

Analysis of a Type I Differing Condition Claim: An Empirical Study to Determine Which Proof Element is Most Frequently Disputed and Which Party Interest Most Often Prevails

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This research paper statistically examines a Type I differing site condition claim and the concomitant proof elements associated therewith necessary to prevail under such a claim by a general contractor. A sample size of 101 cases were observed using the methodology content analysis and statistically measured by the chi-square statistic and Cramer's V measure of association. The results suggest that the only statistically significant association between a favorable or unfavorable award dependency occurred in the direction of the owner. The data measure suggest that the general contractor fails most often to prevail under the issue of whether same has acted reasonably prudent when interpreting construction contract indicates at the pre-bid phase.

Keywords: Differing Site Condition, Unforeseen Site Condition, Type I Claim.

Introduction

The occurrence of a differing site condition creates an inordinate amount of contractual complexity. As a result, the issue differing site condition is the most frequently litigated construction dispute (Richter & Mitchell, 1982). By definition, a *differing condition* is a physical condition at the construction site that is either: a) not indicated in the contract documents, or b) is in some way different from a work condition normally applicable to the construction project and, thus not known to exist at the time the contractor offers to perform the project scope of work. In short, the bidding documents simply do not accurately represent a pre-existing site condition. Thus, unless the owner has included a clause that provides the contractor with an equitable remedy (time and/or money adjustment), the contractor must absorb the added cost stemming from this unexpected work site condition (Richter & Mitchell, 1982). Should this be the case, then the owner is typically subject to liability for a breach of contract resulting from a cause of action emanating from either: a) misrepresentation; b) superior knowledge regarding project data; or c) implied warranty to accurately represent project data *United States v. Spearin*, 248 U.S. 132, 136, (1918). Furthermore, simply because a project owner incorporates a differing site condition clause to mitigate or preclude a law suit for breach of contract does not automatically necessitate an immediate favorable equitable adjustment to the contract price for the construction contractor. In essence, such a clause does not guarantee an implied right to an equitable contract adjustment resulting from a differing site condition claim. The contractor must still comply with each condition precedent stipulated to by the general and special

conditions of the contract to effectuate a successful claim (Cushman, Bigda, & Sadur, 1985). Although there exist a Type I and Type II differing condition claim, this research study examines a Type I condition. To this end, the purpose of this paper is to investigate the legal element(s) that a construction contractor frequently fails to prove when litigating a Type I differing site condition claim that results in a disfavorable court outcome that shifts the risk of a differing site condition provision to the contractor.

Purpose of a Differing Site Condition Clause

Prior to the advent of the differing site condition clause, under common law, a contractor was deemed to have accepted the contractual risk of an unforeseen site condition affecting project scope (Cushman, Bigda, & Sapers, 1985). Thus, the contractor either experienced a financial gain or loss on the contract price as a function of not encountering or encountering the risk of an unforeseen condition at the project site (Nagle, 1992). As a result, a contractor typically includes within the contract price a cost contingency factor allocating cost to the potential probability of encountering a differing condition at the site not represented by the bidding documents. Ostensibly, the inclusion of a contingency factor increases the bid price to the project owner, thereby creating a financial detriment to the project owner and a financial windfall to the contractor should the unforeseen condition not materialize (Riggs, Dorris, Staek, Hafer, Hoy, & Brown, 1998). As a consequence, currently both the public and private owners incorporate a differing condition clause to negate a related differing site condition contingency cost, thereby attempting to allocate unknown contractual risk more equitably amongst the contracting parties (Anderson, 1947). The differing site condition provision therefore serves the purpose of reallocating contractual risk to the owner by requiring the owner to modify the construction contract price and time during contractual performance to account for a changing site circumstance (Code of Federal Regulation, 1996).

Types of Differing Site Conditions

Since 1927, the Federal government has employed the equitable adjustment clause for a change condition. The current version of the Federal Government's differing conditions clause provides at Federal Acquisition Regulation 52.236-2 (FAR), April, 1984, two distinct categories that descriptively define an unforeseen site condition that allows a contractor to claim for an equitable adjustment to contract price *Rice v. United*, 317 U.S. 61, (1942). Technically speaking, an unforeseen contract condition is categorically defined as either: a) Type I, or b) Type II site condition (McClure, 1984).

