

CONSTRUCTION SUMMARY REPORT:

Hope Bay – Roberts Bay Multi Tank Farm – Final 5 ML Tank



AGNICO EAGLE

Type “A” Water Licence 2AM-DOH1335
Hope Bay Phase 2 Project
Agnico Eagle Mines, Hope Bay
February 16, 2021

Prepared For:
Nunavut Water Board
Gjoa Haven, NU

Prepared By:
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Table of Contents

1. INTRODUCTION	3
2. WATER LICENSE CONDITIONS.....	3
2.1. SCHEDULE D PART 2A – FINAL DESIGN AND CONSTRUCTION DRAWINGS	3
2.2. SCHEDULE D PART 2e – GEOCHEMICAL ANALYSIS OF WASTE ROCKS AND FILLS	3
2.3. SCHEDULE D PART 2F – PHOTOGRAPHIC RECORDS	3
2.4. SCHEDULE D PART 2G – AS-BUILT DRAWINGS	3
2.5. SCHEDULE D PART 2H – FIELD DECISIONS AND DESIGN CHANGES.....	3
2.6. SCHEDULE D PART 2I – MITIGATION MEASURES	4
2.7. SCHEDULE D PART 2J – MONITORING ACTIVITIES.....	4
2.8. SCHEDULE D PART 2K – BLAST VIBRATION MONITORING	4
2.9. SCHEDULE D PART 2L - MONITORING EROSION PROTECTION MEASURES.....	4
2.10. SCHEDULE D PART 2M – MONITORING OF WATER USE FROM DUST SUPPRESSION	4
2.11. SCHEDULE D PART 2N – MONITORING OF CONTRACTOR'S GROUND IMPACTS	4
2.12. SCHEDULE D PART 2P – SUMMARY OF QUARRY ROCK SEEPAGE	4
REFERENCES.....	5

List of Appendices

APPENDIX A – ISSUED FOR CONSTRUCTION DRAWINGS – ENGINEERING DRAWINGS FOR THE ROBERTS BAY FUEL TANK FARM, DORIS NORTH PROJECT, NUNAVUT, CANADA

APPENDIX B - HOPE BAY – DORIS NORTH – ROBERTS BAY MULTI TANK FARM – ADDITIONAL 5ML TANK AS-BUILT DOCUMENTATION (SRK, 2021)

1. INTRODUCTION

TMAC Resource Inc. (TMAC) is pleased to present the Construction Summary Report for the 'Roberts Bay Multi Tank Farm – Additional 5ML Tank' at the Hope Bay Project to the Nunavut Water Board (NWB). This Report is being provided in fulfilment of Part D, Item 11 of the Amended Type A Water Licence 2AM-DOH1335.

Construction of the fourth and final 5ML tank began in June 2019 and was constructed within the previously constructed (2010-2011) Roberts Bay Multi Tank Farm (RBTF). This CSR documents field decisions, supporting data and mitigation measures employed as a result of the installation of the additional 5 ML Tank, as required under Schedule D, Item 2 of the NWB Water Licence 2AM-DOH1335.

2. WATER LICENSE CONDITIONS

The following sections are aligned with the CSR requirements as per Schedule D, Item 2 of Water Licence 2AM-DOH1335.

2.1. SCHEDULE D PART 2A – FINAL DESIGN AND CONSTRUCTION DRAWINGS

IFC Drawings were prepared by SRK in 2011 and are presented in Appendix A.

2.2. SCHEDULE D PART 2E – GEOCHEMICAL ANALYSIS OF WASTE ROCKS AND FILLS

The pedestal for the 5ML tank was constructed out of transition and crush fill material sourced from Quarry 2. The purpose of this pedestal was to provide a level base pad for the erection of the additional 5ML tank.

Quarry 2 material is determined to be geochemically stable (non-acid generating or metal leaching) as per the Hope Bay Project Quarry Management and Monitoring Plan (December 2017).

Table 2. Material Source to Destination Table

Source	Destination
Quarry 2	Pedestal Bedding Material

2.3. SCHEDULE D PART 2F – PHOTOGRAPHIC RECORDS

Photographic records are provided in Attachment 3 and 4 of Appendix B.

2.4. SCHEDULE D PART 2G – AS-BUILT DRAWINGS

Certified as-built drawings stamped by the licensed engineer are provided in Appendix B.

2.5. SCHEDULE D PART 2H – FIELD DECISIONS AND DESIGN CHANGES

In general, the tank was built to the design requirements as confirmed by the as-built drawings. Deviations from the design was completed to adapt the design to encountered field and operational conditions.

Due to the timing of construction (June during freshet), ponded water from snow melt had accumulated in the Roberts Bay Multi Tank farm site prior to construction. This ponded water was sampled on June 2 prior to construction and did not meet the discharge criteria outlined in Part F Item 18(b) of the 2AM-DOH13335 licence for discharge to tundra. High traffic in the area during preparation for construction and a small spill of fuel over the previous winter resulted in exceedances for Total Suspended Solids (TSS) and Oil & Grease. The ponded water was transferred to the Tailings Impoundment Area via water truck beginning in May 2019 and continued into June 2019 until all water was removed from the tank farm.

2.6. SCHEDULE D PART 2I – MITIGATION MEASURES

The following mitigation measures were implemented during construction to minimise harm to the environment:

- Construction was conducted entirely within the lined berm facility.
- Water accumulation in the tank farm from regular freshet melt was transferred to the Tailings Impoundment Area.
- Geochemically suitable quarry rock was used for construction of the tank pedestal.
- All fuel and products used during construction were contained within the lined berm facility.

2.7. SCHEDULE D PART 2J – MONITORING ACTIVITIES

Visual monitoring of the construction areas was conducted prior to, during, and upon completion of the construction activity. Construction was conducted entirely within the established berm footprint and no damage to the tundra was observed. Monitoring will be undertaken in compliance with Part D of the Water Licence.

2.8. SCHEDULE D PART 2K – BLAST VIBRATION MONITORING

Blasting was not required as part of the tank installation.

2.9. SCHEDULE D PART 2L - MONITORING EROSION PROTECTION MEASURES

Erosion protection was not required as part of the tank installation.

2.10. SCHEDULE D PART 2M – MONITORING OF WATER USE FROM DUST SUPPRESSION

Dust suppression was not required as part of the tank installation.

2.11. SCHEDULE D PART 2N – MONITORING OF CONTRACTOR'S GROUND IMPACTS

Prior to commencing construction activities, safety and environmental hazards were identified and adequate controls were placed to mitigate risk to workers and the environment. As part of this a step-by-step activity sequence was prepared prior to commencing work. The critical items identified to monitor the contractor's ground impacts are listed in Table 2:

Table 2. Critical Items to Monitor Contractor's Impact

Item	Critical Items Actions
1. Prevent damage to tundra in this area	<ul style="list-style-type: none"> • Heavy equipment will remain on established roadways • No equipment to operate on tundra
2. Ponded water management	<ul style="list-style-type: none"> • Ponded water was transferred to the Tailings Impoundment Area
3. Fuel/chemical storage	<ul style="list-style-type: none"> • Fuel and products used during construction were stored entirely within the berm footprint preventing any release to the environment
4. Welding near fuel tanks	<ul style="list-style-type: none"> • Hot work permits issued for welding work conducted • Fire watch was established • Fire extinguishers present at the work site
5. Waste Management	<ul style="list-style-type: none"> • All waste generated from the construction activity was segregated/sorted as outlined in the Hazardous and Non-Hazardous Waste Management plans.

Monitoring of the construction area was conducted throughout the construction activity. No impacts to the tundra were observed.

2.12. SCHEDULE D PART 2P – SUMMARY OF QUARRY ROCK SEEPAGE

Water entering the Roberts Bay Multi Tank Farm is discharged to the tundra if the water quality complies with the criteria established in Part F, Item 18b of the Amended Type A Water Licence 2AM-DOH1335. If water quality exceeds the specified criteria, it is directed to the Tailings Impoundment Area (TIA) as per the Hope Bay Project Doris-Madrid Water Management Plan (March 2020).

REFERENCES

TMAC Resources Inc., 2017. Hope Bay Project Quarry Management and Monitoring Plan. December 2017.

TMAC Resources Inc., 2020. Hope Bay Project Doris-Madrid Water Management Plan. March 2020.

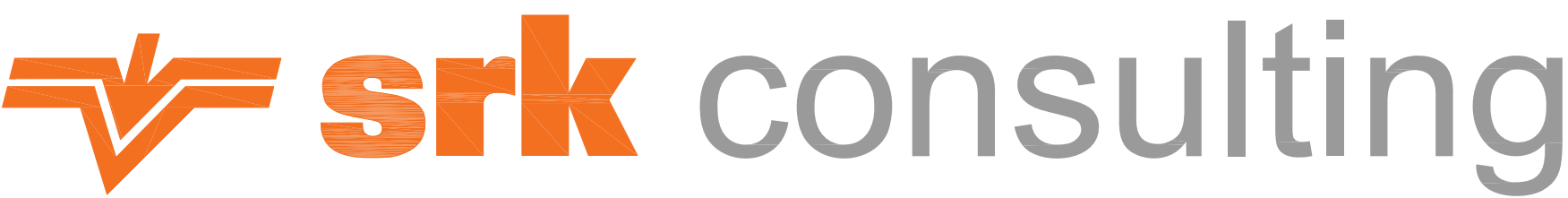
APPENDIX A
Issued for Construction Drawings –
Engineering Drawings for the Roberts Bay Fuel Tank Farm,
Doris North Project, Nunavut, Canada
(SRK, 2011)

Engineering Drawings for the Roberts Bay Fuel Tank Farm, Doris North Project, Nunavut, Canada

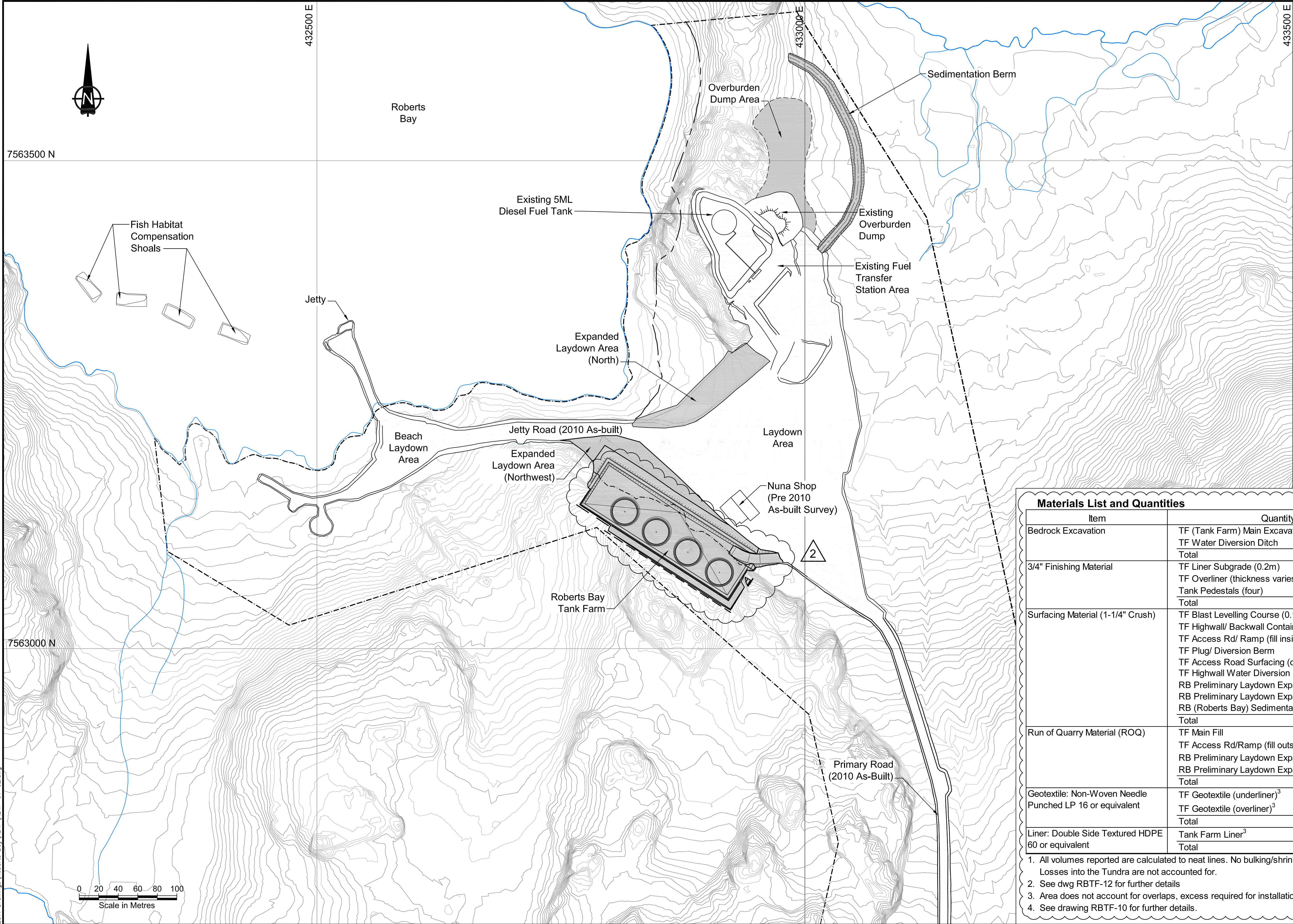
ACTIVE DRAWING STATUS

DWG NUMBER	NEWMONT DWG NUMBER	DRAWING TITLE	REVISION	DATE	STATUS	OLD/REPLACED REVISIONS			
RBTF-00	HB+R-CIV-CIV-OND-0027	Engineering Drawings for the Roberts Bay Fuel Tank Farm	2	June 9, 2011	Issued for Construction	Rev. 1, May 9, 2011	Rev. 0, Apr. 6, 2011	Rev. C, Mar. 11, 2011	Rev. B, Sept. 27, 2010
RBTF-01	HB+R-CIV-CIV-OND-0028	Fuel Tank Farm General Arrangement	2	June 9, 2011	Issued for Construction	Rev. 1, May 9, 2011	Rev. 0, Apr. 6, 2011	Rev. C, Mar. 11, 2011	Rev. B, Sept. 27, 2010
RBTF-02	HB+R-CIV-CIV-OND-0029	Fuel Tank Farm Plan Layout	2	June 9, 2011	Issued for Construction	Rev. 1, May 9, 2011	Rev. 0, Apr. 6, 2011	Rev. C, Mar. 11, 2011	Rev. B, Sept. 27, 2010
RBTF-03	HB+R-CIV-CIV-OND-0042	Fuel Tank Farm Bedrock Excavation	1	June 9, 2011	Issued for Construction	Rev. 0, Apr. 6, 2011	Rev. A, Mar. 11, 2011		
RBTF-04	HB+R-CIV-CIV-OND-0043	Fuel Tank Farm Subgrade Plan	1	June 9, 2011	Issued for Construction	Rev. 0, Apr. 6, 2011	Rev. A, Mar. 11, 2011		
RBTF-05	HB+R-CIV-CIV-OND-0044	Fuel Tank Farm Subgrade Sections and Details	0	April 6, 2011	Issued for Construction	Rev. A, Mar. 11, 2011			
RBTF-06	HB+R-CIV-CIV-OND-0045	Fuel Tank Farm Final Layout Plan (with Stake Out Points)	2	June 9, 2011	Issued for Construction	Rev. 1, May 9, 2011	Rev. 0, Apr. 6, 2011	Rev. A, Mar. 11, 2011	
RBTF-07	HB+R-CIV-CIV-OND-0030	Fuel Tank Farm Sections Sheet 1 of 2	1	June 9, 2011	Issued for Construction	Rev. 0, Apr. 6, 2011	Rev. C, Mar. 11, 2011	Rev. B, Sept. 27, 2010	Rev. A, April 27, 2010
RBTF-08	HB+R-CIV-CIV-OND-0046	Fuel Tank Farm Sections Sheet 2 of 2	0	April 6, 2011	Issued for Construction	Rev. A, Mar. 11, 2011			
RBTF-09	HB+R-CIV-CIV-OND-0031	Fuel Tank Farm Details Sheet 1 of 2	1	June 9, 2011	Issued for Construction	Rev. 0, Apr. 6, 2011	Rev. C, Mar. 11, 2011	Rev. B, Sept. 27, 2010	Rev. A, April 27, 2010
RBTF-10	HB+R-CIV-CIV-OND-0047	Fuel Tank Farm Details Sheet 2 of 2	0	April 6, 2011	Issued for Construction	Rev. A, Mar. 11, 2011			
RBTF-11	HB+R-CIV-CIV-OND-0048	Roberts Bay Preliminary Laydown Expansion	2	June 9, 2011	Issued for Construction	Rev. 1, May 9, 2011	Rev. 0, Apr. 6, 2011	Rev. A, Mar. 11, 2011	
RBTF-12	HB+R-CIV-CIV-OND-0039	Roberts Bay Overburden Storage Area and Sedimentation Control Berm	0	April 6, 2011	Issued for Construction	Rev. B, Mar. 11, 2011	Rev. A, Sept. 27, 2010		

HOPE BAY MINING LTD.



PROJECT NO: 1CH008.033
ISSUED FOR CONSTRUCTION
Revision 2
June 9, 2011
RBTF-00 / HB+R-CIV-CIV-OND-0027



- NOTES**
- The designs are based on the contour information shown on these drawings. It is however the Contractor's responsibility to confirm that the contours are a fair reflection of the ground levels in the vicinity of the works, and to advise the Construction Manager and Engineer of any differences.
 - The co-ordinate system is UTM NAD 83, Zone 13.
 - All dimensions are in metric units, unless specifically mentioned.
 - All drawings are scaled appropriately for D-Size construction drawings. Scales may not be correct if these drawings are reproduced and presented in any other size format.
 - The Engineer will provide the Construction Manager and Contractor with digital design files for setting out the works. The Engineer will instruct the Contractor to survey random spot checks to confirm whether the works have been set out correct.
 - Construction shall be in accordance with the following Technical Specifications: Earthworks and Geotechnical Engineering, Hope Bay project, Nunavut, Canada, Revision G -Issue for Construction.
 - Quarried rock from the tank farm area will be used to construct the laydown expansive areas. Excess rock will be used at other areas of the site.
 - Notes in this drawing apply to all other active drawings.

- LEGEND**
- New Infrastructure
 - Commercial lease boundary
 - 30m shoreline setback

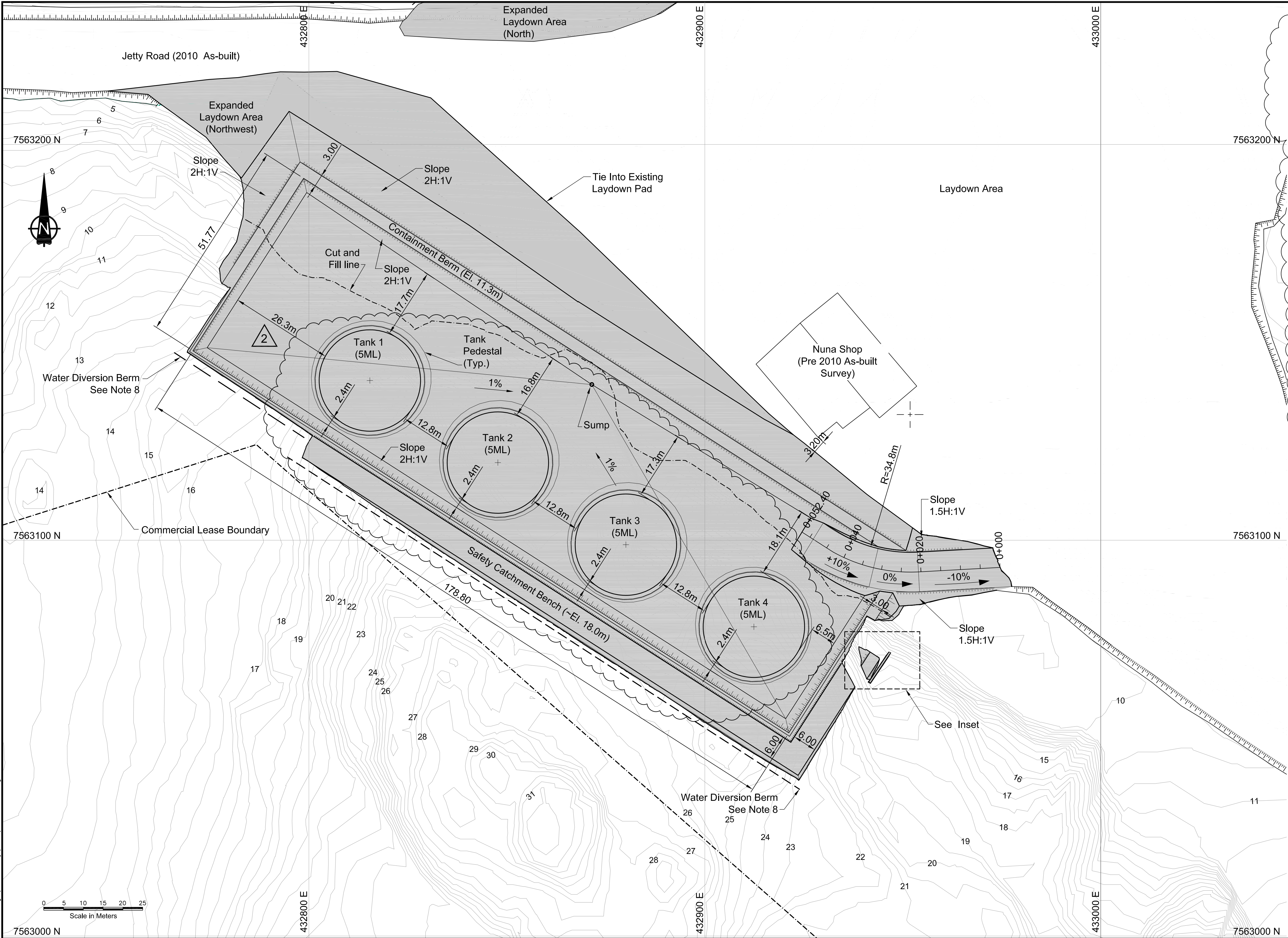
Materials List and Quantities

Item	Quantity/Area/Volume		Description ¹
Bedrock Excavation	TF (Tank Farm) Main Excavation	75,500 m ³	Volumes derived from Gemcom (Gems 6.3) model.
	TF Water Diversion Ditch	5 m ³	
	Total	75,505 m ³	
3/4" Finishing Material	TF Liner Subgrade (0.2m)	2,110 m ³	Volumes derived from Gemcom (Gems 6.3) model.
	TF Overliner (thickness varies)	5,455 m ³	
	Tank Pedestals (four)	1,596 m ³	
	Total	9,151 m ³	
Surfacing Material (1-1/4" Crush)	TF Blast Levelling Course (0.15m)	1,160 m ³	Volumes derived from Gemcom (Gems 6.3) model.
	TF Highwall/ Backwall Containment Berm	790 m ³	
	TF Access Rd/ Ramp (fill inside containment)	190 m ³	
	TF Plug/ Diversion Berm	15 m ³	Calculated from ACAD 2011 ~ Hand calculation to neat lines
	TF Access Road Surfacing (outside continent)	45 m ³	
	TF Highwall Water Diversion Berm ⁴	300 m ³	
	RB Preliminary Laydown Expansion Northwest	380 m ³	
	RB Preliminary Laydown Expansion North	517 m ³	
	RB (Roberts Bay) Sedimentation Berm ²	2,500 m ³	
	Total	5,897 m ³	
Run of Quarry Material (ROQ)	TF Main Fill	12,355 m ³	Volumes derived from Gemcom (Gems 6.3) model.
	TF Access Rd/Ramp (fill outside of containment)	410 m ³	Volumes derived from CIVL 3D
	RB Preliminary Laydown Expansion Northwest	2,365 m ³	
	RB Preliminary Laydown Expansion North	4,341 m ³	
	Total	19,471 m ³	
Geotextile: Non-Woven Needle Punched LP 16 or equivalent	TF Geotextile (underliner) ³	10,300 m ²	Areas derived from Gemcom (Gems 6.3) model.
	TF Geotextile (overliner) ³	10,300 m ²	
	Total	20,600 m ²	
Liner: Double Side Textured HDPE 60 or equivalent	Tank Farm Liner ³	10,300 m ²	Areas derived from Gemcom (Gems 6.3) model.
	Total	10,300 m ²	

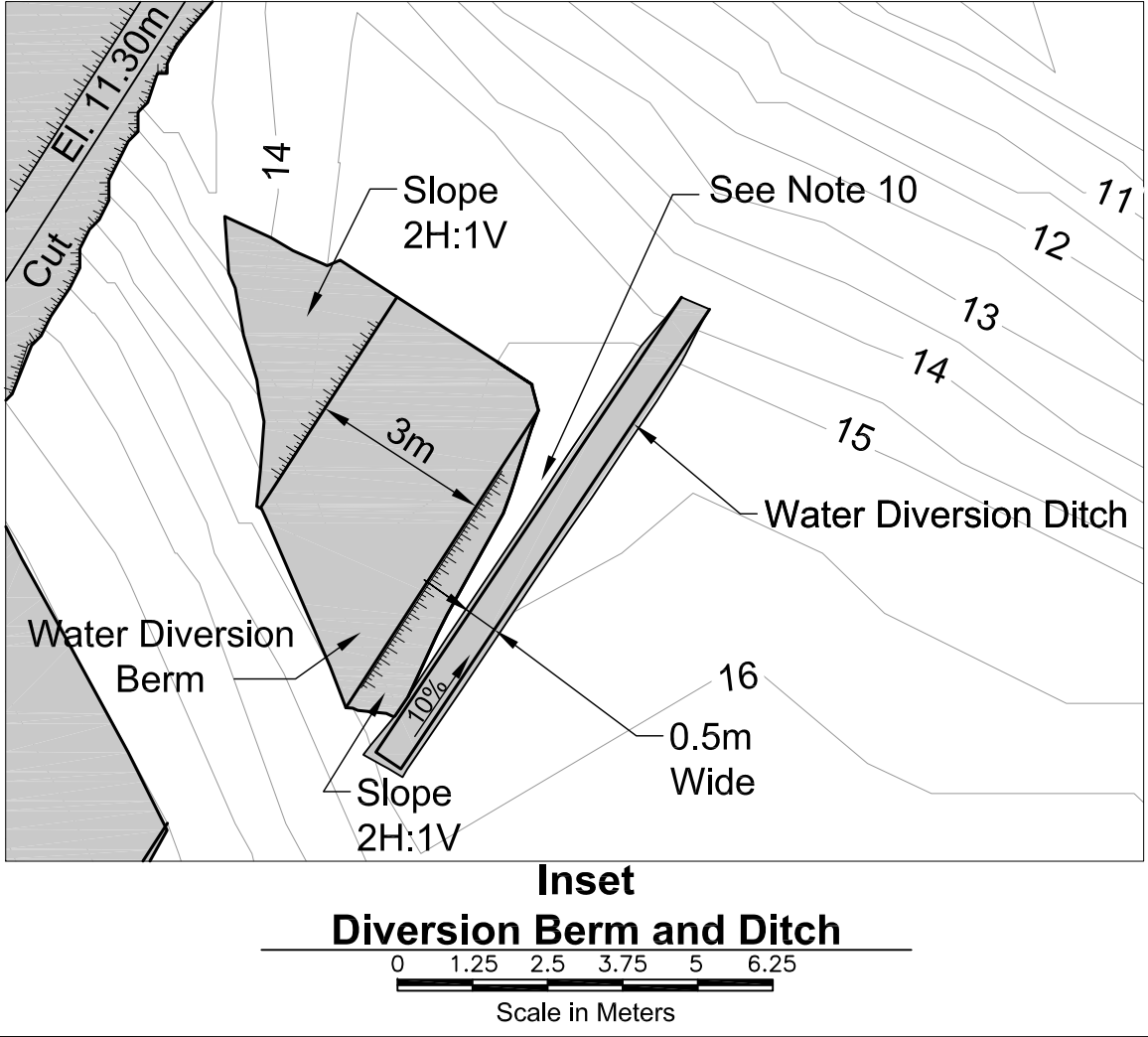
- All volumes reported are calculated to neat lines. No bulking/shrinking factor have been utilized in the volume determination. Losses into the Tundra are not accounted for.
- See dwg RBTF-12 for further details
- Area does not account for overlaps, excess required for installation or for any deviation from neat design lines
- See drawing RBTF-10 for further details.



