BE ABANDONED INV=575.50±
PROP. 675mm STM INV = 572.30
EX. 38mm SERVICE STA.@ 0+69.18
1-45° H. BEND
1-45° H. BEND
63.0 m-600mm PVC ULTRA RIB CASING PIPE
1-250Hx300Hx400H TEE
62.7 m
400mmø PVC C905 DR18 W/M @ 7.45%
35.1 m
400mmø PVC C905 DR18 W/M @ 3.30%
INV. 569.04±
0+002.11
0+003.52
INV. 573.71
0+064.77
0+098.83
INV. 574.87±
0+000
0+040
0+080
WATERMAIN ON GALLAGHER ROAD
EX. GROUND ALONG C/L OF PROP. W/M
PROP. GROUND ALONG C/L OF PROP. W/M
EX. GAS INV. UNKNOWN
EX. ABANDONED 200ø SAN INV=579.20±
Min 1.5m COVER(TYP.)
1-250x300x400 TEE
EX. 250ø SAN INV=574.03±
45° H. BEND STA.@ 5+37.07
45° H. BEND STA.@ 5+39.7
18.3 m-525mm PVC ULTRA RIB CASING PIPE
2.9° V. DEFLECTION
EX. 75mm IRRIGATION SERVICE STA.@ 5+90.05
1-300H X 250H REDUCER STA.@ 6+30.1
TIE-INTO EX. 250ø AC W/M
57.3 m
300mmø PVC C900 DR18 W/M @ -0.44%
60.9 m
300mmø PVC C900 DR18 W/M @ 4.4%
92.9 m
250mmø PVC C900 DR18 W/M @ 4.4%
INV.ELEV. 574.87± STA.@ 5+1.92
INV.ELEV. 574.62 STA.@ 5+69.2
INV.ELEV. 581.38 STA.@ 7+23.03
5+20
5+40
5+60
5+80
6+00
6+20
6+40
6+60
6+80
7+00
7+20
7+40
WATERMAIN ON HIGHWAY 33
FOR STORM PROFILES SEE DWG. R2-699-521 THRU 531
FOR TYPICAL SECTIONS AND DETAILS SEE DWG. R2-699-301 THRU 303
FOR GEOMETRICS AND LANING SEE DWG. R2-699-401 THRU 413
MCKENZIE RD
MUIR RD
TO KELOWNA
HWY 33
LANGFORD RD
MOUNAIR ROAD
SPRINGFIELD ROAD
TOOKEY ROAD
HWY 33
541
542
CHANCES POND RD
TROUT RD
LOSETH ROAD
GALLAGHER ROAD
BLACK MOUNTAIN DR
543
HWY 33
TO BIG WHITE & ROCK CREEK
RUTLAND
KEY PLAN
PROFESSIONAL SEAL
Sept 9, 2009
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City of Kelowna
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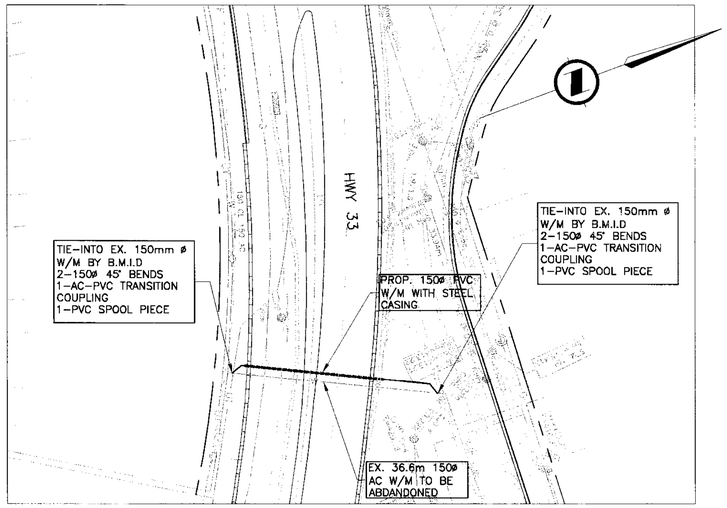
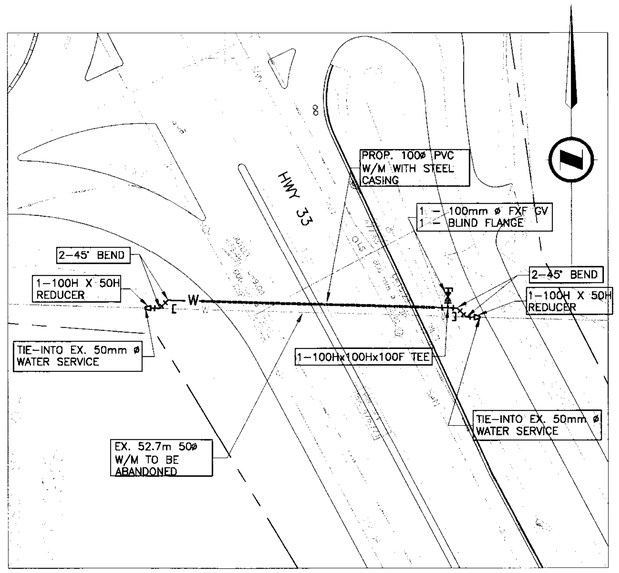
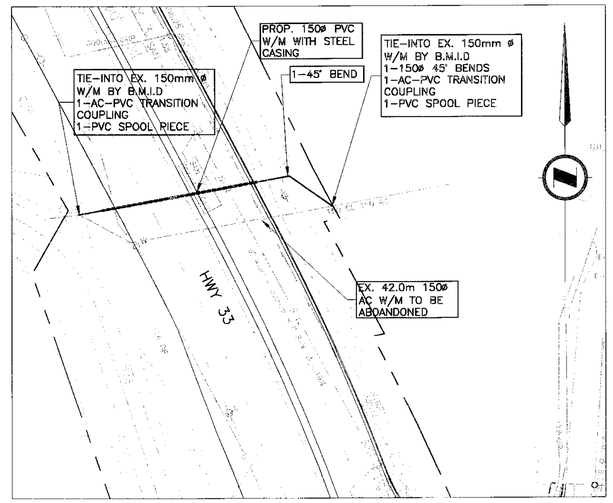
DRAWN B. YANG DATE 07-11-23
CHECKED R. LEE DATE 07-11-23
APPROVED R. LEE DATE 2009-08-28
Rev | Date | Description | Signature
REVISIONS
WATERMAIN RELOCATION
HIGHWAY 33 – FOUR LANING
EAST OF GALLAGHER ROAD
PLAN / PROFILE
SENIOR DESIGN ENGINEER
Sept 9, 2009
DATE
FILE No. 2064
PROJECT No. 22198-0001
REG. 2
DRAWING No. R2-699-543



WATERMAIN CROSSING @ STA. 101+30

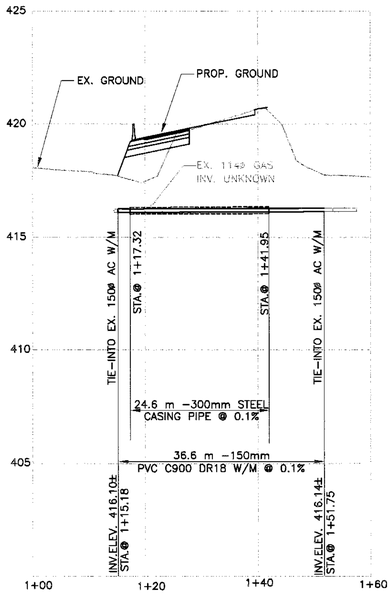


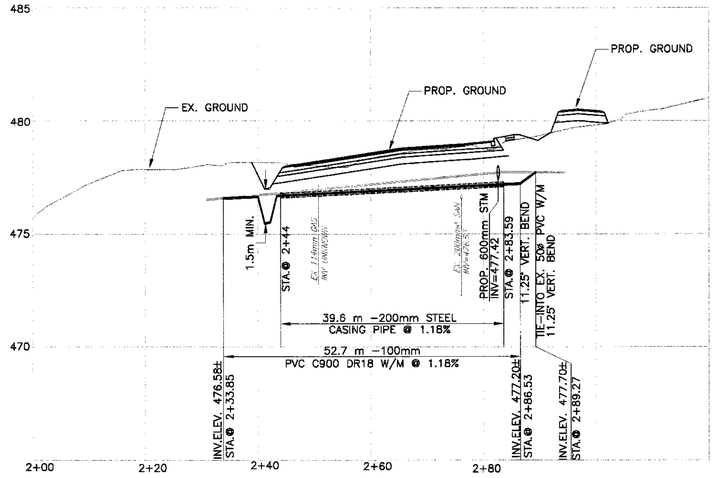
WATERMAIN CROSSING @ STA. 110+10

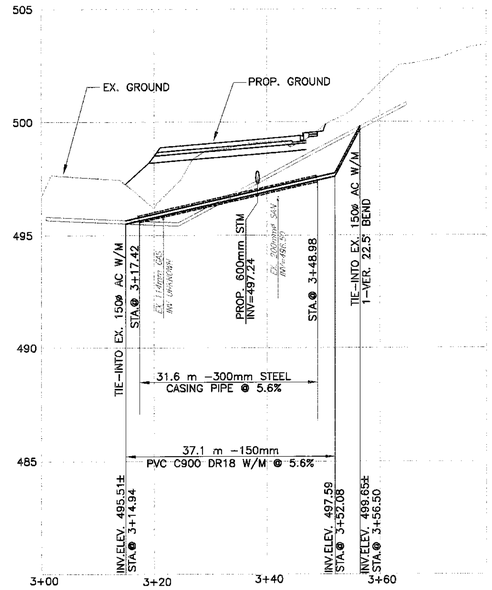


WATERMAIN CROSSING @ STA. 114+30

NOTE:
EXISTING W/M LOCATION AND ELEVATION SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION



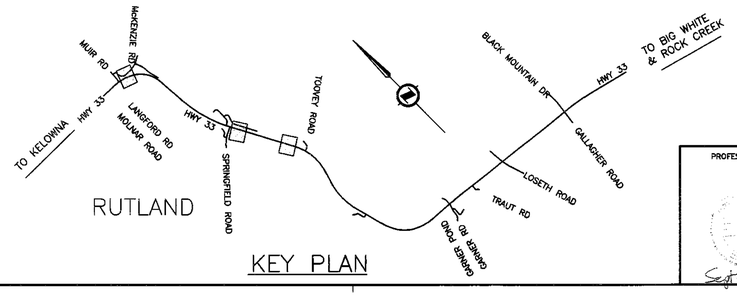




FOR STORM PROFILES
SEE DWG. R2–699–521 THRU 531

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2–699–301 THRU 303

FOR GEOMETRICS AND LANING
SEE DWG. R2–699–401 THRU 413



KEY PLAN

PROFESSIONAL SEAL

Sept 4, 2009

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 Horiz. 1:500 20
0 Vert. 1:125 5

DESIGNED	K. PUN/B. YANG	DATE 07–11–23
DRAWN	B. YANG	DATE 07–11–23
CHECKED	R. LEE	DATE 07–11–23
APPROVED	R. LEE	DATE 2009–08–26

Rev	Date	Description	Signature

REVISIONS

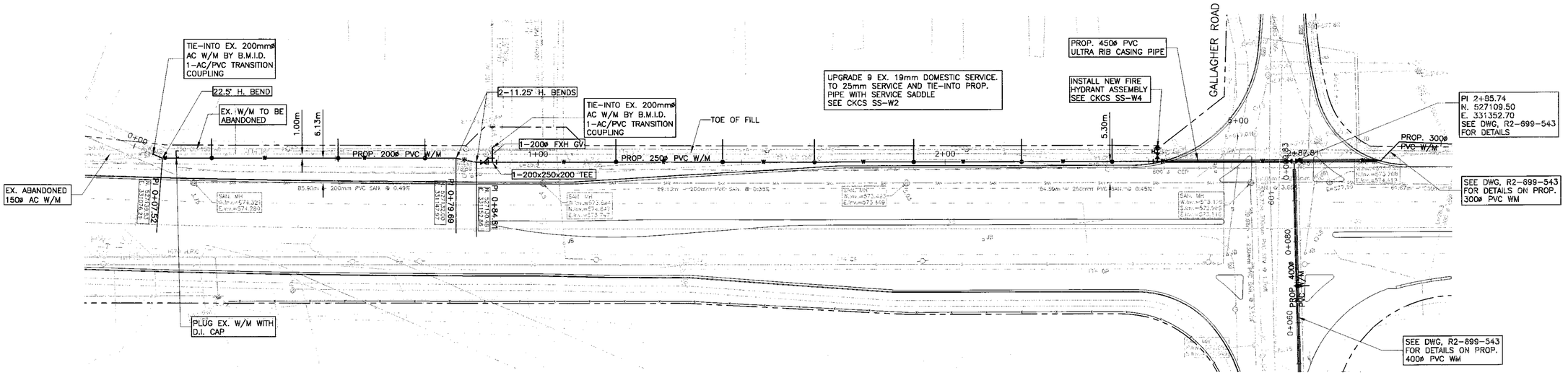
WATERMAIN RELOCATION

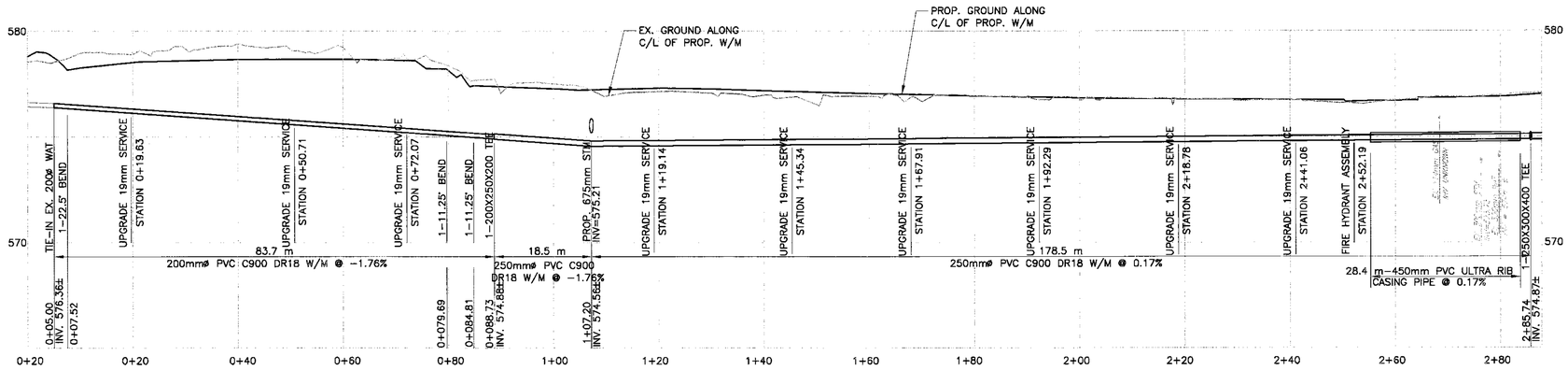
HIGHWAY 33 – FOUR LANING
WATERMAIN CROSSING
PLAN / PROFILE

SENIOR DESIGN ENGINEER

DATE Sept 4 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198–0001	2	R2–699–544





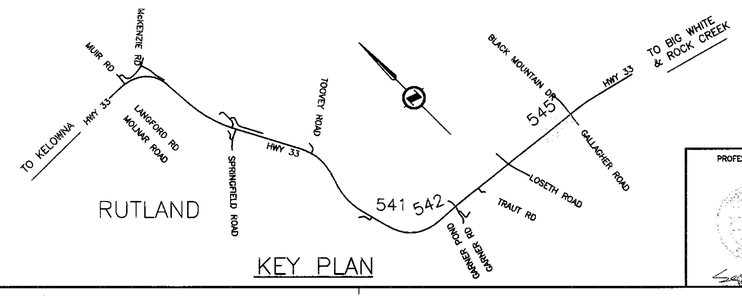
WATERMAIN ON HIGHWAY 33 (WEST OF GALLAGHER ROAD)

FOR WATERMAIN GENERAL NOTES, SEE DWG. R2-699-542(TYP.)

FOR STORM PROFILES SEE DWG. R2-699-521 THRU 531

FOR TYPICAL SECTIONS AND DETAILS SEE DWG. R2-699-301 THRU 303

FOR GEOMETRICS AND LANING SEE DWG. R2-699-401 THRU 413



PROFESSIONAL SEAL

Sept 4, 2009

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 Horiz. 1:500 20 / 0 Vert. 1:125 5

DESIGNED	K. PUN	DATE 09-07-10
DRAWN	N. KRUCKENBERG	DATE 09-07-10
CHECKED	R. LEE	DATE 09-07-10
APPROVED	R. LEE	DATE 2009-08-28

Rev	Date	Description	Signature

REVISIONS

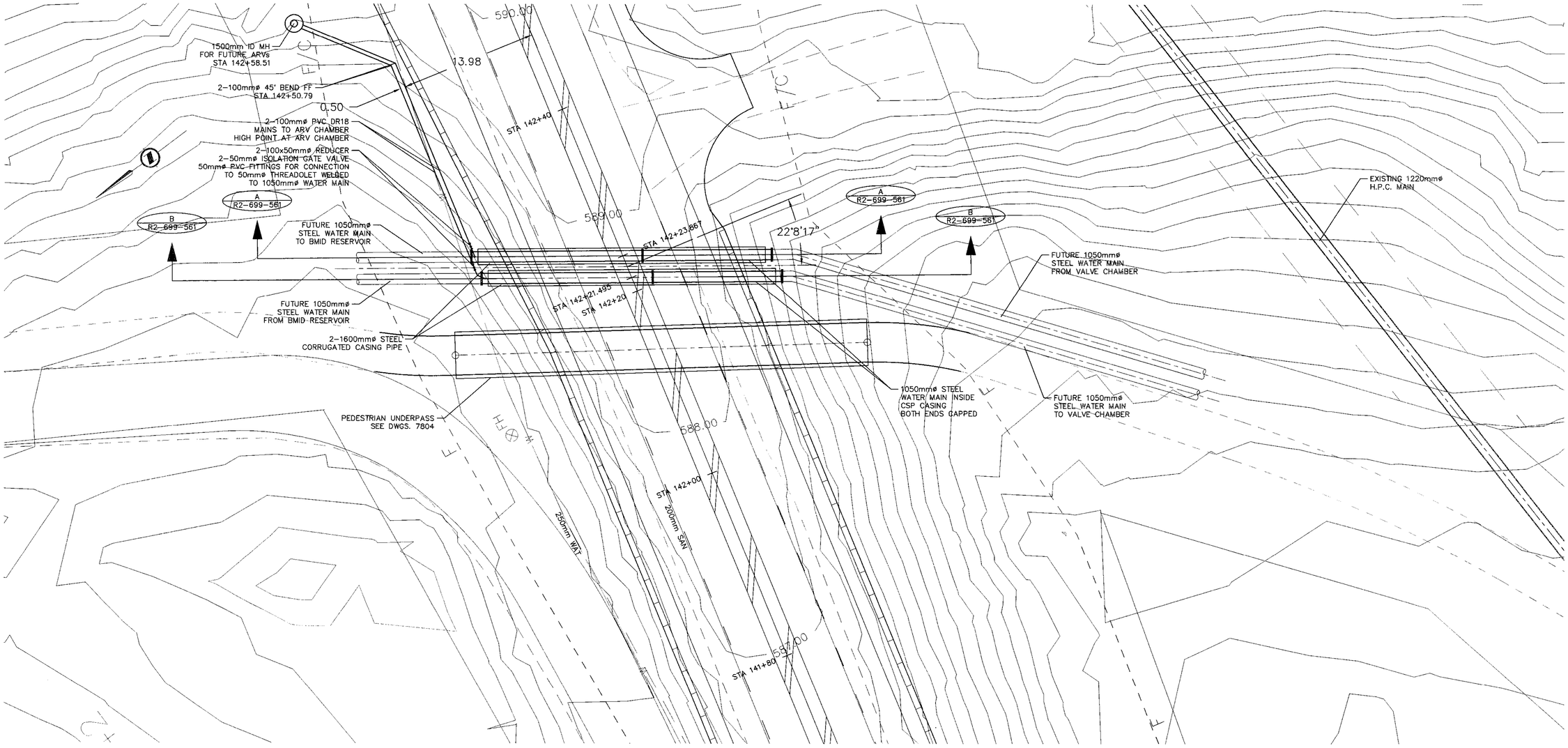
WATERMAIN RELOCATION

HIGHWAY 33 – FOUR LANING
WEST OF GALLAGHER ROAD
PLAN / PROFILE

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-545



NOTES:

1. MATERIALS SUPPLIED BY BMID
   61.24m COATED 1050mmø STEEL WATER MAIN
   30.0m 1600mmø CSP 2.8mm THICKNESS
   4-STEEL PLATE 6mm THICKNESS END PLATES C/W 4-FLANGES (LOOSE), S/S HARDWARE (BOLTS, NUTS, WASHERS AND GASKETS).
2. INSTALL COVER PLATES AT BOTH ENDS OF CSP CASINGS TO PREVENT MATERIAL ENTERING THE CASINGS.
3. EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND MUST BE CONFIRMED BY CONTRACTOR PRIOR TO EXCAVATION. ALL UTILITIES NOT NECESSARY SHOWN.
4. CONTRACTOR TO DETERMINE POSITIONING OF STEEL MAINS IN COORDINATION WITH TRAFFIC DETOUR ROUTING PLAN.
5. REFER TO SPECIFICATION SPECIAL PROVISIONS FOR MATERIAL AND PROCEDURES.

PROFESSIONAL SEAL
R. J. HRASKO
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
AUG 27, 2009
AQUA CONSULTING INC.

Rev	Date	Description	Signature

REVISIONS

SCALE 0 1:200 10

DESIGNED A. FACCINI/B. HRASKO DATE 2009-08-26
DRAWN A. FACCINI DATE 2009-08-26
CHECKED B. HRASKO DATE 2009-08-27
APPROVED B. HRASKO DATE 2009-08-27

BRITISH COLUMBIA
Ministry of Transportation

City of Kelowna

BMID - 2-1050mm WAT MAIN CROSSING

HIGHWAY 33 - FOUR LANING
STA 142+22.681

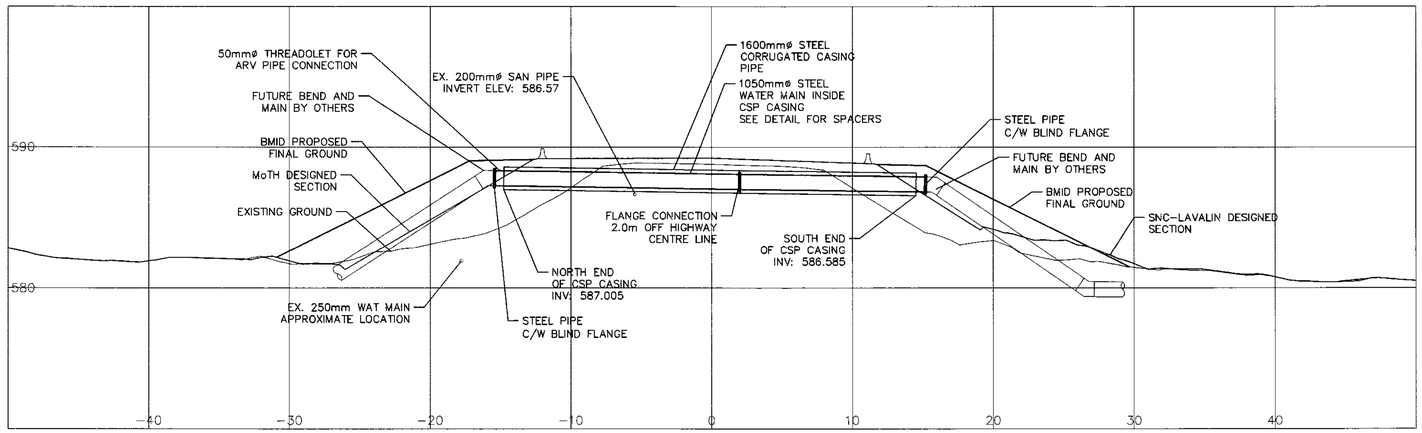
SENIOR DESIGN ENGINEER

AUGUST 27, 2009
DATE

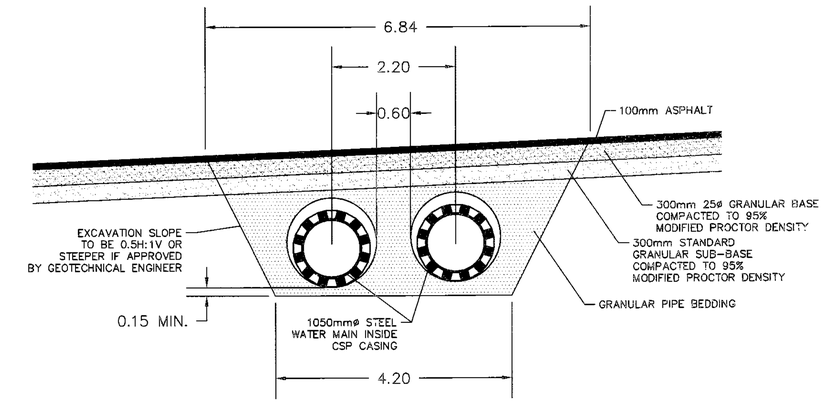
FILE No.	PROJECT No.	REG.	DRAWING No.
		2	R2-699-560

CANCEL PRINTS BEARING PREVIOUS LETTER

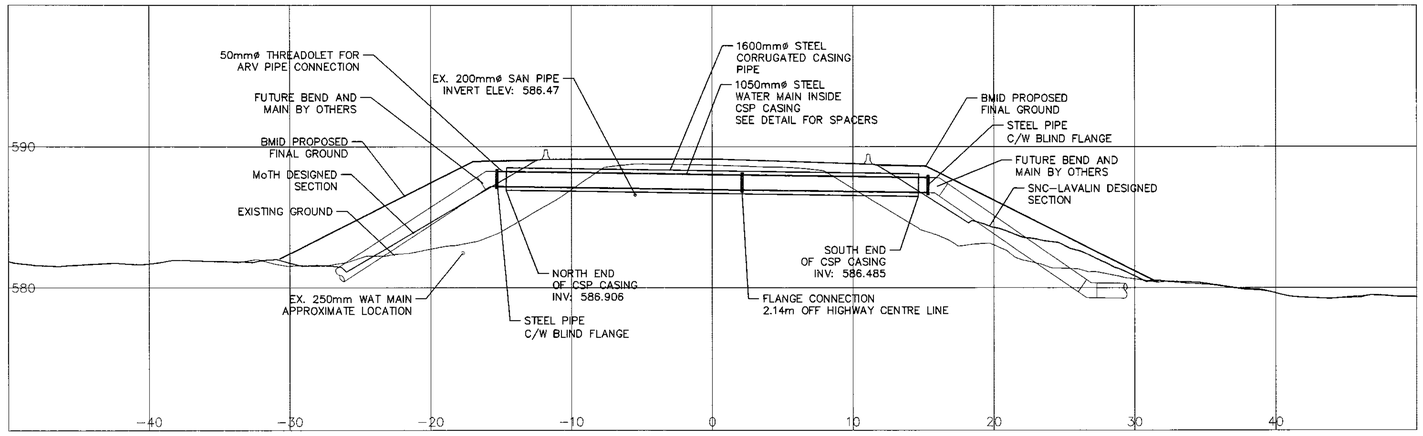
DATE: 2009/08/27 - 11:00am
PATH: C:\ENG\0803-BMID-Eng Services\02-Output\Hwy33 crossing\\240809_main crossing.dwg
LAYOUT: R2-699_560



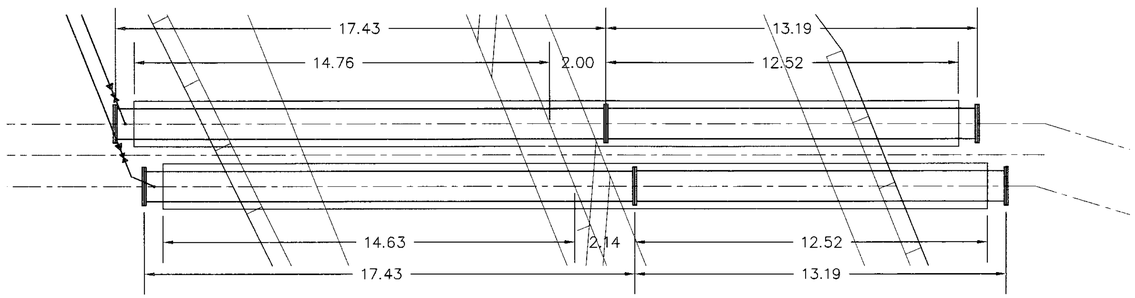
A R2-699-560 SECTION VIEW – EAST SIDE MAIN
SCALE 1:200



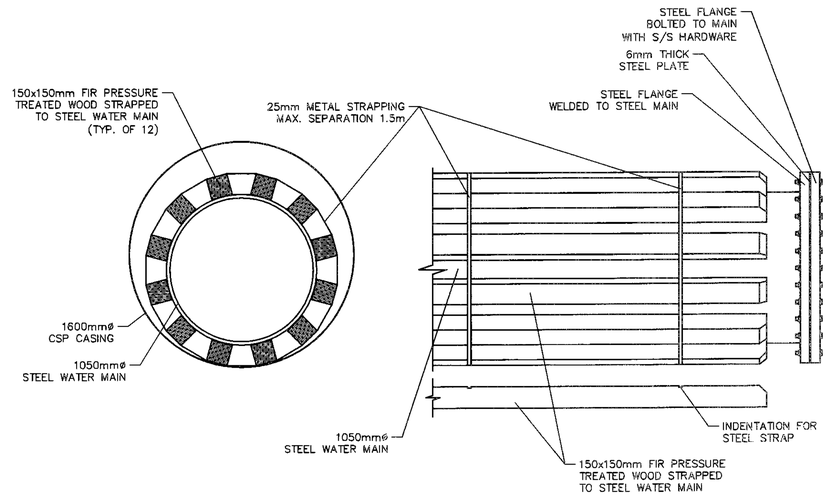
TRENCH SECTION
SCALE 1:50



B R2-699-560 SECTION VIEW – WEST SIDE MAIN
SCALE 1:200



PLAN VIEW – DIMENSIONS
SCALE 1:100



SPACER DETAILS
SCALE 1:20

DATE: 2009/08/27 - 10:58am
PATH: C:\Projects\2008-BMID-Eng Services\02-Output\Hwy33 crossing\250809_main crossing.dwg
LAYOUT: R2-699-561

SCALE 0 1:200 10

DESIGNED	A. FACCINI/B. HRASKO	DATE 2009-08-26
DRAWN	A. FACCINI	DATE 2009-08-26
CHECKED	B. HRASKO	DATE 2009-08-27
APPROVED	B. HRASKO	DATE 2009-08-27

PROFESSIONAL SEAL
R. J. HRASKO — PROVINCE OF BRITISH COLUMBIA — PROFESSIONAL ENGINEER
AUG 27, 2009
AGGIA CONSULTING INC.

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA
Ministry of Transportation

City of Kelowna

BMID – 2–1050mm WAT MAIN CROSSING

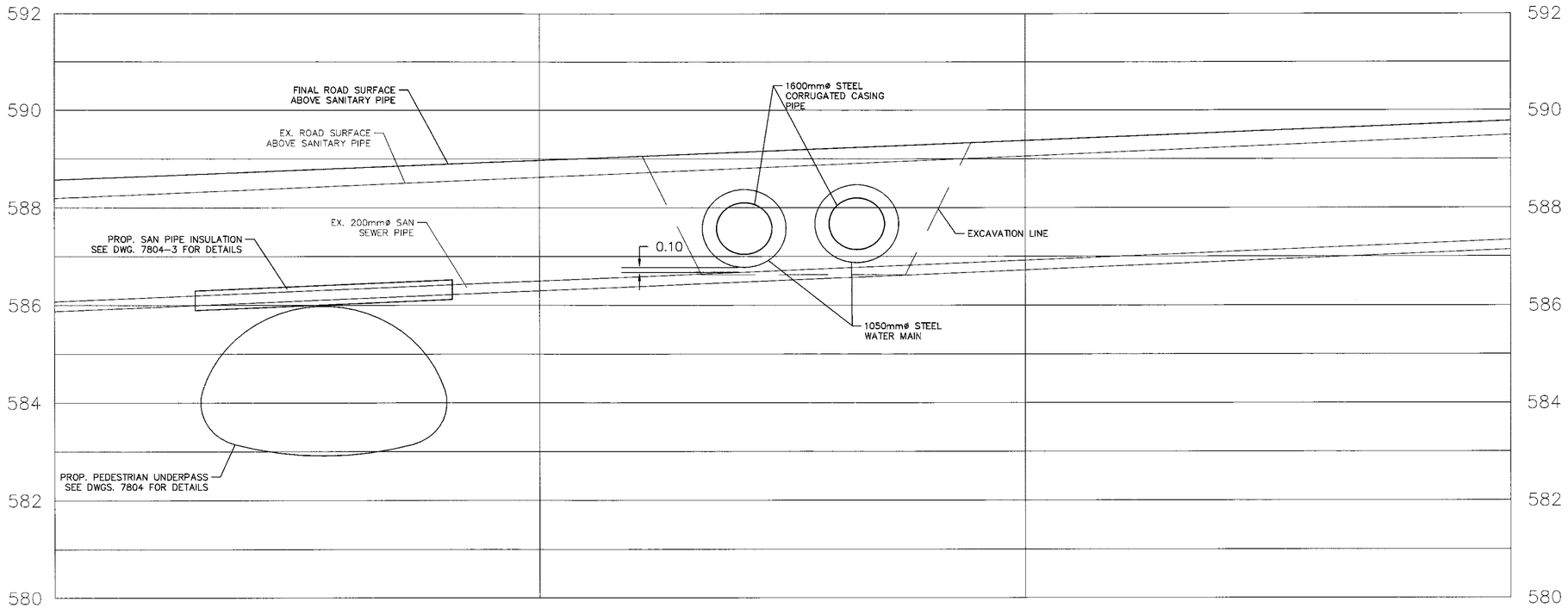
HIGHWAY 33 – FOUR LANING
SECTION VIEWS
AND DETAILS

SENIOR DESIGN ENGINEER

AUGUST 27, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
		2	R2-699-561

CANCEL PRINTS BEARING PREVIOUS LETTER



SANITARY SEWER – SECTION VIEW
SCALE 1:50

DATE: 2009/08/27 - 10:58am
PLOT: C:\Documents and Settings\rhrasko\Desktop\BMID-Eng Services\02-Output\Hwy33 crossing\1260809_main crossing.dwg
LAYOUT: R2-699-562

PROFESSIONAL SEAL
R. J. HRASKO
PROFESSIONAL ENGINEER
AUGUST 27, 2009
AGUA CONSULTING INC

Rev	Date	Description	Signature

REVISIONS

SCALE 0 1:50 2.5

DESIGNED A. FACCINI/B. HRASKO DATE 2009-08-26
DRAWN A. FACCINI DATE 2009-08-26
CHECKED B. HRASKO DATE 2009-08-27
APPROVED B. HRASKO DATE 2009-08-27

BRITISH COLUMBIA
Ministry of Transportation

City of Kelowna

BMID – 2–1050mm WAT MAIN CROSSING
HIGHWAY 33 – FOUR LANING
SANITARY SEWER
SECTION VIEW AND DETAILS

SENIOR DESIGN ENGINEER

AUGUST 27, 2009
DATE

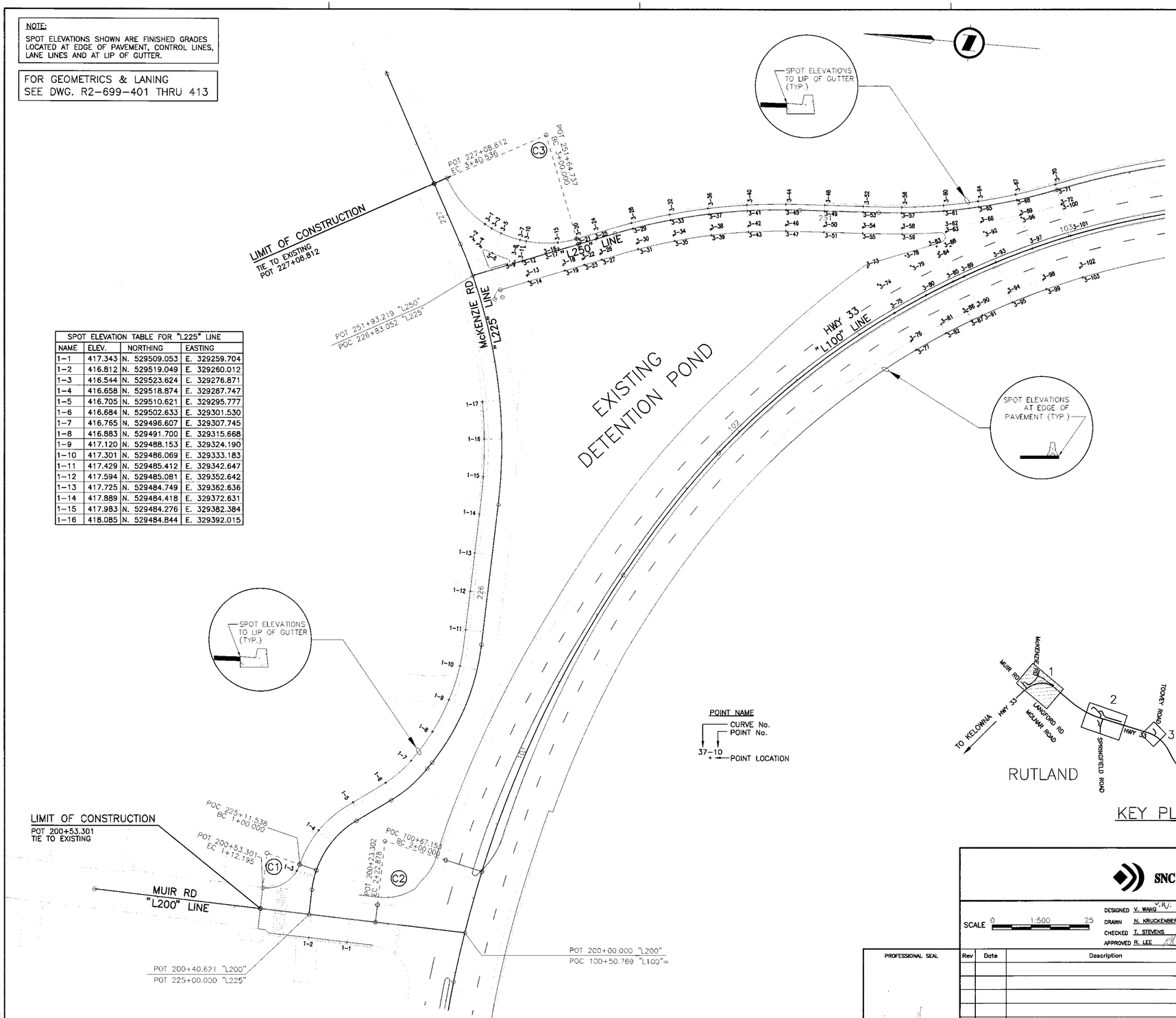
FILE No.	PROJECT No.	REG.	DRAWING No.
		2	R2–699–562

CANCEL PRINTS BEARING PREVIOUS LETTER

NOTE:

SPOT ELEVATIONS SHOWN ARE FINISHED GRADES LOCATED AT EDGE OF PAVEMENT, CONTROL LINES, LANE LINES AND AT LIP OF GUTTER.

