1. PRECAST TYPE 7 CONCRETE BARRIER HAS BEEN CLASSIFIED AS TL-3 MASH COMPLIANT MANUFACTURING AND UTILIZATION OF PRECAST TYPE 7 CONCRETE BARRIER IS PERMITTED FOR ALL COOT PROJECTS REQUIRING TL-3 MASH COMPLIANT TEMPORARY CONCRETE BARRIER REFER TO COSTS APPROVED PRODUCT LIST (APL) FOR ADDITIONAL MASH COMPLIANT PROPRIETARY TEMPORARY BARRIER DEVICES.

2. ALL STEEL REINFORCING SHALL BE 2 IN CLEAR OF THE NEAREST SURFACE OF CONCRETE UNLESS OTHERWISE SHOWN, REINFORCING STEEL SHALL BE GRADE 40 MINIMUM.

3. CONCRETE SHALL BE CLASS D.

4. ALL PERMANENT PRECAST BARRIERS USED TO REPLACE OTHER PRECAST TYPE 7 CONCRETE BARRIERS SHALL BE IN NEW CONDITION, UNDAMAGED, AND WITH NO REPAIRS.

5. FOR TEMPORARY INSTALLATIONS, INSTALL WITH A MINIMUM 4 FT. DISTANCE FROM THE CENTERLINE OF THE PRECAST TYPE 7 CONCRETE BARRIER TO ANY OBSTRUCTIONS BEHIND IT. FOR TEMPORARY INSTALLATIONS WITH LESS THAN A 4 FT. MINIMUM DISTANCE, STABILIZATION PINS SHALL BE USED ON EACH PRECAST TYPE 7 CONCRETE BARRIER UNIT ADJACENT TO AND WITHIN 0 FT. OF BOTH SIDES OF THE OBSTRUCTION SEE SHEET 3 FOR STABILIZATION PINNING DETAILS.

6. THE FLARE RATE FOR TEMPORARY INSTALLATIONS SHALL BE 10:1 OR FLATTER UNLESS OTHERWISE APPROVED BY THE ENGINEER FOR PERMANENT INSTALLATIONS SEE THE FLARE RATES TABLE ON STANDARD M-606-13, SHEET 3.

7. STABILIZATION PINS SHALL BE USED TO ANCHOR EACH 10 FT UNIT IN ALL PERMANENT INSTALLATIONS SEE SHEET 3 FOR STABILIZATION PINNING DETAILS.

8. FOR ALL PERMANENT INSTALLATIONS THAT REQUIRE END ANCHORADES SEE STANDARD PLAN M-606-13, SHEET 3 FOR ANCHORAGE DETAILS.

9. THE MONTH AND YEAR THE PRECAST TYPE 7 CONCRETE BARRIER WAS MANUFACTURED SHALL BE MOLDED INTO ONE END OF EACH 10 FT BARRIER UNIT.

10. APPROVED NON-SHRINK GROUT SHALL BE USED FOR GROUTING OVER ALL PINS AND GROUTING OF SCUPPERS.

11. WHEN HYDRAULIC ANALYSIS ALLOWS, SCUPPERS MAY NOT BE NEEDED ON:
   A. MEDIUM INSTALLATION WITH INLET DRAINAGE.
   B. PRECAST TYPE 7 CONCRETE SHOULDER BARRIER ON HIGH EDGE OF A SUPERELEVATED SHOULDER.
   C. PRECAST TYPE 7 CONCRETE MEDIAN BARRIER ON A CREST VERTICAL CURVE.
   D. PERMANENT BARRIER, IF SPECIFIED ON PLANS.

12. ALL INCIDENTAL WORK AND MATERIALS SUCH AS CONNECTING PINS, ANCHOR BOLTS, GROUT, AND EXCAVATION FOR END ANCHORADES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

13. ONE IN DIA. THREADED INSERTS MAY BE CAST-IN-PLACE TO FACILITATE LIFTING FOR THE TEMPORARY PRECAST TYPE 7 CONCRETE BARRIER APPLICATIONS ONLY.

14. RETROREFLECTORIZATION IS REQUIRED ON PRECAST TYPE 7 CONCRETE BARRIERS, SEE CONCRETE BARRIER RETROREFLECTOR NOTES ON STANDARD PLAN S-612-1.
Yi DIA. LOOP BAR (SEE SHEET 1 FOR DETAILS)

PLAN

PINNING ASSEMBLY (SEE SHEET 3 FOR DETAILS)

PRECAST TYPE 7 CONCRETE BARRIER

NOTES

1. WASHERS SHALL BE FORGED AS AN INTEGRAL PART OF THE PIN, OR SHALL BE WELDED AS SHOWN.

2. PINS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.

3. IF AN ALTERNATIVE TOP CONFIGURATION IS USED FOR LIFTING, THE LIFTING PIN SHALL BE PROVIDED. PINS SHALL CONFORM TO CRITICAL DIMENSIONS (PIN LENGTH DIAMETER).

4. PINS SHALL CONFORM TO ASTM A449.

5. APPROVED NON-SHRINK GROUT SHALL BE USED FOR GROUTING OVER ALL PINS, AND GROUTING OF SCUPPERS.

6. BOTH ENDS OF THE TYPE 7 CONCRETE BARRIER SHALL HAVE A 24:1 TAPER IN EACH DIRECTION FROM THE CENTER PIN RECESS TO ITS OUTER EDGE TO FACILITATE PLACEMENT ON CURVES.

