

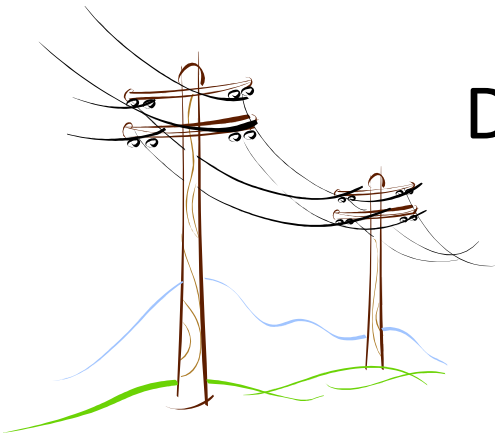
Collaboration Opportunities Between Electrical Design and Utility Coordination

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Design Services Branch





Traffic Design Services



Who we are?

- A Branch in Division of Traffic Operations

What do we do?

- Design Traffic Signals
- Design Roadway Lighting
- Construction Inspections

Typical Process for the Design of Traffic Signals and Lighting

- Project manager tells us that we have signals or lighting in the Project
 - This can be just before the letting (weeks)
 - This can be couple months ahead of the letting (this may give us time to place poles)

With this process we are fighting for very little space

- This is space underground and overhead.
- Most project designs are being turned in at the last possible moment and we are fighting every letting to get them done.

What is ideal process?

- We would like to be at the beginning of the process when right of way and utilities are considered.
- The traffic signal and lighting requirements should be considered early so that we can located all poles and Electrical drops.
 - Traffic signals and lighting required approval from the State Highway Engineer. (Should be sent to Central Office Division Traffic Operations as soon as possible so that we can get Approval)

What is ideal Process?

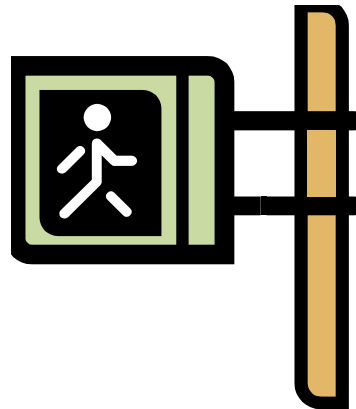
- The Approval of the signals and lighting help us to know what we need to design.
- We would like to work with the Project manager, utilities and right away coordinator to place Poles and to get possible electrical drops. This would include pole heights and attachment heights.
- With the poles/electrical drops verify it would helps to not being fighting for this Space.
 - We want to get the Prime space before underground/overhead utilities

What do we need?

- Utilities for Traffic Signals
 - Need the right to place our pole before utilities take that space.
 - We typically place four (steel strain poles up to 40 feet) poles at each traffic signal- one on each corner.
 - We need Existing and proposed Utilities plans in DGN/DWF or PDF. We really would like in DGN format.

What do we Need?

- Underground –
 - Steel Strain Poles need 3 foot diameter (this diameter may be modified to fit the situation) space with up to 24 feet in depth (we need consider how much space the underground utilities want us to be from there line).
 - Pedestrian Pedestal need 2 foot diameter space with depth of 4 feet.





