

# Gold Run II PCC Rehabilitation Project

Presented By: Mike Ostrom, Project Manager R&L Brosamer  
Phil Zink, Senior RE Caltrans



- **Project Organization/Responsibilities**
  - Contractor: R&L Brosamer-Lead Partner/Granite Construction Inc. - A Joint Venture
  - Owner: Caltrans
- **Safety**
  - Discussion of Tunnel Classification: Pipe Lining work-
  - Narrow lane construction w/o temporary k-rail
  - Night work safety
- **Environmental Considerations**
  - Project Permit Restrictions
  - ESA's
  - SWPPP Compliance

# Project Specifics

- **\$ 33 Million Dollar Interstate 80 PCC Rehab Project located approximately 50 miles east of Sacramento**
  - **Joint Venture Project-Contractors: R&L Brosamer and Granite Construction (Sacramento Division) Companies**
  - **280 Working Day Contract (3-season project)**
  - **Approximately 27 Lane Miles of PCC paving**
  - **Engineer's Estimate of Approx. 75,000 cubic meters (98,000 cubic yards) of PCC**
  - **126 Culvert lining rehab's - HDPE Plastic and Cured-In-Place Pipe liners (CIPP)**
  - **Crib-wall, truck climbing lane, and shoulder widening construction**
  - **Approx. 15 miles of Fiber Optic Installation**

# Gold Run II PCC Rehabilitation Project

## AGENDA cont'd



- **Project Overview**
  - 2004 Work progression
  - As-Planned Stage Construction
  - AS-Built Stage Construction
  - 2004, 2005 Photo History

# SAFETY CONCERNS

- **NIGHT-TIME PCC PAVING WITH TRAFFIC SHIFTED INTO ONE 11-FOOT LANE WITHOUT TEMPORARY K-RAIL SEPARATION**
- **STEEP DOWNGRADES (>6%) AND CLOSE PROXIMITY OF CONTRACTOR AND STATE PERSONNEL TO TRUCK TRAFFIC**
- **TWO-RUNAWAY TRUCK RAMPS WITHIN THE PROJECT LIMITS - AREA PRONE TO TRUCK BRAKE FAILURES**

# PROJECT OVERVIEW

## AS-PLANNED

- **Project Overview - Anticipated 3 season project**
  - Anticipated Construction Season Sequence(s) 2004, 2005, 2006
  - **2004: Drainage, Electrical, Widening(s), Crib Wall, AC Paving**
  - **2005: PCC Pave WB/EB from Alta OC to Towle OH, PCCP WB from Towle OH to Drum Forebay, construct WB Blue Canyon approach slabs: Stages 1-4**
  - **2006: Construct EB cross-over, PCC Pave EB from Drum Forebay to Nyack: Stage(s) 5 and 6**
  - **Staging/Detours**
  - **2005: Detour WB traffic between Baxter OC and Crystal Springs OC**
  - **2006: Cross-over Detour EB traffic (passenger vehicles) onto the WB # 1 lane separated by temp. K-rail from just west of Drum Forebay to east of the Putts Lake UC - TRAFFIC CROSS-OVER**

# 2004 - PROJECT OVERVIEW

## Anticipated Construction



Work on fiber optic system

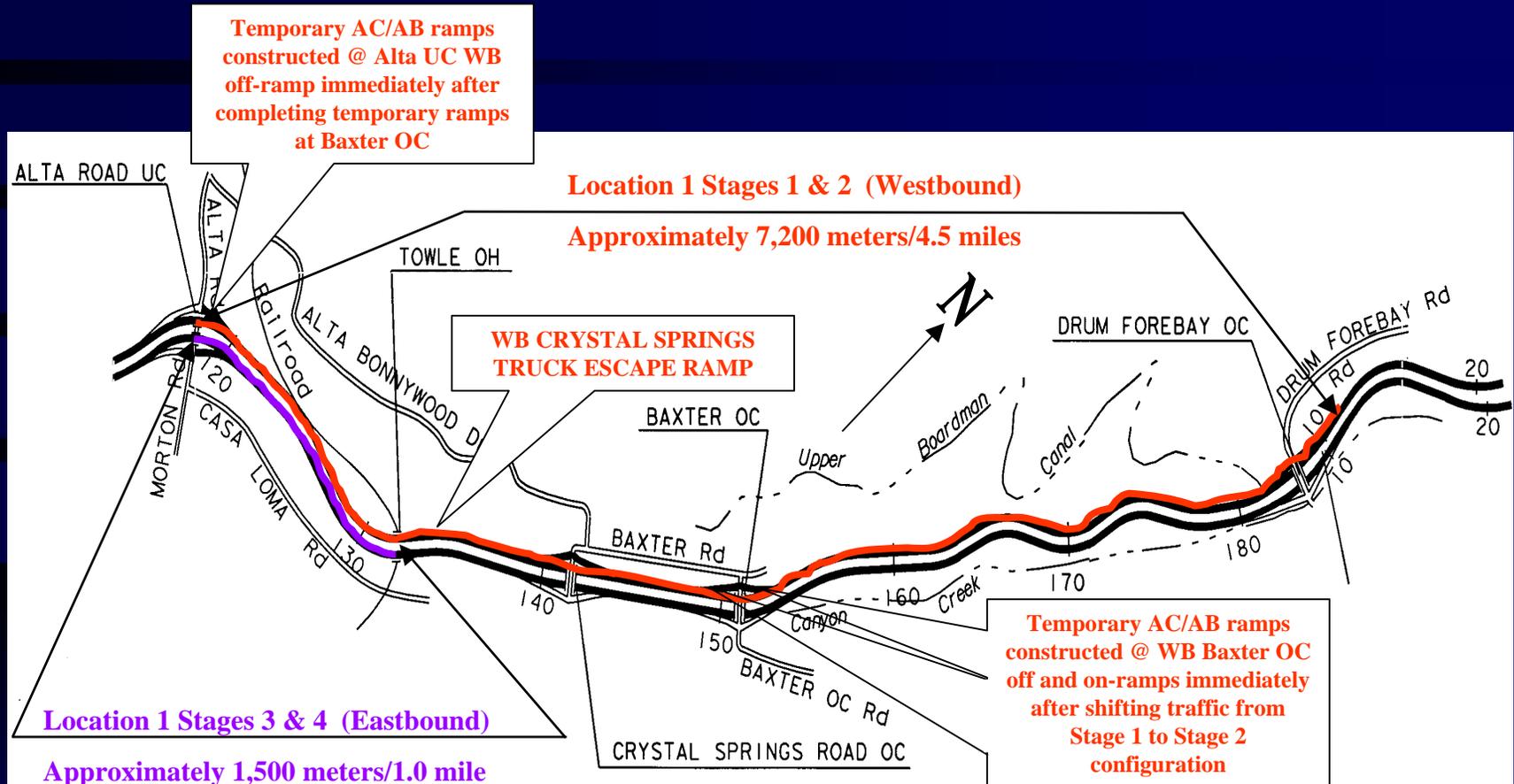
Construct widening(s) along “C” line - Just east of Drum Forebay, extension of truck-climbing lane, & at Putts lake

