

1.1. ALL DIMENSIONS ARE IN MILLIMETERS AND ALL LEVELS ARE IN METERS.

2.1. UNLESS OTHERWISE NOTED IN THE DRAWING, ALL STRUCTURAL STEEL SHALL BE OF WELDABLE QUALITY CONFORMING TO STEEL GRADE S355 ACCORDING TO BS EN 10025, GRADE S355J2H ACCORDING TO BS EN 10210 AND COMPLY WITH EMPLOYER'S REQUIREMENTS UNLESS OTHERWISE NOTED.

- 2.2. BOLTS, NUTS AND WASHERS:
 - 2.2.1. HIGH STRENGTH BOLTS (QUALITY 10.9), NUTS AND WASHERS SHALL CONFORM TO BS EN 14399 OR EQUIVALENT DIN 6914,6915,6916,6917,6918.
 - 2.2.2. HIGH STRENGTH BOLTS (QUALITY 8.8), NUTS AND WASHERS SHALL CONFORM TO BS EN 14399 OR EQUIVALENT DIN 933,934,126.
 - 2.2.3. BOLTS (QUALITY 4.6), NUTS AND WASHERS SHALL CONFORM TO BS EN 14399 OR EQUIVALENT DIN 7990,555,7989,434,435.
 - 2.2.4. ONLY TESTED MATERIALS SHALL BE USED UNLESS WRITTEN AUTHORITY IS GRANTED FOR UNTESTED MATERIALS FOR CERTAIN PARTS.
- 2.3. WELDING
 - 2.3.1. ELECTRODES FOR SHIELDED METAL ARC WELDING (MMAW) OF MILD STEEL SHALL CONFORM TO DIN EN 449 OR AWS EQUIVALENT. FOR ALL OTHER TYPES OF WELDING SUCH AS, SUBMERGED ARC WELDING (SAW) ETC., ELECTRODES, FLUX/FILLER MATERIALS SHALL CONFORM TO RELEVANT DIN OR AWS STANDARDS.
 - 2.3.2. THE GRADE OF THE WELD METAL SHALL BE AT LEAST EQUAL TO THAT OF PARENT METAL AND BE AT LEAST EQUAL TO THOSE OF STEEL GRADE USED. MINIMUM THROAT TO BE 5mm UNLESS OTHERWISE NOTED.
 - 2.4. ALL FLASHING, RIDGING, CORNER PIECES SHALL BE OF GALVANIZED STEEL SHEETS.
 - 2.5. ALL ROOF CLADDING ARE SANDWICH PANEL UNLESS OTHERWISE NOTED.
 - 2.6. ALL FIXING ACCESSORIES FOR LOUVER SHEETING SHALL BE OF GALVANIZED STEEL.
 - 2.7. ALL FLOOR SHALL BE ALL GRATING WITH BEARING BARS (30MM X 3MM) & OPENING (30MM X 50MM) & TWISTED BARS 5 MM (U.O.N).
 - 2.8. ALL PURLIN AND SIDE GIRT SHALL BE GALVANIZED UNLESS OTHERWISE NOTED.

3.1. UNLESS OTHERWISE STATED ALL PROVISIONS OF THE BRITISH CODE BS 5950 CODE OF PRACTICE FOR DESIGN AND SPECIFICATION PERTAINING TO DESIGN, DETAILING AND CONSTRUCTION SHALL APPLY. IN CASE SUITABLE BRITISH CODES AND STANDARDS ARE NOT AVAILABLE, ANY INTERNATIONAL CODES OR EQUIVALENT SHALL BE APPLICABLE.

