



The Write Stuff!

Principles of Writing Construction Specifications and Special Provisions

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Construction Specifications Engineer

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Two *(not so)* **Hidden Truths** about Specifications and Special Provisions:

- **Nobody likes to write them**
- **Nobody likes to read them!**

Well,almost nobody.....



Standard Specifications

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

Questions to ask concerning Unique Special Provisions

1. *Why?* Do you *really* need it? **Is it necessary?**
Is it covered in the Standard Specifications? If so, do you still need a 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 **five** basics (*the Big 5*) are covered.
 - **Description**
 - **Materials**
 - **Construction Requirements**
 - **Method of Measurement**
 - **Basis of Payment**

The *Big 5* follows the standard AASHTO Specification Format.



Questions to ask concerning Unique Special Provisions

5. Does it specify a proprietary item, material or process?
If so, is that necessary? Do you have permission?

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 needs to be included in the USP. (*please be careful when stealing from other States*)

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?

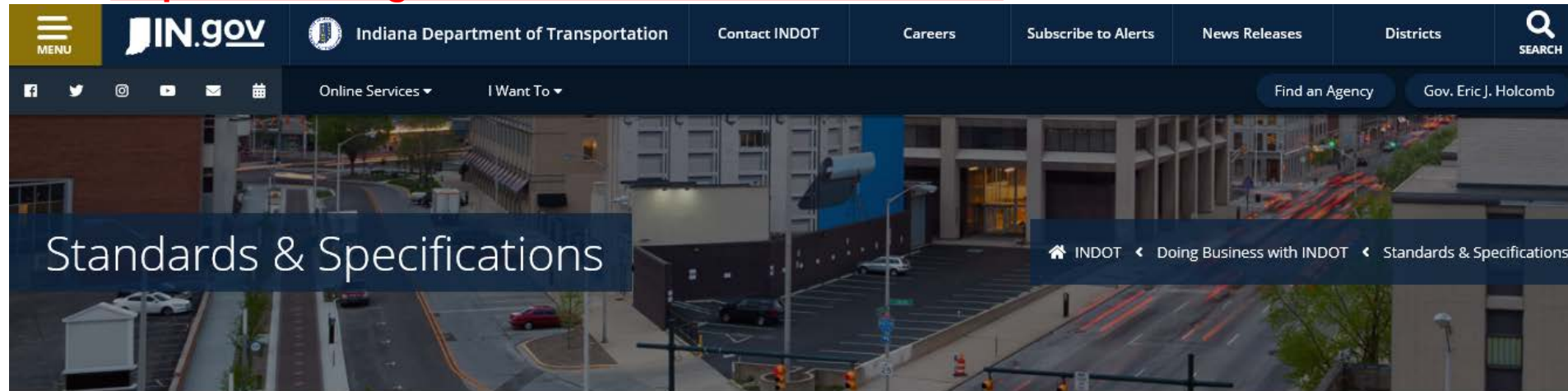
8. Is it ready for the ***USP Review Process*** ?



The most dangerous
phrase in the language is
"we've always done it this way."

Document Links....

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



Standards, Specifications, and Provisions

- [Standards Committee](#)
- [Standard Specifications](#)
- [Standard Drawings](#)
- [Recurring and Unique Special Provisions & Recurring Plan Details](#)
- Special Provisions Technical Advisories have been discontinued as of 08/06/18. The publication schedule for the RSP Menu has been standardized and occurs in February, May, August, and November, approximately 14 days after the preceding Standards Committee meeting. The schedule of Standards Committee meetings, submittals, and distributions is available from the Standards Committee webpage found in the link above titled "Standards Committee."
- [Indiana Design Manual](#)

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



The Write USP Stuff!