FOR GEOMETRICS & LANING
SEE DWG. R2-699-401 THRU 413



POINT NAME
CURVE No.
POINT No.
37-10
POINT LOCATION

SPOT ELEVATION TABLE FOR "L225" LINE			
NAME	ELEV.	NORTHING	EASTING
1-1	417.343	N. 529509.053	E. 329259.704
1-2	416.812	N. 529519.049	E. 329260.012
1-3	416.544	N. 529523.624	E. 329276.871
1-4	416.658	N. 529518.874	E. 329287.747
1-5	416.705	N. 529510.621	E. 329295.777
1-6	416.684	N. 529502.633	E. 329301.530
1-7	416.765	N. 529496.607	E. 329307.745
1-8	416.883	N. 529491.700	E. 329315.668
1-9	417.120	N. 529488.153	E. 329324.190
1-10	417.301	N. 529486.069	E. 329333.183
1-11	417.429	N. 529485.412	E. 329342.647
1-12	417.594	N. 529485.081	E. 329352.642
1-13	417.725	N. 529484.749	E. 329362.636
1-14	417.889	N. 529484.418	E. 329372.631
1-15	417.983	N. 529484.276	E. 329382.384
1-16	418.085	N. 529484.844	E. 329392.015

SPOT ELEVATION TABLE FOR "L250" LINE							
NAME	ELEV.	NORTHING	EASTING	NAME	ELEV.	NORTHING	EASTING
3-1	421.606	N. 529489.398	E. 329447.283	3-51	425.540	N. 529401.877	E. 329452.866
3-2	421.785	N. 529491.901	E. 329442.840	3-52	426.512	N. 529392.271	E. 329460.397
3-3	421.419	N. 529487.567	E. 329446.339	3-53	426.524	N. 529392.189	E. 329458.899
3-4	421.220	N. 529489.950	E. 329441.271	3-54	426.557	N. 529391.973	E. 329454.905
3-5	421.173	N. 529485.046	E. 329445.300	3-55	426.570	N. 529391.892	E. 329453.407
3-6	420.969	N. 529486.912	E. 329440.020	3-56	427.451	N. 529382.355	E. 329461.056
3-7	420.705	N. 529480.038	E. 329444.023	3-57	427.481	N. 529382.212	E. 329459.563
3-8	420.649	N. 529480.273	E. 329442.542	3-58	427.561	N. 529381.832	E. 329455.581
3-9	420.495	N. 529480.915	E. 329438.492	3-59	427.591	N. 529381.690	E. 329454.088
3-10	420.569	N. 529478.408	E. 329443.814	3-60	428.495	N. 529371.649	E. 329462.483
3-11	420.513	N. 529478.555	E. 329442.321	3-61	428.525	N. 529371.396	E. 329461.005
3-12	420.377	N. 529478.910	E. 329438.738	3-62	428.605	N. 529370.719	E. 329457.062
3-13	420.093	N. 529477.455	E. 329435.012	3-63	428.635	N. 529370.486	E. 329455.584
3-14	419.988	N. 529476.910	E. 329433.615	3-64	429.320	N. 529362.840	E. 329464.278
3-15	420.195	N. 529470.266	E. 329444.201	3-65	429.350	N. 529362.495	E. 329462.819
3-16	420.150	N. 529469.977	E. 329442.729	3-66	429.430	N. 529361.575	E. 329458.926
3-17	420.086	N. 529469.829	E. 329442.283	3-67	430.141	N. 529353.294	E. 329466.883
3-18	419.931	N. 529468.374	E. 329438.557	3-68	430.162	N. 529352.850	E. 329465.451
3-19	419.854	N. 529467.829	E. 329437.160	3-69	430.219	N. 529351.685	E. 329461.630
3-20	420.212	N. 529465.471	E. 329445.595	3-70	430.920	N. 529343.261	E. 329470.396
3-21	420.125	N. 529464.926	E. 329444.197	3-71	430.920	N. 529342.732	E. 329469.000
3-22	419.991	N. 529463.471	E. 329440.471	3-72	430.920	N. 529341.271	E. 329465.276
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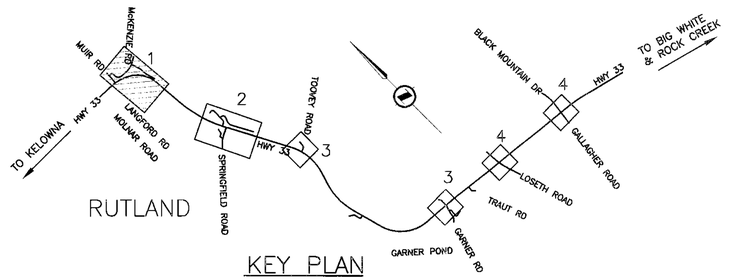
3-24	420.314	N. 529461.059	E. 329447.317	3-74	427.530	N. 529386.812	E. 329440.654
3-25	420.268	N. 529460.513	E. 329445.920	3-75	427.083	N. 529381.892	E. 329433.722
3-26	420.146	N. 529459.140	E. 329442.669	3-76	426.637	N. 529376.973	E. 329426.790
3-27	420.100	N. 529458.513	E. 329440.796	3-77	426.501	N. 529375.468	E. 329424.670
3-28	420.856	N. 529451.673	E. 329450.900	3-78	428.322	N. 529380.329	E. 329448.607
3-29	420.826	N. 529451.172	E. 329449.487	3-79	428.167	N. 529378.728	E. 329446.117
3-30	420.746	N. 529449.834	E. 329445.717	3-80	427.721	N. 529374.131	E. 329438.968
3-31	420.716	N. 529449.333	E. 329444.303	3-81	427.275	N. 529369.533	E. 329431.819
3-32	421.772	N. 529442.051	E. 329453.961	3-82	427.138	N. 529368.127	E. 329429.632
3-33	421.742	N. 529441.644	E. 329452.518	3-83	428.781	N. 529372.520	E. 329451.705
3-34	421.662	N. 529440.557	E. 329448.668	3-84	428.702	N. 529371.757	E. 329450.414
3-35	421.632	N. 529440.150	E. 329447.225	3-85	428.256	N. 529367.437	E. 329443.093
3-36	422.728	N. 529432.249	E. 329456.383	3-86	427.810	N. 529363.117	E. 329435.773
3-37	422.698	N. 529431.937	E. 329454.916	3-87	427.673	N. 529361.796	E. 329433.534
3-38	422.618	N. 529431.106	E. 329451.003	3-88	428.916	N. 529368.926	E. 329452.055
3-39	422.588	N. 529430.795	E. 329449.536	3-89	428.470	N. 529364.718	E. 329444.670
3-40	423.685	N. 529422.309	E. 329458.155	3-90	428.023	N. 529360.511	E. 329437.284
3-41	423.655	N. 529422.094	E. 329456.670	3-91	427.887	N. 529359.224	E. 329435.025
3-42	423.575	N. 529421.522	E. 329452.712	3-92	429.527	N. 529360.687	E. 329456.512
3-43	423.545	N. 529421.308	E. 329451.227	3-93	429.082	N. 529356.808	E. 329448.949
3-44	424.639	N. 529412.274	E. 329459.270	3-94	428.635	N. 529352.929	E. 329441.385
3-45	424.611	N. 529412.157	E. 329457.774	3-95	428.499	N. 529351.742	E. 329439.072
3-46	424.538	N. 529411.847	E. 329453.786	3-96	430.208	N. 529351.308	E. 329461.037
3-47	424.510	N. 529411.730	E. 329452.291	3-97	429.762	N. 529347.803	E. 329453.294
3-48	425.575	N. 529402.256	E. 329459.856	3-98	429.318	N. 529344.297	E. 329445.550
3-49	425.568	N. 529402.175	E. 329458.358	3-99	429.179	N. 529343.224	E. 329443.182
3-50	425.548	N. 529401.958	E. 329454.364	3-100	430.920	N. 529341.271	E. 329465.276
				3-101	430.474	N. 529338.184	E. 329457.364
				3-102	430.028	N. 529335.058	E. 329448.452
				3-103	429.891	N. 529334.108	E. 329447.032



KEY PLAN

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth
Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	V. WANG	DATE 2009-01-08
DRAWN	N. KRUCKENBERG	DATE 2009-01-06
CHECKED	T. STEVENS	DATE 2009-01-15
APPROVED	R. LEE	DATE 2009-08-28

SPOT ELEVATIONS

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

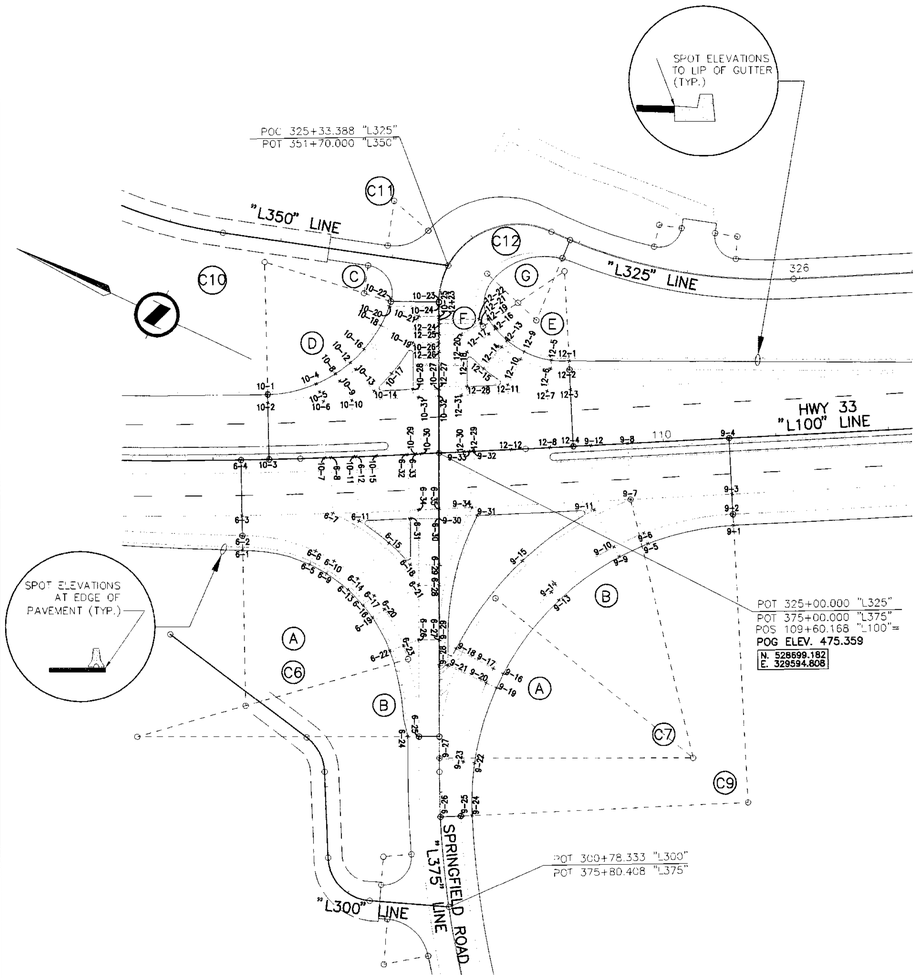
SENIOR DESIGN ENGINEER

DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-601

SPOT ELEVATION TABLE FOR "L325" LINE			
NAME	ELEV.	NORTHING	EASTING
10-1	472.994	N. 528731.052	E. 329591.163
10-2	473.035	N. 528730.382	E. 329589.821
10-3	473.308	N. 528725.960	E. 329580.963
10-4	473.632	N. 528724.047	E. 329596.506
10-5	473.679	N. 528722.929	E. 329595.505
10-6	473.736	N. 528721.564	E. 329594.282
10-7	473.987	N. 528717.057	E. 329585.468
10-8	473.947	N. 528721.730	E. 329599.560
10-9	473.996	N. 528720.465	E. 329598.754
10-10	474.127	N. 528717.091	E. 329596.604
10-11	474.334	N. 528712.529	E. 329587.802
10-12	474.238	N. 528720.160	E. 329602.452
10-13	474.274	N. 528718.795	E. 329601.830
10-14	474.412	N. 528714.244	E. 329599.759
10-15	474.607	N. 528708.968	E. 329589.655
10-16	474.560	N. 528718.972	E. 329605.665
10-17	474.687	N. 528712.728	E. 329603.860
10-18	475.086	N. 528718.091	E. 329610.771
10-19	475.123	N. 528711.603	E. 329610.379
10-20	475.471	N. 528718.162	E. 329614.490
10-21	475.435	N. 528712.688	E. 329615.029
10-22	475.552	N. 528718.264	E. 329615.363
10-23	475.722	N. 528710.541	E. 329618.919
10-24	475.663	N. 528710.218	E. 329618.232
10-25	475.533	N. 528709.431	E. 329616.563
10-26	475.309	N. 528707.442	E. 329612.340
10-27	475.207	N. 528703.955	E. 329604.938
10-28	474.902	N. 528708.116	E. 329602.978
10-29	475.081	N. 528702.796	E. 329592.896
10-30	475.145	N. 528701.962	E. 329593.337
10-31	474.947	N. 528706.591	E. 329602.087
10-32	475.194	N. 528703.406	E. 329603.774

SPOT ELEVATION TABLE FOR SPRINGFIELD ROAD			
NAME	ELEV.	NORTHING	EASTING
6-1	473.412	N. 528723.329	E. 329564.297
6-2	473.340	N. 528724.477	E. 329566.630
6-3	473.241	N. 528726.068	E. 329569.859
6-4	472.968	N. 528730.442	E. 329578.741
6-5	474.242	N. 528711.538	E. 329567.114
6-6	474.254	N. 528711.567	E. 329569.714
6-7	474.291	N. 528711.652	E. 329577.114
6-8	474.054	N. 528716.177	E. 329585.920
6-9	474.477	N. 528708.145	E. 329566.943
6-10	474.507	N. 528707.853	E. 329569.526
6-11	474.607	N. 528706.910	E. 329577.873
6-12	474.362	N. 528712.164	E. 329587.991
6-13	474.729	N. 528703.487	E. 329566.002
6-14	474.784	N. 528702.753	E. 329568.496
6-15	474.974	N. 528700.382	E. 329576.554
6-16	474.839	N. 528699.887	E. 329564.661
6-17	474.915	N. 528698.811	E. 329567.028
6-18	475.175	N. 528695.335	E. 329574.675
6-19	474.868	N. 528697.466	E. 329563.412
6-20	474.958	N. 528696.161	E. 329565.661
6-21	475.215	N. 528692.445	E. 329572.060
6-22	474.845	N. 528692.183	E. 329559.419
6-23	474.887	N. 528690.376	E. 329561.289
6-24	473.970	N. 528682.850	E. 329547.000
6-25	473.919	N. 528681.041	E. 329547.853
6-26	474.945	N. 528688.355	E. 329563.379
6-27	474.985	N. 528685.099	E. 329564.914
6-28	475.330	N. 528689.189	E. 329573.595
6-29	475.402	N. 528690.722	E. 329576.849
6-30	475.430	N. 528694.219	E. 329584.272
6-31	475.147	N. 528698.832	E. 329582.098
6-32	474.978	N. 528704.142	E. 329592.186
6-33	475.084	N. 528702.765	E. 329592.896
6-34	475.216	N. 528698.144	E. 329584.157
6-35	475.436	N. 528694.958	E. 329585.691

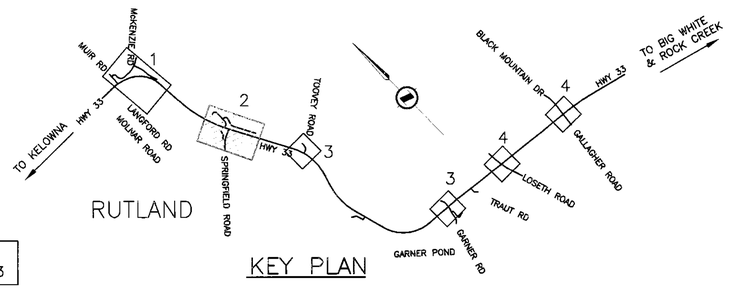


SPOT ELEVATION TABLE FOR "L325" LINE			
NAME	ELEV.	NORTHING	EASTING
12-1	476.683	N. 528685.195	E. 329619.271
12-2	476.713	N. 528684.488	E. 329617.949
12-3	476.785	N. 528682.791	E. 329614.773
12-4	476.983	N. 528678.125	E. 329606.042
12-5	476.419	N. 528688.053	E. 329618.084
12-6	476.443	N. 528687.604	E. 329616.652
12-7	476.504	N. 528686.432	E. 329612.828
12-8	476.702	N. 528681.766	E. 329604.096
12-9	476.016	N. 528693.096	E. 329617.387
12-10	475.997	N. 528693.130	E. 329615.887
12-11	475.937	N. 528693.243	E. 329610.889
12-12	476.231	N. 528687.871	E. 329600.834
12-13	475.838	N. 528696.722	E. 329617.888
12-14	475.790	N. 528697.096	E. 329616.435
12-15	475.631	N. 528698.342	E. 329611.593
12-16	475.815	N. 528699.477	E. 329618.872
12-17	475.744	N. 528700.109	E. 329617.512
12-18	475.529	N. 528702.215	E. 329612.977
12-19	475.865	N. 528701.281	E. 329619.870
12-20	475.541	N. 528704.450	E. 329615.375
12-21	475.777	N. 528702.145	E. 329618.645
12-22	475.796	N. 528702.794	E. 329619.158
12-23	475.502	N. 528709.226	E. 329616.127
12-24	475.457	N. 528708.911	E. 329615.457
12-25	475.354	N. 528708.069	E. 329613.670
12-26	475.288	N. 528706.738	E. 329610.846
12-27	475.213	N. 528704.149	E. 329605.351
12-28	475.491	N. 528699.626	E. 329607.482
12-29	475.738	N. 528694.268	E. 329597.420
12-30	475.665	N. 528695.220	E. 329596.913
12-31	475.467	N. 528699.870	E. 329605.653
12-32	475.194	N. 528703.406	E. 329603.774

SPOT ELEVATION TABLE FOR SPRINGFIELD ROAD			
NAME	ELEV.	NORTHING	EASTING
9-1	478.679	N. 528646.416	E. 329607.176
9-2	478.703	N. 528647.359	E. 329607.176
9-3	478.747	N. 528649.055	E. 329610.351
9-4	478.866	N. 528653.721	E. 329619.083
9-5	477.524	N. 528658.803	E. 329595.991
9-6	477.537	N. 528660.251	E. 329597.370
9-7	477.580	N. 528664.958	E. 329601.853
9-8	477.639	N. 528669.624	E. 329610.585
9-9	477.085	N. 528662.420	E. 329591.732
9-10	477.107	N. 528664.015	E. 329592.937
9-11	477.153	N. 528670.000	E. 329597.458
9-12	477.196	N. 528675.373	E. 329607.513
9-13	476.023	N. 528668.863	E. 329580.278
9-14	476.065	N. 528670.722	E. 329581.017
9-15	476.173	N. 528677.693	E. 329583.784
9-16	474.650	N. 528672.275	E. 329564.349
9-17	474.718	N. 528674.273	E. 329564.437
9-18	474.944	N. 528681.765	E. 329564.767
9-19	474.416	N. 528672.318	E. 329561.586
9-20	474.488	N. 528674.318	E. 329561.561
9-21	474.742	N. 528681.817	E. 329561.468
9-22	473.230	N. 528670.165	E. 329547.819
9-23	473.324	N. 528672.077	E. 329547.232
9-24	472.473	N. 528666.619	E. 329539.254
9-25	472.551	N. 528668.387	E. 329538.318
9-26	472.691	N. 528671.568	E. 329536.632
9-27	473.525	N. 528676.176	E. 329545.974
9-28	474.745	N. 528683.174	E. 329560.829
9-29	474.985	N. 528685.099	E. 329564.914
9-30	475.432	N. 528694.457	E. 329584.778
9-31	475.824	N. 528688.346	E. 329587.658
9-32	475.781	N. 528693.706	E. 329597.719
9-33	475.723	N. 528694.467	E. 329597.314
9-34	475.791	N. 528689.811	E. 329588.577

POINT NAME
CURVE No.
POINT No.
37-10
POINT LOCATION

FOR GEOMETRICS & LANING
SEE DWG. R2-699-401 THRU 413



KEY PLAN

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth — Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	V. WANG V.W.	DATE 2009-01-06
DRAWN	N. KRUCKENBERG	DATE 2009-01-06
CHECKED	T. STEVENS	DATE 2009-01-15
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

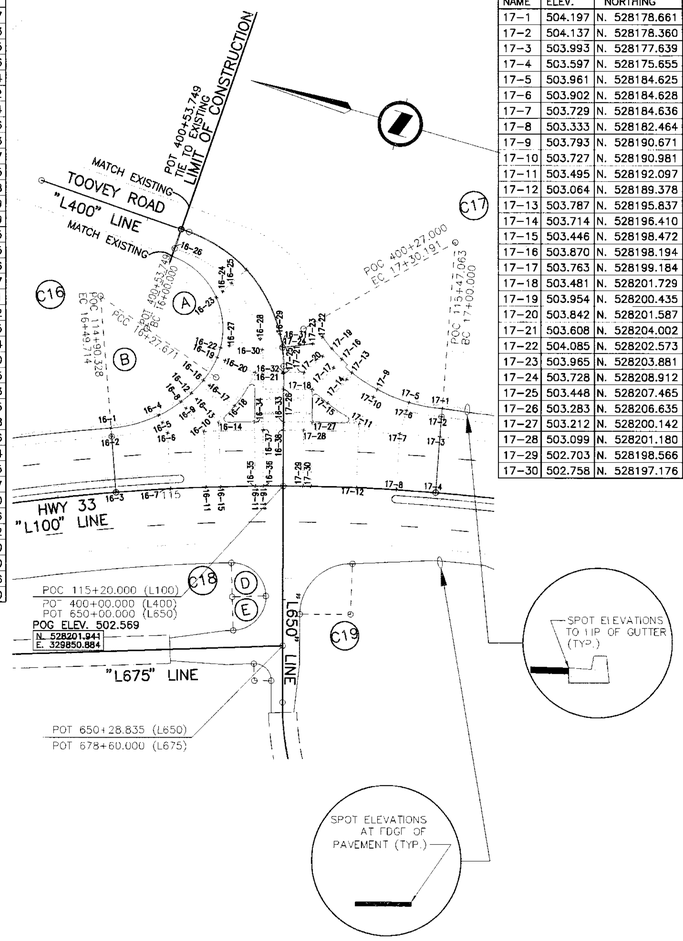
REVISIONS

SPOT ELEVATIONS
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER — Sept 4, 2009 — DATE

FILE No.	PROJECT No.	REC.	DRAWING No.
2064	22198-0001	2	R2-699-602

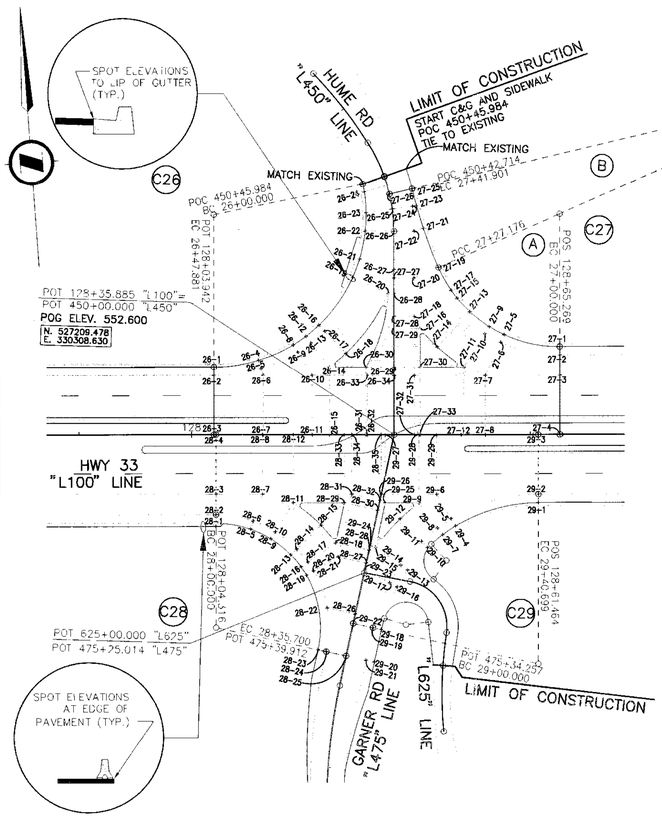
SPOT ELEVATION TABLE FOR TOOVEY ROAD			
NAME	ELEV.	NORTHING	EASTING
16-1	501.884	N. 528234.125	E. 329852.277
16-2	501.824	N. 528233.597	E. 329850.873
16-3	501.428	N. 528230.116	E. 329841.605
16-4	502.196	N. 528226.615	E. 329856.856
16-5	502.181	N. 528225.608	E. 329855.744
16-6	502.198	N. 528224.248	E. 329854.242
16-7	501.802	N. 528221.017	E. 329844.884
16-8	502.405	N. 528223.507	E. 329860.286
16-9	502.413	N. 528222.301	E. 329859.393
16-10	502.440	N. 528218.123	E. 329856.297
16-11	502.044	N. 528215.056	E. 329846.885
16-12	502.552	N. 528222.206	E. 329862.238
16-13	502.560	N. 528220.918	E. 329861.469
16-14	502.589	N. 528216.023	E. 329858.549
16-15	502.144	N. 528212.569	E. 329847.685
16-16	502.780	N. 528220.778	E. 329865.045
16-17	502.789	N. 528219.398	E. 329864.456
16-18	502.821	N. 528214.156	E. 329862.217
16-19	503.205	N. 528219.504	E. 329869.601
16-20	503.215	N. 528218.013	E. 329869.442
16-21	503.250	N. 528212.345	E. 329868.835
16-22	503.393	N. 528219.432	E. 329871.394
16-23	504.635	N. 528222.590	E. 329879.720
16-24	504.713	N. 528221.771	E. 329881.065
16-25	504.844	N. 528220.688	E. 329882.843
16-26	506.205	N. 528232.091	E. 329886.015
16-27	503.476	N. 528217.973	E. 329872.198
16-28	503.709	N. 528213.078	E. 329874.896
16-29	503.887	N. 528209.925	E. 329876.634
16-30	503.556	N. 528212.210	E. 329873.135
16-31	503.728	N. 528208.912	E. 329874.577
16-32	503.442	N. 528207.439	E. 329870.230
16-33	503.023	N. 528205.048	E. 329861.816
16-34	502.835	N. 528209.954	E. 329860.422
16-35	502.380	N. 528206.686	E. 329849.500
16-36	502.435	N. 528205.306	E. 329849.910
16-37	502.831	N. 528208.105	E. 329859.406
16-38	502.964	N. 528204.643	E. 329860.390



SPOT ELEVATION TABLE FOR TOOVEY ROAD			
NAME	ELEV.	NORTHING	EASTING
17-1	504.197	N. 528178.661	E. 329871.994
17-2	504.137	N. 528178.360	E. 329870.524
17-3	503.993	N. 528177.639	E. 329866.997
17-4	503.597	N. 528175.655	E. 329857.298
17-5	503.961	N. 528184.625	E. 329871.396
17-6	503.902	N. 528184.628	E. 329869.896
17-7	503.729	N. 528184.636	E. 329865.496
17-8	503.333	N. 528182.464	E. 329855.837
17-9	503.793	N. 528190.671	E. 329872.033
17-10	503.727	N. 528190.981	E. 329870.565
17-11	503.495	N. 528192.097	E. 329865.282
17-12	503.064	N. 528189.378	E. 329854.211
17-13	503.787	N. 528195.837	E. 329873.631
17-14	503.714	N. 528196.410	E. 329872.245
17-15	503.446	N. 528198.472	E. 329867.254
17-16	503.870	N. 528198.194	E. 329875.407
17-17	503.763	N. 528199.184	E. 329873.555
17-18	503.481	N. 528201.729	E. 329868.792
17-19	503.954	N. 528200.435	E. 329876.738
17-20	503.842	N. 528201.587	E. 329874.982
17-21	503.608	N. 528204.002	E. 329871.304
17-22	504.085	N. 528202.573	E. 329878.286
17-23	503.965	N. 528203.881	E. 329876.643
17-24	503.728	N. 528208.912	E. 329874.596
17-25	503.448	N. 528207.465	E. 329870.320
17-26	503.283	N. 528206.635	E. 329867.398
17-27	503.212	N. 528200.142	E. 329863.210
17-28	503.099	N. 528201.180	E. 329861.374
17-29	502.703	N. 528198.566	E. 329851.825
17-30	502.758	N. 528197.176	E. 329852.203

SPOT ELEVATION TABLE FOR LOSETH ROAD			
NAME	ELEV.	NORTHING	EASTING
26-1	550.249	N. 527223.788	E. 330277.652
26-2	550.299	N. 527222.292	E. 330277.542
26-3	550.477	N. 527211.821	E. 330276.772
26-4	550.811	N. 527224.391	E. 330285.635
26-5	550.853	N. 527222.929	E. 330285.968
26-6	550.889	N. 527221.651	E. 330286.260
26-7	551.058	N. 527211.180	E. 330285.490
26-8	551.284	N. 527226.706	E. 330291.984
26-9	551.334	N. 527225.373	E. 330292.670
26-10	551.496	N. 527221.015	E. 330294.911
26-11	551.634	N. 527210.543	E. 330294.141
26-12	551.474	N. 527228.072	E. 330294.338
26-13	551.524	N. 527226.814	E. 330295.155
26-14	551.714	N. 527222.285	E. 330298.096
26-15	551.839	N. 527210.317	E. 330297.216
26-16	551.687	N. 527229.868	E. 330296.789
26-17	551.739	N. 527228.709	E. 330297.742
26-18	551.934	N. 527224.540	E. 330301.174
26-19	552.413	N. 527237.830	E. 330303.359
26-20	552.682	N. 527234.537	E. 330309.423
26-21	552.653	N. 527240.957	E. 330304.807
26-22	553.005	N. 527245.794	E. 330306.180
26-23	553.276	N. 527249.080	E. 330306.583
26-24	553.623	N. 527252.784	E. 330306.553
26-25	553.522	N. 527249.378	E. 330311.293
26-26	553.263	N. 527245.419	E. 330311.273
26-27	552.909	N. 527238.644	E. 330310.774
26-28	552.748	N. 527234.461	E. 330310.467
26-29	552.519	N. 527221.446	E. 330309.510
26-30	552.171	N. 527221.812	E. 330304.524
26-31	552.267	N. 527209.845	E. 330303.644
26-32	552.284	N. 527209.826	E. 330303.895
26-33	552.180	N. 527220.298	E. 330304.665
26-34	552.520	N. 527219.950	E. 330309.400

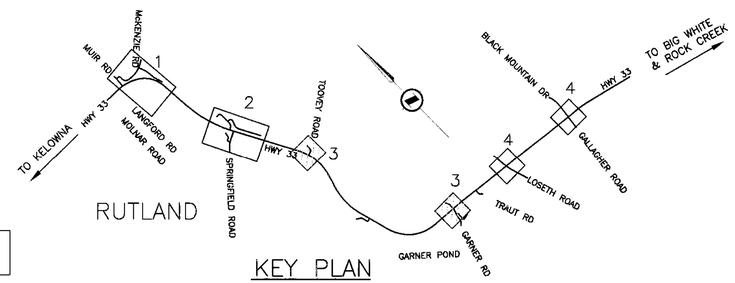
SPOT ELEVATION TABLE FOR LOSETH ROAD			
NAME	ELEV.	NORTHING	EASTING
28-1	550.178	N. 527195.637	E. 330275.958
28-2	550.220	N. 527197.731	E. 330276.111
28-3	550.292	N. 527201.322	E. 330276.375
28-4	550.502	N. 527211.793	E. 330277.145
28-5	550.615	N. 527194.754	E. 330282.012
28-6	550.667	N. 527196.130	E. 330282.610
28-7	550.840	N. 527200.717	E. 330284.601
28-8	551.050	N. 527211.188	E. 330285.371
28-9	550.875	N. 527192.753	E. 330285.516
28-10	550.942	N. 527193.967	E. 330286.398
28-11	551.201	N. 527198.821	E. 330289.924
28-12	551.412	N. 527210.789	E. 330290.804
28-13	551.047	N. 527189.678	E. 330288.815
28-14	551.131	N. 527190.642	E. 330289.964
28-15	551.467	N. 527194.500	E. 330294.559
28-16	551.084	N. 527187.373	E. 330290.465
28-17	551.179	N. 527188.151	E. 330291.748
28-18	551.563	N. 527191.260	E. 330296.879
28-19	551.080	N. 527185.834	E. 330291.301
28-20	551.181	N. 527186.487	E. 330292.652
28-21	551.519	N. 527188.662	E. 330297.154
28-22	551.009	N. 527179.827	E. 330294.540
28-23	550.479	N. 527172.568	E. 330292.393
28-24	550.509	N. 527172.142	E. 330293.831
28-25	550.581	N. 527171.121	E. 330297.283
28-26	551.107	N. 527178.380	E. 330299.431
28-27	551.711	N. 527187.215	E. 330302.044
28-28	551.839	N. 527189.530	E. 330302.729
28-29	551.784	N. 527198.160	E. 330298.920
28-30	552.138	N. 527196.429	E. 330304.770
28-31	551.891	N. 527199.557	E. 330300.376
28-32	552.200	N. 527198.110	E. 330305.267
28-33	552.011	N. 527210.127	E. 330299.800
28-34	552.101	N. 527210.028	E. 330301.146
28-35	552.448	N. 527209.645	E. 330306.352



SPOT ELEVATION TABLE FOR LOSETH ROAD			
NAME	ELEV.	NORTHING	EASTING
27-1	554.475	N. 527222.881	E. 330339.081
27-2	554.505	N. 527221.385	E. 330338.987
27-3	554.577	N. 527217.794	E. 330338.706
27-4	554.552	N. 527207.323	E. 330337.934
27-5	553.565	N. 527225.761	E. 330329.420
27-6	553.580	N. 527224.448	E. 330328.693
27-7	553.544	N. 527218.763	E. 330325.543
27-8	553.675	N. 527208.291	E. 330324.773
27-9	553.302	N. 527227.386	E. 330326.884
27-10	553.306	N. 527226.177	E. 330325.995
27-11	553.329	N. 527220.538	E. 330321.848
27-12	553.391	N. 527208.605	E. 330320.504
27-13	553.025	N. 527230.273	E. 330323.637
27-14	552.967	N. 527224.469	E. 330317.426
27-15	552.899	N. 527232.832	E. 330321.562
27-16	552.781	N. 527227.954	E. 330314.601
27-17	552.864	N. 527234.271	E. 330320.630
27-18	552.741	N. 527230.169	E. 330313.761
27-19	552.858	N. 527238.462	E. 330318.659
27-20	552.861	N. 527236.900	E. 330314.256
27-21	553.145	N. 527245.571	E. 330316.504
27-22	553.163	N. 527245.155	E. 330314.863
27-23	553.394	N. 527249.649	E. 330315.584
27-24	553.415	N. 527249.605	E. 330314.886
27-25	553.594	N. 527252.713	E. 330315.038
27-26	553.722	N. 527252.074	E. 330310.995
27-27	552.847	N. 527237.164	E. 330310.666
27-28	552.632	N. 527230.433	E. 330310.171
27-29	552.587	N. 527228.291	E. 330310.031
27-30	552.813	N. 527221.108	E. 330314.097
27-31	552.764	N. 527218.686	E. 330312.990
27-32	552.839	N. 527209.214	E. 330312.220
27-33	552.905	N. 527209.141	E. 330313.217

SPOT ELEVATION TABLE FOR LOSETH ROAD			
NAME	ELEV.	NORTHING	EASTING
29-1	554.059	N. 527195.535	E. 330333.257
29-2	554.089	N. 527197.131	E. 330333.367
29-3	554.299	N. 527207.602	E. 330334.137
29-4	552.891	N. 527192.651	E. 330318.318
29-5	552.890	N. 527193.990	E. 330317.541
29-6	552.891	N. 527198.453	E. 330315.387
29-7	552.652	N. 527191.276	E. 330315.898
29-8	552.654	N. 527192.543	E. 330315.094
29-9	552.650	N. 527197.187	E. 330312.147
29-10	552.353	N. 527189.229	E. 330313.069
29-11	552.358	N. 527190.387	E. 330312.117
29-12	552.361	N. 527194.636	E. 330308.625
29-13	551.893	N. 527185.454	E. 330309.269
29-14	551.903	N. 527186.414	E. 330308.117
29-15	551.924	N. 527189.934	E. 330303.891
29-16	551.592	N. 527182.624	E. 330307.193
29-17	551.605	N. 527183.436	E. 330305.932
29-18	550.889	N. 527175.295	E. 330303.837
29-19	550.919	N. 527175.721	E. 330302.398
29-20	550.479	N. 527169.674	E. 330302.174
29-21	550.509	N. 527170.100	E. 330300.736
29-22	550.991	N. 527176.743	E. 330298.946
29-23	551.647	N. 527186.140	E. 330301.726
29-24	551.873	N. 527190.218	E. 330302.932
29-25	552.251	N. 527187.627	E. 330306.167
29-26	552.238	N. 527199.174	E. 330305.582
29-27	552.494	N. 527209.584	E. 330307.047
29-28	552.893	N. 527209.155	E. 330313.027
29-29	553.101	N. 527208.924	E. 330316.157

POINT NAME
CURVE No.
POINT No.
37-10 + POINT LOCATION



KEY PLAN

FOR GEOMETRICS & LANING
SEE DWG. R2-699-401 THRU 413

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth — Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED V. WANG DATE 2009-01-08
DRAWN N. KRUCKENBERG DATE 2009-01-08
CHECKED T. STEVENS DATE 2009-01-15
APPROVED R. LEE DATE 2009-08-28

SPOT ELEVATIONS

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

SENIOR DESIGN ENGINEER — DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-603

SPOT ELEVATION TABLE FOR LOSETH ROAD			
NAME	ELEV.	NORTHING	EASTING
37-1	576.465	N. 527175.665	E. 330748.208
37-2	576.487	N. 527174.172	E. 330748.051
37-3	576.567	N. 527170.592	E. 330747.674
37-4	576.625	N. 527160.747	E. 330746.637
37-5	576.763	N. 527176.738	E. 330759.878
37-6	576.785	N. 527175.300	E. 330760.304
37-7	576.878	N. 527169.066	E. 330762.152
37-8	576.928	N. 527159.222	E. 330761.115
37-9	576.869	N. 527178.200	E. 330763.789
37-10	576.885	N. 527176.836	E. 330764.410
37-11	576.971	N. 527170.011	E. 330767.521
37-12	577.027	N. 527158.738	E. 330765.709
37-13	577.052	N. 527181.607	E. 330769.491
37-14	577.108	N. 527174.439	E. 330774.933
37-15	577.160	N. 527183.713	E. 330771.972
37-16	577.189	N. 527177.176	E. 330778.159
37-17	577.237	N. 527185.228	E. 330773.463
37-18	577.247	N. 527179.822	E. 330779.360
37-19	577.255	N. 527185.584	E. 330773.785
37-20	577.576	N. 527192.177	E. 330777.411
37-21	577.964	N. 527198.500	E. 330782.990
37-22	577.355	N. 527180.436	E. 330784.725
37-23	577.319	N. 527177.994	E. 330785.011
37-24	577.281	N. 527169.710	E. 330786.070
37-25	577.183	N. 527168.777	E. 330779.233
37-26	577.232	N. 527157.440	E. 330778.040
37-27	577.263	N. 527157.240	E. 330779.945
37-28	577.214	N. 527167.085	E. 330780.983
37-29	577.290	N. 527167.835	E. 330786.329
37-30	577.300	N. 527166.502	E. 330786.518

SPOT ELEVATION TABLE FOR LOSETH ROAD			
NAME	ELEV.	NORTHING	EASTING
38-1	577.633	N. 527167.558	E. 330825.196
38-2	577.663	N. 527166.066	E. 330825.039
38-3	577.735	N. 527162.486	E. 330824.662
38-4	577.785	N. 527152.640	E. 330823.626
38-5	577.559	N. 527169.976	E. 330815.242
38-6	577.575	N. 527168.579	E. 330814.697
38-7	577.629	N. 527163.734	E. 330812.808
38-8	577.679	N. 527153.889	E. 330811.771
38-9	577.537	N. 527172.616	E. 330809.785
38-10	577.532	N. 527171.322	E. 330809.028
38-11	577.528	N. 527165.970	E. 330805.897
38-12	577.603	N. 527154.633	E. 330804.703
38-13	577.626	N. 527177.113	E. 330803.603
38-14	577.483	N. 527171.366	E. 330798.477
38-15	577.730	N. 527180.193	E. 330800.901
38-16	577.482	N. 527176.499	E. 330793.546
38-17	577.825	N. 527182.937	E. 330800.212
38-18	577.494	N. 527181.885	E. 330790.901
38-19	577.906	N. 527185.033	E. 330800.501
38-20	577.411	N. 527183.285	E. 330784.407
38-21	577.368	N. 527181.179	E. 330784.641
38-22	577.294	N. 527175.475	E. 330785.318
38-23	577.422	N. 527167.138	E. 330794.807
38-24	577.393	N. 527165.822	E. 330792.981
38-25	577.442	N. 527155.976	E. 330791.945
38-26	577.465	N. 527155.800	E. 330793.614

SPOT ELEVATION TABLE FOR BLACK MOUNTAIN DR.			
NAME	ELEV.	NORTHING	EASTING
43-1	576.610	N. 527112.209	N. 527112.209
43-2	576.580	N. 527110.717	E. 331312.529
43-3	576.510	N. 527107.136	E. 331312.152
43-4	576.310	N. 527097.291	E. 331311.115
43-5	576.682	N. 527113.318	E. 331325.014
43-6	576.662	N. 527111.878	E. 331325.435
43-7	576.578	N. 527105.543	E. 331327.287
43-8	576.380	N. 527095.697	E. 331326.250
43-9	576.745	N. 527114.793	E. 331329.038
43-10	576.728	N. 527113.422	E. 331329.647
43-11	576.642	N. 527106.478	E. 331332.735
43-12	576.420	N. 527095.140	E. 331331.541
43-13	576.856	N. 527117.402	E. 331333.780
43-14	576.768	N. 527109.829	E. 331338.826
43-15	576.947	N. 527119.627	E. 331336.734
43-16	576.868	N. 527112.687	E. 331342.619
43-17	577.016	N. 527121.525	E. 331338.784
43-18	576.950	N. 527115.828	E. 331344.542
43-19	577.108	N. 527124.332	E. 331341.253
43-20	577.079	N. 527121.215	E. 331345.244
43-21	577.199	N. 527127.365	E. 331343.353
43-22	577.190	N. 527125.843	E. 331345.847
43-23	577.492	N. 527138.420	E. 331347.541
43-24	577.599	N. 527137.729	E. 331352.841
43-25	577.058	N. 527115.131	E. 331349.896
43-26	576.978	N. 527111.795	E. 331349.462
43-27	576.808	N. 527104.643	E. 331348.530
43-28	576.732	N. 527105.535	E. 331341.687
43-29	576.506	N. 527094.198	E. 331340.494
43-30	576.523	N. 527094.044	E. 331341.949
43-31	576.721	N. 527103.890	E. 331342.986
43-32	576.785	N. 527103.324	E. 331348.358

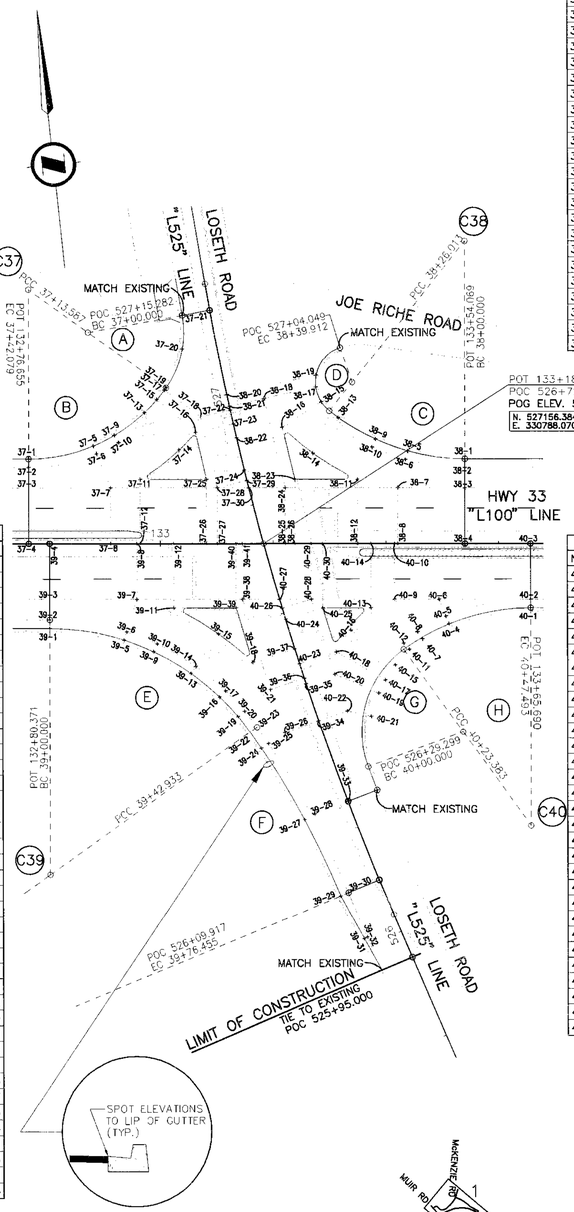
SPOT ELEVATION TABLE FOR BLACK MOUNTAIN DR.			
NAME	ELEV.	NORTHING	EASTING
44-1	577.220	N. 527105.123	E. 331379.978
44-2	577.250	N. 527103.632	E. 331379.821
44-3	577.322	N. 527100.051	E. 331379.444
44-4	577.124	N. 527090.206	E. 331378.407
44-5	577.080	N. 527106.429	E. 331374.398
44-6	577.111	N. 527105.022	E. 331373.877
44-7	577.174	N. 527100.802	E. 331372.315
44-8	576.976	N. 527090.956	E. 331371.278
44-9	576.975	N. 527108.829	E. 331369.674
44-10	576.980	N. 527107.579	E. 331368.845
44-11	577.038	N. 527102.996	E. 331365.805
44-12	576.851	N. 527091.658	E. 331364.611
44-13	576.917	N. 527112.240	E. 331365.631
44-14	576.946	N. 527107.445	E. 331360.532
44-15	576.917	N. 527114.907	E. 331363.474
44-16	576.930	N. 527110.924	E. 331357.718
44-17	576.949	N. 527117.981	E. 331361.682
44-18	576.957	N. 527115.368	E. 331356.281
44-19	577.003	N. 527120.893	E. 331360.511
44-20	577.061	N. 527119.703	E. 331356.845
44-21	577.104	N. 527124.652	E. 331359.631
44-22	577.172	N. 527124.331	E. 331357.449
44-23	577.404	N. 527134.043	E. 331358.714
44-24	577.063	N. 527116.182	E. 331350.033
44-25	576.983	N. 527111.996	E. 331349.488
44-26	576.816	N. 527105.015	E. 331348.578
44-27	576.903	N. 527103.943	E. 331356.809
44-28	576.703	N. 527092.606	E. 331355.615
44-29	576.673	N. 527092.819	E. 331353.588
44-30	576.871	N. 527092.564	E. 331354.625

