



مؤسسة مشاريع نجد للمقاولات

**Najd Projects**

General Contracting Establishment

**PRE  
QUALIFICATION**

**SPECIAL  
CONSTRUCTION  
&  
INDUSTRIAL  
PROJECTS**

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## 1. INTRODUCTION

Najd Projects is in the market for General Contracting, Industrialized Projects, and Maintenance. A 100% Saudi Owned Company, it has CLASS III Classification with Chamber of Commerce, with a paid up capital of 2,000,000 Saudi Riyals.

Najd Projects ventured into the Saudi Arabia to provide the local market with specialized construction and maintenance needs. A new entrant to the Saudi market. It has vested in recruiting experienced workforce and technical expertise geared to cater to a broad range of activities and projects.

Najd Projects offers services which compliments growing range of integrated services that enable us to take any industrial or public works project from concept through planning, financing, design, construction, operations and maintenance. Every element of the firm is structured to ensure that we can leverage our global resources and know-how to satisfy each client's particular needs.

Najd Projects is pleased to present an outline of its Contracting capabilities and experience with in the Commercial & Infrastructure, Power system generation & distribution, Water, Civil Building sectors, Communication facilities, Process and Control Instrumentations.

The services provided by Najd Projects. are enhanced through working relationships and association with established International and local contractors, and specialized vendors. Using these strategic alliances Najd Projects can provide a combined team of well qualified personnel to implement the successful execution of projects.

We hope that you will find the enclosed information of benefit in assessing our organization and we look forward to having the opportunity of putting our management, Engineering, Construction, & Maintenance skills to work for you.

Sincerely yours,

Anil Kumar Singh

+966-501250281,  
+966-13-3634404

## **BUSINESS SECTORS**

### **Commercial & Infrastructure**

Najd Projects in close co-operation with its clients and vendors can provide total turnkey services from concept to completion along with project and construction management, with or without design.

Services offered are concept development, preliminary design, site selection, advance order of materials, program preparation, detailed design, procurement, price negotiation, site setup and mobilization, quality control, co-ordination programming and cost control, as built drawings and O&M manuals, fit-out and furnishing, hand over client.

### **Civil & Buildings**

Najd Projects has gained in a short time synonymy with quality and client satisfaction, having been involved with many significant construction and upgrade projects throughout the Kingdom.

A combination of flexibility, quality, special skills and adherence to budgets have ensured a pre-eminent position when clients require a single source contractor with capabilities in project development, management, construction services, installation and commissioning.

### **Capabilities**

Najd Projects is fully capable to perform following:

#### **1. Civil Construction**

- 1.1 Earthwork, Roads, Sidewalks, Curbs & Gutters
- 1.2 Industrial and Commercial Buildings
- 1.3 Design, detailing and erection of steel buildings

#### **2. Industrial Construction**

- 2.1 Complete Procurement, Construction and Installation of Pre-Engineered Building.
- 2.2 Machine Foundations Design, Procurement and Construction along with Erection.
- 2.3 Fabrication, Installation and Erection of Steel Structure, GSM Towers

### **3. Electrical & Communication - Installation, testing, commissioning and maintenance**

- 3.1 Underground and overhead distribution network
- 3.2 Electrification of Buildings and Plant facilities
- 3.3 Telecommunication works and security alarm system
- 3.4 Power system, Substation, Switchgears and MCC.
- 3.5 Plant equipment, facilities and controls
- 3.6 Calibration of System protection and monitoring devices.

### **4. Mechanical Works**

- 4.1 HVAC Design and installations
- 4.2 Steel Fabrication and Installation

### **5. Instrumentation works**

- 5.1 Installation, process equipment / facilities, piping controls, testing and commissioning Instrumentation devices.
- 5.2 Calibration of Flow control system and supervisory instruments, Tanks / Pipe probes, storage tanks, and gauging devices
- 5.3 Plant automation for process operation enhancement
- 5.4 In-house testing commissioning of Plant / refinery instruments

### **6. Diamond Core Drilling and Wall Opening Service**

- 6.1 Core drilling in reinforced concrete up to Ø 350mm
- 6.2 Wall opening in reinforced concrete up to 400 mm depth
- 6.3 Cutting and coring in both horizontal and vertical positions

### **7. Procurement , Supply & Maintenance**

- 7.1 Electromechanical Equipments and Accessories
- 7.2 Spare parts for Electrical / Mechanical Units
- 7.3 Various Consumable material

## 2. NAJD ROJECTS OVERVIEW

Company Name	Najd Projects General Contracting Est.
Address	PO BOX-529 , AL-JUBAIL, SAUDI ARABIA
Nature of Business	Civil and Mechanical works
Established	2007-08
Ownership	Fahad Adhkeel Otaibi & Anil Kumar Singh
Commercial Registration	2055008102
Telephone Number	(013) 363 4404
Mobile Number	0501250281
E - Mail	najdprojects@gmail.com singhanilchandra@gmail.com
Bank of Account	BANK ALJAZIRA, JUBAIL
IBAN NO	SA31 6000 0000 2214 4190 8001

### 3. LICENSES AND CERTIFICATES

الرقم: ٢٥٥٠٠٨١٠٢	<b>شهادة تسجيل مؤسسة فردية</b>		وزارة التجارة والصناعة Ministry of Commerce and Industry	
التاريخ: ١٤٢٨/٠٢/٠٦				
الإسم التجاري للمؤسسة : مؤسسة / مشاريع نجد للمقاولات				
مركزها الرئيسي : الجبيل / الشمالية أ - شارع الأمير منصور				
ص.ب : ٥٢٩	الرمز البريدي : ٣١٩٥١	هاتف : .....	فاكس : .....	
اسم التاجر : فهد بن أنخيل بن مبارك الرويس العتيبي	الجنسية : سعودي	تاريخ الميلاد : ١٤٠٠		
رقم السجل المدني - الإقامة : ٥٠١٠٠٧٤٥٨٥٩٧	تاريخه : ١٤٠٦/٠٧/٠١	مصدره : الجبيل		
رقم الحفيظة - الجواز : ١٢٤٠٧	تاريخه : ١٤١٨/٠٧/٠١	مصدره : الجبيل		
النشاط : مقاولات عامة للمباني (انشاء ، هدم ، ترميم ، اصلاح ) وتنفيذ اعمال ، الجبس والديكور ، وتظافة وصيانة وتشغيل المنشآت الصناعية والاعمال ، الكهربائية والميكانيكية والصناعية .....				
رأس المال : ٢٥٠٠٠ خمسة و عشرون ألف ريال فقط لا غير				
اسم المدير أو الوكيل المفوض : فهد بن أنخيل بن مبارك الرويس العتيبي				
الجنسية : سعودي				
تاريخ الميلاد : ١٤٠٠				
رقم السجل المدني - الإقامة : ٥٠١٠٠٧٤٥٨٥٩٧	تاريخه : ١٤٠٦/٠٧/٠١	مصدره : الجبيل		
سلطات المدير				
يشهد مكتب السجل التجاري بمدينة الجبيل . بأنه تم تسجيل هذه المؤسسة بسجل مدينة الجبيل .				
وتنتهي صلاحية الشهادة في ١٤٢٩/١٠/١٩ بموجب الإيصال رقم : ٥٠٠٤٠٩١٦ و تاريخ : ١٤٢٨/٠٢/٠٦				
مدير السجل التجاري : نائف صالح الطاسان		التوقيع : 		
				
				
الختم				
يمكنك التحقق من صحة هذه الشهادة بالدخول على <a href="http://v.mci.gov.sa">http://v.mci.gov.sa</a> To Verify the information of this certificate visit				





Membership No :96614

Classification: Third

Date of Issue: 17/3/2016

Asharqia Chamber Certifies that :

**We find projects GENERAL CONTRACTING  
Foundation**

Commercial Register No (2055008102)

Registered for this year

The certificate expires on 3/7/2018

P.O.Box 529 JUBAIL 31951

التوقيع



غرفة الشرقية  
ASHARQIA CHAMBER  
مركز خدمات  
الجبيل

رقم العضوية : 96614

الدرجة : الثالثة

تاريخ الاصدار: 1437/06/08

تشهد الغرفة التجارية الصناعية بالمنطقة الشرقية بأن :

مؤسسة مشاريع نجد للمقاولات العامه

المقيدة بالسجل التجاري / الترخيص رقم (2055008102)

مستتركة لدينا لهذا العام

وينتهي سريان هذه الشهادة في 1439/10/19

صندوق البريد 529 الجبيل 31951

صدرت في : 1437/06/08 الموافق : 2016/3/17 م

رقم السند: 1-177384489 / 60/ تاريخ الاشتراك 1428/02/06 هـ 13506

Unified number 92000 1361

Fax 013 8570607

نعمل معاً... لخدم أفضل

الرقم الموحد ٩٢٠٠٠١٣٦١

فاكس ٠١٣٨٥٧٠٦٠٧



SF-MB-02/REV.05 / 01/ 07 / 2012

أي كشط أو تعديل في هذه الشهادة يُلغىها

www.chamber.org.sa

E-mail: info@chamber.org.sa

## 4. RESOURCES, MANPOWER

Najd Projects has at its core, a team of competent, dedicated and motivated managers who straddle most industrial sectors providing a multidiscipline management capability to the projects.

