


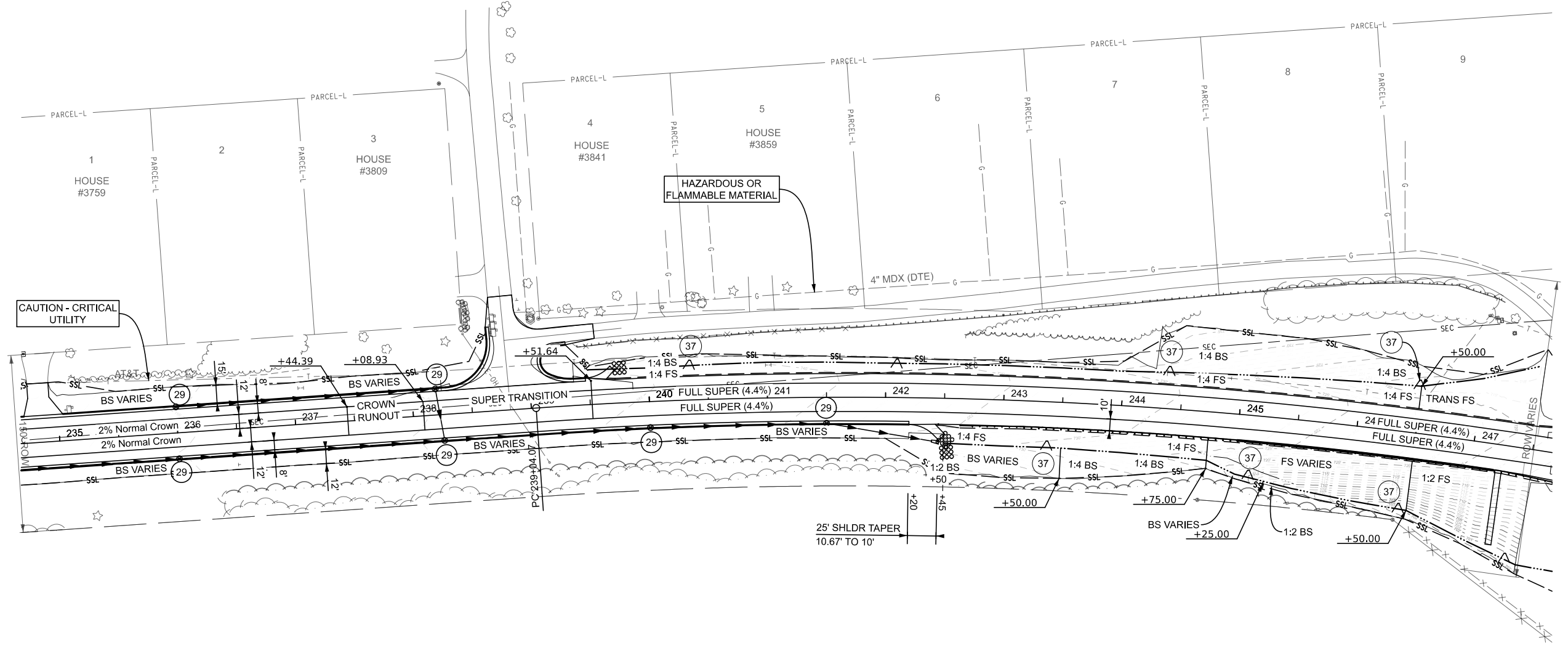
## GRADING PLAN SHEETS

1. Label all roadway names and county drains at the outside of the sheet using MDOT\_x\_1.5\_Mask
2. Show city limits, township, range and section info. Section corner information is not shown here
3. Only show the alignments that are necessary to construct the roadway. Include stations, bearings and curve points.
4. Identify all erosion control measures with the 'Erosion Control Number' cell. Show a "Quantities This Sheet" in the lower right hand corner. Do not show key number next to pay item.
5. Display proposed contours using the P\_Countours 1 & 5 Feature Definition
6. Label the location of superelevation including transition and crown runoff locations.
7. Label the proposed grading of ditches, fore slopes, or back slopes including the stations where transitions occur
8. All bridges/culverts with proposed work will be labeled with a box around the bridge/culvert number. Existing bridges/culverts with no proposed work will only have the bridge/culvert number without the box
9. Dimension lane and paved shoulder widths within the sheet and when changes in width occur. Do not label widths at the end of the sheet limits
10. Show all existing underground utilities. Label underground telephone, water main and fiber optic lines with the 'Caution - Critical Utility' cell. Label underground gas and electric with the 'Hazardous or Flammable Material' cell. Ex sewer, sanitary sewer/sanitary force main only need to be labeled without flagging of a critical utility cell. Overhead utilities are not typically shown. Exceptions would be for high voltage electric transmission lines and other utilities that would impact how the work is completed. Label with the 'Hazardous or Flammable Material' or 'Caution - Critical Utility' cell as appropriate.

11. Include traffic flow arrows to delineate roadway lanes and movements.
12. Label overall ROW dimensions including cross road ROW at the ends of the sheet. Label proposed ROW and all areas where a consent to grade (drive, sidewalk, etc) or an easement is needed.
13. The plat/subdivision lines are shown on these sheets. The parcel lines are not shown. Label the subdivision, plat names and plat numbers on both the removal and construction sheets. House numbers and current business names are desired.
