

G - REINFORCED CONCRETE (CONT'D)

1. FORMS SHALL RESULT IN A FINAL STRUCTURE THAT CONFORMS TO FINAL GRADES, LINES AND DIMENSIONS OF THE MEMBERS AS REQUIRED BY THE DESIGN DRAWINGS AND SPECIFICATIONS.
 2. FORMS SHALL BE SUFFICIENTLY TIGHT TO PREVENT LEAKAGE OF MORTAR.
 3. FORMS SHALL BE PROPERLY BRACED OR TIED TOGETHER TO MAINTAIN POSITION AND SHAPE.
 4. FORMS AND THEIR SUPPORTS SHALL BE DESIGNED IN A WAY THAT DOES NOT DAMAGE PREVIOUSLY PLACED STRUCTURE.
 5. STRIPPING FORMS AND SHORES SHALL BE MINIMUM AS FOLLOWS:

· FOUNTATIONS	1 day
· COLUMNS AND WALLS	1 day
· BEAMS & GIRDERS	21 days
· STRUCTURAL SLABS	14 days
- > REINFORCING STEEL**
1. ALL REINFORCEMENT EXCEPT TIES AND STIRRUPS TO BE OF HIGH TENSILE STRENGTH HAVING A MINIMUM YIELD STRESS $f_y = 500 \text{ MPa}$
 2. IN GENERAL ALL TIES & STIRRUPS TO BE OF MILD STEEL HAVING A MINIMUM YIELD STRESS $f_y = 240 \text{ MPa}$, UNLESS OTHERWISE NOTED.
 - LAP SPALL OF MAIN REINFORCEMENT SHOULD BE 50 BAR DIA.
 3. ALL BARS SHALL BE BENT COLD UNLESS PERMITTED BY THE STRUCTURAL ENGINEER
- > CONCRETE MIXES AND PLACING**
1. TWO TYPES OF CONCRETE ARE SPECIFIED:
 - CONCRETE FOR BLINDING AND CYCLOPEAN CONCRETE : 250 KG CEMENT PER CUBIC METER OF CONCRETE (FOR CYCLOPEAN 40% STONES (100-200mm CAN BE INCORPORATED).
 - CONCRETE FOR STRUCTURAL ELEMENTS : FOUNDATIONS, COLUMNS, WALLS, SLABS, MINIMUM 400 KG OF CEMENT PER CUBIC METER OF CONCRETE. MAX W/C=0.40.
 2. MATERIAL QUALITY :
 - a. CEMENT TYPE II (CP45) - SIKACRETE) SHALL BE USED FOR ALL CONCRETE IN CONTACT WITH WATER IF EXISTS. ALL OTHERS SHALL BE TYPE I (CP45) CEMENT
 - b. CONCRETE MINIMUM ULTIMATE CYLINDER COMPRESSIVE STRENGTHS AT 28 DAYS SHALL BE:

· $f_c = 35 \text{ MPa}$	a- FOUNDATIONS
· $f_c = 35 \text{ MPa}$	b- COLUMNS AND R.C. WALLS
· $f_c = 25 \text{ MPa}$	b- FLOOR AND ROOF SLABS
· $f_c = 17 \text{ MPa}$	b- BEAMS AND GIRDERS
	a- SLAB ON GRADE
	a- BLINDING CONCRETE
 3. NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.
 4. CONCRETE SHALL BE DEPOSITED IN ITS FINAL POSITION WITHOUT SEGREGATION, RE-HANDLING OR FLOWING, NO DEPOSITING OF CONCRETE SHALL BE ALLOWED WITHOUT THE USE OF VIBRATORS, UNLESS AUTHORIZED IN WRITING BY THE DESIGNERS.

