FIGURE 1

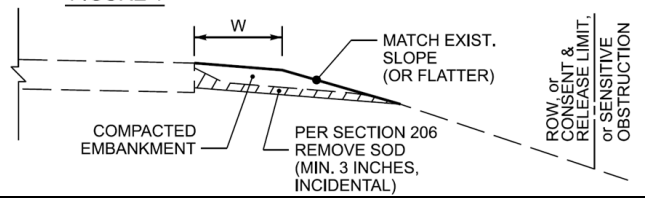


FIGURE 2

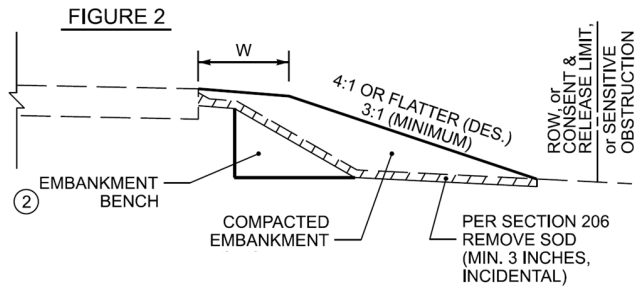


FIGURE 3

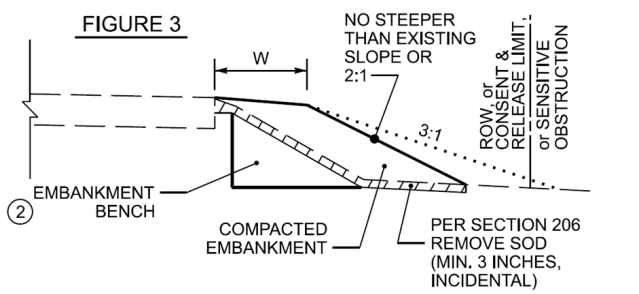


FIGURE 4

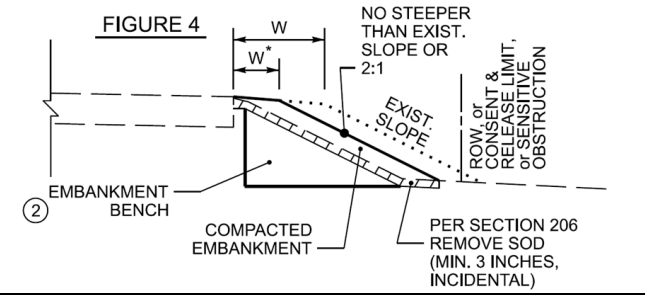


FIGURE 5

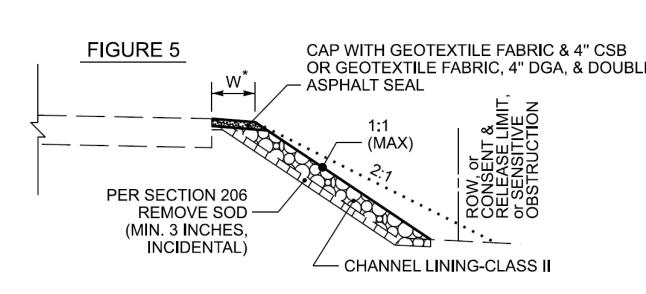
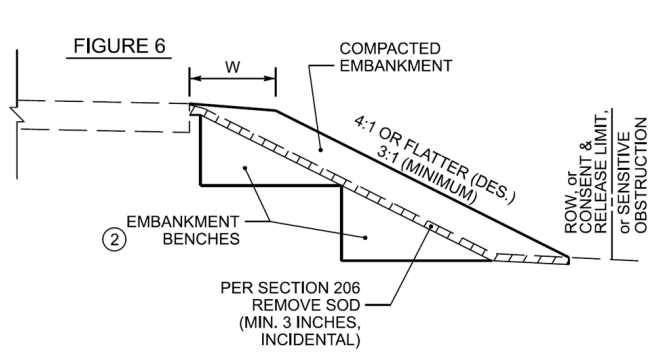


FIGURE 6



~NOTES~

Roadside Regrading Bid Items and Units to bid:

- Bid Item 2230 Embankment in Place – CUYD
- Bid Item 2200 Roadway Excavation – CUYD

1. The bid items listed above for Roadside Regrading shall consist of any and all necessary clearing and grubbing, grading, and/or shaping of the existing shoulder, ditch, and/or roadside to achieve the proposed shoulder, ditch, and/or roadside dimensions, as detailed on the Typical Sections. Final payment will be based on the proposed quantities of embankment and/or excavation, and will include all work and incidentals necessary to perform the Roadside Regrading according to these details, notes, and other information found elsewhere in the proposal or Standard Specifications. In the case of a discrepancy, refer to Section 105.05 of the Standard Specifications. Depending on the existing conditions encountered, Roadside Regrading may also include, but is not limited to:
   - Providing additional earth material and grading, shaping, and compacting the earth material to achieve the dimensions shown on the Typical Sections. Compact material according to Section 206 of the Standard Specifications.
     Note: Additional earth material provided shall be suitable for vegetation growth.
   - Excavating and removing excess material to achieve the dimensions shown on the Typical Sections.
   - Embankment benching.

