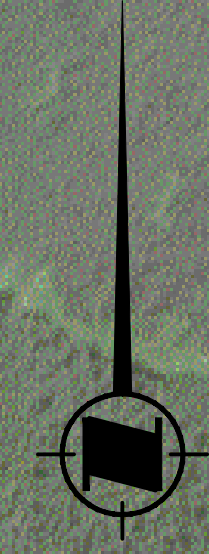
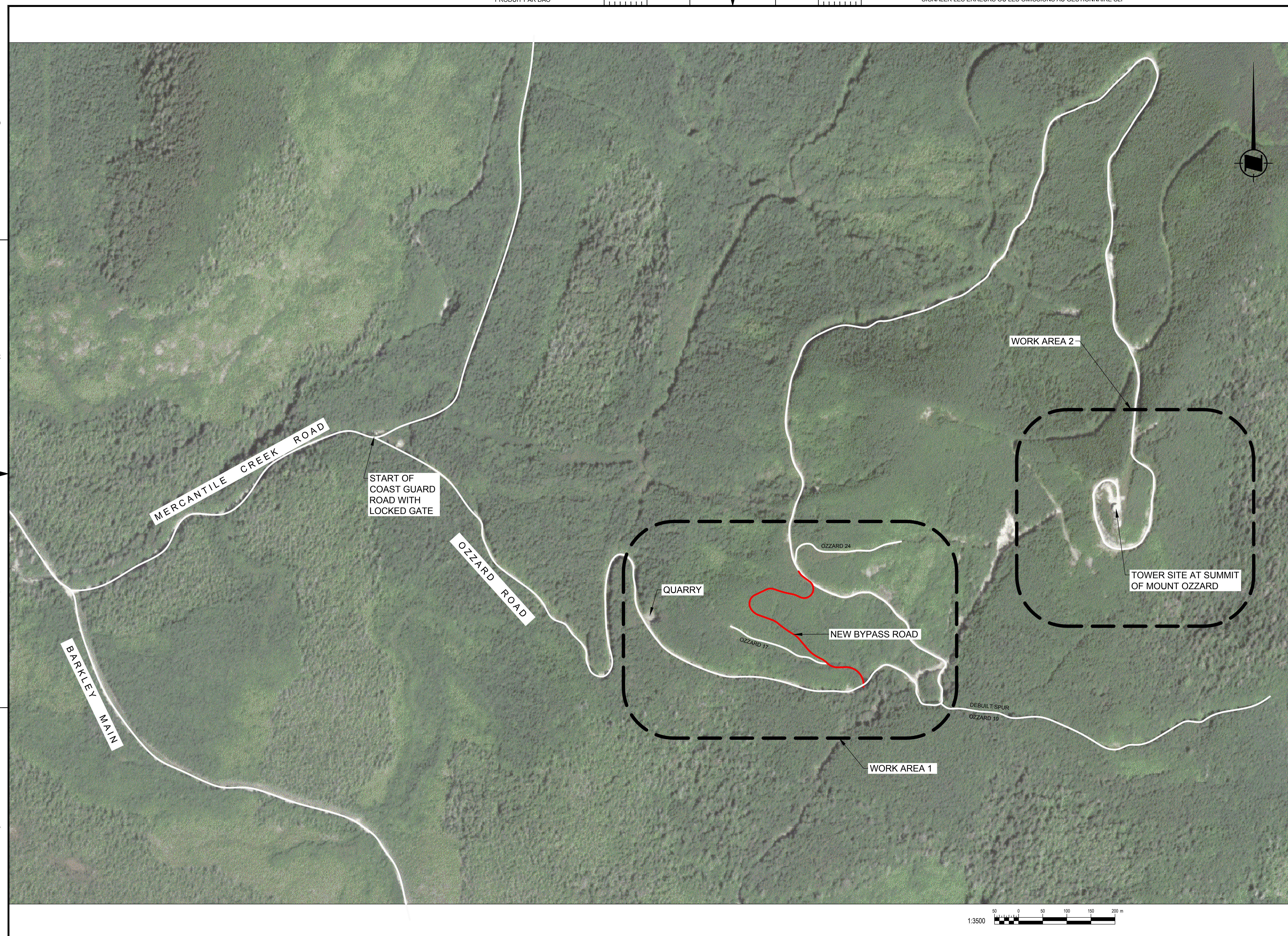


D  
C  
B  
A



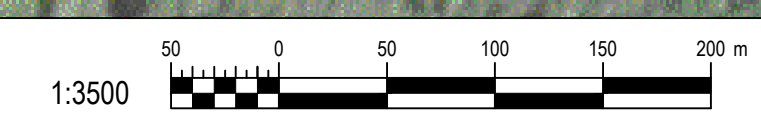
0	ISSUED FOR TENDER	TDK	YYYY-MM-DD
rev	description	by	date

Asset - Actif  
**WM-523 MOUNT OZZARD  
MCTS SITE  
NEW TOWER & BYPASS  
ROAD PROJECT**

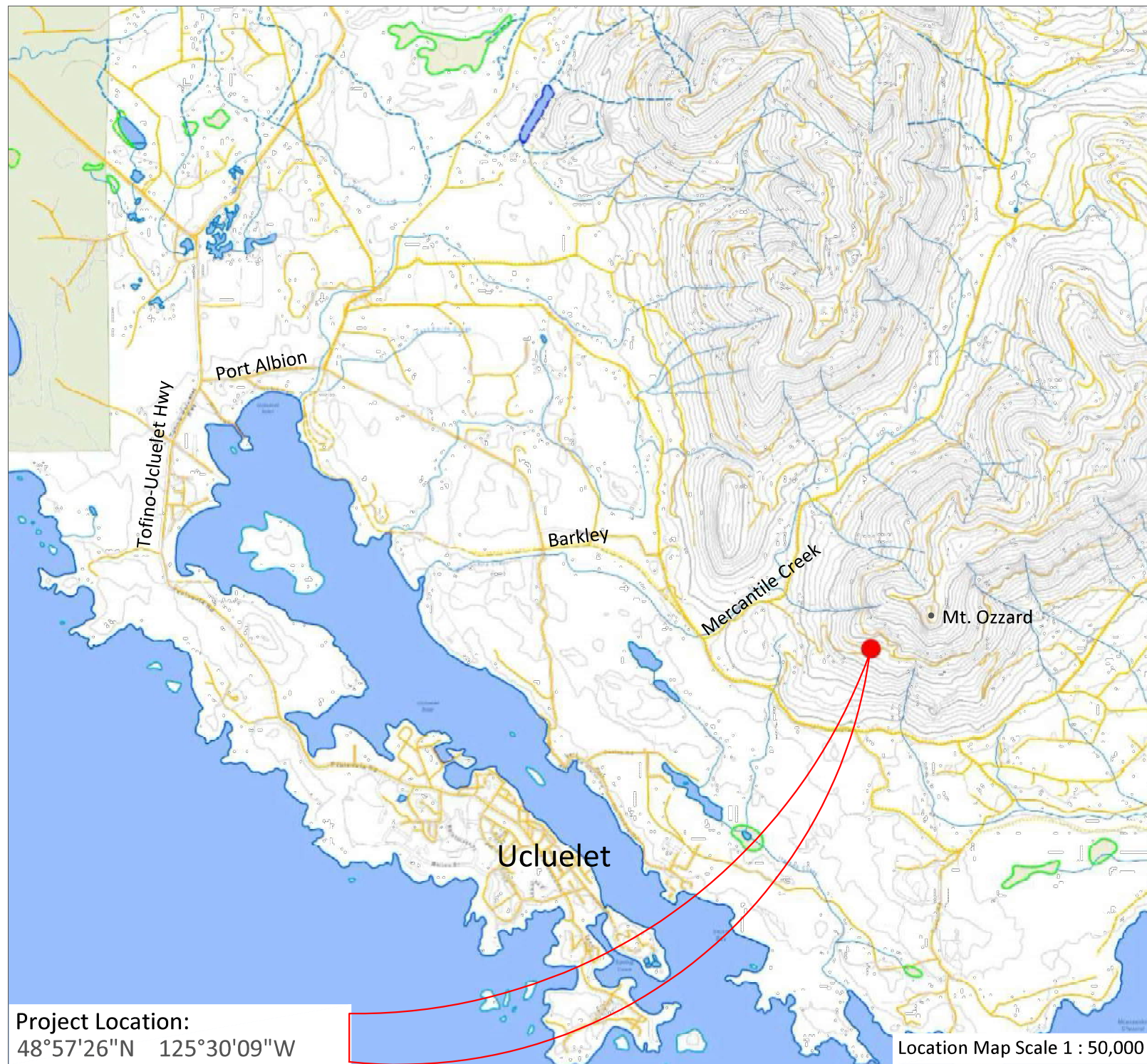
Drawing - Dessin  
**PROJECT OVERVIEW PLAN**

drawn - dessiné	date
TDK	2019-06-05
designed - conception	date
TDK	2019-06-05
checked - vérifié	date
SMC	2019-06-05
approved - approuvé	date
SMC	2019-06-05

CCG ref. no. - no. réf. GCC	scale - échelle
N62B5	1:3500
drawing no. - no. dessin	sheet/feuille
WM-523-1054	01/01
	rev-rév
	0



6 5 4 3 2 1  
millimeters  
millimètres



Project Location:  
48°57'26"N 125°30'09"W

Location Map Scale 1 : 50,000

**Caution:**  
Drawing scale may distort  
with printing. Intended to  
be printed on 11"x17"  
paper in colour.

Drawing Index	
19022 A1-1	Title Page
19022 A1-2	Notes
19022 A1-3	Plan Overview - 1:2000
19022 A1-4	Plan Overview - 1:1000
19022 A1-5	Road Profile
19022 A1-6	Plan 1:500 (1)
19022 A1-7	Plan 1:500 (2)
19022 A1-8	Cross Sections (1)
19022 A1-9	Cross Sections (2)
19022 A1-10	Estimated Volumes
19022 A1-11	Vehicle Tracking Analysis
19022 A1-12	Photos

## Mt. Ozzard Bypass Road (0+000m - 0+435m)

EOR Seal	Prepared for:			Fisheries & Oceans Canada Canadian Coast Guard Ucluelet Mt. Ozzard
Surveyed _____ D. Cybak, T. Scuffi _____ Apr. 2-4, 2019 Design _____ L. Deslauriers, T. Scuffi _____ May 30, 2019 Checked _____ L. Deslauriers _____ May 30, 2019 Drawn _____ T. Scuffi _____ May 30, 2019				
Engineer of Record (EOR) _____ Lee Deslauriers, P. Eng, RPF _____		Drawing No. 19022 A1	Sheet 1 of 12	

## 1.0 General Notes:

### 1.1 Design Criteria:

1.1.1 This structure is part of the permanent infrastructure of the Mt. Ozzard Operation.

1.1.2 The design of this road limits the use to heavy single-unit (HSU) trucks only and it is unlikely to accommodate tractor-trailer trucks or lowbeds.

1.1.3 StoneCroft Project Engineering Ltd. deems this structure to be a low risk design.

1.1.4 Slopes:

Fill slopes no steeper than:

- 1.5H:1V in compact granular fill
- 1.25H:1V in stacked riprap

Cut slopes no steeper than:

- 1H:1V in organics/overburden
- 0.5H:1V in compact till
- 0.25H:1V in competent bedrock

### 1.2 Geotechnical:

1.2.1 A formal geotechnical assessment was completed by Westcoast Geotechnical. See "Mt. Ozzard Debris Flow Site Evaluation and Bypass Road Evaluation", Sealed by D.M. Hazenboom, P. Eng., on August 13, 2014. The site appears to be composed of a blanket of colluvium and till over bedrock.

1.2.2 If excavation of foundations reveals any deviation, the Engineer of Record is to be advised prior to continuation of work.

### 1.3 General Requirements:

1.3.1 Engineer of Record field reviews are required for slope staking, horizontal / vertical grade control during construction, placement of rock fill foundation, and completion of installation.

1.3.2 A danger tree assessment should be completed by a WorkSafeBC approved person prior to works.

1.3.3 Final cut and fill slopes to be reviewed at site by Engineer of Record prior to approval.

1.3.4 All organics and overburden must be stripped from road prism prior to placing granular subgrade material (with no more than 10% fines).

### 1.4 Material Specifications:

Refer to project specifications.

## 2.0 Safety:

A preconstruction meeting will be held prior to any work outlining the environmental and safety concerns of the project. All work will comply with the British Columbia Occupational Health and Safety Regulations.

All cut slopes to be assessed by the Engineer of Record during construction.

## 3.0 Environmental:

### 3.1 Stream Classification:

No classified streams within the work area.

### 3.2 Environmental Management Plan (EMP):

Refer to project specifications.

### 3.3 Timing:

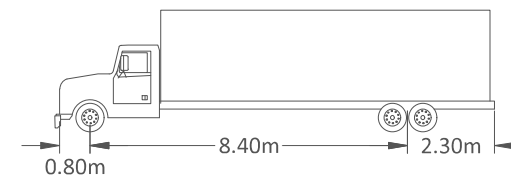
Follow all wet weather shutdown measures, or as specified in the EMP.

\*Vertical datum based on geoid CGVD2013

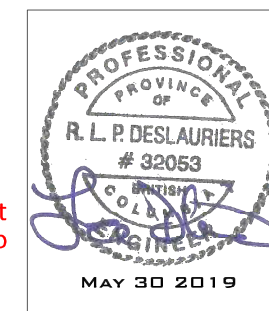
Benchmark Location Table (UTM NAD83 Zone 10)				
Benchmark #	Description	Northing (Y)	Easting (X)	Elevation (Z)
BM300	BM300 Road	5425800.252	316878.917	430.015
BM301	BM301 Road	5425768.334	316942.428	417.993
BM302	BM302 Road	5425575.793	316972.325	344.880
BM303	BM303 Road	5425628.814	317016.429	348.653
BM304	BM304 Hemlock	5425796.415	316867.683	426.316
BM305	BM305 Balsam	5425784.614	316836.784	417.610
BM306	BM306 Root Path	5425780.319	316780.325	410.761
BM307	BM307 Stump Path	5425785.816	316789.228	411.911
BM308	BM308 Stump Path	5425769.214	316762.530	405.404
BM309	BM309 Stump	5425776.897	316742.725	399.924
BM310	BM310 Hemlock	5425752.894	316745.488	394.770
BM311	BM311 Hemlock	5425755.032	316770.593	400.952
BM312	BM312 Hemlock	5425738.942	316811.658	393.850
BM313	BM313 Hemlock	5425736.602	316818.039	393.664
BM314	BM314 Stump	5425692.480	316844.507	376.129
BM315	BM315 Hemlock	5425712.910	316854.064	388.778
BM316	BM316 Cedar Root	5425683.122	316880.696	378.867
BM317	BM317 Stump	5425665.590	316867.991	367.844
BM318	BM318 Hemlock	5425655.159	316913.188	367.932
BM319	BM319 Hemlock Root	5425658.589	316918.218	366.601

Design Vehicle Used for Tracking Analysis

Heavy Single-Unit (HSU) Truck



Caution:  
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Canadian Coast Guard

