

Contract Issues & Construction Safety Management

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The U.S. construction industry is a litigious industry, spending from \$4 to \$12 billion annually on dispute resolution (Gebken II, 2006). A recent study found that the average cost of individual disputes in the U.S. construction industry during 2011 was \$10.5 million. Furthermore, the average length of time required to resolve each dispute was 14.4 months (EC Harris, 2012). In addition to the time and dollars expended, disputes inevitably damage relationships between project team members.

Common causes of construction contract disputes include: 1) ambiguities in the contract; 2) incomplete design information or employer requirements; 3) conflicting party interests; 4) failure to make interim awards on extensions of time and to give associated compensation; and 5) failure to properly administer the contract (EC Harris, 2012).

Contracts are essential to the construction process. In the simplest of terms, a contract is an agreement between two or more parties that is enforceable by law. A more complete definition would also address the desirability of using a written format, the necessity of an offer and an acceptance, an exchange of consideration and a requirement for competent parties.

Based on either definition, however, a well-formed, properly written contract is essential to the construction industry for at least two basic reasons. First, if a contract is intended to be an agreement between parties, then a written contract is the most reliable record of what the parties presumably agreed to do. Contract language that lacks

clarity, includes significant errors and omissions, or contains excessive, nonessential information may result in great ambiguities. Too many ambiguities may put the interpretation of what the parties presumably agreed to in doubt, leading to the impossible accomplishment of the second basic reason for forming a contract: enforcement.

Enforcement is an absolute requirement of any contract. Whether excessive ambiguities in the contract result in a judgment that there was not a true meeting of the minds and, therefore, no agreement, or a refusal of one party to perform contractual obligations, without enforceability no protection whatsoever is provided by the contract for either party. Without a complete agreement in place and the availability of some enforcement procedure, no reasonable party would undertake a construction project.

Contract disputes can be associated with any or all of four major aspects of a construction project: cost, quality, schedule and safety. Many construction practitioners see the contract as a legal reference document to be pulled out only when there is a dispute. However, a more effective approach is to view the contract as a planning tool that can prevent some disputes. Construction safety professionals, whether representing owners or contractors, can help prevent disputes related to safety management by making sure specific safety-related clauses are incorporated into the contract before it is signed by the two parties.

Studies recommend various safety requirements that should be included in contracts to improve safety performance (Gambatese, 2000; Hinze, 1997; Huang, 2003). Specification of safety requirements in contract documents has been found to be an important strategy that has a positive effect on safety.

IN BRIEF

• This article identifies the most common construction contract issues related to safety management, and investigates the frequency and severity of contract issues relative to safety management.

• The findings presented are based on a survey of 46 construction safety professionals and project managers, who reported that 4.8% of their company contract disputes can be attributed to safety management issues.

• The article also recommends actions that contract managers and safety professionals can reference when writing the safety sections of construction contracts.

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Controlling Employer

Congress enacted the OSH Act of 1970 to ensure a safe and healthful working environment for every working person in the nation. As early as 1971, OSHA published a *Field Operations Manual* (FOM) containing a multiemployer worksite policy including both creating employer and exposing employer citation policies. By 1981, a correcting employer citation policy had been added to the FOM, and in 1994 the multiemployer worksite policy was formally amended to add a controlling employer citation policy to the FOM replacement, *Field Inspection Reference Manual*. During the past 4 decades, the secretary of labor, Occupational Safety and Health Review Commission and various U.S. Circuit Courts of Appeal have all accepted the propriety of the controlling employer concept. As a result, the current multiemployer worksite policy now contains citation policies for creating employer, exposing employer, correcting employer and controlling employer situations.

