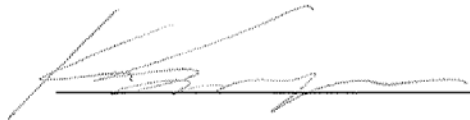




TEMA Construction Safety Requirements


Version 2010-1.3
Reissued July 2011



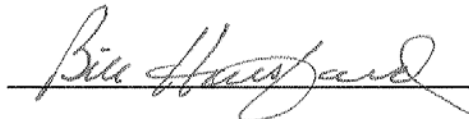
Kazuhiro Somiya, Senior Vice President



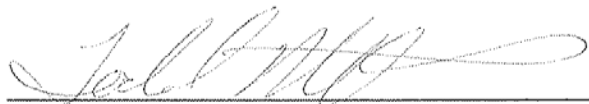
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REVISION HISTORY

Revision	Changes	Date
2005-1	<ul style="list-style-type: none"> Original 	Mar, 2005
2006-1	<ul style="list-style-type: none"> Change all TMMNA to TEMA, TMMC to NAMC, modify the Commissioning Section 	May, 2006
2007-2	<ul style="list-style-type: none"> Added several required definitions and moved definitions to Section 2 (were previously in an Appendix – moved to integrate as part of document text) Highlighted portions of Section 3 to further clarify scope of each type of contractor (General, Sub, TEMA acting as General) Added Organizational Tools checklist OT-1, summarizing contractor responsibilities in document sections 1-3 Added Organizational Tools checklist OT-2, summarizing contractor responsibilities in document section 4 Equipment commissioning (previously only for Canada) Added Organizational Tools checklist OT-3, summarizing contractor responsibilities in document sections 5-8 GFCI testing and tracking (added tracking requirements) Fall protection (clarified acceptable lifeline rope, added requirement for toe boards on above-ground barriers) Use of steel-toed shoes (added Canadian requirements) Modified boom lift section to require manufacturer-supplied tie-off point Clarified requirements for scaffolding erection/dismantling, and for use of scaffolding tags. Provided pictures of tags for reference. Clarified requirements for Job Safety Analyses (JSAs). Added example JSA's in Appendix C Modified Appendix D12, clarifying the process flow for incident reporting. Added Appendix D24, checklist outlining key points of this document, for use as a summary of its scope and requirements Added Appendix D25, checklist for lift/stacking safety Procedures for work permits and work coordination during fire protection equipment construction Ladder safety Hand power tool safety (clarified inspection requirements, clarified methods for providing GFCI protection) Numerous grammatical changes and spelling corrections Added OSHA required illumination table for temporary construction work to section 4.5 Added OSHA table outlining maximum allowed slopes for unshored excavations to section 8.6 Clarified requirements for required PPE in Canada and Mexico. Numerous other inclusions of country-specific requirements also added. Moved example site specific safety plan to Appendix A, and formatted it on 8.5x11 inch paper for easier printing. Clarified header of this appendix for easier reading Coordinated contents of safety orientation video to this document (remove bad work practices) 	March, 2007

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Revision #	Section	Description	Date
2009-1	Entire Document	Changed name from Requirement Doc to Construction Safety Management Handbook to align with Environmental's Management Handbook and changed many "should" requirements to "must"	Oct. 2009
	Definitions	Added Lockout Job Control Leader & Job Control Lock	
	Definitions	Added definition for ARSC	
	Definitions	Added definition for Building Enclosure	
	Definitions	Added TEMA to definitions	
	Definitions	Revised weather warning Definition.	
	3.4.1	Added language to allow full time safety representative to be waived for Small, low risk, short term jobs.	
	3.9	Added Toyota as possible GC	
	3.10.1	Added to cover contractors with less than 30 workers, but work directly without a General Contractor	
	3.15	Added Standardized work behind JSA	
	3.19	Added reference to Association of Reciprocal Safety Council (ARSC Training)	
	3.22	Added where TEMA ORO representative is not present TEMA will work With local NAMC to ensure orientation is provided	
	COT-2	Confirmed document submittal requirements (pg 15)	
	4.1	Added noise to programs to monitor	
	4.8.6.1	Added examples of Yellow caution tape	
	4.8.6.2	Added additional wording regarding use of red danger tape	
	6.3.4	Added references to the Toyota Purchasing Dept.	
	6.3.8	Expanded the records of training & inspection beyond just cranes.	
	7.8	Revised material approval system to reflect actual process.	
	7.6.4	Added language to allow TEMA to stop work if a adequate JSA is not in place	
	7.9.9	Clarified when to use a lockout roster for group lockout.	
	7.9.12	Added detail covering group lockout procedures.	
	7.10.2	Added Security as primary contact for lock removal	
	7.11.10	Added language regarding gas detector calibration & training.	
	7.13	Simplified Commissioning section. Modeled TEMA commissioning after TMMC	
	7.13.3	Added requirement of signage and example of trilingual sign to be used with candy striped tape for commissioning areas.	
	7.14	Added section for General Security Rules / Added restrictions to photo Imaging devices	
	8.1	Changed title to include gas piping systems	
	8.1.3	Added language restricting use of plant air for testing systems	
	8.1.4	Added requirement for mechanical & process lines to be blanked after installation	

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	<p>8.2.7 Changed Empty to Full cylinders, and added identification and hazard type requirement to gas labeling.</p> <p>8.4.2 Added the option allowing certification of crane operators other than CCO</p> <p>8.4.19 Decreased allowable limit for crane lifts before a lift plan is necessary</p> <p>8.5.2 Clarified NFPZ 70-E and clearance issues in electrical section</p> <p>8.5.17 Added language regarding potential local training for hot work permits.</p> <p>8.9.1 Specified when hot work permits are needed</p> <p>8.11 Included non-ionizing radiation with laser</p> <p>8.15.4 Added max load limit for floor be posted</p> <p>8.16.5 Added language regarding no cell phone when operating vehicle</p> <p>8.16.6 Added requirement to ID rental equipment by contractor</p> <p>8.16.19 Permitted limited the use of golf carts</p> <p>8.18.14 Specified that red tape must be used when marking a hazard area below elevated work</p> <p>8.18.18 Added notification to NAMC Safety for any Roof Work</p> <p>8.22.8 Added ladder language requiring extending ladder 3 feet above landing</p> <p>8.23.4 Clarified requirements for protection of falling objects during steel erection.</p> <p>8.26 Added section for Demolition</p> <p>D-2 Added Excavation Permit (D-2)</p> <p>D-16 Changed Document 16 (D-16) from work clearance permit to JHA/JSA</p> <p>D-25 Added example of trilingual commissioning warning sign</p> <p>D-27 Added Crane Inspection form (D-27)</p>	
2009 -1.2 (Editorial Changes Only)	<p>TOC Corrected Title for Appendix D-2 "Excavation Permit"</p> <p>TOC & D-16 Title Change to "Job Safety Analysis" for consistency</p> <p>7.10 Corrected cross references between the Lockout & Group Lockout sections.</p> <p>Annex C Updated Job Safety Analysis example</p>	April 2010
2009-1.3	Annex E TEMA PE JSA Guideline document added	Jul 2011

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1. INTRODUCTION



Welcome to Toyota Motor Engineering and Manufacturing North America. Safe working conditions and safe work practices are strong values at Toyota.

This Toyota corporate document has been created as a reference to assist the Contractor in creating a workplace free of hazards and potential injury while working at a Toyota North American Manufacturing Company facility. This document is intended to help identify the safety requirements that must be observed by the Contractor companies and their workers while working on Toyota projects. It contains both mandatory requirements and recommended practices.

It is intended primarily for the construction, remodeling or modification of buildings and facilities and the installation of machinery and equipment. This includes Prime or General Contractors, Subcontractors, and any company providing workers for construction or equipment related purposes. This document is not intended for companies providing administrative or maintenance services such as: Janitorial or cleaning services, secretarial or inspection services, contract engineering, forklift repairmen and other similar services.

This document describes only the minimum safety requirements to be observed by the Contractor. Therefore, the information contained in this document shall in no way be considered a complete listing of all necessary safety requirements to be observed by the Contractor.

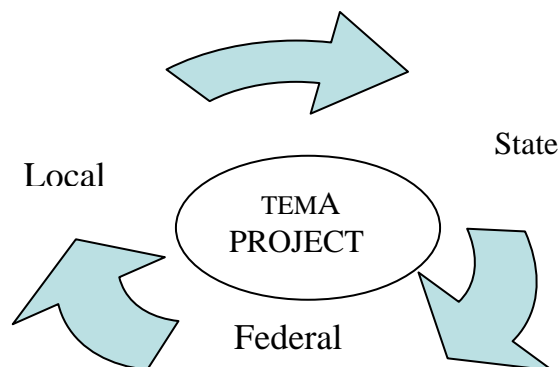
The Contractor has responsibility for the safety of their personnel and shall be responsible for compliance with all Toyota standards, applicable law, applicable code, and accredited consensus standards that are applicable to their industry. All applicable laws, specific to the jurisdiction in which the worksite is located, govern the Contractors performing construction work at Toyota. The Contractor must be aware of all requirements and ensure they have been met in all aspects of the work. The Contractor shall assume full responsibility and liability for the actions of their workers, Subcontractors, Subcontractor workers, agents, material suppliers, visitors, etc., with no limitations.

The publication of this document shall in no way be interpreted as the assumption of responsibility or liability by Toyota Motor Engineering and Manufacturing, North America. If a conflict exists between this document and any applicable law, code or standard, it is the Contractor's responsibility to bring this conflict to the attention of the Toyota engineer in charge of the project for resolution.

A set of sample documents has been provided in the appendix of this document. These sample documents are provided to give the Contractor some understanding of the types of documents they may need during the project, and Contractor is free to use these documents during the course of the project. However, in some cases, these samples may not be the actual documents that the Contractor will be required to use at the project site. The appendix contains only a limited number of samples, and a sample has not been provided for every form listed in this document.

The hierarchy of standards are as follows:

All standards affect a project; the most stringent requirement will be enforced where a conflict arises.



2. DEFINITIONS

Accident

An unwanted or unplanned event that results in injury to people, damage to property, or loss of process.

Affected Worker

An worker whose job requires him/her to operate or use a machine or equipment on which service or maintenance is being performed under lockout, or whose job requires them to work in close proximity to the device under the lockout.

All clear

A signal to indicate the end of an emergency event.

Anchorage

A secure point of attachment for lifelines, lanyards or deceleration devices. It must be capable of holding a 5,000 lb. static load (per person attached).

Applicable Law

Refers to any acts, regulations, codes or standards applicable in the jurisdiction where the work is being performed. The Contractor must be aware of all legal requirements that apply to their work.

ARSC

Association of Reciprocal Safety Councils

Authority Having Jurisdiction (AHJ)

The governmental agency or sub-agency which regulates a construction or installation process and provides final approval of the finished construction project or equipment installation. The AHJ may be a state or local inspector or a representative from the NAMC.

Authorized Worker

A person who locks out machines or equipment in order to perform service or maintenance on a machine or equipment.

ANSI

American National Standards Institute.

Body Belt (Safety Belt)

A strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device. Use of body belts is NOT ALLOWED on Toyota construction sites.

Body Harness

Straps which may be secured about the worker in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

Building Enclosure

The point where siding and roofing systems are completely in place, and where all doors and entrances may not yet be completely installed

CAZ

See Controlled Access Zone

CFR

Code of Federal Regulations. The OSHA Standards for General Industry (29 CFR 1910) & Construction (29 CFR 1926).

Commissioning

The progressive process of installation, testing and buy-off utilizing the Toyota Kanban system for equipment installations.

Competent Person

Is one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to workers, and who has the authorization to take prompt corrective measures to eliminate them.

Confined Space

A confined space is one that meets the following requirements: (1) Is large enough and so configured that an worker can enter and perform assigned work; and (2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and (3) Is not designed for continuous human occupancy. (Also see Permit Required Confined Space)

Contractor(s)

For the purposes of this manual, the term Contractor(s) shall be interchangeable with the term General Contractor or Subcontractor and shall include their directors, officers, agents or workers, unless otherwise specified.

Contractor On-site Management

For the purposes of this document this shall mean those personnel that work full time for a Contractor that are above what is usually referred to as a craft general foreman.

Controlled Access Zone

An area in which certain work (e.g. steel erection, overhead bricklaying) takes place and access to the zone is restricted.

Employer

A person engaged in a business affecting commerce that has workers, but does not include the United States, or any State or political subdivision of a State.

EPA

(Environmental Protection Agency)

General Duty Clause

US OSHA requires that, "Each employer shall furnish to each of his workers employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his workers". This is known as the general duty clause, and is found in 29 CFR1910, Section 5(a)(1)

GFCI

Ground Fault Circuit Interrupter. A device used which is used in conjunction with a plug and cord attached appliance or device, which is designed to trip (stop the flow of electricity to the device) when a leakage current from current-carrying conductor(s) to ground exceeds a preset limit. GFCI's are used to protect people, usually limiting the current to 5 ma, (thereby providing protection from an otherwise potentially lethal shock), and are designated as Class A.

Governing Authority

The agency prescribed to administer and enforce compliance with applicable law.

Harness

Full body personal protective equipment worn by a worker to secure the worker and evenly distribute any forces exerted on the body as a result of a fall arrest system activating (see Body Harness).

Hazard Communication

This standard is also known as the "Worker Right To Know Law". It is designed to inform workers of hazards, particularly chemical hazards, in the workplace. This regulation is found in 29 CFR 1910.1200

HAZCOM

See Hazard Communication

Incident

An unwanted or unplanned event that could or does cause injury to people, damage to property or loss to process

JSA – Job Safety Analysis (See Annex E)

Also known as TSA (Task Safety Analysis) or JHA (Job Hazard Analysis). A methodology for analyzing the potential safety hazards associated with a particular job or task. Each element of the task is analyzed to determine if a potential hazard exists and, if necessary, what method of safeguarding will be used to counter the risk. The findings of this analysis are used to create a document that is then distributed to the workers involved with the task.

Job Control Lock

A lock, which is placed on a group lockout box by a Lockout Job Control Leader. The purpose of the lock is to prevent a lockbox from being unintentionally opened during shift changes or other events. It is the first lock applied to the group lockbox and the last to be removed. This lock may also be the Job Leader's personal lock if a designated Job Control lock is not available.

KV

Kilovolt. A unit of measure equal to 1000 volts.

Lanyard (for fall arrest)

A connecting device engineered to link the worker's full body harness to an anchorage and withstand at least a 5,00lb. static load. One end must have a shock absorbing element to limit the amount of force exerted on the harness.

Lanyard (for positioning)

A connecting device(s) engineered to link the worker's full body harness to an anchorage; typically used in pairs. Its length must be short enough to not allow the worker to reach a point where they may fall. You must never use a positioning lanyard in fall arrest systems.

Lifeline

A component, consisting of a flexible line for connection to a substantial anchor point at one end to hang vertically (vertical lifeline), or for connection to substantial anchor points at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchor points.

Lockout Job Control Leader

The person who is in charge of a group lockout task. They must be the first one to apply their lock and the last one to remove their lock from the hasp or lock box. This person ensures all hazardous energy is controlled.

Ministry of Labor (MOL)

A Canadian federal agency, created in 1919, established to develop and enforce labor legislation in Canada.

MSDS

Material Safety Data Sheet. These documents include several important pieces of information regarding the safe handling, first aid, required PPE, fire fighting and chemical properties of a product.

Must (also see Shall)

A word used within this document, to indicate that compliance with a standard, regulation, or directive is mandatory.

National Consensus Standard

Any standard or modification thereof, which (1) has been adopted and promulgated by a nationally recognized standards-producing organization, and (2) was formulated in a manner which afforded an opportunity for diverse views to be considered.

NFPA

National Fire Protection Association. A non-profit organization which writes standards that are adopted by OSHA, including the National Electrical Code.

Non-Permit Required Confined Space (also see Permit Required Confined Space)

A Non-PRCS does not present an additional life threatening hazard, (e.g., hazardous atmosphere, parts, or the chance to drowning or be engulfed). Documented testing must be on file certifying that the Confined Space meets the requirements of Non-Permit Required Confined Space.

OCIP

Owner Controlled Insurance Program.

ORO

Owner's Representatives Office – a project management organization, usually located on the site of the construction project, which functions as a representative and/or agent of Toyota for the project. Normally includes Toyota and/or contract project leaders, safety representatives and other technical support staff.

OSHA

Occupational Safety and Health Administration. This agency, formed in 1970 by the Williams - Steiger Occupational Safety and Health Act, is charged with writing, adopting and enforcing standards to ensure the safety of America's workers.

Permit Required Confined Space [PRCS] (also see Confined Space)

In addition to the requirements of a normal confined space, a PRCS must present an additional life threatening hazard, (e.g., hazardous atmosphere, parts, or the chance to drowning or be engulfed).

Personal Fall Arrest System

A system designed to prevent an worker from free falling to a lower level. As a minimum for the Toyota site, it consists of a full body harness, shock absorbing lanyard, and a proper connection point.

Positioning Device

A device that prevents an worker from encroaching upon a fall hazard, (e.g., lanyard and body harness at the opening of a trash chute).

P.S.I.

A unit of measure of pressure. Pounds per square inch.

Prime Contractor

The Prime Contractor is either a General Contractor who has subcontractors working for them, or a Contractor who has no subcontractors working for them.

Residual Energy

Energy which remains in a system after all sources of energy supply into the system have been removed. Sources of residual energy can include, but are not limited to, electrical capacitors, hydraulic accumulators, springs, and gravity. Also known as stored energy or potential energy.

ROPS

Rollover Protective Structure. This device prevents an worker from crushing injuries which may be caused by a machine rollover.

Safety Belt

A strap with means both for securing it about the waist and for attaching to a lanyard, lifeline, or deceleration device. The use of a Safety belt is NOT ALLOWED on Toyota construction sites.

Scaffold Status Tag

A multi-part tag that indicates whether or not it is safe to use the scaffold. The Contractor must define the Scaffold Status Tag system they will be using.

Shall (also see Must)

A word used within this document, to indicate that compliance with a standard, regulation, or directive is mandatory.

Shoring (Shoring system)

A structure such as a metal, hydraulic, mechanical or timber system that supports the sides of an excavation and which is designed to prevent cave-ins.

Should

A word used within this document, to indicate that compliance with a standard, regulation, or directive is strongly recommend, but not mandatory.

TSA (Task Safety Analysis)

See JSA (Job Safety Analysis).

TEMA

Toyota Engineering & Manufacturing of North America

Toyota

A reference, used within this document, which includes Toyota Motor Engineering and Manufacturing, North America, Toyota Owner's Representative's Office, Toyota Motor Corporation and any of the affiliate plants.

Tobacco Products

Consumer products containing tobacco and includes, but is not limited to, cigarettes, cigars, pipes, chewing tobacco, and snuff.

Warning Lines

A barrier erected on a roof to warn workers that they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may not take place without the use of guardrails, personal fall arrest devices, or safety net systems to protect workers in the area.

Weather Watch

A severe weather alert condition. It means conditions are favorable for the formation of bad weather.

Weather Warning

A warning is issued when a hazardous weather or hydrologic event is occurring, imminent, or likely. A warning means weather conditions pose a threat to life or property. People in the path of the storm need to take protective action

WHMIS

Workplace Hazardous Material Information System

Worker

A worker who is hired by an employer and who is employed in a business of his employer, which affects commerce.

3. CONTRACTOR GENERAL SAFETY RESPONSIBILITIES



3.1 SAFETY COMPLIANCE

- 3.1.1 The requirements listed in this section shall in no way be considered a complete listing of all necessary safety requirements to be observed by the Contractor. The Contractor has responsibility for the safety of their personnel and shall be responsible for compliance with all Toyota standards, applicable law, applicable code, and accredited consensus standards in their industry.

3.2 SUB-CONTRACTOR RELATIONSHIP TO GENERAL CONTRACTOR

- 3.2.1 To the extent that a Subcontractor of any tier agrees to perform any part of the contract, they also assume responsibility for complying with the standards in this part. Thus, the General Contractor assumes the entire responsibility under the contract and the Subcontractor assumes responsibility with respect to his portion of the work. With respect to subcontracted work, the General Contractor and any Subcontractor(s) shall be deemed to have joint responsibility.
- 3.2.2 Where joint responsibility exists, both the general Contractor and their Subcontractor(s), regardless of tier, shall be considered subject to the enforcement provisions of all applicable laws, codes, standards and the requirements contained herein.

3.3 PROOF OF INSURANCE

- 3.3.1 All Contractors shall be responsible for providing Certificates of Insurance to prove valid coverage for Automobile Insurance, Workers' Compensation Insurance, Owner Controlled Insurance Policy (OCIP) coverage and a valid State Contractors License. Contractors not in the Toyota OCIP program shall also provide Certificates for General Liability and Worker's Compensation Insurance for their workers. Certificates of Insurance shall be provided to Toyota prior to having their workers being admitted to orientation. Contractors will not be allowed to work on Toyota property without the required licenses and insurance coverage in place.
- 3.3.2 General Contractors shall ensure that Subcontractors have proof of applicable insurance.

3.4 CONSTRUCTION SAFETY COORDINATOR(S)

- 3.4.1 General Contractors shall provide a dedicated on-site Construction Safety Coordinator, on all shifts, who shall be responsible for general site safety and for implementing and enforcing all aspects and requirements of the site safety plan and all Toyota requirements, applicable laws and/codes, and consensus standards that are considered to be best practices in their industry. This person shall be qualified and knowledgeable in safety and how it applies to the construction industry. This knowledge shall have been demonstrated through work experience in construction safety or a combination of experience and education in the construction safety field. The General Contractor shall submit a resume and declaration of competency (see sample document #D-1 in the appendix) for their candidate for this position to Toyota for review prior to any work beginning on site. Toyota reserves the right to reject any candidate they feel is not qualified or otherwise well suited for the position. For second and third shift operations only, where the total number of on-site General Contractor and Subcontractor workers is less than thirty (30), another worker of the General Contractor, qualified and knowledgeable in safety, may be designated by the General Contractor to serve as the Safety Coordinator, as a collateral duty, for those shifts only, subject to Toyota approval.
- 3.4.1.1 Full time on site safety representative requirement may be waived by TEMA safety for small, low risk, short term jobs. The contractor must complete a JSA detailing all aspects of the job and risk mitigation steps in the process. The JSA will be reviewed by TEMA safety to determine if requirement will be waived. A Supervisor who is qualified and knowledgeable in safety, may be designated by the General Contractor to serve as the Safety Coordinator, as a collateral duty.

- 3.4.2 Sub-Contractors or Prime Contractors, whose estimated manpower count may reach 30 or more workers on any single day, or based on contract specification requirements, shall provide a dedicated, competent On-Site Safety Coordinator, on all shifts, who shall be responsible for compliance of Contractor personnel with all Toyota safety rules and requirements. This person shall be knowledgeable in laws and regulations applicable to the construction industry, and with applicable Toyota regulations. In the event that this position is subcontracted, the original Contractor foreman or supervisor is still responsible for planning his/her work safely and the enforcement of all safety rules on the project. General Contractor(s) shall have the responsibility of approving competent Subcontractor safety personnel.
- 3.4.3 If a contractor has less than 30 workers and there is no General Contractor managing the company, a Foreman or above shall be designated to attend Safety meetings and address safety concerns. This person should be knowledgeable in all safety procedures and must have the authority to address all safety concerns that apply to that company.

3.5 VISUAL IDENTIFICATION OF SAFETY REPRESENTATIVE

- 3.5.1 In all cases, the means used to clearly identify the responsible safety representative(s) shall be a marking on the hard hat or vest. Examples of acceptable markings are the word "SAFETY" printed in large letters on the hard hat or on the front and back of a vest, or by adding a green stripe around the rim or across the top of the hard hat.

3.6 SAFETY ORIENTATION

- 3.6.1 General Contractors or Prime Contractors shall conduct site specific Safety Orientations for all workers prior to starting work. This shall include orientation to the Contractors Safety and Health Program and to the components of the Site Specific Safety Plan that effect the worker. These orientation sessions shall be conducted as needed to be sufficient to support the arrival of new Contractor workers on-site. Specific requirements of these orientation sessions and exact schedules will be determined on a site-by-site basis. Attendance shall be taken, and workers are required to sign the attendance sheet.

3.7 SAFETY POLICY / PROCEDURE & ORGANIZATION CHARTS (Sub-Contractors)

- 3.7.1 General Contractors shall obtain, review, and have available Subcontractor safety policies and procedures. General Contractors are required to obtain an organization chart from each of their subcontractors. All supervisors must be identified on each chart.

3.8 MONITOR SAFETY PERFORMANCE

- 3.8.1 All Contractors shall ensure that proper monitoring of the work site and their personnel are conducted per the requirements of section 3.1 of this document. The Contractor is required to implement a program of planned, regular safety inspections and meetings.
- 3.8.2 General Contractors shall review, monitor and document Subcontractor safety performance and make records available to the Toyota safety representative upon request.

3.9 TOYOTA ACTING AS GENERAL CONTRACTOR

- 3.9.1 When an internal Toyota department, Division or Group is acting in the role of the General Contractor, they shall be responsible for performing all required functions of a General Contractor, including providing the dedicated On-Site Safety Coordinator(s), as specified above.

3.10 FIRST AID / CPR TRAINED RESOURCE REQUIREMENT

- 3.10.1 All Contractors shall be responsible for providing a full time, qualified First Aid/CPR person who meets all applicable training requirements, in the absence of an infirmary, clinic, hospital, or physician that is reasonably accessible in terms of time and distance to the worksite. This person shall be fully qualified and meet all necessary training requirements as required by applicable law or contract specification. The Contractor shall submit a resume and declaration of competency (See D-1 in Appendix) for their candidate for this position to Toyota for review prior to any work beginning on site. Toyota reserves the right to reject any candidate they feel is not qualified or otherwise well suited for the position. A hardhat sticker or other means shall be used to identify this person.

3.11 SAFETY & HEALTH PROGRAM

- 3.11.1 All Contractors shall create, implement and maintain a Safety and Health Program that demonstrates a level of control by the Contractor over their workers and Subcontractors and addresses all items listed in this document. A detailed description of the contents of this type of program is contained later in this document. A copy of the Contractor's Safety and Health Program shall be submitted to Toyota safety at least two weeks prior to the Contractor beginning work on the project.

3.12 PROJECT SAFETY PLAN

- 3.12.1 All Contractors shall create, implement and maintain a Project Specific Safety Plan, (see sample document in the Appendix, Section A) designed specifically for the work for which they have been contracted. This plan shall contain safety procedures for the specific job hazards that the Contractor plans to encounter on the project site. The Contractor must identify all tasks associated with the project and then describe the risk reduction methods being taken. Toyota Safety reserves the right to reject any portion of the Project Specific Safety Plan. Toyota safety reserves the right to stop work if an adequate JSA is not in place.

3.13 TOYOTA WORK PERMITS

- 3.13.1 All Contractors shall ensure that the proper Toyota work permits have been obtained prior to any actual work beginning on any Toyota site.

3.14 WORKERS QUALIFICATIONS & TRAINING

- 3.14.1 All Contractors shall permit only those workers qualified by training or experience to operate equipment and machinery.
- 3.14.2 All Contractors shall ensure that all their workers and their Subcontractor's workers are properly trained and are fully qualified for their work and be prepared to provide declarations of qualification, when requested. Some examples of specific training that Contractors are responsible for providing include Fall Protection, Lockout/Tagout, PPE, Mechanized Equipment Training and Electrical Safety. Please note that this list is not inclusive. See Section 5 of this document for additional examples of required training.
- 3.14.3 All Contractors shall ensure that all supervisors are adequately trained. The minimum required trainings are the OSHA 10-hour Construction Outreach or equivalent. Some projects may require additional training specific to the location (i.e. "STOP" in Canada, Confined Space, LOTO, Hot Work at TMMI).
- 3.14.4 All Contractors shall, upon request, provide Toyota access to their training programs and personal training records for their workers on a Toyota project site. Training records include but are not limited to: sign-in sheets, lesson plans, and verification forms. Training records will be subject to review to ensure compliance with governmental regulations and Toyota policies and procedures.

3.14.5 All Contractors' workers shall receive on-site Toyota Safety training prior to beginning work on the site. This training shall be provided by Toyota ORO Safety, and shall be scheduled by Toyota ORO Safety frequently enough to meet demand. This training is typically provided once per workday, at the beginning of the work shift.

3.14.6 In the absence of TEMA ORO represented orientation, TEMA will work with NAMC to ensure and orientation for contractors is provided prior to start of work.

Contractors Organization Tool COT-1 (Summary of Requirements outlined in Sections 1, 2 & 3)

Task	General Contractor	Subcontractor
Worker Safety Orientation for New Workers - Daily	✓	✓
Confirmation of Safety Orientation Recordkeeping	✓	✓
Full Time Safety Coordinator on site	✓	If > 30 workers
Full Time First Aid Person on site	If no infirmary on site	If no infirmary on site
Written Safety and Health Program	✓	✓
Review Subcontractors' Safety Policies	✓	
Certificates of Insurance for OCIP	✓	✓
Certificates of Private Insurance for non-OCIP	✓	✓
Certificates of Insurance for Vehicle and Worker's Compensation	✓	✓
Verify Subcontractors have Certificates of Insurance	✓	
Site Specific Safety Plan	✓	✓
Written Records of Subcontractor Safety Performance	✓	
Written Program for Regular Planned Inspections	✓	✓
Specific Additional Training Provided as Required	✓	✓
Provide Trained Supervision for Workers	✓	✓
Obtain Required Toyota Work Permits where Needed	✓	✓
Keep Training Records and Provide to Toyota on Request	✓	✓

4. CONTRACTOR GENERAL SAFETY RESPONSIBILITIES



4.1 MONITORING OF CONSTRUCTION SITE

- 4.1.1 Contractors shall conduct Daily Safety Inspections to ensure compliance with their Site Specific Safety Plan, Toyota Guidelines and applicable law and to maintain good housekeeping of their construction sites. Inspections must be documented and submitted as part of the Contractor Weekly Safety Report to the Toyota on-site Safety Coordinator or their representative. (See sample document #D-3 in the appendix)
- 4.1.2 The on-site Safety Representative or member of management from each Contractor shall participate in a Weekly Safety Review Meeting, scheduled and conducted by the on-site Toyota ORO Project Leader, while working at the Toyota site. The purpose of this meeting is to discuss any safety deficiencies found in the work areas, provide updates on changing safety standards, review incidents, JSA's and other pertinent safety information. This meeting is mandatory for all controlling Contractor Safety representatives or their designees. (See sample document #D-4 in the appendix)
- 4.1.3 Contractors shall conduct daily safety coordination meetings with their personnel to discuss that day's work activities and their associated safety practices. (See sample document #D-5 in the appendix). Meeting attendance shall be taken and records kept (e.g., participants sign and date back of Toolbox Talk presentation, etc.). Examples of topics to discuss at coordination meetings are:
- JSA's or JHA's specific to that day's activities
 - Safety "Tool Box Talks"
 - General safety practice reinforcement
 - Results of previous day's safety audits
- 4.1.4 Contractors shall conduct Toolbox Safety Meetings at least weekly with their personnel for safety awareness and discussion of special Safety topics. (See sample document #D-6 in the appendix) Daily start-up meetings may be required at the request of Toyota the site safety control board (See figure 4.1.8)
- 4.1.5 Contractors shall maintain a daily roster of all workers on site for accountability purposes. In addition, Contractors shall submit weekly manpower reports. (See sample document #D-7 in the appendix) Each contractors designated safety & health representative is responsible to submit this paperwork.
- 4.1.6 Contractors and the Contractor Safety Coordinator(s) must be readily identifiable. Contractors shall provide adequate materials or means of identification for these personnel. (See 3.4 for Safety Coordinator(s) identification)
- 4.1.7 Contractors shall maintain a list of emergency contacts and phone numbers. The list shall include all emergency fire and medical contacts specific to the project site as well as the safety representatives, supervisors, managers, and other involved Contractor personnel. The list shall be provided to ORO and local site security. The list should be posted conspicuously on the site control board as well. (See sample document #D-8 in the appendix)
- 4.1.8 Site Control Boards (See Figure 4.1.8) must be conspicuously posted at all times by the General or Prime Contractors. At a minimum, the following items shall be posted:
- Accident Reporting Procedures
 - Evacuation Routes
 - Emergency Phone Numbers
 - MSDS
 - JSA's
 - All applicable law and required postings.
 - Safety Cross (See sample document #D-9 in the appendix)

For an example of a typical Site Control Board see figure 4.1.8.

