University of Kentucky
Procurement Services

INVITATION FOR BIDS

CCK-2564.0-15-25
Construct Health Education Building
BP-04F Core and Shell MEPFs
ADDENDUM # 1
09/19/2024

IMPORTANT: BID AND ADDENDUM MUST BE RECEIVED BY 10/09/2024 @ 3:00 P.M. LEXINGTON, KY TIME

Bidder must acknowledge receipt of this and any addendum as stated in the Invitation for Bids.

ITEM #2: Modifications and Clarifications to the Contract Documents:

- Bidders are instructed to review and incorporate into their offers the attached addendum#1 from Turner Construction Company and associated files.

OFFICIAL APPROVAL
UNIVERSITY OF KENTUCKY

Corey W. Leslie / (859) 257-9102

SIGNATURE

_____

_____
Typed or Printed Name

University of Kentucky
Procurement Services
322 Peterson Service Building
Lexington, KY 40506-0005

UK Construct Health Education Building
ADDENDUM No. 1
UK-2564.0-15-25
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Item No. 01 Replace existing General Requirements with new updated version.

Item No. 02 Add Sketch SK-003 “Temp Power Plan”.

Item No. 03 Re: Replace Attachment C with updated version.

Item No. 04 Re: Replace Attachment H with updated version.

GENERAL WORK REQUIREMENTS

A.	GENERAL
1.	In these contract documents the term "provide" shall be defined as meaning "furnish and install."
2.	All Trade Contractors shall provide full time supervision while its forces are working on this Project. The Trade Contractors' jobsite supervision shall be experienced in his trade and be capable and have authority to make decisions regarding costs, manpower, and schedule. The Trade Contractors shall obtain the approval of the Construction Manager of his job management personnel prior to their assignment to the Project. Trade Contractors' supervision and management personnel shall not be changed without prior approval of the Owner or Construction Manager.
3.	All contractors shall review the documents to understand what work is included in this **Health Education Building** Project. Ask specific questions with any clarifications needed.
4.	Work hour details for this Project's existing areas: a. Assume ALL work contained in this work scope that occurs in occupied areas/buildings shall be performed AFTER normal working hours (off shift work hours). b. **Health Education Building** construction area – 6:30am to 5:30 pm Monday to Friday. c. Special work hours and off shift hours will be determined for noise making activities such as hoe ramming, drilling, sawcutting, shot pin installs, etc. Assume hours for this work will be 8 am to 8 pm.
5.	Trade Contractors shall not order or **consign** materials for the project in the name of the Owner, Architect, or Turner. Turner Reserves the right to reject all such shipments received in this manner. Deliveries must be coordinated with the Construction Manager a minimum of (1) week prior to receipt on site. Any material deliveries without notice will be given access on an "as available" basis. Also reference Turner's standard subcontractor contract 36 article VI.
6.	Trade Contractors are responsible to **protect and repair if damaged** all adjacent properties and structures, including lawn, planting areas, hardscapes and trees as required to execute the work. Plan for protection of adjacent structures must be part of the overall plan submitted for approval prior to start of work. Trade Contractors will be responsible for immediately replacing/repairing any damage to existing utilities, existing structures, lawn and planting beds, and hardscapes in or outside of the building limits caused by the trade contractor's workforce.
7.	It is the responsibility of each Trade Contractor to make certain that all of its Work performed under the Construction Contract is in accordance with all applicable laws, statutes, ordinances, codes, and regulations. Trade Contractors shall give all notices and comply with all laws, ordinances, rules, regulations, and orders of any public authority with jurisdiction over the performance of the Work. Contractor shall promptly pay all fees, taxes, deposits, charges, penalties, or interest that may be claimed against or paid by Owner/Construction Manager due to any failure to comply with any such laws, statutes, ordinances, codes, or regulations (including those pertaining to permits, licenses, or notices). This shall include any and all professional engineering fees required. Refer to "Instruction to Bidders" of the Bid Manual for tax details. This project is taxable, all applicable taxes should be included in your bid.
8.	All Trade Contractors must employ the proper trades and provide **composite crew**s if necessary to perform this Scope of Work and to avoid jurisdictional disputes.
9.	Each trade contractor is to provide their own **drinking water**.
10.	Contractors must be **licensed** as required by local, State, or Federal jurisdiction required for work of their respective trade in this project location. Contractors are to obtain any and all required licenses including a **Contractor's license** fee for doing business in the locale. Provide copies of the license to the Construction Manager.
11.	Upon request, Trade Contractors must provide the Construction Manager with field copies of latest **referenced standards**.
12.	The Contract Price shall be based on a normal forty (40) hour workweek unless otherwise specified i.e. first shift but may be staggered, Monday - Friday. All work to be performed for tie-ins to existing utilities/services shall be figured at a rate outside the normal (40) hour workweek. All tie-in work shall be scheduled with written approval and coordinated with Turner's Superintendent. Unless Turner's Project Superintendent issues written instruction/agreement otherwise, if a contractor works beyond the eight (8) hours per day, five (5) days per week normal work period, he shall bear all added costs. Trade Contractors shall notify Turner's Project Superintendent by 12:00 PM (noon) 2-days before the requested overtime to allow time to make proper arrangements. Overhead and profit markup shall not be permitted on **premium time** costs or on shift work premiums (see General Conditions).
13.	All Trade Contractors' superintendents and foremen are required to have cell phones compatible for reception in and around the project areas for daily contact. All Trade Contractors and their sub-contractors are required to have at least one (1) iPad each that will be used for review of electronic drawings and other project information as well as at least one (1) iPad each that will be used for electronic punchlists and project execution via Procore. These iPads are to be used on the construction site and shall be onsite at all times each company's workers are present for those worker's use. iPads shall have their own internet connectivity. Trade Contractors should not assume internet connectivity will be available on-site via Wi-Fi.
14.	The Trade Contractors must attend all **required meetings** as follows:

	a. The **Weekly Work Plan meeting** for overall job coordination. Attendance is mandatory for all Trade Contractor superintendents and foreman. All attendees must have the authority to make decisions and commitments. b. The **Weekly Six Week Look Ahead Planning meeting** for overall job coordination. Attendance is mandatory for all Trade Contractor Project Managers. All attendees must have the authority to make decisions and commitments. c. The **Monthly Project Safety Meeting**. Additional supplemental meetings will be held due to incidents, field safety violations, etc. by this or other trade contractors / tiered subcontractors. d. The **Monthly Trade Review Meeting**. The project manager, superintendent, and foreman for each crew/trade are required to be in attendance. These meetings are to discuss current schedule, issues, manpower, and address any other questions or concerns. These meetings will start in the same month as your start of work and will continue until determined otherwise by the construction manager. e. The **Monthly Safety Committee Meeting**. Each Trade Contractor will have the responsibility to provide an individual to attend the Monthly Safety Committee Meeting. This individual should be considered a competent employee that is able to represent the Trade Contractors' scope of work by having at least 5 years in the trade. The purpose of this meeting is to provide an opportunity to disseminate project safety related information and to receive the helpful feedback from the tradesmen in the field. f. The **Daily Stand-Up meetings**. Attendance is mandatory for all Trade Contractor superintendents and/or foreman. g. The **Reverse Phase Schedule meetings (Pull Plan)**. Attendance is mandatory for all applicable Trade Contractors. Those trade contractor's project managers and superintendents are required to attend. These will be held at the Construction Manager's discretion. h. The **Morning Stretch and Flex**. All persons on the project must be in attendance to work that day. Anyone coming in after the stretch and flex has the potential to be removed from site. i. The **Pre Task Plan (PTP) meeting**. Each trade contractor is responsible for holding these meetings each day after the stretch and flex. The trade contractor's superintendent and/or foreman will be responsible for running this meeting. Each trade contractor is responsible to ensure their sub tier contractors participate in a PTP meeting for the day. j. The **Utility Outage Planning meeting**. All superintendents and foreman **needing outages** are required to attend this meeting. k. Separate mechanical and electrical coordination meetings will be held on the jobsite as often as required to facilitate progress of the work. l. **Quality Assurance / Quality Control meeting** (QA/QC): The construction manager intends to hold a once a month QA/QC meeting. This meeting may be selective with trade contractor project managers, superintendents, and foreman invites for focus on topic. The intent is to limit the meeting to one hour. The option of several meetings is possible with small groups on differing divisions of work. Trade contractors will be required to provide a specific **quality control plan** for said division of work. We can focus of QA/QC in the specifications, manufacturer's data, mock-up, sign-off sheets, applicable testing and jurisdiction authorities, inspections, deficiency list, special care and protection, peer reviews, sequencing of work and turnover, etc. m. The **Job Hazard Analysis (JHA) meeting**. This meeting will be before the start of the trade contractor's work. No work will start before this meeting. This meeting will require the trade contractor's safety person, the project manager, the superintendent, and any foreman that will be on that project. All JHAs will be complete prior to this meeting and sent in to Turner for review. n. The **Pre-Start Work meeting**. The purpose of this meeting is to review the drawings and specs with the trade contractor's project manager, superintendent, and foreman to ensure that the project will be completed according to specifications. Sub tier contractors (including material suppliers) may be required to attend. It will be the responsibility of the trade contractor to ensure the attendance of all required persons from any sub tier contractor needed. o. Any Meeting as required by the Owner, Architect, or Construction Manager
15.	Each contractor will be responsible for the **security** of his own stored material, job office, conex box, gang box, equipment, tools, etc.
16.	**Project signs or advertisements** of any nature, including job offices shall not be installed on the jobsite or structure without preapproval of Construction Manager and the Owner. In general, identification lettering of company offices shall be six inches or less; location(s) still must be preapproved by the construction manager and the owner.

17.	All Trade Contractors shall include work made necessary by field conditions that may not be shown in the Contract Documents, but that are apparent during an inspection of the construction site. Trade Contractors must **familiarize** themselves with the jobsite prior to starting work.
18.	All equipment is to be equipped with high efficiency, durable construction exhaust purifiers **('Scrubbers").** Each Trade Contractor is responsible for providing and maintaining (including filter changes) scrubbers for each piece of equipment.
19.	All trade contractors are to be responsible to ensure at the end of each day's work shift the **building perimeter is secure** and locked down and all of their respective employees are offsite.
20.	All construction crews on site are a **minimum of two** people. No single person crews allowed. This may consist of one ground person and one person in the air.
21.	A special effort is to be made to provide the necessary **protection to keep oil** (from lifts, equipment, etc.) off of all floor areas. The offending Trade Contractor will be responsible for any clean-up required due to inadequate protection.
22.	**The University of Kentucky campus and medical campus are tobacco free**. "Use of all tobacco products is prohibited in all owned, operated, leased or [health care] controlled university buildings, grounds, parking structures, enclosed bridges and walkways, sidewalks, parking lots and vehicles, as well as personal vehicles in these areas." "Tobacco includes cigarettes, pipes, snuff, chewing tobacco, e-cigarettes, etc." There are tobacco treatment centers such as the Local health departments (Fayette county Health Department 859-288-2327), 1-800-quit-now. For listings "go to the UKhealthcare.uky.edu to find a link to a statewide listing of tobacco programs.
23.	Contractor shall track their fuel and utility consumption for the duration of their contract. This information shall be turned over to the CM on a monthly basis. Any utilities used through the University will be paid via the special conditions.
24.	All contractors shall refer to Attachment N for the Subcontractor Onboarding Instructions. Contractors are encouraged to complete this process prior to bid opening, as it will expedite contracting with Turner.
B.	**SAFETY**
1.	All Trade Contractors must fully comply with the Construction Manager's corporate **safety policy,** comply with the Site Specific **Safety Plan** (included in this manual as **attachment 'C'),** and all federal, state, and local safety ordinances. The Trade Contractor must also submit a formal written project specific safety plan that is complimentary to the Construction Manager's Safety Plan. a. In addition, all Trade Contractors shall provide a competent safety person to monitor all aspects of the Trade Contractors' work in accordance with the Safety Plan. b. All workers must go through Safety Orientation prior to commencing work. Safety Orientations will be held Mondays and Wednesdays at **7:30 am** (pending staggered shift(s)) in the Turner jobsite office. Special orientation times will be approved at the discretion of the construction manager. c. All Trade Contractor "Principals" are required to attend a monthly safety jobsite walkthrough at the Construction Manager's discretion. d. In order to work on this project, a negative drug test is required prior to starting work. For "**Drug project testing requirements**", refer to Turner safety program. e. All lifts used on the project site must have powered steering front wheels.
2.	All **deliveries requiring a crane** (excluding the tower cranes) will require an approved lifting plan per Turner's safety plan and must be approved by Turner and UK. A UK lifting plan must also be submitted to the construction manager to gain approval from UK. Allow six (6) weeks minimum prior to the crane arriving onsite to gain these approvals.
3.	It is the responsibility of the Trade Contractors to contact the local **utility locating** service and have all utilities located prior to mobilizing heavy equipment used for lifting or hoisting. The Trade Contractors should also contact the Owner (UK), through the Construction Manager, and have all UK owned utilities located as well.
4.	All **plastic** used on site must be fire retardant.
5.	**Smaller floor openings**: the respective trade providing opening will cover with reinforced secured plywood. Mark "hole" and maintain as required. Small opening metal deck cutouts will be by respective trade requiring opening; respective trade contractors will comply with OSHA requirements during and after alterations. Floor covers shall be constructed in such a manner to avoid any random kicking off, and elevated high enough to control lifts, etc. from running over them. These covers should be anchored to the concrete floor and painted orange. Note ALL sleeves" are elevated 1-1/2" above rough slab.
C.	**BONDS AND INSURANCE**
1.	**PAYMENT AND PERFORMANCE BONDS** The base bid should NOT include **Payment and Performance Bonds**. Provide, for reference, the additional cost to provide them on the trade contractors Bid Breakout sheet.

2.	**CONTRACTOR CONTROLLED INSURANCE PROGRAM (CCIP)** a. The project will incorporate a Contractor Controlled Insurance Program (CCIP) as described in the CCIP Manual included in the Project Manual. The Lump Sum Base Bid amount should not include on-site worker's compensation costs, commercial general liability, or excess liability costs for this work, in accordance with the CCIP Manual. Trade Contractors are responsible for & must provide evidence of automobile insurance and offsite general liability & worker's compensation. Trade Contractors **must submit required forms on the website** to be enrolled in the CCIP. i. Trade contractors will not be able to start any work on site until they are enrolled in the CCIP program. This process will take a minimum of two (2) weeks. Any delays caused by late submission shall be borne by the trade contractor responsible. This includes the cost for overtime and extra crews to maintain the project schedule. ii. All sub tier contractors will be required to enroll in the CCIP program.
3.	**Builder's Risk Insurance** is provided by the Construction Manager per the terms of the General Conditions Article 35.5. Unless otherwise provided for through agreement, the Trade Contractor experiencing any loss claimed under the builder's risk policy shall be responsible for that loss up to the amount of the deductible. Trade Contractor(s) may provide their own coverage for amounts up to the deductible. Refer to the General Conditions, Article 35.5 for deductible limits.
D.	**SITE LOGISTICS**
1.	**Storage** of bulk amounts of materials and equipment is restricted due to limited space on the jobsite and within the limitations of the staging area. This project will be utilizing "Just-in-Time" delivery and "Kit-of-Parts" prefabrication. Trade Contractors must schedule and cycle no more material than can be installed in-place **within a 5 day or less period**. Moving of materials stored inside the staging areas will be necessary and the Trade Contractors shall promptly respond to any request from the Construction Manager to move material. Trade Contractors shall include required costs for off-site storage and any additional handling of materials involved with offsite storage. a. All building materials (studs, conduit, pipe, forms, etc.) shall be stored on pallets, dunnage, or a sortable material cart. All contractors shall employ a "nothing hits the ground" mentality.
2.	**Access to/from the existing surrounding buildings (see SK-001)** by the staff, students, public, delivery trucks, etc. is to be maintained at all times. Fire department access must also be maintained to the surrounding buildings during construction. It shall be the responsibility of the Trade Contractors to ensure that all road entrances, exits, fire lanes, building entrances, loading docks, etc. are not blocked by the progress of its work, its deliverymen or contractors in their employ. This is inclusive of providing temporary access and protection including, but not limited to temporary walks, overhead protection, barricades, signage, etc. Temporary provisions are to be in accordance with UK standards. This access and protection shall be to the satisfaction of the Construction Manager.
3.	The University Dr./Veterans Dr, entrance/exit will be used as the main **construction entrance/exit** (see Gate 2 on SK-002). Secondary entrances (Gate 6 and Gate 7) are also available for use after coordination with the Construction Manager and Yard Boss
4.	Trade Contractors are to provide all **street permits**, bonds, police details, flagman, off-duty police, street/lane closure permits, traffic control, and barricades as required to complete the work. This includes deliveries of material. Roadways and driveways may not be blocked without prior approval. Furnish copies of all permits to the Construction Manager.
5.	This project is around existing University buildings. **Utilities or services**, including pavement to the Owner's facilities (and surrounding facilities) must be protected and maintained 100% of the time when possible (as determined by the Owner, Consultant, or Construction Manager). All costs associated with the work required to maintain service shall be the responsibility of the Trade Contractor performing the associated work. The Trade Contractor(s) are responsible to immediately repair any utility damaged or disrupted during the course of its work whether the utility be known or unknown. If the utility is unknown, the Trade Contractor(s) making the repair will be compensated for the work. If the utility is known, the Trade Contractor(s) is responsible and liable for any and all costs of repairs. Failure to immediately repair damaged utilities per the requirements of the utility Owner will result in the work being performed by others at the Trade Contractor's expense. Repair work shall begin immediately and be continuous (24/7) until the service is restored. All costs associated with this work to repair known utilities are the responsibility of the Trade Contractor. If unknown utilities are discovered, they must be reported to the Construction Manager in writing who will in turn investigate with the assistance of the Engineer and Owner.
6.	**USE OF PREMISES** a. **PARKING & TRANSPORTATION**: i. Contractor **parking** is NOT permitted on the job site or on the University of Kentucky Campus. ii. Turner cannot guarantee that UK will issue passes to any lots on the University campus. Parking is at the discretion of the bidding contractor. iii. No parking is permitted in the Whitney Hendrickson Parking Lot or in any UK Parking Structures.

	iv. Any and all parking permitting costs or parking violations shall be borne by the Trade Contractors. v. Contractors will be able to park in the trailer lot as shown on SK-001. Parking passes will be given out on an as needed basis. Contractor can assume 4 passes per prime contractor in this lot, one for their foreman and the other for their shuttle bus. b. **CAMPUS:** i. Trade Contractors are expressly forbidden to enter existing campus buildings (excluding Dimock) except for specific construction purposes. Restrooms, drinking fountains, vending machines, gift shop and food service areas are NOT for Trade Contractor use unless otherwise directed by the Construction Manager. ii. Trade Contractor communications with University Staff, Faculty and students is strictly forbidden. iii. "Catcalling" or otherwise harassing University Staff, Faculty, Students, or the general public is strictly forbidden. Noncompliance with this provision is grounds for immediate dismissal from the jobsite. Additionally, the tradesperson and Trade Contractor may be subject to legal action.
7.	All contractors shall review delivery access routes and include any temporary removal/relocation of existing items (AHU platform rails, stairs, etc.) to transport their materials and equipment.
8.	**Temporary facilities (toilets)** for this project will be located on or near the project site See SK-001. Trade contractors are not permitted to use the active university building toilets.
9.	All contractors shall assume all breaks including lunch shall be taken at the Project Break Area (location shown on SK-001). Taking break and lunch at work areas on project site will not be permitted.
10.	**Office and storage trailer(s)** will not be permitted onsite due to site limitations. Trade Contractors will be allotted space for one (1) 40'x10' conex box or trailer in the Trailer Lot for storage and/or office space (see SK-001). Stacking of conex boxes is allowed, but must be approved by Turner. Each perspective TC will be responsible for ALL utilities required at conex box. Break area for workers will be located in the Dimock Building (see SK-001).
11.	Two tower cranes will be provided for use by the contractors. a. Tower Crane hours of operation will be from 7:00 AM and 5:00 PM. i. During Architectural Precast (TC-001) and Curtain Wall (TC-002) overlapping work, (1) one tower crane will be available from 7:00 AM – 8:30 PM. TC-002 (Curtain Wall Contractor) will have crane time from 7:00 AM to 12:00 PM. TC-001 (Architectural Precast) will have crane time from 12:30 PM to 8:30 PM. b. Priority for Tower Crane usage: i. Steel Erection/Precast Shafts ii. Architectural Precast iii. Curtain Wall/Metal Panels iv. All other trades
12.	**Fuel storage** on site is NOT allowed and fueling procedures must comply with applicable regulations, Project Safety Plan and receive the Construction Managers approval. No gasoline or diesel powered equipment will be operated inside enclosed building areas. There will be no fuel storage permitted inside the building.
13.	All foreman/site lead will be required to carry an **Apple AirTag** when crews are on site. This will allow Turner to know all crews have left the project safely at the end of the day, and the site has been vacated. These AirTags will be purchased by each trade and are to remain with the project at the end of their respective scope. Every subcontractor's crew leader will be required to have an AirTag while they are working on the project. These air tags shall be purchased through Apple with specific engraving requirements determined by Turner. The costs for these air tags are $29.00 each with a lead time of 1 week.
E.	**MEANS AND METHODS**
1.	All Trade Contractors must provide all necessary **fasteners, supports, and attachments** for the installation of their own work. Trade Contractors must submit to the Construction Manager for approval by the A/E, the means and methods in which they plan on attaching hanger/supports to decks.
2.	Trade Contractors are responsible to survey and inspect all **substrate work** performed by others prior to starting its own work. Any and all discrepancies, out of tolerance work, or otherwise unacceptable work must be reported the Construction Manager in writing prior to the start of work. The start of work indicates acceptance of the substrate material.

3.	Each Trade Contractors acknowledges that his Work must be **coordinated** with the work of other trades and further agrees to coordinate his shop drawings, details, and submittals with those of other trades to ensure proper installation of all materials in accordance with the Project Schedule.
4.	Each Trade Contractor shall **protect** his own Work and materials adjacent to his work until accepted by the Architect, Engineer, Construction Manager and the Owner. Trade Contractors shall be responsible for replacing, repairing, or the expense to repair, any damage caused by the performance of their Contract Work. In the event damages occur to existing work and is unidentifiable to a specific trade, all repairs and replacement costs will be distributed equally to all trades working in that area.
5.	Each Trade Contractors, upon notice, shall correct all **deficiencies** in a timely manner before proceeding with the next sequence of Work. Trade Contractors shall be financially liable for any delays to the Project or other contractors due to their deficiencies or the untimely correction of their deficiencies.
6.	Each Trade Contractor requiring **temporary protection or temporary heat** to complete its work in accordance with the Plans, Specifications and Project Schedule is required to provide the protection and/or heating.
7.	Each Trade Contractor is required to provide its own **temporary power** (generators tentatively not applicable) and lighting if additional is needed beyond the temporary power onsite. All trades are responsible to provide their own power for welders. This includes and wiring, tie-ins, or devices to run their welders. They are not permitted to be run on the temporary power provided for the work of this bid package(s). At no time shall the noise generated by generators be overwhelming or disruptive to University operations. Generators shall be placed to minimize noise and exhaust impacts.
8.	While working on-site, Trade Contractors shall fill out Construction Manager's **Daily Construction Report (DCR)** form & labor utilization form. These forms are to be delivered to the jobsite (Turner Superintendent interacting with Trade Contractor) office by no later than 10:00 am the following business day. Failure to perform this duty shall result in delay of payment until all reports have been received. The daily report may be available via electronic format for completion of same.
9.	**CLEAN UP** a. Trade Contractors are responsible to perform clean up on a **continuous basis**. This cleaning shall at no time be less than once per day. Each and every work area must have all trash, debris & scrap removed and properly disposed of, all materials neatly stacked and the floor broom swept on a daily basis. Each Trade Contractor is required to maintain sufficient brooms, shovels, and sweeping compound on site to keep his work area clean. If daily cleanup and rubbish removal are not performed to the satisfaction of the Construction Manager or the Owner, cleanup and rubbish removal will be performed by others and all costs will be backcharged to the at fault Trade Contractor's contract. Cleanup operations shall not 'wait' until end of the week. Trade Contractors will include all costs for daily cleanup in the contract price. b. At no time shall the streets, building, or areas that surround the work be in a disorderly or dirty condition. c. All private and public paved roadways, parking areas, service roads, etc., are to be kept free of mud, debris, etc., resulting from equipment or vehicles performing the work under their respective Trade Contract, in compliance with local city Ordinances. All Trade Contractors are responsible to include in their contract price dust and mud control, traffic control and roadway cleaning. All Trade Contractors are responsible to clean streets of any debris or spillage of any material as a result of the performance of their work as directed by the Construction Manager. Scraping streets 'clean' with a backhoe or "skid steer" is not acceptable debris control. All street cleaning conducted must be swept clean in addition to scraping up of large debris. All paved areas are to be kept "broom clean" at all times. Failure to do so may result in serious fines imposed on each violating Trade Contractor. Any charges directed at the Construction Manager by others, due to the fact that this procedure is not being implemented, will be backcharged to the offending Trade Contractor. Dust control measures shall be provided by all trade contractors as necessary for their work. d. Burning of trash is NOT permitted. e. Dumpsters will be provided for general construction debris ONLY in accordance with scopes of work and these general requirements. Locations for construction debris will be coordinated with the Construction Manger. All crating materials must be disassembled and/or flattened prior to placement in dumpsters. All demolished items must be removed in dumpsters or trucks provided by the contractor removing the items. Any materials that require special care and/or disposal shall remain the contractor's obligation to dispose of. f. Trash receptacles will be furnished for trash & refuse throughout the building and site as outlined in the specific scopes of work and these general requirements. These receptacles are not for construction debris, packing materials, cartons, pallets, scrap, etc. g. It is the responsibility of the Trade Contractors to coordinate the clean-up effort, including removal of non-identifiable items such as lunch wrappers, cans, plastic bottles, etc. h. All Trade Contractors are required to perform a final cleaning of its work and the jobsite.

