

REVISION DATE 06/05/19

16-OCT-2019

Sample Plan

TYPICAL SECTIONS ----- NARRATIVE

References:

- Road Design Manual: Chapters: 3 - 2
4 - 2 to 4 - 6
6 - 3
7 - 4
 - Technical Manual: 5-292.622:
Width of Radial Ditches
 - Standard Plates: 7000 Series
 - Standard Plans: 5-297.404: (1 of 3) Permanent Erosion Control
Shaping and Topsoiling Inslopes
 - Design Scene: Chapter 3 - Details
 - Technical Memorandum: No. 16-01-T-01
Pavement Edge Treatment - Safety Edge
No. 17-12-TS-05
Shoulder Width Standards for State Highways
No. 18-08-TS-02
Traveled Way Pavement Cross Slopes
No. 18-08-TS-06
Traveled Lane Width Standards for State Highways
 - Miscellaneous: Memorandum from the Final Design Principal Engineers
Re: Placement of Granular and Select Granular Materials
- <http://lhub.metrodesign/technicalguidance.html> Bicycle, Bikeways & Pedestrians
<http://lhub.metrodesign/coordination.html> Materials/Des. Proj. Issue Checklist
 pw: \Projects\DM_ROS\Non_Project\Design\SamplePlan\ Typical Section - Metro Freeway

General Information:

- Try to make all typical sections as general as possible and keep to a minimum. It is not necessary to show a typical section for every possible situation. Too many typical sections are time consuming and can lead to confusion.
- Typical sections may be developed using either of the following formats:
- a. Include all information below the grading grade such as topsoil removal, subcuts, muck excavation, rock excavation, etc., with each of the regular typical sections. Additional notes may be required to define specific situations rather than adding additional typical sections. (See Sheet 1 of 7).
 - b. Do not show any work below the grading grade on the regular typical sections. All work below the grading grade as stated above will be shown on a separate sheet identified as excavation and embankment. All appropriate muck or subgrade tabulations and specific backfill material should be shown on this sheet (see Sheet 4 and 5 of 7).

General Information (cont'd):

- Specific projects may require only one or two basic typical sections with approximately ten or more different shoulder/berm/ditch situations. In this case, one may develop a typical section tabulation of the specific typicals rather than show many large typicals with minimal changes.
- If not shown on the regular typical sections, a separate typical should be provided to show ditches and slopes (see Sheet 6 of 7).
- The Designer should consider adding additional notes to typicals to cover specific situations rather than adding additional typical sections. If an additional typical is required, consider showing a partial typical.
- For retaining walls, include a typical section in the plan that defines the pay limits of structure excavation and backfill types. If more than one wall, include the wall name with the appropriate typical.
- Specific typical sections for rock excavation, noise wall construction, etc., may be required.
- If you have a grading project only, show the future finished surfacing with a dashed line and label it as such.
- Most projects show typicals for a normal crown section. Be sure to include superelevation details for shoulder construction in maximum super for both the high and low side. Make reference in the typical section notes to see superelevation plans. If the majority of a typical section is in superelevation, the typical should be drawn accordingly.
- Make sure typicals include all shoulder designs.
- Provide the applicable pavement design insets on each sheet. The bituminous mix designations should be used.
- All existing pavements or future construction should be shown.
- Show locations where gutter slopes vary from Standards.
- Show a separate shoulder detail where more clarity is required (see Sheet 7 of 7).
- All bituminous and aggregate layers shown on the insets should also be shown on the typical sections. However, the wearing course and binder course may be shown as one layer on the typical if needed. If so, note this.
- 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. 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 shouldering inside of the shoulder p.l. in place of slope dressing. Materials Office will provide aggregate recommendation.
- When Safety Edge is needed, provide the appropriate details in the plan. They can be found on ProjectWise at: \OTS\DesignStandards\DesignDetails or at: <https://standardplans.dot.state.mn.us> on the drop down Main Menu.
- Make sure typical sections match the Materials Design Recommendation.

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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.

Sample Plan

TYPICAL SECTIONS ----- CHECKLIST

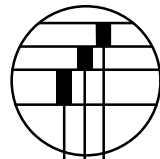
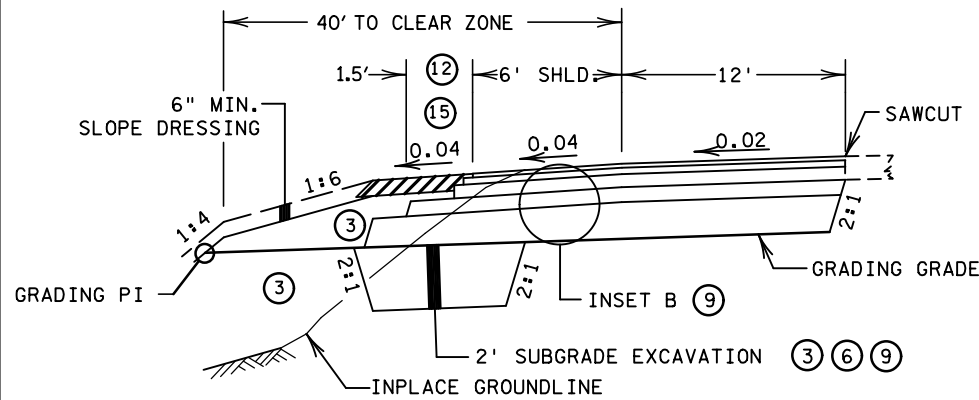
- 1. Profile grade locations
- 2. Shoulder typicals
- 3. Turn lane typicals
- 4. Miscellaneous typicals (entrance, driveways, etc.)
Showing proper safety inslopes
- 5. Muck, rock excavation etc.
- 6. Subcuts
- 7. Check against all recommendations in signed MDR letter
- 8. Check against project memo or 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 back 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

REVISION DATE 08/14/19
 PLOTTED/REVISED: 16-OCT-2019

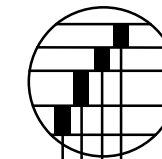
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**TYPICAL SECTION NO. 2
 WIDENING WITHOUT CURB & GUTTER**



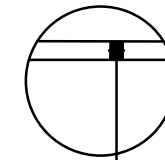
INSET A

- 4" TYPE SP 12.5 WEARING COURSE MIXTURE (5,E) (SPWEB540E) (14)
- 5" TYPE SP 12.5 NON WEARING COURSE MIXTURE (5,E) (SPNWB530B)
- 6" AGGREGATE BASE (CV) CLASS 6



INSET B

- 4" TYPE SP 12.5 WEARING COURSE MIXTURE (5,E) (SPWEB540E) (14)
- 5" TYPE SP 12.5 NON WEARING COURSE MIXTURE (5,B) (SPNWB530B)
- 6" AGGREGATE BASE (CV) CLASS 6
- 10" AGGREGATE BASE (CV) CLASS 5



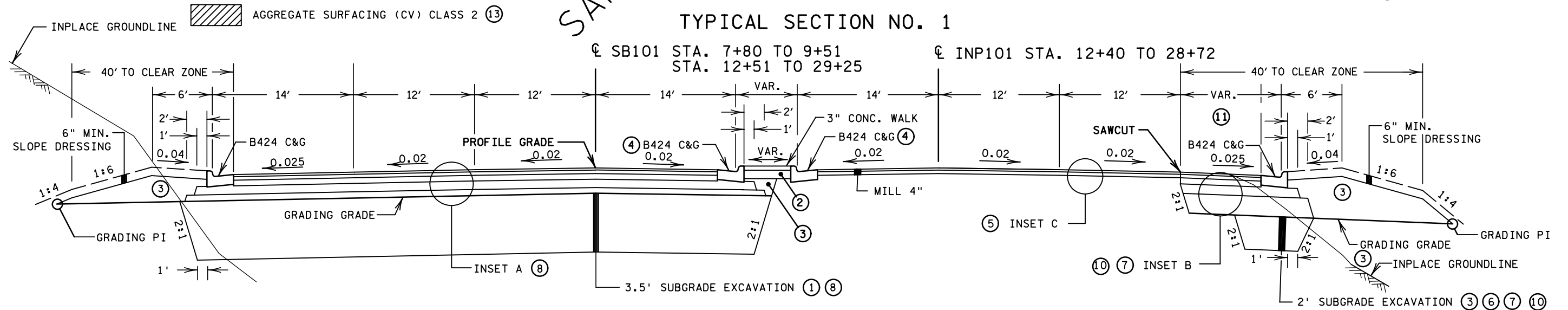
INSET C

- 4" TYPE SP 12.5 WEARING COURSE MIXTURE (5,E) (SPWEB540E) (14)

2105 PAY ITEMS

SAMPLE PLAN

TYPICAL SECTION NO. 1



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 TOPSOILING INSLOPES DETAIL, ON SHEET NO. 60.
 FOR LANE WIDTHS SEE CONSTRUCTION PLANS AND FOR CROSS SLOPES AND SUPERELEVATION SEE DRAINAGE, SUPERELEVATION, TURF AND EROSION CONTROL PLANS.
 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 GRADING MATERIAL.
- ④ STA. 14+50 TO STA. 18+00 LEAVE CURB AND GUTTER INPLACE.