Example of typical Site Control Board

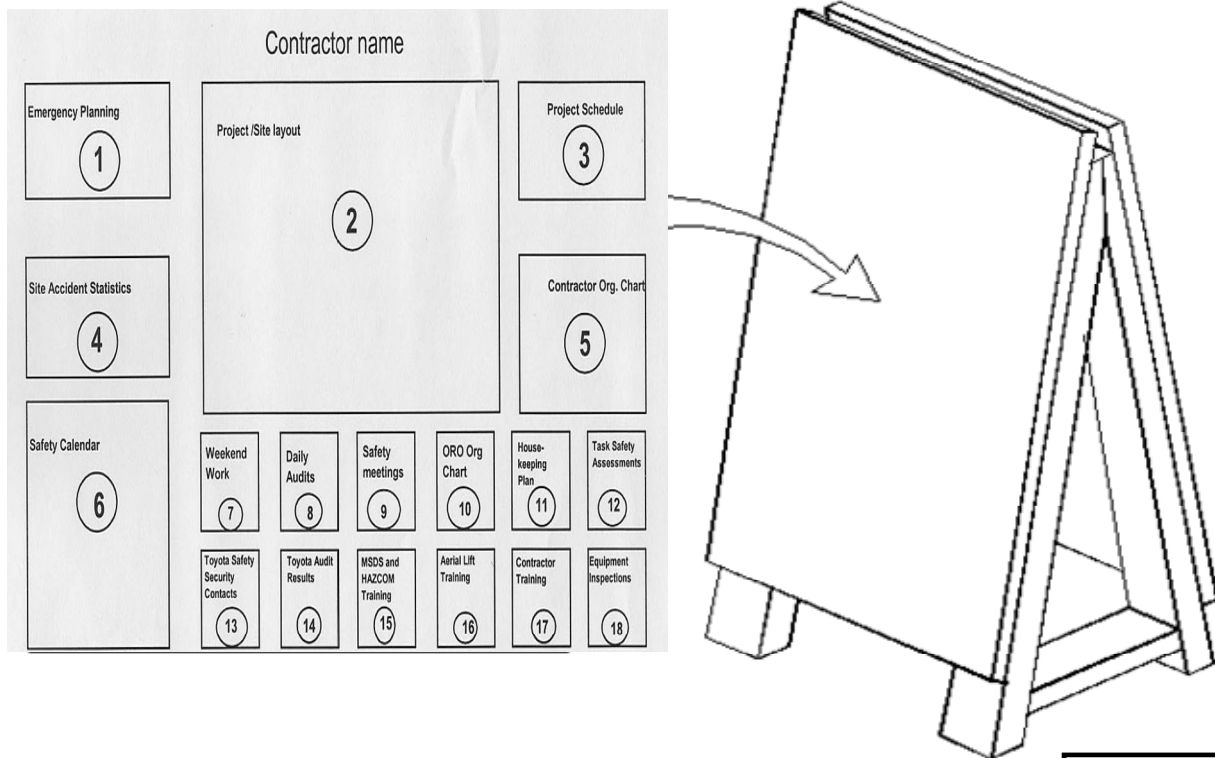


Fig. 4.1.8

The Board is a visual display and is not intended to replace contractor recordkeeping.

The following items shall be prepared by the contractor:

1.	Emergency Planning	Layout with four highlighted exits closest to the work area/What to do-where to go
2.	Project Layout	Contractor's part must be highlighted clearly
3.	Project Schedule	Contractor's own complete project schedule
4.	Site Statistics	OSHA Rates as described by OSHA 300/By individual subcontractor and by GC organization as a whole/Bar chart graph with trend lines shown
5.	Contractor Organization chart	Name(s), Title(s), Phone #,Pager #, and photograph(s)/Including subcontractors
6.	Zero Accident Calendar	Must be updated daily at the end of the work shift
7.	Weekend Work Schedule	Must be posted by Wednesday each week prior to the weekend
8.	Daily Audits	On Contractor's format with Contractor letterhead with listed C/M
9.	Safety Meeting Minutes	Current weekly safety mtg. Minutes and special topics
10.	OWNER Organization Chart	Chart provided by Toyota-ORO
11.	Housekeeping Plan	Layout, List of responsible person(s), Countermeasures
12.	Task safety Assessments	with back-up training documentation
13.	Toyota Safety and Security Contacts	
14.	Toyota ORO Audit Results	With contractor C/M's/scoring
15.	MSDS and Haz Comm Training (subs included)	
16.	Aerial lift training documentation (subs included)	
17.	Contractor Training	As identified by OSHA and Toyota manual

4.2 DUST CONTROL

- 4.2.1 Contractors shall develop and implement a dust control program that contains a description of the methods to be used for controlling the dust. Contractors shall ensure that worker safety and health are not jeopardized due to potential exposures to high levels of nuisance dusts, silica dusts or any other dusts covered by applicable law.
- 4.2.2 Contractors shall submit this program to Toyota Safety prior to beginning work on the site. At a minimum, Contractor(s) shall guarantee Toyota is as close to a dust free condition as possible both inside and outside of the buildings on the property.

4.3 HOUSEKEEPING

- 4.3.1 Good housekeeping shall be maintained in all work areas at all times.
- 4.3.2 During construction, debris shall be kept cleared from work areas, emergency equipment, passageways, and stairs. Debris shall be removed at regular intervals as often as necessary. Containers shall be provided for collection of debris and personal trash, and shall be disposed of at frequent and regular intervals. Adequately covered containers shall be utilized for disposal and storage of oily, flammable or hazardous wastes. Notify Toyota Environmental for disposal requirements, where applicable.
- 4.3.3 The work site shall be continually maintained free of all obstructions or impediments so as to allow free and unobstructed access to designated exits.
- 4.3.4 Combustible scrap and debris shall be removed at regular intervals during the course of construction

4.4 FIRST AID

- 4.4.1 Provisions shall be made prior to the beginning of the project for prompt medical attention in case of serious injury.
- 4.4.2 In the absence of an infirmary, clinic, hospital, or physician that is reasonably accessible in terms of time and distance to the worksite, Contractor shall provide a person who has a valid certificate in first-aid training from the U.S. Bureau of Mines, the American Red Cross, or whose equivalent training that can be verified by other documentary evidence. A person with these qualifications shall be available at the worksite, during all work shifts, to render first aid if required.
- 4.4.3 First aid supplies are required to be easily accessible (Within 2 minutes). An example of the minimal contents of a generic first aid kit is described in American National Standard (ANSI) Z308.1-1978 "Minimum Requirements for Industrial Unit-Type First-aid Kits". The contents of the kit listed in the ANSI standard should be adequate for small work sites. When larger operations or multiple operations are being conducted at the same location, Contractor(s) must determine the need for additional first aid kits at the worksite, additional types of first aid equipment and supplies and additional quantities and types of supplies and equipment in the first aid kits.
- 4.4.4 The contents of the first aid kit shall be placed in a weatherproof container with individually sealed packages for each type of item, and shall be checked by the employer before being sent out on each job and at least weekly on each job to ensure that the expended items are replaced.
- 4.4.5 If it is reasonably anticipated workers will be exposed to blood or other potentially infectious materials while using first-aid supplies, employers must provide personal protective equipment (PPE). Appropriate PPE includes gloves, gowns, face shields, masks and eye protection. For more information see "Occupational Exposure to Blood borne Pathogens", 29 CFR 1910.1030(d)(3).
- 4.4.6 Proper equipment for prompt transportation of the injured person(s) to a physician or hospital, or a communication system for contacting necessary ambulance service, shall be provided.
- 4.4.7 In areas where 911 is not available, the telephone numbers of the physicians, hospitals, or ambulances shall be conspicuously posted.
- 4.4.8 Where the eyes or body of any person may be exposed to hazardous corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

4.5 ILLUMINATION

- 4.5.1 All areas shall be well illuminated to prevent accidents and injuries. The Contractor shall provide general and task lighting suitable for the work activities being performed.

- 4.5.2 Construction areas, aisles, stairs, ramps, runways, corridors, offices, shops, and storage areas where work is in progress shall be lighted with either natural or artificial illumination and shall be lighted to not less than the minimum illumination intensities required by all applicable code and law, including those listed in Table D-3 of OSHA 1926.56 (included here)

OSHA 29 CFR 1926.56 Table D-3

Foot Candles	Area or Operation
3	General construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas
5	General Construction Area Lighting
5	Indoors: warehouses, corridors, hallways, and exit ways
5	Tunnels, shafts, and general underground work areas: (Exception: minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Bureau of Mines approved cap lights shall be acceptable for use in the tunnel heading)
10	General construction plant and shops (e.g., batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active store rooms, mess halls, and indoor toilets and workrooms).
30	First aid stations, infirmaries, and offices

4.6 POTABLE WATER

- 4.6.1 Contractors shall provide an adequate supply of potable water in all work areas. Contractor(s) shall refill these containers as required or at least on a daily basis, and label to identify contents.
- 4.6.2 Potable containers used to dispense drinking water shall be capable of being tightly closed, and equipped with a tap. All containers shall be adequately cleaned to prevent threats to worker health.
- 4.6.3 Water shall not be dipped from the container. A common, or shared, drinking cup is prohibited. Where single use cups are provided, a sanitary dispenser and a trash receptacle container shall also be provided.

4.7 SANITATION

- 4.7.1 Contractors shall provide toilets for workers according to applicable law for the jurisdiction. Where requirements do not exist refer to the following table.

Number of workers	Minimum number of facilities
20 or less	1-toilet seat
20 or more	1-toilet seat and 1 urinal per 40 workers
200 or more	1-toilet seat and 1 urinal per 50 workers

- 4.7.2 Contractors shall keep an adequate cleaning schedule as to not affect the health and safety of their workers or other Contractor workers on the site.

4.8 SIGNS, SIGNALS AND BARRICADES

- 4.8.1 A signage plan must be prepared and submitted as part of the Site Specific Safety Plan. Where multilingual groups can be expected on a jobsite, signage must be translated so those workers can understand the signage content.
- 4.8.2 Specific requirements regarding finish, color and lettering have been established to ensure that signs are effective and uniform. Signs, tags, and marking physical hazards shall be designed and constructed according to the following American National Standards:
- ANSI Z535.1-2002 American National Std. For Safety Color Code
 - ANSI Z535.2-2002 American National Std. For Environmental and Facility Safety Signs
 - ANSI Z535.3-2002 American National Std. Criteria for Safety Symbols

- ANSI Z535.4-2002 American National Std. For Product Safety Signs and Labels
- ANSI Z535.5-2002 American National Std. Safety Tags and Warning Tape (for Temporary Hazards)

- 4.8.3 Construction work areas shall be posted with appropriate signs at intervals of at least 60 feet around the perimeter, looking onto the construction area or as required by the size and shape of the work area. In addition to the warning information, signs must contain the Contractor's name and contact numbers. Safety warning signs must be posted at all access/egress points. Signs may be attached directly to barrier fences.
- 4.8.4 The above barriers and signs are to be installed per a layout approved by Toyota which includes designated traffic lanes, access and egress points, and barrier / signage location.
- 4.8.5 Barricades or guardrails are required around excavations, openings in floors or roof areas, edges of platforms or roof and overhead work areas. Means of access or egress must be available where it does not pose a hazard. Barricades and guardrails used for the prevention of falls shall comply with applicable law.
- 4.8.6 Barricade Tape or Warning Tape:
- **Yellow Caution Tape** – Workers may enter yellow caution tape areas only if it is necessary, and only after first determining it is safe to do so. (Examples: lay down areas, floor level work areas, etc.)
 - **Red Danger Tape** – Workers not directly involved with the work in progress inside this area shall not enter unless given permission by the controlling Contractor or Job Leader representative. Areas barricaded with red tape may be maintained for only as long as necessary to perform the work. Each area must be labeled with contractor's name and a contact phone number. Care must be taken not to totally block access to other areas of the work site. (Examples unstable surfaces, overhead work or immediate danger areas.)
 - **Candy Stripe Commissioning Tape** – Workers entering the commissioning area must be properly trained and identified as part of the commissioning team. A sign must be posted at the entrance of the commissioning area, warning of restricted access. The sign must be in English and Japanese

For Canada

- **Blue Endurance Tape** – Workers must be approved by the Toyota engineer to enter area.
- 4.8.7 Long-term projects (over 30 days) and imminently hazardous sites shall have substantial barriers that are not easily moved. The Contractor will consult with Toyota safety on barricade requirements.

4.9 EGRESS / EXITWAYS

- 4.9.1 In every building or structure, exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied. No lock or fastener to prevent free escape from the inside of any building shall be used.
- 4.9.2 A readily visible sign shall mark all exits. Readily visible signs shall mark access to exits where they are not immediately visible to the occupants.
- 4.9.3 Means of egress shall be continually maintained free of all obstructions or impediments.
- 4.9.4 If work is being performed in, at or over a doorway which is used for egress, a watch shall be posted on the other side of the door to prevent a person from entering the door, and possibly colliding with the worker. Care should be taken to minimize the amount of time blocking the doorway, especially if it is an exit.
- 4.9.5 When an exit will be closed for work activity, the contractor must notify the local NAMC security office to ensure appropriate alternative evacuation routes are communicated to workers in the facility.

Contractors Organization Tool COT-2 (Summary of Responsibilities outlined in Section 4) – Applicable to all Contractors

Activity	Once	Daily	Weekly	Monthly	Duration
The on-site Safety Representative from each Gen. Contractor shall conduct a Weekly Safety Committee Meeting with all subcontractors			✓		Ongoing
Contractors shall conduct regular Safety Inspections to ensure compliance with their Site Specific Safety Plan, Toyota Guidelines and Applicable Law		✓			Ongoing
Contractors shall conduct daily safety coordination meetings with their personnel, as well as weekly toolbox safety meetings with their personnel		✓			Ongoing
Contractors shall maintain a site-specific list of emergency contacts and phone numbers.	✓				Ongoing
Site Control Boards must be conspicuously posted at all times by Contractors.	✓				Update as needed
Contractors shall develop and implement a dust control program that contains a description of the types of dust they will be creating along with the method for controlling each type	✓				At P/J Start
Inspections to ensure good housekeeping shall be done regularly. Contractors shall provide trash receptacles for each area they control		✓			Ongoing
Debris shall be kept cleared from work areas, emergency equipment, passageways, and stairs		✓			Ongoing
The work site shall be continually maintained free of all obstructions or impediments so as to allow free and unobstructed egress to designated exits.		✓			Ongoing
Provisions shall be made prior to commencement of the project for prompt medical attention in case of serious injury.		✓			Ongoing
All first aid kits must be checked for adequate supplies.			✓		Ongoing
Contractors shall provide an adequate supply of potable water in all work areas.		✓			Ongoing
Contractors shall provide an adequate supply of toilets for their workers.		✓			Ongoing
A signage plan must be prepared and submitted as part of the Site Specific Safety Plan.	✓				At P/J Start
Contractors shall prepare and submit a minimum of weekly project status reports to ORO and Toyota Management.				✓	Ongoing
Barricades or guardrails are required around excavations, openings in floors or roof areas, edges of platforms or roof and overhead work areas.		✓			Ongoing
Yellow Caution Tape shall be used to indicate that workers may enter taped areas only if it is necessary, and only after first determining it is safe to do so.		✓			Ongoing
Activity	Once	Daily	Weekly	Monthly	Duration
Red Danger Tape shall be used to indicate that workers not directly involved with the work in progress inside the area shall not enter without permission.		✓			Ongoing
Red and White candy-stripe tape shall be used to delineate areas where equipment commissioning is taking place. Details of this requirement are outlined in Section 6.13		✓			Ongoing
Long-term projects (over 30 days) and immediately hazardous sites shall have substantial barriers that are not easily moved.		✓			Ongoing
In every building or structure exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied.		✓			Ongoing
A readily visible sign shall mark exits, and all exits shall be maintained free of obstructions and impediments.		✓			Ongoing

5. CONTRACTOR SAFETY TRAINING



- 5.1 The employer shall instruct each worker in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury. Reference OSHA 2254 for information regarding training requirements in OSHA.
- 5.2 Contractors shall provide specific safety training, as required by applicable law and to establish competency for their workers. The training shall be conducted prior to the worker beginning work that specifically involves the need for that particular training. Training methods shall adequately prepare the worker for the task at hand and shall be documented with the training topic, trainee's name and date completed, at a minimum.
- 5.3 Examples of specific training that Contractors shall provide include but are not limited to:
- Fall protection and fall protection systems
 - Electrical Safety-Related Work Practices
 - Fire prevention and fire extinguisher use
 - Working in confined spaces
 - Lockout/Tagout
 - Ladders and Stairways
 - Hazard Communication / WHMIS
 - Forklift operation
 - Use of Personal Protective Equipment (face shield, hearing protection, etc.)
 - Training regarding the fit testing requirements, maintenance and limitations of respirators.
 - Use of Aerial and Scissors Type Lifts
 - Powder actuated tool use
 - Laser operation
 - Job Safety Analysis (also called risk assessment)
 - Hot Work Permit System
 - Supervisory Safety training
 - First Aid/CPR training
 - Blood Borne Pathogens
 - Craft/ trade certification
 - Rigging
 - Signaling
 - Training for the erection/disassembly of scaffolding.
 - Crane operation
 - Welding Certification
 - Training for the proper operation and testing of GFCI's.
 - Training for power tools
- 5.4 The above-mentioned are examples of particular training that shall be conducted by the Contractor. Contractors shall not interpret this list as being the only training that is required by applicable law. Copies of the training material and documentation of worker attendance shall be readily available to Toyota for review or accessible within 24 hours. Toyota reserves the right to review training records at its discretion.
- 5.5 Persons not trained, competent or qualified for the task or activity they are performing will require that particular portion of the work to cease until corrective actions have been implemented by the Contractor.

6. DOCUMENTATION THE CONTRACTOR MAY BE RESPONSIBLE FOR



- 6.1 The following is a list of those safety related documents that the Contractor may come into contact with, or be required to submit, during the course of a Toyota construction project. Some of the items in the list are single documents, while others refer to a program that may contain multiple documents. Each Contractor will probably not be required to provide all of the listed documents. For example, a Contractor who does not use cranes or helicopters will not be responsible for those types of documents. There may be additional documents required by law or the Authority Having Jurisdiction that are not mentioned in this list. The Contractor is responsible for providing all necessary documents, whether found in this list or not.
- 6.2 Toyota reserves the right to amend this list to include other pertinent items that may become necessary. Contractors will be given ample notification prior to additional information being required. Some documents on the list must be submitted prior to beginning of work, and others are required during the course of construction.
- 6.3 The list of documents include:
- 6.3.1 Toyota Safety Rules, including this document and the host plant Security Requirements. All Contractors are to ensure that their workers are given free access to these guidelines. In addition they are to be available for review, and their location shall be posted in a conspicuous location.
- 6.3.2 Safety orientation checklist and badge application. This is to be completed by the Contractor for each worker planning to attend the Toyota safety orientation.
- 6.3.3 Toyota Safety Orientation Worker Attendance Verification. To be signed by the worker during orientation.
- 6.3.4 Contractor Safety and Health Program includes:
- Records of attendance at the orientation to the Contractor Safety and Health Program by the Contractor's workers.
 - Resume for Contractor's On-site Construction Safety Coordinator.
 - Resume for First Aid/CPR trained person who meets all applicable training requirements
 - Resume for On-Site Safety Coordinator for any Subcontractor with 30 or more workers on any single day.
 - Forms identifying the competent persons assigned to the project (e.g., for Safety Coordinator, scaffolding erection/inspection, trenching design/inspection, etc.)
 - Contractor's emergency contact information.
 - Contract Insurance requirements (at contract award, minimum prior to work) including:
 - Automobile Insurance, Workers' Compensation Insurance, Owner Controlled Insurance Policy (OCIP) coverage (where in force) or equivalent. This documentation is normally collected by Toyota's Purchasing Dept.
 - Valid State Contractors License and other relevant licenses. This documentation is normally collected by Toyota's Purchasing Dept.
 - A document for the testing of potable water.
- 6.3.5 Disciplinary Action Policy
- Contractor must have a progressive disciplinary policy that addresses the collective agreement for the union, if any, and meets the requirements for this project
- 6.3.6 Inspection and Safety Audit Program includes:
- Contractor's daily coordination meeting forms
 - Safety committee meeting minutes
 - A daily updated roster of workers working on the site
 - Contractor's Safety Report (Weekly Basis)
 - Contractor's Daily Inspections Checklist
 - Daily inspection and documentation of excavations.
 - OSHA 300 Log and First Report of Injury (OSHA 301 or equivalent).
 - Master violation log
 - Investigation report log
 - Master incident log
 - Weekly tool box talk record
 - Contractor's weekly manpower report

6.3.7 Safety Training Program includes:

- Supervisory Safety training
- PPE training
- Job Safety Analysis (JSA) training
- Emergency Action Plan training

6.3.8 Records of training, regular inspections and maintenance of tools and equipment.

- Scaffold inspection procedures
- Scaffold erection/dismantling training records
- Scaffold status tag
- Declaration of competent person from the Contractor for scaffolding erection.
- Training for powder actuated tools
- Contractor Equipment Inspection Form
- Crane or other powered equipment operator training
- Crane or other powered equipment inspection and maintenance records

6.3.9 Electrical Safety Program includes:

- Electrical Safety Related Work Practices training for operation of equipment near energized electrical systems
- A written log for the testing of GFCI type electrical outlets.
- Records of training for the testing & use of GFCI's.
- Extension cord inspection methods.

6.3.10 Fire Hazard Control Program includes:

- Training in the use of fire extinguishers
- Hot work procedures
- The storage of flammable and combustible liquids

6.3.11 Confined Space Entry Program includes:

- Written confined space entry procedures
- Toyota Confined Space Entry Hazard Evaluation and Permit (see document #D-19 in the Appendix) or equivalent.
- A permit number from Toyota security before beginning a confined space entry.
- Training and certification or declaration of competency for all workers involved.

6.3.12 Dust Control Program includes:

- Provide a description of the types of dust the Contractor will create along with a method for controlling each type.

6.3.13 Fall Protection Program

- An inspection program for body harnesses and other rigging equipment.
- A ladder and stair safety program
- Roof work procedures and training

6.3.14 Hazardous Material/Chemical Hygiene Program includes:

- Material Safety Data Sheets for all hazardous chemicals and compounds used.
- A filing system for MSDS
- HAZCOM/WHMIS training program
- Material Usage Request
- Restricted Substances Request.

6.3.15 Lockout/Tagout Programs includes:

- Training records for lockout/tagout
- Copy of the energy isolation procedure for specific machinery, if available.
- A logbook of locks and tags issued.

6.3.16 Motor Vehicle & Mobile material handling equipment [forklift, mobile crane, etc.] Safety Program

- Inspection and maintenance records for all motorized vehicles
- Documented daily inspections of powered lift equipment
- Written permission to use any vehicle indoors that is powered by fuel other than electricity or propane
- Vehicle Site Pass and application for all vehicles
- Mobile crane inspection report (ANSI B30.5 and applicable law) (See sample document D-27 in the appendix)
- Crane operator record of training/ qualification.
- Declaration of competency for vehicle operators

6.3.17 A Site Specific Safety Plan that contains:

- A complete listing and description of all safety hazards associated with the Contractor's work on the project site.
- A description of all safety methods to be used to reduce the risk associated with the site hazards, including all applicable components of the Contractor Safety and Health Program.
- A signage plan that includes a layout showing designated traffic lanes, access and egress points, and barrier / signage location.
- Records of attendance of Contractor workers orientation to the Contractor's Site Specific Safety Plan
- An Emergency Response and Emergency Rescue plan/program.

6.3.18 Other specific documents and permits include:

- Toyota Work Permit (may be required by existing Toyota facilities to coordinate work inside those facilities)
- Hot work permit
- Roof access permit
- Written authorization to impede or impact on any life safety system.
- Utility request form.
- Utility Tie-In Request form
- Crane critical lift plans
- Helicopter Lift Plans
- Trenching System Design Drawings
- Utility Location Drawings
- Annual inspection reports for any mobile cranes, derricks, hoists or temporary conveyors

7. SAFETY PROCEDURES AND POLICIES



7.1 Toyota Safety Orientation Procedures

- 7.1.1 All Contractor workers who will be working on a Toyota project site, as well as the Contractor's management team and key Suppliers, shall attend Safety Orientation prior to performing any actual work on site.
- 7.1.2 Safety Orientation sessions are conducted through the Security or Safety department of the host plant, or through the Owners Representative Office. Toyota Safety Orientation sessions are conducted on a strict schedule. Contractors must contact the host plant Security department for a copy of the current schedule. Anyone arriving after an orientation session starts will not be admitted. The host plant may allow other orientation times by special request with an adequate advance notice.
- 7.1.3 A Toyota Safety Orientation Checklist will be available at all Toyota project sites to assist the Contractor in preparing all necessary materials that will be required to complete the orientation process. For a copy of this checklist, contact the host plant Security or Safety department. (See sample document D-10 in the appendix)
- 7.1.4 Prior to attending the orientation, a Toyota Contractor badge request form must be received by the host plant Security office. Please see your local plant Security office for their badge request form as they vary from site to site. This form contains emergency contact information for the worker and will be kept on file by Toyota Security. This form must be completed by the Contractor for each worker, authorized with the appropriate Toyota representative signature, and submitted at least 24 hours (some plants can require up to 5 days) prior to the scheduled orientation. (See sample document D-11 in the appendix)
- 7.1.5 During the Safety Orientation a film describing Toyota safety procedures will be shown.
- 7.1.6 Personnel attending orientation shall be attired in such a manner as to be ready to begin work on the project site. Proper clothing, shoes and eyewear should be worn as to allow immediate access into the plant. Workers should not bring all necessary PPE, such as welding hoods and other bulky items, to the orientation as they require too much space in the safety/security office.
- 7.1.7 Contractor's workers shall sign the Toyota Safety Orientation Worker Attendance Verification during the course of the orientation session. This verification is mandatory and the responsibility of the Contractor worker.
- 7.1.8 Contractor's workers successfully completing the orientation will be issued an official Toyota Contractor's identification badge or hard hat I.D. sticker so that they may enter the site to work.

7.2 Incident Reporting Procedures

- 7.2.1 All, injuries and injury-free incidents must be reported immediately to Contractor supervision and Toyota Safety and/or, Security. Report any incident during non-regular work hours to Toyota Safety and/or Security.
- 7.2.2 A copy of the Toyota Incident Report (See sample document D-12 in the appendix) shall be completed for all accidents and submitted to Toyota safely within 24 hours of the incident. Contractors shall forward copies of all reports concerning accidents, injuries and injury-free incidents to Toyota Safety, as well as to on-site OCIP personnel. (OCIP may also need to see Employer's First Report of Injury). Contractors shall submit any additional reports and make applicable notifications to Governing Authorities, as required by Toyota or applicable law. General Contractors shall review all incident reports from their Subcontractor with all other Subcontractors under their responsibility.

- 7.2.3 Contractors shall maintain their own First Report of Injury log, as required by local and/or Federal Authority (OSHA 301 or equivalent – Form 7 in Canada; Form SP-1 in Mexico). For instructional material on required OSHA documents for the U.S., please see the following webpage:
<http://www.osha.gov/recordkeeping/OSHArecordkeepingforms.pdf>
- 7.2.4 Recordable injuries and illnesses shall be investigated separately using an acceptable root cause analysis document and submitted to ORO Safety in accordance with the schedule outlined in the Incident Report instructions, see Appendix D-12.
- 7.2.5 The procedure for reporting a Medical emergency shall be as follows:
- To report an accident or injury, contact Toyota using the designated emergency phone number for the site. Identify yourself as a Contractor. Give the location using the column location (if available), building number (or area of the site), type of suspected injury and the number of people involved.
 - Toyota security will dispatch and escort an ambulance to the injured worker if necessary.
 - Wait for instructions. If calling by phone, DO NOT hang up until the person to whom you are speaking tells you to.
 - During regular working hours, report the injury immediately to Contractor supervision and the on-site Toyota Safety and/or project representatives. During non-regular working hours, report the injury to Toyota medical, Safety and/or Security.

7.3 Consequences for Safety & Environmental Violations

- 7.3.1 Where Toyota or its authorized representatives observe or are formally made aware of a violation of Toyota standards or applicable law by the Contractor, its workers, Subcontractors or Suppliers, the Contractor will be immediately notified.
- 7.3.2 Each Contractor must also immediately notify Toyota Safety regarding violations of any applicable safety rules by its own workers, Subcontractors or Suppliers.
- 7.3.3 Every Contractor must have a progressive disciplinary policy that addresses the collective agreement for the union, if any, and meets the requirements for this project
- 7.3.4 Contractors will take adequate corrective or disciplinary action whenever necessary to discourage repetition of the violation. Toyota reserves the right, based on the severity of the incident, to request that the contractor remove worker(s) from the site for rules violations. If contractors are found to be in violation of a plant specific safety or security matter, TEMA will investigate the incident with the host plant to determine access privileges of the party involved. Contractors will inform Toyota Security of any actions taken regarding security matters.
- 7.3.5 The supervisor of any worker who is requested to be removed from the project must also be reviewed for disciplinary action by the Contractor (employer).
- 7.3.6 The Toyota project management team and Toyota Safety must be notified of any disciplinary action the Contractor may take while on the project.
- 7.3.7 Safety Violations requiring disciplinary action fall into two categories:
- Minor Violations
 - Major Violations
- 7.3.8 Examples of Minor Safety Violations include but are not limited to, the following:
- Failure to wear hardhat, safety glasses or other PPE where required
 - Failure to abide by posted safety signs or warnings
 - Failure to report an injury, accident, injury-free incident, environmental spill or a deliberate violation or disregard for the site environmental policies
 - Failure to use a seatbelt in motor vehicles, forklifts or other mobile equipment where they are provided for use

- 7.3.9 When a minor Safety violation is observed, the Toyota Representative and/or Contractor personnel must follow this procedure:
- Ask the worker for his/her official Toyota identification.
 - Contact the Toyota Safety and advise them that the worker's official Toyota identification has been documented for a Safety Violation.
 - Minor Safety violations will result in a three step site access procedure:
- ❖ **1st Offense** – Worker will be instructed in the proper safety rule by the Toyota representative and the Contractor. If minor offense has potential for significant collateral event, (i.e., smoking in flammable area) additional disciplinary actions may be requested by Toyota.
 - ❖ **2nd Offense** – If committed within a twelve-month period from the first offense, the worker shall be dismissed from Company property for a period of 5 days. If an worker does not commit another violation within 12 months of the first violation, his/her safety record shall be cleared
 - ❖ **3rd Offense** – If committed within a twelve-month period from the first offense, the worker shall be dismissed from Toyota Company property for a minimum period of one (1) year.
- 7.3.10 Examples of MAJOR Violations of Toyota Construction Safety Rules:
- The willful and/or reckless failure to comply with a standard and/or abate a recognized hazard and the consistent failure to observe safety rules
 - Intentionally disabling a safety guard or device
 - Intentional violation of Toyota Fall Protection, Lockout or Confined Space standards
 - Falsification of a qualification or certification to operate specialized machinery
 - Fighting on Toyota property
 - Assaulting another person
 - Sexual misconduct, sexual harassment, or public indecency
 - Arson
 - Intentional property damage
 - Robbery or Burglary
 - Criminal trespass
 - Disorderly conduct
 - Possession of a firearm or other deadly weapon on Toyota property
 - Possession, sale, or use of alcoholic beverages or controlled substances
 - Insubordination or failure to surrender official Toyota identification when asked to by Toyota, Security or Contractor supervision.
 - Supervisors or foremen intentionally instructing workers to work in an unsafe manner or intentionally not enforcing the Toyota site safety policies with their workers.
 - Any other acts that may result in injury to the worker, other workers or cause damage to Contractor or Toyota property.
- 7.3.11 FOR MAJOR VIOLATIONS, THE SITE ACCESS PROCEDURE MAY BE PERMANENT DISMISSAL FROM COMPANY PROPERTY ON THE FIRST OFFENSE.
- 7.3.12 When a major violation is committed, the Toyota Representative or the Contractor shall contact security, when security arrives, they will ask the worker for their badge or hard hat ID sticker and official Toyota identification and escort the worker to the gate and off the Toyota premises.