Construct crib-wall at the EB entrance to the Whitmore Maintenance Station

Install pipe liners

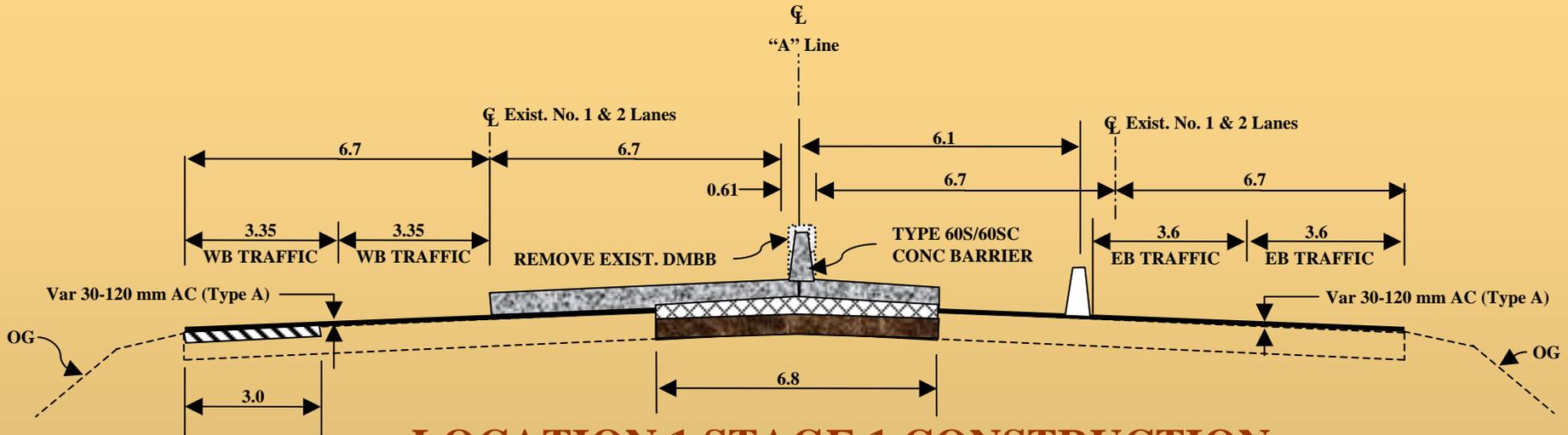
# 2005 - PROJECT OVERVIEW

## As-Planned Stage Construction - Location 1



**LOCATION 1**

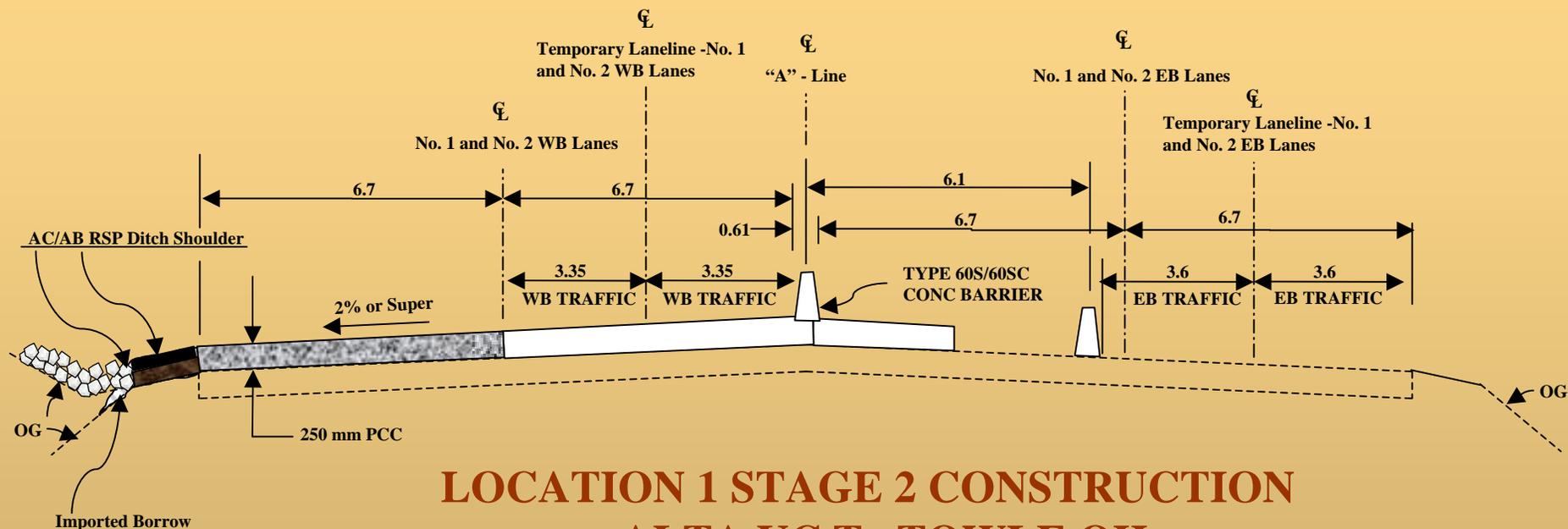
# 2005 CONSTRUCTION SEASON AS-PLANNED WORK SEQUENCE



## LOCATION 1 STAGE 1 CONSTRUCTION ALTA UC TO TOWLE OH

1. RECONSTRUCT WB OUTSIDE SHOULDER (Between Alta UC and Towle OH) 75mm AC grind & replace
2. OVERLAY WITH AC (TYPE A) Var 30-120 mm (Between Alta UC and Towle OH) - CROSS-SLOPE CORRECTION - SPECIAL PROVISION AC PAVING SURFACE TOLERANCE SPEC. - FG AC 30mm BELOW GRADE EST. BY ENGR. --> FILL WITH AC,FG AC 0mm TO 30mm BELOW GRADE EST. BY ENGR. --> FILL WITH PCC WITH SAME OPERATION OF THE PCC PAVING, FG AC OVER 30mm ABOVE GRADE EST. BY THE ENGR. --> GRINDING REQUIRED TO MEET TOLERANCES SPECIFIED ABOVE
3. PLACE SLURRY SEAL ON TRANSITION AREAS
4. PAINT TEMP. TRAFFIC STRIPES ON AC AND TEMP. TRAFFIC TAPE IN TRANSITION AREAS
5. SHIFT TRAFFIC TO RIGHT, PLACE TEMP. RAILING (TYPE K) 6.1m RIGHT OF CL
6. REMOVE EXISTING DMBB
7. RECONSTRUCT MEDIAN SHOULDERS (120mm LCB & 185mm AB)
8. CONSTRUCT ALTA AND TOWLE APPROACH SLABS PCC PAVE WB No. 1 LANE(250mm) & WB& EB MEDIAN SHOULDERS (200mm) AND CONSTRUCT MEDIAN BARRIER
9. CONSTRUCT PCC TRANSITION TAPERS AND APPROACH SLABS AT WB BLUE CANYON UC

