

# **Principles of Writing Construction Specifications and Special Provisions**

**Scott Trammell, P.E.**

**Construction Specifications Engineer**

**and**

**Melissa Russell, Estimator**

***March 06, 2018***

# Standard Specifications

- 1. Do good work.**
- 2. Use good stuff.**

# *Where do we start?*

SO.....

The first thing to do is.....

Ask.....



# Questions to ask concerning Unique Special Provisions

1. Is it covered in the Standard Specifications?  
If so, do you still need the USP?
2. Does it conflict with the current Standard Specifications?  
The USP should *complement*, not conflict, with the Standard Specs.
3. Do we have an existing special provision, recurring or unique, that addresses the same matter? Can you use that instead?
4. Does it define a unique pay item? (*more on this in a few minutes*)  
If so, make sure the 5 basics (the **Big 5**) are covered.
  - **Description**
  - **Materials**
  - **Construction Requirements**
  - **Method of Measurement**
  - **Basis of Payment**

The *Big 5* follows the AASHTO Specification Format.

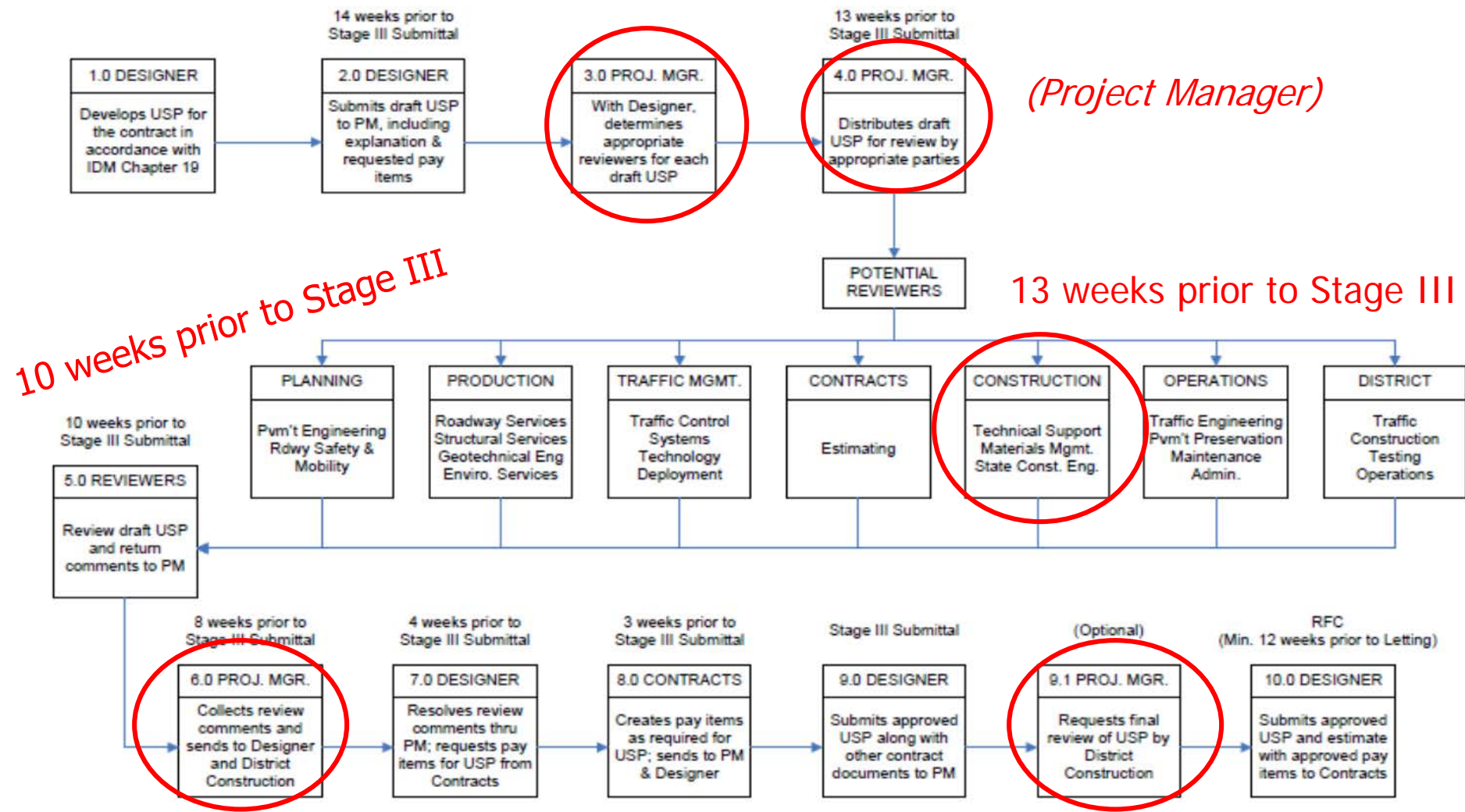


# Questions to ask concerning Unique Special Provisions

5. Does it specify a proprietary item or process?  
If so, is it necessary?  
If so, make sure a **Justification For Use Of Proprietary Material** form has been completed and approved. (see IDM Chapter 17)
  
6. Do we have access to cited standards? (ASTM, AASHTO, LPA standards)  
If not, can the cited standard be revised to one we do have access to?  
If not, the standard must be included in the unique.
  
7. Does it involve Department testing?  
If so, have you checked with our folks at Materials and Testing?  
(they may have something to say about it)  
If not the Department, who does the testing?
  