7.4 Substance Abuse Control Programs

- 7.4.1 The Contractor shall implement an effective substance abuse control program while under contract at Toyota. Toyota is a drug free workplace and insists that its Contractors maintain a drug free workplace. A drug free workplace has been proven to reduce the number of accidents and increase overall productivity.
- 7.4.2 The Contractor's program shall address the following elements typically found in effective substance abuse control /drug free workplace programs:
- Pre-employment drug and alcohol testing
 - For cause drug and alcohol testing
 - Post-accident drug and alcohol testing
 - Drug and alcohol abuse education
 - Prescription Drug Use Notification

7.5 Smoking & Tobacco Products Policy

- 7.5.1 Smoking or Tobacco Product Use is prohibited inside or on top of buildings. Designated areas will be provided for smoking/tobacco use. This policy will be strictly enforced.
- 7.5.2 Where buildings or parts of buildings are under construction the Smoking/Tobacco Use Policy goes into effect when the building enclosure milestone date is met.
- 7.5.3 Certain areas of the site, whether inside or outside building enclosures, shall be posted as No-Smoking due to the presence of flammable materials or other hazards. The No-Smoking policy in these areas shall be strictly enforced.
- 7.5.4 Violation of the tobacco policy may result up to and including dismissal from the project.

7.6 Job Safety Assessments / Job Hazard Analysis

- 7.6.1 Contractors shall be required to develop daily Job Safety Assessments (JSA), Job Hazard Analysis (JHA) or Standardized Work Plans (SWP) for all of their line item schedule activities being performed for all projects at Toyota. Line item schedule activities included are any activities physically being performed during the project. Toyota reserves the right to request that a JSA/JHA be performed for specific activities not addressed in the project schedule. When requested, the JSA/JHA must be completed and reviewed before work begins. (See Appendix Section C for the JSA Guideline or a blank form in Appendix D-16)
- 7.6.2 General Contractors shall develop JSA's/JHA's in regards to coordination of Subcontractors in overlapping work areas, plans for maintaining adequate safety conditions on the project and any items pertaining to Item 1 in this section.
- 7.6.3 JSA's/JHA's for highly hazardous work (steel erection, excavation and trenching, helicopter lifts, work on or near overhead power lines, confined space entry, and any other work identified by the General Contractor as highly hazardous work) shall be submitted to the General Contractor's Safety Supervisor, for review, 48 hours prior to the work commencing. General Contractor's Safety Supervisor shall then submit these JSA's, for review, to on-site Toyota ORO Safety representatives no later than 36 hours prior to the work commencing.
- 7.6.4 To better inform Contractor management about JSA's/JHA's, Toyota safety has set the following guidelines concerning JSA's/JHA's:
 - JSA's/JHA's are to be developed by the Contractor's on site management personnel, or their designee, knowledgeable in the activity being planned and assessed.
 - JSA's/JHA's shall list the work by step, the hazard(s) associated with each step, how each hazard will be mitigated, and the name and contact information of the person responsible for ensuring the JSA's are accurate and complete.
 - JSA's/JHA's prepared by Contractors shall be used as a training tool within their workforce.
 - JSA's/JHA's shall be either posted, or their location shall be posted, on the Contractor's site safety information board.
 - JSA's/JHA's shall be site specific and of good quality. JSA's/JHA's that are completed in a substandard manner will be returned to the initiating Contractor for additional information.
 - JSA's/JHA's shall be updated if the scope of work changes for a particular activity and a new JSA/JHA submitted to the General Contractor Safety Supervisor. These shall be submitted to the General Contractor, who will provide them to ORO Safety for review at least 48 hours in advance of the commencement of the changed activity.
 - If JSA is not being followed or found to be inadequate, Work will be stopped until situation is rectified.
- 7.6.5 Where JSA/JHA content is substandard; Toyota reserves the right to reject the document at which time up to an additional 48 hours may be used for review purposes.

7.7 Environmental Policy

- 7.7.1 Contractors shall abide by all applicable local, state, and federal environmental laws.
- 7.7.2 Contractors shall comply with all requirements contained in the Toyota Motor Engineering and Manufacturing North America (TEMA) "Construction Site Environmental Management Handbook" published by the TEMA Environmental and Safety Engineering Department. For a copy of this document or for additional questions, contact the Toyota project representative. It is the Contractors' responsibility to recognize and comply with all necessary environmental laws and requirements.

7.8 Hazard Communication

- 7.8.1 Contractors shall maintain information on the chemicals they are using or handling at Toyota. Contractors shall be familiar with the information (WHMIS, HazCom or Mexican Standards) and inform their workers, if they will be working in areas where chemicals are used. This information includes descriptions, handling precautions, protective equipment, symptoms of exposure and first aid for each chemical.
- 7.8.2 Contractors shall be responsible to conduct a review of all chemicals under their control that are in use or stored in close proximity to the construction site or work area.
- 7.8.3 Contractors who will be using potentially hazardous or restricted substances on the project site shall ensure that the proper Toyota permits have been applied for and approved 14 days prior to actually bringing these substances to the project site. (See sample document D-13 in the appendix)
- 7.8.4 No hazardous chemical shall be brought on site without first obtaining approval from Toyota; contractors are required to submit MSDS 14 days prior to the chemical arriving on site. ORO and NAMC safety departments will review and approve all chemicals being brought on site. For all chemicals used on site, contractors shall make copies of Material Safety Data Sheets (MSDS) available for review upon request.
- 7.8.5 Contractors shall be responsible for preparing an inventory and maintaining an MSDS file in their office for all approved hazardous chemicals used and documentation of worker training in the hazards and use of these chemicals.
- 7.8.6 The MSDS file shall be current, per applicable law, and readily available for inspection. The location of the MSDS file shall be posted on the job control board.
- 7.8.7 All hazardous materials shall be properly labeled and stored in accordance with applicable law.
- 7.8.8 Contractors shall provide all necessary PPE, and train all workers in the use and limitations of the PPE, required for safe handling of chemicals used by their workers.
- 7.8.9 The storage of flammable and combustible liquids shall be in well-ventilated areas or approved storage cabinets, within maximum allowable quantities as outlined by applicable law. Storage areas shall be conspicuously posted. They shall also comply with all applicable law and any other authority having jurisdiction.
- 7.8.10 Contractors shall be responsible for proper disposal of hazardous waste in accordance with "Construction Site Environmental Management Handbook" and applicable law. When the Contractor has plans or has reason to believe that hazardous waste will be generated; the Contractor will contact the local Toyota environmental department for assistance in dealing with the waste. After drumming, the hazardous

material shall be delivered to the containment area as designated by the Toyota Environmental/Safety department.

7.9 Lockout / Tagout Policy

- 7.9.1 The Contractor must identify all sources of energy which may affect their work such as Hydraulic, Pneumatic, Thermal, Electrical, Gravitational, Residual, Chemical, Radioactive, etc. Refer to equipment or machinery specifications.
- 7.9.2 Contractors shall submit copies of their general Lockout/Tagout Program to ORO Safety prior to beginning work on the project. For each job/task requiring energy control, a JSA (see section 7.6 for details) or standardized work shall be completed.
- 7.9.3 Only trained and authorized personnel shall work on equipment requiring lockout. Records must be maintained regarding training, and may be requested for review by Toyota safety.
- 7.9.4 While locking out, workers shall apply their personal lockout lock and tag. This lockout tag shall be durable, securely affixed to the lock and have a visible means of identification so that the Contractor name, worker name and telephone contact information is listed on the tag
- 7.9.5 Locks designated for use as a lockout lock shall be used for no other purpose. The Contractor shall be responsible for providing lockout locks and ID tags. If ID tags are provided by the NAMC and it does not conflict with the written LOTO program of the contractor, the contractor should use the tags provided by the NAMC.
- 7.9.6 Locks used for lockout shall have one key only on site. Each lock shall be individually keyed. The key shall remain under the exclusive control of the authorized worker installing the lock.
- 7.9.7 Prior to locking out any existing equipment, contact a Toyota Project Management Representative to coordinate lockout activities with existing Toyota NAMC Facilities.
- 7.9.8 Multi-lock hasps or gang boxes shall be used to ensure others can apply additional locks, when necessary.
 - 7.9.8.1 Wherever hasps are used, never fill the last available hole in the hasp with your lockout lock and tag. Instead, install another hasp in the last hole, and apply your lock and tag to a hole in the new hasp. This allows for the use of several hasps on a lockout point, and supports multiple people locking out the equipment.
- 7.9.9 For Group lockout, the Lockout team leader shall maintain an accurate log of participants when the number workers locking out exceed 4.
- 7.9.10 All in plant work shall be coordinated with the Contractor's Toyota contact. This is normally discussed in the daily work coordination meetings.
- 7.9.11 Minimum Required Lockout Procedures
 - All affected workers in the area shall be notified that a lockout is being performed.
 - The equipment being locked out must be shut down using normal shutdown procedures. (i.e., operator's controls station, stop button, etc.)
 - All equipment energy sources shall be neutralized, (e.g., open affected electrical disconnects, close affected valves, insert blanks in affected piping). Verify, by testing, that all energy sources have been neutralized.
 - Any residual energy shall be dissipated. (e.g., return springs to neutral position, or fix in place, drain capacitors, etc.). Verify, by test, that all residual energy has been dissipated.

- Final confirmation – verify all energy sources are neutralized by trying to turn on the equipment.
- Contractor(s) performing the lockout shall place his/her personal lockout lock and tag on EACH energy isolation point.
- If more than two (2) workers will be working on the equipment, a group lockbox or hasp must be used. If a group lockbox is used, refer to Section 7.9.12
- Test the lockout by attempting to operate the machine.
- Perform required work.
- Check around the area to ensure completeness of work.
- Remove all nonessential items from the area.
- Replace all safety guards.
- Notify all affected workers that the machine is being tested or repositioned.
- Remove the necessary lockout locks and devices required to test/reposition the machine.

7.10 Group Lockout

- 7.10.1 When the equipment contains two (2) or more isolation points that must be locked out, and when more than one (1) worker is required to work on the equipment, a group lockout method should be used. Whenever the group lockout method is used, there must be a designated job leader. This person is known as the Lockout Job Control Leader and is responsible for the work. They must be the first one to apply their lock and the last one to remove their lock from the hasp or lock box. There must be a Job Leader for each Company that is utilizing the lock box; in this case, one of those Job Leaders must be designated to be the Primary Job Leader in order to ensure good communication and that all requirements are met.
- 7.10.2 Follow the steps for a lockout as documented in section 7.9.12, use project locks and not personal locks.
- Each key for the project locks used shall be placed in a group lock box.
 - The group lock box shall be kept in view of the work being performed whenever practical.
 - For Group lockout, the Lockout Job Control Leaders shall maintain an accurate log of locks installed and removed when the number of workers locking out exceeds 4.
 - The Contractor's Lockout Job Control Leader may use a Job Control Lock on the group lock box or hasp. When used, this lock shall remain in place until the lockout has been completed. The key for the Job Control Lock shall be kept in the lockout Job Control Leader's possession.
 - In the event that the Lockout Job Control Leader must leave the job site before the work is completed, they must use a Job Control Lock in order to ensure the job locks are secure. They can then either transfer the Job Control Lock key to another Lockout Job Control Leader or place it in safe location. It is also permitted to make multiple copies of the Job Control lock key, as long as the locks are used exclusively as Job Control Locks and the keys are ONLY used by the Contractor's Lockout Job Control Leaders.
 - Each worker who is working on the equipment, is covered by the group lockout, and shall apply their personal lockout lock and tag on the group lockout box. For larger groups, with multiple Contractors, it is permitted that each Contractor can use their own lock box with a single key in it. The associated lock to that key must then be placed on the main group lock box by the Job Control Leader.
 - Each worker shall remove their own lock when their portion of the work is completed. For equipment that needs to be inoperable over multiple shifts, project locks may remain on the equipment.
 - Upon completion of the work, the Contractor(s) involved in the work shall inspect the work area for completeness.
 - Upon completion of the lockout procedures outlined in Section 7.9.11, the Job Control Lock shall be removed from the group lock box by the Lockout Job Control Leader.
 - The Contractor must have procedures in place for removal of a lock-out lock by persons other than the owner of the lock. The procedures must meet the following measures as a minimum;
- ❖ **Lock Surrendering:** If a Contractor(s) worker leaves the facility without removing his/her lockout lock and tag without a known explanation, an effort shall be made to contact the worker to determine why the lock may have been left and confirm that the worker will surrender the lock to the Contractor's supervisor-in-charge. Where confirmation has been received from the worker that the work was completed the Contractor's supervisor-in-charge and a person qualified in the machinery, equipment or process may remove the lock based on the following:
- Stop, Call Security. Some NAMC's will assist in lock removal. If the NAMC does not participate in lock removal, proceed to next step.
 - Verify the lockout is still in effect and the equipment/ machinery is in a zero energy state.

- Verify the work on the equipment, machinery or process has been completed.
- Verify that the equipment, machinery or process is clear of all tools, equipment or interferences.
- Verify that the equipment, machinery or process is clear of workers.
- Complete a Lock Surrendering Form. It must be reported to the Toyota contact person and Toyota Safety & Security. (see sample document D-14 in the appendix)

❖ **Lock Abandonment:** If the following attempts have been made to contact the worker (and documented), but are unsuccessful, the lock shall be considered to be abandoned.

- Checking
- Check with co-workers.
- Check the worker's time card.
- Try to contact the worker (via home phone, cell phone, pager, etc.).
- Verify the worker has left the property

7.10.3 Where a lock is considered to be abandoned, immediately notify the Toyota contact person and Toyota safety. Where it has been determined that the removal of the lock is essential, the following steps must be taken by two Contractor supervisors and a person qualified in the equipment, machinery or process:

- Verify the lockout is still in effect and the equipment, machinery or process is in a zero energy state.
- Verify the work on the equipment, machinery or process has been completed.
- Verify that the equipment, machinery or process is clear of all tools, equipment or interferences.
- Verify that the equipment, machinery or process is clear of workers.
- Complete Form D-14 (Lock Surrender Form) or comparable.
- In the presence of all signatories to FORM D-14, the lock may be cut to remove it.

7.10.4 Upon return to the site by the worker involved, he/she must sign the Form. Contractor(s) will review the incident to determine any disciplinary action necessary.

7.10.5 Copies of all information related to the lock surrender incident must be provided to Toyota Safety for review.

7.11 Work Coordination

7.11.1 All Contractors are responsible for coordinating their work with all existing Toyota Engineering, Facilities, Safety and Security departments, and must notify Toyota Safety and Security prior to beginning actual on-site work. MOST EXISTING TOYOTA FACILITIES REQUIRE COMPLETION OF A WORK PERMIT PRIOR TO COMMENCEMENT OF WORK. All Contractors are responsible for determining whether their work to be performed at a particular Toyota facility requires completion of a work permit. Where possible, work permits may be obtained through the Security office of the host plant or use document D-15. (See sample document D-15 in the appendix)

7.11.2 Toyota Safety/Security must be notified, and any required permits must be completed, prior to:

- Connecting any equipment or tools to compressed air lines that are supporting host plant operations
- Temporarily connecting any equipment or tools to electrical lines (excluding existing 120 VAC receptacle outlets and existing 480VAC weld plugs)
- Using any Toyota equipment or facilities
- Installation or use of any existing, temporary wiring (excluding plug and cord connected equipment)
- Working above or immediately next to production areas
- Working in the vicinity of overhead power lines
- loading material or equipment above the main floor or on to the roof
- Purging of existing gas or liquid lines
- Storing equipment or supplies outside of laydown area that has been designated for that purpose
- Bringing any tools that derive power from a powder actuated cartridge
- Entering permit-required confined space areas
- Using heavy lifting devices, e.g., cranes, etc.

- Bringing any pressurized cleaning equipment onto the job site, e.g. sandblasting, water blast cleaners, etc.
- Performance of any aerial lifts (e.g. helicopter equipment lifts)
- Blasting

7.11.3 Where required, the Contractor shall keep a copy of the Work Permit at the job site, and this copy shall be posted in a conspicuous place at all times.

7.11.4 Where required, the Work Permit is valid for the period specified on the Permit. Upon expiration, the permit must be resubmitted, with any change in scope of work attached.

7.11.5 Where a Work Permit is required, application for the Permit must be submitted to Toyota for approval at least 72 hours prior to the work starting or as early as circumstances allow. In any case, the permit must be issued before any work begins.

7.11.6 Where work is anticipated to impact a service or utility currently in operation at the facility (e.g. steam, electricity, HVAC, Fire Protection Alarms/Systems), the Contractor must additionally complete and submit a Work Clearance Permit. (See sample document D-16 in the appendix)

7.11.7 During weekends, holidays or extended shifts, it is possible that some building utilities may be turned off, for maintenance or other reasons. To ensure availability of utilities, Contractors are responsible for submitting a Utility Request form for work occurring during weekends, holidays or extended shifts. Please contact the local plant Security office for their form. Utility requests must be submitted to the Toyota host plant Security/Safety department at least 48 hours in advance of the utility requirement. (See sample document D-17 in the appendix)

7.11.8 If a Contractor is tying into existing utilities, a Utility Tie-In Request form must be completed and submitted to the Security/Safety department of the host plant. (See sample document D-18 in the appendix)

7.12 CONFINED SPACE ENTRY PROCEDURE

7.12.1 Contractors shall ensure that all Toyota requirements and applicable law are satisfied prior to entering a confined space.

7.12.2 A Confined Space is defined as a space that:

- Is large enough and so configured that an worker can bodily enter and perform assigned work; and
- Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and
- Is not designed for continuous worker occupancy.

7.12.3 Confined spaces on the Toyota Site fall into two categories

- Non-Permit Required Confined Space – Authorized Personnel Only
- Permit Required Confined Space

* Please note that all Confined spaces shall be considered Permit Required unless otherwise identified by Toyota as a Non-permit Required.

7.12.4 Non-Permit Required Confined Spaces are those that meet the following criteria:

- A confined space that does not contain or have the potential to contain any hazard capable of causing death or serious physical harm;
- Will not have any hazards introduced into the space by the Contractor; and
- Meets, or exceeds, ALL of the conditions of the Confined Space Checklist.

* Documented testing must be on file certifying that the Confined Space meets the requirements of a Non-Permit Required Confined Space.

7.12.5 Permit Required Confined Spaces are those that meet one or more of the following criteria:

- Contains or has a potential to contain a hazardous atmosphere;
- The Contractor introduces a hazard into the space;
- Contains a material that has the potential for engulfing an entrant;
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section;
- Contains any other recognized serious safety or health hazard; or
- Are identified by Toyota or Contractor supervision as Permit-Required Confined Spaces.

7.12.6 Prior to ANY confined space entry the Contractor shall submit a copy of their written confined space entry procedures to Toyota safety. All Contractor confined space programs shall meet or exceed the Toyota confined space program requirements.

7.12.7 Contractor(s) involved in the entry shall be trained in confined space entry prior to entering the space. Contractors shall also submit a copy of written documentation for confined space training to Toyota safety for all workers involved with the entry. No confined space work may be performed unless and until appropriate written documentation is received and reviewed.

7.12.8 All workers required to enter into confined or enclosed spaces shall be instructed as to the nature of the specific hazards involved, the necessary precautions to be taken, and in the use of protective and emergency equipment required. The employer shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas.

7.12.8.1 Some plants require additional confined space entry instruction. Please consult your Toyota Safety contact for possible requirements.

7.12.9 Contractors shall provide appropriate safety equipment (including communications), attendant, and where necessary, ventilation equipment, 12-volt lighting or the equivalent, and appropriate rescue equipment. This equipment shall be in place prior to entering the confined space. This equipment shall be intrinsically safe or explosion proof if there is a potential of a flammable atmosphere.

7.12.10 The confined space shall be checked for hazardous atmospheres. The sampling shall be conducted WITHOUT ENTERING THE CONFINED SPACE. Sampling shall consist of at least the following tests:

- | | |
|-------------------------|-----------------------|
| ○ Oxygen | Between 19.5% - 23.5% |
| ○ Carbon Monoxide | < 35 PPM |
| ○ Hydrogen Sulfide | < 10 PPM |
| ○ Lower Flammable Limit | < 10% |

The person responsible for using the meter must be knowledgeable of the confined space meter and proper calibration requirements of the equipment.

7.12.11 Contractors shall document the testing results on the Toyota Confined Space Checklist/Permit (Appendix D-19) or equivalent. If the space meets the criteria for a Non-Permit Required Confined Space, the Contractor may proceed with the entry. If the space fails the criteria for a Non-Permit Required Confined Space, an entry permit must be completed prior to entering the space.

7.12.12 For permit required entry, complete the Toyota Confined Space Checklist/Permit (Appendix D-19). This permit should be provided by the Contractor. All signatures that are required on these forms shall be present before the entry begins. Contractors may require a permit number be obtained from Toyota Security before beginning a confined space entry.

7.12.13 Checklist/Permit and shall be posted in the work area where confined space entry work is done. They are valid for one shift only. In no case shall they be valid for more than 12 hours.

7.12.14 Checklist/Permit must be returned to Toyota (return to Security if they issued a permit number), when the work is complete, or at the end of each shift.

7.12.15 Evaluation and Permitting is the responsibility of the Contractor

7.13 EMERGENCY ACTION PROCEDURES

- 7.13.1 Contractors shall develop an emergency action plan to be used in the event of a fire, explosion or natural disaster such as a severe thunderstorm, tornado, or earthquake. The emergency action plan shall be in writing and shall cover those designated actions Contractors and their workers must take to ensure worker safety from fire and other emergencies.
- 7.13.2 The following elements, at a minimum, shall be included in the plan:
- Emergency escape procedures and emergency escape route assignments;
 - Procedures to be followed by workers who remain to operate critical operations before they evacuate;
 - Procedures to account for all workers after emergency evacuation has been completed;
 - Rescue and medical duties for those workers who are to perform them;
 - The preferred means of reporting fires and other emergencies; and
 - Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan.
- 7.13.3 The Contractor shall obtain copies of all emergency action procedures from the host Toyota plant for incorporation into their own plan. The Safety/Security office of the host plant will have all local emergency contact information available. The host plant may have an emergency action procedure already in place to assist the Contractor.
- 7.13.4 Before implementing the emergency action plan, the Contractor shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of workers.
- 7.13.5 The Contractor shall review the plan with each worker covered by the plan.
- 7.13.6 The Contractor shall review with each worker upon initial assignment those parts of the plan that the worker must know to protect the worker in the event of an emergency. The written plan shall be kept at the workplace and made available for worker review.

7.14 COMMISSIONING

Commissioning includes activities related to the start up of equipment including initial power up, testing, debugging, safety device checks, etc.

- 7.14.1 The Contractor must review site with the TEMA Engineering Specialist responsible for the equipment prior to commissioning activities commencing or identify pertinent issues that need to be explained to all persons participating in the commissioning.
- 7.14.2 The TEMA Engineer responsible for the commissioning activity will create a Job Safety Analysis (JSA) listing each step of the commissioning procedure. This JSA will be reviewed with each Team Member on the commissioning team and a sign in sheet will be signed by each member of the commissioning team. The JSA and sign in sheet will be kept at the location where the commissioning is commencing.
- ❖ Each specific zone must have sign in sheet and Badging System.
 - ❖ A notice must be sent out by the commissioning contractor to TEMA Engineering Specialist & Toyota Safety and other affected Contractors 72 hours prior to the tryout
 - ❖ Red and white striped tape must be installed around the operating perimeter of the equipment which is to be commissioned. Signage must be posted in adequate locations stating "DANGER DUE TO TESTING" or similar (see Fig. 7.14.2 for a good example of a multilingual commissioning signage). Figure 7.14.2 (also in Annex D-25) maybe reproduced as many times as necessary.
- 7.14.3 Commissioning requirements apply to equipment installation where a system can be reasonably encompassed with tape. Where a system cannot be reasonably contained (i.e. a building or large infrastructure item such as power distribution system or conveyor systems transversing many shops)

alternative safety measures shall be exercised to ensure adequate communication is provided to workers in the area that may be affected by the start up of the system.

- ❖ Prior to 'start up' the line shall be inspected to ensure it is ready for commissioning and to ensure that no unauthorized personnel are in the testing area
- ❖ Only authorized personnel shall be in/over/under the commissioning area during testing. Authorized personnel shall be visually identified as Commissioning Team Members (e.g. badge , sticker)
- ❖ If the line of visibility is obstructed, spotters must be stationed, complete with a communication system to ensure a safe start up.
- ❖ When commissioning tests are completed the red and white striped tape and commissioning signs must be removed.

Danger - Do Not Enter,
Commissioning in Progress,
Authorized Personnel Only

危険
立入禁止
コミッショニング中

Peligro - No Entre
Instalación de equipo en Proceso
Solo Personal Autorizado

Fig. 7.14.2 Sample Commissioning Sign

7.15 General Security Rules

*Please see local TEMA or NAMC contact for a comprehensive list of security requirements.

7.15.1 Use of photo imaging devices (e.g., camera's, video recorders, photo capable cell phones, etc.) is prohibited without prior written authorization from Toyota Security.

7.15.2 Workers will be expected to fill out a badge request form before being allowed access to the NAMC .Each NAMC has different badge request forms. It is the responsibility of the contractor to obtain a permit for the corresponding NAMC and follow security policies regarding badge request. If a facility badge request form does not exist, please utilize the TEMA badge request form D-11 in the appendix to obtain a badge at the facility.

Contractors Organization Tool COT-3 (Summary of Responsibilities outlined in Sections 5 - 7) – Applicable to all Contractors

Activity	Daily	Weekly	Monthly	Duration
Contractors shall provide specific safety training, as required by applicable law and to establish competency for their workers.	At worker hire			Ongoing
Examples of specific training that contractors shall provide include, but are not limited to the list in section 5	As Required			Ongoing
Persons found who are not trained, competent or qualified for the task or activity they are performing will require that particular portion of the work to cease until corrective actions have been implemented by the Contractor.	As Required			Ongoing
The list of safety documents required to be maintained on file by the Contractor is contained in Section 6.3				Ongoing
Contractor is required to maintain a site specific safety plan containing the items outlined in Section 6.4.				Ongoing
Administrative permits and documentation required to be maintained by the contractor are listed in Section 6.5.				Ongoing
All contractor workers who will be working on a Toyota project site shall attend Safety Orientation prior to performing any actual work on any Toyota site.	At worker hire			Ongoing
Safety orientation procedures and requirements are outlined in Section 7.1.				Ongoing
All accidents, injuries and injury-free incidents must be reported immediately to Contractor supervision and Toyota Safety.				Ongoing
Incident reporting procedures and requirements are outlined in Section 7.2.	As Required			Ongoing
Each Contractor must immediately notify Toyota Safety of violations of any applicable safety or environmental rules by its own workers, Subcontractors or Suppliers.				Ongoing
Toyota is a drug free workplace and Contractor shall implement an effective substance abuse control program while under contract at Toyota.				Ongoing
Smoking/Tobacco Products Use is prohibited inside plant buildings. Designated areas will be provided for smoking/tobacco use.				Ongoing
Contractors conduct daily Job Safety or Hazard Assessments (JSA/JHA) for all project line item schedule activities being performed on projects at Toyota. Specific requirements of this provision are outlined in section 7.6	✓			Ongoing
Contractors shall comply with all requirements contained in the Toyota Motor Engineering & Manufacturing North America (TEMA) "Construction Site Environmental Management Handbook" published by the Environmental and Safety Engineering Department				Ongoing
Contractors shall maintain information on the chemicals they are using or handling at Toyota and shall submit material MSDS sheets to NAMC Safety. Contractors shall be familiar with the information and inform their workers of the hazards if they will be working in areas where chemicals are used				Ongoing
Contractor shall adhere to the Lockout requirements in section 7.9	As Required			Ongoing
All work to be performed in an operating Toyota facility requires a Toyota Work Permit. Procedures are outlined in section 7.10	As Required			Ongoing
Contractor shall adhere to the Confined Space Entry procedures outlined in section 7.11				Ongoing
Contractor is responsible to review the emergency action plan with each worker covered by the plan	At worker hire			Ongoing
Contractor is required to follow the equipment commissioning safety procedures outlined in section 7.13	During Commissioning Ops			Ongoing

8. SAFETY RULES



8.1 COMPRESSED AIR OR GAS PIPING SYSTEMS

- 8.1.1 Compressed air shall not be used for cleaning purposes except where the air pressure is reduced to less than 30 PSI and then only with effective chip guarding and personal protective equipment, which meets the requirements of applicable law.
- 8.1.2 Compressed air shall not be used to remove dust, debris or other foreign material from a worker or their clothing. Brushing or vacuuming is the preferred method.
- 8.1.3 Compressed plant air shall not be utilized for testing mechanical systems without prior written approval from TEMA ORO Representative. A JSA must be completed and approved prior to utilizing plant air for this purpose.
- 8.1.4 Where new compressed air or gas headers are installed, blanks and or blinds shall be installed at all terminated ends to prevent unintended release.

8.2 COMPRESSED GAS CYLINDERS

- 8.2.1 Compressed gas cylinders and storage containers shall be moved on an adequate crib or cart. For short distances they may be moved by tilting and rolling on their bottom edges. They shall not be intentionally dropped, struck, or permitted to strike each other. When transported by powered vehicles, cylinders shall be secured in a vertical position with valve caps in place.
- 8.2.2 When cylinders are hoisted, they shall be secured on an adequate hoisting crib. They shall not be hoisted or transported by means of magnets, choker slings or on their carts.
- 8.2.3 Cylinders shall never be taken inside tanks, vessels, or confined spaces in which work is being done. Oil or grease shall not be used on regulators or fittings. Test connections prior to each use.
- 8.2.4 Gas cylinder wrenches shall be kept available, in the immediate area of tanks, for emergency purposes.
- 8.2.5 Regulators must be removed and the protective caps placed back on a cylinder when not in use. Pressure must not be left on regulators during extended periods of non-use, (i.e., meal times, job completion, etc.). Caps must be on cylinders when being stored and during transport.
- 8.2.6 Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease) a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire resistive rating of at least one-half hour. Cylinders must never be stored next to flame, steam pipes, or heat source of any type.
- 8.2.7 A suitable rack must secure cylinders (full or empty) when in use or storage. Full cylinders must be stored in cribs outdoors in designated areas at least 50 feet from buildings and be protected from vehicular traffic. Tie wire or combustible materials shall not be used to secure cylinders. Cribs, carts and cylinders must have Contractor identification and contact information as well as gas type and associated hazards.
- 8.2.8 In-house handling, storage, and utilization of all compressed gases in cylinders, portable tanks, motor vehicle cargo or tanks shall be minimized to maintain no more than a one day's supply of compressed gas being stored indoors, at any time. For larger gas volumes, use an outdoor compressed gas storage crib or standalone gas storage house.

8.3 CONCRETE AND MASONRY CONSTRUCTION

- 8.3.1 Safe access shall be maintained in and around concrete and masonry construction areas.
- 8.3.2 Workers shall be guarded from exposed reinforcing steel where scratching, lacerations or impalement is a hazard.
- 8.3.3 Automatic shutoff devices on powered concrete trowels must be checked for proper operation prior to each use. If not in place or not functioning then the machine shall not be used until functioning properly.
- 8.3.4 All tools and equipment used in concrete and masonry construction shall be in good repair and be properly maintained. The Contractor must have a program to regularly inspect and maintain tools and equipment.
- 8.3.5 During the erection of formwork, masonry walls, stairs, etc., the Contractor must ensure that they use appropriate wall/structure/component bracing/securing techniques to prevent any part of the structure under construction, temporarily or permanently installed components or equipment in use, from toppling over or collapse. Braces or supports should only be removed progressively when components or structural members no longer pose the danger of collapse or failure.
- 8.3.6 No worker shall be permitted to apply a cement, sand, and water mixture through a pneumatic hose unless the worker is wearing protective head and face equipment.
- 8.3.7 A limited access zone shall be established whenever a masonry wall is being constructed. Please reference OSHA 1926.706 for limited access zone requirements.
- 8.3.8 All masonry walls over eight feet in height shall be adequately braced to prevent overturning and to prevent collapse. The bracing shall remain in place until permanent supporting elements of the structure are in place.

