CHAPTER 1

GENERAL PROCEDURES

1.0 INTRODUCTION

The objective of this Manual is to promote uniformity in the preparation of plans by establishing the general format and presenting the detailed information which is required for each type of plan sheet required in the maintenance and construction of highway facilities. The drafting standards contained herein apply to all Department plans including Right-of-Way, Structure, Roadway, Geotechnical, Traffic Signal, Highway Lighting, Highway Occupancy, etc. This information, in conjunction with a high, professional standard of drafting techniques, shall ensure, to the greatest extent possible, the uniform appearance and reproduction quality of data presented on right-of-way plan sheets, contract plan sheets, etc. The guidance provided shall also assist the designer in avoiding errors and omissions which consequently would require excessive alterations and corrections.

The accuracy and completeness of all the drawings indicated herein are prerequisites for the fair and equitable compensation of right-of-way and for enabling the Contractor to submit a sound, equitable bid for a project. The final plans, as presented to the Department, shall be concise, complete and contain all the design data necessary to acquire right-of-way or for a Contractor to construct the project to Department standards.

1.1 PROCEDURES FOR MODIFICATIONS OR ADDITIONS TO THE DESIGN MANUAL

Whenever a District Executive or a Bureau Director determines that modifications or additions are required to improve the current guidelines in Design Manual, Part 3, the following procedures shall be followed:

1. The recommended modifications or additions shall be transmitted to the Director, Bureau of Project Delivery with the following information:

a. The title and page number of the existing practice, if applicable.

b. The recommended modifications or additions and the Chapter(s) and the appropriate page number(s) into which they should be incorporated.

c. The reasons for recommending the modifications or additions.

2. The Director, Bureau of Project Delivery shall review the recommended modifications or additions and transmit copies to the various Bureau Directors and District Executives involved for their comments. FHWA comments shall also be solicited, when required.

3. All comments shall be submitted to the Director, Bureau of Project Delivery and, upon review, appropriate action shall be taken.

4. If modifications or additions are required to the current criteria, they shall be made through standard procedures for incorporation into Publication 14M, Design Manual, Part 3, *Plans Presentation*.

1.2 LETTER CODE SYSTEM FOR PLANS DESIGNATION

To create a uniform system for plans designation, a letter code system has been developed. All plans submitted to the Department shall use the following letter codes when separate plans are submitted:

TYPE OF PLANS		LETTER CODE
Bridge Rehabilitation, Combination and/or Construction Plans	SR_____ Section_____	No Code Letter
Right-of-Way Plans	SR_____ Section_____	-R/W
Right-of-Way Plans (GAP)	SR_____ Section_____	-GR/W
Signing Plans	SR_____ Section_____	-S
Lighting Plans	SR_____ Section_____	-L
Safety Rest Area Plans	SR_____ Section_____	-Z
Safety Rest Area Buildings and Related Utilities Plans	SR_____ Section_____	-W
Right-of-Way Fence Plans	SR_____ Section_____	-F
Landscape Planting Design (Roadside Development) Plans	SR_____ Section_____	-B
Resurfacing and Widening Plans	SR_____ Section_____	-R
Paving Plans (Original Paving)	SR_____ Section_____	-P
Junkyard Control Plans	SR_____ Section_____	-J
Traffic Signal Plans	SR_____ Section_____	-T
Scenic Overlook Plans	SR_____ Section_____	-R/S

When a specialty plan is submitted, as a separate plan, the letter code shall be shown as a suffix to the section number in the Title Block on the Title Sheet and in the Identification Block located in the upper right-hand corner of the Title Sheet and on all plan sheets.

The letter code shall be used as a suffix, as previously described, in the Title Block and in the Identification Block of the Title Sheet and on all Plan Sheets. The exception to this policy shall be for Appropriation 187, Highway Maintenance funded projects. For the Appropriation 187 projects, the letter "M" shall be included in the Section Number.

When several Supplemental Plans are submitted with the prime plan, but are not an integral part of that plan, the Supplemental Plans shall be listed on the Title Sheet, as specified in Chapter 2, Section 2.1.H.

The Section Number may or may not be the same as the Section Number in the Title Block and in all Identification Blocks. The Section Number in the Title Block and in all Identification Blocks shall be three characters.

All plan sheets shall have an Identification Block in their upper right-hand corner. This block is to list the major routes shown on the Title Sheet and the political subdivisions affected by the plan.

On individual Detail Sheets, all major routes involved on the sheet shall be listed. If space is a problem, it is permissible to list the major routes elsewhere on the sheet. Only the political subdivisions involved on the Detail Sheet need be listed in the Identification Block on the Detail Sheets.

When a plan sheet involves only work on an adjacent or intersecting route, that route number may be indicated to the left of and outside the Identification Block.

1.3 SIGNATURE BLOCK FOR REQUIRED SIGNATURES FOR TITLE SHEETS

The Title Sheet for all plans shall include a Signature Block providing for the required signatures as indicated in Figure 1.1. Refer to Chapter 15, Section 15.2, Plate B-I for an example of a Signature Block for Construction Plans, Plate B-VIII for an example of a Signature Block for Right-of-Way Plans and Chapter 2, Section 2.9, Figure 2.16 for an example of a Signature Block for 11 in × 8.5 in Construction Plans.

TYPE OF PROJECT	REQUIRED SIGNATURES			
	DISTRICT PLANS ENGINEER**	DISTRICT EXECUTIVE	DEPUTY SECRETARY	SECRETARY OF TRANSPORTATION
STATE PROJECTS				
RIGHT-OF-WAY PLAN	X	X	X	X
CONSTRUCTION PLAN	X	X	X	X
ABBREVIATED CONSTRUCTION PLAN (11 in × 8.5 in)	X	X	X	X
LOCAL PROJECTS*				
RIGHT-OF-WAY PLAN	X	X		
CONSTRUCTION PLAN	X	X		

* Includes projects with any combination of Federal, State and Local funding with the exception of 100% Liquid Fuels Tax funding.

** In-house plans only.

FIGURE 1.1
REQUIRED SIGNATURES FOR
SIGNATURE BLOCK ON TITLE SHEETS

1.4 STATIONING

Stationing for metric Construction Plans shall be based on the AASHTO recommended stationing where one station equals 1 km or 1000 m, and is typically written:

1+000.000

By example, station 1+326.130 indicates a point 326.130 m ahead of station 1+000.000. Stations shall be indicated and labeled every 100 m along the baseline with additional stationing indicated at every 20 m but not labeled. Equality, PT, PI, PC, PVT, PVI and PVC stationing shall be indicated and labeled. All stationing shall be computed to the nearest 0.001 m or 1 mm.

Stationing for English Construction Plans, where one station equals 100 ft, is typically written:

1+00.00

By example, station 1+56.25 indicates a point 56.25 feet ahead of station 1+00.00. Stations shall be indicated and labeled every 100 ft along the baseline. Equality, PT, PI, PC, PVT, PVI and PVC stationing shall be indicated and labeled. All stationing shall be computed to the nearest 0.01 ft.

1.5 REQUIREMENTS FOR FINAL ELECTRONIC DELIVERABLE OF FINAL RIGHT-OF-WAY AND CONSTRUCTION PLAN SHEETS

Upon completion of final Right-of-Way Plans, final Construction Plans, supplemental Construction Plans and as-built Construction Plans, it shall be a requirement to prepare "PDF" (Portable Document File) files for each sheet, with one sheet per "PDF" file, as the final deliverable. This requirement shall be applicable to both Department and consultant prepared plans*.

The final deliverable for all right-of-way plan sheets, construction plan sheets, supplemental plan sheets, and as-built plan sheets shall be prepared following normally acceptable drafting standards and meeting microfilming requirements. These "PDF" files shall contain all applicable signatures and seals. This requirement will provide the Department files that can efficiently be captured in the Electronic Document Management System (EDMS).

All files shall be documents with black line work on white background in "PDF" format (600 dots per inch (DPI)) with no layer or security settings when the files are being created directly from drafting software such as "MicrostationOpenRoads Designer (ORD)". However, if the hard copy plan sheets are being scanned to produce the "PDF" files, the dots per inch setting shall be 200. "PDF" is a common format for exchanging raster graphics (bitmap) images between applications programs, including those used for scanner images.

The files shall represent the final right-of-way plan sheets, construction plan sheets (all roadway plans and supplemental plans) and the final as-built construction plan sheets. All Department prepared "PDF" files shall be created in a shared folder on the Department's computer network. All consultant prepared "PDF" files should be delivered on CD-ROM. Each document type shall be in a separate and appropriately named folder (i.e. River County>SR9999Sec023>Roadway Plan). Each plan sheet shall be a single "PDF" file.

The naming convention for standard ANSI D size, 863.6 mm × 558.8 mm (34 in × 22 in) plan sheets, that has been established for the Department's EDMS, is outlined in Appendix A and shall be followed.

* Other plans such as the Post Construction Stormwater Management (PCSM) plans may have different requirements. See appropriate directives.

CHAPTER 2

CONSTRUCTION PLANS

2.0 INTRODUCTION

The purpose of this Chapter is to provide guidance for the orderly preparation of final Construction Plans. The methods, procedures and examples presented herein are to be followed to promote consistency in the preparation of Construction Plans.

Combination Plans, in which the Right-of-Way Plan and the Construction Plan are combined, shall contain data and information normally required to prepare individual plans for Construction and Right-of-Way. In this case, separate sheets shall be used to tabulate parcels, areas taken, residue, etc. Combination Plans shall be accepted only on small, Federal and 100% State-financed projects involving few properties with no relocation problems. Prior approval shall be received from the Field Liaison Engineer, Bureau of Project Delivery. No Combination Plans shall be accepted without required approval.

When a project is designed for stage construction (see Publication 13M, Design Manual, Part 2, *Highway Design*, Chapter 1, Section 1.8), one set of Construction Plans shall be provided to cover both stages. These plans shall show the future construction as dashed lines labeled "By Others" and shall show the presently proposed construction as solid lines. These plans shall not be destroyed after microfilming since they shall be utilized to the greatest extent possible for the second stage of construction at some future date. Two sets of forms shall be supplied with the Construction Plans. The first set shall show information quantities for the first stage of construction and the second set shall show information quantities for the second stage of construction. They shall be clearly identified as to which stage they apply.

Projects which are financed jointly with Appalachia funds (APD) and other types of Federal-aid funds do not require separate Construction Plans and proposals. However, it shall be necessary to differentiate on the plan, for information only, the construction items to be financed with Federal funds other than Appalachia funds. It shall also be necessary to provide separate programming documents and estimates.

If it is advantageous to combine two or more projects, the following shall be required:

1. One proposal containing all quantities, supplements and Special Provisions pertinent to both (or more) projects.

2. One complete set of original drawings including the signed Title Sheet for each project.

3. One new Title Sheet clearly indicating the contents of each project.

4. One new Summary of Quantities Sheet indicating all items and the total quantities for both (or more) projects.

If possible, avoid combining Federal and 100% State-financed projects.

When local governments prepare plans to be financed with Federal-aid funds, they should be encouraged to follow the presentation format provided herein; however, some flexibility is permissible. The main concern is that the Construction Plans be complete enough to allow a Contractor to accurately bid and construct the project. For example, the size of the plan sheets could be other than standard ANSI D size, 34 in × 22 in, dependent on their own polices, and the type and size of lettering is flexible as long as a half-size print is legible. Since the projects are administered by the Department, the Title Sheet for all highway plans should provide a Signature Block for the "Recommended" signature by the District Executive (see Chapter 1, Section 1.3).

Final Plans shall be prepared on either linen, drafting film or vellum. The drafting film shall be a minimum of 3 mils in thickness and the vellum for the plan sheets shall be between 18 lb and 20 lb.

2.1 TITLE SHEET

The information presented in this section shall be shown on the Title Sheet, in the appropriate location, for all Construction Plans. An example of a typical Title Sheet is shown in Chapter 15, Section 15.2, Plate B-I.

A. Title Block Identification Data. The following data shall constitute the Title Block on the Title Sheet:

1. Headings and Title of Plan.
2. State Route.
3. Section Number.
4. County or Counties.
5. Township, Borough or City.
6. "Limit of Work" Stations.
7. Construction Length.

B. Identification Block. The following information shall be provided in the Identification Block in the upper right-hand corner. Refer to Chapter 15, Section 15.2, Plate B-I for an example of an Identification Block for Construction Plans.

1. State Route.
2. Section Number.
3. Engineering District.
4. County or Counties.
5. Township, Borough or City.
6. Total Number of Sheets.
7. ECMS Number.

Only major routes shall appear in the Title Block and in the Identification Block on the Title Sheet.

C. "And" Routes. When the project consists of two or more major routes, the route numbers and the Stationing Limits of each are to be shown, with their individual construction length, and combined in the total construction length. The "And" route requires a separate section number.

D. "Also" Routes. When work on an intersecting or adjacent State Route is undertaken in conjunction with the mainline construction, that route shall be identified on the Title Sheet by the word "Also". This route shall be shown after the main route(s) listing and shall show Stationing Limits of work FROM STA _____ TO STA _____ without construction lengths.

The "Also" routes shall not be totaled with the main routes nor shall they appear in the Identification Block in the upper right-hand corner of the Title Sheet.

The "Also" routes shall appear on the Title Sheet only if their construction length is at least 500 ft in length and consists of full width construction, except for interchanges. If the work involved consists only of resurfacing and widening, it shall not be considered full width construction. The inclusion of an additional traffic lane shall be considered full width construction. Interchange route numbers shall be included as an "Also" route if the interchange is part of the route appearing in the Title Block (show interchange numbers only, do not show stations).

E. "Limit of Work" Stations and Project Length. Stationing Limits for construction shall include all work to be performed by the Contractor. For exceptions, refer to Chapter 8 and Chapter 9. To allow for working room and any minor construction changes, the Stationing Limit should be set between 50 ft and 100 ft beyond the last work called for on the plan. When the project is located in two or more counties, the Stationing Limits should be broken for each county. Stationing Limits should be from south to north or from west to east. See Chapter 15, Section 15.1, Plates A-IV and A-VI for example sketches indicating "Limit of Work" stations.

The length indicated on the Title Sheet represents the construction length (see Section 2.3.D). The length shall be expressed to the nearest 0.001 mi if the project has been surveyed.

For Combination Plans, in which the Right-of-Way Plan and Construction Plan are the same set of plans, the Stationing Limits for construction and the Right-of-Way may coincide or vary. When these Stationing Limits vary, show both the station to station limits and length for construction. For Right-of-Way Plans, show only the station to station limits. If not surveyed, i.e., flat chained, the length shall be expressed to the nearest 1 ft. The length indicated represents the overall construction limits.

For situations when proposed work is well beyond the project, such as wetland mitigation work or ITS work, the designer shall consult with the Bureau of Project Delivery for direction.

F. Bar Scales. Normally, a horizontal scale of 1" = 25' shall be used on all projects, particularly in built-up areas, where considerable topographic detail is necessary. A horizontal scale of 1" = 50' may be used if conditions dictate, at the discretion of the District Executive.

The vertical scale of the profile shall be one-fifth of the horizontal scale. Circumstances may dictate other scales in which case special permission should be secured from the District Executive before commencing plan preparations.

A Bar Scale shall be used to represent the horizontal and vertical dimensional values as indicated below. A script representation, i.e., 1" = 25', shall not be used to indicate these values.

Example:

G. Design Designation Block. Complete the Design Designation Block, in the lower left-hand corner, under the heading DESIGN DESIGNATION. The following items shall be included: Highway Functional Classification including designation of "Urban", "Rural", etc., Design Speed, Pavement Width, Shoulder Width, Median Width (Maximum and Minimum), Traffic Data including letting year ADT, design year ADT and DHV, D (%) and T (%). Refer to Chapter 15, Section 15.2, Plate B-I for an example of a Design Designation Block for Construction Plans.

H. Supplemental Plans. Below the Identification Block, list the Supplemental Plans and the number of sheets in the following order, as applicable:

Also Included:

Traffic Control Plan	_____ Sheets
Traffic Monitoring Plan	_____ Sheets
Signing and Pavement Marking Plan	_____ Sheets
Utility Relocation Plan	_____ Sheets
Landscaping Plan	_____ Sheets
Erosion and Sediment Pollution Control Plan	_____ Sheets
Wetland Mitigation Plan	_____ Sheets
Highway Lighting Plan	_____ Sheets

Railroad Plan	_____ Sheets
Contamination and Remediation Plan	_____ Sheets
Roadway Test Borings Plan	_____ Sheets
Pavement Sensor Plan	_____ Sheets
Environmental Mitigation Plan	_____ Sheets
Highway Advisory Radio Plan	_____ Sheets
Flashing Warning Device Plan	_____ Sheets
Sign Structure Plan	_____ Sheets
Traffic Signal Plan	_____ Sheets
Interconnect Plan	_____ Sheets
Weather Monitoring System Plan	_____ Sheets
Emergency Detour Plan	_____ Sheets
Structure Plans	
S-	_____ Sheets
S-	_____ Sheets
Cross Sections	_____ Sheets
Existing Structure Plans	
S-	_____ Sheets
S-	_____ Sheets

Supplemental Plans do not have a separate Title Sheet when submitted with the Construction Plans. When submitted separately, a Title Sheet is required.

The Supplemental Plan sheets shall be numbered separately and shall not be included in the "Total Sheets" block shown in the Identification Block.

I. Limited Access Highway Facility Note. The following Note shall be shown below the list of supplemental sheets for Limited Access Highway Facilities:

ESTABLISHED (AND/OR RE-ESTABLISHED) AS A LIMITED ACCESS HIGHWAY FROM

STATION _____ TO STATION _____

STATE ROUTE _____ SECTION _____ R/W (Where Applicable)

LEGISLATIVE ROUTE _____ SECTION _____ R/W (Where Applicable)

APPROVED _____ (DATE) _____

Note: The stations should be the original Stationing Limits shown on referenced Right-of-Way Plans.

J. Public Utility Commission (PUC) Application Docket Number. Place, under the Title Block, one of the following Notes, when applicable:

1. PUC Application Docket Number _____

2. PUC Complaint Docket Number _____

3. PUC Investigation Docket Number _____

K. Professional Engineer's Seal Block. If the plans are prepared in the District Office, the Title Sheet shall be sealed and signed by the Professional Engineer who has direction and control of the engineering aspects of the plan. This is usually the appropriate Assistant District Executive, however the Plans Engineer, Squad Leader or Designer may seal and sign the work for which they are responsible if they so desire. This should be shown in a small block at the bottom of the title sheet. In addition, the District Plans Engineer's signature shall be placed above the District Executive's signature (see Chapter 15, Section 15.2, Plate B-I).

Plans prepared by Consultants shall have a small block at the bottom of the Title Sheet indicating the name and address of the Consultant, the signature, title and seal of the person responsible for the preparation of the plans and the date.

If multiple registrants prepare or direct and control the preparation of documents, each registrant's Seal and Signature shall appear on the document as appropriate. The responsible registrants shall also place a black rubber stamp Seal and Signature on the Title Sheet. The registrants shall also place either a black ink rubber stamp or facsimile seal on all subsequent sheets for which they are responsible. Impression seals are not permitted.

Examples of typical Signature (Seal) Blocks are indicated in Figure 2.1.

L. ECMS Number. The ECMS number shall be placed on the title sheet in the area of the identification block.

INTENTIONALLY BLANK

PREPARED BY:
(NAME AND ADDRESS)
OF CONSULTANT)

(SEAL)

(SIGNATURE)
(TITLE)

(DATE)

CONSULTANT'S SIGNATURE BLOCK

(SEAL)

(SIGNATURE)
(TITLE)

(DATE)

DISTRICT UNIT'S SIGNATURE BLOCK

FIGURE 2.1
EXAMPLES OF TYPICAL SIGNATURE BLOCKS

2.2 INDEX SHEET

The following general information shall be shown on the Index Sheet for all Construction Plans:

1. Index Map.
2. Record of Existing Road Types.
3. Straight Line Diagram Data.
4. Location of Project on State Map.
5. Sheet Index.
6. Tabulation of Equalities Between Segment Node Points and the Survey Stations (if available).

A. Index Map. The Index Map shall be placed on the Index Sheet, to best advantage, using a scale no smaller than 1" = 500' and shall show the following data, where applicable:

1. Construction centerline and stations identified at maximum 500 ft intervals.

2. Edge of existing pavement.

3. State Routes and Township Roads (Show posted Traffic Route Numbers).

4. Local road names.

5. Railroads.

6. Edge of streams (Identify major streams).

7. Outline of proposed and existing bridges.

8. Political subdivisions.

9. "Limit of Work" stations on the mainline.

Example:

LIMIT OF WORK
STA 675+00.00
SEG 20 OFFSET 75
SR 1033 SEC A04
GREENWOOD TOWNSHIP
PERRY COUNTY

10. Channel changes.

11. Temporary roadways.

12. "Stop Work" and "Start Work" stations on all "Also" routes, crossroads, temporary roadways, temporary connections, service roads, railroad-highway grade crossings, channel changes, reconditioning of abandoned State highways and mainlines where the first work starts and the last work stops.

Example:

STOP WORK
STA 240+50.00
SEG 15 OFFSET 50
SR 1033 SEC A04
(Section Number, if applicable,
See Section 2.1.B.)

13. Equality stations.

14. Property lines and owner's names. Property owner's names shall be spelled out exactly as shown on the Deed. Parcel Identification Numbers, corresponding to those assigned on the Plan Sheet shall appear in their proper location. When the scale is small and/or properties are too numerous, code properties with the Parcel Identification Number and tabulate the property owner's names elsewhere on this sheet. Also see Section 2.6.A.13.

15. Sections of roadway to be abandoned or vacated shall be shown and identified.

16. Limits of project covered within each Plan Sheet with the plan sheet number identified in the Legend using the following appropriate symbols:

LEGEND

PLAN

PROFILE

PLAN AND PROFILE

PARCEL IDENTIFICATION NUMBER

PARCEL IDENTIFICATION NUMBER-NO TAKE

17. Distances to the nearest 0.1 mi to the nearest community at each end of project. Also give similar distances from "Stop Work" or "Start Work" stations for the State Route crossroads to the nearest community in each direction. If no towns are nearby, indicate distance (in miles) to Traffic Routes or State Routes.

18. North Arrow and Bar Scale.

19. Abandonment Notes (Same as on the Right-of-Way Plan).

If the project only requires one plan sheet and the above information can be shown, then an index map is not required.

B. Record of Existing Types of Roadway Pavement (OPTIONAL). List, in tabular form, a record of the existing types of roadway pavement adjacent to the proposed construction and throughout the limits of construction. Do not list "Also" routes. Include the following disclaimer statement below the listing:

NOTE: THE DEPTHS OF MATERIAL SHOWN ARE FOR DESIGN PURPOSES ONLY. ANY RISK OF UNANTICIPATED COSTS ASSOCIATED WITH DIFFERENCES BETWEEN THE LISTED DEPTHS AND THE ACTUAL DEPTHS SHALL BE ACCEPTED BY THE CONTRACTOR.

Example:

Limit of Work Adjacent to Seg 30	24' of 3.5" Bit Surf Crse ID-2 on 10" Cr Stone Base Crse
Seg 30 to Seg 120	24' of 3.5" Bit Surf Crse ID-2 on 10" Cr Stone Base Crse
Limit of Work Adjacent to Seg 120	24' of 3.5" Bit Surf Crse ID-2 on 12" Cr Stone Base Crse

C. Straight Line Diagram Data. State Routes which are not shown on the Title Sheet shall be tabulated in accordance with increasing mainline stationing. A sample tabulation form is shown in Figure 2.2.

D. Sheet Index Block. On projects involving many sheets, a Sheet Index Block is suggested. Small projects may also require a Sheet Index Block when there is more than one Supplemental Plan. A sample Sheet Index Block is shown in Figure 2.3.

Example:

STRAIGHT LINE DIAGRAM DATA			
STATE ROUTE	**LIMITS OF CONSTRUCTION**		**PROPOSED CONSTRUCTION**
	CONSTR STA	**SEGMENT/OFFSET**	
SR 1033	345+50 TO 347+10	10/0 TO 10/160	18' OF 1.5" BIT WEAR CRSE ID-2 ON 5" BITUMINOUS CONCRETE BASE COURSE

FIGURE 2.2
SAMPLE FORM FOR TABULATION OF STATE ROUTES

SHEET INDEX

DESCRIPTION	SHEET
TITLE SHEET	1
INDEX MAP	2
LOCATION MAP	3
TYPICAL SECTIONS	3 THRU 7
SUMMARY SHEET	8
TABULATION SHEETS	9 THRU 11
PLAN & PROFILE SHEETS	12 THRU 24

FIGURE 2.3
SAMPLE OF SHEET INDEX BLOCK

E. Identification Block. Complete the Identification Block in the upper right-hand corner. A sample Identification Block is shown in Figure 2.4 below.

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				OF

REV NO	REVISIONS	DATE	BY	APPD

FIGURE 2.4
SAMPLE OF IDENTIFICATION BLOCK

F. Tabulation of Segment Equalities. A sample format for listing the equalities between segment node points and the survey stationing is shown below:

<u>SR 0010</u>

Segment 10, Offset 141 = Station 153+49
Segment 20 = Station 185+37
Segment 30 = Station 210+93

If desired, the straight line diagram station equivalent may be included with this equality.

2.3 TYPICAL SECTION SHEET

The following general information shall be shown on the Typical Section Sheet for all Construction Plans:

1. General Notes.*
2. Identification Block.*
3. Location Map.*
4. Tabulation of Overall and Construction Lengths.*
5. List of all Equalities.*
6. Earthwork Summary Entire Project.*
7. Listing of Public Utilities.*
8. Tabulation of Project Coordinates.*
9. Special Details.**
10. Typical Sections.**

* To be shown on the first Typical Section Sheet.
** Use additional sheets, as required.

A. General Notes. The following is a listing of sample and standard Notes which shall be used, where applicable:

1. Legal Right-of-Way record (width, date published and date recorded). Legal Right-of-Way for all routes referenced to in the plan should be clearly defined as follows:

a. Route Number or street name.
b. Segment and offset or identifying stations.
c. Legal width.
d. Basis of legal width, including dates of plans, ordinances, etc., and places and dates of record.

Examples:

(1) THE LEGAL RIGHT-OF-WAY ON SR 1524 FROM THE WEST CHESTER BOROUGH LINE (STATION 0+00) TO THE INTERSECTION OF SR 1509 (STATION 9+35) IS 60 FEET, BASED ON PLAN OF LR 21524, SECTION 1, SIGNED ON JULY 2, 1949, AND RECORDED ON AUGUST 5, 1949, IN THE CHESTER COUNTY RECORDER'S OFFICE IN PLAN BOOK 3, PAGE 17.

(2) THE LEGAL RIGHT-OF-WAY ON SR 1524, FORMERLY LR 17, FROM THE WEST CHESTER BOROUGH LINE TO THE INTERSECTION OF SR 1509, FROM STATION 0+00 TO STATION 9+35 IS 50 FEET BASED ON REPORT OF VIEWERS, CONFIRMED ON APRIL 26, 1846, FILED IN CHESTER COUNTY COURT OF QUARTER SESSIONS.

(3) THE LEGAL RIGHT-OF-WAY ON SR 6046, FORMERLY LR 359, FROM STATION 201+02 TO STATION 216+50 IS 50 FEET, BASED ON POTTSTOWN BOROUGH ORDINANCE DATED MAY 1, 1929, RECORDED IN THE MONTGOMERY COUNTY RECORDER OF DEEDS OFFICE ON JUNE 15, 1929, IN DEED BOOK 21, PAGE 171.

(4) THE LEGAL RIGHT-OF-WAY ON SR 3021, FORMERLY LR 15039, IS 33 FEET, BASED ON THE ACT OF MAY 1, 1933, P.L. 103, SECTION 1105, AS AMENDED. PRIOR TO THE ADOPTION OF LR 15039 AS A STATE HIGHWAY IN 1942, IT HAS BEEN OPENED AND MAINTAINED FOR TWENTY-ONE (21) YEARS OR MORE BY GREEN TOWNSHIP, A SECOND-CLASS TOWNSHIP. THERE IS NO PUBLIC RECORD OF ANY OTHER WIDTH.

(5) THE LEGAL RIGHT-OF-WAY ON SR 6114, FORMERLY LR 19054, FROM STATION 0+00 TO STATION 9+17 IS 50 FEET BASED ON DEED OF DEDICATION DATED MAY 29, 1856, AND RECORDED IN DEED BOOK 311, PAGE 47, IN THE MONTGOMERY COUNTY RECORDER OF DEEDS OFFICE.

(6) THE LEGAL RIGHT-OF-WAY ON SR 3021 IS _____ FEET BASED ON THE EXISTING EDGES OF PAVEMENT AND SHOULDER WIDTH. THERE IS NO OTHER PUBLIC RECORD.

Note: When two or more Right-of-Way Plans are developed, it shall be necessary to reference all plans on the Construction Plans under the General Notes.

2. ☒ THE DEPARTMENT RESERVES THE RIGHT TO ELIMINATE ANY OR ALL OF THIS WORK. DO NOT PERFORM WORK EXCEPT THAT WHICH IS WITHIN THE HIGHWAY RIGHT-OF-WAY UNTIL SO ORDERED IN WRITING BY THE ENGINEER. (This Note applies to driveway adjustments and other similar work extending beyond the Right-of-Way. This symbol shall appear in the remarks section of the tabulations.)

3. BUILDINGS AND STRUCTURES MARKED C HAVE BEEN OR ARE TO BE REMOVED OR ALTERED BY THE DEPARTMENT OR OTHER AUTHORITY RESPONSIBLE FOR THE PAYMENT OF PROPERTY DAMAGES AND SUCH WORK IS NOT PART OF THIS CONTRACT. (This Note applies to structures removed or altered under a separate contract and is applicable to Construction Plans and Combination Plans.)

4. BUILDINGS AND STRUCTURES MARKED O ARE ENCROACHMENTS WHICH ARE THE RESPONSIBILITY OF THE PROPERTY OWNER TO REMOVE. IN CASE ANY ENCROACHMENTS SO MARKED ARE NOT REMOVED BY THE PROPERTY OWNER, DO NOT INTERFERE WITH OR REMOVE SAME UNTIL AUTHORIZED IN WRITING BY THE ENGINEER.

5. DEMOLISH AND REMOVE BUILDINGS AND STRUCTURES MARKED D AS LUMP SUM ITEMS AT THE LOCATIONS INDICATED.

6. REMOVE BUILDINGS AND STRUCTURES MARKED R UNDER THE ITEM FOR CLEARING AND GRUBBING.

7. List all Roadway Construction Standard Drawings, Bridge Standards and any other standards with dates of drawing approval which are required for the project. This list is to be preceded by the following Note:

DETAILS, OTHER THAN THOSE INDICATED, ARE ON THE FOLLOWING STANDARD DRAWINGS

8. Other Notes, where applicable:

a. DO NOT INTERFERE WITH THE OPERATION OF ANY FIRE HYDRANT, FIRE CALL BOX OR POLICE CALL BOX.

b. THE DEPARTMENT RESERVES THE RIGHT TO ELIMINATE ANY OR ALL OF THE WORK WHICH IS LISTED IN THE TABULATION AS BOROUGH PORTION OR CITY PORTION OR TOWNSHIP PORTION. DO NOT PERFORM ANY SUCH WORK UNTIL SO ORDERED IN WRITING BY THE ENGINEER.

c. THIS IS A FEDERAL-AID PROJECT AND AS SUCH IS SUBJECT TO INSPECTION BY REPRESENTATIVES OF THE FEDERAL HIGHWAY ADMINISTRATION AND THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION. (Additional Municipalities if their funding is involved.)

d. VACATIONS AS SHOWN ON THIS PLAN ARE EFFECTIVE ONLY AFTER AN ORDER OF VACATION HAS BEEN EXECUTED BY THE DEPARTMENT AND FILED IN THE APPROPRIATE COUNTY COURTHOUSE.

e. THREE TO TEN WORKING DAYS PRIOR TO EXCAVATION BASED ON THE COMPLEXITY OF THE PROJECT, THE CONTRACTOR MUST CONTACT THE PA ONE CALL SYSTEM, INC., PHONE 1-800-242-1776, SERIAL NO. _____ FOR (list municipality). ADDITIONAL INFORMATION IS AVAILABLE AT https://www.pa1call.org/PA811/Public/.

f. THE CONTRACTOR IS REQUIRED TO NOTIFY THE DEPARTMENT AND SUBMIT AN ALLEGED VIOLATION REPORT (AVR) TO THE PA PUBLIC UTILITY COMMISSION THROUGH THE PA ONE CALL SYSTEM, WWW.PA1CALL.ORG, WITHIN TEN (10) BUSINESS DAYS AFTER A UTILITY LINE IS STRUCK, DAMAGED, OR PREVIOUS DAMAGE IS DISCOVERED AS REQUIRED BY PENNSYLVANIA'S UNDERGROUND UTILITY LINE PROTECTION LAW ACT 50 (P.L.852, NO. 287 AMENDED OCT. 30, 2017).

9. All existing easements shall be indicated in the general notes. Use the description of the easement from the existing Right-of-Way Plan or see Chapter 3, Section 3.4.H for the appropriate wording.

10. When a Temporary Construction Easement is required, an expiration statement shall be indicated in the General Notes as follows:

TEMPORARY CONSTRUCTION EASEMENT. AN EASEMENT TO USE THE LAND AS NECESSARY DURING CONSTRUCTION OF THE PROJECT. THE EASEMENT IS REQUIRED ONLY UNTIL THE CONSTRUCTION OR WORK INDICATED BY THE PLAN IS COMPLETED, UNLESS SOONER RELINQUISHED IN WRITING BY THE DEPARTMENT.

The expiration date shall be at the discretion of the District Executive.

The Notes shown on the Property Plots (see Chapter 3, Section 3.4.H.5), which clarify the status of the land utilized for slope easements, underground anchor easements and temporary construction easements, are also to be shown in the General Notes. This also includes existing easements not acquired for this project.

11. The General Notes shall contain a Note stating whether the survey is based on the National Geodetic Reference System (formerly USC & GS) or other datum (i.e. wheel survey, flat chain, existing as-built plans).

12. A Note shall indicate whether the horizontal control: (1) has an assumed datum; or (2) is tied to the Pennsylvania State Plane Coordinate System based on current National Spatial Reference System (NSRS).

13. A note shall indicate the vertical control is based upon the USGS National Geodetic vertical datum of 1929 (NGVD 29), North American Vertical Datum of 1988 (NAVD 88), or other datum.

14. Applicable Notes for City of Philadelphia projects shall be shown (see Chapter 3, Section 3.10).

15. The Department has obtained permission for the Contractor to perform work outside the legal Right-of-Way. Right (or left) of Station _____.

16. A Note stating that State Route _____, previously known as Legislative Route _____, may be placed with the General Notes if desired.

B. Identification Block. Complete the Identification Block in the upper right-hand corner.

C. Location Map. The Location Map shall be placed in the lower left-hand corner on the first Typical Section Sheet and may be reproduced from County or City maps. For an example of a typical Location Map, refer to Figure 2.5. This map shall be oriented so that the North Arrow is vertical toward the top of the sheet with a Bar Scale provided below the map. Indicate the following data on the Location Map:

1. Label and place a Legend below the Location Map as shown on Chapter 15, Section 15.2, Plate B-XIII.

2. All adjacent and intersecting State Routes, Traffic Routes and Township Roads by number.

3. If a city map is used, streets should be shown and named.

4. Cities, towns and physical features such as lakes, streams, canals, railroads, etc.

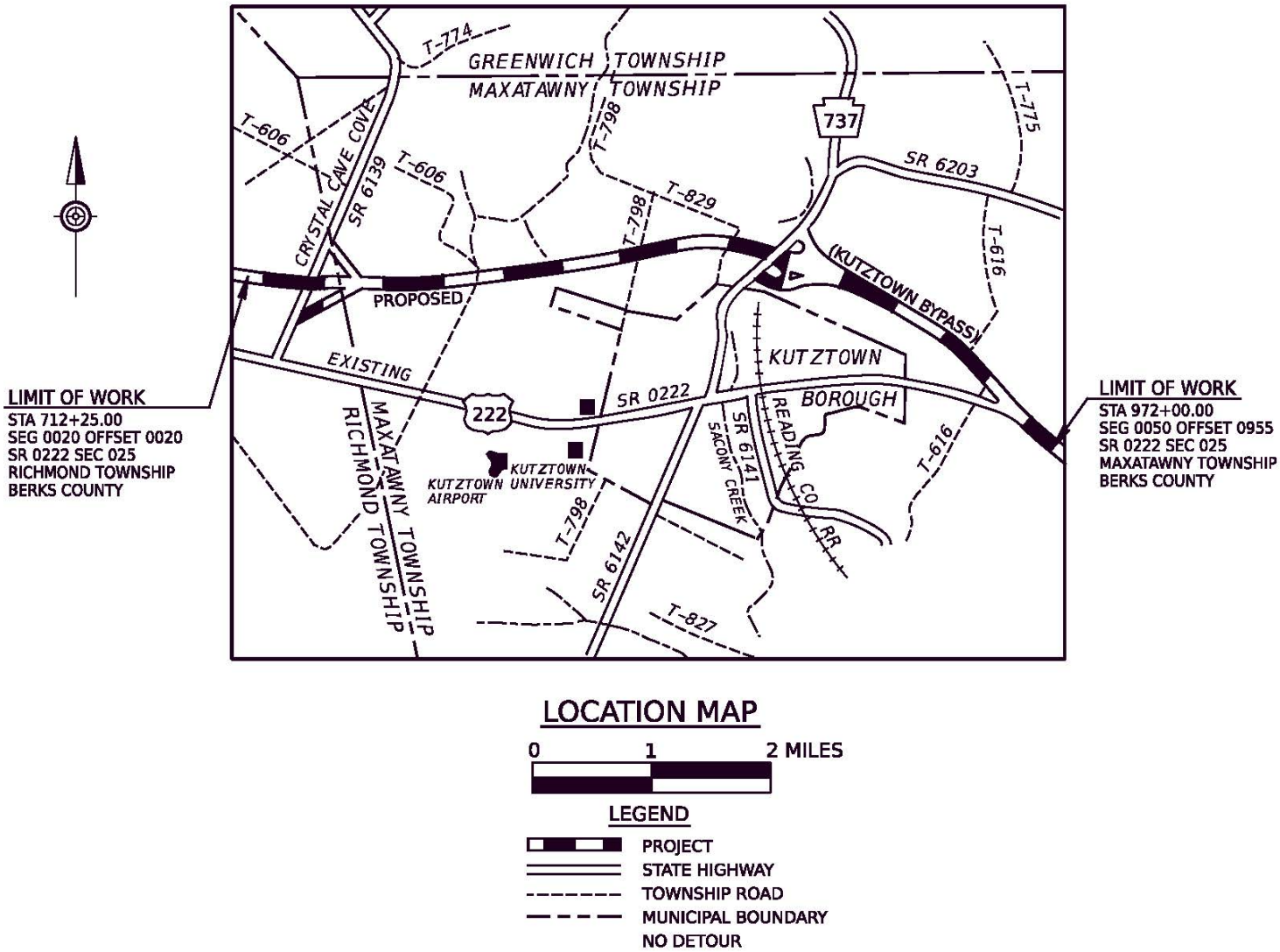
5. City limits and urban limits, where applicable.

6. Show "Limits of Work" stations (Do not show for "Also" routes).

Example:

LIMIT OF WORK
STATION 675+00.00
SEG 50 OFFSET 75
SR 1033 SEC A04
GREENWOOD TOWNSHIP
PERRY COUNTY

7. Bar Scale.



LOCATION MAP

0 1 2 MILES

LEGEND

- PROJECT
- STATE HIGHWAY
- TOWNSHIP ROAD
- MUNICIPAL BOUNDARY
- NO DETOUR

FIGURE 2.5
TYPICAL LOCATION MAP

D. Tabulation of Overall Length and Construction Length. The Overall Length is the total length between the "Limit of Work" stations. On divided highways with separate baseline stationing, a length shall be tabulated for each line and the longest Stationing Limits shall be used on the Title Sheet. The Construction Length is the overall length between the "Limit of Work" stations minus the no construction areas including the distance between the "Limit of Work" and the "Start Work" and "Stop Work" at the beginning and end of the project.

The tabulation of the Overall and Construction Lengths shall be shown on the Typical Section Sheet.

E. List of All Equalities. All Equalities occurring on the major routes appearing in the Title Block shall be listed on the Typical Section Sheet. If there are no Equalities, indicate as such.

F. Earthwork Summary. The earthwork summary should include all excavation and borrow excavation items including those that are incidental to other lump sum items. For a sample presentation of an earthwork summary, see Figure 2.6.

G. List of Public Utilities. List all Public Utilities known to be located within the scope and extent of work activity defined for this construction area in accordance with Act 287-1974, as amended. List the name of the Public Utility, their address with Zip Code, the name, title and telephone number of the utility representative responsible for the project, and show the unique acronym to indicate ownership that accompanies the utility line depictions on the plans. The data shown on the tabulation shall be in complete agreement with the Engineering Construction Management System (ECMS) Project Development Checklist D419 Utility Clearance Document.

List the Pennsylvania One Call System telephone number and serial numbers for the project.

H. Tabulation of Project Coordinates. A Tabulation of Project Coordinates shall be provided for all projects on new location or involving a shift of existing horizontal alignment. Coordinates shall be provided for all horizontal control points such as Beginning and Ending Stations, PC's, PI's, PT's, POT's and POC's. A sample format is shown in Figure 2.7. The Pennsylvania State Plane Coordinate System or, if necessary, an arbitrary coordinate system shall be utilized and properly identified.

When a project includes a 1" = 200' or smaller scale interchange drawing (see Section 2.6.W), the coordinate data for the ramps shall be tabulated on that drawing along with the other geometric information provided. If a perimeter traverse is used, coordinates shall also be provided for the traverse points.

I. Special Details. Show detailed sketches of all construction items which are not covered by the Department's Standard Drawings, such as the following:

1. Stairway and step details - Sta.
2. Special curb details - Sta.
3. Special manholes, endwalls, etc. - Sta.
4. Benching and special earthwork.
5. Intersection sketches.

If, at the discretion of the District Executive, sketches of intersections are required, indicate special features, including curbs, angles of approach, contours and locations of expansion, construction and longitudinal joints. An appropriate scale shall be used for these sketches and they may be placed with the details in the plan.

INTENTIONALLY BLANK

EARTHWORK SUMMARY ENTIRE PROJECT

THE INFORMATION ON ESTIMATED AMOUNTS OF EARTHWORK HAS BEEN USED IN THE PRELIMINARY ESTIMATE. DO NOT USE AS A WAIVER OF ANY PROVISIONS OF THE SPECIFICATIONS AND CONTRACTS.									
CUBIC YARDS OF EXCAVATION						CUBIC YARDS OF COMPLETED EMBANKMENT*	CUBIC YARDS OF BORROW EXCAVATION	CUBIC YARDS OF SELECT BORROW	CUBIC YARDS OF WASTE
CLASS 1	CLASS 1A	CLASS 1B	CLASS 2	CLASS 3 **	CLASS 4				

*INCLUDES ALL BORROW ITEMS
** _____ CY PART OF LUMP SUM STRUCTURE ITEM.

NOTES

1. IN SPECIAL CASES, WHERE BORROW ITEMS ARE NOT INCLUDED IN THE COMPLETED EMBANKMENT QUANTITY, SHOW A NOTE IN ACCORDANCE WITH THE FOLLOWING EXAMPLE.

EXAMPLE: *INCLUDES ALL BORROW ITEMS, EXCEPT _____ CY OF SELECTED BORROW EXCAVATION - GRANULAR, TYPE B.

2. FOR EARTHWORK SUMMARY, SHOW ONLY THE TOTAL EARTHWORK QUANTITIES FOR THE ENTIRE PROJECT. INCLUDE ALL SELECTED BORROW ITEMS (GRANULAR, ROCK, ETC.).

FIGURE 2.6
EXAMPLE OF EARTHWORK SUMMARY

SUMMARY OF PROJECT COORDINATES

BASED ON _____*_____ COORDINATE SYSTEM

RTE	STATION	POINT	COORDINATES		BEARING
			NORTH	EAST	
SR ____ (Indicate Baseline)	0+00.00	POB	5000.0000	5000.0000	
					N36°-30'-00"E
	5+00.00	PC	5401.9332	5297.4122	
					N36°-30'-00"E
	8+00.00	PI	5643.0917	5475.8623	
					N60°-00'-00"E
	10+88.88	PT	5793.0901	5735.6733	
					N60°-00'-00"E
	14+00.00	POT	5998.6523	6091.7132	
					N60°-00'-00"E
	15+50.00	POE	6073.6514	6221.6141	

*Note: Example shown is based on "Assumed" Coordinates System. Recommended minimum values are N 5000.00 and E 5000.00.

Note: Four (4) place coordinates are used for computational purposes only and do not imply a precision beyond two (2) places.

FIGURE 2.7
SAMPLE FORMAT FOR SUMMARY OF PROJECT COORDINATES INFORMATION

J. Typical Sections. Typical Sections and Stationing Limits for each type of construction encountered on the project shall be shown and shall be in accordance with the Department's current Typical Roadway Cross Sections as shown in Publication 13M, Design Manual, Part 2, *Highway Design*, Chapter 1, unless otherwise approved. Typical Sections are required for the following:

1. Normal section.

2. Superelevated or transition sections. Any special treatment shall be clearly indicated. Show the high side in fill and the low side in cut or vice versa but do not superimpose one on the other.

3. Partial sections for special treatment such as curbs, sidewalks, bicycle facilities, trails, etc.

4. Side roads, crossroads, ramps, service roads, frontage roads, temporary roadways, fringe or off-street parking facilities, crossovers, etc.

5. Partial sections to show typical seeding requirements if not shown on the regular Typical Sections.

The minimum data required on each Typical Section shall include the following, where applicable:

1. Profile grade point.

2. Pavement width, type, depth and cross slope (indicate cross slope as a percentage).

3. Shoulder width, type, depth and cross slope (indicate cross slope as a percentage). When the shoulder is constructed the same as the roadway pavement structure, show the limits of the effective shoulder width and label as EFFECTIVE SHOULDER AREA in addition to the width.

4. Centerline or baseline locations.

5. Base course and subbase width, type and depth.

6. Median width, type and cross slope.

7. Embankment and cut slopes.

8. Location and type of underdrain or pavement base drain (the type of backfill need not be shown).

9. Indicate reference to Standard Drawing RC-10M for cut slope rounding used.

10. Special reinforcement and special tiebar or tiebolt longitudinal joints.

11. Topsoil limits.

12. Median barrier and guide rail.

13. Subgrade slopes (if not parallel to pavement).

14. Label all items in accordance with the Summary of Quantities Sheet.

2.4 SUMMARY OF QUANTITIES SHEET

An example format of the Summary of Quantities Sheet is shown in Chapter 15, Section 15.2, Plate B-II.

All items with their respective quantities payable under the Construction Contract shall be tabulated on a Summary of Quantities Sheet and the Summary of Quantities Sheet made part of the Construction Plans. These sheets shall follow the Typical Section Sheets in the Construction Plan.

The tabulations shall be prepared using the standard nomenclature as shown in the Construction Items Catalog (Publication 7).

For items not appearing in the Construction Items Catalog, contact the District Contract Management Engineer.

The quantities indicated for each item shall be calculated in accordance with the "Measurement and Payment" for the various items in Publication 408. Items not covered by Publication 408 shall require a Special Provision. A symbol shall be placed in the description block of these items that provides a reference to the special provision.

The blocks in the Summary of Quantities Sheet shall be of sufficient height to enter a final quantity above the plan quantity.

Pipe alternates with end sections shall be shown on the Summary of Quantities Sheet as indicated in Figure 2.8.

The item descriptions shall not be abbreviated.

QUANTITY	ITEM NO / UNIT	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET
EITHER 8	0601 0500 / LF	18" THERMOPLASTIC PIPE, GROUP VI, 15'-2' FILL, SHORE/TRENCH BOX	604	20
AND 1	0616 1252 / EACH	THERMOPLASTIC END SECTION FOR 18" PIPE	604	20
OR 8	0601 1863 / LF	18" SPIRAL RIB ALUMINIZED STEEL PIPE, TYPE IR, (3/4" X 3/4" X 7 1/2" CORRUGATIONS), 16 GAGE, SHORE/TRENCH BOX	604	20
AND 1	0616 0009 / EACH	STEEL END SECTION, METALLIC COATED, 16 GAGE FOR 18" PIPE	604	20
OR 8	0601 7710 / LF	18" REINFORCED CONCRETE PIPE, TYPE B, 15' - 3' FILL, SHORE/TRENCH BOX	604	20
AND 1	0616 1202 / EACH	CONCRETE END SECTIONS FOR 18" PIPE	604	20

FIGURE 2.8
PIPE ALTERNATES LISTING
ON SUMMARY OF QUANTITIES SHEET

2.5 TABULATION OF QUANTITIES SHEETS

Contract items shall be tabulated as shown in the examples of typical Tabulation of Quantities Sheets in Chapter 15, Section 15.2. These sheets shall follow the Summary of Quantities Sheet in the Construction Plan. The blocks in all tabulations shall be of sufficient height to enter a final quantity above the plan quantity.

A. Tabulation of Drainage Items. The following should be included in the Tabulation of Drainage Items along with other related items:

1. All pipe culverts with "Design Numbers", if appropriate.
2. Inlet tops or frames, Inlet boxes and manholes.
3. Class 2 and Class 4 Excavation.
4. Endwalls (specify type).
5. Pipe end sections and slope pipe fittings.
6. Pipe bedding, if necessary.
7. Embankment (for information only).
8. Remarks Column.
9. Maximum/Minimum Fill Height (for information only).

For projects where the number of drainage items exceeds the number of spaces available on a single width Tabulation Sheet, an alternate method of tabulation may be provided, as shown in Chapter 15, Section 15.2, Plate B-VI. This alternate method shall only be used when necessary to maintain a drainage tabulation one sheet wide.

B. List of Individual Tabulations. Individual tabulations normally should be made for the following items:

1. Guide Rail and Median Barrier (with related items).

2. Right-of-Way Fence (with related items).

3. Driveways (including base and wearing courses, subbase, etc.).

4. Pavement Base Drains, Subgrade Drains, Pipe Underdrain and Outlets.

5. Roadway Quantities (shoulder, base and wearing courses, etc.), tabulated on a route by route basis.

6. Miscellaneous Items.

7. Grading sections of 1000 ft by route and stations with totals.

8. Tabulation of miscellaneous earthwork for special embankment excavation quantities. Include quantities (by route and stations) such as pocket fills, benching, rock embankment, removal of unsuitable material, etc.

9. Tabulation of topsoil quantities by route and stations.

10. Landscape Planting Design (Roadside Development) items (Jute Matting, Sodding, Seeding, etc.), tabulated by route if more than one, and the stations. Use individual tabulations when a few items have many breaks in the stationing.

11. Erosion and Sediment Pollution Control items shall normally be combined with the Landscape Planting Design (Roadside Development) items; however, depending on the size and type of the projects, these may be separate or combined with the Drainage or Miscellaneous Items.

Where quantities for items such as pavement base drains, parallel ditches, sidewalks, pipe removal and items involved with driveway construction are small, they may be included in the Miscellaneous Tabulation. The listing of items shall be in a sequential order of their occurrence with respect to increasing stationing off a baseline, survey or construction centerline for each route.

When required, all items which are to be reserved by the Department are to be listed in the proposal by a Special Provision for that item.

A breakdown (for information only) of estimated quantities for Lump Sum Items such as temporary bridges, cofferdams and erosion and sediment pollution control items shall be provided and may be shown in a tabulated form. A cross reference from the Summary of Quantities Sheet shall be provided.

C. Information for Consideration in the Development of Tabulations. The following information should be considered in the development of the tabulations:

1. Structures. Structures are stationed where their centerline intersects the construction centerline. The item for the REMOVAL OF EXISTING BRIDGE or the REMOVAL OF EXISTING BRIDGE SUPERSTRUCTURE shall be stationed at the intersection of the construction centerline with a line perpendicular to the construction centerline from the centerline of the bridge. When these Lump Sum Items are used, it shall be clearly indicated on the drawings and/or clearly defined in the Special Provisions exactly what is included in the items. When the existing structure is an arch, RC box culvert or pipe, the limits of removal shall be clearly indicated on the Structure Plans and supplemented by compatible, clearly defined limits in the Special Provisions. Where the existing structure occupies an area which shall be occupied by a new structure, the limits of removal shall be indicated on the new bridge plans. Limits of structure removal shall also be indicated on the Cross Sections.

Removal of existing bridges or bridge superstructures and construction of temporary bridges shall not be shown in the bridge quantities. These items are considered as roadway items and may be shown in the roadway or miscellaneous tabulations. Partial removal of an existing bridge (also partial removal of bridge superstructure) of which the remaining portion is intended to be used as part of a new bridge is considered a bridge item and shall be shown in the structure tabulation.

When two or more structures, such as dual bridges, are presented on the S-Drawings, separate stations, quantities and pay items shall be tabulated for each structure.

Structure items and quantities shown in the Construction Plan should not be finalized until the Bridge Plan has been signed and the Structure Estimate has been prepared.

2. Channel Change. The channel change station to be indicated in the tabulations is the station at which the channel base line or the construction centerline of the channel intersects the roadway construction centerline. For parallel channel changes, use the beginning station and ending station projected to the mainline. When the channel change requires items in addition to excavation, the above noted station is to be given along with the stations where other items are required.

3. Pipes. The pay length of all pipes shall be from end to end of the pipe measured along the centerline of the pipe excluding the end section. Because of the difference between the lengths of metal and nonmetal end sections of pipe culverts, the length of connecting pipe can vary. To avoid showing different lengths of the connecting pipe on the plans, the designer should show the length of the metal-type pipe for all alternates on the plan.

Parallel pipes shall be shown in the tabulations by the Stationing Limits.

Lateral pipes shall be shown by the station at which the pipe crosses the construction centerline.

4. Curbs. Curbs generally run parallel to the construction centerline and are stationed from end to end on the construction centerline stations. If the curb continues around a corner for side roads, the mainline stationing is stopped at the point of curvature. The arc and tangent length on the side road are carried on the side road stationing. The actual curved length of the curb shall be computed rather than using straight line distances between stations.

5. Guide Rail. Guide Rail is stationed from end to end, excluding end treatments and anchors, on the construction centerline. The amount of Guide Rail from center to center of the outermost posts on each end of the structure to which it is attached is included in the structure quantities. The remaining quantity is a roadway item. The total length (roadway plus structure) shall be divisible by the length of the rail sections between the estimated stations.

Guide Rail beginning on the mainline and extending around an intersection to a side road may be stationed on both routes.

Where a concrete slab is required for installation of Guide Rail over an underground structure or utility line, the slab shall be identified in the tabulation of Guide Rail items by listing the need for the slab in the remarks column opposite the appropriate run of Guide Rail.

6. Inlets. Provide separate pay items for the Top Unit, Frames, and Inlet Box.

Provide separate pay items for the Inlet Boxes based on the type (size) and installation depth. Determine the type (size) of inlet box based on the maximum pipe size (outside diameter) and pipe opening required. Determine the height range based on the installation depth, where the height is determined by subtracting the bottom slab elevation from the finished grade elevation.

Only provide one inlet box type (size) per installation. The contractor/fabricator is responsible to determine if two box types (sizes) with a transition slab can be utilized based on the requirements of the Standard Drawings.

2.6 PLAN SHEETS

A. List of Items for Plan Sheets. The Plan Sheets shall show the following items:

1. Construction and Survey Centerline (Baseline).
2. Structure Data.
3. Profile.
4. Plan.
5. Survey Book Numbers.
6. "Limit of Work" stations, "Start Work" and "Stop Work" stations, etc.
7. Topography.
8. Curve Data.
9. Intersection Ties Between Baselines and Intersection Radii.
10. Proposed work.
11. Utilities.
12. Right-of-Way Lines and Easements.
13. Property Lines and Ownership (only if Right-of-Way Plans prepared).
14. Reference Circles, Bench Marks, Bearings and Equalities.
15. North Arrow.
16. Identification Block (Route and Section Number).
17. Appropriate professional engineer's seal.
18. Areas to be abandoned or vacated shall be labeled (see Section 2.6.K for Abandonment and Vacations).
19. Location of existing or proposed bicycle facilities.

The accuracy and completeness of the Plan Sheets are prerequisites for enabling the Contractor to submit a sound, equitable bid for construction and to preclude to the greatest extent misinterpretation of the plans. The plans, as presented, should be concise, complete and contain all design data necessary for construction.

B. Bar Scales. Indicate the appropriate Bar Scales (see Section 2.1.F). Circumstances may dictate other Bar Scales in which case special permission should be secured from the Field Liaison Engineer, Bureau of Project Delivery, before commencing plan preparations.

C. Profile Reference Block. To insure a balanced tracing, first determine whether the plan and profile can be shown on the same sheet or whether a separate sheet shall be required for the profile. The space required for and the arrangement of reference circles, bench marks, Notes and other descriptive data shall be considered when laying out the tracing. Where space permits, it is preferable to show the plan and profile on the same sheet. In laying out the Plan Sheets, the maximum use of the sheet area should be achieved.

All equalities in stationing shall be shown on the plan for both equations occurring on the survey centerline and on the construction centerline. Leader lines shall be used to carry the station equality away from the centerline to a location where space permits.

When the plan and profile are on separate sheets, they shall be adequately cross referenced and shall be enclosed in a rectangle at the bottom inside border of the sheet as shown below:

FOR PROFILE, SEE SHEET 11.

Match lines referenced to other sheets shall be used to reference portions of complex interchanges that cannot be included on a single plan sheet.

D. Centerlines and Baselines. The centerline identified by the State Route Number shall be shown horizontally across the sheet with stations increasing from left to right and indicated as follows:

1. Construction Centerline or Construction Baseline.
2. Survey Centerline or Survey Baseline.
3. Construction and Survey Centerline.

Where the construction centerline does not coincide with the survey centerline, the construction centerline shall be indicated with complete alignment data and ties to the survey centerline. If necessary, an enlarged detail of the geometry shall be shown.

When two baselines are used, they shall be adequately tied to each other and, if necessary, an enlarged detail of the geometry shall be shown.

Bearings shall be indicated for all centerline and baseline tangents including ramps. Show at least one bearing for each tangent on each sheet.

The alignment on each sheet shall be located so that the centerline station on the plan falls approximately over the corresponding point on the profile.

The roadway shall be arranged so that the last plan and profile station on the preceding sheet shall also be indicated as the first plan and profile station on the following sheet. The use of match lines is preferred in OpenRoads Designer (ORD). However, usage of overlap may be used at a minimum of 25 ft.

Sheet breaks shall be arranged to avoid curves, important intersections, concentrated topography or other design features at the ends of the sheets when possible. Avoid showing cross pipes, structures, etc., partly on one sheet and the remainder on the following sheet. If this condition is unavoidable, overlap sufficiently so that the entire structure may be placed on the following sheet.

E. Data for Structures. Show the following information near the structure on the Plan Sheet (both existing and proposed):

1. Existing Structure.

- **a.** Station.
- **b.** Type of Structure.
- **c.** Span.
- **d.** Clearance.
- **e.** Clear Roadway Width.

2. Proposed Structure.

a. Station.

b. Type of Structure.

c. Span - along construction centerline (Indicate c-c bearings, etc.).

d. Under clearance - actual minimum.

e. Skew - Lt or Rt.

f. Roadway width between curbs or clear roadway (Indicate sidewalk width and side, Lt or Rt, if applicable).

g. Structure S- _____ Recommended _____.

F. Hydraulic Data. For all waterway structures, when there is a drainage area of 0.5 mi^2 or more, the Construction and Structural Plans to be submitted for PS&E approvals shall show the following data on the Plan Sheet: (1) Drainage Area (in square miles), (2) the magnitude, frequency and water surface elevations for the design flood and the 100-year flood, if different from the design flood, (3) if available, the magnitude, water surface elevations and date of occurrence of the flood of record, if greater that the 100-year flood and (4) if required, the magnitude, frequency and water surface elevations for the overtopping flood.

G. Profile Information. On the profile, the existing ground line, existing structures, existing stream beds, existing railroads and existing ground elevations shall be shown. Profile elevations of stream beds and water surfaces shall be indicated at 50 ft intervals and critical points for 500 ft upstream and downstream from the construction centerline. Streams to the left of centerline shall generally be shown back or to the left and streams to the right of centerline generally be shown ahead or to the right. All line work for existing profiles shall be shown as dashed lines except that the existing ground line along the construction centerline shall be a continuous, solid line.

The datum elevation on the profile shall be shown, labeled and selected with due regard for the extremes of elevation which shall occur on each sheet so that the profile shall not crowd the plan if it is on the same sheet. The datum elevation shall preferably be in multiples of 10 ft.

Elevations of the existing ground on the construction centerline shall be slant lettered to the left.

All equalities in stationing shall be shown below the datum line. These include both equations occurring on the survey centerline and those equating survey and construction centerlines.

Stationing:

1. Full stations shall be lettered horizontally or vertically below the datum line.
2. Plus stations shall be lettered vertically below the datum line.

The following items shall be shown on the profile:

1. Proposed Roadway
2. Percentage of Grade
3. Vertical Curve Data
4. Sight Distances
5. Pipes
6. Inlets and Manholes
7. Channel Grade Line
8. Structures
9. Datum Elevations
10. Limits of Work and Start/Stop Work Limits

The proposed centerline profile grade shall be shown vertically to the right and shall be indicated as follows: G-214.16. Profile grade elevations shall be shown at all full stations, plus 50 ft stations such as +50 and at the vertical and horizontal control points such as PVC's, PVI's, PC's, PT's, etc., and for every station having a cross section. At critical areas, it may be necessary to show additional elevations. When a profile grade elevation is to be shown at a station where no existing ground elevation has been taken, show the elevation in the normal position.

All graphic grade profiles shall be shown as a long, dashed line.

The Profile Sheet shall indicate PVC's and PVT's using a small, single circle on the profile grade line. PVI's shall be shown using two small, concentric circles at the intersection of the tangent grade lines.

The percent of grade (%) shall be shown for all grade lines on the proposed centerline profile and shall be shown in hundredths of a percent (0.01%). For special cases, where tight controls or when meeting existing pavements dictate, the percent of grade can be indicated in thousandths of a percent (0.001%). For ramps in interchange areas and in other areas, the proposed grade elevations shall be shown at full stations and at plus 50 ft stations such as +50. Additional proposed grade elevations shall be shown on both edges of the pavement, at plus 25 ft stations such as +25, +50, +75 and on entrance and exit gores until the ramp attains the point of constant width with normal superelevation.

Complete profiles are required and shall be shown for adjustments to intersecting roadways and streets (excluding driveways).

H. Plan Sheet Requirements. A standard North Arrow shall be placed on every sheet in a clear area near the top center or top right-hand side of the sheet.

All plan sheets shall be numbered. The use of letters after the numbers, such as 12a, 12b, etc., on associated sheets is not permitted, except for plan revisions.

Where an Aerial Easement is required, the horizontal limits shall be shown on the plan and shall be labeled as follows:

LIMIT OF AERIAL EASEMENT, STA _____

The plan sheets shall indicate PC's, PT's, TS's, SC's, CS's and ST's using a small, single circle on the centerline. PI's, POT's, POC's and POST's shall be shown using two small, concentric circles on the centerline or on the tangent.

Terminal joints and pavement relief joints shall be shown.

Show the Survey Book Number in the lower right-hand corner of the sheet between the border and the datum line.

The "Limits of Work" stations for the plan and profile shall be shown. Start Work and Stop Work stations for the plan and profile shall be shown for "Also" routes, crossroads, and roadways being rehabilitated for abandonment purposes, temporary crossovers outside the construction area, temporary roadways, temporary connections, service roads, railroad-highway grade crossings and on channel changes.

All existing topography and ground elevations shall be slant lettering; all proposed work shall be lettered vertically. Dithering techniques should be used as described in Chapter 13, Section 13.2.

I. Topography. All existing topography shall be shown. Of particular importance are existing roads, streets, driveways, buildings, power and telephone lines, underground pipes and cables of all kinds (see Section 2.6.T), inlets and manholes, inlet and/or outlet ditches, retaining walls, curbs, sidewalks, curb ramps, fences, railroads, bridges and culverts. Streams, lakes, swamps and other physical features shall also be included.

The type of vegetation or ground cover, together with boundaries or limits of wooded areas, groves, etc., shall be indicated with the standard symbols. Indicate distances to the nearest 0.1 mi at each end of project as indicated in Section 2.2.A, item 17.

Information on the location of leech beds, septic tanks, wells and accessories shall be obtained during the basic survey and shall be shown on the Topographic Plan within the survey area. It is not necessary to perform extensive investigations, such as excavation, to determine the exact locations of these underground facilities. An indication as to the approximate location shall be sufficient if it is made clear on the plans that the location is, in fact, approximate and is not critical to the design. The designer shall be guided by existing Board of Health regulations since the loss or disturbance of sewage disposal facilities often requires the demolition of the dwelling. County, city, borough and township limits shall be indicated and tied to the centerline by station and angle, where possible.

J. Intersecting Roadways. The centerlines of all intersecting roadways and streets shall be tied to the construction centerline by station and angle. If the construction centerline is a horizontal curve in the area of the crossroad, the tie shall be made a POC and a point on the subtangent.

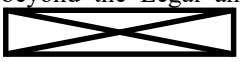
Profiles of existing crossroads, driveways, field entrances, etc., shall be shown as dashed lines from the mainline profile at the intersecting stations with the mainline. Do not show elevations of the profile. Driveways to the left of the mainline centerline are generally shown back from the intersection point and driveways to the right are generally shown ahead of the intersection point. Indicate the profile as follows: DRIVE RT OR TWP RD 370 LT, etc.

Indicate the width and type of existing driveways as: 12' STONE DRIVEWAY. Do not dimension.

Indicate the width and length of driveway adjustments in the remarks column in the Tabulation of Quantities Sheet (the width being the same as the existing).

Indicate the radius of major driveway intersections. A 10 ft minimum radius is desirable.

Driveway replacements shall be carried across the shoulder to the pavement when they are of a higher type of construction material than the shoulder itself.

Where driveway adjustments, etc., extend beyond the Legal and/or Required Right-of-Way Line, indicate in tabulation remarks column with this symbol: 

This symbol is commonly referred to as the "knock-out block". Profile change of driveways shall be shown on cross sections.

Show the Legal Right-of-Way Lines for all intersecting roads if they exist. See Figure 3.12 in Chapter 3, Section 3.5 for an example sketch.

When Paved Shoulders are used on the mainline, carry the shoulders from the mainline around the radius to the point of tangency (PT) on the side road and, from that point, use the type of shoulders along the intersecting roadway as required. Indicate on the plans the limits of the mainline shoulders and the beginning of the side road shoulders using a line across the shoulder with the notation STOP TYPE _____ PAVED SHLDR and an arrow to the line.

Indicate the radius of paving at intersections. It is not necessary to show the radius of the outside edge of shoulder if a constant width shoulder is carried around the intersection. If a constant width shoulder is not used, indicate paving and shoulder radii with lines leading from the radius point to the shoulder edge and the paving edge.

K. Abandonment and Vacation. Abandonment and Vacation, as shown on the Right-of-Way Plan, shall also be shown on the Construction Plan. The plan should incorporate all work necessary to bring roadways to be abandoned to an adequate condition for acceptance by the legal political subdivision. See Figure 2.9 for examples of plan presentations for Abandonment and Vacation.

L. Horizontal Curve Data. Horizontal curve data, together with leader lines, carrying the PC, the PT (TS, SC, CS and ST for spirals) and equation stationing on the centerline shall be located to the inside of each curve. If the construction and survey centerlines (baselines) do not coincide, label curve data to indicate this condition.

When the curve extends over more than one sheet, the curve data shall be repeated on each sheet showing a control point. The arc definition shall be used for all curves. Horizontal curve data shall be presented as indicated in Figure 2.10.