8. Has it been reviewed by:



# Unique Special Provisions Review Process



UNIQUE SPECIAL PROVISION PROCESS

Figure 19-3D

# The types of Unique Special Provisions

## Restrictive Type USP

### STOCKPILED BORROW MATERIAL FOR PROJECT

The Department has stockpiled sufficient borrow material for use in the project in the southwest quadrant of the I-465 interchange with I-70 on the eastside of Indianapolis.

All borrow required for the project shall be taken from this stockpile.

- 
1. Provision title is centered and is Courier New font, 10-pt. pitch, all capitals.
  2. There are no referenced *Standard Specifications* sections and line numbers.
  3. Specification text is Courier New font, 10-pt. pitch.
  5. There are no deletions or insertions.

### EXAMPLE OF A RESTRICTIVE TYPE UNIQUE SPECIAL PROVISION

Figure 19-3A





# The types of Unique Special Provisions

## Directly Revises Standard Specs

### PERMANENT BUZZ STRIPS

The Standard Specifications are revised as follows:

SECTION 801, BEGIN LINE 636, DELETE AND INSERT AS FOLLOWS:

#### 4. ~~Temporary~~ *Permanent* Buzz Strips

~~Temporary~~*Permanent* buzz strips shall be a set of transverse markings constructed of ~~removable~~ or durable marking material. Durable marking material shall be used in accordance with 808.07(b).

SECTION 801, BEGIN LINE 1034, DELETE AND INSERT AS FOLLOWS:

~~Temporary~~*Permanent* Buzz Strips..... LFT

- 
1. Title is centered – Courier New, 10 pt.
  2. Referenced Spec section and line numbers – Courier New, 10 pt.
  3. Spec text is Times New Roman, 12 pt
  4. See Chapter 19 – Figure 19-3B





# Defines a unique pay item – needs the “Big 5”

## HAND DIG GUARDRAIL POST HOLE

### Description

This work shall consist of hand digging guardrail post holes in accordance with 105.03. An undistributed quantity has been included in the contract for this work.

### Materials

Materials shall be in accordance with 601.02.

### Construction Requirements

When the posts are located within the Tolerance Zone of a utility in accordance with IC-8-1-26-2, 12 in. diameter holes shall be bored in accordance with 601.03 to the required embedment depth by use of hand tools or vacuum excavation. If there are 10 or more hand dug holes adjacent to each other, the hole shall be backfilled with removable flowable fill and the guardrail posts shall be placed immediately into the backfilled hole and braced until the flowable fill cures.

### Method of Measurement

The guardrail post holes will be measured per each hand dug post hole.

### Basis of Payment

The guardrail post holes will be paid for at the contract unit price per each hand dug post hole, complete in place.

Payment will be made under:

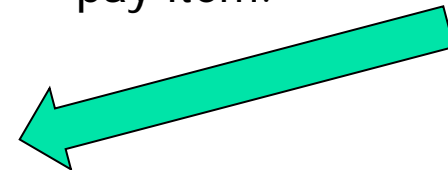
Pay Item	Pay Unit Symbol
Hand Dig Guardrail Post Hole . . . . .	EACH

The cost of the B-borrow or removable flowable fill shall be included in the cost of Hand Dig Guardrail Post Hole.

1. Title is centered, Courier New, 10 pt.
2. No referenced spec section or line numbers.
3. Text is Courier New, 10 pt.
4. Headings are **Bold**.
5. See Figure 19-3C.

This USP does not directly revise the Standard Specs,

But it **does** define a unique pay item.



# About those Pay Items.....

**Only** items listed in the Standard Specifications are **Standard Items**.

Each existing pay item shown in the list of pay items is identified by:

**S** = Standard

**M** = Maintenance

**R** = Recurring (tied to one or more **Recurring Special Provisions**)

**U** = Unique

This means you need a USP with the **Big 5**.

- Check the **examples** of USP's on our website to see if we already have something that you can **revise to fit** your "unique" project.
- Please also note that adding the word "*modified*" to a standard pay item does not *necessarily* make it Unique that requires the "Big 5".
- Can you use the standard spec section the way it is written and **show your "modification" on the plans**? Could you use a **Restrictive Type USP** to clarify your intentions?

**Do NOT address measurement and payment on the plans!**



# About those Pay Items.....

## UNDISTRIBUTED QUANTITIES

The schedule of pay items contains the following undistributed quantities in addition to known plan quantities:

303-08210 Comp Ag No. 53, Temp for Driveways .....100 TON

The Contractor shall inform, and obtain approval from, the Engineer prior to placement of an undistributed quantity.

**Undistributed Quantities** is unacceptable as a supplemental description for your unique pay item.

### **Another question:**

Do you really need it?

Could you simply use 104.03, or 109.05?



# *About those Pay Items.....*

- Changing the UNITS of a standard pay item may not be necessary. Can you use the standard pay item?
- Changing the name of a standard pay item does not make it unique. Can you use the standard pay item?

- And remember:

~~According to~~ *In accordance with* **105.04**,

***Pay Items*** govern,

over **Special Provisions (USPs)**, (101.53)

over the **Plans**, (101.36)

over the **Supplemental Specifications (RSPs)**, (101.66)

over the **Standard Specifications**.

