

Jericho Agro-Industrial Park (JAIP)

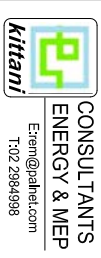
Wastewater Pumping Station and Force Main

Drawings

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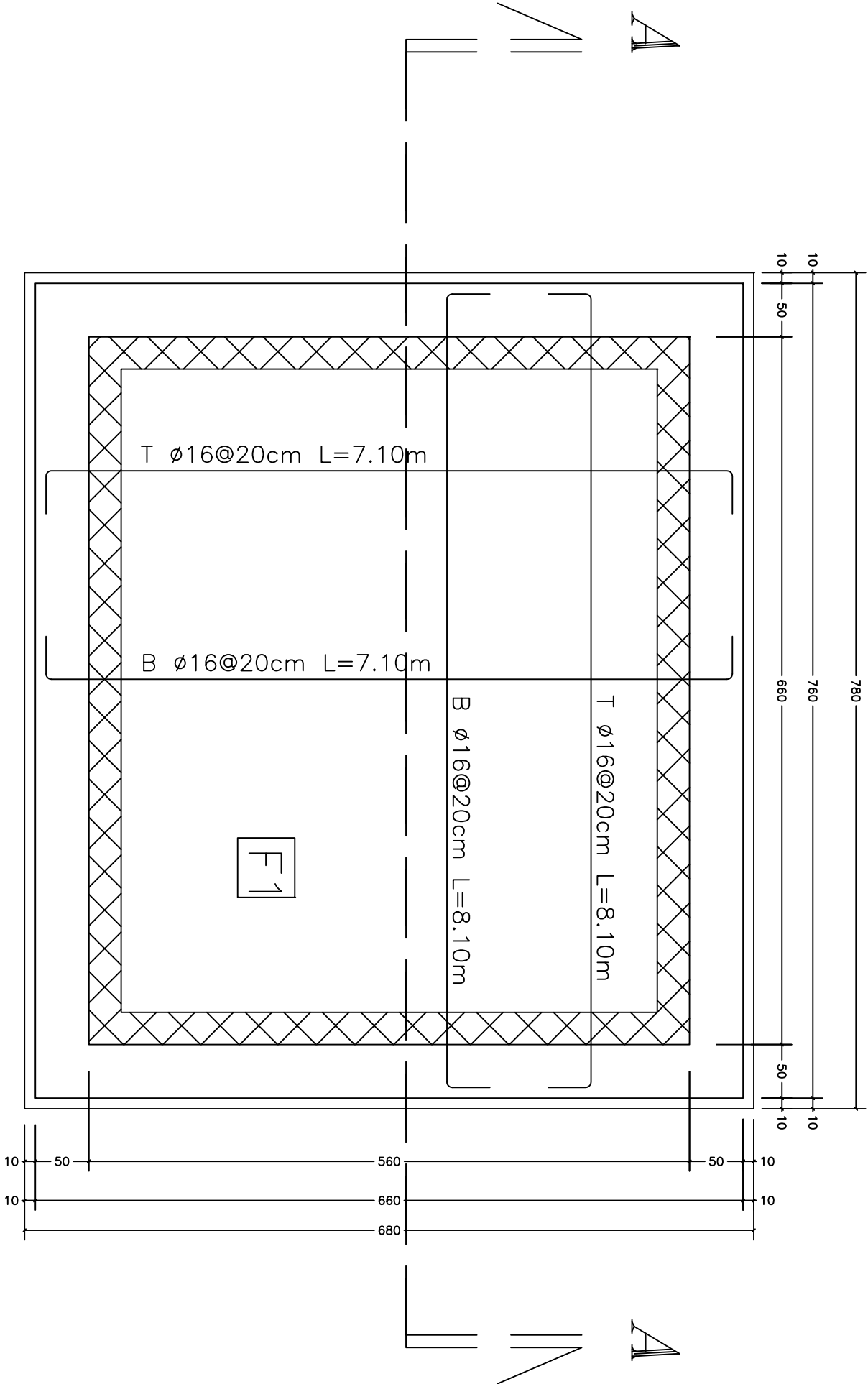
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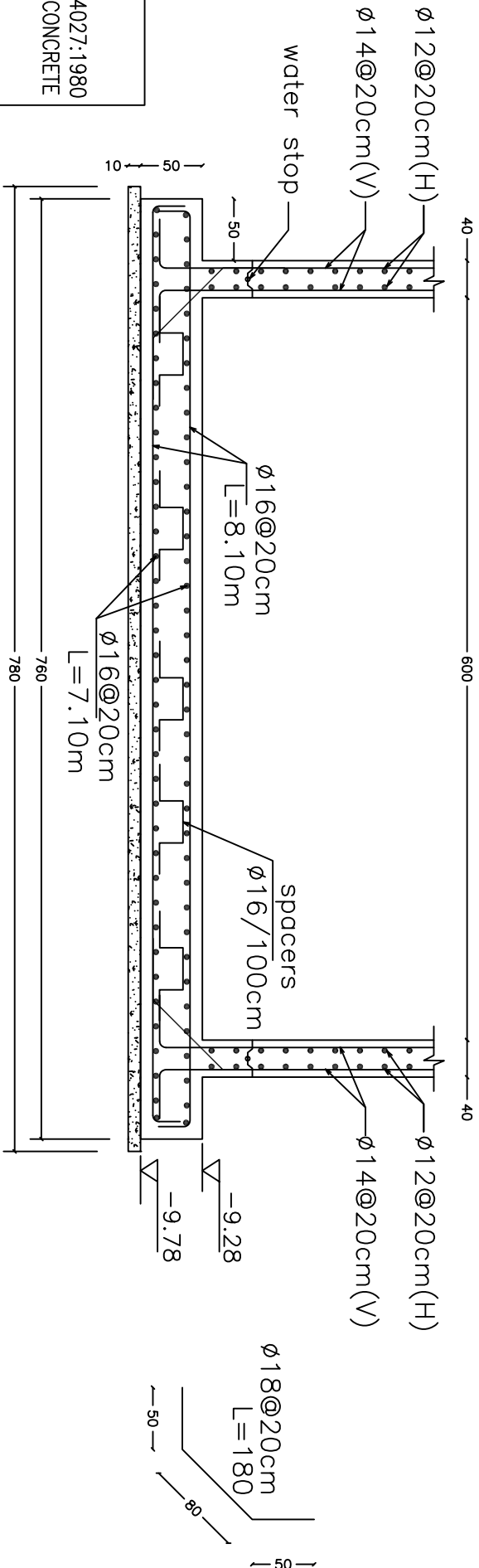


JERCHIO AGRO-INDUSTRIAL PARK
(JAIP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN
List of Drawings

Drawn By:	NAEIMAN ABDALLAH
Checked By:	HUSSEIN KITANI
Approved By:	
Scale:	NTS
DWG No:	Date:
E & M & S	Nov., 2014



F1 Details
scale 1:100



NOTES:

SULPHATE RESISTANT CEMENT (SRC) COMPLYING WITH BS 4027:1980 SHALL BE USED FOR WALLS AND FOOTING OF MANHOLES(CONCRETE GRADE B300)

CONCRETE SHALL BE CASTED IN ACCORDANCE WITH ACI RECOMMENDATION.

REFER TO S01 FOR ALL SPECIFICATIONS AND DETAILS

Section A-A
scale 1:50

- = Structural Wall below Slab Level.
- = Structural Wall above Slab Level (No Structural Wall below)
- = Column below Slab Level.
- = Column above Slab Level.
- = Hardcore.
- = Stone.
- = Polystyrene.
- = Block wall.
- = Plain Concrete
- = Waterproofing.
- = Thickness of Slab.
- = Level.
- = Column Mark.
- = Inverted Beam or Parapet above Slab Level.
- = Drop Beam .



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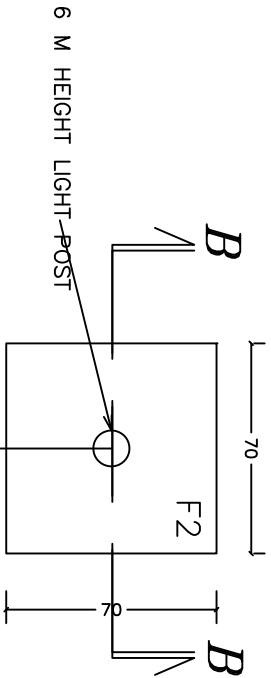
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DESCRIPTION
DATE

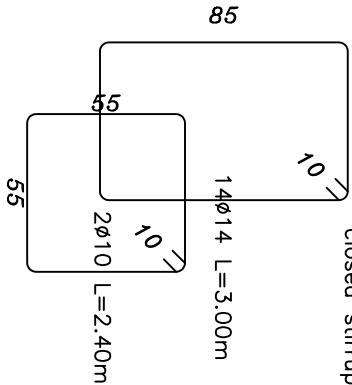
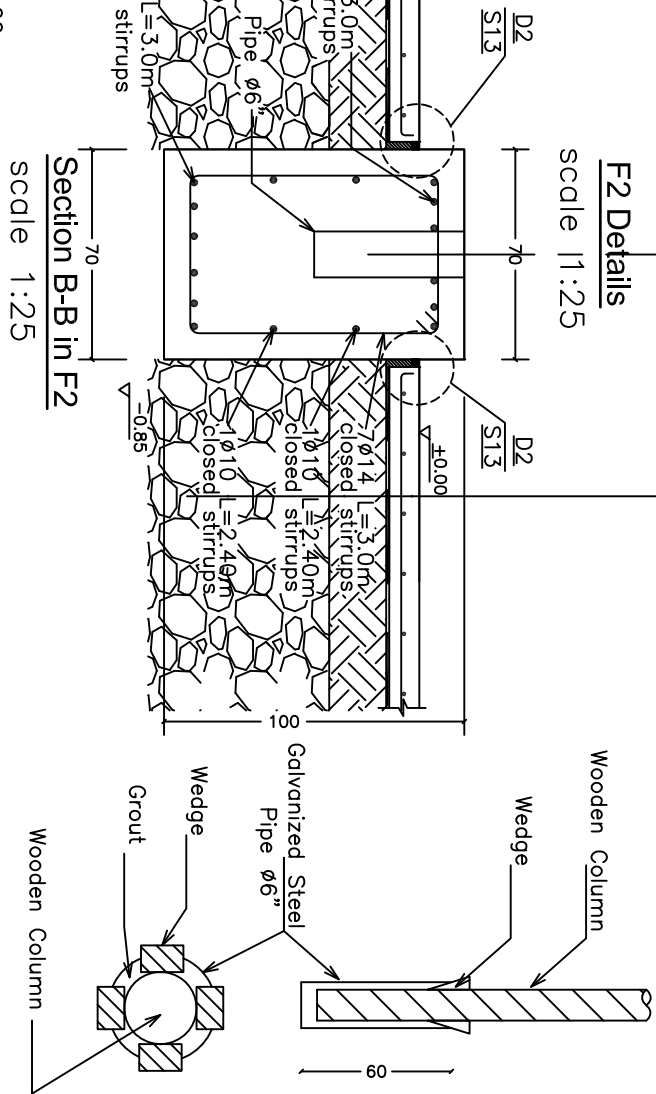
JERICHO AGRO-INDUSTRIAL PARK
(JAP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN

Footing Details-1

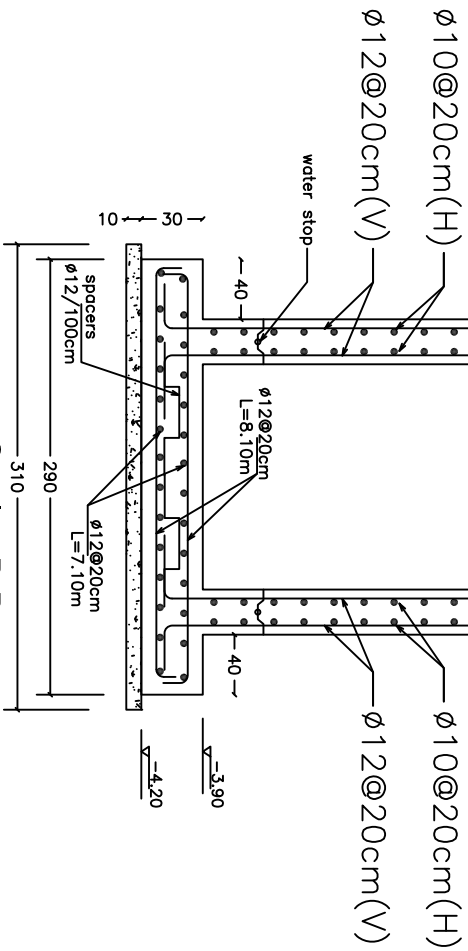
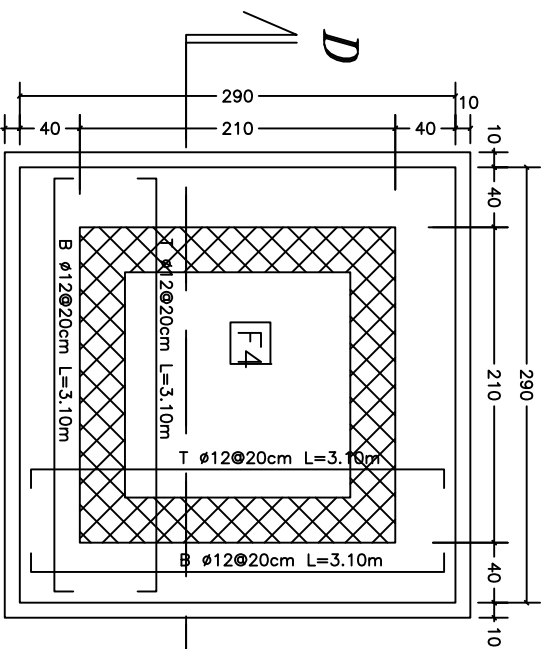
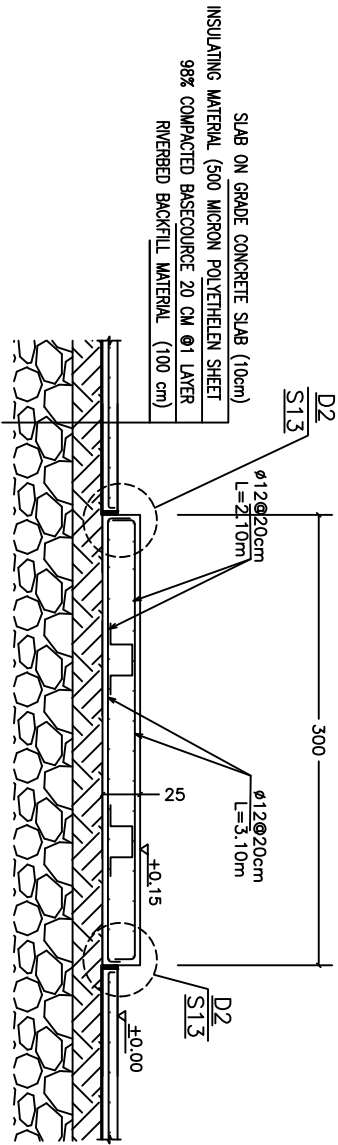
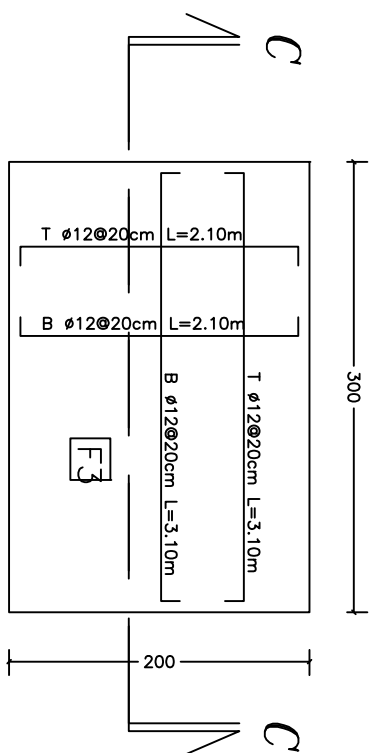
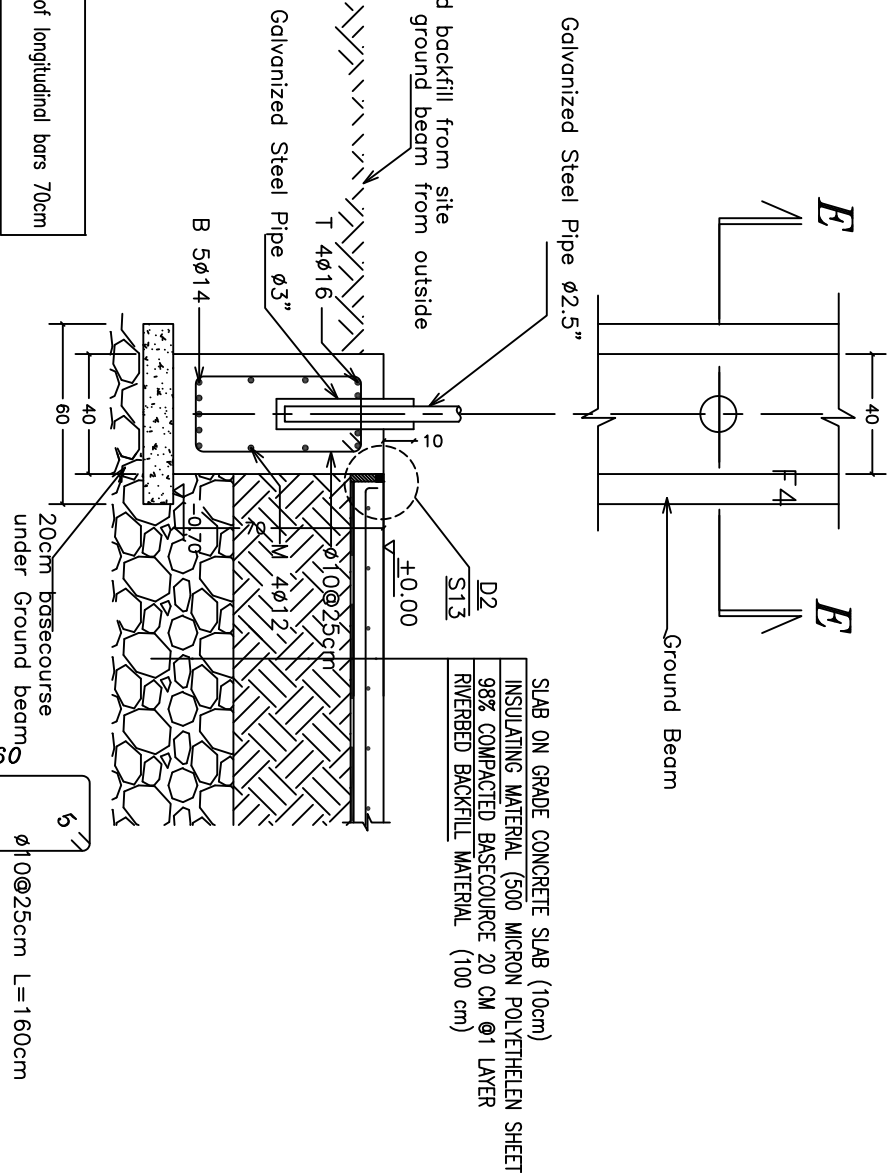
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CHECKED	DATE	Nov. 2014
APPROVED	SHADEN KITANI	DRG. No.
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SLAB ON GRADE CONCRETE SLAB (10cm)
INSULATING MATERIAL (500 MICRON POLYETHYLEN SHEET
98% COMPACTED BASECOURSE 20 CM Ø1 LAYER
RIVERBED BACKFILL MATERIAL (100 cm)



NOTE:
-Min. overlap of longitudinal bars 70cm



= Structural Wall below Slab Level.



= Structural Wall above Slab Level
(No Structural Wall below)



= Column below Slab Level.



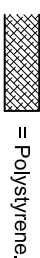
= Column above Slab Level.



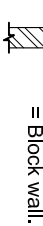
= Hardcore.



= Stone.



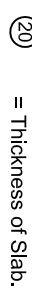
= Polystyrene.



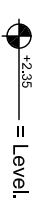
= Block wall.



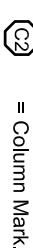
= Plain Concrete



= Thickness of Slab.



= Level.



= Column Mark.



= Inverted Beam or Parapet above
Slab Level.



= Drop Beam .



