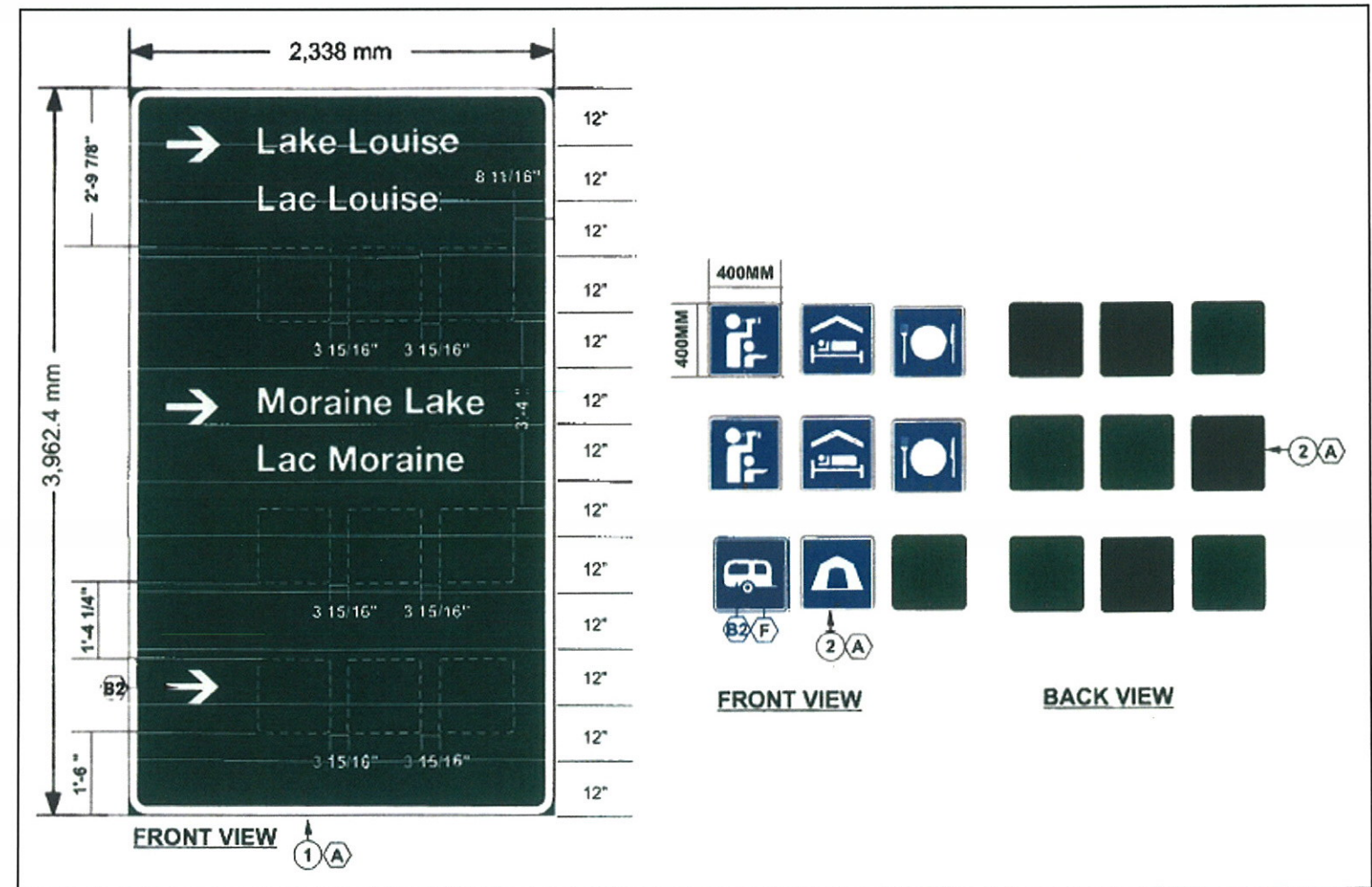


Site Locate Sketch: Lake Louise Arrow (Right) / Moraine Lake Arrow (Right) / Camping Arrow (Right)

