

A light gray background illustration featuring a city skyline with several buildings of varying heights on the left and a winding road that curves from the left towards the right side of the page. A single evergreen tree is visible on the right side of the road.

**DESIGN CRITERIA  
MANUAL  
CHAPTER 8 PLANS & SPECS**

**MUNICIPALITY OF ANCHORAGE**

**PROJECT MANAGEMENT &  
ENGINEERING DEPARTMENT**

**D-R-A-F-T  
NOVEMBER 2025**

## Chapter 8 – Plans & Specs

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**ACRONYMS AND ABBREVIATIONS**

CAD .....	Computer Aided Drafting
DCM .....	Design Criteria Manual
K .....	Horizontal Distance per Percent Grade Change
M.A.S.S.....	Municipality of Anchorage Standard Specifications
MOA .....	Municipality of Anchorage
NCS .....	National CAD Standards
NGE .....	No Groundwater Encountered
PC.....	Point of Curve
PM&E .....	Project Management and Engineering
PRC .....	Point of Reverse Curvature
PSC .....	Professional Services Contract
PVC .....	Point of Vertical Curvature
PVI.....	Point of Vertical Intersection
PVT.....	Point of Vertical Tangency
PT .....	Point Tangency
SI .....	Street Intersection
RAD .....	Radar Detector

## SECTION 8.1 OBJECTIVE

### 8.1 A Objective

The objective of this Chapter is to establish standards for the preparation of plans and specifications for the improvements discussed in this Design Criteria Manual (DCM). Plans are developed using AutoDesk AutoCAD Civil 3D. Detailed standards for Civil 3D plan preparation are provided in Appendix 8A, and Civil 3D template files are available on the PM&E website. The information provided is the framework for plan and specification preparation for both in-house and consultant design projects.

Use this chapter in conjunction with PM&E's the Municipality of Anchorage Standard Specifications (M.A.S.S.). M.A.S.S. provides standard construction specifications and details. Consultants performing design work for the Municipality shall also design in accordance with their professional services contract (PSC).

In addition to the criteria presented in this manual, the Municipal Engineer may at his/her sole discretion impose additional standards and criteria when deemed appropriate to protect the safety and welfare of the public.

### 8.1 B Definitions

In the design process, several entities are involved. They include the Municipality, Project Management and Engineering Department (PM&E), Department of Parks and Recreation, the Municipal project manager, the project engineer, and the consultant. For clarification of the role of each, the following discussion is provided:

1. The owner of all Municipality design projects is the Municipality of Anchorage (MOA) or the managing authority.
2. The managing authority for street and drainage improvements is PM&E.
3. The managing authority for all completed pathway and park projects is the Department of Parks and Recreation, unless otherwise defined.
4. The Municipal Project Manager is the person established as contract administrator for the municipality and is the consultant's contact with the Municipality. The Municipal Project Manager has authority to transmit instructions, receive information and interpret and define the Municipality's policies and decisions with respect to materials, equipment elements and systems pertinent to the work covered by the PSC. The Municipal Project Manager is identified in the consultant's notice to proceed and should be contacted for verification of any information pertaining to the PSC, the information contained in this DCM, or the project in general.
5. The project engineer is the person identified by PM&E as the project designer responsible for the preparation of plans, specifications, and bid documents.
6. The consultant is the consulting firm (and its representatives) hired by the Municipality to function as the project engineer.

### 8.1 C Variances

Designers, whether Municipal or private, shall adhere to the criteria established in this DCM and other referenced documents, unless compliance with such will compromise their judgment as professional engineers with regard to safety, cost effectiveness, and/or practicality. In such cases, a written variance request of the appropriate standard may be requested from the Municipal Engineer. Written variance

requests shall be submitted through the Municipal Project Manager or Private Development Manager for a determination by the Municipal Engineer. Variance requests should contain supporting information, justification and suggested solutions.

END OF SECTION 8.1

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## SECTION 8.2 PLAN PREPARATION

### 8.2 A Objective

Construction documents for Municipal projects should be consistent in appearance and format. This section provides guidelines to assist the designer in achieving that consistency. In addition, Appendix 8A provides detailed criteria for the preparation of project plans using Autodesk Civil 3D and a series of Civil 3D template files are available on the PM&E website.

Prepare plans on 22 inches by 34 inches sheets. This size allows for half-scale plan sets that are 11 inches by 17 inches. Information should primarily be provided on the plans in black ink with the use of color ink limited to gaining attention for specific or unique elements of the plans. The following criteria apply to the preparation of all sheets.

1. Line weights and symbols shall conform with Municipal standards as shown in Appendix 8A of this DCM. The Municipal Project Manager shall approve departure from the standards. On sheets that include both existing and proposed conditions do not include existing features that will be demolished and present the existing conditions using a 50 percent screen, to result in a gray tone for existing conditions.
2. Standard information blocks are provided on all but the cover sheets. The project engineer shall complete all standard information blocks with the information in Table 8-1.

TABLE 8- 1 STANDARD INFORMATION BLOCK REQUIREMENTS	
Project name	Project number
Individual Park name and number (where applicable)	Sheet title
Sheet number (n of n)	Date
Scale	Grid Number
Project milestone	Engineer, architect, or landscape architect registration stamp
Consultant's name, address, and logo	Survey field book number
Benchmark (PM)	Basis of Datum and Basis of Bearings
Record Drawing Stamp	Revisions, as necessary

3. Arrange construction notes on the plan sheets so they do not conflict with the base and design information. Avoid long leader lines. The project engineer should make an effort to group items for each schedule in one area of the plan sheet.

Present notes in a direct and consistent manner throughout the contract documents. Identify existing features as “existing” when not identifiable by legend symbol. Notes that identify bid items on the plan sheets shall correspond exactly to the item description under M.A.S.S. “Basis of Payment” or in the special provisions. Notes shall identify methods and materials of construction, but not treatment, quality of materials, or standards of workmanship, which should be addressed in the specifications.

Plans including traffic signals, illumination, or thaw wire improvements shall clearly identify electrical hook-up responsibilities of the contractor, unless specifically addressed in the specifications.



4. Reproduce plans and drawings only on quality paper. Collate plan sets and staple along the left edge. Individually roll plan sets.

The Municipal Project Manager will determine the number of plan sets to be printed and submitted in each phase of project development.

5. Begin stationing at an appropriate interval before the beginning of project (such as one station) and increase northward and eastward, unless otherwise approved by the Municipal Project Manager. Do not duplicate project stationing. Further, Station 0+00 shall not be used.

## 8.2 B Cover Sheet

The cover sheet is the first sheet of the plan set of construction drawings. A sample title sheet is available in AutoCAD drawing file from PM&E. The cover sheet shall include the following information:

1. The MOA seal and name;
2. Project name;
3. Project number;
4. Location of proposed improvements on the vicinity map;
5. Signature and signature blocks for the Municipal Engineer or Director of Parks and Recreation as appropriate; and
6. The name, address, and/or logo of the consultant under “Prepared by:”

## 8.2 C Key Map, Legend, Abbreviations, General Notes, and Sheet Index

All plan sets shall include a key map, legend, abbreviations, general notes, and a sheet index on a sheet or series of sheets which should follow the cover sheet. A sample key map and legend sheet is available in the Civil 3D templates on the PM&E website. The key map and legend sheet shall include the following information:

1. A completed standard information block as discussed in Section 8.2 A.
2. A Municipal standard legend, vertical or horizontal, which defines all symbols used on the drawings, including non-standard symbols.
3. A key map showing the information from Table 8-2.

TABLE 8- 2 STANDARD KEY MAP REQUIREMENTS	
Project limits (100-scale)	Proposed edge of paving or curb and gutter line
North arrow, pointing to the top or the right side of the sheet	Schedule designation (where applicable)
Existing manholes, catch basins, and cleanouts	Existing pavement
Proposed storm drains, including manholes, catch basins, and cleanouts	

4. An index for all drawing sheets.
5. General notes, including a statement of compliance with M.A.S.S.

- a. A current list of required general notes is maintained on the PM&E Civil 3D Template located on the PM&E website.

## 8.2 D Demolition Sheets

Provide demolition sheets with direction on what facilities should be removed, what facilities should be protected, limits of clearing and grubbing, and other demolition related activities. Prepare the demolition sheet at a scale of 1 inch equals 20 feet (1" = 20'). Some projects may require less clarity and be acceptable at a smaller scale. In such cases, a scale of 1 inch equals 50 feet (1" = 50') may be used when approved by the Municipal Project Manager. The demolition sheets shall include the following information:

1. A legend indicating how protection, removal, and demolition limits and items are depicted.
2. A boundary indicating the approximate limits of disturbance.
3. The plan view elements listed in Table 8-3.

TABLE 8- 3 DEMOLITION SHEET REQUIREMENTS	
0% Screen	
Existing edge of pavement, curbs, medians, sidewalks, curb ramps, driveways, guardrail, signs and traffic controls	Nearest corners of existing buildings, structures, walkways, stairs, decks, foundations, and pads
Existing mailboxes, cluster mailboxes, and cluster mailbox pads	Existing streetlights, junction boxes, and load centers
Existing storm sewer pipes, manholes, catch basins, structures, cleanouts, culverts, ditches, and swales	Existing water utility pipes, valves, services, hydrants, and structures
Existing sanitary sewer pipes, manholes, structures, cleanouts, and services	Existing underground and overhead electric, telephone, fiber-optic, and natural gas utilities including poles, guy lines, manholes, boxes, posts, pads, junction boxes, transformers, load centers, hand holes, mains, services, vaults, and valves
Existing signalization poles, controller cabinets, vaults, and junction boxes	Other pertinent existing features (e.g., dumpster pads, fencing, street furniture, retaining walls, bollards, etc.)
Existing trees, shrubs, landscape beds and features, limits of vegetation & brush/tree line	Lots, blocks, tracts, and parcel designations
Existing easements and permits, including public use easements, temporary access permits, and access or entry permits	Section lines and corners
North arrow, pointing to the top or right of the sheet	Rights-of-way and street names
Graphic scale (2-inch bar scale)	Property lines
Clearing limits	Centerline stationing increasing from left to right
Horizontal location of survey monuments and benchmarks, including name (or number), elevations, etc.	Numbered or lettered leaders indicating locations where facilities will be removed, salvaged, or protected
Approximate limits of disturbance	

## 8.2 E Detail Sheets

Provide details and typical sections to clarify and define elements within the plans. Reference MASS standard Municipal details; do not repeat standard details in the drawing set except when including project specific modifications. Organize detail sheets to depict details and sections of similar construction on the same sheet. Clearly and prominently mark pay limits on all details.

Draw each detail or section to scale when possible. Note the scale for each detail, unless otherwise directed by the Municipal Project Manager. Provide reference numbers to allow cross-reference between plan sheets and detail sheets.

### 1. Roadway or Trail Typical Sections

Prepare typical sections to include the elements in Table 8-4.

<b>TABLE 8- 4 TYPICAL SECTIONS REQUIREMENTS</b>	
Label each typical section with the right-of-way name and provide stationing where typical section applies	Centerline of improvements (crown) with dimension from centerline of right-of-way if not centered within right-of-way
Dimensioned right-of-way limits and centerline of right-of-way	Streetlight poles with minimum offset dimensioned
Dimensioned vehicle travel lanes, shoulders, curb and gutters, buffers, sidewalks, side paths, and bike lanes	Surface slopes with grade arrows
Surface materials with thickness and MASS item designation	Insulation and/or geotextile
Pavement structure including thickness of material and MASS item designations for all materials	Cut and fill slopes with maximum slope labels
Permanent erosion and sediment controls	

## 8.2 F Street or Trail Plan and Profile Sheets

Provide street or trail plan and profile sheets for all street and trail projects that involve changes in grade such as grade brakes or vertical curves along the project alignment. Profile sheets are not required when the scope of the project is limited to spot improvements that don't affect grade or where the scope is limited to pavement improvements (mill and pave, pavement reclamation).