								Original: Drawings Signed and Stamped												Doris North Project			
																				DRAWING TITLE:			
																				Fuel Tank Farm General Arrangement			
																				NEWMONT DRAWING NO.			
DRAWING NO.				DRAWING TITLE				DRAWING NO.				DRAWING TITLE				SRK JOB NO.: 1CH008.033				SRK DWG NO.: RBTF-01			
				REFERENCE DRAWINGS				REVISIONS				PROFESSIONAL ENGINEER'S STAMP				FILE NAME: RBTF-01-02.dwg				SHEET 2 OF 13			
																				REVISION NO. 2			

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- NOTES:
1. The Roberts Bay Tank Farm is to be constructed on a graded engineered fill pad over an intact bedrock surface.
 2. The bedrock surface shall be drill and blasted to specified elevation. The finished grade of the blasted bedrock surface has a maximum tolerance of -0.3m.
 3. The Contractor shall ensure the blasted floor has natural drainage and minimal ponding water.
 4. All blasted material shall be excavated to the expose intact rock surface for survey and approval from the EPCM team and the Engineer.
 5. The scope of work described herein specifically excludes all electrical and mechanical elements.
 6. Tanks 1 to 4 will be designed and constructed by Others and will only be operational once the appropriate regulatory approvals have been put in place. The grounding of the tanks will be designed and installed by Others.
 7. The Roberts Bay Tank Farm Design is based on and meets the standards from Canadian Council of Ministers of Environment (CCME), National Fire Code of Canada (2010) and Newmont Environmental Standards.
 8. The exact location of the highwall water diversion is to be field fit to ensure drainage is directed away from highwall. See typical detail 13 on dwg RBTF-10 for additional berm details.
 9. Ramp access shall be restricted, for light maintenance vehicles only.
 10. Water Diversion Berm side slope to be field fit to ensure no ponding and drainage directed towards diversion ditch.
 11. The Owner will install appropriate signage and barricade to prevent any vehicle access within the secondary catchment area other than on the ram
 12. The tank locations and inter-tank spacing has been provided by others.

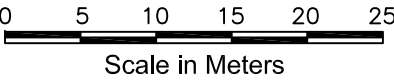


								Original Drawings Signed and Stamped												Doris North Project																											
																				DRAWING TITLE:				Fuel Tank Farm Plan Layout																							
												DESIGN: AT/JBK/MMM CHECKED: AT/JBK/MMM				DRAWN: NV/DC/LR APPROVED: EMR				HOPE BAY MINING LTD.																											
DRAWING NO.				DRAWING TITLE												DATE: June 9, 2011				SRK JOB NO.: 1CH008.033				SRK DWG NO.: RBTF-02																							
REFERENCE DRAWINGS								REVISIONS								PROFESSIONAL ENGINEER'S STAMP								FILE NAME: RBTF-01-02.dwg								NEWMT DRAWING NO. HB+R-CIV-CIV-OND-0029								SHEET 3 OF 13				REVISION 2			



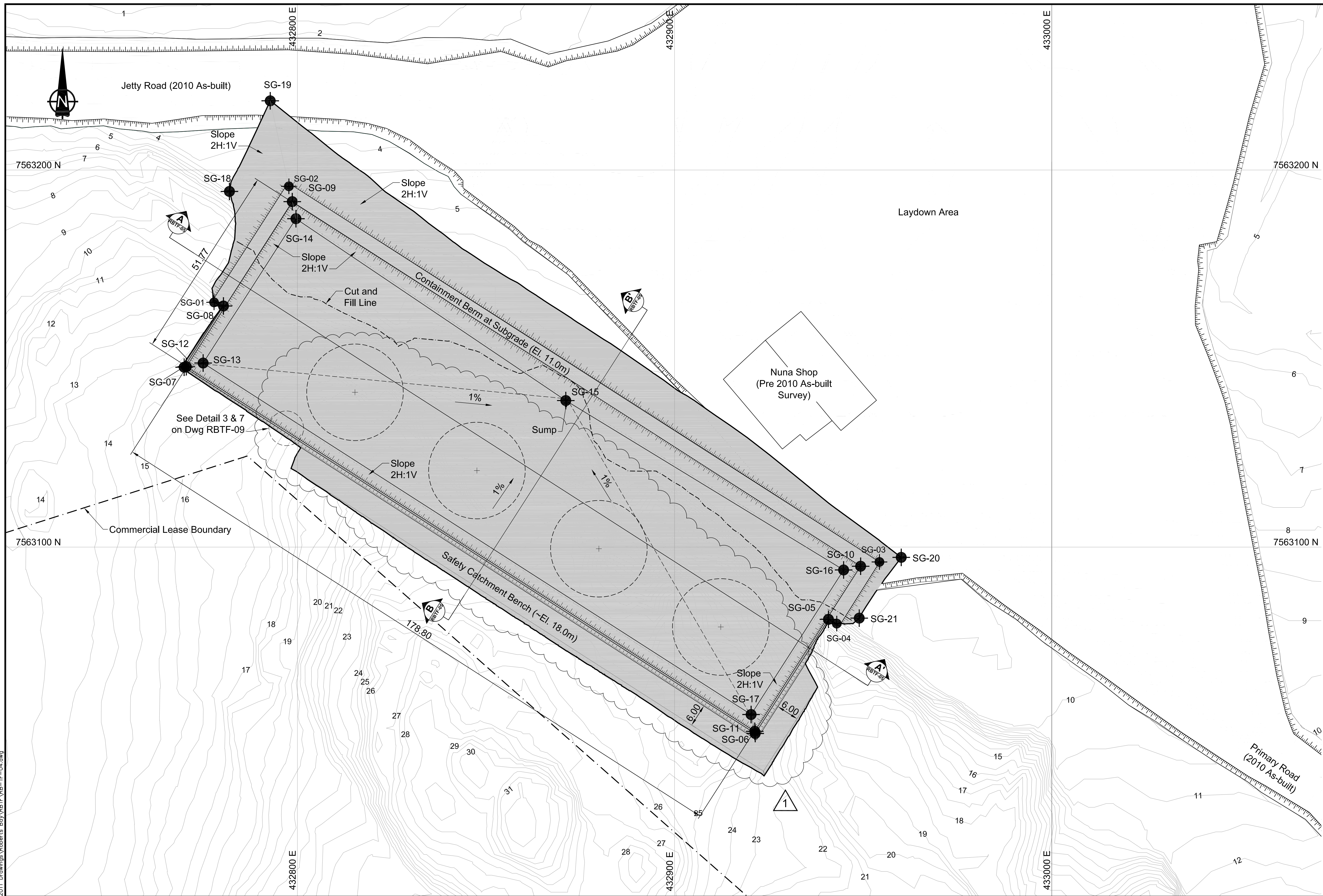
- NOTES**
1. Rock fall safety measures such as rock bolts and mesh maybe required pending on the final surface of the bedrock highwall. The EPCM Manager and the Engineer will determine the proper safety measure once the highwall is completed.
 2. If permafrost/ overburden is exposed during drilling and blasting activities then standard procedures of constructing a min 1m thick thermal insulating cover shall be implemented (e.g. at areas such as at the top of the highwall excavation).

EXCAVATION STAKE OUT POINTS			
ID	Northing	Easting	Elev.(m)
EC-01	7563176.55	432788.84	9.06
EC-02	7563166.75	432799.29	8.92
EC-03	7563161.23	432814.06	8.75
EC-04	7563153.27	432826.84	8.58
EC-05	7563155.40	432831.03	8.55
EC-06	7563154.62	432839.98	8.46
EC-07	7563146.04	432858.78	8.23
EC-08	7563148.24	432865.07	8.13
EC-09	7563141.14	432875.60	8.07
EC-10	7563128.09	432878.80	8.20
EC-11	7563120.85	432886.78	8.32
EC-12	7563118.55	432897.90	8.45
EC-13	7563103.45	432917.46	8.73
EC-14	7563087.50	432931.82	8.96
EC-15	7563083.49	432942.14	9.08
EC-16	7563050.97	432921.30	9.11
EC-17	7563147.79	432770.38	9.11
EC-18	7563147.53	432769.18	14.19
EC-19	7563126.35	432800.99	18.00
EC-20	7563048.89	432921.75	18.00
EC-21	7563069.00	432934.65	18.00
EC-22	7563063.00	432937.94	18.00
EC-23	7563040.60	432923.56	18.00
EC-24	7563120.95	432798.36	18.00
EC-25	7563097.73	432832.56	24.14
EC-26	7563074.03	432869.08	25.50
EC-27	7563048.38	432908.89	26.06
EC-28	7563039.46	432923.81	22.86



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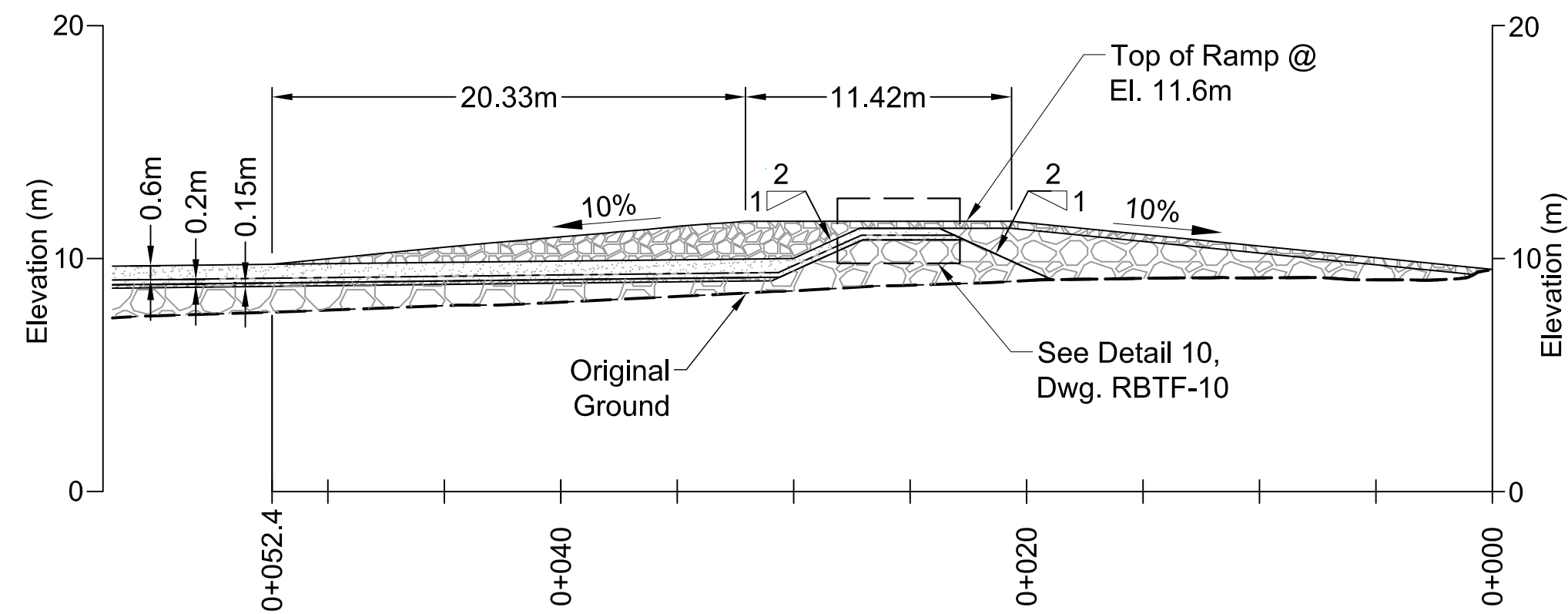
SUBGRADE STAKE OUT POINTS			
ID	Northing	Easting	Elev. (m)
SG-01	7563164.90	432777.91	11.00
SG-02	7563195.67	432797.75	11.00
SG-03	7563096.03	432954.35	11.00
SG-04	7563079.72	432943.00	11.00
SG-05	7563080.83	432940.83	11.00
SG-06	7563050.53	432921.39	11.00
SG-07	7563147.69	432769.93	11.00
SG-08	7563163.96	432780.37	11.00
SG-09	7563191.53	432798.65	11.00
SG-10	7563094.92	432949.27	11.00
SG-11	7563051.22	432921.24	11.00
SG-12	7563147.84	432770.63	11.00
SG-13	7563148.82	432775.07	9.39
SG-14	7563187.01	432799.63	9.40
SG-15	7563138.83	432871.14	8.42
SG-16	7563093.92	432944.75	9.40
SG-17	7563055.67	432920.28	9.39
SG-18	7563194.31	432781.98	5.00
SG-19	7563218.34	432792.80	3.06
SG-20	7563097.28	432960.09	8.85
SG-21	7563081.17	432948.96	9.19

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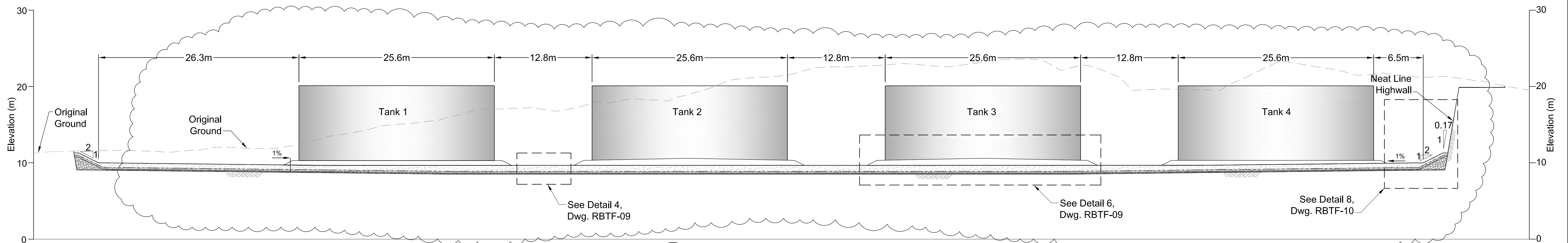
1. Stake out points provided are for top subgrade surface (i.e. surface liner system will be installed/placed on top of). The Contractor must make the appropriate adjustments for the different fill types when setting out the works.

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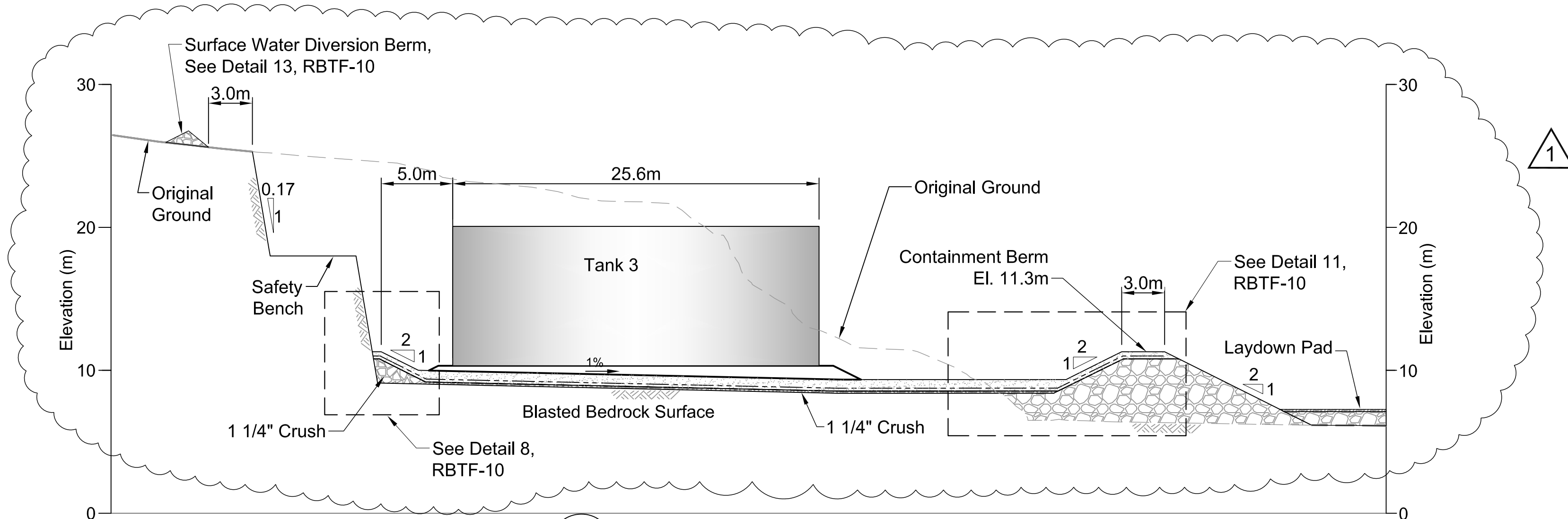
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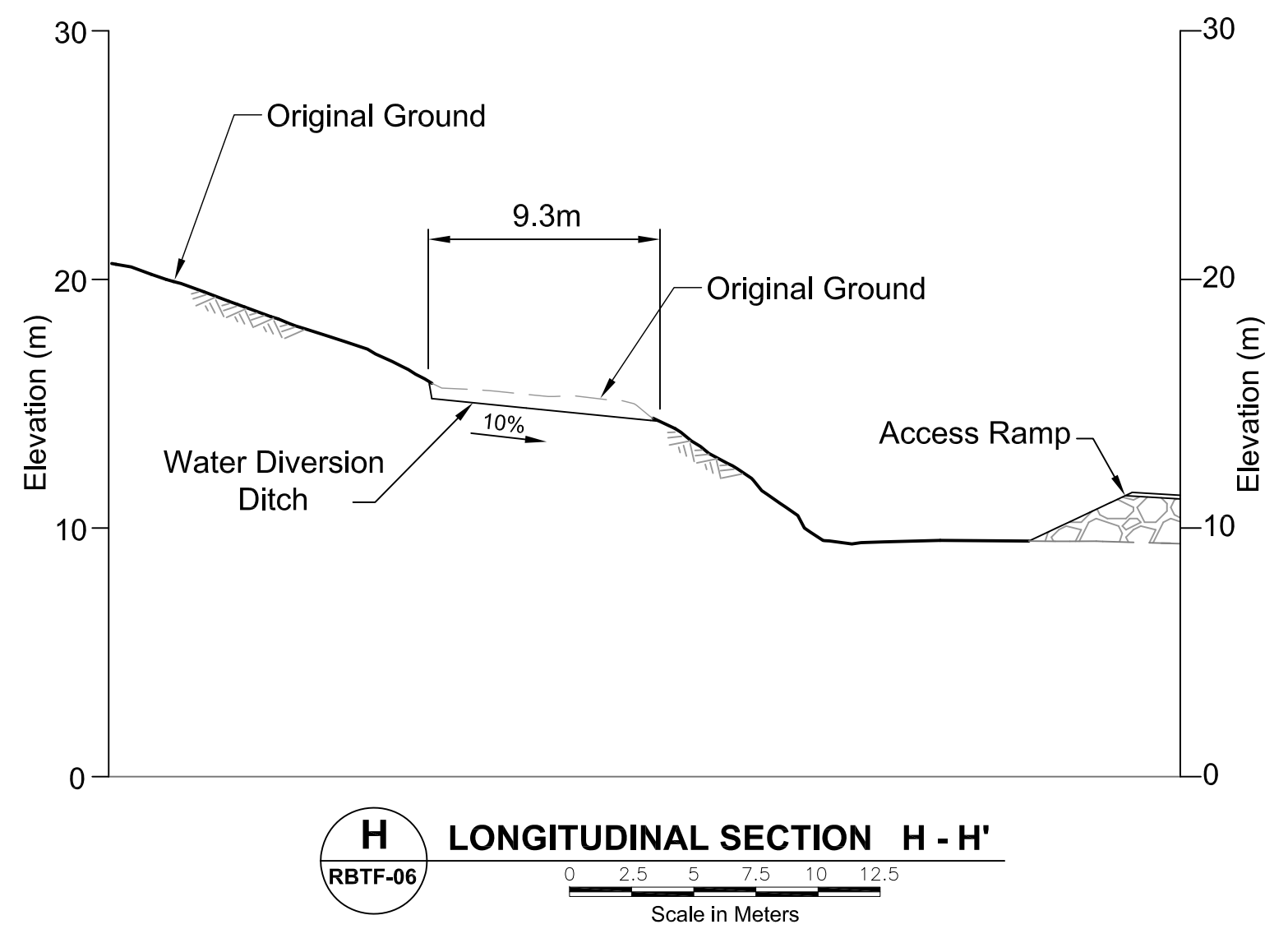
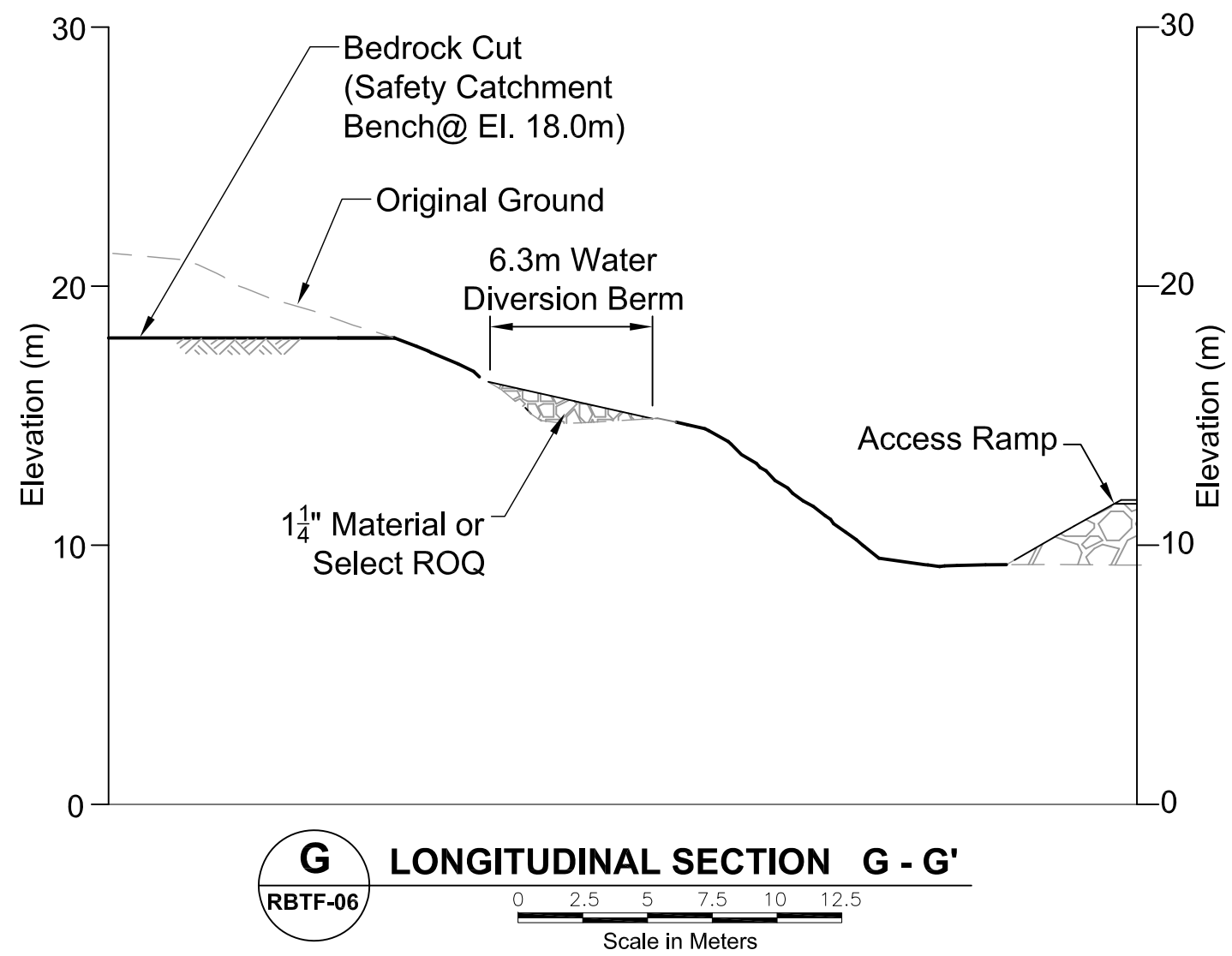
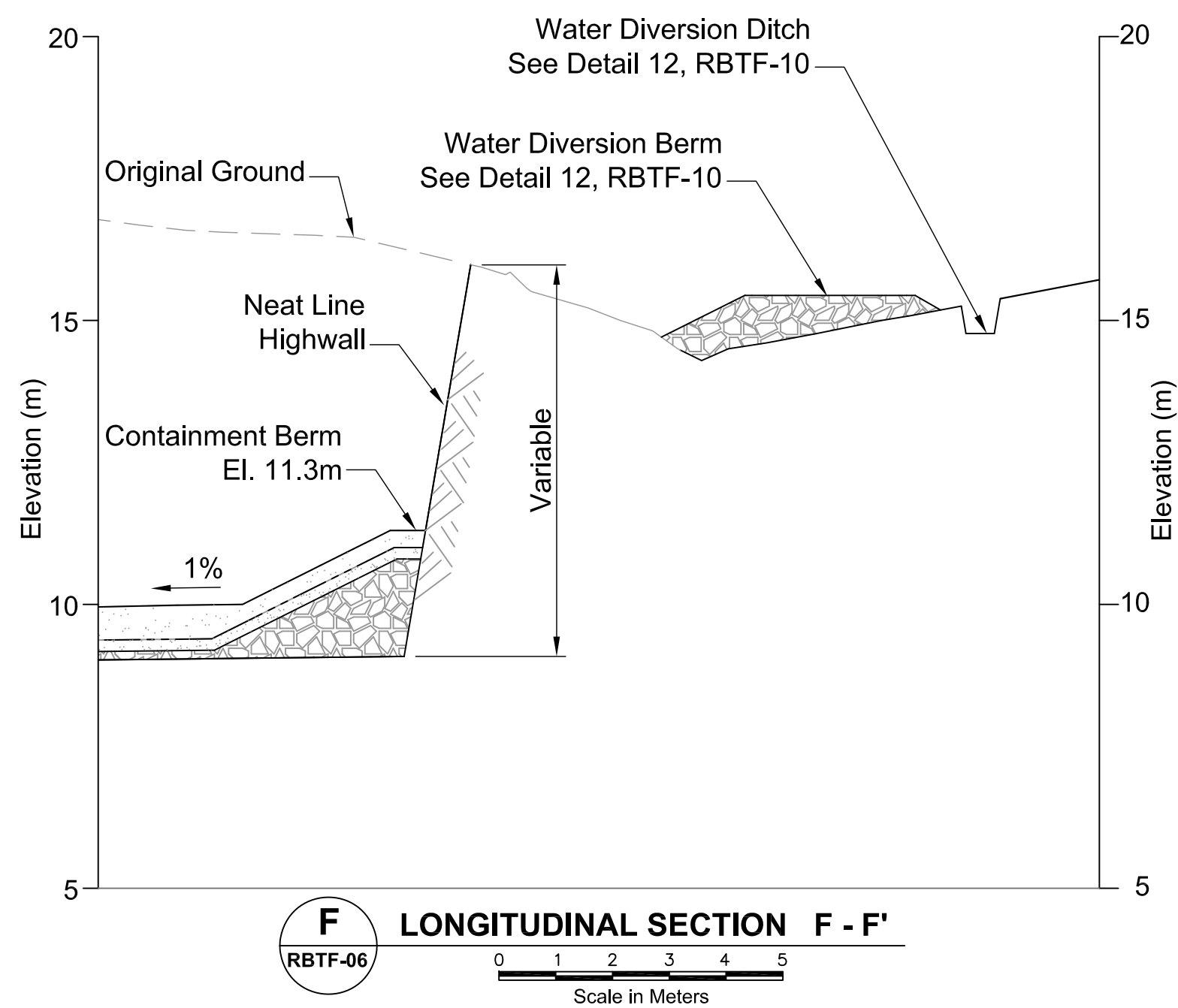
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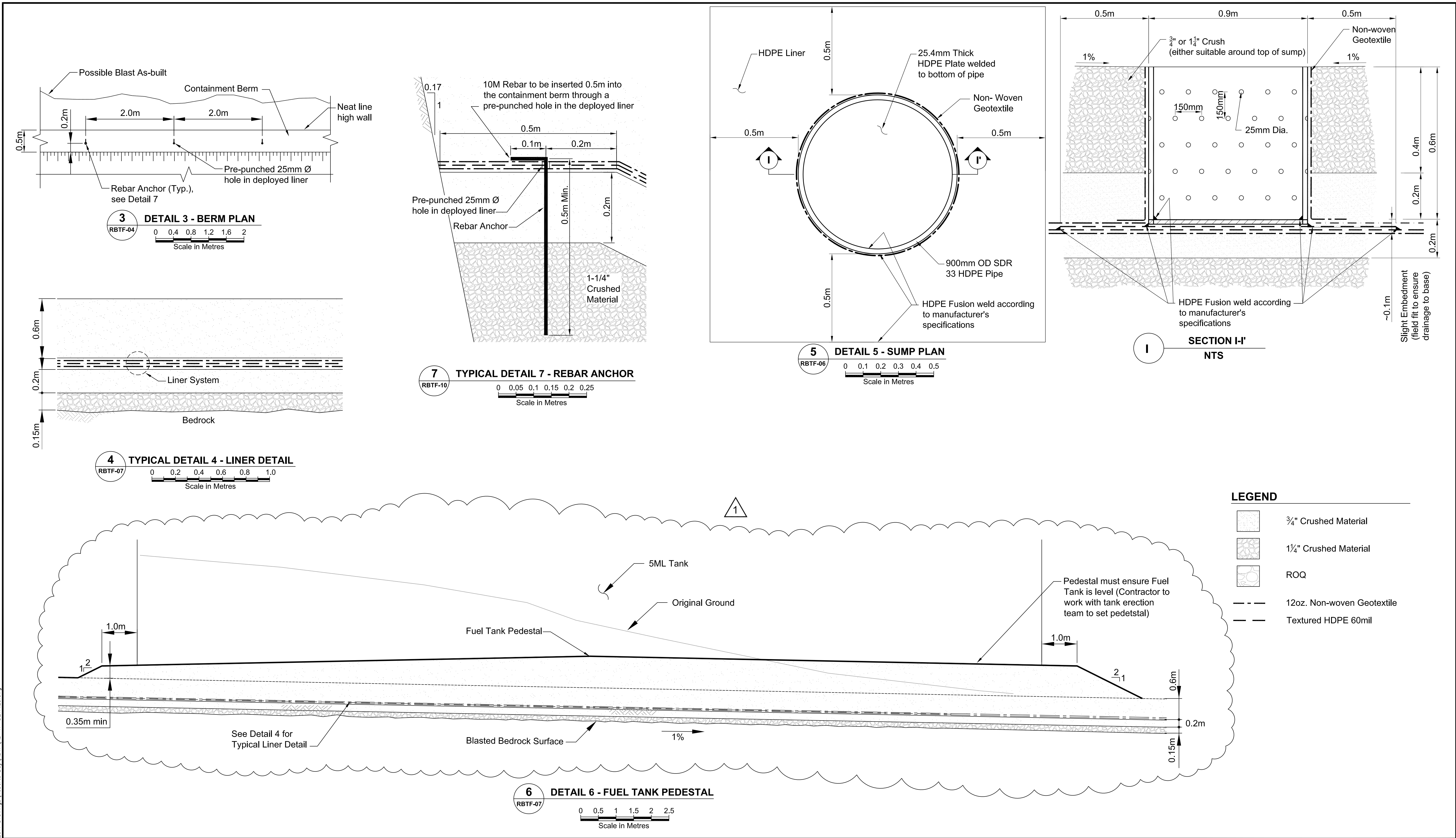
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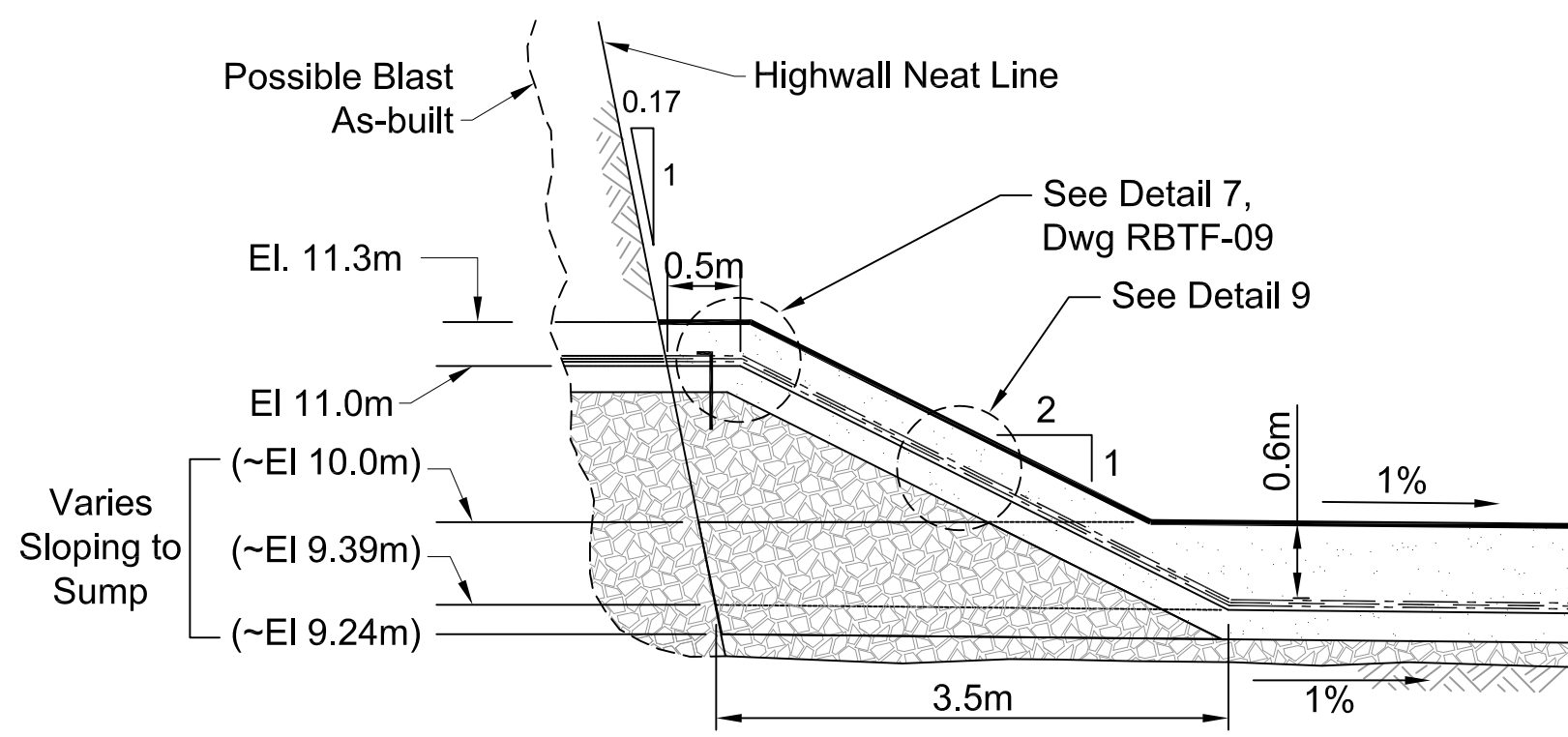
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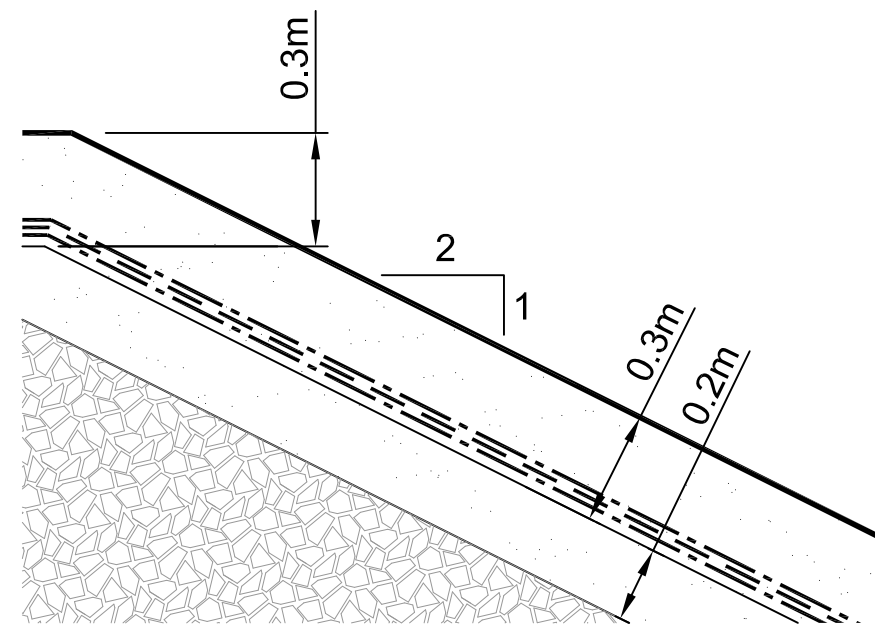