It is the policy of Najd Projects to emphasize on constant training of its personnel through appraisal, coaching and training at all levels.

Our future lies with the development of our people, particularly our younger employees. Our graduates rotate through within the company at various positions as to make their role and position more pivotal exposing them to as many areas of operation as possible with in the first 3 years into the company. All graduate engineers are assigned to a mentor, who guides them through their first years in the company and helps them with professional development.

Our office, its subsidiary offices and its appointed international recruitment agencies can mobilize very rapidly large numbers of highly skilled tradesmen and engineers as required.

With a policy of investing in its people, Najd Projects supports managers and workforce alike through constant appraisal, coaching, training and by encouraging personal initiative. We are focused to consistently improve the high quality and standards of personnel for which Najd Projects is recognized.

It is the underlying policy of Najd Projects to develop and train the indigenous labor force and retain this staff within the subsidiary operation, providing Technology Transfer in the specialist areas of engineering and construction. In this regard we believe that we have been very successful.

## RESOURCES, MANPOWER

S.No	TRADE DESCRIPTION	QTY
1.0	Engineers	10
2.0	Document Controller	10
3.0	Design Engineer-Piping	10
4.0	Electrical Engineer	10
5.0	Inspector-Painting & Coating	10
6.0	Inspector-Electrical	10
7.0	Inspector-Civil & Supervisor	10
8.0	Inspector-Instrumentation	10
9.0	Inspector-Piping	10
10.0	Inspector-Piping-RTR	10
11.0	Instrument Engineer	10
12.0	Material Controller	10
13.0	Mechanical Engineer	10
14.0	Planning Engineer	10
15.0	Process Engineer	10
16.0	QC Civil Engineer	10
17.0	QC Electrical Engineer	10
18.0	QC Engineer (Communication)	10
19.0	QC Engineer (Painting & Coating)	10
20.0	QC Engineer (Piping)	10
21.0	QC Mechanical Engineer(Piping/Fabrication)	10
22.0	Safety Engineer	10
23.0	Safety Officer	10
24.0	Supervisors	10
25.0	Foreman	20
26.0	Carpenters	50
27.0	Decoration Carpenters	20
28.0	Mason	50
29.0	Brush Painters	50
30.0	Spray Painters	30
31.0	Sand Blaster	50

32.0	Steel Fixers	30
33.0	Plumbers	50
34.0	Structural Welders	50
35.0	Tig Welder for Stainless Steel/ Aluminum/ Carbon Steel	50
36.0	Pipe Fabricator	50
37.0	Mill Wright	10
38.0	Rigger L1,L2,L3	30
39.0	Steel Fabricators	30
40.0	Tin Smith	5
41.0	HVAC Technicians	5
42.0	Insulators	10
43.0	Duct Installers	5
44.0	Scaffolding	50
45.0	Electricians	50
46.0	Instrument Technicians	30
47.0	Labor	100
48.0	Heavy Duty Mechanic	5
49.0	Drivers	20
50.0	Heavy Equipment Operators	10
<b>TOTAL</b>		<b>291</b>

## 5. RESOURCES, EQUIPMENT

	<b>DESCRIPTION</b>	<b>QTY</b>
1	Cat. Grader –	146 4
2	Dozer -	D8 4
3	Loaders -	950 2
4	Road Rollers -	10 Tons 2
5	Tire Roller -	20 Tons 2
6	Plate Compactors	5
7	Roller (Compactor)	3
8	Concrete Vibrators	5
9	Air Compressors -	125cfm / 300cfm 9
10	Welding Machine –	300Amp / 400Amp 16
11	Cranes –	10 Tons / 25 Ton 2
12	Scaffolding	Lot
13	Dewatering Equipment	2 Sets
14	Water jet pump	1
15	Electrical Tools	Lot
16	Mechanical Tools	Lot
17	Plumbing Tools	Lot
18	Skip Loader / Bob Cat	1
19	Low Bed Trailer	1
20	Flat Bed Trailer –	40 Ton 1

	<b>DESCRIPTION</b>	<b>QTY</b>
1	Hydraulic wall sawing machine	1
2	Diamond core drilling machine up to 8" Dia	3
3	Dump Truck (15 m <sup>3</sup> )	12
4	Dump Truck (30 m <sup>3</sup> )	4
5	Water Tanker – 11,000 Liters	4
6	Excavator (Back-Hoe)	4
7	Asphalt Paving Machine	1
8	Generator	6
9	Diesel Tanker – 5000 & 8000 Gallons	1

## **6. PROJECT PROFILES/CLIENTS**

### **Partial List of Manpower supply / Projects / shut down/ Industrial Service Clients**

- 01. Abdulla H.Al-Mutawa Sons Co.**
- 02. Advanced Polypropylene Company (A.P.P.C)**
- 03. HS Steel, Dammam**
- 04. Al-Masariq, Dammam**
- 05. Express Industrial Services, Jubail**
- 06. MARAFIQ, Jubail Industrial City**
- 07. Jal International, Jubail Industrial City**
- 08. Timco, Dammam**
- 09. GCS, Dammam**
- 10. Abdulla Al-Barak Ind. Service**

## 7. QULAITY

Najd Projects considers satisfying client requirements and achieving the prime project objectives as an essential quality issue. Najd Projects operates a total quality management system, fully supported by the management and staff. A commitment to quality is required from all employees and the “**THINKQUALITY**” philosophy is encouraged in all aspects of Najd Projects operations.

Najd Projects recognizes the requirement for Quality Assurance within all business areas in which it operates and has therefore committed itself to the establishment of an effective Quality Management System which can be implemented as required on any project, study or proposal it undertakes. The aim of the system is to ensure that client’s objectives are met with minimum wastage, rework or concessions and thus achieving a reliable cost system of management.

To ensure the achievement of these objectives, Najd Projects has appointed a Quality Assurance Manager, who is responsible for the introduction, documentation, implementation and maintenance of the Quality System. The Quality Assurance Manager has a direct reporting link to the Managing Director on all Quality Matters in order to ensure independence.

Najd Projects Quality Assurance procedures and Quality Manual have been developed to meet the requirements of the International Standard Organization ISO 9002. Our policy statements have been developed in line with these standards.



## 8. QA/QC POLICY & QUALITY PLAN

### 1. POLICY

It is the Policy of Najd Projects General Contracting Est., here after referred to as Najd Projects, to provide a consistent level of work performance that meets or exceeds the quality standards set forth in this manual. Quality is herein defined as conforming to the requirements and specification cited within this manual in all matters of construction, fabrication and materials control.

With regards to this project, the program set forth in this manual becomes a mandatory, specific vehicle of enforcing the policy of Najd Projects on this project.

The Quality Control Program established to ascertain that all construction activities are prepared in complete conformance with the approved construction drawings and all applicable standards, specifications and requirements.

The overall responsibility to maintain the program rests with the Quality Control Manager and his delegated Q.C. Supervisors. Their direct responsibility is to ensure that all requirements for this project together with the Integral Quality Program are strictly adhered to. The Q.C department is authorized to stop any work activity until compliance with the manual is achieved.

The Quality Control Manager, in his exercise of all functions controlling quality of construction, fabrication, erection, materials, and test procedures, shall not be overruled by any superintendent or manager, including the Project Manager. Any disputes or conflicts shall be brought to the attention of the General Manager of Najd Projects for resolution.

Najd Projects shall cooperate and coordinate in all matters relative to the quality control program, and all personnel directly involved in this project shall be continuously kept informed of contract requirements as work progresses.

This Quality Control Program document is binding on all Najd Projects personnel, and shall be followed without deviation.

### 2. AUTHORIZED REPRESENTATIVES

The Q.C Manager and his Q.C. Inspectors (Civil, Electrical and Mechanical) are the authorized Q.C. Representatives of Najd Projects on site. The Q.C Manager is responsible to interface with the Client for all matters pertaining to the Q.C. program.

### **3. LEVELS OF RESPONSIBILITY**

a. The Q/C Manager has the overall responsibility to organize, implement, coordinate, conduct and manage the Q.C. Program. It shall be his responsibility to report any deficiencies in the quality of work to the Project Manager. He has the authority to stop work in any area where discrepancies remain uncorrected and shall cancel the stop work order or non-conformance report upon satisfactory correction of noted deficiencies. The Q.C. Manager shall coordinate with the warehouse personnel to ensure that the Quality Control procedures are properly implemented. In any case, he shall be directly responsible to the Planning Manager.

b. The Q.C. Inspectors (Civil, Electrical, and Mechanical) shall be under the direct supervision of the Q.C. Manager. They shall conduct preliminary inspections prior to the joint inspections with the Client's representative(s). They shall monitor the required test and record inspections and tests made. They shall ensure that all the materials and equipments to be incorporated into permanent construction are compliance with the contracts, plans, and the specifications and with the Client's approval. The Q.C. Inspectors shall be available full time to ensure the effective implementation of Q.C. Plan. The Q.C. Inspectors shall have the right to reject the work that does not comply with, or which was not inspected, tested or examined in full compliance with the requirements for the attainment of the good quality as work progresses.

c. Najd Projects shall engage the service of a third party independent. Qualified inspections and testing agency approved by Client's representative to perform all tests required i.e. soil compaction tests, concrete sampling, compressive tests, non-destructive tests, etc. Test technicians shall be made available on site to cover testing requirements of the project.

d. The Third Party Independent Testing Laboratory, approved by Clients representative shall be responsible for carrying out all on-site tests, as directed by Najd Projects Q.C. Manager and his Inspectors. All tests that fail to meet the requirements shall be immediately reported to the Najd Projects Manager for corrective action. Original copies of all test reports shall be submitted to the Clients representative and a copy of Najd Projects Q.C. Department. Copies of all original test reports shall be submitted to the Client with a copy maintained/retained by the QC group. At the conclusion of the project, the completed test reports, by work categories shall be submitted to the Client as part of the project close out documentation.