While almost any subcontractor or contractor on a construction site may find itself on the receiving end of a citation as a creating, exposing or correcting employer, only the general contractor is likely to receive a controlling employer citation. This is because only the general contractor has "supervisory authority over the worksite, including the power to correct safety and health violations itself or require others to correct them." Avoiding a controlling employer citation requires that the contractor "exercise reasonable care to prevent and detect violations on the site." Further:

This duty of reasonable care is less than what is required of an employer with respect to protecting its own employees. This means that the controlling employer is not normally required to inspect for hazards as frequently or to have the same level of knowledge of the applicable standards or of trade expertise as the employer it has hired. (OSHA, 1999)

Selecting subcontractors based on past safety performance, and inclusion of the safety-related contractual language may not only help the contractor avoid safety requirement disputes, but may also help meet the reasonable care standard by improving the subcontractor's safety practices, reducing the likelihood of noncompliance and creating a graduated system of onsite safety enforcement. At a minimum, the contract should include verbiage such as "the subcontractor shall develop and implement, and be responsible for, a comprehensive safety program that complies with all applicable (environmental, health and safety) federal, state, local, contractor and owner requirements while performing work on the project or facility."

Hinze (1997) suggests that owners should include the following safety requirements in contracts:

- submittal of a project-specific safety plan;
- preparation of job hazard analyses;
- regular safety meetings with supervisory personnel;
- a designated project safety coordinator;
- mandatory reporting of incidents, safety inspections and safety meetings;
- inclusion of subcontractors in the safety program;
- compliance with the owner's safety guidelines;
- establishment of an effective worker orientation program.

Gambatese (2000) reports that addressing safety in construction contracts is one way project owners can address safety. Similar to Hinze (1997), Gambatese also suggests including several requirements in construction contracts to promote safety:

- a requirement that the contractor abide by all applicable safety laws and regulations;
- delineation of the responsibility for safety on the job site;
- submission of a written contractor safety program before work begins;
- a requirement to conduct a substance abuse program;
- submission of an emergency plan and incident reporting procedure.

Huang (2003) investigated how owners affect construction safety and concludes that owner involvement can significantly influence project safety performance. Huang suggests that the owner should include the following five contractual requirements to experience improved safety performance:

- 1) Contractor must assign at least one full-time safety representative to the project.
- 2) Contractor must submit the resumes of key safety personnel for the owner's review and approval.
- 3) Contractor must provide specified minimum safety training for the workers.
- 4) Contractor must submit a site-specific safety plan.
- 5) Contractor must submit a safety policy signed by its CEO.

These research efforts provide a list of safety requirements to be included in construction contracts to improve safety performance. However, no guidance exists within the literature about how to avoid contract issues specific to safety management. Furthermore, the literature does not report a list of common safety contract issues encountered during a construction project, which, if it existed, would be a great guidance document for contractors to prevent contract issues and serve as a checklist. Finally, the literature is lacking information regarding the frequency and the severity of contract issues relative to safety management.

The authors' primary objective was to identify the most common construction contract issues related to safety management. This list can then serve as a checklist for contract managers and safety professionals when writing the safety section of the con-

tracts. Consequently, it will eliminate or minimize disputes during the construction phase.

The secondary objective was to investigate the frequency and severity of contract issues relative to safety management. For the purpose of this article, frequency was measured as the percentage of a company's contract issues attributed to safety management. The authors defined *severity* as the amount of money spent to resolve safety-management-related contract issues. This new knowledge will hopefully focus senior management's attention on dispute avoidance related to safety management issues.

Study Methods

Data collected for the study included both quantitative and qualitative information. The authors developed a questionnaire as the data-collection tool. Surveys have been a common tool used to gather information for similar studies (Fink & Koscoff, 1985). Moreover, given the diverse group of participants, it was decided that a survey was the most economical option. The three-section survey

