



- NOTES:**
- 225mm THICK C30/37 MASS CONCRETE FOUNDATIONS.
 - PREFORMED HALF CIRCLE CHANNEL PIPES, THE PIPELINE MAY, WHERE PRACTICABLE BE LAID THROUGH THE MANHOLE & THE CROWN CUT OUT TO HALF DIAMETER, PROVIDED FLEXIBLE JOINTS ARE SITUATED ON EACH SIDE NO FURTHER THAN 600mm FROM INNER FACE OF THE MANHOLE WALL.
 - MANHOLE CONSTRUCTION:
 - FOR SURFACE WATER MANHOLES HIGH-DENSITY BLOCKS 20N STRENGTH TO I.S. EN 771 OR C30/37 INSITU CONCRETE TO IS EN 206.
 - BLOCK WORK SHALL BE EMBEDDED & JOINTED USING MORTAR TO IS 406. BEDS & VERTICAL JOINTS TO BE COMPLETELY FILLED WITH MORTAR AS THE BLOCKS ARE LAID.
 - ALL FOUJ MANHOLES MUST BE FACED IN SOLID ENGINEERING BRICK (MIN CLASS 'A' OR 'B') OR INSITU CONCRETE FOR 1m ABOVE BENCHING LEVEL. BRICK TO BE BONDED TO BLOCK WORK USING GARDEN WALL BOND.
 - JOINTS SHALL BE FLUSH AND POINTED AS THE WORK PROCEEDS.
 - MAX DEPTH OF BLOCKWORK MANHOLE IS 1.2m (THE USE OF BLOCK IN DEEPER MANHOLES WILL BE CONSIDERED BUT SUCH WILL REQUIRE DETAILED STRUCTURAL DESIGN AND WRITTEN APPROVAL FROM IRISH WATER).
 - PIPES WITH INADEQUATE COVER TO BE SURROUNDED IN 150mm THICK C16/20 CONCRETE.
 - LEAN MIX BACKFILL IN EXISTING ROADS, WHERE REQUIRED BY THE LOCAL AUTHORITY TO BE GRADE 20N/20mm CONCRETE.
 - PAVING TO BE IN ACCORDANCE WITH THE ROAD SPECIFICATION & IF APPROPRIATE, THE LOCAL AUTHORITY REQUIREMENTS.
 - GOOD QUALITY TOPSOIL 450mm MINIMUM THICKNESS, TO BE PLACED OVER BACKFILL IN ACCORDANCE WITH PARKS DEPARTMENT/ LANDSCAPE ARCHITECTS.
 - AJ's (ARMSTRONGS JOINTS)
 - TO BE USED FOR PIPE DEPTHS UP TO 600mm
 - INTERNAL AJ'S IF REQUIRED TO HAVE DOUBLE SEALED COVERS
 - EXTERNAL AJ'S TYPICALLY TO BE PROPRIETARY UPVC WITH 35KN COVER
 - EXTERNAL AJ'S IN AREAS SUBJECT TO TRAFFIC TO BE SURROUNDED IN 150mm C20 CONCRETE & TO HAVE CLASS D COVER AND FRAME SUPPORTED OF THE CONCRETE SURROUND.

- NOTES:**
- FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING.
 - ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
 - ENGINEER/EMPLOYERS REPRESENTATIVE, AS APPROPRIATE, TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
 - THE CONTRACTOR SHALL UNDERTAKE A THOROUGH CHECK FOR THE ACTUAL LOCATION OF ALL SERVICES/UTILITIES, ABOVE AND BELOW GROUND, BEFORE ANY WORK COMMENCES
 - ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD
- | Rev | Date | Description | By | Chkd. |
|-----|------------|---------------------|----|-------|
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Client: **Kegata Ltd.**