### 1. Plan View

Prepare the plan view at a scale of 1 inch equals 20 feet (1" = 20'). Some projects may require less clarity and be acceptable at a smaller scale. In such cases, a scale of 1 inch equals 50 feet (1" = 50') may be used when approved by the Municipal Project Manager. Utilize and reference standard details provided in M.A.S.S., unless directed by the Municipal Project Manager. When applicable, the plan view should contain the information shown in Tables 8-5 and 8-6.

**TABLE 8- 5 STREET OR TRAIL PLAN VIEW REQUIREMENTS**

<b>50% Screen</b>	
Existing edge of pavement, curbs, medians, sidewalks, curb ramps, driveways, guardrail, signs and traffic controls that remain after demolition	Nearest corners of existing buildings, structures, walkways, stairs, decks, foundations, and pads that remain after demolition
Existing mailboxes, cluster mailboxes, and cluster mailbox pads that remain after demolition	Existing streetlights, junction boxes, and load centers that remain after demolition
Existing storm sewer pipes, manholes, catch basins, structures, cleanouts, culverts, ditches, and swales that remain after demolition	Existing water utility pipes, valves, services, hydrants, and structures that remain after demolition
Existing sanitary sewer pipes, manholes, structures, cleanouts, and services that remain after demolition	Existing underground and overhead electric, telephone, fiber-optic, and natural gas utilities including poles, guy lines, manholes, boxes, posts, pads, junction boxes, transformers, load centers, hand holes, mains, services, vaults, and valves that remain after demolition
Existing signalization poles, controller cabinets, vaults, and junction boxes that remain after demolition	Other pertinent existing features that remain after demolition (e.g., dumpster pads, fencing, street furniture, retaining walls, bollards, etc.)
Existing trees, shrubs, landscape beds and features, limits of vegetation & brush/tree line that remain after demolition	Section lines and corners
Existing easements and permits, including public use easements, temporary access permits, and access or entry permits	

**TABLE 8- 6 STREET OR TRAIL PLAN VIEW REQUIREMENTS**

<b>0% Screen</b>	
North arrow, pointing to the top or right of the sheet	Lots, blocks, tracts, and parcel designations
Graphic scale (2-inch bar scale)	Property lines
Rights-of-way and street names	Basis of bearing and stationing
Proposed easements and permits, including public use easements, temporary access permits, and access or entry permits	Horizontal location of survey monuments and benchmarks, including name (or number), elevations, etc.
Horizontal location of test holes within project limits	Centerline stationing increasing from left to right. Align stationing on both plan and profile views
Proposed limits of asphalt, concrete, and gravel surfacing	Necessary construction notes
Proposed limits of vegetation	Cut or fill limits for proposed construction
Spot elevations and stationing and offsets for grade breaks and pavement end not shown in profile	Street intersection (S.I.) points with stationing of intersecting streets
P.C., P.T., and, where applicable, P.R.C. of curves, top back of curb elevations at curb returns, and any location varying from typical sections	Proposed traffic signal equipment including load centers, traffic controller, signal poles, signal heads, pedestrian heads, junction boxes, detection, pre-emption, etc.
Proposed storm sewer manholes, catch basins, and other structures	Proposed sanitary sewer manholes, cleanouts, and other structures
Proposed water valves, hydrants, and other structures	Locations affected by wetland, flood hazard, or other permits, where appropriate
Permanent erosion and sediment control measures required	Arrows to indicate surface drainage direction for intersecting streets
Proposed street light luminaire, junction boxes, and load centers	

## 2. Profile View

Prepare the profile view at a vertical scale of 1 inch equals 5 feet (1" = 5') for streets, alleys, and pathways or trails. Include the elements listed in Table 8-7.

<b>TABLE 8- 7 STREET OR TRAIL PROFILE VIEW REQUIREMENTS</b>	
<b>50% Screen</b>	
Existing ground profiles for the right-of-way centerline and the right and left property lines	Soils logs showing soils letter classifications and percent passing #200 sieve, unified frost classification, and water table level. "NGE" shall be noted where no groundwater is encountered
Vertical location of existing water, sanitary sewer, storm sewer, and other underground utilities. When vertical location is unknown, a caution note to this effect should be shown	Existing roadway insulation
<b>0% Screen</b>	
Proposed street or pathway profile showing vertical curves and appropriate curve data (P.V.I. station, P.V.I. elevation, K, and vertical curve length), grades and centerline elevations at grade breaks, vertical points of tangency (P.V.C., P.V.T.), and street intersection (S.I.) points with stationing and spot elevation of intersecting streets	Estimated depth of excavation
Proposed storm sewer manholes, catch basins, pipes, and culverts	Proposed roadway insulation
Proposed sanitary sewer manholes, cleanouts, mains, and services	Proposed water mains, services, and valves

## 8.2 G Storm Sewer Plan and Profile Sheets

Provide storm sewer plan and profile sheets for all projects that involve changes in grade such as grade brakes or vertical curves along the project alignment or where storm sewer improvements are proposed within corridors that contain other utilities.

### 1. Plan View

Prepare the plan view at a scale of 1 inch equals 20 feet (1" = 20'). Some projects may require less clarity and be acceptable at a smaller scale. In such cases, a scale of 1 inch equals 50 feet (1" = 50') may be used when approved by the Municipal Project Manager. Utilize and reference standard details provided in M.A.S.S., unless directed by the Municipal Project Manager. When applicable, the plan view should contain the information shown in Tables 8-8 and 8-9.

**TABLE 8- 8 STORM SEWER PLAN VIEW REQUIREMENTS**

<b>50% Screen</b>	
Existing edge of pavement, curbs, medians, sidewalks, curb ramps, driveways, guardrail, signs and traffic controls that remain after demolition	Nearest corners of existing buildings, structures, walkways, stairs, decks, foundations, and pads that remain after demolition
Existing mailboxes, cluster mailboxes, and cluster mailbox pads that remain after demolition	Existing streetlights, junction boxes, and load centers that remain after demolition
Existing storm sewer pipes, manholes, catch basins, structures, cleanouts, culverts, ditches, and swales that remain after demolition	Existing water utility pipes, valves, services, hydrants, and structures that remain after demolition
Existing sanitary sewer pipes, manholes, structures, cleanouts, and services that remain after demolition	Existing underground and overhead electric, telephone, fiber-optic, and natural gas utilities including poles, guy lines, manholes, boxes, posts, pads, junction boxes, transformers, load centers, hand holes, mains, services, vaults, and valves that remain after demolition
Existing signalization poles, controller cabinets, vaults, and junction boxes that remain after demolition	Other pertinent existing features that remain after demolition (e.g., dumpster pads, fencing, street furniture, retaining walls, bollards, etc.)
Existing trees, shrubs, landscape beds and features, limits of vegetation & brush/tree line that remain after demolition	Section lines and corners
Existing easements and permits, including public use easements, temporary access permits, and access or entry permits	

**TABLE 8-9 STORM SEWER PLAN VIEW REQUIREMENTS**

<b>0% Screen</b>	
North arrow, pointing to the top or right of the sheet	Lots, blocks, tracts, and parcel designations
Graphic scale (2-inch bar scale)	Property lines
Rights-of-way and street names	Basis of bearing and stationing
Proposed easements and permits, including public use easements, temporary access permits, and access or entry permits	Horizontal location of survey monuments and benchmarks, including name (or number), elevations, etc.
Horizontal location of test holes within project limits	Centerline stationing increasing from left to right. Align stationing on both plan and profile views
Proposed limits of asphalt, concrete, and gravel surfacing	Necessary construction notes
Proposed limits of vegetation	Arrows to indicate surface drainage direction
Locations affected by wetland, flood hazard, or other permits, where appropriate	Centerline stationing of proposed manholes, catch basins, and other storm sewer structures unless summarized separately in structure tables
Permanent erosion and sediment control measures required	Storm sewer pipe diameter, length, slope, material, and type unless summarized separately in pipe tables
When storm sewer structure and pipe tables are used, provide proposed structure and pipe identification labels	

## 2. Profile View

Prepare the profile view at a vertical scale of 1 inch equals 5 feet (1" = 5'). The profile view should contain the information shown in Table 8-10



**TABLE 8- 10 STORM SEWER PROFILE VIEW REQUIREMENTS**

<b>50% Screen</b>	
Existing ground profiles for the right-of-way centerline or centerline of storm sewer alignment	Soils logs showing soils letter classifications and percent passing #200 sieve, unified frost classification, and water table level. "NGE" shall be noted where no groundwater is encountered
Vertical location, size, and type of existing water, sewer, storm drain, and other underground utilities. When vertical location is unknown, a caution note to this effect should be shown	
<b>0% Screen</b>	
Stationing, invert, and top elevations of proposed storm drain manholes, catch basins, and culverts unless summarized separately in structure tables. If a specific cone rotation is required, this should be noted	Storm sewer pipe diameter, length, slope, material, and type unless summarized separately in pipe tables
Proposed underground utility crossings including existing utilities that will be relocated	Permanent erosion and sediment control measures required
When storm sewer structure and pipe tables are used, provide proposed structure and pipe identification labels	

### 3. Structure and Pipe Labels and Tables

Whenever possible, storm sewer structure and pipe information should be shown using structure and pipe labels that contain the information shown in Figure 8-1.

When storm sewer structure and pipe information is too complex for structure and pipe labels tables may be substituted to document storm sewer structure and pipe design information. Provide tables that contain the information shown in Tables 8-11 and 8-12.

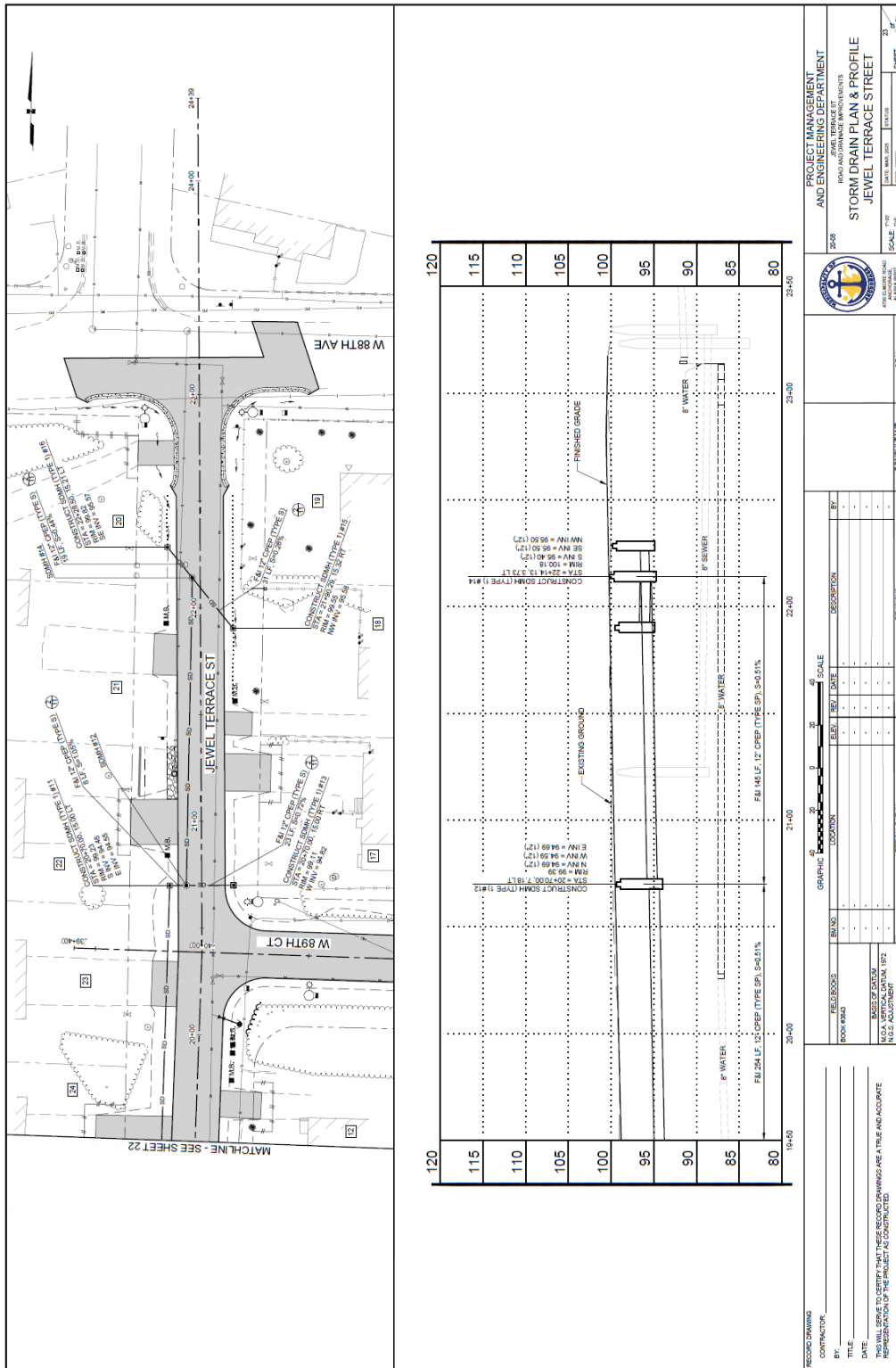
**TABLE 8- 11 EXAMPLE STORM SEWER STRUCTURES TABLE**

