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intends to use; the consequence of this selection approach will many times will have an influence on the final cost and the final completion date of the construction project. Scores of construction projects are delayed many times because of tardy ordering and delivery of materials, equipment or services to the site. The number one reason for these delays is that not enough front end planning is completed; early front end planning can many times optimize this situation. Before the initiation of any construction activities, a detailed purchasing / procurement / contracting plan should be integrated into the overall project execution plan, showing start and finish dates for the Inquire, Negotiate and Purchase (INP) for Purchase Orders, Construction Contracts and any other professional services contracts.

The number one reason for these delays is that not enough front end planning is completed; early front end planning can many times optimize this situation.

Figure 2.1 shown below is an illustration of an overall Engineering (Detailed design), Procurement and Construction (EPC) project that shows the overlapping EPC activities specific to a twenty month EPC effort. The illustration shown is a typical "generic" overall project plan related to the construction of a medium sized manufacturing facility in North America or Western Europe and demonstrates the various interactions and sequences between engineering, procurement and construction.

FUNDAMENTALS OF THE PURCHASING / PROCUREMENT / CONTRACTING PLAN

The purchasing / procurement / contracting or material management plan (refer to earlier comments), which is part of the plan indicated in Figure 2.1 below, must act within the context of the overall project implementation approach. The Purchasing / Procurement / Contracting Plan should mesh with the total project goals, i.e. schedule, cost, quality and safety issues.

FIG. 2.1

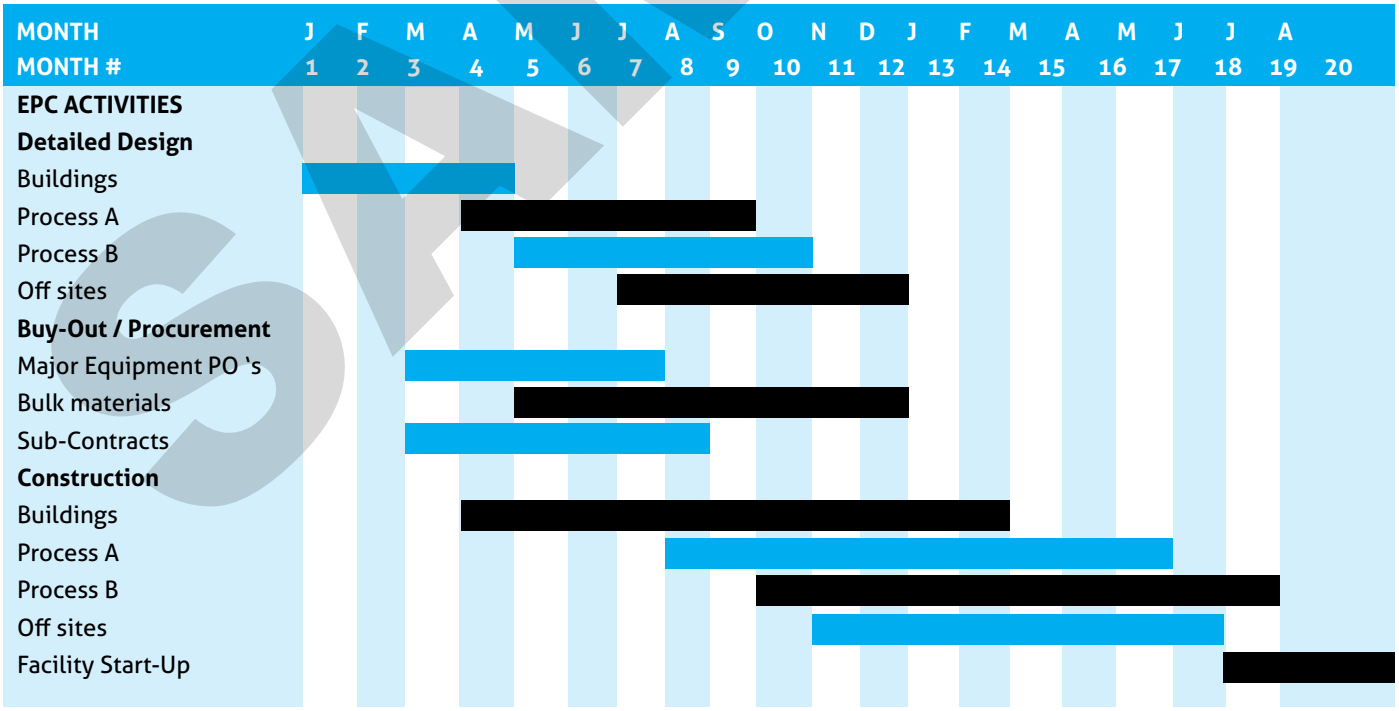


FIGURE 2.1 PURCHASING / PROCUREMENT / CONTRACTING PLAN

Some of the key issues to be considered include exact requirements required by the owner. A number of key questions that must be focused on and incorporated into the Purchasing / Procurement / Contracting Plan are listed below:

- Which organization will be responsible for identifying various sources of construction related resources and in addition, which organization will be responsible for evaluating contractors, vendors and suppliers?
- Which organization will be responsible for the buy out of the bulk materials, manufacturing equipment and the various construction related work packages?
- What will the specialist subcontractor role be in the buy-out of bulk materials, commodities, and equipment?
- Will the owner organization provide any long lead equipment or material items, or is the EPC contractor (General Contractor) responsible for all items?
- Which specifications will be used on the project, the owner's or the A/E's, or EPC contractors?
- Which organization will provide the technical specifications - owner or EPC firm?
- Are any special packing, transport, and marine insurance or customs forms required?
- Which purchase orders will be used on the project, owners, EPC Company or others?
- Is there any long lead (engineering and fabrication time) equipment items on the critical path of the proposed project schedule, do (front end) initial payments / deposits need to be issued to ensure that the schedule is maintained?
- Can proposed contractors / vendors meet the quality assurance (QA) /quality control (QC) provisions of the project?
- Will any equipment or materials be procured from overseas sources, what are the ramifications of this in regards to inspection and transportation to the jobsite?
- Does equipment need to be supplied / purchased with operational spare parts?
- Are any special insurance requirements needed, is there a need for extended warranty issues / periods required?
- Is vendor start-up and assistance necessary, what is the cost of this activity?
- How will currency variations (exchange rates) be monitored and reconciled?
- Are there any special needs for loading, transportation, shipping, overland routing, receiving, offloading, storage and temporary warehousing?
- Can "blanket" purchase orders for key JIT items, bulk material (fuel oil, stone, concrete, bricks, lumber and rebar etc.) items be established?
- Is there a need for any bonding, parent guarantees?
- What are the insurance provisions of the project, OPI, Builders All risk, marine insurance, etc?
- Are there any out of the ordinary material transportation / freight forwarding / permits needed during the procurement delivery cycle?
- Will the home office or the jobsite(s) be responsible for procurement / purchasing / contracting effort, or will it be a joint effort?
- What impact will the project impinge on existing procurement / contracting staffing levels at the home office or at the jobsite(s)?
- Is price based on firm fixed price, or will an escalation formula be utilized?
- Will a fast-track construction approach be utilized, or will a more conventional (traditional sequence) be utilized?

The above check list should be utilized to create a more thorough and all-embracing check list. This check list should clarify scope items and events that need to be planned for and accomplished, start and finish dates, project milestones, engineering interfaces, visits to potential vendors and the (engineering and procurement) staff assigned to the purchasing / procurement / contracting buy-out process needs to be constantly updated on these activities. To make sure that the project is finished on time, it is vital that

responsibility for each of the above activities be taken on by the correct organization i.e., either owner or the EPC organization or A/E firm and or contractor to make sure that no scope is missed or delayed from the buy-out process. Usually, the owner or end user of the project will have minor or limited participation with the purchasing / procurement / contracting effort. Their role will basically be a monitoring role, ensuring that the cost, schedule, safety and quality pre-established goals are fully adhered to and met.

THE PURCHASING / PROCUREMENT / CONTRACTING GUIDELINES

Front end planning and interaction between the project team are the essentials of any successful Purchasing / Procurement / Contracting undertaking. The considerations and checklist touched on above, and action items / needs that are the consequences from the above dialog will aid the Purchasing / Procurement / Contracting effort significantly. The subsequent Purchasing / Procurement / Contracting topics present a general synopsis of the key activities that need to be considered in the Purchasing / Procurement / Contracting materials, equipment, construction contracts and professional service contracts. It is appropriate at this point to touch on what exactly a Contract is; a purchase order also falls into this general description. A contract is an agreement between two or more organizations / parties / individuals in which each organization / party / individual is obligated to perform some specific act / undertaking. A sub-contract employs the services of a third party to carry out specific work or services. Information regarding each of the steps will be touched upon in later Sections of this data source.

To make sure that the project is finished on time, it is vital that responsibility for each of the above activities be taken on by the correct organization

PURCHASING / PROCUREMENT / CONTRACTING ISSUES – FRONT END PLANNING

- Define Purchasing / Procurement / Contracting / subcontractor / Vendor approach.
- Develop and document overall scope of work or services to be completed and obtain buy in by facility / building end users.
- Define overall duration / major milestones to be achieved, document any significant challenges / shutdowns that need to be considered.
- Utilize a backward pass schedule and use end date to establish critical purchasing dates.
- Build up an initial list of EPC, A/E, CM firms, contractors and vendors.
- Agree on single-source contracting approach specific to EPC, A/E, CM firms, contractors and vendors, if required by owner.
- Evaluate Division 1 / Preliminaries - general condition requirements and division of responsibility for site establishment facilities and services.
- Prepare terms and conditions specific to services, construction contracts and purchase orders.
- Define overall insurance / performance and payment bond needs.
- Develop payment terms and retention limits.
- Develop EPC, A/E, CM firms, contractors and vendor technical and commercial evaluation procedure.

ESTABLISH POTENTIAL BIDDERS LIST / PRE-QUALIFY BIDDERS AND RECOMMEND LIST OF PRE-APPROVED EPC, A/E, CM FIRMS, CONTRACTORS AND VENDORS.

- Make a list of owner - or contractor-preferred EPC, A/E, CM firms, contractors and vendors.
- Obtain initial expression of interest in bidding from preferred EPC, A/E, CM firms, contractors and vendors.
- Develop pre-qualification bidding appraisal / questionnaire / survey from preferred EPC, A/E, CM firms, contractors and vendors.
- Evaluate bidding appraisal / questionnaire /

survey responses and perform checks on various references and perform other spot checks / audits of financial, bonding and request additional data on any past projects if required.

• Assemble a short list of potential bidders i.e. EPC, A/E, CM firms, contractors and vendors, and get approval of list from owner.

PREPARE INVITATION TO BID PACKAGES, PURCHASE ORDERS, AND CONTRACTS / SUB-CONTRACTS ETC.

• Decide on whose terms and conditions will be utilized- owners or EPC organization.

• Collect various related engineering deliverables – reports, specifications and drawings into various bidding packages.

