

ATTACHMENT "A"  
HAMILTON COUNTY ENGINEER'S

SCOPE OF SERVICE

ENGLISH UNITS

**1. PROJECT IDENTIFICATION:**

Road Name: Brehm

Road No: 72

Local Let: \_\_\_\_\_ X \_\_\_\_\_ ODOT Let: \_\_\_\_\_

Highway Functional Classification: Urban Minor Arterial

PID No.: \_\_\_\_\_ Project No.: 500912

**2. PROJECT DESCRIPTION:**

Transportation Issue to be Corrected: Replacement of 1936 WPA Corrugated Metal Arch Bridge

Prior Studies/Plan: See Drawing Culvert #9

**3. DESIGN STANDARD:**

ODOT Specifications

**4. PROJECT INFORMATION:**

Limits: 0.02 Mile

Length: 0.02 Mile

**5. AGREEMENT BETWEEN CONSULTANT AND:**

State \_\_\_\_\_ County X Township \_\_\_\_\_

City \_\_\_\_\_ Other \_\_\_\_\_

**6. METHOD OF FINANCING:**

Engineering: 100% Local

Construction: 100% Local

Fiscal Year: 2011 (County) Proposed Sale Date: 06/01/2012

**7. WORK PHASES INCLUDED IN AGREEMENT:**

**PHASE A Plan Submission:** Line, grade and typical sections on Base Sheets to be used in final plans. Critical cross sections are to be plotted. Potential design problem areas are to be identified. Hydraulic Study required. Refer to Exhibit 2.

**PHASE B Plan Submission:** To conform to Phase A recommendations. Final review submission is to

include Special General Notes and Specifications and quantities.

---

**8. PLAN SCALES:**

PLAN: 1" = 20' Min.

PROFILE: Hor. 1" = 20' Min. Vert. 1" = 5' Min.

CROSS SECTIONS: Hor. 1" = 5' Min. Vert. 1" = 5' Min.

Remarks: \_\_\_\_\_

**9. JOURNALIZED SPEED LIMIT:**

Road: Brehm Road 35 MPH

**10. TYPICAL SECTIONS/NUMBER OF LANES:**

Two 12' Lanes with 4' Shoulders on bridge.

Salvage Existing Pavement: Full-Depth Removal only to limits necessary for Bridge Work and approaches.

Curbs: None Report to Recommend: N/A

Type: N/A

Shoulders/Berms: 2' along roadway Report to Recommend: Yes

Type: Paved

Safety Grading Criteria: \_\_\_\_\_ Partial: \_\_\_\_\_

Guardrail: Metal Type: 5-Modified (Without Wood Spacer Blocks)

Median: None

Clear Zone Grading: None

Fencing: None

Lighting: None

Remarks: Traveled lanes will have a minimum width of twelve (12) feet on Bridge

**11. ALIGNMENT:**

Existing alignment is to be basically followed.

**12. PROFILE:**

Existing profile is to be followed as much as possible. Slight adjustments in profile may be required to establish/maintain drainage patterns.

**13. LOGICAL TERMINI: 1.32 Miles North of Springdale Road**

**14. TYPICAL SECTIONS:**

**Existing:**

Width: Pavement 20' Graded Shoulder N/A Treated Shoulder N/A  
R/W: 60'  
Bridge: Face to Face of Rails 28.7' (or) Toe to Toe of Parapets N/A  
Curbs: Yes \_\_\_\_\_ No   
Curb Ramps: Yes \_\_\_\_\_ No   
Sidewalks: Yes \_\_\_ No  Comment \_\_\_\_\_  
Guardrail: Yes  No \_\_\_\_\_ Type Five (5) Modified

**Proposed:**

Width: Pavement 24' Graded Shoulder 4' Treated Shoulder None  
Bridge: Face to Face of Rails 32' (or) Toe to Toe of Parapets \_\_\_\_\_  
Median: Yes \_\_\_ No  Type \_\_\_\_\_  
Curbs: Yes \_\_\_ No  Type \_\_\_\_\_  
Curb Ramps: Yes \_\_\_\_\_ No   
Sidewalks: Yes \_\_\_ No  Comment \_\_\_\_\_  
Guardrail: Yes  No \_\_\_\_\_ Type Five (5) Modified

**15. SIGNAGE:**

Phase A: N/A  
Phase B: N/A

**16. SIGNALS:**

**Existing Signals:**

To be Modified: None To be Replaced: None

**Proposed (New) Signals:**

Locations: N/A  
Phase A to recommend locations: N/A  
Signal Warrants: N/A  
Phase A: N/A  
Phase B: N/A

Remarks: None.