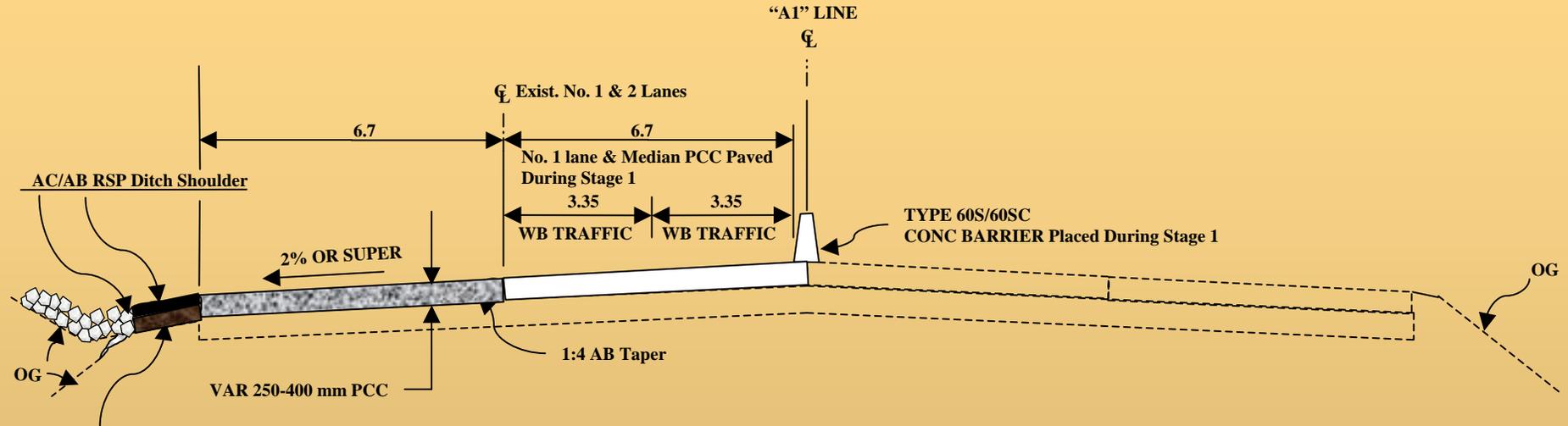
# 2005 CONSTRUCTION SEASON AS-PLANNED WORK SEQUENCE



## LOCATION 1 STAGE 2 CONSTRUCTION ALTA UC To TOWLE OH

1. PLACE SLURRY SEAL & TEMPORARY TRAFFIC TAPE IN TRANSITION AREAS PLACE TEMPORARY LANELINE AND RIGHT EDGELINE & SHIFT WB TRAFFIC ONTO Stage 1 PCC
2. PCC PAVE No. 2 LANE (250mm) AND OUTSIDE SHOULDER
3. PLACE IMPORTED BORROW OR BUILD AC/AB ROCK LINED DITCHES ALONG OUTSIDE SHOULDER
4. REMOVE TAPE AND RESTRIPE TO FINAL STRIPING PLAN

# 2005 CONSTRUCTION SEASON AS-PLANNED WORK SEQUENCE

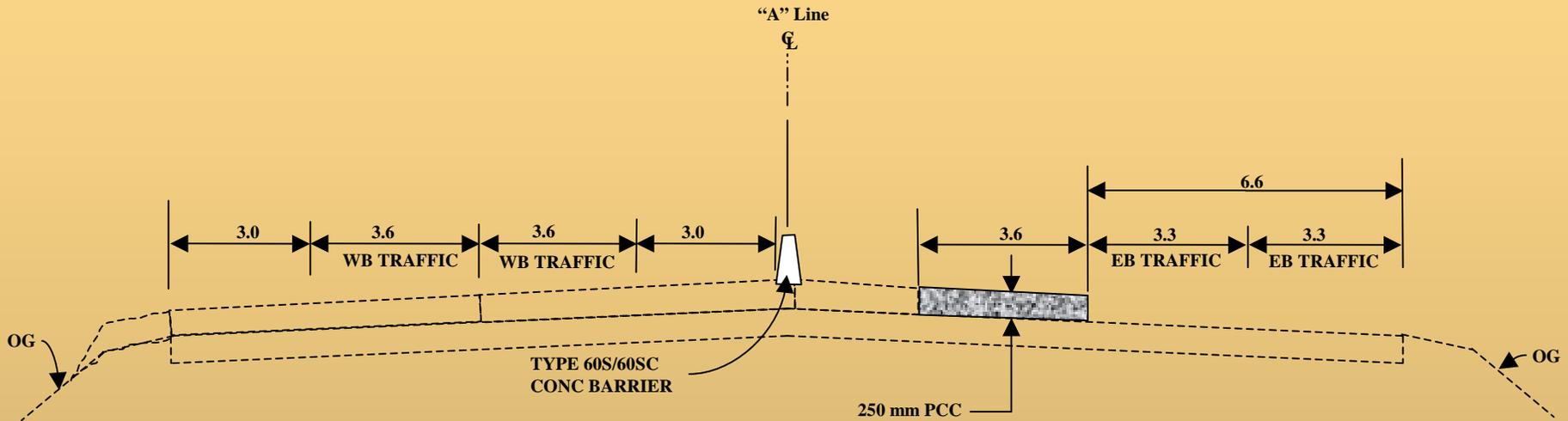


## LOCATION 1 STAGE 2 CONSTRUCTION

“A1” 132+32 (Towle OH) To “B” 12+15 (± 400m East of Drum Forebay OC)

1. REMOVE EXISTING TEMPORARY DELINEATION ON TRANSITION AREAS
2. PLACE TEMPORARY TRAFFIC TAPE IN TRANSITION AREAS, PLACE 1:4 AB TAPERS PRIOR TO SHIFTING TRAFFIC LEFT (Lane Closure Charts 10 & 12 allow for 24 hour closures to install AB tapers)
3. PLACE TEMPORARY AC RAMPS @ BAXTER WB ON/OFF-RAMPS, WB ALTA OFF-RAMP IN ONE SHIFT
4. PCC PAVE No. 2 LANE AND OUTSIDE SHOULDER
5. PLACE IMPORTED BORROW OR BUILD AC/AB ROCK LINED DITCHES ALONG OUTSIDE SHOULDER
6. REMOVE TAPE & RESTRIPE TO FINAL STRIPING PLAN

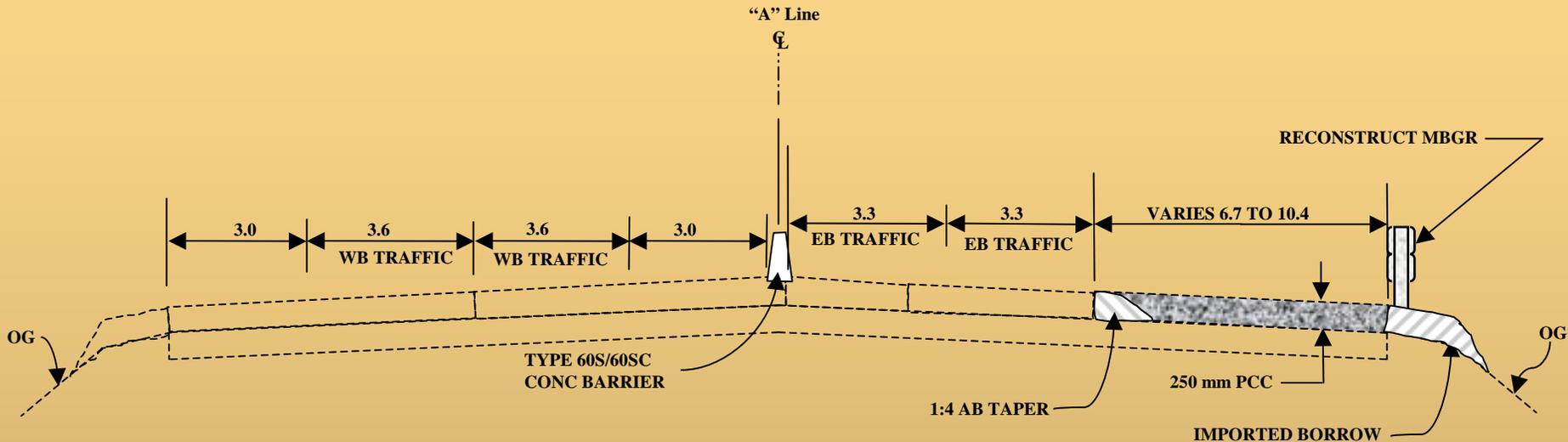
# 2005 CONSTRUCTION SEASON AS-PLANNED WORK SEQUENCE