8.4 CRANES, DERRICKS, HOISTS, & TEMPORARY CONVEYORS

- 8.4.1 Prior to any crane, derrick, hoist, elevator, or temporary conveyor being placed into service at the Toyota site, a copy of the current annual inspection shall be provided to Toyota Safety. Records of required frequent and periodic inspections must be readily available while equipment is on site. (Appendix D-27)
- 8.4.2 Certified Crane Operator (CCO) certificate or other recognized crane certification organization such as TVA (Tennessee Valley Authority) is required to operate any crane. The record of training and qualification required by applicable law must be submitted to Toyota Safety. If a contractor feels a certification meets or exceeds the CCO requirement, the contractor must submit organization credentials to TEMA Safety for evaluation and disposition
- 8.4.3 All mobile cranes must be inspected before its first use and comply with ANSI B30.5-2004, CSA B-167 or the equivalent and with applicable law. The inspection report shall be provided to Toyota prior to the equipment being allowed on site. (Appendix D-27)
- 8.4.4 Whenever CO2 producing equipment is used inside a building or enclosed space, where venting to the atmosphere is not possible, the areas air quality must be monitored to ensure atmospheric conditions are acceptable for workers.
- 8.4.5 After the above named equipment has been approved by Toyota and is allowed on site, a competent person knowledgeable in the assembly and erection of such equipment shall supervise the equipment assembly (use form in Appendix D-1).

- 8.4.6 Following assembly and erection of hoists, and before being put in service, an inspection and test of all functions and safety devices shall be made under the supervision of a competent person. A similar inspection and test is required following major alteration of an existing installation. All hoists shall be inspected and tested at least every 3 months. The Contractor shall prepare a certification record which includes the date the inspection and test of all functions and safety devices was performed; the signature of the person who performed the inspection and test; and a serial number, or other identifier, for the hoist that was inspected and tested. The most recent certification record shall be maintained on file.
- 8.4.7 Prior to the disassembly of the equipment, Toyota and the Contractor shall designate an area for disassembly. A competent person shall also supervise disassembly.
- 8.4.8 For all lifts of one ton (2,000 pounds) or more that require a crane, the Contractor shall perform a lift analysis and complete a copy of document D-25 – TEMA Lift/Stacking Safety Checklist Sheet. This requirement does not apply to the lifting of building construction steel members.
- 8.4.9 Contractors must comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes, especially relating to high wind speeds. Special care must be taken to ensure that the wind speed is known for the appropriate elevation, (e.g., ground level, lift level, top of boom, etc.)
- 8.4.10 Rated load capacities, recommended operating speeds, special hazard warnings or instructions shall all be conspicuously posted on all equipment.
- 8.4.11 A Load Rating Chart shall be securely affixed to the crane cab. Any modifications must be designed by a licensed professional engineer and approved by the manufacturer. If modifications are made, the revised load rating chart shall also be modified, supplied to the crane operator and posted in the crane cab.
- 8.4.12 Instructions or warnings shall be visible to the operator while he is at his control station.
- 8.4.13 Hand signals to crane operators shall be those prescribed by the applicable ANSI standard for the type of crane in use. An illustration of the signals shall be posted at the job site.
- 8.4.14 A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means.
- 8.4.15 All windows in cabs shall be of safety glass, or equivalent that introduces no visible distortion that will interfere with the safe operation of the machine.
- 8.4.16 An accessible fire extinguisher of 5ABC rating, or higher, shall be available at all operator stations on or in cabs of equipment.
- 8.4.17 Guardrails, handholds, and steps shall be provided on cranes for easy access to the car or cab. Platforms and walkways shall have anti-skid surfaces.
- 8.4.18 All cranes shall be inspected by the operator / competent person prior to each use and documented in a dedicated log book, to ensure they are in safe operating condition.
- 8.4.19 All critical lift plans shall be submitted for review to Toyota Safety two (2) weeks prior to the critical lift-taking place. Critical lifts shall be defined using the following criteria:
- When the total load, including rigging, exceeds 75% of the rated capacity of the crane when positioned to make the lift. The rated capacity for evaluation of a critical lift must come from the load chart at the boom length and angle required for the lift.
 - Any tandem lifts, multi lifts or Christmas tree lifts.
 - Lifts over occupied areas, operating processes, previously installed equipment that is operational or potentially congested areas

- When the boom or load may encroach on overhead conductors
- Lifting high value items. A High Value item is a piece of equipment with high dollar value or limited availability where replacement lead time could result in lost or interrupted production.
- Hoisting of workers in a lift basket (note: pre-approval must be obtained and it must be demonstrated that no other means to perform the work is available).

- 8.4.20 Any deficiencies shall be repaired or defective parts replaced by a competent person, before continued use.
- 8.4.21 Wire rope shall be inspected prior to each use and taken out of service and destroyed when any of the following conditions exist:
- Six randomly distributed broken wires in one lay or three broken wires in one strand in one lay.
 - Wear of 1/3 the original diameter of outside individual wires.
 - Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure.
 - Evidence of any heat damage from any cause.
 - Reductions from nominal diameter of more than:
 - 1/64 inch for diameters up to and including 5/16 inch
 - 1/32 inch for diameters 3/8 inch to and including 1/2 inch
 - 3/64 inch for diameters 9/16 inch to and including 3/4 inch
 - 1/16 inch for diameters 7/8 inch to 1-1/8 inches inclusive
 - 3/32 inch for diameters 1-1/4 inch to 1-1/2 inches inclusive
- 8.4.22 All other rigging hardware and slings must be properly rated, labeled or tagged and have the accompanying manufacturer's specifications present at the workplace. All rigging hardware and slings must be visually inspected prior to each use and according to the manufacturer's specifications.
- 8.4.23 Slings, chokers and other similar devices shall be visually inspected before each usage and shall be stored in locations that will not allow any type damage or deterioration to occur.
- 8.4.24 Slings, chokers and other similar devices shall have a permanently affixed tag listing the maximum load rating of the device and when annual inspections were done and/or due.
- 8.4.25 Where swinging hazards to workers exist, tag lines or other suitable devices shall be used to control loads being handled by hoisting equipment.
- 8.4.26 A safe working zone shall be established and barricades erected to prevent inadvertent entry by unauthorized personnel. Accessible areas within the swing radius of the rear of the rotating superstructure of the crane shall be barricaded in such a manner as to prevent a worker from being struck or crushed by the crane or load. When using tape to mark a work zone, red tape must be used.

8.5 ELECTRICAL SAFETY

- 8.5.1 All electrical systems shall be considered energized until the system is locked out, tagged and verified as de-energized.
- 8.5.2 Electrical safety requirements for working on electrical systems 50V and greater require a JSA, PPE, training and qualification as required by NFPA 70E or CSA Z462. Task specific procedures must be developed and provided to Toyota Safety prior to commence of work.
- 8.5.3 All contractors who are required to work near exposed energized conductors or circuit parts shall use the guidelines identified in NFPA 70E to determine appropriate PPE requirements and establishment of Arc Flash Boundaries. All NFPA 70E trained workers must be identified visually or carry proof of proper training.
- 8.5.3.1 Testing, troubleshooting and adjustments may be performed on energized equipment if necessary. Appropriate PPE as identified by NFPA 70E shall be utilized. If work is required on energized equipment an Energized Work Permit must be utilized as prescribed in NFPA 70E 2009.

- 8.5.4 All overhead power lines shall be considered energized until lines are confirmed de-energized and have been properly grounded.
- 8.5.5 Contractors shall use Type A ground fault circuit interrupters (GFCI) on all 120 volt, single phase, 15, 20 and 30 ampere receptacles, cord sets, devices and tools used on the site. Receptacles on a two-wire, single-phase portable or vehicle-mounted generator rated less than <5kW, where the circuit conductors of the generator are insulated from the generator frame and all other grounded surfaces, do not need to be protected with ground-fault circuit interrupters.
- 8.5.6 GFCI's shall be tested monthly with an approved tester and documented to ensure proper operation. GFCI Tests shall be completed by the 10th of each month.
- 8.5.7 A written log of all GFCI tests shall be maintained by the Contractor and available to Toyota safety upon request.
- 8.5.8 Contractors shall instruct their workers in the proper operation and use of GFCI's and that GFCI's should be tested for proper operation before each use.
- 8.5.9 Temporary lighting shall be protected from accidental contact or breakage. Metal-case sockets shall be grounded. Temporary light stringers and cords shall be of the grounded type and designed for extra hard usage.
- 8.5.10 Temporary lights shall not be suspended by their cords unless cords and lights are designed for this means of suspension.
- 8.5.11 Portable electric lighting used in wet and/or other conductive locations (e.g. Drum storage areas around tanks or near other liquid containment vessels) shall be operated at 12 volts or less.
- 8.5.12 Extension cord sets used shall be of the three-wire type and shall be designed for hard or extra-hard usage per NEC Table 400.4. Examples of these cords include:

Wet or Damp Locations	Damp or Dry Location
SEW, SEOW, SEOOW, SJEW, SJEOW, SJEOOW, SJOW, SJOOW, SJTWSJTOW, SJTOOW, SOW, SOOW, STW, STOW, STOOW	S, SE, SEO, SEOO, SJ, SJE, SJEO, SJEOO, SJO, SJOO, SJT, SJTO, SJTOO, SO, SOO, ST, STO, STOO

- 8.5.13 Extension cords of "flat" construction are strictly prohibited.
- 8.5.14 Extension cords shall be inspected prior to each shift. Damaged cords shall be tagged immediately and taken out of service and a record of their disposal or repair shall be maintained by the Contractor. Cords having ground prongs which are damaged or removed may not be used at any time.
- 8.5.15 Receptacles and cord sets other than 120 volt 15, 20 and 30 ampere shall have protection by use of either GFCI or by an "Assured Equipment Grounding Conductor Program". See NEC-2002, article 527 for details.
- 8.5.16 Devices protected by an "Assured Equipment Grounding Conductor Program" shall be tested and documented as specified in the NEC-2002, article 527.
- 8.5.17 Contractors shall instruct their workers in the proper inspection and test procedures for equipment & devices protected by an "Assured Equipment Grounding Conductor Program". See NEC-for details
- 8.5.18 Electrical installations must meet requirements of applicable Occupational Safety Law and local codes and regulations.

8.6 EXCAVATIONS AND TRENCHING

- 8.6.1 Prior to any excavation, the Contractor shall submit drawings that identify the location of all underground obstacles. As-built drawings must be reviewed and the work areas must be surveyed by the Contractor to determine the locations of underground lines (pipe, electrical, or otherwise). Should buried concrete be encountered, all excavations should stop until the ORO representative investigates and clears the situation.
- 8.6.2 While the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard workers. Excavations shall have sides at the proper angle or be correctly shored depending on soil conditions and in accordance with applicable law.
- 8.6.3 Means of egress from trench excavation shall be provided. A stairway, ladder, ramp or other safe means of egress shall be located in all trench excavations that are 4 feet (1220 mm) or more in depth so as to require no more than 25 feet (7620 mm) of lateral travel for workers.
- 8.6.4 All excavations that are 4 feet (1220 mm) or more in depth shall be barricaded and placarded for personnel and vehicle protection at least six (6) feet (1830mm) from the edge of the opening.
- 8.6.5 Areas around excavations shall be kept at least 3 feet (915mm) clear of the excavation edge where tools, materials, equipment or spoils could fall in on workers.
- 8.6.6 Non-supported excavation walls shall be sloped, based on soil type, at no steeper than the angles specified in OSHA 29 CFR 1926, Subpart P, Appendix B, Table B-1. This table is available at the following link:
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10932
- 8.6.7 Under no conditions shall personnel enter an excavation while equipment is operating near the edge. Equipment must remain away from occupied trenches.
- 8.6.8 No worker shall be permitted underneath loads handled by lifting or digging equipment. Workers shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials.
- 8.6.9 Any excavation deeper than 20 feet (6100mm) in depth shall have shoring, shielding or sloping and benching system designed by a licensed professional engineer. The design shall be submitted to Toyota prior to beginning the excavation.
- 8.6.10 Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation.
- 8.6.11 Workers shall not work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect workers against the hazards posed by water accumulation.
- 8.6.12 Adequate protection shall be provided to protect workers from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material or other means that provide equivalent protection.

- 8.6.13 Daily inspections of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other event that has the potential to increase the hazards of the excavation. (See D-2 Excavation Permit).

OSHA 29 CFR 1926, Subpart B, Table B-1 (Maximum Allowable Slopes)

Soil or Rock Type	Maximum Allowable Slopes (H:V) ¹ For Excavations Less Than 20 Feet Deep ³
Stable Rock	Vertical (90 Deg.)
Type A2	3/4:1 (53 Deg.)
Type B	1:1 (45 Deg.)
Type C	1 1/2:1 (34 Deg.)

- Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.
- A short-term maximum allowable slope of 1/2H:1V (63 degrees) is allowed in excavations in Type A soil that are 12 feet (3660 mm) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3660 mm) in depth shall be 3/4H:1V (53 degrees).
- Sloping or benching for excavations greater than 20 feet deep (6100mm) shall be designed by a registered professional engineer.

8.7 FALL PROTECTION

- 8.7.1 The Contractor must develop a detailed Fall Protection Plan to cover all work conducted where the workers' feet are at or higher than 6 feet (2 meters) above a lower level or where there is a potential to fall into equipment or other hazard (e.g., vertical rebar, etc.). The fall protection plan must address the prevention of falls through the use of training, guardrails with toe boards and travel restraint. If the hazard of falling may not be eliminated, then a fall arrest plan must be implemented. The fall arrest plan must identify the type of equipment that will be used including anchor points, lifelines, connectors, lanyards and harnesses and will also include procedures to train personnel, inspect equipment and to rescue a worker that has fallen. The plan must be submitted to Toyota Safety. The fall protection plan will be submitted to Toyota at minimum 2 days in advance of work beginning.
- 8.7.2 An example of a Fall Protection Plan, prepared by OSHA, can be found at the following website:
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10927
- 8.7.3 The Contractor shall provide a training program for each worker who might be exposed to fall hazards above 6 feet (1830mm). The program shall enable each worker to recognize the hazards of falling and shall train each worker in the procedures to be followed in order to minimize these hazards.
- 8.7.4 The Contractor shall assure that each worker has been trained, as necessary, by a competent person who is qualified in the fall protection field. Records of worker training shall be maintained by the Contractor, and shall be available for inspection, upon request, by Toyota. The written record shall contain the name or other identity of the worker trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the Contractor's representative.
- 8.7.5 If the employer relies on training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.
- 8.7.6 Workers in elevated areas shall be protected from falling more than six feet by guardrails or personal fall arrest systems. Prior to work requiring a personal fall arrest system, a JSA shall be completed to determine the exact type of equipment necessary for the work (see Sec. 7.6). For example, a double lanyard might be needed if the work requires climbing in order to ensure 100% tie-off. This includes, but is not limited to the following:

- Workers with the potential to fall more than six feet through holes and floor openings (including skylights). These openings shall be protected by covers that are secured and marked, guardrails or personal fall arrest systems.
 - Workers on the face of concrete forms or reinforcing steel must be protected from falling six feet (1830 mm) or more by personal fall arrest systems, nets or positioning devices.
 - Workers on the edge of excavations deeper than six feet (1830 mm) must be protected from falling by guardrails, fences or barricades as specified in Section 8.6.4.
 - Workers must be protected from falling where they may fall onto potentially hazardous equipment, surfaces or materials.
 - Workers on walking/working surfaces six feet or higher above lower levels which are not otherwise addressed must be protected from falling by guardrails, nets or personal fall arrest systems.
- 8.7.7 Full body harnesses, shock absorbing lanyards, locking snap hooks and proper anchorage points are the minimum requirements for a personal fall arrest system. Body belts are not acceptable as part of a personal fall arrest system. All components shall be inspected prior to each use. An inspection procedure shall be put in place.
- 8.7.8 Personal fall arrest systems shall be rigged so that the worker can neither fall more than six feet (1830mm) nor contact any lower level.
- 8.7.8.1 For work requiring free climbing (e.g., climbing on top a machines), leaving the basket or scaffold, a double lanyard system must be used to maintain 100% tie-off. This needs to be identified in a JSA.
- 8.7.8.2 Some contractors may be required to ensure double lanyard use for all workers. This shall be confirmed during a review of the Project Specific Safety Plan. (See Section 3.15)
- 8.7.9 Positioning devices shall be rigged to prevent free falls more than two feet (610mm).
- 8.7.10 When used in place of fall arrest systems, warning lines shall be erected around all sides of a roof work area. For low slope (4/12 pitch or less) roofing work, warning lines shall be located not closer than six (6) feet (2 meters) from the leading roof edge. For installation of roof-mounted equipment where trades other than roofers are required to access a roof, warning lines shall be located not closer than ten (10) feet from the roof edge. Personal fall arrest systems shall be provided and be used by any workers who are required to work outside a roof warning line.
- 8.7.11 A warning line or other suitable barrier shall define controlled access zones or other means that restrict access.
- 8.7.12 When using safety-monitoring systems [e.g., OSHA 1926.502(h)], a competent person who has received training in the use of the safety-monitoring systems must be used to monitor the safety of the workers. If a safety monitoring system is used, the entire process will be documented in a JSA and must be approved by TEMA. Where review by NAMC is necessary, the JSA will be provided to the NAMC for review.
- 8.7.13 Horizontal lifelines shall be designed by a licensed professional engineer or be pre-engineered and have the accompanying manufacturer's specifications.
- 8.7.14 Lifelines, safety harnesses, and lanyards shall be used only for worker safeguarding (i.e. not to be used for tying or strapping of materials, for example). Any lifeline, safety harness, or lanyard actually subjected to in-service loading, as distinguished from static load testing, shall be immediately removed from service and shall not be used again for worker safeguarding until inspected and determined by a competent person to be undamaged and suitable for reuse.

- 8.7.15 Lifelines shall be secured above the point of operation to an anchorage or structural member capable of supporting a minimum static load of 5,000 pounds (2268 kg).
- 8.7.16 Lifelines used in areas where the lifeline may be subjected to cutting or abrasion, shall be a minimum of 7/8-inch wire core manila rope. For all other lifeline applications, a minimum of 3/4-inch wire core manila or equivalent, with a minimum breaking strength of 5,000 pounds (2268 kg), shall be used.
- 8.7.17 Safety harness lanyards shall be a minimum of 1/2-inch nylon, or equivalent, with a maximum length to provide for a fall of no greater than 6 feet (1830 mm). The rope shall have a nominal breaking strength of 5,000 pounds (2268 kg).
- 8.7.18 All safety harness and lanyard hardware shall be drop forged or stamped steel, cadmium plated in accordance with type 1, Class B plating specified in SAE Specification SAE-AMS-QQ-P-416. Hardware surfaces shall be smooth and free of sharp edges.
- 8.7.19 All safety harness and lanyard hardware, except rivets, shall be capable of withstanding a tensile loading of 4,000 pounds without cracking, breaking, or taking a permanent deformation.

8.8 FIRE PROTECTION AND PREVENTION

- 8.8.1 The Contractor shall at no time impede or impact any life safety system (e.g., fire suppression, fire alarms, etc.) without written authorization from Toyota Safety and Security according to local requirements.
- 8.8.2 Any Contractor performing installation or modification of fire protection systems shall coordinate their work with Toyota Safety, Security and Facilities departments, and are required to provide a written plan for their activities and complete one or more of the following forms, as required by the actual type of work they are performing. These forms can be found in the appendix of this document:
- Appendix D-21 – TEMA Installation of New Fire Line at NAMC*
Appendix D-22 – TEMA New Fire Line Commissioning at NAMC
Appendix D-23 – TEMA Fire Line Outage Request Form
- 8.8.3 Fire doors shall never be blocked or locked to prevent emergency use when workers are within buildings.
- 8.8.4 Exit routes from buildings, once door openings are established, must be clear and free of obstructions and properly marked with signs designating exits from the building. This shall include buildings under construction or being altered. Contractors shall take this into consideration when developing JSAs.
- 8.8.5 Contractors shall train their workers in the potential fire hazards of their jobs. All new or transferred workers must be trained in the fire prevention plan when beginning their job duties. All workers must be trained in any changes in the plan. A record of this training shall be kept on file by the Contractor.
- 8.8.6 In case of fire, Contractors may try to extinguish incipient (beginning) fires with a portable fire extinguisher only if they have been properly trained and it is safe to do so. Toyota Security must be notified immediately.
- 8.8.7 An audible alarm shall consist of either a verbal message, short repetitive blasts on an air horn or the building alarm system. UPON HEARING THIS SIGNAL ALL WORKERS SHALL EVACUATE THE BUILDING using the pre-determined emergency exit routes. Determination of these routes is the responsibility of the Contractor.
- 8.8.8 The Contractor shall be responsible for the development of a fire protection program to be followed throughout all phases of the construction and demolition work, and shall provide for the firefighting

equipment as specified in this subpart. As fire hazards occur, there shall be no delay in providing the necessary equipment.

- 8.8.9 The Contractor shall use the host plant's fire evacuation/seek shelter plan which provides site-wide evacuation or seek shelter procedures to be followed in case of fire, explosion or severe weather. Where there is no host plant plan, the Contractor shall implement their own. This plan shall provide a set of procedures to be followed throughout all phases of the project, including procedures which cover incidents occurring both before and after building enclosure timing.
- 8.8.10 Access to all available firefighting equipment shall be maintained at all times.
- 8.8.11 As warranted by the project, the Contractor shall provide a trained and equipped firefighting organization (Fire Brigade) to assure adequate protection to life
- 8.8.12 Carbon tetrachloride and other toxic vaporizing liquid fire extinguishers are prohibited
- 8.8.13 A fire extinguisher, rated not less than 10B, shall be provided within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the jobsite. This requirement does not apply to the integral fuel tanks of motor vehicles.
- 8.8.14 Portable fire extinguishers shall be inspected periodically and maintained in accordance with Maintenance and Use of Portable Fire Extinguishers, NFPA No. 10-2002.
- 8.8.15 Fire extinguishers that have been listed or approved by a nationally recognized testing laboratory shall be used to meet the requirements of this guideline.
- 8.8.16 During demolition involving combustible materials, charged hose lines, supplied by hydrants, water tank trucks with pumps, or equivalent, shall be made available.
- 8.8.17 As project progresses, emergency evacuation plans must change to new conditions at the site. It is the General Contractors responsibility to update the emergency evacuation plan and communicate it to workers in his employ.

8.9 HOT WORK PERMITS

- 8.9.1 A Hot Work permitting procedure is enforced for all in-plant/ facility work once the building is installed. A signed Hot Work Permit is required before any cutting, welding, brazing, soldering, spark-producing work (or other sources of ignition) is performed. Permits will be issued by the designated Toyota authorizer and must have a Toyota and Contractor Supervisor signature prior to work beginning. Refer to local Toyota Safety or Security for forms and advance notification requirements. Some NAMC's require local hot work permit training. Please check with local NAMC and coordinate local hot work training if required.
- 8.9.1.1 Hot work permits may be required by some NAMC's when working on building exteriors. Contractors must contact local security department to verify hot work requirements prior to performing hot work duties on the premises.
- 8.9.2 A permit shall be issued only after both signers have made a personal inspection of the area and the following basic precautions have been ensured:
- Automatic fire protection systems are in service, when applicable.
 - Contractor assigns a fire watch, with the fire watch's name written on the permit.
 - Area is clear of all combustibles, debris or trash within 35 feet of welding/cutting area.
 - No flammable/combustible liquids are stored in the area.
 - Fire blankets are used to protect equipment, process piping and combustibles that cannot be removed.
 - Process exhaust ducts in the area are shutdown.

8.9.3 A fire watch procedure must be established wherein the fire watch task is assigned to a competent person who shall:

- Have received training in the use of fire extinguishers, fire protection requirements and emergency procedures at the site within the previous 12 months.
- Know the locations of the nearest manual fire alarm box and/or phone.
- Have a pressurized, fully charged portable #10 Class ABC or larger fire extinguisher and be familiar with its use. (Contractor must provide fire extinguishers and appropriate training.)
- Be capable of operating any specialized fire equipment required for the job.
- Constantly inspect the work area for fires during the job. The fire watch shall thoroughly inspect the area for a smoldering fire before going on break, lunch, upon completion of work stand for 30 minutes after the hot work has been completed. A fire watch may cover more than one hot work job if they in close proximity, and approved by Toyota Safety or Security.

8.10 HAND AND POWER TOOL SAFETY

8.10.1 Contractors shall be responsible for ensuring that hand and power tools and equipment are maintained in safe working order.

8.10.2 Electrical tools shall be maintained per the manufacturers' requirements, and be inspected before each use or at least once daily, if used more than once per day. Power supplied to electrical hand tools shall be provided with ground fault circuit interrupter (GFCI) protection. GFCI protection must either be built directly into the tool, be provided by using a portable GFCI outlet unit that plugs directly into a grounded, 120 Volt outlet, or by plugging the tool into a grounded 120 Volt outlet which is powered by a GFCI protected circuit breaker located in the receptacle panel. Double insulated tools will not have internal GFCI protection, but must still be powered by a GFCI-protected receptacle.

8.10.3 Proper guards must be installed on all power tools before being issued. Tools that have been modified (i.e., homemade handles or extensions) are not permitted.

8.10.4 Workers using hand and power tools and who may be exposed to the hazard of falling, flying, abrasive or splashing objects, or who may be exposed to harmful dusts, fumes, mists, vapors, or gases shall be provided with the proper personal protective equipment necessary to protect them from the hazard.

8.10.5 Contractors shall inspect tools prior to being issued and before each use. A formal monthly inspection procedure must be implemented and available for review if requested by Toyota Safety. One recommended method of confirming completion of required inspections, and to provide visual control, is to use markers of colored electrical tape, wrapped around tool electrical cords, for tools that have passed the current month's inspection. Different tape colors, according to a published system, are used for each month. If tools are found defective, either at daily or at monthly inspection timings, they shall be tagged and taken out of service immediately until repairs have been made or tools replaced.

8.10.6 All mechanically powered equipment, tools, machines, and devices rated at greater than 10 horsepower shall be inspected by a competent person on a regular planned basis. (See sample document D-20 in the appendix)

8.10.7 Contractors must have company identification labels on all job boxes, toolboxes and equipment.

8.11 LASER & NON-IONIZING RADIATION SAFETY

8.11.1 Each surveying, leveling or alignment laser product shall comply with all of the applicable requirements of 21CFR 1040.10 for a Class I, IIa, II or IIIa laser product and shall not permit human access to laser radiation in excess of the accessible emission limits of Class IIIa. (Additional information and requirements are found in OSHA CFR1926.54.)

8.11.2 Only qualified and trained workers shall be assigned to install, adjust, and operate laser equipment. Proof of qualification of the laser equipment operator shall be available and in the operator's possession at all times.

8.11.3 Workers, when working in areas in which a potential exposure to direct or reflected laser light greater than 0.005 watts per square centimeter (5 milliwatts/cm²) exists, shall be provided with laser protective eyewear.

- 8.11.4 Areas in which lasers are used shall be posted with standard laser warning placards.
- 8.11.5 Beam shutters or caps shall be utilized, or the laser turned off, when laser transmission is not actually required. When the laser is left unattended for a substantial period of time, such as during lunch hour, overnight, or at change of shifts, the laser shall be turned off.
- 8.11.6 Only mechanical or electronic means shall be used as a detector for guiding the internal alignment of the laser.
- 8.11.7 The laser beam shall not be directed at workers.
- 8.11.8 When it is raining or snowing, or when there is dust or fog in the air, the operation of laser systems shall be prohibited where practicable. In any event, workers shall be kept out of the area near the source and the target during such weather conditions.
- 8.11.9 Laser equipment shall bear a label to indicate maximum output.
- 8.11.10 Workers shall not be exposed to light intensities above:
- 8.11.11 Incidental observing: 1 milliwatt per square centimeter;
- 8.11.12 Diffused reflected light: 2 1/2 milliwatts per square centimeter.
- 8.11.13 Workers shall not be exposed to microwave power densities in excess of 10 milliwatts per square centimeter.
- 8.11.14 A laser unit in operation should be set up above the heads of workers, when possible.
- 8.11.15 If a class 3b or 4 laser is required on a project, the contractor must notify the NAMC prior to bringing laser on site.

8.12 HELICOPTER LIFT PROCEDURES

- 8.12.1 When the need of a helicopter service has been established, a pre-lift meeting shall be held a minimum of one (1) month prior to the actual lift date.
- 8.12.2 The Pre-Lift meeting shall confirm the following:
- Establishment of a JSA, Specific Plan and responsible parties.
 - Approvals required by applicable law or Governing Authorities
 - The date of the lift(s), with an alternate date in case of bad weather.
 - The assigned lay-down yard area.
 - Sequencing and numbering of all lifts with specified load rating clearly identified.
 - The assigned/approved flight path to be used.
 - Physical barricading of the assigned flight path to assure no admittance into the area by unauthorized persons.
 - Radio--equipped observers shall be assigned to assure no one enters the areas of the lift, set point or flight path at all levels
 - Notification by the Contractor of the closest medical facility, fire department and emergency response team that a helicopter lift will be taking place on a given day and given time.
- 8.12.3 Notification shall be given to Toyota and Contractor(s) that a helicopter lift will be taking place on a given date and time. A written plan shall be submitted and follow-up meeting held with Toyota Safety two (2) weeks prior to the lift taking place with appropriate confirmations and notices by Governing Authorities.

- 8.12.4 Helicopter cranes shall be expected to comply with applicable law and requirements of any Governing Authorities, including requirements of the F.A.A while operating in the U.S, or the Canadian Aviation Regulation Advisory Council (CARAC), in Canada.
- 8.12.5 The areas designated for lay down and landing zones shall be cleaned the day prior to the initial arrival of the helicopter at Toyota. This cleaning shall include securing of all loose materials and provision of adequate dust control as outlined in the Contractor's Dust Control Program.
- 8.12.6 On the morning of the lift (within 1 hour prior to the start of the lifts,) a briefing shall be held to set forth the plan of operation for the pilot and the ground personnel both at the lifting and setting points.
- Provide mono-goggles and hard hats equipped with chinstraps for all workers rigging and receiving the load and anyone subject to being struck by the rotor downwash.
 - Secure or remove all loose materials within 200 feet of the staging area, departure area and flight path susceptible to the rotor downwash.
 - Provide a warning barricade and signage for the assigned flight path plus 200 feet on each side of the flight path to keep out unauthorized personnel.
 - Inspect controlled areas to ensure they are clear of unauthorized persons and post observers with radios to assure no one enters the area of the lift, set point or flight path at all levels.
 - Notify the medical facility of the start time and the finish time of the lifting operations.
- 8.12.7 Operator responsibility. The helicopter operator shall be responsible for size, weight, and manner in which loads are connected to the helicopter. If, for any reason, the helicopter operator believes the lift cannot be made safely, the lift shall not be made.
- 8.12.8 Static charge on the suspended load shall be dissipated with a grounding device before ground personnel touch the suspended load, or protective rubber gloves shall be worn by all ground personnel touching the suspended load.

8.13 GUARDING OF CONTRACTOR TOOLS AND MACHINERY

- 8.13.1 Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or other moving parts or equipment shall be guarded if such parts are exposed to contact by workers, or might otherwise create a hazard.
- 8.13.2 All guards shall be in place before a tool or machine can be operated.
- 8.13.3 All hot surfaces (such as an exhaust pipe) shall be guarded or insulated in areas where contact by workers is possible during the performance of their normal duties.

8.14 WORK OVER OR NEAR WATER

- 8.14.1 Contractors working over or near water, liquids or other materials where the danger of drowning exists shall be required to wear life jackets or buoyant work vests as required by applicable law. The floatation device should be a Type III USCG approved personnel floatation device (PFD) or better.
- 8.14.2 Prior to and after each use, the buoyant work vests or life preservers shall be inspected for defects that would alter their strength or buoyancy. Defective units shall not be used.
- 8.14.3 Ring buoys shall be available with at least 90 feet of line for emergency rescue operations. Distance between available ring buoys shall not exceed 200 feet.
- 8.14.4 At least one lifesaving skiff shall be immediately available at locations where workers are working over or adjacent to water and where it will be useful to aid in a rescue.