14. Use the SAVE symbol on the removal and construction sheets to identify important items that need to be saved that are close to the slope stake line or that need to be saved within the construction limits.
15. Show the slope stake line
16. Show existing and proposed storm and sanitary sewers with sizes and flow arrows. Show existing culverts with sizes, flow arrows and material type.
17. Tag utilities that need to be relocated with the REL B/O cell. These cells should show up on the removal and construction sheet in the same location if possible.
18. Place north arrow in upper right corner.
19. Show benchmarks and control points (cell and number) on both the removal and construction sheets.
20. Label all government corners, property corners and legal alignment monuments within the work limits or that have the potential to be disturbed with the "Protect Corners" cell.

| FINAL ROW PLAN REVISIONS |      |      |             | SUBMITTAL DATE: |      |      |             |  | NO SCALE | DATE:                                    | CS:  | Plan Guidelines | DRAWING       | SHEET |        |
|--------------------------|------|------|-------------|-----------------|------|------|-------------|--|----------|--|------|-----------------|---------------|-------|--------|
| NO.                      | DATE | AUTH | DESCRIPTION | NO.             | DATE | AUTH | DESCRIPTION |  |          | DESIGN UNIT:                             | JN:  |                 | Grading Sheet |       | SECT 1 |
|                          |      |      |             |                 |      |      |             |  |          | FILE: Plan Guidelines - Grading Plan.dgn | TSC: |                 |               |       |        |

SECTION 13  
T33N, R9W  
NORWOOD TOWNSHIP



SECTION 18  
T33N, R8W  
NORWOOD TOWNSHIP

US-31

US-31

| FINAL ROW PLAN REVISIONS |      | SUBMITTAL DATE: |             |
|--------------------------|------|-----------------|-------------|
| NO.                      | DATE | AUTH            | DESCRIPTION |
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FILE: D-200957\_Grade\_002.dgn

DATE:  
DESIGN UNIT:  
TSC:


CS:  
JN:

Grading Sheet  
US-31 STA 0+00 TO STA 0+00

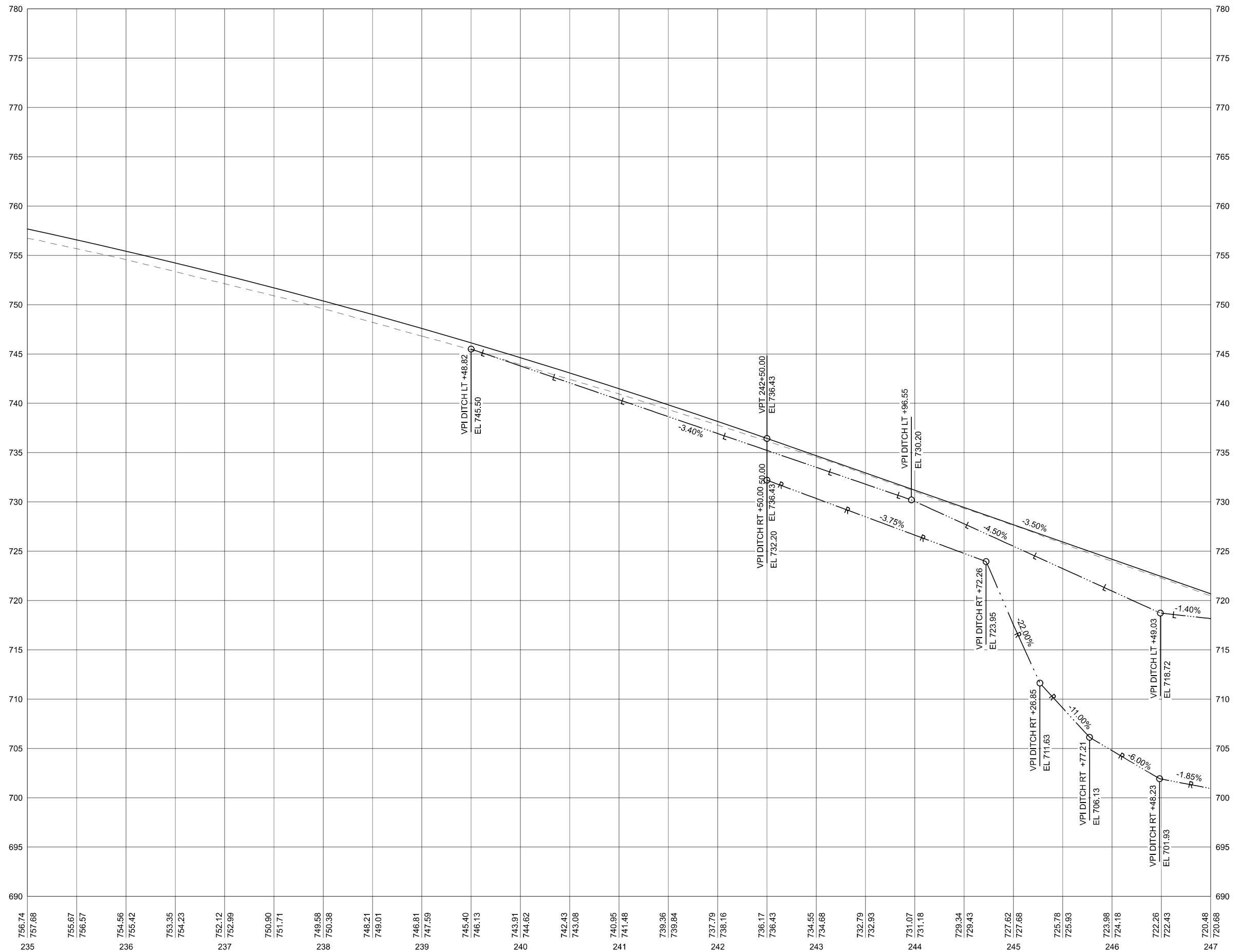
DRAWING SHEET  
US-31 Grade 1 SECT 1

**PROFILE SHEETS:**

1. Show vertical curve PI stations and elevations, curve lengths, tangent grades, high points, low points, and K values. Use standard labeling.
2. Do not show existing or proposed drainage information unless they are affected by note 12. Existing invert information will be shown on the removal sheet.
3. Show proposed plan grade line to nearest 0.01%.
4. Show plan, and independent ditch grades as +% or -% in the direction of stationing.
5. Show and label dependent ditches
6. Show rock, peat, muck and undercut limits and treatments.
7. Show water table elevations, if known.
8. Show existing or proposed bridge or box/slab culvert profile if applicable and underclearances.
9. Show elevations along the side of the profile grid at 5' increments. Show existing and proposed strip grade elevations at 50' increments. Show proposed stationing at 100' intervals.
10. Label station equations on profile sheets.
11. Quantities are not shown on profile sheets. Excavation quantities are shown on the removal sheet, and embankment and subbase quantities are shown on the construction sheet.
12. Critical private or municipal utilities should be shown in the profile. These would be utilities that require protection, temporary support, or monitoring during construction.

