

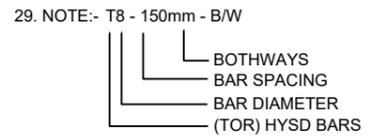
GENERAL NOTES FOR CONCRETE WORKS:

1. GENERAL NOTES SHALL BE READ IN CONJUNCTION WITH THE RELEVANT STRUCTURAL DRAWINGS, CONTRACT TERMS AND CONDITIONS, SPECIFICATIONS AND SCHEDULE OF RATES.
2. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN METERS, UNLESS OTHERWISE SPECIFIED.
3. DO NOT SCALE THE DRAWING. READ FIGURED DIMENSIONS ONLY.
4. PROJECT SITE IS LOCATED IN HYDERABAD FOR WHICH BASIC WIND SPEED IS 44m/sec AND SEISMIC ZONE - II.
5. SITE INCHARGE SHALL CHECK THE DRAWING BEFORE EXECUTION OF THE WORK.
6. GOT TO ENSURE THAT BLACK COTTON SOIL IS NOT PRESENT BELOW FOUNDATIONS, PAVEMENTS OR GRADE SLAB. BLACK COTTON SOIL IN CASE IF ENCOUNTERED, SHALL BE DISPOSED OFF OUTSIDE THE PROJECT BOUNDARY. BACK FILL REQUIRED BELOW THE FOUNDATIONS OR GRADE SLAB SHALL BE GRANULAR NON-SWELLING SOIL. TYPICAL SPECIFICATIONS OF BACKFILL MATERIAL SHALL BE AS FOLLOWS: PERCENT PASSING SIEVE 100MM SHALL NOT EXCEED 20% WITH 100% PASSING 50MM SIEVE. BACK FILL SHALL BE COMPACTED TO 95% PROCTOR DENSITY FOR WELL-GRADED OR COHESIVE SOILS OR TO MINIMUM 75% OF RELATIVE DENSITY FOR COHESION LESS SOILS. BACK FILL SHALL NOT BE COMPACTED WITH FREE WATER ON THE SURFACE.
7. IN CASE FOUNDATIONS ARE PLACED ON MURRUM, THE MURRUM SHALL BE COMPACTED TO 95% OF PROCTOR DENSITY USING SUITABLE COMPACTOR.
8. CANTILEVER SLABS, BEAMS SHALL BE CAST MONOLITHIC WITH ADJOINING SLABS/BEAMS.
9. UNLESS OTHERWISE INDICATED ON DRGS., REINFORCING BARS AT COLUMN-BEAM JUNCTIONS WILL BE PROVIDED WITH FULL DEVELOPMENT LENGTH(L_d) AND BEAM-BEAM JUNCTIONS SHALL BE PROVIDED WITH 'L_d/3'.
10. WHEREVER TWO TYPES OF BEAMS MEET AT ONE SUPPORT, THE EXTRA BARS AT TOP OF BEAMS SHALL BE PROVIDED AS HIGHER OF TWO.
11. THE LOCATIONS AND DETAILS OF CONSTRUCTION JOINTS, ISOLATION JOINTS UNLESS NOTED OTHERWISE ARE TO BE DECIDED BY THE ENGINEER AT SITE.
12. EXPANSION JOINT SHALL BE SUITABLY PROVIDED AS PER IS 456-2000
13. WATER FOR CONSTRUCTION PURPOSES SHALL CONFORM TO RELEVANT CLAUSES OF IS 456-2000
14. IT SHALL BE ENSURED THAT TREES WILL BE ABOUT 3000mm AWAY FROM THE BUILDING EXTERNAL WALLS.
15. ALL PLAIN CEMENT CONCRETE WORKS (UNLESS NOTED OTHERWISE) SHALL BE OF MIX (1:4:8).
16. GRADE OF CONCRETE, UNLESS OTHERWISE MENTIONED :(DESIGN MIX)
 - a) FOOTINGS : M25
 - b) COLUMNS : M35
 - c) BEAMS : M35
 - d) SLABS : M35
 - e) STAIRCASE : M35
17. GRADE OF CEMENT USED SHALL BE OPC 43 GRADE CONFORMING TO IS 8112 (OR) 53 GRADE CONFORMING TO IS 12269 AND PPC CONFORMING TO IS 1489. UNLESS OTHERWISE SPECIFIED.
18. REINFORCING STEEL SHALL BE OF GRADE Fe 500D. CONFORMING TO IS:1786-1985.
19. BENDING AND FIXING OF REINFORCEMENT SHALL BE AS PER IS:2502.
20. SAFE BEARING CAPACITY (SBC) OF SOIL IS TAKEN AS 300kN/m² AT A DEPTH OF 2.5m BELOW NGL/FGL WHICHEVER IS LOWER.
21. ALL HOOKS, BENDS, LAPS AND SPLICES SHALL BE AS PER IS:456. UNLESS OTHERWISE INDICATED.
22. SPLICES OF REINFORCEMENT SHALL BE MADE AS SHOWN IN THE DRAWINGS OR AS APPROVED BY THE ENGINEER AT SITE.
23. COVER BLOCK SHALL BE OF RICHER MIX THAN THAT OF CONCRETE.
24. ALL JOINTS IN SHUTTERING SHALL BE SEALED USING TAPE.
25. CURING SHALL BE DONE FOR MINIMUM OF 2 WEEKS BY PONDING IN CASE OF SLABS, BY MOIST CLOTH OR GUNNY BAGS IN CASE OF VERTICAL SURFACES. IN CASE OF DEVIATION FROM THIS CLAUSE FOR WANT OF REDUCED CYCLE TIME, THE ACCELERATED CURING SHALL BE DONE AT THE COST OF CONTRACTOR.
26. THE SIZES OF AGGREGATE SHALL CONFIRMED TO IS 383 NOMINAL MAXIMUM SIZE OF COARSE AGGREGATE IS 20mm, SUITABLY GRADED AS PER THE REQUIREMENT OF MIX DESIGN.