Structure ID	Structure Type	Station	Offset	Top of Structure Elevation	Comments

**TABLE 8- 12 EXAMPLE STORM SEWER PIPE TABLE**

Pipe ID	Pipe Size	Pipe Type	Pipe Length	From Structure	To Structure	Inlet Elevation	Outlet Elevation	Slope

FIGURE 8- 1 STORM SEWER STRUCTURE AND PIPE LABELS



## 8.2 H Detailed Grading Sheets

Provide detailed grading sheets where additional grading and layout information is needed for features such as ADA curb ramps and intersections. Prepare detailed grading sheets at a scale of 1 inch equals 10 feet (1" = 10'). Some projects may require less clarity and be acceptable at a smaller scale. In such cases, a scale of 1 inch equals 20 feet (1" = 20') may be used when approved by the Municipal Project Manager.

1. Detailed grading sheets shall include the features indicated in Table 8-13.

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**TABLE 8- 13 DETAILED GRADING SHEET REQUIREMENTS**

<b>50% Screen</b>	
Existing edge of pavement, curbs, medians, sidewalks, curb ramps, driveways, guardrail, signs and traffic controls that remain after demolition	Nearest corners of existing buildings, structures, walkways, stairs, decks, foundations, and pads that remain after demolition
Existing mailboxes, cluster mailboxes, and cluster mailbox pads that remain after demolition	Existing streetlights, junction boxes, and load centers that remain after demolition
Existing storm sewer pipes, manholes, catch basins, structures, cleanouts, culverts, ditches, and swales that remain after demolition	Existing water utility pipes, valves, services, hydrants, and structures that remain after demolition
Existing sanitary sewer pipes, manholes, structures, cleanouts, and services that remain after demolition	Existing underground and overhead electric, telephone, fiber-optic, and natural gas utilities including poles, guy lines, manholes, boxes, posts, pads, junction boxes, transformers, load centers, hand holes, mains, services, vaults, and valves that remain after demolition
Existing signalization poles, controller cabinets, vaults, and junction boxes that remain after demolition	Other pertinent existing features that remain after demolition (e.g., dumpster pads, fencing, street furniture, retaining walls, bollards, etc.)
Existing trees, shrubs, landscape beds and features, limits of vegetation & brush/tree line that remain after demolition	Section lines and corners
Existing easements and permits, including public use easements, temporary access permits, and access or entry permits	
<b>0% Screen</b>	
North arrow, pointing to the top or right of the sheet	Lots, blocks, tracts, and parcel designations
Graphic scale (2-inch bar scale)	Property lines
Rights-of-way and street names	Basis of bearing and stationing
Proposed easements and permits, including public use easements, temporary access permits, and access or entry permits	Horizontal location of survey monuments and benchmarks, including name (or number), elevations, etc.
Horizontal location of test holes within project limits	Centerline stationing increasing from left to right. Align stationing on both plan and profile views
Proposed limits of asphalt, concrete, and gravel surfacing	Necessary construction notes
Proposed limits of vegetation	Cut or fill limits for proposed construction
P.C., P.T., and, where applicable, P.R.C. of curves, top back of curb elevations at curb returns, and any location varying from typical sections	Street intersection (S.I.) points with stationing of intersecting streets
Permanent erosion and sediment control measures required	Arrow to indicate surface drainage direction for intersecting streets
Locations affected by wetland, flood hazard, or other permits, where appropriate	

2. Provide grading point and curb radii tables that contain the information shown in Tables 8-14 and 8-15.

TABLE 8- 14 EXAMPLE GRADING POINT TABLE					
Point Number	Station	Offset	Elevation	Curb Type	Notes

TABLE 8- 15 EXAMPLE CURB RADIUS TABLE				
Radius Point	Station	Offset	Radius	Description

### 8.2 I Signing and Striping Sheets

These sheets provide plan views of the project detailing project signing and striping. Prepare signing and striping plan sheets at a scale of 1 inch equals 20 feet (1" = 20').

1. The signing and striping plan sheets should include the information specified in Tables 8-16 and 8-17.

**TABLE 8- 16 SIGNING AND STRIPING SHEET REQUIREMENTS**

<b>50% Screen</b>	
Existing edge of pavement, curbs, medians, sidewalks, curb ramps, driveways, guardrail, signs and traffic controls that remain after demolition	Nearest corners of existing buildings, structures, walkways, stairs, decks, foundations, and pads that remain after demolition
Existing mailboxes, cluster mailboxes, and cluster mailbox pads that remain after demolition	Existing streetlights, junction boxes, and load centers that remain after demolition
Existing storm sewer pipes, manholes, catch basins, structures, cleanouts, culverts, ditches, and swales that remain after demolition	Existing water utility pipes, valves, services, hydrants, and structures that remain after demolition
Existing sanitary sewer pipes, manholes, structures, cleanouts, and services that remain after demolition	Existing underground and overhead electric, telephone, fiber-optic, and natural gas utilities including poles, guy lines, manholes, boxes, posts, pads, junction boxes, transformers, load centers, hand holes, mains, services, vaults, and valves that remain after demolition
Existing signalization poles, controller cabinets, vaults, and junction boxes that remain after demolition	Other pertinent existing features that remain after demolition (e.g., dumpster pads, fencing, street furniture, retaining walls, bollards, etc.)
Existing trees, shrubs, landscape beds and features, limits of vegetation & brush/tree line that remain after demolition	Existing above ground electric, telephone, traffic signal equipment and natural gas utilities including poles, guy lines, mains, services, vaults, and valves.
Existing easements and permits, including public use easements, temporary access permits, and access or entry permits	Section lines and corners

**TABLE 8- 17 SIGNING AND STRIPING SHEET REQUIREMENTS**

<b>0% Screen</b>	
North arrow, pointing to the top or right of the sheet	Lots, blocks, tracts, and parcel designations
Graphic scale (2-inch bar scale)	Property lines
Rights-of-way and street names	Basis of bearing and stationing
Proposed easements and permits, including public use easements, temporary access permits, and access or entry permits	Horizontal location of survey monuments and benchmarks, including name (or number), elevations, etc.
Horizontal location of test holes within project limits	Centerline stationing increasing from left to right. Align stationing on both plan and profile views
Proposed limits of asphalt, concrete, and gravel surfacing	Necessary construction notes
Proposed limits of vegetation	Proposed striping with position dimensioned and labeled with width and color
Proposed sign symbols with post no, stationing, sign image oriented in intended direction, and sign designation	All appropriate signing and striping notes including depth of inlaid markings
Proposed above ground electric, telephone, traffic and natural gas utilities including poles, guy lines, mains, services, vaults, and valves	

2. Provide standard sign tables that contain the information shown in Tables 8-18.

**TABLE 8- 18 EXAMPLE STANDARD SIGN**

Sheet No.	Post No.	Station	Offset	Sign Designation	Legend	Width (inches)	Height (inches)	Area (SF)	Sign Faces	Sign Post	Remarks

## 8.2 J Traffic Signal Sheets

The Traffic Department Engineering Division has five types of base sheets specifically for MOA projects. They include a traffic signal legend & notes sheet, plan sheet, wiring diagram, a hardware schedule sheet, and a profile detail sheet. Guidelines for preparing traffic signal sheets are described below:

1. A legend sheet specifically for traffic signal improvements shall have a symbol legend, specific to traffic signals and equipment, similar to that shown in DCM Chapter 6. In addition, the sheet shall include an abbreviations table, and signal system notes.
2. All other sheets shall have the intersection oriented with north to the top. However, if significantly better space utilization results, the intersection may be oriented with north to the right of the sheet. Designate North with an arrow in either case.
3. Prepare the traffic signal plans at a scale of 1 inch equals 20 feet (1" = 20'). Generally, it is not necessary to size plan sheets to show loop detectors at the scaled distance from the intersection. If geometrics or other conditions dictate that the loops be located to scale, develop an auxiliary map or

detail at a scale of 1 inch equals 50 feet (1" = 50'). Signal plans for the Central Business District (CBD) may be drawn at a scale of 1 inch equals 10 feet (1" = 10'), as there are more conflicting utilities in a limited space and detector loops are not used.

4. Information provided on the traffic signal plan drawings shall include existing conditions. Present the existing conditions using a 50 percent screen, to result in a gray tone for existing conditions. The plan sheet shall include, but not be limited to, the information in Table 8-19.

<b>TABLE 8- 19 TRAFFIC SIGNAL PLANS</b>	
<b>50% Screen</b>	
Existing edge of pavement, curbs, medians, sidewalks, curb ramps, driveways, guardrail, signs and traffic controls that remain after demolition	Nearest corners of existing buildings, structures, walkways, stairs, decks, foundations, and pads that remain after demolition
Existing mailboxes, cluster mailboxes, and cluster mailbox pads that remain after demolition	Existing streetlights, junction boxes, and load centers that remain after demolition
Existing storm sewer pipes, manholes, catch basins, structures, cleanouts, culverts, ditches, and swales that remain after demolition	Existing water utility pipes, valves, services, hydrants, and structures that remain after demolition
Existing sanitary sewer pipes, manholes, structures, cleanouts, and services that remain after demolition	Existing underground and overhead electric, telephone, fiber-optic, and natural gas utilities including poles, guy lines, manholes, boxes, posts, pads, junction boxes, transformers, load centers, hand holes, mains, services, vaults, and valves that remain after demolition
Existing signalization poles, controller cabinets, vaults, and junction boxes that remain after demolition	Other pertinent existing features that remain after demolition (e.g., dumpster pads, fencing, street furniture, retaining walls, bollards, etc.)
Existing trees, shrubs, landscape beds and features, limits of vegetation & brush/tree line that remain after demolition	Existing easements and permits, including public use easements, temporary access permits, and access or entry permits
Existing traffic signal equipment and underground features including load centers, traffic controller, signal poles, signal heads, pedestrian heads, junction boxes, conduit runs, detection, pre-emption, etc.	Section lines and corners
<b>0% Screen</b>	
North arrow, pointing to the top or right of the sheet	Lots, blocks, tracts, and parcel designations
Graphic scale (2-inch bar scale)	Property lines
Rights-of-way and street names	Basis of bearing and stationing
Proposed easements and permits, including public use easements, temporary access permits, and access or entry permits	Horizontal location of survey monuments and benchmarks, including name (or number), elevations, etc.
Horizontal location of test holes within project limits	Centerline stationing increasing from left to right. Align stationing on both plan and profile views
Proposed limits of asphalt, concrete, and gravel surfacing	Necessary construction notes
Proposed limits of vegetation	
Angle of intersecting streets	Driveways
Utility manholes, vaults, and valves	Signs and poles
Lane lines and channelization	



5. Proposed improvements shown on the traffic signal plan sheets shall include, but not be limited to, the information shown in Table 8-20.