### **4. PROCUREMENT AND SUB-SUPPLIER CONTROL**

This section defines the methods and procedures to control the material procurement activity.

a) The engineering Department (off-site) prepares the material take off-lists, drawings and specifications for price quotation. Upon completion, Procurement

Department shall give inquiries to the selected and qualified suppliers. The availability to meet the required delivery of ordered quantity in stipulated time period shall be taken into consideration. Offers received from suppliers are evaluated for:

1) Material in stock and specifications. 2) Time/Period for manufacture of non- stock items.

3) Time required for the material to be delivered.

b) A copy of material submittal shall be submitted to Client representatives for review and approval.

c) The Procurement Manager shall prepare Purchase Order and forward it to the Q.C. Manager for approval. He shall ensure that the Purchase Order contains but not limited to the following:

1) Material Testing and requirements according to specifications.

2) Require Codes/Standards.

3) Mill Test Certificates.

4) Material Identification Requirements

5) Final Delivery Details.

## **5. CONTROL OF MATERIALS AND STORAGE GUIDELINES**

All material deliveries on site are to be inspected and approved by the Q.C. Inspectors to ensure that materials are not damaged or defective and in conformity with the material approvals, purchase orders and packing lists. If discrepancies are found, it will be reported to the Procurement Manager who in turn will notify the vendor concerned for corrective measures or replacements.

Materials found acceptable shall be stored in a manner suited for the particular type of material or in accordance with the manufacturer's or suppliers recommendations. The Q.C. Inspector ensures that proper storage of materials is maintained.

The following storage guidelines shall implement by the Q.C. and warehouse staff:

a) Stocked items shall be suitably protected from damage by spacers or load distribution supports and shall be safely arranged. No metal works or materials shall be stored directly on the ground. Materials shall be properly stored so that they are not subjected to excessive stress, and that the protective coatings and finishes are not damaged.

b) Electrical equipments and fittings shall be stored in a locked warehouse, and shall be arranged and labeled to facilitate easy retrieval.

c) All materials stored outside that may deteriorate or may be damaged as a result of direct exposure to weather shall be adequately covered or protected as recommended by manufacturer.

## **6. TRACEABILITY**

It should be the responsibility of Q.C. Inspectors to inform Najd Projects and verify the identification/tags on materials in comparison with the list on the certified materials test reports or mill certificates. They shall perform visual and dimensional inspection and prepare incoming material reports. Comments shall be marked on the material items, and shall be reflected in the inspection report. If any material is suspected due to loss of trace ability for material grade, it shall be subjected to mechanical/chemical analysis test, returned to vendor, discarded or scrapped, etc. The Q.C. Inspectors shall be responsible for the trace ability of materials on site.

## **7. CONTROL OF MEASURING, TEST AND INSPECTION EQUIPMENT**

The Q.C. Supervisor and Inspectors shall verify that the instruments, tools, and equipments used in testing and inspections are properly calibrated and controlled. All instruments, tools, and equipments shall bear an individual identifying number by etching or permanently marked on the instrument. Calibrated control sheet shall be used to document item, identifying number, location, description, accuracy method, interval, due date, date calibrated, calibrated by, results and remarks. Any instruments/equipment found defective and cannot be repaired shall be replaced and noted in the Q.C. records.

All instruments, tools, and equipments used by Najd Projects in testing and inspections for the project shall be calibrated by an independent testing agency approved by the Client's representative using independent testing agency's calibration procedure.

Original Calibration records/certificates of all tools and equipments owned and being used by Najd Projects shall be maintained on file by Najd Projects Q.C Inspector, and will be available for checking (if required) by Clients representative.

### **Minimum list of instruments, tools and equipments to be used by Najd Projects:**

A. Najd Projects instruments, tools, or equipments to be provided:

- 1) Hydro test tools and equipment  
Pressure Gauges Relief valves Testing Manifold
- 2) Welding Equipment's:  
Welding Oven Temperature Gauge  
Surface Temperature Gauge
- 3) Painting Equipment's Holiday Detector

B. Subcontractor's Instruments, Tools or Equipments to be provided:

All Instruments, tools, or equipments to be used by Subcontractor shall be calibrated by their own recognized Independent Testing Agency.

Copies of Calibration records/certificate of all instruments, tools and equipments being used by subcontractors shall be submitted to Najd Projects Q.C. Department.

These records/certificates shall be maintained on file by Najd Projects Q.C. Department and shall be available for checking (if required) by Client.

All calibrated instruments, tools, and equipments shall be properly monitored by Najd Projects Q.C. Inspectors to ensure that recalibration is done before the expiration date using calibration Tools, instruments and Equipment Control Log.

**CONTROL OF QUALITY PLAN & INSPECTION TEST PLAN**

1. This manual shall be used as reference throughout all phases of construction. The Q.C. Inspector shall track construction activities and determine when it is necessary to conduct inspection and testing, exercising control and documentation of all inspection made.

Should this manual needs an update to incorporate additional items not originally covered, the manual shall be revised and a corresponding number will be assigned.

Should a Client representative see a need for a special procedure for a specialized portions for the work where such is not covered within any of the Owners standards, the Q.C. Supervisor shall submit in writing a proposed Q.C. procedure, The proposal shall address all requirements to the specific work including procedures, inspections and testing and the approval of performing personnel. However, only after the Client representative's approval can a new procedure be implemented.

1 The Client's right to audit performance in compliance with the Quality Program and Client's standard is acknowledged.

2 A log of deficiencies reflecting Q.C. activities shall be maintained and monitored by the Q.C. staff. All outstanding deficiencies shall result in an issuance of Non Compliance Certificate to the Project Manager for corrective and immediate action. Upon completion of corrected deficiencies and approval of QC Supervisor informing that compliance had been achieved and the work may now proceed

## **8. INSPECTION NOTIFICATION**

Where a particular phase of work needs to be inspected/ tested, the QC Inspector shall notify the Client representative on a 24-hour notice prior to the scheduled date of inspection using Request for inspection and Testing Forms.

The inspection notification shall be done in two parts as follows:

Najd Projects construction Group thru Site Engineer shall request for inspection to the Najd Projects QA/QC Department, who in turn will conduct inspection.

Upon satisfactory completion of the inspection, the Najd Projects QA/QC Inspector shall submit a request for inspection to the Clients representative. The Client will designate the Hold "Points" where they are required to inspect or witness.

In addition to the above, Inspection Notification Flow Chart is attached hereto for reference and guidance.

## **9. CONTROL OF DOCUMENTS**

The QC supervisor shall establish and maintain the following records and files. It shall be his responsibility to see and check that these records are properly maintained and stored up to the project completion.

A record of all tests field sequentially and by work categories. All tests including but not limited to the following shall be controlled and properly documented (materials, soil, concrete and NDT)

Record of Daily and Weekly QC Report

A record of all vendors and technical approvals filed correctively by submittal number and index.

A file of current and governing contract plan and specifications, variation orders, shop drawings and technical standards issued for construction. A document control clerk on site will log and track the latest governing data and drawings, and ensure proper issuance of the same.

A file of signed off QA/QC Inspection Forms. Contract Materials receiving report file.

A record of properly logged no-conformance reports.

A separate set of contacts plants for noting changed for subsequent incorporation on the as built reproducible.

The above QC documentations shall be in English Language and of legible and micro filmable quality for easy processing/reproduction, The Client representative shall have access to the records and documents filed and maintained by Contractor.

The specific procedure for document control is defined in Section III-5.3

## **10. CONTROL OF SPECIAL PROCESS**

Should the Client representative or Contractor see a need for a special procedure to a “specialized process” of the work where such is covered within any of the work where such is not covered within any of the Owner’s standards, the QC Supervisor shall submit in writing a proposed QC Procedures. The proposal shall address all requirements to the specific work including procedures, inspectors and testing and the approval for performing personnel; however; only after the Client representative’s approval can a new procedure be implemented.

## **11 NON-CONFORMANCES AND CORRECTIVE ACTIONS**

This section outlines the initiation, control and documentation of non-conformance and corrective action reports.

An NCR (Non-Conformance report) is initiated by QC Supervisor for a portion of work or material that does not conform to the approved project drawings and specifications. This written report is submitted to Najd Projects Project Manager who shall ensure that appropriate action is taken to rectify the problem.

Upon issuance of NCR, the activity/material in question shall be stopped/ grounded by the QC Supervisor until an acceptable corrective measure to rectify the problem is achieved.

Upon completion of rectified deficiency and Najd Projects QC Inspector and Client representative’s inspection and approval, the NCR form shall be returned and signed-off by Najd Projects QC Supervisor and Clients representative and work shall continue.