## LOCATION 1 STAGE 3 CONSTRUCTION "A" 116+83 (ALTA UC) To "A" 131+86 (TOWLE OH)

1. PAINT TEMPORARY TRAFFIC STRIPES ON AC  
AND TEMPORARY TRAFFIC TAPE IN TRANSITION AREAS
2. REMOVE TEMPORARY RAILING TYPE-K
3. SHIFT EB TRAFFIC TO RIGHT
4. PCC PAVE EASTBOUND NO. 1 LANE

# 2005 CONSTRUCTION SEASON AS-PLANNED WORK SEQUENCE

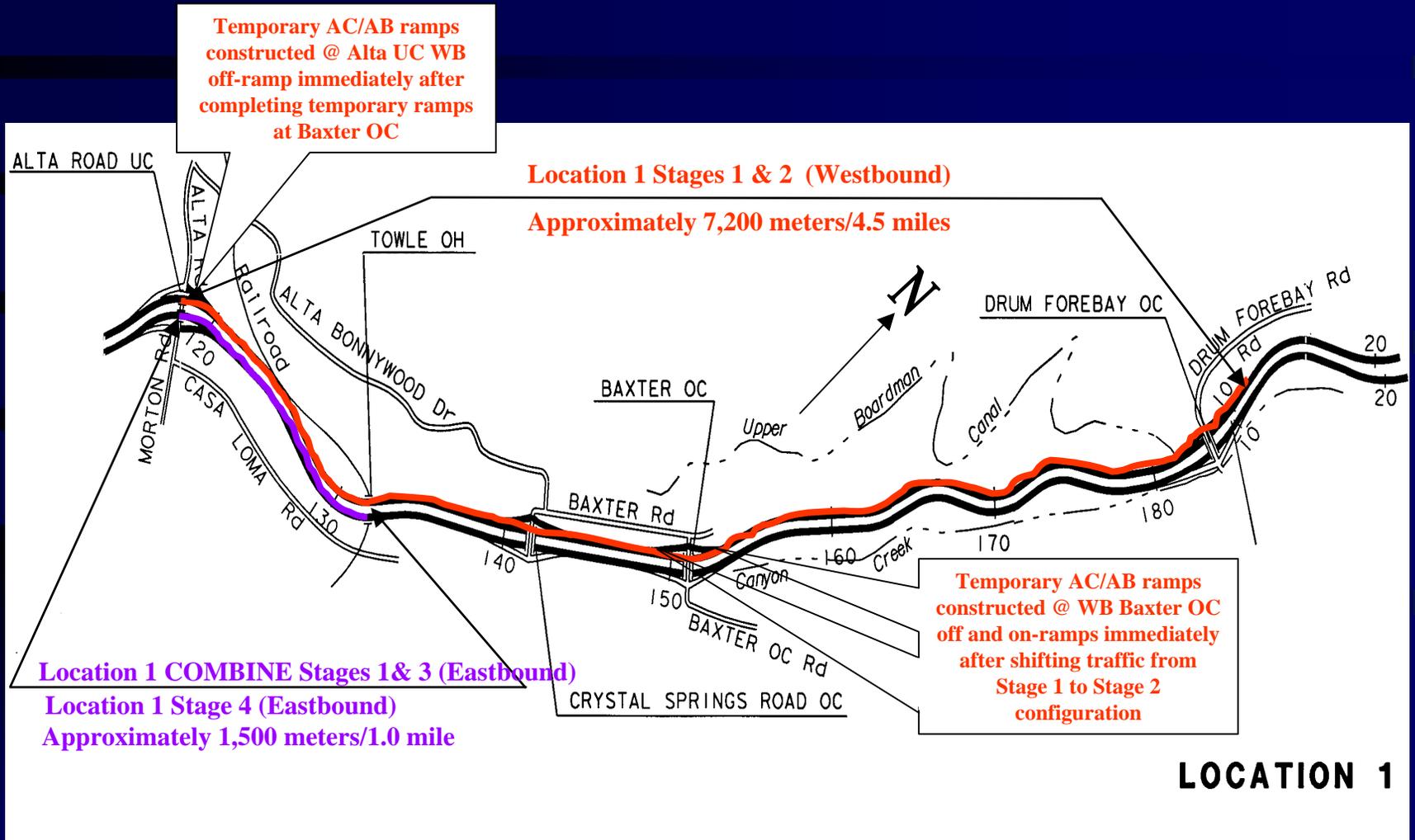


## LOCATION 1 STAGE 4 CONSTRUCTION “A” 116+83 (ALTA UC) To “A” 131+86 (TOWLE OH)

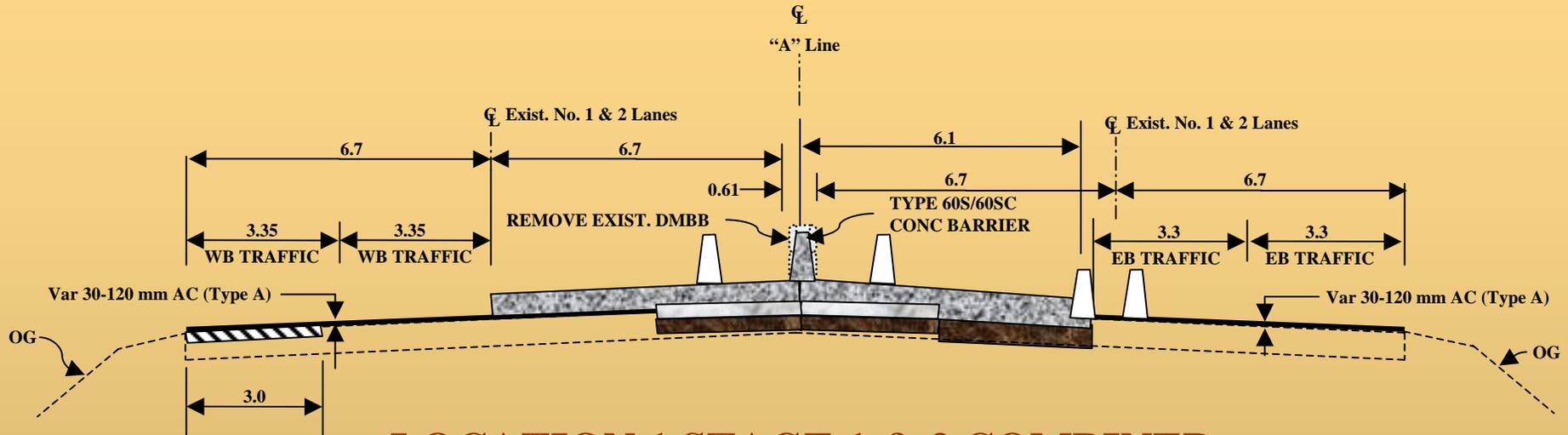
1. SLURRY SEAL TRANSITION AREAS & PLACE TEMPORARY TRAFFIC TAPE IN TRANSITION AREAS & PAINT ON NEW PCC PAVEMENT PRIOR TO MOVING TRAFFIC LEFT
2. PLACE 1:4 AB TEMPORARY TAPER (EB TRAFFIC KEPT IN LEFT LANE UNTIL PLACEMENT OF AB TAPER IS COMPLETED)
3. PCC PAVE EASTBOUND NO. 2 LANE AND OUTSIDE SHOULDER
4. COMPLETE SLOPE RECONSTRUCTION, PLACE IMPORTED BORROW & RECONSTRUCT MBGR
5. REMOVE TEMPORARY TAPE AND RESTRIPE TO FINAL STRIPING PLAN