	i. It is each Trade Contractor's responsibility to place refuse and debris resulting from their direct operations in the refuse containers ("Mobile trash carts/cans") and emptied into the site dumpster by that contractor.
10.	**INSPECTIONS** a. The Trade Contractors shall coordinate, in a timely manner, all city, county, state, or other inspections as required for the completion of its Work in accordance with the Project Schedule. The Trade Contractors understand that multiple inspections (i.e. in-wall, above ceiling, etc.) may be required per area to maintain project schedule. The Trade Contractors shall schedule these inspections in a timely manner with no added cost to the Construction Manager or owner. b. The Trade Contractors shall cooperate with and include the costs of all labor and materials required to assist the Owner's testing/inspection agency with inspections and gathering of samples and assistance in access to the specific locations of tests/inspections, and demonstrations. Initial costs for testing laboratory shall be by others if so noted in documents. Costs for re-test due to noncompliance shall be borne by the offending Trade Contractor. A minimum of 24 hour notice must be given to the testing agency for testing required during normal working hours. If testing is required on weekends, 48 hour notice is required. c. Coordinate with the Owner's Testing/Inspection Agency as required by the specifications. d. The Trade Contractors will cooperate with and demonstrate system operation and safety compliance with the local building and fire inspectors as needed and required for building occupancy. All associated costs, inclusive of after-hours inspections, are the responsibility of the Trade Contractor installing the system.
11.	All contractors are to understand that this is a **LEED** certified project. Contractors are to make themselves familiar with the requirements laid out in the specifications and follow those requirements.
12.	Contractors are to **verify layout** provided by others. Where this subcontractor is performing work using layout provided by others, this subcontractor shall perform sufficient verification of that layout to reasonably ascertain the validity of that layout. Any deficiencies (or suspected deficiencies found) shall be reported to Turner immediately to allow corrections as needed before start of work by this subcontractor. Contractor shall not use any permanent marking (Sharpie, spray paint, etc.) on the concrete slabs.
F.	**SCHEDULE**
1.	This project will utilize a **LEAN scheduling** approach to fully-develop this project's scheduling details (See Attachment I). All contractors will be required to participate in reverse-phase, pull-planning scheduling sessions to develop and schedule the construction work. PMs, superintendents, and foreman will be required to participate in these sessions. Participants are expected to come prepared with work scopes broken down into components knowing their scope details, manpower requirements, and expected durations.
2.	This project will utilize the **Last Planner System** which provide the planning, management, and control tools necessary to efficiently manage the project schedule. In addition to the pull-planning and make ready planning, all contractors will be required to submit a Weekly Work Plan (WWP) weekly to be reviewed by the CM against the schedule as well as participate in daily 15-minute Production Planning Huddles.
G.	**DOCUMENT CONTROL**
1.	All Trade Contractors will comply with all requirements of the Contract Documents as to **Contract Close-Out**, including, but not limited to, Operation and Maintenance data, system training, and project record documents. **O&M Manuals**, training schedules and preliminary as-built drawings are due to the CM prior to 70% trade contractor complete progress billing. The Trade Contractor will be required to submit a form that certifies that all systems, equipment, firestopping comments and incorporated products furnished by the Trade Contractor are complete and operational for the purpose for which the system or product were intended. Each Trade Contractor is responsible to video all start up and training. This video must be of "professional quality" (no cell phone videos) and submitted to the Construction Manager in proper format as part of the Contract Closeout Documents.
2.	All Trade Contractors shall maintain, at the site of the Work, **as-built drawings**, which will be updated on a weekly basis showing actual installation and all changes in the Work. These drawings will be legibly identified as "Record Documents", with changes noted in a legible, concise and explanatory manner in red ink. The Record Documents are subject to review by the Construction Manager on a weekly basis. Any contractor not keeping a current record of the changes made to its Work on the Record Documents will be subject to having Progress Payments withheld until all changes are brought current to the satisfaction of the Construction Manager. Final As-Built Record Documents must be submitted to the Construction Manager in electronic format. As-built drawings and photos shall be reviewed by the Construction Manager prior to covering the work.
3.	Each Trade Contractor shall submit a **submittal schedule** to The Construction Manager within 10 days of Contract award. Submittal submission must begin within 15 days of Contract award or sooner if required to maintain the Project Schedule. Schedule shall include material lead times. Please note that all submittals/samples must be sent to Turner Construction's jobsite office for review. Include the costs for any postage required. Submittals will be in accordance with the Special Conditions Article 8.
4.	**PROJECT MANAGEMENT SOFTWARE (eComm)**

	a. All Trade Contractors will be required to have an Internet connection, a working email address (checked daily) and utilize eComm, the University of Kentucky's web based project management system. b. All Trade Contractors will be required to utilize eComm as required by the University and the Construction Manager. This shall include, but not be limited to: RFI's, daily communication, submittal tracking, etc. c. Communication forwarded via eComm will be binding as if sent via traditional methods. d. ALL Trade Contractors will be required to submit initial and ALL "later" approved submittals and shop drawings as a scanned electronic file for eComm. Exceptions will be at the Construction Manager's and Owner's discretion. The file format will be at the discretion of the Owner and the Construction Manager. If a Trade Contractor fails to comply with this provision, they will be responsible for all costs incurred by the Construction Manager to have said drawings and submittals scanned. Refer to Special Conditions for additional detail. Reference General Conditions for number of "copies".
5.	Contractor change order requests shall be provided with sufficient detail (as acceptable to Turner) to allow for satisfactory review. Contractor shall be allowed a maximum mark up for overhead and profit per the markup provisions included in the Subcontract Agreement, or as clarified in Contract Documents. a. All Change Order Requests, Time & Material Tags, and Pricing Submissions will be in electronic format and shall be submitted to Turner using the Clearstory project management system. Clearstory is no cost to Subcontractors and will help the project team collaborate on change orders, pricing requests, and T&M tags.
6.	All **Applications for Payment** and all supporting documents (including but not limited to lien waivers, sworn statements, and the like) for Subcontractor and its sub-subcontractors and suppliers, shall be in electronic format and shall be submitted to Contractor using the Textura-CPM™ payment management system. Subcontractor shall be responsible for the fees and costs owed associated with Subcontractor's use of the Textura-CPM™ payment management system. Subcontractor shall include a similar provision in its sub-subcontracts and purchase orders. Fees to Subcontractors are calculated as 0.22% (22 basis points) of contract value, with a minimum fee of $50 and a maximum fee of $5,000. Fees to Subcontractors' sub-subcontractors and suppliers are a fixed fee of $100 per sub-subcontractor or supplier contract. a. **Retainage** Conditions shall be in accordance with the "Fairness in Construction Act" of 2007. Namely, Retainage for all Subcontractors shall be 10% until both the Project and the Subcontractor achieves 50% completion. At that point, retainage for all Subcontractors in good standing shall be reduced to 5% of Total Contract Value. b. Turner Accelerated Payment Program - The attached KENTUCKY Rider - Accelerated Payment Program amends and supplements your Agreement with Turner and provides you the opportunity to enroll in the Program through Textura CPM and receive accelerated payments from Turner on your invoices. Formal enrollment into the Program can then be accomplished via the Textura CPM system. Additional information and Program benefits are included in the attached Turner Accelerated Payment Program summary. You may be contacted by a representative from Turner or Textura who can provide additional information on the Program and answer questions you may have or you may call Textura at 1-866-TEXTURA (839-8872) with any questions.
H.	**SITE SPECIFIC**
1.	**TC-019 Site General Trades** is to provide & maintain, one-hundred (100 ea) 20# **fire extinguishers** with free standing stands placed throughout the site in accordance with Turner Construction and OSHA standards for the duration of their contract. Provide initial certification upon delivery and re-certification as needed.
2.	**TC-019 Site General Trades** will furnish and maintain twenty (20) (minimum 55 gallon Rubbermaid drum) **trash cans** for miscellaneous trash (not construction materials) from the commencement of the project. Trash cans to remain at the project after completion of this contract or when no longer required as dictated by the CM.
3.	**TC-019 Site General Trades** contractor will furnish (repair or replace when necessary) thirty (30) new, mobile, one cubic yard, covered **trash carts.** Carts to be Global Industrial™ Extra Heavy Duty Plastic Tilt Truck, 1 Cu. Yd. Cap, 2100 Lbs. Cap, Gray model WB242096 or equal as approved by the CM. Trash carts should be equipped with a lid or some form of covering. Trash carts to remain at the project after completion of this contract or when no longer required as dictated by the CM.
4.	**TC-019 Site General Trades** shall provide two (2) 30-yd **dumpsters** at all times and all required quantity of "pulls" for general construction debris for the duration of their contract. Note: these dumpsters are intended to be used for general construction debris ONLY, not debris associated with excavation activities. Dumpsters for excavation activities will be provided and maintained by others. a. All contractors to follow specification section 01 7419.01 (COMPLETE). Please note the requirements to sort debris for the purpose of recycling. In addition to the (2) general debris dumpsters, **TC-019 Site General Trades** shall provide (2) dumpster for the purposes of recycling per the site LEED requirements. Include all required pulls for 39 weeks.

	b. **TC-019 Site General Trades** shall provide custom dumpster covers similar to ALCO Roll Off Container Covers for all dumpsters provided. Contractor shall include covering dumpsters whenever they are not in use and uncovering when they need to be used. c. Location of dumpsters to be coordinated with CM. Dumpsters to be emptied on a consistent and regular basis to support the construction operations. Contractor shall include relocating the dumpsters as needed to facilitate construction activities. d. If **any** contractor will be generating any concrete, asphalt, or CMU waste, that contractor is responsible for providing a dedicated recycling dumpster for that material. Each contractor shall provide receipts, weight tickets, and manifests indicating receipt and acceptance of recyclable waste by recycling and processing facilities.
5.	**TC-019 Site General Trades** to provide an **all-terrain telehandler (Lull/JLG)** for use by all trades for the duration of their contract. The Lull will be used for material deliveries, trash removal, site fence maintenance, and other miscellaneous site activities as needed. In the event of Lull downtime there will be no compensation resulting from equipment failure. Lull basis of design is a 10,000lb rated machine. a. **TC-019 Site General Trades** to maintain a (1) self-dumping 4-cu. yd. hopper to be used for trash provided by others. Hopper to remain at project site at conclusion of this contract. Contractor to include all maintenance needed so there is no downtime. b. **TC-019 Site General Trades** is responsible for maintenance and all fuel for the Lull for the duration of their scope of work.
6.	**TC-019 Site General Trades** shall provide a **full time Yard Boss/Operator [(5) 10-hour work days/week = 50 hrs./wk.)]** for the 39 weeks. This person will be responsible for tasks including but not limited to the following: opening and closing the site gates daily, scheduling and coordinating deliveries, operating the Lull for deliveries and trash removal, operating street sweeper, etc. This person shall have a minimum of 10 years of construction experience and possess all applicable equipment certifications (all-terrain lift, scissor lift, boom lift, street sweeper, etc).
7.	**TC-019 Site General Trades** to maintain, or provide where noted, **Temporary Construction** work as noted below and as shown on the project drawings & Site Logistics plan: **a. TC-019 Site General Trades** to maintain 8' **chain link construction fence** provided by others (per UK standards) for the perimeter of all construction areas, trailer areas, and laydown areas as shown on Site Logistics Plans. Include costs to maintain all fencing, gates, locking material 24/7 for duration of this contract. Fence to be a combination of jersey barriers and driven posts. Maintain safety signage at 20' o.c. max intervals on fence as directed by Construction Manager. Provide a 24/7 on-call representative for immediate response to emergency corrections/maintenance as needed. The site fencing will remain after the completion of this contract, removed by others at a later date, and turned over to the owner. **TC-027 Electrical Riser contractor to provide maintenance on temp fence lighting installed by TC-009 for the duration of their contract.** i. Maintain all automatic rolling gate closer devices with keypad access. ii. Include necessary hours and equipment to modify/move fence panels/jersey barriers as needed. iii. For water-filled jersey barriers, include filling with water and maintaining water levels required for safety. Treat water for winter usage when necessary. Include replacement of damaged barriers as needed. iv. Maintain fence screening for entire perimeter of fence. v. This contractor shall maintain deck system installed around trailer and restroom complex in the laydown area. vi. This contractor is to replace two existing 30' sliding gates with 2 cantilever sliding gates on nylon rollers. b. Maintain a **sidewalk canopy scaffold system** for overhead protection of the sidewalk adjacent to fence along University Drive from Huguelet Drive to the Behavioral Science Building. Maintain a clear height of 8' throughout. Scaffold shall be properly secured to prevent uplift and overturn. i. Maintain and replace lights/bulbs in the canopy system as needed. Lights to never be down for more than an 8 hour period. c. This contractor to inspect fence and overhead protection daily and repair deficiencies as needed. Maintain log of inspections. Submit log to Construction Manager once per week. d. This contractor is responsible for opening and securing the site at the end of the day. This includes all gates. e. This contractor is responsible for installation of **concrete walk and stairs** in front of the Dimock building (see SK-001) i. Assume the walkway to be 4" thick 4000psi concrete, 8' wide, 100' long, 4" of subgrade. Walk is to pour flush with existing concrete curbs. Include wire mesh per UK standards. ii. Assume the stairs to be 4000psi concrete, 8' wide, 3' tall, and 4 treads. Stair shall include a rod iron metal railing securely fastened to the stairs. f. This contractor shall maintain and remove when no longer needed plywood protection over the windows on the east side of Dimock installed by others.

8.	**TC-019 Site General Trades** is responsible for all **grass cutting and weed eating** inside the site limits and the Trailer and Laydown Yards as well as both sides of the fence line twice per month.
9.	**TC-019 Site General Trades** shall provide a full-time on-site **street sweeper** (assume Laymor Sweepmaster 300 or similar). Provide street cleaning as necessary, with a minimum of twice daily for the duration of this contract. Provide power sweeping and scrubbing of all paved areas, sidewalks, etc. soiled as a result of the work inside and outside of project site limits to the satisfaction of the Construction Manager. This Trade Contractor must clean all adjacent streets and maintain as if there were no construction site in the area. Huguelet Drive, University Drive, Veterans Drive any other impacted streets must be swept daily for the duration of this contract. Street must be immediately swept and cleaned if there is excessive tracking as determined by the Construction Manager. Any and all costs associated with street cleaning, inclusive of permits and fines will be the responsibility of this Trade Contract. In the event of sweeper downtime there will be no compensation resulting from equipment failure.
10.	**TC-019 Site General Trades** contractor to provide twice per week **cleaning services** for the CM offices located inside the Dimock Building (Approximately 2,000 SF) as well as the Office and Restroom Trailer Complex located to the east of University Flats (Approximately 4,000 SF) for 39 weeks. This shall be completed by a contractor that specializes in cleaning and is approved by the CM. Cleaning shall include, but is not limited to sweeping and mopping floors, taking out trash, restocking paper supplies in the restrooms, cleaning plumbing fixtures, furnish paper supplies for restrooms, replacing trash can liners, wiping down surfaces, etc. This cleaning shall be completed outside of working hours. a. Provide and maintain boot scrubbers at entrances to CM offices at both the Dimock Building and Office Trailer. b. Provide cleaning as needed along travel path from the entrance of the Dimock Building to the CM Office (at minimum twice/day).
11.	**TC-019 Site General Trades** contractor will maintain the Project Break Area for 39 weeks. Assume Project Break Area is 2000 sqft. This includes, but is not limited to: a. This contractor to include professional cleaning (mopping floors, wiping down tables, wiping of chairs, cleaning of microwaves, cleaning of refrigerators, trash removal, replacing of can liners, cleaning of walk off mats, etc.) minimum 3 times weekly by a competent cleaning company to be approved by the CM. This shall be complete after working hours b. This contractor shall include a deep clean/scrubbing of the Project Break Area once per month for the 39 week duration. Assume this is done on weekends outside of work hours.
12.	**TC-013 Site Plumbing** has provided **temporary water** and should coordinate the final location(s) on the site with CM. a. This contractor has provided and will maintain (2) spigots that are protected from equipment and freeze-protected that are to be left behind and disconnected by others at the completion of the project. b. This contractor has provided and will maintain (2) heated temporary hand washing stations similar to PolyJohn PSW3-2000. Electrical connection by others. Coordinate with CM on final locations.
13.	**TC-015 Foundations** Contractor has included (3) stationary scaffold stair towers from basement level to top of foundation wall along with (3) scaffold walkways with scaffold guard rail protection that span from the stationary scaffold stair tower to over lagging wall for use by all trades. This trade contractor is to relocate these stair towers and walkways as needed for their work or as directed by the CM. This contractor is to inspect all stair towers and walkways prior to beginning of work each day. These will be removed at the end of their contract.
14.	Temporary facilities (toilets) for this project will be located on or near the project site. Trade contractors are not permitted to use the active university building toilets. a. **TC-019 Site General Trades** contractor is to provide and leave at project site at the conclusion of this contract a Restroom Trailer (separate from the one already provided by previous contractor) complete with heating and cooling, running hot and cold water. Trailer shall have a minimum 6 men's stalls, 3 urinals, 2 women's stalls, & 4 sinks. Trailer selection to be approved by CM. i. Include black water and non-potable holding tanks pumped out and filled as needed. Holding tanks shall be complete with heat trace to prevent freezing. This contractor to monitor tank levels daily. ii. TC-019 to provide (3) "Port-O-Lets" for 39 weeks to be used in the event of restroom trailer failure. These are to be locked at all times and only used when failure occurs. These are to be located next to the portable restroom trailer. b. **TC-019 Site General Trades** contractor will maintain both the Restroom Trailer provided by the previous contractor and the one provided by this contractor for the project site, for 39 weeks. This includes, but is not limited to: i. Professional cleaning (minimum 3 times weekly by a competent cleaning company to be approved by the CM) after working hours. ii. Restocking of soap and paper products. iii. Pumping and unclogging of obstructions. iv. Removal of trash and relining of cans v. Maintaining holding tanks. vi. Relocating as needed per Construction Manager's direction. vii. Completing and logging restroom inspections 3 times daily and submitting to the CM.

15. **TC-019 Site General Trades** Contractor will be responsible for all dewatering and/or snow removal required. This would apply to areas outside of the project site that are to be used for "staging", material stocking, and other deliveries. This would also apply to the offsite parking, any stair towers, trailer yards, laydown yards, project walkways, etc.

    a. This contractor shall provide a 55 gallon "wet/dry shop vac" on wheels and a 20 gallon, walk behind, battery powered, floor scrubber/vacuum. These are to be used in the event of water on or general cleaning of the slabs.

16. **TC-019 Site General Trades** to provide **Vertical Transportation** for the project.

    a. **TC-019 Site General Trades** shall provide a double barrel **Buck Hoist** with two operators for 45 weeks. Contractor to assume Alimak Scando 650 FCS31/50II or similar with approval from the CM. Assume that the operators will be working 5 (10) hour days a week. Operators are to be trained in the use of this hoist. At no time shall this contractor allow these hoist to not be operational due to failure to produce an operator.
        i. Internal length of each car is to be 16'-4 ¾" or greater. Each car shall have a payload capacity of 7000lbs. Contractor shall submit shop drawings stamped by a professional engineer.
        ii. This contractor shall design and install buck hoist foundation and remove when no longer needed.
        iii. This contractor shall include one jump of the buck hoist for vertical erection.
        iv. The buck hoist installation shall precede the installation of concrete on each floor. This contractor shall include all work necessary to allow each car to stop and be used at each floor prior to concrete being placed.
        v. This contractor shall include all material and labor needed for each car to stop at every floor. Contractor shall include rework of existing cable rail and installation of fall protection from the buck hoist stop to the guard rail installed. This includes installing custom plywood "wings" from edge of buck hoist at each floor stop.
        vi. Contractor shall include a weatherproof vestibule at each floor to enclose both buck hoist stops. Assume that each shall be a plywood structure with a set of 4'x8' double doors with self closing hinges. Assume each structure to go from floor to deck, is 20' wide, and 10' deep. Contractor to install a call station at each floor for each car.
        vii. This contractor shall include all maintenance as need on this buck hoist system including 24/7 response if failure occurs. Assume that maintenance shall be coordinated with onsite work and will be performed outside of working hours. This contractor understands that time is of the essence in the repair of the hoist if failure occurs and shall do all in its power to complete the repairs quickly. This includes, but is not limited to: paying of expediting of materials, working off hours, working weekends (including Sundays), managing and supervising the repair work, etc.
        viii. This contractor shall include a **Receiving Dock** to be built around the buck hoist (See SK-001). This dock shall be built to a height able to receive truck deliveries without a lift gate and made out of pressure treated wood. Assume dock to be 1,600 sqft. Contractor shall include all maintenance of this dock for the duration of their contract.
            1. This dock shall include fall protection railing around the entire perimeter. Contractor to include eight (8) 6' wide removable openings for receiving deliveries and dumping trash.
            2. Include all safety requirements for the installation of the buck hoist near this dock.
            3. Include 2 sets of stairs from the dock to the ground.
        ix. This contractor to assume that power for buck hoist will be provided within 20' of the final installation. This contractor is to make final power connections for buck hoist.
    b. **TC-019 Site General Trades** shall provide three **Scaffold Stair** towers at locations to be coordinated with CM. Contractor shall assume rental of each stair for 20 weeks.
        i. Contractor to assume these stairs are to be installed from the Basement through the top of each respective area of the building.
        ii. Contractor to assume that these will follow the installation of the metal deck installation for that area. Stair shall be elevated to the deck within two weeks of the decking being placed on each respective floor and area.
        iii. Contractor to assume that each stair tower will need to be removed floor by floor in coordination with the permanent stair installations to never lose stair access to a floor.
    c. **TC-019 Site General Trades** shall provide a **Transport Platform** from 1st floor to basement to be placed in the south "Garden Area" of the building (see SK-001) for the duration of their contract. Contractor to provide BetaMax Max Climber 4000 or equal.
        i. Contractor shall include all work needed to provide a fully functioning transport platform. This includes, but is not limited to, foundations, safety equipment, electrical connections, design, fees, permits, inspections, etc.
        ii. This contractor shall include all maintenance as need on this buck hoist system including 24/7 response if failure occurs. Assume that maintenance shall be coordinated with onsite work and will be performed outside of working hours.

	d. **TC-019 Site General Trades** shall provide two **Loading Platforms** to be installed and moved as need to assist in construction. Contractor shall provide Preston Deck SuperDeck 3.2 or similar with approval by the CM. Contractor shall assume rental for 30 weeks e. **TC-019 Site General Trades** shall provide **Temporary Infill for Permanent Pan Stairs.** i. Contractor to assume that infill will be 2"x10" pressure treated wood cut to the full width of the stair. No foam will be allowed. Contractor shall install the wood so that no slippage occurs during use. ii. Contractor to assume that each stair will need to be infilled floor by floor in coordination with the permanent stair installations to never lose stair access to a floor. iii. Contractor shall coordinate the removal of temporary infill with the permanent stair infill installation by the SOMD contractor.
17.	**All contractors** and their sub tiers are to provide 2% of their total labor force hours to a **consolidated clean up crew**. Participation in this effort does not relieve the contractor of their daily clean up duties. a. **TC-019 Site General Trades** shall provide a Clean Up Crew foreman for 5 – 10 hours day for a total of 50 hours a week for 30 weeks. This person shall have no other responsibilities than managing this crew. This person shall be efficient in the scheduling and managing of manpower. b. Every contractor will be given notice of the day they are required to supply manpower to this crew. On that contractor's scheduled day, they will supply a worker to the clean up crew foreman by 7:30a with a broom and shovel. This worker shall take break and lunch for the day with this crew. Inability to supply a worker for the day and/or a broom or shovel shall result in a worker or material being provided for you and back charged to the offending contractor.
18.	**TC-027 Electrical Riser Contractor** shall provide **temporary power** for the building as outlined below. This contractor shall assume the maintenance of this system until the end of overhead rough in on each respective floor (see Attachment G). The temporary electrical work shall conform to most recent National Electrical Code, OSHA; Federal, State and Local Codes, etc. having jurisdiction over this work. a. **TC-009 Site Electrical contractor** has provided 2 ea. 1000 Amp/480 V Exterior Distribution Panelboards from Existing 12 kV Service Connections provided by others with conduit stopping within 5 feet of the building. **TC-027** shall provide all work required to run power into the building for temporary electric service including, but not limited to breakers, feeders, conduit, grounding, sleeves as required for a complete and operational system. See SK-003 for general locations of 400 Amp/480V panels. i. **TC-027 Electrical Riser Contractor** shall coordinate shutdown for installation on off hours as to not impact construction utilities. b. This contractor shall provide three (3) ea. 400 Amp/480V Panelboards fed from Existing Distribution Boards and used to feed to 25kVA/480/230/120 Skids. Place Panel boards in locations coordinated with CM. See SK-003 for general locations of 400 Amp Panel boards. c. This contractor shall provide a minimum of twenty four (24) 25 kVA Mobile Power Skids for the building. Assume 2 skids per floor including the roof with additional skids to be installed at the direction of the CM. Skids to be fabricated offsite. Contractor to submit design of skid to CM for approval prior to fabrication. Each skid to include: i. 200 Amp 230/120 Panel ii. 25 kVA 480/230/120 Transformer iii. Skid on wheels with Grounding Buss iv. Feed Cables from Main 400A Panelboard to each Skid v. Sleeves in Decks near Electrical Rooms for riser cables in addition to the permanent power sleeves vi. Sleeves in Walls as needed for the routing of the wire. This includes sleeves in walls built after the installation of the temporary electric. vii. Connection Ground to Building Steel at each skid viii. 1 ea. 480V Twist Lock receptacle for welders ix. 10 ea. 120V/ 20Amp GFCI receptacles x. LED Lighting Circuits for adjacent area temp lights with disconnects. d. This contractor shall provide all hooks and support wire to string wire throughout the project. All power to have non-current carrying guards. All hooks should be non-current carrying similar to Carnie Locking Quickhooks. Assume one hook every ten (10) feet. e. All temporary power wire will initially be installed at a height that permits rolling scaffold/scissor lift to move easily and without obstruction around the site. Enough slack shall be left in the installing method to drop below ceiling height in each area as the project commences. f. Grounding shall comply with applicable codes relating to permanent and construction work. This shall include ground fault protection, using ground circuit interrupters. g. This contractor to provide temporary power design to be reviewed and approved by the EEOR prior to fabrication. h. This contractor shall provide all maintenance needed for the temporary power system including what has been installed previously. This contractor shall coordinate maintenance on off hours as to not impact construction activities.

19.	**TC-027 Electrical Riser contractor** shall provide **temporary lighting** for the building as outlined below. This contractor shall assume the maintenance of this system until the end of overhead rough in on each respective floor (see Attachment G for duration). The temporary electrical work shall conform to most recent National Electrical Code, OSHA; Federal, State and Local Codes, etc. having jurisdiction over this work. a. This contractor shall provide general LED light strings for a minimum of 10-foot candle coverage for temporary lighting for all floors, stairwells, and temporary stair towers. Stair lights and lights in other critical egress areas are to be installed on circuits separate from the General Lighting circuits and will be energized at all times. Provide circuit breaker locks for those breakers. Ten percent of the temporary lights shall remain on 24 hours a day for security purposes, 24 hour illumination is also required at stairs and egress areas on each floor, and all other lighting shall be shut down by means of timers after work for the day is complete. b. All temporary light fixtures will initially be installed at a height that permits rolling scaffold/scissor lift to move easily and without obstruction around the site. Enough slack shall be left in the installing method to drop below ceiling height in each area as the project commences. c. All lighting to have non-current carrying guards. Each light strand shall be hung from non-current carrying hooks similar to Carnie Locking Quickhooks. Assume one hook every 10 linear feet of light strand. d. Should lighting circuits have to be relocated during construction this shall be done at no addition cost to the Owner or Turner. Lights will be added as areas are developed with no interruption to schedule be it electrical or others. e. Maintenance of all Temporary Lighting shall be done on a daily basis, permitting not more than 10% of the lighting in a given area to be non-operating at any one time. It should be noted that maintenance of “construction lighting” should be for the duration of this contract and done on off hours as to not impact construction activities. f. This Trade Contractor shall be required to move temporary wiring from time to time as directed by the Construction Manager. If temporary wiring interferes with other construction work this Trade Contractor shall remove and relocate as necessary. g. This contractor shall provide all maintenance needed for the temporary lighting system including what has been installed previously. This contractor shall coordinate maintenance on off hours as to not impact construction activities.
20.	**TC-026 Plumbing Riser contractor** shall provide **two (2) temporary restrooms** on the Basement area as outlined below. a. This contractor shall provide (13) toilets, (4) urinals, (8) restroom sinks, (2) hand washing stations, (2) electric water heaters, (4) electric exhaust fans. The layout and installation of the walls and ceilings for these restrooms will be by future contractor b. This contractor shall provide all new sanitary, vent, and domestic water piping to these fixtures including any rework needed for these systems to function. c. This contractor to include any permitting and fees needed to use these restrooms in a temporary basis. d. This contractor shall maintain these restrooms for the duration of their contract. This includes, but is not limited to scoping sanitary lines, cleaning lines of clogs, maintaining equipment as specified, etc. e. **TC-027 Electrical Riser Contractor** to run power to all temp exhaust fans and temp water heaters within temp restrooms. f. **TC-027 Electrical Riser Contractor** to include provide (6) 2’x4’ LED Lights for temporary restroom with a switch for each restroom.