<b>TABLE 8- 20 TRAFFIC SIGNAL PLANS IMPROVEMENTS</b>	
<b>0% Screen</b>	
Lane lines and channelization	Mast arms and poles
Vehicle signal head locations	Pedestrian signal head and button locations
Detector locations	Junction boxes
Conduit runs and intercepts (runs must be labeled)	Controller cabinet location
Load center location	Power source
Luminaires	Traffic signs
Pavement markings	Pre-emption detectors
Traffic cameras	

6. Show station reference and offset dimensions on the plans to clearly identify the location of each item listed (except junction boxes and conduits). The project engineer shall include information in accordance with DCM Chapter 6.
7. Group construction notes, which are applicable to the specific intersection, on the traffic signal plan sheet. Use a symbol and number to the specific location on the diagram to refer to the note.
8. Pole schedules and notes on each traffic signal plan sheet shall include a signal display diagram showing each unique signal head configuration for the intersection. The diagram shall show the indication color, size of section (8" or 12"), and identify the signal head numbers for each display. Pedestrian signal head diagrams shall also be provided.
9. Each traffic signal plan sheet shall include a phasing sequence diagram. If the signal is being upgraded, show both the existing and proposed phasing. The assigned phases shall adhere to the phase identification scheme outlined below.
- Show the sequence of operations with a phasing sequence diagram for each intersection on the plan sheet in accordance with DCM Chapter 6.
  - Designate phases on the traffic signal plan sheet in accordance with DCM Chapter 6.
10. Prepare the lane configuration for each intersection.
11. Identify detector loops on the plan sheets by the three-digit number as discussed in DCM Chapter 6.
12. Identify radar detectors as "RAD" followed by the through phase it detects and the type of detection. Currently 3 types of detection exist: advanced detectors (A), bike detectors (B) and stop bar detectors (leave blank).
13. Prepare a wiring diagram for each intersection. Diagram shall identify the number and size of conduits, type and quantity of conductors in each conduit, cable labeling, loop group, and any equipment or structure the wiring feeds to and from.
14. Prepare a profile view for each traffic signal pole. Each profile view shall have the distances to any equipment mounted on the signal pole and approach lane configurations, widths, and alignments to signal heads. Included luminaire mast arm distances and orientation.

## 15. Hardware schedules

Provide hardware schedules with the information summarized in Tables 8-21 through 8-26.

TABLE 8- 21 LOOP GROUPING SCHEDULE	
Cable Group	Loops

TABLE 8- 22 LOOP DETECTOR SCHEDULE				
Detector Number	Station	Offset	Cable Group	Remarks

TABLE 8- 23 RADAR DETECTION EQUIPMENT	
Quantity	Description

TABLE 8- 24 RADAR DETECTOR SCHEDULE				
Detector ID	Location	Phase Call	Facing Direction	Remarks

TABLE 8- 25 STRUCTURE SUMMARY						
Pole	Junction Box		Cabinet	Station	Offset	Remarks
	Number	Type				

TABLE 8- 26 OPTICOM DETECTOR SCHEDULE					
Detector Number	Location	Phase Call	Facing Direction	Model Number	Remarks

## 8.2 K Street Illumination Sheets

Provide street illumination sheets to indicate where street lighting improvements are being installed. Prepare the sheets at a scale of 1 inch equals 20 feet (1" = 20'). Some projects may require less clarity and be acceptable at a smaller scale. In such cases, a scale of 1 inch equals 50 feet (1" = 50') may be used when approved by the Municipal Project Manager.

1. The street illumination sheets should include the information specified in Table 8-27.

**TABLE 8- 27 ILLUMINATION PLANS**

<b>50% Screen</b>	
Existing edge of pavement, curbs, medians, sidewalks, curb ramps, driveways, guardrail, signs and traffic controls that remain after demolition	Nearest corners of existing buildings, structures, walkways, stairs, decks, foundations, and pads that remain after demolition
Existing mailboxes, cluster mailboxes, and cluster mailbox pads that remain after demolition	Existing streetlights, junction boxes, and load centers that remain after demolition
Existing storm sewer pipes, manholes, catch basins, structures, cleanouts, culverts, ditches, and swales that remain after demolition	Existing water utility pipes, valves, services, hydrants, and structures that remain after demolition
Existing sanitary sewer pipes, manholes, structures, cleanouts, and services that remain after demolition	Existing underground and overhead electric, telephone, fiber-optic, and natural gas utilities including poles, guy lines, manholes, boxes, posts, pads, junction boxes, transformers, load centers, hand holes, mains, services, vaults, and valves that remain after demolition
Existing signalization poles, controller cabinets, vaults, and junction boxes that remain after demolition	Other pertinent existing features that remain after demolition (e.g., dumpster pads, fencing, street furniture, retaining walls, bollards, etc.)
Existing trees, shrubs, landscape beds and features, limits of vegetation & brush/tree line that remain after demolition	Section lines and corners
Existing easements and permits, including public use easements, temporary access permits, and access or entry permits	
<b>0% Screen</b>	
North arrow, pointing to the top or right of the sheet	Lots, blocks, tracts, and parcel designations
Graphic scale (2-inch bar scale)	Property lines
Rights-of-way and street names	Basis of bearing and stationing
Proposed easements and permits, including public use easements, temporary access permits, and access or entry permits	Horizontal location of survey monuments and benchmarks, including name (or number), elevations, etc.
Horizontal location of test holes within project limits	Centerline stationing increasing from left to right. Align stationing on both plan and profile views
Proposed limits of asphalt, concrete, and gravel surfacing	Necessary construction notes
Notes detailing special construction techniques, as appropriate	Horizontal locations of proposed luminaires, junction boxes, load centers
Proposed conduit routing, conduit intercepts, conduit size, conductors and circuit number	

## 2. Illumination Schedules

Provide illumination schedules with the information summarized in Tables 8-28 through 8-32. Include all appropriate lighting level notes, including calculation method.

TABLE 8- 28 LIGHT LEVELS (1/2)					
Location	Roadway Classification	Pedestrian Conflict Area	Intersection Functional Classification	Light Loss Factor (LLF)	Luminaire Mounting Height

TABLE 8- 29 LIGHT LEVELS (2/2)					
Required Min. Average Illuminance (fc)	Average Design Illuminance (fc)	Required Maximum Uniformity Ratio	Design Uniformity Ratio	Required Max. Veiling Luminance Ratio	Design Veiling Luminance Ratio

TABLE 8- 30 LUMINAIRE DEFINITION SCHEDULE								
Type	Symbol	Make	Model	CCT	Voltage	Color	Options	Mount

TABLE 8- 31 ROADWAY & INTERSECTION LUMINAIRE SCHEDULE							
Pole	Station	Offset	Shaft Length	Mast Arm Length	Lumens	Distribution	Circuit

TABLE 8- 32 JUNCTION BOX SCHEDULE				
J-Box	Type	Circuit	Station	Offset

### 3. Load Center Schedule and Schematics

Provide details of the appropriate load center wiring diagram (one-line) and load center panel schedule as depicted in MASS details in Section 80 along with the load center arc flash calculations and voltage drop summary information depicted in Tables 8-33 and 8-34. Include all appropriate load center notes, including foundation and placard details.

TABLE 8- 33 VOLTAGE DROP SUMMARY					
Circuit	Conductor Size	Length	Voltage	Current	Percent Voltage Drop

TABLE 8- 34 ARC FLASH CALCULATION	
Incident Energy	
ARC-Flash Boundary	
ARC-Flash PPE Category	
Nominal System Voltage	
Limited Approach Boundary	
Restricted Approach Boundary	
Calculation Date	

## 8.2 L Landscaping Plan Sheets

Provide landscape plan sheets where detailed plantings are proposed. Prepare the sheets at a scale of 1 inch equals 20 feet (1" = 20'). Some projects may require less clarity and be acceptable at a smaller scale. In such cases, a scale of 1 inch equals 50 feet (1" = 50') may be used when approved by the Municipal Project Manager.

1. The landscape plan sheets should include the information specified in Table 8-35.

**TABLE 8- 35 LANDSCAPE PLAN REQUIREMENTS**

<b>50% Screen</b>	
Existing edge of pavement, curbs, medians, sidewalks, curb ramps, driveways, guardrail, signs and traffic controls that remain after demolition	Nearest corners of existing buildings, structures, walkways, stairs, decks, foundations, and pads that remain after demolition
Existing mailboxes, cluster mailboxes, and cluster mailbox pads that remain after demolition	Existing streetlights, junction boxes, and load centers that remain after demolition
Existing storm sewer pipes, manholes, catch basins, structures, cleanouts, culverts, ditches, and swales that remain after demolition	Existing water utility pipes, valves, services, hydrants, and structures that remain after demolition
Existing sanitary sewer pipes, manholes, structures, cleanouts, and services that remain after demolition	Existing underground and overhead electric, telephone, fiber-optic, and natural gas utilities including poles, guy lines, manholes, boxes, posts, pads, junction boxes, transformers, load centers, hand holes, mains, services, vaults, and valves that remain after demolition
Existing signalization poles, controller cabinets, vaults, and junction boxes that remain after demolition	Other pertinent existing features that remain after demolition (e.g., dumpster pads, fencing, street furniture, retaining walls, bollards, etc.)
Existing trees, shrubs, landscape beds and features, limits of vegetation & brush/tree line that remain after demolition	Existing vegetation identifying location, species, canopy diameter, and approximate size
Existing easements and permits, including public use easements, temporary access permits, and access or entry permits	Section lines and corners
<b>0% Screen</b>	
North arrow, pointing to the top or right of the sheet	Lots, blocks, tracts, and parcel designations
Graphic scale (2-inch bar scale)	Property lines
Rights-of-way and street names	Basis of bearing and stationing
Proposed easements and permits, including public use easements, temporary access permits, and access or entry permits	Horizontal location of survey monuments and benchmarks, including name (or number), elevations, etc.
Horizontal location of test holes within project limits	Centerline stationing increasing from left to right. Align stationing on both plan and profile views
Proposed limits of asphalt, concrete, and gravel surfacing	Necessary construction notes
Proposed limits of vegetation	Schematic layout of plants, planting beds, and lawn area
Schematic layout of pertinent streets, bodies of water, and park elements	Plant schedule to address botanical name (including genus, species and variety), common name, quantity, plant size (caliper, height, or container size), root requirement, symbol (if applicable), spacing (if applicable), and special requirements
Planting notes identifying typical planting-related requirements and job- or site-specific conditions	Planting details
Notes and/or details indicating the removal of temporary watering, support, and protection systems	

## 8.2 M Other Plan Sheets

Site plan sheets are used primarily for projects involving parks, landscaping, grading, and other land development. A prototypical plan sheet is available from PM&E. Prepare the site plan at a scale of 1 inch equals 20 feet (1" = 20'), unless otherwise approved by the Municipal Project Manager. Information required for specific types of site plans is discussed below.

### 1. Park Site Plans

Park site plans should include the information specified in Table 8-36.

