

PROJECT BID MANUAL

New Hanover County Government Center

Wilmington, NC

12/15/2020

Addendum 2 1/08/2021



1. Instructions to Bidders – LD's added at \$500/Day
2. Instructions to Bidders – Item 17.1 clarified to 3:00PM for hand delivery
3. Instructions to Bidders – Sample Subcontract and sample QA/QC plan added
4. Payment and Performance Bond Alternate added to Bid Packages 02A, 3A, 05C, 06F, 07B, 07J, 08A, 08F, 09A, 09B, 09D, 09E, 09L, 14A, 21A, 22A, 23A, 23C, 26A, 27A, 28A, 31D, 32O
5. BP-06A – Further clarified duration for scope item #3
6. BP06F – Removed Wood wall panel reference from Bid Breakdown. WWP-1 to be provided by BP-10B
7. BP-08A – Clarified door hardware allowance for exterior doors/storefront system only. Added line item d under allowance section
8. BP-08F – Added Allowance Section
9. BP-09A – Removed reference to column covers 05 5813 in Primary Specifications
10. BP-09A – Added Exclusion for Exterior Wall Air Barrier
11. BP-09A – Removed Exterior Wall Air Barrier from Scope item #4
12. BP-09A – Removed scope item #52; Fabric wrapped panels to be provided by BP10B
13. BP23-A – Clarified scope items #47 and #70
14. BP23-C – Clarified supply of dampers is to be by controls package; installed by HVAC package
15. BP23-C – Clarified that controls contractor is to provide control valves, installation of control valves are to be by HVAC package
16. BP26A – UPS system added to Electrical Scope of work

TABLE OF CONTENTS

01 00 00 – GENERAL INFORMATION

- 01 01 00 PROJECT TEAM
- 01 02 00 ADVERTISEMENTS
- 01 03 00 INSTRUCTIONS TO BIDDERS
- 01 04 00 INDEX OF DRAWINGS AND SPECIFICATIONS
- 01 05 00 SUBSTITUTION REQUEST
- 01 06 00 RFI FORM

02 00 00 – GUIDELINES FOR EO/EA

- 02 01 00 HUB Plan
- 02 02 00 MBE FORMS (Forms 1-6)

00 03 00 – BID FORMS

- 03 01 00 BID FORM
- 03 02 00 BID ACKNOWLEDGEMENT AFFIDAVIT
- 03 03 00 BID BOND FORM
- 03 04 00 BID BOND REQUIREMENTS
- 03 05 00 IMMIGRATION POLICY VERIFICATION
- 03 06 00 MWBE FORMS TO BE SUBMITTED WITH BID
- 03 07 00 NON-COLLUSION AFFIDAVIT

00 04 00 – BID PACKAGES

- ☐ GENERAL INFORMATION APPLICABLE TO ALL BID PACKAGES
- ☐ 01A GENERAL TRADES
- ☐ 01C FINAL CLEANING
- ☐ 02A DEMOLITION
- ☐ 03T TERMITE TREATMENT
- ☐ 05C ARCHITECTURAL ALUMINUM / RAILINGS
- ☐ 06A ROUGH CARPENTRY
- ☐ 06F ARCHITECTURAL MILLWORK
- ☐ 07A WATERPROOFING & CAULKING
- ☐ 07B ROOFING
- ☐ 07E SIDING
- ☐ 07F METAL WALL PANELS
- ☐ 07I JOINT COVERS
- ☐ 07J EIFS
- ☐ 08A DOORS, FRAMES & HARDWARE
- ☐ 08D OVERHEAD DOORS AND GRILLES
- ☐ 08E SPECIALTY DOORS
- ☐ 08F GLASS AND GLAZING
- ☐ 09A DRYWALL/METAL FRAMING
- ☐ 09B CEILINGS
- ☐ 09C STUCCO
- ☐ 09D PAINTING/WALLCOVERING
- ☐ 09E FLOORING
- ☐ 09L HARD TILE
- ☐ 10A TOILET PARTITIONS / ACCESSORIES
- ☐ 10B SOUND ABSORBING WALL UNITS
- ☐ 10C SIGNAGE
- ☐ 10D LOCKERS
- ☐ 10E FIRE EXTINGUISHERS / CABINETS
- ☐ 10G CANOPIES / AWNINGS
- ☐ 10I LOUVERS
- ☐ 10P ACCESS FLOORING
- ☐ 10Q FOLDING PARTITIONS
- ☐ 12A WINDOW TREATMENTS
- ☐ 14A ELEVATORS
- ☐ 21A FIRE PROTECTION

NEW HANOVER COUNTY GOVERNMENT CENTER

- ☐ 22A PLUMBING
- ☐ 23A HVAC
- ☐ 23C CONTROLS / INTEGRATED AUTOMATION
- ☐ 26A ELECTRICAL
- ☐ 27A COMMUNICATIONS
- ☐ 28A FIRE ALARM
- ☐ 28B SECURITY SYSTEMS
- ☐ 31D SITEWORK/SITE UTILITIES/SITE CONCRETE
- ☐ 32O LANDSCAPING & IRRIGATION

00 06 00 – SCHEDULE

6.1 PROJECT MILESTONE DATES

00 07 00 - LOGISTICS

7.1 SITE LOGISTICS PLAN

00 08 00 - SAFETY

8.1 SAFETY PLAN

8.2 SAFETY FORMS AND CHECKLISTS

00 09 00 – QUALITY ASSURANCE / QUALITY CONTROL

9.1 QA/QC PLAN TO BE ISSUED WITH CONTRACT AWARD

00 10 00 – APPENDICIES

10.1 SUBCONTRACTOR CHANGE ORDER FORMS

10.2 NORTH CAROLINA SALES TAX REPORTING

00 11 00 – SUBCONTRACT DOCUMENTS

Please check all boxes acknowledging that you have reviewed these forms and Exhibits

- ☐ Sample Thomas Construction Group Subcontract
- ☐ Exhibit A Contract Documents (SEE SECTION 1)
- ☐ Exhibit B Scope of Work (SEE SECTION 4)
- ☐ Exhibit D Safety Plan (SEE SECTION 8)
- ☐ Exhibit E Site Logistics Plan (SEE SECTION 7)
- ☐ Exhibit H Project schedule (SEE SECTION 6)
- ☐ Exhibit I Quality Control Plan (SEE SECTION 9)
- ☐ Exhibit K Bond Forms (SEE SECTION 3)
- ☐ Exhibit M EEO Policy
- ☐ Exhibit O Carolinas State Law Rider
- ☐ Exhibit P Post Bid Interview
 - (Added after Post-Bid Interview/prior to contract execution)
- ☐ Exhibit Q BIM Execution Plan
- ☐ Exhibit U Diversity Plan (SEE SECTION 2)

SECTION

00 01 00

PROJECT TEAM

<u>Project:</u>	<i>New Hanover County Government Center</i>
<u>Owner:</u>	<i>Cape Fear/FD StoneWater</i>
<u>Construction Manager:</u>	<i>Thomas Construction Group 1022 Ashes Drive, Suite 200 Wilmington, NC 28405</i>
<u>Architect:</u>	<i>LS3P 101 N. Third Street, Suite 500 Wilmington, NC 28401</i>
<u>MEP Engineer:</u>	<i>Newcomb and Boyd Consultants and Engineers 5425 Page Rd; Suite 215 Durham, NC 27003</i>
<u>Civil Engineer:</u>	<i>SEPI Engineering 5030 New Centre Drive; Suite B Wilmington, NC 28403</i>
<u>Structural Engineer:</u>	<i>Citadel Contractors 3405 Apex Peakway Apex, NC 27502</i>
<u>Landscape Architect:</u>	<i>Mihaly Land Design 330 Military Cutoff Road; Suite A-3 Wilmington, NC 28405</i>

ADVERTISEMENT TO BID

NEW HANOVER COUNTY GOVERNMENT CENTER - ADVERTISEMENT FOR BIDS

Sealed proposals will be received by **Thomas Construction Group** for The New Hanover County Government Center in Wilmington, NC. Bids for the following packages will be opened on **January 14, 2021 at 3:00PM**: 01A General Trades, 01C Final Cleaning, 01D Fencing and Gates, 02A Demolition, 03T Termite Treatment, 05C Architectural Railings, 06A Rough Carpentry, 06F Architectural Millwork, 07A Waterproofing & Caulking, 07B Roofing, 07E Siding, 07F Metal Wall Panels, 07I Joint Covers, 07J EIFS, 08A Doors, Frames & Hardware, 08D Overhead Doors and Grilles, 08E Specialty Doors, 08F Glass and Glazing, 09A Drywall/Metal Framing, 09B Ceilings, 09D Painting/Wallcovering, 09E Flooring, 09L Hard Tile, 10A Toilet Partitions / Accessories, 10B Sound Absorbing Wall Units, 10C Signage, 10D Lockers, 10E Fire Extinguishers / Cabinets, 10G Canopies / Awnings, 10I Louvers, 10P Access Flooring, 10Q Folding Partitions, 12A Window Treatments, 14A Elevators, 21A Fire Protection, 22A Plumbing, 23A HVAC, 23C Controls / Integrated Automation, 26A Electrical, 27A Communications, 28A Fire Alarm, 28B Security Systems, 31D Sitework/Site Utilities/Site Concrete, 32O Landscaping & Irrigation. All bids will be received and opened publicly **at the office of Thomas Construction Group; located at 1022 Ashes Drive; Suite 200; Wilmington, NC 28405**. Sealed bids are to be hand delivered to the bid opening location noted below, or mailed, sealed bids can be delivered before 3:00 PM on the day of the bid at the address noted below. Due to the COVID-19 Pandemic, on **December 18, 2020** a Preferred Alternates, HUB Outreach session & Pre-Bid Meeting will be held virtually at the following link:

<https://us02web.zoom.us/j/88222026550> A second Pre-Bid/Hub Outreach meeting will be held on January 8, 2020 @ 3:00 PM at the following link:

<https://us02web.zoom.us/j/84905442439?pwd=bHNtamIwR0NqUVYvWXRpUHpzczczUT09>

Copies of plans, Specifications and Contract Documents will be available at <https://app.buildingconnected.com/projects/5fa027c47ad115004fb9923e/bid-packages>, or purchased from CopyCat Print Shop, 637 S Kerr Avenue, Wilmington, NC 28403, plans@copycatprintshop.net, (910) 799-1500. Hard copies of bid documents may be reviewed by appointment at the offices of Thomas construction Group, 1022 Ashes Drive, suite 200, Wilmington, NC or may be purchased from CopyCat Print shop at the Subcontractors expense. All questions should be directed to Kyle Brooks at kbrooks@thomasconstructiongroup.com

All Bidders are strongly encouraged to include opportunities for Minority Business participation wherever possible in their respective bid submission. Minority Business is a part of this contract and must comply with the State of North Carolina General Statutes. The CM and Owner reserve the right to add bidders, qualify bids, and/or reject any and all proposals as determined in to be in the best interest of the project. In accordance with GS 133-3, Section 64 the following preferred brands are being considered: Johnson Controls BAS Control System, Schneider APC Server Equipment

INSTRUCTIONS TO BIDDERS

TABLE OF CONTENTS

1. GENERAL
2. DEFINITIONS
3. QUALIFICATION OF SUBCONTRACTORS
4. BIDDING DOCUMENTS
5. PRE-BID CONFERENCE
6. INTERPRETIONS AND ADDENDA
7. QUESTIONS AND CLARIFICATIONS
8. SUBSTITUTIONS / APPROVED EQUAL MATERIAL OR EQUIPMENT
9. MATERIAL, SUPPLIES AND EQUIPMENT SALES TAX
10. TIME FOR COMPLETION/LIQUEDATED DAMAGES
11. EQUAL EMPLOYMENT OPPORTUNITY
12. BUILDING INFORMATION MODELING
13. BONDING PROGRAM
14. PROPOSAL SUBMISSION REQUIREMENTS
15. BID OPENINGS
16. BIDS
17. SUBMISSION OF BIDS
18. POST-BID INFORMATION
19. FAILURE TO EXECUTE AN AGREEMENT

NEW HANOVER COUNTY GOVERNMENT CENTER

1. GENERAL

- 1.1 Thomas Construction Group, Construction Manager, will receive Proposals from invited firms on the following dates:

1/14/2021 @ 3:00PM

The CMAR will be conducting selection interviews based on the selection criteria provided in this instruction to bidders.

- 1.2 Thomas Construction Group reserves the right to reject any or all bids, accept bids in any order or combination, make modifications to the work after the bid, and waive any informalities or irregularities in bids if it is deemed appropriate by Thomas Construction Group
- 1.3 Selection will be made based on experience, knowledge of similar projects, safety, schedule, budget, budget management and management team.
- 1.4 Each subcontractor acknowledges that by submitting a bid for this project, that a complete estimate detail breakdown will be required as part of the "open book" policy.
- 1.5 The Bidding Documents will consist of:
- This Project Bid Manual
 - Contract Documents – Drawings, Specifications, Manuals, Reports and Narratives
 - Geotechnical Report(s)
 - Addenda, Bulletins and other supplemental information
 - Project Schedule
 - Site Logistics
 - Work Package Breakdown
- 1.6 All questions should be submitted via e-mail to Kyle Brooks at kbrooks@thomasconstructiongroup.com
- 1.7 All references in the Contract Documents to work being provided by the "General Contractor", "Contractor", "Construction Manager at Risk", "Construction Manager", or any other similar language, shall inferably be provided by the applicable trade Subcontractor(s) as designated by the Bid Package Description(s).

2. DEFINITIONS

- 2.1 See "Bid Packages – Information Applicable to all Bid Packages" for definitions

3. QUALIFICATION OF SUBCONTRACTORS

- 3.1 Subcontractors pre-qualification is not a requirement for this project. Thomas Construction Group and the Owner reserve all rights to qualify subcontractors for scopes of work as related to any/all portions of the project.
- 3.2 Thomas Construction Group reserves the right to request qualification information prior to the issuance of a Subcontract.

4. BIDDING DOCUMENTS

- 4.1 Instructions for accessing the documents were provided in the initial invitation email. Please contact Kyle Brooks if you require any instruction or assistance in accessing

NEW HANOVER COUNTY GOVERNMENT CENTER

documents via the project Website listed below:

<https://app.buildingconnected.com/projects/5fa027c47ad115004fb9923e/bid-packages>

The website may be updated daily or multiple times during any given day, so viewers are urged to refresh their browser to receive any updates to be viewed.

4.2 Bidding Documents will also be available for review at the following locations:

- **Thomas Construction Office**
- **Building Connected Website**
- **CopyCat Print Service**
- **Carolinas AGC/ISQFT/Construct Connect**

5 PRE-BID CONFERENCE

5.1 Pre-Bid conference(s) will be held on the date(s) and time(s) listed below:

Due to the COVID-19 Pandemic; both meetings will be held virtually. All Bidders are expected to have reviewed the Bidding Documents and to have summarized topics for discussion. Attendance at these sessions are strongly encouraged.

Date and Time:

Pre-Bid/HUB Outreach and Owner Preferred Alternates Meeting #1:
12/18/2020 @ 3:00PM

<https://us02web.zoom.us/j/88222026550>

Pre-Bid/HUB Outreach and Owner Preferred Alternates Meeting #2:
01/06/2020 @ 3:00 PM

<https://us02web.zoom.us/j/84905442439?pwd=bHNtamIwR0NqUVYvWXRpUHpzcyczUT09>

6 INTERPRETATIONS AND ADDENDA

- 6.1 Bidders shall promptly notify Thomas Construction Group in writing of any error, ambiguity or inconsistency they may discover upon examination of the Bidding Documents for each portion of the Project or the Site and Local Conditions.
- 6.2 All requests for clarification or interpretation must be submitted in writing to Thomas Construction Group at least one calendar week before the Bid.
- 6.3 All modifications, clarifications and interpretations of the documents will be by Addendum. Oral interpretations or clarification made to any Bidder as to the meaning of the Bidding Documents or any part thereof are non-binding until issued in writing.
- 6.4 Written Addenda to the Bidding Documents will be issued to the Bidders who have prequalified to bid the project. All such Addenda will be listed in the Bid Form in the space provided and will become part of the Subcontract. Each Bidder will be bound by such Addenda, whether received by the Bidder.

NEW HANOVER COUNTY GOVERNMENT CENTER

Planned Addendum Dates:

Addendum #1:

Deadline for Contractor Questions	12/16/2020
Addendum 1 Distribution	12/22/2020

Addendum #2:

Deadline for Contractor Questions	1/5/2021
Addendum 1 Distribution	1/08/2021

Bid Date: 1/14/2021 @ 3:00PM

7 QUESTIONS AND CLARIFICATIONS

- 7.1 Bidders shall promptly notify the Construction manager in writing of any error, ambiguity or inconsistency they may discover upon examination of the Contract documents for each portion of the Project or the Site and Local Conditions. Every request for such an interpretation shall be made in writing to Thomas Construction Group

Email all questions to Kyle Brooks at kbrooks@thomasconstructiongroup.com

- 7.2 All modifications, clarifications and interpretations of the documents will be made by Addendum. Verbal interpretations or clarifications made to any Bidder as to the meaning of the Contract Documents or any party thereof are non-binding until issued in writing.
- 7.3 All requests for clarification or interpretation must be in writing and must be received by the Construction Manager no later than **ten (10) days** prior to bid in order to issue clarifications to all bidders via addendum.
- 7.4 Written Addenda to the Bid Documents will be issued to the Bidders through the project website. All such Addenda shall be listed in the Work Package Form in the space provided and shall become part of the Contract Documents.
- 7.5 The anticipated final written Addenda to the Bidding Documents will be available to all pre-qualified bidders by the close of business seven (7) days prior to the established bid date. Clarifications will be sent for specific bid packages up to the bid opening.
- 7.6 All bidders will be notified of the issuance of written Addenda to the Bidding Documents via an email notification.

Bidders will be able to obtain Addenda by accessing the Project website as indicated in Section 4 above.

- 7.7 Bidders are solely responsible for obtaining bid Addenda as noted above. All such Addenda shall be listed on the Bid Form in the space provided and will become part of the Contract Documents in order for a bid to be considered responsive.

8 SUBSTITUTIONS / APPROVED EQUAL MATERIAL OR EQUIPMENT

- 8.1 Bids are to be submitted in accordance with Bidding Documents. Written requests for substitutions, with all appropriate documentation, are to be submitted to Thomas Construction Group in accordance with the Bidding Documents and along with bid

NEW HANOVER COUNTY GOVERNMENT CENTER

submission. Consideration of these substitutions will be at the discretion of the Architect, Owner and Thomas Construction Group

9 MATERIAL, SUPPLIES AND EQUIPMENT SALES TAX

- 9.1 Bidder's Proposal shall include all Federal, State and/or Local taxes, fees or assessments applicable in all respects to the work covered by Bidder's Proposal.

10 TIME FOR COMPLETION/LIQUIDATED DAMAGES

- 10.1 Bidders shall include in their price all regular labor, overtime, material/equipment fabrication or procurement time, worker delays, on-site coordination, interfacing with other contractors and/or subcontractors and all other factors necessary to adhere to the schedule included in Exhibit H. It is further understood that the schedule and sequence of activities, will be subject to change, which will not be deemed a change to the Bidder's Proposal, except to the extent the schedule is materially delayed.

- 10.2 Liquidated Damages Values

[\\$500 / Day after Substantial Completion](#)

Liquidated damages will be assessed per calendar day after the Substantial Completion Date as defined per the Project Schedule included in the project Bid Manual. Liquidated Damages will be based on the turnover of the project. Substantial Completion shall be defined as an area being able to be used for the purpose for which it was intended and as described in Article 1 of the General Conditions of the contract. The Substantial Completion date is defined in the Contract Schedule for each phase.

11 EQUAL EMPLOYMENT OPPORTUNITY

- 11.1 Each Bidder shall include in its bid such measures as are necessary to comply with Federal, State and Local Equal Employment Opportunity requirements which are applicable under this contract.

12 BUILDING INFORMATION MODELING

- 12.1 Building Information Modeling will be a function of this project for Site Logistics and MEP coordination and will require a 3D modeling effort by the Mechanical, Electrical, Plumbing, Fire Protection, Structural Steel and Telecom trades and a weekly commitment by each during the coordination period, to alleviate "clashes" between such trades.
- 12.2 All awarded subcontractors will be required to attend a BIM "kick-off" meeting where items such as level of model detail, file sharing, and coordination schedule dates are determined. The results of that kick-off meeting will be captured in a BIM "Execution Plan" which, once agreed upon, will be the team's guide for the coordination efforts. This Final Execution Plan will become part of this subcontract agreement. The starting point of this plan can be found in Exhibit Q which details the minimum requirements for this specific project; but will be refined after the initial kick-off meeting.
- 12.3 Each Bidder, by submitting its Bid, represents that:
 - A. It has read and understands the BIM addendum attached in the Exhibits
 - B. Has, at a minimum, participated in at least 3 projects in which the bidding subcontractor has created 3D models for the coordination effort.

NEW HANOVER COUNTY GOVERNMENT CENTER

- C. If required, this subcontractor shall submit model examples from previous experience (model files, graphic images, screen shots, etc.) for evaluation of capabilities to model the required detail.

- 12.4 If bidding subcontractor cannot meet requirements outlined above, they may hire services of a third-party vendor and must inform Thomas Construction Group to such arrangement. Bidding subcontractor will be required to assign a representative as a point of contact and be required to manage the third-party vendor to ensure compliance with the BIM implementation plan and BIM addendum in the Exhibits of this bid package manual.

13 BONDING

- 13.1 All Bonds will be issued by a Surety holding a current valid Certificate of Authority issued by the United States Department of Treasury under Sections 9304 to 9308 of Title 31 of the United States Code.
- 13.2 Bid Bonds: Each Proposal valued at \$300,000 or more shall be accompanied by a cash deposit or certified check drawn on some bank or trust company, insured by the Federal Deposit Insurance Corporation, of an amount equal to not less than five (5%) percent of the bid proposal –OR- bidder may offer a bid bond of five (5%) percent of the bid executed by a surety company licensed under the laws of North Carolina to execute the contract in accordance with the bid bond. Said deposit shall be retained by the construction manager as liquidated damages in event of failure of the successful bidder to execute the contract within ten (10) days after award or to give satisfactory surety as required by law. Bid Bond/certified check shall name Thomas Construction Group as PAYEE.
- 13.3 Bidder agrees to hold bid price for one hundred twenty (120) days after the date of bid opening or longer if outlined in contract documents as a Bid Alternative, as part of the Bid Bond.
- 13.4 Payment and Performance Bonds: The successful Bidder may be required to provide and pay for a Labor and Materials Payment Bond and a Performance Bond, each in the amount of 100% of the Contract Amount. Bonds must be written on Thomas Construction Group Forms (Exhibit K of the Subcontract Agreement). This is a requirement for all contracts over \$300,000.

13 PROPOSAL SUBMISSION REQUIREMENTS

- 14.1 All bids **must be submitted on the Proposal Forms supplied by the Construction Manager.** All Bids must conform in every respect to the Bid Documents and all applicable spaces shall be filled in.

Failure to fill in all applicable spaces may be ground for rejection of a Proposal. ***If a bid item has NO value or results in a NO CHANGE adjustment, then the Bidder must use "\$0" in the blank. Use of "N/A" (not applicable), or "N/C" (no change), or "NIC" (not in contract), MAY render the Bid "non-responsive".***

- 14.2 Proposals shall be sealed and plainly marked "Bid" with the name of the Project, Bid Package Number, name and address of the Bidder, Bidder's State Contractor's License Number (as applicable to the bid package), Bidder's State Contractor's License expiration date, License classifications (as applicable), and date and time of the bid opening.

The following items are required to be submitted with bids for the described bid package:

- A. Bid Form – Including Alternates and Unit Pricing

NEW HANOVER COUNTY GOVERNMENT CENTER

- B. Bid Proposal Affidavit
- C. Completed and Initialed Scope of work per Bid Package
- D. Identification of Minority Business Participation
- E. HUB Affidavit A OR Affidavit B
- F. BID Bond in the amount of 5% of Bid, if applicable
(Required for packages that exceed \$300,000.00)

14 BID OPENINGS

- 15.1 Bids will not be publicly opened or read aloud on the bid due date. Thomas Construction will receive bids, review and schedule post bid interviews with subcontractors as deemed necessary. All submitted bids will be contacted once Thomas Construction has reviewed all necessary and pertinent information.

15.2 MODIFICATION OR WITHDRAWAL OF BIDS

Bids may be accepted, without right of withdrawal or modification, for one hundred twenty (120) days from Date of Submission

Bids may be withdrawn by the Bidder only if notice of withdrawal is received in writing by the Construction Manager at Thomas Construction Group prior to the time for receipt of bids. Modifications shall be worded so as not to reveal the amount of the Original Bid.

No Bids may be withdrawn for a period of one hundred twenty (120) days after the scheduled closing time for receipt of same.

Pricing for Alternates must be held for a period of eight (3) months after the scheduled closing time for receipt of the same.

Negligence on the part of the Bidder in preparing his Bid confers no right for the withdrawal of the Bid after it has been opened.

16 BIDS

- 16.1 All Bids must be submitted on the Bid Forms supplied by Thomas Construction Group and breakdown forms provided.

16.2 Each Bidder, by submitting its Bid, represents that:

A. It has read and understands the Bidding Documents and that its Bid is made in accordance therewith.

B. It has visited the site and has familiarized itself with the local conditions under which the work is to be performed, including sub-surface condition and existing work completed by others.

- i. If a bidder has opted to not visit the site, he/she acknowledges that site visitation was made available by the Construction Manager and the bidder has knowingly waived this right to visit the site; the bidder further affirms that in no way will a failure on the bidder's behalf to visit the site become grounds for a change to the scope of the work during progression of the construction of the Project

NEW HANOVER COUNTY GOVERNMENT CENTER

C. Subcontractor's Bid is not conditioned upon any modifications to the Subcontract, the Long Form Terms and Conditions, or any other Subcontract Agreement contents noted in item 1.5 above, and that Subcontractor is prepared to execute the Subcontract without taking exception to any of the provisions contained therein.

D. By submitting a Bid, Subcontractor/Vendor waives all conditions and exclusions that may have accompanied their Bid. Bidders should only use the forms provided by Thomas Construction Group to submit sealed bid proposal.

16.3 Bidders shall identify their key personnel, equipment, and their sub-subcontractors to be used in accordance with the requirements of the Bid Form.

16.4 ITEMS INCLUDED: Bids shall include all labor, supervision, detailing, tools, materials, equipment, insurance, overhead, profit, permits, bonds, fees, sales, use or similar taxes, etc. applicable to and necessary to accomplish the work outlined in the Bid Package Description except as otherwise stated in the Project Bid Manual. The bidding subcontractors shall include all items necessary for the proper execution and completion of the work.

All Bidding Documents are complementary, and what is required by any one will be as binding as if required by all. In the event of a conflict between any of the Bidding Documents, the most stringent will prevail. Work not covered in the Bidding Documents will not be required unless it is consistent and reasonably inferable as being necessary to produce the intended results.

All Bidders shall, prior to submitting a bid, examine the Bidding Documents thoroughly with respect to work by others and shall have familiarized themselves with the interfacing and coordination of their work with that of other Subcontractors as it pertains to all aspects of the work.

Bidder must provide a totally complete operational system in accordance with all Drawings and Specifications, Local and State Building and Fire Codes and accepted manufacturer's and industry standards governing the Project.

16.5 Prior to submitting a bid, each Bidder shall thoroughly research and familiarize itself with all applicable licensing requirements of the state and local authorities having jurisdiction over the project.

17 SUBMISSION OF BIDS

17.1 Bids will be received for the NEW HANOVER COUNTY GOVERNMENT CENTER

1/14/2020 @ 3:00PM

Submittal of bids will be at the same location as the pre-bid conference:

Thomas Construction Group
1022 Ashes Drive, Suite 200

DO NOT MAIL BID FORMS DIRECTLY TO NEW HANOVER COUNTY

NEW HANOVER COUNTY GOVERNMENT CENTER

Prior to bid day shall be by hand delivery to :

Thomas Construction Group
RE: New Hanover County Government Center
Attn: Kyle Brooks

(Clearly mark on envelope **“New Hanover County Government Center – BID”**)

Note: If a bidder opts to mail or hand deliver bid forms to Thomas Construction Group, the bidder is solely responsible for confirmation of receipt at the address listed above no later than **3:00PM** on bid day (information above). It is strongly recommended that delivery tracking with signature confirmation be utilized to track shipments and confirm receipt by the Construction Manager. It is not the responsibility of Thomas Construction Group to ensure the transport, delivery or receipt of bids from the bid drop-off location to the bid opening at any point after the set time for receipt.

DO NOT MAIL BID FORMS DIRECTLY TO NEW HANOVER COUNTY

18. POST-BID INFORMATION

- 18.1 Each Bidder shall be prepared to attend a selection interview in which the CM, Architect and Owner may participate. The final selection will be made based on the interview team's evaluation of the bidder and their response.
- 18.2 Each Bidder shall be prepared to furnish such information to Thomas Construction Group as is required to demonstrate to the satisfaction of Thomas Construction Group, the Designers and the Owner the ability of the proposed persons and entities to carry out the work for which they have proposed. Provide to Thomas Construction Group, at the Post-Bid Conference, a copy of the following:
- Company Organization Chart with Names and Contact Numbers
 - Resumes of Project Manager and Field Supervisor(s)
 - Insurance
 - Material Supplier and Lower Tier Subcontractor Listing
 - Company Safety Policy
 - Jobsite Specific Safety Plan
 - Jobsite Specific QA/QC Plan
 - Job Hazard Analysis
 - E-Verify
 - Secretary of State – Proof of registration

Individuals attending this Post-Bid Conference shall have the authority to represent its company and to make decisions or commitments on behalf of their company. Meeting minutes and video records from these interviews will be kept by Thomas Construction Group and distributed to each interviewing company. The Post Bid interview notes/recordings will be made part of the contract agreement as Exhibit P.

- 18.3 A post bid interview period will occur after receipt of bids and will be scheduled by Thomas Construction Group with the apparent low bidder within 48-72 hours of bid opening.

NEW HANOVER COUNTY GOVERNMENT CENTER

19. FAILURE TO EXECUTE AN AGREEMENT

- 19.1 If Bidder's Proposal is accepted resulting in the Award of a Contract, Bidder agrees to meet with Contractor, review and execute Contract within seven (7) calendar days after notification from the Contractor. In addition to any other rights which the Contractor may have, Bidder's failure to execute the Contract within the specified time or to furnish any required bonds or insurance certificates shall, if the Contractor so elects, release the Contractor from every obligation of any nature whatsoever to Bidder
- 19.2 The CM & Owner reserves the right to issue subcontracts to the selected bidder at any time up to one hundred twenty (120) days after the receipt of bids. The bidder must sign and return the Agreement within seven (7) days of receiving it. Failure to do so will be considered as refusal on the part of the selected bidder to enter into the Agreement. Upon such refusal, the CM & Owner may award the contract to the next qualified bidder, at their option, with the initially selected bidder's bid guaranty being retained as provided by law.

END OF SECTION – INSTRUCTIONS TO BIDDERS

SECTION

00 02 00

Minority Participation Program

Thomas Construction Group is committed to soliciting and utilizing qualified minority, women-owned and disabled-owned subcontractors and vendors in every community when conducting business. We believe that DBE/HUB opportunities exist in most, if not all, projects; therefore, Thomas makes a concerted effort to include minority businesses when solicitation proposals.

HUB GOALS AND RESPONSIBILITIES:

Our HUB program goal is to obtain the maximum participation of HUB owned businesses. Though many of our projects do not mandate specific goals, our work with HUB firms mirrors our commitment to broadening the construction community and returning benefits to the project's local economy. The goal for the State of North Carolina projects is typically 10% participation by HUB-owned businesses. It is the goal of our team to maximize the ability of the local HUB construction community to participate in the work, thereby partnering and investing in the construction project and our steadfastness to the community. Every member of our construction team is committed to this goal.

Not only do we practice HUB/MBE participation for our projects, but we also employ women in key roles throughout our company. This trend will continue as we seek opportunities to hire talented workers based on skill set and not gender or background. Our intern program has been very successful, and we regularly attend career fairs at major universities. We continue to hire graduates from our state-supported institutions. Thomas recently participated with NCSU and allowed undergraduate and graduate students to use one of our local Raleigh projects as a Case Study.

OUTREACH

How We Will Exceed Your Goal:

- Thomas Construction Group maintains an extensive subcontractor/vendor database, which designates minority status. Verification of their status is made using the North Carolina Department of Administration website. We endeavor to consistently update our HUB database with subcontractors and vendors from various resources, including but not limited to: NCDOA Office of HUB; Directory of NC Department of Transportation; New Hanover County Minority/Women Business Enterprise Directory; City of Wilmington; Wilmington Housing Authority; Small Business Technology Development Center; and other HUB Support organizations.
- Packaging work items that take advantage of the strengths of the minority and local contracting community.
- Conduct pre-proposal meetings with unfamiliar minority and disadvantaged businesses.
- Making bidding documents available at convenient locations and times.
- Consideration of labor or material only contracts and payment cycles of twice a month in lieu of monthly to reduce financial burdens.
- Project specific training with our staff to assist with administrative and pre-qualification forms.
- Project specific notices with our local municipalities, trade associations, and professional associations and with statewide MBE listing.
- Provide clear and efficient procedures for monitoring compliance with the HUB program.

GOOD FAITH EFFORT

Our Effort Will Result in Success:

- If the minority participation goal is not met, we understand our client will evaluate all efforts made by the Contractor and determine compliance in regard to quantity, diligence, and results of these efforts. Contractors are required to earn at least 50 points for good faith efforts.
- Implementing the Thomas Outreach Program will bring us in touch with the established businesses which have the capability to participate in the proposed project. Our team's commitment and accountability is tracked in a detailed log that reflects our efforts with notes and files collecting company information on all interested firms.
- Mass notification and drawing distribution through a number of sources including but not limited to:
 - Advertising in the newspaper(s) with the highest readership within the project vicinity and Diversity News.
 - Conduct subcontractor/vendor search on the North Carolina Department of Administration – Office for Historically Underutilized Businesses website for HUB businesses in and surrounding the county in which the project is located.
 - Construction plans and specifications are made available for review in our office and posted electronically in our bid advertisement/solicitation utilizing Building Connect, an email broadcast tool which solicits from a database of over 10,000 subcontractors – many of whom are MBE/HUB certified by the State of North Carolina; as well as local plan rooms.
- Bid packages will be analyzed and written to facilitate HUB participation in prime subcontracting and second tier bidding. When appropriate, prime subcontract packages may be broken down into smaller bid packages to help promote HUB participation.
- Our team will announce this opportunity to our database of HUB firms early to generate interest.
- Thomas solicits HUB firms on other private projects that allow companies to learn the expectations and build capacity for jobs such as our client expects and requires. Electronic mail and publication advertising are the primary methods of solicitation delivery. Unresponsive subcontractors are followed by personal telephone contact.
- Provide quick pay agreements and policies to enable minority contractors and vendors to meet cash-flow demands.

IDENTIFICATION AND RECRUITMENT

How We Will Do It:

- Thomas will work with the Owner, our internal HUB database, and the HUB listings of MBE and HUB companies in the area which might be interested in the project.
- Direct communication by our team of the opportunities on this project will be clearly documented and advertised.
- Networking sessions to connect first tier subs with second tier subs.
- Provide methods for joint check purchasing to alleviate cash flow problems. We will make special payment arrangements for minority companies to help with the financial burden of labor and materials.
- Waiving of certain insurance limit requirements where excessive limits hinder open competition.
- Provide education sessions and training to help with pre-qualification documents.
- Assist with bidding preparation and scope review prior to bid day.
- Awarding of work items on unit cost basis or rate schedule basis.
- Assist with bonding company relations. Our team will work to make introductions to the bonding community and the subcontractors which appear to be solid new businesses with a real potential of growing with bonding assistance.

MONITORING AND REPORTING

Documenting and Reporting our Success for Minority Business Participation Requirements:

- Thomas will track the utilization of MBE and HUB throughout the project. A master log will show an overview of companies contacted, information on file, and level of interest and specific area of work, conversations, impediments and solutions.
- Developing mentoring relationships between primary subcontractors and minority subcontractors.
- We have proven methods that ensure this can work and will happen. Along with the reporting of HUB participation, our team emphasizes the mentoring of small businesses. Thomas seeks to work with prime subcontractors (e.g. Mechanical, Electrical, Plumbing, etc.) which have a successful history of projects will develop mentoring relationships between small and large subcontractors so a learning opportunity is created and monitored.
- Specifying minority percentage goals by individual prime subcontract package. We will work with other large subcontractors in major disciplines to adopt an MBE responsibility at a sub-sub level. We monitor this program to ensure that it is being managed with the same goals as Thomas.

State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of _____

I have made a good faith effort to comply under the following areas checked:

Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- ☐ **1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- ☐ **2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- ☐ **3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- ☐ **4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- ☐ **5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- ☐ **6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- ☐ **7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- ☐ **8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- ☐ **9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- ☐ **10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

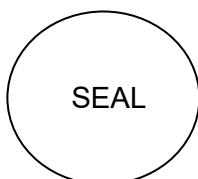
The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

**State of North Carolina --AFFIDAVIT B-- Intent to Perform Contract
with Own Workforce.**

County of _____

Affidavit of _____

(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____

_____ contract.

(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

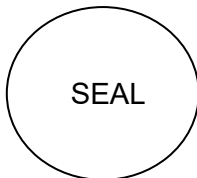
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit.

This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

(Project Name)
Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____ % of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below.

Attach additional sheets if required

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

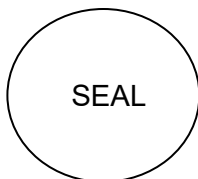
*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____



Signature: _____

Title: _____

State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

State of North Carolina AFFIDAVIT D – Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by HUB Certified/ minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

(Project Name)
Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with HUB certified/ minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Examples of documentation that may be required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

- Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- Copies of quotes or responses received from each firm responding to the solicitation.
- A telephone log of follow-up calls to each firm sent a solicitation.
- For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- Copy of pre-bid roster
- Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- Letter detailing reasons for rejection of minority business due to lack of qualification.
- Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

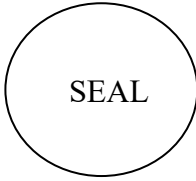
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

00 03 00

DO NOT PUT EXCLUSIONS, BID CLARIFICATIONS, OR ANY OTHER NON-SOLICITED ATTACHMENTS TO THIS BID PROPOSAL. FAILURE TO COMPLY MAY BE GROUNDS FOR CONSTRUCTION MANAGER TO REJECT BID. ALL AREAS ON THIS BID FORM MUST BE FILLED OUT COMPLETELY. ANY AREAS NOT FILLED OUT WILL BE CONSIDERED ZERO DOLLAR AMOUNT. ITEMS THAT DO NOT APPLY TO THIS BID PACKAGE WILL BE FILLED IN WITH "N/A".

Bid Acknowledgements

1. Bids may not be withdrawn for a period of one hundred twenty (120) days after the scheduled closing time for receipt of same.
2. Bidder recognizes that time is of the essence in this proposed subcontract and that it will complete the work in accordance with the required Project Construction Schedule.
3. Bidder certifies that it has familiarized itself with the Local Labor Market and is satisfied that adequate labor resources will be available to allow timely completion.
4. Bidder acknowledges that Bid Alternate amounts are to be honored for 8 months from date of bid.
5. Bidder hereby acknowledges receipt of a complete set of drawings and specifications, along with the following addenda/bulletins/revisions:

_____	Date: _____
_____	Date: _____
_____	Date: _____
_____	Date: _____
_____	Date: _____
_____	Date: _____

By:

Member of Firm Authorized to Sign Bid

Title

State License Number(s) (if applicable): _____

The Bidder is a/an:

☐ Individual☐ Partnership☐ Corporation incorporated in the State of☐ Other __________
(Seal required for Corporation)

SUBCONTRACT AGREEMENT

Subcontractor must check each of the below boxes as confirmation that he has reviewed, and will comply with the associated requirements without modifications upon notification of award:

- ☐ Bid Package Specific Scope of Work and bid form
- ☐ Bid Bond (for bids over \$300,000)
- ☐ Subcontract
- ☐ Certificate of Insurance
- ☐ Subcontract Agreement
- ☐ Safety Manual
- ☐ Project Schedule
- ☐ 10 % HUB Goal, detailed in Exhibit U of Subcontract Agreement
- ☐ If HUB Certified, Subcontractor and/or lower tier must be certified with The Statewide Uniform Certification (SWUC) program that went into effect July 1, 2009. As of this date, only firms certified in the SWUC Program will be counted towards minority participation goals.

Bid Proposal Affidavit

STATE OF _____

COUNTY OF _____

_____, being of lawful age, being first duly sworn, upon his oath
deposes and says:

That he executed the accompanying proposal on behalf of the Contractor therein named, that he had lawful authority to do so, said Contractor has not directly or indirectly entered into any agreement, expressed or implied, with any Contractors(s) or person(s), having for its object the controlling of the price or amount of such proposal, or any proposal; the limiting of the number of proposals or Contractors; the parceling or farming out of any profits thereof, to any Contractors(s) or other person(s); and further says that he has not and will not divulge the sealed proposal to any person whomsoever, except those having a partnership or other financial interest with him in said proposal or proposals, until after the sealed proposal or proposals are opened.

Signed: _____

as: _____

on behalf of: _____
(Contractor)

Sworn to and subscribed before me this the _____ day of _____, 2015.

(Notary Public)

STATE OF: _____

COUNTY OF: _____

MY COMMISSION EXPIRES:

Bid Bond Requirements

New Hanover County Government Center

Required Bid Forms- Bid Bonding Requirements

If bid amount is over \$300,000 (not including Alternates)

**The Bidder is required to provide one of the following per Tab 1
Section "Instructions to Bidders":**

Cash deposit in the amount of 5% of bid

-OR-

Certified Check in the amount of 5% of bid

-OR-

Bid Bond in the amount of 5% bid (follows this sheet)

BID BOND FORM

KNOW ALL MEN BY THESE PRESENTS, That we,

(Bidder's Name)

_____, of _____

(Street Address)

(City, State, Zip)

Hereinafter called the Principal, and

(Surety's Name)

A corporation organized and existing under the Laws of the State of _____, and authorized to transact business in the State of _____, as Surety, hereinafter called Surety, are held and firmly bound unto **Thomas Construction Group** (Construction Manager).

Hereinafter called Obligee, in the Penal sum of five percent (5%) of the amount bid, good and lawful money of the United States of America, for the payment of which the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The Condition of this Obligation is such, that, WHEREAS the Principal has submitted a proposal to the Obligee on a contract for the construction

of _____.

(Contract Name and Number)

NOW THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the Bidding or Contract Documents with good and sufficient surety for the faithful performance of such construction for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith

BID BOND FORM

contract with another party to perform the Work covered by said bid, then this obligation shall be null and void; otherwise to remain in full force and effect.

In witness whereof, we have hereunto set our signatures and seal this _____ day of _____, 20_____, all pursuant to due authorization.

Principal (Seal)

By
Surety

By
Attorney-in-Fact in accordance with the attached Power of Attorney

STATE OF _____)

SS:

COUNTY OF _____)

I, _____, a Notary Public in and for the State and County
aforesaid, do hereby certify that _____, and
_____, whose names are signed to the foregoing bond, this day
personally appeared before me in my State and County aforesaid and acknowledged the same.

Given under my hand seal this _____ day of _____, 20_____.

Notary Public (Seal)

My Commission expires:

VERIFICATION

I, _____, _____ of _____ hereby verify that

(Name of Individual)

(Title)

(Company)

_____ has procedures in place for validation of proper documentation of our

(Company)

workforce and is in compliance with all immigration and employment laws and all terms of the

Immigration and Nationality Act regarding the employment eligibility and hiring practices of all

employees of _____.

(Company)

This the _____ day of _____, 2018.

Signature: _____

Printed Name: _____

Title: _____

Company Name: _____

Sworn to and subscribed before me this the _____ day of _____, 2018.

Notary Public

My Commission Expires: _____

INSERT SCOPE OF
WORK FROM SECTION
00 04 00 WITH YOUR
BID

SCOPE OF WORK
SHOULD HAVE EACH
PAGE INITIALED, AS
WELL AS ALL
PERTINENT
INFORMATION FILLED
OUT FOR ALTERNATES,
UNIT
PRICES, ALLOWANCES
AND BID
BREAKDOWNS

State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of _____

I have made a good faith effort to comply under the following areas checked:

Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- ☐ **1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- ☐ **2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- ☐ **3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- ☐ **4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- ☐ **5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- ☐ **6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- ☐ **7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- ☐ **8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- ☐ **9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- ☐ **10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

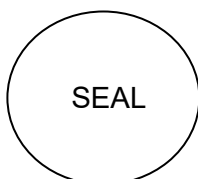
The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

**State of North Carolina --AFFIDAVIT B-- Intent to Perform Contract
with Own Workforce.**

County of _____

Affidavit of _____

(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____

_____ contract.

(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

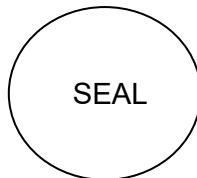
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit.

This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

(Project Name)
Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____ % of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below.

Attach additional sheets if required

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

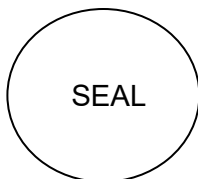
*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____



Signature: _____

Title: _____

State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

State of North Carolina AFFIDAVIT D – Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by HUB Certified/ minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

(Project Name)
Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with HUB certified/ minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Examples of documentation that may be required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

- Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- Copies of quotes or responses received from each firm responding to the solicitation.
- A telephone log of follow-up calls to each firm sent a solicitation.
- For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- Copy of pre-bid roster
- Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- Letter detailing reasons for rejection of minority business due to lack of qualification.
- Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

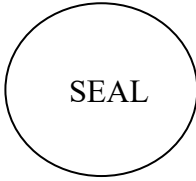
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

NON-COLLUSION AFFIDAVIT

By executing this proposal, I certify that this proposal is submitted to Thomas Construction Group competitively and without collusion. I am authorized to represent the candidate or bidder named below both in submitting this proposal and in making this non-collusion Affidavit. To the best of my knowledge and belief;

(1) the candidate or bidder has not violated N. C. General Statute section 133-24 in connection with the proposal

(2) the candidate or bidder has not entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with its proposal

(3) the candidate or bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding or making a proposal for the benefit of another contractor. The neuter includes the masculine and the feminine. The candidate or bidder to which this Non-Collusion Affidavit refers is:

(insert name of candidate or bidder)

(signature of individual)

ACKNOWLEDGMENT

Type or print name of the individual who signed the affidavit:

Type or print the name of Notary Public signing this acknowledgment:

Place where acknowledgment occurred: County of _____, State of _____

Notary's residence: County of _____, State of _____

I, the Notary Public named above, certify:

- (1) the individual named above personally appeared before me this day
- (2) I have personal knowledge, or satisfactory evidence, of the individual's identity
- (3) the individual acknowledged signing the foregoing affidavit.

This the day of _____, 20____.

Notary Public
My commission expires:

NON-COLLUSION AFFIDAVIT

By executing this proposal, I certify that this proposal is submitted to Thomas Construction Group competitively and without collusion. I am authorized to represent the candidate or bidder named below both in submitting this proposal and in making this non-collusion Affidavit. To the best of my knowledge and belief;

(1) the candidate or bidder has not violated N. C. General Statute section 133-24 in connection with the proposal

(2) the candidate or bidder has not entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with its proposal

(3) the candidate or bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding or making a proposal for the benefit of another contractor. The candidate or bidder to which this Non-Collusion Affidavit refers is:

(insert name of candidate or bidder)

(signature of individual)

ACKNOWLEDGMENT

Type or print name of the individual who signed the affidavit:

Type or print the name of Notary Public signing this acknowledgment:

Place where acknowledgment occurred: County of _____, State of _____

Notary's residence: County of _____, State of _____

I, the Notary Public named above, certify:

- (1) the individual named above personally appeared before me this day
- (2) I have personal knowledge, or satisfactory evidence, of the individual's identity
- (3) the individual acknowledged signing the foregoing affidavit.

This the _____ day of _____, 20____.

Notary Public
My commission expires:

00 04 00

INFORMATION APPLICABLE TO ALL BID PACKAGES

Bid Package Intent:

In general, this Bid Package is comprehensive to specific CSI Division Work and related Work as referenced, indicated on, or implied by the Project Drawings, Specifications and Project Manual. Subcontractor acknowledges that the following Scope of Work detail is provided as a courtesy and must be used in conjunction with all Project Documents. Scope of Work detail listed is not intended to describe a complete and final work scope. It is provided as a summary overview only.

1. DEFINITIONS

The term “**provide**” means to furnish and install, including all labor, materials, supervision, equipment, tools, storage, insurance, taxes, applicable bonds, and all other items to perform the work.

The term “**include**” means to furnish and install, including all labor, materials, supervision, equipment, tools, storage, insurance, taxes, applicable bonds, and all other items to perform the work.

The term “**furnish**” means to supply materials, including delivery, taxes, and applicable bonds. Coordinate all deliveries with the receiving Subcontractor.

The term “**install**” means to receive, inventory, sort, store, distribute, and install, including all labor, supervision, equipment, tools, storage, insurance, taxes, applicable bonds, and all other items necessary for the installation of the work.

The term “**maintain**” means to assume all responsibility for, to maintain structural integrity of, and to keep in proper working order for the duration of the Project, or until no longer required as directed by Thomas Construction Group

Addenda: Formal changes or clarifications issued by the Owner or Owner’s representative to all identified bidders during the bidding period. When modifications are not included in the original bid documents, the issuance of addenda is a process by which bidders can be updated on design changes and clarifications. If such changes or modifications were made after the contract award, these items of work have to be addressed as changes.

Allowance: Amounts included in subcontracts as part of the base bid amount for work above and beyond the work outlined in the bid package scope of work sections (note that: a) these hours are inclusive of all field and office costs, b) the total value of these allowances included by the subcontractor are to be broken out on the bid form, c) verification of any allowance usage must be signed off on by the Contractor to be validated for billing purposes, and d) all unused portion(s) of these item(s) will be reconciled at the completion of the project via deductive change order):

Alternates: Ideally, on a lump sum contract the low bidder will be determined as the party submitting the lowest bid. The determination and selection of the lowest bidder are made more complex when the Project includes alternates. Alternates can be viewed as modifications to the base bid. They may consist of changes in the structure of a project, changes in the quality of the material to be furnished, the inclusion of additional items of work, the deletion of specified work items, and so on.

Base Bid: Refers to the Total Lump Sum price for all the work outlined in the scope of work, and specified in the contract documents.

Bid Bond: Issued to give assurances that the Subcontractor will enter into a binding construction contract and will provide the required payment and performance bonds if the contract is awarded

to him/her. If the Subcontractor fails to do this (sign the contract and furnish the required bonds), the bond stipulates that a responsible party (the surety) will pay the damages.

Bid Form: The bid documents usually include a bid form on which the bids are to be submitted. There are very compelling reasons to use a specified bid form for all bidders. This form will facilitate analysis and comparison of the bids so that irregularities can be detected quickly. For Subcontractors, it ensures accuracy in providing the necessary information and prevents the possibility of having omissions in the bids.

Payment Bonds: Gives protection to the Owner if the Subcontractors and suppliers are not paid by the prime Contractor. Payment bonds prevent liens. Basically, the Subcontractors are paid by the surety if the Contractor fails to pay them.

Performance Bonds: Assures that a financially responsible party will stand behind the prime Contractor if he or she does not perform properly. These bonds usually state a specified dollar amount as a limit to the liability of the surety.

Unit Prices: Unit Prices are used when the Project is fairly well defined but the actual quantities may be difficult or impossible to estimate the accuracy until after construction has started. Thus, the unit price is utilized as a means to establish the payment to be made to the Subcontractor based on precise measurements of in-place field quantities. Unit prices shall be added via change order to this subcontract on an as-need basis. Additional performance requirements above and beyond the provisions of this agreement and following expenditure of any allowances listed above will be performed on an hourly unit basis not to exceed a flat fee which shall include all field costs, printing costs, home office overhead, engineering fees, profit, etc. as follows (note that: a) any additional scope of work must be pre-approved by Contractor in writing prior to Subcontractor proceeding with such work; any unauthorized extra work will not be considered for payment, and b) at any time, the Contractor has the right to re-advertise for bid portions of the work on a lump sum competitive basis rather than electing to utilize unit prices detailed under this agreement).

2. GENERAL

1. In the event of any conflicts between these provisions and the contract documents, the more stringent shall govern.
2. Subcontractor will provide competent superintendent on site at ALL times during construction. This individual will have the authority to make decisions on behalf of the subcontractor in regard to manpower and construction sequencing.
3. Subcontractor shall be solely responsible for obtaining all licenses, permits, and inspections required for the completion of the work covered under this Contract.
4. References to the term "Contractor" in the Drawings and Specifications shall be interpreted to mean work by this Subcontractor as they relate to this scope of work.
5. Subcontractor acknowledges that the site has very limited storage space and coordination of deliveries with the Contractor's Superintendent and the project schedule will be critical.
6. There is a minimal amount of on-site parking. It is strictly reserved for Supervisor's only and must be approved for use by the Thomas Construction Group Superintendent.
7. Subcontractor shall be responsible for washing the tires and undercarriages of all vehicles and equipment associated with this scope of work prior to leaving the site at the designated exit locations. Subcontractor shall be responsible to cleanup all soils and debris that are tracked off site on a daily basis or more often if needed.
8. All materials shall be delivered in their original, unopened packages and must be protected from exposure to the elements. Damaged, deteriorated, or unused materials shall be removed from the premises or as directed by the CMAR
9. Subcontractor shall be responsible for all equipment and labor necessary for unloading, hoisting, and distribution of his materials required for the project. Subcontractor shall be solely

- responsible for re-distribution and/or relocation of his materials as directed by Contractor for the continuation of other activities. Subcontractor shall provide qualified licensed operators for all equipment required.
10. Multiple mobilizations shall be required to perform this work. Subcontractor shall provide all required mobilizations at no additional cost. however if directed to remobilize due to damage or negligence by others trades, these additional mobilization costs will be passed on to these trades.
 11. Proper location and installation of all materials shall be the sole responsibility of Subcontractor.
 12. Subcontractor shall attend all coordination meetings that will be held at the Contractor's office on site prior to any installation. In these meetings, Subcontractor, shall notify Contractor of any other trades work that may prohibit the installation of Subcontractor's work.
 13. Subcontractor will coordinate a pre-construction meeting with their onsite Supervisor/Foremen, Manufacturer, Contractor, Architect and Owners Rep prior to starting work to review the manufacturer's requirements and the Contract Documents.
 14. In the event of any conflicts between these provisions and the contract documents, the more stringent shall govern.
 15. Subcontractor shall at all times respect the work of other crafts and shall take all necessary precautions to avoid damaging such work. If the Subcontractor damages such work, repairs shall be made at Subcontractor's expense.
 16. Subcontractor shall proceed with the work only as directed by the Contractor.
 17. Subcontractor shall provide all labor and material warranties in accordance with the specifications.
 18. Subcontractor shall be responsible for theft, damage, and loss to all materials stored on site.
 19. Subcontractor shall provide physical samples of all products, specification sheets (including flame spread information), SDS sheets, maintenance, and warranty documents to Owner, Architect, and Contractor at no cost.
 20. Subcontractor shall examine substrates for any condition that would affect proper installation according to the plans and specifications. Subcontractor shall notify Contractor within (1) week prior to schedule start dates of any discrepancies. Application constitutes acceptance of substrate.
 21. Subcontractor includes all required field measurements, and layout of all work and patterns is included.
 22. Subcontractor shall punch-out all work included in this scope and shall correct all incomplete and/or defective work within the time frame allowed by the Contractor. Subcontractor shall enumerate his own punch list and execute same prior to punch out by Contractor.
 23. This Subcontractor shall provide all testing data required by the Contract Documents. Tests shall be documented and submitted to the Contractor including all close out manuals, warranties, and certificates upon completion of the Work. Each roofing system warranty shall commence from the date of each Building's Date of Substantial Completion.
 24. Subcontractor is responsible for unloading, distribution, storage, security, breakage, and loss of all materials.
 25. Subcontractor will provide competent superintendent on site at ALL times during construction. This individual will have the authority to make decisions on behalf of the subcontractor in regard to manpower and construction sequencing.
 26. Subcontractor shall conform to all QA/QC requirements of the Contractor.
 27. Subcontractor shall perform cleanup of subcontractor related work in work areas daily. If cleanup is not performed daily, after 48 hours prior written the Contractor will direct temporary labor to perform this work and all costs associated with the cleanup will be deducted from this subcontract.
 28. **Silica Standard: Per OSHA regulations, at no point will subcontractors be allowed to disturb silica (RCS) containing products/materials without the following submittals:**

- Respirable Crystalline Silica Program – 1926.1153
- Respiratory Protection Program - 1910.134
- Training documentation
- Competent person identification/declaration – Silica
- Written silica exposure control plan (resource - www.silica-safe.org)
- Table 1 Compliance (if applicable)
- Air Monitoring/Sampling data or Objective data (if applicable)

29. Each subcontractor is required to provide manpower for participation in a composite clean-up crew. This amount is to be identified as a separate line item in your contract SOV. At our discretion, the CM has the right to reduce your contract via a deductive change order prior to the subcontractor beginning work, and will provide said composite clean-up on behalf of the subcontractor(s). This will and does not eliminate your subcontract requirement to provide daily clean-up of your own trash

30. Subcontractor shall be responsible for maintaining a current set of as-built documents for this Scope of Work with periodic updates occurring as necessary but no further apart than on a monthly basis. Subcontractor shall be responsible for reviewing said documents periodically with Contractor at his discretion. Such as-built information should contain dimensioned locations from known points (building corners, etc.), sizes and material classes, elevations, etc. In the event Contractor determines the as-built documents are not being prepared accurately and/or not being updated on a regular basis, Contractor may recommend that progress payments be withheld from Subcontractor until such time the as-built documents are appropriately updated.

31. **This is a lump sum subcontract. Pricing includes any escalation required for the duration of the project.**

Bid Package Index

- ☐ [01A GENERAL TRADES](#)
- ☐ [01C FINAL CLEANING](#)
- ☐ [01D FENCING AND GATES](#)
- ☐ [02A DEMOLITION](#)
- ☐ [03A STRUCTURE](#)
- ☐ [03T TERMITE TREATMENT](#)
- ☐ [05C ARCHITECTURAL RAILINGS](#)
- ☐ [06A ROUGH CARPENTRY](#)
- ☐ [06F ARCHITECTURAL MILLWORK](#)
- ☐ [07A WATERPROOFING & CAULKING](#)
- ☐ [07B ROOFING](#)
- ☐ [07E SIDING](#)
- ☐ [07F METAL COLUMN COVERS](#)
- ☐ [07I JOINT COVERS](#)
- ☐ [07J EIFS](#)
- ☐ [08A DOORS, FRAMES & HARDWARE](#)
- ☐ [08D OVERHEAD DOORS AND GRILLES](#)
- ☐ [08E SPECIALTY DOORS](#)
- ☐ [08F GLASS AND GLAZING](#)
- ☐ [09A DRYWALL/METAL FRAMING](#)
- ☐ [09B CEILINGS](#)
- ☐ [09D PAINTING/WALLCOVERING](#)
- ☐ [09E FLOORING](#)
- ☐ [09L HARD TILE](#)
- ☐ [10A TOILET PARTITIONS / ACCESSORIES](#)
- ☐ [10B SOUND ABSORBING WALL UNITS](#)
- ☐ [10C SIGNAGE](#)
- ☐ [10D LOCKERS](#)
- ☐ [10E FIRE EXTINGUISHERS / CABINETS](#)
- ☐ [10G CANOPIES / AWNINGS](#)
- ☐ [10I LOUVERS](#)
- ☐ [10P ACCESS FLOORING](#)
- ☐ [10Q FOLDING PARTITIONS](#)
- ☐ [12A WINDOW TREATMENTS](#)
- ☐ [14A ELEVATORS](#)
- ☐ [21A FIRE PROTECTION](#)
- ☐ [22A PLUMBING](#)
- ☐ [23A HVAC](#)
- ☐ [23C CONTROLS / INTEGRATED AUTOMATION](#)
- ☐ [26A ELECTRICAL](#)
- ☐ [27A COMMUNICATIONS](#)
- ☐ [28A FIRE ALARM](#)
- ☐ [31D SITEWORK/SITE UTILITIES/SITE CONCRETE](#)
- ☐ [32O LANDSCAPING & IRRIGATION](#)

BID PACKAGE - 01A – General Trades

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **General Trades** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **01A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide a general trade's foreman that will have the following roles and responsibilities:
 - a. Supervise and manage an on-going cleanup crew consisting of general laborers provided by this package
 - b. Must have a company vehicle
 - c. Be able to perform carpentry, general trades, punchlist and other tasks as directed by TCG
 - d. Adequately produce daily reports with adequate manpower and labor hour tracking
This foreman will report directly to the TCG Superintendent on a daily basis
NOTE: A resume must be provided for this person with your bid. This person may not be removed from the project without consent from TCG.
 - e. This foreman position will be for the entire duration of the project (Starting March 15, 2021 with an anticipated completion of September 16, 2022)
2. Provide all tools, material and equipment necessary for the completion of this scope of work. This includes shovels, rakes, pumps/discharge hoses, wheelbarrows, weed eaters, lawnmowers, small tools (i.e. hammers, nails, saws, etc.) TCG will not supply any tools, misc. material or equipment needed at any point.
3. Provide 4 large "Rubbermaid" type trash carts per floor for debris removal.
4. At all elevator door openings, this package is to include a 6' plywood enclosure with a locked chain-link gate. This package includes all signage required and posted for a confined space
5. Provide a composite general cleanup crew. This crew will be used at the direction of TCG. The primary task will be jobsite cleanliness and housekeeping. This package is to allow for 4 person at 40 hours a week for 78 weeks for a total of 12,480 hours.

NOTE THE FOLLOWING: This does not mean that a crew of 4 will be on the project full time for 105 weeks. The 4 person amount is a rolling average. It is understood that at times there will only need to be 1 person on site and at other times a crew size larger than 4 will be needed.

General Site Cleaning

- a. Dumping of trash into dumpster on a daily basis.
 - b. Vacuuming (no sweeping allowed) of all VCT floors on a daily basis.
 - c. Wet Mopping of all VCT floors on a daily basis.
 - d. Vacuuming the trailer carpet on a daily basis.
 - e. Dusting/cleaning of all counter tops and desk tops once a week.
 - f. Cleaning and sanitizing two bathroom/toilet rooms 3 times a week.
 - g. Cleaning and sanitizing the break-room sink once a week.
 - h. All cleaning materials, equipment and etc. shall be provided by this Subcontractor.
 - i. Subcontractor to provide 1 Bosch 14 gallon HEPA vac unit, Bosch Fleece bags and Bosh HEPA Filters.
6. During peak trash/debris producing periods (i.e. framing, drywall hanging/finishing, etc.) this package is to provide an additional crew of 3 persons for the duration of those activities. This package is to allow for an additional 40 hours each for 12 weeks for a total of 1,440 hours.
 7. The management of this crew will be the responsibility of this package. This includes proper tracking of all labor hours daily and must be signed by a TCG representative. If at any point TCG requests workers to be removed or replaced for any reason, this package is to comply. Note: If a worker is requested to be removed from the site due to disciplinary action, the hours for this worker for any portion of the day that the worker was removed are not reimbursable and shall not be included in the monthly billing.
 8. Provide, install and maintain all OSHA required handrails for the project. This will include protection at all slab edges. Note, this will not include handrails required during the framing portion of the building. The exterior walls will have rails installed by that trade. It will be the responsibility of this package to maintain these rails after they are installed.
 9. This package is to include plywood protection for all stair risers and steps as to protect the safety nosing
 10. This package includes all OSHA required fire extinguishers to include supply, installation, and maintenance for the duration of the project. This will include 6 – 10# extinguishers per floor at a minimum. This is to include all required inspections and testing.

MATERIAL HOISTS

1. This package is to provide, install and maintain one material lift per the building logistics plan. This lift will be installed at the completion of the first concrete deck and will be removed once the elevators are completed for temporary construction use. This package is to provide an operator for the duration of the hoist rental
2. This Subcontractor shall provide equipment, erection and dismantling, engineering, maintenance and operator training, for use by CMAR, employees, all other trade contractors, and other authorized individuals, one (1) 6,000 lb. (or greater capacity) material hoist; not more than five years old from the date of manufacturer. Hoist Cage shall be minimum 5'x12'-4" x7' high.

3. In addition to the floor access gate, the hoist cage shall have a side loading gate with an opening size of 10'-0" wide x 6' tall minimum to allow for large material deliveries.
4. The location of the hoists will be as indicated on the site utilization plan. Hoist access shall be as follows:
Loading Platform will be at ground level: 0'-0"
Stop one (level 2): +16'-8"
Stop Two (level 3): + 31'-4"
Stop Three (level 4): + 46'-0"
5. The hoists will be top drive type with an integral base enclosure
6. This Subcontractor shall certify hoists after erection, certification shall be maintained in accordance with OSHA/DOL Standards and Thomas Construction Group's Safety Policy. Subcontractor shall include all costs as required to adhere to both DOL guidelines for permitting, inspections and maintenance and manufacturer's recommendations for operation and maintenance.
7. Hoist rental shall be for 12 (twelve) months minimum
8. Electrical service connections to hoist disconnect will be furnished by others. Include hoist disconnect and all required electrical from this service connection point. UL listed components are required.
9. Electrical consumption costs will be by others.
10. This subcontractor is required to have a serviceman for technical assistance during the erection, climbing or dismantlement and in the service of the equipment.
11. Subcontractor warrants the equipment will be delivered in operating condition.
12. Application drawings are included.
13. If the equipment is inoperable due to ordinary wear and tear and the equipment is not repaired within 24 hours of notification from CMAR (notification must be during normal work day/hours M-F) and provided subcontractor is allowed unrestricted access to effect repairs rent shall cease for such downtime and shall resume once equipment is in operating condition.
14. This subcontractor shall employ at its own expense personnel to maintain the equipment in compliance with manufacturers specifications. This Subcontractor shall provide required operator training. Include 3 training sessions to be scheduled at intervals throughout the rental period.
15. Provide safety reports as required by CMAR site safety director. This is to include an initial inspection immediately after erection certifying, in writing that the hoists are ready for use.
16. Preventative maintenance is to be scheduled at regular intervals per manufacturer's requirements and OSHA/DOL requirements.
17. Provide maintenance including lubrication for hoist operation. The hoists safety break will be in compliance with ANSI 10.4 code.
18. Prior to initial use each hoist will be subjected to a load test in accordance with manufacturer and OSHA/DOL requirements for hoist rating and safe operation. A report of this test will be submitted to the CM prior to operation. This subcontractor will include test weights.
19. This package includes a certified drop test for every three (3) months that the hoist is in service

20. Subcontractor to pay all personal property taxes, etc., on equipment. No charge to CM.
21. Rent starts when the hoist is inspected, certified for use and put into service. Rent ends when notification is received by CMAR to remove hoist from jobsite. CMAR to provide 14 day advanced notice to remove hoist.
22. All engineering for connection to the building and any required shoring will be by this subcontractor and design will be sealed by a NC engineer. Attachments to support of the building structure shall be approved by structural EOR. Provide engineered shop drawings detailing erection, operation, maintenance, and training requirements. This includes all support slabs, building tie structure, etc. for a complete installation.

02 EXCLUSIONS

NONE

03 ALLOWANCES

ALLOWANCE 1: Include an allowance of \$15,000 for misc. tools and materials

04 ALTERNATES

ALTERNATE: None

05 UNIT PRICES

Provide unit rates for the following:

General Laborer \$ _____/HR

Foreman \$ _____/HR

06 BID BREAKDOWN

BID TOTAL \$ _____

General Foreman	\$ _____
General Labor	\$ _____
Material Hoist	\$ _____

END OF BID PACKAGE 01A – General Trades

BID PACKAGE - 01C – Final Cleaning

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Final Cleaning** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL

WORK/DIVISION DESCRIPTION:

Bid package No. **01C** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. This package will provide 4 total cleans as follows:

1. Construction Clean – Bulk removal of materials, general sweeping mopping and initial cleaning to allow for completion of punch list. Includes pressure washing, initial window cleaning
2. Final Clean – Deep, full clean of all aspects as described below. To be completed immediately prior to initial design team/inspector walks
3. Puff Clean – Touch up clean of spaces once all punch list is complete and prior to owner acceptance
4. Post move in – light traffic vacuuming, mopping and touch up immediately after move in and prior to accepting students.

NOTE: All spaces that are to be cleaned per the above must be coordinated with the TCG team. Spaces that are to be re-cleaned that have not been coordinated with the CMAR will be the sole responsibility of this package.

2. Subcontractor shall clean all interior and exterior surfaces and spaces including, but not limited to, the following:

1. Flooring:
 - i. Vinyl : sweep, scrub, and damp mop
 - ii. Concrete: sweep, scrub, and mop
 - iii. Resilient flooring: sweep, scrub, and mop
 - iv. Ceramic tile: sweep, scrub, and mop
 - v. Rubber flooring: sweep, scrub, and mop
 - vi. Carpet: vacuum
 - vii. Base: dust and wipe down
2. Walls:
 - i. All wall assemblies: dust and wipe down
 - ii. Ceramic tile: sweep, scrub and mop
 - iii. Note that all brick and cast stone will be cleaned by mason

3. Fixtures:
 - i. Dust, scrub, vacuum, wash down, sanitize, and polish (includes but not limited to all lights, toilets, appliances, sinks, toilet accessories, registers, window blinds, fire extinguisher cabinets, handrails, mirrors, etc.)
 - ii. Light fixture cleaning includes removal of bugs from all fixtures.
4. Storefronts, Windows and Doors:
 - i. Wipe down and polish interior and exterior sides (includes glass, door thresholds, door hardware, etc.)
5. Millwork/Casework:
 - i. Dust, vacuum, wipe down and polish cabinets' interior and exterior sides (includes all drawers, upper and lower cabinets, countertops, shelves, etc.), wood wall panels
6. Mechanical:
 - i. Dust and wipe down all conduits, piping, equipment, etc.
3. Subcontractor shall power wash all exterior sidewalks prior to turnover.
4. Subcontractor shall power wash all paving and hardscapes prior to turnover.
5. Subcontractor will final clean all elevator cabs, thresholds, walls, ceilings, etc. This includes removal of all temporary protection and adhesives.
6. Subcontractor shall notify Contractor upon completion of each area to verify completeness and acceptability. Contractor will only provide written acceptance upon 100% completion of this scope.

02 EXCLUSIONS

NONE

03 ALLOWANCES

ALLOWANCE 1: 200 hours of additional cleaning labor \$ _____

04 ALTERNATES

NONE

05 UNIT PRICES

Foreman: \$ _____/HR

Cleaner: \$ _____/HR

06 BID BREAKDOWN

TOTAL BID	_____
1. Interior Cleaning – Construction Clean	_____
2. Interior Cleaning – Final Clean	_____
3. Interior Cleaning – Puff Clean	_____
4. Interior Cleaning – Post Move in Clean	_____

END OF BID PACKAGE 01C – Final Cleaning

BID PACKAGE - 01D Fencing and Gates

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Fencing and Gates** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL
323119 Decorative Gates

WORK/DIVISION DESCRIPTION:

Bid package No. **01D** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Temporary Construction fencing – Provide and install 2,200LF of 6' Tall chain link with top rail. Include two, 24' gates with wheels. Fencing to be post driven.
2. Provide 100 sandbags and moveable fence bottoms for portions of fence that will be made movable upon mobilization
3. Include 6' perforated windscreen at all construction fencing
4. Provide and install 16' Wide Gates at Mechanical Yard per contract documents. This includes all shop drawings, field measurements, samples and installation for a complete system
5. Provide and install all Aluminum mesh at the mechanical courtyard. The Structural steel supports will be provided and installed by others

02 EXCLUSIONS

NONE

03 ALLOWANCES

ALLOWANCE 1: Fence Repairs \$10,000.00

04 ALTERNATES

ALTERNATE: Remove wind screen from temporary fence scope DEDUCT _____

05 UNIT PRICES

Provide unit rates for the following:

Fence Rental \$ _____/Month
Fence maintenance \$ _____/HR

06 BID BREAKDOWN

Construction Fencing \$ _____
Project Decorative Gates \$ _____
Mechanical Courtyard Mesh \$ _____

END OF BID PACKAGE 01D – Fencing and Gates

BID PACKAGE - 02A Demolition

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Demolition** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 – General Requirements – ALL

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **02A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Complete demolition and removal of existing government center building. This is to include a project specific safety plan that addresses the following at a minimum:
 - a. Cut/Cap/Make safe requirements by other trades
 - b. Equipment to be used
 - c. Sequence and Schedule
 - d. Dust Control
 - e. Noise Control
 - f. Routes in and out of project
 - g. Record keeping
2. All building elements, including but not limited to the following are to be removed:
 - a. Foundations, slabs and concrete
 - b. Wall framing and exterior materials
 - c. Interior walls, floor finishes, wall finishes and Ceilings
 - d. Mechanical, Electrical, Plumbing, Fire Protection, Fire alarm and other building systems
 - e. Structural Steel, roof/floor decking and roof materials
3. This package is to provide a complete hazardous materials assessment. All hazardous materials identified to be removed will be handled by this package as a separate scope once the survey is completed
4. All cut/Cap/Make safe requirements will be required to be fully coordinated with the project MEP trades prior to starting demolition

02 EXCLUSIONS

None

03 ALLOWANCES

None

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

Provide unit rates for the following:

Equipment Operator

\$ _____/HR

Demo debris – Haul off/dispose

\$ _____/TN

06 BID BREAKDOWN

Mobilization

\$ _____

Building Demolition

\$ _____

Schedule

_____ weeks

END OF BID PACKAGE 02A Demolition

BID PACKAGE - 03A Structure

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Structure** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
03 0522	Permeability Reducing Admixtures
03 3000	Cast-in-place concrete
03 4713	Tilt-Up Concrete
05 1200	Structural Steel Framing
05 2100	Steel Joist Framing
05 3100	Steel Decking
05 5000	Metal Fabrications
05 5113	Metal Pan Stairs
05 5119	Metal Grating Stairs
05 5213	Pipe and Tube Railings
07 2100	Thermal Insulation

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **03A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide all excavation, Footings, Foundations, Reinforcement, Structural Steel supply, fabrication and erection, Floor and Roof Decking, tilt up wall panel system (including all reveal and finish) levels/patterns indicated, and Exterior panel caulking. This package also includes all misc. steel framing for supports for countertops, Elevator machine beams and hoist beams, shapes for supporting elevator door sills, Metal ladders, Elevator pit sump covers, all lintels not associated with exterior wall construction, embeds required for work under this package, Pipe and Tube Railings
2. All Casting Beds (either on building slab or off of slab) to be prepped by this package. If off-slab casting beds are used, this package includes all materials and installations required to completely remove slabs at completion of work
3. All spoils created by this package will be required to be neatly stockpiled at a location determined by the TCG superintendent. Removal will be by the sitework subcontractor
4. Provide all footings, reinforcement, and tilt-up panels for the dumpster enclosure
5. All Panel joint backer rod and sealants as indicated or required
6. Compacted earth and fill, fine grading, ABC stone base, vapor barrier, reinforcement, concrete placement, finishing and saw-cutting for all Slab on Grade as required

7. Furnish, place and finish all column diamonds and isolators
8. Furnish and install all elevator pits; waterproofing and foundation drainage to be by others
9. Decking, reinforcement, shear studs, concrete, placement and finishing for all elevated slabs
10. Metal decking, bar joists, steel, etc. for a complete roof structure
11. All interior/exterior stairs including design and support structures
12. Provide/install roof access ladders as indicated
13. This package is to ensure that all sills at exterior window/curtain wall locations are structurally sloped for water drainage
14. For roof drain applications, this package includes all 14 gauge leveling sumps fabricated to match roof slopes per location
15. Provide steel angle frames and metal panel Gates at Dumpster Enclosure
16. This package includes all Delegated Design submittals as specified and required for Misc. Steel. This must be completed by a qualified professional engineer licensed in the State of North Carolina.
17. Any blocking required for wall mounted items are to be coordinated with all items that it is to support. Blocking drawings must be provided to the wall installer by this package prior to the installation of all walls.
18. This package is to furnish all setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete.
19. This package includes all field measurements as required for this scope of work. This includes all items that have tolerance and/or clearance requirements.
20. All site bollards, including those at the utility yard and trash enclosures are included in this package; including all required anchor bolts and base plates. All site bollards are to be galvanized.
21. All metal handrails, ladders, sump pit grates and embeds at the mechanical room pit are to be provided and installed by this package. Painting will be by others.
22. All Posts are to be sealed at their bases prior to setting the escutcheon in place.

