

Richardson Bike Phasing in ATC Cabinets

Mike Wobken, P.E., PTOE

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Agenda

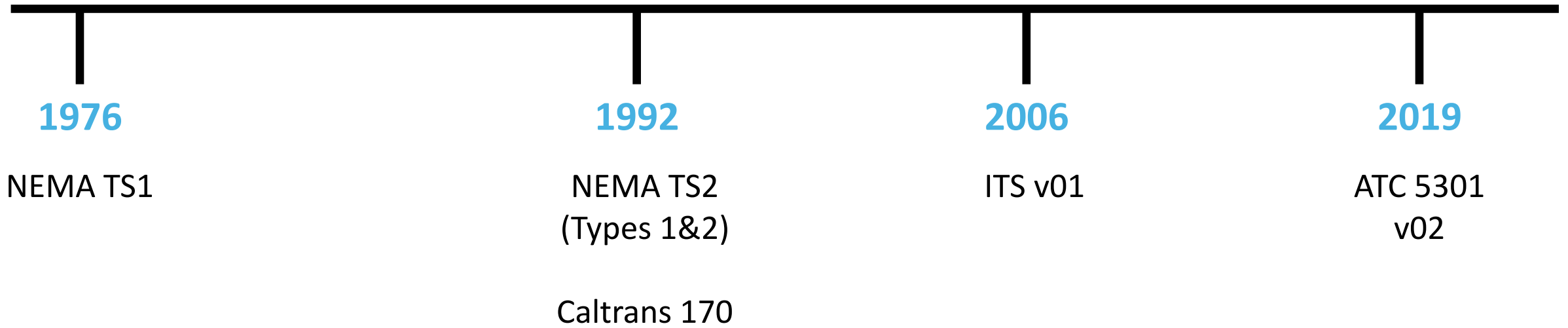
- What's an ATC cabinet?
- Traffic signal cabinets – a brief history
- Advantages of an ATC cabinet
- Bike Phasing Example #1
 - Right-turn overlaps & blank out signs
- Bike Phasing Example #2
 - Passive bike detection & leading bike interval

What's an ATC Cabinet?



- Combines the strengths of previous specifications to get the “best of both worlds”
- Modular swappable components
- High-speed serial communication for more comprehensive monitoring

Signal Cabinet Standards Timeline



Cabinet Types (1992-2019)



NEMA



Caltrans



Controller Types

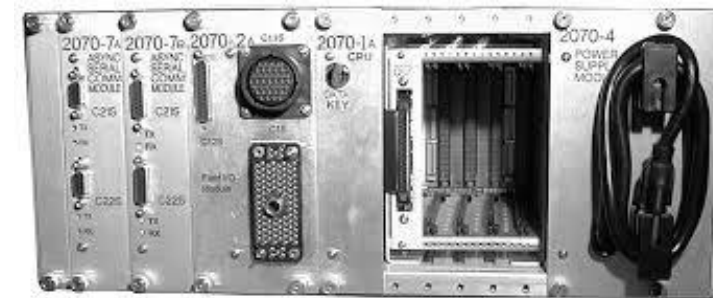


TS2 Type 1/ATC



TS2 Type 2 / TS1

NEMA

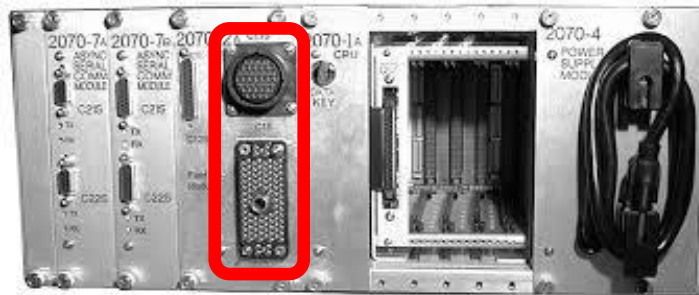


Caltrans/2070/ATC

Why ATC Cabinets?

More efficient serial communication

Physical Pins



Serial Ports



Why ATC Cabinets?

Smaller form factor doubles capacity



Before



After

Why ATC Cabinets?

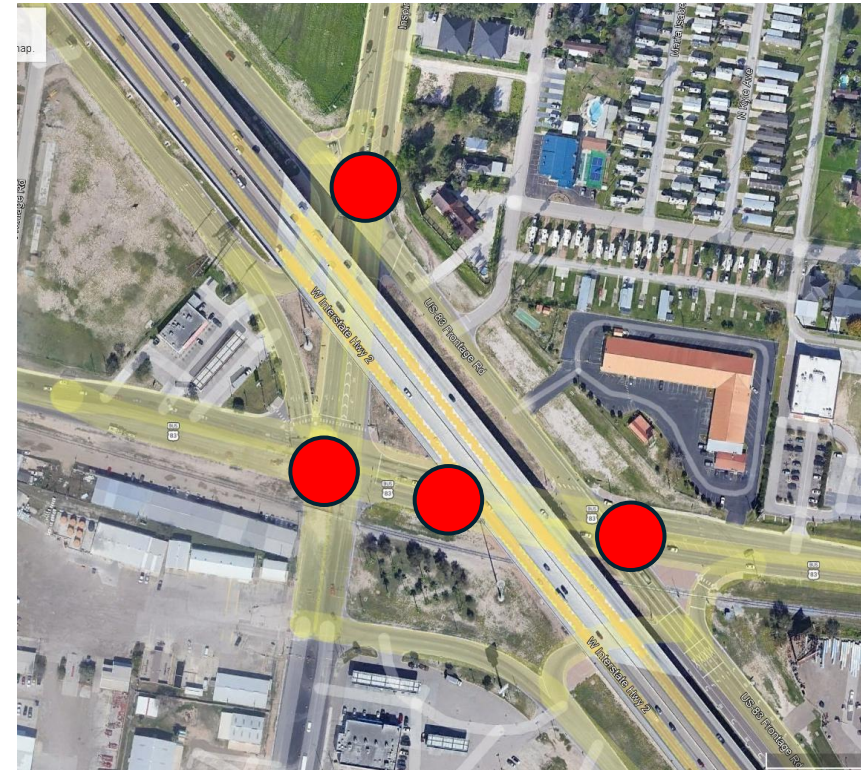
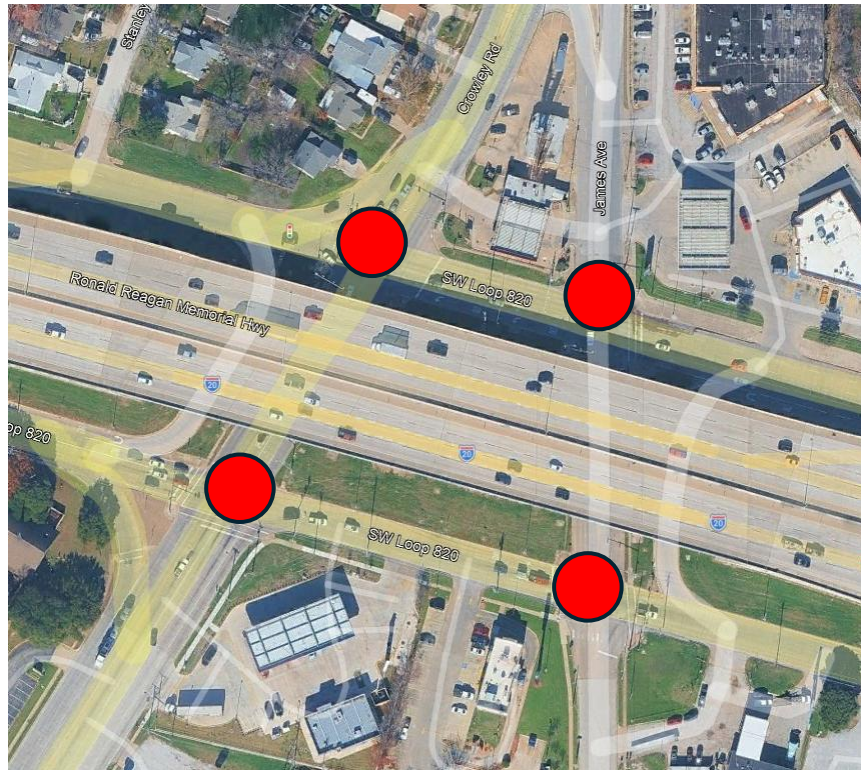


