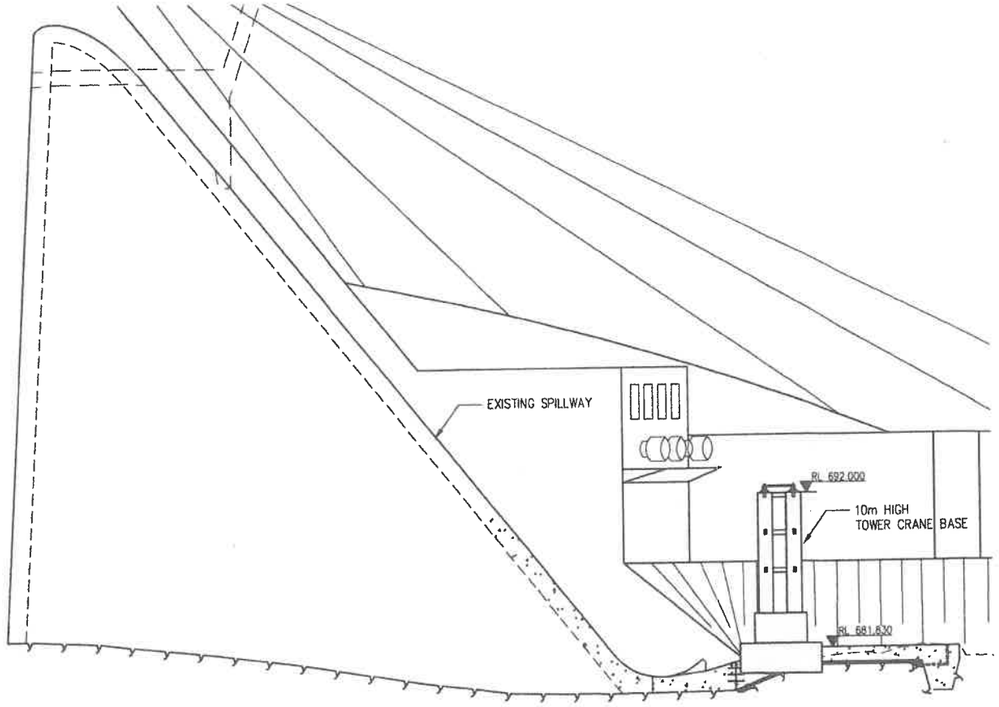
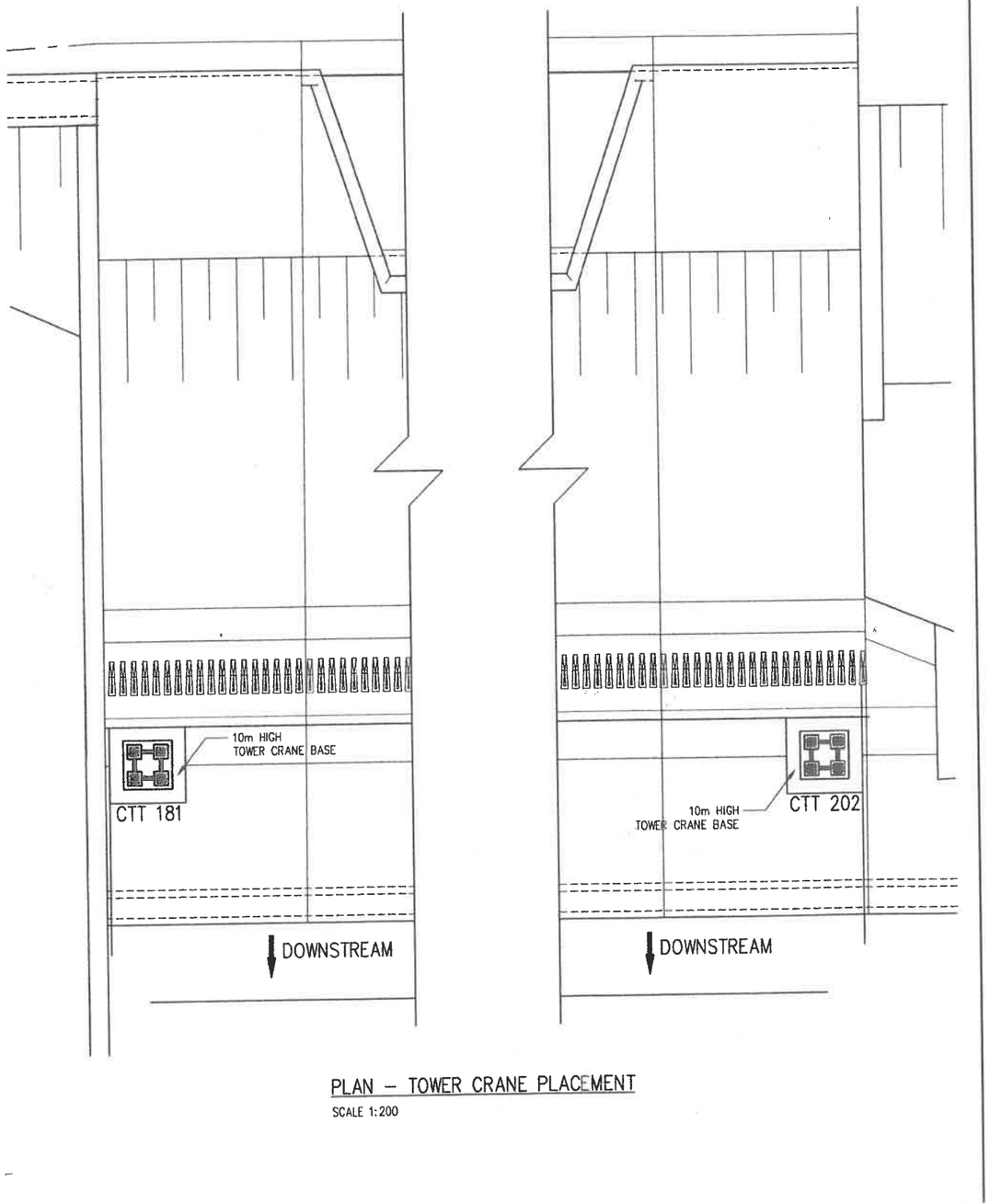