G - REINFORCED CONCRETE:

1. IN SLAB SPICES OF REINFORCEMENT SHALL NOT BE MADE AT POINTS OF MAXIMAL STRESS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER. SPICES WHERE PERMITTED SHALL BE SUFFICIENT TO TRANSFER THE STRESS BETWEEN BARS BY BOND AND SHEAR.
2. ALL REINFORCING BARS, ANCHOR BOLTS, AND OTHER INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
3. PLACE STEVE PLUMBING OPENINGS, IN CONCRETE WALLS AND SLABS BEFORE CONCRETING AND BEND REINFORCING AROUND STEELS CORING NOT PERMITTED IN FLOOR OR ROOF SLABS COLUMNS AND WALLS UNLESS PERMITTED BY THE STRUCTURAL ENGINEER.
4. CONDUIT OR PIPE SIZE (O.D.) SHALL NOT EXCEED 30% OF SLAB THICKNESS UNLESS SPECIFICALLY DETAILED OTHERWISE. CONCENTRATIONS OF CONDUITS OR PIPES SHALL BE AVOIDED EXCEPT WHERE DETAILED OPENINGS ARE PROVIDED.
5. IN GENERAL SLABS CONSTRUCTED ON GRADE SHOULD HAVE POLYETHENE SHEETS UNDERNEATH.
6. PROPER CURING SHOULD BE CARRIED OUT FOR ALL CONCRETE ELEMENTS AND REPRESENTATIVE SAMPLES SHOULD BE KEPT ON SITE FOR CONCRETE STRENGTH TESTING.

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7. CONCRETE COVER TO REINFORCEMENT SHALL BE AS FOLLOWS, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
 - a. FOR SLABS, FLAT BEAMS NOT EXPOSED TO EARTH OR WEATHER : 30mm
 - b. FOR DROP BEAMS, WALLS & COLUMNS : 40mm
 - c. FOR FOOTINGS : 50mm
 - d. FOR ALL SURFACES IN CONTACT WITH WATER OR VAPOR : 50mm.
8. WHERE REQUIRED, DOWELS SHALL MATCH SIZE AND SPACING OF MAIN REINFORCING, UNLESS OTHERWISE SHOWN ON DRAWINGS.
9. ALL CONSTRUCTION JOINTS SHALL BE WIRE BRUSHED AND CLEANED IMMEDIATELY PRIOR TO POURING NEW CONCRETE.
10. ALL UNDERGROUND STRUCTURES IN CONTACT WITH SOIL TO RECEIVE TWO COATS OF BITUMINOUS PAINT UNO.
11. THE SEQUENCE OF POURING CONCRETE SHALL BE SUCH AS TO MINIMIZE SHRINKAGE.
12. ALL REINFORCEMENT SHALL BE CONTINUED ACROSS CONSTRUCTION JOINTS UNLESS OTHERWISE NOTED.
13. THE SURFACE OF THE CONCRETE AT ALL JOINTS SHALL BE ROUGHENED MINIMUM 6mm, THOROUGHLY CLEANED AND ALL LATTANCE REMOVED PRIOR TO PLACING ADJOINING CONCRETE.
14. MAXIMUM AGGREGATE SIZE TO BE 2.5mm
15. ALL AGGREGATE IN ACCORDANCE SHALL BE FREE OF SHALE, CHERT, COAL AND IRON OXIDE.