**17. STRIPING:**

Phase A: N/A

Phase B: N/A

Type To Be Performed by County.

**18. DELINEATION:**

Delineators: None

RPMs: None

**19. DRAINAGE:**

Drainage Criteria: State \_\_\_\_\_ County \_\_\_\_\_ Public Works   
Other \_\_\_\_\_

Phase A Preliminary Plan: Hydraulic Study – See Exhibit Two

Existing: Surface \_\_\_\_\_ Closed \_\_\_\_\_

Proposed: Surface \_\_\_\_\_ Closed \_\_\_\_\_

Special Flood Hazard Area (SFHA): Yes

Storm Water Pollution Prevention Plan: No

Flood Plain Study Required: No

Channel Change Study Required: No

Remarks: Submittal & Approval of Public Works No Rise and Flood Hazard Permit. Prepare documents for 404 NWP – Army Corp of Engineers (To be submitted by County.)

**20. BRIDGE CROSSINGS:**

Number of Bridges: One

Cross Roads: None

Streams: Creek

Supplemental Site Plan for Streams: No

Culverts: No

Alternates Required: No

Railroads: None

Railroad Location Plan: No

Railroad Site Plan: No

Pedestrian: No

Mass Transit: No

Other: \_\_\_\_\_

Remarks: \_\_\_\_\_

**21. MISCELLANEOUS DESIGN CONSIDERATIONS:**

Sidewalks: N/A

Bikeways: N/A

Railroads: N/A

Mass Transit: N/A

Service Roads: N/A

Remarks: Consultant to prepare Earthwork Form for HCSW submittal

**22. RETAINING WALLS:**

Number of Retaining Walls: \_\_\_\_\_

Type(s) of Retaining Walls: Wingwalls

Phase A: N/A Wall Justification: \_\_\_\_\_

Phase B:

Remarks: Wingwalls may need to be extended on uphill side to hold embankment and hillside. See Exhibit Two.

**23. MAINTENANCE OF TRAFFIC:**

Maintenance of Pedestrian Traffic: No

Maintenance of Railroad Traffic: No

Maintenance of Vehicular Traffic: No

Temporary Road(s): No Phase A to Recommend: N/A

Temporary Road Plans & Notes by: County \_\_\_\_\_ Consultant \_\_\_\_\_

Detour Plan Prepared by: County X Consultant \_\_\_\_\_

Remarks: At this time, it is presumed that construction is to be completed with full closure. Maintenance of Traffic Plan Sheets (for inclusion at last page of plans) will be prepared by the Hamilton County Engineer's Office. Expected detour route Springdale Road to Sheits Road.

All items of work relating to the maintenance of traffic are to be submitted with the final plan review submission.

**24. UTILITIES:**

Water	( XX )	Sanitary	( XX )
Electric	( XX )	Gas	( XX )
Telephone	( XX )	Cable TV	( XX )
Public Works	( XX )		

Others: \_\_\_\_\_

**ALL** Utility Companies shall be contacted and **ALL** existing utilities, including house connections, shall be indicated on the plans as required by Section 153.64 O.R.C. (H.B.538). **ALL** utilities shall be furnished with a copy of the preliminary plans for preliminary coordination. A copy of the transmittal letter to each utility company and the response from the utility company shall be submitted to the County Engineer.

**25. STRUCTURE REQUIREMENTS**

**Existing Structure Information:**

Structure Type: Steel Culvert Filled

Sufficiency Rating: -- General Appraisal: 4A Bridge No.: B-0130

Structure File No.: 3130827 Crossing: Creek

Bridge Length: 19'

Number of Spans: One (1)