## Site Photos

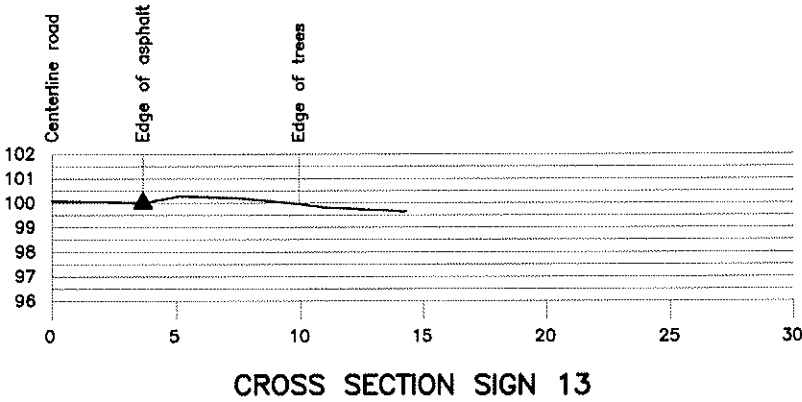
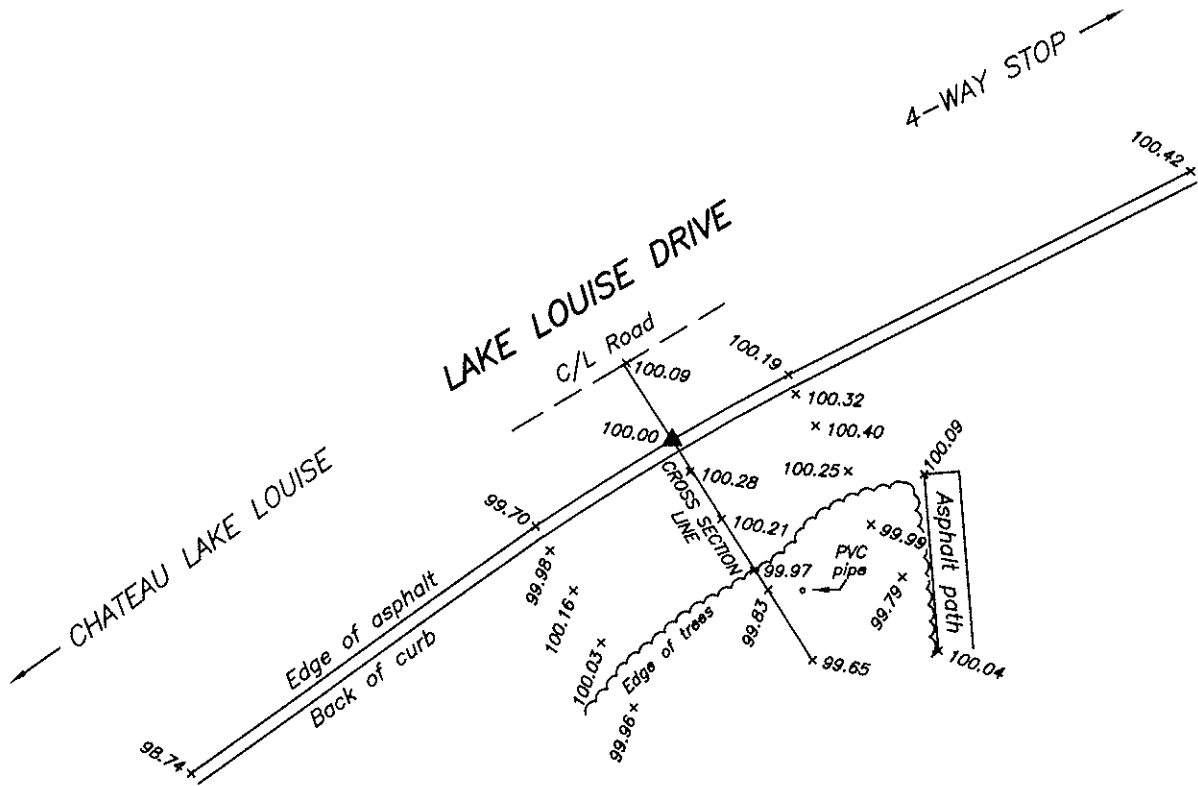
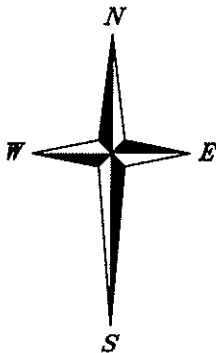
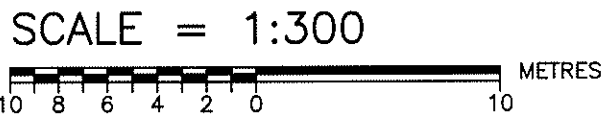


## Production Sketch



AMS#: 80,563	Client: Parks Canada  Parks Canada      Parcs Canada	Notes: New Install.
Field Unit: Lake Louise Townsite Field Unit		
Production Code: PAR1S6XX217	Pattison Sign Group  	
UTM Coordinates: Northing: 5697404    Easting: 557157		
GPS Location:    Latitude: 51 25 29.8    Longitude: 116 10 40.5	Prepared By:  Sitka Developments	
Date: June 14 2010		

# SKETCH PLAN OF SIGN LOCATION 13 (AMS #80,563) LAKE LOUISE (RIGHT) / MORaine LAKE (RIGHT) / CAMPING (RIGHT) BANFF NATIONAL PARK OF CANADA



- NOTES FOR LOCATION 13:
- Distances and elevations are in metres.
  - Elevations refer to an assumed elevation of 100.00 at Alpine Land Surveys Ltd. survey point at edge of asphalt.
  - The sketch is based on a site survey completed on July 6, 2010.
  - Location is at new site across road from mall entrance.



**ALPINE**  
 LAND SURVEYS LIMITED  
 116A, 1151  
 SIDNEY STREET  
 CANMORE, AB  
 T1W 3G1  
 403-678-6363



## GENERAL

### DESIGN

- G.1. THE CONTRACTOR SHALL EXAMINE ALL CONTRACT DOCUMENTS, CHECK DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER FOR CLARIFICATION PRIOR TO COMMENCING CONSTRUCTION. DISCREPANCIES NOT REPORTED ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- G.2. TEMPORARY SUPPORT AND TEMPORARY AND PERMANENT BRACING OF LOAD BEARING AND NON-LOAD BEARING ELEMENTS DURING CONSTRUCTION TO RESIST DEAD, LIVE AND CONSTRUCTION LOADS IS THE RESPONSIBILITY OF THE CONTRACTOR. DESIGN OF THE TEMPORARY SUPPORTS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- G.3. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION".
- G.4. THE GENERAL CONTRACTOR SHALL PROVIDE 6 SETS OF SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. ALLOW ADEQUATE TIME FOR REVIEW BY THE ENGINEER PRIOR TO FABRICATION OR ERECTION. SHOP DRAWINGS SHALL BE REVIEWED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION FOR REVIEW BY THE ENGINEER. SHOP DRAWINGS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ALBERTA. THE ENGINEER SHALL ENSURE THAT THE FABRICATION AND ERECTION OF THESE ELEMENTS ARE IN ACCORDANCE WITH THEIR DESIGN AND THAT THE DESIGN IS IN ACCORDANCE WITH ALL RELEVANT CODES AND REGULATIONS. SHOP DRAWINGS SHALL BE SUPPLIED FOR REVIEW FOR THE FOLLOWING:
- \* REINFORCING STEEL FOR CONCRETE
  - \* STRUCTURAL STEEL SHAPES AND PLATES
  - \* COLD FORMED STEEL FRAMING
  - \* BREAKSAFE ASSEMBLIES
- G.5. ALL DESIGN TO CONFORM TO THE ABC2006 AND ALBERTA INFRASTRUCTURE AND TRANSPORTATION GUIDELINES."
- G.6. **INSPECTIONS:**
- NOTIFY THE ENGINEER 24 HOURS IN ADVANCE FOR INSPECTIONS AND APPROVAL OF THE FOLLOWING:
- \* CONCRETE REINFORCEMENT BEFORE EACH CONCRETE POUR
  - \* STRUCTURAL STEEL

## LOADS

DEAD LOADS:		0.500 kPa
ICE LOADS:	12mm ACCRETION ON FACE OF PANEL	0.115 kPa
WIND LOADS: HOURLY WIND PRESSURE (1/50)		0.480 kPa
SIESMIC DATA:	Sa(0.2)=0.24 Sa(0.5)=0.14 Sa(1.0)=0.07 Sa(2.0)=0.04 PGA=0.12	

