

COMPARISON BETWEEN 318-11 AND 318-14

The chart contrasts the difference in organizational structure between 318-11 and 318-14. The chart provides the steps taken in a typical building design.

- Steps 1 through 4 describe the overall structural analysis.
- Steps 5 through 9 describe the design of an individual member; in this case, a one-way slab.
- Step 10 identifies items that need to be included in the contract documents.

Design Step	Description	318-11 (##-Chapter Title)	318-14 (##-Chapter Title)
OVERALL STRUCTURAL ANALYSIS			
1.	Determine structure system	21—Earthquake-Resistant Structures	4—Structural Systems 20—Earthquake-Resistant Structures
2.	Select material properties for analysis and design	3—Materials 4—Durability 8—Analysis and Design – General Requirements 21—Earthquake-Resistant Structures	5—Material Properties for Design and Durability – Concrete 6—Material Properties for Design and Durability - Steel
3.	Determine loads for analysis	9—Strength and Serviceability Requirements 21—Earthquake-Resistant Structures	7—Loads
4.	Perform analysis	8-Analysis and Design – General Requirements 9-Strength and Serviceability Requirements 10-Flexural and Axial Loads	8-Structural Analysis
EXAMPLE MEMBER DESIGN: ONE-WAY SLABS			
5.	Identify design limits: <ul style="list-style-type: none"> • Size • Serviceability • Strain • Stress 	8—Analysis and Design – General Requirements 9—Strength and Serviceability Requirements 9—Strength and Serviceability Requirements 17—Composite Concrete Flexural Members 10—Flexural and Axial Loads 18—Prestressed Concrete	11.3—Design Limits
6.	Calculate required strength, M_u and V_u	8—Analysis and Design – General Requirements 11—Shear and Torsion	11.4—Required Strength

7.	Calculate design strength, ϕM_n and ϕV_n	9—Strength and Serviceability Requirements 10—Flexural and Axial Loads 11—Shear and Torsion 17—Composite Concrete Flexural Members 18—Prestressed Concrete	11.5—Design strength (with reference to 9.3 and 9.5 in toolbox chapter, 9—Sectional Strength)
8.	Check minimum design strength	7—Details of reinforcement 10—Flexural and Axial Loads 11—Shear and Torsion 18—Prestressed Concrete	11.6—Reinforcement Limits (with reference to 10.4 in toolbox chapter, 10—Serviceability)
9.	Detail reinforcement	2—Notation and Definitions 3—Materials 7—Details of reinforcement 10—Flexural and Axial Loads 11—Shear and Torsion 12—Development and Splices of Reinforcement 16—Precast Concrete 18—Prestressed Concrete	11.7-Reinforcement detailing (with reference to toolbox chapter, 21-Reinforcement Details)

PROJECT SPECIFICATION

10.	Create contract documents	1—General Requirements 3—Materials 4—Durability 5—Concrete Quality, Mixing, and Placing 6—Formwork, Embedments, and Construction Joints 7—Details of Reinforcement 8—Analysis and Design – General Requirements 10—Flexural and Axial Loads 12—Development and Splices of Reinforcement 16—Precast Concrete 17—Composite Concrete Flexural Members 18—Prestressed Concrete	22—Concrete Materials and Quality Assurance 23—Formwork and Construction
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