• Clarify and document the scope of work and the actual work to be bid upon, list the drawings #'s revisions, dates etc., compile same for the specifications and any other bid package deliverables, document O/M requirements, and as-built documentation requirements.

• Confirm delivery requirements of the bid / proposal time, place, number of sealed copies of the bid, security requirements and other bidding requirements.

• Compile bid breakdown format / bid forms / unit prices / hourly rates / escalation formulas.

• Complete instructions to bidders, i.e. contacts, bid due date, validity of bid, bonding and insurance requirements, warranties, performance guarantees and any other specific requirements.

• Compile and assemble bid package(s) and issue to bidders, obtain confirmation that bid package was received.

• Arrange a pre-bid meeting(s) at site, if possible, in a staged approach (to keep bidders unaware of who is bidding on the project). Be prepared to answer specific technical and commercial questions, produce meeting minutes and issue to all bidders.

• Provide brief overview of project, complete a walk through of existing site, describe project goals, grassroots / revamp, modernization construction work, scope and type of process / building, procurement needs, permit requirements, safety issues, drug testing requirements, shutdown dates and end date of construction effort.

EVALUATION AND AWARD OF PURCHASE ORDERS CONSTRUCTION CONTRACTS / SUB-CONTRACTS / SERVICE CONTRACTS:

• Comply with security provisions of pre-established bidding and evaluation procedures.

• Perform technical and commercial evaluations to ensure bids are compliant with the request for proposal.

• Perform bid tab, summarize each bid / proposal and compare to each submission, in addition compare against pre-established estimate / budget to ensure that pricing is in line with project budget.

• Condition the bids / proposals for missing or overstated scope items and arithmetic / bidding errors.

• Arrange pre-award meetings to discuss any outstanding issues and discuss mobilization.

• Formalize recommendation, issue letter of intent / contract.

• Arrange kick-off meeting if deemed necessary.

PURCHASE ORDER / CONSTRUCTION CONTRACT ADMINISTRATION

• Obtain executed "signed" contract / purchase order.

• Get performance bonds and insurance documentation prior to work commencement.

• Obtain lien waiver mechanics liens information.

• List out all documents, manuals, shop drawings, mill documentation, submittals and other data that are part of the contract / purchase order. Also, determine delivery dates on these specific deliverable facets.

• Organize expediting and inspection visits if required.

• Arrange progress meetings and telephone conference calls.

• Develop "approval" of shop drawing(s) procedure. Expedite shop drawings, approval of shop drawings and other submittals needed prior to commencement of fabrication.

• Monitor contractors and vendors progress from a fabrication, quality (QA/QC), schedule point of view.

• Create payments / change order / back charge register.

• Negotiate and approve any schedule extensions, change orders, back charges and claims.

• Complete close-out activities, compile final inspection documentation / reports and approve any outstanding retention funds.

THE GENERAL CONTRACTOR / SUB-CONTRACTOR INTER-RELATIONSHIP:

In the construction arena, it is uncommon for one single organization to be able / take on the total construction effort of a new building or facility. The frequently used "contractual" arrangement utilized in the construction industry is one in which an owner employs a single organization to complete the construction project. (The owner many times hires the services of an A/E and CM firm to complete the detailed design and possibly monitor the construction effort). This organization is usually referred to as a General Contractor (GC) (it may also be known in some circles as the – Prime, Lead or Managing Contractor). The owner will hold the General Contractor responsible for meeting the pre-established project goals, i.e. cost, schedule, quality and safety during and after completion of the construction effort.

Many times, the General Contractor cannot or does not want to carry out certain scope / work tasks, the General Contractor will employ a sub-contractor(s) who will many times have the required wherewithal, experience, plant and construction equipment and skills (labor) for a particular type of work. Many times, the sub-contractor can complete the work quicker and more cost effectively (even though the General Contractor will add a mark-up – usually 10% - 15% for profit and the coordination effort in organizing the activities of the sub-contractor), because they basically complete this specific type of work day in and day out, they are "experts" at this type of work. These sub-contract services typically involve the following work / scope items:

• Structural Steel fabrication and installation
• Mechanical systems
• Electrical systems
• Roofing
• Painting
• Elevators
• External windows

To name but a few.

These sub-contractors many times are contractually bound to the General Contractor, the General Contractor and the sub-contractor would have a contract between themselves, not the owner. The General Contractor would be wise to pass on all the terms and conditions (contractual conditions i.e. liquidated damages, payment terms etc.) that the owner has imposed on the General Contractor onto the sub-contractor where feasible. As was previously mentioned, a specialist sub-contractor can, by and large, perform their specialty (scope) cost-effectively and in less time, plus they have the knowledge of the market place and know where to get the best quality materials at the most competitive cost. This knowledge would not be available to the General Contractor, because they are not doing this specialized work on a regular basis. Various industry studies / white papers that have been carried out over the last couple of decades have concurred that the General Contractor / sub-contractor mode / methodology of construction is both cost effective and productive (optimizing productivity – because the sub-contractor labor force does not continually experience a steep learning curve) in labor installation and in obtaining best material prices in the required time frame. Typically General Contractors are integrating specialist sub-contractors into the construction effort rather than hiring the specialist labor and supervision needed to get the work completed. By utilizing this approach, the General contractor can:

FIG. 3.2

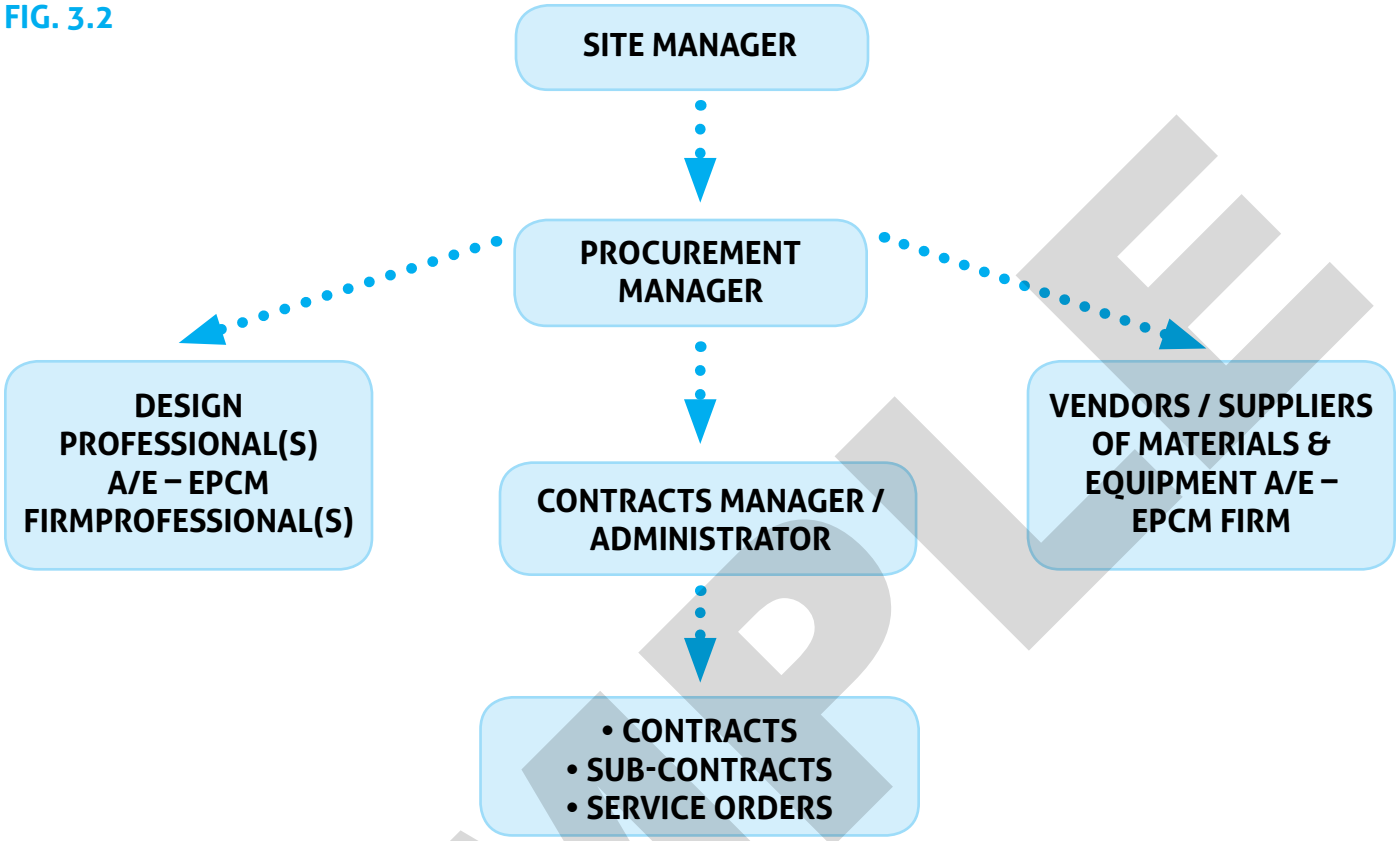
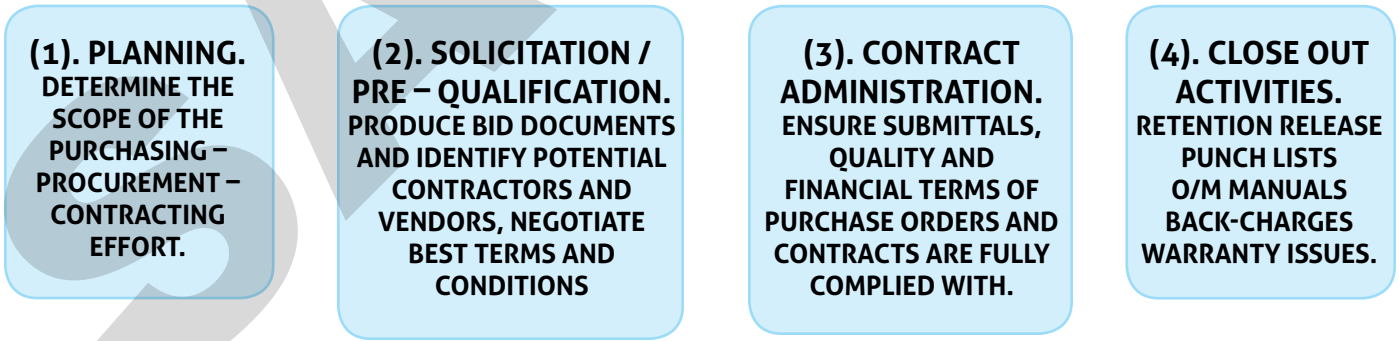


FIG. 3.3



• Establish / maintain database containing information about qualified A/E – EPCM firms, consultants, contractors, vendors and technical ability, (names, addresses, references, financial strength, bonding capacity, union or open shop, size of project undertaken, and the like).

