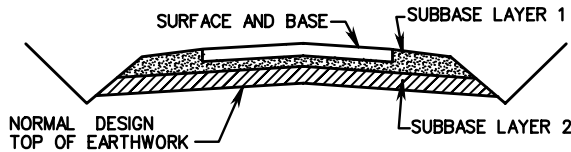


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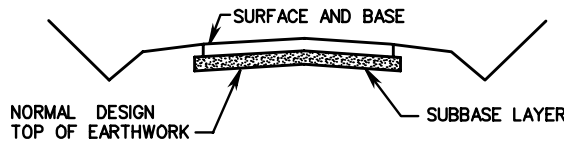
**DESIGN A**



**NORMAL ROADWAY DESIGN "A"**

(SURFACE, BASE, AND ONE OR MORE COURSES OF SUBBASE MATERIAL ABOVE TOP OF EARTHWORK.)

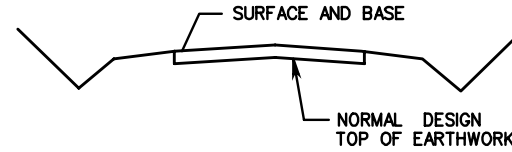
**DESIGN B**



**NORMAL ROADWAY DESIGN "B"**

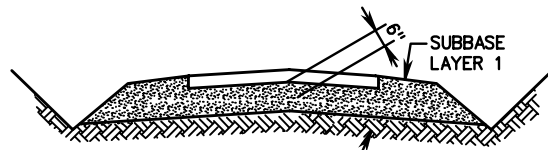
(SURFACE, BASE, AND SUBBASE ONLY. (SUBBASE NOT THROUGH SHOULDERS.)

**DESIGN C**



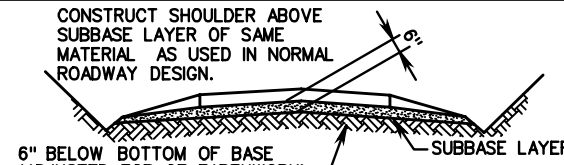
**NORMAL ROADWAY DESIGN "C"**

(SURFACE AND BASE COURSES ONLY.)



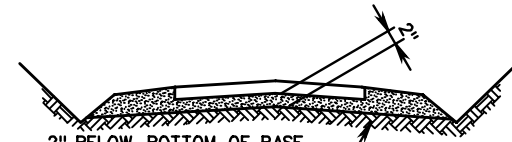
**SOLID ROCK**

REMOVE ROCK TO A POINT 6" BELOW BOTTOM OF BASE FOR ENTIRE WIDTH OF ROADWAY. BACKFILL WITH SUBBASE LAYER 1 USING BOTTOM 2" AS A LEVELING COURSE.



**SOLID ROCK OR IRREGULAR ROCK OUTCROPPING, BOULDERS, SHALE OR OTHER NON-SOLID ROCK**

REMOVE ROCK TO A POINT 6" BELOW BOTTOM OF BASE FOR ENTIRE WIDTH OF ROADWAY. BACKFILL WITH SUBBASE LAYER TO A DEPTH OF 6" FOR ENTIRE WIDTH OF ROADWAY USING BOTTOM 2" AS LEVELING COURSE. SHOULDER DESIGN ABOVE SUBBASE LAYER TO CONFORM TO NORMAL ROADWAY DESIGN AS SHOWN ON PLANS.



**SOLID ROCK OR IRREGULAR ROCK OUTCROPPING, BOULDERS, SHALE OR OTHER NON-SOLID ROCK**

EXCAVATE TO A POINT 2" BELOW BOTTOM OF BASE FOR ENTIRE WIDTH OF ROADWAY. BACKFILL WITH 2" OF ANY AGGREGATE MATERIAL FOR WHICH THERE IS A PAY ITEM IN THE CONTRACT AND USE AS A LEVELING COURSE.



**IRREGULAR ROCK OUTCROPPINGS, BOULDERS, SHALE OR OTHER NON-SOLID ROCK**

EXCAVATE TO NORMAL DESIGN TOP OF EARTHWORK. BACKFILL WITH SUBBASE LAYER 1 AND SUBBASE LAYER 2 TO NORMAL DESIGN DEPTHS.