02 EXCLUSIONS

1. Spoils Haul off – See scope item 2
2. Material Testing – By Owner
3. Waterproofing at Elevators

03 ALLOWANCES

NONE

04 ALTERNATES

1. ALTERNATE – Provide footings, reinforcement, steel columns, edge angles, beams and protective metal wire supports at Mechanical Yard
2. ALTERNATE – Prefinished Metal Screen System steel supports (screen by others)
3. Payment and Performance Bond \$ _____

05 UNIT PRICES

Undercut/replacement of unsuitable soils at footing installations \$ _____ CY

06 BID BREAKDOWN

BASE BID	\$ _____
Foundations/Reinforcement	\$ _____
Tilt Up Wall Panels	\$ _____
Structural Steel	\$ _____
Floor and roof Joists/Decking/Concrete	\$ _____
Misc. Steel and Supports	\$ _____
Stockpiled soil (CY's)	\$ _____

END OF BID PACKAGE 03A - Structure

BID PACKAGE – 03T – Termite Treatment

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Termite Treatment** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL
313116 Termite Control

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **03T** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide termite treatment at all building Slab on Grade areas
2. Provide 2 year warranty from date of installation; future renewal fee's will be provided by owner
3. Coordinate installation of treatment with TCG. Multiple mobilizations will be required
4. Provide written certification of treatment dates, chemicals used and amounts

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

Termite Treatment Application \$ _____

END OF BID PACKAGE 03T – Termite Treatment

BID PACKAGE - 05C – Architectural Railings

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Architectural Railings** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01
05 7313

General Requirements – ALL
Glazed Decorative Metal Railings

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **05C** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide all glass interior railings as indicated
2. Provide all mounting hardware, connection design, etc. for a full and complete system
3. This package is to include multiple mobilizations to install the railing system

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

- | | |
|--------------------------------|----------|
| 1. EOC/HUB Handrail | \$ _____ |
| 2. Office Building Handrail | \$ _____ |
| 3. Engineered/Stamped Drawings | \$ _____ |

END OF BID PACKAGE 05C Architectural Railings

BID PACKAGE - 06A Rough Carpentry

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Rough Carpentry** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
061053	Miscellaneous Rough Carpentry

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. 06A – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide all misc. framing/blocking required at roof, millwork
2. Provide 300lf of temporary walls – Temporary walls are to be 2x4 with $\frac{3}{4}$ " plywood sheathing on one side. Walls are to be 12' tall and braced accordingly
3. Provide one framing foreman for the duration of the project. Foreman will be responsible to report directly to TCG for daily work assignment and coordination of trade work. [Foreman is assumed starting with interior wall layout and finishing at substantial completion of project](#)

02 EXCLUSIONS

NONE

03 ALLOWANCES

Include \$10,000 for temporary wall/protection

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
Roof Blocking	\$ _____
Temporary Walls	\$ _____
Foreman	\$ _____

END OF BID PACKAGE 06A Rough Carpentry

BID PACKAGE - 06F Architectural Millwork

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Architectural Millwork** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
061053	Miscellaneous Rough Carpentry
064116	Plastic-Laminate-Clad Architectural Cabinets
123623.13	Plastic-Laminate-Clad Countertops
123661.16	Solid Surfacing Countertops
123661.19	Quartz Agglomerate Countertops

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **06F** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. This package includes the Design, Fabrication, Delivery and installation of all Millwork items as identified. These specifically include, but are not limited to Plastic-clad architectural cabinets, wall mounted shelves, Acrylic 3D resin panels, cabinet hardware and accessories
2. This package includes coordination of final cabinet hardware with the Door Hardware Supplier as applicable
3. This package is required to be a licensed participant in the AWI Certification Program
4. All removable/adjustable handicapped cabinetry as indicated in the documents is included.
5. Subcontractor shall provide product cut sheets and manufacturer's shop drawings showing layouts of the items to be furnished, with scaled details, sizes, and dimensions of all cabinetry within 21 days of issuance of subcontract. Fabrication shall not begin without the review and approval of these submittals and a final field measure.
6. Subcontractor shall not deviate from the approved shop drawings without written approval from the Contractor's Project Manager.
7. Subcontractor shall provide cabinet and hardware samples for review and approval by Architect and Owner

8. Subcontractor shall field measure all units, confirm dimensions, provide and coordinate all orders with Subcontractor's fabrication shop.
9. Subcontractor shall receive and unload all cabinet deliveries. Subcontractor shall be solely responsible for distributing this material to the appropriate units/areas as required and shall be solely responsible for all materials until installed and accepted by the Contractor.
10. Subcontractor shall supply and install all casework, fasteners, and other materials needed for a complete turnkey installation of all cabinets, vanities, skirt boards, removable cabinets, etc.
11. All cabinets shall be fastened with screws. No nailing will be permitted. Screws in back rails shall be neat and uniform in installation and location along with dressing washers or pan head screws. No screw heads to be visible in face stiles and rails. Wall cabinets shall be shimmed with shims to prevent separation of screw rail if required.
12. Cabinets shall be installed in accordance with the layout as shown on the approved shop drawings and shall include all trim, hardware, and accessories. Cabinets shall be installed on room by room basis as directed by the Contractor.
13. The commencement of installation of cabinets by Subcontractor shall constitute acceptance of adjacent finishes and substrate. Subcontractor shall remove and reinstall cabinets at no additional cost to Contractor if corrections to adjacent finishes or substrates dictate such removal.
14. All installations shall be made by experienced mechanics familiar with the product and manufacturer's recommendations for cabinet installation. Subcontractor shall install cabinets true and level.
15. Subcontractor shall install doors, shelves, hardware, etc. plumb, level and true with proper margins and reveals.
16. Subcontractor shall size and install cabinets so as to minimize use of fillers. All fillers and moldings shall be installed in a neat, workmanlike manner.
17. Subcontractor shall set all nails in fillers, moldings, and toe kicks and fill all cabinetry nail holes and seams with matching fill putty products furnished by cabinet supplier.
18. All penetrations in cabinets must be neatly cut as flush to the item (pipes, wiring, j-boxes, etc.) as feasible to allow for complete cover by pipe escutcheon or other suitable means as determined by Contractor.
19. Subcontractor shall pull out all electrical wires for electrician including those for dishwasher, disposal, outlets, etc.
20. Final adjustments of cabinet doors and drawers and installation of silencers (bumpers) shall be included.
21. All exposed surfaces shall be finished in the same manner as the face material. This includes all cabinet ends, returns and exposed bottoms (i.e. over appliances, the bottom of upper cabinets, etc.)
22. Subcontractor shall at all times respect the work of other crafts and shall take all necessary precautions to avoid damaging such work. If Subcontractor damages such work, repairs shall be made at the Subcontractor's expense.

23. Scope of work shall be in accordance with the submittals and approved shop drawings.
24. Subcontractor shall leave a supply of matching touch-up materials on site with Contractor's Project Superintendent.
25. This package includes up to 1% of total cabinet surface area for minor repairs and touch up in their base bid. Full replacements; if required will be reviewed on a case by case basis.
26. All bathroom solid surface countertops, plastic laminate, Cubbies, bars, counters, exposed and/or concealed brackets, and 3D panels are included.
27. All items required for a complete installation are included but not limited to: all casework, cubbies, including tops, laminate, removable knee walls with Z-Clips, , backsplashes, T-Bar support brackets, K Brackets, Stainless Steel brackets and hardware.
28. This package is to indicate all electrical infrastructure on their shop drawings for reference installation elevations
29. All sub-framing required for a complete installation for all bathroom counters are included. Note all steel supports are provided and installed by the misc. metals scope.
30. This package is to include a recessed bottom for under counter lighting installation on all upper cabinets as indicated.
31. This package is to include all hardwood lip edges as indicated
32. All under cabinet lighting is to be coordinated with the electrical package. All fixtures and installations are to be provided by the electrical package. If a cabinet is required to be cut or penetrated, this package is to coordinate the cutting with the electrical scope.
33. All millwork in room 3033 (Computer Class) is included in this package.
34. All solid hardwood base as indicated in lab rooms are to be provided and installed by this package
35. This package includes all field measurements and filing for solid surface tops as required for flush conditions at cabinets.

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID

\$ _____

Lobby Millwork

\$ _____

~~Lobby Wall Paneling and Finish~~

~~\$ _____~~

Restroom Vanities

\$ _____

4 Story Office Millwork

\$ _____

2 Story EOC and HUB Millwork

\$ _____

END OF BID PACKAGE 06F Architectural Millwork

BID PACKAGE - 07A Waterproofing and Caulking

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Waterproofing and Caulking** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
07 1326	Self-Adhering Sheet Waterproofing (Below Grade)
071800	Traffic Coatings
07 2726	Fluid Applied Membrane Air Barriers

Specification Sections, As applicable:
Joint Sealants

WORK/DIVISION DESCRIPTION:

Bid package No. **07A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Air Barrier at Exterior wall Locations including tilt wall panels, exterior sheathing, behind wood siding etc. Only Air barrier behind stucco/EIFS application by others; rest are by this package
2. All backer rod and sealant where siding interfaces with Tilt-up wall panels
3. Include Waterproofing at all elevator pits and sumps
4. Include all floor traffic coatings at Equipment Room floors as identified. Coating to extend 6" up walls with water tight transition at base
5. All backer rod and sealant at all exterior expansion/control and other joints as indicated by the contract documents are included in this package
6. This package includes all continuous backer rod and sealant at all stair stringers to stair walls (top and bottom of stringer)
7. This package is to include all Listed Fire stop systems at the top of fire rated partitions to match the rating of the partition for all Partition Types
8. Subcontractor shall provide and install two coat waterproofing system at the interior of the elevator pits in addition to the applied exterior system
9. Include primer for installation of waterproofing immediately after concrete forms are stripped.
10. Include all detailing/space sealing of penetrations. All flashing and counter flashing is included. Set metal flanges in hot liquid membrane.

11. Subcontractor includes all necessary preparation of the concrete substrate to meet manufacturer's installation requirements.
12. Subcontractor shall provide and install all sealant, caulking, and backer rod at all slab-on-grade, wall, and column control/isolation joints. This subcontractor to include fire rated compressible filler and caulking as applicable.
13. Include caulking of exterior window frames, exterior door frames, and exterior dissimilar materials.
14. Includes caulking and sealants for louvers, EIFS and siding to dissimilar materials.
15. Include caulking or sealants at lighting, site hard scape or sidewalks. Included caulking of joints between structure and sidewalk.
16. Include caulking of pavers at expansion joints.
17. Include range of colors to match finished surfaces.
18. Subcontractor shall schedule product manufacturer site visits, inspections, and warranty service as required. All specified warranty periods are included

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

ALTERNATE - Provide waterproofing membrane for 300lf of temporary partitions to provide weathertight partition. Assume walls are 14' Tall \$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
Air Barrier	\$ _____
Exterior Caulking	\$ _____
Elevator Pit Waterproofing	\$ _____
Site Concrete Caulking	\$ _____
Floor Traffic Coating	\$ _____

END OF BID PACKAGE 07A Waterproofing and Caulking

BID PACKAGE - 07B Roofing

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Roofing** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
07 1326	Self-Adhering Sheet Waterproofing
075323	Ethylene-Propylene-Diene-Monomer (EPDM) Roofing
076200	Sheet Metal Flashing and Trim
077100	Roof Specialties
077129	Manufactured Roof Expansion Joints
077200	Roof Accessories

Specification Sections, As applicable:

06 1053	Misc. Rough Carpentry
061600	Sheathing
07 2100	Thermal Insulation

WORK/DIVISION DESCRIPTION:

Bid package No. **07B** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. All Rigid Insulation, tapered insulation, crickets, termination bars, cants, nailers, fasteners, cover board, and single ply roof membrane for a fully drainable system system
2. This package includes extending all roof rigid insulation into the parapet cavities and terminating at the exterior wall
3. All vapor barrier applied to concrete slab below roof insulation at EOC/HUB
4. All Roof walkway pads
5. All through wall scuppers, including all flashing details for a complete assembly
6. Provide and install all roof hatches
7. Provide all manufactured metal copings, including blocking at Tilt-wall caps where shown
8. All roofing installation shall be completed in accordance with the American Roofing Manufacturer's Association recommendations, NCRA Roofing Manual, the Contract Documents and the manufacturer's requirements. Any discrepancies must be brought to the Contractor's attention so that the Architect can provide direction prior to starting work.
9. Subcontractor shall coordinate manufacturer inspections through the roofing process. At completion Subcontractor will supply Contractor with a letter from the manufacturer stating all installations meet the manufacturer's installation and warranty requirements.
10. Subcontractor shall inspect roof decking prior to the start of work and notify Contractor of any problems associated with the substrate. Start of work shall signify acceptance of substrate.

Subcontractor will correct any roofing materials installed over improper substrate at no additional cost to Contractor.

11. Subcontractor shall provide and submit a mockup flashing detail and samples prior to starting work for approval by the Contractor and Architect. Color is to be selected from manufacturers standard color selections.
12. All laps in joints shall be properly spliced and sealed in accordance with manufacturer's requirements and as approved by Architect.
13. Subcontractor shall provide and install all field fabricated expansion joints, per the Contract Documents and approved by manufacturer.
14. The roof dry in is a critical path milestone on the construction schedule and Subcontractor will be fully responsible for meeting the schedule requirements. Any damages incurred due to Subcontractor failing to meet the scheduled date will be this Subcontractor's financial responsibility.
15. Subcontractor shall supply and install any materials needed to dry in the buildings per the construction schedule.
16. Subcontractor shall temporarily seal and protect the exposed work in place at the end of each work day to prevent damage to the components of the systems or delays to the progress of the work due to exposure to the elements. Any wet or damaged materials shall not be installed.
17. Subcontractor includes all metal coping and prefinished metal caps as indicated in the contract documents. Color to be selected by designer of record.
18. Subcontractor includes all roof membrane flashing at parapet walls, side and top, to terminate under metal coping.
19. Subcontractor shall furnish and install all waterproofing membrane and insulation cover board as indicated or required.
20. Subcontractor shall furnish and install all saddles, crickets, and tapered edge strips to provide for positive drainage to the roof drains. This package is to provide tapered insulation at drains as required to provide positive drainage at $\frac{1}{4}$ " per 1'-0" minimum.
21. Subcontractor is responsible for leveling, ensuring proper elevations for code and drainage, and coordinating roof downspouts sizes/locations with plumbing Subcontractor. Installing roofing around incorrect roof drain heights or locations is full responsibility for this Subcontractor to rectify.
22. Subcontractor shall submit a copy of his standard fall protection plan used in conjunction with his normal safety program within 5 days of execution of this Contract. Subcontractor shall complete this scope of work within accordance with OSHA's and Thomas Construction Group's requirements.
23. Subcontractor shall clean up all debris from roofing activities, including nails, button caps, etc. on and around building perimeter, on a daily basis. Subcontractor shall be responsible for the disposal of light weight products and packaging materials in a manner as to prevent windblown littering of the jobsite. These materials shall remain the sole responsibility of the Subcontractor until they are removed from site.
24. Subcontractor shall final clean all roofing components before final Owner acceptance. This Does not include pressure washing or removal of other trades trash.
25. No loose items shall be left on the roof overnight at any time. Any damage caused by roofing materials falling off of or blown off of the roofs is the full responsibility of Subcontractor. Subcontractor shall only stock roofs with materials that they are able to install on that day.
26. Subcontractor agrees to make reasonable repairs to the roofing products damaged by this trade at no cost to the Contractor.
27. During the construction and warranty periods Subcontractor shall be responsible for peripheral damage caused by moisture infiltration due to improper installation of his products.

28. It is understood and agreed that Subcontractor shall make every effort to respond within 24 hours; if not quicker, for repairs to prevent further damage of finished work.
29. Roofing materials shall be stocked on the roof deck in such a manner so as not to overload any section of the roof frame. Any damage caused by improper stocking shall be repaired at the cost of this Subcontractor.
30. The first portion of installed roof shall be inspected and approved by Contractor for installation in accordance with the manufacture's recommendations and for the quality of appearance.
31. This contractor is responsible for a final clean of all membrane roofing after their scope of work is completed; including removal of all stains.
32. Subcontractor is to include in base price of this contract to provide labor and materials for roofing repair for 1% of total roof area installed for undefinable damaged not caused by this subcontractor.
33. This Subcontractor shall provide all testing data required by the Contract Documents. Tests shall be documented and submitted to the Contractor including all close out manuals, warranties, and certificates upon completion of the Work. Each roofing system warranty shall commence from the date of each Building's Date of Substantial Completion.
34. All roofing as required including membrane tapered rigid insulation, fixed height rigid insulation, , self-adhered sheet vapor barrier, underlayment, mechanically fastened roof substrate board, nailers, blocking, roof expansion joints, roof vents, etc. are included in this scope.
35. This package includes all roof blocking, including all blocking attached to metal stud backup
36. All prefinished metal drip edge, cleats and pre-drilled holes in these items at roof locations are to be provided and installed by this package
37. At roof deck penetrations, this package includes all pipe boots, sheet underlayment, clamping ring and sealant.
38. This package is to closely coordinate with the Plumbing scope with regards to the roof drains for all TPO roofs. The primary and overflow drains, attachments to structure, water dam compression rings and associated piping are to be provided and installed by the plumbing scope, all insulation, sealants and final water tight installations are the responsibility of this package.

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

ALTERNATE – Provide Boots/Flashings and terminations required to install roofing scope at roof screen

\$ _____

Payment and Performance Bond

\$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
4 – Story Office Building Roof	\$ _____
2 Story HUB and EOC Roof (including entries)	\$ _____

END OF BID PACKAGE 07B Roofing

BID PACKAGE – 07E Siding

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Siding** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL
07 4616 Composite Siding

Specification Sections, As applicable:
Joint Sealants

WORK/DIVISION DESCRIPTION:

Bid package No. **07E** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. All 7/8" hat channel, composite Z-girts, insulation and composite wood siding for a complete system. Air Barrier by others
2. All aluminum tube furring indicated or required for installation of panels on tilt up walls. Reference wall type W09. Air Barrier by others
3. This package includes all hoisting/lifting and access means required for a complete installation.
4. All trims/Accessories required for a complete installation are included. This includes all flashings, counterflashing's and sealants as indicated or required by the manufacturer

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
Backup Framing	\$ _____
Siding Panels	\$ _____

END OF BID PACKAGE 07E Siding

BID PACKAGE - 07F Metal Column Covers

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Metal Column Covers** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL
055813 Column Covers

Specification Sections, As applicable:
Joint Sealants

WORK/DIVISION DESCRIPTION:

Bid package No. **07F** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. This package includes the supply and installation of all exterior column covers as indicated
2. This package is to provide all field measurements required for a tight fit. This is to include all sloping of exterior concrete as required to obtain a uniform reveal at the bottom of the column if required
3. All attachments and sealants as required for a complete system
4. All sub-framing, misc. framing and blocking as required are to be included by this package

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID \$ _____

END OF BID PACKAGE 07F Metal Column Covers

BID PACKAGE - 07I Joint Covers

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Joint Covers** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
079100	Preformed Joint Sealants
079513.13	Interior Expansion Joint Cover Assemblies
079516.16	Exterior Expansion Joint Cover Assemblies

Specification Sections, As applicable:
Joint Sealants

WORK/DIVISION DESCRIPTION:

Bid package No. **07I** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. This package includes all Vertical/Horizontal, Interior and Exterior Expansion Joints and Covers as indicated for a complete installation. This includes all intermediate fill and barriers required to achieve the indicated or required ratings
2. All blocking and attachments required are to be included by this scope
3. All recesses, setbacks, etc. must be coordinated prior to the work installation. If a recess is not installed, this package will be responsible for creating the recess after the fact if not coordinated with the installing trade prior

02 EXCLUSIONS

Roof Expansion Joint

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
Interior Expansion Joints	\$ _____
Exterior Expansion Joint Assemblies	\$ _____

END OF BID PACKAGE 07I Joint Covers

BID PACKAGE - 07J EIFS

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **EIFS** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
07 2419	Water-Drainage Exterior Insulation and Finish System (EIFS)
07 2726	Fluid Applied Membrane Air Barriers

Specification Sections, As applicable:
Joint Sealants

WORK/DIVISION DESCRIPTION:

Bid package No. **07J** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 COPE OF WORK

- 02 This package includes all EIFS, foam profile trim, reglets, flashings and trim as required for a complete installation. This includes all Air Barrier membrane for installation at this system, Rigid Insulation and drainable EIFS, including all Finish coats. This includes all reveals and continuous insulation as indicated or required
- 03 Provide all Ultra-Smooth EIFS as indicated
- 04 All backer rod and sealants where EIFS terminates into tilt up walls
- 05 Provide all flashing strips, trims, tracks, etc. for a complete and warrantable system
- 06 This package includes all exterior EIFS ceilings and walls as indicated
- 07 This package includes all air barrier, insulation board, mechanical attachments and E.I.F.S. finish systems in their entirety.
- 08 This package is to protect all work that is in place at the time this package starts installation.
- 09 All soffit vents in the EIFS system are to be provided and installed by this package
- 10 All required hoisting/lifting of materials or personnel are the responsibility of this package

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID

\$ _____

Air Barrier

\$ _____

EIFS Installation

\$ _____

END OF BID PACKAGE 07J - EIFS

BID PACKAGE - 08A Doors, Frames and Hardware

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Doors, Frames and Hardware** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
081113	Hollow Metal Doors and Frames
081416	Flush Wood Doors
087100	Door Hardware/Door Hardware Schedule
087113	Automatic Door Operators

Specification Sections, As applicable:

084113	Aluminum-Framed Entrances and Storefronts
084413	Glazed Aluminum Curtain Walls
088000	Glazing

WORK/DIVISION DESCRIPTION:

Bid package No. **08A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Subcontractor is to provide Hollow Metal Frames to drywall subcontractor, and provide and install Hollow Metal and Wood Doors
2. Subcontractor is to furnish and install all Flush Wood Doors. All doors shall be factory prepared to receive scheduled hardware including required reinforcement, backing, and pre-machining. All wood doors are to be shipped pre-finished, and pre-machined including shipment in protective plastic covers. Provide finish, texture, stain, sheen, etc. to meet Architect's approval at no additional cost.
3. Subcontractor to furnish and install all hardware per hardware schedule.
 - a. This work shall include all coring and keying. Subcontractor shall furnish all lockable doors with temporary construction cores and keys. Subcontractor shall furnish all final cylinders, including storefront doors. Cylinder coring shall be coordinated with the owner and provided at time of final completion. This package is responsible for procuring, coordinating, coring/keying and installation of all final locksets for the owner at a time directed by TCG.
 - b. Subcontractor is to furnish and install all Automatic Door Operators for the doors under this scope of work, including but not limited to: operators; microprocessor control units; controls; push plate switch; electric interlocks; and signage at wood and/or hollow metal door locations. This includes all door control electric work to ensure a complete working system. Subcontractor shall provide a shop drawing showing the required pathways needed to install the required wiring and power requirements. This subcontractor shall

anticipate having a door controls subcontractor on site to ensure that these doors operate and interact with the Electrical Subcontractor.

4. All doors and frames shall comply with proper UL fire rating, U-Value, and STC sound requirements, and have factory applied labeling affixed to each door and frame.
5. All interior/exterior HM frames/Doors, Wood Doors and all associated hardware
6. All Access Control Prep work and door/frame raceways as required
7. Deliver doors in original cartons or crates with seals intact and legibly labeled to indicate manufacturer, door number, frame type, sizes, model designations, and contents. This subcontractor is required to receive, inventory, and store all metal frames to be turned over to the installing subcontractor as needed during the installation of stud walls
8. Subcontractor is to provide and install temporary metal doors with all hardware necessary for installation at:
 - a. Level 1 Main Electrical and Mechanical rooms
 - b. All electrical rooms from Level 1 to Roof
 - c. All building system panel rooms from Level 1 to Roof
 - d. Telecom room doors from Level to Roof
 - e. Building Exterior doors not associated with Storefront or Curtainwall (including roof access)
9. All temporary and permanent doors shall be keyed with construction cores (assume 5 color types). Each core type shall include 15 keys and master. This subcontractor shall remove all construction cores when this package replaces with permanent cores on a per floor basis as directed by TCG
10. Subcontractor is to coordinate with the Electrical Subcontractor for all interfaces with electrical requirements for door hardware power wiring and control wiring including furnishing of power supplies to Electrical subcontractor. Also coordinate with Owner's security system. This subcontractor shall provide a wiring diagram for each hardware type to electrical subcontractor locating power and providing wiring requirements. This subcontractor is responsible for terminating all wiring to hardware under this agreement and verifying proper operation. Subcontractor to provide a spread sheet confirming all devices work as specified before security contractor ties to the doors. Make all final connection past power supply.
11. This subcontractor will provide final cleaning and adjustment upon installation completion and after subsequent inspection by the Owner and/or Architect until final acceptance.
12. This subcontractor shall furnish and install all plaster guards on door frames, interior door conduit/passageways, junction boxes, etc. for required electrical and security work and so as to not obstruct door hardware installation.
13. This subcontractor shall include in base bid:
 - a. Replacement of 6 wood doors damaged beyond repair
 - b. Repair finish on 25% of wood doors
 - c. Bondo 33% of door frames
 - d. Bondo 25% of hollow metal doors
14. This subcontractor will coordinate with metal stud framing and concrete contractors to insure door frames are installed correctly. Subcontractor will be required to have one (1) full time personnel on site during hollow metal frame installations to confirm all frames are plumb and true. This contractor will review the door frames during installation and confirm door frame openings have been installed correctly and will accept for future doors. This subcontractor to issue a list for deficient openings. Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions. Verify openings are sized to receive the work and are in accordance with manufacturer's acceptable tolerances. Subcontractor acknowledges that the concrete, structural steel, metal framing, etc. is installed to the tolerances required by their respective specification section(s) and any additional work required

to accommodate these tolerances will be done at no cost to the Construction Manager and/or Owner.

15. This subcontractor shall furnish and install all glass in doors and frames furnished under this agreement of types required by glass specifications and per code. Glass stops shall be provided for vision light openings (protect screws during the grouting process) and glazing shim kits are to be provided as required. Provide all required shim spacers for door stops, door guides, etc.
16. Subcontractor is responsible for all submittals, samples, sample panels and mock-ups per Project Specifications.
17. All HM frames that are to be installed in tilt walls or shafts are to have dimpled frames that are pre-punched to allow for installation. When this package is installing final HM doors, this package includes bondo for all dimpled installation locations.
18. This package includes the installation of all door frames and any required grouting at all Concrete Tilt wall Locations
19. Subcontractor shall store all doors and hardware off site in a bonded warehouse for a period of 1 year and bring to site in following order. This subcontractor shall develop a spreadsheet showing each condition and get CMAR to provide dates within 30 days of receiving subcontractor.
 - a. Frames
 - i. By all concrete/tilt wall locations
 - ii. By drywall on per floor basis
 - b. Doors with hardware
 - i. Hollow metal
 1. By exterior building envelope, by building
 2. By MEP room by building
 3. By floor by building
 - ii. Wood doors (after building has climate control)
 1. By floor, by building
 - iii. Stair doors
 1. By each stair, by building
 - c. Hardware to Aluminum Storefront
 - i. Ship to storefront subcontractor within 90 days of receiving subcontract
20. Provide special consideration to all exterior doors to insure thresholds, overhead drips, and weather stripping exceed specifications for no leakage or daylighting and including in your bid as such. This includes all full beds of mastic and threshold grouting as indicated on the contract documents.
21. Included multiple mobilizations to adjust door closers throughout test and balance of HVAC system, stair pressurization, and during all final New Hanover County and Designer inspections. Also include and final readjustment prior to owner move in.
22. Subcontractor to provide Key box with all keys labeled for CMAR use and turnover to the Owner.
23. Subcontractor shall supply and install sealant per the plans under each of these thresholds. A minimum of two beads are required; even if not shown on the contract documents
24. Subcontractor shall provide all required door frame anchor devices required for drywall partitions, anchoring to the floor, etc. Subcontractor shall turn over the necessary anchors to the metal stud subcontractors for their door frame installations.
25. Subcontractor shall supply and install all weather-stripping. Weather stripping will be installed immediately after interior paint is complete and subcontractor shall make accommodations to provide spacer's, for jamb protection while weather stripping is not in place.

26. Subcontractor shall adjust, trim the bottom, or otherwise correct any door units, which are dragging on carpet or other floor finishes after installation. All interior doors shall be undercut as indicated in the contract documents.
27. All doors and frames shall comply with proper UL fire rating, U-Value, and STC sound requirements, and have factory applied labeling affixed to each door and frame.
28. Any doors that have louvers are to have the louvers oriented so that they are turned down after door installation. This will limit visibility through the door.
29. Upon hardware installation, all keys shall be labeled with room numbers and provided to Contractor in an envelope for each door location. Subcontractor shall provide and install all required handicapped accessible specialty hardware only as called for in the contract documents.
30. Subcontractor shall adjust all hardware in order to obtain consistent, smooth operation.
31. Subcontractor shall provide any coordination necessary to facilitate this scope of work.
32. Subcontractor shall coordinate with electrical subcontractor for all electrified hardware to determine location for rough-in, connections, wiring, etc. Subcontractor shall attend security coordination meeting to verify all conditions.
33. Subcontractor is responsible for all offsite/onsite storage, handling, and re-handling costs.

02 EXCLUSIONS

1. Glazing
2. HM frame installation in Metal Stud

03 ALLOWANCES

1. Hardware to be carried in allowances [for Exterior wall/Curtainwall doors only](#)
 - a. INTERIOR DOOR \$500/leaf
 - b. EXTERIOR DOOR \$800/leaf
 - c. EXTERIOR DOOR WITH ACCESS CONTROL \$1,200/leaf
 - d. Interior doors provided/installed under this package are to follow the door/hardware specifications.

04 ALTERNATES

[Payment and Performance Bond](#)

\$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
Hollow Metal Frames	\$ _____
Hollow Metal Doors	\$ _____
Wood Doors	\$ _____
Installation	\$ _____
Hardware, Keying and Coring	\$ _____

END OF BID PACKAGE 08A Doors, Frames and Hardware

BID PACKAGE - 08D Overhead Doors and Grilles

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Overhead doors and Grilles** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **08D** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. This package includes the supply and installation of all Overhead doors and Specialty Smoke Control Doors as indicated
2. This package is to include provisions for connection of doors to life safety systems as required. Final connections of doors will be made by this package
3. All Rough Opening and blocking requirements are to be coordinated in advance

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
Overhead Smoke Doors	\$ _____
Overhead Coiling Doors	\$ _____

END OF BID PACKAGE 08D Overhead Doors and Grilles

BID PACKAGE - 08F Glass and Glazing

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Glass and Glazing** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
07 2100	Thermal Insulation
081216	Aluminum Frames
084113	Aluminum-Framed Entrances and Storefronts
084126.23	Interior All-Glass Entrances
084413	Glazed Aluminum Curtain Walls
087100	Door Hardware/Door Hardware Schedule
087113	Automatic Door Operators
088000	Glazing

Specification Sections, As applicable:
Joint Firestopping

WORK/DIVISION DESCRIPTION:

Bid package No. **08F** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Subcontractor shall furnish and install all Aluminum Entrances, Storefronts, and Accessories in strict accordance with the Contract Documents and Manufacturer's Recommendations, which includes but is not limited to all structural members, anchors, fasteners, shims, wood blocking, support brackets, flashing, sills, trim, caulking, backer rod, gaskets, setting blocks, glass, sealants, glazing, internal steel reinforcement, extruded aluminum members, filler plates, hardware, weeps and all miscellaneous metals required for a complete watertight installation to the building envelopes including perimeter locations. All required grouting is specifically included.
2. Subcontractor shall furnish and install all aluminum storefront and storefront doors (interior and exterior) and associated Low-E glazing as specified in the drawings and specs, for a complete and fully operational system completed in accordance with the Contract Documents.
3. This package includes all required Missile-E specifications for the EOC/HUB area exterior doors, frames and glazing.
4. All backer rod, self-expanding foam fill caulking & sealants associated with this scope of work are included.
5. All miscellaneous metals required for the installation of this scope of work but not shown in the contract documents shall be furnished and installed by this subcontractor. The bracing and

anchorage of this work to the building structure is included in this scope of work. Internal structural reinforcement of any metal shapes required by the Contract Documents shall be the responsibility of this subcontractor.

6. It shall be the responsibility of this subcontractor to isolate aluminum from other dissimilar materials to eliminate any potential for corrosion or electrolytic/electrolysis action in accordance with the Contract Documents.
7. It is the responsibility of this Subcontractor to field verify all openings and associated field dimensions prior to fabrication. Subcontractor to coordinate and provide templates as required for door and window rough openings that will be framed by others.
8. Subcontractor acknowledges that the Contract Documents do not completely detail all the miscellaneous framing and connection details that are required as part of the work. Subcontractor shall include this work and detailing in this agreement at no cost.
9. All field engineering and layout required for this work shall be the responsibility of this subcontractor.
10. All engineering required of framing members is included in this scope of work. Subcontractor shall be responsible for any additional supports not shown on the Contract Documents to meet requirements.
11. Subcontractor shall temporarily seal and protect the exposed work in place at the end of each work day to prevent damage to the components of the systems or delays to the progress of the work due to exposure to the elements.
12. Subcontractor shall clean all systems included in this scope of work per the manufacturer's recommendations. This subcontractor is responsible for protection of surrounding finish products during installation and cleaning operations.
13. Subcontractor shall coordinate this scope of work with other trades. Conflicts arising from this subcontractor's failure to coordinate will be the responsibility of the subcontractor to resolve.
14. It is this Subcontractor's responsibility for proper storage and protection of all materials prior to, during, and after installation of the materials. This includes protection from the work and materials of subsequent trades. All glass is to be protected and cleaned prior to turnover to owner. This specifically includes the removal of all labels and adhesive from glass surface.
15. Any and all hoisting for material and labor associated with this scope of work is included in this Subcontract Agreement.
16. All fasteners and attachments shall be installed so they are concealed from view.
17. Storefront assemblies shall withstand the specified wind pressure per the Contract Documents. Refer to Missile E requirements at EOC/HUB on Structural Drawings.
18. All tempered and fire glazing shall be in locations where governing building codes require.
19. All doors and frames shall comply with proper ADA, FHA, UL fire rating, U-Value, and STC sound requirements, and have factory applied labeling affixed to each door and frame.

20. Subcontractor shall install glass and accessories in accordance with manufacturer's recommendations. Subcontractor has included, but is not limited to, the installations of all gaskets, setting blocks, sealants, and weeps on the interior and exterior of the storefront.
21. Subcontractor shall provide all butt glazing joints with clear silicone and installed without any bubbles, overlaps or gaps evident.
22. Subcontractor shall install all door hardware for the doors included in this scope of work as called for in the Contract Documents. Hardware is to be supplied by the door hardware work package. All ADA and FHA requirements shall be met including but not limited to mounting heights and locations.
23. Subcontractor is to anticipate minor touch up of aluminum sills due to damage and include an allowance of 40 Crew hours to repair such items. This includes all material and labor cost.
24. Subcontractor shall allow for a 1% broken glass based on total quantity of window lights on the project for unidentifiable damages not caused by this Subcontractor. Beyond this allowance, damage by others must be reported to the Construction Manager, who will determine on a case by case basis to whom the financial responsibility will be assigned.
25. Subcontractor shall coordinate with low voltage & alarm/access subcontractors. This includes assistance with internal routing of wiring, coordination of locksets with card readers and electronic hardware, etc.
26. Flashing at storefront as indicated or required in areas of Tilt/Wall and EIFS are included in this package. This includes all self-adhered flexible flashing as required
27. Subcontractor is responsible for all offsite/onsite storage, handling, and re-handling costs.
28. Subcontractor shall at all times respect the work of other crafts and shall take all necessary precautions to avoid damaging such work. If Subcontractor damages such work, repairs shall be made at the Subcontractor's expense.
29. Multiple mobilization(s) required to perform the scope of work identified here are included.
30. Subcontractor shall provide attic stock for all materials as per the specifications.
31. Provide all specified and required special tools for the installation and maintenance of materials furnished under this agreement including providing Maintenance Manuals as required by Contract Documents for proper installation and owner turnover.
32. All trash shall be deposited daily in dumpsters provided by Contractor, or otherwise placed in a location as designated by Contractor. Subcontractor shall sweep and scrape floors. The Contractor reserves the right to stop work on the following day until the previous day's debris has been disposed of properly. Under no circumstances shall debris be removed from the building and left on the ground.
33. This package includes the supply and installation of all windows, interior and exterior Storefront and doors (including all rated requirements), hardware for doors/windows provided under this package.

34. All mockup requirements as indicated in the contract are included. The mockup is to be constructed and left in place once all submittals for all products have been approved. Work shall be installed per the final approved mockup with reference to quality, cleaning and detailing.
35. All Windows, including blocking, membrane flashing, sill extensions, backer-rod, sealant and interior window trim as required for a complete installation.
36. All windows that require frosting, etching or otherwise made opaque are included
37. All rated glazing assemblies as shown or required are included in this package.
38. This package includes all interior door Glazing as indicated
39. All interior Storefront framing is to be included. This includes all framing, glazing, caulking and coordination of raceways as required. All Wood doors at these installations will be provided by the doors/hardware package. All hardware coordination required at these frames is the responsibility of this package.
40. Provide all glazing types as indicated on the glazing schedule
41. Provide one-piece sill pans with end dams at all exterior window conditions
42. This package includes all interior HM window frame glazing. All frames to be by the doors scope; installed by the partitions scope.
43. All Exterior Curtain wall/Floor intersection joint firestopping with required F rating is to be included by this package
44. Provide all ACM panels at elevations as shown

02 EXCLUSIONS

NONE

03 ALLOWANCES

1. Hardware to be carried in allowances for Exterior wall/Curtainwall doors only
 - a. INTERIOR DOOR \$500/leaf
 - b. EXTERIOR DOOR \$800/leaf
 - c. EXTERIOR DOOR WITH ACCESS CONTROL \$1,200/leaf
 - d. Interior doors provided/installed under this package are to follow the door/hardware specifications.

04 ALTERNATES

1. ALTERNATE 1 – Provide 10" Extended caps at SF9, SF10 and SF16
2. ALTERNATE 2 – Provide all sunshades as indicated
3. ALTERNATE 3 – Provide GL7 1" insulated ceramic fritted glazing as areas shown
4. Payment and Performance Bond \$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
4 Story Office Interior Aluminum Frames and Glazing	\$ _____
4 Story Office Aluminum Frames and Glazing	\$ _____
2 Story EOC/HUB Aluminum Frames and Glazing	\$ _____
2 Story EOC/HUB Interior Aluminum Frames and Glazing	\$ _____
Mirrors	\$ _____

END OF BID PACKAGE 08F Glass and Glazing

BID PACKAGE - 09A Drywall and Metal Framing

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Drywall and Metal Framing** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
05 4000	Cold Formed Metal Framing
05 5813	Column Covers
06 1053	Misc. Rough Carpentry
06 1600	Sheathing
07 2100	Thermal Insulation
078413	Penetration Firestopping
078443	Joint Firestopping
079219	Acoustical Joint Sealants
092116	Gypsum Board Shaft Wall Assemblies
092216	Non-Structural Metal Framing
092900	Gypsum Board

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **09A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

EXTERIOR

1. The scope of work includes furnishing, installing, and finishing all exterior framing and sheathing required.
2. Subcontractor shall coordinate with Architectural and Structural Contractors to verify all wall types specified are acceptable and meet all fire ratings, building department and code requirements.
3. All mockup requirements as indicated in the contract specifications are included. The mockup is to be constructed and left in place once all submittals for all products have been approved. Work shall be installed per the final approved mockup with reference to quality, cleaning, and detailing.
4. This package includes all exterior wall load and non-load bearing wall framing, bridging, sheathing (regular and type X) ~~and continuous air barrier~~. This includes all misc. infill framing and insulation required to fill in beams that run parallel to the exterior walls

5. Ceiling framing, insulation and sheathing for all EIFS soffit systems
6. Framing and sheathing at all composite siding locations. Z-Girts and hat channel by Siding package. All aluminum tube furring strips and siding by others
7. All insulation within metal stud framing as indicated or required
8. All Conventional Exterior Wall Framing at NE corner of Office Building; including Delegated Design
9. This package includes all wall systems, firestopping and firesafing as required
10. This package includes all ceilings as sag resistant drywall
11. This package includes all top of wall fire stop systems, acoustical sealants or other items required to provide a complete system per the partition schedule.
12. All Continuous insulation at the interior side of tilt up panels as indicated by wall types W06, W07, W08 and W09
13. Install all insulation in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.
14. All blocking required at door openings
15. Assume all walls at Pump Room are rated
16. Provide metal stud framing and gypsum at slab edge at all guardrail curb locations
17. Provide all framing, insulation, ratings, etc. for a complete assembly at the Elevator Penthouse
18. Provide all parapet supplemental framing and insulation
19. Provide in wall blocking for pre-engineered metal canopy attachments
20. Provide in wall blocking for Future building signage to be provided by owner

INTERIOR

1. This package includes all interior wall framing, door frame installation/blocking, drywall hanging, reveal installation and finishing required.
2. Subcontractor shall examine substrates for any condition that would affect proper installation according to the plans and specifications. Subcontractor shall notify Contractor within (1) week prior to schedule start dates of any discrepancies. Application constitutes acceptance of substrate.
3. All drywall that will be used for wall top out at Mechanical, Electrical and Plumbing walls are to be densglass or similar type for early MEP and bathroom construction. This package is to use moisture resistant (purple) board for the remainder of the project. No standard type Gypsum board is to be used.
4. This package includes all wall systems, firestopping and firesafing as required
5. This package includes all top of wall fire stop systems, acoustical sealants or other items required to provide a complete system per the partition schedule.
6. This package includes all ceilings as sag resistant drywall
7. Provide all interior wall framing, blocking, drywall installation and finishing as required on the contract documents
8. All single and multi-story Shaft enclosures, including framing, C-H Channel, insulation, shaft liners and labeling as required
9. Provide all raised platform framing and sheathing for the 911 call center and EOC center

10. Subcontractor shall furnish and install all fire rated gypsum board, and resilient channel in accordance with the contract documents (Drawings and Specifications) and as required by codes.
11. Drywall and metal framing assemblies include all interior wall partitions, fur-out walls, hard ceilings, soffits, fascia's, shafts, etc.
12. All fire rated gypsum board assemblies per contract documents and UL listings, etc. are included. Included is fire sealing, protecting ("tenting", "boxing", "wrapping", etc.), etc. all items penetrating this scope of work. This package is responsible for stenciling or labeling all interior fire rated wall conditions.
13. Subcontractor includes all batt insulation in interior metal stud partitions where required by the Contract Documents.
14. Provide all acoustical caulking at drywall assemblies installed under this agreement in accordance with the Contract Documents, etc. to meet specified STC ratings. All caulking of penetrations, receptacles, switches or Junction boxes is to be by the installing subcontractor.
15. Subcontractor includes all tile backer board at all bathroom tile assemblies. All joints at these locations are to be treated by the tile bid package.
16. Finish and install all control joints in walls, ceilings, framing, furring etc. per Contract Documents or as required by product manufacturer or industry guidelines.
17. All material shall be of size and quality specified per the Contract documents. All areas shall be hung with the largest size board possible to avoid additional joints. All installations shall be in strict accordance with the Manufacturer's recommendations.
18. This subcontractor shall examine all substrates for excessive moisture content which would prevent installations of materials as per manufacturer's requirements. This subcontractor shall not proceed with installations until satisfactory conditions have been achieved.
19. Subcontractor shall deliver all materials to the jobsite in original unopened containers or bundles bearing the name of the manufacturer. These materials are to be stored in a place protected from damage or exposure to the elements. Subcontractor shall properly stack and protect drywall board on dunnage to prevent the wicking action of water to the drywall sheets. It is the intent of the CMAR to have an accessible material lifts for this project. Coordination of this lift will be required.
20. Subcontractor shall stock each area with the proper amounts, types, and sizes of drywall as soon as each becomes ready for stocking, and as directed by Contractor, but without causing interference to operations being performed by other crafts.
21. Subcontractor shall provide all required framed openings in drywall assemblies (metal stud walls only) installed under this agreement for all trades including, but not limited to, ductwork, MEP items, toilet accessories, fire extinguisher cabinets, etc. This Subcontractor shall verify with other Subcontractors the required quantities, locations and sizes of openings to be provided.
22. Subcontractor shall provide all wood blocking in drywall assemblies installed under this agreement for all trades including, but not limited to, toilet accessories, architectural casework and cabinets, wood base trim, handrails, MEP equipment, windows, door hardware, wall mounted toilet fixtures, wall mounted door stops, etc. This Subcontractor shall verify with other Subcontractors the required quantities, locations and sizes of in-wall blocking to be provided.
23. Subcontractor includes installation of all hollow metal door frames in metal stud partitions. Subcontractor shall be responsible for receiving door frames from the delivery truck (delivery by others); inventory of the deliveries and properly storing on site until time of installation.

24. Subcontractor includes installation of all Hollow Metal windows in metal stud partitions. Subcontractor shall be responsible for receiving windows from the delivery truck (delivery by others) and properly storing on site until time of installation.
25. This package includes the installation of 30 LF of temporary partitions per floor for project phasing and logistics. Include installation of two door frames provided by others per floor (4 levels total)
26. Framed openings for all access panels required in assemblies provided under this agreement are included as indicated on the contract documents or as required and coordinated with the MEP and FP subcontractors. This package includes the installation of all trade supplied access panels.
27. Subcontractor shall be responsible for providing their own heaters (if required) to maintain the construction schedule. All heaters must be approved by the Contractor's Loss Prevention Manager. See Allowance section for more detail.
28. Subcontractor shall furnish and install all required supplemental and temporary lighting as required to provide the level of finish specified in the Contract Documents. Electrical contractor shall provide general hallway lighting and all temporary power poles in accordance with OSHA standards. This Subcontractor shall provide any additional task lighting required to complete this scope of work including all closets and restrooms.
29. This package is to clean up material debris and rubbish daily to the contractor provided container. A written plan must be submitted prior to sheetrock installation detailing how cleanup will be implemented and maintained during the course of construction.
30. Subcontractor shall make all normal and reasonable repairs to his work at no additional cost to the Contractor after all crafts have completed their "punch-out". This includes up to 1% of the total area of gypsum board
31. Any additional patching for drywall surfaces required must be fully documented; including but not limited to area of the building (Specific room # if applicable), photographic proof with date and timestamp (Before and After), description and offending trade. This information is a requirement if Subcontractor intends to request payment for this work. Prior to backcharges being assessed; all parties must be notified in writing at least 72 hours in advance of the backcharge.
32. Water used for tool cleaning, product thinning, etc. will be contained and controlled at a designated clean out station adjacent to the building. At no time shall any tool or piece of equipment be cleaned in any sink, toilet, shower or other plumbing fixture within or around any building structure. All cleaning shall be performed outside at an approved washout location. Care shall be taken to protect landscaping including but not limited to grass areas, shrubs, trees and all sidewalks, driveways, roads and storm drains.
33. Upon completion of Work on each floor or Area, Subcontractor shall scrape floors complete of all drywall mud where floors are to receive a covering. Subcontractor shall clean completely all floors, stairs, etc. which are exposed finished concrete of all drywall mud.
34. All work areas shall be cleaned daily (i.e. screws, tape, mud and boards). This includes inside as well as outside the buildings. Subcontractor shall pay particular attention around finished surfaces.
35. All trash shall be deposited daily in dumpsters provided by Contractor, or otherwise placed in a location as designated by Contractor. Subcontractor shall sweep and scrape floors. The Contractor reserves the right to stop work on the following day until the previous day's debris has been disposed of properly. Under no circumstances shall debris be removed from the building and left on the ground.
36. This subcontractor is to coordinate and work together with the Painting Subcontractor by inspecting the work prior to prime coat of paint. After prime coating this subcontractor will correct surface imperfections, defects and minor damage by others to provide smooth finished wall for final paint

coats. Final applications of drywall finishing are to occur with final lighting conditions and application of the first coat of finish paint is indication of acceptance of the walls by the painter. This subcontractor is responsible to provide a thorough point-up so that the walls do not require multiple mobilizations to repaint. This subcontractor will be responsible for additional painting cost due to excessive point up.

37. Prior to application of gypsum board this subcontractor will conduct a quality control inspection and ensure that the substrate is prepared for application and will not need items such as shimming, installing nailers, blocking, additional furring, or recessed opening such as fire extinguisher cabinets and toilet accessories.
38. This package includes all Delegated Design submittals as specified and required for all cold formed metal framing. This must be completed by a qualified professional engineer licensed in the State of North Carolina.
39. All deflection clips and tracks as specified are included
40. All above ceiling horizontal shaft enclosures are the responsibility of this package. Reference the RCP plans as well as plan sections for details.
41. All Power Actuated Fasteners are required to be installed by an approved installer. This documentation must be submitted to the CMAR prior to installation.
42. Where framed walls are required to be sealed, gaskets are to be installed prior to the installation of the track. At non-rated partitions where GWB extends to deck, this package includes filling voids with insulation per the partition schedule.
43. This package includes all interior partition infill at elevator door openings after the frames and/or CMU have been installed. Extra care and protections should be taken not mar the finished door jambs. All costs associated with cleaning the door jambs are the responsibility of this package should appropriate precautions not be taken.
44. This package includes all top of wall fire stop systems, acoustical sealants or other items required to provide a complete system per the partition schedule.
45. This package includes all dropped soffits at cabinet installations, include all Reveals as shown on the millwork elevations
46. This package includes all interior wall expansion joint systems, including supplemental framing and backing required for a flush, finished condition.
47. All interior drywall that will be used for wall top out at Mechanical, Electrical and Plumbing walls are to be densglass or similar type for early MEP and bathroom construction. This package is to use moisture resistant (purple) board for the remainder of the project. No standard type Gypsum board is to be used.
48. All corridors are to receive impact resistant drywall; regardless of indication in plans or not
49. This package includes glass mat tile backing board behind all ceramic tile walls, sag resistant gypsum board at all interior ceiling applications and impact resistant gypsum board at all corridors and other locations as indicated.
50. This package includes all required Z-Reveals, trim pieces, etc. for finishing gypsum edges as indicated in the documents.
51. All FRP at janitors mop sinks are included

~~52. All fabric wrapped Sound Absorbing units with Z clips are to be provided and installed by this package. All locations for AV, electrical and fire alarm devices are to be coordinated and accommodations made by this package for installation.~~

53. All extra layers of drywall indicated or required to offset rated to non-rated walls are included by this package

54. This package includes the installation of all interior HM doors and HM window frames. All frames to be supplied by the doors scope; installed by this scope. All glazing to be by the window/storefront scope.

02 EXCLUSIONS

1. Exterior Wall Air Barrier

03 ALLOWANCES

NONE

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

Provide unit rates for the following:

1. Patch and Repair hole(s) cut by other trades
 - a. Small patch less than 6": \$ _____/each
 - b. Medium Patch less than 24" but greater than 6": \$ _____/each
 - c. Large Patch less than 48" but greater than 24": \$ _____/each

06 BID BREAKDOWN

BASE BID	\$ _____
Exterior Framing/Sheathing	\$ _____
Interior Framing	\$ _____
Interior Drywall/Finish	\$ _____

END OF BID PACKAGE 09A Drywall and Metal Framing

BID PACKAGE - 09B Ceilings

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Ceilings** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL
095113 Acoustical Panel Ceilings

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **09B** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. This Subcontractor is to provide Ceiling Work, including, but not necessarily limited to: acoustical panels, attachment devices, wire hangers, braces and ties, angle hangers, hold-down clips, metal edge molding and trim, and acoustical sealant.
2. All hoisting/lifting needed for the installation of this scope of work are to be by this package. Subcontractor to submit lifting plan for lobby ceilings prior to beginning work
3. This package includes all acoustical panel ceilings per the finish schedule
4. This package includes all ceiling-to-ceiling expansion joints at ACP ceilings. It is the responsibility of this package to coordinate all supplemental ceiling framing for expansion joints with the interior and/or exterior framing scopes of work
5. This package is to provide scaled shop drawings indicating layouts of all tile, centered about the space and with equal cuts. All ceiling mounted items need to be coordinated
6. This package is responsible for cutting all ceiling tiles that will have infrastructure installed in them. This pertains to Mechanical, electrical, Plumbing, Fire Alarm, Audio Visual, Telecommunications, etc.
7. This Subcontractor is responsible for all field measurements and any blocking, shimming, and attachments required to install a complete system. Subcontractor understands schedule cannot be delayed due to requiring field measurements and shall notify Contractor during submittal process in writing of any such constraints in fabricating materials.
8. This Subcontractor is to provide all layout for this work.

9. Subcontractor shall include 10% replacement costs for damaged grid and 10% replacement costs for damaged ceiling tile (based on total quantity of project) to make repairs for unidentified damages caused by others prior to Owner acceptance of the Project. Subcontractor shall track use of costs/replacements and no further reimbursement shall be provided without field verification of the aforementioned allowances.
10. This Subcontractor is to coordinate with the Mechanical, Plumbing, Fire Protection, and Electrical Subcontractors for all equipment and device locations. All added supports, framing, and access requirements for these devices is included.
11. Verify all substrate conditions and notify CMAR twenty-one (21) days prior to start of Work any difficulties in substrate prohibiting start of Work under this agreement.
12. Provide additional wires and fasteners to structure independent of wires provided at the corners of devices tied to grid for light fixtures and diffusers according to local, state and national requirements. Electrician and mechanical contractor to tie to lights and diffusers.
13. Subcontractor shall include in their coordination drawings all ceiling types installed under this scope of work.
14. Owner training and tools required to remove any ceiling systems included. During shop drawing approval, Subcontractor shall prove all ceiling systems are accessible for above ceiling maintenance to Owner. Provide mock-ups as requested by Owner at no cost.
15. Provide multiple mobilizations:
 - a. Per system each
 - b. Per floor each
 - i. Cut border and MEP tiles
 - ii. Install tiles
 - iii. Pre-Punch
 - iv. Post Punch (2x)
 - c. One last building sweep after commissioning and owner move in.

02 EXCLUSIONS

NONE

03 ALLOWANCES

ALLOWANCE 1: Include a ceiling repair allowance of \$10,000

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID

\$ _____

END OF BID PACKAGE 09B Ceilings

BID PACKAGE – 09D Painting and Wallcovering

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Painting and Wallcovering** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 0	General Requirements – ALL
079200	Joint Sealants
097200	Wall Coverings
099113	Exterior Painting
099123	Interior Painting

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **09D** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Subcontractor shall provide complete painting and finishing of all surfaces throughout the interior and exterior of the building per the Contract Documents and as required to complete this scope of work.
2. All materials supplied shall be in accordance with the project specifications. Only those materials submitted and approved by the Contractor shall be used. No substitutions shall be allowed without prior written permission.
3. Subcontractor shall provide 12-inch square samples of each color and sheen selected on paint-out cards for review and approval by Architect/Interior Designer. A mockup will be prepared for Owner's review.
4. Subcontractor shall deliver all materials to the jobsite in original unopened containers or bundles bearing the name of the manufacturer. These materials are to be stored in a place protected from damage or exposure to the elements.
5. All surfaces to be painted or finished shall be clean, dry, smooth, and free from dust and all foreign matter, which may adversely affect adhesion or appearance. Furthermore, Subcontractor shall perform preparation and cleaning procedures in strict accordance with the coating manufacturer's recommendations.
6. All workmanship shall be of a high standard, installed by skilled painters. Furthermore, all materials shall be properly applied and shall be free from runs, sags, holidays, clogging and excessive

flooding. Subcontractor shall not proceed with any additional coats until the preceding coat is thoroughly dry and hard.

7. Subcontractor shall avoid painting under conditions which may result in condensation on freshly painted surfaces.
8. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers and any other materials whether used as prime, intermediate, or finished coats. Subcontractor shall deliver all materials to the jobsite factory mixed, ready for application with manufacturing labels attached showing the name, brand, type and color of paint, instructions for thinning and type and percentages of pigment, vehicle and solvent. SDS shall be supplied to Contractor for all products brought on site.
9. Subcontractor shall furnish and install 1 primer coat and 2 finish coats on all surfaces (interior and exterior).
10. Painting of pre-finished powder coated metals, anodized aluminum or prefinished metal panels is not included. Painting of all exposed primed steel and prime/paint of all galvanized steel is included.
11. Subcontractor shall store materials not in use in tightly covered containers. In addition, Subcontractor shall maintain containers used in storage, mixing and application of paint in a clean condition, free of foreign materials and residue.
12. All surfaces to be coated shall be inspected prior to the commencement of Work. Any imperfections which may affect the finished product shall be submitted to Construction Manager in writing seventy two (72) hours prior to commencing Work. Starting of Work shall constitute acceptance of substrates. Additional compensation for rework associated with unacceptable substrates will not be granted.
13. Subcontractor shall prime all interior and exterior tilt walls, concrete walls, pipe railings, bollards, stairways, gypsum board, etc. according to the Contract Documents or in accordance with manufacturer's specifications and recommendations before painting. This includes all areas that are to be caulked, puttied, filled, and/or sanded prior to finish coat and shall be completely free of all dirt, dust, debris, runs, sags, holidays, and brush marks. Primer shall be of different shade from finish coat.
14. Subcontractor shall paint all interior walls, ceilings, soffits, and trim according to the Contract Documents.
15. All windows and doors shall be adequately caulked to Tilt Panels, wood trim, or EIFS on the exterior and to the drywall and wood trim on the interior.
16. All stair handrails, metal stairs, pipe bollards and site round pipe rails shall be painted with 1 primer coat and 2 finish coats.
17. Subcontractor shall paint all metal doors and all metal door frames, excluding pre-finished aluminum storefront and windows.
18. Caulk at intersection of cabinets to sheetrock and all other areas normally requiring caulking is included. Caulk at intersection of interior trim and resilient flooring/tile is included.
19. Subcontractor shall sand, properly prepare, prime, and paint all interior and exterior doors, trim, and stool to include top, bottom, and all edges. Minor Bondo repair of doors is included. Hinges shall not be painted. Subcontractor shall take precautions to protect all rated labels on doors and frames from any paint overspray. Unpainted hinges shall be protected while painting. Masking tape shall be removed within 24 hours of application.
20. Painting of the inside of windows, jamb extensions, and window returns is included.
21. Subcontractor shall be responsible for replacing any and all cover plates, doors, and hardware removed by this Subcontractor. All doors shall be replaced in the exact opening from which it was removed. Subcontractor shall be responsible for storage and replacement of any parts removed (i.e. weather-strip, hinge pins, screws, lock parts, etc.).
22. Subcontractor shall take precautions to prevent painting of, but not limited to; weather stripping, door sweeps, alarm devices, etc. Any paint overspray shall be thoroughly cleaned and removed or

shall be replaced (as determined by Contractor) at Subcontractor's sole expense. Painted sprinkler heads cannot be cleaned and will be required to be replaced by the sprinkler package and compensated by this package.

23. All painted surfaces must have coverage to Contractor's and Owner's satisfaction and must meet or exceed Manufacturer's recommendations and the Project Specifications.
24. All required touch-up painting shall be in accordance with the recommendations of the Manufacturer and in all cases blend with the surrounding surface so as not to be noticeable including painting the entire wall from corner to corner if necessary.
25. Subcontractor shall paint all flashing, conduit, piping, access panels, vent caps, roof vents, plumbing vent stack pipes, meter boxes, and any other items identified in the plans and specifications located on the exterior of the buildings to match that of the building finish.
26. All exterior paint products are to be provided with a mildicide, mold inhibiting agent.
27. Subcontractor shall use drop cloths or similar temporary covers to protect all adjacent interior and exterior non painted components including, but not limited to finished flooring, hardscape and floors, cabinetwork and other surfaces subject to damage.
28. Subcontractor shall protect all windows, interior and exterior doors, counter tops, tile and other finished surfaces from paint drops prior to the paint drying.
29. Subcontractor shall remove overspray and splattered paint by proper methods of washing and scraping using care not to scratch or otherwise damage finished surfaces. Any items that cannot be suitably cleaned shall be replaced at Subcontractor's expense. Subcontractor shall provide "wet paint" signs as required to protect newly painted finishes.
30. All clean up (washout) shall be performed outside of the building in an area designated by the Project Superintendent. No paint is to be poured out onto any ground area at any time. Under no conditions shall the interior plumbing fixtures (i.e. showers, sinks or faucets) be used for cleanup.
31. Subcontractor shall provide an adequate supply of attic stock paint for touch-up purposes as required by the plans and specs or a minimum of 1% based upon quantity used of each color.
32. Subcontractor shall provide labor and material for paint touch-up for 10% of all painted surfaces following prime paint beyond industry standard.
33. Subcontractor shall provide labor and material for paint touch-up for 15% of all painted surfaces following 1st coat painting beyond industry standard.
34. Subcontractor shall provide labor and material for paint touch-up for 2% of all painted surfaces following punch list and owner move-in.
35. Subcontractor shall provide labor and material for wall covering repairs for 2% of all wall coverings after punch list and owner move-in.
36. Subcontractor shall punch-out all work included in this scope and shall correct all incomplete and/or defective work within the time frame allowed by the Contractor. Subcontractor shall enumerate his own punch list and execute same prior to punch out by Contractor. This subcontractor acknowledges that the punchlist process will start with the major trades, to be followed by this package. TCG will then create a punchlist to be completed prior to the owner punchlist.
37. Subcontractor is responsible for providing all task lighting for their scope of work. Temporary power and OSHA required lighting will be provided by the Electrical Subcontractor.
38. Proper ladders or scaffolding shall be used to execute the work. At no time shall painting personnel stand on cabinets, appliances, plumbing fixtures or any other finished item. Stilts are strictly prohibited.
39. Subcontractor fully understands that metals (frames, doors, stairs, etc.), masonry and drywall point-up will need to occur after each painting coat (i.e. after prime coat, after 1st coat, after final coat) to ensure that the substrate conditions meet Owner / Architect approval. Subcontract shall allow sufficient time between paint coats to perform pointing up by others and this Subcontractor shall perform touch-up painting of these point ups at no additional cost to Construction Manager.

40. All elevator pit gratings, ladders and sump pit covers shall be painted safety yellow.
41. All Concrete floor sealer by this package. Include tinting as required
42. This package includes all Eggshell, semi-gloss, epoxy and specialty paints as indicated on the finish schedule
43. All plywood and fire retardant paint on the architectural elevations will be provided by the Electrical scope of work and is not to be included by this package.
44. This package includes all Caulking required as semi-recessed and surface mounted fire extinguisher cabinets

02 EXCLUSIONS

1. Pre-painted aluminum doors and windows
2. Other Pre-painted items

03 ALLOWANCES

ALLOWANCE 1: Re-painting walls due to owner move in damage \$5,000

04 ALTERNATES

Payment and Performance Bond \$ _____

05 UNIT PRICES

Painter \$ _____/HR

06 BID BREAKDOWN

BASE BID	\$ _____
Interior Painting	\$ _____
Exterior Painting	\$ _____
Floor Sealer	\$ _____

END OF BID PACKAGE 09D Painting and Wallcovering

BID PACKAGE - 09E Flooring

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Flooring** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 – General Requirements – ALL

096513	Resilient Base and Accessories
096519	Resilient Tile Flooring
096520	Resilient Plank Flooring
096536	Static-Control Resilient Flooring
096566	Resilient Athletic Flooring
096813	Tile Carpeting
096816	Sheet Carpeting
124813	Entrance Walk-Off Carpet

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **09E** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide/install a Rubber Base, Carpet, Resilient flooring, LVT, RSF and VCT as indicated on the finish schedule and room finish plans.
2. Multiple mobilizations shall be required to perform this work. Subcontractor shall provide all required mobilizations at no additional cost.
3. Proper location and installation of all materials shall be the sole responsibility of Subcontractor.
4. Subcontractor shall provide a transition strip at all points of change in floor covering. Type and color of the threshold strips shall be as specified or as approved by the Owner and Architect.
5. Subcontractor shall coordinate their work with interior finish trim subcontractor and other trades, as applicable.
6. Subcontractor shall provide all labor and material warranties in accordance with the specifications.
7. Subcontractor shall be responsible for theft, damage, and loss to all materials stored on site.
8. Subcontractor shall provide physical samples of all products, specification sheets (including flame spread information), MSDS sheets, maintenance, and warranty documents to Owner, Architect, and Contractor at no cost.

9. Subcontractor shall examine substrates for any condition that would affect proper installation according to the plans and specifications. Subcontractor shall notify Contractor within (1) week prior to schedule start dates of any discrepancies. Application constitutes acceptance of substrate.
10. Subcontractor includes all required field measurements, moisture testing and layout of all work and patterns is included.
11. Subcontractor shall punch-out all work included in this scope and shall correct all incomplete and/or defective work within the time frame allowed by the Contractor. Subcontractor shall enumerate his own punch list and execute same prior to punch out by Contractor.
12. Finish schedules are subject to changes and modifications. It is the responsibility of the Subcontractor to have an updated finish schedule prior to delivery of any materials.
13. This package is to include RAM board or equivalent for 100% of flooring in all building corridors. All other rooms will be left cleaned and uncovered at the completion of work by this package.
14. Subcontractor shall include labor and materials for replacement of 1% of each flooring type of the total installed square footage for unidentifiable damage not caused by this subcontractor. This is to include all costs associated with a complete installation.
15. Prior to flooring installation, a layout diagram must be submitted and approved by the Architect and Contractor.
16. Flooring shall be as specified in the Contract Documents. All products and colors shall be as approved by the Architect and Interior Designer. Physical samples of approved choices will be signed by Owner/Architect and available on site for review prior to ANY installation. Installations shall be in accordance with the manufacturer's specifications. No seconds, rejects, or otherwise imperfect materials shall be accepted.
17. Subcontractor guarantees to provide products as submitted and approved. If face weight changes from the approved submittal to the time it is to be delivered and installed; this contractor is to advise in writing before installation begins.
18. All carpet colors shall match the approved samples. No streaking, color shading, color blending, or color variation shall be visible or apparent after the installation is completed.
19. Subcontractor shall install all carpet in a manner to completely conceal all directions of yarn and different dye runs.
20. Subcontractor shall deliver all flooring to the jobsite in original mill wrappings with each roll register number properly marked.
21. Subcontractor shall remove all foreign objects from the floor and provide a "clean sweep" prior to the installation of flooring. If floors are not adequately scraped and cleaned, the Subcontractor shall immediately notify the Contractor. Subcontractor shall provide any minor patches required to sub floor prior to the installation of flooring when applicable. Commencement of flooring installation shall signify acceptance of the surface to be finished.
22. Subcontractor acknowledges that the manufacturer's recommended method of installation, in addition to the project specifications, shall be the basis for acceptance or rejection of methods of installation used in the work covered by this Subcontract Agreement.
23. Subcontractor shall cut all flooring for a tight neat fit and properly secure all edges against walls, columns, projections, recesses, stairs, railings, and edge strips.
24. Subcontractor shall use a cleaning solvent as recommended by the manufacturer for removing adhesive, tape, or any other item from finished flooring.
25. Subcontractor shall provide all moisture tests in accordance with manufacturer's recommendations to assure proper dryness prior to installation. Commencement of flooring installations shall signify acceptance of the substrate surfaces, associated moisture content and any potential needs for moisture remediation if necessary.

26. Subcontractor shall supply and apply an application of manufacturer's sealer/primer material to areas prior to adhesive install as required by the manufacturer.
27. Subcontractor shall roll all flooring to prevent un-bonded areas to substrate.
28. Subcontractor shall scribe and caulk all cuts at doors and trim.
29. All joints, cuts, seams and patches, if found unacceptable by the Contractor, shall be corrected at no additional cost to the Contractor. Any floors that are mislaid or patches that are unacceptable shall be fully replaced at no additional cost.
30. All flooring materials shall be run continuously to walls behind cabinets and vanities, including at all handicapped locations.

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
4 Story Office Building Flooring	\$ _____
Protection	\$ _____
2 Story EOC/HUB Flooring	\$ _____
Protection	\$ _____

END OF BID PACKAGE 09E - Flooring

BID PACKAGE - 09L Hard Tile

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Hard Tile** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
093013	Ceramic Tiling
093023	Glass Tiling

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **09L** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Subcontractor shall furnish and install all wall, base, and floor tile and stone including all thin set and thickset installations as specified and required, special tile and shapes/fabrications, base, trims, patterned tile installations, temporary protective coatings, sealers, grout, etc. to meet Architect's design intent including any field conditions modifications. Areas to receive tile include kitchen backsplashes, shower and tub surrounds), amenity areas, public spaces, janitors mop sinks and other locations as indicated on the contract drawings.
2. Subcontractor shall provide all moisture and pH tests in accordance with manufacturer's recommendations to assure proper substrate prior to installation. Commencement of tile flooring installations shall signify acceptance of the substrate surfaces.
3. Subcontractor shall provide tile cut-outs for all clean-outs, toilet accessories, plumbing fixtures, etc. It is the responsibility of this contractor to maintain a 1/8" consistent gap around all penetrations that is to be filled neatly with the appropriate grout. This package should not rely on trim rings to hide cut edges.
4. Subcontractor shall provide all sealants, joint filers, grouting, etc. within this Scope of Work including the areas where this Scope of Work is abutting dissimilar materials (i.e. floor tile perimeters and base, floor drains, clean-outs, exposed plumbing, control/expansion joints, etc.) is included per contract documents.
5. This contractor includes a caulk joint to match the standard field grout for all transitions of wall tile to tub and shower surrounds.

6. Subcontractor includes all leveling grout, bonding coat/grout, mastic, epoxy grout, flash patch, floor sealers, adhesive, floor scarring, etc. to install tile and waterproofing in accordance with Contract Documents to achieve adhesion and/or levelness for tile installation to meet manufacturer's, TCA's and Architect's recommendations.
7. Provide final cleaning of tile including removal of grout, caulk, stains, discoloration, re-polishing for scratches, tile replacement, etc. to achieve Owner acceptance. Subcontractor is responsible for protection of surrounding finish products during cleaning operations (plumbing fixtures, walls, ceiling, etc.). Cleaning must be completed prior to demobilizing from each area of Work.
8. Subcontractor includes all joint preparation and waterproofing membranes specified under or behind ceramic tile installations including floor preparations, protection, flood testing, etc. Subcontractor is responsible for obtaining Architect acceptance in writing of waterproofing installations prior to concealment with installations under this agreement.
9. Apply a grout sealer to complete installed tile areas per the specifications and as recommended by Tile Manufacturer.
10. Subcontractor shall not clean tools or dispose of grout into the building drainage or sanitary systems. At no time shall any tool or piece of equipment be cleaned in any sink, toilet, tub, shower or other plumbing fixture within or around any building structure. All cleaning shall be performed outside at an approved washout location. Care shall be taken to protect landscaping including but not limited to grass areas, shrubs, trees and all sidewalks, driveways, roads and storm drains.
11. All Tile, including Porcelain and mosaic wall, floor and base as indicated on the elevations, finish schedule and finish plans.