Eligible for the National Historical Register: Yes \_\_\_\_\_ No X \_\_\_\_\_

Comments: \_\_\_\_\_

**Proposed Structure:**

New Structure: Yes X \_\_\_\_\_ No \_\_\_\_\_

Rehabilitate Existing Bridge By: Possible re-use of Abutments

Structure Width: 32' Structure Type: Precast Concrete Three-Sided Box or Arch

Number of Spans: One

Beam Type: Concrete Box \_\_\_\_\_ Steel \_\_\_\_\_

Other Design Considerations/Explanation of Change in Line/Grade: \_\_\_\_\_

Guardrail Type: ODOT Type Five (5) Modified

**26. DESIGN EXCEPTION(S) REQUIRED**

Yes \_\_\_\_\_ No X Explain \_\_\_\_\_

**27. ESTIMATED QUANTITIES:**

Phase A: No

Phase B: Yes

Quantity Splits: No

Remarks: \_\_\_\_\_

**28. CONSTRUCTION COST ESTIMATE:**

Submit with Letter of Interest: No

Phase A: N/A

Phase B: N/A

**29. EXTENT OF FIELD SURVEYS:**

Survey Information by: Field Method X Aerial \_\_\_\_\_

- Main Road Alignment ( XX )
- Main Road Profile ( XX )
- Side Road Alignment ( )
- Side Road Profile ( )
- Reference Points & Bench Marks ( XX )
- Aerial Control ( )
- Alignment & Profile of Driveways ( )
- Cross Sections ( XX )
- Pavement Salvage Sections ( )
- Channel Cross Sections ( XX )
- Profile of Channels ( XX )
- Drainage Survey ( )
- Topo Identification ( XX )
- Utilities ( XX )
- Property Lines ( XX )
- Existing Right-of-way lines ( XX )

Remarks: County will provide centerline control of Right-of-Way and Benchmark to consultant.

**30. RIGHT-OF-WAY AND EASEMENTS:**

- Property Map ( )
- Centerline Plat ( )
- R/W Summary ( XX )

Final Right-of-way Plans ( XX )  
R/W & Easement Descriptions ( XX )  
Registered Land Plats & Descriptions ( )  
Establishment Plat\* ( )  
Establishment Descriptions\* ( )  
Right-of-way Staking ( )  
Remarks: "\*If Authorized."

Approximate Number of Parcels Four (4+/-)

**31. TRAFFIC DATA:**

State \_\_\_\_\_ County X Consultant \_\_\_\_\_

ADT: 1084 Design ADT: 1409 (20 Year)

DHV: N/A Certified Traffic: N/A

T24: 3% Truck

Design Speed: 35 mph Legal Speed: 35 mph

Remarks: \_\_\_\_\_

**32. GEOTECHNICAL/SUBSURFACE INVESTIGATION:**

State \_\_\_\_\_ County X Consultant \_\_\_\_\_

Other \_\_\_\_\_

Remarks: A Geotechnical Study will be provided by the County. See Exhibit Two.

**33. PUBLIC HEARINGS/INFORMATIONAL MEETINGS:**

None required.

Consultant's Responsibility: None.

**34.** The Engineering Agreement will be as per **Attachment "B"**.

**35.** The project will include all office and field work necessary to a) prepare final construction plans, b) write general and special notes, c) calculate quantities, and d) determine existing right-of-way and property lines.

Unless otherwise noted in this Scope, proposed right-of-way plans and descriptions and the establishment plat and descriptions shall be handled on an as necessary basis by amendment to the original agreement.

County will prepare bid document, prints, etc. for bidding process.

36. At the County's discretion, plan development will be subject to the following independent reviews:

- A. Line Grade and Typical Sections - Phase A
- B. Preliminary Drainage - Phase A
- C. Driveway Modifications - Phase B
- D. Final Plan and Preliminary Right-of-way - Phase B
- E. Final Right-of-way and Establishment

In addition to these reviews, the County may also require **MONTHLY** progress meetings.

37. The **Phase A** submission is to develop line, grade and typical section(s) and have said items approved by the Engineer **PRIOR** to the preparation of the final, detailed construction plans. No written report is required. The **Phase A** submission **MUST** include preliminary drainage plans, preliminary drainage calculations and information as to the location of all existing underground utilities.

The **Phase B** submission is to include final detail plans, final drainage plans, final drainage calculations, preliminary right-of-way plans, driveway modifications, etc. If authorized by the Engineer, the final right-of-way plans are to be prepared after the Phase B review is complete.

38. The house numbers shall be indicated on the plan sheets.

39. The necessary fieldwork shall be completed and the plans prepared so as to have the stationing for the project increase from South to North or from West to East, as may be applicable, unless otherwise approved by the Engineer.

40. The baseline and/or centerline shall be adequately marked in the field. The points set in the field shall be shown on the plans. At a minimum, the points to be marked in the field shall be located at one hundred (100) foot intervals. The PC, PI and PT of each curve shall also be marked. In addition, the PC, PI and PT of each curve **AND** the baseline/centerline at intervals **NOT** to exceed one thousand (1000) feet shall be **WITNESSED**. As required, the points to be witnessed in the field shall be witnessed from a **MINIMUM** of three (3) points, located outside of the work limits.