# 2005 - PROJECT OVERVIEW

## AS-BUILT Stage Construction - Location 1



# 2005 CONSTRUCTION SEASON AS-BUILT WORK SEQUENCE

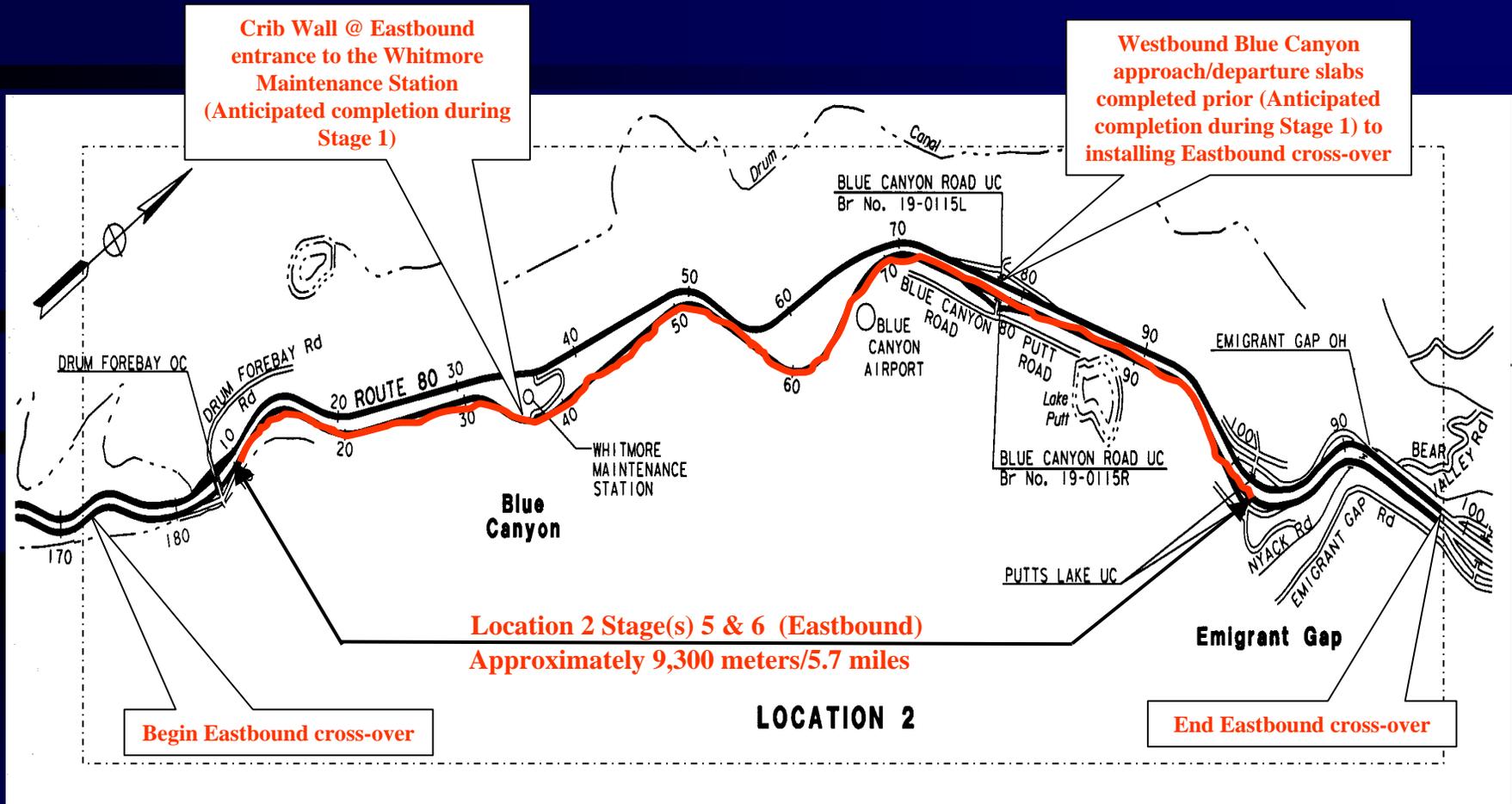


## LOCATION 1 STAGE 1 & 3 COMBINED CONTRACTOR REQUESTED CHANGE ORDER ALTA UC TO TOWLE OH

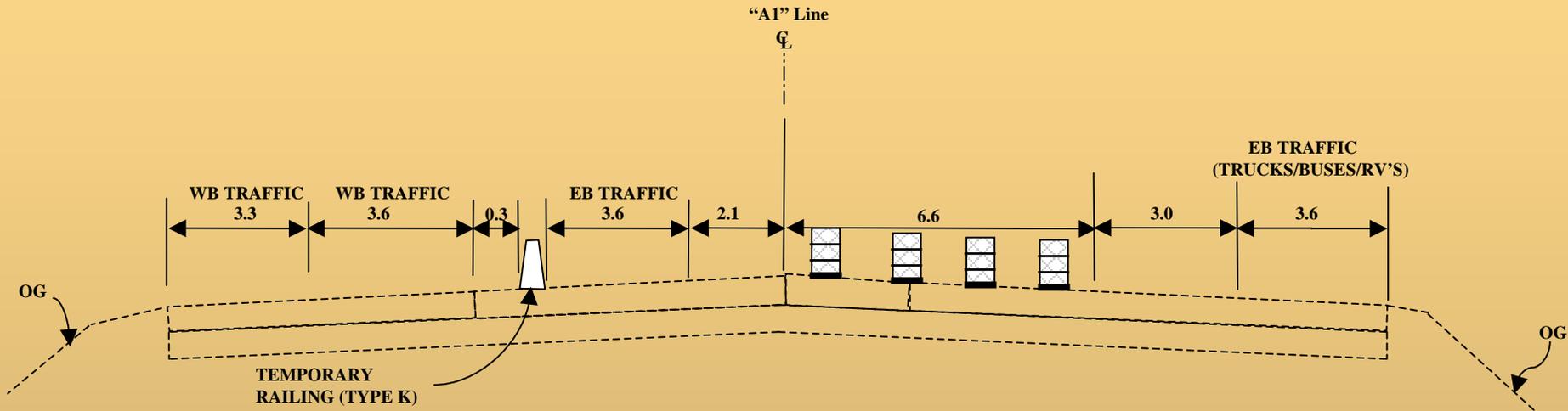
1. RECONSTRUCT WB OUTSIDE SHOULDER (Between Alta UC and Towle OH) 75mm AC grind & replace
2. PLACE WB & EB ASPHALT CROSS-SLOPE CORRECTION (Var 30-120 mm - 30mm Grade Tolerance Spec.)
3. PLACE SLURRY SEAL AND PLACE TEMPORARY STRIPE ON TRANSITION AREAS
4. SHIFT TRAFFIC TO RIGHT, PLACE TEMP. RAILING (TYPE K) 6.1m RIGHT OF CL
5. REMOVE EXISTING DMBB AND RECONSTRUCT EB/WB MEDIAN SHOULDER(S) WITH AB AND LCB
6. CONSTRUCT ALTA AND TOWLE WB APPROACH SLABS PCC PAVE WB No. 1 LANE & MEDIAN
7. SHIFT TEMPORARY K-RAIL TO THE RIGHT (in transition area only) TO ALLOW FOR TRANSITION SUBGRADE WORK
8. SHIFT TEMPORARY K-RAIL TO THE WB NO. 1 LANE AND PCC PAVE EB NO. 1 LANE AND INSIDE SHOULDER
9. SHIFT TEMPORARY K-RAIL ONTO THE EB MEDIAN SHOULDER TO CONSTRUCT CONCRETE MEDIAN BARRIER
10. CONSTRUCT PCC TRANSITION TAPERS AND APPROACH SLABS AT WB BLUE CANYON UC NO. 2 LANE AND OUTSIDE SHOULDERS

