PURPOSE AND APPLICATION

This set of sample plans is intended for use as a guideline for preparing a set of roadway construction plans for the Michigan Department of Transportation. The examples of various sheets illustrate preferred techniques to ensure the uniformity, quality and continuity of plans, but the examples do not necessarily represent a preferred design. Examples of the various plan sheets have been provided, based on the most commonly occurring situations. However, it is recognized that some projects will have unusual circumstances that may allow for some variations from the preferred techniques contained herein.

This set is not to be considered or used as a single, coordinated plan, but as a collection of individual sheet types. In many cases, copies of actual plan sheets have been used to develop the sheets contained herein. Since modifications have been made to these sheets to develop an appropriate sample, they are not to be considered an official record of the plans from which they were taken.

The guidelines and examples included are not intended to provide policies on the design or construction of roadways. Where the information shown on the sample plan sheets is in conflict with the design standards or practices of the Michigan Department of Transportation as contained in its Standard Specifications for Construction, design manuals or design standards, the standards and practices supersede any sample plan sheet information.

Boxed numbers refer to the plan guidelines located on the Plan Guidelines Sheet at the beginning of each section.

Errors and omissions should be reported to MDOT:
CADDSupport@michigan.gov.

SHEET INDEX

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Sample Plans

Title Sheet

Introduction and Sheet Index

Legend Sheet

Survey Information Sheet

Alignment Sheets

Removal and Construction Sheets

Drainage Sheets

Profile Sheets

Detail Grades

INTRODUCTION AND SHEET INDEX
TITLE SHEET:

1. Show station equations and bridge/culvert numbers within project limits. Place a box around bridge or culvert numbers only if bridge or culvert is part of the project scope of work.

2. When available, show traffic counts, design speed and posted speed for the roadways within the project limits. When design and posted speeds change, show limits.

3. Show Route; Township, City or Village; County

4. Show section; control section; job number; and funding type.
   Section 1 for road/non-bridge and section 2 for bridge plans. If project includes a log job then road plans are section 1A and log job is section 1B, bridge plans remain section 2.
   The major control section number based on funding is shown first, with secondary control sections shown in parenthesis.
   Place the lowest job number first then place job numbers in sequential order.
   Federal Project and Item number are left blank, as they are completed by the Specifications and Estimates unit.

5. Show north arrow; township and range on map.

6. Describe type of work and provide length of project. Project description shall match scope of work and cover major items.

7. Show State of Michigan map with county or counties project is located in hatched. Add county or county names where the project is located.

8. Consultant Jobs Only – Use consultant box on Title sheet for Prime consultant only. Place consultant logo in title block at bottom of sheet.
   Sub-consultant work must have their title block or logo on the sheets they are responsible for, no signature required.
   If consultants do a portion of an MDOT designed project, the consultant must sign the first sheet of work and state “Responsible for sheet #__ through sheet #__.”

9. Design Unit for MDOT designed projects is the name of the design unit performing the work.
   Design Unit for consultant designed projects is the name of the MDOT Project Manager or Consultant Coordinator.
   TSC is the TSC where the project is located.

10. Add MGF (Michigan Geographic Framework) version for PR numbers note with correct version number as programmed in MPINS.

11. Make interstates, state routes and major road names legible.

12. Add names of Construction Engineer and Project Manager below signatures.

13. Show POB and POE stations, control section milepoints and PR milepoints.

14. The project map should be large enough to show the entire project limits and other features that will easily identify the project location.

15. Label railroads, streams, rivers, creeks, drains, and lakes on the project map. Be sure all regulated streams within the project influence are shown and identified.

16. Final ROW Revision box should always be displayed. If ROW revision is required, enter date and related information.

SUGGESTED TEXT SIZES:

MDOT Ex: road names, railroads, streams, rivers, creeks, drains, and lakes.

MDOT PR: station equations, project beginning and ending information, changes in control section, and bridges.

MDOT PR x 1.5: cities, townships, and township and range.
TYPICAL SECTIONS - GENERAL ITEMS:

G1. All work items on the typical cross sections are to be in capital letters. Use the proper fonts, sizes, levels, weights, etc. Pay items on the typical sections are to match MDOT standard pay items or the pay items from an approved Special Provision.

