

Civil Engineering Writing Project - Grammar & Mechanics Lesson 3

COMMAS

1. Objectives and Terminology

By the end of this unit, you should be able to

- use commas accurately in the contexts that are most common in civil engineering writing.
- correct the most common comma-related mistakes made by civil engineering students.



There are many rules for comma use in English, and many of the rules have exceptions. This unit covers only the 8 most common uses in civil engineering writing. For a complete list of comma rules, consult a comprehensive handbook or website. A list of resources is provided at the end of this unit.

This unit uses the following terms. If you cannot understand them, review Grammar and Mechanics Lesson 1.

independent clause	subject	compound sentence
dependent clause	verb	

2. Why do commas matter for engineering writing?

Accurate comma use facilitates clear, accurate meaning and easy reading. Both of these are important in civil engineering writing.


3. The eight most common uses of commas in civil engineering

1. Use a comma before the conjunction (connecting word) in compound sentences.

Example commas before conjunctions	Explanation
<p>Compound sentence - Comma necessary:</p> <p>independent clause #1 ↓</p> <p>It would be difficult to maintain two lanes of traffic without constructing a temporary river crossing, but one-way controlled traffic could be moved through the site using temporary signals.</p> <p>↑ independent clause #2</p>	<p>There are two independent clauses joined by a conjunction (<i>but</i>), so a comma is necessary before the conjunction.</p> <p><u>Reminders:</u> An independent clause has a subject and a verb phrase, AND it can stand alone as a complete sentence.</p> <p>There are two options for punctuation in a compound sentence:</p> <ul style="list-style-type: none">• a comma and conjunction (usually <i>and</i>, <i>or</i>, or <i>but</i>)• a semicolon (see Grammar and Mechanics Lesson 6)

<p><u>Compound verb phrase – NO Comma:</u></p> <p>Highway Capacity Software (HCS) was created by the McTrans Center in Florida and is an implementation of the Highway Capacity Manual 5.</p>	<p>This sentence contains a single independent clause with one subject (<i>Highway Capacity Software</i>) and two verb phrases (<i>was created + is...</i>).</p> <p>Because the conjunction is connecting two verbs phrases rather than two independent clauses, there is no comma.</p>
<p><u>Compound subject - NO comma:</u></p> <p>The steel floorbeams and stringers have evidence of minor section losses from corrosion.</p>	<p>This sentence contains only one independent clause with a compound subject (<i>floorbeams + stringers</i>) and a single verb phrase (<i>have</i>). There is no need for a comma here either.</p>

There are three exceptions to this rule:

Exception examples	Explanation
<p><u>Exception 1: Compound verbs within compound verb phrases</u></p> <p>We have developed relationships with many specialty firms, and select and assign subs based on their specific strengths and how they relate to each project.</p>	<p>You might need a comma to help readers follow complicated compound verbs, as in this example.</p> <p> But watch out! If you have trouble with the commas because the sentence is too complicated, it's better to revise it.</p> <p>The following revision adds "we" to the second verb phrase (creating a compound sentence) and makes it easier for readers to follow:</p> <p>We have developed relationships with many specialty firms, and we select and assign subs based on their specific strengths and how they relate to each project.</p>
<p><u>Exception 2: Compound verbs that express contrast</u></p> <p>The height of the wall varies along the project site, but is generally about 20 feet above the base of the rail grade.</p>	<p>Many writers use a comma before the connector of a compound verb if it shows contrast (e.g. <i>but</i>). This violates strict punctuation rules but is common practice.</p>
<p><u>Exception 3: Very short compound sentences</u></p> <p>The posted speed is 25 mph and there is no indication of accident damage.</p>	<p>The comma is optional in very short compound sentences like this one.</p>