Before



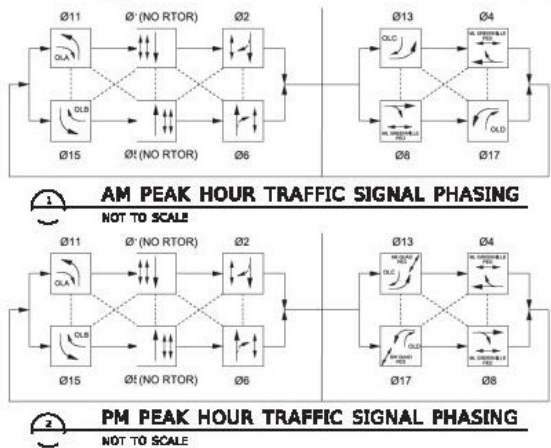
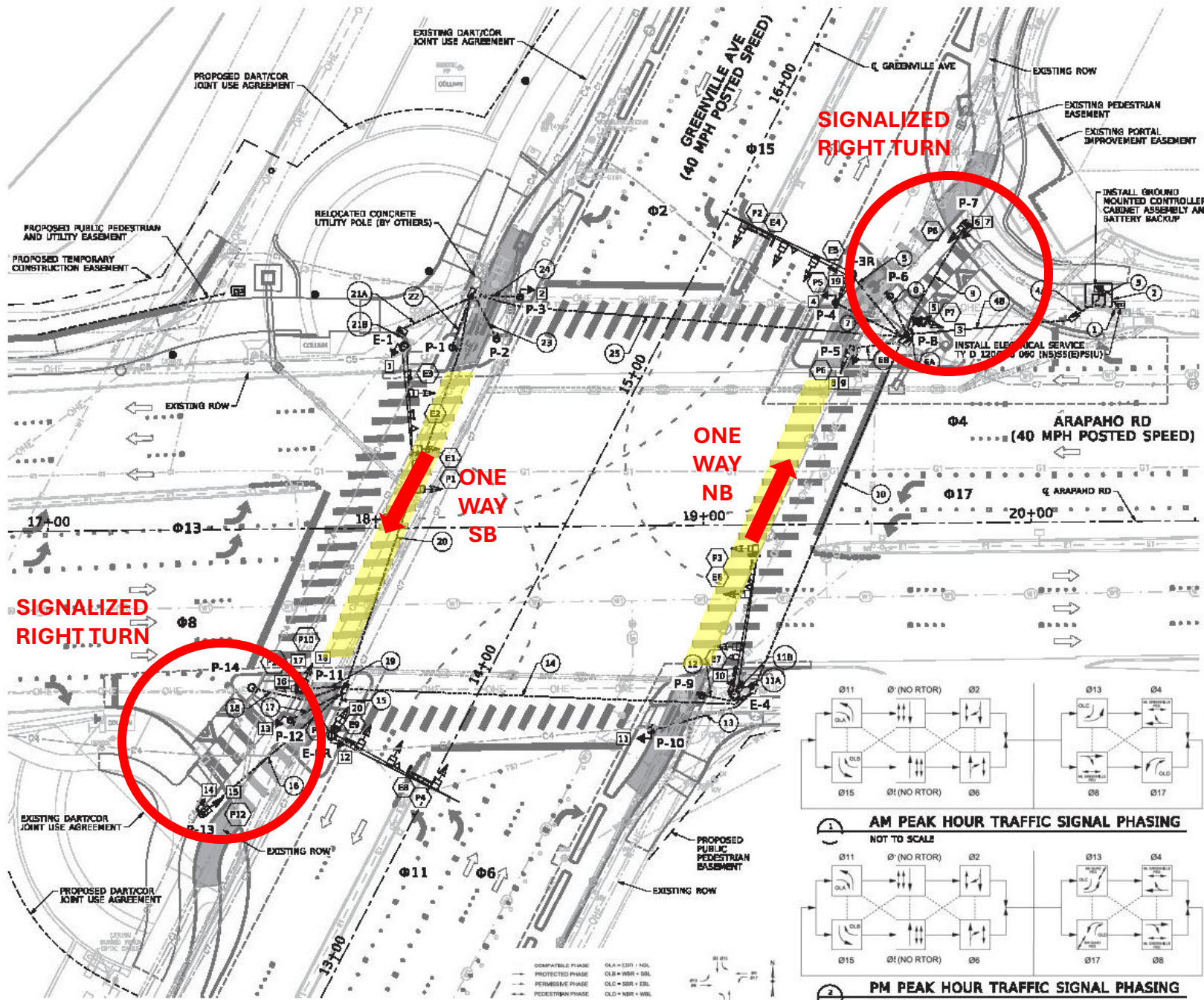
After

Why ATC Cabinets? 32 Channels!



Richardson Example #1 (30 channels)

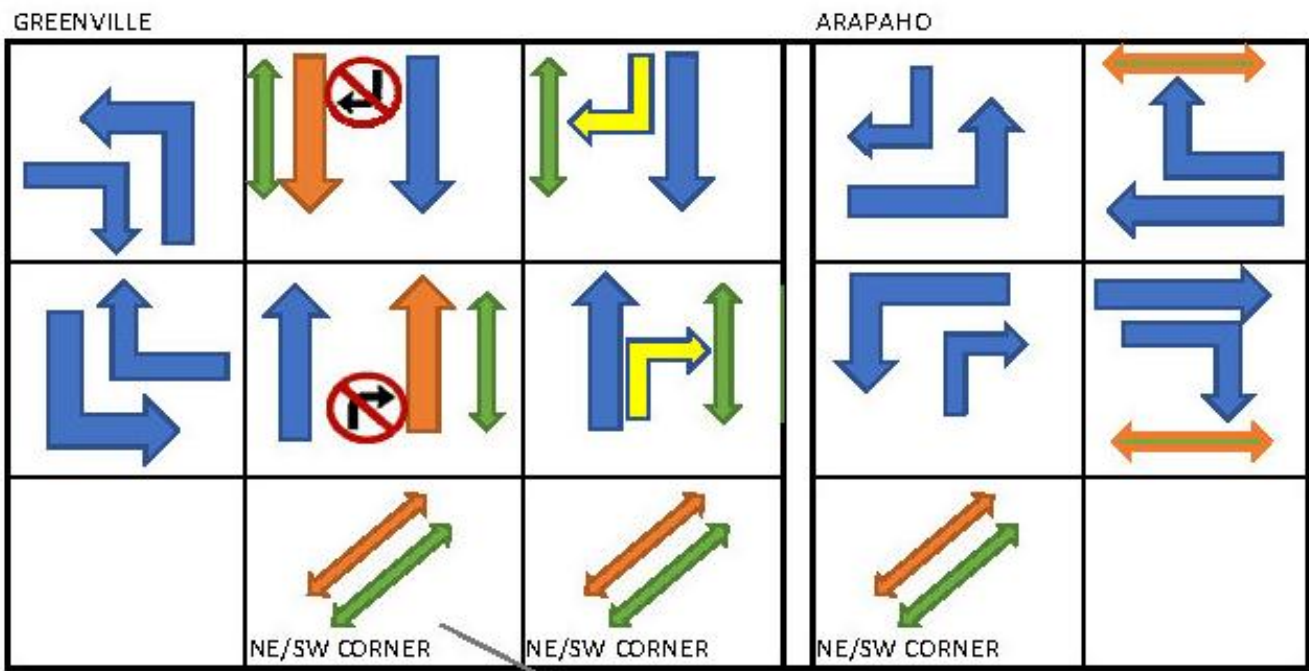




Chardson Bike Phasing in ATC Cabinets



Phasing Sequence



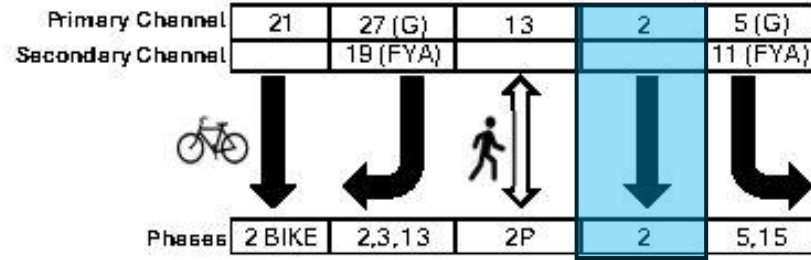
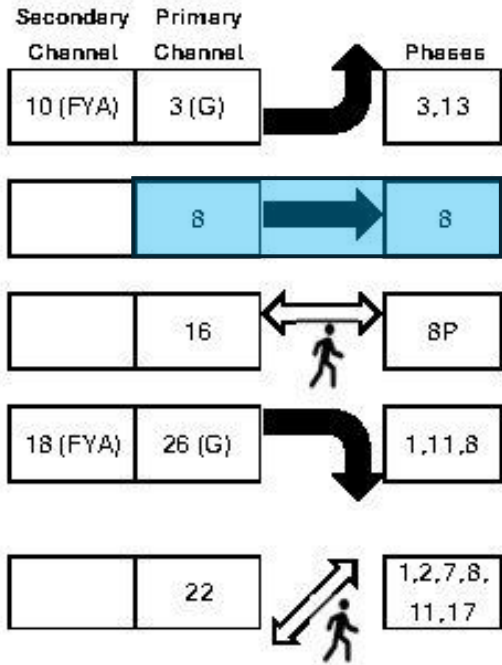
SEPARATE PED CROSSING FROM SW CORNER TO THE ISLAND TO ADDRESS THE LIMITED VISIBILITY AROUND THE EXISTING BRIDGE PIER AND RELATIVELY HIGH EASTBOUND RIGHT-TURN VOLUME.