(101.54)



# *There's some CES stuff, too.....*

- Please send an email to:

**[CESSUPPORT@INDOT.IN.GOV](mailto:CESSUPPORT@INDOT.IN.GOV)**

- If you .....
  - need a *new* pay item number.  
Be sure to include the APPROVED USP.
  - require any Group Number changes
  - have any CES questions or have any problems with CES



# Revised Detailed Cost Estimate

INDIANA DEPARTMENT OF TRANSPORTATION  
DETAIL COST ESTIMATE

02/24/16  
PAGE NO. 3

ESTIMATE NUMBER : B -29070-A      PCN : 0400473      PROJECT NO. : 04DD473      CONTRACT ID : B -29070-A

PCN : 0400473      BRIDGE DECK REPLACEMENT STR NO I64-36-02411, TWIN CONTINUOUS  
COMPOSITE STEEL BEAM, 3 SPANS, TOTAL LENGTH 209.75 LFT

CATEGORY : 0001 BRIDGE DECK REPLACEMENT

LINE NO.	ITEM NUMBER	ITEM DESCRIPTION	ESTIMATED QUANTITY	ITEM UNIT	UNIT PRICE	AMOUNT
0072	711-96800	STUD SHEAR CONNECTORS	3,150.000	EACH		
0073	715-05149	PIPE, TYPE 2, CIRCULAR, 12 IN.	443.000	LFT		
0074	715-05407	PIPE, END BENT DRAIN, 6 IN.	166.000	LFT		
0075	720-45069	INLET, P12	1.000	EACH		
0076	720-45410	MANHOLE, C4	1.000	EACH		
0077	726-92406	BEARING ASSEMBLY ELASTOMERIC	14.000	EACH		
0078	801-03290	CONSTRUCTION SIGN, C	4.000	EACH		
0079	801-04308	ROAD CLOSURE SIGN ASSEMBLY	2.000	EACH		
0080	801-06207	TEMPORARY PAVEMENT MARKING, REMOVABLE, 4 IN.	16,696.000	LFT		
0081	801-06469	TEMPORARY PAVEMENT MARKING, REMOVABLE, 8 IN.	5,417.000	LFT		
0082	801-06640	CONSTRUCTION SIGN, A	28.000	EACH		
0083	801-06645	CONSTRUCTION SIGN, B	3.000	EACH		
0084	801-06710	FLASHING ARROW SIGN	360.000	DAY		
0085	801-06775	MAINTAINING TRAFFIC	1.000	LUMP		
0086	801-07024	ENERGY ABSORBING TERMINAL, C2, TL-3	2.000	EACH		
0087	801-07118	BARRICADE, III-A	96.000	LFT		
0088	801-07119	BARRICADE, III-B	96.000	LFT		
0089	801-08400	TEMPORARY TRAFFIC BARRIER, TYPE 1	3,420.000	LFT		
0090	801-52817	TEMPORARY CROSSOVER, B	1.000	EACH		
<del>0091</del>	<del>808-06701</del>	<del>LINE, THERMOPLASTIC, BROKEN, WHITE, 4 IN.</del>	<del>1,149.000</del>	<del>LFT</del>		
<del>0092</del>	<del>808-06703</del>	<del>LINE, THERMOPLASTIC, SOLID, WHITE, 4 IN.</del>	<del>360.000</del>	<del>LFT</del>		
<del>0093</del>	<del>808-06716</del>	<del>LINE, REMOVE</del>	<del>11,838.000</del>	<del>LFT</del>		
<del>0094</del>	<del>808-10031</del>	<del>LINE, MULTI-COMPONENT, BROKEN, WHITE, 4 IN.</del>	<del>97.000</del>	<del>LFT</del>		
0095	808-10033	LINE, MULTI-COMPONENT, SOLID, WHITE, 4 IN.	289.000	LFT		
0096	808-10034	LINE, MULTI-COMPONENT, SOLID, YELLOW, 4 IN.	289.000	LFT		
0097	808-75245	LINE, THERMOPLASTIC, SOLID, YELLOW, 4 IN.	3,443.000	LFT		
0098	808-75996	SNOWPLOWABLE RAISED PAVEMENT MARKER, REMOVE	47.000	EACH		
0099	808-75998	SNOWPLOWABLE RAISED PAVEMENT MARKER	47.000	EACH		

Confidential

CATEGORY TOTAL

PROJECT TOTAL

Confidential

ADD	808-06702 LINE, THERMOPLASTIC, BROKEN, WHITE, 5 IN	1149	LFT	#		
					Unit Price	
						Amount
	808-10054 LINE, MULTI-COMPONENT, BROKEN, WHITE, 5 IN	97	LFT	#		



# As for any CIB Revisions.....

09-01-15

107-R-169 STATEMENTS ABOUT EXISTING CONDITIONS OF UTILITIES, ADDITIONAL RIGHT-OF-WAY, AND ENCROACHMENTS

(Revised 06-08-15)

The Standard Specifications are revised as follows:

SECTION 107, AFTER LINE 764, INSERT AS FOLLOWS:

## **107.26 Existing Conditions of Utilities, Additional Right-of-Way, and Encroachments**

Such existing conditions are as described below.

### **(a) Utilities**

The status of all utility companies and organizations potentially involved with the work to be performed are described below as known at the time this contract was prepared. The active engagement of the Utility Coordinator does not minimize nor negate the responsibility of the Contractor to perform duties per the Standard Specifications. The contractor shall copy the PE/PS and the Utility Coordinator on all correspondence with utilities.