M. Station Equality on Profile. In cases where an office line shift is made and has not been run in the field, a sketch should be included on the plan tying the construction centerline to the survey centerline. Stationing and offset distances 90° from the survey centerline shall be included on the plans. Figure 2.11 indicates the method of showing equivalent stations and elevations on a profile for an office line shift from the survey centerline. When a horizontal line shift is greater than 6 ft, usually new cross sections shall be taken in the field on the construction centerline.

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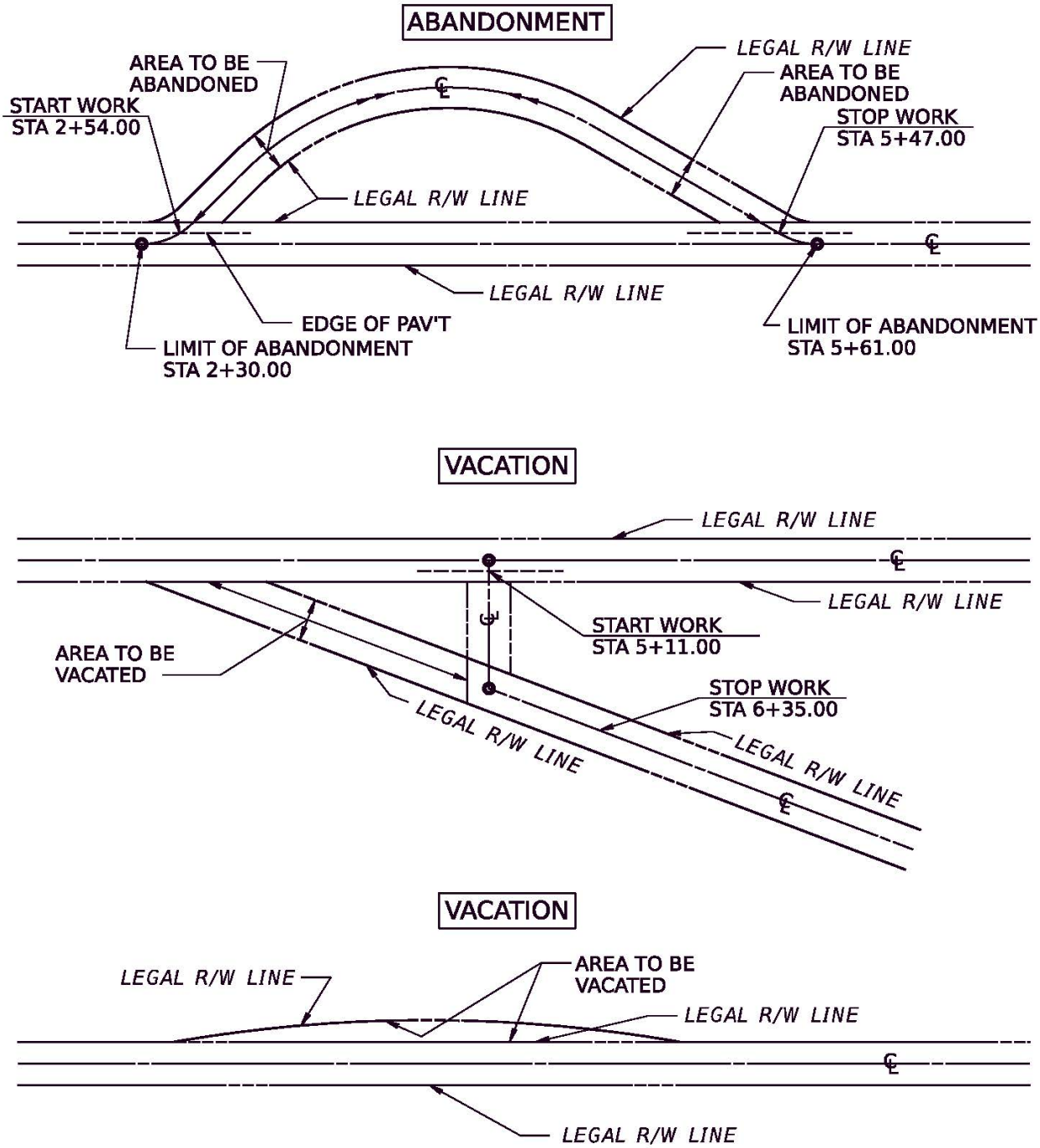
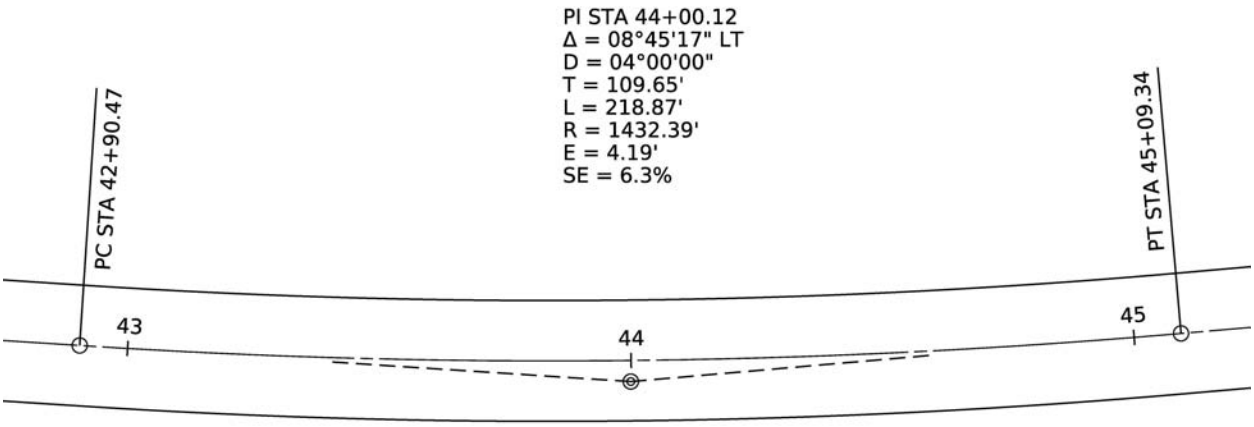


FIGURE 2.9
EXAMPLES OF PLAN PRESENTATION FOR ABANDONMENTS AND VACATIONS



ALTERNATE METHOD

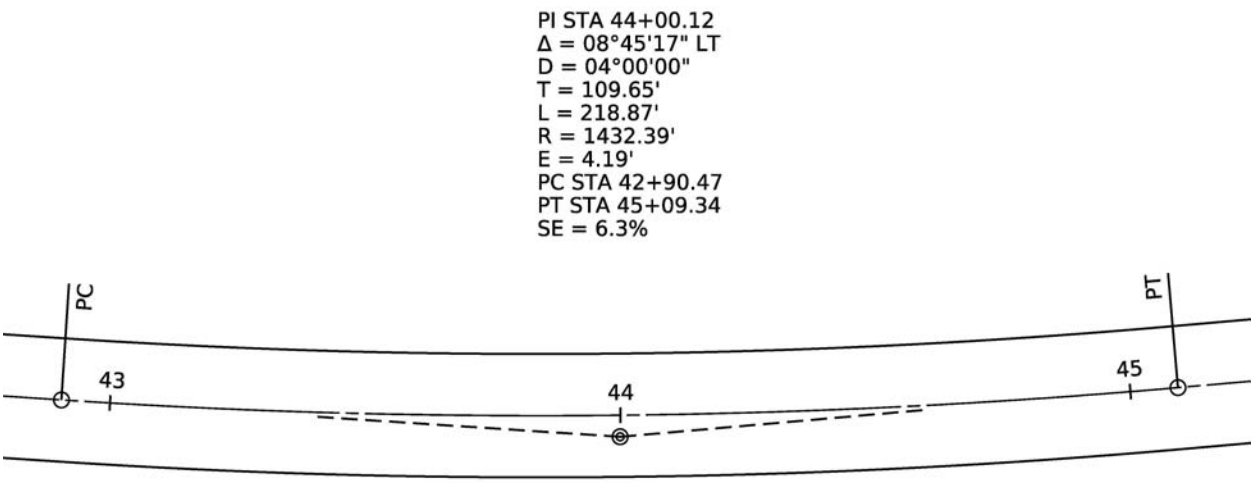


FIGURE 2.10
HORIZONTAL CURVE DATA PRESENTATION

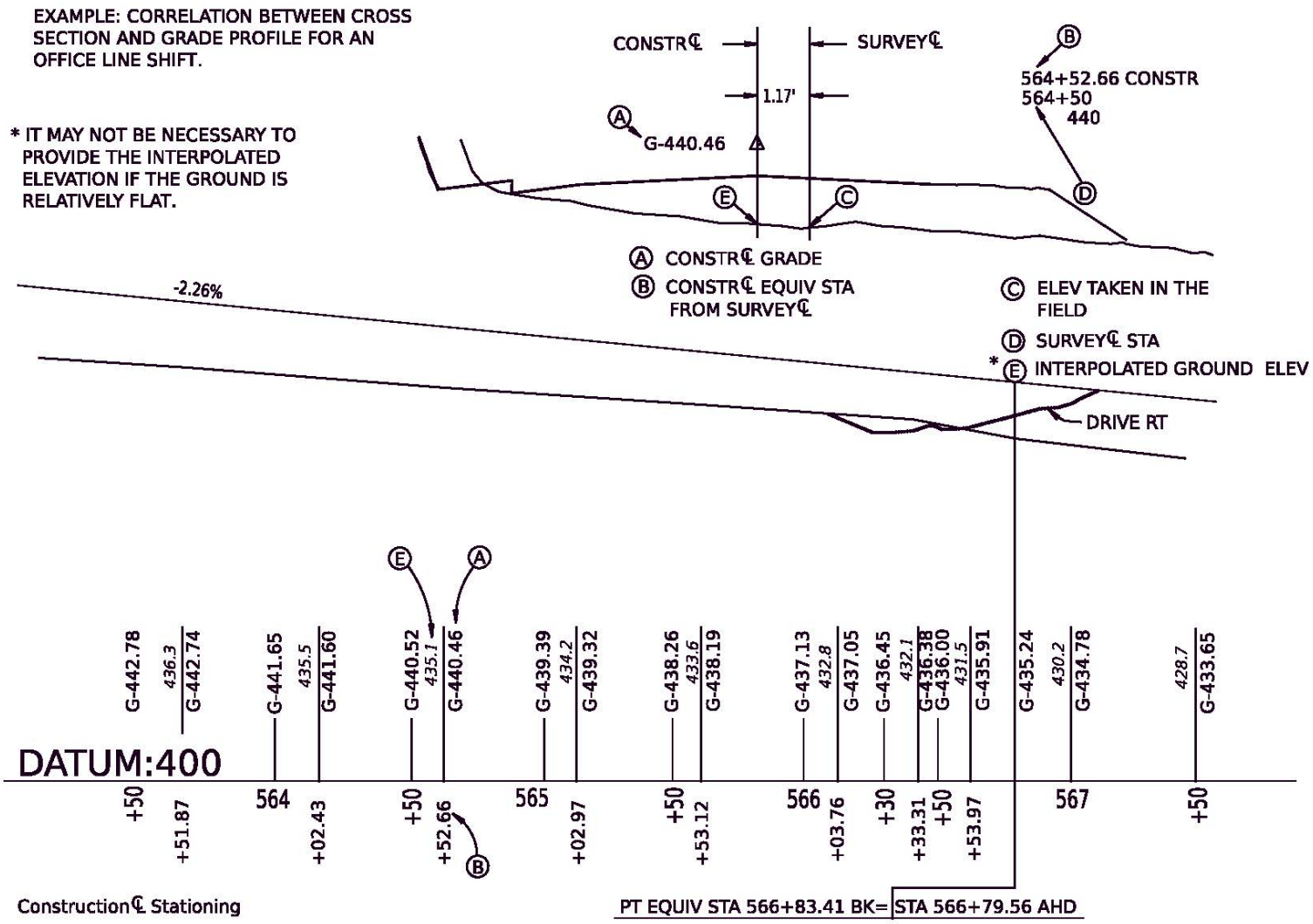


FIGURE 2.11
METHOD FOR INDICATING EQUIVALENT STATIONS AND ELEVATIONS ON A PROFILE

N. Spiral Curve Data. The following horizontal curve data symbols shall be indicated on the plans for spiraled curves (see Publication 13M, Design Manual, Part 2, *Highway Design*, Chapter 2). Only abbreviations and appropriate distances are to be shown on the plan:

PI Station
Delta Angle (Δ)
Delta, Simple Curve (Δ_c)
Radius, Simple Curve (R_c)
Length, Simple Curve (L_c)
Spiral Angle (θ_s)
Spiral Length (L_s)
Spiral Tangent (T_s)
Spiral External (E_s)
Tangent Distance to PC (k)
Tangent Offset to PC (p)
Tangent Distance to SC (x_c)
Tangent Offset to SC (y_c)
Long Tangent (LT)
Short Tangent (ST)
Long Chord (LC)
Superelevation Rate

O. Vertical Curve Data. Vertical Curve Data shall be indicated directly over the PVI, written horizontally, and shall contain the following information. See Figure 2.12 for an example of vertical curve data presentation:

PVI Station
Elevation
VC
MO
SSD or HLSD

P. Guide Rail. The location of Guide Rail shall be shown on the plans using the symbol specified in Chapter 13, Section 13.5.

Q. Pipes and Inlets. Parallel pipes shall be shown as dashed, solid blocks and circles at appropriate locations and elevations on the plan and profile respectively. Invert elevations and stations at breaks in grade, inlet and outlet ends of pipe shall be shown on the profile. Also indicate, on the profile, the percent of grade (%) for parallel pipes with an arrow showing the direction of flow.

Cross pipes shall be indicated in the plan as dashed, solid blocks and on the profile as a circle at the station where it crosses the construction centerline.

Inlet locations shall be plotted on the plan. Indicate the station and offset for inlets and identify inlets (e.g., I-1, I-2, I-3, etc.). Determine the station based on where the centerline of the grate crosses the construction centerline or baseline. Determine the offset (LT or RT) based on the distance measured from the construction centerline or baseline to the centerline of the grate.

Manhole locations shall be plotted on the plan. Indicate the station and offset for manholes and identify manholes (e.g., MH-1, MH-2, MH-3, etc.). Determine the station based on where the centerline of the manhole cover crosses the construction centerline or baseline. Determine the offset (LT or RT) based on the distance measured from the construction centerline or baseline to the centerline of the manhole cover.

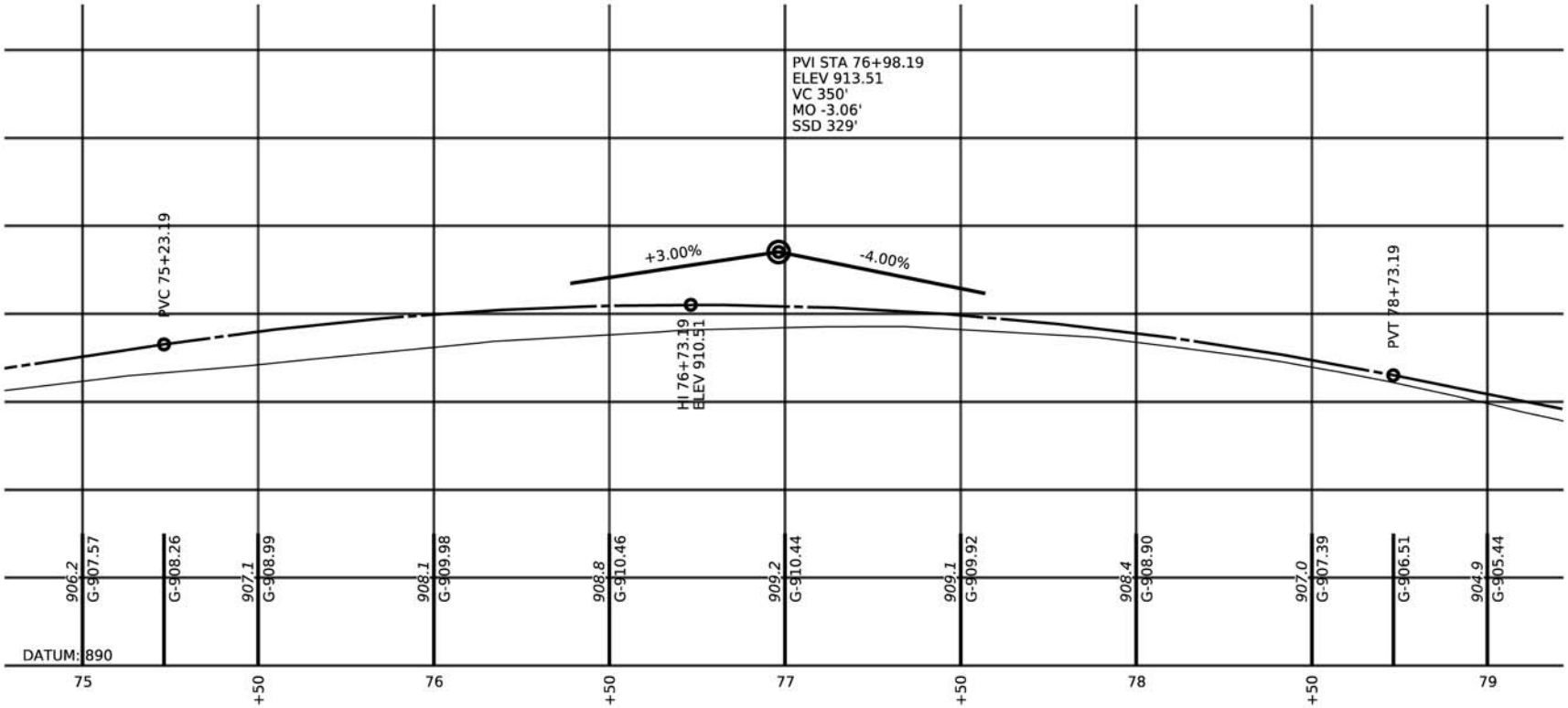


FIGURE 2.12
PRESENTATION OF
VERTICAL CURVE DATA

R. Sidewalk and Curb Ramps. Sidewalks should be considered wherever roadside and land development conditions affect regular pedestrian movement along a highway. If constructed without a legal agreement with the local municipality or property owner, the Department will be responsible for maintaining the sidewalk if located within a township and may be responsible in other communities. Department policy is that the municipality or property owner contributes a fair share of the total sidewalk and incidental curbing costs, is responsible for any right-of-way costs, and agrees to operate and maintain the sidewalk. A written agreement between the municipality and the Department specifying these conditions must be executed before construction.

The width of a new sidewalk should conform to that of the existing sidewalk. The approximate limits of sidewalk removal and replacement may be indicated by field inspection, but the final limits shall be determined by the designer during final design. Federal funding may be used to match local funding for sidewalk construction. Sidewalks should be suggested, where required, for safety reasons and where the municipality can provide the non-Federal share of the expenditures.

Where a minimum amount of existing sidewalk is to be replaced, the top of curb grade shall fit the sidewalk very closely and be designed so that the sidewalk shall drain over the curb at all points. Where the entire sidewalk is to be replaced to the building line, the floor elevations and entrances shall control the grade. Drainage shall be away from the building at all points on the sidewalk.

The designer shall refer to Publication 13M, Design Manual, Part 2, *Highway Design*, Chapter 6 for complete Department policy regarding sidewalks and curb cut ramps.

S. Channel Change. The extent and width of a channel change shall be indicated from a channel baseline which shall be tied to the construction centerline by angle and station at the intersection with the construction centerline. Stations and offsets shall be shown on the plans which permit the extent of the channel area to be laid out in the field.

The top of the channel change shall be indicated with a dashed line. The area utilized for the channel change shall be indicated as a continuous line and shall be clearly labeled on the plan portion as TEMPORARY CONSTRUCTION EASEMENT (CHANNEL) OR (DRAINAGE) with dimension lines.

Tie Temporary Construction Easements to the Legal or Required Right-of-Way Line, as the case may be, with pluses and offsets. Wingwalls of structures shall be indicated within the Legal or Required Right-of-Way Line.

When a channel change baseline is used, indicate the horizontal limits of Temporary Construction Easements as CHANNEL - STOP WORK STA _____ or START WORK STA _____ (See Chapter 15, Section 15.1, Plate A-III).

Include a typical section of the proposed stream channel on the corresponding Plan Sheet with typical dimensions and indicate if width is variable. Show fish channels where required. Show a profile for long channel changes.

T. Utilities. The location of all existing and proposed surface, subsurface and aerial utility lines shall be clearly shown on the plan, profile, and cross sections. Show overhead clearances at the minimum sag height over the pavement and shoulders for aerial utility lines and the depth below existing ground for subsurface utilities (reference Publication 16, Design Manual, Part 5, *Utility Relocation*, Chapter 6, Section 6.3), when included in the scope. Where utility congestion is significant, a separate Detailed Utilities Plan Sheet may be necessary (reference Section 2.13). Utilities shall be shown in accordance with Sections 2.13, 3.7.B, and 13.5.

With the exception of the municipally-owned utilities, such as water lines and sanitary sewers, utility construction on rural and most urban projects is rarely incorporated into the proposal as an item of work for the Contractor. In larger cities, however, this item is normally planned under a series of agreements with the various utilities involved with the Department acting as the coordinator.

The appropriate Notes for Utility Easements shall be shown as outlined in Section 3.7.B.

U. Conduits. All conduits to be placed under the pavement shall be shown and located on the Plan Sheet.

V. Right-of-Way. Show and label the legal Right-of-Way lines for all existing roadways and streets on the plan, including areas beyond the "Limit of Work" stations and "Stop Work". Indicate the width at all breaks and at each end of the sheet.

On projects where a combination Construction and Right-of-Way Plan shall be made, the existing Right-of-Way line shall be indicated as the LEGAL RIGHT-OF-WAY LINE. The proposed Right-of-Way line shall be indicated as the REQUIRED RIGHT-OF-WAY LINE.

Property owner's names and property lines need not be shown within the confines of the Legal Right-of-Way Line as established by a separate Right-of-Way Plan. The names and property lines shall be shown on the Combination Plans. All property owners' names and their property lines abutting the Legal Right-of-Way Line shall be shown with all required information.

W. Interchanges and Channelized Intersections. In addition to the normal Plan Sheets, all specified interchanges and intersections shall be drawn to a scale of 1" = 200' or smaller to show the complete interchange on a single sheet. This drawing shall follow the last Plan Sheet for the interchange and shall be included in the total number of sheets in the plan.

The drawing shall include the following data:

1. Construction Centerline or Baseline.

2. Stations identified at a minimum 500 ft interval with "ticks" at 50 ft intervals.

3. All geometrics including curve data (curve data may be tabulated) and equalities.

4. Coordinates for control points shall be shown in tabular form as indicated in Figure 2.7.

5. Existing streams and proposed relocations.

6. Identification of all routes and ramps.

7. Proposed structures.

8. Existing and/or proposed railroads and railroad structures.

9. North Arrow and Bar Scale.

10. Existing and proposed utility facilities. In very congested areas, a separate sheet may be used to show utilities.

X. Reference Circles. Reference circles shall be 1.5 in in diameter and shall be placed vertically over the control point 0.5 in below the top border of the plan sheet, when possible. If space is not available on the plan sheet, the reference circles may be placed on a separate sheet and the location of the reference circles must be indicated on each plan sheet using a note similar to that used for referencing profiles.

Show centerline and/or tangents on circles parallel to the lines on the plan.

The following information shall be shown in conjunction with the reference circles:

1. Label baseline or centerline (construction or survey).

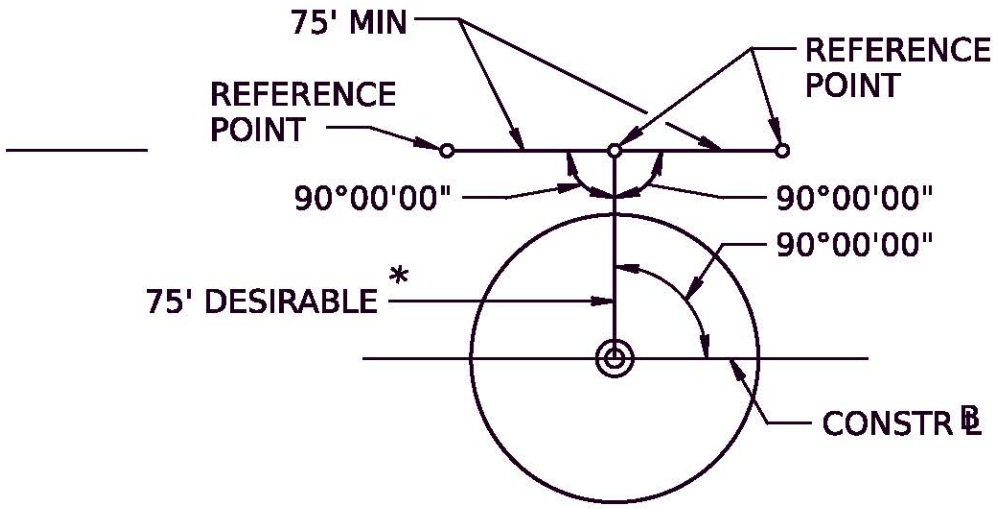
2. Type of control point (PC, PI, PT, etc.).

3. Station.

4. Azimuth angle (Angle at the PI measured clockwise from the back tangent to the ahead tangent).

5. Indicate PC's and PT's with a single circle and POT's and PI's with two concentric circles.

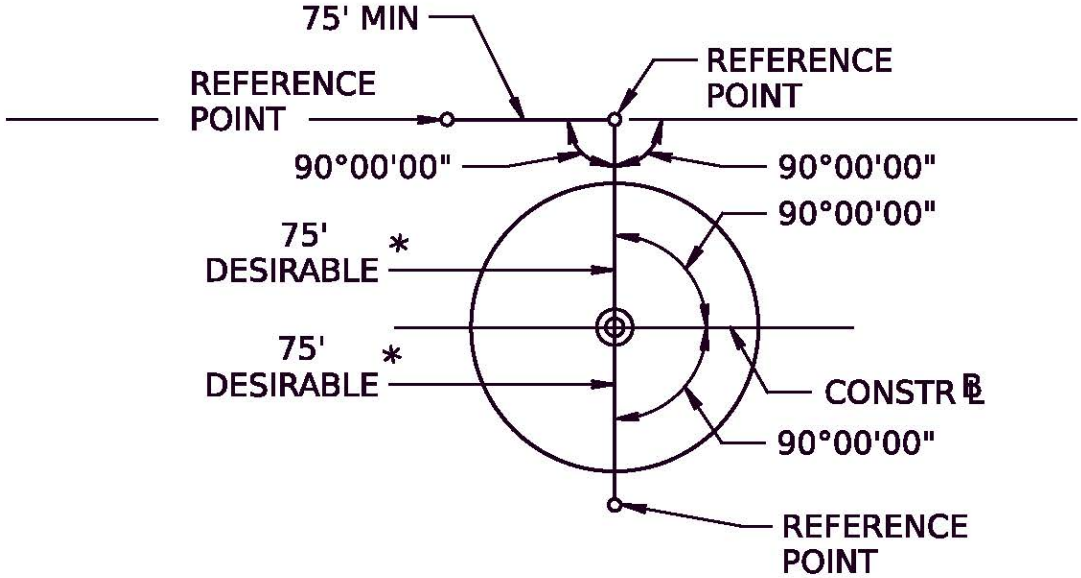
See Figure 2.13 for preferred and acceptable reference circle details.



POT STA 129+49.05 EB

PREFERRED REFERENCE

* ACTUAL DISTANCE CONTROLLED BY R/W LINES. REFERENCE POINT ON OR JUST INSIDE R/W LINE.



POT STA 129+49.05 EB

ACCEPTABLE REFERENCE

FIGURE 2.13
PREFERRED AND ACCEPTABLE
REFERENCE CIRCLE DETAILS

Y. Bench Marks. All bench mark data shall be shown along the upper edge of the Plan Sheet 0.5 in below the top border and vertically above its location on the drawing. All bench marks used in the survey, even if beyond the "Limit of Work" stations, shall be shown on the drawing. For bench mark data, indicate the following:

1. Elevation.
2. Location (Distance left or right of station).
3. Description (Spike in 24" Oak, etc.).

See Figure 2.14 for a sample presentation for bench mark data.

BM #25 ELEV 1032.536 232' RT STA 253+00 EBL RR SPIKE IN ROOT 8' OAK FLAGGED

FIGURE 2.14
SAMPLE BENCH MARK
DATA PRESENTATION

See Publication 122M, *Surveying and Mapping Manual*, for additional information on bench marks.

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2.7 FINAL DESIGN CROSS SECTIONS

A. General Information. Cross sections shall accurately depict the existing relief and human-made features as sections perpendicular to the respective stations on a survey centerline, a baseline or construction centerline and shall show the proposed cross sectional outline of the new facility complete with all its functional elements.

Cross sections shall be plotted on the standard ANSI D size, 34 in × 22 in Cross Section Sheets, along the length of the sheet, with the stations increasing from the bottom to the top of the sheet. Usually, only one column of cross sections is placed on a sheet; however, when the Right-of-Way is narrow, it is feasible to place two columns on a sheet. In this case, the cross section stationing progresses from left to right as well as from bottom to top.

The standard scale for plotting cross sections shall be 1" = 5' both horizontally and vertically. When the roadway section cannot be plotted on one sheet at this scale, it is permissible to use a scale of 1" = 10'. Where the 1" = 10' scale is used, it shall be clearly identified.

Attention shall be given to properly centering the sections on the Cross Section Sheet. For two-lane construction and new multi-lane construction, sections are normally centered on the sheet using the heavy vertical grid line at the centerline of the sheet as the centerline or baseline.

In cases where additional lanes are to be constructed adjacent to existing lanes, centering of the section shall depend upon the location of the centerline in relation to the roadway template. Locate the centerline as far left or right of the middle of the sheet as necessary to accommodate the width of the section. One of the heavy vertical grid lines shall be selected as the survey centerline so that the complete, ultimate section shall be completely located on the sheet. Revise the numbers at the top and the bottom of the grid to correspond to the location of the heavy vertical grid line chosen as the centerline.

When the complete cross section cannot be shown in its entirety on one sheet, appropriate match lines, with referenced sheet numbers, shall be provided on additional Cross Section Sheets, such as an interchange with adjoining cross sections.

As many sections as practicable shall be placed on each sheet to allow a reasonable amount of latitude for possible grade changes. Prior to any plotting, the soil profile should be checked for possible unsuitable material which may cause overlapping of the plotted sections.

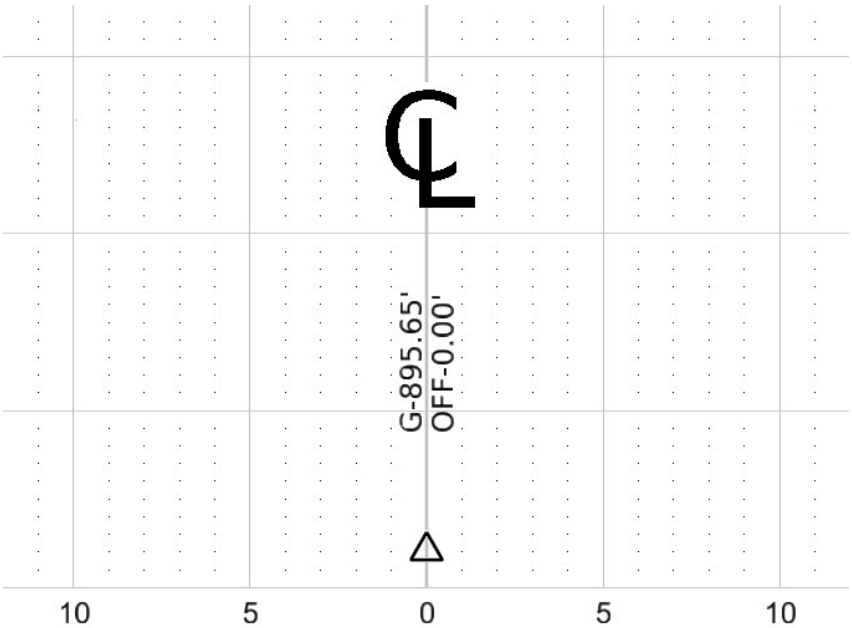
A heavy horizontal grid line shall be selected as an elevation datum line on an even 5 ft elevation (10 ft as required) for each section. Sections shall be spaced with due regard to plotting the proposed template to avoid overlapping adjacent sections.

Cross sections are generally prepared at 50 ft intervals; however, cross sections at 25 ft intervals should be considered in developed areas and where the existing ground is non-uniform. Cross sections at shorter intervals (< 25 ft) could be considered if necessary at strategic locations within the project. Half sections shall be prepared for private driveways to insure proper correlation on the profile or at isolated locations that may present various design issues, such as existing physical features that may impact the construction. After all existing relief and human-made structures have been plotted and checked, the proposed cross section shall be drawn.

Generally, just the location, elevation and description of an item shall be shown on the Computation Sheets which shall be submitted with the plans. The following information shall be shown on the sections:

1. Proposed Grade Line Elevation. Plot elevation as a point and enclose with a triangle on sections as indicated below. Label "G-895.65'". This grade will correspond with the profile grade for each station.

Example:



2. Earthwork Templates. Show as indicated below (Template areas consist of the roadway excavation and embankment only).

3. Drainage Facilities. Outline of proposed drainage facilities such as inlets, endwalls, manholes, pipes, subsurface drains, catch basins, ditches, etc. For each structure, include only a plus station, location left or right and a description as shown below:

STA 10+08.25 18.90' LT
1 EA TYPE S TOP UNIT AND GRATE
1 EA STANDARD INLET BOX, HEIGHT ≤ 10'
INVERT ELEV 601.38

Show the invert elevations for all drainage structures and for transverse pipes where they cross the centerline. Show the invert elevations for all parallel pipes. On a single run of pipe, with a straight grade, it is not required to show more than two pluses and two elevations. Indicate, with an arrow, the direction of flow for all pipes. For pipes, indicate size only; no length and do not show limits of the Class 4 Excavation. Show the side slopes on ditches which are not standard.

4. Limits of structures by stationing.

5. End earthwork station and area.

6. Superelevation data shall be indicated as follows and shall be shown near and above the affected edge of pavement:

Four-Lane Highways: S = ±0.00 with reference to the profile grade.

Two-Lane Highways: S = ±0.00 with reference to the normal edge of pavement.

Superelevation data may also be shown in the form of cross slopes or with reference to the edge of pavement.

7. At the beginning of tangent runout, show this Note:

STATION _____ END NORMAL SECTION, BEGIN SUPERELEVATION TRANSITION

At the beginning of the full superelevation, show this Note:

STATION _____ END SUPERELEVATION TRANSITION, BEGIN FULL SUPERELEVATION

At the end of the full superelevation, show this Note:

STATION _____ END FULL SUPERELEVATION, BEGIN SUPERELEVATION TRANSITION

At the end of the tangent runout, show this Note:

STATION _____ END SUPERELEVATION TRANSITION, BEGIN NORMAL SECTION

8. Datum elevation and station of each cross section near the right-hand border of the sheet.

9. Equalities as shown on the plan and profile sheets.

10. Template areas for and stations of ditch excavation, channel change, benching, etc.

11. Areas for cut and fill.

PRELIMINARY	
C-	F-
FINAL	
C-	F-
TC-	TF-

12. Begin and end stations of parallel benches.

13. Subsurface conduits, including utilities (indicate size and elevation).

14. Mine voids and shafts.

15. Private and commercial driveways.

16. Areas requiring rock embankment shall be hatched.

17. Boundaries of unsuitable material. Show cross-hatched with 45° diagonal lines and label as UNSUITABLE MATERIAL on each cross section.

18. Floor elevations of buildings.

19. Guide rail.

20. Curb.

21. Sidewalk.

See Chapter 15, Section 15.2, Plate B-XI for sample cross section sheet.

The general location of sections plotted on the sheet, if other than mainline sections, shall be indicated in bold print near the upper right-hand side of each sheet.

Each sheet shall be clearly identified by completing the Identification Block in the upper right-hand corner and shall be numbered consecutively.

B. Assembling Cross Sections. To facilitate handling, to reduce wear and tear on the sheets, and to promote uniformity and orderliness in the assembling of cross sections, the following guidelines shall be followed:

1. Large Projects. 200 to 800 + sheets.

a. No bundle shall contain more than 200 sheets.

b. Mainline sections shall be in the first bundle(s).

c. Miscellaneous sections - cross roads, side roads, channels, ditches, etc., shall be in the last bundle(s) in sequential order with the mainline stationing.

2. Small Projects. Less than 200 sheets.

a. Mainline sections shall be placed at the beginning of the bundle and the miscellaneous sections shall be placed at the end.

The contents of each bundle of cross sections shall be clearly identified on the cover. The first bundle shall have a reproducible Title Sheet with an index of the contents of the bundles and it shall be sheet number 1 of the cross sections. Place the Professional Engineer's seal and signature on the Title Sheet.

Examples:

Cumberland County
SR 1023 Section A04
Station 0+00 to Station 165+15 (Limits of Work)
Total Sheets 353

<u>Cross Sections</u>
Main Line
Station 0+00 to Station 90+50
Sheets 2 thru 200
Bundle 1 of 2

Cumberland County
SR 1023 Section A04
Station 0+00 to Station 465+15 (Limits of Work)
Total Sheets 353
#

Cross Sections
Miscellaneous
Cherry Land - Station 10+00 to Station 16+40
Township Road 510 - Station 0+00 to Station 3+40
Ball Run Relocated - Station 5+00 to Station 16+20
Sheets 201 thru 353
Bundle 2 of 2

Examples:

Westmoreland County
SR 0030 Section 02R
Station 0+00 to 165+15 (Limits of Work)
Total sheets 80

SR 0030 Station 0+50 to Station 164+85 2 thru 70
SR 1020 Station 0+00 to 25+00 71 thru 75
Township Road 510 Station 5+10 to Station 12+35 76 thru 80
#

Each bundle of sections shall be punched with three holes 0.75 in from the left hand side and reinforced. Holes shall be located at the center and at 2 in from the top and bottom.

The front and back covers for each bundle shall be of heavy brown wrapping paper of adequate size to cover the entire bundle. A 22 in × 1.5 in wide heavy cardboard strip shall be placed on the outside of the front and back covers and fastened through all sheets with three brass fasteners or equivalent.

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2.8 RIGHT-OF-WAY TERMINOLOGY ON CONSTRUCTION PLANS

1. "LEGAL RIGHT-OF-WAY LINE"

2. "LEGAL RIGHT-OF-WAY LINE FOR ----------" (insert the proper type of local road or street; e.g. township road, borough street, city street)

3. "LEGAL SLOPE EASEMENT"

4. "TEMPORARY CONSTRUCTION EASEMENT" (See Chapter 3, Section 3.1.R for details)

5. "ENTIRE AREA INCLUDED IN LEGAL RIGHT-OF-WAY FOR LIMITED ACCESS"

6. "EXTENT OF LIMITED ACCESS"

7. "LEGAL RIGHT-OF-WAY LINE FOR LIMITED ACCESS"

8. "LEGAL RIGHT-OF-WAY LINE FOR SERVICE ROAD"

9. "LEGAL PRIVATE ACCESS (_____, _____)" [The parcel number or numbers of the property or properties for which the access was acquired and the interest taken (fee simple or easement for driveway purposes, not both) should be designated within the parenthesis.]

10. "LEGAL OCCASIONAL FLOWAGE EASEMENT"

11. "ENTIRE AREA INCLUDED IN LEGAL RIGHT-OF-WAY"

12. "AREA TO BE ABANDONED"

13. "AREA TO BE VACATED"

14. "LEGAL SIDEWALK EASEMENT"

15. "LEGAL AERIAL EASEMENT"

16. "LEGAL WETLAND MITIGATION (FEE SIMPLE or EASEMENT)"

17. "LEGAL STREAM MITIGATION (FEE SIMPLE or EASEMENT)"

18. "LEGAL TERRESTRIAL MITIGATION (FEE SIMPLE or EASEMENT)"

19. "LEGAL REPLACEMENT _____ [insert proper type of land, e.g. parkland or game land] (_____, _____) [The public entity for which the lands were acquired and the interest taken (fee simple or easement for xxx land purposes, not both) should be designated within the parenthesis.]"

20. "LEGAL CHANNEL EASEMENT"

21. "LEGAL DRAINAGE EASEMENT"

22. "LEGAL UNDERGROUND STRUCTURE SUPPORT EASEMENT"

23. "LEGAL DITCH EASEMENT"

24. "LEGAL UNDERGROUND DRAINPIPE EASEMENT"

25. "LEGAL UNDERGROUND ANCHOR EASEMENT"

26. "LEGAL SOUND BARRIER EASEMENT"

27. "LEGAL RIGHT OF WAY CONVERTED TO AERIAL EASEMENT"

28. "LEGAL SIGHT DISTANCE EASEMENT"

29. "LEGAL ITS CONDUIT EASEMENT"

30. "LEGAL TRAFFIC SIGNAL EASEMENT"

All "Easement" or "Area" Notes shown on the Right-of-Way Plan shall be shown on the Construction Plan.

For Utility Terminology, see Chapter 3, Section 3.7.B.

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2.9 ABBREVIATED PLANS

The use of an abbreviated format Construction Plan is encouraged for rehabilitation-type projects. These plans may be 11 in × 8.5 in or full-sized standard ANSI D size, 34 in × 22 in. The originals shall be of high-quality so that reproductions are legible. The 11 in × 8.5 in plans shall be included directly in the proposal.

Permanent records shall be maintained in the Central Office of all plans whether they are full-size or 11 in × 8.5 in plans. Normally, 11 in × 8.5 in plans can be used for projects such as resurfacing, widening, shoulder reconstruction, guide rail replacement, minor bridge repairs, etc. The maximum number of sheets for an abbreviated plan shall be 50 sheets.

When utility relocation or adjustments are required, a minimum plan for use with the utility company shall be provided in accordance with Publication 10C, Design Manual, Part 1C, *Transportation Engineering Procedures*, Chapter 4, Section 4.6 and Publication 16, Design Manual, Part 5, *Utility Relocation*, Section 3.8.

The following format is to be utilized when abbreviated plans are used:

1. Title Sheet. The Title Sheet shall contain the following information (Refer to Figure 2.15 for a sample of an 11 in × 8.5 in Construction Plan Title Sheet.):

- **a.** State Route and Section.
- **b.** County.
- **c.** Township, Borough or City.
- **d.** Stationing Limits.
- **e.** ECMS Number.
- **f.** Total Number of Sheets.
- **g.** Design Designation.
- **h.** Traffic Data.
- **i.** Prepared by _____ (Assistant District Executive or Consultant)
- **j.** Recommended by _____ (District Executive)
- **k.** Recommended by _____ (Deputy Secretary)
- **l.** Approved by _____ (Secretary of Transportation)

2. Location Map. The Location Map shall contain all standard information (Refer to Section 2.3.C).

3. General Project Data.

- **a.** General Notes (Refer to Section 2.3.A).
- **b.** List of Equalities.
- **c.** List of Public Utilities.
- **d.** List of Existing Types of Roadway Pavement.
- **e.** Earthwork Summary.

4. Required Typical Sections.

5. Special Details (Drawings).

6. Summary of Quantities Sheet.

7. Tabulation of Quantities Sheet.

SHEET OF

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DRAWINGS
FOR
CONSTRUCTION
OF

STATE ROUTE SECTION
COUNTY

_____
(TOWNSHIP, BOROUGH OR CITY)

FROM STA. _____ TO STA. _____ LENGTH _____ FT.
FROM SEG _____ OFFSET _____ TO SEG _____ OFFSET _____

ECMS NO.

DESIGN DESIGNATION

HIGHWAY CLASSIFICATION _____
DESIGN SPEED _____
PAVEMENT WIDTH _____
SHOULDER WIDTH _____

TRAFFIC DATA

CURRENT ADT _____
DESIGN YEAR ADT _____
DHV _____
D _____
T _____

RECOMMENDED DATE _____

_____
DEPUTY SECRETARY

APPROVED DATE _____

_____
SECRETARY OF TRANSPORTATION
(ON BEHALF OF THE GOVERNOR AS WELL AS THE SECRETARY)

DATE _____

_____
ASST DIST EXECUTIVE

RECOMMENDED DATE _____

_____
DISTRICT EXECUTIVE

FIGURE 2.15
SAMPLE OF 11 in x 8.5 in
CONSTRUCTION PLAN TITLE SHEET

8. Plan Sheets. Plan sheets shall be of the straight-line format showing all items of construction included in the project. Plan sheets may be omitted for simple projects which include limited items such as resurfacing with shoulder reconstruction and are uniform throughout the project. For projects with multiple items such as drainage, pavement patching, guide rail, pavement widening and similar construction, plan sheets should be provided so that the Contractor can fully comprehend the scope of work and submit an accurate bid to the Department.

The 11 in × 8.5 in plans shall be of a high-quality to allow legible reproductions and shall contain all the data necessary for a Contractor to construct the facility to Department Standards. Readability is important and the minimum lettering size shall conform to that required on standard plans. To ensure that data is not lost in reproduction, all sheets shall have border lines approximately 0.5 in in from the top, bottom and sides of the page. Each sheet shall have the page number and contract number located within the border lines. The originals or acceptable first-generation prints should be submitted to the Central Office to assure that satisfactory reproductions can be made for the proposal. All line work within a plan should be of approximately the same density to facilitate microfilming. The mixing of 11 in × 8.5 in plans and full-size plans for one project is not permitted.

9. Control of Work Location. Normally, the work shall be controlled using the standard stationing method. However, some types of work, such as resurfacing, can be controlled using segments and offsets to identify work areas.

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2.10 CONSTRUCTION PLAN REVISIONS

A revision is defined as a change in the original Construction Plan. Construction Plan revisions are applicable to plans that have been advertised to the public through ECMS or a legal newspaper advertisement.

Procedures and projects for which to apply these revision requirements are presented in Publication 10C, Design Manual, Part 1C, *Transportation Engineering Procedures*, Chapter 4, Section 4.13.J.

The proposed plan revisions shall be highlighted on prints of the appropriate plan sheets. Do not make the changes to the original plan sheets at this time. Changes are made to the originals only after the prints have been approved.

Since no erasure of original information is permitted, the changes for minor revisions should be made on the prints by adding the new information with a cloud circling the changes and crossing out the data being revised. For extensive revisions, the original sheet shall be marked with a large "X" and a supplemental sheet added to the plan.

When making plan revisions on the prints, the plan revision block must be added and completed for each affected plan sheet as shown in Figure 2.16. The Engineer stamping the original plan must initial the plan revision block approving the revisions prior to the plan revisions being published in an addenda, if applicable.

After the prints are approved, changes are made to the original plans. In addition, an approval block to be included on the original Title Sheet shall contain the general description of all the proposed changes and a list of the sheets and parcel numbers affected by the revisions. Lines for the signatures of the District Executive, ADE- Design/ADE-Construction and the District Plans Engineer or the Assistant Construction Engineer shall be included in the block as shown in Figure 2.17. The new total number of sheets shall be shown by crossing out the original and showing the new. The revised original Title Sheet along with the other revised original sheets must be included with the final plan set provided to the contractor prior to Notice to Proceed.

Construction Plan revisions that also require changes to the Right-of-Way Plan shall also follow the requirements presented in Chapter 3, Section 3.11.

REV NO	REVISIONS	DATE	BY	APPD

FIGURE 2.16
EXAMPLE OF PLAN REVISION BLOCK

REVISED TO DELETE TEMPORARY CONNECTION AND SERVICE ROAD, AND UNKNOWN OWNERS, REVISE RAMP B CURVE DATA, ADD AND REVISE PROPERTY OWNERS, ADD TEMPORARY AREAS FOR CONSTRUCTION, REVISE PROPERTY LINES AND OFFSET DIMENSIONS, REVISE RIGHT-OF-WAY LINES, ADD FLOWAGE EASEMENTS, REVISE OWNER'S NAME, REVISE AREA OF CHANNEL NOTE AND REVISE RIGHT-OF-WAY LINE FOR LIMITED ACCESS.

PARCELS INVOLVED: 7, 12, 13, 14, 15, 16, 17, 18, 21, 22, 23, 27, 28, 29, 30, 31, 32, 33, 34, 35, 37 AND 38.

REVISIONS ON SHEETS: 2, 4, 5, 16, 26, 27, 28, 31, 32, 34, 35, 36, 37, 38, 39, 40, 41, 45, 49, 51, 57, 58, 61, 64, 68, 69, 71, 72, 73, 75, 76, 77, 80, 81, 82, 83 AND 85.

RECOMMENDED _____ 20 _____

_____
DISTRICT PLANS ENGINEER/ASSISTANT CONSTRUCTION ENGINEER

RECOMMENDED _____ 20 _____

_____
ADE DESIGN/ADE CONSTRUCTION

APPROVED _____ 20 _____

_____
DISTRICT EXECUTIVE

FIGURE 2.17
EXAMPLE OF APPROVAL BLOCK WITH SIGNATURES

2.11 DESIGN-BUILD MODIFIED TURNKEY

A Design-Build Modified Turnkey project is one in which the Department establishes the preliminary engineering information and the Design-Build team completes the design and constructs the project based on information provided. The procedures and information on developing Design-Build projects are contained in Publication 10C, Design Manual, Part 1C, *Transportation Engineering Procedures* and Publication 448, *Innovative Bidding Toolkit*.

PennDOT will provide the contractor with contract drawings (30% Design Stage) which is the approved conceptual drawings developed by the Department for use in bidding and awarding Design-Build Modified Turnkey contracts.

These conceptual Drawings may include but are not limited to the following:

1. Title Sheet (An example of a typical Title Sheet is shown in Chapter 15, Section 15.2, Plate B-IX)

2. Index Sheet

3. Typical Section Sheet

4. Summary of Quantities Sheets (Items as shown in Bid Proposal)

5. Plan Sheets (Existing and Relocated Utilities, Right of Way location and cut/fill limits, Roadway Design and etc.)

6. Conceptual Traffic Control Plan

7. Conceptual TS&L (General Plan Sheet)

8. Conceptual General Notes (Bridge)

9. Structure Boring Plan (if available)

10. Conceptual Erosion and Sediment Pollution Control Plan

11. Conceptual Traffic Signal Plans

12. Foundation Design Parameters (as applicable)

13. H&H Report including Permits

The conceptual Construction Drawings must have a Professional Engineer's Seal Block in accordance with Section 2.1.K and Figure 2.1.

The Contractor will be required to submit a Preliminary and Final Construction Plan with a Design Engineer's PE Seal in accordance with Section 2.1.K and Figure 2.1.

The Preliminary Roadway Construction Plan or partially developed milestone plans (e.g. 60% to 90%) submitted by the Contractor for review and approval by the Department prior to plan completion will require the following minimum information:

1. Existing Topography
2. Horizontal & Vertical Alignment (detailed plan sheets)
3. Survey References
4. Typical Sections
5. Proposed Guide Rail
6. Proposed Utility Relocation
7. Right of Way location & cut/fill limits

8. Proposed limits of Roadway Construction
9. Final TS&L (in accordance with Publication 15M, Design Manual, Part 4, *Structures*)
10. Structure Boring Plan and Foundation Design Parameters (as applicable)
11. Proposed Drainage Items and location
12. Erosion & Sediment Pollution Control Plan (approved by DEP or County Conservation District)
13. Cross Sections as required

Preliminary Traffic Control Plan with the following information:

1. Plans for each required stage
2. Proposed Signing & Pavement Markings
3. Traffic Control Details as required

Partial Construction Plans shall require sealed drawings and specifications prior to beginning construction of a specific phase.

Final Roadway Construction Plan deliverable shall be prepared in accordance with the procedures discussed in Section 1.5 and are applicable to both Department and consultant prepared plans. The naming convention for standard ANSI D size, 34 in × 22 in plan sheets, which has been established for the Department's Electronic Document Management System (EDMS), is outlined in Appendix A and shall be followed. Final Roadway Construction Plans provided by the Contractor will include but not limited to the following:

1. Title Sheet
2. Index Sheet
3. Typical Section Sheet
4. Summary of Quantities Sheets
5. Tabulation of Quantities Sheets
6. Plan Sheets
7. Profile Sheets
8. Final Structure Plans (in accordance with Publication 15M, Design Manual, Part 4, *Structures*)
9. Cross Sections as required
10. Permanent Pavement Markings and Signing

The above requirements will be in accordance with the appropriate Sections of this Manual and Publication 15M, Design Manual, Part 4, *Structures*. Although Design-Build projects are bid lump sum, it will be necessary to show a breakdown of quantities by station/location on the Tabulation of Quantities sheet for the Preliminary and Final Construction Plan. The format shall follow Section 2.5 and 15.2. The Final Roadway Construction Plans may not be the same as the Final "As Built" Roadway Plans.

Design Plan Reviews shall be in accordance with Publication 10C, Design Manual, Part 1C, *Transportation Engineering Procedures,* Sections 4.13.B and 4.13.C. Structure Reviews shall be in accordance with Publication 15M, Design Manual, Part 4, *Structures*.

Final "As Built" Roadway Plans will include all Contract Drawings including Roadway Plans, Quantity Tabulations, Erosion and Sediment Pollution Control Plans, Traffic Control Plans and Structure Plans. The "As Built" drawings shall conform to the procedures as outlined in Publication 10C, Design Manual, Part 1C. *Transportation Engineering Procedures*, Chapter 5, Section 5.7 and shall be prepared per plan presentation procedures as stated in this Manual and Publication 15M, Design Manual, Part 4, *Structures*.

Final "As Built" Cross Sections should be taken at critical locations and at least 50 ft intervals on the Main Line and Side Roads. Cross Sections are to be template to reflect "As Built" details and prepared in accordance with Section 2.7.

2.12 DESIGN-BUILD REQUEST FOR PROPOSAL

In the Request for Proposal (RFP) process the Department provides general technical criteria to which the D-B team responds with separately sealed technical proposal and price proposal. The D-B team completes the design and constructs the project based on information provided in the detailed scope of work as outlined in Publication 10C, Design Manual, Part 1C, *Transportation Engineering Procedures* and Publication 448, *Innovative Bidding Toolkit*.

The highway submission process and plan development process shall be established on a project-by-project basis.

It is anticipated that most of the plan preparation will follow our traditional methods; however the requirements listed under Section 2.11 may be applied to RFP projects if clearly defined in the scope of work for the project.

2.13 DETAILED UTILITIES PLAN SHEETS

When utility congestion is significant, or when subsurface utility engineering (SUE) is used for utility data collection and depiction for any portion of the project, Detailed Utilities Plan Sheets should be considered. Detailed Utilities Plan Sheets will require the following minimum information and must be shown in accordance with Section 2.6.T:

1. Existing Topography
2. Survey References
3. Proposed Utility Relocations
4. Proposed Structures
5. Proposed Utility Easements
6. Right of Way location & cut/fill limits
7. Existing aerial utilities and poles
8. Existing underground utilities and associated structures.
    - **a.** Utility ownership
    - **b.** Function or type
    - **c.** Size
    - **d.** Utility Quality Level
    - **e.** Geographical limits of the Subsurface Utility Investigation
    - **f.** Encasement status
    - **g.** Existing utilities to be abandoned

In order to organize multiple utility companies of the same type that are depicted at various SUE quality levels on the Detailed Utilities Plan Sheets, a Utility Tabulation Sheet may be included. The Utility Tabulation sheet should list the utility contact information, utility characteristics, and the beginning and ending stations or other location information of the impacted utility with respect to its SUE quality levels.

A general note may be added to the detailed utilities plan sheet to indicate the date that the SUE data was collected, in the event that relocations may have already occurred after the SUE data was collected.

Example general note for SUE data date: "SUE information provided by {list SUE provider} was collected on {insert date of SUE plans}. Utility relocations may have occurred since the date of SUE data was collected."

Additional information will be included as per the utility investigation scope. This may include:

1. Depth of utilities
2. Spatial limits of vaults
3. Material Type
4. Elevations and other pertinent data obtained through a QLA test hole.
5. Number of cables (direct-buried) or conduits (direct-buried or encased)

Existing utilities information shall be collected and depicted in accordance with Publication 16, Design Manual, Part 5, *Utility Relocation*, Chapter 6.

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CHAPTER 3

RIGHT-OF-WAY PLANS

3.0 INTRODUCTION

A. Standard Right-of-Way Plans. Right-of-Way Plans are the end result of preliminary design phase studies and are prepared either by Department forces or by Consultants. In either case, the Designer shall be responsible for obtaining completed plans. Prior to the submission of the Right-of-Way Plans to the Central Office for approval, they shall be reviewed by the District Chief-of-Surveys and the District Right-of-Way personnel. The Right-of-Way Unit shall make recommendations regarding the right-of-way limits. All recommended changes shall be discussed fully with the Design Engineer and with the Professional Land Surveyor in control of the plan. The Professional Land Surveyor shall verify that the land surveying aspects of the plan are satisfactory. Any problems shall be resolved prior to the submission of the Right-of-Way Plans to the Central Office.

In order to acquire land, a description or plan thereof shall be prepared, containing the names of the owners or reputed owners, an indication of the estate or interest to be acquired and such other information as the Department shall deem necessary. Execution by the Secretary of such description or plan shall constitute authority for the filing of a declaration of taking in accordance with the Eminent Domain Code, 26 Pa.C.S. The description or plan shall be filed as a public record in the Department and as necessary in the County Courthouse.

Right-of-Way Plans, including Property Plots, are the basis for determining all property damages which may be involved in the construction of a highway. They are also the legal record indicating the location, the extent and the character of any acquisition of right-of-way and shall be of accuracy commensurate with the Construction Plan data.

Section 2003(e)(6) of the Administrative Code 71 P. S., Section 513(e)(6) requires that all Right-of-Way Plans define the type of interest to be acquired. The Department's policy is that all required right-of-way shall be acquired in fee simple title. However, there are exceptions to this policy such as "Free Releases" and minor partial takings on existing highways (Refer to Section 3.1 and Publication 378, *Right-of-Way Manual* for procedures for the exceptions.).

The only interests that may be acquired are those set forth in this Chapter unless otherwise approved by the Office of Chief Counsel, Real Property Division, which will coordinate with the Bureau of Project Delivery, Highway Delivery Division, Utilities and Right-of-Way Section. Plan reviewers shall not approve plans with acquisitions for interests other than those designated and as defined in this Chapter without the required approval. See Section 3.1 on the nature of interest to be acquired.

The Right-of-Way Plans for each section of a highway facility shall be checked and coordinated for accuracy with the Construction Plans for the same section. The right-of-way information indicated on the plans for each section shall be consistent with right-of-way information shown on plans for adjacent sections.

Right-of-Way Plans shall contain only such construction Notes or information necessary to establish limits for right-of-way acquisition and to accurately estimate the right-of-way costs.

Pennsylvania law provides that the establishment of a limited access highway facility in a City is subject to the approval of the City. This approval shall be evidenced by an ordinance duly passed in accordance with the law.

A Signature Block shall be provided for the City Official as presented in Figure 3.1.

Right-of-Way Plans shall be developed using the engineering graphic standards for microfilming as presented in Chapter 13.

APPROVAL _____(DATE)_____

_____(SIGNATURE)_____
(TITLE OF RESPONSIBLE OFFICIAL)

ATTESTED _____(DATE)_____

_____(SIGNATURE)_____
(TITLE OF RESPONSIBLE OFFICIAL)

FIGURE 3.1
EXAMPLE OF SIGNATURE BLOCK
FOR CITY OFFICIAL

B. Gap Plans and Final Plans. In some cases, it may be desirable to stage the preparation of Right-of-Way Plans to expedite the acquisition of certain properties. In these cases, an initial "Gap Plan" should be prepared, followed by the "Final Plan".

1. Gap Plan. Authorizes right-of-way takes in selected areas within a project, no right-of-way lines to be shown in gap areas.

2. Final Plan. Reestablishes and/or authorizes Gap Plan Right-of-Way, if necessary, and establishes right-of-way in gap areas.

Either plan may be prepared to satisfy the requirements in Publication 10C, Design Manual, Part 1C, *Transportation Engineering Procedures*, Sections 4.7 and 4.13. Plans shall be prepared at 1" = 200' or larger scales depending on the available mapping. The Gap Plan leaves gaps in the areas where sufficient data is not available to complete the plan. The gaps should start and stop at property lines if possible. The Final Plan to fill the gaps should be prepared as early in final design as possible. It shall be necessary to reference both plans in the Construction Plan under the General Notes.

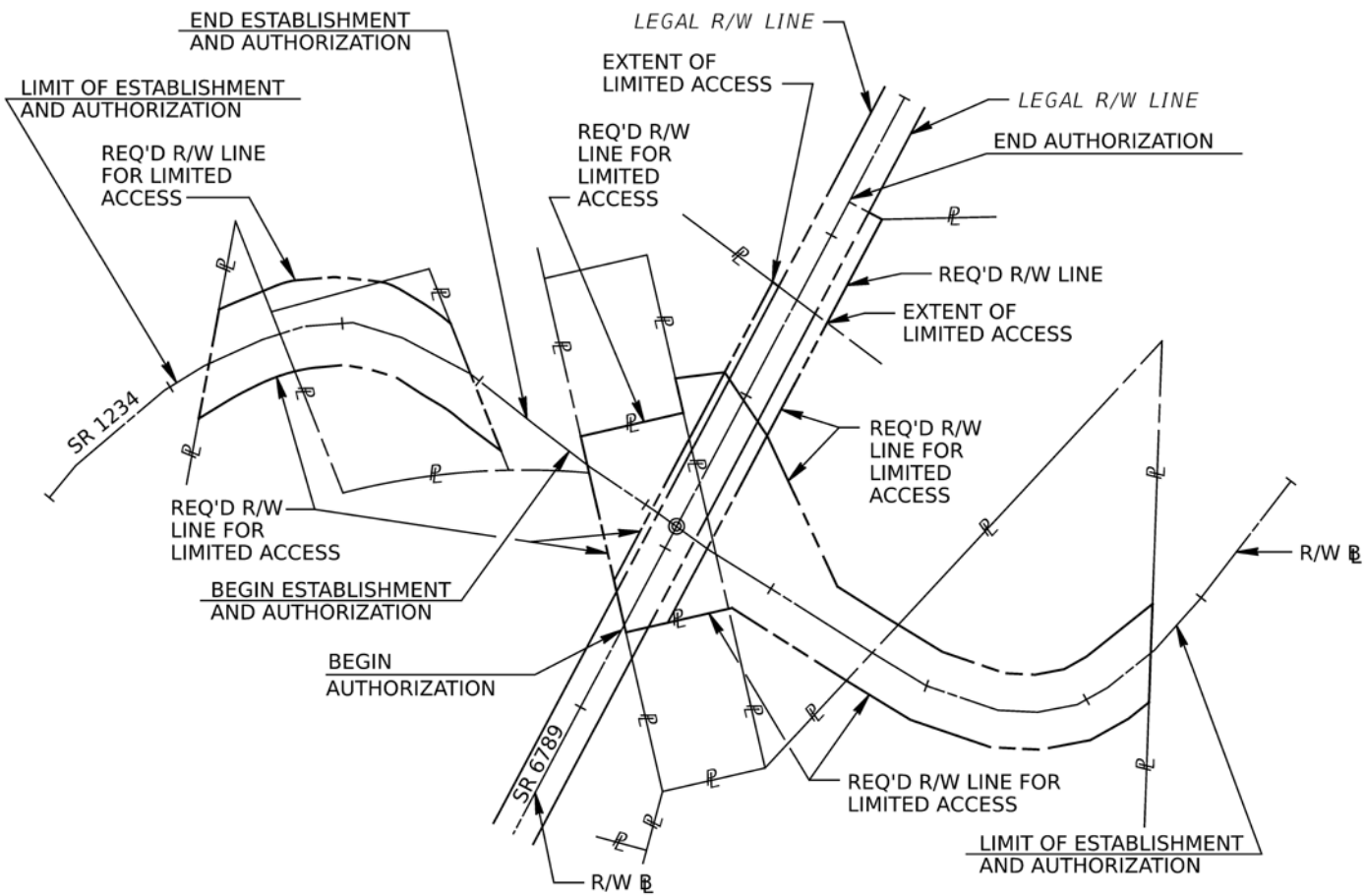
In the preparation of Gap Plans, it is permissible to omit sheets where no acquisition is involved; however, the Index Map should show the entire project. Examples of a Gap Plan and a Final Plan on a project are presented in Figures 3.2 and 3.3, respectively.

The authorization to acquire right-of-way is provided by the signature of the Secretary of Transportation. Right-of-Way Plans should not be recorded in the County Courthouse until absolutely necessary. The Right-of-Way Plans shall be recorded in the County Courthouse prior to filing Deeds or declarations of takings.

In order to establish limited access, all limited access Right-of-Way Plans shall be recorded in the County Courthouse.

C. Combination Plans. Prior approval shall be obtained from the District Chief of Surveys and District Right-of-Way Administrator in consultation with the Field Liaison Engineer, Bureau of Project Delivery. No Combination Plans shall be accepted without the required approval of the Field Liaison Engineer.

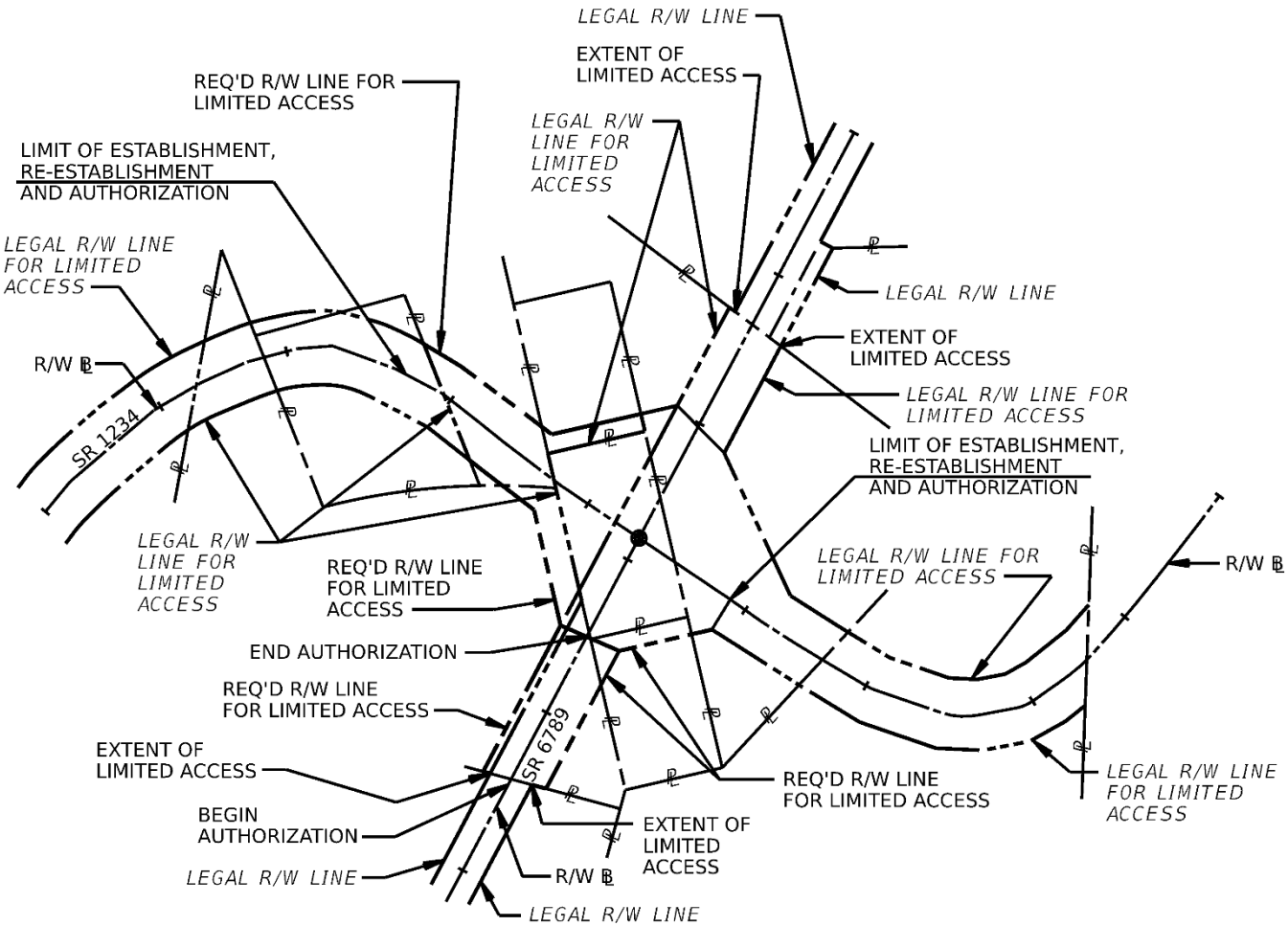
D. Property Plot Plans. Property Plot Plans shall be required and prepared as specified in Section 3.6.



