JOB SPECIFICATION
AND
SKILL TEST

JOB TITLE : Structural Fabricator (L- 3)

SECTOR : Mechanical Engineering

SUB-SECTOR : Fabricating/Welding

COUNCIL FOR TECHNICAL EDUCATION AND VOCATIONAL TRAINING
NATIONAL SKILL TESTING BOARD
KATHMANDU, NEPAL
2002(2058/059)

The National Skill Standards and Test Was Developed by

1.	**Mr. Rabindra Nath Bhattarai**	**Co-ordinator**	**Associate professor IOE, Pulchowk**
2.	**Mr. Harihar Thapaliya**	**Member**	**Director, Skill Testing Division, CTEVT.**
3.	**Mr. Ghanashyam Paudyal**	**Member**	**Technical Director, Radha Structure and Engg. Works (p) Ltd**
4.	**Mr. Gyan Ratna Bajracharya**	**Member**	**Proprietor, G.R. Engineering Workshop**
5.	**Mr. Raju Bajracharya**	**Member**	**HOD, BTTC**
6.	**Mr. Chudamani Upadhyaya**	**Member**	**HOD, Mechanical Engineering, IOE, Thapathali Campus**
7.	**Mr. Rajan Basnet**	**Member**	**Trade Incharge, Mechanical Sonothimi Technical School**
8.	**Mr. Suresh Bhaila**	**Member-Secretary**	**Skill Testing Officer CTEVT, Skill Testing Division.**

Approved by the Tripartite National Skill Testing Board.

2002 (2058/059)

JOB SPECIFICATION

1	**JOB TITLE : Structural Fabricator** **LEVEL : 3**
2	**JOB DESCRIPTION** Ascertains job requirements, sequence and procedures for preparation of metals and welding from drawings and/ or/ other specifications. Selects and operates appropriate welding equipment such as cutting, torch, portable arc welding equipment and acetylene/oxygen welding torch. Cuts, trims and shapes metal using electrical/ manual cutting/ shaping and blending tools. Positions and secures parts to be welded using jigs and fixtures as necessary. Performs flat, vertical – horizontal and overhead arc and gas welding. Cleans and smooth welds and examines visually. Performs thread cutting.
3	**LIST OF TASKS:** 1. Selecting metal, marking out and cutting. 2. Preparing metal for fabrication. 3. Preparing and performing bending operation. 4. Preparing and operating arc welding machine. 5. Preparing and operating Acetylene/Oxygen equipment for welding. 6. Preparing jigs and fixtures for mass fabrication. 7. Estimating and costing for fabrication. 8. Drawing/ sketching for technical drawing.
4	**QUALIFYING NOTES (entry requirement etc.):-** **PHYSICAL REQUIREMENTS:** Normal Health. **EDUCATIONAL REQUIREMENTS:** Understand specifications and interprets manufactures or workshops manual.

	TASK SPECIFICATION
5	**TASK NO: 1** **Selecting metal, marking out and cutting** **JOB TITTLE: Structural Fabricator, L - 3**
6	**TASK ELEMENTS:** 1.1 Receives instruction and interprets accordingly. 1.2 Uses protective clothing. 1.3 Determines sequence of operation/ prepares working sketches whenever necessary. 1.4 Selects metals as specified. 1.5 Selects and uses measuring and marking tools and instruments. 1.6 Marks out and cuts metals with use of appropriate machine and tools. 1.7 De-burns cut work. 1.8 Re-measures cut work and corrects as required.

TASK SPECIFICATION

7 TASK PERFORMANCE REQUIREMENTS

Machine and Equipment:	**Tools and instruments:**	**Materials:**	**Miscellaneous:**
-Power hacksaw	-Measuring tape	-All standard structural steel section	-Drawing
-Guillotine	-Bevel protractor		
-Pipe cutter	-Steel ruler		
-Vice	-Height gauge		
-Working bench	-Vernier calliper		
	-Set square		
	-Scriber		
	-Hammer		
	-Centre punch		

8 TASK PERFORMANCE STANDARDS

Instruction received and understood, metal selected as specified, damaged metal rejected, metal marked out as per drawing, power hacksaw, guillotine and pipe cutter prepared and operated safely, metal cut with use of appropriate cutting tools, metal re-measured using appropriate tools, cleanliness and related safety precautions observed.