The facilities of Eastern Heights Utilities exist within the project limits. An existing 4" PVC water distribution line and a ¾" service line exists in the project area. The waterline will be relocated from Station 676+00 to Station 683+75. The existing water line will be abandoned in place. A new ¾" service line will be installed from Station 681+40, 97' LT to Station 681+40, 40' RT. ~~It is anticipated that the utility will adjust its facilities for construction within 120 days after a notice to proceed is issued to relocate. A Notice to Proceed will be issued after a contractor is chosen by the utility to relocate their facilities. It is anticipated that the utility will adjust its facilities for construction before May 31, 2016. If questions arise, Kenny McIntosh of the utility may be contacted at 812-384-8261. The utility is reimbursable for the relocation. A workplan was executed on 8/24/2015. An agreement was signed on 10/22/2015.~~

The facilities of Smithville Communications exist within the project limits. Their facilities have been adjusted to accommodate construction. A retired-in-place 75 pair copper cable exists left of SR 445 Line "A" and an active 12 & 300 pair copper cable with a 3 pair service drop exists right of SR 445 Line "A". A new 300 pair copper cable was installed to the right of SR 445 Line "A". New pedestals were placed outside of the construction limits. Smithville coordinated with Zayo and Comcast to relocate their facilities alongside theirs with this project. If questions arise, Joe Bryniarski of the utility may be contacted at 812-933-2262. A workplan was executed on 6/9/2015. The notice to proceed to relocate was issued on 6/5/2015.

The facilities of Comcast exist within the project limits. Their facilities have been adjusted to accommodate construction. A new cable was bored along the right of SR 445 Line "A". If questions arise, Scott Templeton of the utility may be contacted at 812-822-3262. A workplan was executed on 6/9/2015. The notice to proceed to relocate was issued on 6/5/2015.

The facilities of Zayo exist within the project limits. Their facilities have been adjusted to accommodate construction. The utility bored a 144 fiber optic cable along the

Deletions highlighted in red.

Additions highlighted in yellow.

Please,

Only send the pages being revised,

NOT the entire CIB.




(please?)









# Tech Writer Concerns for USPs.....

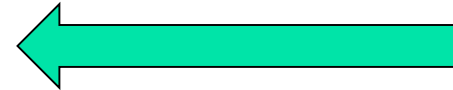
**Page Breaks**

-  **Page**  
Mark the point at which one page ends and the next page begins.
-  **Column**  
Indicate that the text following the column break will begin in the next column.
-  **Text Wrapping**  
Separate text around objects on web pages, such as caption text from body text.

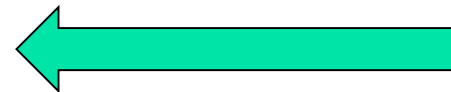
**Section Breaks**

-  **Next Page**  
Insert a section break and start the new section on the next page.
-  **Continuous**  
Insert a section break and start the new section on the same page.
-  **Even Page**  
Insert a section break and start the new section on the next even-numbered page.
-  **Odd Page**  
Insert a section break and start the new section on the next odd-numbered page.

**Page Breaks are okay.**



**Section Breaks are NOT okay, since it cause issues for the CIB.**



# About those Pay Items.....

The Contractor shall dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Disposal of water shall not inconvenience others. Sumps, sedimentation tanks, flow-control devices, and temporary sediment and erosion control shall be provided in accordance with 205 and as required by authorities having jurisdiction. Sediment in filter bags shall be removed once it has accumulated to the design volume and be disposed of in accordance with 202.

## Method of Measurement

Dewatering will not be measured, regardless of how many times the system is moved, replaced or relocated. Sediment filter bags will not be measured regardless of the number of times a day a filter bag may become filled and replaced.

## Basis of Payment

The cost of dewatering shall be included in the cost of other items.

The cost of the pump, materials, installation, inspection, maintenance, sediment filter bags, secondary containment filter sock, material to

- By the way.....

Dewatering is INCIDENTAL to,

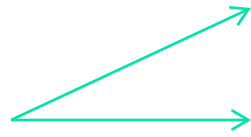
*206, 702, 715, 716, 720, and 734 Standard Pay Items .*



Just because it *LOOKS* okay...

Did *anyone* proof-read this?

Please be specific!



So....what does "incidental" mean to you?

(By the way, this work is "incidental" to a standard 805 pay item)

SIGNAL INSTALLATION **INCIDENTAL** CONSTRUCTION

**Description**

This work shall consist of repairing all lawns, landscaping, sidewalk, curbing and pavement that is damaged, and not designated for removal or replacement in the plans, due to the installation of conduit or handholes.

**Materials**

All materials shall be in accordance with applicable sections of the INDOT Standard Specifications.

**Construction Requirements**

All construction shall be in accordance with applicable sections of the INDOT Standard Specifications and Standard Drawings.

The Contractor shall mark any items that will be disturbed prior to performing the work causing the disturbance. The Engineer shall approve all disturbances prior to the Contractor proceeding.

All items disturbed shall be replaced in-kind. Under no circumstances shall additional sidewalk, pavement or curbs, when compared to existing, be constructed as part of the work performed under this contract.

**Method of Measurement**

This work will not be measured for payment.

**Basis of Payment**

Payment will be made under:

**Pay Item**

Conduit, Steel, Galvanized, 2" . . . . .LFT

**Pay Unit Symbol**

The cost of sawcutting, excavation, backfill, seeding, bedding, mulching material, concrete, asphalt and any other incidental item required to repair lawns, landscaping, sidewalks, curbs and streets damaged, in order to install traffic signal conduit or traffic signal handholes, shall be included in the cost of Conduit, Steel, Galvanized, 2 in

The cost of sawcutting, excavation, backfill, seeding, bedding, mulching material, concrete, asphalt and any other incidental item required to repair lawns, landscaping, sidewalks, curbs and streets damaged, for the Contractor's convenience, shall be paid for by the Contractor at no additional cost to the Owner.