SR 1234 - A01 - GR/W

(INTERCHANGE AREA)

FIGURE 3.2
EXAMPLE OF GAP PLAN



SR 1234 - A01 - R/W

(INTERCHANGE AREA)

FIGURE 3.3
EXAMPLE OF FINAL PLAN

E. Policies for Expediting Plans Preparations. Adherence to the following policies can expedite the preparation of the Right-of-Way Plans:

1. Profile grades should be refined to the point where it is unlikely that any additional land shall be required and that the grade near buildings shall be substantially unchanged.

2. All drainage that affects property damage or underground utilities shall be shown. Pipe and ditch sizes may be determined from preliminary drainage computations.

3. Approval of Service Roads is required prior to including them in the Right-of-Way Plan.

4. Property line surveying of individual properties shall be performed only when deemed necessary by the Professional Land Surveyor in order to adequately define the property boundaries affected by the area of take.

The horizontal geometry and the right-of-way lines shall be the same on all Construction and Right-of-Way Plans.

F. Demolition Contract. If it is necessary to prepare a Demolition Contract for the demolition of buildings, refer to Publication 378, *Right-of-Way Manual* for procedures to be used for Demolition.

G. Simplified Right-of-Way Plans. On small projects, primarily within the existing right-of-way, where only a few properties are involved and the area to be taken is minor, a simplified Right-of-Way Plan should be used.

A simple, one or two sheet Right-of-Way Plan is available and shall require the following items, as applicable:

1. Title Sheet information.
2. General Notes.
3. Location Map.
4. Utility Notes.
5. Drawing which provides the standard Property Plot Plan and Deed information.
6. Overall and Authorization Length.
7. References.
8. Equalities.
9. Beginning and ending segments.
10. Structure data.
11. Hydraulic data.
12. Curve data.
13. Coordinates.

H. Highway Occupancy Permit Plans. There are three types of plans related to the highway occupancy permit process: drawings depicting right-of-way to be deeded to the Department; drawings authorizing acquisition by local governments; and drawings accepting dedications. These plans must conform to the requirements of this Chapter and be reviewed by a Plan Reviewer.

1. Drawings Depicting Right-of-Way to Be Deeded to the Department. The most common HOP-related plan is that developed to document right-of-way deeded to the Department as part of the HOP process. See Section 3.2.I.6 on the appropriate title page and Section 3.1.EE on the interest to be acquired. These deed plans do not transfer title. The permittee must transfer title to the Department by deed. The deed plan only documents the State highway right-of-way for future reference.

Deed plans must be filed with the District plans unit and forwarded to the Bureau of Project Delivery, Office Management and Procurement Section, Plans, Records, and Reproduction, for appropriate filing. Deed plans must also be recorded at the appropriate county courthouse to document the highway right-of-way.

2. Plans Authorizing a Local Government to Acquire Land for a State Highway. This type of plan is also sometimes required in the HOP process. See Section 3.2.I.7 on the appropriate title page. Local authorization plans also do not transfer title. They only authorize the local government to acquire interests in land for a State highway and document the State highway right-of-way for future reference.

Local authorization plans must be filed with the District plans unit and forwarded to the Bureau of Project Delivery, Office Management and Procurement Section, Plans, Records, and Reproduction, for appropriate filing. Local authorization plans must also be recorded at the appropriate county courthouse to document the highway right-of-way.

3. Plans Accepting the Dedication of Right-of-Way. This type of plan is available in the HOP process, but is typically not appropriate. See Section 3.2.I.8 on the appropriate title page. The best practice is to have the land deeded to the Department and documented with a plan depicting right-of-way to be deeded to the Department.

A deed and deed plan should always be used for land owned by the permittee. For land owned by a neighboring owner, but previously dedicated to public use for a State highway, the best practice is to have the local government accept the dedication and then deed it to the Department. Whether the land is being deeded by a private permittee or a local government, the normal permit deed (either fee simple or easement for highway purposes) should be used, not a deed of dedication.

The acceptance of dedication plan may only be used if the offer of dedication is general or to the Commonwealth. It may not be used if the dedication is to the local municipality or, even if general, the local municipality has already accepted the dedication. Use of this plan is not encouraged. The deed process should be used if at all possible.

If the acceptance of dedication plan is used, it must be filed with the District plans unit and forwarded to the Bureau of Project Delivery, Office Management and Procurement Section, Plans, Records, and Reproduction, for appropriate execution by the Secretary and then filing. The acceptance of dedication plan must also be recorded at the appropriate county courthouse because it is evidence of an actual title transfer. Designation of the dedication on the subdivision or land development plan is the offer of dedication and execution of the plan by the Department is acceptance of the dedication; there is no need for a separate deed of dedication.

4. General Guidance. These special highway occupancy permit plans may not be used for other functions. For example, the Department may not designate areas to be vacated or abandoned on them or attempt to authorize acquisition by the Department through them. Separate procedures must be used for these purposes. By the same token, a regular title sheet authorizing the Department to acquire property may not be used for plans reflecting land to be deeded to the Department during the HOP process or authorizing another government entity to condemn for a State highway.

I. Vacation and Confirmation of Disposition Plans. This is a plan created following the disposition of rights of ways owned in easement and fee simple. Such a plan for a highway section is the preferred method to affect formal vacations of highway easements and confirm the sale of fee-owned parcels that have been the subject of quit claim deeds in the disposition process. See Publication 378, *Right-of-Way Manual*, Chapter 7, "Excess Land." The less preferred method to document dispositions is to merely revise the right-of-way lines on the existing right-of-way acquisition plan. See Sections 3.2.I.5 and 3.4.H.5 for further guidance on vacation and confirmation plans.

This type of plan is only appropriate after disposition of right-of-way under the Publication 378, *Right-of-Way Manual* procedures. It may not be used to vacate right-of-way that has not been disposed of as part of a right-of-way disposition. See Section 3.9 for procedures relating to the presentation of vacations as part of a highway project. The current procedure for vacating road segments outside the right-of-way disposition process, by execution and filing of a plan designating the segment as "to be vacated," followed by execution and filing of an order of vacation, is not altered by the availability of this type of plan. A separate plan for vacating right-of-way (and confirming dispositions of fee title) is applicable only where the right-of-way disposition process has been used.

Vacation and confirmation of disposition plans must be filed with the District plans unit and forwarded to the Bureau of Project Delivery, Office Management and Procurement Section, Plans, Records, and Reproduction, for appropriate filing. They must also be filed in the county courthouse to document the highway right-of-way. The plan should be indexed to the persons to whom the Department quit claimed the parcels.

J. Right-of-Way Acquisition for State-Owned Bridges on "Turnback" Local Roads. There are numerous instances throughout the Commonwealth with State-owned bridges on local roads. These situations arose when local municipalities agreed to accept ownership of a state highway under the Turnback Program but did not accept the bridge(s).

1. Acquisition of Right-of-Way. A review of the language in the standard state-wide Turnback Agreement indicates that:

a. The existing Legal Right-of-Way is owned by the municipality.

b. The Department owns the bridge.

c. The Department retains the authority to enter upon and utilize bridge approaches and right-of-way areas necessary for purposes of constructing, reconstructing, or maintaining the bridge structure and/or attached guide rail.

Consequently, any required Right-of-Way for these projects should be acquired as Required Right-of-Way for Township Road (or City/Borough/Town Street).

2. Title Sheet Presentation. Make reference to both the state route and the local road/street to help reference the Right-of-Way acquisition in the future for both the Department and the municipality. Title the plan SR____, Section ____ R/W and Township Road T-____(or City/Borough/Town Street name) R/W. Limits of authorization should only be tied to the local road/street stations with no authorization limits or lengths associated with the state route.

3. Plan Sheet Presentation. Label "Required Right-of-Way Line for Township Road (or City/Borough /Town Street)". Label Limits of Authorization on the local road/street and label "SR____, Section ____ R/W, Segment____, Offset _____." at each end of the bridge. Provide the note "The Department retains the authority to enter upon and utilize bridge approaches and right-of-way areas necessary for purposes of constructing, reconstructing or maintaining the bridge structure and/or attached guide rail. The municipality is responsible for performance of winter traffic services (including snow removal and application of anti-skid and de-icing materials) and cleaning. If the municipality desires to resurface the structure or mark the centerline, written approval must be obtained from the Department prior to the start of work." See Figure 3.3.A.

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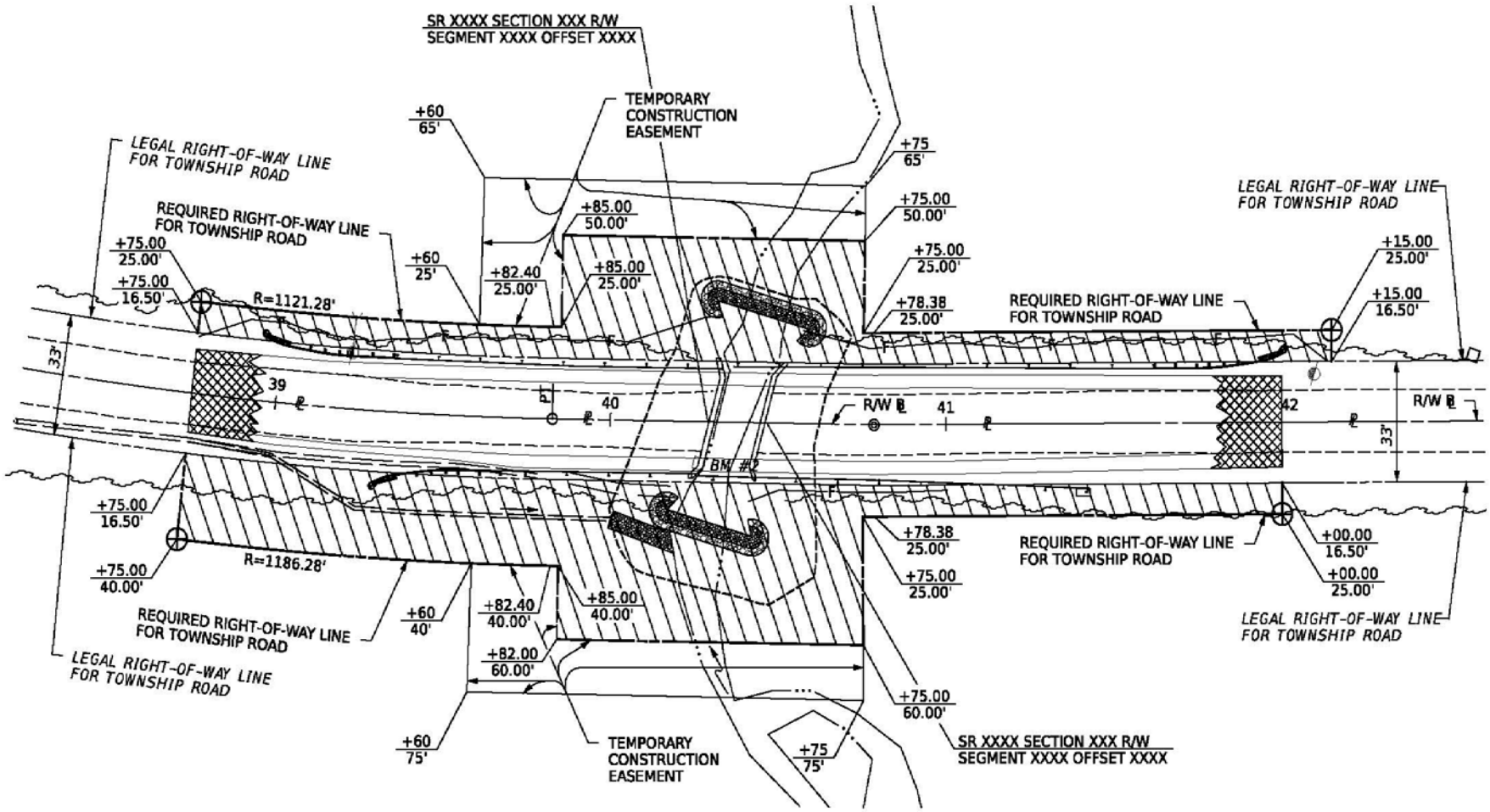

NOTE: THE DEPARTMENT RETAINS THE AUTHORITY TO ENTER UPON AND UTILIZE BRIDGE APPROACHES AND RIGHT-OF-WAY AREAS NECESSARY FOR PURPOSES OF CONSTRUCTING, RECONSTRUCTING OR MAINTAINING THE BRIDGE STRUCTURE AND/OR ATTACHED GUIDE RAIL. THE MUNICIPALITY IS RESPONSIBLE FOR PERFORMANCE OF WINTER TRAFFIC SERVICES (INCLUDING SNOW REMOVAL AND APPLICATION OF ANTI-SKID AND DE-ICING MATERIALS) AND CLEANING. IF THE MUNICIPALITY DESIRES TO RESURFACE THE STRUCTURE OR MARK THE CENTERLINE, WRITTEN APPROVAL MUST BE OBTAINED FROM THE DEPARTMENT PRIOR TO THE START OF WORK.

FIGURE 3.3.A
EXAMPLE OF RIGHT-OF-WAY PLAN
FOR STATE BRIDGES ON LOCAL ROADS

3.1 INTEREST TO BE ACQUIRED

A. General Policy to Acquire in Fee Simple. The general policy is to acquire required right-of-way in fee simple. See Section 3.4.H.2.a for the applicable general note. The Department is authorized to acquire, by gift, purchase, condemnation or otherwise, land in fee simple or such lesser interest as it shall determine, in the name of the Commonwealth, for all transportation purposes (Section 2003 of the Administrative Code of 1929, 71 P.S. Section 513(e)(1)).

B. Lesser Interests. When deemed appropriate, a lesser interest may be acquired as discussed below. An easement is generally defined as an interest in land owned by another person, consisting of the right to use or control the land for a specific limited purpose. Acquisitions designated on prior highway plans as required for areas, e.g. required ditch area, were acquired as easements for the designated use. Likewise, land acquired as limit of slope was acquired as a slope easement.

C. Legal Designation. Designating an area as "legal" denotes the Department holds an existing estate or interest in the land as designated, e.g. legal right-of-way or legal drainage easement.

D. Highway Easement. This is the interest historically acquired in required right-of-way under Section 210 of the State Highway Law (36 P.S. Section 670-210). It has been defined in case law as follows. While not a fee, a highway easement is not a mere easement or right-of-way. It is more. It is the right to the actual and exclusive possession of the property at all times and for all purposes, and includes the right to build on the land, fence it in, and exclude other uses. It is comparable to a fee in the surface and so much beneath as may be necessary for support. This estate, taken from an owner under the right of eminent domain, has no further practical value to the owner in view of the rights of the state in it, unless the easement is formally abandoned. See Section 3.4.H.2.a for the applicable general note. Other interests less than fee title are defined below.

E. Minor Strip Takings. When the area to be acquired as required right-of-way is a minor strip taking of unimproved land, such as an area abutting a previously acquired easement, the required right-of-way may be taken as an easement for highway purposes with approval of the District Right-of-Way Administrator. See Section 3.4.H.2.b for the applicable general note.

F. Takings in Mining Areas. When the highway facility is located on land which is being or is likely to be deep-mined, including removal of gas and oil, by means of wells located off the right-of-way, the Department may acquire only a highway easement with approval of the District Right-of-Way Administrator. The limited depth beneath the surface needed for support shall be shown on the plan. The depth of permissible mining operations by the owner of the coal or other mineral is to be based on the type of rock, possible voids, etc., and shall be indicated on the appropriate plan sheet. The depth of 300 ft may, but need not, be used. Approval of the State Mining Commission is generally required for all mining under the highway. See Sections 3.4.H.5.s and 3.6.A.2.e.(12).(h) for applicable general notes.

G. Takings of Contaminated Areas. When the Department knows that land being acquired is contaminated, an easement for highway purposes only should be acquired with approval of the District Right-of-Way Administrator. This may help reduce the Department's liability. Condemning the land rather than acquiring it amicably in lieu of condemnation will also help reduce the Department's liability.

H. Inclusion of Highway Features in Right-of-Way. The general policy is to include all highway features within required right-of-way, whether acquired in fee simple or as an easement for highway purposes.

I. Surveying Property Lines. Private property lines are typically not surveyed for strip takes along existing highways or new construction when only partial takes are required. Some property lines are typically surveyed when the right-of-way breaks on property lines or when there are both entire property takes and partial takes along an existing highway and/or new construction. Drawings of individual properties should typically be designated plot plans rather than plat plans to be consistent with language in the Eminent Domain Code. Plat plan should only be used when a property survey is actually performed because the accepted definition of plat provides that a plat is based on an actual field survey of the property and is a representation of that survey.

J. Access Control. The Department is authorized by the Limited Access Highway Act to designate existing or new right-of-way as limited access (36 P.S. Section 2391.1 et seq.). A limited access highway is defined as a public highway to which owners or occupants of abutting property or the traveling public have no right of ingress or egress

to, from or across except as may be provided by the Department (36 P.S. Section 2391.1). Abutting landowners have a constitutional right of reasonable access to and from highways that are not limited access (sometimes called free access highways). This right of access is, however, subject to the Department's police powers to control the use of all State highways and the flow of traffic thereon (36 P.S. Section 670-420).

K. Interests Other than Those Designated in this Manual. The only interests that may be acquired are those set forth in this Chapter unless otherwise approved by the Office of Chief Counsel, Real Property Division, who will coordinate with the Chief, Utilities and Right-of-Way Section, Highway Delivery Division. Plan reviewers shall not approve plans with acquisitions for interests other than those designated and as defined in this Chapter without the required approval.

L. Aerial Easements. Aerial easements should be utilized regardless of financing when the highway facility is on structure and crosses over a railroad, the Pennsylvania Turnpike or any other property in which substantial right-of-way damage savings can be affected. An aerial easement includes the right to occupy the surface of the land for the accommodation of piers and other appurtenances and a temporary easement for construction in the entire surface area, as well as the right to use the airspace above for the structure. In addition, the easement restricts the landowner's use of the surface and allows future use of the surface for purposes of inspection, maintenance, repair, painting, reconstruction or alteration of the structure. All of these uses and restrictions are part of the aerial easement. See Sections 3.4.H.5.r and 3.6.A.2.e.(12).(b) for applicable general notes.

M. Takings Contemplating Use of Airspace by Others. When it is proposed to allow the use of airspace within required right-of-way for other than highway purposes or to acquire right-of-way of limited dimensions, see 23 CFR 710.405 for requirements.

N. Slope Easements. Land necessary for slopes is normally included within the required right-of-way on all limited access highway facilities and free access highway facilities in other than built up areas. When designated on the plan as required slope easement, the Department acquires the lesser interest for support and protection (see 36 P.S. Section 670-210) as defined on the plan. The easement allows the Department to contour the area for necessary support of the highway and to construct and maintain drainage facilities as necessary to protect the highway. See Section 3.6.A.2.e.(12).(a) for the applicable general note.

O. Drainage Easements. The Department has authority to acquire drainage easements as a lesser estate under Section 2003 of the Administrative Code. In addition, under Section 417 of the State Highway Law (36 P.S. Section 670-417), the Department is authorized to enter upon any land to "cut, open, maintain and repair such drains or ditches, inlets or outlets as are necessary to carry waters from roadways (and) highways . . ." This section (commonly referred to as the Ditch and Drainage Act) also makes it a criminal offense for any person to "stop, fill up or injure any such drain or ditch, or . . . divert or change the course thereof without authority from the Department . . ."

Although it provides broad authority for the Department to enter lands beyond the highway right-of-way to protect State highways, Section 417 does not allow entry without payment where existing drainage rights do not exist. If the Department is re-establishing or maintaining an existing drainage facility, then the property owner is not entitled to compensation. However, if the Department substantially alters the natural flow of water in the area by creating a new facility, compensation is due.

Drainage easements shall be acquired for a drain or ditch regardless of how far the drain or ditch extends from the highway. Drains and ditches shall be delineated in the same manner as channel changes and may include temporary construction easements. See paragraph on channel easements below. See also Section 3.6.A.2.e.(12).(c) for the applicable general note. Parallel ditches shall be included in the required right-of-way or slope easement.

Acquiring a general drainage easement allows the Department more flexibility to use either pipes or ditches, depending on the Department's needs as they arise. Designation of land as required for drainage easement does not prevent the property owner from making any legal use of the land which is not detrimental to the necessary flow of water. However, no structure of any kind may be erected within the easement, nor may any pipe or ditch be connected to the Department's pipe or ditch without advanced written approval by the Department.

Existing drainage easements can be shown on plans. The extent of the existing easement may be difficult to ascertain because the procedures used by the Department to show drainage features have not always been consistent. Many old

plans merely show arrows leading from the highway where the water would flow in or to a natural drainage course. Other old plans do not even show the arrows, although it is apparent water must flow from a pipe outlet.

Where a defined area was acquired, that area can be designated on plans as legal drainage easement, ditch easement or underground drainpipe easement, as the case may be. Where the area is not defined, a drainage easement can still be designated based on an existing plan, field observation, aerial photography, and/or engineering expertise. For example, the extent of a ditch required to outflow a pipe can be ascertained based on the invert of the pipe and the topography of the land. Also, old aerial photographs can show the extent of ditches that led from pipe outlets at relevant times in the past.

Determination of the extent of ditches and pipe outflow in the past is important because if a public facility has existed for 20 years, there is a legal presumption that the government established it in accordance with the law and that payment was made. Moreover, the person entitled to compensation for the taking of a legal interest is the owner at the time of the entry, not a subsequent owner. These principles have been specifically applied to Department drainage facilities.

P. Channel Easements. The Department has authority to acquire easements to change water channels as a lesser estate under Section 2003 of the Administrative Code. In addition, Section 418 of the State Highway Law (36 P.S. Section 670-418) specifically authorizes the Department to enter upon private property to change or protect existing stream channels where deemed advisable to protect a highway or bridge. The Department retains a permanent interest in the channel easement following relocation of the stream to insure the necessary flow of water for safety of the highway or bridge.

The location of the bottom of the stream shall be delineated by the standard water course symbol for streams. Use a solid line approximating the top of stream bank to denote the Required Channel Easement. Land adjacent to the channel easement needed during construction for relocation of the stream shall be delineated by a solid line and designated temporary construction easement. These areas shall be geometrically tied to the right-of-way baseline. See Section 3.6.A.2.e.(12).(d) for the applicable general note. See also Chapter 15, Section 15.1, Plate A-II.

When dealing with a navigable stream, the streambed is considered a public easement and shall be designated as legal right-of-way. Any part of the existing streambed utilized permanently to change the channel or temporarily during construction shall not be designated as required. Non-navigable streams, however, are not in public ownership. When dealing with a non-navigable stream, the entire channel easement and temporary construction easement is to be included as required. A listing of navigable streams in Pennsylvania (which may differ from navigable waters of the United States administered by the U.S. Coast Guard and the Corps of Engineers) may be obtained from the Department of Environmental Protection. See Section 3.6.A.2.e.(12).(o) on the applicable general note for streams.

Q. Occasional Flowage Easements. In some situations it is desirable or necessary for the Department to acquire an easement to allow periodic flooding. This is necessary when the structure size adopted may result in significant flood damage beyond that which existed or when required by a regulatory agency. See Publication 13M, Design Manual, Part 2, *Highway Design*, Chapter 10, for additional information.

The land needed for potential flooding outside the legal and required right-of-way for the highway shall be delineated by a solid line and labeled as required occasional flowage easement. In addition, the 100-year flood or other flood frequency used for acquiring the occasional flowage easement as well as the part within the existing 100-year flood line shall be shown. See Section 3.6.A.2.e.(12).(e) for the applicable general note.

R. Temporary Construction Easements. Areas needed for temporary roadways, temporary bridges, demolition of the balance of a building which is partially in the right-of-way, etc., shall be acquired as temporary construction easements.

The general rule is that no parenthetical should be placed after the designation of a temporary construction easement. Placing a parenthetical such as (demolition) or (erosion control) will limit the Department's use of the easement to that specific activity. Not placing a parenthetical allows the Department to use the easement for any construction related activity. If the Department is sure the easement is only needed for a limited purpose, that purpose (e.g. channel, drainage, demolition, erosion control, access, temporary roadway, staging, driveway adjustment, etc.) can be designated. This may assist in negotiation of the right-of-way claim, but will legally limit the Department's use of the easement to that specific activity. That is, the land could not be used for general staging purposes.

The District is responsible to see that the premises are restored to a condition commensurate with that of the balance of the property of the landowner, such restoration to include removal of debris, filling of holes left by the removal of buildings or structures, draining, filling and/or capping of wells, cesspools and septic tanks; grading and sowing of grass. If it is determined, prior to the letting of bids for construction or demolition, that a temporary area is to be utilized, the plans, bid documents and the contract shall indicate the restoration requirements.

A temporary construction easement should be acquired for driveway adjustments where the entry onto private property necessary for the adjustment is substantial or the driveway would not function if the landowner does not allow entry. Without the acquisition of a temporary construction easement, entry cannot be made onto private property to make the adjustment without the permission of the landowner. Not adjusting the driveway may subject the Department to damages for change of grade and interference with access.

See Section 3.6.A.2.e.(12).(f) for applicable general note.

S. Legal Right-of-Way Converted to Aerial Easement. There are instances where the reconstruction of a structure causes land previously occupied on the surface to be required only for an aerial structure and its piers and other appurtenances. In this situation, the Department may convert the legal right-of-way to an aerial easement by use of the appropriate note. See Section 3.6.A.2.e.(12).(l) for applicable general note. There is no right-of-way claim in this situation because the Department is reducing the extent of its property interest. Conversely, however, if the Department intends to convert an aerial easement to a surface taking in fee simple or as an easement for highway purposes, the area should be designated as required right-of-way and a right-of-way claim established for acquisition of the increased property interest.

T. Underground Structure Support Easements. When a highway facility requires substructure support elements to either hold the facility back or up, such as anchors, MSE wall straps, batters, or other subsurface elements outside the right-of-way, an underground structure support easement may be acquired. This area shall be of sufficient size to provide for the installation and maintenance of the structure support elements. See Section 3.6.A.2.e.(12).(g) for applicable general note.

U. Sound Barrier Easements. When a highway facility requires construction of a sound barrier, the best practice is to acquire the entire area needed for the barrier and maintenance purposes as required right-of-way in fee simple. If deemed appropriate to mitigate damages, however, a sound barrier easement may be acquired. This area shall be sufficient in size to provide for the installation and maintenance of the sound barrier. See Section 3.6.A.2.e.(12).(k) for applicable general note.

V. Sight Distance Easements. In very limited circumstances, acquisition of a sight distance easement over property abutting a highway may be appropriate to remove obstructions to the sight distance of those using the highways across and over lands of another. The acquisition includes restrictions on the land owner from allowing future obstructions in the easement. This is a lesser interest that the Department may acquire under the Administrative Code, but is also authorized by Section 413 of the State Highway Law (36 P.S. Section 670-413). See Section 3.6.A.2.e.(12).(m) for applicable general note.

W. ITS Conduit Easements. When a highway facility requires an Intelligent Transportation Systems communication line, the best practice is to include them within legal or required right-of-way. However, if deemed appropriate to be located outside legal or required right-of-way, an ITS conduit easement may be acquired. This area shall be of sufficient size to provide for the installation and maintenance of the ITS facilities. See Section 3.6.A.2.e.(12).(q) for applicable general note.

X. Sidewalk Easements. The best practice is to include areas needed for sidewalks within legal or required right-of-way for the State highway. However, if deemed appropriate to be located outside legal or required right-of-way, a required sidewalk easement may be used to designate areas necessary for sidewalk construction. This area shall be sufficient in size to provide for the installation and maintenance of the sidewalk. See Section 3.6.A.2.e.(12).(r) for applicable general note. Whether acquired as required right-of-way or as a sidewalk easement, the area where the sidewalk is located is part of the State highway owned by the Department.

The acquisition cost, construction and maintenance of sidewalk areas have historically been the responsibility of the municipality within which the sidewalk is located. This is accomplished by an agreement or permit, depending on the

circumstances, and cannot be accomplished by designation through a plan note. Unless a legal agreement or permit provides otherwise, the Department may be required to maintain sidewalk that it constructs.

A sidewalk maintenance agreement requires the municipality to assume all maintenance related to the sidewalk and to indemnify the Department against liability arising from the obligations assumed under the agreement. Ownership of the right-of-way on which the sidewalk is located remains with the Department whether an agreement is executed or a permit issued; with repair and maintenance responsibility for the sidewalk transferred to the municipality under the agreement or permit.

Y. Traffic Signal Easements. The best practice is to include areas needed for traffic signals and their appurtenances within legal or required right-of-way for the State highway. However, if deemed appropriate to be located outside legal or required right-of-way, a required traffic signal easement may be used to designate areas necessary for the installation, operation, and maintenance of a traffic signal. This area shall be sufficient in size to provide for the installation and future operation and maintenance of the signal and any appurtenances. See Section 3.6.A.2.e.(12).(s) for applicable general note.

Whether acquired as required right-of-way or as a traffic signal easement, the area where the signal is located is part of the State highway owned by the Department. However, ownership and maintenance of traffic signals are the responsibility of the municipality. This is accomplished by an agreement and/or permit, and cannot be accomplished by designation through a plan note. Unless a legal agreement provides otherwise, the Department may be required to maintain a traffic signal that it constructs.

A traffic signal maintenance agreement requires the municipality to assume ownership of the traffic signal and appurtenances, to assume all maintenance related to the signal, and to indemnify the Department against liability arising from the obligations assumed under the agreement. Ownership of the right-of-way on which the signal and appurtenances are located remains with the Department whether an agreement is executed or a permit issued; with ownership and maintenance of the signal and appurtenances transferred to the municipality under the agreement. Department ownership of the area on which the signal is located (whether in fee or easement) is consistent with its location adjacent to the State highway and the many situations where traffic signals are constructed within existing legal right-of-way of the Department.

Z. Service Roads. A service road is a public highway, either existing or new or a combination thereof, parallel or approximately parallel to a limited access highway, which will provide ingress or egress to or from highway or areas which would otherwise be isolated by the construction or establishment of a limited access highway. Upon completion of construction, service roads must be maintained by and at the expense of the municipality in which they are located. Title therefore lies with the local government after construction. The Department may, upon request, provide the local government with a confirmatory quit claim deed reflecting that title to the land vested in the local government upon the completion of construction. See Section 3.4.H.5.h for applicable general note.

Service roads will generally be acquired in fee simple. An easement for highway purposes may be taken under those circumstances applicable to acquisitions of required right-of-way for State highways. See Section 3.1.A.

AA. Local Roads and Streets. The Department's ability to deed land or easements to public entities is restricted. For this reason, when it must acquire local road right-of-way in connection with a project, the Department acquires the right-of-way for the benefit of the local government. This allows the Department to possess the lands for construction purposes, but provide that title is being acquired for the benefit of the local government. The Department may, upon request, provide the local government with a confirmatory quit claim deed reflecting that title to the land vested in the local government upon acquisition as set forth in the plan authorizing the acquisition. See Section 3.4.H.5.n for applicable general note.

Right-of-way for local roads and streets will generally be acquired in fee simple. An easement for highway purposes may be taken under those circumstances applicable to acquisitions of required right-of-way for State highways. See Section 3.1.A.

BB. Private Access. The Department's ability to deed land or easements to private individuals or entities is restricted. For this reason, the best practice when the Department is required to provide private access to a property in order to mitigate damages to remaining property is to acquire the land for the benefit of the affected private individuals or entities. This allows the Department to possess the lands if necessary for construction purposes, but provide that title is being acquired for the benefit of the private individuals or entities. The Department may, upon request, provide the private individuals or entities with a confirmatory quit claim deed reflecting that title to the land vested in the private individuals or entities upon acquisition as set forth in the plan authorizing the acquisition. See Section 3.4.H.5.o for applicable general note.

Private accesses should normally be taken in fee simple. This provides the property or properties being provided access full control over the area acquired for their benefit and eliminate any responsibility of the property owner from whom it is acquired. If, however, the property owner from whom the area is being acquired should also maintain use of the area, only an easement for driveway purposes should be acquired for the benefit of the other property or properties. This would be appropriate where the property owner from whom the area is being acquired must also have use of the area for access or where a fee simple taking would sever the remaining lands of the property owner from whom the area is being acquired.

CC. Acquisition for Replacement Lands. The Department's ability to deed land to other public entities is restricted. For this reason, the best practice when the Department is required to replace lands acquired from a public entity (for example public parklands or Game Commission lands) is to acquire the land for the benefit of the public entity from which lands are being acquired. This allows the Department to possess the lands if necessary for construction purposes, but provide that title is being acquired for the benefit of the other public entity. The Department may, upon request, provide the public entity with a confirmatory quit claim deed reflecting that title to the land vested in the public entity upon acquisition as set forth in the plan authorizing the acquisition. See Section 3.4.H.5.p for applicable general note.

Replacement lands should normally be taken in fee simple. This provides the government entity for which the lands are being acquired full control over the area acquired and eliminates any responsibility of the property owner from whom it is acquired. It is also consistent with the nature of the title normally acquired for parks and game lands. If, however, the entity for which the lands are being acquired requests that only an easement be acquired, then an easement for parklands or an easement for game lands should be acquired. This may be appropriate, for example, if existing parklands of the government entity are held only in easement.

DD. Environmental Mitigation Takes. Acquisitions for environmental mitigation purposes must be included in the environmental document for the project. If required for wetland or terrestrial mitigation, the preferred approach is to acquire such sites in fee simple, with the subsequent recording of restrictive covenants. If required for stream mitigation, an easement acquisition is normally appropriate. Easements can also be acquired for terrestrial or wetland sites if deemed appropriate by the District Executive and approved by the Corps of Engineers. See Sections 3.4.H.5.q, Section 3.6.A.2.e.(12).(n), Section 3.6.A.2.e.(12).(o), and Section 3.6.A.2.e.(12).(p) for applicable general notes.

EE. Highway Occupancy Permit Plans. The general policy is to have the permittee include all highway features within Required Right-of-Way and to have the right-of-way acquired in fee simple. If appropriate, right-of-way can be acquired as an easement for transportation purposes. See Sections 3.0.H, 3.2.I.8, 3.4.H.5.m, and 3.5.X on HOP plans. The acquisition of traffic signal easements on behalf of the local municipality is permitted on HOP projects, if the municipality has agreed to accept the easement and to apply for a signal permit. This exception does not apply to Department projects. See Section 3.1.Y.

FF. Vacation and Abandonment. See Section 3.9.

3.2 TITLE SHEET

The information presented in this Section shall be shown on the Title Sheet, in the appropriate location, for all Right-of-Way Plans. An example of a typical Title Sheet is shown in Chapter 15, Section 15.2, Plate B-VIII.

A. Title Block Identification Data. The following data shall constitute the Title Block on the Title Sheet:

1. Headings and Title of Plan.
2. State Route.
3. Section Number with Suffix "R/W".
4. County or Counties.
5. Township, Borough or City.
6. Stationing Limits.

B. Identification Block. The following information shall be provided in the Identification Block in the upper right-hand corner. Refer to Chapter 15, Section 15.2, Plate B-VIII for an example of an Identification Block for Right-of-Way Plans:

1. State Route.
2. Section Number with Suffix "R/W".
3. Engineering District.
4. County or Counties.
5. Township, Borough or City.
6. Total Number of Sheets.
7. MPMS Number.

C. "Also" Routes. Interchange, rest area and escape ramp route numbers shall be included as an "Also" route if they are part of the route appearing in the Title Block (show State Route Numbers only, do not show stations).

D. Stationing Limits. When the project consists of two or more routes, the Stationing Limits of each shall be shown with their individual lengths and the total overall length of acquisition.

If a project is located in two counties, a break in the station should begin at the county line and should be stationed ahead starting with Station 0+00.00. Stationing should be from South to North and from West to East. If recorded, the project should be recorded in the Courthouse of each county, with two recording blocks provided accordingly.

Stationing Limits shall be extended to include a full take on a property to prevent the need for a second claim on an adjacent project. When the length of the right-of-way acquisition is different on left and right, the longer length shall govern. See Chapter 15, Section 15.1, Plates A-V and A-VII for examples.

E. Limited Access Highway Facility Note. If limited access has been established for any portion of the project, a Note to that affect and a reference to the establishment plan shall be required and placed below the Identification Block as indicated below:

ESTABLISHED AS A LIMITED ACCESS HIGHWAY FROM
STATION _____ TO STATION _____ BY PLAN OF STATE ROUTE
_____ SECTION _____ RIGHT-OF-WAY
(Where Applicable)

APPROVED____(Date)_____

Note: The stations should be the Stationing Limits shown on the referenced Right-of-Way Plan.

F. Bar Scales. Normally, a horizontal scale of 1" = 25' shall be used on all projects, particularly in built-up areas, where considerable topographic detail is necessary. Horizontal scales of 1" = 50' or 1" = 20' may be used if conditions dictate, at the discretion of the District Executive.

The vertical scale of the profile shall be one-fifth of the horizontal scale. Circumstances may dictate other scales in which case special permission should be secured from the District Executive before commencing plan preparations.

A Bar Scale shall be used to represent the horizontal and vertical dimensional values as indicated below. A script representation, i.e., 1" = 25', etc., shall not be used to indicate these values:

SCALE

HORIZONTAL

VERTICAL

G. Design Designation Block. Complete the Design Designation Block, in the lower left-hand corner, under the heading DESIGN DESIGNATION. The following items shall be included: Highway Functional Classification including designation of "Urban", "Rural", etc., Design Speed, Pavement Width, Shoulder Width, Median Width (Maximum and Minimum), Traffic Data Including letting year ADT, design year ADT and DHV, D (%) and T (%). Refer to Chapter 15, Section 15.2, Plate B-VIII for an example of a Design Designation Block for Right-of-Way Plans.

H. Professional Seal Block. If the plans are prepared in the District Office the signature, title and seal of the appropriate Assistant District Executive responsible for the preparation of the plan shall be provided in a small block at the bottom of the sheet. In addition, the Plans Engineer's signature shall be placed above the District Executive's signature, see Chapter 15, Section 15.2, Plate B-VIII.

Plans prepared by Consultants shall have a small block at the bottom of the Title Sheet indicating the name and address of the Consultant, the signature, title and seal of the person responsible for the preparation of the plans and the date.

For all Right-of-Way Plans, the title sheet shall be sealed and signed by a Professional Land Surveyor, PLS, who has direction and control of the land surveying aspects of the plan. The layout of the seal and signature block shall be as shown in Figure 3.4, Typical Signature Blocks. For projects designed in house, the Chief-of-Surveys shall be the PLS.

The responsible registrants shall place a black ink rubber stamp seal on the Title Sheet. The registrants shall also place either a black ink rubber stamp seal or a facsimile seal on all subsequent sheets. Impression seals are not permitted.

Examples of typical Signature Blocks are indicated in Figure 3.4.

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PREPARED BY:
(NAME AND ADDRESS)
OF CONSULTANT)

(SEAL)

(SIGNATURE)
(TITLE)

(DATE)

CONSULTANT'S SIGNATURE BLOCK

(SEAL)

(SIGNATURE)
(TITLE)

(DATE)

DISTRICT UNIT'S SIGNATURE BLOCK

FIGURE 3.4
EXAMPLES OF
TYPICAL SIGNATURE BLOCKS

I. Titles and Corresponding Laws. The Titles on all plans shall be prepared according to the following examples:

1. Free Access Highway:

a. Authorization to Acquire Right-of-Way:

DRAWINGS AUTHORIZING ACQUISITION OF RIGHT-OF-WAY FOR SR 1033, SECTION A04, RIGHT-OF-WAY, IN ADAMS COUNTY.

THIS PLAN PREPARED PURSUANT TO SECTION 2003(e) OF THE ADMINISTRATIVE CODE, AS AMENDED, 71 P.S. SECTION 513(e), AND SECTION 302(b)(3) OF THE EMINENT DOMAIN CODE, 26 Pa.C.S., SECTION 302(b)(3).

b. Authorization to Acquire Right-of-Way Combined with Construction Plan:

DRAWINGS AUTHORIZING ACQUISITION OF RIGHT-OF-WAY AND CONSTRUCTION OF SR 1033, SECTION A04, RIGHT-OF-WAY, IN ADAMS COUNTY.

THIS PLAN PREPARED PURSUANT TO SECTION 2003(e) OF THE ADMINISTRATIVE CODE, AS AMENDED, 71 P.S. SECTION 513(e), AND SECTION 302(b)(3) OF THE EMINENT DOMAIN CODE, 26 Pa.C.S. SECTION 302(b)(3).

2. Limited Access Highway:

a. Establishment of Limited Access Highway and Authorization to Acquire Right-of-Way:

DRAWINGS ESTABLISHING LIMITED ACCESS HIGHWAY AND AUTHORIZING ACQUISITION OF RIGHT-OF-WAY FOR SR 1033, SECTION A04, RIGHT-OF-WAY, IN ADAMS COUNTY.

THIS PLAN PREPARED PURSUANT TO SECTION 2 OF THE ACT OF MAY 29, 1945, P.L. 1108, AS AMENDED*, 36 P.S. SECTION 2391.2* SECTION 2003(e) OF THE ADMINISTRATIVE CODE, AS AMENDED, 71 P.S. SECTION 513(e) AND SECTION 302(b)(3) OF THE EMINENT DOMAIN CODE, 26 Pa.C.S., SECTION 302(b)(3).

*See Note on This Page.

b. Reestablishment of Limited Access Highway and Authorization to Acquire Right-of-Way:

DRAWINGS REESTABLISHING LIMITED ACCESS HIGHWAY AND AUTHORIZING ACQUISITION OF RIGHT-OF-WAY FOR SR 1033, SECTION A04, RIGHT-OF-WAY, IN ADAMS COUNTY.

THIS PLAN PREPARED PURSUANT TO SECTION 2 OF THE ACT OF MAY 29, 1945, P.L. 1108, AS AMENDED, 36 P.S. SECTION 2391.2* SECTION 2003(e) OF THE ADMINISTRATIVE CODE, AS AMENDED, 71 P.S. SECTION 513(e), AND SECTION 302(b)(3) OF THE EMINENT DOMAIN CODE, 26 Pa.C.S., SECTION 302(b)(3).

*Note: If a highway is a NHS Route, the titles in examples 2a and 2b shall also contain the standard reference to Section 4 of the Outdoor Advertising Control Act of 1971, as amended, 36 P.S. Section 2718.104. Also, a plan which includes any Safety Rest Areas shall contain the following standard reference:

THIS PLAN PREPARED PURSUANT TO SECTION 3 OF THE ACT OF JUNE 7, 1961, P.L. 257, AS AMENDED, 36 P.S. SECTION 478.13, AND SECTION 302(b)(3) OF THE EMINENT DOMAIN, 26 Pa.C.S., SECTION 302(b)(3).

3. Substitute Right-of-Way. Plans which show Required Substitute right-of-way shall, in the "authorization" paragraph of the Title Sheet, refer to Section 412 of the Highway Law by revising the normal paragraph or adding a separate paragraph, e.g.:

412 Added to Normal Paragraph:

THIS PLAN PREPARED PURSUANT TO SECTION 2003(e) . . . AND SECTION 412 OF THE STATE HIGHWAY LAW, AS AMENDED, 36 P.S. SECTION 670-412.

Or as a Separate Paragraph:

PORTIONS OF THIS PLAN PREPARED PURSUANT TO SECTION 412 OF THE STATE HIGHWAY LAW, AS AMENDED, 36 P.S. 670-412.

For plans revised to add required substitute right-of-way after the governor's signature, and the original title sheet did not refer to Section 412, the above described separate authorization paragraph must be added.

The limits of authorization shown on the title sheet are for acquisition of required right-of-way for highway construction. These limits need not include, nor are they to be revised to include, areas or additional routes, segments, and longitudinal roadway offset distances where required substitute right-of-way is to be acquired.

4. Project Subject to PUC Appropriation of Property. The Public Utility Commission (PUC) has jurisdiction over railroad-highway grade crossings and shall appropriate certain property within their jurisdictional area.

For most projects involving PUC jurisdiction, the PUC shall only appropriate the railroad operating right-of-way; therefore, the Stationing Limits to be used on the Title Sheet shall only cover this railroad operating right-of-way. Special cases may arise for which the wording indicated below may not be acceptable. In such cases, the Bureau of Project Delivery, Highway Delivery Division, Utilities and Right-of-Way Section, Grade Crossing Unit, in coordination with the Office of Chief Counsel, shall establish the proper wording.

In any case, the Grade Crossing Engineer in the Grade Crossing Unit assigned to the project should be contacted concerning the proper Note and Stationing Limits to use on any specific project.

Listed below are specific Notes to be used where the PUC appropriates some of the property:

DRAWINGS (ESTABLISHING LIMITED ACCESS HIGHWAY AND)** AUTHORIZING ACQUISITION OF RIGHT-OF-WAY (AND CONSTRUCTION)* FOR

SR _____ SECTION _____ COUNTY _____

THE PUBLIC UTILITY COMMISSION SHALL APPROPRIATE PROPERTY IN (APPLICATION) (COMPLAINT) (INVESTIGATION) DOCKET NO. _____ BETWEEN STATION _____ AND STATION _____ PURSUANT TO THE PROVISIONS OF SECTION 2702(b) OF THE ACT OF JULY 1, 1978, P.L. 598, NO. 116 (66 P.S. SECTION 2702). THIS PLAN PREPARED PURSUANT TO (SECTION 2 OF THE ACT OF MAY 29, 1945, P.L. 1108, 36 P.S. SECTION 2391.2)** SECTION 2003(e) OF THE ADMINISTRATIVE CODE, AS AMENDED, 71 P.S. SECTION 513(e)), AND SECTION 302(b)(3) OF THE EMINENT DOMAIN CODE, 26 Pa.C.S., SECTION 302(b)(3).

*When a Combination Plan is prepared.
**In cases of limited access highway facilities.

5. Drawings Vacating and Confirming Disposition of Right-of-Way:

DRAWINGS VACATING RIGHT-OF-WAY AND CONFIRMING DISPOSITION OF RIGHT-OF-WAY FOR SR 1033, SECTION A04 IN ADAMS COUNTY.

THIS PLAN FILED PURSUANT TO SECTION 210 OF THE STATE HIGHWAY LAW, AS AMENDED, 36 P.S. SECTION 670-210, AND SECTION 2003(e)(7) OF THE ADMINISTRATIVE CODE, AS AMENDED, 71 P.S. SECTION 513(e)(7).

This title sheet is to be used for plans filed following the disposition of rights of ways owned in easement and fee simple. See Section 3.0.I for general discussion on this type of plan.

The plan must contain an approval block for the Secretary of Transportation to approve the plan for the Secretary and the Governor, as well as a District Executive approval and recording block.

See Sections 3.0.I, 3.4.H.5.j, and 3.4.H.5.k discussing plans vacating and confirming disposition of right-of-way.

6. Drawings Depicting Right-of-Way to Be Deeded for State Highways:

DRAWINGS DEPICTING RIGHT-OF-WAY
TO BE DEEDED TO THE
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
UNDER HOP APPLICATION NO._____
BY_____(NAME OF APPLICANT)____
FOR
STATE ROUTE _____
IN _____ COUNTY
FROM STA_____TO STA_____LENGTH _____
FROM SEG_____OFFSET _____ TO SEG_____OFFSET_____

THIS PLAN PREPARED TO DOCUMENT THE RIGHT-OF-WAY FOR STATE HIGHWAY PURPOSES THAT WILL BE DEEDED TO THE COMMONWEALTH AS REQUIRED BY THE PROVISIONS OF 67 PA. CODE CHAPTER 441, ENTITLED "ACCESS TO AND OCCUPANCY OF HIGHWAYS BY DRIVEWAYS AND LOCAL ROADS."

The plan must contain an approval block for the Secretary of Transportation to approve the plan for the Secretary and the Governor, as well as a District Executive approval and recording block. Appropriate personnel, such as the District Plans Engineer, District Chief of Surveys, District Permit Manager and/or District Right-of-Way Administrator, should review the plan prior to signature.

See Sections 3.0.H and 3.5.X discussing deeding of right-of-way to the Department as part of the HOP process. See Chapter 15, Section 15.2, Plate B-XV for a sample title sheet.

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7. Drawings Authorizing Acquisition by Local Governments on State Highways:

DRAWINGS AUTHORIZING ACQUISITION
OF
RIGHT-OF-WAY
FOR
STATE ROUTE _____, SECTION___(IF APPLICABLE)_____
IN _____ COUNTY
BY _____TOWNSHIP
ON BEHALF OF
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
FROM STA_____TO STA_____LENGTH _____
FROM SEG _____OFFSET ____ TO SEG _____OFFSET_____

THIS PLAN PREPARED PURSUANT TO SECTIONS 2003(e) AND 2002(a)(6) AND (7) OF THE ADMINISTRATIVE CODE, AS AMENDED, 71 P.S. SECTIONS 513(e) AND 512(a)(6) AND (7), SECTION 302(b)(3) OF THE EMINENT DOMAIN CODE, 26 Pa. C.S., SECTION 302(b)(3), AND APPROPRIATE MUNICIPAL AUTHORITY FOR THE PURPOSE OF AUTHORIZING AND APPROVING THE LOCAL MUNICIPALITY TO ACQUIRE RIGHT-OF-WAY FOR STATE HIGHWAY PURPOSES ON BEHALF OF THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF TRANSPORTATION.

The plan must contain an approval block for the Secretary of Transportation to approve the plan for the Secretary and the Governor, as well as a District Executive approval and recording block. Appropriate personnel, such as the District Plans Engineer, District Chief of Surveys, District Permit Manager and/or District Right-of-Way Administrator, should review the plan prior to signature.

A signature block should be added to show the approval of the appropriate local government. It should contain a line to indicate the municipal resolution number.

See Sections 3.0.H, 3.4.H.5.m, and 3.5.Y discussing acquisitions of State highway right-of-way by local governments as part of the HOP process. See Chapter 15, Section 15.2, Plate B-XIV for a sample title sheet.

8. Right-of-Way Dedicated in Highway Occupancy Permit Process:

DRAWINGS ACCEPTING DEDICATION OF RIGHT-OF-WAY FOR SR 1033, SECTION A04 IN ADAMS COUNTY.

THIS PLAN PREPARED PURSUANT TO SECTION 2003(e) OF THE ADMINISTRATIVE CODE, 71 P.S. SECTION 513(e)), AND 67 PA CODE CHAPTER 441. HIGHWAY OCCUPANCY PERMIT NO. _____.

See Section 3.0.H.3 discussing the limited use of this type of plan.

J. MPMS Number**.** Beneath the title block, add the MPMS number.

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3.3 INDEX SHEET

The following general information shall be shown on the Index Sheet for all Right-of-Way Plans.

1. Index Map.

2. Location of Project on State Map.

3. Sheet Index Block.

4. Tabulation of Equalities between Segment End Points and the right-of-way Baseline (if available).

5. The Appropriate Professional Seals.

A. Index Map. The Index Map shall be placed on the sheet to best advantage, using a scale no smaller than 1" = 500' and shall show the following data, where applicable.

1. Survey and right-of-way Baseline or Survey and right-of-way Centerline and stations identified at maximum 500 ft intervals and radius (PC, PT, TS, SC, CS and ST circles only).

2. Edge of existing roadways.

3. State Routes and Township Roads (Show posted Traffic Route numbers).

4. Local road names.

5. Railroads.

6. Edge of streams (Identify major streams).

7. Outline of proposed and existing bridges.

8. Political subdivisions.

9. Begin and End Authorization Stations on all crossroads, temporary connections and service roads.

10. Equality stations.

11. North Arrow and Bar Scale.

12. Temporary roadways.

13. Distances to the nearest 0.1 mi to the nearest community at each end of project. Also give similar distances from project limits at crossroads to nearest community in each direction. If no towns are nearby, indicate mileages to intersecting Traffic Routes or State Routes.

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14. Limits of project covered within each sheet with the sheets identified using the following appropriate symbols on the sheet and identified in the Legend:

LEGEND

PLAN

PROFILE

PLAN AND PROFILE

PARCEL IDENTIFICATION NUMBER

PARCEL IDENTIFICATION NUMBER-NO TAKE

For HOP plans, the designation should be "Parcel Identification Number – No Acquisition".

15. Property lines. Property owner's names shall be spelled out and appear exactly as shown on Deeds and the Plan Sheets. Where space permits, property owner's names and parcel numbers shall be shown parallel and equidistant to the right or left of the centerline. A parcel number shall be used for every piece of property for which there is a separate owner. Where one owner owns contiguous property, only one parcel number shall be shown. Parcels separated by a road or railroad are not contiguous; however, when two or more non-contiguous parcels in the same ownership are being used together, e.g., as a single farming or manufacturing operation (but not as a real estate development), they shall be treated as a single property. When the scale is small and/or the properties are too numerous, code the properties with a small, circled number and tabulate the property owners elsewhere on the sheet. Property owners which are numbered but have no right-of-way take shall be indicated as NO TAKE. Questions of unity of use shall be considered with the Bureau of Project Delivery, Highway Delivery Division, Utilities and Right-of-Way Section and the Office of Chief Counsel.

16. Project Limits:

a. On limited access highway facility projects, at the beginning and the ending of the project, the terminology shall read: LIMIT OF ESTABLISHMENT AND AUTHORIZATION. (Note: The Limit of Authorization is not always coincidental to the Limit of Establishment. In such a case, a separate notation shall be made.)

b. On free access highway facility projects, the terminology for the designation of termini shall read: LIMIT OF AUTHORIZATION.

c. On intersecting roads and "Also" routes incidental to the main project, the terminology shall read: BEGIN AUTHORIZATION and END AUTHORIZATION.

d. On plans common to both right-of-way and Construction, the terminology shall read: LIMIT OF WORK AND AUTHORIZATION or any combination of the above that may be applicable.

Example:

LIMIT OF ESTABLISHMENT AND/OR AUTHORIZATION
STA 675+00.00
SEGMENT _____ OFFSET _____ (if applicable)
SR 1033 SEC C04 R/W
GREENWOOD TOWNSHIP
PERRY COUNTY

e. Project limits shall be indicated at county lines and breaks in the State Route designations, except when a structure spans the county line. When a structure is present, the Limiting Stations shall shift to the beginning or end of the structure in accordance with segment breaks as shown in Figure 3.5.

17. Channel Changes. When a baseline has been established, channel changes shall be shown with BEGIN CHANNEL CHANGE and END CHANNEL CHANGE Notes, as applicable.

18. Abandonment Notes (See Section 3.9).

19. Allow space for an appropriate Note regarding the type of acquisition (See Section 3.4.H.2).

B. Sheet Index Block. On projects involving many sheets, a Sheet Index Block is suggested. Small projects may also require a Sheet Index Block when there is more than one Supplemental Plan. A sample Sheet Index Block is shown in Figure 3.6.

C. Tabulation of Segment Equalities. See Chapter 2, Section 2.2.F.

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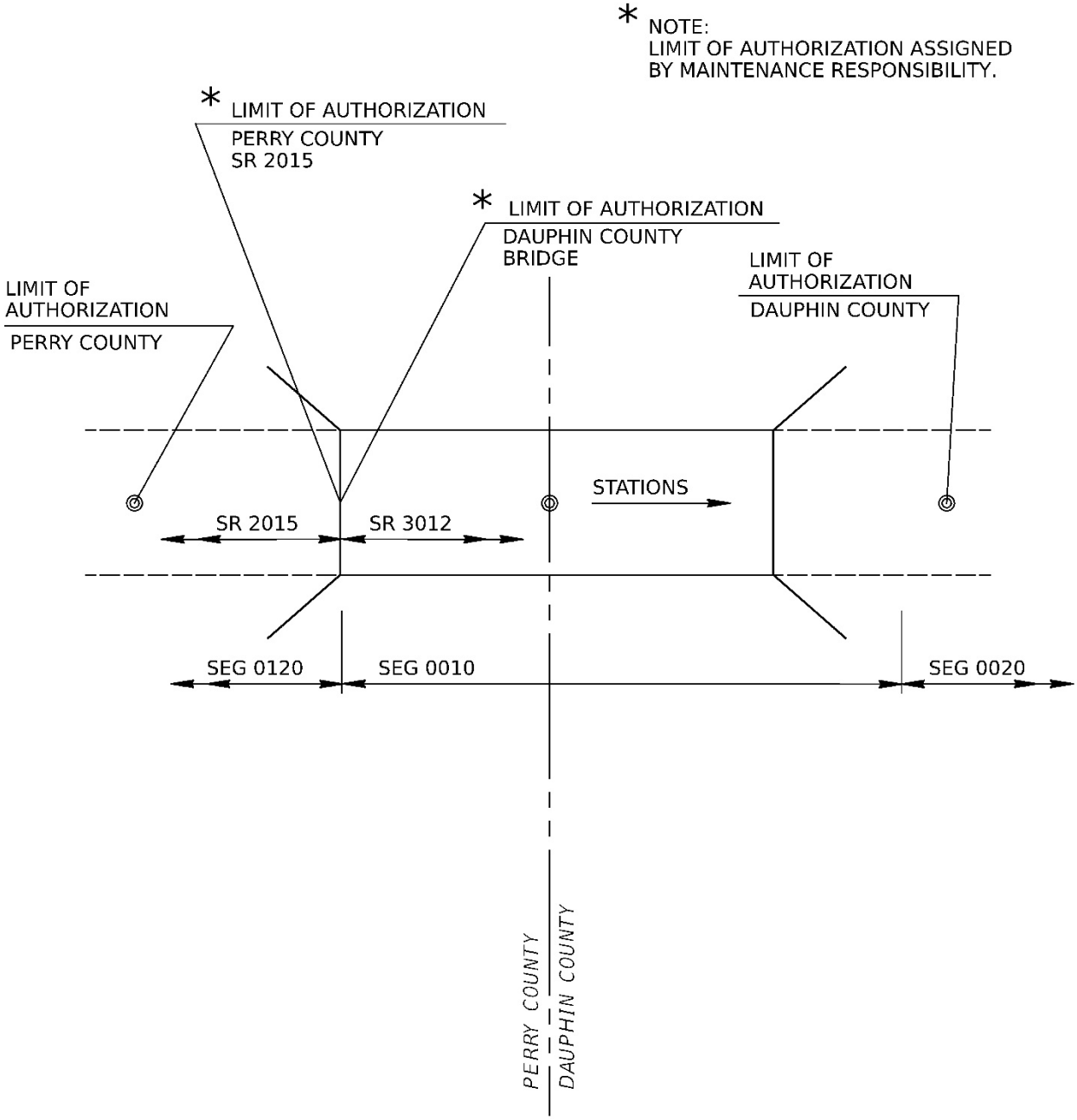

FIGURE 3.5
LIMIT OF AUTHORIZATION DESIGNATION

SHEET INDEX

DESCRIPTION	SHEET
TITLE SHEET	1
INDEX MAP	2
LOCATION MAP	3
TYPICAL SECTIONS	3 THRU 7
PLAN SHEETS	8 THRU 11

FIGURE 3.6
SAMPLE OF
SHEET INDEX BLOCK

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3.4 TYPICAL SECTION SHEET

The following general information shall be shown on the Typical Section Sheet for all Right-of-Way Plans:

1. Tabulation of Overall Length and Authorization Length.
2. List of Stationing Equalities.
3. Location Map.
4. List of Public Utilities.
5. Tabulation of Project Coordinates (Alignment control points and R/W line break points).
6. General Notes.
7. Typical Sections.
8. The Appropriate Professional Seals.

A. Tabulation of Overall Length. The Overall Length is the longest length between the Limit of Establishment stations, the Limit of Reestablishment stations or the Limit of Authorization stations. On plans common to both right-of-way and Construction, the "Limit of Work" station lengths, the Limit of Authorization lengths and the Limit of Establishment or Reestablishment lengths shall be tabulated.

The Overall Lengths shall be shown to the nearest 0.01 ft or 0.001 mi. The authorization length will reflect the overall length minus any breaks where right-of-way is not being acquired.

B. List of All Equalities. All equalities occurring on the major routes shall be listed on the first Typical Section Sheet. If there are no equalities, indicate as such.

C. Location Map. The Location Map shall be placed in the lower left-hand corner on the first Typical Section Sheet and may be reproduced from County or City maps. This map shall be orientated so that the North Arrow is vertical toward the top of the sheet with a Bar Scale, indicated in miles, and placed below the map. Also indicate the following data on the Location Map:

1. Label and place a Legend below the Location Map as shown in Chapter 15, Section 15.2, Plate B-XIII.
2. All adjacent and intersecting State Routes, Traffic Routes and Township Roads by number.
3. If a City map is used, streets should be shown and named.
4. Cities, towns and physical features such as lakes, streams, canals, railroads, etc.
5. City limits, Township Lines and urban limits, where applicable.
6. Show project Limits of Authorization (Do not show for "Also" routes).
7. Bar Scale.

For an example of a typical Location Map, refer to Figure 3.7.

D. Special Details. Indicate special design features including curb and sidewalks which may influence the right-of-way acquisition. An appropriate scale shall be used for these sketches.

E. Identification Block. Complete the Identification Block in the upper right-hand corner. A sample of an Identification Block is shown in Figure 3.8.

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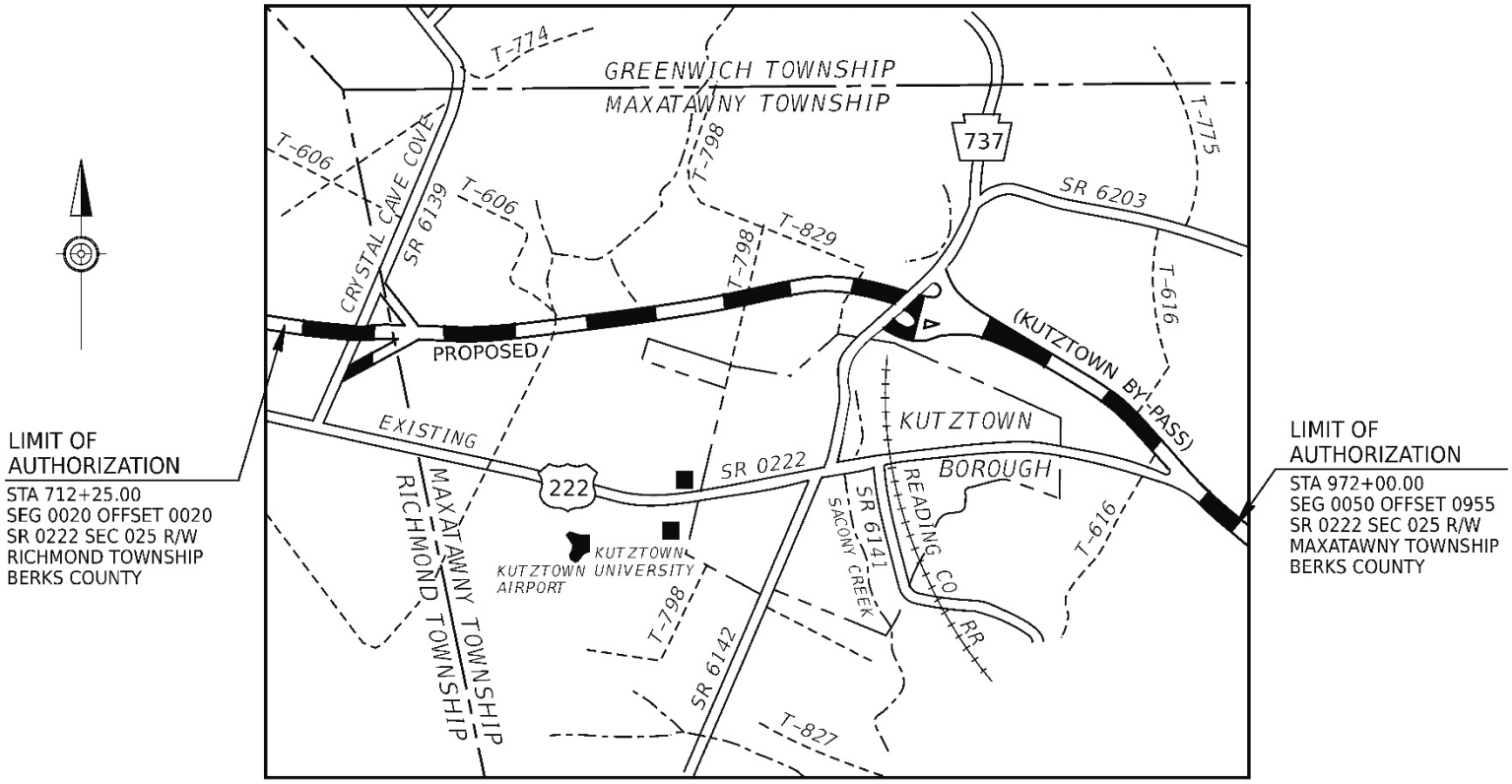


LOCATION MAP

0 1 2 MILES

LEGEND

- PROJECT
- STATE HIGHWAY
- TOWNSHIP ROAD
- MUNICIPAL BOUNDARY
- NO DETOUR

FIGURE 3.7
TYPICAL LOCATION MAP

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				OF

REV NO	REVISIONS	DATE	BY

FIGURE 3.8
SAMPLE OF IDENTIFICATION BLOCK

F. Listing of Public Utilities. List all Public Utilities known to be located within the scope and extent of work activity defined for this construction area in accordance with Act 287-1974, as amended. List the name of the Public Utility, their address with Zip Code, the telephone number, title and the name of the utility representative responsible for the project, and show the unique acronym to indicate ownership that accompanies the utility line depictions on the plans.

List the Pennsylvania One Call System telephone number and serial numbers for the project.

An up-to-date list of the Public Utilities, obtained from each County Courthouse within the District limits, shall be kept on hand by the District to show correct names and addresses for all Public Utilities.

G. Tabulation of Project and Required Right-of-Way Break Point Coordinates. Provide a tabulation of project coordinates as required in Chapter 2, Section 2.3.H.

H. General Notes. The wording of General Notes on Right-of-Way Plans shall be as follows:

1. The first Note shall refer to the Legal right-of-way and shall include the following for all roadways within the limits of authorization:

a. State Route, Township Road or the names of roads which are shown on the Right-of-Way Plan.
b. Identifying stations.
c. Legal width of all roads within the area of taking.
d. Basis of legal width, including dates of plans, ordinances, etc., and places and dates of record.