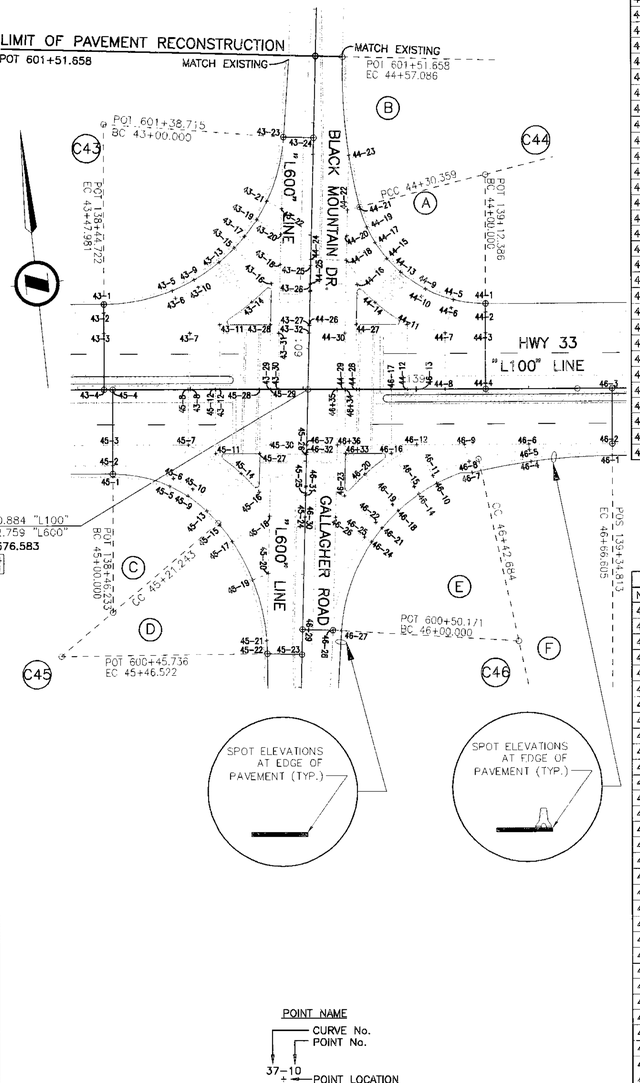
SPOT ELEVATION TABLE FOR LOSETH ROAD			
NAME	ELEV.	NORTHING	EASTING
39-1	576.406	N. 527145.440	E. 330748.762
39-2	576.436	N. 527146.932	E. 330748.919
39-3	576.508	N. 527150.512	E. 330749.296
39-4	576.706	N. 527160.357	E. 330750.333
39-5	576.696	N. 527142.023	E. 330761.663
39-6	576.720	N. 527143.397	E. 330762.264
39-7	576.818	N. 527148.893	E. 330764.672
39-8	577.016	N. 527158.738	E. 330765.709
39-9	576.758	N. 527139.433	E. 330766.666
39-10	576.783	N. 527140.718	E. 330767.440
39-11	576.909	N. 527146.713	E. 330771.054
39-12	577.134	N. 527158.050	E. 330772.248
39-13	576.788	N. 527134.936	E. 330772.829
39-14	576.795	N. 527136.066	E. 330773.816
39-15	576.929	N. 527141.337	E. 330778.422
39-16	576.707	N. 527130.240	E. 330777.446
39-17	576.735	N. 527131.208	E. 330778.592
39-18	576.884	N. 527135.723	E. 330783.941
39-19	576.624	N. 527126.431	E. 330780.320
39-20	576.653	N. 527127.267	E. 330781.565
39-21	576.768	N. 527130.811	E. 330786.546
39-22	576.543	N. 527123.484	E. 330782.133
39-23	576.572	N. 527124.218	E. 330783.441
39-24	576.444	N. 527120.368	E. 330783.835
39-25	576.473	N. 527121.071	E. 330785.160
39-26	576.463	N. 527122.742	E. 330788.308
39-27	575.841	N. 527107.004	E. 330790.097
39-28	575.881	N. 527107.792	E. 330792.020
39-29	574.998	N. 527092.982	E. 330795.032
39-30	575.024	N. 527093.408	E. 330796.470
39-31	574.504	N. 527085.050	E. 330798.369
39-32	574.516	N. 527085.236	E. 330798.966
39-33	575.881	N. 527109.403	E. 330798.111
39-34	576.589	N. 527124.167	E. 330794.445
39-35	576.861	N. 527130.959	E. 330792.917
39-36	576.894	N. 527131.938	E. 330792.705
39-37	577.053	N. 527137.283	E. 330791.584
39-38	577.134	N. 527146.931	E. 330783.309
39-39	577.082	N. 527145.556	E. 330782.035
39-40	577.315	N. 527156.894	E. 330783.229
39-41	577.332	N. 527156.776	E. 330784.346

SPOT ELEVATION TABLE FOR LOSETH ROAD			
NAME	ELEV.	NORTHING	EASTING
40-1	577.634	N. 527140.086	E. 330833.989
40-2	577.664	N. 527141.578	E. 330834.146
40-3	577.862	N. 527151.424	E. 330835.183
40-4	577.391	N. 527138.790	E. 330819.290
40-5	577.441	N. 527140.232	E. 330818.874
40-6	577.549	N. 527143.279	E. 330817.995
40-7	577.184	N. 527136.708	E. 330814.335
40-8	577.235	N. 527137.972	E. 330813.524
40-9	577.474	N. 527144.105	E. 330810.148
40-10	577.673	N. 527153.950	E. 330811.185
40-11	577.048	N. 527135.065	E. 330811.828
40-12	577.093	N. 527136.263	E. 330810.926
40-13	577.350	N. 527143.053	E. 330805.813
40-14	577.629	N. 527154.633	E. 330804.703
40-15	576.880	N. 527132.605	E. 330809.057
40-16	577.119	N. 527139.524	E. 330801.838
40-17	576.734	N. 527130.144	E. 330807.008
40-18	576.940	N. 527135.994	E. 330798.897
40-19	576.616	N. 527127.948	E. 330805.606
40-20	576.753	N. 527132.108	E. 330798.193
40-21	576.422	N. 527123.998	E. 330803.855
40-22	576.481	N. 527125.388	E. 330799.705
40-23	576.978	N. 527134.576	E. 330792.144
40-24	577.171	N. 527142.644	E. 330790.520
40-25	577.255	N. 527143.949	E. 330797.295
40-26	577.205	N. 527144.652	E. 330790.137
40-27	577.230	N. 527146.243	E. 330789.840
40-28	577.305	N. 527145.653	E. 330795.444
40-29	577.503	N. 527155.499	E. 330796.481
40-30	577.528	N. 527155.287	E. 330798.490

SPOT ELEVATION TABLE FOR GALLAGHER ROAD			
NAME	ELEV.	NORTHING	EASTING
45-1	576.014	N. 527082.215	E. 331311.046
45-2	576.044	N. 527083.707	E. 331311.204
45-3	576.116	N. 527087.287	E. 331311.581
45-4	576.314	N. 527097.133	E. 331312.617
45-5	576.013	N. 527078.982	E. 331320.878
45-6	576.045	N. 527080.276	E. 331321.637
45-7	576.180	N. 527085.882	E. 331324.927
45-8	576.378	N. 527095.728	E. 331325.963
45-9	575.958	N. 527076.891	E. 331323.898
45-10	575.993	N. 527078.057	E. 331324.842
45-11	576.172	N. 527083.886	E. 331329.562
45-12	576.413	N. 527095.223	E. 331330.755
45-13	575.844	N. 527073.968	E. 331326.933
45-14	576.082	N. 527079.889	E. 331333.711
45-15	575.714	N. 527071.290	E. 331328.967
45-16	575.974	N. 527076.271	E. 331336.462
45-17	575.535	N. 527068.148	E. 331330.836
45-18	575.776	N. 527071.888	E. 331337.908
45-19	575.024	N. 527061.013	E. 331333.693
45-20	575.102	N. 527061.834	E. 331336.597
45-21	574.050	N. 527049.979	E. 331335.052
45-22	573.845	N. 527047.670	E. 331334.909
45-23	573.968	N. 527046.876	E. 331341.001
45-24	575.902	N. 527071.074	E. 331344.155
45-25	576.104	N. 527075.198	E. 331344.692
45-26	576.343	N. 527081.993	E. 331345.578
45-27	576.236	N. 527083.066	E. 331337.347
45-28	576.485	N. 527094.403	E. 331338.541
45-29	576.506	N. 527094.190	E. 331340.568
45-30	576.308	N. 527084.343	E. 331339.531

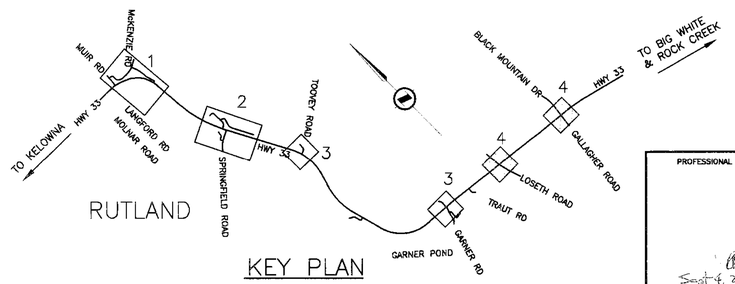
SPOT ELEVATION TABLE FOR GALLAGHER ROAD			
NAME	ELEV.	NORTHING	EASTING
46-1	577.422	N. 527075.923	E. 331399.445
46-2	577.467	N. 527078.012	E. 331399.666
46-3	577.681	N. 527087.856	E. 331400.709
46-4	577.040	N. 527076.480	E. 331385.030
46-5	577.084	N. 527078.579	E. 331384.970
46-6	577.099	N. 527079.563	E. 331384.942
46-7	576.751	N. 527075.628	E. 331374.441
46-8	576.795	N. 527077.700	E. 331374.099
46-9	576.648	N. 527080.756	E. 331373.580
46-10	576.520	N. 527074.473	E. 331367.994
46-11	576.552	N. 527075.870	E. 331367.447
46-12	576.682	N. 527081.643	E. 331365.186
46-13	576.880	N. 527081.488	E. 331366.223
46-14	576.353	N. 527072.942	E. 331364.667
46-15	576.384	N. 527074.268	E. 331363.962
46-16	576.539	N. 527080.620	E. 331360.576
46-17	576.802	N. 527081.958	E. 331361.770
46-18	576.103	N. 527070.421	E. 331360.685
46-19	576.134	N. 527071.825	E. 331359.780
46-20	576.285	N. 527077.403	E. 331355.495
46-21	575.853	N. 527087.756	E. 331357.551
46-22	575.884	N. 527088.833	E. 331355.507
46-23	576.040	N. 527074.002	E. 331351.485
46-24	575.843	N. 527065.451	E. 331355.401
46-25	575.873	N. 527056.419	E. 331354.254
46-26	575.797	N. 527070.416	E. 331349.515
46-27	574.230	N. 527050.328	E. 331348.409
46-28	574.259	N. 527050.575	E. 331346.929
46-29	574.367	N. 527051.273	E. 331341.574
46-30	575.904	N. 527071.114	E. 331344.160
46-31	576.091	N. 527074.894	E. 331344.653
46-32	576.353	N. 527082.365	E. 331345.626
46-33	576.407	N. 527081.474	E. 331352.469
46-34	576.674	N. 527092.811	E. 331353.662
46-35	576.853	N. 527092.964	E. 331352.207
46-36	576.455	N. 527083.119	E. 331351.170
46-37	576.384	N. 527083.684	E. 331345.798





POINT NAME
CURVE No.
POINT No.
37–10
POINT LOCATION

FOR GEOMETRICS & LANING
SEE DWG. R2–699–401 THRU 413



KEY PLAN

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	V. WANG	DATE 2009-01-06
DRAWN	N. KRUCKENBERG	DATE 2009-01-06
CHECKED	I. STEVENS	DATE 2009-01-15
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

SPOT ELEVATIONS
HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

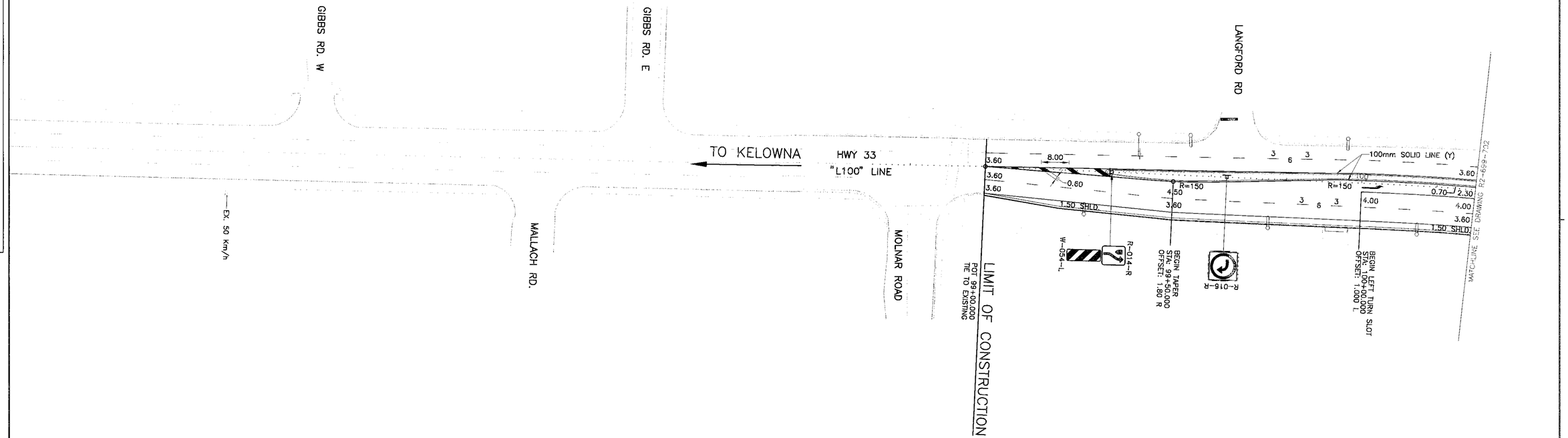
FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198–0001	2	R2–699–604

SIGNS ASSOCIATED WITH THIS DRAWING			
SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
R-014-R	KEEP RIGHT	1	STA: 99+34 MED.
R-016-R	RIGHT TURN ONLY	1	STA: 99+64 MED.
W-054-L	OBJECT MARKER	1	STA: 99+34 MED.
TOTAL SIGNS ON THIS DRAWING = 3			

PAVEMENT MARKINGS LEGEND

- 3 3 — 100mm – CONTINUITY PAINT LINE (WHITE)
- 100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)
- 6 3 6 — 100mm – LANE PAINT LINES (WHITE)

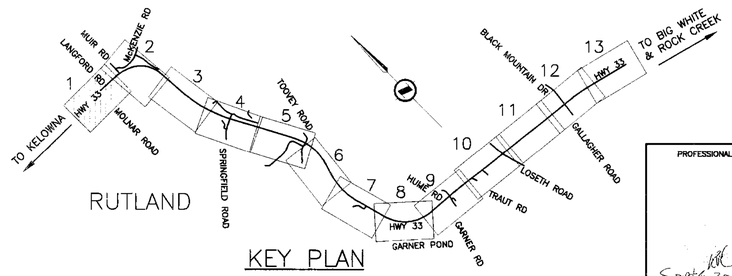
ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW



DESIGN SPEED 60km/h FOR "L100"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
2. SIGNS AND POLE BASES SHALL CONFORM TO THE MoT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2009 EDITION).
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).



KEY PLAN

PROFESSIONAL SEAL

Sept 5, 2009

Rev	Date	Description	Signature

REVISIONS

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED	R.S. GRAR	DATE	2007-03-30
DRAWN	R.S. GRAR	DATE	2007-03-30
CHECKED	S. KAI	DATE	2008-04-25
APPROVED	R. LEE	DATE	2009-06-26

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 99+00.000 TO STA. 100+30.000

SENIOR DESIGN ENGINEER

Sept 5, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-701

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
2. SIGNS AND POLE BASES SHALL CONFORM TO THE MoT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2009 EDITION).
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).

DESIGN SPEED 60km/h FOR "L100"

DESIGN SPEED 30km/h FOR "L200" & "L225"

DESIGN SPEED 50km/h FOR "L250"

TYPICAL CROSS WALK (ZEBRA) DETAIL

DESIGN VEHICLE WB-20

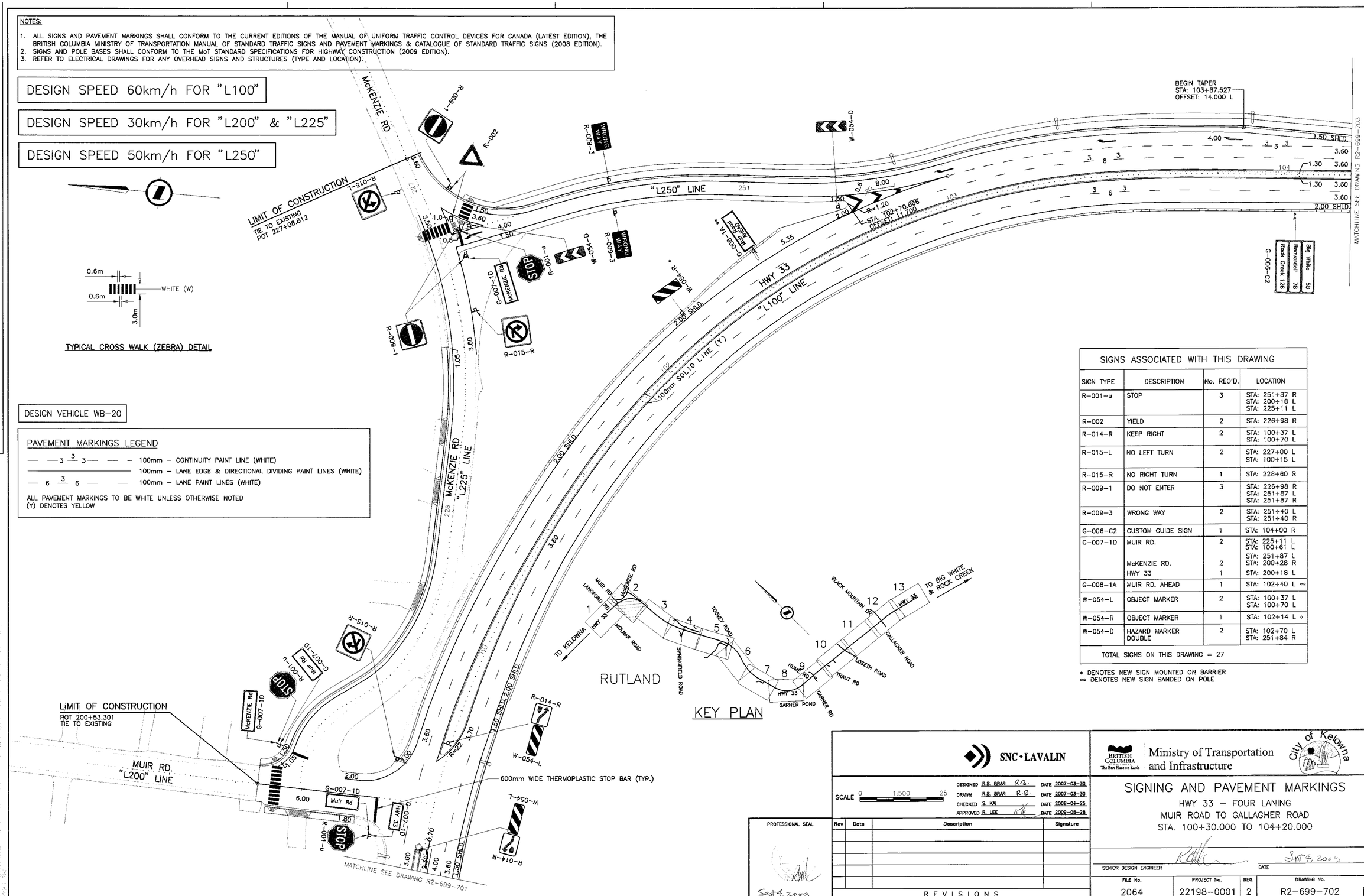
PAVEMENT MARKINGS LEGEND

— —3 3— — — 100mm – CONTINUITY PAINT LINE (WHITE)

——————— 100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)

— 6 3 6 — — 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW



KEY PLAN

SIGNS ASSOCIATED WITH THIS DRAWING			
SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
R-001-u	STOP	3	STA: 251+87 R STA: 200+18 L STA: 225+11 L
R-002	YIELD	2	STA: 226+98 R
R-014-R	KEEP RIGHT	2	STA: 100+37 L STA: 100+70 L
R-015-L	NO LEFT TURN	2	STA: 227+00 L STA: 100+15 L
R-015-R	NO RIGHT TURN	1	STA: 226+60 R
R-009-1	DO NOT ENTER	3	STA: 226+98 R STA: 251+87 L STA: 251+87 R
R-009-3	WRONG WAY	2	STA: 251+40 L STA: 251+40 R
G-006-C2	CUSTOM GUIDE SIGN	1	STA: 104+00 R
G-007-1D	MUIR RD. McKENZIE RD. HWY 33	2 2 1	STA: 225+11 L STA: 100+61 L STA: 251+87 L STA: 200+28 R STA: 200+18 L
G-008-1A	MUIR RD. AHEAD	1	STA: 102+40 L °°
W-054-L	OBJECT MARKER	2	STA: 100+37 L STA: 100+70 L
W-054-R	OBJECT MARKER	1	STA: 102+14 L °
W-054-D	HAZARD MARKER DOUBLE	2	STA: 102+70 L STA: 251+84 R
TOTAL SIGNS ON THIS DRAWING = 27			

° DENOTES NEW SIGN MOUNTED ON BARRIER
°° DENOTES NEW SIGN BANDED ON POLE

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth — Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	R.S. BRAR	R.G.	DATE 2007-03-30
DRAWN	R.S. BRAR	R.G.	DATE 2007-03-30
CHECKED	S. KAI		DATE 2008-04-25
APPROVED	R. LEE		DATE 2009-08-28

SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 100+30.000 TO 104+20.000

PROFESSIONAL SEAL

Sept 4, 2009

SENIOR DESIGN ENGINEER — DATE Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-702

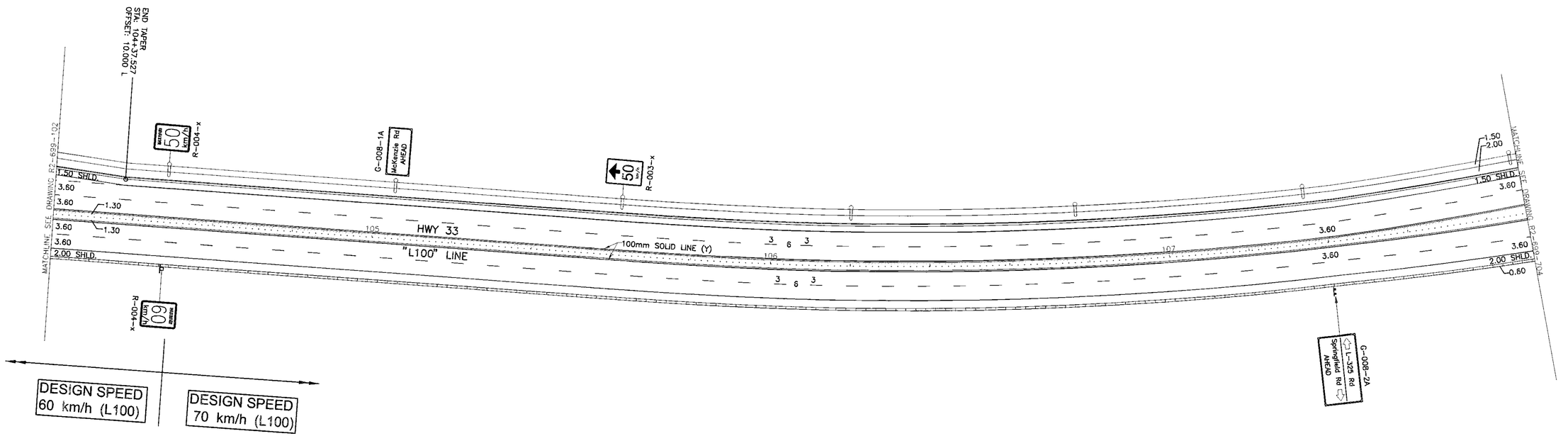
SIGNS ASSOCIATED WITH THIS DRAWING			
SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
G-008-1A	McKENZIE ROAD AHEAD	1	STA: 105+05 L **
G-008-2A	L-325 RD./ SPRINGFIELD RD.	1	STA: 108+00 R
R-003-x	MAX. 50km/h AHEAD	1	STA: 105+63 L **
R-004-x	MAX. SPEED (50km/h)	1	STA: 104+48 L **
R-004-x	MAX. SPEED (60km/h)	1	STA: 104+48 R
TOTAL SIGNS ON THIS DRAWING = 5			

* DENOTES NEW SIGN MOUNTED ON BARRIER
** DENOTES NEW SIGN BANDED ON POLE

PAVEMENT MARKINGS LEGEND

- 100mm – CONTINUITY PAINT LINE (WHITE)
- 100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)
- 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW

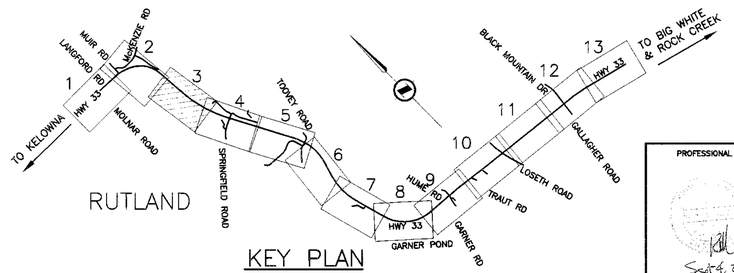


ALL MOVEMENTS WB-20

DESIGN SPEED 70km/h FOR "L100"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
2. SIGNS AND POLE BASES SHALL CONFORM TO THE MoT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2009 EDITION).
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).



KEY PLAN

PROFESSIONAL SEAL

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED	R.S. BRAR R.B.	DATE 2007-03-30
DRAWN	R.S. BRAR R.B.	DATE 2007-03-30
CHECKED	S. KAI	DATE 2008-04-25
APPROVED	R. LEE	DATE 2009-08-28

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA The Best Place on Earth — Ministry of Transportation and Infrastructure

City of Kelowna

SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 104+20.000 TO STA. 107+90.000

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

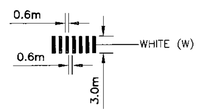
FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-703

FOR SIGNS TABLE SEE DWG. R2-699-714

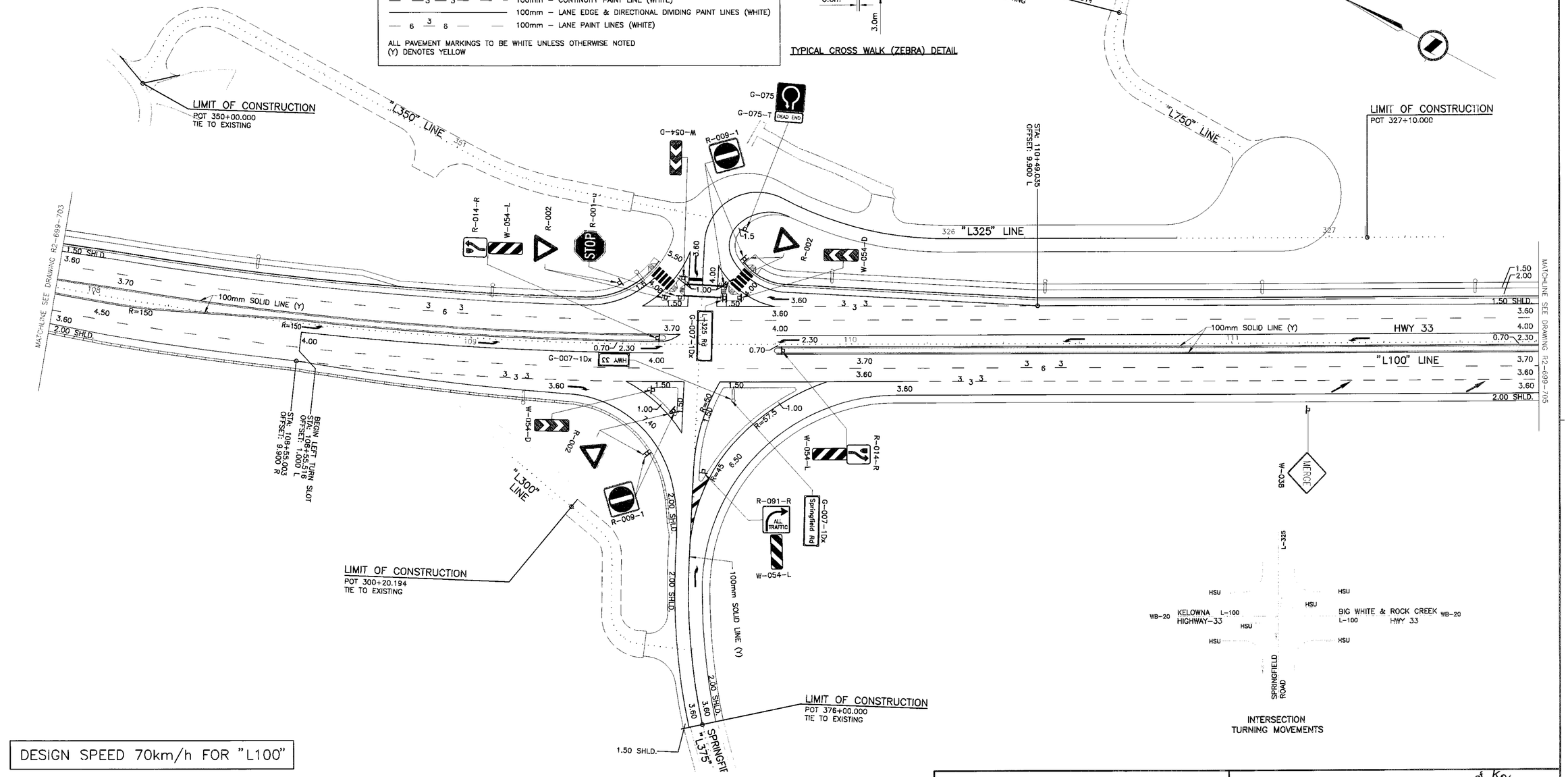
PAVEMENT MARKINGS LEGEND

- 100mm – CONTINUITY PAINT LINE (WHITE)
- 100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)
- 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW



TYPICAL CROSS WALK (ZEBRA) DETAIL



INTERSECTION
TURNING MOVEMENTS

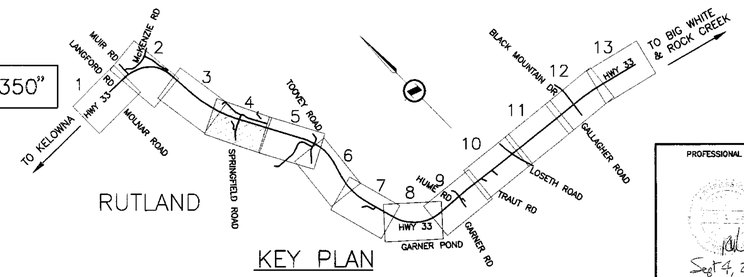
DESIGN SPEED 70km/h FOR "L100"

DESIGN SPEED 40km/h FOR "L375"

DESIGN SPEED 30km/h FOR "L300", "L325" & "L350"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
2. SIGNS AND POLE BASES SHALL CONFORM TO THE MoT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2009 EDITION).
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).



KEY PLAN

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth — Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	R.S. BRAR	R.B.	DATE 2007-03-30
DRAWN	R.S. BRAR	R.B.	DATE 2007-03-30
CHECKED	S. KAI		DATE 2008-04-25
APPROVED	R. LEE		DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

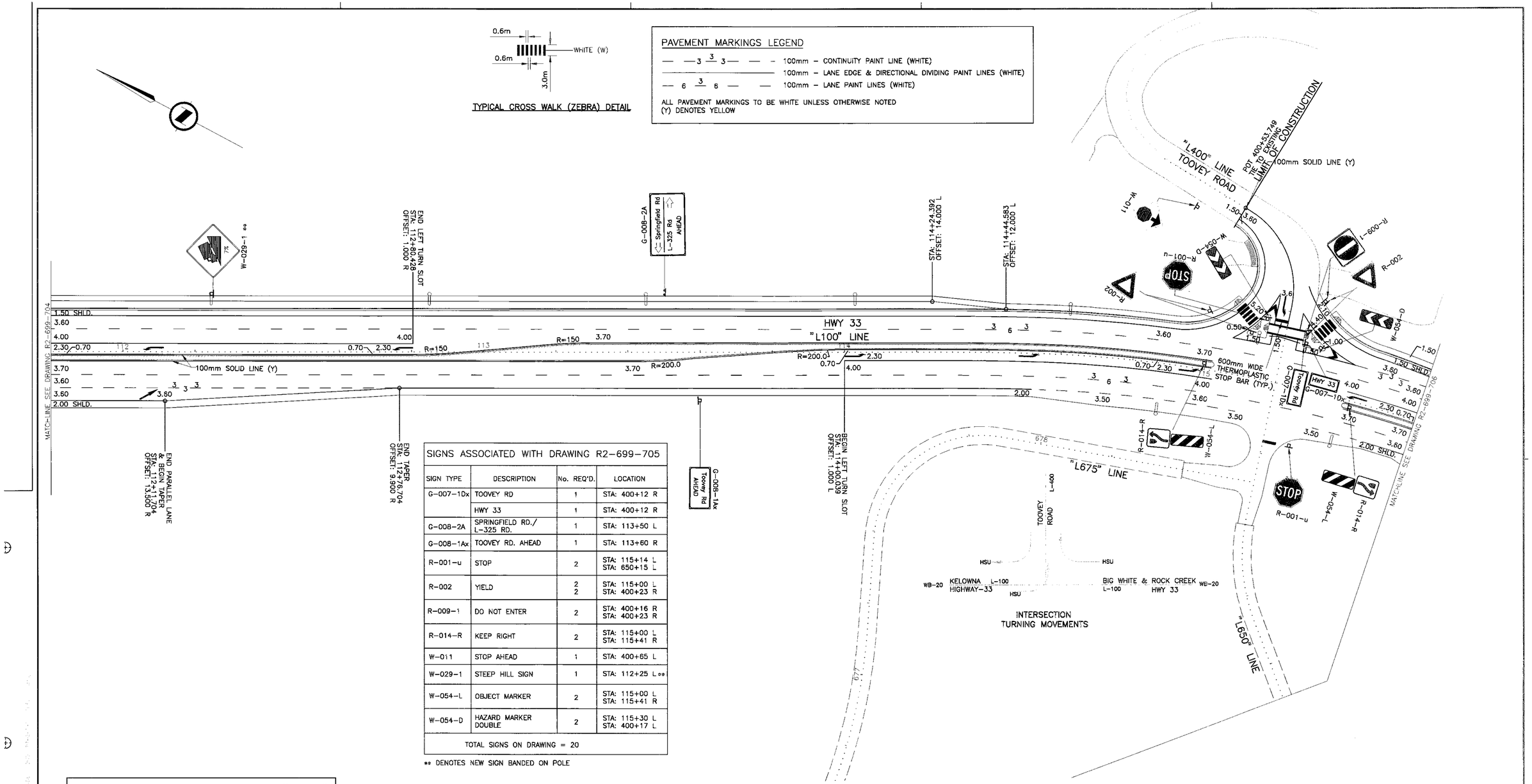
SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 107+90.000 TO STA. 111+80.000

SENIOR DESIGN ENGINEER

DATE Sept 4 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-704



SIGNS ASSOCIATED WITH DRAWING R2-699-705			
SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
G-007-1Dx	TOOVEY RD	1	STA: 400+12 R
	HWY 33	1	STA: 400+12 R
G-008-2A	SPRINGFIELD RD./ L-325 RD.	1	STA: 113+50 L
G-008-1Ax	TOOVEY RD. AHEAD	1	STA: 113+60 R
R-001-u	STOP	2	STA: 115+14 L STA: 650+15 L
R-002	YIELD	2 2	STA: 115+00 L STA: 400+23 R
R-009-1	DO NOT ENTER	2	STA: 400+16 R STA: 400+23 R
R-014-R	KEEP RIGHT	2	STA: 115+00 L STA: 115+41 R
W-011	STOP AHEAD	1	STA: 400+65 L
W-029-1	STEEP HILL SIGN	1	STA: 112+25 L **
W-054-L	OBJECT MARKER	2	STA: 115+00 L STA: 115+41 R
W-054-D	HAZARD MARKER DOUBLE	2	STA: 115+30 L STA: 400+17 L
TOTAL SIGNS ON DRAWING = 20			

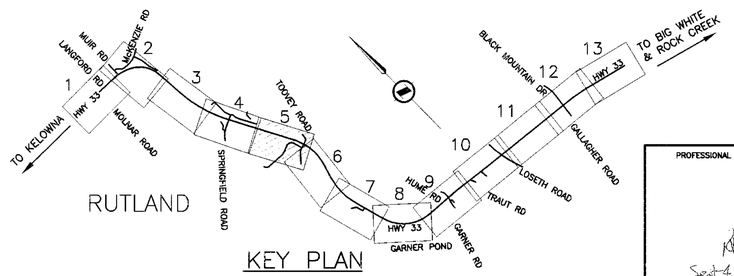
** DENOTES NEW SIGN BANDED ON POLE

DESIGN SPEED 70km/h FOR "L100"

DESIGN SPEED 40km/h FOR "L400"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
2. SIGNS AND POLE BASES SHALL CONFORM TO THE MoT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2009 EDITION).
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).



KEY PLAN

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED	R.S. BRAR	R.B.	DATE 2007-03-30
DRAWN	R.S. BRAR	R.B.	DATE 2007-03-30
CHECKED	S. KAI		DATE 2008-04-25
APPROVED	R. LEE		DATE 2009-08-28

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

STA. 111+80.000 TO STA. 115+60.000

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-705

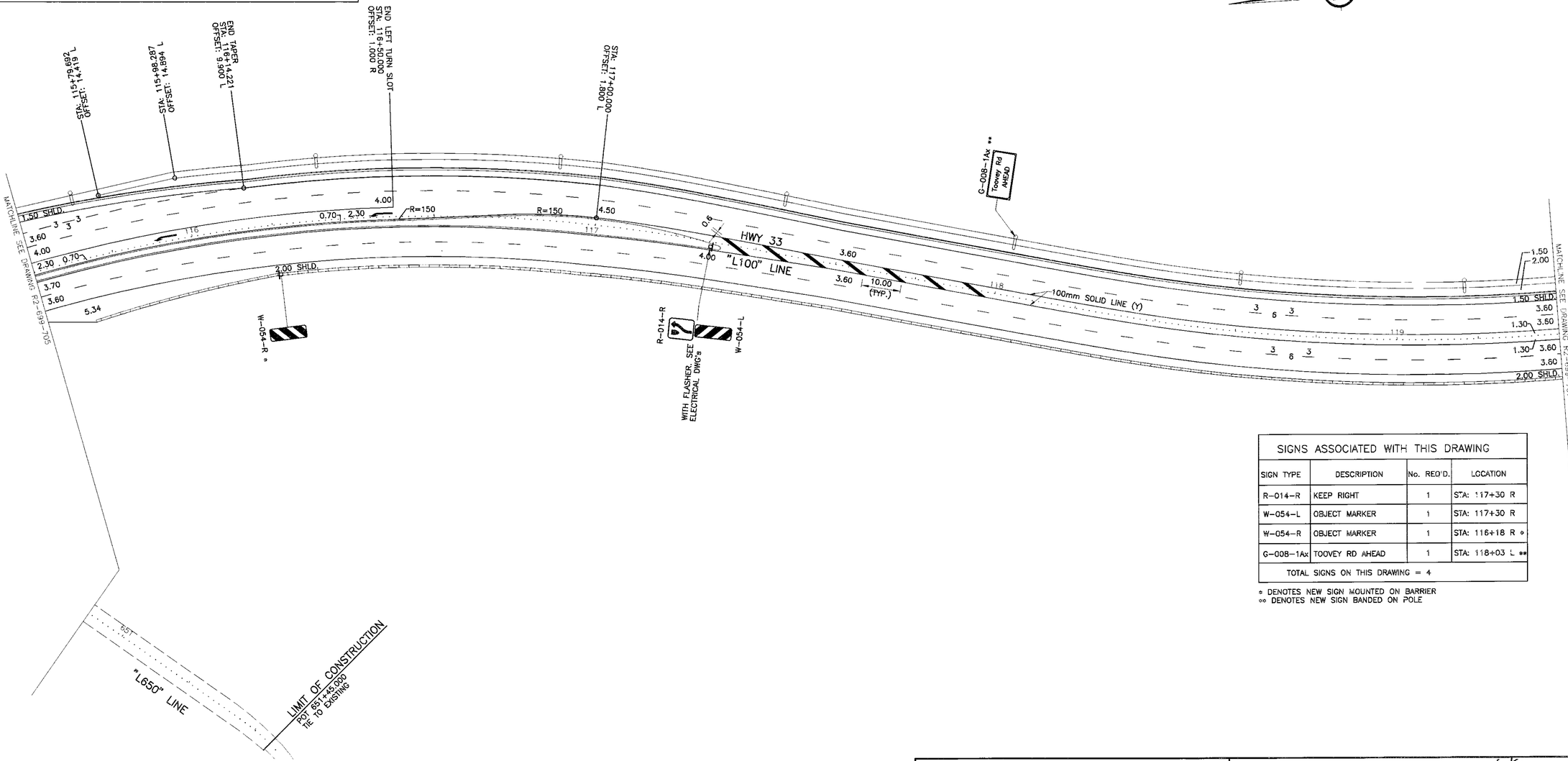
PAVEMENT MARKINGS LEGEND

— — 3 3 3 — — — 100mm – CONTINUITY PAINT LINE (WHITE)

——————————— 100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)

— 6 3 6 — — 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW



SIGNS ASSOCIATED WITH THIS DRAWING			
SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
R-014-R	KEEP RIGHT	1	STA: 117+30 R
W-054-L	OBJECT MARKER	1	STA: 117+30 R
W-054-R	OBJECT MARKER	1	STA: 116+18 R *
G-008-1Ax	TOOVEY RD AHEAD	1	STA: 118+03 L **
TOTAL SIGNS ON THIS DRAWING = 4			

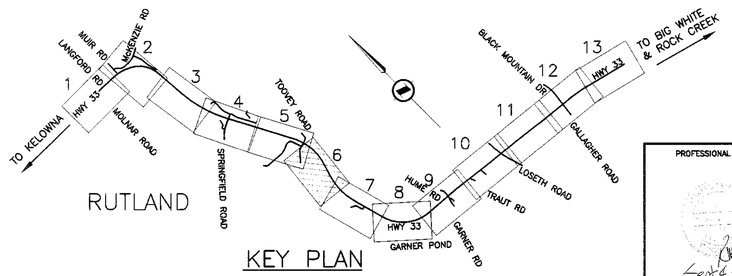
* DENOTES NEW SIGN MOUNTED ON BARRIER
** DENOTES NEW SIGN BANDED ON POLE

ALL MOVEMENTS WB-20

DESIGN SPEED 70km/h FOR "L100"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
2. SIGNS AND POLE BASES SHALL CONFORM TO THE MoT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2009 EDITION).
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).