DEDICATED SIGNAL HEAD WILL ALLOW FLEXIBILITY TO FLUSH EASTBOUND RIGHT-TURN AS NEEDED.



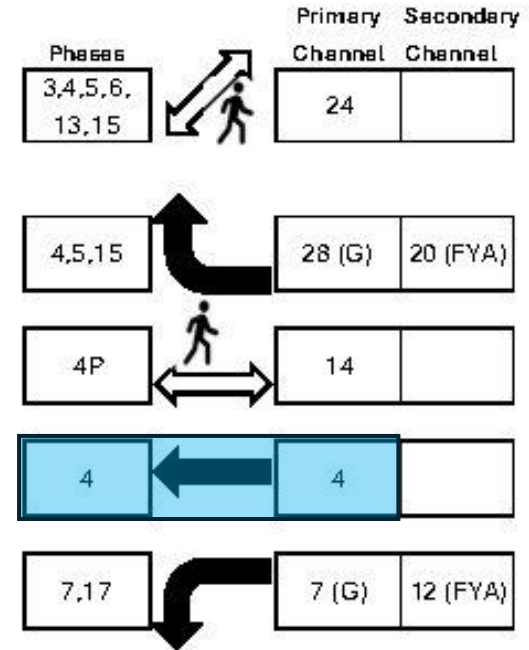
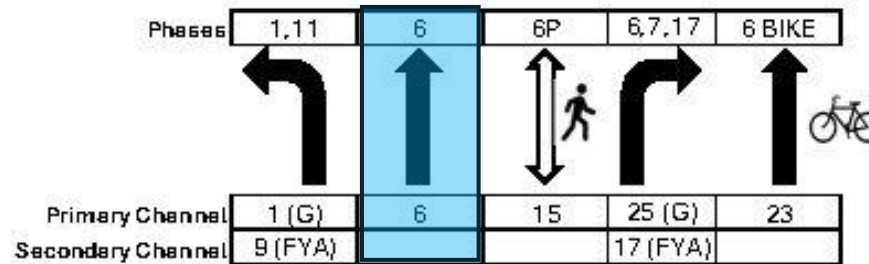
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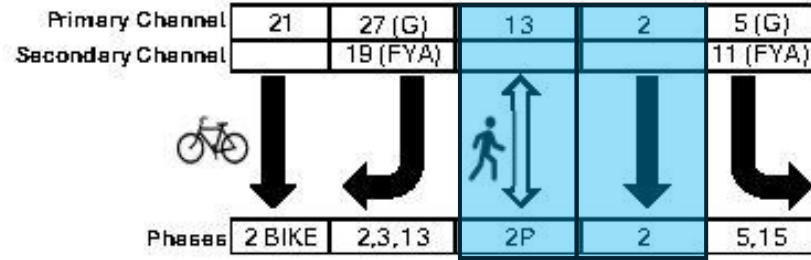
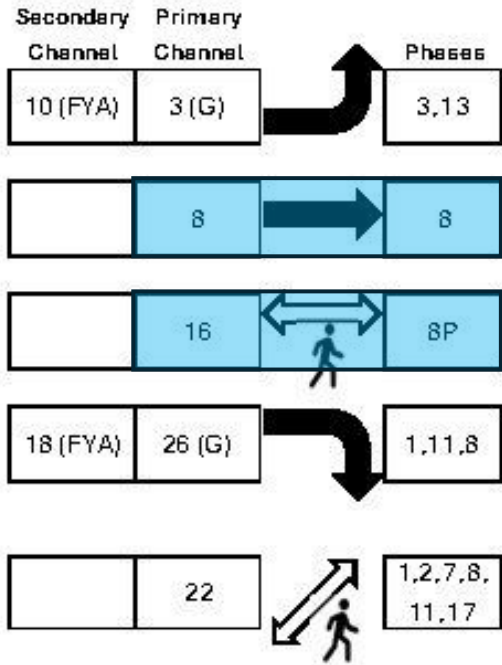
Channel 29(R)

Channel 30 (R)



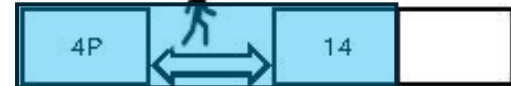
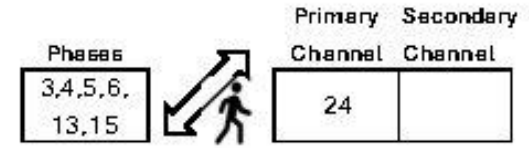
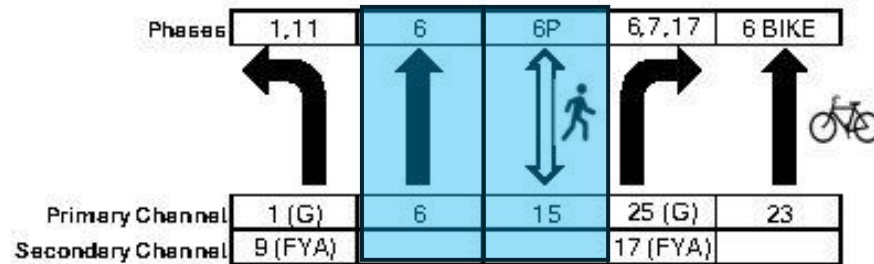
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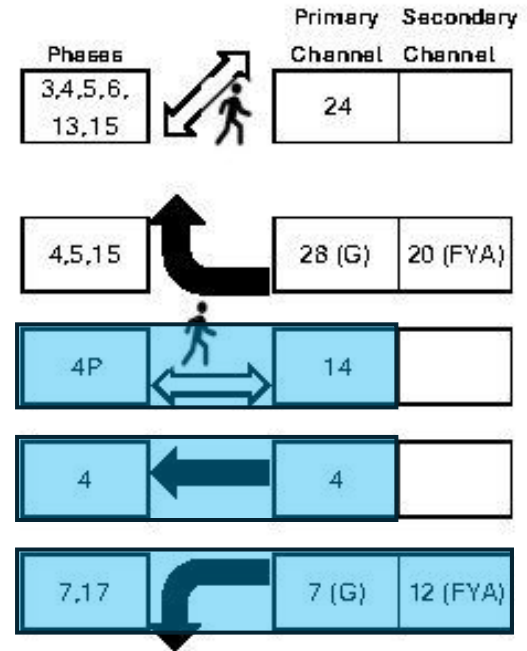
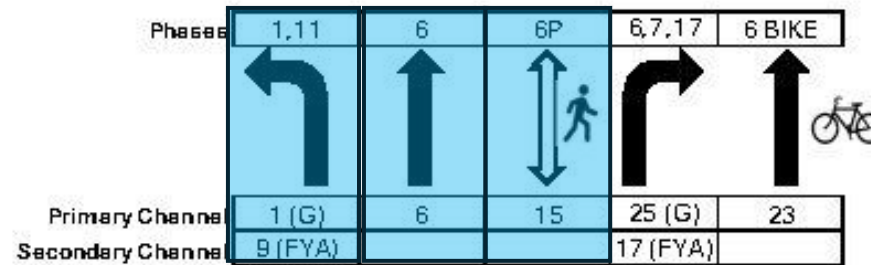
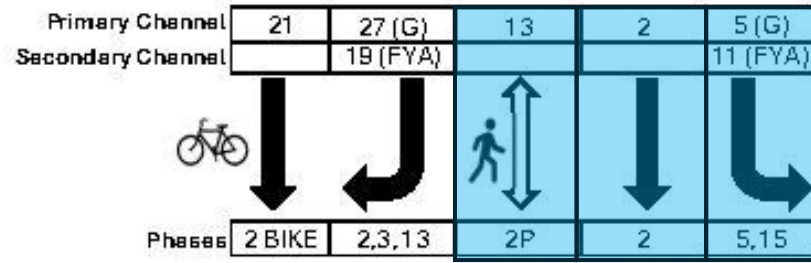
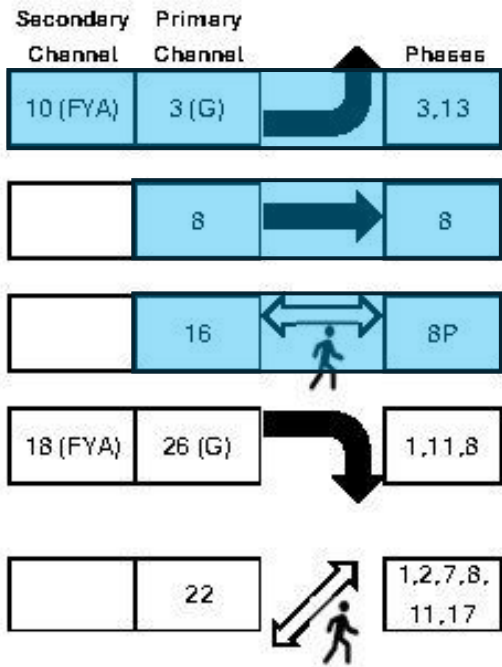