Mt. Ozzard

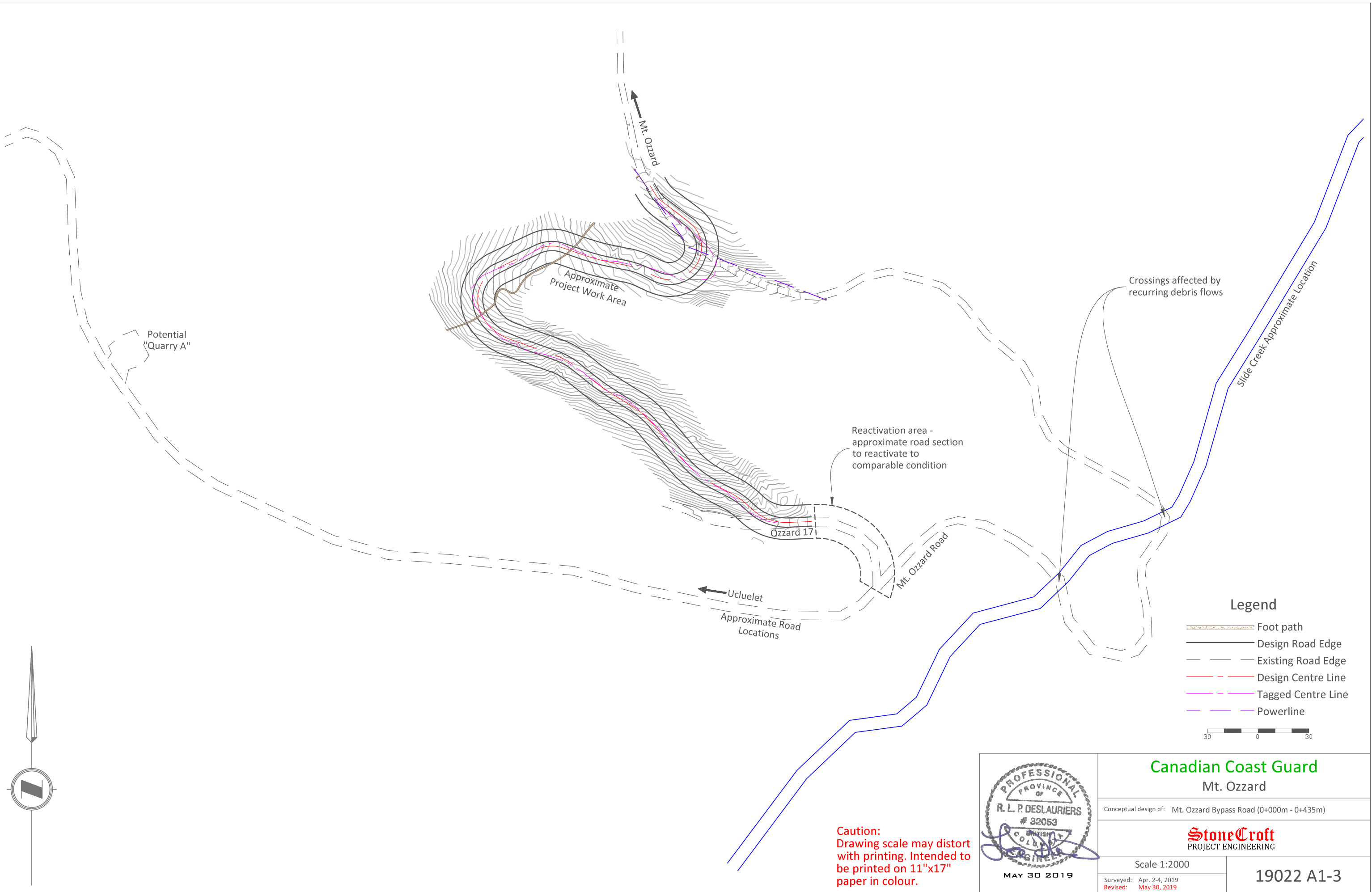
Conceptual design of: Mt. Ozzard Bypass Road (0+000m - 0+435m)

StoneCroft  
PROJECT ENGINEERING

Not to Scale

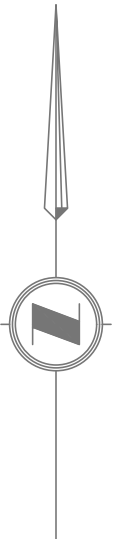
Surveyed: Apr. 2-4, 2019  
Revised: May 30, 2019

19022 A1-2



**Legend**

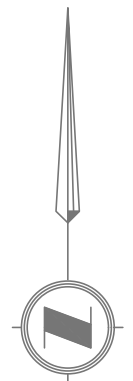
- Foot path
- Design Road Edge
- Existing Road Edge
- Design Centre Line
- Tagged Centre Line
- Powerline



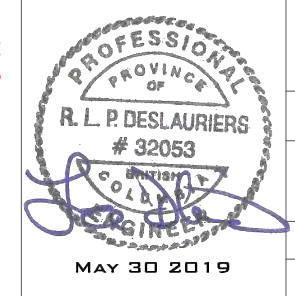
**Caution:**  
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 paper in colour.

PROFESSIONAL  
 PROVINCE OF  
 R. L. P. DESLAURIERS  
 # 32053  
 BRITISH COLUMBIA  
 ENGINEER  
 MAY 30 2019

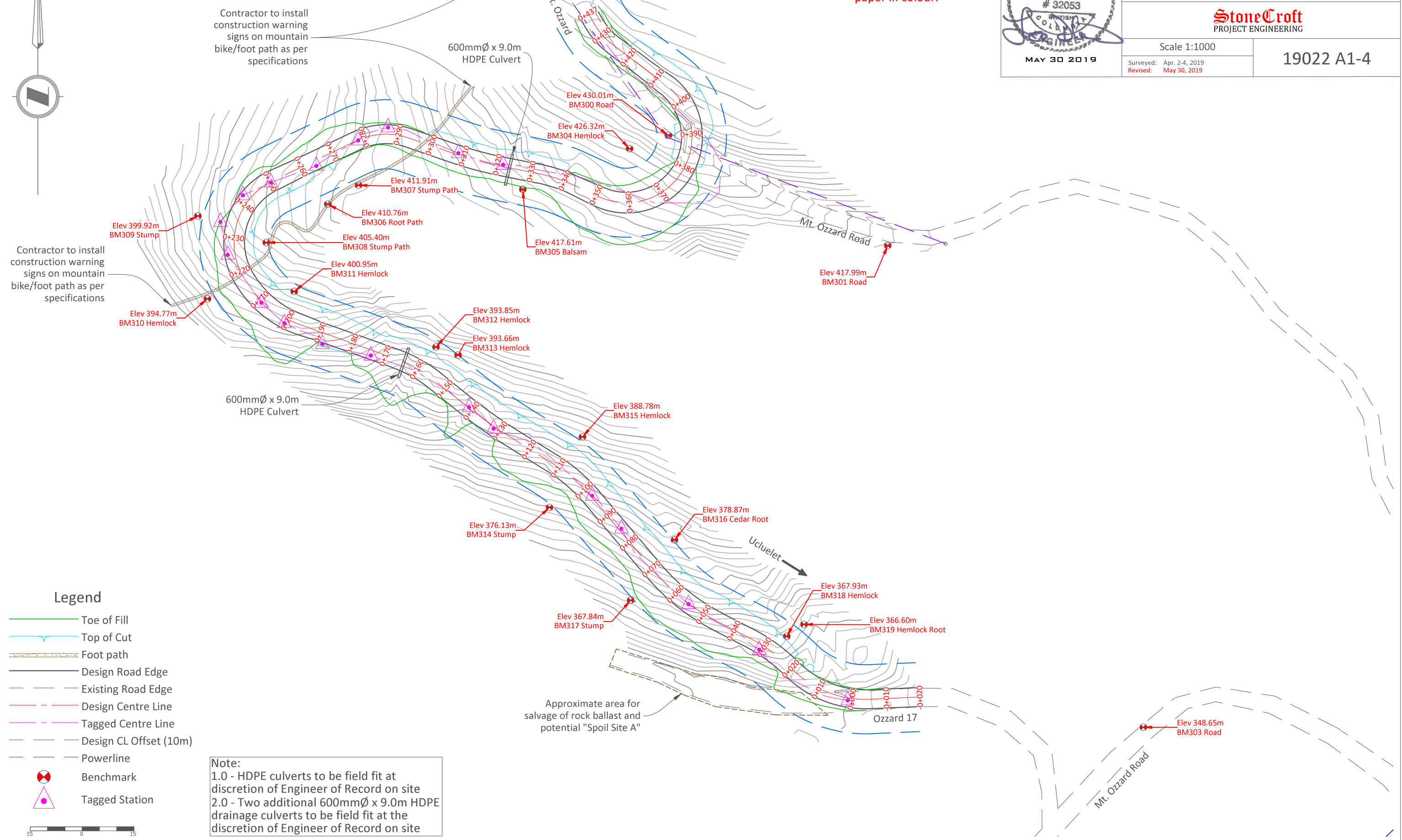
<b>Canadian Coast Guard</b> Mt. Ozzard	
Conceptual design of: Mt. Ozzard Bypass Road (0+000m - 0+435m)	
<b>StoneCroft</b> PROJECT ENGINEERING	
Scale 1:2000	<b>19022 A1-3</b>
Surveyed: Apr. 2-4, 2019 Revised: May 30, 2019	

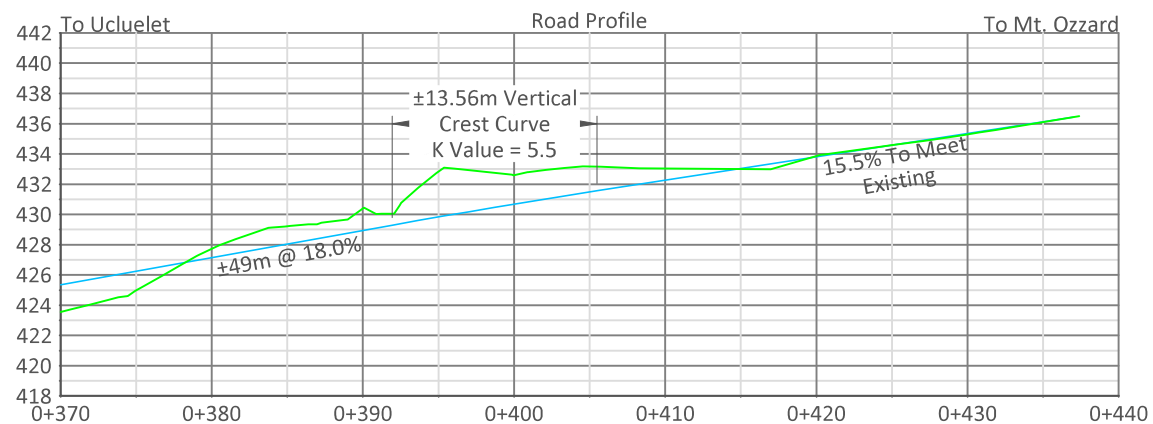
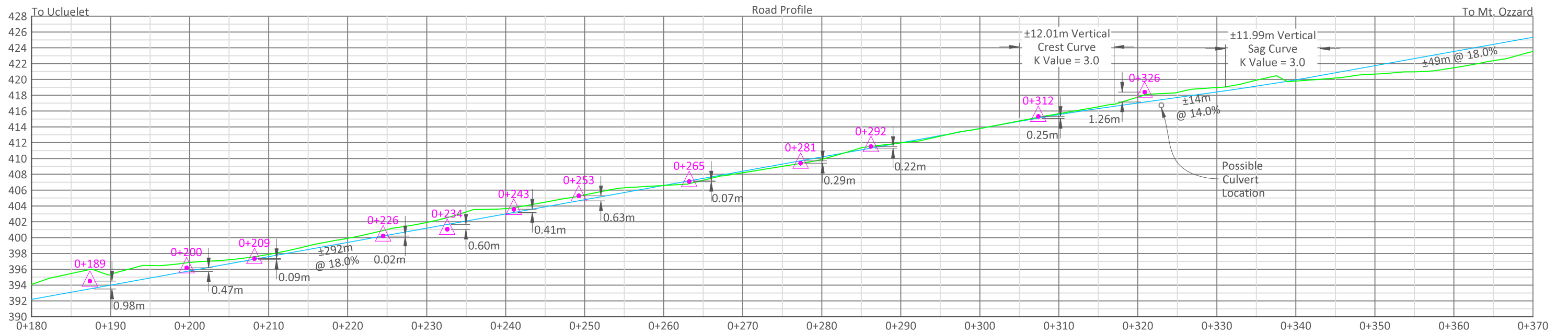
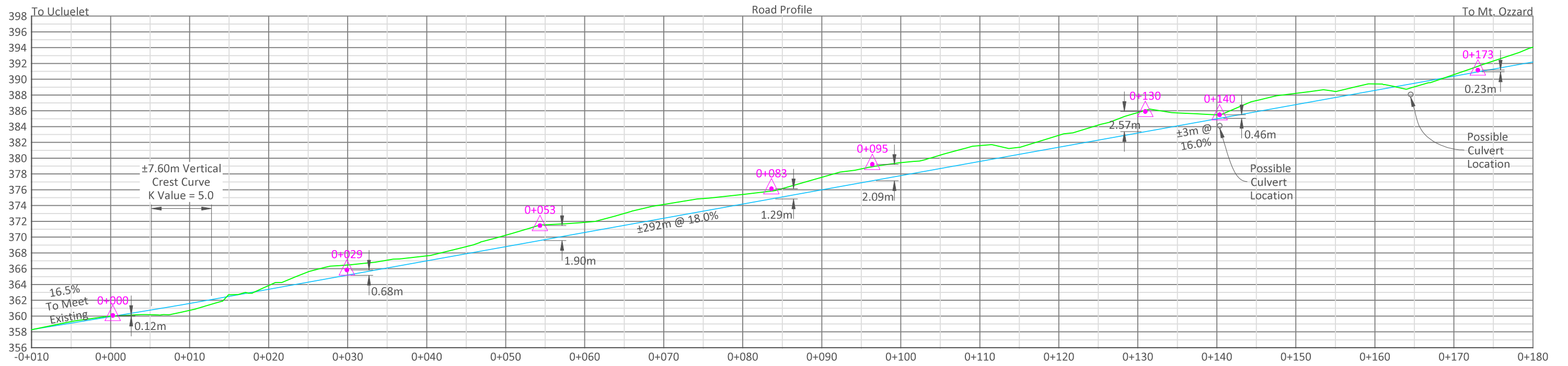


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<b>Canadian Coast Guard</b> Mt. Ozzard	
Conceptual design of: Mt. Ozzard Bypass Road (0+000m - 0+435m)	
<b>StoneCrest</b> PROJECT ENGINEERING	
Scale 1:1000	<b>19022 A1-4</b>
Survised: Apr. 2-4, 2019 Revised: May 30, 2019	

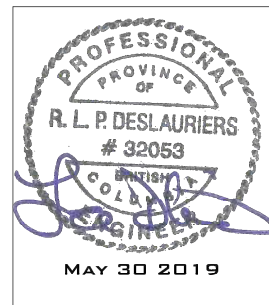




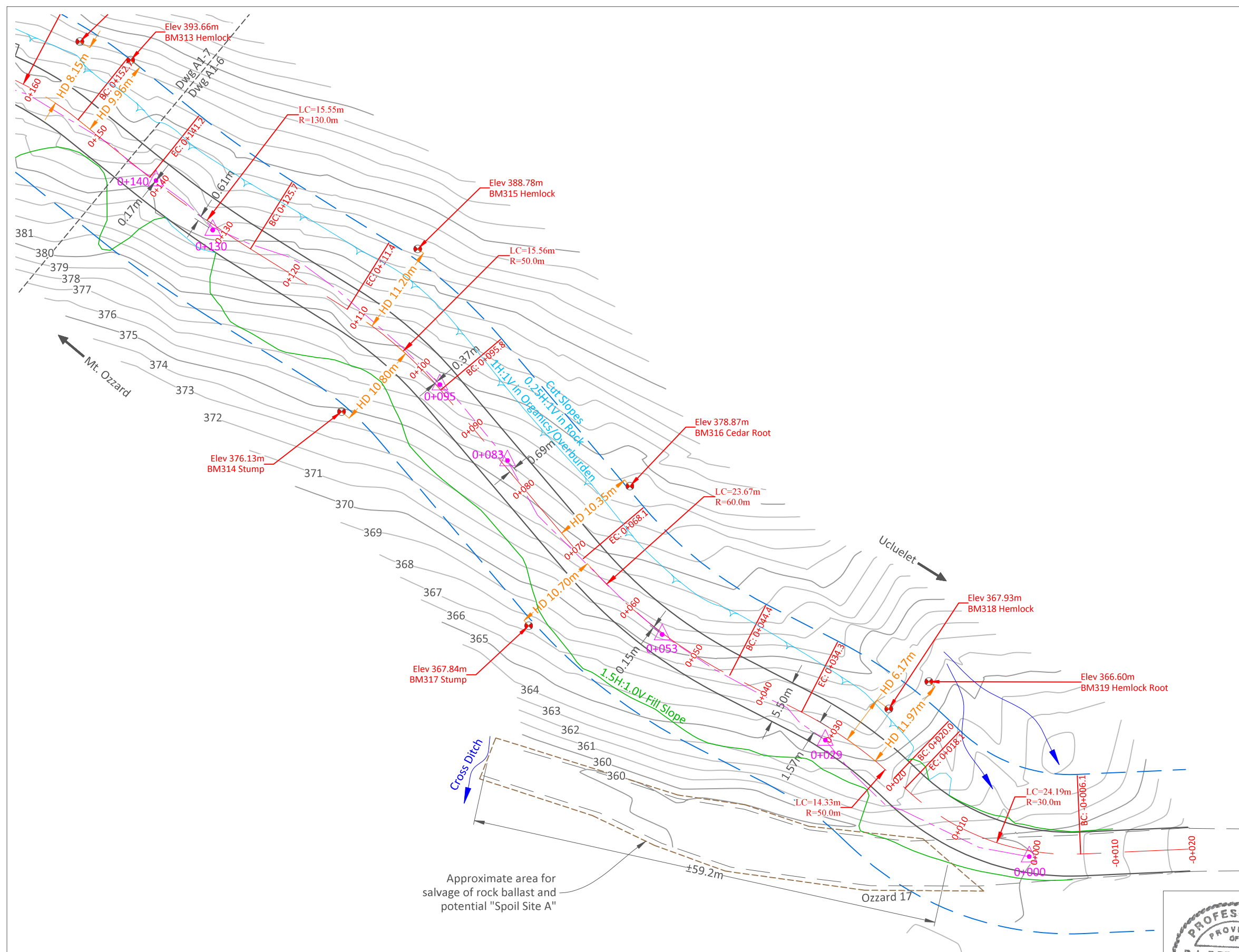
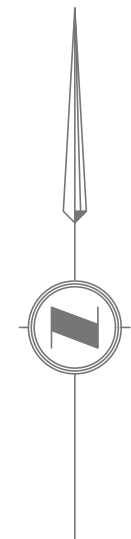
**Legend**