Non-conformance reports are logged, documented and controlled by QC Supervisor with a copy submitted to the Client on a monthly basis.

## **12. Q.C. DAILY REPORTS**

The QC Supervisor shall prepare a daily report at the end of each working day containing all inspections and testing made including:

Significant construction underway (i.e. demolition, earthwork, pipe work, concreting, electrical, mechanical, etc. Location on of inspections, highlighting nature of



deficiencies observed and corrective actions taken or to be taken (i.e. sign offs like Pour Cards, Inspection Request Forms, etc.) shall be submitted with this report.

Test reports performed with results including computations shall be submitted. Where test results cannot be completed at the time a report is submitted, a notation shall be made that the results cannot be completed at the time report is submitted, a notation shall be made that the tests were performed and the results to follow. Delayed test reports shall be submitted on the date received.

The QC Supervisor shall consolidate the above reports for submission to Client representative.

### **13. Q.C. WEEKLY REPORTS**

The weekly report shall include the following:

A summary of the week's inspections highlighting problems and solutions

A summary of test results for a week

A schedule covering each week's QC activities shall be submitted weekly and forecast schedule of QC activities that will require inspections and tests.

### **14. SUBMITTAL REVIEW**

Submittal for materials to be purchased for permanent works shall be coursed thru the QC Manager for review prior to submission to Client for approval. A copy shall be kept at the site by the QC Department on-site as a reference to assure that only technically approved materials are delivered and incorporated into construction. The material submittal and Procurement status report forms, AHS-G-007

### **15. AUDIT**

An internal audit in the field shall be performed by the QC Manager, Project Manager and QC Supervisor to verify control activities are in accordance with this manual, contract drawings and specifications. The audit includes but not limited to:

Personnel Certification  
Material Tracing  
Document Control Records  
Test Equipment Calibration Records

Daily Reports The QC Supervisor on-site shall perform a continuous audit on a day-to-day basis reporting any non-conformity in application of the QC Program to the QC Manager.

The QC Supervisor shall investigate corrective procedures within his terms of responsibility or inform the QC Manager accordingly for further action.



The QC Manager, Project Manager, and QC Supervisor shall perform a minimum of three random audits at 10-20%, 50-60%, 80-90% completion of work. The results of these audits shall be recorded for review by Clients representative.

Random audits shall be performed anytime especially when circumstances change, such as major change in QC program, new personnel and to verify corrective actions are properly performed and documented.

Audit procedures shall be carried out according to the checklist prepared to suit each particular case and activity or facility to be audited. A report shall be issued or completion of each audit giving a summary of findings and recommendations for corrective actions are properly performed and documented.

Audit procedure shall be carried according to checklist prepared to suit each particular case and activity or facility to be audited. A report shall be issued or completion of each audit giving a summary of findings and recommendations for corrective action if necessary.

When corrective actions are recommended, the time limit for their implementation be stated. The activity covered should be re-audited an expiration of time given to rectify the non-conformance.

## **16. PERSONNEL TRAINING AND QULIFICATION**

The QC personnel of Najd Projects who will handle this quality program are all qualified and capable of executing and implementing this quality programs.

A work which will need a special crew shall be trained and certified by a third party testing company or by manufacturer's recommendation such as:

RTR Pipe Installers  
Welders  
Other Special Crafts

Personnel doing code welding inspection shall be certified in conformance with ANSAI/AWS QC-1 as Certified welding Inspectors or Clients or authorized representative approved equal per 1 GS Records of certificates and procedures shall be kept and filled.

## **QA/QC MANUAL**

### **DOCUMENT CONTROL – REVISIONS MANUAL**

All assigned holders will be issued with the copies of revisions/changes/additions together with this Revision Form in duplicate. The assigned holder will revise the document and return single copy of this revision form to confirm receipt, attaching all sheets that have been revised.

Controlled Copy No.	Assigned Company Holder Name	Revision No.	Patent Received Issue Signature
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Revision	Revision and Original Copy	Date Issued	Approved for Issue
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

This manual is property of Najd Projects General Contracting Est.. Authorized revision will be issued to assigned holders of controlled copies only.

The assigned holders are responsible for the manual and updating of all authorized revision changes/addition in the controlled copy. In the event of reassignment/termination, the controlled copy shall be returned to Najd Projects General Contracting Est. at the following address for reassignment/cancellation.

Attention of:

NAJD PROJECTS GENERAL CONTRACTING EST.  
P.O. BOX 529 AL-JUBAIL 31951, KINGDOM OF SAUDI ARABIA

CONTROLLED COPY NO. : \_\_\_\_\_

ASSIGNED HOLDER: \_\_\_\_\_

ORIGINAL DATE ISSUED: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

COMPANY: \_\_\_\_\_

## 9. QUALITY CONTROL INSPECTION PROGRAM

1 The Quality Control Officer shall be supported by testing laboratories and special consultants as required to meet the requirements of the specifications, and to ensure qualified inspection of the work. The Quality Control Office should be responsible for scheduling and coordinating all inspection and testing of work as further described under Testing Program.

2 The Quality Control Officer shall use the expertise of the testing laboratories and specialist consultants as required, and should be responsible for issuing the final recommendations. The Quality Control Office should coordinate and supervise the performance of all required inspections, testing, clearing of documents and submissions performance of all required inspections and submissions for approval. In addition, the Quality Control Officer should be responsible for monitoring complete up-to-date records on submittals of documents and should be responsible for submitting quality control reports as required to the senior management of the contractor on-and-off site.

3 The Quality Control Office shall visually inspect material delivered to the site, the pertinent superintendent and/or subcontractor should be asked to be more from the same site. The Quality Control Office shall notify his Project Manager of any unresolved problems in this regard. Should the problem persist, the status should be incorporated in the daily report and corrective action and remedial measures be taken.

4 As soon as a representative segment of an item of work is completed, the Quality Control Officer should inspect workmanship, dimensional accuracy, and ensure the proper use of approved materials. In addition, he should review the testing and inspection operation to ensure compliance with the specifications.

5 The Quality Control Office should continue inspecting the work as required to assure continuing compliance with the plans and specifications until the work is completed. Upon completion of an item of work, the necessary operational or performance testing should be conducted and required certifications submitted.

6 When materials used do not comply with the specifications, workmanship, or is not satisfactory, the Quality Control Officer should make immediate written notification of non compliance to the superintendent and/or subcontractor performing the work. If the work continues without conformance, the Quality Control Officer shall direct immediate removal and replacement of the non-complying materials or poor workmanship. In the event of consistent no-compliance on the part of either the superintendent or a subcontractor. The Quality Control Officer will report directly to the contractor's executives.

7 Najd Projects shall name an approved quality control representative to be on the job site at all times, and continuous inspection should be maintained during critical phases of the work. The Quality Control Plan should remain in effect until construction work has been substantially completed. Phase inspections should function as follows:

#### a) **Preparatory Inspection**

Prior to commencement of any work segments check plans, specifications, submittals, materials, existing conditions and controls. Advices superintendents and/or suppliers of packing requirements for shipment by land, sea, or airfreight.

#### b) **Initial Inspection**

Check results as soon as initial work segments have been accomplished. c) **Follow-up**

#### **Inspection**

Perform inspection as frequently as required to ensure continued compliance.

#### d) **Final Inspection**

Final inspection should be carried out and deficiencies rectified prior to requesting formal inspection from the client's consultant supervision team.

## **TESTING PROGRAM**

1 An independent on-and-off site testing laboratory shall be used to perform the required on-and-off site testing, and in addition, should assist in the specified inspection of work items such as earthwork, concrete and bituminous paving. Test reports will include specification requirements, test, data, and a statement of recommended corrective actions should a test fail to meet specifications criteria. Inspection reports should include a description of the items or activities inspected of a statement of compliance or a statement of recommended corrective action if tests do not indicate compliance.

2 Test and inspection reports should include the date and time of the test or inspection, the exact location and other pertinent information. All tests and inspection reports prepared by the testing laboratory should be submitted along with the daily reports. Recording of these tests shall on appropriate forms as approved by the client's consultant supervision team. The test report forms should be amended as necessary to include the entire test data required to provide a comprehensive report.

3. Designation of standard tests proposed per specifications may be as per the following examples:

- **Grading**

Soil tests to determine acceptability of materials for fill, moisture content, degree of compensation, field density, etc. Should be performed by the independent testing laboratory in a suitably equipped laboratory on-and off site, and in the field as approved by the client's consultant supervision team. Lines and levels should be checked by the surveying crews under the direction of the superintendents.

➤ **Excavation and Backfilling**

Sieve analysis, compaction tests, in-place field density test, determining water berg, limits, etc. should be performed in a proper testing laboratory facility. Tests results should be submitted promptly, so that remedial measures can be taken if test results fail to meet specification requirements.

➤ **Sub-Surface Drilling & Testing**

The bearing surface of footings slabs or mats should be examined subsurface conditions analyzed by drilling or core boring. All unfavorable or unusual foundations characteristics should be documented, surveyed and graphically represented.