- ⑤ ON INPLACE LANES MILL 4". THESE LANES ARE ON INP101 FROM STA. 12+40 TO 25+00 AND SB101 FROM STA. 12+65 TO 18+00 ON INP101 FROM STA. 25+00 TO 28+72 NO MILLING IS REQUIRED. OVERLAY THIS AREA WITH 2" TYPE SP 12.5 WEARING COURSE MIXTURE (5,E) (SPWEB540E) ON INPLACE RAMP94W MILL BITUMINOUS TO CONCRETE, APPROXIMATELY 2". OVERLAY WITH 2" TYPE SP 12.5 WEARING COURSE MIXTURE (5,E) (SPWEB540E).
- ⑥ SUBCUT WIDENED AREAS ONLY. WHERE PROPOSED ROADWAY IS TO BE CONSTRUCTED WITHIN THE LIMITS OF AN INPLACE ROADWAY OR SHOULDER, A SUBCUT WILL NOT BE REQUIRED. EXCAVATE ONLY ENOUGH MATERIAL TO ACCOMMODATE THE NEW BITUMINOUS AND AGGREGATE BASE DESIGN.
- ⑦ USE THIS INSET AND SUBCUT IN THE FOLLOWING AREAS:
 SB101 LT. STA. 7+80 TO 9+51
 SB101 LT. STA. 12+51 TO 12+86
 RAMP94W RT. STA. 26+00 TO 27+73 (USE D424 C&G)
 SB101 LT. STA. 14+42 TO 18+00 (DECEL TO RAMP94W)
 INP101 RT. STA. 14+20 TO 18+65 (ACCEL FROM RAMP94)
 INP101 RT. STA. 18+65 TO 28+72 (12' LANE, SHLD. & RT. TURN LANE) INCLUDES INTERSECTION RT. TO M/L AT STA. 499+00 ON 49WB1.
 INP101 LT. STA. 18+00 TO 28+50 (LT. TURN LANES, X-OVER AT 49WB1, & LT. SHOULDER.)

- ⑧ USE THIS INSET & SUBCUT FOR SB101 LT. & RT. STA. 18+00 TO 29+25. INCLUDES INTERSECTION LT. TO M/L AT STA. 502+00 ON 49WB2.
- ⑨ USE THIS INSET & SUBCUT LT. OF SB101 FROM STA. 12+86 TO 14+05.
- ⑩ FROM SB101 LT. STA. 8+76 TO 9+51 AND STA. 12+51 TO 12+65, CONSTRUCT 12" CONCRETE BRIDGE APPROACH PANEL. THIS AREA SHALL BE BACKFILLED WITH SELECT GRANULAR MATERIAL.
- ⑪ CONSISTS OF ACCELERATION LANE, THRU LANE AND/OR SHOULDERS.
- ⑫ SEE SHOULDER DETAIL, TYPICAL SHEET 7 OF 7 OF THIS SAMPLE PLAN.
- ⑬ SEE NOTE NO. 38 ON SHEET NO. 8 OF THIS PLAN.
- ⑭ PLACE IN 2 EQUAL LIFTS.
- ⑮ CONSTRUCT SAFETY EDGE. SEE DETAILS ON SHEET NO. 22.

SB101
 INP101

SHEET 1 OF 7

DRAWN BY: JB

CHECKED BY: JS

CERTIFIED BY

Will D. Zure
 LICENSED PROFESSIONAL ENGINEER

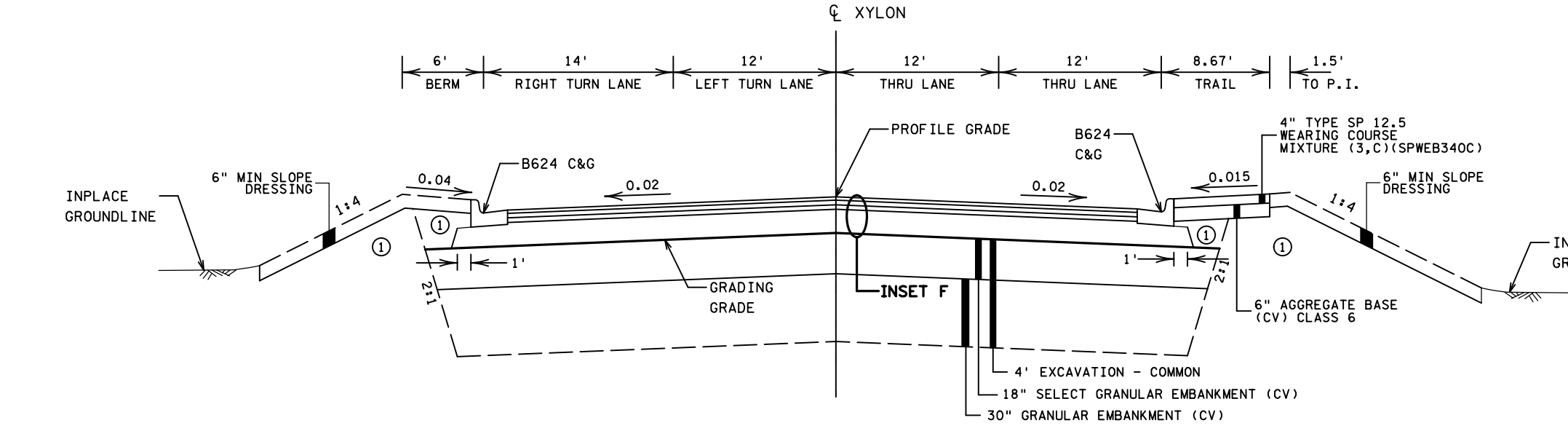
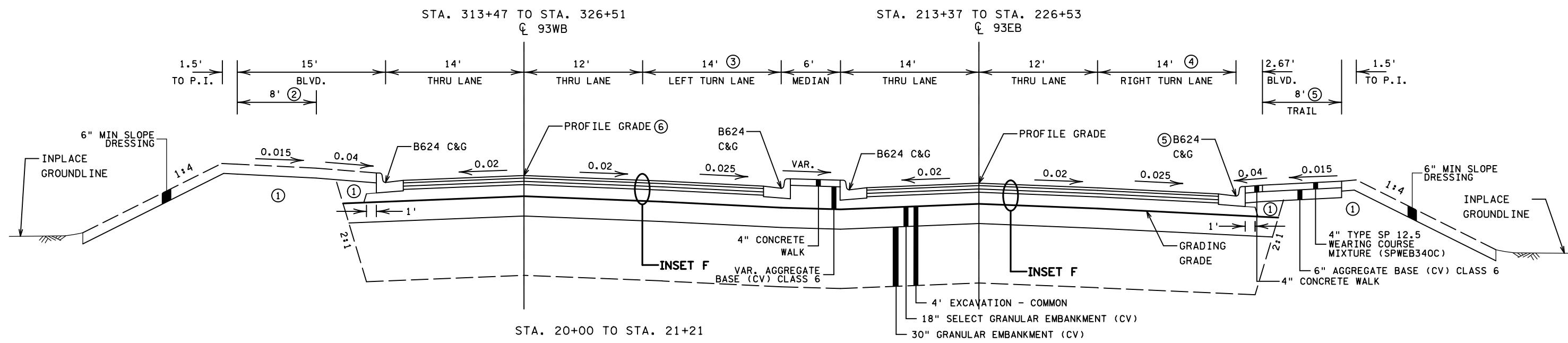
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TYPICAL SECTIONS

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

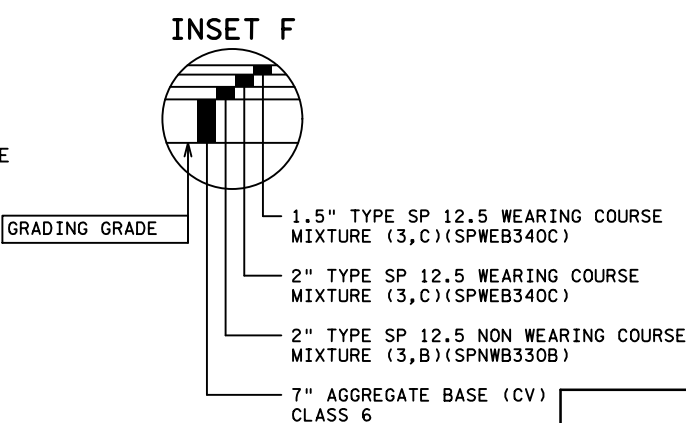
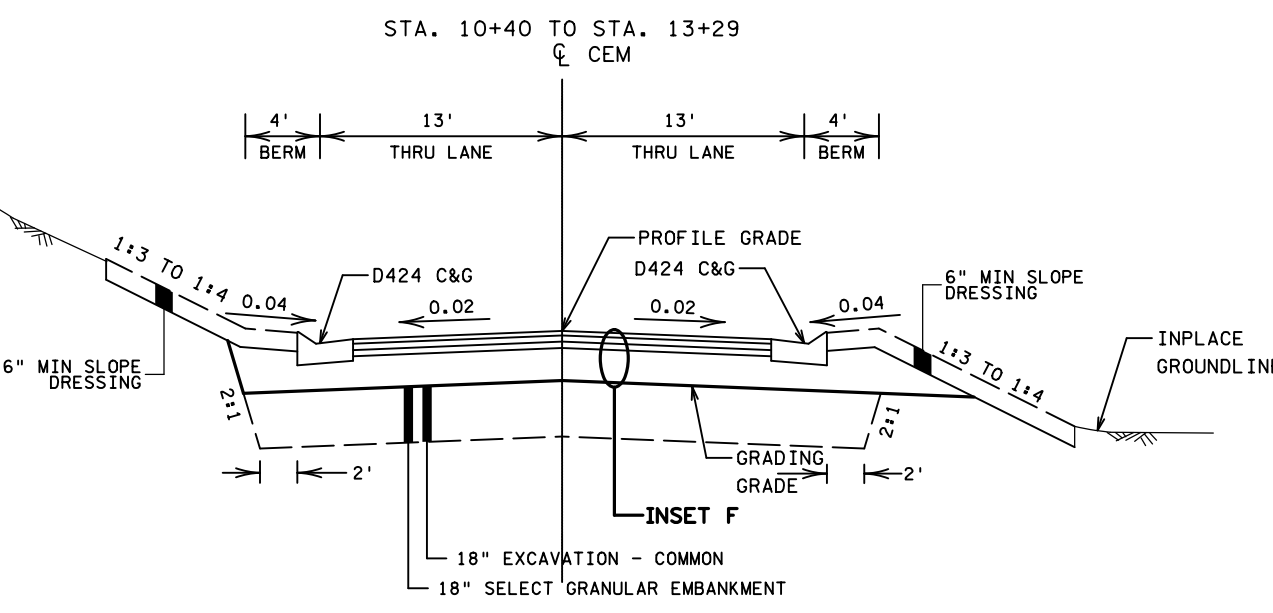
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 PLOTTED/REVISED: 16-OCT-2019