G2. Whole words should be used when possible, but abbreviations are acceptable. The following are some standard abbreviations:

- AGG – Aggregate
- CONC - Concrete
- CP – Crown Point
- EOS – Edge of Shoulder
- EOT – Edge of Travelway
- OGDC – Open-Graded Drainage Course
- PAVT – Pavement
- SWLK – Sidewalk
- PG – Plan Grade
- POR – Point of Rotation
- PT – Point
- REINF – Reinforced
- NONREINF – Non-Reinforced
- SHLD – Shoulder
- AGG – Aggregate
- CONC - Concrete
- CP – Crown Point
- EOS – Edge of Shoulder
- EOT – Edge of Travelway
- OGDC – Open-Graded Drainage Course
- PAVT – Pavement
- SWLK – Sidewalk
- PG – Plan Grade
- POR – Point of Rotation
- PT – Point
- REINF – Reinforced
- NONREINF – Non-Reinforced
- SHLD – Shoulder

G3. Label the existing and proposed lanes and shoulders. If the dimension is a whole number do not label with a decimal. Do not show grade differentials (-0.24') and or circles at break points. For horizontal dimensions use decimals not feet and inches. Vertical dimensions are typically in inches.

G4. Show existing and proposed plan grade, crown point and point of rotation locations.

G5. Typical sections are a general representation; the intent is not to show every scenario. Utilize miscellaneous details or side typical sections to illustrate unique construction locations.

G6. Label the typical sections with general varying widths for the station range of the typical. Exact station ranges and widths of tapers, transitions, gores, etc are to be shown on the construction sheets.

G7. Existing typical cross sections should be developed as complete as possible from old plans, pavement cores, soil borings and field inspections. All layers of all materials should be shown including subbase and aggregate if known. It is critical to identify the type and thickness of concrete pavement, HMA thickness, existing underdrains, or other items that can affect the bid price. Show existing parabolic crown if applicable.

G8. The following items may require separate half section typical or details and shall be used as needed:

- Guardrail sections
- Shoulder sections
- Crossroads
- Fill/Cut sections
- Curb and gutter sections
- Turn lanes
- Lane widening
- Ramps
- Crossovers
- Retaining walls
- Towns
- Lane widening
- Ramps
- Crossovers
- Retaining walls

G9. Government lines will not be shown on typical sections.

G10. Topsoil stripping will not be shown on typical sections.

TYPICAL SECTIONS:

1. Existing typical sections will be located before the proposed typical sections and will be grouped together. Existing and proposed typical sections will not be on the same sheet.

2. The removal type lines and the ‘GRADE TO THIS LINE’ call will address how removal items are paid. The ‘GRADE TO THIS LINE’ call is only shown on the existing typical section and should match the bottom line of the coinciding proposed typical section. Items that are not included in the removal type lines or the ‘GRADE TO THIS LINE’ call will be tagged with the removal cell. (The removal symbol can be added to a text string by selecting it from the symbol library in the text editor window.) For special cases, such as non-standard items, include a description of how the item will be paid.

3. Label all existing materials.

4. Removal items on the existing typical sections are not to be crosshatched.

5. Only show alignments (LEGAL ALI OR NON-LEGAL ALI) that are being used to construct the roadways. Alignment labels shall match the labels in the plan set.

6. Existing and proposed ROW is labeled from ROW line to ROW line, it is not tied to any of the alignments. Identify if it is limited access (LA) ROW.

7. Include station equations that are within the typical section station range. If multiple equations exist within the station range they should be shown in a separate box.

8. Multiple station ranges can be used on the same typical section.

9. Side slopes that vary through the station limits will be labeled as “SLOPE VARIES” or “SLOPES VARY” in the type line or “VARIES” with an arrow instead of specifying a slope. The specific slopes will typically be detailed on the profile sheets. If there are no profile sheets this information can be detailed on the typical.

10. When the pay item “SLOPE RESTORATION, TYPE _” is used, the type can be left blank.

11. The longitudinal pavement joint type labels will not be shown on the typical sections. Concrete pavement joints will only be shown as a vertical line along with a horizontal lane tie.