➤ **Concrete Sidewalks, Curbs, Exterior Items & Buildings.**

Field control tests for ready-mixed concrete as prescribed by ASTM Standards should be performed by the independent testing laboratory, and test results submitted promptly to the consultant's supervision team. Test data should include slump, air content and the curb strength. Substandard results will be flagged and reported promptly so that corrective measures can be undertaken immediately. Mill test reports for cement and reinforcing steel should be submitted with the specifications, and proposed methods of curing should be submitted requirements.

➤ **Bituminous Course for Roads & Parking Areas.**

Selection suitable aggregate should be made after conducting tests on samples to ensure that the materials meet the specification requirements. Sampling and testing of bituminous materials meet the specification requirements. Sampling and testing of bituminous materials and mixtures should be performed, if required, to ensure conformance to density, thickness, and bitumen content and gradation requirements.

➤ **Asphalt Pavement.**

Sampling and Testing of precise Asphalt will be forwarded for approval to ensure that the materials meet the specification requirements. Approved methods of compaction and leveling will be proceeding for approval. Testing will be frequently made on different areas to make sure the required thickness and compaction is achieved. 20cm base course and 7cm Asphalt Pavement will be used in general. Pavement Marking Date and manufacturers of report of materials proposed for use should be submitted for prior approval.

➤ **Sampling & Testing.**

Sampling and testing of materials should be performed as prescribed in the specifications. Sieve analysis atterberg limits and density tests as required should be performed. Line level grade control should be under the supervision of the field survey crew.

➤ **Irrigation Systems.**

Turf, Tress & Parking Notarized certificates attesting that seed, fertilizer, mulch plant, materials & patricides meet contract requirements should submitted for approval.

➤ **Reinforced Masonry.**

Before delivery of materials, certificates of compliance of bricks, concrete blocks, joint materials, lime and rebar as required should be submitted. In addition,

laboratory tests reports for concrete clock and masonry cement should be subjected to consultant's approval. After material samples are approved, sample panels should be constructed as required for on-site approval and acceptable standards of workmanship.

➤ **Miscellaneous Metals.**

Welding tests should be used to select qualified welders on the job and certificates of acceptability should be submitted for approval to start job Caulking Sealant Certificate of compliance and samples of materials proposed to be used on the projects should be submitted to ensure conformance with the specification requirement.

Aluminum Windows & Screens Manufacturer's certificates of compliance should be submitted for approval and quality certification labels as available will be fixed to the windows.

➤ **False Ceiling.**

Manufacture's certificates of compliance of material should be submitted for approval. Samples of proposed Shades and suspension system will be forwarded with the hanging systems.

➤ **Gypsum Board Ceiling.**

Manufacture's certificates of compliance should be submitted for approval. Sample of proposed system and design along with the fixing methods will be forwarded. Hardware's Certificates and tests reports as applicable will be submitted for hardware items as prescribed, and samples submitted for approval.

➤ **Glass & Glazing.**

Certificates of compliance for the material from manufacturers should be submitted as required.

➤ **Furring, Lathing & Plastering.**

Certified tests reports performed by independent or approved testing laboratory on materials should be submitted to start work.

➤ **Ceramics, Quarry & Terrazzo Tiles.**

Certificates of compliance for materials proposed to be used should be submitted as required for approval.

➤ **Acoustical Treatment.**

Tests reports attesting to the conformance of the materials specification requirement should be submitted prior to ordering of materials.

➤ **Painting.**

The test reports of materials proposed should be submitted prior to approval. Except where samples are pre-tested at the source, approvals should be based on tests samples to assure quality. Methods and rates of application and storage of paint should be in strict accordance with the manufacturer's instructions.

➤ Extinguishers.

Equipment's date showing extinguishers ratings, extinguishing agents, mounting features and operating instructions should be submitted for approval. Also, evidence of conformance with UP label and tests have been performed per UL Standards.

➤ Water Lines.

Hydrostatic pressure, leakage and disaffection tests should be performed as prescribed in the specification to ensure conformance to the design requirements.

➤ Sewers.

Certificates of compliance for pipe, fitting and gaskets processed for the projects will be submitted for approval. Line will be tested for leakage either by infiltration or ex-filtration as prescribed. Low-Pressure air tests should be performed after sections of waste water lines are back filled. Deflection tests as specified should be performed to ensure that lines of not defect beyond acceptable tolerance limits.

➤ Compressed Air Systems.

Upon completion and prior to acceptance of the installation, the system should be subjected to prescribed operating test to demonstrate satisfactory functional and operational efficiency.

➤ Plumbing.

All piping lines include solid wastes, vent, water and drain lines should be subjected to the required testing prior to presentation for acceptance. The applicable tests should using water, air, or smoke should be subjected to operating tests to demonstrate satisfactory functional and operational efficiency. The domestic water lines should, in addition, undergo sterilization tests to satisfy the portability requirements.

➤ Air-Condition & Distribution Systems.

A program to conduct performance tests on refrigerant piping, fan coil and associated components should be submitted for approval separately.

➤ Electrical.

Hydrostatic and performance tests on underground sprinkler system should be performed and tests results submitted as required.

Manufacturer's certification should be submitted to prove conformance to applicable specifications or standards of ASTM, NEMA or other commercial standards as may be applicable. After interior wiring in completed, operating tests on the electrical system should be performed. Tests data includes measured ground resistance of each grounded electrodes system should be submitted for approval.

For any project, the QA/QC Program and activities are divided into four parts:

- 1 PRECONSTRUCTION
- 2 THE TENDER & CONTRACT PERIOD
- 3 CONSTRUCTION
- 4 USER OPERATIONS REVIEW



Each of the above phases will require different concerns, personnel, and management levels of attention.

## **1. PRECONSTRUCTION**

A provision to ensure quality on a project begins at inception and should be stressed even during pre-design presentation and discussions.

During the conceptual and design development process, there are several areas where experience dictates that the project team should be involved to tackle major delays during construction at little or no cost. One must always remember that construction and quality control work vary closely together. Elements that are inordinately difficult to build are most likely to be quality issue at a later date.

The following are examples of major building components to be thoroughly checked regarding design details, type of materials, construction and labor skill level:

Subsoil conditions affecting foundation systems, ground water and the required waterproofing and required underpinning and shoring Building Frame Design The lightness of framing, chambers concrete frame and compensation for creep in pre-cast element in situ, and/or structural steel application, field welding requirements, fireproofing, corrosion inhibitor, etc. Exterior Wall: Selection of materials details for easy replacement of components, accessibility to joints and other elements, maintenance and cleaning of components during and after construction. In practice, no exterior wall is watertight, and particular attention must be devoted to avoid trapped moisture or water.

Curtain walling and metal framing Roofing:

System compatibility with frame, materials, drainage and flashing details. Plaza: check type of system proposed, type of water proofing, type of finishes materials, method of easy replacement, drainage, etc.

## **2. THE TENDER & CONTRACT PERIOD**

To prepare a quality product, we must secure commitment from contractors, subcontractors, and vendors both in contract and attitude.

The design consultants, when preparing the particular specification, should include a special section called "Quality Requirements and Control". The other project team members, consisting of the Project Manager and Construction Manager, should assist the design consultant in the preparation of these specifications.

The design consultants, when preparing the specifications, should be very precise when writing up the "Quality Requirements and Control" section and avoid just a "boilerplate" type description. The team should foresee potential problems, which may arise, and work out the controls specifically related to what is expected from the contractor and/or supplier.



The project management team should review and rationalize the testing and inspection requirements, which will be performed by an independent testing agency appointed by the Owner or his designated representative.

- The specification should call for on-site, early mock-up construction for all major repetitive components in the project which, for example, could include the following:

Exterior walls at least one storey high, one bay wide with a width of 2 meters on the interior side. In major buildings, laboratory testing is not a substitute for this mock-up. Typical office, or in the case of building a hospital or hotel, typical patient or hotel room, complete in all disciplines. Typical suspended ceiling including lights, air conditioning fixtures and diffusers. Typical types of partitions and associated finishes including doorframes. Typical washrooms in high-rise buildings.

During the pre-awarded conference, for any of our major trades, we will review all the described quality requirements, and will ascertain the trade contractor's policy regarding quality. It is important to apply similar considerations to the preparation of schedules or other comparable issues. Frequently, the lowest dollar value will not produce the best quality and ultimately might be more costly to the client or end-user.

### **3. CONSTRUCTION**

This is the phase of the project where the tangible results of the QC/QA programs become evident. Careful attention must be exercised by our team, and their attitude regarding quality will be reflected in the finished product. A consistent approach on QC/QA objectives will facilitate proper understanding. The senior members of our team must initiate the education process which, in turn, will direct everyone's attitude towards quality, and in turn promote an appropriate effort by the contractor, subcontractor, and/or supplier.

Construct regular scheduled (once a month) quality requirements and control meetings with all relevant project management. Minutes of the meetings will be kept, published and distributed to the attendees and management.

These meetings should include a review of the current issues and deficiencies in accordance with the directives issued to contractors, potential problems with upcoming trades, action plans to handle problems (contractor and/or subcontractors), and inspection reports where deficiencies are reported. Appropriate directives should be issued to contractors and/or subcontractors as agreed upon.

The Construction Managers and supervision consultants should discuss major quality issues during the contractor's regular forthrightly meetings.

