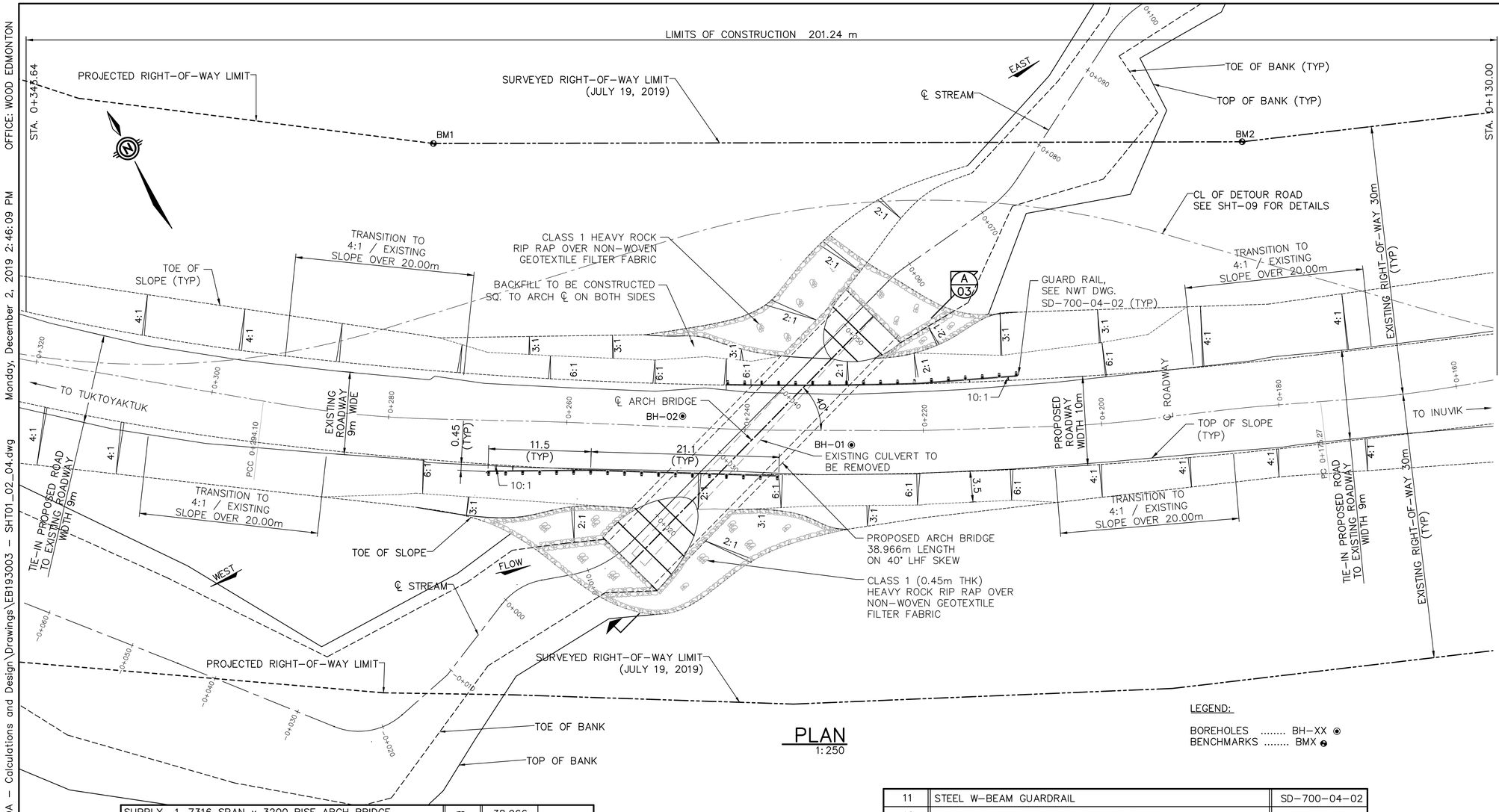
Attachment B

Design Drawings



PLAN
1:250

LEGEND:

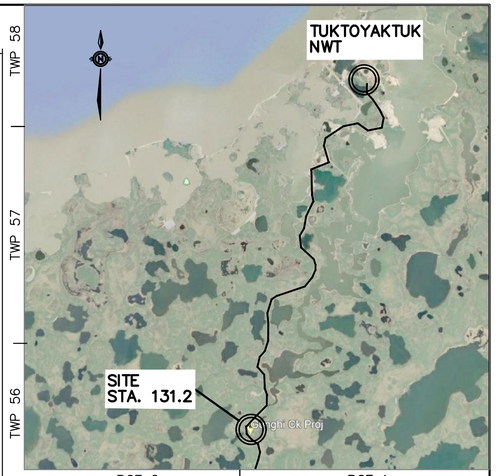
BOREHOLES ..... BH-XX ◉
BENCHMARKS ..... BMX ❶

11	STEEL W-BEAM GUARDRAIL	SD-700-04-02
10	TEMPORARY CONSTRUCTION SIGNAGE PLAN	SHEET-10
9	DETOUR ROAD - PLAN AND PROFILE	SHEET-09
8	CONCRETE ARCH BRIDGE - PILING PLANS, DETAILS AND NOTES	SHEET-08
7	CONCRETE ARCH BRIDGE - PILE CAP REINFORCING DETAILS	SHEET-07
6	CONCRETE ARCH BRIDGE - PLANS, SECTIONS AND DETAILS	SHEET-06
5	INFORMATION SHEET - 3	SHEET-05
4	INFORMATION SHEET - 2	SHEET-04
3	INFORMATION SHEET - 1	SHEET-03
2	STREAMBED AND ROAD PROFILES	SHEET-02
1	GENERAL LAYOUT	SHEET-01
SHEET	DESCRIPTION	DRAWING

INDEX

SUPPLY 1-7316 SPAN x 3200 RISE ARCH BRIDGE		m	38.966	
INSTALL 1-7316 SPAN x 3200 RISE ARCH BRIDGE		m	38.966	
SUPPLY 900 x 900 x 12170 PRE-CAST PILE CAP		UNIT	4	
INSTALL 900 x 900 x 12170 PRE-CAST PILE CAP		UNIT	4	
SUPPLY 900 x 900 x 14606 PRE-CAST PILE CAP		UNIT	2	
INSTALL 900 x 900 x 14606 PRE-CAST PILE CAP		UNIT	2	
REMOVAL OF EXISTING CULVERT		LUMP	1	
EXCAVATION - STRUCTURAL		m^3	4960	
BACKFILL				
CRUSHED AGGREGATE MATERIAL		m^3	1500	
WOVEN GEOTEXTILE FILTER FABRIC		m^2	625	
324ø x 12.7 PLAIN STEEL PIPE PILE	SUPPLY	m	760	
	SET-UP	PILE	40	
	INSTALLATION	m	760	
141ø X 6.4 PLAIN STEEL PIPE PILE	SUPPLY	m	-	
	SET-UP	PILE	-	
	INSTALLATION	m	-	
BRIDGE IDENTIFICATION TAG		UNIT	1	
ROLLED EROSION CONTROL PRODUCT TYPE C		m^2	2500	
HEAVY ROCK RIPRAP - CLASS 1		m^3	200	
NON-WOVEN GEOTEXTILE FILTER FABRIC		m^2	450	
GEOTEXTILE FENCE BARRIER (SILT FENCE)		m	500	
ROADWAY WORK		LUMP	1	
ITEM		UNIT	ESTIMATE	AS CONST

QUANTITY ESTIMATE



SITE MAP

INUVIK TO TUKTOYAKTUK HIGHWAY
LOCAL ROAD
N.T.S.

SURVEY AND BENCHMARK

- MACKENZIE DELTA GEOMATICS LIMITED UNDER THE DIRECTION OF CA, AUGUST 28, 2017
  BM1 : N 7693990.504 E 577210.810 EL. 4.261
  BM2 : N 7693947.488 E 577291.821 EL. 4.136

HYDROTECHNICAL DATA

- DRAINAGE AREA = 60 km^2
- ESTIMATED AVERAGE CHANNEL SLOPE = 0.0015 m/m
- DESIGN DISCHARGE Q_{100} = 16.0 m^3/s
- MEAN OUTLET VELOCITY AT PROPOSED ARCH STRUCTURE FOR DESIGN DISCHARGE = 1.8 m/s
- MEAN ANNUAL DISCHARGE (Q_2) = 4.80 m^3/s
- MEAN OUTLET VELOCITY AT PROPOSED ARCH STRUCTURE DURING MEAN ANNUAL DISCHARGE = 0.84 m/s
- 3-DAY DELAY Q_{10} FLOW ($3Q_{10}$) = 6.6 m^3/s
- MEAN OUTLET VELOCITY DURING $3Q_{10}$ FLOW = 0.95 m/s

PROPOSED STRUCTURE

- 1-7518mm SPAN x 3200mm RISE PRECAST CONCRETE ARCH BRIDGE 38.966 m LENGTH ON 40° LHF SKEW

GENERAL NOTES

- DIMENSIONS AND ELEVATIONS ARE GIVEN IN METRES UNLESS NOTED OTHERWISE
- ROADWAY DESIGN STANDARD RLU-80 GRAVEL SURFACE
- STRUCTURAL DESIGN IN ACCORDANCE WITH CAN/CSA S6-14 AND CL 800 DESIGN LIVE LOAD
- WORK FOR RIP RAP TO BE DONE IN CONFORMANCE WITH SECTION 10 OF STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION (EDITION 16), ALBERTA TRANSPORTATION

wood.