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**TABLE 8- 36 PARK SITE PLANS**

<b>50% Screen</b>	
Existing edge of pavement, curbs, medians, sidewalks, curb ramps, driveways, guardrail, signs and traffic controls that remain after demolition	Nearest corners of existing buildings, structures, walkways, stairs, decks, foundations, and pads that remain after demolition
Existing mailboxes, cluster mailboxes, and cluster mailbox pads that remain after demolition	Existing streetlights, junction boxes, and load centers that remain after demolition
Existing storm sewer pipes, manholes, catch basins, structures, cleanouts, culverts, ditches, and swales that remain after demolition	Existing water utility pipes, valves, services, hydrants, and structures that remain after demolition
Existing sanitary sewer pipes, manholes, structures, cleanouts, and services that remain after demolition	Existing underground and overhead electric, telephone, fiber-optic, and natural gas utilities including poles, guy lines, manholes, boxes, posts, pads, junction boxes, transformers, load centers, hand holes, mains, services, vaults, and valves that remain after demolition
Existing signalization poles, controller cabinets, vaults, and junction boxes that remain after demolition	Other pertinent existing features that remain after demolition (e.g., dumpster pads, fencing, street furniture, retaining walls, bollards, etc.)
Existing trees, shrubs, landscape beds and features, limits of vegetation & brush/tree line that remain after demolition	Lots, blocks, tracts, and parcel designations
Existing easements and permits, including public use easements, temporary access permits, and access or entry permits	Section lines and corners
<b>0% Screen</b>	
North arrow, pointing to the top or right of the sheet	Lots, blocks, tracts, and parcel designations
Graphic scale (2-inch bar scale)	Property lines
Rights-of-way and street names	Basis of bearing and stationing
Proposed easements and permits, including public use easements, temporary access permits, and access or entry permits	Horizontal location of survey monuments and benchmarks, including name (or number), elevations, etc.
Horizontal location of test holes within project limits	Centerline stationing increasing from left to right. Align stationing on both plan and profile views
Proposed limits of asphalt, concrete, and gravel surfacing	Necessary construction notes
Proposed limits of vegetation	Proposed topography with a contour interval of two feet or less.
Location and exact dimensioning of proposed park elements	Identification of materials and keys to details
Location of stockpile, staging and storage sites, if applicable	Notes detailing special construction techniques, as appropriate
Locations affected by wetland, flood hazard, or other permits, where appropriate	Permanent erosion and sediment control measures required



## 2. Grading and Drainage Plans

Site grading and drainage sheets are used primarily for park, landscaping, and other land development projects where substantial re-contouring is involved. The grading and drainage sheet should follow the site plan when assembling the plan set of drawings.

- a. The grading and drainage plan should include the information specified in Table 8-37;
- b. In addition to the information specified in Table 8-37, the grading and drainage plan must also include the information specified in Section 3.4.2 of the Anchorage Stormwater Manual.

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**TABLE 8- 37 GRADING AND DRAINAGE PLANS**

<b>50% Screen</b>	
Existing edge of pavement, curbs, medians, sidewalks, curb ramps, driveways, guardrail, signs and traffic controls that remain after demolition	Nearest corners of existing buildings, structures, walkways, stairs, decks, foundations, and pads that remain after demolition
Existing mailboxes, cluster mailboxes, and cluster mailbox pads that remain after demolition	Existing streetlights, junction boxes, and load centers that remain after demolition
Existing storm sewer pipes, manholes, catch basins, structures, cleanouts, culverts, ditches, and swales that remain after demolition	Existing water utility pipes, valves, services, hydrants, and structures that remain after demolition
Existing sanitary sewer pipes, manholes, structures, cleanouts, and services that remain after demolition	Existing underground and overhead electric, telephone, fiber-optic, and natural gas utilities including poles, guy lines, manholes, boxes, posts, pads, junction boxes, transformers, load centers, hand holes, mains, services, vaults, and valves that remain after demolition
Existing signalization poles, controller cabinets, vaults, and junction boxes that remain after demolition	Other pertinent existing features that remain after demolition (e.g., dumpster pads, fencing, street furniture, retaining walls, bollards, etc.)
Existing trees, shrubs, landscape beds and features, limits of vegetation & brush/tree line that remain after demolition	Lots, blocks, tracts, and parcel designations
Existing easements and permits, including public use easements, temporary access permits, and access or entry permits	Section lines and corners
<b>0% Screen</b>	
North arrow, pointing to the top or right of the sheet	Lots, blocks, tracts, and parcel designations
Graphic scale (2-inch bar scale)	Property lines
Rights-of-way and street names	Basis of bearing and stationing
Proposed easements and permits, including public use easements, temporary access permits, and access or entry permits	Horizontal location of survey monuments and benchmarks, including name (or number), elevations, etc.
Horizontal location of test holes within project limits	Necessary construction notes
Proposed limits of asphalt, concrete, and gravel surfacing	Proposed limits of vegetation
Identification of materials and keys to details	Proposed topography with a contour interval of two feet or less
Location of stockpile, staging and storage sites, if applicable	Notes detailing special construction techniques, as appropriate
Locations affected by wetland, flood hazard, or other permits, where appropriate	Permanent erosion and sediment control measures required

- c. Provide grading point tables that contain the information shown in Table 8-38.

TABLE 8- 38 EXAMPLE GRADING POINT TABLE					
Point Number	Northing	Easting	Elevation	Point Type	Notes

END OF SECTION 8.2

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## SECTION 8.3 SPECIFICATIONS PREPARATION

### 8.3 A Objective

The specifications for contract documents consist of the fifteen major components listed below:

1. Invitation to bid;
2. Special provisions;
3. Submittal list;
4. Special details;
5. Soils information;
6. Temporary construction permits and easements;
7. Equal employment opportunity special provisions;
8. Minimum rates of pay;
9. Contract;
10. Contract performance and payment bond;
11. Certificate of insurance;
12. Bid bond;
13. Bidders checklist & responsible bidder questionnaire;
14. Bid proposal; and
15. Plans.

This information is referred to as the Project Manual in M.A.S.S. The project engineer shall download the latest available Project Manual template from the PM&E website.

The project engineer shall use M.A.S.S. as the basis for and primary source of information during plan and specification preparation. Incorporate M.A.S.S. by reference into the contract documents. All parts of the specifications shall be clear and intelligible. The technical parts of the documents must be understandable to qualified contractors. Utilize standard specifications and bid items whenever possible and not modified or repeated in the special provisions. Specific discussion of some of the components is provided below.

### 8.3 B Invitation to Bid

The Invitation to Bid page is a standard Municipal form that is provided in the project manual template. The project engineer shall complete the project name and work description. The project work description is used for advertising purposes and should be brief, but shall contain specific information as to the quantity and description of major bid items.

The project bid numbers, and the dates and times for the conferences and the bid opening, are furnished by the Municipal Purchasing Department and is coordinated through the Municipal Project Manager. The Municipal Project Manager will provide a copy of the Invitation to Bid, completed and signed by the Municipal Purchasing Department, to the project engineer for final printing of bid documents.

### 8.3 C Special Provisions

#### 1. General

The special provisions are specific clauses, which present conditions or requirements specific to a project and are supplementary to M.A.S.S. The project engineer shall use standard bid items and specifications whenever possible with additions and/or deletions included in the special provisions when required. In no case shall special provisions refer to “the standard specification”. In all cases the reference shall be to the “M.A.S.S.”

Number special provisions sequentially beginning with 95.01. Number the special provision pages in sequence, beginning with “SP-1”. Provide a special provision for each project for the following items using the format provided in the project manual template on the PM&E website.

- a. Location and scope, including information on whether the project is located in the State or Municipal right-of-way;
- b. Reference to M.A.S.S.;
- c. Time of completion, which refers to the number of calendar days to complete the required work after the notice to proceed has been issued, or a set completion date; and
- d. Modifications and/or additions to the M.A.S.S.

Additional items may be provided by the Municipal Project Manager for inclusion in the special provisions. Non-standard bid items unique to each project should be included as special provisions only when the M.A.S.S. does not contain an applicable bid item that may be used or amended to apply to the project requirements.

#### 2. Modifications of M.A.S.S. Standard Provisions

Special provisions which modify existing standard provisions in the M.A.S.S. will only delete, add to, or replace existing descriptions or provisions. Do not restate existing descriptions in the special provisions. Clearly state the division, section, and article being modified. Follow the format in the project manual template.

The Municipality has modifications to the M.A.S.S. that are updated periodically in the project manual template on the PM&E website. Include the most current modifications applicable to the project in the special provisions.

#### 3. New Work Items

Develop special provisions in full, which create new work items that are not modifications of the M.A.S.S. standard provisions. Add new work items to the end of the division which relates to the new work item. Designate new special provisions for the new items AA.XX, where AA is the M.A.S.S.

division under which the work falls and XX is the next available section number within that M.A.S.S. division. The special provisions for new work items shall include the following:

Article XX.1 General

Article XX.2 Material

Article XX.3 Construction

Article XX.4 Measurement

Article XX.5 Basis of Payment

List the special provisions in the same order as the M.A.S.S. divisions. For example, all special provisions pertaining to General Items (Division 10) appear first, then Earthwork Items (Division 20), Portland Cement Concrete Items (Division 30), Asphalt Surfacing Items (Division 40), etc.

Nomenclature used in the special provisions shall conform to the M.A.S.S. general provisions, Section 10.01 Definitions, (i.e., use of “Engineer” or “Owner” rather than “Municipal Representative” or “Municipality”).

### **8.3 D Bid Proposal**

The bid proposal section is the last section in the document and consists of four parts: a title page, unit bid price sheet(s), a bid summary page, and a bid proposal (certification). Number the bid proposal pages consecutively starting with “BP-1 of BP-n”.

Utilize bid proposal sheets similar to those provided in Appendix 8C, unless otherwise directed by the Municipal Project Manager.

1. Arrange the bid items in the same numerical order in which they appear in the M.A.S.S., as modified by the project’s special provisions.
2. Separate the unit bid price sheets into separate schedules, as required.
3. Bid item titles shall correspond exactly to work items as listed under Basis of Payment in the M.A.S.S. or the special provisions.

END OF SECTION 8.3

**SECTION 8.4      ADDENDUM PREPARATION**

When required, prepare addenda on Municipal letterhead. The letter shall explicitly outline all changes, additions, and deletions to be incorporated in the plans and specifications with attached prints or sketches, as necessary.

END OF SECTION 8.4

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## **APPENDIX 8A**

### **AutoCAD Standards**

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## INTRODUCTION

This Appendix is an accompaniment to the MOA AutoCAD standard drawings which were created in AutoCAD Civil 3D 2023. Users shall use AutoCAD Civil 3D 2023 at a minimum or a newer version still compatible with AutoCAD Civil 3D 2023. These standards were developed to establish base criteria for the exchange and compatibility of information. These files provide the designer with sample drawings for use on MOA projects. Users should familiarize themselves with Section 8.2 of this DCM which gives detailed information about the required content and presentation of plan sheets. An example of each dwg file is also included in this appendix.

The MOA AutoCAD standards drawings include the following dwt files:

1. PM&E Cover Sheet (NCS-STB).dwt Sample cover sheet (Page 8A-8).
2. PM&E General Notes-Index-Key Map (NCS-STB).dwt, Sample notes, sheet index, keymap & schedule table (Page 8A-9 through 8A-10).
3. PM&E General Legend (NCS-STB).dwt, Sample Legend & Abbreviations (Page 8A-11).
4. PM&E Detail Sheet (NCS-STB).dwt, Sample Detail sheet (Page 8A-12).
5. PM&E 3D Styles & Settings\_All Disciplines (NCS-STB).dwt, Sample Plan & Profile, Plan over Plan sheet, and Site Plan Views (Pages 8A-13 through 15).
6. Plot Style legend for drawing layers (Page 8A-16).
7. Listing of the most common symbols found on MOA projects. The appropriate layer name and plot style is also given for each symbol. (Pages 8A-17 through 8A-21).
8. Lettering legend for title blocks, plan views and profile views. Font style, text height, and pen weight are given for each feature type typically found on MOA plan sheets (Pages 8A-22 through 8A-24).

## LAYER NAMING CONVENTION

AutoCAD drawings produced for MOA shall generally follow the United States National CAD Standards (NCS) Version 6 standard layering convention as described below. See the following website for information regarding NCS Version 6: <https://www.nationalcadstandard.org/ncs6/> The layer naming convention is a hierarchical system. This allows users to select from several options for naming layers according to the level of detailed information desired. Layer names consist of distinct data fields separated from one another by dashes. A detailed list of abbreviations is prescribed to define the content of layers. Most field codes are abbreviations of construction terminology.

There are three defined layer name data fields: Discipline Designator, Major Group and Minor Groups.