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REVISIONS	DESCRIPTION	DATE

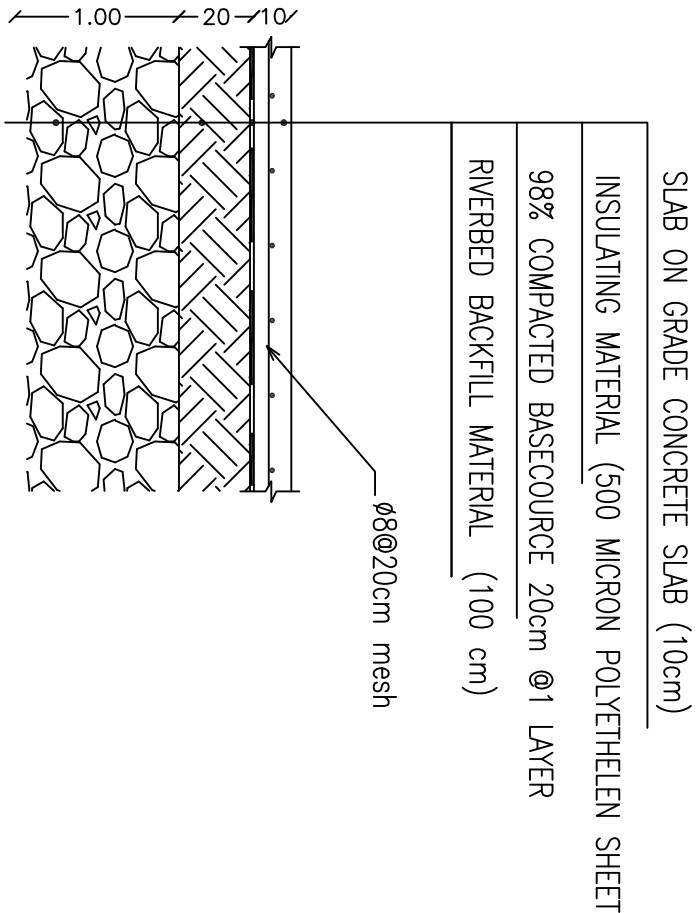
JERICHO AGRO-INDUSTRIAL PARK
(JAP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN

Footings Details-2

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APPROVED	SHADEN KITJIAN	DRG. No.	S 1 1
Sheet Size	A3		

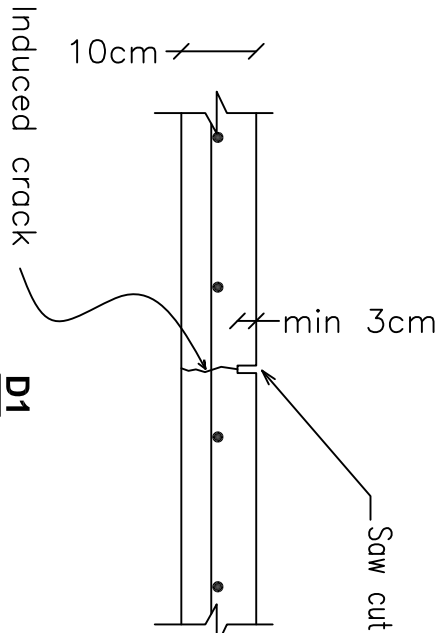
Contraction / Control Joints General Notes:

- a) The maximum joint spacing should be 24 to 36 times the thickness of the slab.
- b) All panels should be square or nearly so.The length should not exceed 1.5 times the width. Avoid L-shaped panels.
- c) For contraction joints, the joint groove should have a minimum depth of ¼ the thickness of the slab, but not less than 1 inch [25 mm]. Timing of jointing operations depends on the method used:
- Pre-formed plastic or hard board joint strips are inserted into the concrete surface to the required depth before finishing.
 - Tooled joints must be run early in the finishing process and rerun later to ensure groove bond has not occurred.
 - Early-entry dry-cut joints are generally run 1 to 4 hours after completion of finishing, depending on the concrete's setting characteristics. These joints are typically not as deep as those obtained by the conventional saw-cut process, but should be a minimum of 1 inch [25 mm] in depth.
 - Conventional saw-cut joints should be run within 4 to 12 hours after the concrete has been finished.
- d) Raveling during saw-cutting is affected by the strength of the concrete and aggregate characteristics. If the joint edges ravel during sawing, it must be delayed. However, if delayed too long, sawing can become difficult and uncontrolled cracking may occur.
- e) Use pre-molded joint filler such as asphalt-impregnated fiber sheeting, compressible foam strips, or similar materials for isolation joints to separate slabs from building walls or footings. At least 2 inches [50 mm] of sand over the top of a footing will also prevent bondage to the footing.
- f) To isolate columns from slabs, form circular or square openings, which will not be filled until after the floor has hardened. Slab contraction joints should intersect at the openings for columns. If square openings are used around columns, the square should be turned at 45 degrees so the contraction joints intersect at the diagonals of the square.
- g) If the slab contains wire mesh, cut out alternate wires, or preferably discontinue the mesh, across contraction joints. Note that wire mesh will not prevent cracking. Mesh tends to keep the cracks and joints tightly closed.
- h) Construction joints key the two edges of the slab together either to provide transfer of loads or to help prevent curling or warping of the two adjacent edges. Galvanized metal keys are sometimes used for interior slabs, however, a beveled 1 by 2 inch [25 by 50 mm] strip, nailed to bulkheads or form boards, can be used in slabs that are at least 5 inches [125 mm] thick to form a key which will resist vertical loads and movements. Keyed joints are not recommended for industrial floors. Metal dowels should be used in slabs that will carry heavy loads. Dowels must be carefully lined up and parallel or they may induce restraint and cause random cracking at the end of the dowel.
- i) Joints in industrial floors subject to heavy traffic require special attention to avoid the spalling of joint edges. Such joints should be filled with a material capable of supporting joint edges. Manufacturer's recommendations and performance records should be checked before use.

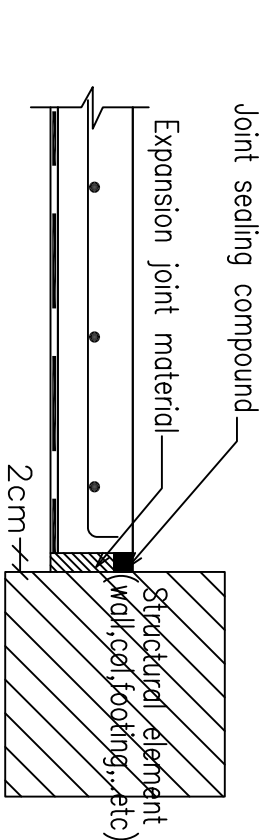


Section In S.O.G

Scale 1:20



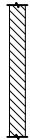
Scale 1:10



Scale 1:10



= Structural Wall below Slab Level.



= Structural Wall above Slab Level
(No Structural Wall below)



= Column below Slab Level.



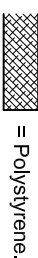
= Column above Slab Level.



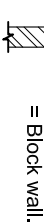
= Hardcore.



= Stone.



= Polystyrene.



= Block wall.



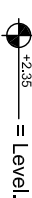
= Plain Concrete



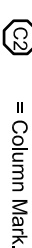
= Waterproofing.



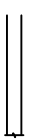
= Thickness of Slab.



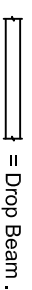
= Level.



= Column Mark.



= Inverted Beam or Parapet above
Slab Level.



= Drop Beam .



Empowered Lines
Redefine nature.



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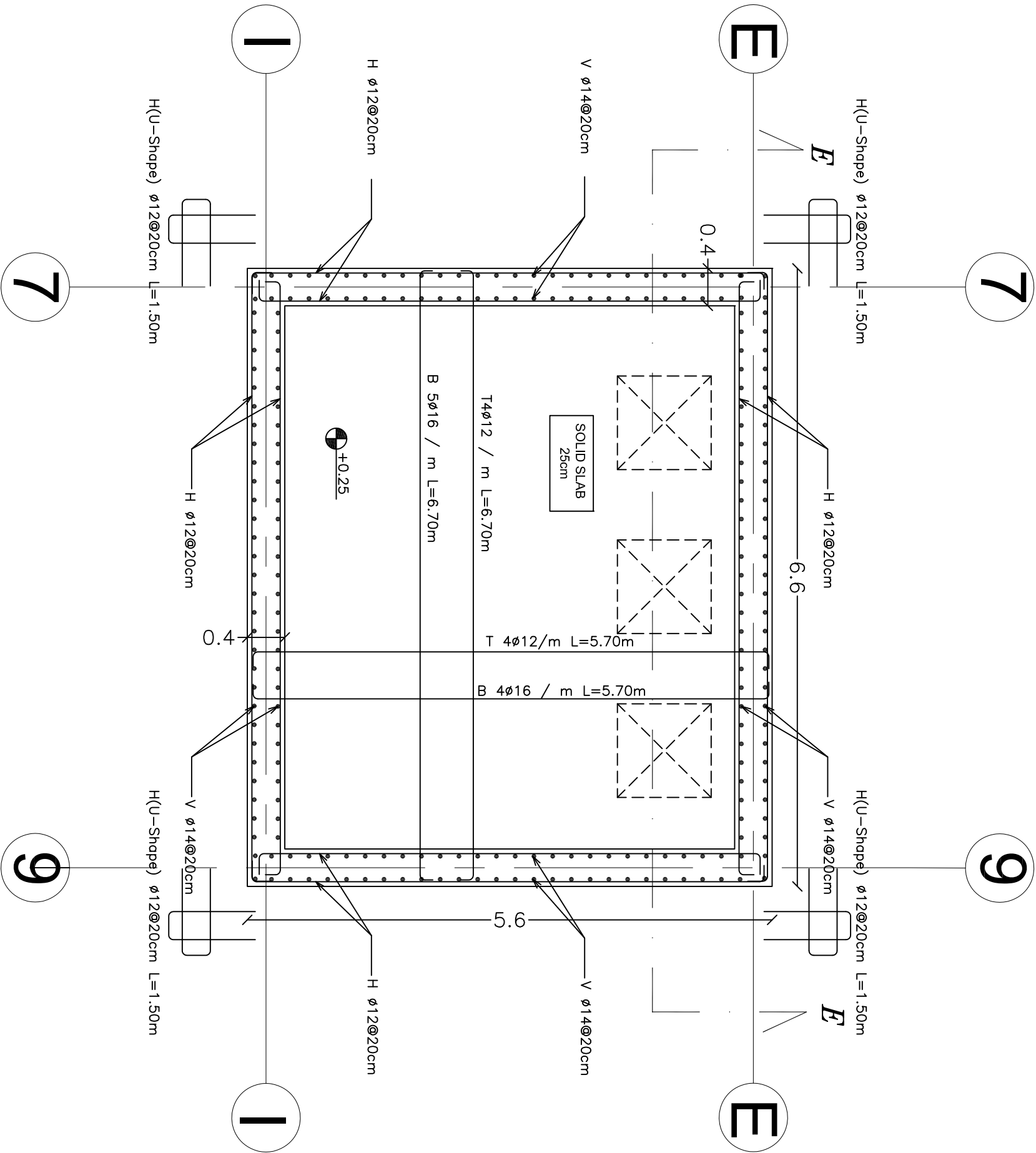
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E.enm@kittani.com
T:02 2984998

REVISIONS	
DESCRIPTION	DATE

JERICO AGRO-INDUSTRIAL PARK
(LAP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN

S.O.G. Details

DESIGNED	SHADEN KITTANI	SCALE	as Noted
CHECKED	DATE	DATE	Nov. 2014
APPROVED	SHADEN KITTANI	DRG. No.	SS 1 3
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Collective Tank Slab Reinforcement details

Scale 1:50

REVISIONS	
DESCRIPTION	DATE

JERCHO AGRO-INDUSTRIAL PARK (JAP) WASTEWATER PUMPING STATION WITH FORCE MAIN			
Collective Tank Slab			
DESIGNED	SHADEN KITTANI	SCALE	1:50
CHECKED		DATE	Nov. 2014
APPROVED	SHADEN KITTANI	DRG. No.	S 14
Sheet Size		A3	

Structural Wall below Slab Level.

Structural Wall above Slab Level
(No Structural Wall below)

Column below Slab Level.

Column above Slab Level.

Hardcore.

Stone.

Polystyrene.

Block wall.

Plain Concrete

Thickness of Slab.

Level.

Column Mark.

Inverted Beam or Parapet above Slab Level.

Drop Beam .



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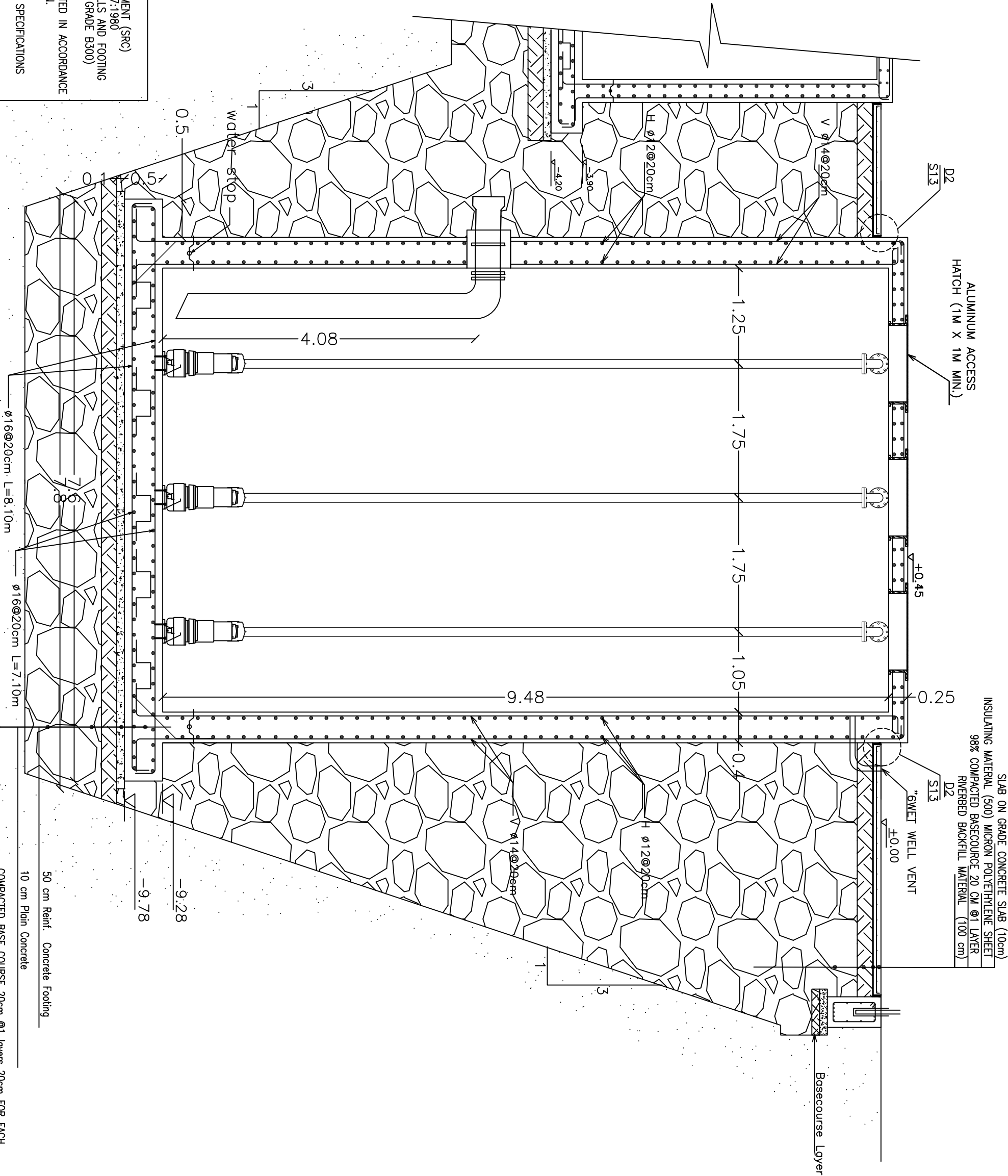
ENERGY & MEP

kitani

kitani@pafirst.com

1302 2884988

NOTES:
-SULPHATE RESISTANT CEMENT (SRC) COMPLYING WITH BS 4027:1980 SHALL BE USED FOR WALLS AND FOOTING OF MANHOLES(CONCRETE GRADE B300)
-CONCRETE SHALL BE CASTED IN ACCORDANCE WITH ACI RECOMMENDATION.
-REFER TO S01 FOR ALL SPECIFICATIONS AND DETAILS.



Section E-E
Scale 1:50

SLAB ON GRADE CONCRETE SLAB (10cm)	
TING MATERIAL (500) MICRON POLYETHYLENE SHEET	
98% COMPACTED BASECOURSE 20 CM @ 1 LAYER	
RIVERBED BACKFILL MATERIAL (100 cm)	
D2	
S13	
"6WEL WELL VENT	
±0.00	
0.4	
H Ø12@20cm	
H Ø14@20cm	
1	3
Basecourse Layer	
-9.28	
-9.78	
10 cm Plain Concrete	
50 cm Reinf. Concrete Footing	
COMPACTED BASE COURSE 20cm Ø1 layers 20cm FOR EACH	
TO AT LEAST 98% OF MODIFIED PROCTOR	
RIVERBED BACKFILL MATERIAL (100cm) / At Area of 9mx9m	
NATURAL SOIL	

REVISIONS		DESCRIPTION	DATE

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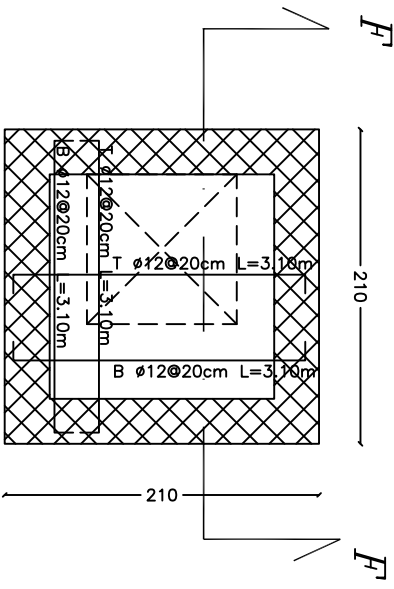
kititani

kititani@pafnet.com

T:302 2894988

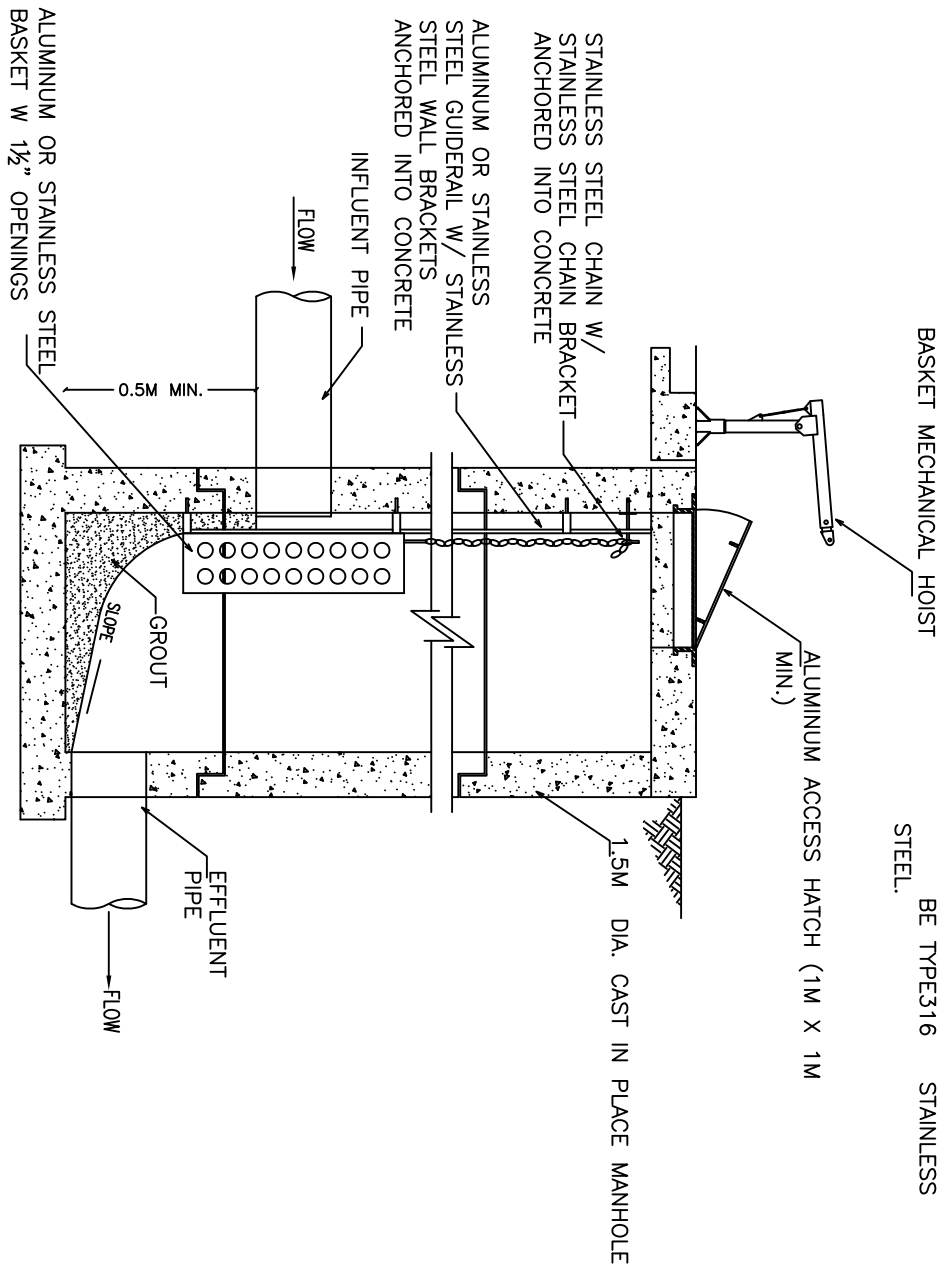
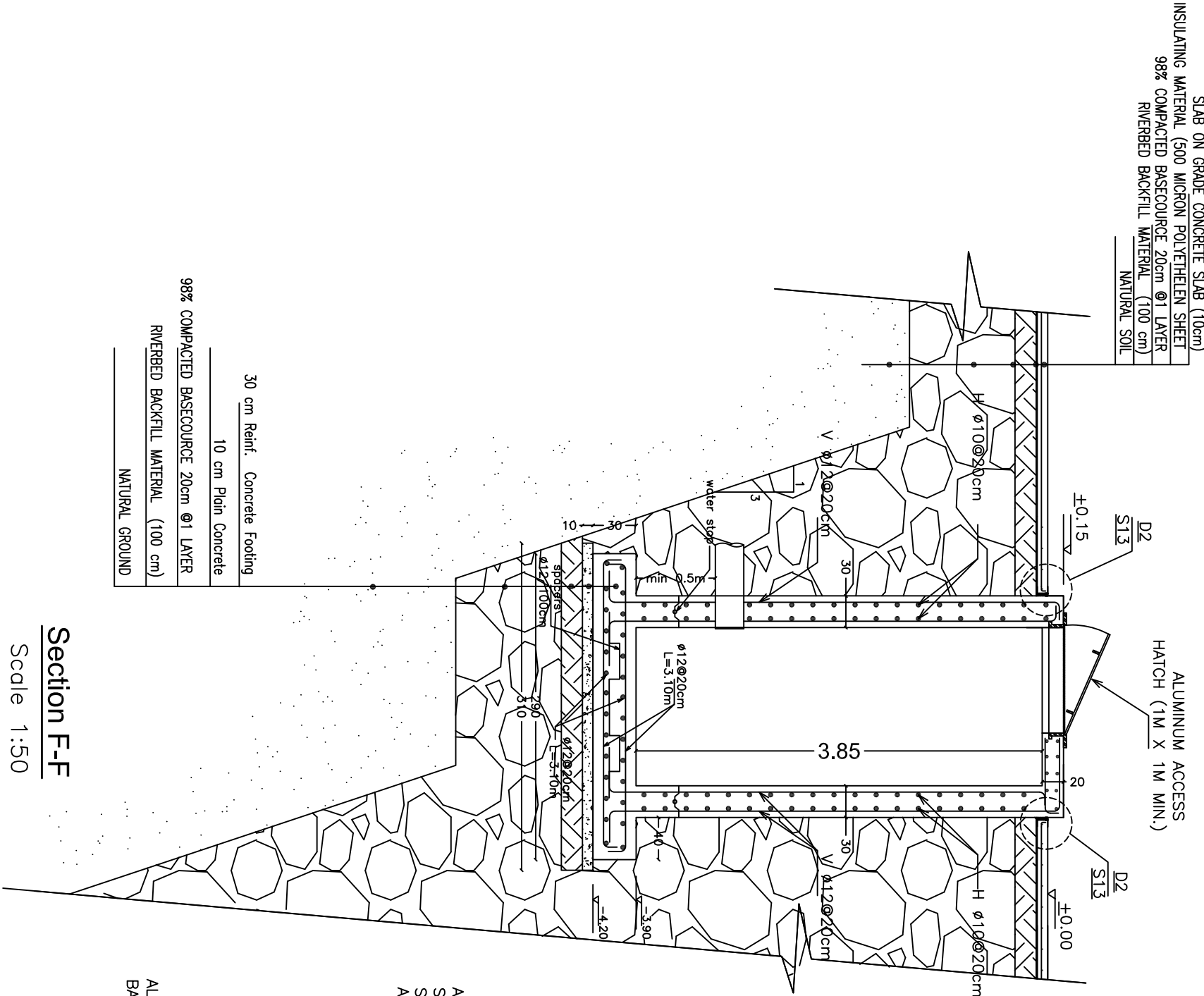


- = Structural Wall below Slab Level.
- = Structural Wall above Slab Level (No Structural Wall below)
- = Column below Slab Level.
- = Column above Slab Level.
- = Hardcore.
- = Stone.
- = Polystyrene.
- = Block wall.
- = Plain Concrete
- = Waterproofing.
- = Thickness of Slab.
- = Level.
- = Column Mark.
- = Inverted Beam or Parapet above Slab Level.
- = Drop Beam .