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												DESIGN: JBK/LW/MMM				DRAWN: DC/LR				REVIEWED: LW			
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												FILE NAME: RB-TF-DETAILS.dwg				SRK JOB NO.: 1CH008 033				SRK DWG NO.: RBTF-09			
																				HOPE BAY MINING LTD			
																				DRAWING TITLE: Fuel Tank Farm Details Sheet 1 of 2			
																				NEWMONT DRAWING NO. HB+R-CIV-CIV-OND-0031			
																				SHEET 10 OF 13			
																				REVISION NO. 1			

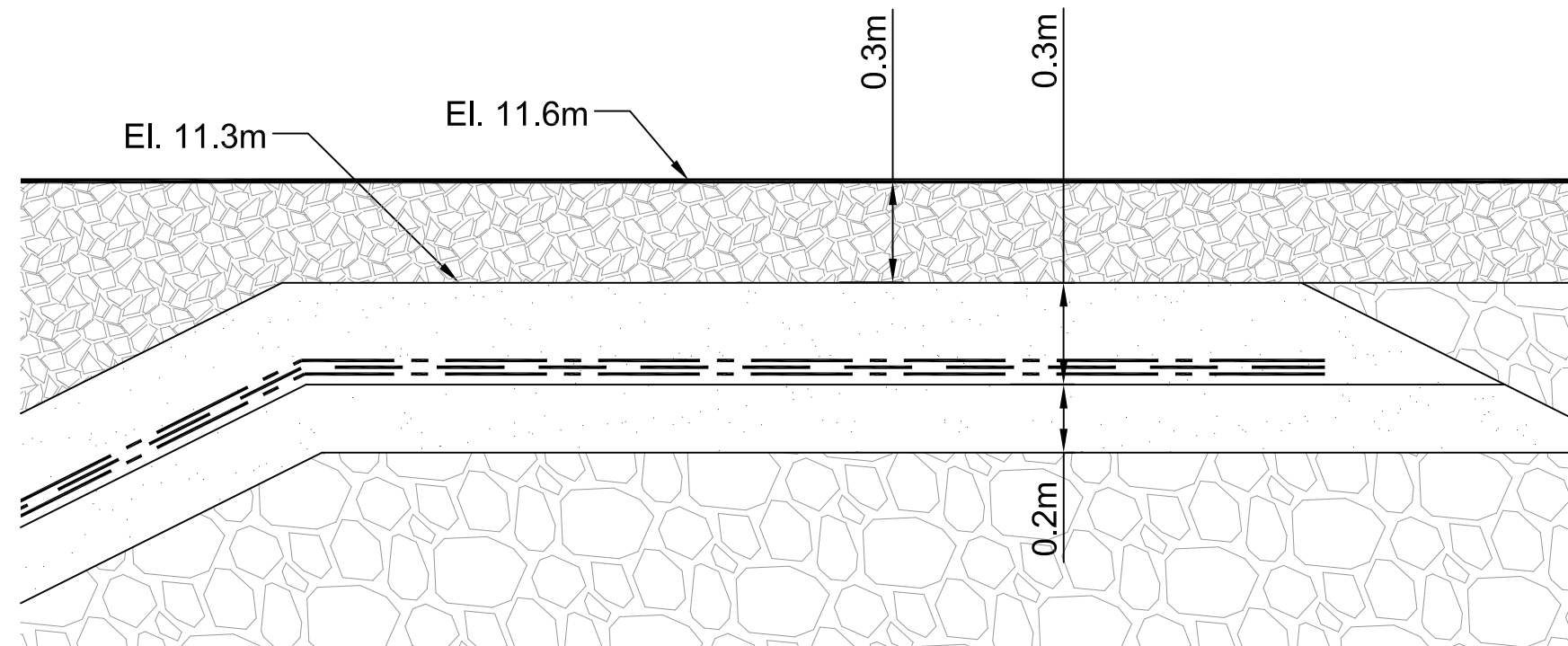
J:\01_SITES\Hope\Box\ACAD\2011 Drawings\Roberts Box\RBTF\RB-TF-DETAILS.dwg



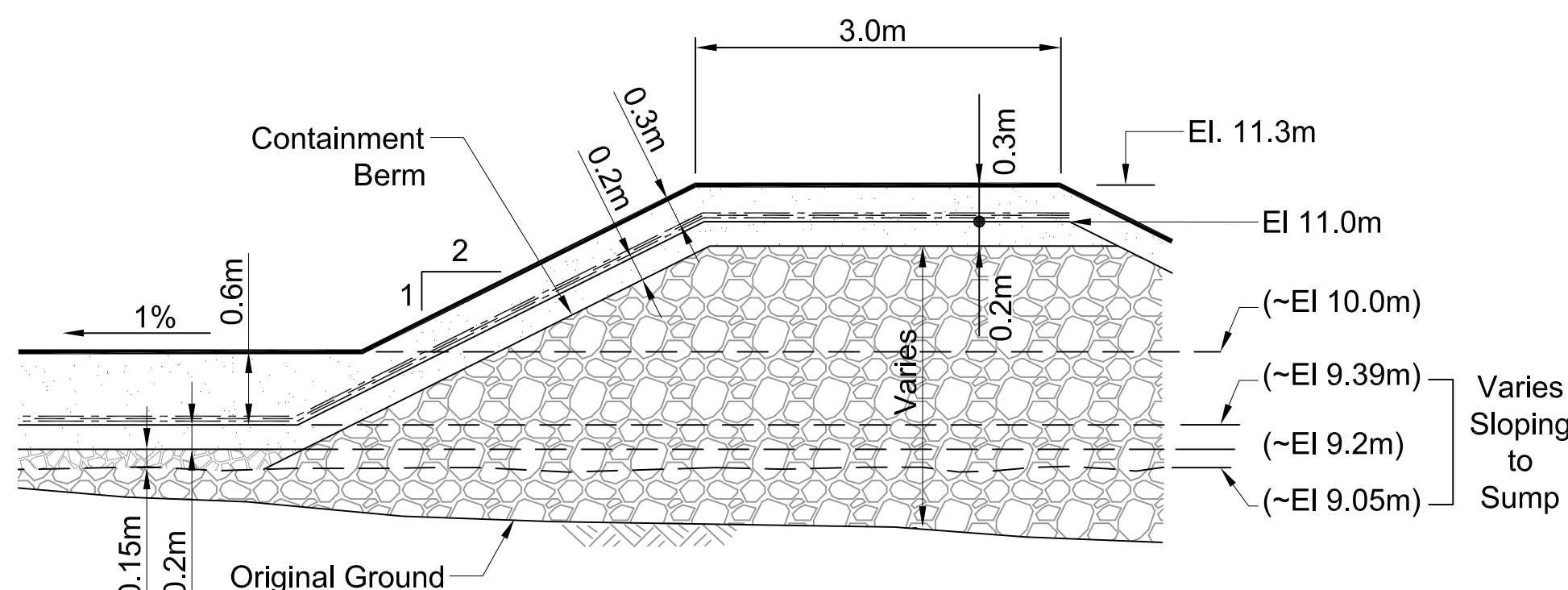
8
RBTF-07
TYPICAL FINAL TANK FARM SECTION ALONG BERM
Scale in Metres



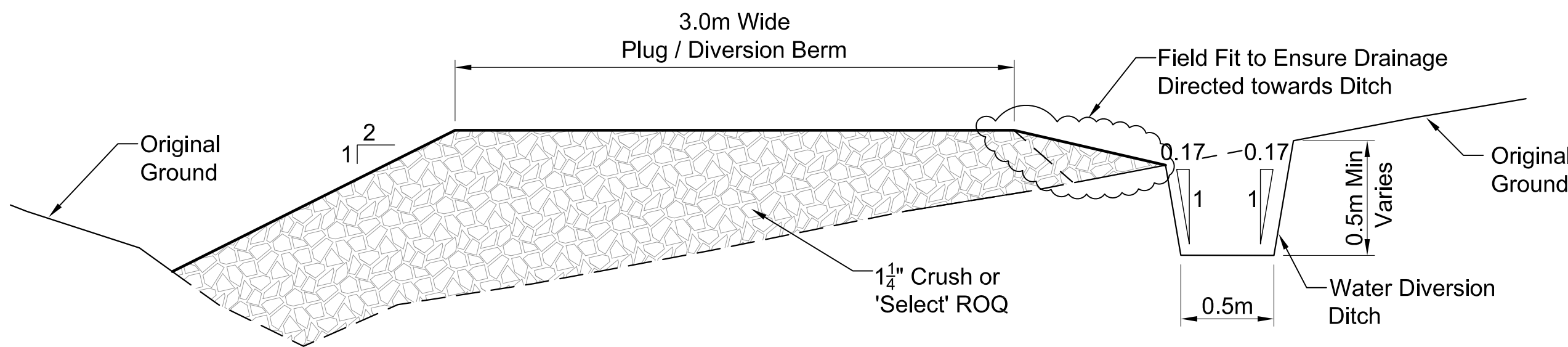
9
RBTF-10
TYPICAL DETAIL 9
Scale in Metres



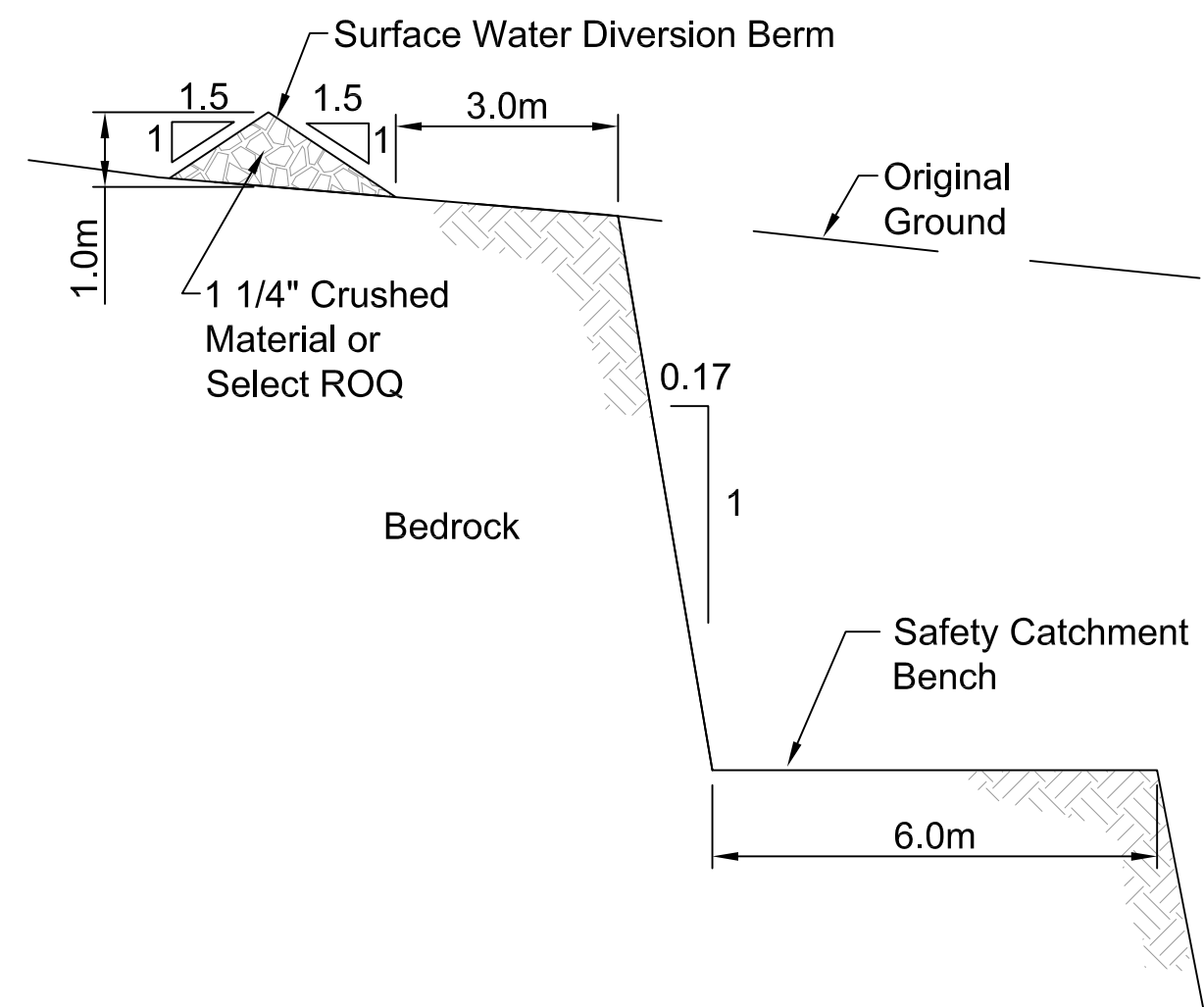
10
RBTF-07
TYPICAL DETAIL 10
ACCESS RAMP
Scale in Metres



11
RBTF-07
TYPICAL DETAIL 11
TYPICAL MATERIALS ALONG FILL SECTION
Scale in Metres

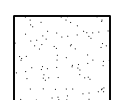


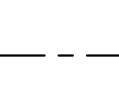
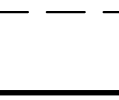


12
RBTF-08
DETAIL 12
BERM and DITCH
Scale 1:25(m)

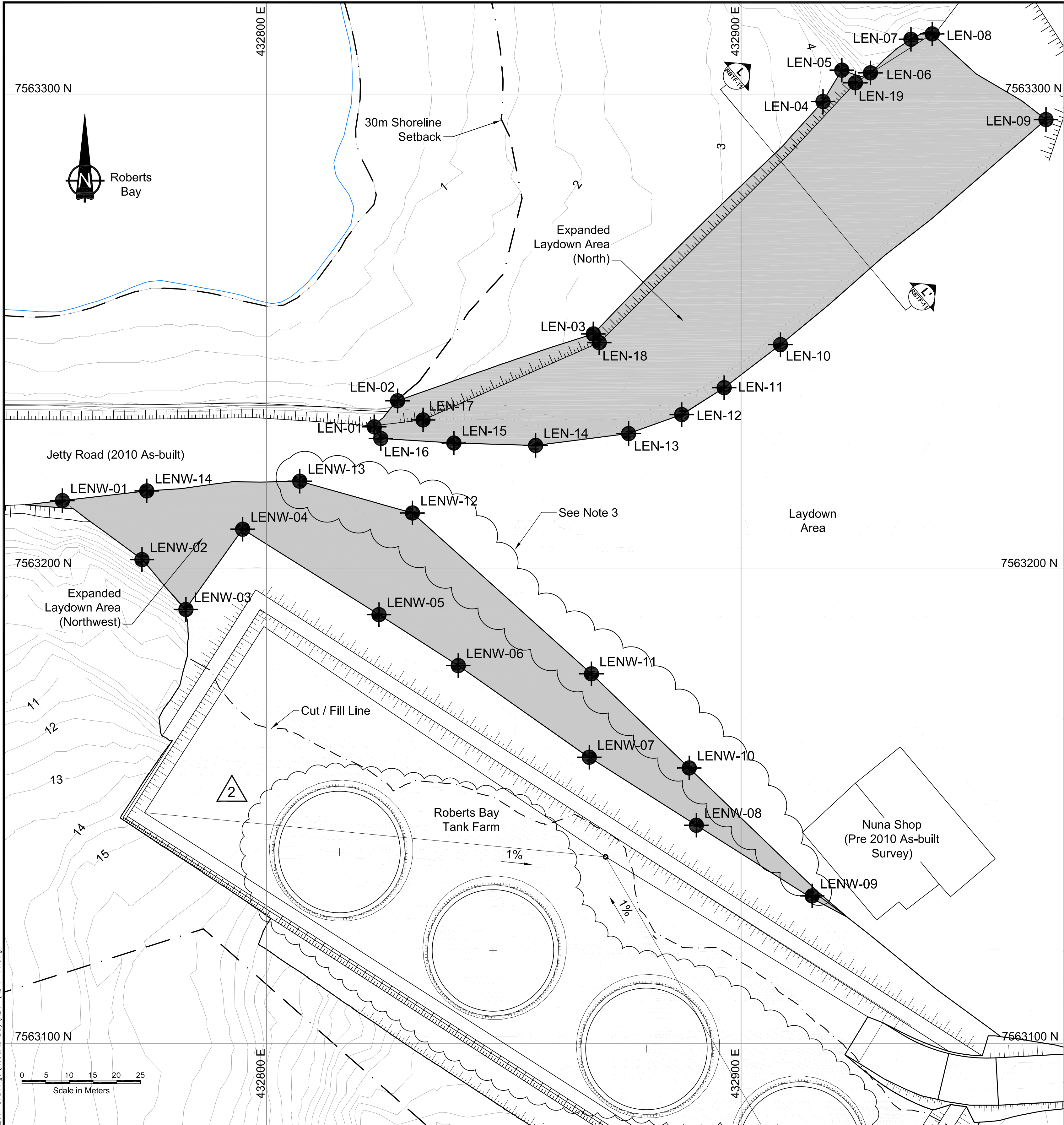


13
RBTF-07
TYPICAL DETAIL 13
Scale in Metres

LEGEND

-  3/4" Crushed Material
-  1 1/4" Crushed Material
-  ROQ
-  12oz. Non-woven Geotextile
-  Textured HDPE 60mil