The superintendents will identify major and/or repeated quality deficiencies by J.S.I (Job Site Instruction) to the trade contractors and initiate corrective actions.

The QC Officer will establish and update a quality control checklist for each trade depending on how intense the trade activity. Every field supervisor should regularly fill out the present format.

The QC Officer will check and collect all welding certificates and insure that the correct reports are issued for every on-site test, particularly for electrical & mechanical work.

The QC Officer, working with the superintendents will prepare and correct punch list (snag tests) before requesting final inspection by the client. Any agreements with the client or deficiencies should precede occupancy.

## **QUALITY CONTROL ORGANIZATION**

The Quality Control Organization shall be headed by the trade contractor's project manager, and should direct the on-site Quality Control Program. The day-to-day implementation of the Quality Control plan should be the responsibility of the Quality Control Engineer. Assigned to the Quality Control Engineer will be a Laboratory Technician and/or Site Engineer. The superintendents and other staff should assist the Quality Control Engineer as required.

The Quality Control Engineer's function shall ensure that the requirements of the applicable specifications and drawings are compiled with and that all work is performed in accordance with established norms and standards, and consistent with job safety requirements.

The Quality Control Organization should be responsible in performing the following tasks:

Continuous and rigorous inspection. Conduct phased inspection on a regular basis. Perform all testing required under the technical provisions of the specifications. Prepare daily QA/QC reports as and when required per contract. Review, approve and submit all shop drawings, brochures and samples as required for approval by the design consultants. Inspect material as they are delivered to site to ensure compliance with approved shop drawings and requirements.

Conduct off-site inspection of supplies and materials to be incorporated into work. Provide monthly reports of off-site QC activities. Main records of all QC activities and submit to the construction manager regularly on established intervals.

#### **4. USER OPERATIONS REVIEW**

The Quality Control Officer shall participate in the review and action on all submittals from subcontractors and suppliers. A submittal may take place in the form of shop drawings, certificate of compliance from a manufacturer, supplier or subcontractor, a sample, catalogues cut or brochure, and/or the drawings, schedules or materials.

A submittal log should be prepared from the final approved plans specifications that summarize all the required submittals in accordance with the contract requirements. This log should be grouped by particular requirements and specification divisions. The particulars trade representatives should be notified of the submittal requirements and due date at the start of the project.

Authority for the administration of this plan is retained by the Project Manager and the control of the programs is delegated to the project Quality Control Officer. Implementation of this program is the responsibility of the Quality Control Officer who has the authority to identify QC problems and initiate, recommend or provide corrective solution to the problems, including removal and replacement of defective works. A separate listing is included, designated to the Quality Control Officer, the staff and the responsibilities assigned.

Quality assurance is the application of standards and procedures to ensure that the facilities meet the designated performance criteria through quality engineering and quality control.

Quality assurance begins with the engineering in the design phase where the design documentation is checked for completeness and constructively, and where specifications are detailed in terms of the required standards.

On site, under the direction of our QC Officer, all schedules for the submission, review and approval of all submittals required by the specifications are established and enforced. These include shop drawings, material samples, mock-ups, manufacturing certificates, etc.

Our QC Officers establish a schedule of inspection including those of the means and methods of construction, off-site operations and of construction put-in-place.

For this particular project, special attention will be given to the fabrication of the various elements of the curtain wall off-site

Quality control should be embodied in a clearly defined program, organized, so that the responsibility and accountability is established from the senior levels of management to the tradesmen on site. Quality assurance on the other hand is, an all inclusive term that embraces all the methods used to guarantee quality and thus includes the quality control and acceptance.

Acceptance quality is a function of the responsible party's ability to meet quality standards established by the clients. Within this framework, quality assurance becomes a matter of setting standards, appraising conformance to these standards. Consequently, quality must be planned and intentionally focused upon, from project conception through warranty period.

## **GENERAL DESCRIPTION**

Quality Control/Assurance Program is a recognized document, and meets the following standards:

AISC	:	Manual for Structural Steel
PCA	:	Design Control of Concrete Mixture
US	:	Drywall Construction
Gypsum	:	
SMACNA	:	Sheet Metal
NAP	:	National Standard Plumbing
NFPA	:	National Electrical Codes
ANSI	:	Article 17.1; Elevators & Escalators

### **A. QUALITY CONTROL DOCUMENTS & RECORDS**

Special forms should be developed to record results of inspection and tests conducted on the job site. These forms should be completed by the quality control staff or testing laboratory technicians, and approved under the client's consultant supervision. Sample forms for recording concrete cube strength, soil date, mechanical system tests results and quality control deficiency are contained in the appendix.

### **B. ACCOMPLISHMENT OF QUALITY CONTROL TASKS**

The QC staff assigned to the project should be required to thoroughly familiarize themselves with the design specifications and drawings, project quality control requirements, subcontracts, shop drawings, samples and other submissions and manufacturer's recommendations. Prior to start of work, job meetings should be convened to highlight design criteria and acceptable standards of workmanship. Mock-ups and samples should be used to establish quality level and solve potential conflicts.

- Materials delivered on site should be inspected, properly stored and shelf life should be checked. check list should be use to monitor construction progress and quality non-conforming work should promptly be rejected.

## **C. INTEGRATION OF QUALITY CONTROL INTO THE CONTRACTOR ORGANIZATION**

The Quality Control department is an integral part of the contractors over all organization, and the contractor's organizational chart should clearly define its place within.

The Quality Control Officer reports directly to the project manager, and coordinated the Quality Control function with the Project Superintendent on site. The Quality Control Officer will coordinate technicians and site engineers as required to assist in managing and administering the contractor's quality control program set forth in this document.

## **AREA OF RESPONSIBILITY AND AUTHORITY OF STAFF**

### **A. PROJECT MANAGER**

The project manager has the overall responsibility for the effective implementation and execution of the on-site quality control program. Given this responsibility, the project manager has the complete authority to carry out the program.

### **B. QUALITY CONTROL OFFICER**

The Quality Control Officer has the responsibility to conduct the tests on site, and when required at the testing laboratory.

### **C. LABORATORY TECHNICIAN**

The laboratory technician as and when required at the testing laboratory is responsible for conducting the tests in accordance with the technical provisions of the specifications.

### **D. CONSTRUCTION SUPERINTENDENT/SITE ENGINEER**

The superintendents and site engineers shall assist the quality control officer with the gathering of samples. An inspection team should be made available for testing.

## 10. SAFETY

Najd Projects is recognized for its high standards in the area of safety, both in Design and Construction. Within Najd Projects we share a common belief that safety is a primary concern. By coupling client and international standards with a commitment to incorporate safety into the design and working environment, we can collectively construct and implement all works conforming to safe practices.

Najd Projects Health and Safety Policy have been prepared in accordance with current international safety legislation, which advises that:

Executive management shall accept responsibility for health and safety, for the implementation and maintenance of measures to secure the health and safety of employees and others and the elimination of risks likely to result in personal injury, damage to health and damage to worksite, plant or equipment.

Najd Projects is aware of the fact that any accident prevention safety policy depends for its effectiveness on the co-operation of all employees. The management will take adequate steps to encourage participation at all levels in the prevention of injury and proper use of all equipment and apparel.

The Najd Projects personnel department has established a comprehensive health and safety procedure. Responsibility and authority resides with this department to provide co-ordinate and direct on all aspects of safety, health and welfare as it applies to Najd Projects employees. It is further the responsibility of this department to ensure the safety policy is rigorously implemented at subsidiary and project level and is fully understood by employees and implemented on a properly planned basis. Safety procedures instruct on:

The keeping and maintenance of accurate accident and injury records are compiled in a uniform manner throughout Najd Projects with a view to measuring performance, maintaining control and estimating hazard potential.

The formulation by management, at all levels, of annual operating plans which include health and safety together with long term plans to achieve tangible and progressive performances throughout Najd Projects.

The preparation and implementation of training programs for all employees based on safe working methods and relevant statutory requirements to ensure that they possess the information, knowledge and understanding necessary to carry out the responsibilities of their jobs without endangering themselves, other people, plant, equipment or product.

## 10. ENG-PROCUREMENT-CONSTRUCTION

### **EPC CONTRACTING**

(Engineering, Procurement, Construction)

Najd Projects recognizes that EPC projects must be executed in strict accordance with the requirements and specifications defined within the clients detailed project scope of work and typically with the principles and concept of ISO 9000 standards. The success of Najd Projects has generally been achieved through adherence to a fundamental objective, that is, to provide our clients with a comprehensive range of multi-discipline Engineering, Procurement and Construction service to the highest quality within schedule and budget.

The project team being a dedicated task force assembled utilizing experienced personnel with proven capabilities from Najd Projects and any appointed sub-contractors and vendors.

Through all phases of project execution, Najd Projects place strong emphasis on its project management skills and in maintaining a close working relationship with our clients. Najd Projects strongly believes that the project personnel must be properly motivated to execute the work. The initial activities will usually begin with a team building process to provide team understanding of the project requirements and to align both Najd Projects and client personnel with project objectives. Team members would jointly plan project methodologies, work process interfaces, and technical strategy to ensure consistency in strict adherence to client requirements.

Najd Projects has a number of computer aided tools which significantly enhance the total quality of the project works. In particular, the Najd Projects corporate data communications network is of considerable value, enabling transfer of documentation between all geographic office locations, providing a global project document management system.