8.15 MATERIAL STORAGE

- 8.15.1 The Contractor shall only store material in the “lay-down” area approved by Toyota. The following requirements shall apply;
- 8.15.2 The perimeter of the designated areas must be flagged, roped-off or otherwise identified.
- 8.15.3 The area must have proper signage, which includes:
- Contractor name.
 - Purpose of the lay-down area.
 - Date Contractor will relinquish area.
 - Contact person and phone number.
- 8.15.4 Contractors must relocate their material lay-down and fabrication areas upon the request of Toyota. All Contractor material must be removed from the site at the completion of the job.
- 8.15.5 All material shall be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling or collapse. Care must be taken while unloading/unpacking trucks and crates. Written procedures must be submitted for large crated objects. (See document D-25 – TEMA Lift/Stacking Safety Checklist Sheet for additional information.)
- 8.15.6 Maximum safe load limits of floors within buildings and structures, in pounds per square foot, or kilograms per square meter if in Canada or Mexico shall be conspicuously posted in all storage areas, except for floor or slab on grade. Maximum safe loads shall not be exceeded.
- 8.15.7 Material stored inside buildings under construction shall not be placed within 6 feet of any hoist way or inside floor openings (i.e., pits, holes, etc.), nor within 10 feet of an exterior wall which does not extend above the top of the material stored.
- 8.15.8 Equipment and materials must not be stacked higher than the top rail of the guardrails. All materials shall be suitably secured against wind and adverse weather conditions.
- 8.15.9 Materials shall not be stored on scaffolds or runways in excess of supplies needed for immediate operations.
- 8.15.10 Used lumber shall have all nails removed before stacking.

8.16 MOTOR VEHICLES -- MECHANIZED EQUIPMENT

- 8.16.1 Speed limit on Site shall be as follows:
- 8.16.1.1 The on-site, construction zone speed limit is 7 MPH.
- 8.16.1.2 Inside fenced areas and all other access roads are as posted.
- 8.16.2 Toyota production equipment and pedestrians have a shared responsibility to yield the right of way. Stop and look both ways prior to crossing vehicle routes – yield to conveyance vehicles. Eye contact will ensure recognition by all parties.
- 8.16.3 Seat belts must be worn whenever the vehicle is in motion.
- 8.16.4 Vehicles must operate with lights on at all times.
- 8.16.5 Vehicle operators shall not use cell phones while operating a vehicle

- 8.16.6 All vehicles shall prominently display the Contractor's name and on site telephone number. For rental equipment temporary signs may be used.
- 8.16.7 All motorized vehicles shall be inspected by a qualified person prior to their first use at the beginning of each day and a record of their mechanical fitness shall be documented. This record must be available for review by Toyota Safety when requested. (See sample document D-20 in the appendix)
- 8.16.8 Riding in vehicles is permitted only when there is an approved passenger seat with a seat belt available. Personnel may not ride in the bed of a pickup truck. Passenger busses are not required to have their passenger seats equipped with seat belts.
- 8.16.9 Vehicles shall not block emergency exits, passageways, pedestrian aisles, fire hydrants, hose cabinets, Post Indicators Valves, and/or other Safety/Security equipment.
- 8.16.10 Vehicles shall not be left running while unattended. "Unattended" shall be defined as being out of sight of the vehicle and/or more than 25 feet from the vehicle.
- 8.16.11 Only propane or electric equipment shall be used inside an enclosed building, unless prior written approval is obtained from Toyota safety. For buildings under construction, the term "inside the building" is defined to mean after the project milestone of building enclosure has been met.
- 8.16.12 Contractor must ensure that the vehicle and equipment exhaust is adequately controlled to maintain safe concentrations of carbon monoxide and other exhaust components inside the building. Levels of carbon monoxide must be maintained at less than 35ppm or a CO monitoring and control plan must be submitted for approval to the Toyota Safety Representative.
- 8.16.13 Only qualified operators shall operate equipment. Training records shall be available for review or submitted to Toyota Safety, as requested.
- 8.16.14 All mobile equipment shall be equipped with an operable horn, back-up alarm, headlights and a fire extinguisher with at least a 5ABC rating.
- 8.16.15 All motorized vehicles must maintain a three (3) foot clearance from pits, trenches or other floor openings. If required to perform work within three (3) feet of the opening, the motor vehicle must be positioned parallel to the opening and have its wheels chocked.
- 8.16.16 The following material handling equipment shall be equipped with a Rollover Protective Structure – ROPS, which meets the requirements of the OSHA guidelines:
- Rubber-tired self-propelled scrapers
 - Rubber-tired or track dozers and front end loaders
 - Wheel type agricultural and industrial tractors
 - Crawler tractors
 - Crawler type loaders
 - Motor graders
 - ATVs
 - Burden carriers
- 8.16.17 Construction equipment with a Rollover Protection Structure (ROPS) cage must have safety belts in use while in operation.
- 8.16.18 The existing structural framing or utility supports of a Rollover Protection Structure (ROPS) cage shall not be used as lift points.

8.16.19 Golf carts may be used to transport personnel. Golf cart shall not be used to transport material or tools which overload the cart or protrude outside the confines of the cart. Racks shall not be fabricated on golf carts.

8.16.20 Buses used for transporting workers must be mechanically fit, roadworthy, licensed and insured.

8.16.21 All rubber-tired motor vehicle equipment manufactured on or after May 1, 1972, shall be equipped with fenders.

8.17 PERSONAL PROTECTIVE EQUIPMENT

8.17.1 The Contractor is responsible for requiring the wearing and maintenance of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions or where this part indicates the need for using such equipment to reduce the hazards to workers.

8.17.2 Where workers provide their own protective equipment, the employer shall be responsible to ensure its adequacy, including proper maintenance and sanitation of the equipment.

8.17.3 Appropriate personal protective equipment must be supplied, used and maintained according to the manufacturer's requirements or applicable law.

8.17.4 Contractors must ensure their workers, Subcontractors, suppliers and visitors are familiar with all personal protective equipment required on the project, and have been instructed how to use and maintain the equipment according to good safety and hygiene practices.

8.17.5 Failure to wear required PPE may subject the worker to corrective action, up to and including dismissal from Toyota property.
The following list must be treated as a minimum standard and expanded on by each Contractor to meet the needs of their work activities and environment:

1) Head Protection:

- Approved Hard Hats must be worn at all times by construction workers in construction areas. The standard covering requirements for hardhats shall be ANSI Z89.1 - 2003. Approved hard hats shall meet the requirements of "Type I, Class E and G" of this standard. No "cowboy-style" hardhats or bump caps shall be allowed on site.
- Hard hats must be worn and replaced as required by the manufacturer.
- Hard hats with a welding shield attached shall be required when welding. There shall be no soft cap welding.
- Hard hats must be worn with the brim facing forward unless manufacturer states that hat meets ANSI requirements while being worn with brim facing backwards.

2) Foot Protection

- Sturdy work boots appropriate for the work activity, and approved by applicable law, must be worn at all times by construction workers.
- Steel toed Safety shoes or the equivalent shall be required during use of a tamper or a jackhammer. If the work takes the Contractor(s) out of the designated construction area into the operations area of the plant, steel-toed shoes shall be required. Steel toed shoes shall meet the requirements of all applicable law and code including ASTM F2413-05.
- In Canada, shoes meeting the provisions of CSA Z195 M92, labeled with "green triangle" signifying additional sole puncture protection of "Class 1", are required.
- Where steel-toed shoes are not required by this provision, their use is still recommended for general safety reasons.

3) Skin Protection/ Protective Clothing

- Proper protective clothing must be worn at all times, e.g. Full length pants and, at least, short sleeve shirts with a minimum of 4" sleeves (no cut-offs). Appropriate skin protection/sun block is recommended for outdoor work.

- Other protective clothing must be worn when required to prevent exposure to any hazardous gas, liquid, dust, fume, or object which may cut, puncture, abrade or burn the skin, or as required by Material Safety Data Sheets.
- Approved high visibility vests/clothing must be used at all times while working on the site. It shall be permissible to remove these items while performing specific work activities where the danger of spark, arc or fire may cause a greater flammability hazard while wearing them. At the conclusion of such work activities, the vests or clothing must again be put on, and shall continue to be worn while working at the site. (Note: The Fire Watch wear must the high visibility vest during fire watch activities.

4) Hearing Protection

- Wherever it is not feasible to reduce the noise levels or duration of exposure to noise specified in Table D-2, Permissible Noise Exposures, in 29CFR1926.52, ear protective devices shall be provided and used. In all cases where the sound levels exceed the values shown herein, an ongoing, effective hearing conservation program shall be administered.

OSHA - 29CFR1926.52

TABLE D-2 - PERMISSIBLE NOISE EXPOSURES

Duration per day in hours response	Sound level dBA slow
8.....	90
6.....	92
4.....	95
3.....	97
2.....	100

- Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

5) Eye and Face Protection

- Approved eye protection with fixed side shields or safety rated goggles must be worn at all times. Prescription safety glasses must also be fitted with secured side shields. The use of thin plastic slip-on eye shields is not allowed. For use in the U.S., eye protection shall meet the requirements of ANSI Z87.1. For use in Canada, eye protection shall meet the requirements of CSA Z94.3.1.
- Suitable approved goggles and/or welding shields with the appropriate shading shall be worn when welding or cutting. Tinted glasses must not be used for general in-plant work.
- Tinted safety rated lens may be used out of doors, but must be changed to clear lenses upon entering a building.
- Face shields in combination with safety glasses must be used where there is a possibility of injury to eyes or face. (e.g., grinding, chipping, cutting, handling hazardous substances, etc.)
- Non-vented goggles must be worn wherever there is a splash hazard.

6) Respiratory Protection/ Air Quality

- The Contractor must take all actions necessary to ensure the quality of air on the project and in their work areas is not affected by emissions caused by their work processes (e.g., welding, running vehicles, etc.) or by the materials used. Make up air must be provided as required.
- Where the quality of air is or may be affected through work activities or by pre-existing conditions, the Contractor must take measures to ensure all hazards that may be present are identified and controlled. (e.g., Air quality tests, ventilation, etc.)
- All air quality tests must be documented and the records available for review by Toyota Safety.
- The Contractor shall provide NIOSH/CSA Approved respirators when such equipment is necessary to protect the health of the worker. The employer shall provide respirators that

are appropriate for the purpose intended. The employer is responsible to establish and maintain a written respiratory protection program with worksite-specific procedures that shall include the following requirements:

- ❖ Procedures for selecting respirators for use in the workplace;
- ❖ Medical evaluations of workers required to use respirators;
- ❖ Fit testing procedures for tight-fitting respirators;
- ❖ Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations;
- ❖ Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators;
- ❖ Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators;
- ❖ Procedures for annually evaluating the effectiveness of the program.
- ❖ Training workers in the respiratory hazards to which they are potentially exposed during routine and emergency situations; and
- ❖ Training workers on the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance.
 - The Contractor shall designate a program administrator who is qualified by appropriate training or experience that is necessary to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.
 - In addition, the Contractor must establish and implement those elements of a written respiratory protection program necessary to ensure that any worker using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user.

8.18 AERIAL LIFTS, SCISSOR LIFTS (ELEVATING WORK PLATFORMS)

- 8.18.1 Contractors shall comply with the manufacturer's requirements and all applicable law for all elevating work platforms. For work in the U.S., OSHA requires that this type of equipment must comply with ANSI A92.2 The American National Standard for Vehicle Mounted Elevating and Rotating Aerial Devices. In Canada, this equipment must comply with CSA B354.2, "Self Propelled Elevating Work Platforms".
- 8.18.2 Personal fall arrest equipment must be worn at all times while operating and/or working in a boom-type lift. The lanyard of the personal fall arrest equipment must be attached to a manufacturers designated anchor point on the equipment. For all boom-type lifts, a manufacturer designated or pre-engineered tie-off point must be provided on the equipment or the equipment shall not be allowed on-site.
- 8.18.3 Personal fall arrest equipment must be worn at all times while operating and/or working in a platform or scissor-type lift. Where platform or scissor-type lifts are equipped with a designated or pre-engineered tie-off point, that point shall be used as the fall protection tie-off point. If no pre-engineered point is provided, the Contractor shall be responsible for determining the location of the manufacturer's approved tie-off point(s).
- 8.18.4 Hand rails on platform or scissor-type lifts shall be of sound structural integrity, with no visible signs of damage, including bending, crimping, cracking, breakage or other deformations.
- 8.18.5 An aerial lift truck shall not be moved when the boom is elevated in a working position with men in the basket, except for equipment which is specifically designed for this type of operation.
- 8.18.6 A pre-shift inspection shall be performed and documented. Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition. Defects must be corrected immediately or the equipment tagged and taken out of service.
- 8.18.7 Only authorized operators, trained in the manufacturer's recommended methods, shall operate an aerial lift. Documentation of such training shall be available for review by Toyota Safety upon request.

- 8.18.8 Only persons trained in Electrical Safety Related Work Practices shall operate equipment near exposed energized electrical systems. Safe approach distances must be maintained at all times.
- 8.18.9 Contractors shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket, stand on a handrail or use planks, ladders, or other devices for a work position.
- 8.18.10 Tying off to an adjacent pole, structure, or equipment while working from aerial lift equipment shall not be permitted.
- 8.18.11 When necessary to exit an aerial lift platform in order to perform work in the surrounding elevated area, the use of a second lanyard, tied off to an acceptable anchorage point outside the lift basket, is required to ensure 100% tie-off. It is unacceptable to detach a single lanyard from a lift tie-off point and re-attach it to an anchorage point outside the lift basket during these operations.
- 8.18.12 All equipment must meet requirements of applicable law and governing authorities.
- 8.18.13 Climbing spikes (shoe attachments) shall not be worn while performing work from an aerial lift.
- 8.18.14 Red tape shall be used to identify the hazard area below elevated work. (See Sections 4.8.5 & 4.8.6 for more information on using red tape as a barrier.) High visibility cones or a dedicated spotter may be used if barrier tape is not practical.

8.19 POWDER ACTUATED TOOLS

- 8.19.1 Powder actuated hand tools used on the construction site must comply with the following:
- Operator must have license, issued by the tool manufacturer or their representative, which is on file with the Contractor.
 - Only the Contractor's workers trained in the operation of the particular tool to be used shall be permitted to use it.
 - All powder actuated hand tools being used at the site shall comply with all applicable safety requirements and shall be maintained in a safe and proper working condition.
 - The tool shall be tested each day before loading to see that all safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.
 - All shot casings must be of a low velocity type.
 - All shot casings (used or misfired) shall be placed in a metal trash receptacle used only for this purpose and disposed of properly.

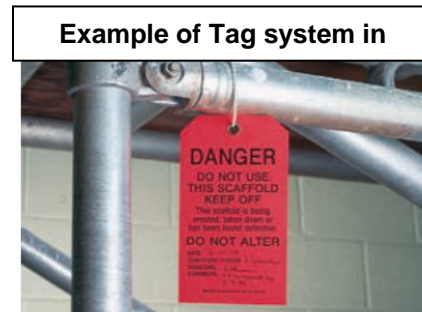
8.20 ROOF ACCESS

- 8.20.1 The following requirements apply to all Contractors, suppliers, inspectors and representatives of the owner who may require access to the roof area.
- 8.20.2 It is the responsibility of all Contractors or other party requiring roof access to prepare a fall protection plan that includes the precautions and emergency/rescue plan for work on the roof. The Contractor must identify why, when, where, and how their work is to be performed.
- 8.20.3 Procedures for the work, working alone (if applicable), the method of fall protection, barriers, signage and supervision must be provided. Procedures should also address such issues as work during inclement weather (wind, ice, snow, etc.)
- 8.20.4 When required by the facility, the Contractor must obtain a Roof Access Permit or similar before allowing workers on the roof. (See sample work permit in appendix D-15.)

- 8.20.5 The supervisor must ensure the workers have been oriented to the job, are aware of the job hazards and that the required Roof Access Procedures are followed. This process must be approved by the NAMC Safety Department.

8.21 SCAFFOLDING

- 8.21.1 All scaffolding equipment and installations must comply with applicable laws.
- 8.21.2 Contractors shall train all workers using, dismantling or erecting scaffold in accordance with applicable laws. A training record for this activity must be available for review or submitted to Toyota Safety, as required. A Competent Person Declaration Form (Appendix D-1) must be completed by the Contractor for the worker(s) who will be supervising the assembling and disassembling of scaffolding.
- 8.21.3 Scaffolding must have a Scaffold Status Tag attached to it at all times. A competent person employed by the Contractor shall complete and apply this tag.



Red Tag – No access allowed. Scaffold is being erected or dismantled, or a major safety defect has been found.

Yellow Tag – Scaffold does not meet all Federal, State/Provincial and Local requirements. Access requires Personal fall protection to be used at all times.

Green Tag - Scaffold meets all Federal, State/Provincial and Local requirements, and is safe to use.

- 8.21.4 Prior to its first use, and prior to each shift, the competent person shall inspect the scaffold, all scaffold components and the surroundings. The Scaffold Tag Status must also be reviewed and signed by the competent person as part of this procedure.
- 8.21.5 The use of personal fall protection equipment shall be required while working on any scaffold platform that is 6 ft. or more above grade and that is not equipped with standard handrails, midrails, toe boards and complete deck.
- 8.21.6 The use of personal fall protection equipment shall be required during scaffolding assembly and disassembly operations, unless the contractor can show that its use would either create a greater hazard for the scaffolding erector(s), or its use is not feasible. In cases where Contractors claim exemption to the use of fall protection during these operations, a written plan showing how worker safety will be ensured shall be presented to, and approved by, a Toyota Safety representative prior to the commencement of the assembly or disassembly operations.
- 8.21.7 Contractors shall not permit their workers to ride a rolling scaffold at any time. Remove or secure all tools and material on the deck before moving.
- 8.21.8 Contractors shall not permit their workers to climb on (unless a ladder is part of the hand rail system), or work from, any scaffold handrail, midrail, or brace member.
- 8.21.9 A ladder or other approved means shall be used to access a scaffold.

8.21.10 Metal scaffolding parts and sections made by one manufacturer shall not be interchanged with another manufacturer.

8.21.11 The area below a scaffold shall be cordoned off and have appropriate warning signs while work is being performed from the scaffold. Where workers are required to work or pass under the scaffold, scaffolds shall be provided with a screen between the toe board and the guardrail, consisting of #18 gauge wire 1/2-inch mesh, or the equivalent.

8.21.12 Scaffolds shall be capable of supporting at least 4 times the maximum intended load. Scaffolds shall not be loaded in excess of their rated capacity. Planks shall not be loaded in excess of their rated capacity.

8.21.13 Slippery conditions on scaffolds shall be eliminated as soon as possible after they occur and prior to work.

8.22 STAIRWAY/LADDER SAFETY

8.22.1 All ladders must be suitable for their intended use, meet requirements of applicable law and shall be either Type 1 (250 lb weight limit) or 1A (300 lb. weight limit). For work in the U.S., all portable manufactured wood ladders shall meet the requirements of ANSI A14.1, Ladders, and Wood. In Canada, portable ladders shall meet the requirements of CSA/CAN3-Z11-M18 "Portable Ladders".

8.22.2 Only ladders constructed of fiberglass or wood or other approved non-conductive materials with anti-slip footings are allowed.

8.22.3 All ladders shall be tied, blocked, or otherwise secured to prevent movement. They should not be located in front of doors unless the door is blocked open or guarded and signs are posted.

8.22.4 Rungs and steps of ladders shall be kept free of grease, oil, paint, snow, ice, mud or other materials which may cause slippery surfaces.

8.22.5 Stepladders shall be fully opened with spreaders locked before using. Never climb higher than two steps below the top of the stepladder. Never move or "walk" a stepladder while standing on it.

8.22.6 Maintain "three point contact" when climbing or descending. Materials should be hoisted to the work level. Face toward ladders when going up or down. During use, the user's body must be kept between the sides rails at all times.

8.22.7 Extension ladders must extend three feet (1m) above the landing area of the ladder.

8.22.8 Do not over-reach when on a straight or extension ladder. An employee who is on a ladder shall not overreach or do any pushing or pulling that may cause the ladder to move or topple. If both of an employee's shoulders are outside of a side rail the employee is overreaching.

8.22.9 Two or more persons should not work on a ladder unless the ladder is specifically designed for this use.

8.22.10 Ladders should never be used for braces, skids, platforms or gangways.

8.22.11 In order to be able to see the safety label, wood ladders should not be painted, except the top step of stepladders may be painted to indicate that it is not to be stepped on. Ladders must be maintained according to manufacturer's instructions.

8.22.12 Ladders shall be visually inspected for structural integrity and damage before each use. Ladders with missing rungs or steps, broken or split side rails or other faulty or defective construction shall be destroyed and removed from the jobsite

- 8.22.13 On all structures two or more floors (20 feet or over) in height, stairways or ramps shall be provided for workers as soon as the Contractor releases this area for access by multiple trades. Stairways must be equipped with suitable handrails where there are four or more risers.
- 8.22.14 Debris and other loose materials shall not be allowed on or under stairways. Slippery conditions on stairways shall be eliminated as soon as possible after they occur.
- 8.22.15 Workers shall not be permitted to use metal-panned stairs unless the pan has been filled completely with a suitable material.
- 8.22.16 The use of a personal fall arrest system shall be required for work from ladders where an worker is exposed to a fall potential of six feet or greater, and the worker's work requires the use of both hands while on the ladder. This requirement is applicable to ladders which are being used as elevated work platforms, and is NOT applicable to ladders being used solely for egress from one level to another.

8.23 STEEL ERECTION

- 8.23.1 The Contractor shall implement a fall protection plan that requires their worker to be tied off 100% of the time for any work over 6 feet in elevation.
- 8.23.2 A positive means of access (scaffold stairs, ladders, etc.) to the work elevation is required.
- 8.23.3 During all phases of erection, Contractor shall provide all safety devices, (e.g., guardrails, handrails, hole covers, etc.) required to keep the work area safe. These devices shall not be removed from the project until their use is no longer required.
- 8.23.4 Protection from falling objects other than materials being hoisted. The controlling contractor shall bar other construction processes below steel erection unless overhead protection for the employees below is provided".
- 8.23.5 The Contractor shall furnish, install and maintain guardrails around the outside perimeter of the building deck at every level change, around all roof openings and all locations where fall potential exists.
- 8.23.6 No steel erection work shall be performed during bad weather (rain or snow) where workers are expected to walk on or straddle structural steel. Work can continue if employer is using aerial lifts to remove slip / fall hazards. Work will cease if crane operator cannot maintain adequate visual contact with connectors fastening steel due to weather conditions.
- 8.23.7 Structural steel shall be erected in accordance with the design drawings and must be temporarily guyed and secured. The guy cable must not be capable of movement or slippage and should have the connections either bolted down or connected to a welded fitting at the base of the column. This must be as approved by an engineer or based on good engineering practice.

8.24 WALKING/ WORKING SURFACES

- 8.24.1 Adequately secured and identified covers and/or guardrails must be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, or any other such hazards.
- 8.24.2 If a cover is used it must be capable of supporting the loads to which it may be subjected (e.g., materials, persons, vehicles, etc.) When a cover is temporarily removed, the opening must be protected on all sides by guardrails and signage.

- 8.24.3 Open-sided floors or platforms 4 feet or more above adjacent floor or ground level must be guarded with a standard railing and toe board wherever persons can pass underneath, where there is moving machinery, or where there falling materials could create a hazard. A standard railing, consisting of a top rail, intermediate rail, and adequate upright posts must be provided when an elevated open-sided surface is greater than 4 feet above the ground. The toe board must be 4 inches above the surface.
- 8.24.4 All floor surfaces should be kept free from protruding objects (nails, splinters, or other projections) and loose boards, holes, etc.
- 8.24.5 Where wet processes are used, drainage should be maintained and platforms, mats, or other dry standing places should be provided where practicable.
- 8.24.6 Contractor must determine the floor load ratings or load capacities of all temporary and permanent structures prior to commencing work on or loading materials onto the floors or structures.
- 8.24.7 Sufficient safe clearances should be allowed between machinery and adjacent aisles or passageways. Permanent aisles and passageways should be clearly marked.
- 8.24.8 Snow, ice, and other hazardous walking surface contaminants should be removed or treated as soon as possible.

8.25 WELDING/ CUTTING/ BRAZING

- 8.25.1 When welding or cutting is being performed in any confined space, the gas cylinders and welding machines shall remain outside the confined space. Refer to the Confined Space Section 7.11 of this manual for welding, cutting and brazing work in a confined space.
- 8.25.2 Torch sets shall be equipped with flashback arrestors and manufacturer's approved gauge hoods.
- 8.25.3 The Contractor shall provide adequate mechanical ventilation when welding or cutting may create a hazardous atmosphere, including exhaust fumes from portable welders. The following materials - fluorine compounds, zinc, lead, beryllium, cadmium, mercury, cleaning compounds, and stainless steel require following specific controls. Refer to federal, provincial and state/local laws as required for specific direction. General requirements are covered by OSHA 29 CFR 1926.353.
- 8.25.4 Free gaseous acetylene is potentially unstable at pressures above 15 PSIG and could decompose with explosive violence. Therefore, the use of acetylene at pressures higher than 15 PSI Gauge pressure (or about 30 PSI absolute pressure) is not allowed.
- 8.25.5 The frame or case of the welding machine (except engine-driven machines shall be grounded under the conditions and according to the methods prescribed in Subpart S of OSHA 1910
- 8.25.6 Pipelines containing gases or flammable liquids, or conduits containing electrical conductors shall not be used for completing a grounding circuit in support of welding operations. Pipelines shall not be used as a permanent part of a work-lead circuit, but may be used during construction, extension or repair providing current is not carried through threaded joints, flanged bolted joints, or caulked joints and special precautions are used to avoid sparking at the connection of the work-lead cable.
- 8.25.7 Before starting operations, all connections to the machine shall be checked to make certain that they are properly made. The work lead shall be firmly attached to the work. Magnetic work clamps shall be freed from adherent metal particles of spatter on contact surfaces. Coiled welding cable shall be spread out before use to avoid serious overheating and damage to insulation.

8.25.8 Cables with damaged insulation, ripped or missing boots, or exposed bare conductors shall be immediately replaced. Splicing of work and electrode cables shall be allowed, and shall be done by the use of connecting means specifically intended for the purpose. The connecting means shall have insulation adequate for the application. Splices in cables shall not be allowed within 10 feet (3m) of the welding rod. Welders should not coil or loop welding electrode cable around parts of their body.

8.25.9 The following limits shall not be exceeded:

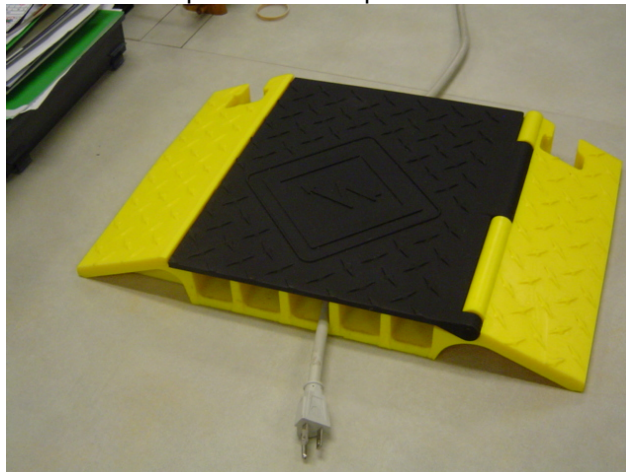
<u>Alternating Current (AC)</u>		<u>Direct Current (DC)</u>
Manual	80 Volts	100 Volts
Automatic	100 Volts	100 Volts

8.25.10 When welding under warm or humid conditions, operator perspiration is a factor. Under these conditions, welding equipment shall be equipped with a reliable automatic control designed to reduce shock hazard by reducing the equipment's no-load voltage

8.25.11 When arc-welding work is discontinued for any substantial period of time, such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine should be disconnected from the power source.

8.25.12 Cables should be positioned so that they do not create a trip hazard. Where there are runs of many cables combined, they should be adequately suspended above the floor surface or covered such that they are protected and do not pose a trip hazard or are subject to damage by vehicular traffic.

Figure 8.25.12 – Example Method for protection of floor-run cables



8.26 Demolition

8.26.1 Prior to permitting workers to start building demolition operations, an engineering survey shall be made, by a competent person, of the structure to determine the condition of the framing, floors, and walls, and possibility of unplanned collapse of any portion of the structure. Any adjacent structure where workers may be exposed shall also be similarly checked. The contractor shall have in writing evidence that such a survey has been performed. The survey shall be presented to Toyota at least 48 (working hours) in advance of the commencement of work.

8.26.2 All electric, gas, water, steam, sewer, compressed air, and other service lines shall be shut off, capped, or otherwise controlled, outside the building or specified area of demolition before demolition work is started. In each case, any utility company which is involved shall be notified in advance. If utilities are controlled by the Toyota, the controlling engineering organization shall be consulted to identify all potential energy sources supporting the identified building or equipment. These sources shall be locked out or eliminated by each contractor associated with the demolition.

- 8.26.3 If it is necessary to maintain any power, water or other utilities during demolition, such lines shall be labeled, temporarily relocated as necessary, and protected from the demolition work.
- 8.26.4 It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property or area of demolition. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started. A written purge plan shall be created and presented to the Toyota 48 (working hours) in advance for review. Environmental implications must be considered in the purge plan.
- 8.26.5 A written plan detailing how exposure and the possible spread of contaminants will be controlled is to be submitted and approved by Toyota Safety & Environmental designated persons 2 days before demolition begins.
- 8.26.6 Where a hazard exists from fragmentation of glass, such hazards shall be controlled and all glass debris created shall be cleaned and disposed of as soon as possible.
- 8.26.7 When debris is dropped through holes without use of chutes, the area onto which the material is dropped shall be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs, warning of the hazard of falling materials, shall be posted at each level. Removal shall not be permitted in the lower area until debris handling ceases above.
- 8.26.8 Demolition of exterior walls and floor construction shall begin at the top of the structure and proceed downward. Each story of exterior wall and floor construction shall be removed before commencing the removal of exterior walls and floors in the story next below. If traditional means are not adequate an alternative plan must be completed by a licensed professional engineer explaining variance from standard.
- 8.26.9 Only stairways, doors and passage ways for access and egress to the work area shall be accessible. All other means of egress shall be blocked to prevent unauthorized entry.
- 8.26.10 Materials shall not be dropped to any point lying outside the exterior walls of the structure unless the area is effectively protected similarly to 8.26.6.
- 8.26.11 All materials chutes or sections thereof, at an angle of more than 45 deg. from the horizontal, shall be entirely enclosed, except for openings equipped with doors at or about floor level for the insertion of materials. The openings shall not exceed 1000mm (40") height measured along the wall of the chute. At all stories below the top floor, such openings shall be kept closed when not in use.
- 8.26.12 Any chute opening, into which workers dump debris, shall be protected by a guardrail above the floor or other surface on which the men stand to dump the material. Any space between the chute and the edge of openings in the floors through which it passes shall be completely covered over.
- 8.26.13 Where the material is dumped from mechanical equipment or wheelbarrows, a securely attached curb or stop-log, not less than 100mm (4") thick and 150mm (6") high, shall be provided at each chute opening.
- 8.26.14 Floor openings shall have curbs or stop-logs securely attached to prevent equipment from running over the edge.
- 8.26.15 Chutes shall be designed and constructed of such strength as to eliminate failure due to impact of materials or debris.
- 8.26.16 Any openings cut in a floor for the disposal of materials shall be no larger in size than 25 percent of the aggregate of the total floor area, unless the lateral supports of the removed flooring remain in place.

Floors weakened or otherwise made unsafe by demolition operations shall be shored to safely carry the required load.