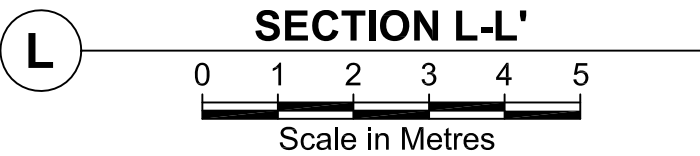
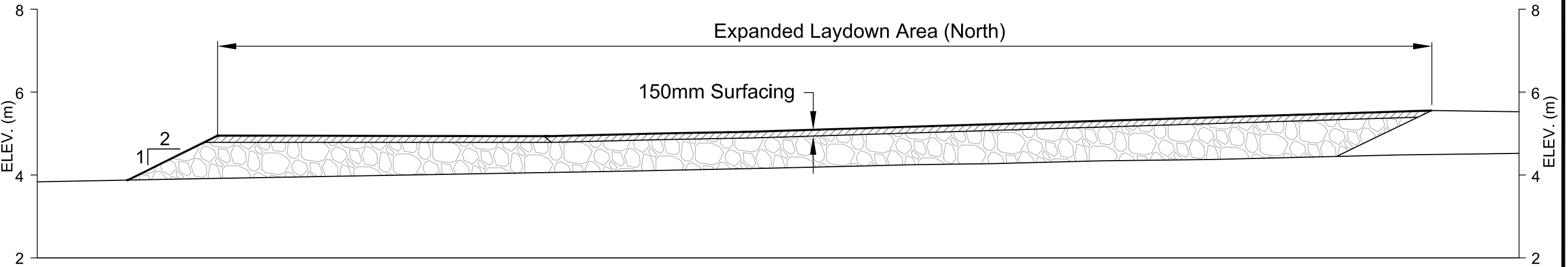
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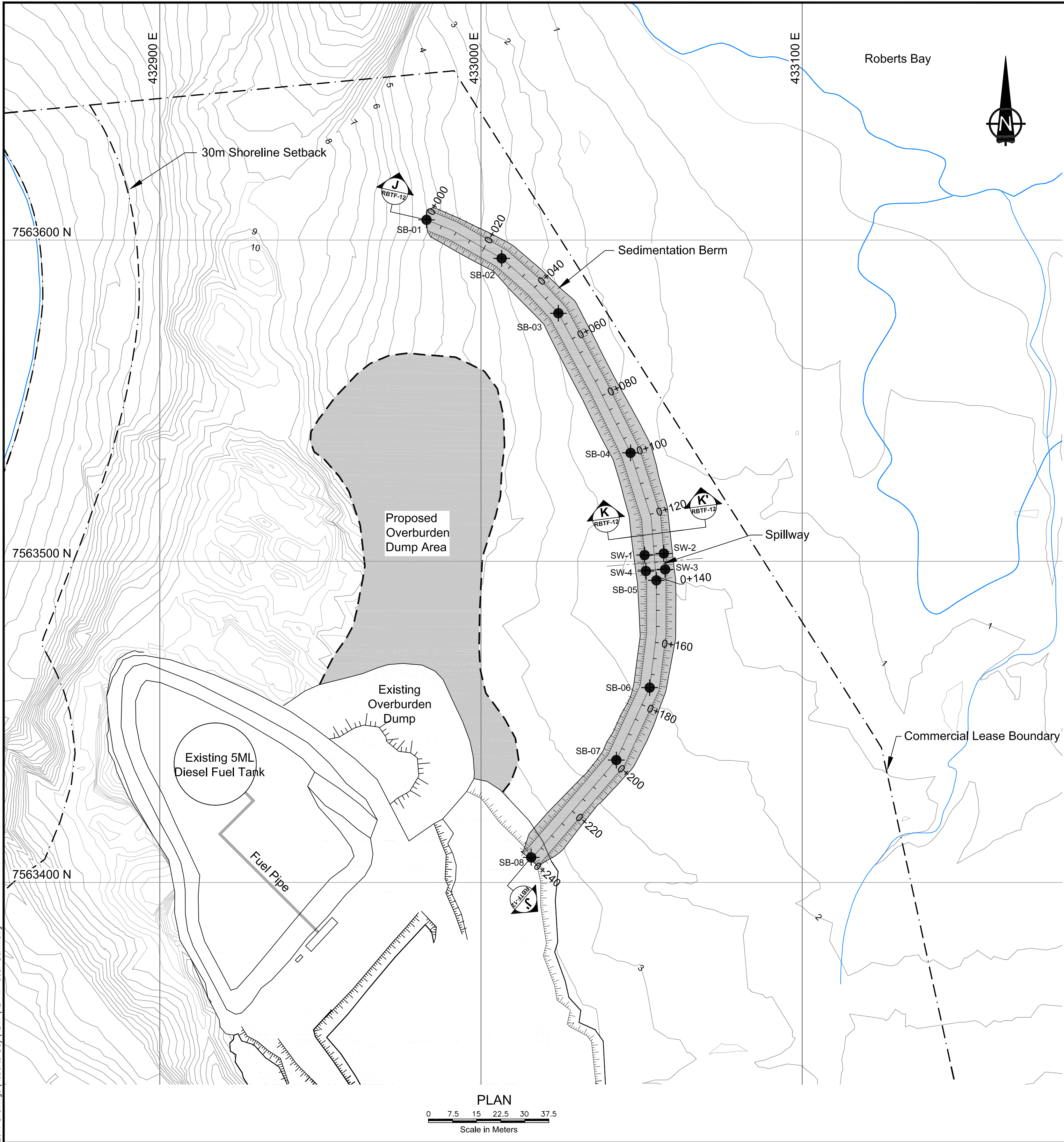
NORTHWEST LAYDOWN EXPANSION STAKE OUT POINTS			
ID	Northing	Easting	Elev. (m)
LENW-01	7563214.37	432757.02	6.10
LENW-02	7563201.95	432773.79	6.15
LENW-03	7563191.44	432783.05	6.29
LENW-04	7563208.35	432795.00	6.40
LENW-05	7563190.35	432823.72	6.50
LENW-06	7563179.62	432840.42	6.90
LENW-07	7563160.31	432868.03	7.00
LENW-08	7563145.99	432890.58	7.20
LENW-09	7563131.10	432914.98	7.47
LENW-10	7563158.06	432889.08	7.05
LENW-11	7563177.89	432868.48	6.20
LENW-12	7563211.77	432830.77	5.38
LENW-13	7563218.46	432807.03	5.95
LENW-14	7563216.42	432774.80	6.00

NORTH LAYDOWN EXPANSION STAKE OUT POINTS			
ID	Northing	Easting	Elev. (m)
LEN-01	7563229.64	432822.90	4.55
LEN-02	7563235.40	432827.64	2.45
LEN-03	7563249.49	432868.87	2.92
LEN-04	7563298.44	432917.26	4.48
LEN-05	7563305.05	432921.23	5.04
LEN-06	7563304.48	432927.26	7.06
LEN-07	7563311.56	432935.79	6.63
LEN-08	7563312.69	432940.27	7.47
LEN-09	7563294.64	432964.24	6.74
LEN-10	7563247.23	432908.30	4.98
LEN-11	7563238.16	432896.44	4.70
LEN-12	7563232.50	432887.50	4.00
LEN-13	7563228.50	432876.31	4.00
LEN-14	7563226.00	432856.72	4.00
LEN-15	7563226.50	432839.50	4.00
LEN-16	7563227.46	432824.11	5.57
LEN-17	7563231.37	432833.01	5.27
LEN-18	7563247.66	432870.12	4.00
LEN-19	7563302.38	432924.09	7.00

- NOTES:
- Quarried Rock from the tank farm area will be used to construct the laydown expansion areas. Excess rock will be used at other areas of the site, if applicable.
 - Laydown expansion areas will tie into the existing crest of the as-built laydown pad to ensure a smooth transition and prevent ponding of water in low areas.
 - Based on available as-built data, portions of existing Robert's Bay Laydown area are expected to be slightly under the minimum 1m pad thickness. Transition into existing laydown will be field fit to ensure a smooth transition and uphold minimum permafrost protection.
 - Stake-out table presented above are to final surface grade; 0.15m of 1¼" crush should overly the placed ROQ (i.e. ROQ grades are 0.15m below the stake-out elevations listed above).

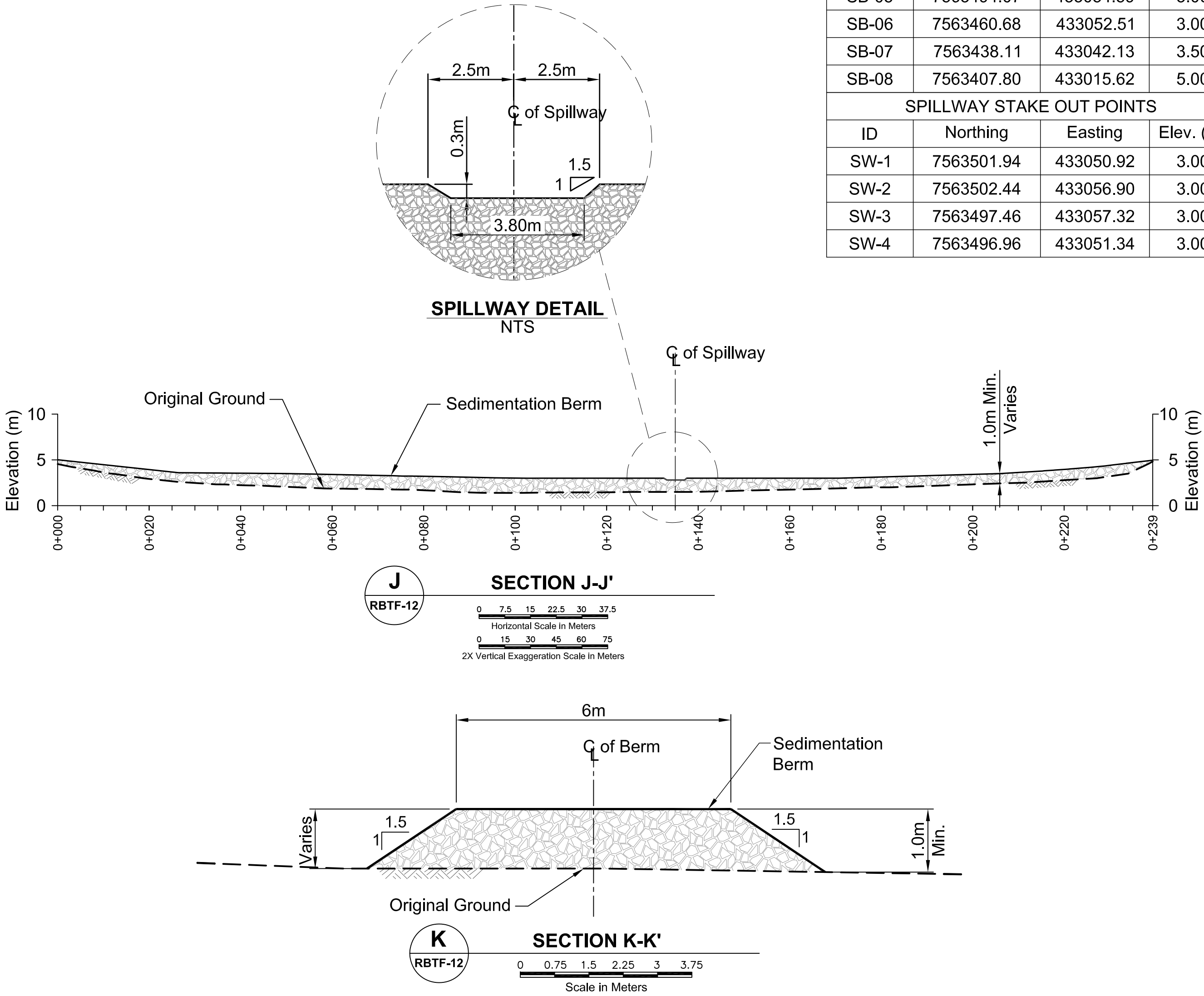


								Original Drawings Signed and Stamped				srk consulting				NEWMONT NORTH AMERICA				Doris North Project			
																				DRAWING TITLE:			
																				Roberts Bay Preliminary Laydown Expansion			
																				NEWMONT DRAWING NO.			
																				HB+R-CIV-CIV-OND-0048			
																				SHEET			
																				12 OF 13			
																				REVISION NO.			
																				2			



J:\01_SITES\Hope Bay\ACAD\2011 Drawings\Roberts Bay\RBTF-RB-TF-Sedi-Berm.dwg

SEDIMENTATION BERM STAKE OUT POINTS			
ID	Northing	Easting	Elev. (m)
SB-01	7563606.32	432983.03	5.00
SB-02	7563594.32	433006.44	4.00
SB-03	7563577.23	433024.08	4.00
SB-04	7563533.76	433046.56	3.00
SB-05	7563494.07	433054.59	3.00
SB-06	7563460.68	433052.51	3.00
SB-07	7563438.11	433042.13	3.50
SB-08	7563407.80	433015.62	5.00
SPILLWAY STAKE OUT POINTS			
ID	Northing	Easting	Elev. (m)
SW-1	7563501.94	433050.92	3.00
SW-2	7563502.44	433056.90	3.00
SW-3	7563497.46	433057.32	3.00
SW-4	7563496.96	433051.34	3.00



NOTES:

- Overburden material should be placed in lifts not exceeding 1.5m in thickness. The overall final slope of the overburden pile should not exceed 3H:1V.
- The overburden storage shall have minimum setback of 15m away from the Sedimentation Control Berm and above elevation 2.8m.
- The Contractor shall employ best management practices to ensure sediment control and to prevent erosion from the overburden stockpile.

LEGEND:

- 1 1/4" Crush or Select ROQ
- Stream / Waterbody

				Original Drawings Signed and Stamped				srk consulting			NEWMONT NORTH AMERICA			Doris North Project		
														DRAWING TITLE:		
														Roberts Bay Overburden Storage Area and Sedimentation Control Berm		
														NEWMONT DRAWING NO.		
														HB+R-CIV-CIV-OND-0039		
														SHEET		
														13 OF 13		
														REVISION NO.		
														0		

APPENDIX B
Hope Bay – Doris North –
Roberts Bay Multi Tank Farm –
Additional 5ML Tank As-built Documentation
(SRK, 2021)

As-Built Memo / Documentation

January 29, 2021

To Oliver Curran, MSc
From John Kurylo, MSc, PEng
Cc Sarah Warnock, Ashley Mathai (TMAC);
Christopher Stevens, Peter Luedke (SRK)
Subject Hope Bay – Doris North – Roberts Bay Multi Tank Farm – Additional 5ML Tank As-built
Client TMAC Resources
Project 1CT022.055

1 Introduction

This memo provides a summary of formal documentations related to the installation of a fourth 5 million liter (ML) tank at the Hope Bay, Doris North, Roberts Bay Multi Tank Farm (Tank Farm). As SRK Consulting (Canada) Inc. (SRK) was the original earthworks designer of the Tank Farm, TMAC Resources Inc (TMAC) requested that SRK complete additional as-built checks to ensure that adequate containment capacity was still available within the Roberts Bay Multi Tank Farm. As part of these checks updates to the as-built drawings have been completed to show the installation of the fourth and final 5 ML tank.

2 Background

SRK completed the original designs and as-built drawing in 2010 to 2011. During the construction of the containment and installation of the first three tanks (Original Tank Farm) in 2010 and 2011, SRK had staff on site and completed field quality assurance (QA) checks on the earthworks construction, including observations of the liner installation. At the time of construction (2010 to 2011) Newmont North America, Hope Bay Mining Ltd, were the owners of the Hope Bay property. In 2013, TMAC became the owner of the Hope Bay property, and as a result has also become the owner and operator of the Roberts Bay Multi Tank Farm.

3 Tank Pedestal and Tank Construction

In June 2019, a pedestal for the fourth 5ML tank (Tank No. 1) (see Attachment 1 – Drawing RBTF-02) was constructed on site. This tank pedestal was constructed out of transition (approximately 3 to 6”

minus) and crush (approximately ¾" minus) fill material (quarried and crushed). This tank pedestal was constructed within the previously constructed (2010-2011) Roberts Bay Multi Tank Farm. The purpose of this pedestal was to provide a level base pad for the erection of Tank No. 1 (5ML tank). SRK was not requested to and did not perform official (QA) checks on this 2019 constructed tank pedestal. This noted, SRK was on site for other construction during part of the time of this minor earthwork construction. Occasionally while on site, SRK staff were able to visit the Roberts Bay tank farm site. Specifically, SRK visited the Roberts Bay Multi Tank farm site on June 13, 14 and 17, 2019. Notes and photographs from these brief inspection visits are provided in Attachment 3 for information purposes. Overall SRK's main comments at the time of these visits were related to the ponding water that had resulted from rain and snow melt within the bunded tank farm containment area. This ponded water posed an operational constraint and was discussed with TMAC site staff and addressed during 2019.

From June 18 to July 14, 2019, Gem Steel was on site to install / erect the fourth 5ML tank (Tank No. 1). The Gem Steel tank drawings (including permit numbers and welder identifications) are provided in Attachment 2. TMAC photographs that were taken during the tank construction are provided in Attachment 4.

4 As-built Drawing Update

Only the drawings for the above liner surface, and drawings showing the arrangement of the tanks were able to be updated with the recent 2020 as-built survey and drone imagery information. Areas below the liner have no new information at this time and the original as-built drawings remain the latest. Table 1 below provided a summary of the recent as-built drawing updates:

Table 1: Overview of As-built Drawings

Drawing #	Drawing Title	As-Built Version Required	Latest Revision ⁽¹⁾	Status	Notes
RBTF-01	Fuel Tank Farm General Arrangement	Yes	AB2	2020 Update	UPDATED - Included in Attachment A
RBTF-02	Fuel Tank Farm Plan Layout	Yes	AB2	2020 Update	UPDATED - Included in Attachment A
RBTF-03	Fuel Tank Farm Bedrock Excavation	No	IFC 1	2011 Version	-
RBTF-04	Fuel Tank Farm Subgrade Plan	Yes	AB1	2012 Version	NOT UPDATED Included in Attachment A
RBTF-05	Fuel Tank Farm Subgrade Sections and Details	Yes	AB1	2012 Version	NOT UPDATED Included in Attachment A

Drawing #	Drawing Title	As-Built Version Required	Latest Revision ⁽¹⁾	Status	Notes
RBTF-06	Fuel Tank Farm Final Layout Plan (with Stake Out Points)	Yes	AB2	2020 Update	UPDATED - Included in Attachment A
RBTF-07	Fuel Tank Farm Sections Sheet 1 of 2	Yes	AB1	2020 Update	UPDATED - Included in Attachment A
RBTF-08	Fuel Tank Farm Sections Sheet 2 of 2	No	IFC 0	2011 Version	-
RBTF-09	Fuel Tank Farm Details Sheet 1 of 2	No	IFC 1	2011 Version	-
RBTF-10	Fuel Tank Farm Details Sheet 2 of 2	No	IFC 0	2011 Version	-
RBTF-11	Roberts Bay Preliminary Laydown Expansion	Yes	AB1	2012 Version	Laydown area NOT Included in Attachment A
RBTF-12	Roberts Bay Overburden Storage Area and Sedimentation Control berm	Yes	AB1	2012 Version	Overburden Storage NOT Included in Attachment A
RBTF-13	Fuel Tank Farm Plan Layout	Yes	AB1	2020 Update	UPDATED - Included in Attachment A

Notes: (1) AB = As-built, IFC = Issued For Construction

See the as-built drawings in Attachment 1 for additional details.

5 Containment Volume Checks

Updated as-built containment volume checks are presented on as-built drawing RBTF-02 (Attachment 1).

Overall the Roberts Bay Multi Tank farm as-built checks show that a containment volume of 8,800 m³ is available (subtracting all tanks and pedestals) up the elevation 10.99m. The design containment volume (direct precipitation from the 1-100 yr 24hr storm plus 100% of largest tank volume plus 10% of all other tanks plus allowance for a tanker truck) is lower than this available as built containment. Therefore the as-built containment volume is seen as adequate and slightly in excess of what is required by the design criteria and fire and environmental standards used for the initial tank farm design. See drawing RBTF-02 in Attachment 1 for additional details.

Attachments:

Attachment 1	Updated As-Built Drawings – Engineering Drawings for the Roberts Bay Fuel Tank Farm, Doris North Project, Nunavut, Canada
Attachment 2	GemSteel Tank Drawings
Attachment 3	Pedestal Construction - June 2019 Notes
Attachment 4	Tank Construction – June & July 2019 Photos

Disclaimer. SRK Consulting (Canada) Inc. has prepared this document for TMAC Resources, our client. Any use or decisions by which a third party makes of this document are the responsibility of such third parties. In no circumstance does SRK accept any consequential liability arising from commercial decisions or actions resulting from the use of this report by a third party.

The opinions expressed in this document have been based on the information available to SRK at the time of preparation. SRK has exercised all due care in reviewing information supplied by others for use on this project. While SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information, except to the extent that SRK was hired to verify the data.

Attachment 1 Updated As-Built Drawings – Engineering Drawings for the Roberts Bay Fuel Tank Farm, Doris North Project, Nunavut, Canada

Updated as-built drawings and updated containment checks. Focus on earthworks / bunded tank area.

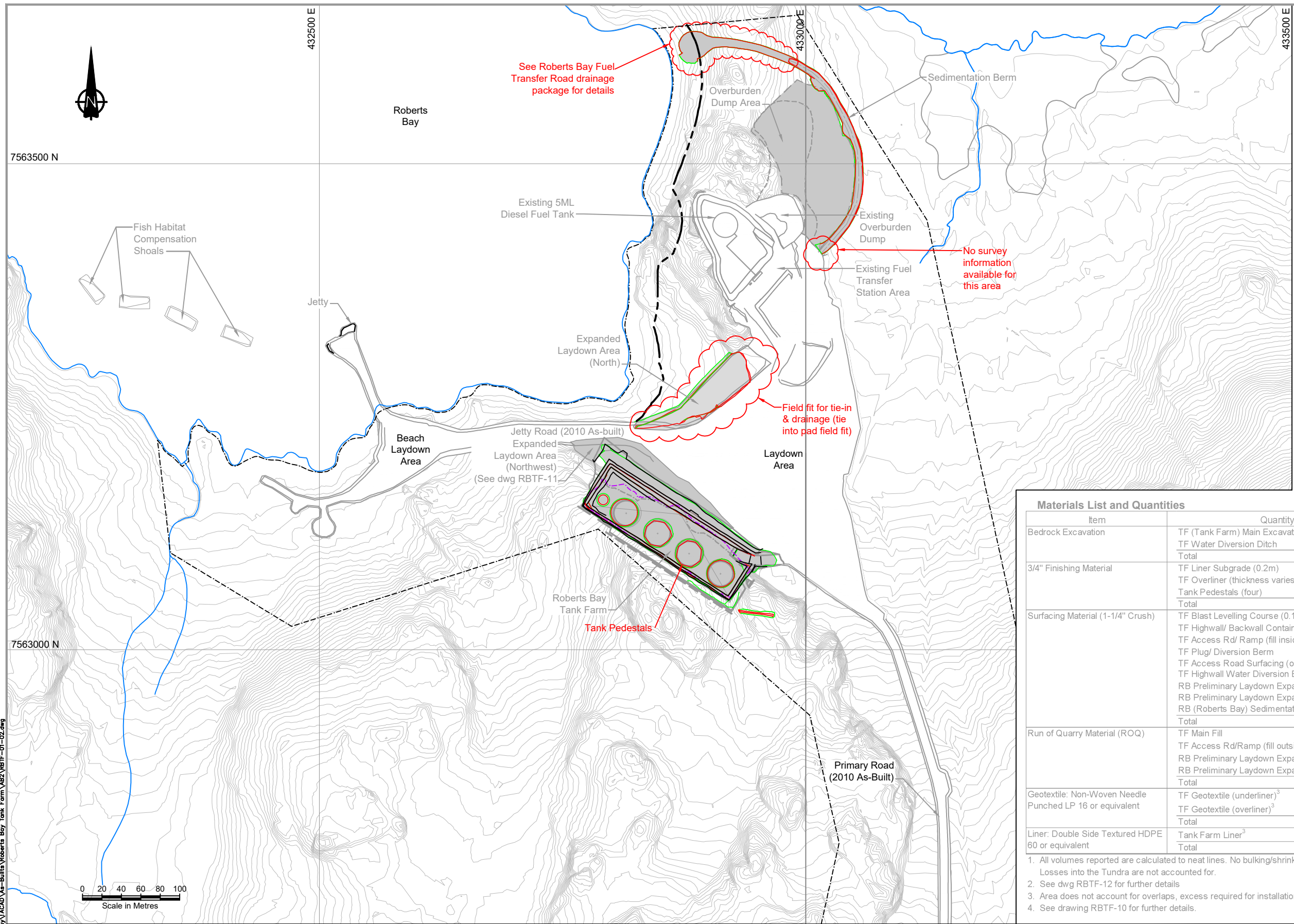
Engineering Drawings for the Roberts Bay Fuel Tank Farm, Doris North Project, Nunavut, Canada