WOOD
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
A DIVISION OF WOOD CANADA LIMITED

SCALES SHOWN ARE CORRECT FOR 22" x 34" SHEET SIZE

JOB No. EB193003

REV	DATE	REVISIONS	BY
6			
5			
4			
3			
2			
1	2019-12-02	ISSUED FOR CONSTRUCTION	AM

PERMIT TO PRACTICE
Wood Environment & Infrastructure Solutions a Division of Wood Canada Limited
Signed By
Date Dec 02, 2019
PERMIT NUMBER: P 047
NT/NU Association of Professional Engineers and Geoscientists

DESIGNER
R. ABBAS LICENSEE NWT/NU
DATE Dec 02, 2019

GOVERNMENT OF THE NWT
DEPARTMENT OF INFRASTRUCTURE

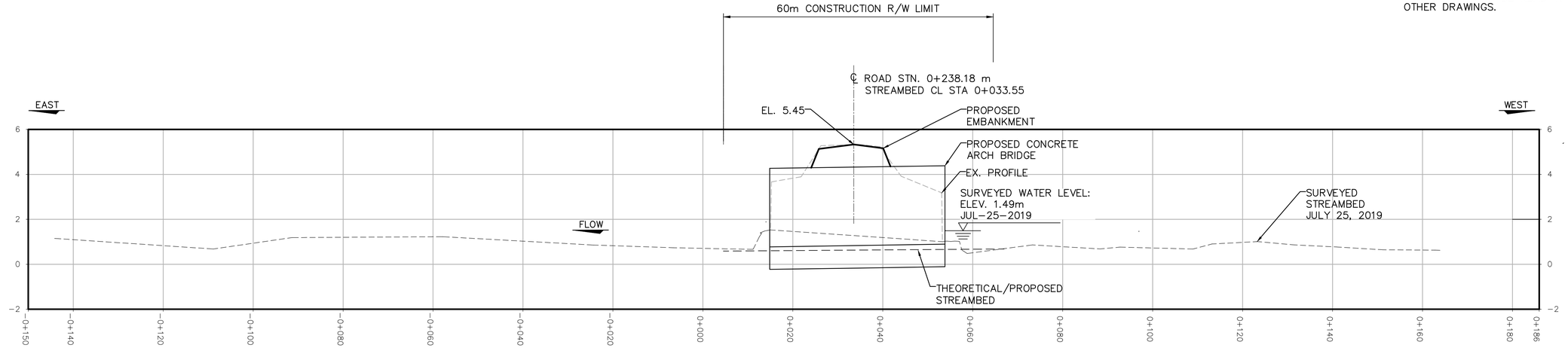
ITH 131.2
GENERAL LAYOUT

DEPARTMENT BAR CODE	DATE	STREAM	LOCATION	HIGHWAY	FILE	SHEET	DRAWING
	2019-12-02	GUNGHI CREEK	INUVIK TO TUKTOYAKTUK HIGHWAY	LOCAL	-	1 OF 10	SHEET-01

G:\BRIDGES\Projects\EB193003 - Gunghi Creek Culvert Replacement\30A - Calculations and Design\Drawing\EB193003 - SHT01_02_04.dwg Monday, December 2, 2019 2:46:09 PM OFFICE: WOOD EDMONTON

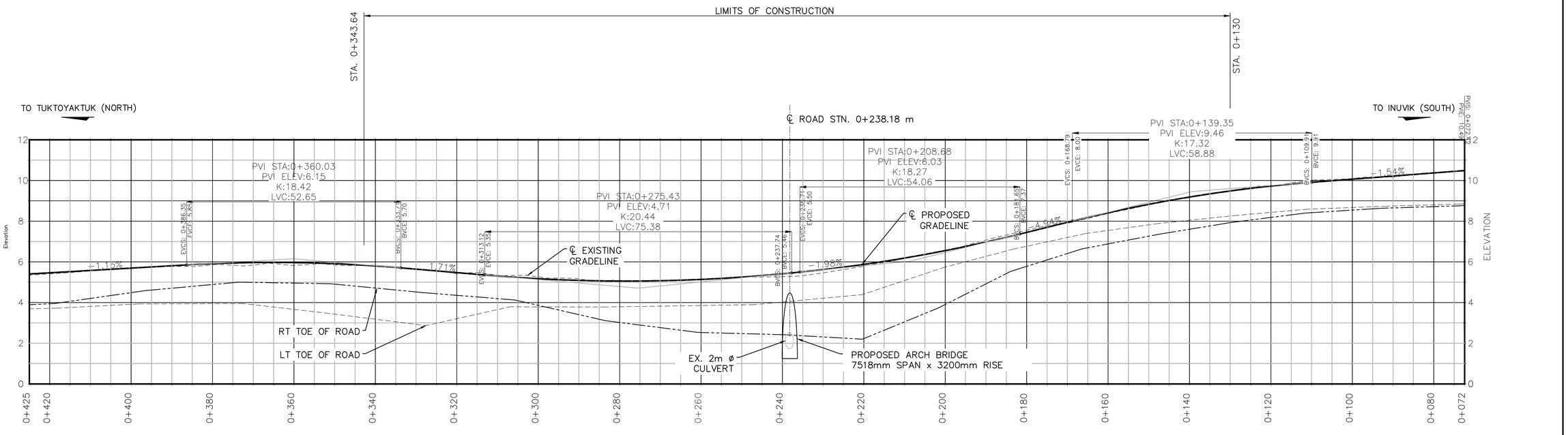
NOTE:

THIS DRAWING TO BE READ IN CONJUNCTION WITH OTHER DRAWINGS.



STREAMBED PROFILE

LOOKING SOUTH H 1:500, V 1:100



ROAD PROFILE

LOOKING EAST H 1:500, V 1:100

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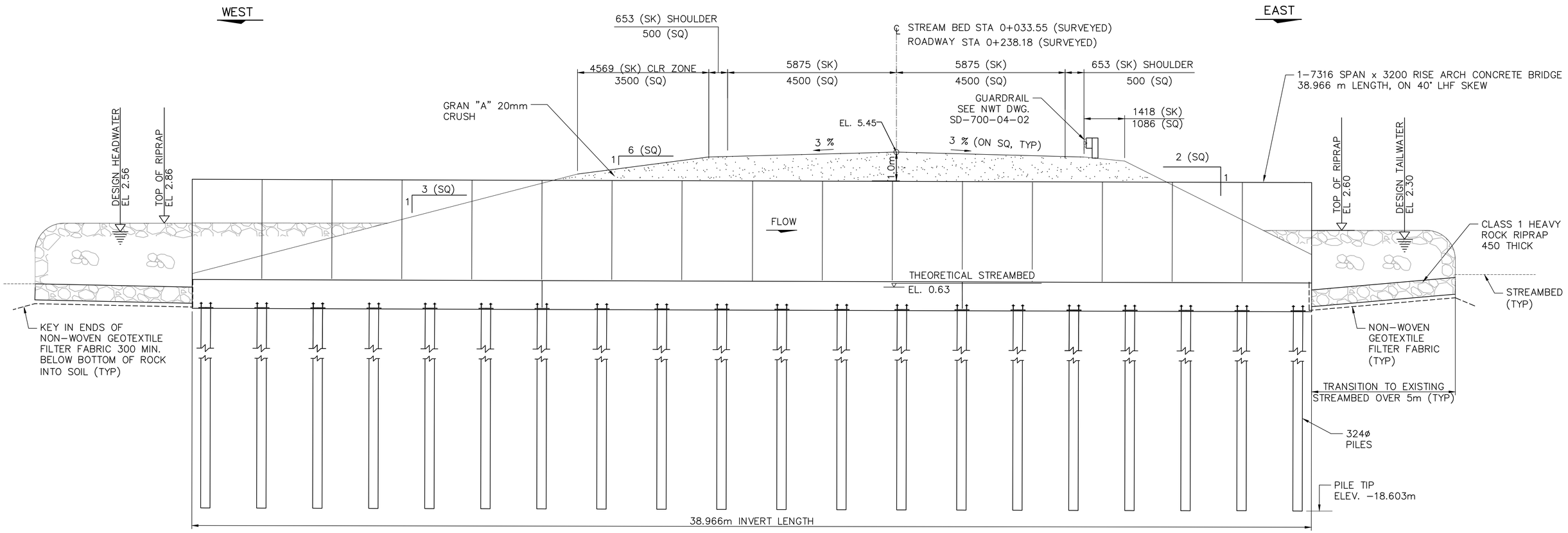
ITH 131.2
STREAMBED AND ROAD PROFILES

DEPARTMENT BAR CODE	DATE	STREAM	LOCATION	HIGHWAY	FILE	SHEET	DRAWING
	2019-12-02	GUNGHI CREEK	INUVIK TO TUKTOYAKTUK HIGHWAY	LOCAL	-	2 OF 10	SHEET-02



A 01 LONGITUDINAL SECTION
LOOKING NORTH 1:75

NOTE:

- THIS DRAWING TO BE READ IN CONJUNCTION WITH OTHER DRAWINGS.
- ALL DIMENSIONS ARE GIVEN IN MILLIMETRES UNLESS OTHERWISE NOTED.
- ELEVATIONS ARE GIVEN IN METRES.