## EXCAVATION AND BACKFILL

- E.1. THE OWNER SHALL OBTAIN THE SERVICES OF A QUALIFIED TESTING AGENCY TO PERFORM COMPACTION TESTS AS REQUESTED BY THE ENGINEER.
- E.2. EXCAVATE TO THE LEVELS NOTED ON THE DRAWINGS FOR THE EXTENT OF THE STRUCTURE. STRIP THE OVER-EXCAVATED AREA OF ALL SILT.
- E.3. KEEP EXCAVATION FREE OF WATER WHILE FILL AND CONCRETE FOUNDATION IS PLACED.
- E.4. PROTECT BOTTOM OF EXCAVATION FROM FROST. DO NOT PLACE CONCRETE ON FROZEN SOIL.
- E.5. FIELD MEASUREMENT FOR GROUND ELEVATIONS AND DRAINAGE SLOPES.
- E.6. CONFIRM EXACT LOCATIONS OF ALL UTILITY LINES WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE COMMENCEMENT OF EXCAVATION.

## FOUNDATION

- F.1. FOOTINGS DESIGNED FOR SERVICABILITY LIMIT STATE BEARING CAPACITY OF 100KPa AND ULTIMATE LIMIT STATE CAPACITY OF 160KPa
- F.2. ELEVATIONS SHOWN ON THE DRAWINGS ARE FOR BIDDING PURPOSES ONLY. ALL FOOTINGS TO BE PLACED ON APPROVED BEARING STRATA.
- F.3. CONFIRM SERVICE LOCATIONS PRIOR TO PLACING FOOTINGS. LOWER FOOTINGS AS REQUIRED TO SUIT SITE SERVICES.
- F.4. FIELD MEASUREMENT FOR GROUND ELEVATIONS AND DRAINAGE SLOPES
- F.5. PROTECT FOOTINGS FROM FREEZING AND WATER INGRESS PIOR TO AND AFTER PLACEMENT.

## CONCRETE GENERAL NOTES

- CG.1. ENSURE SLEEVES, TIES, ANCHOR BOLTS, PIPE HANGERS AND ANY OTHER INSERTS OR OPENINGS REQUIRED IN THE CONCRETE BY OTHER TRADES ARE COMPLETED.
- CG.2. COLD WEATHER CONCRETING
1. COLD WEATHER CONCRETING IS TO COMPLY WITH CSA CAN3-A23.1-M90, CLAUSE 21.2.3 AND ACI STANDARD 306.
  2. USE HOT WATER WHEN TEMPERATURE IS BELOW +3C.
  3. A MAXIMUM OF 1/2% CALCIUM CHLORIDE MAY BE USED EXCEPT FOR P/T AND PARKING SLABS.
  4. WHERE SUPPLEMENTARY HEAT IS PROVIDED, USE APPROVED CONCRETE HEATERS WITH EXHAUST VENTED AWAY FROM SURFACE OF CONCRETE.
  5. FOR TEMPERATURES BELOW -10C, CHECK PROCEDURES WITH ENGINEER.
  6. PROCEDURES (TEMPS SPECIFIED ARE MINIMUM TEMPS):  
FOUNDATIONS  
ABOVE 0C: NO SPECIAL REQUIREMENTS  
-3C TO 0C: COVER WITH INSULATION BLANKET FOR FIRST 24 HOURS  
BELOW -3C: DO NOT POUR ON FROZEN SOIL. COVER AND PROVIDE SUPPLEMENTARY HEAT FOR FIRST 24 HOURS
- CG.4. CONDUITS, PIPES AND SLEEVES
- EMBEDDING OF PIPES, CONDUITS AND SLEEVES SHALL NOT BE ALLOWED EXCEPT IN ACCORDANCE WITH THE FOLLOWING GUIDELINES:
1. CENTRELINE SPACING TO BE NOT LESS THAN 3 TIMES THE DIAMETER OF 50 CLEAR WHICHEVER IS THE GREATER.
  2. CENTRELINE SPACING BETWEEN PARALLEL CONDUIT AND REINFORCING BARS TO BE 3 TIMES THE DIAMETER OR MIN. 50 CLEAR, WHICHEVER IS THE GREATER.
  3. SUBMIT THE LAYOUT OF CONDUIT AT POINTS OF CONGESTION AND ADD REINFORCING OR RE-ROUT AS DIRECTED THE THE ENGINEER (AT CONTRACTOR'S EXPENSE).
  4. FOR COLUMNS:  
THE MAXIMUM SIZE OF CONDUIT OR OTHER FITTINGS ARE NOT TO EXCEED 2% OF THE CROSS-SECTION AREA.  
EMBEDDED PIPING WILL NOT BE ALLOWED.

## STRUCTURAL STEEL

- S.1. FABRICATE AND ERECT STRUCTURAL STEEL TO CSA S16.1.
- S.2. ANCHOR BOLTS TO ASTM A36 OR A307 UNLESS NOTED. STRUCTURAL BOLTS AND NUTS TO ASTM A325 OR A325M-89. TIGHTEN ALL BOLTS WITH AN IMPACT WRENCH (SEE DETAILS ON DRAWINGS)
- S.3. SUBMIT SIX SETS OF SHOP DRAWINGS TO THE ENGINEER AND RECEIVE APPROVAL PRIOR TO FABRICATON. SHOW ALL DETAILS, INCLUDING FIELD WELDS, AND MATERIAL SPECIFICATIONS. SHOP DRAWINGS TO BE SEALED BY A PROFESSIONAL ENGINEER FOR DESIGN OF CONNECTIONS.
- S.4. WELDING TO BE METAL ARC WELDING TO CSA W59-M1989 BY WELDERS APPROVED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA W47.1.
- S.5. WELD REINFORCEMENT STEEL TO CSA W185. USE WELDABLE REINFORCEMENT TO CSA G30.18 GRADE 400.
- S.6. MINIMUM SIZE OF FIELD WELD, 2mm LESS THAN THE THICKNESS OF THE MATERIAL BUT NOT LESS THAN 4.8mm.
- S.7. TOUCH UP ALL FIELD WELDS WITH PRIMER AFTER SLAG HAS BEEN REMOVED.
- S.8. PROVIDE WELD AROUND ON BOTH SIDES, TO AVOID ZIPPER FAILURE
- S.9. 25% OF WELDS TO BE INSPECTED DURING FABRICATION, AT RANDOM BY A QUALIFIED INSPECTOR
- S.10. STUBS SHALL BE GALVANIZED AND CONFORM TO CSA G164
- S.11. ALL STRUCTURAL STEEL, BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED
- S.12. ALL STEEL WORK TO BE GRADE 350W-GALVANIZED

