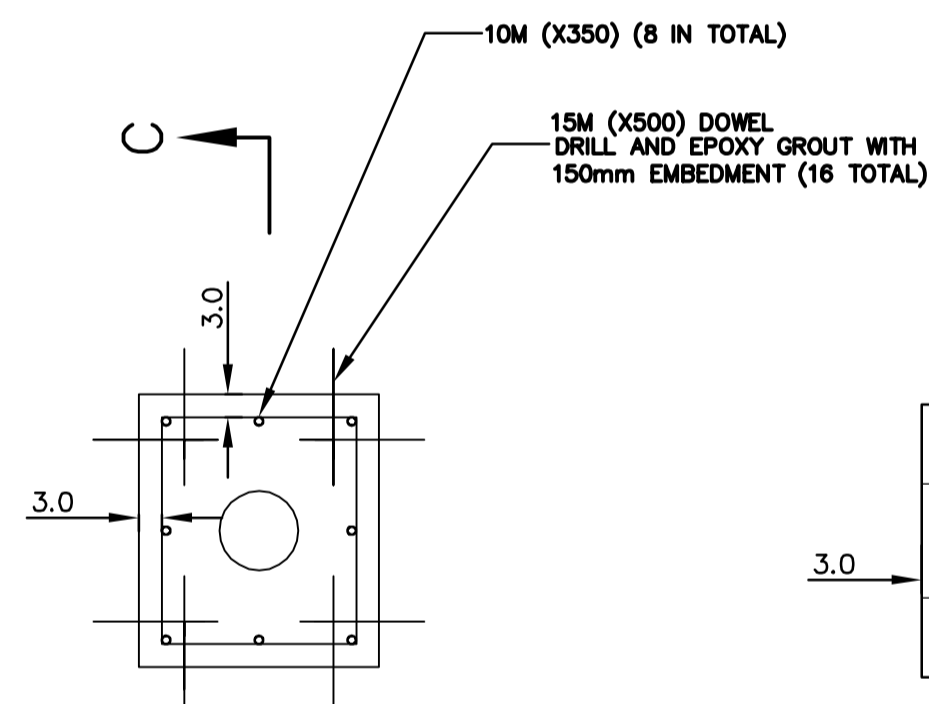
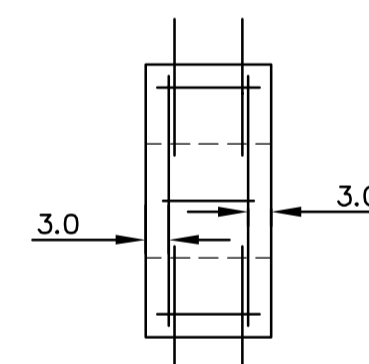


PIPE HANGER DETAIL  
SCALE N.T.S.



SECTION B-B  
SCALE N.T.S.



SECTION C-C  
SCALE N.T.S.

**CONCRETE:**

1. CONCRETE MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH CSA A23.1 (LATEST). SEE BELOW FOR MIX REQUIREMENTS.
2. MIX WATER TO BE POTABLE.
3. ADMIXTURES SHALL NOT BE USED UNLESS SPECIFIED HEREIN OR APPROVED BY THE CONTRACT ADMINISTRATOR. CALCIUM CHLORIDE SHALL NOT BE USED.
4. WHERE NOTED IN SECTION BONDING AGENTS SHALL BE USED TO ADHERE NEW CONCRETE TO EXISTING CONCRETE OR STEEL. ACCEPTABLE PRODUCT: SIKADUR 32 HI-MOD (EPOXY), SIKALATEX R (ACRYLIC, MIX INTO GROUT) OR APPROVED EQUAL IN ACCORDANCE WITH B6.
5. DESIGN, FABRICATE AND ERECT FORMWORK/ SHORING IN ACCORDANCE WITH CAN/CSA-S269.3 (LATEST). ALLOW SUFFICIENT CONCRETE CURING TIME PRIOR TO REMOVAL.
6. GROUT REINFORCING DOWELS WITH EPOXY GROUT, HILTI HIT-HY150 MAX OR APPROVED EQUAL IN ACCORDANCE WITH B6. GROUT BASE PLATES WITH SIKAM-BED STANDARD OR APPROVED EQUAL IN ACCORDANCE WITH B6. PLACE AND CURE ALL GROUT WITHIN TEMPERATURE RANGE RECOMMENDED BY MANUFACTURER.
7. PROVIDE ADEQUATE COLD/HOT WEATHER PROTECTION AS REQUIRED DURING CURING PERIOD.