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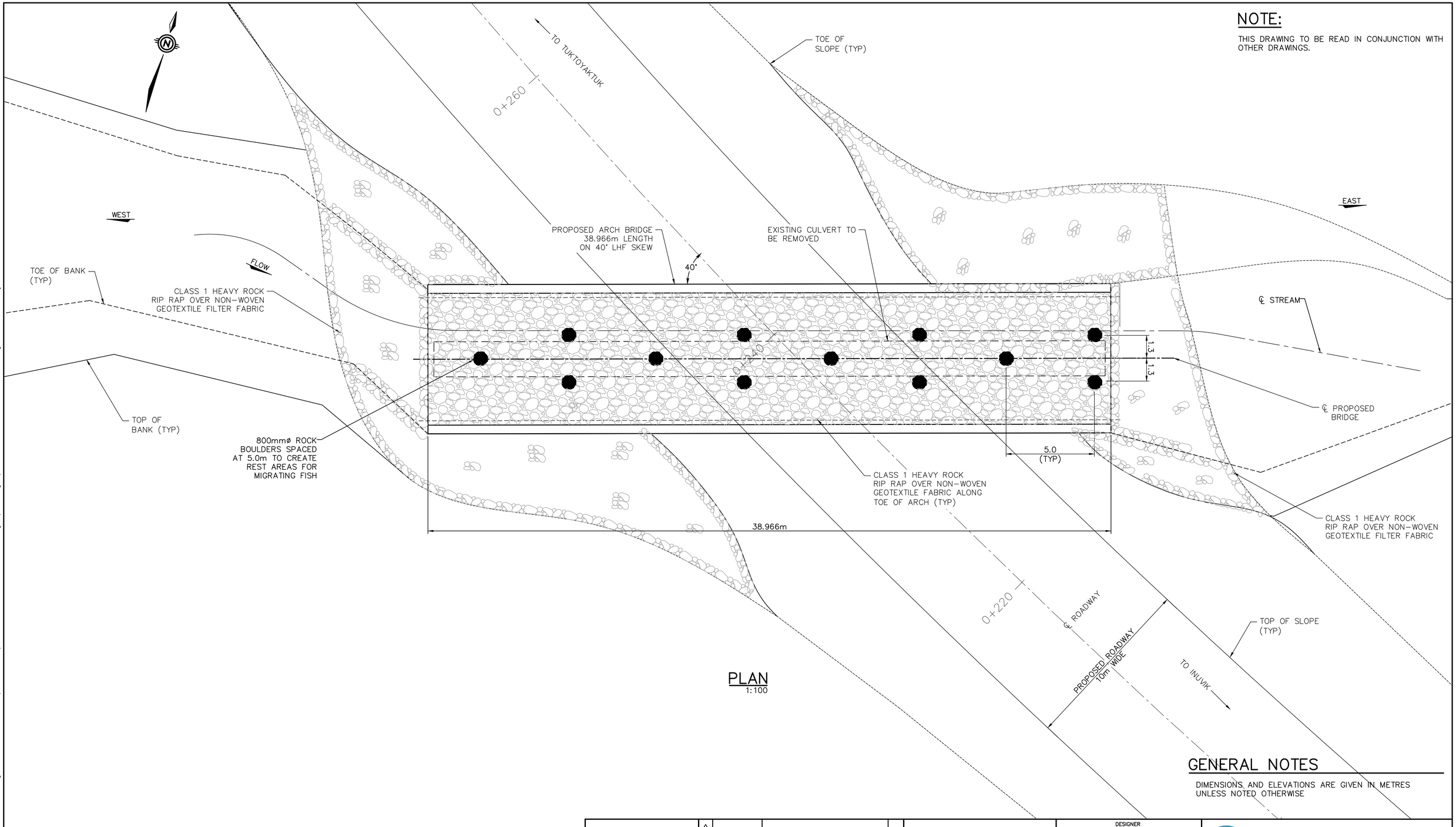
ITH 131.2
INFORMATION SHEET 1

DEPARTMENT BAR CODE	DATE	STREAM	LOCATION	HIGHWAY	FILE	SHEET	DRAWING
	2019-12-02	GUNGHI CREEK	INUVIK TO TUKTOYAKTUK HIGHWAY	LOCAL	–	3 OF 10	SHEET-03

NOTE:

THIS DRAWING TO BE READ IN CONJUNCTION WITH OTHER DRAWINGS.



PLAN
1:100

GENERAL NOTES

DIMENSIONS AND ELEVATIONS ARE GIVEN IN METRES UNLESS NOTED OTHERWISE

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DESIGNER
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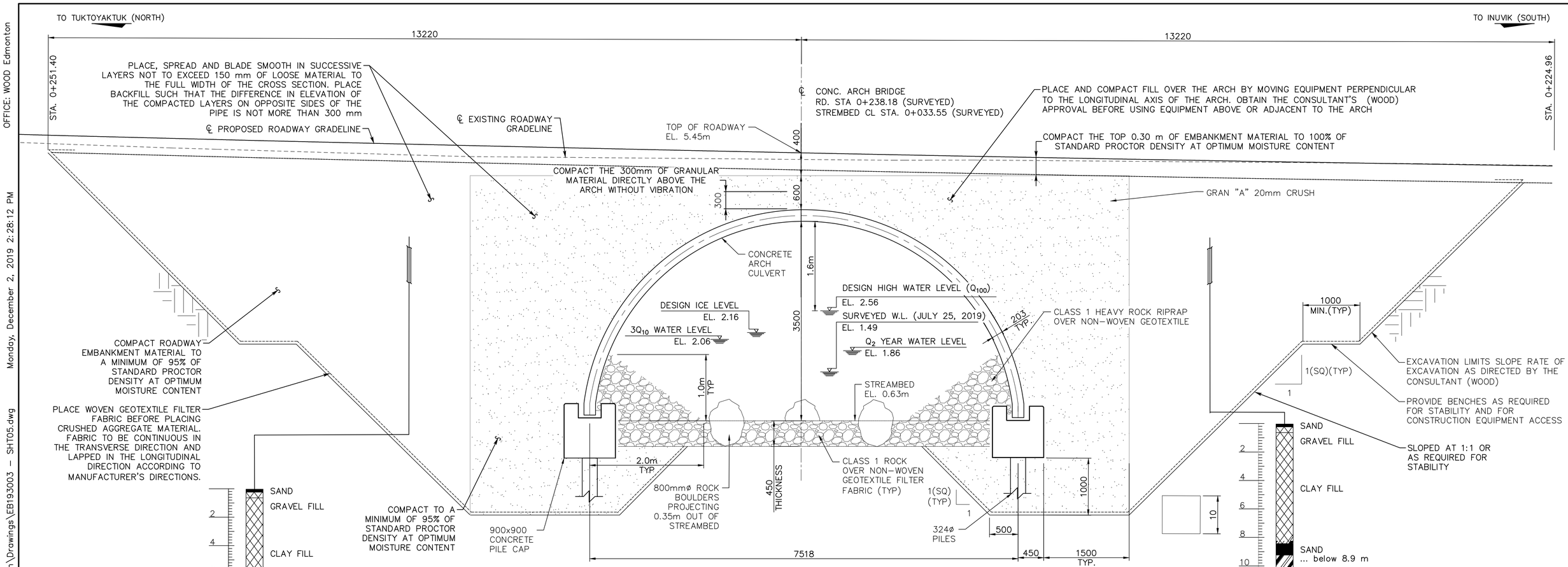
DATE Dec. 02, 2019

GOVERNMENT OF THE NWT
DEPARTMENT OF INFRASTRUCTURE

ITH 131.2
INFORMATION SHEET 2

DEPARTMENT BAR CODE	DATE	STREAM	LOCATION	HIGHWAY	FILE	SHEET	DRAWING
	2019-12-02	GUNGHI CREEK	INUVIK TO TUKTOYAKTUK HIGHWAY	LOCAL	-	4 OF 10	SHEET-04



A TYPICAL SECTION
1:150

AGGREGATE GRADATION (% PASSING) FOR GRAN "A" 20mm CRUSH														
SIEVE SIZE (um)	50000	40000	20000	16000	14000	12500	10000	5000	2500	1250	630	315	160	80
UPPER LIMIT		100		100			73	55		45		15		8
LOWER LIMIT		100		62			48	33	18	15		2		0

TEST HOLE: GUNGHI BH-02
STA: 0+246.99
N 7693951.0, E 577222.0
2017-02-23

END OF BOREHOLE AT 20.4 m
25mm ø PVC PIPE INSTALLED TO 20.4m
3 SINGLE BEAD THERMISTOR STRINGS INSTALLED AT 9.0, 13.0 AND 15.0m DEPTHS.

TEST HOLE: GUNGHI BH-01
STA: 0+228.03
N 7693939.0, E 577237
2017-02-23

END OF BOREHOLE AT 20.4 m
25mm ø PVC PIPE INSTALLED TO 20.4m
3 SINGLE BEAD THERMISTOR STRINGS INSTALLED AT 9.0, 13.0 AND 15.0m DEPTHS.