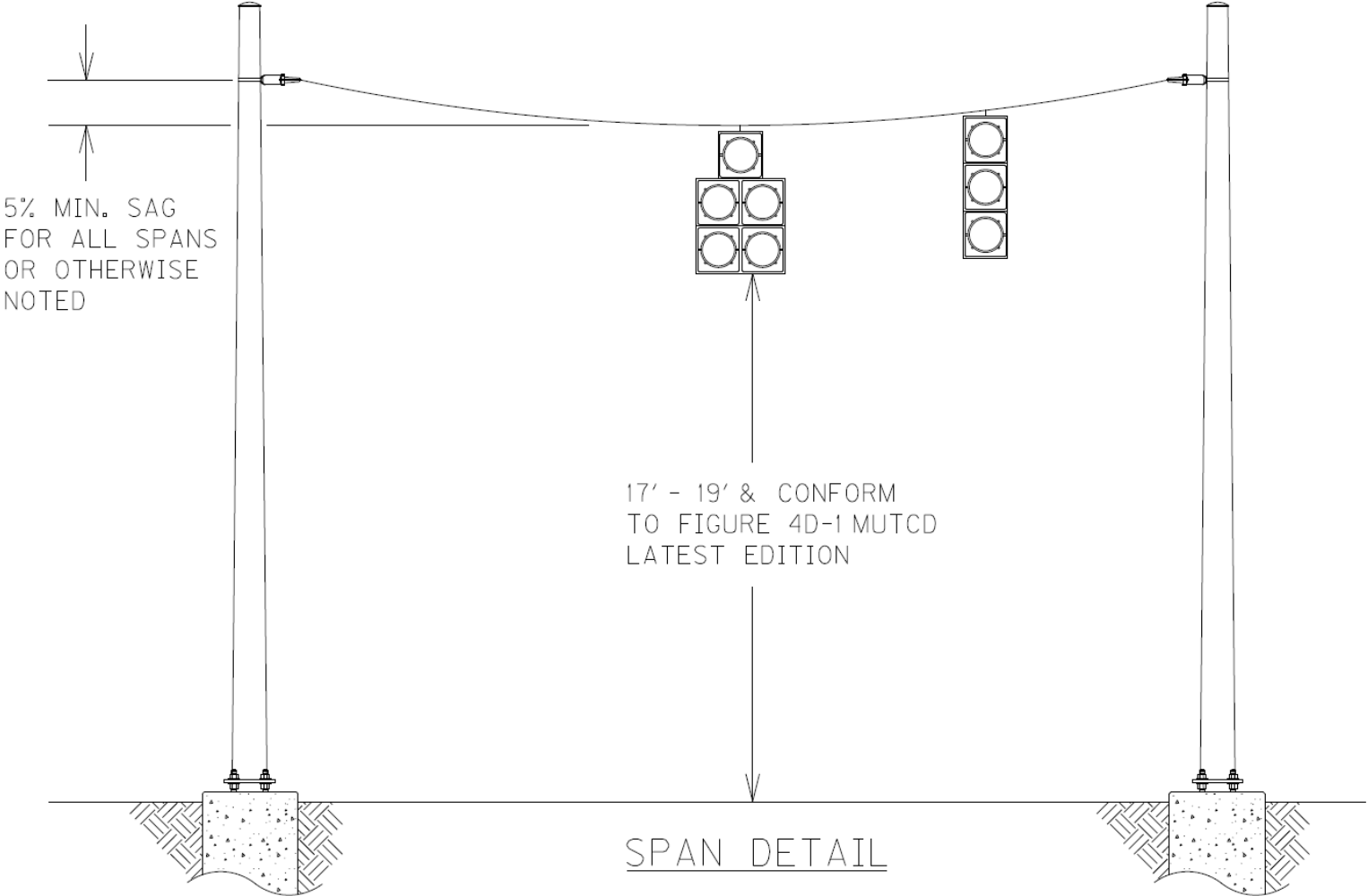
What we Need?



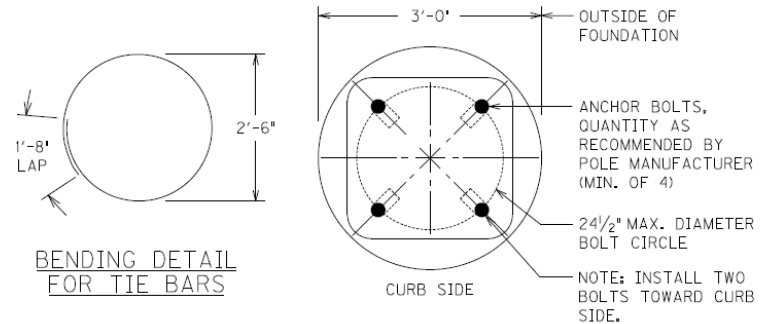
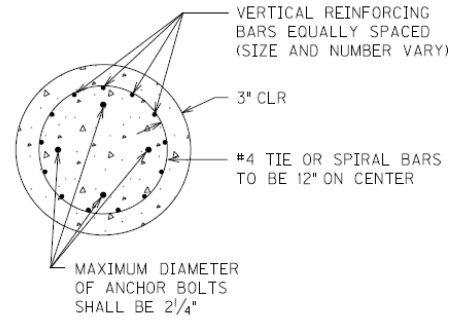
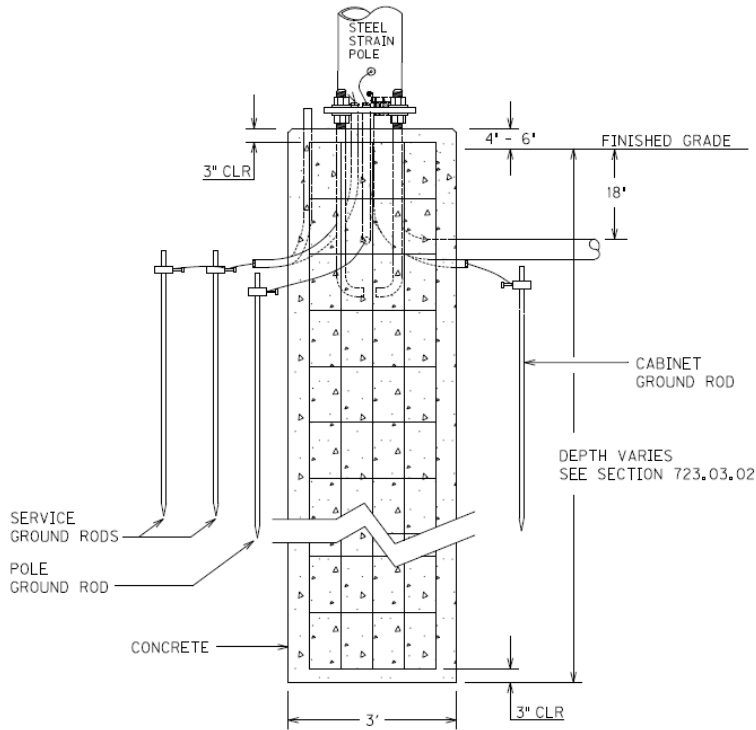
– Overhead–