# AS-PLANNED 2006 - PROJECT OVERVIEW

## Stage Construction - Location 2



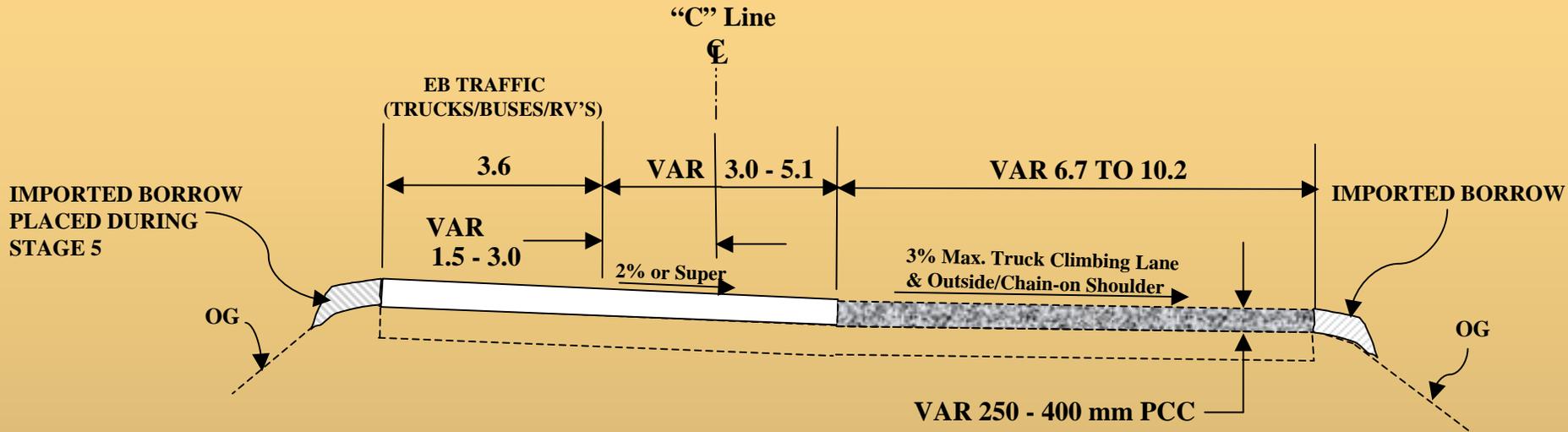
# 2006 CONSTRUCTION SEASON ANTICIPATED WORK SEQUENCE



## LOCATION 2 STAGE 5 CONSTRUCTION CROSS-OVER CONFIGURATION “A1” 179+70 To “B” 101+31

1. PLACE TEMPORARY RAILING (TYPE K)
2. SLURRY SEAL TRANSITION AREAS & PLACE TEMPORARY TRAFFIC TAPE IN TRANSITION AREAS, SPLIT & SHIFT TRAFFIC
3. PCC PAVE EASTBOUND No. 1 LANE (+No. 2 LANE in truck climbing area) AND MEDIAN SHOULDER FROM “C” 10+62 TO “C” 102+42

# 2006 CONSTRUCTION SEASON AS-PLANNED WORK SEQUENCE



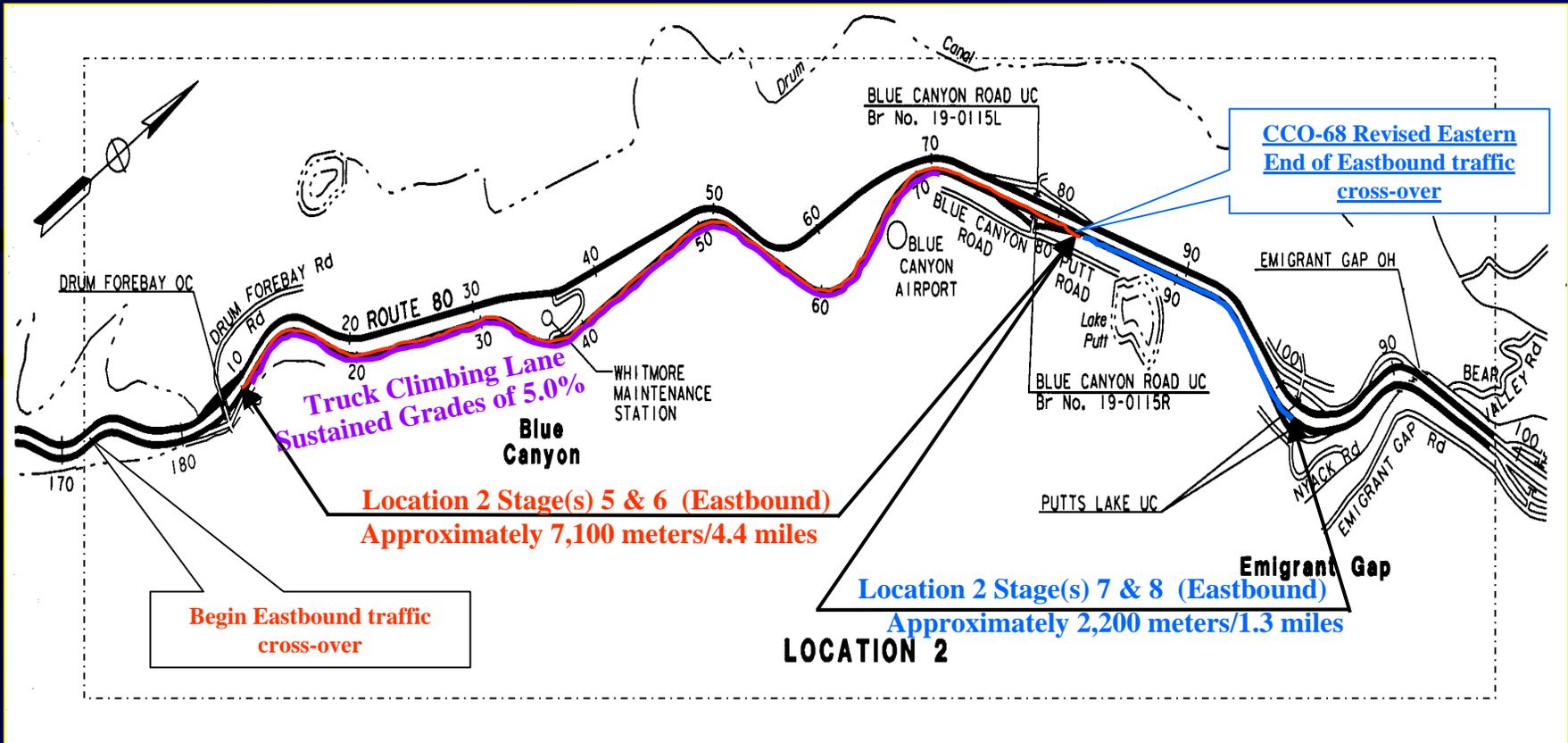
## LOCATION 2 STAGE 6 CONSTRUCTION WITH CROSS-OVER IN EFFECT "C" 10+62 To "C" 102+42