**NOTES:**

APPLICABLE METHOD AS SHOWN HEREON IS TO BE USED AT SUCH LOCATIONS AS DESIGNATED BY THE ENGINEER.

**ROCK CUT SECTIONS**

IN DESIGN "A", IF CEMENT OR LIME SUBGRADE STABILIZATION IS INCLUDED IN THE NORMAL ROADWAY DESIGN, IT SHOULD BE ELIMINATED WHEN SOLID ROCK IS ENCOUNTERED. WHERE IRREGULAR ROCK OUTCROPPINGS, BOULDERS, SHALE OR OTHER NON-SOLID ROCK IS ENCOUNTERED, SUBSTITUTE AGGREGATE BASE OR SUBBASE MATERIAL FOR THE SUBGRADE STABILIZATION ON AN INCH FOR INCH BASIS USING BOTTOM 2" AS A LEVELING COURSE.

IN DESIGN "B", IF CEMENT OR LIME SUBGRADE STABILIZATION IS INCLUDED IN THE NORMAL ROADWAY DESIGN, IT SHOULD BE ELIMINATED WHEN SOLID ROCK, IRREGULAR OUTCROPPINGS, BOULDERS, SHALE OR OTHER NON-SOLID ROCK IS ENCOUNTERED. SUBSTITUTE AGGREGATE BASE OR SUBBASE MATERIAL FOR THE STABILIZATION ON AN INCH FOR INCH BASIS, USING BOTTOM 2" AS A LEVELING COURSE.

IN DESIGN "C", IF CEMENT OR LIME SUBGRADE STABILIZATION IS INCLUDED IN THE NORMAL ROADWAY DESIGN, ELIMINATED WHEN SOLID ROCK, IRREGULAR ROCK OUTCROPPINGS, BOULDERS, SHALE OR OTHER NON-SOLID ROCK IS ENCOUNTERED, SUBSTITUTE AGGREGATE BASE OR SUBBASE MATERIAL FOR THE STABILIZATION ON AN INCH FOR INCH BASIS USING BOTTOM 2" AS A LEVELING COURSE.

IN DESIGN "A", IF CEMENT STABILIZATION OF AGGREGATE BASE OR SUBBASE MATERIAL IS INCLUDED AS AN INTEGRAL PART OF THE PAVEMENT STRUCTURE ABOVE SUBGRADE ELEVATION ELIMINATE THE CEMENT WHEN SOLID ROCK IS ENCOUNTERED.

IN DESIGN "B", IF CEMENT STABILIZATION OF AGGREGATE BASE OR SUBBASE MATERIAL IS INCLUDED AS AN INTEGRAL PART OF THE PAVEMENT STRUCTURE ABOVE SUBGRADE ELEVATION, ELIMINATE THE CEMENT WHEN SOLID ROCK OR IRREGULAR ROCK OUTCROPPINGS, BOULDERS, SHALE OR OTHER NON-SOLID ROCK IS ENCOUNTERED.

**ROCK FILL SECTIONS**

WHEN A FILL SECTION IS BUILT USING GOOD QUALITY STONE AT SUBGRADE ELEVATION AND 2' OR MORE BELOW SUBGRADE ELEVATION, FILL SECTIONS SHALL BE HANDLED IN THE SAME MANNER AS ROCK CUT-SECTIONS. GOOD QUALITY ROCK IN FILL SECTIONS SHOULD BE CONSIDERED THE SAME AS SOLID ROCK IN CUT SECTIONS SHOWN IN DESIGN "A". ALL OTHER ROCK FILL SUBGRADE CONDITIONS SHALL BE HANDLED ACCORDING TO DESIGN A, B OR C AS SHOWN.



ROAD AND BRIDGE STANDARDS

**STANDARD METHODS OF UNDERCUTTING ROCK**

SPECIFICATION REFERENCE

SHEET 1 OF 1

REVISION DATE

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606.01

VIRGINIA DEPARTMENT OF TRANSPORTATION