Tolerance:

Metal cut within accuracy of +- 0.5mm of scribed line.

9	10	TASK TRAINING DATA			
TASK NO:	**T. E. No.**	**TECHNICAL KNOWLEDGE**	**APPLIED CALCULATION**	**GRAPHIC INFORMATION**	**SAFETY & HYGENE**
1	1	Knowledge of weld able materials: Mild steel, round and flat bars, cast iron, and stainless steel.		Read sketch to determine and select correct materials and symbols.	First aid practicing and reporting.
	2	Knowledge of development drawing.	Calculates areas of plane figures; such as circle, square, trapezoid, triangular, rectangular, hollow circle, ellipse, pyramid, and parallelogram. Calculates volume of solids.	Interpret technical drawing.	
	3	Knowledge of making templates.			
	4	Knowledge care and use of height gauge, steel ruler, tape, bevel protractor, square, vernier calliper, scriber, inside and out side calliper, hacksaw, bench hammer, vice, center punch.			
	5	Knowledge of surface development drawing.			
	6	Knowledge and use of power hacksaw, guillotine (hand operated) and pipe cutter (hand operated).			
	7	Knowledge of composition of metals.			
	8	Knowledge of mechanical properties of metals:- tensile strength, hardness, brittleness, elasticity, malleability, toughness, and ductility.			
	9	Knowledge of identification of materials: Appearance of the metal, fracture and density.			

	TASK PERFORMANCE TEST (SKILL ASSESSMENT)		
11	**TASK TITLE: Selecting metal, marking out and cutting.** **TASK NO : 1**		**LOCATION OF TEST :** **CANDIDATE'S NAME :** **EVALUATORS NAMES:**
12	**TEST FACTORS AND ITEMS**	**STANDARD MET**	**STANDARD NOT MET (Comments)**
	DID THE CANDIDATE? 1.1 Dress in appropriate safety clothing. 1.2 Select the materials as specified. 1.3 Use tools and equipment properly. 1.4 Reject the damaged materials, if any. 1.5 Mark out within +- 0.5mm according to drawing. 1.6 Prepare and operate power hacksaw, guillotine and pipe cutter safely. 1.7 Cut metal within +_ 0.5mm of scribed line. 1.8 Clean used tools, working area and return tools to the specified place. 1.9 Complete the test within specified time.		

	TASK SPECIFICATION
5.	**TASK NO: 2** **Preparing metal for fabrication.** **JOB TITLE: Structural Fabricator, L - 3**
6.	**TASK ELEMENTS:** 2.1 Receives instructions and interprets accordingly. 2.2 Dons protective clothing. 2.3 Determines sequence of fabrication as specified/prepares sketches whenever necessary. 2.4 Prepares the required machinery for the required operation. 2.5 Drills holes as required, cuts threads. 2.6 Shapes metal for welding. 2.7 Re-measures dimensions and corrects as required.

	TASK SPECIFICATION
7	**TASK PERFORMANCE REQUIREMENTS** **Machine and equipment** Pillar/portable drilling machine, Pedestal/portable grinding machine, Thread cutting machine (pipe), Working bench, Vice. **Tools and instruments** Measuring tape (2m), bevel protractor, steel ruler, height gauge, vernier calliper, scriber, hammer, centre punch, hacksaw, files, taps and dies, set of drills, G-clamp. **Miscellaneous** Drawing/sketches, safety goggles
8	**TASK PERFORMANCE STANDARDS** Fabricator dressed in appropriate safety clothing. Correct sequence of operation selected. Grinding machine operated safely. Appropriate drilling machine prepared and operated safely .Thread cut as specified. Cut and shaped with hand tools as specified. Cleaned, de-burred and re-measured work. Cleanliness and related safety precaution observed. **Tolerance:** ➢ Drilling: Holes drilled within +- 0.5mm of location marked, counter such as specified. ➢ Cutting: Metal cut within +-0.5mm and angular (90+- 2 degree), cut to specified depth within +- 0.5mm. ➢ Materials ground as per drawing within +- 0.5mm of scribed line.

