

SECTION 1200

Plan Preparation

1201 General Plan Sheet Information	3
1201.1 Introduction	3
1201.2 Unit of Measure	3
1201.3 Plan Sheet Materials and File Format	3
1201.4 Plan Sheet Dimensions	3
1201.5 Title Block Information	3
1201.5.1 General	3
1201.5.2 Sheet Numbers	3
1201.5.3 Project Designation	4
1201.5.4 Sheet Title	4
1201.5.5 Quantity Validation	4
1201.5.6 Plan Scales	4
1201.5.7 North Arrow	4
1201.5.8 Additional Requirements	4
1201.6 Title Sheet Title Block	4
1201.6.1 General	4
1201.6.2 Railroad Involvement	5
1201.6.3 Construction Project Number	5
1201.6.4 PID Number	5
1201.6.5 Federal Project Number	5
1202 Drafting	5
1202.1 Plan Scales	5
1202.2 Lettering	5
1202.3 Cross-Section Grids	5
1202.4 Drafting Conventions	6
1202.4.1 Text Orientation	6
1202.4.2 Placement of Leaders from Notes	7
1202.4.3 Placement of Leaders to, or from, a Circular Object	8
1202.4.4 Terminators	8
1202.4.5 Placement of Balloons	8
1202.4.6 Sheet Notes, Charts, and Summary Sheets	9
1202.4.7 Overdrafting	10
1202.4.8 Horizontal Curve Data	11
1202.4.9 Dashed Lines	12
1202.4.10 Direction of Cross-Hatch Lines	13
1202.4.11 Placement of Dimension Text	14
1202.4.12 Angular Dimensions	15
1202.4.13 Dimension in Crowded Conditions	16
1202.4.14 Dimensioning with a Dot	16
1202.4.15 Dimensioning at Angles	17
1202.4.16 Dimensioning an Object	18
1202.4.17 Crossing Dimension Lines	19
1202.4.18 Grouped Dimensions	20
1202.4.19 Use of "Typical"	21

SECTION 1200

Plan Preparation

1202.5 Computer-Aided Drafting and Design (CADD) _____ 22

1203 Standard Drawings _____ 22

1203.1 Standard Construction Drawings _____ 22

1203.2 Plan Insert Sheets _____ 22

List of Figures

<u>Figure</u>	<u>Subject</u>
1201-1	Plan Sheet Dimensions
1201-2	Title Sheet Block Examples for Roadway Plans
1202-1	Acceptable Grid Systems

Section 1300

Plan Components

Contents

1301 Introduction.....	6
1301.1 Standard Plans.....	6
1301.2 Simplified Plans.....	8
1301.3 Order of Precedence	8
1302 Title Sheet	8
1302.1 General	8
1302.2 Plan Title	9
1302.2.1 Heading.....	9
1302.2.2 Project Designation.....	9
1302.2.3 Political Subdivisions.....	13
1302.2.4 Railroads	13
1302.2.5 Title Block	14
1302.3 Design Designation.....	14
1302.4 Design Exceptions	15
1302.5 Index of Sheets.....	16
1302.6 Plan Preparer Identification	16
1302.6.1 Engineer’s Seal	16
1302.6.2 Design Firm Information	16
1302.7 Underground Utilities Note	16
1302.8 Location Map.....	17
1302.9 Supplemental Specifications.....	18
1302.9.1 Special Provisions.....	18
1302.10 Standard Construction Drawings	18
1302.11 Project Description and Earth Disturbed Areas.....	20
1302.11.1 Project Description.....	20
1302.11.2 Earth Disturbed Areas.....	20
1302.12 Notes	21
1302.12.1 Limited Access.....	21
1302.12.2 Specifications.....	21
1302.12.3 Maintenance of Traffic Endorsement	21
1302.13 Plan Signatures.....	22
1302.14 Combined Plans.....	23
1302.15 Americans with Disabilities Act (ADA) Design Waivers	23
1303 Schematic Plan.....	24
1303.1 General	24
1303.2 Reference Lines.....	24
1303.3 Stationing	24
1303.4 Bearings	25
1303.5 Horizontal Curve Data.....	25
1303.6 Project Limits	25

Section 1300 Plan Components

1303.7 Work Limits	25
1303.8 Federal Project Flags	26
1303.9 Political Boundaries.....	26
1303.10 Waterways.....	26
1303.11 Bridges	26
1303.12 Roads for Maintaining Traffic	26
1303.13 Railroads.....	26
1303.14 Utility Lines.....	26
1303.15 Pipelines	26
1303.16 Service/Public Roads.....	26
1303.17 Culverts and Sewers	27
1303.18 Landscaped Areas	27
1303.19 Participation Splits	27
1303.20 Contractor’s Use of ODOT Right-of-Way.....	27
1303.21 Wetlands.....	27
1303.22 Project Control and Reference Points	27
1304 Typical Sections	28
1304.1 General	28
1304.2 Typical Section Type and Limits	28
1304.3 Reference Line Location.....	29
1304.4 Rounding.....	29
1304.5 Profile Grade Point.....	29
1304.6 Dimensions	29
1304.7 Pavement and Shoulder Cross-Slopes.....	30
1304.8 Subsurface Drainage.....	30
1304.9 Pavement Build-up.....	30
1304.10 Foreslopes and Backslopes	30
1304.11 Legend	30
1304.12 Longitudinal Joints	30
1304.13 Approach Slabs	31
1304.14 Warranty Pavement.....	31
1304.15 Subgrade Treatment.....	31
1305 General Notes and Special Provisions.....	31
1305.1 General	31
1305.2 Sample Plan Notes	31
1305.3 Special Provisions.....	32
1306 Maintenance of Traffic	32
1306.1 General	32
1306.2 Maintenance of Traffic Plan Contents.....	32
1306.3 Roads and Pavements for Maintaining Traffic	33
1307 Estimated Quantities	34
1307.1 General	34
1307.2 General Summary Sheet	34