A Type I condition is one that differs from those *indicates* in the contract documents. In order to maintain a Type I differing site condition claim under Federal Acquisition Regulation 52.236-2, the governmental agency boards and United States Court System have held that the construction contractor must satisfy certain specified elements of proof. Each proof element is as follows: a) that the conditions indicated must differ materially from those encountered; b) that the conditions actually encountered must have been reasonably unforeseeable based on all information available to the contract; c) that the contractor must have reasonably relied upon its interpretation

of the contract and contract related documents; d) that the contractor must have been damaged as a result of the material; e) subsurface conditions are actually encountered; and (f) the contractor acted as a reasonably prudent contractor when interpreting the contract documents *Stuyvesant Dredging Company v. United States*, 834 F.2d 1576 (Fed. Circ., 1987).

A Type II condition is not addressed or indicated in the contract documents, but differs materially from a condition that would ordinarily be encountered at a geographical area. If the condition is known to the contractor at the time of bidding, or if knowledge is imputed to the contractor, recovery is denied. For this reason, a reasonable site inspection by the construction firm prior to bidding is important. If the site condition would have become apparent or is apparent upon a reasonable site investigation, then a equitable adjustment for differing site conditions is barred. This result is owing to the fact that the owner has made no contractual representation to the contractor regarding the physical characteristics at the project site *Alvin H. Leal v. United States*, 276 F.2d 378 (Ct. Cl. 1960). In order for the contractor to establish a favorable Type II claim for equitable adjustment, the contractor must prove two of the three following elements: (a) the condition was unusual and could not be reasonably anticipated by the contractor from prudent study of the contract bid documents, (b) the conditions encountered at the site is materially different from those ordinarily encountered and generally recognized in similar work, and (c) the physical condition at the site was unknown *Youngdale & Sons Const. Co. v. United States*, 27 Fed. Cl. 516, (1984).

For a Type I claim, the primary or fundamental issue is whether the contractor encountered physical site conditions that were materially different from those conditions indicated in the construction contract documents *Pacific Alaska Contractors, Inc. v. United States*, 436 F.2d 461 (Ct. Cl. 1971). Antithetically, by comparison, a Type II claim refers to a physical site condition that is “unknown and unusual” in the sense that same would not normally be expected in a site condition similar in nature to the work encountered and/or required by the construction contract. In essence, a Type II claim does not require analysis and interpretation necessitating comparison demonstrating correlation or disconnection between the construction contract documents and actual physical site conditions. Instead, a Type II claim requires factual exploration necessary to ascertain and test the contractor’s reasonable anticipations regarding future physical site conditions *Western Well Drilling Company v. United States*, 96 F.Supp. 377 (1951). Last, many times a constructor presupposes that a Type I claim is mutually exclusive of a Type II claim, and vice versa. This, however, is not the case. In fact, a Type I and II claim may be mutually inclusive, or concurrently occurring. *Kaiser Industries Corp. v. United States*, 340 F.2d 322 (Ct. Cl. 1965).

Transferring Contractual Beta

As previously discussed, the reason for shifting the risk of a differing site condition to the owner is to remove or significantly reduce the incentive to the contractor to increase contract bid price. As a result however, the project owner encounters exposure to a claim by the contractor having significant financial risk. Because by definition, a contract is a risk-transferring instrument, the owner typically drafts contractual provisions that is/are highly favorable to same, but simultaneously do not negate away the risk shifting aspect of the differing site condition

provision. Typically, such contractual language creates contractual conditions maintaining three conditions precedent necessary to successfully recover an equitable adjustment to the construction contractor. These additional risk transferring contractual conditions are: a) duty to investigate site, b) exculpatory language, and c) notice requirement *Farnsworth & Chambers Co. United States*, 346 F.2d 577 (Ct. Cl. 1965). It is important to note, that such additional contractual condition(s) is/are additional provision, providing, in addition to the proof elements necessary to support a Type I or II claim, the owner with an arsenal of additional affirmative defenses to negate an equitable adjustment to contract time. Thus, not only must the contractor satisfy the six elements necessary to successfully claim a Type I change condition, or in the case of a Type II category two of the three elements listed herein, many times a contractual situation also mandates compliance with one or more of the risk transfer condition precedents discussed herein. As one may conclude, the contractor must be highly cognizant of all contractual conditions necessary to perfect a claim for equitable adjustment resulting from a changing site condition. Herein lies the import of this research paper.