9	10	TASK TRAINING DATA			
TASK NO:	**T. E. No.**	**TECHNICAL KNOWLEDGE**	**APPLIED CALCULATION**	**GRAPHIC INFORMATION**	**SAFETY & HYGENE**
2	1	Knowledge and use of various types of files. Flat/round and profile		Reading drawing to determine and select materials.	First aid practicing and reporting.
	2	Knowledge and use of portable/pillar drilling machine, various drill bits and related maintenance.			Hazards involved in using electrical machine.
	3	Knowledge of marking out methods.			
	4	Knowledge and various uses and methods of shaping, joining for welding and their standards.			Importance of safety goggles.
	5	Knowledge, care and use of measuring tape, bevel protractor, steel ruler, height gauge, vernier calliper.			
	6	Knowledge of various manufacturing processes of steel production and the possible defects produced.			
	7	Knowledge of selection of RPM.			
	8	Knowledge of selection of drill bit size for taping.			

	TASK PERFORMANCE TEST (SKILL ASSESSMENT)		
11	**TASK TITLE: Preparing metal for fabrication** **TASK NO : 2**		**LOCATION OF TEST :** **CANDIDATE'S NAME :** **EVALUATORS NAMES:**
12	**TEST FACTORS AND ITEMS**	**STANDARD MET**	**STANDARD NOT MET (Comments)**
	DID THE CANDIDATE? 1 Dress in appropriate safety clothing. 2 Select/use appropriate measuring and marking out instruments without damage. 3 Use tools and equipment properly. 4 Prepare and operate drilling machine safely within +- 0.5mm of mark. 5 Grind metal the mark of within +-0.5mm. 6 Cut the shape with hand tools as specified. 7 Remove all the burrs and flaws. 8 Cut the thread as specified. 9 Clean used tools, working area and return tools to the specified place. 10 Complete the test within specified time.		

TASK SPECIFICATION

5	**TASK NO: 3** **Preparing and performing bending operation.** **JOB TITLE: Structural Fabricator, L-3**
	TASK ELEMENTS: 1 Receives verbal/written instructions. 2 Dons protective clothing. 3 Selects, marks out and cuts metal. 4 Uses tools and equipment. 5 Prepares metal for bending /rolling operation. 6 Prepares and operates bending/rolling machine. 7 Re-measures and adjusts before further operation.

	TASK SPECIFICATION
7	**TASK PERFORMANCE REQUIREMENTS** **Machine and equipment** Rolling machine, Hydraulic pipe bending machine, Edge bending machine, Work bench, Bench vice. **Tools and instruments** Measuring tape (2m), adjustable bevel protractor, steel ruler, vernier calliper, scriber, hammer, centre punch, hacksaw, files, set square, divider. **Miscellaneous** Drawing/sketches.
8	**TASK PERFORMANCE STANDARDS** Fabricator dressed in appropriate safety clothing. Method of operation determined. Appropriate cutting tools operated safely. cut work de-burred, work marked out and bending performed with appropriate machinery/tools, work re-measured, cleanliness and related safety precaution observed. **Tolerance:** ➢ Cuts made within an accuracy of +- 2mm of scribed line. ➢ Hydraulic pipe bending within accuracy of +- 3 degree of head angle diameter, on 90 degree bending, not exceeding 10% of original diameter. No cracks. ➢ Edge bending shut metal within accuracy of +- 2mm of scribed lines. No cracks. ➢ Rolling tolerance as specified.

9	10	TASK TRAINING DATA			
TASK NO:	**T. E. No.**	**TECHNICAL KNOWLEDGE**	**APPLIED CALCULATION**	**GRAPHIC INFORMATION**	**SAFETY & HYGENE**
3	1	Knowledge of development drawing various marking out methods and techniques for bending/rolling mild steel sheets and pipes including aluminium. Use of templates.	Calculation for various bending methods	Reading drawing to determine and select materials.	First aid practicing and reporting.
	2	Knowledge of sand filling.			Hazards involved in using bending machine.
	3	Knowledge of preparation and use of bending (edge) rolling and hydraulic bending machine, efforts of cold and hot working on the mechanical properties of metals.			
	4	Knowledge and use of vernier calliper, tape, steel ruler and inside and outside calliper.			
	5	Knowledge of changing of metal brittleness caused by rapid cooling.			
	6	Knowledge and use of de-slagging hammer, wire brush, and flat file.			
	7	Knowledge of importance of removing slag to determine correct weld.			
	8	Knowledge of cleaning methods for used instruments.			

