



SPAN DRIVE MACHINERY DEMOLITION PLAN

DRIVE MACHINERY DEMOLITION ELEVATION

GENERAL NOTES

1. THE DIMENSIONS PROVIDED HERE ARE APPROXIMATE AND FOR REFERENCE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING AND MEASURING ANY AND ALL DIMENSIONS NECESSARY FOR THE COMPLETION OF THE REPAIR WORK.
2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE PROTECTION TO ALL EXISTING AND REMAINING MACHINERY TO WHICH WORK IS BEING PERFORMED AS A PART OF THIS EFFORT. DAMAGE TO EXISTING MACHINERY COMPONENTS OCCURRING DURING THE REMOVAL OR INSTALLATION OF MACHINERY WILL BE REPAIRED AT NO COST TO VTRANS.
3. ALL REMOVED EQUIPMENT TO BE DEMOLISHED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
4. DETAILS SHOWN HERE ARE FOR REFERENCE PURPOSES ONLY AND ARE NOT TO SCALE.
5. FOR FITS AND FINISHES SEE NOTE 9 ON SHEET 4.

SUGGESTED MACHINERY REHABILITATION PROCEDURE

THE FOLLOWING IS PROVIDED AS A SUGGESTED PROCEDURE FOR THE MAIN SPAN DRIVE REPAIR AND AUXILIARY DRIVE INSTALLATION AT ONE LEAF. THIS PROCEDURE IS FOR REFERENCE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE DEVELOPMENT OF A FINAL PROCEDURE THAT ADHERES TO ALL APPLICABLE STANDARDS. SEE PERFORMANCE SPECIFICATIONS FOR ADDITIONAL INSTALLATION REQUIREMENTS.

EQUIPMENT REMOVAL

1. FIELD VERIFY ALL NEEDED INSTALLATION DIMENSIONS.
2. REMOVE INSTRUMENTATION, SHAFT AND JAW COUPLING HALF. DOCUMENT BELT DRIVE RATIO AND MEASUREMENTS. DOCUMENT BELT TYPE.
3. REMOVE EXISTING MOTOR, BRAKE, INSTRUMENTATION AND CHAIN DRIVE SUPPORT STEEL. CLEAR DEBRIS AND GRIND ANY EMBEDDED STEEL TO PREPARE SURFACE FOR NEW MACHINERY MOUNTING. PROTECT EXISTING OPEN GEARING DURING THIS PROCESS.
4. REMOVE EXISTING CONCRETE SUPPORT PADS. SOUND THE PIER CAP AND REMOVE ANY LOOSE OR DETERIORATED CONCRETE. REPAIR PIER CAP SURFACE WITH QUICK SET CONCRETE OR EPOXY GROUT.
5. VERIFY PRIMARY REDUCER INPUT SHAFT DIMENSIONS NEEDED FOR NEW CHAIN DRIVE INSTALLATION. CLEAN SHAFT AND KEY WAY AND PROTECT UNTIL INSTALLATION OF NEW SPROCKET.
6. UNBOLT MANUAL DRIVE BEARINGS AND REMOVE MANUAL DRIVE SHAFT ALONG WITH ATTACHED BEVEL GEARS. REMOVE BEARING CLOSEST TO PRIMARY REDUCER.
7. CAREFULLY REMOVE BEVEL GEAR FROM PRIMARY REDUCER INPUT SHAFT. VERIFY SHAFT DIMENSIONS NEEDED FOR INSTALLATION. CLEAN SHAFT AND KEY WAY AND PROTECT UNTIL INSTALLATION OF NEW SPROCKET.
8. TEMPORARILY REPOSITION AND PROTECT ANY WIRING OR JUNCTION BOXES AS REQUIRED FOR THE MOTOR INSTALLATION WORK.