The Importance of the Study

Litigation of a differing site condition provision takes place on an ex post ante basis. Typically, the contractor sues the owner under claims provision of the contract for monies concomitant the additional time and cost necessary to perform work regarding the differing site condition.

The question of critical import, is which element or elements is most often not properly evidenced and thus unproved by the contractor, thereby resulting in a disfavorable court opinion denying the contractor an equitable adjustment to contract even though the contractor otherwise has a valid claim. Therefore, the import and intent of this research study is to provide management of the construction industry with a quantitative research study that empirically measures the most often recurring deficiency in a contractor's claim for a differing site condition that otherwise found present would render the contractor a favorable court outcome.

Problem and Hypothesis Statement

A differing site condition claim between a project owner and construction contractor is the most frequent type of contractual dispute. Many times the contractor fails to favorably prevail regarding such claim owing to many reasons. This situation is exacerbated by compounding contractual language that attempts to negate the supposed purpose for incorporating a differing site condition clause in a construction contract. Failure by the contractor to comply with the technical requisites of conditions precedent at either the bidding phase of the project or during the construction phase many times negates an otherwise valid differing site condition claim for contractual equitable adjustment. Herein lies the problem for this research project. This study investigates adjudicated court decisions in the United States that have at issue the enforceability of a differing site condition claim by contractor against the federal government in a construction contract between owner and contractor. More specifically, this research seeks to answer the questions: a) which contract party interest (owner or contractor) prevails most often and, b) which element does the non-prevailing party most frequently fail to prove?

This researchable problem poses two hypothetical questions. First, whether the project owner or construction contractor statistically prevails most often regarding a differing site condition claim. The null hypothesis test is: no difference exists between whether a contractor or owner receives a favorable court award. The second hypothetical question is to statistically validate that the disfavorable court award outcome to either contracting party is either a result of pre-bid contractual administration failure, or a result of post-bid project administration in action, thus leading to the null hypothesis statement: there is no difference between the proof element frequencies and a disfavorable award and the prevailing contracting party.

Research procedure

The analytical infrastructure of this research is a non-experimental correlational study of archival case law data. The methodology employed is content analysis. The unit of analysis is court of claims' opinions and appellate level court decisions at the Federal court level involving federal government-contractor dispute regarding equitable adjustment to contract price resulting from a Type I site condition.

The search engine produced 323 cases. Of this sample size, 101 cases met research parameters concerning a construction contractor's claim for a Type I differing condition claim against the federal government. The data retrieval process was a survey instrument utilizing each Type I variable descriptor having a categorical quantitative variable property. Scalar data measure is therefore nominal using observational-interpretational classification. Each observation was recorded as a frequency count to the categorical variable displayed at Table B-1.

The dependent variable is operationally defined as favorable versus disfavorable court award to the construction contractor. The independent variable is categorically defined as each proof element, being a qualitative variable having six sub-dimensions necessary to prove a valid and enforceable Type I differing site condition claim. Because the response variable Y is a qualitative variable at two levels, and each nonresponse variable X is a qualitative variable at eight levels, the statistical technique is a multinomial non-parametric statistic. The statistical techniques utilized are the chi-square test statistic for a binomial one-way dimensional classification utilizing a 50/50 percent split distribution. The Cramer's V test for independence (strength of association between two variables) is also employed. The statistical test procedure consists of comparing observed frequencies (court decisions) with frequencies expected (50/50 percent distribution) to prove the null hypothesis. Operational descriptors for survey recordation are defined at Table B-1.

Research Results and Analysis

For data reporting and statistical manipulation purposes, the sample of cases and recordation of favorable versus disfavorable award to contractor counts were categorically inventoried according to the type of differing site condition proof element at issue in the case. Tables B-3 through B-4 present chi-square statistical test for the data recordation displayed in Table B-1.