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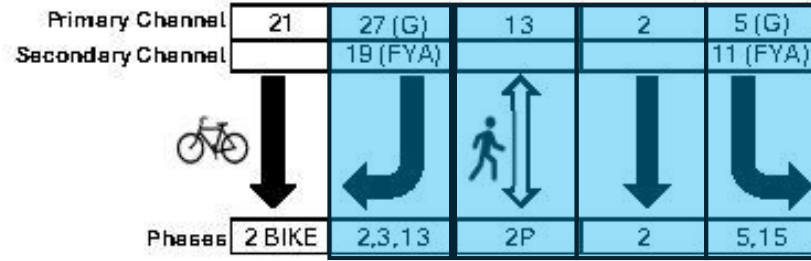
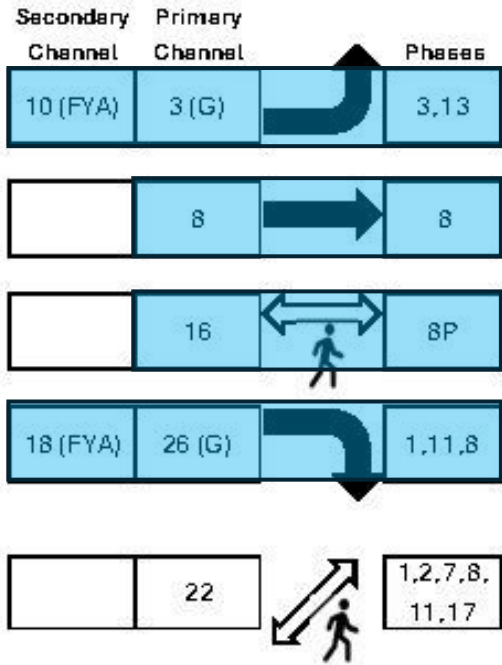
Channel 30 (R)



Channel Count: 16

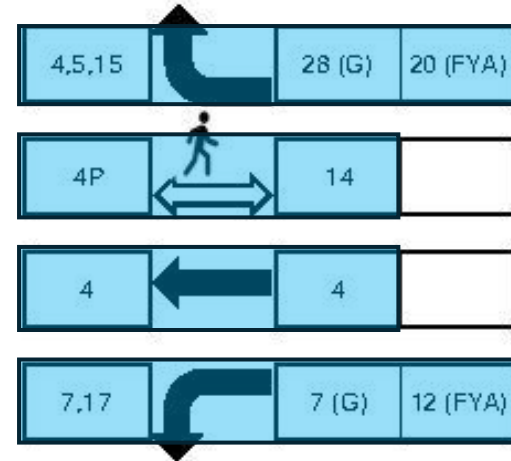
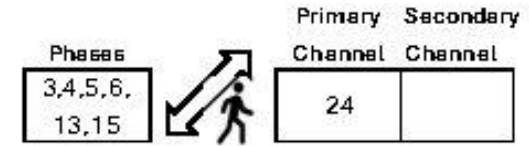


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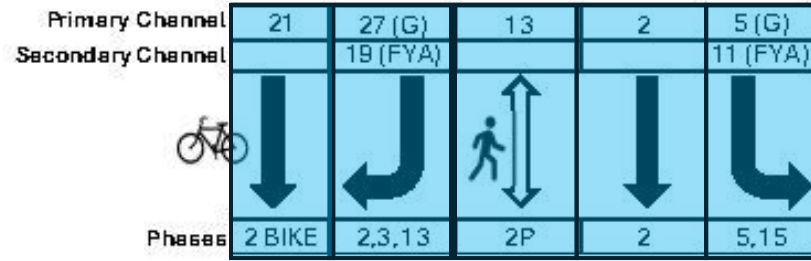
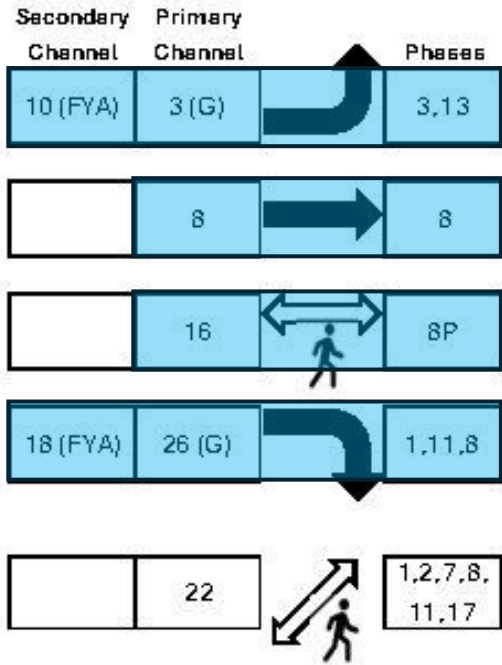
Channel 29 (R)

Channel 30 (R)



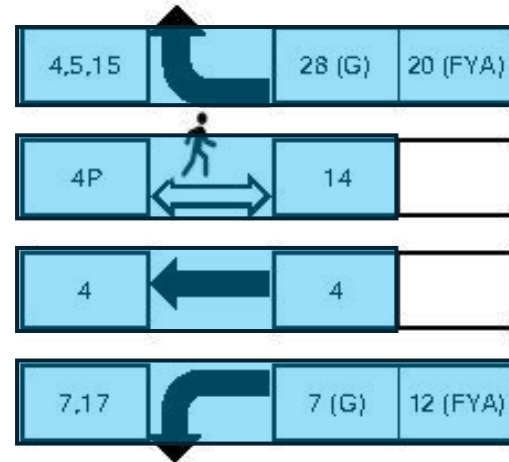
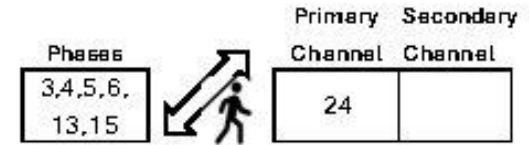
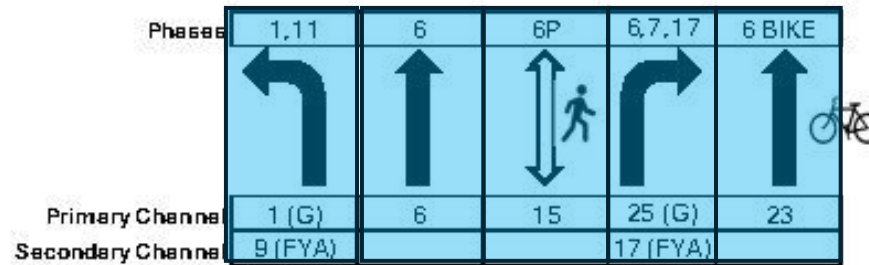
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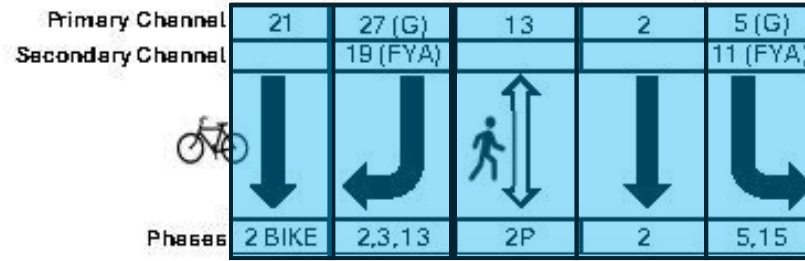
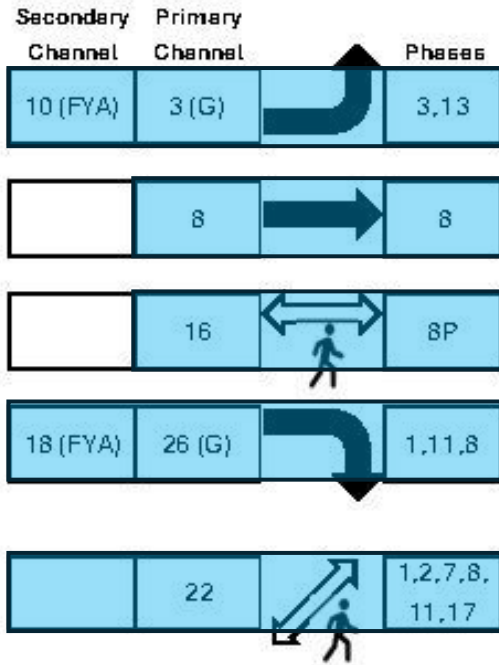
Channel 29(R)