27. CLEAR COVER SHALL BE BASED ON EXPOSURE CONDITIONS AND TWO HOURS FIRE RESISTANCE IN ACCORDANCE WITH IS 456-2000. IN GENERAL THE FOLLOWING COVERS ARE CONSIDERED FOR

I.	FOOTINGS/RAFT	: 50 mm
II.	COLUMNS	: 40 mm
III.	BEAMS	: 30 mm
IV.	SLABS	: 25 mm
V.	WALLS	: 30 mm
VI.	UNDERGROUND STRUCTURES(UG SUMP/STP/COLLECTION PITS) ON WATER SIDE OR EARTH SIDE	: 45 mm

28. SIDE FACE REINFORCEMENT IS TO BE PROVIDED WHEN BEAM DEPTH EXCLUDING SLAB THICKNESS EXCEEDS OR EQUALS TO 750mm. UNLESS OTHERWISE SPECIFIED, SUCH REINFORCEMENT SHALL NOT BE LESS THAN 0.1 PERCENT OF THE WEB AREA.



30. OPENINGS FOR SLABS AND RC WALLS:

SPECIAL DETAILING FOR OPENINGS FOR LIFT SHAFTS, LARGE SERVICE DUCTS, ETC, IN THE FLOORS SHALL BE GIVEN IN THE DRAWING.

 - a) SLAB/ WALL REINF WHICH INTERFERS WITH OPENING SHALL BE CUT AND REPLACED BY BARS OF SAME SIZE AND AREA PLACED EVENLY ON BOTH SIDES OF OPENING AND ON BOTH FACES ADDL BARS SHALL BE PROVIDED IF AN UNEVEN NO OF BARS ARE CUT. ALL REPLACEMENT BARS SHALL EXTEND TO AN ANCHORAGE LENGTH BEYOND THE OPENING.
 - b) FOR SIZE OF OPNG >500 BUT < 1000, DIAGONAL REINF IN THE FORM OF LINKS OR STRAIGHT BARS OF SAME SIZE AS THE REPLACEMENT BARS SHALL BE PLACED AT THE CORNERS OF THE OPENING ON BOTH FACES. ALL DIAGONAL BARS SHALL EXTEND TO AN ANCHORAGE LENGTH BEYOND CORNER OF THE OPENING.

31. ALL OPENINGS FOR PIPING AND CONDUITS SHALL BE FORMED IN POSITION BEFORE THE CASTING OF CONCRETE.
32. MIX DESIGN SHALL BE FOLLOWED FOR ALL CONCRETE WORKS WITH CONCRETE MIX SUPERIOR TO M10, WITH MINIMUM CONTENT OF CEMENT AS SPECIFIED BELOW,

GRADE	MINIMUM CEMENT CONTENT kg/m	WATER CEMET RATIO
M35	340	0.45
M25	300	0.50

33. THE SHUTTERING OF CANTILEVER MEMBERS SHALL BE REMOVED ONLY AFTER THE SHUTTERING OF ITS ADJACENT COUNTER BALANCING MEMBER HAS BEEN REMOVED.
34. MINIMUM HEIGHT OF PLINTH SHALL BE AS PER ARCHITECTURAL DRAWING.
35. SUITABLE WATERPROOF TREATMENT SHALL BE PROVIDED AS PER REQUIREMENT (TERRACE SLAB, RETAINING WALL, TOILETS AND FOOTINGS) WITH PRIOR APPROVAL FROM CLIENT.
36. PLINTH PROTECTION:-
SUITABLE PLINTH PROTECTION SHALL BE PROVIDED AS PER REQUIREMENT OF CLIENT/ ARCHITECT.