# Notice Anything?

## CORED HOLE IN CONCRETE

As part of the operation to predrill pilot holes to bedrock depth, the Contractor shall core through the existing retaining wall footing in accordance with 701.09, as shown on the plans. The diameter of this hole shall match the diameter of the predrilled pilot holes and cored hole in rock. Once the footing has been cored, predrilling shall continue to bedrock depth in accordance with 701.09(a)2.

Once the piles have been driven and the fill beneath the footing is in place, the prebored holes shall be filled as shown on the plans.

The cost of fill materials and all other incidentals shall be included in the cost of the prebored hole.

---

**Defining a Unique Pay Item is not necessary.**

**A Restrictive Type USP will suffice, utilizing the Standard 701 Pay Item for Prebored holes.**



# *Who are we writing these for?*

- The Contractor
  - to bid the work
  - to perform the work
- Department personnel involved with the contract
  - to enforce those standards.

**And,**

since we are writing these special provisions for the contract, here are some recommendations for preparing your **Unique Special Provision**.....

[www.in.gov/indot/design\\_manual/files/Ch19\\_2013.pdf](http://www.in.gov/indot/design_manual/files/Ch19_2013.pdf)



# *Write the Unique Special Provision.....*

- Voice -** Use passive voice. (*the work... shall be...performed*)
- Sentences -** Use simple language and words. Keep sentences short, 20 words or less (please).
- Paragraphs –** Limit to three or four sentences if possible.
- Terminology –** Be consistent. Avoid words with more than one meaning.
- Pronouns -** Avoid them.
- Capitalization -** Only the title can be all caps. Capitalized words may only be Department, Engineer, Contractor, headings or proper nouns.
- Punctuation -** Minimum. The meaning of a sentence should be clear.





*Please use proper Punctuation....*



*Commas save lives!*





# Remember the Five "C's" of Spec Writing.....

Make sure that your special provision is.....

- **Clear** - Avoid ambiguities. Make no assumptions. Use words that convey the *exact* meaning.
- **Concise** - Use simple words, and short sentences. *Keep it simple. Get to the point! Be positive.*
- **Complete** - Use the *The Big 5*, when necessary. Do not be vague or leave it open to interpretation.
- **Correct** - Technically, grammatically and specologically correct. Check references. (*and spelling*)
- **Consistent** - Phraseology and terminology used in a Special Provision should **be consistent** with that used in the *Standard Specifications*.



*Don't leave it open to interpretation, or.....*



Isaiah 57:14

# *Please be Clear and Concise:*

Commonly used terms to AVOID:

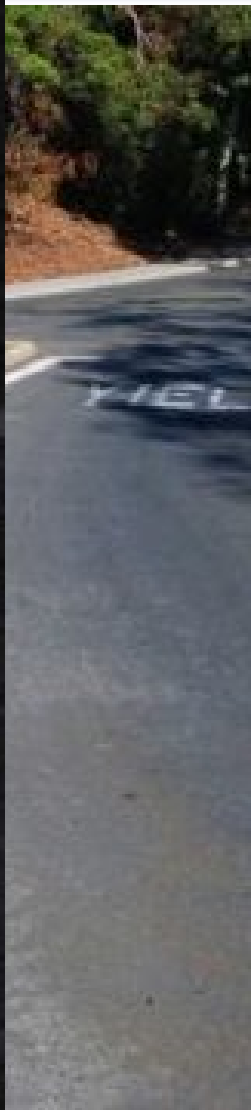
- per, shall conform to, shall comply with.  
Instead, use **shall be in accordance with** ..... Section 605.
- as per. Instead, use **as specified, as shown, *in accordance with***.
- as shown in the plans, as detailed on the plans, as indicated in the plans, as shown on the standard drawings. Instead, use  
**as shown on the plans.**
- shop drawings. Use, **working** drawings.
- and/or. Use either **and** alone, or **or** alone. Choose the one most appropriate for your unique situation. (if in doubt, use **or**)



*Be Consistent. In the words of Yogi Berra.....*



*Take  
it !*



# *Make sure the language is Correct:*

➤ at the Contractor's expense. Instead, use

**\_\_\_\_\_ shall be included in the cost of \_\_\_\_\_,**

**.....at no additional cost....., or**

**with no additional payment.**

And, (parenthetically speaking), do not use parentheses, use a comma, or two.



# *Please be (specologically) Correct:*

AVOID saying:

- INDOT. Instead, use  
**the Department.**
- or approved equal. Do not use this phrase, but **define the equal**.
- must, should, or is to. Use  
**shall**, or **will**.

Remember: the Engineer **will**

the Contractor **shall**.

*(see General Note 11, and 104.01)*



# *Be Consistent with proper spec language:*

- permit or permitted,  
*unless you are actually going to require them to obtain a permit.*

Use **allow**, or **allowed**.

- Do not use " for inches.

Use **in.**

- Do not use ' for feet or foot.

Use **ft** (*no period after ft*)

- For measurements, instead of using 9" x 9", write

**9 in. by 9 in.**

do the same for **ft**





# Please be Clear and Consistent:

➤ For numbers, use **9** for dimensions, and **nine** for quantities, and by all means – do **NOT** say nine (9). That is not necessary.

➤ Also, numbers **nine** or less are spelled out, numbers **10** or above are written numerically.

*Don't place a number at the beginning of a sentence.  
If you have to, spell it out!*

➤ And please, don't ever, I mean **never**, use "i.e." or "etc."  
(*Seriously. Don't try it. I know people!*)

➤ If at all possible ---> avoid using any "**-ly**" words.  
Seriously.

Absolutely.