- 3.2. FOR DETAILING AND CONSTRUCTION OF WELDED CONNECTIONS ALL PROVISIONS OF BS STANDARD OR EQUIVALENT AWS OR DIN 18800 - PART 1 AND SPECIFICATIONS PERTAINING TO DESIGN, DETAILING AND CONSTRUCTION SHALL APPLY.
- 3.3. ALL BOLTS ARE (8.8) EXCEPT OTHERWISE REQUIRED OR NOTED IN THE DRAWING.
- 3.4. ALL WELDS THICKNESS SHOULD BE (0.8 T_{min}) , NOT LESS THAN 5MM LEG SIZE CONTINUOUS FILLET AND FOR BUILT UP SECTION WELD THICKNESS SHOULD BE (0.5 T_{min}) AND NOT LESS THAN 4MM LEG SIZE CONTINUOUS FILLET UNLESS OTHERWISE NOTED.
- 3.5. UNLESS OTHERWISE INDICATED IN THE DRAWING, THE LEG OF FILLET WELD ON THE TOE SIDE OF ANGLES OR PROFILES HAVING A THICKNESS EQUAL TO OR LESS THAN 6MM SHALL BE EQUAL TO THE THICKNESS OF THE MEMBER TOE MINUS 1mm.
- 3.6. THE LENGTH OF WELD SHOWN FOR ANGLES INDICATES MINIMUM DESIGNED LENGTH REQUIRED ON THE HEEL SIDE.
- 3.7. WHERE NO FASTNER IS INDICATED ON THE DRAWING FOR MEMBERS OF TRUSSES, BRACING OR ANY SUCH OTHER LATTICED MEMBERS, THE END CONNECTIONS SHALL BE DEVELOPED WITH MIN. 2 NOS. M20 BOLTS (GRADE 8.8) OR EQUIVALENT WELDING TO TRANSFER 5T LOAD.
- 3.8. IRRESPECTIVE OF WELDING LENGTHS ON THE DRAWING, FULL CONTACT LENGTH BETWEEN GUSSET PLATE AND MEMBERS SHALL BE WELDED IN ALL CASES UNLESS OTHERWISE NOTED.
- 3.9. BEFORE WELDING, ALL SURFACES IN THE WELD AREA AND THE CONTACT FACES SHALL BE PROPERLY CLEANED.
- 3.10. MEMBERS COMPOSED OF TWO ANGLES/CHANNELS BACK TO BACK ARE TO BE STITCHED TOGETHER ASSUMING COMPRESSIVE FORCE IN THE MEMBERS. THE INACCESSIBLE PARTS OF THE MEMBERS INCLUDING THE SEPARATORS ARE TO BE PAINTED PRIOR TO ASSEMBLY.
- 3.11. THE STEEL STRUCTURE WAS DESIGNED TO WITHSTAND THE FOLLOWING LOADS
 1. D.L.
 - 1.1. O.W. OF STEEL STRUCTURE.
 - 1.2. O.W. OF CLADDING OR FLOORING.
 - 2- L.L.
 - 2.1. ROOF LIVE LOAD.
 - 2.2. MECH./ARCH./ELECTRIC FEATURES
 - (LOADING SHOULD BE MADE ON THE MAIN STEEL STRUCTURAL ELEMENTS DIRECT

- 3.12. ALL FIELD SPLICES SHALL BE DESIGNED TO SUSTAIN THE MAX. CAPACITY OF THE SECTION. THE CONTRACTOR SHALL PROVIDE THE EXACT LOCATION OF ALL FIELD SPLICES FOR THE ENGINEER'S APPROVAL.

- 4.1. ALL SHOP STEEL WORK SHALL BE OF WELDED CONSTRUCTION UNLESS OTHERWISE NOTED.
- 4.2. FOR AUTOMATIC/SEMI-AUTOMATIC WELDING, PROCEDURE TESTS FOR ESTABLISHING WELDING PARAMETERS SHALL BE CARRIED OUT PRIOR TO START OF ACTUAL WELDING.
- 4.3. RECOMMENDATIONS OF THE MANUFACTURER FOR PRESERVATION AND APPROPRIATE USE OF WELDING CONSUMABLES SHALL BE STRICTLY FOLLOWED.
- 4.4. DUE TO NON-AVAILABILITY OF REQUIRED LENGTH OF PLATES FOR ANY STRUCTURAL ELEMENT (EXCEPT FOR MEMBERS SUBJECTED TO REPETITIVE LOADS); FULL STRENGTH BUTT-WELDED SPLICES ARE TO BE PROVIDED. NON-DESTRUCTIVE TESTS SHALL BE PERFORMED 100% BUT JOINTS/ACCORDING TO THE APPROVED QUALITY PLAN.
- 4.5. ALL BUTT WELDS SHALL BE OF FULL PENETRATION TESTED QUALITY ACCORDING TO THE QUALITY PLAN. BUTT-WELDED JOINTS IN PLATES SHALL BE DONE USING RUN-ON AND RUN-OFF PLATES; SUCH PLATES SHOULD BE CUT OFF AFTER WELDING AND THE EDGES GROUND FLUSH WITH THE PARENT PLATES.
- 4.6. BEFORE PUTTING THE SEALING RUN IN MANUAL METAL ARC BUTT WELDED JOINTS, THE ROOT RUN SHALL BE GOUGED OUT AND BACK-WELDED.
- 4.7. EDGE PREPARATION SEALING FOR MANUAL METAL ARC WELDING (MMAW) AND SUBMERGED ARC WELDING (SAW) SHALL CONFORM TO DIN 8551 PART 1 & DIN 8551 PART 4, RESPECTIVELY OR EQUIVALENT AWS STANDARDS.
- 4.8. GUIDANCE AND QUALITY LEVELS FOR IMPERFECTION FOR ARC WELDED CONNECTIONS SHALL BE ACCORDING TO BS STANDARD OR EQUIVALENT DIN, EN, 25817 OR AWS.
- 4.9. ALL GAS-CUT FACES SHALL CONFORM TO AT LEAST QUALITY CLASS 1 AND SHALL BE APPROVED BY THE ENGINEER.
- 4.10. HOLES FOR BOLTS SHALL ONLY BE DRILLED FOR PLATE THICKNESS BIGGER THAN 12MM AND PUNISHING FOR OTHER PLATE THICKNESS UNLESS NOTED.
- 4.11. LAMINATION TEST SHALL BE PERFORMED FOR PLATES 40mm OR THICKER.
- 4.12. MACHINED SURFACES OF STEEL MEMBERS (WHERE NECESSARY) SHALL BE PREPARED TO ENSURE FULL CONTACT AFTER ASSEMBLY.