Channel 30 (R)



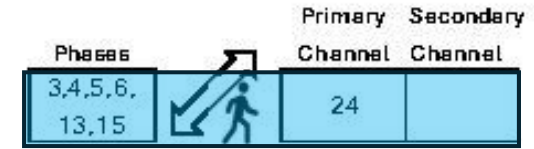
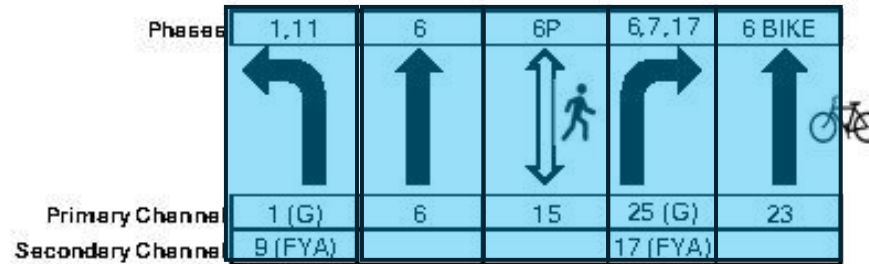
Channel Count:

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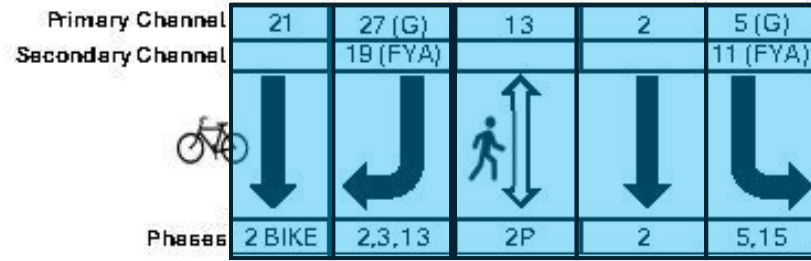
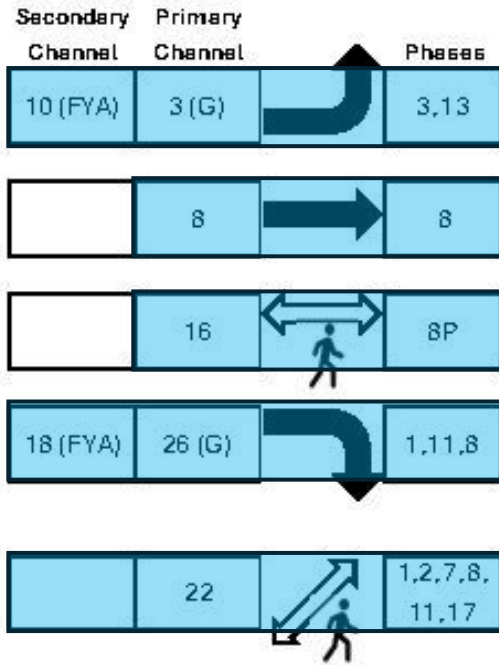
Channel 29(R)

Channel 30 (R)

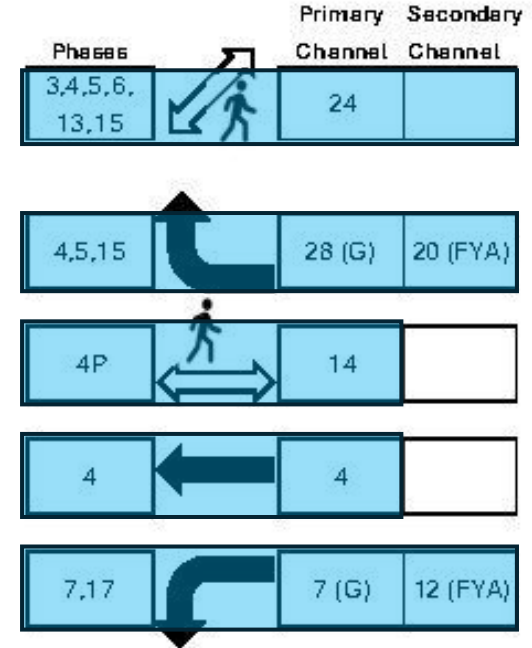
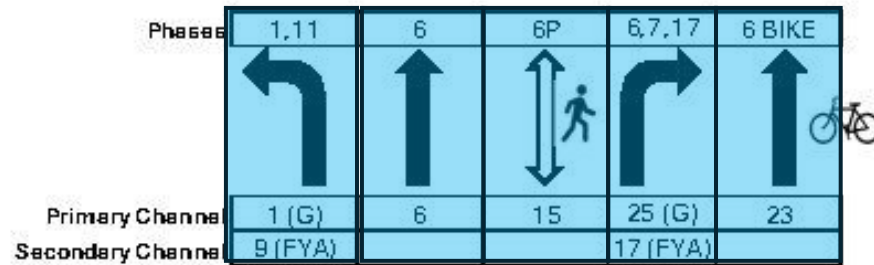
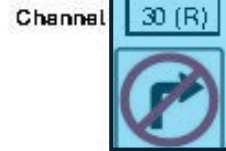


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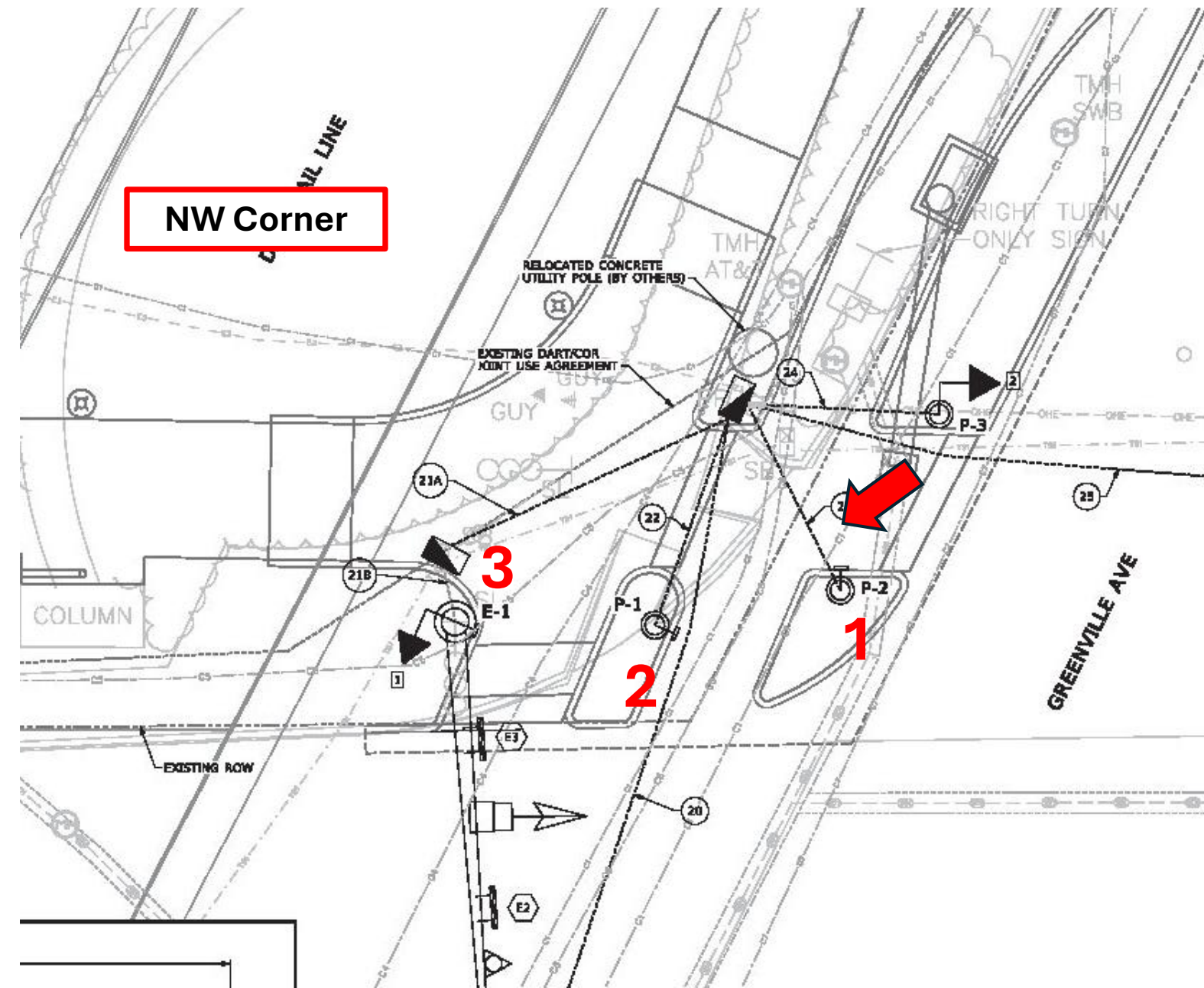