• Complete comprehensive background review of potential A/E – EPCM firms, consultants, contractors and vendors - check all references and ask for additional references if necessary.

• Obtain from appropriate A/E firm - engineering group a detailed scope of work, together with appropriate drawings and specifications. Make certain the complete scope needs of owner or contractor requirements are spelled out in the request for proposal (RFP).

• Examine proposal for conformity with commercial and technical terms, conditions and requirements, condition proposals for missing or duplicated scope.

• Evaluate and rate proposals (use a weighting system) with regard to commercial terms, acceptance of owner's terms and conditions, safety, quality, customer support, references, experience, competence and capability.

• Put together a purchase order(s), contract(s) to ensure conformity with owner or contractor requirements with regard to scope of services, insurance requirements, secrecy agreements, liquidated damages, consequential damages, patents and warranty, and the like.

• Develop field procurement coordination procedures.

• Assist in the development of QA / QC procedures for insertion into RFP's.

• Create and assemble various types of pre-printed purchase orders, contracts and contractor / vendor questionnaires that reflect standard conditions, and terms that can minimize future Purchasing / Procurement / Contracting work efforts.

• Give assistance in the preparation of special / supplementary conditions for future service agreements, purchases and contracts.

• Develop bid security procedures.

• Make sure that an acceptable degree of competition has been achieved in obtaining bids / RFP's (obtain at least three bids / RFP's; more than six bids / RFP's can be deemed counterproductive).

• Develop bid tabulation formats.

• Assist with commercial and technical negotiations.

• Aid in the re-negotiation of bids / RFP's in the case of changes / modifications in scope prior to order or contract placement.

• Develop unit prices and hourly rate formats for extra work.

• Issue letter(s) of intent.

• Develop bonding requirements.

• Communicate and inform unsuccessful bidders of bid award.

• Participate in negotiations for recovery of claims.

• Identify and solicit bids / RFP's from woman-owned and minority-owned businesses (WBE and MBE). (This situation applies to publicly funded and some private construction projects, where local government funds are utilized.)

• Coordinate QA / QC, expediting, testing and inspection services.

• Arrange and develop the submittal of shop drawings, cut sheets, submittals and other data requirements.

• Coordinate shipping and transportation requirements.

• Manage changes to material / equipment purchase orders and contracts, document all pending and approved change orders.

• Coordinate and answer request for information (RFI's).

• Assist in the preparation of back charges / claims to contractors, vendors and suppliers.

• Ensure that all required O/M and other data requirements are received.

• Assist in the invoice approval cycle.

• Participate in purchase order contract and vendor close-out activities and reports, such as final

reports, release of liens and release of retention.

The above are basic steps or activities that need to be accomplished; there could possibly be more activities that need to be completed. The reader should always remember the basic information that needs to be provided to vendors and, in some cases, contractors by the Procurement – Purchasing Group.

- The quantity of type materials / production equipment required
- The anticipated date of the placement of the purchase order / contract
- The anticipated date that materials / production equipment will be required / needed / delivered to site
- The relevant specification data
- The relevant drawings
- QA/QC procedures
- Purchase / contract order terms and conditions language
- Bid breakdown - pricing basis unit prices or firm fixed price
- Appropriate escalation clause if deemed necessary
- Payment terms and retention requirements
- Insurance requirements
- Bonding requirements
- Freight costs

The following are two generic job descriptions that are relevant for individuals engaged in the activities of construction Purchasing / Procurement / Contracting. These job descriptions are generic; they can be tailored and modified for actual construction Purchasing / Procurement / Contracting applications. These working examples give details as to the work experience, background, and skills that are deemed necessary for individuals functioning in general construction, civil engineering, manufacturing, industrial or process engineering and construction. The job descriptions described, are representative for construction Purchasing / Procurement / Contracting personnel assigned to either the home office or a construction site location for medium to large general construction, civil engineering, manufacturing, industrial or process construction projects. Smaller general construction, civil engineering, manufacturing, industrial or process construction projects can utilize the same basic approach in developing a generic job description.

Additional Purchasing / Procurement / contracting job descriptions could be developed if required.

PURCHASING / PROCUREMENT / CONTRACTING MANAGER

Responsibilities: Supervises all Purchasing / Procurement / Contracting department activities and assignments; institutes department home office and site based Purchasing / Procurement / Contracting policies, operating procedures, staffing needs and budgets.

Background Requirements / Activities / Duties: Requires a total knowledge of all aspects of construction Purchasing / Procurement / Contracting. Reports to Senior Operations Manager.

- Has multi-project responsibility for Purchasing / Procurement / Contracting specific to production equipment, materials and contracts from qualified contractors and vendors in accordance with pre-established Purchasing / Procurement / Contracting procedures.
- Produces bidding documents (RFP's) initiates contract / purchase order language, general conditions / site coordination procedures, ensures RFP's contain relevant data i.e. drawings, specifications, QA/QC requirements safety requirements and scope description, together with instructions to bidders, for each project to make sure that the scope of work, job conditions, milestone schedule, bonus / penalty clauses, payment terms, insurance and bonding requirements are clearly described and spelled out for all potential bidders.
- Researches and review the drawings and specifications for any shortcomings/ construction interfaces / holds / clouded areas.
- Manages the buy-out of engineering services, production equipment, bulk materials, engineered materials, basic supplies and services for maximum

Intent to execution of contract:

N. Owner Coordination Procedures:

O. Submittal procedure, Request for Information, shop drawing rejection and approval procedure:

P. Mechanics Lien Document:

Q. Partial / Substantial completion procedure:

R. Owner Safety requirements:

S. Change notice requirements:

T. Emergency contact list:

U. Drug testing policy:

V. Description of office / services to be provided by Construction Manager for Owners Representative:

W. Equal Opportunity Employment Requirements:

SIGNATURE SHEET

IN WITNESS WHEREOF, the parties have executed and agreed to this Agreement:

This day 22 / May

In the year 2015

MXA Manufacturing Company Inc.	G3 Construction Managers Inc
By: Stephen Price Stephen Price Title: President / Owner	By: Raymond Fallon Raymond Fallon Title: Chief Executive Officer
Signature _____	Signature _____

Witnessed By:

Cyril R. Cooper _____

SAMPLE DESIGN / BUILD AGREEMENT RELATE TO MANUFACTURING FACILITY EXPANSION:

DESIGN-BUILD AGREEMENT: The Design-Build Agreement ("Agreement") depicted below is entered into this day 25th July 2015 by Snow Flake Soap Company ("Owner"). 123 Tavern Lane, Kutztown, PA and between Right Build Contractors & Engineers ("Contractor") a New Jersey company, with an address of 88 Pike Road, Frenchtown. New Jersey.

GENERAL BACKGROUND INFORMATION: Right Build Contractors & Engineers ("Contractor") will design and construct a 12,750 Square Foot addition to a soap manufacturing facility at Snow Bright Soap Company ("Owner") site mentioned above, according to the Clauses of Agreement and Appendices described below.

Clauses of Agreement & Appendices

CLAUSE #	CLAUSES OF AGREEMENT	DESCRIPTION
1	Definitions and Interpretation of the Agreement.	Listing of major terms.
2	The Work.	A brief description of the work to be performed.
3	The status of the Owner.	Name, address, list of key employees.
4	The status of the Contractor.	Name, address, list of key employees.
5	Obligations of Owner.	List of responsibilities and duties of Owner.
6	Obligations of Contractor.	List of responsibilities and duties of Contractor.
7	Contractor's personnel.	List of key staff to work on project.
8	Contract Price / Compensation / Payment Terms / Retention provisions.	The purchase price of the work to be completed.
9	Title / Ownership of materials.	
10	Guarantees and warranties.	
11	Changes in scope / Additional work / Variations.	How additional work is to be paid for.
12	Completion date of project.	
13	Defaults, Terminations & Suspension provisions.	
14	Liens and Claims / Waiver of liens.	
15	Force Majeure provision.	
16	Performance Tests / Testing.	
17	Audit rights.	
18	Substantial Completion / Commissioning Requirement.	
19	Governing Law.	State of Pennsylvania, USA.
20	Consequential Damages / Indemnification issues.	
21	Taxes / Duties / Tariffs.	
22	Provision of O&M, operating manuals & product cut sheets.	Items to be provided to Owner at completion of project.
23	Communications (Addresses / Telephone Numbers).	Names, telephones, e-mail addresses of all key project team members.
25	Engineering data and drawings.	To be provided at completion of project.
26	Correction of defective work.	
27	Concealed conditions that may impact performance.	
28	Dispute resolution provisions.	
29	Bonding requirements.	
30	Partial Occupancy.	
31	Successors.	
32	Americans with Disabilities (ADA).	
33	Insurance requirements.	BAR automobile and all other required insurance requirements.
34	Equal opportunity Employer / Ethics.	

CLAUSE	APPENDICES & EXHIBITS TO THE CONTRACT	DESCRIPTION
A	Scope of Work.	A detailed scope of work statement.
B	Contract price / schedule of rates / unit prices.	
C	Master Plan and handover sequence.	Listing of major milestones.
D	Project Specifications.	Listing of all specifications, date and revision number.
E	Owner provided data.	
F	Owner provided equipment.	Ribbon Blender RB-1 on order by Owner.
G	Owner contract coordination / plant operating / safety procedures.	
I	Offices provided to Owners staff.	Provision of 20' x 20' (2) person secure office with appropriate furniture / telephones during the six month detailed design effort.
J	Engineering / drawing approval procedure.	
K	Submittal and approval procedure.	
L	Payment request procedure.	
M	Emergency Procedure / Contacts.	

The parties below have entered into the Agreement to complete "The Work" described above.

Snow Flake Soap Company ("Owner").

Kyle James – President and Owner:

Signature: _____

Date: _____

Right Build Contractors & Engineers ("Contractor")

William Reed – President and Owner:

Signature: _____

Date: _____

Witnessed By:

Jane Nelson - Notary / Stamp: _____

Signature: _____

RE-CAP OF MAIN ISSUES TO CONSIDER:

• Research US and local governmental import rules and trade regulations.

• Know what you are buying - scope out as much as you can, provide drawings, a detailed scope of work, bidding instructions.

• On overseas construction projects, many time the major equipment / bulk materials will need to be transported longer distances, requiring special packing to protect them on their journey.

• Procuring major equipment from say – India, will many times take longer than if you were to purchase the item from North America or Western Europe. Basically, you need a longer lead time. Purchasing a reactor in the US may take 20 weeks for the inquiry, negotiation, and purchase (INP); this could take 30 – 40 weeks from a vendor in India or China.

• Obtain multiple bids (3 – 6).

• Consider, any broker's charges, original bill of lading (OBL), ocean freight, import duties, insurance costs, inland transportation, pallets, skids, special packaging materials / shrink-wrap, warehousing, tariffs, taxes, and transportation logistics, cranes / forklift and offloading labor costs temporary protection, manifest documentation / waybill documentation etc.