Table 1

Participant/Employer Demographic Variables

Demographic variables	Distribution (10%)
Employer type	
Project owner	10.0
General contractor	57.0
Subcontractor	33.0
Tenure	
Less than 5 years	0.0
5 to 10 years	16.3
More than 10 years	83.7
Job title	
Safety	68.2
Project management	31.8
Area of specialization	
Site work	30.0
Structural concrete	5.0
Structural steel	5.0
Reinforcing steel	0.0
Mechanical	15.0
Electrical	25.0
Architectural	0.0
Other(s)	20.0
Project type	
Education	9.0
Healthcare	2.0
Residential	5.0
Other commercial	30.0
Government	16.0
Industrial	16.0
Other(s)	21.0
Labor type	
Union shop	51.0
Open shop	7.0
Both	41.0
Project delivery method	
Design-bid-build	45.0
Design-build	19.0
Construction management	19.0
Other(s)	17.0
Contract delivery method	
Lump sum (competitively bid)	38.0
Lump sum (negotiated)	21.0
Unit price (competitively bid)	24.0
Unit price (negotiated)	2.0
Cost plus fee	12.0
Other(s)	2.0

•How much cost (%) does your company incur annually resolving contract issues pertaining to safety-related areas?

•Compared to all other contract issues, what is your perception of time and financial resources expended on contract issues pertaining to safety-related areas—far less than average, average or far more than average?

The third section requested information about common safety-management-related contract issues that participants and their companies have faced. They were asked to respond for various trade specialties such as demolition; site work (e.g., drilling, pipework, excavation, asphalt paving, landscape); structural concrete; structural steel; reinforcing steel; mechanical (e.g., steam fitters,

requested information about:

1) survey participants and their demographics;

2) contract dispute information;

3) common contract issues.

The first section was used to gather data about each participant's employer type (owner, general contractor or subcontractor), construction specialization area (e.g., electrical, mechanical, structural steel), annual revenues, project type (e.g., education, healthcare), project delivery method and contract delivery method.

The second section collected data about frequency and severity of contract issues associated with safety management. The following questions were posed:

•What percentage of your company's contract disputes can be attributed to safety issues?

•How much time (%) does your company spend annually resolving contract issues pertaining to safety-related areas?

plumbers, sheet metal, sprinkler fitters); electrical; architectural; and general issues pertaining to all trades.

Construction contractors in the northwestern U.S. were the primary study population. The survey was administrated through a secure online website. The authors sent the survey links to safety professionals and project managers working for owners, general contractors and subcontractors. The authors requested that participants respond based on their experience with construction projects. Participants were informed that all responses would remain anonymous (no self-identifying information was attached to the survey).

The authors did not use random sampling to select participants. The survey was sent to personal contacts in the construction industry as well as to members of two construction contractor groups located in the Pacific Northwest. This method of dissemination did not allow the authors to accurately calculate the number of surveys distributed. Hence, the survey response rate is not reported in this article. The authors note that this is a major limitation of the study. Survey responses were automatically recorded in the website database. The study met all criteria of an Institutional Review Board through the Human Subjects Review committee affiliated with Central Washington University.

Descriptive statistics were used to analyze the survey data. All data analysis was completed using Statistical Program for the Social Sciences (SPSS) 19.0. Open-ended questions were analyzed qualitatively.

Study Limitations

1) Study participants included only construction safety professionals and project managers from the northwestern U.S. who were not randomly selected; therefore, results cannot be generalized to the entire U.S. construction industry. The authors recommend further study with a larger, more diverse population from across the country to address this limitation.

2) The small sample size ($N = 46$) limits the ability to generalize the results to the entire construction industry. The authors recommend further study with a larger number of projects and firms to address this limitation and achieve statistical validity.

3) The survey questionnaire was not pilot tested; hence, the quality of the questionnaire is a limitation. The authors recommend a future study with a properly piloted survey to improve the quality of the questionnaire.

4) Another limitation is the difficulty in estimating the number of questionnaires distributed. Survey administrators did not keep track of how many questionnaires were circulated among the safety professionals and project managers; therefore, a valid response rate is not included in the article.

