

# Junction Boxes

- 8-20.3(6)
- 9-29.2 junction boxes
- 9-29.2(3) structure mounted JBs
- 9-29.2(4) cover markings

# Type 1 Junction Box



# Type 2 Junction Box



# Base Plate and JB

## Type 3,7,or 8



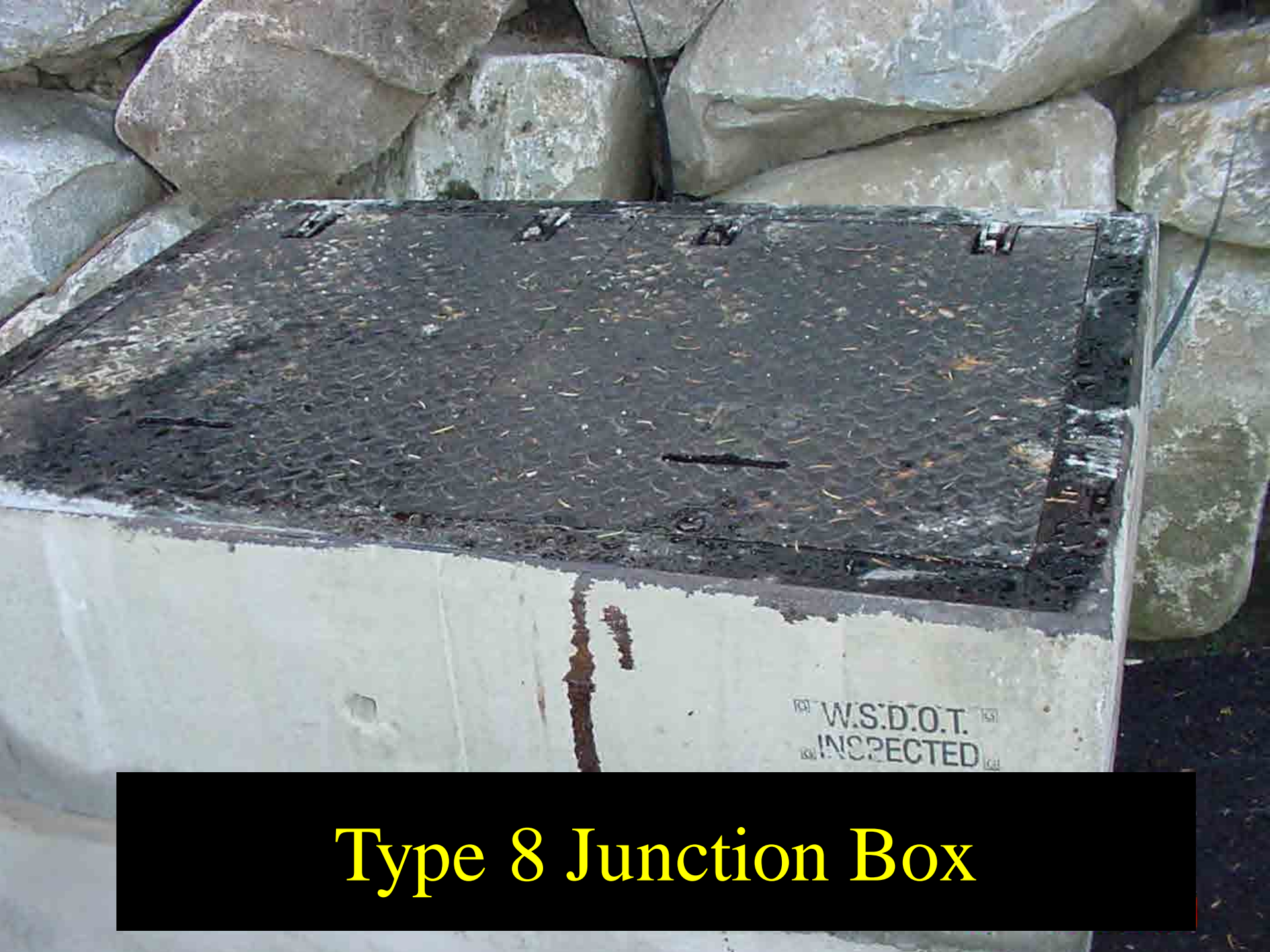
5 9:02AM

# Type 7 JBs

12-inch Deep

18-inch Deep





**Type 8 Junction Box**

# Type 4 Junction Box





# Type 4 JB





# Type 6 Junction Box



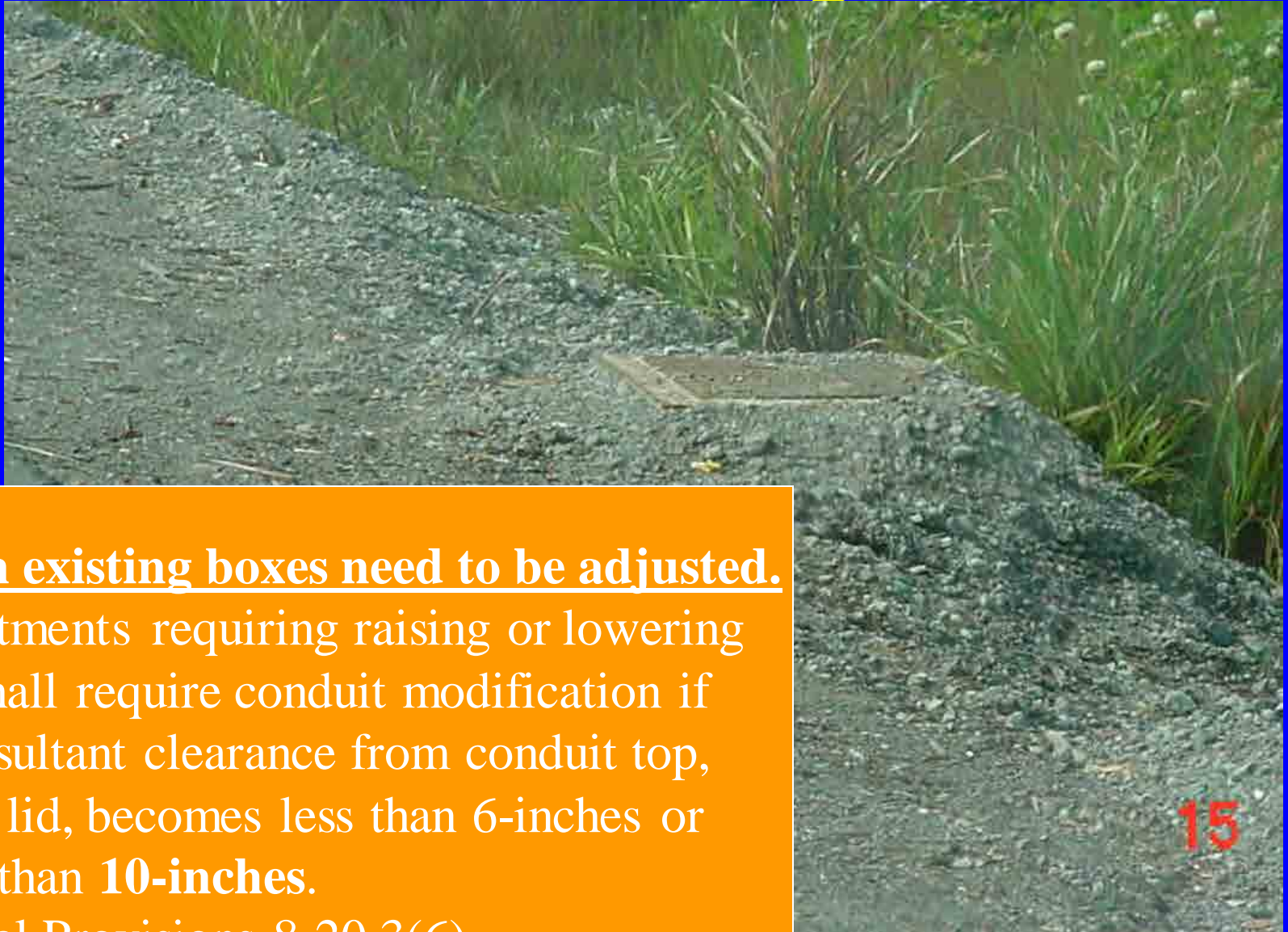
# Traffic Temporarily Placed Over Traffic Bearing Boxes