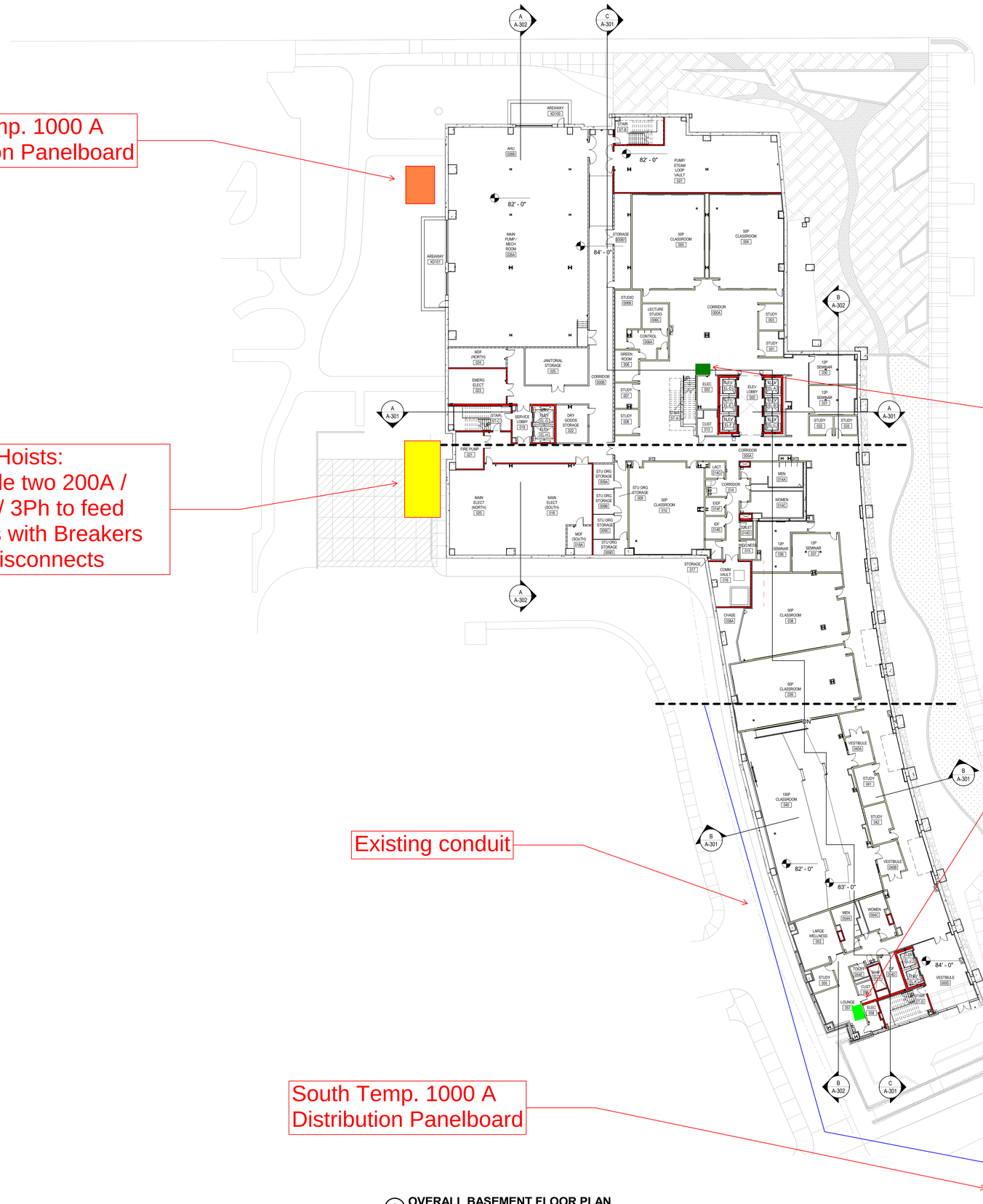
North Temp. 1000 A Distribution Panelboard

Buck Hoists:
Provide two 200A / 480V / 3Ph to feed Hoists with Breakers and Disconnects

400A/480V Panelboards

Existing conduit

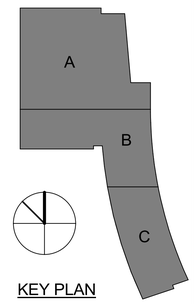
South Temp. 1000 A Distribution Panelboard



A OVERALL BASEMENT FLOOR PLAN
3/64" = 1'-0"

RATED WALL LEGEND

	NON-RATED SMOKE PARTITION
	1 - HOUR FIRE BARRIER
	2 - HOUR FIRE BARRIER



KEY PLAN

SK-003

8/6/2024 1:27:08 PM

JRA architects
301 East Vine Street
Lexington, Kentucky 40507
859.252.6781

JRA, INC. REGISTERED NO. 5464 COMMONWEALTH OF KENTUCKY ARCHITECTS

RESERVED FOR AHJ STAMP

10 S. Broadway Suite 200
St. Louis, MO 63102
314.421.2000

BP-04F

MICHAEL D. RANKIN MD HEALTH EDUCATION BUILDING
UNIVERSITY OF KENTUCKY - BLDG NO. 0724
1149 UNIVERSITY DRIVE, LEXINGTON, KENTUCKY

ARCHITECTURAL

PROJECT	202170
DATE	08.06.24

REVISIONS

OVERALL BASEMENT FLOOR PLAN

A-000

ATTACHMENT C

Turner

Building L.I.F.E

Living Injury Free Everyday

MESSAGE FROM THE PRESIDENT

We think of our workplace as "our house." In our house, we foster a caring environment. We want every person at Turner and every person who steps onto a Turner site to truly believe that they are contributing to, and have a sense of belonging to, something extraordinary. We are focused on maintaining and sustaining the Right Environment where people feel included, engaged, empowered, and connected.

Turner's safety culture is reflected in the principle of Building L.I.F.E.® (Living Injury Free Every Day) with an expectation that all projects provide the safest workplace possible for our employees, trade partners, clients, and members of the communities in which we work.

Turner's Building L.I.F.E.® safety program is a continuous improvement process with a focus on upstream risk avoidance and the activities which produce risk. The Building L.I.F.E.® process seeks to increase frontline worker engagement in the safety and planning processes through engaging those closest to the risk in the decision-making process. Building L.I.F.E.® is anchored by a focus on positive reinforcement and feedback on safe behaviors by everyone involved in the delivery of the project.

The Building L.I.F.E.® vision creates and sustains a culture which promotes an incident-free environment and provides the safest workplace possible to live injury free every day.

Building L.I.F.E.® Guiding Principles

- Injuries are preventable
- We will coach and practice safe behavior to live injury free every day
- We will take the necessary time to engage and properly plan work, to perform tasks safely
- We will perform a job only if it is safe
- We will look out for each other and speak up if there is a safer way to perform a task
- We will intervene and stop work when an unsafe action or condition is observed

Let's be relentless and keep each other accountable by making sure we pre-plan and discuss risk every day and that we continue to actively care. Thank you for your support and help maintaining a workplace that promotes the Building L.I.F.E.® culture. Together, we will continue to improve our performance and make our projects the safest possible.

Peter J. Davoren
President and Chief Executive Officer
Turner Construction Company

PROJECT DESCRIPTION

As the largest academic building in the history of the University of Kentucky, the Michael D. Rankin M.D. Health Education Building will be a canvas for dynamic learning. Allowing the university to adapt to evolving educational needs while maintaining accreditation standards in the health industry. This project consists of a new building, 10 stories, over 520,000 square feet of mixed-use facilities to house world-class medical education facilities for the UK Colleges of: Medicine, Public Health, Health Sciences, and Nursing. This hub for health education will prepare the next generation of health leaders to help Kentuckians, and everyone, live longer, healthier lives. The project duration is approximately 28 months, that will see the site change from demolition of existing structures, excavations, erection, and fit out.

KEY PROJECT STAFF

A.	Project Executive –	David Opalka
B.	Environmental, Health and Safety Director –	Dean Bitter
C.	Project Manager –	Benton Stegman
D.	Sr. Superintendent –	Chad Denny
E.	Project Superintendent –	Austin Stivers
F.	Project Safety Manager –	Tim Sanford
G.	Procurement Manager –	Susie Yanes
H.	Project Engineer –	Mason Thompson

RESPONSIBLITIES

Trade Partner Safety Manager

Trade Partner Safety Manager must have completed an OSHA 30-hour for construction class. One person must be certified for all contracts under $5M, and two people must be certified for contracts over $5M. The 30-hour certified person(s) must be on-site 100% of the time. This OSHA 30- hour certification must be updated through Turner's Safety Update Training every two years through Turner University.

- The Trade Partner's Safety Manager must be identified before start of their work. If the trade partner's contract value is $5M or greater and/or the trade partner will have 25 employees or more on site, including sub tiers, for more than two weeks, they must provide a full-time Safety Manager who:
    1. Is qualified to recognize safety hazards; and
    2. Has the authority to take corrective action; and
    3. Possesses current certifications in First Aid, CPR and AED; and

4. Possesses a recent OSHA 30-hour Construction card (within the last two years or has taken Turner's Safety Refresher); and
5. Has an academic degree in safety, ASP, CHST, or CSP designation; or
6. Has a minimum three (3) years of prior work history as a full-time construction safety manager.

Turner reserves the right to approve or deny the trade partner's full-time safety representative for the project.

At a minimum the Trade Partner Safety Manager will be requested to:

- Ensure their employees attend jobsite orientation before start of work on the project.
- Take the lead in recognition and abatement of hazardous situations.
- Effectively utilize and train employees in pre-planning, recognition, and remediation of hazards.
- Conduct a daily Safety Huddle which includes the following:
    1. Daily Worker Check-In & End of Day Check-Out.
    2. Daily Pre-Task Plan is completed for each task and reviewed with each crew.
    3. Control of work permits completed. (Hot Work, Confined Space, etc...).
    4. Stretch-n-Flex conducted prior to start of work.
- Perform and document weekly safety inspections (1 per week at minimum).
- Conduct at least one monthly safety tour with the Trade Partner's Safety Director and submit findings to Turner.
- Conduct, document, and submit toolbox meetings on a weekly basis.
- Attend and actively participate in project safety meetings.
- Enforce disciplinary measures when needs arise for their employees.
- Ensure that Competent Persons submit, at a minimum, the below listed safety inspections at the designated frequency to the Turner Project Superintendent or Safety Manager. Note: An OSHA 30-hour Construction card alone does not satisfy OSHA requirements for a competent person.

Inspection	**Frequency**
Fall Protection	Before Each Shift
Excavations	Before Each Shift
Scaffold	Before Each Shift
Crane Inspections	Before Each Shift
Confined Space	Before Each Shift
Hot Work	Before Each Shift
Heavy Equipment	Before Each Shift
GFCI	Weekly
Personnel Hoist	Per OSHA Reqs.
Surface Penetration Permit	Prior to penetrating the ground, walls, or slabs at any depth
Tool Box Talks	Weekly

GENERAL REQUIREMENTS

EMPLOYEE / VISITOR ACCESS

All visitors must sign a visitor release at the project site office or into the visitor logbook when visiting an office.

All visitors must be escorted while on site and must adhere to Turner Project Safety Program and be 18 years of age or older.

SAFETY MEETINGS

Onsite employees shall attend safety meetings as scheduled by the owner or Turner Construction Company and the time and cost will be the responsibility of the worker's employer.

PRE-PLANNING

Job Hazard Analysis (JHA)

Every trade partner will prepare a JHA for each phase of work to identify the following:

- Safety and Health Considerations
- Description of Steps to be Performed
- Hazards Associated with Each Step
- Required Action to Eliminate or Control the Hazard
- Supervision Sign-off

Work shall not begin until the JHA for the work activity has been reviewed by Turner and discussed with all engaged in the activity, including the trade partner, trade partner(s), and other affected on-site representatives at safety pre-construction meetings.

Pre-Task Plan (PTP)

The PTP is a formal daily work plan. Each supervisor should meet with their crew, preferably at the place of the work or task, to discuss the tasks to be accomplished and the steps that need to take place to work safely. All workers should review and sign the relevant PTP for their assigned work before beginning the tasks. When the scope of work or conditions change, the PTP should be revised and resubmitted.

For each task of work a PTP will be completed to identify the following:

- Evaluating the work area.
- What permits and proof of training may be required.
- Potential hazard checklist.
- Description of steps to be performed.
- Hazards associated with each step.
- Required actions to eliminate or control the hazard(s).
- All PPE requirements for the activity, keep in mind that PPE is the last resort.
- Crew sign-off.
- In accordance with Building L.I.F.E., plan out steps and controls to minimize risk using the Hierarchy of Controls, as well as by reducing frequency, likelihood, and severity.

Work shall not begin until the PTP for the work activity has been discussed with all engaged in the activity, including the trade partner, trade partner(s), and other affected on-site representatives at a safety pre-construction meeting or daily huddle. A copy of the PTP shall be kept near the work location.

The information the supervisors are relaying to the workers is the same that was developed in the JHA however, the PTP will more greatly define the plan for the phase of work that is occurring that day.

Pre-Task Planning is also accomplished on a daily and pre-shift basis through the pre-shift safety huddles. Each crew leader is responsible for ensuring the crew holds a safety huddle prior to the beginning of the shift, and as necessary during the shift, to develop and revise a PTP for that day's work. The huddle should be collaborative with input from multiple members of the crew. The hazard analysis is typically captured on a dry-erase board laid out like a JHA/PTP (steps, hazards, controls). Workers sign an attendance record showing they participated.

A copy of the PTP and/or a photo of each huddle board shall be kept near the work location and will be submitted to Turner daily. Some states and local municipalities have requirements pertaining to pre-task planning, whichever is more stringent must be followed.

HAZARD COMMUNICATION

Trade partners are responsible for developing a Hazard Communications Program and training their employees.

Safety Data Sheets (SDSs) are to be provided to Turner before the start of work and referenced as a part of pre-planning. Trade partners are responsible for maintaining an updated binder of their respective SDSs on the project and will make them immediately available for review upon employee, Turner, or any other request.

All chemicals and equipment containing chemicals must be stored in approved areas.

Trade partners are responsible for properly labeling and maintenance of said labels on all chemical containers.

SILICA

Each employer that has employees exposed to crystalline silica must prepare and implement a written site-specific Exposure Control Plan (ECP) that identifies tasks that involve exposure and the methods used to protect workers, to include procedures to restrict access to work areas with high exposures. A competent person from each exposing employer shall be designated to implement the exposure control plan and will be provided to Turner before work begins.

FALL PROTECTION

All work performed at or above 6 feet will be done in conjunction with positive fall protection 100% of the time, including but not limited to, loading and unloading trailers and the leading edge of excavations.

Each trade partner, with employees exposed to a fall greater than 6', must submit a written fall prevention plan to Turner prior to beginning work on site. The trade partner must conduct a weekly inspection of their system.

At no time shall a Safety Monitor be used as a means of fall prevention.

All conditions that will require personal fall protection shall be discussed and documented in the daily Pre-Task Plan and reviewed in the field by the crew leader.

Each trade partner is responsible for protecting its own employees by using conventional means of fall protection such as standard guardrails or perimeter cables. The ongoing maintenance and daily inspection of this protection is also required.

If warning lines are used it must be maintained at least 15 feet from the leading edge, including trenches and excavations.

Employees must be trained in the use of fall protection. Trade partners shall provide Turner with their own project-specific Fall Prevention Plan which should include training records. describes the methods they intend to use to provide adequate fall protection for each specific operation and to comply with OSHA Subpart M, and Turner's six-foot rule.

Turner has a "No Gaps" policy to prevent the potential of falling materials. All working platforms or edge protection must be constructed to ensure there are no gaps which material could fall through. Employees must be protected from falling objects by the installation of toe boards, barricades, safety nets, or canopy structures.

All floor openings exceeding 2 inches in diameter shall be covered, barricaded, or otherwise protected. Covers shall be designed to withstand twice the weight of workers, equipment, and materials. Covers shall be secured against displacement horizontally and vertically. All covers must be clearly marked with the words "HOLE" or "COVER" and beveled or flush to reduce trip hazards. The trade partner creating the hole or opening is responsible for the protection or cover. Turner recommends that holes greater than 18" x 18" be protected by a guardrail system.

Where a risk of materials falling or being dropped, including during a lifting operation, an exclusion zone must be established. The exclusion zone should be constructed with physical barriers such as wood or metal guardrail systems, cable wire rope or chain or flagging. Danger and Caution tape will not be accepted for use in exclusion zone construction. The exclusion zone must be secured from tipping and signed. The size of the exclusion zone must consider deflection or arc of the falling material.

All tools, materials or equipment which have the potential to breach the perimeter protection must be positively secured back to the worker or structure through the use of tool lanyards or synthetic rope of line (natural fiber rope is not permitted). Lanyards or ropes must be appropriately sized for the weight of the tool, material or equipment. Anchorages must be snap-hook, carabineer, shackle, or similar device that provides positive locking. The use of knots to secure lanyards is not permitted. Trade partners must evaluate the size and weight of any object which will be secured to a worker's wrist, belt, etc. to ensure it will not cause injury in the event it is dropped. Tethering also applies when there is falling object exposure for employees in the vicinity of elevated work, even when "exclusion zones" are used.

GUARDRAILS

Perimeter cable may be ½" steel cable, but in no situation may they be less than 3/8" steel cable. The cable must be flagged at 6' intervals and must be terminated with three wire rope clips, "Crosby clips" on each end & deflect no more than 3". The cable rail cannot deflect below 39". When using cables for perimeter guarding closed turnbuckles are to be used for every 3 bays or 100 feet, whichever is less. Open eye turnbuckles are not permitted.

Guardrail systems must be able to withstand a force of 200 lbs. in all directions, without failure, and be smooth surfaced to prevent hand injuries. The use of metal studs or similar is prohibited.

PPE

Trade partners must provide their employees with all necessary Personal Protection Equipment (PPE) and tools and enforce their use as required by the Safety Program, as well as Federal, State, and local codes and regulations.

SAFETY HELMETS

Each trade partner shall enforce the wearing of ANSI-approved type II or EN12492-rated helmets with a 4-point chin strap tightly attached and secured (two-finger tight). Helmets are also required when welding.

SAFETY GLASSES AND FACE PROTECTION

Safety glasses (minimum eye protection)

Safety glasses that comply with ANSI Z87.1 must be worn. Dark lenses are not to be worn inside of buildings, in enclosed areas, or at night. Prescription eyeglasses and sunglasses that do not comply with ANSI Z87.1 are prohibited.

Goggles or spoggles

Goggles or spoggles must be worn (instead of safety glasses) when working above shoulder and when falling debris is expected. Examples of these type of activities include installing ceiling tile, pulling wire, etc. Goggles are required for all abrasive actions in which dust can enter the eye.

Clamp-on full face shield plus unvented goggles or spoggles

A full-face shield that clamps tightly onto the brim of the helmet and unvented safety goggles or spoggles that fit snuggly against the skin must be worn when demoing, drilling, cutting, grinding, or performing above shoulder activities that may create flying debris.

*For all scenarios above, please refer to equipment or tool manufacturer and / or Safety Data Sheet (SDS) for more specific eye and face protection requirements.

HI-VIS

High visual, safety vests, shirts, or jackets shall be worn as the outermost apparel by all employees, 100% of the time. ANSI-rated Class 2 (0-44 MPH) and Class 3 (45 MPH or more) reflective outerwear must be worn whenever working on or near (within 10 feet) of a roadway.

FOOT PROTECTION

Sturdy work boots, at a minimum, are required. Metatarsal guards must be worn when using jackhammers, tampers or similar equipment which could be dropped or landed on a worker's toes / feet. ANSI-approved safety-toed boots must also be worn by masons, drillers, pile driving, steel erectors, and riggers due to the hazards inherent with their work.

HAND AND ARM PROTECTION

Anyone entering the project is required to wear at a minimum cut resistant level 4 protective gloves 100% of the time, unless the trade partner's competent person can demonstrate to Turner that wearing gloves for a particular task creates a greater hazard. If agreed upon with Turner, the deviation to not wear gloves must be identified on the PTP, reviewed, and acknowledged. Refer to ANSI cut levels for determining the correct glove. Additional hand protection may be required depending on the hazard assessment.

Cut level 5 gloves (at minimum) must be worn when using box cutters and utility knives.

Appropriate arm protection is required during operations where the arms are exposed to potential cut hazards (i.e., Kevlar, Dyneema sleeves, etc.). Examples of these activities are working around metal studs and pull boxes, tight confines such as between wall studs or above ceiling, and all demo activities.

HEARING PROTECTION

Where an employee could be exposed to noise in excess of 85 dBA, their employer will provide hearing protection, which will reduce the noise to an acceptable level. If the noise levels are determined to cause

and 8-hour TWA exposure greater than 85 dBA, the trade partner must submit a detailed hearing conservation program to Turner. This program must be approved prior to beginning work.

RESPIRATORY PROTECTION

Employees exposed to dust, fumes, and/or gases shall be provided with proper respiratory protection designed to protect against the substance encountered. Each trade partner is solely responsible for the proper testing and training per OSHA standards, and to provide the appropriate equipment for their employees.

FIRST AID, CPR and AED

Each trade partner must have their own adequate first aid kit and at least one qualified First Aid, CPR and AED-trained employee onsite full time. The name of this person, along with copies of their current certification cards, shall be submitted to Turner prior to beginning any work.

LOCK OUT / TAG OUT (LOTO)

A Lock Out / Tag Out program must be submitted by trade partners per OSHA standards. The procedure shall identify the minimum steps necessary to verify a "zero energy state" before any work begins.

The trade partner is responsible for assuring all workers involved and affected by lockout / tagout are trained and that a person competent in lockout / tagout is provided and onsite to provide oversight of the work. The competent person is responsible for maintaining a current Lockout / Tagout Log that identifies the project name, location of energy source, date, scope of work being performed under energy isolation, list of energy isolating devices, live-dead-live verification by the competent person, and trade partner name.

NOTHING HITS THE GROUND

Fabrication

- All material fabrication shall be performed at a work station between 30 and 39 inches off the floor.
- Workstations shall be mobile and include a fire stop directly behind all chop saws.
- Rubbish containers shall be mobile and located directly adjacent to the workstation.
- The trade partner is to furnish all mobile rubbish containers for their work.

Housekeeping

- All rubbish shall be disposed of as it is generated and be immediately placed in trade partner-provided mobile rubbish containers. Debris is not allowed to be consolidated on the floor.
- The trade partner is required to elevate all power cords to minimize tripping hazards on walking/working surfaces. Cords, hoses and welding leads must be kept off the floor at least 8 feet high, or as high as practical, in walkways, aisles, stairs and access points. Suspension of cords will be by non-conductive means only such as plastic S-hangers or wooden cord trees.
- Material which may be dislodged by wind and that could create a hazard when left in an open area shall be secured.

Material Handling and Storage

- Materials may not be stored within 10 feet of the building perimeter or adjacent to shafts or stairwells.
- All tools and materials must be tethered where there is a risk of materials falling or being dropped, including during a lifting operation, unless the project team determines an exclusion zone must be established. The exclusion zone must be constructed of hard barriers such as wood or metal guardrail systems, cable wire rope or chain, red plastic chain, or similar material. Danger and caution tape will

not be accepted for use in exclusion zone construction. Exclusion zone must be maintained during work and have legible Danger signage posted along the perimeter. The size of the exclusion zone must consider deflection or arc of the falling material. All tools, materials, or equipment which have the potential to breach the perimeter protection must be positively secured back to the worker or structure using tool lanyards or synthetic rope (natural fiber rope is not permitted). Lanyards or ropes must be appropriately sized for the weight of the tool, material, or equipment. Anchorages must be snap-hook, carabineer, shackle, or similar device that provides positive locking. The use of knots to secure lanyards is not permitted. Trade partners must evaluate the size and weight of any object which will be secured to a worker's wrist, belt, etc. to ensure it will not cause injury in the event it is dropped.

- Material must be stored to promote mobility of material. Pipes, conduits, metal fabrications and steel framing are to be stored on rolling racks or similar means of conveyance. Bulk material must be palletized to allow for easy mobility.
- "Just in Time" delivery is required to minimize clutter.
- Heavy material such as glass and drywall must be loaded so as not to overload the structure. The trade partner is required to do a floor loading analysis.

STEEL ERECTION

A site-specific erection plan must be developed by a qualified person and submitted prior to start of erection.

The area below steel erection activities must be barricaded to prevent access by unauthorized personnel.

Tag lines must be used to control loads.

Multiple lift rigging ("Christmas Treeing") may be used when limited to a maximum of three (3) members.

Tools and containers for rivets, bolts or welding rods must be secured to prevent falling.

Steel erection activities such as connecting, bolting and welding are to be accomplished from aerial or scissor-lifts to the extent feasible.

Structural steel erection is not to be done using forklifts.

- Small miscellaneous pieces may be lifted if a lift plan is prepared and Turner's Safety Manager (or superintendent if a Safety Manager is not present) allows the lift, the piece does not exceed 70% of the forklift's capacity as configured and is allowed by the load chart.
- The lift must be made with an attachment designed and/or approved by the forklift manufacturer.
- Turner's Business Unit EHS Director must review all plans, prior to lifting, if a trade partner intends to use a forklift for lifting small, miscellaneous, pieces of steel.

CONFINED SPACE

Before beginning work at a project site, each trade partner must ensure that a competent person identifies all confined spaces in which one or more of the employees it directs may work and identifies each space through consideration and evaluation of the elements of that space, including continuous testing as necessary. All confined spaces that an employee will enter must be classified as either a "permit-required space," a "non-permit space," or an "alternate-entry space." Classification of each type of space must be accomplished using the Turner Confined Space Entry Permit, regardless of classification.

EXCAVATIONS

Utility locating services must be contacted prior to any surface penetrations. If utilities are identified, daylighting those utilities is required, by hand-digging or hydro-excavating. No known utilities will be uncovered or excavated using heavy equipment.

A Surface Penetration Permit must be utilized when there are plans to penetrate the ground at any depth. This should be filled out and utilized for cutting into slabs and coring walls as well.

Excavations greater than 4 feet in depth shall always utilize protective systems (i.e., trench shields, sloping, benching, or shoring) to protect employees against potential cave-ins.

All excavations, regardless of depth, shall be protected by safety fence or guardrails.

People walking or working adjacent to an excavation greater than 6 feet in depth must be protected from fall hazards in accordance with Turner's 100% Fall Protection Policy.

All hydraulic shoring fluid must be environmentally friendly.

GROUND FAULT CIRCUIT INTERRUPTERS (GFCI)

All 120-volt single phase 15 & 20-ampere receptacles shall have approved GFCI's.

The electrical trade partner shall test each power receptacle for proper installation including polarity, grounding, etc. and conduct and document monthly tests after the initial installation.

TEMPORARY LIGHTING

All temporary lighting shall be run with sheathed multi-conduction wire. No single strand wiring is allowed. Temporary lighting must never be put on the same circuit as temporary or permanent receptacles; temporary lights must be on a dedicated circuit.

The minimum illumination level through the project is:

- 5 footcandles in areas where no work is being performed but employees may travel;
- 10 footcandles in work areas;
- 15 footcandles in electrical or mechanical rooms; and
- 50 footcandles where first aid and other health or wellness stations are located.

The electrical trade partner is to provide LED temp lighting and is responsible for maintenance of temporary lighting, with at least the minimum lighting levels described above, until permanent lighting is provided. Installation of temporary lighting should anticipate the future placement of ductwork, piping, etc. that may block or reduce light.

GENERAL

Where discrepancies exist between this program, and other regulations, standards, safety plans and contract documents, the more protective requirement will apply.

No one under the age of 18 is allowed to work on the project property / construction site.

Turner offices and projects are tobacco-free zones. This includes e-cigs and all forms of tobacco.

No animals are allowed on Turner property. Please contact Headquarters EHS and Human Resources if you are requesting to bring a service animal on Turner property.

No walking or driving on projects while talking or texting on phone or walkie-talkie.

All personnel are empowered and encouraged to stop unsafe acts, identify unsafe conditions, and to escort non-construction personnel out of the work areas. Please care for your project teammates.

No headphones, iPods, radios, etc. are permitted on the job. No streaming of music from the internet. No walking or driving on projects while talking or texting on phone or walkie-talkie.

A fluent interpreter must be provided and on site for any crew that has one or more non-English speaking workers.

The list of behaviors below, while not inclusive, provides examples of conduct that is prohibited:

- Causing physical injury to another person.
- Making threatening remarks, verbal abuse, derogatory remarks, racial or bias motivated statements (verbal or in writing).
- Aggressive or hostile behavior that creates a reasonable fear of injury to another person or subjects another individual to emotional distress.
- Intentionally damaging employer property or property of another employee.