ABBREVIATIONS					
BLL	_____	BOTTOM LOWER LAYER	IF	_____	INSIDE FACE
BUL	_____	BOTTOM UPPER LAYER	LG	_____	LONG
BPO	_____	BAR PLACING ORDER	LV	_____	LENGTH VARIES
BM	_____	BEAM	LW	_____	LONG WAY
BOT	_____	BOTTOM	OC	_____	ON CENTRE
BTWN	_____	BETWEEN	OF	_____	OUTSIDE FACE
C/W	_____	COMPLETE WITH	R/W	_____	REINFORCED WITH
COL	_____	COLUMN	REINF	_____	REINFORCING
CONC	_____	CONCRETE	SOG	_____	SLAB ON GRADE
CONT	_____	CONTINUOUS	STAG	_____	STAGGERED
DP	_____	DEEP	SWT	_____	SHORT WAY
DWLS	_____	DOWELS	TEMP	_____	TEMPERATURE REINFORCING
EF	_____	EACH FACE	TYP	_____	TYPICAL
ES	_____	EACH SIDE	TLL	_____	TOP LOWER LAYER
EW	_____	EACH WAY	TUL	_____	TOP UPPER LAYER
EX	_____	EXTRA	UNO	_____	UNLESS NOTED OTHERWISE
FTG	_____	FOOTING	VERT	_____	VERTICAL
HOR	_____	HORIZONTAL	WT	_____	WALL THICKNESS
PLA	_____	POINT LOAD ABOVE			

## CONCRETE REINFORCEMENT NOTES

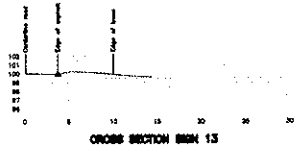
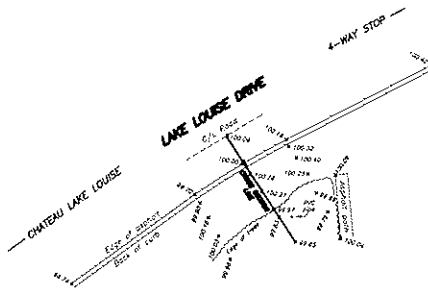
- CR.1. PROVIDE REINFORCEMENT TO CSA CAN-A23.1-M90 AND CSA G30.18-M92 400 MPa
- CR.2. PROVIDE NEW DEFORMED BARS TO CSA G30.18 GRADE 400. TIE ALL BARS SECURELY IN PLACE TO PREVENT DISPLACEMENT.
- CR.3. CLEAR COVER TO REINFORCEMENT (PRINCIPAL REINFORCEMENT) IS: CAST AGAINST AND PERMENANTLY EXPOSED TO EARTH: 75mm EXPOSED TO EARTH OR WEATHER: 20M OR GREATER 50mm 15M OR SMALLER 40mm
- CR.4. UNLESS OTHERWISE NOTED, USE CLASS C TENSION SPLICE FOR ALL REINFORCING STEEL.
- CR.5. SPLICE REINFORCEMENT AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS:
- |            |       |       |       |        |        |
|------------|-------|-------|-------|--------|--------|
| BAR SIZE   | 10M   | 15M   | 20M   | 25M    | 30M    |
| LAP SPLICE | 450mm | 600mm | 750mm | 1200mm | 1450mm |
- INCREASE LAP 20% FOR BAR SPACING LESS THAN 6"
- CR.6. STRAIGHT BARS: 3-15M4500 MEANS 3-15M BARS, 4500 LONG BENT BARS: 13-A15M1500 MEANS 13-15M BARS, 1500 LONG, HOOKED ONE END 180 DEGREES. 3-C15M1200 MEANS 3-15M BARS, 1200 LONG, HOOKED ONE END 90 DEGREES. THE BAR LENGTHS NOTED ARE EXCLUSIVE OF THE STANDARD HOOK.

## CONCRETE PROPERTIES NOTES

- CP.1. CONCRETE IS TO BE PLACED TO CSA A23.1 AS FOLLOWS:  
CONCRETE STRENGTH (@ 28 DAYS) 25MPa  
(TYPE HS SULPHATE RESISTANCE)  
AIR ENTRAINMENT 6-8%  
(FOR CONCRETE EXPOSED TO WEATHER)
- CP.2. MAXIMUM AGGREGATE SIZE TO BE 20mm.
- CP.3. DO NOT USED ADMIXTURES OTHER THAN AIR ENTRAINMENT, STANDARD WATER REDUCERS OR SUPER PLASTICIZERS WITHOUT PRIOR APPROVAL OF ENGINEER. CALCIUM CHLORIDE ADMIXTURES ARE NOT PERMITTED UNLESS NOTED.
- CP.4. REJECT ALL CONCRETE WHEN TIME BETWEEN BATCHING AND PLACING EXCEEDS 2 HOURS.
- CP.5. DO NOT ADD WATER TO CONCRETE ON SITE UNLESS AUTHORIZED BY ENGINEER.
- CP.6. CONSOLIDATE ALL CONCRETE USING MECHANICAL VIBRATORS.