	TASK PERFORMANCE TEST (SKILL ASSESSMENT)		
11	**TASK TITLE: Preparing metal for fabrication** **TASK NO : 3**		**LOCATION OF TEST :** **CANDIDATE'S NAME :** **EVALUATORS NAMES:**
12	**TEST FACTORS AND ITEMS**	**STANDARD MET**	**STANDARD NOT MET (Comments)**
	DID THE CANDIDATE? 1 Dress in appropriate safety clothing. 2 Prepare the machine and materials for bending operation as specified. 3 Bend the metal within +- 3mm of scribed line without exceeding more than 15% of diameter and any cracks. 4 Bend the edge within accuracy of +- 2mm of scribed line without any cracks. 5 Roll the materials as specified. 6 Use tools and equipment properly. 7 Complete the test within specified time		

TASK SPECIFICATION	
5	**TASK NO: 4** **Preparing and operation** **JOB TITLE: Structural Fabricator, L-3**
6.	**TASK ELEMENTS:** 1 Receives verbal/written instructions. 2 Dons protective clothing. 3 Determines sequence and method of operation. 4 Selects and prepares arc welding machine. 5 Pre sets work and tack welds. 6 Performs required welding : ➢ Position: Down hand flat position, vertical ascending and descending and overhead. ➢ Metals: M.S, AL, Stainless steel. ➢ Section: All standard section. 7 Cleans and re-measures welded work.

7	**TASK PERFORMANCE REQUIREMENTS** **Machine and equipment** Portable arc welding machine with all standard accessories, Chipping hammer, Wire brush, Helmet, G – clamp, Welding table, Pedestal/bench grinding machine, Leather apron, Blacksmith tongs. **Tools and instruments** Steel ruler, Welding gauge, protractor and chalk **Miscellaneous** Drawing/sketches, MS plates, Standard structural steel section.
8	**TASK PERFORMANCE STANDARDS** Fabricator dressed in appropriate safety clothing. Sequence of operation selected. Arc welding machine selected and prepared. Appropriate Amp set. Required electrodes selected and joints prepared as specified using grinding machine. ➢ Butt joints up to 5mm without preparation. Gap between metal 1 – 2mm. ➢ For 6 – 15mm joints bevelled to 30 degree ±5 degree (single V), gap 2 – 3 mm and nose 2 – 3 mm. ➢ For 15mm and above joints bevelled to 30 degree ±5, gap 3 – 4 mm and nose 2 – 3 mm. Edge and Te joints: De-burned, joint as specified, work preset tack welded, flat/vertical/overhead welding as inspection of welds shall confirm to the following standard. ➢ All slag, fume spray and droplets removed. ➢ Profile of weld fully penetrated. ➢ Butt joint weld fully penetrated. ➢ Amount of beads as specified. ➢ Reinforcement of butt welds blended smoothly with parent metal. ➢ Undercut max. 0.5 mm in case of filled weld, 30% of total length. ➢ Surface of weld free from crack, cavities, and porosity trapped slag. ➢ Joints where weld free has been stopped and restarted shows no pronounced crater or hump on welded surface. ➢ In case of two pass weld, changing of electrodes not in the same place.

9	10	TASK TRAINING DATA			
TASK NO:	**T. E. No.**	**TECHNICAL KNOWLEDGE**	**APPLIED CALCULATION**	**GRAPHIC INFORMATION**	**SAFETY & HYGENE**
4	1	Knowledge of various arc welding machine, their basic maintenance, capacity and use, various types of electrode and their uses.			First aid practicing and reporting.
	2	Knowledge of MIG and TIG.			Hazards involved in welded hot work.
	3	Knowledge of pre setting of work distortion, various types of tack welding and clamping devices.			
	4	Knowledge of technique for flat, vertical horizontal and overhead welding i.e. angle of electrode, weaving speed and arc length.			
	5	Knowledge of use of steel ruler, welding gauge, de – slagging hammer, wire brush.			
	6	Knowledge of method for preventing and rectifying: - external and internal weld defects.			
	7	Knowledge of non destructive tests dye penetration, fluorescent and x-ray.			
	8	Knowledge of various technique for rectifying defective.			
	9	Knowledge of destructive tests i.e. nick break test, face bend, root bend and side bend tests.			
	10	Knowledge of preparation and arc welding procedure for cast iron, medium and high carbon steel, alloyed steel, galvanized steel, aluminium\, and stainless steel.			