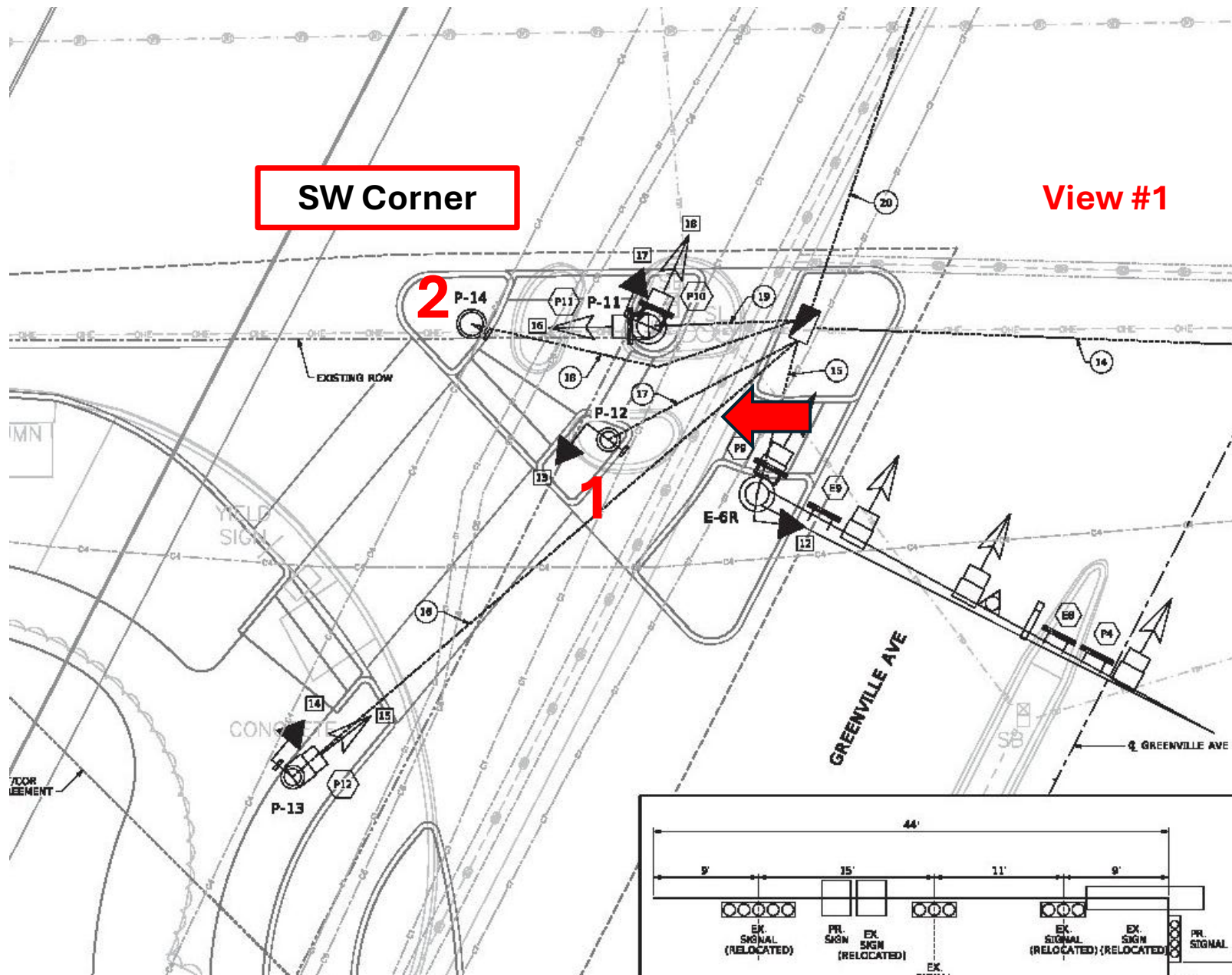
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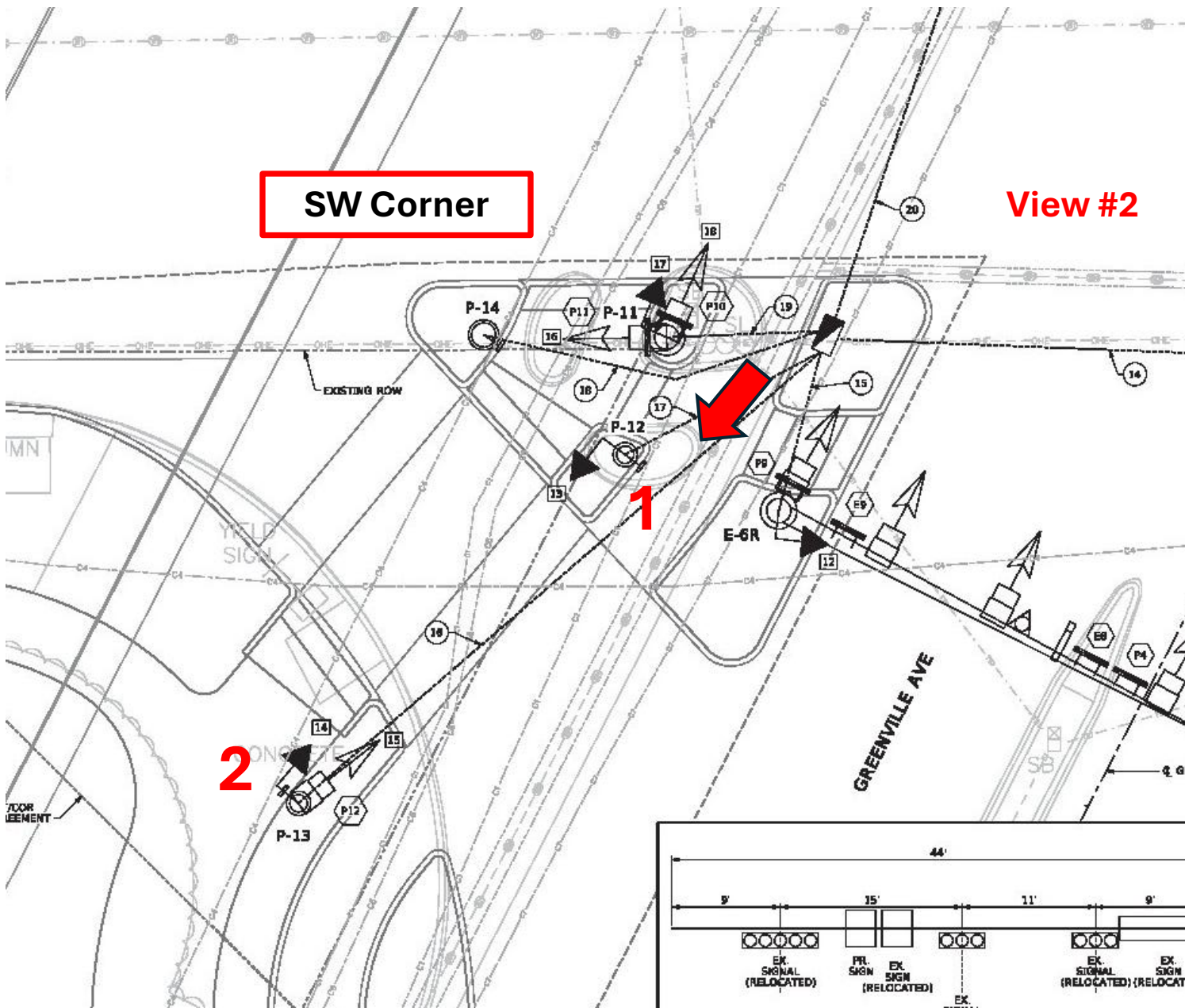