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2106 PAY ITEMS

SAMPLE PLAN



- NOTE:
 SEE SHEET NO. 32 FOR GENERAL NOTES.
- ① BACKFILL WITH COMMON EMBANKMENT.
 - ② FUTURE TRAIL TO BE CONSTRUCTED BY OTHERS.
 - ③ CONSTRUCT TURN LANE 93WB STA. 317+62 TO STA. 321+78.
 - ④ CONSTRUCT TURN LANE 93EB STA. 213+76 TO STA. 217+64.
 - ⑤ CONSTRUCT CURB & GUTTER AND 8' TRAIL TO 93EB STA. 228+60.6.
 - ⑥ PROFILE ENDS AT 93WB STA. 321+77.

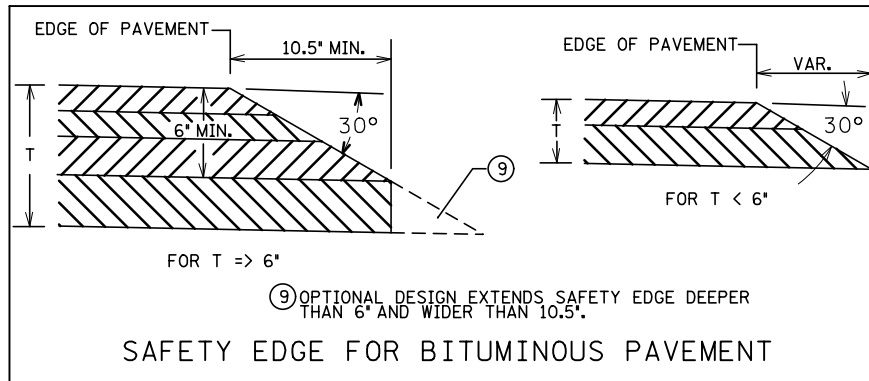
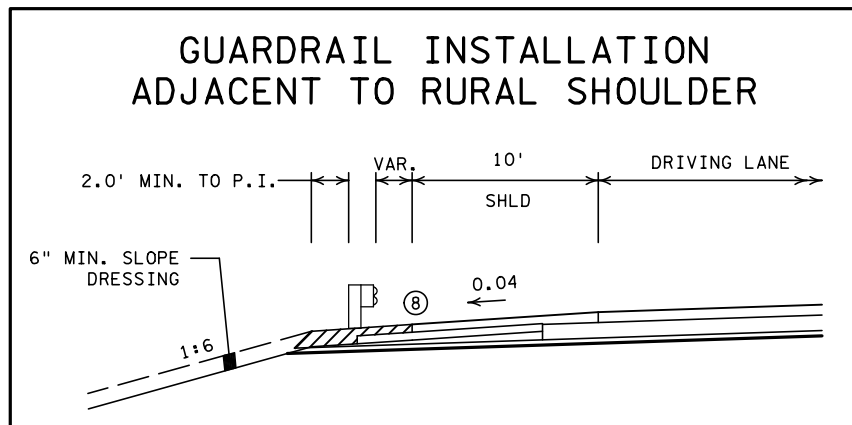
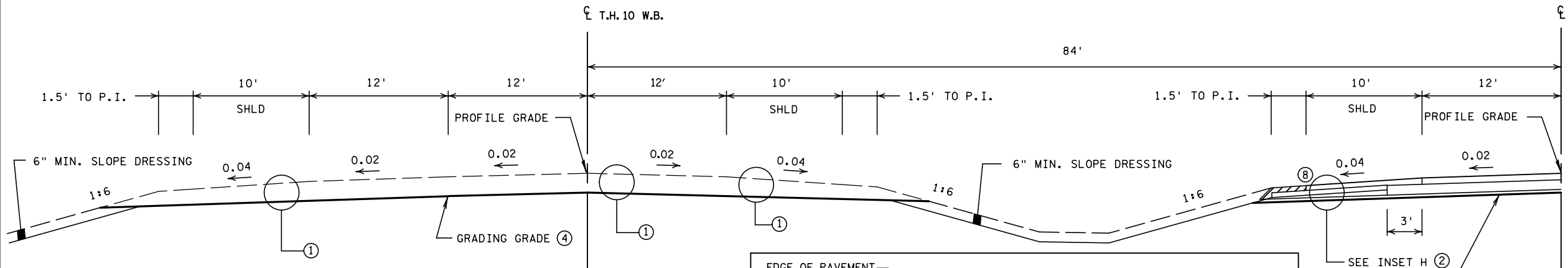
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REVISION DATE 08/14/19
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DISTRICT #: Metro
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T.H. 10 W.B. STA. 625+00 TO BR. NO. 02045

T.H. 10 E.B. STA. 625+00 TO 626+75

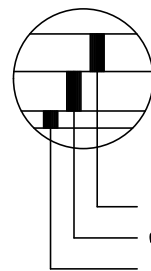


T.H. 10 E.B. STA. 625+00 TO 626+75

NOTES:

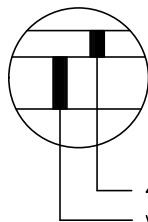
- ALL CROSS SLOPES ARE IN FT. PER FT.
- ALL SECTIONS SHOWN ARE FOR NORMAL CROWN. FOR SUPERELEVATION, SEE SHEET NO. 47.
- FOR DITCH WIDTH, SLOPE VARIATIONS AND INPLACE GROUNDLINES, SEE CROSS SECTIONS.
- FOR SUPERELEVATION DETAILS AND TRANSITIONS, SEE SHEET NO. 172 TO 182.
- FOR SHOULDER AND DITCH DIMENSIONS, AND FOR ROUNDING DETAILS, SEE SHEET NO. 49.
- UNLESS OTHERWISE SPECIFIED, THE CROSS SLOPE OF THE GRADING GRADE MATCHES THE CROSS SLOPE OF THE PROPOSED DRIVING LANES.
- FOR EXCAVATION AND EMBANKMENT DETAILS, SEE SHEET NO. 48.
- MAXIMUM SUPERELEVATION 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.

INSET A



AGGREGATE SURFACING (CV) CLASS 2

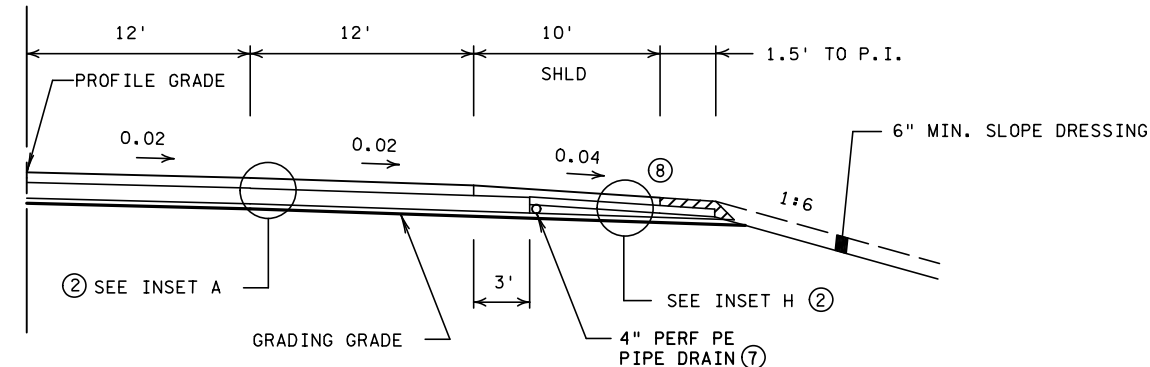
INSET H



- 4" TYPE SP 12.5 WEARING COURSE MIXTURE (5,E)(SPWEB540E) ⑥
- 6" TYPE SP 12.5 NON WEARING COURSE MIXTURE (5,E)(SPNWB530B) ⑥
- 3" AGGREGATE BASE (CV) CLASS 5