To the maximum extent permitted by applicable law, the possession on Company premises or while on duty of firearms, clubs, explosives, or other weapons that could be used to cause harm to personnel or property, other than that used to perform specific construction activities, is not permitted. This would include Turner projects and client-owned buildings and facilities we work in, project-provided parking areas, and while in the execution of work duties.

Employees must:

- Perform their work to prevent accidents to themselves, fellow workers, and property.
- Use Personnel Protection Equipment as required, to meet all Turner, federal, state, and local requirements.
- Alert supervisors to dangerous situations.
- Cooperate with principles of the Project Site Specific Safety Program.
- Utilize all tools and equipment in a safe manner and in accordance with manufacturer's recommendations.
- Complete project safety orientation before starting work on the jobsite.
- Acknowledge and abide by the project enforcement rules.

All visitors must sign a visitor release at the project site office or into the visitor logbook when visiting an office. All visitors must be escorted while on site and must adhere to Turner Project Safety Program and be 18 years of age or older.

All trade partner vehicles within the project site fence (including, but not limited to, transportation and construction equipment, delivery trucks and personal or company trucks) shall not idle.

The only allowable exceptions to the standard are as follows:

- Ambient air temperature exceeds 85°F or falls below 32°F (or as defined by local or regional temperature limits, whichever is stricter)
- Engine idling is required for the function of auxiliary equipment (i.e., cranes, concrete pumps, etc.)

PUBLIC AREAS

All work performed in or adjacent to public spaces will be required to have barricades separating the public from the work.

Public protection should be a minimum of 6' tall and installed in a manner that does not create an additional hazard such as tripping, and capable of sustaining, without failure, high winds, and wind gusts.

Warning signs must be posted approximately every 100' of linear fence to inform the public of hazards.

All public areas are to be always kept clean and clear of debris.

HAND AND POWER TOOLS

- Employees must be trained on each hand and power tool to be used.
- All hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in a safe condition, per the manufacturer's guidelines.
- Tools should only be used for their intended purpose.
- If the tool is designed to accommodate a guard or handlebar, the guard or handlebar must be in place while the tool is being used.
- Each connection on a pneumatic tool and air hose must be secured with a "whip-check" or similar device.
- Operators of powder-actuated tools must be authorized, must possess valid credentials, and wear proper personnel protective equipment.
- All hammer-drills and rotary hammers must have integrated technology, such as a "safety clutch," that will stop drill-bit rotation should the bit bind up in the hole. An example of this is Hilti's Anti-torque control (ATC) technology.

LADDERS

Ladder use on Turner Construction projects will be allowed only when it has been determined that it is unfeasible to use all other options to complete the task.

If it is determined that a ladder is the only means of performing the job at elevated height, a ladder permit must be submitted prior to starting work. At no time will a ladder be on site without a current permit and safety checklist.

For repetitive work, allow for the use of a "multi-day" permit to be issued in lieu of a daily permit. Daily inspections would still occur, but the permit/tag would be modified.

Use of job-built ladders is prohibited on Turner Construction projects. Temporary stair towers or prefabricated stairs shall be used to access different building levels.

When working at a height greater than four (4) feet, 100% fall protection is required. A retractable is the only option in this case.

When extension ladders are used to access upper landings, the side rails must extend at least 3 feet above the landing, and secure at the top. Install an overhead fall protection anchor point, where feasible, to allow for the use of PFASs while ascending/descending.

CONCRETE AND MASONRY

Each trade partner working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart Q – Concrete and Masonry Construction, in addition to the following guidelines.

Unless otherwise stated in the contract, the concrete or masonry trade partner must provide at least two covered entrances into each building or structure during perimeter work. They must also cordon off other means of access/egress.

No load may be placed on a concrete structure unless a qualified person, knowledgeable in structural design, determines that the structure is capable of supporting the load.

Protruding reinforced steel, onto which employees could fall or fall into, must be protected to eliminate the hazard of impalement. The use of mushroom caps is not permitted for impalement hazards.

No worker, except those involved in post tensioning operations, shall be permitted to be behind the jack during tensioning operations. Signs and barricades shall be erected to limit access to the area.

No worker shall be permitted to walk under concrete buckets while it is being elevated or lowered into position.

No worker shall be permitted to apply cement, sand, and water mixture through a pneumatic hose unless the employee is wearing the proper PPE including face protection.

The trade partner shall provide an eye wash station with at least 15 minutes of eye wash solution within 75 feet of any concrete, painting, or masonry work.

Equipment and Tool Requirements

> Powered and rotating concrete troweling machines must have a switch that automatically shuts off power whenever the hands of the operator are removed from the machine.

Cast-In-Place Concrete Requirements

> Formwork must be designed, fabricated, erected, supported, braced and maintained so it is capable of supporting all lateral and vertical loads anticipated to be applied to it.

All shoring equipment must be inspected prior to erection to determine if it meets the requirements specified in the formwork drawings.

Erected shoring equipment must be inspected immediately prior to, during and after concrete placement.

An inspection of the shoring prior to, during, and after the concrete pour is an OSHA requirement.

The concrete trade partner is to determine their means and methods for inspection without placing any person directly under a live concrete pour.

A Controlled Access Zone must be established around the live pour so no one can enter. If an individual is assigned to inspect the shoring, they will be positioned outside of the controlled access zone of the concrete being placed and the previous bay where concrete was placed. This type of inspection of a live pour can also be completed with the use of technology. How the inspection is to be completed will be determined in the preconstruction meeting and will be detailed in the JHA and reviewed with all workers prior to the concrete pour. The location of the person inspecting shoring and performing tasks during concrete placement will be detailed on the project-specific Job Hazard Analysis (JHA) and daily Pre-Task Plan. The placement sequence will also be noted in the JHA.

A qualified designer must prepare the design of the shoring and reshoring. A third-party engineer qualified (certified, registered engineer) in structural design shall review the design of the shoring.

The designer of the shoring must inspect the (initial) erected shoring to ensure it is installed per design prior to concrete pour. Assignment and training of a minimum of one competent person that must be always on site to inspect shoring prior to any concrete pour by the installing trade partner. Any change of formwork should be inspected by designer.

Forms and shores must not be removed until the employer determines that the concrete has gained sufficient strength.

100% Fall protection will always be required while accessing or working on temporary outrigger platform systems. Any anchors for outrigger platforms must be cast in place.

At building perimeters where the decking steps down to allow for a beam pour, the height of the rails shall be increased accordingly.

Areas where form stripping is to be performed must be properly barricaded with tape or fence and signage must be posted on all sides. This should include areas below stripping.

Protruding nails should be removed or bent immediately.

Where employees must walk across rebar, temporary walkways must be installed to prevent trip hazards.

Outrigger platforms used for material movement in and out of the building via a crane or forklift must be designed by an engineer and incorporate 100% fall protection systems.

Authorization to Strip Formwork

When given Authorization that the concrete has reached strength in accordance with project specifications by the Structural Engineer of the Project, the written notification from said engineer (third party that does break strength testing) will be forwarded to the structural concrete trade and Turner. Stripping activities regarding formwork and work platforms will not proceed prior to receiving the authorization.

If any change in conditions occurs while stripping a work platform or shoring, all work must be stopped. A written notification must be sent by the Structural Concrete trade partner to Turner

Management staff and a review meeting held to assess the change. A revised risk mitigationplan will be stablished and reviewed with all workers prior to work restarting.

Use of Proper Barricades and Signage on the Formwork

The use of fixed, physical barricades in lieu of Caution / Danger Tape, where appropriate, to further inform and protect employees from changes in elevation must be utilized.

The use of fixed, physical barricades to further inform and protect employees whenever there is a fall hazard must be utilized. Caution / Danger Tape can never be used to barricade for a fall hazard.

Additional warning signage that contains the appropriate contact information for the trade partner which has installed the barricade must be installed on the barricade.

Masonry Requirements

A limited access zone (LAZ) must be established prior to the start of any masonry work.

The zone must be equal to the height of the wall, plus four feet for the entire length of the wall.

All masonry walls over 8 feet in height shall be adequately braced and remain in place until the permanent supporting elements of the structure are in place.

For overhand bricklaying from a scaffold, fall protection is required if the working side of the scaffold has a gap greater than 12" between the scaffold and structure.

SCAFFOLDS

Scaffolds must be erected under the supervision of a competent person. The competent person shall be designated with credentials submitted to Turner prior to the start of work.

A Personal Fall Arrest System or a guardrail system must be in place on all scaffolds exceeding 6' in height.

Mobile scaffolds require guardrails at 4 foot in height. When rails cannot be installed, utilize a Personal Fall Arrest System (PFAS) anchored overhead.

The use of fall prevention devices is required during the erection or dismantling of a scaffold.

The area below a working scaffold must be barricaded to protect employees from a falling object hazard.

The Competent Person shall inspect scaffolds daily. The competent person will "tag" the scaffold "in service" or "out of service" prior to employee use.

Frame and system type scaffolds, including but not limited to masonry and tube & coupler, must be accessed via scaffold stair attachments.

Mobile scaffolding wheels must be locked when in use.

Cross bracing shall not be used as guardrails.

Scaffolding, such as swing stages, pump jack scaffold, boatswain (bos'n) chairs, floats, and needle beams, requires special approval by Turner's Business Unit EHS Director before use.

SIGNS, SIGNALS, AND BARRICADES

At locations where potential hazards exist, trade partner personnel shall be responsible for posting, installing, and maintaining signs, signals, and barricades to detour the passage of persons or vehicles.

Where areas may require additional awareness or present unique danger, the use of warning barrier may be necessary.

- The warning barrier should have a sign with the nature of the hazard, the trade partner who installed the barrier with a contact number, and the duration the barrier will be in place.
- The intent of the warning barrier is to notify of hazards that may arise during construction activities. Every effort should be made to correct these situations with permanent solutions in a timely fashion.

Turner prefers hard barricades with appropriate signage is to be used in situations where entry is prohibited or requires special permission.

Trade partners installing danger or caution tape are responsible for maintaining it for the duration of their work, or if the hazard exists, and removing immediately after.

Danger signs are to be posted to communicate a potentially dangerous, DO NOT ENTER situation. Caution signs are to be posted in areas where entry is allowed but caution must be followed.

Tape, of any kind, is not permitted for use as fall protection nor swing radius delineation. The swing radius of cranes and other equipment must be a hard material such as red-colored, plastic chain.

INDUSTRIAL VEHICLES

Trade partners must provide for proper equipment selection, inspection, and operation of industrial vehicles, including but not limited to, All Terrain Vehicles (ATV) or Quads, Three-Wheeler, Four-Wheeler, Gators, Mules, and all other similar vehicles.

Only vehicles that have previously been approved by the Operations Manager and Business Unit EHS Director may be utilized.

All authorized drivers must complete training that follows manufacturer requirements (as coordinated through the dealership of the equipment) for the safe operation of the vehicle including use of personal protective equipment, authorized surfaces for operation of the vehicle, weight restrictions, and other safe operational conditions.

Vehicles must have legible name plates and markings that indicate load limits.

Jobsite speed limits and other regulatory signs must be obeyed.

Pedestrians always have the right of way.

Seatbelts must be always worn when riding in a vehicle equipped with seatbelts.

All vehicles used during a project for contract activities must have reverse signal alarms.

HEAVY EQUIPMENT

All operations requiring the use of heavy equipment will require a pre-planning meeting to coordinate and prevent injuries to workers and the public.

All trade partners delivering or receiving material and equipment to the project are required to complete a risk assessment and pre task plan prior to any loading/unloading activities to establish safe work procedures for working around trucks and to protect workers and the public.

Establish a restricted access zone around the truck to prohibit entry into the load/unload area. High visibility "do not enter" tape should be used. "Do not enter" tape is intended to prohibit access and should only be used as a substitute for physical barricades.

- No worker, except those involved in the load/unload operations shall be permitted to be behind the "Do not enter" area. Signs and barricades shall be erected to restrict access to the area.
- The zone must be equal to the area needed to load/unload plus ten feet around the entire truck area.
- All designated personnel within the zone must be clear of the load during all loading or unloading operations by at least 30 feet.
- A qualified "spotter", wearing an ANSI approved high visibility traffic vest, must be utilized during the loading/unloading operation.
- Vehicles must never back "blind" on a Turner project.
- Workers on the ground within the zone should never be on the opposite side of a truck from a forklift / telehandler while it is loading or unloading material.

The driver must be in full view to a forklift / telehandler operator. All loading or unloading activity must stop if the driver cannot be seen or needs to enter the exclusion zone to inspect a load. Alternatively, if it is safe to do so, the operation can allow the driver to stay in the truck cab during loading and unloading.

All motor vehicles and material handling equipment, with an obstructed view to the rear, must have a reverse signal alarm audible above the surrounding noise.

Spotters must be provided for vehicles in congested areas and when backing up.

Heavy equipment (i.e. dozers, scrapers, back hoes, etc.) shall be inspected by the operator prior to each shift. A completed Equipment Inspection Form shall be submitted to the Project Superintendent daily.

CRANES

No crane shall be placed in service on a Turner project until an annual certification, a third-party inspection and supplemental reports are submitted to Turner indicating that the crane meets the manufacturer's inspection criteria.

A daily crane inspection, performed by a competent person, is to be documented. Those are reports are to be provided to Turner when requested.

Any crane that is altered, repaired, "jumped", or modified in a similar manner onsite must be re-inspected by an independent third-party inspection company. Any crane after assembly must be inspected by an independent third-party inspection company.

Crane operators are required to verify the weight of each load prior to hoisting.

The trade partner shall supply a qualified signal person who, through training by a qualified evaluator, deems the person qualified on the standard methods for signals (hand and radio).

Cranes, hoists, boom trucks and derricks shall not be installed or operated within 20' of a power line unless they follow 1926.1408 (a) (2).

The use of a personnel basket must be approved by Turner's BUSINESS UNIT EHS Director after the trade partner has proven there is no other practical safer means.

Outrigger pads should be at least 3 times the dimension of the crane float. The outrigger pads are to be pre-manufactured.

Due diligence is required to determine firm and stable ground loads for outrigger placement. This can be accomplished with Ground Penetrating Radar (GPR) or X-ray.

RIGGING

Any trade partner performing rigging must have a qualified rigger. The qualifications of the rigger must be submitted to Turner for review, prior to start of work.

The qualified rigger shall inspect all rigging prior to each use.

Do not leave unsecured or unattended suspended loads.

The forks of a forklift or telehandler cannot be used for free rigging.

MOBILE ELEVATED WORK PLATFORMS (MEWPS)

All scissorlifts and boom lifts shall have a shroud or guard over the joystick/controls. Scissorlifts require a three-sided joystick guard. Scissorlifts should also have a timeout feature on the lift/lower and drive selector, which disables the lift/lower and drive functions after several seconds of inactivity. Moreover, boom lifts must be delivered with anti-crush or secondary-guard technology.

Please see below for examples of approved guards and shrouds for lift controls on Turner projects.

Note: In addition to joystick guard/shrouds, clear messages, proportional lift and drive controls, and symbol-based function selection buttons are required for easy training and operation of lifts.

Trade partners are required to complete a daily inspection sheet for all mobile elevated work platforms. The inspection includes operational and physical parameters for operation of the equipment being inspected. The inspection form must be posted in a visible location during operations and a copy made available to Turner upon request.

Only trained and authorized individuals may operate aerial lifts.

When a lift is delivered to the project, the rental company or the owner of the lift shall inspect the lift & provide documentation the lift is safe to operate onsite. The lift shall be free from any physical defects in new or like new condition with all the safety placards present. The operator's manual and inspection documentation shall be included.

Employees must use personal fall arrest systems (PFAS) when working from boom platforms. Employees shall follow the manufacturer's recommendations for the type of (PFAS) when working from an aerial lift. At a minimum, employees shall follow the manufacturer's recommendations for the type of fall arrest/restraint when working from a scissors lift. If scissorlifts are equipped with an attachment point provided by the manufacturer for a restraint system, they are to be used. The intent of this protection is to keep workers within the confines of the passive protective system (rails) so the shortest length of lanyard that allows the task to be completed and keep the worker confined to the walking/working surface is required. Note: These attachment points are not designed as fall protection anchorages.

Never climb above the work platform. Employees must keep both feet on the floor of the basket and not stand on the railing or toe board during operation. If it has been determined by the trade partner's competent person that there are no feasible means to access an area without leaving the basket of a scissor lift, a modified Pre-Task Plan must be completed as well as a Fall Protection Plan. This plan must be completed by the competent person with details of the anchorage point outside the scissor lift and above the employee's head. Any worker engaged in the activity should be active in the preplanning of the modified plan. All workers involved must review and sign off on the plan. This must be reviewed with Turner's Superintendent. Each work activity and area will require their own PTP and Fall Protection Plan.

When the manufacturer provides pre-engineered fall protection add-on devices on mobile elevated work platforms, and a person exits the platform while being connected, a person trained in the operation of the mobile platform must remain on the ground, near the machine base controls, to prevent unauthorized use and to prevent the machine from being operated while used as a fall arrest anchor. Trade partners must specify this protocol within their daily PTP.

A dedicated spotter is required any time a scissor lift must be moved in an elevated state or when operated in congested areas. Spotters will be responsible for ensuring that the area around the MEWP and the travel path are free of obstruction and clear of equipment and personnel.

Mobile Elevated Work Platform Use in High Lift Situations (applies to boom lifts with an operating platform height of 30' and above) require the following:

A dedicated JHA shall be developed for each activity operating a MEWP above 30'.

A system for managing the affected area below the basket and movement of the MEWP's is necessary to decrease the risk of struck-by hazards.

If any of the workers in the Aerial Boom Lifts are incapacitated and incapable of descending, a rescue may be required. Due to the nature of this type of work, it is prudent to establish an emergency response plan which has redundancy built into it.

A dedicated ground spotter (with no other collateral duties) shall be in place whose duties are as follows:

- Visually verify and communicate via two-way radio that all obstructions are clear of the path of travel at the ground level.
- Visually verify that all obstructions are clear while basket is moving.
- The ground spotter shall be responsible for no more than 1 Controlled Access Zone (CAZ).
- Additional spotters will be required if MEWP's will need to be operated/relocated simultaneously within 1 CAZ (Approximate size and dimension of CAZ is below).

Spotter Logistics:

- If 2 or more lifts are required to operate simultaneously, each operator/spotter team will utilize their own dedicated radio channel.
- The Spotter shall not use a cell phone, headphones or other devices which may distract them from their duties.
- The Spotter shall have stop work authority.
- The spotter shall wear, at a minimum, a Class II high visibility vest, shirt, or jacket.
- The Spotter/operator team shall perform a "radio" check prior to the commencement of the activity and every 30 minutes thereafter if no communications occur during that time frame.
- Operation of MEWP from the basket is prohibited without prior communication with the spotter and an "All Clear" is given.

Other Traffic at base of operating MEWP:

- A Controlled Access Zone (CAZ) will be established in the affected areas of the MEWP operation to include the base and working zone beneath the platform.
- The CAZ should be constructed with physical barriers such cable, wire rope or chain, or flagging. Danger, Caution tape and spray-painted lines will not be accepted.
- The CAZ must be secured from tipping and signed every 30'. The size of the CAZ must consider deflection or arc of the falling material.
- Each CAZ will be adequately sized to have a 15' buffer zone on each side of the MEWP to include under the platform.
- Each CAZ will hold no more than 3 boom lifts.
- No other equipment or vehicle will be allowed to operate within a dedicated CAZ.

A 30' wide dedicated path of travel for vehicles and other equipment shall be established using rope, traffic cones, delineators or other clear markings which safely guide other equipment and vehicles around the MEWP CAZ.

Any changes in the path of travel must be approved by the Turner Superintendent.

Boom lifts shall not operate within or over the traffic zone.

The Spotter shall monitor vehicle traffic and shall have authority to stop work and or vehicle traffic.

Emergency Response

There shall be, at a minimum, (2) two MEWP's on site when working in excess of 85 vertical feet. This is to ensure that one could assist another which has the capability to reach the basket in the event of an emergency. Exceptions include when there is a means of safely reaching the platform via catwalk or other elevated surface, or when there is a means to reach the platform from above via rope, slings or other climbing type equipment.

The Spotter shall be trained on how to safely use the ground controls. The ground controls shall be tested prior to work occurring each day and/or shift.

The Local Fire Department Shall be invited to the project site to review conditions and site activities which may have the potential for a "Vertical Rescue" in the event of an emergency.

The emergency response number shall be conspicuously posted.

Turner, the fire department and dispatch shall determine a key phrase or word which indicates that a "Vertical Rescue Team" is required. (These teams have specialized training and equipment to respond to high rescue conditions.)

Workers on the ground shall stay out of the CAZ and communicate with the spotter if entrance is needed.

A Stop Work must immediately be called when any deviations are observed with fall protection.

Identify and discuss task which have the potential for falling tools, materials and/or debris. Do not start work until procedures are in place to prevent the loss of tools or equipment (tethering or other means) and/or a Controlled Access Zone is established.

Workers should avoid positioning themselves, and their equipment, in a line of fire where they could be struck by falling, flying, or moving objects from the overhead platform.

Utilize tag lines to maintain positive control of objects being removed or hoisted to ensure the object does not encounter the lift.

DRONES

Turner's policy on drone use is they should only be used as a last resort. If there are other means available to inspect, survey and document jobsite conditions, they should be used in lieu of a drone.

All drones must be operated by a third party who is licensed by the FAA and insured per Turner's insurance policy guidelines.

Drone use can be obtained by submitting a Drone Use Approval Request Form. The form must be submitted for review and approval by Turner's Operations Manager and Business Unit EHS Director.

HOUSEKEEPING

Clean-as-you-go practices are required. All rubbish shall be disposed of as it is generated and be immediately placed in a mobile rubbish container provided by the trade partner.

Each trade partner is responsible for maintaining clear paths to move materials and facilitate emergency egress.

Housekeeping methods will be specified within the trade partner JHA and PTP.

INCIDENT REPORTING REQUIREMENTS

All incidents resulting in injury or property damage are to be reported at the time of occurrence to the Turner Project Superintendent and/or Project Safety Manager.

For any incident involving personal injury, the trade partner will complete their own incident investigation report form and submit it to Turner as soon as reasonably possible (same work shift) but no later than eight (8) hours after the incident occurred.

Copies of all Workers' Compensation reports involving trade partner employees shall be promptly forwarded to Turner Construction Company.

Trade partners will be individually responsible for notifying Federal, State, and local authorities when required.

FIRE PREVENTION

Temporary offices, storage and break areas, or other temp structures, when located inside of a building under construction, must be constructed of fire-retardant materials.

Shanties:

- Each shanty shall have at least one (1) 20# ABC fire extinguisher.
- No oily clothes, oily rags, nor fuels shall be stored in shanties.
- Each trade partner is responsible for installing and maintaining a smoke and carbon monoxide detector in their shanty.
- Electric heaters, if permitted on the project, must be equipped with hi temp shut down and tip-over protection. Electric heaters are not permitted to be operated while unattended.

Trade partners installing tarps, blankets, and poly that may be exposed to sparks are required to utilize fire-retardant material.

Onsite fuel tanks must be double walled, be protected from construction vehicle traffic and have a spill containment system capable of holding all contents of the tank in the event of a leak.

Fire extinguishers shall be a minimum of 20# ABC type and placed and maintained on the job in conspicuous locations according to OSHA requirements. Fire extinguishers must be affixed in a location to prevent damage from water or other materials. These fire extinguishers shall not be moved or discharged except for fighting a fire.

Liquid Propane Gas must never be stored inside buildings.

Cylinder storage must be stored upright and properly secured. When not in use, disconnect hose/gauge assemblies and cap the cylinder. Stored cylinders must have a ½ hour fire rated barrier 5 feet tall or be stored 20 feet apart.

All "Hot Work" requires a permit and approval from Turner's Project Superintendent. Hot work procedures must be followed including Fire Watch.

- Fire Watch will be provided during and for at least 30 minutes after work and during any coffee or lunch breaks.
- Fire Watch is supplied with suitable extinguishers (20-pound, dry chemical, type ABC unless otherwise specified due to project hazards).
- Fire Watch is trained in use of this equipment, in sounding alarm and in emergency evacuation procedures.
- Fire Watch persons must be designated by a red safety vest when acting as a Fire Watch.

Considerations for temporary heating must be evaluated and approved by the Senior Operations Lead and Business Unit EHS Director. Temporary heating devices require a Hot Work Permit.

BUILDING L.I.F.E.

Building L.I.F.E. (Living Injury Free Everyday)® is a continuous improvement process with an upstream focus on risk and the systems which produce risk. The program endeavors to produce a bottom-up safety culture driven by increased worker engagement in safety and planning processes. Building L.I.F.E.® (BL) places an emphasis on optimizing human performance, anchored by a focus on observation & feedback. The outcome of implementing the BL Model is a culture-shift in worker attitudes toward teamwork and proactive safety involvement. Below are the three primary goals associated with BL and the processes supporting each goal:

1. Systems Focused Approach – Integrate the BL "systems model" into key processes such as pre-planning, performance evaluation and incident analysis. Move preplanning farther upstream. Sharpen our focus on risk analysis and reduction. Involving those "closest to the risk" in preplanning.

    a. BL JHA - The JHA has been the standard Turner pre-planning tool thus far. With BL, the JHA has evolved into the BL JHA which places a focus on risk & the system factors which drive that risk. Trade partners complete the form ahead of the pre-construction meeting and submit to Turner. The Turner project team (safety & operations) reviews the quality of the BL JHA and push back if the assessment is not deemed to be of adequate quality. At the pre-construction meeting, Turner will review the final BL JHA and facilitate a discussion with the trade partner to see if risk can be further reduced (with additional controls). As an option, this may include a Turner facilitated Residual Risk Reduction (R3) step which involves quantified risk assessment. Again, the main difference between standard Turner JHAs and the BL JHA is the focus on reducing risk (frequency, likelihood, severity), and the systems which drive that risk (environment, capability, motivation).
    b. Pre-Task Plans (PTP) – This is traditional and effective Turner short-range planning tool is that is supplemented with the Daily Huddle. PTP frequency can be locally determined as either daily or weekly. If weekly is the option selected, and the risk changes during the course of the week, a new PTP is required.
    a. Rapid Improvement Events - Conduct Rapid Improvement Event analysis with front line workers at regular intervals, where they have an opportunity to (using the BL JHA as a starting point) examine work process and look for improvements (risk, efficiency or quality).
    c. Daily Huddles – The Daily Huddles are designed for each trade partner to conduct a meaningful, two-way discussion of anticipated risk & planned controls on a daily basis. The pattern of Huddle dialog (bottom-up) should be – What are our key activities today? What are the key risks we need to be thinking about? What controls do we need in place to protect? Note – those controls need to include physical safeguards, training/procedural safeguards, and required actions (behavior) to keep the task safe.
    d. BL Root Cause - In short, we're looking to incorporate the three systems circles (environment, capability, motivation) into our root cause analysis, whether we're looking at an incident, a near miss, or even an "at-risk" observation.
    e. BIM/Safety Integration – Where BIM Models are available, the project team should work with the BIM engineer recognize and analyze risk and to pre-plan for safety. BIM should be used to develop safety and logistics plans.

2. Engage the Workers – To facilitate a culture-change at our projects toward partnering and proactive safety engagement, the project team, including trade partner supervision, needs to continuously seek out opportunities for front line workers to participate in, and contribute to, the

safety process. Each trade partner should feel free to add creative opportunities, but the primary opportunities are:

a. BL JHA & PTP Review – Once mobilization ramps up, each trade partner should have the frontline workers review the JHA (could be done in a toolbox talk format), and ask them to add missing pieces, contribute new ideas, etc. The key is participation. The same holds true for PTPs – getting the workers involved in the process.
b. Daily Huddles – This is the primary opportunity for front-line workers to be part of the safety process. An effective two-way daily discussion of risk & control plans will be essential to successful Building L.I.F.E.®. Huddles supplement the PTP process.
c. 5-Worker Lunches - Provides another venue for workers to be involved and have a voice into safety management.
d. Rapid Improvement Events – Great opportunities to get front line workers involved in the work process (not just safety), at regular intervals.
e. Safety Perception Surveys and Safety Observation and Recognition (SOAR) stations allow the workforce to provide us a "report card" on what's working and what's not.