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID

\$ _____

4 Story Office Building Tile

\$ _____

2 Story EOC/HUB Tile

\$ _____

END OF BID PACKAGE 09L Hard Tile

BID PACKAGE -10A Toilet Partitions, Dressing Tracks and Toilet Accessories

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Toilet Partitions/Accessories** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
102113.16	Plastic-Laminate-Clad Toilet Compartments
102123	Dressing Curtains and Track
102800	Toilet and Bath Accessories

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **10A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 COPE OF WORK

TOILET PARTITIONS

1. Subcontractor is responsible for all offsite/onsite storage, handling, and re-handling costs.
2. Subcontractor shall at all times respect the work of other crafts and shall take all necessary precautions to avoid damaging such work. If Subcontractor damages such work, repairs shall be made at the Subcontractor's expense.
3. Multiple mobilization(s) required to perform the scope of work identified here are included.
4. Provide all specified and required special tools for the installation and maintenance of materials furnished under this agreement including providing Maintenance Manuals as required by Contract Documents for proper installation and owner turnover.
5. Subcontractor shall examine substrates for any condition that would affect proper installation according to the plans and specifications. Subcontractor shall notify Contractor within (1) week prior to schedule start dates of any discrepancies. Application constitutes acceptance of substrate.
6. This package includes the supply and installation of all toilet accessories per the schedule. All items that state OFCI will be supplied by the owner and installed by this package. This includes coordinated installation drawings that show all elevations for in-wall blocking
7. This package includes all Sink Mirrors as indicated on the elevations and schedules

8. This package includes all metal Utility Shelving in housekeeping, janitor's rooms, etc.

TOILET ACCESSORIES AND SPECIALTIES

1. Subcontractor is responsible for all offsite/onsite storage, handling, and re-handling costs.
2. Subcontractor shall at all times respect the work of other crafts and shall take all necessary precautions to avoid damaging such work. If Subcontractor damages such work, repairs shall be made at the Subcontractor's expense.
3. Multiple mobilization(s) required to perform the scope of work identified here are included.
4. Provide all specified and required special tools for the installation and maintenance of materials furnished under this agreement including providing Maintenance Manuals as required by Contract Documents for proper installation and owner turnover.
5. Subcontractor shall examine substrates for any condition that would affect proper installation according to the plans and specifications. Subcontractor shall notify Contractor within (1) week prior to schedule start dates of any discrepancies. Application constitutes acceptance of substrate.
6. Install toilet compartments after plumbing fixtures and floor, wall and ceiling finishes have been installed.
7. Doors at accessible stalls shall be self-closing with pull handles on both sides of the door
8. All toilet partitions and urinal screens, including all hardware for all restrooms.
9. This package includes all required shop drawings for coordination of in wall and overhead blocking support

DRESSING TRACKS

1. Subcontractor is responsible for all offsite/onsite storage, handling, and re-handling costs.
2. Subcontractor shall at all times respect the work of other crafts and shall take all necessary precautions to avoid damaging such work. If Subcontractor damages such work, repairs shall be made at the Subcontractor's expense.
3. Multiple mobilization(s) required to perform the scope of work identified here are included.
4. Provide all specified and required special tools for the installation and maintenance of materials furnished under this agreement including providing Maintenance Manuals as required by Contract Documents for proper installation and owner turnover.
5. Subcontractor shall examine substrates for any condition that would affect proper installation according to the plans and specifications. Subcontractor shall notify Contractor within (1) week prior to schedule start dates of any discrepancies. Application constitutes acceptance of substrate.
6. Provide and install all specified dressing tracks as indicated by the contract documents. This includes all overhead support requirements for a complete and operational system.

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID \$ _____

Toilet Partitions \$ _____

Toilet Accessories/Specialties \$ _____

Dressing Tracks \$ _____

END OF BID PACKAGE 10A Toilet Partitions and Accessories

BID PACKAGE - 10B Sound Absorbing Wall Units

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Sound Absorbing Wall Units** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL
098433 Sound-Absorbing Wall Units

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **10B** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide and install all sound absorbing wall units as indicated
2. All units are to meet required STC Ratings as indicated
3. Package is to include multiple mobilizations as required to maintain the project schedule

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID \$ _____

END OF BID PACKAGE 10B – Sound Absorbing wall units**BID PACKAGE - 10C – Signage TBD**

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Signage** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 – General Requirements – ALL

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **10C** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

TBD

02 EXCLUSIONS

TBD

03 ALLOWANCES

ALLOWANCE 1: TBD

04 ALTERNATES

ALTERNATE: TBD

05 UNIT PRICES

Provide unit rates for the following:
TBD

06 BID BREAKDOWN

TBD

END OF BID PACKAGE 10C - Signage

BID PACKAGE - 10D Lockers

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Lockers** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL
Plastic Laminate Clad lockers

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **10D** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide all plastic laminate clad lockers as identified
2. Provide shop drawings and samples for review
3. Provide all keying and hardware as indicated

02 EXCLUSIONS

1. Concrete Base – By others

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID

\$ _____

END OF BID PACKAGE 10D - Lockers**BID PACKAGE - 10E Fire Extinguishers/Cabinets**

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Fire Extinguishers/Cabinets** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
104413	Fire Protection Cabinets
104416	Fire Extinguishers

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **10E** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. This package is responsible for field verifying all rough openings prior to installation
2. This package includes all recessed, semi-recessed and surface mounted fire extinguishers and cabinets as indicated in the contract documents.
3. This package includes all triangular Fire Extinguisher Signage to mount above fire extinguisher cabinets. These signs are to be able to be read from both directions of travel
4. This package is to include 1(one) 5-pound fire extinguisher for every kitchen/break area to be mounted under the sink
5. All mounting heights are to be coordinated per accessibility requirements noted in the contract documents
6. Provide an inspection service agreement for inspection and servicing of extinguishers for one year following date of initial charge, as well as for servicing and recharging extinguishers failing to hold charge within the initial one-year period. Recharging extinguishers due to use or vandalism shall not be included in service agreement.

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID

\$ _____

END OF BID PACKAGE 10E – Fire Extinguishers and Cabinets

BID PACKAGE - 10G Canopies/Awnings

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Canopies/Awnings** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL
107326 Metal Canopies

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **10G** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide all cantilevered aluminum canopies as indicated
2. Provided engineered shop drawings as required. Shop drawings shall indicate method of attachment and blocking requirements
3. All hoisting/lifting needs are to be provided by this package

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID

\$ _____

END OF BID PACKAGE 10G – Canopies/Awnings

BID PACKAGE - 10I Louvers

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Louvers** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
089119	Fixed Louvers
089200	Louvered Equipment Enclosures

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **10I** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide and install all fixed louvers as indicated
2. All sill flashings, jamb flashings, terminations, etc. are to be provided by this package
3. All louvers and screens are to have wind and pressure ratings as indicated

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

ALTERNATE: Provide the mechanical screen wall alternate as indicated \$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID

\$ _____

END OF BID PACKAGE 10I - Louvers

BID PACKAGE - 10P Access Flooring

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Access Flooring** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL
096933 Low-Profile Fixed Height Access Flooring

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **10P** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide and install all access flooring as indicated for the EOC area
2. Include all coordination drawings

02 EXCLUSIONS

1. Final Floor Finish

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID

\$ _____

END OF BID PACKAGE 10P Access Flooring

BID PACKAGE - 10Q Folding Partitions

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Folding Partitions** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
102233	Accordion Folding Partitions
102239	Folding Panel Partitions

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **10Q** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Provide All tracks, panels, hardware, and Folding Partitions at Conference 138/139; Training 136/137, Training 137/139
2. Provide all required shop drawings, OH mounting requirements and hole spacing as required

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID

\$ _____

END OF BID PACKAGE 10Q Folding Partitions

BID PACKAGE - 12A Window Treatments

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Window Treatments** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01 General Requirements – ALL
122113 Horizontal Louver Blinds

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. 12A – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. This package is to include Horizontal Louver Blinds at all exterior window locations
2. Subcontractor shall deliver all materials to the jobsite in original unopened containers or bundles bearing the name of the manufacturer. These materials are to be stored in a place protected from damage or exposure to the elements.
3. Multiple mobilizations may be required to complete the work and are included at no additional cost.
4. Subcontractor is responsible for unloading, distribution, storage, security, breakage, and loss of all materials.
1. This package includes all shop drawings required for review prior to fabrication. It is understood that field measurement must be done prior to ordering any window blinds.
2. This package includes minor touch up, repairs or replacements needed for up to 1% of each of the provided material at no additional costs.
3. This package includes all installation of window blinds and roller shades provided under this agreement. This includes all tools, materials, fasteners, clips, brackets, etc. for a complete installation. Any intermediate supports required by the manufacturer are included.
4. All additional lengths of pull cords required to operate blinds or roller shades from an elevation of 5'-0" maximum above finished floor are included
5. Blinds are to be installed within the tolerances specified; but no more than the following:
 - Between (inside) jamb installation: Width equal to jamb-to-jamb dimension of opening in which blind is installed less 1/4 inch per side or 1/2-inch total, plus or minus 1/8 inch.
 - Length equal to head-to-sill dimension of opening in which blind is installed less 1/4 inch, plus or minus 1/8 inch.

6. After installation, all window blinds are to be pulled up with protective coverings left in place with all cords and strings rolled neatly and tucked away. The final cleaning subcontractor will remove this protection during their scope of work.

02 EXCLUSIONS

1. Blinds for Storefront Lobby
2. Blinds for interior office glass walls

03 ALLOWANCES

NONE

04 ALTERNATES

NONE

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
4 Story Office Building	\$ _____
2 Story HUB/EOC Building	\$ _____

END OF BID PACKAGE 12A Window Treatments

BID PACKAGE - 14A Elevators

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Elevators** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 0 General Requirements – ALL
142100 Electric Traction Elevator

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **14A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Include all motors, drive systems, rails, brackets, pumps, piping, wiring, controls, car slings, call buttons, indicator lights, switches, valves and miscellaneous elevator components for a complete installation of three (3) 3,500 MRL Traction Passenger Elevators as intended by the Contract Documents and as required to meet local, and state code requirements. Include supply and installation of all internal fire alarm and life safety devices required for the elevators.
2. Furnish and install all structural steel machine beams, and any necessary absorbers, isolators.
3. Anchor bolts for this equipment. Submit prior to equipment release, the intended layout of all equipment to be installed in the machine room. Provide dimensions on shop drawings for equipment supports.
4. This Subcontractor shall verify elevator pit size and depth, floor opening sizes, sump locations, over travel requirements, any hoist way ledges or obstructions, overall hoist way height, hoist way ventilation requirements, ventilation/cooling of machine room, etc. shown on the Contract Documents. During Shop Drawing preparation, all discrepancies shall be noted to Contractor in writing. Subcontractor will not be compensated for modifications to Elevator System for compliance to elevator pit/hoist way design. This must be done in the first 20 days of the project.
5. Provide all elevator control equipment with clearances in accordance with referenced Codes and specifications, and submit machine layout drawings prior to construction for review by the CM. This subcontractor shall install all equipment so it may be easily removed for maintenance and repair.
6. Provide Elevator machine room support, equipment support steel, etc.
7. Any/All emergency phones required at elevator lobbies are the responsibility of this package.

8. Subcontractor shall review documents and notify CM if the elevator rails including any required overhead and intermediate secondary support members (i.e. where floor to floor height exceeds the code and/or design limit) required to install Work under this Agreement to the existing designed structural conditions on the contract documents.
9. This subcontractor shall provide final connections to and coordination with fire alarm system, emergency power system, CCTV, access control, security and telephone system. Interface required with Security system software. Telephone wiring from elevator cab to elevator machine room is included by this package.
10. Subcontractor is responsible for interfacing all wiring with Electrical, fire alarm, and Communication Subcontractors. Coordinate elevators including controls with electrical and security subcontractors. Provide electronic security cable travel means. Subcontractor shall include personnel on site during all fire alarm inspections. Fire alarm inspections will be on a per floor basis as well as an additional inspection for the final building at substantial and final completions. Include participation in all inspections and up to one additional re-inspection per elevator.
11. Power wiring will be brought to the equipment disconnect and landed by others. Elevator subcontractor shall be responsible for all power wiring from disconnect to their equipment. Any modifications to power requirements or pits must be included and carried by this Subcontractor.
12. All required electrical work shall be the responsibility of this Subcontractor in accordance with the Contract Documents and which is necessary for installation and operation of the elevator. Electrical Subcontractor's scope of inclusion is only per Electrical Drawings. Subcontractor shall identify anticipated work to be performed by others on approval shop drawings.
13. Subcontractor shall provide and install complete all required finishes including but not limited to entrances (frames and fronts), cab subflooring, cab floors (if pre-finished), cab walls, cab ceiling, etc. as required for a complete installation.
14. Subcontractor shall obtain Final Elevator Inspection and Certification for the elevator from all agencies for Contractor's sole use in hoisting materials at no additional cost to Contractor. This Subcontractor shall provide temporary protection in aforementioned elevators such as cab blankets (for interior protection), elevator maintenance, etc. during construction use. Provide training to Contractor for temporary operation of elevator. These elevators will need to be in service as soon as possible but will be from approximately June 2022 thru the final completion date. The warranty of the elevators will not commence until the owner takes occupancy.
15. This subcontract to furnish all non-security and security access panels required for access to valves, switches, etc. All access panels/doors (including fire rated) and covers as required by code or indicated on the documents are by this Subcontractor. Include all caulking of equipment and fixtures installed by this bid package which includes security caulking in secure areas. All fire rated sealing of penetrations required for work under this agreement including hydraulic lines if applicable.
16. Provide cleaning of all exposed surfaces furnished under this package prior to final turnover. This is to include the removal of all labels, excess sealant, compounds, dirt, and other substances. Protection of all installed equipment, fixtures, etc. that are installed in this BP are the responsibility of this subcontractor also.
17. Subcontractor to provide rough in information for position indicators, push button stations, hall lanterns, etc. This subcontractor to coordinate with the finish trade sub-contractors to confirm the rough in locations and openings are correct.
18. Subcontractor shall obtain and pay for any required permits, bonds, or fees as required to complete scope of work under this agreement including any required re-inspection fees / costs are responsibility of Subcontractor. It is the responsibility of this Subcontractor to anticipate inspection delays in the

installation durations and sequence such work ahead of others as not to impose delays in the schedule. This shall be construed for DOI, Engineer, New Hanover County, Duke Progress, TCG, Fire Marshal, etc.

19. Dewatering of pits as required for duration subcontractor is on site is included by this package.
20. If delivery of factory equipment is not timely as to allow hoist way to be closed up and finishes to proceed in accordance with approved progress schedule, then Subcontractor shall obtain, by whatever means necessary, all required rails, brackets, and door frames and maintain Progress Schedule at no cost to the Contractor. Delays at factory shall not be grounds for time extensions by Subcontractor.
21. Subcontractor will coordinate all equipment with electrical subcontractor's Work and shall verify all control and power requirements such as smoke detectors, power wiring, etc. Subcontractor shall notify Contractor of all conflicts or requirements between the Work by others and the Work of this Agreement required for a complete installation of the Elevator Systems with shop drawing approval.
22. Provide security cabling elevator cab raceway means for hoist-way travel so that elevator cabs can be monitored as required. Subcontractor is responsible for identifying on approval shop drawings the routing of all piping from machine room to hoist way/pit areas. All routing shall meet Owner and Architect's approval at no additional cost to Contractor.
23. Subcontractor shall provide, maintain and properly replace, as necessary, all hoist way removable barricades and signage during progression of this Work until work is accepted. The final removal/disposal of Contractor furnished hoist way safety railings at openings is included throughout execution of work under this agreement by this Subcontractor.
24. Subcontractor shall provide surge protection and coordination of power necessary for execution of work prior to permanent power installation. Should generator power be provided by Contractor as the sole power source, the generator shall be conditioned to perform as equal to permanent power.
25. Subcontractor is responsible for sizing and dimensionally locating all items furnished and installed by others for code compliance and per contract drawings on this Subcontractor's Shop Drawings, including but not limited to:
 - a) Sump Pit (location only)
 - b) Elevator Pit Ladder(s) (location only)
 - c) Elevator Pit Lights and Switching (location only)
 - d) Elevator Pit Convenience Outlets (location only)
 - e) Elevator Power Source Point of Termination for Controller and Machines (including service size)
 - f) Elevator Machine Concrete Housekeeping Pad, if required
 - g) Phone, Security and Fire Alarm Point of Termination (location only)
 - h) Wall opening block outs for equipment lines/services installed under this agreement or under slab rough-in requirements
 - i) Rail anchor inserts (furnished by this Subcontractor, and installed by Contractor if in concrete or masonry walls only)
 - j) Elevator hoist beam, if shown on drawings
 - k) Hostway ventilation requirements
 - l) Elevator machine room ventilation requirements
 - m) Elevator machine room door size to install equipment
26. This Subcontractor is responsible for the grouting of door sills, machines, etc. This Subcontractor shall coordinate with Concrete/Drywall Subcontractor to in-fill products around all call buttons, floor indication boxes, door frames, etc. Subcontractor is responsible for installing all devices embedded in work by others or box outs as required. Provide temporary protection of frames and thresholds until grouted

27. Subcontractor is responsible for all penetrations/block-outs, templates and sleeves in or through concrete, precast concrete, gypsum wall board, ceilings, slabs, roofs or foundations, or any other material or structure necessary to complete this work.
28. Subcontractor understands that multiple areas will be occurring simultaneously and said Subcontractor shall provide required supervision and manpower to maintain multiple work areas. Schedule is not constrained which allows the Drywall and Concrete trades to proceed ahead of schedule, or work floors other than anticipated in the schedule. Subcontractor agrees to adjust manpower and supervision requirements to meet acceleration potential of the building structure at no additional cost to Contractor (i.e. electrical rough-ins shall not be constraint on masonry, concrete, installations).
29. Subcontractor understands the schedule and has included multiple crews in order to achieve the required dates.
30. All testing, certification tests, etc. under direction of Owner, Engineer, Inspectors, and governmental authority(s) having jurisdiction. This includes but is not limited to all seismic qualification certifications and/or calculations as required in various elevator specification sections. Certifications/calculations shall be signed and sealed by a qualified professional engineer.
31. This Subcontractor shall make deliveries by trailer truck. Storage space at the jobsite is extremely limited and will only be available as allowed by the CM. Temporary offices and equipment and apparatus at the construction site will be permitted only to the extent approved by the Construction Manager. Include all necessary equipment, etc. to unload all deliveries.
32. Include coordination and assistance with third party inspections and testing as required including providing personnel for commissioning the entire time of the elevator commissioning process (includes commissioning of systems that interface with the elevators such as fire alarm).
33. In the event the Certificates of Use are issued before Substantial Completion, Subcontractor will hold the Certificates so that the warranty period does not begin until the substantial completion date.
34. This package is to include an operator to run each car for hoistway patching for a total of 80 hours. This is to be included as an allowance for all hoistways.
35. This Subcontractor shall provide a Final Clean of their product upon completion of their scope of work, including the removal of temporary labels and protective coatings. At a designated time, Subcontractor will return to completely clean their scope prior to punchlist. Including but not limited to, removal of stains, scratch repair, final alignment of doors, and final adjustment of hardware, etc.

02 EXCLUSIONS

NONE

03 ALLOWANCES

Allowance 01 - 150 days of temporary use for Two Elevators

Allowance 02 – 80 hours of operator time for hoistway patching (total)

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

Provide unit rates for the following:

Elevator Operator

\$ _____/HR

06 BID BREAKDOWN

BASE BID

\$ _____

END OF BID PACKAGE 14A - Elevators

BID PACKAGE - 21A Fire Protection

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Fire Protection** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

- Division 01 General Requirements – ALL
- 078443 Penetration Firestopping
- 083113 Access Doors and Frames
- 210010 Fire Suppression General
- 210090 Fire Suppression Performance Verification
- 213000 Fire Suppression Systems
- 213500 Clean Agent Fire Suppression Systems

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **21A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. This agreement includes providing complete all piping, valves, couplings, water flow indicators, water-motor gongs, backflow devices, supervisory switches, alarm check valves, sprinkler heads, alarm devices, anchorage hangers/devices and attachments, meters, gauges, escutcheons, etc. as shown and/or necessary to fulfill the systems requirements for a complete functioning and approved system per all national, state, and local regulations. It includes a complete all submittal and engineered shop drawing preparation and obtaining approval. Subcontractor is responsible for providing complete wet/dry sprinkler design including complete submittal to the Architect and appropriate governmental inspection agencies for approval.
2. This package includes a complete Clean Agent System for the EOC Server Room. This is to include all piping, tanks, alarms, panels, etc. for a complete system. This system will be required to be integrated with the building alarm system. This includes any and all cost for testing with the local authorities. Provide an extra refill at each station in case of an accidental discharge.
3. This package is to include a spare head and wrench box

4. This package includes a 6" PVC pipe tube mounted to the wall of the fire pump room with final riser flow data, stamped and approved sprinkler drawings, executed copies of NFPA 13, NFPA 14, NFPA 20 and NFPA 24
5. This package includes provisions for all lines that cross the building expansion joints
6. At all low point drains, this package is to include furnishing access panels to the drywall subcontractor for installation with phenolic labels
7. This package includes all seismic design for hangers as required
8. This package includes a valve tag and label tag with the floor/zone that each valve serves at all control valve assemblies.
9. In paths of egress, this package understands that no piping can be lower than 7'-0".
10. To include extensive involvement in the preparation and completion of the Project Coordination Drawings and BIM clash detection process
11. Provide complete ALL Seismic restraints as required.
12. To include performance and submission of all approved test and reports, Commissioning Activity support through final acceptance, Comply and support all the requirements of the Project IAQ Program, provide Owner Training, Warranties and close Out documentation.
13. Subcontractor shall obtain and pay for any required permits, bonds, or fees as required to complete scope of work under this agreement including any required re-inspection fees / costs are responsibility of Subcontractor.
14. All Fire Protections drawings and calculations shall be signed and sealed by a registered and licensed Engineer in State of North Carolina.
15. Subcontractor is responsible to perform (as witnessed by Contractor, Owner and Engineer) a site water flow test(s) as basis of engineered shop drawing design within 5 days of contract award and prior to beginning shop drawings in order to certify the information provided by Owner at time of bid is accurate.
16. Subcontractor shall expedite installation of temporary stand pipe riser assemblies from Level 1 to top floor to function as a temporary fire protection riser at the building from duration of building structure until such time permanent system is activated and accepted by Owner, DOI, Architect and Fire Marshal. FDC piping shall also be connected at ground level condition. Include multiple mobilizations to accomplish this work during the early progress of the project.
17. Subcontractor understands that multiple floors will be occurring simultaneously and said Subcontractor shall provide required supervision and manpower to maintain multiple work areas. Schedule is not constrained which allows the Concrete and Structure trades to proceed ahead of schedule, or work multiple floors than anticipated in the schedule. Subcontractor agrees to adjust manpower and supervision requirements to meet acceleration potential of the building structure at no additional cost to Contractor (i.e. Fire Protection System rough-ins shall not be constraint on masonry, concrete, installations).

18. Subcontractor shall include provisions for support personnel to coordinate and assist in all inspections and testing procedures.
19. Subcontract shall provide all hoses for testing including diversion boxes to prevent danger to personnel or property. Subcontractor will be responsible for cleaning/replacing any material stained due to not extending hoses for drains, test connections, etc.
20. Subcontractor shall include all Fire Protection related work identified on the drawings as well as the inclusion of those items indicated on the Civil, Mechanical and Plumbing drawings identified to be completed by Fire Protection Subcontractor.
21. Subcontractor is responsible for scheduling, coordinating, preparing and documenting all inspections of Owner, Architect, Engineer, DOI and required local authority(s) having jurisdiction inspection agencies. All pre-testing and testing requirements needed to achieve temporary and permanent certificate of occupancy per building (or phased area) and the construction schedule is included.
22. Costs for expediting shop drawings and materials to the site are here included to avoid delays. All material dates shall meet or exceed the project schedule at no cost to Contractor and / or Owner.
23. Subcontractor shall not use mechanical "T's" on this project.
24. Subcontractor shall not use "Saddle Fittings" on this project.
25. Subcontractor shall install Thread-o-let fittings for all devices installed in piping.
26. Subcontractor shall provide complete all sprinkler pipe enclosures and hose cabinets.
27. This subcontractor is responsible to provide drain valves for all water risers.
28. Connections for electrical alarm system including bells, flow and tamper switches all properly connected to the sprinkler system is included. Coordinate location of all devices with Electrical Subcontractor is included.
29. All fire department connections, drain lines, and inspector test line locations shall be coordinated with Owner, Architect, DOI and local authority(s) having jurisdiction.
30. Provide all required sprinkler heads of type, location, size and color to meet code, Architect's approval, and local authority(s) having jurisdiction approval in order to meet both required coverage areas and aesthetics. Subcontractor is responsible for avoiding trapped water in sprinkler system during design and during installations. All required auxiliary drains are included.
31. Subcontractor is responsible for providing all required pipe identification, valve tagging, pipe color coding, identifying flow direction, etc. Prime painting of all steel piping and accessories requiring finish painting is included herein.
32. Subcontractor is responsible for limiting exposed piping conditions to public view and shall coordinate and obtain approval from the Architect of all such exposed conditions prior to installation. Shop drawing approval by the Architect does not constitute acceptance of exposed or uncoordinated piping locations if such conflicts are not highlighted on submittal approval for Architect's as a 'verification by others' notation.

33. Subcontractor is responsible for coordinating the proper location, head type, etc. of elevator pit/shaft fire protection with Architect, elevator subcontractor, elevator inspection agency, DOL, DOI and local authority(s) having jurisdiction if shown on contract documents or is local requirement.
34. Final connections to site piping are included herein in the Riser Room including all required flanges, gaskets, backflow preventer (certified) etc. Subcontractor is responsible for field verifying all site stub-out locations prior to preparing shop drawings.
35. Subcontractor is responsible for testing building systems to point of connection. All testing, certification tests, etc. under direction of Owner, Engineer, Inspectors, and governmental authority(s) having jurisdiction.
36. Subcontractor is aware of the architectural, structural, HVAC, plumbing and electrical components of the building and has taken this into consideration for layout, head locations, and penetrations.
37. Subcontractor is responsible for all layout and coordination of layout for installation of walls, openings, soffits, and the suspended ceiling systems within this work and work by other trades affected by this scope of work.
38. All wall and floor slab penetrations must be properly core drilled and/or sleeved, collared, escutcheoned when exposed, grouted, fire safe, and fire caulked to meet all applicable codes and specifications. Provide a neat, clean, tightly sealed product. Subcontractor is responsible for the layout, furnishing and installation of all sleeving requirements under this agreement.
39. Provide floor and wall escutcheons at all exposed piping penetrations.
40. Subcontractor is responsible to clean-up all core drill slurry from walls and slabs as well as removing and patching all core drill machine anchors.
41. Subcontractor shall provide the Painting and Caulking Subcontractors with the necessary substrate materials for adhesion, cohesion, and compatibility test reports and prepare surface accordingly for application of finish products. Removing of all piping oil, grease, etc. is included.
42. Subcontractor shall protect all flooring conditions (including concrete slabs to received flooring) from staining under work under this agreement.
43. Subcontractor understands the Project will be constructed in major sections and shall deliver materials accordingly as to eliminate extended on-site storage of bulk materials and environmental sensitive products. Contractor is not responsible for providing weather or damage protection, heat, or labor to relocate stored materials to access work of other trades of bulk quantities.
44. Subcontractor shall furnish and install all required supports for this work including, but not limited to anchor bolts, hangers, isolators, channels, angles, embeds. All items shall be hot dipped galvanized finish, unless noted otherwise in the Contract Documents. Coordination drawings for embeds shall be provided and based on the project concrete pour schedule.
45. All material and equipment shall be installed in a manner which will not overload the structural elements of the building. Should additional supports be required to distribute loads over more than one structural element, same shall be included by this Subcontractor. At no point are any piping arrangements to be hung directly from the roof deck (including the concrete deck at the EOC roof)

46. Subcontractor shall install and test fire protection system during building rough-in time frame to prevent any water damage to work by others. Subcontractor will also energize complete system prior to Contractor beginning finish operations (i.e. flooring, finish painting, casework, etc.) to insure system is complete and no leaks are apparent.
47. It is the responsibility of Subcontractor to provide adequate freeze protection techniques in the design, layout, and installation of the fire protection system.
48. Subcontractor is responsible for the final placement of all sprinkler head locations to meet the design intent with the local authority(s) having jurisdiction and aesthetics' approval for the Architect including all adjustments, etc. at no cost to Contractor. All lines shall be installed true and straight with heads being center, square and equal in layout. Subcontractor shall not install the sprinkler heads until ceiling grid installations, final painting, etc. are completed by others to insure correct placement and no damages occurs to sprinkler heads and/or escutcheons. All costs to repair ceiling grid due to damage caused by this subcontractor will be appropriately charged.
49. All access panels and covers as required by code or indicated on the fire protection documents are by this Subcontractor are included. Subcontractor is responsible for coordinating the locations and size of required framed openings with respective trades during the construction of walls, ceilings, and floors. These access doors are for access through architectural ceilings and walls. Rated panels are included to match ceiling and wall types.
50. Subcontractor shall allow walls to be primed and finish painted prior to installation of surface mounted piping, heads, etc.
51. Provide testing, cleaning, certification, start-up, etc. in whole or in part to meet project schedule and per floor level basis.
52. Subcontractor is responsible for all caps for all heads to protect installed heads from damage, paint, drywall mud, etc. from time of installation to Owner acceptance of buildings. Installation of sprinkler heads will precede finish painting of walls.
53. Subcontractor shall provide complete 2% sprinkler head and escutcheon replacement for unidentifiable damage.
54. Subcontractor shall provide head cap/ring at all drywall installations to all drywall finishers to finish around head / cut drywall neatly to correct size of escutcheon. This subcontractor is responsible for all drywall repair costs to refinish around sprinkler heads which are caused by piping movement or misalignment.
55. All Fire Protection rough-in (i.e. for sprinkler head install) will be complete prior to ceiling grid installation (any rough-in activities more than one foot above the ceiling will be appropriately charged for any ceiling grid damage).
56. Subcontractor is hereby advised that site investigation reports have been provided by the Owner for review and information purposes. The report will be issued to this Subcontractor. Subcontractor shall waive all rights to any claims against Contractor as a result of the information contained within the report.
57. Subcontractor is responsible for notifying (2) days in advance the Contractor, Owner, Architect, and Governing Agencies of all inspection requests.

58. Subcontractor is responsible for compliance to all requirements of local authority(s) having jurisdiction on all installations under this agreement.
59. Subcontractor shall provide complete all required piping modifications for obstructions, including fittings, heads, etc. to comply with final piping layouts with approved coordination drawings and/or to comply with field conditions for connections to existing utilities at no additional cost to project.
60. Subcontractor shall be responsible for all concrete equipment and housekeeping pads required for Fire Protection equipment installed under this contract.
61. Provide all 'Extra Materials' and 'Maintenance Tools' for Owner to Contractor in unopened containers/packages to Contractor. All items shall be turned over no later than 60 days prior to the substantial completion date for each phase. All items shall be transmitted to Contractor in writing and delivered and unloaded in a location(s) determined by Contractor.
62. All testing, certification tests, etc. under direction of Owner, Engineer, Inspectors, and governmental authority(s) having jurisdiction. This includes but is not limited to all seismic qualification certifications and/or calculations as required in various Fire Protection specification sections. Certifications/calculations shall be signed and sealed by a qualified professional engineer.
63. Provide extended warranties, special warranties, and bonds as required for the fire protection systems and equipment that is operational prior to final acceptance from the Owner. All warranties are to start at time of substantial completion as approved by the architect and the owner.
64. The coordination activity is to include work in all above/below grade, exterior/site, and interior.
65. Provide all coordination necessary to be certain that all outlets are installed level, plumb, and flush with respective outlets and finishes.
66. TCG will lead the BIM coordination efforts for all trades based on following order and dates. All dates below start from the date issuance of a subcontract agreement to subcontractors – total coordination signoff for entire building must be done in 16 weeks, noting that the durations listed below are not finish to start and will overlap:
 - i) Underground – 2 weeks
 - ii) Mechanical riser shafts and stair shafts and slab penetrations – 3 weeks
 - iii) Main electrical, Fire Pump, IT and mechanical rooms – 4 weeks
 - iv) Level 1 overhead – 4 weeks
 - v) Level 2 Overhead – 4 weeks
 - vi) Level 3 Overhead – 4 weeks
 - vii) Level 4/Roof Overhead – 4 weeks
67. Upon completion of the Coordination Drawings it shall be the responsibility of each subcontractor to provide sufficient copies of the accepted coordination drawings to their respective Superintendents, Foreman's, lower tiered subcontractors and installers in the field. As a minimum each subcontractor shall have (1) set of the accepted coordination drawings on each floor of the project. It is the responsibility of each subcontractor to continually review and communicate with all other Trades in advance of the installation any issues and/or conflicts that require variance from the reviewed and accepted coordinated drawings. These drawings will be allowed to be in electronic format in lieu of hard copies.

68. Subcontractor shall provide all necessary and required materials, management and field labor, ladders, lifts, radios, safety devices (PPE). Commissioning documentation to include but not limited to, all complete and correct pre-function test reports, all training records-audio, video, and written, coordination meetings, all assistance necessary to accomplish a complete and Final Commissioning Activity per the contract documents. Be advised that should for any reason this activity require premium time and or night/weekend/holiday scheduling this requirement shall be met without any additional cost to the project. Be advised that per-function and or final Commissioning Activities that are confirmed to be deficient and or delinquent by cause of this subcontractor will be subject to responsibility assessment and subsequent cost to be paid by this subcontractor.

02 EXCLUSIONS

NONE

03 ALLOWANCES

Allowance 01: Include up to 50 total head replacements for un-identifiable damage

04 ALTERNATES

Provide a Viking Clean Agent System as a preferred Owner Alternate \$ _____

Payment and Performance Bond \$ _____

05 UNIT PRICES

Cost to replace 1 sprinkler head \$ _____/EA

06 BID BREAKDOWN

BASE BID	\$ _____
BIM Coordination	\$ _____
4 Story Office Building	\$ _____
2 Story EOC/HUB	\$ _____
Fire Pump/Jockey Pump	\$ _____

END OF BID PACKAGE 21A Fire Protection

BID PACKAGE – 22A Plumbing

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Plumbing** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

- Division 01 General Requirements – ALL
- 078443 Penetration Firestopping
- 079200 Joint Sealants
- 083113 Access Doors and Frames
- 220010 Plumbing General
- 220090 Plumbing Performance Verification
- 222500 Plumbing Insulation
- 224200 Plumbing Fixtures
- 224300 Drainage Systems
- 224400 Water Systems
- 224900 Petroleum, Oil and Lubricant Systems

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **22A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. To include domestic hot and cold water, all back flow preventers, DWV, RDL and natural gas systems including, but not limited to, all piping, insulation, trap primers, drain piping, fittings, valves, pumps, fixtures, meters, water heaters, balancing valves, wall hydrants, hose bibs, temperature transmitters, supports, vibration isolation/expansion materials, thermostatic mixing valves, expansion tanks, lab air compressor, vacuum pump and other pumps.

2. This package includes the supply, installation and certification of the exterior fuel tank at the service yard. All required piping and safety devices are to be included by this package
3. All utilities will be brought to a flange 12" into the building at the ground level of the building by the Site Utilities contractor.
4. Provide complete Temporary Water System as per the Site Logistics Plan and additional scope of work details described below. This package is to coordinate the connection of this supply to the temporary construction trailer as well as extend any required services for temporary building use.
5. All domestic water, including the main building water meter assembly and associated full size bypass are included.
6. Provide and install Roof drain Bodies; caulk roof drains after final leveling adjustments
7. All plumbing fixtures, including pipe guards, water fountains, bottle fillers, eye wash stations and janitor's sinks are included.
8. All floor drains trap primers, trap fillers and associated piping are included.
9. All one-piece fiberglass showers with integral benches are to be supplied and installed by this package.
10. This package includes all sinks, faucets, mixing valves, pipe coverings, insulation, etc. for all items that are mounted inside cabinets or shown for restrooms for a complete installation.
11. This package is to closely coordinate with the Roofing scope with regards to the roof drains for all TPO roofs. The primary and overflow drains, attachments to structure, water dam compression rings and associated piping are to be provided and installed by this package, all sealants and final water tight installations are the responsibility of the roofing scope. Connection of roof drains to storm line and inlets as shown on the drawings is included.
12. All tankless water heaters at island locations are to be provided and installed by this package
13. All natural gas piping, including the gas meter are included by this package.
14. All elevator sump pumps, remote alarm and control panels are included.
15. Comply with all Earthwork and trench safety requirements for all excavation work.
16. All gravity drained plumbing lines must be stubbed 5' outside the building, link sealed and tied into existing site systems under this agreement.
17. Video records of all under slab drainage piping is the responsibility of this subcontractor.
18. This package includes all testing and reports required for the plumbing systems, commission activity support through final acceptance, all owner training, all warranties and complete close out documentation.
19. Subcontractor shall obtain and pay for any required permits, bonds, or fees as required to complete scope of work under this agreement including any required re-inspection fees / costs are responsibility of Subcontractor.

20. Subcontractor to provide complete, a temporary floor and roof drain system designed to divert all water to the outside of the building. The materials and supports for this system shall be robust enough to handle without failure an extreme (flash flood) rain event. Coordinate the installation of this system with the TCG Superintendent prior to beginning the installation.
21. Subcontractor shall furnish, install, maintain and remove all temporary water services. Reference the project Logistics Plan. Include piping, insulation, valves, spigots, sleeving, supports, pipe protection, etc. for a complete and operating system.
22. Provide temporary sump pumps to be used in the elevator pits until permanent installations are complete
23. This subcontractor must be prepared to set all PRVs and circuit setters to get the system running without waiting on the TAB contractor. Final Test and Balancing of all plumbing related systems are the responsibility of this package.
24. Subcontractor understands that multiple floors will be occurring simultaneously and said Subcontractor shall provide required supervision and manpower to maintain multiple work areas. Schedule is not constrained which allows the Structure and Concrete trades to proceed ahead of schedule, or work more floors than anticipated in the schedule. Subcontractor agrees to adjust manpower and supervision requirements to meet acceleration potential of the building structure at no additional cost to Contractor (i.e. Plumbing rough-ins shall not be constraint on concrete installations).
25. Subcontractor agrees to expedite the permanent mechanical/plumbing systems and final hook-ups necessary to operate the permanent heating and ventilating system for the purpose of temporary heating and ventilation. The Subcontractor will include all labor required to operate the mechanical portions of this system. The early start-up of the mechanical/plumbing equipment shall in no way encroach upon any warranty requirements of the Specifications. Subcontractor shall advise and coordinate with CMAR all items that are or will be received in order to achieve early start-up of equipment.
26. Costs for expediting shop drawings and materials to the site is included as required as to avoid work schedule progress delays.
27. Subcontractor to verify site utility piping inverts prior to preparing for installation work under this agreement. Inverts and lengths of piping indicated on the document are for information purposes only. All information shall be field verified for length and all invert elevations shall be coordinated with other trades, etc.
28. All Plumbing related work identified on plumbing drawings as well as inclusion of those items indicated on civil and architectural drawings identified to be completed by Plumbing Subcontractor under this scope.
29. This subcontractor is responsible for flushing and video camera inspection of all under slab plumbing lines. **The video must be presented to the CMAR for acceptance prior to covering.**
30. Subcontractor shall provide lavatory templates to casework and solid surface countertop Subcontractors to precut openings off-site. Template shall be provided within 45 days of notice of award.
31. All floor drains in mechanical spaces must have the concrete sloped per the owner's requirements. Coordinate elevations with the concrete subcontractor. Coordinate location with adjacent housekeeping pads, toilet partitions, lab equipment and other equipment.

32. Comply with all ADA requirements as called out on the contract documents and coordinate with all trades to remain compliant with ADA requirements as related to all plumbing fixtures adjacent to other finishes and equipment. (For example: The installation of partition walls in public restrooms and toilet paper dispensers within the stalls.)
33. Subcontractor to provide complete ALL pressure reducing valves to equipment furnished under this agreement as required for the proper function and approval of the equipment whether indicated on the documents or not.
34. Verify that all area drains, floor drains and floor sinks are installed at an elevation that allows proper slope for drainage. Coordinate with concrete subcontractor and flooring contractor.
35. Subcontractor to provide complete ALL plumbing piping clean outs.
36. Subcontractor is responsible for final setting and adjusting of all cleanouts, etc. to receive specified floor finishes or final site grades.
37. Taping of all floor drains, clean-out covers, etc. is included for protection of finish. Protection of drains and covers shall be removed upon conclusion of all work by all trades and prior to Architect's punch list. Final cleaning and polishing of drain and clean-out covers is included at conclusion of project.
38. Coordinate accessibility of all valves with all other trades. If a valve is not shown on the contract documents and is needed for future maintenance purposes, it is the responsibility of this subcontractor to bring it to the attention of the contractor and design team.
39. Coordinate all above ceiling equipment and piping with all other trades to allow for proper slope for draining.
40. Coordinate with electrical subcontractor to properly locate all power required for water fountains, flush sensors, and all other plumbing equipment. Comply with all required ADA codes related to the installation and proper clearances of the water fountains.
41. Coordinate the location of all vertical run plumbing and floor penetrations with the framing subcontractor to ensure piping is centered within a framed wall. Any piping not centered inside of a framed wall, due to a lack of proper coordination, is the responsibility of this subcontractor to relocate the penetration.
42. Supply all roof jacks, for plumbing penetrations in the roof, as required by the construction documents.
43. Subcontractor shall furnish and install all necessary items required for concrete work related to the systems installed under this agreement including, but not limited to, concrete collars for all clean-outs, concrete backfill for piping systems location under building footings, grouting of wall sleeves to building structure, etc.
44. All flushing, pressure testing, disinfection/bacteriological (chlorination) chemical flushing, certification tests, etc. under direction of Owner, Engineer, Inspectors, and governmental authority(s) having jurisdiction is included. Subcontractor shall dilute and properly dispose of heavily chlorinated water.
45. During temporary operation include all filters to plumbing equipment requiring such that are equal to the specified filter for the project. If plumbing system becomes contaminated, subcontractor shall clean final plumbing systems to meet Owner's approval at Project Completion.

46. Subcontractor to provide complete all sump pits pumps, alarm panels with provisions for monitoring pump status and alarm condition, and remote audio / visual device for the elevators pits. Subcontractor shall provide the correct length of chord from sump pump to remote controller location from factory.
47. Subcontractor shall provide all rough-in and final hook-up of all items requiring plumbing service that are specified in any other section of the Specifications, or Owner furnished, and/or shown on the Drawings.
48. Subcontractor shall provide code approved panel shields at new electrical or fire alarm panels due to new piping running overhead if alternate locations cannot be approved to re-route pipe.
49. All equipment or materials provided under other Specification sections which are to be installed by this Subcontractor will be identified and delivered to this Subcontractor's Project office.
50. Subcontractor shall receive inventory, store, schedule, handle, protect, and install any Owner furnished equipment as indicated in the Contract Documents.
51. Subcontractor shall insure all plumbing installations have sufficient specified or code required separations.
52. Subcontractor shall coordinate with the Building Energy Management System, Fire Alarm, and Electrical Subcontractors to assure provision of adequate contacts and relays required for proper operation/interface between systems.
53. All testing, adjusting and balancing of plumbing systems is included under this agreement. Subcontractor will then provide final building water balancing report upon 100% completion of the project which will need to occur prior to scheduled substantial completion inspection.
54. Provide all miscellaneous parts as necessary to accomplish the balancing requirements.
55. Cutting, patching and sealing of insulation, and piping, etc. as required for the installation of testing devices is included in this Agreement.
56. Subcontractor is responsible for coordinating the locations and size of required framed openings with respective trades during the construction of walls, ceilings, and floors.
57. Subcontractor shall layout, install, and strip all required sleeves or block-outs within elements of the structure for the installation of Subcontractor's Work cast-in-place concrete locations. Formed openings in concrete walls are herein included.
58. Subcontractor shall include all concrete saw cuts, removal, and concrete replacement as required to install work within this Scope. No saw cutting or core drilling are to be performed without written approval from Contractor and Architect/Engineer.
59. Subcontractor shall be responsible for coordinating, locating, and installing concrete equipment and housekeeping pads.
60. Any grouting of equipment in this bid package or installed by this bid package is included.
61. Subcontractor is responsible to clean-up all core drill slurry from walls and slabs as well as removing and patching all core drill machine anchors.

62. Subcontractor is responsible for all penetrations/block-outs, templates and sleeves in or through concrete, CMU, gypsum wall board, ceilings, slabs, roofs or foundations, or any other material or structure necessary to complete this work.
63. Coordinate locations of Aqua Stats, Flow Meters, Temperature Sensors/Probes and all other control/monitoring devices as to allow for proper installation as required by the manufacturer and contract documents. (Example: Aqua Stats and Flow Meters require a minimum length of pipe to allow proper readings.)
64. Subcontractor shall furnish and install all required supports for this work including, but not limited to anchor bolts, hangers, isolators, channels, angles, and embeds. All items shall be hot dipped galvanized finish, unless noted otherwise in the Contract Documents. Coordination drawings for embeds shall be provided and based on the project concrete pour schedule.
65. Subcontractor is responsible for reviewing Electrical documents for specified power requirements and conditions for plumbing equipment including responsibility for furnishing disconnects and starters specified within the equipment specifications for equipment provided by this bid package.
66. All material and equipment shall be installed in a manner which will not overload the structural elements of the building. Should additional supports be required to distribute loads over more than one structural element, same shall be included by this Subcontractor. At no point are elements to be hung from the roof deck (including the concrete roof deck at the EOC/HUB).
67. Subcontractor shall furnish and install labels, tags, pipe identification, access panel ID, equipment ID, etc.
68. The coordination activity is to include work in all above/below grade in the interior of the building. Installation of exterior piping by others.
69. Provide all coordination necessary to be certain that all outlets are installed level, plumb, and flush with respective outlets and finishes.
70. Include all necessary coordination with the Millwork and Equipment providers. This contractor will be solely responsible for all cost associated with repair and/or replacement of Millwork damaged due to piping outlet(s) and/or openings being made by him or his subcontractors and or incorrect coordination and direction provided by this subcontractor.
71. Include all hose bibs as shown and heat trace as required to prevent freezing.
72. Upon completion of the Coordination Drawings it shall be the responsibility of each subcontractor to provide sufficient copies of the accepted coordination drawings to their respective Superintendents, Foreman's, lower tiered subcontractors and installers in the field. As a minimum each subcontractor shall have (1) set of the accepted coordination drawings on each floor of the project. It is the responsibility of each subcontractor to continually review and communicate with all other Trades in advance of the installation any issues and/or conflicts that require variance from the reviewed and accepted coordinated drawings. These drawings will be allowed to be in electronic format in lieu of hard copies.
73. TCG will lead the BIM coordination efforts for all trades based on following order and dates. All dates below start from the date issuance of a subcontract agreement to subcontractors – total coordination signoff for entire building must be done in 16 weeks, noting that the durations listed below are not finish to start and will overlap:

- i) Underground – 2 weeks
- ii) Mechanical riser shafts and stair shafts and slab penetrations – 3 weeks
- iii) Main electrical, Fire Pump, IT and mechanical rooms – 4 weeks
- iv) Level 1 overhead – 4 weeks
- v) Level 2 Overhead – 4 weeks
- vi) Level 3 Overhead – 4 weeks
- vii) Level 4/Roof Overhead – 4 weeks

74. It is understood that while TCG will lead the effort, each principal trade will be required to attend, manage, schedule and be an active participant in the coordination effort from start to finish. Reference the BIM Execution plan sample for further information.

75. Subcontractor shall provide all necessary and required materials, management and field labor, ladders, lifts, radios, safety devices (PPE). Commissioning documentation to include but not limited to, all complete and correct pre-function test reports, all training records-audio, video, and written, coordination meetings, all assistance necessary to accomplish a complete and Final Commissioning Activity per the contract documents. Be advised that should for any reason this activity require premium time and or night/weekend/holiday scheduling this requirement shall be met without any additional cost to the project. Be advised that per-function and or final Commissioning Activities that are confirmed to be deficient and or delinquent by cause of this subcontractor will be subject to responsibility assessment and subsequent cost to be paid by this subcontractor. Subcontractor is responsible for all costs for delays and re-inspections fees billed by commissioning agent

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

Payment and Performance Bond \$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
Four Story Office	\$ _____
Rough in	\$ _____
Fixtures and trim out	\$ _____
Domestic Booster Pump	\$ _____
2 Story HUB/EOC	\$ _____
Rough in	\$ _____

Fixtures and trim out

\$ _____

END OF BID PACKAGE 22A Plumbing BID PACKAGE - 23A HVAC

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **HVAC** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
07843	Penetration Firestopping
083113	Access Doors and Frames
230010	HVAC General
230090	HVAC Performance Verification
230095	Testing, Adjusting and Balancing
231000	Piping, Valves and Accessories
231500	HVAC Underground Preinsulated Piping Systems
232500	HVAC Insulation
236000	Equipment
236500	Special Equipment
237000	Air Distribution

Specification Sections, As applicable:

238000	Automatic Temperature Controls
--------	--------------------------------

WORK/DIVISION DESCRIPTION:

Bid package No. **23A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. This package includes all Equipment including but not limited to Split Systems, Chillers, ERU's, AHU's, RTU's, BT's, Pump skids, expansion tanks, unit heaters, Finned Tube Radiation, Sound Attenuators, Fans, Terminal Units, ductwork, air distribution, controls, sensors, hydronic piping, valves, insulation and test and balance required for a complete and operational system per the contract documents and as follows:
 - a) This package agrees to provide and install complete all ductwork and sound attenuation ductwork shown and/or necessary to fulfill the systems requirements for a complete functioning and approved system.
 - b) Subcontractor agrees to provide a complete mechanical hydronic system that complies with all applicable codes.

- c) To provide Chilled water system including, but not limited to, piping, insulation, pumps, valves, fittings, welding, meters, water treatment, variable frequency drives, etc.
 - d) To provide Heating hot water systems including, but not limited to, all piping, insulation, meters, water treatment, piping, pumps, valves, variable frequency drives, etc.
 - e) To provide building distribution units including unit heaters, fan coil units, blower coil units, etc.
 - f) To provide and install a complete cooling coil condensate collection piping, insulation, pumps, valves, fittings, welding, meters, water treatment, variable frequency drives, etc.
 - g) To provide and install complete all required types of duct and mechanical pipe insulation included in this scope of work.
 - h) To provide and install complete of all the types of control dampers, grills, diffusers and louvers.
 - i) To comply and provide complete daily maintenance of all filter media installation, removal and disposal necessary to meet the requirements of the Project IAQ Program.
2. The Controls contractor is to include all wiring and connections required from all occupancy sensors to the main controls panel. This will be coordinated with both the Mechanical and Electrical packages.
 3. All concrete pads required for the installation of this scope are to be provided by this package
 4. All equipment, piping, exterior/interior insulation and associated controls for the two chillers are the responsibility of this package. All underground work to be coordinated immediately following contract award
 5. All heat trace for exposed chilled water piping is to be provided and installed by this package. Final electrical connection will be by building electrical contractor
 6. This package includes the temporary remote chiller connections at the mechanical yard
 7. All manufacture warranties are to be included as required. This includes all manufacturer site visits as required for verification.
 8. At roof deck penetrations, this package includes the sleeve, expandable foam fill and insect screen. Pipe boot, sheet underlayment, clamping ring and sealant are the responsibility of the roofing package.
 9. To coordinate and provide a thorough Test and Balance (TAB) of all systems. TAB subcontractor will contracted directly by this package and provide a final and complete report
 10. To include all Commission Activity support through final acceptance.
 11. To include all required Owner Training, Warranties and Close Out documentation.
 12. Architectural Louvers as indicated will be provided by others. This includes all flashings and attachments. All aluminum sleeves, sheet metal enclosures, etc. for connection to the HVAC system will be provided by this package.

13. Mechanical contractor shall coordinate with the Temperature Controls contractor and install pipe and duct mounted devices provided by the Temperature Controls contractor.
14. Subcontractor shall obtain and pay for any required permits, bonds, or fees as required to complete scope of work under this agreement including any required re-inspection fees / costs are responsibility of Subcontractor.
15. Subcontractor shall in participate in daily coordination planning meeting with ALL other Trades performing work on the project.
16. Subcontractor understands that multiple floors will be occurring simultaneously and said Subcontractor shall provide required supervision and manpower to maintain multiple work areas. Schedule is not constrained which allows the Structure and Concrete trades to proceed ahead of schedule, or work floors than anticipated in the schedule. Subcontractor agrees to adjust manpower and supervision requirements to meet acceleration potential of the building structure at no additional cost to Contractor (i.e. mechanical rough-ins shall not be constraint on structure or concrete installations).
17. Subcontractor agrees to expedite the permanent mechanical systems and final hook-ups necessary to operate the permanent cooling and ventilating system for the purpose of temporary cooling and ventilation. The Subcontractor will include all labor required to startup and operate the mechanical portions of this system
18. The early start-up of the mechanical equipment shall in no way encroach upon any warranty requirements of the Specifications. Subcontractor shall advise and coordinate with CMAR all items that are or will be received in order to achieve early start-up of equipment.
19. Subcontractor to include complete cooperation and compliance with the Project Indoor Air Quality Program. Subcontractor shall during temporary operation of all HVAC equipment include filter fabric (Merv 8) over all duct and equipment openings including return air grilles susceptible to dust or dirt. This shall include installation of Merv 13 filters in all AHU's beginning from the initial equipment start up. In addition to the Merv 13 filters installed in the AHU's, provide and install 3 additional layers of Merv 8 filter media shall be installed on top of the Merv 13 filters to facilitate proper maintenance.
20. Subcontractor to include change out of the MERV 13 filters with new MERV 13 filters in all AHU's prior to substantial completion
21. Subcontractor to include continuous (minimum - daily) maintenance of filter media at all locations shall be the responsibility of this subcontractor. Should it be determined proper filter maintenance was not provided and the AHU's become contaminated it shall be the responsibility of this subcontractor to contract an experienced professional organization to perform cleaning of the AHU(s) and ductwork to meet the SMACNA guidelines for this activity and meet Owners final acceptance.
22. Subcontractor shall anticipate inspection delays in the installation durations and sequence such work ahead of others as not to impose delays in the schedule.
23. Subcontractor shall be responsible to provide full cooperation and resources in expediting procurement, delivery and installation of **ALL** items provided by this subcontractor discovered to be incorrect and or damaged regardless of value and complexity so as not to impact the progress schedule.
24. Subcontractor shall be responsible to provide full cooperation and resources in expediting procurement, delivery and installation of all HVAC items discovered as a result of unforeseen conditions not reasonably inferred to be required so as not to impact the progress schedule.

25. Subcontractor shall insure all mechanical installations have sufficient specified or code required separations.
26. All access panels and covers as required by code, or indicated on the mechanical documents are by this which are to provide access to equipment, valves, ductwork access doors, etc. These access doors are for access through architectural ceilings and walls as required. Rated panels are included to match ceiling and wall types. Coordinate with all other trades so as to provide access doors from one manufacture. Provide 2x2 fire rated access doors in each Mechanical shaft on each floor.
27. All required fabricated and pre-fabricated roof curbs and mechanical roof supports for equipment within this bid package. Furnishing and installation of curbs and supports by this Subcontractor shall be in strict accordance with roofing installation procedures. Coordinate roof curbs with roofing subcontractor.
28. This subcontractor shall provide all required roof jacks for mechanical penetrations in the roofing system. The roof jacks must be approved by the project team prior to procurement.
29. Subcontractor shall allow walls to be primed and finish painted prior to installation of surface mounted piping and setting of equipment.
30. Subcontractor shall provide all rough-in and final hook-up of all items requiring Mechanical service that are specified in any other section of the Specifications, or Owner furnished, and/or shown on the Drawings. All equipment or materials provided under other Specification sections which are to be installed by this Subcontractor will be identified and delivered to this Subcontractor's Project office.
31. Subcontractor shall provide testing, cleaning, certification, start-up, and pre-balancing in whole or in part to meet project schedule on a per floor level basis. This package is responsible for all Testing and Balancing, including all commissioning support and report preparation.
32. Subcontractor shall include accepting receipt, storage and installation of all duct mounted smoke detectors furnished by Fire Alarm Subcontractor.
33. Subcontractor to include any grouting of equipment in this bid package.
34. Subcontractor to include painting and touch-up of factory finishes on mechanical equipment.
35. Provide floor and wall escutcheons/ at all exposed round duct penetrations as specified in the contract documents.
36. Subcontractor shall coordinate with the mechanical piping, Building Energy Management System, Fire Alarm, and Electrical Subcontractors to assure provision of adequate contacts and relays required for proper operation/interface between systems.
37. Provide secondary mechanical drain pans, and all primary and secondary p-traps for condensate drains. If float switch is specified in secondary drain pan, this Subcontractor shall furnish and install float switch including all wiring and piping to nearest drain at exterior with splash block.
38. Label ALL Fire/Smoke damper access doors per code requirements. Labels must be visible and acceptable by the project team, owner and AHJ.
39. Coordinate with electrical subcontractor to properly locate power for all stairwell heaters. Provide and maintain protection of cabinet heaters during construction.

40. This subcontractor shall provide and install all VFDs required for HVAC equipment. This subcontractor is to provide all controllers as required per the equipment specifications.
41. This subcontractor shall provide and install all required chemical containment and required signage for hydronic chemical treatment system. This work must be completed prior to flushing activities.
42. If mechanical piping poses a tripping hazard in a mechanical space, and cannot be relocated, it is the responsibility of this subcontractor to provide a galvanized diamond plate ramp capable of supporting at least 500 lbs. over the pipe.
43. Subcontractor agrees to cover the top of ductwork with 6 mils. poly to protect insulation from water and dirt damages in order to insulate ductwork prior to dry-in condition of building.
44. Coordination with HVAC Controls subcontractor is included in this Agreement. Prior to commencing of this work, this subcontractor shall inspect all existing equipment to be tested and advise Contractor.
45. Provide all sheaves, belts and other miscellaneous parts as necessary to accomplish the balancing requirements.
46. The subcontractor is required to provide at least one employee to assist during Test and Balance and Commissioning. They must be capable for sheave adjustments/ replacements, troubleshooting equipment and operating equipment as required for testing.
47. This subcontractor is responsible for all wiring at the fire/smoke dampers [and coordinated with the Fire alarm system](#). Wiring will be from the damper to the adjacent electrical j-box provided by the electrical subcontractor. Coordinate the proper electrical requirements and locations for all fire/smoke dampers on this project
48. Subcontractor shall include cutting, patching and sealing of insulation, and ductwork, etc. as required for the installation of test probes is included in this Agreement.
49. Subcontractor is responsible to clean-up all core drill slurry from walls and slabs as well as removing and patching all core drill machine anchors and forms for block outs and sleeves.
50. Subcontractor is responsible for all coordination and installation of penetrations/block-outs, templates and sleeves in or through concrete, precast concrete, CMU, gypsum wall board, ceilings, slabs, roofs or foundations, or any other material or structure necessary to complete this work.
51. Subcontractor shall furnish and install all required supports for this work including, but not limited to anchor bolts, hangers, isolators, channels, angles, and embeds. All items shall be hot dipped galvanized finish, unless noted otherwise in the Contract Documents. Coordination drawings for embeds shall be provided and based on the project concrete pour schedule.
52. All hanger rods must not extend below hanger or strut by more than 1".
53. This subcontractor is responsible for any required drip pans or secondary drain pans needed to protect critical equipment or areas. The pans must have a drain that is pipe to the nearest mechanical drain.

54. All material and equipment shall be installed in a manner which will not overload the structural elements of the building. Should additional supports be required to distribute loads over more than one structural element, same shall be included by this Subcontractor.
55. Subcontractor shall furnish and install labels, tags, duct identification, access panel ID, equipment ID, etc. for Mechanical/HVAC scope per contract documents.
56. All rough-in/completion activities (i.e. duct runouts, FCU connections, etc.) will be complete prior to ceiling grid installation (any rough-in/completion activities creating damage will be appropriately charged for any ceiling grid damage).
57. Terminal unit valves (manual and control) must be reasonably accessible for maintenance and testing purposes.
58. Coordinate the installation of ventilators and/or louvers with the framing subcontractor.
59. Coordinate with framing subcontractor for all floor penetrations that occur within a framed wall. Any penetrations that are not centered within a framed wall is the responsibility of this subcontractor to relocate the penetration.
60. Coordinate and verify the height of the equipment pads for all Air Handlers to ensure proper drainage of condensate.
61. Coordinate with Electrical Subcontractor for power termination points of all mechanical equipment.
62. All stickers & markings shall be removed from exposed duct unless required by construction documents.
63. Terminal units, fan coils, blower coils and any other ceiling mounted mechanical equipment shall be free of any hand-written markings. If units must be marked with designations to be used by the installation crew, the marking must be on removable painter's tape.
64. This subcontractor is not allowed to paint or mark on exposed concrete flooring. Any markings made by this subcontractor on exposed concrete flooring must be removed and the floor resealed to match surrounding flooring.
65. This subcontract to furnish all non-security and security access panels required for access to valves, switches, etc. All access panels and covers as required by code or indicated on the contract documents in regard to this scope are by this Subcontractor. Subcontractor is responsible for coordinating the locations and size of required framed openings with respective trades during the construction of walls, ceilings, and floors. Rated panels are included to match ceiling and wall types.
66. This subcontractor is responsible for cleaning during and after installation as well as final cleaning of all mechanical equipment prior to final acceptance. Multiple cleanings must be included.
67. Provide all 'Extra Materials' and 'Maintenance Tools' for Owner to Contractor in unopened containers/packages to Contractor. All items shall be turned over no later than 60 days prior to the substantial completion date for each phase. All items shall be transmitted to Contractor in writing, and delivered and unloaded in a location(s) determined by Contractor.

68. Subcontractor shall provide all testing, certification tests, etc. under direction of Owner, Engineer, Inspectors, and governmental authority(s) having jurisdiction.
69. Provide extended warranties, special warranties, and bonds as required for the Mechanical Systems and equipment that is operational prior to final acceptance from the Owner. All warranties are to start at time of substantial completion as approved by the architect and the owner.
70. Mechanical contractor shall ~~provide and~~ install all control dampers in ductwork and equipment. Actuator's shall be provided and installed by the temperature controls contractor.
71. Electrical contractor shall provide all line and load side wiring to equipment. Disconnects (unless integral to the equipment) shall be provided by the electrical contractor.
72. Variable frequency drives shall be provided by the mechanical and/or plumbing contractor and installed by the electrical contractor. Temperature Controls subcontractor shall make any conduit connections required for their work.
73. Provide all coordination necessary to be certain that all device outlets are installed level, plumb, and flush with respective finishes.
74. Include all necessary coordination with the Millwork provider so as to have all openings made by the Millwork provider. This contractor will be solely responsible for all cost associated with repair and/or replacement of Millwork damaged due to outlet(s) and/or raceway openings being made by him or his subcontractors and or incorrect coordination and direction provided by this subcontractor.
75. Upon completion of the Coordination Drawings it shall be the responsibility of each subcontractor to provide sufficient copies of the accepted coordination drawings to their respective Superintendents, Foreman's, lower tiered subcontractors and installers in the field. As a minimum each subcontractor shall have (1) set of the accepted coordination drawings on each floor of the project. It is the responsibility of each subcontractor to continually review and communicate with all other Trades in advance of the installation any issues and/or conflicts that require variance from the reviewed and accepted coordinated drawings.
76. TCG will lead the BIM coordination efforts for all trades based on following order and dates. All dates below start from the date issuance of a subcontract agreement to subcontractors – total coordination signoff for entire building must be done in 16 weeks, noting that the durations listed below are not finish to start and will overlap:
- i) Underground – 2 weeks
 - ii) Mechanical riser shafts and stair shafts and slab penetrations – 3 weeks
 - iii) Main electrical, Fire Pump, IT and mechanical rooms – 4 weeks
 - iv) Level 1 overhead – 4 weeks
 - v) Level 2 Overhead – 4 weeks
 - vi) Level 3 Overhead – 4 weeks
 - vii) Level 4/Roof Overhead – 4 weeks
77. Subcontractor shall provide all necessary and required materials, management and field labor, ladders, lifts, radios, safety devices (PPE). Commissioning documentation to include but not limited to, all complete and correct pre-function test reports, all training records-audio, video, and written, coordination meetings, all assistance necessary to accomplish a complete and Final Commissioning Activity per the contract documents. Be advised that should for any reason this activity require premium time and or night/weekend/holiday scheduling this requirement shall be met without any additional cost

to the project. Be advised that pre-function and or final Commissioning Activities that are confirmed to be deficient and or delinquent by cause of this subcontractor will be subject to responsibility assessment and subsequent cost to be paid by this subcontractor.

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID

\$ _____

4 Story Office Building

\$ _____

Air Handlers

\$ _____

Air Distribution system

\$ _____

AHU's

\$ _____

RTU's

\$ _____

hydronic piping

\$ _____

insulation

\$ _____

test and balance

\$ _____

2 Story EOC/HUB

\$ _____

Chillers

\$ _____

ERU's

\$ _____

Pump skids

\$ _____

hydronic piping

\$ _____

insulation

\$ _____

test and balance

\$ _____

END OF BID PACKAGE 23A HVAC

BID PACKAGE - 23C Controls/Integrated Automation

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Controls/Integrated Automation** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
078413	Penetration Firestopping
238000	Automatic Temperature Controls

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **23C** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Coordinate all programming and work closely with the HVAC, Electrical, Fire Alarm, and TAB subcontractors.
2. Controls contractor is to include all wiring and connections required from all occupancy sensors to the main controls panel or individual lighting controls panels that integrate to the main control panel. This will be coordinated with both the Mechanical and Electrical packages.
3. Controls Contractor includes a control input connection/termination at all building electrical distribution gear for monitoring.
4. Provide complete all control equipment, devices, programming, raceways, wiring, connections, start-up, testing, etc.
5. Provide complete all interface and controls described in the contract drawings identified to be completed by this Controls subcontractor.

6. Accurate and complete test reports for all systems prior to functional testing by the commissioning agent.
7. Include all monitoring, trending and data logging.
8. Include Commission Activity support through final acceptance and all Owner Training, Complete Close Out documentation including equipment, as-builts, manuals, warranties, etc.
9. Subcontractor to be diligent in providing prompt submission of the complete controls shop drawings, wiring diagrams, equipment and device technical data, etc. Subcontractor shall obtain and pay for any required permits, bonds, or fees as required to complete scope of work under this agreement including any required re-inspection fees / costs are responsibility of Subcontractor.
10. Subcontractor shall provide Automatic Temperature Controls systems complete including, but not limited to, all raceways, boxes, wiring, controllers, thermostats and devices required for a complete operable system. Include all associated control/interlock wiring (**regardless of voltage**). This includes any fiber and data cabling required for a complete system back to the Building Control System.
11. Subcontractor shall coordinate and interface the Building Control System with the Fire Alarm, Clean Agent Control System, Electrical, Lighting Control, Fire alarm, Plumbing and Mechanical to assure provision of adequate contacts and relays required for proper operation/interface between systems. Subcontractor is responsible for insuring specified sequence of building operations for other systems and riser diagrams.
12. Subcontractor shall include provisions and provide complete all monitoring of the Site Emergency Phones and Generators. All monitoring points shall be equal to the points provided in the site emergency phone Control Panel provided.
13. Subcontractor shall include provisions and provide complete monitoring all elevator sump pump pit alarm panels for status and alarm conditions through the BCS.
14. Subcontractor shall provide complete all rough-in and final hook-up of all items requiring Mechanical/HVAC/BCS controls service that are specified in any other section of the specifications, or owner furnished, and/or shown on the Contract Drawings. All equipment or materials provided under other specification sections which are to be controlled by this Subcontractor is included.
15. Subcontractor shall provide a complete installation of all control devices that are shipped and delivered separate from the equipment requiring the device.
16. This package includes the supply of all dampers as indicated or required for a complete and operational system. Damper sizes, locations and pertinent information shall be coordinated with the design team and the HVAC package prior to purchase. This package is to turn over all final dampers to HVAC subcontractor for final installation. Any adjustments, parts, tools, etc. required to make the damper fully operational after installation will be the responsibility of this package.
17. All T-Stat locations must be coordinated with other adjacent devices in the wall for uniformity. All T-Stat locations must be coordinated with other adjacent devices in the wall for uniformity. Confirm color of devices match electrical devices prior to submittal submission. Provide a separate T-stat location shop drawing with architectural drawings as a background and overlaid with electrical lighting and power drawings to make sure no conflicts. No devices shall be installed in accent walls for various specialty finishes.

18. Subcontractor understands that multiple floors will be occurring simultaneously and said Subcontractor shall provide required supervision and manpower to maintain multiple work areas. Schedule is not constrained which allows the Masonry and Concrete trades to proceed ahead of schedule, or work floors than anticipated in the schedule. Subcontractor agrees to adjust manpower and supervision requirements to meet acceleration potential of the building structure at no additional cost to Contractor (i.e. electrical rough-ins shall not be constraint on structure or concrete installations). Subcontractors shall provide CMAR with a list of priority actions to phase construction to make controls complete 30 days after receiving a subcontract, and update this list every 30 days in writing (i.e. Which rooms to building, power needs, equipment needs, etc.)
19. Subcontractor agrees to expedite the permanent HVAC Control/BCS systems and final hook-ups necessary to operate the permanent heating and ventilating system for the purpose of temporary heating and ventilation. The Subcontractor will include any labor required to operate the mechanical controls portions of this system. The early start-up of the mechanical equipment shall in no way encroach upon any warranty requirements of the Specifications. Subcontractor shall advise and coordinate with Contractor all items that are or will be received in order to achieve early start-up of equipment.
20. Subcontractor shall prioritize the controls devices, connections and testing for the metering and valves on the incoming domestic water, fire water, chilled water, and electrical power systems. These valves and meters must have the ability to be controlled by OIT at regional plant so as to expedite "Conditioned Air" for the building. Pathway outside of the building for remote connection to OIT will be provided by others.
21. This subcontractor shall include provisions to provide, install and maintain all necessary temporary control devices required to safely operate the HVAC systems so as to provide "Conditioned Air" for the building
22. Subcontractor shall provide ~~and install~~ all control valves, ~~provide and install~~ damper actuators, flow meters, temperature control devices, etc. All layout and field coordination with the respective trades is the responsibility of this subcontractor. It is the responsibility of this subcontractor to provide the MEP trades with restrictions of device placement and location during BIM coordination signoff process, and then go into field and field locate all these devices to insure operation will meet manufacturer's recommendations and contract documents.
23. Subcontractor shall provide complete all lighting controls interface with the BMS as required by the contract documents. This includes all wiring at sensors to integrate back to control equipment provided by this package.
24. Subcontractor shall coordinate and mutually perform test(s) and confirm correctness of all line voltages with the project Electrical subcontractor prior to energizing any control equipment and/or components. The details of these test events shall be recorded in each respective subcontractor Daily Report. Failure to perform and record these test activities may be considered cause to deny any related claims.
25. Provide testing, cleaning, certification, and start-up, in whole or in part to meet project schedule on a per floor level basis.
26. All rough-in work included in this Scope of Work is to be concealed within wall cavity unless approved otherwise by Owner and Architect.
27. Float switches that are specified in secondary drain pan(s), the mechanical subcontractor shall furnish and install float switch and the controls subcontractor shall provide all power wiring and controls for a complete installation, regardless of voltage.

28. Subcontractor shall be responsible to coordinate with Electrical Subcontractor for all power requirements for the Automated Temperature Controls System panels.
29. Subcontractor to provide all mechanical equipment emergency shutoff equipment including push buttons, enclosures, wiring, etc.
30. Subcontractor shall furnish and install labels, tags, pipe identification, access panel ID, equipment ID, etc. for controls scope per contract documents.
31. All rough-in/completion activities (i.e. wire pulling, etc.) will be complete prior to ceiling grid installation (any rough-in/completion activities creating damage will be appropriately charged for any ceiling grid damage).
32. This subcontract to furnish all non-security and security access panels required for access to valves, switches, etc. Subcontractor is responsible for coordinating the locations and size of required framed openings with respective trades during the construction of walls, ceilings, and floors. Rated panels are included to match ceiling and wall types.
33. Provide all 'Extra Materials' and 'Maintenance Tools' for Owner to Contractor in unopened containers/packages to Contractor. All items shall be turned over no later than 60 days prior to the substantial completion date for each phase. All items shall be transmitted to Contractor in writing, and delivered and unloaded in a location(s) determined by Contractor.
34. This Subcontractor and its lower tier subcontractors shall provide Owner training for all equipment, systems and integrated systems as required by the Contract Documents for the scope of this work.
35. All testing, certification tests, etc. under direction of Owner, Engineer, Inspectors, and governmental authority(s) having jurisdiction.
36. Provide extended warranties, special warranties, and bonds as required for the Mechanical/HVAC/BCS Systems and equipment that are operational prior to final acceptance from the Owner. All warranties are to start at time of substantial completion as approved by the architect and the owner.
37. Mechanical contractor shall ~~provide and~~ install all control dampers in ductwork and equipment ~~as provided by this package~~. Actuator's shall be provided and installed by the temperature controls contractor, regardless of voltage.
38. Electrical contractor shall provide all line and load side wiring to equipment. Disconnects (unless integral to the equipment) shall be provided by the electrical contractor.
39. Variable frequency drives shall be provided by the mechanical and/or plumbing contractor and installed by the electrical contractor. TC contractor shall make any conduit connections required for their work.
40. All metering for MEP systems shall be provided and installed herein including the calibrating and certification. This needs to be complete prior to HVAC startup
41. This subcontractor shall be onsite full time during test and balance, and commissioning operations including punchlist period to be available to operate system
42. This subcontractor shall have the HVAC controls sequence, graphics and programming completed off-site 60 days prior to schedule HVAC startup date in accordance with approved shop drawings. Intent is to sit down at a jobsite location with designer, commissioning agent, TAB contractor, and Owner

maintenance to review the completed control system on a computer before downloading in the field. Failure to provide this will cost subcontractor all fees from all parties to do the same work in the field after you download.