# Pull Box With Section Out



# JB Too High



## When existing boxes need to be adjusted.

Adjustments requiring raising or lowering JB's shall require conduit modification if the resultant clearance from conduit top, to the lid, becomes less than 6-inches or more than **10-inches**.

Special Provisions 8-20.3(6)

# Secure the Boxes

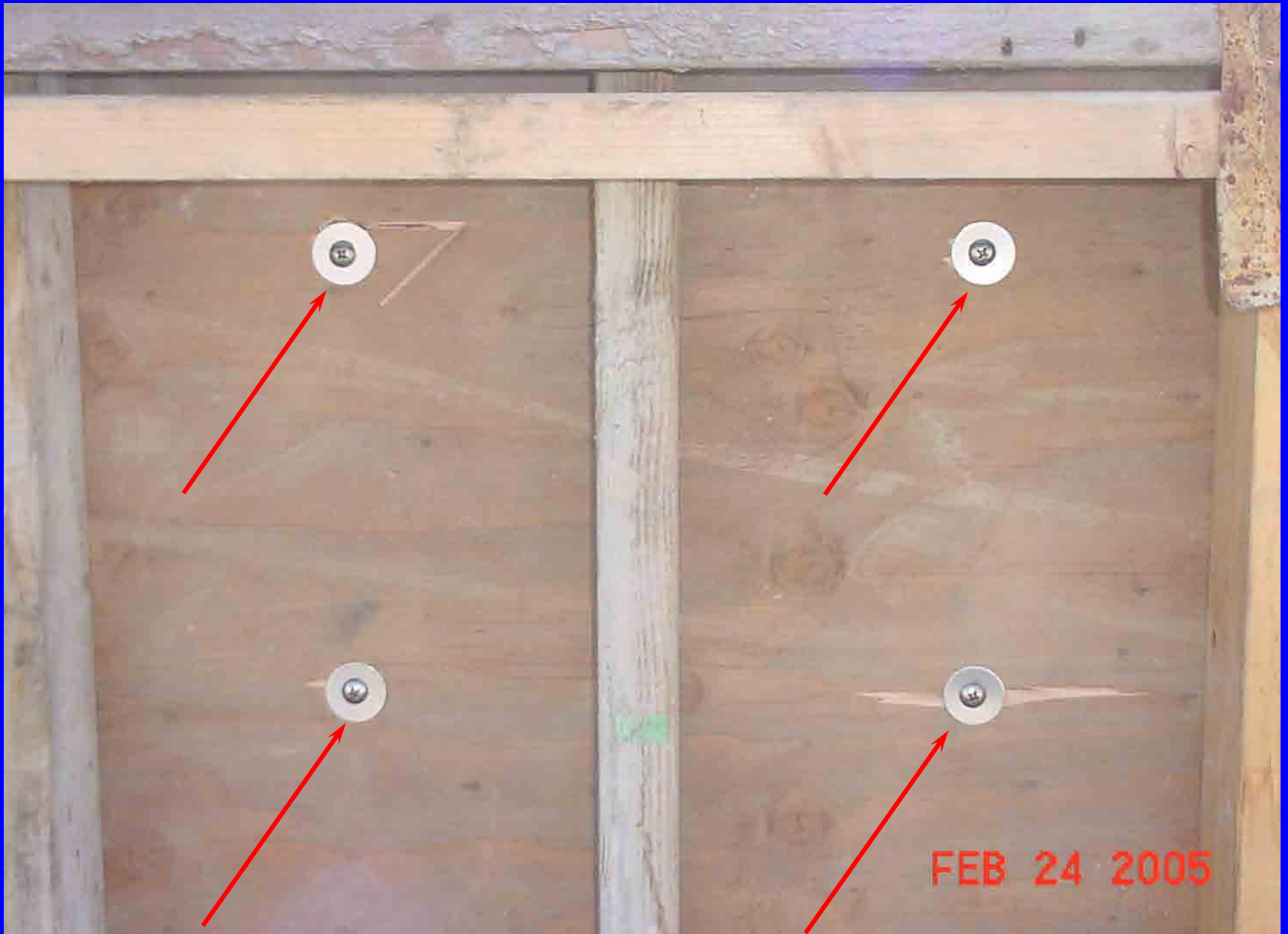




**JB with Rail Form Face in Place**

**FEB 24 2005**

# JB Secured to Form Face



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# Adjustable JB With About 1.5-Inch of Adjustment NEMA 3X



NW Region requires adjustable boxes to be installed in “Slip Form Barriers” with adjustment bolts available with the construction lid in place. Special Prov. 9-29.2