NOTES:
SULPHATE RESISTANT CEMENT (SRC) COMPLYING WITH BS 4027:1980 SHALL BE USED FOR WALLS AND FOOTING OF MANHOLES(Concrete Grade B300) CONCRETE SHALL BE CASTED IN ACCORDANCE WITH ACI RECOMMENDATION. REFER TO S01 FOR ALL SPECIFICATIONS AND DETAILS

- NOTES:**
1.INSIDE OF MANHOLE SHALL BE EPOXY COATED MIN. 50 MIL SURFACE DRY. EPOXY SEALER PRIME COATING AND FINISH COATING SHALL BE NSP 100 AND NSP 1200R CARBOLINE PLASITE 4500.
2.RETRACTABLE ARM POWER HOIST OF 500KG AT FULL ARM & BASE MUST BE PROVIDED FOR BASKET REMOVE.
3.DIFFERENCE IN INLET AND OUTLET INVERT ELEVATIONS SHALL BE 0.5M MINIMUM.
4.ALL CONCRETE EXPANSIONS ANCHORS SHALL BE TYPE316 STAINLESS STEEL.



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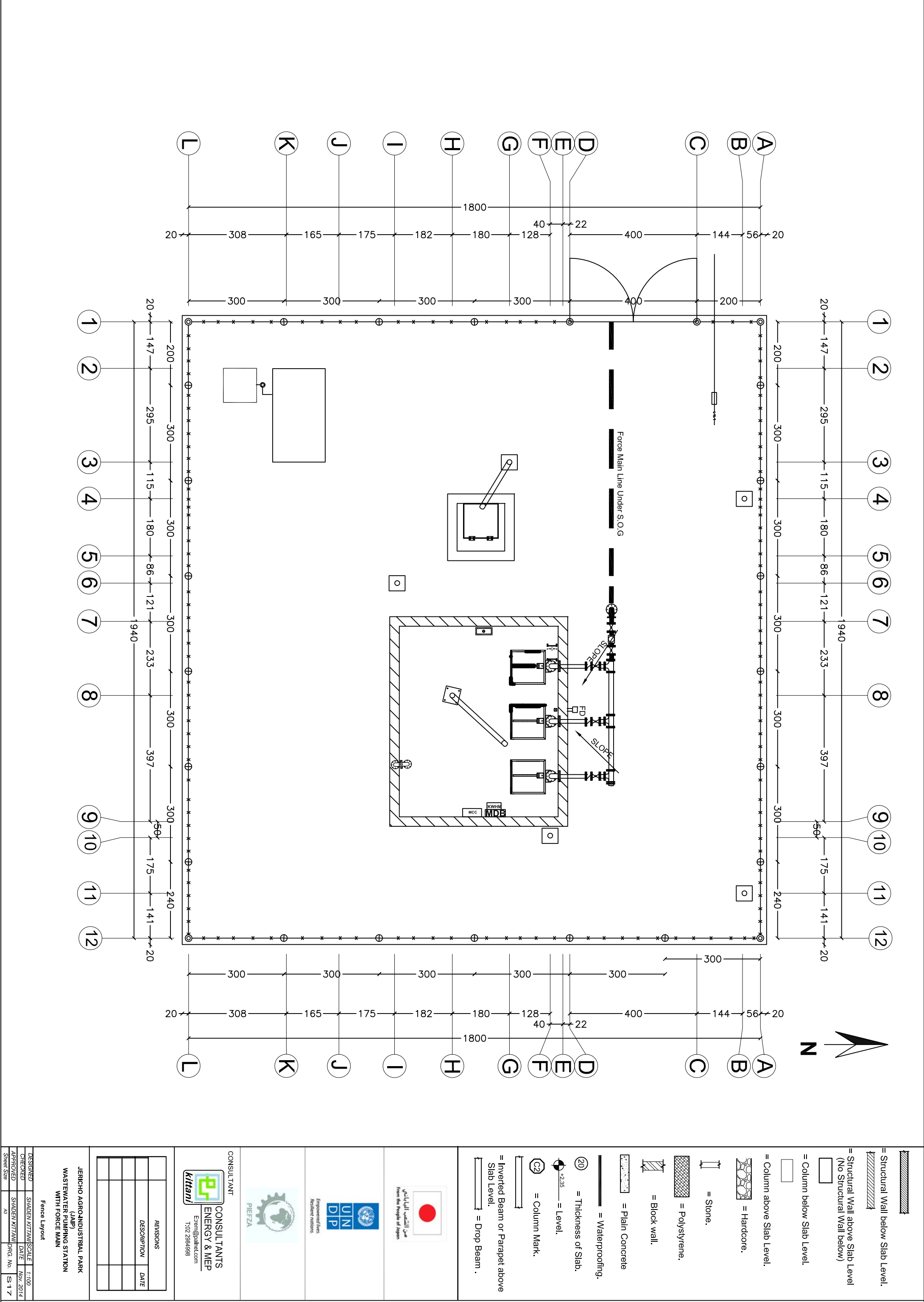


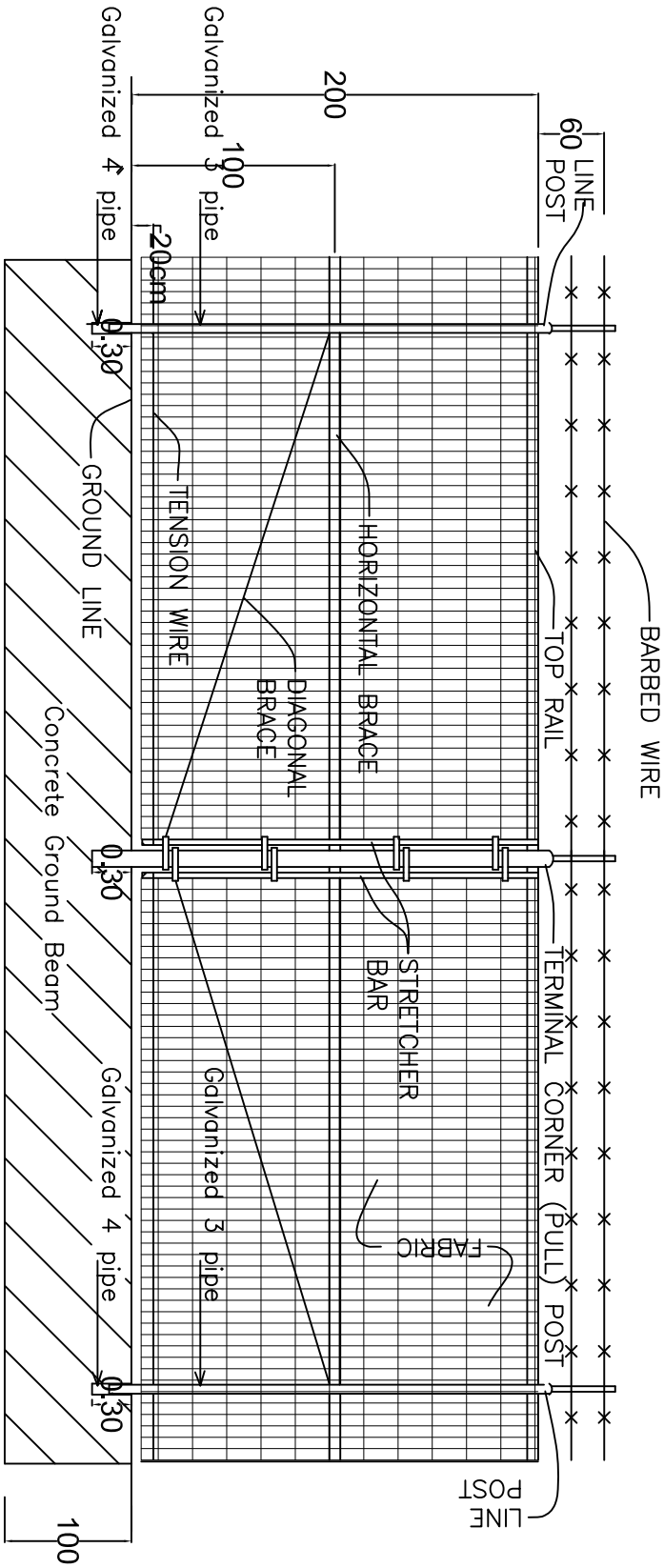
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REVISIONS	
DESCRIPTION	DATE

JERICHO AGRO-INDUSTRIAL PARK
(JAP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN

DESIGNED	SHADEN KITANI	SCALE	1:50
CHECKED	SHADEN KITANI	DATE	10/1/2014
APPROVED	SHADEN KITANI	DRG. No.	S 16
Sheet Size	A3		

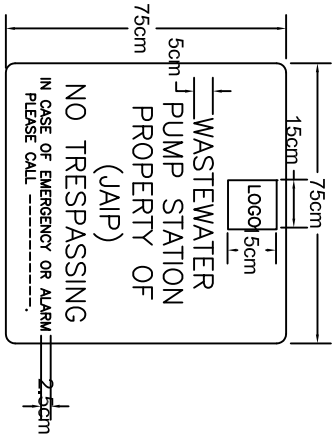




BARBED WIRE – 2 STRANDS, 12 1/2 GAUGE WIRE WITH 14 GAUGE 4 POINT BARBS SPACED APPROXIMATELY 6 INCHES APART. ALL WIRE SHALL BE ALUMINUM COATED WITH A MINIMUM COATING OF 0.25 OUNCES PER SQUARE FOOT OF SURFACE AREA.

BARBED WIRE SHALL BE DIRECTLY ATTACHED TO EACH CORNER AND GATE POST. BARBED WIRE SHALL BE ATTACHED TO EACH LINE POST AND PULL POST WITH A SUPPORTING ARM. SUPPORTING ARM SHALL SLOPE TO THE OUTSIDE OF THE FENCE AT A 45° ANGLE.

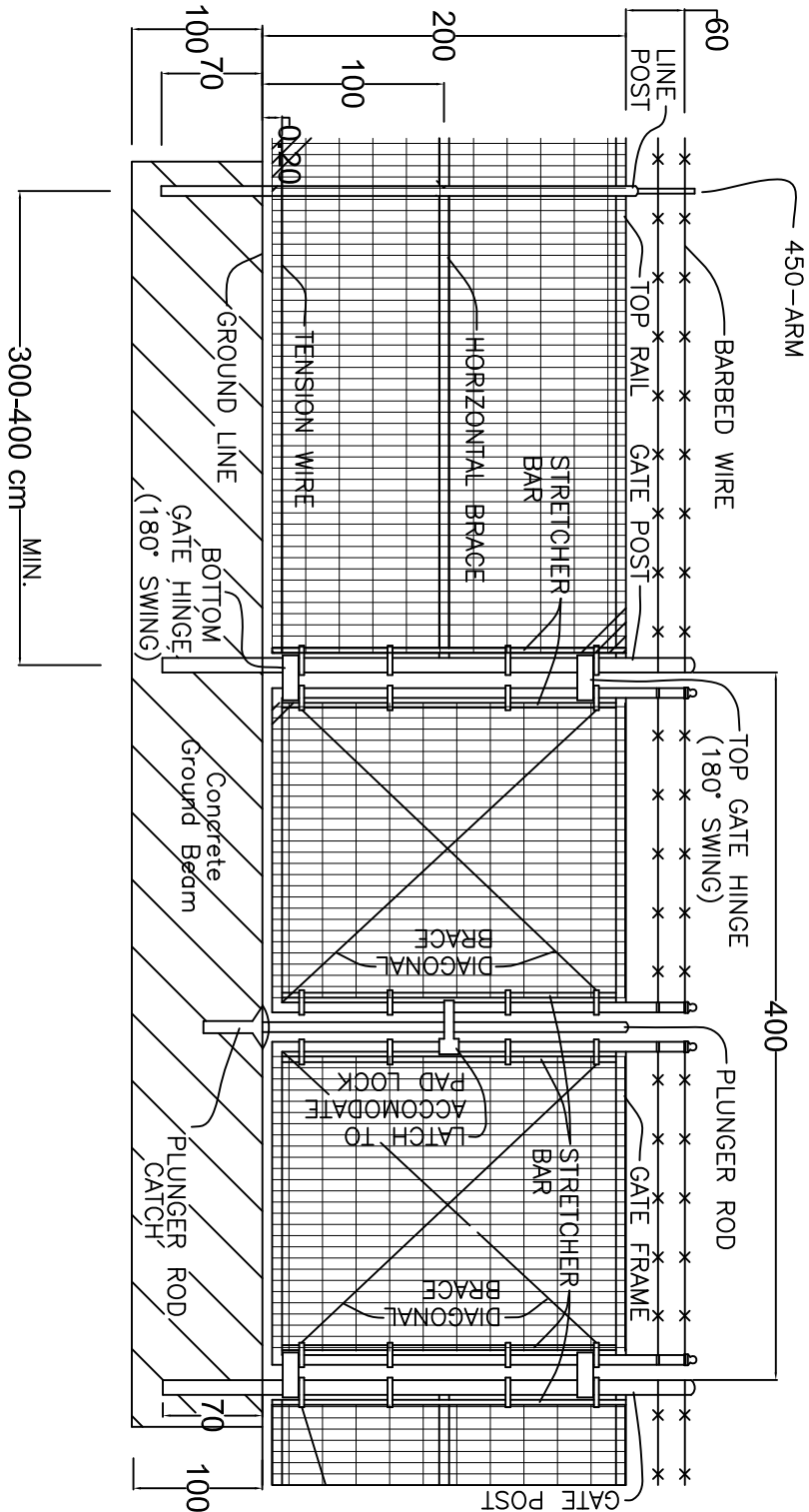
4mm hot dip Galvanized site boundary fence.



BLOCK LETTERS ON WHITE BACKGROUND
SIGN PANEL SHALL BE STANDARD GAUGE ALUMINUM SHEETS
SIGN SHALL BE FIELD LOCATED

SIGN

CHAIN LINK FENCE DETAILS



4M DOUBLE SWING GATE DETAILS

= Structural Wall below Slab Level.

= Structural Wall above Slab Level (No Structural Wall below)

= Column below Slab Level.

= Column above Slab Level.

= Hardcore.

= Stone.

= Polystyrene.

= Block wall.

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= Thickness of Slab.

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Empowered lives.
Resilient nations.

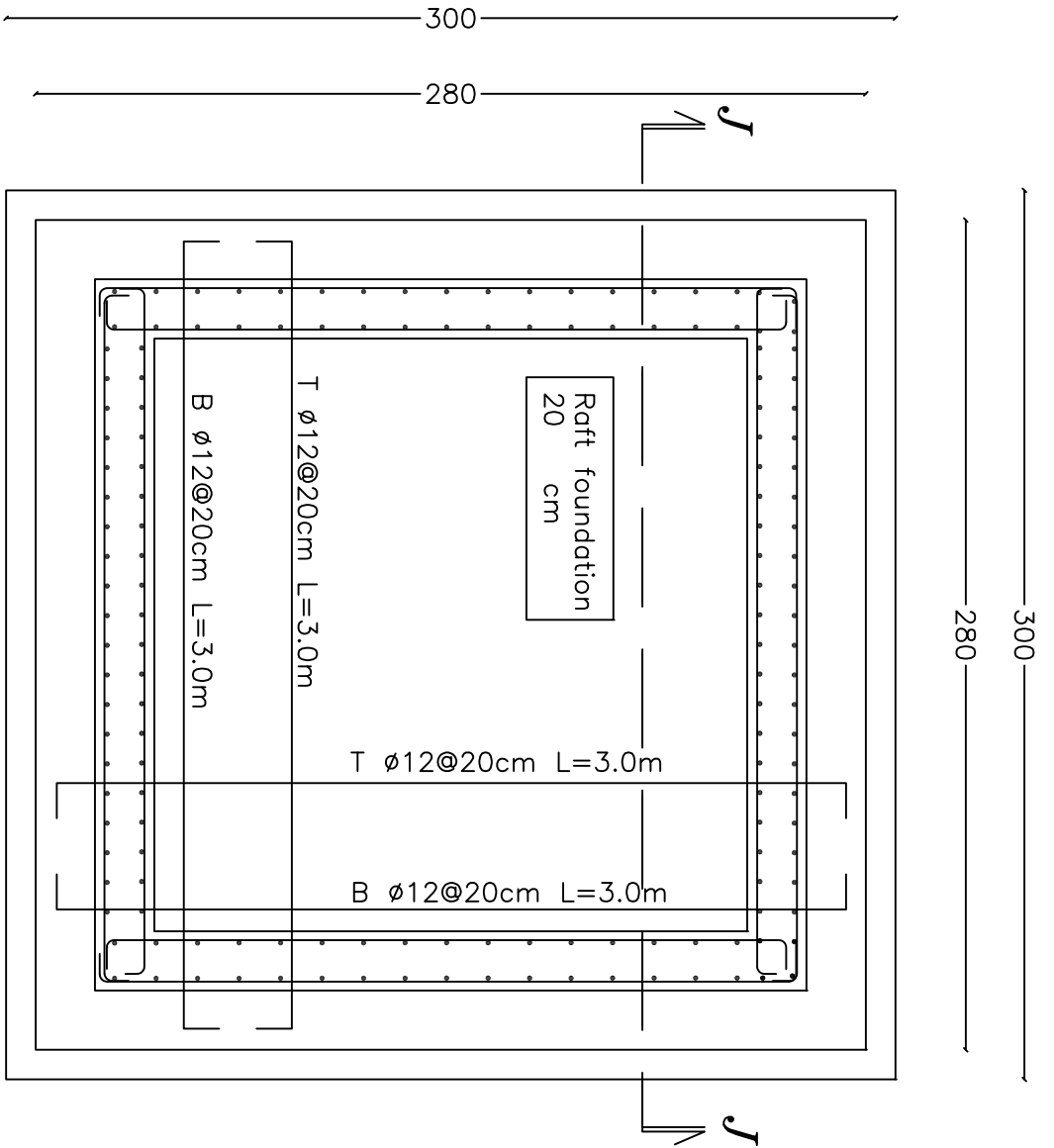


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(JAIP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN

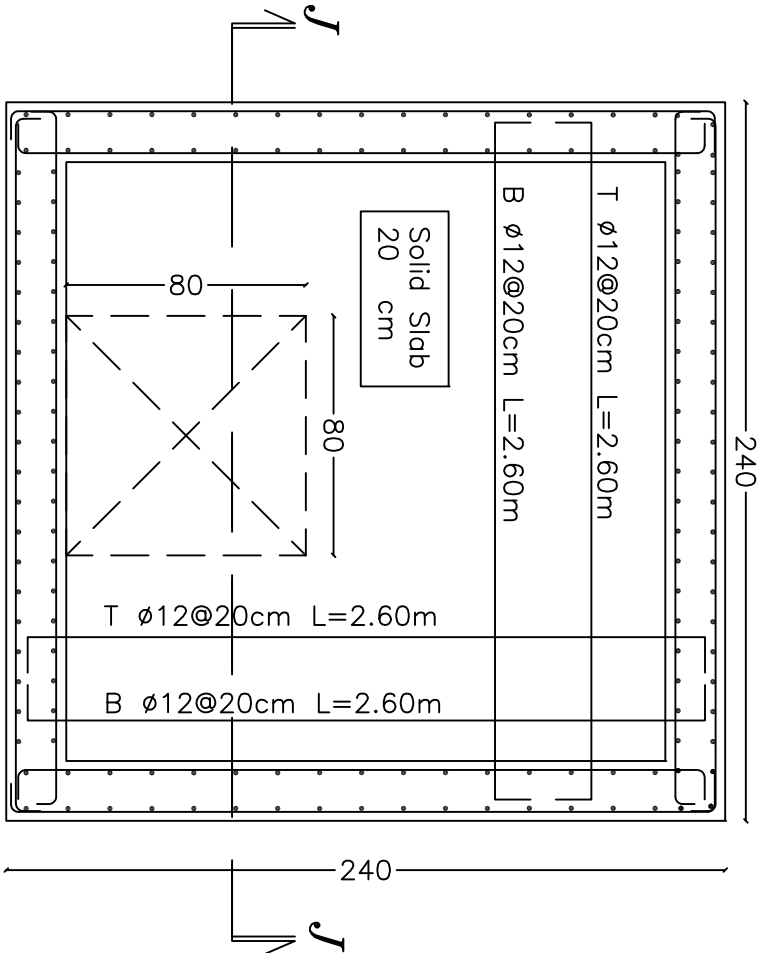
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CHECKED		DATE	Nov. 2014
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Pressure Manhole Foundation

