

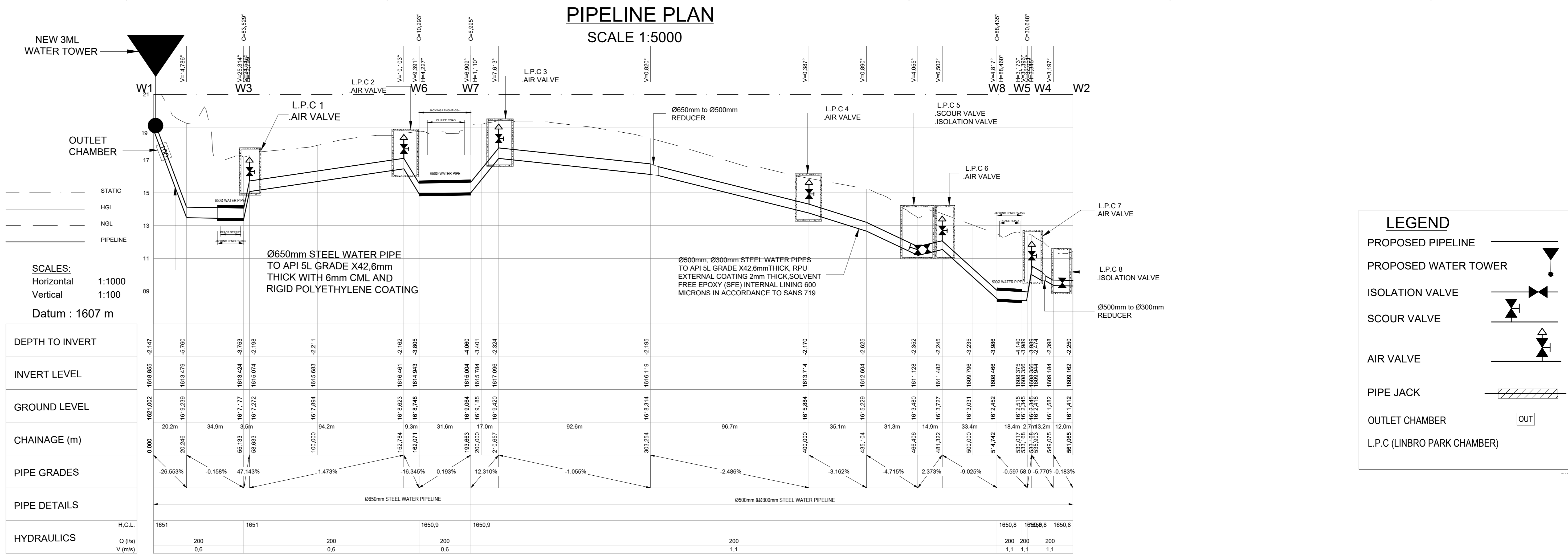
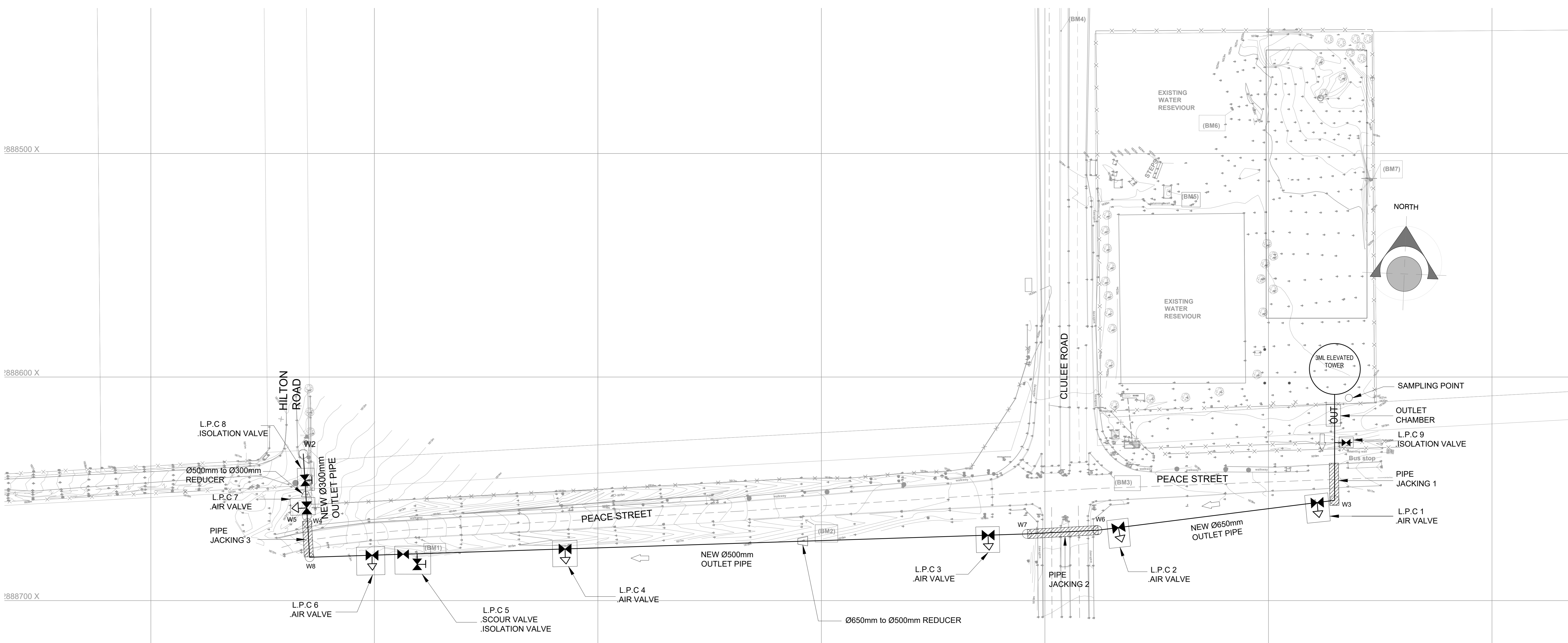
| BENCHMARKS |            |           |               |
|------------|------------|-----------|---------------|
| NAME       | X(m)       | Y(m)      | ELEVATION (m) |
| BM1        | 2888671.97 | 87079.97  | 1613.80       |
| BM2        | 2888662.83 | 86909.22  | 1618.15       |
| BM3        | 2888643.38 | 86770.353 | 1618.67       |
| BM4        | 2888445.17 | 86792.770 | 1617.86       |
| BM5        | 2888517.16 | 86744.246 | 1620.05       |
| BM6        | 2888480.50 | 86715.92  | 1624.21       |
| BM7        | 2888511.96 | 86653.65  | 1618.06       |