- 5.1. ALL SITE CONNECTIONS FOR SECONDARY MEMBERS SUCH AS RAFTER, BRACING, POSTS, LADDERS ETC. SHALL BE DEVELOPED WITH GRADE 4.6 BOLTS UNLESS OTHERWISE INDICATED IN THE DRAWING.
- 5.2. ALL OTHER CONNECTIONS SHALL BE OF GRADE 8.8 BOLTS UNLESS OTHERWISE MENTIONED IN THE DRAWING.
- 5.3. ALL SITE SPLICES SHALL BE DEVELOPED WITH SUITABLE COVER PLATES AND H.S.B. GRADE 10.9 UNLESS OTHERWISE NOTED OR SHOWN IN THE DRAWING.

ALL SURFACES OF IRON AND STEEL WORK SHALL BE PAINTED AS FOLLOWS
IN ACCORDANCE WITH PROJECT AND PAINT SYSTEM SHALL BE A COMPLETE
FROM MANUFACTURE APPROVED FROM THE ENGINEER:—

6.1. IN WORKSHOP:

6.1.1. Sand Blast cleaning (SA 2½) prior to painting (acc. ISO 8501-1)

6.1.2. THREE COATS OF EPOXY PAINT AS FOLLOWS:

ONE COAT EPOXY ZINC RICH WITH 50µm D.F.T.

ONE INTERMEDIATE COAT H.B. EPOXY WITH 125µm D.F.T.

ONE FINISH COAT POLYURETHANE WITH 50µm D.F.T.

THE COATING TO BE EXECUTED WITH AIRLESS SPRAY EQUIPMENT
IN A DUST FREE AREA.
TOTAL DRY THICKNESS 225 µm.

6.1.1. Sand Blast cleaning (SA 2½) prior to painting (acc. ISO 8501-1)

6.1.2. THREE COATS OF EPOXY PAINT AS FOLLOWS (FOR WAREHOUSE AND ADMINISTRATION BUILDING):

ONE COAT EPOXY ZINC RICH WITH 50µm D.F.T.

ONE INTERMEDIATE COAT OF INTUMESCENT PAINT WITH 60/120-MINUTE FIRE RATING FOR WAREHOUSE

ONE FINISH COAT POLYURETHANE WITH 50µm D.F.T.

THE COATING TO BE EXECUTED WITH AIRLESS SPRAY EQUIPMENT
IN A DUST FREE AREA.

6.1.1. Sand Blast cleaning (SA 2½) prior to painting (acc. ISO 8501-1)

6.1.2. THREE COATS OF EPOXY PAINT AS FOLLOWS (FOR HAZARD BUILDING):

ONE COAT EPOXY ZINC RICH WITH 50µm D.F.T.

ONE INTERMEDIATE COAT OF INTUMESCENT PAINT WITH 120-MINUTE FIRE RATING

ONE FINISH COAT POLYURETHANE WITH 50µm D.F.T.

THE COATING TO BE EXECUTED WITH AIRLESS SPRAY EQUIPMENT
IN A DUST FREE AREA.