Najd Projects is committed to continuously improving the quality of work through customer interaction, leadership, and team work and work process improvement. We have instituted a number of initiatives in waste elimination, value engineering, and continuous improvement which form the basis of our total quality management program.

Najd Projects is emphasizes on high standards in the area of safety, both in design and construction. Throughout Najd Projects shares a common belief that safety is a primary concern. By coupling client and international standards with commitment to incorporate safety into the design and working environment, we can collectively construct and implement all works conforming to safe practices.



## **PROJECT EXECUTION**

Najd Projects controls, directs and manages projects through the associated subsidiary office to best suit the client's needs. Our management and project staff is supported by the total resources available within the Najd Projects and its associate companies.

Najd Projects meets the challenge of project execution, beginning with Najd Projects senior management's appointment of an Executive Sponsor, assigned direct responsibility for the successful completion of the project. The assigned project manager located in the subsidiary office under the control of the General Manager provides monthly status report to the Executive Sponsor at Head Office.

To ensure total work process integration, Najd Projects procedures, software, standards and the philosophy for the project execution are developed to be project and client specific. Najd Projects places great emphasis on achieving a high level of communications in our project work, not only within our organization but also with clients, sub- contractors and equipment suppliers. We believe that team building fosters co- operation among personnel, provide an open forum for sharing ideas and airing differences, and provide a positive and productive environment for the project team. The development of trust and open communications between project participants is essential for the effective execution of the project and timely completion of a quality job.

Najd Projects are absolutely committed to improving the quality of our work through our focus on customer needs, on leadership and team work, and on the work process. At Najd Projects we believe that quality is everyone's responsibility and that doing the job right the first time while meeting customer requirements is most important.

Najd Projects is committed to improve the quality of work through our focus on Customer / Client needs. Najd Projects incorporates features into projects, such as waste elimination, value engineering and continuous improvement, charting our work process, measuring key elements, and then using the information to improve our work efficiency



## PROJECT MANAGEMENT

Najd Projects can provide the overall Project Management function on small or large projects as the prime contractor. In this role, we manage all activities performed by Najd Projects, sub- contractors and other suppliers. Typically, our management functions include the following.

- Establish project procedures and plans for internal work and co-ordination with external entities, including other contractors.
- Monitor and report progress measured against plans to the client. The progress reporting measurement is agreed with the client prior to implementation. Following this agreement, Najd Projects Management direct any actions needed to incorporate improvements, obtain client approvals as delineated in project procedures.
- Monitor works scope and advise client of any potential deviations as soon as they are identified in the trend program.
- Co-ordinate work scope between the project office, sub-contractors, and suppliers to ensure tasks are correctly interfaced.
- Establish, monitor and report project schedule performance in meeting client milestones.
- Co-ordinate schedule progress between project office, sub-contractors and suppliers.
- Monitor and report project procurement activities.
- Establish total quality management processes and monitor implementation.
- Establish a team build program and monitor implementation.

Typically, to establish consistency on a project, Najd Projects issues as parts of the Project Execution Procedures and Project Administrative procedures the defined managerial function to be implemented and followed.

- ❖ Overall description of Scope of Work by major activity and location.-Execution plan for each major activity.-Schedules with key milestones.-Cost forecasting and control methods.-Organization charts, including names of personnel and manpower summarized by major activity and location.
- ❖ Security/Safety compliance plan. The procedures would also define inter-relationships between:
- ❖ The Client and Najd Projects - Najd Projects and sub-contractors and suppliers.- Najd Projects and other project contractors

## **PROCUREMENT**

Najd Projects Procurement Group, under the direction of the Project Procurement Manager takes responsibility for purchasing materials and equipment, services for expediting and ship inspection (Supplier Quality Surveillance) and for transportation of materials and equipment from the point of manufacture to the job site. The dedicated procurement group forms part of the project task team. Najd Projects is an experienced contractor in the performance of the procurement function.

Purchasing personnel prepare bid lists in accordance with the contract documents and in conjunction with engineering. They solicit bids, technically evaluate the bid with the engineering department, perform commercial evaluations, and make recommendations for purchase. Following approval, they award and administer purchase orders. After award, expeditors track progress of the order and expedite vendor drawings and documentation. Supplier quality representatives ensure that inspections are conducted and quality is achieved in accordance with project requirements before the product is released for shipment. A traffic Administrator directs the movement of goods from the point of origin to the job site.

Najd Projects expeditors and Suppliers Quality Representatives use laptop computers linked to the project team to report supplier information, providing immediate updates to the procurement tracking system database.

## **ENGINEERING**

Najd Projects provide a complete multi-discipline Engineering Design and Consultancy Service operating within subsidiary companies. When required, Najd Projects can utilize Engineering resources from external International affiliates to form a design team assembled with experienced personnel having proven capabilities.

During detailed engineering, strict adherence to client and internationally applicable standards, codes and procedures are maintained and implemented. Compliance to engineering works detailed by project 'Work Scope', together with reviews to determine value engineering, plant operability and safety are deemed paramount in the execution of the project.

Najd Projects recognizes that quality assurance must form an integral part of the design engineering process and that a commitment to quality is required from all employees. Najd Projects quality assurance procedures and manuals have been developed to conform to those requirements defined by ISO 9000.

Najd Projects computer aided design facilities combined with inter office electronic communication links, standard production methods and project procedures provide a uniform and coordinate engineering work process environment for project execution

## **CONSTRUCTION MANAGEMENT**

Najd Projects provides a complete multi discipline Construction Management Service, operating from within subsidiary companies. When required, Najd Projects can utilize the Construction resources from Head Office and external international affiliates to form a Construction Management team, assembled with experienced personnel having proven capabilities.

The construction team, under the direction of the project construction manager has the resources needed to perform the work and be self-sufficient in execution through the construction and commissioning phases of the project. Also during the detailed design phase, senior construction personnel provide assistance in site visits to implement constructability reviews for input into design.

**Material Handling:** Material Handling covers materials, control activities and local purchases.

**Field Engineering:** Field Engineering, including installation and commissioning.

**Construction Monitoring QA/QC:** Construction Monitoring QA/QC provides the craft supervision, inspection teams and also covers field engineering activities.

**Scheduling /Progress Measurement:** Schedule / Progress Measurement personnel review contractor's schedules, conduct weekly and monthly progress meetings, establish need lists for deliverables, execute monthly progress measurement and issue project reports.

**Administration / Contracts:** Administration/Contracts administer the site office of the construction team, including transportation and personnel administration in addition to the construction contract administration.

**Safety:** Safety monitors safety requirements on the jobsite and provide liaison with the client loss prevention organization. Safety also prepares the safety reports and organizes a safety award program, in which the construction management team participates actively.

## **PROJECT CONTROLS**

Najd Projects uses the following elements of our standards project controls system. These systems will be modified to accommodate preferences or specific requirements determined by the client.

### **Project Schedules:**

Our scheduling system uses the Primavera database program, version 5.1 or client preferred planning tool. Our approach is to develop four levels of scheduling and control for the Engineering, Procurement and Construction (EPC) activities. The project schedule incorporates the contract completion date and key milestone

dates and will indicate the relationship of the activities of the client, Najd Projects and other parties.

### **Level 1:-Milestone Schedule:**

The Level 1 schedule displays the overall Project status in a bar chart format, showing major milestones and the critical Path. We emphasize on the integration of the key milestone dates through all project phases including interface to other contractors. The Level 1 schedule is updated monthly for project use and for inclusion in the monthly progress report. The current status of schedule progress is shown in relation to the current month timeline.

### **Level 2:-Summary CPM (Contract Program Management) Schedule:**

The Level 2 schedule displays major EPC activities, restraints, and dependencies for each sub plant area in more detail. Between 50 and 200 activities are displayed in Precedence Diagram Method format.

### **Level 3:-Detailed CPM Schedule:**

The Level 3 schedule displays working level schedule data, including data sorted by work type within each sub plant area or sub-system. The CPM network will on large projects contain approximately 1,000 activities. The schedule network is updated monthly to reflect actual progress, approved revisions, and change orders. This schedule is developed to support the milestones and interface points with other contractors shown on the Level 1 and 2 schedules

### **Level 4:-Schedule, Document Logs & Progress Baselines:**

The Level 4 schedule contains the working level schedule data including the status of individual tasks, drawings and documents. Drawing, task and quality logs are set up to list items to be tracked. Progress of Engineering and Construction work is measured. Progress and performance reporting methods and format will be agreed with the client after contract award.

We use the progress reporting capabilities of the PC WORKS Windows base program. This program interfaces with the Primavera schedule program and the task and document control logs (actual task completion document issue dates to generate progress data). New software and technology is always in use in the form of pilot projects.

The Engineering schedule database is maintained in our subsidiary office with input downloaded electronically from Engineering Group locations.

The Construction Schedule Database is initiated during the Engineering Phase and subsequently maintained at the job site after the construction organization is established.

-Summary of Progress-Review of action items-Last weeks accomplishments-Goals for the coming weeks.

The status meeting also regularly reviews updated schedules and progress data from Primavera and PC WORKS, including project cumulative percent complete curves for Engineering, Procurement and Construction.