- How we design our signal poles and spans: Typical attachment heights on our Steel Strain poles will be two foot from the top of the pole at a 5 percent sag. We will need to have these spans attach from pole to pole on all corners. The span is only 3/8 inch but is steel and will conduct electricity if near electric lines. Spans need to be as far from electric if possible for the safety of our Traffic Signal Techs.

Pole and Span Example



Steel Strain Pole Base



STEEL STRAIN POLE BASE WITH SERVICE, POLE, AND POLE MOUNTED CABINET GROUNDING DETAILS

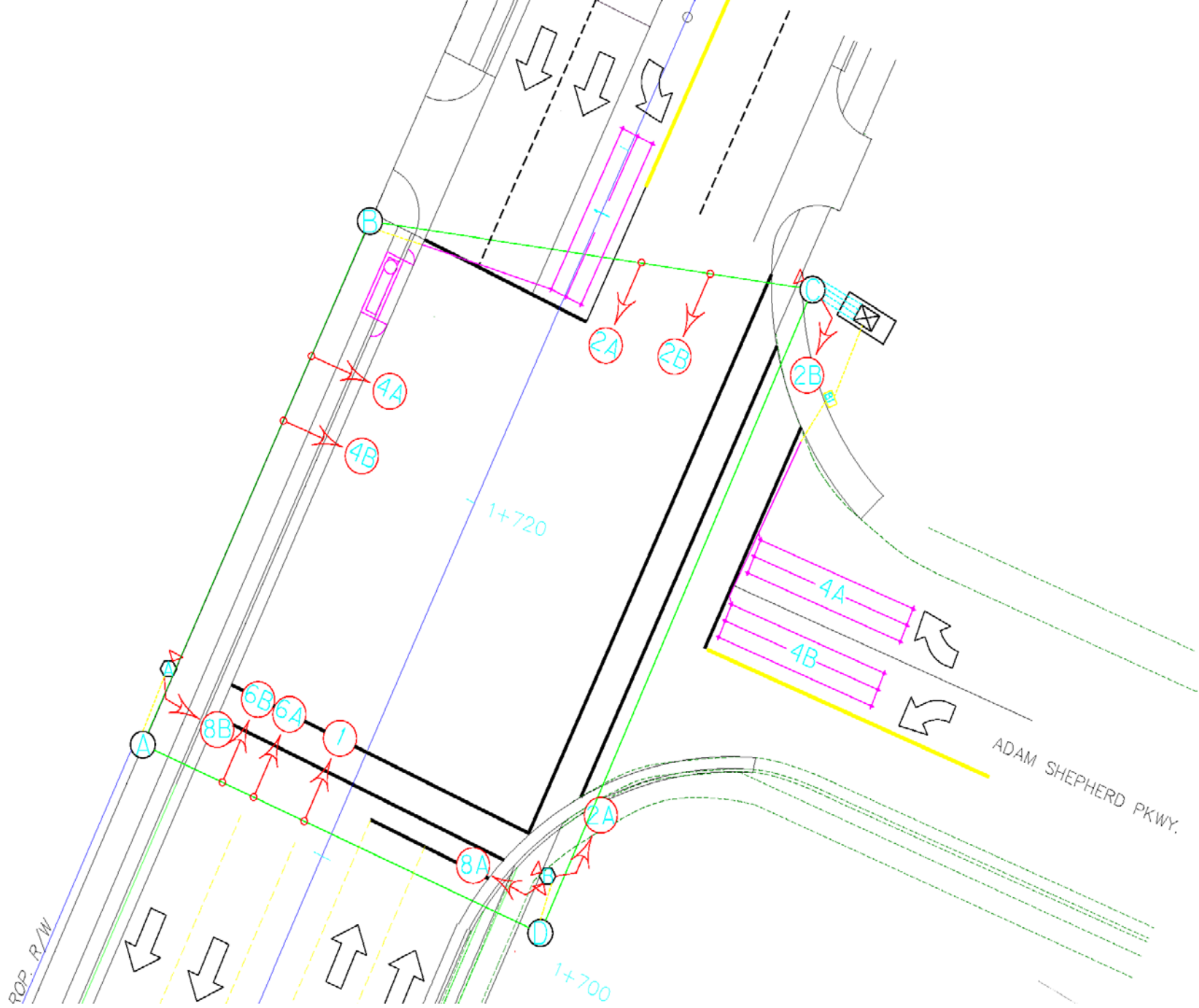
What we Need?