Usually.



Do you *really* need to say it at all?



# Be Correct (and legal)

Materials shall be in accordance with 619.02 and as follows:

All steel components shall receive a powdercoat paint finish in black, Federal Standard 595B Color 17038. Any equivalent coating system shall be as approved by the Engineer. All hardware shall be painted black, Federal Standard 595B Color 17038.

## Construction Requirements

Construction of the powdercoat finish shall be in accordance with 619 and the manufacturer's recommendations.

**Without this,**  
**the Engineer didn't have a choice!**



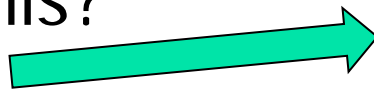
# So, .....Let's be Clear.....

A cone seeder or other similar broadcasting equipment may also be used if the seed mix does not contain fluffy seeds in amounts sufficient to prevent free flowing without plugging. Seed shall then be pressed into the surface ~~using a cultipacker or roller.~~

All seeding equipment, shall be calibrated to deliver the seed at the rates and proportions specified in the plans. Equipment shall be operated in such a manner as to ensure complete coverage of the entire area to be seeded, and seed shall be placed no de

So..... What ARE  
"fluffy seeds" ?

Is it this?



Or this?



# Remember - Safety First!

## BAT INSPECTION

The Contractor shall inspect the underside of the bridge for the presence of bats prior to construction. If any bats are discovered and do not leave after discovery, the Contractor shall contact an animal control, a wildlife conservation agency, or a public health agency for assistance. If help is not available, the Contractor shall stop work immediately and notify the project manager.

**STOP RIGHT HERE!!**

1. Find a small container like a box or a large can, and a piece of cardboard large enough to cover the opening of the container. Punch small air holes in the cardboard prior to capturing bat and place cardboard over opening of the container.
2. Put on leather work gloves. When the bat lands, approach it slowly and place the container over it. Slide the cardboard under the container to trap the bat inside.
3. If you are certain there has been no contact between the bat and any people or pets, carefully hold the cardboard over the container and take the bat outdoors and release it away from people and pets.
4. If there is any question about contact between the bat and people or pets, save the bat for testing. Tape the cardboard to the container, securing the bat inside and then contact your health department to have the bat tested for rabies.

This work shall be included in the cost of mobilization and demobilization.

# 108.08 – Excusable Delays

*Sorry for the inconvenience*



**SuperValu**  
HILL ST. MOWBY

If Rome was  
built in a day  
we would have  
used the same  
contractor



# 108.07 – Character of Workers





# Are you sure you want to say that?

RESTROOM

## Description

The work shall consist of furnishing and installation of a prefabricated restroom building in accordance with the details shown on the plans.

The work shall include, but not be limited to, the necessary to render the building fully operational, including the subgrade, slab, structure, and water and sanitary service connections. Electrical service connection shall be coordinated with the electrical contractor.

## Materials

The prefabricated building slab shall be water and urine resistant for life. The Contractor shall furnish a test certification of compliance from a national independent testing laboratory to support this absorption resistance requirement. The slab shall be a minimum of 4 inches in length and 2 inches in width. The Contractor shall provide a minimum of 2 inches of concrete to the attachment of the building.

**For LIFE!!**

A mat shall be provided and constructed without cracking on the surface. The concrete slab shall be constructed inside a steel angle curb, reinforced with dual mats (tension and compression), and poured with a concrete formula with admixtures to create a finished slab that is waterproof for life.

# Are you sure you want to say that?

- 2. cu  
fa  
cl
- 3. Ca  
bl  
Br  
st
- 4. Ha  
ac

DO NOT  
TOUCH - HOT

Bu  
ndiana,  
atest e



# Are you sure you want to say that?

## Pig Cleaning Procedures

3. Once the  
speed by  
hydrant o **715.05 Laying I**  
the typical speed of 1 fps.

At the time of acceptance, all pipe shall have  
and other foreign matter.



Prior to constructing a pipe extension, the existing structure shall be cleaned of all foreign materials. Existing anchors, end sections, or headwalls shall be removed as shown on the plans or as directed. All existing pipes which are damaged by the removal operation shall be replaced. Removed materials shall be disposed of in accordance with 202.

within one minute.





