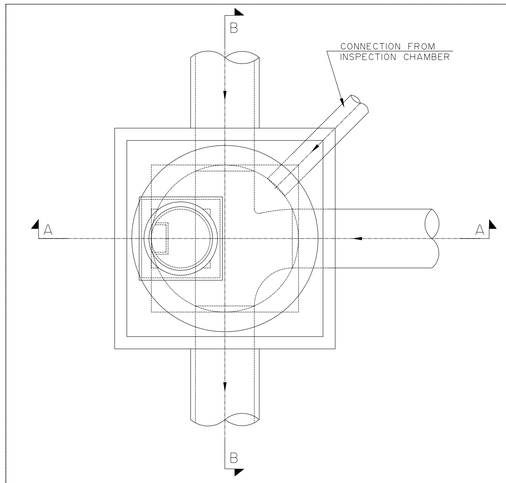
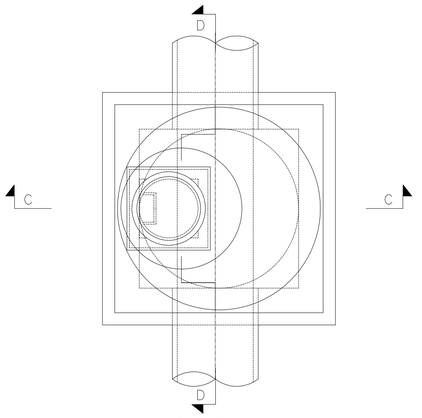


PLAN VIEW

TABLE 1

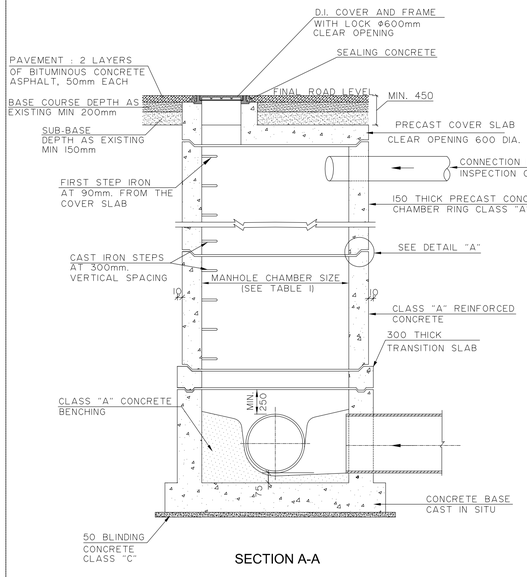
Size of manhole chambers		
Pipe Diameter	Manhole chamber size	Manhole chamber base
200 - 400 mm	1200 mm	1200 x 1200 mm
500 - 800 mm	1500 mm	1500 x 1500 mm
900 - 1500 mm	2000 mm	2000 x 2000 mm



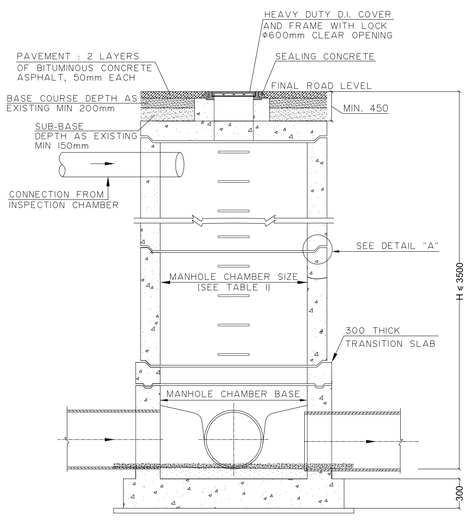
PLAN VIEW

TABLE 2

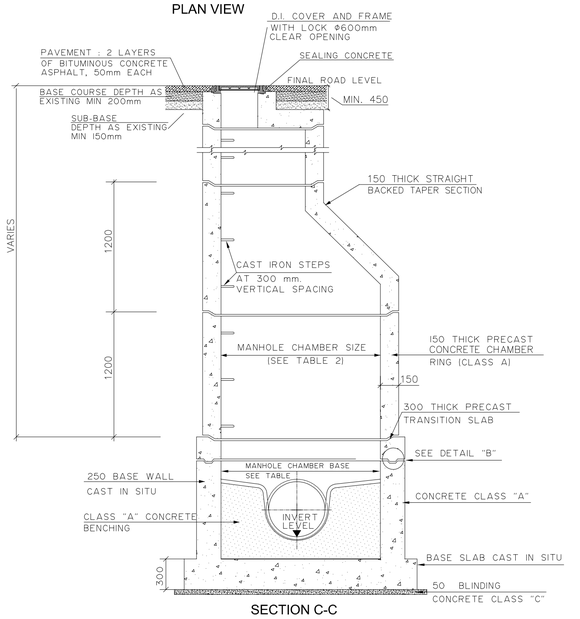
Size of manhole chambers		
Pipe Diameter	Manhole chamber size	Manhole chamber base
200 - 400 mm	1200 mm	1200 x 1200 mm
500 - 800 mm	1500 mm	1500 x 1500 mm
900 - 1500 mm	2000 mm	2000 x 2000 mm