43. During TAB of systems, this subcontractor is expected to have a full crew onsite to manage the programming and go out into the field and make the system is functioning mechanically as designed. Failure to do this, will result in 100% costs for commissioning agent to perform said duties during commissioning, and all costs for CMAR and our Subcontractors to stand around while repairs are made.
44. Subcontractor shall provide all necessary and required materials, management and field labor, ladders, lifts, radios, safety devices (PPE). Commissioning documentation to include but not limited to, all complete and correct pre-function test reports, all training records-audio, video, and written, coordination meetings, all assistance necessary to accomplish a complete and Final Commissioning Activity per the contract documents. Be advised that should for any reason this activity require premium time and or night/weekend/holiday scheduling this requirement shall be met without any additional cost to the project. Be advised that per-function and or final Commissioning Activities that are confirmed to be deficient and or delinquent by cause of this subcontractor will be subject to responsibility assessment and subsequent cost to be paid by this subcontractor.
45. It is the expectation of the CMAR that this subcontractor and all its subcontractors provide all labor, materials, equipment, and appurtenances necessary to provide the complete and functioning systems based on the contract documents. This expectation includes that all work requirements reasonably inferred on the contract documents are to be included complete at no additional cost to the project.
46. Subcontractor shall be responsible to provide full cooperation and resources in expediting procurement, delivery and installation of all controls related items discovered as a result of unforeseen conditions not reasonably inferred to be required so as not to impact the progress schedule. Assume to have all control items which integrate into work by other within 60 days for receiving a subcontract agreement.
47. Subcontractor shall provide safe access for testing agency and Engineer of Record to the Work being fabricated, stored, or installed so that required inspection and testing may be accomplished. It is understood and agreed that any Work under this Scope found to be in non-compliance shall be corrected and re-tested at no cost to Contractor and/or Owner.

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$ _____
4 Story Office Building	\$ _____
2 Story EOC/HUB	\$ _____

END OF BID PACKAGE 23C Controls/Integrated Automation

BID PACKAGE - 26A Electrical

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Electrical** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Division 01	General Requirements – ALL
055050	Pipe Grid
061053	Misc. Rough Carpentry
078443	Penetration Firestopping
083113	Access Doors and Frames
260010	Electrical General
260090	Electrical Performance Verification
261100	Raceways
261120	Cable Trays
261150	Underground Ducts, Manholes and Handholes
261200	Building Wire and Cable, 600 Volt
261300	Boxes
261430	Wiring Devices
261480	Connections to Motors and Equipment
261700	Circuit and Motor Disconnects
261900	Supporting Devices
262000	Emergency Power Supply System
264020	Service Entrance
264400	Switchboards
264500	Grounding
264510	Lightning Protection System
264600	Dry-Type Transformers
264710	Panelboards
264750	Overcurrent Protective Devices
264760	Individual Circuit Breakers
265100	Luminaires
265910	Lighting Control Devices
266140	Uninterruptible Power Supply
266710	Surge Protective Devices
270010	Communications General
270050	Communications Pathways and Spaces
274015	Audio-Visual Infrastructure and Raceway
283300	Rescue Assistance Communication System
283400	Emergency Responder Radio Coverage System

Specification Sections, As applicable:

061053 Miscellaneous Rough Carpentry
283010 Fire Detection and Alarm General
283090 Fire Detection and Alarm Performance Verification
283100 Fire Alarm System

WORK/DIVISION DESCRIPTION:

Bid package No. **26A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

The following is a general outline of the equipment & systems included, but not limited to, under this agreement for the Electrical Work in accordance with the Contract Documents:

Electrical Equipment

1. Switchboards (Service, & Emergency)
2. Medium Voltage Gear
3. Distribution Panelboards
4. Lighting and Power Panelboards
5. Dry Type Transformers (All Ratings)
6. Disconnect Switches (w/fuses UON)
7. Starters (w/thermal units UON)
8. Combination Disconnect/Starters (w/fuses and thermal units UON)
9. [UPS System](#)
10. Automatic Transfer Switches
11. Ductbanks for Secondary Electrical and Telecommunications
 - a) (not required for Communications Tower)

Lighting

1. Interior Light Fixtures
2. Exterior Light Fixtures
3. Landscaping and Site Lighting (including bases). Pole lights and bases by others
4. Lighting Control Systems
5. Contactors
6. Relays
7. Lamps
8. Pipe Grid System

Rescue Assistance Communication System

1. Complete and Operational System

Emergency Responder Radio Coverage System

1. Complete and Operational System

Generator

1. Generator with Base Tank
2. Remote Annunciator(s)
3. Control Panel(s)
4. Weatherproof Enclosure
5. Silencers
6. Site Emergency Call Systems

7. Empty Raceway System(s) w/pull string, outlets and blank cover plates for the following:

- a) Addressable Fire Alarm System
- b) Voice & Data System
- c) Access Control System
- d) Video Surveillance System
- e) Building Wireless System
- f) A/V system
- g) Paging Systems

8. Lightning Protection:

Complete UL Certificated System, including the Pad Mounted Transformers and Generators

9. Grounding:

Provide complete all required grounding for both interior and exterior perimeter. Connections to building steel, UFER, equipment, ground rods, ground bars, etc. is the responsibility of this subcontractor. (Reference Sheet E401 for additional details)

It is the expectation of the CMAR that this subcontractor and all its subcontractors provide all labor, materials, equipment, and appurtenances necessary to provide the complete and functioning systems based on the contract documents. This expectation includes that all work requirements reasonably inferred on the contract documents are to be included complete at no additional cost to the project.

2. All recessed, motorized projection screens are to be wired by this this package. They will be supplied and installed by the communications package.
3. At no point shall MC cable be used for primary runs. Under certain conditions, MC cable may be used for final connection from the Junction box to the point of connection, but this must be approved by the designer of record.
4. Controls contractor is to include all wiring and connections required from all occupancy sensors to the main controls panel. This will be coordinated with both the Mechanical and Electrical packages
5. All plywood and fire-retardant paint per the Architectural Elevations is to be included by this package. This includes all panels as required at electrical, MDF and IDF rooms. Plywood will be 8'-0" x 4'-0" full sheets and oriented with the long direction vertical. At no point shall the labels be painted or otherwise covered over.
6. All under cabinet lighting and switching is to be coordinated with the millwork/casework package. All fixtures and installations are to be provided by this package. If a cabinet is required to be cut or penetrated, this package is to coordinate the cutting with the millwork scope.
7. This package includes the design, procurement and installation of the Pipe Grid System. This will include Delegated Design, connections, supporting devices and components supplied and installed

8. This package includes the supply and installation of all light fixtures indicated on the Luminaire schedule
9. This package includes all temporary electrical power required to operate one, 6,000# material lift
10. This package includes all building temporary power per the building logistics plan.
11. This package includes all temporary power to the CMAR jobsite double wide.
12. This package includes provisions to supply complete submittal and shop drawing package for all elements within 30 days from contract award.
13. This package includes all requirements to support commissioning activities support through final acceptance. This includes all owner training, warranties and close out documentation.
14. Subcontractor shall be responsible to provide full cooperation and resources in expediting procurement, delivery and installation of **ALL** items provided by this subcontractor discovered to be incorrect and or damaged regardless of value and complexity so as not to impact the progress schedule.
15. Subcontractor shall be responsible for facilitating and providing a comprehensive Ground Fault Coordination study for all electrical service entrance and distribution equipment. This study shall be prepared and validated by an engineer trained and approved to perform this work.
16. Subcontractor shall be responsible for facilitating and providing a comprehensive Arc-Flash study for all required electrical equipment as well as providing identification on said equipment of the PPE requirements and ratings.
17. Subcontractor shall be responsible to provide full cooperation and resources in expediting procurement, delivery and installation of all electrical items discovered as a result of unforeseen conditions not reasonably inferred to be required so as not to impact the progress schedule.
18. After acceptance of the Generator Package and all testing and inspections are complete provide the necessary balance of fuel to completely fill fuel tank serving the Generators.
19. Subcontractor shall provide all materials, labor, supports and appurtenances for complete raceway/outlet system(s) and electrical circuitry/cabling (as required per the contract documents) for all systems included in this scope of work, including but not limited to power service/distribution, power outlets distribution, site/exterior/interior lighting, lighting distribution, lighting controls, fire alarm, voice/data, CCTV, access control, building wireless system, and Generator Systems.
20. All emergency and low voltage systems raceways shall be colored conduit and identified as specified. Additional colors will be determined by the CMAR and Owner prior to procurement.
21. Subcontractor shall provide painted covers for all low voltage and emergency systems raceway junction boxes. If not stated in the project specifications, the following color coding shall be used:
 - Tele/Comm – Blue
 - CATV – Brown
 - Security – Dark red
22. Subcontractor shall coordinate and mutually perform test(s) and confirm correctness of all line voltages with the project HVAC and Controls subcontractors prior to energizing any equipment and/or components. The

details of these events shall be recorded in each respective subcontractor Daily Report. Failure to perform and record these activities may be considered cause to deny any related claims.

23. Subcontractor shall include providing and setting all required embeds, provide a detailed layout embed coordination drawing
24. Subcontractor to include complete cooperation with the Project Indoor Air Quality Program (Preconstruction), enforce disciplinary action, provide and replace with new MERV 8 type, all filter media removed and/or disturbed by this subcontractor. Flagrant and/or repeated violations to the Project IAQ Program will result in fine(s) and/or removal from the project as determined by the CMAR.
25. Furnish, install, maintain (include GFCI Test schedule and log), and remove all temporary power and lighting as directed by the CMAR, all installations shall be inspected by the AHJ. A single experienced/safety trained/competent person shall be assigned to perform maintenance for all temporary power and lighting. This person shall be responsible for all maintenance issues and administration of daily logs, file records, etc.
26. All temporary lighting to be maintained at a minimum of 10fc at no time or location shall the fc be below OSHA requirements. Egress and Work areas are to be checked and re-lamped daily at a minimum. Subcontractor shall provide additional temporary lighting on a daily basis as additional interior walls are erected. Subcontractor shall submit, to the CMAR, a temporary Power & Lighting plan indicating layout locations of equipment and lighting fixtures to meet the requirements listed within this Scope of Work.
27. Temporary lights in stairs shall be LED rope lighting and will remain on throughout the night and designated receptacles will remain on for charging lifts, batteries, etc. The balance of lights for the building will be shut off from a central location on the first floor as designated by the site Superintendent.
28. Provide stand-alone power pedestals (spider boxes) with ground fault circuit interrupter (GFCI) protection for all receptacle outlets to be used at the site during the entire period of construction. Power Pedestals shall have a minimum of 6 duplex receptacles with weather proof receptacles at each location. Power Pedestals shall be placed so that no power pedestal with outlets is more than 100' apart. (1) Duplex receptacles on a single 20 Amp GFCI breaker. These should be put on platforms to allow extension cords to be held off the ground. All power pedestals shall built on sturdy bases with the ability to easily relocate.
29. All temporary power and lighting shall be installed with flexibility in mind, it may be necessary to suspend or move all temporary power and lighting equipment to accommodate on going work. AS this work is required it shall be performed by this subcontractor at no additional cost to the project.
30. Temporary power panels are to be NEMA rated & UL Listed for the location they are installed; all installations are to have OSHA approved signage.
31. Include complete provisions for a minimum of two (2) safely lighted entrances into the building structure, locations to be determined by CMAR. Provide battery backup emergency type light fixtures at these locations. Include test schedule and test record log for all battery back-up type light fixtures used on this project (see Item 16). Also provide two (2) quad GFI outlets located at these building entrances (1 quad at each location).
32. Subcontractor to provide three (3) 208v, 50-amp 3P 4W outlets to be located by Construction Manager for tilt wall and other temporary equipment. This package will make provisions to provide matching plug end to accommodate equipment needs.

33. Subcontractor to provide three (3) 208v, 100-amp 3P 4W outlets to be located by Construction Manager for electric welding equipment, make provisions to provide matching plug end to accommodate equipment needs.
34. Subcontractor agrees to expedite the permanent electrical systems and final hook-ups necessary to operate the permanent heating and ventilating system for the purpose of temporary heating and ventilation. The early start-up of the electrical equipment shall in no way encroach upon any warranty requirements of the Specifications. Subcontractor shall advise and coordinate with CMAR all items that are or will be received in order to achieve early start-up of equipment.
35. This subcontractor shall include provisions to supply temporary power to operate all required temporary HVAC control panels necessary for the safe operation of the HVAC systems prior to the Conditioned Air Available milestone date. Permanent power is to be provided to all required locations if available.
36. Subcontractor agrees to utilize permanent building power for temporary power needs upon activation of permanent power system through the main switchboards. Subcontractor agrees to activate permanent power at each floor level main panel upon completion and approval of each secure electrical room facilities. At such time all temporary power elements shall be removed and/or reconnected to permanent power systems as necessary to maintain a suitable level of temporary outlets and lighting required to meet the project stated requirements. At no time shall temporary power and lighting not be available as described in this Scope of Work.
37. Subcontractor agrees to utilize all permanent lighting systems for temporary construction lighting at each floor level upon activation of permanent HVAC system and prior to beginning of finish trades to allow finishes to be performed under permanent light conditions. Light fixtures shall be plastic covered to prevent soiling of lenses, etc. Final cleaning of soiled fixtures will be the responsibility of this Subcontractor. Subcontractor is responsible to re-lamp all permanent fixtures just prior to substantial completion/acceptance. Include proper disposal of all used lamps.
38. Subcontractor shall meet all permanent power conditions and milestones for start-up of HVAC Systems and Elevators. Should this Subcontractor fail to provide permanent power under this agreement in a timely manner to meet start-up date requirements, then this Subcontractor shall provide all means for temporary services including generators, wiring, disconnects, surge protection, fuel costs, delivery costs, etc. as may be required to maintain start-up dates.
39. If additional service is required to provide adequate temporary power for the project, this Subcontractor agrees to provide such additional service at no additional cost to the project.
40. At the point and time in construction when it is necessary to remove temporary power service and lighting from a given area, though construction activities are on-going in that area, Subcontractor will provide sufficient quantities of GFCI circuits in permanent panels to energize as many permanent receptacles to satisfy construction power requirements. When necessary for demonstrations, for Owner/AHJ inspections, construction circuitry will be replaced with permanent circuitry.
41. Subcontractor is responsible for providing, maintaining and removing upon completion all temporary power complete with meter which includes but is not limited to previously installed site services.
42. Upon completion of the Coordination Drawings it shall be the responsibility of each subcontractor to provide sufficient copies of the accepted coordination drawings to their respective Superintendents, Foreman's, lower tiered subcontractors and installers in the field. As a minimum each subcontractor shall have (1) set of the accepted coordination drawings on each floor of the project. It is the responsibility of each subcontractor to continually review and communicate with all other Trades in advance of the installation any issues and/or conflicts that require variance from the reviewed and accepted coordinated drawings. These drawings will be allowed to be in electronic format in lieu of hard copies.

43. TCG will lead the BIM coordination efforts for all trades based on following order and dates. All dates below start from the date issuance of a subcontract agreement to subcontractors – total coordination signoff for entire building must be done in 16 weeks, noting that the durations listed below are not finish to start and will overlap:

- i) Underground – 2 weeks
- ii) Mechanical riser shafts and stair shafts and slab penetrations – 3 weeks
- iii) Main electrical, Fire Pump, IT and mechanical rooms – 4 weeks
- iv) Level 1 overhead – 4 weeks
- v) Level 2 Overhead – 4 weeks
- vi) Level 3 Overhead – 4 weeks
- vii) Level 4/Roof Overhead – 4 weeks

It is understood that while TCG will lead the effort, each principle trade will be required to attend, manage, schedule and be an active participant in the coordination effort from start to finish. Reference the BIM Execution plan sample for further information.

44. Subcontractor is responsible for providing and installing all empty raceways with pull-wire and/or raceways with circuitry to serve future items provided by others that require infrastructure to be installed within the project construction limits. This includes but is not limited to emergency "Blue Phones", connections to offsite systems for HVAC controls and monitoring, etc.
45. This subcontractor is responsible for all preparation and execution of tie-ins of new services that are currently provided up to and at the foundation wall of the building. This includes all underground ductbanks and infrastructure required for interior gear, fire pump, transfer switches, etc.
46. This package is to include all electrical and telecommunication ductbanks. This will include all trenching, excavating, dewatering, etc. for a complete installation. This ductbank concrete must be dyed red per and have as-builts submitted at completion.
47. This package includes all requirements for the cam-lock style temporary generator docking stations.
48. Subcontractor is responsible for and shall provide and install all sleeve seals, raceways, outlets and wires/cables as indicated on the site plans.
49. It is the responsibility of this Subcontractor to insure all piping installations have sufficient specified or code required coverage since installations will occur prior to final grading operations. Subcontractor shall be responsible for benching back existing soils at completed structures if adjacent soils are higher than proposed and/or applying controlled backfill materials around structures/piping if soils are lower than proposed to protect all installation from construction traffic, damages, differential settlements, etc.
50. Subcontractor is responsible for the re-wetting, aeration, and/or drying of existing soil materials to obtain optimum moisture content for use as compacted fill. In the event weather conditions do not allow the Subcontractor to dry the wet materials required to perform the work within the scheduled time frame, Subcontractor shall remove and dispose of the wet material and replace with suitable soil so as not to delay the progress schedule. This action shall be taken at no additional cost to the project.
51. Subcontractor is responsible for dewatering. Dewatering is considered all natural grade water as well as "surface or rain water" for all excavations under this agreement. Dewatering includes all required pumps, sumps, well points, stone, etc. for proper execution of work under this agreement and for the continual maintenance of exposed soil conditions to access the work under this agreement.

52. Subcontractor shall maintain a suitable soil substrate condition once exposed under this agreement. The project will not be responsible to reimburse the Subcontractor for the costs to remove unsuitable soil and dispose of off-site or for the replacement costs of suitable fill (or stone backfill) for exposed substrate conditions not achieving compactions due to excessive moisture content not inherent with undisturbed soil conditions on-site.
53. Subcontractor shall furnish and install complete grounding system (per NEC and contract documents) for all electrical equipment. Include all materials and labor required to provide a complete and UL Certificated lightning protection system. Subcontractor shall confirm the proper installation, schedule and obtain an approved inspection by the AHJ prior to covering or concealing any underground work in place. All work required to be re-exposed for Inspection will be the responsibility of this subcontractor at no additional cost to the project.
54. Subcontractor shall provide all measures necessary to prevent dirt, silt, or debris from entering raceway systems. Provide caps on open end of pipes throughout the duration of construction.
55. Subcontractor is responsible for trench and excavation safety including sheet, shoring, trench boxes, CMAR authorized open cut methods, Risk Mitigation Authorization, etc. Sheeting, shoring, supporting, relocating, removing/reinstalling, etc. of existing utilities or utilities installed ahead of this work is specifically included.
56. Subcontractor shall be responsible for providing and installing all required grounding, pull strings, sleeves, circuitry, lighting, switches, receptacles, dedicated circuitry, and all support appurtenances necessary for the installation of the aforementioned items.
57. Subcontractor is responsible for providing, installing, maintaining, and removing excavation safety barricades, perimeter fencing, flagging, etc., as related to this scope of work.
58. Subcontractor shall provide all ladders at all access/egress points.
59. Subcontractor shall provide all air quality monitoring in excavations.
60. Excavations shall not be left exposed during non-working hours. At end of each day's work they shall be backfilled or barricaded to afford other trades work accessibility on and around the site.
61. Subcontractor shall be responsible for all warning tape, indicators, identification, etc. for underground work in accordance with the drawings and specifications and or state/ local AHJ.
62. Subcontractor to provide all excavation, trenching, backfilling, compaction and electrical appurtenances as required for the emergency system work of this subcontract.
63. All testing of the compacted material will be by the Owner's Testing Agency and will be coordinated with the Contractor accordingly.
64. All electrical related concrete work including reinforcing shall be furnished and installed complete by this Subcontractor per specifications. This shall include but not limited to concrete material as required for the encasement of conduit (both horizontal and vertical, interior and exterior), duct banks, feeders, engineered equipment pads, etc.
65. Subcontractor shall provide to the CMAR a clean copy of the underground As-Built drawings upon completion of the underground work. Subcontractor shall continually update the CMAR's as-built drawings at a minimum of once a week with dimensional locations to ensure that the proper information is identified and recorded. Be advised that inadequate maintenance and updating of all As-Built drawings is regarded as cause to reduce the monthly Pay Application for Line Item: "As-Built Drawings".

66. Scissor lifts (preferably lightweight single-man) will only be allowed on floors if they meet floor weight requirements.
67. Subcontractor understands that multiple floors will be occurring simultaneously, and this Subcontractor shall provide required supervision and manpower to maintain multiple work areas. Schedule is not constrained which allows the Masonry and Concrete trades to proceed ahead of schedule or work more floors than anticipated in the schedule. Subcontractor agrees to adjust manpower and supervision requirements to meet acceleration potential of the building structure at no additional cost to Contractor (i.e. electrical rough-ins shall not be constraint on structure or concrete installations).
68. Subcontractor shall provide all affected Contractors and Subcontractors with all necessary submittal and shop drawing information related to the equipment furnished by him and will seek coordination information from other trades. This information will provide all equipment dimensions, recessed opening requirements, outlet connections, wiring diagrams, etc. necessary to provide complete coordination for a proper installation as per the manufactures suggested/recommended/instructed requirements. This information will be supplied in sufficient time to allow for completion of all necessary rough-in requirements prior to the installation of any type slabs, floors, walls or partitions.
69. The Subcontractor will inspect all areas (7) days prior to mobilization and provide the CMAR with a deficiency list within 24 hours.
70. Subcontractor will be responsible for all layout associated with all work performed by this Subcontractor. All cost associated with repairs required due to incorrect layout will be the responsibility of this Subcontractor.
71. Subcontractor shall furnish and install all hangers and supports for the electrical, fire alarm, telephone, data, intercom, and cable system as required by the Contract Documents. This includes hangers for lighting fixtures, equipment, devices, conduit, etc. for a complete installation. Any additional hangers required for seismic, or redundant support, is the responsibility of this subcontractor.
72. Subcontractor shall be responsible for conduits penetrating the floor surface of a deck to be traffic coated for the purpose of connecting to equipment and shall utilize openings and curbs provided for the equipment where possible. All roof penetrations are to be closely coordinated with the CMAR and the Concrete subcontractor. Under no circumstances shall this subcontractor or other subcontractors performing work for this subcontractor to make any penetration(s) in a traffic coated deck without authorization of the CMAR Superintendent.
73. Subcontractor shall be responsible for ALL re-galvanizing, priming and painting of materials/products as required to provide a new installation per the manufactures recommendations and instructions.
74. Subcontractor shall be responsible to provide conduit and wire to all handicap and motorized entry door operators including to door head housings and push pads. All Line and Low Voltage wiring and terminations to door hardware are to be included. Coordinate conduit paths with storefront subcontractor.
75. Subcontractor shall be responsible to provide raceways and power to all VAVs for the entire HVAC system. All control dampers requiring 120V power shall be included in this scope of work.
76. Subcontractor to provide a complete Lighting Control System and coordinate the system with the Building Management System Subcontractor
77. Subcontractor shall be responsible to proceed and complete all testing required by the contract documents in a manner that support the project progress schedule and the requirements of the Commissioning Process. Contractor is to submit to the CMAR current calibration certifications for all testing equipment used in this activity ten (10) days prior to beginning any testing.

78. Subcontractor shall provide all grounding of the building's steel, rebar, water supply lines, fire sprinkler lines, gas piping, and other required systems.
79. Subcontractor to provide electrical for all trap primers as required per plumbing drawings.
80. Subcontractor to provide power to hot boxes for utility vaults as required.
81. Subcontractor shall include providing and installation of all light fixtures and lamps referenced in the light fixture schedule and in the Contract Documents. Include all spare parts, lamps and mounting appurtenances required for a complete installation.
82. Subcontractor shall furnish and install complete distribution system for all lighting including all necessary feeders, branch circuits, ballasts, batteries, lighting fixtures, emergency lighting, night lights, exit lights, transformers, lighting control system, switches, dimmers, photo cells, clock timers, occupancy sensors, receptacles, site lighting, bulbs, hangers, supports, etc.
83. See Landscape drawings for landscape lighting requirements.
84. Subcontractor understands that the lay-in light fixtures will be suspended from the structure and not installed tight to the structure. Subcontractor will be required to assist in coordinating the height of the light fixtures as to not interfere with the mechanical and security equipment.
85. Subcontractor shall furnish and install a complete distribution system for power including feeders, molded case circuit breakers, transformers, switches, devices and connections to motors and other power loads. This includes all main distribution panels, transformers and sub panels that are to be included in this scope of work.
86. Subcontractor to provide all electrical disconnects, starters, rough-in, line side, load side wiring and final connections for equipment furnished by others in the Contract Documents including but not limited to: mechanical, plumbing, electrical equipment, fire sprinkler, detention equipment, security equipment, motorized screens, automatic doors, etc. All electrical work to be completed by this Subcontractor for a complete functional system. Coordinate the proper type, size, routing and final terminations with each individual subcontractor.
87. Subcontractor is responsible for verifying that overload (thermal) devices and / or breakers & fuses being utilized as overload protection are sized as required to provide the proper protection respective to the equipment furnished.
88. Subcontractor shall coordinate all inspections with the AHJ, as required, prior to energizing any devices, products, equipment or systems. Lock-Out / Tag-Out Safety Procedures shall be followed without compromise.
89. Subcontractor shall provide all coordination assistance necessary to confirm, provide and install the complete electrical (line and low voltage) requirements for ALL doors. It is the responsibility of this subcontractor to provide and install all empty raceway(s) with pull strings and provide all power requirements at ALL doors. All empty raceways with pull strings will be installed to an accessible location and terminated into a 4" sq. junction box with a blank cover. All final raceway, wiring and connections to all door hardware power supplies shall be provided and installed by this subcontractor.
- i) This includes power to all power supplies and ADA operators
 - ii) This includes control conduit from ADA operator to push pads at each side of door
 - iii) This includes all security conduits and wire to power supplies, closers, hinges, panic devices and door locks

- iv) This subcontractor shall contract with a 3rd party vendor to wire all the doors including coordination of all systems (hardware, security, ADA, fire alarm, etc.), terminations, testing, and startup of doors

- 90. Subcontractor is responsible to provide all identification, nameplates and raceway/box color schemes as described in the contract documents. All paint colors shades are to be consistent throughout the entire project at all locations. All name plates are to provide detailed information as directed by the A & E
- 91. Subcontractor shall be responsible for ALL empty conduits designated for future use, they shall be tagged, sealed/fire sealed and identified for use where they terminate.
- 92. Subcontractor shall be responsible for All weatherproof enclosures, housing, shields, phase guards, hoods, drain pans (if electrical work located under water/drain pipes), caulking, seal tight, junction boxes, etc. are included in this Scope of Work.
- 93. Subcontractor shall insure that all rough-in work to be concealed within wall cavities or cast-in concrete unless approved otherwise by Owner and Architect.
- 94. Subcontractor shall foam/seal all conduits entering climate controlled building or cabinets from an outside, unconditioned, or underground conduit raceway.
- 95. Subcontractor shall provide final cleaning of all light fixtures, electrical devices, and electrical equipment, provide and install blank cover plates on all unused outlets prior to pre-punch or final inspections. Blank covers shall match plates used in the area.
- 96. Subcontractor shall provide extended warranties, special warranties, and bonds as required for the Electrical Systems and equipment that is operational prior to final acceptance from the Owner. All warranties are to start at time of substantial completion as approved by the architect and the owner.
- 97. Subcontractor shall provide cleaning of all exposed surfaces furnished under this package prior to pre-punch and final turnover. This is to include the removal of all labels, excess sealant, compounds, dirt, and other substances. Protection through final acceptance of all work in place, installed equipment, fixtures, etc. that are installed in this Bid Package are the responsibility of this subcontractor.
- 98. Subcontractor shall also water seal, weather caulk, aesthetic caulk, fire seal etc. all of its sleeves/penetrations as required by the Contract Documents. Include all caulking of equipment and fixtures installed by this bid package. Include security caulking in secure areas.
- 99. Subcontractor shall provide all testing, certification tests, etc. under direction of Owner, Engineer, Inspectors, and governmental authority(s) having jurisdiction.
- 100. Subcontractor shall coordinate location of above ceiling and in-wall devices requiring access with panel locations. Coordinate with other trade subcontractors to avoid conflicts and minimize the quantity of access panel locations.
- 101. Subcontractor shall furnish all non-security and security access panels required for access to all concealed installation applications, i.e. junction boxes, pull boxes, etc. All access panels and covers as required by code, or indicated on the electrical documents are by this Subcontractor. Subcontractor is responsible for coordinating the locations and size of required framed openings with respective trades during the construction of walls, ceilings, and floors. Rated panels are included to match ceiling and wall types. All Trades will be required to participate in coordinating and purchasing all access doors from the same manufacture. This activity shall be coordinated closely with the partitions subcontractor

102. All MEP rough-in (i.e. valve tagging, wire pulling etc., will be complete prior to ceiling grid installation. Any rough-in activities more than one foot above the ceiling will be appropriately charged for any ceiling grid damage.
103. All training will be coordinated and scheduled to blend together the most efficient and effective use of time for the Owners personnel and the Commissioning Agent. Coordinate with final Commissioning of equipment and systems. Include all required video tape recording (w/Audio) per the design requirements.
104. Include all factory/manufacture's representatives required for testing, start-up and training. If training cannot be performed during the same time period as testing and start-up, NO additional cost will be paid by the Owner/CM.
105. Mechanical contractor shall provide and install all control dampers in ductwork and equipment. Actuator's shall be provided and installed by the temperature controls contractor.
106. Variable frequency drives shall be provided by the mechanical and/or plumbing contractor and installed by the electrical contractor. This contractor shall make any conduit connections required for their work.
107. Subcontractor shall provide temporary power/telephone/fire alarm/DOL requirements to startup and run (1) permanent elevator (Service Elevator) for CMAR use until permanent power has been energized. Coordinate requirements with Elevator subcontractor.
108. Subcontractor shall provide all required 1" concealed conduit(s) with pull string for the telephone raceways to the elevator controllers back to telephone demark location so as to facilitate the elevator commissioning.
109. Subcontractor shall provide pit lighting fixtures and pit receptacles as required by the contract documents and DOL. Refer to elevator shop drawings for locations and mounting elevations.
110. Subcontractor shall provide all raceways, wiring and connections required to interface the Generators and ATS Switches, Elevator Controllers, Fire Alarm and BAS Systems for emergency annunciation at the elevators and remote monitoring of the elevator position.
111. Subcontractor shall provide power to sump pumps, sump pump alarm control panels, (located in remote location), sump pump alarm empty 3" conduit to install alarm factory chord to sump box, box in pit for sump controls raceway, wiring and installation of remote alarm audio/visual device for the elevators required.
112. Subcontractor shall provide power to elevator control panels after these are set by the Elevator subcontractor.
113. Provide a service receptacle for maintenance outside the electrical closet for service and passenger elevators even if not on drawings for NCDOL inspection.
114. Subcontractor to provide Fireman Building Occupant Two-way Communication (Rescue Assistance) Feature.
 - i) As for the Fireman's Two-way Communication, NC Fire Code Section 907.2.13.2 requires a two-way telephone system, employing telephones with handsets at the locations prescribed in the code section.
115. Subcontractor shall furnish and install all raceways, innerduct, outlet boxes, cable tray and terminal cabinets for a complete installation of the Voice and Data structured cabling system. Maximum bend radius for raceways installations shall be strictly adhered to.

116. Subcontractor shall be responsible for sealing of all open conduit terminations in all conduits stubbed-up in electrical, telecommunication, and mechanical rooms, , etc. after completing work under this agreement. Penetration into these rooms must be aesthetically pleasing and uniform.
117. Subcontractor shall furnish and install all raceways, innerduct, outlet boxes, cable tray and terminal cabinets for a complete installation of the Audio Visual System. Maximum radius for raceways installations shall be adhered to.
118. This subcontractor is responsible for the coordination and installation of the fire pump power feeds from the emergency and main utility gear to the fire pump. Follow all State and Local codes as well as owner requirements and contract documents. Coordination and routing of these conduits is critical to the project and must be approved by the CMAR before installation.
119. Subcontractor shall agree and understand that the HVAC System and the Fire Protection System must be tested in conjunction with the Fire Alarm System. Subcontractor agrees to assist in coordinating and performing the testing with the Owner's Rep, CMAR, Fire Alarm Systems Subcontractor, Fire Protection Systems Subcontractor, and Mechanical Subcontractors, Local Inspectors, AHJ, and Commissioning Agent. It is further understood that the results of this testing is to be documented in writing and submitted to the CMAR by the electrical, fire protection, and mechanical contractors including all documentation required to be provided by the respective manufactures representatives.
120. Subcontractor shall perform all work in accordance with Contract Documents for Fire Alarm Systems Work per Specifications and be code compliant with current provisions of the latest edition of the North Carolina State Building Code, NFPA70 (National Electric Code), NFPA72 (National Fire Alarm), NFPA90A (Air Conditioning Systems) and NFPA101 (Life Safety Code).
121. Installation of exterior devices that require excavation for raceway installation must be coordinated to run required fire alarm wiring to the site Post Indicator Valves.
122. Subcontractor shall provide all vibration isolation, acoustical attenuation, and seismic restraints, as required for all equipment and materials under this package.
123. Furnish and install complete all required remote type switches for equipment provided under this contract. Include all raceway, cable/wire, outlets, supports, and connections required for a complete installation.
124. Subcontractor shall provide **ALL** Closeout documents to include but not limited to a complete record set of wiring schematics drawn to scale showing all device locations, wiring routing and connections, etc. to be provided prior to final inspection. All closeout documentation less final As-Built drawings shall be submitted within 120 days of issuance of subcontract. A Tab shall be prepared in the binder for future insertion of the As-Built Drawing information.
125. Include all surveying, engineering and layout from existing benchmark's and coordinates. CM to verify controls.
126. Subcontractor is responsible for taking field measurements as required to properly complete the work.
127. Provide all required Design and Engineering support necessary to create the required submittal shop drawings and technical information for approval.
128. Upon completion provide all test reports and certification information to the TCG Project Team. Coordinate all inspections with the CMAR, Designers (A/E), and the Third Party UL certifier.
129. Provide and install ground rod Test Wells at all ground rod Test Locations described.

130. Provide all junction boxes and raceway as required to maintain the progress of work and adherence to the construction schedule.
131. This contractor will be responsible for coordinating all "through the roof" locations for the down conductors.
132. This contractor will be responsible for communication and coordination with the roof membrane provider/installer for all costs of all attachments to the roof membrane and/or any installation of additional flashing and/or metal panels. This communication and coordination is for the purpose of confirming the attachment process is within the roof membrane manufactures recommended installation guidelines so as not to affect the warranty in any way.
133. This subcontract shall provide raceways for a complete operational security system. All cabling to be provided and installed by the owner
134. This subcontractor to furnish all non-security and security access panels required for access to all concealed installation applications, i.e. junction boxes, pull boxes, etc. All access panels and covers as required by code, or indicated on the electrical documents are by this Subcontractor. Subcontractor is responsible for coordinating the locations and size of required framed openings with respective trades during the construction of walls, ceilings, and floors. Rated panels are included to match ceiling and wall types. All Trades will be required to participate in coordinating and purchasing all access doors from the same manufacturer. This activity shall be coordinated closely with the metal stud framer subcontractor
135. Subcontractor shall properly label all raceways, enclosures, and box covers in accordance with the Contract Documents, for proper identification.
136. Subcontractor shall provide all necessary and required materials, management and field labor, ladders, lifts, radios, safety devices (PPE). Commissioning documentation to include but not limited to, all complete and correct pre-function test reports, all training records-audio, video, and written, coordination meetings, all assistance necessary to accomplish a complete and Final Commissioning Activity per the contract documents. Be advised that should for any reason this activity require premium time and or night/weekend/holiday scheduling this requirement shall be met without any additional cost to the project. Be advised that per-function and or final Commissioning Activities that are confirmed to be deficient and or delinquent by cause of this subcontractor will be subject to responsibility assessment and subsequent cost to be paid by this subcontractor.

02 EXCLUSIONS

1. Av Equipment, wiring and devices shall be the communications package
2. Telecom equipment, wiring & devices shall be by the communications package
3. Security equipment, wiring and devices shall be by communications package

03 ALLOWANCES

Include five (5) exit signs and related conduit, boxes and conductors, in addition to those required in the Contract Documents \$ _____

Include ten (10) receptacle outlets and related conduit, boxes, and conductors, in addition to those required in the Contract Documents \$ _____

Include five (5) smoke detector conduit and boxes (50LF) in addition to those required in the Contract Documents

\$ _____

Include one (1) pull station conduit and boxes (50LF) in addition to those required in the Contract Documents
\$ _____

Include five (5) horn/strobes conduit and boxes (50LF) in addition to those required in the Contract Documents
\$ _____

Include one (1) duct smoke detector conduit and boxes (50LF) in addition to those required in the Contract Documents
\$ _____

04 ALTERNATES

Payment and Performance Bond \$ _____

05 UNIT PRICES

Provide one exit sign and 50 feet of conduit, boxes and conductors	\$ _____
Provide one 20A receptacle and 50' of related conduit, boxes, and conductors	\$ _____
Provide 50' of conduit/boxes for addition of one smoke detector	\$ _____
Provide 50' of conduit/boxes for addition of one pull station	\$ _____
Provide 50' of conduit/boxes for addition of one horn strobe	\$ _____
Provide 50' of conduit/boxes for addition of one duct detector	\$ _____

06 BID BREAKDOWN

BASE BID \$ _____

4 Story Office Building \$ _____

Ductbanks \$ _____

Electrical Infrastructure \$ _____

Electrical Equipment \$ _____

Lighting – Infrastructure (including Pipe Grid) \$ _____

Lighting - Fixtures \$ _____

Rescue Assistance Communication System \$ _____

Emergency Responder Radio Coverage System \$ _____

Generator \$ _____

Raceway Systems \$ _____

Fire Alarm, V/D, Access Control, Surveillance, Wireless, A/V, Paging

Lightning Protection \$ _____

Grounding \$ _____

2 Story EOC/HUB \$ _____

Ductbanks \$ _____

Electrical Infrastructure \$ _____

Electrical Equipment \$ _____

Lighting – Infrastructure	\$ _____
Lighting - Fixtures	\$ _____
Rescue Assistance Communication System	\$ _____
Emergency Responder Radio Coverage System	\$ _____
Generator	\$ _____
Raceway Systems	\$ _____
Fire Alarm, V/D, Access Control, Surveillance, Wireless, A/V, Paging	
Lightning Protection	\$ _____
Grounding	\$ _____

END OF BID PACKAGE 26A Electrical

BID PACKAGE - 27A Communications

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Communications** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

270010	Communications General
270051	Communications Equipment Cabinets
270090	Communications Performance Verification
271000	Structured Cabling Systems
271100	Broadband Cabling Systems
274126	Projection Screens

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. 27A – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. This package includes the supply, installation and testing for all communications devices. All wiring, head in equipment, including racks, tagging and testing is to be provided by this package. Conduit and Cable Tray systems will be the Electrical Subcontractor.
2. This package includes all server room equipment racks for the EOC. This package is to be coordinated closely with TCG and NHC to ensure compatibility with the existing equipment

3. This package includes the supply and installation of all projection screens (including recessed ceiling mount) as well as the projector ceiling mounts. All internal control wiring, screen/projector switches and any other wiring needed to provide a completely operational system are included in this package. All final electrical connections to the main building power distribution system are to be provided by the electrical bid package.
4. Subcontractor to provide complete all required phone line(s) to operate the Fire Alarm and Elevator Systems prior to the permanent telecommunications system being available for use.

02 EXCLUSIONS

1. Conduit, Innerduct, raceways and pull string. To be provided by Electrical Package

03 ALLOWANCES

Include five (5) D/V outlets and related cabling in addition to those required in the Contract Document

04 ALTERNATES

Provide all server room equipment as APC Schneider as an owner preferred Alternate \$_____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID	\$_____
4 Story Office Building	\$_____
2 Story EOC/HUB	\$_____
Server Room Equipment	\$_____

END OF BID PACKAGE 27A Communications

BID PACKAGE - 28A Fire Alarm

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Fire Alarm** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

283010	Fire Detection and Alarm General
283090	Fire Detection and Alarm Performance Verification
283100	Fire Alarm System

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **28A** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

1. Subcontractor shall be responsible for the fire alarm/life safety system that is furnished and installed complete. This shall include all supplemental power supplies, smoke detectors, beam smoke detectors, heat detectors, pull stations, remote test switches, relays, monitor modules, relay switches, horns, strobes, combination Audio / Visual, 120v power wiring, TVSS, control panels, remote annunciator panels, terminal cabinets, node panels, control wiring, connections, panel devices, smoke & smoke/fire damper requirements, line to low voltage transformers, complete HVAC interface and shutdown requirements, etc. for a **complete** Fire Alarm System.

2. Provide all required Design and Engineering support necessary to create the required submittal shop drawings and technical information for approval.
3. Subcontractor shall provide all fire alarm devices, monitoring modules and relay contacts for each elevator controller.
4. Subcontractor shall agree and understand that the HVAC System and the Fire Protection System must be tested in conjunction with the Fire Alarm System. Subcontractor agrees to assist in coordinating and performing the testing with the Owner's Rep, CMAR, Fire Alarm Systems Subcontractor, Fire Protection Systems Subcontractor, and Mechanical Subcontractors, Local Inspectors, DOI, and Commissioning Agent. It is further understood that the results of this testing is to be documented in writing and submitted to the CMAR by the electrical, fire protection, and mechanical contractors including all documentation required to be provided by the respective manufactures representatives.
5. Subcontractor is responsible for connecting all Fire Alarm Devices and interface connections furnished by others, i.e. flow and tamper switches, connections and devices for monitoring (1) site PIV, elevator controllers, ATS, etc.
6. Subcontractor is responsible for furnishing all required duct mounted smoke detectors (including housing and correct length tubes) with an addressable relay. Duct detectors will be installed by the Mechanical subcontractor
7. Subcontractor shall work closely with the automated temperature controls subcontractor in the coordination and start-up of all Smoke/Fire Control Related Systems. All electrical and Fire Alarm related installations shall be provided by this subcontractor.
8. Subcontractor shall be responsible for enabling the Fire Alarm System to supervise the incoming power to the system so that any power failure must be audibly and visually indicated at the control panel and the remote annunciator.
9. Subcontractor shall provide all elevator recall devices and functions per contract documents.
10. Subcontractor shall provide all required Fire Alarm relays and monitoring modules required for the Security Subcontractor.
11. Subcontractor shall provide an identification map per the contract documents to be mounted adjacent the main Fire Alarm Control Panel showing all initiating devices and their address numbers. All room/area identifications shall be confirmed with the CMAR/Owner prior to preparing and submitting this requirement.
12. Subcontractor shall coordinate and provide assistance with the elevator subcontractor, Inspector, and DOL during all elevator certifications.
13. Subcontractor shall "bag" all fire alarm devices from installation through date of Owner acceptance of building to protect devices from surrounding construction elements including dust, etc. Factory dust covers are not acceptable means of protection. Any unacceptable heads at time of Owner Acceptance through sensitivity report shall be replaced by subcontractor at no cost. Delaying installation of devices do to current construction status of building is not acceptable since fire alarm system will proceed under all circumstances to meet inspection dates.
14. Subcontractor shall chain all fire protection backflow valves until such time the Fire Alarm system has been accepted and is fully monitored.
15. Subcontractor shall provide **ALL** Closeout documents to include but not limited to a complete record set of wiring schematics drawn to scale showing all device locations, wiring routing and connections,

etc. to be provided prior to final inspection. All closeout documentation less final As-Built drawings shall be submitted within 120 days of issuance of subcontract. A Tab shall be prepared in the binder for future insertion of the As-Built Drawing information.

02 EXCLUSIONS

NONE

03 ALLOWANCES

addition of five smoke detectors and associated wiring \$ _____

addition of Five pull stations and associated wiring \$ _____

addition of Five horn strobes and associated wiring \$ _____

addition of 5 duct detectors and associated wiring \$ _____

04 ALTERNATES

Payment and Performance Bond \$ _____

05 UNIT PRICES

Provide 50' of conduit/boxes for addition of one smoke detector \$ _____

Provide 50' of conduit/boxes for addition of one pull station \$ _____

Provide 50' of conduit/boxes for addition of one horn strobe \$ _____

Provide 50' of conduit/boxes for addition of one duct detector \$ _____

06 BID BREAKDOWN

BASE BID \$ _____

4 Story Office Building \$ _____

2 Story EOC/HUB \$ _____

END OF BID PACKAGE 28A Fire Alarm

BID PACKAGE - 31D Sitework, Site Utilities and Site Concrete

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Sitework, Site Utilities and Site Concrete** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **31D** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

Layout and Surveying

1. This Subcontractor shall contract to a registered land surveyor in State of North Carolina to stake all work under this agreement.
2. This Subcontractor shall provide a signed and sealed drawing to certify all installations, etc. comply with Contract Documents upon completion of each phase of work and prior to receipt of payment for completed work.
3. Final signed and sealed as-built drawings shall be provided at the conclusion of this scope of work.
4. Subcontractors cost includes providing an additional 80 crew hours for a two-man party for additional layout as required by site superintendent.

5. Subcontractor shall establish all base monuments and hubs as required by site superintendent as part of the base bid.
6. Subcontractor cost includes using soft dig methods for accurate utility location in addition to the 811 locate.

Erosion & Sedimentation Control (per contract documents)

1. Include the installation, maintenance and removal of erosion control measures required for prevention of sediment leaving the project site including any and all erosion control measures indicated on the erosion control plans. Subcontractor understands the need for a phased erosion control sequence and has all cost associated with maintenance until the end of the project.
2. All temporary inlet protection devices, temporary check dams, temporary plastic lining, temporary dewatering silt bags, temporary diversion ditches, temporary silt fence, reinforced silt fence outlets and all permanent outlet protection are included in this package as detailed on the Civil Drawings and the Erosion Control Plans.
3. All traffic control, permitting (if required) barricades, equipment and personnel for work associated in public or private streets are included.
4. Temporary matting for diversion ditches, channels and Temporary Sediment Basins
5. Slope and Surface stabilization as required
6. Contractor agrees to keep self-inspection records of all erosion and sedimentation control measures using NCDENR's self-inspection report (worksheet). This must be submitted after each rain event greater than .10 inch or weekly, whichever happens first.
7. This work includes all silt fence, storm drain inlet protection, and rewrap.
8. Erosion control installation will be performed in phases to coordinate with the other work on site.
9. Surface and rainwater control shall be provided through the duration of the Project. Contaminated water, beyond the limits allowed by the Documents, shall not be permitted, mechanically or by natural flow, to be discharged off-site. Quality of water discharged shall comply with all requirements of the Contract documents and local jurisdictional allowances. All flocculation as required to comply with the quality of water requirements of the Contract Documents shall be included. All liabilities of sediment entering the storm sewer system or discharging off-site is the responsibility of the Subcontractor to rectify.
10. Subcontractors cost includes the installation and maintenance of construction entrances as shown on the logistics plan
11. All temporary fabric/stone as shown on the site logistics plan for utility cover and site access roads are the responsibility of this package. This includes initial installation and on-going maintenance for the duration of the project.
12. Stone building access roads are to have filter fabric and be a minimum 6". This package is to include orange snow fence installed after the first 2" of stone placement as an indicator.

Site Demolition

PHASE 1:

1. Concrete walks
2. parking lots, aggregate base, signage and wheelstops
3. Vegetation, trees and shrubs
4. Storm Sewer, junction boxes and inlets
5. Curb and Gutter
6. Water piping and hydrants

PHASE 2:

1. Site Storm Utilities
2. Existing Building Sanitary and Water Services and valves
3. Existing Concrete walks, walls and ground coverings
4. parking lots, aggregate base, signage and wheelstops
5. Vegetation, trees and shrubs
6. Storm Sewer, junction boxes and inlets
7. Curb and Gutter

Items applicable to all phases:

1. Water piping and hydrants. Perform demolition, removal, disposal and or backfilling with flowable fill of all existing sanitary sewer pipe, water pipe, storm drainage pipe and appurtenances indicated.
2. Removal of existing structures, utilities, fencing, asphalt, curb, gutter, trees, shrubs retaining walls, light poles and existing striping as required.
3. Removal and/or relocation of existing underground utilities required to install all work in this bid package.
4. All sawcutting required for installation of new work is included. Silica standards must be maintained at all times.
5. Demolish, remove and dispose of any and all asphalt, concrete, trees, vegetation, etc. as shown.
6. Cut, cap and make safe all water, storm, sanitary services. The cutting off of these utilities will have to be coordinated with the CM and New Hanover County.
7. All installation and maintenance of gravel construction entries are included in this package.
8. All tree stump removal and or grinding as shown or as required to allow for the complete installation of all walkways, driveways and other site features at the grades indicated in the civil drawings. This package is to allow for an additional 5 tree stumps to be ground 6" below finished grade for stumps not indicated on the contract drawings.
9. All stockpiles and maintenance of stockpiles are included

General Sitework

1. Subcontractor shall barricade all above ground installations (FDC, PIV, etc.) upon installation completion to prevent damage during surrounding building operations. This protection shall be NCDOT Standard Concrete Jersey Barriers surrounding all devices. A minimum of four (4) barriers per device (depending on device size) should be utilized.
2. Structure elevations and lengths of piping indicated on the document are for information purposes only. All information shall be field verified for lengths; finish grade elevations shall be coordinate with final grading drawings, etc.
3. Subcontractor is responsible for final setting and adjusting of all grates, manholes, hydrants, clean-out covers, etc.
4. Subcontractor is responsible for all adjustments to any and all existing sanitary, storm, water and/or other structures related to this scope of work as required to meet new site grading requirements. Any ladder adjustments and/or other access/egress updates to the existing manholes as required per these adjustments are included in this agreement.
5. Subcontractor is responsible for total coordination of all underground utilities and for providing a complete utilities system. There will be no cost or time considerations given for adjustments of structures or pipe runs due to conflicts arising from lack of coordination with adjacent utilities, structures, or other Subcontractors. First installed does not constitute grounds for a change order for installation of uncoordinated work.
6. It is responsibility of this Subcontractor to ensure all piping installations have sufficient specified or

code required coverage since installations will occur prior to final grading operations. Subcontractor shall be responsible for benching back existing soils at completed structures if adjacent soils are higher than proposed and/or applying controlled backfill materials around structures/piping if soils are lower than proposed to protect all installations from construction traffic, damages, differential settlements, etc.

7. Subcontractor shall be responsible for providing safe access for testing agency and Engineer of Record to the Work being fabricated, stored, or installed so that required inspection and testing may be accomplished. It is understood and agreed that any Work under this Scope found to be in non-compliance shall be corrected and re-tested at no cost to Construction Manager and/or Owner.
8. This Subcontractor acknowledges that the Project will require coordination with all other work during this phase in accordance with the Project Schedule and that there is no limitation to the mobilizations which will be required to complete this scope of work.
9. Subcontractor is responsible for notifying Construction Manager, Owner, Architect, and governing agencies of all inspection requests.
10. Subcontractor is responsible to coordinate work under this agreement with all other bid package contractors since existing and/or future utilities exists onsite.
11. Subcontractor is responsible for notifying Construction Manager, Owner, Architect, and governing agencies of all existing utility locates. Subcontractor shall verify locations of all existing Utilities within the Construction Areas prior to commencing Work. Any damage to existing in-service Utilities during Construction will be repaired at the expense of the Subcontractor that caused the damage. Subcontractor is responsible for notifying the Construction Manager, Owner, Architect, and governing agencies of all tie-ins and shut downs of existing utility systems, inspection requests, and existing utility locates.
12. Subcontractor is responsible for compliance to all requirements of local authority(s) having jurisdiction on all installations under this agreement.
13. Subcontractor has reviewed the Drawings & Specification for this Project. Subcontractor has found no obvious omissions and further agrees that the Work of this Agreement and the Project can be constructed within the milestone and completion dates without claims for delay or impact costs, unless substantial Owner directed Scope changes occur.
14. This Subcontractor shall obtain and pay for any additional permits, bonds, or fees as required to complete scope of work under this agreement including any required re-inspection fees/costs are responsibility of Subcontractor.
15. This Subcontractor is responsible for the repairs or relocations required of site perimeter fencing and gates if damaged or if required to perform work under this agreement.
16. Videotaping of all existing conditions prior to start of work under this agreement is included for clearing operations and any operations working around existing utilities and outside construction limit areas
17. Subcontractor is responsible for providing all required temporary and permanent access requirements for construction operations at all times as this requirement is related to this scope of work.
18. Subcontractor shall include all required piping modifications, fittings, etc. to comply with final piping layouts with approved coordination drawings and/or to comply with field conditions for connections to existing utilities at no additional cost to Construction Manager.
19. Subcontractor shall provide flow test(s) for all installations in order to provide Owner with updated readings upon completion of lines installed under this agreement.
20. Provide all required NFPA testing requirements including supervision, forms, equipment, etc.

21. Final clean all utilities prior to turnover.

Earthwork

1. Perform general protection and safe removal of trees; including disposal reports.
2. Subcontractor is responsible for the re-wetting, aeration, and or drying of existing soil materials to obtain optimum moisture content for use as compacted fill.
3. In the event that weather conditions do not allow the Subcontractor to dry wet materials required to perform the work within the scheduled time frame, the Subcontractor shall remove and dispose of the wet material and replace with suitable soil so as not to delay the Project schedule.
4. All Special inspections will be provided by the owner. It is the responsibility of this package to review the statement of special inspections, provide all required information/documentation as well as actively participate in the stated inspections. It is the responsibility of this package to coordinate a request for inspections through TCG no later than 72 hours in advance of the inspection needed. All costs for failed inspections and/or re-inspections will be the responsibility of this package.
5. Once the initial proof-rolling and, if necessary, undercutting of the subgrade soils in the building, hardscape, pavement, and any other structural areas has been completed, the Subcontractor should protect the exposed soil subgrades by smooth-rolling and grading the site to promote surface water runoff. Exposure to the environment and construction activities will likely weaken the exposed subgrade soils. Repair to previously accepted proof-rolled areas should be performed by this Subcontractor at no additional expense to the Construction Manager or Owner.
6. When deterioration of the soil occurs during the construction process, then disking and drying, re-compaction, densification, stabilization with geotextiles, and or undercutting and replacement with structural fill may be necessary and should be performed by the Subcontractor as recommended by the geotechnical engineer at no additional expense to the Construction Manager or Owner.
7. Any fill area undercutting that is required due to not protecting the subgrade should be performed by this Subcontractor at no additional expense to the Construction Manager or Owner.
8. Any virgin cut area undercutting will only be approved after the Subcontractor first attempts to dry the area by disking and drying.
9. All excess spoils excavated or graded under this agreement and as generated by Foundation Contractors are to either be used or disposed by this Subcontractor. All soils will be consolidated to a location outside of the building footprint by the other trades and is to be removed by this package.
10. Subcontractor is responsible for dewatering for this scope of work only.
11. This package is responsible for the supply and installation of clean #57 stone backfill and Civil tie in for the continuous foundation drain at all CIP walls. This includes all foundation drainage
12. Subcontractor is responsible for backfilling all concrete and/or masonry walls installed by other subcontractors. This includes all stairwell, interior retaining and below grade walls.
13. Subcontractor to leave final grade +/- .1" on final grade. Subcontractor to cut grade for foundations and retaining walls per OHSA slope requirements and will provide granular backfill as required behind all walls. Reference the building pad grading plan for further information of where pads are to be left for the next subcontractor.
14. Subcontractor understands the schedule and agrees to work whatever hours are required to meet the completion for each activity. Subcontractor also acknowledges he has visited the site and has all the required traffic control and flagman required to perform operation without disruption to the existing campus environment.
15. All backfill of walls outside building perimeter are included by this package.

Excavation Support and Protection and Trenching & Backfilling

1. Subcontractor is responsible for trench and excavation safety including sheet shoring, trench boxes, soil nailing as may be required for installation of new utilities.
2. Subcontractor is responsible for providing, installing, maintaining, and removing excavation safety barricades, perimeter fencing, flagging, etc.
3. Subcontractor shall provide all ladders and access/egress points.
4. Subcontractor shall provide all air quality monitoring in excavations.
5. Excavations shall not be left exposed during non-working hours. Each day's work shall be backfilled to afford other trades work accessibility on and around the site.
6. Sheet piling, shoring, supporting, relocating, removing/reinstalling, etc. of existing utilities or utilities installed ahead of this work is specifically included.
7. Subcontractor also understands that due to the nature of the project some utilities might be installed out of a normal sequence and if this happens has included flowable fill to be used as backfill in these areas

Storm Drainage

1. Provide all building drainage collection system, storm system piping and appurtenances as indicated on the documents Provide all necessary piping, fittings, manholes, cleanouts, covers, etc.
2. Periodic flushing of Storm Drainage pipes, as well as a final, overall system flush is included prior to final inspection.
3. This package includes all new roof drainage piping including cleanouts, stub ups, etc. The package shall coordinate final location of drains to align with masonry control joints as indicated on the exterior elevations of package A.
4. Demolition, bypass pumping, drilling and repair of existing manholes for new tie-ins, etc.
5. Temporary manholes and/or boxes may be required for maintaining storm water flow.
6. Coordinate this work with all existing utilities and all new work.
7. This package includes a video camera inspection and certified as-built as part of the final inspection.
8. This package includes connection the roof drain leaders to the storm system with the appropriate boot. Reference plumbing drawings for final locations.
9. Subcontractor is responsible for building foundation drains, filter fabric and stone per details shown on structural drawings. Tie in of these drains to the main site utility laterals are the responsibility of this package.
10. Subcontractor is responsible for site wall and planter foundation drains, filter fabric and washed stone per details shown on architectural and structural drawings.
11. This package includes all project curb, gutter, sidewalks and concrete hardscapes.

Water Utilities

1. Provide all water service piping, fire protection service mains and appurtenances as indicated on the documents.
2. Provide all necessary piping, valves, fittings, valve boxes, water meter boxes and vaults, manhole structures, fire hydrants, post indicating valves, tapping devices, flanges, water meters, etc. Air relief

valve and manhole structures complete are included.

3. This package includes the new water line installations. This package is responsible for the removal and replacement of all hardscape, irrigation, landscaping, site lighting and construction fencing in order to access new water line tie in areas.
4. Disinfection/Bacteriological (chlorination) testing, pressure testing, certification tests, etc. under the direction of the Owner, Engineer, Inspectors, and governmental authority(s) having jurisdiction. Subcontractor shall dilute and properly dispose of heavily chlorinated water with Owner permission.
5. All taps/tie-ins into existing system(s) are included.
6. Subcontractor cost includes any required tap fees and fees associated with temporary hydrant meter(s).
7. All pipe bedding material as required by the Contract Documents, Local, City, County, State, and Federal Codes and Regulations.
8. Prior to beginning installations under this agreement, Subcontractor shall determine locations of all new utility installations crossing installations under this agreement. In determining locations of crossings, this Subcontractor shall also determine sequencing time frames. Should any other utility crossing occur following installation of work under this agreement, it is the responsibility of this Subcontractor to provide proper piping restraining devices and methods for work installed under this agreement for piping exposures created by others at no additional cost to Construction Manager.
9. This Subcontractor is to paint all fire main valve covers and all domestic water valve covers in accord with the town of Wilmington requirements.
10. Subcontractor is to note that permanent meters must be installed with the piping installations. The Engineer will not accept testing or inspections to energize systems without permanent final metering installed.
11. Fire line will be installed to a flange 1'-0" AFF at location as shown on Fire Protections drawings. This subcontractor will install all piping up to this location. The final tie in and piping after 1'-0" AFF will be by the fire protection subcontractor.
12. Waterline to be stubbed into building at location as shown on plumbing drawings at 1'-0" AFF for final connection by the plumbing subcontractor.
13. Minimum cover for all water, fire, sewer, sanitary and other site utilities will be required to be maintained
14. All Fire Hydrant assemblies are included
15. Double check detector assembly, storz fire department connection and tamper switch
16. Reduced pressure Detector Assembly within heated enclosure with alarm
17. Tapping Sleeve, thrust blocks and other site utility assemblies are included
18. Roof drain connections to storm system; including all piping
19. Backflow Assembly, inspection and certification
20. Water meter and installation
21. All city and state required signage, including all signs and posts (i.e. building address, FDC, PIV, etc.)

Utilities, Temporary Utilities and Other Specified Services

1. Subcontractors cost includes all water taps, meter barrels, vaults and impact fees. Subcontractor

cost includes paying of the monthly usage fees until the owner accepts the facilities.

2. Temporary water at Trailer Area

- a. Subcontractor shall furnish, install, and maintain all required water taps, valves, backflow preventers, underground PVC or copper piping, and insulated wrap on exposed piping to provide temporary water service 2' line with a header pipe for 3 hose connections to the site as directed by jobsite superintendent.
- b. All temporary water lines are to be buried 2 to 3 feet below final finished grade for protection.

3. Temporary water on site

- a. Subcontractor shall furnish, install, and maintain all required water taps, valves, backflow preventers, underground PVC or copper piping, meter, and insulated wrap on exposed piping to provide a site construction water source as shown on the Site Logistics Plan.
- b. Provide a 2" temporary water meter header to be fed from an existing fire hydrant. All fees, permits, etc. required to obtain this meter through the city of Wilmington will be the responsibility of this package. The header will be required to have one 2" hose bib connection with shut off valve and three ¾" connections and valves. Include removal and capping of existing line at completion of project.
- c. Provide 200' of reinforced 1" hose and associated fittings.
- d. Provide temporary water at each construction entrance for cleaning of tires.

4. Removal of all utilities at the completion of the project.

5. Subcontractor cost includes installation of three (3) construction entrances per Logistic Plan. Including one concrete washout station.

6. Provide three 3,000 psi gas operated pressure washer assembled.

7. Provide sufficient personnel to clean tires, clean streets and provide flagging as directed by site superintendent while on site for this scope of work only.

8. Provide one street sweeper to clean streets daily or as needed.

9. Includes adjustment and repair of existing vaults, manholes, storm drainage structures, cleanouts, etc. as needed to match the finish grade

10. cleanouts, etc. as needed to match the finish grade

11. All pipe disinfection for water mains, fire lines and service lines that are 4" or larger are included. Reports of the disinfection, bacteriological and other tests for the complete system must be submitted.

Sanitary Sewerage

1. Provide all sanitary sewerage system piping, appurtenances as indicated on the documents. Any coatings required inside sanitary sewer manholes are included.
2. Provide all necessary piping, fittings, manholes, cleanouts, valve boxes (for cleanouts in paved areas), pipe encasements, etc.
3. Demolition, bypass pumping, drilling, and repair of existing manholes for new and temporary tie-ins, etc.
4. Verifying the inverts of existing manholes prior to starting of work confirming the inverts provided on the Contract Documents is included.
5. Subcontractor is responsible for all sewer installation testing requirements required of and under the direction of Owner, Engineer, Inspectors, and governmental authority(s) having jurisdiction.

6. All pipe bedding material as required by the Contract Documents, Local, City, County, State, and Federal Codes/Regulations.
7. Subcontractor shall provide all cleanouts required by Governing Agencies whether indicated on the documents or not.
8. Subcontractor is responsible for the design and installation of shoring as required for the installation of Sanitary Sewer piping

SITE CONCRETE AND HARDSCAPES

1. This package includes all Concrete walks, ramps, stairs, warning domes, expansion joints, depressed curbs, removable pipe bollards, pavers, tables and chairs, trash receptacles Decorative Crosswalks, All dumpster, wheel and transformer pads
2. Underground communication lines and pull boxes will be provided/installed by the owner. This package is to include all coordination and sequencing required to accommodate installation of new lines with scope provided under this package
3. Subcontractor to provide and install any reinforcing and construction jointing as indicated on the drawings and specifications.
4. All concrete curb work as shown. This Subcontractor will grade for sidewalks and backfill curbs as required.
5. Concrete overspill will be cleaned promptly following finishing, insuring that finished surface is not disturbed by cleaning operations.
6. Prepare subgrade as indicated in drawings and specifications.
7. Furnish and install any subgrade materials as indicated on the drawings and specifications.
8. Truck "wash-out" of unused concrete will not be permitted on-site. Subcontractor will be allowed to rinse the chute and any concrete splatter on delivery truck only at a location determined by Construction Manager. However, should Subcontractor wash out debris on-site, then this Subcontractor is responsible for removal, or costs thereof, to remove debris from site and shall not utilize Construction Manager's dumpster for such disposal.
9. Prior to pouring concrete at any site walk or ramp; this package is to include a layout review of all edge forms. This is to check for adequate slope, cross slope and placement locations prior to pouring. The attendees for this meeting will include at a minimum representatives of the subcontractor, construction manager, owner and designer of record.
10. Subcontractor shall ensure subgrade is properly compacted prior to placing concrete. Any and all measures required to meet specified subgrade density are included.
11. Subcontractor is responsible for ensuring all slopes and cross slopes conform to ADA requirements. Any concrete that does not meet ADA requirements will be removed and replaced at this subcontractor's expense

ASPHALT PAVING AND STRIPING

1. All heavy-duty Asphalt Paving is included by this package including all subgrade prep, stone installations, curb and gutter and final testing prior to asphalt placement.
2. Contractor understand that the first lift of pavement will be installed and used as a working road during the course of construction.
3. Contractor includes 100 square feet of binder patch and repairs prior to the installation of the final top course

4. All parking lot, street and plaza thermoplastic pavement markings are included in this package. Any required cleaning needed per the manufacturers installation instructions is included by this package. This includes all arrows, stop bars, infill striping and line striping.
5. All code required traffic signage, posts and foundation installations are included by this package. This includes but is not limited to, STOP, YIELD, ONE WAY, etc. all stop bars, parking spot lines and arrows are included in this package.
6. All heavy duty concrete paving and curb and gutter systems are included in this package. This includes all compacted subgrade prep and placement.

02 EXCLUSIONS

NONE

03 ALLOWANCES

ALLOWANCE 1: Remove or reuse 2,500 CY of spoils created by the concrete subcontractor

04 ALTERNATES

Provide Complete Building Demolition of the existing Gov. Center. See BP 02A for more information

\$ _____

Payment and Performance Bond

\$ _____

05 UNIT PRICES

Provide unit rates for the following:

1. Remove/Dispose of Unsuitable Soil \$ _____/CY
2. Haul in, place and compact Structural Fill \$ _____/CY

06 BID BREAKDOWN

BASE BID	\$ _____
Erosion Control	\$ _____
Demolition	\$ _____
Grading/Earthwork	\$ _____
Storm Drainage	\$ _____
Sanitary Sewer	\$ _____
Domestic/Fire Water	\$ _____
Concrete/Hardscapes	\$ _____

END OF BID PACKAGE 31D Sitework, Site Utilities and Site Concrete

BID PACKAGE - 320 Landscaping and Irrigation

SCOPE OF WORK SUMMARY:

Furnish all labor, engineering, submittals and shop drawings, fabrication, material, equipment and tools, competent supervision, hoisting, scaffolding, and transportation required for a complete installation of all **Landscaping and Irrigation** as outlined in the following specification sections:

Primary Specification Sections; applicable in total to the work of this bid package:

Specification Sections, As applicable:

WORK/DIVISION DESCRIPTION:

Bid package No. **320** – Subcontractor is exclusively responsible for work required to furnish all labor, materials, supervision, equipment, insurance, overhead and profit, necessary or incidental, as required to complete the scope of work identified in the construction drawings and applicable specification sections referenced above for this project. Performance of the work must include, but is not necessarily limited to the following:

01 SCOPE OF WORK

A. Turfs and Grasses:

1. Furnish, install, and maintain all permanent seeding/sod per quantities associated with Contract Drawings.
2. This subcontractor is to supply and lay all mulch as shown in the contract documents.
3. All required plant bed sub-grade preparation, rolling, fertilizing, insecticides, herbicides, including any and all topsoil fill at 6" depth for turf areas as shown in the Contract Documents.
4. Pick-up and dispose of all rocks in grassed areas prior to Owner acceptance of site.
5. Subcontractor shall spray top soil for weed control prior to seeding.
6. Subcontractor to provide maintenance for turf/grass for the duration of the project until final acceptance by the owner.

7. Subcontractor is responsible for all planting area establishment/preparation as detailed in the drawings and specifications. All materials, labor etc. required to achieve suitable soils per the specification are included.

B. Plantings:

1. Furnish, install, and maintain all trees, plantings, shrubs, etc. per the contract documents. Subcontractor has included all planting types and quantities indicated on the contract drawings
2. No plant substitutions are allowed without the express written consent of the design team and construction manager.
3. Plant selections are to be made and agreed upon prior to purchasing. The owner's agent reserves the right to review all plant specimens for acceptance prior to installation, during installation and/or during the punchlist process.
4. Pruning of all trees, shrubs, etc. is included as allowed by specifications and Architect's approval.
5. Staking, guying, etc. of trees and shrubs as specified are included. Removal of staking is included at Owner and Architect's direction.
6. All plants and trees shall be free from disease and insects.
7. Included is all required plant mix, sub-grade preparation, fertilizing, insecticides, herbicides, etc.
8. All planting shall be delivered to site in size and caliper specified.
9. Subcontractor to provide plant maintenance for the duration of the project as until final acceptance by the owner.
10. Subcontractor shall provide and install 8" Depth Planting Soil for Site Landscape Areas.

C. Irrigation:

1. Subcontractor to provide and install all irrigation as shown in the contract documents.
2. Subcontractor shall supply and install all irrigation controllers, deep wells, heads, piping, valves, hose bibs, valve boxes, backflow preventers, drip control zones, drip lines, flushing valves, remote control valves and other requirements as necessary per local codes and jurisdictions for a complete turnkey irrigation system. Subcontractor will be responsible for any testing required on the irrigation system per local codes and jurisdiction or for a proper operating system.
3. Irrigation system shall be designed in accordance with landscape plans and in complete compliance with horticultural requirements and best practices.
4. Subcontractor shall not store any pipe material in the work area or travel paths in or around the building. Subcontractor shall store all piping materials on trailers, racks or by other elevated means as to avoid damage and to minimize groundwater, insect and other contamination.
5. Subcontractor must design an irrigation system that will accommodate for the static pressure fluctuation within the water source.
6. Subcontractor shall perform all hydrostatic and operational testing of the system.
7. Subcontractor includes hot box for all irrigation system back flow preventers.
8. Subcontractor includes all irrigation lines shown on the irrigation plans.

1. General:

1. Subcontractor is responsible for removal of all excess soil, topsoil, grass, sand and stone products generated from this scope of work from site. This includes general cleanup at the end of each work day.
2. Subcontractor is responsible for all backfilling required for this scope of work; including sidewalk edges, planter beds, etc.

3. All installations shall be per manufacturer's recommendations and the contract documents. If any variation exists between the two; this subcontractor shall notify the construction manager in writing prior to proceeding.
4. Subcontractor shall adequately backfill and compact, to specified densities, all trenches immediately following installation and inspection of undergrounds. All trenches not under structural areas shall be immediately backfilled and compacted to allow other traffic over ditches. Tamping operations shall be accomplished under the direction and approval of the materials testing consultant and Contractor. All spoils are to be evenly distributed in areas as directed by the project superintendent. Any excess spoils from this scope of work are to be removed from the site by this subcontractor.
5. Subcontractor is hereby advised that site investigation reports have been provided by the Owner for review and information purposes. Subcontractor shall waive all rights to any claims against Construction Manager as a result of the information contained within the report versus field conditions.
6. Subcontractor is responsible for receiving, unloading and protecting all materials. Onsite storage of materials is not allowed.
7. Subcontractor is responsible for barricading of seeding and planted areas from pedestrian and vehicular traffic.
8. All watering of seeding and plantings is included. Subcontractor shall provide all hoses, spray devices, etc. required for this work. Construction Manager shall provide a temporary water source and pay water usage fees. However, Subcontractor shall provide manpower and supervision of watering process to provide timely relocation of devices in order to provide equal distribution of the watering.
9. Subcontractor shall provide all soil testing under this agreement and submitting all results to Construction Manager and Architect prior to starting work under this agreement. All soil amendments and materials to bring on-site into compliance with test results and the Architect's recommendations is included at no additional cost to Construction Manager.
10. Subcontractor is responsible for all soil preparations and organic/in-organic soil amendments including, but not limited to, all fertilizers, sulfates, perlite, humus, herbicides, lime, sand, compost, soil mixtures, manure, antidesiccants, etc.
11. Cleaning of surrounding roads, sidewalks, storm inlets and structures, and parking areas are included if soiled by Subcontractor with work under this agreement.
12. Fine grading is included and shall be completed in accordance with the grading drawing to insure all swales, slopes, berms, etc. are installed to ensure proper drainage.
13. Subcontractor to warranty the health of all plants for a period of 1 year after owner acceptance and will replace any plants that die in that period at no additional cost.
14. Subcontractor shall replace all barriers, storm water, and erosion control systems taken down or moved while performing this scope of work. In the event that these systems require to be down for more than a day, subcontractor shall reinstall or put back into place these systems prior to leaving the project site for the evening.
15. Subcontractor assumes the liability associated with sediment entering the storm sewer system or discharging off-site, and will immediately rectify all unacceptable conditions.
16. Subcontractor understands the Erosion Control devices must remain in-place until site is stabilized and accepted by NCDEQ and Owner at which time devices can be removed by Grading Subcontractor (i.e. sediment ponds, silt fence, etc.). This Subcontractor will be responsible for remobilizing to site to make repairs and complete any contract document planting following removal of erosion control devices.

17. Subcontractor shall layout and pre-stake all work under this agreement for Architect's approval. A pre-installation conference will be held with Contractor and Architect prior to installing planting to confirm layout, spacing, configurations, etc.
18. Subcontractor is responsible for notifying Construction Manager of all inspection requests.
19. Subcontractor is responsible for notifying Construction Manager, Owner, Architect, and governing agencies of all existing utility locates. Subcontractor shall verify locations of all existing Utilities within the Construction Areas prior to commencing Work. Any damage to existing in-service Utilities during Construction will be repaired at the expense of the Subcontractor that caused the damage.
20. Subcontractor to coordinate and schedule all deliveries with TCG field staff.
21. This Subcontractor acknowledges that the landscape/hardscapes scopes of work will follow a specific pattern of installation around the building (reference the exterior phasing plan for more details).
22. Subcontractor is responsible for the repairs or relocations required of site perimeter fencing and gates if damaged or if required to perform work under this agreement.