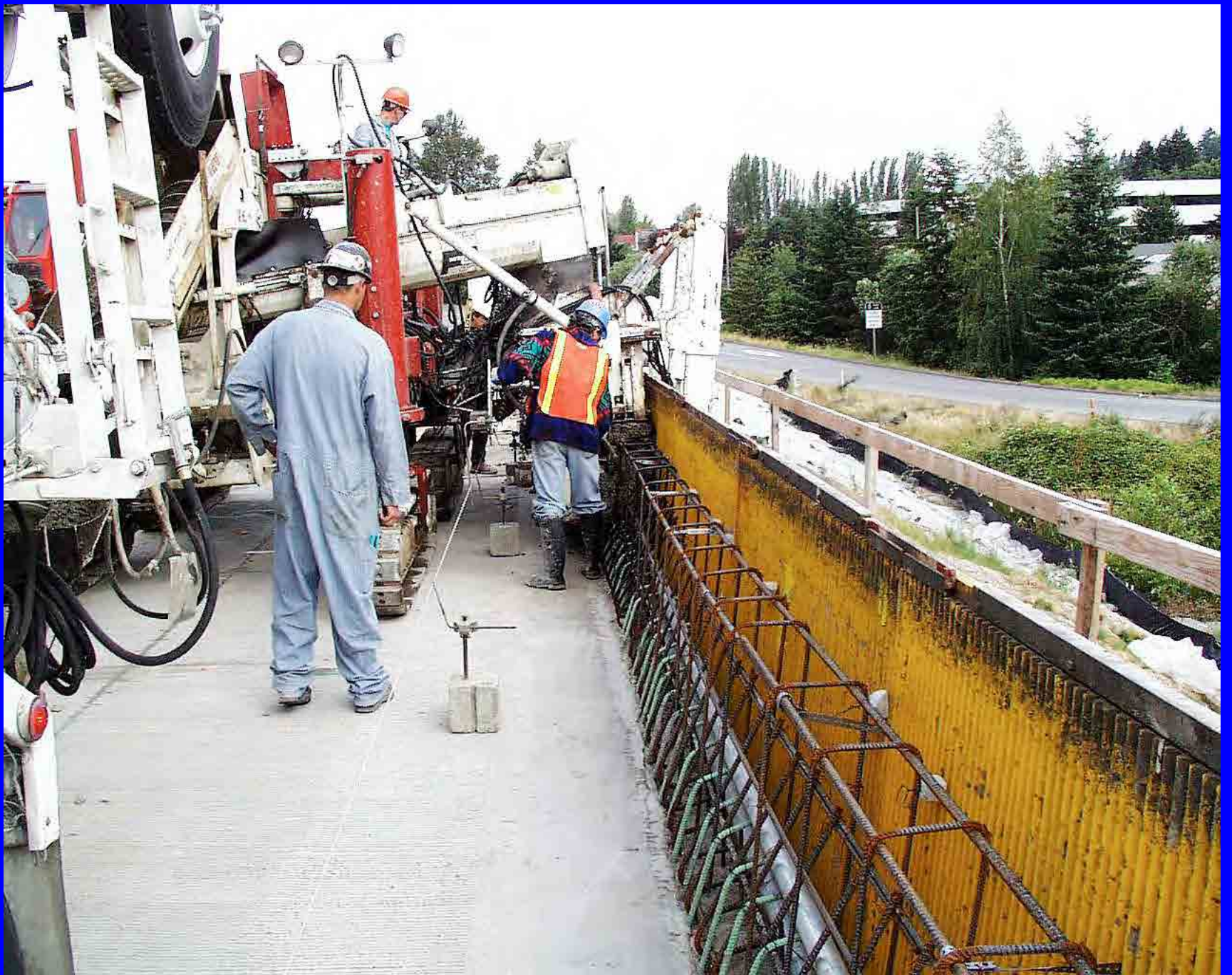
Adjustable JB  
Video Clip

Skip Still  
Pictures









Hold the Box  
Back to Let  
the Machine  
Start Over It



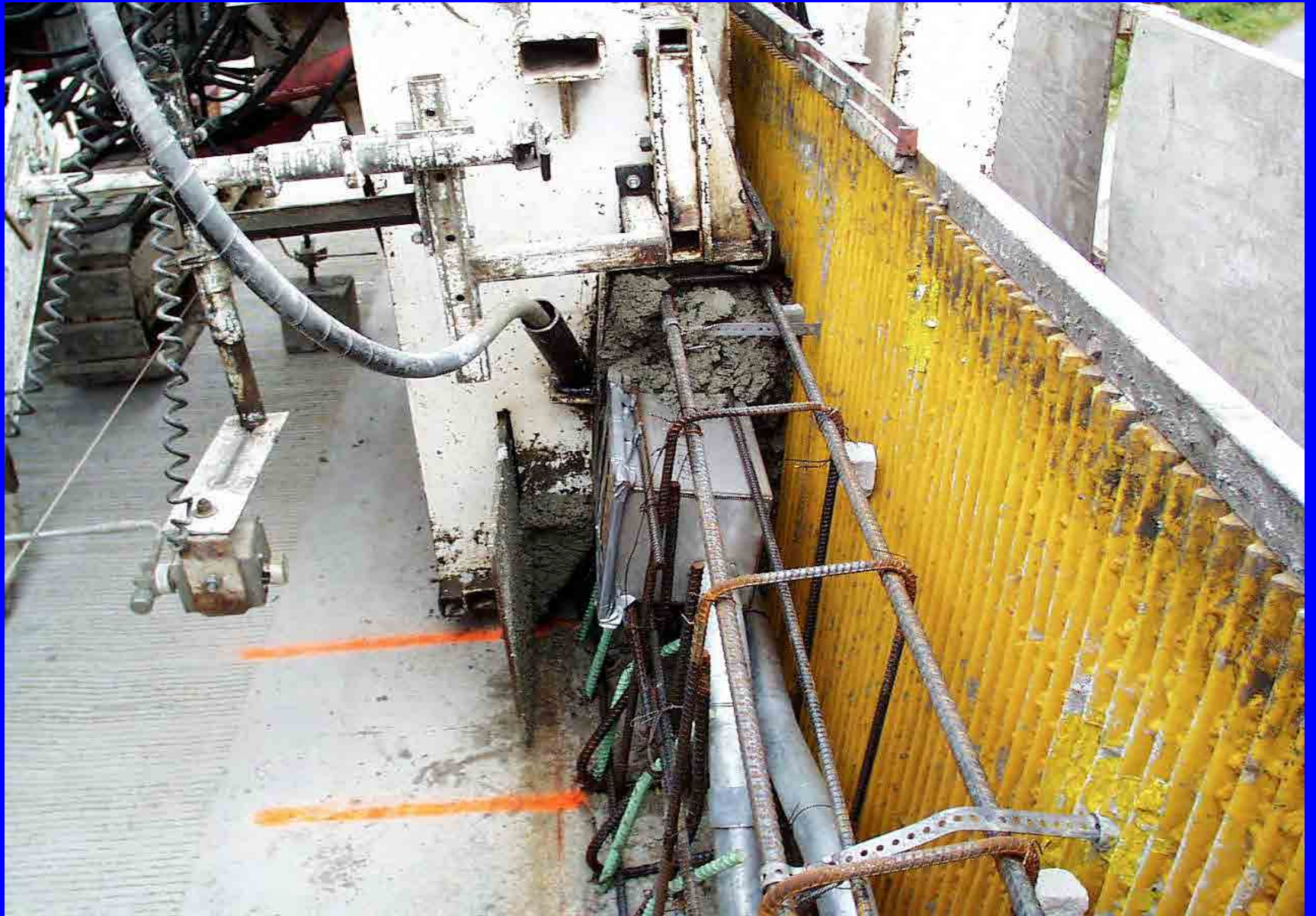


Holding the  
JB to Keep It  
Out Flush



A Close Watch  
Helps With a  
Good Product

# Looking Good



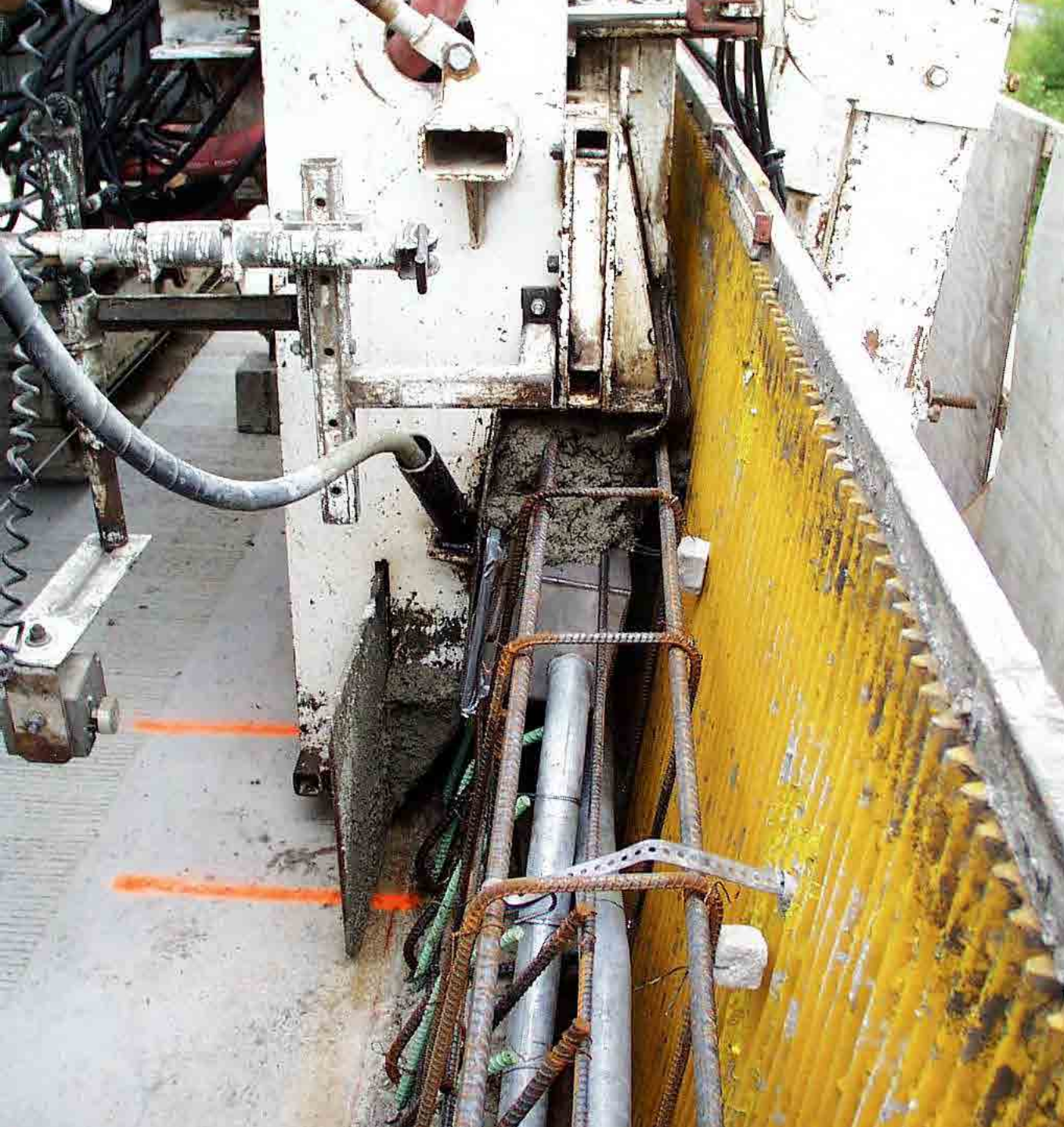
# Box Looks Good



# Pride in His Work







There It  
Goes



Last  
Minute  
Adjustment



**After the Machine Extrudes It**

# I Know There Is a Box Here Someplace



# Just a Little Too Deep





**Pull It Out Just a  
Little More**



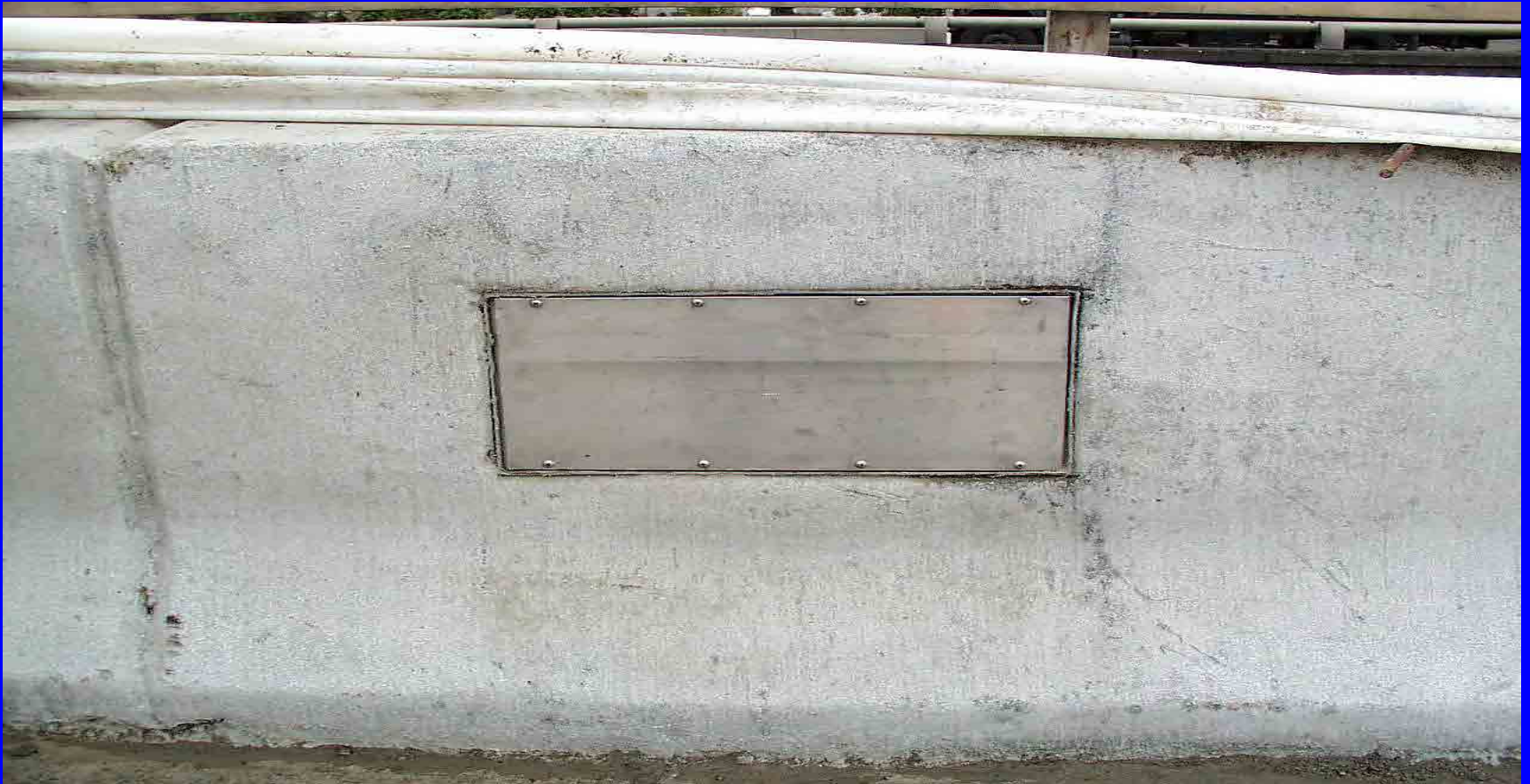