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Revisions

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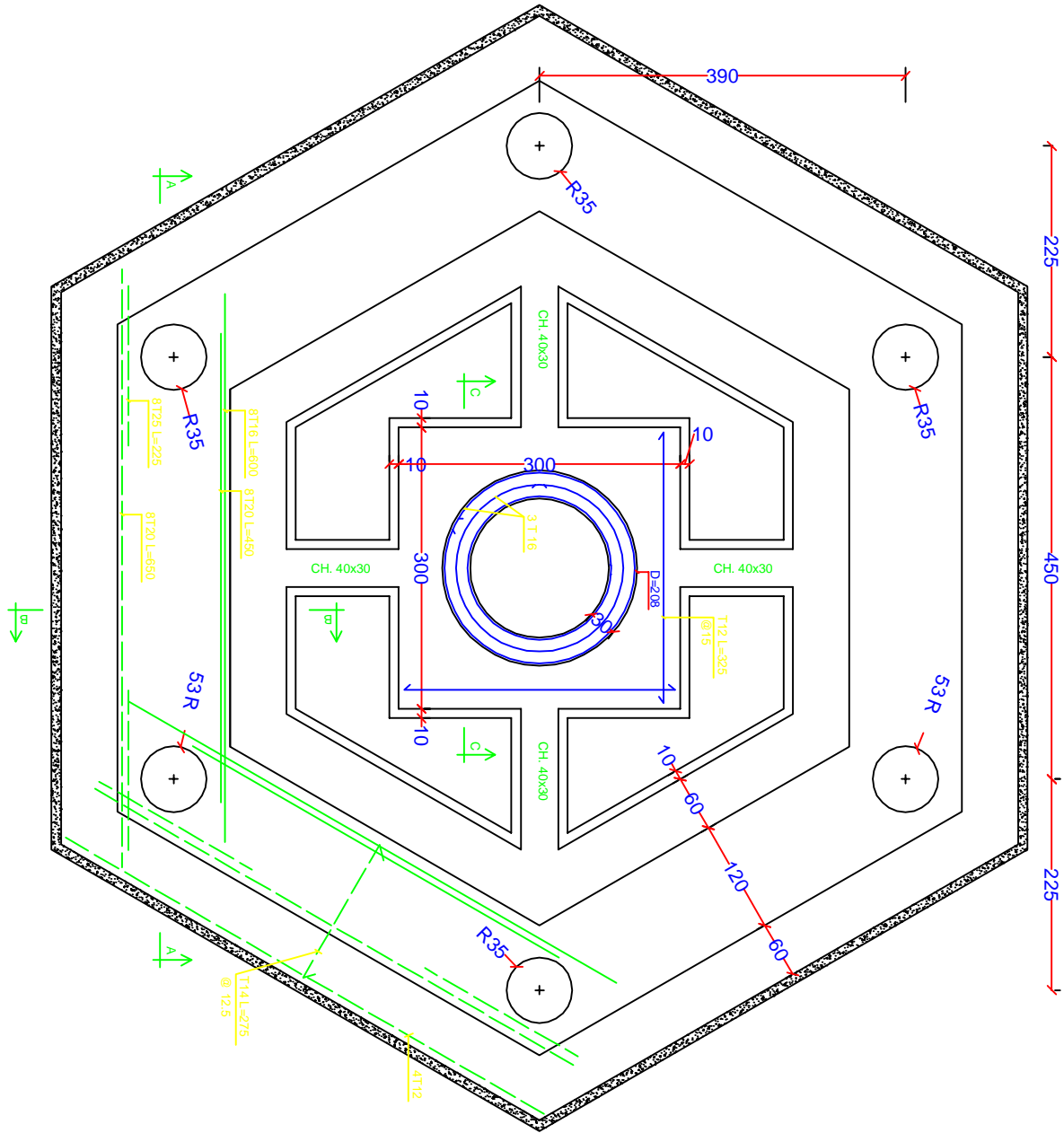
KHARAYEB WATER TANK
CAPACITY 500m3

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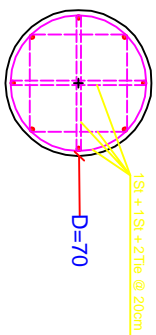
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DISCIPLINE	WATER
SECTOR	.
BUILDING	.
DESIGNED	AC
DRAWN	AC
CHECKED	AC
APPROVED	.
DATE	7/09/2015
SCALE	NTS
SHEET SIZE	AC