**Monthly Status Reports:** The monthly status report includes the following data.

-Overview of monthly and to date progress.-Accomplishments-Continuing Tasks-Material Procurement Status-Project Milestone Status-Monthly Project Statistics-Action Items-Activities and goal planned for next month.-Project Level S-Curve- Trend Report

## **COST AND CHANGE CONTROL**

Project expenditure over the life of a project requires firm and timely control of activities, services and resources. We plan, control and co-ordinate the program, from inception to completion, to the required quality standards. A key part of our strategy to achieve successful Program Management is to implement a comprehensive contract cost control system upon award of the contract, based on the contract scope, price and schedule at the time of award. A work breakdown and cost coding structure is developed. A contract price breakdown based on the contract scope of work is prepared and used as the baseline for a cost and schedule trend program. Deviations from the baseline are trended and reported for management review and action.

**Trend Program:** Subsequent to the issue of the approval project price breakdown, the trend program is initiated to track scope, pricing and quality deviations from the original baseline. Four types of baselines are typically tracked.

- Lump sum Scope
- Unit Price Quantity
- Reimbursable actual costs and quantity
- Schedule date changes with cost consequences

The immediate identification of scope, schedule, pricing and quantity deviations and the impacts of such changes are key features of a project execution program. Any significant reported trends are immediately brought to management's attention for timely evaluation and action. A trend log is maintained which references the status of each trend. A monthly trend report is incorporated in the Monthly Project Report. The trend program supports the change control program described below.

### **Change Control Program:**

The project change control program is implemented in conjunction with the trend program and in strict accordance with contractual requirements.

Change orders originated by the Client are incorporated in the contract price after

the method of calculation, resulting amounts and schedule impacts are agreed. Work proceeds in accordance with direction provided in the change request.

Change orders requested by Najd Projects are initiated by Najd Projects responsible Manager, notifying the Client immediately. A un priced trend is formally presented and discussed at the weekly client meeting and client concurrence is requested prior to any work being initiated on the trend.

A change order control log is issued and updated on a regular basis. The log will include the approved price and a schedule to track the evolution of each change.

Cost and Commitment Ledger: Najd Projects maintain a ledger to track the evolution of each change.

## **TECHNICAL (COMMISSIONING)**

Najd Projects has been recognized for many years as a specialist in the area of pre commissioning and commissioning. Having a large multi-discipline resource for execution of this important project phase, we have successfully provided this service on various geographic regions and remote locations.

Quality of personnel and extensive experience ensures that client's repeatedly use Najd Projects to facilitate a successful transition from construction through to operating plant.

To ensure successful start-up, acceptance, testing and safe and efficient plant operation, the commissioning team develops project pre commissioning and startup procedures/ schedules and develop O&M procedures with the Construction Manager and/or client.

The commissioning teams are supervised by a commissioning manager. The team includes technical personnel from each discipline as required. Technical personnel from the major equipment suppliers will support the start-up team during the commissioning, performance testing and training activities.

Prior to systems acceptance, the start-up team will verify tall checkouts conducted by the construction team such as pressure tests, electrical measurements, loop checks and rotation direction checks. A system walk down and final P&ID check is conducted and any corrective action required are notified to the construction team. A safety tagging procedure is implemented. The commissioning team then performs operational functions in accordance with established procedures in plant start-up, steady state and shutdown modes. Upon completion of each sub-system or system the commissioning manager documents all data and verifies systems operability. Finally, the plant undergoes performance testing to ensure it meets all design and output criteria and to ensure that the facility meets all environmental and safety requirements.

## BASIC CONCEPTS FOR THE CIVIL JOBS

### 1- General

1. Najd Projects maintains all structural drawings should be in conjunction with the specifications, mechanical, architectural, electrical and sanitary drawings.
2. All works should confirm to the ACI-318-89 building code requirements for reinforced concrete.
3. Dimensions are given in centimeters unless otherwise noted in our shop drawings.
4. Bar spacing are given in centimeters and bar diameters are given in millimeters.
5. Elevations are referred to structural floor elevation of ground floor (0,0). For absolute elevations see civil drawings in our shop drawings.
6. All dimensions are centered on columns unless otherwise indicated on plan.
7. Do not scale from drawings. All dimensions should be read or computed.
8. All dimensions should be verified by sub-contractor before construction.
9. All openings shown on plan and/or sections shall be verified with other discipline. Openings not shown on structural drawings Najd Projects shall be installed only after the approval of the consultant.
10. Najd Projects see architectural, mechanical, electrical and sanitary drawings for verification of chases, sleeves, drips, reveals and other items not shown in structural drawings.
11. Najd Projects provide water stop at all construction joints of water structures and in mat foundations or walls below ground level.
12. Unless otherwise shown, bar bends, lap splices and reinforcement details shall conform to: ACI detailing manual - 1988 (Reapproved-1991)
13. Najd Projects shall prepare and submit shop drawing, including but not limited to reinforced concrete components, precast concrete items, structural steel details, required construction details and related supporting calculations for review and approval by the engineer before construction without any extra cost to the owner.

### 2- Design Criteria

#### 2-1 Design Codes

- Uniform building code (UBC-1991).
- Building code requirements for reinforced concrete (ACI-318-89).

#### 2-2 Design

##### Loads: A – Dead Loads

MATERIAL	LOAD
Concrete	24 KN/M3
CMU Wall Partition	3.25 Kpa
Ceiling + Utilities	0.50 Kpa



Floor Finishing & Toppings	1.00 Kpa
Membrane Water Proofing	0.24 Kpa
Mechanical	1.00 Kpa

### **B-Live Loads**

<b>AREA</b>	<b>LOAD</b>
- Private Rooms	1.92Kpa
- Wards	1.92Kpa
- Lobby/Corridor Above Ground Floor	4.80 Kpa
- Laboratories	2.87 Kpa
- Therapy	1.92Kpa
- Examination Rooms & Doctor Rooms	3.60 Kpa
- Radiology	4.80 Kpa
- Stairs	9.85 Kpa
- Mechanical Areas	1.92Kpa
- Others	1.92Kpa

## **3 - Materials**

### **3-1 Concrete**

1. DESIGN STRENGTH: a)  $f_c = 32 \text{ N/mm}^2$  @ 28 days cylinder strength (for all super structure works and walls) b)  $f_c = 32 \text{ N/mm}^2$  @ 28 days cylinder strength (footings, mat foundations and slab on grade unless otherwise noted (S.R.C)). c)  $f_c = 20 \text{ N/mm}^2$  @ 28 days cylinder strength plane concrete (S.R.C)
2. The location of all construction joints not shown on the drawings shall be submitted to the consultant for approval.
3. The sequence of pouring shall be such as to minimize shrinkage.
4. There shall be a delay of at least two hours after columns have been poured before pouring beams and slabs adjacent to those columns.

### **3-2 Masonry**

1. All materials and workmanship shall be in accordance with the applicable standards and specifications of the national concrete masonry association and uniform building code.
2. Concrete masonry units shall conform to ASTM C 90 grade N.
3. Hollow blocks for roof deck shall be of good quality. The maximum weight should not exceed 17Kg per unit. Minimum ultimate compressive strength shall be 105Kg/Cm<sup>2</sup>. The size shall be 20x25x40.

### **3- 3 Reinforcing Steel**

- 1- Concrete reinforcing detail shall conform to: ACI-315 requirements except as modified on the drawings.



- 2- 2- All reinforcing steel shall have a minimum yield strength  $f_y=414$  N/mm<sup>2</sup> conforming to ASTM 615 for deformed bars.
- 3- 3- Welded wire fabric shall conform to: ASTM A185 for smooth bars with minimum yield strength  $f_y=500$  N/mm<sup>2</sup>

### -Basic Development Length (Ldb)

Unless otherwise noted on the drawings, basic development length (Ldb) shall be as shown:

Bar Diameter (MM)	8	10	12	14	16	18	20	22	25	28	32
(Ldb) In Tension (MM)	180	230	280	340	380	420	490	590	760	950	1240
(Ldb) In Compression (MM)	150	200	240	270	310	350	390	430	480	540	620

### 5- Concrete Protection Cover for RCC

CASE	CONCRETE COVER (mm)
1. Concrete cast against and exposed to earth:	75
2. Like before but including water proof: - Dia 16 or smaller - Other bars - Columns ties - Slab on grade	40
	50
	65
	50
3. Concrete not exposed to weather or earth: - Slabs, walls and joists - Beams and columns - Shells and domes	20
	40
	20

### 6- Foundations

1. Foundations are designed for an assumed allowable soil bearing pressure of 1.50 Kg/Cm<sup>2</sup>. Prior to construction, Najd Projects will perform a soil investigation to verify the validity of the design assumption and to define ground water table level. Also we should redesign the foundation in case of any discrepancy between assumed and actual bearing capacity of soil.

2. Earth work and foundation excavation procedure subj. to prior approval of consultant.

3. Najd Projects do not backfill against concrete walls until supporting slabs and other supporting elements including slab on grade were casted in place fully anchored and have reached full design strength.

### **7- Form Works**

1. Design of form works, safety of erection, bracing working procedures and other things always maintain during our construction.
2. Unless otherwise noted, camber all beams @ RIBS at least 7mm for every 3m span. For cantilevers every 3.0m of free span.