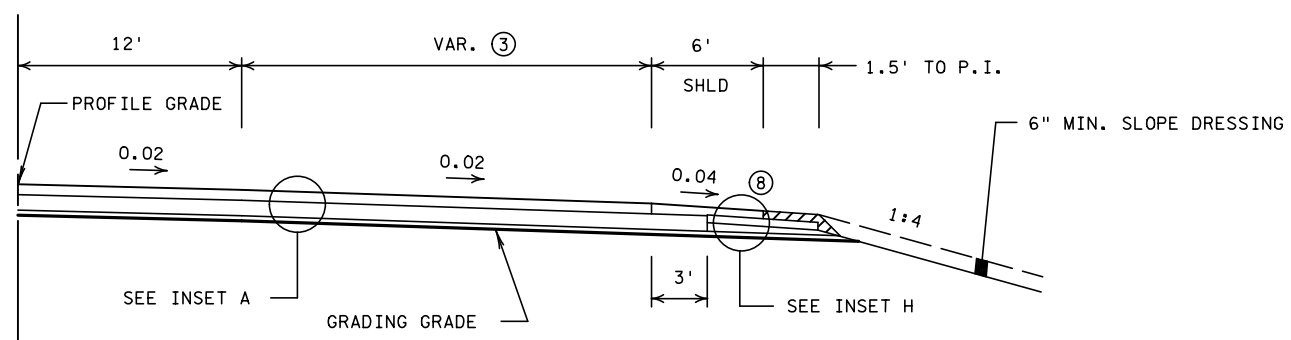
- 4" TYPE SP 12.5 WEARING COURSE MIXTURE (3,B)(SPWEB330B) ⑥
- VAR. SHOULDER BASE AGGREGATE (CV) CLASS 5

T.H. 10 E.B.



T.H. 10 E.B. STA. 626+75 TO BR. NO. 02046

T.H. 10 E.B.



T.H. 10 E.B. STA. 625+00 TO BR. NO. 02046
 T.H. 10 W.B. STA. 625+00 TO BR. NO. 02045

SHEET 3 OF 7

TYPICAL SECTIONS

DRAWN BY: CT

CHECKED BY: HS

CERTIFIED BY

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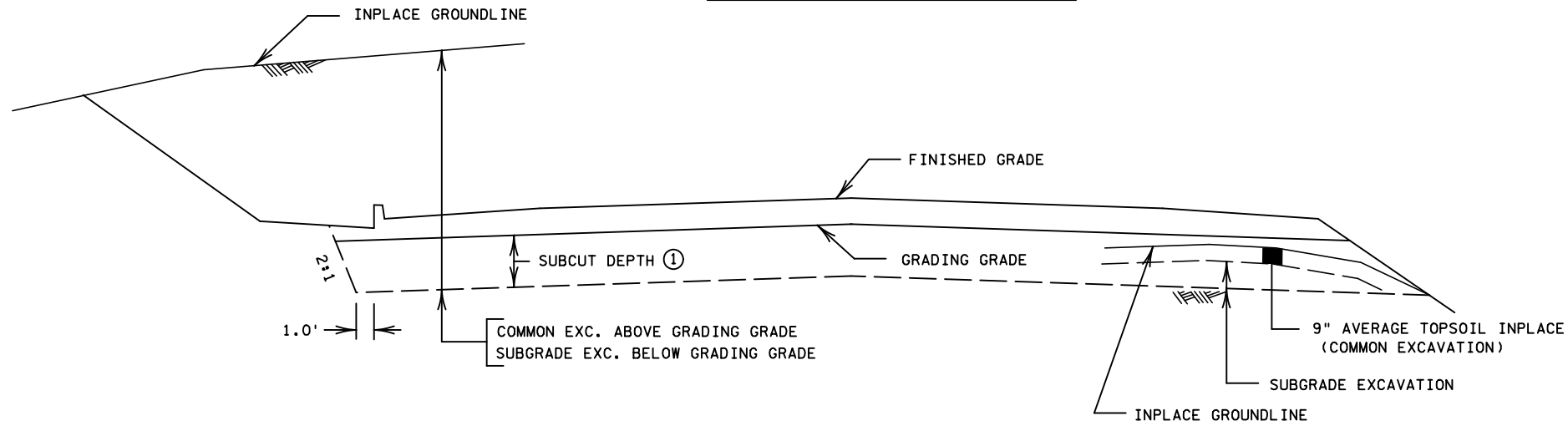
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STATE PROJ. NO. 0000-00 (T.H. 00) SHEET NO. 22 OF 84 SHEETS

SAMPLE PLAN

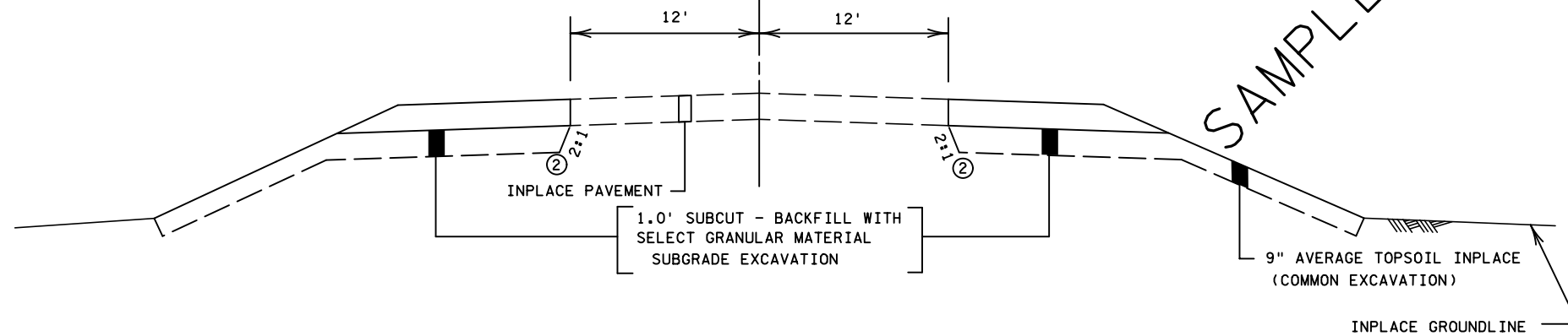
REVISION DATE 06/05/19
 PLOTTED/REVISED: 16-OCT-2019

EXCAVATION TYPICAL NO. 1



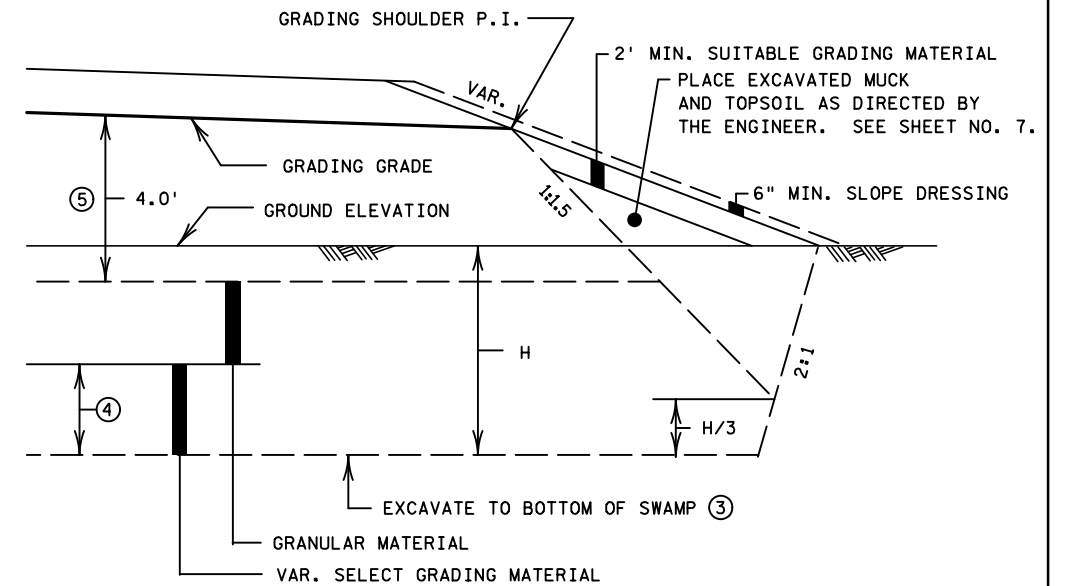
EXCAVATION TYPICAL NO. 2

℄ T.H. 10 E.B. STA. 652+40 TO 725+00
 ℄ T.H. 10 W.B. STA. 652+40 TO 709+80
 ℄ T.H. 65 N.B. STA. 362+37 TO 366+20
 ℄ T.H. 65 S.B. STA. 365+00 TO 383+60



**MUCK EXCAVATION
 TREATMENT 1**

CO. RD. J STA. 131+99 TO 141+50



SUBGRADE EXCAVATION			
ROADWAY	STATION TO STATION	LOCATION	DEPTH
AIRPORT RD. N.B.	8+40 TO 9+00	℄	2.0'
AIRPORT RD. N.B.	34+20 TO 38+76	℄	2.0'
CO. RD. J W.B.	100+40 TO 111+25	℄	2.0'
CO. RD. J W.B.	141+85 TO 144+32	℄	2.0'
RAMP C	24+65 TO 29+25	℄	2.0'

FOR GENERAL NOTES, SEE SHEET NO. 18.