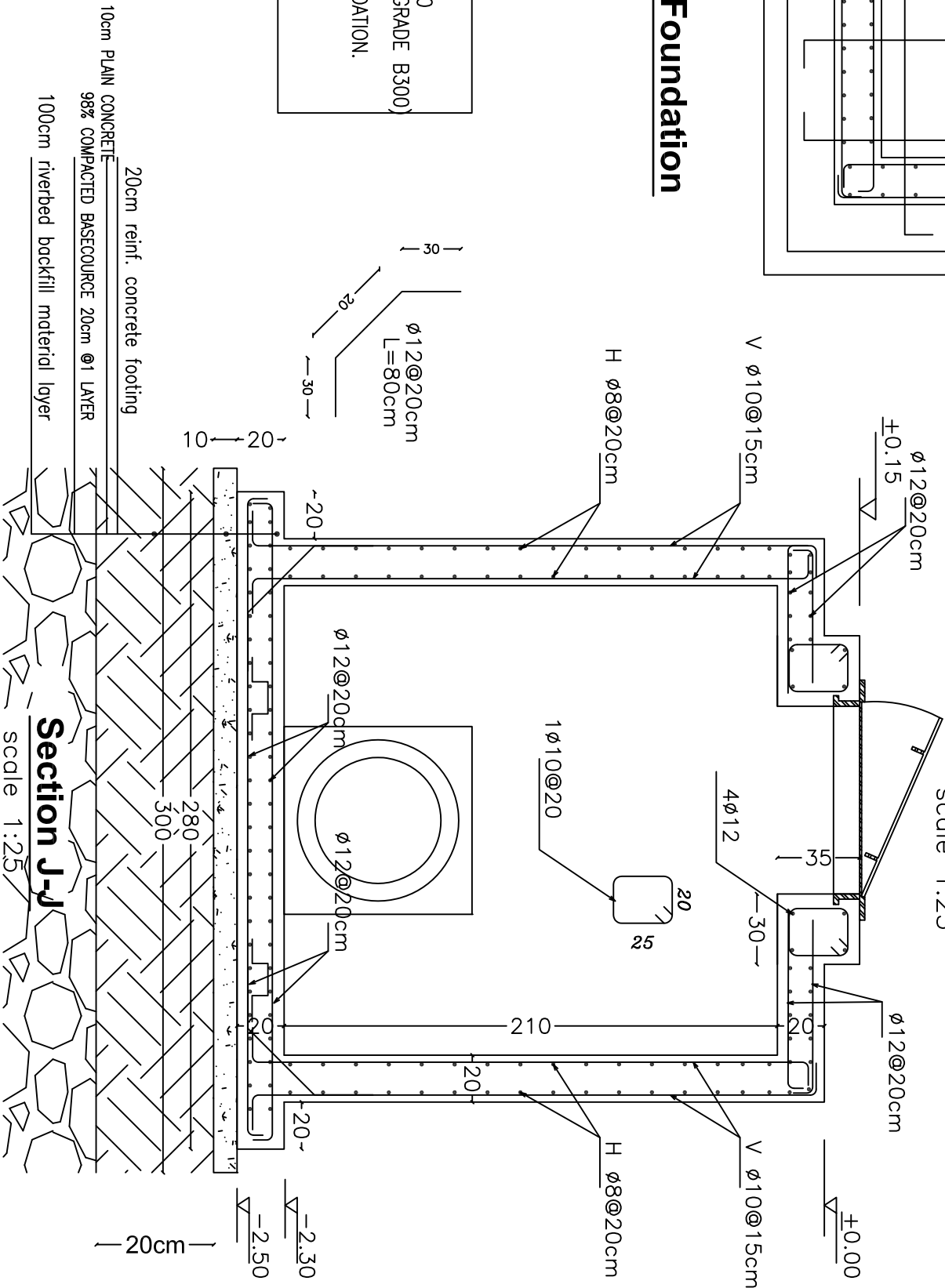
scale 1:25

- NOTES:**
- SULPHATE RESISTANT CEMENT (SRC) COMPLYING WITH BS 4027:1980 SHALL BE USED FOR WALLS AND FOOTING OF MANHOLES(CONCRETE GRADE B300)
 - CONCRETE SHALL BE CASTED IN ACCORDANCE WITH ACI RECOMMENDATION.
 - REFER TO S01 FOR ALL SPECIFICATIONS AND DETAILS



Pressure Manhole Slab

scale 1:25



= Structural Wall below Slab Level.

= Structural Wall above Slab Level
(No Structural Wall below)

= Column below Slab Level.

= Column above Slab Level.

= Hardcore.

= Stone.

= Polystyrene.

= Block wall.

= Plain Concrete

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REVISIONS	
DESCRIPTION	DATE

JERICHO AGRO-INDUSTRIAL PARK
(JAP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN

Pressure Manhole Details

DESIGNED	SHADEN KITTANI	SCALE	1:25
CHECKED	DATE	Nov. 2014	
APPROVED	SHADEN KITTANI	DRG. No.	S 19
Sheet Size	A0		

THE FOLLOWING NOTES ARE VERY IMPORTANT AND SHALL BE READ WITH EVERY STRUCTURAL DRAWING AND SHALL BE FOLLOWED EXACTLY DURING CONSTRUCTION.

GENERAL NOTES

- 1- ALL DIMENSIONS ARE WRITTEN IN CENTIMETERS UNLESS IT IS INDICATED OTHERWISE, AND SHALL BE FOLLOWED EXACTLY DURING CONSTRUCTION. ALL REINFORCING STEEL BARS DIAMETERS ARE SHOWN IN MILLIMETERS
- 2- DIMENSIONS SHALL NOT BE SCALED FROM DRAWINGS, THEY SHALL BE READ OR COMPUTED, CONSULT THE DESIGNER OTHERWISE.
- 3- EVERY DRAWING SHALL BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL, M & E DRAWINGS IN ADDITION TO ALL STRUCTURAL DRAWINGS OF THE SAME PART.
- ** CODES OF DESIGN THE STRUCTURAL DESIGN WAS BASED ON THE RECOMMENDATIONS OF THE "AMERICAN STANDARDS", ACI 318 CODE
- ** BACKFILLING IN FRONT AND BEHIND WALLS SHALL BE DONE SIMULTANEOUSLY.
- ** UNLESS OTHERWISE SHOWN , BAR BENDS , LAP SPLICES AND REINFORCEMENT DETAILS SHALL CONFORM TO ACI DETAILING MANUAL-LATEST EDITION.
- ** SURFACE OF CONCRETE CONSTRUCTION JOINTS SHALL BE ROUGHENED, CLEANED AND LAINTIANCE REMOVED.
- **CONSTRUCTION JOINTS SHALL BE SO MADE AND LOCATED AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE.
- ** THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY, INTEGRITY AND STABILITY OF PEOPLE, BUILDINGS, EXISTING UTILITIES LINE OR ANY OR EXCAVATION OR ANY OTHER CONSTRUCTION OPERATIONS.

DESIGN LOADS

SUPER IMPOSED D LOAD = 1000 KG/SQ.M.
LIVE LOAD = 500 KG/SQ.M

FOUNDATIONS

DUE TO THE LOADS AND THE NATURE OF THE PROJECT AREA AND SOIL PROFILE MAT FOUNDATION OVER LAYERS OF BASECOURSE AND ROCK FILL ARE USED FOUNDATION GROUND SHOULD BE ACCORDING TO THE RECOMMENDATIONS OF THE SOIL INVESTIGATION REPORT

THE SOIL INSITE SHOULD BE REPLACED AS SHOWN IN DRAWINGS SINCE IT IS VERY LOOSE

THE BACKFILL MATERIALS USED FOR THE BUILDINGS SHOULD BE COMPLYING WITH THE FOLLOWING SPECIFICATIONS:

- ROCK PARTICLE NOT EXCEEDING 75mm IN SIZE.
- ORGANIC MATTER < 2%.
- LIQUID LIMIT < 35%.
- PLASTICITY INDEX < 10%.
- WATER SOLUBLE SALTS < 5%.

-THE MATERIAL PASSING THE 0.075mm SIEVE SHALL BE< 20%
THE NET ALLOWABLE BEARING PRESSURE VALUE OF 10kN/m2 WAS ADOPTED IN THE CALCULATION OF FOOTINGS.
THE FOUNDATIONS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE ABOVE RECOMMENDATIONS WILL HAVE NEGLIGIBLE SETTLEMENT.

-THE CONTRACTOR IS RESPONSIBLE TO VERIFY THE SOIL BEARING CABACITY AND CONDITIONS AND PREPARE WORKSHOP DRAWINGS ACCORDINGLY

MATERIALS

CONCRETE - (NORMAL WEIGHT)
MINIMUM 28 DAYS CUBIC COMPRESSIVE STRENGTH
CONCRETE SHALL BE AS SPECIFIED BY PALESTINIAN STANDARADS (PS 55 PARTS(1-6)/(2005&2007):

CONCRETE GRADE (N/mm ²)	CHARACTERISTIC STRENGTH (N/mm ²)	MINIMUM CEMENT CONTENT (kg/m ³)	MAXIMUM WATER CEMENT RATIO	APPLICATIONS
B30	30	350	0.45	COLUMNS, RETAINING WALLS & SLABS , BEAMS BASEMENT WALLS And FOOTINGS
B20	20	250	0.5	BACKING, UNREINFORCED FOOTINGS
B15	15	200	0.6	BLINDING

-WORKABILITY: SLUMP SHALL BE EQUAL TO (12.5CM)FOR SLABS AND WALL.

10CM FOR FOOTING AND GROUND BEAM And FOR COLUMNS

VERY IMPORTANT NOTE : SPECIALE ADDITIVES TO REDUCE OR PREVENT PERMIAPABILITY OF CONCRETE MUST BE USED AND ADED DURING CASTINGOF CONCRETE IN ADDITION TO ANY OTHER ADDITVES USED LIKE SP4 FOR WORKABILITY.

CEMENT

CEMENT FOR BLINDING, PAYING FENCE FOOTING CONCRETE SHALL BE ORDINARY PORTLAND CEMENT (OPC) TO BS 12 OR EQUIVALENT. SULPHATE RESISTANT CEMENT (SRC) COMPLYING WITH BS 4027:1980 SHALL BE USED FOR WALL AND FOOTING OF COLLECTIVE TANKS AND MANHOLES

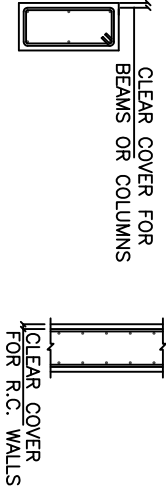
CONCRETE SHALL BE CASTED IN ACCORDANCE WITH ACI RECOMMENDATION.

-REINFORCING STEEL:

REINFORCING STEEL BARS SHALL BE UNCOATED HIGH YIELD DEFORMED BARS OF CHARACTERISTICS STRENGTH OF 420 N/mm² TO ASTM A615 GRADE 60, OR EQUAL DESIGNATED AS GRADE (ø).

CONCRETE PROTECTION COVER FOR REINF.

CONCRETE COVER FOR REINFORCEMENT SHALL BE MEASURED FROM THE CONCRETE SURFACE TO THE OUTERMOST SURFACE OF THE STEEL i.e TO THE OUTER EDGE OF STIRRUPS, TIES OR SPIRALS ENCLOSING MAIN BARS & TO THE OUTERMOST LAYER OF BARS IF MORE THAN ONE LAYER IS USED WITHOUT STIRRUPS OR TIES .
THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT.



CAST IN PLACE CONCRETE

- a) CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH : 75
- b) CONCRETE IN CONTACT WITH EARTH INCLUDING ANY SURFACE PROTECTED WITH WATERPROOFING MEMBRANE OR BITUMASTIC COATING :
 - ø26 AND SMALLER 40
 - OTHER BARS 50
 - COLUMNS TIES 50
 - GRADE BEAMS 50
 - SLAB ON GRADE (FROM TOP SURFACE) 50
- c) CONCRETE NOT IN CONTACT WITH GROUND :
 - SLABS , WALLS AND JOISTS 30
 - BEAMS AND COLUMNS 40

GROUND SLAB

- ** GROUND SLAB DETAILS ARE SHOWN WITH THE S02 SHEET
- ** GROUND SLAB REINFORCEMENT SHALL BE PLACED AT THE UPPER ONE THIRD OF THE SLAB THICKNESS.

** FOR BASE COURSE MATERIALS UNDER SLABS ON GRADE REFER TO THE PROJECT SPECIFICATIONS SECTION: EXCAVATION AND EARTHWORKS
**THE 100 cm BASE COURSE LAYER BELOW THE GROUND SLAB SHALL BE MOISTURE CONDITIONED TO ITS OPTIMUM MOISTURE CONTENT AND COMPACTED TO A DRY DENSITY NOT LESS THAN 100% OF THE MODIFIED DRY DENSITY AS OBTAINED BY MODIFIED PROCTOR COMPACTING TEST ASTM D1556 WITH GBR > 80
** ALL BACK FILLING BELOW THE BASE COURSE LAYER SHALL BE 200 CM HARD ROCK FILL AS SHOWN ON DRAWINGS

PROTECTION OF SUBSTRUCTURE

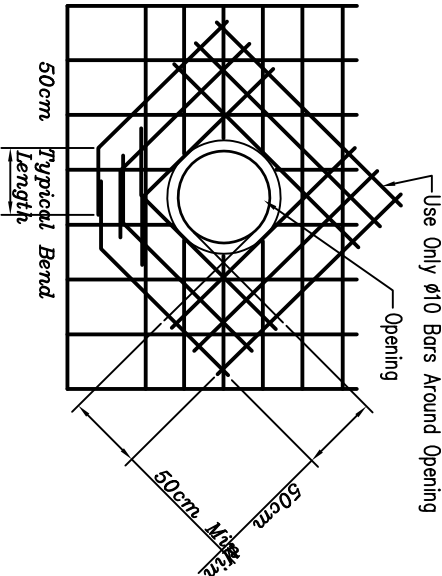
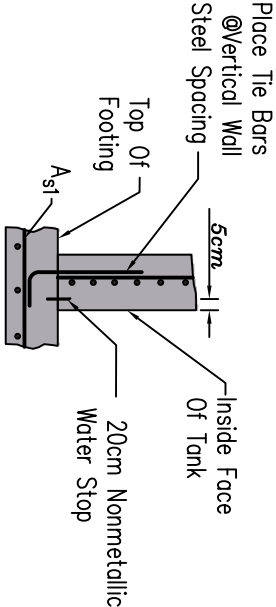
- PAINTING WITH TWO COATS OF NITRO PROOF 30 SHALL BE EMPLOYED TO PROTECT AND SEAL ALL REINFORCED CONCRETE BELOW GRADER IN CONTACT WITH SOIL, INCLUDING:
 - SIDE FACE AND TOP OF FOOTINGS,
 - SIDE FACES AND TOP OF GRADE BEAMS,
 - SIDE FACES OF COLUMNS AND WALLS BELOW GRADE.
- THE EXTERNAL FACES (WALLS AND ROOF SLAB) SHALL PAINT AT ONE COAT OF REPELLENT MATERIAL TO FILL VOIDS AND MINIMUM TWO COATS OF DEKUGARD
- FC WITH 200 MICRONS TOTAL THICK
- INTERNAL AND EXTERNAL WALLS AND

- SLABS OF WATER TANK SHALL BE FAIR FACE FINISH USING THE METALLIC OR SMOOTH PLYWOOD SHUTTERING FORMS
- THE EXACT DEPTH OF FOOTING

EXCAVATION SHALL BE APPROVED BY

THE ENGINEER.

WALL TO FOOTING CONSTRUCTION JOINT



DETAIL OF PIPE PROTRUDING THROUGH A WALL

REVISIONS	
DESCRIPTION	DATE

JERCHO AGRO-INDUSTRIAL PARK
(JAP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN

DESIGNED	SHADEEN KITTANI	SCALE	N.T.S
CHECKED	SHADEEN KITTANI	DATE	Nov. 2014
APPROVED		DRG. No.	SO 1
Sheet Size	A2		



= Structural Wall below Slab Level.



= Structural Wall above Slab Level
(No Structural Wall below)



= Column below Slab Level.



= Column above Slab Level.



= Hardcore.



= Stone.



= Polystyrene.



= Block wall.



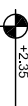
= Plain Concrete



= Waterproofing.



= Thickness of Slab.



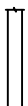
= Level.



= Column Mark.



= Inverted Beam or Parapet above Slab Level.



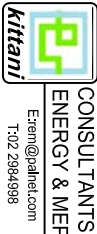
= Drop Beam .



Empowered lives.
Resilient nations.



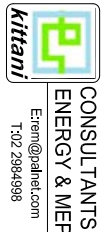
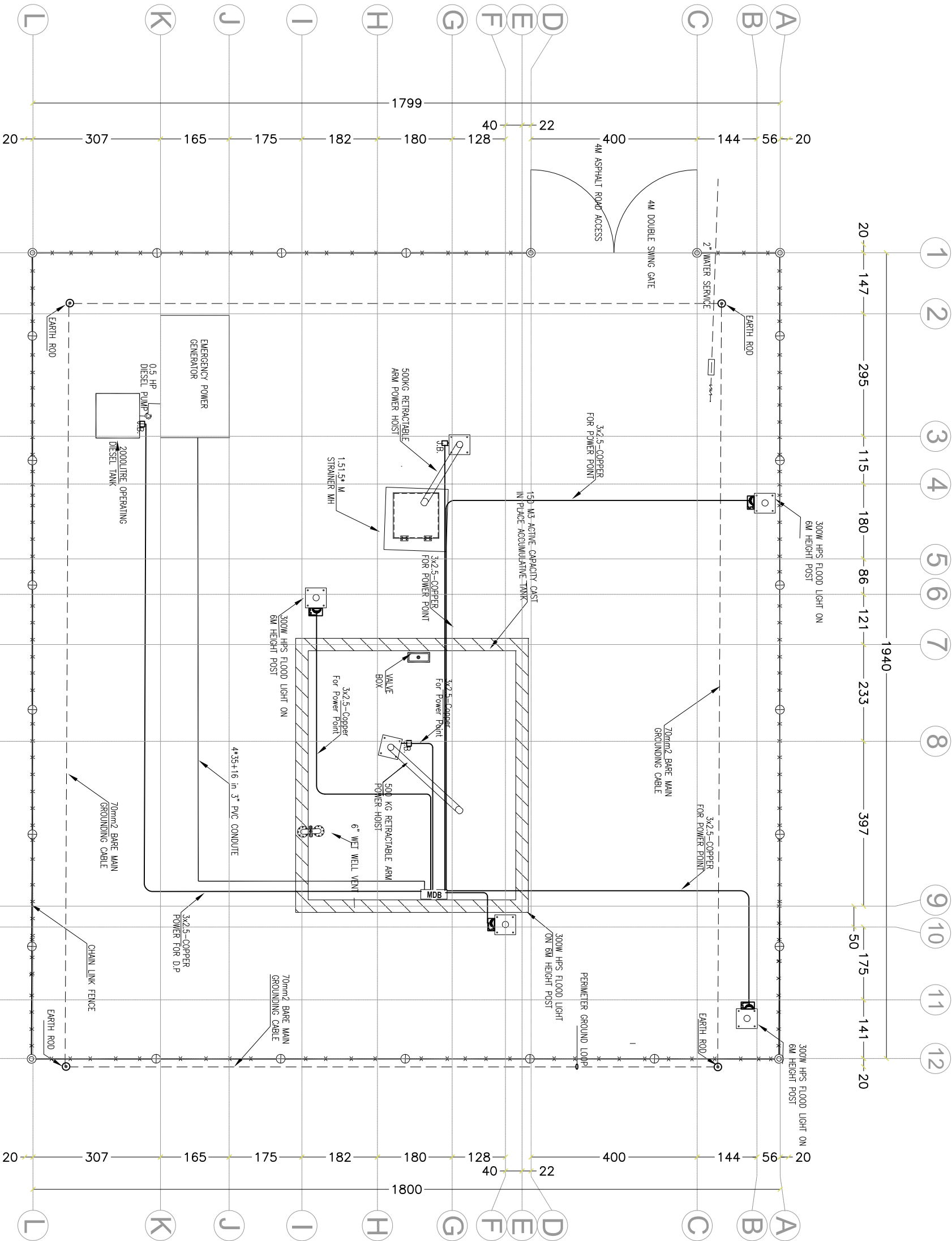
CONSULTANT



Ettem@kittani.com
T:02 2984998

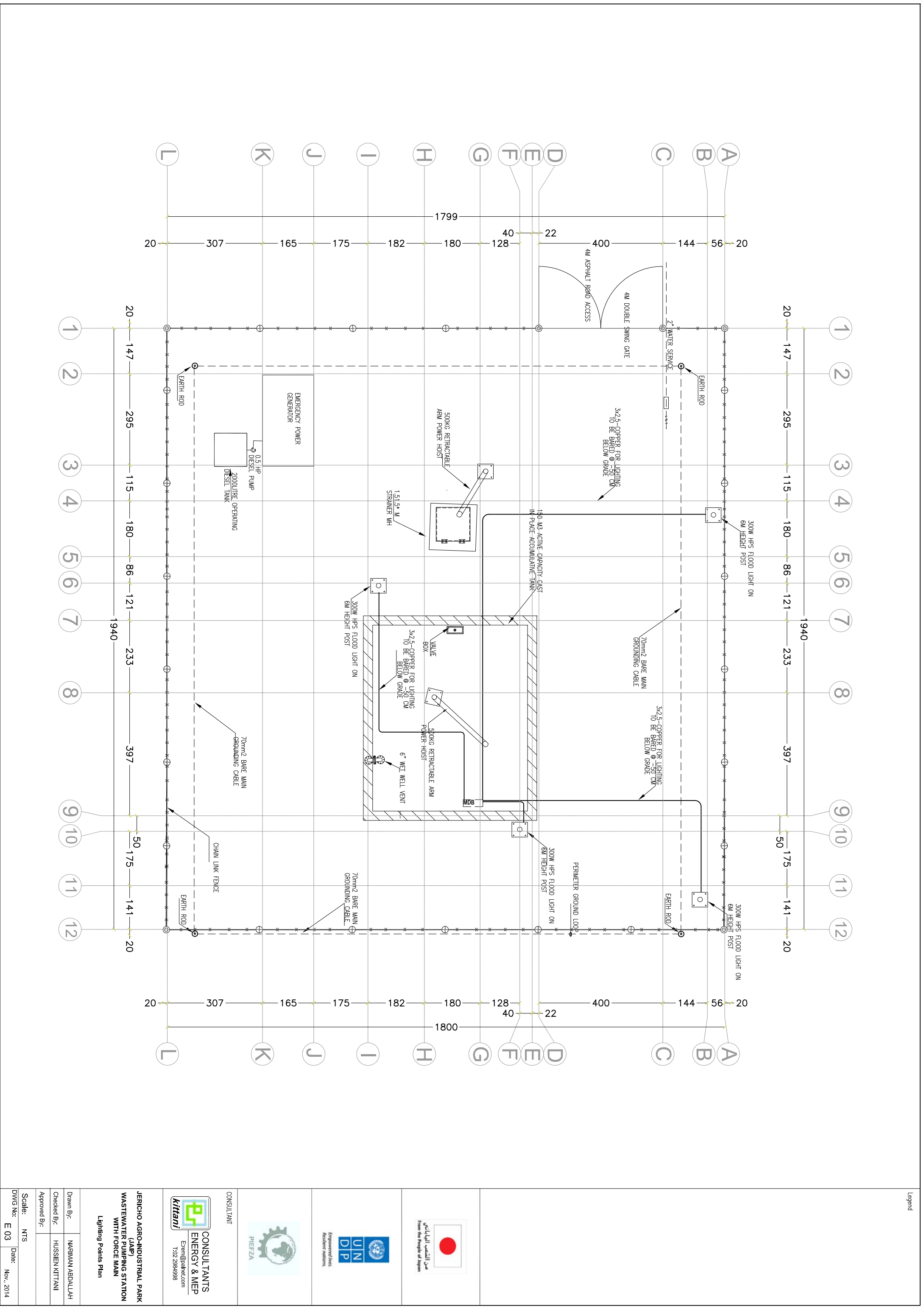
Legend

 16A SP WP SOCKET OUTLET
WITH DP DISCONNECTING SW.



