



Mangat Environmental Solution Inc.



(Signature)

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3	REVISED ISSUED FOR TENDER	20/10/04
2	REVISED ISSUED FOR TENDER	20/06/26
1	ISSUED FOR TENDER	19/11/30
0	ISSUED FOR 75% REVIEW	19/08/20
Revision/	Description/Description	Date/Date
Client/client		

FISHERIES AND OCEANS

Project title/Titre du projet

**INSTITUTE OF OCEAN SCIENCES (IOS)
MARINE FACILITY WATER
SYSTEM UPGRADE**

Consultant Signature Only

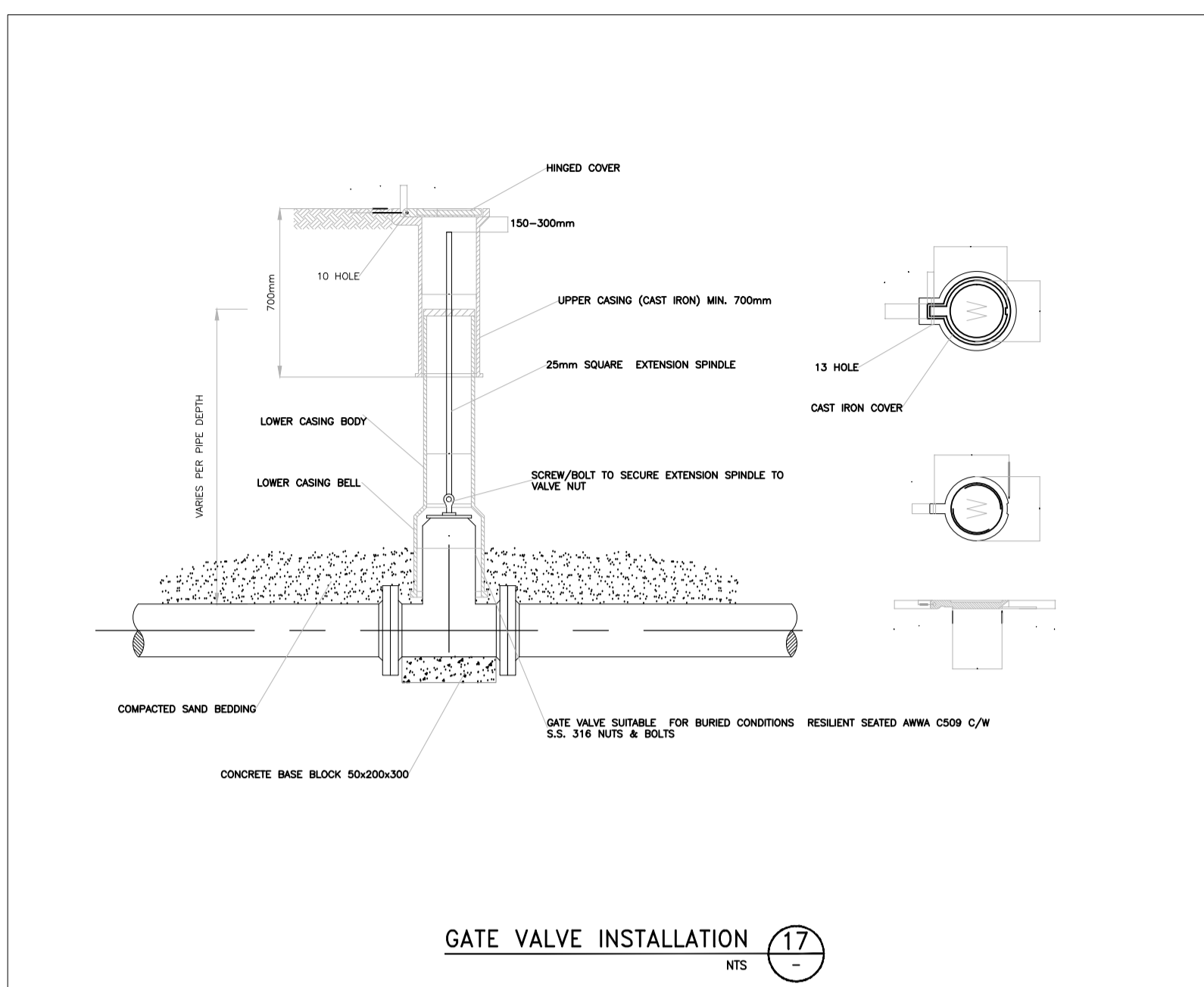
Designed by/Concept par
SUNNY MANGAT / AUGUST 20, 2019