- Existing Grade
- Design Grade
- ▲ Tagged Station

**Caution:**  
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<b>Canadian Coast Guard</b> Mt. Ozzard	
Conceptual design of: Mt. Ozzard Bypass Road (0+000m - 0+435m)	
<b>StoneCrest</b> PROJECT ENGINEERING	
Scale 1:500	19022 A1-5
Surveyed: Apr. 2-4, 2019 Revised: May 30, 2019	



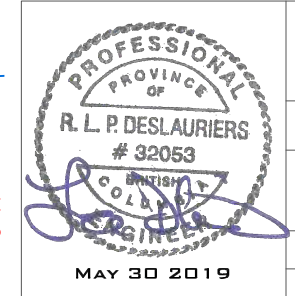
**Legend**

- Toe of Fill
- Top of Cut
- Design Road Edge
- Existing Road Edge
- Design Centre Line
- Tagged Centre Line
- Design CL Offset (10m)
- Benchmark
- Tagged Station

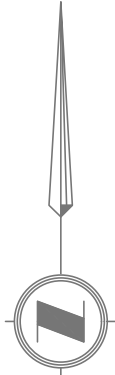


Approximate area for salvage of rock ballast and potential "Spoil Site A"

**Caution:**  
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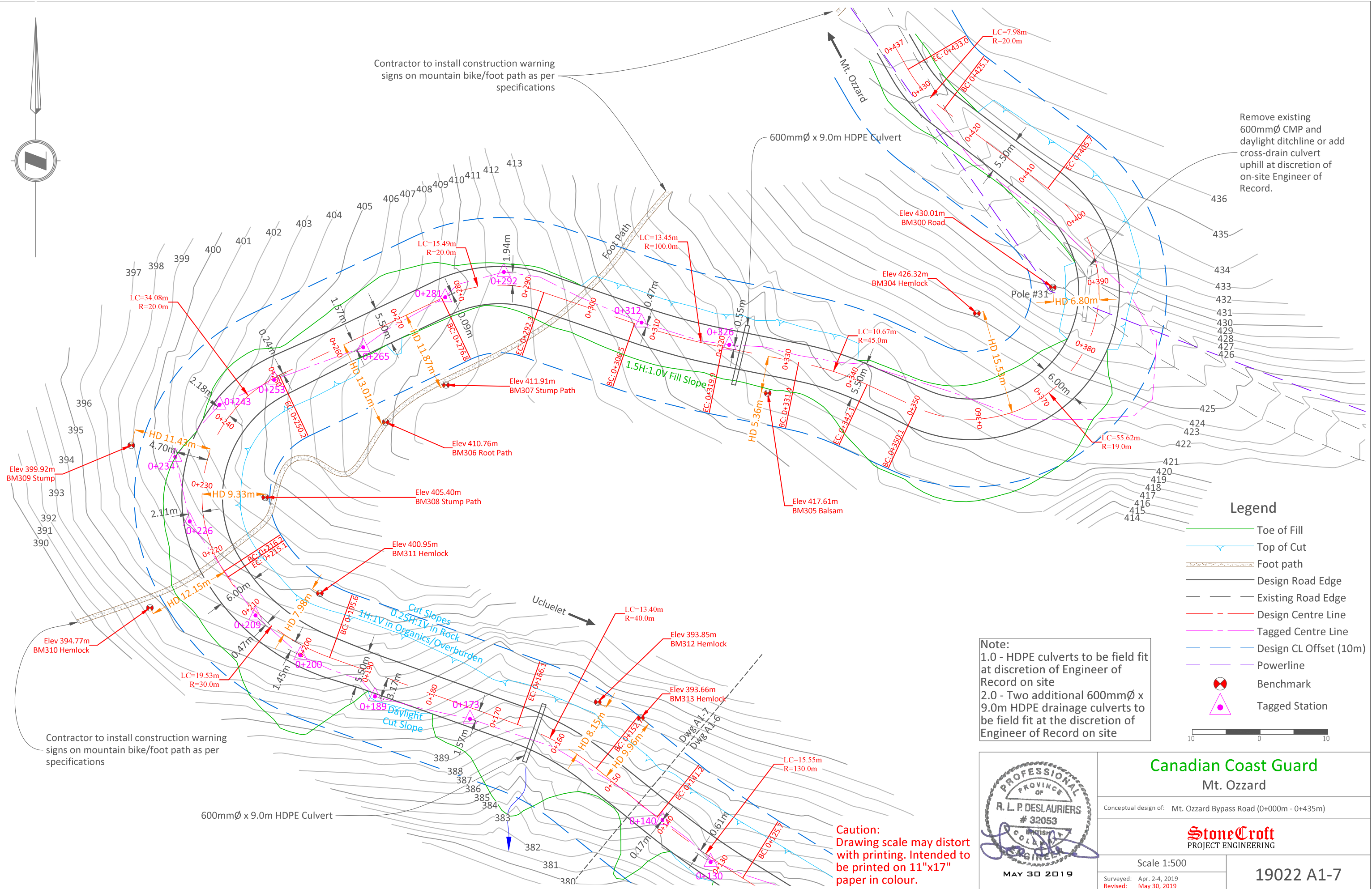


<b>Canadian Coast Guard</b> Mt. Ozzard	
Conceptual design of: Mt. Ozzard Bypass Road (0+000m - 0+435m)	
<b>StoneCroft</b> PROJECT ENGINEERING	
Scale 1:500	<b>19022 A1-6</b>
Surveyed: Apr. 2-4, 2019 Revised: May 30, 2019	



Contractor to install construction warning signs on mountain bike/foot path as per specifications

Remove existing 600mmØ CMP and daylight ditchline or add cross-drain culvert uphill at discretion of on-site Engineer of Record.



### Legend

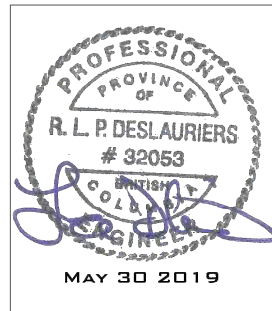
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- Top of Cut
- Foot path
- Design Road Edge
- Existing Road Edge
- Design Centre Line
- Tagged Centre Line
- Design CL Offset (10m)
- Powerline
- Benchmark
- Tagged Station



**Note:**  
 1.0 - HDPE culverts to be field fit at discretion of Engineer of Record on site  
 2.0 - Two additional 600mmØ x 9.0m HDPE drainage culverts to be field fit at the discretion of Engineer of Record on site

Contractor to install construction warning signs on mountain bike/foot path as per specifications

**Caution:**  
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## Canadian Coast Guard Mt. Ozzard

Conceptual design of: Mt. Ozzard Bypass Road (0+000m - 0+435m)

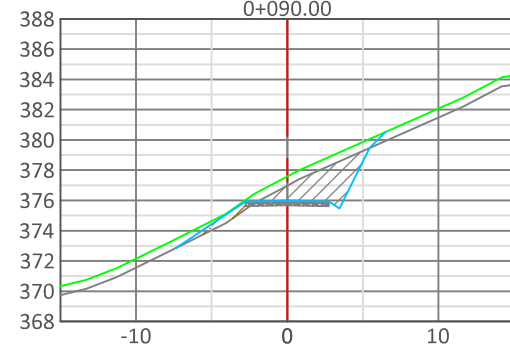
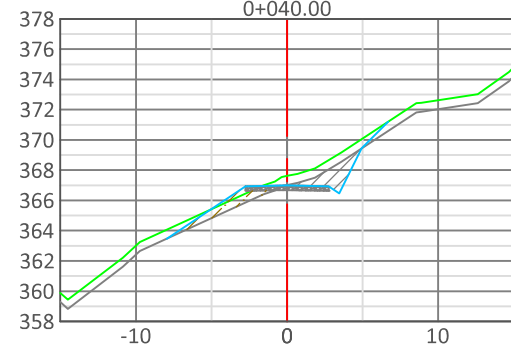
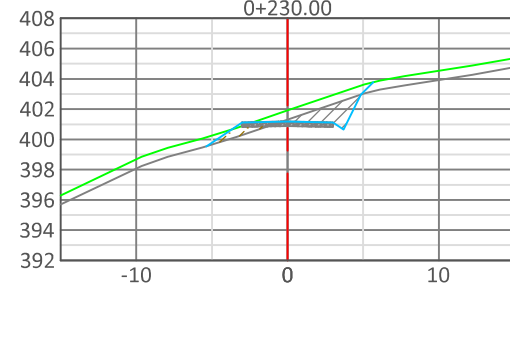
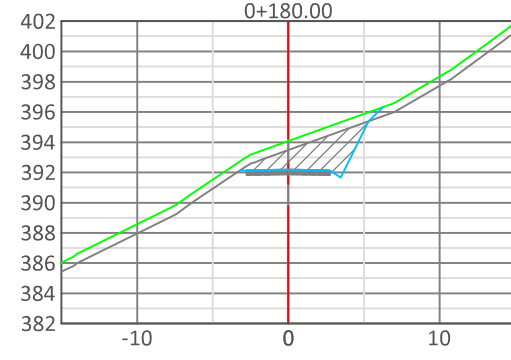
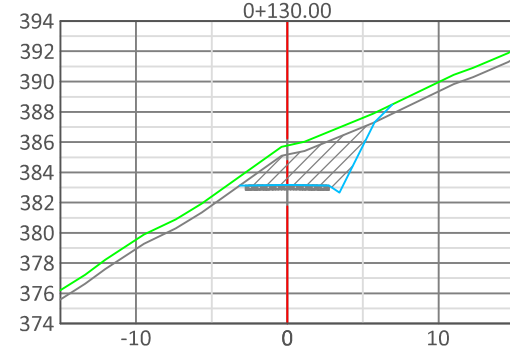
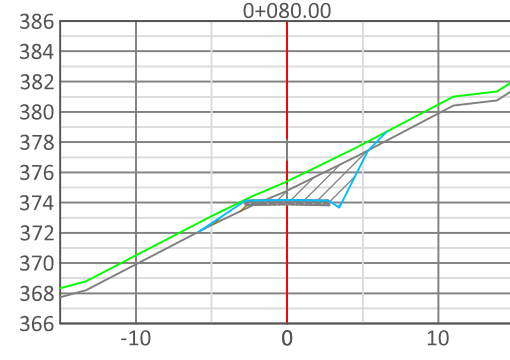
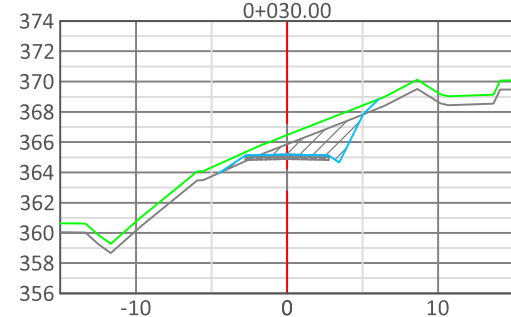
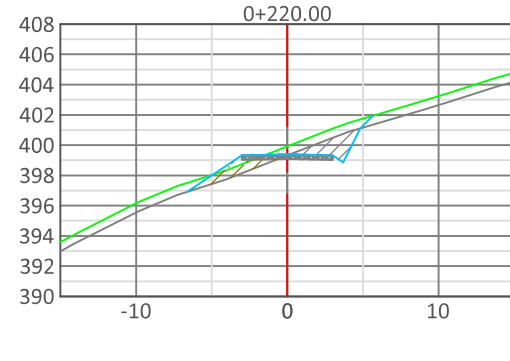
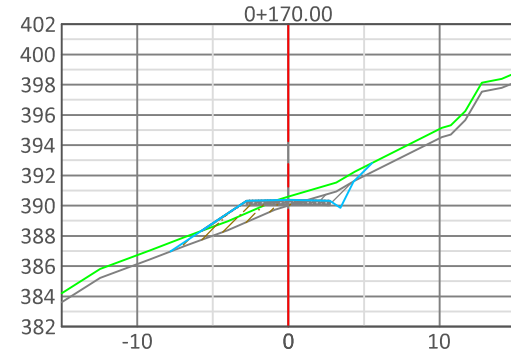
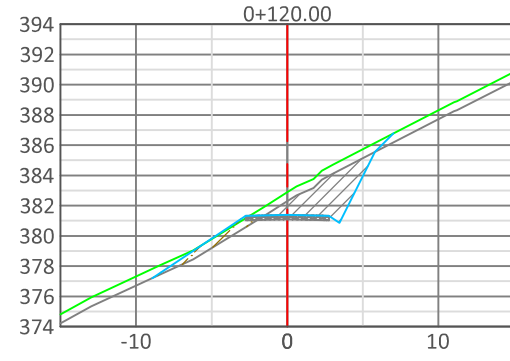
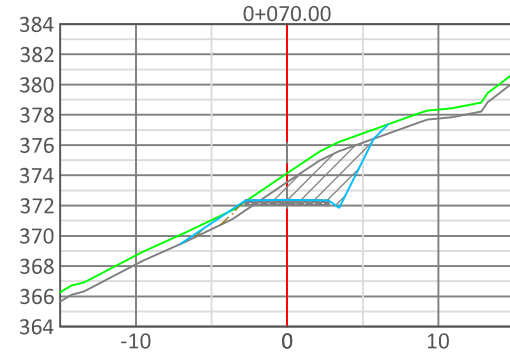
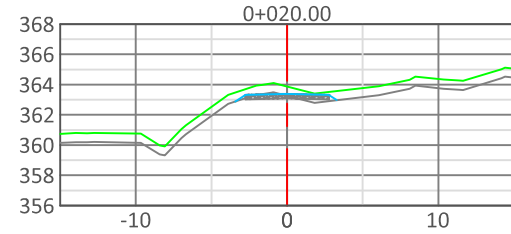
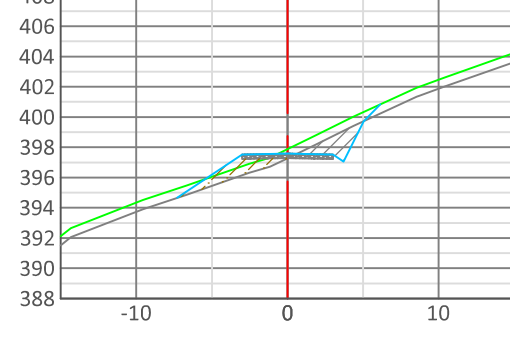
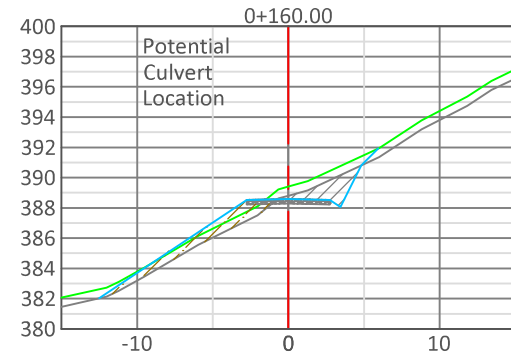
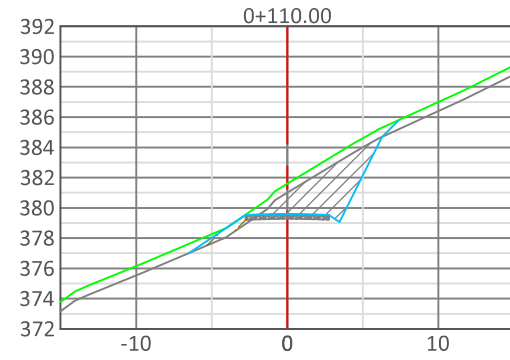
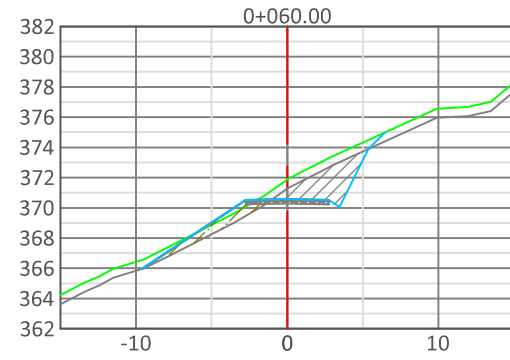
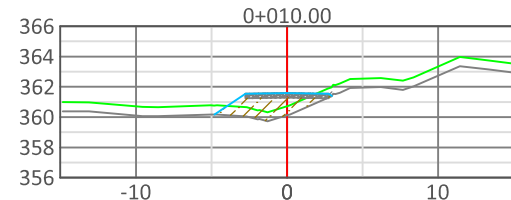
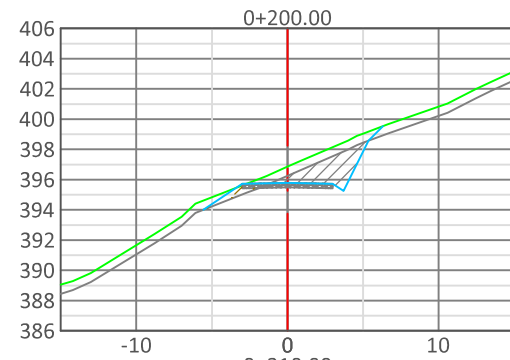
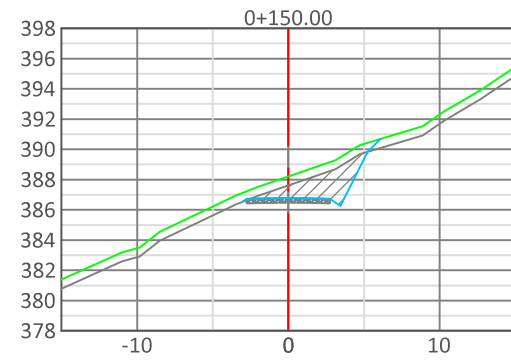
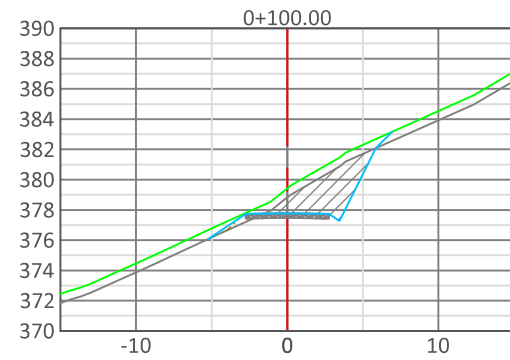
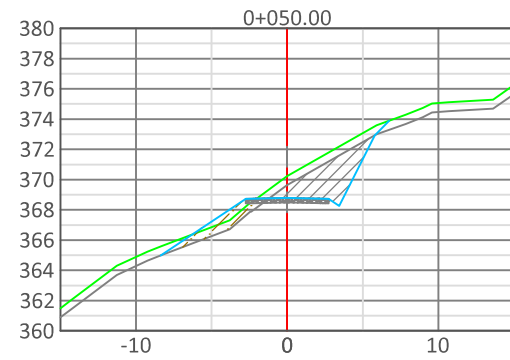
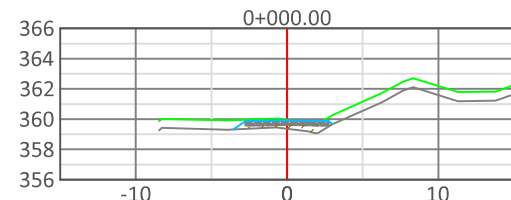
**StoneCroft**  
PROJECT ENGINEERING