02 EXCLUSIONS

NONE

03 ALLOWANCES

NONE

04 ALTERNATES

Payment and Performance Bond

\$ _____

05 UNIT PRICES

NONE

06 BID BREAKDOWN

BASE BID \$ _____

Plantings/Mulch \$ _____

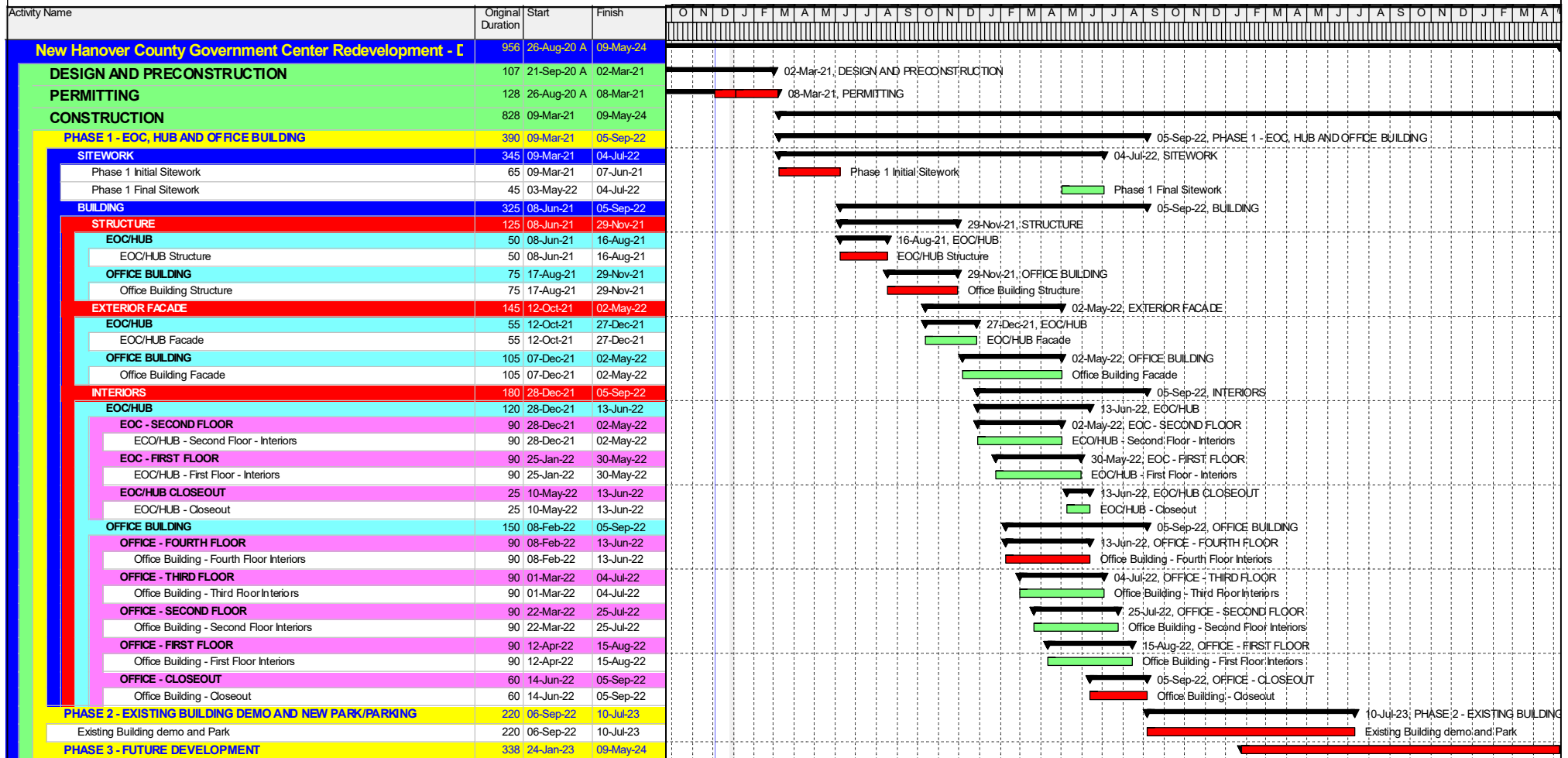
Irrigation \$ _____

END OF BID PACKAGE 320 Landscaping and Irrigation

00 06 00

New Hanover County Government Center

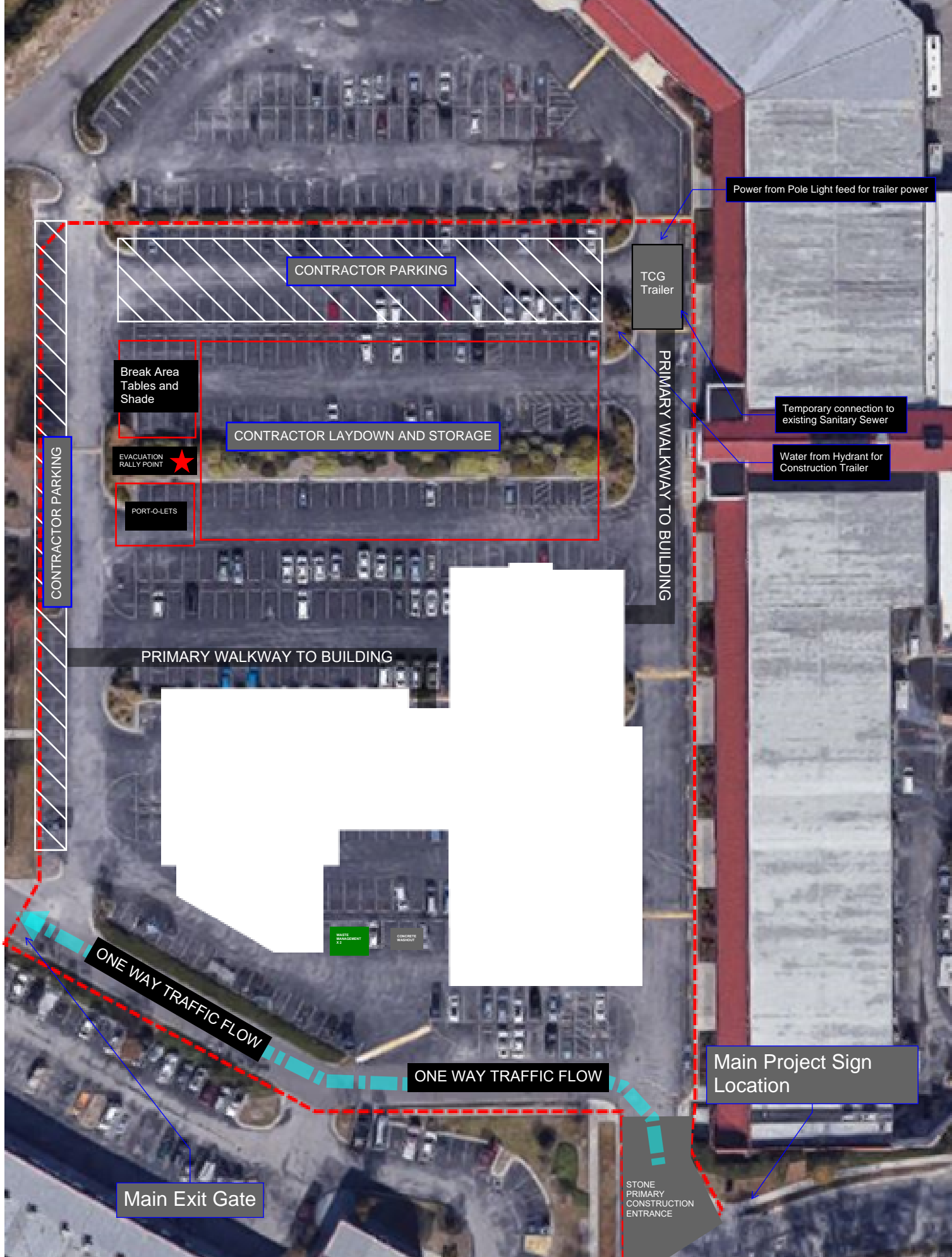
04-Jan-21 15:12



- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone

▼ Summary

00 07 00



NOTE:
Leave as much pavement in tact until needed to be removed for new parking lots. Only remove what is required to install foundations and building pad at beginning of project

00 08 00



TO ALL EMPLOYEES, SUBCONTRACTORS, SUPPLIERS, AND CUSTOMERS

Thomas Construction Group has a moral and business obligation to provide a safe work environment for its employees, subcontractors and the public. It is, therefore, the Company's policy to abide by the Occupational Safety and Health Standards and to initiate and maintain appropriate practices that promote safety in the work environment.

All management and supervisory personnel are charged with the responsibility for planning safety into each work task and for preventing the occurrence of incidents and / or controlling conditions / actions that could lead to occupational injuries or illness. The ultimate success of a safety program depends upon the full cooperation of each individual employee. Management at the Company assumes the responsibility and is prepared to take the necessary actions to see that safety rules and practices are enforced.

Our goal is the total elimination of accidents from our operations.

Sincerely,

Christopher N. Reid
President

ANNUAL REVIEW CONDUCTED BY:

SAFETY DIRECTOR

1/6/2020—2nd revision 3/10/2020 3rd revision 11.2.20

DATE



SAFETY AND HEALTH MANUAL

TABLE OF CONTENTS

PART 1 GENERAL SAFETY AND HEALTH MANUAL	1
1.01 Goal and Purpose	2
1.02 Objectives	2
1.03 Responsibilities	3
1.03.A Management	3
1.03.B Safety Director	4
1.03.C Project Managers	4
1.03.D Project Managers / Superintendents	5
1.03.E Superintendents	5
1.03.F Drivers	7
1.03.G Operators	7
1.03.H Employees	7
1.04 Safety and Health Procedures	8
1.04.A Accountability	8
1.04.B Enforcement - Progressive Discipline Procedures	8
1.04.C Bidding	9
1.04.D Pre-Planning	9
1.04.E Employee Participation	9
1.04.F Site Safety Inspections	10
1.04.G Accident / Incident Investigation and Prevention	10
1.04.H Personal Protective Equipment	11
1.04.I New and Re-hired Employee Orientation	11
1.04.J Training	11
1.04.K Temp Agency/Host employer EHS responsibilities	13
1.04.L OSHA enforcement inspection procedures/What to Do	15



1.05	Emergency and First Aid	17
1.05.A	Emergency Procedures	17
1.05.B	Fire	18
1.05.C	First Aid	18
1.05.D	Bloodborne Pathogens	19
1.06	Accident Reporting / Recordkeeping	34
1.07	Documentation	35
1.08	Subcontractor Selection	35
1.09	Safety and Health Manual Revision	36
1.10	Safety Library / Safety Board	36
1.11	Distribution of Safety and Health Manual	36
1.12	Subcontractor Disciplinary Action for Safety Violations	37
PART 2 JOB SPECIFIC WORK RULES		39
2.01	Abrasive Grinding	40
2.02	Access / Egress	40
2.03	Aerial Lift	40
2.04	Air Tools	46
2.05	Compressed Air	46
2.06	Compressed Gas Cylinders	46
2.07	Concrete and Masonry Construction	47
2.08	Confined Spaces	47
2.09	Cranes	48
2.10	Drinking Water	48
2.11	Electrical - General	48
2.12	Employee/Subcontractor Conduct	50
2.13	Excavation and Trenching	50
2.14	Explosives and Blasting	52
2.15	Eye and Face Protection	52
2.16	Fall Protection	53
2.17	Fire Protection	54
2.18	Flag Personnel	55
2.19	Flammable and Combustible Liquids	55
2.20	Foot Protection	56
2.21	Gases, Vapors, Fumes, Dusts, and Mists	56
2.22	Hand Tools	56
2.23	Hard Hats	57
2.24	Hearing Protection	57



2.25	Heating Devices, Temporary	58
2.26	Housekeeping / Clean-up	58
2.27	Lasers.....	59
2.28	Ladders	59
2.29	Lighting	60
2.30	Liquefied Petroleum Gas.....	60
2.31	Motor Vehicles and Construction Equipment.....	61
2.32	Personal Protective Equipment	62
2.32.A	Introduction	62
2.32.B	Body Protection	68
2.32.C	Head Protection.....	72
2.32.D	Eye and Face Protection	77
2.32.E	Gloves – Hand and Arm Protection.....	82
2.32.F	Foot and Leg Protection.....	86
2.32.G	Other PPE.....	88
2.32.H	Fall Protection.....	90
2.32.I	Personal Protective Equipment Employee Training & Certification.....	95
2.32.J	Personal Protective Equipment Hazard Assessment.....	96
2.33	Powder - Actuated Tools	101
2.34	Power Transmission, Mechanical.....	101
2.35	Protection of the Public.....	101
2.36	Rollover Protective Structures (ROPS)	101
2.37	Respiratory Protection.....	102
2.38	Rules for Drivers of Vehicles	102
2.38.A	Distracted Driving	103
2.39	Rules for Operators	104
2.40	Saws	105
2.41	Scaffolds.....	106
2.42	Signs	107
2.43	Steel Erection.....	107
2.44	Storage	108
2.45	Tire Cages.....	109
2.46	Toilets.....	109
2.47	Washing Facilities	109
2.48	Welding, Cutting and Heating	109
2.49	Wire - Ropes, Chains, Ropes and Other Rigging Equipment.....	111
2.50	Working / Walking Under Suspended Loads.....	112
2.51	Critical Procedures for Protection of Utilities.....	112



PART 3 SPECIFIC SAFETY AND HEALTH POLICIES AND PROGRAMS	115
3.01 Substance Abuse Policy	116
3.02 Hazard Communication Program/Silica Exposure Hazard Communication	119
3.03 Fall Protection Policy	133
3.04 Crane Safety Program	138
3.05 Excavation & Trenching Program	142
3.06 Confined Space Plan	144
3.07 Automobile Safety Policy	147
3.08 Emergency Action / Fire Prevention Plan	149
3.08.A Policy	152
3.08.B Classification of Fires	153
3.08.C Determining Fire Hazards	154
3.08.D Storage and Handling Materials	155
3.08.E Potential Ignition Sources	156
3.08.F Housekeeping Preventative Techniques	160
3.08.G Fire Protection Equipment	162
3.08 H Training	163
3.08 I Fire Prevention Checklist	163
3.08 J Inspection Logs and Fire Incident Reports	165
3.08 K Identified Fire Hazards and Responsible Personnel	165
3.08 L Training Record	165
3.08 M Fire Extinguisher Location	167
3.09 Crystalline Silica Exposure Control Policy, Program, and Procedures	167
3.09 A Introduction	167
3.09 B Statement of Purpose	168
3.09 C Responsibilities	169
3.09 D Exposure Limits	170
3.09 E Risk Identification & Assessment	171
3.10 F Risk Control	172
3.11 G Education and Training	175
3.11 H Safe Work Practices	176
3.11 I Documentation	176
3.12 Covid-19 Policies and Protocols	177
PART 4 SAFETY ORIENTATION PACKAGE	178
4.01 Jobsite Safety Rules	179
4.02 Safety Program	170
4.03 Fire Extinguisher Safety	181



4.04 Hazard Communication 182

4.05 Emergency Plan 183

4.05h Hurricane Preparedness Checklist 184

4.06 Electrical 185

4.07 Safety Tips..... 186

4.08 Ladder Safety..... 187

4.09 Struck-By Hazards 188

4.10 Excavation & Trenching..... 189

4.11 Housekeeping / Cleanup 190

4.12 Substance Abuse Policy..... 191

4.13 Safety Citation 192

4.13A Subcontractor Safety Citation 192

4.14 Accident Termination Policy..... 193

4.15 Safety Orientation Form 194

PART 5 COMPANY FORMS

5.01 Supervisor’s Accident Investigation Report.....

5.02 Incident Investigation Report.....

5.03 Company Report of Incident.....

5.04 Subcontractor’s Report of Accident.....

5.05 Motor Vehicle Accident Report

5.06 Hot Work Permit.....

PART 6 SDS (Separate documents in share drive or on Procore for each job

Orientation Quiz.....



PART 1

GENERAL SAFETY AND HEALTH MANUAL



1.01 Goal and Purpose

The goal of Thomas Construction Group (from this point forward referred to as the "Company") is to ensure that safety and health efforts are so successful that accidents and injuries are eliminated.

The purpose of this Safety and Health Manual is to provide a set of policies and requirements that management and employees can use as guidelines in their efforts to ensure a safe working environment and reach the Company's goal of zero accidents and injuries.

1.02 Objectives

To reflect management's commitment to provide a safe and healthy working environment for all employees, subcontractors and vendors.

To establish a set of policies and requirements that management and employees can use as guidelines in their efforts to ensure a safe and healthy working environment.

To be in compliance with federal, state and local safety and health regulations.

To be in compliance with our clients' safety and health rules and regulations.

Achieve our goals of ...zero injuries
...zero lost time accidents
...zero O.S.H.A. violations



1.03 Responsibilities

Management, Project Managers, Superintendents, subcontractors, vendors, visitors and all employees are responsible for the compliance with this Safety and Health Manual. A summary of each party's responsibilities is outlined below.

1.03.A Management

It is the responsibility of management to establish rules and programs designed to promote safety and health; to make known to all employees the established rules and programs and to impress upon all employees the responsibility and accountability of each individual to maintain a safe and healthful workplace.

Management will ensure that appropriate safety and health training is provided, that inspections are performed, and accident investigations are conducted and reviewed.

Management will designate a person to administer the Safety and Health Program, which includes the general Safety and Health Manual and Specific Safety and Health Manuals. This person has the following duties:

- 1) Answer questions concerning the Safety and Health Manual.
- 2) Keep all copies of the Safety and Health Manual up-to-date.
- 3) Keep all documentation concerning the Safety and Health Manual up-to-date.

The Safety and Health Director designated by the Company is:

Name:	Carl Weatherington
Office:	910-799-2295
Mobile:	910-777-9633



1.03.B Safety and Health Director

- Monitor all jobsites / areas for compliance with the Safety & Health Manual
- Chairperson for the Safety Committee
- Field inspections (self & outsiders)
- Disciplinary and enforcement procedures
- Safety training to all company employees
- "Safety Library" and "Safety Board" upkeep
- All employees safety training records
- Employee packages
- OSHA 300, 300A and 301 Forms
- Safety incentive & reprimand tracking
- Monitor Vehicle Reports (MVR)
- Monitor Safety Training Requirements
- Publish Safety Information
- Insurance coordinating
- Accident tracking

1.03.C Project Managers

Project Managers are responsible for maintaining safe and healthful working conditions under their supervision.

- a. Project Managers will review all written warnings and take appropriate disciplinary action.
- b. Project Managers are responsible for requiring conformance to safety and health standards by subcontractors.
- c. Project Managers are responsible for providing the general public, protection from company operations.



1.03.D Project Managers and Superintendents

Project Managers and Superintendents are responsible for coordinating their safety efforts with each other.

- a. Project Managers and Superintendents are responsible for pre - planning and scheduling the job site(s).
- b. Project Managers and Superintendents are responsible for reviewing all Accidents / Incidents Reports.
- c. Project Managers and Superintendents are responsible for seeing that preventative measures are taken to ensure that Accidents / Incidents do not occur.
- d. The Project Managers and Superintendents are responsible for issuing verbal warnings and written warnings when safety and health rules, regulations or company policies are violated and submitting reports for review to the Safety Director.

1.03.E Superintendents

Superintendents are responsible for maintaining safe and healthful working conditions on the jobsite(s) under their supervision.

- a. Superintendents are responsible for carrying out the planning of the Project Managers and making the Project Managers aware of any new conditions or hazards that may arise.
- b. Superintendents will continually conduct (at least daily) inspections of jobsite(s) material or equipment. The superintendent conducting these inspections must be capable of identifying existing and predictable hazards in the work environment, of identifying working conditions, which are unsanitary, hazardous, or dangerous to employees, and of identifying unsafe behavior. In addition, Superintendents must have the authority to take



prompt corrective measures to eliminate or control hazards and correct unsafe behavior. Hazards and corrective actions will be documented for each inspection.

- c. Superintendents will ensure that prompt medical attention for any injured employee is available, and will report all accidents and injuries to Project Managers and/or the Safety Director.
- d. Superintendents make sure personnel protective equipment is available and is being used correctly. Training on PPE is provided, on site, by the Superintendents.
- e. Superintendents are responsible for filling out the Accident / Incident Report within 24 hours of the Accident / Incident.
- f. Superintendents are responsible for having the appropriate up-to-date SDS sheets on their jobsite.
- g. Superintendents are responsible for all weekly safety meetings, both company and subcontractors. All safety meetings shall be documented & maintained at each job site.
- h. Superintendents are responsible for ensuring all safety rules & regulations are adhered, to on the jobsite, by ALL employees, workers, visitors, subcontractors, etc.
- i. Superintendents are responsible for submitting Accident / Incident Reports and reviewing all Accidents / Incidents with the Safety Director.



1.03.F Drivers

Drivers are expected to drive safely at all times. Drivers will abide by all federal and state laws regarding the safe operation of vehicles on public roads.

Drivers must meet the requirements outlined in Part 2 Job Specific Work Rules under the section "Rules for Drivers".

1.03.G Operators

Operators are expected to operate their equipment safely at ALL times.

Operators of heavy equipment must meet the requirements outlined in Part 2 Job Specific Work Rules under the Section "Rules for Operators".

1.03.H Employees

It is the responsibility of all employees to work safely to ensure their own safety as well as the safety of coworkers and others. Employees are encouraged to ask for assistance when unsure about how to safely perform any task.

- a. Employees are required to report any unsafe acts or conditions to the superintendent. Management will not take any reprisal against employees for such notifications.
- b. Employees are required to attend and participate in all safety meetings that the company conducts.
- c. Employees are responsible for using and maintaining all personal protective equipment that is provided by the employer or the employee.



1.04 Safety and Health Procedures

The safety and health goal and objectives will be realized by implementation of policies outlined under the following headings:

1.04.A Accountability

Project Managers and Superintendents are accountable for improving the safety performance of personnel under their supervision.

A Safety Committee will be established.

It is the duty of the Safety Committee to see that the Company has the cleanest safety record possible. The Safety Director is always available to consult with any employee who has safety concerns. The Safety Director shall answer any questions an employee may have and resolve any safety problems that arise.

If any employee has knowledge of any existing safety hazard, and they have brought it to their supervisor's attention without results, please respond to the Safety Director, and the situation will be promptly investigated.

This safety program is presented as a guide for achieving a high degree of safety within all areas of the company. It is not intended to cover all situations concerning safety, which may arise. Rather, it is presented to instill in each employee the importance of safety and the aspiration that the employee will expand his/her awareness to safety and apply it to all aspects of their work.

1.04.B Enforcement - Progressive Discipline Policy

Project Managers, Superintendents, or any employee found violating any of the safety and health policies outlined in the Safety and Health Manual, or participating in any other



hazardous activity on the jobsite or while performing activities for the company, will be subject to the following progressive discipline system.

First Violation: A written warning, followed by an explanation and/or training.

Second Violation: A written warning, management review of written warning, followed by suspension, without pay or subject to termination.

Third Violation: Subject to termination.

Exceptions:

1. The progressive discipline policy will be suspended, if an employee commits a gross violation of these Safety and Health Manuals or participates in an unsafe act that poses an immediate danger to the life and health of themselves or other employees.
2. If an employee commits a substance abuse violation (as described in the Substance Abuse Program) that employee is subject to the disciplinary measures outlined under the Substance Abuse Program.
3. If a TCG critical procedure is violated, one written warning will be issued. A second violation will result in termination from all TCG sites.

1.04.C Bidding

Bidding will include consideration for the elimination or control of safety and health hazards, and all items in the company Safety and Health Manual.

1.04.D Pre-Planning

The pre - planning of jobs will include attention to the elimination or control of safety and health hazards, and all items in the company Safety and Health Manual.

1.04.E Employee Participation

Employees are encouraged to make the company aware of any safety and health issues.



Employees are encouraged to make recommendations for the elimination or control of safety and health hazards.

All safety and health issues brought up by the employees will be reviewed and responded to by management in a timely manner.

1.04.F Site Safety Inspections

Site safety inspections will be conducted daily and documented weekly to determine jobsite hazards, methods to eliminate or control the hazards and ensure that safe work practices are being implemented.

1.04.G Accident / Incident Investigation and Prevention

Accidents / Incidents will be investigated to prevent future mishaps.

All accidents / incidents must be reported to the Safety Director.

An Accident / Incident Investigation Report must be filled out for each accident / incident by the Supervisor of the employee involved in the accident / incident.

All accidents / incidents will be reviewed by the Safety Director to determine future prevention measures.

Definitions

Accident: An "accident" is one in which 1) a fatality occurs, or 2) an individual in the accident immediately receives medical treatment away from the accident scene, 3) a driver of a commercial motor vehicle receives a citation for a moving traffic violation arising from an accident or 4) there is damage to company property, the property of others or public property.

Incident: An "incident" is an event that could have resulted in an accident.



1.04.H Personal Protective Equipment

All employees will be trained on the proper use and maintenance of personal protective equipment.

1.04.I New and Re-hired Employee Orientation

The Safety and Health Manual will be reviewed with all new hired and/or re-hired employees prior to beginning work. New hired and/or re-hired employees will be required, prior to beginning work, to sign a statement of employee understanding regarding the Safety and Health Manual.

All new hired and/or re-hired employees are also required to review the company's Safety Orientation Video and perform a quiz following the viewing.

1.04.J Training

All training will be documented and entered into employee's personnel files and safety records.

a. Company-wide Training

Company-wide safety meetings will be conducted on a semi-annual basis, or as deemed necessary by the Safety Director. These meetings will cover company-wide safety and health topics.

b. Project Manager and Superintendent Training

Project Managers and Superintendents meetings will be conducted on a regularly scheduled basis. Some of the topics for these meetings will focus on their responsibility as outlined in the Safety and Health Manual.

They will be trained to identify hazards, hazard control and training other employees, subcontractors and vendors on safe work practices and procedures.



c. **On-site Training**

On-site training will cover such topics as:

- Safety rules and/or regulations
- Site specific hazards
- Safe work practices
- Procedures being used to eliminate specific hazards
- Training on personal protective equipment
- Other topics the Superintendents or the Safety Director deem necessary
- Documented Fall Hazard Training

d. **Weekly Safety Meetings**

The Superintendents are responsible for weekly toolbox safety meetings on site specific safety and health hazards.

The Superintendents shall document each session topic and attendance.

e. **Specialized and/or Specific Training**

Specialized training will be conducted on an "As Needed" basis by the company for specific job related functions.

f. **Technical Support**

Outside technical support, for assistance, to eliminate or control of safety and health hazards will be provided on an "As Needed" basis by the Company.



1.04.K Temp. Agency and Host Employer EHS Requirements

Temporary agency employees training and issuance of PPE shall comply with the following:

Prior to Temporary Worker Assigned to Site of Host Employer

- a. Both employers evaluate site, task assignments and Job Hazard Analysis
- b. Staffing agency must supply document on specific training and competencies related to tasks
- c. Both employers must evaluate hazards on site
- d. Temp agency must train supervisory and /or placement staff in basic hazard identification
- e. Both employers must review each other's EHS program
- f. Host employer must review training needs of temporary workers
- g. EHS responsibilities must be defined in contract
- h. Contract must clearly state who will do specific duties
- i. Tasks for temporary employee must be stated in contract
- j. Employer must communicate tasks to temporary employee before work is assigned
- k. Contract must specify who is responsible to communicate with temporary employee
- l. Both employers must contact each other when temporary employee is injured
- m. Both employers must set up procedures for temporary employee to report injuries

Recordkeeping Requirements

- a. Joint employers responsible for safety of temp employees
- b. Host employer responsible for recording temp employee injuries and illnesses if supervised on a day to day basis
- c. Temp agency must ensure that host employer records injuries and illnesses of temp employees



- d. Details of who records injuries and illnesses of temp employees must be in contract language

Personal Protective Equipment Requirements For Temporary Agency Employees

- a. Employers must provide and train temp employees of PPE according to JHA for the job
- b. Host employer is responsible for issuance and use of PPE
- c. Temp agency must ensure host employer conducts job hazard analysis and provides PPE
- d. Temp agency must become familiar with host employer worksite and communicate PPE requirements with temp employee and host employer
- e. Temp agency and host employer must train and ensure training for PPE use is completed
- f. Host employer must conduct PPE training for tasks assigned to temp employees
- g. Both employers cannot require temp employee to pay for PPE unless damaged by negligence or lost
- h. Host employer and temp agency can agree for temp agency to provide and train for PPE but host employer must ensure it is adequate and provides protection
- i. Who is responsible for providing and training for PPE must be documented in contract.

Safety And Health Training Requirements For Temp Agency Employees

- a. Both employers share training activities
- b. Temp agency provides general safety and health training
- c. Host employer provides site and job specific training
- d. Both employers shall provide general safety and health orientation
- e. Host employers must provide same quality of training as their own full-time employees
- f. Both employers must train on how to report injuries
- g. Host employer must train temp employees on emergency procedure for site
- h. Host employer must have hazard specific programs for Bloodborne Pathogens, respiratory protection, and control of hazardous energy if temp employee is exposed to these hazards and for other hazards applicable to the work tasks



Accident Investigations and Auditing of EHS Programs for Temp Agencies

- a. Both employers must investigate accidents and complete corrective action
- b. Both employers must conduct periodic audits of their EHS programs to ensure temp employees are included in the programs and are provided a safe work place.

1.04. L OSHA Enforcement Inspections Procedures

General Requirements:

As part of your project planning, decide ahead of time who will meet with the OSHA compliance officer(s) both during an opening conference and during the walk-around inspection. Preferably, the on-site superintendent and PM should participate. Contact the Safety Director and PX immediately.

At the opening conference, after reviewing the credentials of the compliance officer(s) to determine that they are authorized representatives of the local OSHA area office, determine and document:

- a. The names of the compliance officer(s)
- b. Whether they are safety specialists or industrial hygienists
- c. The purpose of the inspection
- d. If the inspection is directed at Thomas or a subcontractor
- e. If the inspection is based on a complaint, referral, special emphasis program, or random DODGE report selection.

If the basis of the inspection is a complaint request and obtain a copy of the complaint items form from the officer(s). Limit the scope of the inspection to the complaint items.

Note: A compliance officer is authorized to broaden the inspection to include anything else that is observed in plain view while in route to the area of the complaint items.

If the compliance officer requests the OSHA 300 log, contact the Safety Director immediately. We are allowed only four hours to submit the log to OSHA.



Keep as list and copy every document you provide to OSHA. Do not provide any documents until approved by the company host (SD, PX or Gen Super). If you have any questions about the relevancy of a requested document, ask the officer to request them from the company host.

Make sure the PM and/or the superintendent is with each of the officers at all times during the walk-around inspection. Take written notes of any pertinent comments or observations that the officers make, and take parallel photos, videos, or measurements of anything that the officers photograph, videotape, or measure. Do not suggest or identify a problem the officers have not addressed.

If the officer points out a possible hazard or OSHA violation, have it corrected immediately. Never ignore any hazard pointed out by OSHA.

The company has a right to have someone present during any interview of a member of management, which typically includes managers from salaried foremen up to the PM or superintendent. A designated company host (SD, PX, Gen Super) should always be present during all management interviews. OSHA may interview hourly employees privately. Any employee may decline to be interviewed in private by a compliance officer, unless that employee has been subpoenaed to interview or testify in a court proceeding.

Note: Explain to all employees, both hourly and management, that they do not have to agree to have the interview either audio-taped or videotaped and that they are under no obligation to sign a statement that the compliance officer creates from the interview. If the employee elects to sign such a statement, the employee has a right to receive a copy of that statement and should get a copy at the conclusion of the interview.

At the conclusion of each day's inspection, ask the officers for an informal summary of their observations-primarily whether they observed any apparent violations-and ask what OSHA plans to do next. Report the status of the inspection each day to the safety director if he/she is not on site.

During the closing conference, document each apparent violation that the compliance officers identify, listing the specific OSHA standard provision and the machines, employees, or work areas in question.



Make sure that a procedure is in place to receive OSHA citations and forward them immediately to the safety director. The safety director will distribute copies of the citations to the appropriate management staff and legal counsel if necessary.

Note: The failure to contest citations within 15 working days of receipt means that all of the cited items and proposed penalties are final and cannot be appealed in any way.

Any citations received from OSHA must be posted at the jobsite in a conspicuous location for review by all workers. Post them in job trailer and near the specific area where the violation occurred.

Remember that the compliance officer may return to your project at any time or to verify the abatements of all hazards.

A flow chart has been provided to you to serve as a reminder checklist for all actions to perform when inspected.

1.05 Emergency and First Aid

The Superintendent, with the aid of the Safety Director, will determine the emergency phone numbers for each jobsite. The Superintendent will communicate the emergency numbers in such a manner that every employee of a jobsite will be aware of the location of the emergency phone numbers.

Jobsites should have at least 1 (one) person trained in emergency first aid and CPR.

1.05.A Emergency Procedures

The Superintendent should instruct employees on emergency procedures for the specific jobsite before work begins. Although the emergency procedures at each jobsite may vary somewhat, the basic procedures are as follows:



- Don't panic
- Call for help / 911
- Provide the dispatcher with detailed information
- In case of a trench cave in or confined space accident, do not attempt to rescue unless trained in rescue procedures
- Provide first aid if qualified to do so
- Don't move injured person unless his or her life is in danger from sources other than the injury
- Secure the site
- Shut down the equipment
- Account for everybody on the site
- Notify the Safety Director of emergency within 1 (one) hour

1.05.B Fire

In the event of a fire the procedures are:

- Use fire extinguisher to put out small fires
- Evacuate the work area
- Call fire department / 911
- Meet at designated location
- Notify the Safety Director of the fire within 1 (one) hour

1.05.C First Aid

First aid for minor injuries will be administered on the jobsite. If the injury requires immediate medical treatment beyond first aid, the Superintendent will call the appropriate emergency number to receive immediate medical treatment.

If the injury does not require immediate medical treatment, but does require medical treatment beyond first aid, the Superintendent shall arrange transportation for the employee to the appropriate emergency medical facility.



If the injury is minor, and first aid treatment is required by the Superintendents appropriate action should be taken to prevent exposure to Blood borne pathogens and the exchange of body fluids.

All employees must notify their supervisor and/or the Safety Director of any first aid uses or occurrences.

1.05.D Blood borne Pathogens / Exposure Control Plan

In accordance with the OSHA Blood borne Pathogens Standard 29 CFR 1910.1030, the following exposure control plan has been developed.

a. **Purpose:** The purpose of this exposure control plan is to:

1. Eliminate or minimize employee occupational exposure to blood and/or certain other body fluids
2. Comply with the OSHA Blood borne Pathogens Standard, 29 CFR 1910.1930 and its Appendix A

b. **Exposure Determination:**

OSHA requires employers to perform exposure determination concerning which employees may incur occupational exposure to blood or other potentially infectious material (OPIM). The exposure determination is made without regard to the use of personal protective equipment (i.e. employees are considered to be exposed even if they wear personal protective equipment). The exposure determination must list all job classifications in which all employees may be expected to incur such occupational exposure, regardless of frequency.

In addition, OSHA requires a listing of job classification in which some employees may have occupational exposure. Since not all the employees in these categories would be expected to incur exposure to blood or OPIM, tasks or procedures that would cause these employees to have occupational exposure must also be listed in order to understand



clearly which employees in these categories are considered to have occupational exposure. The job classifications and associated tasks for these categories are as follows:

<u>Job classification</u>	<u>Task/Procedure</u>
Superintendents	Assist with treatment of injured persons on a voluntary basis

c. Implementation Schedule and Methodology:

OSHA requires that this plan include a schedule and method of implementation for the various requirements of the standard. The following complies with this requirement.

1. Compliance Methods

Universal precautions will be observed at this site in order to prevent contact with blood or OPIM. All blood or OPIM will be considered infectious, regardless of the perceived status of the source individual.

Engineering and work practice controls will be utilized to eliminate or minimize exposure to employees at this site. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be utilized. At this site, the following instructions are to be followed:

Use broom and dust pan to pick up broken glass, sharp tools, and other items contaminated with blood.

Any broken glassware that may be contaminated will NOT be picked up directly with hands.

The above controls will be examined and maintained on a regular schedule. The schedule for reviewing the effectiveness of the controls is as follows:

Ensure that a broom and dustpan are available prior to beginning work every day.



Hand washing facilities shall be made available to employees who incur exposure to blood or OPIM. These sites must be readily accessible after incurring exposure. *(If handwashing facilities are not feasible, the employer must provide either an antiseptic cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. If these alternatives are used, the hands are to be washed with soap and running water as soon as feasible. Employers who must provide alternatives to readily accessible handwashing facilities should list the location, tasks, and responsibilities to ensure maintenance of these alternatives.)*

Superintendent shall ensure that after the removal of personal protective gloves, employees wash their hands and any other potentially contaminated skin area immediately or as soon as feasible with soap and water.

Superintendent shall ensure that if employees incur exposure to their skin or mucous membranes, those areas shall be flushed with water as soon as feasible following contact.

2. Work Area Restrictions

In work area where there is reasonable likelihood of exposure to blood or OPIM, employees are not to eat, drink, apply cosmetics or lip balm, smoke, or handle contact lenses. Food and beverages are not to be kept in refrigerators, freezers, shelves, cabinets, or on counter tops where there is blood or OPIM.

3. Contaminated Equipment

Superintendent is responsible for ensuring that equipment which has become contaminated with blood or OPIM shall be examined prior to servicing or shipping, and shall be decontaminated as necessary unless the decontamination of the equipment is not feasible.

4. Personal Protective Equipment (PPE)

- **PPE Provision**



Superintendent is responsible for ensuring that the following provisions are met.

All PPE used at this site will be provided without cost to the employee. PPE will be chosen based on the anticipated exposure to blood or OPIM. The PPE will be considered appropriate only if it does not permit blood or OPIM to pass through or reach the employee's clothing, skin, eye, mouth or other mucous membranes under normal conditions of use and for the duration of the time while the protective equipment will be used.

Safety glasses, face shield, latex gloves, and liquid resistant coveralls if needed.

- **PPE Use**

Superintendent shall ensure that the employee uses appropriate PPE unless the supervisor shows that the employee temporarily and briefly declined to use PPE when, under rare and extraordinary circumstances, it was the employee's professional judgement that in the specific instance its use would have prevented the delivery of health care or posed an increased hazard to the safety of the employee or co-worker. When an employee makes this judgement, the circumstances shall be investigated and documented to determine whether changes should be instituted to prevent such occurrences in the future.

- **PPE Accessibility**

Superintendent shall ensure that appropriate PPE in appropriate sizes is readily accessible at the work site or is issued (without cost) to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to employees who are allergic to the gloves normally provided.

- **PPE Cleaning, Laundering and Disposal**



All PPE will be cleaned, laundered, and/or disposed of by the employer at no cost to employees. All repairs and replacements will be made by the employer at no cost to employees.

All garments that are penetrated by blood or OPIM shall be removed immediately, or as soon as feasible. All PPE shall be removed before leaving the work area. When PPE is removed, it shall be placed in an appropriately designated area or container for storage, laundering, decontamination or disposal.

- **Gloves**

Gloves shall be worn where it is reasonably anticipated that employees will have hand contact with blood, OPIM, non-intact skin, mucous membranes, and when handling or touching contaminated items or surfaces.

Disposable gloves used at this site are not to be washed or decontaminated for re-use, and are to be replaced as soon as practical when they become contaminated or if they are torn, punctured, or their ability to function as a barrier is compromised. Utility gloves may be decontaminated for re-use, provided that the integrity of the glove is not compromised. Utility gloves will be discarded if they are cracked, peeling, torn, punctured or show other signs of deterioration or when their ability to function as a barrier is compromised.

- **Eye and Face Protection**

Masks, in combination with eye protection devices such as goggles or glasses with solid side shields or chin length face shields must be worn whenever splashes, spray, splatter, or drops of blood or OPIM may be generated and eye, nose, or mouth contamination can be reasonably anticipated. The following situations at this site require such protection:

Lacerations to workers on various body parts.



- **Additional Protection**

Additional protective clothing (such as aprons, or similar outer garments) shall be worn when gross contaminate can reasonably be anticipated. The following situations at this site would require that such protective clothing be used.

Amputations from use of tools where excessive exposure to OPIM is expected.

5. Housekeeping

This site will be cleaned and decontaminated according to the following schedule:

<u>Area</u>	<u>Schedule</u>	<u>Cleaner</u>
Trailer	As needed	Water and bleach to remove OPIM

Decontamination will be accomplished by using bleach and water.

6. Other Regulated Waste

Other regulated waste shall be placed in containers that are closeable and constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping. The waste container must be labeled or color-coded and closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

NOTE: Disposal of all regulated waste shall be in accordance with all applicable federal, state and local regulations.

7. Laundry Procedures

Laundry contaminated with blood or OPIM will be handled as little as possible. Such laundry shall be placed in appropriately marked bags (biohazard labeled or color-coded red) at the location where it was used.



8. Hepatitis B Vaccine and Post-Exposure Evaluation and Follow-up

Safety Director shall make available the Hepatitis B vaccine series to all employees who have occupational exposure, and post-exposure follow-up to employees who have had an exposure incident. All medical evaluations and procedures including the Hepatitis B vaccine and vaccination series and post-exposure follow-up including prophylaxis are:

- a. Made available at no cost to employee
- b. Made available at a reasonable time and place
- c. Performed by, or under the supervision of, a licensed physician or other licensed healthcare professional
- d. Provided according to the recommendations of the US Public Health Service

Hepatitis B Vaccination

Safety Director is in charge of the Hepatitis B vaccination program. Thomas Construction Group is contracted with Wilmington Health to provide this service.

Hepatitis B (HB) vaccination will be made available after the employee has received training in occupational exposure (see "Information and Training" section), and within 10 working days of initial assignment to all employees who have occupational exposure unless: the employee has previously received the complete HB vaccination series; antibody testing has revealed that the employee is immune; or the vaccine is contraindicated for medical reasons.

Participation in a pre-screening program shall not be a prerequisite for receiving HB vaccination.

For employees who complete the HB vaccination series, antibody testing will be made available at no cost to the employee, one to two months after completion of the series, as recommended by the US Public Health Service.



Employees who decline the HB vaccination series shall sign the OSHA-required declination form indicating their refusal. Any employee who initially declines HB vaccination but later decides to accept vaccination while still covered by the standard, shall be provided the vaccination series as described above.

If, at a future date, the US Public Health Service recommend a routine booster dose of HB vaccine, such booster shall be made available.

Post-Exposure Evaluation and Follow-up

All exposure incidents shall be reported, investigated, and documented. When an employee incurs an exposure incident, it shall be reported to the Safety Director.

Following a report of an exposure incident, the exposed employee shall immediately receive a confidential medical evaluation and follow-up, including at least the following elements:

- a. Documentation of the route of exposure, and the circumstances under which the exposure incident has occurred. If the incident involves percutaneous injury from a contaminated sharp, appropriate information should be entered in the sharps injury log. (Must also be entered on the OSHA 300 form.)
- b. Identification and documentation of the source individual, unless it can be established that identification is infeasible or prohibited by state or local law; (Employers may need to modify this provision in accordance with local laws. Modifications should be listed here.)
- c. The source individual's blood shall be tested as soon as feasible, and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, Safety Director shall establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the blood (if available) shall be tested and the results documented.



- d. When the source individual is already known to be infected with HBV or HIV, testing for the source individual's HBV/HIV status need to be repeated.
- e. Results of the source individual's testing shall be made available to the exposed employee, and he employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

Collection and testing of blood for HBV and HIV serological status will comply with the following:

- a. The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained;
- b. The employee will be offered the option of having her/his blood collected for testing of the employee's HIV serological status. The blood sample will be preserved for up to 90 day to allow the employee to decide if the blood should be tested for HIV status.

Any employee who incurs an exposure incident will be offered post-exposure evaluation and follow-up will be provided by Medac Corporate Health.

Information Provided to the Healthcare Professional

Safety Director shall ensure that the healthcare professional (HCP) responsible for the employee's Hepatitis B vaccination is provided with a copy of the OSHA Blood borne Pathogens Standard (29 CFR 1910.1030.)

Safety Director shall ensure that the HCP who evaluates an employee following an exposure incident is provided with the following:

- a. A copy of the OSHA Blood borne Pathogens standard.
- b. A description of the exposed employee's duties as they relate to the exposure incident.



- c. Documentation of the route(s) of exposure and circumstances under which exposure occurred.
- d. Results of the source individual's blood testing, if available.
- e. All medical records relevant to the appropriate treatment of the employee, including vaccination status.

Healthcare Professional's Written Opinion

Safety Director shall obtain and provide the employee with a copy of the evaluating HCP's written opinion within 15 days of completion of the evaluation. For HBV vaccination, the HCP's written opinion shall be limited to whether vaccination is indicated for an employee, and the employee has received such vaccination.

For post-exposure follow-up, the HCP's written opinion shall be limited to the following:

- a. A statement that the employee has been informed of the results of the evaluation
- b. A statement that the employee has been advised of any medical conditions resulting from exposure to blood or OPIM which may require further evaluation or treatment

NOTE: All other findings or diagnosis shall remain confidential and shall not be included in the written report.

9. Labels and Signs

Superintendent will ensure that biohazard labels shall be affixed to containers of regulated waste. The universal biohazard symbol shall be used. Labels shall be fluorescent orange or orange-red, and shall be affixed as close as feasible to the container by string, wire, adhesive, or other method which prevents loss or unintentional removal. Red bags or containers may be substituted for labels.

Labels for contaminate equipment shall comply with the previous paragraph, and shall state which portions of equipment are contaminated.



10. Information and Training

Safety Director shall ensure that training is provided at the time of initial assignment to tasks where occupational exposure may occur, and that training is repeated within 12 months of the previous training. Training shall be tailored to the education and language level of the employee, and offered during the normal work shift. Training will be interactive, and will cover the following:

- a. A copy of the standard and an explanation of its contents.
- b. A discussion of the epidemiology and symptoms of blood borne diseases.
- c. An explanation of the modes of transmission of blood borne pathogens.
- d. An explanation of the organization's blood borne pathogens Exposure Control Plan (this program), and method for obtaining a copy.
- e. The recognition of tasks that may involve exposure.
- f. An explanation of the use and limitations of methods to reduce exposure, such as engineering controls, work practices and personal protective equipment (PPE).
- g. Information on the types, use, location, removal, handling, decontamination, and disposal of PPE.
- h. An explanation of the basis of selection of PPE.
- i. Information on the Hepatitis B vaccination, including efficacy, safety, method of administration, benefits and that it will be offered free of charge.
- j. Information on the appropriate actions to take and persons to contact in case of an emergency involving blood or OPIM.
- k. An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting and medical follow-up.
- l. Information on the evaluation and follow-up required after an employee exposure incident, particularly incidents which involve contaminated sharps.
- m. An explanation of the signs, labels, and color-coding system used to identify biohazards, regulated waste, and other BBP hazards.

The person conducting the training shall be knowledgeable in the subject matter.



Employees who have received training on blood borne pathogens in the 12 months preceding the effective date of this policy shall receive training only in provisions of the policy that were not covered in their previous training. Additional training shall be provided to employees when there are changes in tasks or procedures that affect occupational exposure.

11. Recordkeeping / Medical Records

Safety Directors is responsible for maintaining medical records as indicated below

Medical records shall be maintained in accordance with OSHA standard 29 CFR1910.1920. These records shall be kept confidential and must be maintained for the duration of employment plus 30 years. The records shall include the following:

- a. The employee's name and social security number
- b. A copy of the employee's HBV vaccination status, including the dates OR a signed declination form
- c. A copy of all results of examinations, medical testing (including post-vaccination antibody testing), and follow-up procedures
- d. A copy of the information provided to the healthcare professional, including a description of the employee's duties as they relate to the exposure incident, documentation of the route(s) of exposure, and circumstances of the exposure

12. Training Records

Safety Director is responsible for maintaining BBP training records. These records will be kept in safety office.

Training records shall be maintained for three years from the date of training, and shall document the following information.

- a. The dates of the training session
- b. An outline describing the material presented
- c. The names and qualifications of persons conducting the training



- d. The names and job titles of all persons attending the training sessions

13. Sharp's Injury Log

For cases that involve percutaneous injury from sharps, Safety Director is responsible for maintaining a Sharp's Injury Log. Information shall be entered on the log to protect the confidentiality of the injured employee. At a minimum, log entries shall document the following:

- a. The type and brand of device involved in the accident
- b. The department or work area where the incident occurred
- c. An explanation of how the incident occurred.

The Sharp Injury Log is required in addition to the OSHA 300 Log.

Availability

All employee records shall be made available to the employee in accordance with 29 CFR 1910.1020.

All employee records shall be made available to the Assistant Secretary of Labor for Occupational Safety and Health (OSHA) and the director of the National Institute for Occupational Safety and Health (NIOSH), or their representatives, upon request.

Transfer of Records

If this facility is closed and/or there is no successor employer to receive and retain the records for the prescribed period, the Director of NIOSH shall be contacted for final disposition.

14. Evaluation and Review

Safety Director is responsible for annually reviewing this program and its effectiveness, and for updating this program as needed. This review shall include and document:



- a. Consideration and implementation, where feasible, of commercially available safer medical devices designed to eliminate or minimize occupational exposure.
- b. Input from non-management direct care staff who are potentially exposed to injury from contaminated sharps on identification, evaluation and selection of engineering and work practice controls.

Hepatitis B Vaccine Declination

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccine series at no charge to me.

Employee's name (print)

Employee's signature

ECP Administrator signature

Date



Establishment/Facility Name: _____ Year 20__

Sharp's Injury Log

Date / Time	Report No.	Type of Device	Brand Name of Device	Work Area where injury occurred	Brief description of how injury occurred and what part of body was injured

Retain until: __/__/__ (which is five years after the end of the current calendar year).

You are required to maintain this Sharps Injury Log if the requirement to maintain an OSHA 300 log form applies to your company. See 29 CFR 1904 for details. The purpose of this Sharps Log is to aid in the evaluation of devices being used in healthcare and other facilities and to identify problem devices or procedures requiring additional attention and/or review. This Sharps Log must be kept in a manner which preserves the confidentiality of the affected employee(s).

Re: 29 CFR 1910.1030(h)(5).



1.06 Accident Reporting / Recordkeeping

Post-accident drug test is required within eight (8) hours of an accident.

All accidents must be reported to the Safety Director or the main office within 1 hour.

All eye, neck, back and knee accidents / injuries require immediate medical attention, no matter how minor.

Accident reports must be 100% complete and turned in to Safety Director within 24 hours of accident.

All accidents require:

- a. Company accident form
- b. First Report of Accident (specific state requirements)
- c. Drug test results

The company will maintain, at each job site and at the main office, an OSHA 300 form (log and summary or equivalent) of all recordable injuries and illnesses resulting in a fatality, hospitalization, lost workdays, medical treatment, and/or loss of consciousness.

Each recordable event will be entered no later than (5) five working days after receiving the information.

The previous year OSHA 300 summary (300A) shall be posted by February 1 and shall remain in place all year.

The OSHA 300, (log and summary), the OSHA 301, (supplementary record or company accident report), shall be retained for five years following the end of the year to which it relates.



OSHA reporting of accidents:

Effective January 1, 2016:

Within 8 hours after its occurrence, an employment accident which is fatal to one (1) or more employees. An accident which results in the hospitalization of one (1) or more employees shall be reported within 24 hours of accident, either orally or in writing, to the nearest OSHA Area Director. 1-800-321-OSHA (1-800-321-6742). In North Carolina call 1-800-625-2267 or 919-779-8560. In addition all amputations and loss of an eye or eyes must be reported within 24 hours.

1.07 Documentation

All documentation relating to the Safety and Health Manual will be kept up-to-date and filed in such a manner that it will be readily accessible. Project Managers and Superintendents are required to file all appropriate documentation in a timely manner with the Safety Director.

1.08 Subcontractor Selection

Safety and health performance will be one of the criteria used to select subcontractors. The safety and health guidelines outlined below will be used to evaluate subcontractors. Copies of the following must be submitted to Safety Director prior to starting work.

- a. 3 year EMR "Mod-Rate"
- b. Insurance Certificate
- c. Safety and Health Manual
- d. Substance Abuse Program
- e. SDS
- f. OSHA citation history

If a subcontractor does not have a Safety and Health Manual and a Substance Abuse Program, the subcontractor will be required to adopt, in writing, the Company's Safety and Health Manual.



1.09 Safety and Health Manual Revision

The Safety and Health Manual is a working document and will be revised and updated as necessary.

At a minimum, the Safety and Health Manual will be reviewed and updated on an annual basis.

1.10 Safety Library / Safety Bulletin Board

A "Safety Library" and "Safety Bulletin Board" will be established with an up-to-date, current copy of the Thomas Construction Group Safety and Health Manual in it.

A current copy of the OSHA standards will be in the "Safety Library" also.

Many other safety related items will be available on the "Safety Library" & "Safety Bulletin Board".

1.11 Distribution of the Safety and Health Manual

Up-to-date copies of the Safety and Health Manual will be available to all employees, subcontractors and vendors through the Safety Director.

In addition, Project Managers and Superintendents will have up-to-date copies of the Safety and Health Manual.



1.12 Subcontractor Disciplinary Action for Safety Violations

This policy is an Addendum to and compliments Article 17 Safety, paragraph 1.2 and Schedule E of the TCG subcontract.

Subcontractor companies and subcontractor employees violating Thomas safety policies or any OSHA standard that could result in injury, illness or death or other liability to Thomas Construction Group will be disciplined according to the following:

a. Critical Procedures

Thomas has established Safety Critical Procedures which are fall protection systems and use, confined space entry procedures, lack of electrical grounding systems without using a ground fault circuit interrupter, welding, cutting or use of any open flame without obtaining a hot work permit from the site superintendent and digging near underground utilities without following Thomas procedures for the same. Thomas has established a zero tolerance for these types of violations. This policy will be an attachment to every sub-contract for companies doing business with Thomas. Superintendents and project managers shall notify all subcontractors of these new procedures before contracts have been signed and for current subcontractors on all Thomas sites.

Any subcontractor employee observed violating any of these critical procedures will be expelled from the site permanently. The subcontractor employee's name and company shall be obtained by the Thomas superintendent and entered in an internal memo or the subcontractor safety citation form and sent to the site project manager or assistant project manager, Division VP and Thomas safety director. The site superintendent shall also investigate why the safety policy was violated that created the hazard and enter that information into the safety violation memo or citation form.



b. Other Safety Violations

Other safety violations by subcontractor employees such as not wearing proper Personal Protective Equipment (PPE) when required by site or tasks, lack of guarding on machinery, improperly constructed scaffolds that are not a fall hazard, ladders not labeled with load ratings or improper use of ladders, smoking in unauthorized areas of the site, damaged outer insulation on cords or tool cords, and other violations of Thomas safety policies or OSHA standards. This list of hazards is not all inclusive. Documentation for these offenses must be sent to subcontractor management.

Violations of these policies will result in a three-step discipline procedure as follows:

1st Offense—Written warning describing hazard category. Send Email to subcontractor management, APM, PM, Operations Manager, and Safety Director.

2nd Offense—Written warning describing number of offenses and suspension of subcontractor worker from site for 3 days. Subcontractor on site supervision may also be suspended or terminated from site. Use TCG Subcontractor Disciplinary Action form.

3rd Offense—Termination from all TCG sites. Documented re-training of subcontractor crew mandatory within 24 hours by subcontractor.

All offenses must be documented by superintendent and copied to APM, PM, Safety Director and Division VP. See Safety Orientation Package form 4.13A.



PART 2

JOB SPECIFIC WORK RULES



2.01 Abrasive Grinding

Abrasive wheel bench or stand grinders must have safety guards strong enough to withstand bursting wheels. [1926.303(b) & (c)(1)]

Adjust work rest on grinders to a clearance not to exceed 1/8 inch between rest and wheel surface. [1926.303(c)(2)]

Inspect abrasive wheels before mounting. [1926.303(c)(7)]

Always leave wheel in working condition for next user.

2.02 Access / Egress

Do not jump on or off equipment and/or vehicles.

Use only safe means of access / egress to and from work areas. Jumping from or to work areas is not allowed, nor is sliding down cables, ropes or guy-wires.

Keep all equipment, vehicles, footwear, access areas, etc. clean.

2.03 MEWPs/Mobile Elevated Work Platforms

Employees shall have adequate training and proper authorization prior to operating any MEWP Lift. [1926.453(b)(2)(ii)]

No TCG employee shall make modifications to MEWPs, without prior written approval from the manufacturer. This includes material holding attachments. [1926.453(a)(2)].

Effective March 1, 2020 the ANSI A-92 and A-94 standards for the manufacturer, use, training and maintenance of MEWPs, (boom lifts, scissors lift and bucket trucks) have changed dramatically. TCG has incorporated the ANSI A-92 and A-94 standards revisions into the Thomas Safety Manual policies and procedures which are briefly described as follows:



The ANSI A-92 and A-94 standards have changed equipment terminology, equipment design standards, safe use and planning, operators, supervisors, and occupants training and maintenance and repair personnel training.

Equipment Terminology:

Aerial Work Platforms (AWPs) are now known as Mobile Elevating Work Platforms, or MEWPs. The word “mobile” is important because it means that the equipment can be driven, either under its own power or by manual effort; it is not stationary. In previous standards, AWP were classified by product types, such as boom lifts, scissors lifts, bucket trucks and so on. In the new standards, MEWP classifications are made up of a combination of two key distinguishing descriptions:

1. A MEWP group
2. An associated MEWP type

A MEWP Group is determined by the platform location in reference to the equipment’s tipping line, which is either at the wheels or the outriggers.

A group A machine has a design that does not allow the main platform to extend beyond the tipping line. In other words, the platform does not go outside of the drive chassis envelope. A perfect example of a Group A would be a scissors lift.

Conversely, a Group B machine has a design that allows the platform to extend beyond the tipping line. A great example of a Group B machine would be an articulating or telescopic boom lift. Bucket trucks are also under this classification.

A MEWP Type is in reference to the equipment’s ability to travel:

- Type 1 – Traveling is allowed only with the MEWP in its stowed position
- Type 2 – Traveling with the work platform in the elevated position is controlled from a point on the chassis
- Type 3 – Traveling with the work platform in the elevated travel position is controlled from a point on the work platform



Type 2 MEWPs are not as common as the others.

An example of a Group A, type 1 MEWP would be a Genie AWP Super series manually-propelled lifts. The platform never extends beyond the tipping line, and the machine is designed to only be moved with the platform in the stowed position.

Trailer mounted booms are examples of Group B, type 1 MEWP. The platform is designed to extend beyond the tipping line, and the machines designed to only be moved with the platform in the stowed position.

An example of a Group A, type 3 MEWP would be electric or rough terrain scissors lifts. The main platform never extends beyond the tipping line, and machine travel is controlled from the platform controls.

Articulated and telescopic booms are examples of a Group B, Type 3 MEWP. The platform is designed to extend the tipping line, and machine travel is controlled from the platform controls.

Equipment Design Standards

In addition to the terminology and language changes in the new ANSI A92 and CSA B354 standards, the standards also include several big changes to the equipment itself:

- + Platform load sense (aka Overload System or Load Sense System)-All MEWPs are now designed to continuously check the weight in the platform and disable certain functions if the load is above the platform load limit.

- + Dynamic Terrain Sensing – Drive and certain boom functions will be disabled when out of their slope limit and functions are restricted only to those that safely return the machine to terrain that is within limits.

- + Indoor-only machines – Allows for the development of smaller, lighter-weight MEWPs bearing an “indoor only” rating because these MEWPs cannot be used in conditions where they might be subjected to any wind.



In addition to the changes described above, there are many other alterations including:

- +Toe guards on work platform entrances
- +Prohibited use of chain gates and flexible gates
- +Reduces lift and slower speeds on some models

Safe Use and Planning

TCG has developed a Safe Use Plan specific to MEWPs and consist of the following. Prior to renting and use of any MEWP on TCG sites the following must be completed by the superintendent and/or subcontractor supervision/competent person.

1. Perform a site risk assessment where the MEWPs will be used.
2. Proper selection, provision and use of a suitable MEWP and associated equipment.
3. Perform an assessment that the support surface is adequate to support the weight of the MEWP.
4. Schedule regular maintenance including owner inspections as needed.
5. Schedule any owner repairs as needed.
6. Remove MEWPs from service if safety equipment fails or controls don't operate properly.
7. Inform the operator of local site requirements and warn and provide the means to protect against identified hazards.
8. Have a trained and qualified supervisor to monitor the performance or the work of the operator and any occupants.
9. Prevent unauthorized use of the MEWPs.
10. Monitor safety of persons not involved in the operation of the MEWPs.

Risk Assessment and Rescue Planning

The risks associated with the task specific to MEWP operations is identified in the TCG JSSP for MEWP use. The JSSP for MEWP use is at end of this section and in Procore documents for each job. The JSSP identifies control measures, safe work practices, and rescue from height. TCG has developed a written rescue plan that will be carried out in the case of machine breakdown,



platform entanglement or fall from the platform. The rescue plan is also located in Procore documents and is part of our training program.

TCG superintendents and/or subcontractor supervision/competent persons shall insure all occupants of MEWPs have receive training that explains procedures to follow if the fall and await rescue or witness another worker's fall. The rescue plan limits the time that a properly restrained worker hangs suspended in air. The rescue plans include the following:

1. Self-rescue- by the person involved
2. Assisted rescue- by others in the work area
3. Technical rescue- by emergency services

Training (Operators, Supervisors, Superintendents)

All TCG personnel involved in the use and supervision of users of MEWPs shall be trained on the following:

- + TCG safety manual sections for MEWPs
- + The ANSI requirements for MEWPs
- + The rules, regulations and JSSPs for MEWPs
- + The rescue plan for occupants or ejected occupants of MEWPS
- + Proper selection of the correct MEWP for the work to be performed
- + Potential hazards associated with the use of MEWPs and the means to protect against identified hazards outlined in the MEWP JSSP
- + Have knowledge of the MEWP manufacturer's operating manual contents and manual is stored properly on the machine

Occupant Training

The MEWP operator must ensure that all occupants in the platform have a basic level knowledge to work safely on the MEWP and know the following:



- + The requirement to use fall protection and the location of fall protection anchors
- + Factors including how their actions could affect stability
- + Safe use of MEWP accessories they are assigned to use
- + Manufacturer's warnings and instructions
- + Site specific work procedures the occupants must follow related to the operation of the MEWP
- + Hazards related to the task at hand and their avoidance
- + At least one of the occupants must be provided with knowledge to operate the controls in an emergency where the operator cannot

Maintenance and Repair Personnel Training

TCG personnel are **not authorized** to perform any maintenance or repairs to rented or leased MEWP equipment. Should TCG purchase MEWP equipment in the future any authorized maintenance and repair personnel will be trained on the appropriate subject matter for those tasks.

In the case where a MEWP is rented, arrangements will be made by TCG or renting subcontractor to identify the entity that will be responsible for the inspections and maintenance activities described in the ANSI standard and owner's manual.

Owner Frequent inspections – Must be completed when the MEWP is put into service or has been out of service for three months.

Owner Annual inspections – Must be performed no later than 13 months after the previous annual inspection.

Daily pre-use inspections must be completed by the operator. These daily inspections must be documented by use of an inspection checklist for the appropriate make and model of MEWP. TCG superintendents are responsible to ensure these inspections have been completed by TCG personnel or subcontractor operators.



2.04 Air Tools

Secure pneumatic tools to hose in a positive manner to prevent accidental disconnection.

[1926.302(b)(1)]

Install and maintain safety clips or retainers on pneumatic impact tools to prevent attachments from being accidentally expelled. [1926.302(b)(2)]

The manufacturer's safe operating pressure for all fittings shall not be exceeded.

[1926.302(b)(5)]

All hoses exceeding ½ inch inside diameter require safety devices at the source of supply to reduce pressure in case of hose failure. [1926.302(b)(7)]

2.05 Compressed Air, Use Of

Compressed air used for cleaning purposes may not exceed 30 psi, and then only in conjunction with effective chip guarding and personal protective equipment. [1926.302(b)(4)]

Exceptions to 30 psi are allowed only for concrete form, mill scale, and similar cleaning operations. [1926.302(b)(4)]

The use of compressed air to clean off yourself or other workers is not allowed.

2.06 Compressed Gas Cylinders

Put valve protection caps in place before compressed gas cylinders are transported, moved or stored. [1926.350(a)(1)]

Cylinder valves will be closed when work is finished and when cylinders are empty or being moved. [1926.350(a)(8)]

Compressed gas cylinders shall be secured by a cart, chain, etc. at all times. [1926.350(a)(7)]



Keep cylinders at a safe distance, or shield from welding or cutting operations and place where they cannot become part of an electrical circuit. [1926.350(b)(1)&(b)(2)]

Oxygen and fuel gas cylinders (in storage), shall be separated by a five - foot high non - combustible wall. The wall must have a fire resistance rating of at least one - half hour or a 20-foot separation. [1926.350(a)(10)]

Oxygen and fuel gas regulators must be in proper working order while in use. [1926.350(h)]

2.07 Concrete and Masonry Construction

No construction loads shall be placed on the structure until the structure is capable of supporting the load. [1926.701(a)]

No employee shall work under concrete bucket while the bucket is being elevated or lowered into position. [1926.701(e)(1)]

Only authorized employees shall be allowed in the "limited access zone" of masonry walls construction. [1926.706(a)(1)-(5)]

All protruding reinforced steel onto and into which employees could fall shall be guarded to eliminate the hazard of impalement. [1926.701(b)]

2.08 Confined Spaces

All employees required to enter into confined or enclosed spaces must be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of required protective and emergency equipment. The employer shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas. Confined or enclosed spaces include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines and open top spaces more than 4 feet deep, such as pits, tubs, vaults, and vessels. [1926.21(b)(6)(i) and (ii)]



2.09 **Cranes**

All manufacturer specifications and limitations must be adhered to. [1926.550(a)(1)]

All equipment shall be inspected, by a competent person, prior to use. [1926.550(a)(5)]

Accessible areas of the "swing radius" shall be barricaded to prevent employees from being struck or crushed by the crane. [1926.550(a)(9)]

The use of a crane to hoist employees is prohibited. [1926.550(g)(2)]

2.10 **Drinking Water**

An adequate supply of potable water shall be provided in all places of employment.
[1926.51(a)(1)]

Potable water containers shall be capable of being tightly closed and be equipped with a tap.
[1926.51(a)(2)]

The common drinking cup is prohibited. Cup dispensers and disposable cups shall be provided.
[1926.51(a)(4)]

A sanitary container for unused cups and a receptacle for used cups shall be provided.
[1926.51(a)(5)]

2.11 **Electrical - General**

All 120-volt, single phase, 15- and 20- ampere receptacles must be protected by G.F.C.I.
[1926.404(b)(1)(ii)]



All extension cords shall be inspected daily, prior to use, for damage or defects.
[1926.404(b)(1)(iii)(C)]

Continuity test shall be conducted on all extension cords, generally every three months
[1926.404(b)(1)(iii)(D)&(E)]

Temporary lights shall not be suspended by their cords. [1926.405(a)(2)(ii)(F)]

Workspaces, walkways and similar locations shall be kept clear of cords. [1926.416(b)(2)]

All extension cords must be 3 - wire type, protected from damage, and not fastened with staples, hung from nails or suspended from wires. [1926.416(e)(2)] & [1926.405(a)(2)(ii)(J)]

No cord or tool with a damaged ground plug shall be used. [1926.404(b)(iii)(c)]

Splices must be soldered wire connections with insulation equal to the cable. [1926.403(e)]

Worn or frayed cables may not be used. [1926.416(e)(1)]

Cables passing through work areas will be covered or elevated to protect from damage. Boxes with covers for the purpose of disconnecting must be securely and rigidly fastened to mounting surface.

No employee may work in proximity to any electric power circuit that may be contacted during the course of work, unless protected against electric shock by de-energizing circuit and grounding it or by guarding with effective insulation. [1926.416(a)(1)]

In work areas where exact location of underground electric power lines is unknown, workers using bars or other hand tools, which may contact lines must wear insulated protective gloves.
[1926.416(a)(2)]



2.12 Employee / Subcontractor Conduct

No "catcalling" and/or any form of sexual harassment will be tolerated.

Willful destruction of company property, (i.e., cutting back-up alarm wires or seatbelts) may result in immediate dismissal.

Any employee caught stealing anything, will be terminated.

2.13 Excavation and Trenching (also see section 2.51)

The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations, that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation. [1926.651(b)]

Utility companies or owners shall be contacted within established customary local response times, advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation. When utility companies or owners cannot respond to a request to locate underground utility installations within 48 hours (unless a longer period is required by state or local law), or cannot establish the exact location of these installations, the company may proceed, provided the company does so with caution, and provided detection equipment or other acceptable means to locate utility installations are used. [1926.651(b)(2)]

When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means. While the excavation is open, underground installation shall be protected, supported or removed as necessary to safeguard employees. [19226.651(b)(3)&(b)(4)]

Each employee in an excavation shall be protected from cave-ins by an adequate protective system except when excavations are made entirely in stable rock; or excavations are less than five feet in depth and examination of the ground by a competent person provided no indication of a potential cave-in. [1926.652(a)(1)]



Protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied and/or transmitted to the system. [1926.652(a)(2)]

A copy of the tabulated data for excavation protective systems must be maintained at the job site during construction. [1926.652(c)(3)(iii)]

Employees shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least two feet from the edge of the excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary. [1926.651(j)(2)]

Daily inspections of excavations, the adjacent areas and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by a competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard-increasing occurrence. These inspections are only required when employee exposure is anticipated. [1926.651(k)(1)]

Where a competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety. [1926.651(k)(2)]

A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are four feet or more in depth so as to require no more than 25-feet of lateral travel for employees. [1926.651(c)(2)]

Where employees or equipment are required or permitted to cross over excavations, walkways or bridges with standard guardrails shall be provided. [1926.651(l)] & [1926.501(b)(7)]

Excavations over 20'-0" must be engineered by a registered engineer prior to excavation.



2.14 Explosives and Blasting

Permits must be obtained prior to blasting.

Only authorized and qualified persons shall be permitted to handle and use explosives.
[1926.900(a)]

Explosive material shall be stored in approved facilities required under the applicable provisions of the Bureau of Alcohol, Tobacco, and Firearms regulations contained in 27 CFR Part 55, Commerce in Explosives.

Smoking and open flames shall not be permitted within 50 feet of explosives and detonator storage magazines. [1926.904(c)]

Procedures that permit safe and efficient loading shall be established before loading is started.
[1926.905(a)]

2.15 Eye and Face Protection

Eye and face protection must be worn when machines or operations present potential eye or face injury. [1926.102(a)(1)]

Employees involved in welding operations must wear filter lenses or plates of the proper shade number. [1926.102(b)(1)]

Employees exposed to laser beams shall be furnished suitable laser safety goggles, which will protect for the specific wavelength of the laser and be optical density (O.D.) adequate for the energy involved. [1926.102(b)(2)]

Eye and face protective equipment shall meet all requirements of ANSI Z 87.1-1968, "Practice of Occupational and Educational Eye and Face Protection". [1926.102(a)(2)]



Goggles will be worn over any employee owned prescription glasses that do not meet ANSI safety standards. (ANSI 287.1 or OSHA 1926.102A3)

2.16 Fall Protection (also see Section 2.32.H)

Where employees are exposed to falling 6 feet or more from an unprotected side or edge, the employer must select and use a guardrail system, safety net system, or a personal fall arrest system to protect the worker from falls. [1926.501(b)(1)]

A personal fall arrest system consists of an anchorage, connectors, body harness and may include a lanyard, a deceleration device, lifeline or a suitable combination of these. [1926.500(b)] & [1926.502(d)]

Each employee in a hoist area shall be protected from falling 10 feet or more on scaffolds by guardrail systems or personal fall arrest systems. If guardrail systems (or chain gate or guardrail) or portions thereof must be removed to facilitate hoisting operations, as during the landing of materials, and a worker must lean through the access opening or out over the edge of the access opening to receive or guide equipment and materials, that employee must be protected by a personal fall arrest system. [1926.501(b)(3)]

Personal fall arrest systems, covers, or guardrail systems must be erected around holes (including skylights) that are more than 6 feet above lower levels. [1926.501(b)(4)]

Each employee at the edge of an excavation 6 feet deep or more shall be protected from falling by guardrail systems, fences, barricades, or covers. Where walkways are provided to permit employees to cross over excavations, guardrails are required on the walkway if it is 6 feet or more above the excavation. [1926.501(b)(7)]

Each employee using ramps, runways, and other walkways shall be protected from falling 6 feet or more by guardrail systems. [1926.501(b)(6)]

Each employee performing overhand bricklaying and related work 6 feet or more above lower levels shall be protected by guardrail systems, safety net systems, or personal fall arrest systems, or shall work in a controlled access zone. All employees reaching more than 10 inches below



the level of a walking / working surface on which they are working shall be protected by a guardrail system, safety net system, or personal fall arrest. [1926.501(b)(9)]

Each employee engaged in roofing activities on low-slope roofs with unprotected sides and edges shall be protected from falling by guardrail, safety net, or personal fall arrest systems or a combination of the following:

- Warning line system and guardrail system
- Warning line system and safety net system
- Warning line system and personal fall arrest system, or
- Warning line system and safety monitoring system. [1926.501(b)(10)]

On low-slope roofs 50 feet or less in width, the use of a safety monitoring system without a warning line system is permitted. [1926.501(b)(10)]

Each employee on a steep roof with unprotected sides and edges 6 feet or more above lower levels shall be protected by guardrail systems with toe boards, safety net systems, or personal fall arrest systems. [1926.501(b)(11)]

2.17 Fire Protection

A fire protection program is to be followed throughout phases of the construction and demolition work involved. It shall provide for effective firefighting equipment to be available without delay, and designed to effectively meet all fire hazards as they occur. [1926.150(a)(1)]

Firefighting equipment shall be conspicuously located and readily accessible at all times, and periodically inspected and maintained in operating condition. [1926.150(a)(2) through (a)(4)]
Report any inoperative or missing equipment to your superintendent / foremen.