ELEVATION VIEW

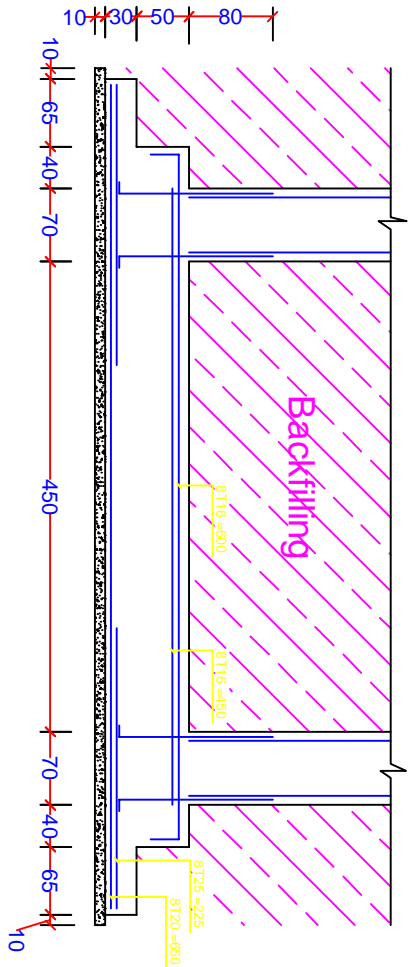
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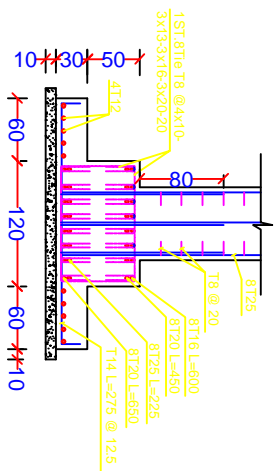
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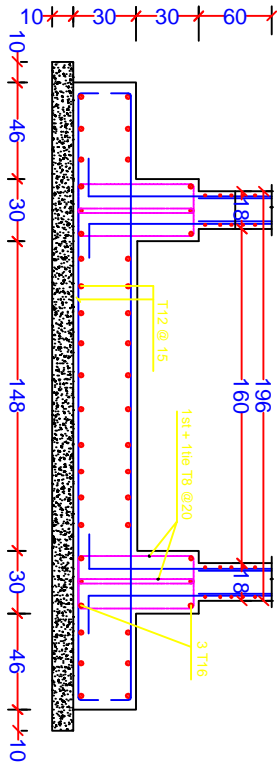
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SECTION A-A
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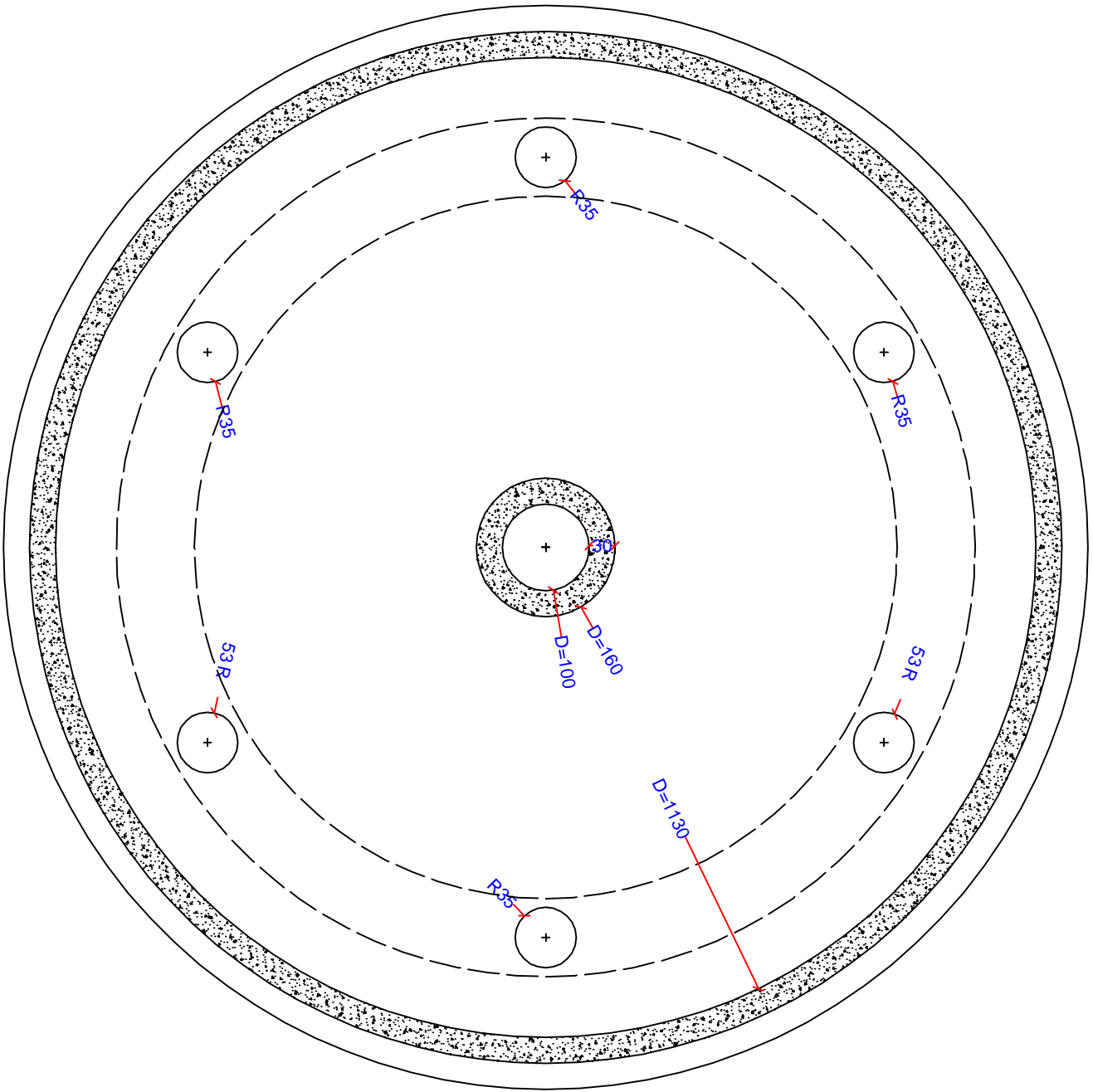