### Discipline Designator

The first letter of the layer name denotes the discipline or category on the specified layer. The following four disciplines shall be used on MOA projects:

C – Civil: all proposed civil features

E – Electrical: all proposed electrical features

G – General: all general features (text, title block lines, detail lines, etc.)

V – Survey / Mapping: all existing or record features. Any record features should be included in a separate Record Base drawing to ensure users understand that the features have not been surveyed.

L – Landscape: all proposed landscape features

### Major Group

The Major Group is a four-character field that identifies a major system. Any Major Group can be combined with a discipline designator. User-defined Major Group fields are acceptable for unique items that are not included in the MOA templates.

Example for proposed civil road feature: C-ROAD

Example for surveyed fence: V-FENC

### Minor Group

The Minor Group is an optional four-character field to further define the Major Group. A second Minor Group may be used to provide further delineation of the minor group. User-defined Minor Group fields are acceptable for unique items that are not included in the MOA templates.

Example for proposed civil guardrail: C-ROAD-GRAL-N

Example for proposed civil back of curb: C-ROAD-CURB-BACK-N

## DRAWING ANNOTATION

### Capitalization

Capital letters shall be used in text since they retain readability when reproduced at one-half size (Figure 1).

Figure 1 - Capitalization in text.

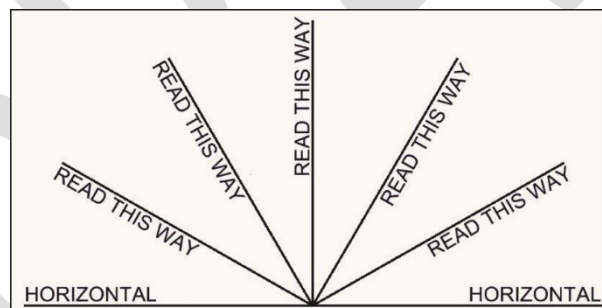


### Orientation and placement

Text shall be set parallel to the primary base of the drawing. If necessary, text can be rotated at 30-degree angles up to 180 degrees as long as the orientation is as shown in Figure 2. However, rotating the text is discouraged to prevent having to turn the drawing sheet to read notations.

Note: An exception to maintaining this text orientation would be on waterways projects because of the various directions in which channels are located. Often, text that has a definite bearing on the contract is kept at proper orientation, while map features incidental to the contract are allowed to follow the orientation when created in a north-up base map, which may result in upside-down text on rotated plan sheets.

Figure 2 - Orientation of text.



The text shall never be placed over other text. Text shall not be placed over feature lines, hatching, or patterning. If text is required in a hatched or patterned area, the hatching/patterning shall be clipped (masked) so the text can be clearly read.

Text justification depends upon the type of text being placed. For example, general numbered notes shall have upper-left justification, elevation labels appearing to the left of a feature shall have bottom-right justification, and elevation labels appearing to the right of a feature shall have bottom-left justification.

### Font Types

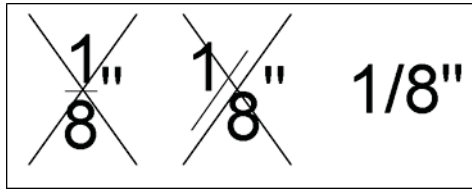
All sheets shall maintain a consistent text style, and all text, labeling, and dimensions shall use ARIAL True Type Font. Text and dimensions may be used in model or layout space but must be kept consistent per drawing and drawing discipline. Text and dimensions are not to be exploded or overridden. All references to details sheets shall be linked fields.

### General Text, Labeling and Dimension Styles

- A sufficient margin will be left around all text, labeling, and dimensions to ensure clarity and readability
- Allowable plotted text heights are 0.080", 0.125", 0.150", 0.200", 0.250", 0.300", and 0.350"
- 0.125" ARIAL font for notes and leader text and 0.15" ARIALBOLD for view titles with underline
- All text will be UPPERCASE unless a specific item requires an exception for clarity
- All leader heads are to be 0.1875" plotted height.
- Labels shall always have a leader landing gap of 0.0625" and a landing of 0.125"
- When a leader is extending off the right side of a text object, the leader will come from the middle of the bottom line. When it is extending off the left side, it will come from the middle of the top line.
- If styles are changed, changes must not alter the appearance or effectiveness of the dimension.
- Dimension text height shall be 0.125" plotted (See Figure 5).
- Dimension units must be consistent across sheets and the drawing set.
- Dimensions shall be associative by default.
- Fractions shall not be stacked (See Figure 3).

### Fractions

Figure 3 – Stacked Fraction Format.



All fractions on the drawing shall be inline (not stacked) (Figure 3). Fractions shall not be less than 1/16 in. (1.5 mm) because accuracy in the field rarely requires more precision. Decimal values shall always have a leading zero before the decimal point when values are less than 1.

Generally, architectural construction dimensions are shown in feet and inches. Decimals of a foot shall be used where dimensions are being set by surveying equipment, such as beam spacing, foundation locations, and structure widths.

### Dimension Placement

Dimension values shall always be placed above the dimension line, preferably midway between the dimension terminators (Figure 4). The dimension line shall never be broken to insert the dimension, with the exception of angular dimensioning. It is preferred that dimensions always be placed outside the view, preferably located at the top and/or the right side of the plans. With that in mind, dimensions shall apply to one view only (i.e., no shared dimensions between views). The dimension shall be placed on the view that shows its true length. Exploded dimensions or dimensions where the dimension text has been edited are strongly discouraged except for the following: where software limitations prevent users from providing the appropriate dimensioning, where the dimension is intended to be an approximation and is notated as such, or where a dimension is displayed as a mathematical formula. An exploded dimension for the sole purpose of displaying a value different from the actual measured value is strictly prohibited.

Figure 4 – Positioning of text in dimensions.

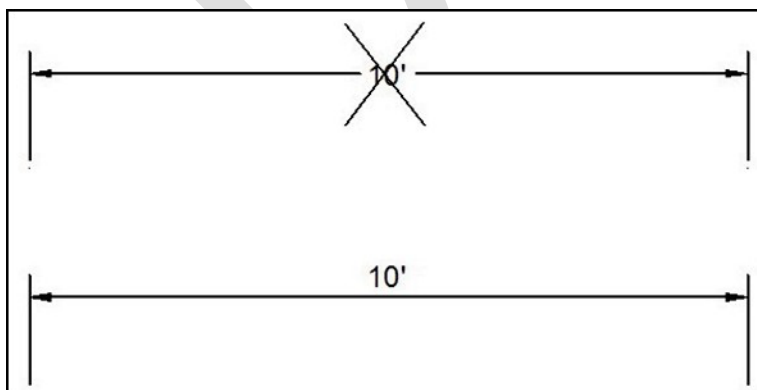
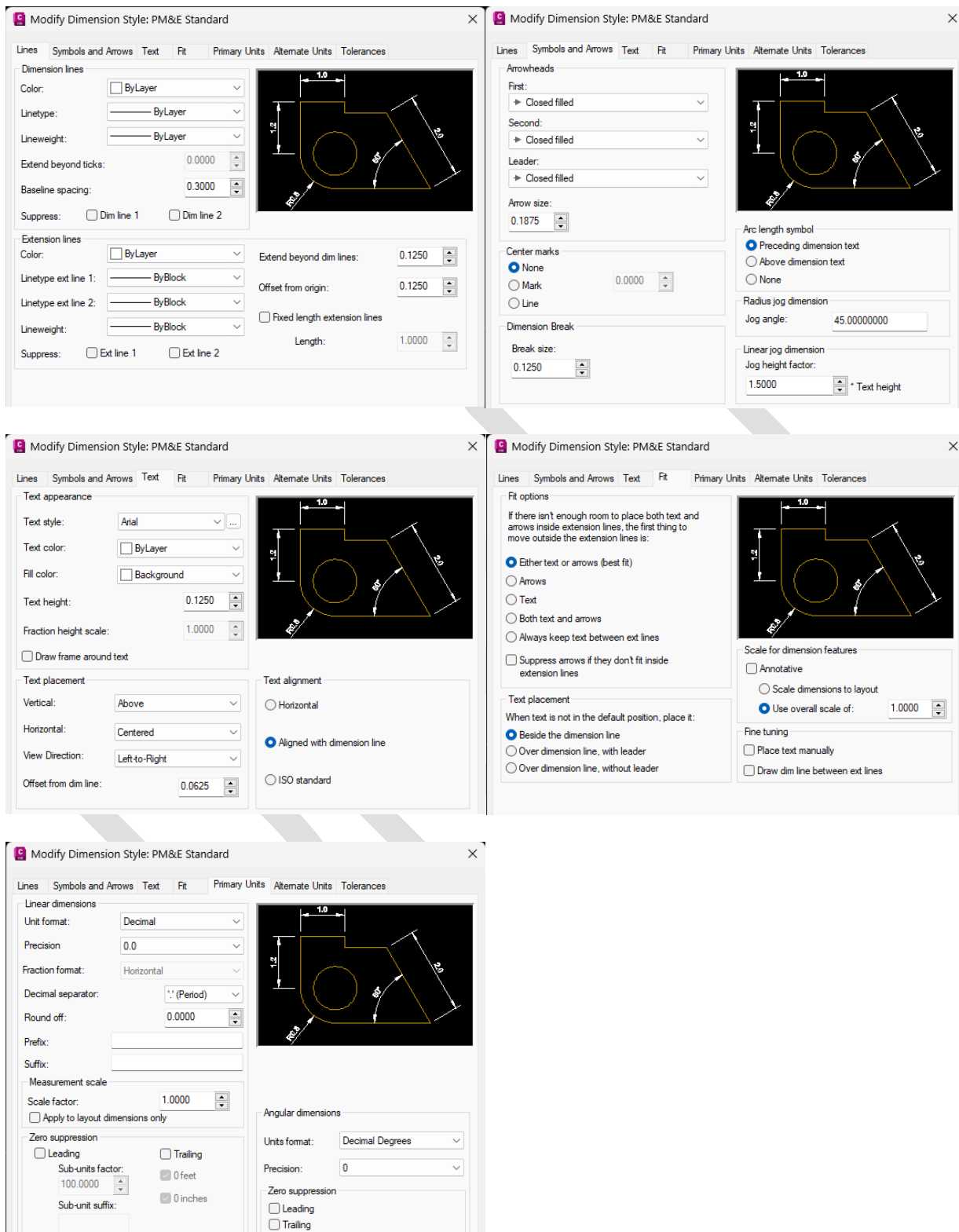
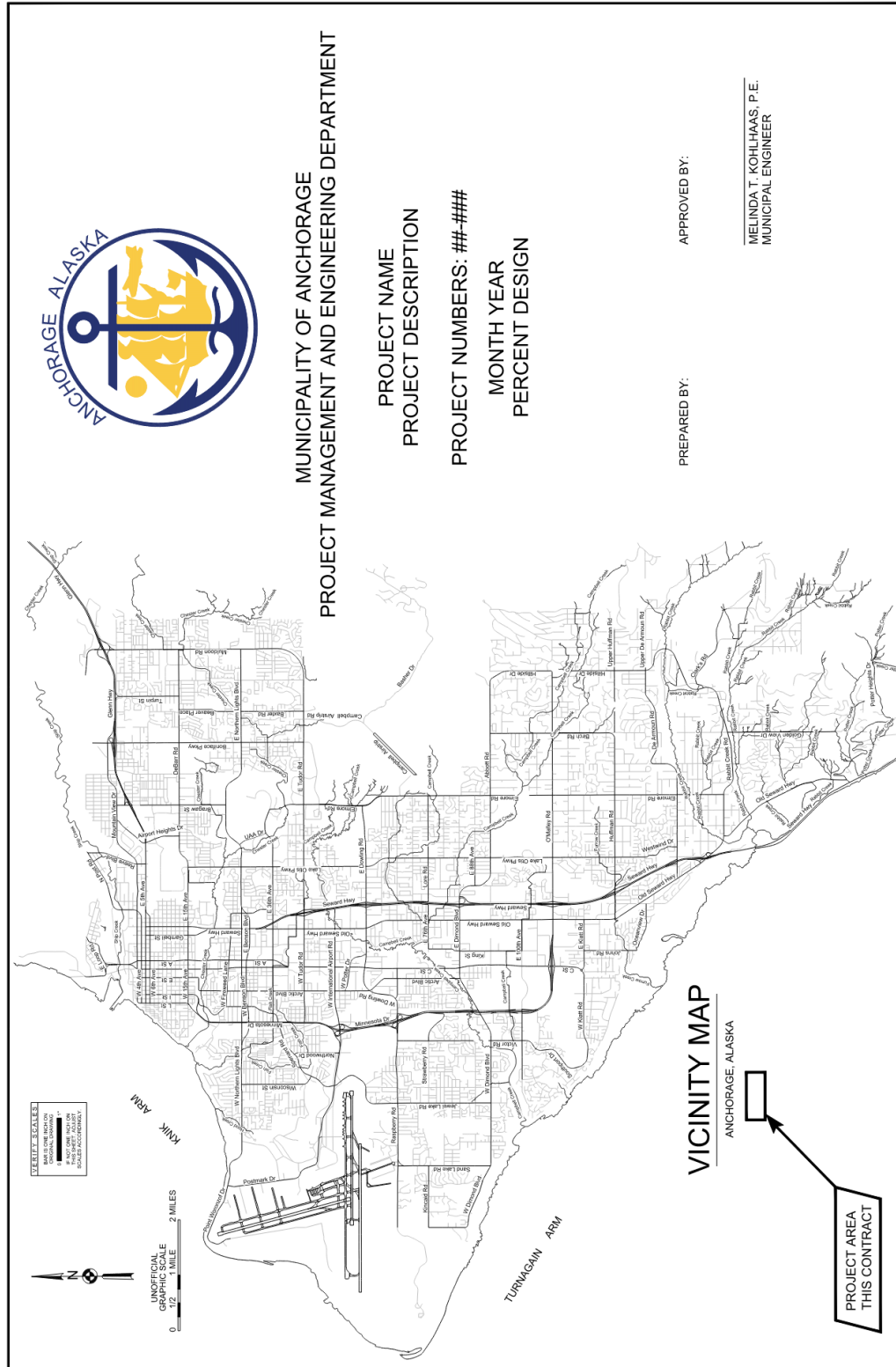