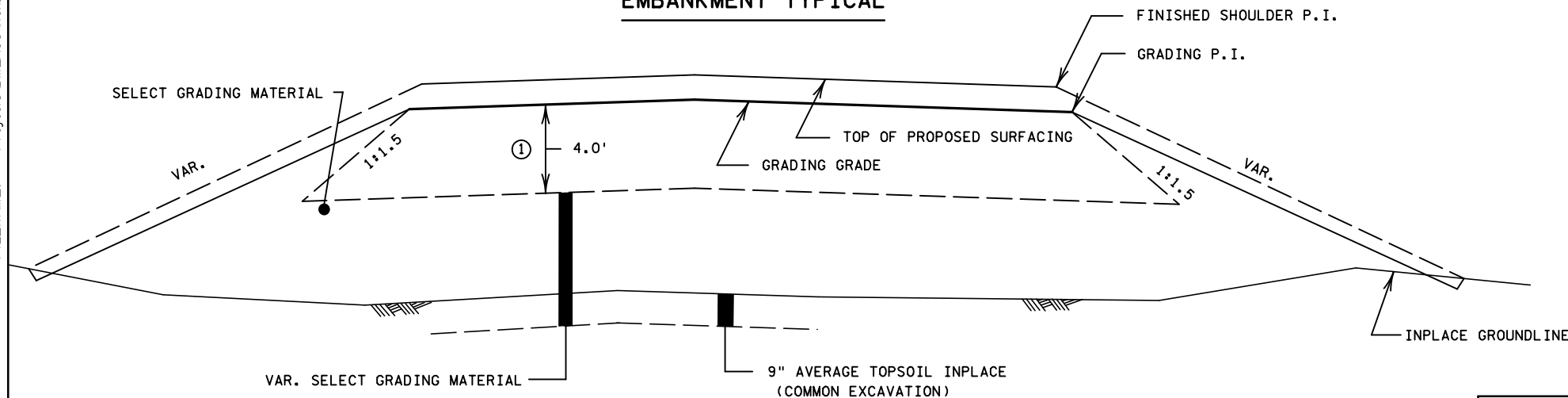
- ① BACKFILL WITH GRANULAR MATERIAL OF WHICH THE UPPER 1.0' SHALL BE SELECT GRANULAR MATERIAL.
- ② NEXT TO INPLACE PAVEMENT ON T.H. 65 EXCAVATE AT 2(V):1(H).
- ③ SEE PROFILES AND CROSS SECTIONS FOR MUCK EXCAVATION DEPTH.
- ④ BACKFILL WITH GRANULAR MATERIAL UP TO LOCAL WATER LEVEL PLUS 2.0'.
- ⑤ BACKFILL WITH GRANULAR MATERIAL OF WHICH THE UPPER 1.0' SHALL BE SELECT GRANULAR MATERIAL.

2105 PAY ITEMS

SUBGRADE EXCAVATION AND EMBANKMENT
 MUCK EXCAVATION
 DETAILS
 TABULATION

SHEET 4 OF 7

EMBANKMENT TYPICAL



TYPICAL SECTIONS

DRAWN BY: CT

CHECKED BY: HS

CERTIFIED BY

Will D. Zire
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 00000 DATE 05/12/11

STATE PROJ. NO. 0000-00 (T.H. 00) SHEET NO. 23 OF 84 SHEETS

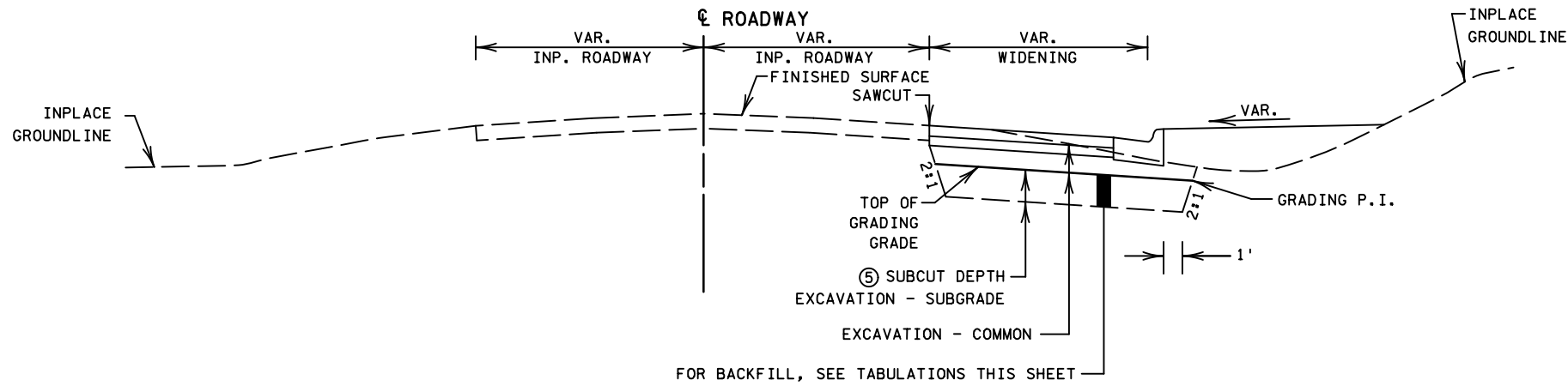
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SAMPLE PLAN

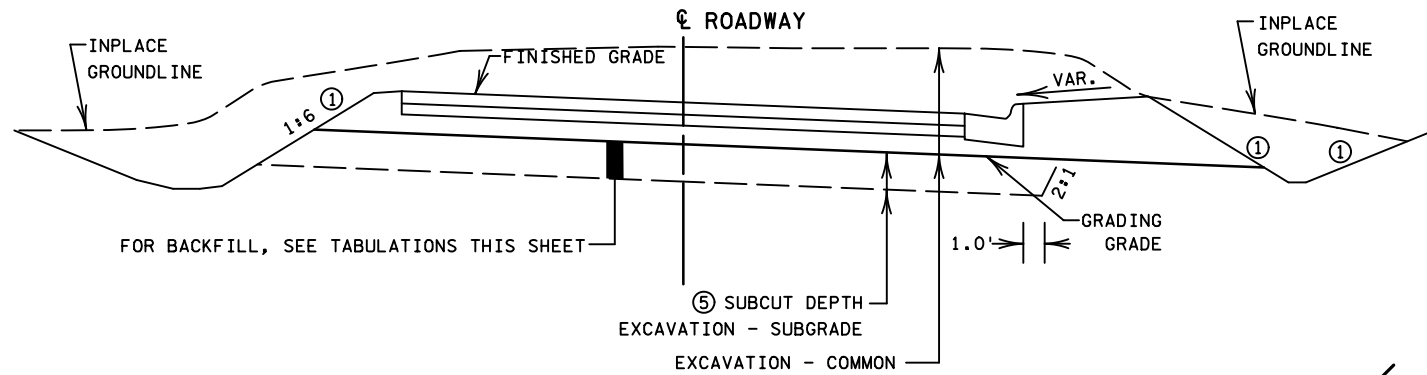
REVISION DATE 06/05/19
 PLOTTED/REVISED: 16-OCT-2019

DISTRICT #: Metro
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EXCAVATION TYPICAL ④