Drawn by/Dessiné par
A.UEFIMTSEV / AUGUST 20, 2019
DFO Project Manager/Administrateur de Projets TPSGC
MICHAEL LIANG

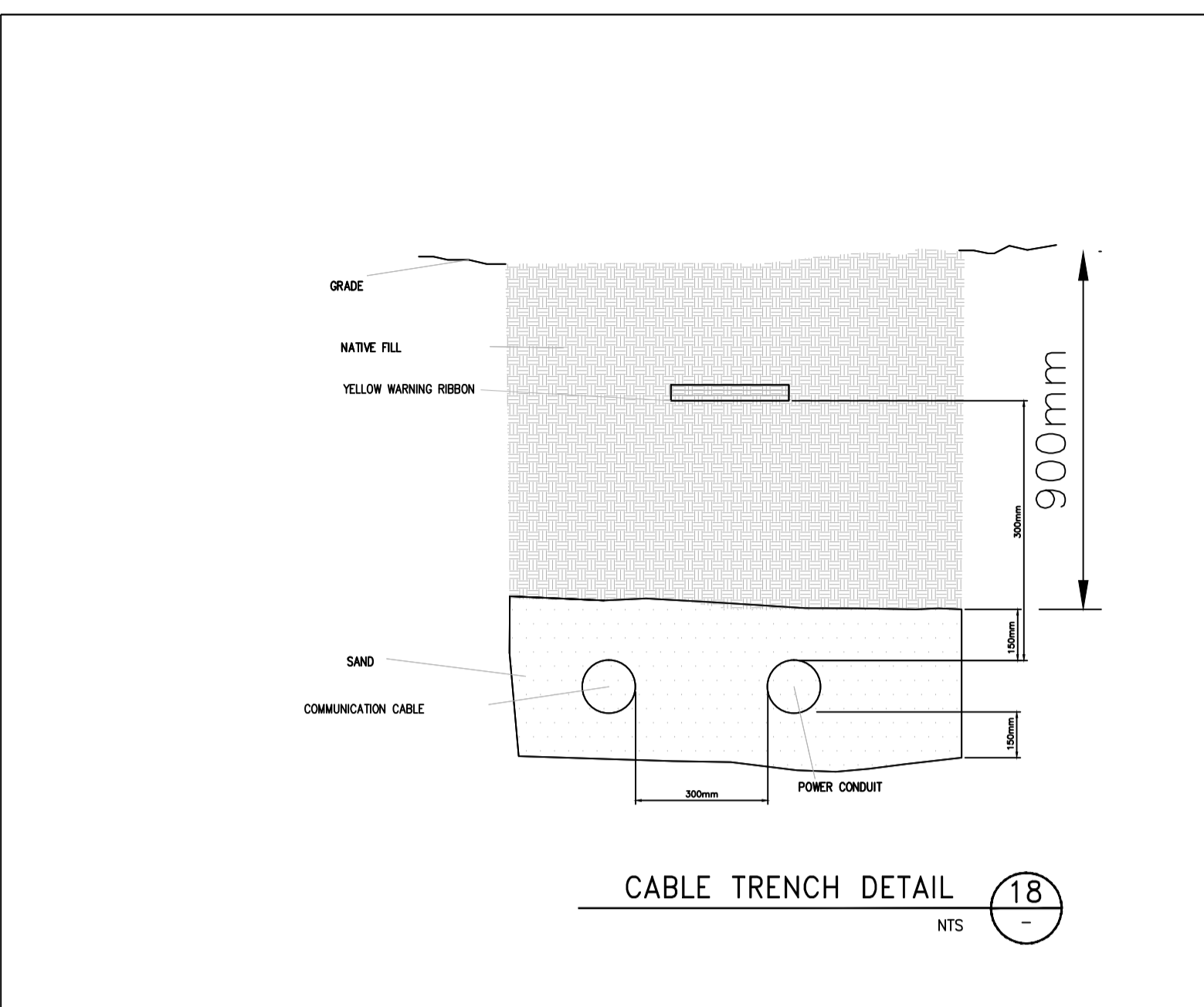
Regional Manager, Architectural and Engineering Services
Gestionnaire régionale, Services d'architectural et de génie, TPSGC