Resources:

1. Website:

<https://www.in.gov/dot/div/contracts/standards/rsp/index.html>

2. Scroll down to “**Unique Special Provisions**”

- **Unique Special Provision Process** (flowchart)
- **List of Unique Provisions** (sample list)
- **Instructions for Use Unique Special Provisions** (ch. 19 of IDM)
- **USP Menu** (initial presentation form)

3. Contact information for **Scott Trammell** and **Lana Podorvanova**

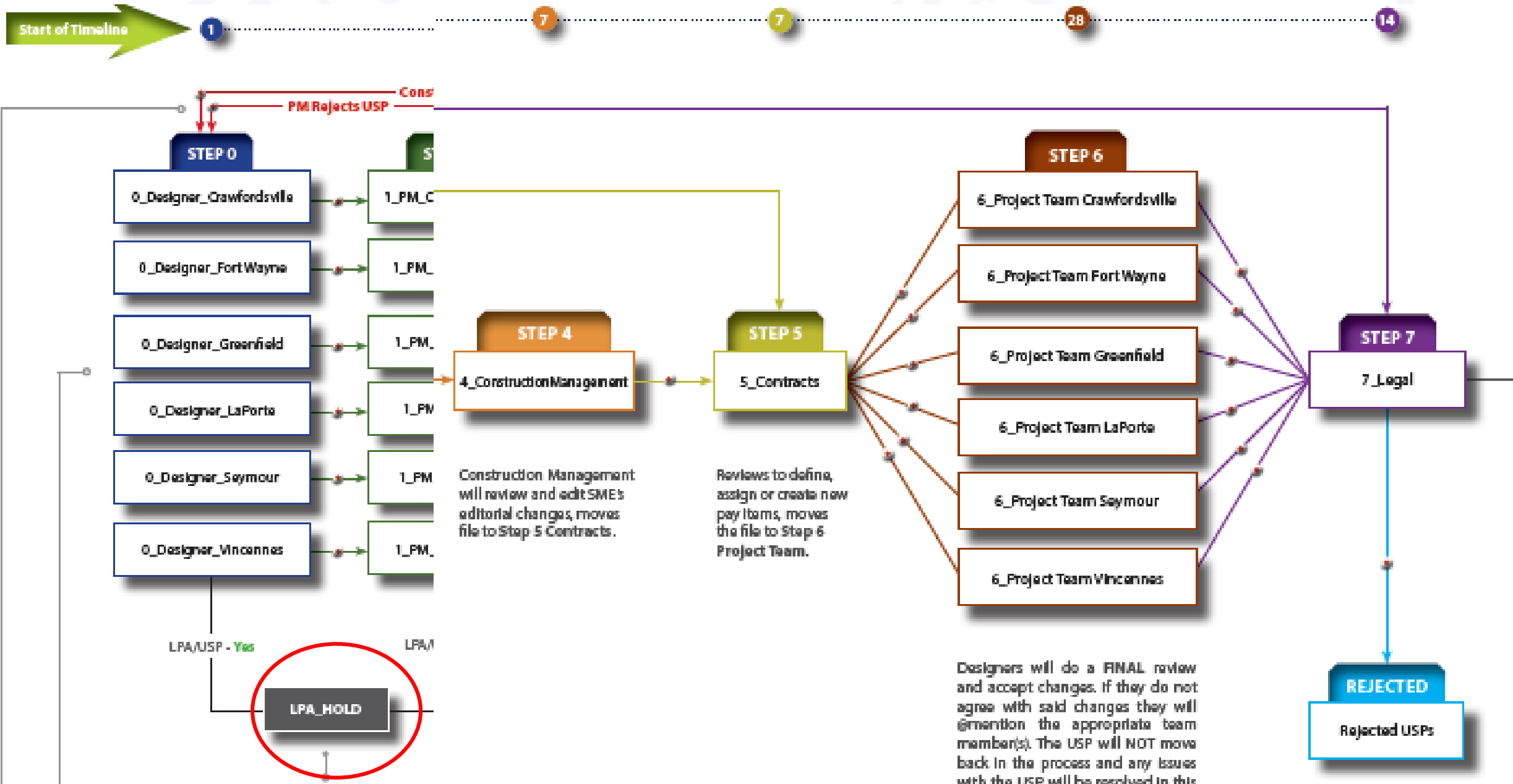
- INDOT_UniqueSpecialProvisions
- Rejected USPs
- LPA_HOLD
- Completed LPAs
- USP Archives**
- USP Training
- Documents
- Notebook
- Pages
- Site content
- Recycle bin