Section 1300

Plan Components

1307.2.1 Sheet Number Columns	34
1307.2.2 Participation and Funding Splits	34
1307.2.3 Item Code, Unit of Measure, and Description	35
1307.2.4 Contingency Quantities	41
1307.2.5 Linear Grading	41
1307.2.6 “Standard”, “As Per Plan”, “Miscellaneous”, and “Special” Pay Items	42
1307.2.7 Alternate, Optional, and Additive Alternate Bid Items	43
1307.2.8 Sheet Cross References	45
1307.2.9 Buildings Demolished	45
1307.2.10 Salvage of Utility Items	45
1307.3 Subsummaries	45
1307.4 Quantity Calculations	46
1307.4.1 General	46
1307.4.2 Pavement Calculations	46
1307.4.3 Rounding of Quantities	46
1307.4.4 Validation of Quantities	46
1308 Project Site Plan	47
1308.1 General	47
1308.2 Requirements	47
1309 Plan & Profile Sheets	48
1309.1 General	48
1309.2 Format	49
1309.3 Existing Information	49
1309.3.1 Topography	49
1309.3.2 Buildings and Appurtenances	50
1309.3.3 Roadway Items	50
1309.3.4 Boundary Lines	50
1309.3.5 Utilities	50
1309.3.6 Underground Mines	51
1309.4 Proposed Facility Information	51
1309.4.1 Alignment and Grade	51
1309.4.2 Roadway Items	53
1309.4.3 Boundary Lines	53
1309.4.4 Drainage Items	53
1309.5 Quantities	54
1309.5.1 Reference Balloons	54
1309.5.2 Estimated Quantities	54
1309.6 Miscellaneous Information	55
1309.6.1 Project Control and Reference Points	55
1309.6.2 Cross References to Other Sheets	55
1309.6.3 Typical Sections of Adjoining Pavement	55
1309.6.4 Project and Work Limits	55
1309.6.5 Match Lines	55

Section 1300
Plan Components

1310 Cross-Sections	55
1310.1 General	55
1310.2 Format.....	56
1310.3 Earthwork and Seeding Quantities.....	56
1310.3.1 Earthwork Calculations.....	56
1310.3.2 Earthwork Corrections for Curvature	57
1310.3.3 Roads for Maintaining Traffic	57
1310.3.4 Seeding Calculations.....	58
1310.4 Drainage Items.....	58
1310.5 Drives	58
1310.6 Miscellaneous Items.....	58
1311 Miscellaneous Details.....	59
1311.1 Drive Details.....	59
1311.2 Grading Details.....	59
1311.3 Intersection Details	59
1311.4 Interchange and Ramp Terminal Details.....	59
1311.5 Pavement Joint Details.....	59
1311.6 Pavement/Transition Details.....	59
1311.7 Superelevation Tables.....	60
1311.8 Other Details.....	60
1312 Drainage Details.....	60
1312.1 General	60
1312.2 Culvert Details.....	60
1312.3 Storm Sewer Profiles.....	62
1312.4 Three-Sided Precast Culverts	63
1312.5 Underdrain Details.....	63
1313 Sanitary Sewer and Water Work Plans.....	63
1314 Traffic Control, Lighting, Landscaping, Rest Areas, Structures, Right-of-Way, and Soil Profile.....	64
1314.1 Traffic Control Plans	64
1314.2 Lighting Plans.....	64
1314.3 Landscaping Plans.....	64
1314.4 Rest Area Plans.....	64
1314.5 Structures.....	64
1314.6 Right-of-Way Plans.....	64
1314.7 Soil Profile Sheets.....	64
1314.8 Mine Map Overlay Sheets.....	65
1315 Simplified Plans	65
1315.1 General	65
1315.2 Plan Sheets.....	65
1315.2.1 Title Sheet.....	65
1315.2.2 General Summary	66

Section 1300

Plan Components

List of Figures

<u>Figure</u>	<u>Subject</u>
1302-1	Standard Title Sheet Layout
1302-2	Simplified Plan Title Sheet Layout: 11"x17" Size
1302-3	Guide for Showing Design Exceptions in Plan
1303-1	Simple Curve Elements and Data
1303-2	Spiral Curve Elements and Data
1303-3	Combining Spiral Curve Elements and Data