KEY PLAN

PROFESSIONAL SEAL

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED R.S. BRAR DATE 2007-03-30
DRAWN R.S. BRAR DATE 2007-03-30
CHECKED S. KAI DATE 2008-04-25
APPROVED R. LEE DATE 2009-08-28

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 115+60.000 TO STA. 119+40.000

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REC.	DRAWING No.
2064	22198-0001	2	R2-699-706

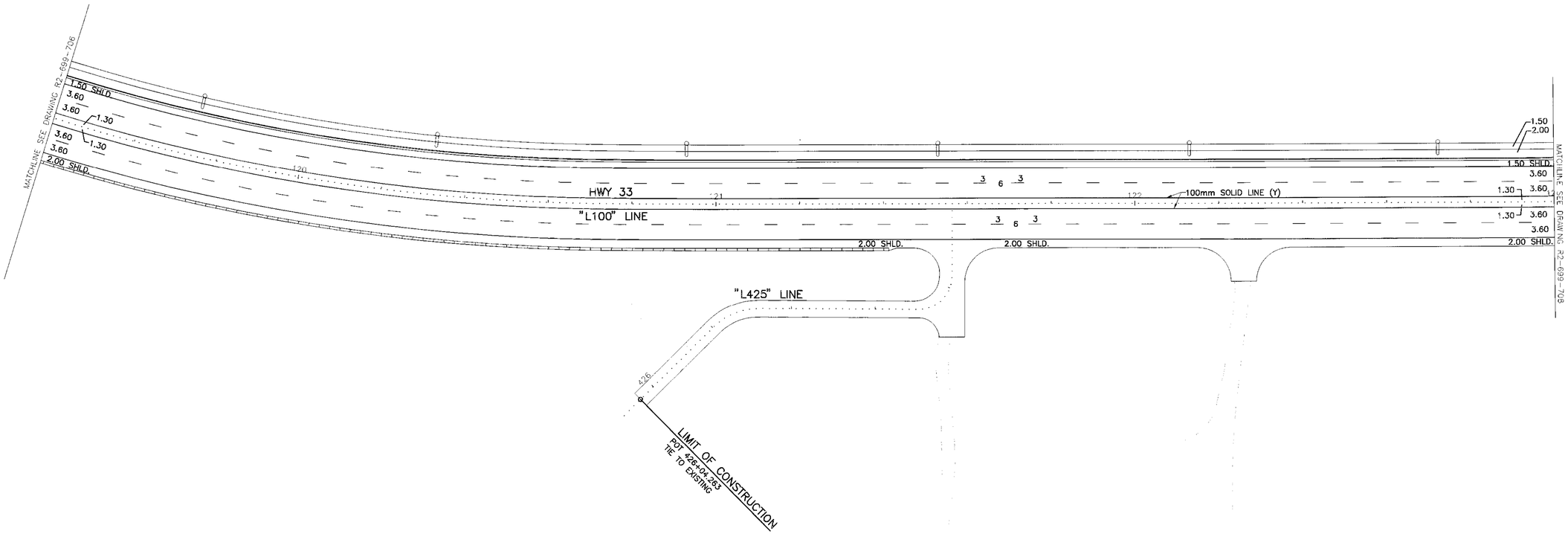
PAVEMENT MARKINGS LEGEND

— — 3 — 3 — — — 100mm – CONTINUITY PAINT LINE (WHITE)

——————— 100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)

— 6 — 6 — — 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW



ALL MOVEMENTS WB-20

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 303

DESIGN SPEED 70km/h FOR "L100"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
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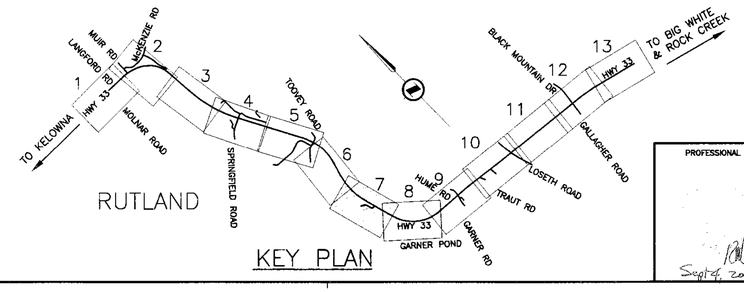
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).



KEY PLAN

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED R.S. BRAR R.B. DATE 2007-03-30
DRAWN R.S. BRAR R.B. DATE 2007-03-30
CHECKED S. KAI DATE 2008-04-25
APPROVED R. LEE DATE 2009-08-28

PROFESSIONAL SEAL

Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA The Best Place on Earth
Ministry of Transportation and Infrastructure

City of Kelowna

SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 119+40.000 TO STA. 123+00.000

SENIOR DESIGN ENGINEER

Sept 4, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-707

SIGNS ASSOCIATED WITH THIS DRAWING			
SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
G-008-2A	HUME Rd./GARNER RD	1	STA: 125+90 R
W-054-R	OBJECT MARKER	1	STA: 123+95 R *
TOTAL SIGNS ON THIS DRAWING = 2			

* DENOTES NEW SIGN MOUNTED ON BARRIER

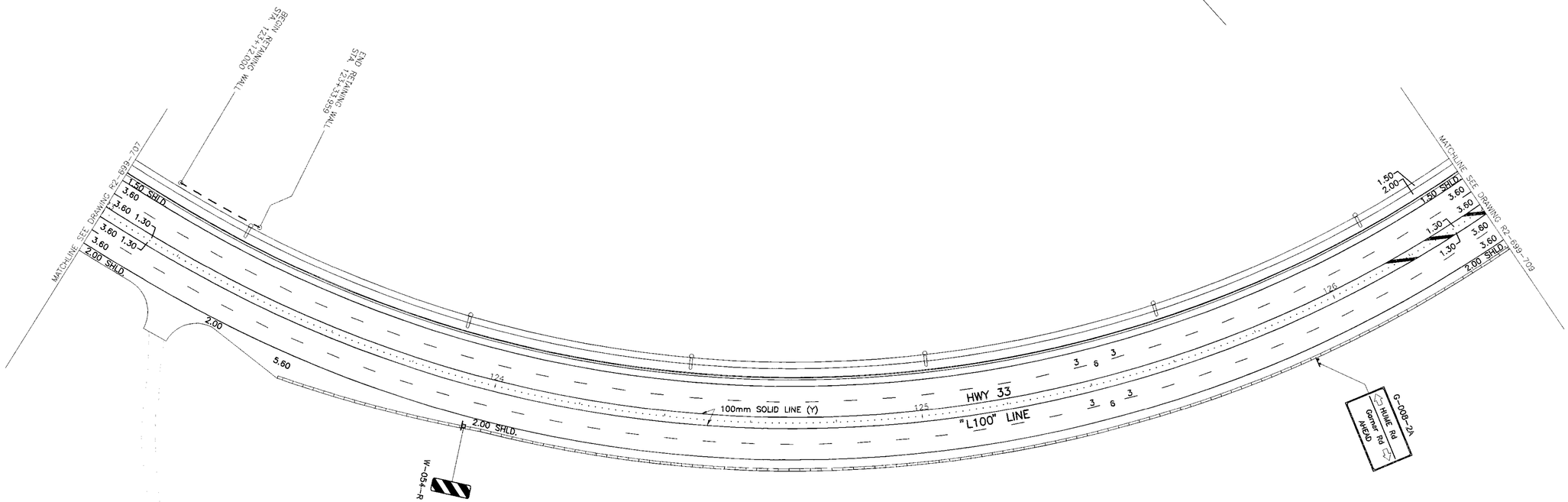
PAVEMENT MARKINGS LEGEND

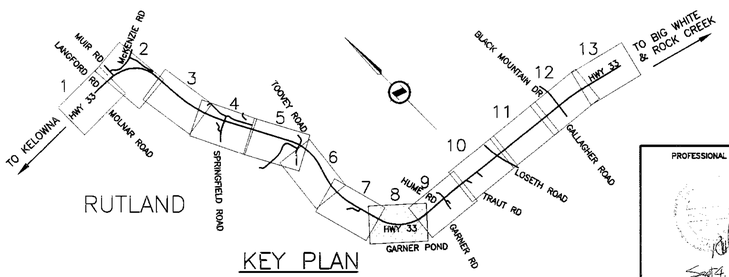
— —3 3 3— — – 100mm – CONTINUITY PAINT LINE (WHITE)

100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)

— 6 3 6 — — 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW





KEY PLAN

ALL MOVEMENTS WB-20

DESIGN SPEED 70km/h FOR "L100"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
2. SIGNS AND POLE BASES SHALL CONFORM TO THE MoT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2009 EDITION).
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).

PROFESSIONAL SEAL

Sept 4, 2009

SNC•LAVALIN

SCALE 0 1:500 25

DESIGNED R.S. BRAR R.B. DATE 2007-03-30
DRAWN R.S. BRAR R.B. DATE 2007-03-30
CHECKED S. KAI DATE 2008-04-25
APPROVED R. LEE DATE 2009-08-28

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA The Best Place on Earth
Ministry of Transportation and Infrastructure
City of Kelowna

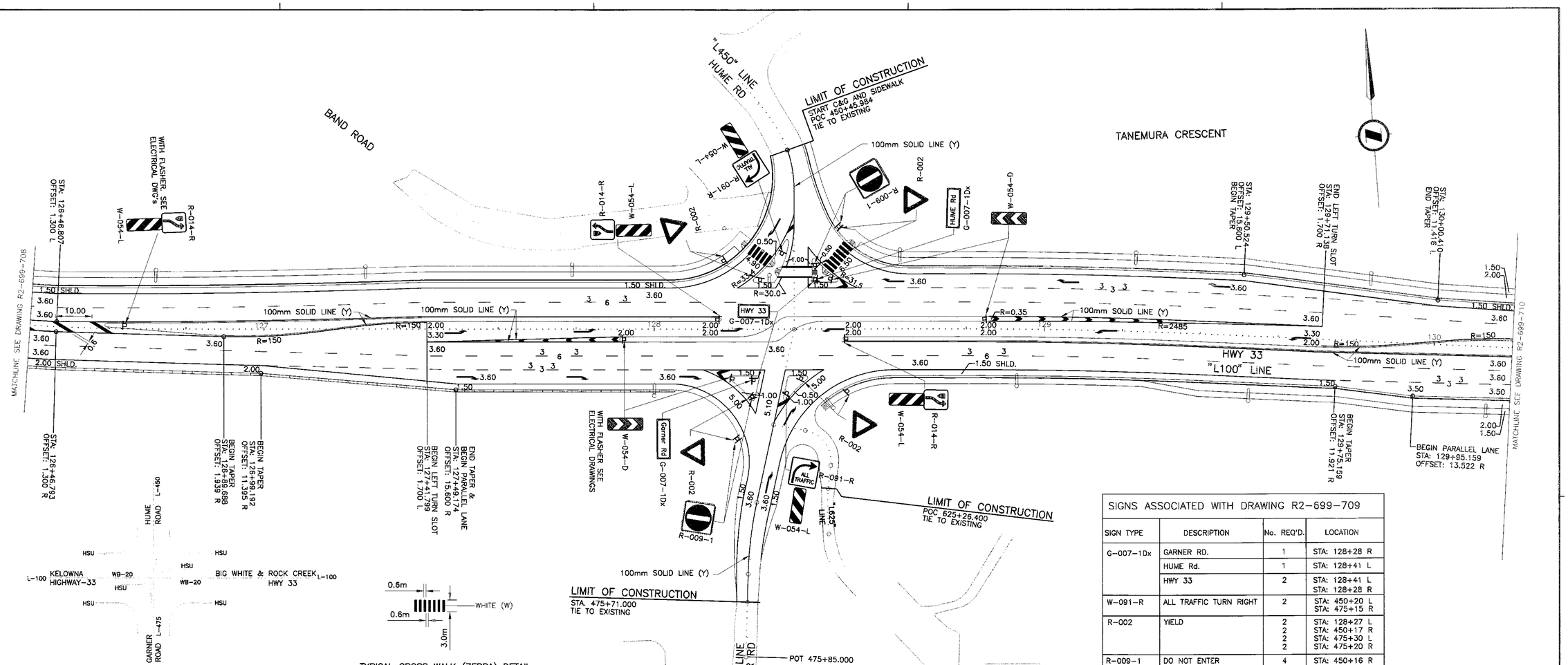
SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 123+00.000 TO STA. 126+40.000

SENIOR DESIGN ENGINEER

Sept 4, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-708



INTERSECTION
TURNING MOVEMENTS

TYPICAL CROSS WALK (ZEBRA) DETAIL

SIGNS ASSOCIATED WITH DRAWING R2-699-709			
SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
G-007-1Dx	GARNER RD.	1	STA: 128+28 R
	HUME Rd.	1	STA: 128+41 L
	HWY 33	2	STA: 128+41 L STA: 128+28 R
W-091-R	ALL TRAFFIC TURN RIGHT	2	STA: 450+20 L STA: 475+15 R
R-002	YIELD	2 2 2 2	STA: 128+27 L STA: 450+17 R STA: 475+30 L STA: 475+20 R
R-009-1	DO NOT ENTER	4	STA: 450+16 R STA: 450+25 R STA: 475+20 L STA: 475+30 L
R-014-R	KEEP RIGHT	3	STA: 126+65 L STA: 128+16 L STA: 128+49 R
W-054-L	OBJECT MARKER	5	STA: 126+65 L STA: 128+16 L STA: 128+49 R STA: 450+19 L STA: 475+15 R
W-054-D	HAZARD MARKER DOUBLE	4	STA: 127+93 R STA: 128+21 R STA: 128+45 L STA: 128+84 L
TOTAL SIGNS ON DRAWING = 30			

PAVEMENT MARKINGS LEGEND

— — 3 3 3 — — — 100mm – CONTINUITY PAINT LINE (WHITE)

100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)

— 6 3 6 — — 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW

DESIGN SPEED 70km/h FOR "L100"

DESIGN SPEED 40km/h FOR "L450" & "L475"

DESIGN SPEED 30km/h FOR "L625"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
2. SIGNS AND POLE BASES SHALL CONFORM TO THE MoT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2009 EDITION).
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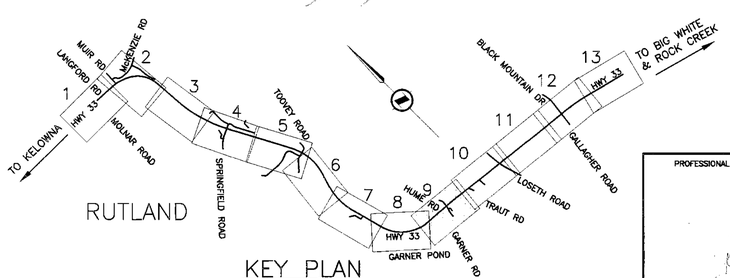

KEY PLAN

SNC·LAVALIN

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED R.S. BRAR DATE 2007-03-30
DRAWN R.S. BRAR DATE 2007-03-30
CHECKED S. KAI DATE 2008-04-23
APPROVED R. LEE DATE 2008-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 126+40.000 TO STA. 130+20.000

SENIOR DESIGN ENGINEER DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-709

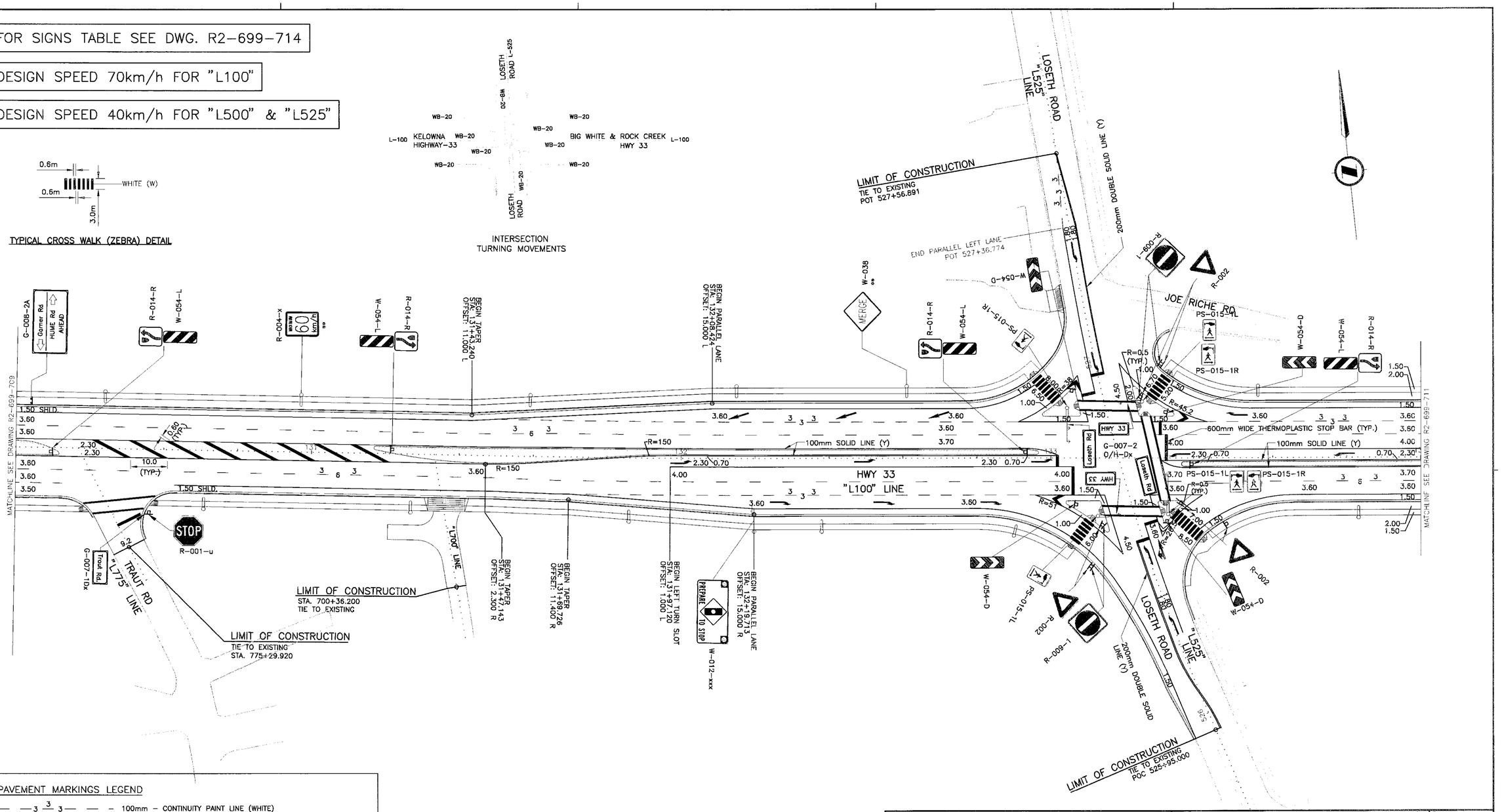
FOR SIGNS TABLE SEE DWG. R2-699-714

DESIGN SPEED 70km/h FOR "L100"

DESIGN SPEED 40km/h FOR "L500" & "L525"

TYPICAL CROSS WALK (ZEBRA) DETAIL

INTERSECTION
TURNING MOVEMENTS



PAVEMENT MARKINGS LEGEND

- — —3 3 3— — – 100mm – CONTINUITY PAINT LINE (WHITE)
- 100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)
- — 6 3 6 — — 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
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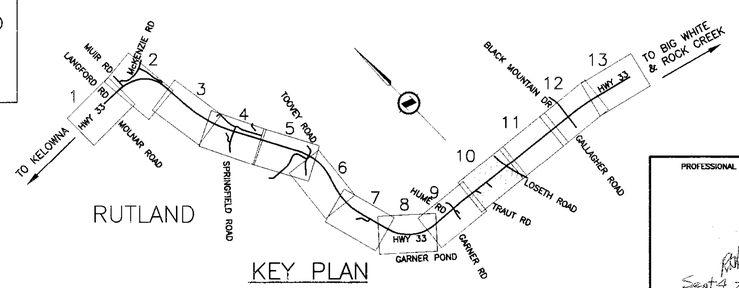


KEY PLAN

PROFESSIONAL SEAL

Sept 4, 2009

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	R.S. BRAR	R.G.	DATE 2007-03-30
DRAWN	R.S. BRAR	R.B.	DATE 2007-03-30
CHECKED	S. KAI		DATE 2008-04-25
APPROVED	R. LEE		DATE 2009-08-28

Rev	Date	Description	Signature

REVISIONS

SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 130+20.000 TO STA. 134+00.000

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-710

PAVEMENT MARKINGS LEGEND

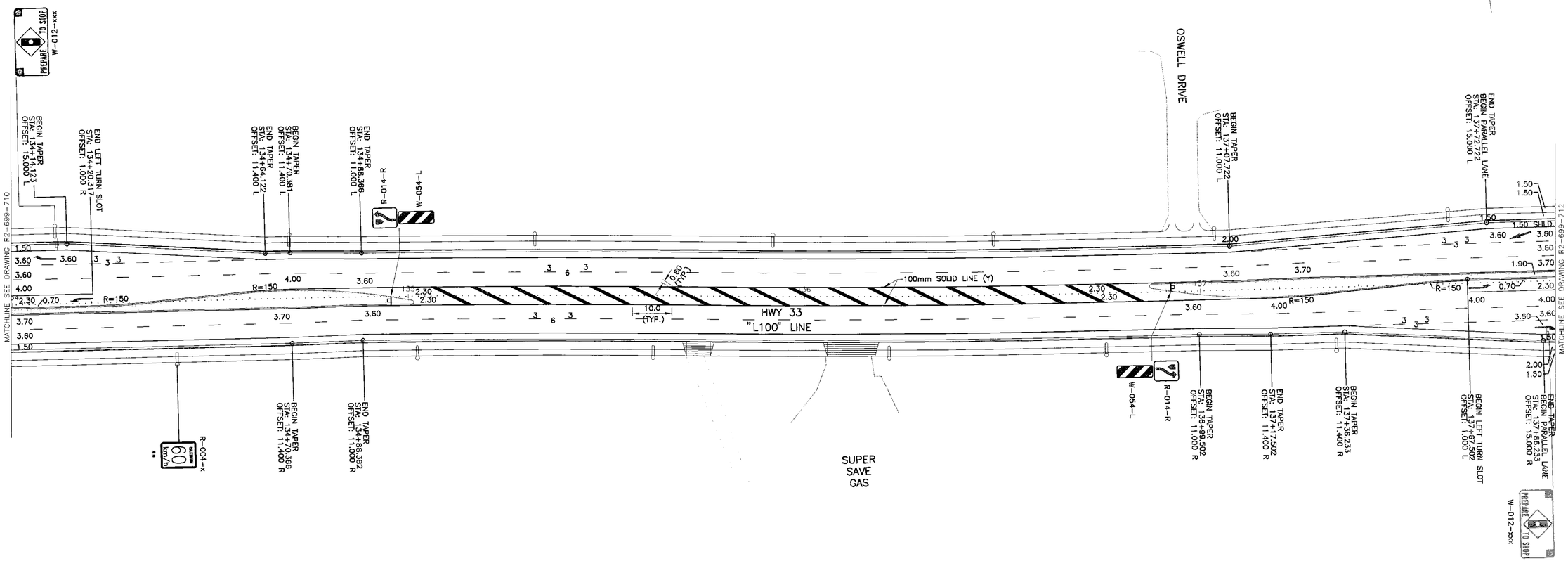
— —3 3— — — 100mm – CONTINUITY PAINT LINE (WHITE)
——————————— 100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)
— 6 6 — — 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW

SIGNS ASSOCIATED WITH THIS DRAWING

SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
R-004-x	MAX SPEED	1	STA: 134+20 R **
R-014-R	KEEP RIGHT	2	STA: 134+95 R STA: 136+95 L
W-012-xxx	PREPARE TO STOP WHEN AMBER FLASHING	INCL. IN ELECTRICAL DWG'S	STA: 134+11 L STA: 137+88 R
W-054-L	OBJECT MARKER	2	STA: 134+95 R STA: 136+95 L
TOTAL SIGNS ON THIS DRAWING = 5			

** DENOTES NEW SIGN BANDED ON POLE



ALL MOVEMENTS WB-20

DESIGN SPEED 70km/h FOR "L100"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
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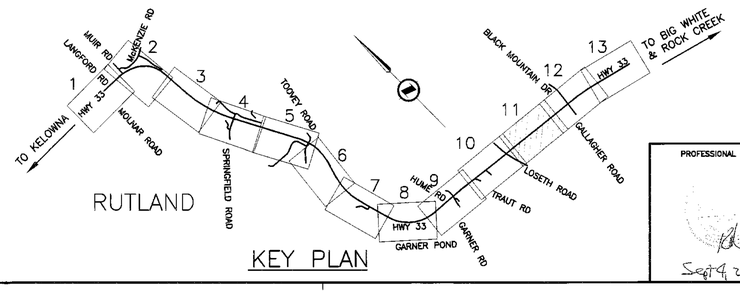
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).



KEY PLAN

PROFESSIONAL SEAL

Sept 4 2009

SNC·LAVALIN

SCALE 0 1:500 25			
DESIGNED	R.S. BRAR R.B.	DATE	2007-03-30
DRAWN	R.S. BRAR R.B.	DATE	2007-03-30
CHECKED	S. KAI	DATE	2008-04-25
APPROVED	R. LEE	DATE	2009-08-26

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

SIGNING AND PAVEMENT MARKINGS

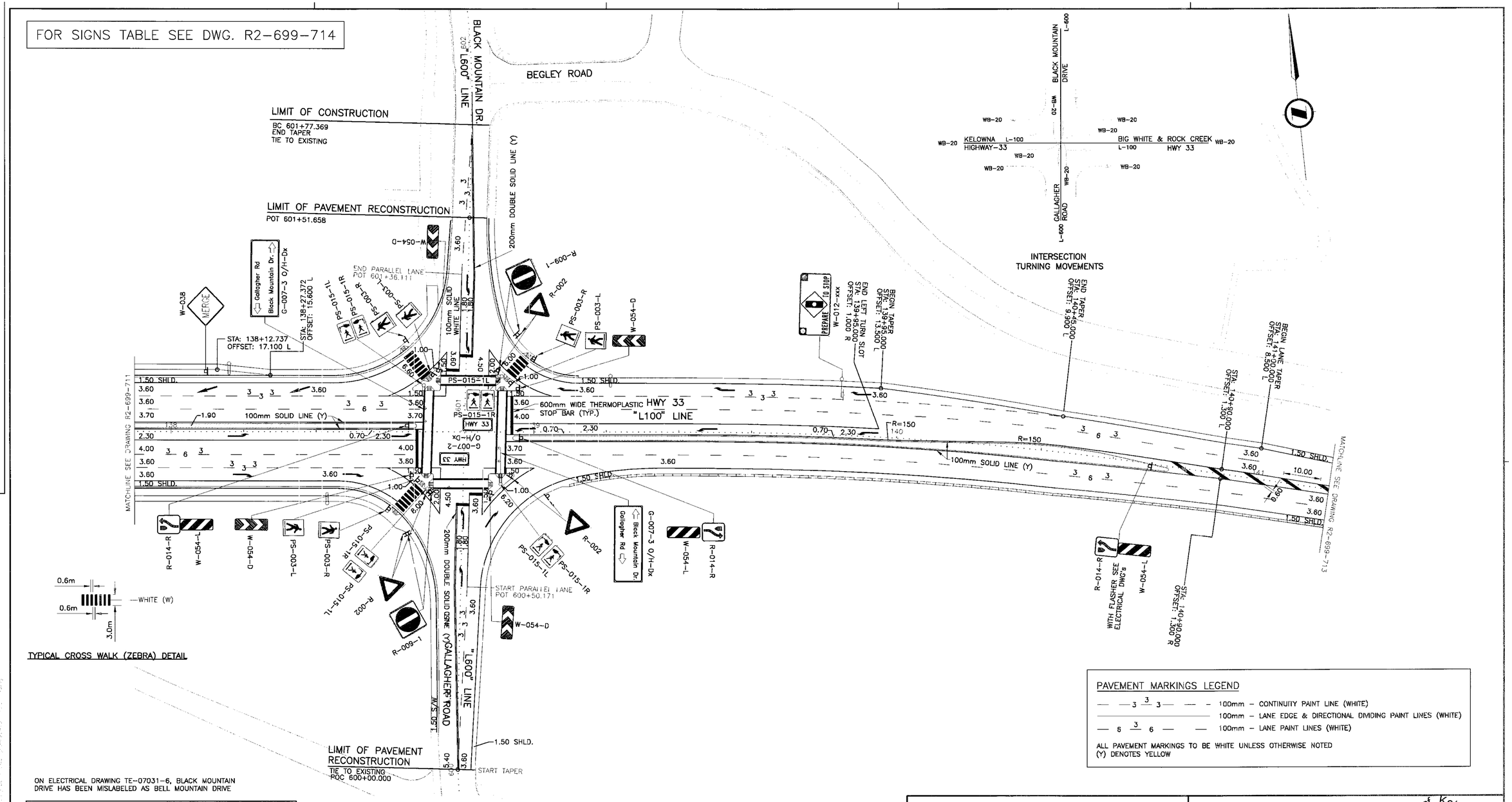
HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 134+00.000 TO STA. 137+90.000

SENIOR DESIGN ENGINEER

DATE Sept 4 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-711

FOR SIGNS TABLE SEE DWG. R2-699-714



TYPICAL CROSS WALK (ZEBRA) DETAIL

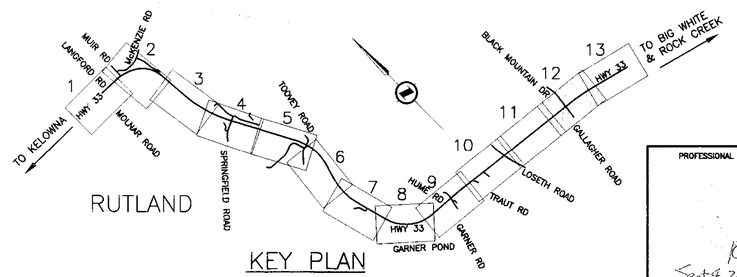
ON ELECTRICAL DRAWING TE-07031-6, BLACK MOUNTAIN DRIVE HAS BEEN MISLABELED AS BELL MOUNTAIN DRIVE

DESIGN SPEED 70km/h FOR "L100"

DESIGN SPEED 40km/h FOR "L600"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
2. SIGNS AND POLE BASES SHALL CONFORM TO THE MoT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2009 EDITION).
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).



KEY PLAN

PAVEMENT MARKINGS LEGEND

- 100mm – CONTINUITY PAINT LINE (WHITE)
- 100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)
- 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED	R.S. BRAR	R.B.	DATE 2007-03-30
DRAWN	R.S. BRAR	R.B.	DATE 2007-03-30
CHECKED	S. KAI		DATE 2008-04-25
APPROVED	R. LEE		DATE 2009-08-26

PROFESSIONAL SEAL

Sept 9, 2009

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 137+90.000 TO STA. 141+20.000

SENIOR DESIGN ENGINEER

DATE Sept 9, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-712

PAVEMENT MARKINGS LEGEND

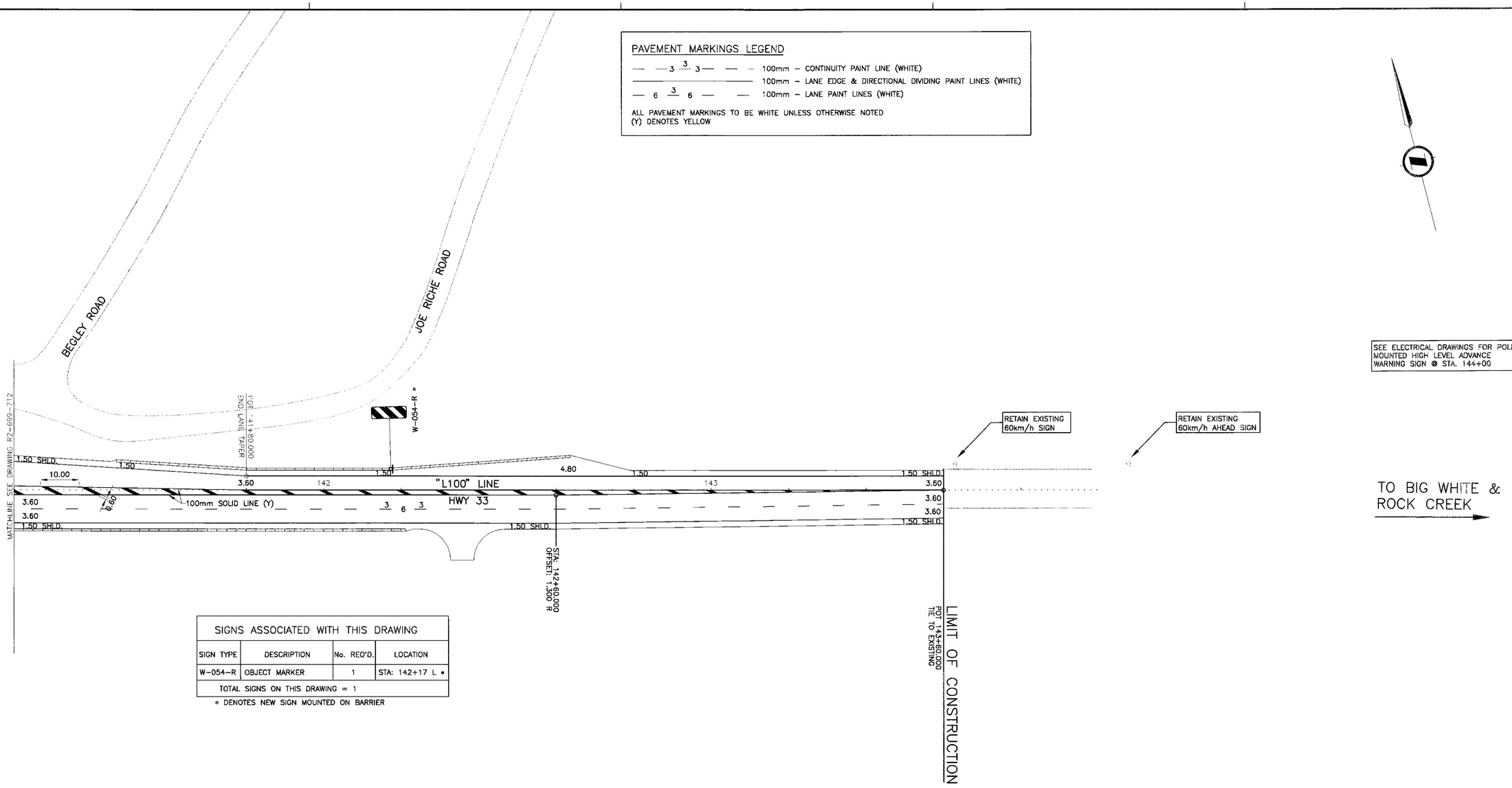
— — 3 3 3 — — — 100mm – CONTINUITY PAINT LINE (WHITE)

——————————— 100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)

— 6 3 6 — — 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW

SEE ELECTRICAL DRAWINGS FOR POLE MOUNTED HIGH LEVEL ADVANCE WARNING SIGN @ STA. 144+00



SIGNS ASSOCIATED WITH THIS DRAWING			
SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
W-054-R	OBJECT MARKER	1	STA: 142+17 L *
TOTAL SIGNS ON THIS DRAWING = 1			

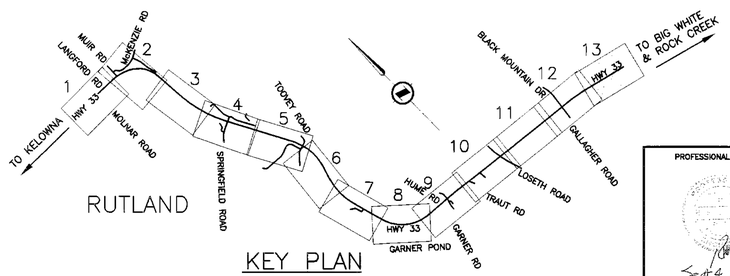
* DENOTES NEW SIGN MOUNTED ON BARRIER

ALL MOVEMENTS WB-20

DESIGN SPEED 70km/h FOR "L100"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
2. SIGNS AND POLE BASES SHALL CONFORM TO THE MoT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2009 EDITION).
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).