Where a baseline has been established and utilized, instead of the centerline, the plans **MUST** indicate the relationship between the baseline marked in the field and the centerline.

The construction plans and the right-of-way plans shall also indicate all existing or set monumentation (centerline, right-of-way, subdivision, and/or civil boundaries) that is found in the field to be within the project limits. This monumentation shall be located, identified, shown and labeled on the plans.

Mr. Bob Heidkamp (946-4265) should be contacted to obtain the information regarding the nearest established benchmark.

41. The journalized speed limit (design speed) shown is to be used as a guideline in determining the criteria to be followed in the design of the profile/alignment of the road. Exceptions to the design criteria may be made as determined by the Engineer during the Phase A or Final Plan review stages.

42. As may be applicable, when the Scope of Service indicates that the project is to include profile modifications, the creation of new intersections or as may otherwise be required by the Engineer, various elements of the proposed design such as the stopping sight distances and intersection sight distances for each leg of the intersection shall be calculated, verified or checked.

These calculations, distances, etc, **MUST** be submitted as part of the Phase A submittal. Based upon the Engineer's review of these distances, the proposed alignment and/or profile of the road(s) as shown in the Phase A submittals may be modified in order to achieve adequate distances.

Unless otherwise approved by the Engineer, in making the above calculations, an **object height of six (6) inches MUST** be used.

43. As required by the design of the proposed improvements, the existing drainage systems are to be left in place, modified, replaced and/or new systems are to be installed.

A **FIELD VISUAL INSPECTION** of **ALL** of the existing systems/conduits shall be completed so as to determine the type and size of the conduit(s) and to evaluate the condition of the conduit(s). This shall require that, at a minimum, a visual inspection of the existing conduits at the inlet end, at the outlet end and at each catch basin, manhole, or other junction point.

After the Phase A submittal, the Engineer will also field inspect the existing systems/conduits and will determine which conduits are to remain in place or are to be replaced under the project. The Engineer will supply this information to the Consultant as quickly as possible. The Phase B plans shall be prepared so as to be in accordance with this information.

44. When the Scope of Service indicates that the improvements could impact a Special Flood Hazard Area (SFHA), the design of all improvements **MUST** meet the requirements of the County's "Flood Damage Prevention Regulations for Unincorporated Hamilton County, Ohio".

SFHA areas are under the jurisdiction of Hamilton County Public Works. The plans and supporting documentation **MUST** be submitted to Public Works for review and approval.

The project will include the preparation of **ALL** necessary supporting documentation, calculations, plans, etc. Unless otherwise directed by the Engineer, the project will include obtaining of any and all required permits either from Hamilton County Public Works, the Corps of Engineers, OEPA, etc., including, but not limited to, the requirement to calculate and certify a "No-rise" determination for any proposed improvement(s) in the floodway.

45. The capacity of any existing storm sewer system that is to remain in place shall be determined/calculated and the Consultant shall determine if an increase in capacity, i.e. a larger conduit, is required.

When the project includes the construction/installation of new storm drainage facilities, the replacement/modification of existing storm drainage facilities or the construction of open channels/ditches and that the design of these facilities is to be in conformance with the Design Criteria of the County and/or Public Works, the design of the storm drainage facilities shall be in conformance with the latest editions of "The Ohio Department of Transportation, Location and Design Manual, Volume Two, Drainage Design" and/or "The Rules and Regulations of the Pubic Works Department Governing the Design, Construction, Operation Maintenance & Use in the County of Hamilton Storm Drainage System", except as may be modified below.

### **Closed Storm Sewers:**

The design of a closed storm sewer shall be based upon a ten (10) year storm.

**OUTSIDE** of Consoer/Townsend (CT) areas or Special Flood Hazard Areas (SFHA), the hydraulic gradient for a fifty (50) year storm shall be calculated and plotted. **WITHIN** CT or SFHA areas, the hydraulic gradient for a one hundred (100) year storm shall be calculated and plotted.

Unless otherwise directed and/or approved by the Engineer, the closed storm system shall be designed so as to contain the hydraulic gradient for the pertinent storm within the facility. The hydraulic gradient **MAY NOT BE HIGHER** than six (6) inches below the elevation of the catch basin grate or the elevation of a manhole rim.

### **Cross Culverts (opening width less than ten feet):**

The design of the facility shall be based upon a twenty-five (25) year storm.