	TASK PERFORMANCE TEST (SKILL ASSESSMENT)		
11	**TASK TITLE: Preparing metal for fabrication** **TASK NO : 4**		**LOCATION OF TEST :** **CANDIDATE'S NAME :** **EVALUATORS NAMES:**
12	**TEST FACTORS AND ITEMS**	**STANDARD MET**	**STANDARD NOT MET (Comments)**
	DID THE CANDIDATE? 1. Dress in appropriate safety clothing. 2. Select and prepare appropriate weld machine. 3. Set welding current and electrodes. 4. Prepare the welding materials in the following way: a) Butt joint up to 5mm only de-burning no special preparation. Gap between 1 – 2mm. b) Butt joint up to 6–15mm bevelled to 30 degree ±5 (single V). Gap 2 – 3 mm, nose 2 – 3 mm. c) Joints 15mm and above bevelled to 30 degree ± 5, gap 3 – 4 mm, nose 2 -3 mm. d) Edge and Tee joints as specified. 5. Pre set the work, tack weld and carry out the welding on flat, vertical, horizontal and overhead welding as required. 6. Procedure the work in the following standard:- ➢ All slag, fume spray and droplets removed. ➢ Profile of weld uniform.. ➢ Butt joint weld fully penetrated. ➢ Amounts of bead as specified. ➢ Reinforcement of butt welds blended smoothly with parent metal. ➢ Undercut max. 0.5mm in case of filled weld , 30% of total length. ➢ Undercut max. 0.25mm in case of butt weld , 30% of total length. ➢ Surface of weld free from cracks, cavities and porosity trapped slag. ➢ Joint where weld has been stopped and restarted shows no pronounced crater or hump on welded surface. 7. Use tools and equipment properly. 8. Complete the test within specified time.		

TASK SPECIFICATION

5.	**TASK NO: 5** **Preparing and operation acetylene/oxygen equipment for welding** **JOB TITLE: Structural Fabricator, L-3**
6.	**TASK ELEMENTS:** 1. Determines sequence and method of operation. 2. Selects and prepares acetylene/oxygen equipment for welding. 3. Pre sets work and tack welds. 4. Performs required welding. ➢ Position: Down hand flat position, vertical ascending and descending, and overhead. ➢ Metal: MS, Al, Stainless steel. ➢ Section: All standard sections. 5. Cleans and re-measures welded work.

	TASK SPECIFICATION
7	**TASK PERFORMANCE REQUIREMENTS** **Machine and equipment** Acetylene/ oxygen welding equipment with all standard accessories, Welding table, Wire brush, G- clamps, Blacksmiths tong, Igniters, Leather apron, Sleeves, Welding goggles, Gloves. **Materials** MS sheets up to 3mm, Ms pipes and GI pipes of different sizes, other materials as required. **Miscellaneous** Drawing/sketches.
8	**TASK PERFORMANCE STANDARDS** Appropriate materials and procedure selected for required welding. Material prepared, Safely clamped and tack welded. Flat, vertical and overhead welding performed as required. **Visual inspections of welds conforms to the following standard:** Sheet:- ➢ Weld must be clean completely. ➢ Welded profile smooth without forming valleys. ➢ Weld without cracks and lack of fusion. ➢ Joints welded through completely. ➢ Welded profile/hill not higher than 50% total of the metal up to 3mm thickness. ➢ Pipes:- ➢ Profile slightly convex. ➢ Welding fully penetrated. ➢ Other tolerance as mentioned under sheet.

9	10	TASK TRAINING DATA			
TASK NO:	**T. E. No.**	**TECHNICAL KNOWLEDGE**	**APPLIED CALCULATION**	**GRAPHIC INFORMATION**	**SAFETY & HYGENE**
5	1	Knowledge of determine required gas welding equipment, preparation and handling procedures including colour-coding and its purpose, maintenance, rejected damage items.	Calculates working pressure and size nozzle according to materials	Determine welding operation required.	First aid practicing and reporting.
	2	Knowledge of distortion, various pre setting of work and related tack welding procedures and clamping techniques.			Hazards involved in using acetylene/oxygen equipment.
	3	Knowledge of types of flame and selecting flame.			Hazards in handling hot welded work.
	4	Knowledge of various welding techniques on sheets and pipes fore – and (leftward and rightward), speed and inclination of filler rods and nozzle on flat, horizontal and vertical position.			
	5	Knowledge of use of fluxes.			
	6	Knowledge of use of brush and steel ruler.			
	7	Knowledge of methods for preventing and rectifying: External/internal weld defects.			
	8	Knowledge of non destructive tests: Dye penetration, fluorescent, ultra sonic test.			
	9	Knowledge of destructive test: Nick break test, face bend, root bend and side bend tests.			