SHOP ASSEMBLY OF MAIN SPAN DRIVE

1. FABRICATE NEW SPAN DRIVE SUPPORT.
2. INSTALL AND ALIGN REFURBISHED MOTOR AND BRAKE ON THE SUPPORT.
3. INSTALL NEW TACHOMETER IN PROTECTIVE ENCLOSURE WITH GEAR BOX AND DELTA FLEX COUPLING. SECURE AND PROTECT ANY WIRING.
3. INSTALL CHAIN DRIVE SPROCKET ON MOTOR SHAFT AND SHOP TEST ASSEMBLY WITH CHAIN USED FOR FINAL INSTALLATION.

FIELD INSTALLATION OF MAIN SPAN DRIVE ASSEMBLY

1. POSITION AND ALIGN THE MACHINERY ASSEMBLY SKID ON THE PIERCAP.
2. TEMPORARILY SECURE AUXILIARY INPUT OF PRIMARY REDUCER TO PREVENT ROTATION. REMOVE SHAFT STOP AND INSTALL SPROCKET ON REDUCER INPUT SHAFT. INSTALL NEW MAIN DRIVE CHAIN TO MANUFACTURER'S SPECIFICATIONS.
3. ALIGN DRIVE ASSEMBLY FOR CHAIN TENSION AND ALIGNMENT AS PER MANUFACTURER'S RECOMMENDATIONS. INSTALL ANCHOR BOLTS IN OVERSIZED HOLES AND PERFORM FINAL ALIGNMENT USING LEVELING NUTS.
4. FINAL INSTALL ANCHOR BOLTS AND GROUT NEW SUPPORT IN PLACE. INSTALL CHAIN COVER AND LUBRICATE AS INDICATED BY THE MANUFACTURER.
5. MOVE ANY ELECTRICAL COMPONENTS PREVIOUSLY REPOSITIONED BACK TO THEIR ORIGINAL POSITIONS.

FIELD INSTALLATION OF AUXILIARY DRIVE

1. IT IS RECOMMENDED THAT THE CHAIN DRIVE SPROCKET BE INSTALLED ON THE GEAR MOTOR SHAFT IN THE SHOP.
2. INSTALL CHAIN DRIVE SPROCKET ON PRIMARY REDUCER INPUT SHAFT.
3. TEMPORARILY MOUNT BRACKET AND GEAR MOTOR ASSEMBLY.
4. ALIGN ASSEMBLY WITH PRIMARY REDUCER INPUT SHAFT.
5. INSTALL CHAIN TO MANUFACTURER'S SPECIFICATIONS AND MARK BASE FASTENER HOLE POSITIONS.
6. FIELD DRILL HOLES IN WEB AND BRACKET INSTALL FINAL INSTALLATION FASTENERS.
7. TEST SYSTEM AFTER ELECTRICAL WORK.
8. REMOVE CHAIN AND STORE AS PER MANUFACTURER'S RECOMMENDATIONS IN LOCATION DETERMINED BY VTRANS MAINTENANCE.

FIELD REHABILITATE MACHINERY BRAKES AS PER SPECIFICATION AND INSTALL NEW LIMIT SWITCHES

SUMMARY OF WORK

ITEM 900.645 SPECIAL PROVISION (PARTIAL REMOVAL OF STRUCTURE)

1. DEMOLITION AND REMOVAL (2 LOCATIONS)

- A. REMOVE MOTOR BRAKES AND INSTRUMENTATION.
- B. REMOVE EXISTING MOTOR SUPPORT, INSTRUMENTATION SUPPORT AND EXISTING CHAIN DRIVE SUPPORT. CUT/GRIND EMBEDDED STEEL DOWN TO PIER SURFACE. CLEAR DEBRIS FROM PIER SURFACE AND REMOVE CONCRETE MOTOR SUPPORTS (SEE DETAIL). REPAIR DAMAGED CONCRETE AT MOTOR INSTALLATION AREA.
- D. REMOVE BEVEL GEAR FROM MANUAL DRIVE INPUT OF PRIMARY REDUCER (SEE DETAIL).
- F. REMOVE BEVEL PINIONS, BEVEL PINION BEARING AND BEVEL PINION SHAFT ADJACENT TO MANUAL DRIVE INPUT OF PRIMARY REDUCER (SEE DETAIL).