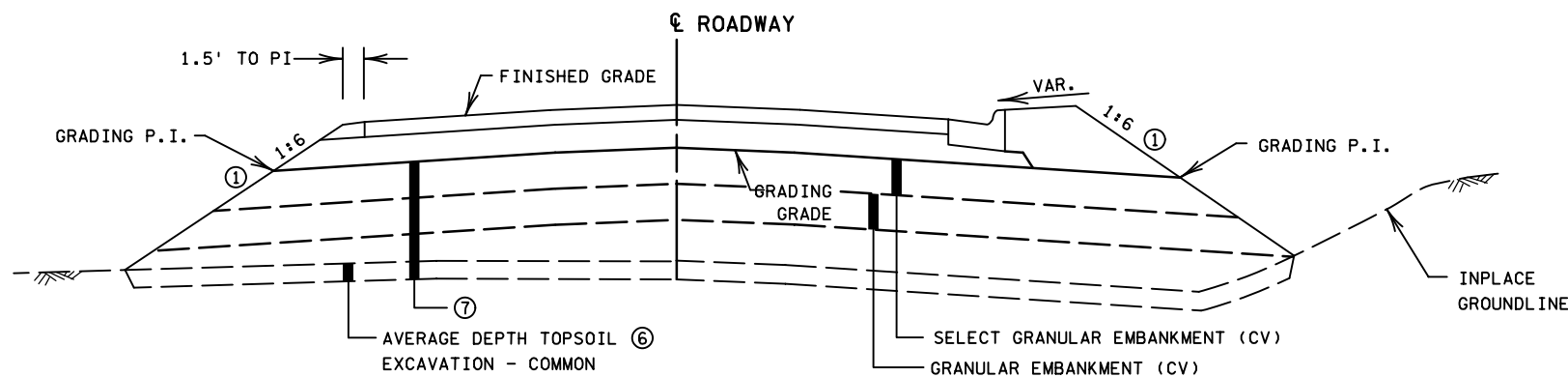


EXCAVATION TYPICAL



2106 PAY ITEMS

EMBANKMENT TYPICAL



SUBGRADE CORRECTIONS AND SUBCUTS ②

ROADWAY ALIGNMENT	STATION TO STATION ③	LOC.	DEPTH	BACKFILL
P694WB1	613+60 TO 625+40	LT.	3.0	A
P694WB1	625+40 TO 668+30	℄	3.0	A
P694WB1	685+35 TO 708+44	℄	3.0	A
P694EB1	616+93 TO 626+61	RT	3.0	A
P694EB1	626+61 TO 668+30	℄	3.0	A
P694EB1	685+00 TO 708+27	℄	3.0	A
PNBSNHAM	10+70 TO 16+00	℄	3.5	B
PNBSNHAM	41+75 TO 42+68	℄	3.5	B
PNBSNHAM	43+80 TO 47+94	℄	3.5	B
PSBSNHAM	10+70 TO 17+40	℄	3.5	B
PSBSNHAM	40+00 TO 47+87	℄	3.5	B
PEBCD1	10+00 TO 16+75	℄	3.5	B
PEBCD1	25+35 TO 52+50	℄	3.5	B
PLXNWR	6+11 TO 25+08	℄	3.5	B
PLEXSWR	19+05 TO 24+17	℄	3.5	B
PSB10	654+00 TO 682+35	℄	3.5	B
PNB10	10+52 TO 24+25	℄	3.5	B
PNB10	39+00 TO 74+50	℄	3.5	B
PNLOOP	13+60 TO 21+30	℄	3.5	B
PSLOOP	17+50 TO 23+47	℄	3.5	B
PCORDF	13+84 TO 15+82	℄	3.5	B
POLD10	21+70 TO 23+90	℄	3.5	B
PNBEXIT	10+00 TO 17+10	℄	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. FOR ADDITIONAL INFORMATION, SEE PROFILE SHEET NO. 231 TO 245.
- ③ PROVIDE 1:20 TAPERS TO STATION LIMITS SHOWN.
- ④ ADJACENT TO INPLACE ROADWAYS.
- ⑤ SEE TABULATION, THIS SHEET.
- ⑥ INPLACE TOPSOIL DEPTH RANGE FROM 3" TO 3'. FOR COMPUTATION PURPOSES USE 6" AVERAGE DEPTH.
- ⑦ EMBANKMENT FOR T.H. 694 EB AND WB SHALL BE:
 12" SELECT GRANULAR EMBANKMENT (CV)
 24" GRANULAR EMBANKMENT (CV)
 VARIABLE COMMON EMBANKMENT (CV)
 ALL OTHER PROJECT ROADWAYS SHALL BE:
 18" SELECT GRANULAR EMBANKMENT (CV)
 24" GRANULAR EMBANKMENT (CV)
 VARIABLE COMMON EMBANKMENT (CV)

EXCAVATION
 EMBANKMENT

TYPICAL SECTIONS

DRAWN BY: CT

CHECKED BY: HS

CERTIFIED BY

Will D. Zire
 LICENSED PROFESSIONAL ENGINEER

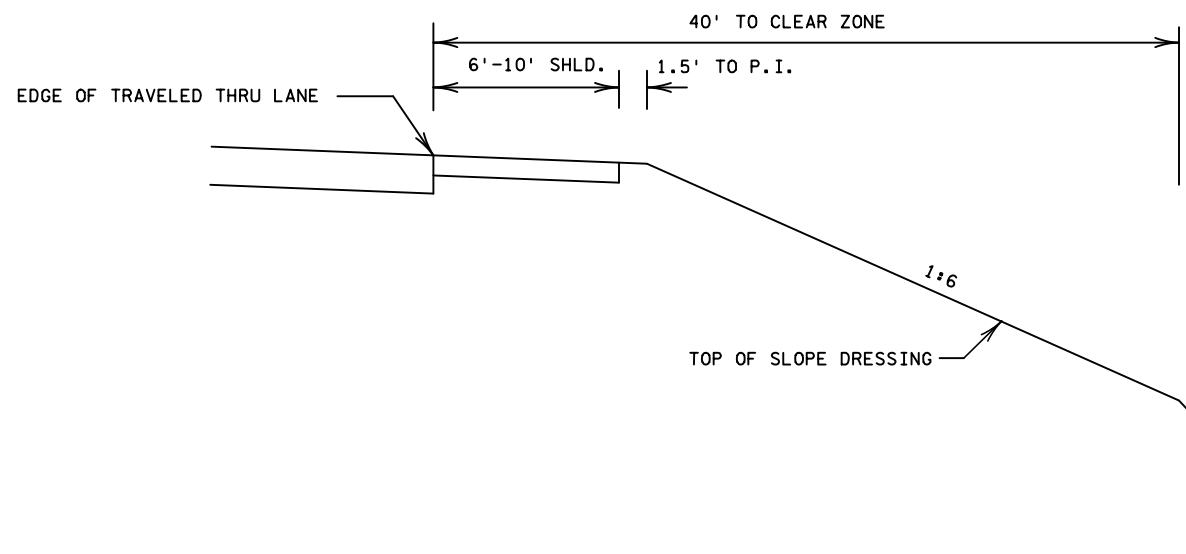
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REVISION DATE 06/06/19
 PLOTTED/REVISED: 16-OCT-2019

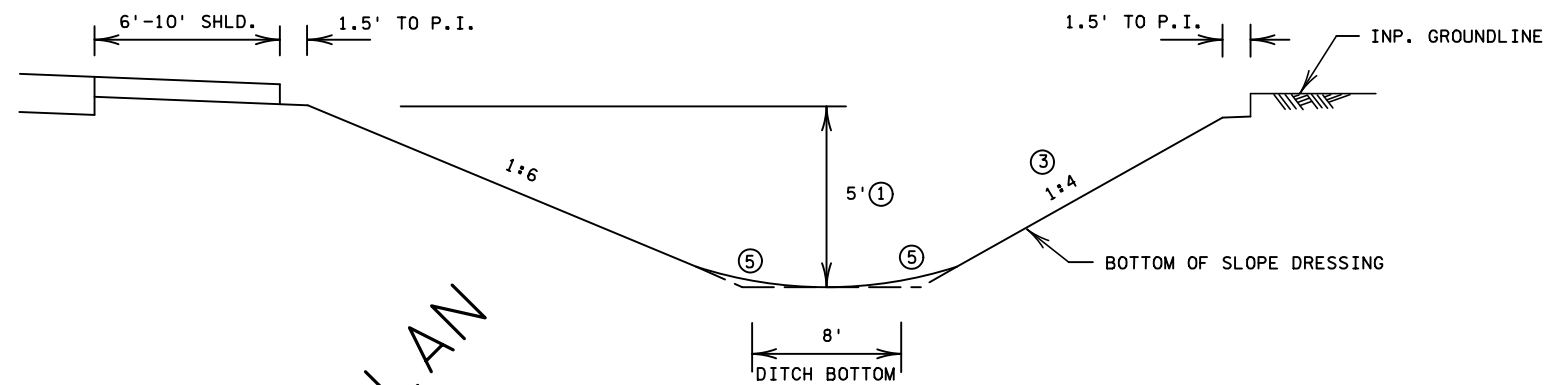
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 I/PLOT NAME: typical
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T.H. 10 FILL SECTION

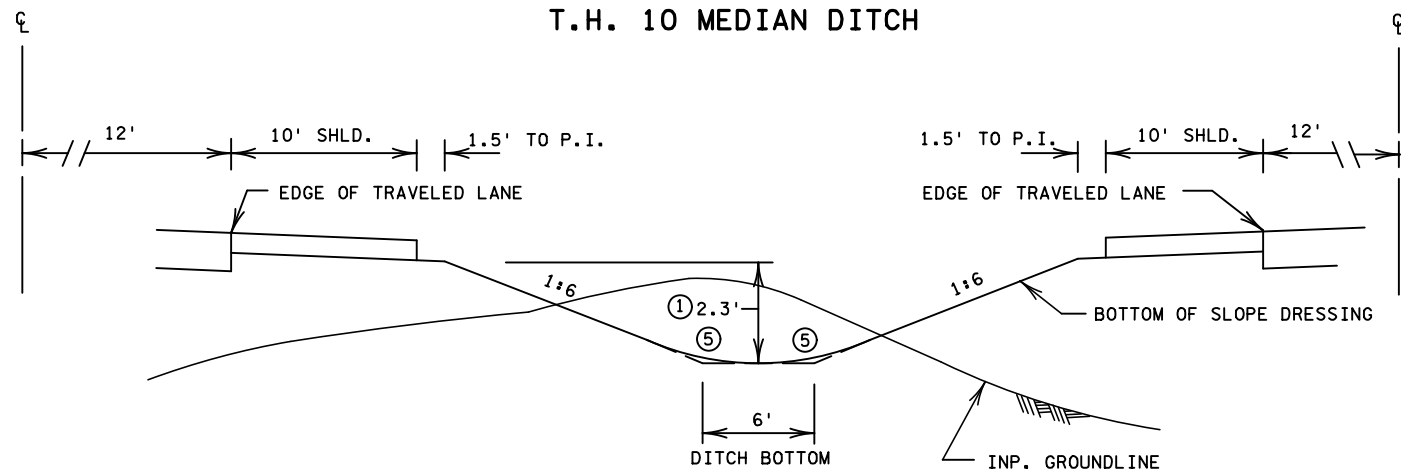
T.H. 10 E.B. STA. 625+00 TO 640+00 RT.
 T.H. 10 W.B. STA. 625+00 TO 635+00 LT.