Examples:

a. THE LEGAL RIGHT-OF-WAY ON SR 1524 FROM THE WEST CHESTER BOROUGH LINE (STATION 0+00) TO THE INTERSECTION OF SR 1059 (STATION 9+35) IS 60 FEET, BASED ON PLAN OF LR 21524, SECTION 1, SIGNED ON JULY 2, 1949, AND RECORDED ON AUGUST 5, 1949, IN THE CHESTER COUNTY RECORDER'S OFFICE IN PLAN BOOK 3, PAGE 17.

b. THE LEGAL RIGHT-OF-WAY ON SR 1524, FORMERLY LR 17, FROM THE WEST CHESTER BOROUGH LINE TO THE INTERSECTION OF SR 1059, FROM STATION 0+00 TO STATION 9+35 IS 50 FEET BASED ON REPORT OF VIEWERS, CONFIRMED ON APRIL 26, 1846, FILED IN CHESTER COUNTY COURT OF QUARTER SESSIONS.

c. THE LEGAL RIGHT-OF-WAY ON SR 6046, FORMERLY LR 359, FROM STATION 201+02 TO STATION 216+50 IS 50 FEET, BASED ON POTTSTOWN BOROUGH ORDINANCE DATED MAY

1, 1929, RECORDED IN THE MONTGOMERY COUNTY RECORDER OF DEEDS OFFICE ON JUNE 15, 1929, IN DEED BOOK 21, PAGE 171.

d. THE LEGAL RIGHT-OF-WAY ON SR 3021, FORMERLY LR 15039 IS 33 FEET, BASED ON THE ACT OF MAY 1, 1933, P.L. 103, SECTION 1105, AS AMENDED. PRIOR TO THE ADOPTION OF LR 15039 AS A STATE HIGHWAY IN 1942, IT HAD BEEN OPENED AND MAINTAINED FOR TWENTY-ONE (21) YEARS OR MORE BY GREEN TOWNSHIP, A SECOND-CLASS TOWNSHIP. THERE IS NO PUBLIC RECORD OF ANY OTHER WIDTH.

e. THE LEGAL RIGHT-OF-WAY ON SR 6114, FORMERLY LR 19054, FROM STATION 0+00 TO STATION 9+17 IS 50 FEET BASED ON DEED OF DEDICATION DATED MAY 29, 1856, AND RECORDED IN DEED BOOK 311, PAGE 47, IN THE MONTGOMERY COUNTY RECORDER OF DEEDS OFFICE. BY THIS PLAN, THE COMMONWEALTH HEREBY ACCEPTS THE AREAS DEDICATED FOR STATE HIGHWAY PURPOSES.

f. THE LEGAL RIGHT-OF-WAY ON SR 6032 FROM STATION 201+02 TO STATION 216+50, IS 30 FEET ON THE LEFT AND IS BASED ON A PLAN OF LOTS OF BROOKFORD MANOR RECORDED IN THE MONTGOMERY COUNTY RECORDER OF DEEDS OFFICE ON MAY 27, 1948, IN PLAN BOOK Q, PAGE 27. BY THIS PLAN, THE COMMONWEALTH HEREBY ACCEPTS THE AREAS DEDICATED FOR STATE HIGHWAY PURPOSES.

g. THE LEGAL RIGHT OF WAY ON S.R. 6114, FORMERLY LEGISLATIVE ROUTE 19054 FROM STA. 0+27 TO STA. 1+12 IS VARIABLE BASED ON THE ACTUAL WIDTH OCCUPIED BY PAVEMENT AND SHOULDERS AS MEASURED IN THE FIELD. THERE IS NO PUBLIC RECORD OF OTHER WIDTH.

2. The second Note shall refer to the terms of acquisition.

a. When required right-of-way will be acquired in fee simple, the Note shall be stated as follows:

ALL REQUIRED RIGHT-OF-WAY FOR THIS PROJECT SHALL BE ACQUIRED IN FEE SIMPLE UNLESS OTHERWISE NOTED. AREAS, IF ANY, NOT TO BE ACQUIRED IN FEE SIMPLE SHALL BE ACQUIRED IN THE LESSER ESTATE OR INTEREST NOTED ON THE PLAN SHEET.

b. When required right-of-way will be acquired in easement for highway purposes only, the Note shall be stated as follows:

ALL REQUIRED RIGHT-OF-WAY FOR THIS PROJECT SHALL BE ACQUIRED AS EASEMENT FOR HIGHWAY PURPOSES. AREAS, IF ANY, NOT TO BE ACQUIRED AS EASEMENT FOR HIGHWAY PURPOSES SHALL BE ACQUIRED IN THE LESSER ESTATE OR INTEREST NOTED ON THE PLAN SHEET.

c. When most of the required right-of-way will be acquired in fee, but certain right-of-way will be acquired in easement for highway purposes, the note set forth in a. above should be used with the specific highway easement areas designated "Required Right-of-way (Easement for Highway Purposes)."

See Section 3.1 on interest to be acquired.

3. A note shall be added concerning the plotting of the property lines:

When no private property lines are surveyed, a note shall be added concerning the plotting of the property lines as follows:

PRIVATE PROPERTY LINES ARE PLOTTED FROM THE DEED OF RECORD, RECORDED SUBDIVISION OR LOT PLANS, EXISTING TOPOGRAPHICAL FEATURES AND LIMITED FIELD DATA. PRIVATE PROPERTY LINES WERE NOT SURVEYED BY THE PROFESSIONAL LAND SURVEYOR RESPONSIBLE FOR THE PROJECT.

When some of the property lines are surveyed during project development, a note shall be added concerning the plotting of the property lines as follows:

ALL PROPERTIES ARE PLOTTED FROM DEEDS OF RECORD, RECORDED SUBDIVISION OR LOT PLANS, OR FROM FIELD SURVEY. PROPERTY LINES WERE SURVEYED ONLY WHEN DETERMINED NECESSARY BY THE PROFESSIONAL LAND SURVEYOR RESPONSIBLE FOR THE PROJECT. PROPERTY LINES NOT ESTABLISHED BY FIELD SURVEY WERE PLOTTED BASED ON EXISTING TOPOGRAPHICAL FEATURES AND LIMITED FIELD DATA.

See Section 3.1.I discussing when it is appropriate to survey property lines.

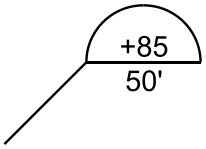
4. A General Note may be added, if desired, to cross reference the State Route numbers to their previous Legislative Route numbers.

5. Other Notes, Where Applicable:

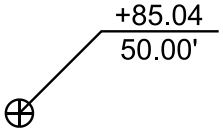
a. BUILDINGS AND STRUCTURES MARKED [C] HAVE BEEN OR ARE TO BE REMOVED OR ALTERED BY THE DEPARTMENT OR OTHER AUTHORITY RESPONSIBLE FOR THE PAYMENT OF PROPERTY DAMAGES.

b. BUILDINGS AND STRUCTURES MARKED [O] ARE ENCROACHMENTS WHICH ARE THE RESPONSIBILITY OF THE PROPERTY OWNERS TO REMOVE.

THE HALF CIRCLED NUMBER INDICATES A SCALED DIMENSION.



INDICATES MONUMENTED DIMENSIONS.



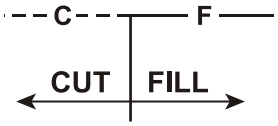
Note: Monumented dimensions indicate that a monument has been set at the designated values.

d. The General Notes shall indicate if the horizontal survey information is based on the Pennsylvania State Plane Coordinate System (SPCS 83), or an independent arbitrary coordinate system. The notes for vertical control shall state if the elevations are based upon the North American Vertical Datum of 1988 (NAVD 88) or an independent arbitrary datum. Also include the definition of the curve data.

e. All NHS routes shall be identified in the General Notes as follows:

SR 0076 IS A NHS ROUTE FROM STATION 0+00 TO STATION 12+76.

f. Indicate the following key for the Slope Limit in the General Notes:



g. A Note shall be provided to indicate which streams within the project are classified as "Navigable Streams" because as such, they are public highways. If no streams are so classified, the Note shall so state.

h. When service roads are designated on a Right-of-Way Plan, one of the following Notes is to be used:

(1) MAINTENANCE RESPONSIBILITY AND TITLE TO THE LOCAL SERVICE ROADS DESIGNATED ON THIS PLAN VESTS IN THE MUNICIPALITY IN WHICH THEY ARE LOCATED UPON COMPLETION OF CONSTRUCTION THEREOF.

(2) FORMER STATE ROUTE _____ IS HEREBY DESIGNATED A LOCAL SERVICE ROAD FROM STATION _____ TO STATION _____. MAINTENANCE RESPONSIBILITY AND TITLE TO SAID ROADWAY VESTS IN THE MUNICIPALITY IN WHICH IT IS LOCATED UPON COMPLETION OF CONSTRUCTION THEREOF.

See Section 3.1.Z for general discussion of acquisitions for service roads.

i. When a Temporary Construction Easement is required, the expiration shall be indicated in the General Notes as follows:

TEMPORARY CONSTRUCTION EASEMENT. AN EASEMENT TO USE THE LAND AS NECESSARY DURING CONSTRUCTION OF THE PROJECT. THE EASEMENT IS REQUIRED ONLY UNTIL THE CONSTRUCTION OR WORK INDICATED BY THE PLAN IS COMPLETED, UNLESS SOONER RELINQUISHED IN WRITING BY THE DEPARTMENT.

The expiration date shall be at the discretion of the District Executive.

Temporary easements are not to be shown on HOP plans reflecting property to be deeded to the Department. They are not deeded to the Department, but rather used by the permittee during construction.

See Section 3.1.R and Section 3.6.A.2.e.(12).(f) for further discussion of temporary construction easements.

j. Plans that include vacations and abandonment.

When abandonment or vacations are part of a right-of-way acquisition plan, the following General Notes must be included:

ABANDONMENTS AS SHOWN ON THIS PLAN ARE EFFECTIVE ONLY AFTER THE ROAD HAS BEEN OPENED TO TRAFFIC AND PROPER NOTICE HAS BEEN GIVEN TO THE LOCAL AUTHORITIES.

VACATIONS AS SHOWN ON THIS PLAN ARE EFFECTIVE ONLY AFTER AN ORDER OF VACATION HAS BEEN EXECUTED BY THE DEPARTMENT AND FILED IN THE APPROPRIATE COUNTY COURTHOUSE.

k. Drawings Vacating Right-of-Way and Confirming Disposition of Right-of-Way**.**

When a plan is filed to vacate right-of-way and confirm the disposition of rights of way after the disposition process, the following General Note must be included:

THIS PLAN SHALL CONSTITUTE A WRITTEN ORDER AND DECLARATION UNDER SECTION 210 OF THE STATE HIGHWAY LAW, 36 P.S. SECTION 670-210, THAT THE RIGHT-OF-WAY SHOWN AS VACATED IS VACATED IMMEDIATELY UPON THE RECORDING OF THE PLAN.

A general note must also be included designating the plan under which the right-of-way was originally acquired. See also Section 3.0.I on plans vacating right-of-way and confirming the disposition of rights after the disposition process. This note and type of plan may only be used when the right-of-way disposition process has been followed. See Publication 378, *Right-of-Way Manual*, Chapter 7, "Excess Land".

A general note specifying that the vacation is made subject to the rights of existing public utility facilities to remain unadjusted within the area vacated is not appropriate if the utilities occupy the right-of-way by permit only. The Department cannot reserve an easement for a utility when it vacates public right-of-way.

l. De Facto Takings. The following General Note shall be placed on all partial take Right-of-Way Plans:

THE FILING OF THIS PLAN IS NOT A CONDEMNATION OF THE PROPERTIES DESIGNATED THEREIN AND DOES NOT IN ANY MANNER WHATSOEVER RESTRICT THE USE OR DISPOSAL THEREOF. AUTHORIZATION TO CONDEMN UNDER THIS PLAN EXTENDS FOR ONLY ONE YEAR FROM THE DATE OF THE SECRETARY'S SIGNATURE INITIALLY AUTHORIZING ACQUISITION OR SUBSEQUENTLY REVISING THE PLAN OR REAUTHORIZING ACQUISITION THEREUNDER.

The following General Note shall be placed on all total take Right-of-Way Plans:

THE FILING OF THIS PLAN IS NOT A CONDEMNATION OF THE PROPERTIES DESIGNATED THEREIN OR ANY OTHER PROPERTIES WITHIN THE PROPOSED HIGHWAY PATH AND DOES NOT IN ANY MANNER WHATSOEVER RESTRICT THE USE OR DISPOSAL THEREOF. AUTHORIZATION TO CONDEMN UNDER THIS PLAN EXTENDS FOR ONLY ONE YEAR FROM THE DATE OF THE SECRETARY'S SIGNATURE INITIALLY AUTHORIZING ACQUISITION OR SUBSEQUENTLY REVISING THE PLAN OR REAUTHORIZING ACQUISITION THEREUNDER.

Where the Right-of-Way Plans have been filed and contain neither of the prior General Notes and the project involved has been delayed for any reason, e.g., lack of funding, etc., the Right-of-Way Plans shall be revised to show the following General Note:

REVISED TO INDICATE THAT ACQUISITION FOR THIS PROJECT HAS BEEN DISCONTINUED, AND TO CLARIFY THAT THIS PLAN IS NOT A CONDEMNATION OF THE PROPERTIES DESIGNATED THEREON OR ANY OTHERS, AND DOES NOT IN ANY MANNER WHATSOEVER RESTRICT THE USE OR DISPOSAL THEREOF. AUTHORIZATION TO CONDEMN UNDER THIS PLAN CAN ONLY BE REVIVED BY THE SECRETARY'S REAUTHORIZATION OF CONDEMNATION HEREUNDER.

m. Drawings Authorizing Acquisition by Local Governments on State Highways. A general note should be added to the plan stating:

THIS PLAN AND ANY RELATED HIGHWAY OCCUPANCY PERMIT AUTHORIZE WORK ONLY IN DEPARTMENT HIGHWAY RIGHT-OF-WAY.

See Sections 3.0.H, 3.5.X, and 3.5.Y also relating to acquisitions of State highway right-of-way by local governments as part of the HOP process.

n. When right-of-way for a local road or street is required, the following Note is to be used:

REQUIRED RIGHT-OF-WAY FOR LOCAL ROADS OR STREETS IS ACQUIRED FOR THE BENEFIT OF THE APPLICABLE MUNICIPALITY IN THE SAME ESTATE OR INTEREST AS DESIGNATED HEREIN FOR REQUIRED RIGHT-OF-WAY FOR STATE HIGHWAY PURPOSES, ALONG WITH A TEMPORARY CONSTRUCTION EASEMENT FOR THE BENEFIT AND USE OF THE COMMONWEALTH. TITLE SHALL VEST IN THE APPLICABLE LOCAL MUNICIPALITY UPON ACQUISITION AND MAINTENANCE RESPONSIBILITY SHALL TRANSFER UPON THE COMPLETION OF CONSTRUCTION.

See Section 3.1.AA for general discussion of acquisitions for local roads and streets.

o. When a private access is required, the following Note is to be used:

LAND REQUIRED FOR PRIVATE ACCESS IS ACQUIRED IN THE SAME ESTATE OR INTEREST DESIGNATED (EITHER FEE SIMPLE OR EASEMENT FOR DRIVEWAY PURPOSES) FOR THE BENEFIT AND USE OF THE PROPERTY OR PROPERTIES DESIGNATED, ALONG WITH A TEMPORARY CONSTRUCTION EASEMENT FOR THE

BENEFIT AND USE OF THE COMMONWEALTH, IF NECESSARY. TITLE SHALL VEST IN THE OWNERS OF THE DESIGNATED PROPERTIES UPON ACQUISITION AND MAINTENANCE RESPONSIBILITY SHALL TRANSFER UPON THE COMPLETION OF CONSTRUCTION, IF ANY.

This General Note should not change. The individual information for the specific acquisition will be shown on the line leaders to the area acquired on the applicable Plan sheets and property plot, if any.

See Section 3.1.BB for general discussion of acquisitions for private access.

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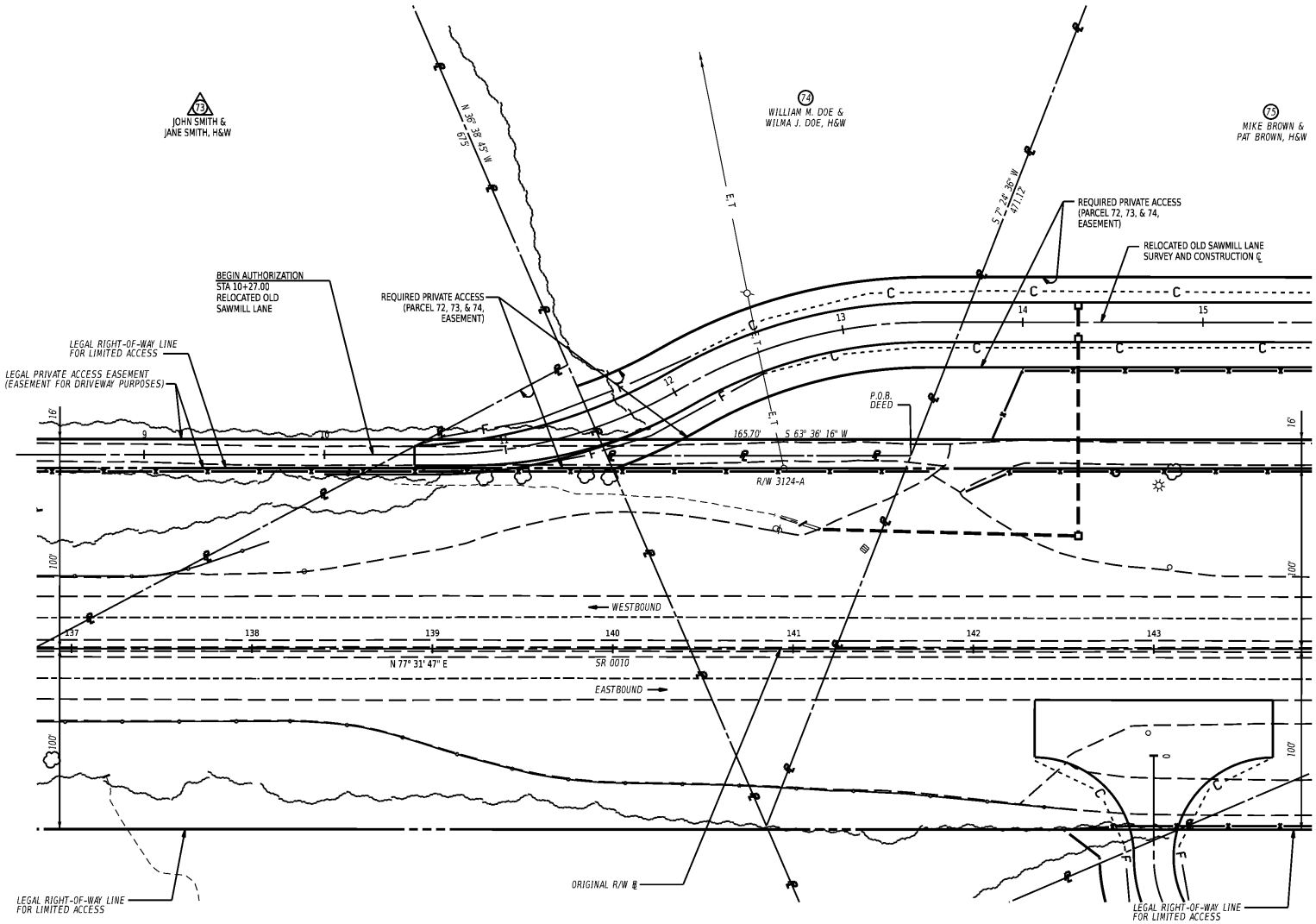

FIGURE 3.9
EXAMPLE FOR PRIVATE ACCESS

p. When lands are required for the **replacement of parkland or game lands**, the following Note is to be used:

> LAND REQUIRED FOR REPLACEMENT [insert proper type of land, e.g. PARKLAND, GAME LAND] IS ACQUIRED IN THE SAME ESTATE OR INTEREST DESIGNATED (EITHER FEE SIMPLE OR EASEMENT FOR [insert proper type of land] PURPOSES) FOR THE BENEFIT AND USE OF THE PUBLIC ENTITY DESIGNATED, ALONG WITH A TEMPORARY CONSTRUCTION EASEMENT FOR THE BENEFIT AND USE OF THE COMMONWEALTH, IF NECESSARY. TITLE SHALL VEST IN THE PUBLIC ENTITY UPON ACQUISITION AND MAINTENANCE RESPONSIBILITY SHALL TRANSFER UPON THE COMPLETION OF CONSTRUCTION, IF ANY.

This General Note should remain the same except for the designation of the type of land being replaced. The nature of the title being acquired will be shown on the line leaders to the area acquired on the applicable plan sheets and property plot, if any.

See Section 3.1.CC for general discussion of acquisitions for replacement lands.

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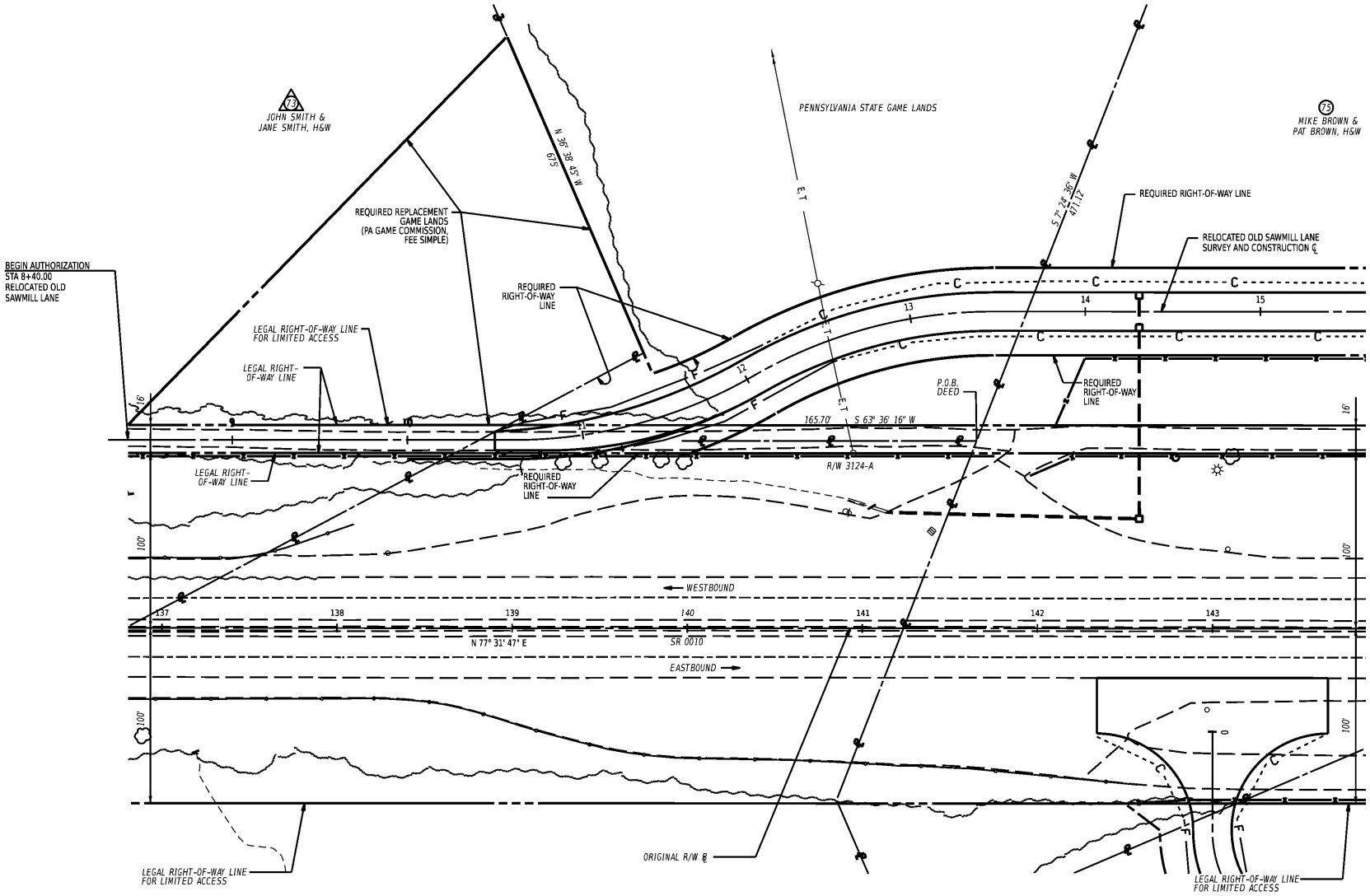


FIGURE 3.10
EXAMPLE FOR REPLACEMENT OF
PARKLAND OR GAME LANDS

q. When land required for environmental mitigation purposes is to be taken in fee simple, the following Note is to be included:

LAND REQUIRED FOR ENVIRONMENTAL MITIGATION PURPOSES (WETLAND, STREAM OR TERRESTRIAL) SHALL BE ACQUIRED IN FEE SIMPLE UNLESS OTHERWISE NOTED. FOLLOWING ACQUISITION, RESTRICTIVE COVENANTS WILL BE FILED OF RECORD LIMITING USE OF THE LAND.

When land required for environmental mitigation purposes is to be taken in easement, no Note is required on the Typical Section Sheet. See Section 3.6.A.2 on wetland, stream and terrestrial mitigation easements.

See Section 3.1.DD for general discussion of acquisitions for environmental mitigation.

r. Aerial Easement Notes.

1) When an aerial easement is to be acquired, the following notes shall be used:

WHERE AN AERIAL EASEMENT IS ACQUIRED, IT SHALL INCLUDE AN EASEMENT IN THE AIR FOR THE ACCOMMODATION OF THE ELEVATED HIGHWAY STRUCTURE UNLIMITED IN VERTICAL DIMENSION ABOVE THE STRUCTURE, A SURFACE EASEMENT UNLIMITED IN VERTICAL DIMENSION FOR THE ACCOMMODATION OF PIERS AND OTHER APPURTENANCES AND A TEMPORARY EASEMENT FOR CONSTRUCTION PURPOSES INCLUDING THE STORAGE OF MATERIALS DURING CONSTRUCTION FOR THE ENTIRE AREA. THE FOLLOWING LIMITATIONS SHALL BE IMPOSED ON THE PROPERTY BENEATH THE AREA AFFECTED BY THE AERIAL EASEMENT.

2) NO USE SHALL BE MADE OF THE PROPERTY WHICH SHALL ENDANGER THE STRUCTURE OR THE HEALTH, SAFETY OR WELFARE OF THE TRAVELING PUBLIC.

3) NO FLAMMABLE, EXPLOSIVE, DANGEROUS OR HAZARDOUS MATERIAL SHALL BE USED, PLACED OR STORED ON THE PROPERTY.

4) NO BUILDING OR OTHER FACILITY SHALL BE CONSTRUCTED ON THE PROPERTY WITHOUT PRIOR AUTHORITY OF THE DEPARTMENT OF TRANSPORTATION. IF AND WHEN SUCH AUTHORITY IS GRANTED, THE PLANS FOR THE BUILDING OR FACILITY AND CONSTRUCTION METHODS SHALL BE SUBJECT TO THE APPROVAL OF THE DEPARTMENT OF TRANSPORTATION.

5) NO INTERFERENCE SHALL BE MADE WITH THE RIGHT OF THE DEPARTMENT OF TRANSPORTATION TO ENTER UPON THE PROPERTY FOR THE PURPOSES OF INSPECTION, MAINTENANCE, REPAIR, PAINTING, RECONSTRUCTION OR ALTERATION OF THE STRUCTURE OR APPURTENANCES. MOVEABLE ITEMS MAY HAVE TO BE REMOVED BY THE OWNER DURING SOME OR ALL OF THE ABOVE OPERATIONS.

6) ANY SUBSTANTIAL CHANGE IN PROPERTY USE TO BE MADE SUBSEQUENT TO THE ACQUISITION OF THE EASEMENT SHALL BE SUBJECT TO THE APPROVAL OF THE DEPARTMENT OF TRANSPORTATION.

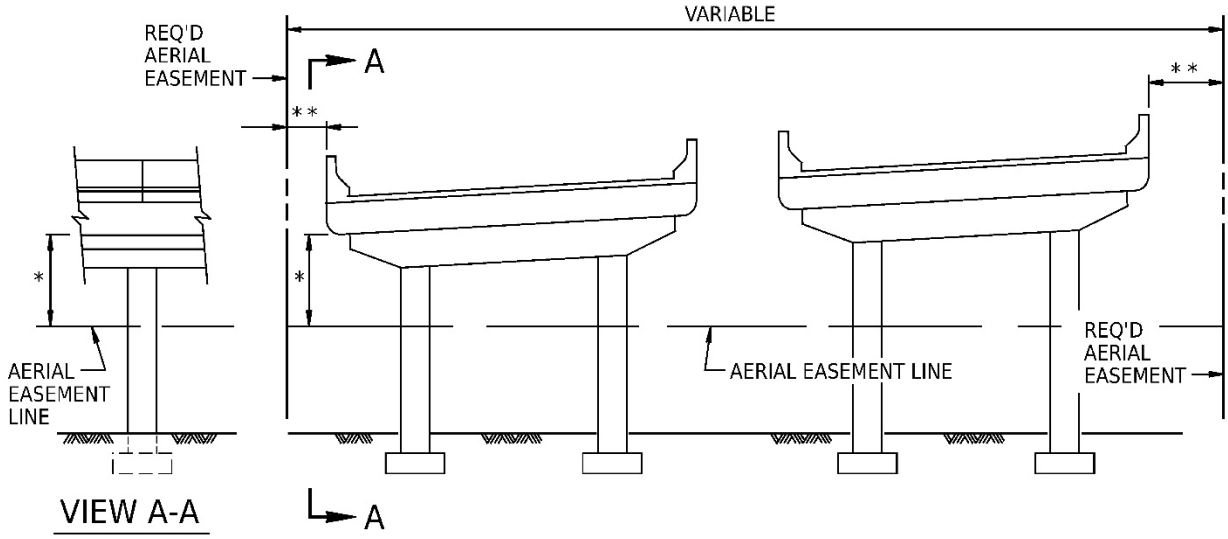
7) Add the following Note when a railroad is involved:

THE NOTES ON THESE DRAWINGS SHALL NOT BE CONSTRUED AS LIMITING OR INTERFERING IN ANY WAY WITH THE PRESENT AND FUTURE OPERATION, USE, MAINTENANCE, REPAIR, RENEWAL, CHANGE, ADDITION, BETTERMENT OR ALTERATION OF THE RAILROAD AND ITS SUPPORTING FACILITIES.

See Section 3.1.L for general discussion of aerial easement acquisitions. A separate sketch shall be included for each aerial easement condition. See Figure 3.11, Aerial Easement Sketch.

FIGURE 3.11

AERIAL EASEMENT SKETCH



SKETCH SHOWING ESTATE TO BE ACQUIRED FOR A LIMITED AERIAL EASEMENT

FROM STA _____ TO STA _____

(The above sketch, modified to fit the project, with applicable dimensions, is added to the General Notes.)

* ACTUAL DIMENSION (2 ft MINIMUM)

** ACTUAL DIMENSION (15 ft DESIRABLE).

USE OF AIRSPACE BENEATH THE ESTABLISHED GRADELINE OF THE HIGHWAY SHALL PROVIDE SUFFICIENT VERTICAL AND HORIZONTAL CLEARANCES FOR THE CONSTRUCTION, OPERATION, MAINTENANCE, VENTILATION AND SAFETY OF THE HIGHWAY FACILITY. THE ESTATE ACQUIRED ABOVE THE AERIAL EASEMENT LINE MAY BE ENTERED ON BY MOVING VEHICLES SUCH AS TRUCKS OR RAILROAD ROLLING STOCK.

s. Mining Reservations. Add the following Note to each Plan Sheet on which the estate to be acquired (whether fee simple or easement) should be limited in vertical dimension to avoid interference with deep mining, including removal of gas and oil by means of wells located off the right-of-way:

> THE ESTATE TO BE ACQUIRED IS LIMITED IN VERTICAL DIMENSION SO AS NOT TO INTERFERE WITH DEEP MINING OF MATERIALS, INCLUDING REMOVAL OF GAS AND OIL BY MEANS OF WELLS LOCATED OFF THE RIGHT-OF-WAY. THE OWNER OF THE MINERALS MAY REMOVE ANY OR ALL OF SAME LOCATED BENEATH THE MINIMUM DEPTH INDICATED.

Note: The depth of permissible mining operations is to be based on the type of rock, possible voids, etc., and shall be indicated on the appropriate Plan Sheet.

t. All existing easements shall be indicated in the general notes. Use the description of the easement from the existing Right-of-Way Plan or see the previous listed notes for the appropriate wording.

u. Typical Sections. One Typical Section shall be shown for each roadway listed on the Title Sheet. Typical Sections are also desirable for ramps, unlisted side roads, etc. The Typical Sections may be shown on as many additional sheets as necessary.

The minimum data required on each Typical Section shall include the following:

1. Profile grade point.
2. Pavement width.
3. Shoulder width.
4. Median width.
5. Embankment and cut slopes.
6. Applicable station limits.

The type and depth of pavement, subbase and shoulders, etc., are not required.

3.5 PLAN SHEETS

A. List of Items for Plan Sheets. The Plan Sheets shall show the following items:

1. Required and Legal Right-of-Way Lines.

2. Survey and Right-of-Way Baselines or Survey and Right-of-Way Centerlines.

3. Railroads and Utilities.

4. Easements (For permanent utility easement, see Publication 16, Design Manual, Part 5, *Utility Relocation*) and associated Easement Notes (See Section 3.6.A.2.e).

5. Topography.

6. Property Lines and Ownership (Use parcel numbers enclosed with one heavy circle). See Section 3.6.A.2.e.(3) for the data required.

7. Limit of Slope Lines.

8. Edge of existing and proposed pavement, curb and new depressed curb, for free access facilities.

9. Tabulation of areas (if no separate property plot is prepared).

10. Survey references and survey book numbers.

11. All drainage that affects property damage shall be shown. Of particular interest are inlet and outlet drainage onto or from properties. Pipe and ditch sizes may be determined from preliminary drainage computations.

12. Right-of-Way Fence. Generally placed 2 ft inside the right-of-way line. Breaks of 90° should be avoided.

13. Structure Data.

14. Curve Data, North Arrow, Profile, Limits.

15. Location of existing or proposed bicycle facilities and trails.

16. Seal of the professional land surveyor and professional engineer who are in responsible direction and control of the work shall be shown.

17. Driveway Adjustments.

18. Intersection ties between baselines (by station and angle).

B. Metes and Bounds and Tabulation of Properties. When directed by the District Right-of-Way Administrator, the total ownership (entire perimeter with metes and bounds) of each parcel shall be shown either directly on the Plan Sheet or on an appropriately-referenced Property Plot. In either case, the same property data that is on the plots is required.

Metes shall be indicated on Right-of-Way Plans as follows:

Units in feet

The data may be tabulated or shown in a block similar to that used on a Property Plot. For information on areas, see Section 3.6.

C. Data Affecting Right-of-Way. All pertinent data affecting the cost of the right-of-way, such as structures outside the right-of-way line affected by the taking, access roads, improvements and fences shall be shown. The means of access to the property, both before and after construction, including the services or access roads, shall be shown. This data shall be shown on both the Plan Sheet and on the Property Plots.

D. Steps, Walls and Sidewalks. All Right-of-Way Plans, including Property Plots, shall clearly indicate whether steps, walls, sidewalks, etc., are included as construction items or are included as items of property damage. Where one or more of the aforementioned items occur on the Right-of-Way Plan, the following Note shall be placed on the plan:

STEPS (or others) SHALL BE INCLUDED AS AN ITEM OF PROPERTY DAMAGE (or CONSTRUCTION).

E. Water Supply Sources, Gas and Oil Wells. The location of all water supplies, i.e., water well casings, dug wells and springs, shall be shown. All gas and oil wells, which may be affected by the highway construction, shall also be shown.

F. Entry or Exit from Traffic Lanes. On projects where the access has been or is to be affected, the Extent of Limited Access and all approved points of entry to or exit from the traffic lanes shall also be shown.

Wherever possible, the Extent of Limited Access should stop short of the nearest property line to allow for present or future construction of a driveway or street, within a regulated distance, into the property, thus avoiding the necessity of paying right-of-way damages for a landlocked property.

On interchange designs, the control of access should extend along the cross road beyond the ramp terminals about 300 ft or more in rural areas and 100 ft or more in urban areas.

G. Correlation with Legal Descriptions. The arrangement of Acquisition of Right-of-Way Plans shall conform to the general requirements for the Construction Plans and shall contain sufficient dimensional and angular data to permit ready identification and correlation with the legal descriptions of all parcels and easement areas that are required by the associated highway project.

H. Right-of-Way Widths. The required right-of-way widths shall be sufficient to contain the highway construction and provide a reasonable border to permit normal maintenance. When replacing an existing utility access road, the minimum width of required right-of-way shall be that of the existing access road. When providing an access road for a utility where none previously existed, the width of required right-of-way shall be held to a minimum as determined by terrain and by the needs of the utility.

I. Location of Required Right-of-Way Lines:

1. On all limited access highway facilities and on free access highway facilities in other than built-up areas, the required right-of-way lines shall be placed to include the construction slope.

2. On free access highway facilities in built-up areas, the required right-of-way lines may be maintained at a uniform width and the construction slope areas designated as required limit of slope line.

On curbed highways, the Department normally limits its right-of-way acquisition to the area from face-of-curb to face-of-curb plus a minimal strip (usually 3 ft to 5 ft) beyond the face-of-curb where signs or traffic signal supports require additional right-of-way. The Department shall not reduce the right-of-way where the legal right-of-way exceeds these requirements.

3. Angle points should be used to transition between parallel segments of right-of-way lines. Every break in the right-of-way line shall be tied to the right-of-way centerline by providing the station and offset on the plan. See Figure 3.13a. For major relocation projects or projects on new location, a list of the station and offset point coordinates for proposed monument locations shall be provided on the Typical Section sheet. For these projects, it shall be necessary to provide proposed monument points on the right-of-way lines. See Figure 3.13b. Monument symbols (proposed and existing) shall be shown on the plan sheets and placed in accordance with Publication 122M, *Surveying and Mapping Manual*.

J. Combining Right-of-Way Damages into One Claim. When a Right-of-Way Plan for a project ends at other than a property line and it is anticipated additional acquisition is necessary on that property for the next construction sections, the plan shall be extended to complete the acquisition with the first project. This eliminates the need for two claims on the same project.

K. Geometrically Defined Area. The required right-of-way shall be a geometrically-defined area noted by dimensions and pluses or pluses and offsets and coordinates. Coordinates shall not be shown on the plan sheets. For minimum right-of-way take areas adjacent to existing right-of-way only the centerline geometry will be established by coordinates with pluses and offsets provided for the right-of-way control. See Figure 3.13a. The horizontal Construction Plan data and the Right-of-Way Plan geometrics shall be identical.

L. Intersecting Right-of-Way Lines. The required right-of-way lines for a limited access mainline facility shall be carried through the legal or required right-of-way lines for the intersecting side road in interchange areas (See Figure 3.12). The right-of-way lines for the proposed intersecting side roads shall be carried through the right-of-way lines of the mainline.

M. Breaks in Right-of-Way. Show pluses and offsets at each break point in the required right-of-way line. Breaks in the required right-of-way lines shall not be established on property lines unless approved by the District Executive. If a right-of-way line break at a property line is required, it should be based on a field located property line and shown as per Figure 3.13b. These property line pluses may be shown on the Property Plot in lieu of the plan sheet. See Figures 3.13a and 3.13b for an example of breaks in the required right-of-way.

N. Legal Right-of-Way. It is required that the legal right-of-way line appear on the plans. The width of the legal right-of-way shall be shown and it shall be tied at points where it intersects the required right-of-way line. The legal right-of-way line should be tied to the centerline or baseline at the beginning and end of projects. Regardless of whether the legal right-of-way has been established by a previous plan or in some other way, the legal right-of-way lines shall be shown on the Right-of-Way Plan and designated as legal right-of-way line. At a minimum, the legal right-of-way shall be indicated near the left and right side of each plan sheet and at every break.

O. Utilities. The location of all existing surface, subsurface, and aerial utility lines shall be clearly shown on the plan and profile. Show overhead clearances at the minimum sag height over the pavement and shoulders for aerial utility lines and the depth below existing ground for subsurface utilities (reference Publication 16, Design Manual, Part 5, *Utility Relocation*, Section 6.3), when included in the scope. Where utility congestion is significant, a separate Detailed Utilities Plan Sheet may be necessary (reference Chapter 2, Section 2.13). Utilities shall be shown in accordance with Sections 2.13, 3.7.B, and 13.5.

P. Profile Data. For plans at a scale of 1" = 200', profile elevations shall be shown at intervals of not more than 200 ft. Profiles shall show existing ground lines, datum lines, stations, lengths of vertical curves, vertical curve data and percentages of gradients. For existing bridges and structures, the clearance and the cross section of the stream bed, type, size, skew, span length, high water elevation and date of occurrence shall be shown. The approximate minimum clearance of proposed structures shall be shown. Profiles of existing streams shall also be provided.

Q. Required and Legal Right-of-Way Lines. The required right-of-way line shall be a heavy, solid line broken at intervals by two dashes and designated as Required Right-of-Way line. If the highway facility has been designated as a limited access highway facility, the required right-of-way line shall be designated as Required Right-of-Way line for limited access. On all such limited access plans, the beginning and ending of the limited access feature should be indicated very clearly, especially on ramps and interchanges. The Legal Right-of-Way line, regardless of how established, shall be shown by a solid line broken at intervals by three dashes and designated as LEGAL RIGHT-OF-WAY LINE. Right-of-Way line labels shall have leader lines with arrows from the outside of the right-of-way line. Area labels shall have leader lines with arrows from the inside of the designated area.

R. Safety Rest Areas. The area required for Safety Rest Areas may be included in the roadway Right-of-Way Plans or may be a separate plan. The required area shall be delineated as required Right-of-Way line or Required Right-of-Way line for limited access.

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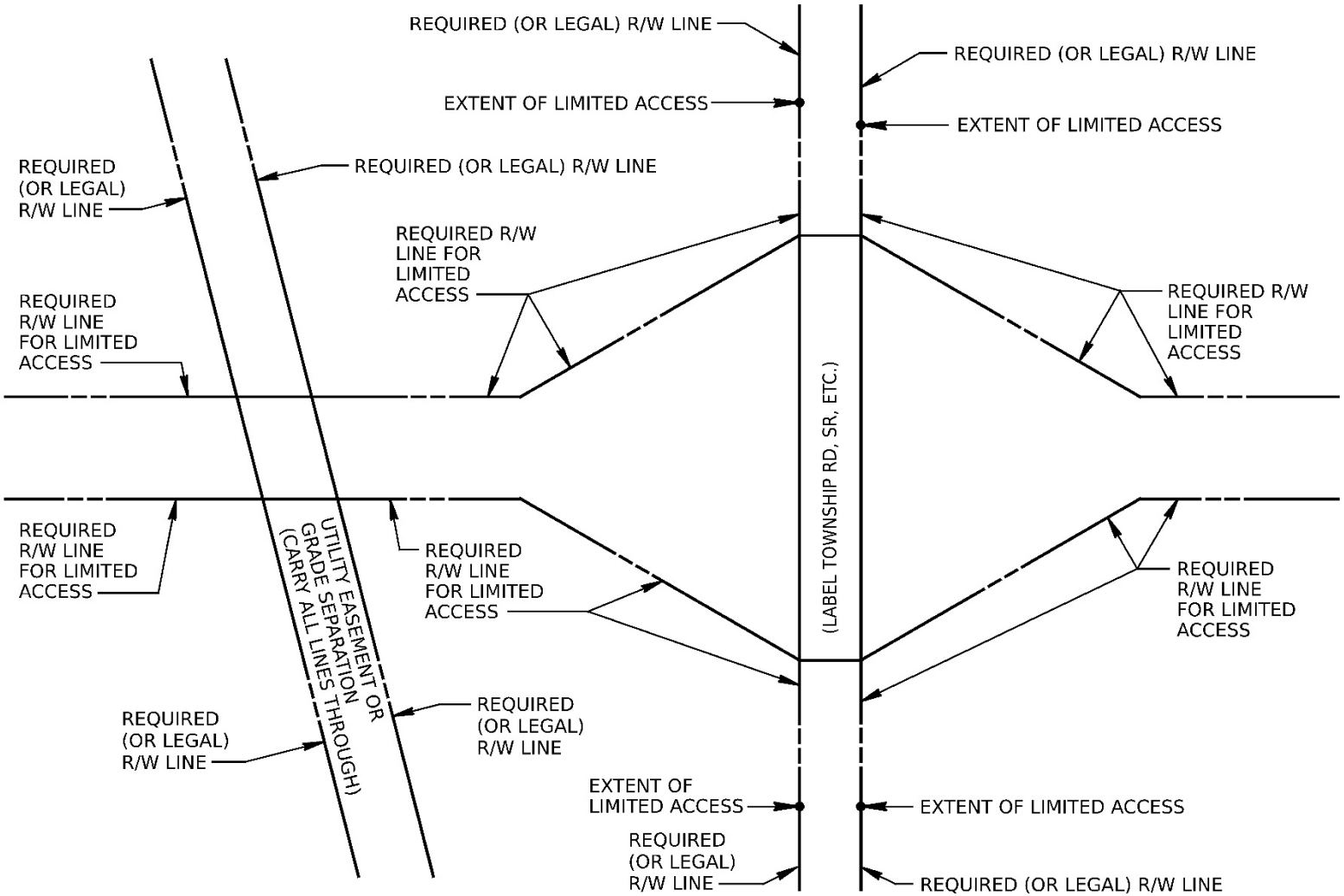
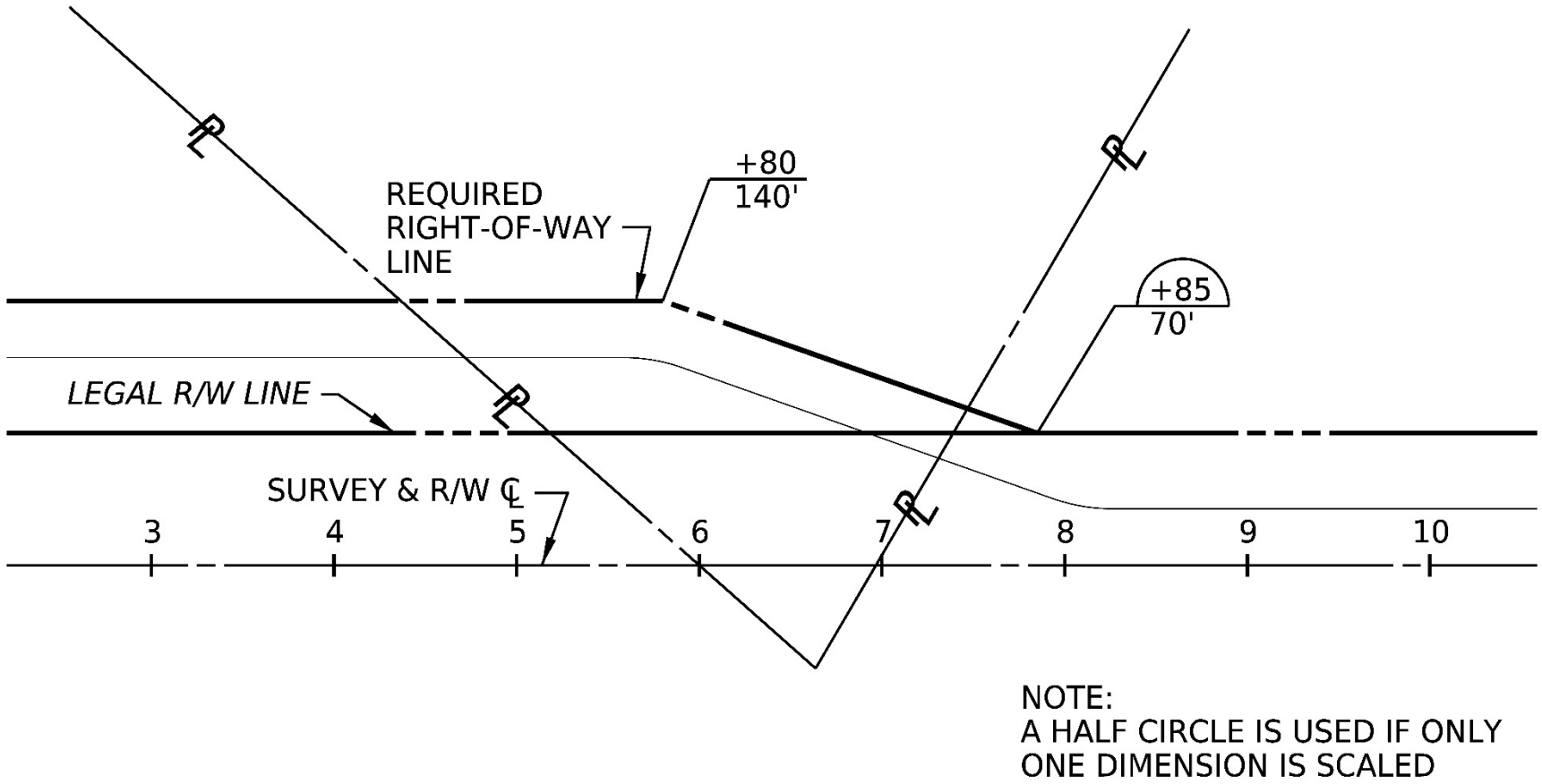


FIGURE 3.12
EXAMPLE OF INTERSECTING
RIGHT-OF-WAY LINES



NOTE:
A HALF CIRCLE IS USED IF ONLY
ONE DIMENSION IS SCALED

FIGURE 3.13a
EXAMPLE OF BREAKS IN
REQUIRED RIGHT-OF-WAY
WITH ONLY R/W BASELINE MONUMENTED

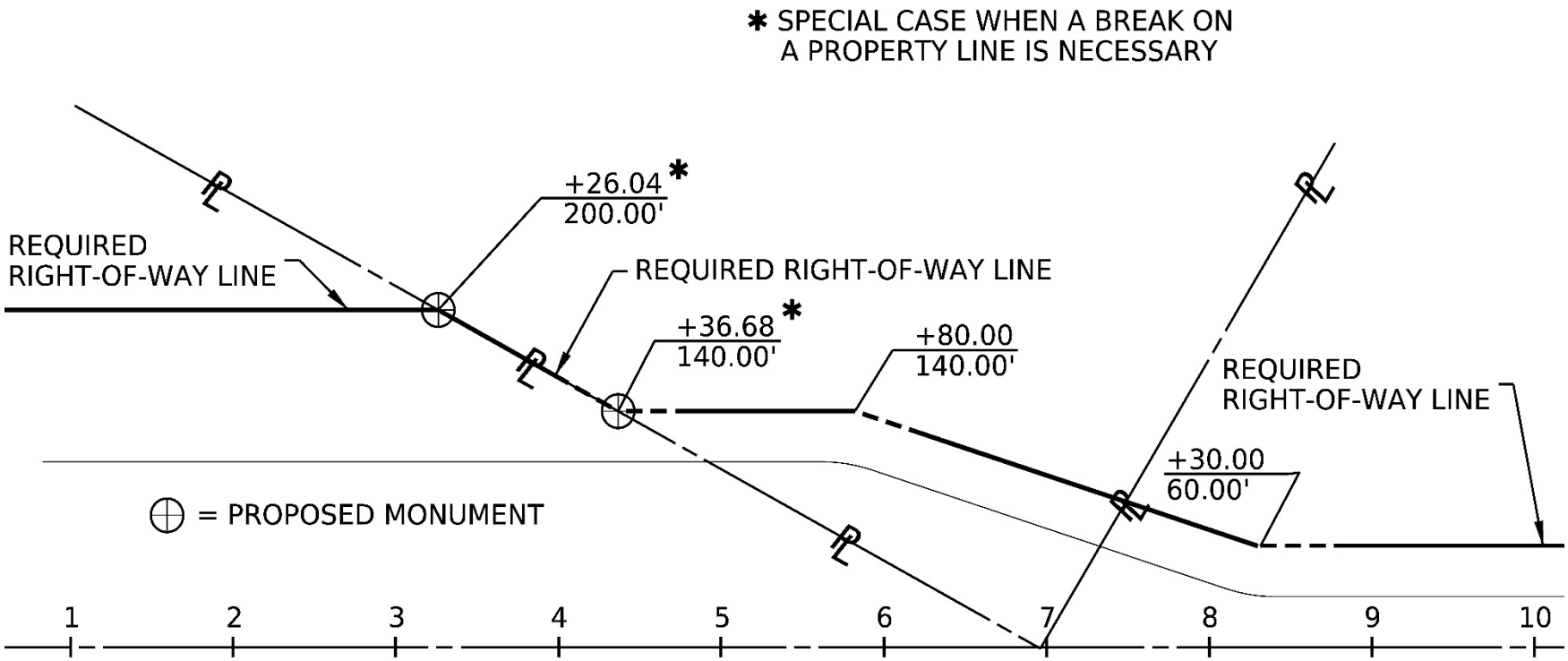
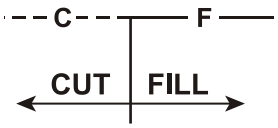


FIGURE 3.13b
EXAMPLE OF BREAKS IN
REQUIRED RIGHT-OF-WAY
WITH R/W AND BASELINE MONUMENTED

S. Ownership Search. Care shall be used in ascertaining the correct names of property owners and the correct location of property lines and that the names are exactly the same on the Plan Sheets, the Index Sheets and the Property Plots. It is necessary that the correct ownership be determined before any settlement can be made with a property owner for the owner's property damage claim. It is, therefore, important that the court records of ownership be searched not more than 30 days prior to the submission of the Right-of-Way Plan to the District Executive so as to avoid numerous revisions to an approved plan.

When a corporation, limited or general partnership or sole proprietorship business utilizing a fictitious name, is a claimant, a record search should be initiated at the Corporation Search Section, Department of State, North Office Building, Harrisburg, Pennsylvania within the same time frame.

T. Slope Limits. Construction Slope Limits (edge of rounding) shall be shown on all Plan Sheets and on all Property Plots. The following symbol shall be used to depict the slope limits. The key to this symbol shall be shown in the General Notes. When parallel ditches are involved, show the mainline slope. The outside cut line for the ditch shall also be shown.



Also indicate changes between cut and fill as shown.

U. Hatching. When a total property is shown on the Plan Sheet, thus eliminating the need for a Property Plot, hatching shall be shown on the Plan Sheet and the key to the hatching indicated on the sheet, if needed for plan recording (For additional information on hatching, see Section 3.6).

V. Referencing Required Right-of-Way. The required right-of-way shall be referenced to tangents and simple curves and tied to the centerline or baseline of the roadway it is serving. The reference lines shall be indicated as either survey and right-of-way baselines or survey and right-of-way centerlines. When the new right-of-way baseline differs from the existing right-of-way centerline, it is recommended that the right-of-way break points be re-identified.

W. Interchanges and Channelized Intersections. In addition to the normal Plan Sheets, all specified interchanges and involved intersections shall be drawn to a scale of 1" = 200' or smaller to show the complete interchange on a single sheet. This drawing shall follow the last Plan Sheet for the interchange and shall be included in the total number of sheets in the plan.

The drawings shall include the following data:

1. Right-of-Way Centerline or Baseline.
2. Stations identified at a maximum 500 ft interval with "ticks" at 100 ft intervals.
3. All geometrics including curve data (curve data may be tabulated) and equalities.
4. Coordinates for control points shall be shown in a tabular form (See Figure 2.7 in Chapter 2, Section 2.3).
5. Existing streams and proposed relocations.
6. Identification of all routes and ramps.
7. Proposed structures.
8. Existing and/or proposed railroads and railroad structures.
9. North Arrow and Bar Scale.
10. Existing and proposed utility transmission lines and pipes.

X. Drawings Depicting Right-of-Way to Be Deeded for State Highways. The preparation of the plans shall follow the procedures of the normal Right-of-Way Plan. However, instead of the normal designation of Required Right-of-Way, the areas on the sheets of the plan depicting the areas that will be deeded to the Department should be designated as Required Right-of-Way to be deeded to the Commonwealth. If it is for other than right-of-way, the area should be marked in a similar manner for the nature of the interest that will be transferred to the Department (e.g., REQUIRED LIMIT OF SLOPE to be deeded to the Commonwealth and REQUIRED DRAINAGE EASEMENT to be deeded to the Commonwealth). Include a tabulation of areas block identifying the deed information.

For a sample title sheet, see Section 3.2.I.6 and Chapter 15, Section 15.2, Plate B-XV. Also, see Sections 3.0.H and 3.1.EE, discussing deeding of right-of-way to the Department as part of the HOP process.

Y. Drawings Authorizing Acquisition by Local Governments on State Highways. The right-of-way that will be acquired by the local government should be designated in the normal manner as required right-of-way. However, if there are areas on the plan that will not need to be acquired by the local government because they are owned by the permittee, these areas should be designated as required right-of-way to be deeded to the Commonwealth. A separate plan to document this new right-of-way to be deeded to the Commonwealth will then not be necessary.

Certain types of municipalities have specific statutory authority to acquire land for the State highway purpose. For example, Townships of the second class can do so with the approval of the Department [53 P.S. Section 67304(b)]. Other types of municipalities do not have specific authority to do so, but can be granted that authority by virtue of the Department's statutory mandate to coordinate its transportation activities and cooperate with other public agencies such as political subdivisions of the Commonwealth [71 P.S. Sections 512(a)(6) and (7)].

Plans authorizing the acquisition of right-of-way for State highways by local governments should follow the procedures set forth in this manual for generating drawings authorizing the acquisition of right-of-way for Department projects, with the following differences:

1. A signature block should be added to show the approval of the appropriate local government. It should contain a line to indicate the municipal resolution number.

2. A general note should be added to the plan stating: "THIS PLAN AND ANY RELATED HIGHWAY OCCUPANCY PERMIT AUTHORIZE WORK ONLY IN DEPARTMENT HIGHWAY RIGHT-OF-WAY".

See Sections 3.0.H, 3.2.I.7, and 3.4.H.5.m, also relating to acquisitions of State highway right-of-way by local governments as part of the HOP process.

Z. Drawings Vacating and Confirming Disposition of Right-of-Way. Existing legal right-of-way lines should be shown on the plan, with the new right-of-way lines designated as required right-of-way lines. Areas that have been disposed (between the legal and required lines) should be designated as either "Area Vacated" (if the Department owned only a highway easement) or "Area Sold" (if the Department owned fee simple title). The owners of the fees underlying the highway easements at the time of disposition and the persons to whom fee land was sold should be shown on the plan.

3.6 PREPARATION OF PROPERTY PLOTS AND BOARD OF VIEW PLANS

A. Property Plots.

1. Exceptions to Property Plot Requirements. Unless the District Executive directs otherwise, Property Plots are not required for the following:

a. On projects primarily on existing right-of-way where only minor property take is involved. In such cases, the District Right-of-Way personnel should view the project in the field to determine if the right-of-way take can be appraised without Property Plots.

b. Total takes.

c. The total property and data are shown on the Right-of-Way Plan (even though only a partial take).

d. See Section 3.1.I discussing the terms property plot and property plat.

2. Identification Data. In all other cases not indicated in Section 3.6.A.1, above, a Property Plot shall be required. The Property Plot should include the following items:

a. Title Block (as shown in Chapter 15, Section 15.1, Plate A-I or on the preprinted Property Plot Sheets).

b. Deed Information:

(1) Deed Book and Page Number.

(2) Date of Deed.

(3) Date of Recording.

(4) Consideration.

(5) Amount of State Reality Transfer Tax Stamps.

(6) Name of Grantor.

(7) Date of Verification of foregoing information (shall be not more than 30 days prior to date of submission of plan).

(8) Name of Owner (exactly as it appears on the Deed).

c. Accuracy of Plot. The Designer shall prepare Property Plot Plans from the Deed of Record or Recorded Subdivision Plans or related documents, and from the property lines established in the field survey. These plots shall be initially plotted without adjustment. Upon completion of the plotting, the responsible Professional Land Surveyor will determine the accuracy or necessary adjustments of the plots. When the responsible Professional Land Surveyor has established that the property lines affected by the right-of-way take are shown properly, no further adjustments will be required. The original plots and a narrative report of all the adjustments will be kept as part of the right-of-way records and will not be shown on the Right-of-Way Plan or plot.

Where a large property is involved, i.e., an industrial plant, an industrial complex or public lands, the owner should be contacted for a copy of the owner's Property Plot for possible use in preparation of the Right-of-Way Plan and the Property Plot.

The Designer shall place, on all individual Property Plot Plans, the following notes concerning the plotting of property lines:

(1) Use the following note when some of the property lines were surveyed during project development. Example: right-of-way breaks on property lines of full property takes along existing highway and/or new construction and also partial takes are shown on the plan.

ALL PROPERTIES ARE PLOTTED FROM DEEDS OF RECORD, RECORDED SUBDIVISION OR LOT PLANS, OR FROM FIELD SURVEY. PROPERTY LINES WERE SURVEYED ONLY WHEN DETERMINED NECESSARY BY THE PROFESSIONAL LAND SURVEYOR RESPONSIBLE FOR THE PROJECT. PROPERTY LINES NOT ESTABLISHED BY FIELD SURVEY WERE PLOTTED BASED ON EXISTING TOPOGRAPHICAL FEATURES AND LIMITED FIELD DATA.

(2) Use the following note when no private property lines were surveyed. Example: Strip takes along existing highways or new construction when only partial takes are required.

PRIVATE PROPERTY LINES ARE PLOTTED FROM THE DEED OF RECORD, RECORDED SUBDIVISION OR LOT PLANS, EXISTING TOPOGRAPHICAL FEATURES AND LIMITED FIELD DATA. PRIVATE PROPERTY LINES WERE NOT SURVEYED BY THE PROFESSIONAL LAND SURVEYOR RESPONSIBLE FOR THE PROJECT.

(3) THIS PROPERTY PLOT PLAN IS NOT TO BE SUBSTITUTED FOR A BOUNDARY SURVEY.

Where no Property Plot Plan is provided, note (1) or (2) above shall appear on the appropriate Right-of-Way Plan Claim Information Block.

d. Closures and Areas. When property closure errors are present in the Deed, the Department will follow reasonable survey procedures to determine the correct location of property lines which are affected by the right-of-way take. This procedure may include additional deed research, contacts with property owners and field survey of property lines when determined necessary by the responsible Professional Land Surveyor. However, it is not the policy of the Department to correct erroneous property line calls in the deeds when it does not affect the take area, resolve property line disputes or to do boundary surveys in all circumstances.

The area of taking and the residual area shall be calculated. The calculations will be kept as part of the right-of-way records. The accuracy of the planimeter method or the use of CADD graphics software shall not be acceptable.

In the cases where there is an overlapping of properties within the right-of-way, the Designer should refer these situations to the responsible Professional Land Surveyor who may consult with the District Right-of-Way Administrator. A possible solution is to label as disputed land then proceed to condemn in both names.

e. The Drawing:

(1) The entire property of the claimant shall be shown:

(a) If the claimant owns two or more contiguous parcels, all such parcels shall be shown even if only one or a part of one is to be acquired. Where one owner owns contiguous property, only one parcel number shall be shown. Parcels separated by a road or a railroad are <u>not</u> contiguous; however, where two or more noncontiguous parcels in the same ownership are being used together, e.g., as a single farming or manufacturing operation (but <u>not</u> as a real estate development), they shall be treated as a single property. Questions of unity of use shall be discussed with the Department's Bureau of Project Delivery, Highway Delivery Division, Utilities and Right-of-Way Section and the Office of Chief Counsel.

(b) If some of the property described in the Deed has been sold, the parcel or parcels sold shall be shown as adverse or exceptions. If adverses or exceptions plus roads and railroads have the effect of breaking contiguity, show only the land contiguous to the taking. See Chapter 15, Section 15.1, Plate A-I for definitions.

(c) If there is a private right-of-way across the claimant's land (e.g., a utility transmission easement), it shall be shown with the name of the owner of the easement.

(2) Show the location of proposed right-of-way monumentation as required by Section 3.5.I.3.

(3) Tabulation of Areas:

(a) Show the area of the parcel(s) as recorded in the Deed unless a lesser area is used because of a lack of contiguity.

(b) List the total area of adverse(s) and/or exception(s) within the area shown above.

(c) List the total area of any legal right-of-way within the metes and bounds of the property or that portion shown above.

(d) Show the effective area by subtracting the total area of adverse(s) and/or exception(s) and the total area of legal right-of-way from the area shown in Item (3)(a) above.

(e) List the area within the required right-of-way line.

(f) List any other required area if it is to be taken as right-of-way in fee (utilities, safety rest areas, etc.).

(g) Show the total residue by subtracting the area of required right-of-way and the area of right-of-way in fee from the effective area.

(h) If the property is severed by the new construction, the total residue shall be distributed as the areas left and right of the required right-of-way, when looking to the ahead stationing, and indicated as RESIDUE LEFT and RESIDUE RIGHT.

(i) Any area required to be reserved for use during construction or after construction, but remaining in the possession of the property owner(s), such as the area required for slopes, aerial easements, drainage easements, temporary construction and substitute utility easements, should be shown on the plot but included in the residue. For aerial easements, the area required for piers shall be noted with the Property Plot Block.

(j) Areas required for channel changes are normally included in the residue. Where such changes involve large areas of land and extensive diversions, they shall be reviewed with the District Right-of-Way Administrator for determination whether they shall be included in the residue or not.

(k) The unit of measurement, when computing areas, should be selected on the following basis:

(i) Use square feet when the area of the parcel is less than 2 acres.

(ii) Use acres when the area of the parcel is 2 acres or greater, but show the take areas in both acres and square feet if the take is 500 ft^2 or less.

In any case, the selection of the unit of measurement should be influenced by the need for clarity, accuracy and the real estate value.

(l) If any residue left or right is landlocked, it should be noted as such and labeled on the plot.

(4) Legal and required right-of-way lines and easement lines shall be designated:

(a) Pluses, offsets and radii of required and legal right-of-way and easement lines shall be shown.

(b) Required substitute utility easements shall be shown if the location is known when the Property Plot is prepared.

(5) All topography and alignment shall agree with the Right-of-Way and Construction Plans. Show centerlines and/or baselines with bearings, roadway shoulder, curb, depressed curbs, curb cut ramps, driveways and driveway slopes, drainage and other construction plans as they affect the damage claims. Major property improvements, such as buildings, etc., shall be accurately spotted and "C" or "O" Notes shall be shown, where applicable.

(6) Borough or Township lines shall be shown, where applicable.

(7) Indicate North Arrow and Bar Scale.

(8) Construction slope limits shall be shown by symbol.

(9) All information concerning abandonment and vacation shall appear on the individual Property Plots involved with the change.

(10) Drainage that affects property damage shall be shown. Of particular interest are inlets for drainage from the property and outlets for drainage onto the property. Pipe and ditch sizes may be determined from preliminary drainage computations.

(11) Water wells, leech beds, septic tanks, gas tanks, oil wells and accessories are to be located on the Property Plot. It should be made clear that the locations shown are approximate.

(12) Easements and Other Notes placed on each Property Plot. The following easement definitions are to be used, as applicable.

For easements that are not listed, a formal request for approval shall be submitted to the Department's Office of Chief Counsel which will coordinate with the Bureau of Project Delivery, Highway Delivery Division, Utilities and Right-of-Way Section.

(a) Slope Easements.

SLOPE EASEMENT. AN EASEMENT FOR THE SUPPORT AND PROTECTION OF THE HIGHWAY, INCLUDING THE RIGHT TO CONSTRUCT, INSPECT, MAINTAIN, REPAIR, RECONSTRUCT AND ALTER DRAINAGE FACILITIES AND THE CONTOUR OF THE LAND. THE EASEMENT SHALL NOT PREVENT THE PROPERTY OWNER FROM MAKING ANY LEGAL USE OF THE AREA WHICH IS NOT DETRIMENTAL TO THE NECESSARY SUPPORT AND PROTECTION OF THE HIGHWAY RIGHT-OF-WAY AND THE SAFETY OF THE TRAVELING PUBLIC.

See Section 3.1.N for general discussion of acquisitions for slopes.

(b) Aerial Easements. The Note required to be placed on each Plan Sheet, which contains an aerial easement and/or a railroad-highway crossing, shall read as follows:

FOR THE AERIAL EASEMENT DEFINITION, SEE GENERAL NOTES, SHEET _____.

The pluses and offsets for the boundary of the aerial easement and the approximate foundation location shall be shown on the plan sheets.

See Section 3.1.L further discussing aerial easements.