| SETTING OUT DATA |              |              |
|------------------|--------------|--------------|
| NAME             | X-COORDINATE | Y-COORDINATE |
| A                | 2888594.597  | 86670.386    |
| B                | 2888602.685  | 86690.654    |
| C                | 2888602.685  | 86701.654    |
| D                | 2888587.685  | 86690.654    |
| E                | 2888587.685  | 86701.654    |
| F                | 2888573.678  | 86701.018    |
| G                | 2888573.678  | 86655.907    |
| H                | 2888453.678  | 86701.017    |
| I                | 2888453.678  | 86655.999    |

| Coordinate List |           |             |
|-----------------|-----------|-------------|
| Lo 27           |           |             |
| OUTLET PIPE     |           |             |
| Node            | YLo       | XLo         |
| Const:          |           |             |
| W1              | 86670.412 | 2888600.000 |
| W2              | 87131.806 | 2888634.388 |
| W3              | 86670.412 | 2888655.133 |
| W4              | 87130.233 | 2888662.240 |
| W5              | 87129.872 | 2888665.371 |
| W6              | 86776.507 | 2888668.537 |
| W7              | 86808.056 | 2888670.176 |
| W8              | 87128.965 | 2888680.619 |

| PIPE MATERIAL LIST |       |            |
|--------------------|-------|------------|
| Diameter (mm)      | Class | Length (m) |
| Steel Pipe         |       |            |
| 650                |       | 303        |
| 500                |       | 285        |
| Total length :     |       | 558        |

| Pipe Data List |        |        |      |            |       |
|----------------|--------|--------|------|------------|-------|
| Node           | - Node | Length | Dia. | MATERIAL   | CLASS |
| OUTLET PIPE    |        |        |      |            |       |
|                |        | (m)    | (mm) |            |       |
| W1             | - W3   | 55.13  | 650  | Steel Pipe |       |
| W2             | - W4   | 27.90  | 500  | Steel Pipe |       |
| W3             | - W6   | 106.94 | 650  | Steel Pipe |       |
| W4             | - W5   | 3.15   | 500  | Steel Pipe |       |
| W5             | - W8   | 15.27  | 650  | Steel Pipe |       |
| W6             | - W7   | 31.59  | 500  | Steel Pipe |       |
| W7             | - W8   | 321.08 | 500  | Steel Pipe |       |