Drawing title/Titre du dessin
DETAILS - SHEET 3

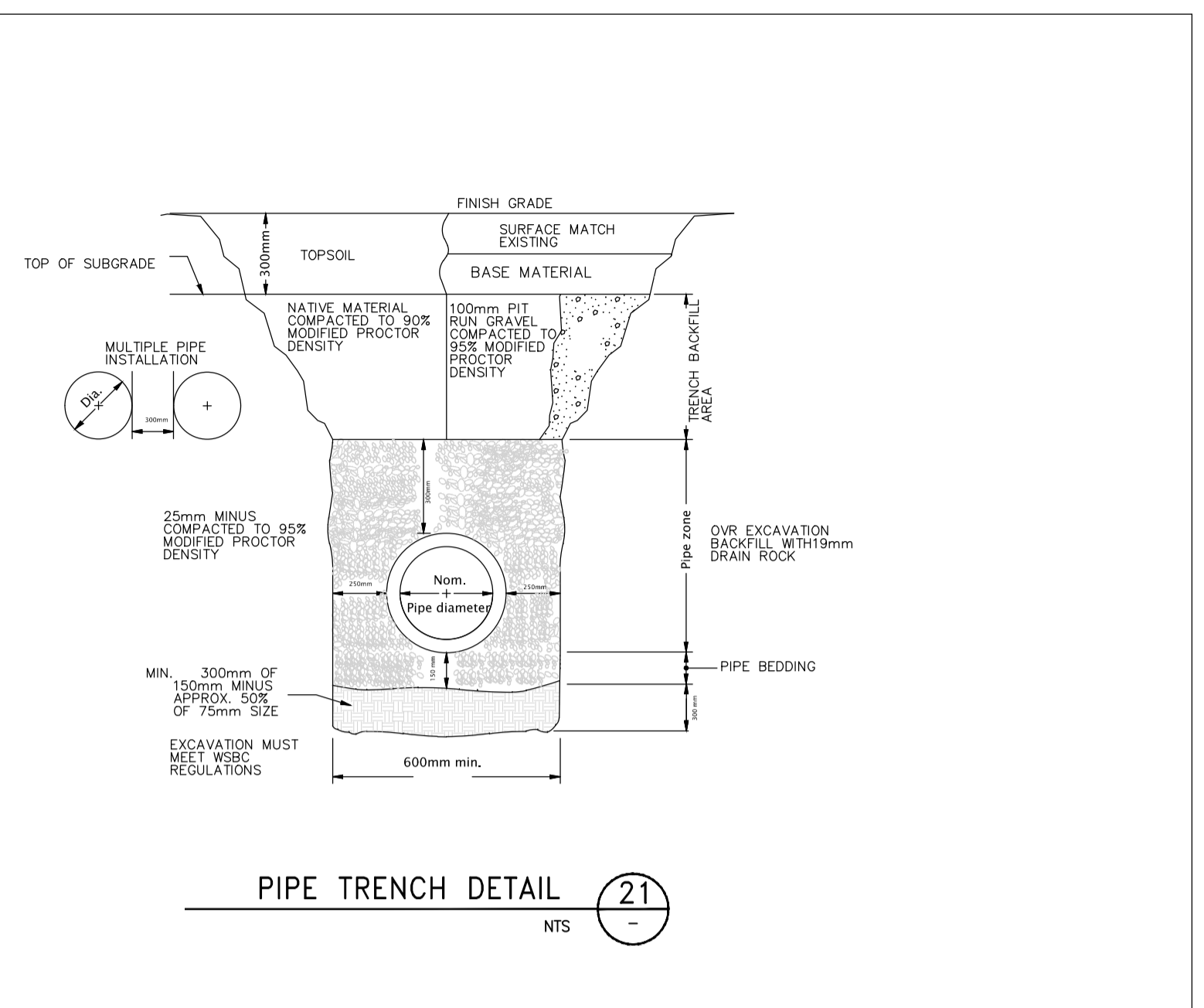
Project No./No. du projet DFO: F1700 - 195255	Sheet/Feuille C-010 OF 10	