- For Steel Strain poles need typically 5 feet horizontal and vertically from the electric (this is typical from KU/LGE but may be different for higher voltages and for different Electric companies). We can be typically within one foot of communication lines (these are usually not the problem).
- Electrical Drop- Typical is overhead but need to know what corner that the electric company wants to drop from. There usually is a maximum distance that an electric company will drop.
 - Question: Does the electric company require us to only do underground services? What do they require KYTC to supply?



What we Need?

- Right of way for traffic signals
 - All corners should have enough right of way to place our poles outside clear zone (not just right behind the sidewalk). Typically we would like 14 – 15 feet in urban and 20 - 24 in rural. This right of way only needs to on each corner near crosswalk or in the middle of the radius.



What we Need?

- Utilities for Roadway Lighting-
 - We typical place 40 foot conventional or 120 foot high mast poles.
 - We need Existing and proposed Utilities plans in DGN/DWF or PDF. We really would like in DGN format.

What we need?

Underground (Typical not a problem)–

- High mast Steel Strain Poles need 4 foot diameter (this diameter may be modified to fit the situation) space with up to 20 feet in depth (we need consider how much space the underground utilities want us to be from there line).
 - » Typically placed 30 foot off the road outside the clear zone.
- Conventional Bases need 2 foot diameter space with depth of 6 feet.
 - » Typically placed one foot behind the shoulder.

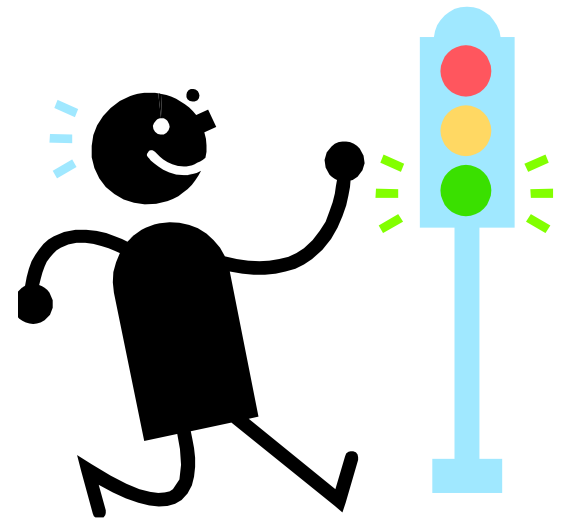
What we Need?

– Overhead-

- Electric lines are the usual problems.
- Need help to find out what the voltage of these lines are and what the requirement is from the electric company for our poles to be clear of them.
- For Conventional poles need typically 5 feet horizontal and vertically from the electric (this is typical from KU/LGE but may be different for higher voltages and for different Electric companies). We can be typically within one foot of communication lines (these are usually not the problem).

What we Need?

- Electrical Drop- Typical is overhead but need to know what corner that the electric company wants to drop from. There usually is a maximum distance that an electric company will drop.
 - Question: Does the electric company require us to only do underground services? Need what they require us to supply.



What we Need?

- Right of way for lighting is not usually a problem except in urban areas.
 - In urban areas we would like to have at least 3 foot behind the sidewalk and this area be clear of any utilities. It would be better the utilities be under sidewalk or in utility strip near road.

Concussion

- Think about the traffic signals and lighting when you considering placing utilities and purchasing right away.
- We want to be in contact with utilities and project manager at beginning of project not at the last possible moment.
- Hopefully we can get the PRIME space before the Utilities companies!!!!
- We need to TALK. Collaboration is the KEY!!!

Contact

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