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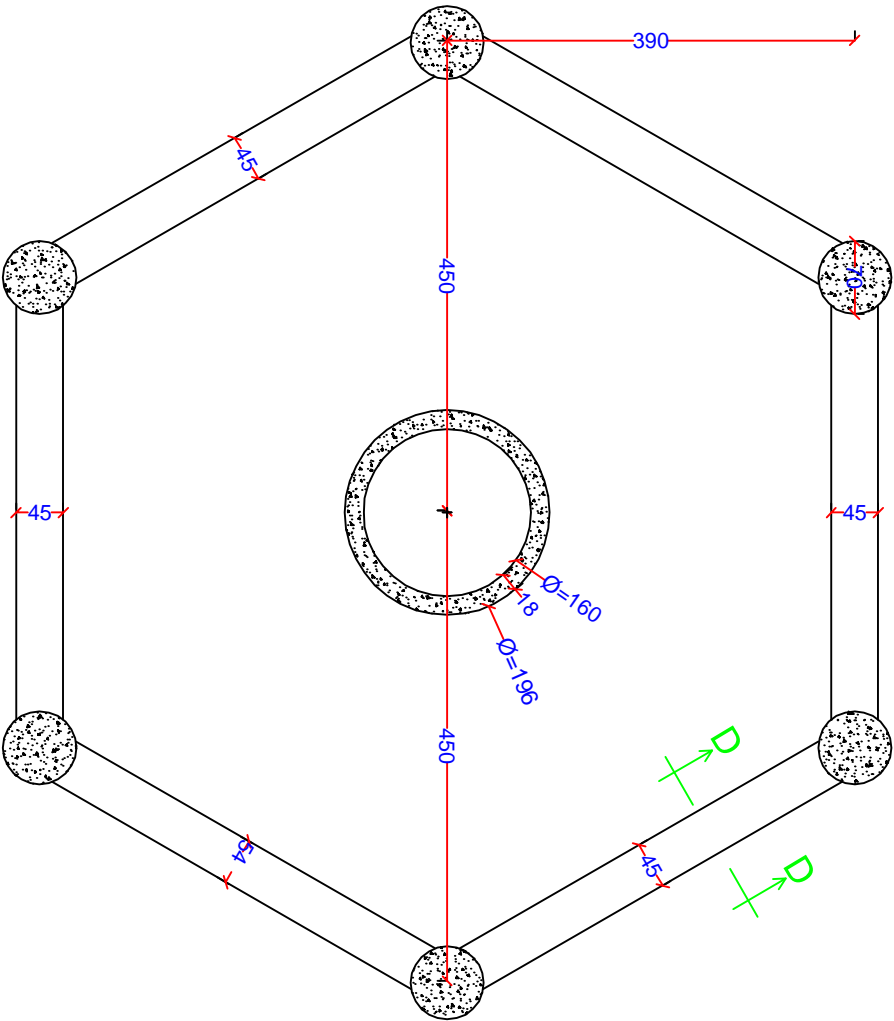
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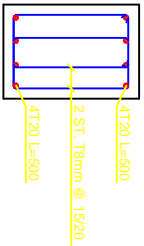
Phase	Discipline	Floor Area	Drawing Number	Revision
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STRUT BEAMS
scale 1/50