**JERICHO AGRO-INDUSTRIAL PARK
(JAP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN**
Power Points Plan

Drawn By:	NARIMAN ABDALLAH
Checked By:	HUSSEIN KITTANI
Approved By:	
Scale:	NTS
DWG No:	E 02
Date:	Nov., 2014



Legend



JERICHO AGRO-INDUSTRIAL PARK (JAIP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN
Lighting Points Plan

Drawn By:	NARIAMAN ABDALLAH
Checked By:	HUSSEIN KITANI
Approved By:	
Scale:	NTS
DWG No:	E 03
Date:	Nov., 2014




kittani

**CONSULTANTS
ENERGY & MEP**

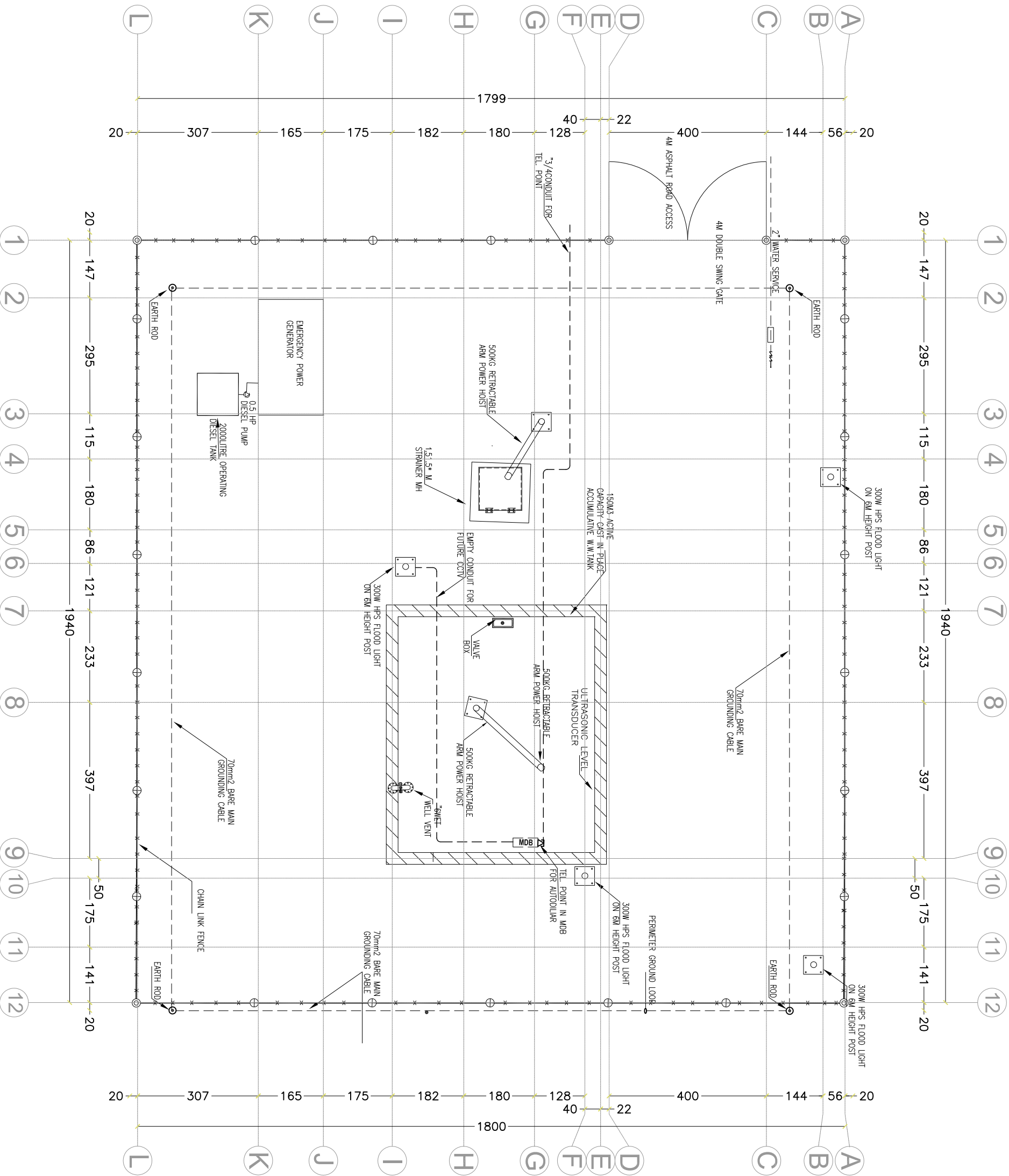
E:rem@palnet.com
T:02 25649986

Control Wiring Layout

Approved By:	
--------------	--

Scale: NTS

DATE: Nov., 2014



JERICHO AGRO-INDUSTRIAL PARK
(JAIP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN
Low Voltage Works

Drawn By: NARIIMAN ABDALLAH

Checked By: HUSSEIN KITTANI

Approved By:

Scale: NTS

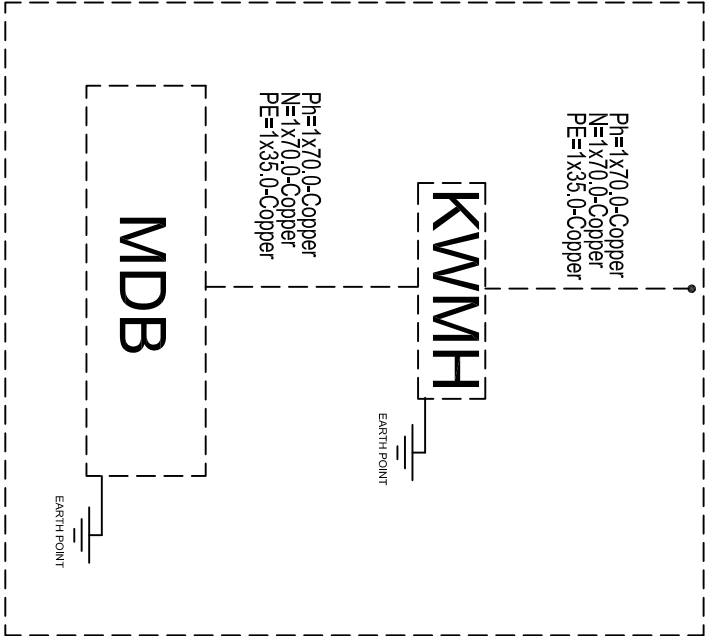
DWG No: E 05 Date: Nov., 2014

ITEM	POWERBREAKER (KW)	F.L.A	CABLE SIZE	VOLTAGE	FREQ.
LIGHT	2	3.6	32.5 mm² XLPE CABLE	220 V	50 Hz
SOCKETS	5	5.4	32.5 mm² XLPE CABLE	220V	50 Hz
SOCKET	2	3.6	57.5 mm² XLPE CABLE	400 V	50 Hz
PUMP MOTOR 1 (MCC)	7.5	13.5	57.5 mm² XLPE CABLE	400 V	50 Hz
PUMP MOTOR 2 (MCC)	7.5	13.5	57.5 mm² XLPE CABLE	400 V	50 Hz
PUMP MOTOR 3 (MCC)	7.5	13.5	57.5 mm² XLPE CABLE	400 V	50 Hz
TOTAL LOAD	31.5				

TOTAL MDB'S LOAD SCHEDULE

PUMPSTATION CONTROL LEVELS	
A TOP OF SLAB	-303.60 m
B H.L. ALARM	-308.38 m
C STANDBY CUT IN	-308.88 m
D STANDBY CUT-OUT	-309.43 m
E DUTY P2 CUT-IN	-310.68 m
F DUTY P2 CUT-OUT	-311.28 m
G DUTY P1 CUT-IN	-311.78 m
H DUTY P1 CUT-OUT	-312.38 m
I LOW LEVEL ALARM	-312.78 m
J FLOOR LEVEL	-313.08 m

PUMP OPERATING LEVELS AND DEFAULT SETTINGS SHALL BE AS PER THE SEWAGE PUMPING STATION CODE .



SERVICE PANEL

- CAPACITOR BANKS (PFC)
- Self heating MPP/MFP type
 - Standard duty SP 250V/ TP 440V 50HZ shunt capacitor (banks)
 - Conforming to IEC:831-1&2
 - The capacitor shall be fitted with discharge resistors,pressure sensitive disconnectors
 - Shall have dissipation factor less than 0.0025 at 50Hz
 - Total wattage loss less than 0.5 watt per KVAR

- INRUSH CURRENT LIMITERS
- duty contactor of:
- 3 nos .early make and post break auxiliary contacts.
 - quick discharge damping resistor /reactors to limit the inrush current.
 - conforming to IEC 947-4-1 Din rail mounting type.

- TP&N removable voltage surge protection device
- enable protection against transient over voltage
 - (8/20micro-seconds)
 - (Imax =40KA , =1.2KV ,Uc 275volts)

- CT:
- 150/5 ratio.
 - 5VA.
 - clas- 1 accuracy

- LED pilot lamps
- 240/220 V ,
 - Integral circuit.
 - terminal block
 - (22.5 mm dia LED) R/Y/G/B

- POWER ANALYSER
- LCD display capable of minimum 20 number electrical parameters
 - 1A/5A , /205/5 ratio 5VA, class-1 accuracy CT input
 - RS-485 communication port

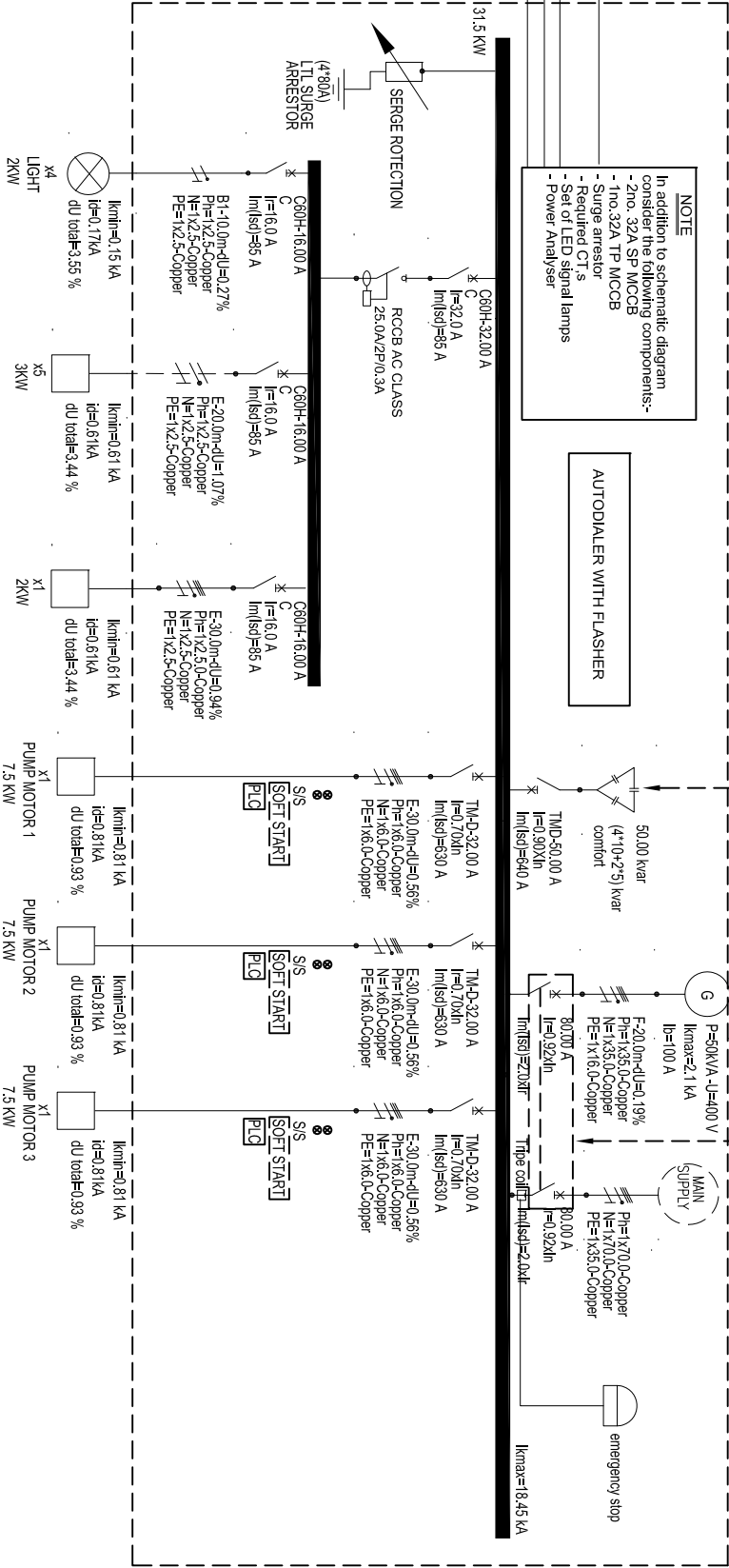
- INTELEGENT PFC CONTROLLER
- Microprocessor based
 - Self analysing auto/ck according to target powder factor setting
 - Relay shall have minimum three digit display unit
 - Lag/lead capacitor switching status
 - Alarm output for:
 - *-over current
 - *-insufficient compensation
 - Indication of switching on units
 - Auto/manual status
 - Shall have overload protection-no volt release. etc.

- quick make and quick break 4 pole current limiting MCCB having provision for UVR (Under Voltage Release)
- earth fault trip.
 - push test to trip

- AUTOMATIC POWER FACTOR CORRECTOR PANEL
- Consisting of:
- MCCB with current limiting release.
 - Intelligent microprocessor based controller
 - MPP/MFP 440V capacitors
 - Current limiting arrangement
 - Ballbearing ventilation fan
 - Power analyser with RS 485

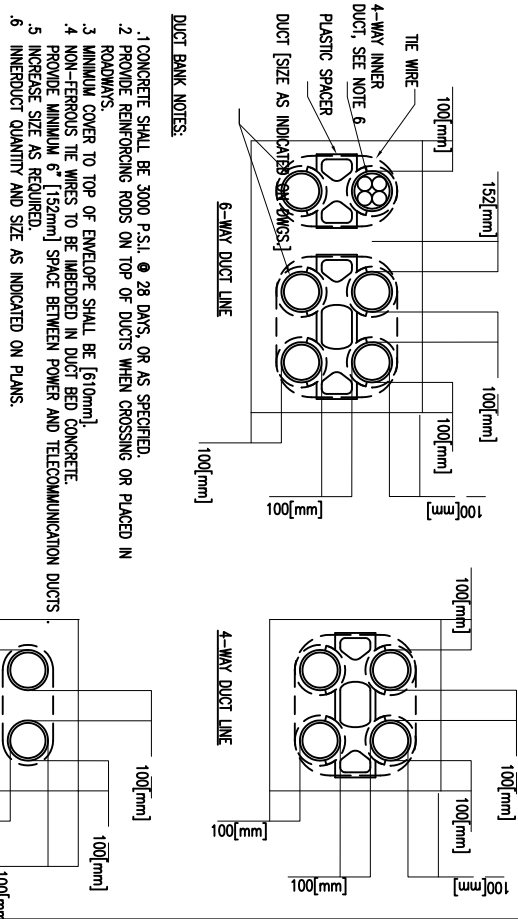
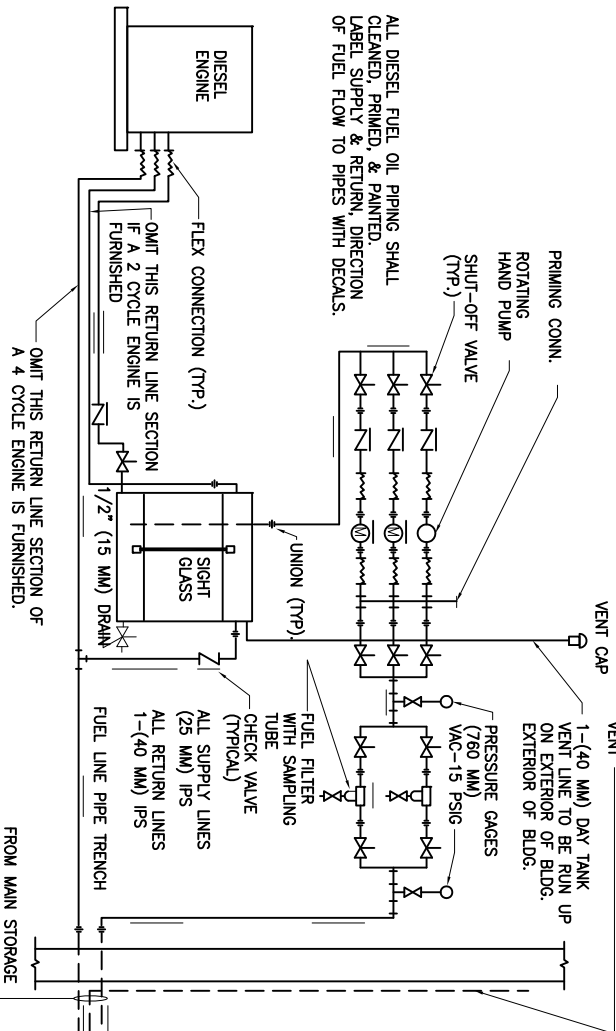
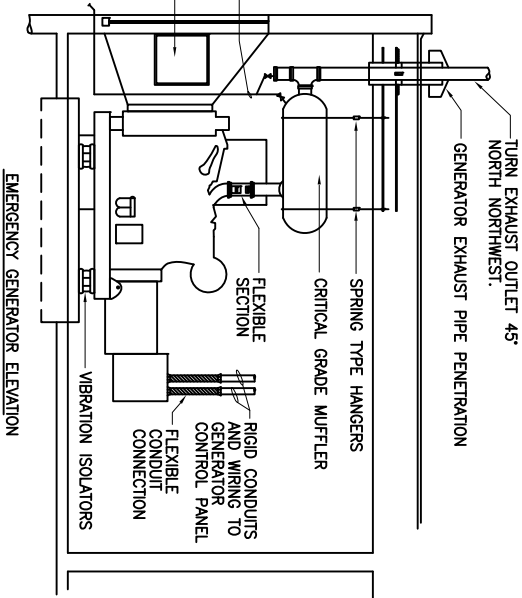
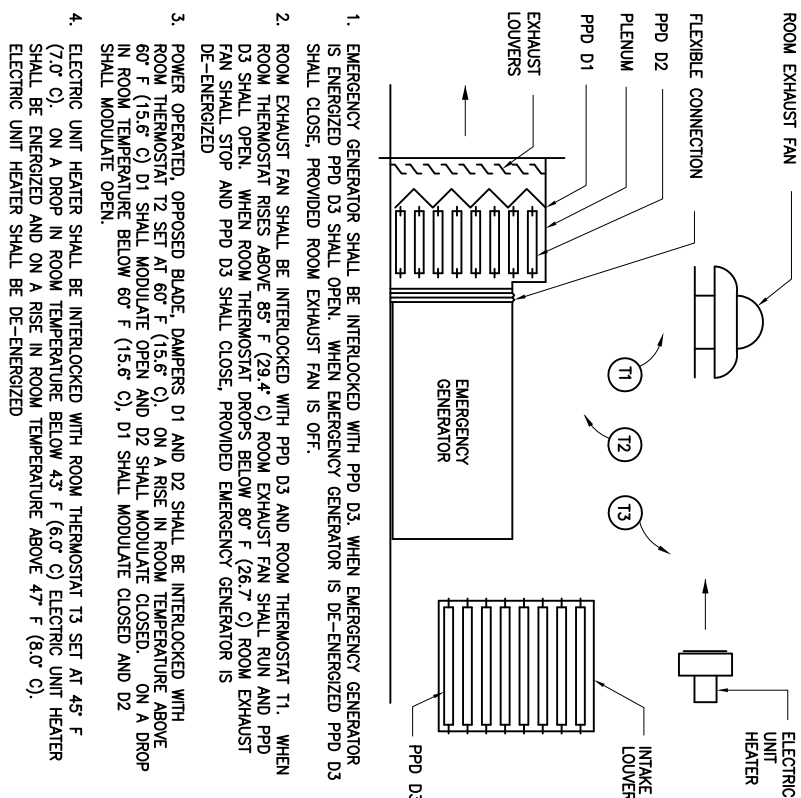
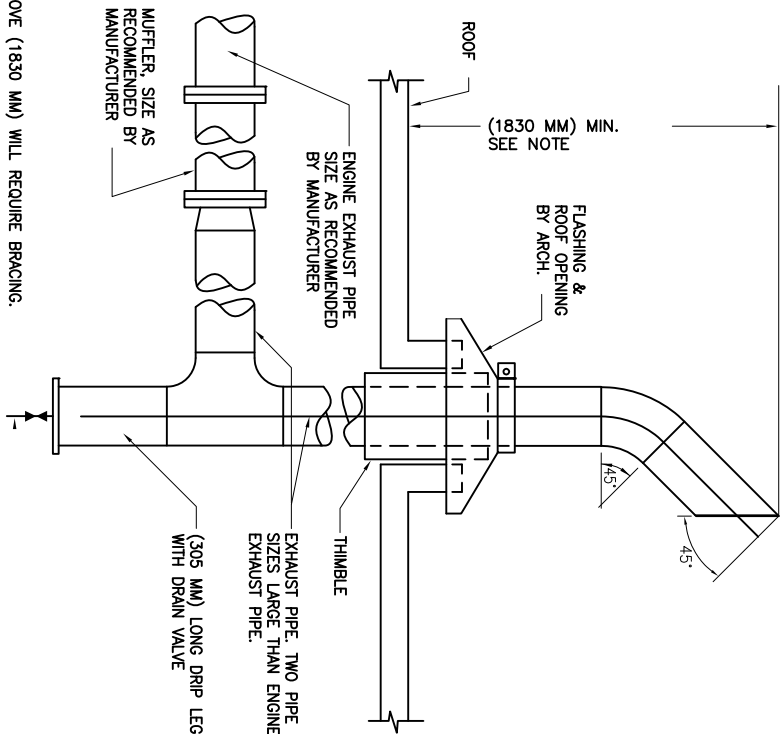
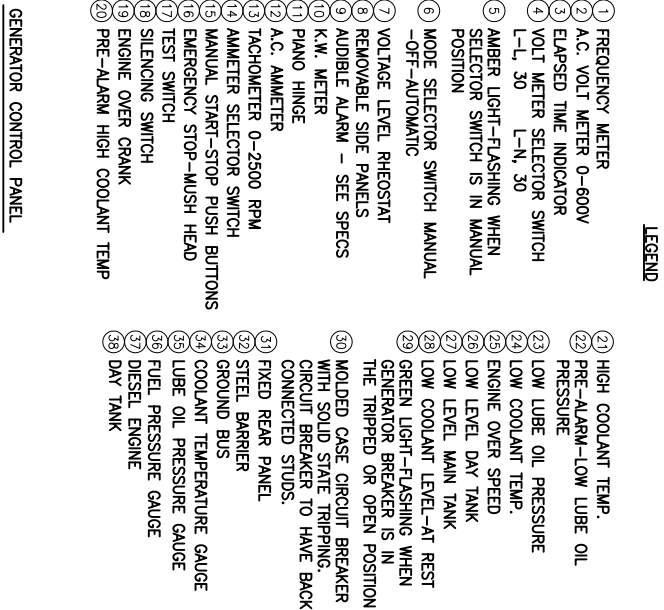
- NOTE
- In addition to schematic diagram consider the following components:-
- 2no. 32A SP MCCB
 - 1no.32A TP MCCB
 - Surge arrester
 - Required CT's
 - Set of LED signal lamps
 - Power Analyser