Carbon tetrachloride and other toxic vaporizing liquid fire extinguishers are prohibited.
[1926.150(c)(1)(vii)]



Fire extinguishers, rated not less than 2A, will be provided for each 3,000 square feet of building area (or major fraction). Travel distance from any point to the nearest fire extinguisher may not exceed 100 feet. [1926.150(c)(1)(i)]

Fire extinguishers should be mounted 48" to 60" off the floor.

2.18 Flag Personnel

When signs, signals, and barricades do not provide necessary protection on or adjacent to a highway or street, flag personnel or other appropriate traffic controls shall be provided. [1926.201(a)(1)]

Flag personnel shall wear a red or orange warning garment while flagging. Warning garments worn at night will be reflectorized material. [1926.201(a)(4)] & [1926.651(d)]

2.19 Flammable and Combustible Liquids

No more than 25 gallons shall be stored in a room outside of an approved storage cabinet. [1926.152(b)(1)]

Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids. [1926.152(a)(1)]

All containers must be labeled with appropriate hazardous warnings. Keep flammable liquids in closed containers when not in use.

Post conspicuous and legible signs prohibiting smoking in service and refueling areas. [1926.152(g)(9)]

No smoking within 25' of any fuel storage and/or fueling operations.



2.20 Foot Protection

Employees shall wear shoes or boots that give ankle support and that have a hard sole. Steel or composite toe boots are not required except in special operations.

No sneakers, tennis shoes, crocs or other open toed or heeled shoes are permitted on active construction sites.

2.21 Gases, Vapors, Fumes, Dusts, and Mists

Exposure to toxic gases, vapors, fumes, dusts, and mists at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970" of the ACGIH, shall be avoided. (American Conference of Government Industrial Hygienists) [1926.55(a)]

When engineering and administrative controls are not feasible to achieve full compliance, protective equipment or other protective measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed. Any equipment and technical measures used for this purpose must first be approved for each use by a competent industrial hygienist or other technically qualified person. [1926.55(b)]

2.22 Hand Tools

Employers shall not issue or permit the use of unsafe hand tools. [1926.301(a)]

Wrenches shall not be used when jaws are sprung to the point slippage occurs. Keep impact tools free of mushroomed heads. Keep wooden tool handles free of splinters or cracks and assure a tight connection between the tool head and the handle. [1926.301(b),(c) & (d)]

Electric - power operated tools shall either be approved double insulated or be properly grounded, and used with ground fault circuit interrupters. [1926.302(a) & 1926.404(b)(1)]



2.23 Hard Hats

Hard hats will be worn 100% of the time on the jobsite at the TCG Superintendent's discretion. Hard Hats shall be worn as designed.

Hard hats will be worn 100% of the time when off equipment and/or out of vehicles for equipment operators.

Employees working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock or burns, shall be protected by protective helmets. [1926.100]

2.24 Hearing Protection

When engineering or administrative controls fail to reduce sound levels within the limits of Table D-2, ear protective devices shall be provided and used. [1926.52(b) & 1926.101(a)]

In all cases where sound levels exceed the values shown in Table D-2 of the Safety and Health Manual, a continuing, effective hearing conservation program shall be administered. [1926.52(d)(1)]

Table D-2 Permissible Noise Exposure

Duration Per Day, Hours	Sound Level DBA Slow Response
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
½	110
¼ or less	115



Plain cotton is not an acceptable protective device. [1926.101(c)]

2.25 Heating Devices, Temporary

When heating devices are used, fresh air shall be supplied to maintain the safety and health of employees. [1926.154(a) (1)]. Only propane or natural gas heaters are allowed on TCG sites. Carbon monoxide monitors must be mounted in area where these types of heaters are used to detect high levels of CO. Propane cylinders inside and outside of buildings must be secured. Only one cylinder per heater is allowed in buildings. Heaters can only be used during working hours and never left on during night unless there is an active fire watch all night.. Use of these heaters must be noted in the emergency action plan for the site.

Solid fuel salamanders are prohibited. [1926.154(d)]

2.26 Housekeeping / Clean-up

Clean up every day all areas, including but not limited to, jobsite, vehicles, shop, office, equipment, tools, etc.

Scrap lumber and other debris will be kept clear from work areas at all times. [1926.25(a)]

Remove combustible scrap and debris at regular intervals. [1926.25(b)]

Containers will be provided for collection and separation of all refuse. Covers are required on containers used for flammable or harmful substances. [1926.25(c)]

At the end of each phase of work, return all tools and excess material to proper storage. Clean up all debris before moving on to the next phase. Each employee is responsible for keeping their work areas clean.

All vehicles and/or equipment must be free of loose debris, dirt, mud, etc., before operation on public roads.



Whenever materials and/or trash are dropped more than 20 feet, an enclosed chute shall be used. [1926.252(a)]

Nails shall be withdrawn from used lumber. [1926.250(b)(8)(i)]

2.27 Lasers

Only qualified and trained employees shall be assigned to install, adjust and operate laser equipment. [1926.54(a)]

"Laser in Use" signs shall be posted at all times lasers are in operation. [1926.54 (d)]

2.28 Ladders

Portable and fixed ladders with broken or missing rungs or steps, broken or split side rails, or with other faulty or defective construction are prohibited. When ladders with such defects are discovered, withdraw them from service immediately. [1926.1053(b)(16)]

Place portable ladders on a substantial base at a 4-1 pitch, have clear access at top and bottom, extend a minimum of 36 inches above landing or, where not practical, provide grab rails. Secure against movement while in use. [1926.1053(b)(1) thru (b)(7)]

Portable metal ladders may not be used for electrical work or where they may contact electrical conductors. [1926.1053(b) (12)]

Portable ladders must be secure.

All employees working in a trench, four feet or more in depth, must be within 25 feet of a ladder, ramp, or stairs. [1926.651(c)(2)]

Job-made ladders will be constructed for their intended use. Rungs and/or cleats will be uniformly spaced, no more than 12 inches, apart. [1926.1053(a)(3)(i)]



No ladders shall be used in a horizontal position as platforms, runways, or scaffolds. Extension ladders must be retracted before transporting.

All ladders must be secured top and bottom. Always face ladders when going up or down.

Materials and tools should be hoisted up or down ladders with a rope, cable or other safe hoist.

Never use the top or next to the top step of a stepladder.

2.29 Lighting

Construction area, ramps, walkways, corridors, offices, shops, sheds and storage areas shall be adequately lighted. [1926.56(a)]

Additional lighting and maintenance of lighting shall be provided at all stairways, aisle ways, and entry / exit areas. Minimum of 5 foot candles of light is required on all construction sites.

2.30 Liquefied Petroleum Gas

Each system shall have containers, valves, connectors, manifold valve assemblies, and regulators of an approved type. [1926.153(a)(1)]

All cylinders shall meet DOT specifications. [1926.153(a)(2)]

Every container and vaporizer shall be provided with one or more approved safety relief valves or devices. [1926.153(d)(1)]

Containers shall be placed upright on firm foundations or otherwise firmly secured. [1926.153(g) & (h)(11)]

Portable heaters shall be equipped with an approved automatic device to shut off the flow of gas in the event of flame failure. [1926.153(h)(8)]



Cylinders shall be equipped with an excess flow valve to minimize the flow of gas in the event the fuel line becomes ruptured. [1926.153(i)(2)]

Storage of LPG within buildings is prohibited. [1926.153(j)]

Storage locations shall have at least one approved portable fire extinguisher, rated not less than 20-b:c. [1926.153(L)]

2.31 Motor Vehicles and Construction Equipment

Check all vehicles in use at the beginning of each workday to assure all parts, equipment and accessories affecting safe operation are in proper operating condition and free from defects. All defects shall be corrected before placing vehicle in service. [1926.601(b)(14)]

No employee shall use any motor vehicle, earthmoving, or compacting equipment having an obstructed view to the rear unless:

- Vehicle has a reverse signal alarm distinguishable from the surrounding noise level, **or**
 - Vehicle is backed up only when an observer signals it is safe to do so.
- [1926.601(b)(4)]

Willful destruction of company property (such as cutting back-up alarm wires or seatbelts) shall result in immediate dismissal.

Heavy machinery, equipment, or parts thereof, which are suspended or held aloft will be substantially blocked to prevent falling or shifting work under or between them.

[1926.600(a)(3)(i)]



2.32 Personal Protective Equipment

2.32A Introduction

Devising an employee safety program that eliminates injuries and illnesses is as important in the workplace as creating a quality product or service. Most employers know that improved morale and lower workers' compensation costs are just two of the many benefits of having good safety programs. Such programs should include procedures for the elimination of injuries and illnesses through the use of personal protective equipment. This guide provides information that will help employers implement or enhance their companies' safety plans regarding PPE.

Remember, it is the employer's responsibility to see that employees have, and use, personal protective equipment. If there's an accident, the employer is typically held responsible for any injuries that should have been avoided by the use of personal protective equipment by an employee. It is also important to keep all PPE in sanitary and reliable condition. If a protective device fails due to being in poor condition, the employer is usually cited under OSHA regulations. Employers should make sure that their employees know how to properly use the PPE they are expected to wear.

General industry and construction standards require that personal protective equipment be provided to and used by employees whenever workplace hazards are encountered that could injure or impair any part of the body. Some requirements provide for the head, face, eyes and feet. Others explain when fall protection devices are required. When purchasing PPE, consult the OSHA standards to be sure that the equipment being bought satisfies the requirements in the standards. Particular standards also require that employees be allowed a choice of PPE devices. Personal protective equipment should not be used as a substitute for engineering, work practice and/or administrative controls. PPE should be used in conjunction with these controls to provide for employee safety and health in the workplace. PPE includes all clothing and other work accessories designed to create a barrier against workplace hazards. The basic element of any management program for personal protective equipment should be an in-depth evaluation of the equipment needed to protect against the hazards at the workplace. Management dedicated to employee safety and health should use that evaluation to set a standard operating procedure



for personnel, then train employees on the protective limitations of the selected PPE, as well as its use and maintenance.

Using PPE requires hazard awareness and training on the part of the user. Employees must be aware that the equipment does not eliminate the hazard. If the equipment fails, exposure will occur. To reduce the possibility of failure, equipment must be properly fitted and maintained in a clean and serviceable condition.

Selection of the proper PPE for a job is important. Employers and employees must understand the equipment's purpose and its limitations. The equipment must not be altered or removed even though an employee may find it uncomfortable. (Sometimes equipment may be uncomfortable simply because it is not sized properly for the individual.)

This booklet discusses those types of equipment most commonly used for protection of the head, including eyes and ears, and torso, arms, hands and feet. The use of equipment to protect against life-threatening hazards is also discussed.

Hazard Assessment and Training

Employers are required to assess the workplace to determine if hazards that require the use of PPE are present or are likely to be present. If hazards or the likelihood of hazards are found, employers must select and have the affected employees use properly fitted PPE suitable for protection from these existing hazards.

Employers must certify in writing that a workplace hazard assessment has been performed. See the JSSP for each site. Defective or damaged personal protective equipment shall not be used.

Before doing work which requires the use of PPE, employees must be trained to know when PPE is necessary; what type is necessary; how it is to be worn; and what its limitations are, as well as know its proper care, maintenance, useful life and disposal.

Employers are required to certify in writing that training has been carried out and that employees understand it. Each written certification shall contain the name of each employee trained, the date(s) of training and identify the subject certified.



Workplace Hazard Control Program

An effective PPE program is an important part of an overall workplace hazard control program. An effective program is a product of a partnership between the employer and employees. It is a joint venture. Employees must know that it is part of their duty to look for and report workplace hazards on a daily basis.

The workplace hazard control program focuses not only on hazards addressed by OSHA standards but also on hazards not specifically covered by these standards. The program can be thought of as a plan for:

- Recognizing hazards
- Evaluating hazards
- Controlling hazards

Recognizing Hazards

Recognizing hazards does not result from happenstance. It results from a formal, systematic plan founded upon employee training. Some hazards, like unguarded machinery in a metal stamping shop, are peculiar to the workplace. Others, such as fire hazards, are of a general nature. But hazards of any nature can go undetected unless employees are trained to recognize them.

Insurance companies, private safety consultants and government agencies can help employers learn about hazards that may result from the nature of the work being conducted and about hazards common to all workplaces. From that beginning, employees can be trained to recognize hazards.

Evaluating Hazards

The ability to recognize hazards must be applied to the workplace in the form of periodic inspections and monitoring. The total plant site should be inspected at least annually. Many workplace areas require monthly, weekly or even daily inspections. A written record of these



inspections needs to be kept. There should be a standard procedure to follow up the inspections to ensure deficiencies are corrected.

Special testing equipment may be required for particular hazards. The equipment should be maintained and properly calibrated. Employees who operate testing equipment must be trained to use it and to interpret the findings.

Work practices must also be evaluated for hazards. Approved work practices should always be reviewed when new machinery, a new operator or a different procedure is introduced to the operation. Particular standards require ongoing hazard evaluation. The standard regarding the control of hazardous energy (lockout/tagout) during machine repair or maintenance is one example.

Controlling Hazards

There may not be a single best way to eliminate (control) hazards. Three approaches to the control of workplace hazards are through:

- Engineering controls
- Administrative controls
- Personal protective equipment

Engineering controls should be used first. Administrative controls should be used second. Personal protective equipment may be used in conjunction with engineering and administrative controls. For example, a machine could have excellent guarding at the point of operation (engineering controls), yet eye protection (PPE) may be required while the machine is being operated.

Examples of Engineering Controls

A classic example of eliminating hazards through engineering controls is machine guarding. Eliminating possible ignition sources near operations where potential explosive vapors could be present is an engineering control. Enclosures for electrical hazards and ventilation equipment for respiratory hazards are engineering controls.



Examples of Administrative Controls

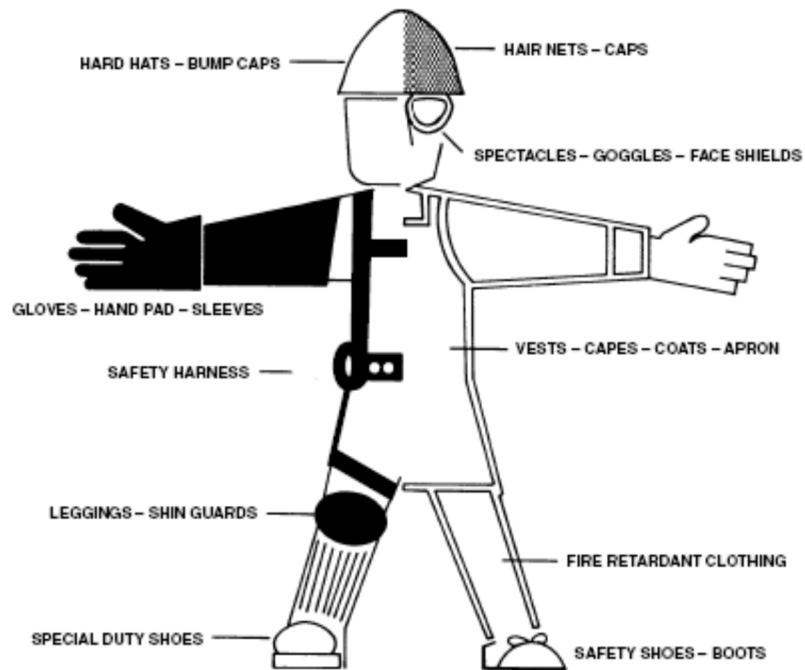
Administrative controls are used if engineering controls will not work or if they only partially work. This method involves limiting employee exposure to hazards by administratively controlling work schedules. Exposure to excessive heat, where cooling is not feasible or equipment has failed, could be controlled by limiting the time an employee spends working in that area. Administrative controls may also be necessary during emergencies or unusual situations. Since they are not as effective as engineering controls, administrative controls should be avoided in most situations.

Examples of Personal Protective Equipment

Figure 1 illustrates PPE to protect the body, head, eyes, face, hands and feet. It is safety equipment designed to be worn or attached to the body. Fall protection devices and equipment to protect employees against drowning are also considered PPE. PPE offers protection that engineering and administrative controls cannot offer. In some operations PPE may be the only available protection for the employee. It is only proper to consider PPE as an adjunct to other means of controlling hazards. Remember, use engineering controls first and PPE as an additional workplace hazard control method.



Figure 1
Personal Protective Equipment



Personal Protective Equipment—Selection, Use, and Maintenance Selection

The workplace hazard control program should identify areas and operations that require PPE. OSHA and North Carolina occupational safety and health standards require PPE (and its use) in specific instances. The employer is responsible for knowing which standards apply to its workplace. Management's consultation with employees will identify even more instances where PPE would enhance workplace safety. A management employee team approach creates a positive atmosphere regarding the PPE and its use.

Funds should be budgeted for the procurement, maintenance and replacement of PPE. When the employer orders PPE, specific standard requirements should be included in the purchase order (see 29 CFR 1910.133(b)(1)). To illustrate this necessity, eye and face protection devices are required by OSHA standards to be designed, constructed and tested in accordance with American National Standards Institute Z87.1-1989. Hard hat protection (29 CFR 1910.135) must meet the requirements and specifications of ANSI Z89.1-1986. Be sure to consult the OSHA standards for applicable requirements before ordering PPE. Never purchase inferior PPE just because it is less expensive.



For specific sources of PPE, manufacturers' catalogs, safety equipment supply catalogs and trade literature can be referenced. Another very good information source is the annual March safety equipment issue of *Safety and Health* magazine published by the National Safety Council (Chicago, Ill.).

Use and Maintenance

Employees have a responsibility to use the PPE and to keep the equipment clean and in reliable condition. Whenever the PPE is damaged or is not safe to be used, employees should be encouraged to turn in the old PPE item for a new one. When use of the PPE is required by company policy, employees must be made aware of the price for failing to adhere to the policy. The policy should be enforced with consistency and fairness.

It may be necessary to include on the inventory PPE for emergency situations. Each employee should be issued his or her own PPE. Personal protective equipment should not be thought of as "community property." PPE such as safety shoes, eye protection and hard hats should also be fitted to the individual. When PPE is properly fitted, it is more comfortable and is more likely to be used.

It is vitally important that the employee be trained in the proper use and care of the PPE. Both initial and refresher training is essential. Refresher training should be conducted at least annually.

2.32B Body Protection

This part addresses body protection against operational, environmental and mechanical (but not chemical) hazards. Personal protective vests, aprons, coats, pants, coveralls and suits are available in a wide range of materials and for numerous purposes. The type of PPE for body protection and the selection of proper material should result from the workplace hazard control program. Accident investigations and analyses of injuries may also suggest the need for types of body PPE.



Requirements

OSHA standards require that protective clothing be provided, used and maintained in a sanitary and reliable condition wherever it is necessary due to hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact (see 29 CFR 1910.132(a) and 29 CFR 1926.28(a)). Purchasers of body protection PPE should reference appropriate standards on purchase requests.

Once the PPE is in use it must be maintained in reliable condition. If employees are permitted to use their own PPE, the employer must nonetheless make certain that the PPE is adequate and properly maintained. Body protection PPE should be part of the overall inspection program and included in inspection checklists.

Cooling Vests and Suits

Personal cooling vests and suits are available for wear in operations involving extreme heat conditions. One design requires the use of a supplied air system. The air enters the vest or coverall through a tube in which it is cooled by as much as 40 degrees. The cooled air is channeled out over the upper torso and around the neck area when only the vest is being used. When the coverall or full body cooling type of PPE is used, the cooling air is also channeled to the leg and arm areas.

There is also a type of body cooling system that does not require an electrical, air or water supply. This vest is made of durable flame-resistant cotton shell fabric. Sewn underneath the outer shell are layers of light metallic insulation that reflect radiant heat outward and cooling inward toward the body. Pouch-like areas are accessible for quick and easy installation of segmented, semi-frozen gel cooling packets. These gel packs, often referred to as plastic ice, provide approximately twice the cooling effect of the same volume of water ice. The gel packs will not leak, even if punctured. They can be refrozen overnight in an ordinary freezer.

Other systems use supplied cooling air and a manifold system of tubes to channel the cool air to the body extremities. Outer surfaces are frequently made of aluminum or other heat-reflective material, depending on the type and source of the heat conditions.



Foul Weather Gear

Rain gear is available in coats or combination bib overall and jackets. Different types of materials are available to match the needs of the user. Common rain gear materials include PVC coatings on polyester or nylon fabric. For lightweight gear single-ply, 20-mil PVC is available. For heavy duty, a heavy-weight nylon netted material coated on both sides with a premium grade of 35-mil flame resistant PVC (or equivalent) may be used. Another combination is rubber on cotton material. This provides a material that resists aging and abrasion and remains flexible in cold weather.

Cold weather gear is available from many sources including sporting goods, catalog and clothing stores. The most common material used for cold outdoor work is the ten- and twelve-ounce cotton duck shell with a variety of lining insulation material. One of the more common lining insulations is polyester fiberfill. It is lightweight and moisture-resistant and has superior insulation qualities. Outer shell material is also available in water- and wind-repellant nylon twill. This material is lightweight but not as rugged as the cotton duck. Water-repellant cotton duck material is also available, but generally it must be retreated after washing. For extremely cold environments one fabricator uses wind-tight nylon duck material with polyester fiber insulation and a tight weave nylon lining. For durability in cold weather gear, look for construction with triple-stitched main seams and riveted stress points (e.g., at the pockets).

Knife Cutting Protection

Workers may be required to perform operations involving the use of sharp knives. Stainless steel mesh material may be used to protect these employees. In many cutting and trimming operations, mechanical guarding is not feasible and body exposure to cuts is a concern. Metal mesh aprons are available for such tasks. Hand, wrist and arm protection garments are also available. These products are comfortable to wear and provide the user freedom of movement. Sizes are available for all body types. Adjustable shoulder and waist straps assure the user a snug fit. Whereas these types of garments are cut resistant, they are not puncture proof. They should not be used with high speed or serrated blades.



High Visibility Vests

High visibility vests are available for workers involved in traffic control. These vests may also be required in operations where key personnel location is crucial. These vests are generally a high visibility orange. Vests can be procured with reflective trim, which offers greater day and night visibility. The vests may be made of solid vinyl, PVC coated polyester or nylon. The garment may be knit or flat mesh, solid or perforated, or nylon mesh. Other features can include hook and loop or snap front closure, webbing or elastic side closures, and reflective and/or luminescent vertical or horizontal stripes.

Flotation Vests

OSHA standard 29 CFR 1926.106(a) requires that employees working over or near water, where the danger of drowning exists, be provided U.S. Coast Guard approved life jackets or buoyant work vests. These vests are available as flotation pads inside high visibility international orange nylon shells or as vinyl coated flotation pads of international orange. The flotation vests must be U.S. Coast Guard approved.

Welding and High Heat

Coveralls, jackets, pants and aprons are available for operations involving high heat or molten metal splashes. Leather is the traditional protective material for many welding operations. Where there is exposure to radiant heat as well as molten metal splashes, aluminized garments may be used. They reflect up to 95 percent of the radiant heat. Flame-resistant cotton coveralls designed for comfort as well as protection are sometimes preferred. Whatever the type of clothing used for welding operations, it should not have external pockets or cuffs.

Fabrics of silica, ceramic and fiberglass eliminate the need for asbestos and are now available for welding operations. These fabrics are available in many combinations of color and weight. The fabrics are functional over a temperature range of 700 F to 2,000 F.



2.32.C Head Protection

Preventing head injuries is an important goal of every safety program. A survey by the U.S. Bureau of Labor Statistics of on-the-job accidents and injuries noted that most workers who suffered impact injuries to the head were not wearing head protection when the accident occurred. The majority of workers were injured while performing their normal jobs at their regular work stations.

The survey showed that in most instances where head injuries occurred, employers had not required their employees to wear head protection. According to the report, in almost half of the accidents involving head injuries, employees did not know of any measures taken by the employers to prevent such injuries from occurring. Of the workers wearing hard hats, 95 percent indicated that they were required by their employers to wear them.

The BLS survey noted that more than one-half of the workers struck on the head were looking down when the accident occurred. Almost 30 percent of them were looking straight ahead. The study showed a dramatic difference in the injury rate for workers who bumped into stationary objects based on the use of hard hats. Unprotected workers suffered about three times the number of injuries as hard hat wearing workers did when striking a stationary object.

Eliminating or controlling hazards should be given first consideration, but many accidents involving head injuries are difficult to anticipate and control. Where dangers exist, head protection must be provided to avoid injury.

Depending upon the construction, hard hats protect employees from head injuries that can be caused by falling or flying objects, bump hazards in close or confined spaces, and electrical shock or burns. Whatever the construction, the hard hat should be easily adjustable so that employees will wear the hat properly. The hats should be acceptable in terms of comfort and appearance so that employees will want to wear them.

A good hard hat program will stress that the hard hat is part of the work uniform. In fact, the hard hat is an excellent place to print the employer's name, identifying the employee as part of the organization.



Particular hard hats can:

- Resist a reasonable impact force without breaking or collapsing the shell or damaging the internal suspension
- Dissipate and/or absorb as much impact force as possible to avoid transmitting the force to the head, spinal column or other parts of the body
- Resist impact penetration
- Provide electrical protection

Those responsible for determining the use of hard hats should be aware of the protection the hats are intended to provide, their limitations, and the maintenance and care required to keep the hats in safe and reliable condition. Employees who are required to wear the hats should be informed of the same information.

OSHA Requirements

The standards recognized by OSHA for protective hats purchased prior to July 5, 1994, are contained in ANSI *Requirements for Industrial Head Protection*, Z89.1-1969, and ANSI *Requirements for Industrial Protective Helmets for Electrical Workers*, Z89.2-1971. These should be consulted for details. The standards for protective helmets purchased after July 5, 1994, are contained in ANSI *Personal Protection—Protective Headwear for Industrial Workers—Requirements*, Z89.1-1986. Later editions of these standards are available and acceptable for use.

Selection

Each type and class of head protectors is intended to provide protection against specific hazardous conditions. An understanding of these conditions will help in selecting the right hat for the particular situation.

Protective hats are made in the following types and classes:

Type 1—helmets with full brim, not less than 11/4 inches wide

Type 2—brimless helmets with a peak extending forward from the crown



For industrial purposes, three classes are recognized:

Class A—general service, limited voltage protection

Class B—utility service, high-voltage protection

Class C—Special service, no voltage protection

For firefighters, head protection must consist of a protective head device with ear flaps and a chin strap that meets the performance, construction and testing requirements of 29 CFR 1910.156(e)(5).

Hats and caps under Class A are intended for protection against impact hazards. They are used in mining, construction, shipbuilding, tunneling, lumbering and manufacturing.

Class B utility service hats and caps protect the wearer's head from impact and penetration by falling or flying objects and from high-voltage shock and burn. They are used extensively by electrical workers.

The safety hat or cap in Class C is designed specifically for lightweight comfort and impact protection. This class is usually manufactured from aluminum and offers no dielectric protection. Class C helmets are used in certain construction and manufacturing occupations, oil fields, refineries, and chemical plants where there is no danger from electrical hazards or corrosion. They are also used on occasions where there is a possibility of bumping the head against a fixed object.

Materials used in helmets should be water-resistant and slow burning. Each helmet consists essentially of a shell and a suspension system. Ventilation is provided by a space between the headband and the shell. Each helmet should be accompanied by instructions explaining the proper method of adjusting and replacing the suspension and headband.

The wearer should be able to identify the type of helmet by looking inside the shell for the manufacturer, ANSI designation and class. For example:

Manufacturer's Name



ANSI Z89.1-1969 (or later year)
Class A

Fit

Headbands are adjustable in 1/8-size increments. When the headband is adjusted to the right size, it provides sufficient clearance between the shell and the headband. The removable or replaceable type sweatband should cover at least the forehead portion of the headband. The shell should be of one-piece seamless construction and designed to resist the impact of a blow from falling material. The internal cradle of the headband and sweatband forms the suspension. Any part that comes into contact with the wearer's head must not be irritating to normal skin.

Inspection and Maintenance

Hard hat manufacturers should be consulted with regard to paint or cleaning materials for their helmets because some paints and solvents may damage the shell and reduce protection by physically weakening it or negating electrical resistance. **Employees should understand that they must not drill holes, alter the harness or cut their initials into hard hats.**

A common method of cleaning shells is dipping them in hot water (approximately 140 F) containing a good detergent for at least a minute. Shells should then be scrubbed and rinsed in clear hot water. After rinsing, the shell should be carefully inspected for any sign of damage.

All components, shells, suspensions, headbands, sweatbands and any accessories should be visually inspected daily for signs of dents, cracks, penetration or any other damage that might reduce the degree of safety originally provided.

Users are cautioned that if unusual conditions occur (such as higher or lower extreme temperatures than described in the standards), or if there are signs of abuse or mutilation of the helmet or any component, the margin of safety may be reduced. If damage is suspected, helmets should be replaced or representative samples tested in accordance with procedures contained in ANSI Z89.1-1986.



Helmets should not be stored or carried on the rear-window shelf of an automobile, since sunlight and extreme heat may degrade the plastic and adversely affect the degree of protection.

Accessories

Face shield Protection

Face shield devices can be attached to the helmet without changing the helmet strength and electrical protection. A metal face shield bracket system can be used on a Class A helmet; however, if a Class B helmet is to be used in an area where Class B protection is required, a type of bracket and shield system which will not conduct electricity (has a dielectric rating) should be used.

Ear Muffs

The required degree of hearing protection should be considered prior to selecting ear muff attachments. If ear muffs are to be attached to helmets, metal attachments are acceptable for Class A helmets. Attachments with a dielectric rating must be used for Class B helmets.

Sweat Bands

If sweat bands are necessary, they must not interfere with the effectiveness of the helmet headband system. Some sweatband devices are made to fit on the headband. For electrical work, metal components must not be used to attach sweatbands to helmets.

Winter Liners

There are many varieties of winter liners. One type fits over the hard hat assembly. It is flame retardant and elasticized to give the user a snug, warm fit. Other styles fit under the helmet. If the liner is to be used with a Class B helmet, it must have a dielectric rating. Regardless of the warmth characteristics, the liner and helmet combination should be compatible. The liner and helmet must fit properly to give the employee proper impact and penetration protection.

Chin Straps

When wind or other conditions present the possibility of the hard hat being accidentally removed from the head, chin straps can be used. If chin straps are used, they should be the



type that fastens to the shell of the hard hat. If the chin straps fasten to the headband and suspension system, the shell may blow off and strike another employee.

2.32.D Eye and Face Protection

Your eyes are two of your most valuable possessions. Almost everything you learn enters your brain through your eyes. Flying objects can also enter the brain through the eyes. Since the eye is one of the most vulnerable parts of the body, it is very important that you give your eyes the protection they deserve.

Eye and face protective equipment is required by OSHA where there is a reasonable probability of preventing injury when such equipment is used. Employers must provide a type of protector suitable for the work to be performed and employees must use the protectors. These stipulations also apply to supervisors and management personnel and should apply to visitors while they are in hazardous areas.

Most eye injury accident evaluations reveal that nine out of ten eye injuries could have been avoided if safety procedures had been followed and eye and/or face protection had been worn. Eye injuries are caused by flying particles, cuts, chemical burns, injurious light, heat rays and blows to the face and eyes. To prevent such injuries, many types of eye and face protection devices are available. Sometimes it is wise to use both eye and face protection. The face shield can serve as the first line of defense to protect against flying particles. The face shield can also protect other parts of the face and the throat.

The workplace hazard control program should include the evaluation of operations, procedures and equipment that might threaten the eyes and face and requirements for eye and face protection. The eye and face protection program should ensure that employees:

- Are aware of potential eye and face hazards in their job
- Have and use eye and face protection appropriate for the potential hazards involved
- Know that their PPE meets OSHA standards
- Have PPE that fits and does not in and of itself create a hazard
- Make certain their PPE is kept in a clean and reliable condition and replaced if damaged
- Understand when lighting is or is not adequate and compatible with the PPE being used



- Know the emergency procedures to follow in case of an accident to the eye or face

OSHA Requirements

OSHA standards 29 CFR 1910.133(a)(1) and 29 CFR 1926.102(a)(1) require eye and face protection devices to be provided and worn where there is a reasonable probability of injury which can be prevented by using such equipment. The standards require that employers make appropriate protective devices available and ensure that employees use such devices.

OSHA Standards 29 CFR 1910.133(b) and 29 CFR 1926.102(b)(2) state criteria and guidelines for eye and face protection. The design, construction, testing and use of eye and face protection required by these sections shall meet the requirements specified in ANSI Z87.1-1968 and ANSI Z87.1-1989 (Practice for Occupational and Educational Eye and Face Protection), as appropriate to the standard and device. Eye and face protection devices should protect against the intended hazard and be:

- Marked to identify the manufacturer
- Reasonably comfortable
- Of proper fit
- Durable
- Capable of being disinfected
- Easy to clean
- In good repair

Eye Protection

In OSHA construction standard 29 CFR 1926.102(a)(5) a table is provided to guide the selection of eye and face protection. Figure 2 illustrates and lists protective devices based on types of workplace hazards. An industrial hygienist can help select eye protection for radiation, chemical hazards and some types of heat hazards. Fitting protective goggles and spectacles to an individual worker should be done by someone skilled in the procedure.



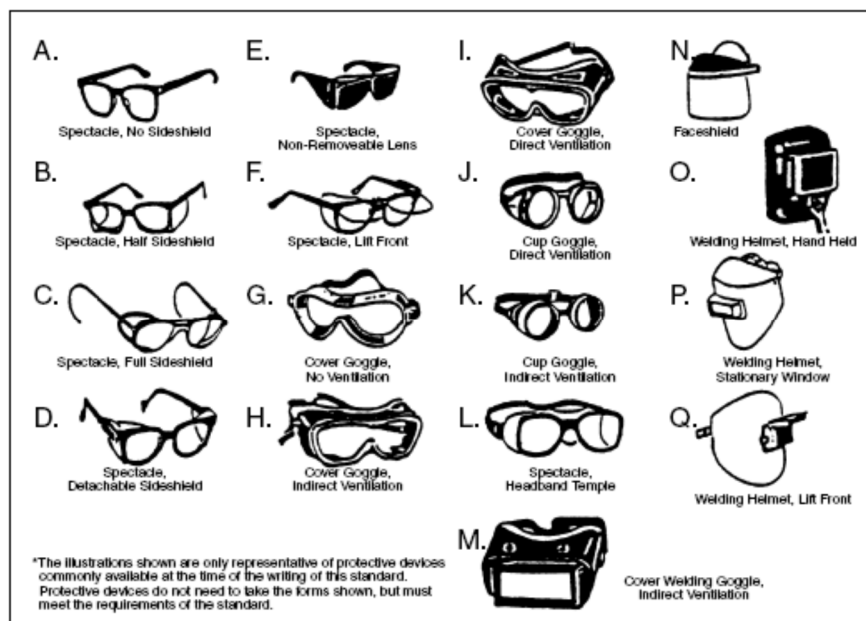
Spectacles

Spectacles are available in a wide variety of styles and colors. They can be equipped with or without side shields, depending on the potential hazards involved. Figure 2 (item A) depicts an example of a spectacle with no side shield, for use where only frontal protection only is required. Spectacles with full or half side shields are for use where side protection is desired. *Always use the protection needed for the highest level of hazard that could occur.* For example, it is wise policy to use side shields throughout a machining or grinding work area.

Lenses can be made of polycarbonate (plastic) or heat treated or chemically treated glass. The most common lens is the polycarbonate type. It is lightweight and has superior projectile impact resistance. Either type of lens material can be prescription ground. Persons wearing contact lenses are additionally required to wear eye and face protection if the impact hazard exposure is located in a hazardous environment.

Frames are also made of a variety of materials. Metal frames should not be used in an electrical hazard area. The manufacturer should warrant that lenses and frames meet the ANSI Z87.1 standard requirements.

Figure 2
Eye and Face Protection Devices





Goggles

People who wear prescription glasses and are exposed to eye impact hazards must either wear safety glasses with prescription lenses or wear goggles designed to be worn over their regular prescription eye wear. Goggle frames are molded of oil resistant synthetic rubber, natural rubber and vinyl. Figure 2 (items G through K) illustrates different goggle configurations. Goggles that offer ventilation are important where fogging is a problem. In work areas with smoke, dust, chemical splashes or fumes that could irritate the eyes, goggles with no ventilation capacity may be safer. *Always select goggle protection against the highest level of hazard that could occur in the workplace environment.*

Figure 3

Filter Lens Shade Numbers for Protection against Radiant Energy

Welding operation	Shade number
Shielded metal-arc welding 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes.....	10
Gas-shielded arc welding (nonferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes.....	11
Gas-shielded arc welding (ferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes.....	12
Shielded metal-arc welding 3/16-, 7/32-, 1/4-inch diameter electrodes.....	12
5/16-, 3/8-inch diameter electrodes.....	14
Atomic hydrogen welding	10–14
Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6
Gas welding (light), up to 1/8-inch.....	4 or 5
Gas welding (medium), 1/8-inch to 1/2-inch.....	5 or 6
Gas welding (heavy), over 1/2-inch.....	6 or 8

Note: In gas welding or oxygen cutting where the torch produces a high yellow light, it is desirable to use a filter or lens that absorbs the yellow or sodium line in the visible light of the operation.

Goggle lens materials include polycarbonate, acetate and glass. For environments where high humidity or fogging is a problem, anti-fogging lenses are available. Welding goggles with filter



lenses require filter lens shade numbers for protection against the particular welding operation radiant energy hazard. Use the table in figure 3 (from 29 CFR 1910.252) to select the proper shade number. Laser beam protective lenses are also available.

OSHA and the National Society to Prevent Blindness recommend that emergency eyewashes be placed in all hazardous locations. First aid instructions should be posted close to potential danger spots since any delay to immediate aid or an early mistake in dealing with an eye injury can result in lasting damage.

Inspection and Maintenance

It is essential that the lenses of eye protectors be kept clean. Continuous vision through dirty lenses can cause eye strain—a commonly used excuse for not wearing the eye protectors. Daily inspection and cleaning of the eye protector with soap and hot water, or with a cleaning solution and tissue, is recommended.

Pitted lenses, like dirty lenses, can be a source of reduced vision. They should be replaced. Deep scratches or excessively pitted lenses are apt to break more readily.

Slack, worn-out, sweat-soaked or twisted headbands do not hold the eye protector in proper position. Visual inspection can determine when the headband elasticity is reduced to a point beyond proper function.

Goggles should be kept in a case when not in use. Spectacles, in particular, should be given the same care as one's own glasses, since the frame, nose pads and temples can be damaged by rough usage.

Several methods for disinfecting eye-protective equipment are acceptable. The most effective method is to disassemble the goggles or spectacles and thoroughly clean all parts with soap and warm water. Carefully rinse all traces of soap, and replace defective parts with new ones. Swab thoroughly or completely and immerse all parts for 10 minutes in a solution of germicidal deodorant fungicide. Remove parts from solution and suspend in a clean place for air drying at room temperature or with heated air. Do not rinse after removing parts from the solution because this will remove the germicidal residue, which retains its effectiveness after drying.



The dry parts or items should be placed in a clean, dust-proof container such as a box, bag or plastic envelope, to protect them until reissue.

Face Protection

Face shields provide extra protection. ANSI Z87.1-1989 states that “face shields shall only be worn over primary eye protection.”

Face shields provide additional protection for the nose, mouth and throat. Face shields do not protect employees from impact hazards. Use face shields in combination with goggles or safety spectacles when you must protect employees from impact hazards, even in the absence of dust or potential splashes. There must be a program to maintain face shields in a clean and reliable condition. Face shields are frequently used by more than one person. When not in use, face shields should be properly stored and not left lying on a workbench or hanging on a wall where they could collect dust and grime. Plastic face shields are available in acetate, polycarbonate and Lexan. The shield thickness is generally 0.04 or 0.06 inches; however, thicker shields are available. For severe exposure hazards it is generally recommended that 0.06 inch polycarbonate or Lexan be used. These thickness and material combinations offer a superior projectile impact resistance safety factor. Reflecting metal screen face shields are available for workplaces where radiant heat is a potential hazard. Headgear and hard hat brackets can be obtained to attach the face shield to a hard hat or directly to the head. Dielectric headgear or hard hat brackets are available for use in work areas where potential electrical hazards exist. Another form of face protection is the welding helmet. Such helmets are equipped to hold shaded filter lenses to protect against optical radiation (see figure 2). The helmets also protect against molten metal splatter. Extended crowns on helmets can protect the top of head.

2.32.E Gloves—Hand and Arm Protection

Approximately 25 percent of workplace injuries are to employees' hands, fingers and arms. These injuries account for approximately 30 percent of workers' compensation costs. The hands and fingers are used to accomplish many hazardous workplace activities. They must be protected from injury.



Hand, arm and finger protective equipment is available in a great variety of types and materials. Gloves help protect against chemicals, surface heat, radiant heat, extreme cold, splinters, abrasion, cuts and electrical shock. The workplace hazard control program should carefully assess all work areas for hand and arm protection needs. The proper use of gloves can reduce accidents and associated losses and help increase production.

The length of gloves should be determined for splash protection, arm immersion in any solution or any exposure to other types of hazards. The proper size and fit of gloves are also important considerations. If gloves are too large they may be uncomfortable and accidentally come off at the wrong time. If they are too small they can bind the hand and cause hand fatigue. The correct glove size is double the width (inches) of the palm at its widest point.

Before purchasing gloves, the employer should request documentation from the manufacturer that the gloves meet the appropriate test standard(s) for the hazard(s) anticipated. For example, for protection against chemical hazards, the toxic properties of the chemical(s) must be determined—particularly, the ability of the chemical(s) to pass through the skin and cause systemic effects.

OSHA Requirements

OSHA standards 29 CFR 1910.132(a) and 29 CFR 1926.28(a) require that PPE be provided to protect employees' extremities whenever it is necessary because of hazards of processes or the environment. The PPE must also be maintained in a sanitary and reliable condition.

There are specific requirements for hand protection for electrical workers. Rubber is considered the best material for insulating gloves and sleeves from the shock and burn hazards encountered in electrical work. Rubber insulating gloves for general industry electrical workers must meet the requirements in 29 CFR 1910.137 and for construction industry workers, the requirements in 29 CFR 1926.951(a) (ANSI J6.6-1971).



Hand and Arm Protection

Cut-Resistant

When engineering and work practice controls fail to eliminate the risk of injury to employee hands or arms, protective gloves are the primary means of protecting their hands. When the risk of injury includes the arm, protective sleeves, often attached to the gloves, may be appropriate. Nature of the hazards(s) and the operation to be performed will determine your selection of gloves.

The meat packing and poultry processing industries typically use metal mesh hand, wrist, arm and finger protective wear to protect against knife cuts. This type of glove can be used in other industries where protection against cuts is required. Plastic dots can be adhered to the metal mesh to facilitate gripping. Another type of cut-resistant glove combines stainless steel with cut-resistant fiber wrapped with nylon fibers for enhanced flexibility and surface softness. These materials resist knives, glass, sheet metal, sharp edges and other cutting surfaces. They are cut resistant but not cut proof or puncture proof. These materials must not be subjected to high-speed knives or serrated blades.

High and Low Temperatures

Gloves, mittens, and arm and sleeve protectors are available in a wide variety of materials. Leather is a common welder's glove material. Heavy duty terrycloth gloves can provide heat protection of up to 350 F. For extreme high and low temperature protection, specially processed silica fiber cloth (non-asbestos) can withstand temperatures from -100 F to 1,100 F. *Do not use asbestos gloves.*

Splinters, Cuts, Abrasions and General Use

Lightweight pigskin, goatskin or calfskin leather gloves enable dexterity and grip while offering some resistance to cuts and abrasions. Other materials that offer similar protection include laminated nitrile coating on stretch fabric; vinyl impregnated stretch fabric; vinyl, rubber or nitrile coated cotton; and other combinations of PVC, neoprene, vinyl, rubber coated or impregnated fabrics.



Electrical Protection

Employers must make certain that rubber devices to protect against electrical shock meet the ANSI J6 series standards. Rubber insulating gloves must meet ANSI J6.6. These gloves are available to meet different voltage exposures. Lightweight low voltage gloves are for use on voltages of under 1,000. Gloves for use on high voltage are of thicker material for the dielectric strength.

As the use voltage rating increases, so does the glove weight. Leather glove protectors are available to protect electrical linemen's rubber gloves against punctures and abrasion. Employees who use this type of equipment must be *qualified* (see 29 CFR 1910.331(a)). Rubber gloves must be visually inspected and an "air" test must be performed before they are used.

Repetitive Motion and Vibration

New forms of technology have brought about injuries known collectively as cumulative trauma disorders. Protective gear is now available to help minimize repetitive hand and wrist motions. Gloves are also being marketed to provide protection against vibration. One such glove has openings for the fingers but offers palm protection. These anti-vibration gloves may be worn under regular work gloves.

Chemicals

Glove materials used to protect against chemicals include natural rubber, neoprene, polyvinyl chloride, polyvinyl alcohol and nitrile. Chemical degradation guides are available to help you determine the general suitability of various glove materials to exposures of specific chemicals.

There are many operational variables that may affect the performance of chemical protection gloves, including chemical combinations and concentrations, temperature, and exposure time. The employer is responsible for determining the suitability of the glove material for the job. Upon request, most glove manufacturers will furnish samples of materials to help you determine the best material for the specific chemical.



2.32.F Foot and Leg Protection

In an average lifetime, our feet will carry us 65,000 miles. That figures out to be approximately 11 round trips, coast to coast, across the United States. For our feet to accomplish that considerable feat, their 52 bones, 60 joints, 38 muscles and 114 ligaments must work very hard. Obviously, we do not want these valuable body parts to become injured. They provide mobility we need to work and enjoy life.

The typical foot injury, according the BLS study cited earlier, was caused by objects falling less than 4 feet and having a median weight of about 65 pounds. As with most of the injuries studied, most workers were conducting normal job activities when they suffered a foot injury.

Good footwear provides comfort, supports the body and reduces fatigue. Proper shoe size helps employees avoid foot maladies such as ingrown toe nails. Properly designed shoe soles can provide secure footing for a variety of different workplace environmental conditions. Safety shoes can prevent foot bruises, resist punctures and minimize injuries. There are many safety shoe manufacturers that will gladly help you set up a safety shoe program.

Most safety shoes use metal toe caps built into the toe of the shoe. Nonmetal toe guards are available for employees who must pass through metal detecting devices for security purposes. There are other workplace environments, such as electrical work, where nonmetal safety shoes must be used.

Other footwear protective devices are available. Foot and toe guards can fit over shoes. Employees who require special shoes can wear these devices over their shoes. For leg and ankle protection, the employer can obtain separate shin, knee or ankle guards. Some guards combine all or part of these features into one integrated guard.

Protective spats and leggings can be used to protect all or part of the leg from the ankle to the knee. These guards are generally used to protect employees against molten metal or hot sparks. They can be equipped with Velcro-type closures that can allow quick removal in case of emergency.



OSHA Requirements

Safety footwear is classified according to its ability to meet minimum requirements for both compression and impact tests. These requirements and testing procedures may be found in American National Standards Institute standards. Protective footwear purchased prior to July 5, 1994, must comply with ANSI Z41.1-1967, *USA Standard for Men's Safety-Toe Footwear*. Protective footwear purchased after July 5, 1994, must comply with ANSI Z41-1991, *American National Standard for Personal Protection-Protective Footwear*. These requirements apply to both the construction and general industries in the OSHA standards (see 29 CFR 1926.28(a) and 29 CFR 1910.136). Safety shoes must be kept in reliable condition. Safety shoes must protect against the specific workplace hazard(s) involved.

Foot and Leg Protection

Safety Shoes

There are many styles of shoes available as well as different materials and construction. Dress shoes with safety toes are difficult to distinguish from ordinary dress shoes. A safety shoe program can provide acceptable safety footwear for management, supervisors and operations personnel.

Special safety shoes without laces or eyelets can be obtained for protection where molten metal and/or welding sparks are a hazard. For those types of exposures, leather or heat- and flame-resistant shoe material construction should be used. Where there is a hazard of protruding nails or sharp objects on the walking surface, safety shoes should be equipped with metal inner soles. For electrical workers and those who have to work in classified or security areas, nonmetal toe guards, eyelets, and other shoe construction components are available. For special foot protection needs you should contact a safety shoe manufacturer or distributor.

Safety Shoe Accessories

Storm rubbers that slip on over the safety shoe provide a nonskid tread for fall protection on slippery walking surfaces. One such shoe has a storm rubber sole with safety bars of aluminum oxide molded into the tread. Not only are storm rubbers good for fall protection, they also



provide excellent protection for inside or outside work where water, oil, or chemicals could damage the safety shoe outer shell.

Lightweight metal or plastic toe and/or instep shoe caps offer protection where marginal foot hazards exist. These devices can be quickly slipped on over safety or street shoes. They are not intended to replace safety shoes.

Leg Protection

Over the sock or over the safety shoe boots are available. Boot outer shell materials include PVC, rubber, butyl and neoprene. Temperature, abrasion and chemical exposures in the workplace must be considered in the selection of the material.

Protective spats and leggings offer protection against chain saws, high heat, flame, molten metal splashes and hot sparks. Material construction includes leather, flame-retardant duck, aluminized rayon and other aluminized fabrics. Quick release legging Velcro closures should be used when any emergency would require the legging to be quickly removed.

2.32.G Other PPE (Hearing, Respiratory, Torso)

Ear Protection

Exposure to high noise levels can cause hearing loss or impairment. It can create physical and psychological stress. There is no cure for noise-induced hearing loss, so the prevention of excessive noise exposure is the only way to avoid hearing damage. Specifically designed protection is required, depending on the type of noise encountered and the auditory condition of the employee.

Preformed or molded earplugs should be individually fitted by a professional. Waxed cotton, foam or fiberglass wool earplugs are self-forming. When properly inserted, they work as well as most molded earplugs.



Some earplugs are disposable, to be used one time and then thrown away. The non-disposable type should be cleaned after each use for proper protection. Plain cotton is ineffective as protection against hazardous noise.

Earmuffs need to make a perfect seal around the ear to be effective. Glasses, long sideburns, long hair and facial movements, such as chewing, can reduce protection. Special equipment is available for use with glasses or beards.

The N.C. Department of Labor publishes a separate guide on occupational hearing protection (e.g., Industry Guide #15, *Developing and Maintaining an Effective Hearing Conservation Program*). Please see inside back cover of this publication for more information. For additional, specific information on a hearing conservation program, see OSHA standard 29 CFR 1910.95, *Occupational Noise Exposure*.

Respiratory Protection

Regulations concerning the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, vapors, or in oxygen-deficient environments can be found in OSHA standard 29 CFR 1910.134.

Torso Protection

Many hazards can threaten the torso: heat, splashes from hot metals and liquids, impacts, cuts, acids, and radiation. A variety of protective clothing is available: vests, jackets, aprons, coveralls and full body suits.

Selection

Wool and specially treated cotton are two natural fibers that are fire-resistant and comfortable since they adapt well to changing workplace temperatures.

Duck, a closely woven cotton fabric, is good for light-duty protective clothing. It can protect against cuts and bruises on jobs where employees handle heavy, sharp, or rough material.



Heat-resistant material, such as leather, is often used in protective clothing to guard against dry heat and flame. Rubber and rubberized fabrics, neoprene, and plastics give protection against some acids and chemicals.

It is important to refer to the manufacturers' selection guides for the effectiveness of specific materials against specific chemicals.

Disposable suits of plastic-like or other similar synthetic material are particularly important for protection from dusty materials or materials that can splash. If the substance is extremely toxic, a completely enclosed chemical suit may be necessary. The clothing should be inspected to ensure proper fit and function for continued protection.

2.32.H Fall Protection

The focus of this part is to provide general information and address protection devices and systems that pertain to requirements of standard for fall protection. The fall protection standard deals with both the human and equipment-related issues in protecting workers from fall hazards. According to data as provided OSHA through the U.S. Department of Labor, between 150 and 200 workers are killed and more than 100,000 are injured as a result of falls at construction sites. Slips, trips and falls constitute most of general industry accidents.

OSHA requires fall protection in construction when working from unguarded surfaces above six feet (or 10 feet on scaffolds) or at any height when above dangerous machinery or equipment. TCG requires fall protection on scaffolds at 10'. Exceptions can be approved by superintendent after consulting with Safety Director.

For general industry, the standard requires every open-sided floor, walkway, platform or runway 4 feet or more above adjacent floor or ground level be guarded by a standard railing or equivalent. Also, as applicable to general industry, the standard states regardless of height, open-sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment, pickling or galvanizing tanks, degreasing units, and similar hazards must be guarded with a standard railing and toe board.



Under guidelines of the standard, employers can select fall protection measures compatible with the type of work being performed. Fall protection generally can be provided using guardrail systems, safety net systems, and personal fall arrest systems, positioning device systems and warning line systems, among others.

When workers are exposed to falls during building or bridge construction, safety nets may be used. Safety nets are generally viewed as backup safety devices rather than primary life-saving devices. Safety belts, harnesses and lanyards attached to a structure or lifeline are primary life-saving devices for employees who work at high elevations. For work at low elevations, such as in confined spaces, the safety harness or belt and lanyard system can be used to retrieve an injured or incapacitated person.

Before a fall arrest system is used and after any fall arrest component or system is changed, employees must be trained to use the system safely. Fall arrest systems must be inspected prior to each use for mildew, wear, damage and other deterioration. Defective components must be removed from service. Any fall arrest systems or components subjected to impact loading (such as an accidental fall) must be immediately removed from service. It must not be used again for employee protection unless a competent person inspects the system or component, determines it to be undamaged, and authorizes its reuse.

Ladder safety climb systems combine the safety harness or belt and lanyard with a rope or rail type grab device. Ladder safety climb devices can be used on water towers, radio and television antenna towers, and other high structures to provide the user safety as well as a system that reduces the effort required to climb very high ladders.

Should an employee pass out while on the ladder and while at a high elevation, another employee with his or her own ladder climb device can safely ascend the ladder and retrieve the disabled employee. Ladder safety devices can be used in lieu of cage protection on ladders over 20 feet in height in unbroken lengths.



Notice

In North Carolina, employers must make sure that employees now use locking type snaphooks to attach personal fall arrest equipment to the fall protection system in use. This rule is in effect throughout this state and being enforced by the N.C. Division of Occupational Safety and Health.

Effective January 1, 1998, body belts are no longer acceptable as part of an employee personal fall arrest system in either North Carolina or the rest of the United States. In general, this will mean using full body harnesses in their place.



Locking Type Snaphooks



Full Body Safety Harness

Safety Harnesses and Belts

The employee fall arrest system should be selected after considering such factors as the presence of sand, extreme heat or cold, solvents, acids, lubricants, and other factors that could have an adverse effect on the equipment. Free-fall distance should be kept to six feet or less. Wire rope fall arrest systems should not be used where an electrical hazard is present. If lanyards, connectors and lifelines are subject to damage by work operations such as welding or sandblasting, exposed fall arrest system components must be protected. Design, system performance criteria, care and use, and inspection requirements for fall arrest systems for powered platforms are contained in 29 CFR 1910.66, appendix C. These same considerations should be observed for fall arrest systems for any operation. ANSI A10.114-1975 should be consulted to resolve questions regarding the type of safety harness or belt and lanyard to use for a particular job.

Ladder safety devices may be used in lieu of cage protection on tower, water tank and chimney ladders over 20 feet in unbroken length. No landing platform is required in these cases. (See 29 CFR 1910.27(d)(5).)

The waist safety belt can be used is used with some ladder climb safety systems. Although a fall may be arrested with a waist belt and lanyard, serious injury can result if the free-fall distance is



not restricted to six inches or less. A waist belt can cause severe internal injuries if it arrests an employee's free-fall from as little as three feet.

If there is a possibility of a free-fall between two and six feet, the full body harness must be used. An employee fall arrest system must be rigged so that employees can neither free-fall more than six feet nor contact any lower level. The full body harness allows a portion of the shock load to be transmitted to the buttocks and thighs, thereby preventing serious injury. From a fall arrest comfort standpoint (to minimize thigh strap pull-up in the crotch) thigh straps should be attached to the shoulders and waist on the back only.

ANSI standard class 4 suspension belts are for independent work support to suspend a worker. Examples are boatswain's chairs, tree trimmer belts, and raising and lowering harnesses. A tree trimmer belt is designed to be used as a positioning and sole support belt, similar to a boatswain's chair. The D-rings are located in the front so in the event of a free-fall the arresting force is from the chest to the back. Since this would cause the body to be bent backwards, causing severe injury, a class 4 belt must not be used as part of a personal fall arrest system.

Lanyards, Deceleration Devices and Lifelines

A lanyard is a flexible line of rope, wire rope or strap used to secure the body belt or body harness to a deceleration device, lifeline or anchorage. If deceleration devices are used, they either have lanyards to attach to the belt D-ring or the manufacturer will specify the type of lanyard to use. Lanyards and vertical lifelines to tie off one person must have a minimum breaking strength of 5,000 pounds. Nylon rope has the greatest shock absorbing characteristics. Straps (webbing) can be used where abrasion resistance is required. Other synthetic fiber ropes such as polyester and polypropylene are available. Select the type of material on the basis of the workplace environment. The D-rings and locking snap hooks must be capable of sustaining a minimum tensile load of 5,000 pounds. Locking snap hooks must be sized to be compatible with the member to which they are to be connected to prevent unintentional disengagement.

Ropes and straps (webbing) used for lanyards, lifelines, and strength components of body belts and body harnesses must be made of synthetic fiber or wire rope. Leather body belts must not be used. A 2 inch wide by 1/4 inch thick steer hide strap will break at around 1,500 pounds. A 1 1/2 inch wide by 1/4 inch thick cotton webbing nylon filled strap will break at 5,000 pounds.



Several types of fall arrest and restraint devices are available to meet specific industrial or construction industry needs. Mobile and static type rope grab devices for both fiber rope and steel wire cable can move up or down the lifeline so that they can be kept adjusted at or above the shoulder to limit free-fall.

Self-retracting lifelines (SRLs) and lanyards can limit a freefall to less than two feet. These devices allow the worker to move about while working. The spring tensioned cable retracts into the block as the worker moves toward the unit and pulls out as the worker moves away from the block. If a fall does occur, the device locks and suspends the worker until rescue is accomplished.

A vertical lifeline used to tie off one employee must have a minimum breaking strength of 5,000 pounds. The manufacturer or distributor should supply test data verifying that the design, performance and testing requirements of the standards have been met.



2.32.1 Employee Training and Certification

Proper Use of Personal Protective Equipment

Instructor Name _____

Date _____

TRAINING OBJECTIVES:

Company/employee responsibilities
Work area hazards
How PPE will protect
When PPE should be worn
What PPE should be worn
How to don, doff, assure proper fit, adjust, wear properly
Limitations of the PPE
Proper care, maintenance, cleaning (sanitation)
Reporting and replacement of worn damaged PPE
Useful life
Proper disposal of PPE

The following employees have received training on specific PPE and have demonstrated an understanding of the PPE.

Attendance List

Department	Name	Signature
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____



2.32.J Personal Protective Equipment Hazard Assessment

Plant _____ Dept. _____ Date(s) _____
Supervisor _____ Job _____

Eye and Face

Is there danger from:

(Eliminated, Guarded, PPE)

	No	Yes	E, G	List Specific PPE
1) Flying Particles	_____	_____	_____	_____
2) Molten Metal	_____	_____	_____	_____
3) Liquid Chemicals	_____	_____	_____	_____
4) Acids	_____	_____	_____	_____
5) Caustic Liquids	_____	_____	_____	_____
6) Chemical Gases or Vapors	_____	_____	_____	_____
7) Light Radiation	_____	_____	_____	_____
8) Other	_____	_____	_____	_____

Head

Is there danger from:

	No	Yes	E, G	List Specific PPE
1) Falling or Flying Objects	_____	_____	_____	_____
2) Work Being Performed Overhead	_____	_____	_____	_____
3) Elevated Conveyors	_____	_____	_____	_____
4) Striking Against a Fixed Object	_____	_____	_____	_____
5) Forklift Hazards	_____	_____	_____	_____



- 6) Exposed Electrical Conductors _____
- 7) Other _____

MISCELLANEOUS

Is there danger from:

- | | No | Yes | E, G | List Specific PPE |
|-------------------------|-------|-------|-------|-------------------|
| 1) Lifting | _____ | _____ | _____ | _____ |
| 2) Bloodborne Pathogens | _____ | _____ | _____ | _____ |

**Foot**

Is there danger from:

(Eliminated, Guarded, PPE)

	No	Yes	E, G	List Specific PPE
1) Falling and Rolling Objects	_____	_____	_____	_____
2) Objects Piercing the Sole	_____	_____	_____	_____
3) Electrical Hazards	_____	_____	_____	_____
4) Wet or Slippery Surfaces	_____	_____	_____	_____
5) Chemical Exposure	_____	_____	_____	_____
6) Environmental	_____	_____	_____	_____
7) Other	_____	_____	_____	_____

Hand

Is there danger from:

	No	Yes	E, G	List Specific PPE
1) Skin Absorption	_____	_____	_____	_____
2) Cuts or Lacerations	_____	_____	_____	_____
3) Abrasions	_____	_____	_____	_____
4) Punctures	_____	_____	_____	_____
5) Chemical Burns	_____	_____	_____	_____
6) Thermal Burns	_____	_____	_____	_____
7) Harmful Temperature Extremes	_____	_____	_____	_____
8) Other	_____	_____	_____	_____

Respiratory



Has the workplace area been evaluated for:

	No	Yes	E, G	List Specific PPE
1) _____ _____				_____
2) Fogs	_____	_____	_____	_____
3) Fumes	_____	_____	_____	_____
4) Mists	_____	_____	_____	_____
5) Smokes	_____	_____	_____	_____
6) Sprays	_____	_____	_____	_____
7) Vapors	_____	_____	_____	_____
8) Other	_____	_____	_____	_____

Torso

Are employees bodies protected from:

(Eliminated, Guarded, PPE)

	No	Yes	E, G	List Specific PPE
1) Hot Metals	_____	_____	_____	_____
2) Cuts	_____	_____	_____	_____
3) Acids	_____	_____	_____	_____
4) Radiation	_____	_____	_____	_____

Comments:

Certification



This hazard assessment has been performed to determine the required type of PPE for each affected employee. The assessment includes:

- Walk-through survey
- Specific job analysis
- Review of accident statistics
- Review of safety equipment selection guideline materials
- Selection of appropriate required PPE

Assessment Certified by (Supervisor) _____

Date _____



2.33 Powder - Actuated Tools

Only trained and certified employees and subcontractor workers shall operate powder – actuated tools. [1926.302(e)(1)]

All misfires shall be placed in a container of water. Fired and empty cartridge strips shall be discarded in a proper trash container.

2.34 Power Transmission, Mechanical

Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains or other reciprocating, rotating, or moving parts of equipment must be guarded if such parts are exposed to contact by employees or otherwise constitute a hazard. No equipment may be used without guards in place. [1926.300(b)(2)]

Guarding shall meet the requirement of ANSI B 15.1-1953 (r 1958), "Safety Code for Mechanical Power Transmission Apparatus". [1926.300(b)(2)]

2.35 Protection of the Public

All company personnel are charged with aiding in the protection of the public including, as your job description dictates, installation and maintenance of signs, signals, lights, fences, guardrails, ramps, temporary sidewalks, barricades, overhead protection, etc. as may be necessary.

Always give the public the "right of way".

2.36 Rollover Protective Structures (ROPS)

Rollover protective structures (ROPS) applies to the following types of materials handling equipment:

- a. To all rubber-tired tractors



- b. Wheel type agricultural and industrial tractors
- c. Crawler tractors
- d. Crawler type loaders
- e. Motor graders with or without attachments that are used in construction work.

2.37 Respiratory Protection

In emergencies, when engineering or administrative controls are not effective in maintaining acceptable atmospheres, appropriate respiratory protective equipment shall be provided by the employer and shall be used. [1926.103] & [1926.134]

Respiratory protective devices shall be approved by the National Institute for Occupational Safety and Health or acceptable to the U.S. Department of Labor for the specific contaminant to which the employee is exposed. [1926.103] & [1910.134]

Respiratory protective devices shall be appropriate for the hazardous material involved and the extent and nature of the work requirements and conditions. [1926.103] & [1910.134]

Employees required to use respiratory protective devices, shall be thoroughly trained in their use. [1926.103] & [1910.134]. Employees shall also be medically qualified to wear a tight fitting respirator.

Respiratory protective equipment shall be inspected regularly and maintained in good condition. [1926.103] & [1910.134]

2.38 Rules for Drivers of Vehicles

No employee shall operate vehicles without adequate training and proper authorization.

Drivers must not take chances. To arrive safely is more important than to arrive on time.

At all times be cautious of other drivers on the road.

Display a positive company image while driving any vehicle.



Positively no tailgating. Maintain a proper distance between you and all other drivers.

Obey all speed limits and observe extreme caution in school zones.

Each employee who drives a vehicle must have a valid driver's license for that type of vehicle. Prior to being hired to operate that vehicle, your license will be checked by the management of the Company.

It is the employee's responsibility to maintain a valid license thereafter.

Drivers should also refer to Part 2 "Specific Work Rules," in the section titled "Motor Vehicles and Construction Equipment."

When pulling a trailer, compressor, tack wagon, or other unit, always hook up safety chains and put a pin through the hitch.

Anyone pulling a trailer or piece of equipment is responsible for checking for proper tags, tires, lights, signals, mirrors, fuel, etc.

All accidents must be reported to the office within 1 hour.

If an accident occurs, the driver must follow the procedures as outlined in the Substance Abuse Program.

No unauthorized "Riders" in company and/or pick-up trucks.

2.38. A Distracted Driving Policy

In order to increase employee safety and eliminate unnecessary risks behind the wheel, Thomas Construction Group has enacted a Distracted Driving Policy, effective October 1, 2016. We are committed to ending the epidemic of distracted driving, and have created the following rules, which apply to any employee operating a company vehicle or using a company-issued cell or smart phone while operating a personal vehicle:



- a. TCG employees may not use a hand-held cell phone to send or read texts, look up phone numbers with hands and fingers or use other social media such as Twitter, Facebook, Linked In, or others, Internet search or other use with hands while the vehicle is in motion.
- b. Hands free communications such as Bluetooth or other voice command technology may be used to communicate or send texts verbally on cell phones unless a state law otherwise restricts the use of the cell phone for such use. Talking or verbal texting on Bluetooth should be kept to a minimum if possible. Some states have enacted a total ban on cell phone use while driving.
- c. Employees shall follow and abide by all local or state laws concerning cell phone use while driving.
- d. Any employee receiving a citation from any law enforcement agency for misuse of a cell phone while driving shall be responsible for their own fines or penalties.
- e. Any employee receiving citations or penalties for misuse of cell phones while driving a company vehicle or conducting company business while driving their personal vehicle shall notify the corporate safety director within 24 hours of receiving such citation.
- f. Any employee found to be in violation of these policies or damaging company vehicles due to misuse of cell phones may be subject to disciplinary action. Each case shall be dealt with on a case by case basis after review of all facts concerning the violation or damage to company vehicles.

2.39 Rules for Operators

No employee shall operate equipment without adequate training & proper authorization.

Operators shall not operate any heavy equipment that is not in safe working order.



Operators shall inspect their equipment prior to beginning work to ensure the equipment is in safe working order.

Operators will refer to Part 2 "Specific Work Rules," in the section titled "Motor Vehicles and Construction Equipment".

All accidents must be reported to the office within 1 hour.

If an accident occurs, the operator must follow the procedures as outlined in the Substance Abuse Program.

No "Riders" on equipment.

2.40 Saws

All portions of band saw blades will be enclosed or guarded, except for working portion of blades between bottom of guide rolls and table. [1926.304(d)]

Portable, power-driven circular saws will be equipped with guards above and below the base plate or shoe. The lower guard will cover the saw to depth of teeth, except for minimum arc required to allow proper retraction and contact with the work, and will automatically return to covering position when blade is removed from the work. [1926.304(d)]

Radial saws will have an upper guard, which completely encloses upper half of saw blade. The sides of the lower exposed portion of blade will be guarded by a device that will automatically adjust to the thickness of and remain in contact with material being cut. Radial saws used for ripping must have non-kickback fingers or dogs. Radial saws will be installed so the cutting head will return to starting position when released by operator. [1926.304(g)]

All swing or sliding cut-off saws will be provided with a hood that will completely enclose the upper half of the saw. [1926.304(f)]

Limit stops will be provided to prevent swing or sliding type cut-off saws from extending beyond the front or back edges of the table. [1926.304(f)]



Each swing or sliding cut-off saw will be provided with an effective device to return the saw automatically to the back of table when released at any point of its travel. [1926.304(f)]

Inverted sliding cut-off saws will be provided with a hood that will cover the part of the saw that protrudes above the top of the table or material being cut. [1926.304(f)]

2.41 Scaffolds

Scaffold means any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage) used for supporting employees or materials or both. [1926.450(b)]

Fall protection - such as guardrail and personal arrest systems - must be provided for each employee working on a scaffold more than 10 feet above a lower level.

The employer shall have a competent person to determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. [1926.451(g)(2)]

Each scaffold and scaffold component shall support, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to it. Scaffolds shall be designed by a qualified person and constructed and loaded in accordance with such design. Scaffolds and scaffold components shall not be loaded in excess of their maximum intended loads or rated capacities, whichever is less. [1926.451(a)(1)]

The scaffold platform shall be planked or decked as fully as possible with the space between the platform and uprights not more than 1 inch wide. When side brackets or odd shaped structures result in a wider opening between the platform and the uprights, the space shall not exceed 9.5 inches. The platform shall not deflect more than 1/60 of the span when loaded. [1926.451(b)(1) & (f)(16)]

The work area for each scaffold platform and the walkway shall be at least 18 inches wide. [1926.451(b)(2)]



Access must be provided when the scaffold platforms are more than 2 feet above or below a point of access.

Cross braces shall not be used as a means of access. [1926.451(e)(1) & (e)(8)]

A competent person shall inspect scaffolds, scaffold components, and ropes on suspended scaffolds before each work shift and after any occurrence that could affect the structural integrity. The competent person also must ensure that prompt corrective action is taken. [1926.451(f)(3) & (d)(10)]

Stilts may be used on a large area scaffold. (A large area scaffold is a pole, tube and coupler, systems or fabricated frame scaffold erected over substantially the entire work area.) [1926.452(y)]

When a guardrail system is used, the guardrail height shall be equal to the height of the stilts and any alterations to the stilts shall be approved by the manufacturer. [1926.452(y)]

2.42 Signs

For the protection of all, signs such as "No Smoking", "Laser in Use", "Keep Out", "Eye Protection Required", "Out of Order – Do Not Use", and "Authorized Personnel" will be posted. All employees will obey these directions.

2.43 Steel Erection

Before authorizing the commencement of steel erection, the controlling contractor shall ensure that the steel erector is provided with written notifications to approve the start of steel erection. [1926.752(a) & (b)]

The operator shall be responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall have the authority to stop and refuse to handle loads until safety has been assured. [1926.753(c)(1)(iv)]



The controlling contractor shall bar other construction processes below steel erection unless overhead protection for the employees below is provided. [1926.759(b)]

Employees engaged in a steel erection activity who is on a walking/working surface with an unprotected side or edge more than 15 feet (4.6 m) above a lower level shall be protected from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, positioning device systems, or fall restraint systems. [1926.760(a)(1)] Workers that are connecting shall be protected from falls when working at 30 feet or more than 2 stories above the ground. The employer shall provide a training program for all employees exposed to fall hazards. The program shall include training and instruction in CFR 29 Part 1926 Subpart M. [1926.761(b) & (b)(1) thru (b)(5)]

The employer shall provide special training to employees engaged in the following activities; multiple lift rigging, connector procedures and CDZ procedures. [1926.761(c)]

2.44 Storage

All materials stored in tiers will be secured to prevent sliding, falling or collapse. [1926.250(a)(1)]

Aisles and passageways will be kept clear and in good repair. [1926.250(a)(3)]

Stored materials will not obstruct exits. [1926.151(d)(1)]

Materials will be stored with due regard to fire characteristics. [1926.151(d)(2)]

Weeds and grass in outside storage areas shall be kept under control. [1926.151(c)(3)]

Flammable liquids must be kept in approved containers. [1926.152(a)(1)]

Material stored outside, on unpaved surface, should be placed on dunnage.



2.45 Tire Cages and Split Rim Wheels

No company employees are allowed to dismount, install or inflate split rim or rims equipped with locking rings.

2.46 Toilets

Toilets shall be provided by the company according to the following minimums:

- 20 or fewer persons – one facility
- 20 or more persons – one toilet seat and one urinal per 40 persons
- 200 or more persons – one toilet seat and one urinal per 50 persons [1926.51(c)(1)]

2.47 Washing Facilities

The employer shall provide adequate washing facilities for employees engaged in operations involving harmful substances. [1926.51(f)]

Washing facilities shall be in near proximity to the worksite and shall be so equipped as to enable employees to remove all harmful substances. [1926.51(f)]

2.48 Welding, Cutting and Heating

Employers shall instruct employees in the safe use of welding equipment. [1926.350(d) & 1926.351(d)]. Hot Work Permits shall be issued for all hot work on Thomas sites. Hot work includes welding, cutting, copper pipe sweating and heavy grinding.

Only trained and authorized employees shall use cutting and welding equipment.



When practical, objects to be welded, cut, or heated shall be moved to a designated safe location or, of the objects to be welded, cut or heated cannot be readily moved, all movable fire hazards in the vicinity shall be taken to a safe place, or otherwise protected. [1926.352(a)]

Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention shall be taken in areas where welding or other "hot work" is being done. No welding, cutting or heating will be done where application of flammable paints, or presence of other flammable compounds, or heavy dust concentrations, creates a fire hazard. Equip torches with anti-flashback devices.