The one-way classification matrix displayed in Table B-3 demonstrates that 30 times within the sample size of 101 cases the issue was the proof element contract documents contain indications of conditions to be encountered. These 30 observations represent 29.7 percent of the case sample. Of the 30 observations, contractor received a favorable decision 63 percent of the time, while receiving a disfavorable award 34 percent of the time. In essence, this means that the contract bid documents did not accurately reflect an actual condition experienced at the project site.

A closer inspection of the frequency counts contained in Table B-3 measured against a 50/50 split distribution provides a chi-square statistic equaling 2.134. A critical chi-square with one degree of freedom using an alpha equal to 0.01 criterion level of significance equaled 9.21. The statistical significance critical value 9.21 demonstrates that the null hypothesis cannot be rejected because the chi-square statistic value 2.134 is lesser than the chi-square critical equal to 9.21, thus suggesting that there is no numerical statistical deviation between receiving a favorable versus a disfavorable award regarding the proof element contract documents contain indications of conditions to be encountered and, there is an equally likely chance of receiving a favorable versus a disfavorable outcome regardless of the party interest. Non-rejection of the null hypothesis is the result of moderately insignificant numerical deviation between the observed frequency (f_o) and the expected frequency (f_e). This insignificant random disagreement between actual (f_o) and expected (f_e) is the result of insignificant proportional occurrence of association, meaning no association exist between a favorable or disfavorable court award, the party interest, and the particular proof element at issue.

The Cramer V coefficient measure equal to .266 when applied to interval of association strength 0 to +1.0, likewise demonstrates a less than moderate degree of association. Thus leading to the conclusion, there exist no statistical difference whether a contractor or owner receives a favorable versus a disfavorable award relative to this proof element. As a result, it is inconclusive as to whether the contractor is documenting or investigating worse than, or better than would be expected given a 50/50% split outcome distribution. This subconclusion thereby leads to the conclusion, that when a contractor challenges an owner regarding the proof element, contract documents contain indications of conditions to be encountered, a degree of uncertainty as to a favorable or unfavorable outcome result. This result and conclusion is a function of the categorical difference between favorable versus disfavorable outcome that occurred less frequently than would be expected from the statistical 50/50% split distribution, thereby resulting in a greater degree of chance of receiving an equally likely basis favorable award versus a disfavorable award at a probalistic level $p < 0.01$.

A review of Table B-4 demonstrates that 37 percent of the Type I cases had at issue the proof element whether the contractor acted in a reasonably prudent manner when interpreting the contract documents. The percent split was significantly disfavorable to the contractor 79% of the case observations, or alternatively the contractor favorably prevailed only 21% of the time.

For the one-way classification matrix in Table B-4, a chi-squared calculated statistic equaling 11.92 was calculated. The chi-square critical value with degrees of freedom 1, with an alpha = 0.01 criterion level of significance equaled 9.21. Because chi-square statistical is greater than

chi-square critical, the null hypothesis, there is no difference between the party interests, the reasonable prudent contractor proof element at issue, and the court rendering of a favorable versus unfavorable outcome is rejected. The sub-conclusion, is that when the proof element being investigated herein is at issue, the owner significantly prevails statistically more than the contractor at a $p < 0.01$ significance level. The larger chi-square statistic at 11.92 versus the chi-square critical equal to 9.21 indicates a non-random significant statistical difference indicating a significant statistical numerical deviation from the observed (f_o) frequency and the expected probalistic frequency (f_e) for a 50/50 % statistical probalistic distribution. The Cramer V test coefficient at 0.60, on a scale of 0 to + 1.0, demonstrates that there exist a significant association and, thus a strong relationship that when X_2 : the reasonable prudent contractor is at issue the owner prevails statistically significantly more often than not. In fact the owner prevails 79 percent of the time in this instance. The Cramer coefficient V clearly demonstrates that there is a strong relationship, or association in the direction owner element and a significant statistical dependency between receiving unfavorable court award and the contractor, and not proving the element act as reasonable prudence standard when interpreting and ascertaining data indicates within the contract documents.

This data result provides one with a statistically significant base to conclusively determine that the typical contractor seemingly bases a valid differing Type I claim at the pre-bid phase of the construction contracting process. Further, the data herein, seemingly suggest that the typical contractor does not completely investigate the entire set of bid documents in a timely fashion prior to bidding the contract work. These two conclusions are not exhaustive. Certainly there exist many other plausible explanations for this occurrence, and should be scientifically explored further.