ITEM 900.645 SPECIAL PROVISION (MECHANICAL EQUIPMENT REHABILITATION)

1. MAIN SPAN DRIVE REPAIRS (2 LOCATIONS)

- A. PROVIDE NEW CHAIN DRIVE BETWEEN MAIN MOTOR AND PRIMARY REDUCER.
- B. PROVIDE NEW MOTOR BRAKE. SEE SPECIFICATIONS. PROVIDE NEW BRAKE COVER.
- C. REFURBISH EXISTING BRAKE WHEEL JAW COUPLING. PROVIDE NEW MATING JAW COUPLING HALF AND SPIDER TO CONNECT INSTRUMENTATION.
- D. PROVIDE GEARBOX FOR TACHOMETER (SEE SPECIFICATION).
- E. PROVIDE DELTA-FLEX COUPLING BETWEEN TACHOMETER AND GEARBOX.
- F. PROVIDE NEW SEALED PROTECTIVE COVER FOR THE TACHOMETER AND TACHOMETER GEARBOX. CONTRACTOR MAY ALSO PROVIDE A SUITABLE WEATHER RESISTANT GEARBOX AND PROVIDE AN ENCLOSURE FOR ONLY THE TACHOMETER (SEE DETAIL).
- G. FABRICATE MACHINERY SUPPORT FOR THE REFURBISHED MOTOR, MOTOR BRAKE AND INSTRUMENTATION (SEE DETAILS ON SHEET 5).
- H. REFURBISH MACHINERY BRAKES AS PER THE MECHANICAL SPECIFICATIONS (2 PER LOCATION).
- I. PROVIDE MACHINERY BRAKE THRUSTER FOR NORTHWEST BRAKE.
- J. SECURE MANUAL DRIVE INPUT OF PRIMARY REDUCER FROM ROTATION AND REMOVE SHAFT STOP AND EXISTING SPROCKET.
- K. INSTALL REFURBISHED MOTOR, MOTOR BRAKE, INSTRUMENTATION ON MACHINERY SUPPORT.

SEE THE SPECIFICATIONS FOR INSTALLATION, TESTING AND ALIGNMENT REQUIREMENTS.

2. AUXILIARY DRIVE (2 LOCATIONS)

- A. PROVIDE AUXILIARY DRIVE GEAR MOTOR (SEE SHEET 4).
- B. PROVIDE AUXILIARY DRIVE SUPPORT AND FASTENERS (SEE SHEET 4).
- C. PROVIDE CHAIN DRIVE SPROCKETS, INSTALLATION HARDWARE AND CHAIN.
- D. INSTALL EQUIPMENT AT EXISTING PRIMARY REDUCER.
- E. PROVIDE STORAGE CONTAINER FOR CHAIN.
- F. INSTALL NEW PORTABLE GENERATOR PLUGS INSIDE LOCKABLE CABINETS ON THE NORTHEAST AND SOUTHEAST SIDE OF THE BRIDGE RAILING.

ITEM 900.645 SPECIAL PROVISION (ELECTRICAL EQUIPMENT REHABILITATION)

1. LIMIT SWITCHES

- A. REMOVE EXISTING AND PROVIDE IN KIND LIMIT SWITCH SUPPORT REPLACEMENTS FOR ALL LIMIT SWITCHES REPLACED UNDER ELECTRICAL WORK.
- B. INSTALL INSTRUMENTATION SUPPORTS IN COORDINATION WITH ELECTRICAL WORK.
- C. PROVIDE CHAIN SPROCKETS AND CHAIN FOR ROTARY CAM LIMIT SWITCHES (2 LOCATIONS).
- D. PROVIDE IN KIND FLEXIBLE COUPLING REPLACEMENTS FOR ROTARY CAM LIMIT SWITCHES (2 LOCATIONS).

2. SEE ELECTRICAL DRAWINGS (SHEETS 6 THROUGH 8) FOR CORRESPONDING ELECTRICAL WORK ITEMS

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MECHANICAL WORK		SHEET 3 OF 8