NOTE:

- THIS DRAWING TO BE READ IN CONJUNCTION WITH OTHER DRAWINGS.
- BACKFILLING OPERATIONS AT THE SIDES OF THE ARCH SHALL NOT COMMENCE BEFORE THE KEYWAY GROUT HAS ATTAINED 17.5 MPa.
- COMPACT BACKFILL MATERIAL BY MECHANICAL MEANS. FLOODING OR JETTING IS TO BE AVOIDED.
- EXCAVATION AND BACKFILLING TO BE DONE IN CONFORMANCE WITH SECTION 1 AND SECTION 2 OF STANDARD SPECIFICATION FOR BRIDGE CONSTRUCTION EDITION 16, ALBERTA TRANSPORTATION AND/OR BEBO GUIDELINES (WHICHEVER IS MORE STRINGENT).
- ALL WATER LEVEL ELEVATIONS ARE AT INLET (HEAD WATER)
- ALL DIMENSIONS ARE GIVEN IN MILLIMETRES UNLESS OTHERWISE NOTED.
- ELEVATIONS ARE GIVEN IN METRES.

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DATE Dec. 02, 2019

GOVERNMENT OF THE NWT
DEPARTMENT OF INFRASTRUCTURE

ITH 131.2
INFORMATION SHEET 3

DEPARTMENT BAR CODE	DATE	STREAM	LOCATION	HIGHWAY	FILE	SHEET	DRAWING
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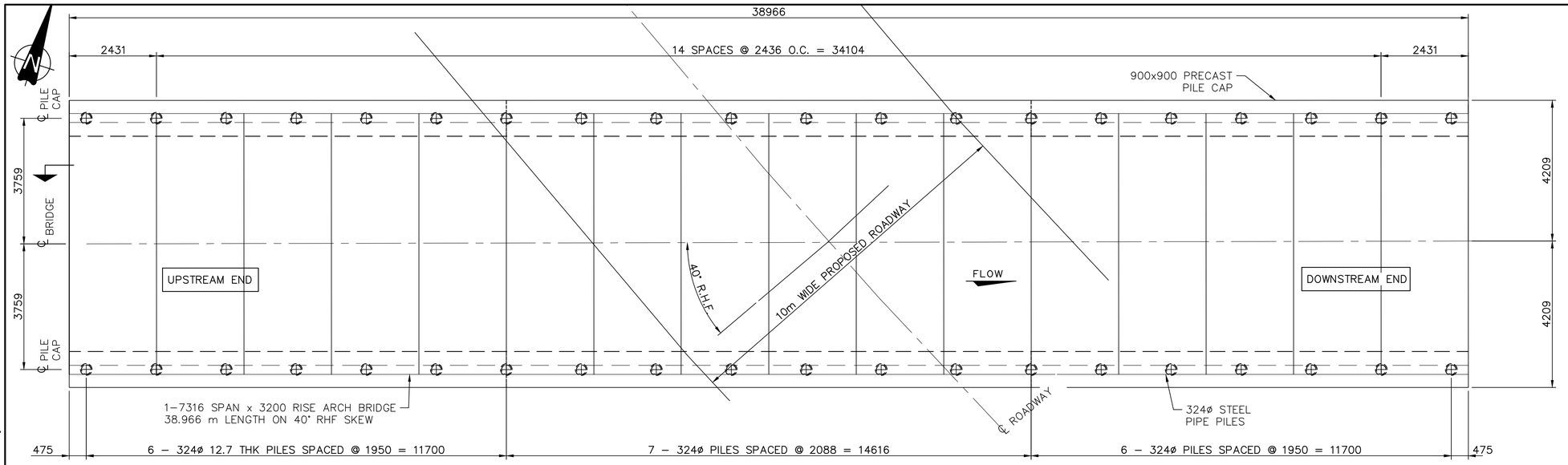
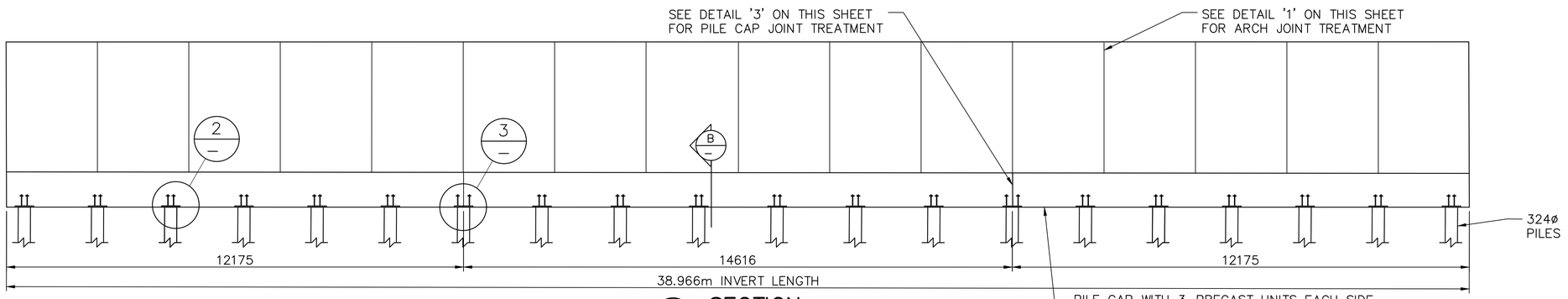
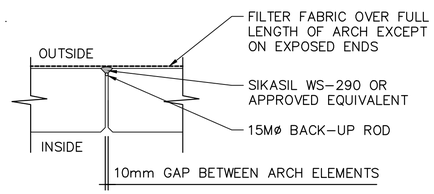


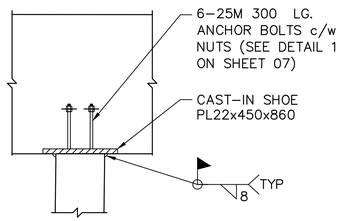
PLAN
1:150



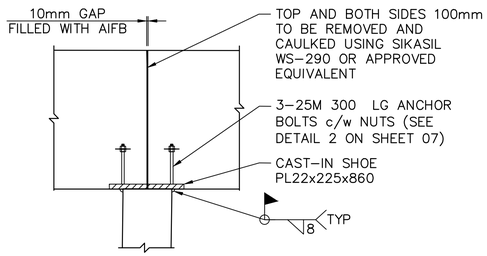
A SECTION
1:150



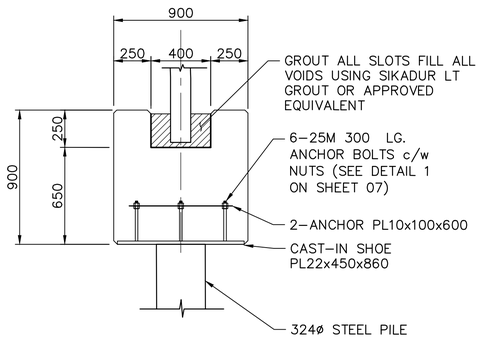
1 DETAIL – ARCH ELEMENT JOINT
1:10



2 DETAIL
1:20



3 DETAIL
1:20



B SECTION
1:10

GENERAL NOTES

- ALL DIMENSIONS SHOWN ARE IN MILLIMETERS UNLESS NOTED OTHERWISE
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH OTHER DRAWINGS
- ALL PRE–CAST CONCRETE SHALL BE IN CONFORMANCE WITH SECTION 7 OF STANDARD SPECIFICATIONS OF BRIDGE CONSTRUCTION OF ALBERTA TRANSPORTATION (EDITION 16).
- ALL EXPOSED CORNERS OF PRECAST CONCRETE UNITS TO HAVE 20 mm CHAMFER.
- THE MINIMUM COVER TO REINFORCING STEEL SHALL BE 50 mm UNLESS OTHERWISE NOTED.
- ALL WELDING TO CONFORM TO AWS SPECIFICATION D1.5

MATERIAL STRENGTH

- ARCH CONCRETE SHALL BE CLASS 'HPC' WITH 28–DAY COMPRESSIVE STRENGTH MINIMUM 45 MPa.
- PILE CAP CONCRETE SHALL BE CLASS "C" WITH 28–DAY COMPRESSIVE STRENGTH MINIMUM 35 MPa
- ALL REINFORCING STEEL SHALL CONFORM TO CAN/CSA G30.18 GRADE 400.
- CONCRETE GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH SAME AS FOR PILE CAP CONCRETE. THE PROCEDURE OF APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS THAT RESULT IN 100% CONTACT OVER GROUTED AREA.
- ALL STEEL PLATES SHALL CONFORM TO CAN/CSA G40.21–300WT OR EQUIVALENT.
- ALL ANCHOR BOLTS TO CONFORM TO ASTM A307 GRADE A. IT MUST MEET THE SUPPLEMENTARY REQUIREMENT S1 OF ASTM A307
- ALL NUTS TO CONFORM TO A194, GRADE 2H.

FABRICATION AND INSTALLATION

- PILES SHALL BE INSTALLED AS PER KIGGIAK EBA GEOTECHNICAL RECOMMENDATIONS AND IN CONFORMANCE WITH SECTION 3 OF STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION EDITION 16, ALBERTA TRANSPORTATION.
- BOTH ARCH AND PILE CAP SHALL BE PRECAST IN KNELSEN PLANT IN UNITS, AS SHOWN ON DRAWING, TO BE INSTALLED ON SITE.
- ARCH ELEMENTS SHALL BE INSTALLED AS PER BEBO ARCH SYSTEMS INSTALLATION GUIDE, BEBO ARCH INTERNATIONAL AG

CODES AND STANDARDS

WORK IS TO BE DONE IN CONFORMANCE WITH FOLLOWING STANDARDS.