Project: **Residential Development at Roshill, Galway**

Title: **Pipe Bedding Details**

- GENERAL NOTES:**
- IN SOFT CONDITIONS CBR<5 THE MATERIAL SHOULD BE EXCAVATED AND DISPOSED IN ACCORDANCE WITH THE WASTE MANAGEMENT ACT AND CLAUSE 804 MATERIAL IN ACCORDANCE WITH THE NRA SPECIFICATION FOR ROAD WORKS. SHALL REPLACE THE EXCAVATED MATERIAL WRAPPED IN GEO-TEXTILE SHEETING, ALTERNATIVELY SPECIAL PIPE SUPPORT ARRANGEMENTS INCLUDING PILING ETC. MAY BE REQUIRED WHERE THE SOFT MATERIAL IS EXCESSIVE. SUCH ARRANGEMENTS SHALL BE ASSESSED BY IRISH WATER BEFORE ADVANCING WITH THE WORK.
 - PIPES SHALL NOT BE SUPPORTED ON STONES, ROCKS OR AND HARD OBJECT AT ANY POINT ALONG THE TRENCH. ROCK SHALL BE EXCAVATED TO A DEPTH OF 150mm BELOW THE ACTUAL DEPTH OF THE TRENCH WITH THE VOID FILLED WITH CLAUSE 804 MATERIAL IN ACCORDANCE WITH THE NRA SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
 - NON DEGRADABLE MARKER TAPE SHOULD BE INSTALLED AT TOP OF PIPE BEDDING LAYER. IN CASE OF NON METAL PIPE MATERIAL THE MARKER SHOULD INCORPORATE A TRACE WIRE WHICH IS LINKED TO THE FITTINGS AND AND TERMINATED AT THE PLUMBING STATION AND DISCHARGE MANHOLE.
 - TRENCH WIDTHS FOR PIPE SIZES 80mm AND LESS MAY BE <500mm SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, H.S., CONSTRUCTION ACCESS REQUIREMENTS.
 - THE HAUNCHES AND SURROUNDS TO BE FORMED USING FORM WORK AND PROVIDE A ROUGH CAST.
 - EXPANSION JOINTS IN THE CONCRETE SHALL BE PROVIDED AT ALL PIPE JOINTS TO ALLOW FOR PIPE FLEXIBILITY, COMPRESSIBLE FILLER BOARD TO BE IN ACCORDANCE WITH BS EN 622-1 AND BS EN 622-4 AND TO BE 18mm THICK.
 - POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO CONCRETE.
 - BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PE OR PVC PIPES.
 - PIPE SHOULD BE CUT FLUSH WITH THE INSIDE SURFACE OF THE MANHOLE WALL SO THAT CHANNEL EXTENDS THE FULL LENGTH OF THE MANHOLE.
 - POSITION OF 910 SQUARE OPE IN INTERMEDIATE ROOF SLAB.
 - ALL MANHOLES SHALL BE WATERTIGHT TO THE SATISFACTION OF THE ENGINEER.
 - FORMWORK TO REINFORCED CONCRETE & MASS CONCRETE SHALL COMPLY WITH CLASS 2 SECTION 2.7.7, BS 8110 PART 1:1997
 - FINISH TO THE TOP OF SLABS SHALL COMPLY WITH TYPE A SECTION 6.2.7, BS 8110, PART 1997.
 - PLAN DIMENSIONS OF MANHOLES ARE BASED ON BLOCKWORK MANHOLE DESIGN CODE TAKING GRANULAR FILL PRESSURE & H.B SURCHARGE.
 - REINFORCEMENT TO SLABS ENGINEERS DETAILS.
 - FOR MANHOLES >3m DEPTH TO INVERT USE C30/37 INSITU CONCRETE, REINFORCING MESH REF. A393 TO BE FIXED AT MID POINT OF WALL. ADDITIONAL REINFORCEMENT TO BE SUPPLIED OVER PIPE CROWN.
 - PRECAST MANHOLES, CHAMBER WALLS & COVER SLAB TO BE CONSTRUCTED TO IS EN 1917 & IS 420:2004
 - MANHOLE OPENINGS TO BE SITUATED FURTHEST FROM THE NEAREST CARRIAGEWAY. MANHOLE STEPS-ACCESS TO BE POSITIONED TO ALLOW VIEWING OF ONCOMING TRAFFIC
 - FOR BEDDING & SEALING OF CHAMBER RINGS, THE TOP RING (TO PRECAST OVER SLAB) & BOTTOM RING TO BE BEDDED WITH CEMENT MORTAR. FOR INTERMEDIATE RINGS, JOINTS TO BE SEALED WITH APPROVED PREFORMED JOINTING STRAP
 - PRECAST MANHOLES TO BE SURROUNDED WITH A MINIMUM OF 150mm THICK GRADE C16/20 CONCRETE.
 - CONCRETE SEWER PIPES WITH SPIGOT & SOCKET JOINTS & RUBBER FITTINGS TO COMPLY WITH EN 1916 & IS 6:2004 OR EQUIVALENT STANDARD CLASS M OR CLASS H
 - VIRTIFIED CLAY PIPES AND FITTINGS COMPLYING WITH THE REQUIREMENTS OF IS EN 285-1/2/3 : 1992 OR EQUIVALENT STANDARD CLASS 160 OR CLASS 200
 - UNPLASTICISED POLYVINYL CHLORIDE (UPVC) PIPES & FITTINGS IN ACCORDANCE WITH THE REQUIREMENTS OF IS424
 - CONCRETE BED & SURROUND MUST BE A MINIMUM 150mm THICK IN-SITU CONCRETE C16/20 & HAUNCHED HALFWAY UP THE BARREL OF THE PIPE.
 - GRANULAR BED AND SURROUND OF RIGID PIPES TO BE EITHER
 - 14mm TO 5mm GRADED AGGREGATE OR
 - 10mm SINGLE SIZE AGGREGATE
 - GRANULAR BED AND SURROUND & COVER FOR UPVC TO BE:
 - 14mm TO 5mm GRADED AGGREGATE 315mm PIPE DIAMETER
 - 10mm SINGLE SIZED AGGREGATE PIPE DIAMETER <315mm
- ALL COMPLYING WITH THE REQUIREMENTS OF IS 5: PART 1:1990, TABLE 7 & SHOULD HAVE A COMPACTION FACTOR VALUE OF NOT GREATER THAN 0.2 WHEN MEASURED IN ACCORDANCE WITH BS 8301: 1985. APPENDIX D. GRANULAR SIDE FILL & COVER TO BE PLACED UNIFORMLY ON EITHER SIDE OF THE PIPE IN LAYERS NOT EXCEEDING 100mm EACH LAYER BEING COMPACTED BY HAND TAMPING UNTIL THE PIPE HAS A MINIMUM COMPACTED COVER OF 150mm.

Scale @ A1: **As Shown**

Prepared by: **JK** Checked: **RD** Date: **July 2019**

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