- 8.26.17 No wall section, which is more than one story in height, shall be permitted to stand alone without lateral bracing, unless such wall was originally designed and constructed to stand without such lateral support, and is in a condition safe enough to be self-supporting. All walls shall be left in a stable condition at the end of each shift.
- 8.26.18 Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are of sufficient strength to support the intended load.
- 8.26.19 Steel construction shall be dismantled column length by column length, and tier by tier (columns may be in two-story lengths).
- 8.26.20 In areas where tarps are hung to separate production activity from demolition areas, dumpster placement and equipment travel paths should be positioned 6 feet from the tarp with interior bump lines established to prevent interaction between demolition works and activate production.
- 8.26.21 When demolition activities require installation of a containment wall, clear material (e.g., lexan or plexi-glass) shall be installed where the wall creates a blind spot at an aisle intersection.
- 8.26.22 For additional construction demolition information, see OSHA 1926 Subpart T - Demolition.



Monthlv


Milestone Schedule


Weekly


APPENDIX SECTION A – Sample of a Project Specific Safety Plan


TEMA Example Health and Safety Plan	Responsible Party	Purpose	Target Completion	Status	Comments	Month n (project start)				Month n+1				Month n+2				Month n+3			
Pre-Construction/ Work Organization																					
1	Pre-Bid Meeting Upon selection, Contractor's Supervisory team names should be submitted & their training dates provided.	TEMA	- Contractor's Safety Record - WSIB or ERM Rating - Expectations of TEMA - Advise On date for Health & Safety Plan.	Pre-project	●	For Large Projects dates for Sub-Contractor Training should already be set up and announced at selection time. *															
2	Kick-Off Meeting Prior to the kick off meeting, TEMA will review the General Contractor(s) Health & Safety Plan, then meet with the General Contractor. Critical Safety items must be documented & scheduled. E.g. Guardrails, Stair Scaffolds, Lock Out.*	TEMA	- Coordinate Work Activities - TEMA to prepare outline/ agenda & Health and Safety Presentation 1. TEMA Safety Policy review 2. Create Presentation of Contractor Expectations for the Kick-Off Meeting	Pre-project																	
3	Submission of Safety Policy & Program The General Contractor(s) will present their Health & Safety Plan.	General Contractor	- How will the work be performed? - Does the program meet TEMA Standards?	Pre-project		For review by TEMA															
4	Contractor Orientation (a) - Contractor Orientation Checklist. -This meeting date and time will be scheduled at the contract award meeting. (b) Review Health and Safety Requirements	(a) TEMA (b) TEMA	Note: Contractor Orientation must be reviewed and revisions made as required to the Orientation prior to beginning Orientations (a) - Review and complete the Contractor's Orientation Required Checklist (b) - To Review TEMA's Health and Safety Requirements - Safety Philosophy - Duties and Responsibilities - Ensure compliance - Sign-off	(a) Pre-project (b) Pre-project		(a) On-going Offered as Required (b) On-going Offered as Required															

Legend


Milestone (target) 


Complete 

In Progress 

On-Going 

Implement





Legend

Milestone (target)

Complete

In Progress

On-Going

Implement

TEMA Example Health and Safety Plan		Responsible Party	Purpose	Target Completion	Status	Comments																			
5	Worker Orientation. (a) TEMA Orientation. On Larger Projects an Appointment system should be set up in order to prevent overcrowding.	(a) TEMA	(a) - Communicate TEMA/ NAMC's safety philosophy/ policy - Train on specific TEMA safety requirements. Exact schedule for orientation meetings will be communicated at this time.	(a) On-going		(a) Throughout duration of project must be renewed every 12 months																			
	(b) General Contractor Orientation.	(b) General Contractor	(b) - Orientate workers to the area and the hazards on the job	(b) On-going		(b) Proof of Orientation needed (i.e. Sticker) Safety Awareness Contractors need to be made aware of Reorientation requirement resulting from Fall Protection and Lock Out violation or other serious violations.																			
6	Work Permits and Commissioning Permits (a) - Production of Work Permits and Commissioning Permits. All forms should be part of a package. With the package there should be an Orientation on the Forms and their meaning and an overview as to how they should be completed.	(a) General Contractor	(a) Notice of Work Permit/ Commissioning Permit must be submitted by the General Contractor - All activities identified under the Permit must have Risk Assessment and Procedures in place - Where work involves interaction with current NAMC facility and workers additional Permits may be required.	(a) Pre-job		As Construction Safety Requirements Special Work Items Consideration as outlined on the Permit																			
	(b)- Walk through and review of Work Permit and Commissioning Permits.	(b) - TEMA	(b) - Walk through work the permit and determine if the counter-measures are adequate. Ensure that the supervisor on the walk through is the same person that is actually supervising the work activity.	(b) Weekly																					
TEMA Example Health and		Responsible	Purpose	Target	Status	Comments																			

Safety Plan		e Party		Completion																	
7	(a)Contractor Project Management and Supervision evaluate work location and activity. (b)Mobilization of The Contractor. The respective Engineer or Construction Manager/Coordinator will assign an area for the Contractor so that they can lay down their Tools, Equipment and Material. Where there is more than one Contractor, proper separation is required and Contractor equipment must be clearly identified, to verify ownership.	General Contractor	- To identify and assess the risks associated with the work to be done- Eliminate the risks or develop and apply control measures- Submit Task Specific Safe Work Procedures detailing main risks to Control:- Stored Energy/ Lock-out (Matrix)- Overhead work/Fall Protection- Confined Space Entry- Material Handling- Equipment Mobilization (work at heights)- Lay down Area - must be designated by TEMA - Taped off and Identified by the Contractor- Mobile Equipment (i.e. hoisting and rigging), Certification of Inspection (visual), Equipment condition, Equipment Installation, Grating and Decking Installation- Chemical Control- Hot Work- Floor Penetrations- Elevated Work Platforms around Pits- Commissioning	Pre-project		- Determine Control Measures- Training- Engineered Drawings (i.e. Anchor points)- Inspection and follow-up- Auditing. -TEMA will carry out their own review of the workplace and the proposed work activity prior to the work being carried out in order to ensure that they or the Contractor are identifying all the hazards associated with the work.															
8	Environmental Management Plan must be developed and implemented	General Contractor	- Demonstrate how environmental hazards/ risks will be managed and controlled- Training	Pre-project		Must be approved by TEMA															
9	Safety Communication Boards (a) - TEMA Board (b) - General Contractor's Board	(a) TEMA (b) General Contractor	(a) - For Safety Communication only (e.g., Safety Bulletins, Emerg. Comm, Emergency Evac Routes, Site Specific Updates, H & S Info, etc.) (b) - For Safety Communication only Permits, safe work procedures, meeting minutes, (i.e., Posting Work etc.)	(a) Pre-project (b) Pre-project		(a) Must be in place before job starts Locations to be agreed to and audited prior to commencement of activity. (b) Pre-Shift Coordination Meeting to take place.															
TEMA Example Health and		Responsibl	Purpose	Target	Status	Comments															

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TEMA Example Health and Safety Plan		Responsible Party	Purpose	Target Completion	Status	Comments																
3	Reporting (a) Weekly - Contractor's Weekly Safety Report	(a) General Contractor	(a) - Monitoring Contractor safety activity, status, man hours, first aids, medical aids, lost time - To be submitted to TEMA by 12:00 every Tuesday	(a) Weekly		(a) To compile statistics.																
	(b) Bi-weekly - Overall Project/ Site Status Report	(b) TEMA/ NAMC	(b) - To communicate to Senior Management and to ensure tracking of all Safety Management Tools	(b) Bi-weekly		(b) Weekly Safety Reports could be modified to display more detail, if situation has changed since last report.																
	(c) Where Required - Incident/ Accident Investigation Reports - Additional Reports as Required	(c) General Contractor	(c) - Incident/ Accident Investigation Reports must be submitted within 24 hours - Additional reports may be required as necessary	(c) - As Required																		
Inspections/ Monitoring																						
1	Weekly Inspections by TEMA Safety Specialist and the Contractor's Supervisors	TEMA/ General Contractor	- To identify if work activities present any hazards or risks - Tuesday's at 11:00 AM - To document findings, commend good work practices and correct any unsafe acts/ conditions	Weekly		Split into zones if necessary, include Superintendent																
2	Inspections by JHSC and Contractor's Supervisor	TEMA/ General Contractor	- Legal requirement - As per the Terms of Reference - Management Co-chair and Worker Co-chair to conduct the inspections	Minimum of once/ month		Inspection to be carried out prior to the JHSC meetings.																
3	Daily inspections (a) - Contractor Site Inspections (b) - Equipment Pre-Operational Check	(a) General Contractor (b) General Contractor	(a) - Daily reports of actions and conditions on site (b) - To ensure equipment is in proper working condition and to detect any malfunctions	(a) Daily (b) Daily																		

TEMA Example Health and Safety Plan	Responsible Party	Purpose	Target Completion	Status	Comments												
4 (a) Construction Air Quality testing(b) Construction Noise/Sound Testing(c) Construction Light Mapping	(a) General Contractor (b) General Contractor (c) General Contractor	(a) - Must provide adequate ventilation for workers and maintain good air quality not measure poor A/Q. (b) - Noise levels Below 85 dB (c) - Must maintain a minimum illumination of 10ft candle.	On-going as required		Document all testing and Test Results to be posted and available to ORO safety. Items may be audited by TEMA												
5 Certification of Equipment and Tools	General Contractor	To ensure that equipment is in proper working condition All inspection Forms should be readily available at work locations.	Pre-project		Must have proof of equipment certification prior to the commencement of work Auditing by TEMA as required												
Training																	
1 Team Member Project Training	TEMA	- To ensure that team members receive the proper training for the project and are up-to-date with the necessary requirements - Training to be geared towards the job and activity	Shop Sequential		As needed and work specific * Must be conducted prior to work on site												
3 Training for Work Permits and Commissioning Permits	TEMA/ NAMC	-To demonstrate how the permits are to be completed and what standards are to be followed - Who will complete the permits and when - Deadlines - Contents of the permits - Distribution of the permits	Pre-job and as required														
4 Emergency Response (to be reviewed on an on-going basis)	TEMA	- Training for the ERT in the Emergency Response Plan and Rescue Procedures	Pre-project		Training will be on-going, as process layout changes, rescue procedures will change												

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APPENDIX SECTION B - References

The following is a partial listing of Safety Standards and Codes that may be relevant to the construction and/or installation Contractor. This list is presented to help make the Contractor aware of types of codes and standards they should be observing while working at a North American Toyota project site. Some of the material and ideas contained in this management handbook have been taken from these documents. Not all of the standards and codes contained in this list are referenced in this guideline.

Std. Number	Standards. Dev.Org	Current Date	Title
NFPA1	NFPA	2003	Uniform Fire Code
NFPA10	NFPA	2002	Standard for Portable Fire Extinguishers
NFPA 30	NFPA	2003	Flammable and Combustible Liquids Code
NFPA51B	NFPA	2003	Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA55	NFPA	2003	Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks
NFPA 70	NFPA	2002	National Electrical Code (NEC)
NFPA 70E	NFPA	2004	Standard for Electrical Safety Requirements for Worker Workplaces
NFPA 70B	NFPA	2002	Recommended Practices for Electrical Equipment Maintenance
NFPA 79	NFPA	2002	Electrical Standard for Industrial Machinery
NFPA101B	NFPA	2003	Code for Means of Egress for Buildings and Structures
NFPA241	NFPA	2004	Standard for Safeguarding Construction, Alteration, and Demolition Operations
NFPA329	NFPA	1999	Recommended Practice for Handling Releases of Flammable and Combustible Liquids and Gases
Z308.1		2003	AMERICAN NATIONAL STANDARD FOR WORKPLACE FIRST AID KITS
NFPA450	NFPA	2004	Guide for Emergency Medical Services and Systems
NFPA471	NFPA	2002	Recommended Practice for Responding to Hazardous Materials Incidents
NFPA704	NFPA	2001	Standard System for the Identification of the Hazards of Materials for Emergency Response
P-1	Compressed Gas Assoc.	2000	Safe Handling of Compressed Gases in Containers.
UL1088	U.L.	2000	TEMPORARY LIGHTING STRINGS
Z89.1	ANSI	2003	REQUIREMENTS FOR INDUSTRIAL HEAD PROTECTION
Z87.1	ANSI	2003	PRACTICE FOR OCCUPATIONAL AND EDUCATIONAL EYE AND FACE PROTECTION
Z41	ANSI	1999	PERSONAL PROTECTION - PROTECTIVE FOOTWEAR
Z358.1	ANSI	2004	EMERGENCY EYEWASH AND SHOWER EQUIPMENT
Z88.2	ANSI	1992	RESPIRATORY PROTECTION
Z359.1	ANSI	1999	SAFETY REQUIREMENTS FOR PERSONAL FALL ARREST SYSTEMS, SUBSYSTEMS AND COMPONENTS
Z49.1	AWS	1999	SAFETY IN WELDING AND CUTTING AND ALLIED PROCESSES
A14.1	ANSI	2000	AMERICAN NATIONAL STANDARD FOR LADDERS - WOOD - SAFETY REQUIREMENTS

Z117.1	ANSI	2003	SAFETY REQUIREMENTS FOR CONFINED SPACES
A92.2	ANSI	2002	The American National Standard for Vehicle Mounted Elevating and Rotating Aerial Devices.
ISEA107	ISEA	1999	AMERICAN NATIONAL STANDARD FOR HIGH-VISIBILITY SAFETY APPAREL
B30.5	ASME	2000	MOBILE AND LOCOMOTIVE CRANES
B30.9	ASME	2003	Slings
B30.10	ASME	1999	Hooks
B30.11	ASME	1998	Monorails and Underhung Cranes
B30.16	ASME	2003	Overhead Hoist (Underhung)
B30.20	ASME	2003	Below-The-Hook Lifting Devices
Z244.1	ASSE	2003	Control of Hazardous Energy- Lockout/Tagout and Alternative Methods
Z358.1	ISEA	1998	Emergency Eyewash and Shower Equipment
Z535.1	NEMA	2002	Safety Color Code
Z535.2	NEMA	2002	Environmental and Facility Safety Signs
Z535.3	NEMA	2002	Criteria for Safety Symbols
Z535.5	NEMA	2002	Safety Tags and Barricade Tapes (for Temporary Hazards)
21CFR 1040.10	FDA	2004	Performance standard for light emitting products (Lasers)
29CFR 1904	OSHA		Recording and Reporting Occupational Injuries and Illness
29CFR 1910	OSHA		Occupational Safety and Health Standards
29CFR 1926	OSHA		Safety and Health Regulations for Construction

Canadian Codes and Standards

Std. Number	Stds. Dev.Org	Current Date	
OHSA		1979	Occupational Health and Safety Agency (OHSA)
C22.1-02	CSA	2002	Canadian Electrical Code (CEC)
C22.1-02 (OA)	ESA	2002	Ontario Electrical Safety Code (OESC) (Ministry of Labor Approval)
Z460	CSA	Draft	Control of Hazardous Energy - Lockout and Other Methods
Z11	CSA	2003	Portable ladders
Z259	CSA	1999	Fall Protection
Z94.1	CSA	2003	Industrial Protective Headwear
Z94.2	CSA	2002	Hearing protection Devices
Z94.3	CSA	2002	Eye and Face Protection
Z94.4	CSA	2002	Selection, Use and Care of Respirators
Z195	CSA	2002	Protective Footwear
Z96	CSA	2002	High Visibility Safety Apparel



TEMA PE

Safety Engineering

Job Safety Analysis

(JSA) Guidelines

**(For Construction, Equipment Installation
& Decommissioning Projects)**

March 11th, 2011

(NOTE: This Annex can be used as a stand alone document as a JSA training aid.)

1.0 Introduction

Toyota believes the Job Safety Analysis (JSA) process is a critical component to a successful safety plan. We expect contractors, vendors and suppliers who provide services to TEMA to embrace the JSA process. To enhance understanding and improve communication with our business partners, the following document was created as a tool for TEMA Production Engineering to reference when construction or machine installation work is conducted by TEMA at an NAMC or at any other location.

NOTE: This is intended provide guidance to TEMA PE regarding the TEMA JSA requirements as contained in the TEMA PE Construction Requirements document. This document should be referenced when confirming contractors' adherence to the TEMA PE JSA process and content requirements. In addition, the concepts and process discussed in this document should apply to construction and equipment installation projects performed by TEMA PE members.

This document will provide answers and direction in the following areas as it relates to JSAs:

- What is a JSA?
- When is a JSA required?
- What are the roles & responsibilities of the JSA process?
- Who should create the JSA?
- What are the key elements of a JSA?
- What is the review process for a JSA?
- How should a JSA be applied in the field?

2.0 What is a JSA?

Job Safety Analysis (JSA) is a proactive technique that, at the job task level, identifies potential hazards and how they will be controlled. It focuses on the relationship between the worker, the task, the tools, and the work environment. The process requires contractors identify, document, and communicate potential hazards and the steps to eliminate or reduce that risk to an acceptable level.

The JSA shall be formally documented in writing. The TEMA PE Construction Requirements document provides a JSA template that may be used by contractors. Contractors may use their own form provided it contains, at a minimum the following fields:

1. Company name.
2. Date JSA was completed.
3. Name of task/job/activity.
4. Steps to complete task in sequential order.
5. Potential hazards associated with each step of the task.
6. The countermeasures or preventive action associated with each hazard.

The contents of the written document shall be reviewed with all affected workers prior to the initial start of the job and on each subsequent day work is performed on that job. It is important to remember affected workers may include workers on other jobs or from other companies who are working in the area. (The review process will be covered in more detail in a subsequent section.)

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The JSA process begins in the planning phase and is utilized by those responsible for determining how a job will be performed. The JSA should prompt strong planning of tasks and should begin to outline known hazards associated with the type of work to be performed. This outline is then refined once at the jobsite to include local hazards such as the proximity of other workers, site traffic, and other site specific conditions.

3.0 When is a JSA required?

The JSA process is a key risk mitigation tool that shall be implemented on all TEMA PE projects. **The TEMA Construction Safety Requirements document requires contractors to complete a JSA for all construction and machine installation activities/tasks** they are contracted to perform or that arise as a consequence of fulfilling those contractual obligations.

Every construction or machine installation task that is planned to be performed or that arises out of additional requests or unforeseen circumstances must have a JSA. The level of detail included in the JSA should be commensurate with the level of risk. Simple sub tasks may be included or added into a broader scoped JSA

4.0 What are the roles & responsibilities of the JSA process?

The JSA process is primarily the responsibility of the contractor. The planning and execution of process steps rest solely with the contractor. TEMA Production Engineering’s role includes, but is not limited to: 1) confirming the contractors understand the JSA process, and; 2) reviewing JSAs to confirm TEMA PE clearly understands the contractor’s tasks, potential hazards, and countermeasures.

The job shall not commence until the applicable JSA has been reviewed by TEMA ORO/Project Management Group Designee(s) AND TEMA PE Safety representative(s). All questions regarding the steps, potential hazards, and countermeasures must be addressed to the satisfaction of both these groups before the contractor shall allow work to begin on the job.

The roles and responsibilities of each respective area are provided in TABLE 1.

Section	Responsibility
TEMA PE Project Department Leads	<ol style="list-style-type: none"> 1. Understand JSA process. 2. Ensure contractors understand JSA requirements / expectations when bidding work. 3. Provide time for JSA training
TEMA ORO/Project Management Group (PMG) Organization or Designee* (e.g., Project Engineers) (*These are TEMA PE resources that are dispatched, assigned, or located at the project location.)	<ol style="list-style-type: none"> 1. Confirm contractor understanding of JSA requirements. 2. Review all JSAs prior to beginning of job to: 1) confirm understanding of job steps in the required work scope, and; 2) risk countermeasures are commensurate with the potential hazards listed on each step. 3. Confirm execution of JSA as part of periodic site tours.
TEMA PE Safety Department	<ol style="list-style-type: none"> 1. Serve as Subject Matter Expert for JSA process. 2. Set criteria for JSA completion and quality. 3. Train PE team members as needed 4. Review JSA Audit findings. 5. Resolve JSA questions/issues.
TEMA PE Site Construction Safety Team (or designee)	<ol style="list-style-type: none"> 1. Serve as Subject Matter Experts for JSA process 2. Train PE team members as needed. 3. Review all JSAs prior to beginning of job to confirm risk countermeasures are commensurate with the potential hazards listed on each step. 4. Coach TEMA PE and Contractors if JSA quality is substandard.
General Contractor	<ol style="list-style-type: none"> 1. Understand contractual obligations as they relate to the JSA process. 2. Create thorough JSAs for all tasks as identified in TEMA Construction Safety Requirements document. 3. Ensure JSAs include all critical steps of the job process in sequential order. 4. Submit JSAs in timely manner to allow proper review. 5. Confirms TEMA appropriate TEMA PE review conducted before beginning work. 6. Effectively communicate to workers prior to start of work & obtain signatures on JSA. 7. Confirm execution of JSAs in the field as work progresses. 8. Modify JSA in the field immediately if conditions / tasks/ risks should change & communicate updates to affected workers.

5.0 Who should create the JSA?

It is very important to **involve employees of all disciplines and levels in the JSA process; Supervisors, Foreman, Laborers, Technicians, Safety, etc.** They all can contribute in providing a practical understanding of the job which is invaluable in identifying potential hazards. This practical knowledge will help minimize oversights, improve quality of the analysis, and get all workers to “buy in” to the process of identifying hazards and the countermeasures associated with their work.

6.0 What are the key elements of a JSA?

There are **three elements essential to creating a quality JSA.**

1. **Identify each individual step or sub task of the job.**
2. **Identify workplace hazards associated with each step or sub task.**
3. **Determine suitable and sufficient control measures which address identified hazards.**

Let's examine each one in more detail.

1 - Identify each individual step or sub task of the job.

Every job can be broken down into sub tasks or steps. Starting from the project plan, **break down each job into the sequential steps** required to complete it (components or sub tasks). It may be helpful to get input from workers who have performed the same job before in fully understanding the detailed steps and job sequence.

2 - Identify workplace hazards associated with each step or sub task.

Using the breakdown of sequential tasks or steps, the job hazard analysis is now an exercise in detective work. The goal is to foresee:-

- What could go wrong?
- How could a potential hazard arise?
- What contributing factors exist (not immediately related to the task at hand)?

The best way to identify workplace hazards is to walk the worksite in advance. Look for hazards that are directly associated with the task that will be conducted as well as hazards that are not related to the target task. From trip/fall hazards to overhead power lines all potential hazards must identified.

Section 10.0 (Sample Task / Hazard List) identifies some key tasks and risks that should be considered when developing a JSA. It is by no means a complete list of all items that should be covered, but serves as a guide to reference when creating a JSA.

3 - Determine suitable and sufficient control measures which address the identified hazards.

After reviewing this list of hazards, consider what control methods will eliminate or reduce them to an acceptable level. When developing any JSA, the Hierarchy of Risk Control (from most to least effective) should be referenced regularly:

1. Can the hazard be **eliminated**? Ask if the step is truly necessary to accomplish the task.
If #1 is not practical,
2. Can a **substitution** be put in place? For example: replace a manual task with equipment that eliminates the exposure.
If #2 is not practical,
3. Can workers be **isolated** from the hazard? For example: moving the work to an off shift if excessive noise or atmospheric hazards may be introduced by a process.
If #3 is not practical,

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4. Can **engineering controls** be put in place? For example: Can ventilation be provided to decrease heat, remove atmospheric hazards etc.
If #4 is not practical,
5. Can **administrative controls** be put into place? For example: Move work to off shift if 2 contractors need to work in same space. Shift workers to off shift on extremely hot days.
If #5 is not practical,
6. Provide appropriate **PPE until better controls are available**.

See Section 11.0 of this Appendix for an example of a completed JSA.

7.0 What is the review process for a JSA before it is finalized and shared with the work crew?

All JSAs created by contractors must be reviewed by the Toyota ORO/PMG designee responsible for the work. The Toyota ORO/PMG designee is responsible to ensure the contractor has adequately considered the key steps associated with the contracted task, associated hazards and controls. After the TEMA ORO/PMG review, TEMA Safety or their designee will also review the JSA for content and risk control measures. **The work shall not commence prior to review of the JSA by TEMA PE Project Lead (or designee) and TEMA Site Construction Safety (or designee).**

Periodically, TEMA will conduct field JSA audits to confirm correct application at the jobsite. Key Items covered during the field audit are:-

- JSA document is present at the jobsite
- JSA is applicable to work being performed
- JSA has been reviewed by workers
- JSA is signed off by workers
- JSA is being followed by the workers

Figure 1 below provides a flow chart for the JSA initiation, development and review process

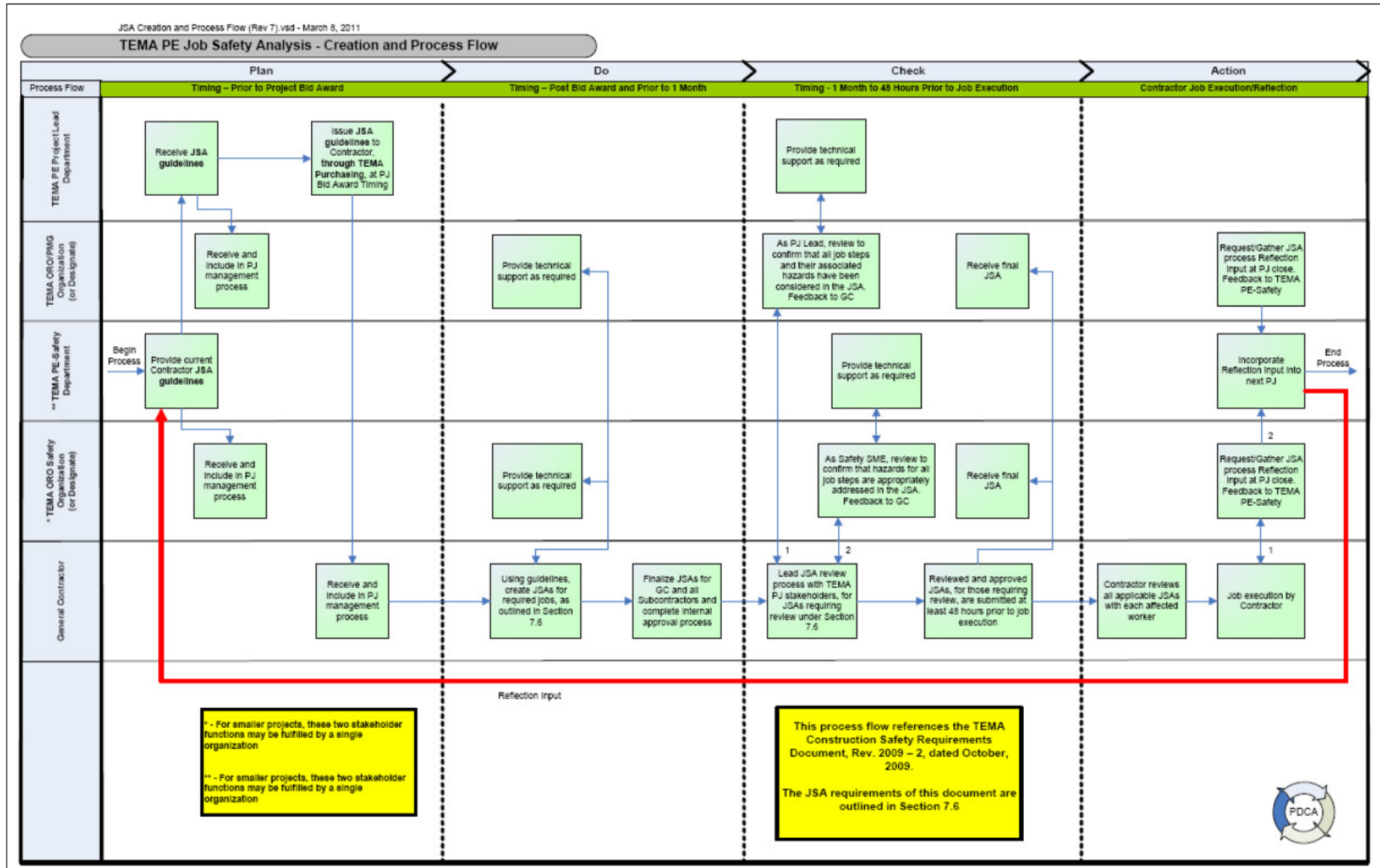


Figure 1 – JSA Process Flow

8.0 How should the JSA be applied the field?

The JSA process is only effective if, **prior** to work starting, it is reviewed on a daily basis with all affected workers and followed throughout the day's activity. In addition, the JSA should always be considered a living document at the job site. **If conditions change, or the task must be modified, it is required that the JSA is modified in the field to reflect the changes.** Changes to the JSA should be documented in pen by the supervisor and communicated to the affected workers. The affected workers should write their initial and date on the modified JSA next to where they originally signed the JSA to document they are aware of the changes. It is expected that key items included in the audit will be exercised at all times during the course of the work.

If an injury occurs on a specific job, the JSA must be reviewed to determine the failure point in the process. If a hazard was not appropriately identified and/or a countermeasure listed on the JSA was insufficient, the JSA must be updated to address the failure point(s) prior to work restarting. In addition, the changes to the JSA must be reviewed with workers before work restarts and all affected workers must initial and date the JSA. If an employee's failure to follow proper job procedures results in a "close call" or "near miss", discuss the situation with all employees who perform the job and remind them of proper procedures. Any time a JSA is revised, it is important to train all employees affected by the changes in the new job methods, procedures, or protective measures adopted and have them initial and date the updated JSA.

9.0 Summary

The JSA process outlined in this document is a PROACTIVE technique to protect workers on Toyota projects. It is a straightforward process designed to eliminate risk (where practicable) or reduce the risk to an acceptable level. The expectation is for TEMA PE to reinforce the use of the JSA process for TEMA-led construction, equipment installation, and decommissioning projects.

If you have any questions on the JSA process, please contact TEMA PE Safety Engineering.

10.0 Sample Task / Hazard List

This identifies some specific tasks and associated key points / risks that should be considered when developing a related JSA. It is by no means a complete list of all items that should be covered, but serves as reference guide when creating a JSA.

Concrete Formwork (Flatwork on Grade)

1. Hand & power tool risks (e.g., pounding stakes w/ sledge, vibration, noise, etc.)
2. Ergonomics (e.g., worker posture)
3. Worker & equipment interface (excavators, compactors, bull dozers)
4. Re-bar / mesh placement
5. Trip hazards when walking on re-bar / mesh
6. Potential CO concerns (portable generators)

Concrete Placement

1. Concrete truck path of travel (height, ground condition, etc.)
2. Rear Loader trucks will need spotter on chute.
3. Contact with overhead obstructions (e.g., power lines) by trucks & finishers with poles
4. Interface of workers with concrete buggies and power finishers
5. CO / air quality concerns from motorized equipment.
6. Workers walking on steel re-enforcement

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7. Posture / use of power screed
8. PPE (ex. lye burn prevention)
9. Laceration prevention.
10. Ergonomics (ex: moving pump hose where pump truck is involved)
11. Industrial hygiene concerns with concrete sealer. (Reference MSDS)

Concrete Saw Cutting

1. Unloading equipment (saw)
2. If gas equipment is used, CO concerns
3. If electric equipment is used, electrical hazards (GFCI use)
4. Unauthorized entry (barricading)
5. Industrial hygiene concerns (noise & dust).

Conveyor Installation

1. Unloading equipment & staging material
2. Crane operation (crane operator has documented 3rd party certification, crane action plan that addresses potential contact with energy sources, etc.)
3. Fork truck operations (proof of operator training, path of travel, worker / forklift interface)
4. Rigging – Rigger qualifications* documented & on file, rigging equipment inspection and use
5. Availability of engineered pick points
6. Pinch point & laceration prevention
7. Shimming / leveling concerns
8. Electrical & mechanical installation hazards
9. Requirement to use Lock Out (training record, equipment for workers, etc.)
10. Fall protection (if work > 6 feet) - training records for workers, equipment available & adequate, etc.)
11. Man lift operation – training, lift inspection prior to use (daily before each use, documented)
12. Burning & welding concerns / countermeasures

Earth Moving / Paving Operations

1. Documented proof of equipment operator training. (Copy attached to JSA)
2. Determine a safe traffic pattern / flow.
3. Location of overhead & underground energy sources
4. Documented equipment inspection sheets
5. Loading / unloading of equipment from trailer
6. Night time operations (if applicable)
7. Equipment fire prevention
8. Air quality (if performed indoors)

Electrical Installation (General)

1. Unloading & staging material
2. Electrical Safe Work Practices (NFPA 70-E and PPE training requirements)
3. Lock Out training requirements (LO equipment adequate and available)
4. Conduit installation (threaded pipe, or compression fittings)
5. Installation of cable tray hanger and cable trays (trip hazards, overhead work, etc.)
6. Cable / wire installation, (pulling cable)
7. Fall Protection training (equipment available and adequate for job)
8. Man Lift training and inspection requirements.