ACTIVE DRAWING STATUS

DWG NUMBER	NEWMONT DWG NUMBER	DRAWING TITLE	REVISION	DATE	STATUS	OLD/REPLACED REVISIONS			
RBTF-01	HB+R-CIV-CIV-OND-0028	Fuel Tank Farm General Arrangement	AB2	Dec. 4, 2020	2020 As-built	Rev. 2, June 9, 2011	Rev. 1, May 9, 2011	Rev. 0, Apr. 6, 2011	Rev. C, Mar. 11, 2011
RBTF-02	HB+R-CIV-CIV-OND-0029	Fuel Tank Farm Plan Layout	AB2	Dec. 4, 2020	2020 As-built	Rev. 2, June 9, 2011	Rev. 1, May 9, 2011	Rev. 0, Apr. 6, 2011	Rev. C, Mar. 11, 2011
RBTF-03	HB+R-CIV-CIV-OND-0042	Fuel Tank Farm Bedrock Excavation	1	June 9, 2011	Issued for Construction	Rev. 0, Apr. 6, 2011	Rev. A, Mar. 11, 2011		
RBTF-04	HB+R-CIV-CIV-OND-0043	Fuel Tank Farm Subgrade Plan	AB1	Apr. 18, 2012	2011 As-built	Rev. 1, June 9, 2011	Rev. 0, Apr. 6, 2011	Rev. A, Mar. 11, 2011	
RBTF-05	HB+R-CIV-CIV-OND-0044	Fuel Tank Farm Subgrade Sections and Details	AB1	Apr. 18, 2012	2011 As-built	Rev. 0, Apr. 6, 2011	Rev. A, Mar. 11, 2011		
RBTF-06	HB+R-CIV-CIV-OND-0045	Fuel Tank Farm Final Layout Plan (with Stake Out Points)	AB2	Dec. 4, 2020	2020 As-built	Rev. 2, June 9, 2011	Rev. 0, Apr. 6, 2011	Rev. A, Mar. 11, 2011	
RBTF-07	HB+R-CIV-CIV-OND-0030	Fuel Tank Farm Sections Sheet 1 of 2	AB1	Dec. 4, 2020	2020 As-built	Rev. 1, June 9, 2011	Rev. 1, June 9, 2011	Rev. 0, Apr. 6, 2011	Rev. C, Mar. 11, 2011
RBTF-08	HB+R-CIV-CIV-OND-0046	Fuel Tank Farm Sections Sheet 2 of 2	0	April 6, 2011	Issued for Construction	Rev. A, Mar. 11, 2011			
RBTF-09	HB+R-CIV-CIV-OND-0031	Fuel Tank Farm Details Sheet 1 of 2	1	June 9, 2011	Issued for Construction	Rev. 0, Apr. 6, 2011	Rev. C, Mar. 11, 2011	Rev. B, Sept. 27, 2010	Rev. A, April 27, 2010
RBTF-10	HB+R-CIV-CIV-OND-0047	Fuel Tank Farm Details Sheet 2 of 2	0	April 6, 2011	Issued for Construction	Rev. A, Mar. 11, 2011			
RBTF-11	HB+R-CIV-CIV-OND-0048	Roberts Bay Preliminary Laydown Expansion	AB1	Apr. 18, 2012	2011 As-built	Rev. 2, June 9, 2011	Rev. 1, May 9, 2011	Rev. 0, Apr. 6, 2011	Rev. A, Mar. 11, 2011
RBTF-12	HB+R-CIV-CIV-OND-0039	Roberts Bay Overburden Storage Area and Sedimentation Control Berm	AB1	Apr. 18, 2012	2011 As-built	Rev. 0, April 6, 2011	Rev. B, Mar. 11, 2011	Rev. A, Sept. 27, 2010	
RBTF-13	HB+R-CIV-CIV-OND-2020	Fuel Tank Farm Plan Layout	AB1	Dec. 4, 2020	2020 As-built				









PROJECT NO: 1CT022.055
As-built
December 4, 2020
RBTF-00 / HB+R-CIV-CIV-OND-0027



- ## NOTES
1. The designs are based on the contour information shown on these drawings. It is however the Contractor's responsibility to confirm that the contours are a fair reflection of the ground levels in the vicinity of the works, and to advise the Construction Manager and Engineer of any differences.
 2. The co-ordinate system is UTM NAD 83, Zone 13.
 3. All dimensions are in metric units, unless specifically mentioned.
 4. All drawings are scaled appropriately for D-Size construction drawings. Scales may not be correct if these drawings are reproduced and presented in any other size format.
 5. The Engineer will provide the Construction Manager and Contractor with digital design files for setting out the works. The Engineer will instruct the Contractor to survey random spot checks to confirm whether the works have been set out correct.
 6. Construction shall be in accordance with the following Technical Specifications: Earthworks and Geotechnical Engineering, Hope Bay project, Nunavut, Canada, Revision G - Issue for Construction.
 7. Quarried rock from the tank farm area will be used to construct the laydown expansive areas. Excess rock will be used at other areas of the site.
 8. Notes in this drawing apply to all other active drawings.

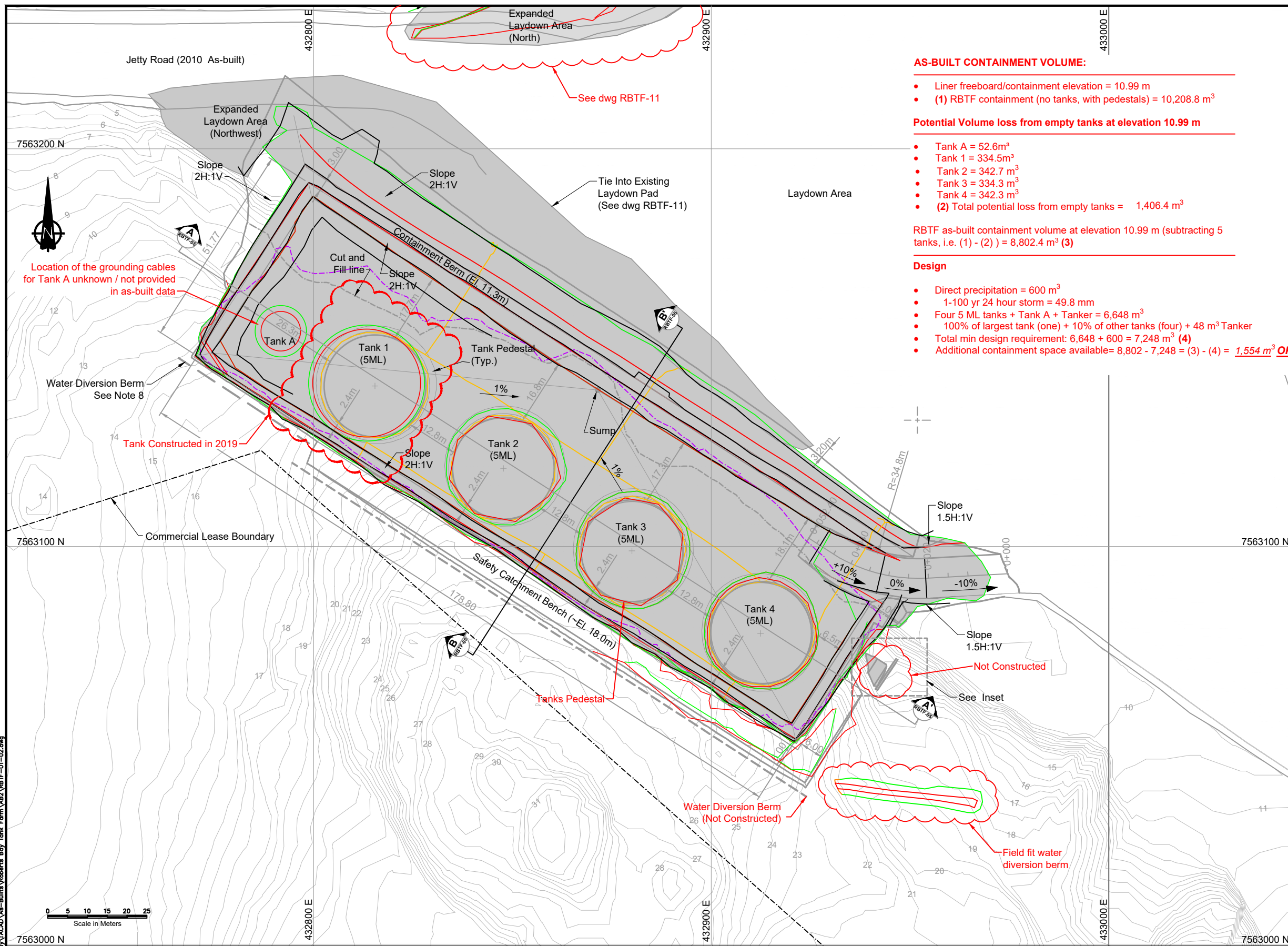
LEGEND

-  New Infrastructure (constructed in 2011 and 2020)
-  Commercial Lease Boundary
-  30m Shoreline Setback
-  As-built Crest
-  As-built Toe
-  As-built Cut/Fill Line

Materials List and Quantities			As-built Cut/Fill Line
Item	Quantity/Area/Volume		Description ¹
Bedrock Excavation	TF (Tank Farm) Main Excavation	75,500 m³	Volumes derived from Gemcom (Gems 6.3) model.
	TF Water Diversion Ditch	5 m³	
	Total	75,505 m³	
3/4" Finishing Material	TF Liner Subgrade (0.2m)	2,110 m³	Volumes derived from Gemcom (Gems 6.3) model.
	TF Overliner (thickness varies)	5,455 m³	
	Tank Pedestals (four)	1,596 m³	
	Total	9,151 m³	
Surfacing Material (1-1/4" Crush)	TF Blast Levelling Course (0.15m)	1,160 m³	Volumes derived from Gemcom (Gems 6.3) model.
	TF Highwall/ Backwall Containment Berm	790 m³	
	TF Access Rd/ Ramp (fill inside containment)	190 m³	
	TF Plug/ Diversion Berm	15 m³	
	TF Access Road Surfacing (outside containment)	45 m³	Calculated from ACAD 2011 ~ Hand calculation to neat lines Calculated from ACAD 2011 Calculated from ACAD 2011 Volumes derived from CIVIL 3D
	TF Highwall Water Diversion Berm ⁴	300 m³	
	RB Preliminary Laydown Expansion Northwest	380 m³	
	RB Preliminary Laydown Expansion North	517 m³	
	RB (Roberts Bay) Sedimentation Berm ²	2,500 m³	
	Total	5,897 m³	
Run of Quarry Material (ROQ)	TF Main Fill	12,355 m³	Volumes derived from Gemcom (Gems 6.3) model.
	TF Access Rd/Ramp (fill outside of containment)	410 m³	Volumes derived from CIVIL 3D Volumes derived from CIVIL 3D
	RB Preliminary Laydown Expansion Northwest	2,365 m³	
	RB Preliminary Laydown Expansion North	4,341 m³	
	Total	19,471 m³	
Geotextile: Non-Woven Needle Punched LP 16 or equivalent	TF Geotextile (underliner) ³	10,300 m²	Areas derived from Gemcom (Gems 6.3) model.
	TF Geotextile (overliner) ³	10,300 m²	
	Total	20,600 m²	
Liner: Double Side Textured HDPE 60 or equivalent	Tank Farm Liner ³	10,300 m²	Areas derived from Gemcom (Gems 6.3) model.
	Total	10,300 m²	

1. All volumes reported are calculated to neat lines. No bulking/shrinking factor have been utilized in the volume determination. Losses into the Tundra are not accounted for.
2. See dwg RBTF-12 for further details
3. Area does not account for overlaps, excess required for installation or for any deviation from neat design lines
4. See drawing RBTF-10 for further details.

[illegible]



NOTES:

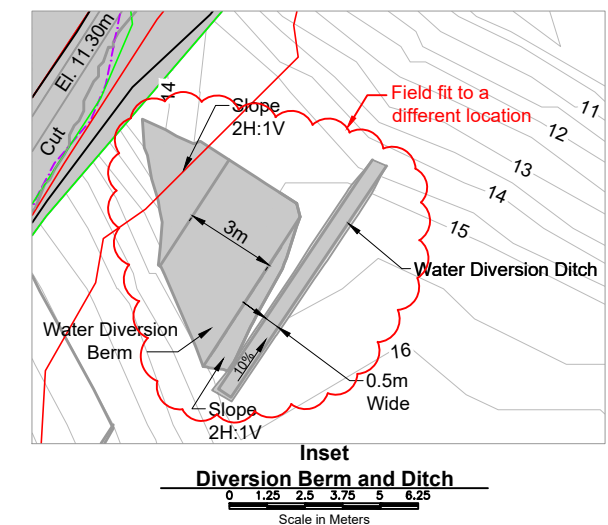
1. The Roberts Bay Tank Farm is to be constructed on a graded engineered fill pad over an intact bedrock surface.
2. The bedrock surface shall be drill and blasted to specified elevation. The finished grade of the blasted bedrock surface has a maximum tolerance of -0.3m.
3. The Contractor shall ensure the blasted floor has natural drainage and minimal ponding water.
4. All blasted material shall be excavated to the expose intact rock surface for survey and approval from the EPCM team and the Engineer.
5. The scope of work described herein specifically excludes all electrical and mechanical elements.
6. Tanks 1 to 4 will be designed and constructed by Others and will only be operational once the appropriate regulatory approvals have been put in place. The grounding of the tanks will be designed and installed by Others.
7. The Roberts Bay Tank Farm Design is based on and meets the standards from Canadian Council of Ministers of Environment (CCME), National Fire Code of Canada (2010) and Newmont Environmental Standards.
8. The exact location of the highwall water diversion is to be field fit to ensure drainage is directed away from highwall. See typical detail 13 on dwg RBTF-10 for additional berm details.
9. Ramp access shall be restricted, for light maintenance vehicles only.
10. Water Diversion Berm side slope to be field fit to ensure no ponding and drainage directed towards diversion ditch.
11. The Owner will install appropriate signage and barricade to prevent any vehicle access within the secondary catchment area other than on the ram
12. The tank locations and inter-tank spacing has been provided by others.

LEGEND

- As-built Cut/fill Line (2011)
- As-built Crest (2011 and 2020)
- As-built Toe (2011 and 2020)
- Grounding Cables

REFERENCE

1. 2011 as-built surface updated based on survey files provided by TMAC, August 2020. File 'FUEL STORE-0828.csv'.

[illegible]

DESIGN: AT/JBK/MMM	DRAWN: TH	REVIEWED: JBK
CHECKED: TMAC	APPROVED: JBK	DATE: December 4, 2020

MP	FILE NAME: RBTF-01-02.dwg
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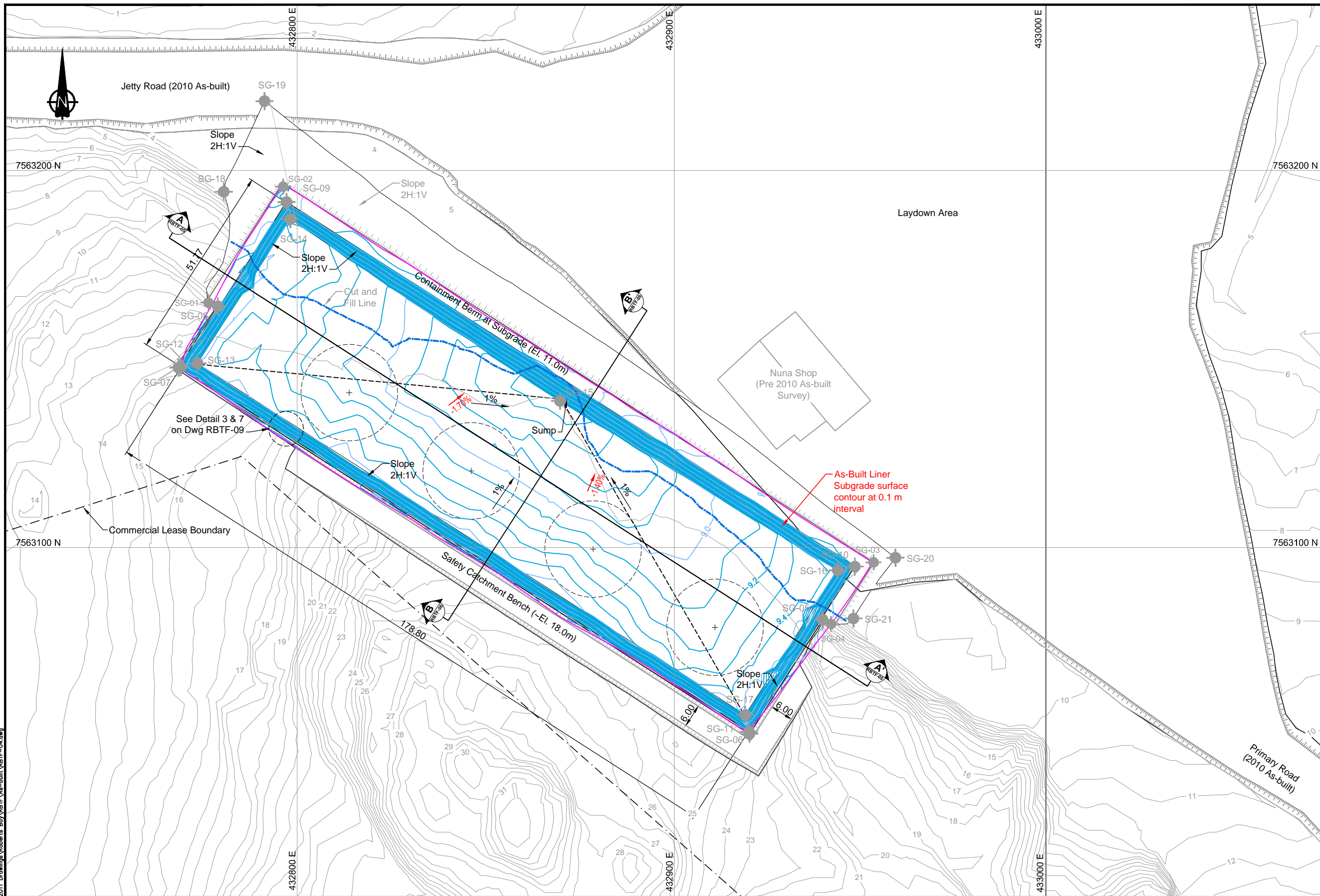
HOPE BAY PROJECT

Doris North Project

DRAWING TITLE:

Fuel Tank Farm Plan Layout

DRAWING NO.	SHEET	REVISION NO.
HB+R-CIV-CIV-OND-0029	3 OF 13	AB2







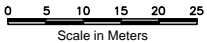
SUBGRADE STAKE OUT POINTS			
ID	Northing	Easting	Elev. (m)
SG-01	7563164.90	432777.91	11.00
SG-02	7563195.67	432797.75	11.00
SG-03	7563096.03	432954.35	11.00
SG-04	7563079.72	432943.00	11.00
SG-05	7563080.83	432940.83	11.00
SG-06	7563050.53	432921.39	11.00
SG-07	7563147.69	432769.93	11.00
SG-08	7563163.96	432780.37	11.00
SG-09	7563191.53	432798.65	11.00
SG-10	7563094.92	432949.27	11.00
SG-11	7563051.22	432921.24	11.00
SG-12	7563147.84	432770.63	11.00
SG-13	7563148.82	432775.07	9.39
SG-14	7563187.01	432799.63	9.40
SG-15	7563138.83	432871.14	8.42
SG-16	7563093.92	432944.75	9.40
SG-17	7563055.67	432920.28	9.39
SG-18	7563194.31	432781.98	5.00
SG-19	7563218.34	432792.80	3.06
SG-20	7563097.28	432960.09	8.85
SG-21	7563081.17	432948.96	9.19

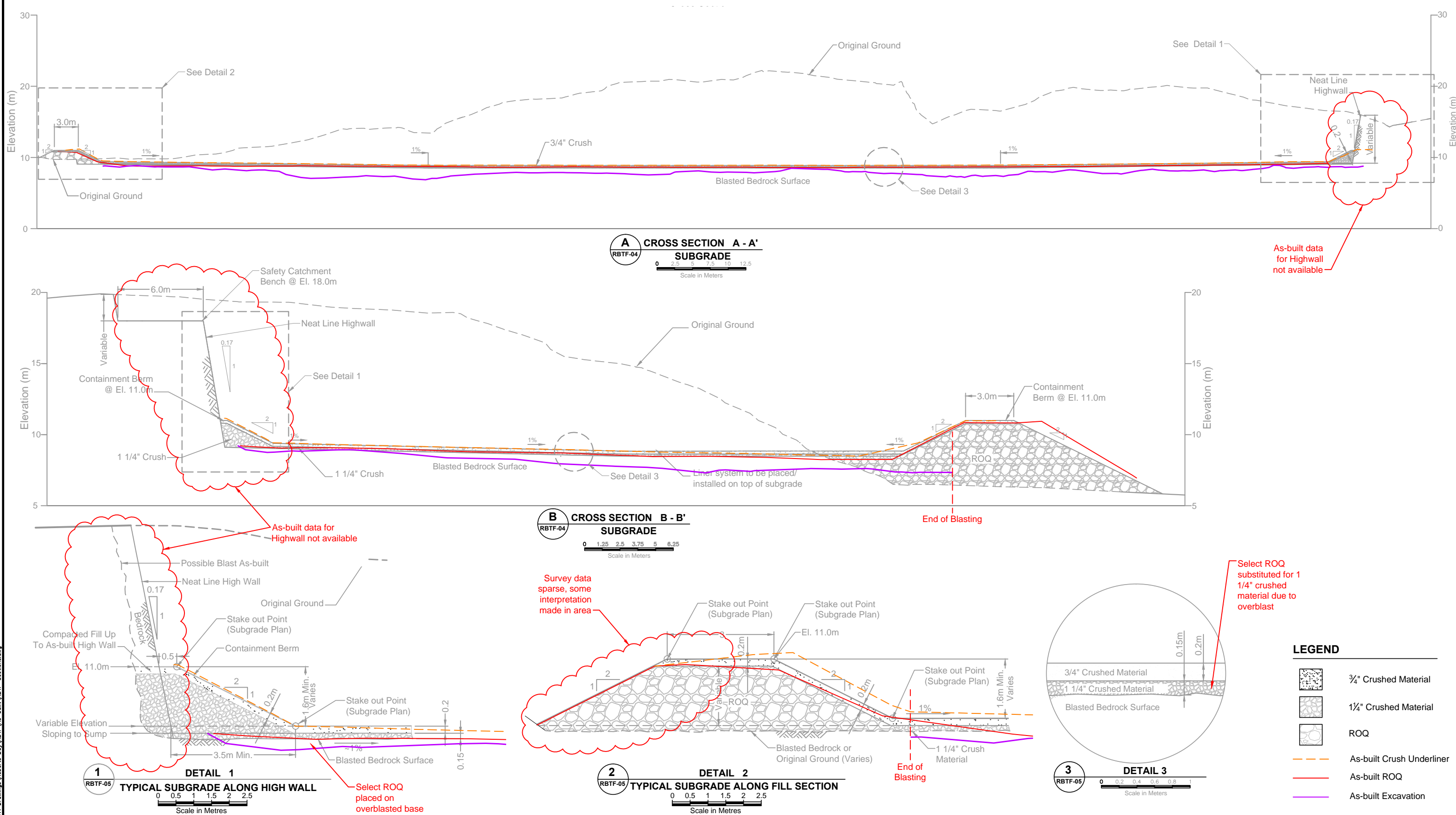
NOTES

1. Stake out points provided are for top subgrade surface (i.e. surface liner system will be installed/placed on top of). The Contractor must make the appropriate adjustments for the different fill types when setting out the works.

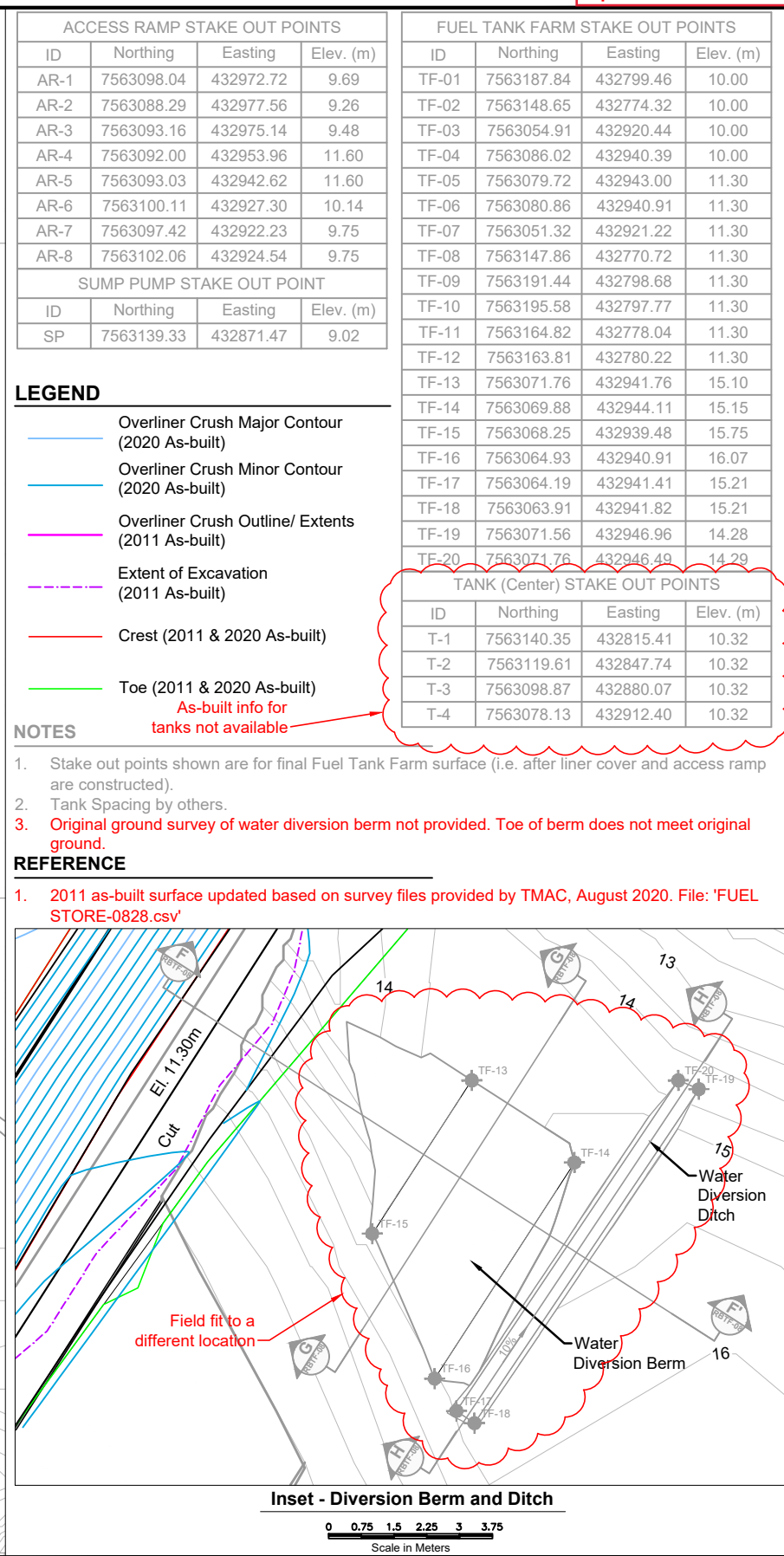
LEGEND

-  Liner Subgrade Major Contour
(2011 As-built)
 Liner Subgrade Minor Contour
(2011 As-built)
 Liner Subgrade Outline/ Extents
(2011 As-built)
 Extent of Excavation (2011 As-built)

[illegible]



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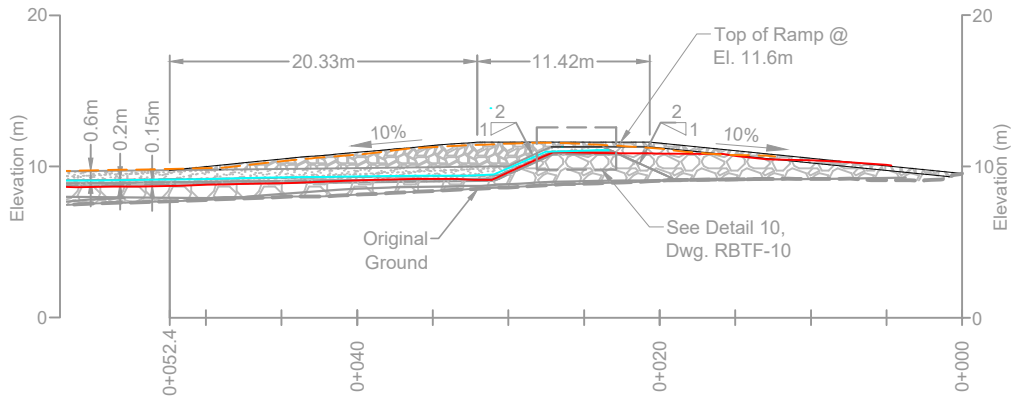
[illegible]

NOTES

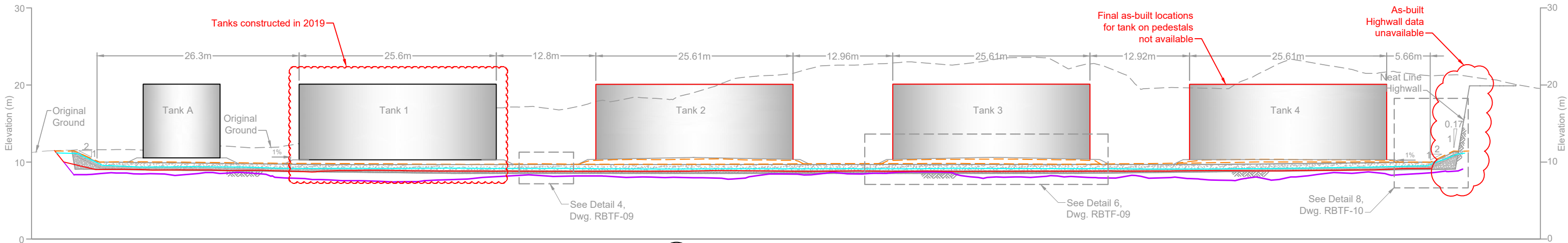
1. Select ROQ substituted for 1¼" crushed material.