(c) Drainage Easements.

DRAINAGE EASEMENT. AN EASEMENT FOR THE CONSTRUCTION, INSPECTION, MAINTENANCE, REPAIR, RECONSTRUCTION AND ALTERATION OF HIGHWAY DRAINAGE FACILITIES. THE EASEMENT SHALL NOT PREVENT THE PROPERTY OWNER FROM MAKING ANY LEGAL USE OF THE AREA WHICH IS NOT DETRIMENTAL TO THE NECESSARY FLOW OF WATER. HOWEVER, NO STRUCTURE OF ANY KIND MAY BE ERECTED IN THE AREA, NOR MAY ANY PIPE OR DITCH BE CONNECTED TO THE DEPARTMENT'S PIPE OR DITCH WITHOUT ADVANCED WRITTEN APPROVAL BY THE DEPARTMENT OF TRANSPORTATION.

See Section 3.1.O for general discussion of acquisitions for drainage.

(d) Channel Easements.

CHANNEL EASEMENT. AN EASEMENT FOR THE CONSTRUCTION, INSPECTION, MAINTENANCE, REPAIR, RECONSTRUCTION AND ALTERATION OF THE COURSE OF THE CHANNEL. THE EASEMENT SHALL NOT PREVENT THE PROPERTY OWNER FROM MAKING ANY LEGAL USE OF THE AREA WHICH IS NOT DETRIMENTAL TO THE NECESSARY FLOW OF WATER.

See Section 3.1.P for general discussion of acquisitions for channel changes.

(e) Occasional Flowage Easements.

OCCASIONAL FLOWAGE EASEMENT. AN EASEMENT ALLOWING THE PROPERTY TO BE INUNDATED BY NATURAL FLOOD WATERS. THE EASEMENT SHALL NOT OTHERWISE, IN ITSELF, PREVENT THE LANDOWNER FROM MAKING ANY LEGAL USE OF THE EASEMENT AREA.

In addition, the existing 100-year flood or other flood frequency used for acquiring the occasional flowage easement shall be shown and that part within the existing 100-year flood line shall be designated by adding it, where appropriate, as follows:

OCCASIONAL FLOWAGE EASEMENT – 3.684 ACRES (EXISTING FLOWAGE AREA – 2.736 ACRES)

See Section 3.1.Q for general discussion of acquisitions for occasional flooding.

(f) Temporary Construction Easements.

TEMPORARY CONSTRUCTION EASEMENT. AN EASEMENT TO USE THE LAND AS NECESSARY DURING CONSTRUCTION OF THE PROJECT. THE EASEMENT IS REQUIRED ONLY UNTIL THE CONSTRUCTION OR WORK INDICATED BY THE PLAN IS COMPLETED, UNLESS SOONER RELINQUISHED IN WRITING BY THE DEPARTMENT.

See Section 3.1.R for general discussion of temporary acquisitions for construction. The temporary construction easement shall be delineated by a thin, solid black line on the original drawings and labeled as shown in Chapter 15, Section 15.1, Plate A-II.

(g) **Underground Structure Support Easement.**

UNDERGROUND STRUCTURE SUPPORT EASEMENT. AN EASEMENT FOR THE CONSTRUCTION, INSPECTION, MAINTENANCE, REPAIR, RECONSTRUCTION AND ALTERATION OF UNDERGROUND STRUCTURE SUPPORT ELEMENTS. THE EASEMENT SHALL NOT PREVENT THE OWNER FROM MAKING USE OF THE SURFACE FOR FARMING, PARKING AND SIMILAR LEGAL PURPOSES WHICH SHALL NOT INJURE THE STRUCTURE SUPPORT ELEMENTS. HOWEVER, NO STRUCTURE OF ANY KIND MAY BE ERECTED THEREON, NOR IS ANY EXCAVATION OR DRILLING ALLOWED WITHOUT ADVANCED WRITTEN APPROVAL BY THE DEPARTMENT OF TRANSPORTATION.

See Section 3.1.T for general discussion of acquisitions for underground structural supports.

(h) Mining Reservations. Use the following Note where deep mining, including removal of gas and oil by means of wells located off the right-of-way, is involved.

MINING RESERVATION. DEEP MINING OF MINERALS, INCLUDING REMOVAL OF GAS AND OIL BY MEANS OF WELLS OFF THE RIGHT-OF-WAY, BENEATH THE RIGHT-OF-WAY FROM STATION _____ TO STATION _____ IS PERMITTED

BELOW A MINIMUM DEPTH OF _____ ft FROM THE ROADWAY GRADE. APPROVAL BY THE STATE MINING COMMISSION IS REQUIRED FOR ALL MINING OF COAL.

(i) Right-of-Way for Local Roads and Streets.

REQUIRED RIGHT-OF-WAY FOR [insert proper type of local road or street; e.g. TOWNSHIP ROAD, BOROUGH STREET, CITY STREET]. RIGHT-OF-WAY ACQUIRED FOR THE BENEFIT OF THE APPLICABLE MUNICIPALITY IN THE SAME INTEREST AS DESIGNATED HEREIN FOR REQUIRED RIGHT-OF-WAY FOR STATE HIGHWAY PURPOSES, ALONG WITH A TEMPORARY CONSTRUCTION EASEMENT FOR THE BENEFIT AND USE OF THE COMMONWEALTH. TITLE SHALL VEST IN THE APPLICABLE LOCAL MUNICIPALITY UPON ACQUISITION AND MAINTENANCE RESPONSIBILITY SHALL TRANSFER UPON THE COMPLETION OF CONSTRUCTION.

See Section 3.1.AA for general discussion of acquisitions for local roads and streets.

(j) Utility Easements. The utility easements shall be labeled in accordance with the requirements presented in Section 3.7.B.

(k) Sound Barrier Easements.

SOUND BARRIER EASEMENT. AN EASEMENT FOR THE CONSTRUCTION, INSPECTION, MAINTENANCE, REPAIR, RECONSTRUCTION AND ALTERATION OF A SOUND BARRIER, INCLUDING A SURFACE EASEMENT WITH NECESSARY SUPPORT FOR ACCOMMODATION OF THE SOUND BARRIER AND RELATED APPURTENANCES AND AN EASEMENT OF INGRESS AND EGRESS OVER THE REMAINING AREA FOR MAINTENANCE PURPOSES. THE EASEMENT SHALL NOT PREVENT THE PROPERTY OWNER FROM MAKING ANY LEGAL USE OF THE AREA WHICH IS NOT DETRIMENTAL TO ITS USE FOR SOUND BARRIER PURPOSES, EXCEPT THAT NO BUILDING OR OTHER FACILITY SHALL BE CONSTRUCTED ON THE PROPERTY WITHOUT PRIOR APPROVAL OF THE DEPARTMENT OF TRANSPORTATION. MOVEABLE ITEMS MAY NEED TO BE REMOVED BY THE OWNER WHEN THE DEPARTMENT ENTERS UPON THE AREA FOR PURPOSES OF INSPECTION, MAINTENANCE, REPAIR, RECONSTRUCTION OR ALTERATION OF THE BARRIER OR APPURTENANCES.

See Section 3.1.U for general discussion on acquisitions for sound barriers, indicating that they should normally be located within required right-of-way.

(l) Legal Right-of-Way Converted to Aerial Easement.

LEGAL RIGHT-OF-WAY CONVERTED TO AERIAL EASEMENT. PROPERTY IN WHICH THE DEPARTMENT INTENDS TO VACATE ITS EXISTING SURFACE EASEMENT FOR HIGHWAY PURPOSES AND RETAIN AN AERIAL EASEMENT AS DEFINED ELSEWHERE ON THIS PLAN. SUBJECT TO THE APPROVAL OF THIS PLAN BY THE GOVERNOR, THE FILING OF THIS PLAN AS A PUBLIC RECORD IN THE OFFICE OF THE DEPARTMENT AND THE RECORDING OF THIS PLAN IN THE COUNTY RECORDER OF DEEDS OFFICE, THIS NOTE SHALL CONSTITUTE AN ORDER OF VACATION PURSUANT TO SECTION 210 OF THE STATE HIGHWAY LAW, 36 P.S. SECTION 670-210, AS TO THE SURFACE EASEMENT FOR HIGHWAY PURPOSES, EFFECTIVE WHEN THE CONSTRUCTION IS COMPLETED.

If the definition of aerial easement is not otherwise included on the plan, the entire note defining an aerial easement must be set forth on the index page as a General Note.

See Section 3.1.S for general discussion of converting legal right-of-way to aerial easement.

(m) Sight Distance Easements.

SIGHT DISTANCE EASEMENT. AN EASEMENT TO REMOVE, INITIALLY AND IN THE FUTURE, ANY STRUCTURE, VEGETATION OR OTHER IMPROVEMENT THAT MAY INTERFERE WITH OR OBSTRUCT THE FREE AND UNOBSTRUCTED VIEW DOWN AND ACROSS THE LANDS BY ANY PERSON OR PERSONS TRAVELING UPON THE HIGHWAY OR HIGHWAYS. THE PROPERTY OWNER SHALL NOT USE THE LAND SUBJECT TO THE EASEMENT FOR ANY PURPOSE OR IN ANY MANNER WHICH MAY INTERFERE WITH OR OBSTRUCT THE VIEW DOWN AND ACROSS THE LANDS; HOWEVER, THE EASEMENT SHALL NOT OTHERWISE PREVENT THE OWNER FROM MAKING ANY LEGAL USE OF THE LANDS WHICH ARE NOT DETRIMENTAL TO THE NECESSARY FREE AND UNOBSTRUCTED VIEW.

See Section 3.1.V for general discussion of acquisitions for sight distance.

(n) Wetland Mitigation Easements.

Reserved. The Office of Chief Counsel is in discussions with the United States Corps of Engineers on this note. Please contact the Assistant Counsel in Charge of the Environmental Section at (717) 787-5299 for guidance when this type of easement is to be acquired.

See Section 3.1.DD for general discussions of acquisitions for environmental mitigation.

(o) Stream Mitigation Easements.

Reserved. The Office of Chief Counsel is in discussions with the United States Corps of Engineers on this note. Please contact the Assistant Counsel in Charge of the Environmental Section at (717) 787-5299 for guidance when this type of easement is to be acquired.

See Section 3.1.DD for general discussions of acquisitions for environmental mitigation.

(p) Terrestrial Mitigation Easements.

Reserved. The Office of Chief Counsel is in discussions with the United States Corps of Engineers on this note. Please contact the Assistant Counsel in Charge of the Environmental Section at (717) 787-5299 for guidance when this type of easement is to be acquired.

See Section 3.1.DD for general discussions of acquisitions for environmental mitigation.

(q) ITS Conduit Easements.

ITS CONDUIT EASEMENT. AN EASEMENT FOR THE CONSTRUCTION, INSPECTION, OPERATION, MAINTENANCE, REPAIR, RECONSTRUCTION AND ALTERATION OF CONDUIT FACILITIES FOR INTELLIGENT TRANSPORTATION SYSTEMS (ITS). THE EASEMENT SHALL NOT PREVENT THE OWNER FROM MAKING USE OF THE SURFACE FOR FARMING, PARKING AND SIMILAR PURPOSES WHICH SHALL NOT INJURE THE CONDUIT. HOWEVER, NO STRUCTURE OF ANY KIND MAY BE ERECTED THEREON, NOR IS ANY EXCAVATION OR DRILLING ALLOWED WITHOUT ADVANCED WRITTEN APPROVAL BY THE DEPARTMENT OF TRANSPORTATION.

See Section 3.1.W for general discussion of acquisitions for ITS conduits, indicating that they should normally be located within required right-of-way.

(r) Sidewalk Easements.

SIDEWALK EASEMENT. AN EASEMENT FOR THE CONSTRUCTION, INSPECTION, MAINTENANCE, REPAIR, RECONSTRUCTION AND ALTERATION OF A SIDEWALK. THE EASEMENT SHALL NOT PREVENT THE PROPERTY OWNER FROM MAKING ANY LEGAL USE OF THE AREA WHICH IS NOT DETRIMENTAL TO ITS USE FOR SIDEWALK PURPOSES.

See Section 3.1.X for general discussion of acquisitions for sidewalks, indicating that they should normally be located within required right-of-way.

(s) Traffic Signal Easements.

TRAFFIC SIGNAL EASEMENT. AN EASEMENT FOR THE CONSTRUCTION, INSPECTION, OPERATION, MAINTENANCE, REPAIR, RECONSTRUCTION AND ALTERATION OF A TRAFFIC SIGNAL AND APPURTENANCE THERETO. THE EASEMENT SHALL NOT PREVENT THE PROPERTY OWNER FROM MAKING ANY LEGAL USE OF THE AREA WHICH IS NOT DETRIMENTAL TO ITS USE FOR TRAFFIC SIGNAL PURPOSES.

See Section 3.1.Y for general discussion of acquisitions for traffic signals, indicating that they should normally be located within required right-of-way.

(t) Private Access.

REQUIRED PRIVATE ACCESS. LAND ACQUIRED IN THE INTEREST DESIGNATED (EITHER FEE SIMPLE OR EASEMENT FOR DRIVEWAY PURPOSES) FOR THE BENEFIT AND USE OF THE PROPERTY OR PROPERTIES DESIGNATED, ALONG WITH A TEMPORARY CONSTRUCTION EASEMENT FOR THE BENEFIT AND USE OF THE COMMONWEALTH, IF NECESSARY. TITLE SHALL VEST IN THE OWNERS OF THE DESIGNATED PROPERTIES UPON ACQUISITION AND MAINTENANCE RESPONSIBILITY SHALL TRANSFER UPON THE COMPLETION OF CONSTRUCTION, IF ANY.

This General Note should not change. The individual information for the specific acquisition, i.e. the nature of the interest acquired and the parcels benefited, will be shown on the line leaders to the area acquired.

See Section 3.1.BB for general discussion of acquisitions for private access.

See Figure 3.9 for an example plot.

f. Hatching. On Property Plots, only the required right-of-way shall be hatched, unless there is additional right-of-way in fee.

For navigable streams, the stream bed shall be considered as the legal right-of-way and shall not be cross-hatched on the Property Plot Plan or cut-out or included in the calculated required right-of-way area. The bed of any non-navigable stream, however, belongs to the abutting property owner and shall be included in the Deed of easement or declaration of taking.

The highwater mark shall be used to determine the area of legal right-of-way for navigable streams.

g. Size of Property Plots. Property Plots may be prepared on the available preprinted sheets. An appropriate scale shall be selected which clearly depicts the required Plans. Should the property be of a large area, the entire property shall be shown on one sheet, regardless of the scale necessary to plot the entire property, with appropriate metes and bounds. The portion of the property directly affected by the right-of-way acquisition shall be enlarged elsewhere on the sheet.

h. Submission of Property Plots. Property Plot Plans shall be submitted to the District Office as part of the Right-of-Way Plan. The Property Plot sheets shall be placed at the back of the plans and shall be incorporated in the total number of Right-of-Way Plan sheets.

i. Professional Seals. Each plot shall contain the seal of the Professional Land Surveyor and the Professional Engineer who are in responsible direction and control of the work.

B. Board of View Plans.

1. Introduction. Section 509 of the Eminent Domain Code, 26 Pa.C.S. requires the preparation of plans for review by a selected Board of View for all right-of-way claims which go to litigation. The City of Philadelphia's Board of View Plans are incorporated with the Right-of-Way Plan and their requirements are presented in Section 3.10.

2. Title Area.

a. Heading Data.

(1) Board of View Plan.
(2) Commonwealth of Pennsylvania.
(3) Department of Transportation.

b. Identifying Data.

(1) Property Owner(s).
(2) Parcel Number.
(3) Sheet Number(s) of Right-of-Way Plan on which parcel appears.
(4) State Route Number, Section Number, Claim Number.
(5) Municipality (City, Borough, Township).
(6) County.
(7) Name of Consultant.

3. Deed Information.

a. Deed Book and Page Number.
b. Date of Deed.
c. Date of Recording.
d. Name of Grantor(s).
e. Date of Verification of Foregoing Information.

4. The Drawing.

a. The entire property of the claimant, including improvements, shall be shown:

(1) If the claimant owns two or more contiguous parcels, all such parcels shall be shown even if only part of one parcel has been acquired.

(2) If some of the property described in the Deed was sold prior to condemnation, only the area still owned by the claimant shall be shown.

(3) Existing easements shall be clearly identified.

b. Perimeter distances shall be shown by metes and bounds.

c. Identifying stations of all intersecting property lines shall be shown.

d. Areas shall be computed as follows:

(1) Area of parcel(s) as shown in Deed and/or calculated area.
(2) Area of adverse(s).
(3) Area within legal right-of-way.
(4) Effective Area (1-2-3).
(5) Required right-of-way.
(6) Total Residue (4-5).
(7) Required slope, if any.
(8) Required channel easement, if any.
(9) Required aerial easement, if any.
(10) Required occasional flowage easement, if any.
(11) Required drainage easement, if any.
(12) Required temporary construction easement, if any.
(13) Required underground structure support easement, if any.

e. If the property is severed by the new construction, the total residue shall be indicated as residue left and residue right or residue parcel A, residue parcel B, residue parcel C, etc.

f. Improvements:

(1) Distance from each improvement (or from the improvement closest to the right-of-way line in a group of improvements) to the right-of-way line shall be indicated to scale, if the distance is 100 ft or less.

(2) Type of construction of improvement shall be indicated; that is, whether the building is brick, frame, stone or such identifying data as may be obvious.

g. Extent and Nature of the Condemnation:

(1) Legal and required right-of-way lines and widths shall be shown as well as roadway lines and widths, slope and channel easements, temporary construction easements, substitute utility easements, as well as any other easements.

(2) Drainage and other structures, pipes, ditches, location and direction of flow of outlets, etc., that have any effect on the property should be shown even though these may not necessarily be on the property itself.

h. Easements and Other Notes shall be placed on the Board of View Plan. See Section 3.6.A.2.e.(12) for easement definitions that are to be used, as applicable.

i. Physical Data:

(1) Cuts and fills shall be indicated at 50 ft intervals in built-up areas and at 100 ft intervals in open country by placing in a circle, opposite the appropriate station, a figure representing the difference, in feet, between the elevation of the existing terrain at the required right-of-way line and the elevation of the proposed roadway at the outside edge of the shoulder. A plus (+) figure indicates a fill and a minus (-) figure a cut.

In addition, where an improvement to an existing roadway is involved, a figure, placed within a square, shall accompany the circled figure. This figure shall represent the difference, in feet, between the elevations of the existing roadway at the outside edge of the shoulder. Again, a plus (+) figure indicates a fill and a minus (-) figure a cut. Figure 3.14 indicates the distances to be shown in the circles and squares.

The following Legend should be placed on all plans where only the circled figures are appropriate:

Figures Within Circles - The difference, in feet, between the elevation of the existing terrain at the required right-of-way line and the elevation of the proposed roadway at the outside edge of the shoulder, at that station.

Plus (+) figures indicate the edge of the shoulder of the proposed roadway is at a higher elevation than the existing terrain at the required right-of-way line. Minus (-) figures indicate the edge of the shoulder of the proposed roadway is at a lower elevation than the existing terrain at the required right-of-way line.

The following Legend shall be placed on all plans where both the circled figure and the squared figure are appropriate:

Figures Within Circles - The difference, in feet, between the elevation of the existing terrain at the required right-of-way line and the elevation of the proposed roadway at the outside edge of the shoulder, at that station.

Figures Within Squares - The difference, in feet, between the elevation of the existing terrain at the legal right-of-way line and the elevation of the existing roadway at the outside edge of the shoulder, at that station.

Plus (+) figures indicate the edge of the appropriate roadway is at a higher elevation than the existing terrain at the appropriate right-of-way line. Minus (-) figures indicate the edge of the shoulder of the appropriate roadway is at a lower elevation than the existing terrain at the appropriate right-of-way line.

(2) Trees, swamps, rock and/or other terrain features including human-made features such as power lines, fences, walls, etc.

(3) Indicate North by a directional arrow. North should be in the direction of the top or left-hand border.

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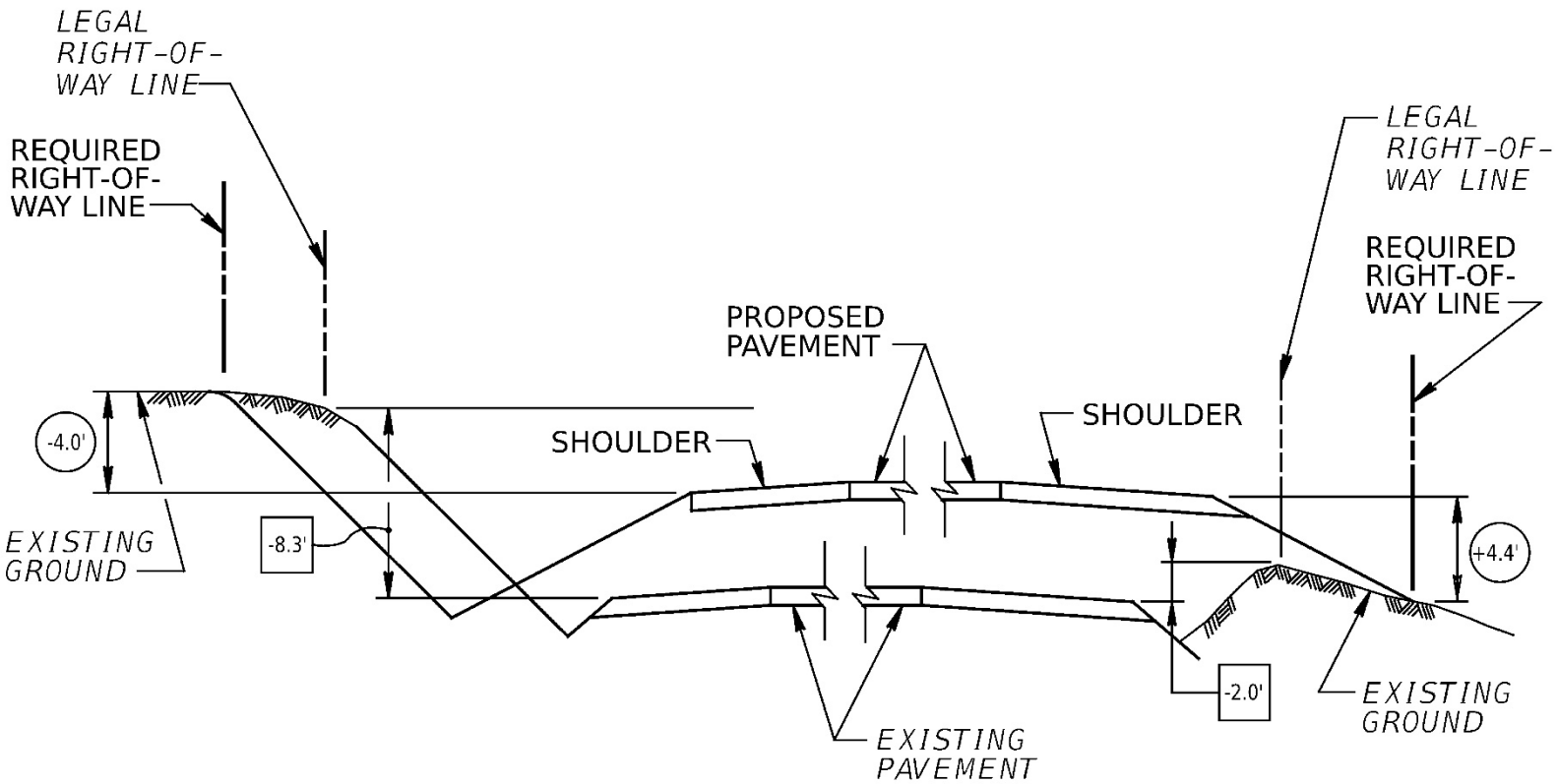

FIGURE 3.14
INDICATION OF PHYSICAL DATA
FOR CUTS AND FILLS

5. Preparation of Board Of View Plans. Good judgment and drafting practices should be exercised in the preparation of the Board of View Plans. Plans shall be prepared on a reproducible of either the standard ANSI C size of 22 in × 17 in or the standard ANSI D size, 34 in × 22 in and at any scale in keeping with the clarity of the drawing. However, the area affected by the take shall be at a scale reduced to not less than 1" = 100'.

This area may be expanded either on the same sheet as the drawing or, if the area of take is too large, on a separate sheet. If the property is too large for one sheet, it may be placed on separate sheets that can be matched in such a way that prints can be combined to make an exhibit 44 in × 34 in or 44 in × 68 in.

6. General Requirements. When the Board of View Plans have been completed, they shall be submitted to the District Right-of-Way Administrator. Extreme care shall be exercised to be certain the information that appears on the Board of View Plans is the same as that contained on the Right-of-Way Plans and the Individual Plot Plans, if any. In addition, the Board of View Plans shall be updated to reflect any change or proposed change before or during construction.

7. Total Take. The Board of View Plans for properties totally taken shall show all pertinent information concerning the property prior to construction. Construction details shall not be shown.

8. Priority. When the Board of View Plans are requested, they shall be completed with all possible haste. The time lapse between the request for the plans and the scheduled hearing is usually 15 days.

3.7 RIGHT-OF-WAY TERMINOLOGY ON RIGHT-OF-WAY PLANS

A. List of Terminology. The following terminology shall be used on all Right-of-Way Plans:

1. REQUIRED RIGHT-OF-WAY LINE

2. LEGAL RIGHT-OF-WAY LINE

3. REQUIRED RIGHT-OF-WAY LINE FOR ---------- (insert the proper type of local road or street; e.g. township road, borough street, or city street)

4. LEGAL RIGHT-OF-WAY LINE FOR ---------- (insert the proper type of local road or street; e.g. township road, borough street, or city street)

5. LEGAL RIGHT-OF-WAY LINE (Dedicated by property owner for public use)

6. REQUIRED RIGHT-OF-WAY LINE FOR LIMITED ACCESS

7. LEGAL RIGHT-OF-WAY LINE FOR LIMITED ACCESS

8. EXTENT OF LIMITED ACCESS

9. TEMPORARY CONSTRUCTION EASEMENT (See Section 3.1.R for details)

10. REQUIRED RIGHT-OF-WAY LINE FOR SERVICE ROAD

11. LEGAL RIGHT-OF-WAY LINE FOR SERVICE ROAD

12. REQUIRED SLOPE EASEMENT

13. LEGAL SLOPE EASEMENT

14. REQUIRED CHANNEL EASEMENT

15. LEGAL CHANNEL EASEMENT

16. REQUIRED DRAINAGE EASEMENT

17. LEGAL DRAINAGE EASEMENT

18. REQUIRED AERIAL EASEMENT

19. LEGAL AERIAL EASEMENT

20. REQUIRED OCCASIONAL FLOWAGE EASEMENT

21. LEGAL OCCASIONAL FLOWAGE EASEMENT

22. REQUIRED SIDEWALK EASEMENT

23. LEGAL SIDEWALK EASEMENT

24. REQUIRED PRIVATE ACCESS (_____, _____) [The parcel number or numbers of the property or properties for which the access is being acquired and the interest being acquired (fee simple or easement for driveway purposes, not both) should be designated within the parenthesis.]

25. LEGAL PRIVATE ACCESS (_____, _____) [The parcel number or numbers of the property or properties for which the access was acquired and the interest taken (fee simple or easement for driveway purposes, not both) should be designated within the parenthesis.]

26. REQUIRED WETLAND MITIGATION (FEE SIMPLE) or (EASEMENT)

27. LEGAL WETLAND MITIGATION (FEE SIMPLE) or (EASEMENT)

28. REQUIRED STREAM MITIGATION (FEE SIMPLE) or (EASEMENT)

29. LEGAL STREAM MITIGATION (FEE SIMPLE) or (EASEMENT)

30. REQUIRED TERRESTRIAL MITIGATION (FEE SIMPLE) or (EASEMENT)

31. LEGAL TERRESTRIAL MITIGATION (FEE SIMPLE) or (EASEMENT)

32. REQUIRED REPLACEMENT _____ [insert proper type of land, e.g. parkland or game land] (_____, _____) [The public entity for which the lands are being acquired and the interest being acquired (fee simple or easement for xxx land purposes, not both) should be designated within the parenthesis.]

33. LEGAL REPLACEMENT _____ [insert proper type of land, e.g. parkland or game land] (_____, _____) [The public entity for which the lands were acquired and the interest taken (fee simple or easement for xxx land purposes, not both) should be designated within the parenthesis.]

34. REQUIRED UNDERGROUND STRUCTURE SUPPORT EASEMENT

35. LEGAL UNDERGROUND STRUCTURE SUPPORT EASEMENT

36. LEGAL DITCH EASEMENT

37. LEGAL UNDERGROUND DRAINPIPE EASEMENT

38. LEGAL UNDERGROUND ANCHOR EASEMENT

39. REQUIRED SOUND BARRIER EASEMENT

40. LEGAL SOUND BARRIER EASEMENT

41. REQUIRED SIGHT DISTANCE EASEMENT

42. LEGAL SIGHT DISTANCE EASEMENT

43. REQUIRED ITS CONDUIT EASEMENT

44. LEGAL ITS CONDUIT EASEMENT

45. REQUIRED TRAFFIC SIGNAL EASEMENT

46. LEGAL TRAFFIC SIGNAL EASEMENT

47. LEGAL RIGHT-OF-WAY CONVERTED TO AERIAL EASEMENT

48. AREA TO BE ABANDONED

49. AREA TO BE VACATED

Where an entire area in an interchange or other area is to be acquired, the following designations may be used, where necessary, for clarity with arrows to the extremities of the taking:

1. ENTIRE AREA INCLUDED IN REQUIRED RIGHT-OF-WAY

2. ENTIRE AREA INCLUDED IN REQUIRED RIGHT-OF-WAY FOR LIMITED ACCESS

On limited access projects, for the beginning and ending of a project, the terminology shall be as follows:

"LIMIT OF ESTABLISHMENT AND AUTHORIZATION"

On free access projects, the designation of all termini for the mainline shall be as follows:

"LIMIT OF AUTHORIZATION"

There may be conditions whereby the "LIMIT OF ESTABLISHMENT" may not be the same as the "LIMIT OF AUTHORIZATION". In such cases separate notations shall be made.

On intersecting roads and "Also" routes incidental to the main project, the terminology shall be as follows:

"BEGIN AUTHORIZATION" and "END AUTHORIZATION"

On plans common to both Right-of-Way and Construction, the terminology shall be as follows:

"LIMIT OF WORK AND AUTHORIZATION" and, if required, any combination of the above that may be applicable.

Naturally, all situations which may arise cannot be covered here and a particular situation deviating from the above should be referred to the District Right-of-Way Administrator. Also, see Section 3.6.A.2.e.(12).

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B. Utility Terminology.

1. Existing. All existing utility right-of-way is to be initially shown on highway drawings.

Whenever the utility right-of-way lines and/or easement areas are outside the areas to be required by the Department for highway purposes, the lines/areas must be labeled on the Right-of-Way and Construction Plans as follows:

EXISTING EASEMENT

Existing Right-of-Way of __(Utility)__.

EXISTING FEE SIMPLE

Shown as normal property lines with the complete name of the utility as property owner.

All existing utility right-of-way is to be shown on highway drawings as a width (if clearly defined) or centerline (if not clearly defined), as applicable, including any utility right-of-way occupied by the Department for highway purposes.

If a utility's existing right-of-way is overtaken by highway right-of-way, the plans must be labeled, either initially or by update, as shown in Sections 3.7.B.2 and 3.7.B.3 listed below.

2. Reserved. When utility right-of-way is being overtaken by highway right-of-way and there are no utility relocations/adjustments or utility relocations/adjustments are within the utility's existing easement, the Right-of-Way and Construction Plans must be labeled to show:

EXISTING EASEMENT

Right-of-Way Reserved by __(Utility)__.

EXISTING FEE SIMPLE

Right-of-Way Reserved in fee by __(Utility)__.

Designation of an area as reserved by a utility does not mean the utility's property interest is being excepted and reserved from the Department's acquisition of the land; rather, it means the Department intends to grant the utility private status, thereby reserving relocation rights in the future. In accordance with 67 Pa. Code Section 459.1, private status is the status of a utility's facilities, which are situated within public right-of-way by agreement with the Department, after the Department condemned the utility's easement and did not provide a substitute right-of-way.

A description of rights is not required where right-of-way is reserved by a utility if the utility is to remain in the existing utility right-of-way with or without adjustment, as long as the utility has a defined easement (See Publication 16, Design Manual, Part 5, *Utility Relocation*, Section 7.3.E.).

A private status agreement is required where a right-of-way is reserved by a utility or where a right-of-way is reserved in fee by a utility (see Publication 16, Design Manual, Part 5, *Utility Relocation*, Section 8.1.L).

3. Substitute Right-of-Way. When utility right-of-way is being overtaken by highway right-of-way and there are utility relocations/adjustments outside the utility's existing easement, the Right-of-Way Plan must be labeled to show:

All substitute right-of-way to be acquired by the Department for utility relocation will be identified on the highway drawings in accordance with the following terminology.

a. If a substitute utility right-of-way, OUTSIDE the area to be acquired by the Department for highway purposes must be labeled on the highway plans as follows:

TO REPLACE EXISTING EASEMENT

Right-of-Way Plan: Required Substitute Right-of-Way for __(Utility)__.

Construction Plan: Substitute Right-of-Way for __(Utility)__.

TO REPLACE EXISTING FEE SIMPLE

Right-of-Way Plan: Required Substitute Right-of-Way in Fee for __(Utility)__.

Construction Plan: Substitute Right-of-Way in Fee for __(Utility)__.

b. If a substitute right-of-way, WITHIN the area to be acquired by the Department for highway purposes, must be labeled on the Right-of-Way and Construction Plans as follows:

TO REPLACE EXISTING EASEMENT

Substitute Right-of-Way for __(Utility)__ with Future Easement Interest.

TO REPLACE EXISTING FEE SIMPLE

Substitute Right-of-Way for __(Utility)__ with Future Fee Interest.

A description of rights is required for the property plat (or the plan sheet if there is no property plat) where substitute right-of-way is required for a utility or where a substitute right-of-way for a utility with future easement interest is designated (see Publication 16, Design Manual, Part 5, *Utility Relocation*, Section 7.3.E). A private status agreement is required where a substitute right-of-way for a utility with future easement interest or with future fee interest is designated (see Publication 16, Design Manual, Part 5, *Utility Relocation*, Section 8.1.L).

See Publication 16, Design Manual, Part 5, *Utility Relocation*, Section 7.3 for a discussion regarding the coordination of Substitute Right-of-Way for utility relocation.

See Figure 3.15 for utility Right-of-Way Plan terminology.

4. Utility Access Roads. The following terminology must be used on Right-of-Way Plans for the acquisition of property for utility access roads:

REQUIRED RIGHT-OF-WAY LINE FOR UTILITY ACCESS ROAD

See Publication 16, Design Manual, Part 5, *Utility Relocation*, Section 7.5 for additional information regarding utility access roads.

See Figure 3.16 for plan terminology for utility access roads.

C. Definitions of Terminology. See Section 3.1 for definitions of terminology.

FIGURE 3.15
UTILITY RIGHT-OF-WAY PLAN TERMINOLOGY

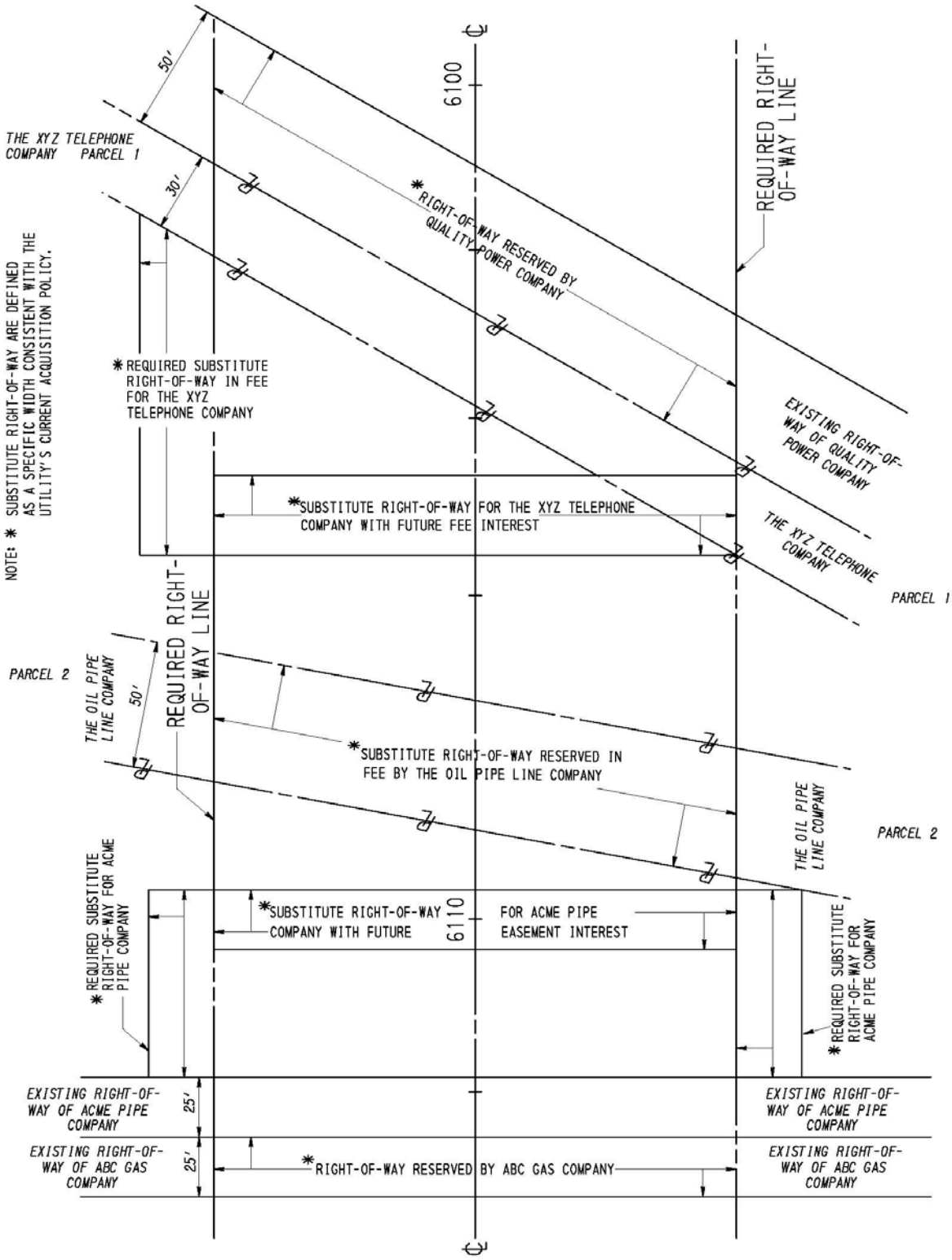
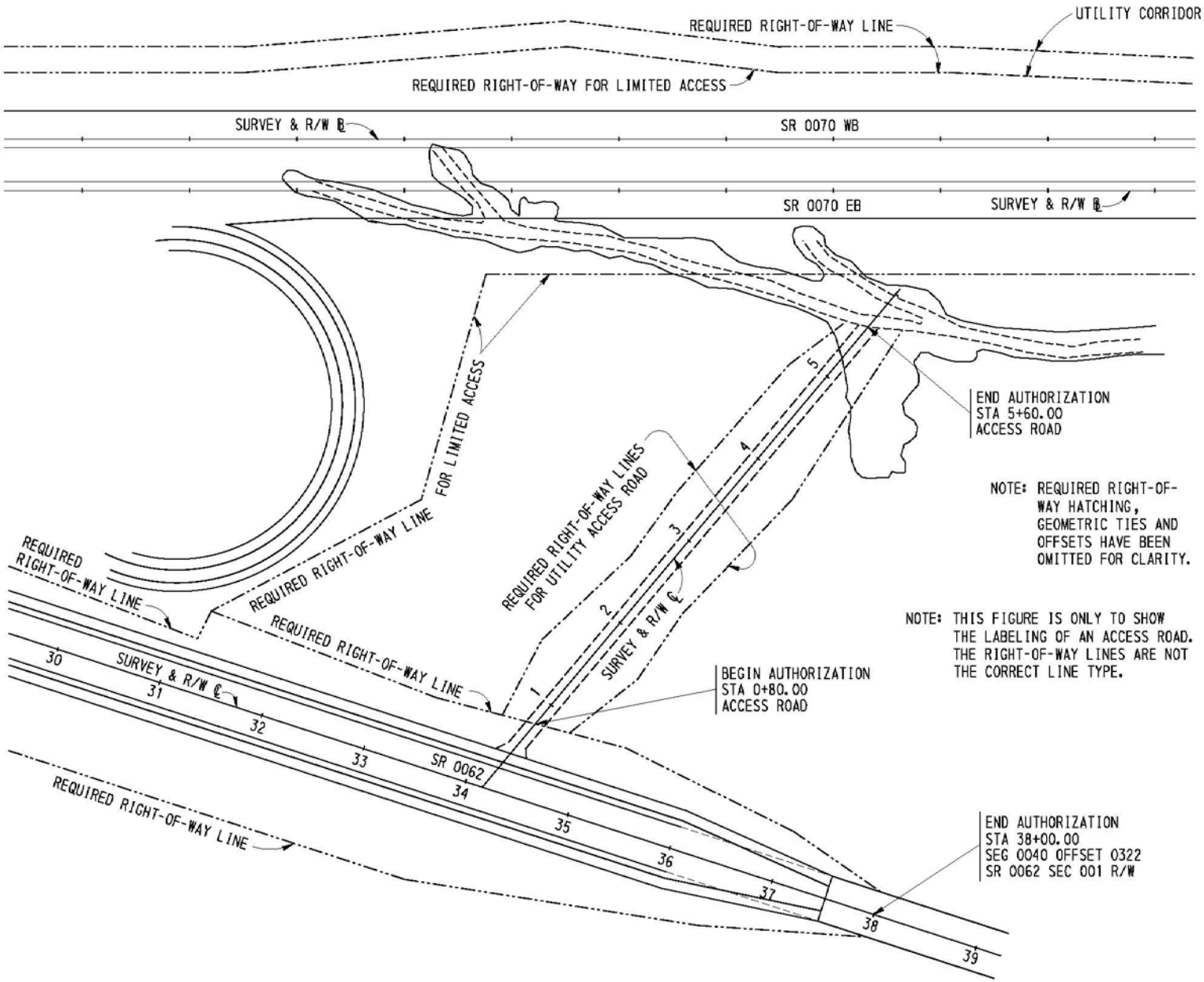


FIGURE 3.16
PLAN TERMINOLOGY FOR UTILITY ACCESS ROADS



3.8 DETERMINATION OF LEGAL RIGHT-OF-WAY WIDTHS

The legal width of right-of-way of any State Route can be determined from the following:

A. Prior Highway Plans. Prior highway plans signed by the Governor; note however that the validity of a "legal" right-of-way which is determined from a prior plan signed by the Governor depends on whether notice of the said plan was received by the then-owners of the properties abutting the highway. Such notice could have been given by recording of the plan, by personal contact, by letter, etc. It is presumed that this notice was given if the Department, County or municipal records indicate that the then-owners were paid right-of-way damages. If a prior plan was not recorded in the county recorder's office, it is necessary to ascertain whether there is sufficient evidence of notice given to prior property owners to support a decision to utilize "legal" right-of-way based on such a plan. This is particularly important if the prior plan was signed by the Governor prior to 1934, when the Department began to pay for right-of-way damages. The District Right-of-Way Administrator should be consulted whenever there is doubt as to the validity of the legal right-of-way based on a prior, un-recorded plan.

B. Record of Court Proceedings. Record of court proceedings by which the roadway was originally laid out by viewers (check roadway docket in Court of Quarter Sessions). Note that when the legal right-of-way is based on the width originally laid out by viewers (i.e., where there has been no formal redesignation of the right-of-way lines by plan, ordinance or otherwise), the right-of-way lines are located equidistant from the centerline of the roadway as originally laid out on the ground. Over the years, the paving of a roadway or highway may be moved somewhat to one side or the other. Such movement, of course, does not change the right-of-way lines of the roadway. Hence, after a roadway has been opened for many years, one can no longer rely entirely on the present centerline to locate the side lines of the roadway. To determine the location of the original centerline, and, therefore, of the original right-of-way lines, it is necessary to consider the location of fence lines, walls, buildings, hedges and other monuments as well as the Deeds of abutting properties.

C. City, Borough or Township Ordinances. City, Borough or Township Ordinances which legally opened the street or roadway. Note that "laying out" a street or roadway generally means only that the street or roadway was put onto the municipality's plan as a projected street. Before the designated width of the street can be regarded as the legal right-of-way, it shall have been legally opened and adopted. These exact terms are not always used; however, LEGALLY OPENED means that not only has an ordinance been passed by the political subdivision setting a width, but that the street has been physically opened to its ordained width or at least declared to be LEGALLY OPENED to that width, either of which actions by the municipality would have entitled the property owners to just compensation at that time. When there is any doubt as to the meaning of such an ordinance, the Department's Office of Chief Counsel should be consulted.

D. By Statute. By statute, a legal right-of-way of 33 ft is presumed on a Township Road in a second-class Township where there is no record of the roadway having been opened to some other width, and where the Township has maintained the roadway with Township funds for at least 21 years. If the roadway in question is now a State Highway, or if the Township or the part of the Township which is the situs of the roadway is now a first-class Township, Borough or City, the 33 ft width presumption would apply only if on September 1, 1933, the effective date of the Act of May 1, 1933, P.L. 103, or thereafter, and all the foregoing conditions were met, that is:

1. The roadway was a Township Road, and
2. The Township was a second-class Township, and
3. The Township has maintained the roadway during the previous 21 years, and
4. There is no record of any other width.

E. Dedicated to Public Use by Owner. Right-of-Way can be dedicated to public use by present or prior owner by one of the following:

1. By Deed of dedication.
2. By plan of dedication.
3. By plan of lots, if some lots were sold from the plan.
4. By written agreement, properly signed and executed.

To accept dedicated right-of-way, the following activities need to be taken:

1. Provide note(s) in the GENERAL NOTES of the plan which indicate the origin of the dedicated right-of-way along with the following sentence:

BY THIS PLAN, THE COMMONWEALTH HEREBY ACCEPTS THE AREA DEDICATED FOR STATE HIGHWAY PURPOSES.

2. Label the legal right-of-way as previously recognized by the Department as LEGAL RIGHT-OF-WAY LINE with an arrow to the outside of the existing legal right-of-way line.

3. Label the dedicated right-of-way to be accepted as LEGAL RIGHT-OF-WAY (BY DEDICATION) with arrows to the inside of the dedicated area.

4. Label the outside line as REQUIRED RIGHT-OF-WAY LINE with an arrow to the outside.

5. Include the dedicated right-of-way area in the tabulation of legal right-of-way when preparing claim blocks.

See Figure 3.17 for an example of the plan presentation.

F. By Actual Width. If there is no other provable legal right-of-way, the legal right-of-way should be determined from the actual width of the existing edges of pavement and shoulders. If there is an existing slope, it should be designated as the LEGAL LIMIT OF SLOPE EASEMENT.

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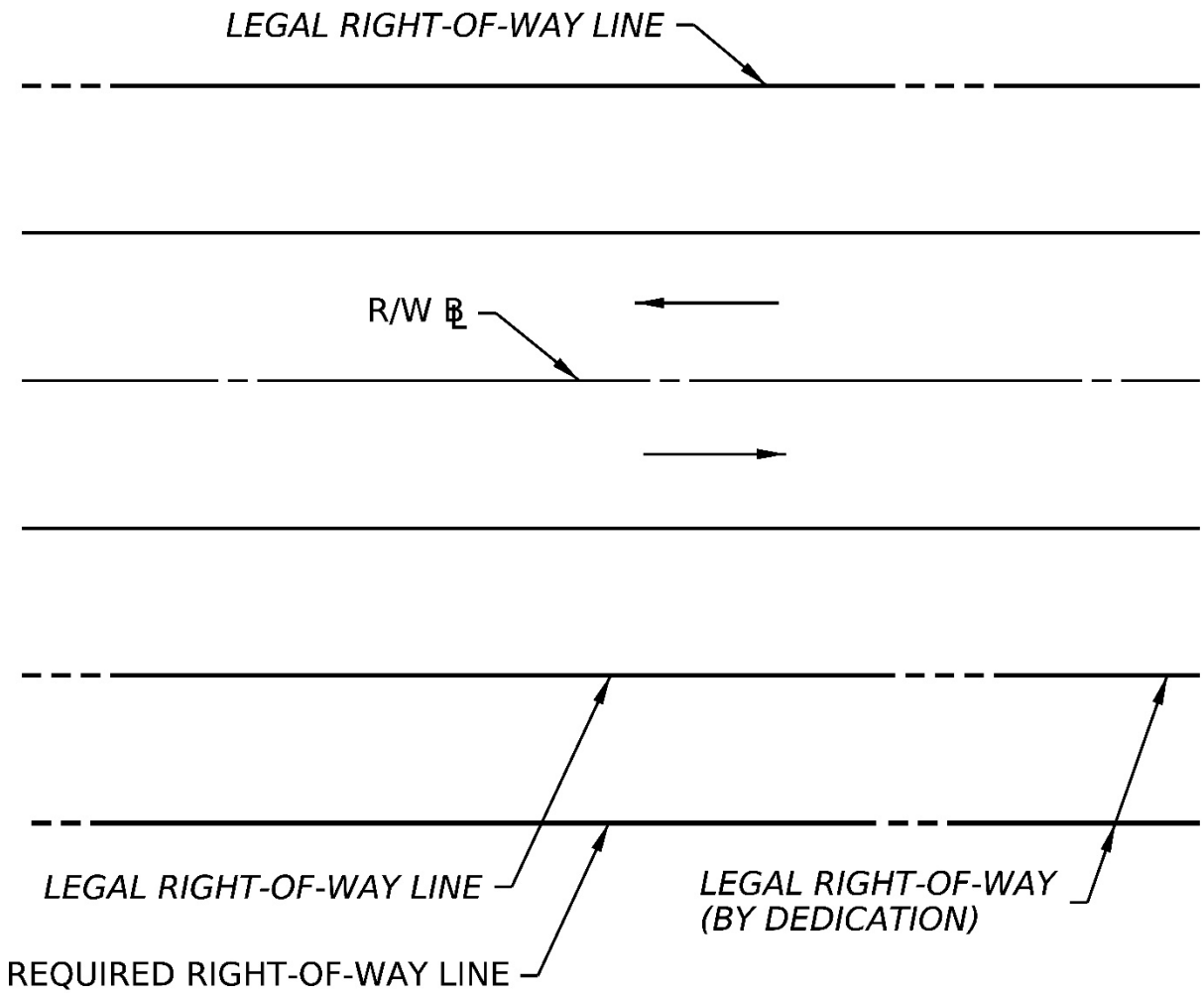

FIGURE 3.17
EXAMPLES OF DEDICATED
RIGHT-OF-WAY

3.9 ABANDONMENT AND VACATION

A. Definitions. Abandonment of a State Highway is the transfer by the Department of the jurisdiction and maintenance of an existing State Highway to a municipality. Vacation, on the other hand, is the return of a portion of any existing State Highway to the private property owner whose abutting property originally contained that portion of State Highway vacated. Only highway easements may be vacated; land held in fee title must be disposed in accordance with Publication 378, *Right-of-Way Manual*, Chapter 7, "Excess Land." Road segments held in either easement or fee may be abandoned.

B. Deciding Whether to Abandon or Vacate. Whether a roadway should be abandoned or vacated is dependent on many factors, including safety, convenience of access to property owners (Sections 201 and 214 of the State Highway Law), and possible damage claims under Section 613 of the Eminent Domain Code. Abandonment and vacation decisions shall be made by the District Executive in consultation with the Department's Right-of-Way Administrator and the Municipal Services office.

C. Plans Presentation. The application general notes when a plan includes abandonment or vacations are set forth in Section 3.4.H.5.j. Refer to Figure 3.18 for examples of typical abandonments and vacations to be indicated on the Right-of-Way Plan:

1. Abandonment. The portion of a State Highway to be abandoned shall be designated as the AREA TO BE ABANDONED and shall have arrows leading to the appropriate lines. This designation is necessary only in the immediate proximity of the project. In addition, a Note describing the limits of abandonment shall be shown on the Index Map as follows:

> EXISTING SR 1033 TO BE ABANDONED AS A STATE HIGHWAY BETWEEN SEGMENT 30 OFFSET 10 AND SEGMENT 50 OFFSET 35 UPON COMPLETION OF CONSTRUCTION.

Inclusion of the abandonment on a plan approved by, or on behalf of, the Governor is the first step in affecting abandonment (36 P.S. Section 670-210).

The road segment must be in first class condition before abandoned to the local municipality (36 P.S. Section 670-214). Form M-4226 (entitled "Inspection of Roads to be Abandoned as State Highways") should be used to document that the local municipality agrees the road is in first class condition. Execution of this form is not legally required to affect abandonment, but is prudent to avoid problems.

Abandonment is not effective until written notice is provided to the local municipality following construction of the project (36 P.S. Section 670-210). A copy of the letter providing this notice must be maintained by the District in the event the local municipality denies responsibility for the road segment in the future. Coordination is required with Municipal Services to insure the road segment is added to the local government's liquid fuels allocation.

2. Vacation. Where the width, lines or location of a State Highway shall be or have been changed, altered or established, according to law, in a manner which does not create an entirely new highway, the section or sections or portions of the right-of-way of the highway, as previously established, which are not included within the changed, altered or established widths shall be considered vacated, if such portions or sections are not the full width of the highway, as previously established (36 P.S. Section 670-214). The portion of State Highway to be vacated shall be shown as an existing legal right-of-way. This area to be vacated shall be designated as the AREA TO BE VACATED and shall have arrows leading to the appropriate lines.

Highway segments less than 2 mi in length can also be vacated if determined to be unnecessary for public use and travel, or burdensome or dangerous, having due regard for the convenience of access to the highway system by owners of property abutting the highway segment (36 P.S. Section 670-210). As with the vacation of strips along a highway, the portion of State highway to be vacated shall be shown as an existing legal right-of-way. This area to be vacated shall be designated as the AREA TO BE VACATED and shall have arrows leading to the appropriate lines.

Inclusion of the vacation on a plan approved by, or on behalf of, the Governor is the first step in affecting vacation (36 P.S. Section 670-210).

RW-376 (entitled "Settlement Agreement, Vacation") should be executed by each landowner to whom land will be vacated. Execution of this form is not legally required to affect a vacation, but is prudent to avoid problems.

Vacation is not effective until an order of vacation is executed by, or on behalf of, the Secretary of Transportation. The order of vacation, with a sketch showing the areas vacated and the names of the underlying fee owners, is filed with the recorder of deeds. Thereafter, the part of the highway so vacated shall be closed to public use and travel, and shall no longer be a public road (36 P.S. Section 670-210).

Vacations cannot be made subject to the rights of existing public utility facilities to remain unadjusted within the area vacated if the utilities occupy the right-of-way by permit only. That is, the Department cannot unilaterally reserve easements for other parties as against the land owner when it vacates public right-of-way.

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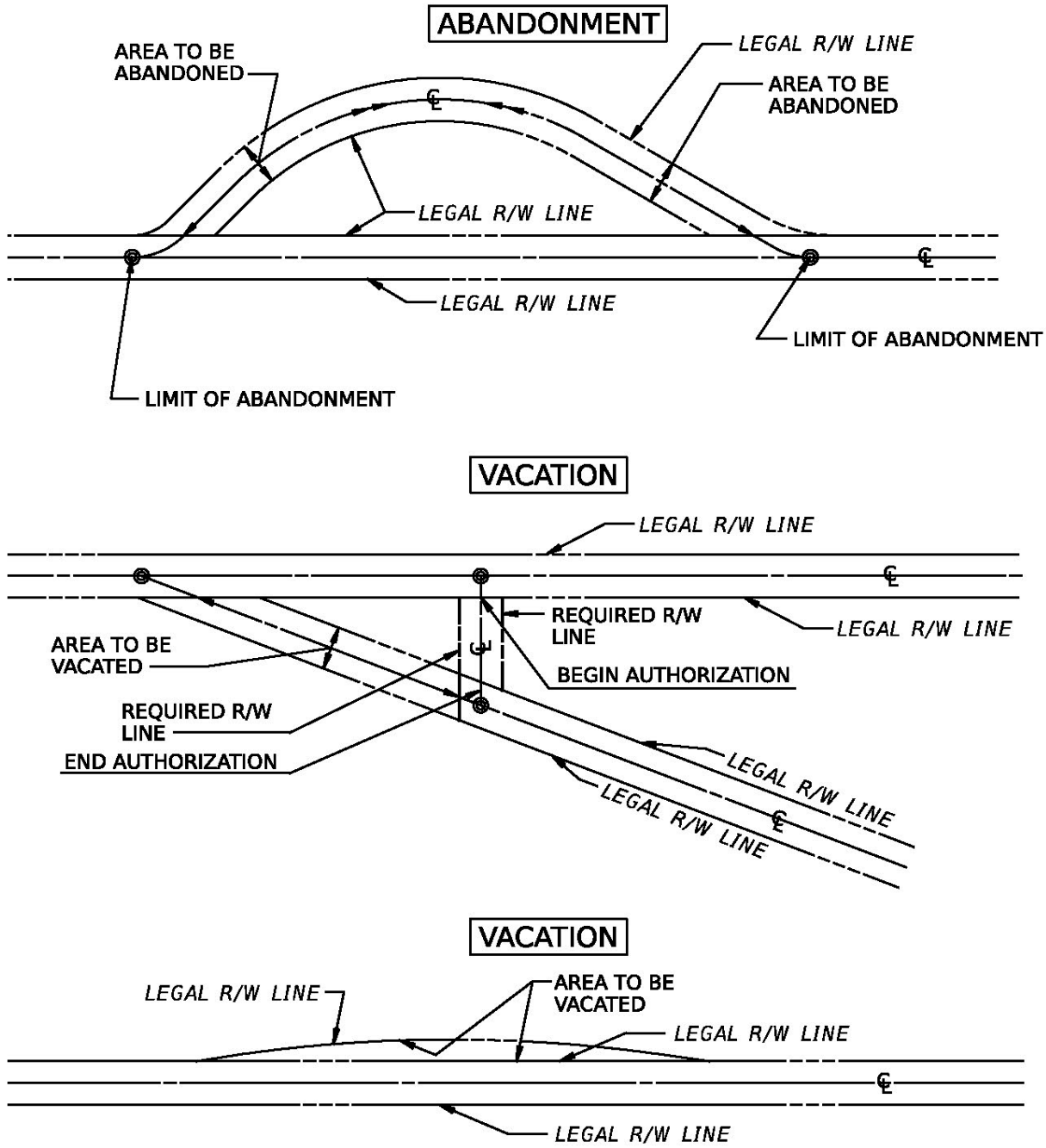

FIGURE 3.18
EXAMPLES OF
ABANDONMENTS AND VACATIONS

3.10 COMBINATION CITY OF PHILADELPHIA BOARD OF VIEW PLANS AND RIGHT-OF-WAY PLANS

A. Title Sheet. In the City of Philadelphia, Right-of-Way Plans shall also meet the requirements of the Board of View. The statement AND BOARD OF VIEW shall be shown in the title in the upper center of the Title Sheet. The local name of the road should be indicated under the State Route Number and the cross streets indicated at the Stationing Limits of the project as indicated below:

DRAWINGS ESTABLISHING LIMITED ACCESS HIGHWAY AND AUTHORIZING ACQUISITION OF RIGHT-OF-WAY AND BOARD OF VIEW PLANS FOR

STATE ROUTE ____0063____ SECTION ____A02_____ R/W
(Woodhaven Road)

IN PHILADELPHIA COUNTY

FROM STA 1+82.00 TO STA 4+35.00
LENGTH 253.00 FEET (0.048 MILE)
POQUESSING CREEK TO ACADEMY ROAD

A City of Philadelphia Acknowledgement Block shall be shown in the lower portion of the Title Sheet. The names of the Chief Engineer, the Surveyor, the Streets Commissioner and the Mayor plus the date of the approval shall be shown in this block.

A Surveyor and Regulator Acknowledgement Block shall be shown in the lower portion of the sheet and shall contain the names of the District Surveyor and Regulator plus the date of the approval.

The statement REVIEWED FOR CITY PLAN DATA AND LEGAL STATUS OF STREETS shall be placed above the space reserved for the signature of the Surveyor and Regulator Acknowledgement Block.

B. General Notes. Where applicable, the following Notes shall be included on the Typical Section Sheet under the General Notes:

1. ALL EXISTING DISTANCES, ALL NEW PROPERTY DISTANCES (RESULTING FROM NEW CONSTRUCTION) AND DISTANCES INVOLVING RECONSTRUCTION AND/OR RELOCATION OF CITY STREETS ARE SHOWN TO CITY OF PHILADELPHIA DISTRICT STANDARD.

NOTE: For clarity, the City of Philadelphia District Standard distances should be followed by an asterisk properly referenced.

2. ALL PROJECT MEASUREMENTS ARE US STANDARD MEASUREMENTS. TO CONVERT TO CITY OF PHILADELPHIA DISTRICT STANDARD, A FACTOR OF _____ IS TO BE USED. THAT IS _____ FEET US STANDARD EQUALS 100.00 FEET PHILADELPHIA DISTRICT STANDARD MEASUREMENT.

NOTE: Contact the Survey District in which the project is located for the conversion factor(s) to be used for that particular District. In cases where each line may have its own factor, the factor should be indicated for each line and reference should be made in the General Notes accordingly.

3. THE DATUM FOR THIS PLAN IS BASED ON US COAST & NORTH AMERICAN VERTICAL DATUM OF 1988. THERE IS A DIFFERENCE OF _____ FEET BETWEEN THE US COAST & GEODETIC DATUM USED FOR ELEVATIONS SHOWN ON THESE DRAWINGS AND THE DATUM USED BY THE CITY OF PHILADELPHIA SURVEY DISTRICT.

Example:

ELEV 10.00' US Coast & Geodetic Survey = ELEV 4.238' City of Philadelphia

NOTE: Contact the Survey District in which each project is located for the difference between the US Coast and Geodetic Datum and the City of Philadelphia Datum to be used.

4. MONUMENTS OR PROPERTY LINE MARKERS LOCATED WITHIN THE LIMITS OF THIS PROJECT SHALL NOT BE DISTURBED UNTIL THEY HAVE BEEN REFERENCED BY THE CITY OF PHILADELPHIA.

5. T INDICATES AREAS OF BUILDINGS OR PORTIONS OF BUILDINGS USED TO OBTAIN THE TAKING VOLUMES SHOWN IN THE TABULATION.

C. Plan Sheet. The Right-of-Way Plan Sheet shall contain the following additional details:

1. Properties taken and portions of properties remaining shall be dimensioned in accordance with City of Philadelphia District Standard.

2. The cubical contents of the buildings taken. Where there is a partial taking, the plan should show the cubical contents taken and remaining. State whether the volume includes the basement. The plan should also indicate the construction of the building (frame, brick, etc.).

3. The location and width of all streets. Streets not on the City plan should be so indicated. Indicate clearly whether each street shown on the plan is opened or unopened and show the manner and date of the opening.

4. Where the grade of a street is changed in front of improved property, show elevations of the door sills and cellar window sills on the profiles. Also indicate tops and bottom of all retaining walls and the curb elevation on all streets.

5. Show existing profiles for boundary streets and the proposed profiles for new streets or highways.

6. Where spot elevations on each parcel and elevations along each house line cannot be shown or depicted by contours, a profile should be produced to show this information.

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3.11 RIGHT-OF-WAY PLAN REVISIONS

A revision is defined as a change in the original Right-of-Way Plan. Right-of-Way Plan revisions are applicable for plans that have been signed by the Secretary of Transportation.

On a project that requires the Department to acquire an additional estate or easement from a parcel which has been the subject of an acquisition, additional acquisition can not be made until the Right-of-Way Plan has been officially revised.

Procedures and projects for which these revision requirements apply can be found in Publication 10C, Design Manual, Part 1C, *Transportation Engineering Procedures*, Chapter 4, Section 4.13.J.

The proposed plan revisions shall be highlighted on prints of the appropriate plan sheets.

The print of the Title Sheet shall include an approval block containing a general description of all the proposed changes and a list of the sheets and parcel numbers affected by the revisions as shown in Figure 3.19. It is not necessary to provide detailed information, such as stationing, in the description. Lines for the signatures of the District Executive, the District Right-of-Way Administrator, the District Chief-of-Surveys, and the District Plans Engineer shall be included in the block.

After approval of the prints by the District Executive, the District Office shall request the Title Sheet and affected original sheets or reproducibles from the Bureau of Project Delivery, Office Management and Procurement Section, Plans, Records, and Reproduction. The District should then make changes to the original plan sheets or reproducibles as per the previously approved prints. When making plan revisions, the plan revision block shall be added and completed for each affected plan sheet as shown in Figure 3.20.

Since no erasure of original information is permitted, changes for minor revisions should be made by adding the new information and crossing out the incorrect data. For major revisions, the original sheet shall be marked with a large "X" and a supplemental sheet added to the plan.

An approval block to be included on the original Title Sheet shall contain the general description of all the proposed changes and a list of the sheets and parcel numbers affected by the revisions as previously approved on the print of the Title Sheet. Lines for the signatures of the Deputy Secretary and the Secretary of Transportation along with the statement ON BEHALF OF THE GOVERNOR AS WELL AS THE SECRETARY are to be included in the block, as shown in Figure 3.21, when the Governor has delegated signature authority. The total number of sheets shall be revised by crossing out the original number and adding the new number.

The revised sheets shall be signed and sealed by the appropriate professional land surveyor and as necessary by the professional engineer. See Figure 3.22 for sample block.

The District shall also include the notary seal block and the recorder of deeds block to have the revised plan re-recorded in the office for the recording of deeds. See Figures 3.23 and 3.24 for sample blocks. The District shall include the Note for reauthorization in the revision block for <u>all</u> projects. For reauthorizations without revisions, the District shall make a request for the reauthorization to the Bureau of Project Delivery, Office Management and Procurement Section, Plans, Records, and Reproduction. The Plans, Records, and Reproduction shall proceed accordingly.

After the changes have been completed, the District shall submit the Title Sheet and the revised original to the Bureau of Project Delivery, Office Management and Procurement Section, Plans, Records, and Reproduction. These shall be processed similar to the original plans. The District shall be responsible for making copies of the original plans before they are submitted to the Central Office as only the original Title Sheet shall be returned to the District upon receipt of the necessary approvals.

Additionally, when a Right-of-Way Plan was authorized under the previous eminent domain code and a revision and/or reauthorization is made after September 1, 2006 under the new law, the following note must be added to the title sheet:

> ALL REVISIONS TO THIS PLAN AFTER SEPTEMBER 1, 2006, ARE FURTHER AUTHORIZED BY SECTION 302(b)(3) OF THE EMINENT DOMAIN CODE, 26 Pa.C.S., SECTION 302(b)(3).

THE PLAN IS REAUTHORIZED AND
REVISED AS/AND FOR CHANGING AUTHORIZATION
LENGTH, ADDING TOPOGRAPHY, REMOVING LEGAL
RIGHT-OF-WAY LINES FROM UNOPENED STREETS.
CHANGING PLOT AREAS AND ADDING PARCELS 121,
122 AND 123. SHEET NO 20A IS A NEW SHEET.

PARCELS INVOLVED ARE: 22, 23, 24, 31, 32, 34, 34A,
35, 36, 40, 51, 59, 64, 82, 119, 121, 122 AND 123.

REVISIONS ON SHEETS: 1, 2, 3, 4, 5, 6, 9, 10, 11, 12,
13, 14, 15, 16, 19, 20, 21, 22, 25, 26, 27, 28, 29,
30, 31, 32 AND 34.