Results & Discussion

Despite the limitations noted, this is a new study that departs from the current body of literature. The study's prime objectives are to: 1) develop a list of common contract issues related to safety

management; and 2) quantify the frequency and severity of safety-management-related contract issues.

Demographics

The authors received a total of 46 completed questionnaires, of which 68% were completed by safety professionals and 32% by project managers or related title holders. Annual company revenues ranged from \$500,000 to \$6 billion (mean = \$490 million), and the companies provided construction services worldwide. As one might expect, most of the companies represented regularly performed work in the northwestern U.S. One firm built international projects in Europe, Asia and Africa, and another firm has performed work in all 50 states. Individual respondents were highly experienced, with more than 80% having worked in the construction industry for more than 10 years. Table 1 presents a summary of demographic information.

Contract Issues & Safety Management: Frequency & Severity

Contract issue frequency and severity was assessed using the four questions previously noted. One survey question asked what percentage of a respondent's company's contract disputes were attributed to safety management issues. These responses ranged from 0% to 25% (mean = 4.8%; *SD* = 7.7%).

Another question requested information about how much time a participant's company spent resolving contract issues related to safety management issues per year. For example, if a company spent 1,000 hours on overall construction contract disputes, and safety issues accounted for 100 hours, then the response would be 10%. Answers ranged from 0% to 25% (mean = 4.6%; *SD* = 5.9%).

The third question asked how much cost a respondent's company incurred annually resolving contract issues pertaining to safety management issues. This cost ranged from 0% to 25% (mean = 4.7%; *SD* = 6.4%).

Responses to the three questions were then summarized based on demographic variables such as employer type, project delivery method and contract delivery method to see whether any trends emerged. A statistical summary of frequency and severity data is reported in Table 2.

The data summarized in Table 2 suggest several possible trends. For example, the employer type grouping shows that general contractor respondents reported the largest values in all categories, project owners reported the next largest values and subcontractors reported the smallest values.

Table 2

Frequency & Severity Data Based on Demographic Variables

Demographic variables	Contract issues frequency (proportion %)			Contract issues severity (time %)			Contract issues severity (cost %)		
	N	Range	Mean	N	Range	Mean	N	Range	Mean
Employer type									
Project owner	19	0-25	5.1	3	0-10	3.3	2	0-10	5.0
General contractor	3	0-25	8.3	16	0-25	5.7	12	0-25	5.6
Subcontractor	8	0-10	2.9	7	0-10	2.6	6	0-10	2.0
Project delivery method									
Design-bid-build	17	0-25	3.5	16	0-10	2.9	11	0-10	1.3
Design-build	4	0-25	7.5	3	0-25	9.0	3	0-25	10.0
Construction management	9	0-25	6.1	7	0-10	6.6	6	0-10	7.5
Other(s)	--	--	--	--	--	--	--	--	--
Contract delivery method									
Lump sum (competitively bid)	13	0-25	5.6	11	0-25	5.0	10	0-25	5.2
Lump sum (negotiated)	6	0-10	1.7	4	0-10	2.75	3	0-10	3.3
Unit price (competitively bid)	8	0-10	4.0	9	0-10	4.1	5	0-5	1.4
Unit price (negotiated)	1	5	5.0	1	10.0	10.0	1	10.0	10.0
Cost plus fee	2	0-25	12.5	2	0-10	5.0	1	10.0	10.0
Other(s)	0	--	--	--	--	--	--	--	--

Table 3

Resources Expended on Contract Disputes: Safety Related vs. All Others

Expended resources	Response (n)	Percentage (%)
Far less than average	19	49
Less than average	7	18
Average	8	21
More than average	5	13
Far more than average	0	0
Total	39	100

A possible reason for this trend is that the general contractor group works with both project owners and subcontractors on a contractual basis. On one side, project owners:

1) are motivated by their own safety culture to expect safe operations by others over whom they have some control;

2) are encouraged to mandate safety practices because of the contingent liability they assume;

3) are driven by a desire to avoid adverse public relations resulting from lapses in safety practices.