REFERENCE

1. 2011 as-built surface updated based on survey files provided by TMAC, August 2020. File: 'FUEL STORE-0828.csv'.

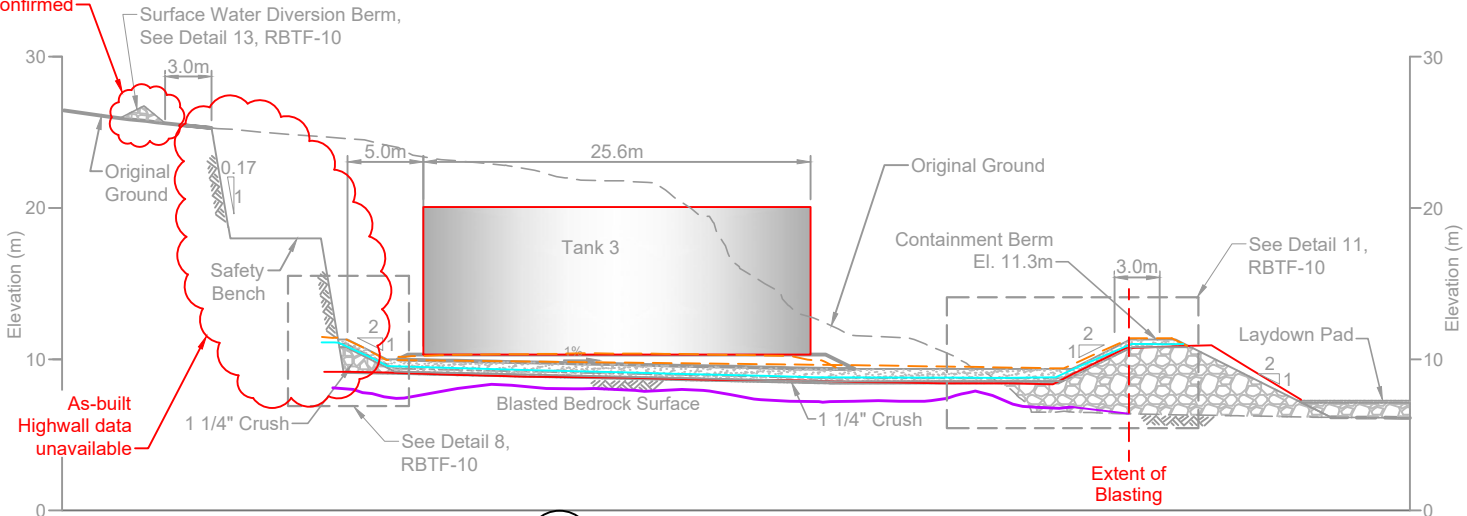


C CROSS SECTION C - C'
Center Line of Access Ramp
Scale in Meters



D CROSS SECTION D - D'
Scale in Meters

No Survey data available for diversion berms.
Berm extent/alignment not confirmed



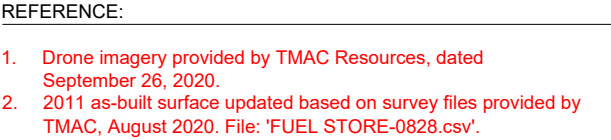
E CROSS SECTION E - E'
Scale in Meters




LEGEND

- ¾" Crushed Material
- 1¼" Crushed Material
- ROQ
- As-built ¾" Crush Material
- As-built Select ROQ
- As-built Excavation
- As-built Liner System

P:\Projects\01_SITES\Hope Bay\ACAD\As-Built\Roberts Bay Tank Farm\AB2\RBTF-07.dwg

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													PROFESSIONAL ENGINEER'S STAMP			FILE NAME: RBTf-14.dwg			SRK JOB NO.: 1CH008.033			SRK DWG NO.: RBTf-13		
																</								

Attachment 2 GemSteel Tank Drawings

GENERAL NOTES

Design

- Code of Construction: API-650, Latest Edition
- All dimensions are in Imperial unless noted otherwise.
- Product Stored: Diesel Fuel
- Diameter: 84'-0"
- Height: 32'-0"
- Nominal Capacity: 5 M litres
- Operating Temperature Range: -46 / +20°C
- Product Specific Gravity: 0.84 @ 15°C

Inspection

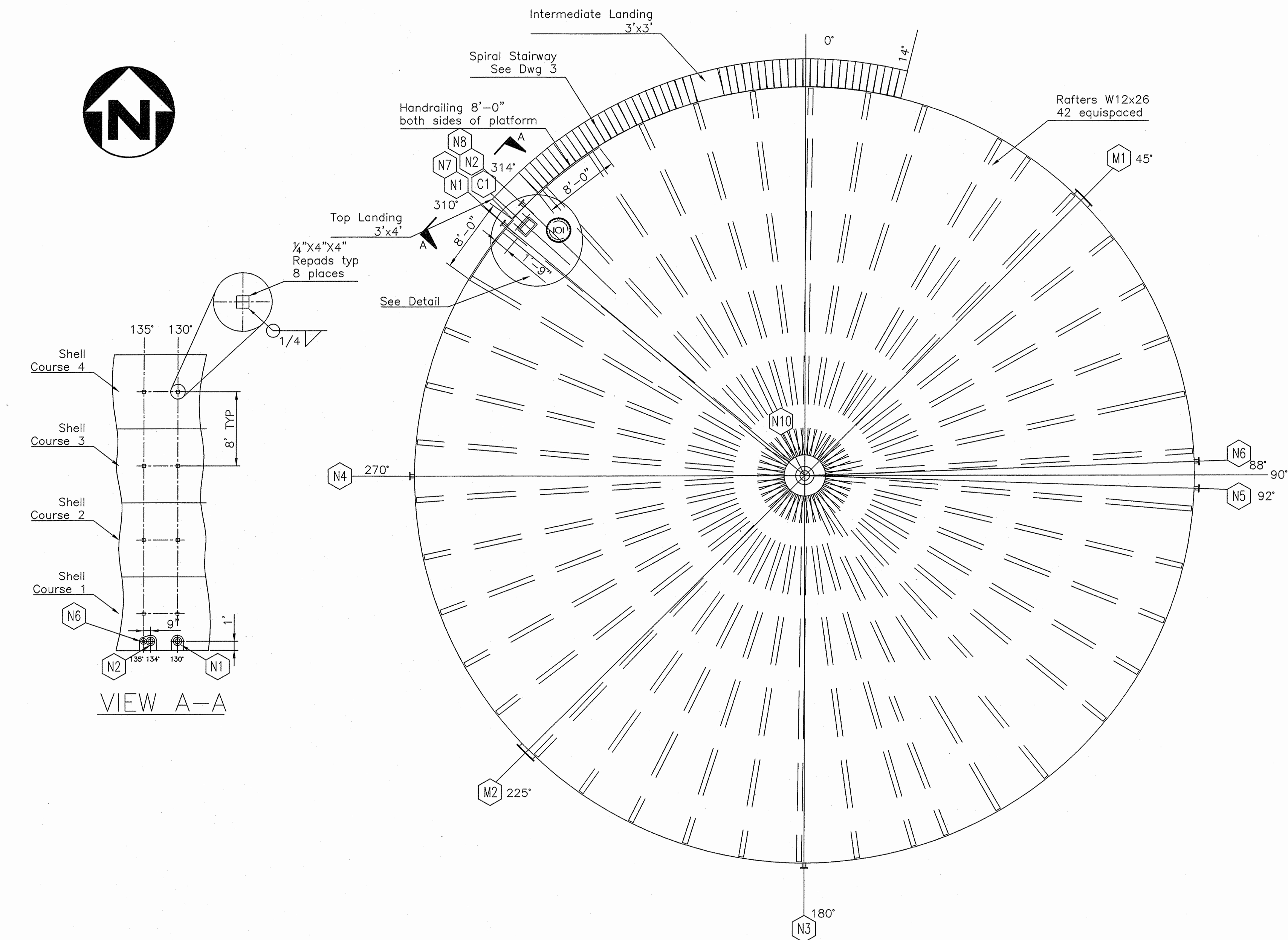
- Vacuum Testing: Floor
- Liquid Penetrant Inspection: Shell to Floor Weld & all Shell Welds
- Radiography: Vertical Shell Welds - Spot as per API 650
- Radiography: Horizontal Shell Welds - Spot as per API 650
- Air Test: Repads

Materials

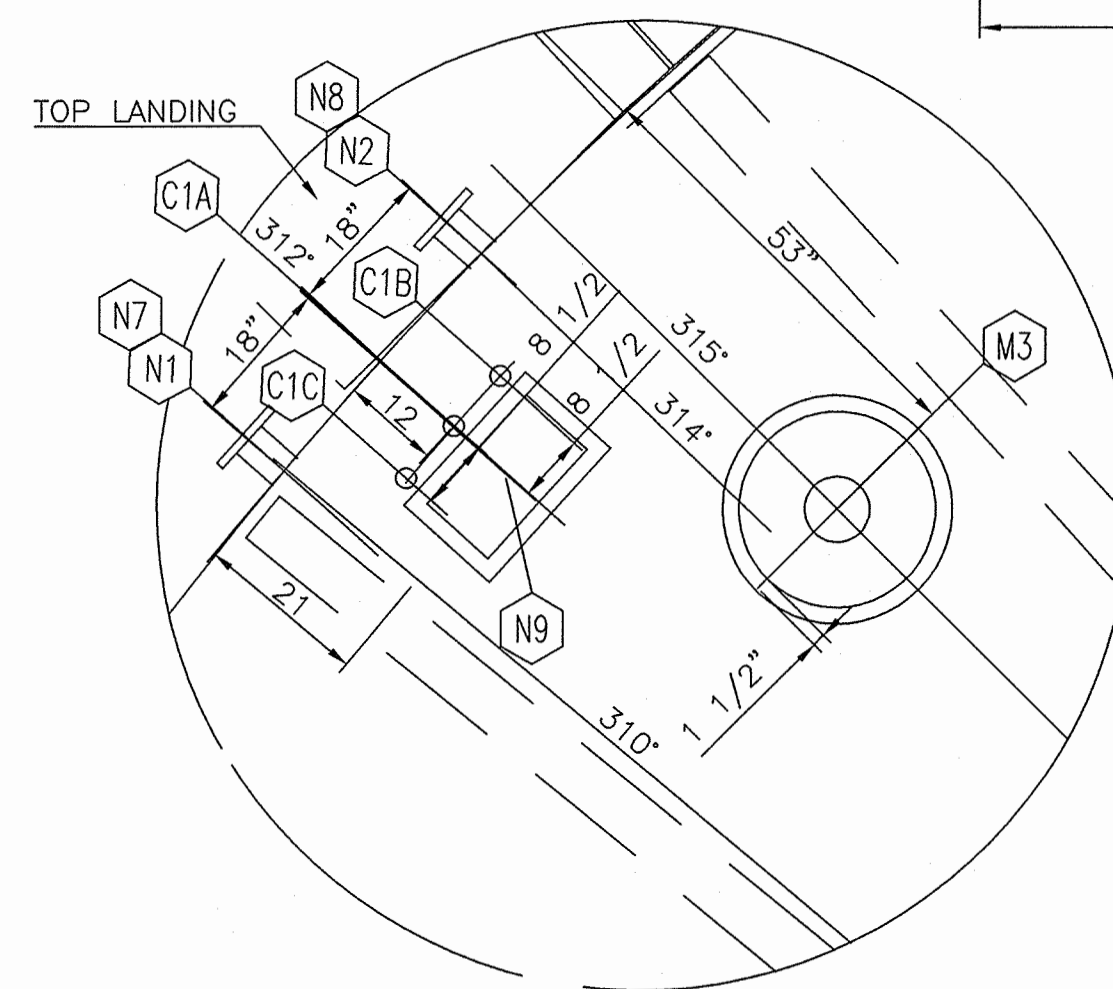
- Structural Bolts: A-325
- Structural Steel: G40.21 300W
- Pipe Nozzles: A333 Gr.6 Impact Energy 18J @ -45°C
- Forged Flanges: 150# RFSO A350M Gr. LF2
- Steel Plate: G40.21M-260WT, Killed & Fine-Grain Practice
- Roof Support Column: 12" STD Structural Grade Pipe
- Manway Gasket: 1/8" NBR/Aramid Fibre
- Welding Electrodes: As per Welding Procedures

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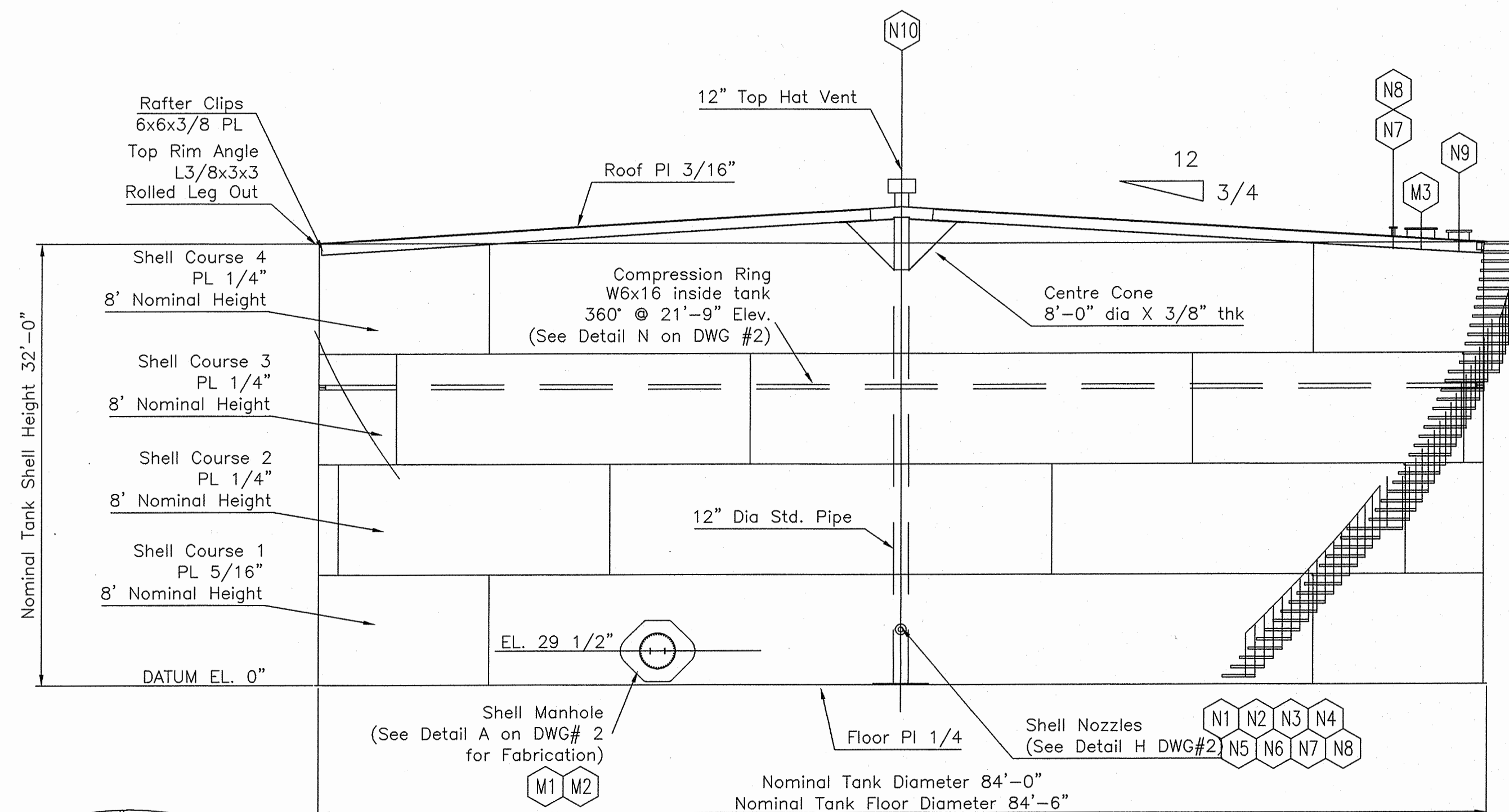
#	REVISION DESCRIPTION	DATE	BY
01	As-built	08/06/19	JOC
B	Preliminary	05/09/19	JOC
A	Preliminary	04/08/18	JOC



ORIENTATION VIEW



Roof Nozzle Detail



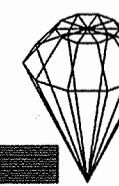
ELEVATION VIEW

(SEE THIS DRAWING FOR TRUE ORIENTATION)

NOZZLE SCHEDULE

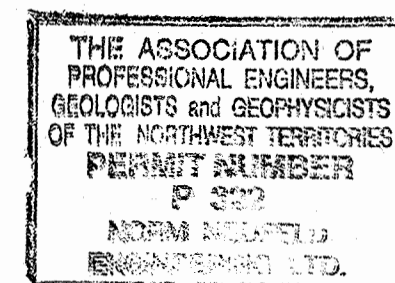
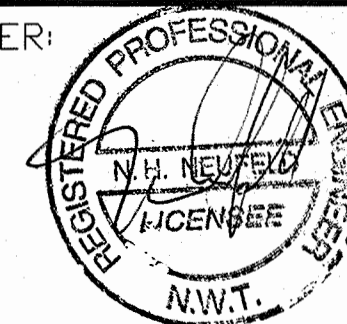
MARK	DESCRIPTION	SIZE	PROJ.	TYPE	RATING	LOC.	ELEV.
M1	Shell Manhole	24"			API650	45°	29 1/2"
M2	Shell Manhole	24"			API650	225°	29 1/2"
M3	Roof Manhole w/Jayco Thief Hatch	24"			API650	ROOF	N/A
N1	Inlet	6"	7"	RFSO	150#	310°	12"
N2	Outlet	6"	7"	RFSO	150#	314°	12"
N3	Drain / Pumpout	4"	7"	RFSO	150#	180°	24"
N4	Temperature	2"	7"	RFSO	150#	270°	59"
N5	Spare (c/w blind flg)	2"	7"	RFSO	150#	92°	5"
N6	Water Draw-off	3"	7"	RFSO	150#	88°	12"
N7	Inlet PRP Discharge	2"	6"	RFSO	150#	310°	31'-6"
N8	Outlet PRP Discharge	2"	6"	RFSO	150#	314°	31'-6"
N9	Inspection Hatch	10"x18"				Det.	See Det.
N10	Center Roof Vent	12"				Det.	See Det.
C1A	Fitting for Liquid Level Gauge	1 1/2"		CPLG	1500#	132°(Det)	N/A
C1B/C	Fittings for Guide Wire	1 1/4"		CPLG	1500#	132°(Det)	N/A

GEM STEEL



9060 - 24 Street
Edmonton, Alberta
Canada T6P 1X8
Ph. (780) 449-0000
Fax. (780) 449-0001

ENGINEER:



TITLE:

GENERAL TANK LAYOUT

PROJECT:

84'Øx 32' HIGH DIESEL FUEL STORAGE TANK
EQUIP. No.
TMAC RESOURCES
HOPE BAY, NUNAVUT

CLIENT:

TMAC Resources

CHK'D BY:

B.K.G.

DATE:

August 2018

CADFILE:

TMAC842018-1

DRAWN BY:

J.O.C.

APP'D BY:

-

SCALE:

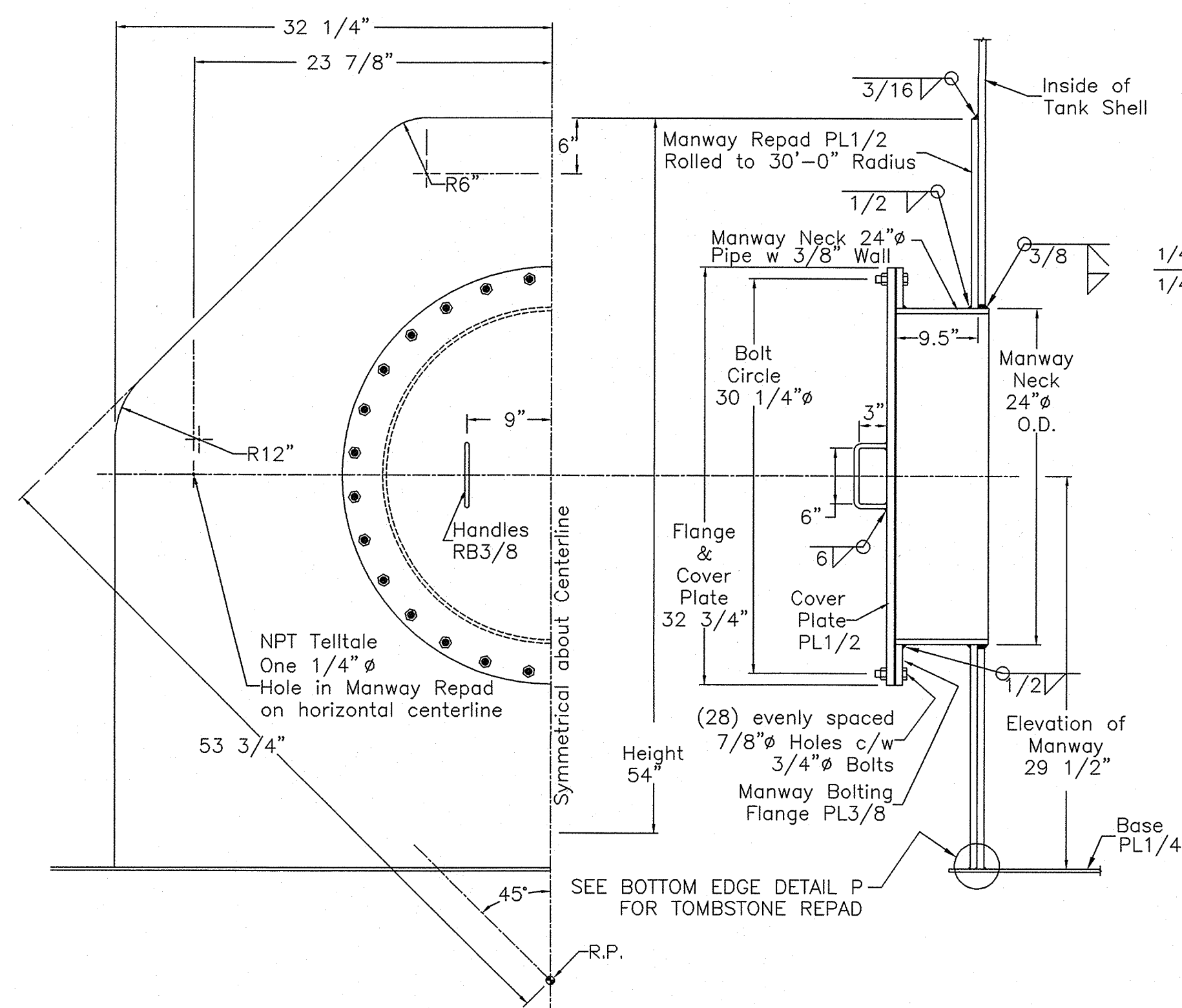
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DRAWING #