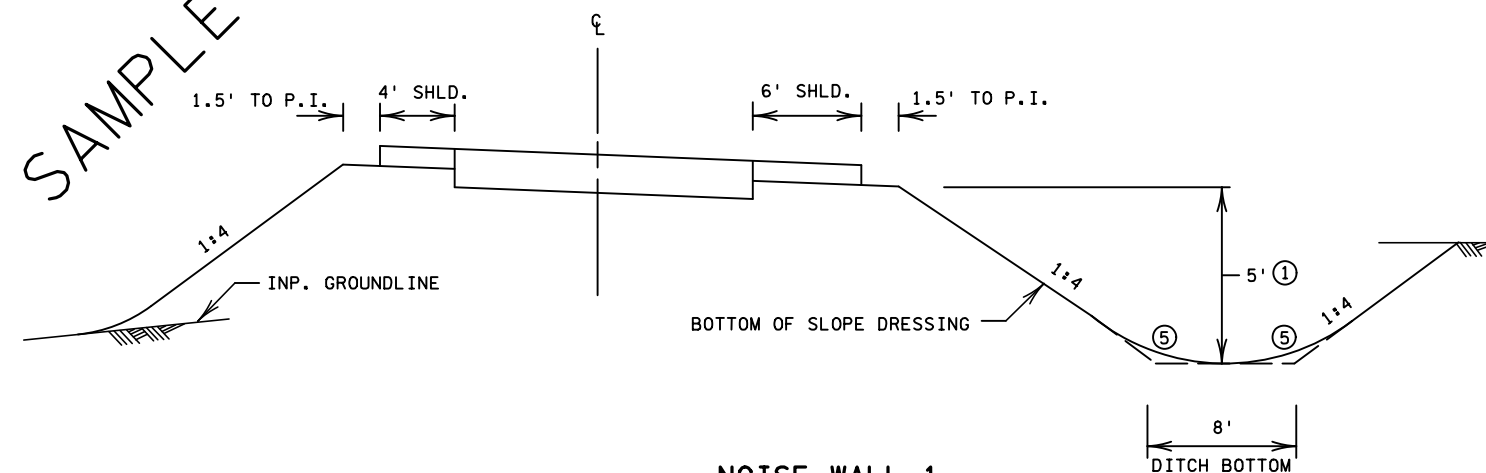
T.H. 10 DITCH SECTION



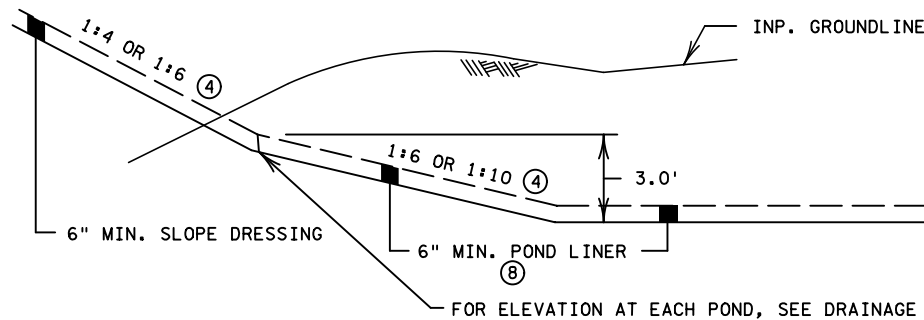
T.H. 10 MEDIAN DITCH



RAMPS AND LOOPS



POND BOTTOM DETAILS

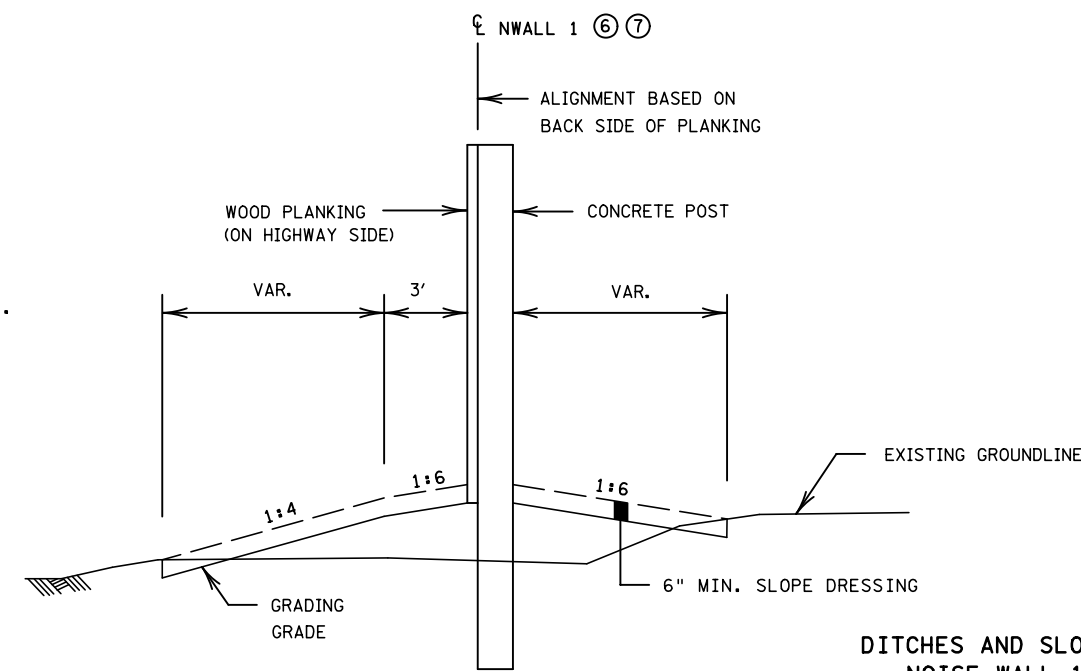


FOR GENERAL NOTES, SEE SHEET NO. 18.

NOTES

- ① DITCH GRADES AS SHOWN ON THE PROFILES AND CROSS SECTIONS MAY VARY THE DEPTH. DITCH GRADES ARE AT THE BOTTOM OF TOPSOIL.
- ② USE 1:3 OR 1:2 ONLY IF SPECIFIC CONSTRAINTS SUCH AS RIGHT OF WAY OR NOISE WALLS DICTATE. SEE CROSS SECTIONS FOR ALL BROKEN BACK SLOPE LOCATIONS.
- ③ USE 1:3 ONLY IF SPECIFIC CONSTRAINTS SUCH AS RIGHT OF WAY OR NOISE WALLS DICTATE.
- ④ SEE CROSS SECTIONS FOR SLOPES AT SPECIFIC POND.
- ⑤ TYPICALLY 32.5' RADIUS.
- ⑥ FOR DETAILS, SEE STANDARD PLAN 5-297.661 ON SHEET NO. 63 & 64.
- ⑦ FOR PROFILE, SEE SHEET NO. 131 & 132.
- ⑧ PAID FOR AS COMMON BORROW SPECIAL (CV).

NOISE WALL 1



DITCHES AND SLOPES NOISE WALL 1

SHEET 6 OF 7

TYPICAL SECTIONS

DRAWN BY: CT

CHECKED BY: HS

CERTIFIED BY

Will D. Zine
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 00000 DATE 05/12/11

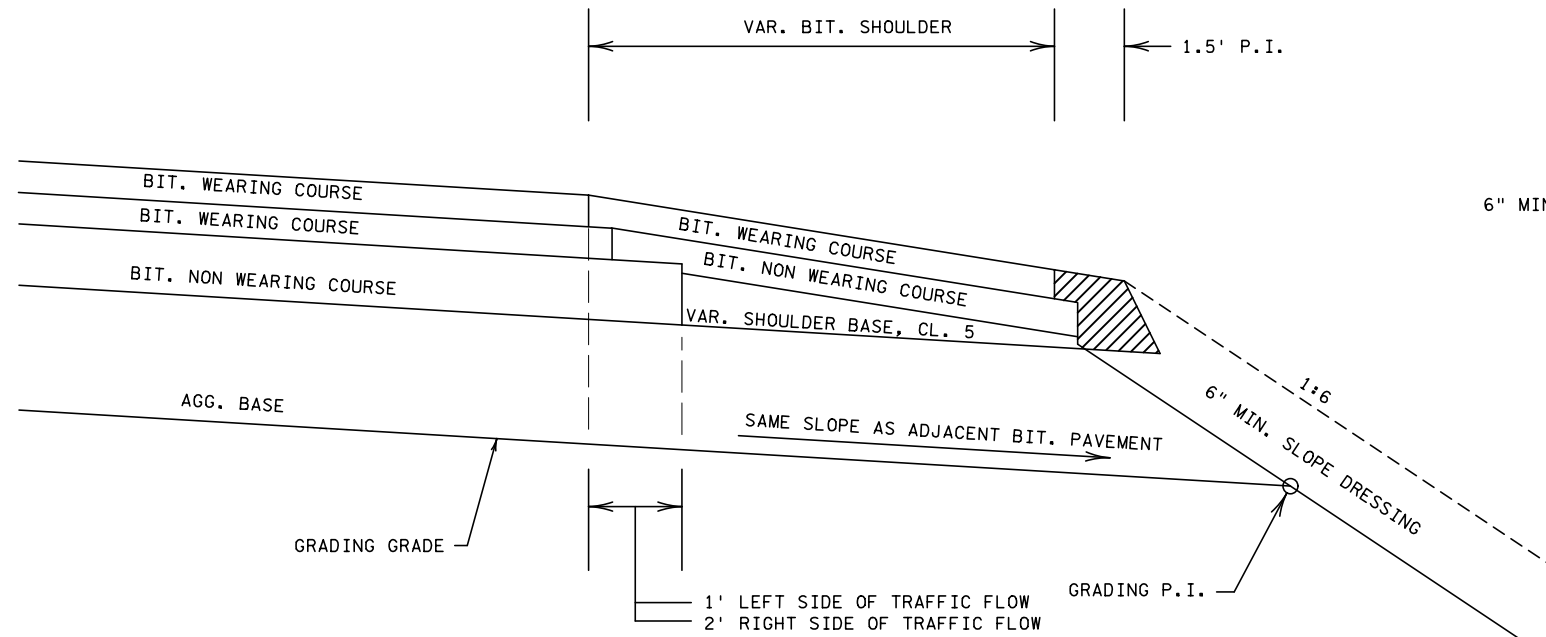
STATE PROJ. NO. 0000-00 (T.H. 00) SHEET NO. 25 OF 84 SHEETS