Regarding variables X_3 , X_4 , X_5 , X_6 , X_7 , and X_8 , the sample selection did not provide an adequate number of recordable observations to conduct a probalistic examination of same that statistically would not result in a spurious empirical conclusion. However, one can, from a priori examination of Table B-2 and Table B-5, inferentially determine that there appears to be an insignificant deviation from the null hypothesis of a 50/50% split resulting in no significant statistical difference between the observed and the expected for each independent variable. Therefore, an a priori visual observation of the data would allow one to conclude no rejection of the null hypothesis is determined ascertainable and thus inconclusive regarding each proof element. The analyses of each Type I proof variable does not terminate at this juncture however. Although each variable offers no true predictive statistical measure, from a descriptive statistical basis a rational observation may be observed.

As Table B-5 and Figure 1 herein demonstrate, an X_2 proof claim appears 37% of the time, while a X_1 proof claim appears 30% of the time combining to equal 67% of case sample observation.

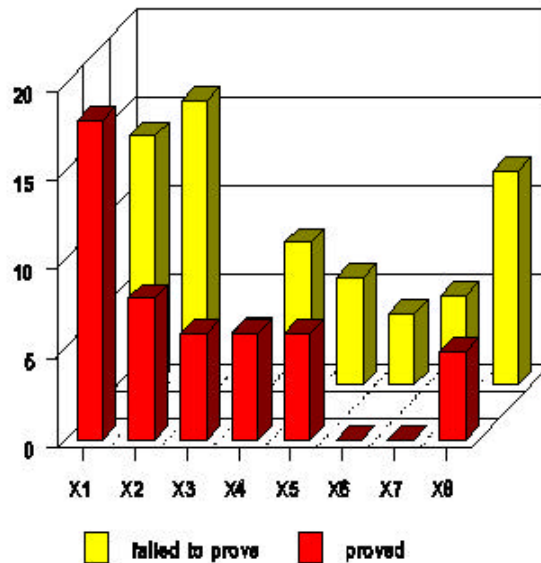


Figure. 1. Proof element frequency outcome

As Figure 1 and Table B-5 display, the other proof elements are less frequently disputed than X₁ and X₂. Further, because of X₃, X₄, X₅, X₆, X₇, and X₈ insignificant proportional observation, conjoining this with a similarly seemingly reasonable observation advanced herein that the null hypothesis for each cannot be rejected, there does appear that the contractor should allocate more resources in the direction of X₁ and X₂ at the bidding stage of the construction contracting process, thereby balancing or offsetting resource allocation to proof elements occurring during the actual construction phase.

Conclusion

Based on the data findings and analyses, the following conclusions are proffered. The majority of differing site condition complications regarding a contractual dispute between the owner and contractor occur during the bidding phase. The issue regarding whether the contractor acted in a reasonably prudent manner when interpreting the contract was the most occurring dispute element. The proof element, contract documents contain indications of conditions to be encountered, was the second highest litigious matter to appear in the study sample, followed next by the contractor must have reasonably relied on the contract indicates. As can be concluded, the most occurring or recurring proof element disputes occur at and result from the bidding phase of a construction project. Two of these proof elements, namely: a) acted in a reasonable manner, and b) reasonably relied on contract indicates, are concerned with a contractor processing of bid document indicates. The balance of the eight proof elements had some statistical presence, but did not represent a strong data presence necessary to draw a chi-square statistical inference regarding same's import. Nevertheless, it is again interesting to note however, that the fourth most frequently recurring proof element at issue is: failure to investigate site. Here again, being a bidding phase process failure, more particularly having a strong contractual relation to the disclaiming language within the contract. The fifth most disputed proof element is actual

condition encountered must be reasonably unforeseeable. This proof element bifurcates into both a bidding phase analyses and an actual construction phase question. From the partitioned conclusion of each proof element, it seems clear that a reasonable sub-conclusion is that the most recurring disputes regarding a differing site condition occurs most often at the bidding phase. A second sub-conclusion is that of the first proof elements having relative merit to these analyses, four proof element outcomes clearly demonstrated strong statistical evidence in the direction of disfavorable court awards to the contractor party in interest. Conversely, of these four proof elements, the statistical strength was in favor of the owner, thus there appears to exist a plausible inference that the contractor has failed in some respect to meet standards necessary of a bidding contractor claiming a differing condition from that presumed to exist during bidding phase examination. The study does not reach beyond this reasonable conclusion, but certainly there may, or perhaps may not, exist many other plausible explanations for the statistical findings herein. It is recommended by the researcher that this aspect of the study be continued.