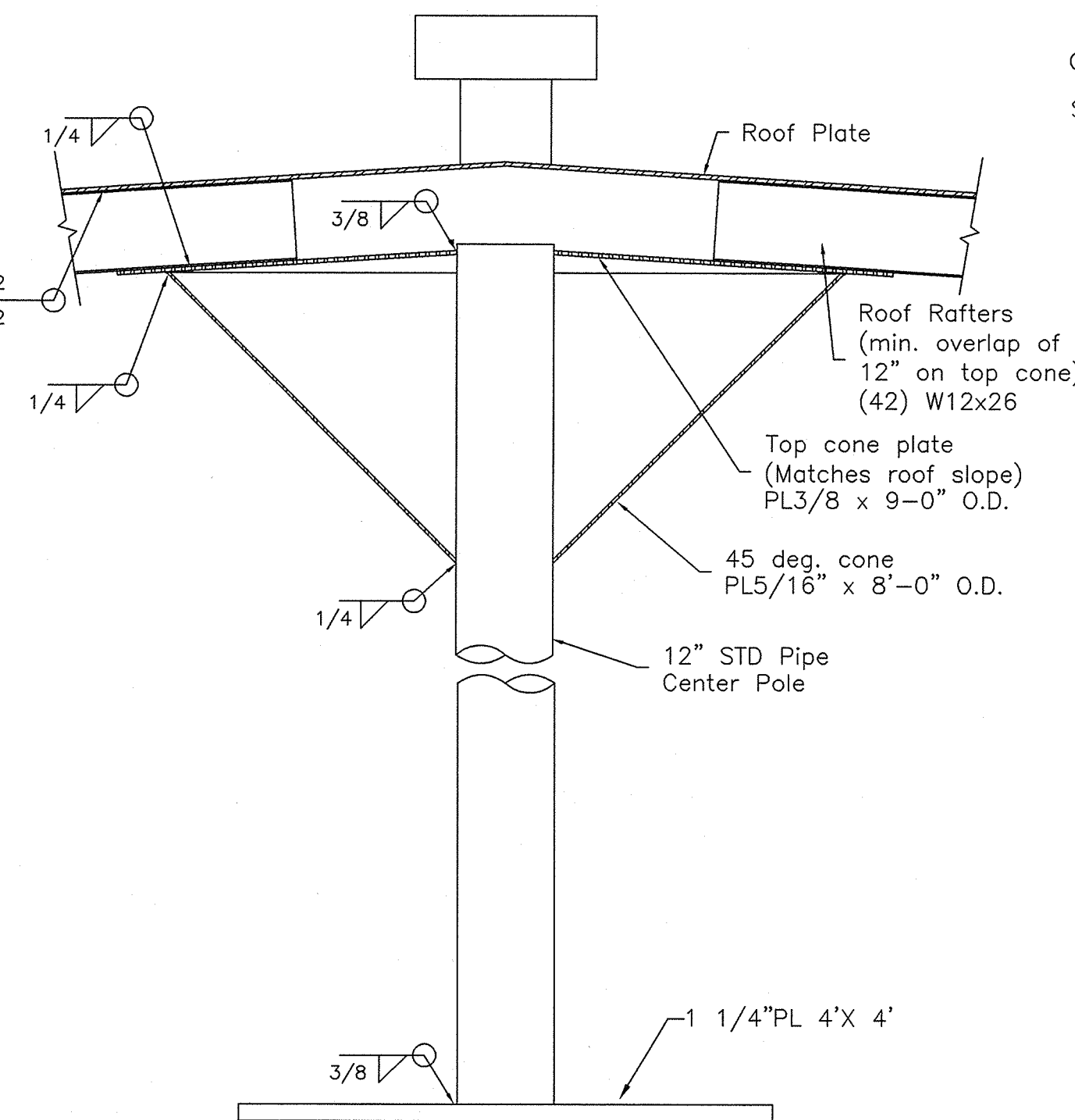
TMAC842018-1

REVISION #

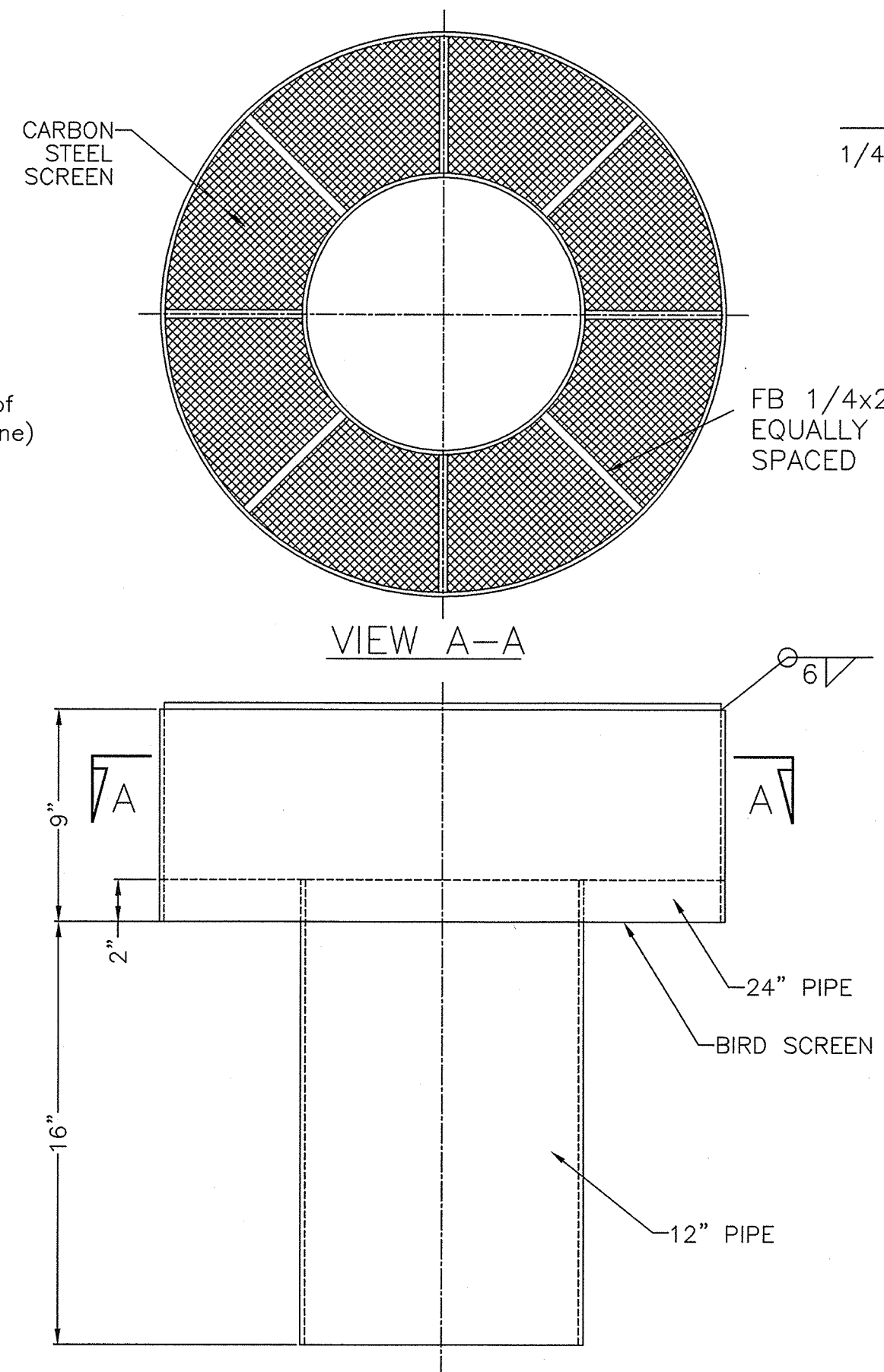
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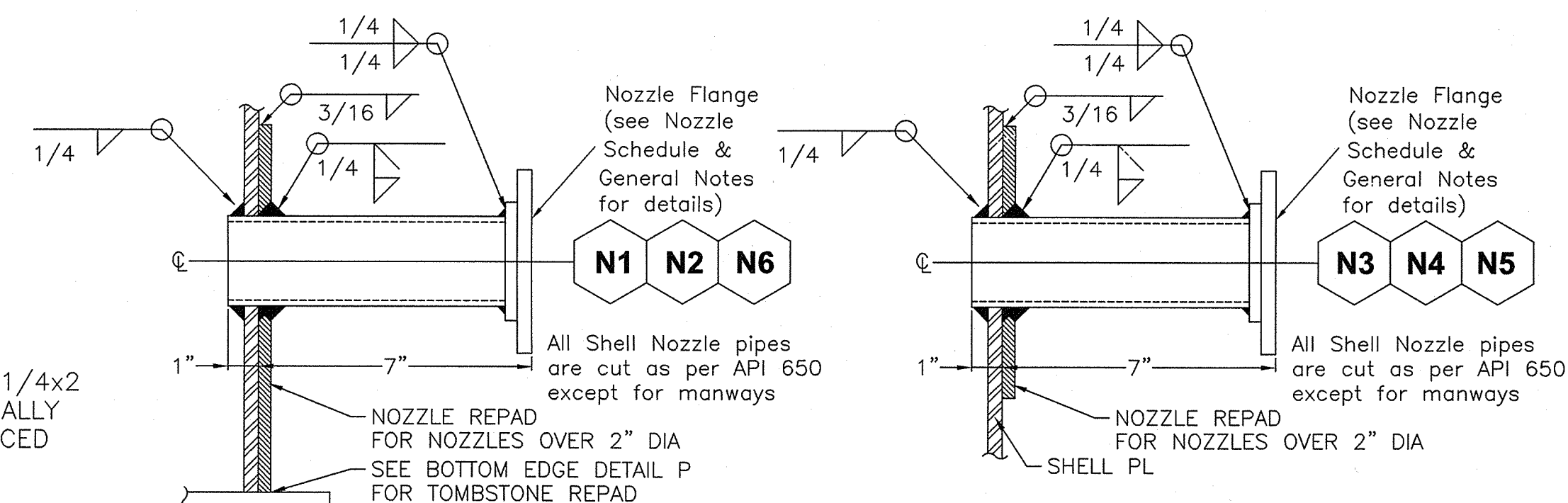
A
1 **24" Ø SHELL MANWAY DETAIL**
NTS



D
1 **BASE PLATE & CENTER CONE**
DETAILS NTS

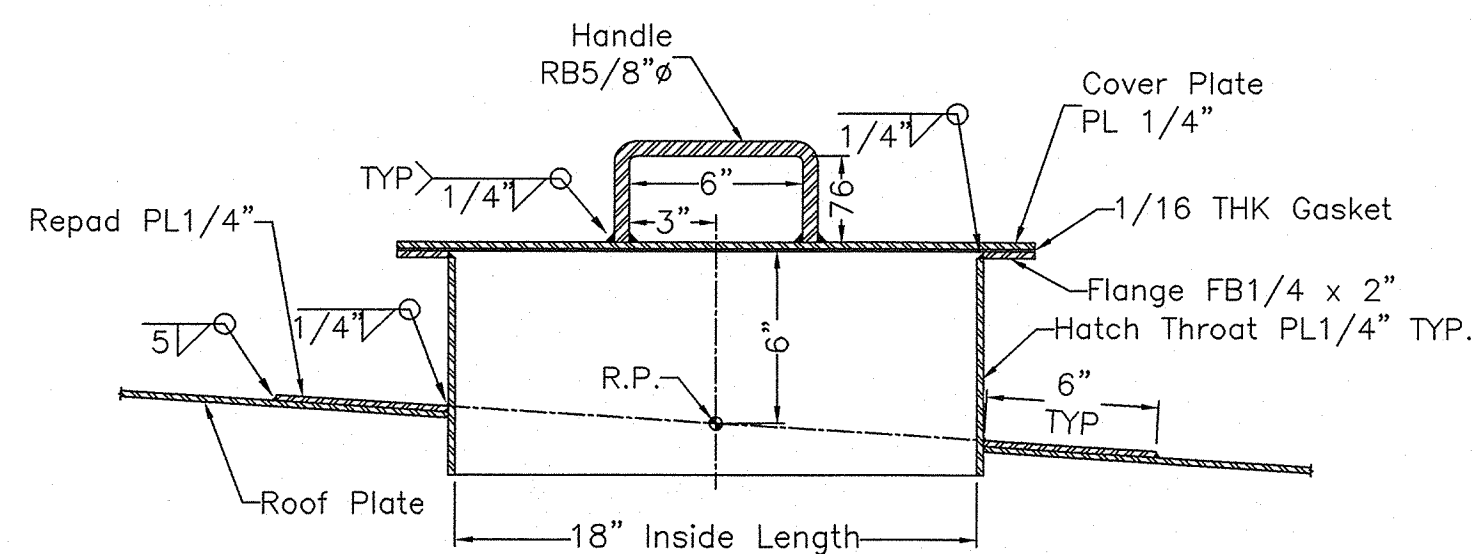


C
1 **TOP HAT VENT DETAIL R1**
NTS

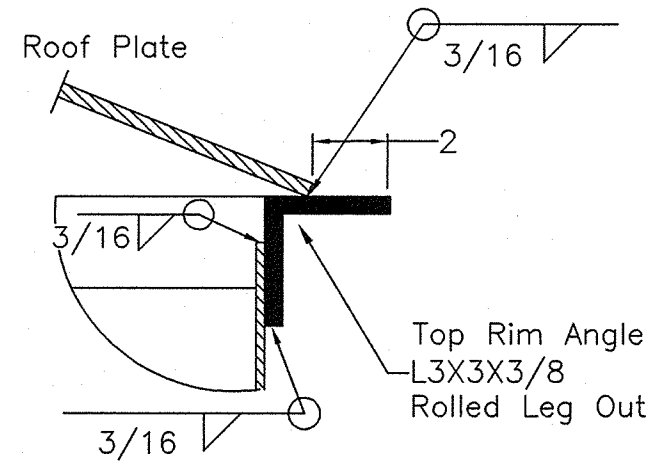


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1 **SHELL NOZZLE**
DETAIL N1,N2,N6 NTS

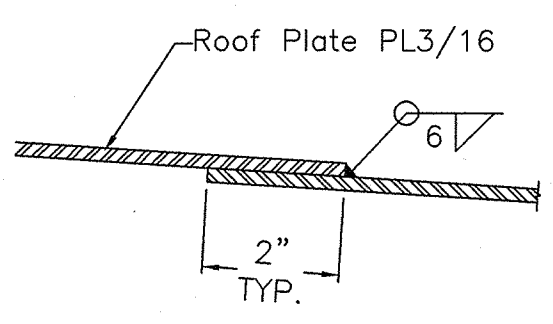
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1 **SHELL NOZZLE**
DETAIL N3,N4,N5 NTS



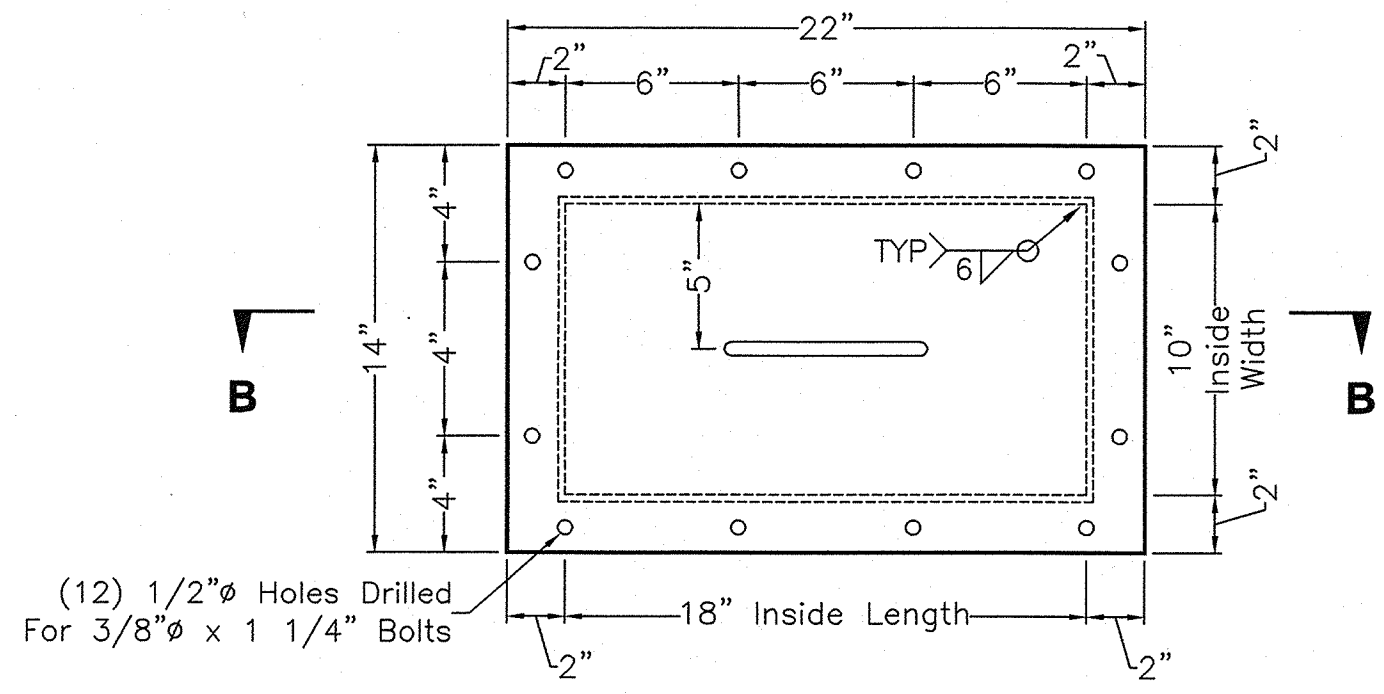
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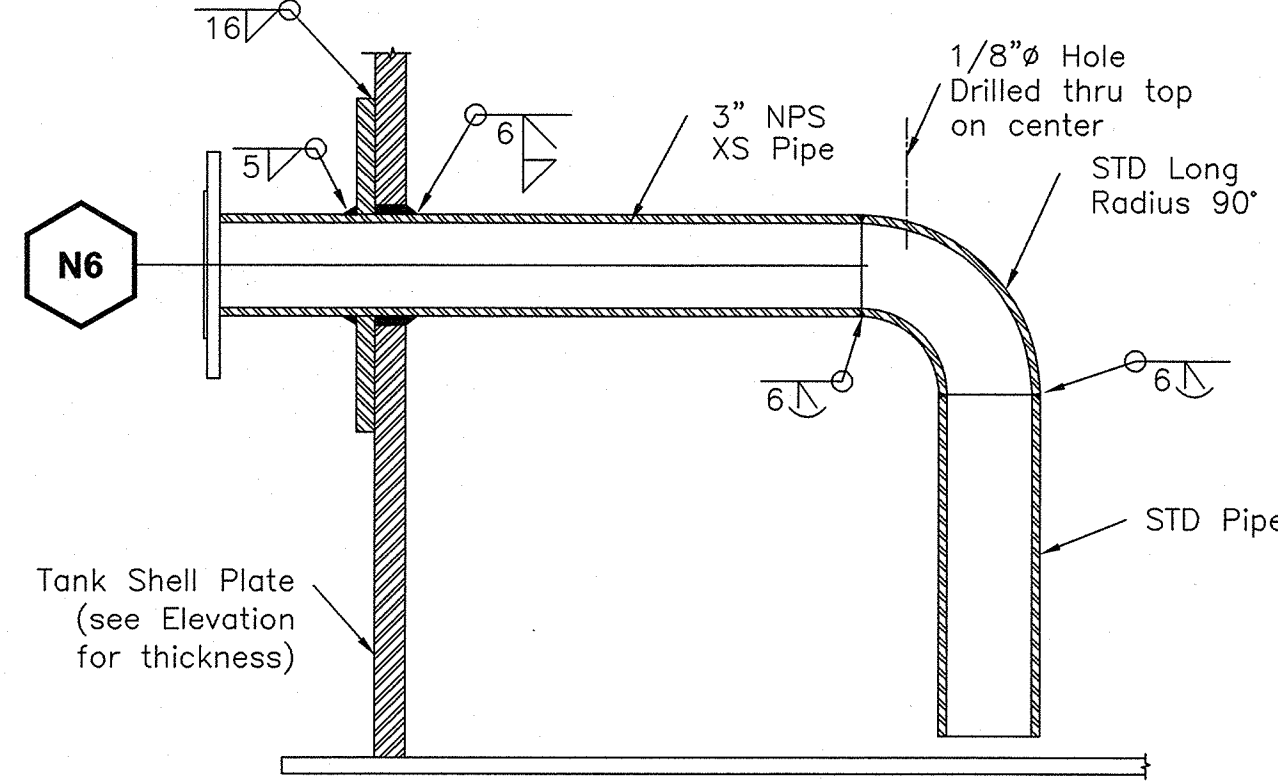
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1 **RIM ANGLE DETAIL**
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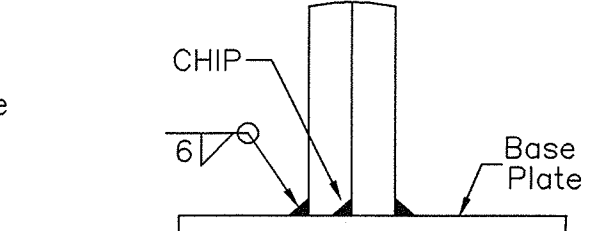
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1 **ROOF PLATE WELD DET.**
NTS



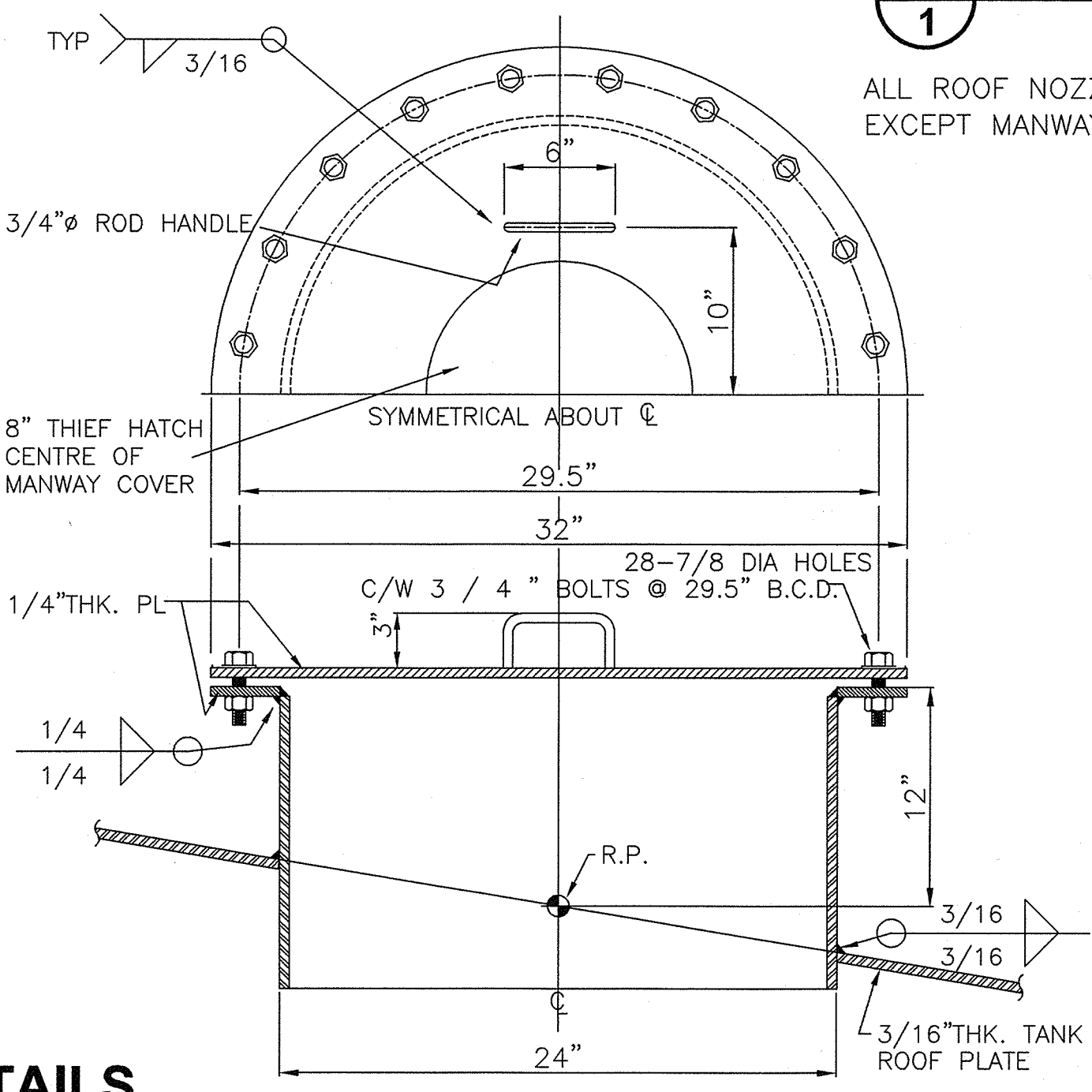
L
1 **INSPECTION HATCH DET.**
NTS



M
1 **WATER DRAW OFF DET.**
NTS



P
- **BOTTOM EDGE DETAILS**
TOMBSTONE REPAD



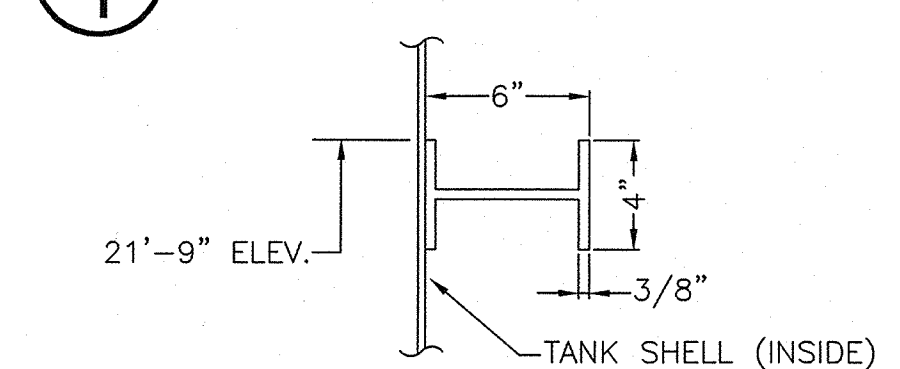
B
1 **ROOF MANWAY**
NTS

E
1 **TYP. ROOF NOZZLE DET.**
NTS

ALL ROOF NOZZLE PIPES (X) ARE CUT PER API 650 EXCEPT MANWAYS OR VENTS

J
1 **FLOOR PLATE WELD JOINT**
DETAIL NTS

K
1 **SHELL WELD DETAIL**
NTS



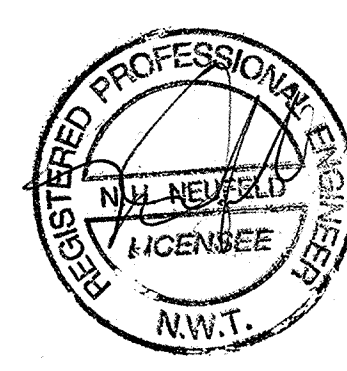
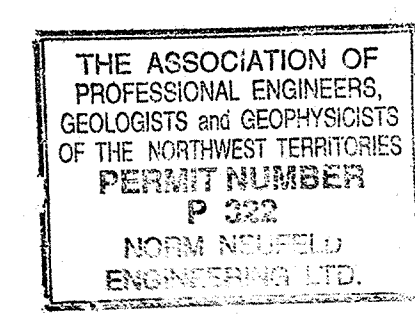
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1 **COMPRESSION RING DET.**

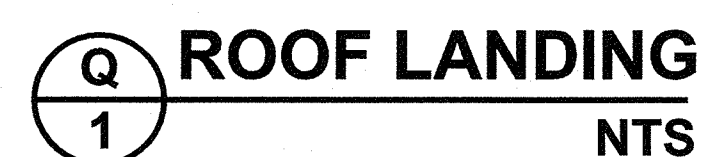
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01	As-built	06/8/19	JOC
B	Re-Issue for Review	09/5/19	JOC
A	Preliminary	04/8/18	JOC

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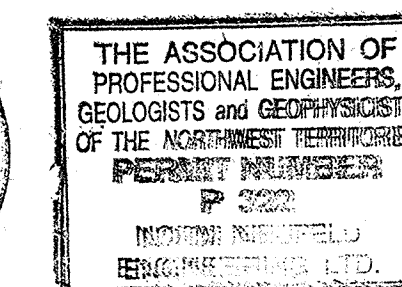
GEM STEEL

9060 - 24 Street
Edmonton, Alberta
Canada T6P 1X8
Ph. (780) 449-0000
Fax. (780) 449-0001

ENGINEER:		
 		
TITLE: GENERAL TANK DETAILS		
PROJECT: 84'Øx 32' HIGH DIESEL FUEL STORAGE TANK EQUIP. No. TMAC RESOURCES HOPE BAY, NUNAVUT		
CLIENT: TMAC Resources		
CHK'D BY: B.K.G.	DATE: August 2018	CADFILE: TMAC842018-2
DRAWN BY: J.O.C.	APP'D BY: -	SCALE: N.T.S.
DRAWING # TMAC842018-2		REVISION # 01



TS



TITLE:	SPIRAL STAIRWAY & LANDING DETAILS
--------	--------------------------------------------------

PROJECT:

**84'Øx 32' HIGH DIESEL FUEL STORAGE TANK
EQUIP. No.
TMAC RESOURCES
HOPE BAY, NUNAVUT**

CLIENT:

CHK'D BY:

B.K.G.