- STANDARD SPECIFICATIONS OF BRIDGE CONSTRUCTION (EDITION 16) ALBERTA TRANSPORTATION (AT)
- CAN/CSA A23.1–14/A23.2–14 – CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION/TEST METHODS AND STANDARD PRACTICES FOR CONCRETE.
- CAN/CSA S6–14 – CANADIAN HIGHWAY BRIDGE DESIGN CODE.
- CSA W59 AND AWS D1.5

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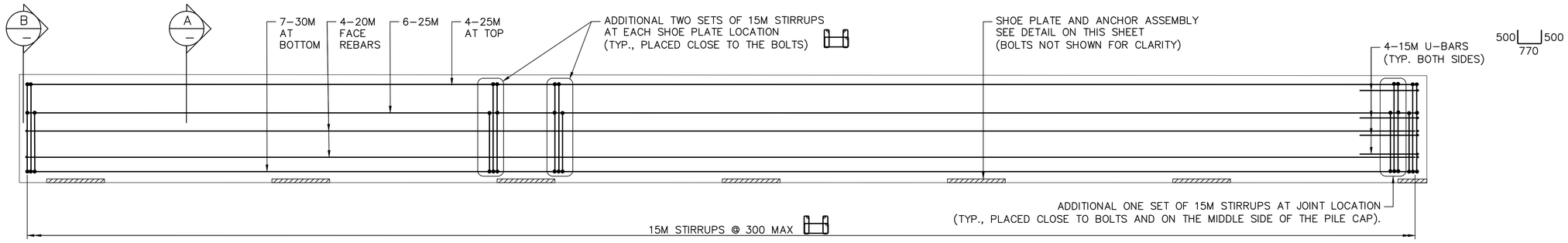
DESIGNER
REGISTERED PROFESSIONAL ENGINEER R. ABBAS LICENSEE NWT/NU
DATE Dec 02, 2019

GOVERNMENT OF THE NWT
DEPARTMENT OF INFRASTRUCTURE

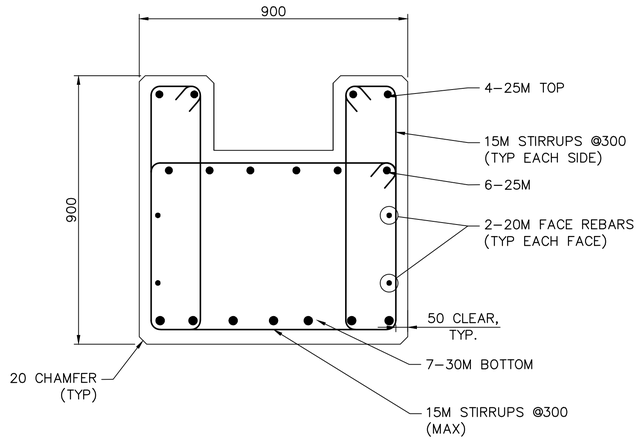
ITH 131.2
CONCRETE ARCH BRIDGE
PLAN, SECTIONS & DETAILS

DEPARTMENT BAR CODE	DATE	STREAM	LOCATION	HIGHWAY	FILE	SHEET	DRAWING
	2019–12–02	GUNGHI CREEK	INUVIK TO TUKTOYAKTUK HIGHWAY	LOCAL	–	6 OF 10	SHEET–06

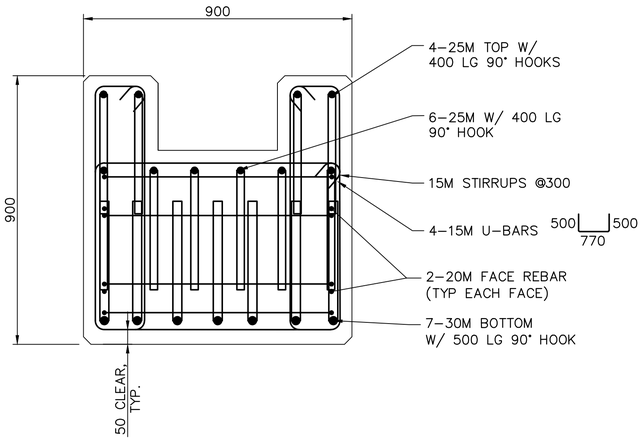


PRECAST PILE CAP UNIT – REINFORCEMENT DETAIL

(12175 LG. SHOWN, OTHERS WITH SIMILAR DETAILS) 1:20



A SECTION 1:10

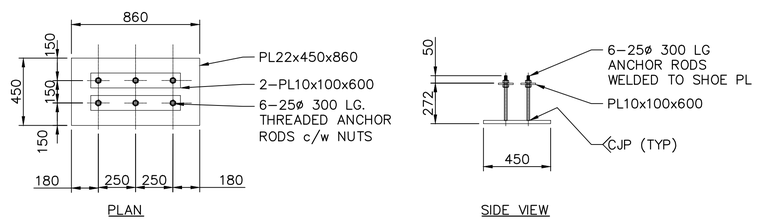


B PILE CAP END (SAME FOR BOTH ENDS) 1:10

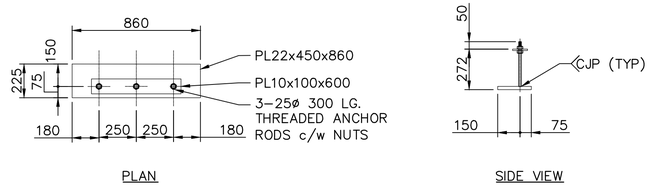
LAP LENGTHS

REINFORCEMENTS LAP LENGTHS AS FOLLOWS:

30M – 1500 LONG
25M – 1200 LONG
20M – 900 LONG



1 DETAIL – SHOE PLATE AND ANCHOR ASSEMBLY 1:20



2 DETAIL – SHOE PLATE AND ANCHOR ASSEMBLY (AT JOINT LOCATION) 1:20

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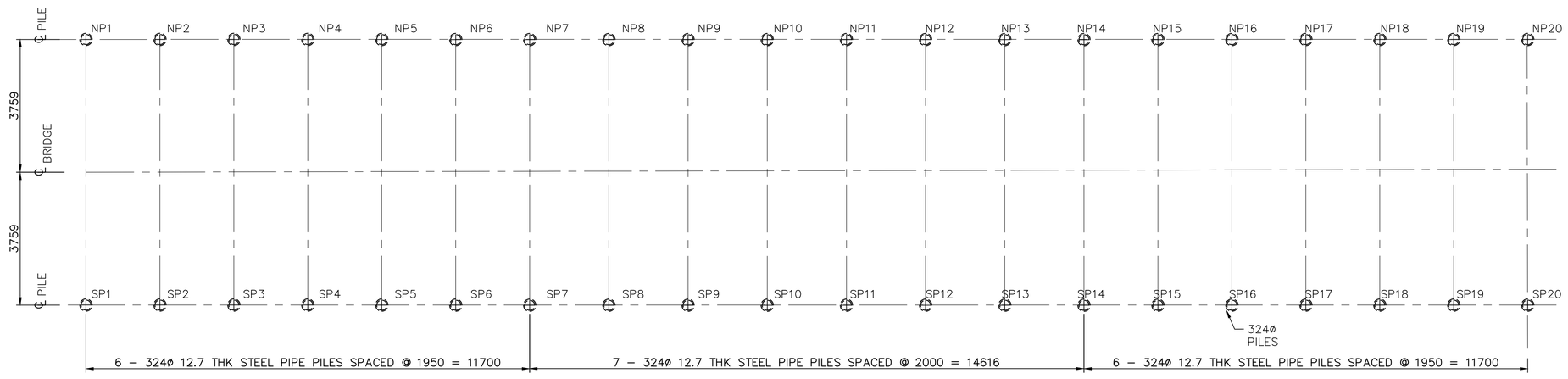
DEPARTMENT OF INFRASTRUCTURE

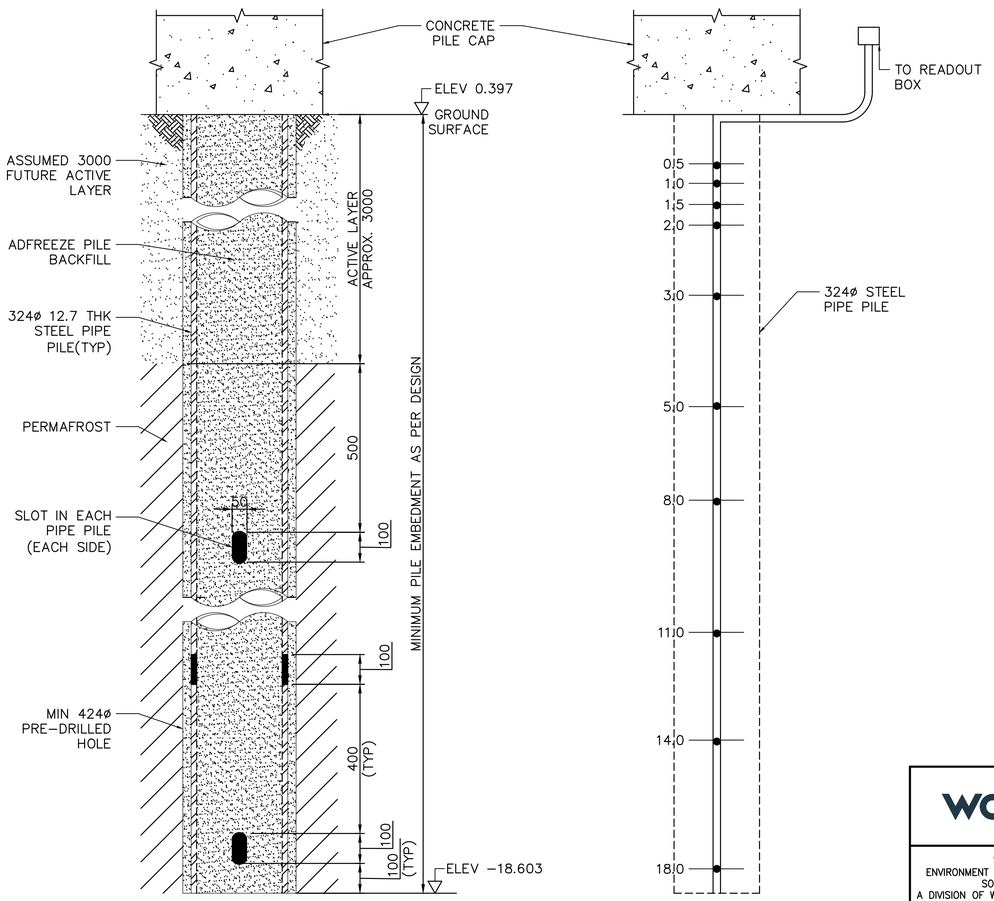
ITH 131.2
CONCRETE ARCH BRIDGE
PILE CAP REINFORCING DETAILS