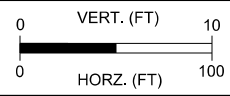
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| FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: ) |      |      |             |     |      |      |             |  | <b>NO SCALE</b> | DATE:        | CS:  | <b>PLAN GUIDELINES</b><br><b>PROFILE SHEETS</b> | DRAWING | SHEET |
| NO.   | DATE | AUTH | DESCRIPTION | NO. | DATE | AUTH | DESCRIPTION |  |                 | DESIGN UNIT: | JN:  |   |         |       |
|   |      |      |             |     |      |      |             |  |                 | FILE:        | TSC: |   |         | SECT  |

This is the profile view of the grading sheet



EX GROUND PROFILE AT LEGAL ALI  
 PROP PLAN GRADE AT LEGAL ALI  
 PROP DITCH GRADE

| FINAL ROW PLAN REVISIONS |      |      |             | SUBMITTAL DATE: |      |      |             |
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FILE: 200957\_PRO\_002.dgn

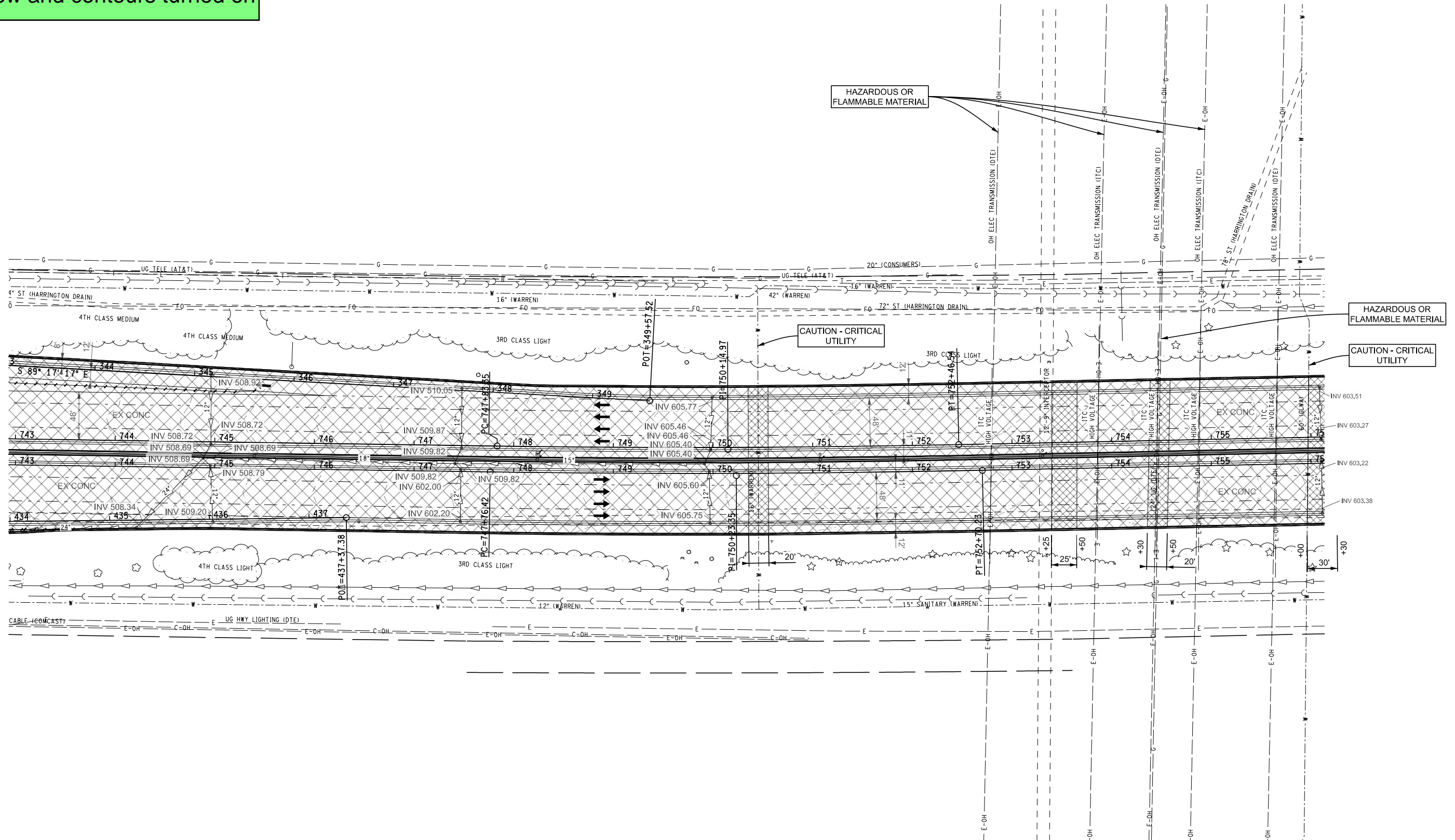
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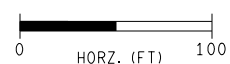
Profile Sheet  
 US-31 STA 0+00 TO STA 0+00

