General Information:

Sample Plan

TYPICAL SECTIONS ------- NARRATIVE

References:

Road Design Manuals: Chapters 3 - 2
4 - 2 to 4 - 6
4 - 3
7 - 4

Technical Manuals:
5-292.62:
Width of Radial Ditches

Standard Plates: 7000 Series

Design Scene: Chapter 3 - Details

Technical Memorandum:
No. 18-08-TS-06
Pavement Edge Treatment - Safety Edge
No. 17-12-TS-05
Shoulder Width Standards for State Highways
No. 18-08-TS-02
Travelled Ray Pavement Cross Slopes
No. 18-08-TS-06
Travelled Lane Width Standards for State Highways

Miscellaneous:
Memorandum from the Final Design Principal Engineers
Re: Placement of Granular and Select Granular Materials

http://ihub.metrodesign/technicalguidance.html  Bicycle, Bikeways & Pedestrians
pw: Projects\NM\ROS\Non_Project\Design\SamplePlan\  Typical Section - Metro Freeway

References (cont'd):

Make sure typical sections match the Materials Design Recommendation.

When Safety Edge is needed, provide the appropriate details in the plan. They can be found on ProjectWise at:

Consider showing additional typicals indicating how quantities (granular, select granular, suitable grading)
were computed for various situations (cut section with curb, cut section without curb, narrow medians,
slopes (see Sheet 6 of 7).

Show locations where gutter slopes vary from Standards.

Show a separate shoulder detail where more clarity is required (see Sheet 7 of 7).

List known locations of organic swamp soil within the project limits.

The 2:1 slope for Muck Excavation shown on Sheet No. 4-2 (7) TYPICAL SWAMP SECTION, figure 4-2.02A, of the Road Design Manual is provided for computational purposes only. However, the Materials Engineer should be contacted to determine the actual slope to be expected, considering sloughing and safety requirements.

Make sure typical sections include all shoulder designs.

All existing pavements or future construction should be shown.

Show the applicable pavement design insets on each sheet. The bituminous mix designations should be used.

Make reference to the appropriate typical section notes to see superelevation plans. If the majority of a typical section is in superelevation, the shoulder construction in maximum super for both the high and low side. Make reference to determine the actual slope to be expected, considering sloughing and safety requirements. This information is needed for determining construction limits. Use Muck Excavation Pay Item unless conditions require Structure Excavation outside of Muck.

Consider showing additional typicals indicating how quantities (granular, select granular, suitable grading) were computed for various situations (cut section with curb, cut section without curb, narrow medians, subgrades in partial fill / partial cut, etc.). Discuss special situations with the Soils Engineer.

For high speed rural roadways, ramps and loops, provide aggregate shoulder inside of the shoulder p.i.

The 2:1 slope for Muck Excavation shown on Sheet No. 4-2 (7) TYPICAL SWAMP SECTION, figure 4-2.02A, of the Road Design Manual is provided for computational purposes only. However, the Materials Engineer should be contacted to determine the actual slope to be expected, considering sloughing and safety requirements.

Make sure typical sections match the Materials Design Recommendation.
Sample Plan

TYPICAL SECTIONS -------- CHECKLIST

1. Profile grade locations
2. Shoulder typicals
3. Turn lane typicals
4. Miscellaneous typicals (entrance, driveways, etc.)
   - Showing proper safety inslopes
5. Muck, rock excavation etc.
6. Subcuts
7. Check against all recommendations in Signed MDR letter
8. Check against project memo or study report
9. Horizontal dimensions and a general note regarding lateral stepping
10. Label grading grade
11. Label roadway center lines
12. Proper roadway station limits
13. Dimensions to P.I.
14. roadway and shoulder slopes
15. Proper fill slope and bank slope ratio
16. Ditch depths
17. Structure excavation
18. Pond Bottom Details
19. Proposed minimum slope dressing
20. Future work noted
21. Input/output gutter slopes (other than Standards)
22. Proper mix designations
23. Check notes for applicability
24. Note maximum rollover criteria, if necessary
25. Confirm stationing on typicals match Construction Plan sheets and that there are no unaccounted for gaps.
26. Show temporary work if appropriate
27. Cross references to other sheets (as applicable)
28. Drawn by:  Checked by:  Initials and Engineer’s Signature

TYPICAL SECTIONS CHECKLIST

General Information (cont'd):

Do not place more than 6" in depth on slopes steeper than 1:2.5 unless the slope is part of an RSS Wall Design.

In areas where muck is to be disposed of on inslopes, provide 2' depth of mineral soil cap (common embankment) over muck. (See Sheet 4 of 7.) This is needed to provide a stable surface for future maintenance.

Consider snow storage and discuss with Maintenance and Water Resources.

In areas where muck is to be disposed of on inslopes, provide 2' depth of mineral soil cap (common embankment) over muck. (See Sheet 4 of 7.) This is needed to provide a stable surface for future maintenance.

Consider snow storage and discuss with Maintenance and Water Resources.
GENERAL NOTES:

* ALL CROSS SLOPES ARE IN FT. PER FT.
* UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES WILL BE THE SAME AS THE PROPOSED DRIVING SURFACE.
* SEE SHAPING AND TOS POPILING ENVELOPES DETAIL, ON SHEET NO. 60.
* USE 0.5' LATERAL STEPPING ON BITUMINOUS LIFTS.

NOTES:

1. BACKFILL WITH SELECT GRANULAR MATERIAL.
2. PROVIDE 6' GRANULAR MATERIAL UNDER CONCRETE WALK.
3. BACKFILL WITH SELECT GRANULAR MATERIAL.
4. STA. 14+50 TO STA. 18+00 LEAVE CURB AND GUTTER INPLACE.

10. USE THIS INSET & SUBCUT FOR SB101 LT. 6' RT. STA. 10+00 TO 12+40, INCLUDES INTERSECTION LT. TO R/W AT STA. 10+00 ON 49WB2.
11. USE THIS INSET & SUBCUT LT. OF SB101 FROM STA. 12+51 TO 12+78. INCLUDES INTERSECTION RT. TO M/L AT STA. 12+50 ON 49WB2, CONSTRUCT 9" CONCRETE DRIVE APPROACH PANEL, THIS AREA SHOULD BE BACKFILLED WITH SELECT GRANULAR MATERIAL.
12. CONSISTS OF ACCELERATION LANE, THRU LANE AND/OR SHOULDERS.
13. SEE SHOULDER DETAIL, TYPICAL SHEET 7 OF THIS SAMPLE PLAN.
14. CONSTRUCT SAFETY EDGE. SEE DETAILS ON SHEET NO. 22.
15. PLACE IN 2 EIMAL LIFTS.
16. PLACE IN 2 EQUAL LIFTS.

STATE PROJ. NO. 0000-00 (T.H.) SHEET NO. 20 OF 84 SHEETS

TYPICAL SECTIONS

TYPICAL SECTION NO. 2
WIDENING WITHOUT CURB & GUTTER

TYPICAL SECTION NO. 1

TYPICAL SECTIONS

SAMPLE PLAN

2105 PAY ITEMS

INSET A

INSET B

INSET C

PLANT VAR.

B424 C&G

INSET C

INSET B

INSET A

INPLACE GROUNDLINE

AGGREGATE SURFACING (CV) CLASS 2

GRADING GRADE

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

3.5' SUBGRADE EXCAVATION

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

SLOPE DRESSING

14'

6' MIN.

1:4

VAR.

2' SUBGRADE EXCAVATION

INPLACE GROUNDLINE

GRADING PI

INSET B

INSET C

INSET B

INSET C

2' SUBGRADE EXC...
GUARDRAIL INSTALLATION ADJACENT TO RURAL SHOULDER

NOTES:
- All cross slopes are in ft. per ft.
- All sections shown are for normal crown.
- For ditch depth, slope variations and embankment details, see cross sections.
- For shoulder and ditch dimensions, see sheet no. 49.
- Unless otherwise specified, the cross slope of the grading grade matches the cross slope of the proposed driving lanes.
- Maximum super-elevation rollover shall be 0.07 ft./ft. for details see sheet no. 47.
- The bottom of the upper most bituminous wearing course is not shown on the typical sections for clarity; it is shown on the insets.
- Construct to grading grade. Surface shall be provided in a future contract.
- Deep bituminous surfacing at station 626+00.
- New PE pipe drain.

1. Construct to grading grade. Surface shall be provided in a future contract.
2. Deep bituminous surfacing at station 626+00.
3. For details see sheet no. 49.
4. Grading grade is based on profile grade minus 13" of future surfacing.
5. Deleted.
6. Place in 2 equal lifts.
7. Subsurface drain. For details see sheet no. 136.
8. Construct safety edge. See details on this sheet.

FOR EXCAVATION AND EMBANKMENT DETAILS, SEE SHEET NO. 48.

FOR SHOULDER AND DITCH DIMENSIONS, AND FOR ROUNDING DETAILS, SEE SHEET NO. 49.

FOR SUPER-ELEVATION DETAILS AND TRANSITIONS, SEE SHEET NO. 47.

FOR DETAILS SEE SHEET NO. 47.

THE BOTTOM OF THE UPPER MOST BITUMINOUS WEARING COURSE IS NOT SHOWN ON THE TYPICAL SECTIONS FOR CLARITY; IT IS SHOWN ON THE INSETS.
2106 PAY ITEMS

FOR ADDITIONAL INFORMATION, SEE PROFILE SHEET NO. 231 TO 245.

FOR GENERAL TYPICAL SECTIONS NOTES, SEE SHEET NO. 65.

NOTE:

EXCAVATION TYPICAL

INPLACE

FINISHED GRADE

TOP OF GRADING P.I.

SUBCUT DEPTH

EXCAVATION - SUBGRADE

EXCAVATION - COMMON

FOR BACKFILL, SEE TABULATIONS THIS SHEET.

EMBANKMENT TYPICAL

INPLACE

FINISHED GRADE

TOP OF GRADING P.I.