RECOMMENDED _____ 20 ____

_____
DISTRICT PLANS ENGINEER

RECOMMENDED _____ 20 ____

_____
DISTRICT CHIEF-OF-SURVEYS

APPROVED _____ 20 ____

_____
DISTRICT RIGHT-OF-WAY ADMINISTRATOR

APPROVED _____ 20 ____

_____
DISTRICT EXECUTIVE

FIGURE 3.19
EXAMPLE OF APPROVAL BLOCK WITH SIGNATURES
FOR PRINT OF TITLE SHEET

REV NO	REVISIONS	DATE	BY

FIGURE 3.20
EXAMPLE OF PLAN REVISION BLOCK

THE PLAN IS REAUTHORIZED AND
REVISED AS/AND FOR CHANGING AUTHORIZATION
LENGTH, ADDING TOPOGRAPHY, REMOVING LEGAL
RIGHT-OF-WAY LINES FROM UNOPENED STREETS.
CHANGING PLOT AREAS AND ADDING PARCELS 121,
122 AND 123. SHEET NO 20A IS A NEW SHEET.

PARCELS INVOLVED ARE: 22, 23, 24, 31, 32, 34, 34A,
35, 36, 40, 51, 59, 64, 82, 119, 121, 122 AND 123.

REVISIONS ON SHEETS: 1, 2, 3, 4, 5, 6, 9, 10, 11, 12,
13, 14, 15, 16, 19, 20, 21, 22, 25, 26, 27, 28, 29,
30, 31, 32 AND 34.

RECOMMENDED _____ 20 ____

_____
DEPUTY SECRETARY

APPROVED _____ 20 ____

_____
SECRETARY OF TRANSPORTATION
(ON BEHALF OF THE GOVERNOR
AS WELL AS THE SECRETARY)

FIGURE 3.21
EXAMPLE OF APPROVAL BLOCK WITH SIGNATURES FOR ORIGINAL OF TITLE SHEET

REVISION _ PREPARED BY
DISTRICT __-0 DESIGN UNIT

(SEAL)

_____(SIGNATURE)_____
(TITLE)

_____(DATE)_____

FIGURE 3.22
EXAMPLE OF TYPICAL SIGNATURE BLOCK FOR A PLAN REVISION

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF DAUPHIN SS

BEFORE ME, A NOTARY PUBLIC, PERSONALLY CAME
_____,
KNOWN TO ME OR SATISFACTORILY PROVEN TO BE THE PERSON WHO HAS BEEN AUTHORIZED BY WRITTEN DELEGATION TO AFFIX THE FACSIMILE SIGNATURE OF [*INSERT NAME OF CURRENT SECRETARY*] SECRETARY OF TRANSPORTATION ON PLANS AUTHORIZING ACQUISITION OF RIGHT-OF-WAY BY THE DEPARTMENT OF TRANSPORTATION, AND AS SUCH AUTHORIZED REPRESENTATIVE ACKNOWLEDGED THE WITHIN PLAN, COMPRISING _____SHEETS, TO BE AN OFFICIAL PLAN OF THE DEPARTMENT OF TRANSPORTATION AND DESIRED THAT THE SAME BE RE-RECORDED.

WITNESS MY HAND AND NOTARIAL SEAL

_____

FIGURE 3.23
EXAMPLE OF NOTARY BLOCK WITH SIGNATURES FOR PLAN REVISIONS

RE-RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC., IN
_____ COUNTY, PA.
IN _____BOOK_____
PAGE_____ TO SHOW REVISIONS ON
SHEETS_____
_____
WITNESS MY HAND AND SEAL OF OFFICE

_____
RECORDER

FIGURE 3.24
EXAMPLE OF RECORDER BLOCK WITH SIGNATURES FOR PLAN REVISIONS

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CHAPTER 12

COMPUTER AIDED DRAFTING AND DESIGN (CADD) SYSTEM PROCEDURES AND CONFIGURATION

12.0 INTRODUCTION

The information in this Chapter is provided to assist users of the Pennsylvania Department of Transportation's Computer Aided Drafting and Design (CADD) system in preparing all CADD project plans and to provide guidance for CADD project plans prepared by Consultants.

On the Pennsylvania Department of Transportation's Computer Aided Drafting and Design (CADD) system, all plans are created as OpenRoads Designer (ORD) files.

Note: Programs such as BRADD and gINT make use of the MicroStation architecture but may not be required to meet the standards of this Manual. Refer first to theses products respective manuals for their specific standards. Then refer to this Manual for any required additional guidance.

Note: Consultants may obtain the Department's CADD environment resource files by going to the following location on our website: www.penndot.gov and then navigating the menu path:
Projects & Programs > Road Design & Environment > CADD Resources

12.1 DEFINITIONS

- CADD Design File → ORD file
- Department's CADD software → Bentley's ORD software
- Department's CADD Software Working Environment → Any file used to configure the Department's CADD software to operate in accordance with the Department's graphics standards. This custom workspace must be used by all Department CADD users and is available to all business partners for their use.

12.2 NAMING OF CADD DESIGN FILES

It is critical that CADD Design File names adequately define file contents so that anyone viewing project file folders can quickly identify each CADD Design File. The following recommendations should be used as a guideline for file naming.

The recommended naming convention for roadway CADD Design Files is as follows:

FORMAT: CCSSSSXXX_FFFF.dgn

CC = County Number, two digits
SSSS = State Route Number, four digits
or TNNN = Township Route Number, three digits following "T"
XXX = Section Number or Survey Callout (Construction or Maintenance Only), three digits
FFFF = File Type, four digits

SURVEY CALLOUTS (XXX)

BOR - Borrow Pit
STK - Stock Pile
DFB - Department Force Bridge
MIL - Milling Pile
FAC - Facility
SLM - Slide Monitoring (Did not use SLD due to it being a common Section Number)
UNK - Unknown Section Number

FILE TYPE (FFFF):

SURV - Survey Terrain
ALGX - Alignment (X = numeric of alignment)
Examples: ALG0, ALG1, ALG2, etc. for multiple alignment files.
CORX - Corridor (X = numeric of corridor)
Examples: COR0, COR1, COR2, etc. for multiple corridor files (Match alignment numeric.)
SUPE - Super-Elevation (Can also be created in the corridor file.)
PLAN - Plan sheets only
PLPF - Plan and Profile
PROF - Profile sheets only
DRNU - Drainage and Utilities
XSEC - Cross Sections
RTOW - Right-of-Way
ESPC - Erosion and Sediment Pollution Control
TRFC - Traffic Control
TSIG - Traffic Signal
TSGN - Traffic Signing
SGPM - Signing and Pavement Marking
HWLT - Highway Lighting
STRU - Structure
WETL - Wetland
NAME - Named Boundary (For sheet production and quantities)

Example: Forest County (27), State Route (0948), Section (03M), and File Type (SURV)
Design File Name: 27094803M_SURV.dgn

Example: Forest County (27), Township Route (T372), Section (03M), and File Type (SURV)
Design File Name: 27T37203M_SURV.dgn

The recommended naming convention for bridge plan sheets prepared using MicroStation® is as follows:

FORMAT: ccssssnni.xxx

cc = County Number
ssss = State Route Number
nn = Sheet Number
i = This is a one character structure identification letter. This allows you to have more than one set of design drawings generated for one structure.
xxx = Section Number

EXAMPLE: Allegheny County
SR 1053, Section 005
General Plan Sheet (Sheet No. 1)
Given structure identification "A"

Design file name: 02105301A.005

File name shall be no more than nine characters plus the Section Number. Each sheet is a separate file.

Structure Identification (ID) letter: Used to differentiate between several structures on one project. They shall be labeled in order of increasing station.

Note: See Appendix A for information and guidance regarding the naming of CADD Design Files saved to the PDF format for use within the Department's Electronic Document Management System.

NOTE: BRADD generated MicroStation® (DGN) files do not conform to these file naming conventions.

12.3 CADD DESIGN FILE LEVEL CONVENTION

ORD files allow data to be separated by levels within the file. The use of levels provides a data management tool to control data display beyond reference files, features, graphic weight, and line styles. The Department's level naming convention follows a modified National CADD Standard® naming convention. The Department's named levels are listed in Appendix D. Levels 1 through 63 remain active in order to provide backward compatibility with existing designs and are listed in Appendix C. New designs shall use the named levels listed in Appendix D.

NOTE: BRADD generated MicroStation® (DGN) files do not conform to the named level conventions of Appendix D or the level number convention of Appendix C. For BRADD's level conventions, see Chapter 7 of the BRADD User Manual.

Level names consist of a **Discipline** code (one or two digits), a **Major** code (four digits), a **1st Minor** code (four digits), a **2nd Minor** code (four digits) and a **Status** code (two digits). Valid levels must contain a Discipline and Major code while the Minor and Status codes are optional codes to more precisely define the graphic content to be placed on the level. The Department modifies the National CAD Standard® level naming convention by defining the Status code to be two digits as opposed to the standard one digit. A listing of the Discipline and Major codes appears in Appendix D.

12.4 CADD DESIGN FILE GRAPHIC SYMBOLOGY

Graphic symbology refers to the configuration and settings used by the Department's CADD software to achieve the plotted results as defined by this Design Manual. The Department's CADD Software Working Environment uses By-Level Symbology to control the graphic symbology of CADD Design Files. Level properties that may be controlled in this manner are listed in Appendix D. Older CADD files using numeric levels will follow the standards listed in Appendix C.

NOTE: BRADD generated MicroStation® (DGN) files do not conform to these graphic standards. See Chapter 7 of the BRADD User Manual for BRADD graphic standards.

A. Line Styles. The Department's CADD Software Working Environment provides standard line styles (or codes) for use on plans. The line styles are shown in Appendix D, Figure D.1.

Nonstandard line codes are to be placed on the level's root or MAJOR code level. A legend of the line code, giving the line code name, the line code description, and a graphic sample of the line code, shall be placed as a General Note.

B. Fonts. The Department's CADD Software Working Environment provides a library of fonts to be used for different types of work. The fonts used for Legacy plan preparation are Font 5 (Vertical) for proposed work, Font 25 (Slanted) for existing information and Font 7 for sheet titles or Title Sheet text. These fonts are shown inAppendix C, Table C.6.

The fonts used for current plan production are Engineering Vert for proposed work and Engineering Regular for existing information. These fonts are shown in Appendix D, Table D.5.

C. Graphic Weights. The Department's CADD Software Working Environment provides standard graphic weights (or line widths) for use on plans. The graphic weights (or line widths) and codes are shown in Appendix D, Table D.6.

D. Color Tables. The Department does not currently require standard colors be used in plans production as the final output is black line work on a white background.

When showing existing features on a plan for reference, it may be necessary to de-emphasize the existing features for clarity. The Department recognizes the use of dithered or grey tone line work to display existing features. Dithered or grey tone line work must be reproducible from microfilmed plans. See Chapter 13.2, Image Lines, for information on the Department's dithering method.

12.5 REFERENCE FILES AND CELL LIBRARIES

Graphics used repetitively in plan preparations may be stored on the CADD system as reference files or as a cell in a cell library. Examples of this information would be blank plan or cross section sheets, General Notes, and typical section details. The Bureau of Project Delivery is responsible for keeping this information current. When these files are used on specific projects, the District shall review the content for accuracy and update the content for the project conditions. Any questionable information shall be called to the attention of the Bureau of Project Delivery for verification or revision.

12.6 ELECTRONIC FILE EXCHANGE OF CADD DATA FILES

See Appendix B for information and guidance regarding the exchange of electronic copies of all CADD Project Files between the Department and Business Partners (Consultants and Contractors).

12.7 ELECTRONIC FILES AND 3D MODELING IMPLEMENTATION

As uniformity and consistency of the 3D data files will increase the constructor's understanding of the design intent presented in the official plan set, the following are guidelines for implementation:

1. Determine and document whether 3D modeling will be used during the scoping field view.

2. Design all projects with the "US Survey Foot" as the working unit of measure.

3. Make LandXML translations of each of the following data sets when practical and relevant as determined by the ADE-Design:

a. Existing or surveyed surface - the surface as it exists prior to construction or a construction stage when a project is multi-staged.

b. Final project geometry - the horizontal and vertical alignment data for each design corridor or cross section set represented in the final design. Temporary road(s) geometry for staged construction should be saved to separate LandXML data files.

c. Final design surface - the proposed design surface complete in all its parts. It may be contained in a single merged surface or in several component surfaces. The final design surface must be checked for accuracy prior to LandXML translation.

4. Compress all LandXML files using the WinZip software package and store as a *.zip file type for loading into the Engineering and Construction Management System (ECMS).

5. The Portable Document Format (PDF) is an open standard for electronic document exchange. Produce the plan set loaded into ECMS directly from the CADD software as a set of PDF files. A PDF file created from a scanned plan sheet should not be loaded into ECMS as part of the official plan set because a scanned image

loses graphic and numeric detail. The exception to this rule is a Title sheet which must contain a professional seal and original signature.

6. All Civil Application Files provided to bidders must contain only data represented in the official plan set. No alternate design data should be included. If such information is present, it must be redacted prior to translation to LandXML.

7. If the roadway design was not developed in a 3D format, no effort should be made to recreate the design for the sole purpose of generating 3D data for translation to the LandXML format.

CHAPTER 15

PLATES

15.0 INTRODUCTION

The various plates contained in this Chapter represent example sketches and general format that are provided as guidance in the preparation of highway plans.

15.1 "A" PLATES

The following is a listing of the "A" Plates that are presented in this Section to provide example sketches for suggested treatments for presentation on Construction and Right-of-Way Plans.

PLATE NUMBER	TITLE
Plate A-I	Clarification of Right-of-Way Terms
Plate A-II	Example Sketch Indicating Areas for Tabulation on Right-of-Way Plans and Property Plots
Plate A-III	Example Sketch Indicating Required Channel Easement on Property Plot
Plate A-IV	Example Sketch Indicating Construction Limits at Intersections
Plate A-V	Example Sketch Indicating Right-of-Way Limits at Intersections
Plate A-VI	Example Sketch Indicating Construction Limits at Interchanges
Plate A-VII	Example Sketch Indicating Right-of-Way Limits at Interchanges

Plate A-V and Plate A-VII are provided as suggested treatments to locate the Limit of Work and Limit of Authorization stations when one State Route comes into another State Route without crossing. These represent general cases and the indicated schemes need not be followed when other factors are involved since the examples are based on both State Routes being on the Title Sheet. However, the same logic applies to side roads where the terminology would be "start-stop work" and "begin-end authorization."

PLATE A-I
CLARIFICATION OF
RIGHT-OF-WAY TERMS

DEED AREA	-	That area described by the metes and bounds given on the Deed.
CALCULATED AREA	-	A check of the Deed Area by mathematical methods.
ADVERSE AREA	-	A portion(s) of the property sold in fee simple by the present owner.
LEGAL RIGHT-OF-WAY EASEMENT	-	The area previously acquired by plan or dedication and currently being used for Right-of-Way purposes. These areas are easements only and, upon abandonment, would revert to the local community for continuation as Right-of-Way and, upon vacation, would revert to the owner of the reversionary interest who would then own the area outright.
LEGAL RIGHT-OF-WAY FEE	-	The area previously acquired by the Department either by condemnation, dedication or amicable agreement and owned by the Department in fee simple. This area shall be tabulated on the Right-of-Way Claim Information as adverse or exception.
EXCEPTION	-	The area of previously deeded lands which have been excluded from the current owner's use.
EFFECTIVE AREA	-	The portion of the Deed Area, after all exceptions, adverses and legal Right-of-Way are subtracted, actually owned by the property owner.
REQUIRED AREA	-	One vacant space for use other than those listed (For others, see Chapter 3, Section 3.6).
TOTAL RESIDUE	-	The Effective Area, less the Required Right-of-Way, less substitute Right-of-Way in fee.
VERIFICATION DATE	-	Date of latest Title verification.
DRAWN BY	-	Name of Consultant or District drawing the Property Plat.

RIGHT-OF-WAY CLAIM INFORMATION

COMMONWEALTH OF PENNSYLVANIA-DEPARTMENT OF TRANSPORTATION

STATE RTE. _____ SEC NO. _____ (INCLUDE CITY, TWP OR BORO) _____ COUNTY

PARCEL NO. _____ SHEET NO. _____ CLAIM NO. _____

PROPERTY OWNER(S) _____

GRANTOR(S) _____

		AREAS	ACRE/SF	REQUIRED AREA	ACRE/SF
DEED BOOK	_____	DEED	_____	RIGHT OF WAY	_____
PAGE	_____	CALCULATED	_____	CHANNEL	_____
DATE OF DEED	_____	ADVERSES	_____	SLOPE	_____
DATE OF RECORD	_____	LEGAL R/W	_____		_____
CONSIDERATION	_____	EFFECTIVE	_____		_____
TAX STAMPS	_____	TOTAL REQ'D R/W	_____	VERIFICATION DATE	_____
	_____	TOTAL RESIDUE	_____	DRAWN BY	_____
	_____	RESIDUE LT	_____		
		RESIDUE RT	_____	SCALE	

ALL PROPERTIES ARE PLOTTED FROM DEEDS OF RECORD, RECORDED SUBDIVISION OR LOT PLANS, OR FROM FIELD SURVEY. PROPERTY LINES WERE SURVEYED ONLY WHEN DETERMINED NECESSARY BY THE PROFESSIONAL LAND SURVEYOR RESPONSIBLE FOR THE PROJECT. PROPERTY LINES NOT ESTABLISHED BY FIELD SURVEY WERE PLOTTED BASED ON EXISTING TOPOGRAPHICAL FEATURES AND LIMITED FIELD DATA.

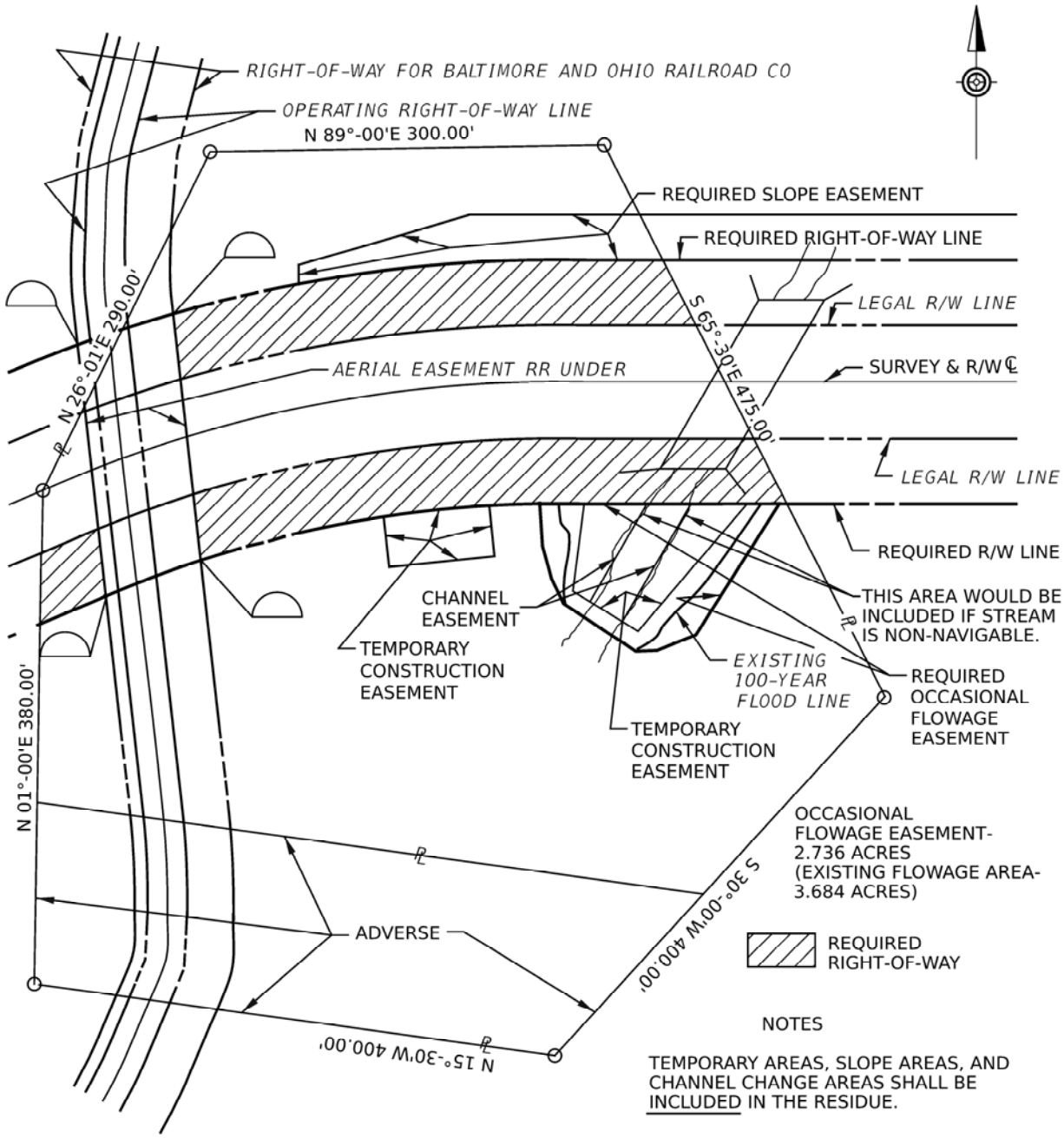
THIS PROPERTY PLOT IS NOT TO BE SUBSTITUTED FOR A BOUNDARY SURVEY.

PARCEL NUMBER	PROPERTY OWNER / GRANTOR	DEED BOOK / PAGE	DATE OF DEED / DATE OF RECORD	CONSID	TAX STAMPS	DEED AREA	ADV AREA	LEGAL R/W AREA	EFF AREA	REQ'D R/W AREA	RESI-DUE TOTAL	RESI-DUE LT	RESI-DUE RT	VERIFI-CATION DATE

ALL REQUIRED RIGHT-OF-WAY FOR THIS PROJECT SHALL BE ACQUIRED IN FEE SIMPLE UNLESS OTHERWISE NOTED.
AREAS, IF ANY, NOT TO BE ACQUIRED IN FEE SIMPLE SHALL BE ACQUIRED IN THE LESSER ESTATE OR INTEREST DESIGNATED ON THE PLAN SHEET.

PLATE A-I
(Continued)

PLATE A-II
EXAMPLE SKETCH INDICATING AREAS FOR TABULATION ON RIGHT-OF-WAY PLANS AND PROPERTY PLOTS



EFFECTIVE AREA = DEED AREA - (LEGAL + ADVERSES + UTILITIES IN FEE).
RESIDUE = EFFECTIVE AREA - (REQUIRED RIGHT-OF-WAY + SUBSTITUTE RIGHT-OF-WAY IN FEE + NAVIGABLE STREAMS).

PLATE A-III
EXAMPLE SKETCH INDICATING REQUIRED CHANNEL EASEMENT ON PROPERTY PLOT

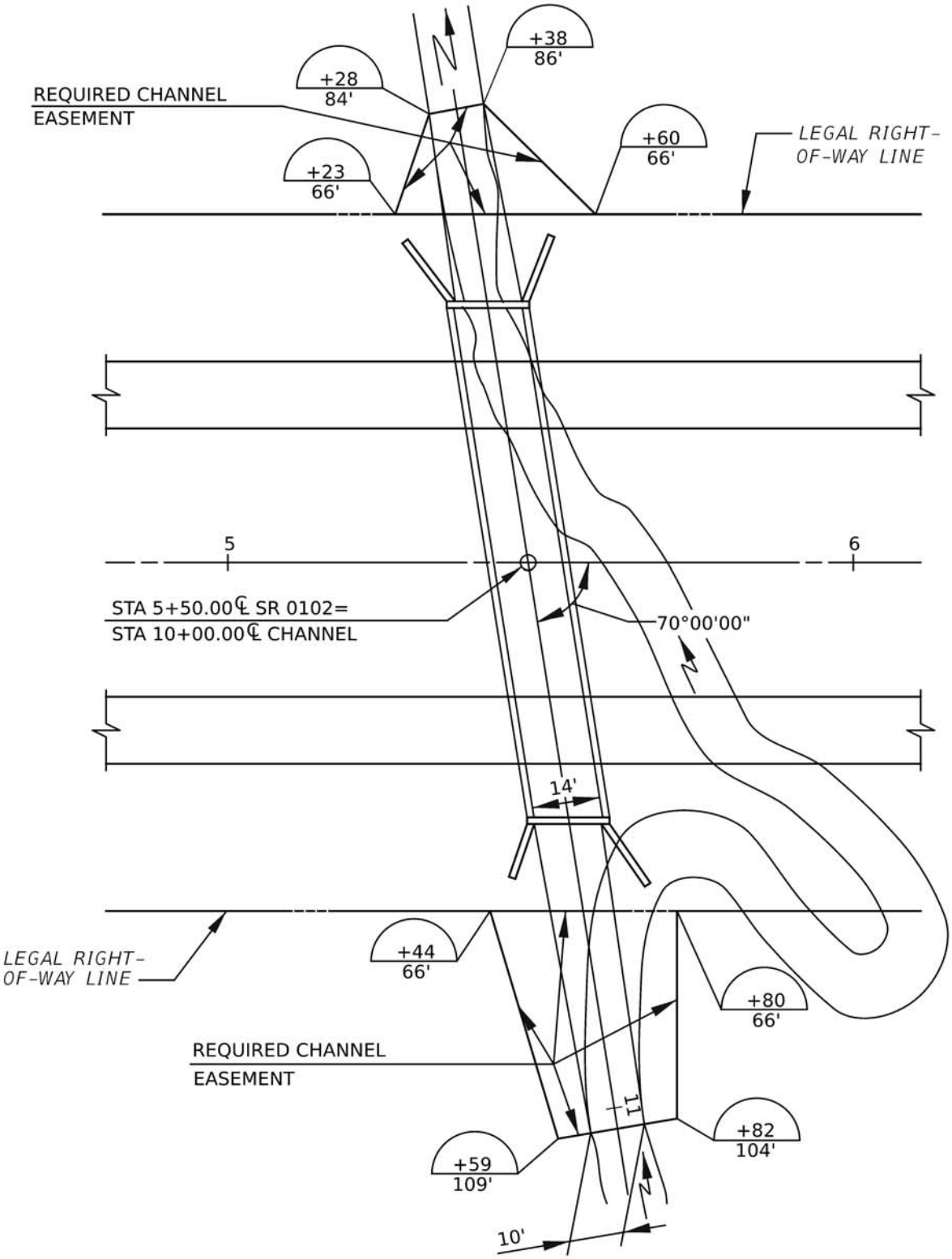


PLATE A-IV
EXAMPLE SKETCH INDICATING CONSTRUCTION LIMITS AT INTERSECTIONS

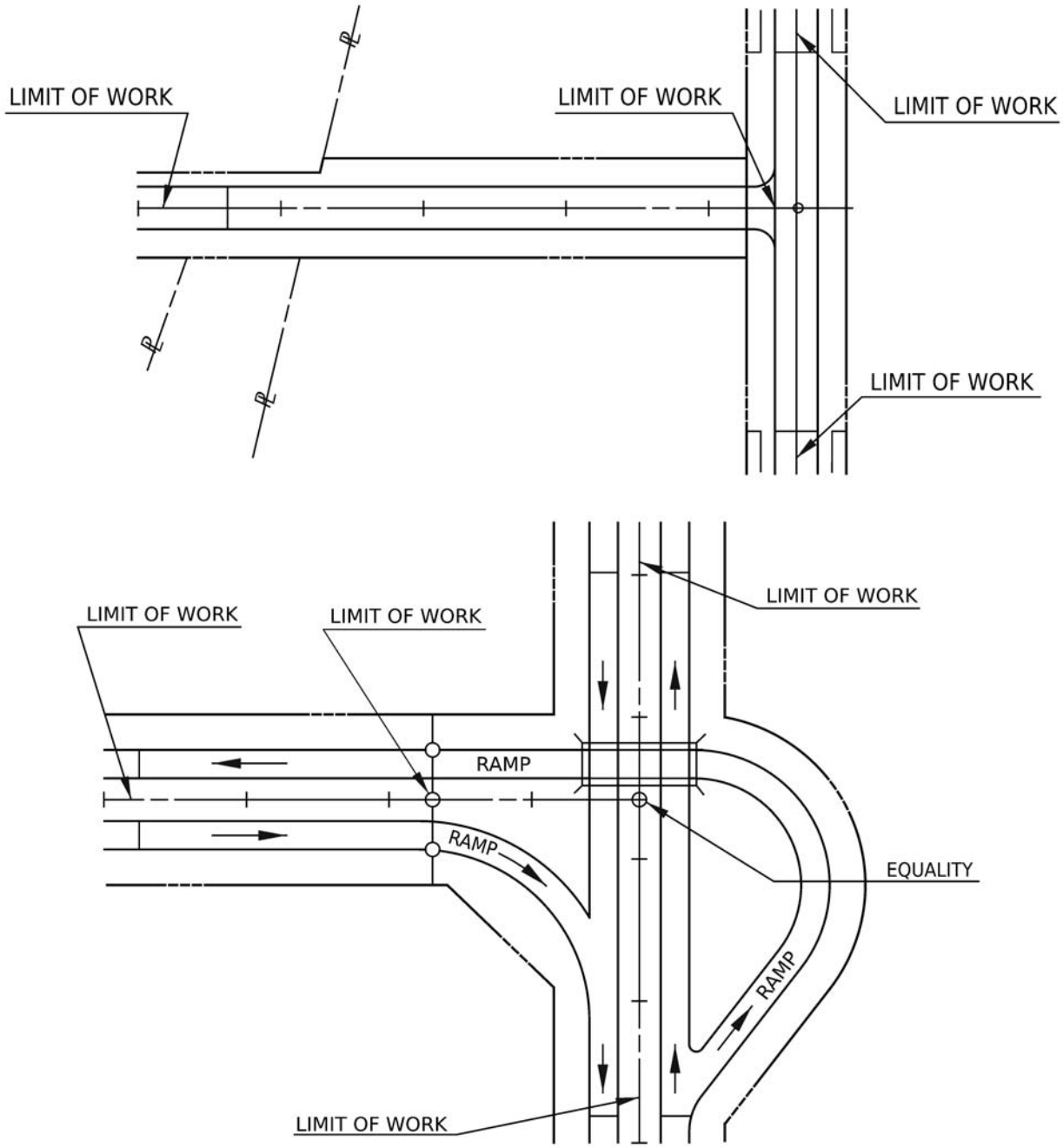


PLATE A-V
EXAMPLE SKETCH INDICATING RIGHT-OF-WAY LIMITS AT INTERSECTIONS

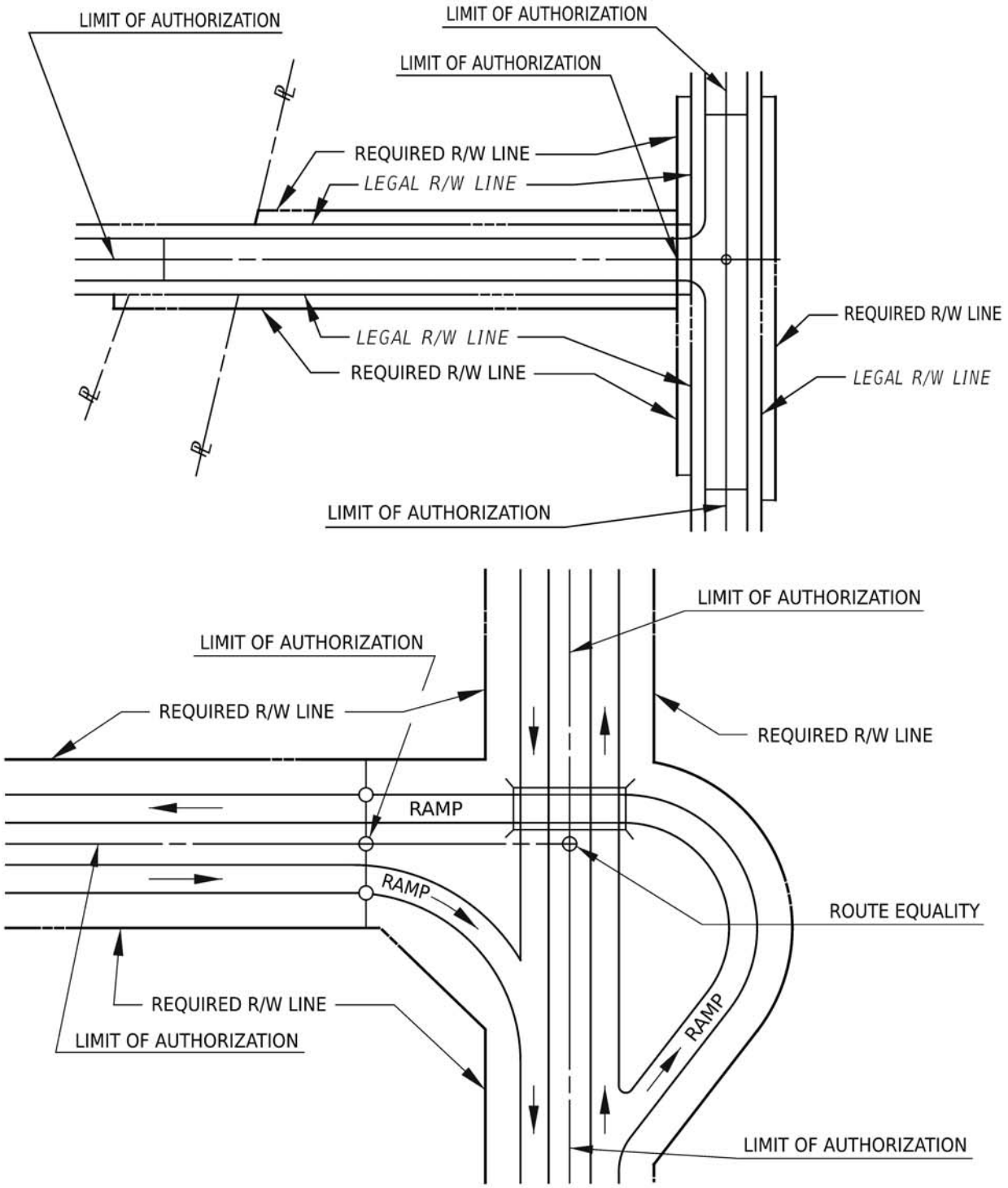


PLATE A-VI
EXAMPLE SKETCH INDICATING CONSTRUCTION LIMITS AT INTERCHANGES

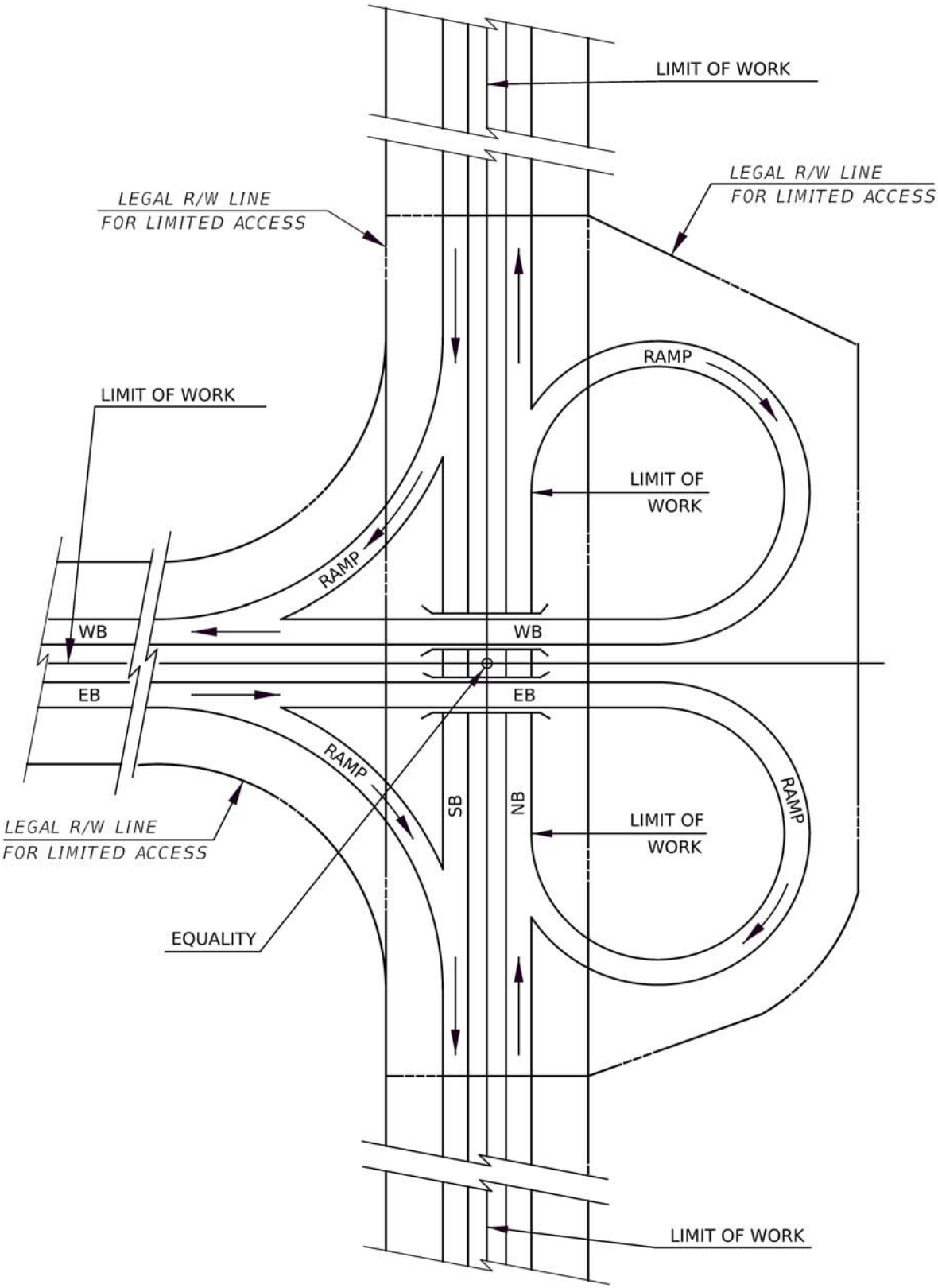
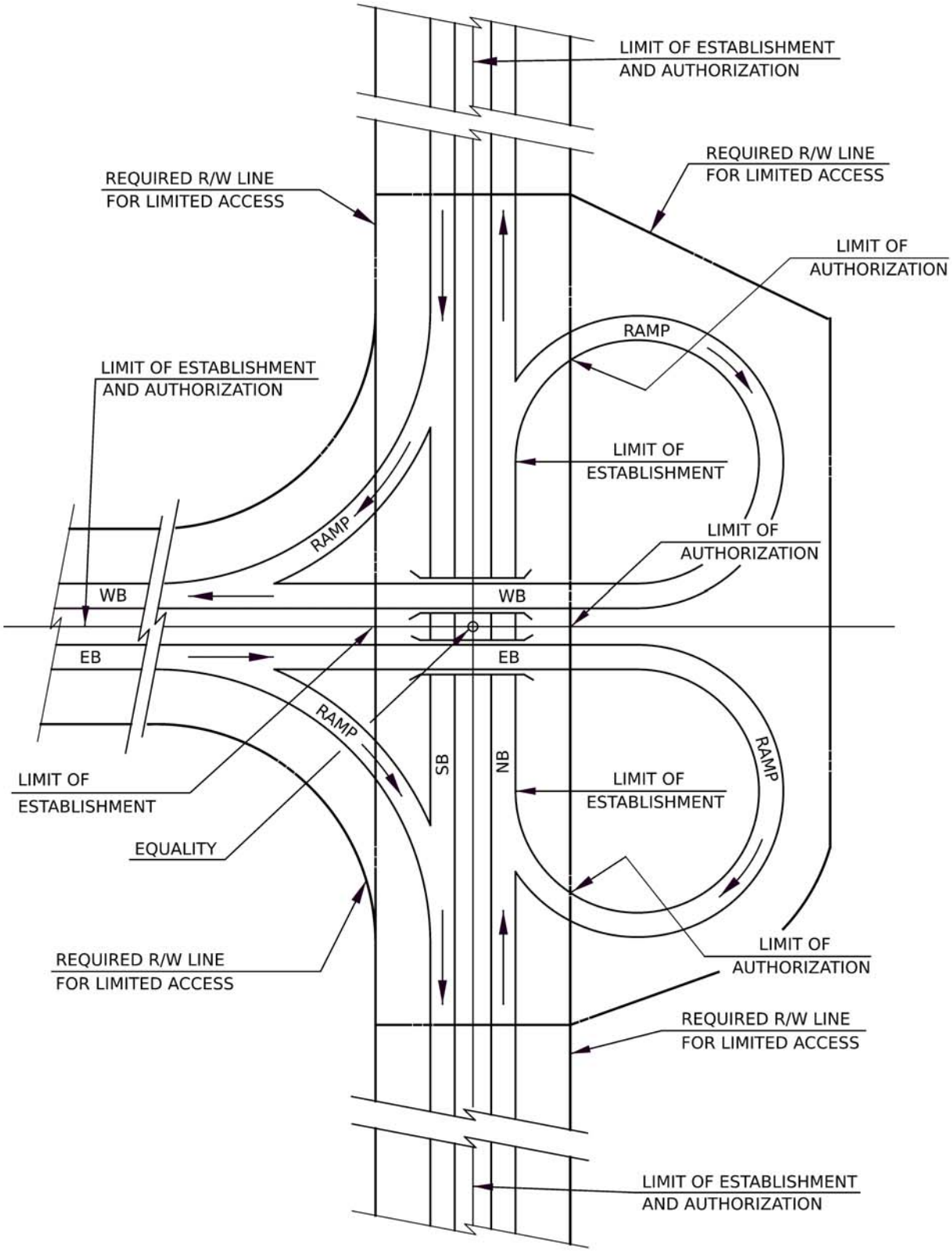


PLATE A-VII
EXAMPLE SKETCH INDICATING RIGHT-OF-WAY LIMITS AT INTERCHANGES



15.2 "B" PLATES

The following is a listing of the "B" Plates that are contained in this Section which compliment the applicable plan sheets as presented in this Manual.

PLATE NUMBER	TITLE
Plate B-I	Example of Title Sheet for Construction Plans
Plate B-II	Example of Summary of Quantities Sheet
Plate B-III	Example of Tabulation of Quantities Sheet (Roadway Quantities)
Plate B-IV	Example of Tabulation of Quantities Sheet (Miscellaneous Quantities)
Plate B-V	Example of Tabulation of Quantities Sheet (Guide Rail and Barrier Quantities)
Plate B-VI	Example of Alternate Method for Tabulation of Quantities Sheet (Pavement Base Drain Quantities) (two-column format)
Plate B-VIIA	Example of Pipe Design Number and Concrete Pipe Item Number - Summary Sheet
Plate B-VIIB	Example of Pipe Design Number and Concrete Pipe Item Number - Tabulation of Quantities Sheet (Drainage Quantities)
Plate B-VIII	Example of Title Sheet for Right-of-Way Plans
Plate B-IX	Example of Title Sheet for Design-Build Plans
Plate B-X	Example of Cross Section Sheet
Plate B-XI	Example of Cross Section Sheet
Plate B-XII	Example of Location of Project on State Map
Plate B-XIII	Location Map Legend
Plate B-XIV	Example of Title Sheet for Right-of-Way by Township
Plate B-XV	Example of Right-of-Way Deeded to the Commonwealth

D-9012 CADD (02-90) REVISED (06-18)

PLOTTED: 10-DEC-2020 11:25

PLAN PREPARATION
PROJECT MANAGER _____
DESIGNER _____

DISTRICT	COUNTY	TOWNSHIP	BOROUGH	ROUTE	SECTION	TOTAL SHEETS

ECMS NO.

PLATE B-I
EXAMPLE OF TITLE SHEET
FOR CONSTRUCTION PLANS

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

DRAWINGS
FOR
CONSTRUCTION
OF

STATE ROUTE _____ SECTION _____

IN _____ COUNTY

FROM STA _____ TO STA _____ LENGTH _____ FT _____ MI.
FROM SEG _____ OFFSET _____ TO SEG _____ OFFSET _____

SCALE

HORIZONTAL 0 25 50 FEET

VERTICAL 0 5 10 FEET

DESIGN DESIGNATION

HIGHWAY CLASSIFICATION -
DESIGN SPEED -
PAVEMENT WIDTH -
SHOULDER WIDTH -

TRAFFIC DATA

CURRENT A.D.T. -
DESIGN YEAR A.D.T. -
D.H.V. -
D -
T -

PREPARED BY:

ASST. DIST. EXEC.
DATE: _____

RECOMMENDED DATE: _____
DISTRICT PLANS ENGINEER
RECOMMENDED DATE: _____
DISTRICT EXECUTIVE
RECOMMENDED DATE: _____
DEPUTY SECRETARY
APPROVED DATE: _____
SECRETARY OF TRANSPORTATION
(ON BEHALF OF THE GOVERNOR
AS WELL AS THE SECRETARY)

OPERATOR: brhardie
FILE NAME: C:\Bentley\...\PennDOT Design\Standards\Sheets\Title Sheets sect.dgn

PLATE B-II
EXAMPLE OF SUMMARY OF QUANTITIES SHEET

SUMMARY

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				08	DAUPHIN	0083	0000	1 OF 100
				SWATARA TOWNSHIP				

QUANTITY	ITEM NO / UNIT	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET	QUANTITY	ITEM NO / UNIT	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET	QUANTITY	ITEM NO / UNIT	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET	QUANTITY	ITEM NO / UNIT	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET
100	0203 0001 / CY	CLASS 1 EXCAVATION		1															

SHEET 1 OF 1 PROJECT ID: 3999 MPMS: ECMS: 12/10/2020 2:39:11 PM

PLATE B-III
EXAMPLE OF TABULATION
OF QUANTITIES SHEET

TABULATION OF QUANTITIES

ROADWAY

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				03	LYCOMING	220	120	22 OF 52
				HUGHESVILLE BOROUGH & WOLF TOWNSHIP				

CLASS 1 EXCAVATION (INCLUDES SAWCUTTING) 4203 0001 CY	SELECTED BORROW EXCAVATION, COARSE AGGREGATE, NO. 1 0205 0381 TON	GEOTEXTILE, CLASS 4, TYPE A 0212 0014 SY	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BASE COURSE, PG 64-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 4" DEPTH 0311 0322 SY	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BASE COURSE, PG 64-22, 0.3 TO < 3 MILLION ESALS, 25.0 MM MIX, 6" DEPTH 0311 0426 SY	SUBBASE 6" DEPTH (NO. 2A) 0350 0106 SY	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 64-22, < 0.3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-L 0411 0385 SY	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 76-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-H 0411 0882 SY	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE (SCRATCH), PG 64-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, SRL-L 0411 2895 TON	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BINDER COURSE, PG 76-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH 0411 0940 SY	BITUMINOUS TACK COAT (NTT/CNTT) 0460 0004 GAL	MILLING OF BITUMINOUS PAVEMENT SURFACE, 2 1/4" DEPTH, REUSED MATERIAL RETAINED BY CONTRACTOR 0491 0021 SY	SELECTED MATERIAL SURFACING (INLCUDES EXCAVATION) 4677 0001 CY	EMBANKMENT - FOR INFORMATION ONLY CY	REMARKS (ITEM NUMBER / UNIT)	SIDE	STATIONS
															SR 220		
	1439														AS DIRECTED	LT / RT	210+65.00 to 220+42.00
		2688		2688	2688		2688		2688	376					FULL DEPTH REPLACEMENT	LT / RT	210+65.00 to 214+89.00
2370													20		EARTHWORK	LT / RT	210+65.00 to 215+00.00
							5			1					PAVED DRIVEWAY	LT	210+75.00 to 210+93.00
							14			2					PAVED DRIVEWAY	RT	210+84.00 to 211+22.00
							12			2					PAVED DRIVEWAY	LT	211+56.00 to 211+80.00
				72	72		72		72	10					PAVED DRIVEWAY	RT	211+76.00 to 212+35.00
					74										SUBBASE DAYLIGHT, LT	LT	212+25.00 to 213+09.20
1120															EARTHWORK	LT / RT	215+25.00 to 220+42.00
							3889	175		856	3889				MILL / OVERLAY	LT / RT	220+42.00 to 228+95.00
															SR 220 SB RAMP		
1490															EARTHWORK	LT / RT	60+70.51 to 64+08.96
		300		300	300		300		300	42					FULL DEPTH REPLACEMENT	LT / RT	61+70.00 to 62+84.00
															SR 405 / SR 220		
		4021		4021	4021		4021		4021	563					FULL DEPTH REPLACEMENT	LT / RT	102+00.00 to 220+42.00
															SR 405		
							973	44		215	973				MILL / OVERLAY	LT / RT	99+75.00 to 102+00.00
510													15		EARTHWORK	LT / RT	99+75.00 to 104+00.00
				19	19		19		19	3					PAVED DRIVEWAY	LT	102+16.00 to 102+27.00
															NORTH SPRUCE STREET		
45															EARTHWORK	LT / RT	20+11.00 to 20+60.00
			55		55	55				8					FULL DEPTH REPLACEMENT	LT / RT	20+11.00 to 20+60.00
															RACE STREET (T-290)		
					412										SUBBASE DAYLIGHT, LT	LT	0+12.60 to 4+75.00
670													85		EARTHWORK	LT / RT	0+12.60 to 4+75.00
		1389	1389		1389	1389				97					FULL DEPTH REPLACEMENT	LT / RT	0+12.60 to 4+75.00
					412										SUBBASE DAYLIGHT, RT	RT	0+12.60 to 4+75.00

SHEET 1 OF 2 PROJECT ID: 1547 MPMS: 93016 ECMS: 93016 9/6/2018 8:18:41 AM

PLATE B-IV
EXAMPLE OF TABULATION
OF QUANTITIES SHEET

(+) SEE SUMMARY SHEET FOR COMPLETE ITEM NUMBERS

TABULATION OF QUANTITIES

MISCELLANEOUS

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				03	LYCOMING	220	120	24 OF 52
				HUGHESVILLE BOROUGH & WOLF TOWNSHIP				

0205 0364 TON SELECTED BORROW EXCAVATION ROCK, CLASS R-4	0205 0385 TON SELECTED BORROW EXCAVATION, COARSE AGGREGATE, NO. 57	0212 0014 SY GEOTEXTILE, CLASS 4, TYPE A	0350 0106 SY SUBBASE 6" DEPTH (NO. 2A)	0601 0020 SY PLAIN CEMENT CONCRETE PAVEMENT, 4" DEPTH	0623 0052 LF SINGLE FACE CONCRETE BARRIER	0630 0001 LF PLAIN CEMENT CONCRETE CURB	0633 0225 LF PLAIN CONCRETE MOUNTABLE CURB, TYPE B	0676 0001 SY CEMENT CONCRETE SIDEWALK	0695 (+) SF DETECTABLE WARNING SURFAC DESIGN NO. 101	0810 0052 EACH SELECTIVE TREE REMOVAL	9000 0002 EACH STAIRS FOR RECONSTRUCTION	9000 0004 EACH CURB TO BARRIER TRANSITION	ITEM NUMBER UNIT REMARKS	SIDE	STATIONS
													SR 220		
									23					RT	215+41.00 to 215+50.00
								11						RT	215+41.00 to 215+57.00
												1		LT	217+25.00 to 217+45.00
							287							BL	217+35.00 to 218+78.00
						84								LT	217+45.00 to 218+10.00
													SR 220 / SERVICE ROAD		
						103								LT	222+79.00 to 70+59.00
													SR 220 / SR 220 SB RAMP		
264	6	298			348									LT / RT	212+79.00 to 60+75.00
													SR 220 SB RAMP		
			248	248			280						CONCRETE ISLAND	LT	61+68.00 to 62+86.00
													SR 405		
						20								LT	102+00.00 to 102+16.00
								10						LT	102+00.00 to 102+17.00
											1		INCLUDES HANDRAIL PER DETAIL	LT	102+20.00
								65						LT	102+25.00 to 103+33.00
						128								LT	102+26.00 to 103+33.00
										1			OFFSET 52.3', MAPLE TREE, 2.3' DIAMETER	LT	102+71.00
									13					LT	103+29.00 to 103+33.00
								46						RT	103+30.00 to 103+91.00
						85								RT	103+30.00 to 103+92.00
									22					RT	103+60.00 to 103+70.00
									13					RT	103+88.00 to 103+91.00
										1			OFFSET 38.1', MAPLE TREE, 2.1' DIAMETER	RT	103+95.00
													RACE STREET (T-290)		
										1			OFFSET 10.4', SPRUCE TREE, 2.2' DIAMETER	LT	2+53.00
										1			OFFSET 2.0', CYPRESS TREE, 0.8' DIAMETER	RT	2+80.00

SHEET 1 OF 2 PROJECT ID: 1547 MPMS: 93016 ECMS: 93016 9/6/2018 8:19:11 AM

PLATE B-V
EXAMPLE OF TABULATION
OF QUANTITIES SHEET

TABULATION OF QUANTITIES
GUIDE RAIL AND BARRIER

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				08	YORK	0083 / 0851	074 / 020	49 OF 124
				SHREWSBURY BOROUGH, SHREWSBURY AND HOPEWELL TOWNSHIPS				

PERMANENT IMPACT ATTENUATING DEVICE, TYPE II, TEST LEVEL 3, TANGENT (MASH) 0619 0459 EACH	TYPICAL AND ALTERNATE CONCRETE BRIDGE BARRIER TRANSITION WITHOUT INLET PLACEMENT 0620 0010 EACH	TYPICAL AND ALTERNATE CONCRETE BRIDGE BARRIER TRANSITION WITH INLET PLACEMENT 0620 0011 EACH	TERMINAL SECTION, SINGLE 0620 0400 EACH	TERMINAL SECTION, BRIDGE CONNECTION 0620 0402 EACH	REMOVE EXISTING GUIDE RAIL (CONTRACTOR'S PROPERTY) 0620 0003 LF	ANCHORED BACKSLOPE TERMINAL, TYPE 1 0620 0870 EACH	TYPE 31-S GUIDE RAIL 0620 1600 LF	TYPE 31-S GUIDE RAIL WITH EXTRA LENGTH POSTS 0620 1605 LF	TYPE 31-SC GUIDE RAIL 0620 1625 LF	TYPE 31-STRONG POST ANCHOR TERMINAL 0620 1660 EACH	TYPE 31-STRONG POST IN-LINE ANCHOR 0620 1670 EACH	CONCRETE GLARE SCREEN 0622 0001 LF	TRANSITION, CONCRETE GLARE SCREEN, 50" HEIGHT, 24" TO 41 1/2" WIDTH 0622 0008 EACH	FLEXIBLE DELINEATOR POST, GROUND-MOUNT TYPE GM-2, RED POST WITH WHITE/BLANK SHEETING 0937 0339 EACH				REMOVE EXISTING I.B.C. MEDIAN BARRIER (DEPARTMENT'S PROPERTY) 9620 0001 LF	REMOVE EXISTING I.B.C. MEDIAN BARRIER (CONTRACTOR'S PROPERTY) 9620 0002 LF	TRANSITION, CONCRETE GLARE SCREEN TO I.B.C. BARRIER 9622 0001 EACH	TRANSITION, CONCRETE GLARE SCREEN TO NON-STANDARD BRIDGE BARRIER 9622 0002 EACH	TRANSITION, TYPICAL END (GLARE SCREEN) 9622 0003 EACH							ITEM NUMBER / UNIT	REMARKS	SIDE	STATIONS
																																	SR 0083		
												2202	1								1													BL	163+85.00 to 186+17.00
																		500	1734															BL	163+85.00 to 186+19.00
1							350	150						1																		CONNECT TO EXISTING GUIDE RAIL, STA 167+10	LT	167+10.00 to 172+43.00
1		1					537.5		12.5					1																			RT	179+84.00 to 185+74.00
					615																												RT	179+86.00 to 186+00.00
			1	1			525			1																							LT	180+82.00 to 186+17.00
					103																												LT	185+21.00 to 186+23.00
					103																												RT	187+23.00 to 188+26.00
																			1898														BL	187+31.00 to 206+29.00
					243																												LT	187+46.00 to 189+89.00
			1	1			287.5			1																							RT	188+02.00 to 191+00.00
												1783	1									1											BL	188+02.00 to 206+15.00
1		1					100		12.5					1																			LT	188+33.00 to 189+93.00
	1					1	212.5		12.5																							CONNECT TO EXISTING BRIDGE, STA 206+77, RT	RT	204+34.00 to 206+77.00
					221																												RT	204+59.00 to 206+77.00
																			336														BL	206+79.00 to 210+15.00
												290									1	1											BL	206+95.00 to 210+15.00
																																SR 0083 / SR 8001 RAMP A		
					438																												LT	167+10.00 to 101+38.00
																																SR 0851		
					275																												LT	28+65.30 to 31+40.00
			1				337.5				1																					CONNECT TO EXISTING GUIDE RAIL, STA 28+65.30	LT	28+65.30 to 32+04.00
			2				187.5				2																						LT	32+17.00 to 34+11.00
					149																												LT	32+36.00 to 33+78.00
												243											2										LT / RT	35+53.00 to 38+20.00
												230											2										RT	35+59.00 to 38+13.00
					466																												LT	39+43.00 to 44+09.00

SHEET 1 OF 2 PROJECT ID: 1549 MPMS: 89917 ECMS: 89917 12/11/2018 10:14:57 AM

PLATE B-VI
EXAMPLE OF TABULATION OF QUANTITIES SHEET

TABULATION OF QUANTITIES
PAVEMENT BASE DRAIN

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				03	LYCOMING	220	120	29 OF 52
				HUGHESVILLE BOROUGH & WOLF TOWNSHIP				

GEOTEXTILE, CLASS 1 0212 0001 LF	6" PAVEMENT BASE DRAIN 0610 7002 LF	REMARKS (ITEM NUMBER / UNIT)	SIDE	STATIONS
		SR 220		
366	366	OUTLET TO INLET IN3A	RT	210+65.00 to 214+31.00
91	91	OUTLET TO INLET IN5	RT	215+35.00 to 216+26.00
18	18	OUTLET TO SLOPE STA 217+18, RT	RT	217+00.00 to 217+18.00
257	257	OUTLET TO SLOPE STA 219+75, RT	RT	217+18.00 to 219+75.00
32	32	OUTLET TO INLET PROP IN 217+92	LT	217+58.00 to 217+90.00
77	77	OUTLET TO EXISTING INLET STA 220+52, RT	RT	219+75.00 to 220+52.00
		SR 220 / SR 220 SB RAMP		
391	391	OUTLET TO INLET IN2	LT / RT	210+65.00 to 62+54.00
		SR 405		
51	51	OUTLET TO INLET IN4A	RT	102+00.00 to 102+51.00
112	112	OUTLET TO INLET IN1A	LT	102+00.00 to 103+10.00
		SR 405 / SR 220		
244	244	OUTLET TO INLET IN6A	RT	103+56.00 to 217+00.00
		SR 220 SB RAMP / SR 220		
59	59	OUTLET TO INLET PROP IN 217+58	RT / LT	61+00.00 to 217+58.00
		SR 220 SB RAMP		
138	138	OUTLET TO INLET IN4	RT	61+00.00 to 62+38.00
		RESERVOIR ROAD (T-190)		
22	22	OUTLET TO INLET PROP IN 217+92	LT	50+33.00 to 50+55.00
70	70	OUTLET TO INLET PROP IN RES	LT	50+55.00 to 51+25.00
		RESERVOIR ROAD (T-190) / SR 220		
280	280	OUTLET TO EXISTING INLET STA 220+49, LT	RT / LT	51+25.00 to 220+49.00
		RACE STREET (T-290)		
93	93	OUTLET TO INLET BASIN OUTLET 2	RT	0+36.00 to 1+29.00
115	115	OUTLET TO INLET IN 2+45	RT	1+29.00 to 2+44.00
16	16	OUTLET TO INLET BASIN OUTLET 5	RT	2+44.00 to 2+60.00
		TOTALS		

SHEET 1 OF 1

GEOTEXTILE, CLASS 1 0212 0001 LF	6" PAVEMENT BASE DRAIN 0610 7002 LF	REMARKS (ITEM NUMBER / UNIT)	SIDE	STATIONS
110	110	OUTLET TO INLET BASIN OUTLET 6	RT	2+60.00 to 3+70.00
2542	2542	TOTALS		

PROJECT ID: 1547 MPMS: 93016 ECMS: 93016 9/6/2018 8:21:11 AM

PLATE B-VIIA
EXAMPLE OF PIPE DESIGN NUMBER AND CONCRETE PIPE ITEM NUMBER SUMMARY SHEET

TCP - TRAFFIC CONTROL PLAN
S & PMP - SIGNING AND PAVEMENT MARKING PLAN

SUMMARY

♦ - SEE SPECIAL PROVISIONS

QUANTITY	ITEM NO / UNIT	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET	QUANTITY	ITEM NO / UNIT	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET
	0201 0002 / LS	CLEARING AND GRUBBING		19	EITHER 8	0601 0500 / LF	18" THERMOPLASTIC PIPE, GROUP VI, 15'-2' FILL, SHORE/TRENCH BOX	604	20
	0202 0001 / LS	DEMOLITION		19	AND 1	0616 1252 / EACH	THERMOPLASTIC END SECTION FOR 18" PIPE	604	20
	0202 0005 / LS	DEMOLITION		19	OR 8	0601 1863 / LF	18" SPIRAL RIB ALUMINIZED STEEL PIPE, TYPE IR, (3/4" X 3/4" X 7 1/2" CORRUGATIONS), 16 GAGE, SHORE/TRENCH BOX	604	20
11980	0203 0001 / CY	CLASS 1 EXCAVATION		TCP, 17-18, 20, 22-24	AND 1	0616 0009 / EACH	STEEL END SECTION, METALLIC COATED, 16 GAGE FOR 18" PIPE	604	20
316	0203 0004 / CY	CLASS 1B EXCAVATION		17-18	OR 8	0601 7710 / LF	18" REINFORCED CONCRETE PIPE, TYPE B, 15' - 3' FILL, SHORE/TRENCH BOX	604	20
1636	0204 0150 / CY	CLASS 4 EXCAVATION		20	AND 1	0616 1202 / EACH	CONCRETE END SECTIONS FOR 18" PIPE	604	20
377	0205 0264 / CY	SELECTED BORROW EXCAVATION ROCK, CLASS R-4		17-18	EITHER 164	0601 0500 / LF	18" THERMOPLASTIC PIPE, GROUP VI, 15'-2' FILL, SHORE/TRENCH BOX	613	20
42	0206 0010 / TON	SELECT GRANULAR MATERIAL (2RC)		17-18	OR 164	0601 1863 / LF	18" SPIRAL RIB ALUMINIZED STEEL PIPE, TYPE IR, (3/4" X 3/4" X 7 1/2" CORRUGATIONS), 16 GAGE, SHORE/TRENCH BOX	613	20
264	0212 0001 / LF	GEOTEXTILE, CLASS 1		20	EITHER 672	0601 0500 / LF	18" THERMOPLASTIC PIPE, GROUP VI, 15'-2' FILL, SHORE/TRENCH BOX	614	20
8004	0212 0014 / SY	GEOTEXTILE, CLASS 4, TYPE A		17-18, 22-24	OR 672	0601 1863 / LF	18" SPIRAL RIB ALUMINIZED STEEL PIPE, TYPE IR, (3/4" X 3/4" X 7 1/2" CORRUGATIONS), 16 GAGE, SHORE/TRENCH BOX	614	20
1166	0311 0322 / SY	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BASE COURSE, PG 64-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 4" DEPTH		17-18	OR 672	0601 7710 / LF	18" REINFORCED CONCRETE PIPE, TYPE B, 15' - 3' FILL, SHORE/TRENCH BOX	614	20
6000	0311 0326 / SY	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BASE COURSE, PG 64-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 6" DEPTH		17-18	EITHER 280	0601 7509 / LF	18" REINFORCED CONCRETE PIPE, TYPE A, 7' - 3' FILL, SHORE/TRENCH BOX, 100 YEAR DESIGN LIFE	615	20
1493	0311 0334 / SY	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BASE COURSE, PG 64-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 10 " DEPTH		TCP	OR 280	0601 0973 / LF	18" DUCTILE IRON PIPE, SHORE/TRENCH BOX, 100 YEAR DESIGN LIFE	615	20
1166	0350 0106 / SY	SUBBASE 6" DEPTH (NO. 2A)		17-18	EITHER 100	0601 7551 / LF	54" REINFORCED CONCRETE PIPE, TYPE A, 15' - 1.5' FILL, SHORE/TRENCH BOX, 100 YEAR DESIGN LIFE	608	20
6000	0350 0108 / SY	SUBBASE 8" DEPTH (NO. 2A)		17-18	OR 100	0601 1932 / LF	54" SPIRAL RIB ALUMINIZED STEEL PIPE, TYPE IR, (3/4" X 3/4" X 7 1/2" CORRUGATIONS), 12 GAGE, SHORE/TRENCH BOX, 100 YEAR DESIGN LIFE	608	20
67	0350 0120 / CY	SUBBASE (NO. 2A)		17-18	EITHER 264	0604 7509 / LF	18" REINFORCED CONCRETE PIPE, TYPE A, (OPEN JOINT), 7' - 3' FILL, SHORE/TRENCH BOX, 100 YEAR DESIGN LIFE	610	20
1166	0411 0385 / SY	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 64-22, < 0.3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-L		17-18	OR 264	0604 4509 / LF	18" PERFORATED REINFORCED CONCRETE PIPE, TYPE A, 7' - 3' FILL, SHORE/TRENCH BOX, 100 YEAR DESIGN LIFE	610	20
7704	0411 0732 / SY	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 76-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-H		17-18	1	0605 2401 / SET	MANHOLE FRAME AND COVER		20
311	0411 7470 / TON	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BINDER COURSE (LEVELING), PG 64-22, 0.3 TO < 3 MILLION ESALS, 19.0 MM MIX		TCP, 17-18	2	0605 2620 / EACH	TYPE D-W ENDWALL		20
16574	0460 0003 / SY	BITUMINOUS TACK COAT (NTT/CNTT)		17-18	1	4605 2620 / EACH	TYPE D-W ENDWALL (ADDITIONAL HEIGHT) ♦		20
134	0461 0001 / SY	BITUMINOUS PRIME COAT		17-18	3	0605 2730 / SET	TYPE M CONCRETE TOP UNIT AND GRATE		20
1704	0491 0016 / SY	MILLING OF BITUMINOUS PAVEMENT SURFACE, 3 1/2" DEPTH, MILLED MATERIAL RETAINED BY CONTRACTOR		17-18	13	0605 2740 / SET	TYPE S CONCRETE TOP UNIT AND GRATE		20
EITHER 36	0601 0452 / LF	15" THERMOPLASTIC PIPE, GROUP III, 8'-2' FILL, SHORE/TRENCH BOX	601	20	15	0605 2850 / EACH	STANDARD INLET BOX, HEIGHT < /= 10'		20
OR 36	0601 7706 / LF	15" REINFORCED CONCRETE PIPE, TYPE B, 15' - 2' FILL, SHORE/TRENCH BOX	601	20	1	0605 2854 / EACH	TYPE 4 INLET BOX, HEIGHT < /= 10'		20

TABULATION OF QUANTITIES

DRAINAGE

(+) SEE SUMMARY SHEET FOR COMPLETE ITEM NUMBERS

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				09	CAMBRIA	0219	046	20 OF 36
				EAST CARROLL TOWNSHIP				

PLATE B-VIIB
EXAMPLE OF PIPE DESIGN NUMBER AND CONCRETE PIPE ITEM NUMBER TABULATION OF QUANTITIES SHEET (DRAINAGE QUANTITIES)

CLASS 1 EXCAVATION 0203 0001 CY	CLASS 4 EXCAVATION 0204 0150 CY	GEOTEXTILE, CLASS 1 0212 0001 LF	DESIGN NO. 601 0601 (+) LF	DESIGN NO. 604 0601 (+) LF	DESIGN NO. 613 0601 (+) LF	DESIGN NO. 614 0601 (+) LF	DESIGN NO. 615 0601 (+) LF	DESIGN NO. 608 0601 (+) LF	DESIGN NO. 610 0604 (+) LF	MANHOLE FRAME AND COVER 0605 2481 SET	TYPE D-W ENDWALL 0605 2620 EACH	TYPE D-W ENDWALL (ADDITIONAL HEIGHT) 4605 2620 EACH	TYPE M CONCRETE TOP UNIT AND GRATE 0605 2730 SET	TYPE S CONCRETE TOP UNIT AND GRATE 0605 2740 SET	STANDARD INLET BOX, HEIGHT < /= 10' 0605 2380 EACH	TYPE 4 INLET BOX, HEIGHT < /= 10' 0605 2384 EACH	TYPE 4 MANHOLE, STORM WATER, HEIGHT >8' AND < /= 10' 0605 3011 EACH	NO. 57 COARSE AGGREGATE 0703 0025 CY			EMBANKMENT (FOR INFORMATION ONLY) CY	MIN FILL HEIGHT (FOR INFORMATION ONLY) LF	MAX FILL HEIGHT (FOR INFORMATION ONLY) LF						ITEM NUMBER UNIT	SIDE	STATIONS
																														SR 219		
	140					128								1	1						112	2.3	3							IN-1445-R TO IN-1446-R	RT	1445+45.00 to 1446+75.00
	119					100								1	1						97	2.5	3.6							IN-1446-R TO IN-1447-R	RT	1446+75.00 to 1447+75.00
	53						48							1	1						42	2.5	5.3							IN-1447-L TO IN-1447-R	LT / RT	1447+65.00 to 1447+75.00
	114					92								1	1						94	1.9	4.2							IN-1447-R TO IN-1448-R	RT	1447+75.00 to 1448+65.00
	126					88								1	1						107	3.8	4.4							IN-1449-R TO IN-1450-R	RT	1449+65.00 to 1450+50.00
	76						60							1	1						63	3.6	5.6							IN-1450-R TO IN-1450-L	RT / LT	1450+50.00 to 1450+75.00
	7			8																	5	2	2.7							END SECTION TO IN-1450-L	LT	1450+65.00 to 1450+75.00
	133					100							1		1						111	3.2	5.2							IN-1450-L TO MH-1451-L	LT	1450+75.00 to 1451+80.00
	34					24				1							1				29	2	6.1							MH-1451-L TO OUTLET	LT	1451+80.00 to 1452+02.00
485								100			1	1									382	2.2	12.9							HEADWALL TO ENDWALL	RT / LT	1452+05.00 to 1452+30.00
	216						172						1		1						179	3.3	4							IN-1454-R TO OUTLET	RT	1452+60.00 to 1454+25.00
	24		36								1										17	0.9	1.4							HEADWALL TO OUTLET	LT	1453+07.00 to 1453+39.00
	213	264							264				1		1			29			166	2.6	3.2							IN-1456-R TO IN-1454-R	RT	1454+25.00 to 1456+90.00
																														T-465		
	42				32									1		1					35	3.7	5							IN-BR-400-S TO IN-BR-400-L	RT / LT	400+58.00 to 400+60.00
	36				32									1	1						30	1.3	3.6							IN-BR-400-R TO IN-BR-400-S	RT	400+58.00 to 400+90.00
	55				52									1	1						44	2.3	2.8							IN-BR-401-L1 TO IN-BR-400-L	LT	400+60.00 to 401+15.00
	43					36								1	1						35	2.4	3.5							IN-BR-401-R TO IN-BR-400-R	RT	400+90.00 to 401+25.00
	50				48									1	1						39	2.3	2.7							IN-BR-401-L2 TO IN-BR-401-L1	LT	401+15.00 to 401+68.00
																														SR 219 / T-465		
	56					52								1	1						45	1.9	3.1							IN-1448-R TO IN-BR-400-S	RT	1448+65.00 to 400+58.00
																														T-465 / SR 219		
	99					52								1	1						87	4	8.3							IN-BR-400-L TO IN-1449-R	LT / RT	400+60.00 to 1449+65.00
485	1636	264	36	8	164	672	280	100	264	1	2	1	3	13	15	1	1	29			1719	50.7	90.6							TOTALS		

SHEET 1 OF 1 PROJECT ID: 2378 MPMS: 111865 ECMS: 111865 6/13/2019 9:13:13 AM

D-9012 CADD (02-90) REVISED (06-18)

PLOTTED: 10-DEC-2020 11:27

PLAN PREPARATION
PROJECT MANAGER _____
DESIGNER _____

DISTRICT	COUNTY	TOWNSHIP	BOROUGH	ROUTE	SECTION	TOTAL SHEETS

MPMS NO.

