# **RECOMMENDED STRUCTURAL REFERENCES**

## Resource for Commercial-type Design and Construction (e.g., Tailored Standards Manual)

This nonmandatory document provides a list of references that offer guidelines, best practices, design examples, and recommendations to support compliance with the 2021 IBC and its referenced standards.

While the information in these documents is believed to be accurate, neither LANL nor the individuals who contributed make any warranty, express or implied, nor assume any legal liability or responsibility for the use, application, or reference to the opinions, findings, conclusions, or recommendations contained in these publications.

The material presented in these publications should not be used for any specific application without a competent review and verification of its accuracy, suitability, and applicability. Users assume all liability arising from its use; therefore, its use is only suggested.

## **Concrete Design and Detailing**

- ACI (2020). MNL-3(20) Guide to the Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures. The American Concrete Institute.
- ACI (2021). MNL-17(21) ACI Reinforced Concrete Design Handbook: A Companion to ACI 318-19. The American Concrete Institute.
- ACI (2020). MNL-66(20) ACI Detailing Manual. The American Concrete Institute.
- Moehle, J. P., Hooper, J. D., Meyer, T. R. (2016). NIST GCR 16-917-42: Seismic Design of Castin-Place Concrete Diaphragms, Chords, and Collectors A Guide for Practicing Engineers (Second Edition). <u>https://nvlpubs.nist.gov/nistpubs/gcr/2016/NIST.GCR.16-917-42.pdf</u>

## Anchorage and Baseplate Design

- ASCE (2022). Anchorage Design for Petrochemical and Other Industrial Facilities. Reston, VA: American Society of Civil Engineers, Task Committee on Anchorage Design.
- Kanvinde, A., Maamouri, M., Buckholt, J. (2024). *Design Guide 1: Base Connection Design for Steel Structures*. American Institute of Steel Construction.

## Design of Restraints and Anchorage for Nonstructural Components

- EPRI (2007). Experience-Based Seismic Equipment Qualification (1016125). Electric Power Research Institute. Palo Alto, California. <u>https://www.epri.com/research/products/0000000001016125</u>
- FEMA (2012). FEMA E-74, *Reducing the Risks of Nonstructural Earthquake Damage A Practical Guide*. The Federal Emergency Management Agency. <u>https://femae74.atcouncil.org/</u>
- HCAI (2023). OSHPD Preapproval of Manufacturer's Certification (OPM). Department of Health Care Access and Information. <u>https://hcai.ca.gov/facilities/building-safety/preapproval-programs/opm/</u>
- HCAI (2023). OSHPD Preapproved Details (OPD). Department of Health Care Access and Information. <u>https://hcai.ca.gov/facilities/building-safety/preapproval-programs/opd/</u>

- HCAI (2025). OSHPD Special Seismic Certification Preapproval (OSP) by Category. Department of Health Care Access and Information. <u>https://hcai.ca.gov/facilities/building-safety/preapproval-programs/osp-by-category/</u>.
- SEAONC (2024). SEAONC Practical Guide to Seismic Bracing and Restraint of Nonstructural Components. Structural Engineers Association of Northern California.

### **Steel Design**

- AISC (2017). Steel Construction Manual (15th Edition). American Institute of Steel Construction.
- AISC (2018). Seismic Design Manual (3<sup>rd</sup> Edition). American Institute of Steel Construction.
- AISC (2019). Companion to the AISC Steel Construction Manual. Volume 1: Design Examples Version 15.1. American Institute of Steel Construction.
- Fisher, J. M. (2019). *Design Guide 7: Industrial Building Design* (Third Edition). American Institute of Steel Construction.
- Friedman, A. D. (2018). *Design Guide 34: Steel-Framed Stairway Design*. American Institute of Steel Construction.
- Hewitt, C. M. (2025). *Design Guide 16: Assessment and Repair of Structural Steel in Existing Buildings*. American Institute of Steel Construction.
- Murray, T. M., Allen, D. E., Ungar, E. E., and Davis, D. B. (2016). *Design Guide 11: Vibrations of Steel-Framed Structural Systems Due to Human Activity* (Second Edition). American Institute of Steel Construction.
- West, M., Fisher, J., and Griffis, L. (2004). *Design Guide 3: Serviceability Design Considerations for Steel Buildings* (Second Edition). American Institute of Steel Construction.
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- Sabelli, R., Sabol, T. A., Easterling, W. S. (2011). NIST GCR 11-917-10: Seismic Design of Composite Steel Deck and Concrete-filled Diaphragms: A Guide for Practicing Engineers. <u>https://www.nehrp.gov/pdf/nistgcr11-917-10.pdf</u>

#### Masonry Design

- CMACN (2021). Typical Masonry Details AutoCAD/PDF. Concrete Masonry Association of California and Nevada. <u>https://cmacn.org/product/typical-masonry-details-autocad-pdf/</u>
- CMHA (2003). CMU-MAN-001-03. Annotated Design and Construction Details for Concrete Masonry. The Concrete Masonry & Hardscapes Association. https://www.masonryandhardscapes.org/resource/cmu-man-001/
- Hochwalt, J. M., Amrhein, J. E. (2022). *Reinforced Masonry Engineering Handbook: Clay and Concrete Masonry*.

 Kingsley, G. R., Shing, P. B., Gangel, T. (2014). NIST GCR 14-917-31: Seismic Design of Special Reinforced Masonry Shear Walls: A Guide for Practicing Engineers. <a href="http://www.nist.gov/customcf/get\_pdf.cfm?pub\_id=917414">http://www.nist.gov/customcf/get\_pdf.cfm?pub\_id=917414</a>

## Seismic Design

- ASCE (2020). Seismic evaluation and design of petrochemical and other industrial facilities, Third Edition. American Society of Civil Engineers. Task Committee on Seismic Evaluation and Design of Petrochemical Facilities. <u>https://doi.org/10.1061/9780784415481</u>
- FEMA (2016). *FEMA P-1051 Recommended Seismic Provisions: Design Examples*. Federal Emergency Management Agency. <u>https://www.fema.gov/media-collection/nehrp-recommended-seismic-provisions-new-buildings-and-other-structures-2015</u>
- SEAOC (2023). 2021 IBC SEAOC Structural/Seismic Design Manual, Volume 1: Code Application Examples. Structural Engineers Association of California, Sacramento, CA.
- SEAOC (2023). 2021 IBC SEAOC Structural/Seismic Design Manual, Volume 2: Examples for Light-Frame, Tilt-Up and Masonry Buildings. Structural Engineers Association of California, Sacramento, CA.
- SEAOC (2023). 2021 IBC SEAOC Structural/Seismic Design Manual, Volume 3: Example for Concrete Buildings. Structural Engineers Association of California, Sacramento, CA.
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- SEAOC Seismology Committee (2019). *The SEAOC Blue Book: Seismic Design Recommendations*. Structural Engineers Association of California, Sacramento, CA.

## **Cold-formed Steel Design**

- AISI (2017). D310-17 Design Examples Based on AISI S310-16. American Iron and Steel Institute.
- Robert L. Madsen Thomas A. Castle Benjamin W. Schafer (2016). NIST GCR 16-917-38: Seismic Design of Cold-Formed Steel Lateral Load-Resisting Systems: A Guide for Practicing Engineers. <u>https://nvlpubs.nist.gov/nistpubs/gcr/2016/NIST.GCR.16-917-38.pdf</u>
- SDI (2015). Diaphragm Design Manual (Fourth Edition No. DDM4). Steel Deck Institute.
- SDI (2020). Floor Deck Design Manual (Second Edition). Steel Deck Institute.
- SSMA (2021). Cold-Formed Steel Details. Steel Stud Manufacturers Association. <u>https://ssma.</u> <u>com/wp-content/uploads/2021/07/ssmacad-3.zip</u>

## Geotechnical Engineering and Design

 CMHA (2010). SRW-MAN-001-10: Design Manual for Segmental Retaining Walls (3rd Edition). Concrete Masonry & Hardscapes Association (CMHA). <u>https://www.masonryandhardscapes.org/</u>resource/srw-man-001/

- FHWA (2003). FHWA-ED-88-053: Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Plans and Specifications. Federal Highway Administration (FHWA). <u>https://www.fhwa.dot.gov/engineering/geotech/pubs/reviewguide/checklist.pdf</u>
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# **Quality of Structural Construction Documents**

- ACI Committee E703 (2018). ACI MNL-5 The Contractor's Guide to Quality Concrete Construction 4th Edition. The American Concrete Institute.
- CASE National Guidelines Committee (2018). CASE-962-D A Guideline Addressing Coordination and Completeness of Structural Construction Documents. Council of American Structural Engineers (CASE).
- Hyde, S. (2021). Special Inspection Manual. International Code Council (ICC).
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