**Ok Stuff It  
Full of Mud**



Now That  
Looks Great



# After the Pour



Inside the Box



**Ground Lug Inside the Box  
Drain Hole Got Missed  
Box Has Been Hit**



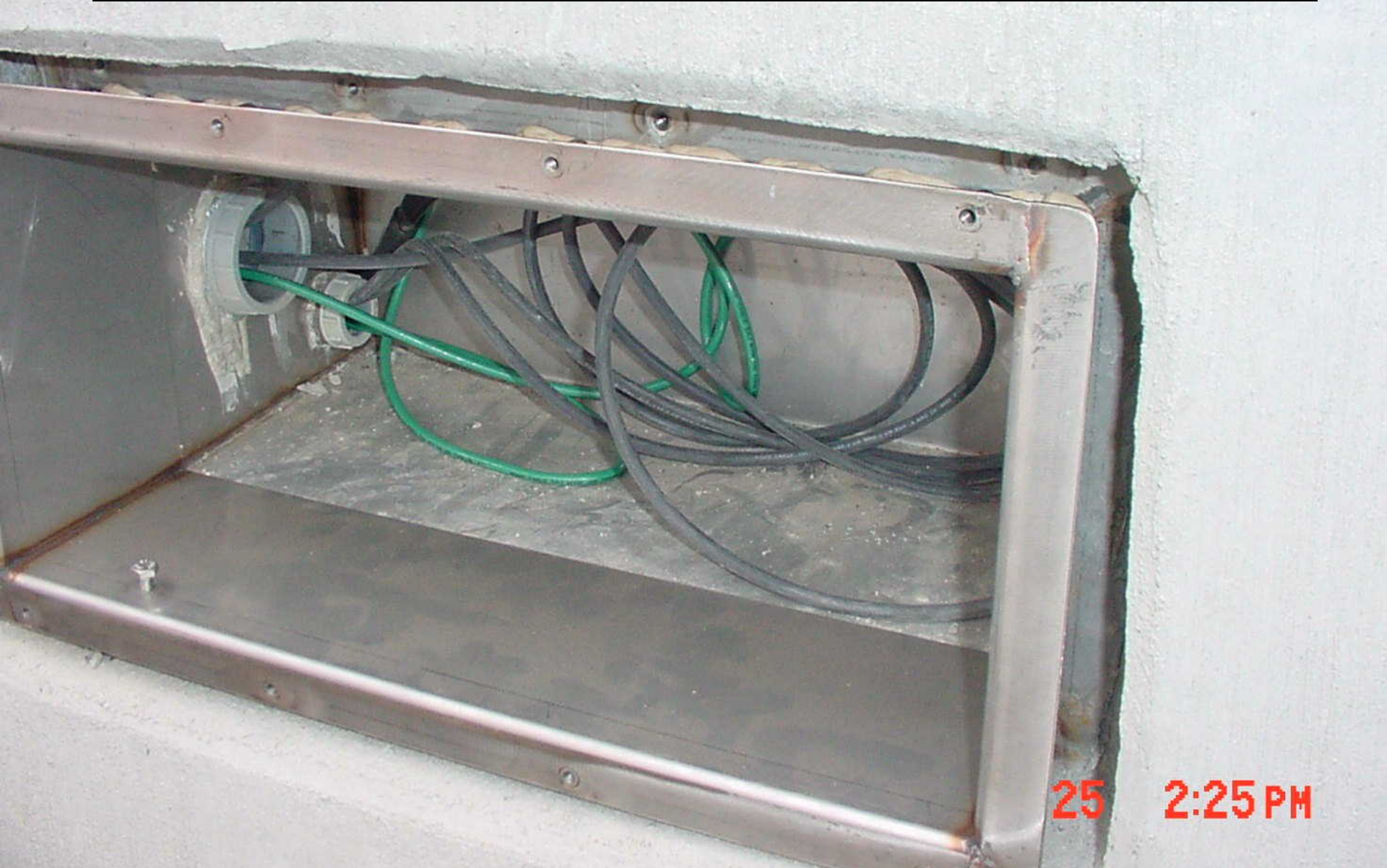
# Lid After It Takes a Direct Hit



# Barrier Box With Extension Added



# Extension Installed With Epoxy




25 2:25 PM



Plexiglas spacer and SS lid removed

2 12:19 PM

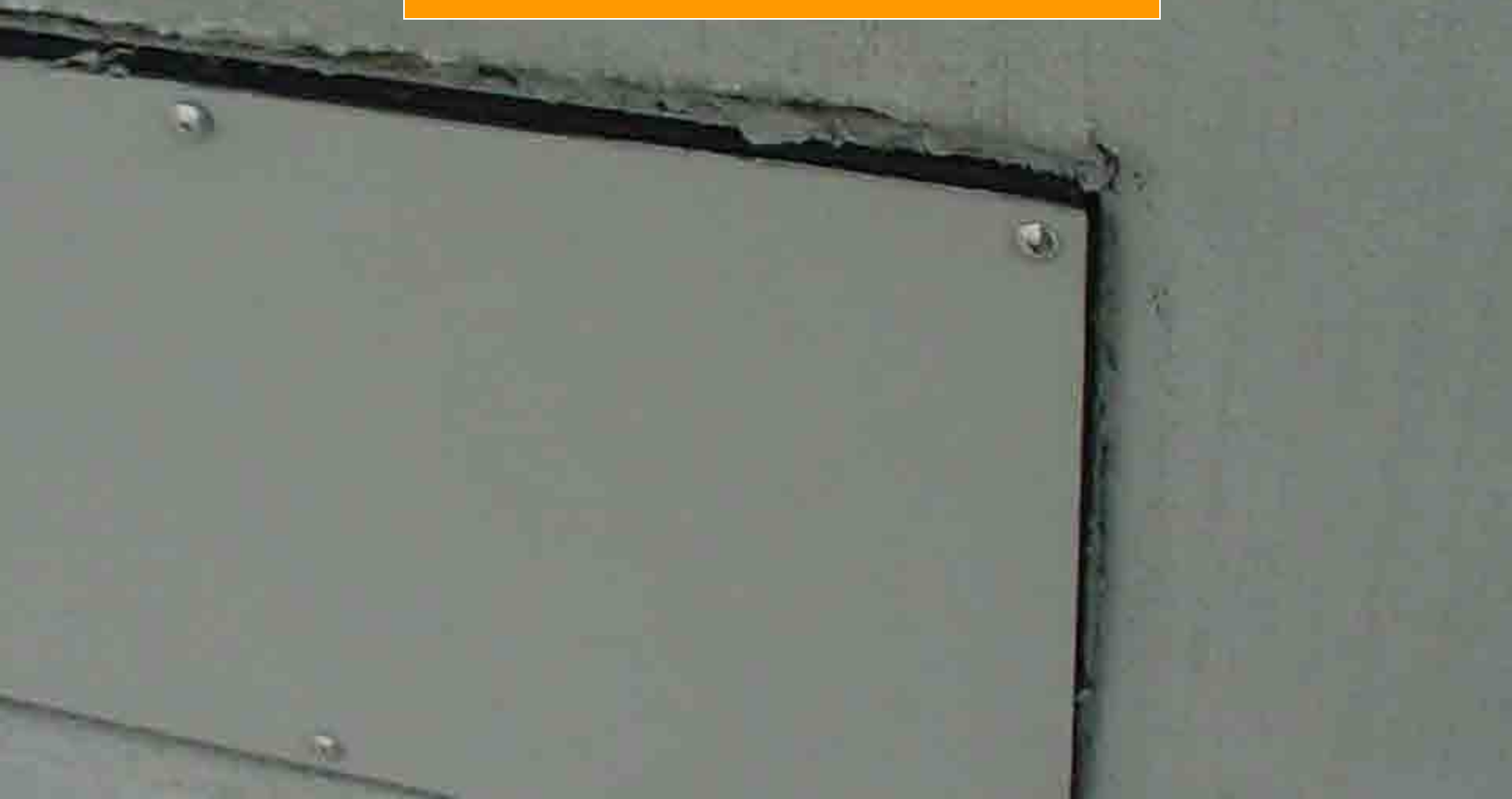


Plexiglas spacer with SS lid removed

2 12:18 PM



NW Region requires boxes in the barrier to be parallel to barrier top within 1-degree. The face shall not be more than 1/8-inch recessed. Special Provisions 8-20.3(6)