• Think outside the box, ask for value engineering ideas in the bidding documents

• Use your company's contract language, know your rights.

• Hire an expert to assist in marshalling goods and materials, continually check the status of the fabrication efforts, have individuals visit the various fabrication yards, where possible.

• Establish a procedure for the control and maintenance of all necessary documentation / reports required in the purchasing process and for the subsequent review of overseas customs officials.

• Determine at what stage the title transfer of materials and equipment passes on a sale in the foreign country and establish if materials stored at site can be claimed for.

• Determine if there are any overall restrictions on the value, type, country of origin, and quantity of materials or equipment being imported.

• Confer with overseas customs experts and retain the services of a qualified and experienced foreign trade and customs brokers and a freight forwarder.

• Research if the foreign country imposes its' own import/export regulations, or does the country belong to a union/trade association such as the European Community or other trade groups.

• Establish what form purchase orders and construction contracts should be used, and in what language. Also, determine if certified translations will be required.

• Establish if any import licenses are required for construction materials and major equipment and where these licenses can be obtained, if they are required. Determine the cost implications of these requirements.

• Research the composition of the country's import duty. Be aware of the appraisal method used to value material and equipment being imported, and find out if the appraisal value includes ocean freight and insurance costs.

• Determine if the specific foreign country offers special terms and/or preferential treatment related to international and domestic purchases. Establish what these terms are, and what documentation is required to benefit from these specific conditions.

Another challenge for US based procurement individuals is coming to terms with the metric system. The USA has still not converted to the metric system; the USA is the only major country yet to adopt this measurement practice. This issue can be initially difficult to procurement professionals if they don't work with overseas projects on a day to day basis. The metric system was formulated in the 16th and 17th centuries as an attempt to formalize the many diverse measurement /weight systems then in place. The metric systems as we know it today, was adopted in France in 1791. There are only three countries in the world that still utilize the old Eng-

BURKINA FASO

One of Africa's ultimate backwaters until the last five to ten years, Burkina Faso was a former French colony known as Upper Volta; independence from France took place in the 1960's. Burkina Faso is an extremely poor country. It shares borders with Mali, The Ivory Coast, Ghana, Togo, Benin and Niger. It has copious amounts of minerals, oil and gas and timber reserves that have as yet not been exploited.

DATA TABLE	
1.	Type of Government: Republic
2.	Capital: Ouagadougou 1,100,000
3.	Major Cities: Bobo-Dioulasso, Kaya, Banfora
4.	Population: 18.45 million
5.	Area: 275,500 sq km
6.	GDP: $12.9 billion
7.	GDP per Head: $1,850
8.	Inflation Rate: 1% - 3%
9.	Time: + 5 EST
10.	VAT / Sale Tax: 18%
11.	Exchange Rate: 597.17 CFA
12.	Freight from USA: 8.5 – 11.5 / 30 days
13.	Local freight: 2% - 3% of material / equipment purchase price
14.	Government website: www.primature.gov.bf
15.	Import duties: Refer to website mentioned above under General Notes, note 15
16.	Electricity: 220 v – 50 Hz
17.	Telephone code: 226
18.	Professional Architect / Engineer / Accountant / Purchasing Agent etc: $13 - $25
19.	Skilled Worker rate: $6 - $9
20.	Unskilled worker rate: $3 - $5
21.	Worker Productivity vs. USA Gulf Coast (Houston = 1.00): 1.85 – 2.85
22.	Location Factor vs. USA Gulf Coast (Houston = 1.00): 0.88 - 0.95
23.	Local Bulk Material Factor vs. USA Gulf Coast (Houston = 1.00): 0.85 – 0.90
24.	Major Sea Ports: Burkina Faso is landlocked goods come in via The Ivory Coast, Ghana and Togo.

BURUNDI

Burundi is located in Central Africa. Burundi is a landlocked country that borders Rwanda, Tanzania and The Democratic Republic of the Congo. It has abundant minerals and timber resources; however it is one of Africa's most impoverished countries. It has experienced some of the worst ethnic cleansing / war in the last ten years, with rival tribes being hostile to one another.

DATA TABLE	
1.	Type of Government: Republic
2.	Capital: Bujumbura 400,000
3.	Major Ngozi, Cibitoke, Bururi
4.	Population: 9.65 million
5.	Area: 27,800 sq km
6.	GDP: $3 billion
7.	GDP per Head: $860
8.	Inflation Rate: 2% -4%
9.	Time: + 7 EST
10.	VAT / Sale Tax: 18%
11.	Exchange Rate: 1,658 BF
12.	Freight from USA: 8.5 – 11.5 / 31 days
13.	Local freight: 2% - 3% of material / equipment purchase price
14.	Government website: www.burundi-gov.bi
15.	Import duties: Refer to website mentioned above under General Notes, note 15
16.	Electricity: 220 v – 50 Hz
17.	Telephone code: 257
18.	Professional Architect / Engineer / Accountant / Purchasing Agent etc: $12 - $23
19.	Skilled Worker rate: $6 - $8
20.	Unskilled worker rate: $3 - $5
21.	Worker Productivity vs. USA Gulf Coast (Houston = 1.00): 1.85 – 2.85
22.	Location Factor vs. USA Gulf Coast (Houston = 1.00): 0.88 - 0.95
23.	Local Bulk Material Factor vs. USA Gulf Coast (Houston = 1.00): 0.85 – 0.90
24.	Major Sea Ports: Burundi is landlocked; goods come in via Tanzania and Kenya

CAMBODIA

Cambodia is located in South East Asia; it borders Vietnam, Laos and Thailand. Cambodia does have a good potential for future oil / gas, agricultural and timber production. Cambodia is a poverty-stricken country, but it does have large and industrious populations that are focused on improving their country.