+ New Add shortcut to OneDrive Export to Excel Automate

All Documents

USP Archives

Section	DES Num...	Contract ...	District	Name	Created
108	1400249	R-40577	Crawford...	108_USP_FAILURE COMPLETE ICD All ...	September 28, ...
108	1400249	R-40577	Crawford...	108_USP_FAILURE COMP...	September 28, ...
205	1400249	R-40577	Crawford...	205_USP_PUMP AROUND_1400249_0...	August 31, 2021
401	1901510	R-42262	Greenfield	401_CrackSealing_1901510_001.docx	January 28
401	1400249	R-40577	Crawford...	401_USP_RPE JOINT_1400249_001.docx	September 9, 2...
100	1600517	R-39851	Fort Way...	401404Permit_1600517_0001.docx	November 5, 2...
408	1800563	R-41008	Crawford...	404AND401PERMIT_1700897_0001.docx	November 20, ...
502	1400249	R-40577	Crawford...	502_USP_USE OF OPTIMIZED AGGREG...	September 28, ...
740	1400249	R-40577	Crawford...	740_USP_TIL... 1400249_0...	August 31, 2021



https://www.in.gov/dot/div/contracts/standards/usp/USP_Process.pdf

Different Types of USPs

Restrictive Type USP

Simple, concise language for clarification.

Constructive Types of USPs

Directly Revises Standard Specifications

- Reference Spec sections and line numbers
- Line out ~~existing~~, *italicize* new

Defines a Unique Pay Item

- Needs the "Big 5"
- Could be one that directly revises the standard specifications (not as common)

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.

Provision title is centered and is Courier New font, 10-pt. pitch, all capitals.

There are no referenced *Standard Specifications* sections and line numbers.

Specification text is Courier New font, 10-pt. pitch.

There are no deletions or insertions.

EXAMPLE OF A RESTRICTIVE TYPE UNIQUE SPECIAL PROVISION

Figure 19-3A



Constructive Type USPs

Directly Revises Standard Specifications

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

Title is centered – Courier New, 10 pt.
Referenced Spec section and line numbers – Courier New, 10 pt.
Spec text is Times New Roman, 12 pt
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:

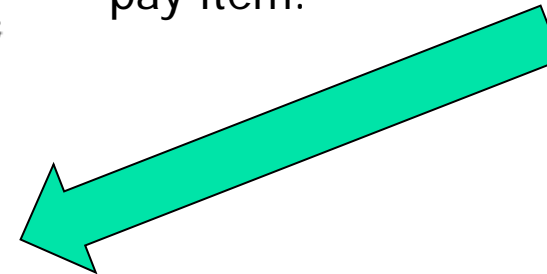
Pay Item	Pay Unit Symbol
Hand Dig Guardrail Post Hole	EACH

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 Driveways100 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: *In accordance with 105.04,*

Instruction to Bidders and
description of pay items listed
in the **Schedule of Pay Items**

hold over:

Unique Special Provisions, (101.71)

hold over:

Plans, (101.36)

hold over:

Recurring Special Provisions, (101.44)

hold over:

Standard Specifications. (101.55)



Did we mention Pay Items.....?

Removal

Pump-around shall be removed after construction in the main channel is complete and permanent erosion control features have been established. Any areas disturbed by the pump-around measures shall be returned to their original condition and re-vegetated as needed.

Method of Measurement

No measurement will be made.

Basis of Payment

This work will be paid for at the contract lump sum price for implementation of the pump-around.

Payment will be made under:

Pay Item

Pay Unit Symbol

Pump-Around..... EACH

The cost of furnishing all materials, equipment, labor, installation, maintenance, and removal required for dewatering and operation of the temporary pump-around shall be included in the cost of pump-around.

The cost of temporary channel crossings if required shall be included in the cost of the pump-around.



Just because it *LOOKS* okay...