AUTODIALER WITH FLASHER



ATS

ATS Control Function		Range	Setting
Normal Line Sensing-Under-Voltage	Dropout	75-98%	80%
	Pickup	85-100%	90%
Emergency Line Sensing-Under-Voltage	Dropout	75-98%	80%
	Pickup	85-100%	90%
Emergency Line Sensing-Under-frequency	Dropout	2 Hz below pickup	2 Hz
	Pickup	90-100%	95%
Time Delay- Engine Start		0-10 seconds	3 s
Time Delay- Engine Cool Down		0-60 minutes	5 m
Time Delay- Transfer to Emergency		0-5 seconds	1 s
Time Delay- Retransfer		0-60 minutes	10 m
Time Delay- Motor Disconnect or Transfer Presignal (when applicable)		0-60 seconds	20 s
Delayed Transition Time Delays (when applicable)		0-10 seconds	5 s



DUCT BANK DETAILS

- GROUNDING NOTES:
- GROUNDING INSTALLATION SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND SUCH LOCAL CODES WHICH HAVE PRECEDENCE. LOCATION OF GROUNDING LOOP IS SHOWN DIAGRAMATICALLY. EXACT LOCATION TO MAINTAIN CLEARANCE FROM FOOTERS SHALL BE DETERMINED IN THE FIELD. PROVIDE 3/4" DIA. x 10' LONG COPPERWELD SECTIONAL GROUND ROD(S) COUPLED TOGETHER AS REQUIRED TO GIVE A MAXIMUM SYSTEM RESISTANCE OF 5 OHMS TO GROUND.

2. TOP OF GROUNDING RODS SHALL BE 50 CM BELOW GRADE.

3. 70 MM2 BARE STRANDED COPPER GROUND WIRE IS TO BE USED FOR THE MAIN GROUND LOOP AND SHALL BE BURIED A MINIMUM OF 50 CM BELOW GRADE. 70 MM2 BARE STRANDED COPPER GROUND WIRE IS TO USED FOR THE TAPS.

4. AT A MINIMUM, THE FOLLOWING ITEMS SHALL BE BONDED TO THE MAIN GROUND

5. MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR
CONTROL PANEL PRIMARY DISCONNECT
UTILITY METER PER UTILITY COMPANY REQUIREMENTS
D. CORNER AND GATE FENCE POSTS
A. WET WELL HATCH FRAMES (HINGED SIDE)
B. LIGHT POLE AND/OR UTILITY POLE
C. GENERATOR

6. GROUND WIRE RUNS, BETWEEN POINT OF CONNECTIONS, SHALL BE AS SHORT AND STRAIGHT AS POSSIBLE.

7. ALL SURFACES TO BE GROUNDDED SHALL BE THOROUGHLY CLEANED TO BARE METAL BEFORE ATTACHING GROUND CONNECTION.

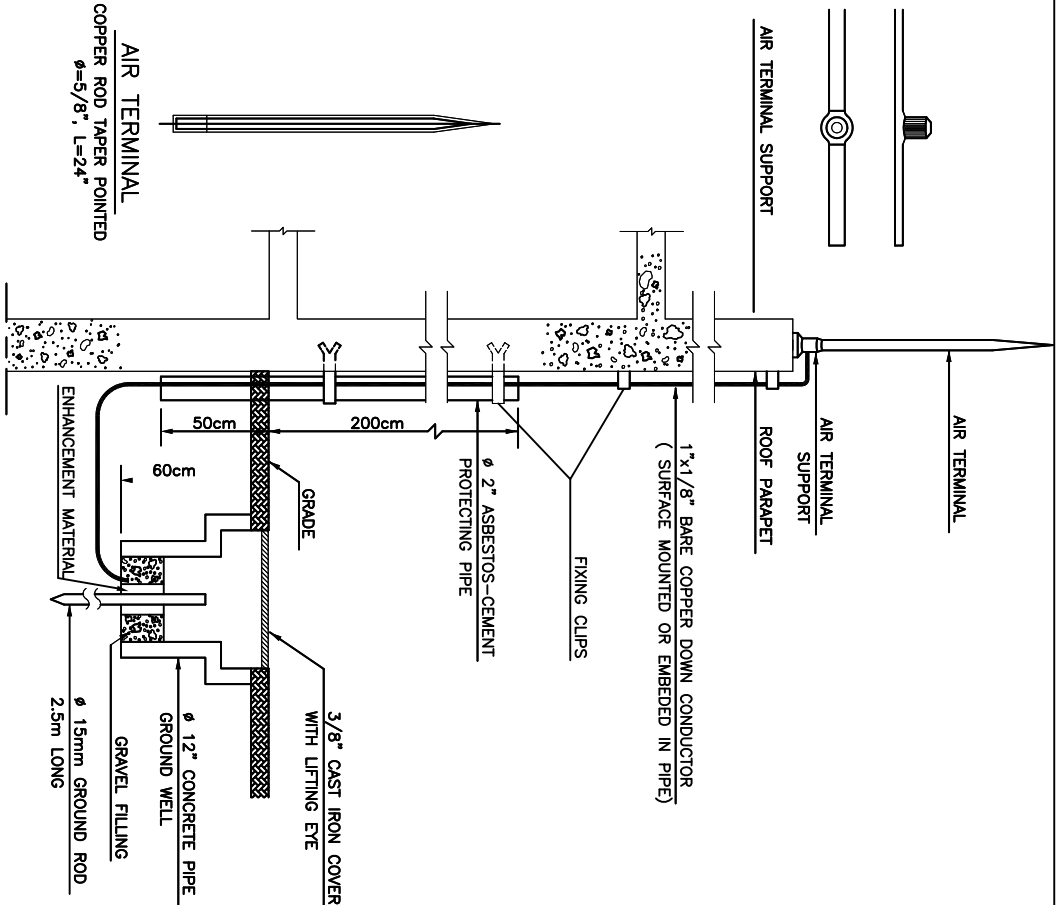
8. GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS. THE RESISTANCE TO MEASUREMENTS SHALL BE MADE BY FALL-OF-POTENTIAL OR 3-POINT METHOD.

9. THE 5 OHMS SHALL BE MEASURED WITH THE GROUND POINT ISOLATED AND NO OTHER GROUND WIRES OR POINTS TIED INTO THE GROUND RODS UNDER TEST. THERE SHALL BE NO TREATMENT OF THE SOIL AROUND THE GROUND RODS TO IMPROVE THE RESISTANCE.

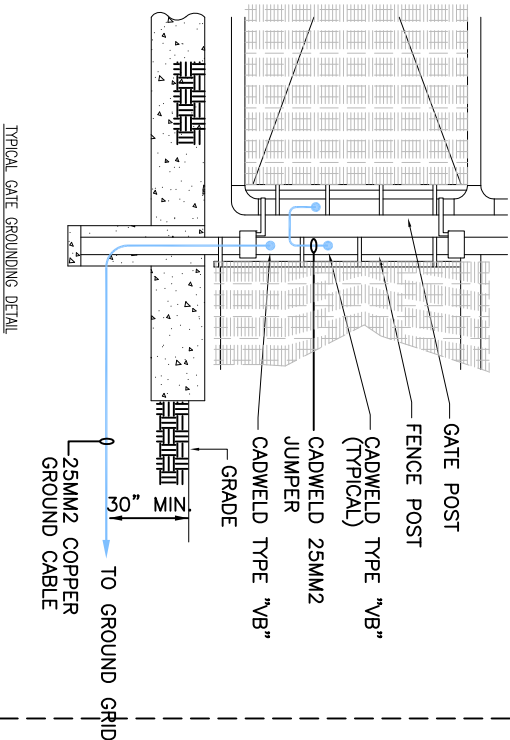
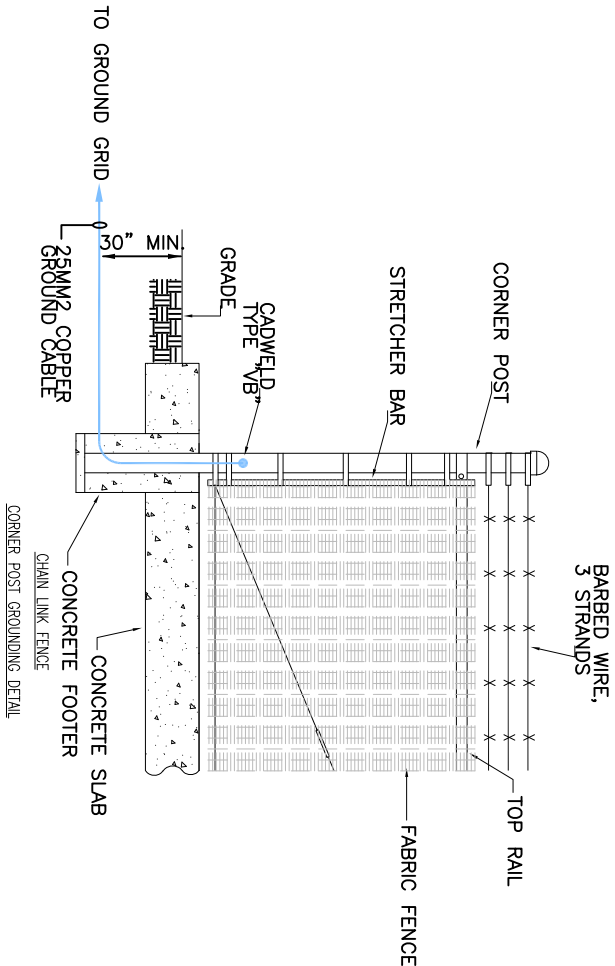
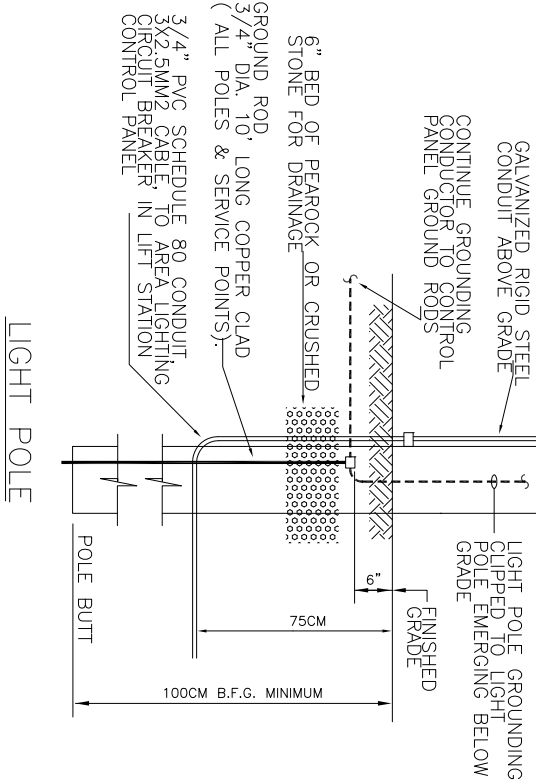
9. IF THE MEASURED RESISTANCE TO GROUND DOES NOT MEET THE REQUIRED VALUE, EXTENSIONS SHALL BE COUPLED TO THE ROD OR ADDITIONAL RODS SPACED 3M APART SHALL BE DRIVEN AND CONNECTED BY 70MM2 BARE STRANDED COPPER CABLE.

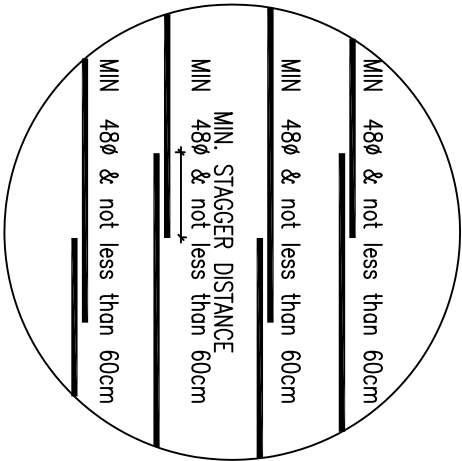
10. WHERE GROUNDING WIRE RISES TO ELECTRICAL EQUIPMENT, COLUMNS, POSTS, VESSELS, ETC. THROUGH EARTH OR CONCRETE SLABS, THE WIRE SHALL BE PROTECTED BY SCHEDULE 80 PVC CONDUIT.

11. ALL BELOW GRADE OR CONCRETE SLAB GROUNDING CONNECTIONS SHALL BE MADE USING THE EXOTHERMIC WELDING PROCESS, CADWELD OR APPROVED EQUAL.

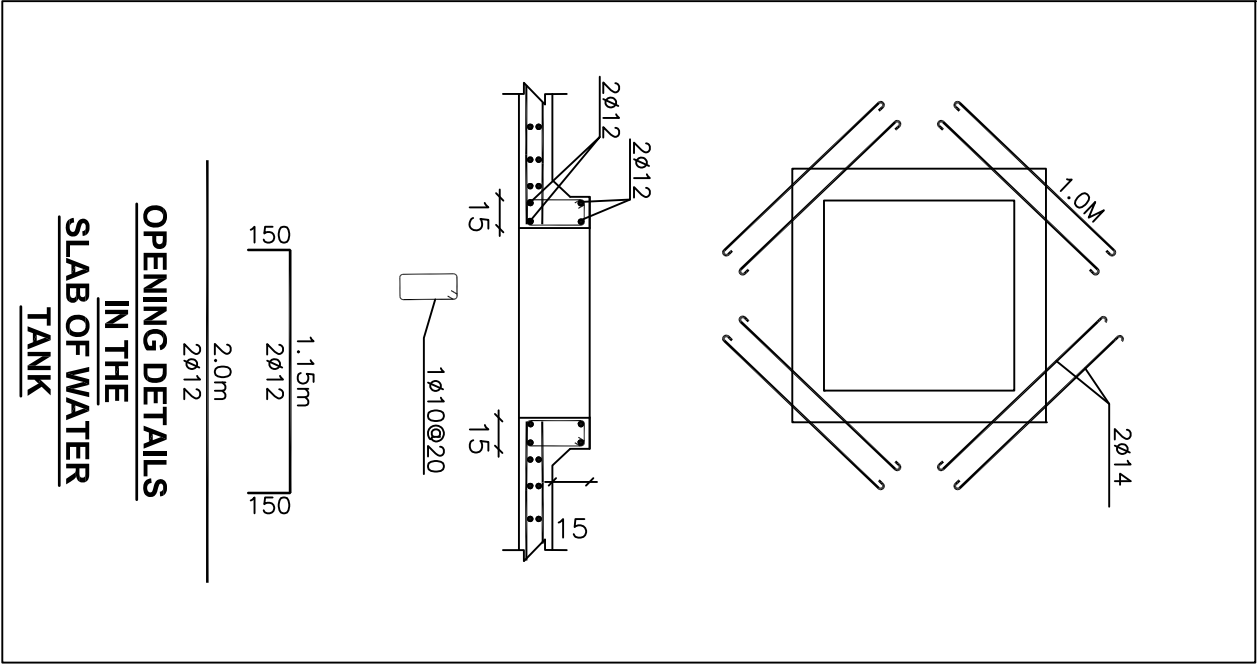


NOTE: THE LIGHT POLE MUST BE PLACED TO WHERE THE LIGHT SHINES INTO THE FRONT OF CONTROL PANEL AND ILLUMINATES THE ENTIRE STATION AREA. THE LIGHT POLE SHALL BE LOCATED WHERE THE STATION HAS SERVICE UTILITY POLE WHERE THE FLOOD LIGHT CAN BE MOUNTED AND THE POLE IS LOCATED WHERE THE STATION WILL BE ILLUMINATED AS DESCRIBED ABOVE.

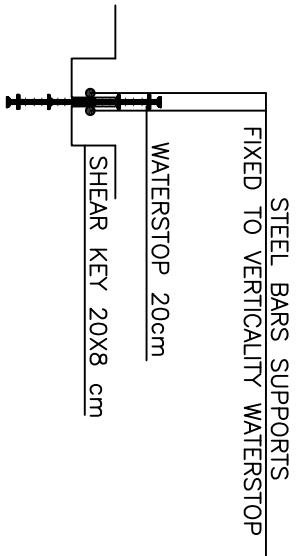




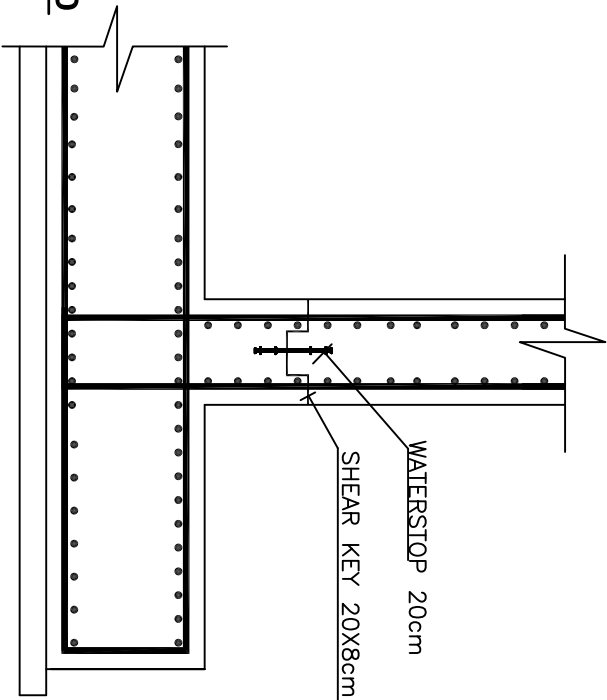
TYPICAL STAGGERING REINFORCEMENT DETAILS



OPENING DETAILS
IN THE
SLAB OF WATER
TANK

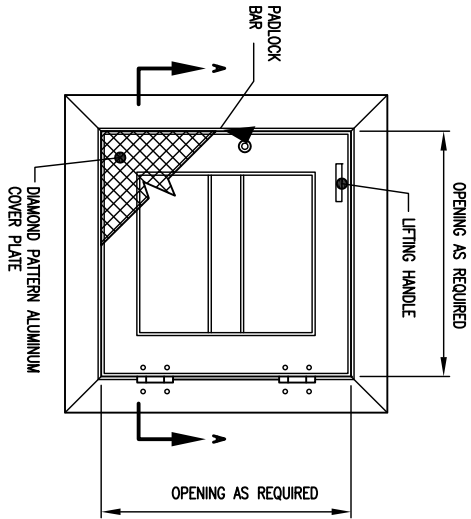


CONSTRUCTION JOINT FIXING METHOD



P.V.C. WATERSTOP FOR
WALL CONSTRUCTION JOINT

TYPICAL WALL CONSTRUCTION JOINT

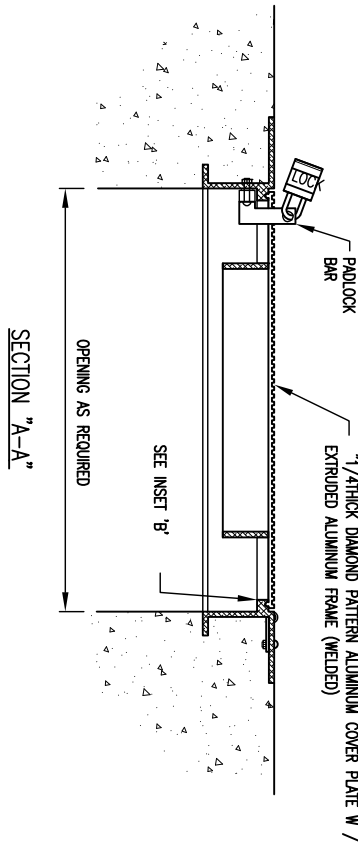


PLAN VIEW

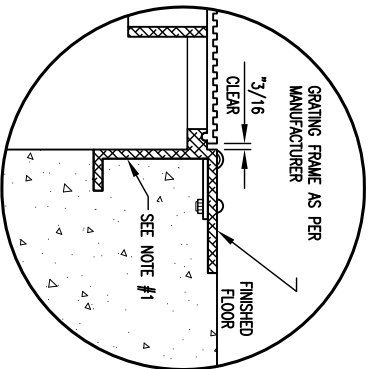
- NOTES:
1. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR GROUT SHALL BE COATED WITH BITUMINOUS MATERIAL FOR PROTECTION.
 2. PATCHES SHALL BE SINGLE OR DOUBLE HATCH DEPENDING ON OPENING SIZE AND MANUFACTURER'S RECOMMENDATIONS.