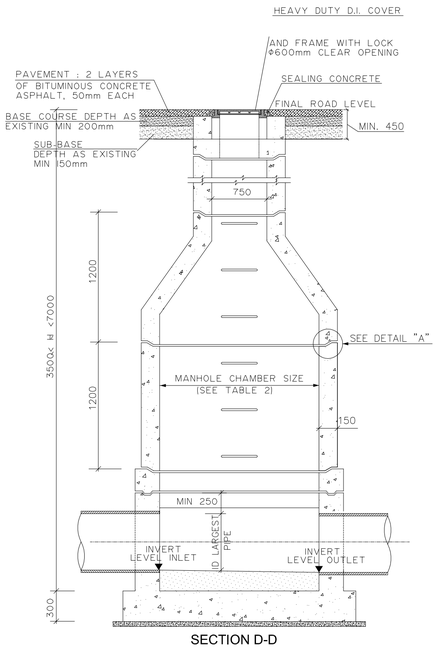
SECTION A-A



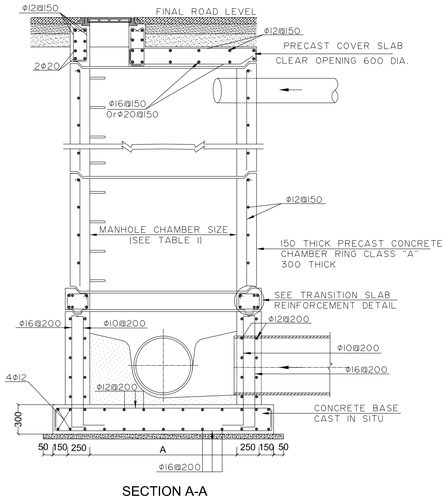
SECTION B-B



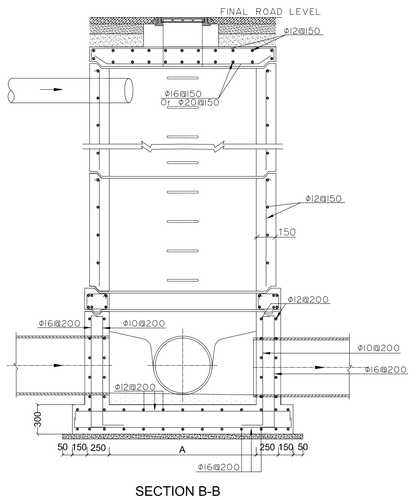
SECTION C-C



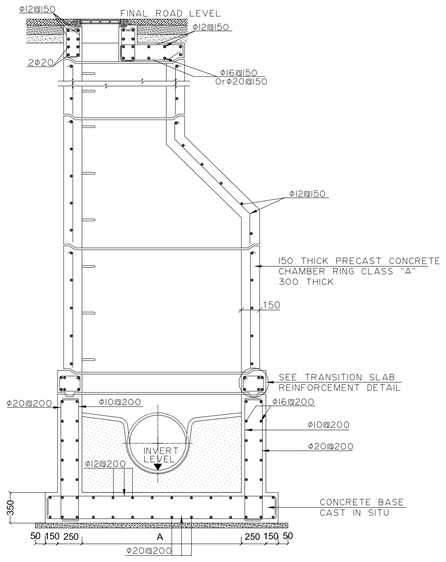
SECTION D-D



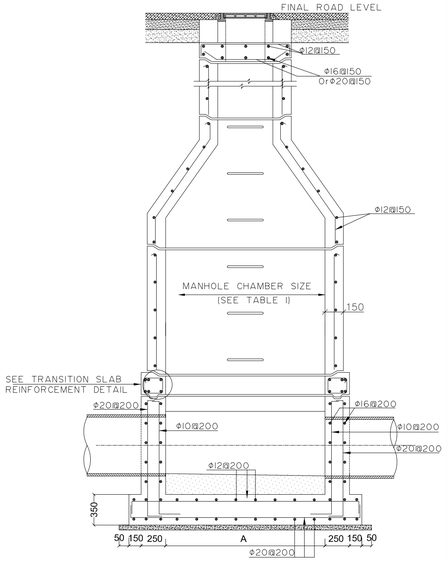
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