6.2. AT SITE:

6.2.1. CLEANING.

6.2.2. TOUCH—UP OF DAMAGES DUE TO TRANSPORT AND ERECTION WORKS,
WITH IF NECESSARY, THE PRIMER, INTERMEDIATE AND FINAL COAT
TO ACHIEVE THE REQUESTED PROTECTION.

6.3. SURFACES NOT TO BE PAINTED

a. SURFACES TO BE IN CONTACT WITH CONCRETE OR MORTAR U.O.N.

b. CONTACT SURFACES OF MEMBERS TO BE JOINED BY HIGH STRENGTH
BOLTS OF FRICTION TYPE.

- 7.1. BOLTS OF GRADE 10.9 SHALL BE TIGHTENED WITH 100% OF THE TORQUE TO ACHIEVE FULL TENSILE CAPACITY OF THE BOLTS UNLESS OTHERWISE NOTED IN THE DRAWING.
- 7.2. ALL CONNECTIONS ARE TO BE DEVELOPED AS PER THE DETAILS AND LOADS SHOWN IN THE DRAWINGS.
- 7.3. ALL BS STANDARD CODES AND SPECIFICATIONS SHALL BE THE LATEST PUBLISHED EDITION THEREOF.
- 7.4. ALL SIDE AND GABLE STEEL WORK ARE TO BE MADE OF BOLTED CONNECTION WITH PROVISION FOR EASE OF DISMANTLING AND REUSE, IF REQUIRED.
- 7.5. ALL HOLES FOR STEEL BOLTS SHALL BE IN ACCORDANCE WITH THE BS STANDARD CODE OF PRACTICE, UNLESS OTHERWISE NOTED.
- 7.6. THE DIAMETER OF HOLES SHALL BE LARGER THAN NOMINAL DIAMETER OF BOLTS , IN ACCORDANCE WITH THE BS STANDARD CODE REQUIREMENTS.
- 7.7. FRAME DIMENSIONS AND LOCATIONS GIVEN ON CONTRACT DRAWINGS SHOULD BE CHECKED WITH ARCHITECTURAL DRAWINGS AND AS BUILT SITE CONDITIONS PRIOR TO FABRICATION.
- 7.8. ALL COMPONENTS OF ROOF AND INTERMEDIATE ROOF BEAMS, LONGITUDINAL ROOF GIRDERS, AS WELL AS COLUMNS SHALL SHOULD BE CHECKED FOR DIMENSIONS AND STRAIGHTNESS, ...ETC. TO SATISFY THE ALLOWABLE TOLERANCES DUE TO FABRICATION AND ERECTION.

	AXIS NUMBER
	TOP OF CONCRETE LEVEL IN PLAN
	LEVEL IN ELEVATION
	REVISION MARK
	BREAK LINE
	SETTING OUT POINT
	OPENING
	REINFORCED CONCRETE
	PLAIN CONCRETE
	EXPANSION JOINTS
	SECTION MARK (WHERE SECTION IS SHOWN ON A DIFFERENT DRAWING)
	SECTION MARK (WHERE SECTION IS SHOWN ON THE SAME DRAWING)
	ELEVATION MARK (WHERE ELEVATION IS SHOWN ON A DIFFERENT DRAWING)
	NORTH POINT (PN – PLANT NORTH)
	DETAIL MARK
	SUB-TITLE FOR ELEVATION
	SUB-TITLE FOR SECTION
	SUB-TITLE FOR DETAIL
	TOP OF STEEL BOTTOM OF STEEL TOP OF GRATING TOP OF CONCRETE FINISHED FLOOR LEVEL TOP OF SLAB ON GRADE

E71									
E81									
E91									
F14									
F21									
F31									
F41									
F51									
F61									
F71									
F81									
F91									
G	30-36-48	ISSUES FOR APPROVAL	4-3402	4-3403	4-3404	4-3405	4-3406	4-3407	4-3408
RECD	2-2-16	RECEIVED BY	4-3402	4-3403	4-3404	4-3405	4-3406	4-3407	4-3408