3. Optimizing Human Performance – In order to help optimize (safety) performance, the Building L.I.F.E.® process employs several tools to achieve continual improvement.

a. Coaching Training – This is aimed at Turner and trade partner leadership and is designed to help them become better safety coaches during their planned & unplanned observation opportunities. Training will include how to better understand what drives better safety performance (behavior), and how to conduct meaningful safety observations.

SUBSTANCE ABUSE POLICY

Trade partners are required to comply with all elements of the Substance Abuse Policy contained within Turner Construction Company's Environmental Health and Safety Policy.

STRETCH AND FLEX

All trade partner employees are required to participate in a Stretch and Flex Program on this project. A stretch and flex will be facilitated by each trade partner's foreman or designee at a central location, every morning, prior to start of work. All employees are required to participate but only to their level of comfort.

Building L.I.F.E.®

Building L.I.F.E.® is a collection of tools designed to enhance operational staff's ability to engage with trades to improve safety outcomes and measure performance. This program is designed to:

- Enhance the recognition of and reduce risk through better operational planning while increasing safety acumen resulting in fewer incidents and near-misses.
- Encourage all Turner employees, trade partners, clients, and design team to make safety a personal value.

The Building L.I.F.E.® program is a continuous-improvement program aimed at reducing process discrepancies and risks that in turn lead to unplanned events or loss. This program also aims to create a more positive working climate by frequently involving our project teams and subcontractors (including the frontline worker) in many aspects of our safety processes.

Note: Refer to the Turner Building L.I.F.E.® instruction manual for detailed guidance on each aspect of the program.

Program Goals & Objectives

- Implement a more comprehensive continuous improvement model for safety & risk management that supports Lean Construction, Human and Organizational Performance, and ISO 14001 by building continuous improvement cycles into each of our key risk-reduction processes.
- Embed an upstream "systems focus" into our planning and problem-solving tools focusing on risk and the systems that are driving risk.
- Increase the engagement and participation of frontline workers in our processes to increase ownership, change culture and improve results.
- Utilize Human and Organizational Performance principles to provide a more holistic approach to safety management and culture change.

Program Elements

All elements of the Building L.I.F.E.® program are based on engagement and feedback at all stages and levels of the construction process. Key elements of the program are:

- Pre-planning process
- Assessments
- Coaching activities
- Feedback processes

Notes:
Pre-Planning Process: This element is detailed in the "Job Hazard Analysis / Pre-Task Planning" section of this Policy Manual
Assessments: This element is detailed in the "SafetyNet Operational Guidelines" section of this Policy Manual.

I Coaching Activities

CSB Coaching Process

The critical safe behavior coaching process is intended to close a gap in our Safety Management System and bring balance to the "systems-approach." Critical safe behavior coaching is focused on positive and delivering actionable

feedback. We strive for CSB coaching to be a welcome event that draws on workers skills and actions in the construction environment.

These are conducted with the engagement of the those directly performing a task, the supervisor and foreman of the workers, and the Turner Staff Coach.

There are five primary categories considered during this process:
- Visual Focus
- Body Position
- Manual Material Handling
- Organization and Housekeeping
- Elevated Work

The intended outcome of this collaborative activity is process improvement, improving efficiencies and risk reduction.

Staff engagement expectations with CSB Coaching are defined in the “SafetyNet Operational Guidelines” section of this Policy Manual.

Rapid Improvement Events

A rapid improvement event is a continuous improvement process meant to accomplish the following:
- Ensure every major task of work has been optimized for safety, efficiency, and quality, thus reducing all forms of waste.
- Improve the quality of our work plans, such as JHAs and PTPs.
- Taking a systems-based approach
- Engaging the workforce
- Continuous improvement

Unlike a Critical Safe Behavior coaching activity which is task focused, the Rapid Improvement Event takes a much broader look at the overall operation and the context in which the tasks are taking place. These are conducted with the engagement of the those directly performing a task, the supervisor and foreman of the workers, and the Turner Staff Coach.

The intended outcome of this collaborative activity is process and efficiency improvement and risk reduction.

Engagement expectations are to be established at a project level based on scope, size and complexity.

II Feedback Processes

Five Worker Lunches

This feedback-based process supports continual improvement and worker engagement. Turner selects 5 workers from various contractors to have an informal free lunch with Turner site management team and available BU Managers. The Turner facilitator explains to them over lunch that “we need their input so we can continue to assess and improve the effectiveness of our safety program and leadership. Although we will keep notes during the meeting so we can follow up on their feedback and ideas, no names will be attached, and their comments are confidential for the staff in the room only.”

How to select the five workers

Each worker should be from a different subcontractor. Preference should be given to companies that meet the following:

- Program and policy non-conformance issues have been noted.
- New subcontractor to Turner Construction.
- High-risk activities.
- High EMR Risk Management Waiver was executed.

This is a monthly process, at a minimum. 5 workers is a guideline. The feedback received from this meeting should be tracked in meeting minutes. Select items requiring Turner action should be addressed and resolution shared verbally at all-hands safety meetings and noted on “You Said / We Did” boards.

Safety Observation and Recognition Cards (S.O.A.R.)

Safety Observation and Recognition Cards, or SOAR Cards for short, serve two purposes in supporting Building L.I.F.E.®.

- SOAR Cards provide a good avenue for workforce engagement which creates further ownership in our safety program and supports the desired culture shift.

- SOAR is another feedback mechanism supporting continuous improvement - this mechanism focuses on providing feedback to Turner Construction. It allows workers the opportunity to anonymously become extra eyes and ears in the field.

The SOAR Card signs with drop-boxes should be prominently displayed at the entrance to the project. Turner staff should check the drop-box daily.

Observations and recognition submitted should be shared during morning safety meetings to discuss actions taken and to close the loop with the workers, shared verbally at all-hands safety meetings and noted on “You Said / We Did” boards.

III Training Requirements

To ensure the consistent and effective program implementation and integration, training will be completed as defined below:

Turner Field Operations Staff: Attend and actively participate in the Building L.I.F.E.® 5 training module series and complete the learning application activities as delivered and facilitated by a designated program trainer.

Turner Staff (non-field operations): Attend the Building L.I.F.E.® program overview training module delivered by a designated program trainer. (1 hour in duration)

Trade Partner Staff and Craft: A Building L.I.F.E.® overview is presented in the Turner site orientation video.

Crisis Management Plan

I. Policy Statement

Turner's Crisis Management Plan provides an outline of actions that must be taken to prepare for a crisis and response plan in the event of a crisis. The plan defines the action steps necessary, and the responsibility assigned for such actions. A crisis is any event that has been created and/or may still pose an immediate threat to life, property, or business as usual. This may occur at a jobsite, a Business Unit office or other locations related to our business. The full Crisis Management Plan is available on the Safety SharePoint site.

Such situations may include, but are not limited to:

- Incidents involving serious bodily harm and/or deaths, or property damages,
- Bomb threats, terrorist attacks,
- Collapse of a building or portion of a building,
- Natural disasters and severe weather events
- Fire/explosion, water events,
- Equipment failure such as the collapse of a crane,
- Workplace violence,
- Environmental incidents,
- Extreme business interruption,
- Pandemic Illness,
- Active shooter events
- Bias Motivated Events
- Labor events, protests, immigration.

II. Procedures

1. The following are highlights of the Crisis Management Plan and may be found and viewed in detail in the Safety Section of the SharePoint Document Management System.

    a) Section 1 – General
        - The severity of the event will dictate the appropriate response. Your Business Unit Environmental, Health, and Safety Director (BUEHSD) and Operations Manager must be contacted before reporting a crisis by submitting a New Notification using the AlertMedia! application on your mobile device or go to turner.alertmedia.com OR call 1-866-3-TURNER (1-866-388-7637) or 201-903-4127.

    b) Section 2 – Preparing for a Crisis
        - The key to success in handling a crisis situation is preplanning, prior preparation, organization, and rehearsal / practice drills.
        - Each project and office must have pre-determined Action Plans

and Teams that are ready to react to any crisis situation.

c) Section 3 – Event Response Plans
   - Several immediate and simultaneous actions must take place during a crisis regardless of the type of event.
   - These actions should be directed by the Project Superintendent or, in his/her absence, the Project Safety Manager. Again, it is important to notify your BUEHSD and Operations Manager before submitting a New Notification using the AlertMedia! application on your mobile device or go to turner.alertmedia.com OR call 1-866-3-TURNER (1- 866-388-7637) or 201-903-4127. The Site-Specific Crisis Plan will detail the actions needed.

d) Section 4 – Media Management
   - All inquiries by the media should be referred to the General Manager or Operations Manager.
   - Turner's Corporate Public Relations Group must also be contacted immediately by the Operations Manager or General Manger of the Business Unit.

e) Section 5 – Crisis Preparedness Checklist
   - Turner's level of preparedness for a crisis prior to its occurrence will determine the success of effectively managing such an event.
   - Crisis practice drills must be conducted semi-annually for project sites and offices. These also should occur at the start of every project.
   - Checklists provided on SharePoint will assist in drill preparation.
   - During a pandemic, refer to specific programs for cleaning and disinfecting, PPE, and general guidance documents.
   - Projects should utilize posters, applications, etc. to maintain a level of awareness and preparedness for any crisis that may develop. They are available on the Turner Homepage at the Turner store.

Incident and Near–Miss Investigation and Reporting

I. Incident Reporting

For any incident involving personal injury, the subcontractor will complete their own incident investigation report form and submit it to Turner as soon as reasonably possible (same work shift) but no later than 24 hours after the incident occurred.

The Project Safety Manager and/or Superintendent will notify the Business Unit Claims Coordinator and BU EH&S Director (BUEHSD) as soon as practical after the incident, but no longer than 1 hour. In addition, a Turner Incident Investigation Report will also be completed in Origami by the Turner Project Superintendent and/or Project Safety Manager (if assigned) based on the information collected from witnesses and contractors. All matters pertaining to medical records and reports will be kept strictly confidential by the responsible party.

II. Responsibilities

All incidents resulting in injury or property damage are to be reported at the time of occurrence to the Turner Project Superintendent and/or Project Safety Manager. The Turner Superintendent and/or Project Safety Manager will speak with the worker involved in the incident as well as the subcontractor in charge of the person(s) involved or witnesses to the event. The contractor will complete their own incident investigation report form and will require each craft person involved to complete a written statement whenever such events take place. Turner and or the Owner may require a more detailed investigation and the Subcontractor will comply with theirdirections.

The BUEHSD will notify the Turner Helpline when appropriate. See Turner Incident and Near-Miss Reporting Matrix for reference of when to submit a New Notification using the AlertMedia! application on your mobile device or go to turner.alertmedia.com OR call 1(866) 3-TURNER / 1 (866) 388-7637 OR 201-903- 4127 OSHA's Recordkeeping rule requires employers to report all work-related fatalities within 8 hours and all in-patient hospitalizations, amputations, and losses of an eye within 24 hours of finding out about the incident.

III. Incident Reporting Procedures

1. Near-Miss Event

A Near-Miss is an unplanned event that did not result in injury, illness, or damage – but had the potential to do so. Only a fortunate break in the chain of events prevented an injury, fatality, or damage; in other words, a miss that was nonetheless very near. A faulty process or management system invariably is the root cause for the increased risk that leads to the near miss and should be the focus of improvement. Other familiar terms for these events are a "close call," or "near hit."

It is the responsibility of the Turner Project Superintendent or Project Safety Manager to complete the investigation using the Turner Construction Company Incident investigation report in Origami. This report will include recommendations/ implementation of corrective actions. The report will be submitted as soon as reasonably possible (same work shift) but no later than 8 hours. If the near miss could have resulted in a severe injury or fatality a call must be set up within 4 hours with the EVP, SVP, HQEHSO, GM, OM, BUEHSD, and the project team to review. A gathering of all involved parties will take place within 24 hours of the incident to review the case and determine if the steps taken to remediate the incident were appropriate.

2. First Aid Event

Any first aid event will result in a full incident investigation. TCCO feels that no injury is minor but an opportunity to learn and eliminate like occurrences. Daily records of all first-aid treatments not otherwise reportable will be maintained in Origami for record purposes only. Refer to the Turner Incident and Near-Miss Reporting Matrix for reporting requirements.

3. Medical Treatment Event

It is the responsibility of each subcontractor to immediately notify the Turner Project Superintendent of an injury requiring medical treatment. If the injury is considered an emergency call 911. The Turner Safety Manager or senior TCCO project representative will oversee the completion of required Turner reporting forms in Origami. The Turner Business Unit Environmental, Health, and Safety Director and Claims Manager shall be notified as soon as possible. The Turner Business Unit Environmental, Health, and Safety Director will contact OSHA when required, regardless of the subcontractor's requirement to notify.
The BUEHSD will notify the Turner Helpline when appropriate. See Turner Incident and Near-Miss Reporting Matrix for reporting requirements and when to notify the Turner Helpline.

4. Recordable Injury Event

It is the responsibility of each subcontractor to immediately notify the Turner Project Superintendent of an injury requiring medical treatment. If the injury is considered an emergency call 911. The Turner Safety Manager or senior TCCO project representative will oversee the completion of required Turner reporting forms in Origami. The Turner Business Unit Environmental, Health, and Safety Director and Claims Manager shall be notified as soon as possible. The Turner Business Unit Environmental, Health, and Safety Director will contact OSHA when required, regardless of the subcontractor's requirement to notify. The BUEHSD will notify the Turner Helpline when appropriate. The BUEHSD will set up a call within 24 hours to review the incident/injury with HQ EHSO, SVP, GM, OM, BUEHSD and project team. If the Recordable is considered a SIF or SIFP, a call must be set up within 4 hours of the incident and include HQ EHSO, EVP, SVP, GM, OM, BUEHSD, SHRD, and project team. See Turner Incident and Near-Miss Reporting Matrix for reporting requirements and when to notify the Turner Helpline.

5. Fatality

It is the responsibility of the subcontractor to immediately notify the Turner Project Superintendent or the Turner Safety Manager of an event resulting in a fatality. The Turner Project Superintendent will then implement the Turner Crisis Management Plan. All notifications must follow in accordance with the Turner Crisis Management Plan notifications flowchart. The BUEHSD, BU Claims Manager, General Manager, and Operations Manager must be notified immediately. A call must be set up within 4 hours with the EVP, SVP, HQ EHSO, GM, OM, BUEHSD, and the project team to review the incident. All media inquiries are to be referred to the Owner or as the Site-Specific Crisis Plan dictates. A notification must be made by the employer to OSHA within 8 hours. The BUEHSD will notify the Turner Helpline.

6. Property/Environmental Damage

It is the responsibility of the Turner Project Superintendent to notify the Turner Project Manager and Owner of the incident and assist in the assessment of damages. The Business Unit Environmental, Health, and Safety Director and Claims Manager shall be notified in all cases. The Claims Manager will be responsible for notifying applicable insurance carriers in accordance with policy provisions. Turner Project Superintendent or Safety manager shall input a report into Origami for record purposes only. The BUEHSD will notify the Turner Helpline when appropriate. See Turner Incident and Near-Miss Reporting Matrix for reference of when to notify the Turner Helpline.

7. General Liability Accident

It is the responsibility of the subcontractor to immediately notify the Turner Project

Superintendent of an event involving third parties or the general public. The Turner Project Manager will immediately notify the Owner, BUEHSD and Claims Manager. The subcontractor involved will complete an incident report and submit it to the Turner Superintendent or his/her designee. Turner Project Superintendent or Safety manager shall input a report into Origami for record purposes only. The BUEHSD and Claims Manager will determine if a Third-Party Investigator will be needed. The BUEHSD will notify the Turner Helpline when appropriate. See Turner Incident and Near-Miss Reporting Matrix for reference of when to notify the Turner Helpline. In all cases, including a near-miss, a full investigation will be conducted by TCCO and the contractors to determine potential contributors to the incident in hopes of eliminating the conditions reoccurrence on this or any project. The intent of the investigation is not to affix blame but to learn from the event.

IV. Return to Work Provision

1. Trade partners and tiered contractors must provide a modified return to work program for any of their employees returning from an occupational injury for a minimum of 90 days after the injury date.

2. Failure to provide accommodations to an injured employee may result in a penalty assessment, at Turner Construction's discretion, to the trade partner of $2500 per week until such time as the injured employee is returned to work.

Turner Incident and Near-Miss Reporting Matrix

Serious Injury Fatality (SIF) or Serious Injury Fatality Potential (SIFP)	
Work-related incidents, injuries, illnesses or near misses that caused, or could have caused, a serious injury or fatality. SIF and SIFP Examples: • Any fall or fall exposure 6' or greater (Including fall-catch) • Severe fire or explosion • Active shooter • Loss of a suspended load • Object falling from a building • Collapse of a structure or portion of a structure • Equipment collapse (cranes, scaffolds, etc.) • Bomb threat or terrorist threats/attacks • Trench/Excavation Collapse • Inadequate hole protection • Any in-patient hospitalization of a worker related to a workplace incident • Significant third-degree burns • Amputations (all, including fingertip) • Loss/impairment of body organ function • Loss of an eye • Utility line strike (Gas/Electric) • Loss of hearing • Severe visual impairment to total blindness • Broken bone • Missing or faulty guarding • Deficient or faulty temporary elevated working platforms 6' or above • Other SIF or SIFP incident identified by BUEHSD, OM, GM	BUEHSD Enter into Alert Media/Turner Help Line Immediately BUEHSD sets up a call within 4 hours with EVP, HQ EHSO, SVP, GM, OM, BUEHSD, SHRD, and the Project Team members closest to the incident Enter into Origami.
Recordable Injury (Non-SIF/SIFP)	
Work-related recordable injury or illness that did not cause, or could not have caused, a serious injury or fatality (SIF/SIFP).	Project Team sets up a call within 24 hours of incident with HQ EHSO, SVP, GM, OM, BUEHSD & the project team members closest to the incident Enter into Origami
Other Alert Media Reportable Events	
Events that would not be considered SIF or SIFP and may or may not have resulted in a recordable injury but are required to be reported through Alert Media for Risk Management tracking and support purposes. Examples: • Union or labor issues (i.e., picket) • Utility line strike (sewer, water, phone/data) • Worker is transported to a medical facility via ambulance (workplace related or personal medical) • Environmental crisis, regulatory visit or inquiry (OSHA, EPA, etc.) • Building shutdown due to emergency • Jobsite shutdown due to safety (by owner or Turner) • Workplace violence • Property damage greater than $10,000	BUEHSD or designee enter into Alert Media/Turner Helpline Immediately GM, OM, BUEHSD, or HQ EHSO to determine if a follow up call is needed. BU sets up call if required. Enter into Origami
Minor Injuries	
Minor Injuries that were not a SIFP or a recordable Injury Minor Injury examples: • Mild eye (corneal) abrasions • Minor sprains and strains • Minor lacerations/penetrations • Minor chipping or cracking of a tooth/teeth • Property damage less than 10K • Minor Skin rashes/burns (blistering)	Notify PM/PX, BUEHSD, Claims & Insurance, and OM/GM. Enter into Origami

V. Return to Work Provision

1. Trade partners and tiered contractors must provide a modified return to program for any of their employees returning from an occupational injury for a minimum of 90 days after the injury date.
2. Failure to provide accommodations to an injured employee may result in a penalty assessment, at Turner Construction's discretion, to the trade partner of $2500 per week until such time as the injured employee is returned to work.

VI. Documentation for all Work-Related Incidents, Illnesses and Near-Misses

The following forms must be completed and delivered to the Project EH&S Manager when there is one or to the Superintendent. These will be made available on the site.

- Turner Construction Company Incident Report form in Origami.
- Complete a root-cause investigation.
- Employee Incident Statement(s) (speak with all employees and workers that may have information regarding the incident)
- Subcontractor's Incident Report

All incidents, near-misses, injuries, illnesses, and unusual events that have occurred will be investigated thoroughly.

Projects are responsible for having onsite equipment to document the accident scene. Photos, sketches, schematics, and related evidence/equipment should be collected for report and preservation as soon as practicably possible after an incident. Photos should be taken of the site of loss as soon as practicably possible. Do not take photos of the injured, if at all possible.

Except for rescue and emergency measures, the accident scene shall not be disturbed and should be barricaded until it has been released by the investigating official. The Subcontractor is responsible for obtaining appropriate medical and emergency assistance and to ensure timely response to injured worker orevent.

It is required that the investigation team inspect any equipment involved in the incident and secure it for future use as evidence, if practicable, i.e., ladders, tools, PPE involved in the incident, etc. If the incident involves a ladder, the permit must be collected along with any inspection forms for the ladder.

Incident reports are to be completed in Origami, within 8 hours even though supplementary information may be necessary but not available for a period of time.

"Subcontractor" is intended to mean any contractor working under Turner's inspection, supervision and/or direction whether under contract to Turner or the Owner as on Construction Management. This policy will be used on all projects at all times.

In all cases, the Site-Specific Crisis Management Plan and the Site-Specific Health

and Safety Plan will be the guiding document.

If applicable, a Lessons Learned document will be developed and approved by TCCO to relay any information gathered that may assist in the elimination of a future similar occurrence.

Personal Protective Equipment

I. Policy Statement

All employees of Turner will be provided with the personal protective equipment necessary to complete their jobs safely. A competent person onsite will determine necessary equipment. Each subcontractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart E – Personal Protective and Lifesaving Equipment in addition to the following guidelines.

II. Procedures

1. All Turner employees, subcontractor employees and visitors to project sites are required to wear safety glasses that comply with ANSI Z87.1. Dark lenses are not to be worn inside of buildings, in enclosed areas or at night. Prescription eyeglasses and sunglasses that do not comply with ANSI Z87.1 are **prohibited**.

2. High visual, safety vests, shirts or jackets shall be worn as the outermost apparel by all employees, 100% of the time. ANSI Class 2 (0-44 MPH) and Class 3 (45 MPH or more) outerwear must be worn whenever working on or near (within 10 feet) of a roadway.

3. All Turner employees, subcontractor employees and visitors to project sites are required to wear, at a minimum, sturdy work boots. Metatarsal guards must be worn when using jackhammers, tampers or similar equipment which could be dropped or landed on a worker's toes / feet. ANSI-approved safety-toed boots must also be worn by masons, drillers, pile driving, steel erectors, and riggers due to the hazards inherent with their work.

4. Where employees are performing work that could potentially cause materials to become flying objects such as, but not limited to, chipping, welding, grinding, cutting, drilling, and chiseling, they shall utilize a face shield in addition to safety glasses. A face shield shall be worn while using powder-actuated tools and drilling overhead. For above shoulder activities in which dust, metal shaving, fasteners or other similar hazards could fall onto your face, enhanced eye protection such as face shield, spoggles or helmet visor are to be used.

5. Where employees are performing work that could potentially expose them to harmful chemicals or micro airborne particles, they may be required to utilize safety goggles and or a face shield. Please refer to manufacturer SDS for specific requirements. Goggles are required for abrasive actions in which dust can enter the eye.

6. Where necessary, each employee shall use equipment with filter lenses that have a shade number appropriate for the work being performed for protection from injurious light radiation.

7. Anyone entering a Turner Construction Project is required to wear at a minimum cut resistant level 4 protective gloves 100% of the time, unless the competent person can demonstrate to Turner that wearing gloves for a particular task creates a greater hazard. If agreed upon with Turner, this deviation to not wear gloves must be identified on the PTP, reviewed, and acknowledged. Refer to ANSI cut levels for determining the correct glove. Additional hand protection may be required depending on the hazard assessment.

8. Appropriate arm protection is required during operations where the arms are exposed to cut hazards (i.e., Kevlar, Dyneema sleeves, etc.). Examples of these activities are working around metal studs and pull boxes, tight confines such as between wall studs or above ceiling, and all demo activities.

9. Contractors exposed to dust, fumes, and/or gases shall be provided with proper respiratory protection designed to protect against the substance encountered. The Contractor is solely responsible for the proper testing and training per OSHA standards, and to provide the appropriate equipment. Reference Respiratory Protection Program herein.

10. Workers exposed to roofing tar must wear long sleeved shirts and gloves. Workers who are directly exposed to hot tar must also wear a full apron and face shield.

11. Where an employee could be exposed to noise in excess of 85 dBA, their employer will provide hearing protection, which will reduce the noise to an acceptable level. If the noise levels are determined to cause and 8-hour TWA exposure greater than 85 dBA, the subcontractor shall be required to submit a detailed hearing conservation program to Turner. This program shall be approved prior to beginning work.

12. All Turner employees, subcontractor employees and visitors to project sites are required to wear hardhats that comply with ANSI Z89.1. Employees exposed to electrical voltages of 600 V or greater shall wear hardhats that meet the requirements of ANSI Z89.2 Type Hardhats. Turner employees are required to wear one of the currently approved ANSI Type II or EN12492 safety helmet models with an integrated four-point chin strap attached and secured under the chin.

    Trade partner employees, vendors and visitors are required to wear an ANSI Type II or an EN12492 safety helmet (i.e., a safety helmet that meets the requirements of testing against vertical, front, back, and side impacts and penetration) with the four-point chin strap tightly attached and secured under the chin. The chin strap shall be secured with no more than a 2-finger gap between strap and chin.

    No other type of hard hat will be permitted on any Turner Construction Site.

Safety Enforcement Penalty Guidelines

I. Policy Statement

To assist in Turner's efforts to provide a safe workplace, the following three-strike policy is to be enforced on all projects. The Penalty Schedule listed below is to be used at the discretion of the local Business Unit. Once a fine is assessed it must be collected. Money collected is intended to be used for safety recognition or training programs only.

Turner Construction will employ a three-strike policy related to violations of this policy.

1. For first-time non-repeat violations, a verbal warning may be issued.
2. On the second violation, a written warning shall be issued to the employer and a record of the action taken documented in a violation log.
3. On the third violation, the employee will be removed from the project and the removal shall be documented in the violation log.

Turner reserves the right to remove any employee of any company for serious, repeat, willful or egregious violations, skipping the three-strike process listed above. Turner may also require outside third-party training relative to the safety infraction for any employee to be able to return to the site.

Superintendents/Foremen may be held accountable for the actions of their employees, as well.

Penalty Schedule	
Non-serious violations (examples: basic PPE, missing PTP or ladder permit, etc.)	**$500**
Serious safety violations (including but not limited: to fall protection violations, unauthorized energized work, failure to follow Confined Space Procedures, etc.)	**$2,000**
Failure to provide modified duty when authorized by physician.	**$2,500/week**

Concrete and Masonry

I. Policy Statement

Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart Q – Concrete and Masonry Construction, in addition to the following guidelines.

II. Procedures

1. General Requirements

    a) Unless otherwise stated in their contract, the concrete or masonry contractor must provide at least two covered entrances into each building or structure during perimeter work. They must also cordon off other means of access/egress.

    b) No load may be placed on a concrete structure unless a qualified person, knowledgeable in structural design, determines that the structure is capable of supporting the load.

    c) Protruding reinforced steel, onto which employees could fall or fall into, must be protected to eliminate the hazard of impalement. The use of mushroom caps is not permitted for impalement hazards.

    d) No worker, except those involved in post tensioning operations, shall be permitted to be behind the jack during tensioning operations. Signs and barricades shall be erected to limit access to the area.

    e) No worker shall be permitted to walk under concrete buckets while it is being elevated or lowered into position.

    f) No worker shall be permitted to apply cement, sand, and water mixture through a pneumatic hose unless the employee is wearing the proper PPE including face protection.

    g) This subcontractor shall provide an eye wash station with at least 15 minutes of eye wash solution within 75 feet of any concrete, painting, or masonry work.

2. Equipment and Tool Requirements

    a) Powered and rotating concrete troweling machines must have a switch that automatically shuts off power whenever the hands of the operator are removed from the machine.