DEPARTMENT BAR CODE	DATE	STREAM	LOCATION	HIGHWAY	FILE	SHEET	DRAWING
	2019-12-02	GUNGHI CREEK	INUVIK TO TUKTOYAKTUK HIGHWAY	LOCAL	–	7 OF 10	SHEET–07



NOTES: INSTALL MULTI–BEAD THERMISTOR CABLE ON PILE NP1, NP9, SP14 AND SP20

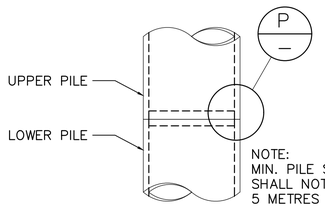
PILING PLAN
1:150



PILE EMBEDMENT
NTS

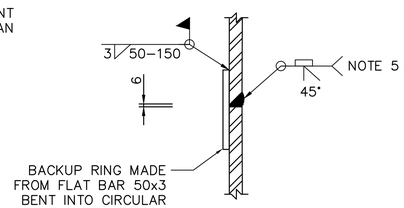
THERMISTOR CABLE DETAILS
NTS (TO BE INSTALLED INSIDE THE PILE)

FOUNDATION PILE DESIGN LOAD (kN)		
LOAD COMBINATION	VERTICAL	LATERAL
SLS 1 (PERMANENT)	400	10
SLS 1 (DEAD + LIVE)	550	40
ULS 1 (PERMANENT)	500	10
ULS 1 (DEAD + LIVE)	750	70



1. THE LOWER PILE SHALL BE TRIMMED TRUE AND SQUARE.
2. THE BEVEL ON THE UPPER PILE SHALL BE FLAME CUT USING A MECHANICAL PIPE BEVELING MACHINE.
3. THE BACKUP PLATE SHALL BE WELDED TO THE UPPER PILE.
4. THE UPPER PILE SHALL BE POSITIONED WITH THE BACKUP RING FITTED INTO THE LOWER PILE.
5. FIELD WELDING SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATION.

PILE SPLICE
NTS



P DETAIL
NTS

GENERAL NOTES

- THE GEOTECHNICAL INVESTIGATION IS AVAILABLE FROM "ADFREEZE STEEL PIPE PILE RECOMMENDATIONS FOR PRECAST BRIDGE CULVERT GUNGHI CREEK, KM 131.2 INUVIK–TUKTOYAKTUK HIGHWAY REVISION 1" PROVIDED BY KIGGIAK–EBA. FILE: KE1077/ENG.YARC03163, JULY 2019
- THE FOUNDATION PILES ARE ADFREEZE TYPE (SLOTTED). NUMBER OF PILES, LENGTHS AND TIP ELEVATIONS ARE BASED ON THE RECOMMENDATIONS MADE BY KIGGIAK–EBA CONSULTING LTD.
- ALL PILES SHALL BE INSTALLED PLUMB TO THE PILE TIP ELEVATIONS SHOWN ON THE GENERAL LAYOUT DRAWING OR LOWER TO PROVIDE THE REQUIRED DESIGN CAPACITY NOTED IN THE PILE LOAD TABLE.
- THE CONTRACTOR SHALL BE PREPARED TO USE AN AUGER OR OTHER MEANS OF PASSING PILES THROUGH FROST OR BOULDERS.
- USE A TEMPLATE FOR ACCURATE HORIZONTAL PLACEMENT OF PILES IS RECOMMENDED.
- PILES SHALL BE INSTALLED TO THE FOLLOWING TOLERANCES:
  –MAXIMUM TOLERANCE FOR PILE SPACING IN PLAN IS 50 mm
  –FINISHED PILE CUT–OFF ELEVATION TO BE WITHIN 3 mm OF REQUIRED ELEVATION.
  –MAX OFFSET FROM PILE CENTERLINE BY 25 mm.
- STEEL PIPE PILING SHALL MEET THE REQUIREMENTS OF SPECIFICATION ASTM 252 GRADE 2, EXCEPT THAT HYDROSTATIC TESTING IS NOT REQUIRED. IMPERIAL EQUIVALENT PILING IS ACCEPTABLE. MILL CERTIFICATES SHALL BE PROVIDED TO CONSULTANT FOR REVIEW PRIOR TO PILE SUPPLY.
- ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF CURRENT AWS SPECIFICATION D1.5.
- ANY VOIDS DEVELOPED IN THE VICINITY OF THE PILES FROM ADJACENT SOIL DURING INSTALLATION SHALL BE BACKFILLED WITH GRANULAR FILL OR GROUT TO MAINTAIN THE LATERAL GROUND RESISTANCE.
- PILES SHALL BE INSTALLED IN THE DRILLED HOLES OF DIAMETER 100 MM LARGER THAN THE PILE DIAMETER. THE VOIDS BETWEEN THE PILE AND THE DRILLED HOLE SHALL BE FILLED WITH ADFREEZE GRANULAR MATERIAL AND WATER.
- CONTRACTOR SHALL ENGAGE A QUALIFIED GEOTECHNICAL ENGINEER WHO SHALL MONITOR FOR DRILLING AND PILE INSTALLATIONS BASED ON THE EQUIPMENT CONTRACTOR PROPOSES TO USE. THE CONTRACTOR SHALL SUBMIT THE PROPOSED INSTALLATION FOR REVIEW BY THE ENGINEER.
- REFER TO GEOTECHNICAL INVESTIGATION REPORT BY KIGGIAK ENGINEERING CONSULTANT LTD FOR PREDICTED ADFREEZE PILE INTERVENTION TIMING AT THIS CROSSING.
- PILES SHALL BE 19m LONG.
- DELIVER PILES IN THE LONGEST LENGTHS POSSIBLE TO MINIMIZE FIELD SPLICES. HOWEVER IF REQUIRED, SPLICING SHALL BE DONE AS SHOWN ON THIS DRAWING.
- GRADATION OF ADFREEZE PILE BACKFILL MATERIAL IS AS SHOWN IN THE TABLE. THE BACKFILL MATERIAL SHALL BE PLACED WITH WATER.
- TO CONTAIN A SATURATED, BUT CONSOLIDATED ADFREEZE BACKFILL, WATER SHOULD BE PLACED FIRST FOLLOWED BY AGGREGATE IN AN ALTERNATING SEQUENCE. MAINTAINING FREE WATER ABOVE THE LEVEL OF BACKFILL SHOULD ACHIEVE THE OBJECTIVES OF SATURATION AND ADEQUATE CONSOLIDATION. WATER TEMPERATURE SHALL NOT EXCEED 10°C.
- THE ADFREEZE AGGREGATE SHALL BE PLACED AT A CONTROLLED RATE TO AVOID THE POTENTIAL FOR ARCHING THE ANNULUS BETWEEN THE PIPE PILE AND THE WALL OF THE PILE HOLE.
- NO LOADING TO OCCUR UNTIL ADFREEZE PILE BACKFILL IS COMPLETELY FROZEN. ADFREEZE PILE BACKFILL TO BE MONITORED AND FREEZE–UP VERIFIED UTILIZING MULTI–BASED THERMISTOR CABLE SYSTEM.