(2) Embankment benching will be required when the existing groundline has an incline greater than 15% (Approx. 6:1). Excavation of embankment benches shall be incidental; however, embankment benching will be measured as Embankment in Place. The following are guidelines for embankment benching used in conjunction with the bid items for Roadside Regrading:
   - The typical height (or rise) is 1' to 6'.
   - The typical width (or run) will vary based on the height of the bench.
   - Multiple small benches may be used, and may be more advantageous as this will require processing less earthwork and may help avoid any existing underground utilities.

3. As shown in **Figure 1**, in some situations, minor shouldering, with minimal additional earth material, may be all that is required to reshape the earth shoulder to the proposed width and bring it flush with the edge of pavement.
4. As shown in **Figure 2**, most situations will require additional earth material to achieve the proposed earth shoulder width. It is desired that the resulting fill slope be installed as flat as possible and shall remain within the Right-of-Way and/or any Consent & Release areas obtained by KYTC noted in the proposal, while also avoiding any sensitive obstructions.
5. As shown in **Figure 3**, if a 3:1 fill slope will results in the toe of slope extending beyond the Right-of-Way or outside of a Consent & Release area obtained by KYTC noted in the proposal, or will impact a sensitive obstruction, then the fill slope may be installed steeper than 3:1, but no steeper than the existing fill slope, or a 2:1, whichever is flatter.
6. As shown in **Figure 4**, if matching the existing fill slope or installing a 2:1 fill slope (whichever is flatter) still results in the toe of slope extending beyond the Right-of-Way or outside of a Consent & Release area obtained by KYTC noted in the proposal, or still impacts a sensitive obstructions, then the proposed earth shoulder width may be reduced so that the resulting toe of slope will remain within the Right-of-Way or Consent & Release area, and/or not impact the sensitive obstruction.
7. As shown in **Figure 5**, if the existing fill slope is steeper than 2:1 and there is not enough space to install a 2:1 fill slope without extending beyond the Right-of-Way or outside of a Consent & Release area obtained by KYTC noted in the proposal, and/or impacts a sensitive obstructions, then Class II Channel Lining may be installed along the steep existing slope in order to establish a width of aggregate shoulder. These locations will be noted in the proposal. The Channel Lining is to be capped with Geotextile Fabric Class 1 and 4" of crushed stone base or 4" of DGA with Double Asphalt Seal Coat.
8. As shown in **Figure 6**, as the height of the fill increases, multiple embankment benches may be required. Refer to Note (2) for more information about embankment benching.

See Sheet 2 of 2 for Notes 9 through 13.

Roadside Regrading and Embankment Benching Details
Sheet 1 of 2

FIGURE 7

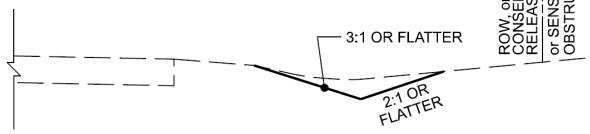


FIGURE 8

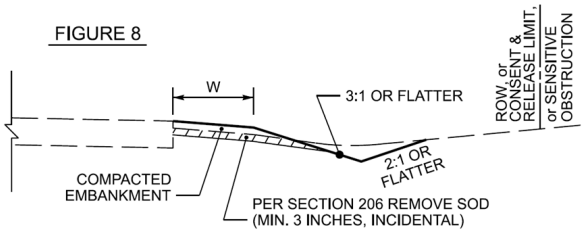


FIGURE 9

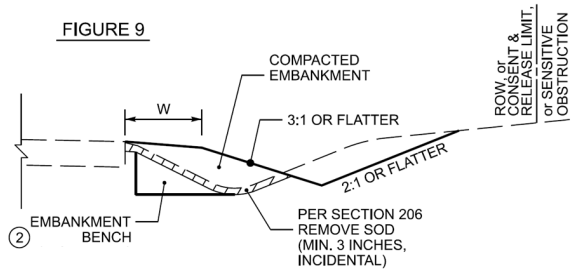


FIGURE 10

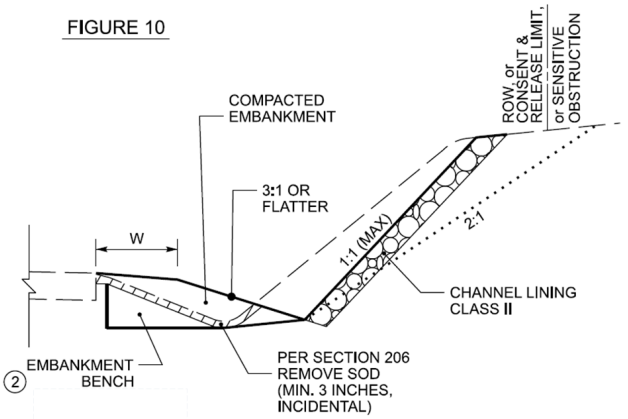
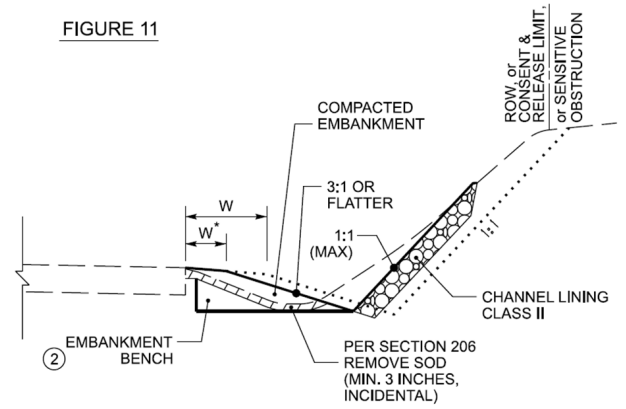


FIGURE 11



~NOTES~

Roadside Regrading Bid Items and Units to bid:

- Bid Item 2230 Embankment in Place – CUYD
- Bid Item 2200 Roadway Excavation – CUYD

1. The bid items listed above for Roadside Regrading shall consist of any and all necessary clearing and grubbing, grading, and/or shaping of the existing shoulder, ditch, and/or roadside to achieve the proposed shoulder, ditch, and/or roadside dimensions, as detailed on the Typical Sections. Final payment will be based on the proposed quantities of embankment and/or excavation, and will include all work and incidentals necessary to perform the Roadside Regrading according to these details, notes, and other information found elsewhere in the proposal or Standard Specifications. In the case of a discrepancy, refer to Section 105.05 of the Standard Specifications. Depending on the existing conditions encountered, Roadside Regrading may also include, but is not limited to:
   - Providing additional earth material and grading, shaping, and compacting the earth material to achieve the dimensions shown on the Typical Sections. Compact material according to Section 206 of the Standard Specifications.
     Note: Additional earth material provided shall be suitable for vegetation growth.
   - Excavating and removing excess material to achieve the dimensions shown on the Typical Sections.
   - Embankment benching.

(2) Embankment benching will be required when the existing groundline has an incline greater than 15% (Approx. 6:1). Excavation of embankment benches shall be incidental; however, embankment benching will be measured as Embankment in Place. The following are guidelines for embankment benching used in conjunction with the bid items for Roadside Regrading:

- The typical height (or rise) is 1’ to 6’.
- The typical width (or run) will vary based on the height of the bench.
- Multiple small benches may be used, and may be more advantageous as this will require processing less earthwork and may help avoid any existing underground utilities.

See Sheet 1 of 2 for Notes 3 through 8.

9. As shown in **Figure 7**, in some situations, all that may be required is to clean out the existing ditch and reshape it to the proposed dimensions. The material excavated from the ditch may be re-used elsewhere on the project, provided the Engineer determines the material removed from the ditch is suitable for the intended re-use.
10. As shown in **Figure 8**, in some situations, the ditch and shoulder may only need minor regrading and/or reshaping. The material excavated from the ditch may be used to reshape the earth shoulder, provided the Engineer determines the material removed from the ditch is suitable for shouldering. If the material is not suitable, additional earth material may be required.
11. As shown in **Figure 9**, in most situations, regrading and reshaping the roadside to achieve the proposed shoulder, ditch, and/or roadside dimensions will result in moving the ditch further away from the roadway. It is desired that the ditch foreslopes be 3:1 or flatter and the ditch backslopes be 2:1 or flatter. It is also desired that the new ditch backslope remain within the Right-of-Way and/or any Consent & Release area obtained by KYTC noted in the proposal, while also avoiding any sensitive obstructions.
12. As shown in **Figure 10**, if installing a 2:1 ditch backslope will result in the top of cut extending beyond the Right-of-Way and/or any Consent & Release area obtained by KYTC noted in the proposal, and/or impacting a sensitive obstruction, then the ditch backslope may be installed steeper than 2:1, up to 1:1 maximum. In this situation, the ditch backslope shall have Class II Channel Lining installed for slope protection.
13. As shown in **Figure 11**, if using a 1:1 ditch backslope still results in the top of cut extending beyond the Right-of-Way and/or outside any Consent & Release area obtained by KYTC noted in the proposal, and/or still impacts a sensitive obstruction, then the proposed earth shoulder width may be reduced so that the steep ditch backslope can be installed within the Right-of-Way and/or avoid a sensitive obstruction.

Roadside Regrading and Embankment Benching Details
Sheet 2 of 2