2. Use a comma after introductory phrases and clauses.

Example commas after introductory phrases	Explanation
<p>1. At the request of ODOT District 12, all of the existing poles and bases impacted by the project will be replaced.</p> <p>2. Based on the City of Hillsdale Parking Requirements, a total of 112 parking spaces are required.</p> <p>3. Because loop detectors cannot be installed on the bridge deck, video detection will be required for westbound traffic at the I-5 southbound ramp intersection and eastbound traffic at the I-5 northbound ramp intersection.</p> <p><u>Note</u>: If the phrases and clauses come after the independent clause, they do not require commas: Video detection will be required because loop detectors cannot be installed on the bridge deck.</p>	<p>These sentences each begin with a different kind of grammar structure before the independent clause, but they all require a comma after the introductory material.</p>

There are two exceptions to this rule:

Exception examples	Explanation
<p><u>Exception 1: Short introductory prepositional phrases – no commas</u></p> <p>In numerous locations the rust has created large holes.</p>	<p>If a sentence begins with a short prepositional phrase and the meaning is clear without a comma, you do not need to add a comma. This is rare in most civil engineering writing but occasionally occurs with physical locations.</p>
<p><u>Exception 2: Contrasting ideas in dependent clauses after independent clauses – commas often used:</u></p> <p>Traffic could be maintained on Colorado Boulevard, though there would be periods of time when traffic would be on an unpaved surface.</p> <p style="text-align: center;">comma often used, not strictly needed</p>	<p>Many writers use a comma when the dependent clause expresses a contrasting idea (<i>though...</i>). This violates strict punctuation rules but is common practice.</p> <p>Remember, most dependent clauses after independent clauses will <u>not</u> take a comma: Differential settlement between adjacent footings should be ½ inch or less if the footings are designed and built as specified herein.</p> <p style="text-align: right;">NO comma needed</p>

Omitted commas can slow readers! Compare these examples to see how commas reduce potential confusion.

Ineffective example without comma	Corrected example with comma
<p>1. To reduce short- and long-term effects on aquatic species mitigation measures will likely be necessary.</p> <p>2. To help protect against bank erosion and abutment scour place a 0.60 meter thick blanket of class 100 metric riprap on the abutment slopes to an elevation of 802.90m.</p>	<p>1. To reduce short- and long-term effects on aquatic species, mitigation measures will likely be necessary.</p> <p>2. To help protect against bank erosion and abutment scour, place a 0.60 meter thick blanket of class 100 metric riprap on the abutment slopes to an elevation of 802.90m.</p>

3. Use commas to set off non-essential information inserted into a sentence.

Example commas setting off non-essential information	Explanation
<p>1. Sight distance, though improved, would remain 23% short of the mandatory minimum for 40 miles-per-hour.</p> <p>2. Public Involvement (PI) is a critical component of any project, especially urban projects that can be disruptive to businesses and the traveling public.</p>	<p>1. We could remove <i>though improved</i> and still have the complete idea. It is an extra detail that is not essential.</p> <p>2. The final phrase (<i>especially urban projects...</i>) is an extra piece of information; it intensifies and specifies the main idea but is not essential.</p>

Judging essential and non-essential information is especially important for clauses beginning with *which* and *that* (relative clauses):

Ineffective example	Correction
<p>The Lazy Creek Bridge is located on the South Wilson Highway (OR-321) at MP 30.68 at the Wilson-Jefferson County Line (Figure 1). The bridge that was built in 1937 lies partially in the Truman National Forest.</p>	<p>The Lazy Creek Bridge is located on the South Wilson Highway (OR-321) at MP 30.68 at the Wilson-Jefferson County Line (Figure 1). The bridge, which was built in 1937, lies partially in the Truman National Forest.</p>
<p>Explanation:</p> <ul style="list-style-type: none"> The ineffective example makes it sound like there is more than one bridge (i.e., the bridge that was built in 1937 as opposed to the bridge that was built in some other year). The revision adds commas to show that the information is non-essential, and it changes <i>that</i> to <i>which</i>. 	

Practice Principles 1-3: Add the needed commas to these sentences.

- a. If the roundabout were modified by adding a right-turn bypass lane Alternative 3 would also provide acceptable conditions.
- b. Native slopes in the property area measure about 3H:1V (18°) but flatter and steeper areas are present at the property.
- c. Pile 2 contains a 53% loss of core section from rot and piles 1 and 3 which were not drilled sounded very hollow at specific heights.