1. PLACE SLURRY SEAL ON TRANSITION AREAS
2. PAINT TEMP TRAFFIC STRIPE ON PCC AND PLACE TEMP TRAFFIC TAPE ON TRANSITION AREAS
3. SHIFT EASTBOUND TRUCKS/BUSES/RV'S TO THE LEFT AND PCC PAVE TRUCK-CLIMBING LANE AND NO. 2 LANE AND OUTSIDE SHOULDERS, INCLUDING SHOULDER BARRIER SLAB AND FOOTING(S)
4. PLACE IMPORTED BORROW @ OUTSIDE SHOULDER AREA

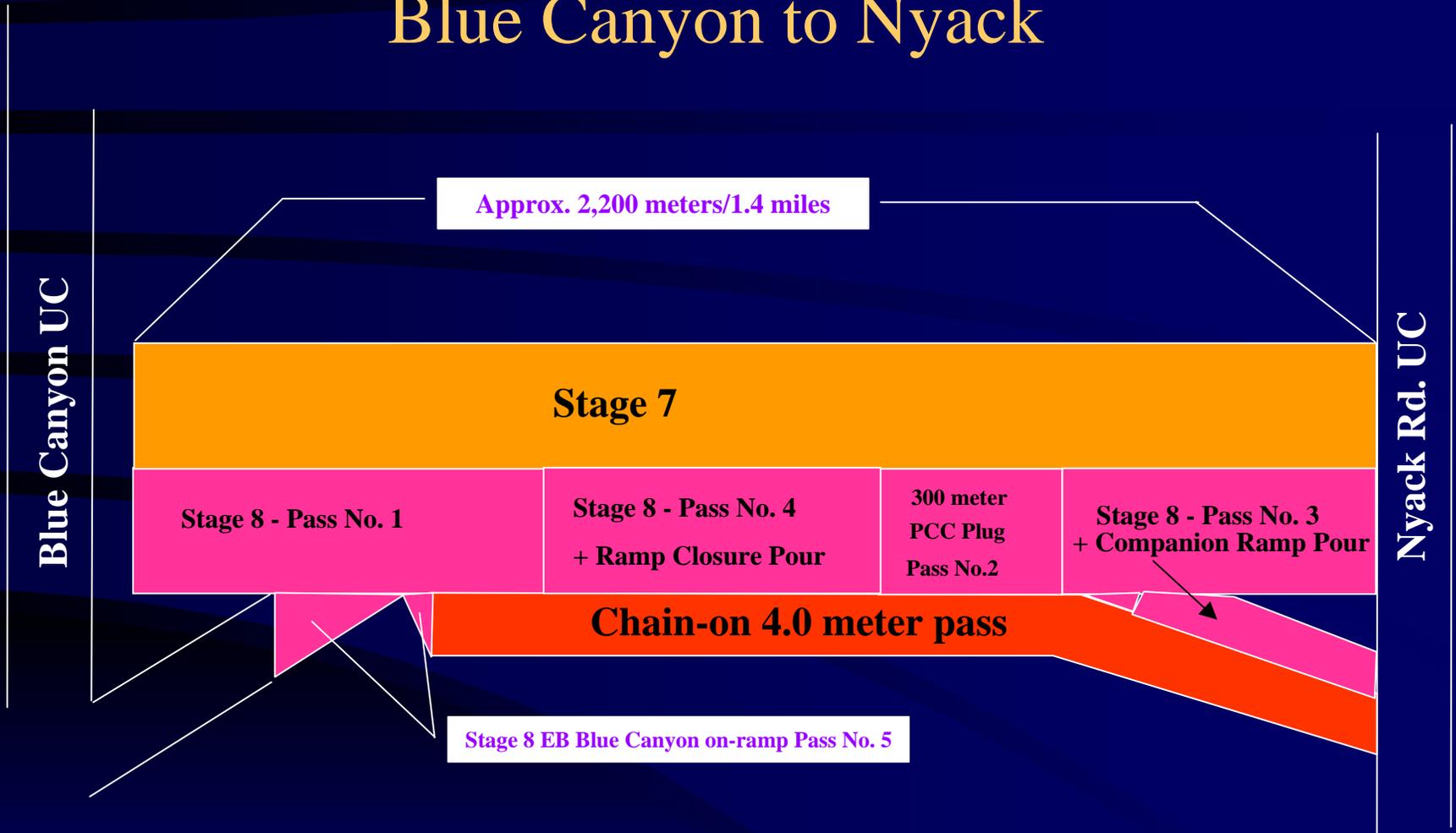
**Internal Time of Completion Restrictions/Penalties \$5,000.00/day after Oct. 15th**