TYPE I-A JOINT SEALANT REPLACEMENT

The Contractor shall remove and replace the existing type I-A joint seal in accordance with 609.05.

Replacement of the existing type I-A joint seal shall be included in the cost of other items.

**Type I-A joints is found in 609.05, not in 724.
And it is used in Reinforced Concrete Bridge Approaches.**

Trying to define a unique pay item is not necessary.



Proofreading can be a good thing....

NEXT LEVEL ROAD SIGNS

Next Level Road Signs will be furnished by the Department. The Contractor shall pick up the signs at the Greenfield district office at:

32 South Broadway St.

Greenfield, IN 46140

The Contractor shall return the signs to the Vincennes district office upon project completion. The travel cost for this effort shall be included in the cost of other items.

Make sure your intentions are clear.

(take the time to make it yours)



Notice anything?

DRIVE ACCESS

The Contractor shall coordinate with adjacent property owners with drives located inside of the extents of the portable signal layout to determine locations where access needs to be maintained.

Coordination with property owners shall be included in the cost of maintaining traffic.

Pay attention to proper formatting.

Standard pay items do not belong in a USP.

How about this one?

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.



Notice anything?

IMPAIRED WATERWAYS

Des 1900223

Sheets Creek is listed by the Indiana Department of Environmental Management, IDEM, as being impaired by E. coli. Workers working in or near the water shall take care to wear appropriate personal protective equipment, PPE, observe proper hygiene procedures, including regular hand washing, and limit personal exposure.



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.....

Get to the point

and **keep it simple.**

here are some guidelines to follow:

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. (*Seriously, just don't*)
- 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....

**punctuation,
please!**

**ELEPHANTS
PLEASE STAY IN
YOUR CAR**

Remember

Posting.....

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leave it

sion



From Question #1 – Is it necessary?



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



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**)



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.



Make sure the language is Clear and Correct :

DRY CONSTRUCTION RESTRICTION

All construction work on the Site shall occur **in dry conditions**, with no water present in the stream. No work shall be performed on the channel during a rain event or until such a time as the channel is dry.

If work is desired to be performed following rain events when the channel is still wet the Contractor shall implement dewatering and pump around operations sufficient to ensure continuous, uninterrupted flow as well as dry working conditions in the channel. Pump around and dewatering operations shall be performed at **no additional cost to the Department**.

Please make sure that your intentions are easily understood!



Please be (specologically) Correct:

AVOID saying:

➤ INDOT. Instead, use

the Department.

➤ or approved equal. Do not use this phrase, but **define the equal**, or say **as approved**.

➤ must, should, or is to. Use

shall, or **will**.

Remember: the Engineer **will**...

the Contractor **shall**...

(see General Note 11, and 104.01)



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Please make sure to use the Correct words:

NOTIFICATION OF TRAFFIC CONTROL CHANGES

The Contractor shall provide notification of all changes in traffic control, including road closures, to the following agencies at least five calendar days prior to implanting the revised traffic pattern:

Monroe County Community School Corporation	812-330-7700
Bloomington Transit	812-336-7433
Monroe County Sherriff	812-349-2534
Bloomington Police Department	812-339-4477
Bloomington Fire Department	812-332-9763
US Post Office	812-334-7013

The Contractor shall provide notification to the following property owners of all changes in detour routes impacting access to their properties at least seven calendar days prior to implanting the revised traffic pattern:

Unity of Bloomington, 4001 S. Rogers Street	812-333-2484
John & Martha <u>Newlin</u> , 420 W. Gordon Pike	812-336-1149

The cost of providing notifications shall be included in the cost of maintaining traffic.

I think they meant to say "*implementing*".



Is this the Correct word?

Manner?
or
Manor?



From our own 2010 Spec Book....

Plant, Coniferous Evergreen, Cone, Broad Upright, _____^{size}EACH

Plant, Coniferous Evergreen, Globe, Dwarf, _____^{size}EACH

Plant, Coniferous Evergreen, Prostrate Broad Spreading,
Semispreading, _____^{size}EACH

Plant, Deciduous Shrub, _____^{size}EACH

(don't worry, we fixed it in the 2012 spec book)



From our own 2018 Spec Book....