Scale 1:500

Surveyed: Apr. 2-4, 2019  
Revised: May 30, 2019

19022 A1-7

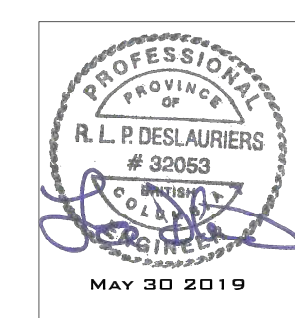




Caution:  
Drawing scale may distort  
with printing. Intended to  
be printed on 11"x17"  
paper in colour.

**Legend**

- Existing Surface
- Design Surface
- Estimated Rock Surface
- Tagged Station
- Fill
- Rock/Till Cut
- Road Capping



**Canadian Coast Guard**  
Mt. Ozzard

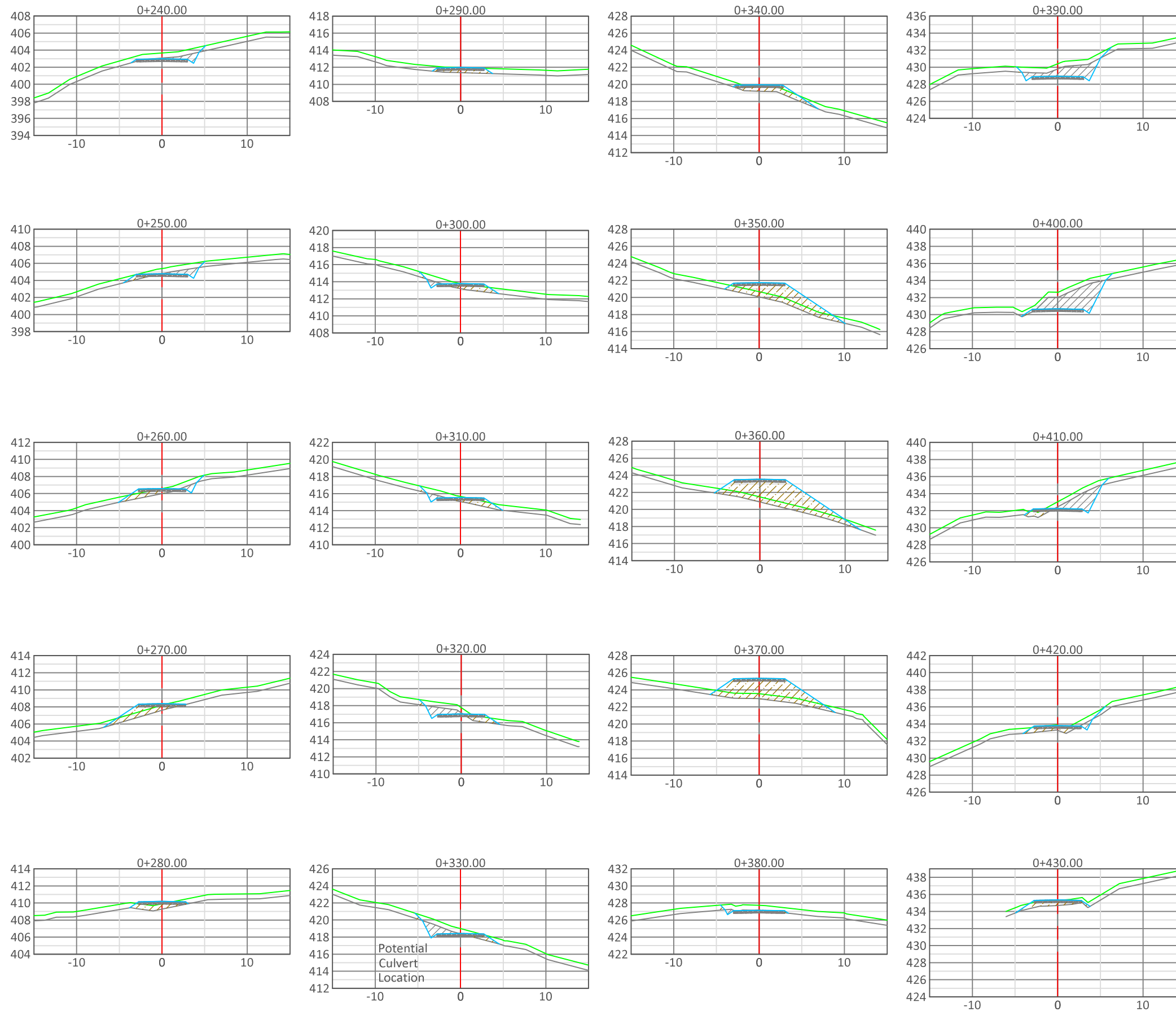
Conceptual design of: Mt. Ozzard Bypass Road (0+000m - 0+435m)

**StoneCroft**  
PROJECT ENGINEERING

Scale 1:500

Surveyed: Apr. 2-4, 2019  
Revised: May 30, 2019

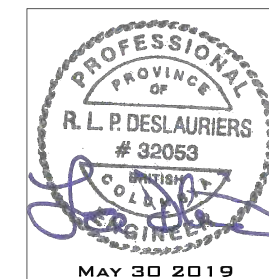
**19022 A1-8**



Caution:  
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be printed on 11"x17"  
paper in colour.

**Legend**

- Existing Surface
- Design Surface
- Estimated Rock Surface
- Tagged Station
- Fill
- Rock/Till Cut
- Road Capping



**Canadian Coast Guard**  
Mt. Ozzard

Conceptual design of: Mt. Ozzard Bypass Road (0+000m - 0+435m)

**StoneCroft**  
PROJECT ENGINEERING

Scale 1:500

Surveyed: Apr. 2-4, 2019  
Revised: May 30, 2019

19022 A1-9

Estimated Total Volume Table (no expansion factor)				
Station (m)	In-Bank Cut (±m³)	In-Place Fill (±m³)	Cumulative In-Bank Cut (±m³)	Cumulative In-Place Fill (±m³)
-0+005	0	0	0	0
0+000	19	13	19	13
0+005	21	24	40	37
0+010	23	36	63	73
0+015	32	42	95	115
0+020	31	25	126	140
0+025	66	11	192	151
0+030	112	13	305	164
0+035	107	20	412	184
0+040	93	28	505	212
0+045	108	33	613	245
0+050	145	35	758	280
0+055	165	33	923	313
0+060	156	33	1079	346
0+065	152	27	1231	373
0+070	171	20	1402	393
0+075	168	16	1570	409
0+080	141	14	1712	423
0+085	123	17	1835	440
0+090	137	18	1972	458
0+095	161	19	2133	477
0+100	169	16	2302	493
0+105	169	12	2471	505
0+110	188	14	2658	520
0+115	183	26	2841	546
0+120	164	31	3005	576
0+125	181	21	3186	597
0+130	198	13	3384	610
0+135	183	10	3568	620
0+140	134	20	3702	641

Estimated Total Volume Table (no expansion factor)				
Station (m)	In-Bank Cut (±m³)	In-Place Fill (±m³)	Cumulative In-Bank Cut (±m³)	Cumulative In-Place Fill (±m³)
0+145	124	20	3826	661
0+150	133	10	3958	671
0+155	109	15	4067	685
0+160	101	36	4168	721
0+165	90	67	4258	788
0+170	66	59	4324	847
0+175	75	26	4399	873
0+180	125	13	4524	886
0+185	184	10	4708	895
0+190	187	12	4895	907
0+195	173	15	5068	922
0+200	151	16	5219	938
0+205	107	23	5326	961
0+210	90	32	5416	993
0+215	85	34	5501	1027
0+220	82	30	5583	1057
0+225	80	23	5663	1080
0+230	80	18	5743	1098
0+235	85	14	5828	1112
0+240	71	10	5899	1122
0+245	51	13	5950	1135
0+250	52	15	6002	1150
0+255	55	13	6057	1163
0+260	48	18	6105	1181
0+265	33	28	6138	1209
0+270	28	35	6166	1244
0+275	28	38	6195	1281
0+280	24	31	6219	1312
0+285	20	17	6239	1329
0+290	20	14	6259	1343

Estimated Total Volume Table (no expansion factor)				
Station (m)	In-Bank Cut (±m³)	In-Place Fill (±m³)	Cumulative In-Bank Cut (±m³)	Cumulative In-Place Fill (±m³)
0+295	22	20	6281	1363
0+300	29	21	6310	1385
0+305	38	22	6349	1407
0+310	40	22	6389	1428
0+315	41	19	6430	1448
0+320	52	18	6482	1465
0+325	62	17	6545	1483
0+330	63	16	6607	1499
0+335	69	14	6676	1513
0+340	52	23	6729	1536
0+345	34	51	6763	1586
0+350	41	85	6803	1671
0+355	46	116	6850	1787
0+360	51	146	6900	1933
0+365	50	158	6951	2090
0+370	47	141	6997	2232
0+375	41	109	7038	2341
0+380	36	51	7074	2391
0+385	60	10	7134	2402
0+390	105	11	7239	2413
0+395	157	12	7396	2425
0+400	184	12	7580	2437
0+405	169	12	7750	2449
0+410	129	15	7879	2464
0+415	80	18	7959	2482
0+420	48	20	8007	2502
0+425	30	21	8036	2523
0+430	25	22	8061	2545
0+435	26	20	8087	2565

**1.0 Estimated Volumes Notes:**

- 1.1 Cut volume estimates are "in bank" volumes (unexpanded).
- 1.2 "In place" fill volume estimates are final, compacted volumes.
- 1.3 Cut volume in table includes both organics/overburden (to be spoiled) and rock/till cut (to be used with approval from on-site Engineer of Record).
- 1.4 Fill volume in table includes both road subgrade and road capping.
- 1.5 Volumetrics assume 0.6m layer of organics/overburden over bedrock/till.

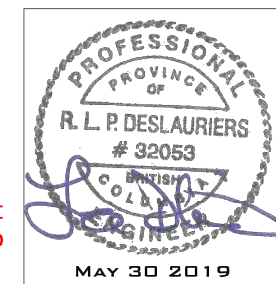
**2.0 Estimated Volumes Required:**

1820m³ of subgrade material (in place)  
750m³ of road capping material (in place)

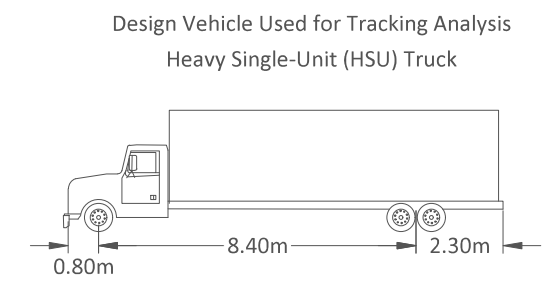
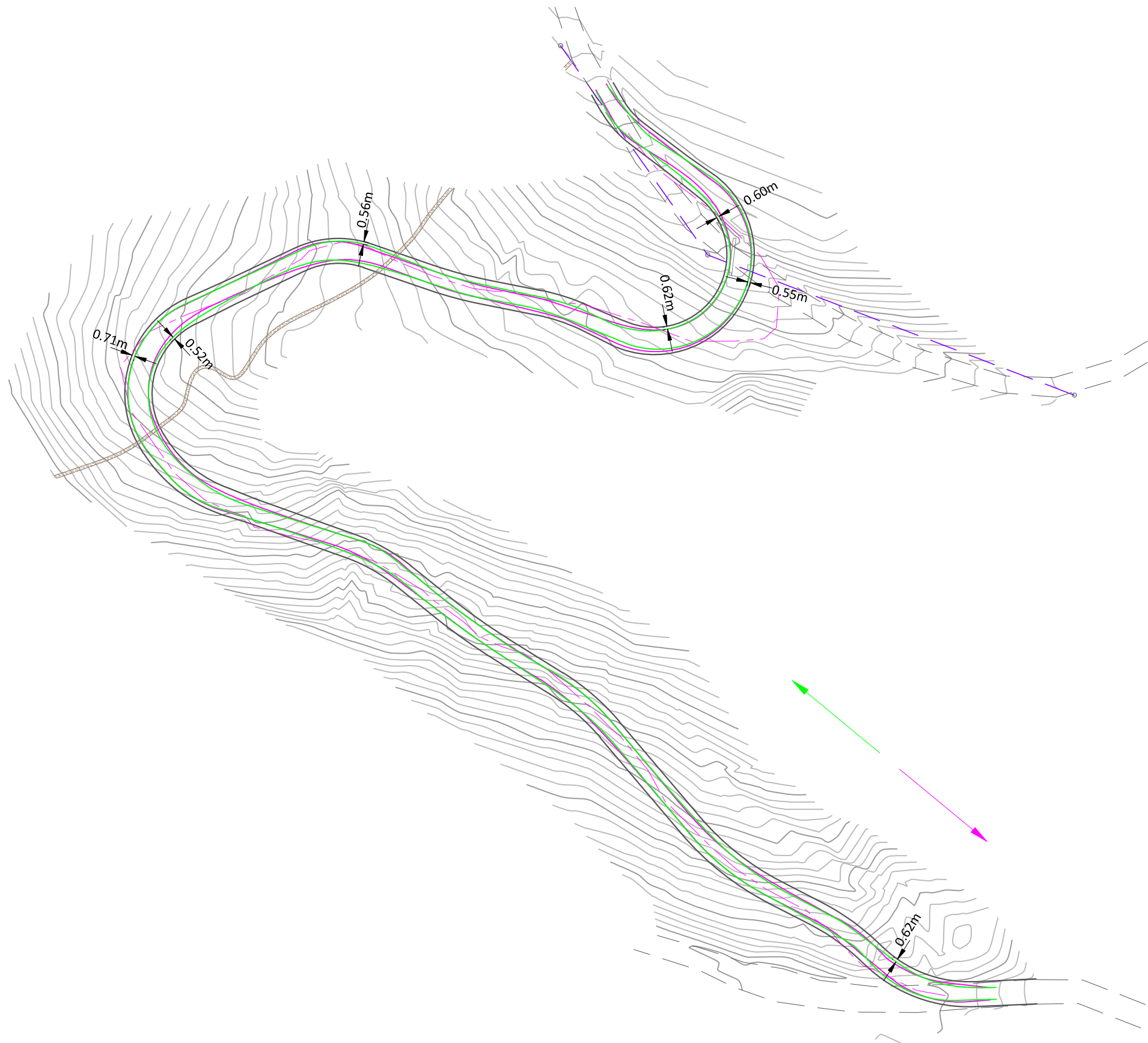
**3.0 Estimated Volumes Produced:**

2570m³ of rock or till cut (10% net expansion factor applied)  
5760m³ of organics/overburden (in bank)

Caution:  
Drawing scale may distort  
with printing. Intended to  
be printed on 11"x17"  
paper in colour.