DRAWING SHEET  
 US-31 Prof 1 SECT 1

This is an example of a "Busy" removal sheet with inverts labeled in the plan view and contours turned on



| FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: ) |      |      |             |     |      |      |             |
|---|------|------|-------------|-----|------|------|-------------|
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FILE:


DATE:  
DESIGN UNIT:  
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JN:

DRAWING SHEET  
SECT

**DRAINAGE PROFILE SHEETS:**

1. Show all proposed storm sewer. Show existing storm sewer at locations where the proposed system ties into an existing system and one additional existing downstream structure
2. Label drainage structures with the structure number
3. Label pipe sizes and sewer grade. Show sewer grades as +% or -% in the direction of stationing
4. If a drainage table is not used, add offset and rim elevation to proposed structure label.
5. Show invert elevations to the nearest 0.01 ft.
6. Show water table elevations, if known.
8. Show existing and proposed ground profiles above the sewer network
9. Critical private or municipal utilities should be shown in the profile. These would be utilities that require protection, temporary support, or monitoring during construction.

| FINAL ROW PLAN REVISIONS |      |      |             | SUBMITTAL DATE: |      |      |             |  | NO SCALE | DATE:  | CS:  | Plan Guidelines        |  | DRAWING | SHEET  |
|--------------------------|------|------|-------------|-----------------|------|------|-------------|--|----------|--|------|------------------------|--|---------|--------|
| NO.                      | DATE | AUTH | DESCRIPTION | NO.             | DATE | AUTH | DESCRIPTION |  |          | DESIGN UNIT:                                 | JN:  | Drainage Profile Sheet |  |         | SECT 1 |
|                          |      |      |             |                 |      |      |             |  |          | FILE: Plan Guidelines - Drainage Profile.dgn | TSC: |                        |  |         |        |