REVISION DATE 08/14/19
 PLOTTED/REVISED: 16-OCT-2019

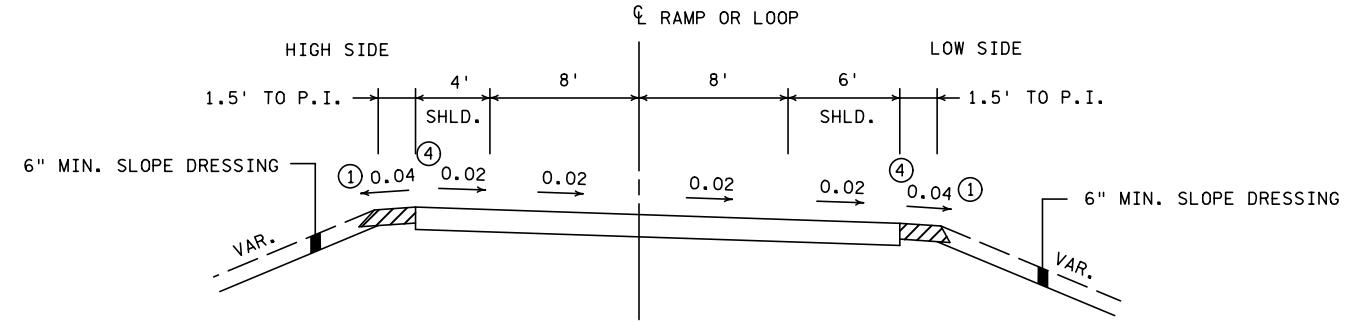
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SHOULDER DETAIL - T.H. 10 & 610

NORMAL CROWN OR LOW SIDE SUPERELEVATION



RAMP OR LOOP P.I. DETAILS

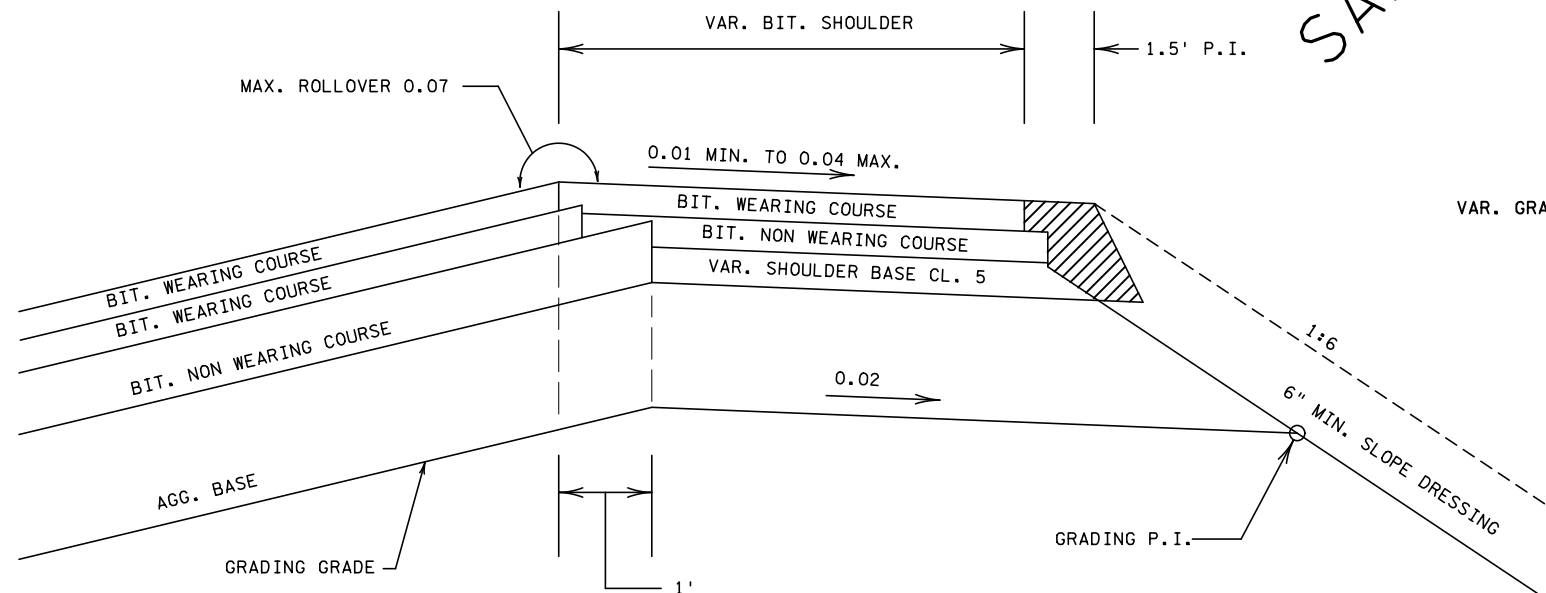


- ① ON HIGH SIDE OF RAMP OR LOOP, SLOPE IS 0.04 FT/FT AWAY FROM PAVEMENT REGARDLESS OF PAVEMENT SLOPE. ON LOW SIDE OF RAMP OR LOOP, SLOPE IS 0.04 FT/FT WHEN PAVEMENT SLOPE IS 0.04 OR LESS. WHEN PAVEMENT SLOPE IS GREATER THAN 0.04 FT/FT, THEN SLOPE TO P.I. MATCHES ADJACENT PAVEMENT.
- ② FOR SPECIAL SURFACE TREATMENT SEE SHEET NO. 139.
- ③ PLACE IN 2 EQUAL LIFTS.
- ④ CONSTRUCT SAFETY EDGE. SEE DETAILS ON SHEET NO 56.

AGGREGATE SURFACING (CV) CLASS 2

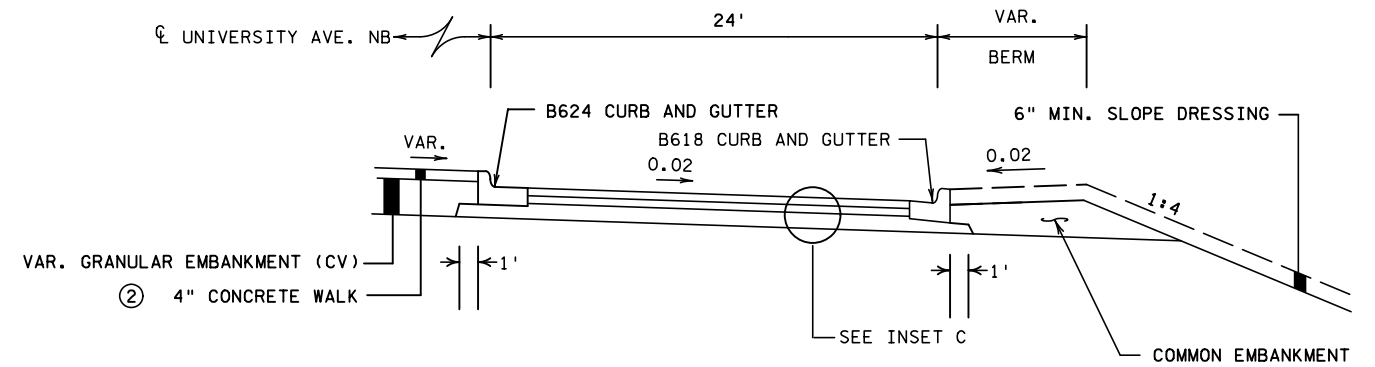
SHOULDER DETAIL - T.H. 10 & 610

HIGH SIDE SUPERELEVATION

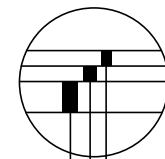


SAMPLE PLAN

FREE RIGHT TURN LANE



INSET C



- 4" TYPE SP 12.5 WEARING COURSE MIXTURE (3,B)(SPWEB330B) ③
- 3" TYPE SP 12.5 NON WEARING COURSE MIXTURE (3,B)(SPNWB330B)
- 6" AGGREGATE BASE (CV) CLASS 6

FOR GENERAL NOTES, SEE SHEET NO. 18.

FREE RIGHT TURN LANE
 SHOULDER DETAILS

SHEET 7 OF 7

DRAWN BY: CT

CHECKED BY: HS

CERTIFIED BY

Will D. Zire
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 00000 DATE 05/12/11

TYPICAL SECTIONS

STATE PROJ. NO. 0000-00 (T.H. 00) SHEET NO. 26 OF 84 SHEETS