PRECAST MANHOLE TYPE "A" - H ≤ 3500

1

PRECAST MANHOLE TYPE "B" - 3500 < H ≤ 7000

2

KEY PLAN

United Nation Development Programme
UNDP Lebanon
Social and Local Development Programme
P.O.Box: 11-3216 Beirut, Lebanon
Empowered lives. Resilient nations.
Tel: 961 1 962491

PROGRAMME:
Lebanese Host Communities Support Programme
Support to Integrated Service Provision at the Local Level

PROJECT NAME:

TAL ABBAS EL GHARBI SEWAGE NETWORK

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE INDICATED
2. ALL INFORMATION PROVIDED IS INDICATIVE. DETAILED STRUCTURAL DESIGN AND ARCHITECTURAL SHOP DRAWINGS ARE TO BE PREPARED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL TO THE ENGINEER.
3. ALL CONCRETE SHALL BE SULFATE RESISTING PORTLAND CEMENT TYPE V WITH A MINIMUM CYLINDRICAL COMPRESSIVE STRENGTH AT 28 DAYS FOR :
   CLASS A - REINFORCED & BENCHING CONCRETE = 280 kg / cm2
   CLASS B - WHERE INDICATE CONCRETE = 175 kg / cm2
   CLASS C - BLINDING & MASS CONCRETE = 105 kg / cm2
4. WATER PROOFING FOR CONCRETE SHALL BE IN THREE LAYERS FOR SURFACE BITUMINOUS COATING APPLIED TO EXTERNAL SURFACES OF MANHOLE WALLS, AND DOUBLE SURFACE COAL TAR EPOXY COATING APPLIED TO INTERNAL SURFACES OF MANHOLE WALLS.
5. MINIMUM CONCRETE COVER TO STEEL REINFORCEMENT SHALL BE =50mm.
6. ALL REINFORCING STEEL BARS SHALL BE DEFORMED HIGH GRADE STEEL HAVING A MINIMUM YIELD STRENGTH OF 4200Kg/cm², AND MILD STEEL HAVING A MINIMUM YIELD OF 2800Kg/cm².
7. LAP LENGTH SHALL NOT BE LESS THAN 50 TIMES THE DIAMETER WHERE SPLICE BARS ARE USED, THEIR LENGTH SHALL NOT BE LESS THAN 2x50 DIAMETER.
8. LAPS SHALL BE STAGGERED FROM ONE HOOP TO THE OTHER AND/OR ONE BAR TO THE OTHER IN ORDER TO REDUCE THE NUMBER OF LAPS IN THE SAME SECTION STIRRUPS ϕ8 SHALL BE USED ON EACH LAP.
9. ADDITIONAL REINFORCEMENT AROUND OPENINGS SHALL BE PROVIDED BY THE CONTRACTOR UP TO THE APPROVAL OF THE ENGINEER.
10. BENDING OF REINFORCEMENT BARS SHALL BE MECHANICAL FOR DIAMETERS GREATER THAN 12mm AND MANUAL FOR LESS. STRAIGHTENING OF BENDED BARS IS NOT ALLOWED.
11. HOLES MADE BY TIE RODS SHALL BE FILLED WITH NON-SHRINK GROUT.
12. ALL PIPES CROSSING THROUGH CONCRETE WALLS SHALL BE PROVIDED WITH A 2cm THICK EXPANSIVE MATERIAL (TAR BASED) OR AS APPROVED BY THE ENGINEER
13. WHERE THERE IS A DISCREPANCY BETWEEN THE REQUIREMENTS IN THE SPECIFICATION AND THOSE SHOWN ON THIS DRAWING,THE SPECIFICATION SHALL BE FOLLOWED UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
14. ALL JOINTS BETWEEN PIPES, FIXTURES AND LINING MATERIAL SHALL BE SEALED
15. ALL JOINTS BETWEEN PIPES AND CONCRETE SHALL BE WATERTIGHT.

REV	BY	Date	Description	Appr.
0	M.N	11-12-2015	GENERAL REVISION	M.N

PROJECT NBR.	L1505
PROJECT PHASE	TENDER
DISCIPLINE	CIVIL ENGINEERING
SECTOR	
BUILDING	
DESIGNED	M.N
DRAWN	M.N
CHECKED	M.N
APPROVED	
DATE	11-12-2015
SCALE	N.T.S
SHEET SIZE	A1

Title

TAL ABBAS EL GHARBI
SEWAGE NETWORK

SEWAGE TYPICAL DETAILS

Sheet 1 OF 4

L1505-PH1-SW-10-REV.0

Project Number	Phase	Type	Drawing Number	Revision