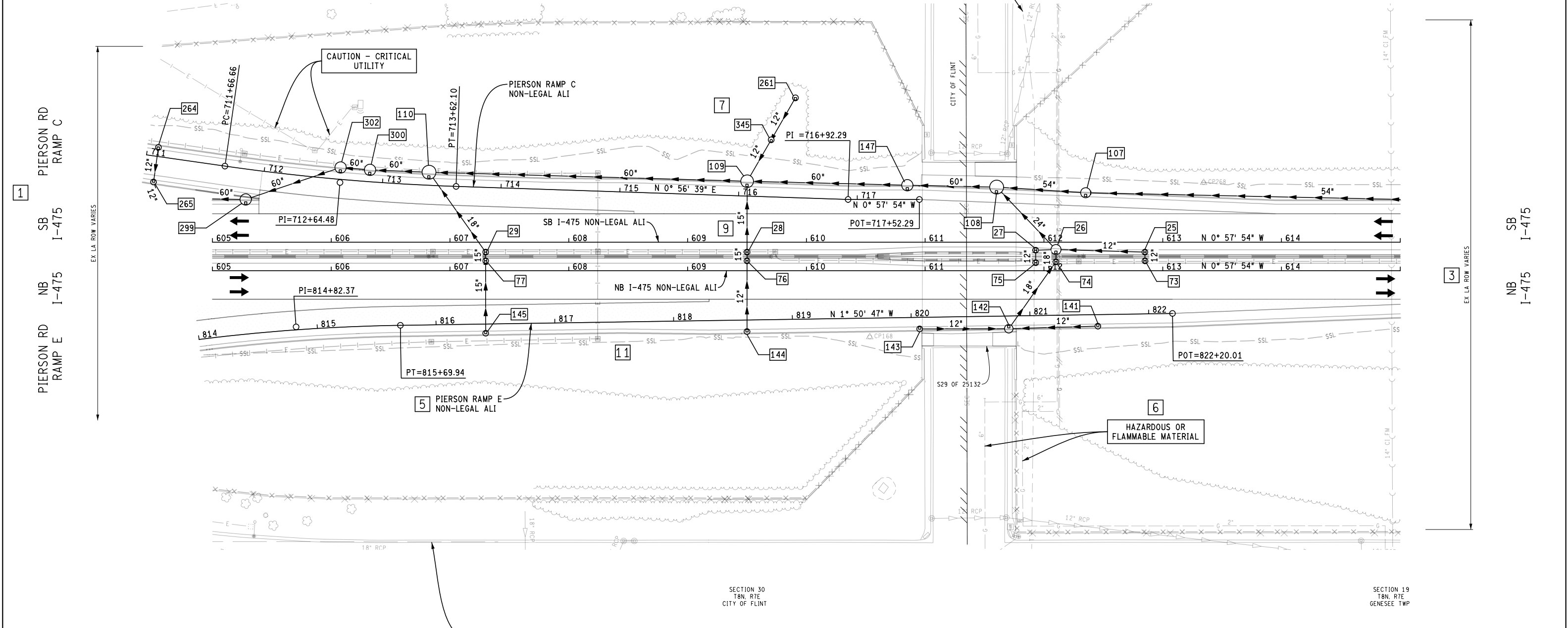
This sheet is from the current sample plans. Drainage sheets to not change, but the next drainage profile sheet is this network

CARPENTER RD



4  
SECTION 30  
T8N, R7E  
CITY OF FLINT

SECTION 19  
T8N, R7E  
GENESEE TWP



1  
PIERSON RD  
RAMP C  
SB I-475  
NB I-475

3  
SB I-475  
NB I-475

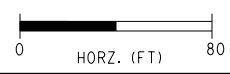
SECTION 30  
T8N, R7E  
CITY OF FLINT

SECTION 19  
T8N, R7E  
GENESEE TWP

REFERENCE TRANSPARENCY OPTIONAL

CARPENTER RD

| FINAL ROW PLAN REVISIONS |      | (SUBMITTAL DATE: ) |             |
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DESIGN UNIT: \_\_\_\_\_  
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FILE: \_\_\_\_\_

CS: \_\_\_\_\_  
JN: \_\_\_\_\_

DRAINAGE SHEET  
I-475 STA 605+00 TO STA 615+00  
DRAWING SHEET  
1475 DRAIN 002  
SECT 1