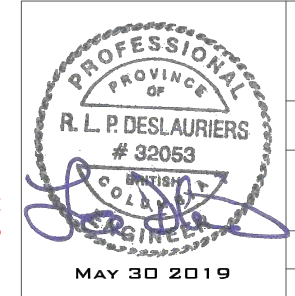
<b>Canadian Coast Guard</b> Mt. Ozzard	
Conceptual design of: Mt. Ozzard Bypass Road (0+000m - 0+435m)	
<b>StoneCroft</b> PROJECT ENGINEERING	
Scale 1:200	<b>19022 A1-10</b>
Surveyed: Apr. 2-4, 2019 Revised: May 30, 2019	



- Legend**
- Tracking extents - towards Mt. Ozzard summit
  - Tracking extents - towards Ucluelet



**Caution:**  
Drawing scale may distort  
with printing. Intended to  
be printed on 11"x17"  
paper in colour.



<b>Canadian Coast Guard</b> Mt. Ozzard	
Conceptual design of: Mt. Ozzard Bypass Road (0+000m - 0+435m)	
<b>StoneCrott</b> PROJECT ENGINEERING	
Scale 1:1000	<b>19022 A1-11</b>
Surveyed: Apr. 2-4, 2019 Revised: May 30, 2019	



Start of Ozzard-17 from Ozzard Road



Facing Towards Ozzard Road from Ozzard-17



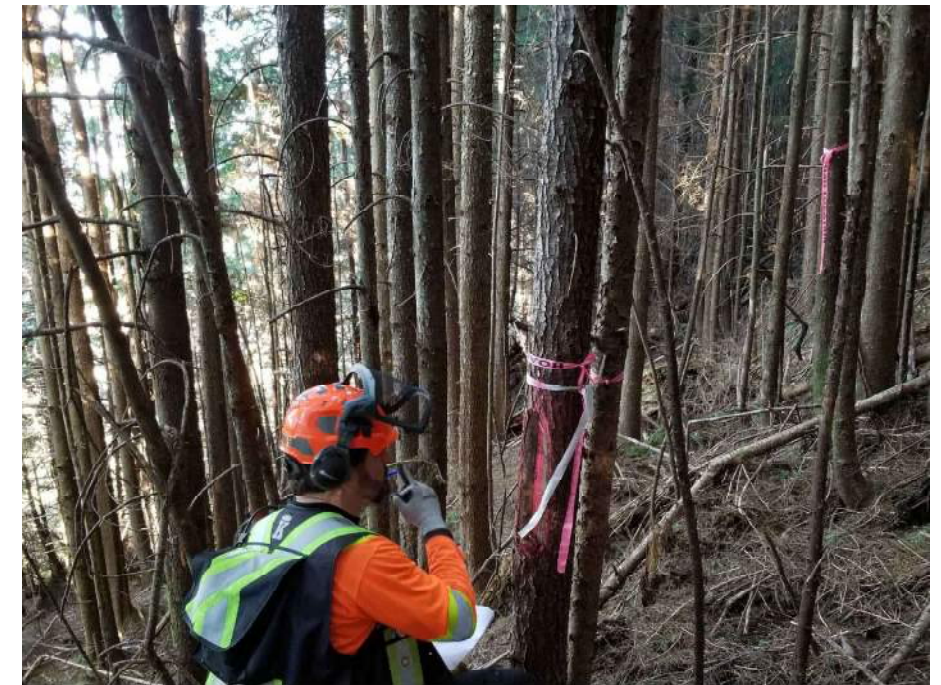
Facing Up Ozzard Road at Design CL



Facing Down Ozzard Road at Design CL



Facing Down Design CL at 0+053



Facing Up Design CL at 0+053

Canadian Coast Guard  
Mt. Ozzard

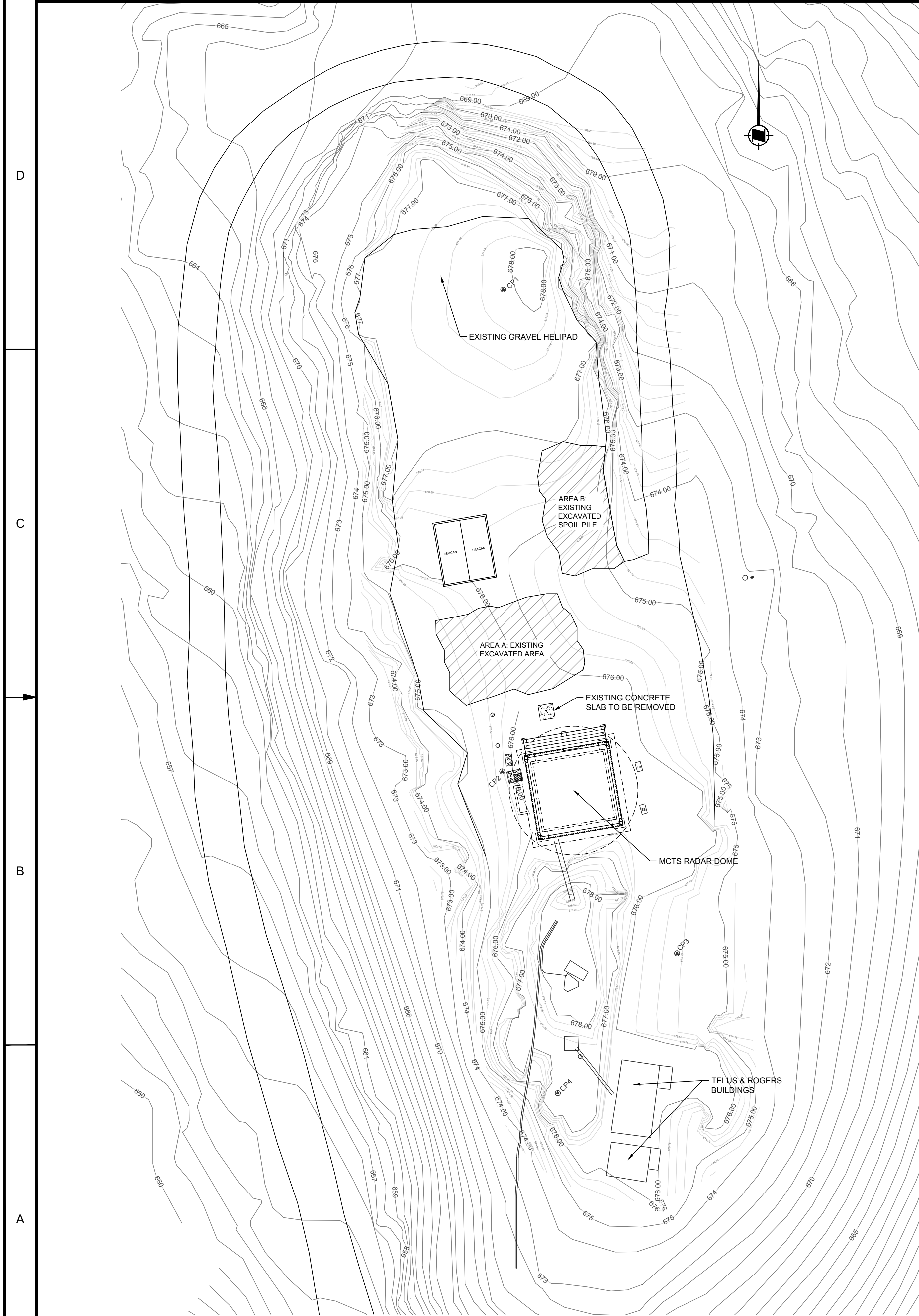
Conceptual design of: Mt. Ozzard Bypass Road (0+000m - 0+435m)

StoneCraft  
PROJECT ENGINEERING

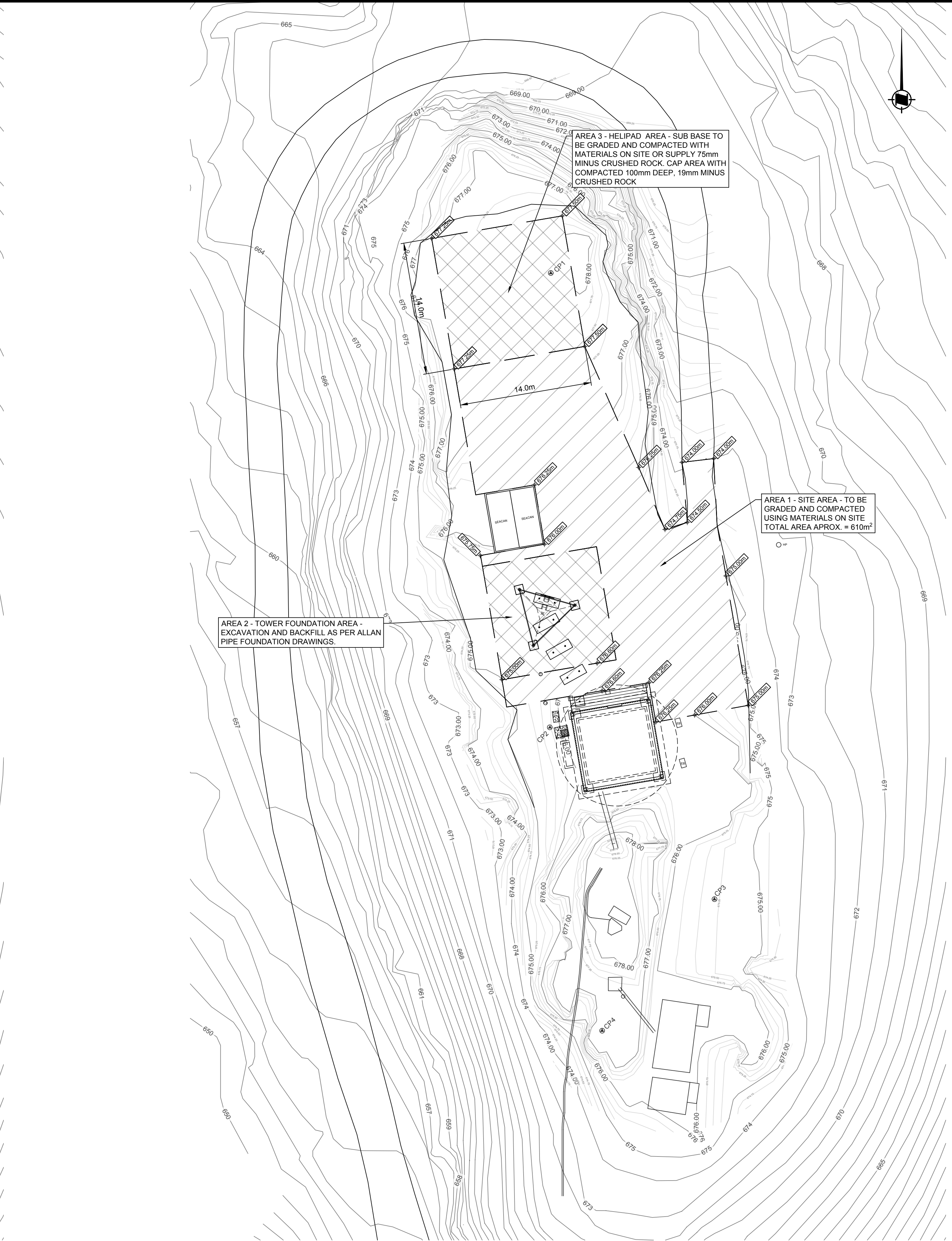
Not to Scale

Surveyed: Apr. 2-4, 2019  
Revised: May 30, 2019

19022 A1-12



PLAN  
SCALE: 1:250  
**A**  
EXISTING SITE GRADING



PLAN  
SCALE: 1:250  
**B**  
FINISHED SITE GRADING

Vendor Information / Sous-traitant

LEGEND

- FINISHED ELEVATION MARK
- SURVEY CONTROL NAIL SEE SCHEDULE FOR UTM COORDINATES

SURVEY CONTROL NAILS			
NAME	NORTHING	EASTING	ELEVATION
CP1	5425995.550	317503.367	677.754
CP2	5425947.580	317503.265	675.634
CP3	5425915.519	317508.798	677.743
CP4	5425929.415	317520.659	675.572

COORDINATES ARE UTM ZONE 10 NAD 83 (CSRS)  
ELEVATION ARE REFERRED TO CGVD 28 (HTV2.0)

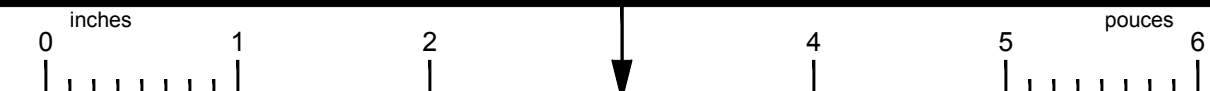
A	ISSUED FOR TENDER	TDK	2019-07-17
rev	description	by	date

Asset - Actif  
**WM-523 MOUNT OZZARD  
MCTS SITE  
NEW TOWER PROJECT**

Drawing - Dessin  
**SITE PLAN**

drawn - dessiné	date
TDK	2019-07-17
designed - conception	date
AW	2019-07-17
checked - vérifié	date
AW	2019-07-17
approved - approuvé	date
AW	2019-07-17

CCG ref. no. - no. réf. GCC	scale - échelle
N62B5	AS SHOWN
drawing no. - no. dessin	sheet/feuille rev-rév
WM-523-1053	01 of 03 A