SECTION D-D
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TANK FLOOR AND STRUTS
FORMWORK

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Phase Discipline Floor Area Drawing Number Revision

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REV BY	APP	DESCRIPTION	DATE

Revisions

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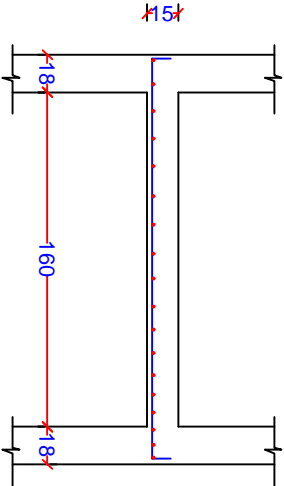
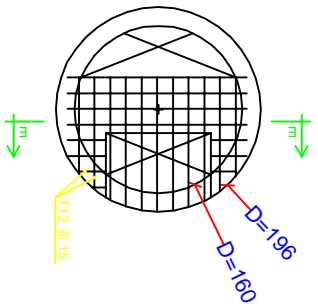
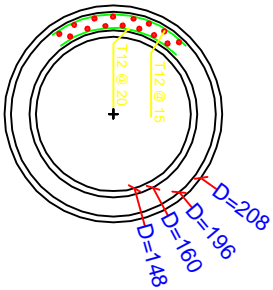