Excavations

1. Excavation permit filled out.
2. Competent person identified
3. Soil classification identified
4. Utility identification
5. Equipment / worker interface in excavation
6. Air quality (if performed inside)
7. Trench / benching / shoring plan
8. Egress

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9. Spoils
10. Barricading
11. Operator location in relation to excavation
12. Worker location in relation to operator & excavation.
13. Vibration concerns
14. Previous excavations in close proximity concerns
15. Backfilling process

HVAC & Similar Large Equipment Installation

1. Unloading & staging material (equipment , rigging, lay down area)
2. Crane operator has certification such as CCO or similar third party certification & documentation on file.
3. Crane action plan (Potential contact with energy)
4. Fall Protection Plan (If required)
5. Laceration protection
6. Duct installation (large , awkward pieces)
7. Mechanical piping installation
8. Electrical installation
9. Lockout training records (LO equipment adequate and available)
10. Man Lift training records
11. Fall Protection training records (Fall Protection equipment adequate & available)

Lifting & Rigging (General).

1. Rigging – Rigger qualifications* documented & on file, rigging equipment inspection and use
2. Crane operator has certification such as CCO or similar third party certification & documentation on file.
3. Crane action plan. (Potential contact with energy)
4. Pinch points for workers
5. Overhead and underground energy sources
6. Weather conditions are considered.

Machine Installation

1. Path of travel / pedestrian & vehicle interface during placement
2. Unloading equipment
3. Staging materials
4. Fork truck operations (proof or operator training)
5. Fork truck path of travel (spotters required?)
6. Crane operations (operator qualifications on file & crane inspection)
7. Rigging – Rigger qualifications* documented & on file, rigging equipment inspection and use
8. Use of engineered lift points
9. Pinch point & laceration prevention
10. Location of energy sources and potential hazards during delivery and installation
11. Energy (electrical, hydraulics, pneumatics) connection and testing
12. Fall protection (if work is required above 6 feet) - training records for workers, equipment adequate (confirm availability)
12. Ergonomics (awkward reach, back bend, neck twist, etc.)

Steel Erection

1. Unloading & staging material
2. Fall Protection plan, training records, and adequate equipment (confirm availability)
3. Crane action plan
4. Operator certifications (proof)
5. Rigging – Rigger qualifications* documented & on file, rigging equipment inspection and use
6. Man Lift use (proof of worker training)
7. Connectors (pinch points, position in relation to load)
8. Decking (installation, laceration prevention)
9. Industrial hygiene hazards - welding (ventilation), bolt up (noise), etc.
10. Leading edge work

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11. Deck penetrations (barricading plan)
12. Controlled Access Zone (CAZ)
13. Weather conditions
14. Burning, welding concerns / countermeasures.

Siding

1. Unloading material
2. Staging material
3. Fall protection (if work is required above 6 feet) - training records for workers, equipment adequate (confirm availability)
4. Crane operator has certification such as CCO or similar third party certification & documentation on file.
5. Crane action plan
6. Placing panels (cannot use man-lifts to install siding)
7. Man Lift use (proof or worker training)
8. Pinch point & laceration prevention
9. Weather conditions.

* From the U.S. Department of Labor, Occupational Safety & Health Act FAQ (frequently asked questions) website on Cranes and Derricks in Construction; Final Rule that went into effect November 8th, 2010.

“(R)iggers are not required to be certified. However, riggers must be a qualified person for the performance of specified hoisting activities such as during assembly/disassembly work and those that require employees to be in the fall zone to handle a load. The rigger would be considered qualified through possession of a recognized degree, certificate, or professional standing; or by extensive knowledge, training, and experience, successfully demonstrating the ability to solve/resolve problems related to rigging work and related activities.”

The full rule may be viewed at: <http://www.osha.gov/cranes-derricks/faq.html#require>.

11.0 Sample JSA

ABC Company

Safe Work Practices	Page 1 of 3		Date:
Name of Activity – Machine delivery and removal from vehicle			
Task	Potential Hazard	Preventive Measures	Site Specific Plans
1. Directing truck to suitable location for unloading	1. Slips, trips, falls 2. Cuts, abrasions 3. Vehicles/employees in general work area 4. Uneven grade elevation and ground surface conditions 5. Overhead obstructions	1. Employees will review pre-task analysis before work begins. 2. Employees will be required to wear the proper PPE (hard hats, gloves safety glasses, etc.) 3. A spotter will be used while moving and positioning trucks into place. 4. The area will be secured before arrival of the truck. 5. The supervisor in charge of unloading will make sure the ground conditions are suitable for unloading. 6. Traffic and pedestrian controls will be implemented as necessary. 7. Overhead hazards will be reviewed when the location is identified.	
2. Tarp removed from equipment	1. Moving machinery 2. Slips, trips, falls 3. Being struck by 4. Cuts and abrasions 5. Strains and sprains	1. All employees will be required to wear their proper PPE (hardhats, gloves, safety glasses, safety gasses, ear plugs.) 2. All work will be performed inside the secured area. 3. A spotter with a high visibility vest will watch while the tarp is being removed. 4. If tarp is completely removed, it will be stored in an area that will not create a tripping hazard. 5. Proper lifting methods will be reviewed before work begins. 6. Driver must set brakes, turn off engine, and stay out of the cab during the entire unloading process.	
3. Evaluate the stability of the load	1. Cuts, abrasions 2. Vehicles/employees	1. Employees will review pre-task analysis before work begins.	

<p>4. Rigging and removing the load</p>	<p>in general work area 3. Falling objects 4. Equipment/machines toppling</p> <p>1. Slips/trips/falls 2. Cuts/abrasions 3. Improper rigging 4. Faulty rigging 5. Faulty crane/hi-lo 6. Operator error 7. Bad signaling 8. Employees/vehicles in general work area 9. Pinch points</p>	<p>2. Employees will be required to wear the proper PPE (hard hats, gloves safety glasses, etc.) 3. A spotter will be used while moving and positioning trucks into place. 4. The area will be secured before arrival of the truck. 5. The supervisor in charge of unloading will make sure the ground conditions are suitable for unloading. 6. Traffic and pedestrian controls will be implemented as necessary. 7. Overhead hazards will be reviewed when the location is identified.</p> <p>1. All employees are to review the lifting plan before work starts. 2. Employees will be required to wear their proper PPE (hard hats, gloves, safety glasses, etc.) 3. Employees will be checked for current rigging certifications 4. Supervisor will check the machine used to unload the equipment/machinery for any Safety violations. 5. During operations requiring employees to put themselves in a position where potential pinch points could exist, the following actions must take place: a)vehicle must be turned to off position b)forks or boom placed in lowered position c)keys (if equipped) will be handed to designated lead man d)if not equipped with keys the operator must step out of the vehicle e)different situations will be looked at on a case by case basis(such as electrical panels, piping, duct work, etc.) f)body positioning must be minimized as to not place body in harms way. 6. Operator will be checked for certification to operate the equipment. 7. Rigging will be checked daily. 8. The signal person will be identified and hand signals reviewed with the operator</p>	
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General Cleanup	1. Slips/trip/falls 2. Cuts/abrasions	<p>before lift is made.</p> <ol style="list-style-type: none">9. The weight of the load, rigging used and the equipment used will be compared to make sure they match.10. Staging area for the equipment/machinery will be identified and it will be in a secure area.11. A spotter in a high visibility vest will watch for employees/vehicles while the load is being lifted. <ol style="list-style-type: none">1. All rigging will be placed back in gang boxes or hung up after use.2. Employees will be required to wear their proper PPE (hard hats, safety glasses, gloves, etc.).3. Employees will be made aware of their surroundings.	
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**APPENDIX SECTION D - Sample Documents**

- D-1 DECLARATION OF A COMPETENT PERSON
- D-2 RESERVED FOR FUTURE USE
- D-3 CONTRACTOR WEEKLY SAFETY REPORT
- D-4 SAFETY COMMITTEE MEETING MINUTES
- D-5 CONTRACTOR'S DAILY SAFETY COORDINATION MEETING
- D-6 WEEKLY TOOL BOX TALK RECORD
- D-7 CONTRACTOR'S WEEKLY MANPOWER REPORT
- D-8 EMERGENCY CONTACT LIST
- D-9 SAFETY CROSS CALENDER
- D-10 CONTRACTOR ORIENTATION CHECKLIST
- D-11 CONTRACTOR BADGE REQUEST FORM
- D-12 INCIDENT REPORTING – PROCESS AND FORM
- D-13 TEMA RESTRICTED SUBSTANCES REQUEST FORM
- D-14 LOCK SURRENDER AND/OR ABONDONMENT FORM
- D-15 TEMA NOTICE OF WORK PERMIT
- D-16 JOB SAFETY ASSESSMENT / JOB HAZARD ANALYSIS
- D-17 UTILITY REQUEST FORM
- D-18 UTILITY TIE IN REQUEST FORM
- D-19 CONFINED SPACE ENTRY CHECKLIST
- D-20 CONTRACTOR EQUIPMENT INSPECTION
- D-21 INSTALLATION OF NEW FIRE LINE AT NAMC

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D-22 NEW FIRE LINE COMMISSIONING FORM

D-23 FIRE LINE OUTAGE REQUEST FORM

D-24 CONSTRUCTION SAFETY MGT HANDBOOK KEY POINTS

D-25 COMMISSIONING WARNING SIGN EXAMPLE

D-26 LIFTING / STACKING SAFETY CHECKLIST SHEET

D-27 CRANE INITIAL USE INSPECTION CHECKLIST

D 28 CHANGE REQUEST

D-2 EXCAVATION PERMIT

Work Description:					
Excavation Dimensions:					
Penetrometer Test Results: (Circle One)	>2.5	2.5	1.5	1.0	<1.0
Protective System Used:	Soil Type & Conditions:				
<input type="checkbox"/> Hydraulic Shoring System	<input type="checkbox"/> Rock	<input type="checkbox"/> Dry			
<input type="checkbox"/> Timber Shoring System	<input type="checkbox"/> Stiff Clay	<input type="checkbox"/> Wet			
<input type="checkbox"/> Trench Shield / Box	<input type="checkbox"/> Firm Clay	<input type="checkbox"/> Saturated			
<input type="checkbox"/> Sloped Angle of Repose (Width & Height) _____	<input type="checkbox"/> Dry Granular				
<input type="checkbox"/> Benched (Measurement Required) _____	<input type="checkbox"/> Wet Granular				
<input type="checkbox"/> Unsupported Wall - (Height) _____	<input type="checkbox"/> Saturated Granular				
	<input type="checkbox"/> Running				

SITE EVALUATION

YES	NO	N/A	Any items marked NO on this form MUST be remediated prior to any employee entry.
GENERAL			
			Employees protected from cave-ins & loose rock/soil that could roll into the excavation. Spoils, material, & equipment set back at least 2 feet from the edge of the excavation. Engineering designs for sheeting &/or manufacturer's data on trench box capabilities. Adequate signs posted and barricades provided. Training conducted with employees prior to entering excavation.
UTILITIES			
			Utility company contacted & 72 hrs. notice &/or utilities already located & marked. Overhead lines located, noted, & reviewed with the operator. Utility locations reviewed w/operator, & precautions taken to ensure no contact occurs. Utilities crossing the excavation are supported & protected from falling materials. Underground installations protected, supported, or removed when excavation is open.
WET CONDITIONS			
			Precautions taken to protect employees from water accumulation. Surface water or runoff diverted / controlled to prevent accumulation in the excavation. Inspection made after every rainstorm or other hazard-increasing occurrence.
HAZARDOUS ATMOSPHERES			
			Air in excavation tested for oxygen concentration, combustibles, & other contaminants. Oxy%____ LEL%____ H2S PPM ____ CO PPM ____ Name:_____ Time:_____ Inst. Used_____ Calibration _____
			Ventilation used when oxygen rich/deficient &/or hazardous substances are present. Ventilation used to keep LEL below 10%. Emergency equipment available where hazardous atmospheres could or do exist. Safety Harness and Lifeline used. Is Supplied Air Necessary?
ENTRY & EXIT			
			Exit (ladder, sloped wall, etc.) no further than 25 feet from ANY employee. Ladders secured & extended 3 feet above the edge of the excavation. Wood ramps made of uniform material thickness & cleated together at the bottom. Employees protected from cave-ins when entering and exiting the excavation.

Printed Name of Competent Person: _____

Signature of Competent Person: _____

D-3 CONTRACTOR WEEKLY SAFETY REPORT

Date: _____ Shop _____

CONTRACTOR: _____ TEMA Engineer _____

Supervisor _____

NUMBER OF SUBCONTRACTORS MEDICAL AID INJURIES

LOST TIME INJURIES FIRST AID INJURIES

MAN HOURS

WEEK PERIOD CUMULATIVE

SAFETY ACTIVITIES
TRAINING/ TOOLBOX TALKS/ RISK ANALYSIS
CONCERNS/ COUNTERMEASURES
SITE INSPECTIONS
COMMITTEE MEETINGS

* Please submit this report to TEMA Engineering Specialist and the Health & Safety Section on a weekly basis.

D-4 SAFETY COMMITTEE MEETING MINUTES

MEETING # _____		
Facility/ Site: _____		
Date: _____	Start Time: _____	End Time: _____

(Present)	Name	Position

Please inform of any omissions or errors.

Item	Action By	Resolved
(Old Business)		
(New Business)		

Management Representative

Worker's Representative

The next Safety Committee Meeting will be held on _____ @ _____

D-5 CONTRACTOR'S DAILY SAFETY COORDINATION MEETING

Company:	Date:	
NUMBER OF WORKERS ON SITE FOR YOUR SUBCONTRACTORS	A	
NUMBER OF WORKERS ON SITE FOR YOUR COMPANY	B	
TOTAL NUMBER OF WORKERS ON SITE FOR YOU AND YOUR SUBCONTRACTORS	A + B	
1) AREA/ LOCATION OF WORK FOR THE DAY:		
DESCRIBE WORK ACTIVITIES FOR THE DAY:		
DESCRIBE KEY SAFETY CONCERNS AND CONTROLS RELATED TO YOUR WORK ACTIVITIES		
2) AREA/ LOCATION OF WORK FOR THE DAY:		
DESCRIBE WORK ACTIVITIES FOR THE DAY:		
DESCRIBE KEY SAFETY CONCERNS AND CONTROLS RELATED TO YOUR WORK ACTIVITIES		
3) AREA/ LOCATION OF WORK FOR THE DAY:		
DESCRIBE WORK ACTIVITIES FOR THE DAY:		
DESCRIBE KEY SAFETY CONCERNS AND CONTROLS RELATED TO YOUR WORK ACTIVITIES		

D-6 WEEKLY TOOL BOX TALK RECORD

Contractor: _____
 Date: _____
 Supervisor: _____

Project ID # _____
 Time: _____
 Work: _____

SITE SPECIFIC TOPIC(s)

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

Attendance: Print Name and Initial	Attendance: Print Name and Initial
1.	13.
2.	14.
3.	15.
4.	16.
5.	17.
6.	18.
7.	19.
8.	20.
9.	21.
10.	22.
11.	23.
12.	24.

Recommendations from Workers:

Supervisor Comments:

Supervisor Signature: _____

Date: _____

SAFETY BEGINS WITH YOU

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D-9 SAFETY CROSS CALENDER

Safety Calendar

Safety Slogan

Accident Free Day

Green

OSHA Case

Red

May

			1	2		
			3	4		
			5	6		
7	8	9	10	11	12	
13	14	15	16	17	18	
19	20	21	22	23	24	
			25	26		
			27	28		
			29	30	31	

D-10 CONTRACTOR ORIENTATION CHECKLIST

Project: _____ _____ Location: _____ _____	Contractor Name: _____ _____ CONTRACTOR OFFICE #: _____ Contractor Fax #: _____
Trade(s): _____ Est. # of Workers (Start): _____ (Max): _____	Supervisor(s): _____ Name: _____ Phone (site): _____ (Cell): _____ (24 Hour Emergency #) _____

Orientation To Site Policies/ Procedures	PD	D	Comments
NAMC Health and Safety Policy Statement			
NAMC Environmental Policy Statement			
Contractor Orientation			
Worker Orientation			
Visitors and Deliveries			
Blue Book (TMMC only)			
Personal Protective Equipment Standards			
Inspections Guidelines			
Incident/ Accident Reporting Guidelines			
Housekeeping (Access/Egress, Guardrails etc.)			
Material Storage Requirements (per site plan)			
Risk Assessments			
Safe Operating Procedures			
Equipment and Machinery Standards			
Emergency Plan / First Aid (Hospital Directions#)			
JHSC/Worker Trades Committees			
Progressive Disciplinary Policy			
Work Permit/ Plant Tie-ins			
Lock Out Request/ Forms			
Weekly Safety Report Form			
Confined Space Entry Form			
Commissioning Form			
Site Hours of work			
Co-operation with M.O.L. or other Governing Authorities			
WSIB "Certificate of Clearance"/Coverage			
Insurance: General Liability/Automobile			
Registration Form			

D-10 Continued

Information Provided by Contractor	PD	PG	D	Comments
1. Contractor Policy and Program				
2. Competent Supervisor per OHSA				
3. Safety and Environmental Plan				
4. Training/Certification Requirements				
WHMIS				
Propane				
Fall Protection				
Elevating Work Platforms				
Forklifts				
Suspended Scaffolds				
Hoisting Equipment				
Welding Certificate (CWB)				
Trades Qualification				
First Aid Trained Workers				
Certified Member (JHSC)				
Signalpersons				
Life Lines				
Fire Extinguisher				
Explosive Actuated Tools				
Lock-Out				
Confined Space Entry				
4. Safety Representative Name: _____ Local Union: _____				
5. Equipment/Machinery Documentation				
Operator's Manual				
Logbook				
Final Mechanical Inspection				
6. Daily Equipment Inspection Reports				
7. Engineer's Drawings/ Specifications				
Trench Boxes/ Shoring				
Scaffolds/ Work platforms				
Fall Prevention System				
Equipment Modifications				
Caisson Liners				

D-10 Continued Information Provided by Contractor	PD	PG	D	Comments
10. Confined Space Procedures				
11. Hoisting/ Rigging Procedures				
12. Commissioning/ Testing Procedures				
13. Caisson Entry Procedures				
14. Material Safety Data Sheets/Labels				
15. Designated Substances				
16. Formwork/ False work Inspections				
17. Scaffold Inspections Tagging				
18. Compressed Gas Storage Cages				
19. Spill Procedures				
20. Spill Kit Available				
21. Approved Fire Extinguishers				
22. First Aid Kits per Reg 1101				
23. Policy for Transporting Injured Workers to Hospital/ Clinic/ ESRTW				
24. Helicopter Lift Procedures				
25. Competent Signalpersons				
26. Barriers/ Hoarding/ Signs				
27. Traffic Control Procedures				
28. Energy Control Procedure (Lock Out)				
29. Formwork/ False work				
30 Existing Plant Work				
31 Hot Work				
32 Soil Disturbance Procedure/Locates				
33 Other (specify)				

Acceptance

We have reviewed all policies and procedures required on-site and agree to perform all work according to these requirements and the Occupational Health and Safety Act/ Regulations for Construction Projects. Any documentation listed as pending will be provided before the work is performed. We also recognize that standards may be modified to suit changing site conditions and hazard

Contractor Project Manager Contractor Supervisor Date Time

Reviewed By

Representative **Date** **Time**

PD = Provided PG = Pending D = Discussed

D-11 CONTRACTOR BADGE REQUEST FORM

This Section To Be Completed By Security Only

Safety Orientation Date: ____/____/____ Day: _____ Time: _____

Name (Please print your name the way you want it displayed on your badge – Middle initial is not shown on badge)

First Name	Middle	Last Name

Company (1)

Worker #
Company Name (Who you are employed by)
Company Address (Your Company's address)
Department/ Cost Center
Title (Optional) (Your Company Title)
Business Phone (Your Company Phone No.)

Personal (2)

SSN/(Last 4 digits)	
Address 1 (Personal)	
Address 2 (Personal)	
City of Residence	State
Zip Code	
Date of Birth	
Phone (3)	
Home Phone	

Physical (4)

Gender		
Race		
Height	feet	inches
Weight		
Hair		
Eyes		

Additional Information (5)

Shift	Mail Code
Supervisor Name	
Supervisor Phone	
Hire Date	
Emergency Contact Name	
Relationship	
Emergency Contact Phone	

Toyota only below this line

Authorization Signatures (On-site Toyota Asst. Mgr. or above)

PRINT RESPONSIBLE SECTION / NAME / TITLE /
DEPT.

PRINT SAFETY/SECURITY NAME

RESPONSIBLE SECTION SIGNATURE

____/____/____
DATE

SAFETY/SECURITY SIGNATURE

____/____/____
DATE**8.26.23 Security Use Only**

Type	Sequence	Site Code	Card #	Access Level	Data Entry (Signature)	Photo Taken (Signature)
26		200				

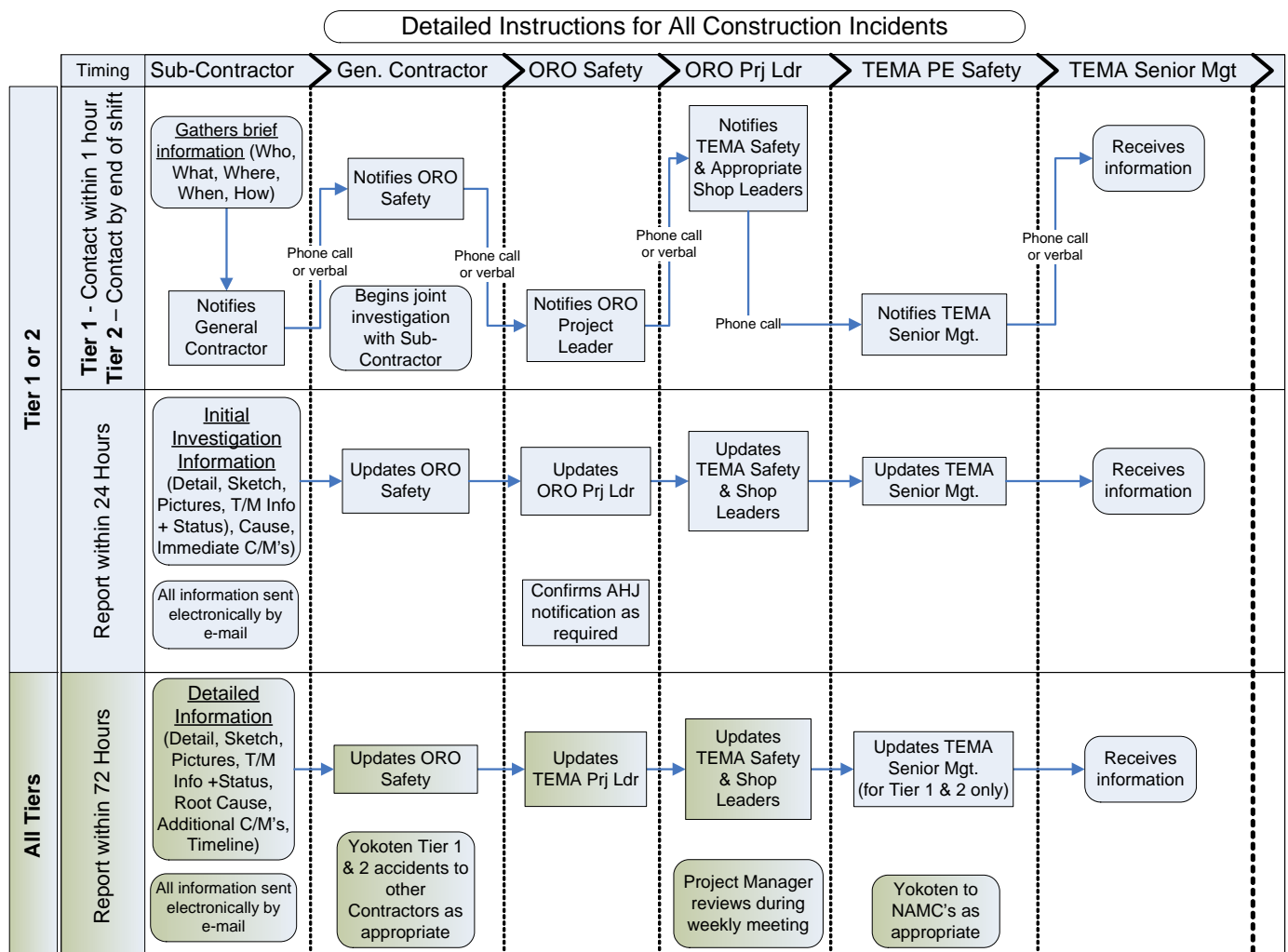
D- 12 A TEMA Construction Incident notification must be given and the form completed per the instructions.

1. Determine the Type of Incident using Table 1(Choose Tier 1, 2, 3, or 4). Tier 1 & 2 are considered serious.

Table 1

Tier 1 ► Fatality	Tier 2 ► Injury as listed below: Permanent (Loss of Sight, or Hearing; Amputation - excluding a small (< 2 cm) flap of skin such as a finger pad, patch of skin on forearm, etc.) Fracture - any fracture resulting in non-alignment, compound or open wound, or a multiple of fracture locations, excluding fingers & toes. Burn - 2 nd degree burn greater than 9% of the body (e.g., one arm, lower leg, torso, etc.) and/or 3 rd degree burn > 5 cm length or dia. Head Injury - head trauma with loss of consciousness. Hospitalization - any injury requiring hospitalization, unless for observation. ► Property Damage ≥ \$500,000	Tier 3 ► Injury requiring more than first aid ► Property Damage < \$500,000
		Tier 4 ► Near Miss/Near Hit (Based on the judgment of a safety professional, an incident that likely would have resulted in one of the afore incidents if circumstances were slightly different.)

2. Next contact the appropriate person with as much information as available using the flow chart below.



<h2 style="margin: 0;">D12 - CONSTRUCTION INCIDENT INVESTIGATION REPORT</h2>				THIS REPORT IS REQUIRED FOR ANY: SERIOUS INJURY <input type="checkbox"/> OTHER INJURY / ILLNESS <input type="checkbox"/> FIRE / EXPLOSION <input type="checkbox"/> FATALITY <input type="checkbox"/> PROPERTY DAMAGE <input type="checkbox"/> NEAR MISS <input type="checkbox"/> (CHECK THE APPROPRIATE BOX)						
SEVERITY CLASSIFICATION <small>(By Medical Professional if possible)</small>		<input type="checkbox"/> FIRST AID <input type="checkbox"/> RECORDABLE <input type="checkbox"/> LOST TIME								
WORKER INVOLVED	WORKER (FULL NAME)			TIME ON THS JOB		BADGE or ID#		COMPANY		
	IMMEDIATE SUPERVISOR			CONTACT INFORMATION						
INCIDENT DETAILS	INCIDENT LOCATION BUILDING COLUMN		TRADE	PROJECT NAME		WORKER TIME ON THIS JOB				
	INCIDENT DATE		DID INCIDENT OCCUR AT WORK? IF NO, EXPLAIN BELOW. <input type="checkbox"/> YES <input type="checkbox"/> NO				WITNESSES			
	INCIDENT TIME									
	COMMENTS/CLARIFICATION -									
INJURY/ILLNESS	INJURY DIAGNOSIS					BODY PART(S)				
	NATURE OF INJURY [CHECK BOX(ES)]									
	<input type="checkbox"/> 01 - STRUCK AGAINST		<input type="checkbox"/> 05 - STRUCK BY:		<input type="checkbox"/> 07 - EXPOSURE TO:		<input type="checkbox"/> 09 - CONTACT WITH:			
	<input type="checkbox"/> 02 - CAUGHT ON/IN/BETWEEN		<input type="checkbox"/> 05.1 - VEHICLE		<input type="checkbox"/> 07.1 - HARMFUL SUBSTANCES		<input type="checkbox"/> 09.1 - EXTREME TEMP			
	<input type="checkbox"/> 03.1 - FALL ≥ 2m		<input type="checkbox"/> 05.2 - HEAVY LOAD		<input type="checkbox"/> 07.2 - BIOLOGICAL AGENTS		<input type="checkbox"/> 09.2 - ELECTRICITY			
<input type="checkbox"/> 03.2 - FALL < 2m		<input type="checkbox"/> 05.3 - OTHER		<input type="checkbox"/> 07.3 - OTHER		<input type="checkbox"/> 09.3 - OTHER				
<input type="checkbox"/> 04 - DRAWN IN		<input type="checkbox"/> 06 - RESERVED		<input type="checkbox"/> 08 - RESERVED		<input type="checkbox"/> 10- RESERVED				
DETAILED DESCRIPTION OF WHAT HAPPENED (BY TEAM MEMBER) <i>BE SPECIFIC</i>	INCIDENT DESCRIPTION - WHY = ROOT CAUSE				SKETCH (IF THIS AREA IS NOT ADEQUATE, TO DEPICT INCIDENT, PLEASE ATTACH PHOTOS)					
COUNTERMEASURES	COUNTERMEASURES				PERSON RESPONSIBLE		DATE COMPLETE			
	1.				1.		1.			
	2.				2.		2.			
	3.				3.		3.			
SIGNATURES	WORKER			DATE		SUPERVISOR / GENERAL FOREMAN			DATE	
	GC's SAFETY REPRESENTATIVE			DATE		PROJECT MANAGER / COORDINATOR			DATE	
	TOYOTA SAFETY REPRESENTATIVE			DATE		ORO PROJECT MGR. / SENIOR ADVISOR			DATE	

D-13 TEMA RESTRICTED SUBSTANCES REQUEST FORM

Any products containing the following substances are restricted from TEMA operating facilities:

Acrylonitrile (D)	Isocyanates (D)	CFC's
Arsenic (D)	Lead (D)	HCFC's
Asbestos (D)	Mercury (D)	Silicone
Benzene (D)	Silica (D)	
Ethylene Oxide (D)	Vinyl Chloride (D)	

(D) = Denotes chemicals which are designated substances under OSHA and applicable law

Date: _____ Shop: _____ North / South Location: _____

General Contractor: _____ Requestor: _____

Contractor Supervisor: _____ Contact Phone #: _____

Product Name: _____ Supplier Name: _____

Quantity to be used: _____

Identify exact process in which is to be used: _____

Special Disposal Methods Required: _____

Coding: Health

Flammability
Reactivity

Personal Protection

Contractor Attach Material Safety Data Sheet and Risk Analysis for Review and Approval

APPROVAL

Environmental Special Instructions _____

Environmental Specialist _____

Signature

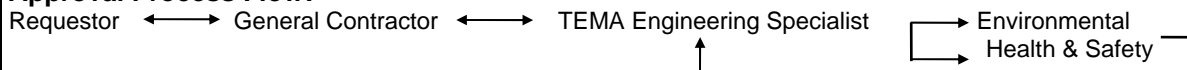
Date

Health & Safety Special Instructions _____

Health & Safety Specialist _____

Signature

Date

Approval Process Flow:

TEMA Restricted Substances are not permitted on site unless this permit has been signed by TEMA Environmental and Health & Safety Specialists.

#12 MATERIAL USAGE REQUEST

Environmental _____
 Plant Coordinator _____
 Industrial Hygiene _____
 Area Coordinator _____

Fax _____
 Fax _____
 Fax _____
 Fax _____

D-13 Continued

Requesting Department and Group(s): _____

Plant: _____

Reason for Submission: _____ Test/ Trial _____ Prod. Emergency _____ Contractor _____

Does this product fall under the Chemical Management Criteria: _____ Yes _____ No

Product Trade Name: _____

Supplier: _____ Address: _____

Supplier Contact: _____ Telephone: _____

Quantity Required: _____ Requested by: _____ Date: _____

Telephone: _____ Ext: _____ Fax: _____

Department Approval

The undersigned requests permission to use the above material on a temporary basis and will ensure the following requirements are met.