Figure 5 – Dimension Settings.





[illegible]



[illegible]



RECORD DRAWING

CONTRACTOR: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

THIS WILL BECOME A TRUE AND ACCURATE REPRESENTATION OF THE PROJECT AS CONSTRUCTED.

**A**

**DETAIL NAME**

SCALE: NTS

PROJECT MANAGEMENT  
AND ENGINEERING DEPARTMENT

PROJECT NAME: \_\_\_\_\_

DETAILS

SHEET DESCRIPTION: \_\_\_\_\_

DATE: \_\_\_\_\_

SCALE: \_\_\_\_\_

ITEM NO.	DESCRIPTION	QTY	UNIT	PRICE	TOTAL
1	ITEM 1 DESCRIPTION	1	UNIT	100.00	100.00
2	ITEM 2 DESCRIPTION	2	UNIT	50.00	100.00
3	ITEM 3 DESCRIPTION	3	UNIT	33.33	100.00
4	ITEM 4 DESCRIPTION	4	UNIT	25.00	100.00
5	ITEM 5 DESCRIPTION	5	UNIT	20.00	100.00
6	ITEM 6 DESCRIPTION	6	UNIT	16.67	100.00
7	ITEM 7 DESCRIPTION	7	UNIT	14.29	100.00
8	ITEM 8 DESCRIPTION	8	UNIT	12.50	100.00
9	ITEM 9 DESCRIPTION	9	UNIT	11.11	100.00
10	ITEM 10 DESCRIPTION	10	UNIT	10.00	100.00
11	ITEM 11 DESCRIPTION	11	UNIT	9.09	100.00
12	ITEM 12 DESCRIPTION	12	UNIT	8.33	100.00
13	ITEM 13 DESCRIPTION	13	UNIT	7.69	100.00
14	ITEM 14 DESCRIPTION	14	UNIT	7.14	100.00
15	ITEM 15 DESCRIPTION	15	UNIT	6.67	100.00
16	ITEM 16 DESCRIPTION	16	UNIT	6.25	100.00
17	ITEM 17 DESCRIPTION	17	UNIT	5.88	100.00
18	ITEM 18 DESCRIPTION	18	UNIT	5.56	100.00
19	ITEM 19 DESCRIPTION	19	UNIT	5.26	100.00
20	ITEM 20 DESCRIPTION	20	UNIT	5.00	100.00
21	ITEM 21 DESCRIPTION	21	UNIT	4.76	100.00
22	ITEM 22 DESCRIPTION	22	UNIT	4.55	100.00
23	ITEM 23 DESCRIPTION	23	UNIT	4.35	100.00
24	ITEM 24 DESCRIPTION	24	UNIT	4.17	100.00
25	ITEM 25 DESCRIPTION	25	UNIT	4.00	100.00
26	ITEM 26 DESCRIPTION	26	UNIT	3.85	100.00
27	ITEM 27 DESCRIPTION	27	UNIT	3.70	100.00
28	ITEM 28 DESCRIPTION	28	UNIT	3.57	100.00
29	ITEM 29 DESCRIPTION	29	UNIT	3.45	100.00
30	ITEM 30 DESCRIPTION	30	UNIT	3.33	100.00
31	ITEM 31 DESCRIPTION	31	UNIT	3.23	100.00
32	ITEM 32 DESCRIPTION	32	UNIT	3.13	100.00
33	ITEM 33 DESCRIPTION	33	UNIT	3.03	100.00
34	ITEM 34 DESCRIPTION	34	UNIT	2.94	100.00
35	ITEM 35 DESCRIPTION	35	UNIT	2.86	100.00
36	ITEM 36 DESCRIPTION	36	UNIT	2.78	100.00
37	ITEM 37 DESCRIPTION	37	UNIT	2.70	100.00
38	ITEM 38 DESCRIPTION	38	UNIT	2.63	100.00
39	ITEM 39 DESCRIPTION	39	UNIT	2.56	100.00
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44	ITEM 44 DESCRIPTION	44	UNIT	2.27	100.00
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57	ITEM 57 DESCRIPTION	57	UNIT	1.76	100.00
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125'	130'	135'	140'	145'
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710+00	711+00	712+00	713+00	714+00
715+00	716+00	717+00	718+00	719+00
720+00	721+00	722+00		

RECORD DRAWING

CONTRACTOR \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

THIS WILL BECOME TO CERTIFY THAT THESE RECORD DRAWINGS ARE A TRUE AND ACCURATE REPRESENTATION OF THE PROJECT AS CONSTRUCTED.

GRAPHIC

FIELD BOOKS	DATE	SCALE
FIELD BOOK NO. 1	DATE	SCALE
FIELD BOOK NO. 2	DATE	SCALE
FIELD BOOK NO. 3	DATE	SCALE
FIELD BOOK NO. 4	DATE	SCALE
FIELD BOOK NO. 5	DATE	SCALE
FIELD BOOK NO. 6	DATE	SCALE
FIELD BOOK NO. 7	DATE	SCALE
FIELD BOOK NO. 8	DATE	SCALE
FIELD BOOK NO. 9	DATE	SCALE
FIELD BOOK NO. 10	DATE	SCALE

DESCRIPTION

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

RECORD DRAWING

CONTRACTOR \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

THIS WILL BECOME TO CERTIFY THAT THESE RECORD DRAWINGS ARE A TRUE AND ACCURATE REPRESENTATION OF THE PROJECT AS CONSTRUCTED.

GRAPHIC

FIELD BOOKS	DATE	SCALE
FIELD BOOK NO. 1	DATE	SCALE
FIELD BOOK NO. 2	DATE	SCALE
FIELD BOOK NO. 3	DATE	SCALE
FIELD BOOK NO. 4	DATE	SCALE
FIELD BOOK NO. 5	DATE	SCALE
FIELD BOOK NO. 6	DATE	SCALE
FIELD BOOK NO. 7	DATE	SCALE
FIELD BOOK NO. 8	DATE	SCALE
FIELD BOOK NO. 9	DATE	SCALE
FIELD BOOK NO. 10	DATE	SCALE

DESCRIPTION

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

RECORD DRAWING

CONTRACTOR \_\_\_\_\_

BY: \_\_\_\_\_

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

THIS WILL BE USED TO CERTIFY THAT THESE RECORD DRAWINGS ARE A TRUE AND ACCURATE REPRESENTATION OF THE PROJECT AS CONSTRUCTED.

**DETAIL NAME**

SCALE: 1" = 100'

PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT

PROJECT NAME \_\_\_\_\_

PLAN SHEET

SHEET DESCRIPTION \_\_\_\_\_

DATE: \_\_\_\_\_

BY: \_\_\_\_\_

FOR: \_\_\_\_\_

FIELD BOOKS		GRAPHIC		SCALE	
NO.	DESCRIPTION	NO.	DESCRIPTION	NO.	DESCRIPTION
1	FIELD BOOK NO. 1	1	GRAPHIC	1	SCALE
2	FIELD BOOK NO. 2	2	GRAPHIC	2	SCALE
3	FIELD BOOK NO. 3	3	GRAPHIC	3	SCALE
4	FIELD BOOK NO. 4	4	GRAPHIC	4	SCALE
5	FIELD BOOK NO. 5	5	GRAPHIC	5	SCALE
6	FIELD BOOK NO. 6	6	GRAPHIC	6	SCALE
7	FIELD BOOK NO. 7	7	GRAPHIC	7	SCALE
8	FIELD BOOK NO. 8	8	GRAPHIC	8	SCALE
9	FIELD BOOK NO. 9	9	GRAPHIC	9	SCALE
10	FIELD BOOK NO. 10	10	GRAPHIC	10	SCALE

## PLOT STYLE

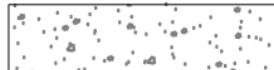
The plot style shall be STB, and all plot styles have a defined line weight. With this style, it does not matter what color the objects are or even what layer they are on. See the line weight tables below for various weights based on the plot style. Existing lines/hatches are screened, as shown in the existing features line weight table. Users can modify the color of the layers based on their preferences. All layers will follow the Layer Naming Convention section below.