4. Use commas to set off transition words.

Example commas after transition words	Explanation
<p>1. The risk of liquefaction, settlement, and lateral spreading is low due to the presence of relatively dry sandy soil above the ground water table and shallow bedrock. Therefore, liquefaction was not considered during our analysis.</p> <p>2. At this time, there are no planned improvements at any of the study intersections. However, the City of Hillsdale is considering improvements to Coho Street to alleviate congestion.</p> <p>3. Minimum parking requirements, however, had unintended consequences for traffic.</p>	<p>Transitions words like <i>therefore</i> and <i>however</i> tell the reader the connection between two sentences. These transition words need a comma after them if they come first in a sentence (1 and 2). They need a comma on each side if they are placed after the subject of the sentence (3).</p> <p><u>Reminder:</u> There are two correct ways to punctuate when a transition word begins a sentence: ...study intersections. However, the City... ...study intersections; however, the City...</p> <p>Incorrect comma: ...study intersections, however, the City... (See Grammar & Mechanics Lesson 6.)</p>

5. Use commas in a series of more than 2 items.

Example commas in series	Explanation
<p>1. The parkway will be four lanes wide with a center median strip, landscaping, bike lanes, and illumination.</p> <p>2. The following data were needed for the model application: geometric data, initial conditions, boundary conditions, hydraulic parameters, kinetic parameters, and calibration data.</p>	<p>1. The commas separate the items in the list.</p> <p><u>The Oxford comma:</u> Some writers omit the last comma before the conjunction (called an "Oxford comma"), but many style guides include this comma to help avoid ambiguity. Check your firm's style guide, and, most importantly, be consistent!</p> <p>2. Commas also separate items in a list after a colon.</p>

<p>3. This subduction zone is capable of generating earthquakes within the descending Juan de Fuca plate (intraplate), along the inclined interface between the two plates (interface), or within the overriding North American Plate (crustal).</p>	<p>3. This is a more complicated list of prepositional phrases (<i>within...</i>, <i>along...</i>), but it still requires commas between each prepositional phrase in the list.</p>
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Watch out! When items in a list have other punctuation within them, use semi-colons between the list items to avoid confusion. For more details, see Grammar and Mechanics Lesson 6.

Example of semi-colons for list items	Explanation
<p>This project will require compliance with environmental regulations in the state and federal Endangered Species Acts (ESA); the Clean Water Act, Sections 202 and 306; the Oregon Removal Fill Law; the Migratory Bird Treaty Act; and the Fish and Wildlife Coordination Act.</p>	<p>This comma is <u>within</u> one of the list items, so semi-colons are used <u>between</u> the items.</p>

6. Use commas with modifiers before a noun if the modifiers could be used in a different order or could have *and* between them.

Example commas with modifiers	Explanation
<p><u>Comma required:</u></p> <ol style="list-style-type: none"> Alternative 2, spread footing founded on native material, is not feasible due to the soft, compressible soils at varying depths. Shallow, continuous footings will be prone to greater settlement compared to deep foundations. 	<p>In these sentences, the modifiers could have <i>and</i> between them or be used in a different order.</p> <ol style="list-style-type: none"> The soft, compressive soils = <i>the soft and compressible soils</i> <i>the compressible, soft soils</i> Shallow, continuous footings = <i>shallow and continuous footings</i> <i>continuous, shallow footings</i>
<p><u>Comma NOT needed:</u></p> <ol style="list-style-type: none"> This bridge is a reinforced concrete structure with five spans consisting of two approach spans of 11.65 meters, two spans of 24.57 meters and a main span of 30.41 meters. Existing fill materials and alluvial soils may be prone to collapse, especially where shallow groundwater conditions exist. 	<p>The modifiers cannot be re-ordered or have <i>and</i> between them without changing the meaning.</p> <ol style="list-style-type: none"> A reinforced concrete structure ≠ <i>a reinforced and concrete structure</i> <i>a concrete reinforced structure</i> "Reinforced concrete" is a single unit. Existing fill materials ≠ <i>existing and fill materials</i> <i>fill, existing materials</i>

	<p><i>Shallow groundwater conditions</i> ≠ groundwater shallow conditions shallow and groundwater conditions You might also recognized that "fill materials" make a single unit that is modified by "existing," and "groundwater conditions" make a single unit modified by "shallow."</p>
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7. Use commas between the day of the week and the month, and between the date and year.