DATA TABLE	
1.	Type of Government: Democracy
2.	Capital: Phnom Penh 2,100,000
3.	Major Cities: Kampot, Sisophon
4.	Population: 15.78 million
5.	Area: 181,050 sq km
6.	GDP: $21.05 billion
7.	GDP per Head: $3,950
8.	Inflation Rate: 2.5% - 3.8%
9.	Time: + 12 EST
10.	VAT / Sale Tax: 10%
11.	Exchange Rate: 4,095 Riel
12.	Freight from USA: 8.5 – 11.5 / 34 days
13.	Local freight: 2% - 3% of material / equipment purchase price
14.	Government website: www.cambodia.gov.kh
15.	Import duties: Refer to website mentioned above under General Notes, note 15
16.	Electricity: 120/220 v – 50Hz
17.	Telephone code: 855
18.	Professional Architect / Engineer / Accountant / Purchasing Agent etc: $18 - $30
19.	Skilled Worker rate: $7 - $13
20.	Unskilled worker rate: $5 - $7
21.	Worker Productivity vs. USA Gulf Coast (Houston = 1.00): 1.80 – 2.80
22.	Location Factor vs. USA Gulf Coast (Houston = 1.00): 0.84 - 0.94
23.	Local Bulk Material Factor vs. USA Gulf Coast (Houston = 1.00): 0.75 – 0.85
24.	Major Sea Ports: Sihanoukville, Koh Kong, Kampot

ZAMBIA

Located in southern Africa, with Botswana and Zimbabwe to the south and Angola and Tanzania to the north. Zambia is a landlocked nation. This ex-British colony was formerly known as Northern Rhodesia, it got its independence in 1964 from Britain. Zambia has huge copper ore deposits; agriculture / farming are the other main economic activity.

DATA TABLE	
1.	Type of Government: Republic
2.	Capital: Lusaka 1,375,000
3.	Major Cities: Livingston, Mongu, Kitwe, Solwezi
4.	Population: 16 million
5.	Area: 752,600 sq km
6.	GDP: $19.25 billion
7.	GDP per Head: $4,000
8.	Inflation Rate: 7% - 9%
9.	Time: +7 EST
10.	VAT / Sale Tax: 17.5%
11.	Exchange Rate: 9.94 Kwacha
12.	Freight from USA: 8.5% – 11.5% / 30 - 40 days
13.	Local freight: 2% - 3% of material / equipment purchase price
14.	Government website: http://www.statehouse.gov.zm www.zambia.co.zm
15.	Import duties: Refer to website mentioned above under General Notes, note 15
16.	Electricity: 220 v – 50 Hz
17.	Telephone code: 260
18.	Professional Architect / Engineer / Accountant / Purchasing Agent etc: $12 - $28
19.	Skilled Worker rate: $6 - $11
20.	Unskilled worker rate: $3 - $5
21.	Worker Productivity vs. USA Gulf Coast (Houston = 1.00): 1.80 – 2.50
22.	Location Factor vs. USA Gulf Coast (Houston = 1.00): 0.88 - 0.94
23.	Local Bulk Material Factor vs. USA Gulf Coast (Houston = 1.00): 0.85 – 0.90
24.	Major Sea Ports: Zambia is landlocked; goods are shipped in via Tanzania and Botswana.

ORDER OF MAGNITUDE COSTS FOR SHIPPING / OCEAN FREIGHT – MATERIALS / EQUIPMENT:

from the USA (East or West Coast port) to various countries (using 20' – 40' containers). These values exclude shipping to and from US port and shipping from local port to jobsite. (Note: there is 35.315 CF in 1M3)

	COUNTRY	NO. OF DAYS TO SHIP TO COUNTRY FROM EAST COAST USA PORT	$ M3 FROM EAST COAST PORT	$ CUBIC FOOT FROM EAST COAST PORT
1	Algeria	18	257	7.28
2	Australia	40	180	5.09
3	Bangladesh	43	187	5.29
4	Belgium	13	145	4.11
5	Bolivia	25	342	9.69
6	Brazil	24	236	6.70
7	Chile	25	267	7.56
8	Burkina Faso	37	588	16.65
9	China	43	289	8.17
10	Cyprus	25	221	6.25
11	Estonia	25	262	7.43
12	Germany	22	158	4.49
13	Hungary	25	201	5.70
14	Ivory Coast	30	312	8.84
15	Mexico	11	226	6.41
16	Nigeria	36	338	9.57
17	New Zealand	39	355	10.06
18	Pakistan	30	238	6.75
19	Philippines	27	242	6.84
20	Russia	31	350	9.90
21	Saudi Arabia	30	187	5.29
22	South Korea	20	147	4.15
23	Switzerland	23	179	5.06
24	UK (Liverpool)	12	145	4.09

	COUNTRY	NO. OF DAYS TO SHIP TO COUNTRY FROM WEST COAST USA PORT	$ M3 FROM WEST COAST PORT	$ CUBIC FOOT FROM WEST COAST PORT
25	Australia	25	232	6.56
26	China	34	228	6.46
27	Hong Kong	23	181	5.12
28	India	34	234	6.63
29	Indonesia	34	255	7.21
30	Japan	23	255	7.23
31	New Zealand	25	229	6.47
32	Pakistan	41	234	6.63
33	Saudi Arabia	34	221	6.25
34	South Korea	22	145	4.10
35	Thailand	28	152	4.32