# AS-BUILT 2006 - PROJECT OVERVIEW

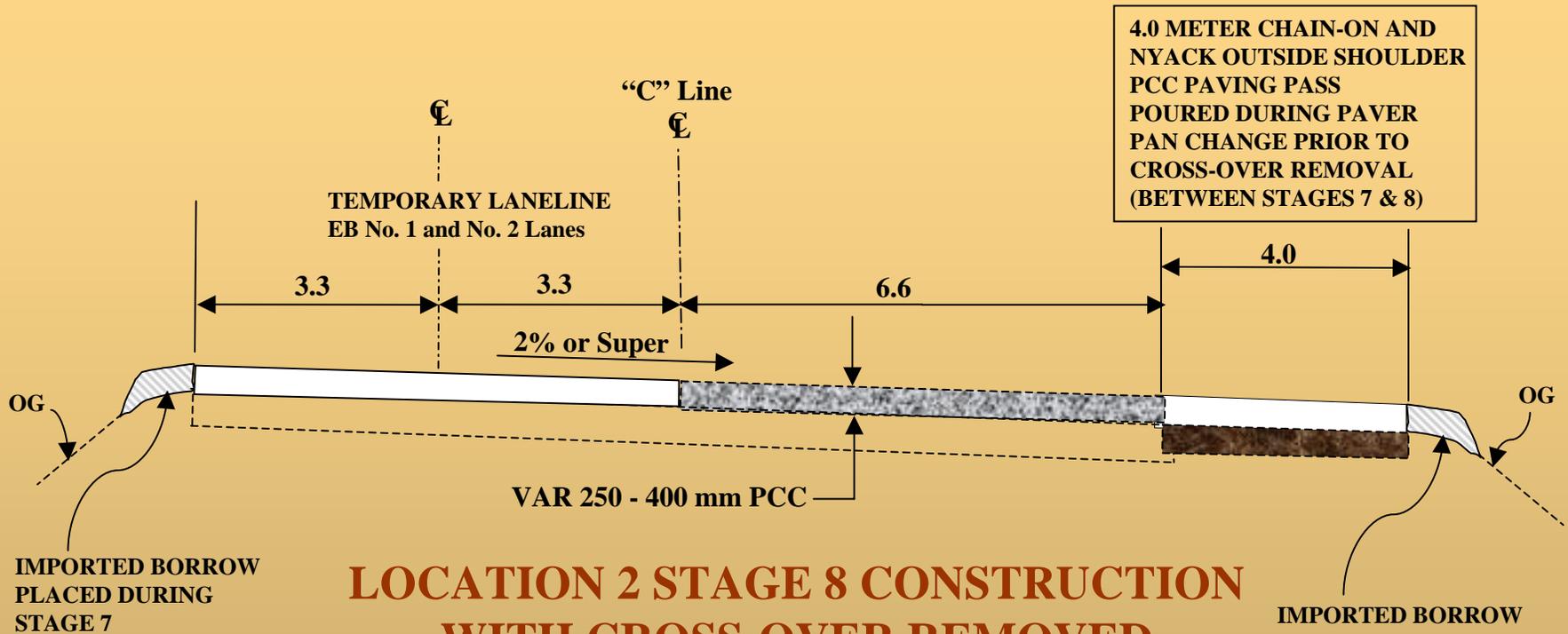
## Stage Construction - Location 2



# Stages 7 and 8 PCC Paving Sequence From Blue Canyon to Nyack



# 2006 CONSTRUCTION SEASON AS-BUILT WORK SEQUENCE



## LOCATION 2 STAGE 8 CONSTRUCTION WITH CROSS-OVER REMOVED "C" 80+72 To "C" 102+42

1. AB SHOULDER RECONSTRUCTION COMPLETED DURING STAGE 5
2. PLACE SLURRY SEAL ON TRANSITIONS PAINT TEMP TRAFFIC STRIPE ON PCC AND PLACE TEMPORARY TRAFFIC TAPE ON TRANSITION AREAS
3. SHIFT EASTBOUND TRAFFIC TO THE LEFT ONTO STAGE 7 PCC PAVEMENT AND PCC PAVE NO. 2 LANE AND OUTSIDE SHOULDER (6.6 meter pass)
4. PLACE IMPORTED BORROW ALONG OUTSIDE SHOULDER AREA

**Internal Time of Completion Restrictions/Penalties \$5,000.00/day voided  
with the removal of the cross-over**

# 2004 Photo History



- Crib Wall Construction



- Fiber Optic conduit work

# 2004 Photo History



- State Furnished Materials - residuals from Terminated Gold Run I Project



# 2004 Photo History



- HDPE Plastic Pipe liners - “Snap-Tite” joint methods



# 2004 Photo History



- Cured-In-Place-Pipe (CIPP) liners



- Putt's Lake chain-on shoulder widening

# 2004 Photo History



- Extremely “Close-Call”



# 2004 Photo History



- Extremely “Close-Call”



# 2004 Photo History



- Winter arrives - In October

# 2005 Photo History

- Wet spring/May-  
Temporary k-rail  
shifted for Stage 1  
traffic configuration-  
Potholes resulting  
from winter/spring  
storm activity



# 2005 Photo History



- Typical stage configuration message



- Temporary construction zone speed reduction by Director's Order

# 2005 Photo History



- Drainage Inlets poured prior to PCC paving pass



- Approach slab pour

# 2005 Photo History



- Median roadway excavation



- AC paving for Cross-slope correction

# 2005 Photo History



- Temporary k-rail shift for Stage 1 PCC paving sequence



- Sliver median shoulder removal to allow for median barrier placement

# 2005 Photo History



- Sliver median shoulder removal to allow for median barrier placement - sliver to partial shoulder removal

# 2005 Photo History



- Sliver pave with Class-IV concrete in preparation for median barrier placement



- Median structural section construction - Lean Concrete Base

# 2005 Photo History



- Sawcutting - “Green Cut” transverse joints



- Profile grinding to meet “zero-blanking” band specifications

# 2005 Photo History



- Setting up the PCC paver - Guntert Zimmerman S850 w/DBI



- Stage 1 PCC paving pass - sand checkdams used to capture sawcutting slurry

# 2005 Photo History



- Slip-form median barrier construction - Stage 1



# 2005 Photo History



- Rain damaged slab



- Bear damaged slab

# 2005 Photo History



- Mixing resin materials



- Polyester Concrete overlay

# 2005 Photo History



- Running the profilograph for Stage 1 PCC paving



- Temporary AC paving of median DI's to allow for Stage 2 traffic shift

# 2005 Photo History



- DUI driver in the middle of the afternoon



# 2005 Photo History



- Placement of 1:4 Aggregate Base Safety Material in preparation for opening both lanes to traffic
- Safety material shown removed in preparation for companion pass paving - threaded inserts used for tie-bar placement



# 2005 Photo History



- PCC paving Stage 2 companion pass - traffic in one 3.35meter/11-foot lane



# 2005 Photo History



- Profile grinding residue hauled to Contractor's batch plant recycle facility



- Grinding residue solids separated in overflow chamber configuration

# 2005 Photo History



- No the ramp is actually closed for a reason!



- Didn't quite make the turn!

# 2005 Photo History



- Departure transition excavation



- Overhead sign structure damage

# 2005 Photo History



- CCO-068 - Crossover clearing/subgrade excavation



# 2005 Photo History

- Alternate traffic crossover construction
- Crossover AC paved separated by temporary k-rail and signed for passenger vehicles only



# 2005 Photo History



- PCC Paving Stage 6 - EB Truck Climbing lane - Three lane section



- PCC Paving Stage 6 - EB two-lane section

# 2005 Photo History



- Paving past the shoulder barrier - truck climbing lane



- Shoulder Barrier slab pour

# 2005 Photo History



- Truck Escape Ramp Arrestor Bed Aggregate screening operations



- PCC paving for Truck Escape Ramp - Commander III Paver

# 2005 Photo History



- Grind/removal of temporary crossover pavement



- Temporary lighting for crossover

# 2005 Photo History



- Forms & Tie-bars set for AC Dike Pad



- Hydroseeding operations

# 2005 Photo History



- Median barrier plug following removal of Crossover



- Crossover Temporary k-rail removal

# 2005 Photo History



- 4.0 Meter Chain-on pass



- Stage 7 PCC Paving

# 2005 Photo History



- Stage 7 - 6.6 Meter Pass



- Stage 7 Layout for sawcutting, traffic in depressed section (“The Luge”)

# 2005 Photo History



- Stage 8 - Nyack transition subgrade construction



- Stage 8 EB Nyack offramp companion pass

# 2005 Photo History



- Traffic fatality -  
19- year old driver fell  
asleep at the wheel



- COZEEP Officer  
providing an  
invaluable service to  
the Contractor and  
Caltrans

# QUESTIONS / ANSWERS!