

MINIMUM REQUIREMENTS FOR ENGINEERING PLANS
FOR CONSERVATION PRACTICES

These minimum requirements show information necessary, in addition to requirements shown on page 4 of Engineering Memorandum-IN-3, to completely describe the conservation practice which will be incorporated into the plans. See Engineering Technical Note 8 for typical plans.

Subsurface Drain (Code No. 606)

1. Plan view of drain layout. Need for topographic survey and spot elevations of low areas will be determined on a case by case basis.
2. Length, size, quality and kind of drain
3. Length, size, and kind of outlet pipe (specify animal guard)
4. Soil types (soil logs may be needed in special situations - show location and log with unified classifications)
5. Stationing at key points
6. Location of all appurtenances
7. Profile of mains
8. Grade on all profiles
9. Hydraulic design data
10. Minimum depth and required spacing
11. Bill of materials
12. Ditch bottom or low flow elevation of outlet

Pond and Other Structures (Code No. 378, 410, 587, 402 and 350)

1. Plan view of structure layout
2. Topographic map (where applicable). Show low ground elevations at property lines when they are near design high water level.
3. Hydraulic design data
4. Profiles of principal and emergency spillways
5. Cross section along centerline of proposed fill and core trench with soil boring unified classification log and ground water level data.
6. Cross section along centerline of foundation drain (when required)
7. Soil boring locations
8. Location and dimensions of principal and emergency spillways
9. Details of principal spillway appurtenances
10. Fill cross section showing side slopes, top width, elevations of top of fill, berms, ground line, core trench, etc.
11. Stationing along centerline of fill. Show stations of intersections of principal and emergency spillway centerlines. Establish stationing ground control.
12. Erosion and sediment control measures
13. Seeding, fertilizing and fencing requirement
14. Quantities - bill of materials
15. Specifications w/earth fill compaction requirements and sealing treatment if applicable

Rock Lined Chute (Code 410)

1. Plan view of structure layout
2. Topographic map (where applicable)
3. Profiles and cross sections (where applicable), with soil boring
4. Hydraulic design data
5. Chute profile and x-section showing elevations, chute slope, apron lengths, side slopes, bottom width, depth, chute length
6. Quantities and bill of materials
7. Seeding and fertilizing requirements (if applicable)

Drainage Mains and Laterals (Code No. 607-B and 582)

1. Plan view showing system layout
2. Soil types or groups
3. Profiles along centerline of channel. Show existing grade, proposed grade, low bank or ground elevations, hydraulic grade line, and location of soil borings with unified classification logs.
4. Hydraulic design data
5. Typical cross section showing side slopes, depth, bottom width, berms
6. Spoil disposition
7. Erosion and sediment control measures
8. Seeding and fertilizing requirements
9. Quantities and bill of materials
10. Specifications
11. Bridge and culvert stationing, dimensions, footer elevations

Drainage Field Ditch

1. Plan view of system layout
2. Profile along centerline of channel
3. Spoil disposition
4. Typical cross section showing side slopes and bottom width
5. Hydraulic design data
6. Quantities and bill of materials
7. Seeding and fertilizing requirements (if applicable)
8. Specifications

Diversion (Code No. 362 and 400)

1. Plan view of system layout
2. Profile showing grade of channel and ridge
3. Cross section of channel and ridge
4. Hydraulic design data
5. Outlet protection required
6. Compaction requirement for supporting ridge
7. Seeding and fertilizing requirement

Terrace (Code No. 600)

1. Plan view of system layout
2. Profile showing channel and ridge
3. Typical cross sections
4. Details of subsurface outlets or other required appurtenances
5. Hydraulic and storage design data

Grassed Waterways (Code No. 412)

1. Plan view of system layout
2. Cross sections showing width, minimum depth, shape
3. Profile along channel centerline
4. Hydraulic design data
5. Quantities
6. Seeding and fertilizing requirements
7. Details of outlet structures and parallel tile

Spring Development (Code No. 574)

1. Plan view of system layout
2. Dimensions of pipeline, collection box, cutoff walls, tank or trough
3. Elevation at key points
4. Quantities and bill of material
5. Seeding and fertilizing requirements

Pipeline (Code No. 516)

1. Plan view of system layout
2. Source of water
3. Type, size and length of pipe
4. Minimum cover over pipe

Waste Storage Pond or Treatment Lagoon (Code No. 425 and 359)

1. Waste management system
2. Plan view of system layout
3. Lagoon or storage pond (same data as for a pond)
4. Soil boring location in area of excavation to a depth of 2 feet below lowest excavation. Use unified classification. Show ground water level data
5. Structural details of all components
6. Disposal area showing restricted areas, soil type, slope, etc.
7. Quantities and bill of material
8. Seeding and fertilizing requirements
9. Specifications
10. Special requirements for safety

Waste Storage Structure (Code 313)

1. Location map
2. Computations for size
3. Length, width, depth and thickness of walls
4. Inlet, outlet covers, vent details, safety features and other appurtenances
5. Type of construction (block, steel, reinforced concrete, etc.)
6. Reinforcing and concrete information
7. If prefabricated
 - a. Manufacturer
 - b. Type and model
 - c. Dimensions
 - d. Inlet and outlet details
 - e. Manufacturer's or contractor's certificate
8. Disposal area showing restricted areas, soil type, slope, etc.
9. Quantities and bill of materials
10. Seeding and fertilizing requirements