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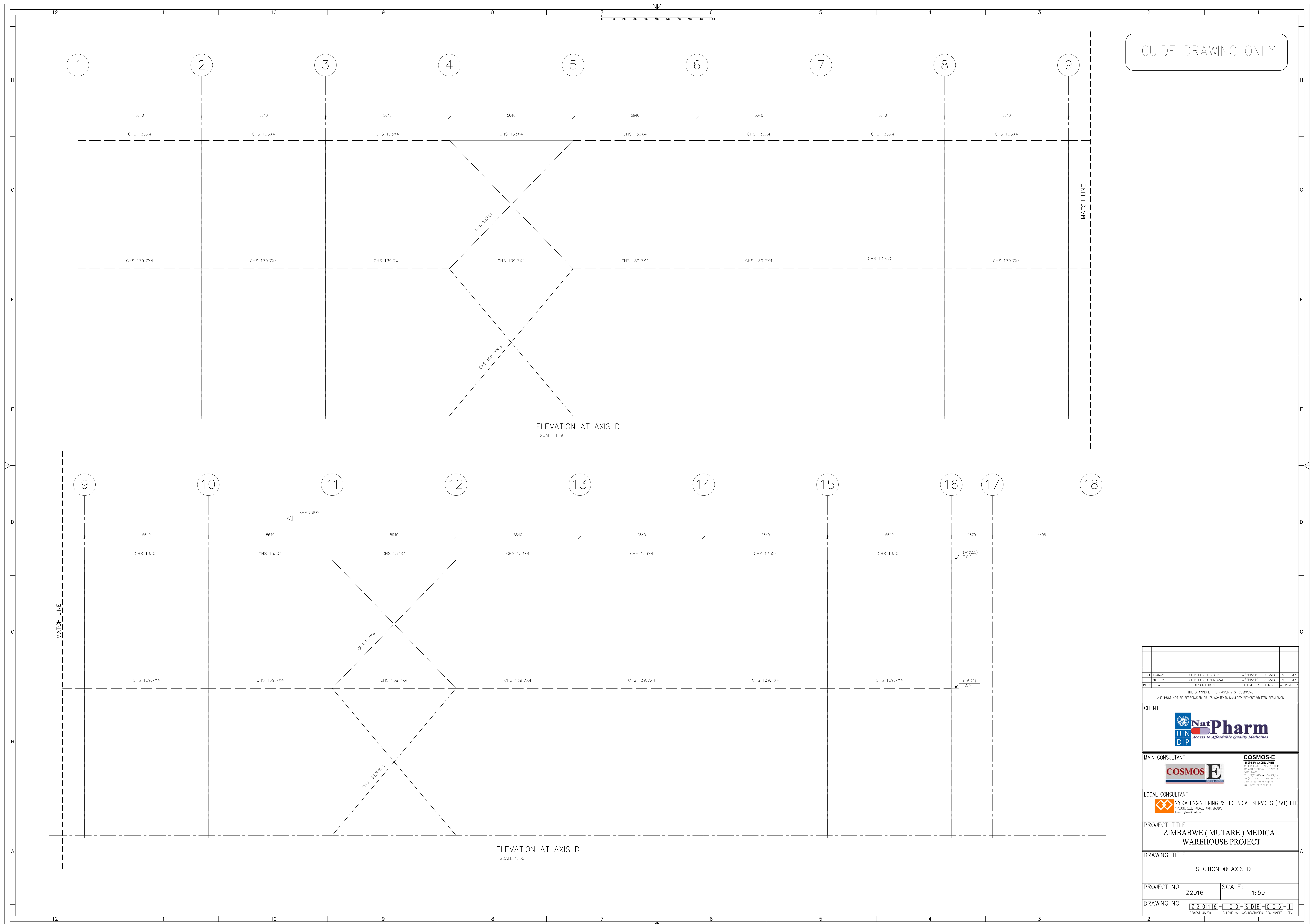

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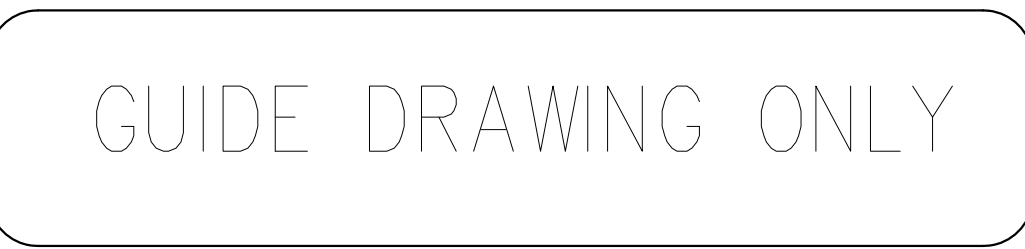


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