# Concrete Made to Fit



# Surface JB Hinge Lid



30 3:37 AM

# Surface Mount SS JB





Cable Vault Too High to Put on  
Traffic Bearing Lid 5 11:06 PM

CV With Top 6 Inches Cut Off

6 12:18 AM





# Setting Traffic Bearing Lid

6 12:43 AM



CV With Traffic Bearing Lid

6 12:52 AM





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# Set Pull Box



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# Junction Box Inspection Checklist

Copy in your books

# Messenger Cable Fittings



- 8-20.3(7)
- 9-29.4 messenger cable fittings
- 9.29.5 pole line hardware



14 12:50pm

14 12:53pm



# Span System Parts

14 1:02 PM



# Johnny Ball Insulator With Guy Wraps Installed



17 9:54 AM

# Johnny Ball Insulator



17 1:41 PM



# Aerial Terminal Box



16 2:41 PM

# Wiring

- 8-20.3(8)
- 9-29.3 conductors, cable
- 9-29.7 luminaire fusing and connections at light standards
- 9-29.12 electrical splice materials
- 9-29.12(1) illumination circuit splices



# Mandrels



# Pulling Wire



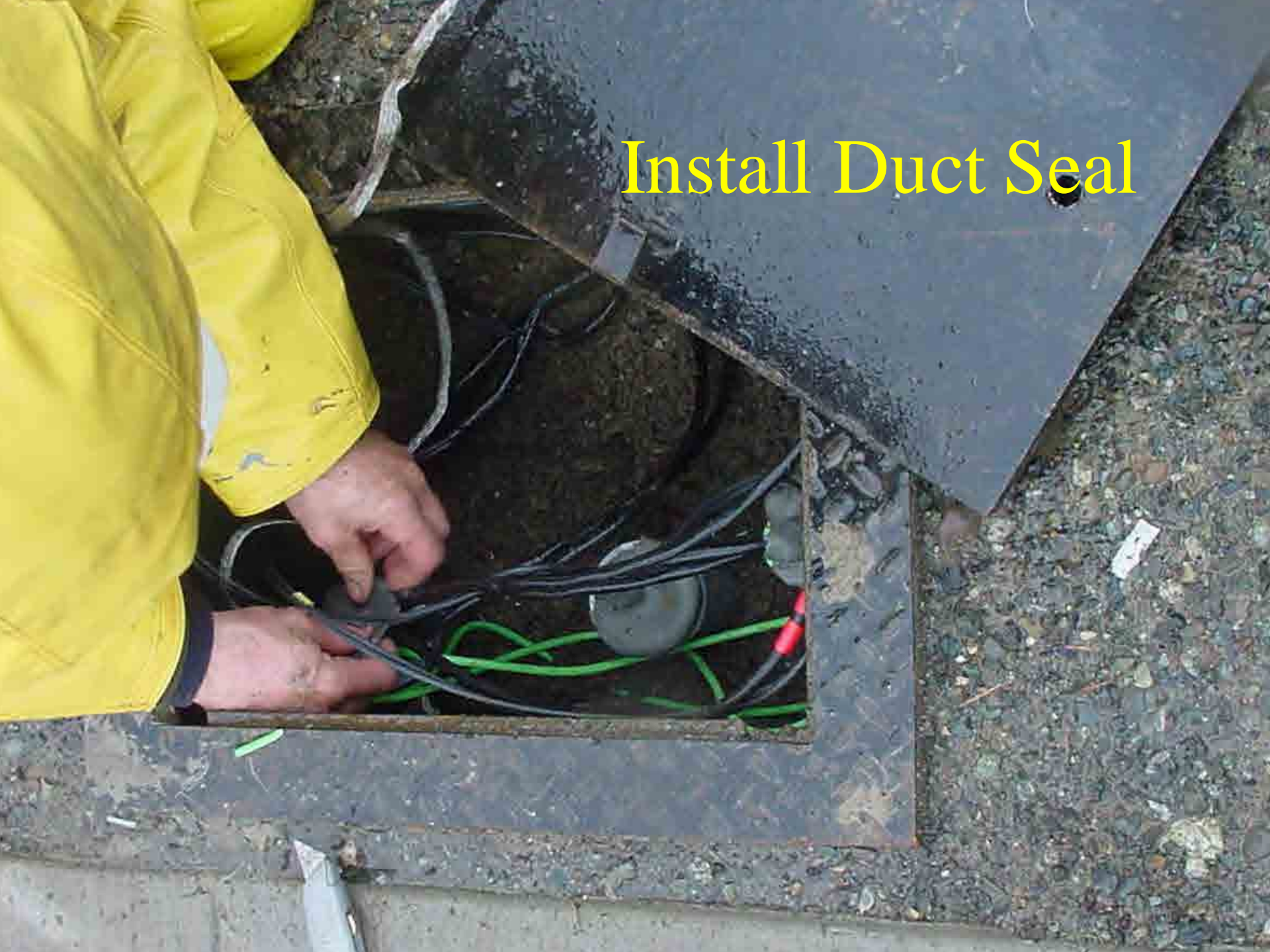
## 8-20.3(5) Conduit

NW Region

In conduit less than 2-inch pull ropes for wire installation shall be not less than  $\frac{1}{4}$ -inch. In conduits 2-inch diameter or larger, pull ropes shall be not less than  $\frac{1}{2}$ -inch.



