



Structural Spec Changes
2014 Specifications:
Info for Bridge Designers

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Branch – Bridge Division

400's + 360's + 780's

- 75 Specs
- 47 People – 19 leads, 28 reviewers
- 9 new specs – several were SS's
- 4 specs removed from 2004 Items
- Major changes or New Items: 28
- Moderate changes: 20
- No changes: 27

Why Major Changes?

- Keep up with material issues
 - ❖ Supply; EPA; Industry changes
- Fix “broken” specs from 2004
- New technologies/practices
- Address recent issues
- Some changes were hard to do with SP’s
- Some due to design/code changes

Item 403 – Temporary Sp. Shoring

- Considering making this only for slope protection for cuts
- If done that way, temp faces for embankments will go under 423
- Having lots of confusion about this in field for phased construction

Item 404 Driving Piling

- Drive to plan tip elev or more (no more stopping w/in 5' and waiting)
- Provisions for driving in hard soils ($<0.1''$ per blow) to reduce penetration reqt's
- Electronic stroke indicator and blow count recording device may be req'd (designer's choice)



Item 410 – Soil Nails (New)

Item 411 – Rock Nails (New)

Item 416 - Drilled Shafts

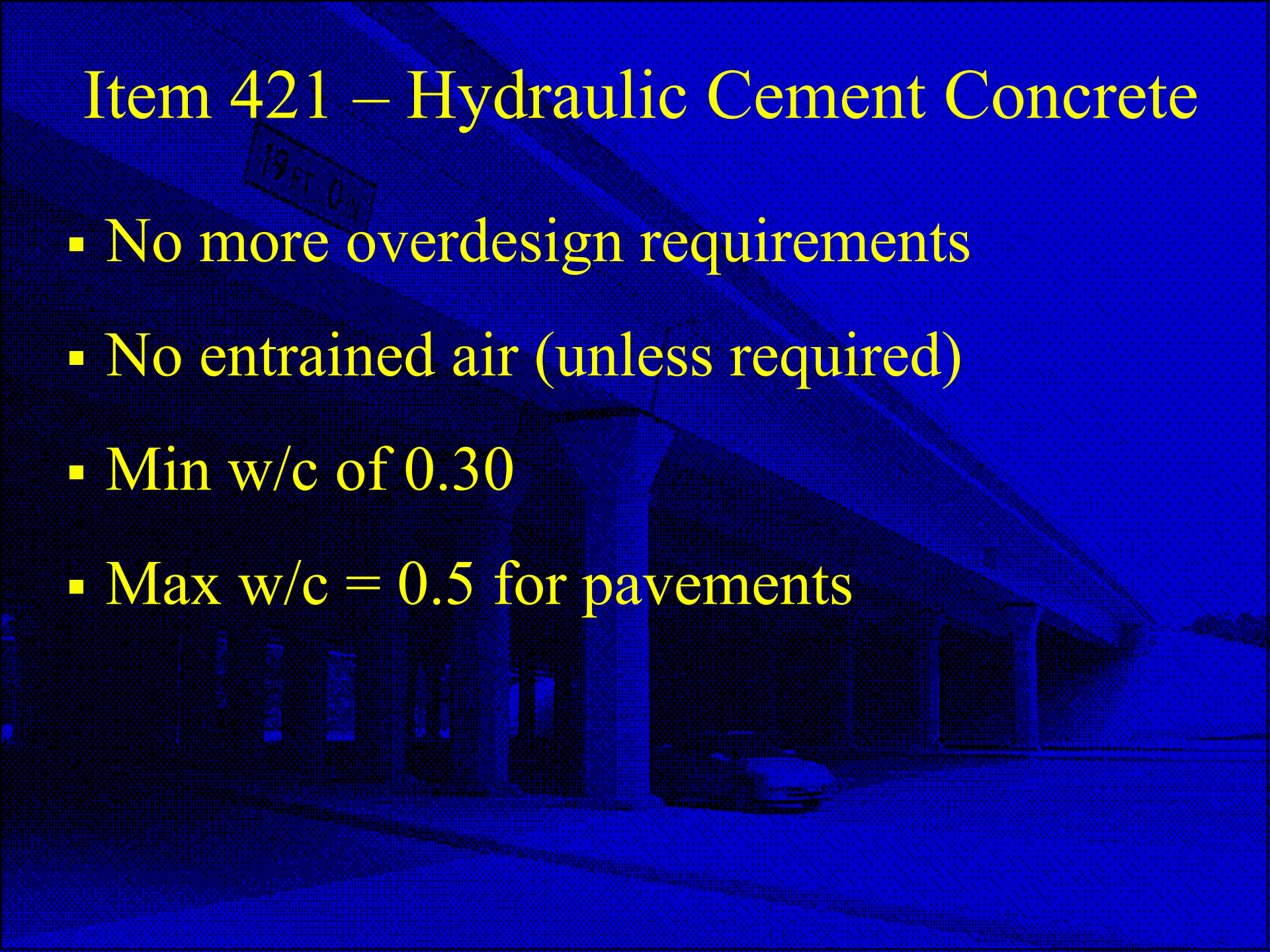
- Drilled shaft installation plan may be required in plans - Optional

Item 420 - Concrete Substructures

- Name change and change in scope
 - Covers abutments, caps, columns, footings, culverts, piers,... below the bearings
- Changes to mass concrete to use new TxDOT software: ConcreteWorks 5' dimension now removed from wording
- New bid codes for widenings, P-T structures,...

Item 421 – Hydraulic Cement Concrete

- No more overdesign requirements
- No entrained air (unless required)
- Min w/c of 0.30
- Max w/c = 0.5 for pavements

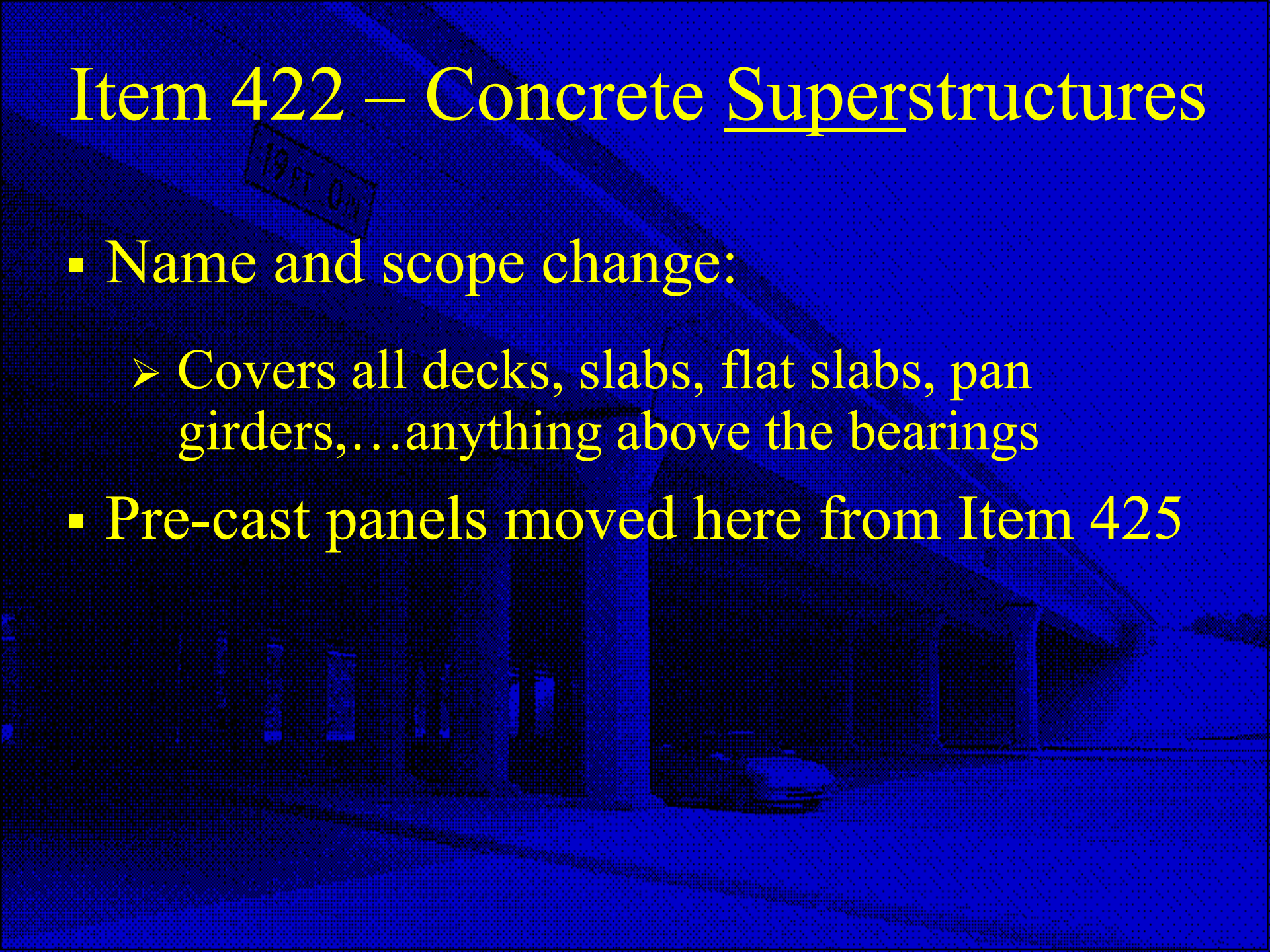


Item 421 – Hydraulic Cement Concrete

- All mix design info in one table
- Max and min slumps
- SCC for pre-cast and drilled shafts
- Optimized gradations
- Low strength formula now in 421

Item 422 – Concrete Superstructures

- Name and scope change:
 - Covers all decks, slabs, flat slabs, pan girders,...anything above the bearings
- Pre-cast panels moved here from Item 425



Item 422 – Concrete Superstructures

Interim Curing and evaporation protection

- Evaporation protection based on evaporation rate or if indicated in plans (West Texas)
- Evap prot needed if rate > 0.15 per website
 - Evaporation retarder or wet burlap
- Interim Curing:
 - Curing compound or
 - Wet burlap (can be same burlap as for evap prot)

Item 422 – Concrete Superstructures

Final Curing

- Cotton mats
- Burlap (burlap from interim cure will work) covered with plastic
- Burlap-Poly sheets
- No change in duration: 8 or 10 days
- Defects: seal shrinkage cracks before cutting grooves – no expense to Dept
- No change to ride specs

Item 423 – Retaining Walls

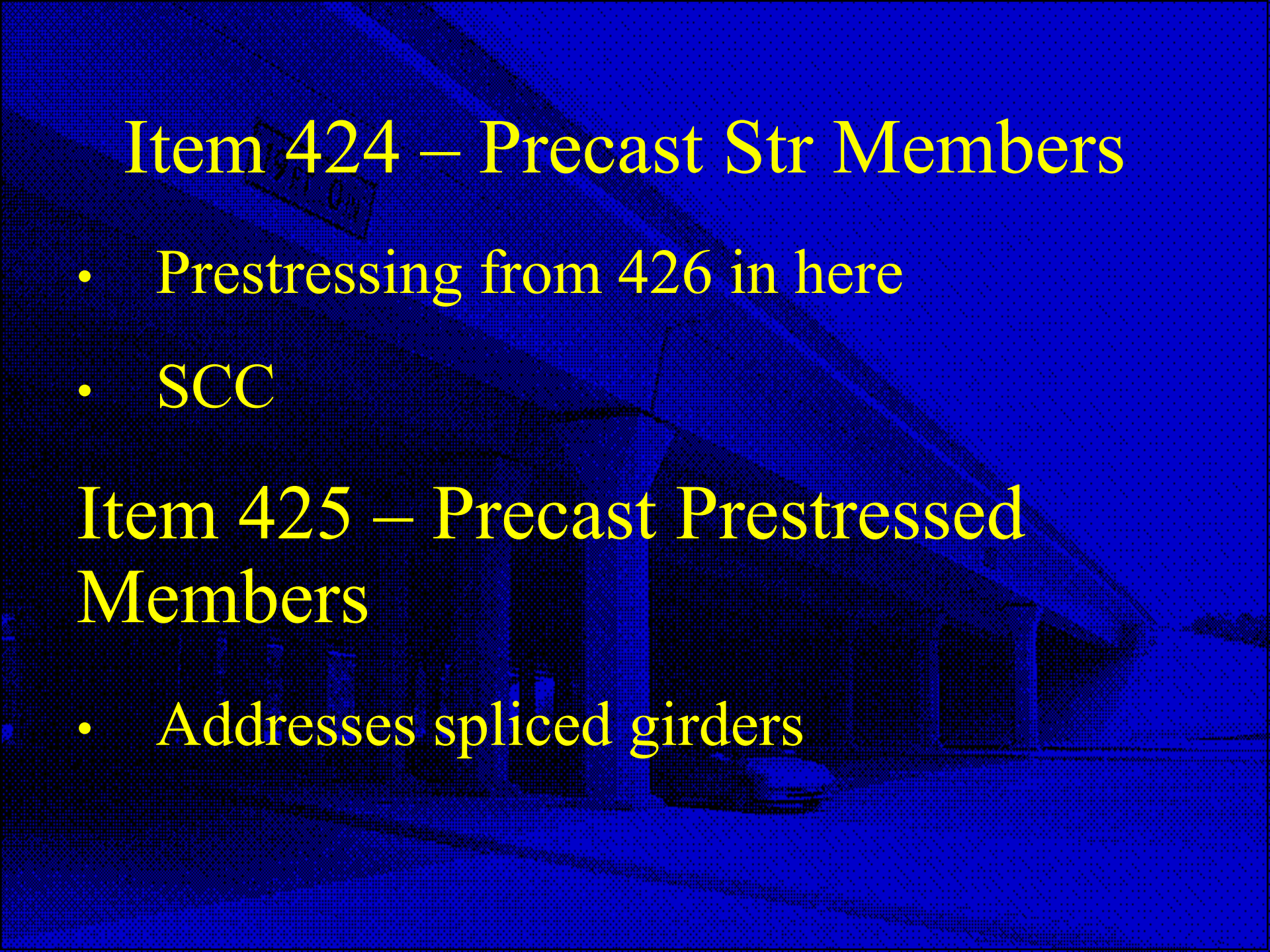
- Gradation changes (less -200 material)
- Temporary walls may have similar material specs as permanent walls
- No RAP or crushed concrete
 - SP just went to AGC
- Pre-approved MSE systems on web

Item 424 – Precast Str Members

- Prestressing from 426 in here
- SCC

Item 425 – Precast Prestressed Members

- Addresses spliced girders



Item 426 – Post-Tensioning

- Covers P-T only, prestressing went to 424
- Will reference PTI specs for tendon stressing and grouting (Nat'l std)
- No longer a pay item (subsidiary to 420 or 422)
- BRG will supply inspectors (just as we do for Str steel)

Item 427 – Surface Finishes for Concrete

- Considering making pay items for more exotic finishes (rub, paint,...)

Item 440 – Reinforcing “Steel”

- Higher grades of A615 rebar (75 and 80)
- Adding stainless, MMfX, Glass fiber bars
- Changing to CRSI standards for bends, rebar detailing

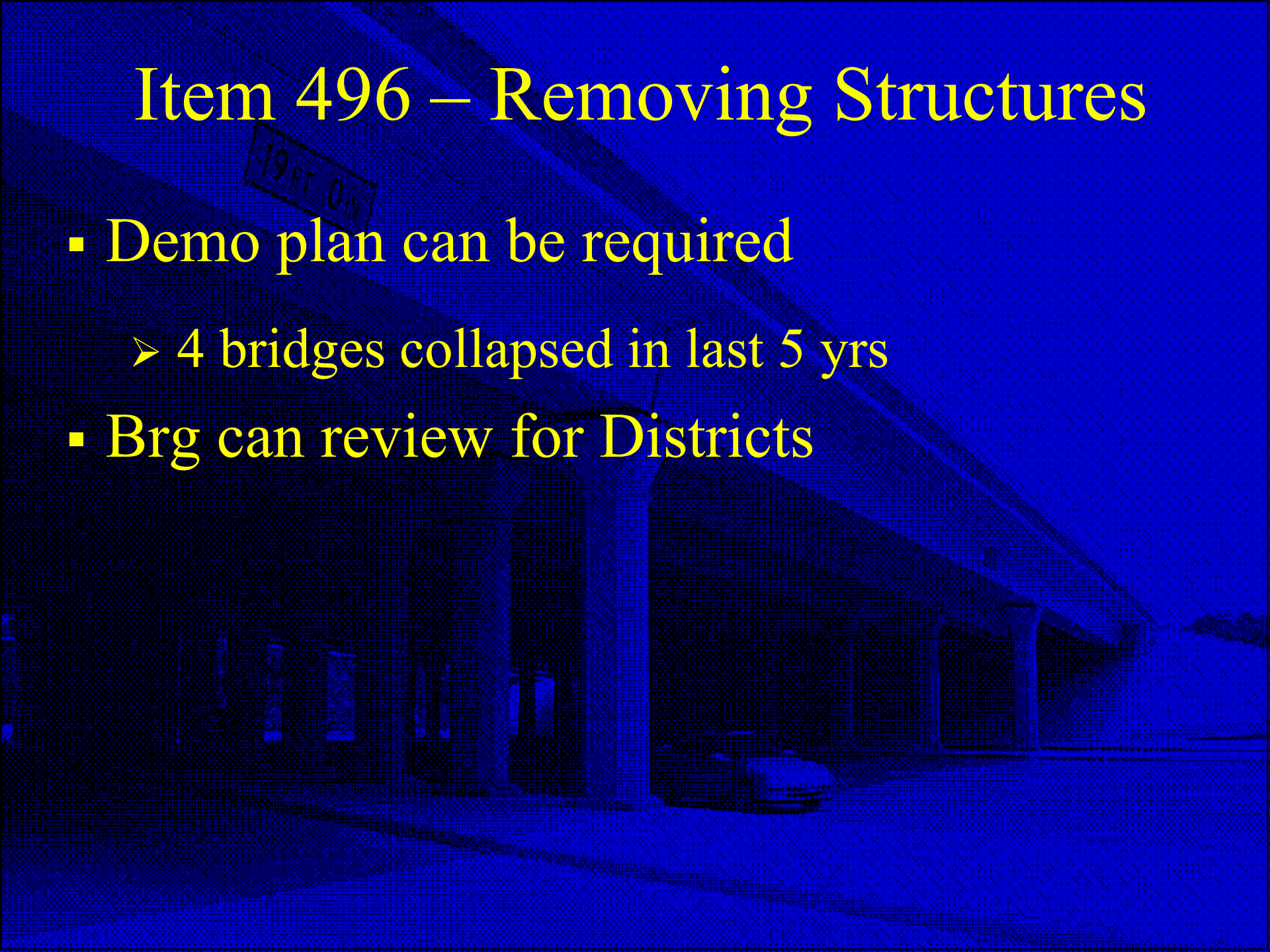
Item 441 – Steel Structures

- Strengthening erection submittal req'ts
 - Refer to NSBA S10.1 (Nat'l std) and TxDOT provided software
- PE sealed and Approval is req'd
 - BRG can review/approve
- Improve safety

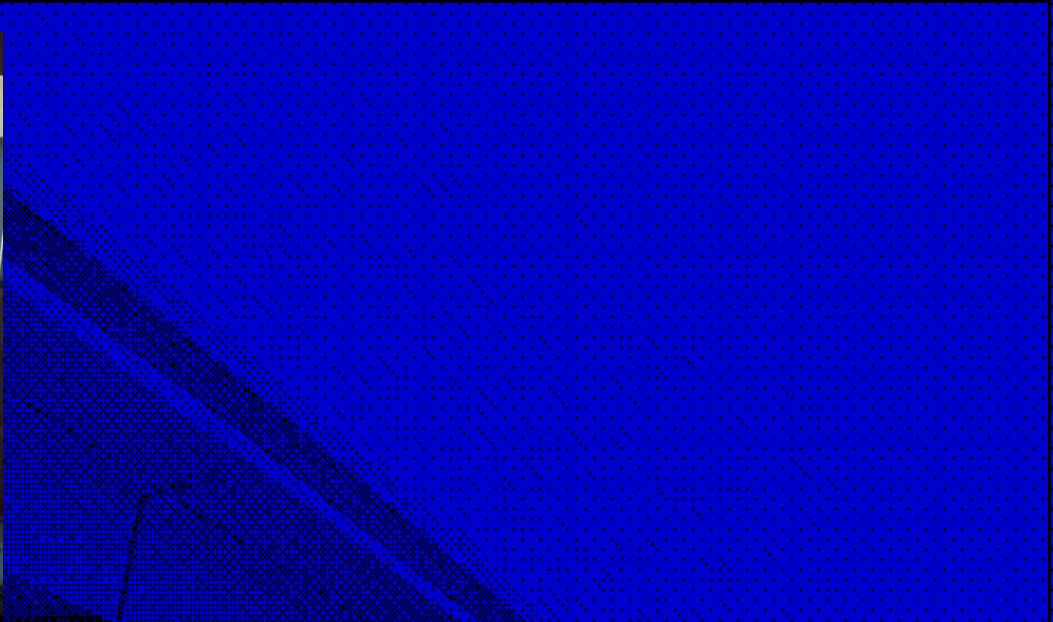


Item 496 – Removing Structures

- Demo plan can be required
 - 4 bridges collapsed in last 5 yrs
- Brg can review for Districts









Other New Specs

A photograph of a bridge structure, likely a pedestrian or bicycle bridge, with a sign that reads "19 FT 0 IN". The bridge has a series of vertical supports and a flat top surface. The background shows a clear sky and some distant structures.

- Item 451 – Retrofit Railing
- Item 783 – Railing Repair
- Item 785 – Bridge Joint Repair or Replacement

Time Line

- Go to Printer July 1, 2013
- Effective for Jan 2014 Letting

Still to Come:

- New bid codes
- New Spec Guidelines
- Possible revisions to standards