**CONCRETE MIX DESIGNS:**

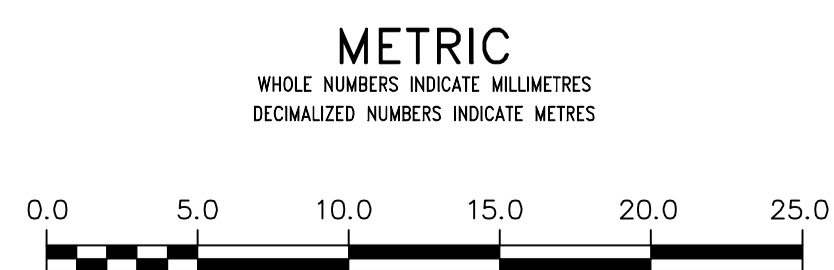
CONCRETE EXPOSURE CLASS	F1
/INFILL 28 DAY COMP. STRENGTH	30MPa
CEMENT	TYPE GU
W/C RATIO	0.50
AGGREGATE SIZE (MAX.)	20mm
ENTRAINED AIR	5%-8%
SLUMP (MAX.)	90mm (±10mm)

**REINFORCING STEEL:**

1. REINFORCING STEEL TO BE NEW DEFORMED BILLET STEEL BARS CONFORMING TO CSA G30.18 (LATEST). GRADES TO BE; 400 MPa FOR 15M BARS AND LARGER; 300 MPa FOR 10M BARS.
2. REINFORCING STEEL SHALL BE CLEAN, FREE OF RUST, DIRT, LOOSE SCALE, OIL, GREASE OR ANY OTHER MATERIAL WHICH WOULD REDUCE BOND WITH THE CONCRETE.

**CONSTRUCTION NOTES:**

1. CONTRACTOR TO CONFIRM ALL DIMENSIONS AND FIELD MEASUREMENTS PRIOR TO FABRICATION AND INSTALLATION OF MATERIALS.
2. CONTRACTOR TO REMOVE AND DISPOSE OF ALL STATION PIPING, FITTINGS AND FORCEMAIN PIPING TO ALLOW FOR INSTALLATION OF NEW PIPING, FITTINGS AND APPURTENANCES.
3. ALLOWABLE SHUTDOWN TIME: 4.0 HRS
4. CRITICAL BASEMENT ELEVATION: 224.862m
5. PROVIDE TEMPORARY PUMPING OF WASTEWATER DURING CONSTRUCTION.
6. EXCAVATION TO BE BACKFILLED WITH CLASS 3 BACKFILL IN ACCORDANCE WITH CW2030 AND SD-002.
7. FLANGE NUTS AND BOLTS TO BE ASTM A307.
8. GASKETS TO BE FULL FACED, 3 THICK RED RUBBER
9. ALL ANCHOR BOLTS TO BE ASTM A276 TYPE 316 SS.



<p><b>WARNING</b></p> <p>IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:</p> <ol style="list-style-type: none"> <li>1) NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.</li> <li>2) TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS.</li> </ol> <p>SEE PROVINCIAL REGULATION 21072 FOR DETAILS</p>	<p>LOCATION APPROVED UNDERGROUND STRUCTURES</p> <p>SUPV. U/G STRUCTURES COMMITTEE _____ DATE _____</p> <p>NOTE:</p> <p>LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.</p>	<p>B.M. ELEV. _____</p> <p>CONSTRUCTION COMPLETION DATE: YYYY MM DD _____</p>		<p>DESIGNED BY: DEB</p> <p>CHECKED BY: KZ</p>		<p>ENGINEER'S SEAL</p> <p>ORIGINAL SIGNED BY K.R. ZUREK 14/01/17</p>	<p><b>THE CITY OF WINNIPEG</b></p> <p>WATER AND WASTE DEPARTMENT ENGINEERING DIVISION</p> <p>2014 DISCHARGE PIPING AND FORCEMAIN UPGRADES TO THE LINDEN PUMPING STATION</p>	<p>SHEET 2 OF 2</p> <p>CITY DRAWING NUMBER 10731</p>
		<p>NO. _____ REVISIONS _____ DATE _____ BY _____</p>		<p>SCALE:</p> <p>HORIZONTAL AS SHOWN</p> <p>VERTICAL AS SHOWN</p> <p>DATE 2014 01 17</p>				