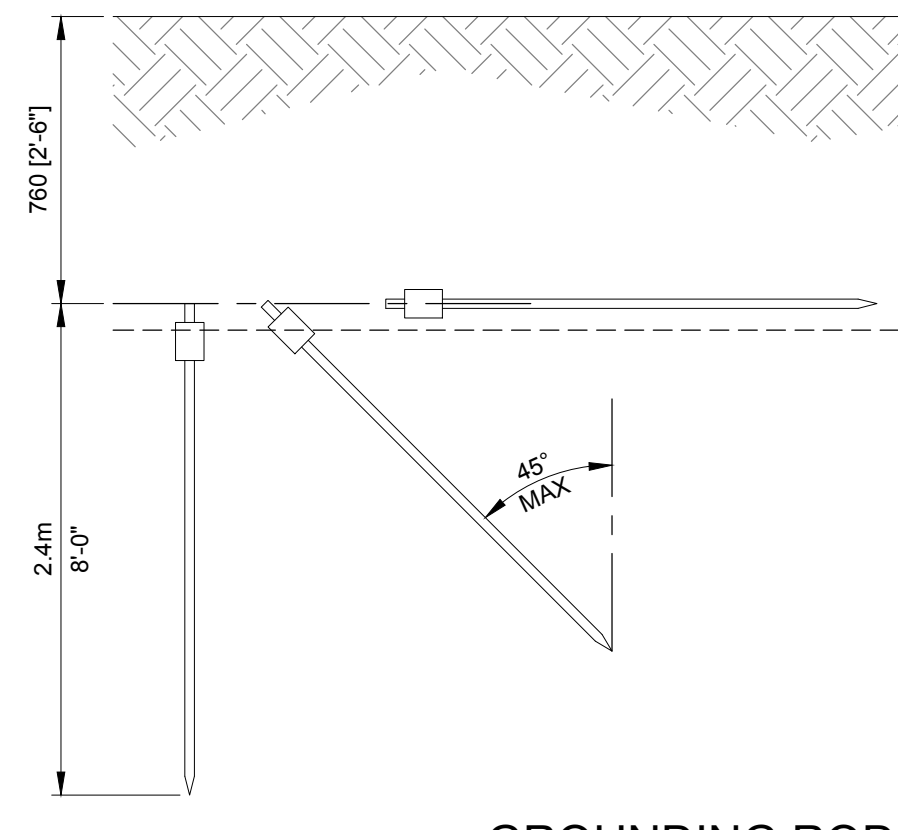
Vendor Information / Sous-traitant

GENERAL NOTES

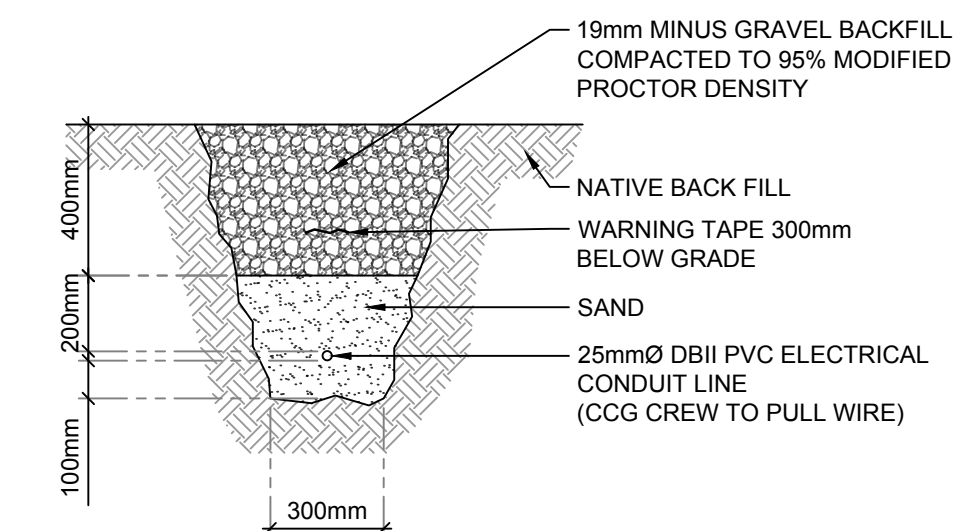
1. USE EXOTHERMIC WELDING OR LISTED IRREVERSIBLE HIGH-COMPRESSION FITTINGS FOR ALL GROUNDING SYSTEM CONNECTIONS.
2. INSTALL GROUNDING SYSTEM IN ACCORDANCE WITH MOTOROLA R56 GUIDELINES.
3. USE #20 BARE STRANDED COPPER CABLE FOR ALL BELOW GRADE EXTERNAL GROUNDING CONDUCTORS UNLESS OTHERWISE NOTED.
4. USE #20 INSULATED STRANDED COPPER CABLE FOR ALL ABOVE GRADE EXTERNAL GROUNDING CONDUCTORS UNLESS OTHERWISE NOTED.
5. APPLY LISTED CONDUCTIVE ANTIOXIDANT COMPOUND ON ALL COMPRESSION/MECHANICAL GROUNDING CONNECTIONS.
6. CONNECT ALL METALLIC OBJECTS WITHIN 3.0m OF GROUNDING RING OR RADIALS TO THE EXTERNAL GROUNDING SYSTEM USING MINIMUM WIRE SIZED OF #2 UNDERGROUND AND #6 ABOVE GROUND.
7. USED COPPER CLAD GROUND RODS, 2.4m LENGTH, MINIMUM 15.9mm DIAMETER.
8. ENCASE RADIALS AND TOWER RING IN CONDUCTIVE CONCRETE WHERE SOIL DEPTH IS LESS THAN 762mm.

GROUNDING NOTES

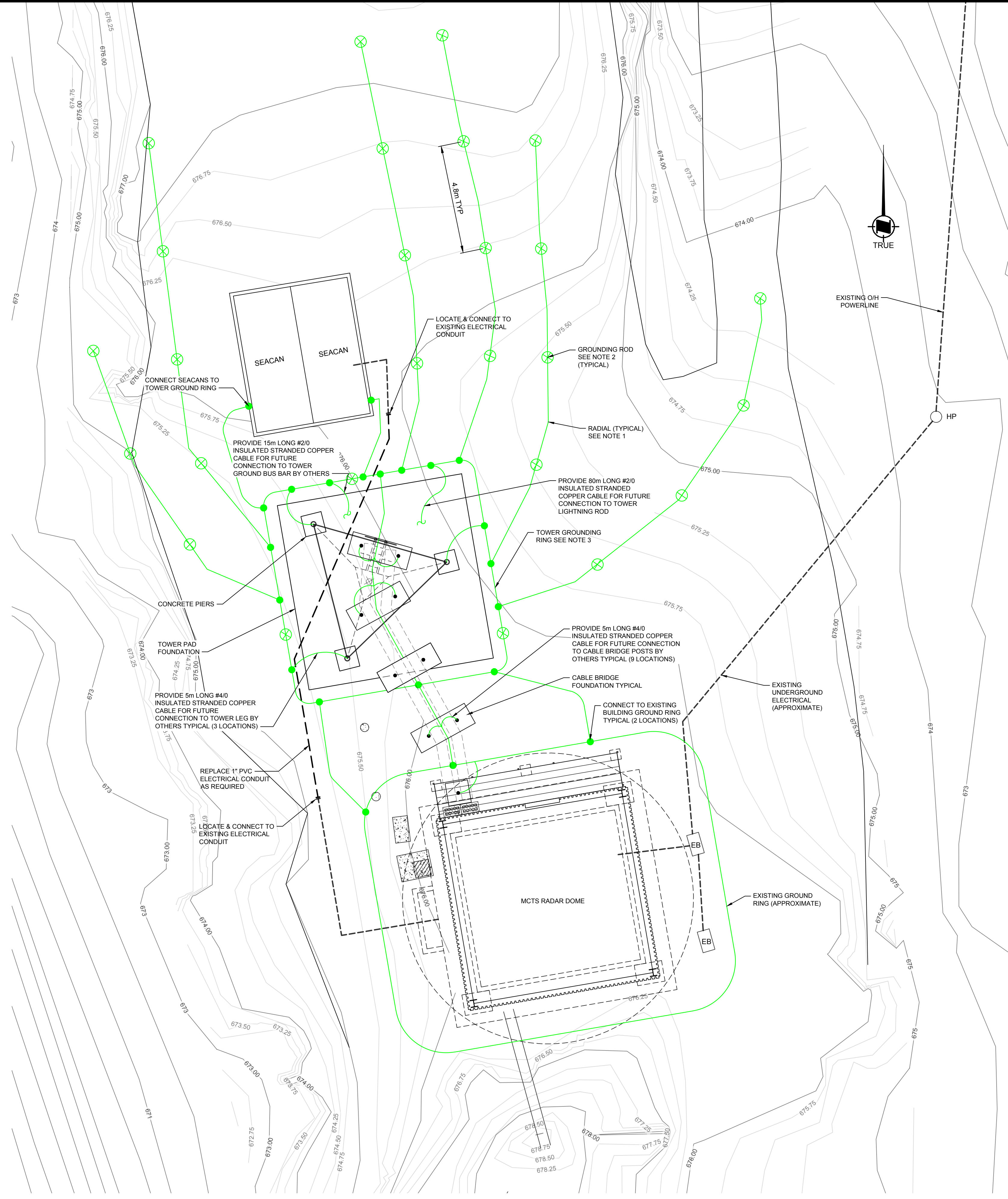
1. INSTALL #20 RADIAL CONDUCTORS AT 762mm DEPTH WHERE POSSIBLE. MINIMUM PERMITTED DEPTH IS 457mm. COORDINATE LAYOUT OF RADIALS WITH SITE CONDITIONS. RADIALS SHOULD BE 18m LENGTH WHERE POSSIBLE, WITH MINIMUM LENGTH OF 7.6m. CONNECT GROUND RODS OR PLATES AT 4.8m SPACING ALONG RADIALS WHERE POSSIBLE.
2. INSTALL GROUND RODS VERTICALLY WHERE POSSIBLE. RODS MAY BE INSTALLED HORIZONTALLY OR AT AN ANGLE OF 45° OR LESS FROM VERTICAL. GROUND RODS MUST BE INSTALLED A MINIMUM OF 4.8m AWAY FROM RODS ALONG THE SAME RADIAL, AND A MINIMUM OF 1.8m AWAY FROM ADJACENT RODS.
3. INSTALL #4/0 RING CONDUCTOR AT 762mm DEPTH AND MINIMUM OF 610mm FROM THE TOWER FOUNDATION. CONNECT 3 GROUND RODS, EVENLY SPACED ALONG RING.



DETAIL 1  
SCALE: NTS



SECTION 2  
SCALE: 1:20



PLAN A  
SCALE: 1:100

A	ISSUED FOR TENDER	TDK	2019-07-17
rev	description	by	date

Asset - Actif  
**WM-523 MOUNT OZZARD  
MCTS SITE  
NEW TOWER PROJECT**

Drawing - Dessin  
**UNDERGROUND ELECTRICAL  
& GROUNDING PLAN**

drawn - dessiné	date
TDK	2019-07-17
designed - conception	date
AW	2019-07-17
checked - vérifié	date
AW	2019-07-17
approved - approuvé	date
AW	2019-07-17
CCG ref. no. - no. réf. GCC	scale - échelle
N62B5	AS SHOWN
drawing no. - no. dessin	sheet/feuille
WM-523-1053	02 of 03

File / Fichier: WM-523-1053 MOUNT OZZARD 140 TOWER.DWG - Printed / Imprimé: 2019/07/15 7:3  
Arch D

**CAST-IN-PLACE CONCRETE**  
 1. SUBMIT PROPOSED MIX DESIGNS TO THE ENGINEER FOR REVIEW BEFORE CONSTRUCTION. ALL CONCRETE SHALL BE NORMAL WEIGHT STONE CONCRETE WITH A UNIT WEIGHT OF 150pcf (2400 Kg/m)  
 2. MIX DESIGNS SHALL CONFORM TO THE FOLLOWING:

28d (MPa)	CEMENT STRENGTH TYPE	SLUMP (in.)	MAX. EXP. AGG (in.)
30	10	3-3/4	3/4 N

3. SPECIFIED SLUMPS ARE PRIOR TO THE ADDITION OF ANY APPROVED PLASTICIZER ADMIXTURE. WHEN CONCRETE IS PLACED BY PUMPING, THE LISTED SLUMPS SHALL BE AT DISCHARGE.  
 4. SUBMIT PROPOSED DETAIL AND LOCATION OF ALL CONSTRUCTION JOINTS NOT SHOWN ON DRAWINGS TO ENGINEER FOR APPROVAL.  
 5. CHAMFER ALL EXPOSED EDGES OF CONCRETE WITH A 3/4" CHAMFER UNLESS NOTED OTHERWISE.  
 6. FORMWORK, FALSEWORK AND SHORING DESIGN SHALL BE COMPLETED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA.  
 7. GROUT: NON-SHRINK, NONMETALLIC GROUT WITH MINIMUM STRENGTH AT THREE DAYS OF 2900psi (20MPa) AND MINIMUM STRENGTH AT 28 DAYS OF 7250psi (50MPa).

Vendor Information / Sous-traitant

**REINFORCING STEEL**

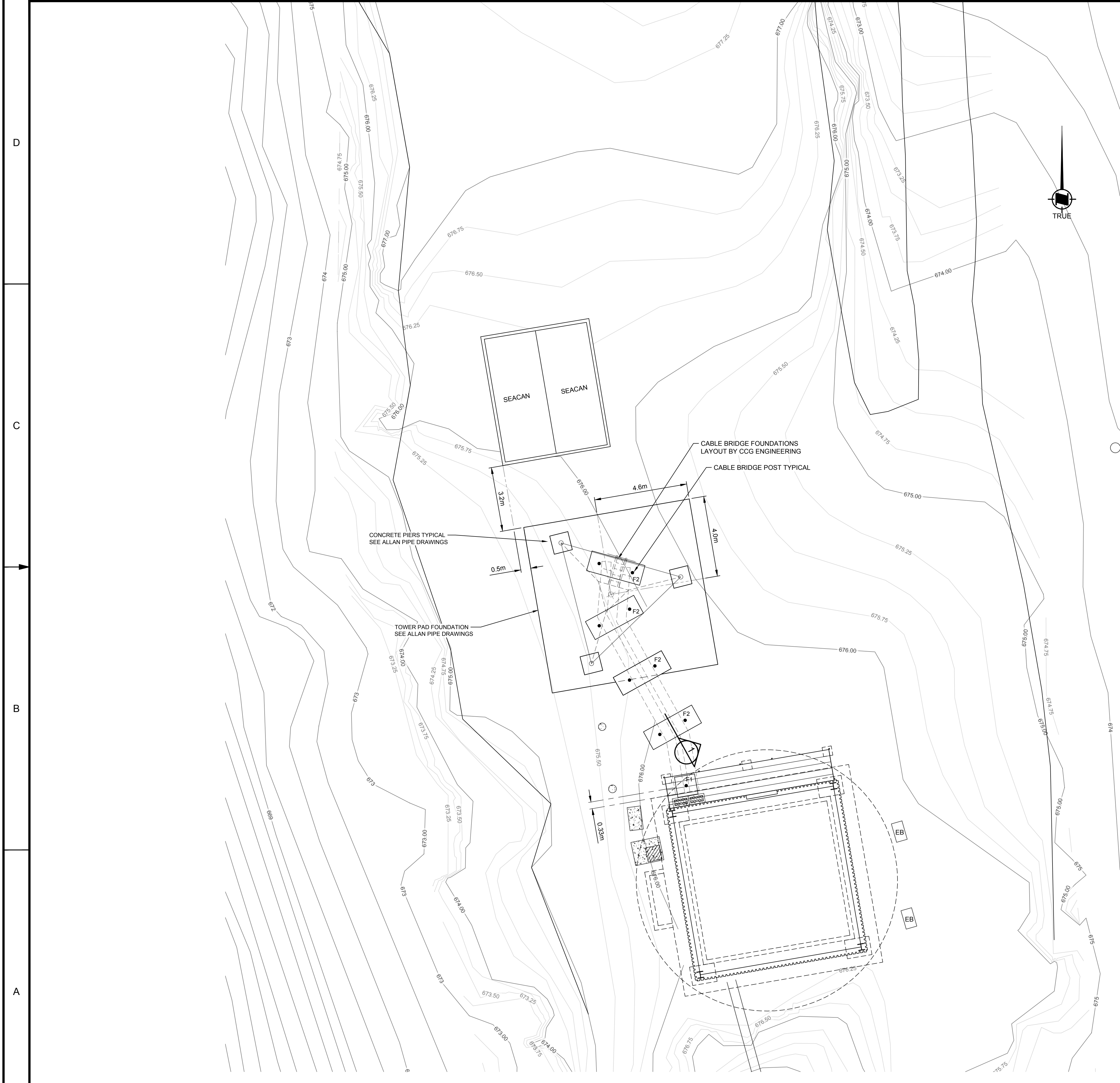
- REINFORCING STEEL SHALL BE DEFORMED STEEL, GRADE 400W, SHALL CONFORM TO CAN/CSA-G30.18-09.
- WELDABLE LOW ALLOY DEFORMED STEEL REINFORCING BARS, GRADE 400W, SHALL CONFORM TO CAN/CSA-G30.16 MILL CERTIFICATES SHALL BE SUPPLIED TO THE ENGINEER FOR ALL WELDABLE REINFORCING STEEL USED IN THE PROJECT.
- WELDING OF REINFORCING STEEL SHALL CONFORM TO CSA W186-M1990 (R2007). WELDING OF REINFORCING SHALL BE ALLOWED ONLY AS NOTED ON DRAWINGS. WRITTEN PERMISSION FROM THE ENGINEER IS REQUIRED FOR ANY ADDITIONAL WELDING.
- NO SPLICES OTHER THAN THOSE NOTED ON THE DRAWINGS ARE PERMITTED WITHOUT THE WRITTEN PERMISSION FROM THE ENGINEER. SPLICES AND EMBEDMENT TO BE DETAILED ACCORDING TO CAN/CSA-A23.3-04 (R2010).
- ALL HORIZONTAL REINFORCING IN WALLS, FOUNDATIONS AND PEDESTALS SHALL BE CONTINUOUS, WITH HOOKS OR CORNER BARS HAVING A LAP LENGTH OF 16" FOR 10M AND 20" FOR 15M.
- BENT 90 DEGREE REINFORCING HOOKS, DESIGNATED AS "C" SHALL BE DETAILED AS STANDARD HOOKS UNLESS NOTED OTHERWISE.
- TWO BENT 90 DEGREE REINFORCING BARS, DESIGNATED AS "D" SHALL BE DETAILED AS STANDARD HOOKS UNLESS NOTED OTHERWISE.
- ALL REINFORCING BARS SHALL BE TIED IN THEIR FINAL POSITION SECURELY TO PREVENT DISPLACEMENT. SUPPORT TO BE PROVIDED NOT FURTHER THAN 3'-0" APART IN EITHER DIRECTION.
- DOWELS ARE TO BE TIED IN PLACE PRIOR TO CONCRETE PLACEMENT. "WET DOWELING" OF ANY REINFORCING STEEL IS NOT PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
- WHERE CONCRETE SURFACES ARE TO BE EXPOSED OR IN MARINE ENVIRONMENTS NON-CORROSIVE TYPE REINFORCING CHAIRS SHALL BE USED TO SUPPORT THE REINFORCING STEEL.
- REINFORCEMENT MUST BE CLEAN AND FREE FROM ANY SUBSTANCE THAT HASTEN RUSTING OR REDUCES CONCRETE BOND. ANY QUESTIONABLE MATERIALS TO BE CLEANED OR REPLACED.
- THE FOLLOWS UNLESS NOTED OTHERWISE ON DRAWINGS SHALL BE:

**LAP LENGTHS FOR REINFORCING STEEL**

10M	16"	(400mm)
15M	24"	(600mm)
20M	36"	(900mm)
25M	48"	(1200mm)

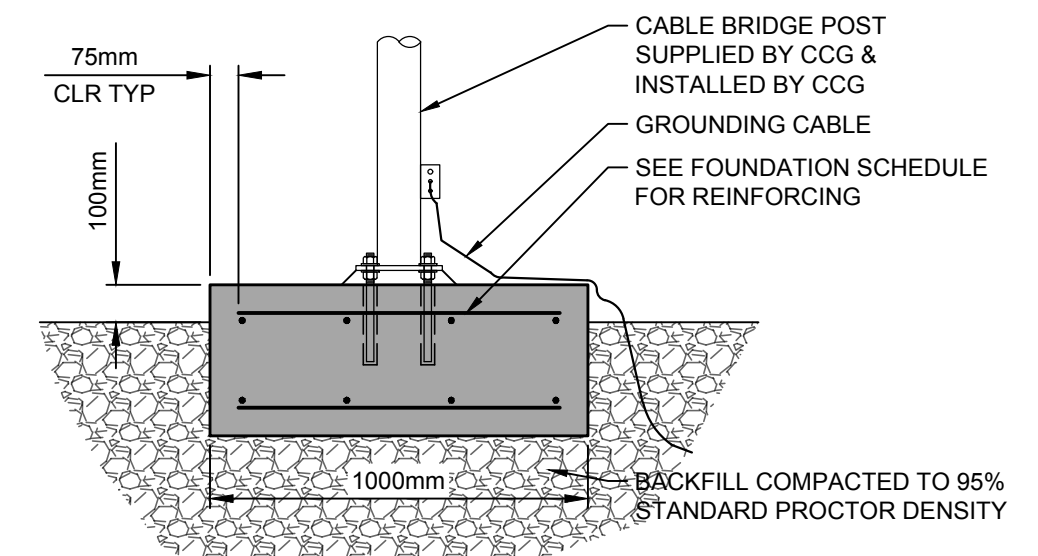
**COVER TO PRINCIPAL REINFORCING**

SURFACE CAST AGAINST GROUND	3"(75mm)
EXPOSED TO GROUND OR WEATHER	2"(50mm)
WALLS AND COLUMNS	2"(50mm)



**WAVEGUIDE FOUNDATION SCHEDULE**

TYPE	SIZE	REINFORCEMENT
F1	1000x1000x300mm DEEP	4-15Mx850mm LG E.W. TOP & BOT
F2	2700x1000x400mm DEEP	15Mx850mm@300 O.C. S.W. TOP & BOT 4-15Mx2550mm LG L.W. TOP & BOT



SECTION 1  
SCALE: 1:20

PLAN SCALE: 1:100  
A FOUNDATION PLAN

A	ISSUED FOR TENDER	TDK	2019-07-17
rev	description	by	date
Asset - Actif			
<b>WM-523 MOUNT OZZARD MCTS SITE NEW TOWER PROJECT</b>			
Drawing - Dessin			
<b>FOUNDATION PLAN</b>			
drawn - dessiné			date
TDK			2019-07-17
designed - conception			date
AW			2019-07-17
checked - vérifié			date
AW			2019-07-17
approved - approuvé			date
AW			2019-07-17
CCG ref. no. - no. réf. GCC			scale - échelle
N62B5			AS SHOWN
drawing no. - no. dessin			sheet/feuille rev-rév
WM-523-1053			03 of 03 A

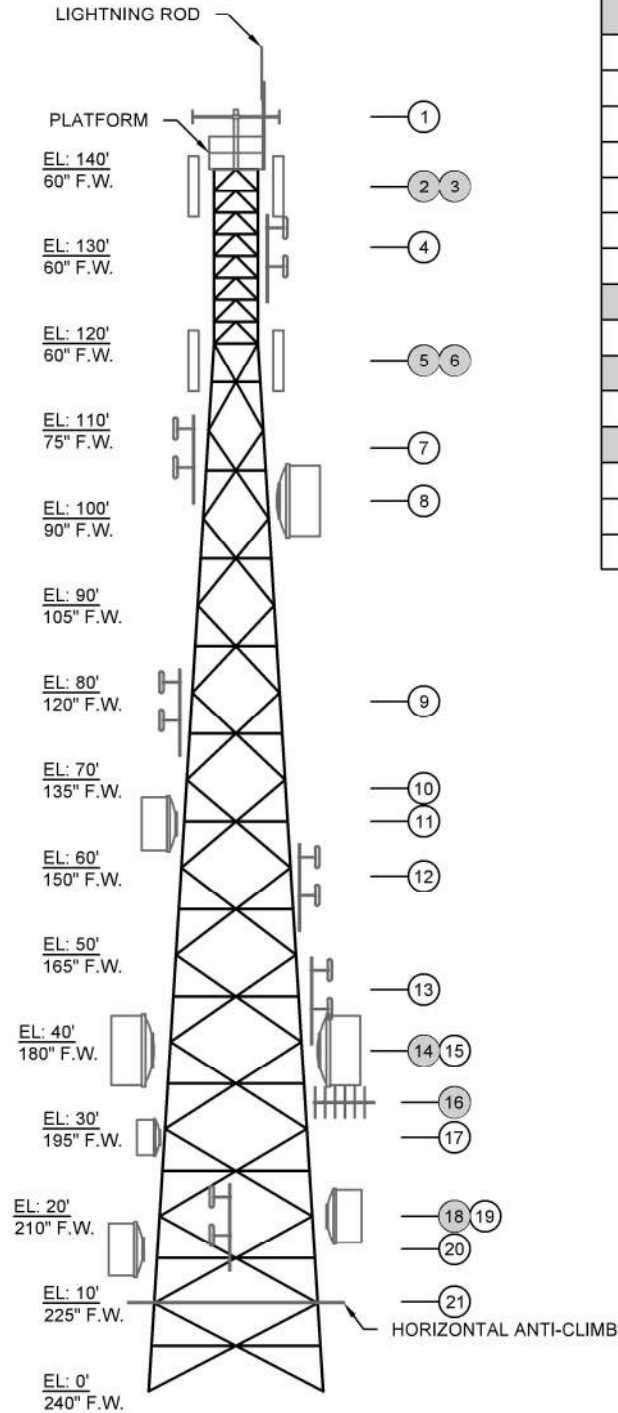


**TOWER DESIGNED TO:**  
 CODE: CSA-S37-2018  
 WIND LOADING: V01 = 56.91mph, AS PER EC SITE SPECIFIC  
 ICE LOADING: 25mm  
 MAX TWIST/TILT @ M/W DISH = 0.50°

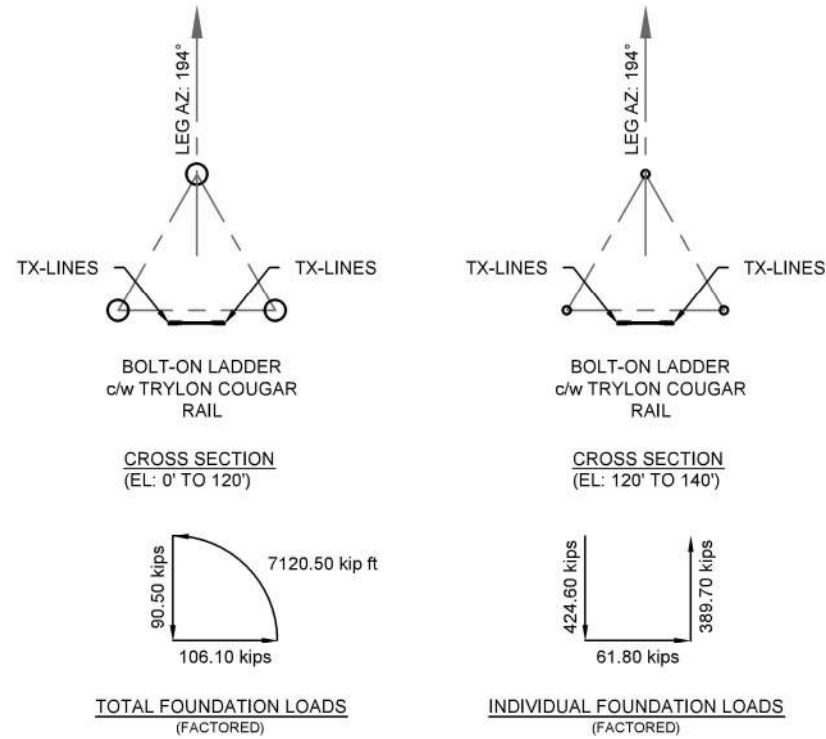
**MEMBER LEGEND**

- A - 11" OD x 1-3/8" PLATE
- B - (6) 1" x 4" A325 BOLT ASS'Y
- C - 8" x 8" x 1-1/4" PLATE
- D - (3) 1-1/4" x 4-1/2" A325 BOLT ASS'Y

SECTION No.	MEMBER	SIZE	PAINT	QTY	DESCRIPTION
960.3.0101.001	LEG (60W)	8-5/8" OD x 0.500" RHSS	NO PAINT	2	3/4" S.R.
960.3.0126.002	HORIZ. (44W)	6-5/8" OD x 0.500" RHSS	NO PAINT	1	1/4" S.R.
7238.980.112-6B	SUB HORIZ. (44W)	3-1/2" x 3-1/2" x 5/16"	N/A	1	N/A
7238.980.112-6A	DIAG. (44W)	3-1/2" x 3-1/2" x 5/16"	N/A	1	1" S.R.
7238.980.112-5B	SUB DIAG. (44W)	3-1/2" x 3-1/2" x 5/16"	N/A	1	N/A
7238.980.112-5A	SPLICE PAD	15" OD X 1-1/4" PLATE	N/A	1	A
7238.980.112-4B	SPLICE BOLTS	(8) 1-1/8" X 4-1/2" A325	N/A	3	B
7238.980.112-4A					C
7238.980.112-3B					D
7238.980.112-3A					
7238.980.112-2B					
7238.980.112-2A					
7238.980.112-1B					
7238.980.112-1A					

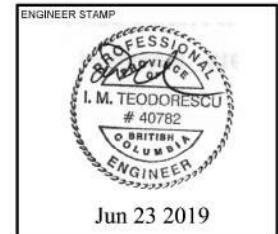
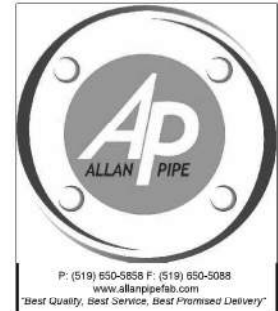


ITEM NO.	QTY	ANTENNA LOADING					TX LINES	
		MAKE / MODEL OF ANTENNA	ELEV. (ft)	AZ. (°TN)	DOWN TILT	STATUS	QTY	DESCRIPTION
1	1	RHOTHETA RT-800 DF ANTENNA	147.6	OMNI	N/A	PLANNED	1	APHA WIRE
2	6	COMMSCOPE UNNPX306R3	138.0	94 / 224 / 300	N/A	FUTURE	-	-
3	12	REMOTE RADIO UNIT	138.0	N/A	N/A	FUTURE	3	DC POWER FIBRE
4	1	SINCLAIR SRL212 DUAL DIPOLE	131.0	220	N/A	INITIAL	1	LDF4-50A
5	6	COMMSCOPE UNNPX306R3	118.0	94 / 224 / 270	N/A	FUTURE	-	-
6	12	REMOTE RADIO UNIT	118.0	N/A	N/A	FUTURE	3	DC POWER FIBRE
7	1	SINCLAIR SRL212 DUAL DIPOLE	108.5	220	N/A	INITIAL	1	LDF4-50A
8	1	HSX8-6W PARABOLIC DISH	102.0	137.7	N/A	PLANNED	1	EWP63
9	1	SINCLAIR SRL212 DUAL DIPOLE	79.0	220	N/A	INITIAL	1	LDF4-50A
10	3	MOUNTAIN TOP CAMERAS	69.0	TBD	N/A	INITIAL	3	CAT5
11	1	HSX6-6W PARABOLIC DISH	65.5	137.7	N/A	PLANNED	1	EWP63
12	1	SINCLAIR SRL212 DUAL DIPOLE	59.0	220	N/A	INITIAL	1	LDF4-50A
13	1	SINCLAIR SRL212 DUAL DIPOLE	46.0	220	N/A	INITIAL	1	LDF4-50A
14	1	HSX8-6W PARABOLIC DISH	39.5	86.4	N/A	FUTURE	2	EWP63
15	1	HSX8-6W PARABOLIC DISH	39.5	302.2	N/A	PLANNED	2	EWP63
16	1	SNCLAIR SY206	33.0	TBD	N/A	FUTURE	1	LDF4-50A
17	1	HSX4-107 PARABOLIC DISH	29.5	220.65	N/A	INITIAL	2	LMR400
18	1	HSX6-6W PARABOLIC DISH	20.0	86.4	N/A	FUTURE	2	EWP63
19	1	SINCLAIR SRL212 DUAL DIPOLE	20.0	220	N/A	INITIAL	1	LDF4-50A
20	1	HSX6-6W PARABOLIC DISH	16.5	302.02	N/A	PLANNED	2	EWP63
21	1	UNKNOWN	10.0	TBD	N/A	INITIAL	1	COAX



**STRUCTURAL NOTES:**

1. ALL DIMENSIONS ARE IMPERIAL UNLESS NOTED OTHERWISE
2. TOWER ERECTION SHALL CONFORM TO CSA-S37 AND S16 (LATEST REVISION)
3. ALL WELDING SHALL CONFORM TO CSA-47.1 & W59 (LATEST REVISION)
4. ALL SOLID ROUND MEMBERS GREATER THAN 2" [51mm] Ø MUST BE PRE-HEATED PRIOR TO WELDING
5. ALL STRUCTURAL STEEL SHALL BE MIN. G40.21-44W [300W] OR 50W [350W] AS NOTED
6. LIMIT STATES DESIGN, FACTORED LOADING
7. ALL MATERIAL SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH CSA-G164 U.N.O.
8. ALL STRUCTURAL BOLTS SHALL CONFORM TO ASTM-A325 U.N.O. BOLTS SHALL BE TENSIONED USING THE TURN OF NUT METHOD



OWNERS NAME: **Public Works and Government Services Canada**  
 PROJECT TITLE: **140' 240' SELF SUPPORT TOWER REVISED DRAWING PACKAGE**  
 SITE NAME / CODE: **MT OZZARD, BC**

CUSTOMER NAME: **Public Works and Government Services Canada**  
 CUSTOMER REF / PO#: -

No.	Description	Date
A	ISSUE FOR CONSTRUCTION	05/02/2019
B	REVISED	06/06/2019
-	-	-
-	-	-

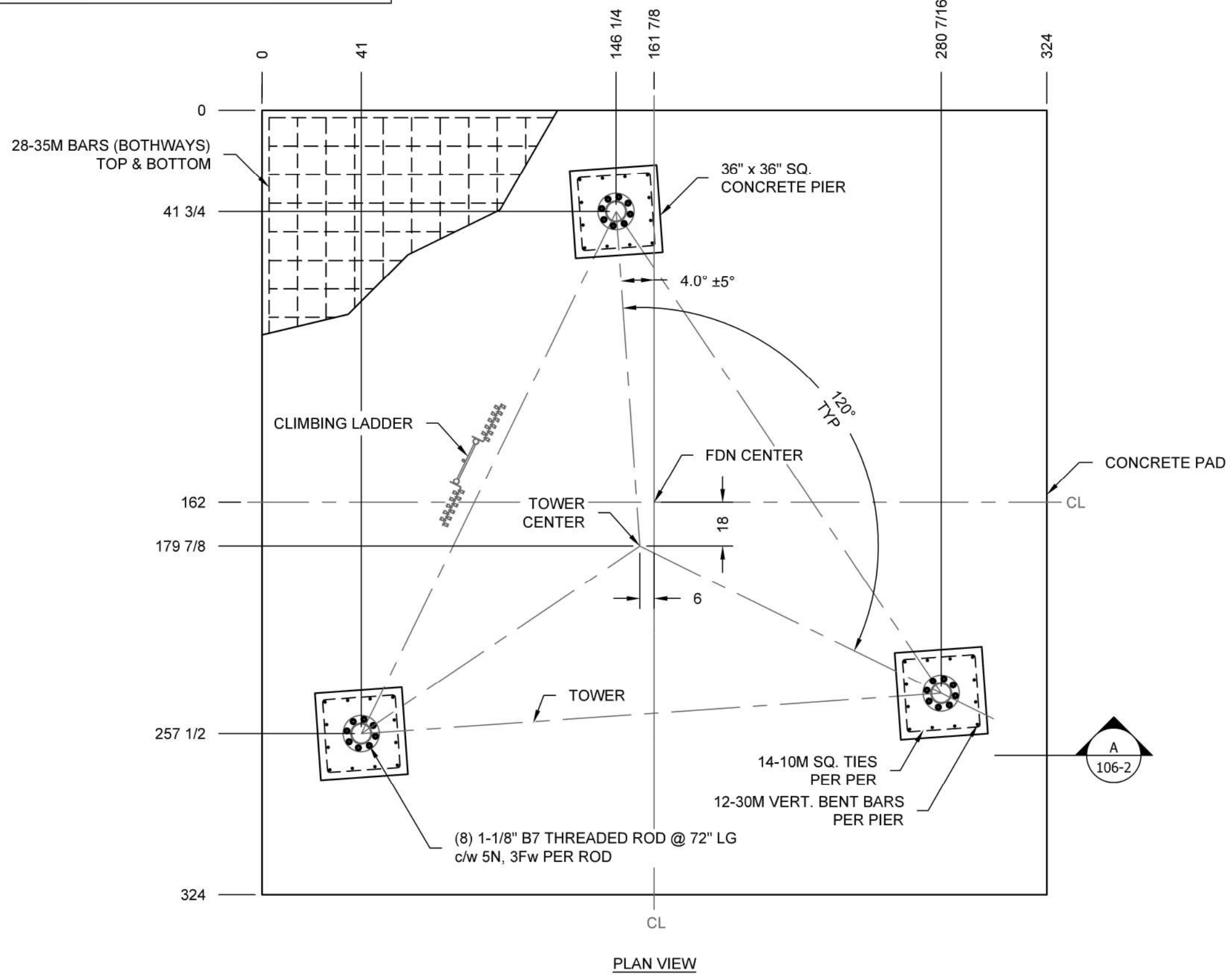
DRAWING TITLE: **TOWER PROFILE**  
 APFI JOB No.: **8005**  
 DRAWING No.: **8005.980.102-1**  
 DRWN BY: **MO** CHKD BY: **-** APPRD BY: **-**