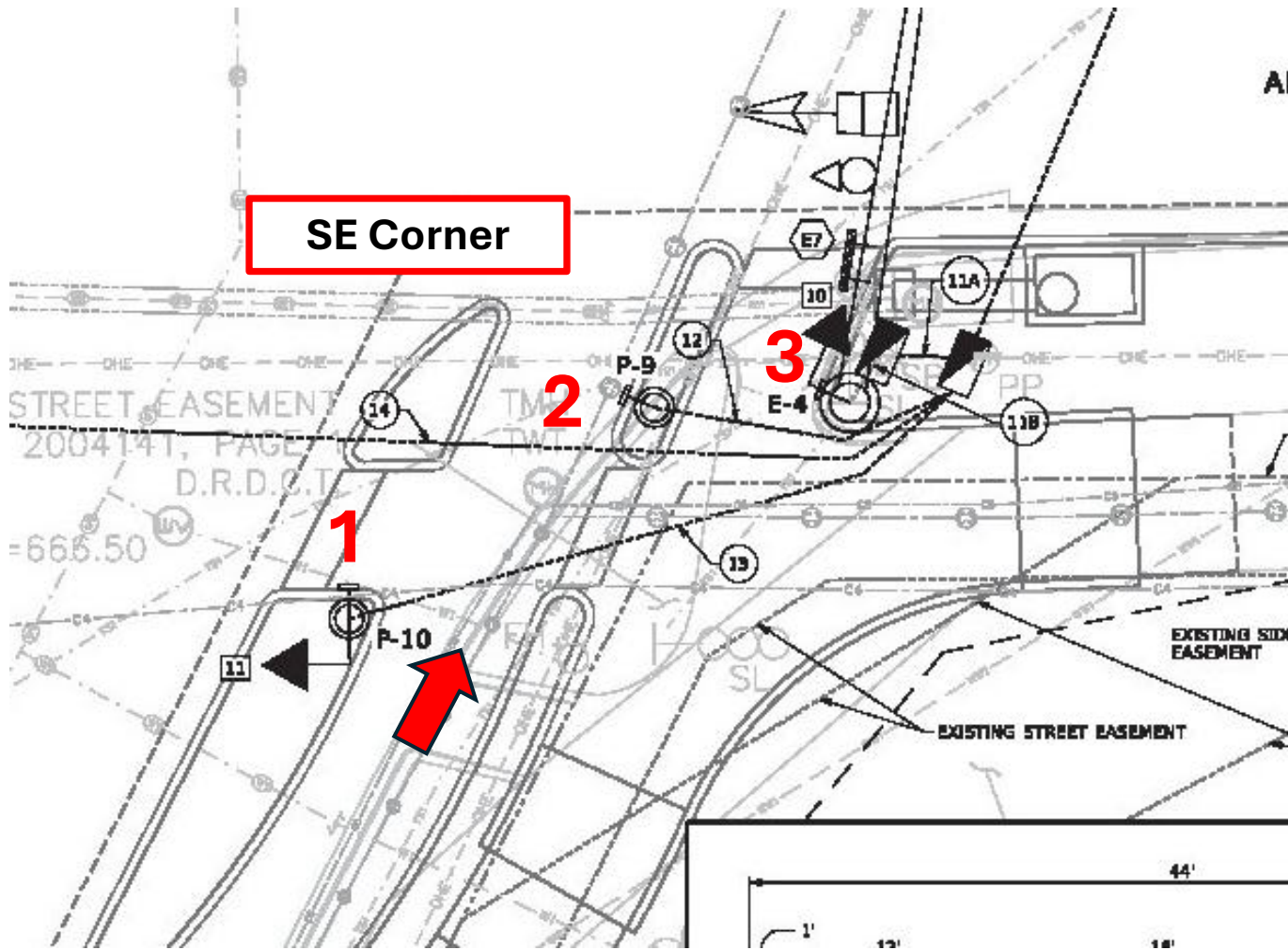


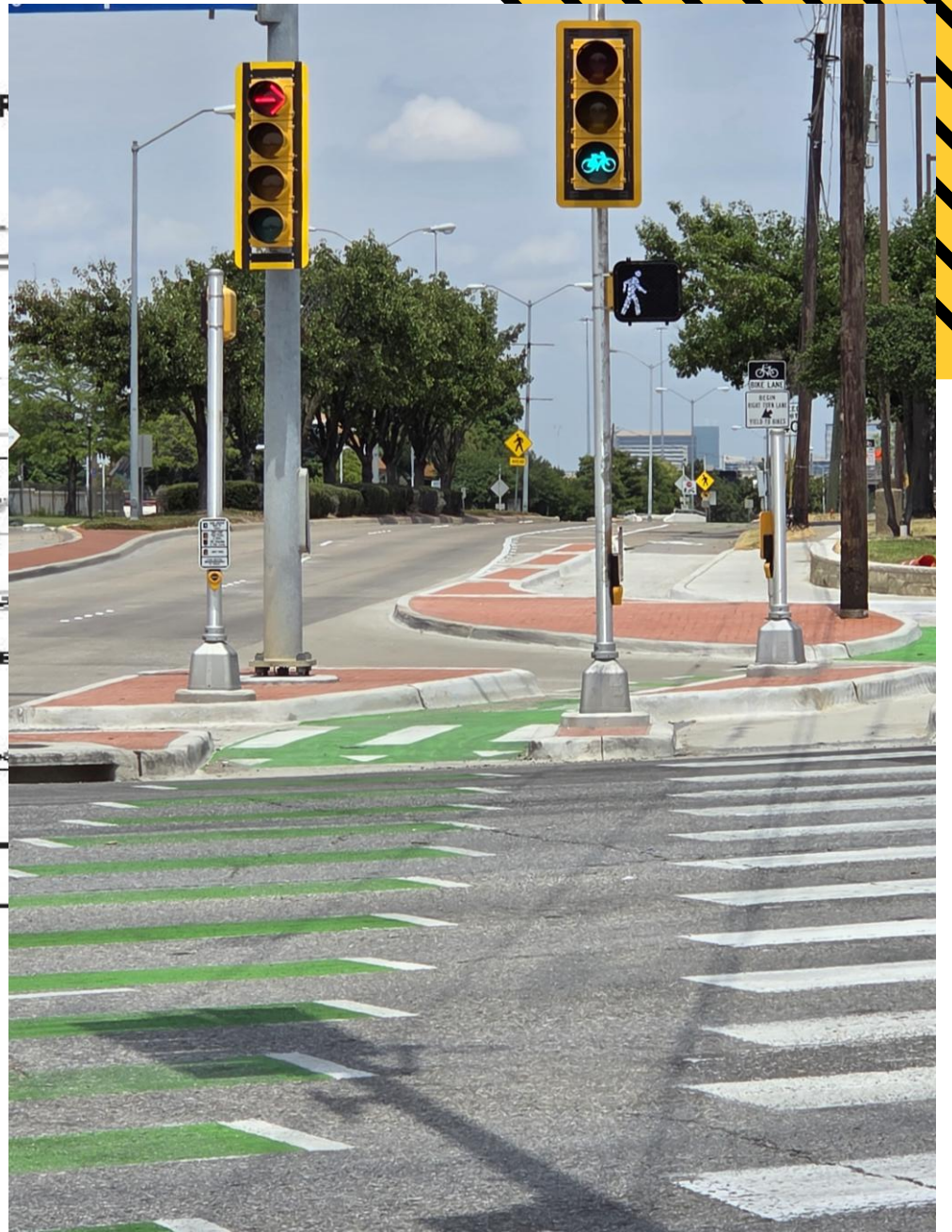
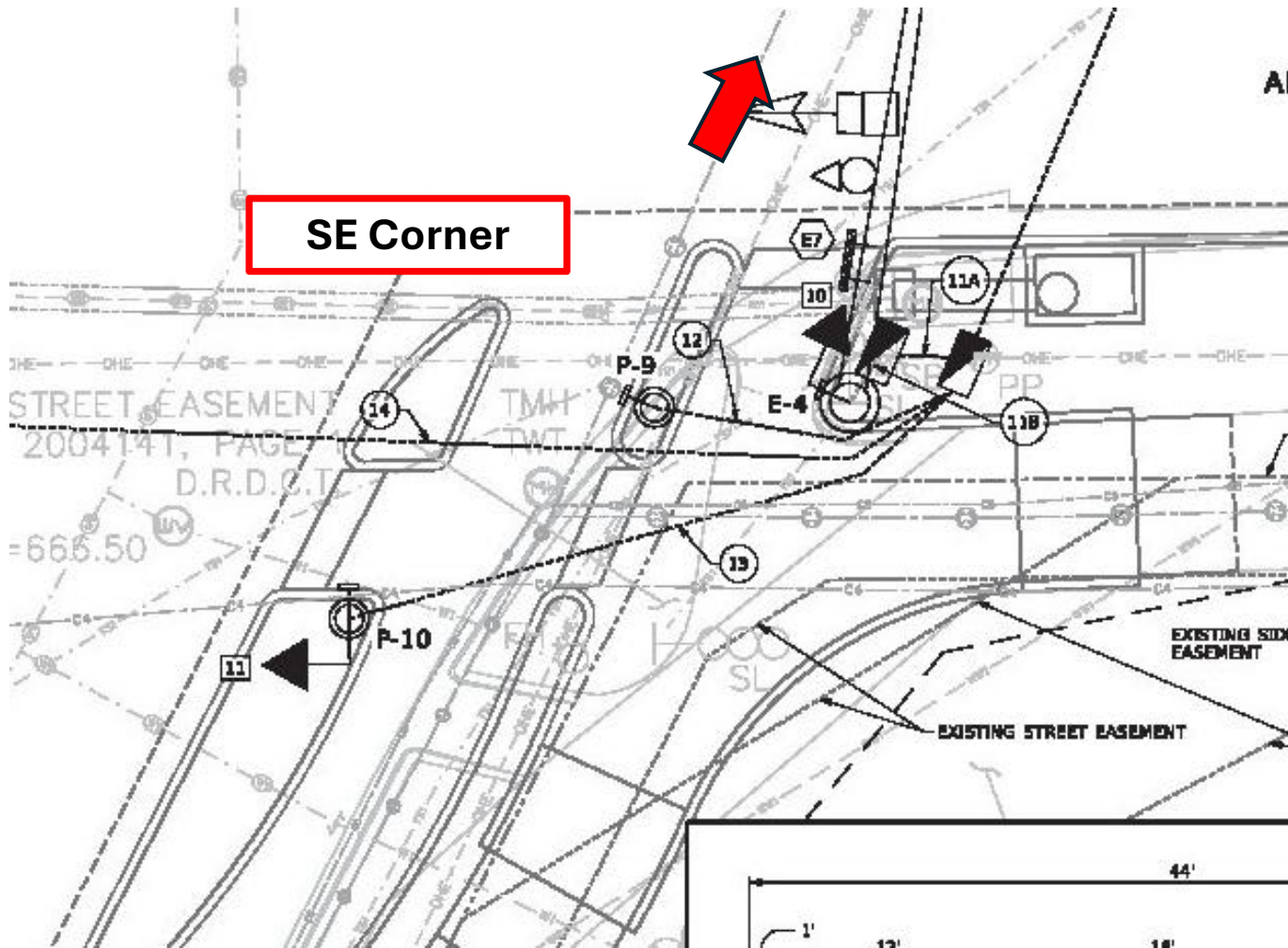
Bike/Ped Accommodations











Bike Phase Video



Bike Phase Photos

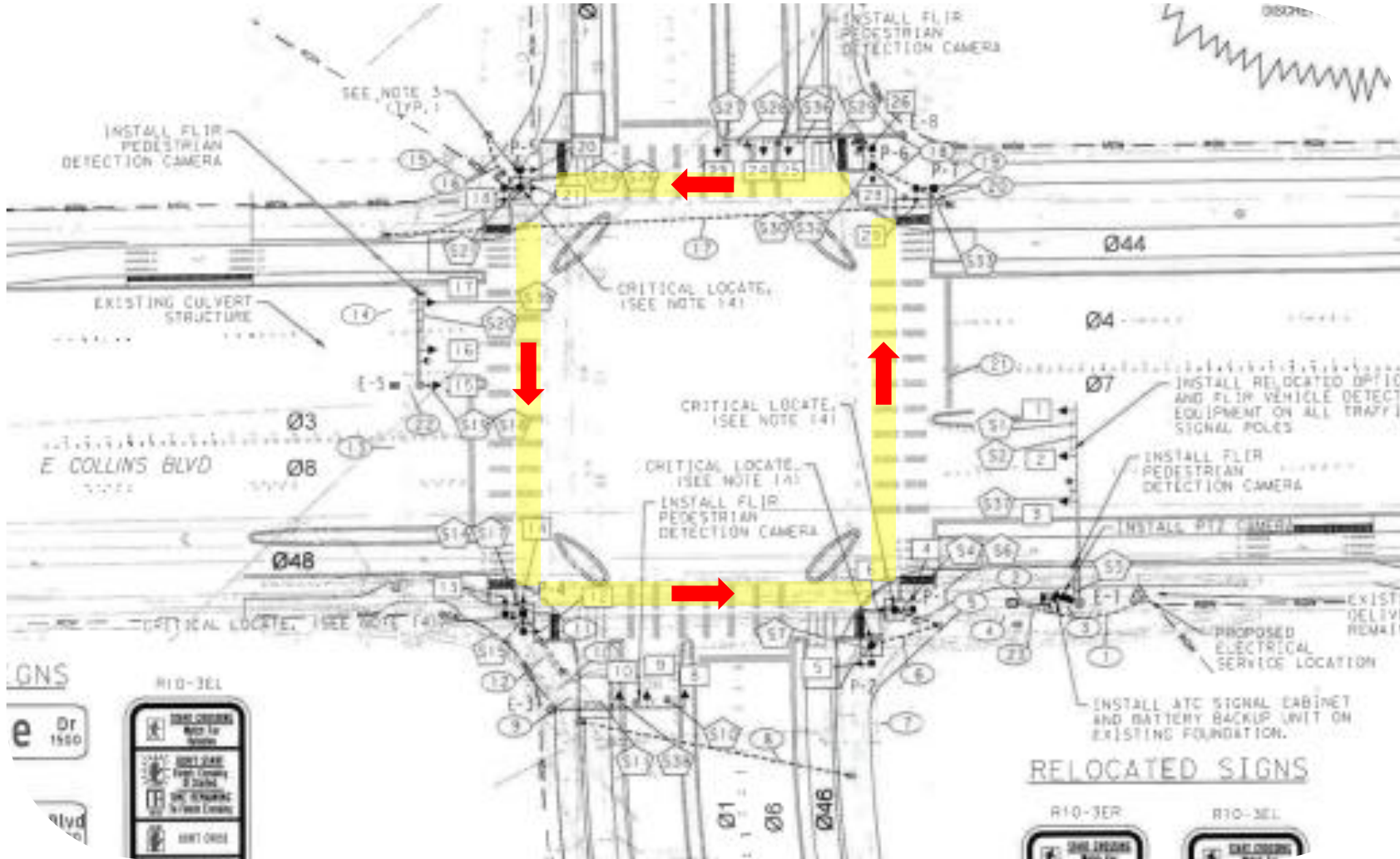


Lessons Learned

- Suppressing (holding in red) FYA left- and right-turn overlap is an effective way to protect peds & bikes
- Channelized right-turns made bike phasing more complicated
 - Eliminated the leading bike interval
 - Added longer bike overlap min green to cover entire crossing
- Not all blank-out signs are ATC cabinet compatible

Richardson Example #2

Passive Bike Detection



Bike Phase Photos



Bike Phase Photos



Bike Phase Video



Lessons Learned

- Leading Bike/Ped Interval is another effective way protect peds & bikes
 - For locations that don't have dedicated right-turn lanes & FYA overlaps
- Giving active feedback to bicyclist with a confirmation light should reduce chances of jaywalking
 - Call is cancelled if detection zone is empty



Questions?