# *On second thought.....*



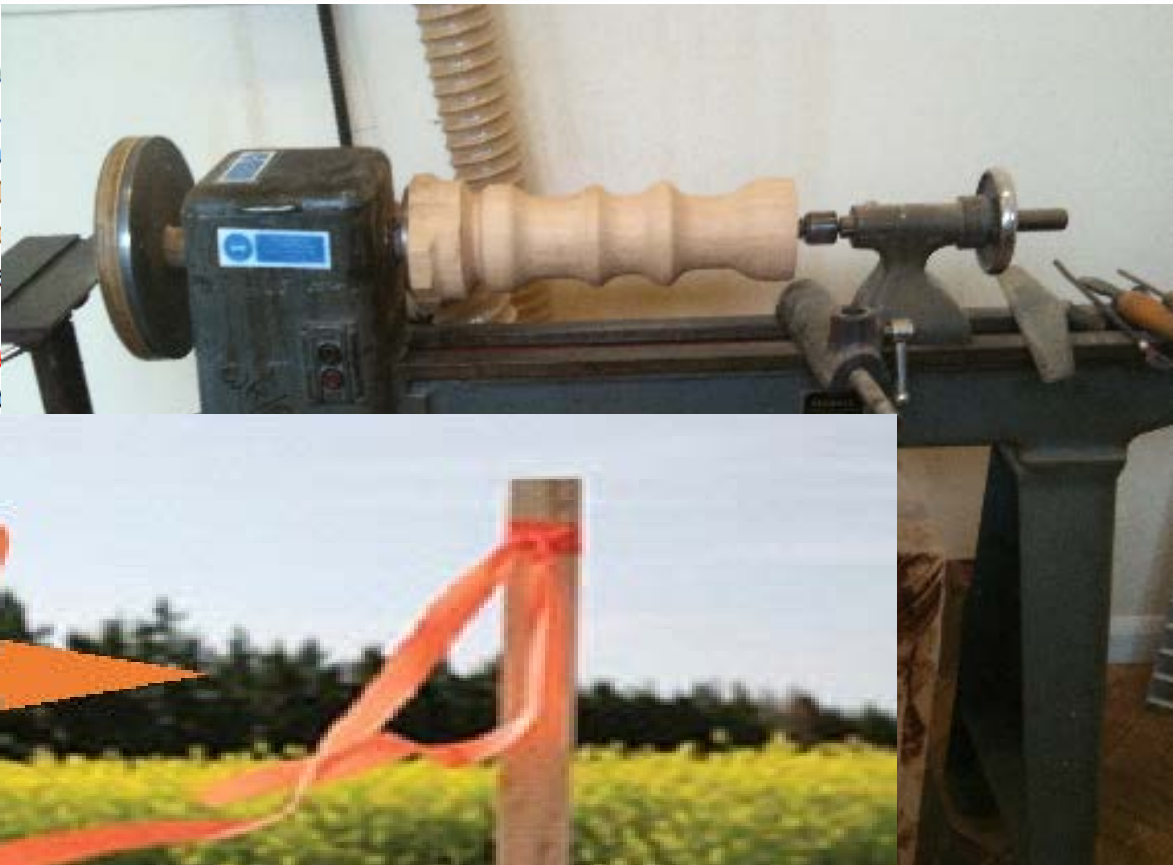
# 102.01 – Prequalification and Bidding



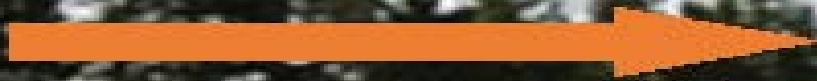


# Sometimes, you can't trust spellcheck.....

Construction Requirem  
Environmentally sensi  
wetlands, streams and open  
near the vicinity of t  
construction plans. Deli  
areas, borrow or waste site  
in these areas. Wetlands  
limits shown ~~in~~on the Gen  
erosion and sediment cont



# Lath



call  
ally  
eter  
the

The difference ONE letter can make .....





# The importance of Proofreading.....

*material shall proceed immediately after approval of installation. The geocomposite drainage layer shall be covered by the specified aggregate material within two days of installation.*

*Tracked equipment and machines shall not operate directly on the geocomposite drainage layer until a minimum of 6 in of aggregate material is placed. Rubber tire vehicles may be allowed to operate on the geocomposite drainage layer to **back dump fill material**, but shall do so slowly, at speeds of 5 mph or less, and in a straight forward or backwards motion. The vehicle operator shall avoid sharp or standing turns and abrupt stops or acceleration. If any visible damage is noted, fill placement operations shall be stopped. The initial load of specified aggregate material shall be back dumped onto the geocomposite drainage layer and spread to create a working platform. Subsequent loads shall be dumped onto previously placed aggregate and spread with a tracked dozer or similar equipment. When dumping or spreading the specified aggregate material, equipment operators shall not allow sharp objects such as dozer blades and loader buckets to come in direct contact with the geocomposite drainage layer.*

## 214.04 Fill Placement

Construction vehicles shall not operate on the geogrid. The placement of the fill shall proceed

**We only allow SMART materials.....**



# The importance of Proofreading.....

## Construction Requirements

The structure base, inlet pipe, and outlet pipe must be set on firm, flat surfaces of compacted soil or fill sand to provide a solid, stable base. Pipes shall be connected and secured using stainless steel clamps. An anti seep collar shall be used on inlet and outlet pipe. The Contractor shall ensure that the structure is level vertically before placing backfill. A survey shall be performed by a professional Land Surveyor to verify the structure base elevation, inlet, and outlet pipe is within +/- 0.5 inch of plans. Hand-tamp backfill soil, do not mechanically compact. Do not use a backhoe or blade to place backfill directly against the water control structure. Inlet and outlet pipes shall be protected by a rodent screen or bar guard. Ensure structure. Place elevation.

How do you “level *vertically*”?

Did they mean “*plumb*”?

Make it a point to read through your USP and imagine how someone else may interpret what you have written.



# The importance of Proofreading.....

compaction following installation. Trees shall not be planted in rows, rather installed **haphazardly** to imitate a more natural pattern. Trees shall be planted so the root collar is even with the ground surface. The roots shall be extended downward into a hole or topsoil. Roots shall not be forced into improper planting holes which would restrict their ability to grow and support the seedling to **permit** survival. Failure to comply with these procedures shall require replanting of trees with no additional payment. Outside temperature and storage requirements shall be in accordance with ~~INDOT design manual standards found in~~ 622.03. All other provisions of planting, backfilling, and watering shall be in accordance with 622.08.

All trees shall be marked with wire flags ~~immediately~~ adjacent to their stems.

Haphazardly.

An *LY* word.

Was it a good idea?