Revision no./La Révision no. 3
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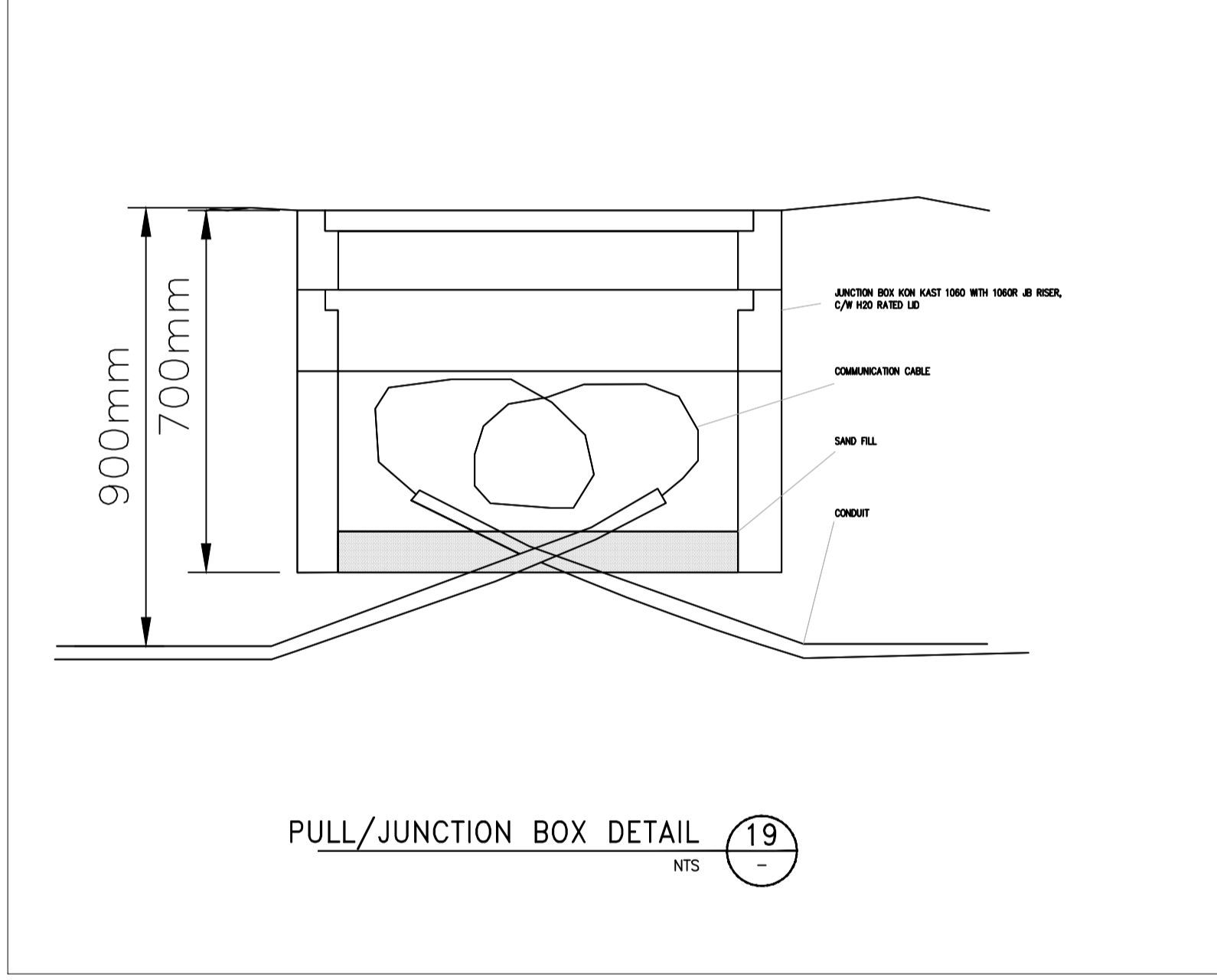
GATE VALVE INSTALLATION (17)
NTS