37. STRIKING OF FORM WORK

TYPE OF FORMWORK	MINIMUM PERIOD BEFORE STRIKING FORMWORK
A. VERTICAL FORMWORK TO COLUMNS, WALL, BEAMS	16-24 H
B. SOFFIT FORMWORK TO SLABS (PROPS TO BE REFIXED IMMEDIATELY AFTER REMOVAL OF FORMWORK.)	3 DAYS
C. SOFFIT FORMWORK TO BEAMS (PROPS TO BE REFIXED IMMEDIATELY AFTER REMOVAL OF FORMWORK.)	7 DAYS
D. PROPS TO SLABS:	
1.) SPANNING UP TO 4500mm	7 DAYS
2.) SPANNING OVER 4500mm	14 DAYS
E. PROPS TO BEAMS AND ARCHES:	
1.) SPANNING UP TO 6000mm	14 DAYS
2.) SPANNING OVER 6000mm	21 DAYS

THESE TIMES ARE SUBJECTED TO APPROVAL AND THE SAME MAY BE ALTERED TO THE APPROVAL OF THE ENGINEER.

38. ON REMOVAL OF FORMWORK, ALL CONCRETE SURFACE WHICH ARE TO RECEIVE MASONRY WORK OR PLASTER SHALL BE CLOSELY HACKED TO PROVIDE A ROUGH SURFACE FOR BONDING.
39. ALL OPENINGS TO BE FORMED IN THE FLOORS AND WALLS, INCLUDING THOSE FOR CONSTRUCTION PURPOSES SHALL BE TO SUBJECTED THE APPROVAL OF THE ENGINEER.

40. LAPS SHALL BE STAGGERED AND NOT MORE THAN 50% OF THE REINFORCING BARS SHALL BE LAPPED AT ANY LOCATION.
41. ALL ELEMENT TESTS FOR STEEL, CEMENT, AGGREGATES SHALL BE TESTED AS PER STANDARDS. DESIGN/TRIAL MIX SHALL BE TESTED PRIOR TO USAGE.
42. SHUTTERING LEVEL VERTICALITY, ALIGNMENT & PLANENESS SHALL BE VERIFIED PRIOR TO COMMENCEMENT OF REINFORCEMENT WORK.
43. ALL STRESSED BARS NEAR SUPPORTS SHALL HAVE MINIMUM DEVELOPMENT LENGTH INTO SUPPORTS BY 'L' BEND.
44. SLABS SHALL HAVE MINIMUM 0.12% OF GROSS AREA IN BOTH DIRECTIONS UNLESS OTHERWISE SPECIFIED.
45. WHERE THERE ARE TWO OR MORE ROWS OF THE BARS IN THE BEAM, THE BARS SHALL BE VERTICALLY IN LINE AND MINIMUM VERTICAL DISTANCE BETWEEN BARS SHALL BE MAXIMUM SIZE OF AGGREGATE OR THE MAXIMUM SIZE OF THE BARS, WHICH EVER IS MORE.
46. FOR MISSING DETAILS, PLEASE REFER SP34, IS:2502, IS:1200, SP16, IS:456, FOR ANY RELAVENT DRAWING.,
47. BASED ON SOIL STRATA & DEPTH OF EXCAVATION, NECESSARY ADDITIONAL WIDTH IN FOUNDATION SHALL BE DONE WITH PROPER SIDE SLOPES FOR STABILITY OF SOILS.
48. DEVELOPMENT LENGTHS FOR Fe500:-

TABLE 4.4 : DEVELOPMENT LENGTH FOR HIGH YIELD STRENGTH DEFORMED BARS
A. TENSION BARS (L_d IN mm) B. COMPRESSION BARS (L_{dc} IN mm)

BAR DIA (mm)	DEVELOPMENT LENGTH, L _d (IN MILLIMETERS)	
	GRADE OF CONCRETE	
	M35	
8	320	
10	400	
12	480	
16	640	
20	800	
25	1000	
32	1280	

BAR DIA (mm)	DEVELOPMENT LENGTH, L _{dc} (IN MILLIMETERS)	
	GRADE OF CONCRETE	
	M35	
8	256	
10	320	
12	384	
16	512	
20	640	
25	800	
32	1024	

49. FOR INTERNAL WALLS, MULLIONS AND RC BANDS SHALL BE SUITABLY PROVIDED AS SUPPORTS.



Rev	Date	Drawn By/Design By	Description	CHKD	CERT	APPD

ARMY COLLEGE OF DENTAL SCIENCES

Project : CONSTRUCTION OF PG BLOCK FOR ARMY COLLEGE DENTAL SCIENCES -SECUNDERABAD

Title : GENERAL NOTES

Drawn	GSA	REV	R0	<input type="checkbox"/> INFORMATION	STATUS
Designed	AVS	DWG ISSUED FOR		<input type="checkbox"/> TENDER	
Checked	SBK			<input type="checkbox"/> COMMENTS	
Certified	VRN	Scale	1:100	<input checked="" type="checkbox"/> APPROVAL	
Approved	CVS	Date	18.11.22	<input type="checkbox"/> EXECUTION	

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Dwg.No : SV/ACDS/STRL/S-2 SHEET SIZE : A1