General contractors, on the other hand, must establish and administer not only their own safety management programs, but often those of subcontractors as well. Subcontractors tend to be smaller, focused more on productivity and less sophisticated in their project management abilities than general contractors. Parenthetically, it is interesting to note that the values for the general contractor group in two of the three categories are approximately equal to the sum of the values for the other two groups. This might suggest that the party caught in the middle is higher because of the

Table 4a

Trade-Specific Contract Issues To Be Included in Construction Contracts

Checklist items: Requirements specified? Responsibility identified?	Status
Demolition	
Dust control	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Demolition lighting erection and maintenance	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Cleanup and disposal of demolition debris	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Salvaged materials handling procedures	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Mandated materials salvage	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Comprehensive demolition process safety plan	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Testing of suspected or known hazardous materials	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Open hole barricades and/or covers	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Third-party protection during demolition	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Termination and capping or safe-off of electrical, water, gas and other utilities	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Site work	
Barricades and guardrails around excavation work beyond basic OSHA requirements	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Safety procedures around heavy equipment beyond basic OSHA requirements	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Barricades around trenches regardless of depth	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Notification & follow-up verification of implementation of utility location service(s)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Utility potholing (physical verification of utility locations)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Street cleanup of spilled material due to rock and soil hauling activities	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Federal Aviation Administration permits for tall equipment near airports	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Wheel wash provisions at the site entrance/exit points	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Development of traffic control plan	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Implementation and maintenance of traffic control plan	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Pavement protection near excavations during construction	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Structural components	
Concrete pump/truck safety procedures	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Guardrail erection and maintenance during footing construction	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Isolation blackout protection at column: SOG intersections	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Installation and maintenance of access to work areas used by multiple trades	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Crane safety requirements in excess of basic OSHA requirements	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Dry cutting of concrete specifications	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Temporary bracing design, installation and maintenance for masonry walls	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Protection from overhead masonry operations	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Protection from overhead welding operations	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Decking debris netting installation and maintenance	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Decking cutoff debris cleanup	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Perimeter cable installation and maintenance	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Rebar cap installation and maintenance	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA

time and effort spent dealing with the two bordering parties.

Analysis of survey results grouped by project delivery method indicates that the design-build mode of delivery results in the greatest amount of time and cost expended on contract issues related to safety management. Reasons for this result may relate to the differing control levels that the project owner exercises over the design professional for each method. Project owners generally have a closer and more controlling relationship with the design professional in design-bid-build projects, less control in a construction management mode, and the least amount of control with a design-build method of project delivery.

Survey results for the third grouping, contract delivery methods, is less consistent than for the other two groupings. The highest values for frequency and severity values occur for negotiated unit price and cost-plus-fee projects. The higher values may relate to budget levels included in the

negotiated fixed unit price or allowed as a reimbursable cost by the project owner. Determination of any realistic trends, if any exist, calls for additional research before valid results can be proposed.

The fourth and final question asked respondents to compare their perceptions of time and financial resources expended on safety-management-related contract issues to all other contract issues.

As the summary of the responses (Table 3, p. 59) indicates, fully two-thirds of respondents believe that less-than-average levels of resources were expended to solve safety-related contract issues. While the immediate reaction to this data is to ask, "Why are safety issues so unimportant to construction projects?" a closer look at the data in Tables 2 and 3 indicates that the responses are indeed consistent between both tables. Table 2 concludes that 88% to 98% of the time or cost expended is consumed by issues other than safety-related contract disputes. This is certainly less than average.

Common Contract Issues

The third section of the survey requested information about common safety-related contract issues that participants have faced. This was an open-ended question and participants responded based

on their experiences in the construction industry. Tables 4a and 4b summarize common issues identified for each specialty. Formatting the list of issues as a checklist will help contract managers and safety professionals remember to include appropriate items in the final contract.

