



ANCHORAGE SCHOOL DISTRICT

Purchasing Department
4919 Van Buren Street
Anchorage, AK 99517-3137

REQUEST FOR PROPOSAL

THIS IS NOT AN ORDER

Show the following on the outside of the sealed proposal envelope:
RFP 2026-611 PROFESSIONAL SERVICES WENDLER MIDDLE SCHOOL TIER 2/3 SEISMIC EVALUATION

ISSUED DATE:
October 24, 2025

DUE: **Prior to 10:00 a.m., Local Time**
DATE: **November 20, 2025**

The Anchorage School District (referred to as the “District” or the “ASD”) invites sealed proposals from qualified persons/firms to **PERFORM A TIER 2/3 SEISMIC EVALUATION OF WENDLER MIDDLE SCHOOL** to the District in accordance with the following documents that are a part of this RFP 2026-611:

Cover Page	This Notice/Cover Page	Page(s) 1 – 2
Section I	Instructions to Offerors	Page(s) 3 – 13
Section II	Evaluation of Proposals	Page(s) 14 – 15
Section III	Proposal Format	Page(s) 16 – 17
Section IV	Specifications and Scope of Services	Page(s) 18 – 20
Attachment A	Proposal Transmittal Form	1 Page
Attachment B	Sample Professional Services Agreement (PSA)	4 Pages
Attachment C	Seismic Evaluation and Retrofit Guide for Existing Anchorage School District Buildings Updated 07/2025 to Reference IBC 2024 and ASCE 41-23, Version r1, 09/2025	36 Pages
Attachment D	Wendler Middle School ASCE 41 – Tier 1 Evaluation January 2022	72 Pages
Attachment E	Wendler Middle School Floor Plan	1 Page
Attachment F	Offeror’s Checklist	1 Page
Exhibit 1	Supplemental Terms, Conditions and Forms	7 Pages
Exhibit 2	Disadvantaged Business Enterprises Contract Participation Form	2 Pages
Exhibit 3	Disadvantaged Business Enterprises Prime Consultant/Contractor Certification	1 Page
Exhibit 4	Disadvantaged Business Enterprises Contact Documentation Form	1 Page
Special Provisions	Disadvantaged Business Enterprise Program Program Specifications for District Contracts	5 Pages

THIS RFP HAS FEDERAL GRANT REQUIREMENTS (DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM PARTICIPATION REQUIREMENTS).

DBE PARTICIPATION REQUIREMENTS MUST BE COMPLETED BY THE PROPOSAL SUBMISSION DATE.

AVAILABILITY OF RFP: This Request for Proposals (.pdf) is available electronically at the District’s Purchasing website: <https://www.asdk12.org/departments/support-services/purchasing-and-warehouse-dept/purchasing-and-warehouse/vendor-info>

A copy of the current plan holder's list can be viewed at:

http://apps.asdk12.org/depts/purchasing/meeting/Plan_Holders/2026/611.xlsx

SUBMISSION OF PROPOSALS: Proposals must be submitted to the Anchorage School District Purchasing Department, 4919 Van Buren Street, Anchorage, Alaska 99517-3137 prior to the time specified above. Proposals received after that time will not be considered and will be returned. FAXED or ELECTRONIC proposals are not acceptable. Proposals must be submitted in a SEALED package with the outside of the package clearly marked with Offeror's name, address, and phone number, and as follows:

REQUEST FOR PROPOSALS RFP 2026-611
PROFESSIONAL SERVICES WENDLER MIDDLE SCHOOL TIER 2/3 SEISMIC
EVALUATION
DUE: Prior to 10:00 a.m., Local Time
DATE: November 20, 2025

ON-SITE VISIT: **An on-site visit will be held at 4:30 p.m., Local Time, November 5, 2025,** at Wendler Middle School, 2905 Lake Otis Parkway, Anchorage, Alaska 99508. Prospective proposers are encouraged to meet the ASD Project Manager at the School's main office entrance and walk through the proposed area of design for this RFP.

PRE-PROPOSAL CONFERENCE: **A pre-proposal conference will be held at 11:00 a.m., Local Time, November 6, 2025,** in the conference room of the Anchorage School District Purchasing Department, 4919 Van Buren Street, Anchorage, Alaska to discuss any matter concerned with this RFP. Prospective Offerors who wish to participate by teleconference may participate by calling (907) 742-6750. The line will be available approximately 5 minutes' prior the conference start time.

The Anchorage School District is committed to providing reasonable accommodations, according to applicable state and federal laws, to all individuals with a qualifying disability. If you require a reasonable accommodation in order to participate in this or any other district process, please contact the Anchorage School District's Compliance/Equal Employment Opportunity Office (907) 742-4132.

Estimated amount of proposed contract: \$50,000 to \$100,000

END OF COVER PAGE

A. GENERAL REQUIREMENTS

This solicitation is a REQUEST FOR PROPOSALS (“RFP”) governed by applicable Anchorage School Board Policies, including Section 3311 of such Policies. Anchorage School Board Policies are available at <https://www.boardpolicyonline.com/?b=anchorage>

Offerors should read this RFP carefully and review all instructions contained herein. Incomplete or incorrect proposals may be rejected as not conforming to the essential requirements of the RFP. Proposals submitted on other than the prescribed forms contained in this RFP will be rejected. Offerors may copy the forms contained in the RFP for use in their proposals, but substitute forms or formats are unacceptable. Electronic copies of the forms which Offerors must submit as part of any proposal, if any—if not provided with this RFP—may be obtained by contacting the Anchorage School District Purchasing Department. Forms shall not be altered except to supply requested offeror information.

B. INTENT OF SPECIFICATIONS

The Anchorage School District desires to enter into a contract with an offeror whose primary business is to provide professional Structural Engineering services to complete the contract in accordance with all of its terms and conditions and in compliance with all applicable laws. The scope of work is considered performance oriented and it is the intent of the District to rely on the experience and expertise of the offeror to fully appraise itself of the work required to fulfill the terms of the contract resulting from the RFP.

C. EXAMINATION OF CONTRACT DOCUMENTS

Offerors should read this Request for Proposals carefully and review all instructions contained herein. The submission of a proposal shall constitute acknowledgement that the offeror has thoroughly examined and is familiar with the solicitation documents.

D. CONDITIONS OF THE WORK

Each offeror must acquaint itself thoroughly as to the character and nature of the services to be provided to fulfill the requirements of the resulting contract. Each offeror must complete a careful examination of the existing systems, infrastructure, geographical features, and prevailing weather conditions, as applicable, and must inform itself fully as to the difficulties to be encountered in the performance of the work, the availability of a qualified work force and other conditions related to providing the required services. No claim of ignorance of conditions that exist or hereafter may exist, or difficulties that may be encountered in the execution of the work, as a result of failures to make necessary investigations and examinations, will be accepted as an excuse for any failure or omission on the part of a successful offeror(s) to fulfill all of the requirements of the contract documents and to complete the work for the consideration set forth therein, or as the basis for any claim whatsoever.

E. QUESTIONS; METHOD FOR CLARIFICATION

Any offeror in doubt as to the true meaning of any part of this RFP may submit to the District a written request for an interpretation thereof. Questions must be received by the District’s Purchasing Department at least seven (7) days prior to the date set for the submission of proposals. If such date falls on a weekend or holiday, the deadline shall be the last business day before the weekend or holiday. Questions can be delivered as follows:

Fax: Anchorage School District Purchasing Department @ 907-243-6293
Attn: Shannon Powers, Sr. Purchasing Agent

Reference: RFP 2026-611 PROFESSIONAL SERVICES WENDLER MIDDLE
SCHOOL TIER 2/3 SEISMIC EVALUATION

E-mail: purchasing@asdk12.org PREFERRED METHOD

Attn: Shannon Powers, Sr. Purchasing Agent

**Reference: RFP 2026-611 PROFESSIONAL SERVICES WENDLER MIDDLE
SCHOOL TIER 2/3 SEISMIC EVALUATION**

Mail: Anchorage School District Purchasing Department

Attn: Shannon Powers, Sr. Purchasing Agent

4919 Van Buren Street

Anchorage Alaska 99517-3137

Reference: RFP 2026-611 PROFESSIONAL SERVICES WENDLER MIDDLE
SCHOOL TIER 2/3 SEISMIC EVALUATION

Two types of questions generally arise. One may be answered by directing the offeror to a specific section of the RFP. These questions may be answered by direct communication to the offeror submitting the question. Questions which in the opinion of the Purchasing Senior Director require a more detailed or complex reply, or require an answer that may affect responses to this RFP or may be prejudicial to other prospective Offerors, will be answered by issuing an addendum to all RFP holders prior to the submittal opening.

F. ERRORS AND AMBIGUITIES

1. Offeror comments concerning discrepancies, defects, ambiguities or other errors in the RFP must be made in writing and received by the District's Purchasing Department at least seven (7) days prior to the date set for the submission of proposals. If such date falls on a weekend or holiday, the deadline shall be the last business day before the weekend or holiday. Comments can be delivered as set forth in Section E, above. Any clarifications, changes or corrections to the RFP will be made only by written notice or addendum issued by the District.
2. If an offeror fails to notify the District of a discrepancy, defect, ambiguity or other error in the RFP, the offeror's proposal shall be submitted at the offeror's own risk and if a contract is awarded as a result of such proposal, the offeror shall not be entitled to additional compensation or other consideration by reason of the discrepancy, defect, ambiguity or other error, or its later correction or clarification. Protests based on any error or omission, or on the content of the solicitation, will be disallowed if the fault has not been brought to the attention of the District, in writing, at least five (5) days prior to the date set for submission of proposals. If such date falls on a weekend or holiday, the deadline shall be the last business day before the weekend or holiday.

G. ADDENDA

Addenda may be issued when changes, clarifications, or amendments to this RFP are deemed necessary by the District for any reason. If an addendum is issued, the District will make reasonable efforts to ensure that each prospective offeror receives the addendum in a timely fashion. However, the risk of non-receipt of any addendum lies solely with prospective Offerors. Offerors should contact the District at the addresses set forth in Section E, above, to ascertain if any addenda have been issued. Offerors must acknowledge receipt of each addendum issued in the space provided on the appropriate addendum form and submit such signed addendum with the proposal. No oral change or interpretation of this RFP shall be relied upon by prospective Offerors or shall be binding on the District whether issued at a pre-proposal conference or otherwise.

H. SUBMISSION OF PROPOSALS

1. All proposals, addenda, and forms must be manually signed. One (1) original and three (3) copies of the proposal, for a total of four (4).
2. Proposals delivered by telefax, facsimile or by electronic means are not acceptable and will not be considered.
3. Signed and sealed Proposals must be at the District Purchasing Department on or before the time and date stated on the face page of this RFP. Offerors are solely responsible for ensuring that the offeror's proposal package is received by the District's Purchasing Department by the deadline.
4. Late proposals will not be considered and will be returned to the offeror unopened.
5. Photographs may be included with a proposal as appropriate or as desired by the offeror. Photographs will not be returned to an offeror.
6. Offerors may submit only one proposal for evaluation.
7. No responsibility will attach to any officer or agent of the District for the premature opening of, or the failure to open, a proposal not properly addressed and identified.

I. ALASKA BUSINESS LICENSE

Offerors must hold a valid Alaska business license and any necessary applicable professional licenses required by Alaska Statute as a condition of award. Offerors should contact the State of Alaska, Department of Commerce, Community and Economic Development, Division of Occupational Licensing, for information regarding business licensing. Contact information, information regarding business licensing, and business licenses, are available at <https://www.commerce.alaska.gov/web/cbpl>

J. FIRM OFFER

Offers made in response to this RFP must be good and firm for a period of ninety (90) calendar days from the date specified for submittal of proposals.

K. WITHDRAWAL OF PROPOSALS

Proposals may be withdrawn on written request delivered to the District Purchasing Director (fax is acceptable) prior to the time specified for submittal. Proposals not withdrawn prior to the specified time may not be withdrawn for a period of ninety (90) calendar days after the time for receipt of proposals.

L. DISTRICT NOT RESPONSIBLE FOR PREPARATION COSTS

Each offeror understands and agrees that it submits its proposal at its own risk and expense and releases the District from any claim for damages or other liability arising out of the Request for Proposals and award process, including but not limited to: proposal preparation costs and costs associated with any challenge (administrative, judicial or otherwise (including attorney fees)) to the determination of the highest ranked proposal and/or award of contract and/or rejection of proposals, except as follows: in the event that a contract is awarded to one offeror, and it is determined after award of the contract that it should have been awarded to some other offeror, the only financial liability of the District, if any, to the aggrieved offeror shall be actual costs reasonably incurred by that offeror in the preparation and submittal of its proposal. No other obligation of any sort is created nor may liability, financial or otherwise, be asserted against the District, its Board, Board members, employees, agents or insurers to offer to award or award a contract. By submitting a proposal, each offeror agrees to be bound in this respect.

M. REJECTION OF PROPOSALS

1. Offerors must comply with all of the terms of this RFP, and all applicable local, state, and federal laws, codes and regulations. The District may reject any proposal that does not comply with all of the material and substantial terms, conditions, and performance requirements of this RFP and any proposal which contains information or material which cannot be verified or otherwise confirmed for purposes of determining responsiveness to the solicitation.
2. The District reserves the right to waive informalities and minor irregularities, and/or reject any and all proposals, and to not award the proposed contract, if in its best interest. "Informalities and minor irregularities" means matters of form rather than substance which are evident from the submittal, or are insignificant matters that have a negligible effect on price, quantity, quality, delivery, or contractual conditions and that can be waived or corrected without prejudice to other Offerors. These include items that:
 - Do not affect responsiveness;
 - Are merely a matter of form or format;
 - Do not change the relative standing or otherwise prejudice other offers;
 - Do not change the meaning or scope of the RFP;
 - Are trivial, negligible, or immaterial in nature;
 - Do not reflect a material change in the work, or;
 - Do not constitute a substantial reservation against a requirement or provision of the RFP.

N. SELECTION FOR AWARD

1. Selection for award will be accomplished in accordance with Anchorage School Board Policy Section 3311 and the terms and conditions of this solicitation. A recommendation for award, based upon the evaluation criteria specified in this RFP, will be made to the Anchorage School Board for approval, unless approval is not required under Board Policy Section 3311.
2. The District may award a contract on the basis of initial proposals received, without discussions. Therefore, each proposal should contain the offeror's best efforts from a technical standpoint.
3. For those awards requiring Board approval, the District's Purchasing Department will make public in the Purchasing Department each Notice of Intent to Award ten (10) calendar days prior to the scheduled date for award by the Board. Offerors may, upon request to the Purchasing Department, review the proposal scoring summary prior to the scheduled Board award date.
4. Any contract awarded as a result of this solicitation will incorporate the contents of this RFP and the successful offeror's proposal, subject to the reservations set forth herein for provisions of a proposal that do not comply with material and substantial terms, conditions, and requirements of this RFP or that impermissibly restrict the rights of the District. The successful offeror(s) will be required to execute a written contract in the form included as part of this RFP and comply with its terms.

O. NEGOTIATIONS

After final evaluation, the District may negotiate with the offeror of the highest-ranking proposal. Negotiations, if held, shall be within the scope of the RFP and limited to those items which would not have an effect on the ranking of proposals. The District reserves the right to change terms and conditions during contract negotiations. If the highest-ranked offeror fails to provide necessary information for negotiations in a timely manner or fails to negotiate in good faith, or if the offeror

and the District, after a good faith effort, cannot come to terms, the District may terminate negotiations and commence negotiations with the offeror of the next highest-ranking proposal.

P. RESPONSIBLE OFFERORS

1. A contract will be awarded only to prospective Offerors who are determined to be responsible.
2. In order to determine responsibility of a prospective offeror, the District may require Offerors to supply additional information or documentation and may perform on-site pre-award surveys. Failure of an offeror to promptly cooperate or supply information in connection with a District inquiry with respect to responsibility may result in a determination of non-responsibility with respect to the offeror.
3. To be determined responsible, a prospective offeror must:
 - a. Have adequate financial resources to perform the contract or the ability to obtain them;
 - b. Be able to comply with the contract performance schedule taking into consideration all existing other business commitments;
 - c. Have a satisfactory performance record;
 - d. Have a satisfactory record of integrity and business ethics;
 - e. Have the necessary organization personnel, experience, accounting and operational controls, and technical skills, or the ability to obtain them;
 - f. Have the necessary equipment and facilities or the ability to obtain them; and
 - g. Be otherwise qualified and eligible to receive an award under applicable laws and regulations.

Q. AWARD OF CONTRACT

1. Award of Contract
 - a. Selection of the successful offeror will be by a notice in writing signed by a duly authorized representative of the District and no other act of the District or its representative will constitute an acceptance of a proposal.
2. Execution of Contract
 - a. The offeror whose proposal is accepted by the District shall execute the contract and furnish the required insurance within five (5) days after presentation of the contract for signature. Failure or neglect to provide the required insurance or to execute the contract within the time specified, or within such additional time as the District, in its sole discretion, may allow, shall constitute a breach of the agreement affecting the award. The damages to the District for such breach shall include loss due to delay and interference with the District's general operations improvements program, and increased administrative expense, and other items whose accurate amount would be difficult or impossible to compute.
 - b. Upon receipt of the above-referenced contract executed by the offeror, and all required insurance certificates, the properly authorized District representatives will execute the contract. The Contract shall not be effective until it is executed by a properly authorized representative of the District.

R. AGGRIEVED OFFERORS

1. Protest

- a. An interested party may protest a solicitation or a proposed award of a contract.
 - i. A protest as to the specifications and/or terms and conditions of a solicitation must be received by the Purchasing Senior Director at least five (5) calendar days prior to the due date of the bid or proposal; failure to protest as provided herein constitutes a waiver of any objection to the solicitation.
 - ii. For construction projects and architectural/engineering design services, the protest of a proposed award of a contract must be received by the Purchasing Senior Director within ten (10) calendar days after issuance of the Notice of Intent to Award.
 - iii. For goods or services, the protest of a proposed award of a contract must be received by the Purchasing Senior Director within seven (7) calendar days after issuance of the Notice of Intent to Award, except that for purchases under \$100,000, the protest must be received within three (3) business days.
 - iv. The protest must include the name of the person submitting the protest, the name of the bidder/proposer represented by that person, the specific action or bid/request for proposal contract award which is being protested, a detailed explanation of the reasons for the protest, and the relief requested.
 - v. The aggrieved person must serve all other interested parties with its protest.
- b. The Purchasing Senior Director shall stay the intended award of a contract unless the Purchasing Senior Director determines the award of the contract without further delay is necessary to protect the District's best interest.
- c. The Purchasing Senior Director may, in his/her sole discretion, hold a hearing.
- d. The rights and remedies granted by this section are not available for informal small purchases with an actual or potential value of less than twenty-five thousand dollars (\$25,000).
- e. Failure to protest as provided herein constitutes a waiver of any objection to the solicitation and contract award.

2. Appeal

- a. A decision by the Purchasing Senior Director may be appealed to the Anchorage School Board.
- b. Any appeal shall be filed with the Superintendent within five (5) days after the decision is received by the protester and must include the name of the person submitting the appeal, the name of the bidder/proposer represented by that person, and a detailed explanation of the basis for the appeal.
- c. The aggrieved bidder/proposer must serve all other interested parties with its appeal.
- d. The Superintendent may obtain an independent review of the appeal issues if the Superintendent determines such review will assist consideration of the appeal.

- e. The independent review shall not be conducted by a District employee, but must be conducted by an experienced but disinterested third party from outside the District.
 - f. Failure to appeal to the Anchorage School Board as provided herein constitutes a waiver of any objections to the solicitation and the contract award.
3. Consideration of Appeal
- a. The decision being appealed and the findings from the independent review, if any will be reported to the Board.
 - b. Upon consideration of the appeal and allowing interested parties an opportunity to address the issues on appeal, the Board may:
 - i. Award the contract as recommended, if applicable, indicating its reasons for rejecting the appeal;
 - ii. Grant the appeal, indicating its reasons for granting the appeal, and determine an appropriate remedy consistent with AR3311.1(c).1 of Board Policy. The Board may award the contract at that meeting to some other bidder/proposer if it finds that a delay in making the award would adversely affect the District.
 - iii. Stay any award of the contract to permit further consideration of the appeal, with action to be scheduled as soon as practicable, but in no event more than twenty (20) days after the stay as initiated.
 - iv. Reject all bids/proposals
 - v. Take such other action as appears appropriate and in the best interest of the District under the circumstances.
4. Frivolous Protests
- a. Signature on Protest Constitutes Certificate
 - i. The signature of an attorney or party on a request for review, protest, motion, or other document constitutes a certificate by the signer that the signer has read the document, to the best of his/her knowledge, information, and belief formed after reasonable inquiry it is well grounded in fact and is warranted by existing law or a good faith argument for the extension, modification, or reversal of existing law, and that it is not interposed for an improper purpose, such as to harass, limit competition, or to cause unnecessary delay or needless increase in the cost of the procurement or of the litigation.
 - b. Sanctions for Violation
 - i. If a request for review, protest, pleading, motion, or other document is filed with the Purchasing Senior Director is signed in violation of Board Policy AR3311.1(c).1, the School Board may impose upon the person who signed it, a represented party, or both, an appropriate sanction, that may include an order to pay to the other party or parties the amount of the reasonable expenses incurred because of the filing of the protest, pleading, motion, or other paper, including a reasonable attorney's fee.

S. PUBLIC RECORDS/CONFIDENTIALITY

1. This RFP and the resulting proposals received, together with copies of all documents pertaining to the award of a contract, will be kept by the District's Purchasing Office and made a part of the record which will be open to public inspection after contract award. Proposers, upon request to the Purchasing Officer, may review the proposal scoring summary after issuance of the notice of intent to award has been issued, except to the extent permissibly restricted by the offeror.
2. Offerors are advised to consult School Board Policy Section 1340 and the Alaska Public Records Act, A.S. 40.25.100-40.25.295 to verify if any of their proposal information may qualify for exemption from public disclosure. Exemptions to public disclosure requirements are narrowly construed. As such, the District cannot exempt materials that are not of a truly proprietary nature under applicable law and policy, and cannot be held liable for the disclosure of such information, even if marked for restriction by an offeror.
3. If a proposal contains any information that an offeror reasonably believes is proprietary or confidential, and is subject to protection under applicable law, each such page of the proposal must be marked "Confidential" by the offeror and the offeror must explain the basis for its determination that the information is not subject to disclosure under applicable public records laws. Cost or price information may not be restricted and will be open to public inspection. Marking an entire proposal "confidential" is not acceptable and may result in disclosure of the entire proposal.
4. By submitting a proposal, the offeror agrees to release the District from any liability resulting from the District's disclosure of information not clearly marked "Confidential." The offeror also agrees to defend any action seeking release of information marked "Confidential" and to indemnify and hold the District, its Board, employees and agents, harmless from any judgments, damages and costs awarded against the District, its Board, employees or agents, in favor of a party requesting information submitted by an offeror. Additionally, the offeror understands and agrees that if a request is made under applicable public records laws, the District will notify the offeror of such request but under no circumstance shall the District be required to commence or defend any action to prevent the disclosure of any information submitted by an offeror, including information the offeror believes to be confidential or proprietary.

T. EQUAL EMPLOYMENT OPPORTUNITY

1. The Contractor certifies that it will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, age, sex, marital status, mental or physical disability, or change in marital status, in employment, provision of services or otherwise. The Contractor shall take affirmative action to ensure such non-discrimination, including but not limited to the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
2. The Contractor shall state, in all solicitations or advertisements for employees to work in the performance of this Agreement, that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, ancestry, age, sex, marital status, mental or physical disability, or change in marital status.
3. The Contractor shall comply with the requirements of the Anchorage Municipal Code, Chapter 7.50.010-.120, as well as any procedures adopted by the District to implement the policies set forth therein.
4. The Contractor shall comply with any and all of the applicable laws and directives, and any

regulations which may be applicable to the Project or this Agreement.

5. The Contractor shall include the provisions of this Article in every Subcontract and purchase order, and shall require each Subcontractor to include these provisions in every sub-subcontract, so that these provisions will be binding upon each Subcontractor, sub-subcontractor and vendor providing services or goods to the Project.
6. The Contractor shall cooperate fully with the District's efforts which seek to deal with the problem of unlawful discrimination, and with all other District efforts to guarantee fair employment practices under this contract and promptly comply with all requests and directions from the Anchorage Equal Rights Commission and State Commission for Human Rights or any of its officers or agents relating to prevention of discriminatory employment practices.

U. NON-DISCRIMINATION

1. No Contractor on any District contract may illegally discriminate on the basis of sex, race, color, religion, gender identity, sexual orientation, national origin, ancestry, age, marital status, changes in marital status, pregnancy, parenthood, physical or mental disability, Vietnam era veteran status, genetic information, or good faith reporting to the board on a matter of public concern in employment, provision of services, or otherwise.
2. Any Contractor submitting a bid or proposal of one hundred thousand (\$100,000) or more must certify that if awarded a contract on the basis of that bid or proposal, he/she as the contractor will not illegally discriminate against any member or applicant for employment because of sex, race, color, religion, gender identity, sexual orientation, national origin, ancestry, age, marital status, changes in marital status, pregnancy, parenthood, physical or mental disability, Vietnam era veteran status, genetic information, or good faith reporting to the board on a matter of public concern in employment, provision of services, or otherwise.

V. NOTICE OF COMPLIANCE

1. All successful Contractors shall ensure such non-discrimination.
2. All successful Contractors must agree to post in conspicuous places, available to employees and applicants for employment, notice setting forth the provisions of this non-discrimination section and this section shall be deemed to be a part of every contract entered into by the District under these policies.

W. CONFLICT OF INTEREST

1. The Contractor agrees to certify that Anchorage School District employees, School Board members, or a member of their household are not in conflict of interest with the contract and Board Policy as follows (AR3311.1(e).1 Disclosure and Waiver of Conflict of Interest):
 - a. No Board member, employee, or a member of their household, shall acquire, directly or indirectly, an economic interest in a District or Municipal contract, or engage in business with the District or the municipality, unless the contract is competitively solicited and other requirements of Section 3311 of Board Policy and section 1.15 of the Anchorage Municipal Code are met.
 - b. The following acts and circumstances shall not be deemed to be in conflict with the performance of official duties if, at the earliest opportunity after having acquired such knowledge, the Board member or employee files a disclosure pursuant to AR3311.1(e).1 or requests and obtains a waiver pursuant to Board Policy AR3311.1(e).2:

1. Such person owns a sole proprietorship, or is a partner in a partnership, or is an officer, director, major shareholder (five percent (5%) or more of the outstanding shares) or has management control in a corporation that submits a bid, proposal or quotation to the District or attempts to enter or enters into a contract with the District;
 2. Such person has any significant (five percent (5%) or more) financial interest in any sale, lease or rental to the District of any service or property and such person has knowledge that the District intends to purchase, lease or rent the property or service;
 3. Such person wishes to sell or receive royalties on books or materials sold to the District for use in the school system for which the employee is the author;
 4. Such person is an employee who has been providing private services to a child who transfers to a new school or class or advances to a higher grade and the child becomes a student in the class being taught/aided by his/her provider.
2. Board Members, District employees, and their household and/or immediate family members are required to comply with Board Policies and the Municipal Ethics Code by disclosing conflicts of interest.
- a. When a board member, employee, or their household and/or immediate family member intends to do business with the District, the appropriate District and Municipal forms must be filed by the Board Member or District employee with the Municipal Clerk's Office and the Purchasing Department.

Note: *Notice of Intent To Respond To Public Solicitation* shall be filed with the Municipal Clerk's office in advance to allow a minimum of **7 calendar days to elapse between electronic publication by the clerk and the final date** for submitting a response to the solicitation. The form may be obtained from the Municipality of Anchorage website, www.muni.org.

District *Disclosure* and *Request for Waiver* forms and instructions may be obtained from the Conflict of Interest link on the Procurement Department page of the ASD website, www.asdk12.org.

- b. The responsibility for complete and timely filing rests solely with the Board Member or District employee.

X. SEX OFFENDER/CHILD KIDNAPPER REGISTRY

Anchorage School Board Policy 3515.5 prohibits a contractor whose employees or agents may have direct or incidental contact with District students from sending any employee or agent to district property who has been convicted of a sex offense under federal law or the law of any state and who is required to register as a sex offender under Alaska law or by court order, or who has been convicted of child kidnapping under federal law or the law of any state and who is required under Alaska law or court order to register on the Alaska Department of Public Safety Sex Offender/Child Kidnapper Central Registry. Board Policy 3515.5 requires contractors to certify in writing the contractor's knowledge of and compliance with Board Policy 3515.5. **Prior to executing a contract** for this project, the selected Contractor shall verify that no employee or agent who will be on district property is registered as a sex offender or child kidnapper in Alaska [Alaska Department of Public Safety "Sex Offender/Child Kidnapper Registry"] or in any other state. In addition, the contractor shall certify that, to its knowledge, no employee or agent is a convicted sex offender or child kidnapper. Certification will be required at time of award.

Y. CONTACT WITH SCHOOL STAFF AND AUTHORIZED SCHOOL COMMUNITY GROUPS

Offeror is not to contact site's school staff or authorized community groups for purposes of solicitation unless otherwise authorized by the Purchasing Senior Director.

Z. CONTRACT INDUCEMENTS

No payment, gratuity or offer of employment shall be made in connection with any contract, by or on behalf of the subcontractor to the prime contractor or higher tier subcontractor or any person associated therewith, as an inducement for the award of a subcontract or order.

AA. STANDARD CONTRACT TERMS

In addition to carefully reading all of the information in the RFP, Offerors must carefully read and review the attached standard contract terms and conditions. The successful Offeror shall be required to enter into an agreement with the District which will be substantially similar to the sample.

END OF SECTION I

A. EVALUATION OF PROPOSALS

1. All proposals will be reviewed by the District's Purchasing Department to evaluate administrative responsiveness of proposals to determine if Offerors have complied with the administrative proposal requirements and to determine if proposals meet the minimum mandatory criteria set forth below.
2. Proposals meeting minimum mandatory requirements then will be evaluated by an evaluation committee comprised of District employees or other persons deemed appropriate by the District using the Evaluation Criteria specified in this RFP. Evaluation of proposals in accordance with the evaluation criteria will result in a numerical score for each proposal. Each criterion has an assigned weight for this RFP which demonstrates its relative importance. Evaluation of proposals will be accomplished as follows:

- a. Each Evaluator will individually review and score each offeror's proposal on a scale of 0 to 1 for each of the Technical Evaluation Criteria.

A rating of "0" indicates a proposal which is non-responsive and/or provides no quality or value to the District and a rating of "1.0" indicates a proposal which is completely responsive and/or provides significant quality and value to the District. Ratings within the range indicate the level at which the proposal is responsive and/or provides quality and value to the District.

- b. After completion of ratings by each Evaluator, the Selection Committee may discuss the proposal. Evaluators may then alter their ratings; however, any changes shall be based only on the proposal and the Evaluation Criteria.
- c. The chairperson will obtain the ratings for the Evaluation Criteria, which ratings will then be multiplied against the points available for each criterion. The sum of the weighted scores for each proposal will result in a total weighted score from each member of the evaluation committee. The total weighted scores of all Evaluators will be summed to determine the total weighted score for each proposal. The maximum score obtainable for any proposal is equal to the product of the maximum points for the evaluation criteria multiplied by the number of Evaluators.
- d. Based upon the results of the proposal scoring, the District may, in its discretion, conduct discussions with Offerors whose proposals are determined to be reasonably susceptible to award. Such discussions, visits and presentations are for the purpose of ensuring full understanding of the requirements of the RFP and offeror proposals and may not result in any material or substantive change to proposals. Offerors selected by the Selection Committee for interviews may be permitted to submit final written, graphic and verbal presentation information for consideration by the Selection Committee in response to the above purposes. Only those members of the offeror's staff who will be in responsible charge and/or will carry out the actual tasks should participate in the interviews.
- e. Subsequent to the interviews, the Selection Committee will make a final rating based upon the original criterion supplemented by interview information for the purposes of determining the highest ranked proposer. The Selection Committee shall use the same procedure as specified for the initial proposal rankings. The final ranking may or may not be the same as the order of ranking after completion of the initial ranking.
- f. For purposes of this RFP, proposals that are "reasonably susceptible to award" means the three (3) highest scoring proposals, unless, in the sole discretion of the District's Purchasing Senior Director, one or more of the three highest scoring proposals did not achieve a score high enough to be within the competitive range and to remain under consideration for award when ranked with other proposals or the District received one or

more additional proposals that are within the competitive range of the three highest scoring proposals such that the additional proposal(s) may remain under consideration when ranked with the other proposals. This is not a strict mathematical formula and may not be challenged on that basis except in the case of obvious arithmetic errors.

3. The District reserves the right, at any time, to determine that a proposal is non-responsive and to request additional information to determine responsiveness.
4. All Offerors will be advised of the offeror selected for negotiation with a Notice of Intent to Negotiate. If contract negotiations are unsuccessful with offeror selected for negotiation, the School District may either cancel the solicitation or negotiate with other Offerors in the order of ranking.

B. EVALUATION CRITERIA

Proposals will be scored using the criteria listed below to determine which proposal best meets the needs of the Anchorage School District. The criteria to be considered during the evaluation and their associated weights are as follows:

Item	Criteria	Points
1.	PROJECT APPROACH	25
2.	METHODS	20
3.	MANAGEMENT	10
4.	FIRM'S EXPERIENCE	25
5.	PROPOSED PROJECT STAFF	10
6.	WORKLOAD AND RESOURCES	10
	TOTAL POINTS POSSIBLE	100

END OF SECTION II

Each response must be identified and keyed to the applicable criterion and assembled in the order in which the criteria are listed in Section II, Part B, so the criterion to which information applies shall be plainly evident. Material not so identified or assembled may be discarded without evaluation. Each proposal shall be submitted on standard 8 1/2" x 11" bond paper bound on one side. Proposals should be prepared simply and economically, providing a straightforward, concise delineation of the capabilities proposed to satisfy the requirements of this RFP. In addition, small print or typeface that is difficult to read may affect scoring.

To achieve a uniform review process and obtain the maximum degree of comparability, it is required that the proposals be organized in the manner specified below. Proposals shall not exceed twenty (20) pages in length (excluding letter of transmittal, resumes (resumes shall not exceed two (2) pages in length), table of contents, attachments, or dividers. Information in excess of those allowed will not be evaluated or scored. One page shall be interpreted as one side of single lined, typed, 8 1/2" X 11", piece of paper.

To ensure that proposals are evaluated fairly and that comparisons between proposals are accurate, Offerors must submit proposals in the format outlined below. Failure to comply with these requirements may cause a proposal to be rejected as non-responsive and eliminated from further consideration.

A. PROPOSAL TRANSMITTAL FORM

Submit the completed Proposal Transmittal Form (Attachment A) as the first page of the proposal. The Proposal Transmittal Form must be signed by an authorized representative of the offeror.