PLATE B-VIII
EXAMPLE OF TITLE SHEET
FOR RIGHT-OF-WAY PLANS

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

DRAWINGS AUTHORIZING ACQUISITION
OF
RIGHT-OF-WAY
FOR

STATE ROUTE _____ **SECTION** _____

IN _____ **COUNTY**

FROM STA _____ TO STA _____ LENGTH _____ FT _____ MI.
FROM SEG _____ OFFSET _____ TO SEG _____ OFFSET _____

THIS PLAN PREPARED PURSUANT TO SECTION 2003(e) OF THE ADMINISTRATIVE CODE, AS AMENDED, 71 P.S. SECTION 513(e), AND SECTION 302(b)(3) OF THE EMINENT DOMAIN CODE, 26 Pa. C.S., SECTION 302(b)(3).

SCALE

HORIZONTAL 0 25 50 FEET

VERTICAL 0 5 10 FEET

DESIGN DESIGNATION

HIGHWAY CLASSIFICATION -
DESIGN SPEED -
PAVEMENT WIDTH -
SHOULDER WIDTH -

TRAFFIC DATA

CURRENT A.D.T. -
DESIGN YEAR A.D.T. -
D.H.V. -
D -
T -

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC. IN COUNTY, PA.

IN BOOK PAGE

WITNESS MY HAND AND SEAL OF OFFICE

DATE

RECORDER

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF DAUPHIN SS
BEFORE ME, A NOTARY PUBLIC, PERSONALLY CAME KNOWN TO ME OR SATISFACTORILY PROVEN TO BE THE PERSON WHO HAS BEEN AUTHORIZED BY WRITTEN DELEGATION TO AFFIX THE FACSIMILE SIGNATURE OF SECRETARY OF TRANSPORTATIONON PLANS AUTHORIZING ACQUISITION OF RIGHT-OF-WAY BY THE DEPARTMENT OF TRANSPORTATION, AND AS SUCH AUTHORIZED REPRESENTATIVE ACKNOWLEDGED THE WITHIN PLAN, COMPRISING SHEETS. TO BE AN OFFICIAL PLAN OF THE DEPARTMENT OF TRANSPORTATION AND DESIRED THAT THE SAME BE RECORDED AS SUCH. WITNESS MY HAND AND NOTARIAL SEAL

PREPARED BY:

DISTRICT CHIEF OF SURVEYS
DATE: _____

PREPARED BY:

ASST. DIST. EXEC.
DATE: _____

RECOMMENDED DATE: _____
DISTRICT PLANS ENGINEER

RECOMMENDED DATE: _____
DISTRICT EXECUTIVE

RECOMMENDED DATE: _____
DEPUTY SECRETARY

APPROVED DATE: _____
SECRETARY OF TRANSPORTATION
(ON BEHALF OF THE GOVERNOR AS WELL AS THE SECRETARY)

OPERATOR: brhardie
FILE NAME: C:\Bentley_CADD\Organization-CMS\Part\DOT Design\Standards\Sheets\Title Sheets sheet.dgn

D-9012 CADD (02-90) REVISED (06-18)

PLOTTED: 10-DEC-2020 11:28

PLAN PREPARATION
PROJECT MANAGER _____
DESIGNER _____

DISTRICT	COUNTY	TOWNSHIP	BOROUGH	ROUTE	SECTION	TOTAL SHEETS

MPMS/ECMS NO.

PLATE B-IX
EXAMPLE OF TITLE SHEET
FOR DESIGN-BUILD PLANS

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

CONCEPTUAL DESIGN DRAWINGS
FOR
CONSTRUCTION
OF

STATE ROUTE _____ **SECTION** _____

IN _____ **COUNTY**

FROM STA _____ TO STA _____ LENGTH _____ FT _____ MI.
FROM SEG _____ OFFSET _____ TO SEG _____ OFFSET _____

SCALE

HORIZONTAL 0 25 50 FEET

VERTICAL 0 5 10 FEET

DESIGN DESIGNATION

HIGHWAY CLASSIFICATION -
DESIGN SPEED -
PAVEMENT WIDTH -
SHOULDER WIDTH -

TRAFFIC DATA

CURRENT A.D.T. -
DESIGN YEAR A.D.T. -
D.H.V. -
D -
T -

PREPARED BY:

ASST. DIST. EXEC.
DATE: _____

RECOMMENDED DATE: _____
DISTRICT PLANS ENGINEER
RECOMMENDED DATE: _____
DISTRICT EXECUTIVE
RECOMMENDED DATE: _____
DEPUTY SECRETARY
APPROVED DATE: _____
SECRETARY OF TRANSPORTATION
(ON BEHALF OF THE GOVERNOR
AS WELL AS THE SECRETARY)

OPERATOR: lrhoads
FILE NAME: C:\Sandbox_CRD\Organization-CM\Pen\DOT Design\Standards\Seed\Sheets\Title Sheets seed.dgn

PLATE B-X (1:5 SCALE)
EXAMPLE OF CROSS SECTION SHEET

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
CROSS SECTIONS
SCALE: 1 INCH = 5 FEET

Dist.	County	Route	Sect.	Prelim. Bk. No.	Final Bk. No.	Sheet No.
						OF

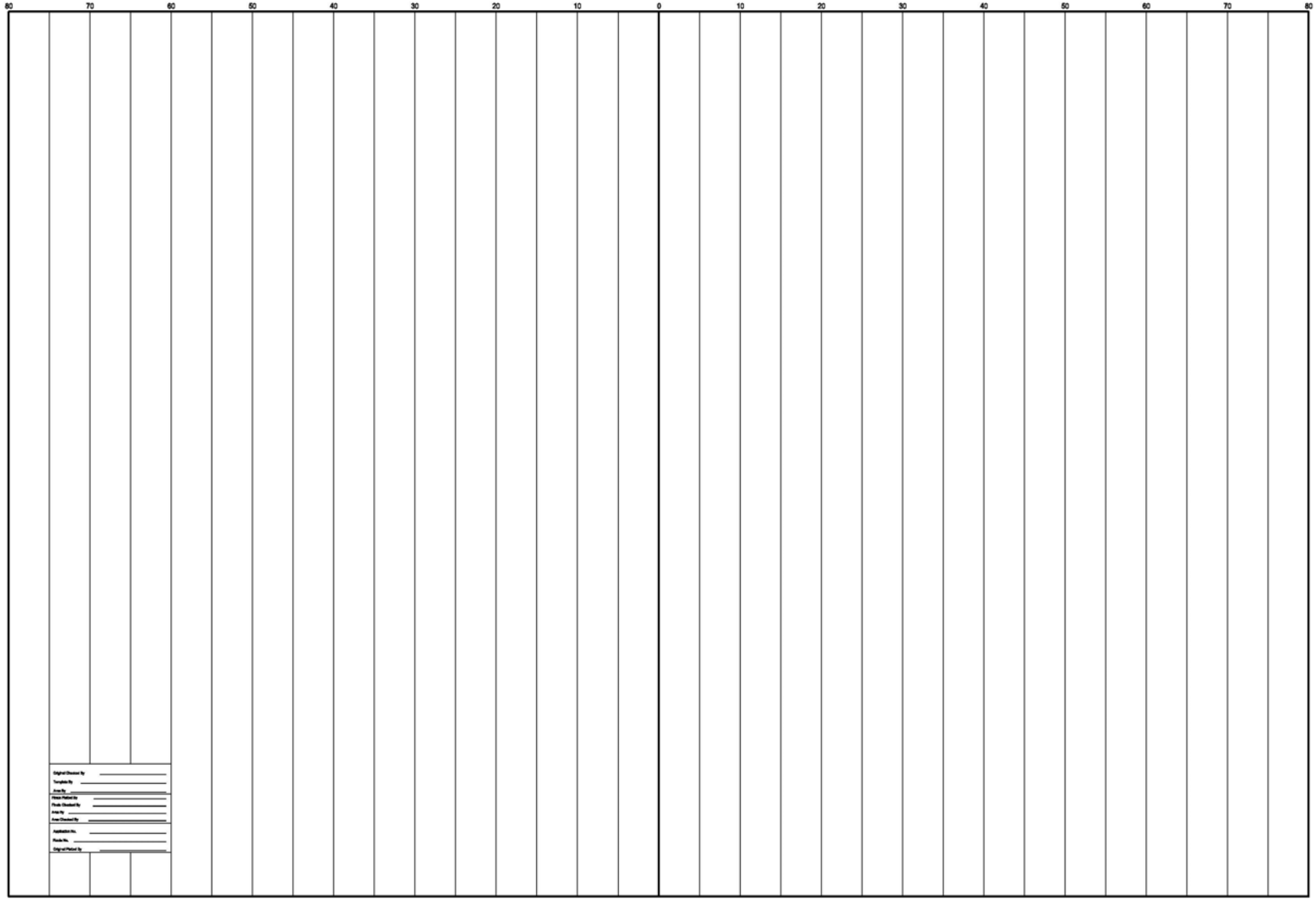


PLATE B-X (1:10 SCALE)
EXAMPLE OF CROSS SECTION SHEET

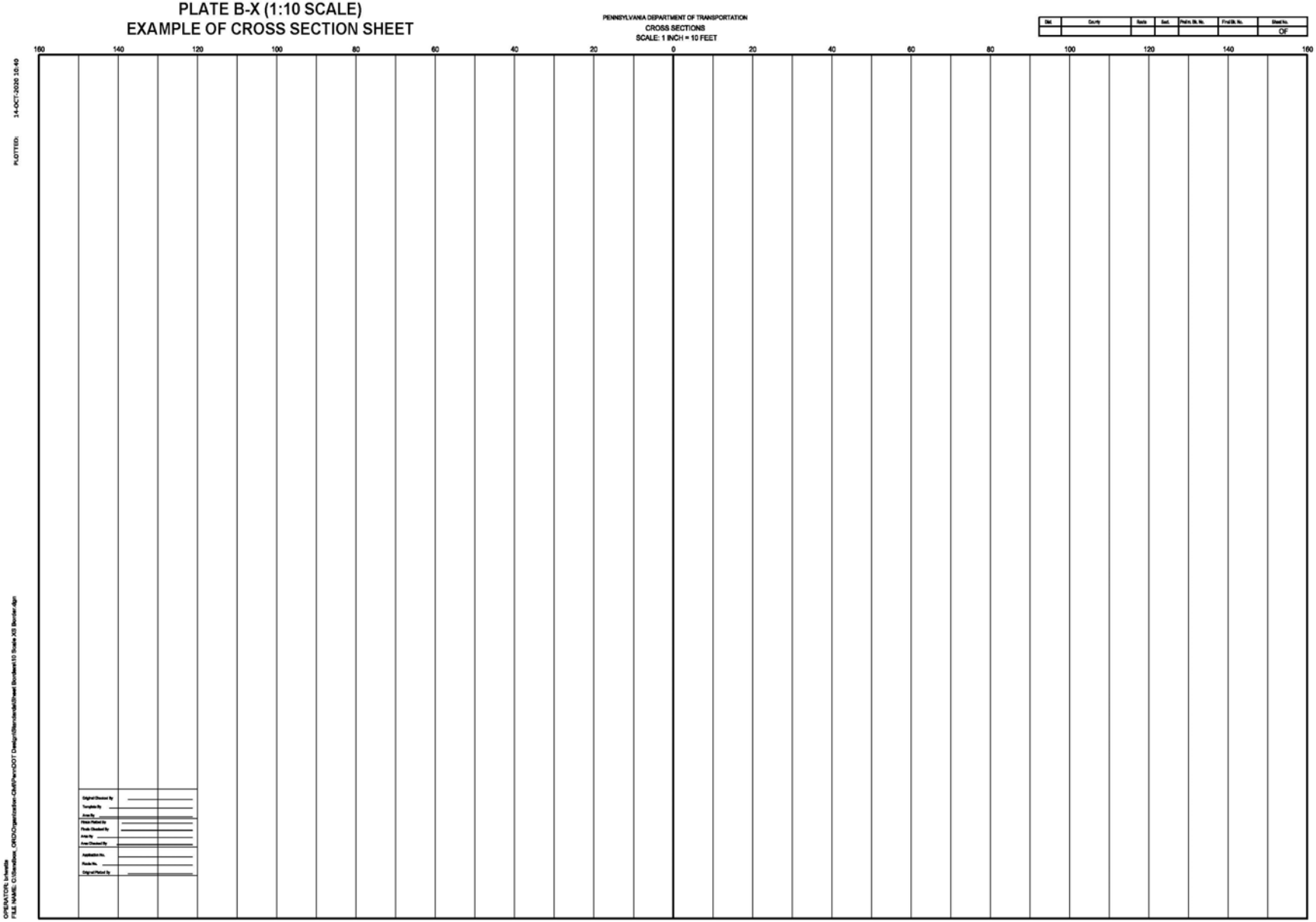
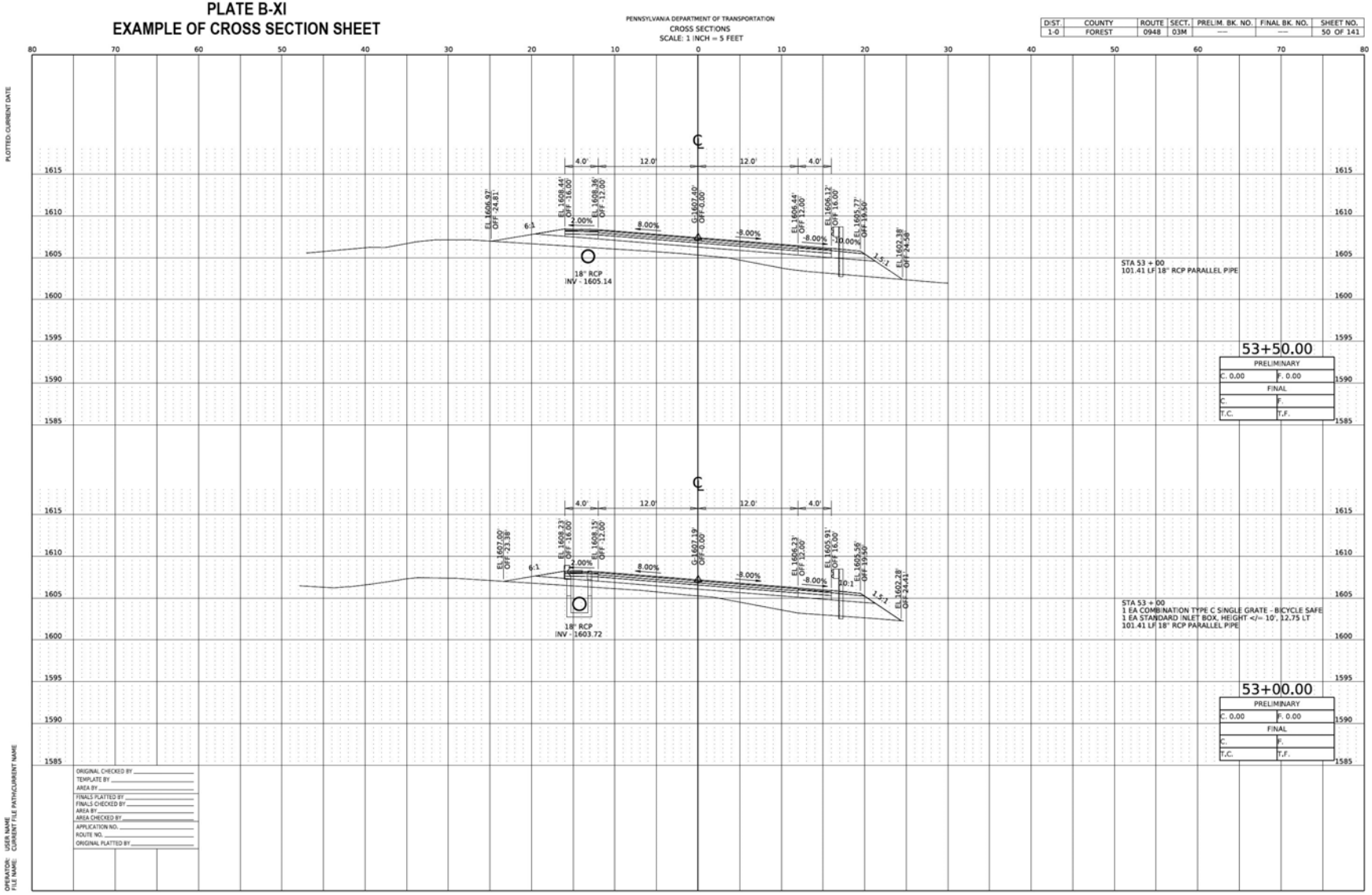


PLATE B-XI
EXAMPLE OF CROSS SECTION SHEET



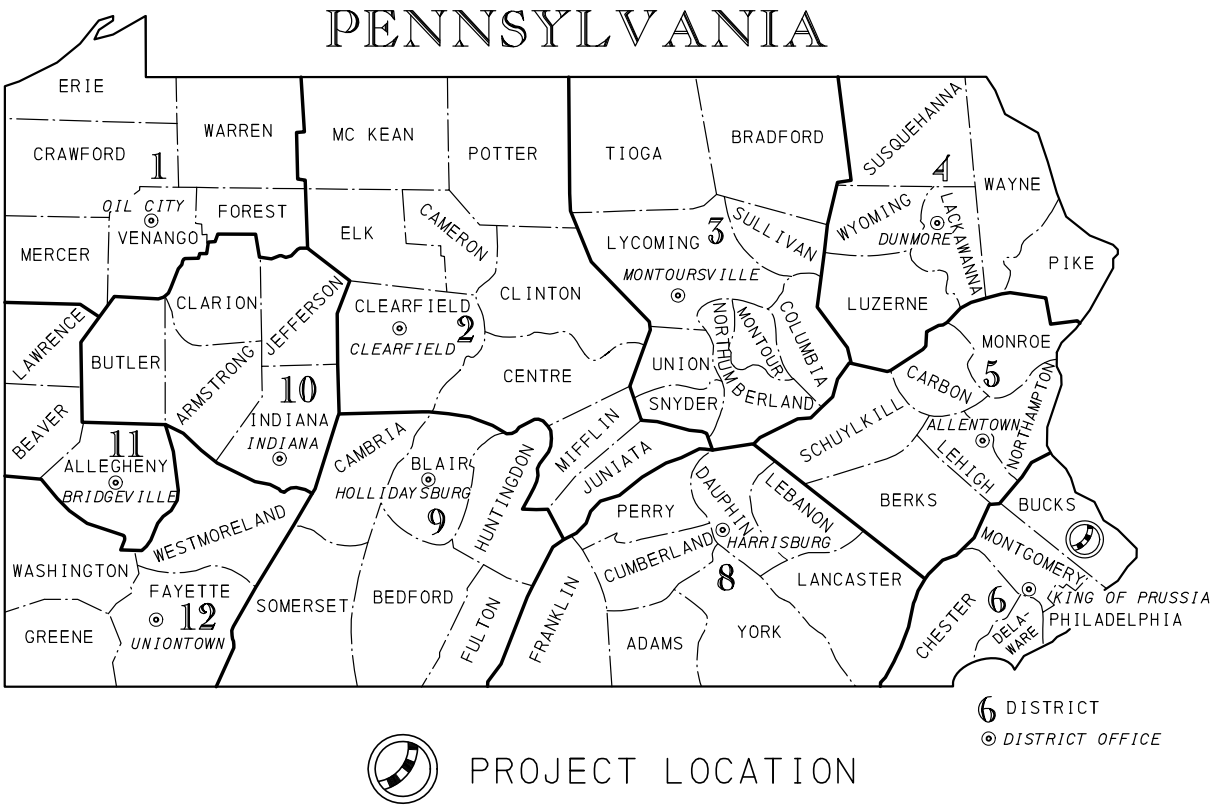


PLATE B-XII
PROJECT LOCATION MAP

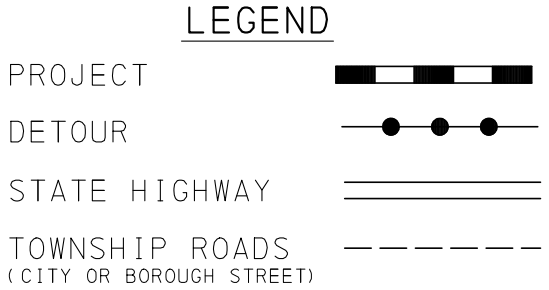


PLATE B-XIII
LOCATION MAP LEGEND

D-9012 CADD (02-90) REVISED (06-18)

PLOTTED: 29-DEC-2020 07:25

PLAN PREPARATION

PROJECT MANAGER _____

DESIGNER _____

DISTRICT	COUNTY	TOWNSHIP	BOROUGH	ROUTE	SECTION	TOTAL SHEETS

MPMS NO.

PLATE B-XIV
EXAMPLE OF TITLE SHEET
FOR RIGHT-OF-WAY BY TOWNSHIP

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

DRAWINGS AUTHORIZING ACQUISITION
OF
RIGHT-OF-WAY
FOR

STATE ROUTE _____ SECTION _____

IN _____ COUNTY

BY _____ TOWNSHIP

ON BEHALF OF
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

FROM STA _____ TO STA _____ LENGTH _____ FT _____ MI.

FROM SEG _____ OFFSET _____ TO SEG _____ OFFSET _____

THIS PLAN PREPARED PURSUANT TO SECTIONS 2003(e) AND 2002(a)(6) AND (7) OF THE ADMINISTRATIVE CODE, AS AMENDED, 71 P.S. SECTIONS 513(e) AND 512(a)(6) AND (7), SECTION 302(b)(3) OF THE EMINENT DOMAIN CODE, 26 Pa. C.S. SECTION 302(b)(3), AND APPROPRIATE MUNICIPAL AUTHORITY FOR THE PURPOSE OF AUTHORIZING AND APPROVING THE LOCAL MUNICIPALITY TO ACQUIRE RIGHT-OF-WAY FOR STATE HIGHWAY PURPOSES ON BEHALF OF THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF TRANSPORTATION.

SCALE

HORIZONTAL 0 25 50 FEET

VERTICAL 0 5 10 FEET

DESIGN DESIGNATION

HIGHWAY CLASSIFICATION -
DESIGN SPEED -
PAVEMENT WIDTH -
SHOULDER WIDTH -

TRAFFIC DATA

CURRENT A.D.T. -
DESIGN YEAR A.D.T. -
D.H.V. -
D -
T -

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC. IN COUNTY, PA.

IN BOOK PAGE

WITNESS MY HAND AND SEAL OF OFFICE

_____ DATE

_____ RECORDER

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF DAUPHIN SS
BEFORE ME, A NOTARY PUBLIC, PERSONALLY CAME , KNOWN TO ME OR SATISFACTORILY PROVEN TO BE THE PERSON WHO HAS BEEN AUTHORIZED BY WRITTEN DELEGATION TO AFFIX THE FACSIMILE SIGNATURE OF SECRETARY OF TRANSPORTATION, ON PLANS AUTHORIZING ACQUISITION OF RIGHT-OF-WAY BY THE DEPARTMENT OF TRANSPORTATION, AND AS SUCH AUTHORIZED REPRESENTATIVE ACKNOWLEDGED THE WITHIN PLAN, COMPRISING SHEETS, TO BE AN OFFICIAL PLAN OF THE DEPARTMENT OF TRANSPORTATION AND DESIRED THAT THE SAME BE RECORDED AS SUCH. WITNESS MY HAND AND NOTARIAL SEAL

_____

PREPARED BY:

_____ DISTRICT CHIEF OF SURVEYS
DATE: _____

PREPARED BY:

_____ ASST. DIST. EXEC.
DATE: _____

RESOLUTION NUMBER _____
RECOMMENDED DATE: _____
LOCAL GOVERNMENT OFFICIAL
RECOMMENDED DATE: _____
DISTRICT EXECUTIVE
RECOMMENDED DATE: _____
DEPUTY SECRETARY
APPROVED DATE: _____
SECRETARY OF TRANSPORTATION
(ON BEHALF OF THE GOVERNOR AS WELL AS THE SECRETARY)

OPERATOR: brivetts
FILE NAME: C:\Sandbox_ORD\Organization-Civil\Pen\DOT Design\Standards\Seed\Sheets\Title Sheets seed.dgn

D-9012 CADD (02-90) REVISED (06-18)

PLOTTED: 29-DEC-2020 07:26

PLAN PREPARATION
PROJECT MANAGER _____
DESIGNER _____

DISTRICT	COUNTY	TOWNSHIP	BOROUGH	ROUTE	SECTION	TOTAL SHEETS

PLATE B-XV
EXAMPLE OF RIGHT-OF-WAY
TITLE SHEET
DEEDED TO THE COMMONWEALTH

DRAWINGS DEPICTING RIGHT-OF-WAY
TO BE DEEDED TO THE

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

UNDER HOP APPLICATION NO. _____

BY _____

FOR

STATE ROUTE _____ **SECTION** _____

IN _____ **COUNTY**

FROM STA _____ TO STA _____ LENGTH _____ FT _____ MI.

FROM SEG _____ OFFSET _____ TO SEG _____ OFFSET _____

THIS PLAN PREPARED TO DOCUMENT THE RIGHT-OF-WAY FOR STATE HIGHWAY PURPOSES THAT WILL BE DEEDED TO THE COMMONWEALTH AS REQUIRED BY THE PROVISIONS OF 67 PA. CODE CHAPTER 441, ENTITLED "ACCESS TO AND OCCUPANCY OF HIGHWAYS BY DRIVEWAYS AND LOCAL ROADS."

SCALE

HORIZONTAL 0 25 50 FEET

VERTICAL 0 5 10 FEET

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC. IN COUNTY, PA.

IN BOOK PAGE

WITNESS MY HAND AND SEAL OF OFFICE

_____ DATE

_____ RECORDER

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF DAUPHIN SS
BEFORE ME, A NOTARY PUBLIC, PERSONALLY CAME , KNOWN TO ME OR SATISFACTORILY PROVEN TO BE THE PERSON WHO HAS BEEN AUTHORIZED BY WRITTEN DELEGATION TO AFFIX THE FACSIMILE SIGNATURE OF SECRETARY OF TRANSPORTATION, ON PLANS AUTHORIZING ACQUISITION OF RIGHT-OF-WAY BY THE DEPARTMENT OF TRANSPORTATION, AND AS SUCH AUTHORIZED REPRESENTATIVE ACKNOWLEDGED THE WITHIN PLAN, COMPRISING SHEETS, TO BE AN OFFICIAL PLAN OF THE DEPARTMENT OF TRANSPORTATION AND DESIRED THAT THE SAME BE RECORDED AS SUCH.
WITNESS MY HAND AND NOTARIAL SEAL

_____

PREPARED BY:

_____ DISTRICT CHIEF OF SURVEYS
DATE: _____

PREPARED BY:

_____ ASST. DIST. EXEC.
DATE: _____

APPROVED DATE: _____
_____ DISTRICT EXECUTIVE

RECOMMENDED DATE: _____
_____ DEPUTY SECRETARY

APPROVED DATE: _____
_____ SECRETARY OF TRANSPORTATION
(ON BEHALF OF THE GOVERNOR AS WELL AS THE SECRETARY)

OPERATOR: brwatts
FILE NAME: C:\Sandbox_ORD\Organization-Civil\PennDOT Design\Standards\Seed\Sheets\Title Sheets seed.dgn

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APPENDIX C

COMPUTER AIDED DRAFTING AND DESIGN (CADD) LEGACY NUMERIC LEVELS

TABLE C.1
LEVELS FOR ROADWAY DRAWINGS
FOR DEPARTMENT CADD USAGE

SHEET	LEVEL	DESCRIPTION
TITLE SHEET	1	ALL INFORMATION
INDEX SHEET	1	BORDER AND INDEX ASSOCIATED TEXT (RECORD OF EXISTING ROAD TYPES, STRAIGHT LINE DIAGRAM DATA, LOCATION OF PROJECT ON STATE MAP, TABLE OF CONTENTS)
	2	HORIZONTAL ALIGNMENTS
	3	NORTH ARROW, BAR SCALE
	4	EDGE OF EXISTING ROADWAYS, ROADWAY BRIDGES, TOWNSHIP ROADS, SIDE ROADS, ETC.
	5	TEXT FOR LEVEL 4
	6	SHEET DIVISION MARKERS, SYMBOLS WITH TEXT
	8	RAILROADS
	9	TEXT FOR LEVEL 8
	10	POLITICAL SUBDIVISIONS, PROPERTY LINES
	11	TEXT FOR LEVEL 10
	14	EDGES OF STREAMS, CREEKS, RIVERS, ETC.
	15	TEXT FOR LEVEL 14
	32	CONSTRUCTION CENTERLINES, OTHER PROPOSED ALIGNMENTS
	33	TEXT FOR LEVEL 32
	36	TEMPORARY ROADWAYS
	37	TEXT FOR LEVEL 36
	44	PROPOSED CHANNEL CHANGES
	45	TEXT FOR LEVEL 44

TABLE C.1
LEVELS FOR ROADWAY DRAWINGS
FOR DEPARTMENT CADD USAGE
(CONTINUED)

SHEET	LEVEL	DESCRIPTION
TYPICAL SECTION SHEET	1	BORDER AND ASSOCIATED TEXT, GENERAL NOTES, UTILITIES, LOCATION MAP
	2	ALL LINE WORK FOR TYPICALS AND DETAILS INCLUDING DIMENSION LINES
	3	ALL TEXT FOR TYPICALS AND DETAILS
SUMMARY SHEET	1	BORDER AND ASSOCIATED TEXT AND ITEMS
	21	QUANTITIES FOR SUMMARY SHEET NO. 1 (IF MORE THEN ONE SUMMARY SHEET, QUANTITIES SHALL BE ON LEVELS 22, 23...)
TABULATION SHEET	1	BORDER AND ASSOCIATED TEXT AND ITEMS
	21	QUANTITIES FOR TABULATION SHEET NO. 1, STATIONS, AND REMARKS (IF MORE THEN ONE TABULATION SHEET, QUANTITIES SHALL BE ON LEVELS 22, 23...)
	62	BLOCK NUMBERS (NUMBERS DO NOT SHOW ON FINISHED PLAN)
DETAIL SHEET EXISTING	1	BORDER AND ASSOCIATED TEXT
	2	SURVEY BASELINES AND PROFILES
	3	TEXT FOR LEVEL 2 (STATIONS, CURVE DATA, ROAD NAMES, NORTH ARROW, BEARINGS, TIES, ELEVATIONS, BENCH MARKS, BAR SCALE)
	4	EXISTING ROAD EDGES, TOWNSHIP ROADS, SIDE ROADS, CURB, MEDIAN BARRIER, ROAD BRIDGES
	5	TEXT FOR LEVEL 4
	6	TREES, WOODS, SHRUBS, HEDGE ROWS
	7	TEXT FOR LEVEL 6

TABLE C.1
LEVELS FOR ROADWAY DRAWINGS
FOR DEPARTMENT CADD USAGE
(CONTINUED)

SHEET	LEVEL	DESCRIPTION
DETAIL SHEET EXISTING (Continued)	8	RAILROADS, RAILROAD STRUCTURES, EXISTING R/W LINES
	9	TEXT FOR LEVEL 8
	10	BUILDINGS AND ASSOCIATED ITEMS (SIDEWALKS, WELLS, FENCES, SEPTIC SYSTEMS, MAILBOXES, PROPERTIES, BOROUGH & TOWNSHIP LINES, ETC.)
	11	TEXT FOR LEVEL 10
	12	MISCELLANEOUS TOPOGRAPHY, GUIDE RAIL, SIGNS, BILLBOARDS
	13	TEXT FOR LEVEL 12
	14	ALL EXISTING DRAINAGE (PIPES, STREAMS INLETS, DITCHES, HEADWALLS, WET AREAS)
	15	TEXT FOR LEVEL 14
	16	UNDERGROUND UTILITIES (WATER VALVES, MANHOLES, ETC.)
	17	TEXT FOR LEVEL 16 AND LEVEL 18
	18	ABOVE GROUND UTILITIES
	19	MAPPING GRID AND COORDINATES
	20	CONTOURS AND CONTOUR TEXT
DETAIL SHEET PROPOSED	32	PROPOSED HORIZONTAL AND VERTICAL ALIGNMENTS, RAILROAD REALIGNMENTS
	33	TEXT FOR LEVEL 32 (STATIONS, CURVE DATA, BEARINGS, GRADES, ETC.)
	34	PROPOSED ROAD EDGES, SIDE ROADS, SHOULDERS, ROADWAY BRIDGES
	35	TEXT FOR LEVEL 34
	36	TEMPORARY ROADWAYS

TABLE C.1
LEVELS FOR ROADWAY DRAWINGS
FOR DEPARTMENT CADD USAGE
(CONTINUED)

SHEET	LEVEL	DESCRIPTION
DETAIL SHEET PROPOSED (Continued)	37	TEXT FOR LEVEL 36
	38	REQUIRED R/W LINES, TEMPORARY EASEMENTS, R/W FENCES
	39	TEXT FOR LEVEL 38 (TO INCLUDE CONDEMNATION AND DEMOLITION MARKERS
	40	SIDEWALKS AND CURBS
	41	TEXT FOR LEVEL 40
	42	MISCELLANEOUS PROPOSED WORK (RETAINING WALLS, SOIL EROSION, GUIDE RAIL, MEDIAN BARRIER, ETC.)
	43	TEXT FOR LEVEL 42
	44	PROPOSED DRAINAGE (PIPES, INLETS, DITCHES, STREAM RELOCATIONS, HEADWALLS, ETC.)
	45	TEXT FOR LEVEL 44
	46	PROPOSED UNDERGROUND UTILITIES
	47	TEXT FOR LEVEL 46 AND LEVEL 48
	48	PROPOSED ABOVE GROUND UTILITIES
	50	PROPOSED CONTOURS AND CONTOUR TEXT
	62	TRAVERSE WITH TEXT AND ANY TEMPORARY ITEMS (REFERENCE POINT CELLS, GRID, ETC.)

TABLE C.2
LEVELS FOR BRIDGE DRAWINGS
FOR DEPARTMENT CADD USAGE

LEVEL	DESCRIPTION
1	BRIDGE SHEETS
2	EXISTING HORIZONTAL ALIGNMENT
3	GENERAL NOTES, QUANTITIES, BAR SCHEDULE, DETAIL CELLS AND MISCELLANEOUS NOTES
4	EXISTING ROAD EDGES AND EXISTING BRIDGE PLAN
5	EXISTING SUBSTRUCTURE PLAN TO BE RETAINED
6	EXISTING SUBSTRUCTURE PLAN TO BE REMOVED
7	PROPOSED STRUCTURE MOUNTED GUIDE RAIL -- SECTION
8	EXISTING RAILROAD PLAN
9	STAKE-OUT PLAN
10	EXISTING SIDEWALK (ROADWAY) -- PLAN
11	TYPICAL EXISTING SUPERSTRUCTURE SECTION
12	TYPICAL EXISTING DECK SECTION
13	TYPICAL PROPOSED DECK SECTION
14	EDGES OF STREAMS, CREEKS, RIVERS, ETC.
15	TYPICAL PROPOSED SUPERSTRUCTURE SECTION
16	EXISTING UNDERGROUND UTILITIES -- PLAN
17	REINFORCEMENT -- PROPOSED DECK SECTION
18	PROPOSED ROCK PLAN
19	PROPOSED ROCK SECTION
20	EXISTING CONTOURS AND CONTOUR TEXT
21	OUTLINE -- PROPOSED SUPERSTRUCTURE PLAN
22	REINFORCEMENT -- PROPOSED SUPERSTRUCTURE PLAN
23	FRAMING PLAN
24	OUTLINE -- PROPOSED ABUTMENT AND PIER PLAN

TABLE C.2
LEVELS FOR BRIDGE DRAWINGS
FOR DEPARTMENT CADD USAGE
(CONTINUED)

LEVEL	DESCRIPTION
25	OUTLINE -- FOOTING PLAN
26	REINFORCEMENT -- FOOTING PLAN
27	SUBSTRUCTURE PLAN AT BEAM SEAT ELEVATION
28	PLAN AT DECK JOINT
29	OUTLINE -- PROPOSED SUBSTRUCTURE ELEVATION
30	REINFORCEMENT -- PROPOSED SUBSTRUCTURE ELEVATION
31	ELEVATION FOR GENERAL PLAN SHEET
32	PROPOSED HORIZONTAL ALIGNMENT AND RAILROAD REALIGNMENTS
33	EXISTING GROUND LINE INCLUDING TEXT
34	PROPOSED ROAD EDGES AND SHOULDERS
35	PROPOSED GROUND LINE INCLUDING TEXT
36	OUTLINE -- PROPOSED SUBSTRUCTURE SECTION
37	REINFORCEMENT -- PROPOSED SUBSTRUCTURE SECTION
38	OUTLINE -- PROPOSED WINGWALL PLAN
39	(Not Assigned)
40	(Not Assigned)
41	(Not Assigned)
42	PROPOSED STRUCTURE MOUNTED GUIDE RAIL -- PLAN
43	TEXT AND DIMENSIONS FOR GENERAL PLAN
44	PROPOSED DRAINAGE (PIPES, INLETS, STREAM RELOCATIONS, BRIDGE SCUPPERS, DECK DRAINS, ETC.)
45	TEXT AND DIMENSIONS FOR ELEVATION ON GENERAL PLAN SHEET
46	PROPOSED UNDERGROUND UTILITIES -- PLAN

TABLE C.2
LEVELS FOR BRIDGE DRAWINGS
FOR DEPARTMENT CADD USAGE
(CONTINUED)

LEVEL	DESCRIPTION
47	TEXT AND DIMENSIONS FOR TYPICAL EXISTING DECK SECTION
48	TEXT AND DIMENSIONS FOR TYPICAL PROPOSED DECK SECTION
49	TEXT AND DIMENSIONS FOR STAKE-OUT PLAN
50	PROPOSED CONTOURS AND CONTOUR TEXT
51	TEXT AND DIMENSIONS FOR EXISTING SUBSTRUCTURE PLAN
52	TEXT AND DIMENSIONS FOR EXISTING SUBSTRUCTURE PLAN
53	TEXT AND DIMENSIONS FOR SUBSTRUCTURE PLAN AT BEAM SEAT ELEVATION
54	TEXT AND DIMENSIONS FOR FOOTING PLAN
55	TEXT AND DIMENSIONS FOR SUBSTRUCTURE ELEVATION
56	TEXT AND DIMENSIONS FOR SUBSTRUCTURE SECTION
57	TEXT AND DIMENSIONS FOR FRAMING PLAN
58	TEXT AND DIMENSIONS FOR SLAB PLAN
59	TEXT AND DIMENSIONS FOR REINFORCED DECK SECTION
60	TEXT AND DIMENSIONS FOR DECK JOINT PLAN
61	TEXT AND DIMENSIONS FOR SOILS BORING LOCATION PLAN
62	PLAN REVISIONS
63	PLAN REVISIONS

TABLE C.3
LEVELS FOR CULVERT DRAWINGS
FOR DEPARTMENT CADD USAGE

LEVEL	DESCRIPTION
1	BRIDGE SHEETS
2	EXISTING HORIZONTAL ALIGNMENT
3	GENERAL NOTES, QUANTITIES, BAR SCHEDULE, SCALED CELLS AND MISCELLANEOUS NOTES
4	EXISTING ROAD EDGES AND EXISTING BRIDGE PLAN
5	EXISTING STRUCTURE PLAN TO BE REMOVED
6	EXISTING STRUCTURE PLAN TO BE RETAINED
7	PROPOSED GUIDE RAIL -- SECTION
8	EXISTING RAILROAD PLAN
9	STAKE-OUT SKETCH
10	EXISTING SIDEWALK (ROADWAY) PLAN
11	OUTLINE -- PROPOSED CULVERT PLAN
12	OUTLINE -- INLET AND OUTLET PLANS (APRONS & WINGS)
13	REINFORCEMENT -- PROPOSED CAST-IN-PLACE BOX PLAN
14	EDGES OF STREAMS, CREEKS, RIVERS, ETC.
15	ELEVATION FOR GENERAL PLAN SHEET
16	EXISTING UNDERGROUND UTILITIES -- PLANS
17	(Not Assigned)
18	PROPOSED ROCK PLAN
19	PROPOSED ROCK SECTION
20	EXISTING CONTOURS AND CONTOUR TEXT
21	OUTLINE -- FOOTING PLAN
22	REINFORCEMENT FOOTING PLAN
23	REINFORCEMENT -- PROPOSED INLET PLAN
24	REINFORCEMENT -- PROPOSED INLET ELEVATION

TABLE C.3
LEVELS FOR CULVERT DRAWINGS
FOR DEPARTMENT CADD USAGE
(CONTINUED)

LEVEL	DESCRIPTION
25	REINFORCEMENT -- PROPOSED OUTLET PLAN
26	REINFORCEMENT -- PROPOSED OUTLET ELEVATION
27	OUTLINE -- PROPOSED WING ELEVATION
28	REINFORCEMENT -- PROPOSED WING ELEVATION
29	OUTLINE -- PROPOSED BOX SECTION
30	REINFORCEMENT -- PROPOSED BOX SECTION
31	(Not Assigned)
32	PROPOSED HORIZONTAL ALIGNMENT AND RAILROAD REALIGNMENTS
33	EXISTING GROUND LINE INCLUDING TEXT
34	PROPOSED ROAD EDGES AND SHOULDERS
35	PROPOSED GROUND LINE INCLUDING TEXT
36	(Not Assigned)
37	(Not Assigned)
38	PROPOSED COLLAR ELEVATION
39	REINFORCEMENT PROPOSED COLLAR ELEVATION
40	(Not Assigned)
41	(Not Assigned)
42	PROPOSED GUIDE RAIL – PLAN
43	TEXT AND DIMENSIONS FOR GENERAL PLAN
44	PROPOSED DRAINAGE (PIPES, INLETS, STREAM RELOCATIONS)
45	TEXT AND DIMENSIONS FOR ELEVATION FOR GENERAL PLAN SHEET
46	PROPOSED UNDERGROUND UTILITIES – PLAN
47	TEXT AND DIMENSIONS FOR INLET PLAN

TABLE C.3
LEVELS FOR CULVERT DRAWINGS
FOR DEPARTMENT CADD USAGE
(CONTINUED)

LEVEL	DESCRIPTION
48	TEXT AND DIMENSIONS FOR INLET ELEVATION
49	TEXT AND DIMENSIONS FOR STAKE-OUT SKETCH
50	PROPOSED CONTOURS AND CONTOUR TEXT
51	TEXT AND DIMENSIONS FOR OUTLET PLAN
52	TEXT AND DIMENSIONS FOR OUTLET ELEVATION
53	TEXT AND DIMENSIONS FOR FOOTING PLAN
54	(Not Assigned)
55	(Not Assigned)
56	(Not Assigned)
57	(Not Assigned)
58	(Not Assigned)
59	(Not Assigned)
60	(Not Assigned)
61	TEXT AND DIMENSIONS FOR SOILS BORING LOCATION PLAN
62	PLAN REVISIONS
63	PLAN REVISIONS

DESIGN FILE WORKING UNITS

ROADWAY (ENGLISH)

1:1:1000

Master Units	ft
Sub Units	none
1000	Positional Units per ft
Working Area	4,294,967 ft × 4,294,967 ft

This allows for an accuracy of 0.001 ft.

BRIDGE (ENGLISH)

1:12:1000

Master Units	ft
Sub Units	in
12	in per ft
1000	Positional Units per in
Working Area	357,913 ft × 357,913 ft

This allows for an accuracy of 0.001 in.

TABLE C.4
STANDARD ROADWAY TEXT SIZES USING WORKING UNITS OF 1:1:1000

TEXT HEIGHT (in)	0.120	0.140	0.175	0.200	0.240	0.290	0.350	0.425	0.500
LINE WIDTH (in)	0.015	0.015	0.020	0.025	0.025	0.030	0.030	0.035	0.040
LINE WEIGHT	2	2	3	4	4	5	5	6	7
ENGLISH SCALE	**EQUIVALENT TEXT HEIGHT (in)**								
1" = 5'	0.60	0.70	0.875	1.00	1.20	1.45	1.75	2.125	2.50
1" = 10'	1.20	1.40	1.75	2.00	2.40	2.90	3.50	4.25	5.00
1" = 25'	3.00	3.50	4.375	5.00	6.00	7.25	8.75	10.625	12.50
1" = 50'	6.00	7.00	8.75	10.00	12.00	14.50	17.50	21.25	25.00
1" = 100'	12.00	14.00	17.50	20.00	24.00	29.00	35.00	42.50	50.00

TABLE C.5
STANDARD BRIDGE TEXT SIZES USING WORKING UNITS OF 1:12:1000

TEXT HEIGHT (in)	0.120	0.140	0.175	0.200	0.240	0.290
LINE WIDTH (in)	0.015	0.015	0.020	0.025	0.025	0.030
LINE WEIGHT	2	2	3	4	4	5
ENGLISH SCALE	**EQUIVALENT TEXT HEIGHT (in)**					
1/8" = 1'-0"	0.96	1.12	1.40	1.60	1.92	2.32
1/4" = 1'-0"	0.48	0.56	0.73	0.80	0.96	1.16
3/8" = 1'-0"	0.32	0.37	0.47	0.53	0.64	0.77
1/2" = 1'-0"	0.24	0.28	0.35	0.40	0.48	0.58
3/4" = 1'-0"	0.16	0.19	0.23	0.27	0.32	0.39
1" = 1'-0"	0.12	0.14	0.175	0.20	0.24	0.29
1 1/2" = 1'-0"	0.08	0.09	0.12	0.13	0.16	0.19
3" = 1'-0"	0.04	0.05	0.06	0.07	0.08	0.10
1" = 10'	1.20	1.40	1.75	2.00	2.40	2.90
1" = 20'	2.40	2.80	3.50	4.00	4.80	5.80
1" = 25'	3.00	3.50	4.375	5.00	6.00	7.25
1" = 30'	3.60	4.20	5.25	6.00	7.20	8.70
1" = 40'	4.80	5.60	7.00	8.00	9.60	11.60
1" = 50'	6.00	7.00	8.75	10.00	12.00	14.50
1" = 60'	7.20	8.40	10.50	12.00	14.40	17.40
1" = 100'	12.00	14.00	17.50	20.00	24.00	29.00
1" = 150'	18.00	21.00	26.25	30.00	36.00	43.50

TABLE C.6
LEGACY FONT LIBRARY STYLES

FONT LIBRARY STYLES

Font 5, PENNDOT VERTICAL

ABCDEFGHIJKLMNOPQRSTUVWXYZ

1234567890! @#$%° &*( ) +-=[ ]; ' \: "Ø,. /?~Δ

Font 7, COMPRESSED

ABCDEFGHIJKLMNOPQRSTUVWXYZ

1234567890-!#$& ✳ ():"?'

Font 25, PENNDOT SLANTED

ABCDEFGHIJKLMNOPQRSTUVWXYZ

1234567890! @#$%° &( ) +-=[ ]; '\: "Ø,. /?~Δ*

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
BORDERS		0.65 mm (0.025")	4	
CENTERLINES AND BASELINES	1.25 mm (0.05") 50 mm (2.0") 2.5 mm (0.10")	0.25 mm (0.01")	1	TO BE LABELED ON PLANS
SURVEY CENTERLINES	1.25 mm (0.05") 50 mm (2.0") 2.5 mm (0.10")	0.25 mm (0.01")	1	TO BE LABELED ON PLANS
DIMENSION LINES		0.13 mm (0.005")	0	
LEGAL R/W LINES	1.25 mm (0.05") 100 mm (4.0") 2.5 mm (0.10")	0.51 mm (0.02")	3	TO BE LABELED ON PLANS

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
REQUIRED R/W LINES	1.25 mm (0.05") 100 mm (4.0") 2.5 mm (0.10")	0.65 mm (0.025")	4	TO BE LABELED ON PLANS
TEMPORARY CONSTRUCTION EASEMENT		0.25 mm (0.01")	1	TO BE LABELED ON PLANS
PROPERTY LINES	1.25 mm (0.05") 50 mm (2.0") 1.25 mm (0.05")	0.25 mm (0.01")	1	
REQUIRED LIMIT OF SLOPE LINES		0.25 mm (0.01")	1	TO BE LABELED ON PLANS
EDGE OF NEW PAVEMENT		0.38 mm (0.015")	2	

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
EDGE OF EXISTING PAVEMENT	1.25 mm (0.05") 5.0 mm (0.20")	0.25 mm (0.01")	1	TO BE LABELED ON PLANS
SHOULDER LINES		0.51 mm (0.02")	3	
CURB EXISTING - PROPOSED -		0.25 mm (0.01") 0.38 mm (0.015")	1 2	EXISTING CURB TO BE LABELED ON PLAN
STATE, COUNTY, TOWNSHIP, CITY, OR BOROUGH LINES	25 mm (1.0") 2.5 mm (0.1") 2.5 mm (0.1")	0.51 mm (0.02")	3	
FENCE		0.51 mm (0.02")	3	

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
BACKFILLING EXISTING CHANNELS		0.13 mm (0.005")	0	
EXISTING INLETS		0.13 mm (0.005")	0	
PROPOSED INLETS		0.65 mm (0.025")	4	
EXISTING PIPES		0.13 mm (0.005")	0	
PROPOSED PIPES		0.76 mm (0.03")	5	
EXISTING DITCHES	APPROX 5.0 mm (0.20")	0.13 mm (0.005")	0	TO BE LABELED ON PLANS
PROPOSED DITCHES	APPROX 10.0 mm (0.40")	0.38 mm (0.015")	2	

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
RIGHT-OF WAY MONUMENTS	⊕ ◓	0.51 mm (0.02")	3	PROPOSED EXISTING
CULVERTS		0.76 mm (0.03")	5	
HEADWALLS		0.51 mm (0.02")	3	
MANHOLES		0.65 mm (0.025")	4	

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
SEWER LINE AND MANHOLE	S S 200 mm (8") S S	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING (LABEL SIZE)
WATER LINE AND VALVE	W W 200 mm (8") W W	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING (LABEL SIZE)
GAS LINE AND VALVE	G G 200 mm (8") G G	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING (LABEL SIZE)
ELECTRIC LINE	E E 200 mm (8") E E	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING
TELEPHONE LINE AND MANHOLE OR POLE	T T 200 mm (8") T T	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING

NOTES:

LETTERING FOR PROPOSED UTILITY SYMBOLS IS VERTICAL & 3.5 mm (0.14") IN HEIGHT.

LETTERING FOR EXISTING UTILITY SYMBOLS IS SLANTED & 3.0 mm (0.12") IN HEIGHT.

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
ELECTRIC-AERIAL	E E 200 mm (8") *E E*	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING
ELECTRIC UNDERGROUND	EU EU 200 mm (8") *EU EU*	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING
ELECTRIC-DIRECT BURIED	DBE DBE 200 mm (8") *DBE DBE*	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING
TELEPHONE-DIRECT BURIED	DBT DBT 200 mm (8") *DBT DBT*	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING
TELEPHONE-UNDERGROUND	TU TU 200 mm (8") *TU TU*	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING

NOTES:

LETTERING FOR PROPOSED UTILITY SYMBOLS IS VERTICAL & 3.5 mm (0.14") IN HEIGHT.

LETTERING FOR EXISTING UTILITY SYMBOLS IS SLANTED & 3.0 mm (0.12") IN HEIGHT.

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
FIBER OPTICS	FO FO 200 mm (8") *FO* *FO*	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING
FIBER OPTICS-UNDERGROUND	FOU FOU 200 mm (8") *FOU* *FOU*	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING
PETROLEUM-PIPELINE	P P 200 mm (8") *P* *P*	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING
NEW CONDUIT	C C 200 mm (8") *C* *C*	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING
CABLE TV	CTV CTV 200 mm (8") *CTV* *CTV*	0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING

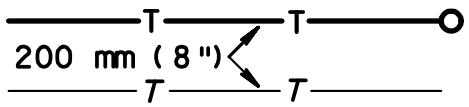
NOTES:

LETTERING FOR PROPOSED UTILITY SYMBOLS IS VERTICAL & 3.5 mm (0.14") IN HEIGHT.

LETTERING FOR EXISTING UTILITY SYMBOLS IS SLANTED & 3.0 mm (0.12") IN HEIGHT.

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
TELEPHONE-AERIAL		0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING
ELECTRIC UTILITY POLE		0.65 mm (0.025") 0.13 mm (0.005")	4 0	PROPOSED EXISTING
CHANGE PRIVATE TO ELECTRIC		0.65 mm (0.025") 0.13 mm (0.005")	4 0	NEW EXISTING
TELEPHONE-UTILITY POLE		0.13 mm (0.005")	0	PROPOSED EXISTING
PRIVATE UTILITY POLE		0.25 mm (0.01")	1	

NOTES:

LETTERING FOR PROPOSED UTILITY SYMBOLS IS VERTICAL & 3.5 mm (0.14") IN HEIGHT.

LETTERING FOR EXISTING UTILITY SYMBOLS IS SLANTED & 3.0 mm (0.12") IN HEIGHT.

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
WELL	○	0.25 mm (0.01")	1	LABEL
TRAFFIC SIGNAL	⊗	0.13 mm (0.005")	0	LABEL EXISTING ON PLAN
FIRE HYDRANT	⊡	0.13 mm (0.005")	0	LABEL
PIPE AND END SECTION	----------◀	0.76 mm (0.03")	5	
CRIBBING	▭▭▭▭▭▭▭▭▭▭▭▭	0.38 mm (0.015")	2	LABEL
SEPTIC TANK	○	0.25 mm (0.01")	1	LABEL

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
RAILROAD CROSSING SIGNAL LIGHT		0.13 mm (0.005")	0	
RAILROAD CROSSING GATE		0.13 mm (0.005")	0	
RAILROAD SINGLE TRACK	20	0.13 mm (0.005")	0	
RAILROAD DOUBLE TRACK	2.5 20	0.13 mm (0.005")	0	
RAILROAD SIGN		0.13 mm (0.005")	0	

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
BUILDINGS		0.25 mm (0.01")	1	PLOT ROOF OUTLINE
PI		0.13 mm (0.005")	0	
FOUNDATION, NEW BUILDING (UNDER CONSTRUCTION)	U/C 2.5 mm (0.1")	0.25 mm (0.01")	1	
FOUNDATION, OLD RUINS	RUINS 2.5 mm (0.1")	0.25 mm (0.01")	1	
ROADWAY SIGN POLES		0.25 mm (0.01")	1	

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
WOODED AREA OUTLINE PREDOMINATELY DECIDUOUS TREES		0.25 mm (0.01")	1	OUTLINE NOT REQUIRED ALONG NATURAL FEATURES SUCH AS ROADS, RAILROADS, STREAM
WOODED AREA OUTLINE PREDOMINATELY CONIFEROUS TREES	EVERGREENS	0.25 mm (0.01")	1	
INDIVIDUAL TREES SHRUB	½ SIZE TREE	0.25 mm (0.01")	1	
ORCHARDS	ORCHARD	0.25 mm (0.01")	1	SHOW ONLY PERIMETER TREES AND LABEL
NURSERY BEDS	NURSERY BEDS	0.25 mm (0.01")	1	SHOW ONLY PERIMETER AND LABEL

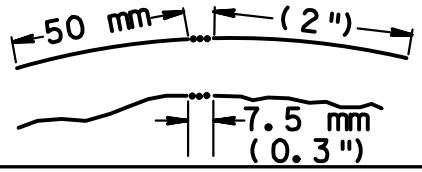
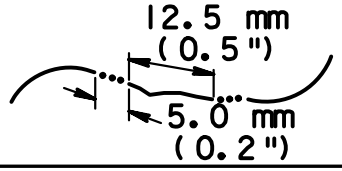
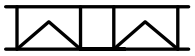
LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
VINEYARD	VINEYARD	0.25 mm (0.01")	1	SHOW ONLY PERIMETER AND LABEL
HEDGES		0.25 mm (0.01")	1	
CUT/FILL	1.5 mm (0.06") —C— 1.5 mm (0.06") —F—	0.25 mm (0.01")	1	
WET AREA	6.25 mm (0.25")	0.13 mm (0.005")	0	ALTERNATE 7.5 mm (0.3") 25 mm (1")
SPRING HOLE WITH DISAPPEARING DRAINAGE	12.5 mm (0.5") 5.0 mm (0.2")	0.13 mm (0.005")	0	

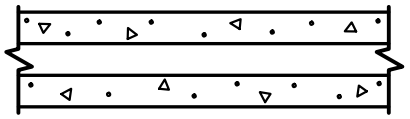
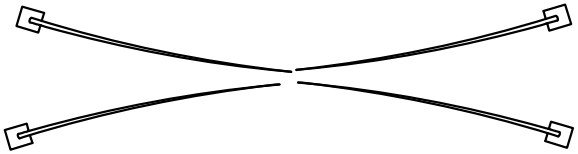
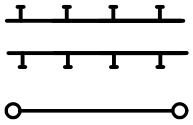
LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
RIVERS, CREEKS, STREAMS		0.25 mm (0.01")	1	
DRAINAGE DRAWS, DITCHES AND RAVINES, NORMALLY DRY		0.25 mm (0.01")	1	
PROPOSED DRIVEWAYS		0.38 mm (0.015")	2	
BILLBOARD SIGN		0.13 mm (0.005")	0	
BILLBOARD DOUBLE		0.13 mm (0.005")	0	

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

LINE WEIGHTS AND SYMBOLS

DESCRIPTION	SYMBOL	LINE WIDTH	LINE WEIGHT	REMARKS
PAVED PARALLEL DITCH		0.13 mm (0.005")	0	LABEL EXISTING ON PLAN
NORTH ARROW		0.25 mm (0.01")	1	
SHEET BREAK INDEX MAP		0.51 mm/ 0.76 mm (0.02"/ 0.03")	3/5	
GUIDE RAIL END TREATMENT LT RT		0.13 mm (0.005")	0	
GUIDE RAIL LT GUIDE RAIL RT GUIDE RAIL		0.25 mm (0.01") 0.13 mm (0.005")	1 0	PROPOSED EXISTING

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

EROSION CONTROL DEVICES - LINE WEIGHTS AND SYMBOLS

ITEMS	SYMBOLS		LINE WIDTH	LINE WEIGHT	REMARKS
	CONSTRUCTION PLANS	EROSION CONTROL PLANS			
ROCK LINING			0.25 mm (0.01")	1	
ROCK BASIN			0.38 mm (0.015")	2	
TEMPORARY SLOPE PIPE DRAIN			0.38 mm (0.015")	2	
PAVED ENERGY DISSIPATOR			0.38 mm (0.015")	2	
ROCK BARRIER			0.38 mm (0.015")	2	
DIKE			0.38 mm (0.015")	2	
SEDIMENTATION POND-TYPE 2			0.38 mm (0.015")	2	
SEDIMENTATION POND-TYPE 1			0.38 mm (0.015")	2	
STANDBOXES			0.38 mm (0.015")	2	
ROCK ENERGY DISSIPATOR			0.38 mm (0.015")	2	

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

EROSION CONTROL DEVICES - LINE WEIGHTS AND SYMBOLS

ITEMS	SYMBOLS		LINE WIDTH	LINE WEIGHT	REMARKS
	CONSTRUCTION PLANS	EROSION CONTROL PLANS			
WATER COURSE EROSION PROTECTION MATTING			0.25 mm (0.01")	1	
TEMPORARY DITCH			0.38 mm (0.015")	2	
SILT BARRIER FENCE	SF SF 0.38 mm (0.015")		0.38 mm (0.015")	2	
SILT BARRIER FENCE		SF SF 0.76 mm (0.03")	0.76 mm (0.03")	5	

LINE WIDTHS AND LINE WEIGHTS – FIG. C.1

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APPENDIX D

COMPUTER AIDED DRAFTING AND DESIGN (CADD)
NAMED LEVELS AND SYMBOLOGY

DESIGN FILE WORKING UNITS

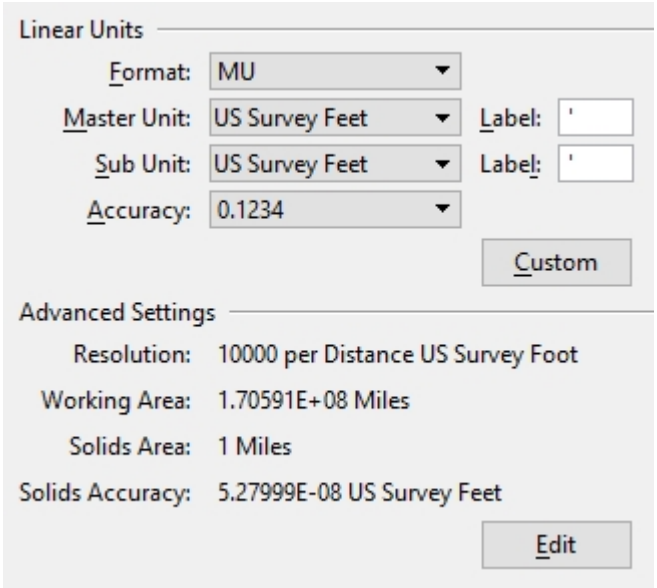


FIGURE D.1
ROADWAY WORKING UNITS AND RESOLUTION

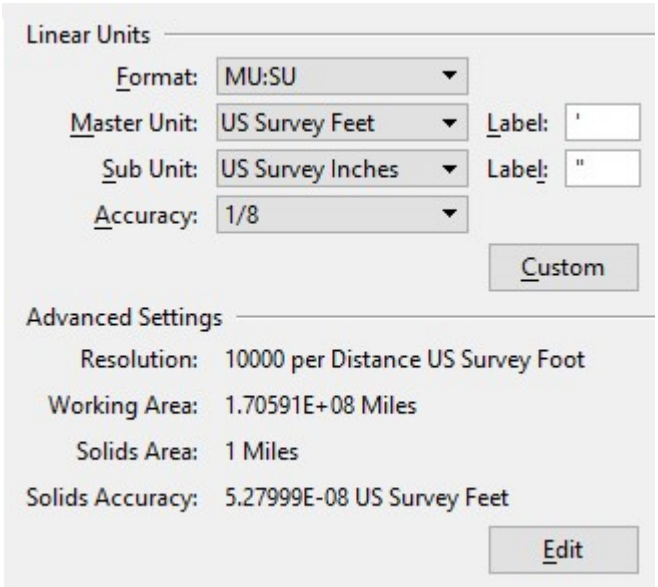
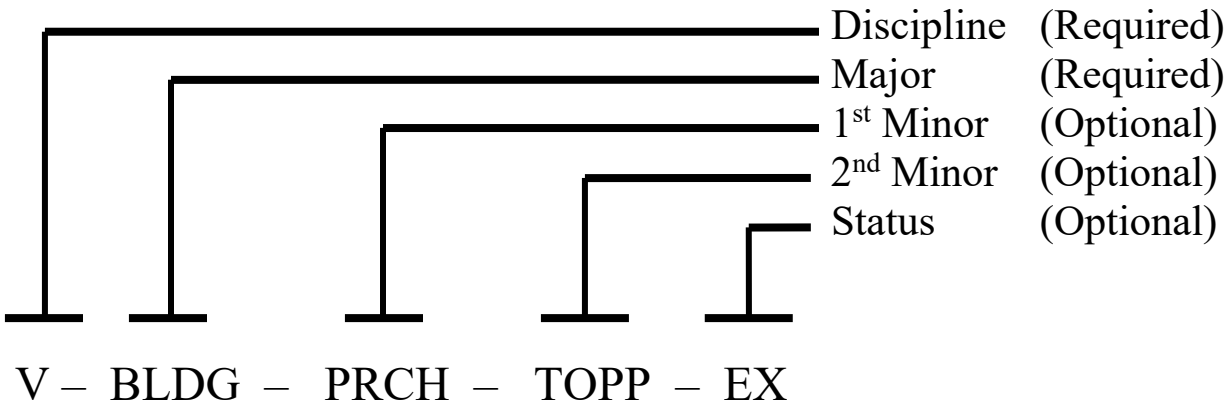


FIGURE D.2
BRIDGE WORKING UNITS AND RESOLUTION

Level names consist of a **Discipline** code (one or two digits), a **Major** code (four digits), a **1st Minor** code (four digits), a **2nd Minor** code (four digits) and a **Status** code (two digits). Valid levels must contain a Discipline and Major code while the Minor and Status codes are optional codes to more precisely define the graphic content to be placed on the level. The Department modifies the National CADD Standard® level naming convention by defining the Status code to be two digits as opposed to the standard one digit. A listing of the Discipline and Major codes appears in the following tables:

- Table D.1 (Discipline Code Descriptors for Named Levels)
- Table D.2 (Major Code Descriptors for Named Levels)
- Table D.3 (Minor Code Descriptors for Named Levels)
- Table D.4 (Status Code Descriptors for Named Levels)



NOTE: In general, V- and VA- levels serve as existing feature levels, C-, T- and S- (and others, if defined) serve as proposed feature levels.
For example, V-ROAD-EDGE (Survey-Pavement Edge) is an existing feature; C-ROAD-EDGE is a proposed feature.