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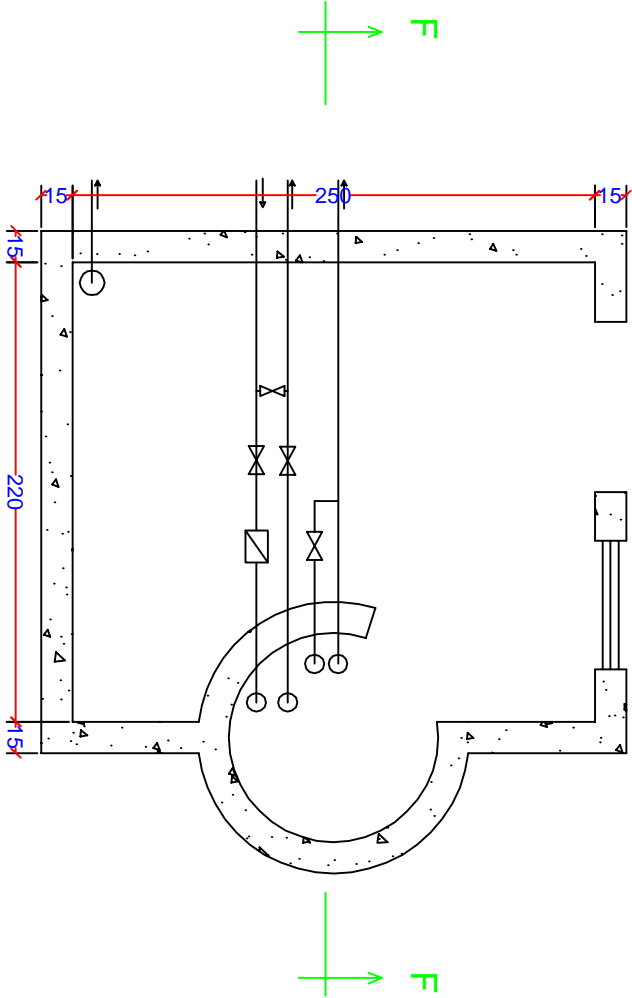
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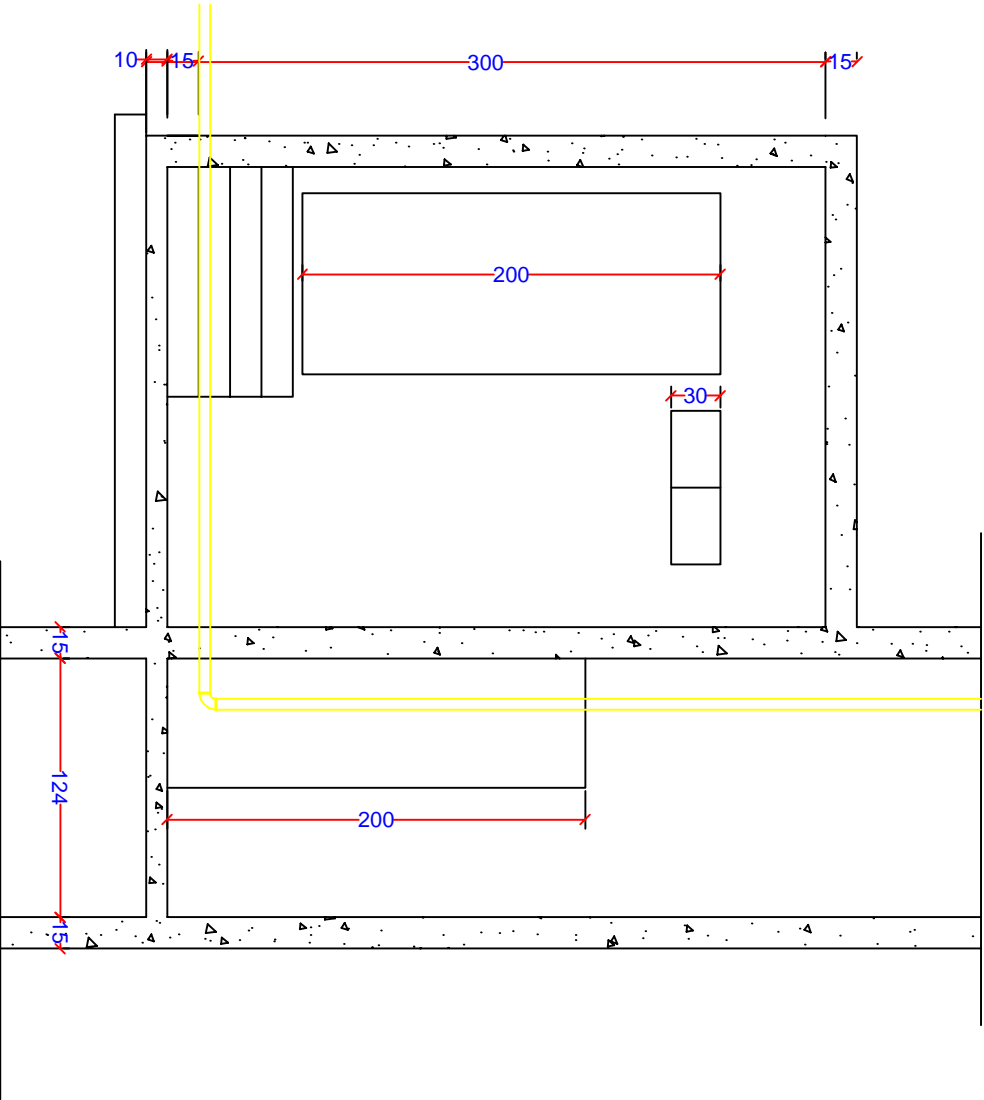
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SECTION E-E
scale 1/25



LAYOUT
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CONTROL ROOM




SEC F-F
scale 1/25

SHAFT and CONTROL ROOM

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BOTTOM SLAB & ROOF REINFORCEMENT

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