ADFREEZE PILE BACKFILL MATERIAL	
SIEVE SIZE	% BY WEIGHT
20	100%
10	65–100
5	40–100
1.5	20–90
0.63	15–65
0.315	10–35
0.160	5–20
0.080	0–10
PLASTICITY INDEX	NP–6
POREWATER SALINITY	0–5 PPT

wood.
WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
A DIVISION OF WOOD CANADA LIMITED
SCALES SHOWN ARE CORRECT FOR 22" x 34" SHEET SIZE
JOB No. EB193003

REV	DATE	REVISIONS	BY
6			
5			
4			
3			
2			
1	2019–12–02	ISSUED FOR CONSTRUCTION	JZ

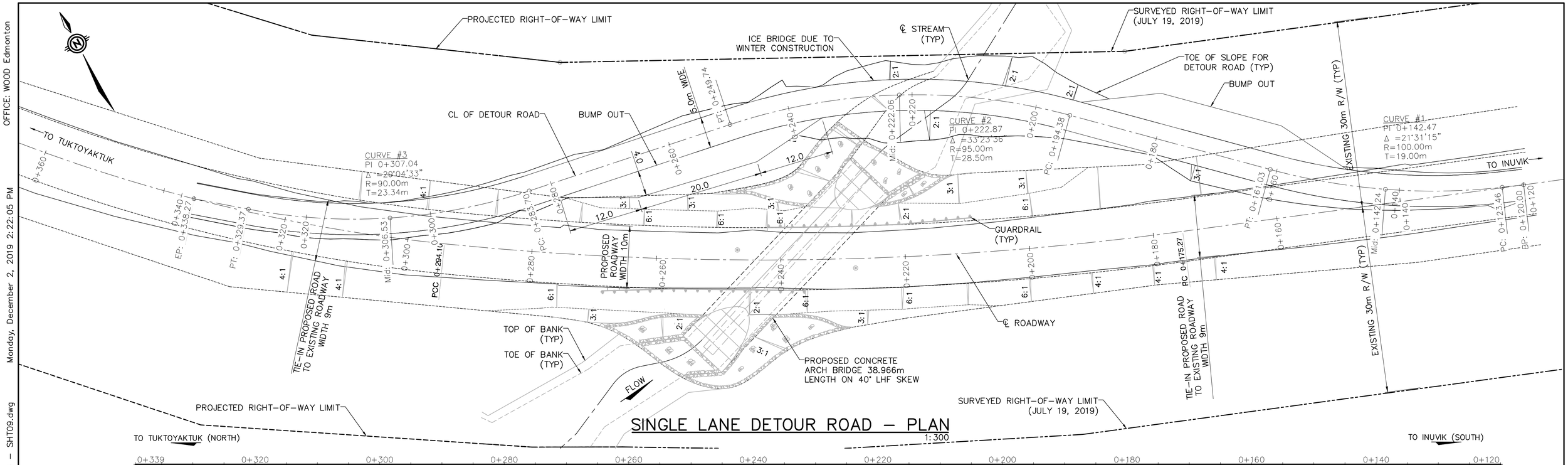
PERMIT TO PRACTICE
Wood Environment & Infrastructure Solutions a Division of Wood Canada Limited
Signed By
Date Dec 02, 2019
PERMIT NUMBER: P 047
NT/NU Association of Professional Engineers and Geoscientists

DESIGNER
R. ABBAS LICENSEE
NWT/NU
DATE Dec 02, 2019

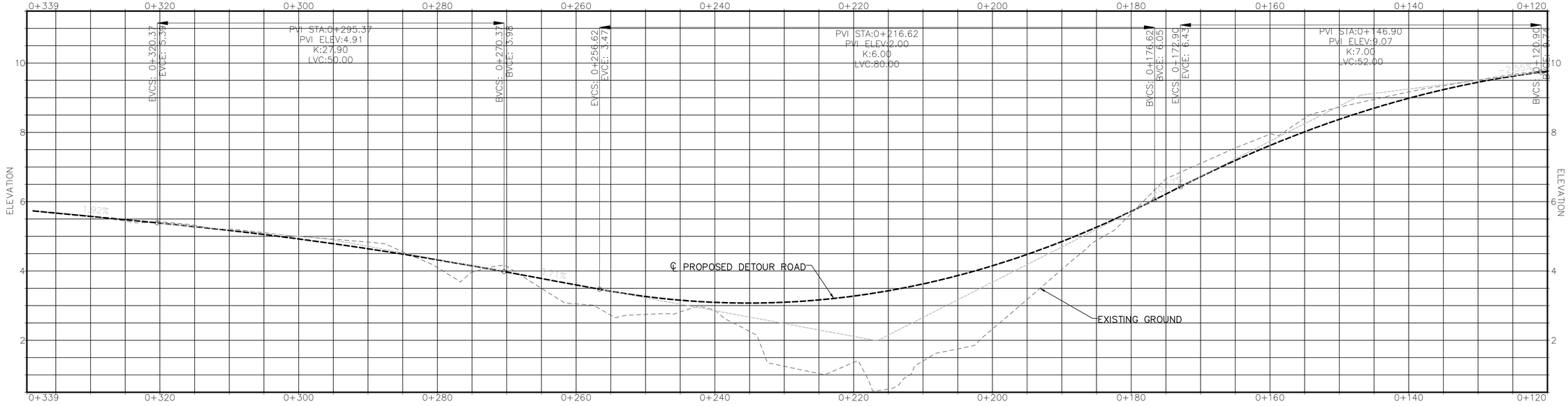
GOVERNMENT OF THE NWT
DEPARTMENT OF INFRASTRUCTURE

ITH 131.2
CONCRETE ARCH BRIDGE
PILING PLAN, DETAILS AND NOTES

DEPARTMENT BAR CODE	DATE	STREAM	LOCATION	HIGHWAY	FILE	SHEET	DRAWING
	2019–12–02	GUNGHI CREEK	INUVIK TO TUKTOYAKTUK HIGHWAY	LOCAL	–	8 OF 10	SHEET–08



SINGLE LANE DETOUR ROAD – PLAN
1:300

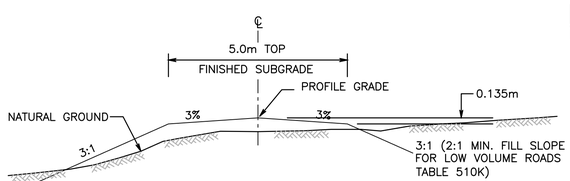


DETOUR ROAD PROFILE
LOOKING EAST 1:300

DETOUR ROAD DESIGN STANDARDS

DESIGN SPEED	MIN. SSD	MIN. CURVE (k) SAG	MIN. CURVE (k) CREST	MAX. GRADE
30 km/h	35	6	4	9.5%

(BASED ON BC SUPPLEMENT TO TAC GEOMETRIC DESIGN GUIDE 2019, 3rd EDITION)



TYPICAL DETOUR ROAD CROSS-SECTION
N.T.S.

NOTE:
- THIS DRAWING TO BE READ IN CONJUNCTION WITH OTHER DRAWINGS.
- ALL DIMENSIONS ARE GIVEN IN MILLIMETRES UNLESS OTHERWISE NOTED.
- ELEVATIONS ARE GIVEN IN METRES.

wood.
WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
A DIVISION OF WOOD CANADA LIMITED

SCALES SHOWN ARE CORRECT FOR 22" x 34" SHEET SIZE

JOB No. EB193003

REV	DATE	REVISIONS	BY
6			
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1	2019-12-02	ISSUED FOR CONSTRUCTION	AM

PERMIT TO PRACTICE
Wood Environment & Infrastructure Solutions a Division of Wood Canada Limited
Signed By
Date Dec 02, 2019
PERMIT NUMBER: P 047
NT/NU Association of Professional Engineers and Geoscientists

DESIGNER
R. ABBAS LICENSEE NWT/NU
DATE Dec 02, 2019

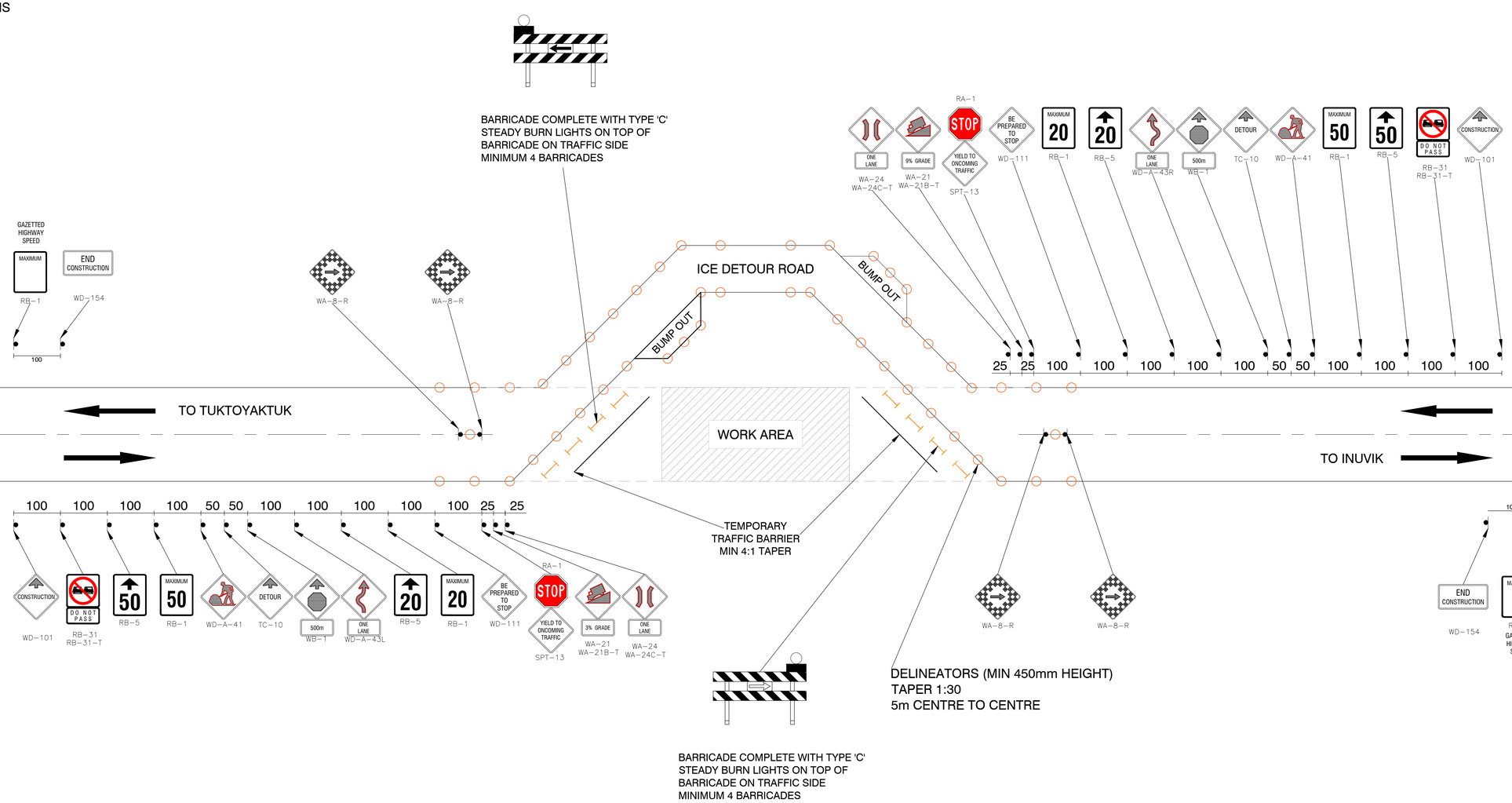
GOVERNMENT OF THE NWT
DEPARTMENT OF INFRASTRUCTURE