## DRAWING LIST

DRAWING LIST			
DWG	TITLE	ISSUE FOR	DATE
S-0	GENERAL NOTES	CONSTRUCTION	2010.08.09
S-1	ELEVATION VIEW	CONSTRUCTION	2010.08.09
S-2	DETAILS	CONSTRUCTION	2010.08.09
S-3	POST DETAILS	CONSTRUCTION	2010.08.09
S-4	SECTIONS	CONSTRUCTION	2010.08.09



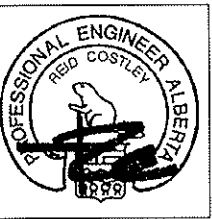
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Consultant:

LOCATION:	13
UTM COORDINATES:	
NORTHING:	5697464
EASTING:	557157
GPS LOCATION:	
LATITUDE:	51 25 29.8
LONGITUDE:	116 10 40.5



01	ISSUE FOR CONSTRUCTION	2010.08.09
No.	Revision/Issue	Date

Consultant:

**cascadeengineeringgroup**

#101,621 10 st, canmore ab t1w2a2  
t [403] 678 4211 f [403] 609 0437

Drawing:

## GENERAL NOTES

Project:

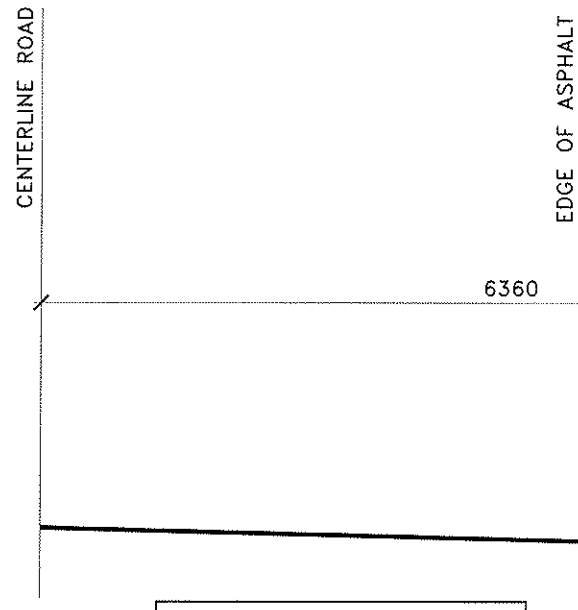
**PARKS CANADA,  
LAKE LOUISE  
AMS #80,563**

BANFF, ALBERTA

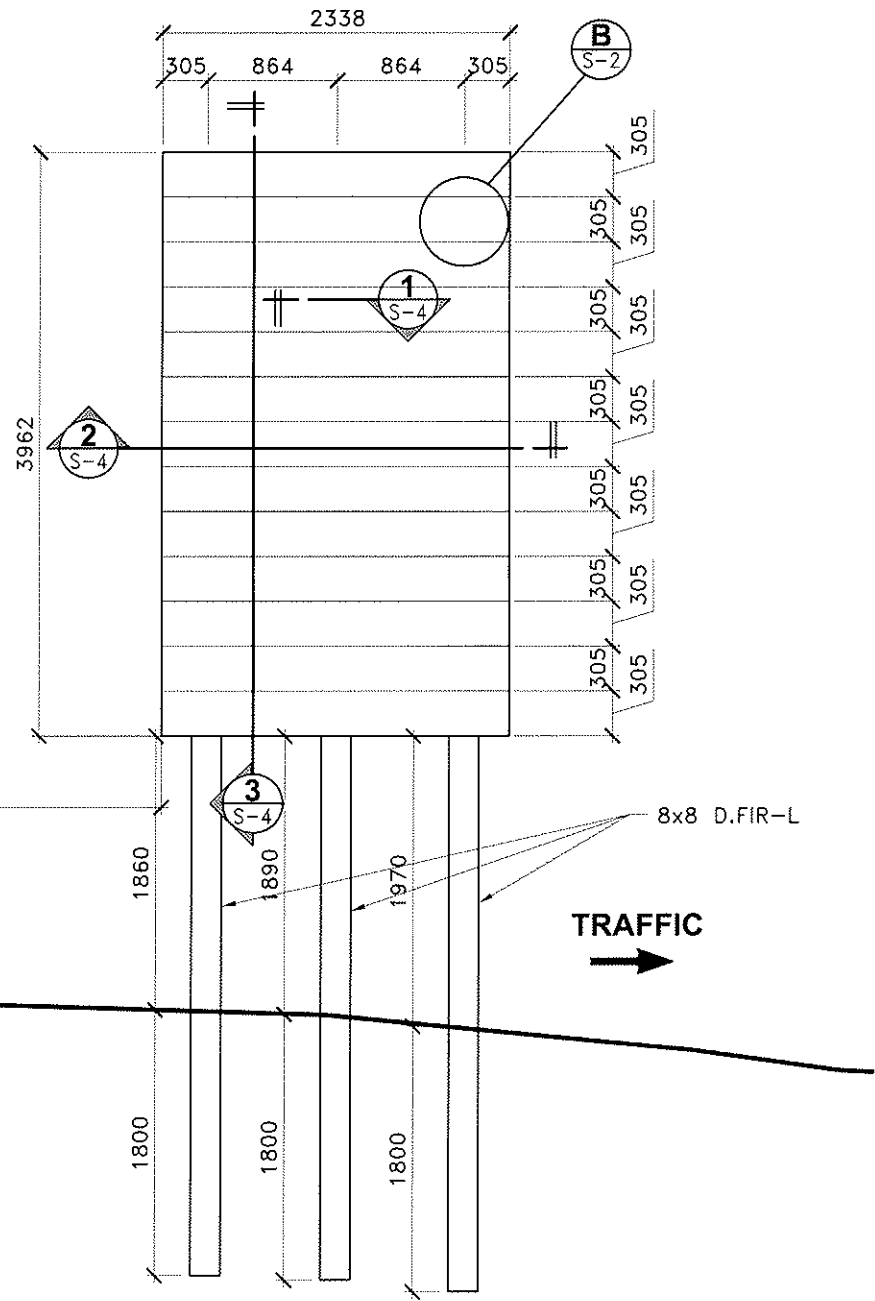
Project No.	10-110	Sheet
Date	10.07.29	
Scale	AS SHOWN	