12. Proposed ditches that vary within the station range will be labeled as “DITCH SLOPES, BOTTOM WIDTH AND DEPTH VARY”. The specific slopes, bottom width and depth will typically be detailed on the profile sheets. If there are no profile sheets this information can be detailed on the typical.

13. The pavement cross slope on a superelevated typical section will be labeled as ‘RATE OF SUPER’ when the typical section includes the crown-runout and transition or if multiple curves are within the typical station ranges. If the superelevated typical section is in full super for the entire station range then the specific percent super can be shown.

14. Varying shoulder slopes on super elevated typical sections will be labeled with an asterisk (*). Shoulder slopes that are in the same direction that the pavement is superelevated will include a slope arrow. Slopes on the high side that slope in the opposite direction of the pavement super will not have an arrow.

15. The HMA application table should appear only on the first proposed typical sheet that has an HMA pavement section and should be placed in the lower left corner of the sheet.

16. Include POB and POE label with station. Do not show stations with trailing zeros (i.e. 15+00, not 15+00.00).
EX 4' AGG BASE
EX 10' SUBBASE
LEGAL ALI
M-89
(TYP)
EX GROUND
EX HMA
4%
2%
4%
EX AGG BASE (TYP)
SUPER RATE OF *
*
SUPER RATE OF 2%
(TYP)
EX GROUND
FULL SUPER SEE STANDARD PLAN R-107 SERIES
*
FOR SHOULDER SLOPES IN SUPER TRANSITION AND
*
NON-LEGAL ALI
M-43 RAMP A
PROPOSED NORMAL SECTION
EMBANKMENT, CIP
NONREINF, 9 INCH
CONC PAVT, MISC,
OPEN-GRADED, 6 INCH
UNDERDRAIN, PIPE,
EX LA ROW VARIES
(TYP)
EMBANKMENT, CIP
(9" TYP)
SHOULDER, NONREINF CONC
SHOULDER, CL II, 6 INCH
(TYP)
SHOULDER, CL II, 6 INCH
(TYP)
MULCH BLANKET
SEEDING, MIXTURE THV
FERTILIZER, CHEMICAL NUTRIENT, CL A
TOPSOIL SURFACE, FURN, 4 INCH
SLOPE VARIES
SHOULDER
8'
12' LANE
12' LANE
8'
SLOPE VARIES
7'
12'
AND DEPTH VARY
DITCH SLOPES, BOTTOM WIDTH
SHOULDER
8'
16' RAMP LANE
SHOULDER
6'
SLOPE VARIES
4'
9'
3E3
4E3
PT OF ROTATION
PLAN GRADE &
DEPTH VARY
SLOPE RESTORATION,
TYPE _ (TYP)

PROPOSED RAMP SUPERELEVATED SECTION
SECTION APPLIES TO:
RAMP A STA 15400 TO STA 20400
M-89 STA 100+00 TO STA 200+00
SECTION APPLIES TO:
M-89 & M-43
PROPOSED TYPICAL SECTIONS
SECT 1
DATE
AUTH
CS:
JN:
TSC:
DATE:
FILE:
DESIGN UNIT:

Michigan Department of Transportation
**LEGEND SHEET:**

1. All patterns are found in the MDOT pattern cell library. The patterns are to be patterned at the scale of the drawing.

2. Any cells or linestyles special to the project will be placed in the lower right corner.

3. Proposed and existing linestyles are the same. Proposed linestyles are weight 1 and existing linestyles are weight 0.

4. Removing pavement pattern is used to represent the area of pavement removal regardless of underlying material and pay item used.
SURVEY INFORMATION SHEET:

1. NOTES:
   - In the notes section outline the project Coordinate System, Datum, and Units of Measure that were used during the design survey.