B. PROPOSAL NARRATIVE

1. PROJECT APPROACH

Weight:

Restate the proposed Scope of Services, outlining the objectives and scope as perceived. Do not repeat the statement of services provided herewith, but elaborate on the tasks, conditions, deliverables or other specifics deemed significant and necessary to demonstrate a complete understanding of the technical and substantive issues to be addressed. Define any assumptions made in formulating response. If scope includes design services for a construction project, express any opinions regarding alternative design considerations that could impact construction costs.

2. METHODS

Weight:

Response must outline the methods for accomplishing the proposed contract. Consider what, when, where, how, and in what sequence the work will be done. Include proposed timeline with milestones. Identify the amount and type of work to be performed by any sub-consultants. Consider how each task may be carried out; what services or interaction may be required from/with the Contracting Agency. Suggest alternatives, if appropriate. Identify any distinct and substantive qualifications for undertaking the proposed contract, such as the availability of specialized equipment or unique approaches or concepts relevant to the required services, which the firms may use.

3. MANAGEMENT

Weight:

Response must describe the administrative and operational structures that will be used for performing the proposed contract. Address who will have overall responsibility for the contract and who will have direct responsibility for specific disciplines. Discuss the lines of authority. Use of a table or chart is preferred in your response. When applicable, include discussion of public participation process and coordination with State and Municipal agencies.

4. FIRM'S EXPERIENCE

Weight:

Discuss the offeror's background and qualifications to establish experience and performance as a team leader for professional services similar to those required by this project. Discuss the relevance of past projects (program, unique features, schedules, budgets, etc.) to this project. List at least three (3) references (contact persons and telephone numbers) for the firm.

5. PROPOSED PROJECT STAFF

Weight:

Response must name proposed leader(s) for the following categories plus any other essential personnel who will be directly and routinely engaged in performing the work:

1 – Principal-in-Charge	3 – Project Manager
2 – Contract Manager	4 – Project Architect/Planner

Describe the work to be performed by the named Leader(s), and their qualifications in terms of educational and substantive experience directly related to the proposed services. Identify: employer, professional discipline and/or job classification, Alaskan registration number, and state of residency. A response prepared specifically for this proposal is required. Marketing resumes often include irrelevant information, which may detract from the evaluation of proposal. Lists of projects without relevant details are not useful. Focus on individuals' specific duties and responsibilities and how project experience is relevant to the proposed services.

6. WORKLOAD AND RESOURCES

Weight:

Response must: (1) discuss both current and potential time commitments to all clients (i.e. not only the District) for the proposed Project Staff; and (2) demonstrate adequate support personnel, facilities and other resources to provide the services required throughout the project's term. Briefly address capabilities for providing additional services and/or services under an accelerated schedule. Address capacity to reassign personnel, equipment and facilities whenever the proposed contract would not require such capabilities or would be delayed.

END OF SECTION III

A. SCOPE OF WORK

1. The requirements of this project shall consist of providing complete professional services necessary to provide a Tier 2/3 Seismic Evaluation at Wendler Middle School, 2905 Lake Otis Parkway, Anchorage, Alaska 99508.

This qualifications-based selection focuses on the Prime Consultant as the responsible and contractual leader of a team. The Offeror will only identify required disciplines in the proposal. Once selected and given a Notice of Intent to Negotiate by the School District, the Prime Consultant Offeror will proceed with a qualifications-based selection of Sub-consultants. The School District will consult with the Offeror, reviewing and commenting on proposed Sub-consultants as appropriate. The School District reserves the right to object to selection of Sub-consultants based on considerations of cost, performance, special qualifications, and/or known work load relative to resources.

The Prime Consultant is the project design coordinator and document quality control authority. Prime Consultant will review and verify deliverables prior to submission to Owner. Incomplete or lacking deliverables may be rejected. Owner will review complete deliverables for compliance and acceptance.

2. Planned Project Scope of Work: This project is funded by a Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program (HMGP) grant.
 - a. The evaluation will follow the Anchorage School District Seismic Evaluation and Retrofit Guide and ASCE 41-23.
 - b. Review the attached Tier 1 evaluations.
 - c. Investigate the areas of potential weaknesses identified in the Tier 1 report.
 - d. Recommend retrofits that will increase the seismic resiliency of the building including ROM estimate(s).
 - e. Complete FEMA Benefit Cost Analysis (BCA) on recommended seismic retrofits, for potential inclusion in a future FEMA grant opportunity.

B. SCOPE OF CONSULTANT SERVICES

For the purpose of this document, the phrase "Consultant(s)" refers to the person, partnership, corporation, joint venture, or other business entity with which the District contracts to provide the professional services required for this project.

Anticipated Scope of Consultant Services: For this project, the Consultant shall provide all professional services necessary to support the successful completion of this project. The Consultant's services shall include, but are not limited, to the following:

1. Consultant Design Phases/Deliverable Requirements: The following design phases with corresponding design deliverables shall be required for this project.
 - a. Draft Report
 - b. Final Report
2. Phase 1 Evaluation Development
 - a. Develop Report

- i. Verification of the Planned Project Scope of Work: the Consultant shall verify and update the Planned Project Scope of Work. The Consultant shall consult with the District Project Manager for any deviation from the Planned Project Scope of Work prior to completing the Draft Report. The Draft Report shall reflect the final approved evaluation scope of work.
 - ii. Verification of the Construction Budget: The Consultant shall verify the recommended seismic retrofit projects with respect to required cost estimates.
 - iii. Project Report Review: ASD Reviews are organized by the ASD PM and executed using Bluebeam Revu (Bluebeam) sessions at the draft report phase. The use of Bluebeam allows for a collaborative, digital review for the Project; involving ASD Reviewers and Consultants, including the Consultant's cost estimator. ASD will provide all comments, written and noted, in the Bluebeam session and the Consultant shall assist the District by reviewing and responding in writing to all comments in the Bluebeam session; identifying and making written recommendations to the ASD Project Manager regarding the most critical design issues. The most critical path design issues will be summarized and discussed in a Post-Review Debrief. The Project Manager will organize/invite Reviewers to the Post-Review Debrief. The Consultant shall act as the Meeting Facilitator of the Post-Review Debrief. The Post-Review Debrief is not meant to be a 'page-turn' review of documents and comments, but a one-hour summarization of the most critical path items and the team's intent/approach to resolve. Once the Post-Review Debrief is held, the PM will give Consultant notice to proceed to the final report, pending any requested changes prior to NTP. The Project Manager will then verify that each comment and response has a Bluebeam **status** set and **finish** the Bluebeam session for ASD archives.
3. Anticipated Required Consultant Service Disciplines: Anticipated disciplines required for this project shall include, but are not limited to:
- a. Structural Engineering
 - b. Cost Estimating
4. Additional Requirements:
- a. Extended District Review: The Consultant shall acknowledge that while review periods are scheduled during the design process, the District plan review resources may not be able to accommodate the schedule due to work load. In some cases, follow-up comments beyond the scheduled review period may be necessary. The Consultant is encouraged to be proactive in assisting the District in facilitating the design review process.
 - b. Use of Standard Anchorage School District Invoice Format: The Consultant shall utilize a standardized Anchorage School District Invoice Format. The format will be provided by the District to the consultants.

C. PROJECT SCHEDULE

Based on the Tentative Project Schedule and Specific Project Schedule Requirements below, the Offeror shall develop a preliminary project schedule covering the period from Notice to Proceed (NTP) through Design Completion based on anticipated workload and resources and include it as part of the Offeror's proposal response to Part B, Article 2 Methods. Identify all submittal milestones including submittal dates, cost estimate submittal dates and District review comments periods.

1. Tentative Project Schedule for Design Work:

Requirement	Anticipated Dates
RFP/Consultant Selection/Negotiation:	November/ December 2025
Anticipated Contract Award/NTP:	December 2025/January 2026
Draft Report:	May 2026
Final Report, Estimates and BCA:	July 2026

2. Specific Project Schedule Requirements:
 - a. Allow 2 weeks after each submittal for review by the District.

D. INFORMATION TO BE PROVIDED BY THE DISTRICT

The following information is available for review and use by the consultants during design:

1. Wendler Middle School
2905 Lake Otis Parkway
Anchorage, Alaska 99508
2. Historical As-Built/Project Documents/AHERA Documents – Existing documents are available at the District Capital Planning & Construction Department. Proposers can view existing documents by coordinating with the planning & design section for access to the plans room. Proposer must coordinate the time at least 24 hours in advance with Capital Planning & Construction (CP&C) planning & design staff at 907-348-5264.

E. ADDITIONAL INFORMATION

1. Attachment C – Seismic Evaluation and Retrofit Guide for Existing Anchorage School District Buildings Updated 07/2025 to Reference IBC 2024 and ASCE – 41 -23, Version r1, 09/2025
2. Attachment D – Wendler Middle School ASCE 41 – Tier 1 Evaluation January 2022
3. Attachment E – Wendler Middle School Floor Plan

END OF SECTION IV

THIS FORM MUST BE RETURNED WITH THE OFFEROR'S PROPOSAL

Addendum Number(s)/Date(s) _____ is/are hereby acknowledged.

REPRESENTATION. THE OFFEROR REPRESENTS THAT IT [] IS, [] IS NOT A MINORITY BUSINESS ENTERPRISE;

AND/OR

REPRESENTATION. THE OFFEROR REPRESENTS THAT IT [] IS, [] IS NOT A WOMEN BUSINESS ENTERPRISE;

AND/OR

REPRESENTATION. THE OFFEROR REPRESENTS THAT IT [] IS, [] IS NOT A LABOR SURPLUS AREA FIRM.

FIRM'S NAME: _____

MAILING ADDRESS: _____

CITY/STATE/ZIP: _____

PHYSICAL BUSINESS ADDRESS: _____

CITY/STATE/ZIP: _____

CONTACT PERSON FOR THIS SOLICITATION: _____

FAX NO.: _____

TELEPHONE NO.: _____

CELL PHONE NO.: _____

ALASKA BUSINESS LICENSE NO.: _____

FEDERAL TAX ID NO.: _____

EMAIL ADDRESS: _____

CERTIFICATION

I certify that I am a duly authorized representative of the firm listed above and that the information and materials enclosed with this proposal accurately represent the capabilities of the firm to provide the services indicated in compliance with the requirements of the solicitation. I certify that no member of the School Board or District employee, or spouse or other member of his/her household, has or shall have any undisclosed interest in the firm or this proposal, as provided in the Instructions to Offerors ("Conflicts of Interest"). The School District is hereby authorized to request from any individual any pertinent information deemed necessary to verify information regarding the capacity of the firm and for purposes of determining responsiveness of the proposal or responsibility of the firm as a prospective contractor. In compliance with the solicitation, the offeror agrees, if this offer is accepted within 90 calendar days from the date specified in the solicitation for receipt offers, to furnish any or all items on which prices are offered at the price set opposite each item, delivered at the designated places, within the times specified in the solicitation.

SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____

ANCHORAGE SCHOOL DISTRICT PROFESSIONAL SERVICES AGREEMENT

(LESS Than \$100,000)

CONTRACT/P.O. NUMBER: DATE PREPARED:

PROJECT TITLE: PROJECT NUMBER: CONTRACTOR:															
ASD PROJECT MANAGER:	PHONE NUMBER:														
ARTICLE 1 – SERVICES (DESCRIBED BELOW OR IN <u>REFERENCED</u> ATTACHMENT)															
1.1 Provide professional design services @															
ARTICLE 2 – PERIOD OF PERFORMANCE															
2.1 The Contractor shall commence the services described herein upon receipt of this fully executed Agreement and shall complete services @															
ARTICLE 3 – COMPENSATION															
3.1 Compensation for services shall not exceed the authorized amount(s) entered below and is in accordance with the attached proposals from @ dated @.															
<p>Following completion of services and receipt of specific approval from the Anchorage School District, the Contractor shall submit one invoice. If the period of performance is in excess of three months, the Contractor may submit interim billings monthly, which represent the percentage of completed work for fixed-price work or substantiated charges for other than fixed-price work. The Contractor shall substantiate all charges other than for fixed price or fixed profit by attaching receipts, time sheets, summary of units completed, or other proof of expenditures.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Method of Payment</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>Authorized Amount(s)</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>Funding Code(s):</u></th> </tr> </thead> <tbody> <tr> <td>Fixed Price</td> <td rowspan="6" style="width: 30%;"></td> <td rowspan="6"></td> </tr> <tr> <td>Time and Materials</td> </tr> <tr> <td>Unit Prices</td> </tr> <tr> <td>Salaries</td> </tr> <tr> <td>Expenses</td> </tr> <tr> <td>Hourly Rate</td> </tr> <tr> <td>TOTALS</td> <td></td> <td></td> </tr> </tbody> </table>		<u>Method of Payment</u>	<u>Authorized Amount(s)</u>	<u>Funding Code(s):</u>	Fixed Price			Time and Materials	Unit Prices	Salaries	Expenses	Hourly Rate	TOTALS		
<u>Method of Payment</u>	<u>Authorized Amount(s)</u>	<u>Funding Code(s):</u>													
Fixed Price															
Time and Materials															
Unit Prices															
Salaries															
Expenses															
Hourly Rate															
TOTALS															
ARTICLE 4 – SIGNATORIES															
4.1 To this Agreement between the above-named Contractor and the Anchorage School District, effective on the last date executed by its parties, in consideration of the terms, conditions and requirements of Articles 1 through 6 herein, the parties hereto agree. (Incorporated Contractor must affix corporate seal or attach corporate resolution authorizing signatory to execute this Agreement.)															
<u>CONTRACTOR NAME</u>	<u>ANCHORAGE SCHOOL DISTRICT</u>														
SIGNATURE _____	SIGNATURE _____														
DATE _____	DATE _____														
TITLE: Principal	NAME: David Whiting TITLE: Senior Director, Purchasing/ Warehouse														

ARTICLE 5 - INDEMNIFICATION AND INSURANCE

- 5.1 The A/E consultant shall obtain and maintain all insurance required under this section. The A/E consultant shall file with the Contracting Officer a Certificate of Insurance showing the type and amounts of insurance, the policy number, and the expiration date.
- 5.2 Certificates of Insurance shall be in the name of the Anchorage School District as an additional insured and shall provide the Contracting Officer, Anchorage School District, with at least a thirty (30) day written notice of any material change, cancellation or non-renewal of the policy(s) during the Contract Period.
- 5.3 Statement of Insurance. At the time of contract execution the A/E consultant must have in effect:

WORKER'S COMPENSATION	Statutory Limit	
EMPLOYER'S LIABILITY	\$1,000,000	
COMMERCIAL GENERAL LIABILITY	\$1,000,000	Combined Single Limit
	\$2,000,000	Aggregate Limit
COMPREHENSIVE AUTOMOBILE	\$1,000,000	per accident for any auto
PROFESSIONAL LIABILITY INSURANCE	\$100,000	<input type="checkbox"/> not required if checked

ARTICLE 6 - GENERAL CONDITIONS

- 6.1 Termination
 - 6.1.1 Termination - This Agreement may be terminated for just cause by either party upon ten days written notice. If warranted, the Contractor will be compensated for reasonable expenses incurred for services completed prior to the date of termination. Federal funding agency, if any, must approve any settlement in conformance with applicable federal regulations.
 - 6.1.2 Termination - The Anchorage School District may at any time terminate (convenience termination) or suspend this Agreement for its needs or convenience upon ten (10) Days' written notice to the Contractor. In the event of a convenience termination or a suspension of the Agreement for more than three (3) months, the Anchorage School District will compensate the Contractor for services performed and any expenditures incurred prior to the effective date of the written notice of termination or suspension. No fee, profit or other compensation for the uncompleted portion of the services will be paid, except for already incurred indirect costs which the Contractor can establish and for which the Anchorage School District would have compensated the Contractor over the life of this Agreement, but because of the termination or suspension would have to be absorbed by the Contractor without further compensation.
- 6.2 Officials not to Benefit - The Contractor shall comply with all applicable federal and state laws and regulations regarding ethical conduct of public officials and employees.
- 6.3 Independent Contractor - The Contractor and their agents and employees shall act in an independent capacity and not as officers or agents of the Anchorage School District in the performance of this Agreement except that the Contractor may function as the Anchorage School District's agent as may be specifically set forth in this Agreement.
- 6.3.1 Any and all employees of this Contractor while engaged in the performance of any work or services required by the Contractor under this Agreement, shall not be considered employees of the Anchorage School District and any and all claims that may or might arise under the Worker's Compensation Act on behalf of said employees, while so engaged and any and all claims made by a third party as a consequence of any negligent act or omission on the part of the Contractor's employees, while so engaged on any of the services to be rendered herein, shall be the sole obligation and responsibility of the Contractor.

- 6.3.2 This Agreement will be declared null and void should the Anchorage School District determine that by Internal Revenue Service definitions employees of the Contractor or of any subcontractor may be an employee of the Anchorage School District.
- 6.4 Proselytizing - The Contractor agrees that it will not engage, on a full or part time basis, during the period of this Agreement, any person or persons who are or have been employed by the Anchorage School District during the period of this Agreement or during the 90 days immediately preceding the date of this Agreement except those who have been regularly retired or approved in writing by the Anchorage School District.
- 6.5 Covenant Against Contingent Fees - The Contractor shall comply with the Copeland "Anti-Kickback" Act (18 USC 874) as supplemented in federal Department of Labor Regulations (29 CFR, Part 3), which are incorporated by reference and made a part of this Agreement.
- 6.6 Subcontractors - The Contractor shall not engage any subcontractor(s) without the prior approval of the Anchorage School District.
- 6.7 No Assignment or Delegation - The Contractor may not assign or delegate this contract, or any part of it, or any right to any of the money to be paid under it, except with the written consent of the Anchorage School District.
- 6.8 Disputes - Any dispute concerning a question of fact arising under this Agreement which is not disposed of by mutual consent shall be decided without bias by the Anchorage School District which shall reduce the decision to writing and furnish a copy of it to the Contractor within 30 days of receipt of all necessary information from the Contractor upon which to base the decision. The Anchorage School District's decision is final and conclusive unless, within 30 days of receipt of the decision, the Contractor delivers a Notice of Appeal to the Anchorage School District. The Notice of Appeal shall include specific exceptions to the Anchorage School District's decision including specific provisions of this Agreement, which the Contractor intends to rely upon on appeal. General assertions that the Anchorage School District's decision is contrary to law or to fact are not sufficient. The Superintendent will appoint an Appeals Officer who will render a decision within 60 days of Notice of Appeal and the decision constitutes the exhaustion of contractual and administrative remedies.
- 6.9 Extent of Agreement/Changes - This Agreement represents the entire and integrated Agreement between the Anchorage School District and the Contractor and supersedes all prior negotiations, representations or agreements, written or oral. This Agreement may be changed only by written amendment executed by both the Anchorage School District and the Contractor.
- 6.10 Taxes - As a condition of performance of this Agreement, the Contractor shall pay all federal, state and local taxes incurred by the Contractor and shall require their payment by any other persons in the performance of this Agreement.
- 6.11 Governing Laws - This Agreement is governed by the laws of the State of Alaska and federal and local laws and ordinances applicable to the work performed. The Contractor shall be cognizant and shall at all times observe and comply with such laws which in any manner affect those engaged or employed in the performance, or which in any way affects the manner of performance, of this Agreement.
- 6.12 Ownership of Work Products
- 6.12.1 Ownership of Work Products produced under this Agreement, including items which have pre-existing copyrights, shall remain with the Contractor. The Anchorage School District shall have an unrestricted, irrevocable license to use the Work Products without infringing any copyrights, and without additional compensation to the Contractor.
- 6.12.2 Unrestricted use shall include use: (1) for any additions, alterations, or other subsequent work to the Project; (2) to demonstrate or reference conceptual arrangements, in whole or in part, for incorporation into any District project; and (3) reuse of a prototypical design on an Anchorage School District project.
- 6.12.3 Should the Anchorage School District elect to reuse Work Products produced by the Contractor and its Subcontractors under this Agreement and owned by the Contractor on any other project, the Anchorage School District shall indemnify, hold harmless and defend the Contractor and its Subcontractors against any damages or liabilities arising from such reuse.

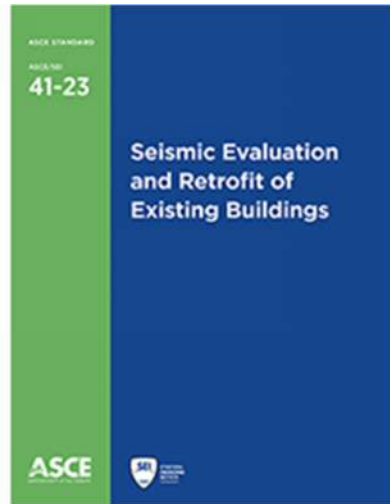
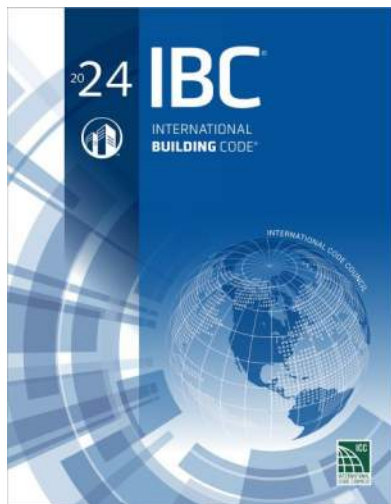
- 6.12.4 When Work Products produced by the Contractor and its Subcontractors under this Agreement are reused by the Anchorage School District, the Contractor's and Subcontractors' signatures, professional seals and dates shall be removed. Such Work Products, which require professional signature and seal, will be signed, sealed and dated by the professional who is in direct supervisory control and responsible for the new project for which such Work Products are being reused.
- 6.12.5 The Contractor shall include this provision in every Subcontract so as to be binding on every Subcontractor.

SAMPLE

SEISMIC EVALUATION AND RETROFIT GUIDE

For Existing Anchorage School District Buildings

Updated 07/2025 to Reference IBC 2024 and ASCE 41-23
Version r1, 09/2025



Preface

This guide is a revision to the 2021 edition of the Seismic Evaluation and Retrofit Guide for Existing Anchorage School District Buildings. A summary of the most significant changes that are in this current version includes the following:

Significant Changes in ASCE 41-23

- Chapter 4 Tier 1 Screening
 - Changed several of the Tier 1 Quick Check procedures
- Chapter 5 Tier 2 Deficiency-Based Evaluation and Retrofit
 - Aligned the Tier 2 Knowledge Factor with the Tier 3 requirements
 - Updated Tier 2 evaluation requirements for Steel Deck diaphragms
 - Updated the Tier 2 Deficiency-Based Retrofit requirements to include retrofit-specific requirements on the resulting structure, design and detailing requirements, and the definition of the scope of evaluation requirements for existing components
- Chapter 6 Tier 3 Systematic Evaluation and Retrofit
 - Revised the condition assessment and data collection requirements
 - Eliminated the dependence of performance level for data collection and material testing
 - Granted permission to use material property bounding in a nonlinear analysis in lieu of material testing

Significant Changes in ASCE 7-22

- Chapter 7 Snow Loads
 - New risk-targeted snow loads; four separate maps for reliability-targeted ground snow load values for Risk Category I through IV
- Chapter 11 Seismic Design Criteria
 - Site Classes BC, CD, and DE added
 - Use of Default Site Conditions revised
 - Multi-Period Response Spectrum (MPRS) added
 - Risk-targeted maximum considered earthquake (MCE_R) spectral response acceleration parameters shall be obtained from the USGS Seismic Design Geodatabase for the applicable site class

Significant Changes to this 'Seismic Evaluation and Retrofit Guide'

Technical updates were made to align with referenced codes and additional verbiage was added to provide clarity.

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Executive Summary

The following document is to be used to assist in the seismic screening, evaluation, and retrofit of existing Anchorage School District (ASD) school buildings. It outlines four progressive methods for screening, evaluating, and retrofitting these buildings, all in relation to seismic events: Rapid Visual Screening, Screening, Evaluation, and Retrofit.

Rapid Visual Screening (RVS) is a method to determine the probability of failure based on basic criteria determined about the building such as building type, year of construction, soil type, etc. The RVS section is based on Federal Emergency Management Agency (FEMA) 154. Because of the basic nature of this method, this can be conducted on an inventory of buildings for easy comparison and understanding of the relative/ranked seismic risk. Buildings are rated by Seismic Score “S”, and buildings receiving a lower score have a higher probability of failure during large earthquakes.

The Screening section (Tier 1) is based on American Society of Civil Engineers (ASCE) 41-23, Chapter 4. This section of the guide is used to identify possible structural and nonstructural deficiencies based on an ASD-determined performance objective using checklists accumulated from observed deficiencies revealed within distinct building types during previous large earthquakes. These potential deficiencies are prioritized and put into a report that includes a conceptual narrative on how these potential deficiencies could be grouped and mitigated.

The Evaluation section (Tier 2 or 3) is based on ASCE 41-23, Chapters 5 and 6. This section of the guide is used to further evaluate existing building components in more detail and to verify structural and nonstructural deficiencies identified in the Screening report, based on ASD-determined performance objectives. The verified deficiencies are prioritized and put into a report that includes a schematic narrative on how these verified deficiencies could be grouped and mitigated.

The Retrofit section (Tier 2 or 3) is also based on ASCE 41-23, Chapters 5 and 6. This section of the guide is to be used following the Screening and Evaluation phases for developing the retrofits for specific deficiencies, to a performance objective determined by ASD. The deficiencies mitigated by any retrofit project are typically voluntary and may not include the retrofit of all verified deficiencies listed in the Evaluation report, depending on ASD funding priorities and the cost of retrofit versus replacement of the entire school.

A. Definitions

The following terms are used throughout this document. In this section, no specific guidance is given, only general descriptions.

- IBC/ASCE 7
 - The International Building Code (IBC) and American Society of Civil Engineering (ASCE) 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures* are the basic building codes to which new buildings are designed.
 - At the time of publication, this guide is based on IBC 2024 and ASCE 7-22, with local amendments as expected to be adopted by the Municipality of Anchorage (MOA) in the spring of 2026.
 - Life Safety is a concept that governs all new building code provisions within IBC/ASCE 7 for Risk Category II buildings. The basic goal in any extreme event is that all persons can safely egress the building. This concept does not ensure the repairability of the building or the state of the building after the event. The only objective is that there is no loss of life.
- Risk Category
 - Buildings are categorized into four groups, generally by number of occupants, but also by community need. These are defined by the IBC and ASCE 7.
 - Risk Category I – Buildings that represent a low hazard to human life in the event of failure, such as minor storage facilities, barns, sheds, temporary facilities, etc.
 - Risk Category II – All buildings except those listed in Risk Categories I, III, and IV. An example would be a single-family home, a retail store, or an office building.
 - Risk Category III – Buildings that represent a substantial hazard to human life in the event of failure. This would include buildings where 300 people or more congregate in one area, detention facilities, and primary and secondary schools with a capacity of 250 or more.
 - Risk Category IV – Buildings designated as essential facilities, including hospitals, fire stations, police stations, or buildings designated as emergency shelters.
- IEBC
 - The International Existing Building Code (IEBC) governs existing buildings and their repair, alteration, addition, and repurposing (change of use or occupancy).
 - At the time of publication, this guide is based on IEBC 2024, with local amendments as expected to be adopted by the MOA in the spring of 2026.
 - The IEBC does not require existing buildings, that are not undergoing a change of use or occupancy, to be upgraded to current IBC/ASCE 7 (current building code) force levels and detailing standards. Instead, it sets limits on the amount of mass that can be added (increasing the seismic force) before the building needs to be analyzed to ensure that the building can support the new mass. Until that threshold is reached, the original design and construction is assumed to be acceptable.
 - Under an “Alteration – Level 1” a new 3-psf second roofing layer may be added and no evaluation of the existing structure is required. However, for the majority of Anchorage that is in a high wind zone (basic wind speed, V, for Risk Category II greater than 130 mph), when

a reroof occurs, the existing roof diaphragm, existing connections of the roof diaphragm to roof framing members, and existing roof to wall connection must all be evaluated for a reduced wind load. Reference IEBC Sections 706.2 and 706.3.2 and the MOA's Three Second Gust Wind Zones map, Risk Category II.

- Under an "Alteration – Level 2" the stress in any gravity or lateral element may be increased up to 10% (per expected MOA local amendments) without evaluation of the existing structure. Voluntary alterations (retrofits) may be made to the lateral force resisting system under this level of alteration if they do not create (or worsen) an irregularity. See the Retrofit section (Tier 2 or Tier 3) for more information.
- "Alterations – Level 3" are separated into substantial and unsubstantial (based on work area as defined by IEBC). Where substantial, the building shall undergo a whole-building evaluation (Tier 3, but with reduced seismic forces, BSE-1E and BSE-2E, or 75% of IBC earthquake forces). Where unsubstantial, refer to Alteration - Level 2. Under all Level 3 Alterations, anchorage of masonry and masonry walls, partitions, and parapets shall be verified. Reference IEBC Section 906.
- Once a structural Evaluation is required by the IEBC, there are several specified checks and calculations that are required be performed, but the IEBC also allows for an alternate approach called Performance Based Design, such as ASCE 41.
- Performance Based Design
 - Performance Based Design (PBD) is a nuanced design methodology that allows an Owner to select either the Life Safety objective that is built into the building code (IBC/ASCE 7) or elect to use an enhanced performance objective that produces a better outcome after a large ground shaking. ASCE 41 (Tier 2 or 3) is a PBD methodology that is adopted, by reference, into the IEBC and is approved by the MOA Building Safety Department.
 - Reduced performance objectives with lower outcomes can also be directed by the Owner and accepted by the Engineer and MOA under this methodology.
- Seismic Screening
 - Screenings are relatively quick analyses that allow an Owner to define the relative seismic risk of a building to the other buildings in a given inventory of buildings.
 - Two types are represented in this guide:
 - Rapid Visual Screening (RVS) - This can be used as a preliminary step to the ASCE 41 tiered evaluation. RVS allows for an inventory of buildings to be easily and quickly compared with one another.
 - ASCE 41 Tier 1 Screening – See ASCE 41 Tier 1 below.
- ASCE 41 Tiers
 - ASCE 41, *Seismic Evaluation and Retrofit of Existing Buildings*, is organized as a series of tiers, each more time intensive than the previous.
 - At the time of publication, this guide is based on ASCE 41-23.
 - *Tier 1* – The screening phase. This tier consists of reviewing the existing building versus a **checklist** of 'known deficiencies' that have been shown to be dangerous in previous earthquakes in similar building types. These known deficiencies were acceptable practice

when the building was designed and constructed but have since been shown to be seismically vulnerable. Potential deficiencies are checked against acceptable standards and determined to be compliant (C), non-compliant (NC), non-applicable (N/A), or unknown (U). Separate checklists are used for Collapse Prevention and for Immediate Occupancy performance levels. No other checklists are available for different performance levels. Tier 1 checklists are 'red-flag' checklists and raise only potential concerns, not verified problems that need repair. Non-compliant items may be shown to not need retrofit at the conclusion of a Tier 2 Evaluation.

- *Tier 2* – This **deficiency-only** tier is used for evaluation or retrofit after a Tier 1 screening. Tier 2 allows for the elements deemed non-compliant from Tier 1 to be reevaluated with more-detailed calculations to determine the degree of deficiency. Once the degree of deficiency is determined, a decision can be made on whether each element should be retrofitted.
- *Tier 3* – This is an in-depth, comprehensive structural analysis of the **entire structure**. This analysis does not just look for deficient elements but looks at the interaction of all of the structure's elements. This tier is only used for buildings where the entire structure needs to be upgraded or where buildings do not meet the limitations for using Tier 1 or 2 evaluations. A Tier 3 retrofit is analogous to a new building design under IBC and ASCE 7, with either full or reduced seismic forces, dependent on Seismic Hazard Level.
- Seismic Hazards
 - The seismic hazard caused by ground shaking is based on a building's geographic location, proximity to faults (earthquake epicenter), and soil properties. The level of the ground shaking observed at the epicenter of an earthquake will be much higher than what is observed at the building. This reduction in intensity depends on distance and soil properties between the epicenter and the building site. Per ASCE 41, there are four specified seismic hazard levels that are tied to the intensity of shaking expected over the 50-year life of a building (mean return period), or put inversely, the probability of a certain intensity of shaking occurring at any one time (probability of exceedance). The seismic hazard level chosen for analysis is dependent on the desired performance objective and can be selected by the Owner of a building. ASCE 41 uses the following predefined hazard levels, or basic safety earthquakes (BSE):
 - Those noted with an '-E' suffix are more applicable to existing buildings, and those with an '-N' suffix are more applicable to new buildings.
 - The hazards noted as '-2' are larger (less frequent/likely) than those noted as '-1' (more frequent/likely).
 - *BSE-2N* – Also known as the Maximum Considered Earthquake, Risk-Targeted (MCE_R), this would be the largest earthquake expected for the area in question. This level of shaking in Anchorage, Alaska could be caused by megathrust faults, such as the Aleutian Subduction Zone, which is capable of M9+ earthquakes. At this intensity of shaking, one would likely see large cracks forming in the ground,

significant roadway damage, loss of utilities, and most buildings would be highly damaged.

- *BSE-1N* – This is $2/3$ of the MCE_R , and still a sizeable earthquake. This level of shaking in Anchorage, Alaska could be caused by crustal faults, such as the Castle Mountain Fault, which is capable of M7+ earthquakes. At this intensity of shaking, one would see ground cracking, damage to houses and office buildings, roadway damage, and underground utility disruption. This is also noted as S_{D5} and S_{D1} (design level earthquake) in IBC/ASCE 7, and new building codes provide Life Safety performance during this large of a seismic hazard.
- *BSE-2E* – This level of shaking would be a M8+ earthquake caused by crustal faults (like the Denali Fault, although the Denali Fault is too far from Anchorage to create this level of ground shaking in Anchorage). At this intensity of shaking, one would likely see large cracks forming in the ground, significant roadway damage, loss of utilities, and some buildings would be moderately damaged.
- *BSE-1E* – This would be a smaller earthquake than all others considered above but still capable of causing observable damage to structures. This level of shaking could be caused by a crustal fault, such as the Castle Mountain Fault, which can produce M6+ earthquakes on an annual basis. At this intensity of shaking, there would be general alarm and cracks forming in some building shear walls. For buildings with a shorter remaining useful life, less than 20 years, this may be an acceptable reduced seismic hazard.