NOTES

1. ALL COMPONENTS TO BE FABRICATED FROM GRADE 6061-T6 ALUMINUM (UNLESS OTHERWISE NOTED).
2. ALL NUTS, BOLTS, SCREW AND WASHERS TO BE GRADE 316 STAINLESS STEEL.
3. ALL WELDING TO BE WELD QUALITY B IN ACCORDANCE ASME STANDARDS.
4. ALL WELDS TO BE FILET CONTINUOUS USING FILLER ALLOY 4043.
5. COVER TO BE FABRICATED FROM GRADE 5251 ALUMINUM CHECKER PLATE AND HAVE A BITUMINOUS COATING.
6. ALL SURFACES TO BE EMBEDDED IN CONCRETE ARE TO HAVE TWO COATS OF BITUMEN BASED PAINT.
7. MOST WELDS HAVE BEEN OMITTED FOR CLARITY.
8. COVER DIMENSIONS MAY CHANGE TO SUIT THE SIZE OF OPENING.
9. THESE DETAILS TO READ IN CONJUNCTION WITH DRAWINGS.

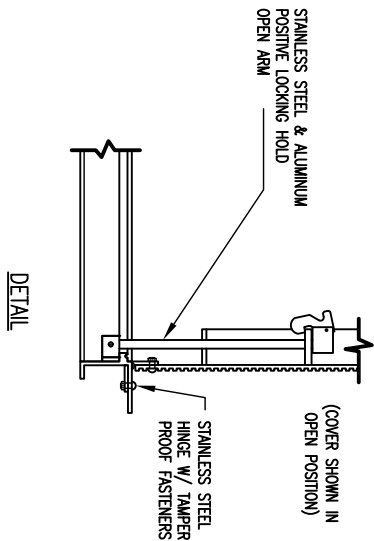


SECTION "A-A"



INSET "B"

ALUMINUM ACCESS HATCH



DETAIL

Structural Wall below Slab Level.

Structural Wall above Slab Level (No Structural Wall below)

Column below Slab Level.

Column above Slab Level.

Column above Slab Level.

Column above Slab Level.

Hardcore.

Stone.

Polystyrene.

Block wall.

Plain Concrete

Waterproofing.

Thickness of Slab.

Level.

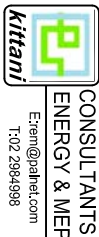
Column Mark.

Inverted Beam or Parapet above Slab Level.

Drop Beam .



CONSULTANT

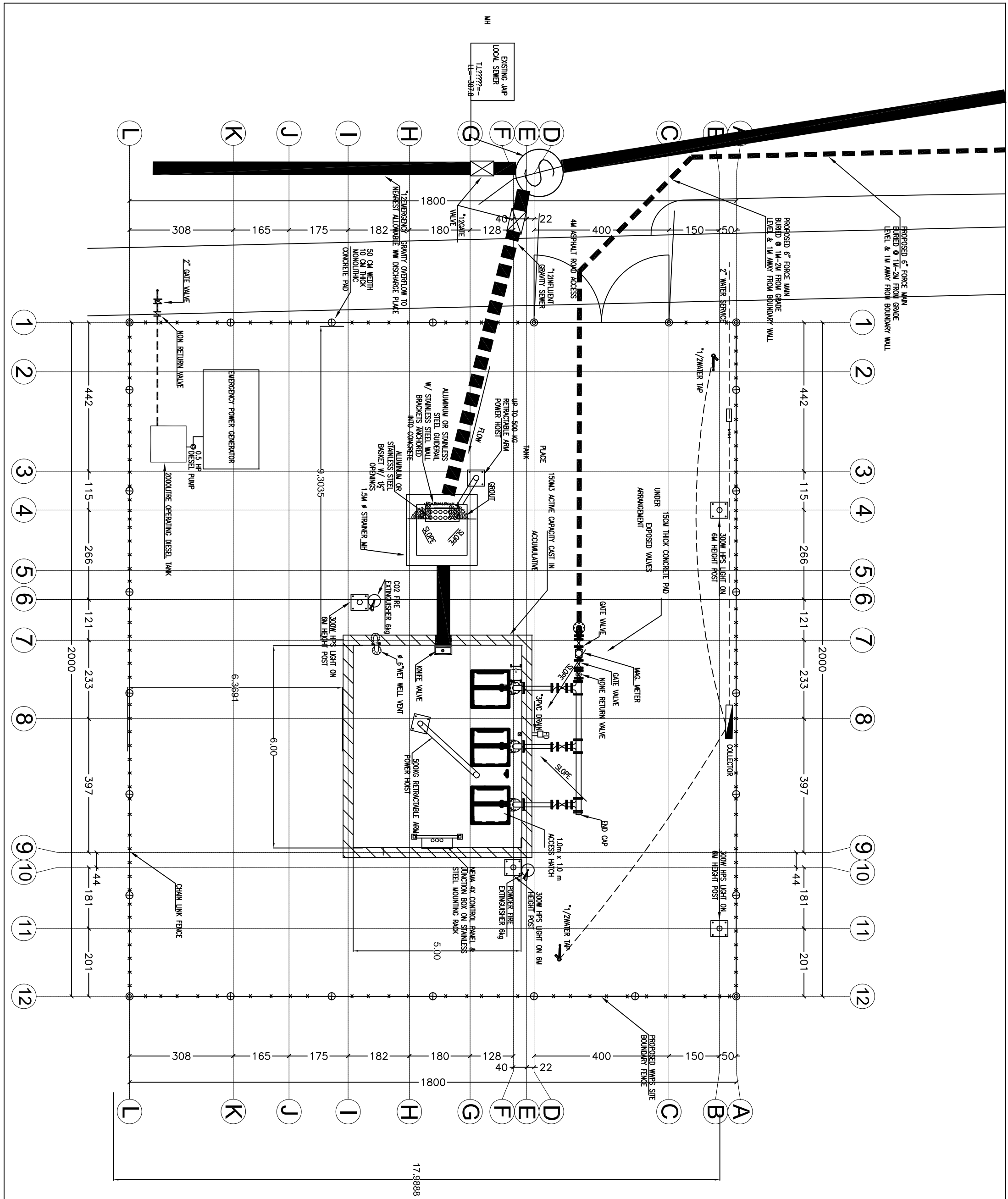


REVISIONS		DATE
	DESCRIPTION	

JERICHO AGRO-INDUSTRIAL PARK
WASTEWATER PUMPING STATION
WITH FORCE MAIN

General Details-1

DESIGNED	SHADEN KITANI	SCALE	N.T.S
CHECKED	SHADEN KITANI	DATE	Nov. 2014
APPROVED		DRG. No.	SO2
Sheet Size	A3		



Legend

◎ "4GI PIPE FOR CORNERS AND PULL POSTS

⊕
⊕⁷3G1 PIPE FOR LINE POSTS

FD : FLOOR DRAIN

Scale

Z

Z

1

2014

**CONSULTANTS
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**JERICHO AGRO-INDUSTRIAL PARK
(JAIP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN**

Pumping Station Site & Manifold Layout

Drawn By:	B. IBRAHIM ABUFARI
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Checked By:	SAMEER SHWAIKI
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Approved By:	
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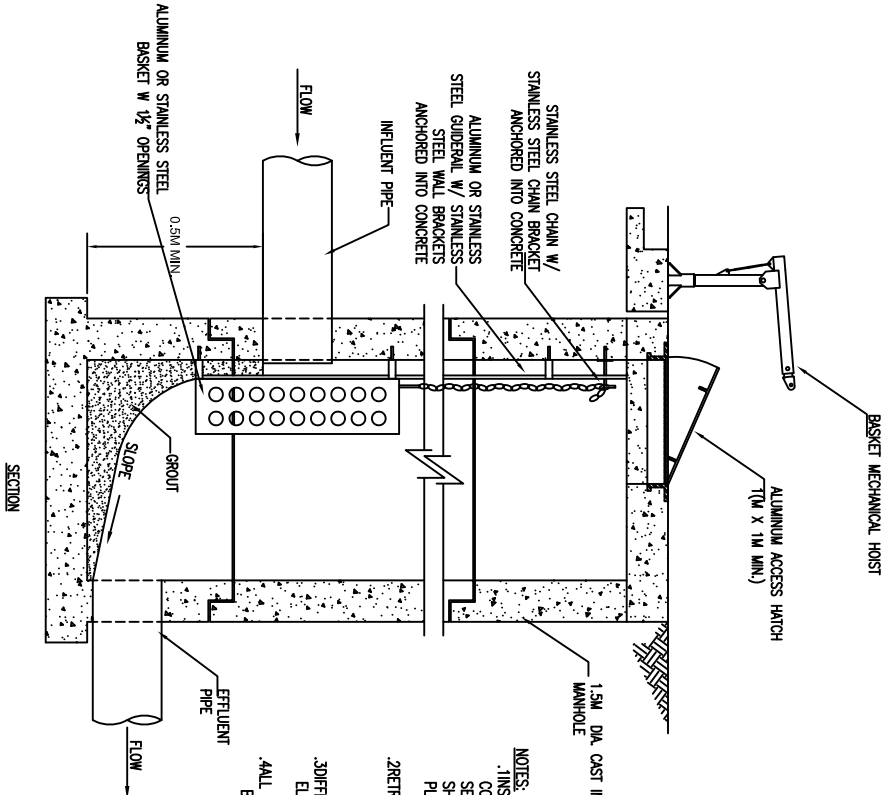
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2014

ITEM	TDH (m)	Q (m ³ /h)	POWER (KW)	RPM	VOLTAGE (V)	FREQUENCY	EFFICIENCY
SUBMERSIBLE-1	20	75	7.5	1450	400	50Hz	75%>
SUBMERSIBLE-2	20	75	7.5	1450	400	50Hz	70%>
SUBMERSIBLE-2	20	75	7.5	1450	400	50Hz	70%>

PUMPS SCHEDULE



- NOTES:
- INSIDE OF MANHOLE SHALL BE EPOXY COATED MIN. 50 MIL SURFACE DRY. EPOXY SEALER PRIME COATING AND FINISH COATING SHALL BE NSP 100 AND NSP 120 OR CARBOLINE PLASTIC 4500.
 - RETRACTABLE ARM POWER HOIST OF 500KG AT FULL ARM & BASE MUST BE PROVIDED FOR BASKET REMOVE.
 - DIFFERENCE IN INLET AND OUTLET INERT ELEVATIONS SHALL BE 0.5M MINIMUM.
 - ALL CONCRETE EXPANSIONS ANCHORS SHALL BE TYPE316 STAINLESS STEEL.

PUMPSTATION CONTROL LEVELS	
A TOP OF SLAB	-303.60 m
B H.L. ALARM	-308.36 m
C STANDBY CUT-IN	-308.88 m
D STANDY CUT-OUT	-309.43 m
E DUTY P2 CUT-IN	-310.68 m
F DUTY P2 CUT-OUT	-311.28 m
G DUTY P1 CUT-IN	-311.78 m
H DUTY P1 CUT-OUT	-312.38 m
I LOW LEVEL ALARM	-312.78 m
J FLOOR LEVEL	-313.08 m

SLAB OPERATING LEVELS AND DETAIL SETTINGS SHALL BE AS PER THE SAME PUMPING STATION CODE .

GENERAL:

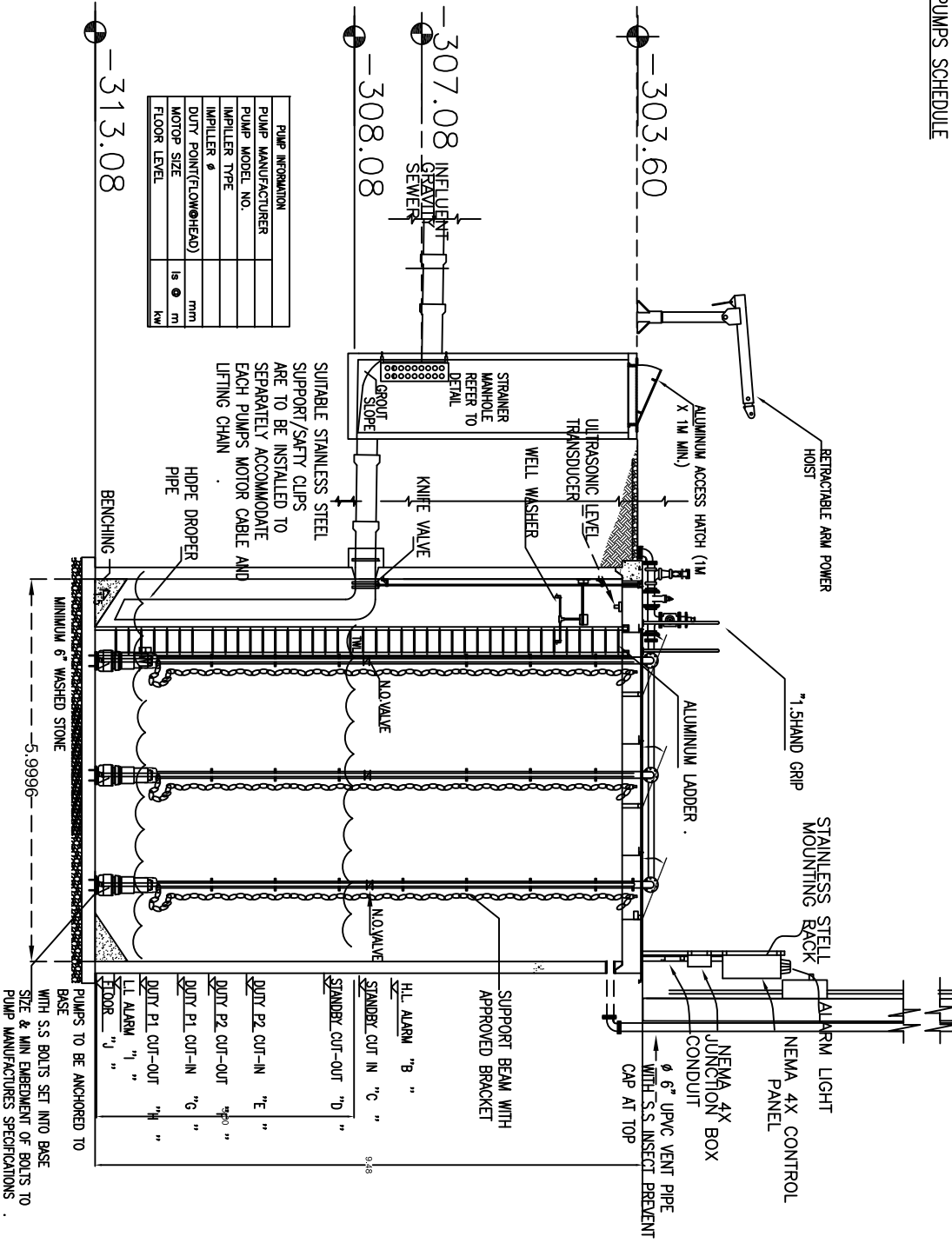
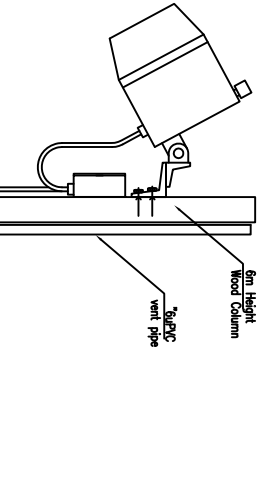
- This drawing and all other drawings that relate to sewage pumping stations shall be read in conjunction with the sewage pumping station code of ASME and the design drawings .
- Control cabinet ore to be located on the opposite side of the pump station to the access, so as to minimize obstruction to vehicular movement.

MATERIALS:

- All nuts & bolts to be stainless steel grade 316 in accordance with codes. (treated with grease to prevent galling).
- 2.All pump lifting chains to be long link proof coil 8mm stainless steel chain , pitch 41.2mm ,width 31.8mm and minimum working load of 500kg.
- 3.All aluminum to be coated with approved bituminous seal where set into or contacting concrete.
- 4.Hand grips to be of 316 stainless steel.

LEVEL PROBE:

- 4-20 1.mg ultrasonic level transducer (hydrorange) to be provided on accordance with requirements of pumps operation.
- 2.Ultrasonic transducer, installed in a suitable location for access by maintenance staff.



PUMP INFORMATION	
PUMP MANUFACTURER	
PUMP MODEL NO.	
MANILLER TYPE	
MANILLER Ø	
DUTY POINT(FLOW/HEAD)	
MOTOP SIZE	
FLOOR LEVEL	

CONTROL CABINET:

- The control cabinet is required to be a free-standing cabinet on a GI painted steel stand.
- PVC conduit to be provided between bottom of switchboard plug compartment and entry into wet-well. Suitable support and sealing ore to be provided for pvc conduit both at entry to plug compartment and roof of wet-well at floor level.
- Control cabinet & its hinges to be located to ensure technicians have a clear view of wet-well opening with cabinet door open(while standing in front of instrument panel).
- Where possible access door to control panel to open away from prevailing winds.
- 5.Heavy duty stainless steel mesh guard is to be installed as protection around flushing alarm light and outble alarm.
- 6.Mains conduit ,when supplied by aerial service line to be strapped to lighting pole with stainless steel "tanrid" strapping

SAFETY FITTINGS:

- Recessed Stainless Steel ring for fall arrester to be installed at approved location.
- Provide holes in Pump Station Roof for Portable Safety Buffer.

PIPE WORK:

- 1.All pipe work and fittings within concrete structures shall be designed to withstand thrust as applicable and shall be configured for easy dismantling.
- 2.All exposed pipe works and unprotected fittings in the pump well shall be HDPE.
- 3.Drop—pipe from inlet pipe to be constructed from high density polyethylene pipe.
- All tank header fittings to be of UPVC.

VALVES & FITTINGS:

- All valves to be resilient seated with fusion bonded epoxy (fhe) coating.
- 2.All fittings to be fusion bonded epoxy (fhe) coated.

LADDER:

- Internal aluminum ladders shall conform to standards in conjunction with drawing.
- Intermediate supports ore to be provided to all ladders.
- 3.Ladder to be bracketed to concrete pump station base in an approved manner.
- 4.Lifting tank entry requires fixed stainless steel ladder access.

COVERS & OPENINGS:

- 1.Tripex pump Station,holding tank shall generally be 3 No.s 1000*1000fitted with three aluminum access covers as per standards drawing.However the volute diameter of the pump used may dictate an increase in the opening requirements.
- 2.Hinged safety grating "SAFE HATCH" to be fitted below all pump station covers.
- 3.Combinpad or an equally approved foam gasket sealer is to be provided between the access lids and frames to inset proof the chamber.
- 4.Access lids to have a bituminous coating exposed surface and have hinges pins(stainless steel) securely attached (preferably welded).

INTERNAL COATING:

- Internal surfaces to pump station,holding tank,collector strainer monhole and outflow maintenance monhole (at force main end) shall have concrete protection with approved epoxy coating or liner.

WELL WASHER:

- 1.Pump station well washer to be provided.
- 2.Well washer to be installed by contractor in a clear space where rotating arms will not come into contact with other obstructions. Mount one (1) metre above HIGH LEVEL ALARM POINT or as per supplier's instructions.