# S13-0

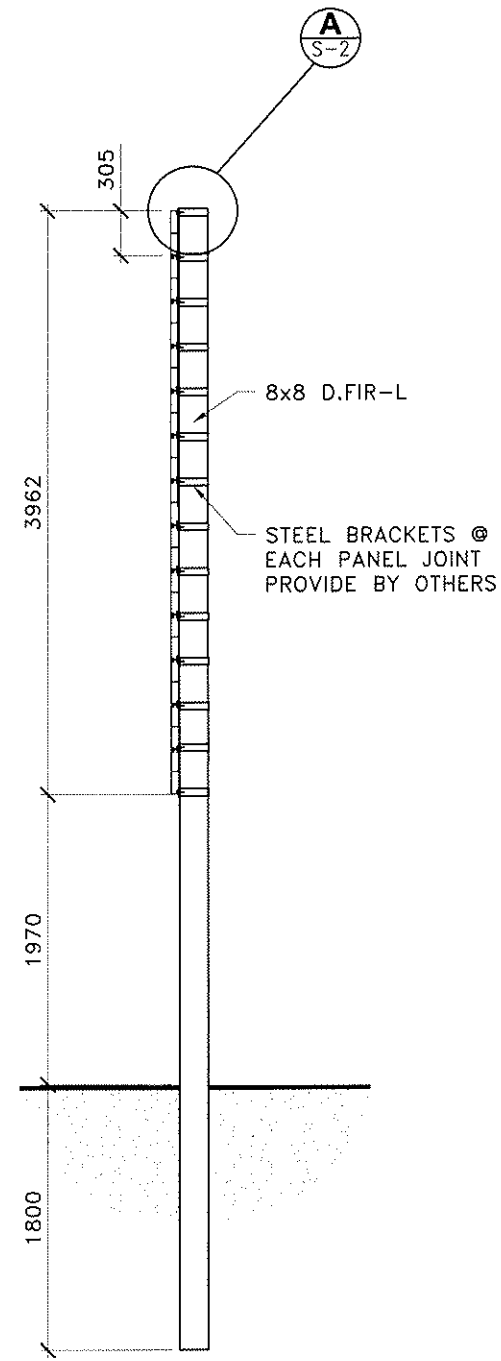
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- SIGN TITLE: LAKE LOUISE ARROW(RIGHT)/MORaine LAKE ARROW(RIGHT)/CAMPING ARROW(RIGHT)
- PRODUCTION CODE: PAR1S6XX217
- HEIGHT: 3962.4 mm
- LENGTH: 2338 mm
- AMS#: 80,563
- UTM COORDINATES: NORTHING : 5697404 EASTING: 557157
- GPS LOCATION: LATITUDE: 51 25 29.8 LONGITUDE: 116 10 40.5



**NOTES:**  
ALL BACKFILL MATERIAL TO BE WELL GRADED GRANULAR FILL TO BE COMPACTED TO 98% IN LIFTS OF 0.6m MAXIMUM



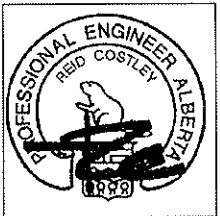
FRONT VIEW  
1 : 50



SIDE VIEW  
1 : 50

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Consultants:

LOCATION: 13  
UTM COORDINATES:  
NORTHING: 5697404  
EASTING: 557157  
GPS LOCATION:  
LATITUDE: 51 25 29.8  
LONGITUDE: 116 10 40.5



01	ISSUE FOR CONSTRUCTION	2010.08.09
No.	Revision/Issue	Date

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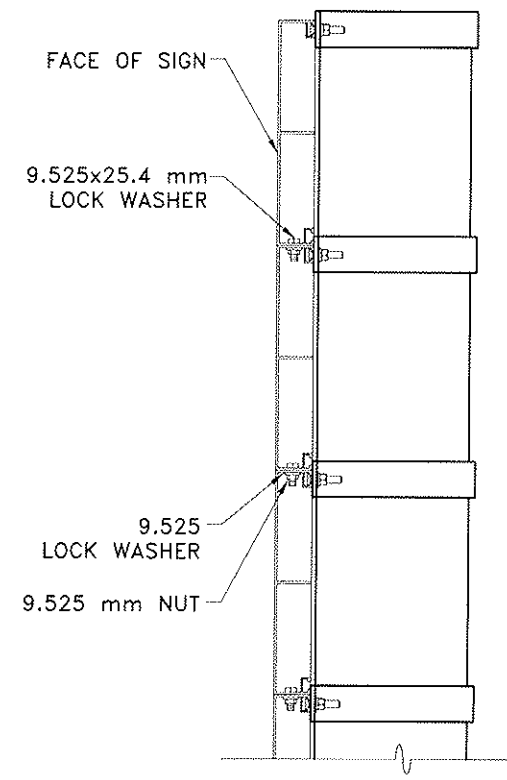
Drawing

## ELEVATION VIEWS

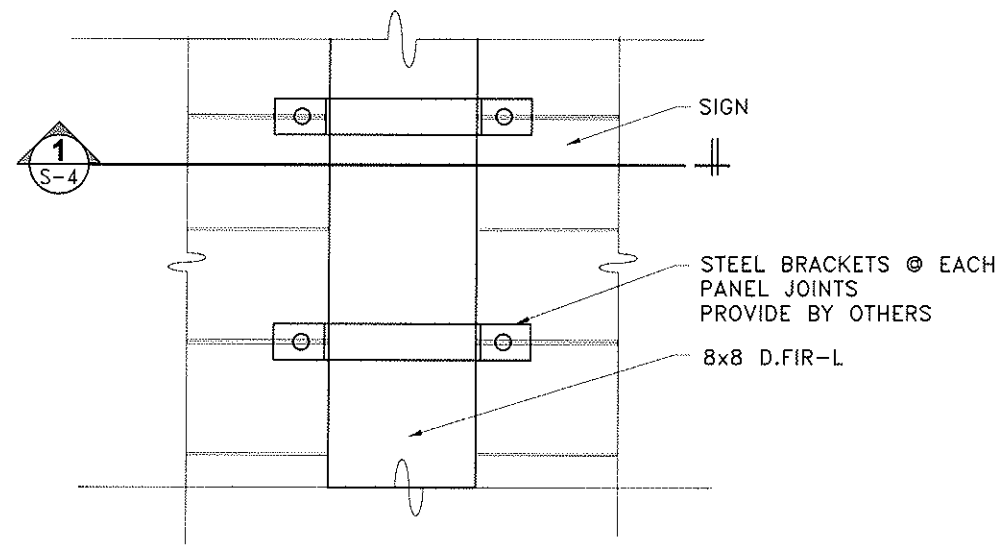
Project  
**PARKS CANADA,  
LAKE LOUISE  
AMS #80,563**  
BANFF, ALBERTA