PM&E\_NCS B&W.STB  
PM&E\_NCS Color.STB



Hatch 25% Screen  
Solid Hatches

\_FINE - 0.0080 inch



Hatch 25% Screen  
Medium 50% Screen  
Line Hatches

\_THIN - 0.0120 inch

\_THIN 50% - 0.0120 inch

\_MEDIUM - 0.0200 inch

\_MEDIUM 50% - 0.0200 inch

\_BOLD - 0.0400 inch


\_BOLD 50% - 0.0400 inch

\_XBOLD - 0.0600 inch














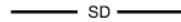























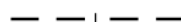






\_XBOLD 50% - 0.0600 inch

\_XXBOLD - 0.0800 inch

\_XXBOLD 50% - 0.0800 inch

Symbol		Plan Legend	Layer Name National CAD Standards (?)=Discipline Code (?) = Status Field Code	Layer Width (Plot Style Name)	
Existing (E)	Proposed (N)			(E)	(N)
		CENTERLINE	?-RWAY-CNTR-?	Med 50%	Medium
		PROPERTY LINE	V-PROP-LINE-E	Medium	----
		EASEMENT LINE	?-ESMT-?	Med 50%	Medium
		SECTION LINE	V-PROP-SECT-E	Med 50%	----
		TEMPORARY CONSTRUCTION EASEMENT / PERMIT	C-ESMT-TEMP-PMIT-N	Med 50%	Medium
		UNPAVED (GRAVEL) EDGE OF ROAD / DWY	?-ROAD-GRVL-EDGE-?	Med 50%	Medium
		EDGE OF PAVEMENT	?-ROAD-ASPH-EDGE-?	Med 50%	Medium
		EDGE OF SIDEWALK / CONCRETE	?-SWLK-CONC-?	Med 50%	Medium
		PAVEMENT REMOVAL	C-ROAD-PATT-D	----	Hatch 25%
		PAVEMENT ROTOMILLING LIMITS	C-MILL-LIMI-PATT-N	----	Fine
		PAVEMENT ROTOMILLING INSPECTION LIMITS	C-MILL-LIMI-PATT-N	----	Fine
		CURB & GUTTER	?-ROAD-CURB-BACK-?	Med 50%	Medium
		RADIUS REFERENCE POINT	C-ROAD-CURB-TEXT-N	----	Medium
		DRAINAGE SWALE	?-DTCH-BOTM-?	Med 50%	Medium
		DRAINAGE ARROW	?-DRAN-FLOW-?	Med 50%	Medium
		CULVERT	?-STRM-CULV-?	Med 50%	Medium
		FENCE (AS NOTED)	?-FENC-STEL-?	Med 50%	Medium
		DECORATIVE FENCE	C-FENC-WOOD-N	----	Medium
		DECIDUOUS TREE / SHRUB	?-PLNT-VEGE-SYMB-?	Med 50%	Medium
		CONIFEROUS TREE / SHRUB	?-PLNT-VEGE-SYMB-?	Thin 50%	Thin
		VEGETATION & BRUSH	?-SITE-VEGE-?	Med 50%	Medium
		GUARDRAIL	?-ROAD-GRAL-?	Med 50%	Medium
		STREET SIGN	?-ROAD-SIGN-SYMB-?	Med 50%	Medium
		HANDICAPPED PARKING	C-ROAD-MRKG-SPCL-N	----	Fine
		TEST BORING OR TEST HOLE	?-BORE-TPIT-SYMB-?	Med 50%	Bold
		RAILROAD TRACKS	V-RAIL-TRAK-E	Med 50%	----
		MAILBOX	?-ROAD-MBOX-SYMB-?	Med 50%	Medium
		HOUSE OR STRUCTURE	?-SITE-STRC-?	Med 50%	Medium
		CONTOUR LINE	?-TOPO-MAJR-?	Med 50%	Medium
		STREAM / EDGE OF WATERWAY	V-RIVR-EDGE-E	Med 50%	----
Date: July 2025		Standard Symbols			
Revised:					





Symbol		Plan Legend	Layer Name National CAD Standards (?)=Discipline Code (?) = Status Field Code	Layer Width (Plot Style Name)	
Existing (E)	Proposed (N)			(E)	(N)
		SPOT ELEVATION	?-TOPO-TEXT-?	Med 50%	Medium
		IRON PIN (REBAR / IRON PIPE)	V-SURV-HORZ-SYMB-E	Med 50%	----
		BENCHMARK	V-SURV-HORZ-SYMB-E	Med 50%	----
		TEMPORARY BENCHMARK	V-SURV-HORZ-SYMB-E	Med 50%	----
		BRASS CAP MONU. / BLM CORNER	V-SURV-HORZ-SYMB-E	Med 50%	----
		PK NAIL, SPIKE OR CONCRETE NAIL	V-SURV-HORZ-SYMB-E	Med 50%	----
		ALCAP OR PLASTIC CAP	V-SURV-HORZ-SYMB-E	Med 50%	----
		FILL SLOPE LIMITS	C-GCVR-FILL-N	----	Medium
		CUT SLOPE LIMITS	C-GCVR-MCUT-N	----	Medium
		RETAINING WALL	?-WALL-RTWL-?	Med 50%	Medium
		STORM DRAIN LINE	?-STRM-CNTR-?	Med 50%	Medium
		FIN DRAIN	?-STRM-FLDR-CNTR-?	Med 50%	Medium
		FOOTING DRAIN SERVICE / STUBOUT	?-STRM-FTNG-CNTR-?	Med 50%	Medium
		SUBDRAIN LINE	?-STRM-SUBS-CNTR-?	Med 50%	Medium
		SANITARY SEWER LINE	?-SSWR-CNTR-?	Med 50%	Medium
		WATER LINE	?-WATR-CNTR-?	Med 50%	Medium
		GAS LINE	?-NGAS-CNTR-?	Med 50%	Medium
		ELECTRIC LINE	?-POWR-UGND-?	Med 50%	Medium
		OVERHEAD ELECTRIC LINE	?-POWR-OVHD-?	Med 50%	Medium
		OVERHEAD ELECT. & TELE. LINE	V-POWR-COMM-OVHD-E	Med 50%	----
		TELEPHONE LINE	V-COMM-UGND-E	Med 50%	----
		OVERHEAD TELEPHONE LINE	V-COMM-OVHD-E	Med 50%	----
		CABLE TV	V-CATV-UGND-E	Med 50%	----
		OVERHEAD CABLE TV	V-CATV-OVHD-E	Med 50%	----
		FIBER OPTIC	V-COMM-FIBR-E	Med 50%	----
		FUEL / OIL LINE	?-FUEL-PIPE-?	Med 50%	Medium
		TRAFFIC LINE	V-TRAF-UGND-E	Med 50%	----
		TRAFFIC LIGHTING CIRCUITS	E-TRAF-LITE-CIRC-N	----	Medium
		TRAFFIC DETECTOR LOOPS	?-TRAF-EQPM-?	Med 50%	Medium
		CAST IN PLACE PIPE	C-STRM-SLVE-N	-	Medium
Date: July 2025		Standard Symbols			
Revised:					

Symbol		Plan Legend	Layer Name National CAD Standards (?)=Discipline Code (?) = Status Field Code	Layer Width (Plot Style Name)	
Existing (E)	Proposed (N)			(E)	(N)
		REMOVE PIPE / DECOMMISSION BY REMOVAL	C-UTIL-PIPE-D	----	Medium
		TREE PROTECTION ZONE FENCING	L-PROT-FENC-ZONE-N	----	Medium
		STORM DRAIN MANHOLE	?-STRM-STRC-SYMB-?	Med 50%	Medium
		CATCH BASIN MANHOLE	?-STRM-STRC-SYMB-?	Med 50%	Medium
		CATCH BASIN	?-STRM-STRC-SYMB-?	Med 50%	Medium
		SANITARY SEWER MANHOLE	?-SSWR-STRC-SYMB-?	Med 50%	Medium
		SANITARY SEWER CLEANOUT	?-SSWR-STRC-SYMB-?	Med 50%	Medium
		SEWER SERVICE CONNECTION	?-SSWR-STRC-SYMB-?	Med 50%	Medium
		CESSPOOL / SEPTIC TANK	?-SSWR-STRC-SYMB-?	Med 50%	Medium
		WATERTIGHT SANITARY SEWER MANHOLE	?-SSWR-STRC-SYMB-?	Med 50%	Medium
		WATER WELL	?-WATR-STRC-SYMB-?	Med 50%	Medium
		WATER SERVICE KEY BOX / VALVE MARKER	?-WATR-STRC-SYMB-?	Med 50%	Medium
		FIRE HYDRAINT	?-WATR-STRC-SYMB-?	Med 50%	Medium
		DRY WELL	?-WATR-STRC-SYMB-?	Med 50%	Medium
		STUBOUT CAPPED OR PLUGGED END	?-WATR-STRC-SYMB-?	Med 50%	Medium
		GAS VALVE	V-NGAS-SYMB-E	Med 50%	----
		GAS METER	V-NGAS-SYMB-E	Med 50%	----
		UNDERGROUND ELECTRIC PEDESTAL	V-POWR-ELEC-SYMB-E	Med 50%	----
		ELECTRICAL MANHOLE / J-BOX	V-POWR-ELEC-SYMB-E	Med 50%	----
		ELECTRIC METER	?-POWR-ELEC-SYMB-?	Med 50%	Medium
		JUNCTION BOX (TYPE IA, II, & III)	?-POWR-ELEC-SYMB-?	Med 50%	Medium
		ELECTRICAL VAULT / MANHOLE	?-POWR-ELEC-SYMB-?	Med 50%	Medium
		LUMINAIRE	?-POWR-ELEC-SYMB-?	Med 50%	Medium
		UTILITY POLE	?-POWR-ELEC-SYMB-?	Med 50%	Medium
		GUY POLE	V-POWR-ELEC-SYMB-E	Med 50%	----
		GUY ANCHOR	V-POWR-ELEC-SYMB-E	Med 50%	----
		CONTROLLER OR ATR CABINET	?-POWR-ELEC-SYMB-?	Med 50%	Medium
		LOAD CENTER	?-POWR-ELEC-SYMB-?	Med 50%	Medium
		SWITCH CABINET	V-POWR-ELEC-SYMB-E	Med 50%	----
		ELECTRIC TRANSFORMER	V-POWR-ELEC-SYMB-E	Med 50%	----
Date: July 2025		Standard Symbols			
Revised:					

[illegible]

[illegible]

Annotation Item	Font Style	Text Height	Line Weight (Inches)
FIELD BOOK NUMBER	Arial	0.10	Medium
DATUM INFORMATION	Arial	0.10	Medium
PROJECT NAME & PROJECT NUMBER	Arial	0.10	Medium
<b>AREA OR SHEET NAME</b>	Arial	0.20	Medium
SCALE	Arial	0.10	Medium
DATE	Arial	0.10	Medium
GRID NUMBER	Arial	0.10	Medium
ACCOUNT NUMBER	Arial	0.10	Medium
PROFESSIONAL ENGINEERS NAME & NUMBER	Arial	0.08	Fine
SHEET NUMBER / SHEET DESCRIPTION	Arial	0.10	Medium
REVISIONS	Arial	0.10	Medium
RECORD DRAWING INFORMATION	Arial	0.08 - 0.10	Medium
SCHEDULE	Arial	0.10	Medium
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<div> <div>Date: July 2025</div> <div>Revised:</div> <div>Lettering Legend - Title Block</div> <div>  </div> </div>			

Annotation Item	Font Style	Text Height	Line Weight (Inches)
SUBDIVISION NAME	Arial	0.24	Medium 50%
BLOCK NUMBER	Arial	0.24	Medium 50%
LOT NUMBERS	Arial	0.12	Medium 50%
STREET NAMES	Arial	0.14	Medium
100' STATION TEXT	Arial	0.12	Medium
STREET WIDTHS	Arial	0.12	Medium
ELEVATIONS	Arial	0.12	Medium
PROPERTY AND EASEMENT NOTES	Arial	0.12	Medium
EXISTING FEATURES AND UTILITY SYMBOLS	Arial	0.12	Medium
CONTOUR LABELS, GENERAL NOTES, LEADERS, DIMENSIONS	Arial	0.12	Medium
EXISTING UTILITY LINE LABEL	Arial	0.12	Medium 50%
PROPOSED UTILITY LINE LABEL	Arial	0.12	Medium
TABLES ( TITLE )	Arial	0.14	Medium
TABLES ( HEADERS & DATA )	Arial	0.12	Medium
VIEW TITLES w/UNDERLINES	Arial Bold	0.15	Medium
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<p>Note: Use proper planning for text justification so future editing does not require the text to be moved. Wherever multiple lines of text are placed, use multiline text (mode) instead of single-line text.</p>			
Date: July 2025	Lettering Legend - Plan View		
Revised:			

Annotation Item	Font Style	Text Height	Line Weight (Inches)
<b>TITLE ANNOTATION</b>	Arial	0.25	Medium
HORIZONTAL AXES	Arial	0.12	Medium
VERTICAL AXES	Arial	0.175	Medium
PL & CL REFERENCE	Arial	0.12	Medium
CONSTRUCTION NOTES	Arial	0.12	Medium
SOILS CLASSIFICATIONS	Arial	0.08	Medium 50%
GRADE AND VERTICAL CURVE DATA	Arial	0.12	Medium
EXISTING UTILITY DATA	Arial	0.12	Medium 50%
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<div> <div>Date: July 2025</div> <div>Revised:</div> </div>			
Lettering Legend - Profile View			