RUTLAND

KEY PLAN

PROFESSIONAL SEAL

Sept 4, 2009

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED	R.S. BRAR	DATE	2007-03-30
DRAWN	R.S. BRAR	DATE	2007-03-30
CHECKED	S. KAI	DATE	2008-04-25
APPROVED	R. LEE	DATE	2009-08-26

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA The Best Place on Earth — Ministry of Transportation and Infrastructure

City of Kelowna

SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 141+20.000 TO STA. 143+60.000

SENIOR DESIGN ENGINEER

DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-713

SIGNS ASSOCIATED WITH DRAWING R2-699-704

SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
G-007-1Dx	HWY 33	1	STA: 109+70 R**
	SPRINGFIELD RD.	1	STA: 109+70 R**
	L-325 RD.	1	STA: 109+67 L
G-075	CUL-DE-SAC	1	STA: 325+66 R
G-075-T	DEAD END	1	STA: 325+66 R
R-001-u	STOP	1	STA: 109+55 L
R-002	YIELD	2 2 2	STA: 109+40 L STA: 325+23 L STA: 375+27 R
R-009-1	DO NOT ENTER	4	STA: 325+23 R STA: 325+16 R STA: 375+33 R STA: 375+18 R
R-014-R	KEEP RIGHT	2	STA: 109+50 L STA: 109+81 R
W-091-R	ALL TRAFFIC TURN RIGHT	1	STA: 375+33 L
W-038	MERGE	1	STA: 111+20 R
W-054-L	OBJECT MARKER	3	STA: 109+50 L STA: 109+81 R STA: 375+33 L
W-054-D	HAZARD MARKER DOUBLE	3	STA: 109+48 R STA: 109+71 L STA: 325+16 L
TOTAL SIGNS ON DRAWING = 26			

** DENOTES NEW SIGN BANDED ON POLE

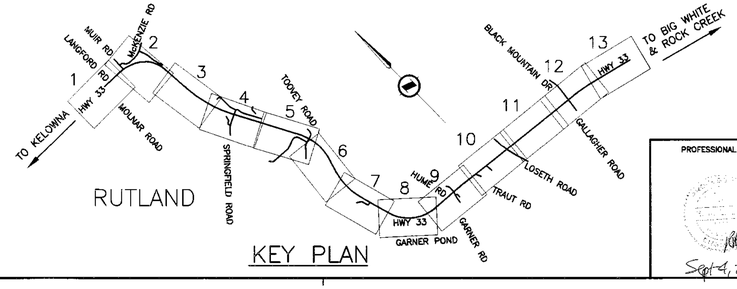
SIGNS ASSOCIATED WITH DRAWING R2-699-710

SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
G-007-2 O/H-Dx	LOSETH ROAD	INCL. IN ELECTRICAL DWG'S	STA: 133+05 L STA: 133+32 R
	HWY 33	INCL. IN ELECTRICAL DWG'S	STA: 133+13 R STA: 133+25 L
G-007-1Dx	TRAUT ROAD	1	STA: 130+32 R
G-008-2A	GARNER RD./HUME Rd	1	STA: 130+24 L
R-001-u	STOP	1	STA: 130+60 R
R-002	YIELD	2 2 2	STA: 526+50 L STA: 133+48 R STA: 526+95 R
R-009-1	DO NOT ENTER	4	STA: 526+50 L STA: 526+57 L STA: 526+88 R STA: 526+95 R
R-014-R	KEEP RIGHT	4	STA: 130+30 R STA: 131+22 L STA: 132+94 L STA: 133+37 R
R-004-x	MAX. SPEED (60km/h)	1	STA: 130+97 L **
W-038	MERGE	1	STA: 132+61 L **
W-054-L	OBJECT MARKER	4	STA: 130+30 R STA: 131+22 L STA: 132+94 L STA: 133+37 R
W-054-D	HAZARD MARKER DOUBLE	4	STA: 133+07 R STA. 133+31 L STA: 526+52 R STA: 526+93 L
W-012-xxx	PREPARE TO STOP WHEN AMBER FLASHING	INCL. IN ELECTRICAL DWG'S	STA: 132+20 R
TOTAL SIGNS ON DRAWING = 27			

** DENOTES NEW SIGN BANDED ON POLE

SIGNS ASSOCIATED WITH DRAWING R2-699-712

SIGN TYPE	DESCRIPTION	No. REQ'D.	LOCATION
G-007-2 O/H-Dx	HWY 33	INCL. IN ELECTRICAL DWG'S	STA: 138+71 R STA: 138+91 L
G-007-3 O/H Dx	BLACK MOUNTAIN DR./ GALLAGHER RD.	INCL. IN ELECTRICAL DWG'S	STA: 138+71 L
	GALLAGHER RD. / BLACK MOUNTAIN DR.	INCL. IN ELECTRICAL DWG'S	STA: 138+91 R
PS-015-1L	PEDESTRIAN CROSSING WITH BUTTON	INCL. IN ELECTRICAL DWG'S	STA: 138+71 L STA: 138+91 L STA: 138+91 R STA: 138+71 R
PS-015-1R	PEDESTRIAN CROSSING WITH BUTTON	INCL. IN ELECTRICAL DWG'S	STA: 138+71 L STA: 138+91 L STA: 138+91 R STA: 138+71 R
PS-003-L	PEDESTRIAN CROSSING	3	STA: 138+68 R STA: 138+94 L STA: 601+10 L
PS-003-R	PEDESTRIAN CROSSING	3	STA: 138+59 R STA: 139+02 L STA: 601+19 L
R-002	YIELD	2 2 2	STA: 139+02 R STA: 601+19 R STA: 600+65 L
R-009-1	DO NOT ENTER	4	STA: 600+62 L STA: 600+76 L STA: 601+10 R STA: 601+19 R
R-014-R	KEEP RIGHT	3	STA: 138+66 L STA: 138+96 R STA: 140+70 R
W-038	MERGE	1	STA: 138+10 L
W-054-L	OBJECT MARKER	3	STA: 138+66 L STA: 138+96 R STA: 140+70 R
W-054-D	HAZARD MARKER DOUBLE	4	STA: 138+67 R STA: 601+10 L STA: 138+96 L STA: 600+77 R
W-012-xxx	PREPARE TO STOP WHEN AMBER FLASHING	INCL. IN ELECTRICAL DWG'S	STA: 139+84 L
TOTAL SIGNS ON DRAWING = 27			



KEY PLAN

PROFESSIONAL SEAL

Sept 4, 2009

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED	R.S. BRAR R.B.	DATE	2007-03-30
DRAWN	R.S. BRAR R.B.	DATE	2007-03-30
CHECKED	S. KAI	DATE	2008-04-28
APPROVED	R. LEE	DATE	2009-08-28

Rev	Date	Description	Signature

REVISIONS

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

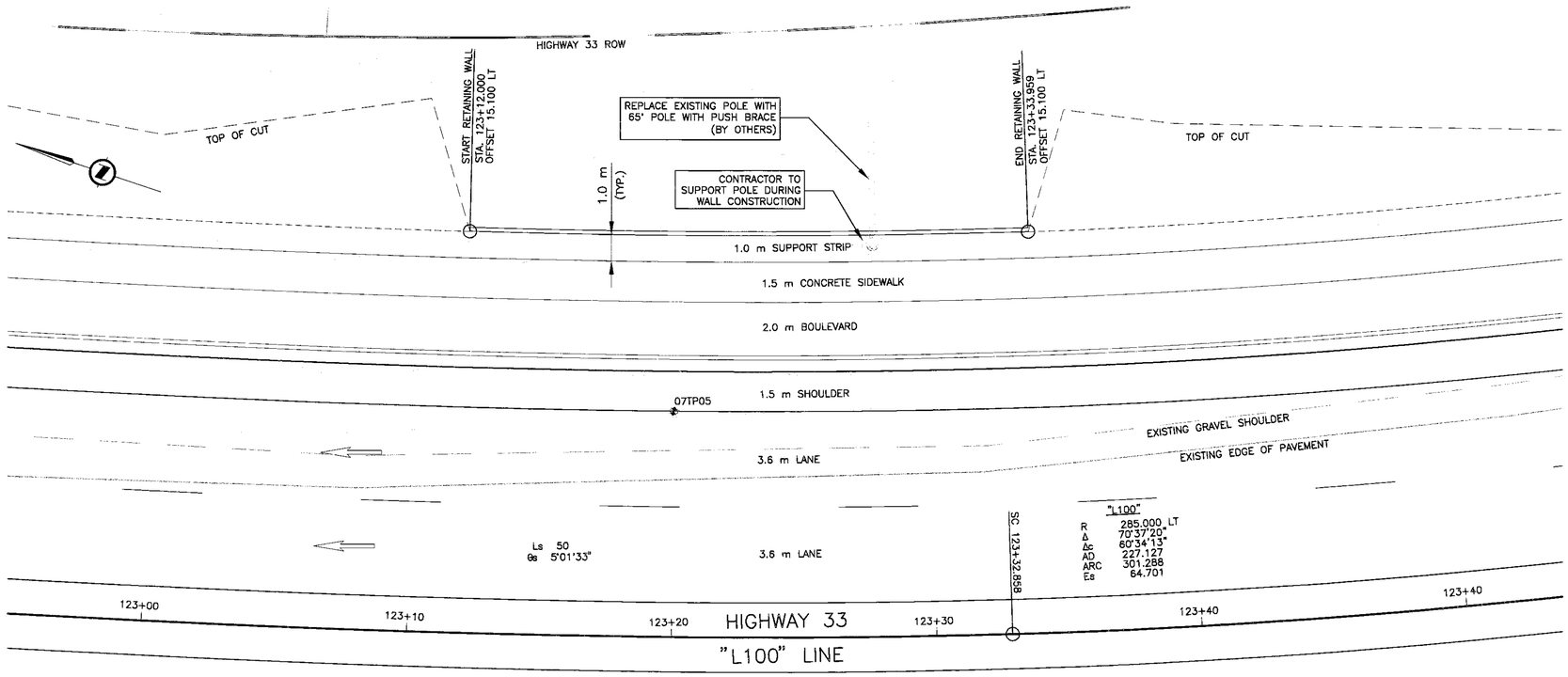
SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
SIGNS TABLES

SENIOR DESIGN ENGINEER

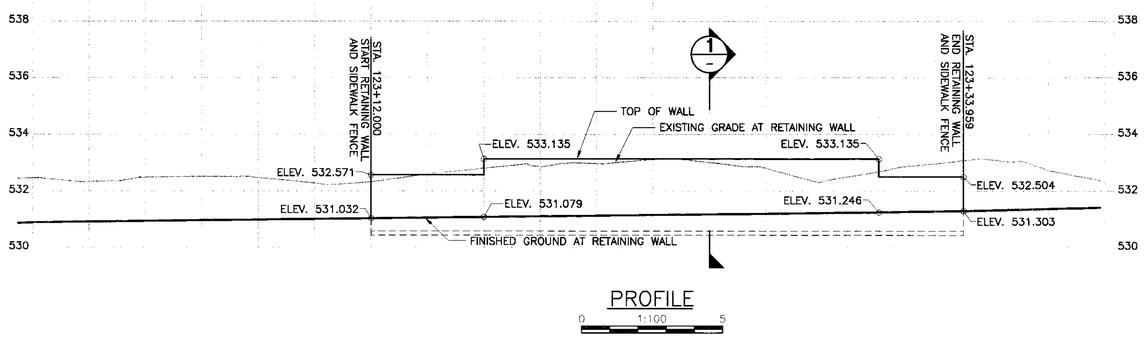
DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-714



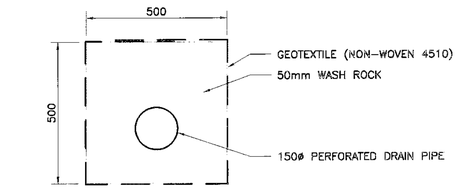
PLAN

0 1:100 5



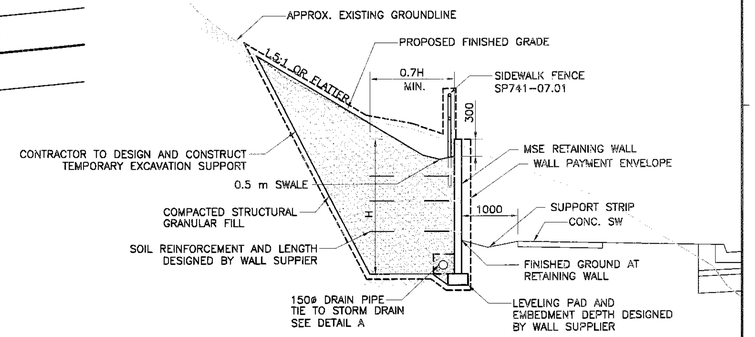
PROFILE

0 1:100 5



DETAIL A
RETAINING WALL SUB-DRAIN

0 1:10 0.5



SECTION 1
1:50

0 1:50 2

SURVEY CONTROL POINTS TABLE				
NAME	NORTHING	EASTING	ELEVATION	COMMENTS
G385	527330.836	329925.150	533.335	RP
G384	527554.395	329840.099	527.595	RP

NOTES:

1. MSE RETAINING WALL DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR. FULLY DETAILED MSE WALL DESIGNS MUST BE SUBMITTED TO THE MINISTRY REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION OF THE MSE WALL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT MSE WALLS CONFORM TO THE GEOMETRY AND ELEVATIONS SHOWN. ALL DIMENSIONS ARE IN METERS.
3. FOR MSE RETAINING WALL DESIGN AND DESIGN CRITERIA REFER TO THE SPECIAL PROVISIONS SECTION ON MECHANICALLY STABILIZED EARTH RETAINING WALL SYSTEMS. REFER TO SITE PLAN AND OTHER DRAWINGS FOR GENERAL NOTES AND OTHER APPLICABLE INFORMATION.
4. BENCH MARK SEE SURVEY CONTROL POINTS TABLE

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE AS SHOWN

DESIGNED V. WANG DATE 2009-01-28
DRAWN N. KRUCKENBERG DATE 2009-01-28
CHECKED R. LEE DATE 2009-01-29
APPROVED R. LEE DATE 2009-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

HWY 33 RETAINING WALL – 4028R

SENIOR DESIGN ENGINEER DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198	2	4028R-2

Project: Highway No. 33 - Four Laning	Client: SNC Lavalin	TESTPIT NO: 07TP05
Muir Road to Gallagher Road (ditch)	Method: Excavator	PROJECT NO: 8800230.001
Kelowna, BC	Contractor: AG Appel	

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	MOISTURE CONTENT	PLASTIC M.C. LIQUID (20 40 60 80)	◆UNCONFINED (kPa)◆ (50 100 150 200) ▲POCKET PEN. (kPa)▲ (100 200 300 400)	Depth (ft)
0	TOPSOIL						0
	GRAVEL & SAND (FILL), scattered 6" sizes, moist, brown		S-1	4.4	●		
	SILT TILL, sandy, some gravel, scattered cobbles upto 5", wet, compact, brown		S-2	8.3	●		
1							
	- trace groundwater seepage at 1.1m		S-3	8	●		
	- moist, compact to dense at 1.4m		S-4	10.9	●		
	End of test pit at 1.5m below ground surface Test pit stayed open to 1.5m below ground surface No groundwater accumulation upon completion						5
2							
3							10
4							13

eba	LOGGED BY: LD	COMPLETION DEPTH: 1.5m
	REVIEWED BY: GM	COMPLETE: 3/21/2007
	DRAWING NO: 07TP05	Page 1 of 1

GEOTECHNICAL 8800230.001.GPJ.EBA.GDT 07/03/28

MATERIALS CLASSIFICATION LEGEND

MAJOR DIVISION		SYMBOL	SOIL TYPE
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	WELL GRADED GRAVELS OR GRAVEL-SAND MIXTURES, < 5% FINES
		GP	POORLY-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, < 5% FINES
		GM*	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
		GC*	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS	SW	WELL-GRADED SANDS OR GRAVELLY SANDS, <5% FINES
		SP	POORLY-GRADED SANDS OR GRAVELLY SANDS, <5% FINES
		SM*	SILTY SANDS SAND-SILT MIXTURES
		SC*	CLAYEY SANDS SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS (WL<50)	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		OL	ORGANIC SILTS AND ORGANIC SILT-CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (WL>50)	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, PLASTIC SILTS
		CH	INORGANIC CLAYS OF HIGH PLASTICITY FAT CLAYS
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY ORGANIC SILTS
ORGANIC SOILS		Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS
TOPSOIL		TS	TOPSOIL WITH ROOTS, ETC.
COBBLES		SB	ROCK FRAGMENTS AND COBBLES, PARTICLE SIZE 75mm TO 300mm
BOULDERS		LB	BOULDERS, PARTICLE SIZE OVER 300mm
BEDROCK		BR	BEDROCK

FOR SOILS HAVING 5 - 12% PASSING .075 SIEVE, USE DUAL SYMBOL

*GM1; GC1; SM1; SC1: 12 - 20%
*GM2; GC2; SM2; SC2: 20 - 30%
*GM3; GC3; SM3; SC3: 30 - 40%
*GM4; GC4; SM4; SC4: 40 - 50%

} PASSING 0.075mm SIEVE

NOTES
1. INFORMATION PROVIDED HEREIN IS INTENDED TO BE USED BY THE MINISTRY OF TRANSPORTATION IN CONJUNCTION WITH ALL OTHER DATA RELEVANT TO THE SITE. THE SOIL AND GROUND WATER CONDITIONS SHOWN ARE REPRESENTATIVE AT THE TEST HOLE LOCATIONS ON THE DATES INDICATED. CONDITIONS ARE SUBJECT TO CHANGE WITH TIME. THE MINISTRY OF TRANSPORTATION SHALL NOT BE HELD LIABLE FOR ANY CLAIMS OR ACTIONS ARISING FROM THE USE OR INTERPRETATION OF THE DATA HEREIN PROVIDED.
2. GRADATION AND CLASSIFICATION OF SOIL ARE BASED ON A VISUAL ESTIMATE UNLESS OTHERWISE NOTED UNDER "OTHER TEST".
3. COBBLE AND BOULDER SIZES ARE DRILLER'S ESTIMATE OF THE DIMENSION ENCOUNTERED.

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SCALE N.T.S.

DESIGNED V. WANG V.W. DATE 2009-01-28
DRAWN N. KRUCKEMBERG DATE 2009-01-29
CHECKED R. LEE DATE 2009-01-29
APPROVED R. LEE DATE 2009-08-28

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

BORE HOLE LOG

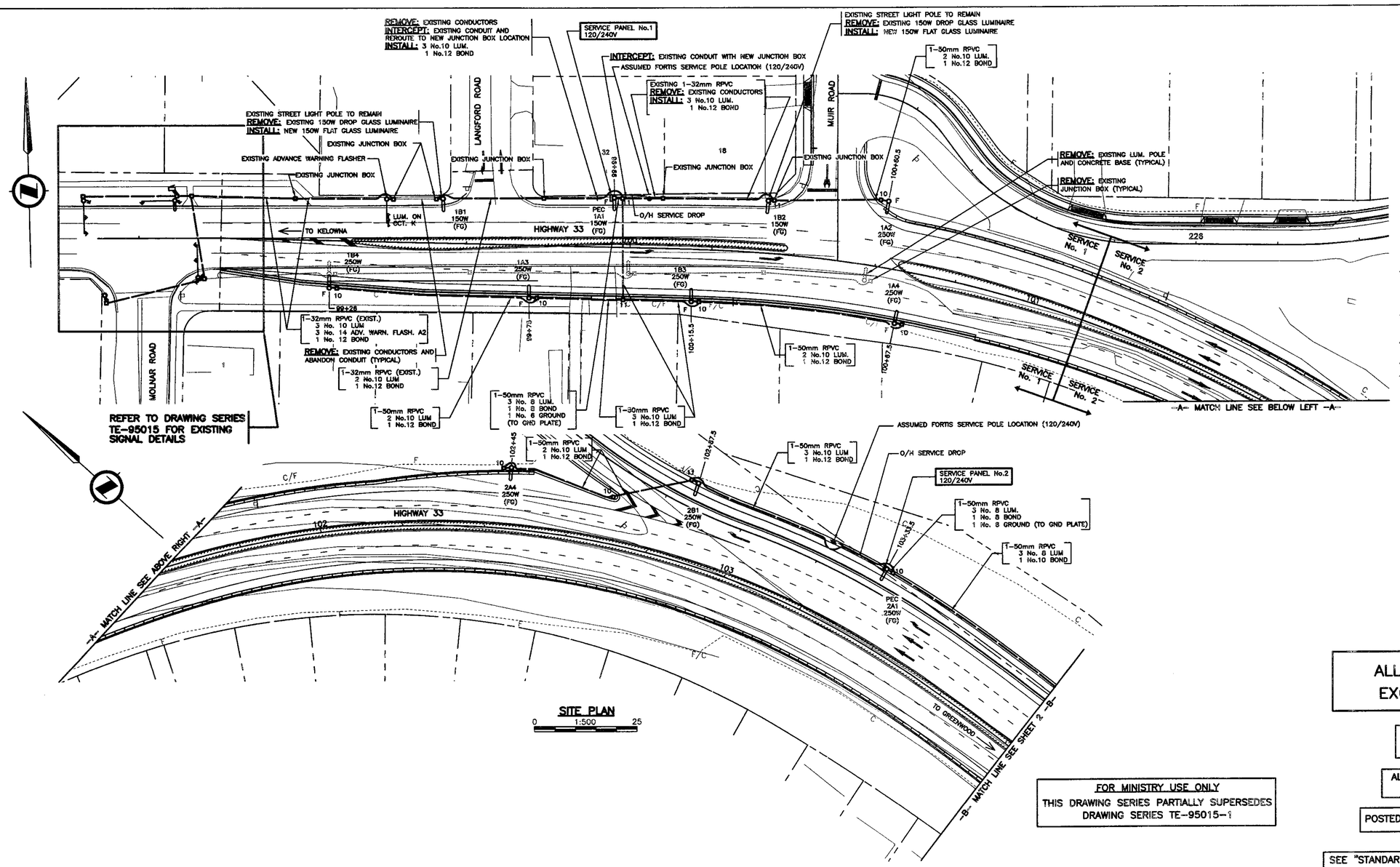
PROFESSIONAL SEAL — Sept 4, 2009

Rev	Date	Description	Signature

REVISIONS

SENIOR DESIGN ENGINEER — DATE Sept 4, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198	2	4028R-3



NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE ELECTRICAL SPECIAL PROVISIONS ISSUED WITH THIS CONTRACT.
2. CONDUCTORS FROM JUNCTION BOX TO LUMINAIRE POLE SHALL BE:
   2 No.10 RW90
   1 No.12 RW90
   — 50mm RPVC (UNLESS OTHERWISE NOTED)
3. ALL CONDUITS FROM JUNCTION BOXES TO BASES ARE TO BE 50mm RPVC.
4. JUNCTION BOXES SHALL BE POSITIONED BEHIND OR, AS AN ALTERNATIVE, TO THE SIDE, BUT NOT IN FRONT OF POLES.
5. EACH SHIELDED CABLE SHALL RUN CONTINUOUS WITH NO SPLICES, FROM THE CONTROLLER TO THE RESPECTIVE LOOP.
6. ALL SIGNAL HEAD SECTIONS SHALL BE WIRED SEPARATELY FROM THE HANDHOLE OF THE POLE TO EACH HEAD INCLUDING A SEPARATE NEUTRAL AND BONDING CONDUCTOR FOR EACH HEAD.
7. LUMINAIRE NUMBERING EXAMPLE: 1A2
   SERVICE No. — 1 CCT. LETTER — A LUM. No. — 2
8. WHERE POSSIBLE, POLES SHALL BE POSITIONED WITH THE HANDHOLE IN THE BACK OR IF NOT POSSIBLE, ON THE DOWNSTREAM TRAFFIC SIDE.
9. ALL CONCRETE BASES AND JUNCTION BOX SYMBOLS ARE NOT TO SCALE.
10. THE CONTRACTOR SHALL NOT PRE-DRILL HOLES IN A SIGNAL POLE UNTIL AFTER THE BASE FOR THAT POLE HAS BEEN INSTALLED. THE CONTRACTOR SHALL ADVISE THE MINISTRY REPRESENTATIVE OF ANY ADJUSTMENTS MADE TO THE BASE LOCATION WHICH WILL EFFECT THE LOCATIONS OF HARDWARE TO BE MOUNTED ON THAT POLE PRIOR TO DRILLING.
11. WHERE THREE OR MORE SECONDARY/PEDESTRIAN HEADS ARE BEING MOUNTED ON THE POLE SHAFT, ORIENT THE PEDESTRIAN HEAD MOUNTING BRACKETS WITH THE WIREWAY ON TOP.
12. WHERE TWO OR MORE SECONDARY HEADS ARE BEING MOUNTED IN THE SAME SHAFT, ALL SECONDARY HEADS SHALL HAVE TUNNELS.
13. ALL NEW JUNCTION BOXES SHALL HAVE STEEL LIDS.
14. ALL CONDUCTORS SHALL BE RW90 STRANDED COPPER UNLESS SHOWN OTHERWISE.

ALL EQUIPMENT IS NEW EXCEPT WHERE NOTED

DO NOT USE THIS DRAWING FOR PAVEMENT MARKINGS

ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE NOTED

POSTED SPEED LIMIT 60 km/h ON HIGHWAY 33

SEE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" FOR APPLICABLE STANDARD DRAWINGS

FOR MINISTRY USE ONLY
THIS DRAWING SERIES PARTIALLY SUPERSEDES DRAWING SERIES TE-95015-1

LEGEND

- FUTURE CONCRETE BASE AND LUMINAIRE POLE (SINGLE)
- F — LUMINAIRE POLE (SINGLE) 'F' DENOTES FRANGIBLE BASE
- LUMINAIRE POLE (DOUBLE)
- PRIVATE LUMINAIRE (BASE VARIABLE)
- POST TOP MOUNTED LUMINAIRE
- WALL MOUNTED LUMINAIRE
- 10 — JUNCTION BOX — No. DENOTES TYPE
- CJB — CONCRETE JUNCTION BOX OR VAULT

- SIGNAL POLE WITH SIGNAL HEAD MOUNTED ON SIDE
- COMBINATION LUMINAIRE/TRAFFIC SIGNAL POLE
- ILLUMINATED SIGN WITH AMBER FLASHERS
- COMBINATION LUMINAIRE/ILLUMINATED SIGN WITH AMBER FLASHERS
- SIGN POLE (NON-ILLUMINATED)
- ILLUMINATED SIGN POLE
- COMBINATION LUMINAIRE/ NON-ILLUMINATED SIGN
- COMBINATION LUMINAIRE/ ILLUMINATED SIGN

- PEC — PHOTO ELECTRIC CELL
- RPVC — RIGID P.V.C. CONDUIT
- R.C. — RIGID STEEL CONDUIT
- F.C. — FLEXIBLE CONDUIT (LIQUID TIGHT)
- OVERHEAD FLASHING BEACON
- POST MOUNTED FLASHER
- BACKGUY
- POWER POLE
- TELEPHONE POLE
- POWER/TELEPHONE POLE
- A,B,AT, A2(T) — SIGNAL HEAD VEHICLE PHASE (T) DENOTES TUNNEL VISOR
- PA,PB, PA1,PB2 — SIGNAL HEAD PEDESTRIAN PHASE
- ppb — PEDESTRIAN PUSHBUTTON

- TEST SWITCH
- BREAKER
- NEUTRAL BAR
- DIAMOND DETECTOR LOOP (WITH LOOP LEADER)
- PRE-FORMED DETECTOR LOOP
- ROUND DETECTOR LOOP
- RECTANGULAR COUNT LOOP
- QUADRAPOLE DETECTOR LOOP

- RAISED CURB
- PROPERTY LINE
- EDGE OF GRAVEL SHOULDER
- EDGE OF PAVEMENT
- PAINT LINE
- FUTURE ELECTRICAL AND GEOMETRICS
- ELECTRICAL EQUIPMENT TO BE REMOVED
- PROPOSED UNDERGROUND CONDUIT
- EXISTING UNDERGROUND CONDUIT
- FENCE
- CORRUGATED METAL PIPE (CULVERT)
- U/G UTILITY:
  - 'G' DENOTES GAS
  - 'S' DENOTES STORM DRAINS/SEWERS
  - 'W' DENOTES WATER
  - 'UE' DENOTES ELECTRIC
  - 'UT' DENOTES TELEPHONE
  - 'SAN' DENOTES SANITARY SEWER

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DMD PROJECT No. 1462-05-01 of 12

CAD FILENAME 070311.dwg

REV	DATE	REVISIONS	DRAWN
	AUG/09	DRAWING ISSUED	ER

BRITISH COLUMBIA — The Best Place on Earth
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
ELECTRICAL ENGINEERING CENTRE

LIGHTING INSTALLATION AND SIGNAL MODIFICATIONS HIGHWAY 33 4 LANING FROM MOLNAR ROAD TO GALLAGHER ROAD KELOWNA

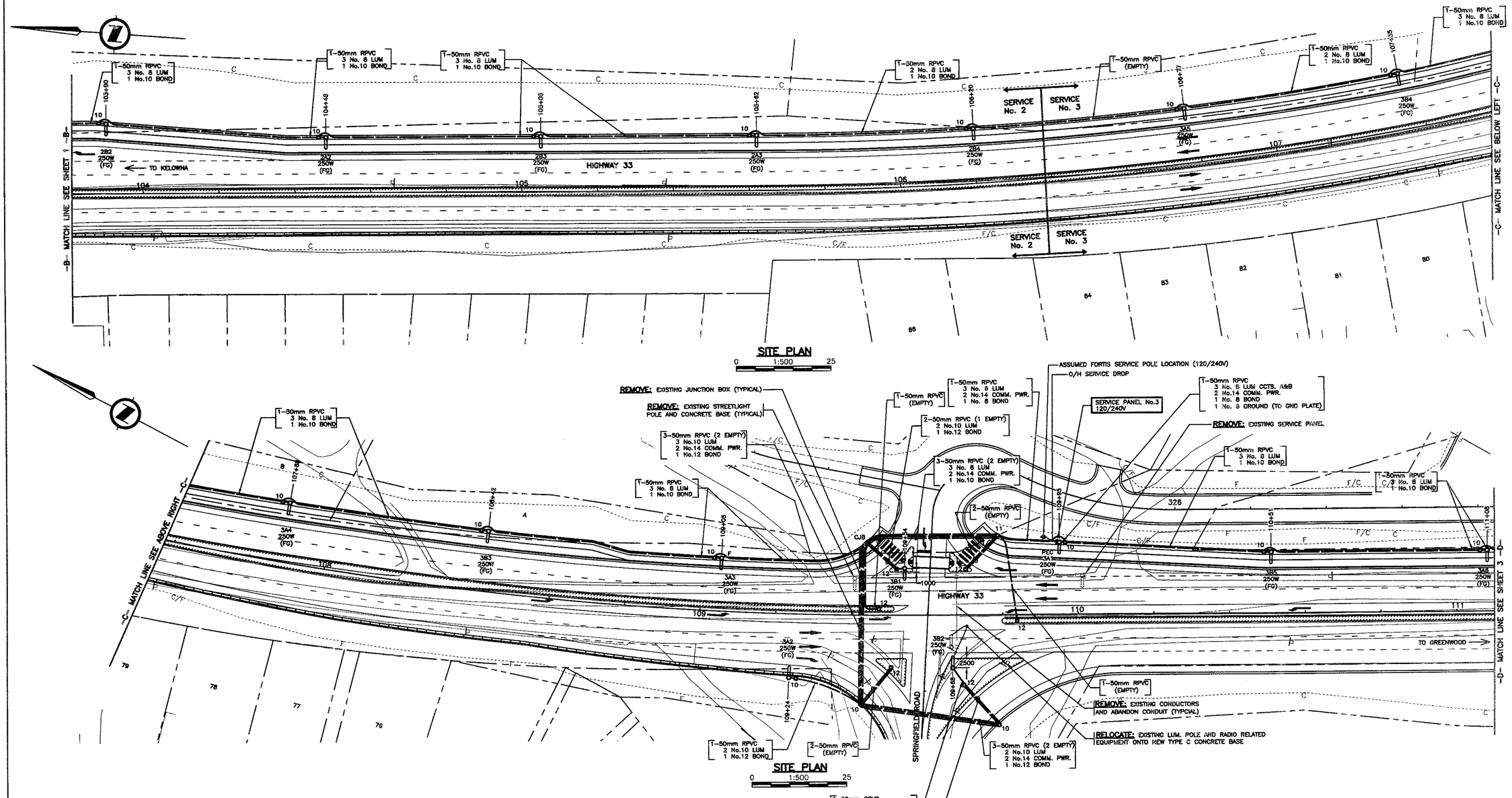
SITE PLAN — LEGEND — NOTES

ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE SEP 11 2009

B. S. WONG — PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA

DESIGNED	NB	DATE	AUG/09
QUALITY CONTROL	MIS	DATE	AUG/09
QUALITY ASSURANCE	DJW	DATE	AUG/09
TRAN ELECTRICAL DESIGN REVIEW	ABC	DATE	Sep 2/09

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET 1 OF 12		5	2	TE-07031-1



REFER TO SHEET 1 FOR LEGEND

REFER TO SHEET 1 FOR NOTES

DO NOT USE THIS DRAWING FOR PAVEMENT MARKINGS

ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE NOTED

POSTED SPEED LIMIT 60 km/h ON HIGHWAY 33

SEE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" FOR APPLICABLE STANDARD DRAWINGS

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THIS DRAWING SERIES SUPERSEDES DRAWING SERIES TE-05070-1

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ELECTRICAL ENGINEERING CENTRE

LIGHTING INSTALLATION AND SIGNAL MODIFICATIONS HIGHWAY 33 4 LANING FROM MOLNAR ROAD TO GALLAGHER ROAD KELOWNA

SITE PLAN

ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE SEP 01 2009

DESIGNED	WB	DATE AUG/09
QUALITY CONTROL	MIS	DATE AUG/09
QUALITY ASSURANCE	DJW	DATE AUG/09
TRAN ELECTRICAL DESIGN REVIEW	ABJC	DATE Sep 2/09

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
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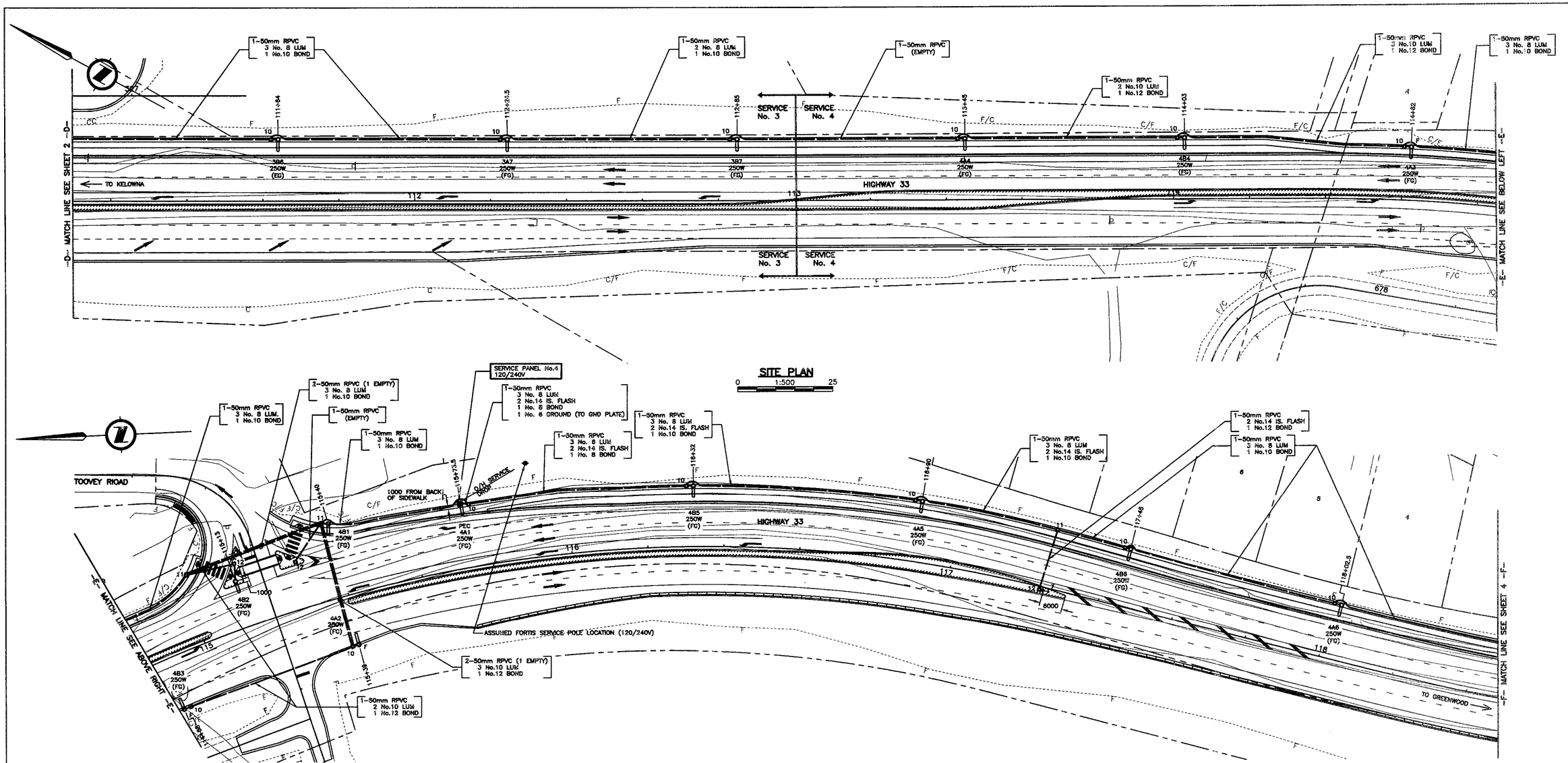

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POSTED SPEED LIMIT 60 km/h ON HIGHWAY 33

SEE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" FOR APPLICABLE STANDARD DRAWINGS

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ELECTRICAL ENGINEERING CENTRE

LIGHTING INSTALLATION AND SIGNAL MODIFICATIONS HIGHWAY 33 4 LANING FROM MOLNAR ROAD TO GALLAGHER ROAD KELOWNA

SITE PLAN

ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION) DATE SEP 01 2009

DESIGNED	NB	DATE AUG/09
QUALITY CONTROL	MIS	DATE AUG/09
QUALITY ASSURANCE	DJW	DATE AUG/09
TRAN ELECTRICAL DESIGN REVIEW	ABC	DATE Sep 2/09

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
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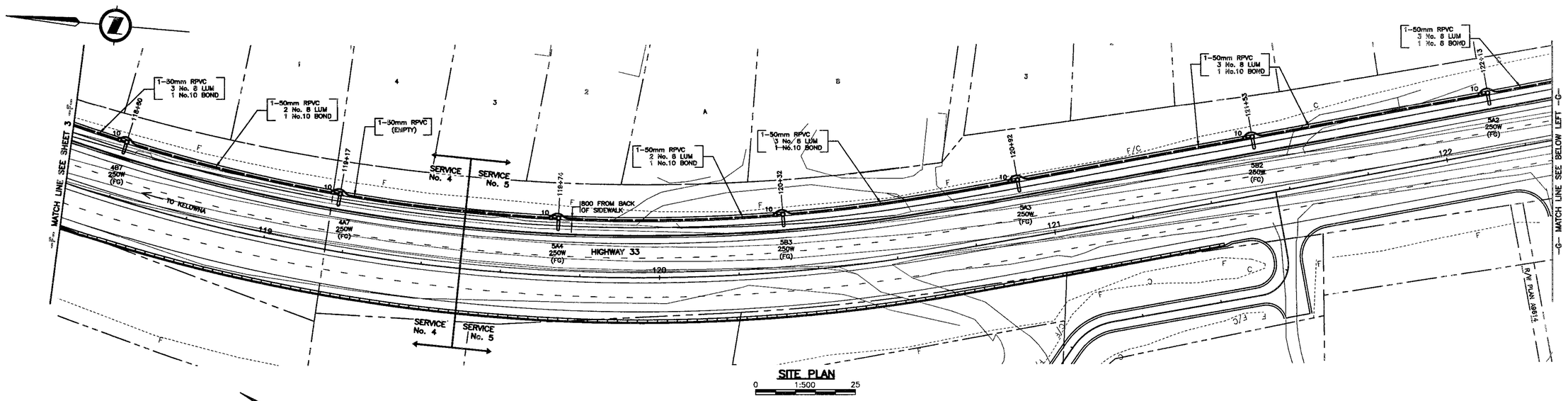

SITE PLAN

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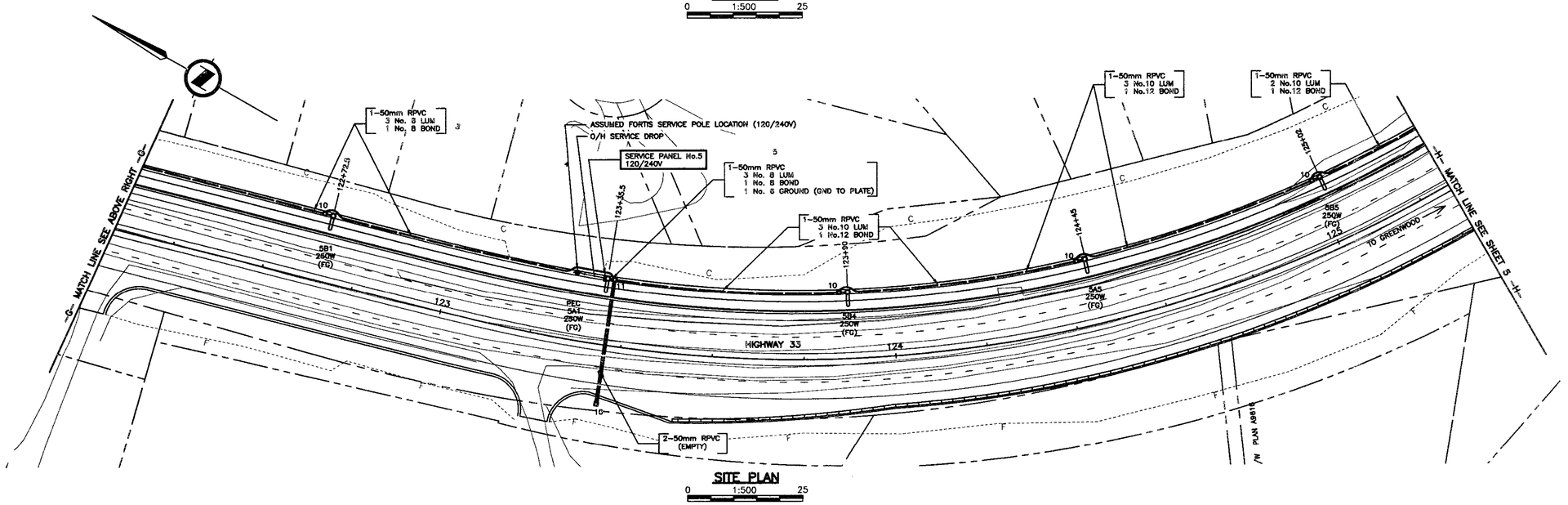

SITE PLAN

0 1:500 25

REFER TO SHEET 1 FOR LEGEND

REFER TO SHEET 1 FOR NOTES

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POSTED SPEED LIMIT 60 km/h ON HIGHWAY 33

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ELECTRICAL ENGINEERING CENTRE

LIGHTING INSTALLATION AND SIGNAL MODIFICATIONS HIGHWAY 33 4 LANING FROM MOLNAR ROAD TO GALLAGHER ROAD KELOWNA

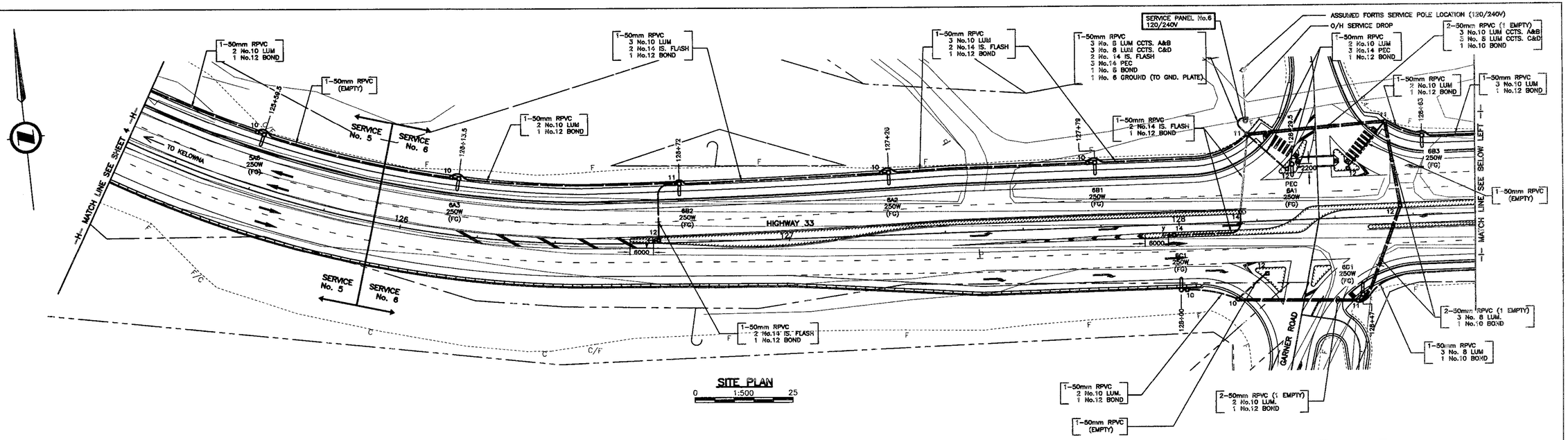
SITE PLAN

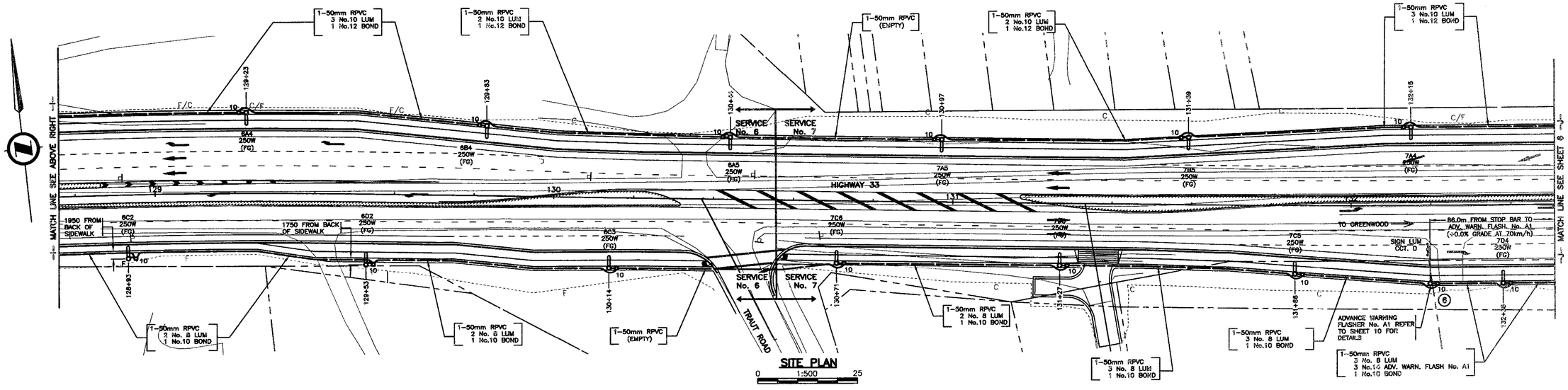
ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE SEP 01 2009

Th. J. WONG

DESIGNED	NB	DATE	AUG/09
QUALITY CONTROL	MIS	DATE	AUG/09
QUALITY ASSURANCE	DJW	DATE	AUG/09
TRAM ELECTRICAL DESIGN REVIEW	ABC	DATE	Sep 2/09

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET 4 OF 12		5	2	TE-07031--4





REFER TO SHEET 1 FOR LEGEND

REFER TO SHEET 1 FOR NOTES

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POSTED SPEED LIMIT 60 km/h ON HIGHWAY 33

SEE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" FOR APPLICABLE STANDARD DRAWINGS

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ELECTRICAL ENGINEERING CENTRE

LIGHTING INSTALLATION AND SIGNAL MODIFICATIONS HIGHWAY 33 4 LANING FROM MOLNAR ROAD TO GALLAGHER ROAD KELOWNA

SITE PLAN

ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE SEP 01 2009

DESIGNED	NB	DATE AUG/09
QUALITY CONTROL	MIS	DATE AUG/09
QUALITY ASSURANCE	DJW	DATE AUG/09
TRAN ELECTRICAL DESIGN REVIEW	ABC	DATE Sep 2009

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET 5 OF 12		5	2	TE-07031-5

REFER TO SHEETS 9 & 10 FOR SIGNAL ENLARGEMENT & ELEVATIONS

SERVICE PANEL No. 7 120/240V

1-50mm RPVC 3 No. 8 LUM 3 No.14 ADV. WARN. FLASH. No. A1 1 No.10 BOND

1-50mm RPVC 3 No.10 LUM 1 No.12 BOND

1-50mm RPVC 3 No. 8 LUM 3 No.14 ADV. WARN. FLASH. No. A2 1 No.10 BOND

1-50mm RPVC 3 No. 8 LUM 1 No.10 BOND

1-50mm RPVC 2 No. 8 LUM 1 No.10 BOND

1-50mm RPVC (EMPTY)

1-50mm RPVC 2 No.10 LUM 1 No.12 BOND

ADVANCE WARNING FLASHER No. A2 REFER TO SHEET 10 FOR DETAILS

SIGN LUM CCT. B

SERVICE No. 7

SERVICE No. 8

VAULT

CJB

PEC 7A1 250W (FG)

7B1 150W (FG)

7B2 250W (FG)

7A2 250W (FG)

7A3 250W (FG)

7B3 250W (FG)

7B4 250W (FG)

7C1 150W (FG)

7C2 250W (FG)

7D1 250W (FG)

7D2 250W (FG)

7C3 250W (FG)

7D3 250W (FG)

7C4 250W (FG)

888 250W (FG)

885 250W (FG)

HIGHWAY 33

TO KELOWNA

80.0m FROM STOP BAR TO ADV. WARN. FLASH. No. A2 (0.0% GRADE AT ULTIMATE 70km/h)

80.0m FROM STOP BAR TO ADV. WARN. FLASH. No. A1 (+0.0% GRADE AT ULTIMATE 70km/h)

LOSETH ROAD

MATCH LINE SEE SHEET 5

MATCH LINE SEE BELOW LEFT

SITE PLAN

0 1:500 25

REFER TO SHEETS 11 & 12 FOR SIGNAL ENLARGEMENT & ELEVATIONS

SERVICE PANEL No. 8 120/240V

1-50mm RPVC 2 No.10 LUM 1 No.12 BOND

1-50mm RPVC 3 No.10 LUM 1 No.12 BOND

REMOVE: EXIST. SERVICE PANEL

REMOVE: ALL CONDUCTORS AND ABANDON CONDUIT (TYPICAL)

REMOVE: ADV. WARN. FLASH. POLE & BASE

REMOVE: & REUSE EXIST. SIGN ASSEMBLY & SIGN LUM ON NEW ADVANCE WARNING SIGN.