All arc welding and cutting cables shall be completely insulated and be capable of handling the maximum current requirements for the job. **There shall be no repairs or splices within 10 feet of the electrode holder, except where splices are insulated, equal to the insulation of the cable.** Defective cable shall be repaired or replaced [1926.351(b)(1) & (b)(2)]

Fuel gas and oxygen hose shall be easily distinguishable and shall not be interchangeable. Hoses shall be inspected at the beginning of each shift and shall be repaired or replaced if defective. [1926.350(f)(1) & (f)(3)]

General mechanical or local exhaust ventilation or airline respirators shall be provided, as required, when welding, cutting or heating:

- zinc, lead, cadmium, mercury, or beryllium bearing, based or coated material in enclosed spaces
- stainless steel with inert-gas equipment
- in confined spaces or
- where an unusual condition can cause an unsafe accumulation of contaminants

[1926.353(b)(1),(c)(1) through (c)(2) & (d)(1)(iv)]

Arc welding and cutting operations will be shielded by non - combustible or flameproof shields to protect employees from direct arc rays. When electrode holders are left unattended, electrodes will be removed and holder will be placed or protected so they cannot make electrical contact. All arc welding and cutting cables will be completely insulated. Defective cable will be repaired or replaced. [1926.351]



Remove electrodes from unattended electrode holders. [1926.351(d)(1)]

Welding electrode stubs shall be collected in metal containers and not dropped on the floor or other walking / working surface.

Torches shall be lighted **ONLY** by friction lighters or other approved devices. [1926.350(g)(3)]
Cigarette lighters and/or matches are **NOT** approved lighting devices!

All welding and cutting performed within closed in structures shall be authorized by a Hot Work Permit.

2.49 Wire Ropes, Chains, Ropes and other Rigging Equipment

Wire ropes, chains, ropes and other rigging equipment will be inspected prior to use and as necessary during use to assure their safety. Remove defective rigging equipment from service immediately. [1926.251(a)(1)]

Job or shop hooks and links, or makeshift fasteners, formed from bolts, rods or other such attachments will not be used in rigging "systems". [1926.251(b)(3)]

When U-bolts are used for eye splices, the U-bolt will be applied so the "U" section is in contact with dead end of rope. [1926.251(c)(5)(i)]



2.50 Working / Walking under Suspended Loads

Employees shall NOT work / walk under any suspended load. [1926.701(e)(1) & (2)]

Plan your work and train your crew prior to performing activities with cranes and rigging.

2.51 Critical Procedures for Protection of Utilities

Digging in Proximity to Underground Utilities

Prior to digging near underground utilities such as gas, water, sewer, storm sewer, chemical or other fuel pipeline, electric, communications wiring or alarm systems wiring the following procedures shall be followed by all contractors working on any Thomas Construction Group construction site. Failure to follow these procedures may result in disciplinary action against the TCG superintendent and possible dismissal of the subcontractor. Any sub-contractor causing damage or outage to any utility shall reimburse TCG for all damages because of the damages or penalties levies against TCG for such damages. All federal and state rules and OSHA regulations concerning digging of trenches and excavations in underground utility installations shall be followed.

Pre-Planning and Notification

Prior to digging on any TCG construction site, advanced planning shall be conducted by civil drawings review to determine any present or prior location of any underground utility. Superintendents shall meet with excavation or site subcontractors and notify the notification call in center (Usually 811 in most states) three to twelve days prior to digging or removing any soil. The property owner and utility owner or owners shall also be notified.

Marking

All locations of possible utilities shall be marked by the locating contractors according to the states rules for types and colors for marking lines with paint or flags, or both. All marks and



flags shall remain in place for the duration of the site work or digging activity. If marks or flags are disturbed or destroyed by weather events or site work, they shall be replaced by the locating contractor or service prior to any further digging or soil removal. If there is any possibility that an unknown utility may exist on a property, ground penetrating radar and/or ground penetrating radar with laser scanning may also need to be used to locate potential unknown or forgotten utilities or other hazard such as underground tanks.

Digging Activities

No digging or soil removal shall be completed until all possible underground utilities have been located as accurately as possible and marked to show their location on the entire property. When excavations approach the marked location of the utility, all mechanical excavation shall cease within 36 inches of the marks and hand digging shall be used to positively identify the location, depth and width of the utility. No mechanical digging shall be done on the marks of the utility. Hand digging the entire estimated length and width of the utility shall be done to accurately locate the position and depth of the utility. In some cases, the utility owner may require an owner's representative be present during the digging activity. The utility owner may approve mechanical digging within three feet of the utility as long as the utility owner's representative remain on site and continually observes the digging. In such case, digging shall not commence unless owner's representative is on site. After the utility has been exposed, it shall be supported as necessary to prevent any sagging or displacement.

Emergency Action Planning and Training

Prior to digging near any utility, the TCG superintendent shall conduct an emergency action planning meeting with all workers involved in the digging operations to familiarize them with the TCG Emergency Action Policies; 1.05-First Aid, 105A-Emergency Procedures, 105B-Fire Emergencies, 105C-First Aid Policies, and 106 Accident Reporting Procedures. These policies are located in the TCG Corporate Safety Manual. The locations of any shut-off valves or breakers, or other electrical shut down device shall be made know to authorize workers in case they need to be shut off or de-energized. Only trained and authorized personnel are authorized to shut off or de-energize utilities. Training records such as tool box safety meeting documents shall be completed for this training with topics and signature.



Utility Damage Emergency Action

If an incident occurs such as damage to or ruptures of a gas, water, chemical or other fuel piping or contact with any electrical line, the following procedures shall be followed;

- Area of the breach, rupture, or contact shall be evacuated immediately. In case of a gas leak, evacuate up wind from leak. Keep all personnel away from area.
- Shut down all equipment operating in the area
- Secure site
- Notify emergency services such as fire, EMS departments, and law enforcement department if needed for crowd control.
- Treat injured if necessary
- Attempt to shut off control valves and electrical disconnects if authorized.
- If liquid spill, attempt to mitigate property damage
- Account for everyone on site
- Notify TCG Safety Director
- Notify utility owner of damage
- Notify property owner
- Notify other TCG management
- Monitor emergency procedures

Post Incident Procedures

- Contact remediation contractors if needed for clean-up.
- Get witness statements for all involved in the accident
- Complete property damage subcontractors report and injury report if needed
- Review and conduct post incident meeting with all involved to determine if procedures were adequate or need revision. This may be done in conjunction with safety director and other management personnel.



PART 3

SPECIFIC SAFETY AND HEALTH POLICIES AND PROGRAMS



3.01 Substance Abuse Policy

Policy Statement

Thomas Construction Group Substance Abuse Policy (hereafter referred to as Substance Abuse Policy or Policy) prohibits the use, possession, selling, distributing, or transportation of illegal drugs, alcohol, or other controlled substances, that are not being taken in accordance with a prescription, on company premises or on company property.

The terms "company premises" or "company property" for the purpose of this Policy, includes all property owned, leased, used, or under the control of Thomas Construction Group, including, but not limited to, the jobsite, structures, land, automobiles, trucks, buildings, offices and facilities. This Policy also includes any other work location or mode of transportation to and from those locations while in the course and scope of company employment.

All test results will be kept confidential and in a separate file cabinet from other personnel records.

Failure to comply with this Policy will result in termination.

Terms and conditions of this Policy are subject to change at the sole discretion of Thomas Construction Group.

Attached are the Policy Rules, Occasions for Drug / Alcohol Testing, Disciplinary Action and Policy Acknowledgement Form, which must be signed and returned prior to starting work.

Substance Abuse Policy Rules

Thomas Construction Group Substance Abuse Policy prohibits employees, and subject to the terms of applicable commercial agreements, the employee of any subcontractor or supplier, from the following:

- Reporting to and/or being at work under the influence of illegal drugs, unauthorized controlled substances, alcohol or other intoxicants.



- The on - site use, manufacture, distribution, dispensing, possession, sale, or purchase of illegal drugs, drug paraphernalia, or any unauthorized controlled substance.
- Reporting to and/or being at work under the influence of prescribed or over the counter drugs where such use prevents the employee from performing the duties of the job or poses a safety risk to the employee, other persons or property are prohibited. Legally prescribed drugs may be permitted on the work site or company property provided the drugs are contained in the original prescription container and are prescribed by an authorized medical practitioner for current use by the person in possession. It is the employee's responsibility to inform their supervisor if he / she is taking a prescribed drug, which his / her attending physician has advised may have adverse side effects.
- Failure to report to supervisor any accident or injury or late reporting of any accident or injury may also result in denial of any claims.
- Refusal to comply with authorized search.
- The failure to report within five days, any drug related conviction, including "guilty" or "nolo contendere" plea.
- Refusal to sign Policy Acknowledgement, refusal to sign drug and/or alcohol consent and release forms, refusal to cooperate fully with testing lab / clinic requests; refusal to provide a urine or blood sample for testing, or refusal to cooperate with Thomas Construction Group Substance Abuse Policy in any other way.

Occasions for Drug & Alcohol Testing

Thomas Construction Group will require drug and/or alcohol testing (urinalysis and/or blood) under, but not limited to, the following conditions:

Applicants for Employment

All applicants for employment or new hires with Thomas Construction Group will be subject to all aspects of this Policy as a condition of employment. All applicants or new hires for employment must submit to a drug screen test prior to starting work.

Post Accidents



Employees will be tested after the occurrence of a work place accident or incident resulting in personal injury, injury of coworkers, damage to property or work place circumstances which could have resulted in personal injury or damage to property.

Reasonable Suspicion

All employees are subject to testing for reasonable suspicion.

Random

All employees are subject to unannounced random drug tests.

Disciplinary Action

Positive Drug / Alcohol Tests

Any employee who tests positive for an unauthorized controlled substance, illegal drug or alcohol, as determined by the testing laboratory's testing thresholds after an initial drug / alcohol screen and a second confirmatory test, will be terminated. Applicants who test positive will not be eligible for employment. New hires, who are allowed to work pending receipt of test results, will be terminated if results are positive.

Refusal to Comply With Substance Abuse Policy

Any employee, who refuses to submit a urine or blood sample for testing under this Policy, will be treated as a positive drug test and terminated. Any employee who refuses to execute the necessary paperwork, or who fails to disclose ingested drugs, or who refuses to cooperate with a search, or otherwise fails to cooperate with the Substance Abuse Policy will be terminated.



Subcontractors and Suppliers

Subcontractors and suppliers, subject to the terms of applicable commercial agreements, will be required to test their employee(s) and furnish results to Thomas Construction Group should any of their employees violate Policy rules. Any subcontractor or supplier employee who refuses to be tested or who tests positive will not be permitted to work on property under the control of Thomas Construction Group.

3.02 Hazard Communication Program

The North Carolina Department of Labor has adopted the federal OSHA Hazard Communication Standard 29 CFR (Code of Federal Regulation) 1910.1200. The Hazard Communication Standard became effective on May 25, 1986 for North Carolina manufacturing employers and for state and local government agencies, which have one or more employers who are exposed to hazardous chemicals. The standard became effective to non-manufacturing employers on May 25, 1987. This regulation also covers North Carolina construction employers per 1926.59 which now reference the use of 1910.1200 for applicable construction work.

The goal of the Hazard Communication Standard is to reduce the occurrence of workplace illnesses and injuries caused by hazardous chemicals. The standard is designed to achieve this goal by providing information and training for employees who work with hazardous chemicals. All employers subject to the standard must have a written hazard communication program.

The written program must:

1. Describe how the criteria specified in the standard will be met for labels and other forms of warning for material safety data sheets and for employee information and training;
2. Include a list of hazardous chemicals known to be present using the chemical or common name that appears on the appropriate material safety data sheet;
3. Identify the methods used to inform employees of the hazards of non-routine tasks and those hazards associated with chemicals in unlabeled pipes in their work areas; and
4. Describe methods used to inform any contractor with employees in the workplace of hazards that may be exposed to and appropriate protective measures.



The written hazard communication program must be made available upon request to employees; designated employee representatives; and authorized representatives of the North Carolina Commissioner of Labor.

TCG Hazard Communication Program

- A. This program will describe how Thomas Construction Group, LLC, intends to protect the safety and health of our employees who are exposed to hazardous materials in the workplace, and to comply with the provisions of 29 CFR 1910.1200.
- B. The Safety Director has been assigned the title of Hazard Communication Program Monitor and is responsible for monitoring all related activities to ensure compliance with both the intent and specifics of this program.
 - Each supervisor/superintendent will be held responsible for strict adherence to these policies and will closely monitor all activities involving hazardous materials. Each employee will carefully follow established work practices and promptly report observed or potential problems to supervision.
 - There is no job at Thomas Construction Group so vital or urgent as to justify the risk of employee overexposure to a hazardous material. Ask when in doubt. Proceed with a job only after being satisfied that it is safe for you to do so.
- C. A list of all hazardous materials for each workplace has been made and is readily available, upon request, to any employee, working on any shift. It is located at the jobsite trailer.
- D. A Safety Data Sheet (SDS) for each hazardous material on the list referenced above is on file at the jobsite trailer. The SDS for any hazardous material is readily available for review by any employee upon request, through their immediate supervisor.
- E. The jobsite superintendent is responsible to ensure that the list of hazardous materials is kept current and that a current SDS for each hazardous material used is on hand. A material that is not shown on the current list will not be ordered without prior coordination with the



jobsite superintendent.

- F. All containers of hazardous materials in each workplace will be conspicuously labeled with the identity of the material (same as on the applicable SDS), and the appropriate hazard warnings. If the chemical is a known or suspected cancer-causing agent (carcinogen), or if it is known to affect a specific organ of the body, this information will also be placed on the container label. The person having supervisory responsibility for the storage or use of each hazardous chemical will ensure that such labels are not defaced and that they remain legible at all times. All labels shall meet the new GHS labeling requirements.

The Thomas Construction Group jobsite superintendent will ensure that an adequate supply of labels is kept on hand and made available to the responsible supervisors. The jobsite superintendent is responsible for anticipating, as much as possible, the hazards that would be present for non-routine tasks, such as chemical spill or container rupture. Clean-up procedures and proper personal protective equipment shall be considered and adequate training for such tasks shall be addressed.

- G. When an outside contractor will be used, it will be the responsibility of the outside contractor to advise the contractor of any hazardous materials to which their employees may be exposed and the appropriate protective measures to be taken. Conversely, it will be the same person's responsibility to determine if the contractor will be using any hazardous chemicals during this work that would expose other employees. Appropriate training and protective measures must be taken in order to protect all employees. Prior to any work being performed by an outside contractor involving hazardous chemicals, Thomas Construction Group jobsite superintendent is to be advised.
- H. All employees exposed to any hazardous materials will complete an information and training program which includes at least the subjects listed below. New employees must complete similar instruction before initial exposure to any hazardous chemical in the workplace.

Adequate training of all employees exposed to hazardous materials will be given by the subcontractor who is completing the work, and assisted as needed by the Hazard Communication Program Monitor.



Employee information for this program will include:

1. The purpose and need for such a program, including the basic concept that gives every employee the right to know about hazardous materials with which they work.
2. The location and availability of the written Hazard Communication Program, plus the list of hazardous materials and their corresponding SDS's.
3. The identity upon request, of any material to which the employee is exposed. In the case of a trade secret material, the name shown on the SDS will be provided.

Employee training shall include at least the following:

1. Methods and observations used to detect the presence or release of a hazardous chemical in the work area such as monitoring devices, appearance or odor.
 2. The physical and health hazards associated with each chemical, as specified in the SDS.
 3. Action that employees can take to protect their own safety and health, including specific procedures that have been established for normal work practices, emergency procedures, and policies on the use of personal protective equipment.
 4. Details of the Hazard Communication Program, including an explanation of the labeling system used on in-house containers of hazardous chemicals. Also, details of how employees can obtain and use information contained in the SDS.
- I. It is the intent of Thomas Construction Group's management to protect the safety and health of each employee, our most valuable and valued asset. By following correct procedures, no employee should experience any harmful effects from working with chemicals in their workplace.



J.

Hazard communication for Crystalline Silica Exposure and Control Plan

Introduction

Silica is the second most common mineral on earth, found in the common form as "sand" and "rock". The three main forms or "polymorphs" of silica are alpha quartz, cristobalite, and tridymite.

Health Hazards Associated with Silica Exposure

The health hazards of silica come from breathing in the dust. If crystalline silica becomes airborne through construction activities, exposures to fine crystalline silica dust (specifically exposure to the size fraction that is considered to be respirable) can lead to a disabling, sometimes fatal disease called silicosis. The fine particles are deposited in the lungs, causing thickening and scarring of the lung tissue. The scar tissue restricts the lungs ability to extract oxygen from the air. This damage is permanent, but the symptoms of the diseases may not appear for many years. A worker may develop any of the three types of silicosis, depending on the concentration of silica dust and the duration of the exposure:

- . Chronic Silicosis: Develops after 10 or more years of exposure to crystalline silica relatively low concentrations.
- . Accelerated Silicosis: Develops 5 to 10 years after initial exposure to crystalline silica at high concentrations.
- . Acute Silicosis: Develops within weeks, or 4 to 5 years, after exposure to very high concentrations of crystalline silica.

Initially, workers with silicosis may have no symptoms; however, as the disease progresses, workers may experience:

- . Shortness of breath.
- . Severe cough.
- . Weakness.



These symptoms can worsen over time and lead to death. Exposure to silica has also been linked to other diseases, including bronchitis, tuberculosis, and lung cancer.

Silica Exposures at Thomas Construction Group

Many of the activities performed on Thomas projects result in the creation/release of silica dust, thus exposing our employees. These activities include, but are not necessarily limited to:

- . Sweeping concrete slabs/floors
- . Jack-hammering of concrete
- . Saw cutting of concrete, cement block, brick, stone, cement board, ceramic tile and other materials containing crystalline silica
 - . Drilling of concrete, cement block, brick, stone, cement board, ceramic tile and other materials containing crystalline silica
 - . Grinding, chipping, shaving, sanding of concrete, cement block, brick, stone, cement board, ceramic tile, and other materials containing crystalline silica
 - . Large scale removal, addition or grading of soil, sand and gravel during site work preparation or finishing with various earth moving machines
 - . Excavating for utilities and truck loading or dumping

B. Statement of Purpose

Thomas is committed to providing a safe and healthy workplace for our employees, recognizing the right of employees to work in a safe and healthy work environment and ensuring that Thomas activities do not adversely affect the health and safety of subcontractor workers or any other persons on Thomas sites.

This commitment includes ensuring every reasonable precaution is taken to protect our employees (and others) from the adverse health effects associated with exposure to silica.

C. Responsibilities



Due to the risk posed by respirable silica, it is critical that all personnel involved in activities that could potentially create silica dust take specific actions to ensure that, as much as practicable, a hazard is not created. In recognition of this, the following (Silica related) responsibilities have been established and must be adhered to:

Safety Director, Project Management and Division Management are responsible for:

- . Regularly evaluating new equipment and technologies that become available, as able/appropriate, purchasing the "best available" equipment/technologies (within TCG's capabilities). Equipment/technologies with silica dust suppression and/or capture technologies will generally be given preference over equipment/technologies that lack such.
- . Implementing a suitable respirable silica exposure monitoring program, or otherwise ensuring representative exposure monitoring results are available. The purpose of the program will ensure that (over time) TCG has quantifiable silica exposure data available for all regularly occurring, as well as reasonably foreseeable, work activities.
- . Ensuring project and/or task specific Exposure Control Plans (ECPs) are developed, communicated, and effectively implemented as appropriate. TCG employees and subcontractor workers will always use the procedures, equipment and tools when performing tasks as outlined in OSHA's Silica standard Table 1 for working with products that will produce silica dust.
- . Ensuring that all employees that may be exposed to silica dust receive the necessary education and training related to this policy, as well as project/task specific ECPs.
- . Maintaining applicable records such as exposure sampling, inspections, respirator fit tests, training records, etc., in accordance with OSHA requirements and company policy.
- . In conjunction with the TCG safety and health committee conduct a review of this policy as well as specific ECPs and all other records related to the silica dust control program annually.

K. Project Managers and Superintendents are responsible for:

- . Obtaining a copy of the project/task specific ECPs and other similar information from all subcontractors prior to performing any work that may create silica dust on the site.



- . Ensuring that all the tools, equipment, PPE and materials (including water) necessary to implement the ECP is available and in good working order prior to allowing work activities to commence.
- . Ensuring that all workers under the superintendent's direction and control have received the necessary education and training. As appropriate, each superintendent must ensure that workers are available to "demonstrate competency" for identified tasks.
- . Ensuring that workers adhere to the project/task specific ECP, including PPE and personal hygiene requirements. Workers required to wear respirators must be clean shaven.
- . Coordinating work activities with the subcontractors as required, and/or otherwise implementing the controls necessary to protect others (by erecting signage and barricades) who could be adversely effected by TCG or other subcontractors acts or omissions.

Thomas employees and subcontracted employees are responsible for:

- . Knowing the hazards of silica dust exposure.
 - . Using the assigned protective equipment in an effective and safe manner if PPE is required.
 - . Use wetting agents or dust control system in conjunction with proper tools to control dust.
 - . Working in accordance with the project/task specific ECP.
 - . Reporting immediately to their supervisor any hazards, unsafe conditions, unsafe acts, improperly operating equipment related to silica dust release or control failures.

D Exposure Limits

Exposure Limits/Considerations:

- . The OSHA silica exposure regulation lists an occupational exposure limit (OEL) for respirable crystalline silica (including quartz) of 0.025 milligrams per cubic meter (mg/m³). This is a concentration to which nearly all workers could be exposed for eight hours a day, five days a week, without adverse health effects. However, as a suspected carcinogen, crystalline silica is also an ALARA substance, and exposures must be reduced to levels **As Low As Reasonably Achievable** below the OEL.



E Risk Identification

Silica is contained in many of the products used/encountered on TCG projects. SDS for concrete reveals the potential for up to 90% crystalline silica. Silica dust can be readily released through the various tasks performed by TCG and subcontractors.

The health hazards of silica come from breathing the dust! In addition to identifying the specific activities/areas where personnel could be exposed to silica dust, the "amount" of exposure and "duration" of exposure must also be considered. With consideration of these three factors, activities performed by TCG (or that are otherwise occurring in proximity to TCG activities" that expose our employees (as well as members of the public and other workers) to dust include, but are not necessarily limited to:

- . Surface preparation activities such as the use of skid steer machines, with sweeper attachments, or other attachments that create dust during site work, the use of brooms for hand sweeping without using dust reducing compounds.
- . Jack-hammering (of both concrete and asphalt).
- . Saw-cutting (of both concrete and asphalt) with various hand held or machine saws.
- . Saw cutting of cement board (Hardie Plank) and trim.
- . Saw cutting of concrete blocks, bricks, ceramic tiles, stone tiles and other building products that contain crystalline silica.
- . Drilling of concrete, blocks, bricks, tiles, concrete pipe and others that contain silica.
- . Sanding or grinding of concrete, blocks, bricks, tiles, cement pipe and others that contain silica.

3.10 E Risk Assessment

TCG will use a variety of methods to assist with the "assessment" of (possible and actual) silica exposures. These methods will include, but may not necessarily be limited to:

- . Reviewing data/reports available in the public domain (i.e. Information available through regulatory agencies (including OSHA, NIOSH, ABC, risk control and insurance companies, industry associations and others).



- . Regularly consulting with the Safety Resources/Safety Managers/Industrial Hygienists from firms who perform similar work.
- . Implementing a suitable respirable silica exposure monitoring program. This program will ensure that (over time) TCG has quantifiable silica exposure data available that is representative of all regularly occurring, as well as reasonably foreseeable work activities. Exposure monitoring will generally be conducted "in house", although assistance (i.e. actual monitoring and/or interpretation of results) may be obtained through outside consultants/hygienists as needed.

F Risk Control

Control methods: When determining measures to reduce or eliminate worker exposure to silica dust, TCG will generally select a combination of controls, listed in order of preference:

- . Elimination and substitution.
- . Engineering.
- . Administrative.
- . Personnel Protective Equipment (PPE)

Substitution and Elimination: Whenever possible, TCG will substitute products containing silica with products that do not contain (or contain a lower percentage of) crystalline silica. While there have historically been few "substitution" options available, TCG recognizes the importance of planning work in order to minimize the amount of silica dust generated. During the planning phases of a project, TCG will advocate for the use of methods that reduce the need for cutting, grinding, or drilling of concrete surfaces.

Engineering Controls: Engineering controls are those controls which aim to control or otherwise minimize the release of crystalline silica. Two "common" engineering options are available to TCG in many circumstances. These include Local Exhaust Ventilation (LEV) and Wet Dust Suppression (WDS) systems.

LEV Systems: Tools/appliance specific LEV systems are available on some tools/appliances. Such LEV systems are generally comprised of a shroud assembly, a hose attachment, and a



vacuum system. Dust-laden air is collected within the shroud, drawn into the hose attachment, and conveyed to the vacuum, where it is filtered and discharged.

When vacuum systems are used, TCG will employ the following systems and safe work practices:

- . Vacuum attachment systems that capture and control dust at its source whenever possible.
- . Dust control systems will be maintained in optimal working condition.
- . HEPA or good quality, multi-stage vacuum units (approved for use with silica dust) will be used in accordance with the manufacturer's instructions.
- . Whenever possible, concrete grinding will be completed when the concrete is wet (thus dust release will be significantly reduced).

WDS Systems: Water Delivery Systems can be attached to many tools and appliances at TCG such as attachments on various hand held/portable, abrasive/cutting equipment. When WDS systems are not available, (as a standard or retrofitted part of a tool or appliance), similar effects can also be achieved by manually wetting the surface (i.e. with a mister or with a hose). When pressurized water systems are not available on TCG sites a pump type garden sprayer, compressed water fire extinguisher, squeeze bottles or buckets of water can be used to reduce silica levels and exposure.

Under no circumstances will silica dust be cleaned with the use of compressed air streams either indoors or outdoors on TCG sites!

When WDS are used, TCG will employ the following systems and safe work practices:

- . If water is not readily available on the specific TCG project, the project superintendent in conjunction with the project manager will require or arrange to have a mobile water tank delivered to the site for use in control of silica dust. Subcontractor creating silica dust will be responsible for this also. TCG will not supply water tanks for subcontractor use unless agreed to in a contract.



- . Pneumatic or fuel powered equipment will generally be used instead of electrically powered equipment if water is the method of dust control, unless the electrical equipment is specifically designed to be used in such circumstances.
- . Pressure and flow rate will be controlled in accordance with the tool manufacturer's specifications.
- . When sawing concrete, blocks or bricks tools that provide water directly to the blade will be used if possible.
- . Wet slurry will be cleaned from work surfaces when the work is complete, if/when necessary.

Administrative Controls: Administrative Controls are those that aim to control or otherwise minimize the release of silica through the use of work procedures and work methods, rather than by affecting the actual physical work. Common examples of administrative controls include, but not limited to:

- . Posting of warning signs.
- . Rescheduling of work as to avoid the activities of others.
- . Relocating unprotected workers away from dusty areas.

When administrative controls are used, TCG will employ the following systems and safe work practices:

- . In conjunction with the subcontractor suitable exposure control strategies (both within and outside (TCG's) capabilities/responsibilities) will be discussed and determined. As necessary/appropriate, supplemental (to this policy/procedure) project and task specific Exposure Control Plans will be developed.
- . Suitable housekeeping, restricted areas, hygiene practices, training and supervision procedures/standards will be determined and implemented on TCG projects.
- . As appropriate, barriers will be erected around known silica dust generating activities, and/or warning signs will be posted.



When able, work activities will be scheduled to minimize the silica related effect on, and from, others.

Personal Protective Equipment Controls: When used in conjunction with the other (i.e.) Engineering and Administrative) controls elsewhere identified, personal protective equipment and clothing can help further reduce our employee's exposure to silica dust.

An air purifying respirator fitted with HEPA cartridges is the most common piece of PPE that would be used by TCG to minimize exposure to silica dust. Dependent on the effectiveness of the other control measures employed, either a "full face piece" or "1/2 face piece" respirator would be used by personnel. In the majority of situations, a ½ face respirator will be used. When working indoors or in other areas with poor ventilation, a full-face piece respirator may be required. Both respirators are "seal dependent", and thus the users must be "fit tested" and clean shaven where respirators seals to the face.

In addition to respiratory PPE, protective clothing such as disposable or washable coveralls may be used and/or required to help prevent the contamination of the worker's personnel clothing.

g Education and Training

- . Prior to performing activities, or working on project site where personnel could be exposed to silica dust, TCG will ensure that personnel receive suitable education and training. As necessary, personnel will be trained to a level of "demonstrated competency". While not necessarily an exhaustive list, education and training may include:
- . The hazards of and risks associated with exposure to silica dust.
- . The signs and symptoms of silica related diseases.
- . General and specific silica exposure reduction methods/strategies as detailed in the general /specific exposure control plans.
- . The use of specific pieces of equipment and control systems such as local exhaust ventilation or water delivery systems.
- . The use and care of respiratory (and other) personnel protective equipment.



- . How to seek first aid for respiratory related concerns, including those that may be caused/associated with silica dust exposure and

- . How to report items of concern related to silica dust exposure.

The education and training detailed will be delivered to TCG employees through a variety of forums, including but not necessarily limited to:

- . New employee orientations.

- . Project/site orientations.

- . Equipment/task specific training in accordance with TCG's policy, all personnel must be trained to a level of demonstrated competency prior to using required tools, equipment and appliances.

- . Start of shift tool box safety talks.

- . Regularly scheduled crew safety meetings.

- . Notifications and bulletins

h Safe Work Practices

TCG will ensure that suitable written procedures for controlling the risk of silica exposure are developed. OSHA's table 1 for the silica standard will be used as a guide for all TCG operations where possible exposure to silica dust may occur. Tasks generating silica dust on TCG sites are too numerous to address in this policy. Therefore, specific procedures (Job Hazard Analysis) for all sites will be developed and inserted into the site specific safety plan for that site to control silica dust exposures.

I Documentation

All documentation concerning the silica dust exposure control plan will be maintained by the corporate safety director. Site specific (Job Hazard Analysis) for silica dust control will be maintained by the project manager for the site. After completion of the site all silica control plan documents will be forwarded to the corporate safety director for long term storage.



3.03 Fall Protection Policy

This Fall Protection Policy is designed to provide guidance for all Thomas Construction Group jobsites for establishing procedures to identify, evaluate, and control falls from elevations at all times. This program focuses on orientation, training, and enforcement to ensure fall protection guidelines are implemented and adhered to by all project personnel. The purpose of Fall Protection Policy is to provide maximum protection against falls.

The management of Thomas Construction Group has adopted a Fall Protection Policy to eliminate fall accidents in our operations. All levels of management and supervision will be responsible and accountable for ensuring the success of the program by integrating this program into the company's operations.

Goal

The goal of this program is to eliminate all falls from elevations by identifying and managing all fall exposures.

Responsibility

All levels of management and supervision are responsible for supporting and enforcing this program to ensure 100% compliance by all personnel. Management, estimating, scheduling, and project management personnel are responsible for pre-planning safety into the job by identifying and predicting potential fall exposures both during the preconstruction phase and during construction. Each discipline shall plan safety into the job with priorities placed on engineering solutions to the hazards. Each discipline is responsible for working with architects, consultants, and company safety professionals to design a safe work place for our employees.

Personal fall protection systems shall only be used as a backup method to primary fall protection systems, such as guardrails, or when there is no other feasible or practical means for safely accomplishing the work.



Accountability

All levels of management and supervision shall be accountable for the safety of jobsite personnel. Jobsite supervision is directly responsible for using the Fall Protection Policy as a means to control falls from elevations. Management teams shall have the goal of zero fall-related accidents for each jobsite. Measurement of performance will take into account actual results related to this goal. The direct costs of any accident will be charged to the cost of the jobsite involved. Management, estimating, and scheduling personnel shall be accountable for pre-planning, designing, budgeting, and scheduling Fall Protection into each jobsite.

Pre-Construction Planning

Pre-planning must begin during the pre-bid phase of each jobsite and continue.

1. Pre-Bid Phase:

- A. Management: Management shall review plans for jobsites during the pre-bid phase to determine the nature and scope of Fall Protection needs, as well as any necessary design changes and engineering controls needed.
- B. Estimating: Estimating personnel must include the cost for Fall Protection into the bid / proposal. Input from management should be utilized as necessary. The cost of subcontract bids should include the cost of implementing an acceptable Fall Protection Policy.
- C. Contract Administration: The subcontract must include language requiring a Fall Protection Policy.

2. Pre-Startup:

- A. Management: The management team shall hold a review meeting prior to startup of any work on a jobsite. The purpose of the meeting shall be to review plans and to



identify and evaluate all potential fall exposures in each phase of construction.

- B. Superintendent: The regular Fall Protection inspection must be incorporated into an overall Fall Protection Policy.
- C. Scheduling: Design changes, engineering controls, and installation of fall protection devices, i.e. anchorages, guardrails, etc., must be incorporated into the schedule to ensure completion in a timely manner.

*****NOTE:** Existing or potential hazards must be eliminated by engineering controls and/or design changes whenever feasible.

Pre-Task Safety Analysis and JSSPs

Superintendents must analyze all elevated tasks prior to assigning work to determine all existing and potential fall protection needs and to ensure adequate fall protection systems are provided.

Employee Training

Pre-task safety instruction must be given to each person assigned to work in elevated areas prior to commencing work activities. New hire safety orientation training must be conducted for all new hires immediately upon the beginning of employment. The orientation shall include the company's Fall Protection Policy, procedures, and work rules. Weekly Tool Box safety meeting will be held with all field crews. Fall Protection must be included in these meetings on a regular basis or when an upcoming work assignment may involve unusual or non-routine fall exposures. Written documentation of all employees training shall be kept.

Procedures

All personnel with potential fall exposures of six feet or greater will be required to wear an approved full body harness and shock absorbing lanyard where guardrails or safety net systems cannot be used.

Fall protection systems shall include, but are not limited to; the following fall exposure areas:



- A. Building construction activities
 - Formwork
 - Reinforcing steel deliveries, rigging, erection
 - Concrete placement
 - Structural / miscellaneous steel erection
 - Precast concrete erection

- B. Hoisting activities
 - Aerial lifts (6 feet)
 - Movable ladders (no fall protection required)
 - Crane erection / dismantling (6 feet)
 - Hoisting areas including platforms, docks, chutes. Hoisting areas on scaffolds is 10 feet

- C. Floor / Wall penetrations and exposures
 - Elevator shafts 6 feet
 - Stairways four or more risers high
 - MEP shafts and attic work above 6 feet from floor
 - Perimeter edges 6 feet above floor

- D. All exterior skin installation including, but not limited to, roofing, stone, masonry, waterproofing, and glazing is 6 feet. Work on scaffolds is 10 feet

- E. Excavation / Trenching

Fall protection options shall include, but are not limited to, the following:

- Guardrails
- Safety Nets
- Full body harnesses
- Monitoring systems
- Retractable life lines and lanyards
- Vertical and horizontal life lines



- Built-in hook points
- Written plans for fall protection

Personnel traveling or working in elevated areas where a fall exposure exists shall make use of secondary fall protection by securing their safety lanyard at all times to a structure, life line, or approved fall arresting device capable of supporting 5,000 pounds.

Personnel working on traveling powered work platforms or personnel lifting/hoisting devices shall also properly secure their safety lanyards.

Fall protection devices such as lifelines, safety harnesses/lanyards, etc.; shall be inspected before each shift as required by the manufacturer's safety procedures for damage or deterioration. Defective equipment shall be removed from service and repaired or destroyed.

All personal fall protection equipment must meet minimum requirements of OSHA revision to subpart "M", which is effective as of February 6, 1995. Fall protection devices subjected to shock loading imposed during fall arrest shall be removed from service.

All contractors and subcontractors shall be responsible for supplying their own fall protection systems and/or equipment.

A site specific rescue plan shall be developed and included as part of the overall Fall Protection Plan when using Personal Fall Arrest Systems.

Regulatory Requirements

- OSHA 1926.500
- 1926.501
- 1926.502
- 1926.503



Subcontractor Fall Protection Programs and Training

Prior to a subcontractor mobilizing on a project, each subcontractor shall submit a jobsite specific Fall Protection Program which addresses; identifying, evaluating, and protecting employees from elevated falls of six feet or more and 10 feet on scaffolds.

Subcontractor shall demonstrate in writing that all subcontractor employees have been adequately trained and oriented in fall protection.

If subcontractor does not provide an adequate fall protection plan prior to mobilization, subcontractor must comply with general contractor's plan at subcontractor's own expense.

Subcontractor compliance with Thomas Construction Group Fall Protection Policy must include provisions for enforcement in each Subcontractor's subcontract agreement.

3.04 Crane Safety Program

The safe operation and proper maintenance of cranes on the site shall be the overall responsibility of each contractor. Each contractor shall also be held accountable for compliance with OSHA crane regulations for all cranes on the site. TCG does not have CCO qualified crane operators.

Special Provisions

Prior to its initial use on the site or after repairs have been made, each crane shall be thoroughly inspected by a Competent Person. The manufacturer's representatives or the vendor supplying the equipment (for leased or rented units) may be used for this purpose. Any deficiencies found shall be corrected before the equipment is placed into service.

A copy of the annual certification inspection shall be available on the jobsite.

Each Contractor shall designate a competent person who shall inspect all cranes daily, as a part of the contractor's job site inspection program. Such inspections shall be documented. Defective equipment shall be removed from service and repaired. At a minimum, the weekly inspection



shall consist of:

- Wire ropes, guys, hoist and trolley cable
- Jib and counterweights
- Hoist rope anchorage on winding drum
- Safety latches and hooks

Each Contractor supplying the equipment shall inspect each crane at least monthly and provide to Thomas Construction Group a written report as to the results of the inspection. Defective equipment shall be removed from service.

Loads shall not be passed or suspended over persons.

Tag lines or guide ropes shall be used when needed to control swinging loads.

Barricades for employee safety shall be maintained around the swing radius of crane cab.

Superintendent Responsibilities

The Superintendent shall personally talk to crane operators on the job. An operator will be used only after the Superintendent has:

- Satisfied himself that the operator is experienced on the type of equipment to be operated for the type of work being performed.
- Employees have been instructed to avoid overhead and suspended crane loads.
- All above ground electrical lines are flagged, de-energized, or insulated by the local electrical power company.

Operator's Responsibilities

Each crane operator will be specifically assigned the responsibility for safe operations and shall be given written instructions as applicable. These responsibilities shall include:

- Verification of a current "annual inspection" certification for the crane.



- Verification that manufacturer's rated load capacities, recommended operating speeds, and special warnings or instructions are posted on the crane and visible from the operator's station.

A Daily inspection of:

- Condition of brakes under no-load conditions
- Functioning of various safety devices and limiting devices fitted to the hoisting apparatus
- The electric power installation
- Leakage or deterioration in air or hydraulic systems
- The overload controls
- Condition of structural members for crack, bends, misalignment, etc.
- Fire Extinguisher in crane cab
- Installation and maintenance of swing radius protection
- Hand signal charts for type of crane used, are posted.
- Assuring that routine maintenance is performed, as well as necessary repairs.
- Responsibility for assuring that signaling and communications are adequate. This includes making sure that correct hand signals are used by personnel at materials loading and receiving areas. Where conditions require, radio communications will be with clear channels for the crane.
- Refusing to lift any loads that are not safely rigged. Job supervisory personnel cannot over-ride this refusal. The weight of all auxiliary handling devices such as hoist blocks, headache balls, hooks and rigging shall be considered as part of the total load. The weight of all items added to the load at the site must be determined and added to the total weight.
- Making sure that adequate clearances exist between operating areas and nearby structures, especially power lines.

Each crane operator shall ensure that good housekeeping is maintained in his or her equipment.



Contractor / Subcontractor Responsibilities

Making sure that rigging equipment is in good condition and provided with safety devices as applicable. This includes such things as:

- Safety latches on hoisting hooks
- Chains, wire rope, slings, etc., are free from defects and conform to standard load ratings for work being done
- Eye splices conform to safety standards

Employee Training

Each Contractor shall ensure that all employees involved in crane activities receive comprehensive training as to their responsibilities. This shall include hand signals and those authorized to give signals.

Outriggers

"Blocking" shall always be used under outrigger floats to prevent deflection or sinking. Outriggers shall always be fully extended.

Only rigid, tightly spaced blocking shall be used under outrigger floats.

Recordkeeping

All records pertaining to crane inspections shall be kept on site with the crane. If, during any safety inspection, the operator or supervisor cannot produce the required crane inspection and certification sheets, the crane shall be shut down and inspected. The crane operations and maintenance manual shall be located on each crane.

Regulatory Requirements

- OSHA 1926.1400 thru 1926.1442



3.05 Excavation and Trenching Program

Thomas Construction Group incorporates the following Excavation and Trenching Program to follow during day-to-day operations for the protection of personnel. The OSHA requirements for a "Competent Person" to be on site is met by the trained employees of Thomas Construction Group. See section 2.51-Critical Procedures for Protection of Utilities.

Purpose

Excavation and Trenching safety problems can be avoided by hazard awareness and recognition by employees on the worksite. Thomas Construction Group provides the opportunity for employees to attend "Competent Person" training to understand the potential for a cave-in of a trench, and the methods to protect employees from a cave-in.

Policy

Thomas Construction Group takes the position that cave-ins are preventable, and through training of employees in hazard recognition, a safe and efficient method to provide a safe work site is devised prior to excavation and maintained throughout the length of the job.

Scope

The Excavation and Trenching Safety Program of Thomas Construction Group involves the orientation of current employees, and all newly hired employees to recognize hazards associated with excavation and trench work, and the proper methods of providing protection to employees working within the excavation or trench.

Items included in this Program are:

- Orientation
- "Competent Person" Training
- Safety Review of Jobsite
- Refresher Training (if required)
- Soils Analysis Review



- Use of Protective Systems Review

Responsibilities

Thomas Construction Group provides training in safe methods of excavation and trenching, and will determine the employees who have the authority to control any type of excavation work.

The "Competent Person" has the training required by OSHA to recognize potential hazards in excavation work, and has the authority to take corrective action, including but not limited to, stopping the work, directing the employees to exit the excavation, and providing safe methods of protection.

All employees of Thomas Construction Group are capable of recognizing potential unsafe conditions and report such conditions to the "Competent Person" or the Safety Director immediately.

Subcontractors performing work for Thomas Construction Group shall have a Competent Person available on the worksite, and shall employ the safe methods of protecting employees that are followed by Thomas Construction Group.

Procedures

Excavating and Trenching is one of the most dangerous types of work / activity in the construction industry. To prevent illness or death to employees, Thomas Construction Group provides several methods of protection that are available to the "Competent Person". These items are utilized when excavations are made in depths greater than 5 feet, and at locations anywhere site conditions may warrant a protection system.

Regulatory Requirements:

- OSHA 1926.32(f)
- 1926.650
- 1926.651
- 1926.652



3.06 Confined Space Plan

General Procedures for Entering a Confined Space Area

- Have adequate ventilation and lighting in place.
- Always check oxygen, explosive and toxic gas levels with certified testing equipment.
- Wear proper personal protective equipment necessary for task at hand.
- Have safety "attendant" in place at all times.
- Wear full body harness with lifeline attached when necessary for work that generates toxic fumes.
- Take frequent breaks and come up for fresh air.

Emergency Procedures for Injured Person

- Follow normal procedures for injured person and fire (call 911).
- Never enter without testing oxygen, explosive and toxic gas levels.
- Wear proper personal protective equipment.
- The man basket and/or full body harness shall be used for retrieval of the injured worker.
- Never enter the area without assistance and a safety "attendant" in place.
- If you are not sure of the situation, wait for the proper emergency medical personnel.

Note: Over 60% of workers that die in a confined space area are attempting to rescue other workers.

Note: Please refer to 1910.146 for specific safety rules and regulations for Confined Space Entry.

Confined Space Entry Plan

Before entering the confined space, make sure that there is adequate ventilation and lighting. Oxygen levels, explosive levels and toxic fume levels shall be tested, before entering and periodically while in the confined space. The proper personal protective equipment (safety



glasses, hard hats, hard soled shoes, proper respirator required for task at hand, etc.) shall be worn **AT ALL TIMES**.

The safety "attendant" shall be in place at all times while work is being performed. If the safety "attendant" should leave his area for any reason, the alternate safety "attendant" shall be in place before work continues.

Anyone required to work in a confined space where welding, waterproofing, grinding of concrete, or any other related activity that generates toxic fumes will be required to wear a full body harness with life line attached **AT ALL TIMES**.

Before entering the confined space area, the following procedures must be reviewed and understood by each employee.

Atmosphere

The atmosphere must be tested each time before entering a confined space, and during the entry work, especially during times when the task at hand creates toxic fumes and/or could cause an oxygen enriched or depleted environment.

- A. The normal oxygen level is approximately 21%. The minimum oxygen level to enter a confined space without a self-contained breathing apparatus is 19.5%. If the oxygen level is greater than 23.5%, the environment is oxygen enriched, and flammables and combustibles burn more violently and can ignite more rapidly.
- B. Only a trained, qualified person shall test the atmosphere for oxygen, explosives and gases. The following gases are typical gases that may be found in a confined space:
 - Hydrogen sulfide
 - Carbon Monoxide
 - Methane
 - Carbon dioxide



- C. Always test the bottom, middle, and top of the confined space area. Some gases are lighter or heavier and settle at different elevations.

Ventilation

Ventilation is the preferred method of eliminating atmospheric hazards over wearing respirators.

- Ensure that there is adequate ventilation and lighting.
- Maintain ventilation and lighting **AT ALL TIMES**.
- **NEVER** use pure oxygen to ventilate an atmosphere.
- If the oxygen level is below 19.5% rapid fatigue will be experienced.
- If the oxygen level is above 23.5%, the atmosphere becomes extremely flammable and combustible. If a fire should develop, everything will burn or ignite rapidly.

Attendant

- A. A safety "attendant" shall be within voice and/or radio contact with all workers inside the confined space **AT ALL TIMES**. The safety "attendant" should not leave his position for any reason while an employee is in a Confined Space.
- B. The safety "attendant" shall be trained in the jobsite emergency plans for fire and/or injured person, as well as, have contact with the jobsite 911 contact person for an emergency.
- C. The "safety attendant" shall not perform any other duties other than to monitor the workers inside the Confined Space.
- D. The safety "attendant" shall have a fire extinguisher on hand at all times.
- E. The safety "attendant" shall be highly distinguishable from the other workers in the area.

Respiratory Protection

- A. The proper respirator must be worn to match the task at hand.
- B. The workers must be properly trained in how to correctly wear and inspect the respirator they are required to wear, prior to use.



- C. Any welding, cutting, brazing, painting, grinding, waterproofing, etc., which may produce toxic gases and/or deplete or enrich the oxygen levels in the confined space require that all workers inside the confined space wear full body harness with a life line attached in the event of an emergency with retrieval necessary. These operations may also create a combustible atmosphere, which will also require the full body harness with the lifeline attached.
- D. If any operation causes an oxygen level of less than 19.5% and/or creates a combustible atmosphere where proper ventilation cannot increase the oxygen to acceptable levels, a self-contained breathing apparatus, may be required to be worn by all workers. If a self-contained breathing apparatus is worn, proper training will be required for all workers, including the safety "attendant".

Confined Space Entry Team

- A. Entrant: All workers / entrants of the confined space shall be thoroughly trained in the Confined Space Plan.
- B. Attendant: All workers / entrants shall be constantly monitored by an attendant trained in the Confined Space Plan.
- C. Entry Supervisor: Entry Supervisors shall supervise all Confined Space operations. Entry Supervisors shall be trained in the Confined Space Plan.

3.07 Automobile Safety Policy

All employees of Thomas Construction Group are required to follow the following guidelines when operating any vehicle leased, rented or owned by Thomas Construction Group or when operating a personal vehicle for company business.

- All drivers will be held accountable for safe operation and maintenance of company vehicles and for the safe operation of a personal vehicle for company business.
- Only **approved** drivers may operate company vehicles. Drivers of personal vehicles on company business must also be approved by Thomas Construction Group.



- All drivers must submit a copy of their driver's license to the Thomas Construction Group so that a driver's Motor Vehicle Record may be reviewed for motor vehicle history.
- Motor vehicle records will be reviewed as needed. If at this time, when there are excessive violations or accidents found, driving privileges of company vehicles may be revoked for a period of time to be determined by Thomas Construction Group.
- The driver of a company vehicle must maintain a maintenance logbook. The logbook should include the date, work performed on the vehicle, and the mileage shown on the odometer at the time the work was performed. This includes oil and filter changes, tire rotations / replacements, brake replacement, body and engine work etc.
- Any vehicle repair or maintenance expense in excess of \$500.00 for any single expenditure or in the aggregate for any quarter must be approved in advance by your supervisor.
- The Safety Director of Thomas Construction Group will perform a vehicle inspection yearly. This inspection will include a review of the maintenance logbook and a visual inspection of the vehicle.
- A Supervisor's Report of Accident for Automobiles must be completed and sent to the main office whenever an accident has occurred involving any company vehicle. This report is to be completed by the supervisor responsible for the vehicle no matter who is at fault. A copy of the police report should be attached, along with the estimates from the repair shop.
- Company vehicles driven for personal use are to be driven only by the approved driver who is responsible for the vehicle. Company drivers who are on the approved driver's list may request to have a spouse placed on the approved drivers list by submitting the required information to obtain an MVR report. Other family members and friends shall not operate a company vehicle.
- Operating a company vehicle while under the influence of alcohol, drugs, etc. shall result in immediate termination of employment.



- Employees who use the auto allowance in lieu of a company provided vehicle should provide proof of auto insurance and limits for review and approval by Thomas Construction Group.
- Failure to follow any of the policies listed above may be grounds for termination of driving privileges or dismissal from employment.

3.08 **Emergency Action Plan** (Ref: 1926.24)

This document is a plan to prepare for workplace emergencies. By auditing the workplace, training employees, obtaining and maintaining the necessary equipment, and by assigning responsibilities, human life and company resources will be preserved. The intent of this plan is to ensure all employees a safe and healthful workplace. Employees that are assigned specific duties under this plan will be provided the necessary training and equipment to ensure their safety. This plan applies to emergencies that could be reasonably expected in our workplace such as fire/smoke, tornadoes, bomb threats, leaks, etc.

Emergency Plan Coordinators / Superintendent:

Building/Department	Name/Title	Phone #

Coordinators are responsible for the proper inventory and maintenance of equipment. They may be contacted by employees for further information on this Plan.

Means of Reporting Emergencies: All fires and emergencies will be reported by one or more of the following means as appropriate:

- a. Verbally to the Coordinator during normal working hours.
- b. By telephone if after hours/weekends.



Note: The following numbers will be posted in the job trailer:

FIRE: _____ POLICE: _____ AMBULANCE: _____

Alarm System Requirements: Alarm system requirements for notifying employees during an emergency are as follows:

- a. Provides warning for safe escape.
- b. Can be perceived by all employees.
- c. Alarm is distinctive and recognizable.
- d. Employees have been trained on the alarm system.
- e. Emergency phone numbers are posted.
- f. Emergency alarms have priority over all other communications.
- g. Alarm system is properly maintained.

Sounding the Alarm: The signal for immediate evacuation of the site will be sounding a compressed air horn. The alternate means of notification will be verbal.

Evacuation Plans: Emergency evacuation escape route plans (see Appendix A) are posted in key areas of the facility. All employees shall be trained on primary and secondary evacuation routes.

Employee and Subcontractor Accountability: In the event of an evacuation, all occupants shall promptly exit the site. Go to your designated assembly point at site entrance and report to your supervisor. Each supervisor (or designee) will account for each assigned employee via a head count. All supervisors shall report their head count to TCG superintendent who will be located at jobsite entrance and accessible via cell phone.

Site Re-Entry: Once evacuated, no one shall re-enter the site. Once the Fire Department or other responsible agency has notified us that the site is safe to re-enter, then personnel shall return to their work areas.



Hazardous Weather: A hazardous weather alert consists of cell phone alerts. When a hazardous weather alert is made, all employees shall immediately report to the closest tornado refuge area. Stay in this area until given the all-clear by verbal communication.

Training: The personnel listed below have been trained to assist in the safe and orderly emergency evacuation of employees.

Task	Building/Department	Name/Title/Phone#
Fire Extinguisher/Hoses		
Evacuation Assistant		
Emergency Shut-down		

Employee training is provided when this plan is initiated, when employees required responsibilities change, when the plan changes and initially for new hires. Subjects to be covered include:

- a. Emergency escape procedures/routes
- b. Fire extinguisher locations and proper use
- c. Head count procedures
- d. Major fire hazards
- e. Fire prevention practices
- f. Means of reporting fires/emergencies
- g. Names/titles of Coordinators
- h. Availability of the plan to employees
- i. Housekeeping practices
- j. No smoking areas
- k. Hazardous weather procedures
- l. Special duties as assigned to Coordinators and those listed above.

Written records shall be maintained of all Emergency Action Plan training.



3.08. A Fire Prevention Plan

Policy Established: June 15, 2016

It is the policy of Thomas Construction Group, LLC to provide to employees the safest practical workplace free from areas where potential fire hazards exist. The primary goal of this fire protection program is to reduce or eliminate fire in the workplace by heightening the fire safety awareness of all employees. Another goal of this plan is to provide all employees with the information necessary to recognize hazardous conditions and take appropriate action before such conditions result in a fire emergency.

This fire prevention plan complies with the requirements of 29 CFR 1926.24.

This plan details the basic steps necessary to minimize the potential for fire occurring in the workplace. Prevention of fires in the workplace is the responsibility of everyone employed by the company but must be monitored by each supervisor overseeing any work activity that involves a major fire hazard. Every effort will be made by the company to identify those hazards that might cause fires and establish a means for controlling them.

The fire prevention plan will be administered by Safety Director and site superintendents who will compile a list of all major workplace fire hazards, the names or job titles of personnel responsible for fire control and prevention equipment maintenance, names or job titles of personnel responsible for control of fuel source hazards and locations of all fire extinguishers in the workplace. The plan administrator, or safety officer, must also be familiar with the behavior of employees that may create fire hazards as well as periods of the day, month, and year in which the workplace could be more vulnerable to fire.

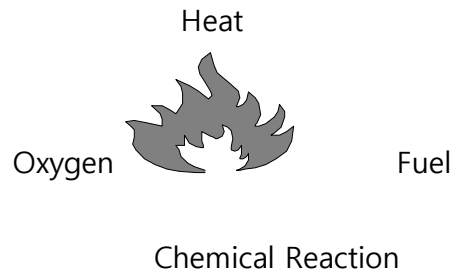
This fire prevention plan will be reviewed annually and updated as needed to maintain compliance with applicable regulations and standards and remain up-to-date with the state of the art in fire protection. Workplace inspection reports and fire incident reports will be maintained and used to provide corrections and improvements to the plan.

This plan will be available for employee review at any time during all normal working hours.



3.08. B Classification

Fire is a chemical reaction involving the rapid oxidation or burning of a fuel. It needs four elements to occur as illustrated below in the tetrahedron. This is described by the following illustration:



The first component of the tetrahedron is fuel. Fuel can be any combustible material such as: solid (such as wood, paper, or cloth), liquid (such as gasoline) or gas (such as acetylene or propane). Solids and liquids generally convert to gases or vapors before they will burn.

Another component of the tetrahedron is oxygen. Fire only needs an atmosphere with at least 16% oxygen.

Heat is also a component of the tetrahedron. Heat is the energy necessary to increase the temperature of the fuel source to a point in which sufficient vapors are emitted for ignition to occur.

The final side of the tetrahedron represents a chemical chain. When these components are brought together in the proper conditions and preparations, fire will develop. Take away any one of these elements, and the fire cannot exist or will be extinguished if it was already burning.

Fires are classified into four groups according to sources of fuel: Class A, B, C, and D based on the type of fuel source. Table 1 below describes the classifications of fire which can be used in making hazard assessment.

Class A	Ordinary combustible materials such as paper, wood, cloth and some rubber and plastic materials.
---------	--



Class B	Flammable or combustible liquids, flammable gases, greases and similar materials, and some rubber and plastic materials.
Class C	Energized electrical equipment and power supply circuits and related materials.
Class D	Combustible metals such as magnesium, titanium, zirconium, sodium, lithium and potassium.

3.08. C Determining Fire Hazards

This section consists of two steps: first, identifying the existing fire hazards in the workplace and, second, taking action to resolve them. The inspection checklist, in Appendix A, provides a guide for precise fire-safe practices that must be followed. The location of these major fire hazards are denoted in Appendix C. Also included in Appendix C is a listing of the personnel responsible for the maintenance of the equipment and systems installed to prevent or control fires.

Material hazards shall be identified, as evident on the specific Material Safety Data Sheets (MSDS), and labeled on containers as soon as they arrive in the workplace. The identification system shall also include incorporation into the company's hazard communication program.

Oxygen-Energized Atmospheres

Oxygen-enriched atmospheres involve operating rooms and anesthesia machines, oxygen tents as used by ambulances, fire and police or rescue squads; hospitals and laboratory supply systems; cutting and welding. If practical, nonflammable anesthetic agents will be used. To prevent dangerous adiabatic heating of flammable anesthetic gases, the cylinder valves will be opened very slowly to allow the gradual introduction of the high pressure gas downstream from the cylinder valve. This will permit a slow buildup of pressure and hence temperature. An aid to the identification of hazards associated with medical agents and gases in NFPA 704, Standard Systems for the Identification of the Fire Hazards of Materials.



Industrial Trucks

The type of industrial truck being used shall be approved for use within any building storing hazardous materials. All refueling operations shall be conducted outside and away from storage of flammable materials. Areas that are used for maintenance and battery charging of electrical trucks should be separated from storage areas.

3.08. D Storage and Handling Procedures

The storage of material shall be arranged such that adequate clearance is maintained away from heating surfaces, air ducts, heaters, flue pipes, and lighting fixtures. All storage containers or areas shall prominently display signs to identify the material stored within. Storage of chemicals shall be separated from other materials in storage, from handling operations, and from incompatible materials. All individual containers shall be identified as to their contents.

Only containers designed, constructed, and tested in accordance with the U. S. Department of Transportation specifications and regulations are used for storage of compressed or liquefied gases. Compressed gas storage rooms will be areas reserved exclusively for that purpose with good ventilation and at least 1 hour fire resistance rating. The gas cylinders shall be secured in place and stored away from any heat or ignition source. Pressurized gas cylinders shall never be used without pressure regulators.

Ordinary Combustibles

- Wooden pallets will not be stacked over 6 feet tall. Extra pallets will be removed from site to reduce the risk of fire hazards.
- Piles of combustible materials shall be stored away from buildings and located apart from each other sufficiently to allow firefighting efforts to control an existing fire.

Flammable Materials

- Bulk quantities of flammable liquids shall be stored outdoors and away from completed building and buildings that are presently under construction. Smaller quantities are



subsequently brought into a mixing room where they are prepared for use. The mixing room shall be located next to an outside wall equipped with explosion relief vents. The room shall also have sufficient mechanical ventilation to prevent the accumulation of flammable vapor concentration in the explosive range.

- Small quantities (limited to amount necessary to perform an operation for one working shift) of flammable liquids shall be stored in, and also dispensed from, approved safety containers equipped with vapor-tight, self-closing caps, screens or covers.
- Flammable liquids shall be stored away from sources that can produce sparks.
- Flammable liquids shall only be used in areas having adequate and, if feasible, positive ventilation. If the liquid is highly hazardous, the liquid shall only be used in areas with a local exhaust ventilation.
- Flammable liquids shall never be transferred from one container to another by applying air pressure to the original container. Pressurizing such containers may cause them to rupture, creating a serious flammable liquid spill.
- When dangerous liquids are being handled, a warning sign will be posted near the operation, notifying other employees and giving warning that open flames are hazardous and are to be kept away.
- The storage and usage areas will include fire-resistive separations, automatic sprinklers, special ventilation, explosion-relief valves, separation of incompatible materials, and the separation of flammable materials from other materials.

3.08. E Potential Ignition Sources

- Ensure that utility lights always have some type of wire guard over them.
- Don't misuse fuses. Never install a fuse rated higher than specified for the circuit.



- Investigate any appliance or equipment that smells strange. Space heaters, microwave ovens, hot plates, coffee makers and other small appliances shall be rigidly regulated and closely monitored.
- The use of extension cords to connect heating devices to electric outlets shall be prohibited.
- If a hot or under inflated tire is discovered, it should be moved well away from the vehicle. As an alternative, the driver should remain with the vehicle until the tire is cool to the touch, and then make repairs. If a vehicle is left with a hot tire, the tire might burst into flames and destroy the vehicle and load.

Table 2 below lists common sources of ignition that cause fires in the workplace, gives examples in each case, and suggests preventive measures.

Sources of Ignition	Examples	Preventive Measures
Electrical equipment	Electrical defects, generally due to poor maintenance, mostly in wiring, motors switches, lamps and hot Use only approved equipment elements	Follow National Electrical Code Establish regular maintenance
Friction	Hot bearings, misaligned or broken machine parts, poor adjustment.	Follow a regular schedule of inspection maintenance and lubrication.
Open flames clean	Cutting and welding torches, gas oil burners, misuse of gasoline torches.	Follow established welding pre-cautions. Keep burners and properly adjusted.



		Do not use open flames near Combustibles.
Smoking and matches	Dangerous near flammable liquids and in areas where combustibles are stored or used.	Smoke only in permitted areas. Make sure matches are out. Use appropriate receptacles.
Static electricity	Occurs where liquid flows from pipes.	Ground equipment. Use static eliminators. Humidify the atmosphere.
Hot surfaces	Exposure of combustibles to insulation, Furnaces, electric lamps or irons.	Provide ample clearances and air circulation. Check heating apparatus prior leaving it unattended.
to		

Welding and Cutting

Welding and cutting will not be permitted in areas not authorized by management.

If practical, welding and cutting operations shall be conducted in well-ventilated rooms with a fire-resistant floor. If this practice is not feasible, superintendent shall ensure that the work areas have been surveyed for fire hazards; the necessary precautions taken to prevent fires; and **issue a hot permit.** This hot permit shall only encompass the area, item and time which is specified on it.

If welding is to be performed over wooden or other combustibles type floors, the floors will be swept clean, wetted down, and covered with either fire-retardant blankets, metal or other noncombustible coverings.



Welding will not be permitted in or near areas containing flammable or combustible materials (liquids, vapors, or dusts). Welding will not be permitted in or near closed tanks that contain or have contained flammable liquids unless they have been thoroughly drained, purged and tested free from flammable gases or vapors. Welding shall not begin until all combustible materials have been removed at least 35 feet from the affected areas, or if unable to relocate, covered with a fire retardant covering. Openings in walls, floors, or ducts shall be covered if located within 35 feet of the intended work area. Welding will not be permitted on any closed containers.

Fire extinguishers will be provided at each welding or cutting operation. A trained watcher will be stationed at all times during the operation and for at least 30 minutes following the completion of the operation. This person will assure that no stray sparks cause a fire and will immediately extinguish fires that do start.

Open Flames

No open flames will be permitted in or near spray booths or spray rooms. If indoor spray-painting work needs to be performed outside of standard spray-painting booths, adequate ventilation will be provided. All potential ignition sources will also be eliminated.

Gasoline or alcohol torches shall be placed so that the flames are at least 18 inches away from wood surfaces. They will not be used in the presence of dusts, vapors, flammable combustible liquids, paper or similar materials. Torches shall never be left unattended while they are burning.

The company has a specific policy regarding cigarette/cigar/pipe smoking in the workplace. Smoking and no-smoking areas will be clearly delineated with conspicuous signs. Rigid enforcement will be maintained at all times. The plan administrator will enforce observance of permissible and prohibited smoking areas for employees and outside visitors to the workplace. Fire-safe, metal containers will be provided where smoking is permitted. No-smoking areas will be checked periodically for evidence of discarded smoking materials.

Static Electricity



The company recognizes that it is impossible to prevent the generation of static electricity in every situation, but the company realizes that the hazard of static sparks can be avoided by preventing the buildup of static charges. One or more of the following preventive methods will be used: grounding, bonding, maintaining a specific humidity level (usually 60-70 percent), and ionizing the atmosphere.

Where a static accumulating piece of equipment is unnecessarily located in a hazardous area, the equipment will be relocated to a safe location rather than attempt to prevent static accumulation.

3.08. F Housekeeping Preventative Techniques

The following are housekeeping techniques and procedures to prevent occurrences of fire:

- Keep storage and working areas free of trash.
- Place oily rags in covered containers and dispose of daily.
- Do not use gasoline or other flammable solvent or finish to clean floors.
- Use noncombustible oil-absorptive materials for sweeping floors.
- Dispose of materials in noncombustible containers that are emptied daily.
- Remove accumulation of combustible dust.
- Don't refuel gasoline-powered equipment in a confined space, especially in the presence of equipment such as furnaces or water heaters.
- Don't refuel gasoline-powered equipment while it is hot.
- Follow proper storage and handling procedures.



- Ensure combustible materials are present only in areas in quantities required for the work operation.
- Clean up any spill of flammable liquids immediately.
- Ensure that if a worker's clothing becomes contaminated with flammable liquids, these individuals change their clothing before continuing to work.
- Post "No Smoking" caution signs near the storage areas.
- Report any hazardous condition, such as old wiring, worn insulation and broken electrical equipment, to the supervisor.
- Keep motors clean and in good working order.
- Don't overload electrical outlets.
- Ensure all equipment is turned off at the end of the work day.
- Maintain the right type of fire extinguisher available for use.
- Use the safest cleaning solvents (nonflammable and nontoxic) when cleaning electrical equipment.
- Ensure that all passageways and fire doors are unobstructed. Stairwell doors shall never be propped open, and materials shall not be stored in stairwells.
- Periodically remove over spray residue from walls, floors, and ceilings of spray booths and ventilation ducts.
- Remove contaminated spray booth filters from the building as soon as replaced, or keep immersed in water until disposed.



- Don't allow material to block automatic sprinkler systems, or to be piled around fire extinguisher locations. To obtain the proper distribution of water, a minimum of 18 inches of clear space must be maintained below sprinkler deflectors. If there are no sprinklers, a 3 foot clearance between piled material and the ceiling must be maintained to permit use of hose streams. These distances must be doubled when stock is piled higher than 15 feet.
- Check daily for any discard lumber, broken pallets or pieces of material stored on site and remove properly.
- Re-pile immediately any pile of material which falls into an aisle or clear space.
- Use weed killers that are not toxic and do not pose a fire hazard.

3.08. G Fire Protection Equipment

Every site will be equipped with portable fire extinguishers.

In hospitals, every patient sleeping room will be provided with an outside window or door that can be opened from the inside; this will allow venting of products of combustion if there is a fire. A specially designed smoke control system can be a substitute for an outside window

Fire extinguishers must be kept fully charged and in their designated places. The extinguishers will not be obstructed or obscured from view. A map indicating the locations of all fire extinguishers for this company is located on site evacuation plan. The fire extinguishers will also be inspected by superintendents at least monthly to make sure that they are in their designated places, have not been tampered with or actuated, and are not corroded or otherwise impaired. Attached inspection tags shall be initialed/dated each month.

The location of all hydrants, hose houses, portable fire extinguishers, or other fire protective equipment should be properly marked with arrows and signs.



3.08. H Training

All employees shall be instructed on the locations and proper use of fire extinguishers in their work areas. Employees shall also be instructed as to how to operate the building's fire alarm system, and be familiar with evacuation routes. The training of all employees shall include the locations and types of materials and/or processes which pose potential fire hazards. The training program shall also emphasize the following:

1. Use and disposal of smoking materials
2. The importance of electrical safety
3. Proper use of electrical appliances and equipment
4. Unplugging heat-producing equipment and appliances at the end of each work day
5. Correct storage of combustible and flammable materials
6. Safe handling of compressed gases and flammable liquids (where appropriate)

Initial training and ongoing training shall include regularly scheduled fire drills. Training documentation shall be maintained.

3.08. I Fire Prevention Checklist

This checklist should be reviewed regularly and kept up-to-date.

ELECTRICAL EQUIPMENT

- No makeshift wiring
- Extension cords serviceable
- Motors and tools free of dirt and grease areas (if
- Lights clear of combustible materials
- Safest cleaning solvents used
- Fuse and control boxes clean and closed
- Circuits properly fused or otherwise protected
- Equipment approved for use in hazardous required)

FRICTION

- Machinery properly lubricated
- Machinery properly adjusted and/or aligned

SPECIAL FIRE-HAZARD MATERIALS



- Storage of special flammable isolated

- Nonmetal stock free of tramp metal

WELDING AND CUTTING

- Area surveyed for fire safety

- Combustible removed or covered
- Permit issued

OPEN FLAMES

- Kept away from spray rooms and booths

- Portable torches clear of flammable surfaces
- No gas leaks

PORTABLE HEATERS

- Set up with ample horizontal and overhead clearances - Safely mounted on noncombustible surfaces
- Secured against tipping or upset
- Combustibles removed or covered
- Use of steel drums prohibited
- Not used as rubbish burners

HOT SURFACES

- Hot pipes clear of combustible materials
- Soldering irons kept off combustible surfaces
- Ample containers available and serviceable
- Ashes in metal containers

SMOKING AND MATCHES

- "No smoking" and "smoking" areas clearly marked
- No discarded smoking materials in prohibited areas
- Butt containers available and serviceable

SPONTANEOUS IGNITION

- Flammable waste material in closed, metal containers - Piled material, dry, and well ventilated
- Flammable waste material containers emptied frequently - Trash receptacle emptied daily

STATIC ELECTRICITY

- Flammable liquid dispensing vessels grounded and bonded
- Proper humidity maintained
- Moving machinery grounded

HOUSEKEEPING

- No accumulation of rubbish materials
- Premises free of unnecessary combustible
- Safe storage of flammables
- No leaks or dripping of flammables and floor of spills
- free - Passageways clear of obstacles
- Automatic sprinklers unobstructed
- Fire doors unblocked and operating freely



- Proper type of fire extinguisher
- Fire extinguisher in proper location
- Access to fire extinguishers unobstructed
- Access to fire extinguishers clearly marked
- Fire protection equipment turned on
- Extinguishing system in working order
- Service date current
- Personnel trained in use of equipment
- Personnel exits unobstructed and maintained

Insert any fire incident reports and inspection records behind this section.

HAZARD IDENTIFICATION

01/2020 Thomas Construction Group Safety & Health Manual Page 165



3.08. L Training Record

[illegible]



3.08. M Fire Extinguisher Location

Insert a map designating fire extinguisher locations behind this section.

3.09 Crystalline Silica Exposure Control Policy, Program, and Procedures

3.09 A. Introduction

Silica is the second most common mineral on earth, found in the common form as "sand" and "rock". The three main forms or "polymorphs" of silica are alpha quartz, cristobalite, and tridymite.

Health Hazards Associated with Silica Exposure

The health hazards of silica come from breathing in the dust. If crystalline silica becomes airborne through construction activities, exposures to fine crystalline silica dust (specifically exposure to the size fraction that is considered to be respirable) can lead to a disabling, sometimes fatal disease called silicosis. The fine particles are deposited in the lungs, causing thickening and scarring of the lung tissue. The scar tissue restricts the lungs ability to extract oxygen from the air. This damage is permanent, but the symptoms of the diseases may not appear for many years. A worker may develop any of the three types of silicosis, depending on the concentration of silica dust and the duration of the exposure:

- . Chronic Silicosis: Develops after 10 or more years of exposure to crystalline silica relatively low concentrations.
- . Accelerated Silicosis: Develops 5 to 10 years after initial exposure to crystalline silica at high concentrations.



. Acute Silicosis: Develops within weeks, or 4 to 5 years, after exposure to very high concentrations of crystalline silica.

Initially, workers with silicosis may have no symptoms; however, as the disease progresses, workers may experience:

- . Shortness of breath.
- . Severe cough.
- . Weakness.

These symptoms can worsen over time and lead to death. Exposure to silica has also been linked to other diseases, including bronchitis, tuberculosis, and lung cancer.

Silica Exposures at Thomas Construction Group

Many of the activities performed on Thomas projects result in the creation/release of silica dust, thus exposing our employees. These activities include, but are not necessarily limited to:

- . Sweeping concrete slabs/floors
- . Jack-hammering of concrete
- . Saw cutting of concrete, cement block, brick, stone, cement board, ceramic tile and other materials containing crystalline silica
- . Drilling of concrete, cement block, brick, stone, cement board, ceramic tile and other materials containing crystalline silica
- . Grinding, chipping, shaving, sanding of concrete, cement block, brick, stone, cement board, ceramic tile, and other materials containing crystalline silica
- . Large scale removal, addition or grading of soil, sand and gravel during site work preparation or finishing with various earth moving machines
- . Excavating for utilities and truck loading or dumping

3.09 B. **Statement of Purpose**

Thomas is committed to providing a safe and healthy workplace for our employees, recognizing the right of employees to work in a safe and healthy work environment and ensuring that



Thomas activities do not adversely affect the health and safety of subcontractor workers or any other persons on Thomas sites.

This commitment includes ensuring every reasonable precaution is taken to protect our employees (and others) from the adverse health effects associated with exposure to silica.

3.09 C. **Responsibilities**

Due to the risk posed by respirable silica, it is critical that all personnel involved in activities that could potentially create silica dust take specific actions to ensure that, as much as practicable, a hazard is not created. In recognition of this, the following (Silica related) responsibilities have been established and must be adhered to:

Safety Director, Project Management and Division Management are responsible for:

- . Regularly evaluating new equipment and technologies that become available, as able/appropriate, purchasing the "best available" equipment/technologies (within TCG's capabilities). Equipment/technologies with silica dust suppression and/or capture technologies will generally be given preference over equipment/technologies that lack such.
- . Implementing a suitable respirable silica exposure monitoring program, or otherwise ensuring representative exposure monitoring results are available. The purpose of the program will ensure that (over time) TCG has quantifiable silica exposure data available for all regularly occurring, as well as reasonably foreseeable, work activities.
- . Ensuring project and/or task specific Exposure Control Plans (ECPs) are developed, communicated, and effectively implemented as appropriate. TCG employees and subcontractor workers will always use the procedures, equipment and tools when performing tasks as outlined in OSHA's Silica standard Table 1 for working with products that will produce silica dust.
- . Ensuring that all employees that may be exposed to silica dust receive the necessary education and training related to this policy, as well as project/task specific ECPs.
- . Maintaining applicable records such as exposure sampling, inspections, respirator fit tests, training records, etc., in accordance with OSHA requirements and company policy.
- . In conjunction with the TCG safety and health committee conduct a review of this policy as well as specific ECPs and all other records related to the silica dust control program annually.