SECTION 1400 Project Development

Table of Contents

1401 Design Review Process.....	3
1401.1 Introduction	3
1402 Project Phases	3
1402.1 Planning Phase (PL).....	4
1402.2 Preliminary Engineering (PE)	4
1402.3 Environmental Engineering (EE)	5
1402.4 Final Engineering/ROW Phase (FE).....	5
1402.5 Construction (CO).....	5
1403 Project Classification	6
1403.1 Path 1 Projects.....	6
1403.2 Path 2 Projects.....	7
1403.3 Path 3 Projects.....	7
1403.4 Path 4 Projects.....	7
1403.5 Path 5 Projects.....	8
1404 Review Process Determination	8
1404.1 Staged Review Process.....	9
1404.2 Limited Review Process	9
1404.3 Design-Build Review Process.....	9
1404.4 Local-Let Local Public Agency (LPA) Project Review Process	10
1404.5 Customization of Review Requirements.....	10
1404.5.1 Combined Reviews	10
1404.5.2 Modifications to Design Review Content	11
1404.6 Scheduling.....	11
1405 Review Agencies	11
1405.1 Ohio Department of Transportation	12
1405.1.1 Technical Offices and Specialty Areas	12
1405.1.2 Central Office	12
1405.2 Federal Highway Administration	12
1405.3 Local Governments	13
1405.4 Other Governmental Agencies.....	13
1405.6 Railroads	13
1406 Design Review Submittals.....	13
1406.1 General Requirements	14
1406.1.1 General.....	14
1406.1.2 Format.....	14
1406.1.3 Engineers Seal	15
1406.2 Project Initiation Package	15
1406.3 Feasibility Study (FS)	16
1406.3.1 General.....	16
1406.4 Alternative Evaluation Report (AER)	16
1406.4.1 General.....	16
1406.5 Stage 1 Detailed Design	17
1406.5.1 General.....	17
1406.5.2 Stage 1 Detailed Design Activities	17
1406.5.3 Stage 1 Detailed Design Review Submission.....	17
1406.6 Preliminary Right of Way Plan.....	18
1406.6.1 General.....	18
1406.6.2 Preliminary Right of Way Plan Tasks	19
1406.6.3 Preliminary Right of Way Plan Review Submission.....	19

SECTION 1400 Project Development

1406.7 Stage 2 Detailed Design	19
1406.7.1 General	19
1406.7.2 Stage 2 Detailed Design Activities	19
1406.7.3 Stage 2 Detailed Design Review Submission	20
1406.8 Final Right of Way Plan.....	21
1406.8.1 General	21
1406.8.2 Final Right of Way Plan Review Submission	21
1406.9 Stage 3 Detailed Design	21
1406.9.1 General	21
1406.9.2 Stage 3 Detailed Design Activities	22
1406.9.3 Stage 3 Detailed Design Review Submission	22
1406.10 Final Plan Package	23
1407 Miscellaneous Studies	23
1407.1 Airway/Highway Clearance Analysis.....	23
1407.1.1 Introduction	23
1407.1.2 Notification Surfaces.....	24
1407.1.3 Traverse Way Adjustments	24
1407.1.4 Exceptions to Notification Requirements.....	24
1407.1.5 Temporary Structures and Construction Equipment.....	25
1407.1.6 Controlled Areas	25
1407.1.7 FAA Notification/Clearance Procedures	25
1407.1.8 Private Facilities	26
1407.2 Retaining Wall Justification.....	26
1407.3 Service Road Justification Study	27
1407.4 Pedestrian Overpass Justification	27
1407.5 Value Engineering (VE) Studies.....	27
1407.6 Constructability Review.....	28

Section 1500
Plan Related Actions

Contents

- 1501 Introduction 2**
- 1502 Documentation of Environmental Commitments 2**
- 1503 CADD File Requirements for Design and Construction..... 2**
 - 1503.1 CADD Software Requirements 2
 - 1503.2 CADD File Requirements 2
 - 1503.2.1 Typical Requirements for Projects Following Path 1 of the Project Development Process (PDP) 3
 - 1503.2.2 Typical Requirements for Projects Following Paths 2, 3, 4, and 5 of the Project Development Process (PDP) 3
 - 1503.3 Submission of Files to the District 5
 - 1503.4 Submission of Files to Central Office..... 5
- 1504 Submission of Completed Plans to District..... 5**
 - 1504.1 General 5
 - 1504.1.1 Projects Administered by ODOT..... 5
 - 1504.1.2 Projects Administered through the Local Public Agency (LPA) Policy 6
- 1505 Review of Completed Plans 7**
 - 1505.1 Plan Checking 7
 - 1505.1.1 Projects Administered by ODOT..... 7
 - 1505.1.2 Projects Administered through the Local Public Agency (LPA) Policy 7
 - 1505.2 Field Verification..... 8
- 1506 Submission of Completed Plans to Central Office 8**
 - 1506.1 General 8
 - 1506.1.1 Projects Administered by ODOT..... 8
 - 1506.1.2 Projects Administered through the Local Public Agency Policy 9
- 1507 Record of Plans..... 9**