2. PRIMARY CONTROL, INTERMEDIATE CONTROL, BENCHMARKS
   - All of the control points found or set for the project will be listed on the sheet under the appropriate section.
   - For all Horizontal and Vertical control points listed on the sheet the following information will be included.
     i. Description of point and location
     ii. Station and Offset
     iii. Coordinate values
     iv. Standard deviation of the point
     v. Combined Scale Factor for each point
     vi. Four witnesses

3. GOVERNMENT CORNERS, ALIGNMENT POINTS
   - For all Government Corners and Alignment Corners listed on the sheet the following information will be included.
     i. Description of point and location
     ii. Station and Offset
     iii. Note stating to Preserve and Protect this corner.
     iv. Coordinate values
     v. Combined Scale Factor for each point
     vi. Four witnesses
CONTROL POINT#: CP501
DESCRIPTION: SET A 5/8" REROD WITH A "W-T" TRAV. CAP IN THE MEDIAN OF I-75 AT THE NE QUADRANT OF NB I-75 AND KOCHVILLE ROAD. STATION 201+00.106, OFFSET 20.073 LEFT
COORDINATES: N - 727604.230  E - 13237903.147  ELEV - 612.615 SDZ=0.011 WITNESSES: 1. NORTH 12' TO EAST LEG ON MERGE SIGN. 2. N10E  42' TO CL REFLECTOR POST. 3. N70W  69' TO CL NO LEFT TURN SIGN. 4. S10W 117' TO CL REFLECTOR POST.

CONTROL POINT#: CP506
DESCRIPTION: 5/8" X 36" REROD AND RED TRAVERSE CAP IN EAST EDGE OF I-75.
STATION 633+44.469, OFFSET 231.128 RIGHT
COORDINATES: N - 733242.767  E - 13237743.70  ELEV – 589.556 SDZ=0.000
WITNESSES: 1. SOUTH 6' TO NORTH EDGE OF PIER. 2. NORTH 7' TO SOUTH EDGE OF PIER. 3. S60W  36' TO FENCE CORNER.

INTERMEDIATE CONTROL
CONTROL PT # CP 358
DESCRIPTION: 5/8" X 36" REROD AND RED TRAVERSE CAP IN EAST EDGE OF I-75.
STATION 634+44.469, OFFSET 231.128 RIGHT
COORDINATES: N - 733242.767  E - 13237743.70  ELEV – 589.556 SDZ=0.000
WITNESSES: 1. SOUTH 6' TO NORTH EDGE OF PIER. 2. NORTH 7' TO SOUTH EDGE OF PIER. 3. S60W  36' TO FENCE CORNER.

GROUND DISTANCE CONVERSION
THE COMBINED SCALE FACTOR (CSF) FOR EACH CONTROL POINT IS INCLUDED IN THE CONTROL POINT LIST. AVERAGE COMBINED SCALE FACTOR (ACSF) = (CSF1 + CSF2)/2
GROUND DISTANCE = GRID DISTANCE / ACSF

PRIMARY CONTROL
CONTROLPNT#: CP193
DESCRIPTION: 5/8" X 36" REROD AND RED TRAVERSE CAP IN EAST EDGE OF I-75.
STATION 633+44.469, OFFSET 231.128 RIGHT
COORDINATES: N - 731456.677  E - 13238063.41  ELEV – 591.120 SDN=0.001  SDE=0.001  SDZ=0.001
COMBINED SCALE FACTOR: 0.99984200
WITNESSES: 1. N40E 14' TO WEST EDGE CONCRETE ON RAMP LANE. 2. S10E 81' TO NAIL IN 8" THORN TREE. 3. N70W 61' TO NAIL IN WP POPULAR. 4. N30W 56' TO CP 127.

CONTROL POINT#: CP222
DESCRIPTION: 5/8" X 36" REROD AND RED TRAVERSE CAP IN EAST EDGE OF I-75.
STATION 590+93.171, OFFSET 75.875 LEFT
COORDINATES: N - 727314.039  E - 13239558.27  ELEV – 586.800 SDN=0.010  SDE=0.010  SDZ=0.013
COMBINED SCALE FACTOR: 0.99984066
WITNESSES: 1. NORTH 12' TO EAST LEG ON MERGE SIGN. 2. N30W 86' TO CL REFLECTOR POST. 3. N70W 69' TO CL NO LEFT TURN SIGN. 4. S10W 117' TO CL REFLECTOR POST.

GOVERNMENT CORNERS
SECTION CORNER: L11T13R4
DESCRIPTION: CHISEL BOX ON CONCRETE HEADWALL SOUTH END PIER WALL, SOUTHBOUND I-75 AT CRANE ROAD. STATION 634+75.175, OFFSET 79.473 LEFT
COORDINATES: N - 727650.185  E - 13237635.155  ELEV 584.500 COMBINED SCALE FACTOR: 0.99984200
WITNESSES: 1. SOUTH 14' TO MAG NAIL IN WING WALL OF NB I-75. 2. S90E  35' TO CONCRETE GIRDER BEARING 6" ASH TREE.