	TASK PERFORMANCE TEST (SKILL ASSESSMENT)		
11	**TASK TITLE: Preparing and operating acetylene/oxygen equipment for welding.** **TASK NO : 5**		**LOCATION OF TEST :** **CANDIDATE'S NAME :** **EVALUATORS NAMES:**
12	**TEST FACTORS AND ITEMS**	**STANDARD MET**	**STANDARD NOT MET (Comments)**
	DID THE CANDIDATE? 1. Select and prepare acetylene/oxygen equipment. 2. Prepare materials, clamp safely and tack weld. 3. Perform the welding to the following standard: Sheets:- ➢ Weld must be cleaned completely. ➢ Smooth welding profile without valleys. ➢ Weld without cracks and lack of fusion. ➢ Joints welded through completely. ➢ Welding profile hills not higher than 50% total of metal up to 3mm thickness. Pipes:- ➢ Profile slightly convex. ➢ Welding fully penetrated ➢ Other tolerance as mentioned. 4. Use tools and equipment properly. 5. Complete the test within specified time.		

TASK SPECIFICATION

5.	**TASK NO: 6** **Preparing jigs and fixtures for mass fabrication.** **JOB TITLE: Structural Fabricator, L-3**
6.	**TASK ELEMENTS:** 1. Receives verbal/ sketch instruction.. 2. Determines sequence of operation/ prepares working sketches wherever necessary. 3. Selects metal for preparing fixture as required. 4. Prepares jigs and fixtures as required. 5. Tests the fixture and corrects if required.

	TASK SPECIFICATION
7	**TASK PERFORMANCE REQUIREMENTS** **Machine and equipment** Welding machine, Oxy fuel gas cutting set, Hydraulic pipe bending Machine, Edge bending machine, Working bench, Bench vice, Anvil. **Hand tools and Instrument** Measuring tape (2M), Scriber, steel ruler, hammer, centre punch, files, Vernier calliper, adjustable bevel protractor, divider, hacksaw, G- clamp, hand grinder, nuts and bolts. . **Miscellaneous** Drawing/sketches. **Materials** All types of structural section.
8	**TASK PERFORMANCE STANDARDS** Need of jigs and fixture determined appropriately. Materials selected as required. Jigs and fixtures prepared as required to shorten the time of manufacture or correctness or uniformity.

9	10	TASK TRAINING DATA			
TASK NO:	**T. E. No.**	**TECHNICAL KNOWLEDGE**	**APPLIED CALCULATION**	**GRAPHIC INFORMATION**	**SAFETY & HYGENE**
6	1	Knowledge of jigs and fixture and its importance of break even point.			First aid practicing and reporting.
	2	Knowledge of materials used for making jigs and fixtures.			
	3	Knowledge of shaping and forming materials for preparation of jig and fixture.			
	4	Knowledge of using fixture for the purpose of testing.			
	5	Knowledge of use of machine, their use tools (Lathe, Milling, Sharper) etc. for the preparation of jigs.			
	6	Knowledge of importance checking methods of jigs.			

	TASK PERFORMANCE TEST (SKILL ASSESSMENT)		
11	**TASK TITLE: Preparing jigs and fixtures for mass fabrication.** **TASK NO : 6**		**LOCATION OF TEST :** **CANDIDATE'S NAME :** **EVALUATORS NAMES:**
12	**TEST FACTORS AND ITEMS**	**STANDARD MET**	**STANDARD NOT MET (Comments)**
	DID THE CANDIDATE? 1. Select the materials as required. 2. Prepare and operate machine tools for making jigs and fixture. 3. Prepare and operate bending/ rolling machine for making jigs and fixture. 4. Test the jigs and fixture for uniformity/ quickness/ correctness. 5. Position the component as specified. 6. Use tools and equipment properly. 7. Complete the test within specified time.		