Recommended Strategies to Eliminate Contract Issues

In addition to the checklist, safety professionals could be tasked in many ways to reduce the number of contract issues in construction. Primary strategies include:

- Marketing:** Safety professionals should be involved with marketing departments early in the process to avoid commitment of unrealistic or unnecessary safety resource levels in an attempt to win a project.

- Owner:** An owner should clearly communicate its safety expectations for the project so contractors can allocate resources appropriately in the bid. Construction safety professionals must understand

the owner's SH&E processes as well as their own.

•**Request for proposal (RFP)/invitations to bid:** Safety professionals should actively participate in the project procurement process as early as the RFP/invitation-to-bid stage.

•**Prebid meetings and communications:** Safety professionals should take an active role in prebid meetings and communications.

•**Preaward meetings:** Safety professionals should continue their involvement in early project stages by actively participating in preaward meetings.

•**Contracts:** As proposed in this article, safety professionals should ensure that appropriate contractual requirements and responsibility assignment clauses are included in the final contract.

•**Mobilization meetings:** A safety professional's active participation must continue into and through the mobilization meetings phase of bringing a new project online.

•**Craft orientation:** The project's craft orientation should include a review of basic OSHA standards as well as an explanation of project-specific requirements.

•**Major pretask plans:** As a part of the ongoing project safety program, safety issues unique to high-hazard, low-frequency activities and site-specific protocols should be an active part of the pretask planning effort.

Conclusions & Recommendations

As stated, safety issues can lead to contract issues. The study participants indicated that an average of 4.8% of their company contract disputes can be attributed to safety management issues.

A safety checklist, such as the one shown in Tables 4a and 4b, is one technique to identify unique safety issues to be considered for inclusion in a contract.

Safety issues specified in the contract should focus on those issues that go beyond basic OSHA requirements, as those are generally well covered within existing reference specifications.

Safety issues that are particularly troublesome and unique to construction should be researched further to refine the checklist.

Construction safety professionals should be involved during the project proposal phase, contract management phase, preaward and premobilization meetings to ensure that safety management expect-

tations are clearly identified and communicated to help reduce the possibility of safety management related claims. **PS**

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Table 4b

Trade-Specific Contract Issues To Be Included in Construction Contracts

Checklist items: Requirements specified? Responsibility identified?	Status
Mechanical	
Machine guarding beyond basic OSHA requirements	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Rolling stock (e.g., pipes, conduit) material storage and cut-off cleanup	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Tie-off points for overhead work and tasks near deck edges	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Removal of waste materials left by multiple trades	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Removal, cleanup and patching of spray-on structural steel fireproofing	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Installation and maintenance of access to work areas used by multiple trades	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Protection from welding operations	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Spotters for scissor lift work	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Pressure testing procedures and requirements	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Accessibility to trenches for work purposes	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Electrical	
Electrical safety procedures beyond OSHA requirements	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Small diameter conduit and ground wire impalement protection	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Weather protection of electrical components	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Temporary lighting installation and maintenance	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Theft security provisions for both installed and stored cuprous materials	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Allowance & procedures for electrical hot work onsite	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Electrical work training and experience in excess of basic OSHA requirements established	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Accessibility to trenches for work purposes	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
General	
Installation and maintenance of access to roof work areas used by multiple trades	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Roof protection after completion	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Perimeter falling objects projection	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Additional safety procedures for stilts used in ceiling work	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Maximum response time for permits (e.g., confined space, hot work, lockout/tagout) specified	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Coordination of cranes and critical lift procedures	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Erection and maintenance of task and general lighting	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Material storage areas onsite	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Theft security provisions for both installed and stored materials	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Removal of waste materials left by multiple trades	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Multitrade scaffold erection, inspection and maintenance	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Onsite fire protection for project	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Provisions for onsite safety professionals	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Creation, implementation and maintenance of traffic control plan	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Other safety requirements or responsibilities	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA