

ROAD 27 OVERCROSSING PROGRESS UPDATE

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November 30, 2020



CURRENT STATUS

- Current road completion date remains summer 2021
- **Girder D replacement Tendon 5 installed and tensioned**
- **Completion Plan approval – BNSF approval obtained 11/16/20**
- Existing strand failures (2 in Girder B - Tendon 5, 3 in Girder C - Tendon 5)
- BNSF Moratorium, November 21, 2020 to January 1, 2021
- **Insufficient time to execute Completion Plan before Moratorium begins**
- **Winterize structure with falsework engaged – completed 11/17/20**
- **Developing Crack Monitoring & Repair Plan**



RAILROAD APPROVAL

Railroad approval for the Completion Plan have been delayed and are being addressed:

- ✓ Engineer of Record (EOR) completion of bridge inspection (10/14/2020)
- ✓ Develop the Specialized Grouting Plan (10/14/2020)
- ✓ EOR determination that structure will meet the design intent and 100-year design life. (10/14/2020)
- ✓ Extended time needed for Girder D Tendon 5 replacement due to blockages and damaged duct (completed 10/21/2020)
- ✓ Submission of Supplemental Repair Plan to address BNSF concerns (10/21/2020)
- ✓ BNSF comments received and TPZP responded to comments (10/29/2020)
- ✓ TPZP to winterize structure determination (10/30/2020)
- ✓ BNSF provided approval (11/16/20)



STRUCTURE MILESTONES

Activity	Status
Engineer of Record (EOR) Certification of Girder/Bridge Design Life	Complete
WJE, Inc., Root Cause Analysis	Complete
EOR Girders Inspection	Complete
Madera Valley Water Company Agreement Executed	In-Progress
Complete Pre-Work Plan	Complete
Complete Tendon Replacement (B4 and D5)	Complete
BNSF Approval of Repair Plan	Complete
BNSF Moratorium Nov 21, 2020 – Jan 1 , 2021	Commenced
Strand Replacement in All Girders (Tendons 3, 4 & 5)	Pending
Complete Deck	Pending
Strand Installation (Tendons 1 & 2) and Grouting	Pending
Open Road 27 to Traffic	Summer 2021



ANATOMY OF A TENDON

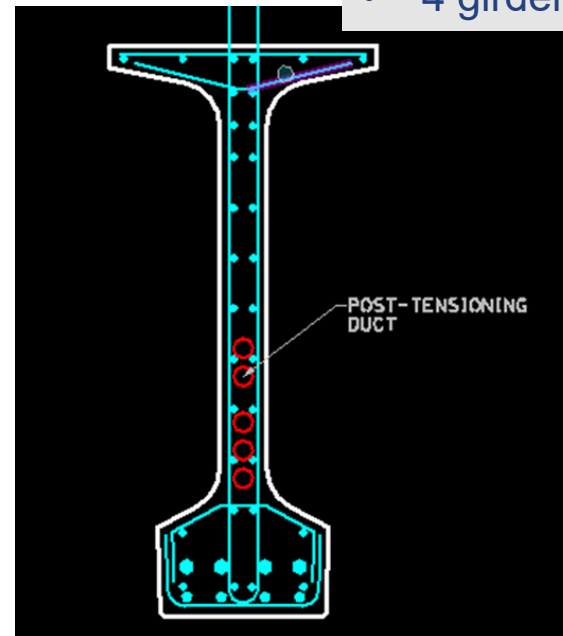
- 7 wires per strand



- 15-strands per Tendon
- Tendons in duct

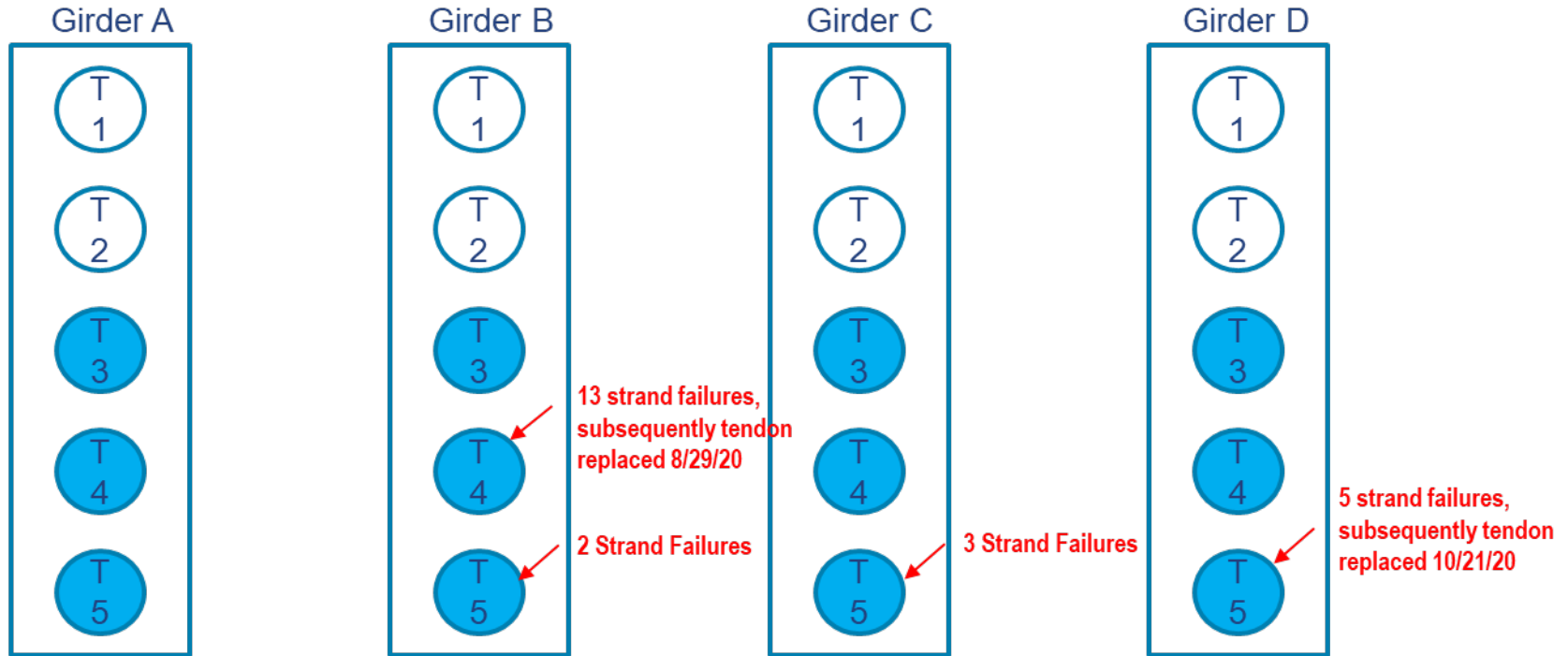


- 5 tendons per Girder
- 4 girders for the bridge



CURRENT STRAND STATUS

- 23 strand failures 8/13/20 – 12/01/20



Abutment # 1 (South Abutment looking North)

● Tendons installed and tensioned

○ Tendons to be installed and tensioned after deck placement



TPZP STEPS PRE-MORATORIUM (COMPLETED)



- **Engineer of Record (EOR)
Confirm Structural Adequacy of
Falsework to Support Entire
Structure**
- **Structure Winterizing Plan**
 - Seal vent tube areas
 - Inject corrosion inhibitor
 - Monitor strands
 - Falsework fully engaged

TPZP STEPS POST MORATORIUM

- Remove all existing strands, replace with new strands
 - Inspect at installation
 - Confirm no further water intrusion
 - Protect while not grouted – corrosion inhibitor applied
- Continuous, void-free grout
- Closure Pours
 - Monitor cracks at each construction milestone
 - Seal cracks



QUALITY CONTROL ACTIONS COMPLETED

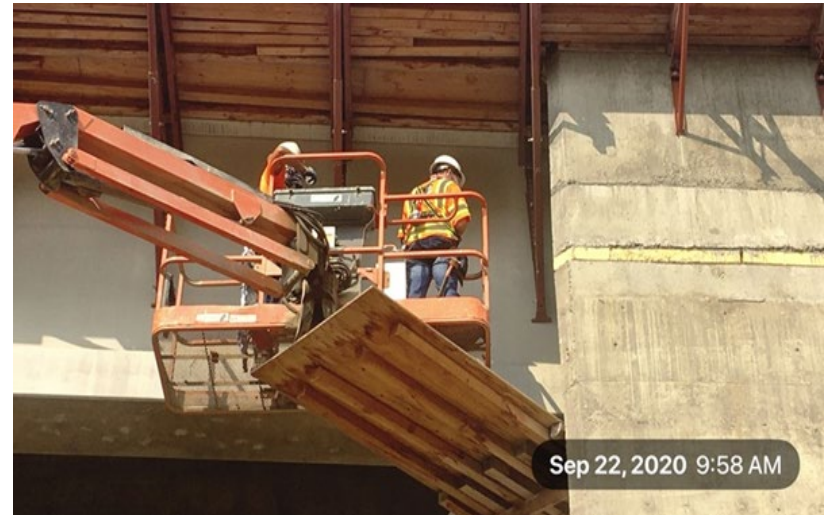


Removal of strands for tagging and inspection from WJE

- ✓ Daily strand checks
- ✓ Removed and replaced broken strands in girders B4 and D5
- ✓ Performed further analysis to verify root cause
- ✓ Identified/verified source of water intrusion and sealed ducts
- ✓ Full-time on-site superintendent and quality inspector assigned during all repair work
- ✓ Additional independent expert analysis of additional damaged strands

QUALITY OVERSIGHT

- ✓ Provided explicit guidance to TPZP and Project Construction Management (PCM), on standards for quality review and structures
- ✓ Enhanced PCM Quality Team
- ✓ Reassigned a State Principal Transportation Engineer to lead Construction Quality Team
- ✓ Added PCM quality inspectors to Construction Package 1 Team
- ✓ Added two Caltrans quality control engineers for expertise and assistance with quality reviews, one additional engineer to come in November
- ✓ Test new strands to be installed



California High Speed Rail Authority & PCM performing ongoing bridge inspection for Road 27



AUTHORITY COMMITMENT



Top Priorities:
Structurally Sound
Communication with Community
Quality Oversight



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