TASK SPECIFICATION

5.	**TASK NO: 7** **Estimating and costing for fabrication.** **JOB TITLE: Structural Fabricator, L-3**
6.	**TASK ELEMENTS:** 1. Receives verbal/written instructions. 2. Selects appropriate tools and equipment. 3. Identifies work for fabrication. 4. Estimates the costs like: materials, labour, tools and equipment (depreciation), profit above 10%. 5. Estimates time for fabrication. 6. Prepares invoices/bills/receipts. 7. Completes work order form. 8. Calculates total price. 9. Maintains records for future reference.

	TASK SPECIFICATION
7	**TASK PERFORMANCE REQUIREMENTS** Receipt, work order form, invoice form, list of local market price, pencil or pen, drawing. .
8	**TASK PERFORMANCE STANDARDS** Client complaint receipt. Work for fabrication identified. Price list and labour charge list consulted. Materials and cost estimated properly. Time for fabrication estimated. Labour cost estimated. Invoices/work order forms/receipts prepared. Records maintained for future reference.

9	10	TASK TRAINING DATA			
TASK NO:	**T. E. No.**	**TECHNICAL KNOWLEDGE**	**APPLIED CALCULATION**	**GRAPHIC INFORMATION**	**SAFETY & HYGENE**
7	1 2 3 4 5 6	Knowledge of the work to be fabricated. Knowledge of the estimating price of the materials, tools and equipment. Knowledge labour charger, availability of local market. Knowledge of fabrication cost. Knowledge of preparing invoice/bill/receipt. Knowledge of depreciation cost.	Calculates the different charges	Interpretation of drawing/sketches	.

	TASK PERFORMANCE TEST (SKILL ASSESSMENT)		
11	**TASK TITLE: Estimating and costing for fabrication.** **TASK NO : 7**		**LOCATION OF TEST :** **CANDIDATE'S NAME :** **EVALUATORS NAMES:**
12	**TEST FACTORS AND ITEMS**	**STANDARD MET**	**STANDARD NOT MET (Comments)**
	DID THE CANDIDATE? 1. Identify work for fabrication 2. Estimate appropriate the costs like materials labour tools and equipment (deprecation), profit above 10%. 3. Estimate proper time for fabrication. 4. Prepare invoices/bills/receipts properly. 5. Completely work order form. 6. Calculate total price. 7. Maintain records for future reference properly.		

TASK SPECIFICATION

5.	**TASK NO: 8** **Drawing/sketches of technical drawing.** **JOB TITLE: Structural Fabricator, L-3**
6.	**TASK ELEMENTS:** 1. Receives instructions. 2. Selects appropriate stationary materials and measuring instruments. 3. Selects appropriate papers 4. Identifies work to be fabricated. 5. Draws/sketches technical drawing (Three view and perspective only). 6. Checks technical drawing.

	TASK SPECIFICATION
7	**TASK PERFORMANCE REQUIREMENTS** Pencils, Eraser, Papers, Set squares, T- square, Drawing Boards, Measuring scales, French carve.
8	**TASK PERFORMANCE STANDARDS** Appropriate stationary materials and measuring instruments selected as required. Appropriate papers selected. Work identified to be fabricating. Technical drawing drawn/sketched (Three view and perspective only) proper scale. Technical drawing check as per clients needs.

9	10	TASK TRAINING DATA			
TASK NO:	**T. E. No.**	**TECHNICAL KNOWLEDGE**	**APPLIED CALCULATION**	**GRAPHIC INFORMATION**	**SAFETY & HYGENE**
8	1	Knowledge of selecting appropriate stationary materials and measuring instruments.			
	2	Knowledge of size and use of papers.			
	3	Knowledge of identifying procedures of work to be fabricated			
	4	Knowledge of selecting scale.			
	5	Knowledge of three view and prospective drawing.			
	6	Knowledge of checking technical drawing.			
	7	Knowledge of scale and their appropriation.			

	TASK PERFORMANCE TEST (SKILL ASSESSMENT)		
11	**TASK TITLE: Drawing /sketching of technical drawing.** **TASK NO : 8**		**LOCATION OF TEST :** **CANDIDATE'S NAME :** **EVALUATORS NAMES:**
12	**TEST FACTORS AND ITEMS**	**STANDARD MET**	**STANDARD NOT MET (Comments)**
	DID THE CANDIDATE? 1. Select appropriate stationary materials and measuring instruments. 2. Select appropriate papers size. 3. Select/Identify work to be fabricated. 4. Draw/sketch technical drawing (Three view and perspective only) as required scale. 5. Check technical drawing properly.		