Project No. 10-110  
Date 10.07.29  
Scale AS SHOWN

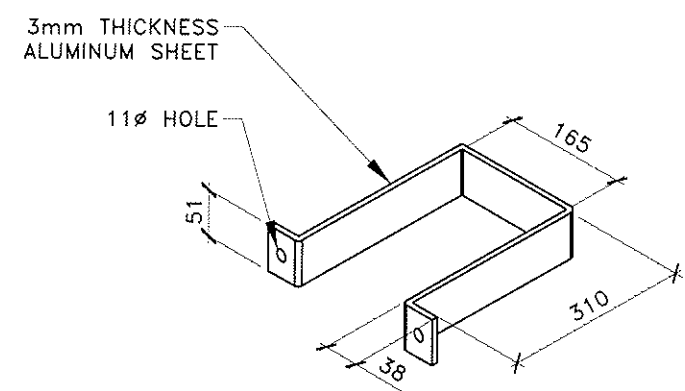
**S13-1**



**A** **DETAIL A**  
S-1 1 : 10



**B** **DETAIL B**  
S-1 1 : 10



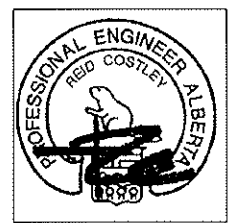
**-** **STEEL BRACKET DETAIL**  
S-1 1 : 10

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LOCATION:	13
UTM COORDINATES:	
NORTHING:	5697404
EASTING:	557157
GPS LOCATION:	
LATITUDE:	51 25 29.6
LONGITUDE:	116 10 40.5



No.	Revision/Issue	Date
01	ISSUE FOR CONSTRUCTION	2010.08.09

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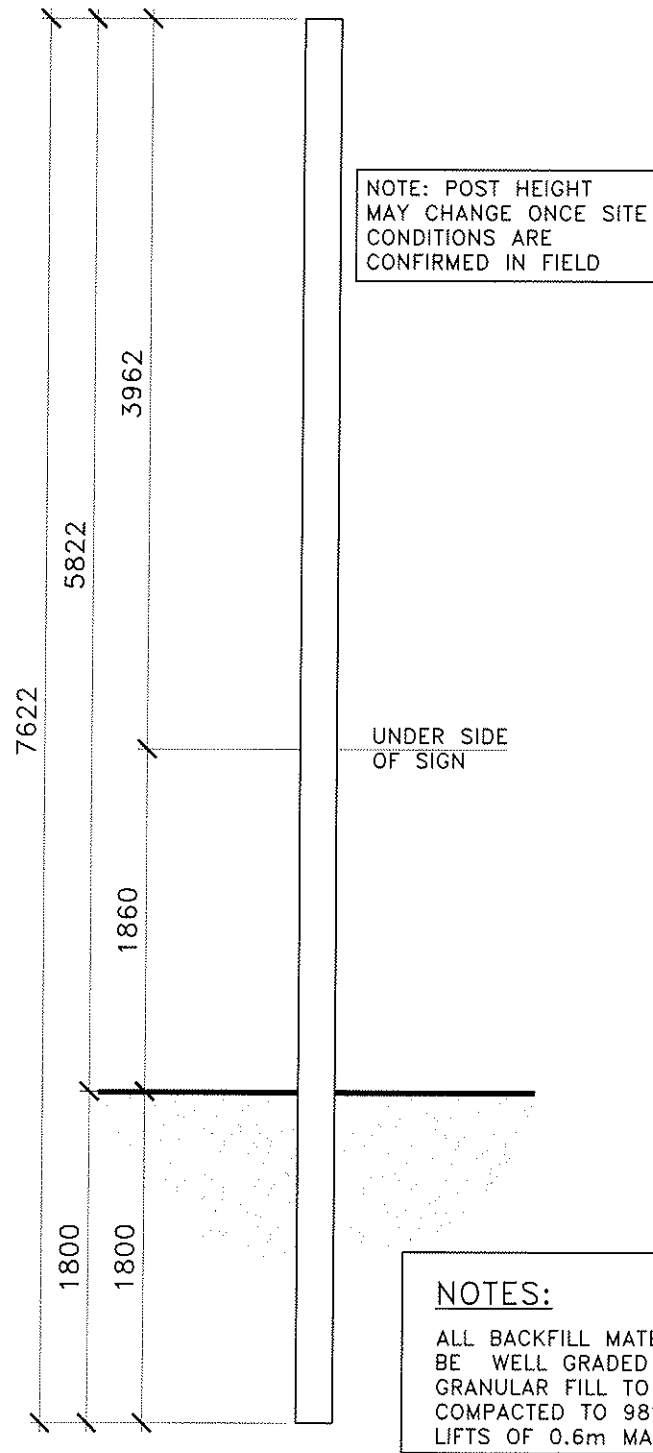
## DETAILS+ SECTIONS