Unless otherwise directed and/or approved by the Engineer, the cross culvert shall be designed so that the headwater for the design storm does **NOT** exceed the most restrictive elevation of the following:

- a) two (2) feet below the near, low edge of pavement;
- b) two (2) feet above the inlet crown of the culvert;
- c) above a tailwater elevation that would submerge the inlet crown.

The hydraulic gradient for a one hundred (100) year storm is to be calculated and plotted.

Unless otherwise directed and/or approved by the Engineer, the cross culvert shall be designed so that the headwater for the one hundred (100) year storm does **NOT** exceed the most restrictive elevation of the following:

- a) one (1) foot below the lowest ground elevation adjacent to an occupied building;
- b) a headwater depth twice the diameter or the rise of the cross culvert;
- c) **NO** overtopping of the pavement;
- d) **NO** significant increase in headwater elevation.

### **Bridges (opening width ten foot and greater):**

The design of the bridge shall be based upon a fifty (50) year storm. Or greater depending on FEMA Studies

The hydraulic gradient for a one hundred (100) year storm shall be calculated and plotted.

At a minimum, the existing width of the opening of the bridge **MUST** be maintained; **NO DECREASE** in the waterway opening of the bridge will be permitted unless approved by the Engineer.

In areas where special conditions may be applicable, the Scope of Service and/or the County Engineer may specify that criteria different from the above be followed in the design of the facility.

Prior to or in conjunction with the Phase B plan submittal, all drainage calculations, drainage maps, gradient profiles, etc. **MUST** be submitted to the Engineer.

46. During the initial phases of the preparation of the Phase A plans, the Consultant **MUST** contact **ALL** agencies that may have jurisdiction over storm water and storm water facilities, e.g. Metropolitan Sewer District (MSD), Hamilton County Public Works, any state/federal agencies, to determine if any special considerations/issues/restrictions, e.g. detention or flood mitigation, will have to be addressed in the design of the drainage improvements. The Consultant **MUST** report these special design considerations/issues/restrictions to the Engineer as a part of the Phase A submittal.
47. For **TOWNSHIP** projects, the design of storm sewer and channel improvements **WILL** also be subject to the review and/or approval of Hamilton County Public Works. **PRIOR** to the submittal of the Phase A plans, a preliminary drainage/storm sewer improvement plan **MUST** be prepared and submitted to Public Works. This plan **MUST** indicate the magnitude of the proposed improvements so that the extent of Public Works involvement can be determined.
48. All underground facilities shall be located. These underground facilities are to include, but to not be limited to, storage tanks, septic tanks/systems, leach beds, utilities, including service lines (in accordance with Section 153.64 ORC), drain pipes and exposed field tiles shall be located and identified as to the size and type.

Special attention shall be given to any commercial/industrial property having underground storage tanks in current use or which may have previously utilized underground storage tanks, e.g. service stations, print shops, dry cleaners, etc., to identify any potential environmental problems.

49. Where the Scope of Service includes cross-sections, the sections are to be taken every twenty-five (25) feet. If the Aerial Method is utilized, cross sections are to be field checked every three hundred (300) feet. Critical driveway profiles to be plotted at a scale of 1" = 2' (Horizontal and Vertical). The **location** and **approximate depth** of **underground utilities**, i.e. storm sewers, sanitary sewers, gas lines and water lines, shall also be shown on the **Cross-sections**.
50. Where the Scope of Service includes pavement salvage sections, the pavement is to be salvaged to the greatest extent possible. Pavement salvage sections are to be plotted at a scale of 1" = 5' (Horizontal) and 1" = 1' (Vertical). Pavement salvage sections may be combined on the normal cross-section sheets or shown separately.
51. Right-of-way and Establishment plans and descriptions:

The project will include the researching of all right-of-way information and ownership information from all available sources including but not limited to County road records, Commissioners' journals and records of other County offices to the extent necessary to provide an accurate basis for the right-of-way plans.

Property ownership data for the right-of-way plan development shall be based on a search of County records conducted no more that six (6) months prior to preliminary right-of-way plan submission.

Within fourteen (14) days prior to the submission of the final right-of-way tracings, an in-depth field review of the plan shall be conducted to assure that no topographic features, structures or utilities have been changed or omitted.

In addition, no more than fourteen (14) days prior to the submission of the final right-of-way tracings, the property ownership data shall be checked and verified and copies of the deeds for any new ownership transactions that impact the project shall be submitted to the County Engineer. The actual date that the ownership data was checked and verified shall be contained in the submittal letter.