- The material will not enter the plant prior to a signed acknowledgement of completed review and approval
- All workers exposed to this material are trained on the safe use and handling of the product as outlined on the Manufacturers Material Safety Data Sheet.
- The material will be kept in a designated quarantine area, when not in use by fully trained personnel.
- All original and decanted materials must be properly labeled per regulations
- All unused material will be removed from the plant and disposed of by the supplier of the material pending Environmental review.
- It is understood that this material will be allowed into the plant for a maximum of 90 calendar days. If the material is found suitable for use in the plant on a permanent basis the G852 process must be followed before the material is introduced into production on a permanent basis.

Department Approval: _____ Date: _____
(eighth level)

_____ Ext: _____
(please print name)

Approval

Area Coordinator _____ Date _____

Plant Coordinator _____ Date _____

Industrial Hygiene _____ Date _____

Environmental _____ Date _____

Material Status Review

Review Status Date: _____ Plant Coordinator: _____

Status (please indicate status below) Extension Review Date: _____

____ removed from plant ____ required permanently, a G852 has been issued ____ 30 day extension required

D-14 LOCK SURRENDER AND/OR ABANDONMENT FORM

DATE _____ TIME _____ LOCATION _____

EQUIPMENT _____

(i) CONTRACTOR _____ SUPERVISOR _____

Lock removal/cut-off due to: (Please circle one of the choices below)

Missing or lost key

Worker went home with out removing his/her lock

Abandon Lock without Tag

Mechanical failure of lock

Lock obstructed from removal

Other

If other please give details:

Lock Surrender: All attempts must be made to contact the worker. (please complete this section)

Was the worker contacted? _____ Yes _____ No

Did the worker give permission to remove the lock? _____ Yes _____ No

Workers signature to remove lock _____

Worker contacted off site and gave permission to remove the lock. _____ Yes _____ No

Competent Supervisor signature _____ Witness signature _____

Abandoned Lock (complete this section if the worker did not give permission to remove the lock)

If the worker did not give permission to remove the lock please state the reason.

—

Were all attempts made to contact the owner of the lock, including reviewing the lockout form?

_____ Yes _____ No

If the owner of the lock cannot be located, then the system or equipment must be inspected by a competent person to ensure it is safe to remove the lock.

Signature of competent person(s) that it is safe to remove the lock. _____

Authorization to remove the lock. (all parts of the surrender and abandon lock out form must be completed and reviewed)

Supervisor signature _____ Date and time _____

Safety Reps. signature _____ Date and Time _____

Client Rep. Signature _____ Date and Time _____
(if required)

D-15 TEMA NOTICE OF SCOPE OF WORK PERMIT

Date: _____	General Contractor: _____		
P.O. #: _____	Supervisor Name: _____		
Location: _____	Contact Phone #: _____		
Dept.: _____	TEMA Contact and _____		
	Contact Number: _____		
Column # _____	Work Period Date: _____	From: _____	To: _____
	Time: _____	From: _____	To: _____
# Workers Per Day: _____	Sat: Yes / No _____	Sun: Yes / No _____	Weekday: Day/ Aft./ Night _____
	Day/Aft./Night _____	Day/Aft./Night _____	

TEMA utilities are only available during scheduled production hours. If Contractor requires use of utilities during non-production hours, please complete and attach a TEMA utility request form. Request attached? Yes / No

Description of Work: _____

Special Work Items			Approval/Initials
Hot Work	Yes/ No	Follow TEMA Hot Work Procedure (Section 3.1.8)	<input type="checkbox"/>
CO ₂ System	Yes/No	Requires special training and TEMA Eng. Spec. Approval.	<input type="checkbox"/>
Confined Space	Yes/ No	Follow TEMA Confined Space Entry Procedure (Section 1.2.13)	<input type="checkbox"/>
Overhead or Roof work	Yes/ No	Overhead or Roof Work risks included in risk assessment.	<input type="checkbox"/>
Gas, Diesel, Propane, etc.	Yes/ No	TEMA Engineering prior written approval required	<input type="checkbox"/>
Equipment Commissioning	Yes/ No	Follow TEMA Commissioning Procedure	<input type="checkbox"/>
Floor Penetrations/Excavations	Yes/ No	Location identified prior to beginning work	<input type="checkbox"/>
Equipment Lockout	Yes/ No	Confirm lockout plan completed.	<input type="checkbox"/>
TEMA Restricted Substances	Yes/ No	Prior written approval required. Section 1.2.24	<input type="checkbox"/>
Chemical Substances	Yes/ No	Attach MSDS. TEMA Eng. Prior approval required	<input type="checkbox"/>
Fire Alarm/Suppress sys. work	Yes/ No	Security and Facilities prior approval required	<input type="checkbox"/>
Tie In To Existing Equipment	Yes/ No	Attach Tie In Request Form.	<input type="checkbox"/>
Special Protective Equipment	Yes/ No	List equipment to be used in safe work procedure	<input type="checkbox"/>
If any "Special Work Items" are marked yes, Contractors must submit a Safety Plan/ Risk Analysis with permit for review & approval.			

I have read and understand the Contractor's Safety, Requirements Manual and agree to comply with all rules, requirements and procedures as outlined in the Manual, and any special instructions on this permit.

Contractor Supervisor _____

Print Name

Signature

Date

Maint. Special Instructions: _____

NAMC Maintenance _____

Print Name

Signature

Date

Eng. Special Instructions: _____

TEMA Engineering
Specialist _____

Print Name

Signature

Date

Work cannot commence until this permit has been signed by Contractor, TEMA Engineering & Maint. (when appropriate).

Copies – Originator, Health & Safety, Security, TEMA Engineering, Shop Maintenance Mgr., Shop Mgr., (when appropriate), & File.

D-16 Job Safety Analysis (JSA) Job Hazard Analysis (JHA)

Company Name Here			
Safe Work Practices	Page 1 of n		Date:
Name of Activity			
Task	Potential Hazard	Preventive Measures	Site Specific Plans
1)		■	
2)		■	
3)		■	
		■	

D-17 UTILITY REQUEST FORM

REQUEST DATE:		REQUESTED BY:	
Location	Dept.	General Contractor	
UTILITIES REQUIRED IN: <input type="checkbox"/> Paint <input type="checkbox"/> Administration <input type="checkbox"/> Assembly <input type="checkbox"/> Welding <input type="checkbox"/> Plastics <input type="checkbox"/> Stamping <input type="checkbox"/> Engine Column Location:		Contractor Supervisor	
		TEMA Engineering Specialist	

Details of Work: (Purpose, Location)

UTILITY REQUEST		Date	Date	Date	Date	Date	Date	Date
COMPRESSED AIR 8.0 KPA / 5.0 KPA	From (Time)							
	To (Time)							
STEAM	From (Time)							
	To (Time)							
DOMESTIC WATER	From (Time)							
	To (Time)							
PROCESS WATER	From (Time)							
	To (Time)							
D.I. WATER	From (Time)							
	To (Time)							
LIGHTING	From (Time)							
	To (Time)							
WASTE TREATMENT	From (Time)							
	To (Time)							
VENTILATION	From (Time)							
	To (Time)							

FACILITIES MAINTENANCE APPROVALS:

FACILITY ENGINEERING SPECIALIST _____ DATE _____

FACILITY GROUP LEADER _____ DATE _____

BUILDING SERVICES GROUP LEADER _____ DATE _____

DISTRIBUTION:

Requester----- Shop Engineer ----- Facilities Engineer----- Facilities/Building Services G/L ----- Requester

ALL REQUEST FORMS MUST BE SUBMITTED TO FACILITY ENGINEER BY 4PM ON SECOND LAST PRODUCTION DAY OF THE WEEK.

D-18 UTILITY TIE IN REQUEST FORM

Date _____	General Contractor _____					
Location _____	Supervisor Name _____					
Dept. _____	Contact Phone # _____					
Column # _____	TEMA Eng. Specialist _____					
North / South _____	Requested Timing of Tie In _____	Date _____ Time _____				
Description of Work: _____ <div style="height: 50px; border: 1px solid black;"></div>						
REQUIREMENTS						
ITEM	HEADER SIZE (inch.)	PRESSURE KPA	MAX. VOLUME	TEMP °C	TIE IN LOCATION	BACKFLOW PREVENTOR
STEAM			Kg/hr			
COMPRESSED AIR			M ³ /hr			
NATURAL GAS			M ³ /hr			
CHILLED WATER			M ³ /hr			
WATER DOMESTIC <input type="checkbox"/> RO <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> PROCESS <input type="checkbox"/> DI <input type="checkbox"/>			M ³ /hr			ID NUMBER *** see Note below
WASTE WATER INDUSTRIAL <input type="checkbox"/> ROW <input type="checkbox"/> DEGREASE <input type="checkbox"/>			M ³ /hr			
ELECTRICITY	PHASE	VOLTS	RUNNING AMPS	FLA	BUSS DUCT #	
	1Ø 3Ø					
	DUTY CYCLE	FUSE/BREAKER	FUSE/BREAKER SIZE	DISC. (SIZE)	COLUMN #	
OTHER CONTROL WIRING <input type="checkbox"/> HYDRAULICS <input type="checkbox"/> PLC PROGRAMMING <input type="checkbox"/> FIRE ALARM <input type="checkbox"/> FIRE PROTECTION <input type="checkbox"/> COMMUNICATION WIRE <input type="checkbox"/> STRUCTURAL <input type="checkbox"/>	POTENTIAL RISKS			COUNTERMEASURE PLANS		

NOTES:

THIS FORM IS INTENDED TO AID IN RISK ANALYSIS & PROVIDE CRITICAL INFORMATION TO TEMA TO AVOID PROBLEMS DURING THE TIE IN OF EQUIPMENT. PLEASE ATTACH ALL ADDITIONAL INFORMATION THAT MAY ASSIST IN REDUCING RISK WHEN EVER POSSIBLE TIE INS ARE TO BE DONE DURING NON PRODUCTION TIME.

*** OBTAIN ID# FOR ALL NEW BACKFLOW PREVENTORS FROM NAMC PLANT FACILITY ENGINEERING SPECIALIST

Requestor → TEMA Engineering Specialist → Shop Mtc. G/L → Plan (F) Eng. → NAMC Engineering Specialist → Requestor

Shop Eng.	Shop MTC G/L	Facility Eng.

Copy as Required → Building MTC → MTC File

Requestor: Must submit this form at least 72 hrs. Before intended work & must receive a signed copy of this form before beginning work

D-19 CONFINED SPACE ENTRY CHECKLIST/PERMIT

Company/Contractor _____ Entry Supervisor _____

Date _____ Estimated Start Time _____ Estimated Completion Time _____

Area of Entry _____ Description of Space to be Entered _____

Purpose of entry: ☐ Inspection ☐ Repairs ☐ Cleaning ☐ Installation ☐ Other (specify) _____

If **ANY** of the following questions answer **YES**, the space is a permit-required confined space and this permit is required to be completed prior to entry into the confined space.

If **ALL** of the following questions answer **NO**, the space is a non-permit required confined space.

	YES	NO		YES	NO
Has the space been identified by Toyota as a Permit Required Confined Space?			Does the space have an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section?		
Does the space contain a hazardous atmosphere?			Does the space contain materials which could cause entrapment, engulfment, and/or suffocation?		
Does the space contain any other recognized serious safety or health hazard?			Will you be introducing a hazard into the space?		

Atmospheric Conditions must be analyzed by a competent person prior to entering the confined space.

Test	Results	Initials of Tester	Date/Time	Permissible Entry Level
Oxygen (O ₂)	%			19.5% to 23.5%
Flammable (LFL)	%			Under 10%
Carbon Monoxide (CO)	ppm			Under 35 ppm
Hydrogen Sulfide (H ₂ S)	ppm			Under 10 ppm
Temperature (for oven entry)	F			
Other: _____				

The following questions/procedures must be documented prior to entering the confined space.

Measures used to isolate the permit space and to eliminate or control permit space hazards before entry	
Equipment which will be provided (such as PPE, testing equipment, communications equipment, alarm systems, rescue equipment)	
Emergency & Entrant communication procedures	
Rescue procedures (include name of rescue service and phone numbers)	
Additional permits, such as for hot work, which have been issued (if any)	
Additional notes	

Signature of Authorized Person Completing Checklist

Date

Time

- All entrants and attendants to the confined space covered by this permit shall sign and date the back of this form prior to entering the confined space.
- Record air monitoring results at least every 2 hours or whenever conditions change. Results of these atmospheric tests accompanied by the names or initials of the testers and the time of the tests shall be logged on the back of this form.
- This permit must be posted at or near the entrance to the space. This permit shall be valid for one shift or a maximum of 12 hours.

Entry Authorized (hh:mm)

Signature of Entry Supervisor

Date

Entry Closed Out (hh:mm)

Signature of Entry Supervisor

Date

D-20 CONTRACTOR EQUIPMENT INSPECTION (Required for equipment greater than 10 HP in size)

Contractor:	Supervisor:
Project:	Date Submitted:

Equipment Inspected	Make/ Serial #	Date On Site	Last Inspection

This report will attest that prior to its first use on this project, all of the mechanically powered equipment, tools, machines and devices rated at greater than 10 horsepower listed above, have been inspected by a competent person and are considered to be in competent operating condition in accordance with the manufacturer's design, maintenance and testing criteria. All known defects and deficiencies have been corrected prior to use on the project. A list of inspected items, operator's manual, logbook (if applicable), engineers reports (if applicable), non-destructive test report (if applicable), manufacturer's approvals (if applicable) and other required documents are provided with the equipment.

Inspector's Name: _____ **Signature:** _____

Qualifications: _____



TEMA - INSTALLATION OF NEW FIRELINE AT NAMC - D21

DATE OF NOTIFICATION: _____

START DATE: _____

DESCRIPTION OF WORK (EXAMPLE: TOTAL FOOTAGE OF PIPING, NUMBER OF HYDRANTS/PIVS)

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

8 X 11 DRAWING SHOWING LOCATION? YES _____ NO _____

FIRE PUMP REQUIRES SHUTDOWN? YES _____ NO _____

HAVE ALL SUPPLIER/ONSITE BUILDINGS BEEN NOTIFIED OF WORK THAT MAY AFFECT THEM?
YES _____ NO _____

PROCEDURES

FIRE HYDRANTS: NEW HYDRANTS MUST BE WRAPPED IN BLACK PLASTIC BY THE CONTRACTOR PERFORMING THE WORK, INDICATING THEY ARE NOT IN SERVICE.

PIV: NEW POST INDICATOR VALVES MUST BE LOCKED BY THE CONTRACTOR PERFORMING THE WORK AND WRAPPED IN BLACK PLASTIC, INDICATING THEY ARE NOT IN SERVICE.

SUPPLIERS/ONSITE BUILDINGS AFFECTED BY ACTIVATION:

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

SUPPLIER/ON SITE BUILDING APPROVALS:

AFFECTED BUILDING	NAME: _____	DATE _____
AFFECTED BUILDING	NAME: _____	DATE _____
AFFECTED BUILDING	NAME: _____	DATE _____

APPROVALS:

GENERAL CONTRACTOR:	NAME: _____	DATE _____
NAMC PLANT MANAGEMENT:	NAME: _____	DATE _____
NAMC FIRE:	NAME: _____	DATE _____
NAMC SAFETY:	NAME: _____	DATE _____
NAMC SECURITY:	NAME: _____	DATE _____
CONTRACTOR/APPLICANT:	NAME: _____	DATE _____



TEMA NEW FIRELINE COMMISSIONING FORM - D22

DATE OF COMMISSION: _____

DATE SYSTEM LEFT IN SERVICE: _____

DESCRIPTION OF SYSTEM: (HOW MANY FT OF PIPE, QUANTITY OF FIRE HYDRANTS AND VALVES)

1 _____
 2 _____
 3 _____
 4 _____
 5 _____

8 X 11 DRAWING SHOWING LOCATION? YES _____ NO _____

WILL FIRE PUMP BE REQUIRED TO RUN? YES _____ NO _____

COMMISSIONING CHECKLIST TO BE WITNESSED AND COMPLETED BY THE UNDERSIGNED

VALVES FULLY OPEN AND CLOSE	YES _____	NO _____
FIRE HYDRANTS FULLY OPEN AND CLOSE	YES _____	NO _____
FLUSHING WITNESSED BY APPROVAL PARTIES	YES _____	NO _____
ALL GROUND POST INDICATORS LABELED	YES _____	NO _____
ALL FIRE HYDRANTS LABELED	YES _____	NO _____
ALL ROADWAY BOXES PAINTED RED	YES _____	NO _____
ALL VALVES BEEN LEFT IN THE OPEN POSITION	YES _____	NO _____
ALL FIRE HYDRANT BEEN LEFT CLOSED	YES _____	NO _____
TMMTX SECURITY PROVIDED A LOCK FOR PIV'S	YES _____	NO _____

HAVE ALL SUPPLIERS/ON SITE BUILDINGS BEEN NOTIFIED OF COMMISSIONING?

YES _____ NO _____

AFFECTED BUILDING _____

NAME: _____ DATE _____

AFFECTED BUILDING _____

NAME: _____ DATE _____

AFFECTED BUILDING _____

NAME: _____ DATE _____

APPROVALS:

GENERAL CONTRACTOR:

NAME: _____ DATE _____

NAMC PLANT MANAGEMENT:

NAME: _____ DATE _____

NAMC FIRE:

NAME: _____ DATE _____

NAMC SAFETY:

NAME: _____ DATE _____

NAMC SECURITY:

NAME: _____ DATE _____

APPLICANT:

NAME: _____ DATE _____



TEMA FIRELINE OUTAGE REQUEST FORM - D23

DATE OF REQUEST: _____

START DATE: _____ COMPLETION DATE: _____

AFFECTED AREAS:

1	_____
2	_____
3	_____
4	_____
5	_____

8 X 11 DRAWING SHOWING OUTAGE LOCATION? YES _____ NO _____

EQUIPMENT REQUIRES SHUTDOWN? YES _____ NO _____

IF "YES", LIST EQUIPMENT:

1	_____
2	_____
3	_____
4	_____
5	_____

DIG PERMIT APPLIED FOR: YES _____ NO _____

HAVE ALL THE SUPPLIERS/ON SITE BUILDINGS BEEN NOTIFIED OF OUTAGE?
YES _____ NO _____

SUPPLIERS/ON SITE BUILDINGS AFFECTED BY OUTAGE

AFFECTED BUILDING:	NAME: _____	DATE: _____
AFFECTED BUILDING:	NAME: _____	DATE: _____
AFFECTED BUILDING:	NAME: _____	DATE: _____

DESCRIPTION OF WORK AND SPECIAL PRECAUTIONS REQUIRED

APPROVALS:

GENERAL CONTRACTOR:	NAME: _____	DATE: _____
NAMC PLANT MANAGEMENT:	NAME: _____	DATE: _____
NAMC FIRE:	NAME: _____	DATE: _____
NAMC SAFETY:	NAME: _____	DATE: _____
NAMC SECURITY:	NAME: _____	DATE: _____
APPLICANT:	NAME: _____	DATE: _____

**D24 - TEMA PE-Safety Engineering
Construction Safety Guidelines Key Points
(included for reference as part of TEMA Construction Safety Guidelines Document)**

Purpose: This checklist is designed for use during Contractor Prebid Meetings and Project Kickoff Meetings. Its purpose is to verify that important key points related to overall project safety, and contained in the TEMA Contractor Safety Guidelines Document, are noted and presented during these meetings. It is not meant to be all-encompassing, or to provide complete details about the full responsibilities of the Contractor, which are fully outlined in the manual.

Date: _____

Project: _____

Contractor(s) attending: _____

TEMA Safety Representative: _____

Item
Covered



Section 1 - Introduction

Contains Introductory Comments - Welcome, etc.	
--	--

Section 2 - General Safety Responsibilities

This corporate guideline describes the minimum safety requirements to be observed by the Contractor.	
Contractors shall provide a dedicated On-site Construction Safety Coordinator, on all shifts	
Contractors may be responsible for providing a full time, qualified First Aid/CPR person, depending on project size.	
Contractors shall create, implement and maintain a Safety and Health Program that demonstrates a level of control by the Contractor over their employees and subcontractors.	
Contractors shall be responsible for providing Certificates of Insurance to prove valid coverage for Automobile Insurance, Workers' Compensation Insurance, Owner Controlled Insurance Policy (OCIP) coverage (where implemented) and a valid State Contractors License	
Contractors shall create, implement and maintain a Site Specific Safety Plan - Details contained herein	
General contractors shall conduct site specific Safety Orientations for all workers prior to starting work.	
Contractors shall ensure that proper monitoring for safety of the work site and their personnel are conducted as per the requirements of section 3.1 of this document	
Contractors shall ensure that the proper Toyota work permits have been obtained prior to any actual work beginning on any Toyota site.	
Contractors shall insure that all contractor and subcontractor employees have been trained and are fully qualified for their work. Contractors shall be prepared to provide written support of qualification, upon Toyota request.	
Contractors shall insure that all supervisors are adequately trained. The minimum required trainings are the OSHA 10-hour Construction Outreach or equivalent and first aid training	

D24 - TEMA PE-Safety Engineering
Construction Safety Guidelines Key Points
(included for reference as part of TEMA Construction Safety Guidelines Document)

Section 3 - Construction Site Responsibilities

Contractors shall conduct Daily Safety Inspections to ensure compliance with their Site Specific Safety Plan, Toyota Guidelines and Applicable Law	
The on-site Safety Coordinator from each Contractor shall conduct a Weekly Safety Committee Meeting while working at the Toyota site	
Contractors shall conduct daily safety coordination meetings with their personnel, as well as weekly toolbox safety meetings with their personnel	
Contractors shall maintain a site-specific list of emergency contacts and phone numbers.	
Site Control Boards must be conspicuously posted at all times by the Contractor, per section 3.1.8	
Contractors shall develop and implement a dust control program that contains a description of the types of dust they will be creating along with the method for controlling each type	
Good housekeeping shall be maintained in all work areas at all times. Contractors shall provide trash receptacles for personal trash accumulating in area	
Debris shall be kept cleared from work areas, emergency equipment, passageways, and stairs	
The work site shall be continually maintained free of all obstructions or impediments so as to allow free and unobstructed egress to designated exits.	
Provisions shall be made prior to commencement of the project for prompt medical attention in case of serious injury.	
First aid supplies are required to be easily accessible. Examples of minimal contents of a generic first aid kit are outlined in section 3.4.8.	
Contractors shall provide an adequate supply of potable water in all work areas.	
Required toilet facilities to be provided by Contractor are outlined in section 3.7	
A signage plan must be prepared and submitted as part of the Site Specific Safety Plan.	
Barricades or guardrails are required around excavations, openings in floors or roof areas, edges of platforms or roof and overhead work areas	
Yellow Caution Tape shall be used to indicate that workers may enter taped areas only if it is necessary, and only after first determining it is safe to do so.	
Red Danger Tape shall be used to indicate that workers not directly involved with the work in progress inside the area shall not enter under any circumstance	
Long-term projects (over 30 days) and immediately hazardous sites shall have substantial barriers that are not easily moved	
In every building or structure exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied.	
A readily visible sign shall mark exits, and all exits shall be maintained free of obstructions and impediments.	

Section 4 - Contractor Safety Training

Contractors shall provide specific safety training, as required by applicable law and to establish competency for their employees.	
Examples of specific training that contractors shall provide include, but are not limited to the list in section 4.3	
Persons found who are not trained, competent or qualified for the task or activity they are performing will require that particular portion of the work to cease until corrective actions have been implemented by the Contractor.	

D24 - TEMA PE-Safety Engineering
Construction Safety Guidelines Key Points
(included for reference as part of TEMA Construction Safety Guidelines Document)

Section 5 - Maintaining Required Documentation

The list of safety documents required to be maintained on file by the Contractor is contained in Section 5.5	
Contractor is required to maintain a site specific safety plan containing the items outlined in Section 5.6.	
Administrative permits and documentation required to be maintained by the contractor are listed in Section 5.7.	

Section 6 - Safety Procedures and Policies

All contractor employees who will be working on a Toyota project site shall attend Safety Orientation prior to performing any actual work on any Toyota site.	
Safety orientation procedures and requirements are outlined in Section 6.1.	
All accidents, injuries and injury-free incidents must be reported immediately to Contractor supervision and Toyota Safety.	
Incident reporting procedures and requirements are outlined in Section 6.2.	
Each Contractor must immediately notify Toyota Safety of violations of any applicable safety or environmental rules by its own employees, Subcontractors or Suppliers.	
Examples of Minor and Major safety violations, as well as disciplinary actions and procedures are outlined in Section 6.3.	
Toyota is a drug free workplace and insists that its contractors maintain a drug free workplace. Contractor shall implement an effective substance abuse control program while under contract at Toyota.	
Smoking/Tobacco Products Use is prohibited inside plant buildings. Designated areas will be provided for smoking/tobacco use.	
Contractors shall be required to conduct daily Task/Job Safety Assessments (TSA/JSA) for all project line item schedule activities being performed on projects at Toyota. Specific requirements of this provision are outlined in section 6.6	
Contractors shall comply with all requirements contained in the Toyota Motor Manufacturing North America (TMMNA) "Construction Site Environmental Management Handbook" published by the TMMNA Environmental Affairs Department	
Contractors shall maintain information on the chemicals they are using or handling at Toyota. Contractors shall be familiar with the information and inform their employees, if they will be working in areas where chemicals are used	
Contractors shall follow the MSDS and Hazard Communications Policies outlined in Section 6.8.	
Contractor shall maintain and follow a Lockout/Tagout policy which meets at least the minimum standard as outlined in Toyota's policy contained in Section 6.9	
All work to be performed in an operating Toyota facility requires a Toyota Work Permit. Procedures are outlined in section 6.10	
Contractor shall adhere to the Confined Space Entry procedures outlined in section 6.11	
Contractor shall maintain an emergency action plan and procedures which meet, at a minimum, the requirements of section 6.12	
(Note: this item applies to TMMC jobs only) Contractor is required to follow the equipment commissioning safety procedures outlined in section 6.13	

D24 - TEMA PE-Safety Engineering
Construction Safety Guidelines Key Points
(included for reference as part of TEMA Construction Safety Guidelines Document)

Section 7 - Safety Rules

Contractor is required to comply with the rules for construction site safety that are outlined in section 7. This section contains minimum requirements for the following:	
- Compressed Air	
- Compressed Gas Cylinders	
- Concrete and Masonry Construction	
- Cranes, Derricks, Hoists and Conveyors	
- Electrical Safety	
- Excavations and Trenching	
- Fall protection	
- Fire Protection and Prevention	
- Hot Work	
- Hand and Power Tool Safety	
- Laser Safety	
- Helicopter Lift Procedures	
- Machine Guarding	
- Work Over or Near Water	
- Material Storage	
- Motor Vehicles and Mechanized Equipment	
- Personal Protective Equipment	
- Aerial and/or Scissor lifts (Elevating Work Platforms)	
- Powder Actuated Tools	
- Roof Access	
-Scaffolding	
- Stairway and Ladder Safety	
- Steel Erection	
- Walking and Working Surfaces	
- Welding/Cutting/Brazing	

Appendix:

Sample forms for reference are provided as Appendices to this manual. Contractors may use these forms or, at their discretion, may use their own existing forms, as long as the Contractor's forms provide at least the information shown in Toyota's sample forms.

D-25 COMMISSIONING WARNING SIGN

Danger - Do Not Enter,
Commissioning in Progress,
Authorized Personnel Only

危険
立入禁止
コミッショニング中

Peligro - No Entre
Instalación de equipo en Proceso
Solo Personal Autorizado

D-26 TEMA Lift/Stacking Safety Checklist Sheet

Required for: Loads 2000 lbs (907 kg) or greater that require a crane.

For standard lifts (such as building framing), form is required when new type of activity is started.

Form is required for forklifts if load must be secured to forks. (abnormal size or shape)

- Procedure:**
1. Contractor must fill-out form and obtain signatures on bottom before beginning work.
 2. Sheet must be posted at job-site during work.
 3. After job is complete, sheet must be filed in contractor office until completion of contract.

Job Leader: _____

Crane Operator (print): _____

Crane Operator Signature: _____

Crane Operator Certified: (Y,N) _____

Date & Time of lift: _____

Technical Advisor

(if applicable)

Name: _____

LIFT LOCATION: _____

SCOPE OF WORK FOR THIS LIFT: _____

POTENTIAL HAZARDS FOR THIS LIFT: _____

LIFTING DEVICE: _____ Shift Equipment Inspection completed by: _____

CAPACITY OF LIFTING DEVICE: _____ Verified by: _____

WEIGHT OF LOAD: _____

Act	Est

Verified by: _____

Act = actual weight

Est = estimated weight

PRE-LIFT CHECK LIST (OK, NO GOOD, OR NOT APPLICABLE)

	OK/NG/NA		OK/NG/NA
Load Chart has been verified:	<input type="text"/>	Adequate ventilation in area:	<input type="text"/>
Check for overhead hazards:	<input type="text"/>	No workers in potential pinch-points:	<input type="text"/>
Rigging fastened securely:	<input type="text"/>	Fall Protection (for heights > 6 ft.):	<input type="text"/>
Rigging material in good condition:	<input type="text"/>	Crane limit switch operation verified:	<input type="text"/>
Cushioning softeners around sharp edges:	<input type="text"/>	Crane outriggers fully extended:	<input type="text"/>
Tag line(s) for stabilizing unbalanced loads:	<input type="text"/>	Crane is stable, on solid foundation:	<input type="text"/>
Load can not shift in rigging:	<input type="text"/>	Load stabilization blocks OK:	<input type="text"/>
Spotters properly positioned:	<input type="text"/>	Stacking method appropriate for load:	<input type="text"/>
Swing radius perimeter cordoned off:	<input type="text"/>	Stacking height appropriate for load:	<input type="text"/>

LIFT PERMIT TEAM MEETING:

Print Name/Signature of team members: _____

Contractor Job Leader Signature: _____

Contractor Supervisor Signature: _____

ALL SIGNATURES MUST BE OBTAINED PRIOR TO LIFT!!!

D-27 CRANE INITIAL USE INSPECTION CHECKLIST

Contractor's Crane Inspection Initial Use Checklist

Crane inspections are required when equipment arrives on site, if the crane changes possession, or is reconfigured.

DATE: _____ CRANE MANUFACTURER: _____
 REQUESTED BY: _____ MODEL: _____
 CONTRACTOR: _____ SERIAL NUMBER: _____
 CRANE OWNER: _____ DATE OF LAST INSPECTION: _____
 YEARLY INSPECTION PERFORMED BY: _____

	YES	NO
1. Is there an operator's manual provided with the machine?		
2. Is there a load chart available for the machine as it is equipped?		
3. Is there an external placard displaying standard hand signals?		
4. Do the outriggers function properly without leaks?		
5. Are appropriate pads available to prevent outriggers from damaging floor or road surfaces?		
6. If used indoors, is there a diaper in place to catch incidental fluid drips?		
7. Is the wire rope(s) in good condition and free of damage?		
8. Is the wire rope(s) terminated properly?		
9. Does the anti two block device(s) function properly?		
10. Do all lights work properly?		
11. Does the horn work?		
12. Does the backup alarm work?		
13. Are safety latches or their equivalent in place and functioning.		
14. Is there a functional fire extinguisher available?		
15. Are all windows safety plate or equivalent and free of defects?		
16. Is the machine capable of running on propane for indoor use?		
15. Is the operator properly trained for this machine?		

INSPECTED BY: _____

APPROVED:

REJECTED:

D-28 Change Request

TEMA Contractor Safety Requirements Document

Date Submitted: <mm/dd/yyyy>
Department/NAMC/Contractor: <Submitter>
Current Document Revision Number: <Rev. No.>
Section where change requested: <Section>
Requester Name: <Requester>
Phone/email: <Contact>

Document Change Description

Reason for Suggested Change

Benefit of Change

Impact of not making change

Document change approved for investigation?

☐ Yes☐ No

Assigned Implementer: <Implementer>
Approved by: <Approver>
Date Approved: <mm/dd/yyyy>

Comments

Please send this form to TEMA PE Safety - Construction Safety Specialist - PESAF-ER