# The importance of Proofreading.....

## Labeling and Tagging:

The Electrical Contractor shall label all electrical equipment by one of these methods described below:

1. Printed card labels may be used on items of equipment furnished with plastic windows. Labeling of the cards shall be **nearly** printed using a lettering device such as Leroy Instrument.
2. Directories on the inside of panelboards shall be typewritten and shall show a list of circuits and points, equipment, or areas supplied.

Did they mean NEATLY?

Or is it okay if the Contractor just thought about it?

"Well, we *nearly* did the work....."

**Adverbs are not your friend.**



*There could be consequences.....*



*Have you ever had a traffic control device walk off the job?*



*Did anyone check this?*





# The importance of Proofreading.....



# *The importance of Proofreading.....*





*Did they think this through????*



*Did they think this through????*



# What's wrong with this picture?



106.01(c).



# *Is it Necessary?*





# In Summary.....

**Please make sure you are referencing  
the Current version  
of the Standard Specifications.**



And *please*

(did you notice I said please? *I'm begging here People!*)

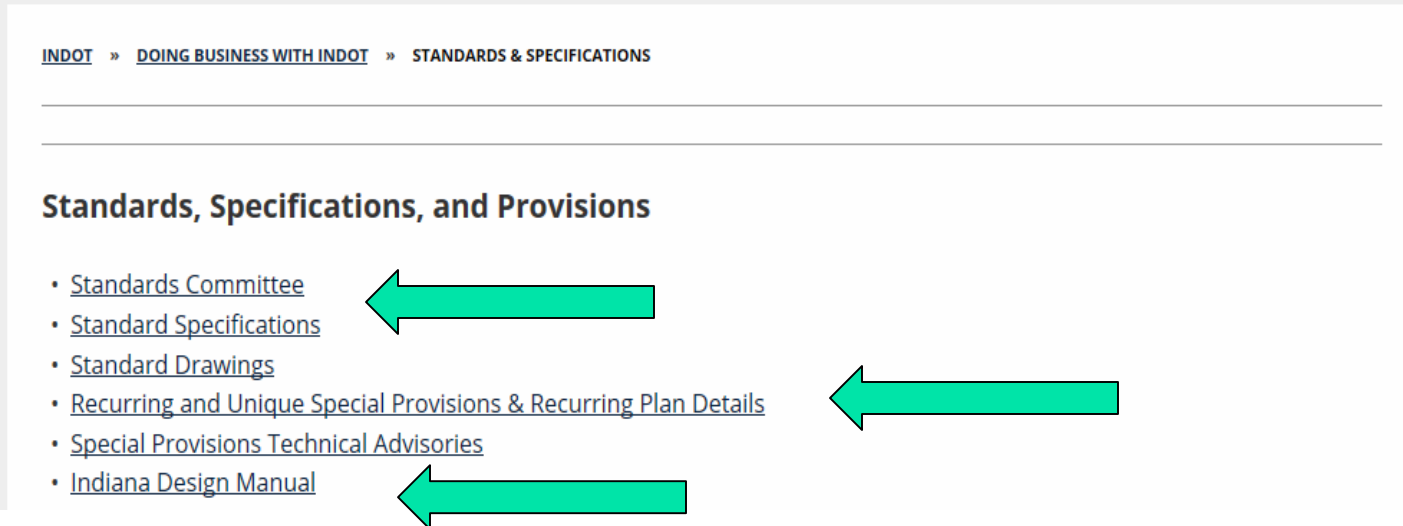
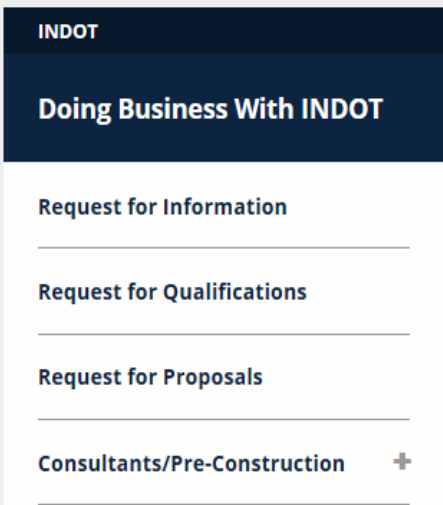
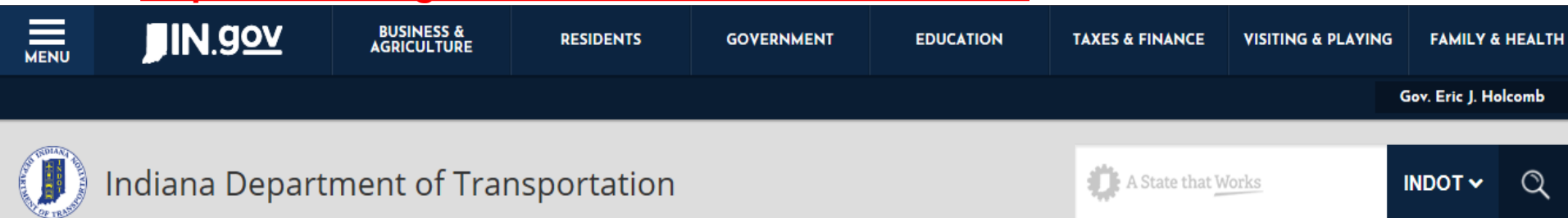
If at all possible, write your Unique Special Provisions in such a way that it points the reader back into the Standard Specifications book at every opportunity.

Also, please (*there it is again!*) look inside the SS Book to see if what you are trying to do is already in there.



# Document Links....

- <http://www.in.gov/dot/div/contracts/standards/>



Just go to the INDOT website and click on **Doing Business with INDOT**



# Thank you.....