3. Cast-In-Place Concrete Requirements

    a) Formwork must be designed, fabricated, erected, supported, braced, and maintained so it is capable of supporting all lateral and vertical loads anticipated to be applied to it.

b) All shoring equipment must be inspected prior to erection to determine if it meets the requirements specified in the formwork drawings.

c) Erected shoring equipment must be inspected immediately prior to, during and after concrete placement.

    a. An inspection of the shoring prior to, during, and after the concrete pour is an OSHA requirement. The concrete contractor is to determine their means and methods for inspection without placing any person directly under a live concrete pour. A Controlled Access Zone must be established around the live pour so no one can enter. If an individual is assigned to inspect the shoring, they will be positioned outside of the controlled access zone of the concrete being placed and the previous bay where concrete was placed. This type of inspection of a live pour can also be completed with the use of technology. How the inspection is to be completed will be determined in the preconstruction meeting and will be detailed in the JHA and reviewed with all workers prior to the concrete pour. The location of the person inspecting shoring and performing tasks during concrete placement will be detailed on the project-specific Job Hazard Analysis (JHA) and daily Pre- Task Plan. The placement sequence will also be noted in the JHA.

d) A qualified designer must prepare the design of the shoring and re-shoring. A third-party engineer qualified (certified, registered engineer) in structural design shall review the design of the shoring.

e) The designer of the shoring must inspect the (initial) erected shoring to ensure it is installed per design prior to concrete pour. Assignment and training of a minimum of one competent person that must be on site at all times to inspect shoring prior to any concrete pour by the installing contractor. Any change of formwork should be inspected by the designer.

f) Forms and shores must not be removed until the employer determines that the concrete has gained sufficient strength.

g) 100% Fall protection will always be required while accessing or working on temporary outrigger platform systems. Any anchors for outrigger platforms must be cast in place.

h) At building perimeters where the decking steps down to allow for a beam pour, the height of the rails shall be increased accordingly.

i) Areas where form stripping is to be performed must be properly barricaded with tape or fence and signage must be posted on all sides. This should include areas below stripping.

j) Protruding nails should be removed or bent immediately.

k) Where employees must walk across rebar, temporary walkways must be installed to prevent trip hazards.

l) Outrigger platforms used for material movement in and out of the building via a crane or forklift must be designed by an engineer and incorporate 100% fall protection systems.

4. Authorization to Strip Formwork:

a) When given Authorization that the concrete has reached strength in accordance with project specifications by the Structural Engineer of the Project, the written notification from said engineer (third party that does break strength testing) will be forwarded to the structural concrete trade and Turner. Stripping activities regarding formwork and work platforms will not proceed prior to receiving the authorization.
b) If any change in conditions occurs while stripping a work platform or shoring, all work must be stopped. A written notification must be sent by the Structural Concrete subcontractor to Turner Management staff and a review meeting held to assess the change. A revised risk mitigation plan will be established and reviewed with all workers prior to work restarting.

5. Use of Proper Barricades and Signage on the formwork:

a) The use of fixed, physical barricades in lieu of Caution / Danger Tape, where appropriate, to further inform and protect employees from changes in elevation must be utilized.
b) The use of fixed, physical barricades to further inform and protect employees whenever there is a fall hazard must be utilized. Caution / Danger Tape can never be used to barricade for a fall hazard.
c) Additional warning signage that contains the appropriate contact information for the contractor which has installed the barricade must be installed on the barricade.

6. Concrete Core Formwork Systems
a) The business unit must schedule a Teams conference call prior to erecting any concrete core formwork at the project. Ideally this call will be scheduled post concrete interviews but pre award so that the business unit and this team have an understanding of what formwork systems and methodologies will be utilized for the concrete formwork system.

a. This meeting should include Andrew Leone aleone@tcco.com, Jack Dawson jdawson@tcco.com, John Grafrath jgrafrath@tcco.com, Karl Kinsella kkinsella@tcco.com, Steve Garrett srgarrett@tcco.com, and Doug LaPlante dlaplante@tcco.com.

b. The goal of this meeting is to have a peer review done to include new policy elements in the Turner EHS Program in relation to concrete core formwork systems that are above OSHA and industry standards.

c. Please include in the invite to the call.
    - Concrete Core Formwork System Questionnaire
    - Concrete Core Formwork drawing
    - Engineered anchor detail drawing
    - Erection / Dismantle Plan
    - Fall Protection Plan
    - Access Plan

7. Masonry Requirements

    a) A limited access zone (LAZ) must be established prior to the start of any masonry work.

    b) The zone must be equal to the height of the wall, plus four feet for the entire length of the wall.

    c) All masonry walls over 8 feet in height shall be adequately braced and remain in place until the permanent supporting elements of the structure are in place.

    d) A top guard rail is required to be installed on the working side of the masonry scaffold unless the height of the installed block is 39” or other suitable fall protective systems used.

Cranes and Derricks in Construction

I. Policy Statement

Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart CC – Cranes and Derricks in Construction, in addition to the following guidelines.

II. Procedures

1) General Requirements
   a) An annual third-party inspection is required for all cranes(s). Documentation of the annual third-party inspection and report must be submitted to Turner prior to use. Third party inspectors are required to possess local and federal credentials to which type of crane they are inspecting.
   b) An additional project specific third-party inspection is required for any crane that will be assembled, erected and/or modified on site that requires more than adding counterweights or a seeing on jib. An additional third-party inspection will be required for each modification made to the crane while on site.
   c) Re-inspection may be required if repairs or modifications are required after the initial inspection.
   d) A daily crane inspection, performed by a competent person, is to be documented and those are reports are to be given to Turner when requested.
   e) If the manufacturer's inspection criterion does not exist, a qualified person, familiar with crane design and dynamics, may develop inspection criteria.
   f) Turner requires that all crane operators be certified by an accredited testing organization. Currently there are four organizations offering crane operator certifications. The four are the National Commission for the Certification of Crane Operators (NCCCO); the Operating Engineers Certification Program (OECP); and the National Center for Construction Education and Research (NCCER). Copies of their certifications must be submitted to Turner. In addition, a resume indicating the specific type of crane must be submitted to TCCO supervision prior to operation. Additional certifications for operators by other accredited testing organizations must be vetted by Turner BUEHSD before acceptance.
   g) All operators are required to verify the weight of each load prior to hoisting.
   h) Any lift exceeding 75% of the cranes rated capacity or lifts involving two or more cranes shall be considered a critical lift. In addition, the following factors should be considered when determining whether or not a critical lift plan should be developed:
      - Potential hazards to personnel and the public
      - Hazards in proximity to the work area (i.e., power lines)
      - Complexity of the load (i.e., shifting loads)
      - Adverse impact from environmental conditions (i.e., winds)
      - Adverse commercial impact (i.e., job shutdown and cost to replace)
      - Site requirements / owner requirements

A critical lift plan must be submitted to TCCO supervision for review prior to the lift. A sample plan and checklist has been linked to this document.

i) A pre-planning meeting to discuss the critical lift will be held in the field with the appropriate parties to discuss the lift. At a minimum, the following shall be reviewed:

- The critical lift plan.
- The contingency plan if something goes wrong during the lift.
- The emergency response.

j) Mobile crane movement on site must be in accordance with manufacturer's recommendations.
k) At 20 mph, crane operations need to be evaluated by the competent person regarding the safe operation of the crane & the task associated with the crane. The crane shall not operate outside its wind limitations as stated in the operator's manual.
l) The swing radius of cranes must be properly barricaded at all times while working on site. Tape is not an acceptable barrier.
m) Outrigger pads should be at least 3 times the dimensions of the crane floats. The outrigger pads are to be pre-manufactured. The weight must be determined prior to lifting the load.
n) Wire rope, its attachments, fittings, sheaves, and safety devices must be inspected according to the manufacturer's recommendations. Copies of the inspections must be submitted to Turner.
o) Wedge sockets and fittings must be the proper size to match the wire rope and must move to hold the wire rope under load. The dead end must be terminated according to ANSI B30.5.
p) An anti-two-block or warning device is required on all cranes as specified in ANSI B30.5 for each hoist line. This requirement may be waived by the BUEHSD for certain cycle duty crane operations such as pile driving and drilling rigs.
q) A qualified rigger must inspect the rigging prior to each use.
r) All windows in cabs must be safety glass that produces no visible distortion that will interfere with the safe operation of the machine.
s) Cranes, hoists, boom trucks and derricks shall not be installed or operated within 20' of a power line unless they follow 1926.1408 (a) (2).
t) Assembly/disassembly must be directed by a person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons ("A/D director"). See 1926.1404
u) Before commencing assembly/disassembly operations, the A/D director must ensure that the crew members understand all of the following
    1. Their tasks,
    2. The hazards associated with their tasks.
    3. The hazardous positions/locations that they need to avoid.

2) Ground Conditions
    a. Ensure that ground preparations necessary to meet the requirements. The equipment must not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer's specifications for adequate support and

degree of level of the equipment are met. The requirement for the ground to be drained does not apply to marshes/wetlands. "Ground conditions" means the ability of the ground to support the equipment (including slope, compaction, and firmness).

b. Inform the user of the equipment and the operator of the location of hazards beneath the equipment set-up area (such as voids, tanks, utilities) if those hazards are identified in documents (such as site drawings, as-built drawings, and soil analyses) that are in the possession of the controlling entity (whether at the site or off-site) or the hazards are otherwise known to that controlling entity.

c. If the A/D director or the operator determines that ground conditions do not meet the requirements in paragraph (a) of this section, that person's employer must have a discussion with the controlling entity regarding the ground preparations that are needed so that, with the use of suitable supporting materials/devices (if necessary), the requirements in paragraph (a) of this section can be met.

3) Signal Person Qualifications
   a. Know and understand the type of signals used. If hand signals are used, the signal person must know and understand the Standard Method for hand signals.

   b. The employer must make the documentation for whichever option is used available (Third party qualified evaluator or Employer's qualified evaluator) at the site while the signal person is employed by the employer. The documentation must specify each type of signaling (*e.g.*, hand signals, radio signals, *etc.*) for which the signal person meets the requirements.

   c. Please refer to 1926.1428 for reference.

Electrical Hazards Prevention

I. Policy Statement

Use of electricity on the jobsite poses serious hazards, with employees potentially becoming exposed to such dangers as electric shock, electrocution, fires, and explosions. All Turner employees and subcontractors working on a Turner project will comply with NFPA 70E Electrical Safety Practices and 29 CFR 1926, Construction Industry Regulations, Subpart K – Electrical in addition to the following guidelines.

II. Procedures

1. Working On or Near Exposed Energized Parts
   a) It is Turner policy that no one works on live electrical circuits. If a situation arises where it is impossible to perform a task with the circuit de-energized, the Turner Superintendent or Safety Manager shall contact the Business Unit Environmental, Health, and Safety Director prior to performing the work. A formal pre-construction meeting shall occur prior to any such work occurring. All energized electrical work shall comply with NFPA 70E Requirements. This includes exposures related to start-up, testing and commissioning.

   b) Only qualified persons may work on electric circuit parts that have not been de-energized under the procedures of 1910.333.

   c) Such persons must be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials and insulated tools.

   d) All work must be completed with strict compliance to NFPA 70-E requirements and guidelines.

   e) The subcontractor shall provide proof of training for their workers.

   f) Light switches and receptacles must be protected by permanent or temporary cover plates prior to energizing the circuit.

   g) All boxes containing energized circuits must have a cover in place, regardless of elevation above floor.

   h) Electrical room doors shall be secured prior to energization.

   i) Even when all conducting parts are 100% insulated, entry into all junction and pull boxes will be treated as energized work until made safe by the steps below.
   j) Always de-energize if possible, following the lock-out/tag-out procedure discussed in this plan.

   k) When removing a cover from a junction box, before working, inspect all energized current-carrying parts. Check insulation and splices for damage. This inspection

should be done by journeyman electricians as "energized work," adhering to NFPA 70E practices and using arc-flash gear. Use infrared testing if necessary (for instance, if there is observed damage that appears to be due to excessive heat at a splice or a loose mechanical connection).

l) After inspection, while still adhering to NFPA 70E and wearing appropriate arc flash gear, protect all conductors with blankets or barriers to prevent shock or damage during cable pulling.

m) Care should be taken during the installation/removal of sheaves to prevent contact and damage to energized conductors.

n) If the above steps cannot be taken to control the potential for electrical hazards, then work in the box will require appropriate arc-flash protection.

2. Ground Fault Circuit Interrupters
   a) All 120-volt, single-phase 15 and 20 ampere receptacle outlets which are not part of the permanent wiring of the structure, and which are in use by employees shall have approved GFCI's.

   b) Turner requires that all projects be 100% GFCI compliant.

   c) The installing subcontractor, i.e., the electrical subcontractor, shall test each power receptacle for proper installation including polarity, grounding, etc. The electrical subcontractor will conduct and document monthly tests after the initial installation.

3. Electric Tools
   a) All portable electric tools such as saws, hammers, drills, vibrators, and float machines must bear the label of a Certified Testing Agency, such as Underwriters Laboratories, CSA, ETL, or the like.

4. Extension Cords
   a) Only round, heavy-duty, minimum AWG 12-gauge cords are acceptable for use on site. Extension cords must include, at a minimum, the following designations on the cord jacket: W for outdoor use (or S if indoors), and O when the cord is present in an oily environment.

   b) Cords must be maintained in their original design configuration.

   c) Any cord which is damaged or has the grounding pin removed shall be removed from service.

   d) Plug ends can only be repaired by a qualified electrician.

   e) Whenever a power tool or cord is used where the circuit is not GFCI-protected, a portable GFCI is required at the receptacle.

   f) Extension cords cannot be connected in series. The manufacturer's recommendations must be followed.

g) Extension cords cannot exceed 100’ or run through doorways. The electrical contractor is to install temporary receptacles within 100’ of where any employee might be standing inside the structure.

h) All electrical cords shall be elevated to a minimum 8’ in the air in hallways, corridors, aisles, stairways, doorways, and exit areas where a tripping hazard may occur.

i) If the cords cannot be elevated, they shall be protected from damage by equipment, carts, trucks, and other rolling objects.

j) Extension cords shall not be fastened with staples, hung from nails, or suspended with non-insulated wire.

5. Temporary Wiring
   a) All temporary wiring and lighting must meet current NEC codes. Flat cords (Romex) are not to be used as a flexible cord and are to be hardwired.

   b) Temporary lighting must never be put on the same circuit as temporary receptacles.

6. Temporary Lighting
   a) The minimum illumination level is 5 foot-candles in general areas and 15 in electrical or mechanical rooms, special areas where additional lighting might be needed, or where contractors are placing temporary offices. The electrical contractor is to provide LED lights in every room.

   b) When installing temporary lights and choosing the elevation to hang them, anticipate the future placement of ductwork, piping, etc., that may block and reduce light.

   c) Installation of temporary lighting must be per manufacturer’s specifications and in compliance with OSHA, NFPA, NEC and local codes.

7. Pulling Cable

   a) When blowing line into a conduit to pull wire or cable, follow the manufacturer’s instruction for the tools being used. When pressurizing the conduit, do not exceed the allowed pressure. The assembly must have a pressure release valve set for the maximum pressure not to be exceeded, as well as a pressure gauge. No one should be located where they could be struck by components used to pressurize the conduit or by the plug pulling the line shooting out the other end.

   b) When using a “tugger” (puller motor assembly) to pull cable or wire, first document that all applicable employees have received training on the equipment and then follow the manufacturer’s instructions. The force gauge must be operable and calibrated, and the anti-reversing pawl must be functional. Do not use in a wet environment. Use the correct size rope with the diagramed configuration. Keep the rope away from the operator’s feet and keep body parts

out of pinch points. Never wrap rope around wrists or body parts. Never exceed the load rating.

Hand and Power Tools

I. Policy Statement

All Turner Employees and Subcontractors working on a Turner project must comply with 29 CFR 1926, Construction Industry Regulations, Subpart I – Tools – Hand and Power, in addition to the following guidelines.

II. Procedures

1. General Requirements
    a) Employees must be trained on each hand and power tools to be used.

    b) All hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in a safe condition, per the manufacturer's guidelines.

    c) If the tool is designed to accommodate a guard or handlebar, the guard or handlebar must be in place while the tool is being used.

    d) Additional personal protective equipment (PPE), such as a face shield, goggles and/or hearing protection, may be required while operating a tool.

    e) Cutters and knives with automatic self-closing blade-guards, or blades that retract into the handle when the blade loses contact with the cutting surface are the preferred tool of choice for making cuts. If these cannot be used for a certain task or activity it must be outlined in the PTP and reviewed with a Turner Superintendent.

2. Electric Powered Tools
    a) All power tools must be double insulated or provided with a three wire, grounded connection.

    b) All cords are to be inspected prior to their use. Cords having the outer jacket damaged shall be removed from service or must be replaced or repaired per the manufacturer's instructions.

    c) Only a qualified electrician may replace a cord and/or cord end.

    d) All hammer-drills and rotary hammers must have integrated technology, such as a "safety clutch," that will stop drill-bit rotation should the bit bind up in the hole. An example of this is Hilti's Anti-torque control (ATC) technology.

    e) All bandsaws must be equipped with a dual trigger design with triggers located on both the back and front handles to be engaged for safe cutting. Single hand bandsaws must be used according to the

manufacturer's requirements.

3. Pneumatic Power Tools
    a) Each connection on a pneumatic tool and air hose must be secured with a "whip-check" or similar device.
    b) All air hoses, with an inside diameter exceeding ½ inch, must have a flow reduction device at the supply source to reduce pressure in case of hosefailure.
    c) Compressed air must not be used for cleaning unless the pressure is reduced to less than 30 p.s.i. and appropriate guarding and PPE are in place (PPE should include goggles and a face-shield for anyone in the area). Means and methods for using compressed air for cleaning formwork must adhere to the OSHA Silica standard and may not expose employees of other contractors. Use HEPA vacuuming or water in lieu of compressed air, to the extent feasible.
    d) The 30 p.s.i. requirement does not apply to "blowing down" concrete decks or forms; however, a spring loaded "dead man" control must be attached to the blowpipe.
4. Fuel Powered Tools
    a) Fuel powered tools must be stopped and turned off while being refueled, serviced, or maintained.
    b) Combustion powered tools/equipment must not be utilized inside structures unless an evaluation has been conducted to ensure fumes will not affect personnel. The subcontractor who is utilizing the equipment is responsible for testing and monitoring the indoor air quality. Scrubbers and/or mufflers may be required as dictated by the testing.
5. Powder-Actuated Tools
    a) The manufacturer, or their representative, must train employees in the safe use of powder-actuated tools.
    b) The tool must be tested each day, according to the manufacturer's recommendations, before loading to see that safety devices are in proper working condition.
    c) Tools must not be loaded until just prior to the intended firingtime.
    d) Loaded tools must not be left unattended.
    e) All tools must be used with the correct shield, guard or attachment recommended by the manufacturer.
    f) No cartridges are to be used that contain toxic heavy metals such aslead.
    g) Follow the manufacturer's guidelines for storage, disposal and handling of cartridges and tools.
6. Abrasive Wheels and Tools

a) The RPM rating on all grinding machine motors must not exceed the speed rating of the grinding wheel attachment.

b) All abrasive wheels must be closely inspected by the competent person and ring tested before mounting to ensure they are free from cracks or defects.

7. Woodworking Tools

a) All fixed, power-driven woodworking tools must be equipped with a disconnect switch that can be locked out in the off position.
b) All portable, power-driven circular saws must be equipped with guards above and below the base plate or shoe.
c) When the tool is withdrawn from the wood, the lower guard must automatically and instantly return to the covering position.

Scaffolds

I. Policy Statement

Each Contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart L- Scaffolds, in addition to the following guidelines.

II. Procedures

1. General Requirements
    a) Capacity
        - Scaffolds must be erected under the supervision of a competent person. The competent person shall be designated and submitted to Turner prior to the start of work.
        - Scaffolds and their components must be able to support at least four times the maximum intended load.

    b) Access and Egress
        - Frame and system type scaffolds, including but not limited to masonry and tube & coupler, must be accessed via scaffold stair attachments. Where space does not permit the use of a stair, alternate means of access/egress may be utilized including ladder systems when a Turner Ladder Permit is issued. When ladders are used to access scaffolds, the competent person shall work with Turner to explore the use of personal fall protection systems while ascending/descending the ladder (such as retractable lanyards attached above the scaffold ladder to an OSHA compliant anchor point.

    c) Platform Construction
        - Each working platform on a scaffold must be fully decked or planked. Planking must be sufficient to comply with any statutes or regulatory provisions in the applicable jurisdiction.
        - Any gap in a working platform cannot exceed 1”.
        - All planks or platforms must be cleated or overlap a minimum of 6”, but no more than 12”.
        - Wooden scaffold planks must not be painted.

    d) Supported Scaffolds
        - Supported scaffolds with a height to base width ratio exceeding 4:1 must be stabilized from tipping by a solid connection such as guy wires, bracing, tying or other equivalent means.
        - When scaffolds are erected adjacent to structures, they must be secured to the structure every 26’ vertically and 30’ horizontally.
        - Scaffold poles, legs, posts, frames, and uprights must be placed on base plates, mudsills, or other adequate firm foundations.
        - “X” or cross bracing is not considered to be a guard rail system. Guard rails

(horizontal top and mid-rails) must be installed when the platform reaches four feet in height.

e) Suspension Scaffolds
- Each suspension rope, including connecting hardware, used on adjustable or non-adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope with the scaffold operating at the rated load of the hoist.
- Counterweights must be made of non-flowable material. Sand, gravel, water, or similar material may not be used.
- Counterweights must be secured to the outrigger beams by mechanical means to prevent accidental displacement.
- Outrigger beams that are not bolted to the structure must be secured by tiebacks. The tiebacks must be attached to a structural member of the building. Standpipes, vents, conduit, and other piping systems are not adequate structural members.
- Tiebacks shall be equivalent in strength to the suspension ropes.
- Direct connections to roofs and floors, and counterweights used to balance adjustable suspension scaffolds, shall be capable of resisting at least 4 times the tipping moment imposed by the scaffold operating at the rated load of the hoist.

f) Scaffold Access
- Cross bracing must never be used as a means of access.
- Stair rail and handrail systems must be smooth surfaced to prevent lacerations or puncture wounds.
- A competent person must evaluate safe means of access during erection and dismantlement of the scaffold. Proper access shall be provided to each worker that is working on/off a scaffold.

g) Scaffold Use
- Scaffolds and scaffold components must never be loaded in excess of their maximum intended loads.
- Scaffolds and scaffold components shall not be left loaded with material overnight unless the materials are secured. Materials shall not be left on suspended scaffolds overnight unless the scaffold is grounded.
- A competent person must inspect each scaffold before every shift and after any occurrence that may affect its structural integrity.
- The competent person will “tag” the scaffold “in service” or “out of service” prior to employee use.
- Scaffolds cannot be erected, moved, dismantled, or altered except under the supervision of a competent person.
- Snow, ice, and other slippery conditions must be eliminated before employees are allowed access to a scaffold.

h) Fall Prevention
- A Personal Fall Arrest System or a guardrail system must be in place on all scaffolds exceeding 6’ in height. Mobile scaffolds require guardrails at 4 foot in height. When rails cannot be installed, utilize a Personal Fall Arrest System

(PFAS) anchored overhead.
- Each employee on a single-point or two-point suspension scaffold must be protected by a PFAS and guardrail system, except boatswains' chair which requires PFAS.
- The use of fall prevention devices is required during the erection or dismantling of a scaffold.
- When vertical lifelines are used, they must be protected from surface abrasion.
- When guardrails are used, they must be 42", + or – 3" in height. Mid-rails must be half the distance from the top-rail height to the platform deck. Toe boards should be constructed from 2"x4" material or equivalent and must meet existing state or client requirements.
- "X" or cross bracing is not considered to be a guard rail system. Guard rails (horizontal top and mid-rails) must be installed when the platform reaches four feet in height.

i) Falling Object Protection
- The area below a working scaffold must be barricaded to protect employees from a falling object hazard.

2. Requirements for Specific Scaffold Types

a) Tube and Coupler Scaffolds
- Tube and coupler scaffolds, in excess of 125', must be designed by a registered professional engineer (RPE).

b) Fabricated Frame Scaffolds
- Frames and panels must be braced by cross, horizontal, or diagonal braces.
- Frames and panels must be joined together vertically by stacking pins or equivalent couplings.
- Frame scaffolds, in excess of 125", must be designed by an RPE.

c) Pump Jack Scaffolds
- Cannot be used on Turner projects unless approved by the BUEHSD.

d) Mobile Scaffolds
- Mobile scaffolds require guardrails at 4feet in height, unless required at a lower height by the manufacturer.
- Mobile scaffolds must be braced by cross, horizontal, or diagonal braces based on manufacture's requirements to prevent racking during movement.
- Wheels must be locked when in use.
- Workers are not permitted to be on scaffold when it is being moved.
- Caster and wheel stems must be pinned to the scaffold legs or adjustment screws.
- The height to base width ratio on a mobile scaffold cannot exceed 2:1 unless it is braced with outrigger frames.

e) Mast Climber Systems
- 100% personal fall arrest systems (PFAs) are required when working on a mast climber system.
- PFAS Anchors shall be located on the building above the work platform

unless it creates a hazard or when performing an activity where there is no structure above.

- PFAS Connectors, ropes or other systems must not interfere with the safe operation of the mast climber. A vertical rope anchor system must be collected into a receptable on the platform so not to “catch” on the platform or cause a hazard to those on the platform.
- In the event the PFAS anchor cannot be connected to the building or structure; a platform integrated PFAS anchor system must be engineered by the mast climber manufacturer and used according to the manufacturer direction and limitations.
- Access to the Mast climber platform must be by stair or established, pre-determined access points at floor levels.

f) Cantilevered and Suspended Work Platforms: Personal Fall Arrest System (PFAS) Policy

- 100% Personal Fall Arrest Systems (PFAS) is required on Cantilevered and Suspended Work Platforms.
- The Cantilevered and Suspended Work Platforms covered under this policy are as follows (but may not be limited to):
  - Jump/climbing formwork systems (all types)
  - Stacker bracket, wall bracket, hanging bracket, bridge bracket and other similar cantilevered systems
  - Wall or waler bracket scaffold platform (typically attached and supported by vertical formwork)
  - Outrigger scaffold platforms
  - Cantilevered loading platforms (retractable and stationary)
  - Suspended scaffold, swing stage, bosun’s chair and other similar suspended systems

General Requirements:

- Guard rail systems must be constructed in accordance with OSHA Regulation and Manufacture’s specifications.
- A PFAS shall be installed and used on all cantilevered and suspended work platforms.
- The complete cantilevered or suspended platform system shall be engineered detailing each component (fastening devices, brackets, working platform, guard rails, PFAS etc) and include guidelines for safe installation/use and limitations of that system.
- Any additional engineering required to adequately assess the compatibility and performance of a PFAS is the performing/installing contractors' responsibility. The performing/installing contractor shall coordinate with all other contractors who will need to access and/or perform work on that system.
- Each trade partner planning on using any of the above systems must give Turner a fall prevention and PFAS plan before installation. At a minimum the plan must include the following:
  - The cantilevered or suspended system intended to be installed
  - Maximum intended deck height of cantilevered or suspended system
  - Maximum number of workers allowed on each cantilevered or suspended system
  - Engineering and/or manufacture’s specification detailing PFAS compatibility and performance criteria/limitations

- Access to cantilevered or suspended system
- Rescue plan in the event of a fall-catch
- Locations with no guard rail and or sequences where guard rail will be removed and/or modified
- PFAS system(s) to be used (including anchor point(s), connecting device(s), harness)
- Training program implementation plan
- For jump/climbing system, the number of “plus” and/or “minus” decks in the system

3. Scaffold Training Requirements
    a) Each employee that works on a scaffold must be trained by a qualified person in the recognition and avoidance of hazards associated with the type of scaffold they will be required to work from.

    b) Each employee that is involved in the erection, dismantling, moving, operating, repairing, maintaining, or inspecting of a scaffold must be trained by a qualified person in the recognition and avoidance of hazards associated with these operations.