7. JOINTS BETWEEN CAST-IN-PLACE GUARDRAIL TYPE 7 AND PERMANENT INSTALLATION PRECAST TYPE 7 CONCRETE BARRIER SHALL INCLUDE ALL REGRESSES AND LOOPS IN THE CAST-IN-PLACE END, ALONG WITH THE PIN TO COMPLETE THE TYPICAL PRECAST TYPE 7 CONCRETE BARRIER JOINT.

DETAILS FOR PIN AND LOOP CONNECTION

Computer File Information

Sheet Revisions

Colorado Department of Transportation

STANDARD PLAN NO. M-606-14

Issued by the Project Development Branch: July 31, 2019

Project Sheet Number:
1. SEE SHEET 1 FOR REINFORCEMENT AND OTHER DETAILS NOT SHOWN HERE.
2. PINS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION
3. FOR TERMINAL ANCHORING OF THE PERMANENT INSTALLATION OF PRECAST TYPE 7 CONCRETE BARRIERS, SEE THE END ANCHORAGE DETAIL ON STANDARD PLAN M-606-13, SHEET 1.
4. AN OPTIONAL 3 IN MAXIMUM TAPERED END POINT MAY BE PROVIDED ON THE STABILIZATION PIN TO FACILITATE DRIVING.

ROAD SURFACE | PIN LENGTH
---|---
CONCRETE | 2 FT-6 IN.
HMA | 3 FT.
SOIL | 3 FT-6 IN.

TABLE OF STABILIZATION PIN LENGTHS

DETAILS FOR STABILIZATION OF PERMANENT OR TEMPORARY PINNED PRECAST TYPE 7 CONCRETE BARRIER

ELEVATION VIEW WITH PINS

PLAN VIEW OF S BAR ENDS

STABILIZATION PIN THROUGH SURFACING INTO SUBGRADE. DRILLED HOLES REQUIRED FOR CONCRETE PAVEMENT.

OPTIONAL TAPERED END PIN

FILL RECESS WITH GROUT AFTER PLACING PIN.

TABLE OF STABILIZATION PIN LENGTHS

NOTES
NOTES

1. PRECAST TYPE 7 CONCRETE BARRIERS SHALL BE USED ONLY IN TEMPORARY CONFIGURATIONS AND MUST BE INSPECTED PRIOR TO REUSE AND PLACEMENT IN WORK ZONES. CONTINUED USE IN WORK ZONES IS ALSO SUBJECT TO PERIODIC INSPECTIONS. INSPECTIONS AND MEASUREMENTS WILL BE PERFORMED BY CDOT. ANY PRECAST TYPE 7 CONCRETE BARRIER SHOWING ANY ONE OF THE FOLLOWING DISCREPANCIES WILL NOT BE INSTALLED OR ALLOWED TO REMAIN IN USE:

   a) A SLOT CONNECTION WHERE MORE THAN 25% IS EITHER CRACKED OR MISSING.
   b) A CRACK ON TOP OF A BARRIER UNIT WHICH RUNS DOWN THE VERTICAL FACE ON EITHER SIDE FOR MORE THAN 16 INCHES.
   c) A CHIP ON THE TOP OR VERTICAL FACE WHICH IS MORE THAN 1 SQUARE FOOT IN AREA AND MORE THAN 2 INCHES DEEP. SMALLER AREAS AND DEPTHS SHALL BE FIELD PATCHED. CHIPS LESS THAN 2 INCHES DEPTH AND WITHIN A REASONABLE AREA SHALL NOT REQUIRE ATTENTION.
   d) A HORIZONTAL CRACK ON EITHER SIDE WHICH IS GREATER THAN 1/2, OR THAT SPLITS INTO A "Y" SHAPE WITH ARMS GREATER THAN 1 INCHES.
   e) A HORIZONTAL CRACK IN THE SLOPING AREA THAT IS GREATER THAN 1/2 AND INTERSECTS A VERTICAL CRACK.
   f) A CHIP ON A VERTICAL CURB GREATER THAN 1 SQUARE FOOT AND/OR 3 INCHES DEEP. SMALLER AREAS AND DEPTHS SHALL BE FIELD PATCHED. CHIPS LESS THAN 1 INCH DEPTH AND WITHIN A REASONABLE AREA SHALL NOT REQUIRE ATTENTION.
   g) ANY CORNERS THAT ARE CHIPPED MORE THAN 1 SQUARE FOOT IN AREA AND MORE THAN 2 INCHES DEEP. SMALLER AREAS AND DEPTHS SHALL BE FIELD PATCHED. CHIPS LESS THAN 2 INCHES DEPTH AND WITHIN A REASONABLE AREA SHALL NOT REQUIRE ATTENTION.

2. A "CRACK" IS DEFINED AS AN OPENING OF AT LEAST 1/32 INCH IN WIDTH WHEN MEASURED WITH A FEELER GAUGE.

3. ALL PRECAST TYPE 7 CONCRETE BARRIERS SHALL BE IN ACCORDANCE WITH SUBSECTION 606.04(8).

NON-REUSE OF PRECAST TYPE 7 CONCRETE BARRIER