The discussion turns next to whether the data clearly demonstrated a strong statistical association as presupposed by the null hypothesis. The answer is no. In general, no null hypothesis could be rejected except for the hypothesis-representing category X_2 , contractor acted in a reasonably prudent manner. The reason for the other statistical non-rejection of the null hypothesis is because the data did not demonstrate a strong independence or association in the direction reject versus non-reject on the basis of significant statistical randomization from the observed case outcome to that of the expected case outcome.

As noted herein, there is one exception however to this conclusion. The variable, contractor did act in a reasonably prudent manner, rejected the null hypothesis X_2 , thereby allowing the inference that the contractor did not use reasonably prudent analyses when bidding contract indicates. The chi-square statistic and the Cramer V coefficient clearly demonstrated a strong statistical association that the owner receives a disproportion of favorable court awards relative to the proof elements, while the contractor receives a disproportional amount of disfavorable court opinions because same has failed to prove that during the bidding process the contractor did not act reasonably prudent when interpreting the contract documents. This outcome is further substantiated when conjoining or collapsing categorical partitions, thus in examining jointly two proof elements simultaneously. Here, examining jointly the categories, must act in a reasonably prudent manner, X_2 and failure to investigate site condition(s), X_8 presents an even stronger conclusion regarding reject hypothesis. For example, consider jointly categories X_2 and X_8 , the case count expands to 42 case observations. This represents 42% of the case sample. In this instance, 35 cases or 83.3% of the court cases were disfavorable to the contractor, while 9 cases, or 21% of the occurrence was disfavorable to the owner. When comparing the chi-square statistic critical equal to 9.21 having degrees of freedom equaling 1 and a probability level_ 0.01, to a chi-statistic equal to 16.4 and Cramer's V coefficient equal to 0.64, there is an even stronger level of association between contractor receiving a disfavorable award and failure to use reasonable prudent conduct when examining bid document indicates. In conclusion, it is clear that court case outcomes statistically evidence that the contractor must attempt to manage the bidding process more proficiently if same expects to prevail when claiming an otherwise valid differing condition claim.