Engineer:

**KEON**  
CONSULTING ENGINEERS  
TECHNO  
DESIGNS  
Civil Structural & Transport Engineers

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THESE NOTES SERVE AS AN ADDENDUM TO THE SPECIFICATION IN THE BILL OF QUANTITIES (BOQ). IN THOSE CASES WHERE THE BOQ SPECIFICATIONS DIFFER FROM THESE NOTES, THESE NOTES SHALL TAKE PRECEDENCE ON ORIGINAL.

Engineer:

T. Chikwata P. Eng (20140009) [Signature]

Drawn By: T. Mulumbe  
Designed By: T. Mulumbe  
Checked By: T. Chikwata

Signature: [Signature]  
Date: September 2023

Signature: [Signature]  
Date: September 2023

Signature: [Signature]  
Date: September 2023

CONCRETE NOTES:

1.1 SETTING OUT AND GENERAL:  
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ARCHITECT'S DRAWINGS.  
ALL DIMENSIONS AND HEIGHTS ARE TO BE CHECKED ON SITE BEFORE WORK IS PUT IN HAND.  
REPORT DISCREPANCIES TO ARCHITECT OR ENGINEER.  
THIS DRAWING MUST NOT BE USED TO SCALE OFF. USE ONLY WRITTEN DIMENSIONS. CONTACT THE ENGINEER OR ARCHITECT WHERE CLARITY IS SOUGHT.

1.5 FOR SETTING OUT DATA, SETTING OUT POINTS AND DATUM LEVELS REFER TO SURVEY INFORMATION AND ARCHITECT'S DRAWINGS.

1.6 STRUCTURAL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE PROJECT SPECIFICATION AND THE RELEVANT S.A.N.S. SPECIFICATIONS. ALL CONCRETE WORK IS TO BE DONE IN ACCORDANCE WITH S.A.N.S. 1200G AND EARTHWORKS IN ACCORDANCE WITH S.A.N.S. 1200D.

1.8 CONSULT RELEVANT ARCHITECT'S, MECHANICAL, ELECTRICAL & PLUMBING DRAWINGS AND DETAILS AS RELEVANT FOR DRAINAGE, STORMWATER OUTLETS, RWOPS AND HOLES AND SLEEVES FOR THESE SERVICES. NO HOLES ARE TO BE CORED WITHOUT ENGINEERS WRITTEN APPROVAL.

2.0 FOUNDATIONS:  
ALL FOUNDATION EXCAVATIONS TO BE INSPECTED AND APPROVED IN WRITING BY THE ENGINEER BEFORE CONCRETE IS CAST.

2.2 NO FOUNDATIONS ARE TO BE CAST IN FILL MATERIAL. A 50mm THICK LAYER OF 10MPa / 15mm BLINDING CONCRETE IS TO BE CAST UNDER ALL REINFORCED BASES, REINFORCED STRIP FOOTINGS AND GROUND BEAMS.  
ANY OVER EXCAVATIONS ARE TO BE MADE GOOD WITH 10MPa / 15mm CONCRETE AT THE CONTRACTORS EXPENSE.  
BACKFILLING OVER COLUMN BASES SHALL BE DONE WITH AN APPROVED MATERIAL COMPACTED IN LAYERS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

2.5 ALL CRAWLER BEARING PRESSURE UNDER:  
CONCRETE BASES = 150kPa  
CONCRETE STRIP FOOTINGS = 100kPa

3.0 CONCRETE CHARACTERISTIC 28 DAY STRENGTH:  
BASES: 25MPa / 15mm  
STRIP FOOTINGS: 20MPa / 15mm  
SUSPENDED SLABS & BEAMS: 30MPa / 15mm  
COLUMNS: 30MPa / 15mm

3.2 CONCRETE MIX DESIGNS FOR ALL GRADES OF CONCRETE TO BE GIVEN TO ENGINEER FOR PERUSAL AND COMMENT. CONCRETE MIX DESIGNS FOR SURFACE BEDS TO HAVE MINIMUM BLEED CHARACTERISTICS.