NOTES:

- 1.COAT INTERIOR OF MANHOLE WITH APPROVED EPOXY COATING AT MINIMUM 80-mils.
- 2.ELEVATION OF FORCE MAIN CROWN SHALL BE AT SAME ELEVATION AS THE GRANITY SEWER CROWN.
- 3.PROVIDE SMOOTH CHANNEL FROM FORCE MAIN TO GRANITY SEWER.
- 4.FORCE MAIN SHALL NOT CONNECT WITH EXISTING GRANITY SEWER MANHOLES

Legend



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JERICHO AGRO-INDUSTRIAL PARK
(JAP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN

Strainer MH & Well Section

Drawn By: E. IBRAHIM ABUFARHA

Checked By: SAMEER SHWAMI

Approved By:

Scale:

NTS

DRAWING NO:

M 03

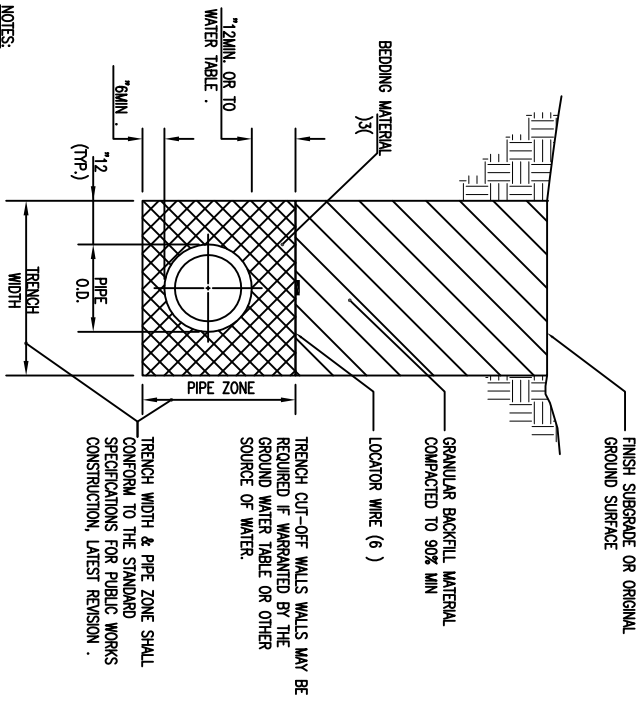
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Nov, 2014

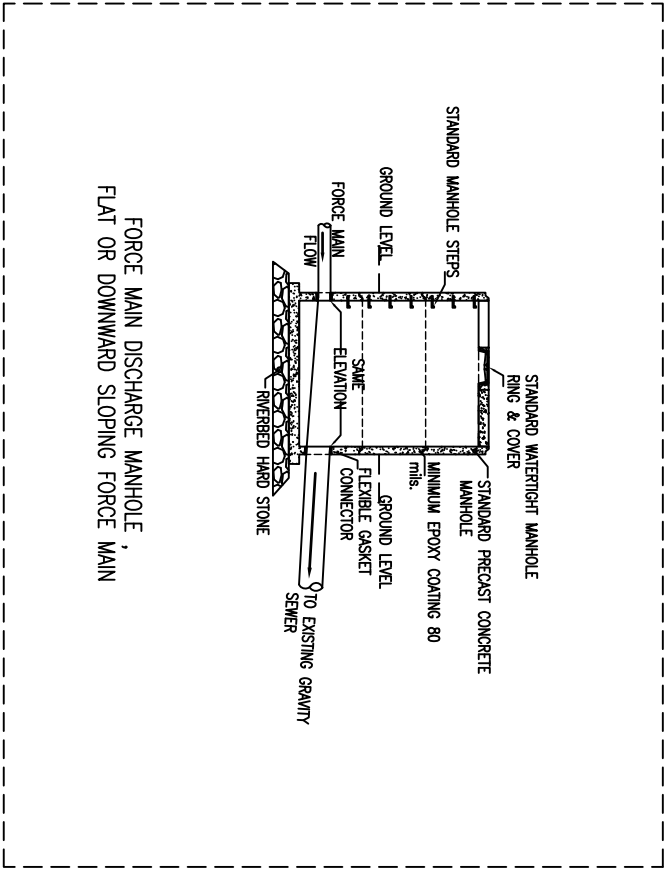
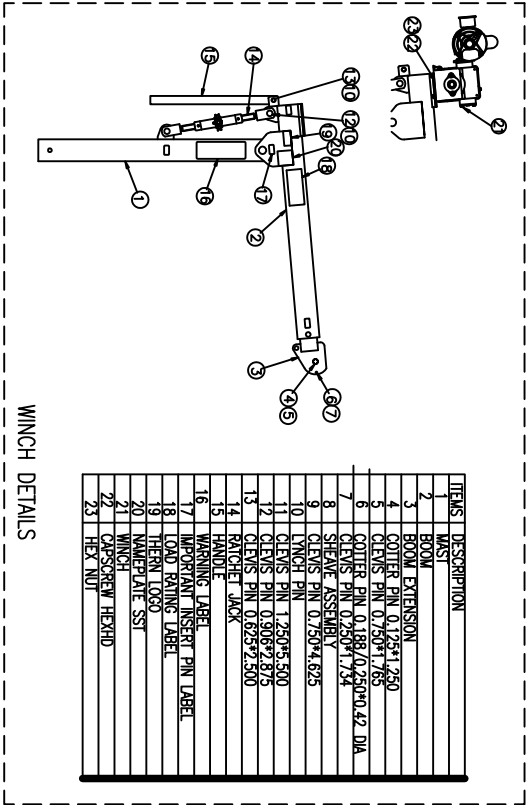
⊙ *4SI PIPE FOR CORNERS AND
PULL POSTS

⊕ *3SI PIPE FOR LINE POSTS

FORCE MAIN TRENCH



- NOTES:
- 1. ALL MATERIALS AND INSTALLATIONS PROCEDURE SHALL BE IN ACCEPTANCE WITH STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION, LATEST REVISION .
 - 2. FORCE MAIN BEDDING MATERIAL SHALL BE CLASS "A", "B", OR "C", COMPACTED TO 90% MINIMUM. BACKFILL SHALL BE GRANULAR MATERIAL COMPACTED T 90% MIN .
 - 3. SHALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS, SHORING OR SLOPED CUT MAY BE NECESSARY, BUT THERE WILL BE NO PAYMENT FOR ADDITIONAL EXCAVATION, BEDDING, BACKFILL, OR SHORING.
 - 4. (INSTALL IDENTIFICATION TAPE MARKED FORCE MAIN "
 - 5. (FORCE MAIN SHALL HAVE A MINIMUM OF 4' OF COVER MEASURED FROM PROPOSED FINISH GRADE TO TOP OF PIPE.
 - 6. (RIBBON WIRE SHALL BE #14 AWG, TEST STATIONS SHALL BE CONSTRUCTED EVERY 1000 FEET. TEST STATIONS SHALL HAVE A MINIMUM OF 3 FEET OF COILED WIRE



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WASTEWATER PUMPING STATION
WITH FORCE MAIN

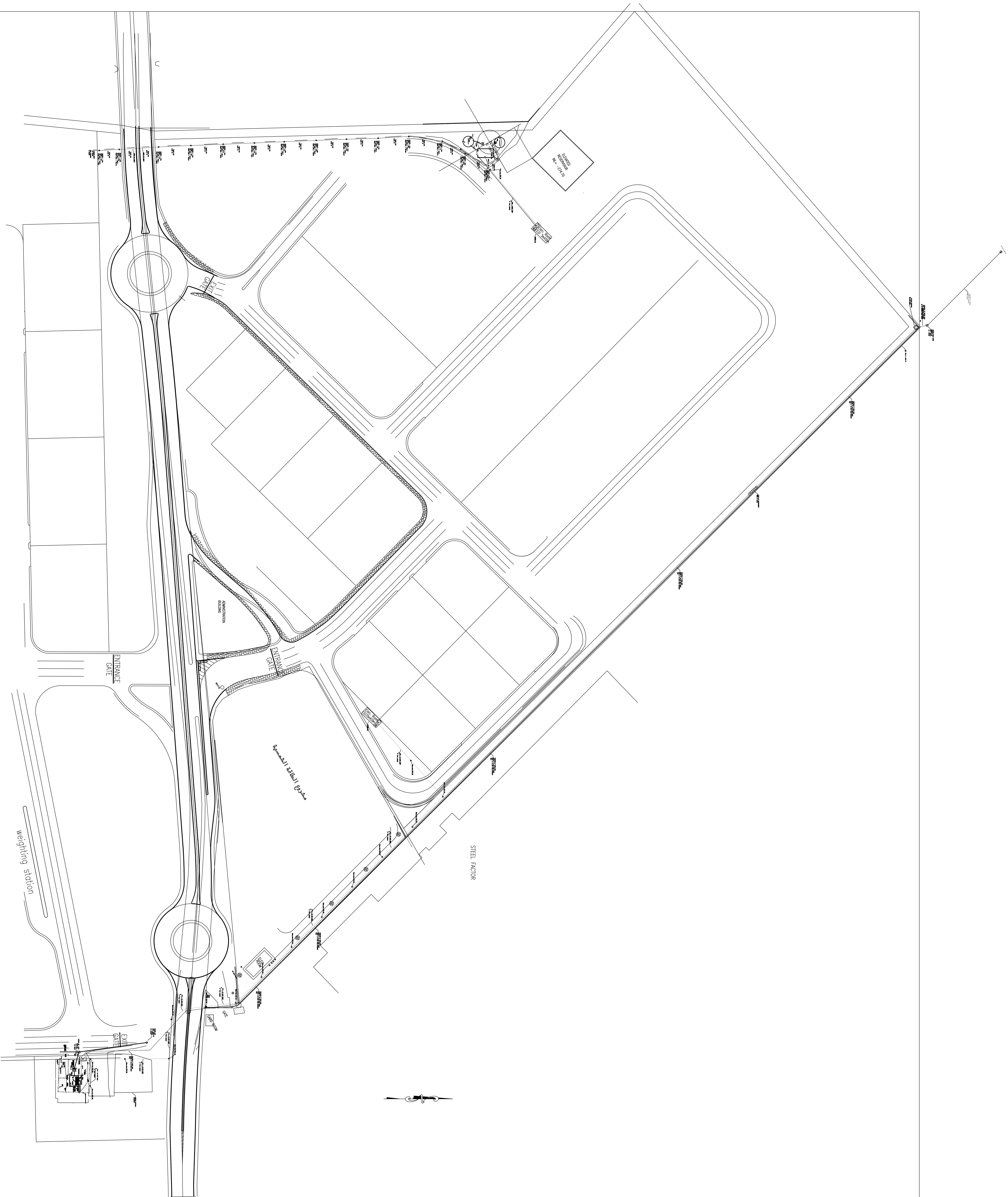
Details

Drawn By: B. IBRAHIM ABU-ARHA
Checked By: SAMEER SHAWKI
Approved By:

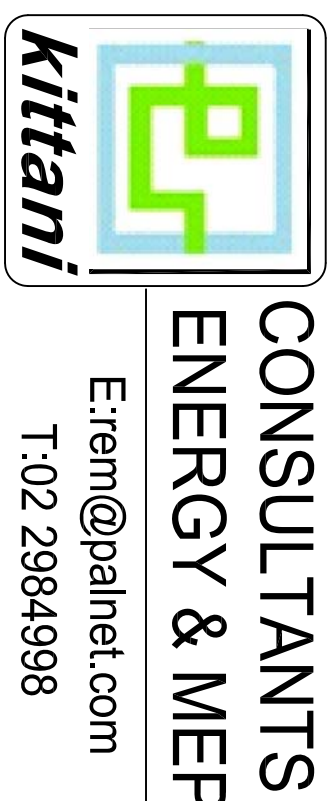
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DRAWING No: M 04 Date: NOV, 2014



Legend

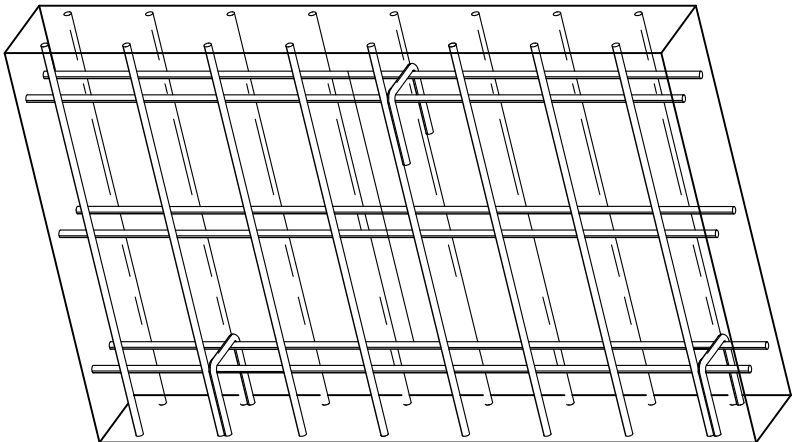


JERICHO AGRO INDUSTRIAL PARK
(JAIP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN &
DEEP WATER WELL
& DESALINATION UNIT

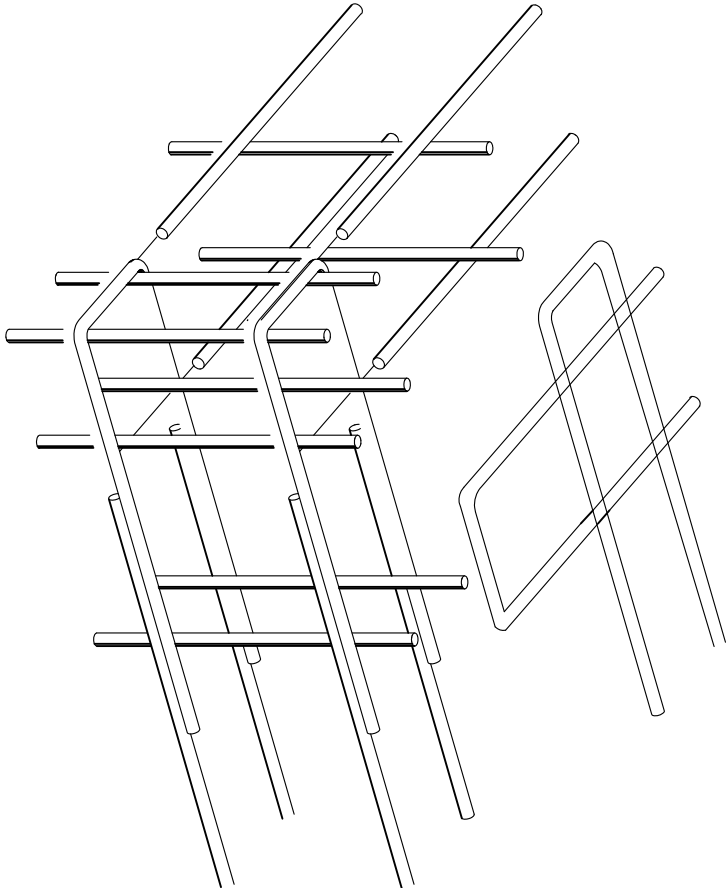
Site Layout

Scale:
NTS

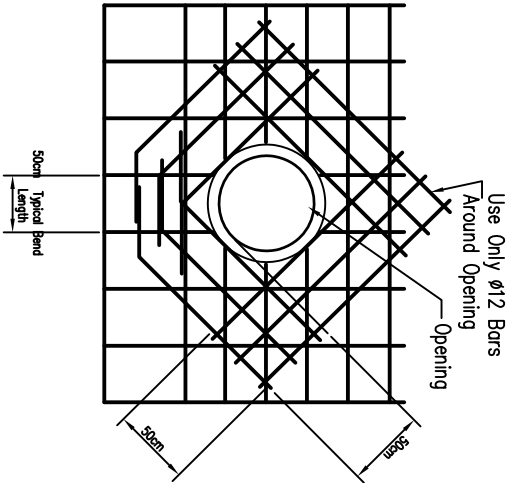
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Date: Nov 2014



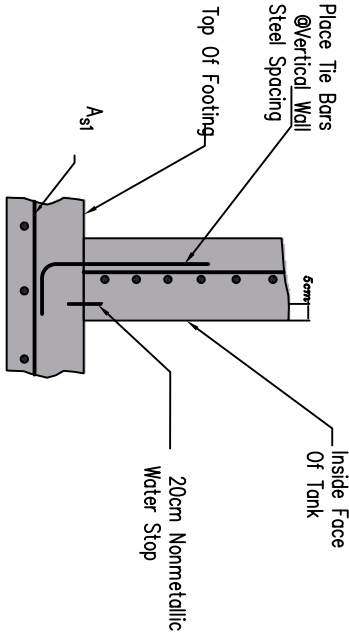
FOR CONCRETE WALLS
Use Ø10 U tie spacers staggered at 150 cm intervals.



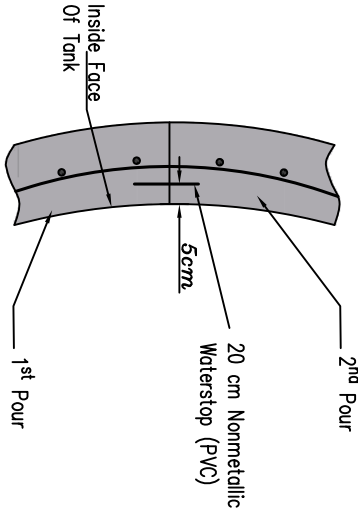
For all R.C. walls and wall beams:
Use Ø12 U Bars for ends and corners
for both walls



**DETAIL OF PIPE PROTRUDING
THROUGH A WALL**



**WALL TO FOOTING
CONSTRUCTION JOINT**



PLAN VIEW

TYPICAL WALL JOINT DETAIL

= Structural Wall below Slab Level.

=

= Structural Wall above Slab Level
(No Structural Wall below)



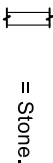
= Column below Slab Level.



= Column above Slab Level.



= Hardcore.



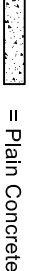
= Stone.



= Polystyrene.



= Block wall.



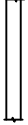
= Plain Concrete

= Waterproofing.

Ø20 = Thickness of Slab.

±2.35 = Level.

⊗C2 = Column Mark.



= Inverted Beam or Parapet above Slab Level.

= Drop Beam .



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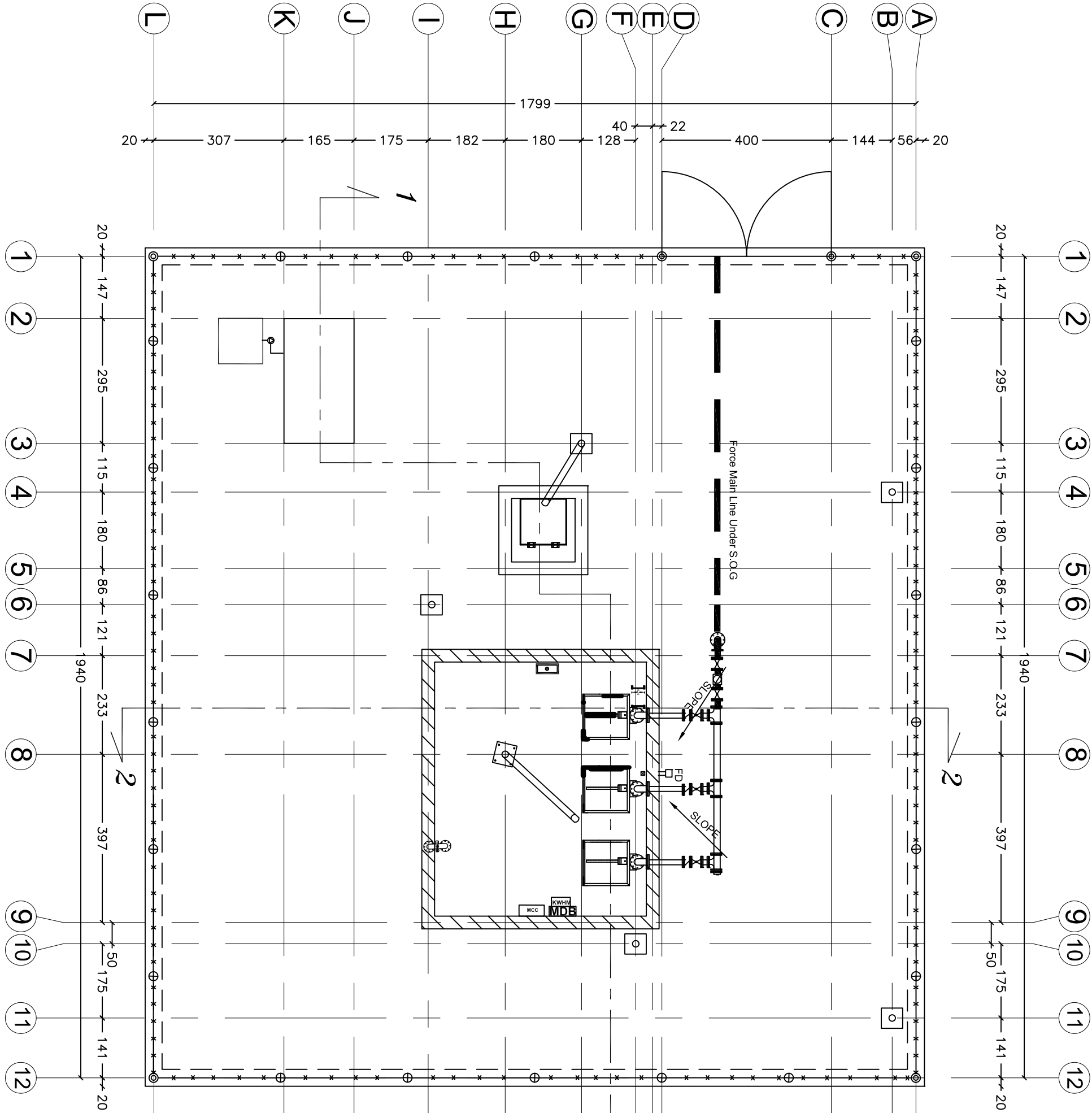
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REVISIONS	
DESCRIPTION	DATE

JERICHO AGRO-INDUSTRIAL PARK
(JAP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN

General Detail -2

DESIGNED	SHOEN KITTANI	SCALE	N.T.S
CHECKED	SHADEN KITTANI	DATE	Nov. 2014
APPROVED		DRG. No.	SO3
Sheet Size	A3		



Structural Wall below Slab Level.

Structural Wall above Slab Level (No Structural Wall below)

Column below Slab Level.

Column above Slab Level.

Hardcore.

Stone.

Polystyrene.

Block wall.

Plain Concrete

Waterproofing.

Thickness of Slab.

+2.35 = Level.

Column Mark.

Inverted Beam or Parapet above Slab Level.

Drop Beam.



REVISIONS	
DESCRIPTION	DATE

JERCHO AGROINDUSTRIAL PARK
(JAP)
WASTEWATER PUMPING STATION
WITH FORCE MAIN

DESIGNED	SHADEN KITANI	SCALE	1:100
CHECKED	SHADEN KITANI	DATE	Nov. 2014
APPROVED	SHADEN KITANI	DRG. No.	S.O.6
Sheet Size	A3		