CABLE TRENCH DETAIL (18)
NTS



PIPE TRENCH DETAIL (21)
NTS



PULL/JUNCTION BOX DETAIL (19)
NTS

THRUST BLOCKING

TABLE A CONCRETE THRUST BLOCKING (HORIZONTAL)		TABLE B SAND BEARING CAPACITY (kg/cm²)		TABLE C CONCRETE BLOCKING FOR CONVEX VERTICAL BENDS	
PIPE DIA. (mm)	THRUST (kN)	15'	20'	PIPE DIA. (mm)	THRUST (kN)
150	12.5	1.25	1.67	150	12.5
200	16.7	1.67	2.22	200	16.7
250	20.8	2.08	2.78	250	20.8
300	25.0	2.50	3.33	300	25.0
350	29.2	2.92	3.89	350	29.2
400	33.3	3.33	4.44	400	33.3
450	37.5	3.75	5.00	450	37.5
500	41.7	4.17	5.56	500	41.7
550	45.8	4.58	6.11	550	45.8
600	50.0	5.00	6.67	600	50.0
650	54.2	5.42	7.22	650	54.2
700	58.3	5.83	7.78	700	58.3
750	62.5	6.25	8.33	750	62.5
800	66.7	6.67	8.89	800	66.7
850	70.8	7.08	9.44	850	70.8
900	75.0	7.50	10.00	900	75.0
950	79.2	7.92	10.56	950	79.2
1000	83.3	8.33	11.11	1000	83.3

THRUST BLOCKING AREA EQUATION

NOTE: Where Table B Block Bearing Capacity is NOT SPECIFIED ON THE BLOCK OR DETERMINED BY THE ENGINEER, USE THE FOLLOWING PROCEDURE TO DETERMINE REQUIRED Thrust Block Area.

- Determine Block (B) for type of fitting or joint and size of pipe from Table A.
- Determine Block (B) from Table B based on Sand Bearing or Special Processes.
- Determine Table Pressure from Table A.
- Determine Soil Bearing Capacity (B) of soil from Table B.
- Determine required bearing area (A) in sq. ft. as follows:

$$\text{Thrust Block Area} = A \left(\frac{\text{Thrust}}{\text{Table Pressure}} \right)$$

Example: Design Dept Pressure = 138 PSI
 Pipe = 14"
 Thrust = 700 kN
 Soil = 1000

$$A = \left(\frac{700}{138} \right) \left(\frac{1000}{1000} \right) = 5.07 \text{ sq. ft.}$$

GENERAL NOTES FOR ALL DETAILS:

- Contractor to provide blocking adequate to withstand full test pressure.
- Final concrete blocking against subgrade surface.
- All concrete shall be constructed grade concrete.
- Shall pipe and/or fittings with 2 layers of polyethylene film unless in contact with concrete.
- Final concrete shall be of all joints and accessories.
- Shall pipe and/or fittings shall be installed with proper bedding and shall meet all applicable codes.
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THRUST BLOCKING

TEE, CROSS, STRADDLE, BEND, CROSS, TEE, CONVEX VERTICAL BEND, WYE

THRUST BLOCK DETAIL (20)
NTS

LAST SAVE: 2020/10/05 - 11:35am
 PATH: C:\Users\Surfacer Pro - 3\OneDrive\Projects\VE 4601 DFO IOS Water Line\000-0400-040 CADD WIP\CAVC-010 2019 08 18.dwg
 PWGSC - A1 - 841X594