ORIGINAL JOB NO. J7705

QUOTE NO. N/A

PAPER SIZE: 11X17

REFER TO DRAWING # 980.106-1 FOR FOUNDATION NOTES



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ENGINEER STAMP

I. M. TEODORESCU  
 # 40782  
 BRITISH COLUMBIA  
 ENGINEER

Jun 23 2019

OWNERS NAME: Fisheries and Oceans Canada / Pêches et Océans Canada  
 PROJECT TITLE:  
 140' 240" SELF SUPPORT TOWER  
 REVISED DRAWING PACKAGE  
 SITE NAME / CODE:  
 MT. OZZARD, BC

CUSTOMER NAME:  
 Public Works and Government Services Canada  
 CUSTOMER REF / PO#:  
 -

REVISIONS		
No.	Description	Date
A	ISSUE FOR CONSTRUCTION	05/01/2019
B	REVISED ORIENTATION	06/05/2019
*	*	*
*	*	*

DRAWING TITLE:  
 FOUNDATION DETAILS  
 PLAN VIEW  
 APFI JOB No.  
 8005  
 DRAWING No.  
 8005.980.106-1

DRWN BY	CHKD BY	APPRD BY
MO	-	-

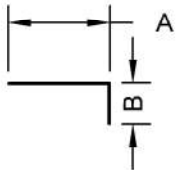
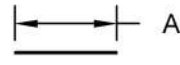
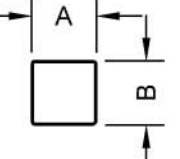
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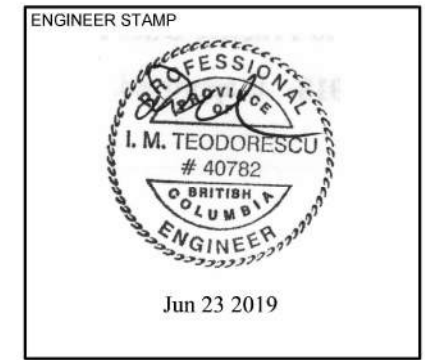
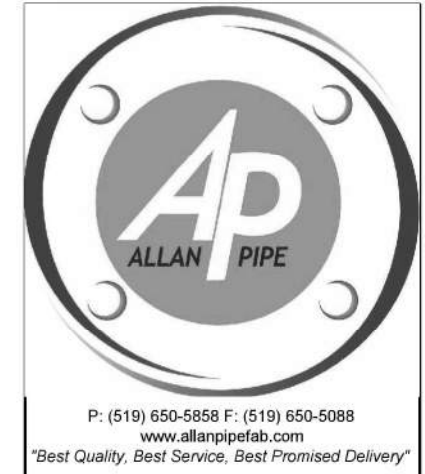
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PAPER SIZE: 11X17

**SOIL FOUNDATION NOTES:**

1. CONTRACTOR SHALL FIELD CHECK ALL DIMENSIONS BEFORE PROCEEDING WITH WORK.
2. FOUNDATION DESIGNED BASED ON GEOTECHNICAL ASSESSMENT REPORT PROVIDED BELOW:
  - 2.1. BY: GEOPACIFIC
  - 2.2. MEMORANDUM DATED: APRIL 10, 2019
  - 2.3. FILE # 13974-B
3. FOUNDATION BASE SHALL BE PLACED AGAINST UNDISTURBED ROCK. IF THIS IS NOT POSSIBLE, REMOVE LOOSE ROCK AND REPLACE WITH CRUSHED ROCK COMPACTED BY USE OF HOEPACK.
4. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4350 psi [30 MPa] AT 28 DAYS. AIR ENTRAINMENT OF 5% - 7% SHALL BE USED. MEASURED SLUMP SHALL BE 3" [76mm] +/- 1" [25mm]
5. ALL CONCRETE SHALL BE TYPE 10 NORMAL PORTLAND CEMENT. USE OF CALCIUM CHLORIDE OR ACCELERATING ADMIXTURES IS PROHIBITED. CONCRETE MUST ACHIEVE MINIMUM 70% OF SPECIFIED STRENGTH BEFORE APPLYING ANY LOADS.
6. NON SHRINK GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 7250 psi [50 MPa] AT 28 DAYS SHALL BE USED AT BASE OF TOWER.
7. ALL REINFORCING SHALL BE CLEAN OF OIL, RUST, DIRT ETC... BEFORE CONCRETE IS POURED. BARS WITH KINKS, BENDS ETC... NOT SHOWN ON FOUNDATION LAYOUT SHALL BE REJECTED.
8. ALL REINFORCING MATERIAL SHALL HAVE A MINIMUM OF 3" [75mm] OF CONCRETE COVER.
9. ALL ANCHORAGE STEEL BELOW GRADE NOT ENCASED IN CONCRETE SHALL BE GALVANIZED AND FURTHER CORROSION PROTECTION SHALL BE PROVIDED
10. BACKFILL SHALL BE PLACED IN LIFTS NO GREATER THAN 10" [250mm] AND COMPACTED TO A MINIMUM OF 95% OF S.P.D.D.
11. ALL BACKFILL MATERIAL SHALL BE FREE OF DEBRIS, WATER, LARGE ROCKS, ORGANIC MATERIAL, ICE AND SNOW.
12. FOUNDATION DESIGNED IN ACCORDANCE TO CSA-S37 (LATEST REVISION)
13. CONCRETE WORK SHALL BE IN ACCORDANCE WITH CSA-A23.1, CSA-A23.2 & CSA-A23.3 (LATEST REVISIONS)
14. REINFORCMENT SHALL CONFORM TO CSA-G30.18 AND HAVE A YIELD STRENGTH OF 58000 PSI [400 MPa].

REINFORCING BAR CHART					
QTY	SIZE	DIM 'A'	DIM 'B'	SPACING	DESCRIPTION
36	30M	126"	20"	EQUALLY	
112	35M	318"	N/A	11-3/4" c/c	
42	10M	30"	30"	3 @ 5" c/c 11 @ 10" c/c	

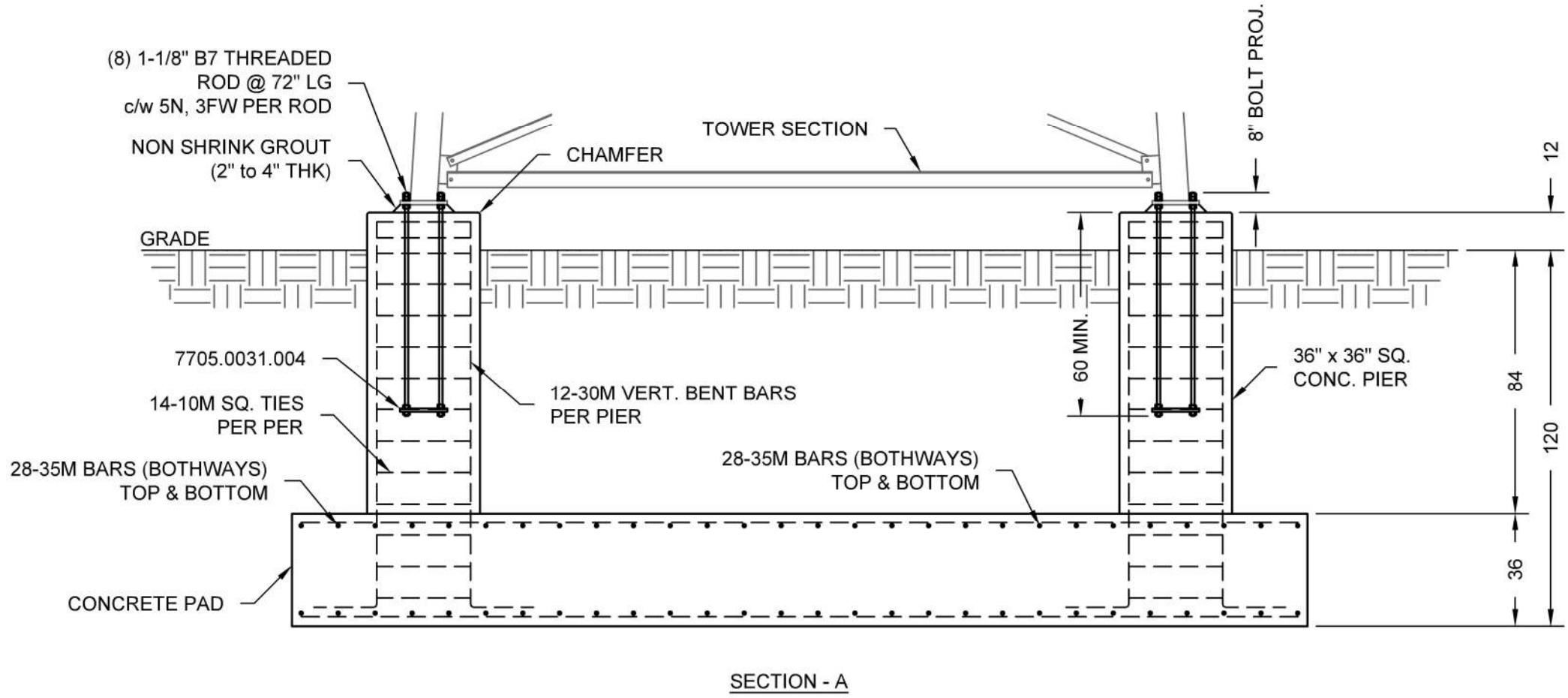


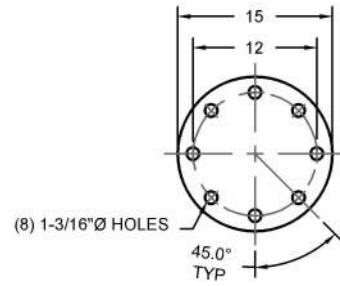
OWNERS NAME: Fisheries and Oceans Canada / Pêches et Océans Canada  
 PROJECT TITLE: 140' 240" SELF SUPPORT TOWER REVISED DRAWING PACKAGE  
 SITE NAME / CODE: MT. OZZARD, BC

CUSTOMER NAME: Public Works and Government Services Canada  
 CUSTOMER REF / PO#: -

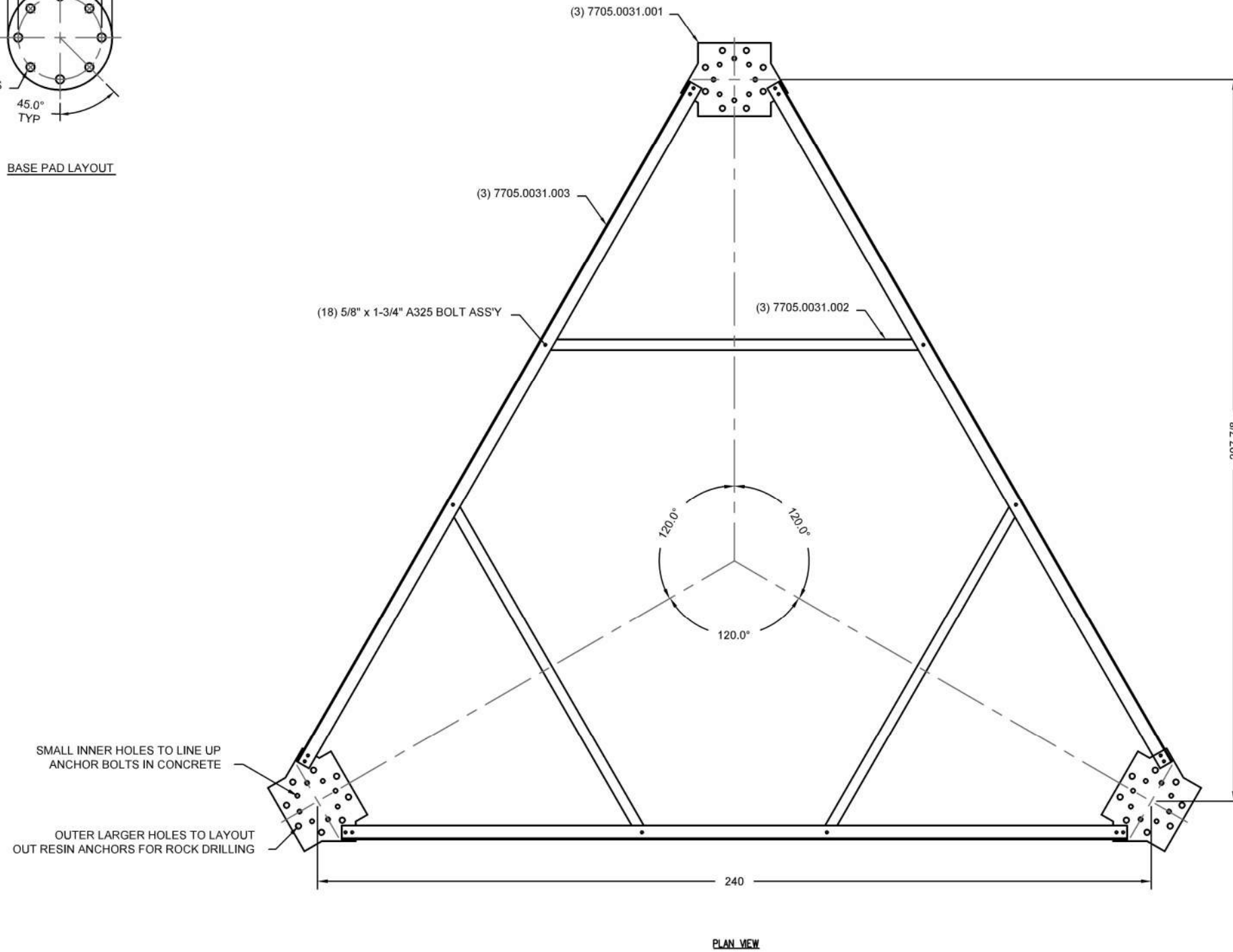
REVISIONS		
No.	Description	Date
A	ISSUE FOR CONSTRUCTION	05/01/2019
B	REVISED NOTES	06/05/2019
*	*	*
*	*	*

DRAWING TITLE: FOUNDATION DETAILS SECTION - A  
 APFI JOB No. 8005  
 DRAWING No. 8005.980.106-2  
 DRWN BY: MO    CHKD BY: -    APPRD BY: -





BASE PAD LAYOUT



SMALL INNER HOLES TO LINE UP ANCHOR BOLTS IN CONCRETE

OUTER LARGER HOLES TO LAYOUT OUT RESIN ANCHORS FOR ROCK DRILLING



OWNERS NAME	Public Works and Government Services Canada
PROJECT TITLE	140' 240' SELF SUPPORT TOWER REVISED DRAWING PACKAGE
SITE NAME / CODE	MT. OZZARD, BC

CUSTOMER NAME	Public Works and Government Services Canada
CUSTOMER REF / PO#	-

No.	Description	Date
A	ISSUE FOR CONSTRUCTION	05/02/2019
-	-	-
-	-	-

DRAWING TITLE	TEMPLATE DETAILS	
APFI JOB No.	8005	
DRAWING No.	8005.980.108-1	
DRWN BY	CHKD BY	APPRD BY
MO	-	-