Appendix A

Table A-1 Case Law Sample

001	24 Cl. Ct. 659	A.S. McGaughan Co., Inc. v. U.S.
002	20 Cl. Ct. 184	Al Johnson Const. Co., v. U.S.
003	1979 WL 16464	C.L. Michner, Inc. v. U.S.
004	20 Cl. Ct. 649	CCM Corp. v. U.S.
005	5 Cl. Ct. 447	Clark v. U.S.
006	18 Cl. Ct. 682	Dawco Const., Inc. v. U.S.
007	9 Cl. Ct. 302	Erickson-Shaver Contracting Corp. v. U.S.
008	7 Cl. Ct. 60	Fox v. U.S.
009	5 Cl. Ct. 662	G.M. Shupe, Inc. v. U.S.
010	1977 WL 17891	Gevyn Const. Corp. v. U.S.
011	1979 WL 16487	Gevyn Const. Corp. v. U.S.
012	36 Fed. Cl. 793	H.B. Mac, Inc. v. U.S.
013	36 Fed Cl. 347	Hardwick Bros. Co., II v. U.S.
014	40 Fed. Cl. 184	Hoffman Const. Co. of Oregon v. U.S.
015	25 Cl. Ct. 555	Hydromar Corp. of Delaware & Eastern Seaboard Pile Driving, Inc. v. U.S.
016	23 Cl. Ct. 24	John Massman Contracting Co. v. U.S.
017	32 Fed. Cl. 647	Kit-San-Azusa, J.V. v. U.S.
018	18 Cl. Ct. 259	McCormick Const. Co., Inc. v. U.S.
019	1995 WL 908647	Olympus Corp. v. U.S.
020	98 F.3d 1314	Olympus Corp. v. U.S.
021	732 F.2d 913	P.J. Maffei Bldg. Wrecking Corp. v. U.S.
022	1981 WL 30772	Pleasant Excavating Co v. U.S.
023	31 Fed. Cl. 749	Round Place, Inc. v. U.S.
024	1980 WL 20840	Schnip Bldg. Co. v. U.S.
025	227 Ct. Cl. 148	Schnip Bldg. Co. v. U.S.
026	19 Cl. Ct. 84	Spirit Leveling Contractors v. U.S.
027	834 F.2d 1576	Stuyvesant Dredging Co. v. U.S.
028	883 F.2d 1027	Tri-Ad Constructors v. U.S.
029	220 Ct. Cl. 179	Turnkey Enterprises, Inc. v. U.S.
030	8 Cl. Ct. 42	Utility Contractors, Inc. v. U.S.
031	2 Cl. Ct. 384	Warchol Const. Co., Inc. v. U.S.
032	19 Cl. Ct. 474	Weaver-Bailey Contractors, Inc. v. U.S.
033	13 Cl. Ct. 193	Weeks Dredging & Contracting v. U.S.
034	27 Fed. Cl. 516	Youngdale & Sons Const. Co., Inc. v. U.S. - rock
035	27 Fed Cl. 516	Youngdale & Sons Const. Co., Inc. v. U.S. - water
036	ASBCA No. 20,747,83-1	Blake Const. Co.
037	GSBCA No. 4867, 77-2	Fraser Drywall
038	ASBCA No. 33576,89-3	Zenith Const.
039	ASBCA No. 27638,	Reliance Enterprises 27639,85-2
040	AGBCA No. 85-129-3, 85-218,105, P. 90,883	W.D. Kyle
041	ASBCA No. 21242, 84-2	P.J. Crowley
042	41 Fed. Cl. 303	Meyers v. U.S.
043	ASBCA No. 34672, 89-2	Futia Co.
044	PSBCA No. 3885	Thomas Young, Inc.
045	BCA at 27,181, 66-2	Lee Smith
046	312 F.2d 408	Flippian Materials
047	962 S.W. 2d	Unerstall Constr.
048	20 Ct. Cl. 725	Servidone Constr.
049	732 F.2d 918	Maffei Building
050	ASBCA No. 47733	Vecca Elect. Co.
051	ENG BCA No. PCC-117	Indelsa, S.A.
052	84 F.Supp 1021	Tobin Quarries
053	F.2d 629	Stock & Grove
054	435 F.2d 873	Foster Constr.
055	186 Ct. Cl. 398	Bolander Co.
056	ENG. BCA No. 6043	Steele Contractors
057	BCA 2323	Fisen-Meagers Const
058	1153 F.3d 1338	H.B. Mac, Inc.
059	127 F.Supp. 805	General Casualty
060	4 Cl. Ct. 46	Shea Co.
061	BCA 89-2 21,586	Dekonty
062	BCA 93-3 26,179	Glagola
063	368 F.2d 585	United Contractors
064	412 F.2d 1325	Wm. Smith Co.
065	BCA 93-3 26,172	Avisco, Inc.