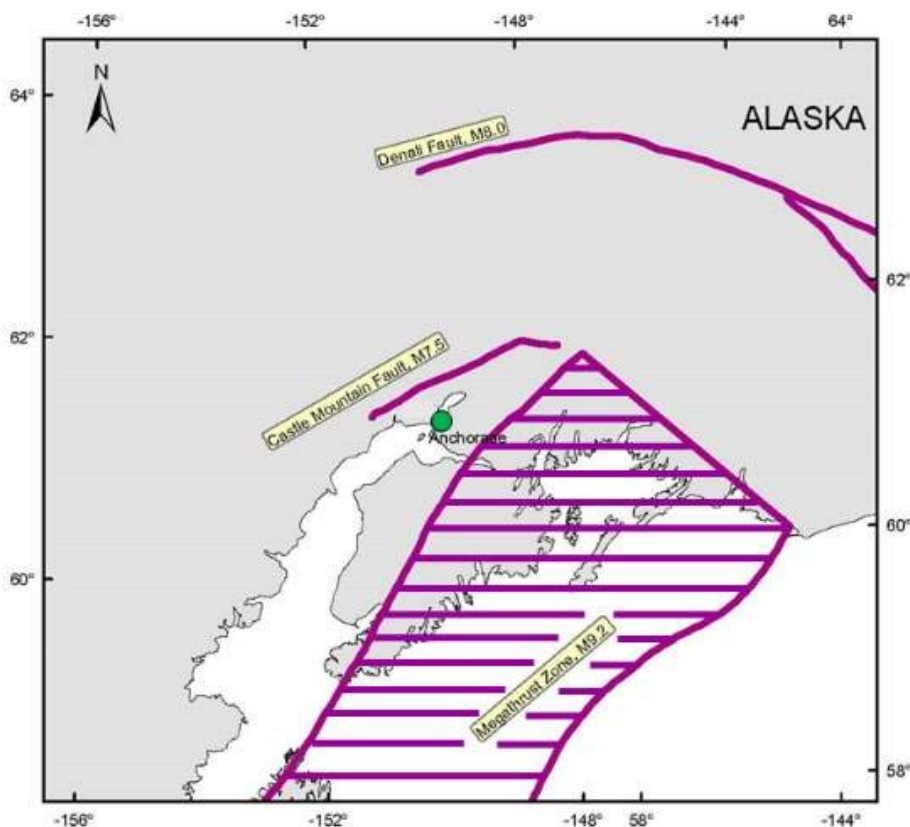


Figure 1: Faults near Anchorage Capable of Producing High Magnitude Earthquakes.

- For Anchorage, Alaska, using the *ASCE Hazard tool* (<https://ascehazardtool.org>), and Site Class C, the seismic accelerations (at a short period of 0.2 seconds, S_{Xs} , and a longer period of 1.0 seconds, S_{X1}) of the seismic hazards above are:

Seismic Hazard	Probability of Exceedance	Mean Return Period	S_{Xs}	S_{X1}
BSE-2N (MCE_R)	2% in 50 years	2475 years	1.54g	0.88g
BSE-1N	2/3 of BSE-2N (~10% in 50 years)	475 years	1.03g	0.59g
IBC/ASCE 7, current code, S_{Ds} , S_{D1}				
BSE-2E	5% in 50 years	975 years	1.38g	0.82g
BSE-1E	20% in 50 years	225 years	0.95g	0.46g

Table Note: Seismic accelerations (S_{Xs} and S_{X1}), for location and site class described, per ASCE 41-23 are, on average, 8% lower than seismic accelerations per ASCE 41-17. Differences in accelerations between code years are due to refined/increased United States Geological Survey (USGS) data and updates to the US National Seismic Hazard Model (NSHM).

Table 1: Seismic Accelerations of Anchorage, AK at Predefined Seismic Hazard Levels.

- Performance Level

- These are the levels at which a building should perform under a given seismic hazard. Levels of performance exist for both structural and nonstructural components.
- *Structural* – Structural refers to all elements and systems that make up the building's gravity and lateral force resisting system. Structural components would include such items as shear walls, roof deck, braced frame, etc. Structural performance levels are classified with an 'S-' prefix followed by a number, with a lower number representing a better performance.

- *Immediate Occupancy (S-1)* - The structure will retain the pre-earthquake strength and stiffness and can be utilized immediately. Few to no injuries should occur to persons within the structure due to building failure. (Figure 2).
- *Damage Control (S-2)* – Some damage will occur to the building, with small permanent drift. Damage should be economical to repair. Building is capable of being occupied following shaking, but damage should be addressed as soon as feasible.



Figure 2: Immediate Occupancy (S-1) - Note damage to facade, but underlying structural brick in working condition.

- *Life Safety (S-3)* – Moderate damage will be present in the building, with some residual strength left in the elements. Minor permanent drift will be present. The building may be beyond economical repair (Figure 3). Injuries due to structural failure should be few.
- *Limited Safety (S-4)* – Moderate to severe damage. The building will have permanent drift and will be beyond economical repair. The building should not be reused following an earthquake. Damage to structure may cause injuries or obstacles to evacuation, but these should be minor.



Figure 3: Life Safety (S-3) - Cracking/deflection in concrete beam, cannot be repaired.

- *Collapse Prevention (S-5)* – Severe damage is present throughout the structure. Little residual strength and stiffness remains, but load-bearing columns and walls should function. Large permanent drifts exist in the structure and exits may be blocked. Building is near collapse. This is a hazard to human safety and will not be reusable (Figure 4). Risk of injury due to structural damage is high.



Figure 4: Collapse Prevention (S-5) - Severe buckling of members, near collapse.

- *Structural Performance Not Considered (S-6)* – Used where an evaluation or retrofit does not address the structure.
- *Nonstructural* – Nonstructural refers to all aspects of a structure that do not provide structural support. This would include architectural elements (soffits, moldings, and drop ceilings), mechanical elements (boilers, generators, and HVAC; Figure 5), and electrical components (fans and lights). Nonstructural levels are classified with an ‘N-’ prefix followed by a letter from A to D, with the lower order letters representing a higher performance.
 - *Operational (N-A)* – Elements will resume pre-earthquake functions without repair. Power and utilities are available, possibly from a standby source.
 - *Position Retention (N-B)* – Elements are damaged and may not function but are secured in place following an earthquake. May require repair or replacement before reuse.
 - *Life Safety (N-C)* – Elements are damaged and may be dislodged from positions, though the consequences of damage do not pose a high risk to life safety, e.g., items are not major falling hazards and will remain anchored until repaired or replaced.
 - *Hazards Reduced (N-D)* – Elements are damaged, will require replacement, and could become falling hazards.

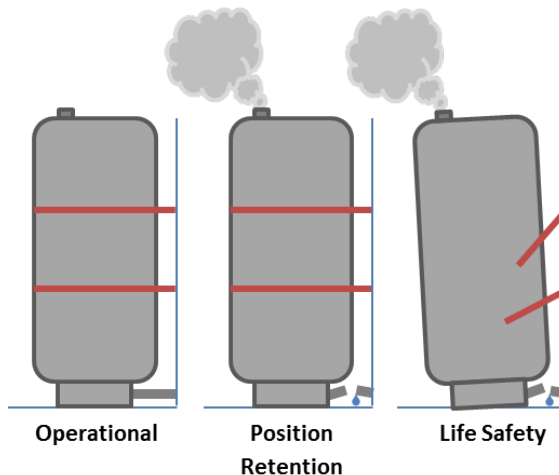


Figure 5: Example of performance levels for nonstructural element (water heater).

- *Nonstructural Performance Not Considered (N-E)* – Used where an evaluation or retrofit does not address all nonstructural components to one of the previous levels (N-A through A-D)
 - Performance Objectives
 - Performance Objectives are the combination of Seismic Hazard and Structural and Nonstructural Performance Levels. Performance Objectives are abbreviated as ‘S-N’, dropping the ‘S-’ and ‘N-’ prefixes.
 - These are overlaid below on the Risk Categories defined by IBC and ASCE 7 and are defined by ASCE 41 as the Basic Performance Objective for Existing Buildings (BPOE). ASCE 41 also defines Basic Performance Objectives for New Buildings (BPON).
 - The Owner can select to use a higher or lower performance objective for any element or building, if the IEBC does not require retrofit.

Risk Category (IBC)	BSE-1E		BSE-2E	
I and II	Structural: Life Safety (S-3)	3-C	Structural: Collapse Prevention (S-5)	5-D
	Nonstructural: Life Safety (N-C)		Nonstructural: Hazards reduced (N-D)	
III	Structural: Damage Control (S-2)	2-B	Structural: Limited Safety (S-4)	4-D
	Nonstructural: Position Retention (N-B)		Nonstructural: Hazards reduced (N-D)	
IV	Structural: Immediate Occupancy (S-1)	1-B	Structural: Life Safety (S-3)	3-D
	Nonstructural: Position Retention (N-B)		Nonstructural: Hazards reduced (N-D)	

Table 2: Basic Performance Objective for Existing Buildings (BPOE).

B. Rapid Visual Screening

Pre-Screening

In order to conduct Rapid Visual Screening (RVS) per FEMA 154, the following data should be collected for each school:

- Construction drawings and as-built drawings
 - Floor area (square feet)
 - Building type (e.g. braced frame steel building)
 - Building height
 - Irregularities (plan/vertical)
 - Year(s) of construction/design
- Soil type (A, B, BC, C, CD, D, DE, E, F, or Default)
- Field study
 - Falling hazards
 - Occupancy (Number of persons)
 - Verify as-built drawings

Rapid Visual Screening

Fill out the Rapid Visual Screening FEMA-154 Data Collection Form for High Seismicity. The form should be filled out during the site visit to each school.

BASIC SCORE

The basic score is based on the building type. The building type is determined from the as-built drawings and a site visit for verification.

BUILDING HEIGHT

The height of the building is used to modify the basic score through two checks: Mid Rise (4 to 7 stories) and High Rise (>7 stories). These modifiers are only used if the building fits within these criteria.

IRREGULARITIES

Irregularities (vertical or plan) should be determined from the as-built drawings and verified through the site visit.

YEAR OF DESIGN

There have been great changes in the seismic code over the years. The importance of the code the building was designed under is also given weight through two modifiers: Pre-Code and Post-Benchmark.

The earliest code that MOA has on record as acceptable for seismic considerations is the UBC 1946, adopted on June 9, 1948. Buildings designed before this year are considered “Pre-Code” for FEMA 154. Buildings constructed before 1984 were not subject to the rigorous review now present in the MOA and should use a value of one-half of the “Pre-Code” value listed in FEMA 154, e.g., a 1942 S-4 would receive a -0.8; a 1970 S-4 would use $\frac{1}{2} * -0.8 = -0.4$.

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Specific building types have benchmark years, or benchmark codes, that were deemed reliable for seismic design. The date that the MOA accepted these codes is the date after which all buildings are considered to surpass the “Benchmark Design Year”. See Table 3 for the dates that the MOA accepted various benchmark codes. See Table 4 for specific building types and their representative benchmark years, per ASCE 41.

Building Code	Benchmark Designation	Effective Date in the MOA
UBC	1976	5/9/1978
	1988	1/24/1989
	1991	2/25/1992
	1994	5/31/1995
	1997	12/15/1998
IBC	2000	1/28/2003
	2003	11/1/2005
	2006	1/29/2008

Table 3: Date after which Benchmark Codes were accepted into MOA.

Buildings designed after their respective codes were accepted by the MOA are considered “Post Benchmark” for FEMA 154. The UBC was utilized until 2003, and the IBC has been used since that time. Previous retrofit codes are also considered benchmarks. A building can be benchmarked under any of these building codes, e.g., a W1a building designed to the 1997 UBC, the 2000 IBC, or previously retrofitted to the 1998 FEMA 310 are all considered “Post Benchmark”.

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Table 3-2. BPOE Benchmark Building Codes and Standards for Risk Categories I and II.

Building Type ^{a,b}	Building Seismic Design Provisions				Seismic Evaluation or Retrofit Provisions	
	NBC/SBC	UBC	IBC	NEHRP	FEMA 310 ^{d/} ASCE/SEI 31 ^d	FEMA 356 ^{e/} ASCE/SEI 41 ^e
Wood Light Frames, Small Residential (Type W1) ^f	1993	1976	2000	1985	1998	2000
Wood Light Frames, Large Residential, Commercial, Industrial, and Institutional (Type W2)	<i>f</i>	1997	2000	1997	1998	2000
Steel Moment Frames (Types S1 and S1a)	<i>f</i>	1997	2000	1997	1998	2000
Steel Concentrically Braced Frames (Types S2 and S2a)	<i>f</i>	1997	2000	<i>f</i>	1998	2000
Steel Eccentrically Braced Frames (Types S2 and S2a)	<i>f</i>	1997	2000	1997	<i>f</i>	2000
Steel Buckling-Restrained Braced Frames (Types S2 and S2a)	<i>f</i>	<i>f</i>	2006	<i>f</i>	<i>f</i>	2000
Metal Building Frames (Type S3)	<i>f</i>	<i>f</i>	2000	<i>f</i>	1998	2000
Dual Frame Systems with Concrete Shear Walls and Backup Steel Moment Frames (Type S4)	1999	1997	2000	1997	1998	2000
Dual Frame Systems with Steel Braced Frames and Backup Steel Moment Frames (Type S4)	1999	1997	2000	1997	1998	2000
Steel Frames with Infill Masonry Shear Walls (Types S5 and S5a)	<i>f</i>	<i>f</i>	2000	<i>f</i>	1998	2000
Steel Plate Shear Walls (Type S6)	<i>f</i>	<i>f</i>	2006	<i>f</i>	<i>f</i>	2000
Cold-Formed Steel Light-Frame Construction: Shear Wall System (Type CFS1)	<i>f</i>	1997 ^h	2000	1997 ^h	<i>f</i>	2000 ^h
Cold-Formed Steel Light-Frame Construction: Strap-Braced Wall System (Type CFS2)	<i>f</i>	<i>f</i>	2003	2003	<i>f</i>	<i>f</i>
Concrete Moment Frames (Type C1)	1999	1997	2000	1997	1998	2000
Concrete Shear Walls (Types C2 and C2a)	1999	1997	2000	1997	1998	2000
Concrete Frames with Infill Masonry Shear Walls (Types C3 and C3a)	<i>f</i>	<i>f</i>	2000	<i>f</i>	1998	2000
Precast or Tilt-Up Concrete Shear Walls (Types PC1 and PC1a)	<i>f</i>	1997	2000	<i>f</i>	1998	2000
Precast Concrete Frames (Types PC2 and PC2a)	<i>f</i>	<i>f</i>	2000	<i>f</i>	1998	2000
Reinforced Masonry Bearing Walls with Flexible Diaphragms (Type RM1)	<i>f</i>	1997	2000	<i>f</i>	1998	2000
Reinforced Masonry Bearing Walls with Stiff Diaphragms (Type RM2)	1997	1997	2000	1997	1998	2000
Unreinforced Masonry Bearing Walls with Flexible Diaphragms (Type URM)	<i>f</i>	<i>f</i>	2000	<i>f</i>	<i>f</i>	2000
Unreinforced Masonry Bearing Walls with Stiff Diaphragms (Type URMa)	<i>f</i>	<i>f</i>	2000	<i>f</i>	1998	2000
Seismic Isolation or Supplemental Energy Dissipation ^c	<i>f</i>	1991	2000	<i>f</i>	<i>f</i>	2000

^a Building type refers to one of the Common Building Types defined in Table 3-1.

^b For buildings in areas defined as Very Low Seismicity, the benchmark provisions are limited to the IBC, FEMA 310/ASCE/SEI 31, and FEMA 356/ASCE/SEI 41.

^c Applies to buildings with seismic isolation or supplemental energy dissipation systems that comply with the cited reference codes and standards.

^d Life Safety Structural Performance Level for the seismic hazard as defined by those provisions.

^e Life Safety Structural Performance Level for the BSE-1 Seismic Hazard Level as defined by those provisions.

^f No benchmark year; buildings must be evaluated using this standard.

^g W1 buildings located on hillside sites as defined by Table 17-4 cannot be considered Benchmark Buildings.

^h Only cold-formed steel light-frame buildings with wood structural panel shear walls are permitted to be considered Benchmark Buildings.

Source: NBC = *National Building Code* (BOCA 1993, 1996, 1999); SBC = *Standard Building Code* (SBCC 1993, 1994, 1996, 1997, 1998, 1999); UBC = *Uniform Building Code* (ICBO 1976, 1979, 1982, 1985, 1988, 1991, 1994, 1997); IBC = *International Building Code* (ICC 2000, 2003, 2006, 2009, 2012, 2015, 2018, 2021); NEHRP = *NEHRP Recommended Provisions for the Development of Seismic Regulations for New Buildings* FEMA 95 (BSSC 1985), FEMA 95 (BSSC 1988), FEMA 222 (BSSC 1992), FEMA 222A (BSSC 1995), FEMA 302 (BSSC 1997), FEMA 368 (BSSC 2001), FEMA 310 (1998), ASCE/SEI 31-03 (2003), FEMA 356 (2000), ASCE/SEI 41-06 (2007), ASCE/SEI 41-13 (2014), and ASCE/SEI 41-17 (2017).

Table 4: Benchmark Codes (Table 3-2 excerpt from ASCE 41-23).

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Soil Type

Soil type plays an important role in the seismic stability of a building. If there are soil reports available to help one determine the soil type, that soil type should be used in this analysis for scoring the school.

When a soil report is unavailable to determine the soil type, correlation of the Ground Failure Susceptibility for Anchorage (See Appendix 1) may be used. The following correlation is acceptable:

Map Color	Hazard Zone	Approximate Soil Type
Dark green	'Lowest' Hazard Zone	Soil Type D
Light green	'Moderate-Low' Hazard Zone	Soil Type D
Yellow	'Moderate' Hazard Zone	Soil Type D
Orange	'High' Hazard Zone	Soil Type E
Red	'Very High' Hazard Zone	Soil Type F see note below

Table 5: Ground Failure Susceptibility Conversion to Soil Type.

Schools within the Red, 'Very High' Hazard Zone, or having Soil Type F should be given an automatic final score, S, of negative one (-1.0), because the building cannot be effectively screened by an RVS. Schools in the 'Very High' Hazard Zone require further evaluation by a geotechnical engineer.

Final Score, S

A final seismic score will be determined (S). The lower the number, the larger the probability that the school's lateral system is not adequate.

For example, a school with a seismic score S of 2 would have a 1 in 10² (1 out of 100) chance of failure during a BSE-2N event. A school with a seismic score of 3 would have a 1 in 10³ (1 out of 1000) chance of failure during a BSE-2N event.

Deliverables

The FEMA 154 RVS final output for schools should be a table that includes the following:

- School Name
- Grade Level
- Year Constructed
- Building Type
- No. of Stories
- Area (sq feet)
- Ground Failure Susceptibility
- Soil Type (note if correlated from Ground Failure Susceptibility for Anchorage map)
- FEMA 154 Seismic Score (S)
- Further Evaluation, Yes/No

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Any building with a seismic score at or below 2.5 should be considered high risk and should be evaluated further. Anything above 2.5 may be considered at moderate or low risk, but seismic deficiencies may still exist.

All data collection forms should be included. Additional reports or memos for clarification of specific schools or the screening conducted overall should be included in the deliverables as well.

C. Screening - Tier 1

Pre-Screening

- Confirm with ASD if any nonstructural items should be added to the checklists (See Appendix 2)
- Review as-built and construction drawings.
 - Make note of any and all missing drawings.
- Collect all available previous testing and investigation documentation.
 - If an RVS was conducted prior to this evaluation, the report should be reviewed for pertinent information such as building type, soil type, and any noted areas of structural distress or damage.
- Identify Ground Failure Susceptibility based on the map provided in Appendix 1.
- Review available geotechnical information for the building site or other sites nearby.

Screening Criteria

- Level of Seismicity: High
- Earthquake Hazard: BSE-2E
- Where material properties are not specified on the available drawings, utilize Default Material Properties from ASCE 41.
- BPOE for Schools (Risk Category III) in the Anchorage School District:

Structural	Nonstructural
Limited Safety* (S-4)	Hazards Reduced** (N-D) (or compliance with ASCE 7 standards)
<p>*For Tier 1 Screening, use Collapse Prevention checklists and modify Ms factors in Quick Check Calculations to be an average of Life Safety and Collapse Prevention values.</p> <p>**Position Retention NS performance also required at BSE-1E; therefore in NS checklist, provide status for all items, even those listed as 'HR-not required' and 'PR-H'</p>	

Table 6: BPOE Level of Performance for Tier 1 Screening

- Note that many schools (22) are deemed as District Designated School Shelters (DDSS) per the ASD Emergency Preparedness Plan. This does not mean that they are to be designed to Risk Category IV or Immediate Occupancy performance objectives unless specifically directed by ASD.

Screening Tasks

1. Conduct a field assessment of the building.
 - a. Confirm the existing construction with the as-built drawings.
 - b. Note critical details such as areas of structural distress or damage.
 - c. Identify structural movement/distress if settlement problems are identified.
 - d. Evaluate nonstructural components.

2. Fill out the following checklists:
 - a. Basic Configuration Checklist
 - b. Structural **Collapse Prevention** Checklist for all building types
 - i. A school building will often have two or three building types, including additions and renovations, and a checklist for all applicable building types and additions must be completed.
 - c. Nonstructural Checklist
 - i. If items have been noted as Enhanced Objectives (See Appendix 2), then specifically add those items to the checklist.
3. Provide sufficient evaluation to eliminate all “UNKNOWN” answers, if possible.
 - a. If UNKNOWN items cannot be resolved, coordinate with ASD prior to issuing report. Provide a thorough description of why the item remains unknown and specifically identify what is needed (destructive evaluation, material testing, etc.) to confirm compliance or non-compliance. Provide a sketch of the locations where additional evaluation is needed along with a schedule of how many locations, tests, etc., are needed to resolve the unknown.
4. Provide quick check calculations that are required by checklists.
 - a. For Limited Safety Performance Objective (typical for ASD schools), use Collapse Prevention checklists and modify Ms factors to be an average of Life Safety and Collapse Prevention values.
5. Give priority rating to all elements/components deemed deficient (See Appendix 4 and Appendix 5).
 - a. Tier 1 checklists are ‘red-flag’ checklists and raise only potential concerns, not verified problems that need repair. Non-compliant items may be shown to not need retrofit at the conclusion of the Evaluation.
6. For each of the noncompliant deficiencies, develop schematic level (10%) concepts for retrofit.

Deliverables

The Screening may be done as a standalone project or as part of a larger Screening & Evaluation project. If part of a Screening & Evaluation project, no specific screening deliverable is needed.

If standalone, create a Screening Report (Tier 1) that includes the following:

1. Document review (existing drawings, new or existing soils report, etc.).
 - a. Note any missing documentation.
2. General and structural building description and description of nonstructural elements of interest.
3. List of assumptions.
4. Description of gravity and lateral structural systems present in building (sketches/diagrams as necessary).
 - a. If building consists of multiple renovations and additions, provide description of each and a key map to indicate the extents of each.

5. Field assessment information, including areas of structural distress or damage.
6. Summarize any soil data reviewed and the condition of soils on site during field survey. Report Ground Failure Susceptibility (See Appendix 1).
7. Statement of design criteria under original design building code (for each part/generation/addition) and current IBC and the percentage change between the two.
 - a. Roof Snow Load (including drift and sliding snow)
 - b. Wind Load
 - c. Earthquake Load
8. Statement of seismic evaluation criteria.
 - a. Level of Seismicity
 - b. Earthquake Hazard Levels
 - c. Performance Objectives (BPOE or other/enhanced)
9. Prioritized lists of noncompliant items divided into structural (See Appendix 4) and nonstructural component lists (See Appendix 5). Also, separate those items into groups that could be retrofit with other common projects such as reroofing, residing, or maintenance.
10. Concept narrative to retrofit deficiencies. Provide sketches, as necessary, to illustrate location and extent of concept retrofit. Develop retrofit to 10% of completion.
11. Completed seismic evaluation checklists from ASCE 41 and structural quick check calculations (Append).

The report is to be presented to the ASD. Meet with ASD to discuss the Screening, ranking, grouping, and the conceptual retrofit design, as well as possible retrofit alternatives.

D. Evaluation - Tier 2 or Tier 3

Pre-Evaluation

- Confirm with ASD if any nonstructural items are subject to Enhanced Objectives (See Appendix 2).
- Review as-built and construction drawings.
 - Make note of all missing drawings.
- Collect all available previous testing and investigation documentation.
 - If an RVS was conducted prior to this evaluation, the report should be reviewed for pertinent information such as building type, soil type, and any noted areas of structural distress or damage.
 - A Tier 1 Screening is required to define the scope for a Tier 2 Deficiency-Only Evaluation.
 - If part of a Screening & Evaluation report, this work will be done just prior to this Evaluation step.
 - A Tier 3 Whole Building Evaluation does not require a previous Tier 1 report.
- Identify Ground Failure Susceptibility based on the map provided in Appendix 1.
- Review available geotechnical information for the building site or other sites nearby.

Evaluation Criteria

- Where material properties are not specified on the available drawings, utilize Default Material Properties from ASCE 41.
- Knowledge factor: 0.75 per ASCE 41, unless data collection complies with the requirements for a knowledge factor of 0.9 or 1.0.
- BPOE for Tier 2 Deficiency-Only Evaluations of Schools (Risk Category III) in the Anchorage School District (referred to as ‘reduced seismic forces’ by IEBC):

BSE-2E	
Structural: Limited Safety (S-4) *	4-D
Nonstructural: Hazards Reduced (N-D) **	
*For Tier 2 Evaluation, modify factors to be an average of Life Safety and Collapse Prevention values. **Position Retention NS performance also required at BSE-1E	

Table 7: BPOE Level of Performance for Tier 2 Evaluation.

- BPOE for Tier 3 Whole-Building Evaluations of Schools (Risk Category III) in the Anchorage School District includes two objectives (referred to as ‘reduced seismic forces’ by IEBC):

BSE-1E		BSE-2E	
Structural: Damage Control (S-2)	2-B	Structural: Limited Safety (S-4)	4-D
Nonstructural: Position Retention (N-B)		Nonstructural: Hazards reduced (N-D)	

Table 8: BPOE Level of Performance for Tier 3 Evaluation.

- Note that many schools are deemed as District Designated School Shelters (DDSS) per the ASD Emergency Preparedness Plan. This does not mean that they are to be designed to Risk Category IV or Immediate Occupancy performance objectives unless specifically directed by ASD.

Tier 2 Evaluation

1. Conduct Tier 2 Evaluation of non-compliant and unknown checklist items. Do not evaluate compliant or not applicable checklist items.
2. Give priority rating to all elements/components still deemed noncompliant (see Appendix 4 and Appendix 5).
3. For each of the remaining noncompliant items, develop schematic level (35%) concepts for retrofit.

Tier 3 Evaluation

1. This level of evaluation is rare and should only occur if specifically directed by ASD.
2. Conduct Tier 3 Evaluation of the entire building, considering all vertical and horizontal elements and connections of the lateral force resisting system.
3. Give priority rating to all elements/components deemed noncompliant (see Appendix 4 and Appendix 5).
4. For each noncompliant item, develop schematic level (35%) concepts for retrofit.

Deliverables

The Evaluation may be done as a standalone project or as part of a larger Screening & Evaluation project.

Create a Tier 2 Deficiency-Only (or Tier 3 Whole Building) Evaluation report to include the following:

1. Document review (existing drawings, new or existing soils report, etc.).
 - a. Note any missing documentation.
2. General and structural building description and description of nonstructural elements of interest.
3. List of assumptions.
4. Description of gravity and lateral structural systems present in building (sketches/diagrams as necessary).
 - a. If building consists of multiple renovations and additions, provide description of each and a key map to indicate the extents of each.
5. Field assessment information, including areas of structural distress or damage and material test results (if material tests conducted).
6. Summarize any soil data reviewed and the condition of soils on site during field survey. Report Ground Failure Susceptibility (See Appendix 1).
7. Statement of design criteria under original design building code (for each part/generation/addition) and current IBC and the percentage change between the two.
 - a. Roof Snow Load (including drift and sliding snow)

- b. Wind Load
 - c. Earthquake Load
8. Statement of seismic evaluation criteria.
 - a. Level of Seismicity
 - b. Earthquake Hazard Levels
 - c. Performance Objectives (BPOE or other/enhanced)
 9. For Tier 2 Deficiency-Only Evaluations, list all previously identified Tier 1 deficiencies. Note whether the Tier 2 calculations verified or nullified the Tier 1 concern.
 - a. If part of a Screening & Evaluation project, include all Screening Report deliverable items in the Screening & Evaluation Report.
 10. Prioritized lists of remaining noncompliant items divided into structural (See Appendix 4) and nonstructural component lists (See Appendix 5). Also, separate those items into groups that could be retrofit with other common projects such as reroofing, residing, or maintenance.
 11. Schematic narrative to correct deficiencies that provides adequate information to develop a cost estimate (by others). Provide sketches to illustrate location and extent of schematic repair. Develop retrofit to 35% of completion.
 12. Calculations for building mathematical model, seismic accelerations, irregularities, multi-directional effects, P-delta effects, overturning, diaphragm, continuity, out-of-plane wall forces and anchorages, confirmation of material capacities, and other items as appropriate (append).

The report is to be presented to the ASD. Meet with ASD to discuss the Evaluation, ranking, grouping, and the retrofit design, as well as possible retrofit alternatives.

E. Retrofit - Tier 2 or Tier 3

Pre-Retrofit

- Collect all available previous testing and investigation documentation.
 - A Tier 2 Retrofit requires a Tier 2 Deficiency-Only Evaluation to have been completed.
 - A Tier 3 Retrofit requires a Tier 3 Whole Building Evaluation to have been completed.
- Since most retrofits are voluntary, ASD shall identify which noncompliant items are to be retrofitted in any project. If the IEBC requires any retrofits, ASD and/or Engineer to identify them as such.

Retrofit Criteria

- All new items shall be designed per the IBC and ASCE 7.
- All retrofitted items shall be upgraded to the Basic Performance Objective for New Buildings (BPON).
- BPON for School Retrofits (Risk Category III) in the Anchorage School District includes two objectives (referred to as ‘full seismic forces’ by IEBC, IBC, and ASCE 7):

BSE-1N		BSE-2N	
Structural: Damage Control (S-2)	2-B	Structural: Limited Safety (S-4)	4-D
Nonstructural: Position Retention (N-B)		Nonstructural: Hazards reduced (N-D)	

Table 9: BPON Level of Performance for Tier 2 or Tier 3 Retrofit.

- Note that many schools are deemed as District Designated School Shelters (DDSS) per the ASD Emergency Preparedness Plan. This does not mean that they are to be designed to Risk Category IV or Immediate Occupancy performance objectives unless specifically directed by ASD.

Tier 2 Retrofit

1. Design Tier 2 Retrofit of items that are still noncompliant after the Tier 2 Deficiency-Only Evaluation.
2. Provide stamped, signed drawings, specifications, and calculations per the typical ASD project delivery matrix.
3. Provide fully developed details for the retrofit of all items designated by ASD to be included in this voluntary retrofit project.
4. If the IEBC requires any retrofits, Engineer to note on the contract documents as such.

Tier 3 Retrofit

1. Design Tier 3 Retrofit of items that are deemed non-compliant at the completion of the Tier 3 Whole-Building Evaluation.
2. Provide stamped, signed drawings, specifications, and calculations per the typical ASD project delivery matrix.
3. Provide fully developed details for the retrofit of all items designated by ASD to be included in this voluntary retrofit project.

4. If the IEBC requires any retrofits, Engineer to note on the contract documents as such.

Deliverables

1. Plans, Elevations, and Details to fully describe scope of retrofit, stamped by an Alaska-registered Structural Engineer.
2. Narrative describing deficiencies found in previous reports and detailed explanation of how and to what extent this retrofit strengthens those deficiencies. Include a list of assumptions.
3. Updated priority ranking of un-retrofitted remaining noncompliant items divided into structural (See Appendix 4) and nonstructural component lists (See Appendix 5). Also, separate those items into groups that could be retrofit with other common projects such as reroofing, residing, or maintenance.
4. Calculations for building mathematical model, seismic accelerations, irregularities, multi-directional effects, P-delta effects, and all repairs/retrofits.

Appendix 1 – Anchorage Ground Failure Susceptibility

The following map was developed by Harding and Lawson in 1979 after the 1964 Good Friday Earthquake to estimate the regions of soil in and around the Anchorage Bowl that may be susceptible to landslides under a similar magnitude and origin of earthquake. This was reaffirmed by the USGS in 2009.









- ‘Very High’ Hazard Zone – Areas of previous seismically induced landslides. Includes zones of tension cracks above the head wall scarp, toe bulge, and pressure ridge areas. Although portions of these previous slides may remain relatively undisturbed from future strong shaking, these slides will be the more likely site of future seismically induced sliding.
 - Red zone
 - >15cm of Newmark displacement, >32% chance of landslide occurrence.
- ‘High’ Hazard Zone – Fine-grained surficial and subsurface deposits within the vicinity of steep slopes; includes area above and below the slope. Highly susceptible to all types of seismically induced ground failure, including liquefaction, translational sliding, lurching, land spreading, cracking, and subsidence.
 - Orange zone
 - 5-15cm of Newmark displacement, 15%-32% chance of landslide occurrence.
- ‘Moderate’ Hazard Zone – Fine-grained surficial and subsurface deposits, including the Bootlegger Cove Clay and other silt, clay, and peat deposits. May experience ground cracking and horizontal ground movement due to land spreading or lurching and subsidence due to consolidation.
 - Yellow zone
 - 1-5cm of Newmark displacement, 2%-15% chance of landslide occurrence.
- ‘Moderate-Low’ Hazard Zone – Mixed coarse and fine-grained glacial deposits in lowland areas, thick deposits of channel, terrace, flood plain, and fan alluvium. May have very low susceptibility; may experience minor ground cracking, localized settlement due to consolidation, and perhaps liquefaction or lurching of localized saturated zones of fine-grained material.
 - Light green zone
 - 0-1cm of Newmark displacement, <2% chance of landslide occurrence.
- ‘Lowest’ Hazard Zone – Includes exposed bedrock, thin alluvium and colluvium over bedrock. May experience minor ground cracking and acceleration of normal mass wasting process in unconsolidated material such as rock falls and snow avalanches.
 - Dark green zone


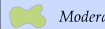
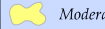
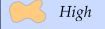

While this map is a decent approximation of the soil class and seismic site geotechnical risk, it is not the authority. Site borings and geotechnical reports should be relied upon whenever possible during seismic screenings, evaluations, and retrofits.

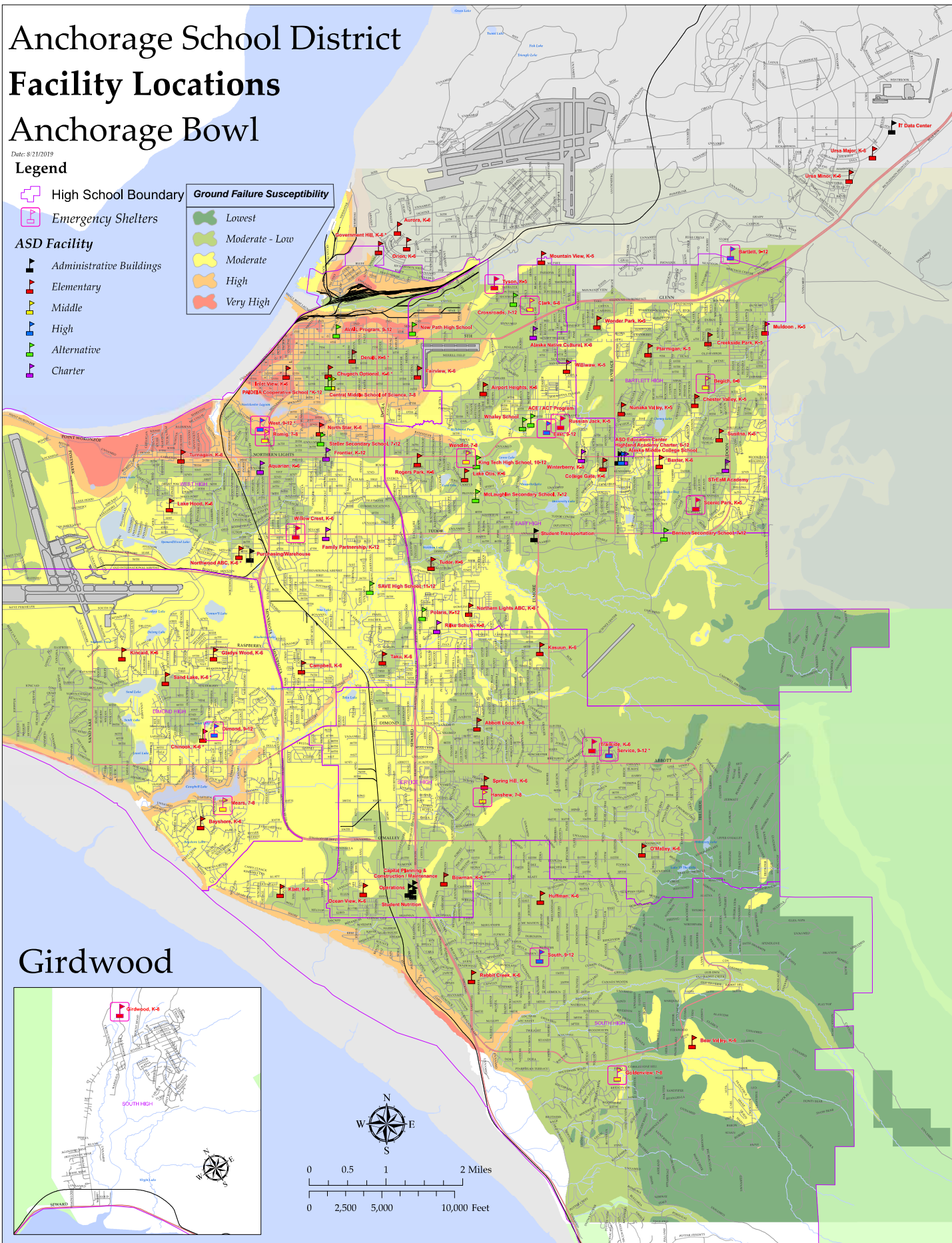
Anchorage School District Facility Locations Anchorage Bowl

Date: 8/21/2019

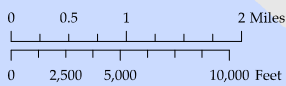
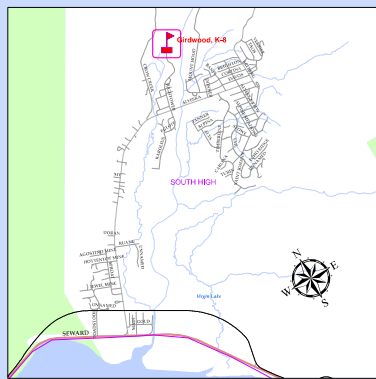
Legend

-  High School Boundary
-  Emergency Shelters
- ASD Facility**
-  Administrative Buildings
-  Elementary
-  Middle
-  High
-  Alternative
-  Charter

- ### Ground Failure Susceptibility
-  Lowest
 -  Moderate - Low
 -  Moderate
 -  High
 -  Very High

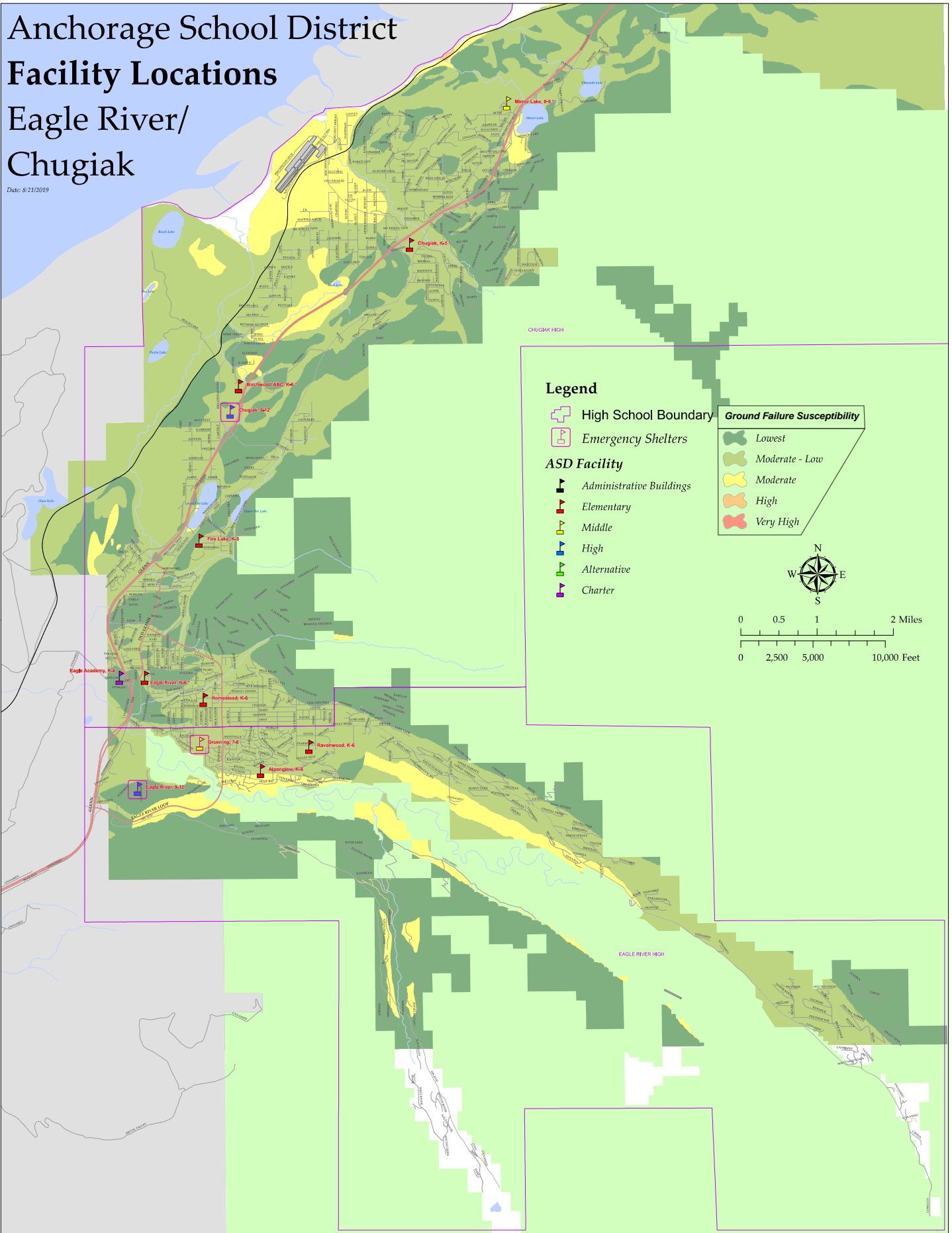


Girdwood



Anchorage School District Facility Locations Eagle River/ Chugiak

Date: 8/21/2019



Appendix 2 – Commonly Specified Enhanced Performance Objectives for Nonstructural Items

This form to be provided by ASD to the Engineer prior to starting the Screening, Evaluation and Retrofit stages to ensure any enhanced objectives are accounted for. At the Screening stage, this list is to ensure these items are explicitly added to the Nonstructural checklists and report, and compliance or non-compliance is noted. At the Evaluation and Retrofit stages, the **Operational** at **BSE-1N** performance objective is explicitly evaluated and retrofit if needed.

The following list of nonstructural components should be included in the enhanced performance objectives for this school:

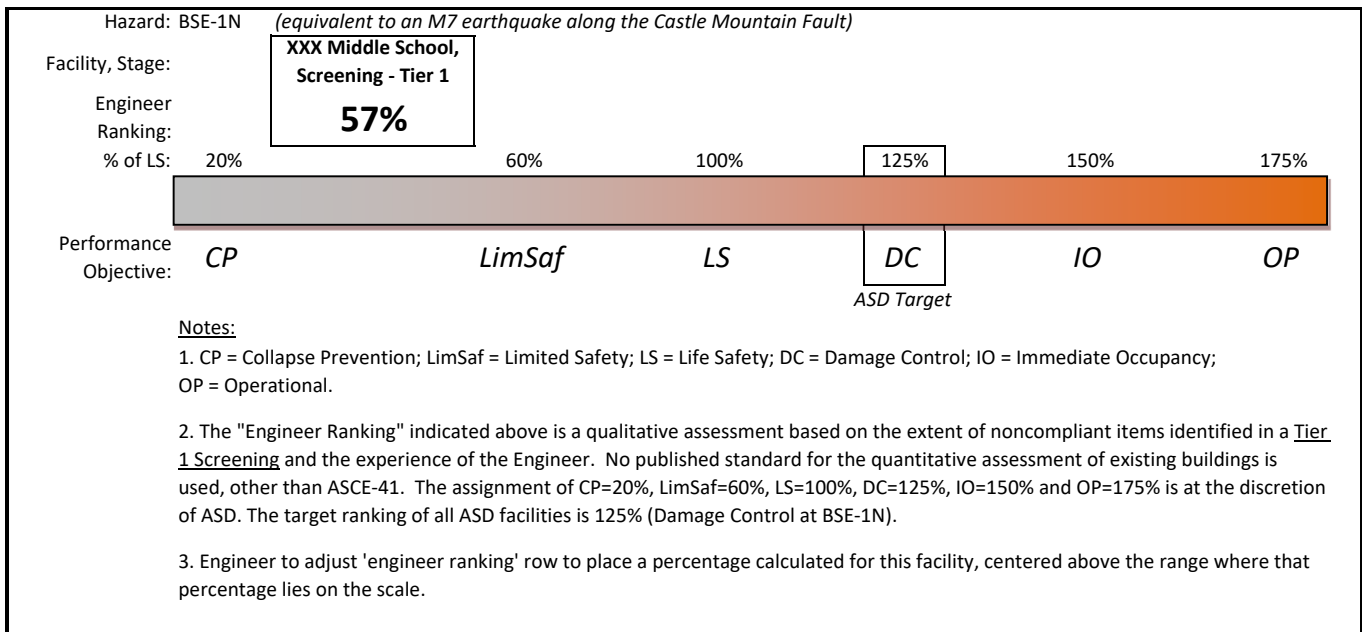
- Standby generator
- Dual fuel boilers
- HVAC equipment
- Fire sprinkler system / Fire pumps
- File cabinets / bookshelves
- Battery racks
- Suspended ceilings
- Light fixtures
- Plumbing / Piping
- Ductwork
- Raised floor system
- Natural gas shutoff
- Other:
 - ___ Artwork (only if high value or falling hazard)
 - ___ DDSS Supply Storage (Conex or other)
 - ___
 - ___

Appendix 3 – Seismic Performance Assessment Scale

The following figure is to be included in all Screening, Evaluation, and Retrofit reports and narratives.

While much of this scale is dependent upon engineering judgement, guidelines for how it should be applied are:

- Each performance level correlates to a rating from 20% - 175%, where 100% is a standard new code compliant office building or retail store (Risk Category II).
 - Collapse Prevention (CP) = 20%
 - Limited Safety (LimSaf) = 60%
 - Life Safety (LS) = 100%
 - Damage Control (DC) = 125%
 - Immediate Occupancy (IO) = 150%
 - Operational (OP) = 175%
- Based on the size (square footage) of additions and generations of the building, average the rankings to determine an overall school ranking.
- Based on the Demand-Capacity Ratios under the **BSE-1N**, for each portion of a building, rank those portions relative to their number scale, e.g., if a building has a few deficient items, but is mostly adequate, it would be ranked just below the Life Safety metric, 91%.
 - Note that the BSE-1N is a lower Seismic Hazard than the BSE-2E hazard used under the Tier 1 Screening and Tier 2 Deficiency-Only Evaluation. Per Table 1, you can transition between the two by multiplying by 0.75 (ratio of BSE-1N S_{XS} to BSE-2E S_{XS} Anchorage, AK). Therefore, if the BSE-2E ranking is just above Limited Safety (68%), the BSE-1N ranking that would be reported would be $68/0.75 = 91\%$, just below Life Safety.
 - Since the seismic hazard used in the early screenings and evaluations under previous versions of ASCE 41 used the BSE-1N, the Building Seismic Ranking will maintain that seismic hazard for reporting purposes and cross-report comparisons.
- For the retrofit reports and narratives, re-rank the building at the **BSE-1N** hazard based on the condition after the retrofits are complete.
- The target performance objective for school buildings in ASD (Risk Category III) is 125%, Damage Control.



Appendix 4 – Structural Deficiency Priority Ranking

The Priority Ranking is a way to help determine the order in which deficiencies should be addressed. All elements with a rating above zero should be addressed, but this will allow the retrofit to be prioritized. Structural deficiencies should be rated in the following three categories: degree of deficiency, prevalence, and degree of threat.

Degree of Deficiency

The percent of nonconformance should be taken into consideration when prioritizing the deficiencies. Anything considered “code deficient” should be ranked a 5. Use the following six-point scale to rate the degree of deficiency.

- 0** – Elements loaded less than or equal to member capacity (<100%).
- 1** – Elements loaded less than 10% above member capacity (<110%).
- 2** – Elements loaded less than 20% above member capacity (<120%).
- 3** – Elements loaded less than 35% above member capacity (<135%).
- 4** – Elements loaded less than 50% above member capacity (<150%).
- 5** – Elements loaded greater than 50% of member capacity or deemed “code deficient”.

Prevalence

It is important to recognize how many times this element or connection is repeated throughout the building. Prevalence allows the priority rating to include the amount of the structure that has the element problem described. Use the following five-point scale to rate the prevalence of all deficient elements.

- 1** – Present in 0-10% of the building.
- 2** – Present in 10-25% of the building.
- 3** – Present in 25-50% of the building.
- 4** – Present in 50-80% of the building.
- 5** – Present in 80-100% of the building.

Degree of Threat

Allowing for engineering judgment, the degree of threat is for including what would happen should this member fail. The threat or hazard to structural integrity should this element fail should be rated on the following four-point scale.

- 1** – The problem is not critical to structural integrity.
- 2** – The problem will create minor problems nearby but does not affect structural integrity.
- 3** – The problem will create problems nearby and will affect structural integrity.
- 4** – The problem will create major problems and affect structural integrity of many other members and the system.

By taking the product of the three categories above (deficiency X prevalence X threat), each noncompliant item will be rated on a scale of 0 to 100, creating a Priority Ranking for each element. See an example on the following page.

XXX Elementary School

date

Relative Priority Rating of Tier 1 Screening Deficiencies - Structural Items

Ref Appendix 4 of ASD Seismic Evaluation & Retrofit Guide

Area	Checklist	Item	(0-5)	(1-5)	(1-4)	Priority Rating
			Deficiency	Prevalence	Threat	
UNGROUPED / MISC						
Structural - 1964 Building	xx.xx	22 - xxxx	5	5	4	100
Structural - 1964 Building	xx.xx	24 - xxxx	4	2	3	24
Structural - 1964 Building	xx.xx	25 - xxxx	5	1	4	20
Structural - 1964 Building	xx.xx	26 - xxxx	3	1	1	3
Structural - 1983 Addition	xx.xx	28 - xxxx	0	4	2	0
REROOFING PROJECT (FROM ABOVE ONLY)						
Structural - 1983 Addition	xx.xx	30 - xxxx	5	3	4	60
Structural - 1983 Addition	xx.xx	27 - xxxx	4	1	4	16
Structural - 1983 Addition	xx.xx	31 - xxxx	5	1	2	10
RESIDING PROJECT (FROM EXTERIOR ONLY)						
Structural - 1983 Addition	xx.xx	29 - xxxx	2	1	4	8
Structural - 1964 Building	xx.xx	23 - xxxx	1	2	3	6

Appendix 5 – Nonstructural Deficiency Priority Ranking

The Priority Ranking is a way to help determine the order in which deficiencies should be addressed. All elements with a rating above zero should be addressed, but this will allow the retrofit to be prioritized. Nonstructural deficiencies should be rated in the following three categories: degree of deficiency, prevalence, and degree of threat.

Degree of Deficiency

The percent of nonconformance should be taken into consideration when prioritizing the deficiencies. Anything considered “code deficient” should be ranked a 5. Use the following scale to rate the degree of deficiency.

- 0** – Elements connected and connection appears to be adequate for seismic and gravity loads.
- 2** – Element connected, but connection is deficient.
- 5** – Elements not connected to the structure to resist seismic loads.

Prevalence

It is important to recognize how many of this element is in the building. Use the following five-point scale to rate the prevalence of all deficient items.

- 1** – One piece of equipment, or one location, is deficient.
- 2** – Two pieces of equipment or locations are deficient.
- 3** – Three pieces of equipment or locations are deficient.
- 4** – Four pieces of equipment or locations are deficient.
- 5** – More than four pieces of equipment or locations are deficient.

Degree of Threat

Allowing for engineering judgment, the degree of threat is for including what would happen should this member fail. The threat or hazard to the occupants of the building should this element fail should be rated on the following four-point scale.

- 1** – The problem is not critical and will not create a falling hazard or impede egress.
- 2** – The problem will create a minor falling hazard but will not impede egress nearby.
- 4** – The problem will create major problems and/or will impede egress from the building.

By taking the product of the three categories above (deficiency X prevalence X threat), each noncompliant item will be rated on a scale of 0 to 100, creating a Priority Ranking for each element. See an example on the following page.

XXX Elementary School

date

Relative Priority Rating of Tier 1 Screening Deficiencies - Non-Structural Items

Ref Appendix 5 of ASD Seismic Evaluation & Retrofit Guide

(0,2,5)

(1-5)

(1,2,4)

Area	Checklist	Item	Deficiency	Prevalence	Threat	Priority Rating
UNGROUPED / MISC / MAINTENANCE						
Non-Structural - All Sections	XX	24 - EDGE SUPPORT	5	5	4	100
Non-Structural - All Sections	XX	53 - TALL NARROW CONTENTS	5	2	4	40
Non-Structural - All Sections	XX	54 - FALL PRONE CONTENTS	2	4	4	32
Non-Structural - All Sections	XX	5 - SPRINKLER CEILING CLEARANCE	5	1	2	10
Non-Structural - All Sections	XX	28 - LENS COVERS	2	2	2	8
Non-Structural - All Sections	XX	25 - SEISMIC JOINTS	0	1	1	0
BOILER REPLACEMENT PROJECT						
Non-Structural - All Sections	XX	8 - HAZARDOUS MATERIAL STORAGE	5	3	4	60
Non-Structural - All Sections	XX	11 - FLEXIBLE COUPLINGS	5	2	1	10
Non-Structural - All Sections	XX	67 - FLEXIBLE COUPLINGS	2	5	1	10
Non-Structural - All Sections	XX	2 - FLEXIBLE COUPLINGS	5	1	1	5

Anchorage School District **Seismic Evaluation and Retrofit Guide**
For Existing ASD Schools

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Voluntary 2

WENDLER MIDDLE SCHOOL

ASCE 41 – Tier 1 Evaluation

January 2022



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Wendler Middle Tier 1 Evaluation Report

1 INTRODUCTION

1.1 BACKGROUND

At the request of the Anchorage School District (ASD), PND Engineers, Inc. (PND) completed American Society of Civil Engineers (ASCE) 41 Tier 1 Seismic evaluations of certain ASD-owned buildings. Tier 1 evaluations were completed to screen buildings for potential deficiencies in each building's ability to resist the forces induced during a seismic event. PND completed the evaluations in accordance with ASD's Publication *Seismic Evaluation and Retrofit: Guides for Existing ASD Schools* (2021) and American Society of Civil Engineers and Structural Engineering Institute (ASCE/SEI) standard *ASCE/SEI 41-17 Seismic Evaluation and Retrofit of Existing Buildings* (ASCE 41-17).

Structural Seismic Evaluations include:

- Review of existing record building documents.
- On-site inspection of each building following ASCE 41-17 Tier 1 checklists for both structural and non-structural components.
- Completion of ASCE 41-17 Tier 1 checklists for both structural (S) and non-structural (NS) components.

This report flags items that were found to be potentially deficient per the Tier 1 analysis procedures and by engineering judgement. The scope of all investigations is limited to engineering judgement of a Tier 1 evaluation. No detailed Tier 2 or 3 evaluations were performed as part of the scope of this project, and no retrofit beyond conceptual retrofit narratives are provided.

1.2 METHODOLOGY FOR SEISMIC EVALUATION

The methods used for this evaluation follow the American Society of Civil Engineers and Structural Engineering Institute (ASCE/SEI) standard *ASCE/SEI 41-17 Seismic Evaluation and Retrofit of Existing Buildings*. This standard is accepted nationwide as a tool for determining the expected level of performance for existing buildings during a seismic event. ASCE 41-17 outlines evaluation procedures for both the seismic force resisting systems and nonstructural components.

A seismic force resisting system, also called a lateral force resisting system (LFRS), is a system that uses vertical elements (frames, shear walls, etc.) to transfer lateral forces (wind, seismic loads, etc.) to the building foundation.

Non-structural (NS) components are items such as mechanical systems, lights, electrical fixtures, and architectural features. NS components do not contribute to the stability of the building as a whole; however, these items do have mass and will develop seismic forces during seismic event. As a result of



these developed seismic forces, NS items can then fall, swing, or break, which may be hazardous. Therefore, their evaluation is also required as part of a Tier 1 evaluation in accordance with ASCE.

The procedures presented in ASCE 41-17 allow for engineers to identify problem areas quickly through generalized conservative checks. As deficiencies are identified, a more refined check can be triggered, elevating the Tier level of the evaluation. Evaluation levels range from Tier 1: generalized, globalized, and conservative: to Tier 3, specific, global, and precise. Tier 1 is a screening tool used to determine if, or where, a building may have deficiencies. As the Tier increases, analysis becomes more thorough and may remain global, or become more specific to a deficiency found in the previous screening process. A brief overview of each level of analysis is given below:

- Tier 1: ASCE 41-17 defines Tier 1 as “completion of checklists of evaluation statements that identify potential deficiencies in a building based on performance of similar buildings in the past”. The checklists consist of common design practices that were once standard, but are now known to result in deficiencies in a building’s performance during a seismic event. Each checklist contains statements that are marked as: “Compliant”, “Non-Compliant”, “Not Applicable”, and “Unknown”. These checklists involve quick check calculations that look at the broad picture of the building for fast evaluations. Items marked as Non-Compliant are not necessarily deficient: Non-Compliant status means that there is a need for further evaluation in additional Tiers. Not Applicable is applied to checklist statements that do not specifically apply to a particular structure. Unknown is relevant when a checklist criterion related to the structure cannot be determined by drawings, on-site inspection, or engineering judgement. Per Anchorage School District requirements, Unknown elements are classified as Non-Compliant, and a reason why the item was flagged as Unknown must be provided.
- Tier 2: ASCE 41-17 defines Tier 2 as “An approach applicable to certain types of buildings and performance objectives based on specific evaluation of potential deficiencies that may require mitigation. Analysis and response of the entire building may not be required”. This may involve examining at the building as a whole, or focusing on deficiencies found in the Tier 1 screening. For a full building evaluation, a simplified computer model of the current building is often developed and then compared with seismic force and displacement criteria dictated by ASCE 41-17. For a component-level evaluation, a smaller-scale, more detailed analysis that focuses only on the identified deficiency areas is provided.
- Tier 3: ASCE 41-17 defines Tier 3 as “An approach to evaluation in which complete analysis of the response of the building to seismic hazards is performed implicitly or explicitly recognizing non-linear response”. this is the highest level of evaluation that may be performed under ASCE/SEI 41-17. This level of evaluation requires detailed computer modeling and analysis of the entire building. The more precise computer finite element modeling (FEM) required to provide a Tier 3 analysis allows this analysis to be less conservative than a Tier 2 or Tier 1. Less conservative results may mean that items identified as deficient under Tier 1 or 2 may be found to be satisfactory. Very complex or highly irregular buildings may automatically trigger this level of analysis, as ASCE 41-17 limits the applicability of Tier 1 and Tier 2 analysis.

The ASD has determined the scope of work for this report to be the ASCE 41-17 Tier 1 evaluation. This Tier 1 evaluation includes non-structural item checklists. Per ASCE 41-17, a “Non-Compliant” element found during a Tier 1 investigation does not indicate deficiency, but will trigger a higher level of analysis. PND performed a scoring of the school in accordance with ASD *Seismic Evaluation and Retrofit Guide v7.3* (ASD

Standard). This scoring is intended to act as an aid to ASD in prioritizing repairs. A conceptual-level narrative of possible repairs of deficient items is included as a part of this report. However, cost estimates for these repairs are not included with this report.

1.3 SEISMIC CONDITIONS

The site-specific design short-period and one-second period spectral ground accelerations for the Maximum Considered Earthquake (MCE) are summarized with the design criteria. The design accelerations in the Anchorage Bowl area classify this region as “high” seismicity. Accelerations are only one tool in determining the risk associated to a building; additionally, the soil, or site classification, is a factor in determining the seismicity of a site. Site Class is a description of soil properties at a specific site. This ranges from Site Class A, hard rock, to Site Class F, a very soft clay soil profile. Soil-structure interaction effects can be significant, but interactions between the soil and structure can be very difficult to analyze, so conservative soil properties are provided by code to simplify this interaction.

1.4 PERFORMANCE LEVELS

The ASCE 41-17 standard relies on *Basic Performance Objectives for Existing Buildings* (BPOE). This sets a standard for performance for the building. Using this standard, a performance level can be determined. In this performance objective, the desired level of performance is evaluated for a particular magnitude of earthquake to determine if the building performance is adequate. The ASD further develops these guidelines to better assess the building performance, and specifically tailor performance to the ASD target objective.

Two magnitudes of earthquake are considered:

- BSE-2E is an earthquake with an expected probability of return of 5% in 50 years. This would result in an earthquake with a magnitude of roughly M8. After an earthquake of this magnitude, major roadway damage, loss of utilities, and moderate building damage are expected.
- BSE-1E is a smaller earthquake with an expected probability of return of 20% in 50 years. This would result in an earthquake of a magnitude of approximately M6. This level of earthquake is not uncommon in the Anchorage bowl. Although it would likely cause alarm and cracks in shear walls and non-structural components, it is not likely for this magnitude of earthquake to cause significant damage to structures, roads, or utilities.
- BSE-1N is a magnitude of earthquake that is two thirds of the maximum considered earthquake. This is the standard level used for new designs. This magnitude of earthquake would result in a approximately M7 level. After an earthquake of this magnitude, it would be expected to see roadway damage, ground cracking, damage to houses, utilities, and other buildings.

The target level of performance chosen by the ASD is Damage Control (S-2) at a BSE-1N level seismic event, or a rating 125% (Risk Category III). However, all “quick checks” and evaluations are to be done for a BSE-2E, limited safety performance (S-4), or rating 60%, per ASD standard. Safety performance levels are defined as follows:

- *Immediate Occupancy (S-1)* – The structure will retain the pre-earthquake strength and stiffness and can be utilized immediately. Few to no injuries should occur to persons within the structure due to building failure.
- *Damage Control (S-2)* – Some damage will occur to the building, with small permanent drift. Damage should be economical to repair. The building is capable of being occupied following shaking, but damage should be addressed as soon as feasible.
- *Life Safety (S-3)* – Moderate damage will be present in the building, with some residual strength left in the elements. Minor permanent drift will be present. The building may be beyond economical repair. Injuries due to structural failure should be few.
- *Limited Safety (S-4)* – Moderate to severe damage. The building will have permanent drift and will be beyond economical repair, and should not be reused following an earthquake. Damage to the structure may cause injuries or obstacles to evacuation, but these should be minor.
- *Collapse Prevention (S-5)* – Severe damage is present throughout the structure. Little residual strength and stiffness remains, but load-bearing columns and walls should function. Large permanent drifts exist in the structure and exits may be blocked. The building is near collapse. This is a hazard to human safety and will not be reusable. Risk of injury due to structural damage is high.

To evaluate the structures for this level of performance, the collapse prevention checklists were used and modification factors were interpolated to reflect the S-4 safety level as required. Ranking is then determined at BSE-2E accelerations, with a S-4 modification factor. Per ASCE 41-17, a BSE-2E ranking can be converted to a BSE-1N event by multiplying by a ratio of the BSE-1N design acceleration to BSE-2E design acceleration. A BSE-2E S-4 converted to a BSE-1N ranks approximately 80%, ranking overall between limited safety, S-4 (60%), and life safety, S-3 (100%).

1.5 NON-STRUCTURAL EVALUATIONS

Nonstructural components are evaluated for two different performance levels. The first is hazard reduced (N-D) using a BSE-2E level seismic event. Hazards reduced means “non-structural elements are damaged and potentially create falling hazards, but high-hazard nonstructural components are secured to prevent falling into areas of public assembly”. The second performance level is position retention (N-B) using a BSE-1N level seismic event. Position retention means “non-structural components might be damaged to the extent that they cannot immediately function but are secured in place so that damage is avoided”.

2 BUILDING DESCRIPTION

2.1 GENERAL

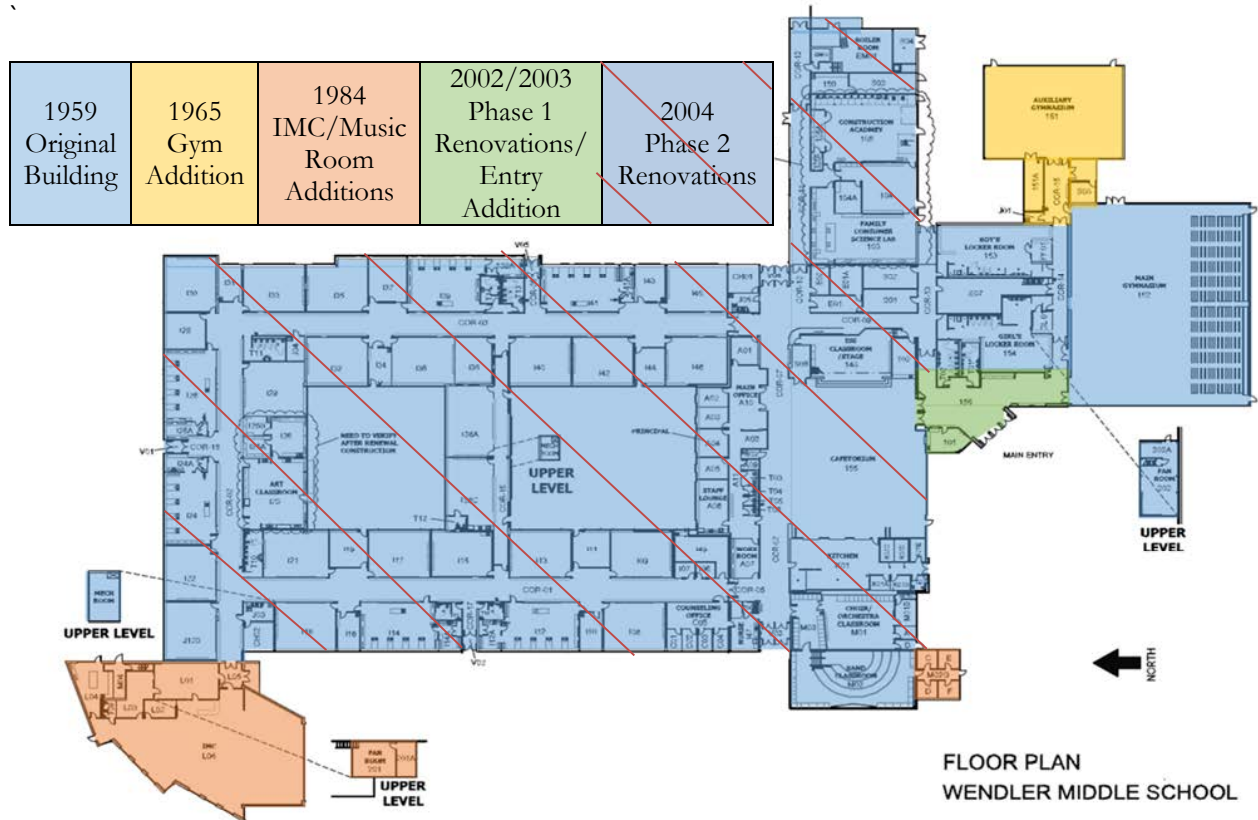


Figure 2-1 Wendler Middle Building Configurations

Wendler Middle is a single-story building constructed in 1959. A gym extension was added 1965 and in 1975 damaged caused by a fire was repaired, leading to minor structural adjustments. A library was added in 1984, along with an extension of the music room. Then in 1997, portions of the original structure roof were redone. An entry was added to the original structure in 2002/2003. Immediately following the entry addition, in 2004, most of the original 1959 structure was renovated. The most recent remodel in 2016 was a modification to the original structure to accommodate a technology and construction lab.

2.2 AS-BUILT DOCUMENTATION

The Anchorage School District provided “as-built” documentation for review of the existing conditions for the building. From those drawings, PND performed a detailed review of drawings that pertained to the original structure and structural modifications that were made after the original construction. The following is a list of drawings reviewed by PND:

- 1959 As Built AJ Wendler Original Construction Documents
- 1959 Isaacson Iron Works
- 1965 Gymnasium Addition
- 1975 Fire Damage Repair
- 1984 Library Addition
- 1984 Shop Ventilation Upgrade
- 1994 Roof Renovations
- 2004 Wendler Middle School Renovation Phase 2
- 2016 Wendler MS CTE Record Drawings

Of these drawings, the 2004 drawings would supersede the 1959 drawings because renovation was substantial; however, the south gym and the north IMC, which are both seismically isolated from the main structure, did not appear to have been incorporated in the 2004 renovation. The 2004 renovation is considered benchmark per ASCE 41-17, meaning areas constructed under benchmark code would meet modern requirements, so a Tier 1 analysis was not necessary under ASCE 41-17 for the portions of the building retrofitted in 2004. For the IMC review, 1965 record drawing were used. For the portions of the gym that were not included in the 2004 renovations, the original 1959 drawings would have been used in the Tier 1 review; however, the 1959 record drawings did not include any structural drawings. The set only contained architectural drawings, so PND attempted to use the 1959 Isaacson Iron Works steel shops to assess this portion of the structure. Unfortunately, the steel shops did not include drawings for the gym. Therefore, structural assessment of the gym portion will be marked Unknown. It is very likely that during 2004 structural assessments, the gym was evaluated and found to be Compliant, but no documentation could be found to confirm this.

2.3 ORIGINAL DESIGN CRITERIA

The following table includes both current and original design criteria. Original design criteria are based on provided record drawings.

Table 1-1 Design Criteria

Building Section	Original Building Code	Roof Snow	Wind	Seismic
1959 Original Building	Structural documents missing from file			
1965 Gym Addition		40 psf	$q_s = 25$ psf	Zone 3
1984 IMC/Music Room Additions	1982 UBC	40 psf	$q_s = 20$ psf	$K=1.33$, $C=0.14$, $Z=1.0$
2002/2003 Phase 1 Renovations/Entry Addition	2000 IBC w/ Municipality of Anchorage Amendments	50 psf	120 mph Basic Wind Speed, Exp. B, $I_w=1.15$	Seismic Use Group 1, Site Class C, $S_s=1.57g$, $S_1=0.6g$
2004 Renovations	2000 IBC w/ Municipality of Anchorage Amendments	50 psf	120 mph Basic Wind Speed, Exp. B, $I_w=1.15$	Seismic Use Group 1, Site Class C, $S_s=1.57g$, $S_1=0.6g$
Current Code	2018 IBC (ASCE 7-16) Risk Cat. III	40 psf min plus drifting $I_s = 1.10$	150 mph, Exp. B (LRFD), q_z (ASD) = 22.8psf* $0.6 = 13.7$ psf	$S_s = 1.50g$ $S_1 = 0.677g$ SDC=D, $I_e = 1.25$ $R=5$, $V=0.25w$

2.4 BUILDING TYPE

The original 1959 construction is a single-story building consisting of steel braced frames and CMU walls; however, the lack of structural drawings makes it impossible to confirm if the CMU walls were designed to take in-plane shear forces. The CMU walls were used to resist gravity loads, and steel beams and columns were also used to resist gravity loads. The original structure underwent extensive renovations in 2004, which included a retrofit of the existing CMU walls. The retrofits included the additions of headed screws, shotcrete, and drag struts to the CMU. The addition of drag struts may mean that the original CMU walls were not intended to take shear. However, these drag struts could also have been added to move lateral forces to these walls that may otherwise not have made it there. Another possibility is that the struts were added because the wall-to-roof attachments were not sufficient to transfer shear forces to the CMU per modern code. The addition of shotcrete and headed screws indicates that even if CMU walls were intended to be part of the lateral force resisting system (LFRS), they had insufficient capacity.

The LFRS post-2004 renovation appears to be primarily steel braced frames, and the CMU walls primarily provide redundancy to the LFRS. The 2004 renovation uses both CMU walls and steel beams for the gravity bearing system, which may have also been used in the original structure. The original and 2004 structures have a flexible metal roof diaphragm and a pseudo-second-story mechanical level, which also has a flexible metal deck. The original and the 2004 renovations would be classified as RM1 and S2a. However, the 2004 renovation would have been benchmark per ASCE 41-17: if designed to code, the structural system would be adequate and negate the need for a Tier 1 evaluation. Therefore, checklists were not completed and calculations were not performed for portions of the original structure modified under the 2004 renovation.

The 1965 gym addition was added to the original 1954 structure's gym. This portion of the structure was not updated during 2004 renovations. According to 1965 drawings, this area contained CMU walls with a flexible metal diaphragm, and was classified as an RM2; however, this addition was not seismically isolated from the original structure. Because no structural documents are available for the gym portion of the original building that the 1965 addition was attached to, the structural system's capacities and connections could not even be approximated. Therefore, this area will be classified as Unknown under this Tier 1 evaluation. This portion of the building would likely have been evaluated in the 2004 renovations, and because it was not renovated with the rest of the structure, it may meet the demand/capacity requirements.

An IMC and music room addition was done in 1989. The music room portion was included in the benchmark 2004 addition, but the IMC was not. The IMC is a two-story building, and has CMU walls providing bearing and lateral force resistance, with tension-only braced frames used at openings. The roof consists of a flexible metal deck diaphragm. The partial second floor mechanical level consists of a concrete slab on metal deck. The IMC is classified as RM1 and S2a, but RM2 at the mechanical level.

2.5 SITE VISIT

PND Engineers performed an on-site evaluation of Wendler Middle on December 17th, 2021 at 2905 Lake Otis Parkway in Anchorage. The purpose of the site evaluation was to field verify "as-built" representations of the building's construction. PND also used this visit to confirm members or details that were either not identified on the plans or, due to the quality of original documents, were incomplete or illegible. This visit was necessary for completion of Tier 1 checklists.

The additional focus of the December 17th inspection was to evaluate NS components for Tier 1 checklists, as these components will often change throughout the life of the structure. Site visits only provide a snapshot of current NS components and their status.

2.6 GEOTECHNICAL DATA

ASD did not provide site geotechnical data for review. Per ASCE 7-16 20.1: "where soil properties are not known in sufficient detail to determine the site class, Site Class D, subject to requirements of 11.4.4, shall be used unless Authority Having Jurisdiction or geotechnical data determine that Site class E or F soils are present at the site". As geotechnical data is limited, a soil classification of D was used. This is consistent with adjacent building designs, which also used site class D.

According to the Municipality of Anchorage (MOA) Geographic Data Information Center Seismic Susceptibility Map, Wendler Middle is located in an area Moderate-Low ground failure susceptibility, see appendix D. Based on this information, liquefaction probability is not high, but further study would need to be performed to verify this.

2.7 REFERENCES

- ASCE/SEI 7-16 Minimum Design Loads and Associated Criteria for Buildings and Other Structures
- ASCE/SEI 41-17: Seismic Evaluation and Retrofit of Existing Buildings
- International Building Code 2018
- Seismic Evaluation and Retrofit Guide for Existing Anchorage School District Buildings v7.3

3 SEISMIC BUILDING EVALUATION RESULTS

In accordance with ASD standards all structural elements will be considered High Level of Seismicity, Earthquake Hazard BSE-2E, Default Material Properties from ASCE 41-17 when materials are not specified on drawings. The school will have a *Basic Performance Objective of Existing Building* (BPOE) of Risk Category III, Limited safety (S-4). Quick calculations will be performed using a S_{xs} and S_{1x} . S_a , and M_s values will be interpolated between Life Safety and Collapse Prevention for Limited Safety using the BSE-2E seismic event. Scoring will be done based on the BSE-2E event and then modified to represent scoring of the structure under a BSE-1N event. Only the collapse prevention checklist will be used during Tier 1 screenings.

According to ACSE 41-17 Table 3-1, a building with braced frames to develop seismic forces and a flexible metal deck diaphragm is classified as an S2a. S2 and S2a (Table 17-10) was used for the IMC addition.

ASCE 41-17 defines a CMU LFRS with a flexible diaphragm as a RM2. ASCE 41-17 defines a CMU LFRS with a rigid diaphragm as a RM1. For the CMU portions of the IMC addition RM1 and RM2 (Table 17-34) was used.

All non-structural components will be evaluated for Hazards Reduced performance level using a BSE-2E level event and for Position Retention at a BSN-1E level event, as defined by ASD standard.

3.1 BASIC CONFIGURATION

ASCE 41-17 Table 17-1 Very Low Seismicity Checklist (APPENDIX C, pp. C-1), and Table 17-2 Collapse Prevention Basic Configurations Checklist were completed.

Of *Collapse Prevention Basic Configuration Checklist* (ASCE 41-17 Table 17-1 & 17-2) , no items were Non-Compliant¹ and (1) was Unknown.²

3.1.1 LIQUEFACTION; TABLE 17-2 (10):

According to the MOA hazard map, Wendler Middle is in a Low-Moderate hazard zone. However, these levels are unclear in describing liquefaction risk.

RECOMMENDATIONS

Further geotechnical study should be performed to verify that liquefaction is not a concern.

¹ Note: Non-compliant or unknown ratings do not necessarily indicate deficiency, only that there may be a need for a higher level of analysis.

² See APPENDIX A table A-1 For Prioritization and Breakdown of General and Structural Checklists.

3.2 IMC 1989 ADDITION

Structural evaluations were primarily conducted based on provided as-built documents. However, some structural observations were made during the on-site visit to verify the building was built in accordance with design documents and to clarify items noted during the evaluation that were not clearly indicated in the plans.

For flexible diaphragms attached to steel brace frames, *Collapse Prevention Structural Checklist for Building Types S2 and S2a* Table 17-10 (APPENDIX C, C-2 & C-3) was used.

Of the *Collapse Prevention Structural Checklist for Building Types S2 and S2a* (ASCE 41-17 Table 17-10) (21) Items, (1) items were found Non-Compliant.³⁴

3.2.1 BRACE AXIAL STRESS CHECK; TABLE 17-10 (03):

PND performed ASCE 41-17 4.4.3.4 (APPENDIX D) checks on (1) brace frame, based on 1984 Library Addition S-5/1.⁵ Brace was found not to meet ASCE standard: Line D.

RECOMMENDATIONS

A more detailed analysis should be done to determine if tension are deficient and how deficient they are; otherwise, rods could be removed and replaced with F1554 Gr 105 threaded.

For rigid & flexible diaphragms attached to CMU shear walls, *Collapse Prevention Structural Checklist for Building Types RM1 and RM2* Table 17-34 (APPENDIX C, C-4) was used.

³ Note: Non-compliant or unknown ratings do not necessarily indicate deficiency, only that there may be a need for a higher level of analysis.

⁴ See APPENDIX A table A-1 For Prioritization and Breakdown of General and Structural Checklists.

⁵ Note: Engineering judgement was used to determine which braces required Brace Axial Stress Checks, not all braces were checked.

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Of the *Collapse Prevention Structural Checklist for Building Types RM1 and RM2* (ASCE 41-17 Table 17-34) (20) Items, (0) items were Non-Compliant.

No Table 17-34 Tier 1 deficiencies were observed for RM1 portions of the structure⁷.

3.3 NON-CHECKLIST STRUCTURAL OBSERVATIONS

Beyond the scope of the ASCE 41-17 Tier 1 evaluations, engineers observed conditions for which the Tier 1 parameters did not apply but comments to ASD were justified. This condition assessment is based solely on engineering judgement. It identifies items not captured in the main evaluation, but that require a more detailed evaluation.

3.3.1 CMU CRACKING

Figure B-6 – B-12 (APPENDIX B) show various cracks (indicated by red lines) in the CMU along the exterior of the building. The 2004 retrofit added threaded screws and shotcrete to one face of the existing CMU. In the cases of these cracked walls, the shotcrete was likely applied to the inside face of the wall.

RECOMMENDATIONS

A more detailed inspection of cracks should be done to verify that their sizes and locations are not of concern.

⁷ Wall Anchoring was not found deficient where rigid diaphragms were attached to the top of CMU walls.



3.4 NON-STRUCTURAL EVALUATIONS

Non-structural components were evaluated per ASCE 41-17 Table 17-38. Unlike structural components, which could be primarily evaluated from as-built documents, non-structural components were primarily identified during the site visit.

3.4.1 HAZARDOUS MATERIAL STORAGE; TABLE 17-38 (08):

Figure B-35 (APPENDIX B) Shows an unrestrained gas tank.

RECOMMENDATIONS

Provide a mechanical attachment to positively attach the tank back to wall.

3.4.2 EDGE CLEARANCE; TABLE 17-38 (22):

This item requires that the free edges of integrated suspended ceilings have clearances from the enclosing walls or partitions of at least $\frac{3}{4}$ inch in areas of high seismicity. No $\frac{3}{4}$ -inch gap was observed between the integrated ceiling and any partitions.

RECOMMENDATIONS

A $\frac{3}{4}$ -inch gap between the integrated ceiling and partitions should be created.

3.4.3 EDGE SUPPORT; TABLE 17-38 (24):

This item requires that the free edges of integrated suspended ceilings be supported by closure angles or channels no less than 2 inches wide. Neither 2-inch closure angles nor channels were observed along any free edges.

RECOMMENDATIONS

2-inch closure angles or channels should be installed along any free edges.

3.4.4 LENS COVERS; TABLE 17-38 (28):

Figure B-3 & B-4 (APPENDIX B) show examples of lens covers that have become partially detached from lights.

RECOMMENDATIONS

Re-attach lens covers and ensure that they are sufficiently attached so they do not fall during a seismic event.

3.4.5 OVERHEAD GLAZING; TABLE 17-38 (36):

UNKNOWN: It could not be determined if skylights are safety glass or not. This item requires that window panes in curtain walls, as well as panes greater than 16 square feet, be laminated annealed or laminated heat-strengthened glass. This item is marked Unknown because PND was unable to determine the type of glass that was used. This is something that would require destructive testing or a site visit from an expert glazier to determine if this item is compliant. However, this is outside of the scope of this report and is left as Unknown.

RECOMMENDATIONS

Since the type of glazing used in overhead windows could not be determined with certainty, PND classified overhead glazing as Unknown the on checklist. It is likely that overhead glazing is safety glass. The glazing should be reviewed by a qualified glazing contractor to accurately determine the glazing type.

3.4.6 TALL NARROW CONTENTS; TABLE 17-38 (54):

This item requires items that are over 6 feet tall with a width-to-depth ratio greater than 3:1 be anchored to the structure or each other. Items frequently considered tall narrow contents are tall bookshelves or storage shelves. APPENDIX B, Figure B-13 to B-31 show examples of unrestrained contents. These conditions were not uncommon throughout the building.

Improperly restrained contents were found in Rooms S07, L03, L06, M01B, E01, 149, 145, 143, 135, 138, 137, 132, 131, 130, 129, 119 and 111.⁸

RECOMMENDATIONS

Sufficient anchoring for these components should be attached to the structure, or several components should be attached together such that height-to-depth or height-to-width ratios are greater than 3:1. While retrofitting, all narrow contents should be restrained.

3.4.7 FALL-PRONE CONTENTS; TABLE 17-38 (55):

This item requires that items weighing more than 20 pounds and stored at a height of over 4 feet should be restrained from falling. Fall-prone contents were also not uncommon throughout the building. APPENDIX B Figure B-33 shows an example condition.⁶

RECOMMENDATIONS

All fall-prone contents weighing more than 20 pounds that are more than 4-5 feet above the ground should be restrained or moved below 4 feet from the floor.

3.4.8 SUSPENDED CONTENTS; TABLE 17-38 (58):

APPENDIX B Figure B-3 shows suspended artwork that cannot swing 45 degrees without causing damage. Figure B-1 shows an example of suspended contents that will cause damage to surrounding elements in a seismic event.⁶

RECOMMENDATIONS

Additional restraint should be attached to components to prevent elements from damaging surrounding objects during a seismic event, or these components should be taken down.

⁸ Components may be added or removed from rooms at any time. As components in various rooms are often manipulated by teachers and staff. This list includes only observed deficiencies. However, it should not be assumed that deficiencies are limited to the provided list.

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3.4.9 FLEXIBLE COUPLING; TABLE 17-38 (68):

This checklist item requires that fluid and gas piping have flexible couplings. APPENDIX B, Figure B-32 shows an example of fluid and gas piping without flexible couplers, this condition was common throughout mechanical rooms.

RECOMMENDATIONS

Provide flexible couplers where piping meets a point of rigidity, such as water tanks, etc.

4 RECOMMENDATIONS

A higher form of analysis is also recommended for the braced frames to determine if existing conditions are sufficient. Retrofitting or replacing the dropped ceiling is also recommended to address many of the non-structural checklist items. Most other non-structural checklist items could be corrected with a maintenance inspection to ensure contents are properly attached and stored. Finally, an ungrouped "Miscellaneous" category was created for items that would likely need to be addressed individually.

4.1 DETAILED ANALYSIS OF IMC TENSION FRAMES (TABLE A-1)

BRACE AXIAL STRESS CHECK *Collapse Prevention Structural Checklist for Building Types S2 and S2a* (ASCE 41-17 Table 17-10: 13) could be rectified by doing a detailed code study to confirm or deny if frames are sufficient. Otherwise, brace rod should be replaced with F1554 Gr. 105 threaded rod.

4.2 GYM AND GYM EXTENSION AS-BUILT AND ANALYSIS (TABLE A-1)

The gym and extension were marked Unknown all around because no structural drawings exist for a large portion of them. Drawings were provided for the gym extension, but since the large gym and extension are not isolated from each other, no form of estimation can be provided to the demands in this area.

Research should be done to determine if this area was in fact analyzed during the 2004 renovation. If the Gyms were not analyzed and found sufficient in 2004, drawings for these areas, or as-built existing drawings, should be found and then a Tier 1 analysis be performed to determine if members do meet demand/capacity, or if a higher form of analysis is required.

4.3 RETROFIT OR REPLACE EXISTING DROPPED CEILING (TABLE A-2)

EDGE CLEARANCE, EDGE SUPPORT, LENS COVERS *Nonstructural Checklist* (ASCE 41-17 Table 17-38: 22, 24, 28) Non-Compliant issues may all be rectified with retrofit or replacement of the dropped ceiling.

4.4 MAINTENANCE UPDATE OF SEISMIC ATTACHMENTS (TABLE A-2)

HAZARDOUS MATERAILS, TALL NARROW CONTENTS, FALL-PRONE CONTENTS, SUSPENDED CONTENTS, FLEXIBLE COUPLERS *Nonstructural Checklist* (ASCE 41-17 Table 17-38: 08, 54, 55, 56, 68) items may all be addressed with a thorough maintenance check to ensure various elements are properly restrained or attached. This report could be used as a punch list, but a secondary visual inspection could be performed to ensure all features are adequately attached.

4.5 UNGROUPED / MISC (TABLE A-1 & A-2)

The LIQUEFACTION *Collapse Prevention Basic Configuration Checklist* (ASCE 41-17 Table 17-2: 10) item will require a geotechnical study.

The OVERHEAD GLAZING *Nonstructural Checklist* (ASCE 41-17 Table 17-38: 36) item will require some form of testing to verify safety glazing.

APPENDIX A — ASD TIER 1 PRIORITY RANKINGS

TABLE A-1 RELATIVE PRIORITY RATING OF TIER 1 SCREENING DEFICIENCIES -
STRUCTURAL ITEMS

Wendler Middle School
Relative Priority Rating of Tier 1 Screening Deficiencies - Structural Items
Ref Appendix 4 of ASD Seismic Evaluation & Retrofit Guide

Area	Checklist	Item	(0-5)	(1-5)	(1-4)	Priority Rating
			Deficiency	Prevalence	Threat	
Detailed Analysis of IMC Tension Frames						
Structural – 1989 IMC	17-10	03 – BRACE AXIAL STRESS CHECK	5	4	4	80
Unknown Gym Structural						
Structural – 1959 & 1965	UNKNOWN	ALL - CHECKLIST ITEMS INCOMPLETE DRAWING FOR THIS AREA*	5	5	4	100
Ungrouped/MISC						
Structural – 1982 Building	17-2	10 – LIQUIFACTION - UNKNOWN	5	5	4	100

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TABLE A-2 RELATIVE PRIORITY RATING OF TIER 1 SCREENING DEFICIENCIES - NON-STRUCTURAL ITEMS

Wendler Middle School

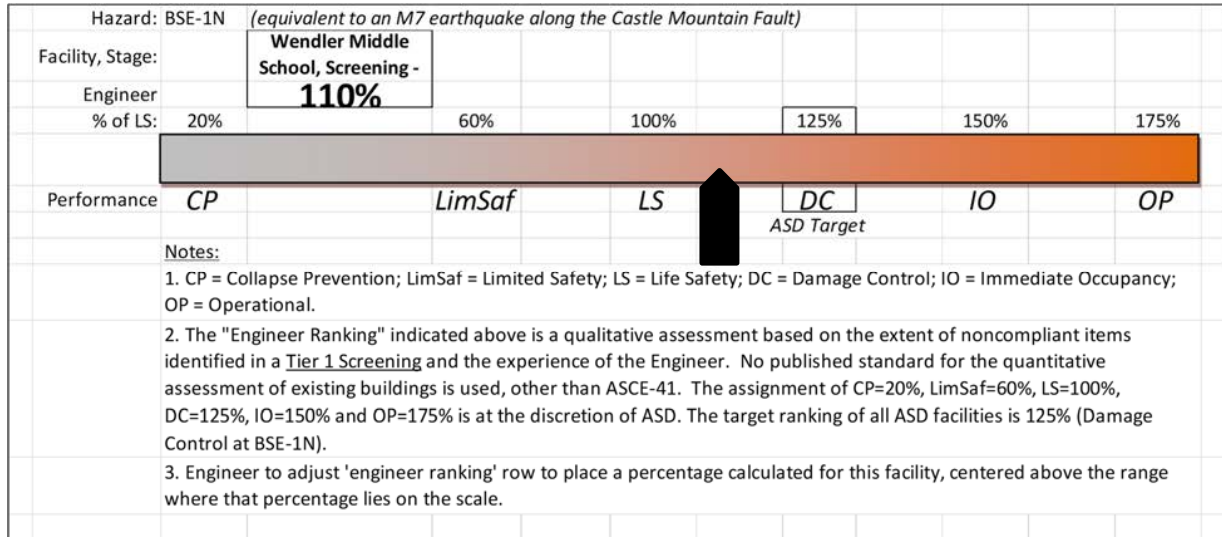
Relative Priority Rating of Tier 1 Screening Deficiencies - Non-Structural Items

Ref Appendix 5 of ASD Seismic Evaluation & Retrofit Guide

Area	Checklist	Item	(0,2,5)	(1-5)	(1,2,4)	Priority Rating
			Deficiency	Prevalence	Threat	
Retrofit or Replace Existing Dropped Ceiling						
Non-Structural - All Sections	17-38	22 – EDGE CLEARANCE	2	5	2	20
Non-Structural - All Sections	17-38	24 – EDGE SUPPORT	2	5	2	20
Non-Structural - All Sections	17-38	28 – LENS COVERS	2	1	2	4
Maintenance Update of Seismic Attachments						
Non-Structural - All Sections	17-38	54 – TALL NARROW CONTENTS	5	5	2	50
Non-Structural - All Sections	17-38	55 – FALL-PRONE CONTENTS	5	5	2	50
Non-Structural - All Sections	17-38	58 – SUSPENDED CONTENTS	5	5	2	50
Non-Structural - Boiler Room & Fan Rooms	17-38	08 – HAZARDOUS MATERIALS STORAGE	5	1	4	20
Non-Structural - Boiler Room & Fan Rooms	17-38	68 – FLEXIBLE COUPLINGS	2	3	2	12
Ungrouped / MISC						
Non-Structural - All Sections	17-38	36 – OVERHEAD GLAZING - UNKNOWN	5	5	4	100



TABLE A-3 OVERALL BUILDING PERFORMANCE LEVEL



APPENDIX B — SITE VISIT PHOTOS



Room 156, Unrestrained Art Figure B- 1



Room 148, Contents Figure B- 2



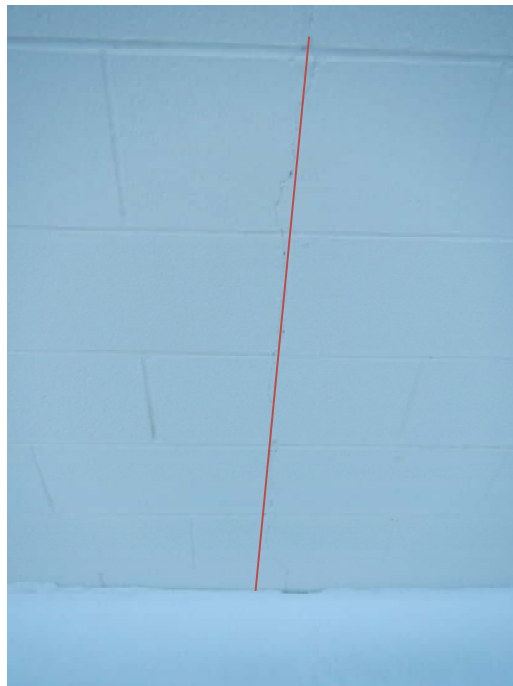
Main Gym, Lens Cover Detached Figure B- 3



Auxiliary Gym, Lens Cover Detached Figure B- 4



Kitchen, CMU Out of Plane Bracing Figure B- 5



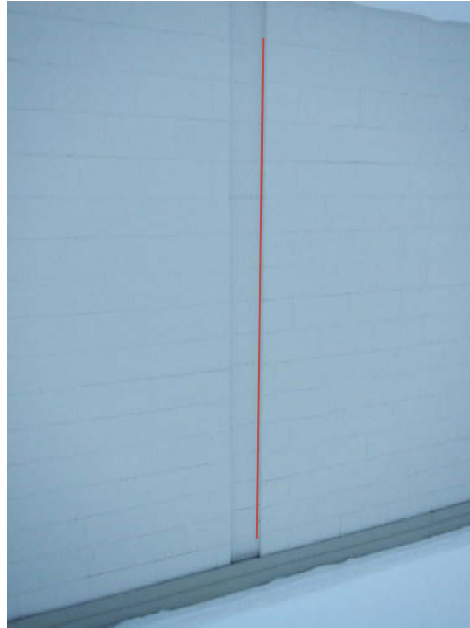
CMU Cracking Figure B- 6



CMU Cracking Figure B- 7



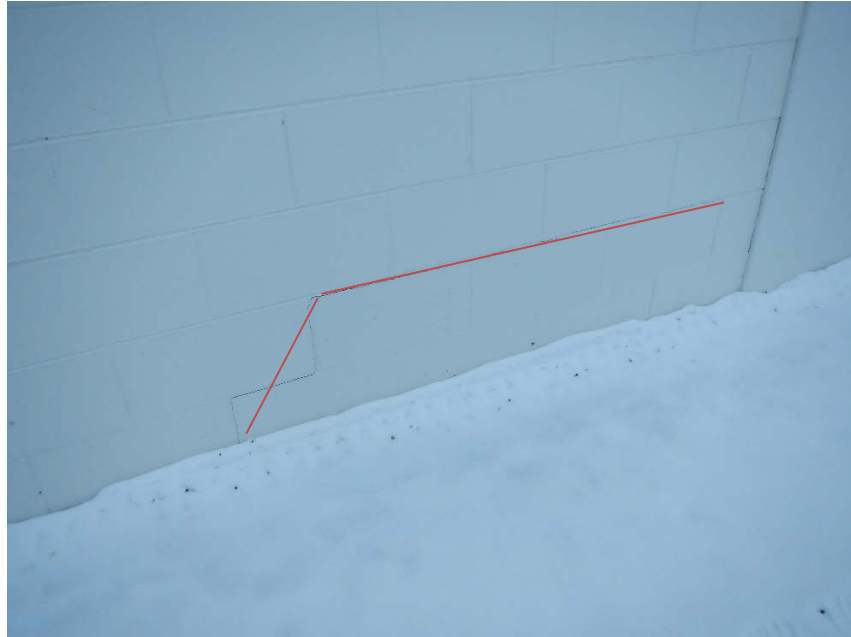
CMU Cracking Figure B- 8



CMU Cracking Figure B- 9



CMU Cracking Figure B- 10



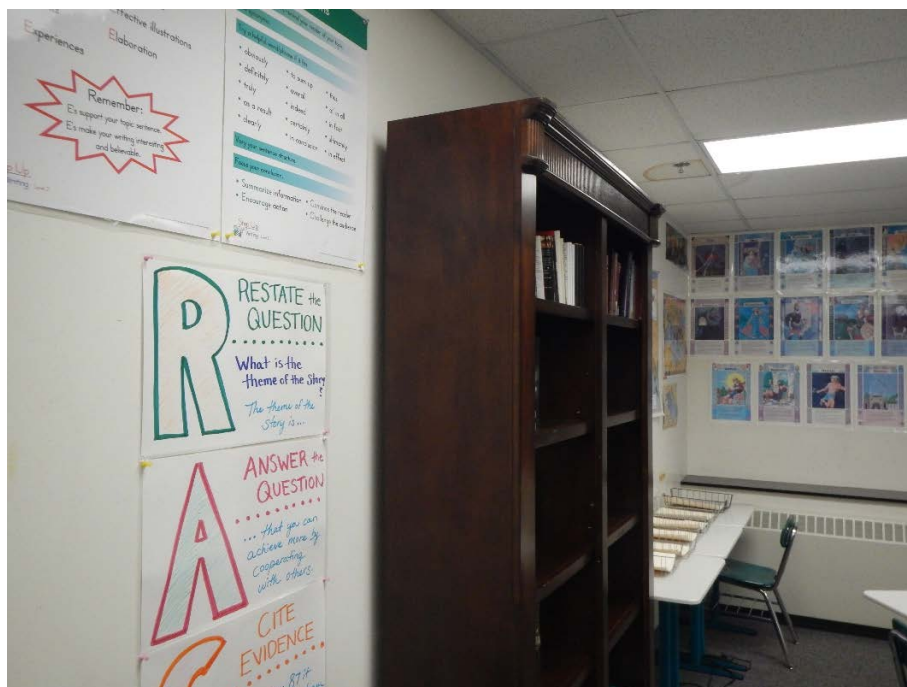
CMU Cracking Figure B- 11



CMU Cracking Figure B- 12



Room 137, Unrestrained Shelving Figure B- 13



Room 130, Unrestrained Shelving Figure B- 14



Room S07, Unrestrained Shelving Figure B- 15



Room S07, Unrestrained Shelving Figure B- 16



Room MO2C, Unrestrained Shelving Figure B- 17



IMC, Unrestrained Shelving Figure B- 18



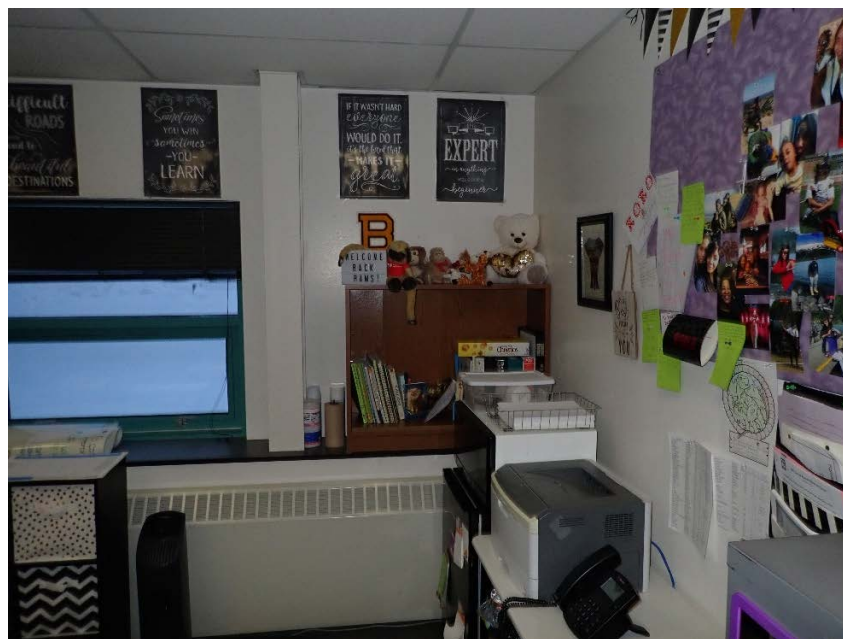
ICM, Unrestrained Shelving Figure B- 19



Room 145, Unrestrained Shelving Figure B- 20



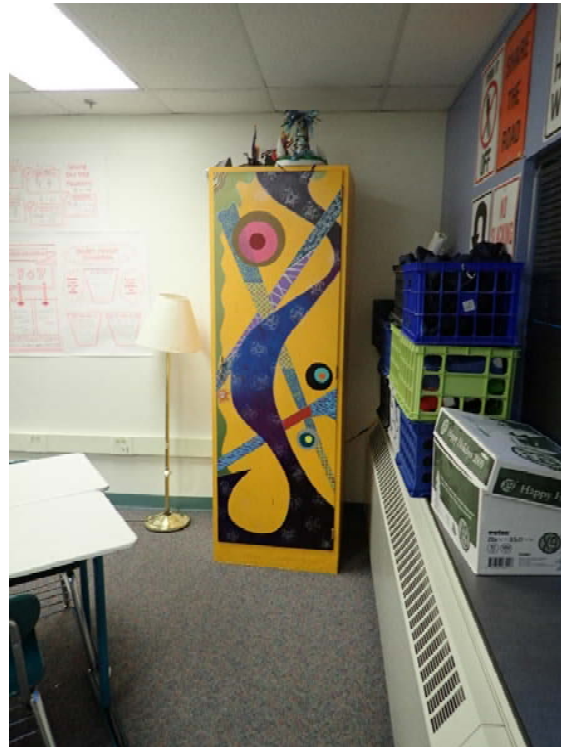
Room 143, Unrestrained Shelving Figure B- 21



Room 135, Unrestrained Shelving Figure B- 22



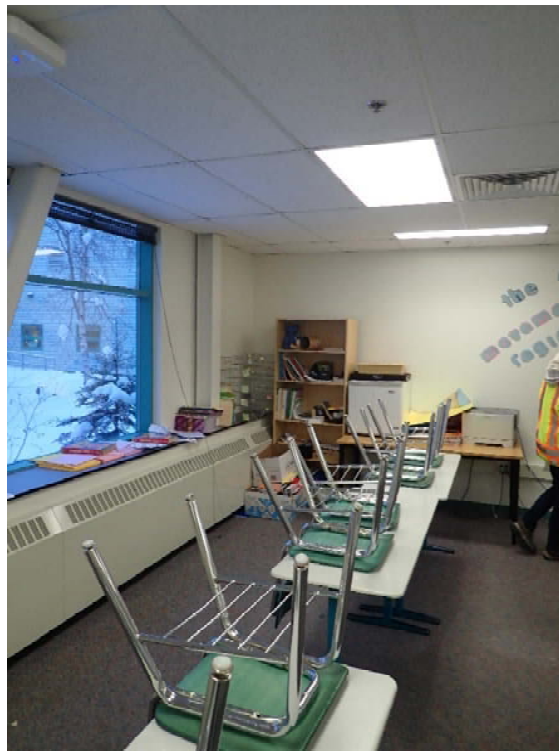
Room 132, Unrestrained Shelving Figure B- 23



Room 132, Unrestrained Shelving Figure B- 24



Room 138, Unrestrained Shelving Figure B- 25



Room 138, Unrestrained Shelving Figure B- 26



Room 131, Sprinkler w/ Insufficient Gap Figure B- 27



Room 130, Unrestrained Shelving Figure B- 28



Room 129, Unrestrained Shelving Figure B- 29



Room 129, Unrestrained Shelving Figure B- 30



Room 119, Unrestrained Shelving Figure B- 31



Room 201A, No Flexible Couplers Figure B- 32



Room 503, Fall Prone Contents Figure B- 33



Room 105b, Unrestrained Hazardous Material Figure B- 34



IMC, In Floor Receptacle without cover Figure B- 35

APPENDIX C — ASCE 41-17 TIER 1 CHECKLIST

C-1 TABLE 17-1 & 17-2 COLLAPSE PREVENTION BASIC CONFIGURATION CHECKLIST

Table 17-1. Very Low Seismicity Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Structural Components			
01	C NC N/A U LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
02	C NC N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

Table 17-2. Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low Seismicity Building System—General			
01	C NC N/A U LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
02	C NC N/A U ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 0.25% of the height of the shorter building in low seismicity, 0.5% in moderate seismicity, and 1.5% in high seismicity.	5.4.1.2	A.2.1.2
03	C NC N/A U MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure.	5.4.1.3	A.2.1.3
Building System—Building Configuration			
04	C NC N/A U WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above.	5.4.2.1	A.2.2.2
05	C NC N/A U SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above.	5.4.2.2	A.2.2.3
06	C NC N/A U VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation.	5.4.2.3	A.2.2.4
07	C NC N/A U GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines.	5.4.2.4	A.2.2.5
08	C NC N/A U MASS: There is no change in effective mass of more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered.	5.4.2.5	A.2.2.6
09	C NC N/A U TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension.	5.4.2.6	A.2.2.7

continues

Table 17-2 (Continued). Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Moderate Seismicity (Complete the Following Items in Addition to the Items for Low Seismicity)			
Geologic Site Hazards			
10	C NC N/A U LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance do not exist in the foundation soils at depths within 50 ft (15.2 m) under the building.	5.4.3.1	A.6.1.1
11	C NC N/A U SLOPE FAILURE: The building site is located away from potential earthquake-induced slope failures or rockfalls so that it is unaffected by such failures or is capable of accommodating any predicted movements without failure.	5.4.3.1	A.6.1.2
12	C NC N/A U SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated.	5.4.3.1	A.6.1.3
High Seismicity (Complete the Following Items in Addition to the Items for Moderate Seismicity)			
Foundation Configuration			
13	C NC N/A U OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$.	5.4.3.3	A.6.2.1
14	C NC N/A U TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C.	5.4.3.4	A.6.2.2

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

C-2 TABLE 17-10 COLLAPSE PREVENTION STRUCTURAL CHECKLIST FOR BUILDING TYPE S2 AND S2A

Table 17-10. Collapse Prevention Structural Checklist for Building Types S2 and S2a

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low Seismicity			
Seismic-Force-Resisting System			
01	C NC N/A U REDUNDANCY: The number of lines of braced frames in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.3.1.1
02	C NC N/A U COLUMN AXIAL STRESS CHECK: The axial stress caused by gravity loads in columns subjected to overturning forces is less than $0.10F_y$. Alternatively, the axial stress caused by overturning forces alone, calculated using the Quick Check procedure of Section 4.4.3.6, is less than $0.30F_y$.	5.5.2.1.3	A.3.1.3.2
03	C NC N/A U BRACE AXIAL STRESS CHECK: The axial stress in the diagonals, calculated using the Quick Check procedure of Section 4.4.3.4, is less than $0.50F_y$.	5.5.4.1	A.3.3.1.2
Connections			
04	C NC N/A U TRANSFER TO STEEL FRAMES: Diaphragms are connected for transfer of seismic forces to the steel frames.	5.7.2	A.5.2.2
05	C NC N/A U STEEL COLUMNS: The columns in seismic-force-resisting frames are anchored to the building foundation.	5.7.3.1	A.5.3.1
Moderate Seismicity (Complete the Following Items in Addition to the Items for Low Seismicity)			
Seismic-Force-Resisting System			
06	C NC N/A U REDUNDANCY: The number of braced bays in each line is greater than 2.	5.5.1.1	A.3.3.1.1
07	C NC N/A U CONNECTION STRENGTH: All the brace connections develop the buckling capacity of the diagonals.	5.5.4.4	A.3.3.1.5
08	C NC N/A U COMPACT MEMBERS: All brace elements meet compact section requirements in accordance with AISC 360, Table B4.1.	5.5.4	A.3.3.1.7
09	C NC N/A U K-BRACING: The bracing system does not include K-braced bays.	5.5.4.6	A.3.3.2.1
High Seismicity (Complete the Following Items in Addition to the Items for Low and Moderate Seismicity)			
Seismic-Force-Resisting System			
10	C NC N/A U COLUMN SPLICES: All column splice details located in braced frames develop 50% of the tensile strength of the column.	5.5.4.2	A.3.3.1.3
11	C NC N/A U SLENDERNESS OF DIAGONALS: All diagonal elements required to carry compression have K/r ratios less than 200.	5.5.4.3	A.3.3.1.4
12	C NC N/A U CONNECTION STRENGTH: All the brace connections develop the yield capacity of the diagonals.	5.5.4.4	A.3.3.1.5
13	C NC N/A U COMPACT MEMBERS: All brace elements meet section requirements in accordance with AISC 341, Table D1.1, for moderately ductile members.	5.5.4	A.3.3.1.7
14	C NC N/A U CHEVRON BRACING: Beams in chevron, or V-braced, bays are capable of resisting the vertical load resulting from the simultaneous yielding and buckling of the brace pairs.	5.5.4.6	A.3.3.2.3
15	C NC N/A U CONCENTRICALLY BRACED FRAME JOINTS: All the diagonal braces frame into the beam-column joints concentrically.	5.5.4.8	A.3.3.2.4
Diaphragms (Stiff or Flexible)			
16	C NC N/A U OPENINGS AT FRAMES: Diaphragm openings immediately adjacent to the braced frames extend less than 25% of the frame length.	5.6.1.3	A.4.1.5
Flexible Diaphragms			
17	C NC N/A U CROSS TIES: There are continuous cross ties between diaphragm chords.	5.6.1.2	A.4.1.2
18	C NC N/A U STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered.	5.6.2	A.4.2.1
19	C NC N/A U SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
20	C NC N/A U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12.2 m) and aspect ratios less than or equal to 4-to-1.	5.6.2	A.4.2.3
21	C NC N/A U OTHER DIAPHRAGMS: Diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

C-3 TABLE 17-34 COLLAPSE PREVENTION STRUCTURAL CHECKLIST FOR BUILDING TYPE RM1 AND RM2

Table 17-34. Collapse Prevention Structural Checklist for Building Types RM1 and RM2

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low and Moderate Seismicity			
Seismic-Force-Resisting System			
01	C NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1
02	C NC N/A U SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than 70 lb/in. ² (0.48 MPa).	5.5.3.1.1	A.3.2.4.1
03	C NC N/A U REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in. (1220 mm), and all vertical bars extend to the top of the walls.	5.5.3.1.3	A.3.2.4.2
04	Stiff Diaphragms C NC N/A U TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab.	5.6.4	A.4.5.1
05	Connections C NC N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1
06	C NC N/A U WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers.	5.7.1.3	A.5.1.2
07	C NC N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls.	5.7.2	A.5.2.1
08	C NC N/A U TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements.	5.7.2	A.5.2.3
09	C NC N/A U FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation.	5.7.3.4	A.5.3.5
10	C NC N/A U GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1
High Seismicity (Complete the Following Items in Addition to the Items for Low and Moderate Seismicity)			
Stiff Diaphragms			
11	C NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length.	5.6.1.3	A.4.1.4
12	C NC N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft (2.4 m) long.	5.6.1.3	A.4.1.6
Flexible Diaphragms			
13	C NC N/A U CROSS TIES: There are continuous cross ties between diaphragm chords.	5.6.1.2	A.4.1.2
14	C NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length.	5.6.1.3	A.4.1.4
15	C NC N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft (2.4 m) long.	5.6.1.3	A.4.1.6
16	C NC N/A U STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered.	5.6.2	A.4.2.1
17	C NC N/A U SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
18	C NC N/A U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12.2 m) and aspect ratios less than or equal to 4-to-1.	5.6.2	A.4.2.3
19	C NC N/A U OTHER DIAPHRAGMS: Diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1
20	Connections C NC N/A U STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. (3 mm) before engagement of the anchors.	5.7.1.2	A.5.1.4

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

C-4 TABLE 17-38 NONSTRUCTURAL CHECKLIST

Table 17-38. Nonstructural Checklist

Status	Evaluation Statement ^{a,b}	Tier 2 Reference	Commentary Reference
Life Safety Systems			
01	C NC N/A U HR —not required; LS —LMH; PR —LMH. FIRE SUPPRESSION PIPING: Fire suppression piping is anchored and braced in accordance with NFPA-13.	13.7.4	A.7.13.1
02	C NC N/A U HR —not required; LS —LMH; PR —LMH. FLEXIBLE COUPLINGS: Fire suppression piping has flexible couplings in accordance with NFPA-13.	13.7.4	A.7.13.2
03	C NC N/A U HR —not required; LS —LMH; PR —LMH. EMERGENCY POWER: Equipment used to power or control Life Safety systems is anchored or braced.	13.7.7	A.7.12.1
04	C NC N/A U HR —not required; LS —LMH; PR —LMH. STAIR AND SMOKE DUCTS: Stair pressurization and smoke control ducts are braced and have flexible connections at seismic joints.	13.7.6	A.7.14.1
05	C NC N/A U HR —not required; LS —MH; PR —MH. SPRINKLER CEILING CLEARANCE: Penetrations through panelized ceilings for fire suppression devices provide clearances in accordance with NFPA-13.	13.7.4	A.7.13.3
06	C NC N/A U HR —not required; LS —not required; PR —LMH. EMERGENCY LIGHTING: Emergency and egress lighting equipment is anchored or braced.	13.7.9	A.7.3.1
Hazardous Materials			
07	C NC N/A U HR —LMH; LS —LMH; PR —LMH. HAZARDOUS MATERIAL EQUIPMENT: Equipment mounted on vibration isolators and containing hazardous material is equipped with restraints or snubbers.	13.7.1	A.7.12.2
08	C NC N/A U HR —LMH; LS —LMH; PR —LMH. HAZARDOUS MATERIAL STORAGE: Breakable containers that hold hazardous material, including gas cylinders, are restrained by latched doors, shelf lips, wires, or other methods.	13.8.3	A.7.15.1
09	C NC N/A U HR —MH; LS —MH; PR —MH. HAZARDOUS MATERIAL DISTRIBUTION: Piping or ductwork conveying hazardous materials is braced or otherwise protected from damage that would allow hazardous material release.	13.7.3 13.7.5	A.7.13.4
10	C NC N/A U HR —MH; LS —MH; PR —MH. SHUTOFF VALVES: Piping containing hazardous material, including natural gas, has shutoff valves or other devices to limit spills or leaks.	13.7.3 13.7.5	A.7.13.3
11	C NC N/A U HR —LMH; LS —LMH; PR —LMH. FLEXIBLE COUPLINGS: Hazardous material ductwork and piping, including natural gas piping, have flexible couplings.	13.7.3 13.7.5	A.7.15.4
12	C NC N/A U HR —MH; LS —MH; PR —MH. PIPING OR DUCTS CROSSING SEISMIC JOINTS: Piping or ductwork carrying hazardous material that either crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements.	13.7.3 13.7.5 13.7.6	A.7.13.6
Partitions			
13	C NC N/A U HR —LMH; LS —LMH; PR —LMH. UNREINFORCED MASONRY: Unreinforced masonry or hollow-clay tile partitions are braced at a spacing of at most 10 ft (3.0 m) in Low or Moderate Seismicity, or at most 6 ft (1.8 m) in High Seismicity.	13.6.2	A.7.1.1
14	C NC N/A U HR —LMH; LS —LMH; PR —LMH. HEAVY PARTITIONS SUPPORTED BY CEILINGS: The tops of masonry or hollow-clay tile partitions are not laterally supported by an integrated ceiling system.	13.6.2	A.7.2.1
15	C NC N/A U HR —not required; LS —MH; PR —MH. DRIFT: Rigid cementitious partitions are detailed to accommodate the following drift ratios: in steel moment frame, concrete moment frame, and wood frame buildings, 0.02; in other buildings, 0.005.	13.6.2	A.7.1.2
16	C NC N/A U HR —not required; LS —not required; PR —MH. LIGHT PARTITIONS SUPPORTED BY CEILINGS: The tops of gypsum board partitions are not laterally supported by an integrated ceiling system.	13.6.2	A.7.2.1
17	C NC N/A U HR —not required; LS —not required; PR —MH. STRUCTURAL SEPARATIONS: Partitions that cross structural separations have seismic or control joints.	13.6.2	A.7.1.3

continues

Table 17-38 (Continued). Nonstructural Checklist

Status	Evaluation Statement ^{a,b}	Tier 2 Reference	Commentary Reference
18	C NC N/A U HR—not required; LS—not required; PR—MH. TOPS: The tops of ceiling-high framed or panelized partitions have lateral bracing to the structure at a spacing equal to or less than 6 ft (1.8 m).	13.6.2	A.7.1.4
Ceilings			
19	C NC N/A U HR—H; LS—MH; PR—LMH. SUSPENDED LATH AND PLASTER: Suspended lath and plaster ceilings have attachments that resist seismic forces for every 12 ft ² (1.1 m ²) of area.	13.6.4	A.7.2.3
20	C NC N/A U HR—not required; LS—MH; PR—LMH. SUSPENDED GYPSUM BOARD: Suspended gypsum board ceilings have attachments that resist seismic forces for every 12 ft ² (1.1 m ²) of area.	13.6.4	A.7.2.3
21	C NC N/A U HR—not required; LS—not required; PR—MH. INTEGRATED CEILINGS: Integrated suspended ceilings with continuous areas greater than 144 ft ² (13.4 m ²) and ceilings of smaller areas that are not surrounded by restraining partitions are laterally restrained at a spacing no greater than 12 ft (3.6 m) with members attached to the structure above. Each restraint location has a minimum of four diagonal wires and compression struts, or diagonal members capable of resisting compression.	13.6.4	A.7.2.2
22	C NC N/A U HR—not required; LS—not required; PR—MH. EDGE CLEARANCE: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft ² (13.4 m ²) have clearances from the enclosing wall or partition of at least the following: in Moderate Seismicity, 1/2 in. (13 mm); in High Seismicity, 3/4 in. (19 mm).	13.6.4	A.7.2.4
23	C NC N/A U HR—not required; LS—not required; PR—MH. CONTINUITY ACROSS STRUCTURE JOINTS: The ceiling system does not cross any seismic joint and is not attached to multiple independent structures.	13.6.4	A.7.2.5
24	C NC N/A U HR—not required; LS—not required; PR—H. EDGE SUPPORT: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft ² (13.4 m ²) are supported by closure angles or channels not less than 2 in. (51 mm) wide.	13.6.4	A.7.2.6
25	C NC N/A U HR—not required; LS—not required; PR—H. SEISMIC JOINTS: Acoustical tile or lay-in panel ceilings have seismic separation joints such that each continuous portion of the ceiling is no more than 2,500 ft ² (232.3 m ²) and has a ratio of long-to-short dimension no more than 4-to-1.	13.6.4	A.7.2.7
Light Fixtures			
26	C NC N/A U HR—not required; LS—MH; PR—MH. INDEPENDENT SUPPORT: Light fixtures that weigh more per square foot than the ceiling they penetrate are supported independent of the grid ceiling suspension system by a minimum of two wires at diagonally opposite corners of each fixture.	13.6.4 13.7.9	A.7.3.2
27	C NC N/A U HR—not required; LS—not required; PR—H. PENDANT SUPPORTS: Light fixtures on pendant supports are attached at a spacing equal to or less than 6 ft. Unbraced suspended fixtures are free to allow a 360-degree range of motion at an angle not less than 45 degrees from horizontal without contacting adjacent components. Alternatively, if rigidly supported and/or braced, they are free to move with the structure to which they are attached without damaging adjoining components. Additionally, the connection to the structure is capable of accommodating the movement without failure.	13.7.9	A.7.3.3
28	C NC N/A U HR—not required; LS—not required; PR—H. LENS COVERS: Lens covers on light fixtures are attached with safety devices.	13.7.9	A.7.3.4
Cladding and Glazing			
29	C NC N/A U HR—MH; LS—MH; PR—MH. CLADDING ANCHORS: Cladding components weighing more than 10 lb/ft ² (0.48 kN/m ²) are mechanically anchored to the structure at a spacing equal to or less than the following: for Life Safety in Moderate Seismicity, 6 ft (1.8 m); for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 ft (1.2 m)	13.6.1	A.7.4.1

continues

Table 17-38 (Continued). Nonstructural Checklist

Status	Evaluation Statement ^{a,b}	Tier 2 Reference	Commentary Reference
30	C NC N/A U HR—not required; LS—MH; PR—MH. CLADDING ISOLATION: For steel or concrete moment-frame buildings, panel connections are detailed to accommodate a story drift ratio by the use of rods attached to framing with oversize holes or slotted holes of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02, and the rods have a length-to-diameter ratio of 4.0 or less.	13.6.1	A.7.4.3
31	C NC N/A U HR—MH; LS—MH; PR—MH. MULTI-STORY PANELS: For multi-story panels attached at more than one floor level, panel connections are detailed to accommodate a story drift ratio by the use of rods attached to framing with oversize holes or slotted holes of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02, and the rods have a length-to-diameter ratio of 4.0 or less.	13.6.1	A.7.4.4
32	C NC N/A U HR—not required; LS—MH; PR—MH. THREADED RODS: Threaded rods for panel connections detailed to accommodate drift by bending of the rod have a length-to-diameter ratio greater than 0.06 times the story height in inches for Life Safety in Moderate Seismicity and 0.12 times the story height in inches for Life Safety in High Seismicity and Position Retention in any seismicity.	13.6.1	A.7.4.9
33	C NC N/A U HR—MH; LS—MH; PR—MH. PANEL CONNECTIONS: Cladding panels are anchored out of plane with a minimum number of connections for each wall panel, as follows: for Life Safety in Moderate Seismicity, 2 connections; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 connections.	13.6.1.4	A.7.4.5
34	C NC N/A U HR—MH; LS—MH; PR—MH. BEARING CONNECTIONS: Where bearing connections are used, there is a minimum of two bearing connections for each cladding panel.	13.6.1.4	A.7.4.6
35	C NC N/A U HR—MH; LS—MH; PR—MH. INSERTS: Where concrete cladding components use inserts, the inserts have positive anchorage or are anchored to reinforcing steel.	13.6.1.4	A.7.4.7
36	C NC N/A U HR—not required; LS—MH; PR—MH. OVERHEAD GLAZING: Glazing panes of any size in curtain walls and individual interior or exterior panes more than 16 ft ² (1.5 m ²) in area are laminated annealed or laminated heat-strengthened glass and are detailed to remain in the frame when cracked.	13.6.1.5	A.7.4.8
Masonry Veneer			
37	C NC N/A U HR—not required; LS—LMH; PR—LMH. TIES: Masonry veneer is connected to the backup with corrosion-resistant ties. There is a minimum of one tie for every 2-2/3 ft ² (0.25 m ²), and the ties have spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 36 in. (914 mm); for Life Safety in High Seismicity and for Position Retention in any seismicity, 24 in. (610 mm).	13.6.1.2	A.7.5.1
38	C NC N/A U HR—not required; LS—LMH; PR—LMH. SHELF ANGLES: Masonry veneer is supported by shelf angles or other elements at each floor above the ground floor.	13.6.1.2	A.7.5.2
39	C NC N/A U HR—not required; LS—LMH; PR—LMH. WEAKENED PLANES: Masonry veneer is anchored to the backup adjacent to weakened planes, such as at the locations of flashing.	13.6.1.2	A.7.5.3
40	C NC N/A U HR—LMH; LS—LMH; PR—LMH. UNREINFORCED MASONRY BACKUP: There is no unreinforced masonry backup.	13.6.1.1 13.6.1.2	A.7.7.2
41	C NC N/A U HR—not required; LS—MH; PR—MH. STUD TRACKS: For veneer with cold-formed steel stud backup, stud tracks are fastened to the structure at a spacing equal to or less than 24 in. (610 mm) on center.	13.6.1.1 13.6.1.2	A.7.6.1

continues

Table 17-38 (Continued). Nonstructural Checklist

Status	Evaluation Statement ^{a,b}	Tier 2 Reference	Commentary Reference
42	C NC N/A U HR— not required ; LS—MH; PR—MH. ANCHORAGE: For veneer with concrete block or masonry backup, the backup is positively anchored to the structure at a horizontal spacing equal to or less than 4 ft along the floors and roof.	13.6.1.1 13.6.1.2	A.7.7.1
43	C NC N/A U HR— not required ; LS— not required ; PR—MH. WEEP HOLES: In veneer anchored to stud walls, the veneer has functioning weep holes and base flashing.	13.6.1.2	A.7.5.6
44	C NC N/A U HR— not required ; LS— not required ; PR—MH. OPENINGS: For veneer with cold-formed-steel stud backup, steel studs frame window and door openings.	13.6.1.1 13.6.1.2	A.7.6.2
Parapets, Cornices, Ornamentation, and Appendages			
45	C NC N/A U HR—LMH; LS—LMH; PR—LMH. URM PARAPETS OR CORNICES: Laterally unsupported unreinforced masonry parapets or cornices have height-to-thickness ratios no greater than the following: for Life Safety in Low or Moderate Seismicity, 2.5; for Life Safety in High Seismicity and for Position Retention in any seismicity, 1.5.	13.6.5	A.7.8.1
46	C NC N/A U HR— not required ; LS—LMH; PR—LMH. CANOPIES: Canopies at building exits are anchored to the structure at a spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 10 ft (3.0 m); for Life Safety in High Seismicity and for Position Retention in any seismicity, 6 ft (1.8 m).	13.6.6	A.7.8.2
47	C NC N/A U HR—H; LS—MH; PR—LMH. CONCRETE PARAPETS: Concrete parapets with height-to-thickness ratios greater than 2.5 have vertical reinforcement.	13.6.5	A.7.8.3
48	C NC N/A U HR—MH; LS—MH; PR—LMH. APPENDAGES: Cornices, parapets, signs, and other ornamentation or appendages that extend above the highest point of anchorage to the structure or cantilever from components are reinforced and anchored to the structural system at a spacing equal to or less than 6 ft (1.8 m). This evaluation statement item does not apply to parapets or cornices covered by other evaluation statements.	13.6.6	A.7.8.4
Masonry Chimneys			
49	C NC N/A U HR—LMH; LS—LMH; PR—LMH. URM CHIMNEYS: Unreinforced masonry chimneys extend above the roof surface no more than the following: for Life Safety in Low or Moderate Seismicity, 3 times the least dimension of the chimney; for Life Safety in High Seismicity and for Position Retention in any seismicity, 2 times the least dimension of the chimney.	13.6.7	A.7.9.1
50	C NC N/A U HR—LMH; LS—LMH; PR—LMH. ANCHORAGE: Masonry chimneys are anchored at each floor level, at the topmost ceiling level, and at the roof.	13.6.7	A.7.9.2
Stairs			
51	C NC N/A U HR— not required ; LS—LMH; PR—LMH. STAIR ENCLOSURES: Hollow-clay tile or unreinforced masonry walls around stair enclosures are restrained out of plane and have height-to-thickness ratios not greater than the following: for Life Safety in Low or Moderate Seismicity, 15-to-1; for Life Safety in High Seismicity and for Position Retention in any seismicity, 12-to-1.	13.6.2 13.6.8	A.7.10.1
52	C NC N/A U HR— not required ; LS—LMH; PR—LMH. STAIR DETAILS: The connection between the stairs and the structure does not rely on post-installed anchors in concrete or masonry, and the stair details are capable of accommodating the drift calculated using the Quick Check procedure of Section 4.4.3.1 for moment-frame structures or 0.5 in. for all other structures without including any lateral stiffness contribution from the stairs.	13.6.8	A.7.10.2
Contents and Furnishings			
53	C NC N/A U HR—LMH; LS—MH; PR—MH. INDUSTRIAL STORAGE RACKS: Industrial storage racks or pallet racks more than 12 ft high meet the requirements of ANSI/RMI MH 16.1 as modified by ASCE 7, Chapter 15.	13.8.1	A.7.11.1

continues

Table 17-38 (Continued). Nonstructural Checklist

Status	Evaluation Statement ^{a,b}	Tier 2 Reference	Commentary Reference
54	C NC N/A U HR—not required; LS—H; PR—MH. TALL NARROW CONTENTS: Contents more than 6 ft (1.8 m) high with a height-to-depth or height-to-width ratio greater than 3-to-1 are anchored to the structure or to each other.	13.8.2	A.7.11.2
55	C NC N/A U HR—not required; LS—H; PR—H. FALL-PRONE CONTENTS: Equipment, stored items, or other contents weighing more than 20 lb (9.1 kg) whose center of mass is more than 4 ft (1.2 m) above the adjacent floor level are braced or otherwise restrained.	13.8.2	A.7.11.3
56	C NC N/A U HR—not required; LS—not required; PR—MH. ACCESS FLOORS: Access floors more than 9 in. (229 mm) high are braced.	13.6.10	A.7.11.4
57	C NC N/A U HR—not required; LS—not required; PR—MH. EQUIPMENT ON ACCESS FLOORS: Equipment and other contents supported by access floor systems are anchored or braced to the structure independent of the access floor.	13.7.7 13.6.10	A.7.11.5
58	C NC N/A U HR—not required; LS—not required; PR—H. SUSPENDED CONTENTS: Items suspended without lateral bracing are free to swing from or move with the structure from which they are suspended without damaging themselves or adjoining components.	13.8.2	A.7.11.6
Mechanical and Electrical Equipment			
59	C NC N/A U HR—not required; LS—H; PR—H. FALL-PRONE EQUIPMENT: Equipment weighing more than 20 lb (9.1 kg) whose center of mass is more than 4 ft (1.2 m) above the adjacent floor level, and which is not in-line equipment, is braced.	13.7.1 13.7.7	A.7.12.4
60	C NC N/A U HR—not required; LS—H; PR—H. IN-LINE EQUIPMENT: Equipment installed in line with a duct or piping system, with an operating weight more than 75 lb (34.0 kg), is supported and laterally braced independent of the duct or piping system.	13.7.1	A.7.12.5
61	C NC N/A U HR—not required; LS—H; PR—MH. TALL NARROW EQUIPMENT: Equipment more than 6 ft (1.8 m) high with a height-to-depth or height-to-width ratio greater than 3-to-1 is anchored to the floor slab or adjacent structural walls.	13.7.1 13.7.7	A.7.12.6
62	C NC N/A U HR—not required; LS—not required; PR—MH. MECHANICAL DOORS: Mechanically operated doors are detailed to operate at a story drift ratio of 0.01.	13.6.9	A.7.12.7
63	C NC N/A U HR—not required; LS—not required; PR—H. SUSPENDED EQUIPMENT: Equipment suspended without lateral bracing is free to swing from or move with the structure from which it is suspended without damaging itself or adjoining components.	13.7.1 13.7.7	A.7.12.8
64	C NC N/A U HR—not required; LS—not required; PR—H. VIBRATION ISOLATORS: Equipment mounted on vibration isolators is equipped with horizontal restraints or snubbers and with vertical restraints to resist overturning.	13.7.1	A.7.12.9
65	C NC N/A U HR—not required; LS—not required; PR—H. HEAVY EQUIPMENT: Floor-supported or platform-supported equipment weighing more than 400 lb (181.4 kg) is anchored to the structure.	13.7.1 13.7.7	A.7.12.10
66	C NC N/A U HR—not required; LS—not required; PR—H. ELECTRICAL EQUIPMENT: Electrical equipment is laterally braced to the structure.	13.7.7	A.7.12.11
67	C NC N/A U HR—not required; LS—not required; PR—H. CONDUIT COUPLINGS: Conduit greater than 2.5 in. (64 mm) trade size that is attached to panels, cabinets, or other equipment and is subject to relative seismic displacement has flexible couplings or connections.	13.7.8	A.7.12.12
Piping			
68	C NC N/A U HR—not required; LS—not required; PR—H. FLEXIBLE COUPLINGS: Fluid and gas piping has flexible couplings.	13.7.3 13.7.5	A.7.13.2

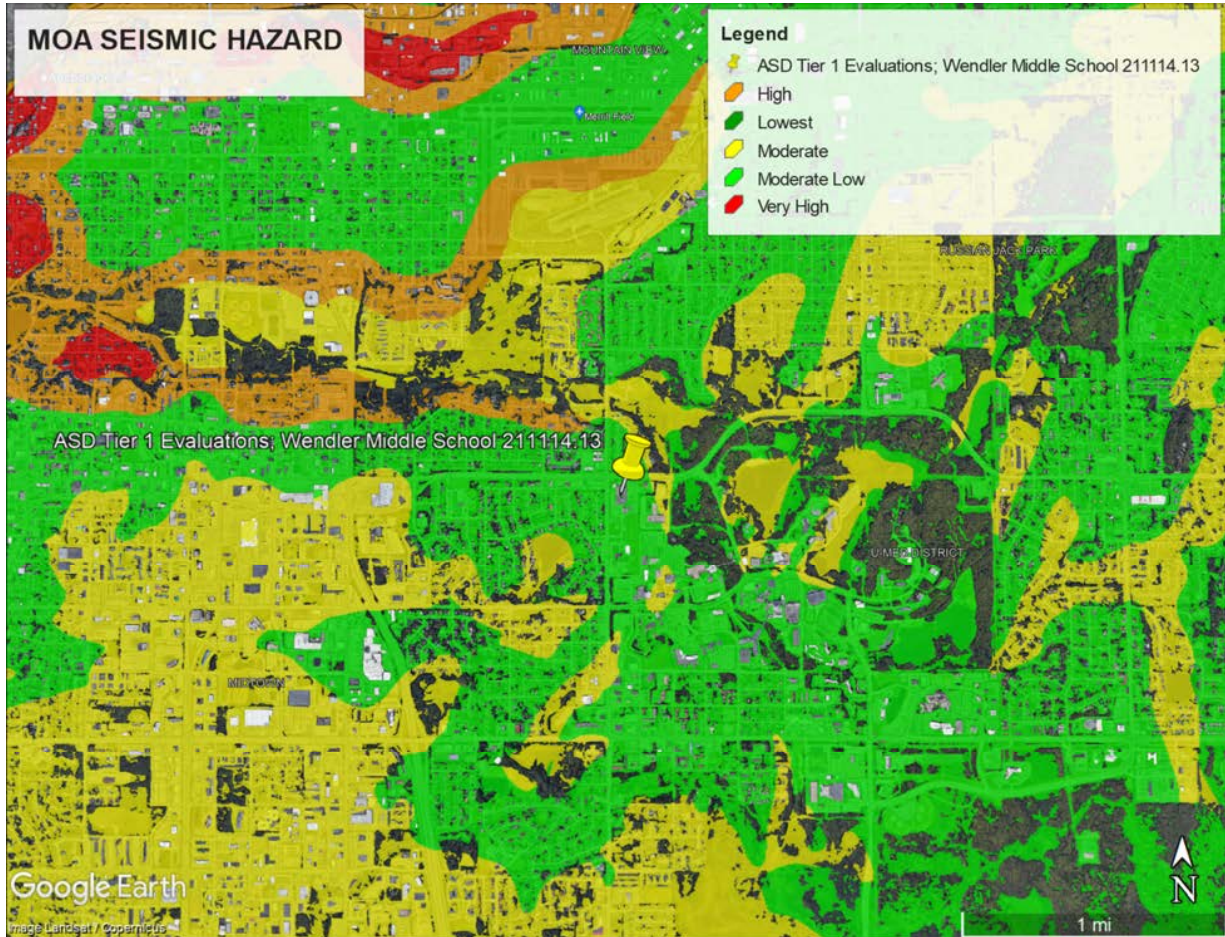
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Table 17-38 (Continued). Nonstructural Checklist

Status	Evaluation Statement ^{a,b}	Tier 2 Reference	Commentary Reference
69	C NC N/A U HR—not required; LS—not required; PR—H. FLUID AND GAS PIPING: Fluid and gas piping is anchored and braced to the structure to limit spills or leaks.	13.7.3 13.7.5	A.7.13.4
70	C NC N/A U HR—not required; LS—not required; PR—H. C-CLAMPS: One-sided C-clamps that support piping larger than 2.5 in. (64 mm) in diameter are restrained.	13.7.3 13.7.5	A.7.13.5
71	C NC N/A U HR—not required; LS—not required; PR—H. PIPING CROSSING SEISMIC JOINTS: Piping that crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements.	13.7.3 13.7.5	A.7.13.6
Ducts			
72	C NC N/A U HR—not required; LS—not required; PR—H. DUCT BRACING: Rectangular ductwork larger than 6 ft ² (0.56 m ²) in cross-sectional area and round ducts larger than 28 in. (711 mm) in diameter are braced. The maximum spacing of transverse bracing does not exceed 30 ft (9.2 m). The maximum spacing of longitudinal bracing does not exceed 60 ft (18.3 m).	13.7.6	A.7.14.2
73	C NC N/A U HR—not required; LS—not required; PR—H. DUCT SUPPORT: Ducts are not supported by piping or electrical conduit.	13.7.6	A.7.14.3
74	C NC N/A U HR—not required; LS—not required; PR—H. DUCTS CROSSING SEISMIC JOINTS: Ducts that cross seismic joints or isolation planes or are connected to independent structures have couplings or other details to accommodate the relative seismic displacements.	13.7.6	A.7.14.4
Elevators			
75	C NC N/A U HR—not required; LS—H; PR—H. RETAINER GUARDS: Sheaves and drums have cable retainer guards.	13.7.11	A.7.16.1
76	C NC N/A U HR—not required; LS—H; PR—H. RETAINER PLATE: A retainer plate is present at the top and bottom of both car and counterweight.	13.7.11	A.7.16.2
77	C NC N/A U HR—not required; LS—not required; PR—H. ELEVATOR EQUIPMENT: Equipment, piping, and other components that are part of the elevator system are anchored.	13.7.11	A.7.16.3
78	C NC N/A U HR—not required; LS—not required; PR—H. SEISMIC SWITCH: Elevators capable of operating at speeds of 150 ft/min (0.30 m/min) or faster are equipped with seismic switches that meet the requirements of ASME A17.1 or have trigger levels set to 20% of the acceleration of gravity at the base of the structure and 50% of the acceleration of gravity in other locations.	13.7.11	A.7.16.4
79	C NC N/A U HR—not required; LS—not required; PR—H. SHAFT WALLS: Elevator shaft walls are anchored and reinforced to prevent toppling into the shaft during strong shaking.	13.7.11	A.7.16.5
80	C NC N/A U HR—not required; LS—not required; PR—H. COUNTERWEIGHT RAILS: All counterweight rails and divider beams are sized in accordance with ASME A17.1.	13.7.11	A.7.16.6
81	C NC N/A U HR—not required; LS—not required; PR—H. BRACKETS: The brackets that tie the car rails and the counterweight rail to the structure are sized in accordance with ASME A17.1.	13.7.11	A.7.16.7
82	C NC N/A U HR—not required; LS—not required; PR—H. SPREADER BRACKET: Spreader brackets are not used to resist seismic forces.	13.7.11	A.7.16.8
83	C NC N/A U HR—not required; LS—not required; PR—H. GO-SLOW ELEVATORS: The building has a go-slow elevator system.	13.7.11	A.7.16.9

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.
^a Performance Level: HR = Hazards Reduced, LS = Life Safety, and PR = Position Retention.
^b Level of Seismicity: L = Low, M = Moderate, and H = High.

APPENDIX D — MUNICIPLAITY OF ANCHORAGE SEISMIC HAZARD MAP



APPENDIX E — SUPPLEMENTAL CALCULATIONS



1506 West 36th Avenue
Anchorage Alaska 99503
phone 907.561.1011
fax 907.563.4220

Project: ASD Tier 1 Wendler Middle School (211114.13)
Calculated by: **JJL** Date: 01/08/22
Checked by: Date:

S2 & S2a "Quick Checks"

SHEAR STRESS CHECK

4.4.2.4 Period. The fundamental period of a building, in the direction under consideration, shall be calculated in accordance with Eq. (4-4).

$$T = C_t h_n^\beta \quad (4-4)$$

where

- T = Fundamental period (s) in the direction under consideration;
- C_t = 0.035 for moment-resisting frame systems of steel (Building Types S1 and S1a);
- = 0.018 for moment-resisting frames of reinforced concrete (Building Type C1);
- = 0.030 for eccentrically braced steel frames (Building Types S2 and S2a);
- = 0.020 for all other framing systems;
- h_n = Height (ft) above the base to the roof level;

- β = 0.80 for moment-resisting frame systems of steel (Building Types S1 and S1a);
- = 0.90 for moment-resisting frame systems of reinforced concrete (Building Type C1); and
- = 0.75 for all other framing systems.

Alternatively, for steel or reinforced-concrete moment frames of 12 stories or fewer, the fundamental period of the building may be calculated as follows:

$$T = 0.10n \quad (4-5)$$

where n = number of stories above the base.

4.4.2.3 Spectral Acceleration. Spectral acceleration, S_a , for use in computing the pseudo seismic force shall be computed in accordance with Eq. (4-3).

$$S_a = \frac{S_{X1}}{T} \quad (4-3)$$

but S_a shall not exceed S_{XS} , where T is the fundamental period of vibration of the building, calculated in accordance with Section 4.4.2.4, and S_{X1} and S_{XS} are as defined in Section 2.4 for the Seismic Hazard Level specified in Section 4.1.2. Alternatively, a site-specific response spectrum shall be permitted to be developed according to Section 2.4.2 for the Seismic Hazard Level specified in Section 4.1.2.

84' Library Addition, A-7

$$h_H := 18.125 \text{ ft}$$

$$h_L := 14.20835 \text{ ft}$$

$$C_t := \frac{.03}{ft} \quad \text{S2 \& S2a 4.4.2.4}$$

$$\beta := .75 \quad \text{S2 \& S2a 4.4.2.4}$$

Original EQN 4-4

$$T_O := C_t \cdot h_H^\beta \cdot ft^{\frac{1}{4}} = 0.264$$

BSE-2E ATC HAZARD TOOL

$$S_{xs} := 1.562 \quad S_{x1} := 1.018$$

Original EQN 4-3

$$S_{aO} := \min \left(S_{xs}, \frac{S_{x1}}{T_O} \right) = 1.562$$

ALL REFERENCES ARE ASCE 41-17 UNO





1506 West 36th Avenue
Anchorage Alaska 99503
phone 907.561.1011
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Project: ASD Tier 1 Wendler Middle School (211114.13)
Calculated by: JJL Date: 01/08/22
Checked by: Date:

S2 & S2a "Quick Checks"

<u>WEIGHT OF STRUCTURE: WENDLER MIDDLE SCHOOL 84' LIBRARY ADDITION S-2</u>	
$RF_H := 5374.32 \text{ ft}^2$	$h_H = 18.125 \text{ ft}$ High roof
$RF_L := 1736.59 \text{ ft}^2$	$h_L = 14.208 \text{ ft}$ Low Roof
$\sigma_{Rf} := 25 \text{ psf}$	Dead Load TYP Flex Roof w/ 1/2 Partition Load
$\sigma_{SL} := 40 \text{ psf} \cdot .2 = 8 \text{ psf}$	20% Snow Load
<u>12" CMU w/ Grout 16" o.c. 127 psf</u>	<u>WENDLER MIDDLE SCHOOL 84' GYM ADDITION S-2</u>
$W_{12,H} := \left(\frac{h_H}{2} \cdot 127 \text{ psf} \cdot 255 \text{ ft} \right) = 293.489 \text{ kip}$	$\frac{h_H}{2} * 127 \text{ psf} * \text{Length of Wall (255 ft)}$
<u>8" CMU w/ Grout 32" o.c. 50 psf</u>	<u>WENDLER MIDDLE SCHOOL 84' GYM ADDITION S-2</u>
$W_{8,L} := \left(\frac{h_L}{2} \cdot 50 \text{ psf} \cdot 114.75 \text{ ft} \right) = 40.76 \text{ kip}$	$\frac{h_H}{2} * 50 \text{ psf} * \text{Length of Wall (114.75 ft)}$
$W_{HCMU} := RF_H \cdot (\sigma_{Rf} + \sigma_{SL}) + W_{12,H} = 470.842 \text{ kip}$	Weight High Roof w/ CMU Walls
$W_{LCMU} := RF_L \cdot (\sigma_{Rf} + \sigma_{SL}) + W_{8,L} = 98.068 \text{ kip}$	Weight Low Roof w/ CMU Walls
$W_{CMU} := W_{HCMU} + W_{LCMU}$	Weight Building w/ CMU Walls
$W_H := RF_H \cdot (\sigma_{Rf} + \sigma_{SL}) = 177.353 \text{ kip}$	Weight High Roof w/o CMU Walls
$W_L := RF_L \cdot (\sigma_{Rf} + \sigma_{SL}) = 57.307 \text{ kip}$	Weight Low Roof w/o CMU Walls
$W := W_H + W_L = 234.66 \text{ kip}$	Weight Building w/o CMU Walls

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Checked by: Date:

S2 & S2a "Quick Checks"

SEISMIC SHEAR:

Table 4-7. Modification Factor, C

Building Type ^a	Number of Stories			
	1	2	3	≥4
Wood and cold-formed steel shear wall (W1, W1a, W2, CFS1)	1.3	1.1	1.0	1.0
Moment frame (S1, S3, C1, PC2a)				
Shear wall (S4, S5, C2, C3, PC1a, PC2, RM2, URMa)	1.4	1.2	1.1	1.0
Braced frame (S2)				
Cold-formed steel strap-brace wall (CFS2)				
Unreinforced masonry (URM)	1.0	1.0	1.0	1.0
Flexible diaphragms (S1a, S2a, S5a, C2a, C3a, PC1, RM1)				

^a Defined in Table 3-1.

$C_O := 1$ Original C **Table 4-7**

Original Structure Weight **EQN 4-1**

w/ CMU

$V_{OCMU} := C_O \cdot S_{ao} \cdot W_{CMU} = 888.636 \text{ kip}$

w/o CMU

$V_O := C_O \cdot S_{ao} \cdot W = 366.539 \text{ kip}$

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$k := 1$

4.4.2.2 Story Shear Forces. The pseudo seismic force calculated in accordance with Section 4.4.2.1 shall be distributed vertically in accordance with Eqs. (4-2a and 4-2b). For buildings six stories or fewer high, the value of k shall be permitted to be taken as 1.0.

$$F_x = \frac{w_x h_x^k}{\sum_{i=1}^n w_i h_i^k} V \quad (4-2a)$$

$$V_j = \sum_{x=j}^n F_x \quad (4-2b)$$

where

- V_j = Story shear at story level j ;
- n = Total number of stories above ground level;
- j = Number of story levels under consideration;
- W = Total seismic weight, per Section 4.4.2.1;
- V = Pseudo seismic force from Eq. (4-1);
- w_i = Portion of total building weight W located on or assigned to floor level i ;
- w_x = Portion of total building weight W located on or assigned to floor level x ;
- h_i = Height (ft) from the base to floor level i ;
- h_x = Height (ft) from the base to floor level x ; and
- $k = 1.0$ for $T \leq 0.5$ s and 2.0 for $T > 2.5$ s; linear interpolation shall be used for intermediate values of k .

For buildings with stiff or rigid diaphragms, the story shear forces shall be distributed to the lateral-force-resisting elements based on their relative rigidities. For buildings with flexible diaphragms (Types S1a, S2a, S5a, C2a, C3a, PC1, RM1, and URM), story shear shall be calculated separately for each line of lateral resistance.

High Roof Story Force EQN 4-2a

w/ CMU

$$F_{HCMU} := \frac{W_{HCMU} \cdot h_H^k}{W_{LCMU} \cdot h_L^k + W_{HCMU} \cdot h_H} \cdot V_O = 315.093 \text{ kip}$$

Low Roof Story Force EQN 4-2a

w/ CMU

$$F_{LCMU} := \frac{W_{LCMU} \cdot h_L^k}{W_{LCMU} \cdot h_L^k + W_{HCMU} \cdot h_H} \cdot V_O = 51.446 \text{ kip}$$

High Roof Story Force EQN 4-2a

w/o CMU

$$F_H := \frac{W_H \cdot h_H^k}{W_L \cdot h_L + W_H \cdot h_H} \cdot V_O = 292.459 \text{ kip}$$

Low Roof Story Force EQN 4-2a

w/o CMU

$$F_L := \frac{W_L \cdot h_L^k}{W_L \cdot h_L + W_H \cdot h_H} \cdot V_O = 74.08 \text{ kip}$$

High Roof Story Shear EQN 4-2b

$V_{HCMU} := F_{HCMU} = 315.093 \text{ kip}$ w/ CMU	$V_H := F_H = 292.459 \text{ kip}$ w/o CMU
---	--

Low Roof Story Shear EQN 4-2b

$V_{LCMU} := F_{LCMU} = 51.446 \text{ kip}$ w/ CMU	$V_L := F_L = 74.08 \text{ kip}$ w/o CMU
--	--

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S2 & S2a "Quick Checks"

4.4.3.6 Column Axial Stress Caused by Overturning. The axial stress of columns in moment frames at the base subjected to overturning forces, p_{ot} , shall be calculated in accordance with Eq. (4-11).

$$p_{ot} = \frac{1}{M_s} \left(\frac{2}{3} \right) \left(\frac{V h_n}{L n_f} \right) \left(\frac{1}{A_{col}} \right) \quad (4-11)$$

where

n_f = Total number of frames in the direction of loading;
 V = Pseudo seismic force;

Table 4-9. M_s Factors for Diagonal Braces

Brace Type	d/t^b	Level of Performance		
		CP ^a	LS ^a	IO ^a
Tube ^b	$< 90/(F_y)^{1/2}$	7.0	4.5	2.0
	$> 190/(F_y)^{1/2}$	3.5	2.5	1.25
Pipe ^c	$< 1,500/F_y$	7.0	4.5	2.0
	$> 6,000/F_y$	3.5	2.5	1.25
Tension-only Cold-formed steel strap-braced wall		3.5	2.5	1.25
		3.5	2.5	1.25
All others		7.0	4.5	2.0

Note: $F_y = 1.25 F_{y0}$; expected yield stress.
^a CP = Collapse Prevention, LS = Life Safety, IO = Immediate Occupancy.
^b Depth-to-thickness ratio.
^c Interpolation to be used for tubes and pipes.

h_n = Height (ft) above the base to the roof level;
 L = Total length of the frame (ft);
 M_s = System modification factor taken as equal to 2.5 for buildings being evaluated to the Collapse Prevention Performance Level, equal to 1.5 for buildings being evaluated to the Life Safety Performance Level, and equal to 1.0 for buildings being evaluated to the Immediate Occupancy Performance Level; and
 A_{col} = Area of the end column of the frame.

COL AXIAL STRESS CHECK

$F_y := 36 \text{ ksi}$

$M_s := \frac{2.5 + 1.5}{2} = 2$

$h_{max} := 7 \text{ ft}$

Longest BF Col
Max unbraced length

HSS5x5x3/8 GRID D/3:

AISC 360 15th Edn $A_{HSS5x6} := 6.18 \text{ in}^2$ $L_D := 28.9167 \text{ ft}$ $n_D := 2$

$V_D := \frac{3476.27 \text{ ft}^2}{RF_H} \cdot F_H + \frac{919.14 \text{ ft}^2}{RF_L} \cdot F_L = 228.38 \text{ kip}$

$p_{ot} := \frac{1}{M_s} \cdot \frac{2}{3} \cdot \frac{V_D \cdot h_{max}}{L_D \cdot n_D} \cdot \frac{1}{A_{HSS5x6}} = 1.491 \text{ ksi} < .3 \cdot F_y = 10.8 \text{ ksi} \quad \text{PASS}$

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S2 & S2a "Quick Checks"

BRACE AXIAL STRESS & SLENDERNESS CHECK

4.4.3.4 Diagonal Bracing. The average axial stress in diagonal bracing elements, f_j^{avg} , shall be calculated in accordance with Eq. (4-9).

$$f_j^{avg} = \frac{1}{M_s} \left(\frac{V_j}{sN_{br}} \right) \left(\frac{L_{br}}{A_{br}} \right) \quad (4-9)$$

where

- L_{br} = Average length of the braces (ft);
- N_{br} = Number of braces in tension and compression if the braces are designed for compression, number of diagonal braces in tension if the braces are designed for tension only;
- s = Average span length of braced spans (ft);
- A_{br} = Average area of a diagonal brace (in.²);
- V_j = Maximum story shear at each level (kip); and
- M_s = System modification factor; M_s shall be taken from Table 4-9.

Table 4-9. M_s Factors for Diagonal Braces

Brace Type	d/t^b	Level of Performance		
		CP ^a	LS ^a	IO ^a
Tube ^b	$<90/(F_{ye})^{1/2}$	7.0	4.5	2.0
	$>190/(F_{ye})^{1/2}$	3.5	2.5	1.25
Pipe ^c	$<1,500/F_{ye}$	7.0	4.5	2.0
	$>6,000/F_{ye}$	3.5	2.5	1.25
	Tension-only	3.5	2.5	1.25
Cold-formed steel strap-braced wall		3.5	2.5	1.25
All others		7.0	4.5	2.0

Note: $F_{ye} = 1.25F_y$; expected yield stress.
^a CP = Collapse Prevention, LS = Life Safety, IO = Immediate Occupancy.
^b Depth-to-thickness ratio.
^c Interpolation to be used for tubes and pipes.

$$F_y := 36 \text{ ksi}$$

$$F_{ye} := 1.25 \cdot F_y = 45 \text{ ksi}$$

$$LB := \frac{90}{\left(\frac{F_y}{\text{ksi}} \right)^{1/2}} = 15$$

$$UB := \frac{190}{\left(\frac{F_y}{\text{ksi}} \right)^{1/2}} = 31.667$$

$$M_{sLB} := \frac{7 + 4.5}{2} = 5.75$$

$$M_{sUB} := \frac{3.5 + 2.5}{2} = 3$$

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S2 & S2a "Quick Checks"

- **1" Threaded Rod LINE D TOP of CMU to B.O.D.:**

$x := 1$ $x = d/t$ **AISC 360 15th Edn**

$$M_{sD} := \begin{cases} \text{if } x < LB \\ M_{sLB} \\ \text{else} \\ \text{if } x > UB \\ M_{sUB} \\ \text{else} \\ \left(\frac{x - LB}{UB - LB} \cdot (M_{sUB} - M_{sLB}) \right) + M_{sLB} \end{cases} = 5.75$$

$h_{max} = 7 \text{ ft}$

$A_1 := \frac{\pi \cdot (1 \text{ in})^2}{4}$

$V_D = 228.38 \text{ kip}$

$s_D = 37 \text{ ft}$

$n_D = 2$

$L_D := \sqrt{s_D^2 + h_{max}^2}$

$f_4 := \frac{1}{M_{sD}} \cdot \frac{V_D}{s_D \cdot n_D} \cdot \frac{L_D}{A_1} = 25.734 \text{ ksi} > .5 \cdot F_y = 18 \text{ ksi} \quad \text{FAIL}$

$r_1 := \frac{.865 \text{ in}}{4}$

$\frac{\sqrt{(s_D)^2 + h_{max}^2}}{r_1} = 2089.6 > 200$

TENSION ONLY DNC

$r_{1.25} := \frac{1.1 \text{ in}}{4}$

$A_{1.25} := \frac{\pi \cdot (1.1 \text{ in})^2}{4}$

$L_E := \sqrt{(23.5 \text{ ft})^2 + h_{max}^2}$

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S2 & S2a "Quick Checks"

COMPACT MEMBERS & DUCTILITY CHECK

$E := 29000 \text{ ksi}$ $F_y := 36 \text{ ksi}$

$\lambda_p := .07 \cdot \sqrt{\frac{E}{F_y}} = 1.987$ AISC 360 15th Edition **Table B4.1**

$\lambda_{md} := .053 \cdot \sqrt{\frac{E}{F_y}} = 1.504$ AISC Seismic Design Manual 3rd Edition **Table D1.1**

1" Threaded Rod

$x := 1$ $x = d/t$ **AISC 360 15th Edn** $< \lambda_{md} = 1.504$ $< \lambda_p = 1.987$

1 1/4" Threaded Rod

PASS **PASS**

$x := 1$ $x = d/t$ **AISC 360 15th Edn** $< \lambda_{md} = 1.504$ $< \lambda_p = 1.987$

PASS **PASS**

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S2 & S2a "Quick Checks"

BRACE CONNECTION BUCKLING STRENGTH

$F_y := 36 \text{ ksi}$

$\lambda_r := .11 \cdot \sqrt{\frac{E}{F_y}} = 3.122 > \begin{matrix} \text{1 "Threaded Rod} \\ x := 1 \quad x = d/t \text{ AISC 360 15th Edn} \end{matrix}$
NONSLENDER

$> \begin{matrix} \text{1 1/4" Threaded Rod} \\ x := 1 \quad x = d/t \text{ AISC 360 15th Edn} \end{matrix}$
NONSLENDER

$r_1 = 0.216 \text{ in} \quad \frac{L_D}{r_1} = 2089.6 > 4.71 \cdot \sqrt{\frac{E}{F_y}} = 133.681$

$r_{1.25} = 0.275 \text{ in} \quad \frac{L_E}{r_{1.25}} = 1069.981$

$F_{e1} := \frac{\pi^2 \cdot E}{\left(\frac{L_D}{r_1}\right)^2} = 0.066 \text{ ksi} \quad F_{e1.25} := \frac{\pi^2 \cdot E}{\left(\frac{L_E}{r_{1.25}}\right)^2} = 0.25 \text{ ksi}$

1" Threaded Rod Buckling Capacity AISC 360 Eqn E3-4

$P_1 := .877 \cdot F_{e1} \cdot A_1 = 0.045 \text{ kip}$ AISC 360 Eqn E3-1 (E3-2)

1 1/4" Threaded Rod Buckling Capacity

$P_{1.25} := .877 \cdot F_{e1.25} \cdot A_{1.25} = 0.208 \text{ kip}$ AISC 360 Eqn E3-1 (E3-2)

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S2 & S2a "Quick Checks"

$D := 4$		Gusset to Brace	
$\frac{P_1}{4 \cdot 1.392 \frac{\text{kip}}{\text{in}} \cdot D} = 0.002 \text{ in}$	$<$	$l_w := 5 \text{ in}$	ASSUMED PASS
$\frac{P_{1.25}}{4 \cdot 1.392 \frac{\text{kip}}{\text{in}} \cdot D} = 0.007 \text{ in}$	$<$	$l_w = 5 \text{ in}$	ASSUMED PASS
		AISC EQN 8-2a	
		AISC EQN 8-2a	
$c := 1 \text{ in}$		ASUMED Distance of Beam to Brace	
$t_p := \frac{3}{8} \text{ in} = 0.375 \text{ in}$		Thickness of Gusset	
$\theta_1 := \text{atan}\left(\frac{h_{max}}{s_D}\right) = 10.713 \text{ deg}$		Angle of Brace	
$l_1 := \frac{c}{\sin(\theta_1)} = 5.379 \text{ in}$			
$t_\beta := 1.5 \cdot \sqrt{\frac{36 \text{ ksi} \cdot c^3}{E \cdot l_1}} = 0.023 \text{ in}$		$<$	$t_p = 0.375 \text{ in}$
		Non-compact Buckling Controls	
$l_{wHSS6} := \tan(\theta_1) \cdot 1 \text{ in} = 0.016 \text{ ft}$		Whitmore Section	
$r := \frac{t_p}{\sqrt{12}} = 0.108 \text{ in}$		Plate Radius of Gyration	
$\frac{l_1}{r} = 49.693$		$<$	$4.71 \cdot \sqrt{\frac{E}{36 \text{ ksi}}} = 133.681$
		AISC 360 E3-2	

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January 2022

2022 Wendler Middle
Tier 1 Evaluation Report



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S2 & S2a "Quick Checks"

$$F_c := \frac{\pi^2 \cdot E}{\left(\frac{l_1}{r}\right)^2} = 115.904 \text{ ksi}$$

AISC 360 Eqn E3-4

PASS

$$P := \left(0.658^{\frac{36 \text{ ksi}}{F_c}}\right) \cdot 36 \text{ ksi} \cdot l_{wHSS6} \cdot t_p = 2.243 \text{ kip}$$

$$> P_c := \max(P_1, P_{1.25}) = 0.208 \text{ kip}$$

AISC 360 Eqn E3-1 (E3-2)

AS THIS IS A TENSION ONLY FRAME AND ASCE 41-17 DOES NOT EXPLICITLY SAY COMPRESSION CHECKS NEED NOT BE DONE, COMPRESSION CHECKS WERE PERFORMED, EVEN THOUGH THEY ARE IRRELVANT.

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S2 & S2a "Quick Checks"

BRACE CONNECTION YIELDING STRENGTH

$F_y := 36 \text{ ksi}$

$P_1 := F_y \cdot A_1 = 28.274 \text{ kip}$ 1" Threaded Rod Yield Capacity AISC 360 **Eqn D2-1**

$P_{1.25} := F_y \cdot A_{1.25} = 34.212 \text{ kip}$ 1 1/4" Threaded Rod Yield Capacity AISC 360 **Eqn D2-1**

PASS

$P := l_w \cdot t_p \cdot F_y = 67.5 \text{ kip}$

$> P_{16} := \max(P_1, P_{1.25}) = 34.212 \text{ kip}$

Plate Yield Capacity AISC 360 **Eqn D2-1** $\frac{P_1}{P} = 0.419$ $\frac{P_{1.25}}{P} = 0.507$

$\frac{P_1}{4 \cdot 1.392 \frac{\text{kip}}{\text{in}} \cdot D} = 0.952 \text{ in}$

$< l_w = 5 \text{ in}$

PASS

AISC **EQN 8-2a**

$\frac{P_{1.25}}{4 \cdot 1.392 \frac{\text{kip}}{\text{in}} \cdot D} = 1.152 \text{ in}$

$< l_w = 5 \text{ in}$

PASS

AISC **EQN 8-2a**

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SHEAR STRESS CHECK

4.4.2.4 Period. The fundamental period of a building, in the direction under consideration, shall be calculated in accordance with Eq. (4-4).

$$T = C_t h_n^\beta \quad (4-4)$$

where

T = Fundamental period (s) in the direction under consideration;

- C_t = 0.035 for moment-resisting frame systems of steel (Building Types S1 and S1a);
- = 0.018 for moment-resisting frames of reinforced concrete (Building Type C1);
- = 0.030 for eccentrically braced steel frames (Building Types S2 and S2a);
- = 0.020 for all other framing systems;
- h_n = Height (ft) above the base to the roof level;

- β = 0.80 for moment-resisting frame systems of steel (Building Types S1 and S1a);
- = 0.90 for moment-resisting frame systems of reinforced concrete (Building Type C1); and
- = 0.75 for all other framing systems.

Alternatively, for steel or reinforced-concrete moment frames of 12 stories or fewer, the fundamental period of the building may be calculated as follows:

$$T = 0.10n \quad (4-5)$$

where n = number of stories above the base.

4.4.2.3 Spectral Acceleration. Spectral acceleration, S_a , for use in computing the pseudo seismic force shall be computed in accordance with Eq. (4-3).

$$S_a = \frac{S_{x1}}{T} \quad (4-3)$$

but S_a shall not exceed S_{XS} , where T is the fundamental period of vibration of the building, calculated in accordance with Section 4.4.2.4, and S_{x1} and S_{XS} are as defined in Section 2.4 for the Seismic Hazard Level specified in Section 4.1.2. Alternatively, a site-specific response spectrum shall be permitted to be developed according to Section 2.4.2 for the Seismic Hazard Level specified in Section 4.1.2.

WENDLER MIDDLE SCHOOL 84' GYM ADDITION A-7

$$h_H := 18.125 \text{ ft}$$

$$h_L := 14.20835 \text{ ft}$$

$$C_t := \frac{.02}{ft} \quad \text{RM1 \& RM2 4.4.2.4}$$

$$\beta := .75 \quad \text{RM1 \& RM2 4.4.2.4}$$

Original EQN 4-4

$$T_O := C_t \cdot h_H^\beta \cdot ft^{\frac{1}{4}} = 0.176$$

BSE-2E ATC HAZARD TOOL

$$S_{xs} := 1.564 \quad S_{x1} := 1.012$$

Original EQN 4-3

$$S_{aO} := \min\left(S_{xs}, \frac{S_{x1}}{T_O}\right) = 1.564$$

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WEIGHT OF STRUCTURE: WENDLER MIDDLE SCHOOL 84' LIBRARY ADDITION S-2

$RF_H := 5374.32 \text{ ft}^2$	$h_H = 18.125 \text{ ft}$ High roof
$RF_L := 1736.59 \text{ ft}^2$	$h_L = 14.208 \text{ ft}$ Low Roof
$\sigma_{Rf} := 25 \text{ psf}$	Dead Load TYP Flex Roof w/ 1/2 Partition Load
$\sigma_{SL} := 40 \text{ psf} \cdot .2 = 8 \text{ psf}$	20% Snow Load

12" CMU w/ Grout 16" o.c. 127 psf

**WENDLER MIDDLE SCHOOL
84' GYM ADDITION S-2**

$$W_{12.H} := \left(\frac{h_H}{2} \cdot 127 \text{ psf} \cdot 255 \text{ ft} \right) = 293.489 \text{ kip} \quad \frac{h_H}{2} * 127 \text{ psf} * \text{Length of Wall (255 ft)}$$

8" CMU w/ Grout 32" o.c. 50 psf

**WENDLER MIDDLE SCHOOL
84' GYM ADDITION S-2**

$$W_{8.L} := \left(\frac{h_L}{2} \cdot 50 \text{ psf} \cdot 114.75 \text{ ft} \right) = 40.76 \text{ kip} \quad \frac{h_H}{2} * 127 \text{ psf} * \text{Length of Wall (114.75 ft)}$$

$$W_H := RF_H \cdot (\sigma_{Rf} + \sigma_{SL}) + W_{12.H} = 470.842 \text{ kip} \quad \text{Weight High Roof}$$

$$W_L := RF_L \cdot (\sigma_{Rf} + \sigma_{SL}) + W_{8.L} = 98.068 \text{ kip} \quad \text{Weight Low Roof}$$

$$W := W_H + W_L$$

ALL REFERENCES ARE ASCE 41-17 UNO



SEISMIC SHEAR:

Table 4-7. Modification Factor, C

Building Type ^a	Number of Stories			
	1	2	3	≥4
Wood and cold-formed steel shear wall (W1, W1a, W2, CFS1)	1.3	1.1	1.0	1.0
Moment frame (S1, S3, C1, PC2a)				
Shear wall (S4, S5, C2, C3, PC1a, PC2, RM2, URMa)	1.4	1.2	1.1	1.0
Braced frame (S2)				
Cold-formed steel strap-brace wall (CFS2)				
Unreinforced masonry (URM)	1.0	1.0	1.0	1.0
Flexible diaphragms (S1a, S2a, S5a, C2a, C3a, PC1, RM1)				

$C_O := 1$

Original C **Table 4-7**

Structure Weight **EQN 4-1**

$V_O := C_O \cdot S_{aO} \cdot W = 889.774 \text{ kip}$

^a Defined in Table 3-1.

ALL REFERENCES ARE ASCE 41-17 UNO



Project: ASD Tier 1 Wendler Middle School (211114.13)
Calculated by: JNL Date: 01/08/22
Checked by: Date:

$$k := 1$$

4.4.2.2 Story Shear Forces. The pseudo seismic force calculated in accordance with Section 4.4.2.1 shall be distributed vertically in accordance with Eqs. (4-2a and 4-2b). For buildings six stories or fewer high, the value of k shall be permitted to be taken as 1.0.

$$F_x = \frac{w_x h_x^k}{\sum_{i=1}^n w_i h_i^k} V \quad (4-2a)$$

$$V_j = \sum_{x=j}^n F_x \quad (4-2b)$$

where

- V_j = Story shear at story level j ;
- n = Total number of stories above ground level;
- j = Number of story levels under consideration;
- W = Total seismic weight, per Section 4.4.2.1;
- V = Pseudo seismic force from Eq. (4-1);
- w_i = Portion of total building weight W located on or assigned to floor level i ;
- w_x = Portion of total building weight W located on or assigned to floor level x ;
- h_i = Height (ft) from the base to floor level i ;
- h_x = Height (ft) from the base to floor level x ; and
- k = 1.0 for $T \leq 0.5$ s and 2.0 for $T > 2.5$ s; linear interpolation shall be used for intermediate values of k .

For buildings with stiff or rigid diaphragms, the story shear forces shall be distributed to the lateral-force-resisting elements based on their relative rigidities. For buildings with flexible diaphragms (Types S1a, S2a, S5a, C2a, C3a, PC1, RMI, and URM), story shear shall be calculated separately for each line of lateral resistance.

High Roof Story Force EQN 4-2a

$$F_H := \frac{W_H \cdot h_H^k}{W_L \cdot h_L + W_H \cdot h_H} \cdot V_O = 764.888 \text{ kip}$$

Low Roof Story Force EQN 4-2a

$$F_L := \frac{W_L \cdot h_L^k}{W_L \cdot h_L + W_H \cdot h_H} \cdot V_O = 124.886 \text{ kip}$$

High Roof Story Shear EQN 4-2b

$$V_H := F_H = 764.888 \text{ kip}$$

Low Roof Story Shear EQN 4-2b

$$V_L := F_L = 124.886 \text{ kip}$$

ALL REFERENCES ARE ASCE 41-17 UNO



Project: ASD Tier 1 Wendler Middle School (211114.13)
Calculated by: **JJL** Date: 01/08/22
Checked by: Date:

4.4.3.3 Shear Stress in Shear Walls. The average shear stress in shear walls, v_j^{avg} , shall be calculated in accordance with Eq. (4-8).

$$v_j^{avg} = \frac{1}{M_s} \left(\frac{V_j}{A_w} \right) \quad (4-8)$$

where

- V_j = Story shear at level j computed in accordance with Section 4.4.2.2;
- A_w = Summation of the horizontal cross-sectional area of all shear walls in the direction of loading. Openings shall be taken into consideration when computing A_w . For masonry walls, the net area shall be used. For wood-framed walls, the length shall be used rather than the area; and
- M_s = System modification factor; M_s shall be taken from Table 4-8.

Table 4-8. M_s Factors for Shear Walls

Wall Type	Level of Performance		
	CP ^a	LS ^a	IO ^a
Reinforced concrete, precast concrete, wood, reinforced masonry, and cold-formed steel	4.5	3.0	1.5
Unreinforced masonry	1.75	1.25	1.0

$$M_s := \frac{4.5 + 3.0}{2} = 3.75$$

^a CP = Collapse Prevention, LS = Life Safety, IO = Immediate Occupancy.

$$T_A := \frac{1898.05 \text{ ft}^2}{RF_H} \cdot F_H = 270.136 \text{ kip}$$

**WENDLER MIDDLE SCHOOL
84' GYM ADDITION S-2**

$$A_A := 76 \text{ ft} \cdot 1 \text{ ft} = 76 \text{ ft}^2$$

$$v_{D.5} := \frac{T_A}{M_s \cdot A_A} = 6.582 \text{ psi}$$

> 70 psi **EQN 4-8**

$$T_1 := \frac{3604.75 \text{ ft}^2}{RF_H} \cdot F_H = 513.038 \text{ kip}$$

**WENDLER MIDDLE SCHOOL
84' GYM ADDITION S-2**

$$A_1 := 90.3333 \cdot 666 \text{ ft} = 60.216 \text{ ft}$$

$$v_A := \frac{T_1}{M_s \cdot A_1} = 15.778 \text{ ft} \cdot \text{psi}$$

> 70 psi **EQN 4-8**

ALL REFERENCES ARE ASCE 41-17 UNO



Project: ASD Tier 1 Wendler Middle School (211114.13)
Calculated by: **JJL** Date: 01/08/22
Checked by: Date:

$$T_4 := \frac{1769.57 \text{ ft}^2}{RF_H} \cdot F_H = 251.85 \text{ kip}$$

**WENDLER MIDDLE SCHOOL
84' GYM ADDITION S-2**

$$A_4 := 74 \text{ ft} \cdot 1 \text{ ft} = 74 \text{ ft}^2$$

$$v_{D.5} := \frac{T_4}{M_s \cdot A_4} = 6.303 \text{ psi}$$

> 70 psi **EQN 4-8**

REINFORCING STEEL

**WENDLER MIDDLE SCHOOL
84' GYM ADDITION S-1**

ORIGINAL: 12" CMU

$$A_{st12V} := \frac{.79 \text{ in}^2}{16 \text{ in} \cdot 12 \text{ in}} = 0.00411$$

> .0007 **PASS**

$$A_{st12H} := \frac{2 \cdot .31 \text{ in}^2}{48 \text{ in} \cdot 12 \text{ in}} = 0.00108$$

> .0007 **PASS**

$$A_{st12} := A_{st12V} + A_{st12H} = 0.00519$$

> .002 **PASS**

ORIGINAL: 8" CMU

$$A_{st8V} := \frac{.79 \text{ in}^2}{32 \text{ in} \cdot 8 \text{ in}} = 0.00309$$

> .0007 **PASS**

$$A_{st8H} := \frac{.31 \text{ in}^2}{48 \text{ in} \cdot 8 \text{ in}} = 0.00081$$

> .0007 **PASS**

$$A_{st8} := A_{st8V} + A_{st8H} = 0.00389$$

> .002 **PASS**

ALL REFERENCES ARE ASCE 41-17 UNO





Project: ASD Tier 1 Wendler Middle School (211114.13)
Calculated by: J.J.L. Date: 01/08/22
Checked by: Date:

WALL ANCHORAGE

$$\psi := \frac{1 + 1.3}{2} = 1.15 \quad \text{Limited Safety S-4}$$

ORIGINAL: 12" CMU TYP WENDLER MIDDLE SCHOOL 84' GYM ADDITION S-3/A & S-4/E

AB 24" o.c * 12" CMU wall w/ Reinf 16" o.c. * Max/2 Unbraced Height

$$V_{c12} := \psi \cdot S_{xs} \cdot 127 \text{ psf} \cdot 24 \text{ in} \cdot \frac{25.8333 \text{ ft}}{2} = 5.901 \text{ kip} \quad \text{EQN 4-12}$$

$$l_b := 6 \text{ in} \quad l_{bc12} := 5.625 \text{ in} \quad f_y := 36 \text{ ksi} \quad f'_m := 1350 \text{ psi} \quad d := \frac{5}{8} \text{ in}$$

$$A_{pt} := \pi \cdot l_b^2 = 0.785 \text{ ft}^2 \quad \text{TMS 402 Eqn 6-5}$$

$$A_{pv} := \frac{\pi \cdot l_{bc12}^2}{2} = 0.345 \text{ ft}^2 \quad \text{TMS 402 Eqn 6-6}$$

$$A_b := \frac{d^2 \cdot \pi}{4} = 0.002 \text{ ft}^2$$

TENSION CONTROLS

$$B_{anb} := 4 \cdot A_{pt} \cdot \sqrt{\frac{f'_m}{\text{psi}}} = 16.622 \text{ kip} \quad \text{TMS 402 Eqn 9-1}$$

$$B_{ans} := A_b \cdot f_y = 11.045 \text{ kip} \quad \text{TMS 402 Eqn 9-2}$$

SHEAR CONTROLS

$$B_{vnb} := 4 \cdot A_{pv} \cdot \sqrt{\frac{f'_m}{\text{psi}}} = 7.305 \text{ kip} \quad \text{TMS 402 Eqn 9-6}$$

$$B_{vnc} := 1750 \text{ lbf} \cdot \sqrt[4]{\frac{f'_m \cdot A_b}{\text{lbf}}} = 7.895 \text{ kip} \quad \text{TMS 402 Eqn 9-7}$$

$$B_{vnpvy} := 8 \cdot A_{pt} \cdot \sqrt{\frac{f'_m}{\text{psi}}} = 33.244 \text{ kip} \quad \text{TMS 402 Eqn 9-8}$$

$$B_{vns} := .6 \cdot A_b \cdot f_y = 6.627 \text{ kip} \quad \text{TMS 402 Eqn 9-9}$$

$$V := \min(B_{vnb}, B_{vnc}, B_{vnpvy}, B_{vns}) = 6.627 \text{ kip} > V_{c12} = 5.901 \text{ kip} \quad \text{PASS}$$

$$T := \min(B_{anb}, B_{ans}) = 11.045 \text{ kip} \quad T_{c12} := V_{c12} \cdot 1.333 = 7.866 \text{ kip}$$

ALL REFERENCES ARE ASCE 41-17 UNO



Project: ASD Tier 1 Wendler Middle School (211114.13)
Calculated by: J.J.L. Date: 01/08/22
Checked by: Date:

ORIGINAL: 8" CMU TYP WENDLER MIDDLE SCHOOL 84' GYM ADDITION S-3/A & S-4/E

AB 24" o.c * 8" CMU wall w/ Reinf 32" o.c. * Max/2 Unbraced Height

$$V_{c8} := \psi \cdot S_{xs} \cdot 50 \text{ psf} \cdot 24 \text{ in} \cdot \frac{16.5 \text{ ft}}{2} = 1.484 \text{ kip}$$

EQN 4-12

$$l_b := 6 \text{ in} \quad l_{be12} := 2.625 \text{ in} \quad f'_m := 1350 \text{ psi} \quad f_y := 36 \text{ ksi} \quad d := \frac{5}{8} \text{ in}$$

$$A_{pt} := \pi \cdot l_b^2 = 0.785 \text{ ft}^2$$

TMS 402 Eqn 6-5

$$A_{pv} := \frac{\pi \cdot l_{be12}^2}{2} = 0.075 \text{ ft}^2$$

TMS 402 Eqn 6-6

$$A_b := \frac{d^2 \cdot \pi}{4} = 0.002 \text{ ft}^2$$

TENSION DNC

$$B_{amb} := 4 \cdot A_{pt} \cdot \sqrt{\frac{f'_m}{\text{psi}}} = 16.622 \text{ kip}$$

TMS 402 Eqn 9-1

$$B_{ans} := A_b \cdot f_y = 11.045 \text{ kip}$$

TMS 402 Eqn 9-2

SHEAR CONTROLS

$$B_{vnb} := 4 \cdot A_{pv} \cdot \sqrt{\frac{f'_m}{\text{psi}}} = 1.591 \text{ kip}$$

TMS 402 Eqn 9-6

$$B_{vnc} := 1750 \text{ lbf} \cdot \sqrt[4]{\frac{f'_m \cdot A_b}{\text{lbf}}} = 7.895 \text{ kip}$$

TMS 402 Eqn 9-7

$$B_{vnpry} := 8 \cdot A_{pt} \cdot \sqrt{\frac{f'_m}{\text{psi}}} = 33.244 \text{ kip}$$

TMS 402 Eqn 9-8

$$B_{vns} := .6 \cdot A_b \cdot f_y = 6.627 \text{ kip}$$

TMS 402 Eqn 9-9

$$V := \min(B_{vnb}, B_{vnc}, B_{vnpry}, B_{vns}) = 1.591 \text{ kip} > V_{c8} = 1.484 \text{ kip} \quad \text{PASS}$$

$$T := \min(B_{amb}, B_{ans}) = 11.045 \text{ kip}$$

ALL REFERENCES ARE ASCE 41-17 UNO



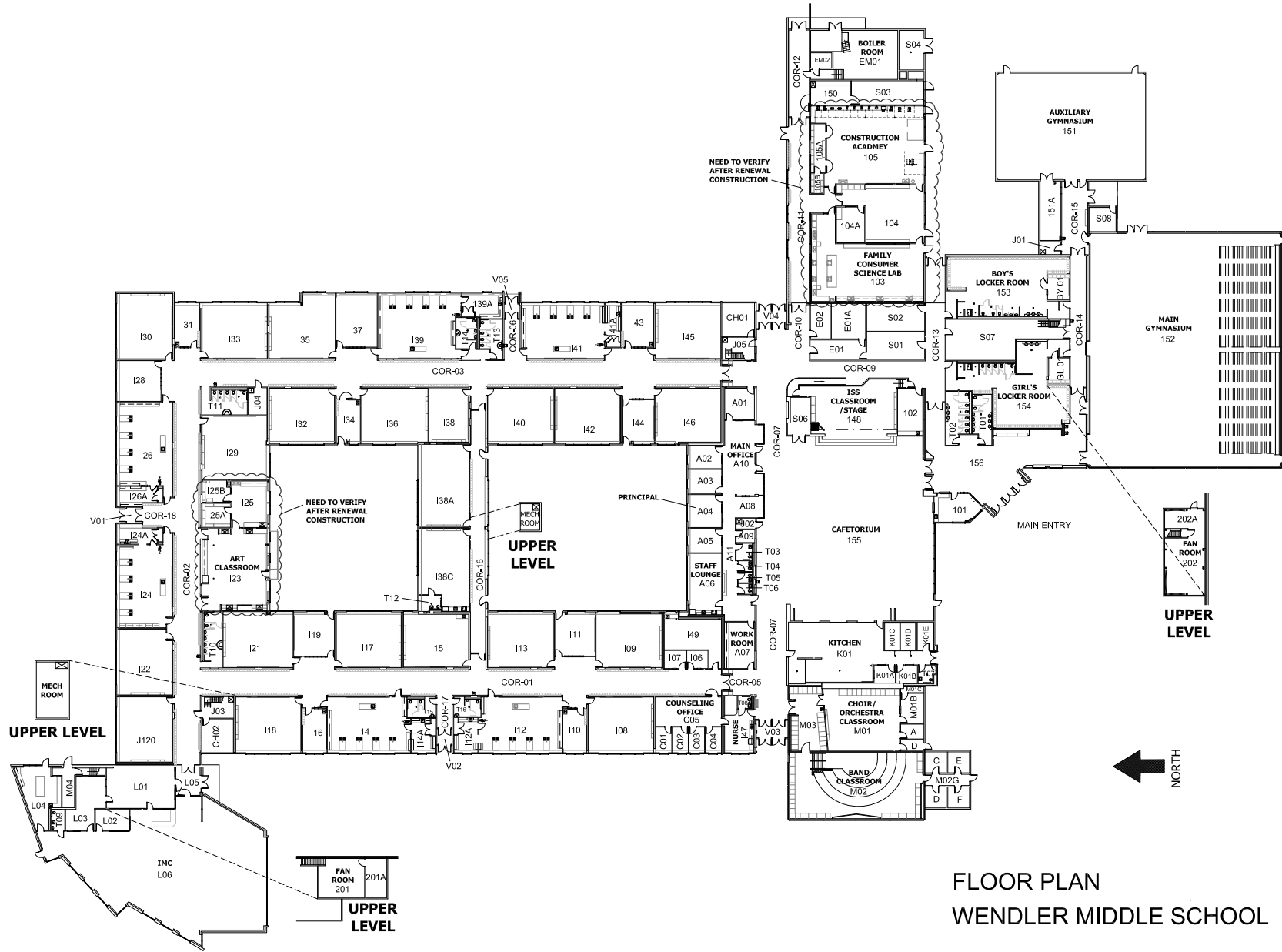


PROJECT TITLE:
WENDLER MIDDLE SCHOOL
2905 LAKE OTIS PARKWAY
ANCHORAGE, ALASKA 99508

FLOOR PLAN

DRAWN: T. JARONIK
CHECKED: S. WILSON
DATE: 08/26/97
REVISIONS: 05/20/16

SCALE: NTS
SHEET NO.
1 OF 1



FLOOR PLAN
WENDLER MIDDLE SCHOOL

A. GENERAL

Proposers/Offerors are advised that, notwithstanding any instructions or implications elsewhere in this RFP, only the documents shown and detailed on this Check List need to be submitted with and made part of their proposal/offer. Proposers/Offerors are hereby advised that failure to submit the documents shown and detailed on this Check List may be justification for rendering the proposal/offer non-responsive.

B. REQUIRED DOCUMENTS FOR OFFER PROPOSAL SUBMISSION

1. Attachment A, Proposal Transmittal Form
Submit the completed Proposal Transmittal Form (Attachment A) as the first page of the proposal per Site.
2. All addenda issued should be acknowledged by manually signing the Addenda sheet and submitting it prior to the offer opening, or by indicating acknowledgement in the space provided on the Attachment A, Proposal Transmittal Form.

Items 3, 4, 5, & 6 TO BE SUBMITTED AS PART OF ORIGINAL PROPOSAL OR WITHIN THREE (3) CALENDAR DAYS OF NOTICE FROM THE DISTRICT IF NOT SUBMITTED WITH PROPOSAL.

DBE PARTICIPATION REQUIREMENTS MUST BE COMPLETED BY THE PROPOSAL SUBMISSION DATE.

ONLY 1 COPY OF 3, 4, 5 & 6 (below) is to be submitted.

3. Exhibit 1, Supplemental Term, Conditions and Forms
 - ✓ 1. Acknowledgement of Terms, Conditions, and Grant Clauses General Grant Clauses
 - ✓ 2. Certification Regarding Lobbying
4. Exhibit 2, Disadvantaged Business Enterprises, Contract Participation Form
5. Exhibit 3, Disadvantaged Business Enterprises, Prime Consultant/Contractor Certification
 - ✓ 1. Prime Consultant/Contractor Certification
6. Exhibit 4, Disadvantaged Business Enterprises, Contact Documentation Form
 - ✓ 1. Contact Documentation Form

EXHIBIT 1: SUPPLEMENTAL TERMS AND CONDITIONS

(2 C.F.R. § 200.326 and 2 C.F.R. Part 200, Appendix II, Required Contract Clauses)

The supplemental conditions contained in this section are intended to cooperate with, to supplement, and to modify the general conditions and other specifications **for the acquisition of supplies, services, equipment, or construction services to insure compliance with 2 C.F.R. § 200.317 through 200.327 and 2 C.F.R. Part 200, Appendix II** for contracts being awarded using Federal Grant funds.

1. Flow Down of Terms and Conditions from the Grant Agreement

Subcontracts: If the vendor Subcontracts any of the work required under this Agreement, a copy of the signed Subcontract must be forwarded to the Anchorage School District ("District") for review and approval. The vendor agrees to include in the Subcontract that (i) the Subcontractor is bound by the terms of this Agreement, (ii) the Subcontractor is bound by all applicable local, state and federal laws and regulations, and (iii) the Subcontractor shall hold the District harmless against all claims of whatever nature arising out of the Subcontractor's performance of work under this Agreement, to the extent allowed and required by law.

2. Compliance with Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity," as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations

During the performance of this contract, the Contractor agrees as follows:

- (1) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
- (2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.
- (3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (4) The Contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (5) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

- (6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (7) The Contractor will include the *portion of the sentence immediately preceding the first paragraph* and the provisions of Paragraphs (1) through (7) in every Subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of Sept. 24, 1965, so that such provisions will be binding upon each Subcontractor or Vendor. The Contractor will take such action with respect to any Subcontract or Purchase Order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, That in the event the Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or Vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States."
- (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States. The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract. The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance. The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of

future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

3. Davis Bacon Act (See Contract Provisions within Original Contract, if applicable); and Copeland Anti-Kickback Act (See Attached Certification, if applicable).

Note: In situations where the Davis-Bacon Act does not apply, neither does the Copeland "Anti-Kickback Act.

4. Contract Work Hours and Safety Standards Act of 1962, 40 U.S.C. 327 et seq.

The Contractor agrees it will require that mechanics and laborers (including watchmen and guards) employed on this federally assisted contract be paid wages of not less than one and one-half times their basic wage rates for all hours worked in excess of forty hours in a work week.

- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$26 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

5. Federal Fair Labor Standards Act, 29 U.S.C. Section 201 et seq.

The Contractor agrees it will require that covered employees be paid at least the minimum prescribed wage, and also that they be paid one and one-half times their basic wage rates for all hours worked in excess of the prescribed work-week.

6. Copeland “Anti-Kickback” Act (U.S.C. Section 51)

The Contractor agrees to comply with the Copeland Anti-Kickback Act of 1968, if applicable, which outlaws and prescribes penalties for “kickbacks” of wages in federally financed or assisted construction activities.

7. Reporting

The Contractor will provide any information requested by the District which is determined to be required to comply with 2 C.F.R. § 200 requirements and regulations pertaining to reporting.

8. Patents and Data

No reports, maps, or other documents produced in whole or in part under this contract shall be the subject of an application for copyright by or on behalf of the Contractor. The grantor agency and the grantee shall possess all rights to invention or discovery, as well as rights in data which may arise as a result of the Contractor’s services.

9. Clean Air Act, Federal Water Pollution Control Act, Executive Order 11738, and US EPA Regulations

Contracts and sub grants of amounts in excess of \$100,000 shall contain a provision that requires the Contractor or recipient to comply with all applicable standards, orders, or requirements issued under Section 112 and 306 of the Clean Air Act (42 U.S.C. § 1857 (h)), Section 508 of the Clean Water Act (33 U.S. 1368), Executive Order 11738, and the U.S. Environmental Protection Agency regulations (40 CFR Part 15 and 61). Violations shall be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

10. Energy Conservation Requirements - 42 USC 6201

Energy Conservation - The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

11. If appropriate to the project, the Contractor will provide assurances regarding the following:

- **Procurement of Recovered Materials.** The requirements of Section 6002 of the Solid Waste Disposal Act, Pub. L. No. 89.272 (1965) (codified as amended by the Resource Conservation and Recovery Act at 42 U.S.C. § 6962. The requirements of 6002 include procuring only items designated in guidelines of EPA 40 C.F.R. Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000.
 - a) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired –
 - i. Competitively within a timeframe providing for compliance with the contract performance schedule;
 - ii. Meeting contract performance requirements; or
 - iii. At a reasonable price.
 - b) Information about this requirement, along with the list of EPA-designate items, is available at EPA’s Comprehensive Procurement Guidelines website, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.

THE FOLLOWING DOCUMENTS NEED TO BE RETURNED TO THE DISTRICT.

1. Acknowledgement of Terms, Conditions, and Grant Clauses
2. Certification Regarding Lobbying

Acknowledgement of Terms, Conditions, and Grant Clauses

Flow Down of Terms and Conditions from the Grant Agreement

Subcontracts: If the Vendor Subcontracts any of the work required under this Agreement, a copy of the signed Subcontract must be available to the Department for review and approval. The Vendor agrees to include in the Subcontract that (i) the Subcontractor is bound by the terms of this Agreement, (ii) the Subcontractor is bound by all applicable state and federal laws and regulations, and (iii) the Subcontractor shall hold the District harmless against all claims of whatever nature arising out of the Subcontractor's performance of work under this Agreement, to the extent allowed and required by law.

Grant Clauses

On behalf of my firm, I acknowledge, and agree to perform all of the specifications and grant requirements identified in this document.

Vendor/Contractor Name _____ Date _____

Authorized Signature _____

Email Address _____

Address/Phone Number

Contract Number _____

CERTIFICATION REGARDING LOBBYING
(Byrd Anti-Lobbying Amendment, awards over \$100,000)

The undersigned _____ (Vendor/ Contractor) certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal Contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal Contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal Contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form--LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96). Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, et seq.)]

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub awards at all tiers (including Subcontracts, sub grants, and Contracts under grants, loans, and cooperative agreements) and that all sub recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor/Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, et seq., apply to this certification and disclosure, if any.

_____ Signature of Vendor/Contractor's Authorized Official

_____ Name and Title of Vendor/Contractor's Authorized Official

_____ Date

EXHIBIT 2
Disadvantaged Business Enterprises
CONTRACT PARTICIPATION FORM

Efforts to Obtain MBE/WBE/LSAF Participation

- A. Please answer the following questions and return this questionnaire with attachments (i.e., ads, meeting attendance list, etc.) to the Purchasing Agent with your offer.

Project Name: _____
Solicitation Number: _____
Contractor: _____

- B. Did your company: YES/NO

1. Attend any pre-proposal meetings that were scheduled by the District? **Yes** No **N/A (provide documentation)**

If YES, please list the meetings (e.g. site-visit, pre-proposal conference, proposal reading) attended below.

- a)
- b)
- c)

2. Did your company utilize the services or assistance, as appropriate, of such organizations as the Small Business Administration, Alaska District Office, the Department of Transportation and Public Facilities (DOT), Civil Rights Office and/or the US Department of Labor?

Yes No **N/A (provide documentation)**

3. Advertise subcontracting opportunities in major circulation newspapers, such as:

- a) Anchorage Daily News?
- b) Pubic Website?
- c) Plans Rooms?
- d) Other types of notices?

Yes No **N/A (provide documentation)**

If YES, please attach copies of any ads or notices.

4. Provide timely written notice to specific MBEs/WBEs/LSAFs that their interest in the contract is being solicited? **Yes** No **N/A (provide documentation)**

If YES, please attach a sample of such notification and list MBEs/WBEs contacted on the Contact Documentation Form (Exhibit 4).

5. Follow-up initial solicitations of interest by personally contacting MBEs/WBEs/LSAFs? **Yes** No **N/A (provide documentation)**

If YES, please list those MBEs/WBEs/LSAFs contacted on the Contact Documentation Form (Exhibit 4).

6. Select the portions of the contract to be performed by MBEs/WBEs/LSAFs in a manner that will increase the likelihood of MBE/WBE/LSAF participation? **Yes** No **N/A (provide documentation)**

If YES, please attach a list of those portions of the contract selected for MBE/WBE/LSAF participation.

7. Provide interested MBEs/WBEs/LSAFs with timely and thorough information about the plans, specifications and technical requirements of the contract? **Yes** No **N/A (provide documentation)**

If YES, please list the MBEs/WBEs/LSAFs provided with such information on the Contact Documentation Form (Exhibit 4).

8. Negotiate in good faith with interested MBEs/WBEs/LSAFs, and not reject MBEs/WBEs/LSAFs as unqualified without sound reasons based on a thorough investigation of their capabilities? **Yes** No **N/A (provide documentation)**

If YES, list MBEs/WBEs/LSAFs with whom good faith negotiations were conducted on the Contact Documentation Form (Exhibit 4).

9. Assist interested MBEs/WBEs/LSAFs in obtaining bonding and/or insurance. **Yes** No **N/A (provide documentation)**

If YES, list MBEs/WBEs/LSAFs assisted on the Contact Documentation Form (Exhibit 4).

10. For each question answered "YES" above that requires a listing of MBEs/WBEs/LSAFs, please provide that listing on this page. Answers need not be limited to a single line. If more space is needed, please attach supplemental sheets. You need only list an MBE/WBE/LSA firm only once. Use the first column to indicate the question(s) referenced above by each firm listed. Any question answered "N/A" above, please provide supporting documentation of good faith efforts taken.

EXHIBIT 3
Disadvantaged Business Enterprises
PRIME CONSULTANT/CONTRACTOR CERTIFICATION

I. PROJECT INFORMATION

Applicant/Entity Name	Total of District Funding
Anchorage School District	\$

Prime Consultant/Contractor: _____
Contract Number: _____ **Contract Amount:** _____

II. AFFIRMATIVE STEPS (Applicant to all subcontracts awarded by the prime consultant/contractor)

I understand that it is my responsibility to comply with all state and federal regulations and guidance in the utilization of Minority, Women-Owned Businesses and Labor Surplus Area Firms in procurement. I certify that I will take affirmative steps to afford opportunities for Minority Business Enterprise (MBE), Women-Owned Business Enterprise (WBE) and Labor Surplus Area Firms (LSAF) by:

1. Including qualified MBEs/WBEs/LSAFs on procurement solicitation lists
 2. Soliciting potential MBE's/WBE's/LSAFs.
 3. Reducing contract size/quantities when economically feasible to permit maximum participation by MBE's/WBE's/LSAFs.
 4. Establishing delivery schedules to encourage participation by MBE's/WBE's/LSAFs.
 5. Using the services and assistance of the Small Business Administration, Minority Business Development Agency, U.S. Department of Commerce (<https://www.sba.gov/>), as appropriate, the Department of Transportation and Public Facilities (DOT), Civil Rights Office (<http://www.dot.state.ak.us/cvlrts/directory.shtml>) and/or the US Department of Labor (<http://www.doleta.gov/lssa>).
 6. Requiring all Prime Consultants/Contractors to follow steps 1-5 listed above in employing MBE/WBE/LSA Subcontractors.
- Exception:** As Prime Consultant/Contractor, I certify that I have reviewed the contract requirements and found no available subcontracting opportunities. I also certify that I will fulfill 100 percent of the contract requirements with my own employees and resources. (Check if applicable).

Signature – Prime Consultant/Contractor	Name & Title (print legibly)	Certification Date

III. DISTRICT APPROVAL SIGNATURE

Signature indicates the form meets DBE Requirements.

District Coordinator	Approval Date

EXHIBIT 4
Disadvantaged Business Enterprises
CONTACT DOCUMENTATION FORM

Project Name: _____ RFQ/ITB/RFP No. _____

Company Name: _____

This form is provided for your convenience to document your efforts to meet the DBE Affirmative Steps on this project. You may use additional sheets, if needed. You may return this form or other supporting documentation, such as explanations, advertising notices, solicitations, telephone logs, etc. with your Contract Participation Form (Exhibit 2).

Firm: _____ MBE / WBE / LSAF

Address: _____ Phone No: _____

Type of Work: _____ Amount: \$ _____

Dates of Contact: _____

Method of Contact: _____

Name of Person Contacted: _____

Results of Contact: _____

If rejected, why: _____

Firm: _____ MBE / WBE / LSAF

Address: _____ Phone No: _____

Type of Work: _____ Amount: \$ _____

Dates of Contact: _____

Method of Contact: _____

Name of Person Contacted: _____

Results of Contact: _____

If rejected, why: _____

Firm: _____ MBE / WBE / LSAF

Address: _____ Phone No: _____

Type of Work: _____ Amount: \$ _____

Dates of Contact: _____

Method of Contact: _____

Name of Person Contacted: _____

Results of Contact: _____

If rejected, why: _____

**Disadvantaged Business Enterprise Program
Program Specifications for District Contracts**

This project is a Federally funded contract and, is subject to any applicable federal and state regulations. Bidders/proposers shall be fully informed regarding the requirements of the regulations, statutes, and code regarding the Disadvantaged Business Enterprise Program (DBE).

A bidder/proposer who is determined not in compliance with the requirements of the applicable regulations and code, or these specifications will not be awarded this contract. Noncompliance after award of the contract constitutes a breach of the contract and may result in termination of the contract or other appropriate remedy for such breach.

Part I. Disadvantaged Business Enterprise Program Goals and Six Affirmative Steps.

All bidders/proposers shall solicit subcontractor or supplier bids/offers prior to bid/proposal opening for this project. The bidder/proposer acknowledges that post-bid/proposal opening of solicitations do not qualify for meeting Fair Share objectives or the Six Affirmative Steps.

- A. All bidders/proposers on this project **shall** carry out the required Six Affirmative Steps, listed as items 1 through 6 below:
1. Include qualified small, minority, women's business enterprises, and labor surplus area firms on solicitation lists.
 2. Assure that small, minority, women's business enterprises, and labor surplus area firms are solicited. If the MBE/WBE is only certified as a Disadvantaged Business Enterprise (DBE), such as through the Small Business Administration (SBA), Alaska District Office; and the Alaska Department of Transportation and Public Facilities (DOT&PF), Civil Rights Office, and the bidder has exhausted all efforts to determine the subcontractor MBE/WBE status, the bidder may document either category of certification to meet the good faith efforts.
 3. Divide total requirements when economically feasible, into small tasks or quantities to permit maximum participation of small, minority, women's business enterprises, and labor surplus area firms.
 4. Establish delivery schedules, where requirements of the work permit, which will encourage participation by small, minority, women's business enterprises, and labor surplus area firms.
 5. Use the services and assistance of the U.S. Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce, as appropriate.
 6. If the prime contractor or proposer awards subcontracts/procurements, require the subcontractor to take the affirmative steps 1 through 5 above.
 7. Exception: As prime consultant/contractor, certify that they have reviewed the contract requirements and found no available subcontracting opportunities; and certify that they will fulfill 100 percent of the contract requirements with their own employees and resources.
- B. The District will presume a lack of six affirmative steps to satisfy MBE, WBE and LSAF requirements if the bidder/proposer rejects any bids/offers from MBEs, WBEs and/or LSAF's, which are as low, or lower, than other competitor's bids/offers. The bidder/proposer that rejects an as-low or lower bid/offer from an MBE, WBE or LSAF may submit proof to rebut this presumption.
- C. If a prime contractor is an MBE, WBE or LSAF, such prime also must carry out the Six Affirmative Steps to award any subcontracts or procurements on this project.

- D. Record keeping requirements. The prime contractor must retain all records documenting their Six Affirmative Step for audit purposes and provide copies of these to the District DBE Officer upon request.

Apparent successful bidders/proposers, who fail to demonstrate completion of the required Six Affirmative Steps, will not be awarded this contract.

Part II: Certified Minority (MBE) and Women's (WBE) Business Enterprises

- A. MBE/WBE, or a joint-venture with a MBE/WBE, must be currently certified prior to opening of bids/proposals in order to be considered a MBE/WBE enterprise.
- B. Businesses must be certified by the Small Business Administration (SBA), Alaska District Office <https://www.sba.gov/offices/district/ak/anchorage>, Department of Transportation and Public Facilities (DOT), Civil Rights Office <http://www.dot.state.ak.us/cvlrts/directory.shtml>, or by state, local, Tribal or private entities whose certification criteria and who present proof of this will be eligible. Proof may be in the form of a letter from the certifying agency or a current listing in a directory maintained by the certifying agency.
- C. Those companies certified as DBEs by one of the agencies listed in Part II.B above:
 - 1. Whose majority ownership and control is vested in one or more minority individuals;
 - 2. Whose majority ownership and control is vested in one or more non-minority women;
 - 3. Whose majority ownership and control is vested in one or more minority individuals, and who are women may be counted toward either the MBE or the WBE, but not to both.

Part III: MBE and WBE Participation

The MBE or WBE must perform work on the project in the category/categories of work for which certification is issued. While the MBE or WBE may perform work in other categories for which certification is not issued, only that work performed in the certified categories.

- A. The MBE or WBE must perform a useful business function according to custom and practice in the industry; i.e., must be responsible for the execution of a distinct element of work and must carry out its responsibilities by actually performing, managing, and supervising the work.
- B. An MBE or WBE that acts merely as a broker or passive conduit of funds, without performing, managing, or supervising the work of its contract or subcontract in a manner consistent with normal business practices.
 - 1. Presumption. If 50% or more of the total dollar amount of MBE or WBE's prime contract is subcontracted to a non-DBE, the MBE or WBE prime contractor will be presumed to be a broker, and no MBE or WBE participation may be reported.
 - 2. Rebuttal. The MBE or WBE prime contractor may rebut this presumption by demonstrating that its actions are consistent with normal practices for prime contractors in its business and that it will actively perform, manage and supervise the work under this contract.
- C. MBE or WBE trucker/hauler expenditures will be credited towards the contract only if the trucker/hauler is performing a commercially useful function. The following factors should be used in determining whether MBE or WBE trucker/hauler is performing a commercially useful function:

1. The MBE or WBE must be responsible for the management and supervision of the entire trucking/hauling operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting MBE or WBE objectives.
 2. The MBE or WBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
- D. For joint ventures, MBE and WBE participation consists of the portion of the dollar amount of the joint venture attributable to the MBE or WBE. However, where the MBE/WBE's risk of loss, control or management responsibilities are not commensurate with the share of profit.

Part IV: Submission of Minority, Women's Business Enterprises and Labor Surplus Area Firms Information

- A. TO BE SUBMITTED AS PART OF BID/PROPOSAL OR WITHIN THREE (3) WORKING DAYS OF NOTICE FROM THE DISTRICT (ASD):
1. The bidder/proposer for this project shall submit their Contact Documentation (Exhibit 4), a completed and signed Prime Consultant/Contractor Certification (Exhibit 3) with their bid/proposal. If the bidder does not intend to utilize MBE, WBE or LSAF subcontractors, their Prime Consultant/Contractor Certification form must still be signed by bidder and, indicate "NONE TO BE USED". The bidder/proposal shall then be required to show that the mandatory Six Affirmative Steps were taken as set forth in these specifications, which are also included in the Contract Participation Form (Exhibit 2).
 2. Bids/offers submitted without a completed and signed Contract Participation Form, completed and signed Prime Consultant/Contractor Certification Form, and sufficient Contact Documentation will be considered non-responsive, if not submitted with bid/offer or upon three (3) working days upon request, if not submitted with their bid/proposal.
 3. A contract may not be awarded to a bidder/proposer who fails to submit the required supporting documents within the time specified. There shall be no substitutions, deletions, additions, or modifications to this listing subsequent to its submittal to Purchasing.

Part V: MBE/WBE/LSAF Utilization Removal/Substitution

If a successful bidder/proposer for a contract which contains MBE, WBE and/or LSA Firm participation requirements, at any time after award of contract, proposes to remove or make substitutions for MBE, WBE or LSA Firm subcontractors or joint-venture partners under the contract, a written notice of such removal or substitution shall be submitted to the District DBE Officer prior to commencement of performance of the affected work, with the names, addresses and phone numbers of the subcontractors or joint venture partners to be removed or substituted for and an explanation of the reasons for the removal and substitution. The successful bidder shall make good faith efforts as defined in Part I.B to utilize another MBE, WBE or LSA Firm subcontractor as the replacement. These efforts shall be documented and, the circumstances fully explained in writing, and approval obtained from the District DBE Officer prior to such replacement. The District DBE Officer shall, within seven (7) days of receipt of such notice, approve said notice or removal and substitution where it is shown that the requested action is for good cause and not for discriminatory purposes.

Part VI: Other Provisions

The District DBE Officer or his or her designee may visit the job site during regular working hours and interview subcontractors and employees for verification of compliance with these specifications and/or the regulations.

Part VII: Definitions

- A. Minority Business Enterprise (MBE) or Women Owned Business Enterprise (WBE) - means a business concern which is owned and controlled by one or more minorities or women. Owned and controlled means a business:
 - 4. Which is at least 51 percent owned by one or more minorities or women, or in the case of a publicly owned business, at least 51% of the stock is owned by one or more minorities or women;
 - 5. Whose management and daily business operations are controlled by one or more such individuals.
- B. Minority Individual - means an individual who is a citizen or lawful permanent resident of the United States and who is:
 - 1. Black (a person having origins in any of the black racial groups in Africa);
 - 2. Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);
 - 3. Portuguese (a person of Portugal, Brazilian, or other Portuguese culture or origin, regardless of race);
 - 4. Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands);
 - 5. American Indian and Alaskan Native (a person having origins in any of the original peoples of North America or original peoples of Alaska), and
 - 6. Members of other groups, or other individuals, found to be economically and socially disadvantaged by the United States Small Business Administration under section 8(1) of the federal Small Business Act.
- C. Labor Surplus Area (LSA) – is defined as a civil jurisdiction (a city of more than 25,000 or a county, borough, or census area) that has a civilian average annual unemployment rate during the previous two (2) calendar years of 20 percent or more above the average annual civilian unemployment rate for all states during the same 24-month reference period. If the national annual average unemployment rate during the referenced period is less than 6.0 percent, then the qualifying rate is 6.0 percent. If the national annual average unemployment rate during the referenced period is above 10 percent, then the qualifying rate is 10 percent. Please reference the US Department of Labor, Employment and Training Administration at <http://www.doleta.gov/lsa>. The list becomes effective each October 1 and remains in effect through the following September 30.
- D. Certification – a copy of a current MBE/WBE certification from any agency to be used for the District's monitoring of MBE/WBE participation in its program.
- E. Joint Venture – a commercial enterprise undertaken by more than one business enterprise jointly, limited in its scope and duration to one project, for the purpose of each enterprises profiting thereby.

- F. Fair Share - is a reasonable amount of funds commensurate with the total project funding, demographic factors and the availability of minority and women's businesses. A fair share does not constitute an absolute requirement, but a commitment on the part of the bidder/proposer to attempt to use minority and women's businesses by carrying out the "Good Faith Efforts".

For more information about these specifications, please contact the District DBE Officer at the Anchorage School District, Purchasing Warehouse, 4919 Van Buren Street, Anchorage, AK 99517; telephone (907) 742-8630.

Part VIII – Equal Opportunity, Minority, Women-Owned Business Enterprise and Labor Surplus Area Firm (MBE/WBE/LSAF) Participation

A. Equal Opportunity

No person or firm shall be discriminated against because of race, color, national origin, or sex in the award of District contracts. Further, the Contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract.

B. MBE/WBE Participation

While there are no MBE/WBE/LSAF goals associated with this solicitation, the District is committed to achieving participation in its contracting programs by business enterprises that are owned and operated by minorities, women and labor surplus area firms (MBEs, WBEs and LSAF) regardless of the size of the enterprise. All bidders/offerors are strongly encouraged to take active steps to maximize the participation of MBEs, WBEs and LSAF in this contract.

C. Technical Assistance

The District will provide assistance to promote the participation of MBEs, WBEs and LSAF in this contract, including the identification of MBEs, WBEs and LSAF. To obtain assistance, interested parties are encouraged to contact the District's Purchasing Office at (907) 742-8621.