1-50mm RPVC 3 No. 8 LUM 1 No.10 BOND

1-50mm RPVC 3 No.10 LUM 3 No.14 ADV. WARN. FLASH No. 2 1 No.12 BOND

REMOVE: EXISTING ADV. WARN FLASH AND CONCRETE BASE. DISCARD BASE OFF-SITE.

REMOVE: & REUSE EXIST. SIGN ASSEMBLY & SIGN LUM ON NEW ADVANCE WARNING SIGN.

ADVANCE WARNING FLASHER No. 2 REFER TO SHEET 12 FOR DETAILS

150m FROM EDGE OF PAVEMENT

SIGN LUM CCT. B

BELL MOUNTAIN ROAD

GALLAGHER ROAD

OSWELL DRIVE

8A1 250W (FG)

8B1 150W (FG)

8A2 150W (FG)

8B2 250W (FG)

8A3 250W (FG)

8B3 250W (FG)

8A4 250W (FG)

8B4 250W (FG)

8A5 250W (FG)

8B5 250W (FG)

8A6 250W (FG)

8B6 250W (FG)

8A7 250W (FG)

8B7 250W (FG)

89.0m FROM STOP BAR TO ADV. WARN. FLASH. No. 2 (-4.0% GRADE AT 70km/h)

80.0m FROM STOP BAR TO ADV. WARN. FLASH. No. 1 (0.0% GRADE AT ULTIMATE 70km/h)

TO GREENWOOD

SIGN LUM CCT. A

REMOVE: EXIST. JB (TYP.)

REMOVE: EXIST. LUM. POLE & CONCRETE BASE (TYP.)

ADVANCE WARNING FLASHER No. 1 REFER TO SHEET 12 FOR DETAILS

1-50mm RPVC 2 No. 8 LUM 1 No.10 BOND

1-50mm RPVC 3 No. 8 LUM 1 No.10 BOND

1-50mm RPVC 3 No. 8 LUM 3 No.14 ADV. WARN. FLASH No. 1 1 No.10 BOND

1-50mm RPVC 2 No.14 IS. FLASH. 1 No.12 BOND

MATCH LINE SEE ABOVE RIGHT

MATCH LINE SEE SHEET 7

SITE PLAN

0 1:500 25

REFER TO SHEET 1 FOR LEGEND

REFER TO SHEET 1 FOR NOTES

DO NOT USE THIS DRAWING FOR PAVEMENT MARKINGS

ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE NOTED

POSTED SPEED LIMIT 60 km/h ON HIGHWAY 33

SEE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" FOR APPLICABLE STANDARD DRAWINGS

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DMD PROJECT No. 1462-05-06 of 12

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MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
ELECTRICAL ENGINEERING CENTRE

CAD FILENAME 070318.dwg

REV	DATE	REVISIONS	DRAWN
	AUG/09	DRAWING ISSUED	ER

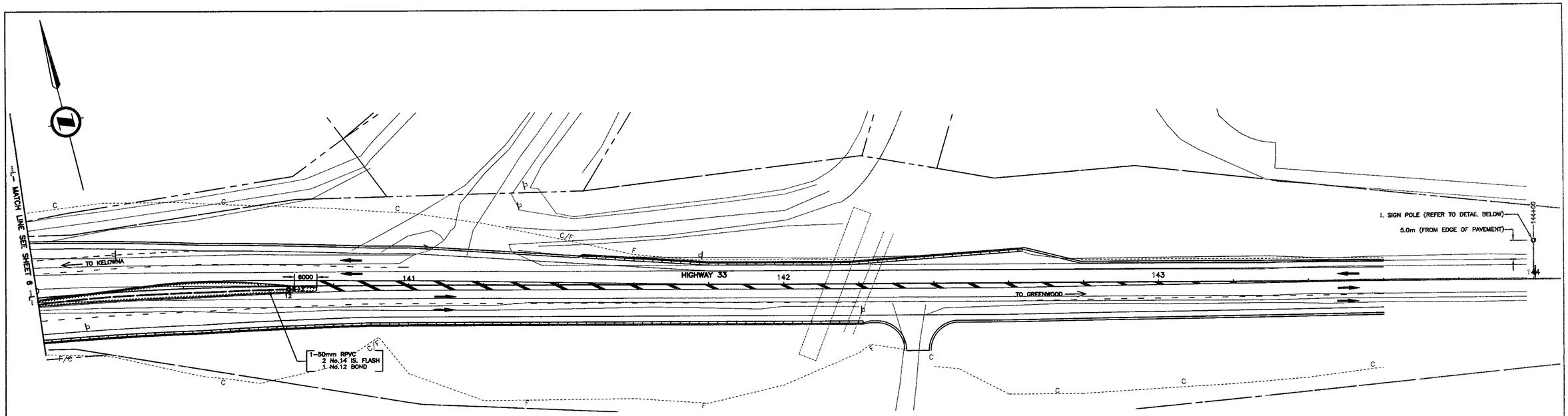
LIGHTING INSTALLATION AND SIGNAL MODIFICATIONS HIGHWAY 33 4 LANING FROM MOLNAR ROAD TO GALLAGHER ROAD KELOWNA

SITE PLAN

ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISIONS) E. N. WONG
DATE SEP 01 2009

DESIGNED	NB	DATE AUG/09
QUALITY CONTROL	DWW	DATE AUG/09
QUALITY ASSURANCE	DJW	DATE AUG/09
TRAK ELECTRICAL DESIGN REVIEW	ABC	DATE Sep 2009

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET 6 OF 12		5	2	TE-07031-6

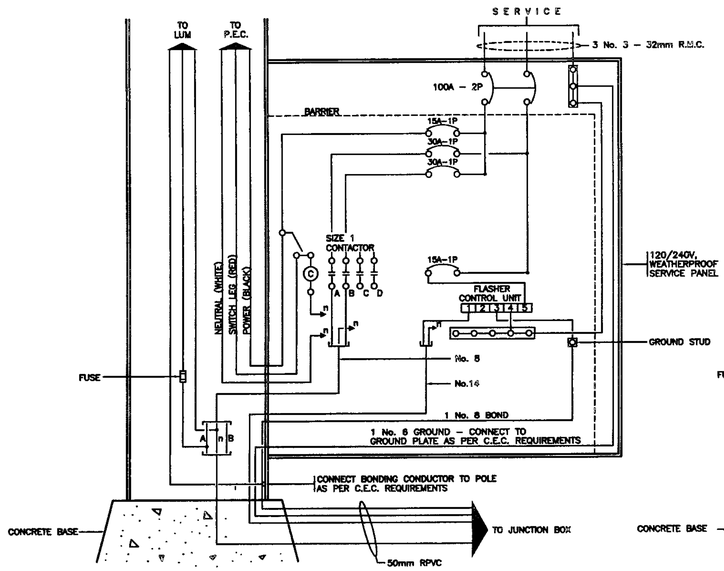


SITE PLAN

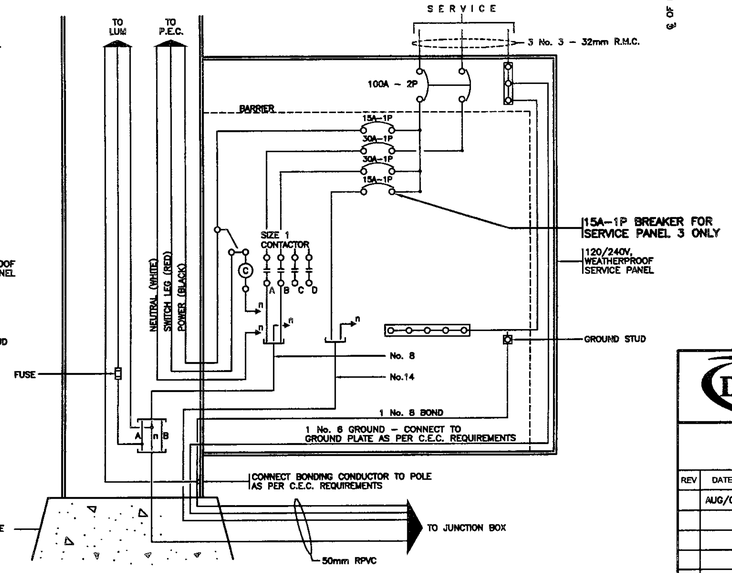
0 1:500 25

ILLUMINANCE DESIGN CRITERIA		
ITEM	DESIGN REQUIREMENTS	DESIGN ACHIEVED
STREET NAME(S)	HIGHWAY 33	
PEDESTRIAN CONFLICT	LOW	
ROAD CLASSIFICATION	ARTERIAL	
ILLUMINATION TYPE	11.0m – 250W H.P.S. (FG) LUMINAIRE	
SPACING (MAX)	31.5m STAGGERED	
ILLUMINANCE LEVEL (AVG.)	9.0 LUX	11.4 LUX
ILLUMINANCE UNIFORMITY RATIO (AVG.:MIN.)	3:1	2.7:1

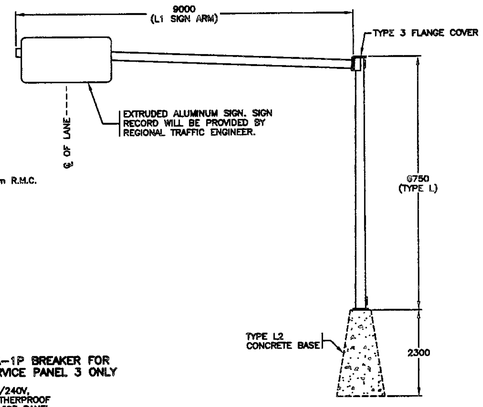
ILLUMINANCE DESIGN CRITERIA		
ITEM	DESIGN REQUIREMENTS	DESIGN ACHIEVED
STREET NAME(S)	HIGHWAY 33 (HALF ROAD)	
PEDESTRIAN CONFLICT	LOW	
ROAD CLASSIFICATION	ARTERIAL	
ILLUMINATION TYPE	11.0m – 250W H.P.S. (FG) LUMINAIRE	
SPACING (MAX)	63.0m ONE SIDED (HALF ROAD)	
ILLUMINANCE LEVEL (AVG.)	9.0 LUX	10.1 LUX
ILLUMINANCE UNIFORMITY RATIO (AVG.:MIN.)	3:1	2.9:1



WIRING DIAGRAM – SERVICE PANEL No. 4
N.T.S.



WIRING DIAGRAM – SERVICE PANEL No. 1, 2, 3 & 5
N.T.S.



ELEVATION

0 1:75 5

ALL EQUIPMENT IS NEW EXCEPT WHERE NOTED

REFER TO SHEET 1 FOR LEGEND

REFER TO SHEET 1 FOR NOTES

DO NOT USE THIS DRAWING FOR PAVEMENT MARKINGS

ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE NOTED

POSTED SPEED LIMIT 70 km/h ON HIGHWAY 33

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DMD PROJECT No. 1462-05-07 of 12

CAD FILENAME 070317.dwg

REV	DATE	REVISIONS	DRAWN
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ELECTRICAL ENGINEERING CENTRE

LIGHTING INSTALLATION AND SIGNAL MODIFICATIONS
HIGHWAY 33 4 LANING FROM MOLNAR ROAD TO GALLAGHER ROAD
KELOWNA

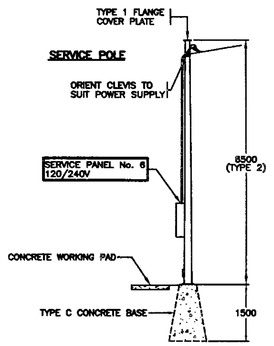
SITE PLAN – WIRING DIAGRAMS

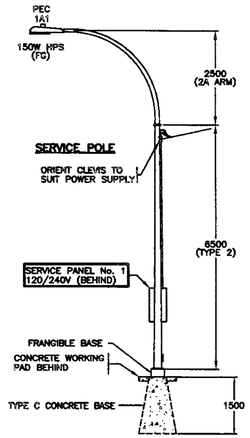
ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE SEP 01 2009

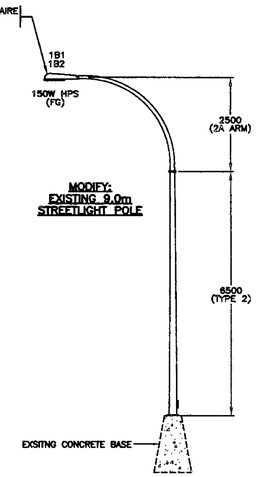
R. S. WONG

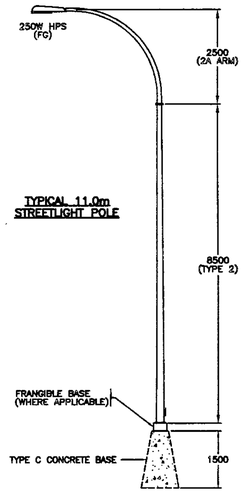
DESIGNED	NB	DATE	AUG/09
QUALITY CONTROL	RS	DATE	AUG/09
QUALITY ASSURANCE	DJW	DATE	AUG/09
TRAN ELECTRICAL DESIGN REVIEW	ABC	DATE	Sep 2/09

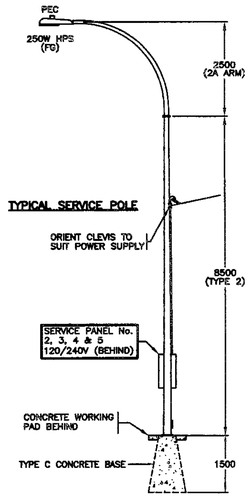
SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET 7 OF 12		5	2	TE–07031–7





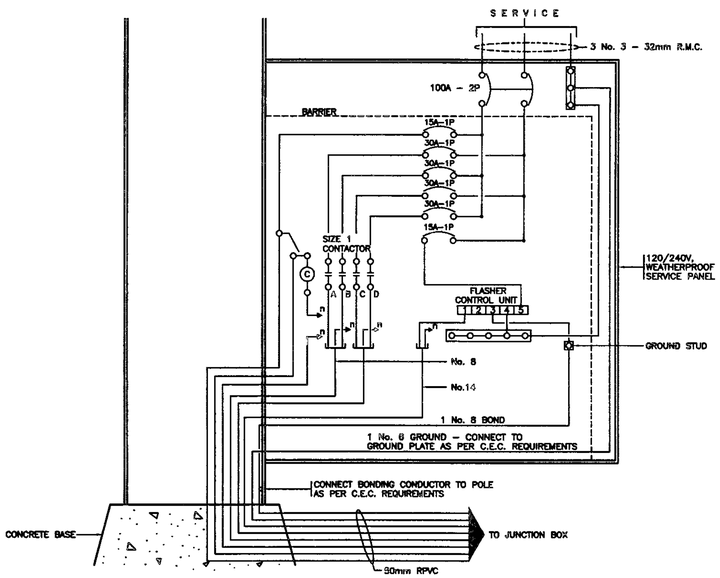






ELEVATIONS

0 1:75 5



WIRING DIAGRAM – SERVICE PANEL No. 6
N.T.S.

ALL EQUIPMENT IS NEW EXCEPT WHERE NOTED

REFER TO SHEET 1 FOR LEGEND

REFER TO SHEET 1 FOR NOTES

DO NOT USE THIS DRAWING FOR PAVEMENT MARKINGS

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DMD PROJECT No. 1462-05-08 of 12

CAD FILENAME 070318.dwg

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	AUG/09	DRAWING ISSUED	ER

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ELECTRICAL ENGINEERING CENTRE

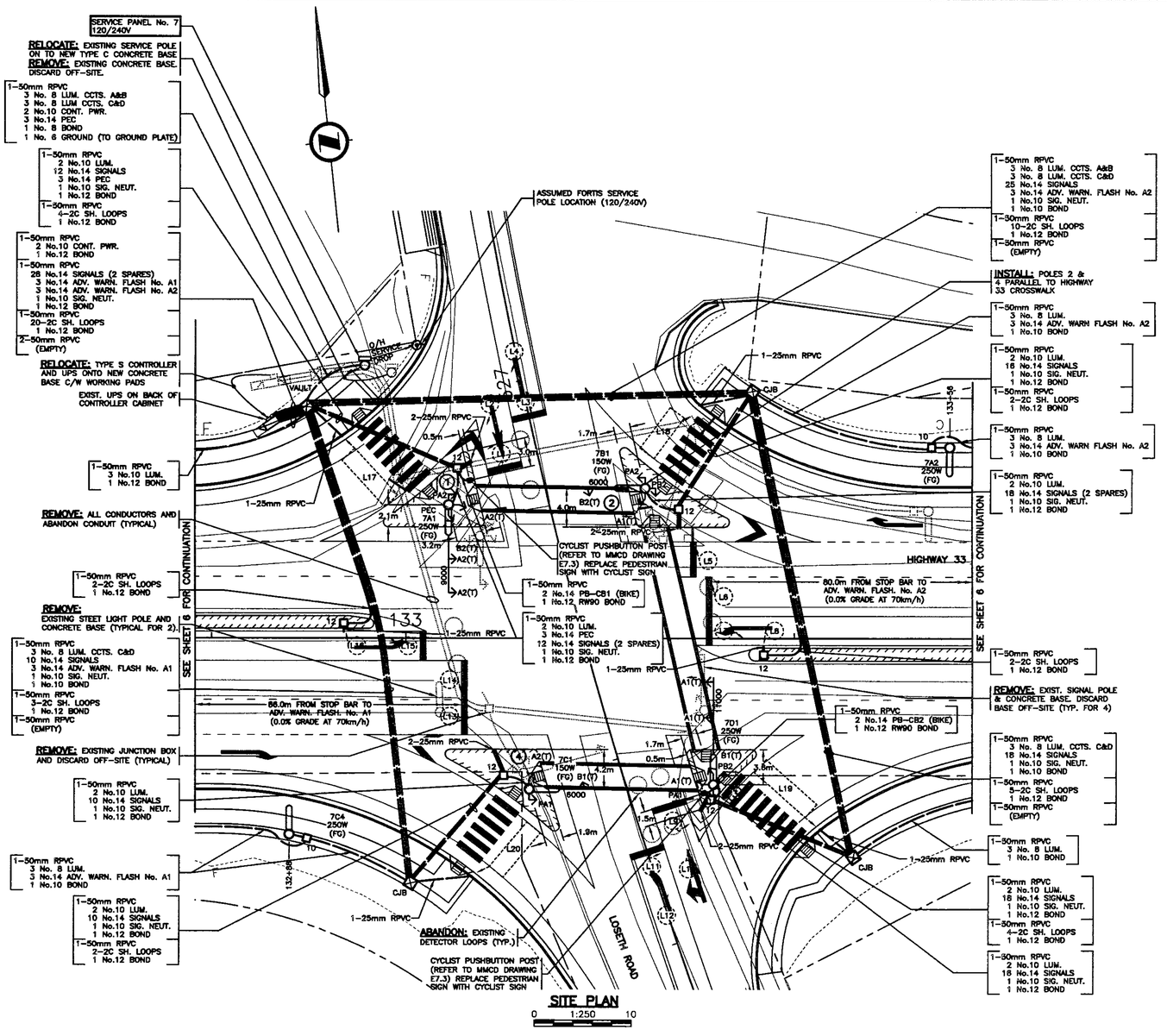
LIGHTING INSTALLATION AND SIGNAL MODIFICATIONS HIGHWAY 33 4 LANING FROM MOLNAR ROAD TO GALLAGHER ROAD KELOWNA

ELEVATIONS – WIRING DIAGRAM

ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE SEP 0 1 2009

DESIGNED NB DATE AUG/09
QUALITY CONTROL MIS DATE AUG/09
QUALITY ASSURANCE DJW DATE AUG/09
TRAN ELECTRICAL DESIGN REVIEW ABC DATE Sep 2/09

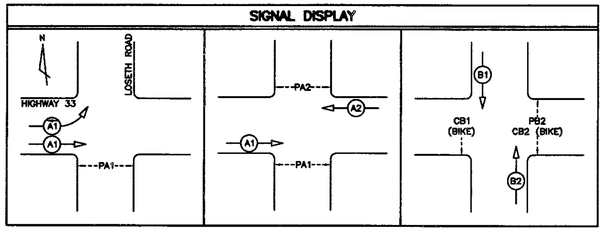
SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET 8 OF 12		5	2	TE–07031–8



SITE PLAN

0 1:250 10

SIGNAL DISPLAY



DETECTOR LOOP TABLE

LOOP			INDUCTANCE			PHASE
LOOP No.	SIZE	TURNS	LOOP	LEAD	TOTAL	
L 1	1.8 DIA.	4	95	15	110	B1
L 2	1.8 DIA.	4	95	15	110	B1
L 3	1.8 DIA.	4	95	15	110	B1
L 4	1.8 DIA.	4	95	15	110	B1
L 5	1.8 DIA.	4	95	38	133	A2
L 6	1.8 DIA.	4	95	38	133	A2
L 7	1.8 DIA.	4	95	47	142	A2
L 8	1.8 DIA.	4	95	47	142	A2
L 9	1.8 DIA.	6	140	65	205	B2
L 10	1.8 DIA.	6	140	65	205	B2
L 11	1.8 DIA.	6	140	65	205	B2
L 12	1.8 DIA.	6	140	65	205	B2
L 13	1.8 DIA.	4	95	40	135	A1
L 14	1.8 DIA.	4	95	40	135	A1
L 15	1.8 DIA.	4	95	21	116	$\overline{A1}$
L 16	1.8 DIA.	4	95	21	116	$\overline{A1}$
L 17	1.8 x 3.5	3	164	5	169	COUNT
L 18	1.8 x 5.2	3	138	31	169	COUNT
L 19	1.8 x 7.0	3	174	57	231	COUNT
L 20	1.8 x 3.0	3	134	33	167	COUNT

COLOUR CODE

ITEM	SIGNAL SECTION	CONDUCTOR COLOUR
$\overline{A1}$	RED YELLOW GREEN YELLOW ARROW GREEN ARROW	RED YELLOW BLUE ORANGE (WHITE T.T.) BLUE (WHITE T.T.)
A2	RED YELLOW GREEN	RED YELLOW (RED T.T.) BLUE
B1	RED YELLOW GREEN	RED BROWN BLUE
B2	RED YELLOW GREEN	RED BROWN (ORANGE T.T.) BLUE
PA1	DON'T WALK WALK PUSH BUTTON	YELLOW BLUE PURPLE/PURPLE (YELLOW T.T.)
PA2	DON'T WALK WALK PUSH BUTTON	YELLOW (RED T.T.) BLUE PURPLE/PURPLE (RED T.T.)
PB2	DON'T WALK WALK PUSH BUTTON	BROWN (ORANGE T.T.) BLUE PURPLE/PURPLE (ORANGE T.T.)
CB1 & CB2	PUSH BUTTON	PURPLE/PURPLE (BROWN T.T.)
CONTROLLER POWER		BLACK
LUMINAIRE CCTS. 'A&C' LUMINAIRE CCTS. 'B&D'		RED BLACK
NEUTRAL		WHITE
GROUND/BOND		GREEN
ADVANCE WARNING FLASHER No. 1		YELLOW BROWN
ADVANCE WARNING FLASHER No. 2		YELLOW (RED T.T.) BROWN

NOTE: T.T. DENOTES TAPE TRACER

INTERSECTION ILLUMINANCE DESIGN CRITERIA

ITEM	DESIGN REQUIREMENTS	DESIGN ACHIEVED
INTERSECTION NAME	HIGHWAY 33 AT LOSETH ROAD	
PEDESTRIAN CONFLICT AREA	LOW	
ROAD CLASSIFICATION	MAJOR/COLLECTOR	
ILLUMINATION LEVEL (AVG.)	15.0 LUX	25 LUX
UNIFORMITY RATIO (AVG.:MIN.)	3:1	1.8:1

ALL EQUIPMENT IS NEW EXCEPT WHERE NOTED

REFER TO SHEET 1 FOR LEGEND

REFER TO SHEET 1 FOR NOTES

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POSTED SPEED LIMIT 60 km/h ON HIGHWAY 33

POSTED SPEED LIMIT 50 km/h ON LOSETH ROAD

SEE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" FOR APPLICABLE STANDARD DRAWINGS

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CAD FILENAME 070319.dwg

REV	DATE	REVISIONS	DRAWN
	AUG/09	DRAWING ISSUED	ER

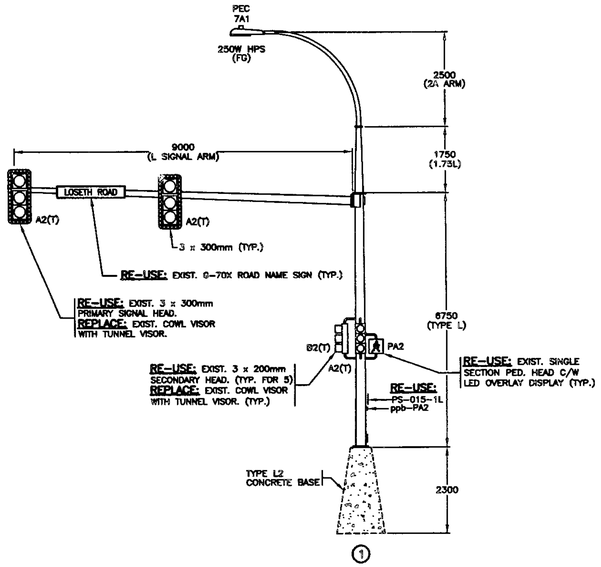
SIGNAL INSTALLATION
HIGHWAY 33 4 LANING AT LOSETH ROAD
KELOWNA

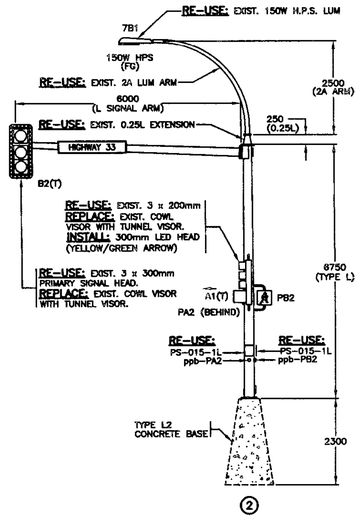
SITE PLAN – SIGNAL DISPLAY – LOOP TABLE – COLOUR CODE

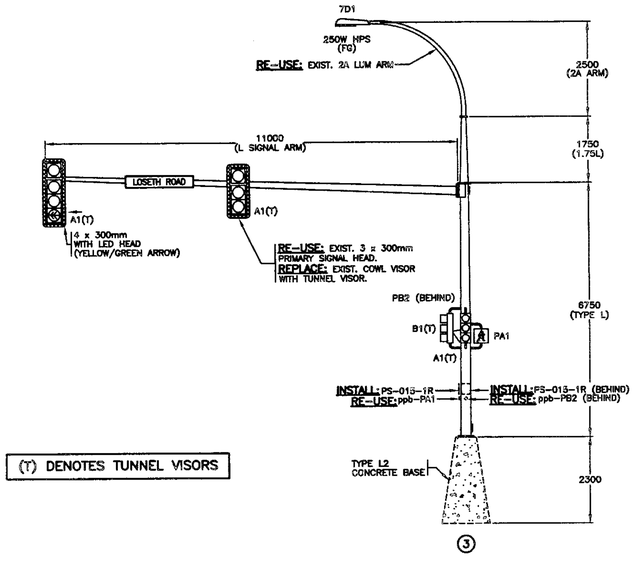
ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE SEP 01 2009

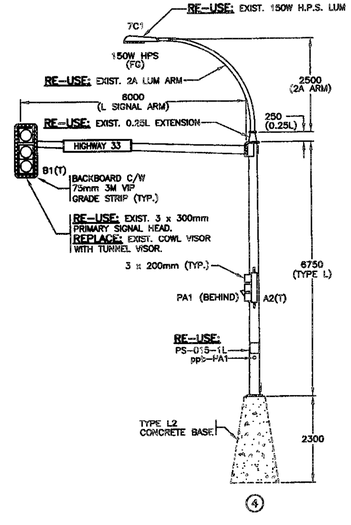
DESIGNED	NB	DATE	AUG/09
QUALITY CONTROL	MIS	DATE	AUG/09
QUALITY ASSURANCE	DJW	DATE	AUG/09
TRAN ELECTRICAL DESIGN REVIEW	ABC	DATE	Sep 2/09

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET 9 OF 12		5	2	TE-07031-9





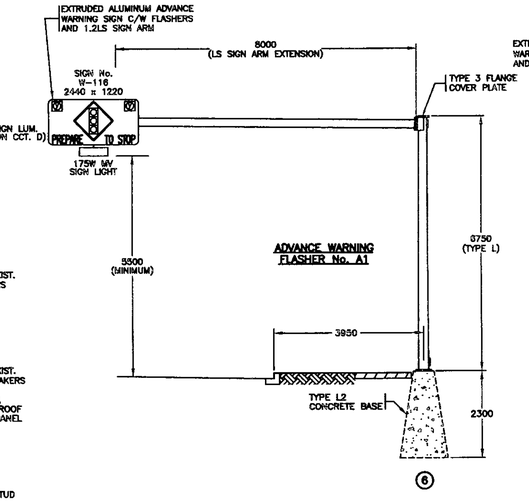


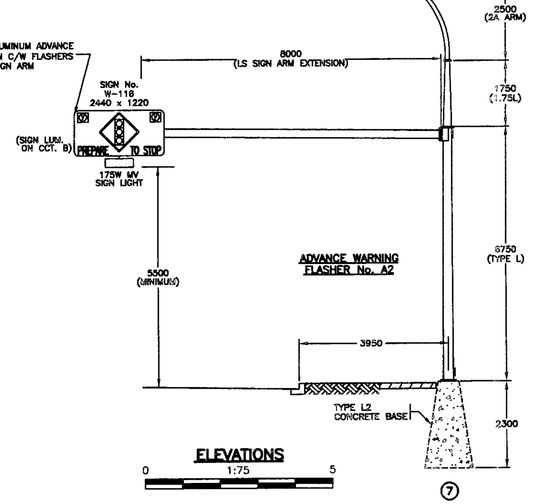


(T) DENOTES TUNNEL VISORS

ELEVATIONS

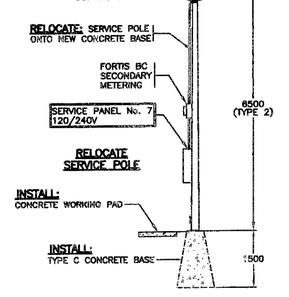
0 1:75 5

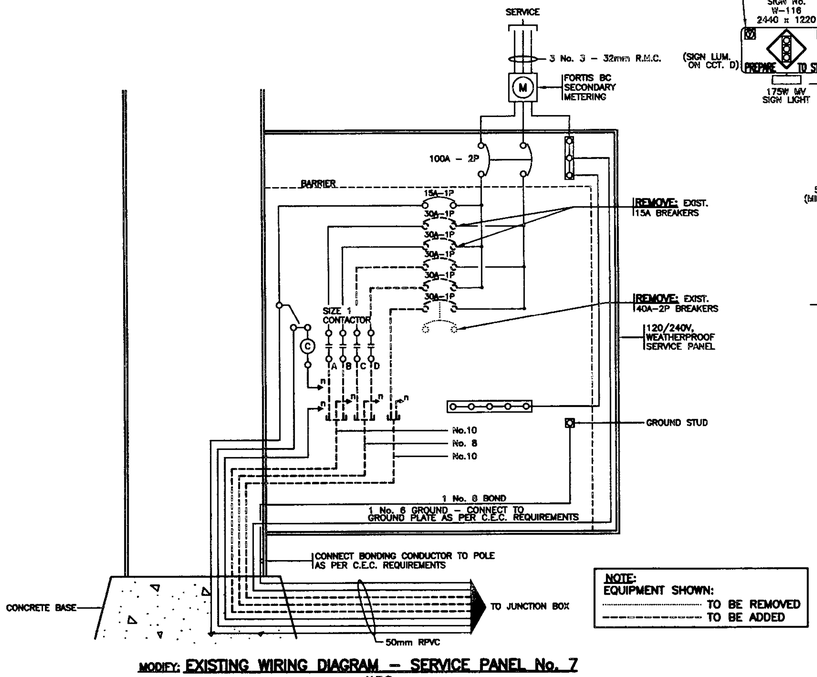




ELEVATIONS

0 1:75 5





MODIFY: EXISTING WIRING DIAGRAM - SERVICE PANEL No. 7

N.T.S.

NOTE:
EQUIPMENT SHOWN:
..... TO BE REMOVED
----- TO BE ADDED

ALL EQUIPMENT IS NEW
EXCEPT WHERE NOTED

REFER TO SHEET 1 FOR LEGEND

REFER TO SHEET 1 FOR NOTES

ALL DIMENSIONS ARE IN MILLIMETERS
EXCEPT WHERE NOTED

SEE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION"
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CAD FILENAME 0703110.dwg

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ELECTRICAL ENGINEERING CENTRE

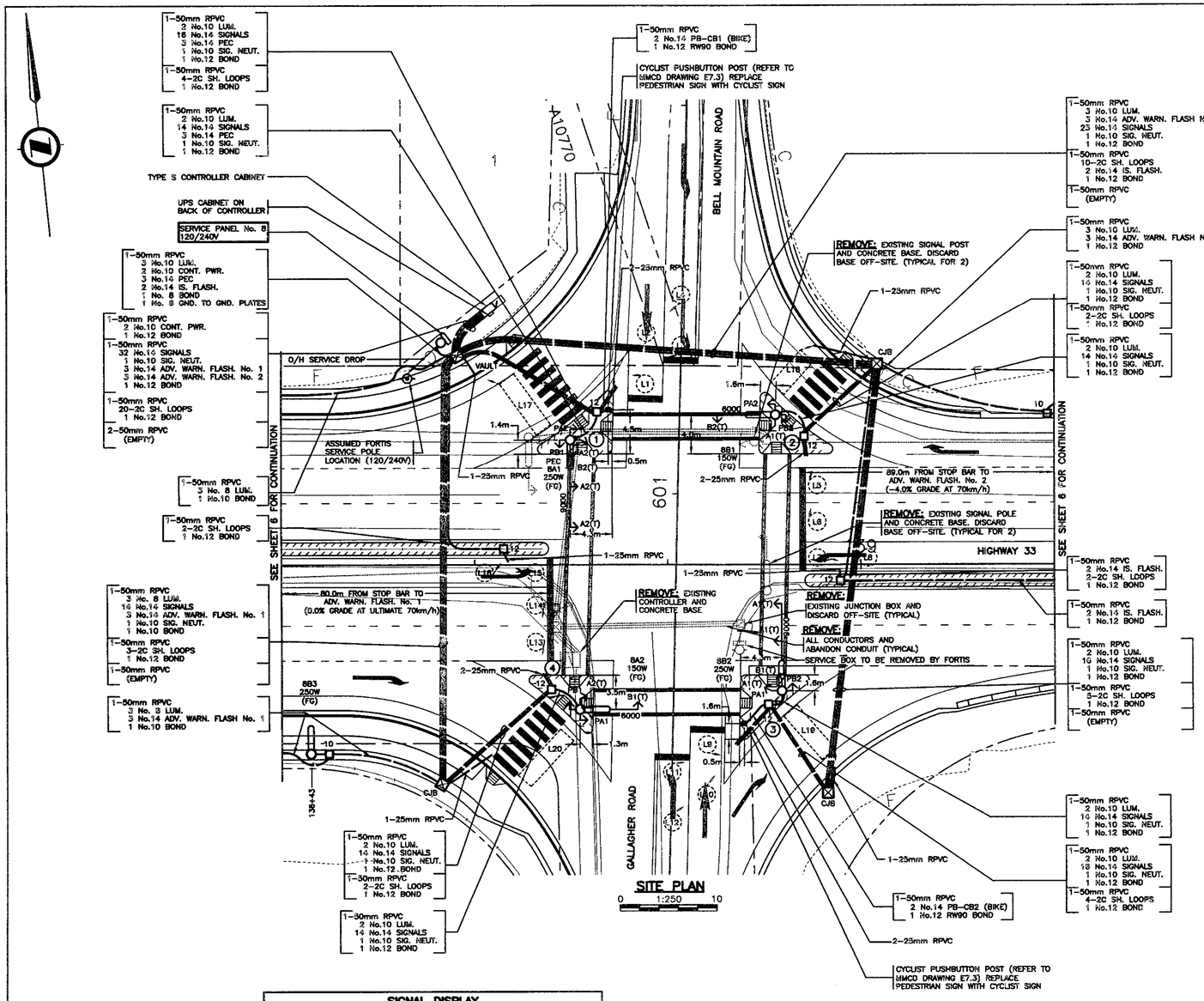
SIGNAL INSTALLATION
HIGHWAY 33 4 LANING AT LOSETH ROAD
KELOWNA

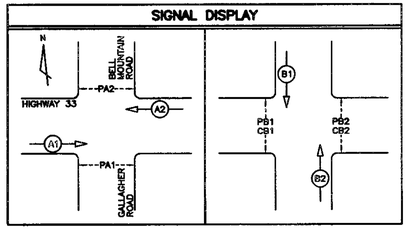
WIRING DIAGRAM - ELEVATIONS

DESIGNED NB DATE AUG/09
QUALITY CONTROL MIS DATE AUG/09
QUALITY ASSURANCE DJW DATE AUG/09
TRAN ELECTRICAL DESIGN REVIEW ABC DATE Sep 2/09

ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE SEP 01 2009

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET 10 OF 12		5	2	TE-07031-10





DETECTOR LOOP TABLE

LOOP			INDUCTANCE			PHASE
LOOP No.	SIZE	TURNS	LOOP	LEAD	TOTAL	
L 1	1.8 DIA.	4	95	16	111	B1
L 2	1.8 DIA.	4	95	16	111	B1
L 3	1.8 DIA.	4	95	16	111	B1
L 4	1.8 DIA.	4	95	16	111	B1
L 5	1.8 DIA.	4	95	40	135	A2
L 6	1.8 DIA.	4	95	40	135	A2
L 7	1.8 DIA.	4	95	48	143	A2
L 8	1.8 DIA.	4	95	48	143	A2
L 9	1.8 DIA.	5	140	68	208	B2
L 10	1.8 DIA.	5	140	68	208	B2
L 11	1.8 DIA.	5	140	68	208	B2
L 12	1.8 DIA.	5	140	68	208	B2
L 13	1.8 DIA.	4	95	39	134	A1
L 14	1.8 DIA.	4	95	39	134	A1
L 15	1.8 DIA.	4	95	21	116	A1
L 16	1.8 DIA.	4	95	21	116	A1
L 17	1.8 x 8.5	3	164	5	169	COUNT
L 18	1.8 x 4.5	3	124	34	158	COUNT
L 19	1.8 x 6.0	3	154	60	214	COUNT
L 20	1.8 x 8.5	3	164	30	194	COUNT

COLOUR CODE

ITEM	SIGNAL SECTION	CONDUCTOR COLOUR
A1	RED YELLOW GREEN	RED YELLOW BLUE
A2	RED YELLOW GREEN	RED YELLOW (RED T.T.) BLUE
B1	RED YELLOW GREEN	RED BROWN BLUE
B2	RED YELLOW GREEN	RED BROWN (ORANGE T.T.) BLUE
PA1	DON'T WALK WALK PUSH BUTTON	YELLOW BLUE PURPLE/PURPLE (YELLOW T.T.)
PA2	DON'T WALK WALK PUSH BUTTON	YELLOW (RED T.T.) BLUE PURPLE/PURPLE (RED T.T.)
PB1	DON'T WALK WALK PUSH BUTTON	BROWN BLUE PURPLE/PURPLE (BROWN T.T.)
PB2	DON'T WALK WALK PUSH BUTTON	BROWN (ORANGE T.T.) BLUE PURPLE/PURPLE (ORANGE T.T.)
CB1	PUSH BUTTON	PURPLE/PURPLE (BROWN T.T.)
CB2	PUSH BUTTON	PURPLE/PURPLE (ORANGE T.T.)
CONTROLLER POWER		BLACK
LUMINAIRE CCTS. 'A&C' LUMINAIRE CCTS. 'B&D'		RED BLACK
NEUTRAL		WHITE
GROUND/BOND		GREEN
ADVANCE WARNING FLASHER No. 1		YELLOW BROWN
ADVANCE WARNING FLASHER No. 2		YELLOW (RED T.T.) BROWN