CROSS SECTION – TOWER CRANE PLACEMENT

SCALE 1:200



PLAN – TOWER CRANE PLACEMENT

SCALE 1:200

DESIGN NOTES

1. GENERAL DESIGN NOTES :

1.1. DESCRIPTION OF THE STRUCTURE:
INSITU REINFORCED CONCRETE BASE FOR TOWER CRANE CONSISTING OF FOUNDATION, STARTING PLINTH AND 4 x COLUMNS.
1.2. THE BASE HAS BEEN DESIGNED BY ELASTIC METHODS AND CHECKED AT LIMIT STATES.
1.3. COMPUTER PACKAGE : PROKON

2. DESIGN LOADING

2.1. THE DESIGN LOADING IS IN ACCORDANCE WITH THE CRANE MANUFACTURER'S LOADING CRITERIA AS PER TABLES BELOW:

2.1.1 IN-SERVICE CRANE LOADS FOR 65M JIB 1 X TS21 22.6 C1 + 9 X TS21 22.6 (REAR WIND 72 KM/H)					
HOOK HEIGH [m]	H [kN]	V [kN]	M [kNm]	R1 [kN]	R2 [kN]
61.95	34	914	2728	-1244	787

2.1.2 OUT-OF-SERVICE CRANE C25 LOADS FOR 65M JIB 1 X TS21 22.6 C1 + 9 X TS21 22.6 (REAR WIND 161 KM/H)					
HOOK HEIGH [m]	H [kN]	V [kN]	M [kNm]	R1 [kN]	R2 [kN]
61.95	136	766	4244	-1771	1388

2.1.3 OUT-OF-SERVICE CRANE LOADS FOR 65M JIB 1 X TS21 22.6 C1 + 9 X TS21 22.6 (WIND FROM ANY SIDE 100 KM/H)					
HOOK HEIGH [m]	H [kN]	V [kN]	M [kNm]	R1 [kN]	R2 [kN]
61.95	96	766	4769	-1923	1540

3. DESIGN PARAMETERS

3.1. YOUNG'S MODULUS FOR CLASS 30/19 CONCRETE = 28GPa.
3.2. YOUNG'S MODULUS: STEEL = 200 GPa.
3.3. COEFFICIENT OF CONCRETE EXPANSION = 12x10
3.4. CREEP FACTOR = 2

4. CHARACTERISTIC STRENGTH OF MATERIALS

4.1. CONCRETE:
a) BLINDING = 15/19 MPa/mm
b) MASS CONCRETE = 15/38 MPa/mm
c) FOUNDATION SLABS = 30/19 MPa/mm
d) COLUMNS = 30/19 MPa/mm

4.1. REINFORCEMENT:
REINFORCEMENT TO BE HOT ROLLED AND TO COMPLY WITH THE STANDARD SPECIFICATIONS FOR STEEL BARS FOR CONCRETE REINFORCEMENT SANS 920 MINIMUM CHARACTERISTIC STRENGTH :
a) MILD STEEL = 250MPa
b) HIGH TENSILE STEEL = 450MPa

5. FORMWORK AND CONCRETE SURFACE FINISH

5.1. CONCEALED SURFACES : F1, U1
5.2. EXPOSED SURFACES : F1, U1
5.3. ALL SHARP EDGES TO HAVE A 50mm x 50mm CHAMFER.

6. CONCRETE COVER TO REINFORCEMENT

6.1. FOOTINGS = 60mm
6.2. ALL OTHER MEMBERS = 50mm

7. FOUNDATION

7.1. TYPE OF FOUNDING MATERIAL:
THE UNDERLYING ROCK NEEDS TO BE CONFIRMED. IT IS ASSUMED THAT THE BOTTOM OF FOUNDATION IS ON MEDIUM ROCK GRANITE.
7.2. FOUNDING METHOD: RAFT
7.3. RECOMENDED BEARING PRESSURE: DESIGNED FOR 600 kPA