4. Temporary work platform access system inspection
    - In addition to manufacturer, OSHA and local jurisdiction inspection requirements; all temporary work platforms and access systems shall be inspected, at a minimum, after initial installation and quarterly by a qualified third party or manufacturer representative.

Mobile Elevated Work Platforms and Safety Procedures for High-Lift Work

I. Purpose and Background

This policy directive is intended to mitigate risks related to elevated work. It reflects current evidence – and experience-based safety enhancements for the use of lifts and requires control guards for all lifts brought onto Turner sites, timely retrofitting of lifts already on site to add control guards, and enhanced procedures for work at 30' or above in lifts.

The Policy directive addresses the following hazards and risks:

A. Inadequate guards over controls which can lead to inadvertent operation of the lift.
B. Risk of crush injuries or entrapment in the ceiling
C. Risk of accidental over-extension and lift tip-over
D. Inability to rescue.

The enhancements to our lift safety policy grew out of a collaboration between Turner and the industry's top scissor lift manufacturers (JLG, Skyjack, and Genie) and purveyors (United, Herc, and Sunbelt). They reflect our unwavering commitment to continuously evaluating and improving our safety program to provide the safest possible work environment for our people.

We know that no safety device can prevent an accident in all circumstances. But, with enhancements and modifications to lift controls, Turner is taking an important step to protect workers against known and preventable hazards.

II. The Policy

All scissor lifts and boom lifts shall have an approved shroud or guard over the joystick/controls, or a timeout feature on the lift/lower and drive selector, which disables the lift/lower and drive functions after several seconds of inactivity *(Reference CSO Alert #1001).* Moreover, boom lifts must be delivered with anti-crush or secondary- guard technology.

Note: Along with the scissor lift and boom lifts policy change, enhanced safety procedures for Mobile Elevated Work Platforms used in High Lift Situations have been developed and incorporated into the policy.

III. Implementing the Policy: Who is Responsible?

Procurement

All Bare Rental Agreements shall reflect Turner's updated policy regarding additional control guards for the safe use of scissor lifts, mobile elevated work platforms, and boom lifts**.**

Safety and Operations Leaders

Ensure that our people are aware of the policy and that they understand their responsibilities as outlined therein.

Site Safety and Field Staff

Conduct a thorough review of all active lifts to determine which must be retrofitted and work with subcontractors and rental companies to complete the necessary modifications as soon as possible. Verify that all lifts brought on site meet the safety requirements of the policy.

1. Mobile Elevated Work Platform (MEWP)

a) All scissor-lifts and aerial-lifts shall have an approved (see below) shroud or guard over the joystick/controls, or a timeout feature on the lift/lower and drive selector, which disables the lift/lower and drive functions after several seconds of inactivity. Moreover, aerial- lifts must be delivered with anti-crush or secondary-guard technology.

b) All Bare Rental Agreements shall reflect Turner's updated policy regarding additional control guards for the safe use of scissor-lifts, mobile elevated work platforms, and aerial-lifts.

c) Prior to mobilizing, all Mobile Elevated Work Platforms (MEWP) must be inspected to ensure compliance with Turner requirements. MEWP's (scissor-lifts, aerial-lifts, and knuckle-booms) must have dual action controls to be approved for use.

d) Dual action controls require that there be two separate actions to activate the lift. If a MEWP arrives on site and does not have dual action controls, then it must remain inoperable until a Dual action control is installed. The dual action control may consist of a button that must be depressed in order for the controls to operate, or a toggle switch that must be activated prior to operating the MEWP controls (The toggle switch must automatically return to the center when released).

e) The contractor is required to complete a daily inspection sheet for all powered lift trucks and mobile elevated work platforms. The inspection includes operational and physical parameters for operation of the equipment being inspected. The inspection form must be posted in a visible location during operations and a copy made available to Turner upon request. An inspection form is available from Turner. Field modifications are not allowed on aerial lifts.

f) Only authorized and trained individuals may operate aerial lifts.

g) When a lift is delivered to the project, the rental company or the owner of the lift shall inspect the lift & provide documentation that the lift is safe to operate onsite. The lift shall be free from any physical defects in new or like new condition with all the safety placards present. The operator's manual and inspection documentation shall be included.

h) Employees must use personal fall arrest systems (PFAS) when working from boom platforms. Employees shall follow the manufacturer's recommendations for the type of (PFAS) when working from an aerial lift.

i) At a minimum, employees shall follow the manufacturer's recommendations for the type of fall arrest/restraint when working from a scissors lift. If scissor lifts are equipped with an attachment point provided by the manufacturer for a restraint system, they are to be used. The intent of this protection is to keep workers within the confines of the passive protective system (rails) so the shortest length of lanyard that allows the task to be completed and keep the worker confined to the walking/working surface is required. Never climb above the work platform. A dedicated spotter is required any time a scissor lift must be moved in an elevated state. The lift shall be inspected daily & documentation provided to Turner upon request. Each worker operating the lift shall have a training card or documented training.

j) Employees must keep both feet on the floor of the basket and not stand on the railing or toe board during operation.

k) If it has been determined by the subcontractor's competent person that there are no feasible means to access an area without leaving the basket of a scissor lift, a modified Pre-Task

Plan must be completed as well as a Fall Protection Plan. This plan must be completed by the competent person with details of the anchorage point outside the scissor lift and above the employee's head. Any worker engaged in the activity should be active in the preplanning of the modified plan. All workers involved must review and sign off on the plan. This must be reviewed with Turner's Superintendent. Each work activity and area will require their own PTP and Fall Protection Plan.

l) If operating in congested areas, MEWP's will require spotters. The spotters will be responsible for ensuring that the area around the MEWP and the travel path are free of obstruction and clear of equipment and personnel.
m) Man baskets such as those utilized from fork truck type vehicles are not allowed on Turner projects.

2. Mobile Elevated Work Platform Use in High Lift Situations (applies to boom lifts with an operating platform height of 30' and above) A dedicated JHA shall be developed for each activity operating a MEWP above 30'.

a) MEWPs often operate in close proximity to each other, and workers may walk through or work close to their operation. A system for managing the affected area below the basket and movement of the MEWP's is necessary to decrease the risk of struck-by hazards.
b) If any of the workers in the Aerial Boom Lifts are incapacitated and incapable of descending, a rescue may be required. Due to the nature of this type of work, it is prudent to establish an emergency response plan which has redundancy built into it.
c) Boom lifts cannot be operated by the basket controls without first depressing a covered, protected foot switch. This causes the operator to be intentional about basket movement and reduces the risk of incidental operations.
d) The lifts should have a pressure actuated auto shut-off across the controls which shuts down the equipment to prevent entrapment.
e) A dedicated ground spotter (with no other collateral duties) shall be in place whose duties are as follows:
    i. Visually verify and communicate via two-way radio that all obstructions are clear of the path of travel at the ground level.
    ii. Visually verify that all obstructions are clear while basket is moving.
    iii. The ground spotter shall be responsible for no more than 1 Controlled Access Zone (CAZ). Additional spotters will be required if MEWP's need to be operated/relocated simultaneously within 1 CAZ (Approximate size and dimension of CAZ is below).
    iv. Spotter Logistics:
        a. If 2 or more lifts are required to operate simultaneously, each operator/spotter team will utilize their own dedicated radio channel or communication method.
        b. The Spotter shall not use a cell phone, headphones or other devices which may distract them from their duties.
        c. The Spotter shall have stop work authority. The spotter shall wear, at a minimum, a Class II High Visibility Vest.
        d. The Spotter/operator team shall perform a "radio" check prior to the commencement of the activity and every 30 minutes thereafter if no communications occur during that time frame.
        e. Operation of MEWP from the basket is prohibited without prior communication with the spotter and an "All Clear" is given.

f) Other Traffic at base of operating MEWP
    a. A Controlled Access Zone will be established in the affected areas of the MEWP operation to include the base and working zone beneath the platform. The CAZ should be constructed with physical barriers such cable, wire rope or chain, or flagging. Danger tape and Caution tape should be the last choice and spray-painted lines will not be accepted. The CAZ must be secured from tipping and signed every 30'. The size of the CAZ must consider deflection or arc of the falling material. Each CAZ will be adequately sized to have a 15- foot buffer zone on each side of the MEWP to include under the platform. Each CAZ will hold no more than 3 boom lifts.
    b. No other equipment or vehicle will be allowed to operate within a dedicated CAZ.
    c. A 30' Wide dedicated path of travel for vehicles and other equipment shall be established using rope, traffic cones, delineators or other clear markings which safely guide other equipment and vehicles around the MEWP CAZ. Any changes in the path of travel must be approved by the Turner Superintendent. Boom lifts shall not operate within or over the traffic zone.
    d. The Spotter shall monitor vehicle traffic and shall have authority to stop work and or vehicle traffic.
g) Emergency Response
    a. There shall be, at a minimum, (2) two MEWPs on site when working in excess of 85 vertical feet. This is to ensure that one could assist another which has the capability to reach the basket in the event of an emergency. (A typical FD ladder truck can reach 85'-90' vertical feet)
        i. Exceptions
            1. There is a means of safely reaching the platform via catwalk or another elevated surface.
            2. There is a means to reach the platform from above via rope, slings, or other climbing type equipment. This equipment is only to be used by trained professionals.
    b. The Spotter shall be trained in how to safely use the ground controls. The ground controls shall be tested prior to work occurring each day and/or shift.
    c. The Local Fire Department Shall be invited to the project site to review conditions and site activities which may have the potential for a "Vertical Rescue" in the event of an emergency.
    d. The emergency response number shall be conspicuously posted.
    e. Turner, the Fire Department and Dispatch shall determine a key phrase or word which indicates that a "Vertical Rescue Team" is required. (These teams have specialized training and equipment to respond to high rescue conditions.)
    f. Pre-lift inspections are to include the review of available fall protection equipment and access to and the condition of anchor points.
    g. Workers on the ground shall stay out of the CAZ and communicate with the spotter if entrance is needed.
    h. A Stop Work must immediately be called when any deviations are observed with fall protection.
h) Address line of fire hazards by following these work practices:

a. Identify and discuss tasks which have the potential for falling tools, materials and/or debris.
b. Workers should avoid positioning themselves, and their equipment, in a line of fire where they could be struck by falling, flying, or moving objects from the overhead platform.
c. Utilize tag lines to maintain positive control of objects being removed or hoisted to ensure the object does not come in contact with the lift.

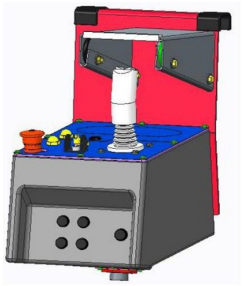
IV. Approved Guards and Shrouds for Lift Controls

Please see below for examples of approved guards and shrouds for lift controls on Turner projects.

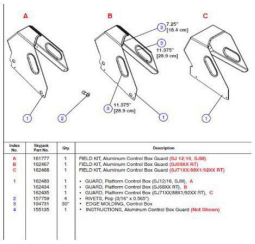
Note: In addition to joystick guard/shrouds, clear messages, proportional lift and drive controls, and symbol-based function selection buttons are required for easy training and operation of lifts.

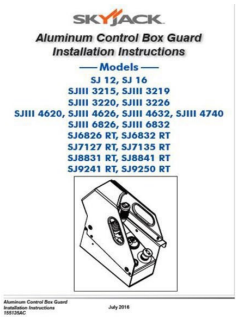
JLG Scissor Lift Guard

JLG All-Terrain



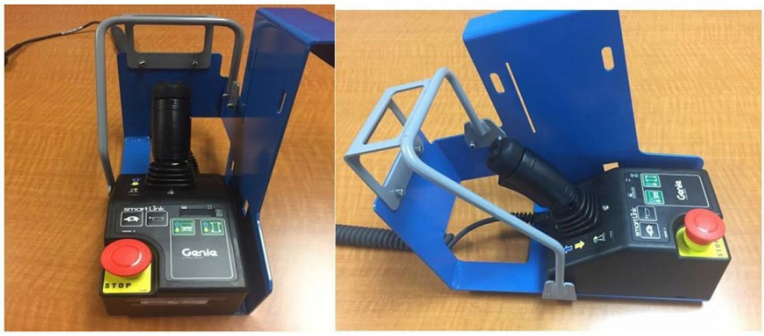
- **Skyjack Scissor Lift**





- **Genie Scissor Lifts**

The Genie Smart Link control scissor for slab scissors must include a platform control, ground control, and joystick cover as shown below.



3. Aerial Lift Training Requirements
   Only trained and authorized persons are allowed to operate an aerial lift. Training should include:
   a) Explanations of electrical, fall and falling object hazards.
   b) Procedures for dealing with hazards.
   c) Recognizing and avoiding unsafe conditions in the work setting.
   d) Instructions for correct operation of the lift (including maximum intended load and load capacity).
   e) Demonstrations of the skills and knowledge needed to operate an aerial lift before operating it on the job.
   f) When and how to perform inspections; and
   g) Manufacturer's requirements

V. MEWP Safe Operation and "Walking the MEWP"

When operating a mobile elevated work platform (MEWP) operators are required to stay inside the confines of the basket on the platform. Site-specific conditions should be discussed and documented in the Pre-Task Plan or PTP Huddle Board. Prior to driving or walking the MEWP through any entry, doorway, or corridor, the operator must take a mandatory pause to re-evaluate potential hazards such as door heights, overhead hazards, etc.

Ensure Risk Assessments on Pre-Task Plan includes using mobile equipment, and that potential hazards and mitigations are identified. For example:

- Travel path and travel restrictions including doorways, semi-permanent structures, overhead hazards, pinch points, and obstructions.
- Drop-offs/holes and floor/ground obstructions
- Energized power lines
- Pedestrian and vehicle traffic
- Concurrent work (e.g. drop zones)
- Situations that may require additional spotters.

Implement the below controls if it is determined that walking the MEWP provides a safer alternative:

Definition of "WALKING THE MEWP": The term is used when maneuvering or travelling a MEWP using the platform controls from the ground by walking alongside or in the rear of the MEWP. This includes those that use an 'umbilical cord', radio/remote control or fixed point of control at the chassis.

“Walking the MEWP” will be allowed when it is determined by the competent person that there is insufficient/restricted space above the platform to operate safely from the platform, such as through doorways, corridors, or when any other hazard is recognized by the competent person and operator. Hazards should be identified and discussed in the Pre-Task Plan and mitigating factors such as walking the MEWP should be identified. The following precautions shall be taken when the decision to walk a MEWP has been determined:

- Follow manufacturer’s safety recommendations and training.
- Define alternative MEWP equipment and features such as manual push behind lifts & other alternative means of equipment, especially for accessing through doorways and other low clearance openings.
- Prior to driving or walking the MEWP through any entry, doorway, or corridor, the operator must take a mandatory pause to re-evaluate potential hazards such as door heights, overhead hazards, etc.
- Review process of “Walking the MEWP” and site-specific conditions should be discussed and documented in the Pre-Task Plan or PTP Huddle Board. Ensure Risk Assessments on Pre-Task Plan includes using mobile equipment, and that potential hazards and mitigations are identified.
- A spotter is required when walking a MEWP and should be positioned away from the lift in a manner that gives the operator another set of eyes on the side of the MEWP that is difficult for the operator to see.
- The operator should be trained for the MEWP category and familiarized with the MEWP being moved.
- The operator and spotter must walk the path of travel for the MEWP and remove any obstacles and debris from the route.
- The path of travel should be barricaded off or overseen by spotters during this activity.
- The operator and spotter should maximize their stand-off distance from the MEWP during this activity and out of the direction of travel while walking with the controls in hand from behind the MEWP. The activity should not proceed if the MEWP controller does not allow the operator to walk from behind.
- Hold the control box in your hands while operating the MEWP. Do not operate the MEWP while the control box is secured to the machine.
- Select the lowest speed when operating outside of the guardrails.
- Maintain a clear view of the support surface and path of travel.
- Stop the work if additional personnel are needed to perform the MEWP task safely

SUMMARY

Turner reserves the right to add or change this Program, as deemed necessary, to protect people, property, and the environment.

The Project Safety Program is designed to proactively manage, control, and eliminate incidents throughout the construction process.

This Program is to be used in conjunction with Turner Construction Company's Environmental Health and Safety Policy as well as the Trade Partner's Safety Program(s). The more stringent elements within each program shall supersede the other and will be followed unless otherwise directed by Turner.

Turner Construction Company expects full cooperation from all trade partners, regardless of tier, in monitoring, supervising, and enforcing the Project Safety Program.

All trade partners, regardless of tier, engaged in work on this project, shall comply with Turner's Project Safety Program, as well as Federal, State, and local safety codes and regulations.

Each trade partner is responsible to follow the Turner Construction Company's Substance Abuse Program.

All trade partners are responsible for training their employees in the recognition of hazards which could result in an illness or injury. Training must include procedures for proper elimination or control of unsafe conditions.

Good safety practices carried out on this project will produce a safe and healthful workplace for all employees.

Neglecting safety is neglecting job responsibilities.

TRADE PARTNER AGREEMENT & SIGNATURE

We are in receipt of and will cooperate and comply with all elements contained within this Project Safety Program and Turner Construction Company's Environmental Health and Safety Policy, adhering to the most stringent rules between the two.

A copy of the Project Safety Program will be provided and discussed with all assigned project personnel, prior to starting work on this project.

Company Name: _____

Company Representative's Name (please print): _____

Company Representative's Signature: _____

Company Representative's Title: _____

Today's Date: _____

ATTACHMENT H
Project BIM Requirements

Building Information Modeling (BIM) is the development and use of a three-dimensional computer model to represent a virtual model of the facility and the process for constructing the facility. Once the model is developed, it can be used to simulate the construction process and to manage the operations of the facility. The Building Information Model can be created by combining many different three-dimensional models from the designers and contractors into a federated model. From this federated model, views and data appropriate to various users' needs can be extracted and analyzed to generate information so long that said need is feasible to be met given the format of the delivered composite model, to make decisions and to improve the process of delivering the building.

The Project shall utilize three-dimensional modeling for the coordination of all Sitework, Site Utilities, Architectural, Structural, Mechanical, Plumbing, Fire Protection, Electrical Systems, and Low Voltage Systems.

Virtual Design and Construction Techniques

1. Subcontractor agrees to participate in the use of digital/computer based three dimensional models and other related functionality, generally referred to as building information modeling (such models and functionality are referred to herein as BIM) as Turner may determine to be beneficial for use in facilitating coordination, sequencing, scheduling and/or production of as-built depictions of the Project and performance of the Work and as hereafter provided. The Subcontractor's costs of such participation are included in the Price unless explicitly outlined herein.

2. Subcontractor shall provide digital submissions of information describing its respective Work in a form and manner that Turner may require and that can be loaded into a federated model assembled by Turner.

3. Subcontractor's submissions shall be of sufficient detail to enable accurate and complete clash detection and shall be provided by Subcontractor at a point in time that is reasonably in advance of Subcontractor's shop drawing submittals and the subsequent on site construction of the Subcontractor's Work and such submissions shall contain such details and follow such procedures as Turner may require.

4. The digital format of such BIM submissions shall be as described herein (specifying the necessary digital formats, software requirements, etc.), which will be provided to subcontractor after execution of Agreement and prior to the start of coordination.

5. Subcontractor shall participate in BIM Coordination and review meetings as Turner may require and agrees that, as a result of the information exchanged at such meetings, both the digital submission and the Work depicted in the Subcontractor's digital submission may be required to be changed by Subcontractor to achieve coordination with other elements of the Project being provided by others. Such changes shall be accomplished at no increase in the Price or Time of Completion. Subcontractor acknowledges that such meetings will require attendance of personnel that are familiar with both the data entry aspects of the BIM as well as an understanding of the Work to be performed and its relation to other elements of the Project, and subcontractor therefore agrees that personnel conversant in both shall attend all such meetings.

6. Subcontractor agrees that neither the BIM nor the use of the BIM is in lieu of nor intended to relieve the Subcontractor of its responsibilities under the Subcontract, including to (i) coordinate its Work with the work of others involved in the Project and (ii) strictly comply with the other requirements of the Subcontract Agreement and the Contract Documents. It is expressly understood and agreed that, notwithstanding the requirement for submittals in connection with the BIM, traditional shop drawings and other submissions shall be required of Subcontractor as required by the Contract Documents and no party shall be liable to the other for any claim, dispute, controversy, cost, or expense arising solely out of the use of the BIM.

7. Turner does not waive any of its intellectual property rights and shall have the sole and exclusive

right to use the BIM and all submissions made by Subcontractor as it deems appropriate, whether during or after construction.

8. Subcontractor agrees that notwithstanding the fact that it may participate in the BIM process or receive information or materials from others in connection with the Project through the course of the use or development of the BIM, it shall not take any position that the receipt of such participation or information has or will, in any respect, operate to waive, release or otherwise invalidate any of its obligations or responsibilities under the Subcontract or any intellectual property rights (copyrights, trademarks/logos, patents, etc.) or secure information that may apply to such information or materials.

9. Subcontractor acknowledges and agrees that Turner shall incur no responsibility or liability with respect to the BIM or the use thereof, including those resulting from errors, omissions, or deficiencies in the BIM. In the event that Subcontractor provides deficient information or data that does not represent the Work it will be ultimately providing, that is corrupted, that contains a virus and/or that otherwise damages the BIM, Subcontractor shall bear all costs associated with reconstructing the BIM and to otherwise remediate such deficiencies or their effects.

10. In the event the Subcontractor discovers any error, inconsistency, or omission in its information or submissions, the information or submissions provided by others or any BIM, it shall promptly report the same to Turner via written notice, which shall contain all relevant specifics.

11. Subcontractor acknowledges that the BIM may require updating throughout the life of the Project to address any changes to the Work so that the BIM at the conclusion of the Project accurately depicts the Work as actually performed and installed. Subcontractor agrees to promptly update and provide revised submissions to Turner throughout the course of the Project so that the BIM at the conclusion of the Project accurately depicts the Work as actually performed and installed.

12. Subcontractors will be compensated for any additional modeling as a result of any additions to the scope of work that are approved by the Owner so long that the subcontractor includes the price required for the additional modeling associated with this increase in any document that includes but is not limited to any change order requests, RFIs, and Bulletins submitted to the Owner prior to final approval.

13. The foregoing process is in addition to the Subcontractor's obligations to make the traditional submissions and shall not relieve or lessen in any way the Subcontractor's obligations contained throughout this Agreement and the other Contract Documents.

Subcontractor Roles and Responsibilities – All Trades:

1. Owner/Architect may provide three-dimensional design models for use as backgrounds for coordination. Models may include basic architectural features, such as the floors, a rough approximation of ceilings chases, door openings, partitions exterior wall surfaces, window openings, roofs, elevator shafts, and stairs, and basic Structural features such as slabs and walls, steel framing – columns, beams, and major structural elements. Each Trade Contractor is ultimately responsible for coordinating to all information contained in the 2D contract drawings and specifications as related to their work. The models provide are used as diagrammatic representation only and is not to be relied upon for their accuracy, or as a reflection of the design, design intent, or representation of existing conditions.

2. Turner Construction Company will specify or make available a collaboration platform that will enable all project parties to upload and download their respective "in-progress shop models," manage electronic drawing files or models and other electronic documents used in the coordination process.

3. If three-dimensional design models or two-dimensional CAD files are posted on the collaboration site, it is recommended that each trade use these files as references to create their system models by sequence or geographic area dictated by Turner's representatives. The process is to create and upload system models to the collaboration site as frequently as required by Turner for other trades to use while modeling their systems.

4. Trade Contractor is not required nor encouraged to wait for the distribution of two-dimensional CAD files or three-dimensional background models by Turner to begin their engineering and drafting efforts. Each subcontractor shall proceed with the most haste using the two-dimensional contract documents to begin their engineering and drafting in order to meet the project schedule.

5. Each Trade Contractor is required to use parametric BIM authoring software. Owner project requirements may require specific authoring software such as Revit to be used by all Trades. All objects in the models must be three-dimensional solids, parametric components, or AEC (Architecture, Engineering, and Construction) objects. All files shall be purged prior to submission. All models should reflect the exact material properties and performance data.

6. The model origin shall be consistent with that which is provided by Turner prior to trade coordination. All trade subcontractor's drawing and model files shall be based on this origin point provided by Turner. The cost of any changes required by the Trade Contractor to their drawings or models due to the use of an unauthorized origin shall be borne by the trade contractor.

7. Each Trade Contractor is required to submit all models to Turner in their native Model authoring format, three-dimensional DWG, three-dimensional NWC, with necessary Object Enabler executable(s). The three-dimensional model shall be layered and constructed in a manner such that all elements of the model can be converted into a two-dimensional drawing for use in the field.

8. The three-dimensional models submitted by the Trade Contractor for overall coordination are required to be checked and coordinated with the structure and the Trade Contractor's own work prior to submittal.

9. Each Trade Contractor is to provide a list of minimum typical clearances and access requirements for all model components and coordinate necessary clearances/access within the model. The three-dimensional model is to include clearances for equipment included as a modeled volume such that clash detection and coordination can be accommodated relating to necessary clearances/access. All clearances modeled shall begin at the access points to all the way to the equipment.

10. Each Trade Contractor shall be prepared to attend daily coordination huddles and scheduled coordination meetings to resolve conflicts within the model.

11. Each Trade detailer/drafter shall have the capability to host and attend virtual meetings.

12. Penetrations through building systems shall be identified in the three-dimensional model by means of a modeled sleeve, and shall be identified on penetration and sleeve drawings in a PDF and DWG format to be submitted to Turner as per the coordination schedule.

13. Each Trade shall complete the drawings and model in a time frame capable of meeting the Project Schedule.

14. Each Trade may be asked to provide a three-dimensional mock-up of a specific portion of the project to be designated by Turner, prior to the pre-detailing meeting, in full detail in order to verify the compatibility of the file formats. Each Trade Contractor shall provide object enablers for its specific three-dimensional software if required.

15. Each Trade is responsible for providing their detailer/drafter with the appropriate modeling and coordination hardware/software to meet the requirements herein, including the ability to attend in-person coordination meetings so to be able to make live, real-time changes to the "Shop Model" in the meetings and in order to review the finalized, signed off coordinated models prior to and during the fabrication/installation process.

16. Each Trade is to submit the required number of color copies of their respective, As-Built two-dimensional drawings as required by the contract documents, for approval through the regular closeout process. This is required for each floor as well as each riser.

17. Each Trade is required to digitally submit their three-dimensional As-Built models. The final as-built will be submitted in their native model authoring format, three-dimensional solid object DWG,

three-dimensional NWC, IFC, and 2D DWG/PDF. Turner reserves the right to request additional file formats as the needs of the client or project require.

18. Each Trade is required to update and post any changes originating from RFI's, submittals and bulletins that have changed their respective work. Each Trade making changes shall post to the collaboration site and send out a corresponding notice indicating the changes and reasoning behind the change within 5 business days of receipt of the changes.

19. Each Trade is required to model in a format that a 3rd party individual can highlight and track progress of work by selecting individual items in each trade model. Each trade will make their best effort to organize and categorize the objects within their model files in a useful manner.

20. It is critical that Each Trade use a mandated file naming convention. Turner will provide the file naming convention to all involved contractors at the coordination kick-off meeting. Any files that do not follow the file naming convention will be deleted and removed from the server at any time without any notification.

Coordination Process – All Trades:

1. Turner will provide a BIM Coordinator to manage the BIM Coordination Meetings, Clash Detections and give direction for changes, scope of work per schedules and meeting schedules. Turner's BIM Coordinator will call meetings, as required, which this contractor and vendors must attend. Failure to attend will result in work by the absent contractor on sheets reviewed at meetings being declared improperly coordinated and will require the contractor to relocate work as shown by Turner, or to field run the work not coordinated. No extra compensation will be paid to any contractor for relocating any pipe, conduit, or other material that has been installed without proper coordination between all the contractors and the trades involved. If any improperly coordinated work, or work installed that is not in accordance with the approved coordination composites, necessitates additional work by other contractors, the cost of such additional work shall be assessed to the contractor responsible as determined by Turner. Errors in coordination will be resolved by the contractor at his own expense. Where agreements cannot be reached, Turner will furnish a resolution. The contractor will bear the expense of said resolution.