ITH 131.2
DETOUR ROAD
PLAN AND PROFILE

DEPARTMENT BAR CODE	DATE	STREAM	LOCATION	HIGHWAY	FILE	SHEET	DRAWING
	2019-12-02	GUNGHI CREEK	INUVIK TO TUKTOYAKTUK HIGHWAY	LOCAL	–	9 OF 10	SHEET-09

NOTES:

1. NOT TO SCALE
2. CONSTRUCTION DELINEATORS SHALL BE UTILIZED
3. CONSTRUCTION SIGNS WILL BE PLACED SUCH THAT THE LEFT EDGE OF THE SIGN IS 4m FROM THE EDGE OF THE TRAVELED LANE
4. CONSTRUCTION SIGNS WILL BE PLACED SUCH THAT THE BOTTOM EDGE OF THE SIGN IS 1.5m ABOVE THE EDGE OF THE TRAVELED LANE
5. SEE DETOUR ROAD PLAN AND PROFILE FOR 'BUMP OUT' GEOMETRY AND STATIONS



REV	DATE	REVISIONS	BY
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2			
1	2019–12–02	ISSUED FOR CONSTRUCTION	AM

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ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
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NT/NU Association of Professional Engineers and Geoscientists

DEPARTMENT BAR CODE

DATE 2019–12–02

DESIGNER
R. ABBAS LICENSEE
NWT/NU
DATE Dec 02, 2019

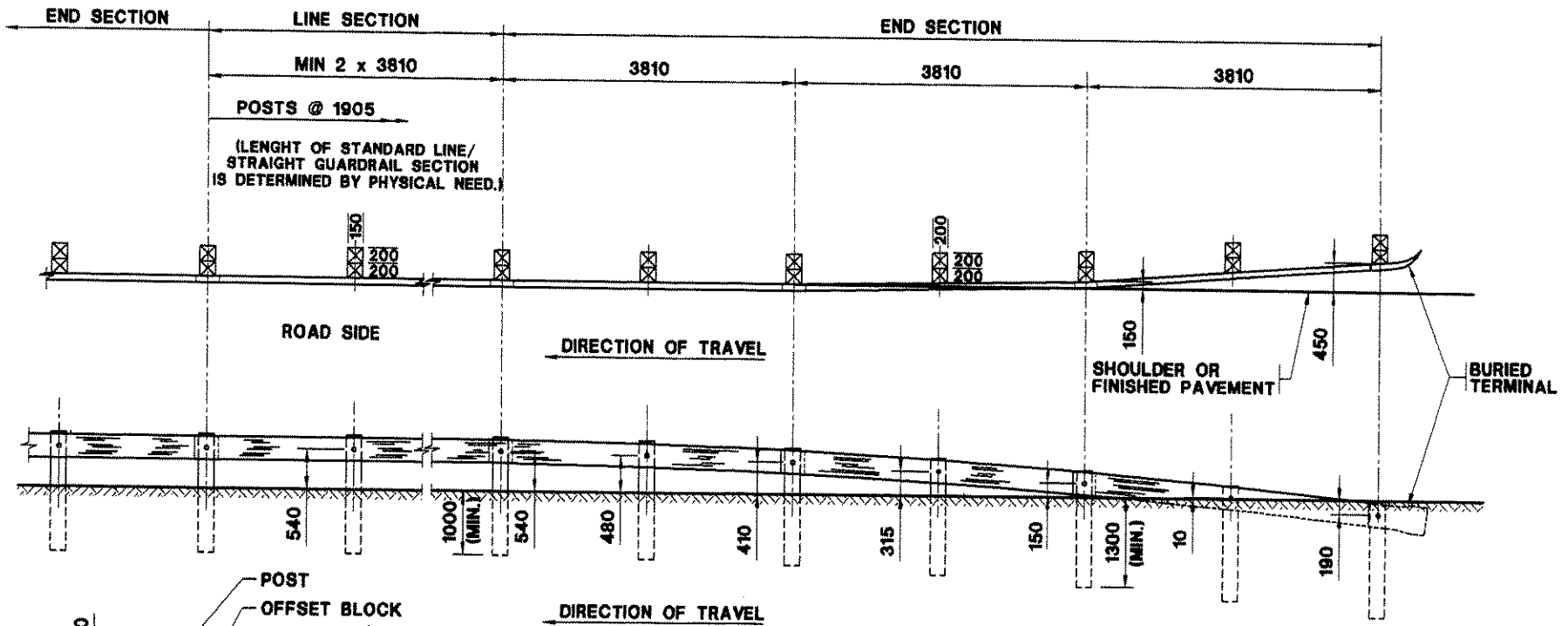
GOVERNMENT OF THE NWT
DEPARTMENT OF INFRASTRUCTURE

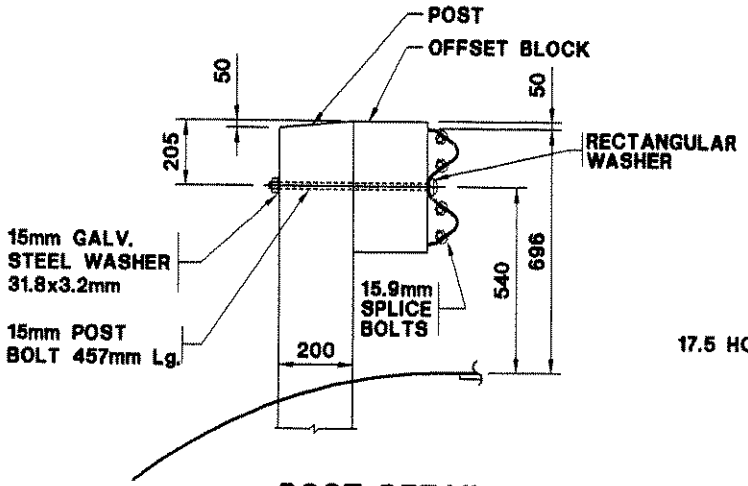
ITH 131.2
TEMPORARY CONSTRUCTION SIGNAGE PLAN

STREAM	LOCATION	HIGHWAY	FILE	SHEET	DRAWING
GUNGHI CREEK	INUVIK TO TUKTOYAKTUK HIGHWAY	LOCAL	–	10 OF 10	SHEET–10

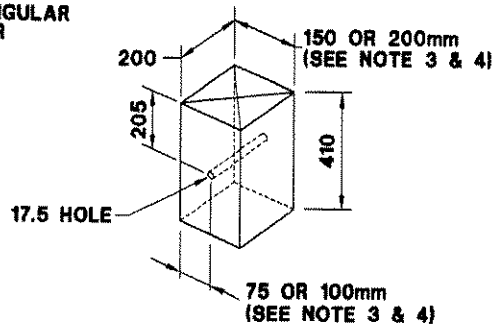
G:\BRIDGES\Projects\EB193003 – Gunghi Creek Culvert Replacement\30A – Calculations and Design\Drawings\IFC_DEC02_CAD\EB193003 – SHT10.dwg Monday, December 2, 2019 3:07:05 PM OFFICE: WOOD EDMONTON

FILE NAME: 700-0402-R1.DWG





POST DETAIL



OFFSET BLOCK DETAIL

NOTES:

1. END POSTS 200mm x 200mm
2. LINE POSTS 150mm x 200mm
3. OFFSET BLOCKS FOR END POSTS 200mm x 200mm x 410mm
4. OFFSET BLOCKS FOR LINE POSTS 150mm x 200mm x 410mm
5. ALL MEASUREMENTS IN MILLIMETRES
6. ALL JOINTS TO BE LAPPED IN THE DIRECTION OF TRAFFIC
7. BURIED TERMINALS ARE TO BE USED AT BOTH ENDS OF GUARDRAIL

Northwest Territories Transportation

SD-700-04-02

STEEL W-BEAM GUARDRAIL

BURIED TERMINALS INSTALLATION DETAIL

Date: JULY 1994 | Revised: MARCH 2002

Approved

K.C. Wood

Director
Highways Division

APR 21 2005
Date