ALIGNMENT(S) POINTS
ALIGNMENT POINT SALZBURG - FOUND PK WITH WASHER RESET WITH IRON IN MONUMENT BOX STATION 37+35.894, OFFSET 0.000 **PRESERVE AND PROTECT**
COORDINATES: N - 758352.433  E - 13246650.119 ELEV = 590.745
COMBINED SCALE FACTOR: 0.99967782
WITNESSES: 1. N10'E 65.6' TO THE SE CORNER OF THE BOYS AND GIRLS CLUB CLUB SIGN 2. S90° 76.8' TO A PK IN FACE OF 10" MAPLE 3. S90° 76.0' TO FC OF CP 127.

REVISIONS
DRAWING SHEET SURVEY INFORMATION SHEET
COORD SHEET SHEET
1 5/6/11 FILE: TSC:
ALIGNMENT/ROW SHEETS:
1. Label all roadway names and county drains at the outside of the sheet using MDOT Pr x 1.5 text size.
2. Label all alignments using current naming convention.
3. Place north arrow in upper right corner.
4. Show section, township and range information, and city, village, township or county.
5. ROW is dimensioned only to the legal alignments. If a legal alignment is not available then the ROW is dimensioned from ROW line to ROW line. Label ROW within the sheet every time it changes. Label and dimension proposed ROW.
6. An alignment key is required and should be located in the upper left corner of the first alignment sheet.
7. Show section corners, quarter corners, quarter quarter corners, section lines, bearings of the section lines and distances as shown. The section corner information will only be shown on the alignment sheets.
8. All crossroad alignment ties will only be shown on the alignment sheets.
9. Show tangent bearings on all alignments.
10. Existing and proposed alignment curve data is only shown on the alignment sheets. Show the curve data on the alignment sheet where the PI appears. List existing (if applicable) and proposed superelevation rates below curve data.
11. Dimension the distances between alignments.
12. Show parcel and plat lines on the alignment sheets. Parcel lines are not shown on the removal and construction sheets.
13. Label all subdivisions and plats. Label with proposed text size and on the appropriate level.
14. If a POT is shown at the end/beginning of an alignment, northing and easting shall be included to establish the location.
15. The POB/POE, job number, control section and mile points, and physical reference and mile points need to be shown at the beginning and end of the construction limits.
16. If the existing ROW has been established from survey and it is not dependent on the legal alignment, label the bearing and distance of the existing ROW and the station of the location that the ROW is no longer dependent on the legal alignment.
17. Label and dimension any existing or proposed easements.
18. Use the standard GEOPAK orientation for labeling PC, PI & PT locations whenever possible. These can be modified if readability becomes an issue.
19. Parcel numbers and property boundary information shall be shown on the Alignment/ROW sheets only.
20. Use separate sheets for ramp and/or crossroad alignments as needed, only show the information once.
21. The scale of the Alignment/ROW sheets is at the discretion of the designer. Due to the amount of information shown on these sheets it may be beneficial to use the same scale as the removal and construction sheets.
22. Show all station equations.
23. Show LA terminator cell signifying the change from LA ROW to ROW.
24. The alignment(s), stationing and curve data used to construct the roadway (the ones shown on typicals, removal, and construction sheets) will be shown as weight 1. All other alignments will be weight 0.
REMOVAL AND CONSTRUCTION SHEETS:
1. Label all roadway names and county drains at the outside of the sheet using MDOT Pr x 1.5 text size.
2. Show city limits, township, range and section info. Section corner information is not shown.
3. Only show the alignments that are necessary to construct the roadway. Include stations, bearings and curve points.
4. Curve data is not to be shown on these sheets. Curve data is only shown on the alignment sheets.
5. If there are numerous driveways, sewers or guardrail, use summary tables. Do not duplicate quantities in tables into ‘Quantities This Sheet’. The pay items in the tables are to match the MDOT standard pay items and/or the specifications book. If the project has more than one funding category, specify the category number for the quantities.
6. Show all ‘Quantities This Sheet’ in the lower right hand corner if possible for all quantities not shown in individual tables. If the project has more than one funding category, include the category number above the quantity for which they are included.
7. Show pay items and leaders to specific work types.
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. Dimension limits of work on crossroads in proposed text size on the removal sheet only. If crossroad has an alignment, label with station. For crossroads without alignments, label distance from mainline alignment.
11. 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.
12. Include traffic flow arrows to delineate roadway lanes and movements.
13. 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.
14. 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.
15. If existing trees are to be removed, label with the removal cell and the existing tree size and type if known.
16. On the removal sheet label all driveways with a station to the nearest foot.
17. 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.
18. Show the slope stake line.
19. Drainage structures, sewers, culverts and/or end sections being removed will be tagged with the removal cell. If end section is part of a culvert/sewer that is being removed, it does not need to be tagged separately.
20. Show existing and proposed storm and sanitary sewers with sizes and flow arrows. Show existing culverts with sizes, flow arrows and material type. In areas where there are several drainage structures an additional drainage sheet may be required to clarify the details of the proposed drainage system. If a separate drainage sheet is used, it will follow the construction sheet in the plan set. When additional drainage sheets are used the proposed storm sewer size labels can be omitted from the construction sheets. Flow arrows on existing and proposed ditch bottoms are required.
21. Label the existing roadway and driveway pavement materials on the removal sheets and outside the limits of work on the construction sheets. If text cannot fit within the pavement then a leader may be used.
22. Label and station all proposed lane and shoulder tapers and changes in width.
23. Label the 2' and 22' gore points and equate the ramp and mainline alignments at the specified locations.
24. 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.
25. Structures that need to be adjusted will need to be tagged with the ADJ or ADJ B/O cells. These cells should show up only on the construction sheets.
26. Only tag items with the removal cell that are not included in a removal hatching pattern. Fence and guardrail are examples of items that should be tagged with the removal cell on the removal sheets. If the item is identifiable by a line style or a cell, only the removal cell is required.
27. Place north arrow in upper right corner.
28. Saw cut locations are not labeled on the removal sheets.
29. The proposed driveway slopes shown in the driveway table are per MDOT Standard Plan/Special Detail R-29 series.
30. The proposed driveway width is measured along the back of the driveway where proposed ties into existing.
31. Show benchmarks and control points (cell and number) on both the removal and construction sheets.
32. Show soil borings and pavement cores on the removal sheets only.
33. Include all government corners and property corners with the “Protect Corners” cell. These should be shown on both removal and construction sheets.
34. Identify erosion control measures on the construction sheet with the ‘Erosion Control Number’ cell. Pay for erosion control items in the main list of ‘Quantities This Sheet’. Do not show key number next to pay item.
DRAINAGE SHEETS:

1. Label all roadway names and county drains at the outside of the sheet using MDOT Pr x 1.5.
2. Show north arrow in upper right corner.
3. Label overall ROW dimensions including cross road ROW at the ends of the sheet. These labels and dimensions should be in the same location as the construction sheet.
4. Show city limits, township, range and section info. Section corner information is not shown.
5. Only show the alignments that are necessary to construct the roadway and drainage. Include stations, bearings and curve points.
6. 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.
7. Structure numbers are required on all proposed drainage structures. Existing drainage structures will require a structure number if the proposed drainage system is connecting into the existing system.
8. Show the proposed drainage layout and the existing drainage that is remaining including existing drainage that is being abandoned in place. Do not show any existing drainage systems that are being removed.
9. Show existing and proposed pipes with sizes and flow arrows.
10. A drainage table is needed for each drainage sheet and includes all drainage related pay items and quantities. If the drainage table is too large then an additional sheet may be required to display all information. The drainage table sheet follows the corresponding drainage sheet.
11. Show the slope stake line.
12. Adjusting drainage structure covers within the roadway are considered part of the paving operation and should be shown and paid for on the construction sheet.
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.
<table>
<thead>
<tr>
<th>STRUCT NO</th>
<th>STATION</th>
<th>OFFSET</th>
<th>DR STRUCT Type</th>
<th>Sewer CL A</th>
<th>Sewer CL A</th>
<th>Sewer Top</th>
<th>Dr Structure Tab. 12 inch</th>
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<tbody>
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<td>6600</td>
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**Notes:**
- Offsets are measured to the center of structure.
- The left edge shown is at edge of pavement for catch basins and at center of cover for manholes.
PROFILE SHEETS:

1. Show vertical curve PI stations and elevations, curve lengths, tangent grades, high points, low points, and K values. Use standard GEOPAK labeling.
2. Show all existing and proposed drainage features.
3. Show all existing drainage structures with +STA, size, type, and structure number, if applicable. Label structures to be removed with removal cell. Show all proposed drainage structures with +STA, size, cover, and structure number. If a drainage table is not used, add offset and rim elevation to proposed structure label.
4. Show the invert, station, and offset at proposed storm sewer or culvert outlets. Station and offset should represent the end of the pipe not end section.
5. Show existing ground profile and existing ground points both left and right (space existing ground points at 50' increments for all scales except 200 scale profiles use 100' increments). Rural sections should show existing ground profiles at an offset that closely represents the location of the existing ditch bottom, and existing ground points at an offset that closely represents the location of the existing ROW. Urban sections should show existing ground profiles at an offset that closely represents the location of the existing or proposed top of curb and gutter, and existing ground points at an offset that closely represents the location of the existing ROW. Show proposed top of curb profile for urban sections. Show proposed sidewalk profile if independent.
6. Show proposed plan grade line to nearest 0.01%.
7. Show existing and proposed invert elevations to the nearest 0.01 ft.
8. Show plan, ditch and sewer grades as +% or -% in the direction of stationing.
9. Show location of superelevation including transition and crown run out locations on type line directly above the plan grade.
10. Show type lines describing the proposed grading of the ditches, fore slopes, or back slopes. Show these type lines directly above the right and left edge profiles.
11. Show rock, peat, muck and undercut limits and treatments.
12. Show water table elevations, if known.
13. Show erosion control items that apply on the profile sheet. Items are paid for on the construction sheet.
14. Show existing or proposed bridge or box/slab culvert profile if applicable and underclearances.
15. Show elevations along the side of the profile grid at 5’ increments (use 10’ increments if using 200 scale). Show existing and proposed strip grade elevations at 50’ increments (use 100’ increments for 200 scale). Show proposed stationing at 100’ intervals.
16. Label station equations on profile sheets.
17. 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.
18. Critical private or municipal utilities should be shown in the profile. These would be utilities that require protection, temporary support, or monitoring during construction.
DETAIL GRADE AND SIDEWALK RAMP SHEETS:

1. If possible combine the intersection detail grades and sidewalk ramp details.
2. If a stand-alone CPM project or a sidewalk ramp project, the sidewalk details may be combined with the removal and construction sheets.
3. Place north arrow in upper right corner.
4. Show mainline roadway alignment with stationing only, bearings and curve points are not needed.
5. Show elevations and offsets along the alignment of the crossroad/ramps at key locations such as pavement joint lines or wherever necessary to accurately convey the intent of the design.
6. Show all sanitary and storm manholes and catch basins, but not the sewer pipes.
7. Show existing sidewalk joints if available.
8. Show all utilities.
9. Dimension and give proposed elevations around proposed radii. Include grade elevations at sidewalk ramp locations. Provide existing elevations at the tie in locations, and an additional elevation 10'-20' beyond to show the existing slope of the road.
10. Provide mainline roadway station, offset and elevation at radii spring points. Show at least one elevation beyond the spring point to show the proposed slope of the road.
11. At the center point of the radius identify the roadway name, radius, station, offset and the northing and easting.
12. If sidewalk ramps are present, show each quadrant at large scale to provide details with elevations, slopes and dimensions to ensure they comply with ADA standards. Show details by quadrant and at a larger scale than the detail sheet to show the sidewalk ramp details.
13. Label sidewalk ramp type with appropriate cell.
14. Label proposed curb type.
15. Show the slope stake line.
16. Show pedestrian signals and push buttons. Detail push button locations or reference signal plans if applicable.
17. For the first station/elevation label in a row, use the whole station to help identify the corresponding alignment.
SIDEWALK RAMP DETAIL - SE QUADRANT

NOTE: SEE SIGNAL PLANS FOR PEDESTRIAN PUSH BUTTON DETAILS