NOTE: T.T. DENOTES TAPE TRACER

INTERSECTION ILLUMINANCE DESIGN CRITERIA

ITEM	DESIGN REQUIREMENTS	DESIGN ACHIEVED
INTERSECTION NAME	HIGHWAY 33 AT GALLAGHER/BELL MOUNTAIN ROAD	
PEDESTRIAN CONFLICT AREA	LOW	
ROAD CLASSIFICATION	MAJOR/COLLECTOR	
ILLUMINATION LEVEL (AVG.)	15.0 LUX	26 LUX
UNIFORMITY RATIO (AVG.:MIN.)	3:1	1.5:1

ALL EQUIPMENT IS NEW EXCEPT WHERE NOTED

REFER TO SHEET 1 FOR LEGEND

REFER TO SHEET 1 FOR NOTES

DO NOT USE THIS DRAWING FOR PAVEMENT MARKINGS

FOR MINISTRY USE ONLY
THIS DRAWING SERIES SUPERSEDES DRAWING SERIES TE-83016

ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE NOTED

POSTED SPEED LIMIT 60 km/h ON HIGHWAY 33 (EASTBOUND)

POSTED SPEED LIMIT 70 km/h ON HIGHWAY 33 (WESTBOUND)

POSTED SPEED LIMIT 50 km/h ON BELL MOUNTAIN ROAD

POSTED SPEED LIMIT 50 km/h ON GALLAGHER ROAD

SEE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" FOR APPLICABLE STANDARD DRAWINGS

DMD & Associates Ltd.
#12-17358 104A Avenue, Surrey, BC, Canada V4N 5M3
www.dmdeng.com Ph 604/589-9010
office@dmdeng.com Fax 604/589-9012
DMD PROJECT No. 1462-05-11 of 12

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MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
ELECTRICAL ENGINEERING CENTRE

CAD FILENAME 0703111.dwg

REV	DATE	REVISIONS	DRAWN
	AUG/09	DRAWING ISSUED	ER

SIGNAL MODIFICATION
HIGHWAY 33 4 LANING AT GALLAGHER/BELL MOUNTAIN ROAD
KELOWNA

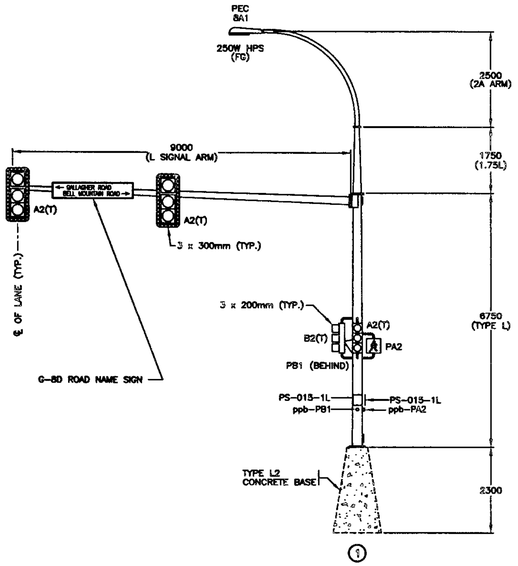
SITE PLAN – SIGNAL DISPLAY – LOOP TABLE – COLOUR CODE

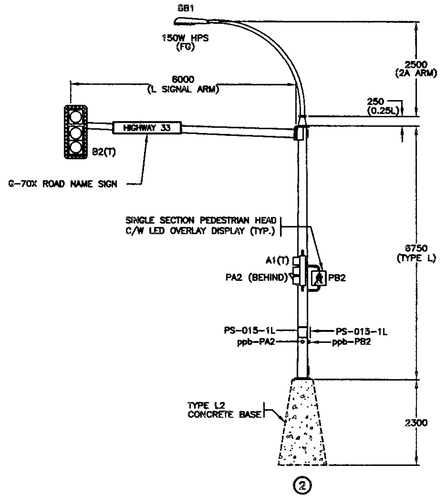
ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE SEP 01 2009

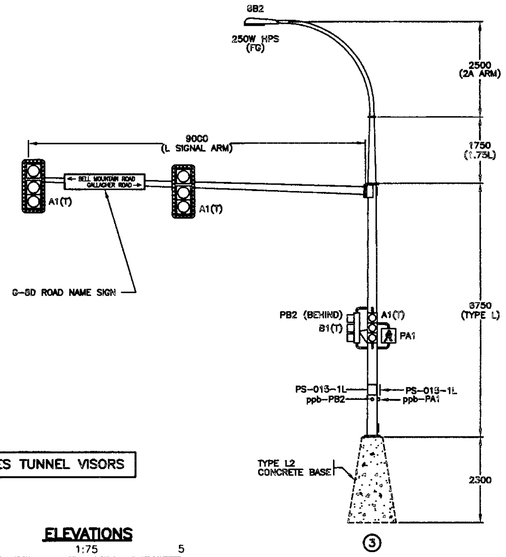
D. J. WONG

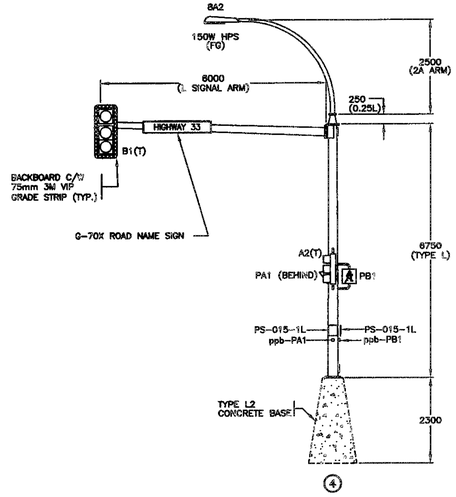
DESIGNED	NB	DATE AUG/09
QUALITY CONTROL	MIS	DATE AUG/09
QUALITY ASSURANCE	DJW	DATE AUG/09
TRAN ELECTRICAL DESIGN REVIEW	ABC	DATE Sep 2/09

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET 11 OF 12		5	2	TE-07031-11





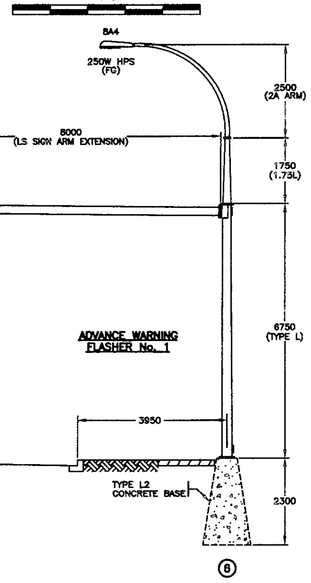


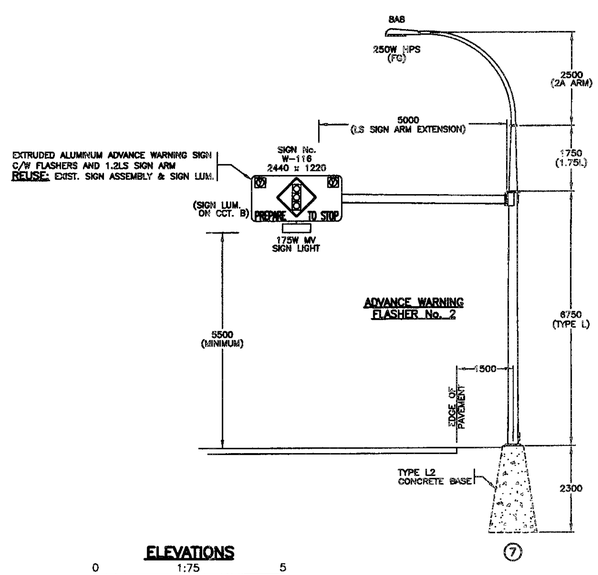


(T) DENOTES TUNNEL VISORS

ELEVATIONS

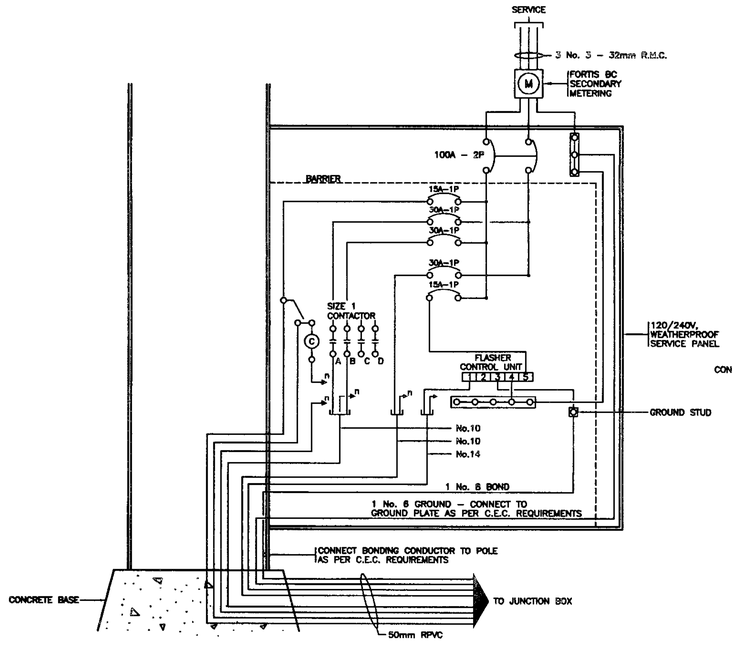
0 1:75 5





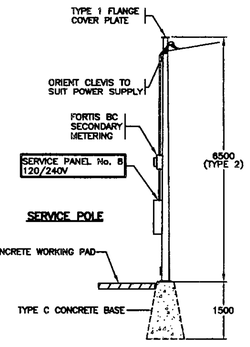
ELEVATIONS

0 1:75 5



WIRING DIAGRAM - SERVICE PANEL No. 8

N.T.S.



ALL EQUIPMENT IS NEW
EXCEPT WHERE NOTED

REFER TO SHEET 1 FOR LEGEND

REFER TO SHEET 1 FOR NOTES

ALL DIMENSIONS ARE IN MILLIMETERS
EXCEPT WHERE NOTED

SEE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION"
FOR APPLICABLE STANDARD DRAWINGS

DMD & Associates Ltd.
#12-17358 104A Avenue, Surrey, BC, Canada V4N 5M3
www.dmdeng.com 604/589-9010
office@dmdeng.com Fax 604/589-9012
DMD PROJECT No. 1462-05-12 of 12

CAD FILENAME 0703112.dwg

REV	DATE	REVISIONS	DRAWN
	AUG/09	DRAWING ISSUED	ER

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ELECTRICAL ENGINEERING CENTRE

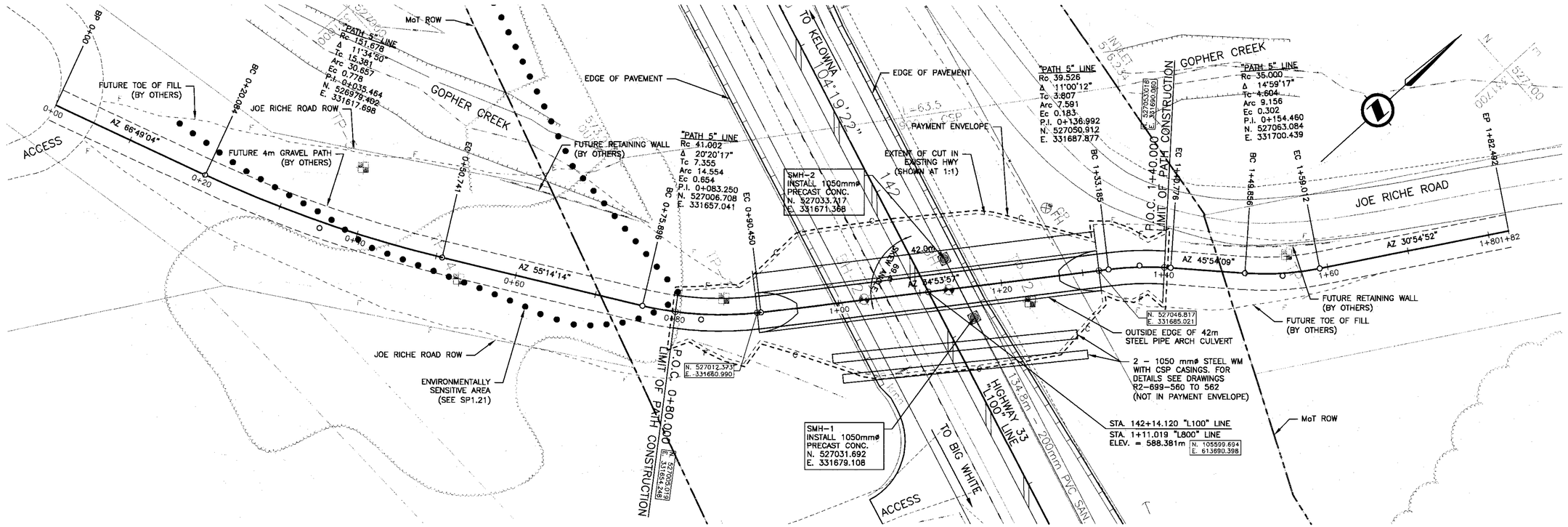
SIGNAL MODIFICATION
HIGHWAY 33 4 LANING AT GALLAGHER/BELL MOUNTAIN ROAD
KELOWNA

WIRING DIAGRAM - ELEVATIONS

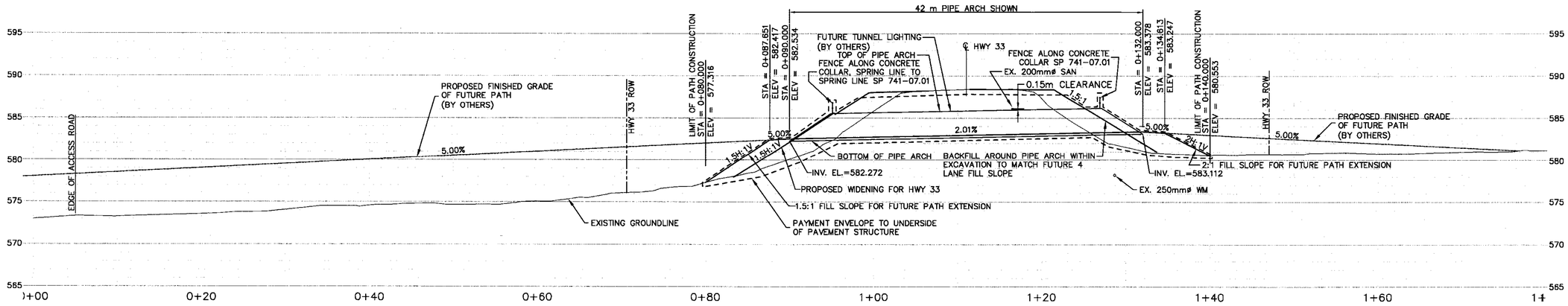
ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE SEP 01 2009

DESIGNED	NB	DATE AUG/09
QUALITY CONTROL	MIS	DATE AUG/09
QUALITY ASSURANCE	DJW	DATE AUG/09
TRAN ELECTRICAL DESIGN REVIEW	ABC	DATE Sep 2/09

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET 12 OF 12		5	2	TE--07031--12



PLAN



PATH PROFILE

GENERAL NOTES:

1. CONCRETE COLLAR TO BE DESIGNED BY PROPRIETARY STRUCTURE SUPPLIER, REVIEWED BY SNC-LAVALIN. DESIGN TO INCLUDE STEP BEVEL TO ALLOW FOR CASTING OF STRUCTURE NUMBER AND CONSTRUCTION YEAR.
2. ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 30MPa AT 28DAYS. ALL REINFORCING STEEL TO CONFORM TO CSA SPEC. G30.18M GRADE 400R.
3. ACTUAL LENGTH OF STRUCTURE DEPENDS ON BEVELED END DIMENSIONS DESIGNED BY PROPRIETARY STRUCTURE SUPPLIER.
4. SEE ADDITIONAL PROPRIETARY STRUCTURE DESIGN NOTES ON DWG. 7804-3

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City of Kelowna

SCALE 0 1:250 10

DESIGNED	N. KRUCKENBERG VK	DATE 2009-08-19
DRAWN	N. KRUCKENBERG	DATE 2009-08-19
CHECKED	Y. DING	DATE 2009-10-15
APPROVED	R. LEE	DATE 2009-10-15

GENERAL ARRANGEMENT SHEET 1

HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
GOPHER CREEK PED. TUN. No.- 7804

PROFESSIONAL SEAL

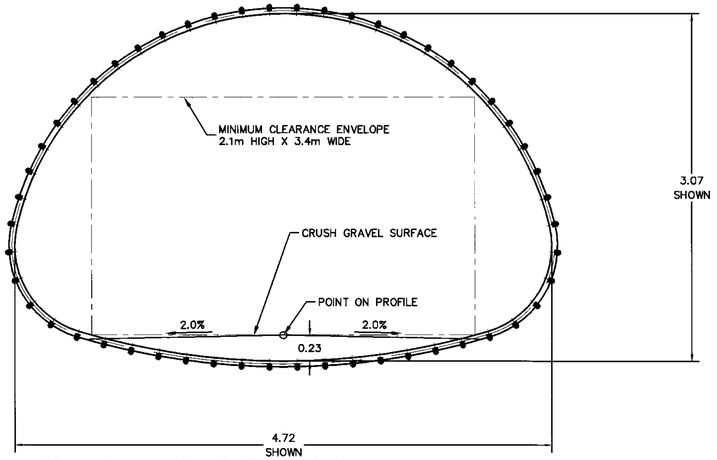
SENIOR DESIGN ENGINEER — DATE Oct 15, 2009

Rev	Date	Description	Signature

REVISIONS

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	7804-2

DATE: 2009/10/15 - 2:12pm
PLOTTED BY: VDOCZY
LAYOUT: 7804-2

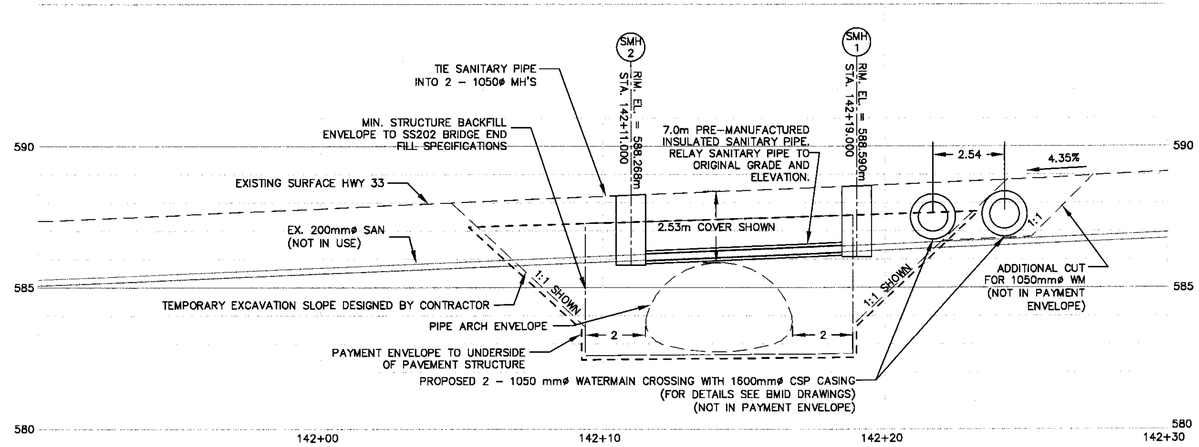


PROPRIETARY STRUCTURE DESIGN NOTES:

1. THE BURIED STRUCTURE AS SHOWN ON THESE DRAWINGS SHALL SHALL BE A PROPRIETARY DESIGN STEEL PIPE ARCH STRUCTURE WITH REINFORCED CONCRETE COLLAR AT BOTH ENDS.
2. ALL DIMENSIONS ARE MEASURED TO THE INSIDE CREST.
3. SPAN AND RISE ARE NOMINAL, AND SUBJECT TO MANUFACTURING TOLERANCES.
4. PIPE ARCH DESIGN LIVE LOAD: BCL625 TRUCK. DESIGN CODE CAN/CSA-S6-06 AND BCMoT SUPPLEMENT TO S6-06
5. THE DESIGN LIFE FOR CORROSION SHALL BE 100 YEARS.
6. CAMBER, FOUNDATION PREPARATION AND CONSTRUCTION TOLERANCES TO BE SPECIFIED BY PROPRIETARY STRUCTURE SUPPLIER.
7. SEE EBA GEOTECHNICAL REPORT DATED AUG. 26, 2009 FOR TEST PIT AND BOREHOLE INFORMATION.

TYPICAL TUNNEL SECTION

0 1:25 1

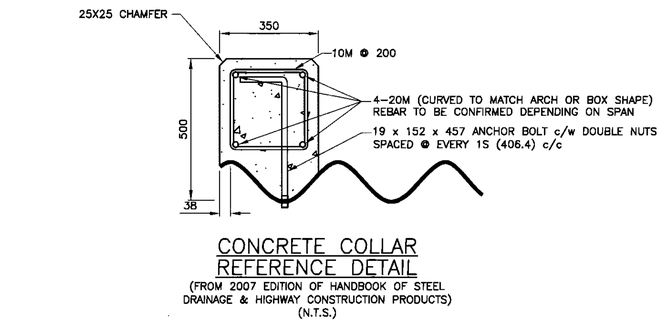


HIGHWAY 33 PROFILE

0 1:100 5

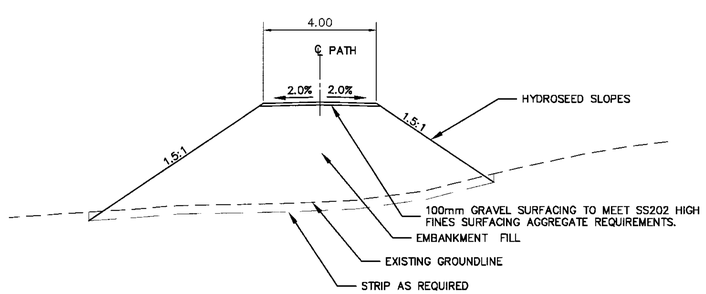
SANITARY PIPE NOTES:

1. 7.0m OF PRE-INSULATED (FACTORY APPLIED) SANITARY PIPE (URECON OR EQUIVALENT) CENTERED OVER STEEL PIPE ARCH CULVERT.
2. KEEP PIPE JOINT AWAY FROM HIGH POINT OF CULVERT.
3. MAKE TIE-INS TO RE-LAID UN-INSULATED SANITARY PIPE INSIDE 1050 mm ø MANHOLE.
4. ALL SANITARY MAIN EXPOSED BY EXCAVATION (EXISTING OR NEW) TO BE VIDEO TAPED AND AIR TESTED PRIOR TO PAVING.



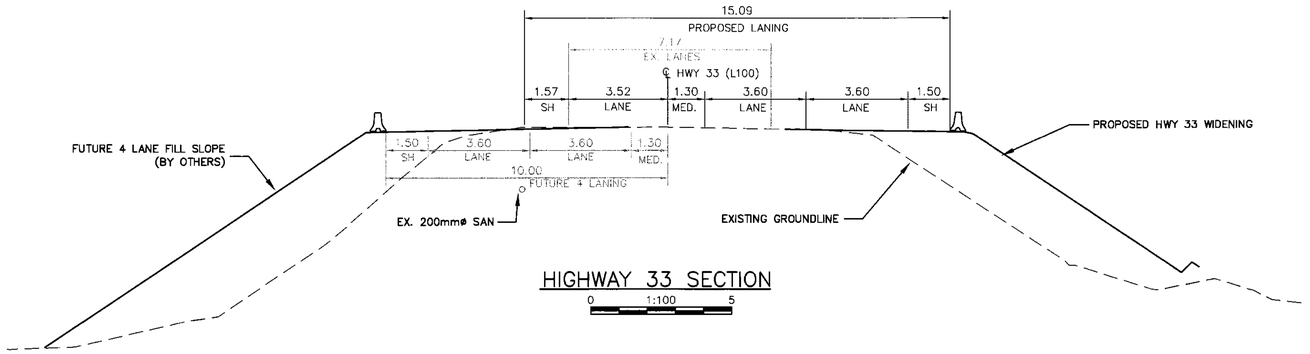
CONCRETE COLLAR REFERENCE DETAIL

(FROM 2007 EDITION OF HANDBOOK OF STEEL DRAINAGE & HIGHWAY CONSTRUCTION PRODUCTS)
(N.T.S.)



TYPICAL PATH SECTION

0 1:100 5



HIGHWAY 33 SECTION

0 1:100 5

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City of Kelowna

SCALE AS SHOWN

DESIGNED N. KRUCKENBERG DATE 2009-08-19
DRAWN N. KRUCKENBERG DATE 2009-08-19
CHECKED Y. DING DATE 2009-10-15
APPROVED R. LEE DATE 2009-10-15

PROFESSIONAL SEAL — R. L. LEE — ENGINEER — Oct 15, 2009

Rev	Date	Description	Signature

REVISIONS

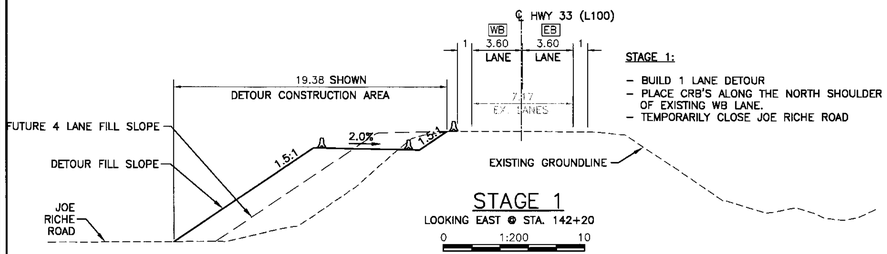
GENERAL ARRANGEMENT SHEET 2

HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
GOPHER CREEK PED. TUN. No.- 7804

SENIOR DESIGN ENGINEER — DATE Oct 15, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	7804-3

DATE: 2009/10/15 - 2:12pm
PATH: N:\MAIL\220572 - Hwy 33 Gopher Creek\41 - Civil Engineering\4100 - Drawings\7804-2 AND 3.DWG
LAYOUT: 7804-2



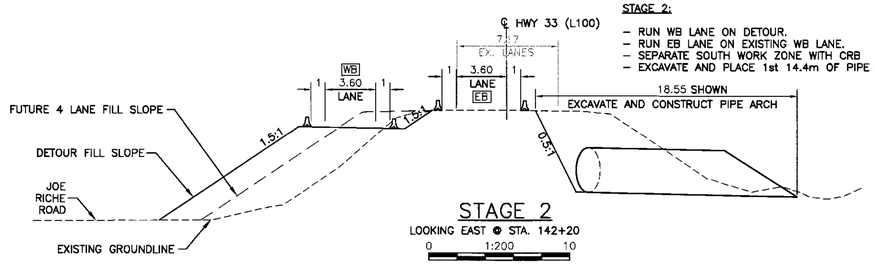
STAGE 1:

- BUILD 1 LANE DETOUR
- PLACE CRB'S ALONG THE NORTH SHOULDER OF EXISTING WB LANE.
- TEMPORARILY CLOSE JOE RICHE ROAD

STAGE 1

LOOKING EAST @ STA. 142+20

0 1:200 10



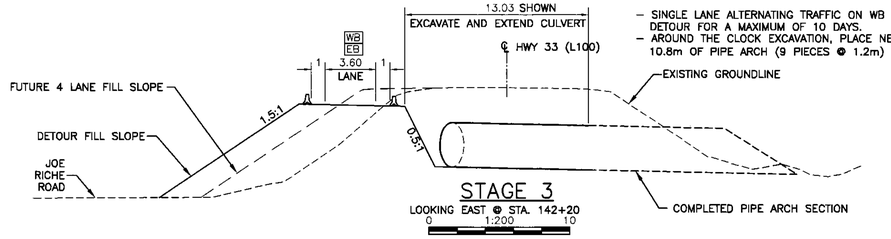
STAGE 2:

- RUN WB LANE ON DETOUR.
- RUN EB LANE ON EXISTING WB LANE.
- SEPARATE SOUTH WORK ZONE WITH CRB
- EXCAVATE AND PLACE 1st 14.4m OF PIPE ARCH.

STAGE 2

LOOKING EAST @ STA. 142+20

0 1:200 10



STAGE 3:

- SINGLE LANE ALTERNATING TRAFFIC ON WB DETOUR FOR A MAXIMUM OF 10 DAYS.
- AROUND THE CLOCK EXCAVATION, PLACE NEXT 10.8m OF PIPE ARCH (9 PIECES @ 1.2m)

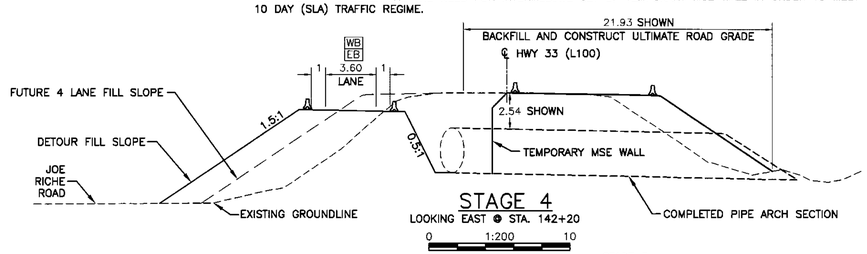
STAGE 3

LOOKING EAST @ STA. 142+20

0 1:200 10

STAGE 4:

- SINGLE LANE ALTERNATING (SLA) TRAFFIC ON WB DETOUR FOR A MAXIMUM OF 10 DAYS.
- BACKFILL OVER CULVERT WITH TEMPORARY MSE WALL MINIMUM 2m SET BACK FROM SHORT SIDE OF PIPE ARCH.
- CONTRACTOR TO DETERMINE THE NEED FOR INTERMEDIATE SET OF TEMPORARY MSE WALL IN ORDER TO MEET THE 10 DAY (SLA) TRAFFIC REGIME.



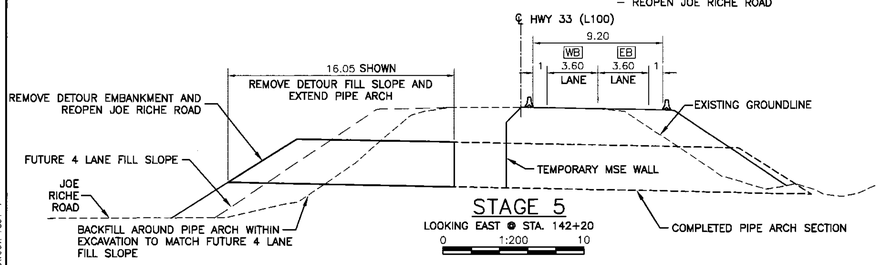
STAGE 4

LOOKING EAST @ STA. 142+20

0 1:200 10

STAGE 5:

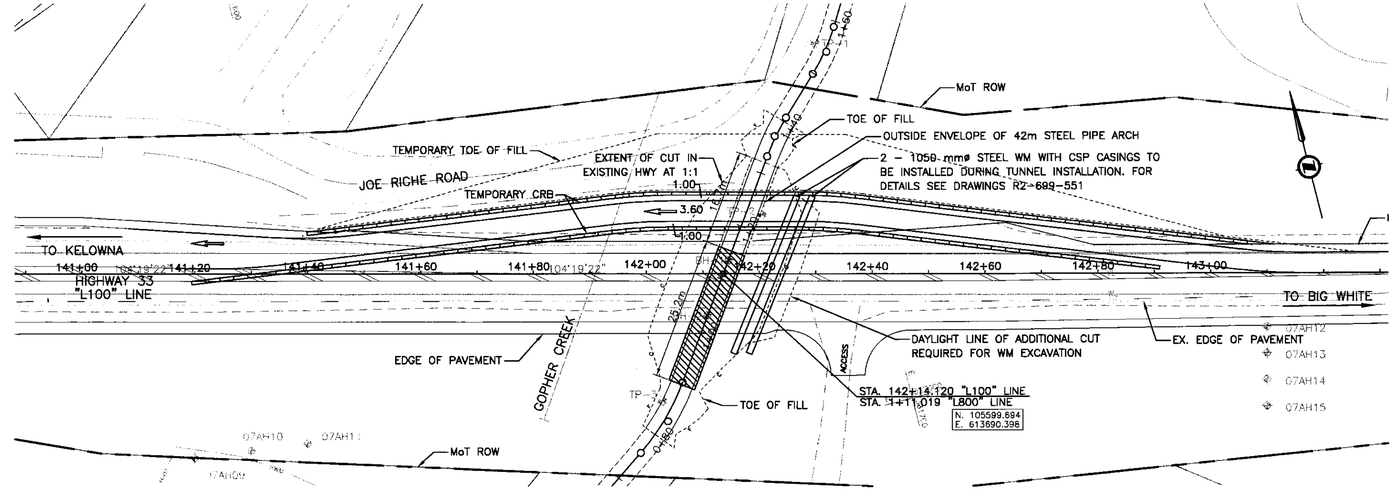
- EB AND WB LANES ON SOUTH SIDE.
- EXCAVATE AND COMPLETE NORTH HALF OF PIPE ARCH.
- REOPEN JOE RICHE ROAD



STAGE 5

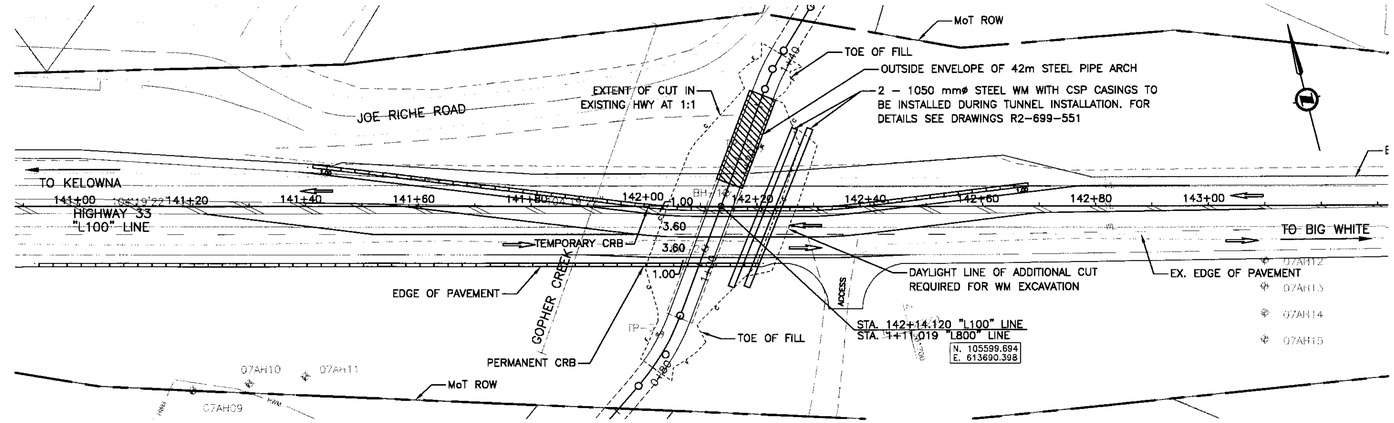
LOOKING EAST @ STA. 142+20

0 1:200 10



STAGE 3 PLAN

0 1:500 25



STAGE 5 PLAN

0 1:500 25

DESIGN SPEED 50km/h

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE AS SHOWN

DESIGNED	N. KRUCKENBERG	DATE 2009-08-19
DRAWN	N. KRUCKENBERG	DATE 2009-08-19
CHECKED	Y. DING	DATE 2009-10-15
APPROVED	R. LEE	DATE 2009-10-15

PROFESSIONAL SEAL

R. K. LEE — Oct 15, 2009

Rev	Date	Description	Signature

REVISIONS

POSSIBLE DETOURING AND CONSTRUCTION STAGING

HIGHWAY 33 – FOUR LANING

MUIR ROAD TO GALLAGHER ROAD

GOPHER CREEK PED. TUN. No.– 7804

SENIOR DESIGN ENGINEER

DATE Oct 15, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	7804-4

DATE: 2009/10/15 – 2:12pm
PATH: H:\DATA\Q2052 – Hwy 33 Gopher Creek\41 – Civil Engineering\41D – Drawings\7804-4.DWG
LAYOUT: 7804-4

Project: Proposed Underpass Hwy 33 & Joe Rich Rd.	Client: SNC Lavalin Inc.	PROJECT NO. - BOREHOLE NO.
Hwy 33 & Joe Rich Road, centre of west bound lane	Driller: Beck Drilling & Environmental Services Ltd.	K13101383-09BH-1
Kelowna, BC	Drill Type: Hollow Stem Auger	ELEVATION: 588m

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	SPT (N)	MOISTURE CONTENT	PLASTIC / M.C. / LIQUID (20 40 60 80)	STANDARD PENETRATION (N) (20 40 60 80) ◆UNCONFINED (kPa)◆ (50 100 150 200) ▲POCKET PEN. (kPa)▲ (100 200 300 400)	Elevation (m)
0	Asphalt (125 mm thick).							588.0
	GRAVEL and SAND (FILL), <20 mm, well graded, brown, moist to damp, dense.		1-1	36	6.3			
1								587.0
	GRAVEL FILL, sandy, brown, damp to moist, < 50 mm, very dense (hard drilling condition). (Sa 1-2: 25mm penetration)		1-2	50	5.4			
2								586.0
			1-3	53	8.7			
	SAND and SILT (FILL), fine grained, trace gravel, brown, damp, very dense.							
3	Compact at 3.1 m, silty, moist, sand till like.		1-4	25	12.5			585.0
4	Scattered cobbles at 3.7 m, 4.1 m, and 4.4m.							584.0
			1-5	63	4.2			
5	Very dense gravel layer from 4.3 m to 4.9 m, sandy, brown, and damp.							583.0
6	Moist at 6.1 m. (Sa 1-6: 150mm penetration)		1-6	50	9.8			582.0
7	Scattered cobbles from 6.4 m to 7.5 m.							581.0
			1-7	62	8.1			
8	Sand TILL like, very dense at 8.2m.							580.0
	Borehole terminated at 8.2 m. Borehole dry upon completion. Borehole open to 7.0 m.							
9								579.0
10								578.0

EBA Engineering Consultants Ltd.

LOGGED BY: HH	COMPLETION DEPTH: 8.2m
REVIEWED BY: LD	COMPLETE: 8/18/2009
DRAWING NO: Centre of West Bound Lane	Page 1 of 1

GEOTECHNICAL K13101383.GPJ EBA.GDT 09/08/25

Project: Proposed Underpass Hwy 33 & Joe Rich Rd.	Client: SNC Lavalin Inc.	PROJECT NO. - BOREHOLE NO.
Hwy 33 & Joe Rich Road, shoulder of east bound lane	Driller: Beck Drilling & Environmental Services Ltd.	K13101383-09BH-2
Kelowna, BC	Drill Type: Hollow Stem Auger	ELEVATION: 588m

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	SPT (N)	MOISTURE CONTENT	PLASTIC / M.C. / LIQUID (20 40 60 80)	STANDARD PENETRATION (N) (20 40 60 80) ◆UNCONFINED (kPa)◆ (50 100 150 200) ▲POCKET PEN. (kPa)▲ (100 200 300 400)	Elevation (m)
0	SAND and GRAVEL (FILL), <20 mm, well graded, some silt, dark brown, moist, dense.							588.0
1			2-1	39	5.8			587.0
	SAND and SILT (FILL), fine grained, some gravel, brown, moist, dense.		2-2	14	8.7			
2	At 2.3 m medium to coarse sand layer, some fine gravel (0.5 m thick), dark brown, moist, dense.		2-3	30	7.1			586.0
3	At 3.1 m fine grained sand, silty, trace gravel, very dense (looks glacial till).		2-4	62	9			585.0
4								584.0
5			2-5	45	11.4			583.0
6	Gravel pieces at 5.6 m. At 6.1 m sand till like with incressing moisture content.		2-6	43	9.7			582.0
7								581.0
8	Compact at 7.6 m.		2-7	21	8.6			580.0
9								579.0
10	SAND, fine grained, silty, some fine gravel, grey, moist, compact.		2-8	14	7.6			578.0
11			2-9	23	23.6			577.0
12								576.0
			2-10	11				
13	Borehole terminated at 12.7m. Borehole dry upon completion. Borehole open to 11.2 m.							575.0
14								574.0
15								573.0

EBA Engineering Consultants Ltd.

LOGGED BY: HH	COMPLETION DEPTH: 12.7m
REVIEWED BY: LD	COMPLETE: 8/18/2009
DRAWING NO: Shoulder of East Bound Lane	Page 1 of 1

GEOTECHNICAL K13101383.GPJ EBA.GDT 09/08/25

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE AS SHOWN

DESIGNED N. KRUCKENBERG NK DATE 2009-08-19
DRAWN N. KRUCKENBERG DATE 2009-08-19
CHECKED Y. DING DATE 2009-10-15
APPROVED R. LEE DATE 2009-10-15

PROFESSIONAL SEAL

Rev	Date	Description	Signature

REVISIONS

TEST HOLE LOGS

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
GOPHER CREEK PED. TUN. No.– 7804

SENIOR DESIGN ENGINEER

DATE Oct 15, 2009

FILE No.	PROJECT No.	REV.	DRAWING No.
2064	22198-0001	2	7804-5

DATE: 2009/10/15 - 2:12pm
PATH: H:\DATA\020572 - Hwy 33 Gopher Creek\41 - Civil Engineering\41DD - Drawings\7804-5 TO 7.DWG
LAYOUT: 7804-5

Project: Proposed Underpass Hwy 33 & Joe Rich Rd.	Client: SNC Lavalin Inc.	PROJECT NO. - TESTPIT NO.
Hwy 33 & Joe Rich Road	Excavator:	K13101383-TP-1
Kelowna, BC	Excavator Type: Hitachi Ex160	ELEVATION: 581m

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	MOISTURE CONTENT	PLASTIC / M.C. / LIQUID (20 40 60 80)	STANDARD PENETRATION (N) (20 40 60 80) / UNCONFINED (kPa) (50 100 150 200) / POCKET PEN. (kPa) (100 200 300 400)	Elevation (m)
0	ORGANIC LAYER (TOP SOIL).						581.0
	SAND and SILT, dense, damp.		TP1-1	23.5			
1							580.0
	SILT, sandy, very light greyish brown, dense.						
2			TP1-2	23.1			579.0
3							578.0
	clayey SILT, sandy, low plastic, moist, dark greyish brown, very stiff.		TP1-3				
	CLAY, silty, medium plastic, trace sand, dark brownish grey.		TP1-4	31			
4	Testpit term nated at 4.0 m.						577.0
5							576.0
6							575.0
7							574.0
8							573.0
9							572.0
10							571.0

EBA Engineering Consultants Ltd.