066	397 F.2d 826	Morrison-Knudsen
068	49 F.3d 1070	Millgard Corp.
068	14 Cl. Ct. 242	North Slope Ltd.
069	BCA 87-3, 20,176	Zinger Const.
070	3 Cl. Ct. 353	Mojave Enters
071	237 U.S. 234	Eastern Tunneling
072	ASBCA 25697, 84-2, BCA 17, 397	Torres Const.
073	138 Ct. Cl. 571	Firhlhaber
074	AGBCA 74-103, 77-2 BCA 12,813	Southern Paving
075	BCA 2859, 69-BCA 7519	Whalen
076	186 Ct. Cl. 398	Bolander Co.
077	137 F.2d 1360	Robertson Co.
078	171 Ct. Cl. 30	Farnsworth
079	ASBCA 18456, 74-2, BCA 10,834	Warren Painting
080	190 Ct. Cl. 546	John Vann
081	ASBCA 17474, 74-2, BCA 10, 760	Maintenance Engr.
082	ASBCA 25695, 83-2, BCA 6, 768	Commercial Mech.
083	708 F.2d 395	International Glass
084	ASBCA 26136, 83-2, BCA 16612	Leiden
085	435 F.2d 873	Foster Constr.
086	437 F.2d 1360	J.E. Robertson
087	436 F.2d 461	Pacific Alaska
088	207 Ct. Cl. 1010	Amer. Dredging
089	ASBCA 21,421,80-1, BCA 14,254	Fermin
090	ASBCA 4997, 59-1, BCA 2225	Bailey-Lewis
091	ASBCA 7876, BCA 3969	Ziskin Constr
092	ASBCA 19838, 76-2, BCA 12,104	Maverick
093	ASBCA, 450, 7802, BCA 13,537	Nineteenth
094	364 F.2d 420	Jefferson Const.
095	ASBCA 2793,70-1, BCA 8172	Piracci
096	ASBCA 19914, 781 BCA 113,128	Roy I. Strate
097	12 Cl. Ct. 328	Baltimore Constr.
098	DOI CAB 67-1, 69-2, BCA 7933	Helms Constr.
099	ENGBCA 3646, 77-1, BCA 12, 224	Exe. Const. Co.
100	PSBCA 152, 76-2, BCA 12,219	McCann Co.
101	AGBCA 307, 72-2, BCA 9475	F.H. Antrim

Appendix B

Table B-1 Case Opinion Survey Observations

Operational descriptors for survey recordation is:

where **y** = contractor: 1 = favorable court decision

2 = unfavorable court decision, and,

X₁ = Contract documents contain indications of conditions to be encountered,

X₂ = contractor must act in a reasonably prudent manner when interpreting contract documents,

X₃ = the contractor must have reasonably relied on the contract indications,

X₄ = conditions actually encountered differ materially from those indicated in the contract documents,

X₅ = Actual conditions encountered must be reasonably unforeseeable,

X₆ = proper notice not timely filed,

X₇ = exculpatory/disclaiming contractual language,

X₈ = failure to investigate site,

where **X₁,.....X_n** = 0 = failed to prove

1 = proved

Case X Claim Proof Elements									
#	Outcome	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈
001	2	0							
002	2				0				
003	1	1							
004	1	1							
005	2					0			
006	1		1						
007	2				0				
008	2		0						
009	2				0				
010	1	1							
011	1	1							
012	1		1						
013	2	0							
014	2					0			
015	2				0				
016	2		0						
017	1	1							
018	2					0			
019	2	0							
020	2	0							
021	2	0							
022	2								0
023	2				0				
024	2						0		
025	2						0		
026	2					0			
027	2								0
028	1	1							
029	2				0				
030	2				0				

031	2				0				
032	1	1							
033	2		0						
034	2								0
035	2	0							
036	2	0							
037	2		0						
038	2			0					
039	1		1						
040	2	0							
041	1	1							
042	2		0						
043	2			0					
044	2		0						
045	2		0						
046	2		0						
047	1								
048	1	1							
049	1				1				
050	2		0						
051	2		0						
052	1	1							
053	1	1							
054	1	1							
055	1				1				
056	2		0						
057	2		0						
058	1				1				
059	2					0			
060	2	0							
061	1	1							
062	2		0						
063	2		0						
064	2								0
065	2		0						
066	1	1							
067	2								0
068	2		0						
069	2		0						
070	2			0					
071	1			1					
072	2		0						
073	1				1				
074	2		0						
075	2		0						
076	2		0						
077	1		1						
078	2		0						
079	1		1						

080	1			1					
081	2								1
082	1		1						
083	1	1							
084	2	1							
085	2	0							
086	1	1							
087	1	1							
088	2		0						
089	1				1				
090	2		0						
091	1		1						
092	2		0						
093	2		0						
094	2		0						
095	2		0						
096	2		0						
097	1		1						
098	2	0							
099	1	1							
100	1					1			
101	2								0

Table B-2

Frequency Distribution for a Type I Differing Site Condition Claim: Proof Elements

COURT

Opinion X₁ X₂ X₃ X₄ X₅ X₆ X₇ X₈ TOTAL

Favorable 19 8 3 5 1 0 0 1 37

CONTRACTOR

Disfavorable 11 29 3 8 5 2 0 6 64