Example commas in dates	Explanation
On Wednesday, October 26, 2016 , we discussed comma use.	Besides the commas after the day and the date, there is a comma after the year because it is the end of an introductory phrase.

8. Use commas after openings and closings in e-mails and informal letters.

Example commas in openings and closings	Explanation
<p><u>Openings</u> Susan, Hi Susan, Dear Susan,</p> <p><u>Closing</u> Thanks, Best, Sincerely,</p>	<p>In formal letters, use a colon rather than a comma after the <u>opening</u>. Dear Dr. Conrad: Dear Susan: To Whom It May Concern:</p>

Practice Principles 4-8: Add the needed commas to the following sentences.

- a. Existing structures include a 40-foot diameter morning glory intake a 10-foot rectangular spillway a fish ladder and a 30-inch conveyance pipe that passes through the dam.
- b. [Opening of an e-mail]
Hi Sophia
Michael just sent me a question about the models. [e-mail continues]
- c. Groundwater observation wells are generally used if precise groundwater table information is needed. However the installation of wells was not deemed critical for the design of this project.
- d. On January 8 2015 our team met with the president and founder of the Blue Organization.

- e. Our explorations indicate that native soils in the project area consist of a relatively thin layer of loose dry silty sand overlying weathered basalt rock. [Note: "silty sand" is a term for classifying soil types. It is a single term.]

For more details on comma usage, check these resources:

1. <https://www.uvu.edu/writingcenter/docs/handouts/commarules.pdf> - A short reference that's good for the basics but doesn't cover complicated situations
2. <http://writingcenter.unc.edu/handouts/commas> - A more complete reference that is helpful. Note, however that the "describers" section doesn't go into the complicated kind of language that appears in civil engineering.
3. <http://www.thepunctuationguide.com/comma.html> - A succinct reference guide that covers a wide range of uses for each punctuation mark
4. <http://www.grammarbook.com/punctuation/commas.asp> - Another resource for comma rules that may be useful. This site also includes free quizzes to practice and test your knowledge.

4. More Practice

Instructions: Edit the following sentences for comma errors. Some commas are missing. Other commas need to be deleted or replaced with other punctuation.

1. The rail industry does not have a standard to rate the condition of bridges or determine a state of maintenance, however there is a standard in place for highway bridges.
2. Since one or more of the lines of the subject parcels do not appear on a tract map, official map, or previous record of survey we must file a Record of Survey with the county in order to establish any point or line in the boundary lines as required by state law.
3. A high score on the Pugh Matrix will be given to the design that incorporates timber as the main structural component and a low score will be given to a design that incorporates mainly steel or concrete.
4. Grassed swales slow the stormwater flow velocity which encourages the settlement of particulate matter.
5. As shown in Figure 1 the facility consists of two, large above-ground storage tanks, and three associated structures.
6. The existing two-lane 60-foot three-span timber structure was built in the late 1950s.
7. Pipe piles, if selected should be equipped with inside-fitting cutting shoes to reduce the risk of tip damage and facilitate penetration into the gravel. Similarly H-pile sections, if selected should be fitted with driving tips.
8. This project was conducted by modeling a tieback retaining wall, and analyzing the data collected.
9. Dear Mr. Amari;
Please find attached to this cover letter the required 3 sets of the temporary shoring design...

10. OrganizationName1's highest priority is owner and user satisfaction, we therefore implement a measurement and verification plan to ensure systems are functioning at a satisfactory level.
11. The advantages to this alternative are, reduced construction cost, avoidance of impacts to the existing combined sewer inlets and reduction of impacts to the approach roadway.
12. On April 16 2014 Good Business, Inc. conducted a DPE pilot test on five DPE test wells.

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