3.3 ALL CONCRETE TO BE ADEQUATELY CURED BY KEEPING SURFACES CONTINUOUSLY DAMP FOR AT LEAST 5 DAYS AFTER CASTING.

4.1 ALL CONCRETE TO BE CONSTRUCTED TO THE S.A.N.S. 1200G PERMISSIBLE DEVIATION DEGREE OF ACCURACY CLASS II UNLESS SPECIFIED OTHERWISE.  
CONCRETE CUBE TEST RESULTS TO BE SUBMITTED TIMEOUSLY TO ENGINEER FOR PERUSAL, RECORDS, COMMENT AND APPROVAL.

4.2 REINFORCEMENT CHARACTERISTIC STRENGTH:  
MILD STEEL: 250N/mm2  
HIGH YIELD STEEL: 450N/mm2  
ALL REINFORCEMENT TO BE CHECKED AND APPROVED BY ENGINEER BEFORE ANY CONCRETE IS CAST. 48 HOURS WRITTEN NOTICE TO BE GIVEN TO ENGINEER BEFORE TIME OF INSPECTION.

4.3 LAP LENGTH TO REINFORCING TO BE MINIMUM 50 x SMALLER BAR DIAMETER, UNLESS OTHERWISE NOTED.  
MESH REINFORCEMENT REFERENCE 245 TO BE PLACED IN SLAB (TOP) MINIMUM LAPS = 300mm UNLESS OTHERWISE NOTED.

4.4 THE CONTRACTOR MUST TAKE PARTICULAR CARE TO ENSURE THAT THE SPECIFIED COVER TO ALL REINFORCEMENT HAS BEEN ATTAINED THROUGHOUT BEFORE THE ENGINEER IS CALLED TO SITE FOR INSPECTION OF THE REINFORCEMENT.

4.6 STRIP FOOTINGS:  
BASES: 50mm  
50mm  
30mm  
30mm  
SUSPENDED SLABS:  
COLUMNS AND WALLS: 50mm  
30mm  
30mm

4.7 SUSPENDED BEAMS: 30mm  
CONTRACTOR IS TO CONDUCT HIS OWN INSPECTION OF REINFORCEMENT BEFORE CALLING THE ENGINEER FOR INSPECTION.

5.1 FORMWORK AND PROPPING STRIPPING TIMES FOR:  
COLUMNS AND WALL SHUTTERING: 15 DAYS  
12 DAYS IN HOT WEATHER,  
4 DAYS IN COLD WEATHER.

5.2 FLAT SLABS:  
PROPPING TIMES FOR:  
SLABS AND BEAMS: 14 DAYS IN HOT WEATHER  
21 DAYS IN COLD WEATHER

5.3 CANTILEVER SLABS AND BEAMS: 21 DAYS  
(SUBJECT TO CUBE TEST RESULTS BEING SUBMITTED TIMEOUSLY TO ENGINEER FOR APPROVAL).  
NO DEPROPPING OF SUSPENDED ELEMENTS UNTIL INSTRUCTED BY ENGINEER.

5.4 CONCRETE FINISHES: UNLESS NOTED OTHERWISE  
COLUMNS AND WALLS: OFF SHUTTER  
BEAMS AND SLAB SOFFIT: OFF SHUTTER  
TOP OF SUSPENDED SLABS: STEEL FLOAT  
SURFACE BEDS: POWER FLOAT  
SIDES OF GROUND BEAMS TO BE SHUTTERED.

Refer To Drawing No:

Key Plan:

No Date Details Revisions Chd Appd

Project: JW14406-LINBRO PARK TOWER (WITH ASSOCIATED WORKS)

Description: PROFILE FOR OUTLET WATER PIPELINE

Issued For: TENDER

Size: A1 As Shown Scale: 1 OF 1 Sheet No: Original Date: Sept 2023

Project No: C01486 Drawing No: CP-11 Revision: T0