Descriptions shall be prepared on 8-1/2" X 11" letter size sheets, using letter quality printing on the final submissions. Descriptions shall be written so as to conform to the format designated by the County, samples to be furnished by the Engineer upon request. Descriptions shall be written so as to read in a clockwise direction, unless otherwise approved by the Engineer. Parcel designations for parcels to be acquired shall conform to the Engineer's requirements.

The right-of-way plans shall indicate/contain the following information for each parcel: Owner's name, Property Address, Auditor's information, Deed reference, Project Parcel number and Area of tract to be acquired. In cases where an Owner's Summary Sheet is to be prepared, the Auditor's information, Deed reference and Area of tract to be acquired may be shown on the Summary Sheet instead of the plans.

The name(s) of the owner(s) shall be shown on the above items **EXACTLY** as indicated on the pertinent deeds. Unless otherwise approved by the Engineer, each parcel, as indicated by the Auditor's plats or Auditor's tax information, shall be treated as a separate, individual parcel in the preparation of the right-of-way/easement documents and plans.

In cases where the deed distance on a property line is different than the calculated project distance on that line, the right-of-way plans and the descriptions shall indicate/contain both the deed distance and the calculated distance. The area(s) calculated for the proposed right-of-way take or easement shall be based upon the deed distance.

In cases where the affected property is a Registered Land parcel, the right-of-way plans and the descriptions shall indicate/contain both the Registered Land bearings and the project bearings. If the parcel is affected by a permanent right-of-way acquisition, including clearing of PRO, a plat and description(s) of the parcel(s) **MUST** be prepared in accordance with the Hamilton County Registered Land rules, regulations and requirements.

Unless **otherwise approved** by the Engineer, the construction plans and the right-of-way plans **MUST** be separate plans. Unless **otherwise approved** by the Engineer, the right-of-way plans shall consist of screened mylars of the construction plans on which the necessary right-of-way and/or easement information has been indicated.

A copy of **ALL** deeds, surveys, record plats and/or other documents that were used to determine the existing right-of-way and/or property lines and were used as the basis for the preparation of the project descriptions **MUST** be furnished to the Engineer.

52. If the proposed project involves **ANY** work within the right-of-way for a **STATE** and/or a **FEDERAL** Highway, the design plans **MUST** be submitted to ODOT for review and approval prior to submitting the final plans to the County. A copy of ODOT's approval letter **MUST** be submitted with the final plan submission.
53. Along with the **FINAL** submission of the project plans and documents, a copy of **ALL** field notes; a listing of point coordinates and point descriptions for **ALL** points on the existing **AND** proposed centerline, baseline and right-of-way line; a closure for **EACH** easement or right-of-way take; and a copy of **ALL** quantity calculations **MUST** be furnished to the Engineer.
54. Quantity calculations for the following items of work, **Excavation, Embankment, all pavement items and all driveway items**, **MUST** be prepared and submitted to the Engineer.

The calculations may be submitted separately on normal sheets and do not have to be made an integral part of the plans. Preliminary quantity calculations shall be submitted with the Phase B plan submittal. The final

calculation sheets **MUST** be submitted with the final plan submittals.

55. All construction plans **MUST** be prepared by or under the direct supervision of a Professional Engineer who is registered in the State of Ohio. A Professional Engineer **MUST** stamp and sign the Construction Improvement plans.
56. All surveying and/or fieldwork **MUST** be done by or under the direct supervision of a Professional Surveyor who is registered in the State of Ohio. All right-of-way plans and descriptions, establishment plats and descriptions and registered land plats and descriptions **MUST** be prepared by or under the direct supervision of a Professional Surveyor who is registered in the State of Ohio. A Professional Surveyor who is registered in the State of Ohio **MUST** stamp and sign **ALL** Right-of-way plans and Registered Land plats.
57. All final plans and plats to be ink on mylar/linen or high quality mylar copies. Construction plans and right-of-way plans shall be separate plans. Plan sheets shall be 22" x 34" trimmed size. Computer-aided design and/or drafting systems (CAD) are acceptable.
58. If the plans are prepared with a computer-aided design and/or drafting system (CAD), a computer disk or disks containing all the project information **MUST** be furnished to the Engineer. The electronic files shall be in a format compatible with "Autocad".

A hard copy of all the project information, including the notes, quantities, descriptions, **MUST** be furnished to the Engineer. A computer disk or disks containing all the project information **MUST** also be furnished to the Engineer. Unless otherwise approved by the Engineer, the electronic files shall be in a format compatible with the Engineer's software, i.e. Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Adobe Acrobat.