**PARKS CANADA,  
LAKE LOUISE  
AMS #80,563**

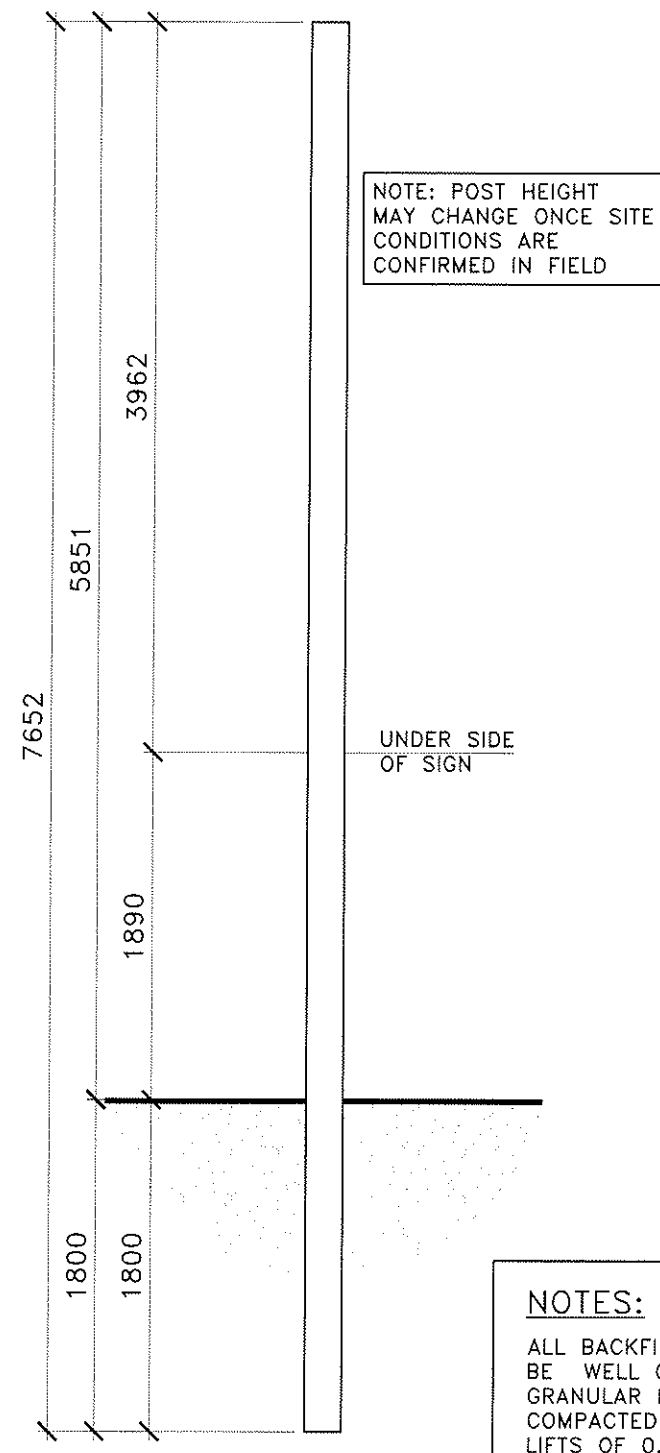
BANFF, ALBERTA

Project No.	10-110	Sheet
Date	10.07.29	
Scale	AS SHOWN	

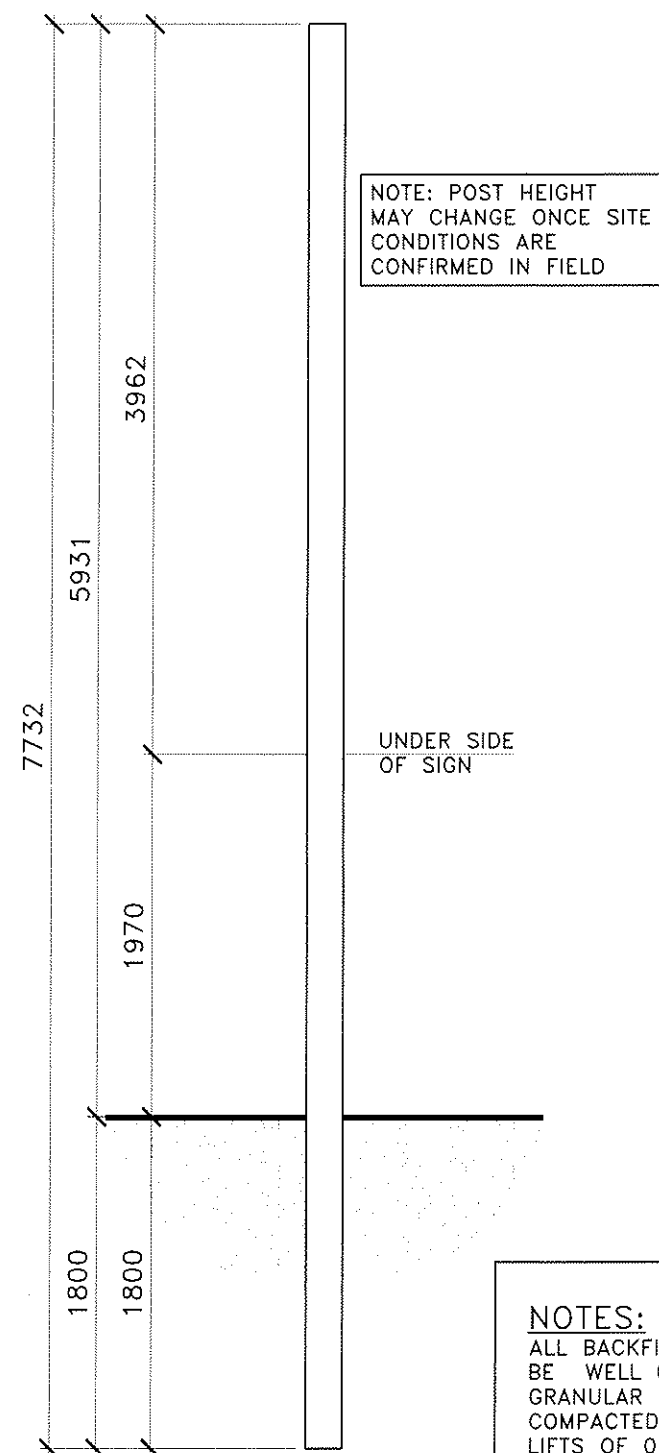
**S13-2**



**POST DETAIL NO. 1 (LEFT)**  
S-1 1 : 40



**POST DETAIL NO.2 (MIDDLE)**  
S-1 1 : 40



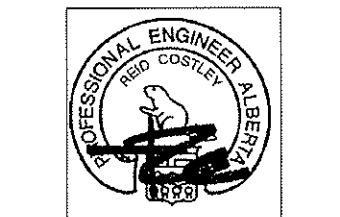
**POST DETAIL NO.3 (RIGHT)**  
S-1 1 : 40

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LOCATION: 13  
UTM COORDINATES:  
NORTHING: 5687404  
EASTING: 557157  
GPS LOCATION:  
LATITUDE: 51 25 29.8  
LONGITUDE: 116 10 40.5



01	ISSUE FOR CONSTRUCTION	2010.08.09
No.	Revision/Issue	Date

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Drawing

**POST DETAILS**

Project  
**PARKS CANADA,  
LAKE LOUISE  
AMS #80,563**  
BANFF, ALBERTA

Project No. 10-110  
Date 10.07.29  
Scale AS SHOWN

**S13-3**

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STEEL BRACKETS @  
EACH PANEL JOINTS  
PROVIDE BY OTHERS

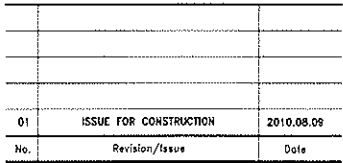
3962

UTM COORDINATES:

NORTHING:  
EASTING:

GPS LOCATION:  
LATITUDE:

LONGITUDE:



**cascadeengineeringgroup**

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## POST DETAILS

**PARKS CANADA,  
LAKE LOUISE  
AMS #80,563**

Project No. \_\_\_\_\_

10-110

10.07.29

**Abstract**

AS SHOWN

**S13-4**