2. All work on the coordination drawings (including three-dimensional models) shall be performed by an experienced draftsperson in a clear legible manner utilizing standard industry conventions.

3. All trades shall be responsible for providing their coordination drawing files according to the established coordination schedule.

4. It is the responsibility of All Trades to supply a sufficient number of draftsperson so as not to delay the three-dimensional coordination process and shop drawing submittals.

5. Coordination drawings are not to be construed as and not to relieve each contractor from their shop drawing obligations required under the project specifications, and are distinctly separate from the requirements to provide final "As-Built" drawings.

6. All files exchanged by trade contractors will be in a file format that is readable by other trades' CAD system and Navisworks. Being 'readable' means the ability to open a file without any errors (such as proxy, xref resolution, geometry error, etc.) and with objects, layers, and other file properties remaining intact. In addition, all files shall be saved down to the lowest common version.

7. All Trades are responsible for providing three-dimensional solid models (not line, wireframe, or surface models) that represents the actual dimensions of the trade system elements and the equipment that will be installed.

8. Coordination will be expected to start as soon as contracts are awarded or letters of intent are sent (whichever comes first).

9. Each Trade Contractor will model in conformance with the design documents.

10. Turner may require that subcontractors divide their systems models by floors, zones, and/or areas as defined by Turner to better manage the coordination process in a manner that is most conducive to meeting the project's schedule and needs.

11. Each Trade must run the clash detection analysis for their respective trade system against the Architectural/Structural design models to ensure there are no conflicts between the architectural/ structure elements and their system(s). These analysis documents are to be shared with the BIM Coordinator for any major clash issues that cannot be resolved between the trades in working sessions.

12. Each Trade is required to run the clash detection analysis for their respective trade system against the other trade models in sequence to ensure that there are no conflicts between other trade elements and their system(s).

13. Each Trade is required to post to the collaboration site, updated drawings/models at least once a day, and prior to the clash detection analysis run by the BIM Coordinator. (Day and time to be determined). This will continue until the area is completely coordinated.

14. When the coordination models are uploaded, the BIM Coordinator and/or MEP Engineer will download and integrate all trade models into a consolidated model. The clash reports will be run for MEP systems in conflict with other trades and systems. A clash analysis report will be generated by the BIM Coordinator for major coordination issues that cannot be resolved between the active trades. The BIM Coordinator will create a Navisworks .NWD file showing the clash viewpoints. This Clash report & Navisworks .NWD file will be posted to the collaboration site by the BIM Coordinator and a corresponding notice sent by the BIM Coordinator to all parties involved that the report is ready.

15. Each Trade is required to review the clash detection report generated by the BIM Coordinator before the coordination meeting, and arrive at the meeting prepared to address the unresolved clashes in a constructive manner.

16. Each Trade is required to collaborate with each other trade through email, telephone, and in person to resolve basic clashes with the BIM Manager outside of the BIM Coordination Meetings with the BIM Coordinator. It is expected that these coordination meetings between trades be held to address difficult areas that require more effort between the multiple trades themselves. At these meetings, the resolution will be collectively agreed upon, and a trade will be identified as having to "move". This trade will adjust the respective model and repost it for the following coordination meeting. All trades are responsible to update and post the changes agreed upon at the meeting within 2 business days, or at Turner's discretion based on schedule requirements.

17. Each Trade is to submit the required number of copies of their respective, coordinated systems in a two-dimensional format as required by their contract, for approval through the regular submittal process. This is required for each floor as well as each riser. In addition to the development of three-dimensional coordination models, all trade subcontractors are responsible for producing a traditional two-dimensional coordination drawing after cleaning up resolved all clashes and collisions. In the preparation of the final composite two-dimensional coordination drawings, large scale details as well as cross and longitudinal sections developed at Coordination Meetings shall be made by the subcontractor as required to fully delineate all conditions. The final Coordination CAD drawing file will be circulated through all trades in preparation for a BIM sign-off meeting. This electronic coordination drawing files shall include all coordinated drawing information, fully dimensions (especially elevation dimensions), texts, and tags, etc. The fully coordinated overlay drawing will then be signed off and dated by each contractor at the sign-off meeting.

Change Management – All Trades:

1. Each Trade Contractor is responsible for incorporating the following changes into the model and drawings on a regular basis, but in no case later than 5 business days from the date of issuance. If changes are going to take longer than 5 business days then Each Trade Contractor is required to get an extension in writing from Turner within 5 business days from the date of issuance:
    a. RFIs, Bulletins and Owner approved changes.

b. Changes in the sequences of work
c. Field modifications
d. Shop drawing review comments or design modifications and field changes made by Trade Contractors
e. Changes requested by the Construction Manager
f. Clash Resolution

2. The process for quantifying and correcting clashes caused by a design change to a signed off and in-progress area is as follows:
    a. Trade(s) that have work directly affected by the bulletin documents will take the lead in drafting the revised three-dimensional layout, minimizing the clashes w/ other trades as much as possible. Revised layouts are to be drawn in an identifiable layer, labeled to match the respective bulletin.
    b. Once the work is drafted by the affected trade(s), these trades will work to coordinate clash resolutions amongst themselves while keeping the BIM Coordinator informed of their efforts.
    c. A clash report will be prepared by the BIM Coordinator w/ all latest posts when it is determined that clashes remain which could not be resolved by the trades themselves.
    d. A coordination meeting will be held if required to resolve remaining clashes. Actions will be assigned to the appropriate trades the fixes will be made in a timely manner.
    e. Once all new clashes resulting from the change are resolved, a sign-off meeting will be held with a new fully-coordinated overlay drawing to document the resolution of the clashes.

3. All revised three-dimensional model or two-dimensional drawing submittals shall have a written narrative to define changes from previous submittals. Typical drafting techniques such as 'clouds' or 'bubbles' are acceptable means of tracking changes on the 2D drawings. [Layer control shall be used to define changes in the three-dimensional model. All revisions shall be shown in both 2D and three-dimensional formats.]

Individual Subcontractor Roles and Responsibilities:

1. The **TC-013 Site Plumbing Contractor** will generate and provide, in a timely manner, a three-dimensional model of their underground Domestic Water, Fire Protection, Steam, and Chilled Water scope of work in addition to their contractually required two-dimensional documentation. This contractor shall also generate and provide, in a timely manner, a three-dimensional model of the TC-009 Site Electric contractor's underground installations, as well as the TC-014 Excavation contractor's Storm and Sanitary installations. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but is not limited to, concrete slabs, foundation and other structural walls, caissons and footings, grade beams, concrete columns, concrete beams, ramps, concrete stairs, concrete equipment pads and any other concrete scope items necessary for the successful coordination of other building trades. Any structural entities modeled shall have a level of intelligence associated with them including, at a minimum, the type, material, size, etc. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the concrete system in its entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, and 2D DWG/PDF.

2. The **TC-016 Structural Steel Contractor** will generate and provide, in a timely manner, a three-dimensional model of their structural scope of work in addition to their contractually required 2D documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but is not limited to, major structural members such as primary steel members (columns, beams, joists and trusses), secondary and miscellaneous steel connections including equipment support, steel stairs, kickers, bolts, clip angles, gusset plates, miscellaneous metals, railings, bracing, knife plates, etc. necessary for the successful coordination of other building trades. The fabrication level detailed model shall also include structural stair components, façade support angles, lintels, bracing, decks (metal, wood

and concrete, including penetrations and openings). Any structural entities modeled shall have a level of intelligence associated with them including, at a minimum, the type, material, size, etc. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the structural steel system in its entirety. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, and 2D DWG, and 2D PDF.

3. The **TC-020 Cast In Place Shafts and Decks Contractor** will generate and provide, in a timely manner, a three-dimensional model of their concrete scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but is not limited to, concrete slabs, foundation and other structural walls, caissons and footings, grade beams, concrete columns, concrete beams, ramps, concrete stairs, concrete equipment pads and any other concrete scope items necessary for the successful coordination of other building trades. Any structural entities modeled shall have a level of intelligence associated with them including, at a minimum, the type, material, size, etc. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the concrete system in its entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, and 2D DWG/PDF.

4. The **TC-001 Architectural Precast Concrete Contractor** will generate and provide, in a timely manner, a three-dimensional model of their concrete scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but is not limited to, precast concrete columns, beams, spandrel beams, tees, shear walls, miscellaneous walls, precast concrete stairs, precast concrete slabs, foundation and other structural and any other precast concrete scope items necessary for the successful coordination of other building trades. Any structural entities modeled shall have a level of intelligence associated with them including, at a minimum, the type, material, size, etc. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the concrete system in its entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, and 2D DWG/PDF.

5. The **TC-002 Curtainwall Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but is not limited to, major Curtainwall elements such as frames, mullions, glass, windows, curtain walls, storefront systems, skylights, borrowed lites and windows leaves, metal panels, support framing, connections, embeds, etc. necessary for the successful coordination of other building trades. Curtainwall to be modeled like it is to be built, i.e. separate components/panelized for the purpose of time lining. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the curtainwall system in its entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, and 2D DWG, and 2D PDF.

6. The **Drywall Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but is not limited to, major Drywall elements such as head-of-wall conditions, king studs at door and interior glazing, hard lid ceilings and framing, acoustic ceiling framing systems, won-door framing and angle supports, soffit framing and lateral supports, exterior wall framing and supports, required bracing for metal stud systems, vertical and horizontal shafts, etc. necessary for the successful coordination of other building trades.

Exterior walls not included in Structural (including all wall layers, penetrations and openings. Walls to be modeled like they are built: pre-cast walls to be modeled as separate components and masonry walls to be split from floor to floor for the purpose of time lining. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the metal stud and drywall systems in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF.

7. The **Laboratory Equipment Contractor/Vendor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but not limited to, casework systems, overhead service carriers, snorkels, structural elements (hangers, threaded rods, misc. attachment elements), fume hoods and bio-safety cabinets, wood laboratory casework. This contractor must play an active role in all the coordination meetings. Provide the structural elements early to allow coordination by other trades around the necessary hangers. All actual points of connection for other trades must be modeled and coordinated; fixture mounting openings must be designated and assigned for each service, as well as umbilical connections shown in the BIM. The model shall also include equipment pads, inertia pads, and access doors, and, under a separate layer, any items to be included in concrete pours (sleeves, boxouts, etc.) The model shall identify under separate drawing layer accessibility requirements for above listed items for code and maintenance purposes. This Contractor to work closely with the Ceilings Contractor, HVAC Contractor. Plumbing Contractor, Electrical Contractor and any other contractor to ensure overhead laboratory equipment specified is well coordinated with the work of others. Provide all access and services areas in greyscale as a solid object on a separate layer for coordination purposes. Final Shop drawings and approval of this contractor's work shall not precede modeling and collaboration with the BIM team. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of laboratory equipment in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF.

8. The **TC-023 Miscellaneous Steel Contractor** will generate and provide, in a timely manner, a three-dimensional model of their structural scope of work in addition to their contractually required 2D documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but is not limited to, secondary and miscellaneous steel connections including equipment support, steel stairs, kickers, bolts, clip angles, gusset plates, medical equipment supports, toilet partition supports, door supports, window washing system supports, ladders, miscellaneous metals, railings, bracing, knife plates, etc. necessary for the successful coordination of other building trades. The fabrication level detailed model shall also include lintels, bracing, decks (metal, wood and concrete, including penetrations and openings). Any structural entities modeled shall have a level of intelligence associated with them including, at a minimum, the type, material, size, etc. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the structural steel system in its entirety. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, and 2D DWG, and 2D PDF.

9. The **TC-025 HVAC Risers Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but not limited to, HVAC piping, chilled water and condenser systems, process chilled water system, steam and condensate systems, heating hot water systems, fuel oil system including all associated piping, all equipment installed in the HVAC Risers Scope of work, AHU's, Built Up AHU's., pumps, tanks, valves, controls, heat exchangers, all valves (including valve stems and handles), gauges & control valves, insulation, hangers & seismic restraints, high & low point drains, motor starters, disconnects, VFD's, boilers, cooling towers, chillers, heaters, etc. The HVAC Contractor shall also include in the three-

dimensional model all concrete equipment pads, inertia bases, and access doors. The HVAC Risers Contractor shall identify under separate drawing layer access doors and accessibility requirements for above listed items for code and maintenance purposes. All items modeled should have a level of intelligence associated with them including, at a minimum, the material type, size, insulation, make and model number, equipment/valve tag, fire/penetration seals, etc. The mechanical rooms shall have a level of intelligence associated with them that include at a minimum material type, size, insulation, manufacturer, product numbers, serial numbers, maintenance schedules, operation and maintenance data, etc. Pipes larger than 3/4" outside diameter to be modeled. Turner and other contractors will use this rule for pipes pertaining to HVAC and mechanical systems and will supersede any other rule listed within the contract documents if they contradict with this statement. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the HVAC system in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF.

10. The **TC-025 Sheetmetal Risers Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but not limited to, supply, return, exhaust and makeup air systems, chemical treatment systems, snow melting systems, all control/power panels, smoke dampers, sensors, valve and damper operators/actuators, duct work, equipment installed in the HVAC Risers Scope of work, Fans, AHU's, Built Up AHU's., air terminal boxes, sound attenuators, smoke & fire dampers, insulation, hangers & seismic restraints, diffusers, registers, louvers, grilles, motor starters, disconnects, VFD's, plenums, etc. The Sheetmetal Risers Contractor shall also include in the three-dimensional model all concrete equipment pads, inertia bases, and access doors for their Scope of Work. The HVAC Contractor shall identify under separate drawing layer access doors and accessibility requirements for above listed items for code and maintenance purposes. All division 23 and 25 systems will be modeled. All items modeled should have a level of intelligence associated with them including, at a minimum, the material type, size, insulation, make and model number, equipment/valve tag, fire/penetration seals, etc. The mechanical rooms shall have a level of intelligence associated with them that include at a minimum material type, size, insulation, manufacturer, product numbers, serial numbers, maintenance schedules, operation and maintenance data, etc. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the sheetmetal systems in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF. The sheetmetal Contractor is to compile and plot the required number of color copies of the two-dimensional, multi-trade, coordinated drawings required by the contract documents for approval through the regular submittal process, for each floor. This is required for each floor as well as each riser.

11. The **TC-026 Plumbing Risers Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but not limited to, all piping systems, and equipment installed, underground systems, domestic cold water and hot water systems, storm/roof leaders, waste and vent systems, pumps, tanks, water heaters, makeup water systems, all control/power panels associated with the scope of work listed in this subparagraph, in wall carriers, in-wall plumbing equipment., all valves, gauges & control valves, insulation on piping, hangers & seismic restraints, clean-outs, drains, trap primers, rainwater/stormwater systems, natural gas, medical gas, medical vac, sewage ejectors, etc. The Plumbing Risers Contractor shall also include in the three-dimensional model all inertia bases, and access doors for their work. The Plumbing Risers Contractor shall identify under separate drawing layer access doors and accessibility requirements for above listed items for code and maintenance purposes. All items modeled should have a level of intelligence associated with them including, at a minimum, the material type, size, insulation, make and model number, equipment/valve tag, fire/penetration seals, etc. All piping, power and controls associated with the mechanical systems

will be modeled. Equipment will be modeled to its overall height, width and depth. Pipes will be modeled to the outside diameter of the pipe or pipe insulation (whichever is greater). All valves, cleanouts and accessories, pipe hangers, hanger assemblies and dunnage will be modeled. The mechanical rooms shall have a level of intelligence associated with them that include at a minimum material type, size, insulation, manufacturer, product numbers, serial numbers, maintenance schedules, operation and maintenance data, etc. Pipes larger than 3/4" outside diameter to be modeled.. Turner and other contractors will use this rule for pipes pertaining to plumbing and fire protection systems and will supersede any other rule listed within the contract documents if they contradict with this statement. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the plumbing systems in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF.

12. The **TC-028 Fire Protection System Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but not limited to, all risers, main and branch piping, (including heads), pumps, controllers, ATS, and equipment installed in the Fire Suppression System Scope of work, pre-action systems, dry system, main fire suppression systems, hangers & seismic bracing, valve assemblies, drain valves, fire department valves, drains, control panels, fire extinguishers, fire department connections and supports, test headers, roof hydrants, etc. The Fire Suppression System Contractor shall also include in the three-dimensional model Concrete Equipment pads, inertia pads, and Access Doors. The Sprinkler Contractor shall identify under separate drawing layer Access doors and Accessibility requirements for above listed items for code and maintenance purposes. All items modeled should have a level of intelligence associated with them including, at a minimum, the material type, size, insulation, make and model number, equipment/valve tag, fire/penetration seals, etc. The mechanical rooms shall have a level of intelligence associated with them that include at a minimum material type, size, insulation, manufacturer, product numbers, serial numbers, maintenance schedules, operation and maintenance data, etc. Pipes larger than 3/4" outside diameter to be modeled. Turner and other contractors will use this rule for pipes pertaining to plumbing and fire protection systems and will supersede any other rule listed within the contract documents if they contradict with this statement. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the fire protection systems in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF.

13. The **TC-027 Electrical Risers Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but not limited to, underground systems, all conduit systems, junction boxes, equipment installed in the Electrical Risers Scope of work, individual conduits 3/4" and over, conduit racks, panels, transformers, switch/paralleling gear, ATS's, generators, cable tray, data racks, starters, VFD's, hangers & seismic bracing, etc. for normal, emergency and isolated power systems. The Electrical Contractor shall also include in the three-dimensional model inertia pads, Light Fixtures, primary distribution (Main Electrical Rooms), secondary distribution to the panel boards (floor level M/E Rooms), junction boxes, lighting protection, Exit Signs, Fire Alarm, Speakers, AV Equipment, Recessed Electrical devices, and Access Doors. The Electrical Risers Contractor shall identify under separate drawing layer Access doors and Accessibility requirements for above listed items for code and maintenance purposes. All panel boards modeled should have a level of intelligence associated with them that accurately identifies at a minimum the panel schedule and equipment tag numbers. All items located within electrical/mechanical rooms and closets shall have a level of intelligence associated with them that includes, at a minimum, material type, size, manufacturer, product numbers, serial numbers, maintenance schedules, operation and maintenance data, equipment tags, fire penetration/seals,

etc. 3/4" and larger in outside diameter conduits to be modeled. Turner and other contractors will use this rule for conduits and will supersede any other rule listed within the contract documents if they contradict with this statement. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the electrical systems in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF.

14. The **TC-027 Technology and Low Voltage Risers Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include all division 27 and 28 systems, but not limited to, all conduit systems, equipment installed in the Low Voltage Scope of work, VFD's, hangers & seismic bracing, individual Conduits 3/4" and over, conduits racks, panels, transformers, controls, cable tray, data racks, starters, VFD's , hangers & seismic bracing, etc. , main distribution equipment, hangers & seismic bracing, antennas access points, antenna enclosures, sleeves, risers, security cameras, access control, emergency communication systems, fire stop assemblies, etc. The Low Voltage Risers Contractor shall identify under separate drawing layer Access doors and Accessibility requirements for above listed items for code and maintenance purposes. All items located within technology rooms and closets shall have a level of intelligence associated with them that includes, at a minimum, material type, size, manufacturer, product numbers, serial numbers, maintenance schedules, operation and maintenance data, equipment tags, fire penetration/seals, etc. All cable trays shall be modeled. All fire stop assemblies shall be modeled. All wireless antennas/Aps, and antenna enclosures shall be modeled. All security cameras shall be modeled. All wall-mounted monitors shall be modeled. 3/4" and larger in outside diameter conduits to be modeled. Turner and other contractors will use this rule for conduits and will supersede any other rule listed within the contract documents if they contradict with this statement. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the technology and low voltage systems in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF.

15. The **HVAC Interiors Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but not limited to, HVAC piping, chilled water and condenser systems, process chilled water system, steam and condensate systems, heating hot water systems, fuel oil system including all associated piping, all equipment installed in the HVAC Interiors Scope of work, AHU's, Built Up AHU's., pumps, tanks, valves, controls, heat exchangers, all valves (including valve stems and handles), gauges & control valves, insulation, hangers & seismic restraints, high & low point drains, motor starters, disconnects, VFD's, boilers, cooling towers, chillers, heaters, etc. The HVAC Interiors Contractor shall also include in the three-dimensional model all concrete equipment pads, inertia bases, and access doors. The HVAC Contractor shall identify under separate drawing layer access doors and accessibility requirements for above listed items for code and maintenance purposes. All items modeled should have a level of intelligence associated with them including, at a minimum, the material type, size, insulation, make and model number, equipment/valve tag, fire/penetration seals, etc. The mechanical rooms shall have a level of intelligence associated with them that include at a minimum material type, size, insulation, manufacturer, product numbers, serial numbers, maintenance schedules, operation and maintenance data, etc. Pipes larger than 3/4" outside diameter to be modeled. Turner and other contractors will use this rule for pipes pertaining to HVAC and mechanical systems and will supersede any other rule listed within the contract documents if they contradict with this statement. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the HVAC system in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-

built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF.

16. The **Sheetmetal Interiors Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but not limited to, supply, return, exhaust and makeup air systems, chemical treatment systems, snow melting systems, all control/power panels, smoke dampers, sensors, valve and damper operators/actuators, duct work, equipment installed in the HVAC Interiors Scope of work, Fans, AHU's, Built Up AHU's., air terminal boxes, sound attenuators, smoke & fire dampers, insulation, hangers & seismic restraints, diffusers, registers, louvers, grilles, motor starters, disconnects, VFD's, plenums, etc. The Sheetmetal Contractor shall also include in the three-dimensional model all concrete equipment pads, inertia bases, and access doors for their Scope of Work. The HVAC Contractor shall identify under separate drawing layer access doors and accessibility requirements for above listed items for code and maintenance purposes. All division 23 and 25 systems will be modeled. All items modeled should have a level of intelligence associated with them including, at a minimum, the material type, size, insulation, make and model number, equipment/valve tag, fire/penetration seals, etc. The mechanical rooms shall have a level of intelligence associated with them that include at a minimum material type, size, insulation, manufacturer, product numbers, serial numbers, maintenance schedules, operation and maintenance data, etc. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the sheetmetal systems in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF. The sheetmetal Contractor is to compile and plot the required number of color copies of the two-dimensional, multi-trade, coordinated drawings required by the contract documents for approval through the regular submittal process, for each floor. This is required for each floor as well as each riser.

17. The **Plumbing Interiors Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but not limited to, all piping systems, and equipment installed, underground systems, domestic cold water and hot water systems, storm/roof leaders, waste and vent systems, pumps, tanks, water heaters, makeup water systems, all control/power panels associated with the scope of work listed in this subparagraph, in wall carriers, in-wall plumbing equipment., all valves, gauges & control valves, insulation on piping, hangers & seismic restraints, clean-outs, drains, trap primers, rainwater/stormwater systems, natural gas, medical gas, medical vac, sewage ejectors, etc. The Plumbing Interiors Contractor shall also include in the three-dimensional model all inertia bases, and access doors for their work. The Plumbing Interiors Contractor shall identify under separate drawing layer access doors and accessibility requirements for above listed items for code and maintenance purposes. All items modeled should have a level of intelligence associated with them including, at a minimum, the material type, size, insulation, make and model number, equipment/valve tag, fire/penetration seals, etc. All piping, power and controls associated with the mechanical systems will be modeled. Equipment will be modeled to its overall height, width and depth. Pipes will be modeled to the outside diameter of the pipe or pipe insulation (whichever is greater). All valves, cleanouts and accessories, pipe hangers, hanger assemblies and dunnage will be modeled. The mechanical rooms shall have a level of intelligence associated with them that include at a minimum material type, size, insulation, manufacturer, product numbers, serial numbers, maintenance schedules, operation and maintenance data, etc. Pipes larger than 3/4" outside diameter to be modeled.. Turner and other contractors will use this rule for pipes pertaining to plumbing and fire protection systems and will supersede any other rule listed within the contract documents if they contradict with this statement. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the plumbing systems in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format,

3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF.

18. The **Electrical Interiors Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include, but not limited to, underground systems, all conduit systems, junction boxes, equipment installed in the Electrical Scope of work, individual conduits 3/4" and over, conduit racks, panels, transformers, switch/paralleling gear, ATS's, generators, cable tray, data racks, starters, VFD's, hangers & seismic bracing, etc. for normal, emergency and isolated power systems. The Electrical Interiors Contractor shall also include in the three-dimensional model inertia pads, Light Fixtures, primary distribution (Main Electrical Rooms), secondary distribution to the panel boards (floor level M/E Rooms), junction boxes, lighting protection, Exit Signs, Fire Alarm, Speakers, AV Equipment, Recessed Electrical devices, and Access Doors. The Electrical Interiors Contractor shall identify under separate drawing layer Access doors and Accessibility requirements for above listed items for code and maintenance purposes. All panel boards modeled should have a level of intelligence associated with them that accurately identifies at a minimum the panel schedule and equipment tag numbers. All items located within electrical/mechanical rooms and closets shall have a level of intelligence associated with them that includes, at a minimum, material type, size, manufacturer, product numbers, serial numbers, maintenance schedules, operation and maintenance data, equipment tags, fire penetration/seals, etc. 1" and larger in outside diameter conduits to be modeled. Turner and other contractors will use this rule for conduits and will supersede any other rule listed within the contract documents if they contradict with this statement. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the electrical systems in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF.

19. The **Technology and Low Voltage Interiors Contractor** will generate and provide, in a timely manner, a three-dimensional model of their scope of work in addition to their contractually required two-dimensional documentation. **The three-dimensional model will represent an "as-fabricated" fully detailed level of information.** The fabrication level detailed model shall include all division 27 and 28 systems, but not limited to, all conduit systems, equipment installed in the Low Voltage Interiors Scope of work, VFD's, hangers & seismic bracing, individual Conduits 3/4" and over, conduit racks, panels, transformers, controls, cable tray, data racks, starters, VFD's , hangers & seismic bracing, etc. , main distribution equipment, hangers & seismic bracing, antennas access points, antenna enclosures, sleeves, risers, security cameras, access control, emergency communication systems, fire stop assemblies, etc. The Low Voltage Interiors Contractor shall identify under separate drawing layer Access doors and Accessibility requirements for above listed items for code and maintenance purposes. All items located within technology rooms and closets shall have a level of intelligence associated with them that includes, at a minimum, material type, size, manufacturer, product numbers, serial numbers, maintenance schedules, operation and maintenance data, equipment tags, fire penetration/seals, etc. All cable trays shall be modeled. All fire stop assemblies shall be modeled. All wireless antennas/Aps, and antenna enclosures shall be modeled. All security cameras shall be modeled. All wall-mounted monitors shall be modeled. 1" and larger in outside diameter conduits to be modeled. Turner and other contractors will use this rule for conduits and will supersede any other rule listed within the contract documents if they contradict with this statement. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the technology and low voltage systems in their entirety. The intent of this model is to show the systems in a true representation of the actual condition at construction completion. The final as-built will be submitted in their native Model authoring format, 3D solid object DWG, 3D NWC, IFC, 2D DWG, and 2D PDF.

20. **Each Equipment Vendor/Contractor**, if not specifically indicated above, shall provide intelligent models of their Equipment. Provide the following items, including but not limited to:
    a. Models shall be dimensionally accurate
    b. All supply and return connections shall be indicated.

c. Include connections to all systems
d. All Skid, support structure, stands shall be Shown in exact configuration
e. Housekeeping pad layout shall be accurately modeled
f. Access Doors or panels
g. Tanks
h. Valves and valve clearances
i. Gauges
j. Power connections, and all raceway
k. Flanges, blanks, inspection points
l. Ladders, stairs and guardrails
m. Exhaust or duct connections
n. Power and/or control panels
o. Pumps, filters
p. Air/liquid separators
q. Drain locations and piping
r. Vents and vent lines
s. Equipment enclosures
t. No-fly-zones for equipment maintenance/ access (ie tube pull, coil pull, etc…)
u. No-fly-zones for personnel access
v. No-fly-zones for safety or code requirements
w. All vibration isolation