DATE:

August, 2018

CADFILE:

TMAC842018-3

DRAWN BY:

J.O.C.

APP'D BY:	
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SCALE:

N.T.S.

DRAWING #

TMAC842018-3

REVISION #

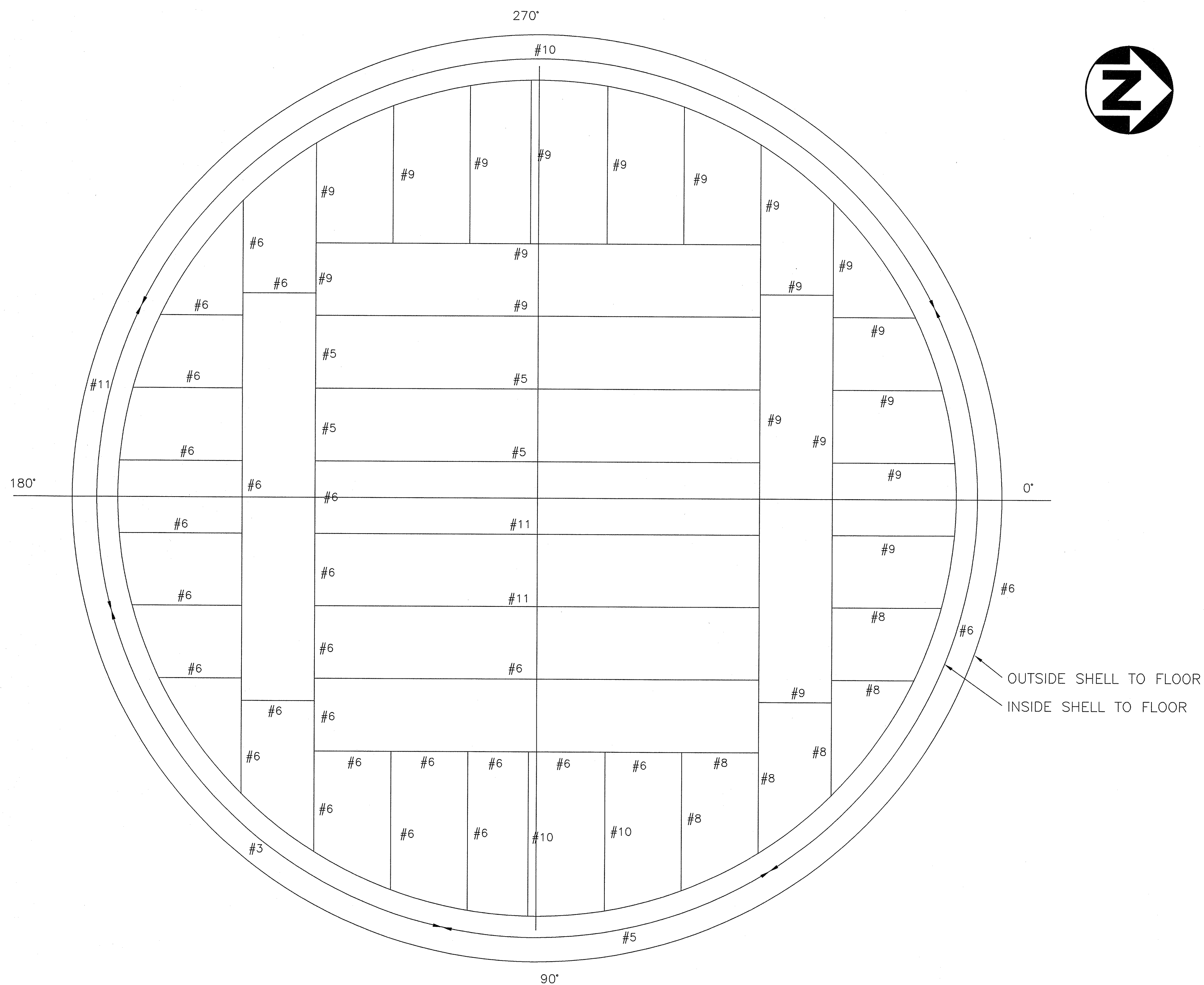
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Fax. (780) 449-0001**

01	As-Built	06/8/19	JOC
A	Preliminary	04/8/18	JOC
#	REVISION DESCRIPTION	DATE	BY



FLOOR WELD MAP

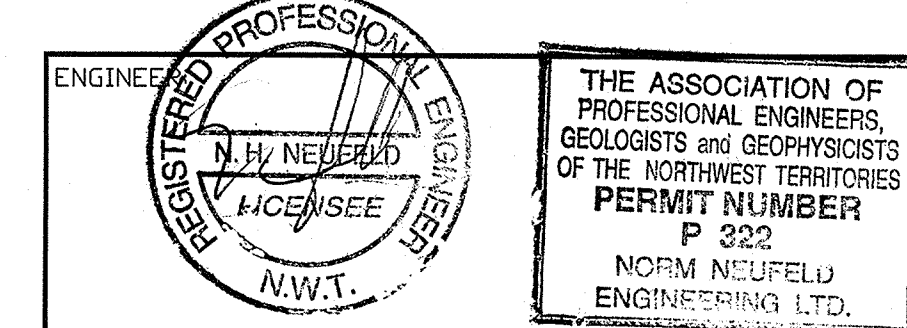
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#	REVISION DESCRIPTION	DATE	BY
A	ISSUED FOR MARKUP	AUG 8/19	JOC
#			

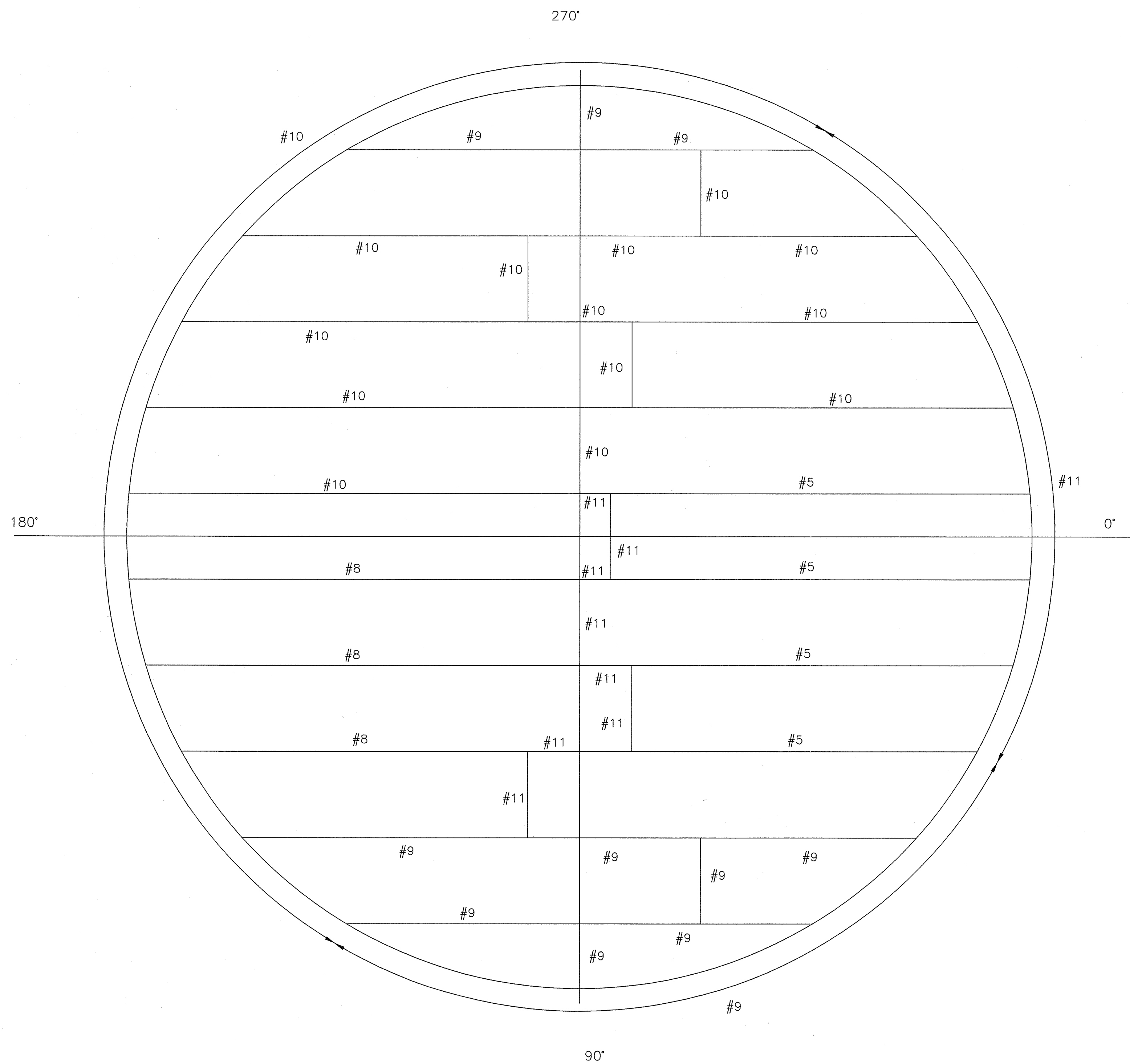
GEM STEEL
9060 - 24 Street
Edmonton, Alberta
Canada T6P1X8
Ph: (780) 449-0000
Fax: (780) 449-0001

Welder's I.D. Numbers Schedule

Joe Nederhoff #3
Jesse Duncalfe #5
Steve Kelch #6
Chris Gaudet #8
Kyle Potter #9
Kyle Fehr #10
Chris Gauthier #11



TITLE: FLOOR PLATE LAYOUT AND WELD MAP		
PROJECT: 84'Øx 32' HIGH DIESEL FUEL STORAGE TANK EQUIP. No. TMAC RESOURCES HOPE BAY, NUNAVUT		
CLIENT: TMAC Resources		
CHK'D BY: B.K.G.	DATE: August 2019	CAD FILE: TMAC842018-4
DRAWN BY: J.O.C.	APP'D BY: -	SCALE: N.T.S.
DRAWING # TMAC842018-4		REVISION # A



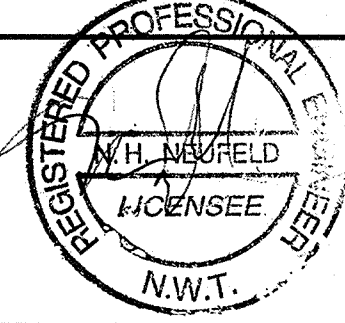
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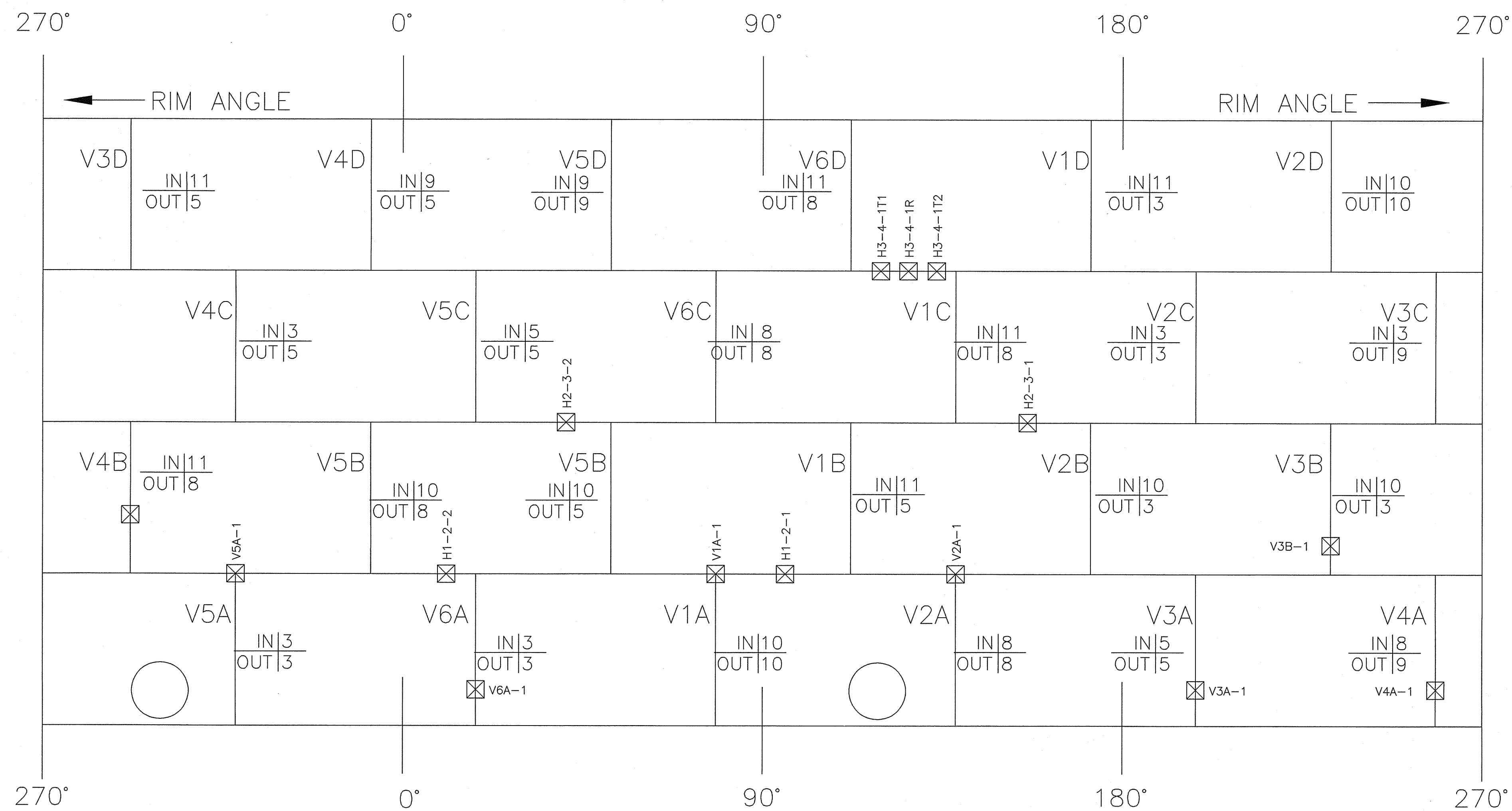
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Welder's I.D. Numbers Schedule

Jesse Duncafe #5
Chris Gaudet #8
Kyle Potter #9
Kyle Fehr #10
Chris Gauthier #11

ENGINEER:		
		
TITLE: ROOF PLATE LAYOUT AND WELD MAP		
PROJECT: 84'Øx 32' HIGH DIESEL FUEL STORAGE TANK EQUIP. No. TMAC RESOURCES HOPE BAY, NUNAVUT		
CLIENT: TMAC Resources		
CHK'D BY: B.K.G.	DATE: August 2019	CADFILE: TMAC842018-5
DRAWN BY: J.O.C.	APP'D BY: -	SCALE: N.T.S.
DRAWING # TMAC842018-5		REVISION # A



SHELL WELD MAP
VIEWED FROM INSIDE

LEGEND

$\frac{IN|8}{OUT|8}$ WELDED BY

\boxtimes X-RAY TAKEN

[] NEW WELD BETWEEN

Welder's I.D. Numbers Schedule

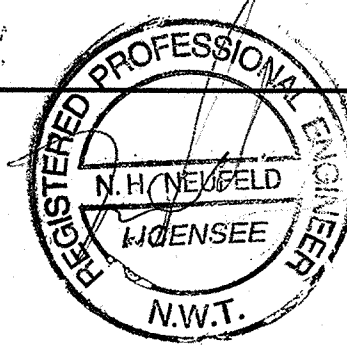
Joe Nederhoff #3
Jesse Duncalfe #5
Chris Gaudet #8
Kyle Potter #9
Kyle Fehr #10
Chris Gauthier #11

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#	REVISION DESCRIPTION	DATE	BY
1	ISSUED FOR MARKUP	AUG 7/19	JDC

GEM STEEL

9060 - 24 Street
Edmonton, Alberta
Canada T6P 1X8
Ph: (780) 448-0000
Fax: (780) 448-0001

ENGINEER: 		THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF THE NORTHWEST TERRITORIES PERMIT NUMBER P 322 NORM NEUFELD ENGINEERING LTD.	
TITLE: SHELL WELD MAP & RADIOGRAPH TEST MAP			
PROJECT: 84'Øx 32' HIGH DIESEL FUEL STORAGE TANK EQUIP. No. TMAC RESOURCES HOPE BAY, NUNAVUT			
CLIENT: TMAC Resources			
CHK'D BY: B.K.G.	DATE: August 2019	CADFILE: TMAC842018-6	
DRAWN BY: J.O.C.	APP'D BY: -	SCALE: N.T.S.	
DRAWING # TMAC842018-6		REVISION # A	

Attachment 3

Pedestal Construction - June 2019 Notes



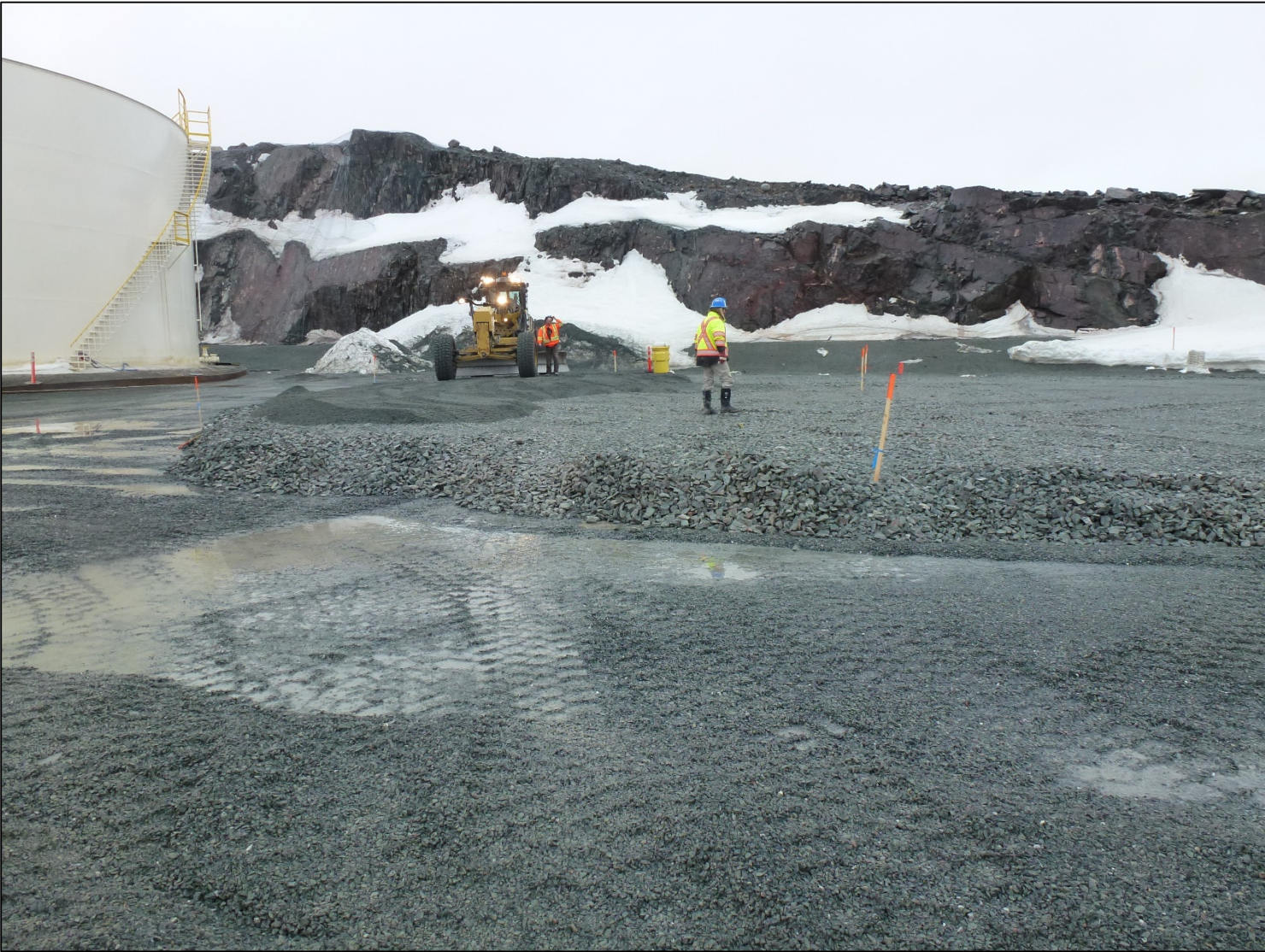
Tank No. 1 location (June 13, 2019)

Topping up liner cover with crush material (June 13, 2019)



Roberts Bay Tank Farm – Preparation for construction of new tank (Tank No. 1)

		Hope Bay		
		Field Observations and Notes		
Project No: 1CT022.043	Hope Bay Project	Date: 2019/06/17	Approved: RW	Figure 1



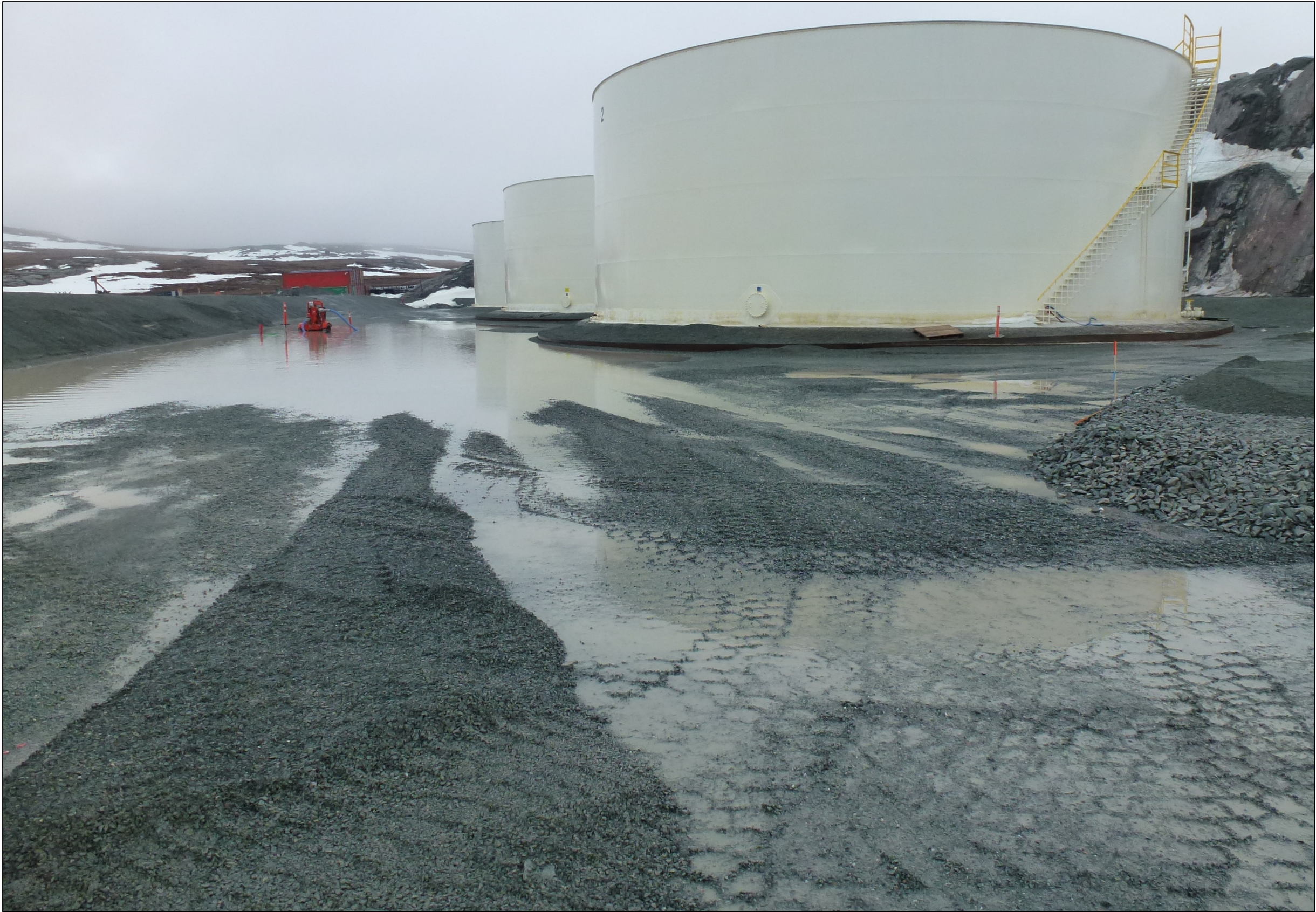
Placing base of 3 inch minus material for tank pedestal (June 14, 2019)



Placing 3 inch base and final 15 cm of crus material for Tank No. 1 pedestal (June 14, 2019)

Roberts Bay Tank Farm – Preparation for construction of new tank (Tank No. 1)

		Hope Bay		
		Field Observations and Notes		
Project No: 1CT022.043	Hope Bay Project	Date: 2019/06/17	Approved: RW	Figure 2



Roberts Bay Tank Farm – Ponding water from rain and snow melt. Challenge to pump it out since it does not meet discharge criteria. Apparently water samples failed for hydrocarbons as a result of historic spill (unsure of when) - June 14, 2019.

		Hope Bay		
		Field Observations and Notes		
Project No: 1CT022.043	Hope Bay Project	Date: 2019/06/17	Approved: RW	Figure 3



Ponding water still an issue – vac truck being used to transport water to the Doris sediment pond (June 17, 2019)

Compacted final surface of pedestal for Tank No. 1 (June 17, 2019)



Roberts Bay Tank Farm – Preparation for construction of new tank (Tank No. 1)

		Hope Bay		
		Field Observations and Notes		
Project No: 1CT022.043	Hope Bay Project	Date: 2019/06/17	Approved: RW	Figure 4

Attachment 4 Tank Construction – June & July 2019 Photos