SELECT GRANULAR EMBANKMENT (CV)

GRANULAR EMBANKMENT (CV)

AVERAGE DEPTH TOPSOIL

EXCAVATION - SUBGRADE

EXCAVATION - COMMON

INPLACE

SAMPLE PLAN

SUBGRADE CORRECTIONS AND SUBCUTS

ROADWAY ALIGNMENT STATION TO STATION LOC. DEPTH BACKFILL

PER6941 613+40 TO 625+40 LT. 3.0  A

PER6941 665+35 TO 666+30  3.0  A

PER6941 615+45 TO 615+41  3.0  A

PER6941 625+40 TO 626+40  3.0  A

PRE6941 1040+70 TO 1040+90  3.5  B

PRE6941 1034+70 TO 1034+90  3.5  B

PRE6941 438+20 TO 438+40  3.5  B

PRE6941 104700 TO 114800  3.5  B

PRE6941 4000 TO 4073  3.5  B

PER6941 1040 TO 1047  3.5  B

PER6941 2543 TO 2549  3.5  B

PLANN 6411 TO 6518  3.5  B

PLANM 2454 TO 2457  3.5  B

Pcus 6540 TO 660+30  3.5  B

Pcus 10432 TO 16+50  3.5  B

Pcus 3940 TO 79000  3.5  B

Pcus 13140 TO 21320  3.5  B

Pcus 17920 TO 22227  3.5  B

Pcus 13844 50 TO 15842  3.5  B

Pcus 21760 TO 24540  3.5  B

Pcus 10400 TO 10710  3.5  B

BACKFILL

A = 12" SELECT GRANULAR EMBANKMENT (CV) OVER 24" GRANULAR EMBANKMENT (CV)

B = 18" SELECT GRANULAR EMBANKMENT (CV) OVER 24" GRANULAR EMBANKMENT (CV)

NOTE:

FOR GENERAL TYPICAL SECTIONS NOTES, SEE SHEET NO. 65.

① SEE CROSS SECTIONS FOR APPROPRIATE SLOPE RATIO.

② PROVIDE FOR SUBCUTS AS LISTED IN THIS TABULATION.

③ PROVIDE 1:20 TAPERS TO STATION LIMITS SHOWN.

④ PROVIDE 2 INPLACE TAPERS TO STATION LIMITS SHOWN.

⑤ ADJACENT TO INPLACE ROADWAYS.

⑥ SEE TABULATION, THIS SHEET.

⑦ INPLACE TOPSOIL DEPTH RANGE FROM 3" TO 3'.

⑧ FOR COMPUTATION PURPOSES USE 6' AVERAGE DEPTH.

⑨ EMBANKMENT FOR T.H. 694 EB AND WB SHALL BE:

⑩ SELECT GRANULAR EMBANKMENT (CV) OVER 24" GRANULAR EMBANKMENT (CV)

⑪ VARIABLE COMMON EMBANKMENT (CV)

⑫ ALL OTHER PROJECT ROADWAYS SHALL BE:

⑬ SELECT GRANULAR EMBANKMENT (CV) OVER 24" GRANULAR EMBANKMENT (CV)

⑭ VARIABLE COMMON EMBANKMENT (CV)
SHOULDER DETAIL - T.H. 10 & 610

NORMAL CROWN OR LOW SIDE SUPERELEVATION

VAR. BIT. SHOULDER

1.5' P.I.

SHOULDER DETAIL - T.H. 10 & 610

HIGH SIDE SUPERELEVATION

VAR. BIT. SHOULDER

1.5' P.I.

RAMP OR LOOP P.I. DETAILS

HIGH SIDE

LOW SIDE

6' WIN. SLOPE DRESSING

6' WIN. SLOPE DRESSING

ON HIGH SIDE OF RAMP OR LOOP, SLOPE IS 0.04 FT/FT AWAY FROM
PAVEMENT REGARDLESS OF PAVEMENT SLOPE.
ON LOW SIDE OF RAMP OR LOOP, SLOPE IS 0.04 FT/FT WHEN
PAVEMENT SLOPE IS 0.04 OR LESS.
WHEN PAVEMENT SLOPE IS GREATER THAN 0.04 FT/FT THEN SLOPE
TO P.I. MATCHES ADJACENT PAVEMENT.

FOR SPECIAL SURFACE TREATMENT SEE
SHEET NO. 139.

PLACE IN 2 EQUAL LIFTS.

CONSTRUCT SAFETY EDGE. SEE DETAILS ON SHEET NO. 56.

AGGREGATE SURFACING (CV1) CLASS 2

FREE RIGHT TURN LANE

E UNIVERSITY AVE. NO

VAR. GRANULAR EMBANKMENT (CVI)

3' CONSTRUCT SAFETY EDGE. SEE DETAILS ON SHEET NO. 56.

FREE RIGHT TURN LANE

SHOULDER DETAILS

Sheet 1 of 7

TYPICAL SECTIONS

Sheet 26 of 84 SHEETS