911.01 Untreated Lumber

(a) General

Untreated **limber** is a saw mill product which is not further manufactured than by sawing, resawing, passing lengthwise through a standard planing machine, drying, cross cutting to length, and machining but is not treated with preservatives.

(don't worry, we fixed it in the 2020 spec book)



Sometimes Spellcheck does NOT help:

Did you mean?

or

did you mean?

implanting

or

implementing

insure

or

ensure

manor

or

manner

prostate

or

prostrate

limber

or

lumber

Make sure your intentions are clear.



Sometimes Spellcheck does NOT help:

PIPE ABANDON AND **GROUNT** FILL

The Contractor shall remove a portion of the pipe within the widening limits and abandon and fill with grout the existing portion of the structure within the resurface limits as shown on the plans.

This work shall be included in the cost of clearing of right-of-way.

Proofreading is important.



Be Consistent with proper spec language:

- Do not say 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.



Are you sure you want to say it that way?

4. The Contractor shall notify Indiana American Water immediately of a chemical spill or leak onto the ground or into a waterway using the emergency number of 317-300-4779.
5. Due to concerns regarding East Fork White Lick Creek, fertilizers pesticides, or herbicides shall not be applied within the five year Time of Travel Zone. Portable toilets and the use of explosives is also prohibited in this zone.
6. Due the presence of E. coli, workers who are working in or near White Lick Creek, East Fork White Lick Creek, or a UNT1 to East Fork White Lick Creek



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!**



Proofreading! It's a thing. Really!

PIPE ROADWAY DRAIN CASTING EXTENSION

The Standard Specifications are revised as follows:

SECTION 715, BEGIN LINE 168, INSERT AS FOLLOWS:

The Contractor shall cut the existing roadway drain extension as shown on the plans. The Contractor shall use a coupler to connect the new roadway drain extension to the existing bridge deck drain system. The coupler shall be in accordance with 907.28 or 908.10.

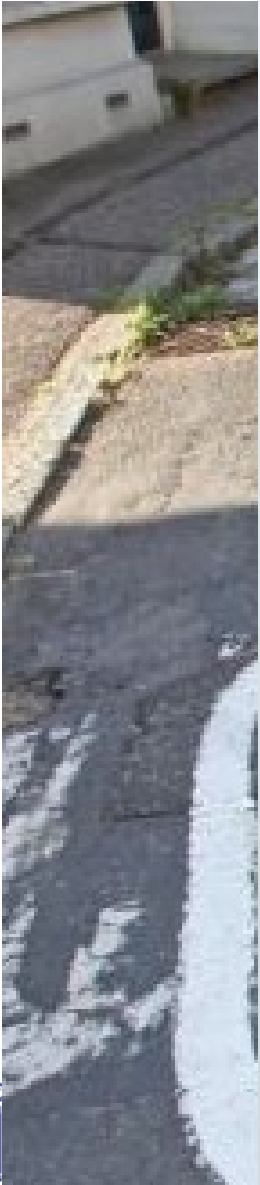
SECTION 715, BEGIN LINE 484, INSERT AS FOLLOWS:

Couplers and all necessary accessories will not be measured.

SECTION 715, BEGIN LINE 547, INSERT AS FOLLOWS:

price per each. Couplers and all necessary accessories shall be included in the cost of the roadway drain casting extension pipe.

Check your spelling.....



Colonel's Buffet

**FAMOUS
BOWELS
\$3.00**



ork here?

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 that no debris is present inside water level control structure. Place boards inside structure to reach specified top board elevation.

How do you “level vertically”? Lay on your side?
“Yep. Looks good! The bubble is off though.....”

Do 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?



Did we mention 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* printed those....."

Adverbs are not your friend.



Haphazardly ?

Or Nearly?



Make sure your intentions are clear.

Please.

There could be consequences.....



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

In Summary.....



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

Coming Soon!

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.



Thank you.....