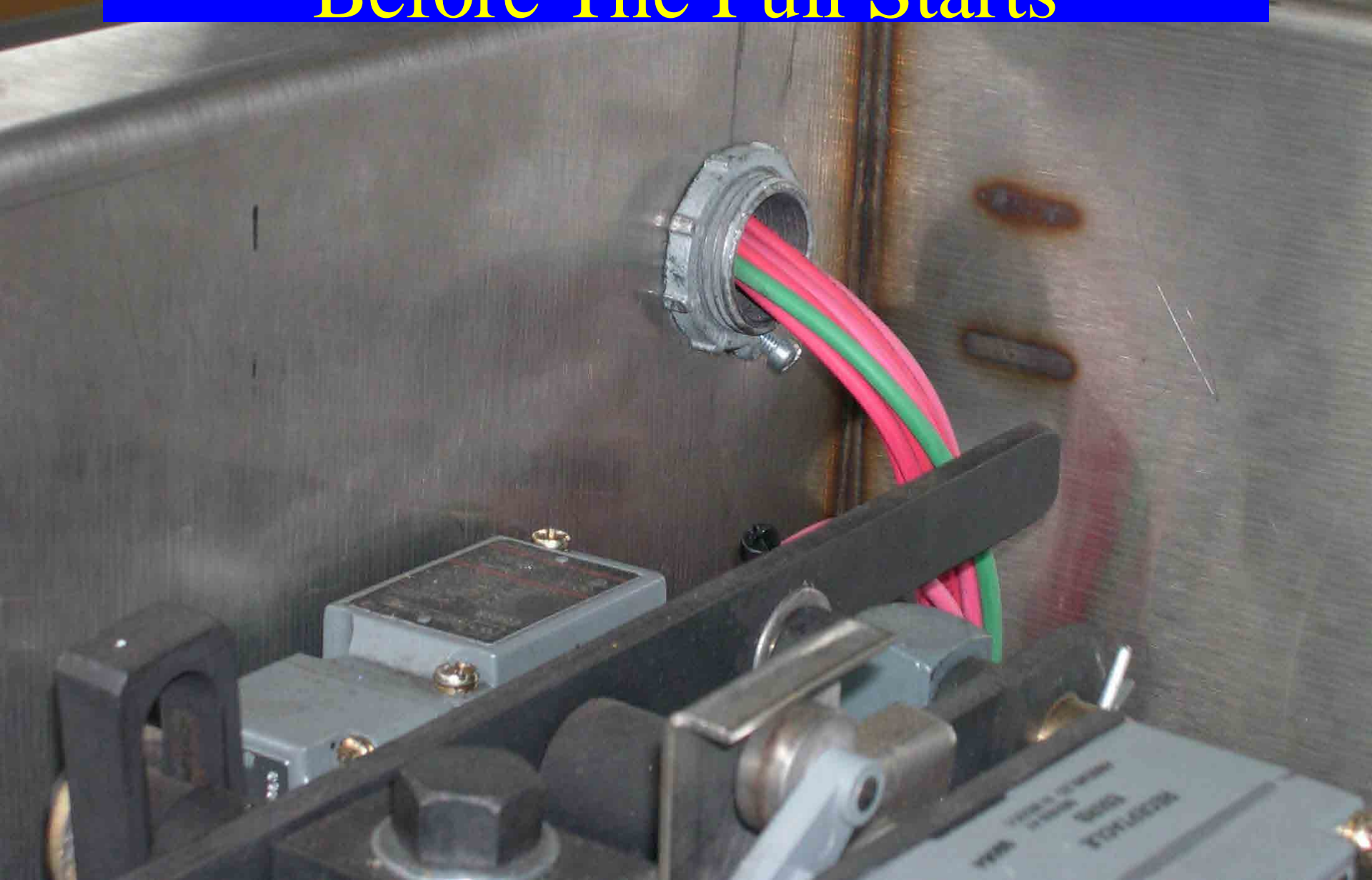
# Install Duct Seal



# NW Region Requires Mechanical Conduit Plugs in All Cabinets



**Make Sure They Are Ready  
Before The Pull Starts**







# Wire Connectors and Grounding Clamps





# Burndy Crimp and Crimper



# T & B Crimper

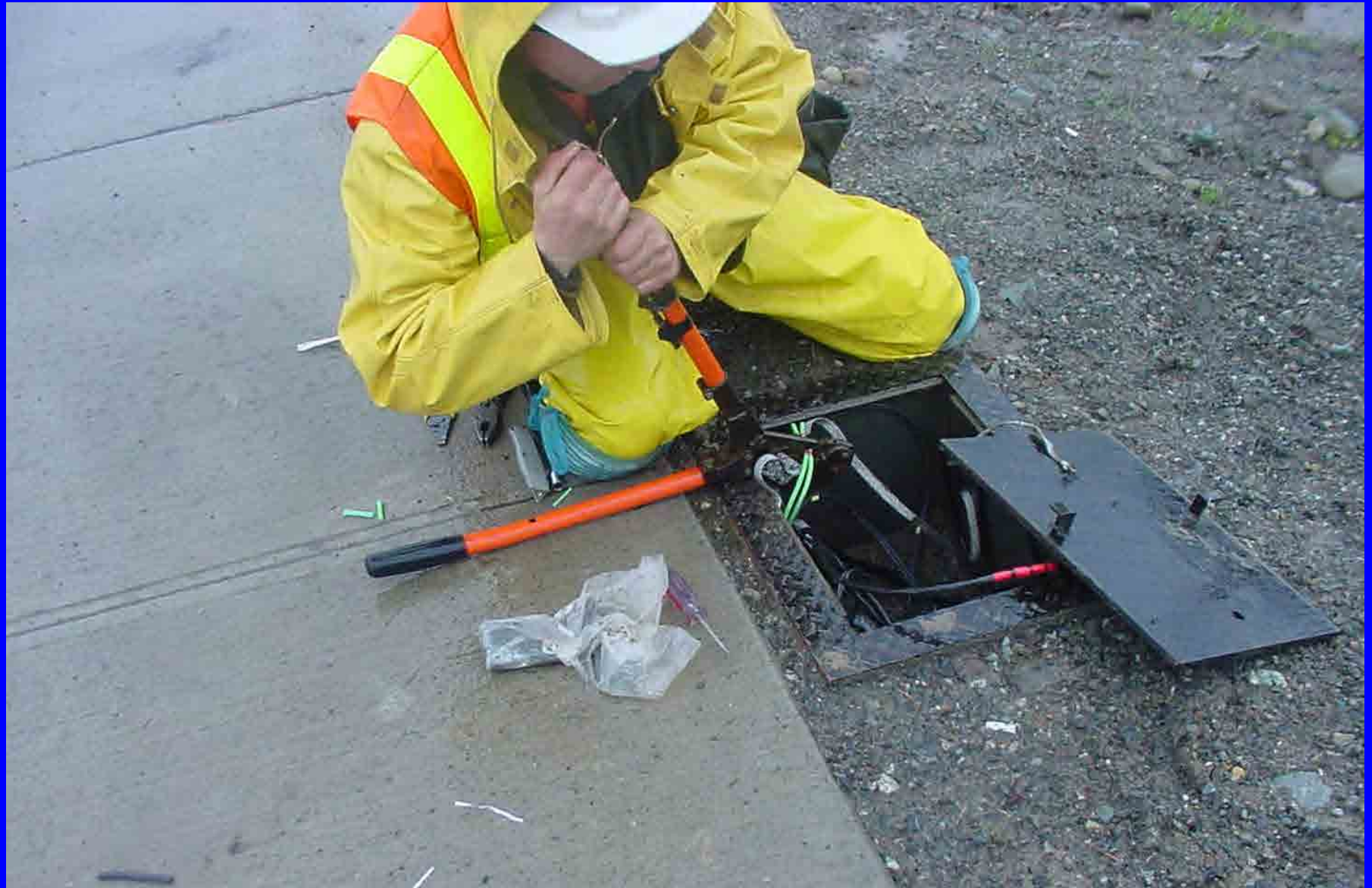


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12 1:20 PM

# Crimping the Ground Wire



# Epoxy Splice Kit



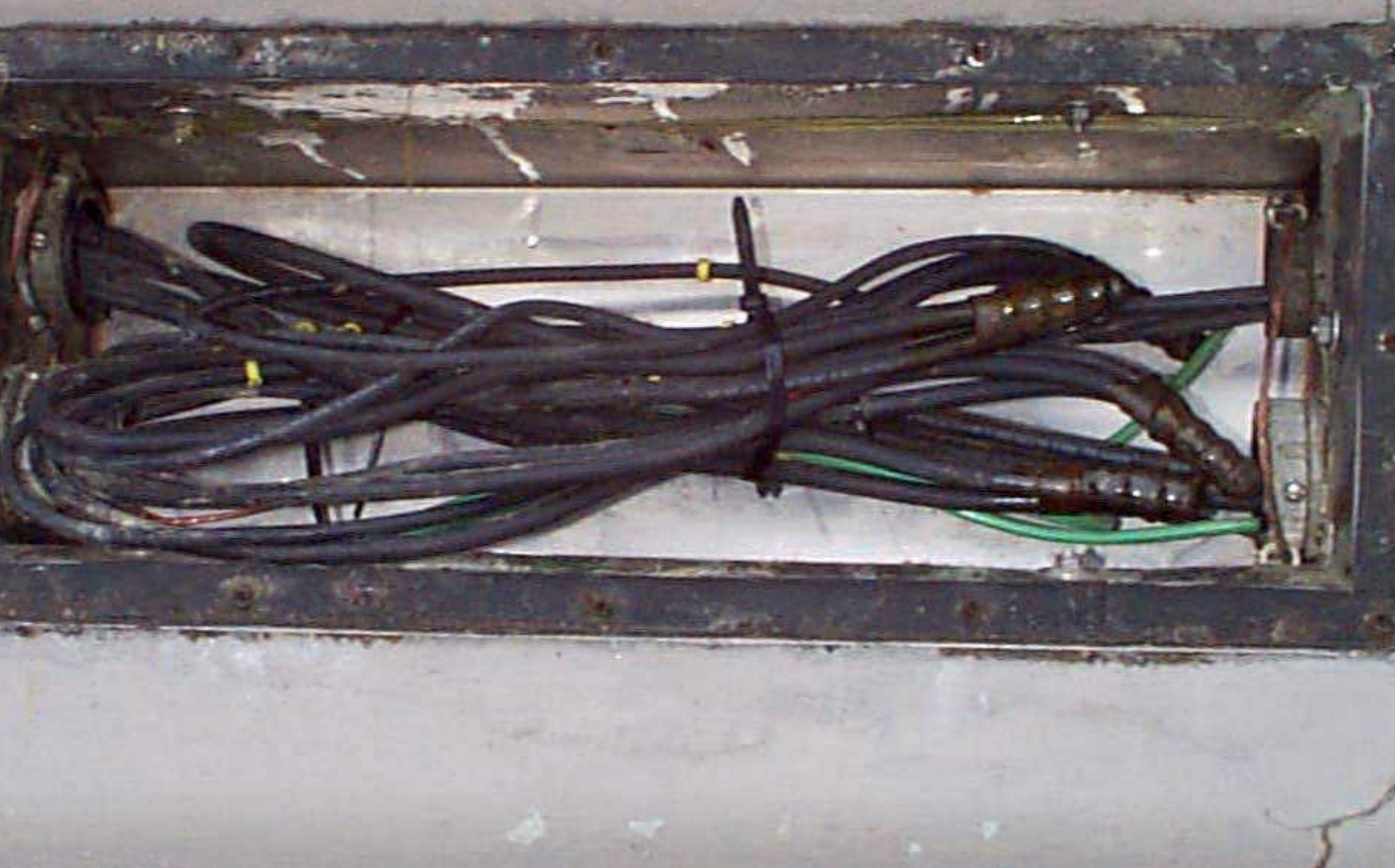
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17 1:36 PM

# Heat Shrink





Heat Shrink Splice

# Heat Shrink Splices



# Camera Cable Termination



Properly done



Corrosion Results

Poorly Done







**Use Caution Where You Drive**

# Fiber Optic Tugger



# Dynamometer on Control Unit

Pulling pressures on copper

8-20.3(8)

Page 654

F.O. cable can be pulled at a maximum of 600 LBS. 9-29.3(1)





Setting Up

# Pulling Cable With Ease



# Cable Is Out and Pulling Around the Puller Wheel



# Racking Fiber Optic Cable

NW Region Require Stainless Steel Hangers

9 2:09 PM

# Figure 8 Fiber Optic Rack in P.V.

NW Region Requires Stainless Steel Hangers

10 10:39 AM