LOGGED BY: HH	COMPLETION DEPTH: 4m
REVIEWED BY: LD	COMPLETE: 8/18/2009
DRAWING NO:	Page 1 of 1

GEOTECHNICAL K13101383.GPJ EBA.GDT 09/8/25

Project: Proposed Underpass Hwy 33 & Joe Rich Rd.	Client: SNC Lavalin Inc.	PROJECT NO. - TESTPIT NO.
Hwy 33 & Joe Rich Road, North embankment	Excavator:	K13101383-TP-2
Kelowna, BC	Excavator Type: Hitachi Ex160	ELEVATION: 586.5m

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	MOISTURE CONTENT	PLASTIC / M.C. / LIQUID (20 40 60 80)	STANDARD PENETRATION (N) (20 40 60 80) / UNCONFINED (kPa) (50 100 150 200) / POCKET PEN. (kPa) (100 200 300 400)	Elevation (m)
0	TOPSOIL						586.0
	SAND (FILL), fine grained, silty, some fine to coarse gravel of minus 100 mm sizes, dense.						
1			TP2-1	9.7			585.0
2							584.0
	Gravelly, scattered cobbles at 2.5 m.						
3	Thin layer (100 mm) yellowish brown coarse sand and gravel at 3.0 m.		TP2-2	10.2			583.0
4							582.0
5			TP2-3	10			581.0
6							580.0
7							579.0
	Testpit terminated at 7.5 m. Testpit dry upon completion. Borehole open to 7.5 m.						
8							578.0
9							577.0
10							

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LOGGED BY: HH	COMPLETION DEPTH: 7.5m
REVIEWED BY: LD	COMPLETE: 8/18/2009
DRAWING NO:	Page 1 of 1

GEOTECHNICAL K13101383.GPJ EBA.GDT 09/8/25

DATE: 2009/10/15 - 2:12pm
PATH: N:\DATA\220572 - Hwy 33 Gopher Creek\41 - Civil Engineering\x100 - Drawings\7804-5 TO 7.DWG
PLOT: 100%

SNC·LAVALIN

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE AS SHOWN

DESIGNED	N. KRUCKENBERG NK	DATE 2009-08-19
DRAWN	N. KRUCKENBERG	DATE 2009-08-19
CHECKED	Y. DING	DATE 2009-10-15
APPROVED	R. LEE	DATE 2009-10-15

PROFESSIONAL SEAL

Oct 15, 2009

Rev	Date	Description	Signature

REVISIONS

TEST HOLE LOGS

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
GOPHER CREEK PED. TUN. No.– 7804

SENIOR DESIGN ENGINEER

Oct 15, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198–0001	2	7804–6

Project: Proposed Underpass Hwy 33 & Joe Rich Rd.	Client: SNC Lavalin Inc.	PROJECT NO. - TESTPIT NO.
Hwy 33 & Joe Rich Road, South embankment	Excavator:	K13101383-TP-3
Kelowna, BC	Excavator Type: Hitachi Ex160	ELEVATION: 583m

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE NUMBER	MOISTURE CONTENT	PLASTIC M.C. LIQUID (20 40 60 80)	STANDARD PENETRATION (N) (20 40 60 80) ◆UNCONFINED (kPa)◆ (50 100 150 200) ▲POCKET PEN. (kPa)▲ (100 200 300 400)	Elevation (m)
0	Organic layer (TOP SOIL), 200 mm thick. SAND (FILL), fine grained, some gravel, silty, trace cobbles, dense.					583.0
1						582.0
2		TP3-1	6.4			581.0
3						580.0
4	Gravelly at 3.5 m.					579.0
5		TP3-2	4.7			578.0
6						577.0
7	Trace gravel, possibly topsoil inclusions at 6.0 m.	TP3-3	27.7			576.0
8	Testpit terminated at 7.5 m. Testpit dry upon completion. Borehole open to 7.5 m.					575.0
9						574.0
10						573.0
11						572.0
12						571.0
13						570.0
14						569.0
15						568.0

EBA Engineering Consultants Ltd.

LOGGED BY: HH	COMPLETION DEPTH: 7.5m
REVIEWED BY: LD	COMPLETE: 8/18/2009
DRAWING NO:	Page 1 of 1

GEOTECHNICAL K13101383.GPJ EBA.GDT 09/8/25

Project: Proposed Underpass Hwy 33 & Joe Rich Rd.	Client: SNC Lavalin Inc.	PROJECT NO. - TESTPIT NO.
Hwy 33 & Joe Rich Road	Excavator:	K13101383-TP-4
Kelowna, BC	Excavator Type: Hitachi Ex160	ELEVATION: 575m

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE NUMBER	MOISTURE CONTENT	PLASTIC M.C. LIQUID (20 40 60 80)	STANDARD PENETRATION (N) (20 40 60 80) ◆UNCONFINED (kPa)◆ (50 100 150 200) ▲POCKET PEN. (kPa)▲ (100 200 300 400)	Elevation (m)
0	Organic layer (TOP SOIL). SAND and GRAVEL, silty.					575.0
1	Encountered large quantities of boulders (up to ~600 mm) mixed in with the above silty sand and gravel. Very difficult digging.	TP4-1	6			574.0
2	Testpit terminated at 1.7 m.					573.0
3						572.0
4						571.0
5						570.0
6						569.0
7						568.0
8						567.0
9						566.0
10						565.0

EBA Engineering Consultants Ltd.

LOGGED BY: HH	COMPLETION DEPTH: 1.7m
REVIEWED BY: LD	COMPLETE: 8/19/2009
DRAWING NO:	Page 1 of 1

GEOTECHNICAL K13101383.GPJ EBA.GDT 09/8/25

Project: Proposed Underpass Hwy 33 & Joe Rich Rd.	Client: SNC Lavalin Inc.	PROJECT NO. - TESTPIT NO.
Hwy 33 & Joe Rich Road	Excavator:	K13101383-TP-5
Kelowna, BC	Excavator Type: Hitachi Ex160	ELEVATION: 575m

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE NUMBER	MOISTURE CONTENT	PLASTIC M.C. LIQUID (20 40 60 80)	STANDARD PENETRATION (N) (20 40 60 80) ◆UNCONFINED (kPa)◆ (50 100 150 200) ▲POCKET PEN. (kPa)▲ (100 200 300 400)	Elevation (m)
0	Organic layer (TOP SOIL). Asphalt layer below grass ~40 mm. GRAVEL and SAND (FILL), trace silt, frequent cobbles.	P5-1A	4.7			575.0
1	SILT, organic, dark brown. GRAVEL and SAND, frequent cobbles, trace silt, scattered boulders upto 400mm in size.	P5-1B	8			574.0
2	Encountered seepage at 2.0 m. Fine sand, trace fine gravel, no silt, dense, wet at 2.2 m. Testpit terminated at 2.2 m.	TP5-2	23.1			573.0
3						572.0
4						571.0
5						570.0
6						569.0
7						568.0
8						567.0
9						566.0
10						565.0

EBA Engineering Consultants Ltd.

LOGGED BY: HH	COMPLETION DEPTH: 2.2m
REVIEWED BY: LD	COMPLETE: 8/19/2009
DRAWING NO:	Page 1 of 1

GEOTECHNICAL K13101383.GPJ EBA.GDT 09/8/25

DATE: 2009/10/15 - 2:12pm
PATH: H:\DATA\020572 - Hwy 33 Gopher Creek\41 - Civil Engineering\4100 - Drawings\7804-5 TO 7.DWG
LAYOUT: 7804-7

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE AS SHOWN

DESIGNED N. KRUCKENBERG NK DATE 2009-08-19
DRAWN N. KRUCKENBERG DATE 2009-08-19
CHECKED Y. DING DATE 2009-10-15
APPROVED R. LEE DATE 2009-10-15

PROFESSIONAL SEAL

Oct 15, 2009

Rev	Date	Description	Signature

REVISIONS

TEST HOLE LOGS

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
GOPHER CREEK PED. TUN. No.– 7804

SENIOR DESIGN ENGINEER

Oct 15, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198–0001	2	7804–7

SECTION 13
T.P. 26, OSOYOOS DIVISION, YALE DISTRICT

BENTIEN RD.

PLAN 25650

PLAN 24835

PLAN 24835

PLAN 46576

PLAN 48141

PLAN H8433

PLAN 49831

"T100"
R 450.000 LT
Δ 32°05'32"
Ac 26°57'58"
AD 149.327
ARC 211.790
Es 18.358

CS 120+55.723

ST 120+95.723

Ls 40
Θs 2°52'47"

TS 122+82.858

IF DRIVEWAY REMAINS ACTIVE AT TIME OF CONSTRUCTION, PROVIDE DRIVEWAY LETDOWN.

IF DRIVEWAY REMAINS ACTIVE AT TIME OF CONSTRUCTION, PROVIDE DRIVEWAY LETDOWN.

4" CHAINLINK FENCE

CL & GR

CLOSE

POT 425+00.000 "L425"
POT 121+56.400 "L100"
N 5875763.523
E 329838.244

MATCHLINE SEE DRAWING R2-699-106

HWY 33

"L100" LINE

REMOVE AND DISPOSE OF EXISTING FENCE

PI 425+71.451
N 527622.405
E 329803.315
EC 425+74.476

"L425" LINE

345°12'45"

BC 425+16.532

KAP86139
CL & GR

PULVERIZE EXISTING ASPHALT ON HWY 33. FOR DETAILS SEE DRAWING R2-699-303

PLAN 4283
Lot 2

TEMPORARY CONSTRUCTION LICENSE ACCESS

BC 425+68.339

"L425"
R 15.000 LT
Δ 23°26'35"
AD 3.112
ARC 6.137
Ec 0.519

LIMIT OF CONSTRUCTION
POT 425+80.000
TIE TO EXISTING
N 5875743.643
E 329817.764

POT 426+00.800

PLAN 22851
Lot A

EC 425+25.997

TEMPORARY CONSTRUCTION LICENSE ACCESS

PI 425+22.572
N 527572.615
E 329816.459

"L425"
6.000 RT
R 8.000
Δ 90°23'04"
AD 6.046
ARC 9.419
Ec 3.514

PLAN 10262
Lot A

R/W PLAN 49614

PLAN 11265
Lot A

PLAN 11265
Lot B

PLAN 15924
Lot 2

PLAN 54818
Lot B

PI 119+53.260

SEE DRAWING R2-699-107

MATCHLINE SEE DRAWING R2-699-106

FOR GENERAL NOTES
SEE DWG. R2-699-101

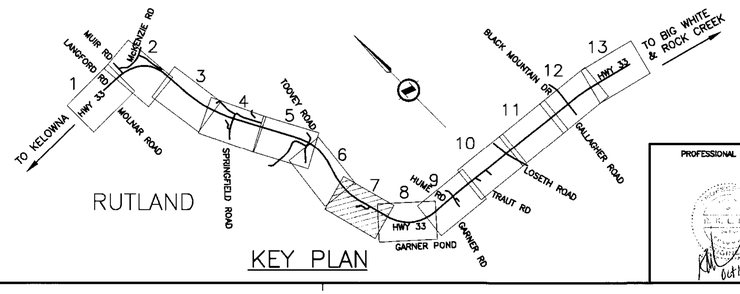
FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

FOR DRAINAGE AND UTILITIES
SEE DWG. R2-699-501 THRU 516

CL & GR TOTAL THIS SHEET:
1.881 ha



KEY PLAN

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Ministry of Transportation and Infrastructure

City of Kelowna

SCALE 0 1:500 25

DESIGNED	V. WANG / R.S. BRAR	DATE 2007-11-23
DRAWN	N. KRUCKENBERG	DATE 2007-11-23
CHECKED	K. MacDONALD/R. LEE	DATE 2007-11-23
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature
A	09/10/15	ADDENDUM 2 – L425 REVISED	

REVISIONS

PLAN

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 119+40.000 TO STA. 123+00.000

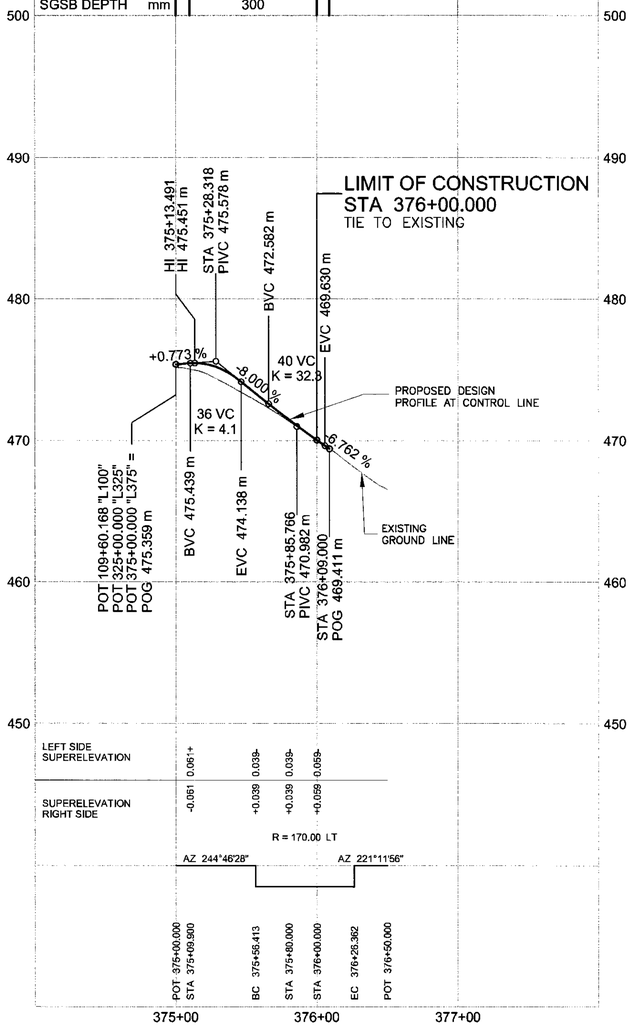
SENIOR DESIGN ENGINEER

DATE Oct 15, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.	
2064	22198-0001	2	R2-699-107	A

DATE: 2009-10-15 - 2:09pm
PLOT: C:\Documents and Settings\rlee\Desktop\Rev 33 - Four Lanes\4-2 - Civil Engineering\DWG\R2-699-107 Plan 113.dwg
LAYOUT: 107

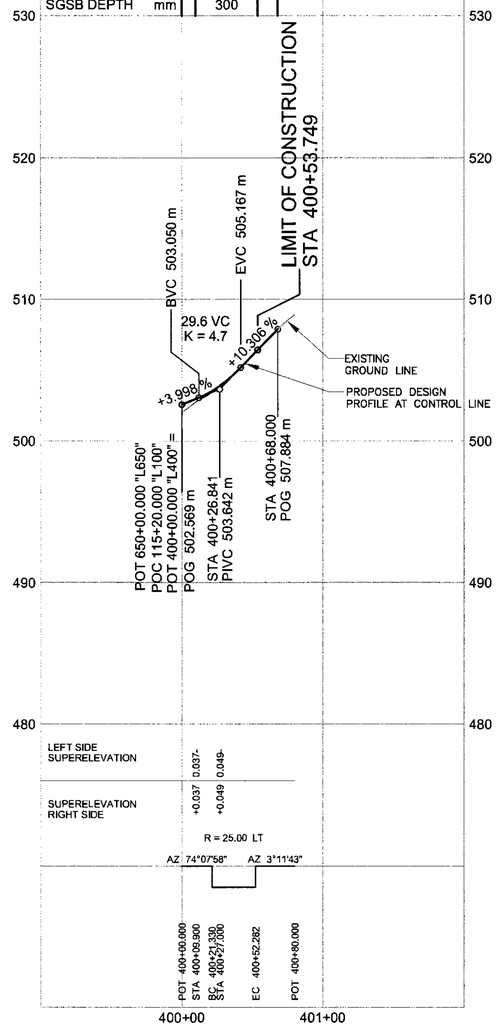
TYPE-D	m³	7	NIL	307		TOTAL 314
EMBANKMENT	m³		12	24		TOTAL 36
STRIPPING	m³	NIL		99		TOTAL 99
SGSB DEPTH	mm	300				



"L375" LINE
SPRINGFIELD ROAD PROFILE

DESIGN SPEED 40 km/h

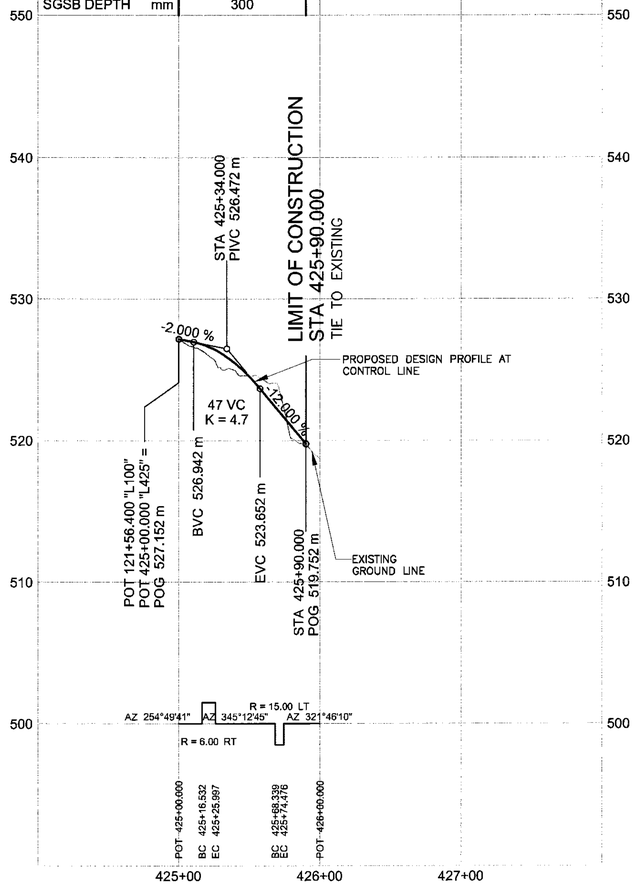
TYPE-D	m³		147			TOTAL 147
EMBANKMENT	m³		NIL	3		TOTAL 3
STRIPPING	m³		NIL			TOTAL 0
SGSB DEPTH	mm		300			



"L400" LINE
TOOVEY ROAD PROFILE

DESIGN SPEED 40 km/h

TYPE-D	m³		378	NIL		TOTAL 379
EMBANKMENT	m³		95	NIL	31	TOTAL 126
STRIPPING	m³		215			TOTAL 215
SGSB DEPTH	mm		300			



"L425" LINE
DRIVEWAY PROFILE

DESIGN SPEED 20 km/h

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

FOR GEOMETRICS AND LANING
SEE DWG. R2-699-401 THRU 413

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City of Kelowna

SCALE 0 Horiz. 1:2000 100
0 Vert. 1:200 10

DESIGNED	V. WANG	DATE 2007-03-30
DRAWN	N. KRUCKENBERG	DATE 2007-03-30
CHECKED	T. STEVENS	DATE 2007-04-16
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature
A	09/10/15	ADDENDUM 2 - L425 REVISED	

REVISIONS

PROFILE "L375","L400" & "L425"

HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD

SENIOR DESIGN ENGINEER

DATE Oct/15, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.	
2064	22198-0001	2	R2-699-206	A

INTERSECTION CURVES		
C22		C23
A	B	
R=6.000 Δ=90°00'00" Tc=6.000 ARC=9.425 Ec=2.485	R=4.000 Δ=90°23'04" Tc=4.027 ARC=6.310 Ec=1.676	R=8.000 Δ=90°00'00" Tc=8.000 ARC=12.566 Ec=3.314
P.I. 22+06.000 N. 527578.670 E. 329827.325	P.I. 22+13.477 N. 527576.040 E. 329817.623	P.I. 23+08.000 N. 527572.879 E. 329828.895

"L100"
R 450.000 LT
Δ 32°03'32"
Δc 26°57'58"
AD 149.327
ARC 211.790
Es 18.358

CS 120+55.723
Ls 40
θs 2°32'47"
ST 120+95.723
TS 122+82.858

1.00 SUPPORT STRIP
1.50 SIDEWALK
2.00 BLVD.
0.60 CURB & GUTTER
CONCRETE SIDEWALK AS PER (TYP.) MoT SP 582-07.01
COMBINED CURB & GUTTER (TYP.) MoT SP 582-01.01
PAVEMENT EDGE
CONCRETE DRAINAGE BARRIER MoT SP 941-01.02.05

MATCHLINE SEE DRAWING R2-699-406

1.50 SHLD.
3.60
3.60
1.30
3.60
3.60
2.00 SHLD.

HWY 33
"L100" LINE

0.60 CRB
0.30 GRAVEL SHLD.
PAVEMENT EDGE
CONCRETE ROADSIDE BARRIER (TYP.) MoT SP 941-01.02.01 & 02

PI 119+53.260
N 527622.405
E 329803.315

POT 425+00.000 "L425"
POT 121+56.400 "L100"=
N. 527578.523
E. 329838.244

POT 121+47.400
BC 22+00.000

END CRB
STA. 121+41.277
OFFSET: 11.100 R

PI 425+71.451
EC 425+74.476

"L425" LINE

POT 425+08.896
EC 22+18.959
345°12'45"

C22 A B
C23
25+49'41"
164°49'41"

POT 121+67.400
EC 23+12.566
BC 425+16.532

POC 425+17.824
BC 23+00.000
POT 425+16.500
EC 22+09.425
POT 425+16.525
BC 22+09.450

PI 425+22.572
N 527572.615
E 329816.459

2.00 SHLD.
PAVEMENT EDGE
R=8.0
6.00
R=8.0
STA: 122+36.994
STA: 122+14.994

2.50
2.50 321°46'10"
BC 425+68.339
EDGE OF GRAVEL ROAD

R=7
6.00

EC 425+25.997

"L425"
6.000 RT
90°23'04"
6.040
9.463
2.514

"L425"
R 15.000 LT
Δ 23°26'35"
AD 3.112
ARC 6.137
Ec 0.319

LIMIT OF CONSTRUCTION
POT 425+90.000
TIE TO EXISTING
N 527572.615
E 329816.459

POT 426+00.000

STA: 122+25.994
OFFSET: 18.500 R

1.00
1.50
2.00
1.50 SHLD.
3.60
1.30
3.60
3.60
2.00 SHLD.
0.50

MATCHLINE SEE DRAWING R2-699-408

FOR PLANS
SEE DWG. R2-699-101 THRU 113

FOR PROFILES
SEE DWG. R2-699-201 THRU 215

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 304

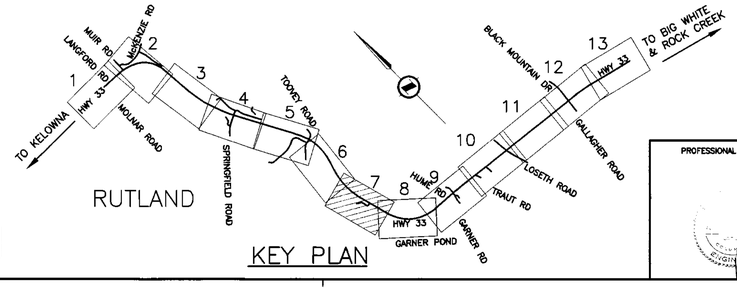
FOR DRAINAGE & UTILITIES
SEE DWG. R2-699-501 THRU 516

FOR BARRIER LOCATION CHART
SEE DWG. R2-699-401

DESIGN SPEED 70 km/h "L100"

DESIGN SPEED 20 km/h "L425"

DESIGN VEHICLE WB-20, UNLESS OTHERWISE NOTED



RUTLAND

KEY PLAN

PROFESSIONAL SEAL

Rev	Date	Description	Signature
A	09/10/15	ADDENDUM 2 – L425 REVISED	

REVISIONS

SNC·LAVALIN

DESIGNED V. WANG / R.S. BRAR DATE 2007-03-30
DRAWN N. KRUCKENBERG DATE 2007-03-30
CHECKED T. STEVENS DATE 2007-04-16
APPROVED R. LEE DATE 2009-08-28

SCALE 0 1:500 25

Ministry of Transportation and Infrastructure

City of Kelowna

GEOMETRICS AND LANING

HIGHWAY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 119+40.000 TO STA. 123+00.000

SENIOR DESIGN ENGINEER

DATE Oct 15, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.	
2064	22198-0001	2	R2-699-407	A

DATE: 2009/10/15 - 2:01pm
LAYOUT: H:\DWG\2064\22198 - Hwy 33 - Four Lanes\4 - DWG\E:\Sheets\LIT - DWG\R2-699-401 THRU 415.dwg
LATITUDE: 49°

SECTION 13
T.P. 26, OSOYOOS DIVISION,
YALE DISTRICT

BENTIEN RD.

DMH 507-2A
1050mmø PRECAST CONC. MH
OUTSIDE DROP MH TO MMCD S3
RIM EL. 525.20
N. 527660.20
E. 329836.21
SEE DWG. R2-699-515 FOR DETAILS

LB 507-2 STA. 119+80
GRATE EL. = 519.62
OFFSET FROM C/L =17.38L
11.0m - 200mmø CB LEAD

13.2m - 375mm ø PVC PIPE

CB 507-1 STA. 119+80
GRATE EL. = 520.61
OFFSET FROM C/L = 10.45L
4.2m - 200mmø CB LEAD

LB 507-4 STA. 120+70
GRATE EL. = 523.94
OFFSET FROM C/L = 14.85L
8.7m - 200mmø CB LEAD

CB 507-3 STA. 120+70
GRATE EL. = 524.03
OFFSET FROM C/L = 10.45L
4.2m - 200mmø CB LEAD

SWALE
START STATION 120+20
END STATION 126+00

DMH 507-4
1050mmø PRECAST CONC. MH
N. 527571.33
E. 329852.21

CB 507-5 STA. 121+20
GRATE EL. = 525.77
OFFSET FROM C/L = 10.45L
3.2m - 200mmø CB LEAD

LB 507-7 STA. 121+67
GRATE EL. = 527.11
OFFSET FROM C/L = 14.60L
3.0m - 200mmø CB LEAD

CB 507-8 STA. 121+70
GRATE EL. = 527.28
OFFSET FROM C/L = 10.45L
3.2m - 200mmø CB LEAD

CB 507-8 STA. 122+30
GRATE EL. = 528.93
OFFSET FROM C/L = 10.45L
3.2m - 200mmø CB LEAD

LB 507-10 STA. 122+87
GRATE EL. = 530.21
OFFSET FROM C/L = 14.60L
3.0m - 200mmø CB LEAD

DMH 507-5
1050mmø PRECAST CONC. MH
N. 527455.52
E. 329883.62

REPLACE SAN MH FRAME

REMOVE EX. CULVERT

REPLACE SAN MH FRAME

REMOVE EX. CULVERTS

REMOVE EX. CULVERT

94.5m - 525mm ø CONC. PIPE

REPLACE SAN MH FRAME

HWY 33

REPLACE SAN MH FRAME

50.0m - 250mm ø PVC PIPE.

REPLACE SAN MH FRAME

REPLACE SAN MH FRAME

150mm ø W/M SEE DWG. R2-699-541 FOR DETAIL

"L100" LINE

44.2m - 300mm ø PVC PIPE.

120m - 250mm ø PVC PIPE.

"L425" LINE

DMH 507-1
1200mmø PRECAST CONC. MH
N. 527754.07
E. 329808.75

DMH 507-2
1200mmø PRECAST CONC. MH
N. 527660.78
E. 329822.99

DMH 507-3
1050mmø PRECAST CONC. MH
N. 527619.59
E. 329839.13

LIMIT OF CONSTRUCTION
POT 425+90.000
TIE TO EXISTING

RELOCATE EX. 150mm ø AND 200 ø AC WATERMAIN FROM STATION 119+16 TO 124+67
SEE DWG. R2-699-541 FOR DETAILS

CB 507-9 STA. 122+90
GRATE EL. = 530.37
OFFSET FROM C/L = 10.45L
3.2m - 200mmø CB LEAD

200mm ø W/M SEE DWG. R2-699-541 FOR DETAIL

R/W PLAN A9614

PLAN 11265 Lot A
PLAN 11265 Lot B
PLAN 54818 Lot B
PLAN 15924 Lot 2
PLAN 22851 Lot A
PLAN 10262 Lot A
PLAN 24835
PLAN 46576
PLAN 48141
PLAN 49831
PLAN H8433
PLAN 4283
KAP86139

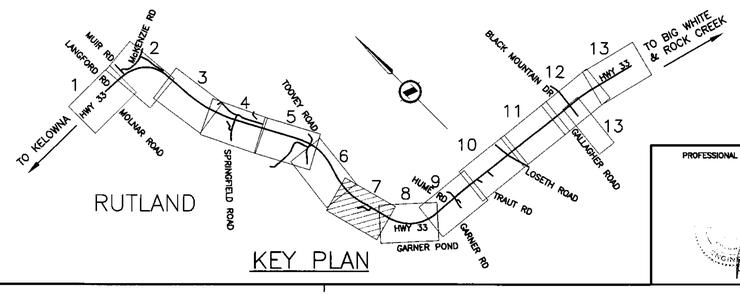
MATCHLINE SEE DRAWING R2-699-506

MATCHLINE SEE DRAWING R2-699-508

PIPE FLOW TABLE						
FROM MH	TO MH	PIPE SIZE (mm)	SLOPE (%)	PIPE CAP. (m3/s)	Q10 (m3/s)	Q100 (m3/S)
508-1	507-5	250 PVC	2.21	0.104	0.076	0.135
507-5	507-4	250 PVC	2.58	0.113	0.084	0.149
507-4	507-3	250 PVC	5.01	0.157	0.088	0.155
507-3	507-2	300 PVC	2.76	0.190	0.111	0.173
507-2	507-1	525 CONC	3.78	0.836	0.465	0.797
507-2 A	507-2	375 PVC	3.41	0.383	0.368	0.614

FOR DRAINAGE & UTILITIES GENERAL NOTES, SEE DWG. R2-699-501

FOR STORM DRAINAGE PROFILES SEE DWG. R2-699-522 TO 532



KEY PLAN

SNC·LAVALIN

Ministry of Transportation and Infrastructure

City of Kelowna

DESIGNED K. PUN DATE 2008-02-22
DRAWN N. KRUCKENBERG DATE 2008-02-22
CHECKED R. LEE DATE 2008-02-22
APPROVED R. LEE DATE 2009-08-28

SCALE 0 1:500 25

DRAINAGE AND UTILITIES
HIGHWAY 33 - FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 119+40.000 TO STA. 123+00.000

PROFESSIONAL SEAL

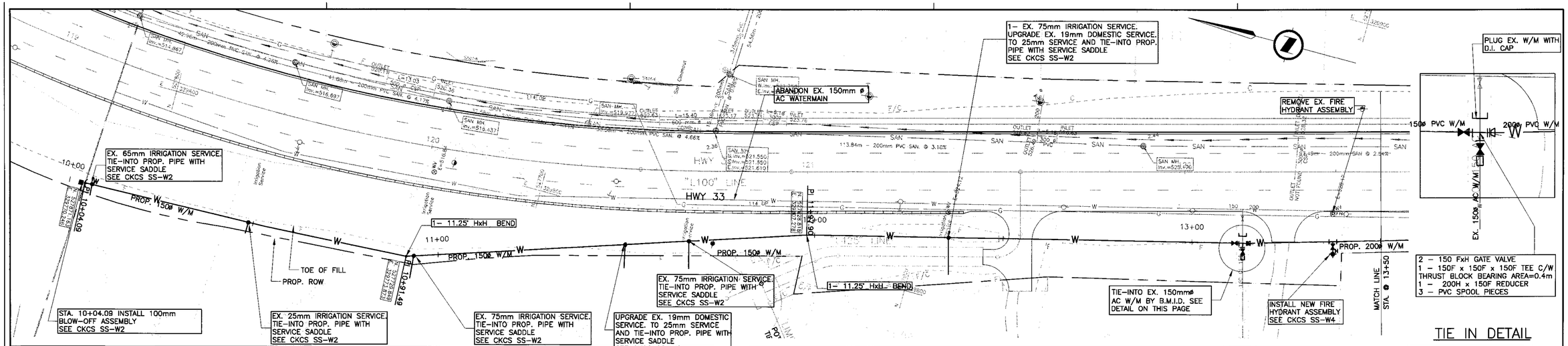
Rev	Date	Description	Signature
A	09/10/15	ADDENDUM 2 - L425 REVISED	

REVISIONS

SENIOR DESIGN ENGINEER

DATE Oct 19, 2009

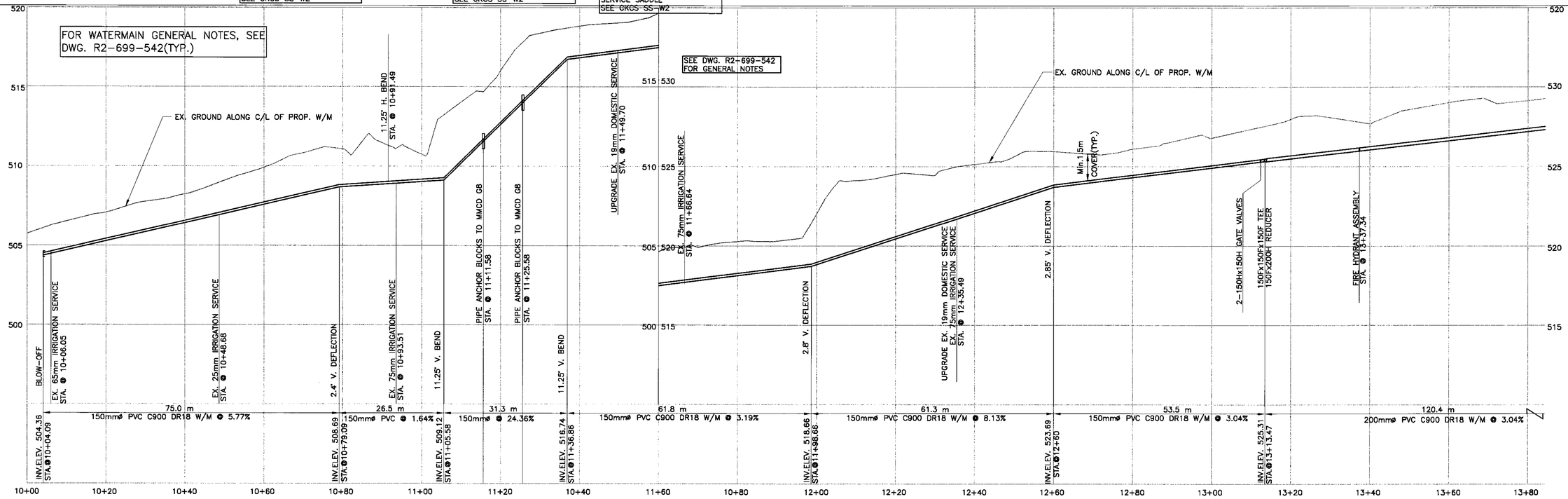
FILE No.	PROJECT No.	REG.	DRAWING No.	
2064	22198-0001	2	R2-699-507	A



TIE IN DETAIL

FOR WATERMAIN GENERAL NOTES, SEE DWG. R2-699-542(TYP.)

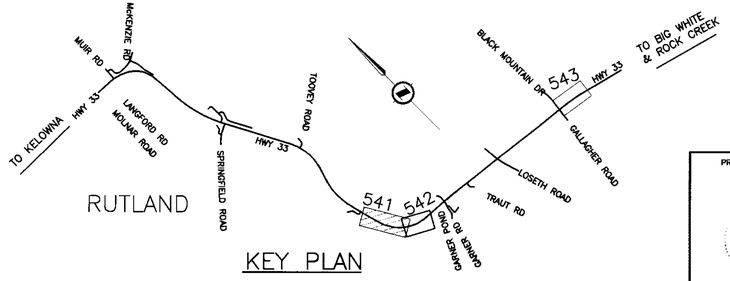
SEE DWG. R2+699-542 FOR GENERAL NOTES



FOR STORM PROFILES SEE DWG. R2-699-521 THRU 531

FOR TYPICAL SECTIONS AND DETAILS SEE DWG. R2-699-301 THRU 303

FOR GEOMETRICS AND LANING SEE DWG. R2-699-401 THRU 413



KEY PLAN

SNC·LAVALIN

BRITISH COLUMBIA The Best Place on Earth — Ministry of Transportation and Infrastructure — City of Kelowna

SCALE 0 Horiz. 1:500 20 / 0 Vert. 1:125 5

DESIGNED	K. PUN/B. YANG	DATE 07-11-23
DRAWN	B. YANG	DATE 07-11-23
CHECKED	R. LEE	DATE 07-11-23
APPROVED	R. LEE	DATE 2009-08-28

PROFESSIONAL SEAL

Rev	Date	Description	Signature
A	09/10/15	ADDENDUM 2 - L425 REVISED	

REVISIONS

WATERMAIN RELOCATION

HIGHWAY 33 - FOUR LANING
TOOVEY ROAD TO GARNER ROAD
PLAN / PROFILE

SENIOR DESIGN ENGINEER — DATE Oct 15, 2009

FILE No.	PROJECT No.	REG.	DRAWING No.
2064	22198-0001	2	R2-699-541 | A

DATE: 2009-10-15 - 2:04pm
SYSTEM: M:\2064\0198\dgn - Hwy 33 - Four Lanes\Plt - Civil Engineering\R2 - Drawings\R2-699-541 PLAN_Sht.dwg

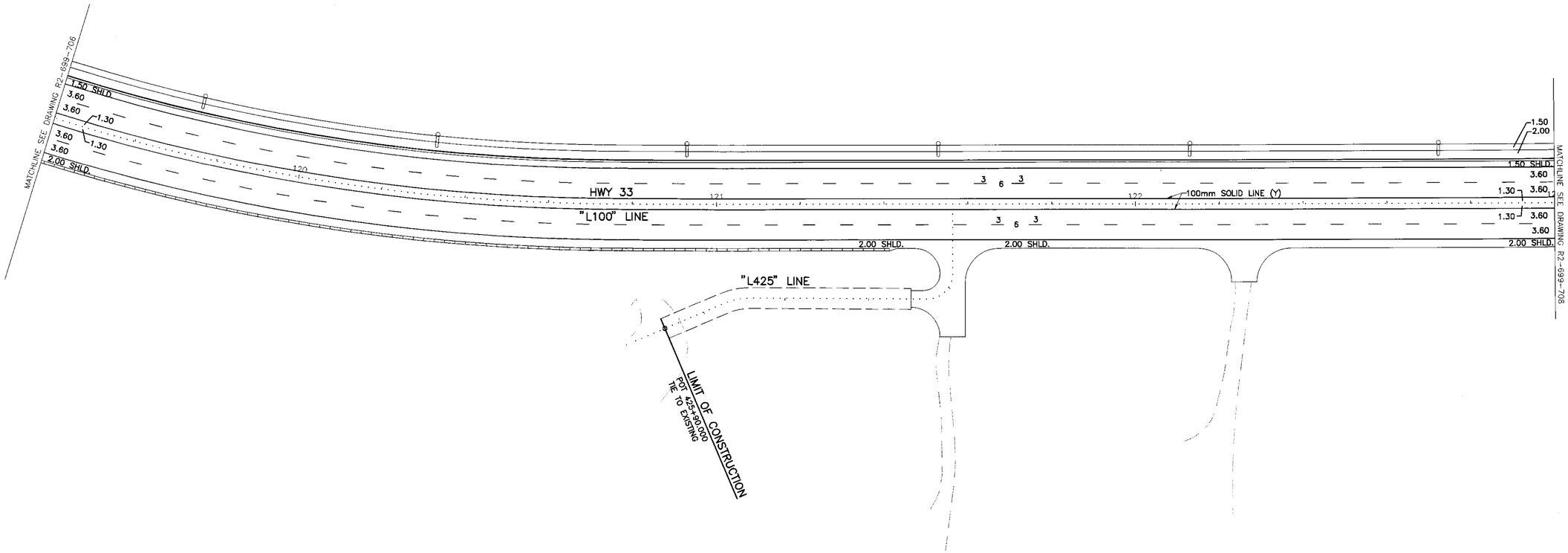
PAVEMENT MARKINGS LEGEND

— — 3 3 — — — 100mm – CONTINUITY PAINT LINE (WHITE)

——————— 100mm – LANE EDGE & DIRECTIONAL DIVIDING PAINT LINES (WHITE)

— 6 3 6 — — 100mm – LANE PAINT LINES (WHITE)

ALL PAVEMENT MARKINGS TO BE WHITE UNLESS OTHERWISE NOTED
(Y) DENOTES YELLOW



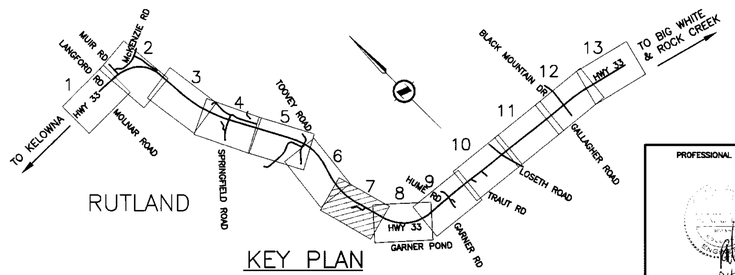
ALL MOVEMENTS WB-20

FOR TYPICAL SECTIONS AND DETAILS
SEE DWG. R2-699-301 THRU 303

DESIGN SPEED 70km/h FOR "L100"

NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS & CATALOGUE OF STANDARD TRAFFIC SIGNS (2008 EDITION).
2. SIGNS AND POLE BASES SHALL CONFORM TO THE MoT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2009 EDITION).
3. REFER TO ELECTRICAL DRAWINGS FOR ANY OVERHEAD SIGNS AND STRUCTURES (TYPE AND LOCATION).



KEY PLAN

PROFESSIONAL SEAL

Oct 15, 2009

SNC·LAVALIN

SCALE 0 1:500 25

DESIGNED	R.S. BRAR	DATE 2007-03-30
DRAWN	R.S. BRAR	DATE 2007-03-30
CHECKED	S. KAI	DATE 2008-04-25
APPROVED	R. LEE	DATE 2009-08-28

Rev	Date	Description	Signature
A	09/10/15	ADDENDUM 2 – L425 REVISED	

REVISIONS

BRITISH COLUMBIA The Best Place on Earth

Ministry of Transportation and Infrastructure

City of Kelowna

SIGNING AND PAVEMENT MARKINGS

HWY 33 – FOUR LANING
MUIR ROAD TO GALLAGHER ROAD
STA. 119+40.000 TO STA. 123+00.000

SENIOR DESIGN ENGINEER

Oct 15, 2009
DATE

FILE No.	PROJECT No.	REG.	DRAWING No.	
2064	22198-0001	2	R2-699-707	A

DATE: 2009/10/15 - 2:03pm
PATH: M:\DATA\2198\d - Hwy 33 - Four Lanes\c1 - Civil Engineering\CD DWGS\R2-699-707 THRU 710.dwg
LAYOUT: R2-699-707