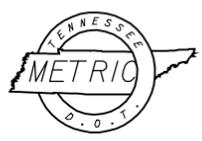


- HANDRAIL GENERAL NOTES**
- (H1) PIPE CROSS MEMBERS ARE TO ADHERE TO SPECIFICATION ASTM A53 TYPE E OR S-GRADE A OR B.
 - (H2) PIPE HANDRAIL IS TO BE PAINTED BLACK IN COLOR AND ADHERE TO FEDERAL SPECIFICATION TT-E-489H.
 - (H3) THIS PIPE HANDRAIL IS TO BE USED ONLY AS A PROTECTION FOR PEDESTRIANS AND SHOULD NOT BE PLACED IN ANY LOCATION WHERE IT MIGHT BE SUBJECT TO VEHICULAR IMPACT. FOR VEHICULAR PROTECTION STANDARD GUARD RAIL SHOULD BE USED.
 - (H4) THE PIPE HANDRAIL IS TO BE PAID FOR UNDER ITEM NO. 604M01.04, 38 mm DIA. STEEL PIPE HANDRAIL PER METER.
 - (H5) THE PIPE HANDRAIL SHALL BE REQUIRED WITH FIVE OR MORE STEPS AND WILL MEET THE FOLLOWING CONDITIONS:
 - ① ON STEPS LESS THAN 1.1 m WIDE HAVING BOTH SIDES ENCLOSED, AT LEAST ONE HANDRAIL PREFERABLY ON THE RIGHT SIDE DESCENDING.
 - ② ON STEPS LESS THAN 1.1 m WIDE HAVING ONE SIDE OPEN, ONE HANDRAIL ON EACH SIDE.
 - ③ ON STEPS LESS THAN 1.1 m WIDE HAVING BOTH SIDES OPEN, ONE HANDRAIL ON EACH SIDE.
 - ④ ON STEPS MORE THAN 1.1 m WIDE BUT LESS THAN 2.2 m WIDE, ONE HANDRAIL ON EACH SIDE.
 - ⑤ ON STEPS 2.2 m OR MORE WIDE, ONE HANDRAIL ON EACH SIDE, AND ONE INTERMEDIATE HANDRAIL LOCATED APPROXIMATELY MIDWAY OF THE WIDTH.

- CONCRETE STEP GENERAL NOTES**
- (C1) FOR SPECIFICATIONS SEE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION.
 - (C2) CONCRETE STEPS MAY BE CAST IN PLACE OR PRECAST. ALL CONCRETE CAST IN PLACE TO BE CLASS "A". ALL PRECAST TO BE 28 MPa.
 - (C3) ALL EXPOSED EDGES ARE TO BE ROUNDED USING A 6 mm RADIUS.
 - (C4) THE TREAD IS TO BE 305 mm DEEP. THE RISER HEIGHT IS TO BE VARIED SO AS TO CONFORM TO THE PROPOSED SLOPE. A MAXIMUM RISER HEIGHT OF 230 mm IS NOT TO BE EXCEEDED.
 - (C5) CONCRETE JOINT MATERIAL TO BE 13 mm PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF THE STANDARD SPECIFICATIONS. COST OF JOINT MATERIAL WILL BE INCLUDED IN THE COST OF OTHER ITEMS.
 - (C6) ALL REINFORCING STEEL TO ADHERE TO SPECIFICATION ASTM A615M. ALL REINFORCING STEEL TO BE NO. 13 BARS.
 - (C7) THE COST OF EXCAVATION BELOW LEVEL ON PROPOSED SLOPE TO BE INCLUDED IN THE COST OF OTHER ITEMS.
 - (C8) PAYMENT FOR CONCRETE STEPS WILL BE MADE AS FOLLOWS:
 - ITEM NO. 604M01.01, CLASS "A" CONCRETE (ROADWAY) PER CUBIC METER.
 - ITEM NO. 604M01.02, STEEL BAR REINFORCEMENT (ROADWAY) PER KILOGRAM.



ALL UNITS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

DETAILS FOR
STANDARD CONCRETE
STEPS AND
PIPE HANDRAILS