Project Managers and Superintendents are responsible for:

- . Obtaining a copy of the project/task specific ECPs and other similar information from all subcontractors prior to performing any work that may create silica dust on the site.
- . Ensuring that all the tools, equipment, PPE and materials (including water) necessary to implement the ECP is available and in good working order prior to allowing work activities to commence.
- . Ensuring that all workers under the superintendent's direction and control have received the necessary education and training. As appropriate, each superintendent must ensure that workers are available to "demonstrate competency" for identified tasks.
- . Ensuring that workers adhere to the project/task specific ECP, including PPE and personal hygiene requirements. Workers required to wear respirators must be clean shaven.
- . Coordinating work activities with the subcontractors as required, and/or otherwise implementing the controls necessary to protect others (by erecting signage and barricades) who could be adversely effected by TCG or other subcontractors acts or omissions.

Thomas employees and subcontracted employees are responsible for:

- . Knowing the hazards of silica dust exposure.
- . Using the assigned protective equipment in an effective and safe manner if PPE is required.
- . Use wetting agents or dust control system in conjunction with proper tools to control dust.
- . Working in accordance with the project/task specific ECP.
- . Reporting immediately to their supervisor any hazards, unsafe conditions, unsafe acts, improperly operating equipment related to silica dust release or control failures.

3.09 D **Exposure Limits**

Exposure Limits/Considerations:

- . The OSHA silica exposure regulation lists an occupational exposure limit (OEL) for respirable crystalline silica (including quartz) of 0.025 milligrams per cubic meter (mg/m³). This is a concentration to which nearly all workers could be exposed for eight hours a day, five days a



week, without adverse health effects. However, as a suspected carcinogen, crystalline silica is also an ALARA substance, and exposures must be reduced to levels **As Low As Reasonably Achievable** below the OEL.

3.09 E Risk Identification

Silica is contained in many of the products used/encountered on TCG projects. SDS for concrete reveals the potential for up to 90% crystalline silica. Silica dust can be readily released through the various tasks performed by TCG and subcontractors.

The health hazards of silica come from breathing the dust! In addition to identifying the specific activities/areas where personnel could be exposed to silica dust, the "amount" of exposure and "duration" of exposure must also be considered. With consideration of these three factors, activities performed by TCG (or that are otherwise occurring in proximity to TCG activities" that expose our employees (as well as members of the public and other workers) to dust include, but are not necessarily limited to:

- . Surface preparation activities such as the use of skid steer machines, with sweeper attachments, or other attachments that create dust during site work, the use of brooms for hand sweeping without using dust reducing compounds.
- . Jack-hammering (of both concrete and asphalt).
- . Saw-cutting (of both concrete and asphalt) with various hand held or machine saws.
- . Saw cutting of cement board (Hardie Plank) and trim.
- . Saw cutting of concrete blocks, bricks, ceramic tiles, stone tiles and other building products that contain crystalline silica.
- . Drilling of concrete, blocks, bricks, tiles, concrete pipe and others that contain silica.
- . Sanding or grinding of concrete, blocks, bricks, tiles, cement pipe and others that contain silica.

3.10 E Risk Assessment



TCG will use a variety of methods to assist with the "assessment" of (possible and actual) silica exposures. These methods will include, but may not necessarily be limited to:

- . Reviewing data/reports available in the public domain (i.e. Information available through regulatory agencies (including OSHA, NIOSH, ABC, risk control and insurance companies, industry associations and others).
- . Regularly consulting with the Safety Resources/Safety Managers/Industrial Hygienists from firms who perform similar work.
- . Implementing a suitable respirable silica exposure monitoring program. This program will ensure that (over time) TCG has quantifiable silica exposure data available that is representative of all regularly occurring, as well as reasonably foreseeable work activities. Exposure monitoring will generally be conducted "in house", although assistance (i.e. actual monitoring and/or interpretation of results) may be obtained through outside consultants/hygienists as needed.

3.11 F **Risk Control**

Control methods: When determining measures to reduce or eliminate worker exposure to silica dust, TCG will generally select a combination of controls, listed in order of preference:

- . Elimination and substitution.
- . Engineering.
- . Administrative.
- . Personnel Protective Equipment (PPE)

Substitution and Elimination: Whenever possible, TCG will substitute products containing silica with products that do not contain (or contain a lower percentage of) crystalline silica. While there have historically been few "substitution" options available, TCG recognizes the importance of planning work in order to minimize the amount of silica dust generated. During the planning phases of a project, TCG will advocate for the use of methods that reduce the need for cutting, grinding, or drilling of concrete surfaces.



Engineering Controls: Engineering controls are those controls which aim to control or otherwise minimize the release of crystalline silica. Two "common" engineering options are available to TCG in many circumstances. These include Local Exhaust Ventilation (LEV) and Wet Dust Suppression (WDS) systems.

LEV Systems: Tools/appliance specific LEV systems are available on some tools/appliances. Such LEV systems are generally comprised of a shroud assembly, a hose attachment, and a vacuum system. Dust-laden air is collected within the shroud, drawn into the hose attachment, and conveyed to the vacuum, where it is filtered and discharged.

When vacuum systems are used, TCG will employ the following systems and safe work practices:

- . Vacuum attachment systems that capture and control dust at its source whenever possible.
- . Dust control systems will be maintained in optimal working condition.
- . HEPA or good quality, multi-stage vacuum units (approved for use with silica dust) will be used in accordance with the manufacturer's instructions.
- . Whenever possible, concrete grinding will be completed when the concrete is wet (thus dust release will be significantly reduced).

WDS Systems: Water Delivery Systems can be attached to many tools and appliances at TCG such as attachments on various hand held/portable, abrasive/cutting equipment. When WDS systems are not available, (as a standard or retrofitted part of a tool or appliance), similar effects can also be achieved by manually wetting the surface (i.e. with a mister or with a hose). When pressurized water systems are not available on TCG sites a pump type garden sprayer, compressed water fire extinguisher, squeeze bottles or buckets of water can be used to reduce silica levels and exposure.

Under no circumstances will silica dust be cleaned with the use of compressed air streams either indoors or outdoors on TCG sites!

When WDS are used, TCG will employ the following systems and safe work practices:



- . If water is not readily available on the specific TCG project, the project superintendent in conjunction with the project manager will require or arrange to have a mobile water tank delivered to the site for use in control of silica dust. Subcontractor creating silica dust will be responsible for this also. TCG will not supply water tanks for subcontractor use unless agreed to in a contract.
- . Pneumatic or fuel powered equipment will generally be used instead of electrically powered equipment if water is the method of dust control, unless the electrical equipment is specifically designed to be used in such circumstances.
- . Pressure and flow rate will be controlled in accordance with the tool manufacturer's specifications.
- . When sawing concrete, blocks or bricks tools that provide water directly to the blade will be used if possible.
- . Wet slurry will be cleaned from work surfaces when the work is complete, if/when necessary.

Administrative Controls: Administrative Controls are those that aim to control or otherwise minimize the release of silica through the use of work procedures and work methods, rather than by affecting the actual physical work. Common examples of administrative controls include, but not limited to:

- . Posting of warning signs.
- . Rescheduling of work as to avoid the activities of others.
- . Relocating unprotected workers away from dusty areas.

When administrative controls are used, TCG will employ the following systems and safe work practices:

- . In conjunction with the subcontractor suitable exposure control strategies (both within and outside (TCG's) capabilities/responsibilities) will be discussed and determined. As necessary/appropriate, supplemental (to this policy/procedure) project and task specific Exposure Control Plans will be developed.
- . Suitable housekeeping, restricted areas, hygiene practices, training and supervision procedures/standards will be determined and implemented on TCG projects.



- . As appropriate, barriers will be erected around known silica dust generating activities, and/or warning signs will be posted.
- . As able, work activities will be scheduled to minimize the silica related effect on, and from, others.

Personal Protective Equipment Controls: When used in conjunction with the other (i.e.) Engineering and Administrative) controls elsewhere identified, personal protective equipment and clothing can help further reduce our employee's exposure to silica dust.

An air purifying respirator fitted with HEPA cartridges is the most common piece of PPE that would be used by TCG to minimize exposure to silica dust. Dependent on the effectiveness of the other control measures employed, either a "full face piece" or "1/2 face piece" respirator would be used by personnel. In the majority of situations, a 1/2 face respirator will be used. When working indoors or in other areas with poor ventilation, a full-face piece respirator may be required. Both respirators are "seal dependent", and thus the users must be "fit tested" and clean shaven where respirators seals to the face.

In addition to respiratory PPE, protective clothing such as disposable or washable coveralls may be used and/or required to help prevent the contamination of the worker's personnel clothing.

3.11 g **Education and Training**

- . Prior to performing activities, or working on project site where personnel could be exposed to silica dust, TCG will ensure that personnel receive suitable education and training. As necessary, personnel will be trained to a level of "demonstrated competency". While not necessarily an exhaustive list, education and training may include:
 - . The hazards of and risks associated with exposure to silica dust.
 - . The signs and symptoms of silica related diseases.
 - . General and specific silica exposure reduction methods/strategies as detailed in the general /specific exposure control plans.
 - . The use of specific pieces of equipment and control systems such as local exhaust ventilation or water delivery systems.



- . The use and care of respiratory (and other) personnel protective equipment.
- . How to seek first aid for respiratory related concerns, including those that may be caused/associated with silica dust exposure and
- . How to report items of concern related to silica dust exposure.

The education and training detailed will be delivered to TCG employees through a variety of forums, including but not necessarily limited to:

- . New employee orientations.
- . Project/site orientations.
- . Equipment/task specific training in accordance with TCG's policy, all personnel must be trained to a level of demonstrated competency prior to using required tools, equipment and appliances.
- . Start of shift tool box safety talks.
- . Regularly scheduled crew safety meetings.
- . Notifications and bulletins

3.11 h **Safe Work Practices**

TCG will ensure that suitable written procedures for controlling the risk of silica exposure are developed. OSHA's table 1 for the silica standard will be used as a guide for all TCG operations where possible exposure to silica dust may occur. Tasks generating silica dust on TCG sites are too numerous to address in this policy. Therefore, specific procedures (Job Hazard Analysis) for all sites will be developed and inserted into the site specific safety plan for that site to control silica dust exposures.

3.11 I **Documentation**

- . All documentation concerning the silica dust exposure control plan will be maintained by the corporate safety director. Site specific (Job Hazard Analysis) for silica dust control will be maintained by the project manager for the site. After completion of the site all silica control plan documents will be forwarded to the corporate safety director for long term storage.



Thomas

3.12 COVID-19 Exposure Prevention, Preparedness, and Response Plan

The purpose of this plan is to outline the steps that Thomas Construction Group employees can take to reduce the risk of exposure to COVID-19. The plan describes how to prevent worker exposure to coronavirus, protective measures to be taken on the jobsite, personal protective equipment and work practice controls to be used, cleaning and disinfecting procedures, and what to do if an employee becomes sick.

Thomas Construction Group takes the health and safety of our employees very seriously. With the spread of the coronavirus or “COVID-19,” a respiratory disease caused by the SARS-CoV-2 virus, we all must remain vigilant in mitigating the outbreak. This is particularly true for the construction industry, which has been deemed “essential” in many locations throughout the United States during this Declared National Emergency. To be safe and maintain operations, we have developed this COVID-19 Exposure Prevention, Preparedness, and Response Plan to be implemented throughout the Company and at all of our jobsites. We have also identified a team of employees to monitor available U.S. Center for Disease Control and Prevention (“CDC”) and Occupational Safety and Health Administration (“OSHA”) guidance on the virus.

This Plan is based on currently available information from the CDC and OSHA and is subject to change based on further information provided by the CDC, OSHA, and other public officials. The Company may also amend this Plan based on operational needs.

I. Responsibilities of Managers and Supervisors

All managers, superintendents and supervisors must be familiar with this Plan and be ready to answer questions from employees. Managers, superintendents, and supervisors must always set a good example by following this Plan. This involves practicing good personal hygiene and jobsite safety practices to prevent the spread of the virus. Managers, superintendents, and supervisors must encourage this same behavior from all employees.

II. Responsibilities of Employees



We are asking every one of our employees to help with our prevention efforts while at work. To minimize the spread of COVID-19 at our jobsites, we all must play our part. As set forth below, the Company has instituted various housekeeping, social distancing, and other best practices at our jobsites. All employees must follow these. In addition, employees are expected to report to their managers, superintendents, or supervisors if they are experiencing signs or symptoms of COVID-19, as described below. If you have a specific question about this Plan or COVID-19, please ask your manager, superintendent, or supervisor. If they cannot answer the question, please contact **the company safety director**.

OSHA and the CDC have provided the following control and preventative guidance to all workers, regardless of exposure risk:

- Frequently wash your hands with soap and water for at least 20 seconds. When soap and running water are unavailable, use an alcohol-based hand rub with at least 60% alcohol.
- Avoid touching your eyes, nose, or mouth with unwashed hands.
- Follow appropriate respiratory etiquette, which includes covering for coughs and sneezes.
- Avoid close contact with people who are sick.

In addition, employees must familiarize themselves with the symptoms of COVID-19:

- Coughing.
- **Fever of 100.4 degrees Fahrenheit or higher.**
- Shortness of breath, difficulty breathing; and
- Early symptoms such as chills, body aches, sore throat, headache, diarrhea, nausea/vomiting, and runny nose.

If you develop a fever and symptoms of respiratory illness, such as cough or shortness of breath, **DO NOT GO TO WORK** and call your healthcare provider right away. Likewise, if you come into close contact with someone showing these symptoms, call your healthcare provider right away.

III. Guidance for Critical Infrastructure Employers

The CDC has provided guidance for employers regarding safety practices for “critical infrastructure workers” who may have been exposed to a person with a suspected or confirmed



case of COVID-19. Construction has been deemed as critical infrastructure by the U.S. Department of Homeland Security's Cybersecurity and Infrastructure Security Agency ("CISA") and many state and local jurisdictions have similarly deemed construction as critical infrastructure during the COVID-19 pandemic. Given this, **Thomas** is adopting the following protocol for employees exposed or potentially exposed to a suspected or confirmed case of COVID-19, consistent with CDC recommendations.

If a critical infrastructure employee has been exposed or potentially exposed to a suspected or confirmed case of COVID-19, Thomas will permit the employee to continue to work, but will implement the following practices:

- Measure temperature of employees before they enter the worksite (see Appendix A for additional information).
- Regularly monitor asymptomatic employees.
- Exposed or potentially exposed employees wear a mask/face covering for 14 days after exposure.
- Have employees maintain social distancing as work duties permit; and
- Routinely disinfect workspaces.

Depending upon workforce needs, Thomas may choose to keep the exposed or potentially exposed employee away from work for 14 days. *See also* Section VI below.

IV. Job Site Protective Measures

The Company has instituted the following protective measures at all jobsites.

A. General Safety Policies and Rules

- Any employee/contractor/visitor showing symptoms of COVID-19 will be asked to leave the jobsite and return home. Thomas may determine that taking employee/contractor/visitor temperatures at worksites is appropriate and restrict access based upon temperature readings. As an alternative to taking temperatures at the worksite, Thomas may request employees/contractors/visitors to take their own temperatures prior to coming to the worksite. (See Appendix A for additional information.)
- Safety meetings will be by telephone, if possible. If safety meetings are conducted in-person, attendance will be collected verbally, and the superintendent will sign-in each attendee. Attendance will not be tracked through passed-around sign-in sheets or



mobile devices. During any in-person safety meetings, avoid gathering in groups of more than 10 people and participants must remain at least six (6) feet apart.

- Employees must avoid physical contact with others and direct employees/contractors/visitors to increase personal space to at least six (6) feet, where possible. Where work trailers are used, only necessary employees should enter the trailers and all employees should maintain social distancing while inside the trailers.
- All in-person meetings will be limited. To the extent possible, meetings will be conducted by telephone.
- Employees will be encouraged to stagger breaks and lunches, if practicable, to reduce the size of any group at any one time to less than ten (10) people.
- The Company understands that due to the nature of our work, access to running water for hand washing may be impracticable. Sites where water is available, a sink with hand soap will be provided. In these situations, the Company will provide, if available, alcohol-based hand sanitizers and/or wipes.
- Employees should limit the use of co-worker's tools and equipment. To the extent tools must be shared, the Company will provide alcohol-based wipes to clean tools before and after use. When cleaning tools and equipment, consult manufacturing recommendations for proper cleaning techniques and restrictions.
- Employees are encouraged to wear face coverings/masks if social distancing of 6 feet cannot be maintained. Employees are not required to wear N95 respirators unless they are certified to wear a respirator to provide protection against silica dust. Engineering and work practice controls should be used to minimize dust. Such controls include the use of water delivery and dust collection systems, as well as limiting exposure time.
- The Company will divide crews/staff into two (2) groups where possible so that projects can continue working effectively if one of the divided teams is required to quarantine.
- Employees are encouraged to minimize ridesharing. While in vehicle, employees must ensure adequate ventilation and consider the use of face coverings.
- If practicable, employees should use/drive the same truck or piece of equipment every day.
- In lieu of using a common source of drinking water, such as a cooler, employees should use individual water bottles. Use of tobacco products (chewing tobacco, smoking), vaping, sunflower seeds, etc., should be avoided.

B. Workers entering Occupied Buildings for renovation work



- When employees perform construction and maintenance activities within occupied homes, office buildings, and other establishments, these work locations present unique hazards with regards to COVID-19 exposures. All such workers should evaluate the specific hazards when determining best practices related to COVID-19.
- During this work, employees must sanitize the work areas upon arrival, throughout the workday, and immediately before departure. The Company will provide alcohol-based

□

wipes for this purpose.

- Employees should ask other occupants to keep a personal distance of six (6) feet at a minimum. Workers should wash or sanitize hands immediately before starting and after completing the work.
- If the occupied site or building has Covid-19 protocols in place all employees will follow the client protocols in addition to Thomas protocols or the stricter of the two.

C. Job Site Visitors

- The number of visitors to the job site, including the trailer or office, will be limited to only those necessary for the work.
- All visitors will be screened in advance of arriving on the job site. If the visitor answers “yes” to any of the following questions, he/she should not be permitted to access the jobsite:
 - Have you been confirmed positive for COVID-19?
 - Are you currently experiencing, or recently experienced, any acute respiratory illness symptoms such as fever, cough, or shortness of breath?
 - Have you been in close contact with any persons who have been confirmed positive for COVID-19 and are also exhibiting acute respiratory illness symptoms?
 - Have you been in close contact with any persons who have traveled and are also exhibiting acute respiratory illness symptoms?
- Thomas may determine that taking visitor temperatures at worksites is appropriate and restricting access based upon temperature readings. As an alternative to taking temperatures at the worksite, Thomas may request visitors take their own temperatures prior to coming to the worksite. (See Appendix A for more information.)



- Site deliveries will be permitted but should be properly coordinated in line with the employer's minimal contact and cleaning protocols. Delivery personnel should remain in their vehicles if possible.

D. Personal Protective Equipment and Work Practice Controls

- In addition to regular PPE for workers engaged in various tasks (fall protection, hard hats, hearing protection), employers will also provide:
 - Gloves: Gloves should always be worn while on-site. The type of glove worn should be appropriate to the task. If gloves are not typically required for the task, then any type of glove is acceptable, including latex gloves. Employees should avoid sharing gloves.
 - Eye protection: Eye protection should always be worn while on-site.
 - **NOTE:** The CDC is currently not recommending that healthy people wear N95 respirators to prevent the spread of COVID-19. Employees should wear N95 respirators if required by the work and if available.
- Due to the current shortage of N95 respirators, the following Work Practice Controls should be followed:
 - Keep dust down by using engineering and work practice controls, specifically using water delivery and dust collection systems.
 - Limit exposure time to the extent practicable.
 - Isolate workers in dusty operations by using a containment structure or distance to limit dust exposure to those employees who are conducting the tasks, thereby protecting nonessential workers and bystanders.
 - Institute a rigorous housekeeping program to reduce dust levels on the jobsite.
- To the extent that shortages of N95 respirators continue to occur, the Company will take the following steps in accordance with OSHA guidance to continue to protect employees where respirator use is required by other OSHA standards:
 - *Extended use or reuse of N95s* – If extended use or reuse of N95 respirators becomes necessary, the same employee is permitted to extend use of or reuse the respirator, as long as the respirator maintains its structural and functional integrity and the filter material is not physically damaged, soiled, or contaminated.
 - *Use of expired N95s* – If N95s are not available and extended use or reuse of N95s is not possible, employees may use previously NIOSH-certified *expired* N95s.



- *Non-NIOSH approved respirators* – If N95s are not available, extended use or reuse of N95s is not possible, and expired N95s are not available, employees may use respirators that are either certified under certain standards of other countries; or previously certified under the standards of other countries but beyond their manufacturer's recommended shelf life. OSHA directs that respirators certified by the People's Republic of China be used only after respirators from other countries are sought.

E. Face Coverings

Thomas has reviewed OSHA's workplace classification scheme for worker exposure potential to COVID-19. While construction work could generally be considered "low risk" for viral transmission, some construction tasks or activities may involve working with others in proximity closer than six feet, including sitting in the same vehicle, and therefore might be considered as "medium risk" under the Agency's risk pyramid.

Due to this and CDC recommendations, we are implementing a face covering policy for certain work activities for the foreseeable future, including those situations where (1) it is mandated by state or local rule, or (2) employees must work in proximity of six (6) feet from other employees. A face covering is a cloth, bandana, or other type of material that covers a person's nose and mouth. The CDC lists five criteria for "cloth face coverings": the face covering should:

- fit snugly but comfortably against the side of the face.
- be secured with ties or ear loops.
- include multiple layers of fabric.
- allow for breathing without restriction; and
- Be able to be laundered and machine-dried without damage or change to shape.
- Neck gaiters used as face coverings are not acceptable

Use of a face covering is not a substitute for other workplace preventative techniques that are outlined in this Plan.

V. Job Site Cleaning and Disinfecting

The Company has instituted regular housekeeping practices, which includes cleaning and disinfecting frequently used tools and equipment, and other elements of the work environment, where possible. Employees should regularly do the same in their assigned work areas.

- Jobsite trailers and break/lunchroom areas will be cleaned at least once per day. Employees performing cleaning will be issued proper personal protective equipment ("PPE"), such as nitrile, latex, or vinyl gloves and gowns, as recommended by the CDC.



- Any trash collected from the jobsite must be changed frequently by someone wearing nitrile, latex, or vinyl gloves.
- Any portable jobsite toilets should be cleaned by the leasing company at least twice per week and disinfected on the inside. The Company will ensure that hand sanitizer dispensers are always filled. Frequently touched items (i.e., door pulls and toilet seats) will be disinfected frequently.
- Vehicles and equipment/tools should be cleaned at least once per day and before change in operator or rider.
- The Company will ensure that any disinfection shall be conducted using one of the following:
 - Common EPA-registered household disinfectant.
 - Alcohol solution with at least 60% alcohol; or
 - Diluted household bleach solutions (these can be used if appropriate for the surface).
- The Company will maintain Safety Data Sheets of all disinfectants used on site.

VI. Jobsite Exposure Situations

- **Employee Exhibiting COVID-19 Symptoms**

If an employee exhibits COVID-19 symptoms, the employee must remain at home until he or she is symptom free for 72 hours (3 full days) without the use of fever-reducing or other symptom-

□

altering medicines (e.g., cough suppressants). The Company will similarly require an employee that reports to work with symptoms to return home until they are symptom free for 72 hours (3 full days). To the extent practical, employees are required to obtain a doctor's note clearing them to return to work.

- **Employee Tests Positive for COVID-19**

An employee that tests positive for COVID-19 will be directed to self-quarantine away from work. Employees that test positive and are symptom free may return to work when at least seven (7) days have passed since the date of his or her first positive test and have not had a subsequent illness. Employees that test positive and are directed to care for themselves at home may return



to work when: (1) at least 72 hours (3 full days) have passed since recovery;¹ and (2) at least seven (7) days have passed since symptoms first appeared. Employees that test positive and have been hospitalized may return to work when directed to do so by their medical care provider. The Company will require an employee to provide documentation clearing their return to work from a physician.

- **Employee Has Close Contact with a Tested Positive COVID-19 Individual**

Employees that have come into close contact with a confirmed-positive COVID-19 individual (co-worker or otherwise), will be directed to either: (1) continue to work, provided they remain asymptomatic in accordance with Section III above; or, if they are symptomatic or the Company chooses to follow more conservative protocols, (2) self-quarantine for 14 days from the last date of close contact with the carrier. Close contact is defined as six (6) feet for a prolonged period.

If the Company learns that an employee has tested positive, the Company will conduct an investigation into co-workers that may have had close contact with the confirmed-positive employee in the prior 14 days and direct those individuals that have had close contact with the confirmed-positive employee to either continue to work, provided they remain asymptomatic in accordance with Section III above, or, if they are symptomatic or the Company chooses to follow more conservative protocols, to self-quarantine for 14 days from the last date of close contact with the carrier. If an employee learns that he or she has come into close contact with a confirmed-positive individual outside of the workplace, he/she must alert a manager or supervisor of the close contact.

VII. OSHA Recordkeeping

For purposes of recording cases of COVID-19, the Company is responsible for recording a case, if:

- The case is a tested-positive confirmed case of COVID-19, as defined by the CDC; and
- The case is “work-related,” which is defined as an event or exposure that either caused or contributed to the resulting condition or significantly aggravated a pre-existing injury or illness; and
- The case involves one or more of the following:
 - Death.
 - Days away from work.

¹ Recovery is defined as: (1) resolution of fever without the use of fever-reducing medications; and (2) improvement in respiratory symptoms (e.g., cough, shortness of breath).



- Restricted work or transfer to another job.
- Medical treatment beyond first aid.
- Loss of consciousness; and
- A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness.

However, per OSHA recent guidance, the Company will consider a COVID-19 positive case to be work-related only where:

- There is objective evidence that a COVID-19 case may be work-related. For example, several cases developing among workers who work closely together without an alternative explanation: and
- The evidence was reasonably available to the Company. For example, the Company was given information by employees or the Company learns of information regarding employees' health and safety in the ordinary course of business.

For purposes of reporting the case to OSHA, the Company will report any work-related confirmed cases if they result in a fatality within 30 days or an in-patient hospitalization within 24-hours of the exposure incident occurring.

VIII. "Essential" Industry

Several States and localities are issuing orders that prohibit work and travel, except for essential businesses. In general, construction work has been deemed essential and the Company is committed to continuing operations safely. If upon your travel to and from the worksite, you are stopped by State or local authorities, you will be provided a letter that you can show the authorities indicating that you are employed in an "essential" industry and are commuting to and from work.

IX. Confidentiality/Privacy

Except for circumstances in which the Company is legally required to report workplace occurrences of communicable disease, the confidentiality of all medical conditions will be maintained in accordance with applicable law and to the extent practical under the circumstances. When it is required, the number of persons who will be informed of an employee's condition will



be kept at the minimum needed not only to comply with legally-required reporting, but also to assure proper care of the employee and to detect situations where the potential for transmission may increase. A sample notice to employees is attached to this Plan. The Company reserves the right to inform other employees that a co-worker (without disclosing the person's name) has been diagnosed with COVID-19 if the other employees might have been exposed to the disease so the employees may take measures to protect their own health.

X. General Questions

Given the fast-developing nature of the COVID-19 outbreak, the Company may modify this Plan on a case by case basis. If you have any questions concerning this Plan, please contact the company safety director.



Appendix A – Temperature Screening Guidance

General Considerations²

- Certain local jurisdictions have recommended or required employers to conduct temperature screenings of employees as they enter the worksite. Any applicable federal, state, or local requirements on employee temperature screenings should be consulted prior to performing them.
- Temperature screenings must be conducted consistently, professionally, and with proper training for those conducting the checks. Such checks must be uniformly and non-discriminatorily conducted on all employees (as well as contractors, vendors, customers, and/or visitors, if they will also be screened).
- Any information obtained from temperature screenings should be stored securely with access limited to those with a business need to know. It is essential to have proper documentation if an individual needs to be excluded from the worksite based on the results of their temperature screening. If excluding individuals from a worksite based upon temperature, a set temperature should be established, based upon public health recommendations. Many employers have set the temperature required for exclusion at 100.4 degrees Fahrenheit or above.
- Wage protocols and procedures to account for any potential time spent waiting in line to be screened must also be considered. This is particularly important at worksites where there may be numerous workers reporting to their shift at the same time and only one or two individuals conducting the temperature screenings. Any existing Collective Bargaining Agreements should also be considered.

Options for Screening

- There are two options for how temperature screening can be conducted:
 - By the employee, at home, prior to leaving for work; or
 - By the employer, at the worksite, when the employee arrives to report for their shift.
- Types of temperature screeners:
 - *Traditional digital thermometers applied typically in the ear.* These thermometers should only be used with a temperature screening policy that requires employees to

² Temperature screening involves numerous, difficult legal issues. This Appendix does not represent a comprehensive discussion of all those issues. It is intended to provide some basic guidance to contractors who might be performing screening. Contractors should consult with legal counsel before implementing a screening program.



conduct such screenings at their homes, prior to leaving for their shift. These types of thermometers should not be used by employers at the worksite as there would be a high risk of exposure for the individuals conducting such temperature screenings.

- *Infrared thermometers.* Infrared thermometers are the most practicable and safe option for conducting screening at work. However, the individual conducting such temperature screening must still be provided with appropriate protective gear. If the infrared thermometer does not allow the individual conducting the screening to stand at least six feet from the employee being screened, the following protective gear is recommended:
 - The individual conducting the screening should wear a face covering and gloves. If possible, the employee being screened should wear a face covering as well during the check.
 - If the employee is not wearing a face covering, the individual conducting the screening should wear a gown and eye protection in addition to a face covering and gloves.

If the individual conducting the screening can stand six feet or more from the employee being screened, no additional protective gear is necessary, though a face mask and gloves are recommended.



Essential Industry Employee

Re: Shelter-in-Place Orders

To whom it may concern:

Please be informed that the bearer of this letter is employed at Thomas Construction Group, located at 1022 Ashes Dr. Wilmington NC. The Company is a General Contractor for commercial construction. We have reviewed all applicable Orders and have determined that our operations qualify as essential/critical infrastructure and that we are able to continue to operate under those Orders.

Employees in possession of this letter have been deemed essential to the minimum basic operations of our business. All non-essential personnel have been notified to work remotely until further notice. Employees who are critical to the minimum basic operations of the business have been instructed to comply with social distancing rules/requirements in the jurisdiction, as well as other safety and health precautions.

If you have questions regarding the nature or scope of this letter, please do not hesitate to contact Carl Weatherington at 910/777/9633 or email at cweatherington@thomasconstructiongroup.com.

Sincerely,

Carl Weatherington
Corporate Safety Director



Employee Notification Letter Example

DATE: [DATE]

TO: [CLOSE CONTACT EMPLOYEE]

FROM: [COMPANY REP]

We have been informed by one of our [employees/customer/vendor/etc] working at [SITE] that he/she has a confirmed case of COVID-19, commonly known as “Coronavirus,” based on test results obtained on [DATE]. Per company policy, this [employee/customer/vendor/etc] has been directed to self-quarantine until permitted to return to work.

We are alerting you to this development because, based on the Company’s investigation, we believe that you may have been exposed to a confirmed-positive case, on or about [DATE]. As a critical infrastructure employee, Thomas will permit you to work provided you remain asymptomatic. In addition, we are implementing the following practices:

- Measuring temperature of employees before they enter the worksite.
- Regularly monitoring asymptomatic employees.
- Ensuring employees maintain social distancing as work duties permit; and
- Routinely disinfecting workspaces.

You are always also required to wear a face covering while at the worksite for at least 14 days. Please inform the safety director, human resources manager and your supervisor if any of the following occur to you during the next 14 days: you experience flu-like symptoms, including fever, cough, sneezing, or sore throat; or you test positive for COVID-19.

We also want to take this opportunity to remind you that one of our core values as a company is respect for and among our employees or customers. We will treat information regarding the identity of employees or customers with suspected or confirmed cases of COVID-19 as confidential to the extent practicable and will comply with applicable laws regarding the handling of such information. Further, per Company policy, we will not tolerate harassment of, or discrimination or retaliation against, employees or anyone testing positive for Covid-19.

Please contact safety director at 910/777/9633 if you have any questions or concerns.

For more information about COVID-19, please visit the CDC website at: <http://www.cdc.gov/coronavirus/2019-ncov/index.html>



COVID-19 Checklist

Know the Symptoms of COVID-19

- Coughing, fever, shortness of breath, and difficulty breathing.
- Early symptoms may include chills, body aches, sore throat, headache, diarrhea, nausea/vomiting, and runny nose. If you develop a fever and symptoms of respiratory illness, **DO NOT GO TO WORK**, and call your health-care provider immediately. Do the same thing if you come into close contact with someone showing these symptoms.

Employer Responsibilities

- Develop a COVID-19 Exposure Action Plan.
- Conduct safety meetings (toolbox talks) by phone if possible. If not, instruct employees to maintain 6-feet between each other. The foreman/supervisor will track attendance verbally rather than having employees sign an attendance sheet.
- Access to the job site and work trailer will be limited to only those necessary for the work.
- All visitors will be pre-screened to ensure they are not exhibiting symptoms.
- Employees, contractors, and visitors will be asked to leave the jobsite and return home if they are showing symptoms.
- Provide hand sanitizer and maintain Safety Data Sheets of all disinfectants used on site.
- Provide protective equipment (PPE) to any employees assigned cleaning/disinfecting tasks.
- Talk with business partners about your response plans. Share best practices with other businesses in your communities (especially those in your supply chain), chambers of commerce, and associations to improve community response efforts.

Employee Responsibilities

- Become familiar with the Exposure Action Plan and follow all elements of the Plan.
- Practice good hygiene: wash hands with soap and water for at least 20 seconds. If these are not available, use alcohol-based hand rub with at least 60% alcohol. Avoid touching your face, eyes, food, etc. with unwashed hands.

Cleaning/Disinfecting Job Sites and Other Protective Measures

- Clean and disinfect frequently used tools and equipment on a regular basis. This includes other elements of the jobsite where possible. Employees should regularly do the same in their assigned work areas.
- Clean shared spaces such as trailers and break/lunchrooms at least once per day.
- Disinfect shared surfaces (door handles, machinery controls, etc.) on a regular basis.
- Avoid sharing tools with co-workers. If not, disinfect before and after each use.
- Arrange for any portable job site toilets be cleaned by the leasing company at least twice per week and disinfected on the inside.
- Trash collected from the jobsite must be changed frequently by someone wearing gloves.

Personal Protective Equipment and Alternate Work Practice Controls

- Provide and wear the proper PPE.
- Keep the dust down by using engineering and work practice controls, specifically using a water delivery and/or dust collection systems.



COVID-19 Toolbox Talk

What is COVID-19?

The novel coronavirus, COVID-19 is one of seven types of known human coronaviruses. COVID-19, like the MERS and SARS coronaviruses, likely evolved from a virus previously found in animals. The remaining known coronaviruses cause a significant percentage of colds in adults and children, and these are not a serious threat for otherwise healthy adults.

Patients with confirmed COVID-19 infection have reportedly had mild to severe respiratory illness with symptoms such as fever, cough, and shortness of breath.

According to the U.S. Department of Health and Human Services/Centers for Disease Control and Prevention (“CDC”), Chinese authorities identified an outbreak caused by a novel—or new—coronavirus. The virus can cause mild to severe respiratory illness. The outbreak began in Wuhan, Hubei Province, China, and has spread to a growing number of other countries—including the United States.

How is COVID-19 Spread?

COVID-19, like other viruses, can spread between people. Infected people can spread COVID-19 through their respiratory secretions, especially when they cough or sneeze. According to the CDC, spread from person-to-person is most likely among close contacts (about 6 feet). Person-to-person spread is thought to occur mainly *via* respiratory droplets produced when an infected person coughs or sneezes, like how influenza and other respiratory pathogens spread. These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs. It is currently unclear if a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes.

In assessing potential hazards, employers should consider whether their workers may encounter someone infected with COVID-19 in the course of their duties. Employers should also determine if workers could be exposed to environments (e.g., worksites) or materials (e.g., laboratory samples, waste) contaminated with the virus.

Depending on the work setting, employers may also rely on identification of sick individuals who have signs, symptoms, and/or a history of travel to COVID-19-affected areas that indicate potential infection with the virus, in order to help identify exposure risks for workers and implement appropriate control measures.

There is much more to learn about the transmissibility, severity, and other features associated with COVID-19, and investigations are ongoing.



COVID-19 Prevention and Work Practice Controls:

Worker Responsibilities

- Frequently wash your hands with soap and water for at least 20 seconds. When soap and running water are unavailable, use an alcohol-based hand rub with at least 60% alcohol. Always wash hands that are visibly soiled.
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow.
- Avoid touching your eyes, nose, or mouth with unwashed hands.
- Avoid close contact with people who are sick.
- Employees who have symptoms (i.e., fever, cough, or shortness of breath) should notify their supervisor and stay home—DO NOT GO TO WORK.
- Sick employees should follow [CDC-recommended steps](#). Employees should not return to work until the criteria to [discontinue home isolation](#) are met, in consultation with healthcare providers and state and local health departments.

General Job Site / Office Practices

- Clean AND disinfect frequently touched objects and surfaces such as workstations, keyboards, telephones, handrails, and doorknobs. Dirty surfaces can be cleaned with soap and water prior to disinfection. To disinfect, use [products that meet EPA's criteria for use against SARS-CoV-2external icon](#), the cause of COVID-19, and are appropriate for the surface.
- Avoid using other employees' phones, desks, offices, or other work tools and equipment, when possible. If necessary, clean and disinfect them before and after use.
- Clean and disinfect frequently used tools and equipment on a regular basis.
 - This includes other elements of the jobsite where possible.
 - Employees should regularly do the same in their assigned work areas.
- Clean shared spaces such as trailers and break/lunchrooms at least once per day.
- Disinfect shared surfaces (door handles, machinery controls, etc.) on a regular basis.
- Avoid sharing tools with co-workers if it can be avoided. If not, disinfect before and after each use.
- Arrange for any portable job site toilets to be cleaned by the leasing company at least twice per week and disinfected on the inside.
- Any trash collected from the jobsite must be changed frequently by someone wearing gloves.
- In addition to regular PPE for workers engaged in various tasks (fall protection, hard hats, hearing protection), employers will also provide:
 - Gloves: Gloves should always be worn while on-site. The type of glove worn should be appropriate to the task. If gloves are not typically required for the task, then any type of glove is acceptable, including latex gloves. Gloves should not be shared if possible.
 - Eye protection: Eye protection should always be worn while on-site.



- Some employees may be required to wear face coverings, including in those situations where (1) it is mandated by state or local rule, or (2) employees must work in proximity of six (6) feet from other employees. A face covering is a cloth, bandana, or other type of material that covers a person's nose and mouth. The CDC lists five criteria for "cloth face coverings": the face covering should: fit snugly but comfortably against the side of the face; be secured with ties or ear loops; include multiple layers of fabric; allow for breathing without restriction; and be able to be laundered and machine-dried without damage or change to shape. Use of a face covering is not a substitute for other workplace preventative techniques that are outlined in this Plan.

Updated protocol from Wilmington Health Occupational Medicine July 22, 2020

As promised, Wilmington Health Occupational Medicine want to keep you apprised of any new information we receive regarding COVID-19. Dan Shapiro, PA-C is collaborating with infectious disease doctors at Wilmington Health and would like to share the latest recommendations. As of July 22, 2020, here are Dan's Return-To-Duty recommendations following illness, symptoms, or exposure.

	Either	Or
Positive COVID Test w/ symptoms	- At least 10 days since positive test collected or onset of symptoms (whichever is longer) - Fever free for at least 24 hours with no fever - Symptoms have improved	- Fever free for at least 24 hours without fever medication - Symptoms have improved - At least 2 negative COVID tests at least 24 hours apart
Positive COVID Test – NO symptoms	- At least 10 days since positive test was collected	- At least 2 negative COVID tests at least 24 hours apart
COVID exposure – NO symptoms	- At least 14 days quarantine	- If symptoms develop, 10 additional isolation days from onset of symptoms
COVID exposure w/ symptoms	- At least 10 days since onset of symptoms - Symptoms have improved - Fever free for at least 24 hours without fever medication	

As experts learn more, we will continue to provide you with information. Should you have any questions, please do not hesitate to reach out. We continue to offer COVID testing for our Occupational Medicine employers. We are open at 1202 Medical Center Dr. and welcome any employees you may need to send for standard Occ Med reasons. No one experiencing COVID symptoms, or with recent exposure is allowed in the building. Please have your employee who may fall in that category call us at (910) 341-1542 should they need our services.

See revision below

Revision 11/3/20

Thomas continues to monitor federal, state, and local public health communications about COVID-19 and update our protocol accordingly. The latest CDC guidelines for exposure to Covid-19 are listed [here](#).

Clorox wipes and antibacterial are available in the office and all site trailers.



- If you have COVID-19 symptoms or have been exposed to someone with COVID, notify Carl in Safety and Lisa in HR and stay home. You may be instructed to get a COVID test before returning to work. **ISOLATION FOR 48 HRS FROM EXPOSURE MAY BE REQUIRED TO ENSURE VALIDITY OF COVID TEST.**
- COVID tests can be done with TCG's company doctor's office: Wilmington Health Occupational Health at 1202 Medical Center Drive, schedule an appointment by calling 910.341.1542. If you choose to go to your own doctor, **please make sure your test is "PCR-based" (even the rapid test must be PCR-based).** Other tests (rapid antigen) are not reliable.
- If you are sick, stay home and do not **return to work** until you meet criteria to discontinue home isolation.
- If you are awaiting a COVID test result, you should work remote/from home until you're cleared to return to work from Lisa or Carl.

COVID Scenario	Either	Or
Negative PCR-based COVID Test with no symptoms.	Maintain 6 ft social distancing	Wear mask indoors
Negative PCR-based COVID Test with symptoms.	Quarantine for 10 days from onsite of symptoms, improving and fever free and off fever medicine for 24 hours.	
Positive PCR-based COVID Test w/ symptoms.	- At least 10 days since positive test collected or onset of symptoms (whichever is longer) - Fever free for at least 24 hours with no fever - Symptoms have improved	- Fever free for at least 24 hours without fever medication - Symptoms have improved - A negative PCR-based COVID test
Positive COVID Test – NO symptoms	- At least 10 days since positive test was collected	- A negative PCR-based COVID test
COVID exposure w/ symptoms	-Get PCR-based test. -Don't return until at least 10 days since onset of symptoms. - Symptoms have improved. - Fever free for at least 24 hours without fever medication	

- If you are well but have someone in your household who has COVID-19, notify Lisa or Carl to determine appropriate next steps regarding report to work, and follow CDC recommended precautions.
- Wash hands often with soap and water for at least 20 seconds or use hand sanitizer with at least 60% alcohol if soap and water are not available. Avoid touching eyes, nose, and mouth.
- Avoid using other employees' phones, desks, offices, or other work tools and equipment. Clean and disinfect between employees if sharing occurs.
- Stay at least 6 feet from others when possible.
- Use cloth face coverings (if appropriate) when social distancing is not possible.



PART 4

SAFETY ORIENTATION PACKAGE

All personnel performing work on a Thomas Construction Group (TCG) site must complete safety orientation training before performing any tasks.

Safety orientation training is required for all TCG employees, subcontractors, vendors and/or anyone working on the jobsite.

Orientation training includes:

- Introduction to the job Superintendent
- Viewing the orientation video
- Passing a post-training quiz administered verbally by Site Superintendent

Following successful completion on this training, the trainee shall sign the orientation log, indicating that he/she understands and agrees to comply with the given rules. TCG will then issue an orientation sticker and place it on his/her hard hat.

If non-TCG trained personnel leave the jobsite for more than 180 days, he/she shall repeat the orientation training. Thomas Construction Group employees will require re-training if the period exceeds one year on any TCG project.



4.01 Basic Jobsite Safety Rules

1. Use and/or possession of intoxicants, alcohol or drugs are not allowed.
2. Hard hats will be worn by all employees and visitors at all times. At certain stages of the project, this ruling may be relaxed at the discretion of the Project Superintendent and/or the TCG Safety Committee.
3. Long pants and shirts with 4" minimum sleeves are required at all times.
4. Hard sole shoes are required – no tennis shoes unless approved for specific jobs by the Project Superintendent and/or TCG Safety Committee.
5. Eye protection, ear protection, and respiratory protection devices will be worn when required by OSHA standards.
6. Only authorized personnel are permitted to operate equipment / vehicles.
7. No riders on machinery or equipment. Seat belt use is required at all times if provided. Riding in the back of trucks is prohibited.
8. All heavy equipment with limited visibility must have operable backup alarms or a spotter when backing up. Seat belts shall be used on all vehicles and equipment that are equipped with them!
9. No one shall enter a trench or excavation over 5' deep unless it is properly sloped, shielded or shored in accordance with OSHA standard 29CFR1926.450-454, Subpart L and inspected by a competent person.
10. Immediately report all accidents, unsafe conditions / practices to your supervisor.
11. Any individual performing work at a height of six (6) feet or more must have fall protection in accordance with the OSHA standards.
12. All scaffolding is to be erected and maintained by a competent person in a manner consistent with OSHA standards. Fall protection required at 10 feet on scaffolds.



4.02 Safety Program

I have reviewed the Thomas Construction Group Safety Rules 1 through 12 as outlined in this package.

The Thomas Construction Group Safety & Health Manual was made available in the event that my company does not have their own and the TCG Company Safety Rules were either read by me or read to me by an employee of Thomas Construction Group. I agree to be guided by the safety instructions issued by my supervisors and will report to him all unsafe conditions or practices observed on the work site.

I understand that any violation of the safety rules or refusal to comply with an OSHA "Safety and Health Regulation" is grounds for dismissal.

Except under emergency conditions, I will obtain first aid treatment at the site for all injuries and will report to the foreman or the superintendent before leaving the jobsite to obtain additional medical attention.

A list of physicians and medical facilities for the company are available onsite and I understand that I must choose one of the named physicians or medical facilities for an on the job injury. I further understand that if I seek medical treatment elsewhere, other than the listed physicians or medical facilities for an on the job injury, I shall be responsible for my own medical bills.

Signature: _____



4.03 Fire Extinguisher Safety

- Four things needed to maintain a fire. Take away any one of the first three and the fire will be out.
 - Fuel
 - Heat
 - Oxygen
 - Chain reaction
- Stay upwind of a fire when using a fire extinguisher.
- Stay back 8 to 10 feet from a grease fire because the force of the pressure / powder from the fire extinguisher may cause the grease to splash.
- The main three classes of fire extinguisher ratings are: (1) Wood, paper, plastic; (2) Flammable liquids; and (3) Electrical
- **PASS** is the word used to train people properly to use a fire extinguisher.
 - **P**ull the pin.
 - **A**im the extinguisher at base of fire.
 - **S**queeze the handle.
 - **S**weep extinguisher from side to side from outside towards center of fire.
- A 10lb. B.C. rated extinguisher should be within 50' of any 5 gallons of fuel. A 20 lb. B.C. rated extinguisher shall be located not less than 25' nor more than 75' from any flammable liquid storage area (>25 gallons) located outside.
- All fires no matter how small must be reported immediately to supervisor.
- Mount fire extinguisher: Minimum of 48" from the floor, but no more than 60" off the floor.



- The distance one should stand from the base of the fire is written on the fire extinguisher. For example: (2 ½ lb.) Minimum distance is 6' (20 lb.) minimum distance is 12'.
- Everyone should check the fire extinguisher in their work area daily to make sure it has adequate pressure and that the pin is still in the proper place. Periodic inspection is required by OSHA standards and must be documented in some form, i.e.: inspection tag, filed documentation, color code, etc.
- Fire extinguishers shall be serviced at least once a year.
- At each testing, a maintenance tag will be placed on the extinguisher to show the inspection date.
- A fire extinguisher, rated not less than 2A, shall be provided for each 3,000 square feet of the protected building area, or major fraction thereof. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 100 feet.

4.04 Hazard Communication

Most hazards will fall into five broad categories:

1. Flammables and combustibles
2. Compressed gases
3. Poisons
4. Corrosives
5. Irritants

A hazardous substance can endanger our well-being in four ways:

1. Inhaled
2. Ingested
3. Absorbed
4. Injected



SDS's (Safety Data Sheets) contain the following information:

1. How to properly handle and store
2. Outline spill cleanup procedures
3. Medical and first aid procedures

Know where the SDS's, emergency supplies, and emergency phone numbers are located.

Understand how to interpret and use the SDS's.

Follow the guidelines outlined on labels which explain the dangers of the product and the proper way to use this product.

The hazardous chemical list, Thomas Construction Group Hazard Communication Program, and the SDS are available for my review upon request.

Observe and follow safe work practices while working for Thomas Construction Group.

4.05 Emergency Plan

- An emergency plan is a set of rules or procedures to be followed by all personnel in the event of an emergency.
- The emergency plan is maintained by the company and is implemented by the Superintendent. The emergency plan determines the proper access / egress of emergency equipment and/or personnel into or out of the area, in case of emergency.
- Supervisors will be directed to key locations, to assist in an emergency situation.
- Each employee is expected to follow directions of supervisors and cooperate in any emergency action effort.
- Personnel should evacuate the area in an orderly fashion, when instructed to do so by the supervisor.
- If you become aware of an emergency situation or any injury, notify a supervisor immediately.
- Notify supervisor of the location of emergency so that 911 can be called.



- All personnel shall evacuate the area in an orderly manner and reassemble in the designated location.
- All supervisors are responsible for knowing the location and number of employees at all times.
- All personnel will be accounted for to ensure that everyone has evacuated the area.
- Personnel are strictly forbidden to discuss project conditions, incidents or emergencies with the owner, media, press or any person not associated with the emergency.
- An emergency evacuation plan will be discussed during this orientation and a "muster area" will be established by the Superintendent in charge.

4.05 A Construction Site Hurricane Preparedness Checklist

Construction Project _____

Superintendent _____

24-48 Hours before landfall of hurricane stop all construction activity and complete the following.

1. Scaffolding removed or secured	Yes	No	Comments _____
2. Crane boom secured if applicable	Yes	No	Comments _____
3. Secure floor or roof decking	Yes	No	Comments _____
4. Secure dumpsters	Yes	No	Comments _____
5. Empty & secure temp toilets	Yes	No	Comments _____
6. Secure gravel & other light stone	Yes	No	Comments _____
7. Secure loose building materials	Yes	No	Comments _____
8. Secure plywood & sheetrock	Yes	No	Comments _____
9. Secure or remove equipment	Yes	No	Comments _____
10. Remove trash	Yes	No	Comments _____
11. Remove signage not needed	Yes	No	Comments _____
12. Secure signage for safety	Yes	No	Comments _____
13. Clean storm drains	Yes	No	Comments _____
14. Broom clean entire site	Yes	No	Comments _____
15. Board up windows in site trailer	Yes	No	Comments _____



16. Turn off all power to site	Yes	No	Comments_____
17. Turn off water to site		Yes	No Comments_____
18. Charge all battery operated tools	Yes	No	Comments_____
19. Charge all laptops, cell phones	Yes	No	Comments_____
20. Secure all flammable liquids	Yes	No	Comments_____

After site is secure, advise subcontractors to leave and not return until hurricane threat has passed. Make sure to have contact numbers for all subcontractors stored in a safe and dry place in addition to having them in your cell phone and that they know who will contact them after storm passes.

During the last 24 hours before landfall of the hurricane, GO HOME and take care of your family and personal property. Make sure you have a hurricane preparedness plan for your home also. Stock up on items needed such as water, food and medicine to sustain your family for at least 3-5 days or longer depending on damage in area. Fuel up your vehicles in case of mandatory evacuation.

4.06 **Electrical** (Focus Four – Electrical Hazards)

- All electrical equipment and power tools must be protected from shock hazards by use of a Ground Fault Circuit Interrupter (GFCI) plug or by double insulation.
- All electrical power "drop" cords must have grounding lugs and insulation of wires intact.
- Cords found defective must be repaired immediately or be removed from service by cutting the cord at the male plug end.
- Ensure that electrical equipment is free from recognized hazards that are likely to cause death or serious physical harm to employees. Safety of equipment shall be determined on the basis of 29CFR1926.403
- Lock-out and tag-out of equipment shall be in accordance w/ 29CFR1910.147 and 29CFR1926.803.
- Note: All electrical drop cords, GFCI's, corded power tools/equipment, etc. must be periodically inspected with proof (documentation, color coded tape, etc.) of actual inspections.



4.07 Safety Tips

- Assume that all overhead wires are energized at lethal voltages. Never assume that a wire is safe to touch even if it is down or appears to be insulated.
- Never touch a fallen overhead power line. Call the electric utility company to report fallen electrical lines.
- Stay at least 10 feet (3 meters) away from overhead wires during cleanup and other activities. If working at heights or handling long objects, survey the area before starting work for the presence of overhead wires.
- Never operate electrical equipment while you are standing in water.
- Never repair electrical cords or equipment unless qualified and authorized.
- Have a qualified electrician inspect electrical equipment that has gotten wet before energizing it.
- If working in damp locations, inspect electric cords and equipment to ensure that they are in good condition and free of defects, and use a ground-fault circuit interrupter (GFCI).
- Always use caution when working near electricity.

4.08 Ladder Safety (Focus Four – Fall Hazard)

- All ladders shall be inspected prior to use.
- The use of ladders with broken or missing rungs, broken or split side rails, or other faulty or defective construction is prohibited.
- Portable ladder feet shall be placed on a substantial base, on a 4 to 1 pitch and the area around the top and bottom of the ladder should be kept clear and clean at all times.
- Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.
- Portable ladders shall be tied, blocked or otherwise secured to prevent movement.
- Ladders shall extend 36 inches above the landing and be secured.
- Avoid the use of metal ladders when the possibility of contact with electrical power exists.
- Always clean mud or greasy substances from shoes before climbing up ladder.
- Always face the ladder and maintain a “three point contact” (one hand & two feet or two hands & one foot), whether climbing up or down.



- It is dangerous to reach out too far from a ladder in any direction, keep your "center of gravity" as close to the ladder as possible. Move the ladder, as the work requires.
- Never use the second from the top or the top step of a step ladder.
- Never use a step ladder as a straight ladder. Open fully and use as designed.
- Make sure that all labels and tags on ladders are in place and legible.
- All ladders must be periodically inspected and documented by tags, filed documentation, color code or any appropriate means to prove inspection occurred.

4.09 Struck-by Hazards (Construction Focus Four)

- Struck-by injuries are produced by forcible contact or impact between the injured person and an object or piece of equipment.
- When the impact alone creates the injury, the event is considered as *Struck*. On the other hand, when the injury is created more as a result of crushing injuries between objects, the event is considered as *Caught*.

Occupational fatalities caused by struck-by hazards are a serious concern. According to the Bureau of Labor Statistics (BLS) report titled "Manner in which fatal work injuries occurred 2009" preliminary data, the category of "Contact with objects and equipment is 17% of the total 4,340 fatal work injuries. Of that 17%, the sub-category of "Struck-by object" was 10-% [more than half].

The most common type of struck-by hazards in construction are:

- Struck-by flying objects
- Struck-by falling objects
- Struck-by swinging objects
- Struck-by rolling objects



Flying object hazard exists when something has been thrown, hurled, or is being propelled across space. It can include instances when a piece of material separates from a tool, machine or other equipment, striking a worker, resulting in injuries or fatality.

Also, a hazard exists if an object is ejected under power by a tool or equipment usually designed for that purpose such as, a nail from a nail gun.

Using compressed air can also cause flying object hazards.

Falling objects occur when the source of injury is falling from an elevation to a lower level, including instances where the injured person is crushed, pinned, or caught under a falling object, other than collapsing material or structures, resulting from being struck by a falling object or equipment.

Swinging objects occur when materials are mechanically lifted and have the potential to swing and strike workers. As the load is lifted, the materials may swing, twist or turn. This movement can catch workers by surprise and they could be hit by the swinging load. Windy conditions are especially hazardous because the load will swing more. Loads must be rigged properly to prevent swinging.

When the source of injury has been referred to objects which are not free standing, they are attached at some point or are being held by the worker. This includes instances where a hinge-like motion retracts creating swinging motion in which the worker is struck-by a slamming or swinging motion.

Rolling objects injuries occur when an object which is rolling, moving, or sliding on the same level at which the worker is located. This includes instances in which the worker is struck or run over by a moving vehicle without being caught under it or instances in which the worker is struck-by a sliding object or equipment on the same level.



4.10 Excavation and Trenching (Focus Four – Caught Between Hazard)

- For any and all trenches more than (5') five feet deep, slope sides of trench 1.5 feet horizontal to 1.0 feet vertical, unless a COMPETENT PERSON classifies the soil and determines that this is not necessary. Other alternatives are to use shoring and/or trench boxes.
- Shoring and sloping of all trenches and/or excavations greater than (20') twenty feet deep, MUST be designed by a registered Professional Engineer.
- A COMPETENT PERSON is one who has been trained and is capable of identifying existing and predictable hazards in the surrounding work areas, and/or working conditions that are unsanitary, hazardous, or dangerous and who has the authority to take prompt corrective measures to eliminate the hazard. Also, the competent person must have the authority to stop work if a hazard exists.
- A competent person must inspect / check all trenches, adjacent areas, and any protective systems for possible cave-ins, failure of protective systems, hazardous conditions, etc. Inspections MUST be performed DAILY before work begins and/or when any worker enters the area. Inspections must be performed after any rainstorm, any hazard-increasing occurrence and/or any other change in conditions.
- In trenches deeper than (4') four feet, locate means of an exit, such as ladders, steps or ramps so that they are no more than (25') twenty-five feet of travel from anyone in the trench.
- Superintendents are required to call 811...48 hours prior to excavation / trenching.



4.11 Housekeeping / Clean Up

No one should create hazards for other workers and employees by leaving objects like pipes, carts, boxes, barrels and other trash / debris in the access path and work areas.

Housekeeping is a major part of our daily work. With the cooperation of everyone we can keep all areas clean, neat, organized and free from tripping hazards.

A clean workplace reduces fire hazards.

Housekeeping shall be part of your DAILY routine and must be performed continuously throughout each shift by all workers on the jobsite.

Follow these steps to help keep your work areas clean:

- Always check / inspect your workplace DAILY.
- Dispose of wastepaper, cardboard, lunch and/or break trash, shipping material, scrap material, etc. into the appropriate container DAILY.
- Clean up anything that is spilled on the floor immediately or as soon as possible.
- Keep all aisles, access paths, walkways clear of obstruction...these areas are for people access, not material storage.
- Store all materials neatly and keep them away from traffic and access areas.
- Use nonflammable containers for disposing of scrap and waste substances.
- Always put tools back in their proper places. Tools left on the floor are a hazard!
- Know all locations of first aid and firefighting equipment.

Take time to think SAFELY!

Note: Poor housekeeping is a major cause of slip, trip and fall accidents.



4.12 Substance Abuse Policy

I acknowledge by my signature on the Thomas Construction Group Orientation Log, that I have received Thomas Construction Group Substance Abuse Program Statement, Rules, Occasions for Drug / Alcohol Testing, and Disciplinary Action that I have reviewed them thoroughly, and that I will abide by every aspect of them, including, but not limited to, testing and reporting requirements. I further acknowledge that this policy does not change my status as an employee-at-will, which the employer may terminate with or without cause at any time, and that my signature on this acknowledgement is required as a condition of my continued employment.

I understand that the failure to comply with Thomas Construction Group Substance Abuse Program will result in termination of my employment.

Signature: _____



4.13 Safety Citation

On this date, _____ and time _____,

at this location _____

employee (name), _____

working for (company) _____

failed to comply with the safety rules and/or policies: _____

- ☐ 1st Offense – Written warning
- ☐ 2nd Offense - Written warning, suspension or termination
- ☐ 3rd Offense - Subject to termination



4.13A Subcontractor Safety Citation

On this date, _____ and time _____,

at this location _____

subcontractor employee (name), _____

working for (company) _____

failed to comply with the safety rules and/or policies: _____

Offense of TCG Critical Procedures

- ☐ Subcontractor employee is permanently expelled from site

Other Offenses

- ☐ 1st Offense – Written warning
- ☐ 2nd Offense – Written warning, 3-day suspension
- ☐ 3rd Offense – Subject to termination and mandatory re-training of subcontractor crew



4.14 Accident Termination Policy

Thomas Construction Group adopts the following policy regarding recurring injuries for the purpose of reducing or eliminating repetitive injuries among our employees.

If an employee has 3 accidents or injuries, which are caused by the employee, or if the employee causes two accidents or injuries to another employee within any twelve - month period, he / she will receive a written warning from the Safety Director. The written warning will state that if another accident occurs due to the actions or inactions of the employee within six months from the date of the warning, the employee will be terminated.

4.15 Safety Orientation

I have been verbally and visually orientated and/or trained to all Thomas Construction Group safety rules, regulations and/or policies.

These items include:

- Jobsite Safety Rules
- Safety Program
- Fire Extinguisher Safety
- Hazard Communication / SDS
- Emergency Plan
- Ladder Safety
- Struck-By
- Electrical
- Safety Tips
- Excavation & Trenching
- Housekeeping / Clean-up
- Substance Abuse Policy
- Safety Violation Citation System
- Accident Termination Policy

Questions / Comments: _____

Date _____
TCG Superintendent or Safety Director Date





PART 5

COMPANY FORMS





5.01 Supervisor's Accident Investigation Report

Name of Injured Person _____

Date of Birth _____ Telephone Number _____

Address _____

City _____ State _____ Zip _____

(Circle one) Male Female

What part of the body was injured? Describe in detail. _____

What was the nature of the injury? Describe in detail. _____

Describe fully how the accident happened? What was employee doing prior to the event? What equipment, tools being using? _____

Names of all witnesses:

Date of Event _____

Time of Event _____

Exact location of event: _____

What caused the event? _____



Were safety regulations in place and used? If not, what was wrong? _____

Employee went to doctor/hospital? Doctor's Name _____

Hospital Name _____

Recommended preventive action to take in the future to prevent reoccurrence.

Supervisor Signature

Date

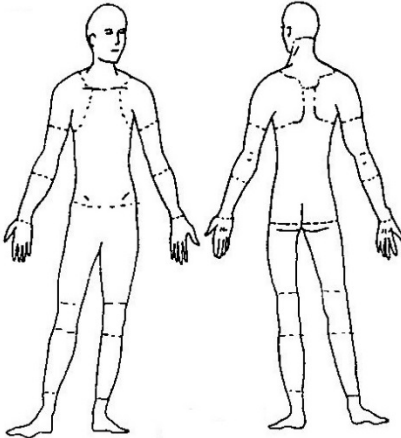


5.02 Incident Investigation Report

Instructions: Complete this form as soon as possible after an incident that results in serious injury or illness. (Optional: Use to investigate a minor injury or near miss that *could have resulted in a serious injury or illness*.)

This is a report of a: <input type="checkbox"/> Death <input type="checkbox"/> Lost Time <input type="checkbox"/> Dr. Visit Only <input type="checkbox"/> First Aid Only <input type="checkbox"/> Near Miss	
Date of incident:	This report is made by: <input type="checkbox"/> Employee <input type="checkbox"/> Supervisor <input type="checkbox"/> Team <input type="checkbox"/> Other _____

Step 1: Injured employee (complete this part for each injured employee)

Name:	Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female	Age:
Department:	Job title at time of incident:	
Part of body affected: (shade all that apply) 	Nature of injury: (most serious one) <input type="checkbox"/> Abrasion, scrapes <input type="checkbox"/> Amputation <input type="checkbox"/> Broken bone <input type="checkbox"/> Bruise <input type="checkbox"/> Burn (heat) <input type="checkbox"/> Burn (chemical) <input type="checkbox"/> Concussion (to the head) <input type="checkbox"/> Crushing Injury <input type="checkbox"/> Cut, laceration, puncture <input type="checkbox"/> Hernia <input type="checkbox"/> Illness <input type="checkbox"/> Sprain, strain <input type="checkbox"/> Damage to a body system: <input type="checkbox"/> Other _____	This employee works: <input type="checkbox"/> Regular full time <input type="checkbox"/> Regular part time <input type="checkbox"/> Seasonal <input type="checkbox"/> Temporary <input type="checkbox"/> Subcontractor Months with this employer: Months doing this job:

Step 2: Describe the incident

Exact location of the incident:	Exact time:
---------------------------------	-------------



What part of employee's workday? ☐ Entering or leaving work ☐ Doing normal work activities
☐ During meal period ☐ During break ☐ Working overtime ☐

Names of witnesses (if any):

Number of	Written witness statements:	Photographs:	Maps / drawings:
------------------	-----------------------------	--------------	------------------

What personal protective equipment was being used (if any)?

Describe, step-by-step the events that led up to the injury. Include names of any machines, parts, objects, tools, materials and other important details.

Step 3: Why did the incident happen?

Unsafe workplace conditions: (Check all that apply)

- ☐ Inadequate guard
- ☐ Unguarded hazard
- ☐ Safety device is defective
- ☐ Tool or equipment defective
- ☐ Workstation layout is hazardous
- ☐ Unsafe lighting
- ☐ Unsafe ventilation
- ☐ Lack of needed personal protective equipment
- ☐ Lack of appropriate equipment / tools
- ☐ Unsafe clothing
- ☐ No training or insufficient training
- ☐ Other:

Unsafe acts by people: (Check all that apply)

- ☐ Operating without permission
- ☐ Operating at unsafe speed
- ☐ Servicing equipment that has power to it
- ☐ Making a safety device inoperative
- ☐ Using defective equipment
- ☐ Using equipment in an unapproved way
- ☐ Unsafe lifting
- ☐ Taking an unsafe position or posture
- ☐ Distraction, teasing, horseplay
- ☐ Failure to wear personal protective equipment
- ☐ Failure to use the available equipment / tools
- ☐ Other:



Why did the unsafe conditions exist?

Why did the unsafe acts occur?

Is there a reward (such as "the job can be done more quickly", or "the product is less likely to be damaged") that may have encouraged the unsafe conditions or acts?

☐ Yes ☐ No

If yes, describe:

Were the unsafe acts or conditions reported prior to the incident?

☐ Yes ☐ No

No

Have there been similar incidents or near misses prior to this one?

☐ Yes ☐ No

Step 4: How can future incidents be prevented?

What changes do you suggest to prevent this incident/near miss from happening again?

☐ Stop this activity ☐ Guard the hazard ☐ Train the employee(s) ☐ Train the supervisor(s)

☐ Redesign task steps ☐ Redesign work station ☐ Write a new policy/rule ☐ Enforce existing policy

☐ Routinely inspect for the hazard ☐ Personal Protective Equipment ☐ Other: _____

What should be (or has been) done to carry out the suggestion(s) checked above?

Description continued on attached sheets: ☐

**Step 5: Who completed and reviewed this form? (Please Print)**

Written by:	Title:
Names of investigation team members:	
Reviewed by:	Title: Date:

Signature

supervisor Signature



5.03 Company Report of Incident (Property Damage No Injury)

Jobsite: _____

Jobsite Number: _____

Date of Incident: _____
incident: _____

Name of employee causing

Time of Incident: _____

Employed By: _____

Occupation: _____

Drug / Alcohol Test Performed? Yes____ No____

Description of Occurrence (Include location, time of day, related details, and resulting injuries if any.)

Witness:

Name: _____ Employed by: _____

Comments: _____

Did any unsafe conditions exist? If yes explain _____

Did worker contribute to incident? _____



Corrective action taken to prevent re-occurrence. Explain in detail:_____

Superintendent Signature

PM Signature



5.04 Subcontractor's Report of Accident

Jobsite:_____ Jobsite Number:_____

Date of Injury:_____ Name of Injured:_____

Age:_____ Employed By:_____

SS#:_____ Occupation:_____

Drug / Alcohol Test Performed? Yes____ No____

Description of Occurrence (Include location, time of day, related details, and resulting injuries.)

Witness:

Name: _____ Employed By:_____

Drug / Alcohol Test: Yes____ No____

Comments:_____

Did any unsafe conditions exist? _____

Did employee contribute to accident? _____



Corrective action taken:_____

Signature

Supervisor Signature



5.05 Motor Vehicle Accident Report

Date: _____ Name: _____

State and City Accident Occurred: _____

Name of Injured Persons: _____

Make and Model of Company Vehicle: _____

Description of Damage to Thomas Construction Group Vehicle: _____

Description of Damage to Other Vehicles and/or Property: _____

Description of Accident: _____



Signature: _____

THOMAS CONSTRUCTION GROUP, LLC

HOT WORK PERMIT

Date _____ Time _____

Name of Person(s) Performing Work _____

Specific Location of Work _____

Yes No

- | | | |
|-----|-----|---|
| ___ | ___ | Cutting or welding permitted in an area that has been made fire safe. |
| ___ | ___ | All movable fire hazards in the vicinity have been taken to a safe place. |
| ___ | ___ | Guards used to contain the heat, sparks and slag if fire hazards cannot be removed. |
| ___ | ___ | Floor or wall openings or cracks, open doorways and windows protected or closed. |
| ___ | ___ | Fire extinguisher available for instant use. |



- — Fire watch in areas where other than a minor fire might develop such as around combustible material.
- — Floors swept clean of combustible material for a radius of 35'.
- — Combustible floors have been kept wet, covered with damp sand or protected by fire resistant shields.
- — Welding/cutting done only in areas authorized by management. No welding/cutting in sprinkled building when sprinkler system is impaired or in presence of explosive atmosphere, or in area of storage of readily ignitable material.
- — Dusts and conveyor systems that might carry sparks to distant combustibles protected or shutdown.
- — Cutter/welder is trained in safe operation of equipment and the safe use of the process.
- — Any on-site contractors advised about flammable material or hazardous conditions of which they may not be aware.
- — Welding or cutting containers:
 - — Container thoroughly cleaned and ventilated;
 - — Any pipe lines or connections to containers disconnected or blanked.
 - — PPE used as needed– e.g., eye protection, helmet, protective clothing, respirator, gloves.
 - — Warning sign posted to warn other workers of hot metal.
 - — Appropriate ventilation provided.
 - — When working in confined spaces a permit has been issued as per 1910.146.

For specific requirements refer to General Industry Standards 1910.146; 1910.252; .253; .254 and .272 and Construction Standards 1926.803; .350; .352 and .353.

Authorized Signature – Supervisor/Superintendent

Revised 08/12/2016



PART 6

SDS (Separate)



Orientation Quiz

- 1) Most of the Safety & Health rules & regulations can be found in the following:
 - a) CFR 1926
 - b) CFR 1910
 - c) Both a & b
 - d) None of the above

- 2) A Job Hazard Analysis (JHA) or a Safe Plan of Action (SPA) should be prepared and reviewed:
 - a) Once a week.
 - b) At the end of each shift.
 - c) Prior to each new task.
 - d) Monthly.

- 3) The _____ is a document that focuses on job tasks to identify hazards before they occur. It also includes a checklist of the most potential hazards and defines the actions to be taken to eliminate, avoid or protect yourself from them.
 - a) Job Hazard Analysis
 - b) Safe Plan of Action
 - c) Daily Log
 - d) All of the above

- 4) Hard hats must be worn:
 - a) as designed.
 - b) at all times.
 - c) At the TCG Superintendent's discretion.
 - d) Both a & c.

- 5) Long pants and a minimum 4" sleeves are required on the jobsite.
 - a) True
 - b) False

- 6) Heavy equipment operators must have evidence of training & experience operating the equipment they are on.
 - a) True



- b) False
- 7) It is permissible to ride in the back of a pickup truck as long as it is on the jobsite.
- a) False
 - b) True
- 8) Excavations/Trenches must be sloped, benched, shored or have a trench box if the depth is:
- a) 4' or more.
 - b) 5' or more.
 - c) 6' or more.
 - d) 10' or more.



- 9) Fall Protection is required if working at which height?
- a) 4' or above.
 - b) 5' or above.
 - c) 6' or above
 - d) 10' or above.
- 10) When using Scaffolding, you must have a:
- a) Qualified Person
 - b) Certified Person
 - c) Competent Person
 - d) None of the above.
- 11) One fire extinguisher is required for every _____ sq. ft. of the building site.
- a) 1,000
 - b) 3,000
 - c) 5,000
 - d) 10,000
- 12) A ____ lb. fire extinguisher is required for a fuel storage area of more than 25 gals. of fuel.
- a) 5
 - b) 10
 - c) 20
 - d) 50
- 13) Subcontractors must provide SDS for all hazardous chemicals that they bring on site.
- a) True
 - b) False
- 14) Where is the primary "muster area" in the event of a site evacuation?
- a) The main building.
 - b) The parking lot.
 - c) The office trailer.
 - d) The construction entrance.



- 15) Emergence phone numbers & a site evacuation plan must be posted in the office trailer.
- a) True
 - b) False
- 16) The Focus Four are the four most frequent and dangerous hazards in construction.
- They include:
- a) Electrical, Fire, Caught between & Falls
 - b) Struck-by, Chemicals, Electrical & Falls
 - c) Falls, Electrical, Drowning & Caught between.
 - d) Electrical, Falls, Caught between & Struck by.
- 17) Implementation of Lock-out/Tag-out procedures must be controlled & monitored by a Competent Person.
- a) True
 - b) False
- 18) The following must be inspected at least periodically:
- a) Excavations
 - b) Ladders
 - c) Electrical drop cords
 - d) All of the above.
- 19) The TCG inspection code color for January thru March (Winter) is:
- a) White
 - b) Green
 - c) Orange
 - d) Red
- 20) If a subcontractor does not clean up to the satisfaction of the TCG Superintendent, the superintendent may hire a clean-up crew and back-charge the subcontractor for the cost.
- a) True
 - b) False

00 09 00

TO BE ISSUED WITH CONTRACT AWARD

00 10 00

TO BE ISSUED WITH CONTRACT AWARD

00 11 00