TABLE D.1
DISCIPLINE CODE DESCRIPTORS
FOR NAMED LEVELS

Discipline Code	Description
C	Civil Design
S	Structure
T	Traffic
V	Survey
VA	Arial Survey
PLT	Plotting (Old)
NP	Non Plot

TABLE D.2
MAJOR CODE DESCRIPTORS
FOR NAMED LEVELS

Major Code	Description
ABUT	Abutment
AFLD	Airfield
ALG0	Alignment #
ANNO	Annotation
APSL	Approach Slab
BARR	Barrier
BEAM	Beam
BLDG	Building
BLN0	Baseline #
BNDY	Boundary
BRDG	Bridge
CHAN	Channel
CREK	Creek
CULV	Culvert
CURB	Curb
DECK	Deck
DRIV	Driveway
DTCH	Ditch
EROS	Erosion
FLHA	Flood Hazard Area
FOOT	Footing
GEOT	Geotechnical Data
GRAL	Guiderail
LITE	Lighting
MAPI	Map Information
MILR	Military Installation
MPTX	Maintenance and Protection of Traffic
PIER	Pier
PRKG	Parking
PROF	Profile
RAIL	Railway
ROAD	Roadway
RWAY	Right-of-Way
SGNL	Signal
SHLD	Shoulder
SIGN	Sign
SSWR	Sanitary Sewer
STKE	Staking
STRM	Stream
SUEI	Subsurface Utility Engineering Information
SURF	Surface Data
SURV	Survey
SWLK	Sidewalk
TERR	Terrain
TOPO	Topography
TRAF	Traffic
TRAL	Trail
UTIL	Utility
VEGE	Vegetation
VOLS	Volume
WALL	Wall
WETL	Wetlands
WWAY	Water Way
XSEC	Cross Section

TABLE D.3
MINOR CODE DESCRIPTORS
FOR NAMED LEVELS

Minor Code	Description
010Y	10 Year Line
025Y	25 Year Line
050Y	50 Year Line
100Y	100 Year Line
200Y	200 Year Line
500Y	500 Year Line
ABUT	Abutment
ACQU	Acquired
ANNO	Annotation
ANTN	Antenna
ARCH	Arch
AREA	Area
ARST	Arresting System
ATAB	AutoTAB
ATHL	Athletic Field
ATTN	Attenuators
AUTO	Auto
AXIS	Axis
BACK	Back
BANK	Bank
BARN	Barn
BARR	Barrier
BASN	Basin
BEAM	Beam
BEAR	Bearing
BEDS	Beds
BLBD	Billboard
BLDR	Boulder
BNDY	Boundary
BOAT	Boat
BOGS	Boggs
BORE	Bore Hole
BOTM	Bottom
BOXC	Box Culvert
BRDG	Bridge
BRKL	Break line
BRSH	Brush

Minor Code	Description
BSLN	Baseline
CANL	Canal
CATV	Cable Television
CELL	Cell
CEMR	Cemetery
CESS	Cess Pool
CHCK	Check Shot
CHNL	Channel
CHRD	Chord
CHUT	Chute
CNTE	Construction Entrance
CNTR	Center
CODE	Code
COGO	Coordinate Geometry
COMB	Combined Utilities
CONC	Concrete
CONS	Construction
CONT	Contours
CRCL	Circular Element
CRPL	Circle Pullout
CRSH	Crash
CRWN	Crown
CTLA	Controlled Area
CTPT	Control Point
CTRL	Control
CULV	Culvert
CURB	Curb
DAMM	Dam
DATA	Data
DBBL	Double
DECK	Deck
DEPU	Dead End Point of Utility
DETB	Detention Basin
DFLD	Drain Field
DFLT	Default
DIMS	Dimensions
DIRT	Dirt

TABLE D.3
MINOR CODE DESCRIPTORS
FOR NAMED LEVELS
(CONTINUED)

Minor Code	Description
DISC	Discharge Point
DRAN	Drainage
DRAW	Draw
DRYB	Dry Bed
DTCH	Ditch
DUCT	Duct
DVDK	Diversion Dike
EDGE	Edge
ELEV	Elevation
ENDT	End Treatment
ENGR	Energy
EQPM	Equipment
EROS	Erosion
ERRO	Error
EXCA	Excavation
EXDM	Expansion Dam
EXTR	Exterior
FDPT	Field Point
FENC	Fence
FIBR	Fiber Optic
FILL	Fill
FLOW	Flow
FOOT	Footing
FPLC	Fireplace
FRAM	Frame
GABI	Gabion
GARG	Garage
GATE	Gate
GEOL	Geological
GNRL	General
GOLF	Golf
GRAL	Guiderail
GRID	Grid
GRND	Ground
GUYS	Guy Wire
HDWL	Head Wall

Minor Code	Description
HEAD	Head
HEDG	Hedge
HIDN	Hidden
HVGL	Heavy Vertical Grid Line
HYDR	Hydrant
ICTR	Interconnect Controller
INLT	Inlet
INPR	Inlet Protection
INTR	Interior
IRRG	Irrigation
JBOX	Junction Box
JNTS	Joints
LAKE	Lake
LANE	Lane
LEVE	Levee
LGAL	Legal
LINE	Line
LINR	Linear
LITE	Lighting
LLOS	Legal Limit of Slope
LMON	Legal Monument
LOOP	Loop
LOSD	Limit of SUEI Data
LOWW	Low
MAJR	Major
MANL	Manual
MARK	Marker or Marking
MAST	Mast
MATT	Matt
MEDN	Median
METR	Meter
MHOL	Manhole
MINR	Minor
MISC	Miscellaneous
MLBX	Mail Box
MODL	NEAT Model Line

TABLE D.3
MINOR CODE DESCRIPTORS
FOR NAMED LEVELS
(CONTINUED)

Minor Code	Description
MOUN	Monument
MRSH	Marsh
MTCH	Match Line
MUNI	Municipal
NAME	Name
NDAT	No Data
NETW	Network
NGAS	Natural Gas
NOTE	Note
NSBR	Noise Barrier
OBSC	Obscured
OGTC	Oil Gas Tank Cap
OLDG	Old Ground (Existing)
OLSF	Overland Sheet Flow
OPEN	Open
ORCH	Orchard
OTLN	Outline
OVHD	Overhead
OVHG	Overhang
PANL	Panel
PARA	Parapet
PAVE	Pavement
PEDS	Pedestrians
PERC	Percolation
PIER	Pier
PILE	Pile
PIPE	Pipe
PITS	Pit
PLAN	Plan
PLNT	Plant
PLOT	Plot
PLTR	Planter
PLTS	Plots
PMTR	Perimeter
PNTS	Points
POLE	Pole

Minor Code	Description
POND	Pond
POST	Post
POWR	Power
PRCH	Porch
PROF	Profile
PROP	Proposed
PRVT	Point on Reverse Curve
PTRN	Pattern
PTRO	Petroleum
PVMK	Pavement Marking
RAMP	Ramp
REBR	Reinforcing Bar
REGL	Regular
REQD	Required
RETN	Retaining
REVI	Revisions
RNDM	Random
ROCK	Rock
RRAP	Rip-Rap
RUNW	Runway
SATD	Satellite Dish
SBED	Stream Bed
SCAL	Scale
SDTR	Sediment Trap
SDWK	Sidewalk
SEAL	Seal
SEAT	Seat
SEPT	Septic
SGNL	Signal
SHEA	Shear or Bearing
SHED	Shed
SHOR	Shoring
SHRB	Shrub
SHTS	Sheets
SIGN	Sign
SILO	Silo
SILT	Silt

TABLE D.3
MINOR CODE DESCRIPTORS
FOR NAMED LEVELS
(CONTINUED)

Minor Code	Description
SLAB	Slab
SLOP	Slope
SNDG	Sounding
SNGL	Single
SOCK	Sock
SPLW	Spillway
SPRL	Spiral
SROW	Stone Row
SSLT	Super Silt
STEL	Steel
STEP	Step
STMP	Stump
STON	Stone
STOP	Stop
STRC	Structure
STRD	Strand
STRG	Strong
SURV	Survey
SWAL	Swale
SYMB	Symbol (Cell)
T120	Leroy 120
T175	Leroy 175
T200	Leroy 200
T240	Leroy 240
TABL	Table
TANK	Tank
TCRV	Template Curves
TELP	Telephone
TEMP	Temporary
TEXT	Text
TITLE	Title
TNGT	Tangent
TOEE	Toe
TOPP	Top
TPIT	Test Pit
TRAK	Track
TRAP	Trap

Minor Code	Description
TRAV	Traverse
TRCH	Trench
TREE	Tree
TRIA	Triangle
TURF	Turf (Grass)
TURN	Turn
UCON	Under Construction
UNDR	Under
UQLC	Utility Quality Level Change
VBFN	Visual Barrier Fence
VENT	Vent
VINE	Vine
VLVE	Valve
VOLS	Volume Data
WALL	Wall
WATR	Water
WDAT	With Data
WDRW	Woods Row
WEAK	Weak
WEIR	Weir
WELL	Well
WHGD	Wheel Guard
WING	Wing
WOOD	Woods Line
WORK	Work (User, Non-Plotting)
XFMR	Transformer
XSEC	Cross Section

TABLE D.4
STATUS CODE DESCRIPTORS FOR NAMED LEVELS

Status Code	Description
00	00
01	01
02	02
03	03
04	04
05	05
06	06
07	07
08	08
09	09
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
EX	Existing
LN	Line
LT	Left
PT	Point
RT	Right
TX	Text

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Font, Engineering Vert

ABCDEFGHIJKLMNOPQRSTUVWXYZ

1234567890!@#$%°&*():”?’

Font, Engineering Regular

ABCDEFGHIJKLMNOPQRSTUVWXYZ

1234567890!@#$%°&():”?’*

TABLE D.5

MicroStation Graphic Weights

Inches	Graphic Weight	Display Weight	Inches	Graphic Weight	Display Weight
0.007	0		0.085	16	
0.010	1		0.091	17	
0.014	2		0.094	18	
0.020	3		0.100	19	
0.024	4		0.104	20	
0.028	5		0.110	21	
0.033	6		0.114	22	
0.039	7		0.120	23	
0.045	8		0.124	24	
0.049	9		0.130	25	
0.055	10		0.136	26	
0.059	11		0.140	27	
0.065	12		0.146	28	
0.069	13		0.150	29	
0.075	14		0.156	30	
0.079	15		0.159	31	

TABLE D.6

LINE STYLE (NAME), CODE and GRAPHIC DEFINITION

NAME	CODE	GRAPHIC DEFINITION	REMARKS
MicroStation	0		
MicroStation	1		
MicroStation	2		
MicroStation	3		
MicroStation	4		
MicroStation	5		
MicroStation	6		
MicroStation	7		

FIGURE D.3

LINE STYLE (NAME), CODE and GRAPHIC DEFINITION

NAME	CODE	GRAPHIC DEFINITION	REMARKS
CENTERLINES	L100	SPACE 0.05" LINE 2.0" DASH 0.10"	
BASELINES	L101	SPACE 0.05" LINE 2.0" DASH 0.10"	
EDGE OF PAVEMENT	L102	SPACE 0.05" DASH 0.20"	EXISTING EOP TO BE LABELED ON PLANS
CURB	L103		EXISTING CURB TO BE LABELED ON PLANS
GUIDE RAIL PROPOSED LEFT	L104		
GUIDE RAIL PROPOSED RIGHT	L105		
GUIDE RAIL EXISTING	L106		
CUT	L107	SPACE 0.05" C SYMBOL SPACING 0.8" C DASH 0.10" ①, ②	CUT / FILL TRANSITION TO BE LABELED ON PLANS
FILL	L108	F SYMBOL SPACING 0.8" F ①, ②	CUT / FILL TRANSITION TO BE LABELED ON PLANS

FIGURE D.3

NOTES: ① TEXT CHARACTERS ARE 0.12 INCHES WHEN PLOTTED
② SLANTED FONT FOR EXISTING LINE STYLES

LINE STYLE (NAME), CODE and GRAPHIC DEFINITION

NAME	CODE	GRAPHIC DEFINITION	REMARKS
LEGAL R/W LINE	L200	SPACE 0.05" LINE 4.0" DASH 0.10"	TO BE LABELED ON PLANS
REQUIRED R/W LINES	L201	SPACE 0.05" LINE 4.0" DASH 0.10"	TO BE LABELED ON PLANS
PROPERTY LINES	L203	SPACE 0.05" LINE 2.0" ℄ DASH 0.10" ①②	
MUNICIPAL LINES	L204	SPACE 0.05" LINE 1.0" DASH 0.10"	STATE, COUNTY, TOWNSHIP, CITY, OR BOROUGH LINES. TO BE LABELED ON PLANS
FENCE	L230	X X ①, ②	
BUILDING FOUNDATION UNDER CONSTRUCTION	L250	SPACE 0.10" LINE 0.4"	LABEL ON PLAN U/C
BUILDING FOUNDATION OLD RUINS	L251	LINE 0.20" SPACE 0.10"	LABEL ON PLAN RUINS
RAILROAD SINGLE TRACK	L260	0.80" 0.20"	

NOTES: ① TEXT CHARACTERS ARE 0.12 INCHES WHEN PLOTTED
② SLANTED FONT FOR EXISTING LINE STYLES

FIGURE D.3

LINE STYLE (NAME), CODE and GRAPHIC DEFINITION

NAME	CODE	GRAPHIC DEFINITION	REMARKS
RIVER, LAKE, CREEK, STREAM OR POND	L300	0.3"	USE LEVEL C-WWAY-EDGE FOR STREAM REALIGNMENT
DRAINAGE DRAWS, DITCHES AND RAVINES NORMALLY DRY	L301	0.5" 0.2"	
SWALE	L302		
SPRING HOLE WITH DISAPPEARING DRAINAGE	L303	DASH 0.5" DASH & SPACE 0.2"	
WETLANDS	L304	0.3" 1.0"	ALTERNATE PATTERN 0.25"
TEMPORARY EROSION DITCH	L305		
EROSION FENCE	L306	①②	
EROSION SILT FENCE	L307	①②	

NOTES: ① TEXT CHARACTERS ARE 0.12 INCHES WHEN PLOTTED
② SLANTED FONT FOR EXISTING LINE STYLES

FIGURE D.3

LINE STYLE (NAME), CODE and GRAPHIC DEFINITION

NAME	CODE	GRAPHIC DEFINITION	REMARKS
TELEPHONE -AERIAL	L400	T T ①②	
TELEPHONE -UNDERGROUND	L401	TU TU ①②	LABEL IF DIRECT BURIAL
TELEPHONE -DIRECT BURIED	L402	TDB TDB ①②	
FIBER OPTICS -AERIAL	L403	FO FO ①②	
FIBER OPTICS -UNDERGROUND	L404	FOU FOU ①②	LABEL IF DIRECT BURIAL
FIBER OPTICS -DIRECT BURIED	L405	FODB FODB ①②	
CABLE TV -AERIAL	L406	CTV CTV ①②	
CABLE TV -UNDERGROUND	L407	CTVU CTVU ①②	LABEL IF DIRECT BURIAL
CABLE TV -DIRECT BURIED	L408	CTVDB CTVDB ①②	
ELECTRIC -AERIAL	L409	E E ①②	
ELECTRIC -UNDERGROUND	L410	EU EU ①②	LABEL IF DIRECT BURIAL

NOTES: ① TEXT CHARACTERS ARE 0.12 INCHES WHEN PLOTTED
② SLANTED FONT FOR EXISTING LINE STYLES

FIGURE D.3

LINE STYLE (NAME), CODE and GRAPHIC DEFINITION

NAME	CODE	GRAPHIC DEFINITION	REMARKS
COMBINED UTILITIES	L411	CU CU ①②	LABEL PLAN WITH SHARED UTILITIES
CONDUIT	L420	COND COND ①②	LABEL PLAN WITH SIZE IN INCHES
SEWER LINE	L440	S S ①②	LABEL SANITARY OR COMBINED USE SEWER
WATER LINE	L450	W W ①②	
GAS LINE	L460	G G ①②	LABEL SIZE ON PLANS
PETROLEUM PIPELINE	L470	P P ①②	LABEL SIZE ON PLANS
STORM WATER PIPE, EXISTING	L480		LABEL SIZE ON PLANS
STORM WATER PIPE, PROPOSED	L481		LABEL SIZE ON PLANS
LIMIT OF SUE DATA	L490	LOS LOS ①②	

NOTES: ① TEXT CHARACTERS ARE 0.12 INCHES WHEN PLOTTED
② SLANTED FONT FOR EXISTING LINE STYLES

FIGURE D.3

LINE STYLE (NAME), CODE and GRAPHIC DEFINITION

NAME	CODE	GRAPHIC DEFINITION	REMARKS
WOODED AREA OUTLINE PREDOMINATELY DECIDUOUS TREES	L500		OUTLINE NOT REQUIRED ALONG FEATURES SUCH AS ROADS, RAILROADS & STREAM
WOODED AREA OUTLINE PREDOMINATELY CONIFEROUS TREES	L501	EVERGREENS	SHOW ONLY PERIMETER AND LABEL EVERGREEN ON PLANS
ORCHARDS	L502		SHOW ONLY PERIMETER TREES AND LABEL ORCHARD ON PLANS
NURSERY BEDS	L503		SHOW ONLY PERIMETER AND LABEL NURSERY BEDS ON PLANS
VINEYARD	L504		SHOW ONLY PERIMETER AND LABEL VINEYARD ON PLANS
HEDGES	L505		

FIGURE D.3

PATTERN FILL (NAME), CODE and GRAPHIC DEFINITION

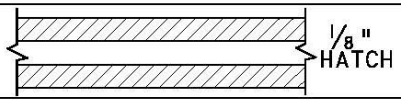
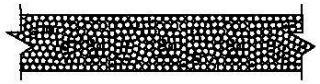
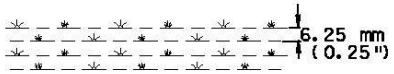
NAME	CODE	GRAPHIC DEFINITION	REMARKS
EXISTING CHANNEL BACKFILL	F100		
PARALLEL DITCH PAVED	F101		LABEL EXISTING ON PLAN
ROCK LINING	F102		Tn - n IS STONE SIZE
WETLANDS	F103		

FIGURE D.3

Name	Description	Style	Wt.	Plot
C-ANNO	Annotation - General Information (Uncontrolled)	0	1	1
C-ANNO-ATAB	Annotation - AutoTab	0	2	1
C-ANNO-CELL	Annotation - Cells	0	1	1
C-ANNO-DIMS	Annotation - Dimensions	0	2	1
C-ANNO-LINE-HIDN	Annotation - Hidden Line	0	4	1
C-ANNO-MISC-JOIN	Annotation - Construction Joints	0	1	1
C-ANNO-MISC-LCON	Annotation - Limits of Construction	0	1	1
C-ANNO-NOTE	Annotation - Notes	0	2	1
C-ANNO-PNTS	Annotation - Points (Non-Plotting)	0	1	0
C-ANNO-PTRN	Annotation - Pattern	0	1	1
C-ANNO-SYMB	Annotation - Symbols	0	1	1
C-ANNO-TEXT	Annotation - Annotation text	0	2	1
C-ANNO-WORK	Annotation - User Work (Non-Plotting)	0	1	0
C-ALG0	Alignment 0 - Base level (Uncontrolled)	0	1	1
C-ALG0-COGO	Alignment 0 - COGO points	0	1	1
C-ALG0-DIMS	Alignment 0 - Dimensions, Stationing	0	2	1
C-ALG0-INDEX	Alignment 0 - Index Map text	0	2	1
C-ALG0-LINE	Alignment 0 - Center/Base Line	L100	1	1
C-ALG0-LINE-CRCL	Alignment 0 - Center/Base Line	L100	1	1
C-ALG0-LINE-SPRL	Alignment 0 - Center/Base Line	L100	1	1
C-ALG0-LINE-TNGT	Alignment 0 - Center/Base Line	L100	1	1
C-ALG0-NOTE	Alignment 0 - Notes, Curve Data	0	2	1
C-ALG0-PNTS	Alignment 0 - Points (Non-Plotting)	0	1	0
C-ALG0-PTRN	Alignment 0 - Pattern	0	1	1
C-ALG0-SYMB	Alignment 0 - Symbols	0	1	1
C-ALG0-TEXT	Alignment 0 - Annotation text	0	2	1
C-ALG0-TICK	Alignment 0 - Major/minor tick marks	0	2	1
C-ALG0-WORK	Alignment 0 - User work (Non-Plotting)	0	1	0
C-ALG1	Alignment 1 - Base level (Uncontrolled)	0	1	1
C-ALG1-COGO	Alignment 1 - COGO points	0	1	1
C-ALG1-DIMS	Alignment 1 - Dimensions, Stationing	0	2	1
C-ALG1-INDEX	Alignment 1 - Index Map text	0	2	1
C-ALG1-LINE	Alignment 1 - Center/Base Line	L100	1	1
C-ALG1-LINE-CRCL	Alignment 1 - Center/Base Line	L100	1	1
C-ALG1-LINE-SPRL	Alignment 1 - Center/Base Line	L100	1	1
C-ALG1-LINE-TNGT	Alignment 1 - Center/Base Line	L100	1	1
C-ALG1-NOTE	Alignment 1 - Notes, Curve Data	0	2	1
C-ALG1-PNTS	Alignment 1 - Points (Non-Plotting)	0	1	0

Name	Description	Style	Wt.	Plot
C-ALG1-PTRN	Alignment 1 - Pattern	0	1	1
C-ALG1-SYMB	Alignment 1 - Symbols	0	1	1
C-ALG1-TEXT	Alignment 1 - Annotation text	0	2	1
C-ALG1-TICK	Alignment 1 - Major/minor tick marks	0	2	1
C-ALG1-WORK	Alignment 1 - User work (Non-Plotting)	0	1	0
C-ALG2	Alignment 2 - Base level (Uncontrolled)	0	1	1
C-ALG2-COGO	Alignment 2 - COGO points	0	1	1
C-ALG2-DIMS	Alignment 2 - Dimensions, Stationing	0	2	1
C-ALG2-INDEX	Alignment 2 - Index Map text	0	2	1
C-ALG2-LINE	Alignment 2 - Center/Base Line	L100	1	1
C-ALG2-LINE-CRCL	Alignment 2 - Center/Base Line	L100	1	1
C-ALG2-LINE-SPRL	Alignment 2 - Center/Base Line	L100	1	1
C-ALG2-LINE-TNGT	Alignment 2 - Center/Base Line	L100	1	1
C-ALG2-NOTE	Alignment 2 - Notes, Curve Data	0	2	1
C-ALG2-PNTS	Alignment 2 - Points (Non-Plotting)	0	1	0
C-ALG2-PTRN	Alignment 2 - Pattern	0	1	1
C-ALG2-SYMB	Alignment 2 - Symbols	0	1	1
C-ALG2-TEXT	Alignment 2 - Annotation text	0	2	1
C-ALG2-TICK	Alignment 2 - Major/minor tick marks	0	2	1
C-ALG2-WORK	Alignment 2 - User work (Non-Plotting)	0	1	0
C-ALG3	Alignment 3 - Base level (Uncontrolled)	0	1	1
C-ALG3-COGO	Alignment 3 - COGO points	0	1	1
C-ALG3-DIMS	Alignment 3 - Dimensions, Stationing	0	2	1
C-ALG3-INDEX	Alignment 3 - Index Map text	0	2	1
C-ALG3-LINE	Alignment 3 - Center/Base Line	L100	1	1
C-ALG3-LINE-CRCL	Alignment 3 - Center/Base Line	L100	1	1
C-ALG3-LINE-SPRL	Alignment 3 - Center/Base Line	L100	1	1
C-ALG3-LINE-TNGT	Alignment 3 - Center/Base Line	L100	1	1
C-ALG3-NOTE	Alignment 3 - Notes, Curve Data	0	2	1
C-ALG3-PNTS	Alignment 3 - Points (Non-Plotting)	0	1	0
C-ALG3-PTRN	Alignment 3 - Pattern	0	1	1
C-ALG3-SYMB	Alignment 3 - Symbols	0	1	1
C-ALG3-TEXT	Alignment 3 - Annotation text	0	2	1
C-ALG3-TICK	Alignment 3 - Major/minor tick marks	0	2	1
C-ALG3-WORK	Alignment 3 - User work (Non-Plotting)	0	1	0
C-ALG4	Alignment 4 - Base level (Uncontrolled)	0	1	1
C-ALG4-COGO	Alignment 4 - COGO points	0	1	1

Name	Description	Style	Wt.	Plot
C-ALG4-DIMS	Alignment 4 - Dimensions, Stationing	0	2	1
C-ALG4-INDEX	Alignment 4 - Index Map text	0	2	1
C-ALG4-LINE	Alignment 4 - Center/Base Line	L100	1	1
C-ALG4-LINE-CRCL	Alignment 4 - Center/Base Line	L100	1	1
C-ALG4-LINE-SPRL	Alignment 4 - Center/Base Line	L100	1	1
C-ALG4-LINE-TNGT	Alignment 4 - Center/Base Line	L100	1	1
C-ALG4-NOTE	Alignment 4 - Notes, Curve Data	0	2	1
C-ALG4-PNTS	Alignment 4 - Points (Non-Plotting)	0	1	0
C-ALG4-PTRN	Alignment 4 - Pattern	0	1	1
C-ALG4-SYMB	Alignment 4 - Symbols	0	1	1
C-ALG4-TEXT	Alignment 4 - Annotation text	0	2	1
C-ALG4-TICK	Alignment 4 - Major/minor tick marks	0	2	1
C-ALG4-WORK	Alignment 4 - User work (Non-Plotting)	0	1	0
C-ALG5	Alignment 5 - Base level (Uncontrolled)	0	1	1
C-ALG5-COGO	Alignment 5 - COGO points	0	1	1
C-ALG5-DIMS	Alignment 5 - Dimensions, Stationing	0	2	1
C-ALG5-INDEX	Alignment 5 - Index Map text	0	2	1
C-ALG5-LINE	Alignment 5 - Center/Base Line	L100	1	1
C-ALG5-LINE-CRCL	Alignment 5 - Center/Base Line	L100	1	1
C-ALG5-LINE-SPRL	Alignment 5 - Center/Base Line	L100	1	1
C-ALG5-LINE-TNGT	Alignment 5 - Center/Base Line	L100	1	1
C-ALG5-NOTE	Alignment 5 - Notes, Curve Data	0	2	1
C-ALG5-PNTS	Alignment 5 - Points (Non-Plotting)	0	1	0
C-ALG5-PTRN	Alignment 5 - Pattern	0	1	1
C-ALG5-SYMB	Alignment 5 - Symbols	0	1	1
C-ALG5-TEXT	Alignment 5 - Annotation text	0	2	1
C-ALG5-TICK	Alignment 5 - Major/minor tick marks	0	2	1
C-ALG5-WORK	Alignment 5 - User work (Non-Plotting)	0	1	0
C-ALG6	Alignment 6 - Base level (Uncontrolled)	0	1	1
C-ALG6-COGO	Alignment 6 - COGO points	0	1	1
C-ALG6-DIMS	Alignment 6 - Dimensions, Stationing	0	2	1
C-ALG6-INDEX	Alignment 6 - Index Map text	0	2	1
C-ALG6-LINE	Alignment 6 - Center/Base Line	L100	1	1
C-ALG6-LINE-CRCL	Alignment 6 - Center/Base Line	L100	1	1
C-ALG6-LINE-SPRL	Alignment 6 - Center/Base Line	L100	1	1
C-ALG6-LINE-TNGT	Alignment 6 - Center/Base Line	L100	1	1
C-ALG6-NOTE	Alignment 6 - Notes, Curve Data	0	2	1
C-ALG6-PNTS	Alignment 6 - Points (Non-Plotting)	0	1	0

Name	Description	Style	Wt.	Plot
C-ALG6-PTRN	Alignment 6 - Pattern	0	1	1
C-ALG6-SYMB	Alignment 6 - Symbols	0	1	1
C-ALG6-TEXT	Alignment 6 - Annotation text	0	2	1
C-ALG6-TICK	Alignment 6 - Major/minor tick marks	0	2	1
C-ALG6-WORK	Alignment 6 - User work (Non-Plotting)	0	1	0
C-ALG7	Alignment 7 - Base level (Uncontrolled)	0	1	1
C-ALG7-COGO	Alignment 7 - COGO points	0	1	1
C-ALG7-DIMS	Alignment 7 - Dimensions, Stationing	0	2	1
C-ALG7-INDEX	Alignment 7 - Index Map text	0	2	1
C-ALG7-LINE	Alignment 7 - Center/Base Line	L100	1	1
C-ALG7-LINE-CRCL	Alignment 7 - Center/Base Line	L100	1	1
C-ALG7-LINE-SPRL	Alignment 7 - Center/Base Line	L100	1	1
C-ALG7-LINE-TNGT	Alignment 7 - Center/Base Line	L100	1	1
C-ALG7-NOTE	Alignment 7 - Notes, Curve Data	0	2	1
C-ALG7-PNTS	Alignment 7 - Points (Non-Plotting)	0	1	0
C-ALG7-PTRN	Alignment 7 - Pattern	0	1	1
C-ALG7-SYMB	Alignment 7 - Symbols	0	1	1
C-ALG7-TEXT	Alignment 7 - Annotation text	0	2	1
C-ALG7-TICK	Alignment 7 - Major/minor tick marks	0	2	1
C-ALG7-WORK	Alignment 7 - User work (Non-Plotting)	0	1	0
C-ALG8	Alignment 8 - Base level (Uncontrolled)	0	1	1
C-ALG8-COGO	Alignment 8 - COGO points	0	1	1
C-ALG8-DIMS	Alignment 8 - Dimensions, Stationing	0	1	1
C-ALG8-INDEX	Alignment 8 - Index Map text	0	2	1
C-ALG8-LINE	Alignment 8 - Center/Base Line	L100	1	1
C-ALG8-LINE-CRCL	Alignment 8 - Center/Base Line	L100	1	1
C-ALG8-LINE-SPRL	Alignment 8 - Center/Base Line	L100	1	1
C-ALG8-LINE-TNGT	Alignment 8 - Center/Base Line	L100	1	1
C-ALG8-NOTE	Alignment 8 - Notes, Curve Data	0	2	1
C-ALG8-PNTS	Alignment 8 - Points (Non-Plotting)	0	1	0
C-ALG8-PTRN	Alignment 8 - Pattern	0	1	1
C-ALG8-SYMB	Alignment 8 - Symbols	0	1	1
C-ALG8-TEXT	Alignment 8 - Annotation text	0	2	1
C-ALG8-TICK	Alignment 8 - Major/minor tick marks	0	2	1
C-ALG8-WORK	Alignment 8 - User work (Non-Plotting)	0	1	0
C-ALG9	Alignment 9 - Base level (Uncontrolled)	0	1	1
C-ALG9-COGO	Alignment 9 - COGO points	0	1	1

Name	Description	Style	Wt.	Plot
C-ALG9-DIMS	Alignment 9 - Dimensions, Stationing	0	1	1
C-ALG9-INDEX	Alignment 9 - Index Map text	0	2	1
C-ALG9-LINE	Alignment 9 - Center/Base Line	L100	1	1
C-ALG9-LINE-CRCL	Alignment 9 - Center/Base Line	L100	1	1
C-ALG9-LINE-SPRL	Alignment 9 - Center/Base Line	L100	1	1
C-ALG9-LINE-TNGT	Alignment 9 - Center/Base Line	L100	1	1
C-ALG9-NOTE	Alignment 9 - Notes, Curve Data	0	2	1
C-ALG9-PNTS	Alignment 9 - Points (Non-Plotting)	0	1	0
C-ALG9-PTRN	Alignment 9 - Pattern	0	1	1
C-ALG9-SYMB	Alignment 9 - Symbols	0	1	1
C-ALG9-TEXT	Alignment 9 - Annotation text	0	2	1
C-ALG9-TICK	Alignment 9 - Major/minor tick marks	0	2	1
C-ALG9-WORK	Alignment 9 - User work (Non-Plotting)	0	1	0
C-BARR	Barriers - Base level (Uncontrolled)	0	1	1
C-BARR-DIMS	Barriers - Dimensions	0	2	1
C-BARR-ENDT	Barriers - End Treatments	0	1	1
C-BARR-LINE	Barriers - Linear Elements	0	1	1
C-BARR-NOTE	Barriers - Notes	0	2	1
C-BARR-PNTS	Barriers - Points (Non-Plotting)	0	1	0
C-BARR-PTRN	Barriers - Pattern	0	1	1
C-BARR-SYMB	Barriers - Symbols	0	1	1
C-BARR-TEXT	Barriers - Text	0	2	1
C-BARR-VBFN	Barriers - Visual Barrier Fence	0	1	1
C-BARR-WORK	Barriers - User Work (Non-Plotting)	0	1	0
C-BLDG	Buildings - Base level (Uncontrolled)	0	1	1
C-BLDG-DIMS	Buildings - Dimensions	0	2	1
C-BLDG-NOTE	Buildings - Notes	0	2	1
C-BLDG-OTLN	Buildings - Structure outlines	0	1	1
C-BLDG-PNTS	Buildings - Points (Non-Plotting)	0	1	0
C-BLDG-PTRN	Buildings - Pattern	0	1	1
C-BLDG-SYMB	Buildings - Symbols	0	1	1
C-BLDG-TEXT	Buildings - TEXT	0	2	1
C-BLDG-WORK	Buildings - User Work (Non-Plotting)	0	1	0
C-BLN0	Base Line 0 - Base level (Uncontrolled)	0	1	1
C-BLN0-COGO	Base Line 0 - COGO points	0	1	1
C-BLN0-DIMS	Base Line 0 - Dimensions, Stationing	0	2	1
C-BLN0-LINE	Base Line 0 - Center/L101	L101	1	1

Name	Description	Style	Wt.	Plot
C-BLN0-NOTE	Base Line 0 - Notes, Curve Data	0	2	1
C-BLN0-PNTS	Base Line 0 - Points (Non-Plotting)	0	1	0
C-BLN0-PTRN	Base Line 0 - Pattern	0	1	1
C-BLN0-SYMB	Base Line 0 - Symbols	0	1	1
C-BLN0-TEXT	Base Line 0 - Annotation text	0	2	1
C-BLN0-WORK	Base Line 0 - User work (Non-Plotting)	0	1	0
C-BLN1	Base Line 1 - Base level (Uncontrolled)	0	1	1
C-BLN1-COGO	Base Line 1 - COGO points	0	1	1
C-BLN1-DIMS	Base Line 1 - Dimensions, Stationing	0	2	1
C-BLN1-LINE	Base Line 1 - Center/L101	L101	1	1
C-BLN1-NOTE	Base Line 1 - Notes, Curve Data	0	2	1
C-BLN1-PNTS	Base Line 1 - Points (Non-Plotting)	0	1	0
C-BLN1-PTRN	Base Line 1 - Pattern	0	1	1
C-BLN1-SYMB	Base Line 1 - Symbols	0	1	1
C-BLN1-TEXT	Base Line 1 - Annotation text	0	2	1
C-BLN1-WORK	Base Line 1 - User work (Non-Plotting)	0	1	0
C-BLN2	Base Line 2 - Base level (Uncontrolled)	0	1	1
C-BLN2-COGO	Base Line 2 - COGO points	0	1	1
C-BLN2-DIMS	Base Line 2 - Dimensions, Stationing	0	2	1
C-BLN2-LINE	Base Line 2 - Center/Base Line	L101	1	1
C-BLN2-NOTE	Base Line 2 - Notes, Curve Data	0	2	1
C-BLN2-PNTS	Base Line 2 - Points (Non-Plotting)	0	1	0
C-BLN2-PTRN	Base Line 2 - Pattern	0	1	1
C-BLN2-SYMB	Base Line 2 - Symbols	0	1	1
C-BLN2-TEXT	Base Line 2 - Annotation text	0	2	1
C-BLN2-WORK	Base Line 2 - User work (Non-Plotting)	0	1	0
C-BLN3	Base Line 3 - Base level (Uncontrolled)	0	1	1
C-BLN3-COGO	Base Line 3 - COGO points	0	1	1
C-BLN3-DIMS	Base Line 3 - Dimensions, Stationing	0	2	1
C-BLN3-LINE	Base Line 3 - Center/Base Line	L101	1	1
C-BLN3-NOTE	Base Line 3 - Notes, Curve Data	0	2	1
C-BLN3-PNTS	Base Line 3 - Points (Non-Plotting)	0	1	0
C-BLN3-PTRN	Base Line 3 - Pattern	0	1	1
C-BLN3-SYMB	Base Line 3 - Symbols	0	1	1
C-BLN3-TEXT	Base Line 3 - Annotation text	0	2	1
C-BLN3-WORK	Base Line 3 - User work (Non-Plotting)	0	1	0

Name	Description	Style	Wt.	Plot
C-BLN4	Base Line 4 - Base level (Uncontrolled)	0	1	1
C-BLN4-COGO	Base Line 4 - COGO points	0	1	1
C-BLN4-DIMS	Base Line 4 - Dimensions, Stationing	0	2	1
C-BLN4-LINE	Base Line 4 - Center/Base Line	L101	1	1
C-BLN4-NOTE	Base Line 4 - Notes, Curve Data	0	2	1
C-BLN4-PNTS	Base Line 4 - Points (Non-Plotting)	0	1	0
C-BLN4-PTRN	Base Line 4 - Pattern	0	1	1
C-BLN4-SYMB	Base Line 4 - Symbols	0	1	1
C-BLN4-TEXT	Base Line 4 - Annotation text	0	2	1
C-BLN4-WORK	Base Line 4 - User work (Non-Plotting)	0	1	0
C-BLN5	Base Line 5 - Base level (Uncontrolled)	0	1	1
C-BLN5-COGO	Base Line 5 - COGO points	0	1	1
C-BLN5-DIMS	Base Line 5 - Dimensions, Stationing	0	2	1
C-BLN5-LINE	Base Line 5 - Center/Base Line	L101	1	1
C-BLN5-NOTE	Base Line 5 - Notes, Curve Data	0	2	1
C-BLN5-PNTS	Base Line 5 - Points (Non-Plotting)	0	1	0
C-BLN5-PTRN	Base Line 5 - Pattern	0	1	1
C-BLN5-SYMB	Base Line 5 - Symbols	0	1	1
C-BLN5-TEXT	Base Line 5 - Annotation text	0	2	1
C-BLN5-WORK	Base Line 5 - User work (Non-Plotting)	0	1	0
C-BLN6	Base Line 6 - Base level (Uncontrolled)	0	1	1
C-BLN6-COGO	Base Line 6 - COGO points	0	1	1
C-BLN6-DIMS	Base Line 6 - Dimensions, Stationing	0	2	1
C-BLN6-LINE	Base Line 6 - Center/Base Line	L101	1	1
C-BLN6-NOTE	Base Line 6 - Notes, Curve Data	0	2	1
C-BLN6-PNTS	Base Line 6 - Points (Non-Plotting)	0	1	0
C-BLN6-PTRN	Base Line 6 - Pattern	0	1	1
C-BLN6-SYMB	Base Line 6 - Symbols	0	1	1
C-BLN6-TEXT	Base Line 6 - Annotation text	0	2	1
C-BLN6-WORK	Base Line 6 - User work (Non-Plotting)	0	1	0
C-BLN7	Base Line 7 - Base level (Uncontrolled)	0	1	1
C-BLN7-COGO	Base Line 7 - COGO points	0	1	1
C-BLN7-DIMS	Base Line 7 - Dimensions, Stationing	0	2	1
C-BLN7-LINE	Base Line 7 - Center/Base Line	L101	1	1
C-BLN7-NOTE	Base Line 7 - Notes, Curve Data	0	2	1
C-BLN7-PNTS	Base Line 7 - Points (Non-Plotting)	0	1	0
C-BLN7-PTRN	Base Line 7 - Pattern	0	1	1

Name	Description	Style	Wt.	Plot
C-BLN7-SYMB	Base Line 7 - Symbols	0	1	1
C-BLN7-TEXT	Base Line 7 - Annotation text	0	2	1
C-BLN7-WORK	Base Line 7 - User work (Non-Plotting)	0	1	0
C-BLN8	Base Line 8 - Base level (Uncontrolled)	0	1	1
C-BLN8-COGO	Base Line 8 - COGO points	0	1	1
C-BLN8-DIMS	Base Line 8 - Dimensions, Stationing	0	2	1
C-BLN8-LINE	Base Line 8 - Center/Base Line	L101	1	1
C-BLN8-NOTE	Base Line 8 - Notes, Curve Data	0	2	1
C-BLN8-PNTS	Base Line 8 - Points (Non-Plotting)	0	1	0
C-BLN8-PTRN	Base Line 8 - Pattern	0	1	1
C-BLN8-SYMB	Base Line 8 - Symbols	0	1	1
C-BLN8-TEXT	Base Line 8 - Annotation text	0	2	1
C-BLN8-WORK	Base Line 8 - User work (Non-Plotting)	0	1	0
C-BLN9	Base Line 9 - Base level (Uncontrolled)	0	1	1
C-BLN9-COGO	Base Line 9 - COGO points	0	1	1
C-BLN9-DIMS	Base Line 9 - Dimensions, Stationing	0	2	1
C-BLN9-LINE	Base Line 9 - Center/Base Line	L101	1	1
C-BLN9-NOTE	Base Line 9 - Notes, Curve Data	0	2	1
C-BLN9-PNTS	Base Line 9 - Points (Non-Plotting)	0	1	0
C-BLN9-PTRN	Base Line 9 - Pattern	0	1	1
C-BLN9-SYMB	Base Line 9 - Symbols	0	1	1
C-BLN9-TEXT	Base Line 9 - Annotation text	0	2	1
C-BLN9-WORK	Base Line 9 - User work (Non-Plotting)	0	1	0
C-CATV	Cable TV	0	1	1
C-CATV-BERM	Cable TV - Berm for liquids retention	0	1	1
C-CATV-DIMS	Cable TV - Dimensions	0	2	1
C-CATV-DUCT	Cable TV - Ducts and conduits (vacant) for future lines	0	1	1
C-CATV-EQPM	Cable TV - Equipment and Pad	0	1	1
C-CATV-GUYS	Cable TV - Guying equipment	0	1	1
C-CATV-HYDR	Cable TV - Hydrants and Fire Department connections	0	1	1
C-CATV-JBOX	Cable TV - Junction Box	0	1	1
C-CATV-LINE	Cable TV - Lines	L406	4	1
C-CATV-LINE-DBUR	Cable TV - Direct Buried Underground Lines	L408	4	1
C-CATV-LINE-OVHD	Cable TV - Overhead Lines	L406	4	1
C-CATV-LINE-UNDR	Cable TV - Underground Lines	L407	4	1
C-CATV-MARK	Cable TV - Cell - Above Ground Markers	0	1	1
C-CATV-METR	Cable TV - Meters and instrumentation	0	1	1

Name	Description	Style	Wt.	Plot
C-CATV-MHOL	Cable TV - Manholes and junction boxes	0	1	1
C-CATV-NOTE	Cable TV - Notes	0	2	1
C-CATV-PERC	Cable TV - Perc Test Holes and Pits	0	1	1
C-CATV-PITS	Cable TV - Pits for vents, valves and other equipment	0	1	1
C-CATV-PLNT	Cable TV - Plants, pumping stations, storage tanks and reservoirs	0	1	1
C-CATV-PNTS	Cable TV - Points (Non-Plotting)	0	1	0
C-CATV-POLE	Cable TV - Pole	0	1	1
C-CATV-PTRN	Cable TV - Pattern	0	1	1
C-CATV-SITE	Cable TV - Line - Site (Interior boundary)	0	1	1
C-CATV-SYMB	Cable TV - Symbols	0	1	1
C-CATV-TEXT	Cable TV - Text	0	2	1
C-CATV-TRCH	Cable TV - Fuel line trench	0	1	1
C-CATV-WELL	Cable TV - Wells	0	1	1
C-CATV-WORK	Cable TV - User Work (Non-Plotting)	0	1	0
C-CATV-XFMR	Cable TV - Transformers	0	1	1
C-CHAN	Channels (Navigable)	0	1	1
C-CHAN-DIMS	Channels - Dimensions	0	2	1
C-CHAN-EDGE	Channels - Edge	0	1	1
C-CHAN-LINE	Channels - Line	L300	1	1
C-CHAN-NOTE	Channels - Notes	0	2	1
C-CHAN-PNTS	Channels - Points (Non-Plotting)	0	1	0
C-CHAN-PTRN	Channels - Pattern	0	1	1
C-CHAN-SYMB	Channels - Symbols	0	1	1
C-CHAN-TEXT	Channels - Text	0	2	1
C-CHAN-WORK	Channels - User Work (Non-Plotting)	0	1	0
C-CREK	Creek, Stream, Pond or Minor Water Courses	0	1	1
C-CREK-DIMS	Creek - Dimensions	0	2	1
C-CREK-EDGE	Creek - Edge	L300	1	1
C-CREK-LINE	Creek - Line	L300	1	1
C-CREK-NOTE	Creek - Notes	0	2	1
C-CREK-PNTS	Creek - Points (Non-Plotting)	0	1	0
C-CREK-PTRN	Creek - Pattern	0	1	1
C-CREK-SYMB	Creek - Symbols	0	1	1
C-CREK-TEXT	Creek - Text	0	2	1
C-CREK-WORK	Creek - User Work (Non-Plotting)	0	1	0
C-CURB	Curbs and Gutters	0	1	1
C-CURB-BACK	Curbs - Back of Curb	0	2	1

Name	Description	Style	Wt.	Plot
C-CURB-BOTM	Curbs - Bottom of Curb	0	2	1
C-CURB-DIMS	Curbs - Dimensions	0	2	1
C-CURB-NOTE	Curbs - Note	0	2	1
C-CURB-PNTS	Curbs - Points (Non-Plotting)	0	1	0
C-CURB-PTRN	Curbs - Pattern	0	1	1
C-CURB-SYMB	Curbs - Symbols	0	1	1
C-CURB-TEXT	Curbs - Text	0	2	1
C-CURB-TOPP	Curbs - Top of Curb	0	2	1
C-CURB-UNDR	Curbs - Bottom - non plotting	0	1	1
C-CURB-WORK	Curbs - User Work (Non-Plotting)	0	1	0
C-DRIV	Driveways	0	1	1
C-DRIV-DIMS	Driveways - Dimensions	0	2	1
C-DRIV-EDGE	Driveways - Edge of	L102	1	1
C-DRIV-LINE	Driveways - Lines	L101	1	1
C-DRIV-NOTE	Driveways - Notes	0	2	1
C-DRIV-PNTS	Driveways - Points (Non-Plotting)	0	1	0
C-DRIV-PTRN	Driveways - Pattern	0	1	1
C-DRIV-SYMB	Driveways - Symbols	0	1	1
C-DRIV-TEXT	Driveways - Text	0	2	1
C-DRIV-WORK	Driveways - User Work (Non-Plotting)	0	1	0
C-DTCH	Ditch, Swale or Wash	0	1	1
C-DTCH-SWAL	Ditch - Swale	L302	1	1
C-DTCH-BOTM	Ditch - Bottom of Ditch	L301	1	1
C-DTCH-CNTR	Ditch - Centerline of Ditch	L302	1	1
C-DTCH-DIMS	Ditch - Dimensions	0	2	1
C-DTCH-DRAW	Ditch - Draw	0	1	1
C-DTCH-NOTE	Ditch - Note	0	2	1
C-DTCH-PAVE	Ditch - Paved	0	1	1
C-DTCH-PNTS	Ditch - Points (Non-Plotting)	0	1	0
C-DTCH-PTRN	Ditch - Pattern	0	1	1
C-DTCH-SYMB	Ditch - Symbols	0	1	1
C-DTCH-TEXT	Ditch - Text	0	2	1
C-DTCH-TOPD	Ditch - Top of Ditch	0	1	1
C-DTCH-WORK	Ditch - User Work (Non-Plotting)	0	1	0
C-EROS	Erosion and Sediment Control Devices	0	1	1
C-EROS-BARR	Erosion - Vapor/Capillary water barriers	0	1	1
C-EROS-CNTE	Erosion - Construction Entrance	0	1	1

Name	Description	Style	Wt.	Plot
C-EROS-DIMS	Erosion - Dimensions	0	2	1
C-EROS-DISC	Erosion - Discharge Point	0	1	1
C-EROS-DTCH	Erosion - Ditch	0	1	1
C-EROS-DTCH-TEMP	Erosion - Temporary Ditch	L305	1	1
C-EROS-DVDK	Erosion - Diversion Dike	0	1	1
C-EROS-FENC	Erosion - Protective Fence	L306	1	1
C-EROS-GABN	Erosion - Gabions	0	1	1
C-EROS-INPR	Erosion - Inlet Protection	0	1	1
C-EROS-LEVE	Erosion - Levee	0	1	1
C-EROS-MATT	Erosion - Matt	0	1	1
C-EROS-NOTE	Erosion - Notes	0	2	1
C-EROS-OLSF	Erosion - Over Land Sheet Flow	0	1	1
C-EROS-PIPE-TEMP	Erosion - Temporary Pipe	L481	1	1
C-EROS-PNTS	Erosion - Points (Non-Plotting)	0	1	0
C-EROS-PTRN	Erosion - Pattern	0	1	1
C-EROS-RRAP	Erosion - Riprap, Stone Protection, Jetties, Breakwaters	0	1	1
C-EROS-SDTR	Erosion - Sediment Trap	0	1	1
C-EROS-SILT	Erosion - Silt control devices	0	1	1
C-EROS-SILT-BASN	Erosion - Silt Basin	0	1	1
C-EROS-SILT-FENC	Erosion - Silt Fence	L307	1	1
C-EROS-SILT-SOCK	Erosion - Silt Sock	0	1	1
C-EROS-SILT-TRAP	Erosion - Silt Trap	0	1	1
C-EROS-SSLT	Erosion - Super Silt Fence	0	1	1
C-EROS-SYMB	Erosion - Symbols	0	1	1
C-EROS-TEXT	Erosion - Text	0	2	1
C-EROS-TOEB	Erosion - Toe / Bottom of Berm	0	1	1
C-EROS-TOPB	Erosion - Top of Berm	0	1	1
C-EROS-WEIR	Erosion - Weirs	0	1	1
C-EROS-WORK	Erosion - User Work (Non-Plotting)	0	1	0
C-ESMT	Easements	0	1	1
C-ESMT-CDAT	Easements - Property Lines, Curve Data	0	1	1
C-ESMT-CONS-TEMP	Easements - Temporary Construction Easement	0	1	1
C-ESMT-DIMS	Easements - Dimensions	0	2	1
C-ESMT-LGAL	Easements - Required Legal Easement lines	0	1	1
C-ESMT-LINE	Easements - Property Lines	0	1	1
C-ESMT-NOTE	Easements - Notes	0	2	1
C-ESMT-PNTS	Easements - Points (Non-Plotting)	0	1	0
C-ESMT-PTRN	Easements - Pattern	0	1	1

Name	Description	Style	Wt.	Plot
C-ESMT-RWAY	Easement - Legal R/W Lines	L200	1	1
C-ESMT-RWAY-ACQU	Easement - Required R/W Lines	L201	4	1
C-ESMT-SYMB	Easements - Symbols	0	1	1
C-ESMT-TEXT	Easements - Text	0	2	1
C-ESMT-WORK	Easements - User Work (Non-Plotting)	0	1	0
C-FIBR	Fiber Optic	0	1	1
C-FIBR-BERM	Fiber Optic - Berm for liquids retention	0	1	1
C-FIBR-DIMS	Fiber Optic - Dimensions	0	2	1
C-FIBR-DUCT	Fiber Optic - Ducts and conduits (vacant) for future lines	0	1	1
C-FIBR-EQPM	Fiber Optic - Equipment and Pad	0	1	1
C-FIBR-GUYS	Fiber Optic - Guying equipment	0	1	1
C-FIBR-HYDR	Fiber Optic - Hydrants and Fire Department connections	0	1	1
C-FIBR-JBOX	Fiber Optic - Junction Box	0	1	1
C-FIBR-LINE	Fiber Optic - Lines	L403	1	1
C-FIBR-LINE-DBUR	Fiber Optic - Direct Buried Underground Lines	L405	1	1
C-FIBR-LINE-OVHD	Fiber Optic - Overhead Lines	L403	1	1
C-FIBR-LINE-UNDR	Fiber Optic - Underground Lines	L404	1	1
C-FIBR-MARK	Fiber Optic - Cell - Above Ground Markers	0	1	1
C-FIBR-METR	Fiber Optic - Meters and instrumentation	0	1	1
C-FIBR-MHOL	Fiber Optic - Manholes and junction boxes	0	1	1
C-FIBR-NOTE	Fiber Optic - Notes	0	2	1
C-FIBR-PERC	Fiber Optic - Perc Test Holes and Pits	0	1	1
C-FIBR-PITS	Fiber Optic - Pits for vents, valves and other equipment	0	1	1
C-FIBR-PLNT	Fiber Optic - Plants, pumping stations, storage tanks and reservoirs	0	1	1
C-FIBR-PNTS	Fiber Optic - Points (Non-Plotting)	0	1	0
C-FIBR-POLE	Fiber Optic - Pole	0	1	1
C-FIBR-PTRN	Fiber Optic - Pattern	0	1	1
C-FIBR-SITE	Fiber Optic - Line - Site (Interior boundary)	0	1	1
C-FIBR-SYMB	Fiber Optic - Symbols	0	1	1
C-FIBR-TEXT	Fiber Optic - Text	0	2	1
C-FIBR-TRCH	Fiber Optic - Fuel line trench	0	1	1
C-FIBR-WELL	Fiber Optic - Wells	0	1	1
C-FIBR-WORK	Fiber Optic - User Work (Non-Plotting)	0	1	1
C-FIBR-XFMR	Fiber Optic - Transformers	0	1	0
C-FLHA	Flood Hazard Area	0	1	1
C-FLHA-010Y	Flood Hazard Area - 10 Year Mark	0	1	1
C-FLHA-025Y	Flood Hazard Area - 25 Year Mark	0	1	1

Name	Description	Style	Wt.	Plot
C-FLHA-050Y	Flood Hazard Area - 50 Year Mark	0	1	1
C-FLHA-100Y	Flood Hazard Area - 100 Year Mark	0	1	1
C-FLHA-200Y	Flood Hazard Area - 200 Year Mark	0	1	1
C-FLHA-500Y	Flood Hazard Area - 500 Year Mark	0	1	1
C-FLHA-DIMS	Flood Hazard Area - Dimensions	0	1	1
C-FLHA-NOTE	Flood Hazard Area - Notes	0	2	1
C-FLHA-PNTS	Flood Hazard Area - Points (Non-Plotting)	0	1	0
C-FLHA-PTRN	Flood Hazard Area - Pattern	0	1	1
C-FLHA-SYMB	Flood Hazard Area - Symbols	0	1	1
C-FLHA-TEXT	Flood Hazard Area - Text	0	2	1
C-FLHA-WORK	Flood Hazard Area - User Work (Non-Plotting)	0	1	0
C-GEOT	Geotech	0	1	1
C-GEOT-DIMS	Geotech - Dimensions	0	1	1
C-GEOT-NOTE	Geotech - Notes	0	2	1
C-GEOT-PNTS	Geotech - Points (Non-Plotting)	0	1	0
C-GEOT-PTRN	Geotech - Pattern	0	1	1
C-GEOT-SYMB	Geotech - Symbols	0	1	1
C-GEOT-TEXT	Geotech - Text	0	2	1
C-GEOT-WORK	Geotech - User Work (Non-Plotting)	0	1	0
C-GRAL	Guide rail	0	1	1
C-GRAL-DIMS	Guide rail - Dimensions	0	2	1
C-GRAL-ENDT	Guide rail - End treatment	0	1	1
C-GRAL-EXIS	Guide rail - Existing	L106	1	1
C-GRAL-MARK	Guide rail - Markers and Reflectors	0	1	1
C-GRAL-NOTE	Guide rail - Notes	0	2	1
C-GRAL-PNTS	Guide rail - Points (Non-Plotting)	0	1	0
C-GRAL-PROP	Guide rail - Proposed	0	1	1
C-GRAL-PROP-LEFT	Guide rail - Proposed left side	L104	2	1
C-GRAL-PROP-RGHT	Guide rail - Proposed right side	L105	2	1
C-GRAL-PTRN	Guide rail - Pattern	0	1	1
C-GRAL-SYMB	Guide rail - Symbols	0	1	1
C-GRAL-TEXT	Guide rail - Text	0	2	1
C-GRAL-WORK	Guide rail - User Work (Non-Plotting)	0	1	0
C-MILR	Military Ranges	0	1	1
C-NGAS	Natural Gas	0	1	1
C-NGAS-BERM	Natural Gas - Berm for liquids retention	0	1	1
C-NGAS-DIMS	Natural Gas - Dimensions	0	2	1

Name	Description	Style	Wt.	Plot
C-NGAS-DUCT	Natural Gas - Ducts and conduits (vacant) for future lines	0	1	1
C-NGAS-EQPM	Natural Gas - Equipment and Pad	0	1	1
C-NGAS-GUYS	Natural Gas - Guying equipment	0	1	1
C-NGAS-HYDR	Natural Gas - Hydrants and Fire Department connections	0	1	1
C-NGAS-JBOX	Natural Gas - Junction Box	0	1	1
C-NGAS-LINE	Natural Gas - Lines	L460	4	1
C-NGAS-LINE-DBUR	Natural Gas - Direct Buried Underground Lines	L460	4	1
C-NGAS-LINE-OVHD	Natural Gas - Overhead Lines	L460	1	1
C-NGAS-LINE-UNDR	Natural Gas - Underground Lines	L460	4	1
C-NGAS-MARK	Natural Gas - Cell - Above Ground Markers	0	1	1
C-NGAS-METR	Natural Gas - Meters and instrumentation	0	1	1
C-NGAS-MHOL	Natural Gas - Manholes and junction boxes	0	1	1
C-NGAS-NOTE	Natural Gas - Notes	0	2	1
C-NGAS-PERC	Natural Gas - Perc Test Holes and Pits	0	1	1
C-NGAS-PITS	Natural Gas - Pits for vents, valves and other equipment	0	1	1
C-NGAS-PLNT	Natural Gas - Plants, pumping stations, storage tanks and reservoirs	0	1	1
C-NGAS-PNTS	Natural Gas - Points (Non-Plotting)	0	1	0
C-NGAS-POLE	Natural Gas - Pole	0	1	1
C-NGAS-PTRN	Natural Gas - Pattern	0	1	1
C-NGAS-SITE	Natural Gas - Line - Site (Interior boundary)	0	1	1
C-NGAS-SYMB	Natural Gas - Symbols	0	1	1
C-NGAS-TEXT	Natural Gas - Text	0	2	1
C-NGAS-TRCH	Natural Gas - Fuel line trench	0	1	1
C-NGAS-WELL	Natural Gas - Wells	0	1	1
C-NGAS-WORK	Natural Gas - User Work (Non-Plotting)	0	1	0
C-NGAS-XFMR	Natural Gas - Transformers	0	1	1
C-POWR	Power	0	1	1
C-POWR-BERM	Power - Berm for liquids retention	0	1	1
C-POWR-COND	Power - Conduits	L420	4	1
C-POWR-DIMS	Power - Dimensions	0	2	1
C-POWR-DUCT	Power - Ducts and conduits (vacant) for future lines	0	1	1
C-POWR-EQPM	Power - Equipment and Pad	0	1	1
C-POWR-GUYS	Power - Guying equipment	0	1	1
C-POWR-HYDR	Power - Hydrants and Fire Department connections	0	1	1
C-POWR-JBOX	Power - Junction Box	0	1	1
C-POWR-LINE	Power - Lines	L409	4	1
C-POWR-LINE-DBUR	Power - Direct Buried Underground Lines	L410	4	1
C-POWR-LINE-OVHD	Power - Overhead Lines	L409	4	1

Name	Description	Style	Wt.	Plot
C-POWR-LINE-UNDR	Power - Underground Lines	L410	4	1
C-POWR-MARK	Power - Cell - Above Ground Markers	0	1	1
C-POWR-METR	Power - Meters and instrumentation	0	1	1
C-POWR-MHOL	Power - Manholes and junction boxes	0	1	1
C-POWR-NOTE	Power - Notes	0	2	1
C-POWR-PERC	Power - Perc Test Holes and Pits	0	1	1
C-POWR-PITS	Power - Pits for vents, valves and other equipment	0	1	1
C-POWR-PLNT	Power - Plants, pumping stations, storage tanks and reservoirs	0	1	1
C-POWR-PNTS	Power - Points (Non-Plotting)	0	1	0
C-POWR-POLE	Power - Pole	0	1	1
C-POWR-PTRN	Power - Pattern	0	1	1
C-POWR-SITE	Power - Line - Site (Interior boundary)	0	1	1
C-POWR-SYMB	Power - Symbols	0	1	1
C-POWR-TEXT	Power - Text	0	2	1
C-POWR-TRCH	Power - Fuel line trench	0	1	1
C-POWR-WELL	Power - Wells	0	1	1
C-POWR-WORK	Power - User Work (Non-Plotting)	0	1	0
C-POWR-XFMR	Power - Transformers	0	1	1
C-PRKG	Parking Lots	0	1	1
C-PRKG-DIMS	Parking Lots - Dimensions	0	1	1
C-PRKG-EDGE	Parking Lots - Edge of	0	1	1
C-PRKG-LINE	Parking Lots - Line	0	1	1
C-PRKG-NOTE	Parking Lots - Note	0	2	1
C-PRKG-PNTS	Parking Lots - Points (Non-Plotting)	0	1	0
C-PRKG-PTRN	Parking Lots - Pattern	0	1	1
C-PRKG-SYMB	Parking Lots - Symbols	0	1	1
C-PRKG-TEXT	Parking Lots - Text	0	2	1
C-PRKG-WORK	Parking Lots - User Work (Non-Plotting)	0	1	0
C-PROF	Profile	0	1	1
C-PROF-AXIS	Profile - Axis	0	1	1
C-PROF-AXIS-TEXT	Profile - Axis - Text	0	1	1
C-PROF-AXIS-TITL	Profile - Axis - Title	0	1	1
C-PROF-DIMS	Profile - Dimensions	0	1	1
C-PROF-FRAM	Profile - Frame	0	1	1
C-PROF-GRID	Profile - Grid	0	1	1
C-PROF-GRID-MAJR	Profile - Grid - Major	0	1	1
C-PROF-GRID-MINR	Profile - Grid - Minor	0	1	1
C-PROF-NOTE	Profile - Notes	0	1	1

Name	Description	Style	Wt.	Plot
C-PROF-PNTS	Profile - Points (Non-Plotting)	0	1	0
C-PROF-PTRN	Profile - Pattern	0	1	1
C-PROF-SYMB	Profile - Symbols	0	1	1
C-PROF-TEXT	Profile - Text	0	2	1
C-PROF-WORK	Profile - User Work (Non-Plotting)	0	1	0
C-PTRO	Petroleum	0	1	1
C-PTRO-BERM	Petroleum - Berm for liquids retention	0	1	1
C-PTRO-DIMS	Petroleum - Dimensions	0	2	1
C-PTRO-DUCT	Petroleum - Ducts and conduits (vacant) for future lines	0	1	1
C-PTRO-EQPM	Petroleum - Equipment and Pad	0	1	1
C-PTRO-GUYS	Petroleum - Guying equipment	0	1	1
C-PTRO-HYDR	Petroleum - Hydrants and Fire Department connections	0	1	1
C-PTRO-JBOX	Petroleum - Junction Box	0	1	1
C-PTRO-LINE	Petroleum - Lines	L470	4	1
C-PTRO-LINE-DBUR	Petroleum - Direct Buried Underground Lines	L470	4	1
C-PTRO-LINE-OVHD	Petroleum - Overhead Lines	L470	4	1
C-PTRO-LINE-UNDR	Petroleum - Underground Lines	L470	4	1
C-PTRO-MARK	Petroleum - Cell - Above Ground Markers	0	1	1
C-PTRO-METR	Petroleum - Meters and instrumentation	0	1	1
C-PTRO-MHOL	Petroleum - Manholes and junction boxes	0	1	1
C-PTRO-NOTE	Petroleum - Notes	0	2	1
C-PTRO-PERC	Petroleum - Perc Test Holes and Pits	0	1	1
C-PTRO-PITS	Petroleum - Pits for vents, valves and other equipment	0	1	1
C-PTRO-PLNT	Petroleum - Plants, pumping stations, storage tanks and reservoirs	0	1	1
C-PTRO-PNTS	Petroleum - Points (Non-Plotting)	0	1	0
C-PTRO-POLE	Petroleum - Pole	0	1	1
C-PTRO-PTRN	Petroleum - Pattern	0	1	1
C-PTRO-SITE	Petroleum - Line - Site (Interior boundary)	0	1	1
C-PTRO-SYMB	Petroleum - Symbols	0	1	1
C-PTRO-TEXT	Petroleum - Text	0	2	1
C-PTRO-TRCH	Petroleum - Fuel line trench	0	1	1
C-PTRO-WELL	Petroleum - Wells	0	1	1
C-PTRO-WORK	Petroleum - User Work (Non-Plotting)	0	1	0
C-PTRO-XFMR	Petroleum - Transformers	0	1	1
C-RAIL	Railroad	0	1	1
C-RAIL-DIMS	Railroad - Dimensions	0	2	1
C-RAIL-EQPM	Railroad - Equipment	0	1	1
C-RAIL-NOTE	Railroad - Notes	0	2	1

Name	Description	Style	Wt.	Plot
C-RAIL-PNTS	Railroad - Points (Non-Plotting)	0	1	0
C-RAIL-PTRN	Railroad - Pattern	0	1	1
C-RAIL-SGNL	Railroad - Crossing Signal Light	0	1	1
C-RAIL-SIGN	Railroad - Sign	0	1	1
C-RAIL-SYMB	Railroad - Symbols	0	1	1
C-RAIL-TEXT	Railroad - Text	0	2	1
C-RAIL-TRAK	Railroad - Single Track	L260	1	1
C-RAIL-WORK	Railroad - User Work (Non-Plotting)	0	1	0
C-ROAD	Roadway	0	1	1
C-ROAD-BNCH	Roadway - Benching	0	1	1
C-ROAD-BRDG	Roadway - Bridge Structure Outline	0	1	1
C-ROAD-CNTR	Roadway - Centerline (Non-Patterned)	L100	1	1
C-ROAD-DIMS	Roadway - Dimensions	0	2	1
C-ROAD-EDGE	Roadway - Edge of Roadway (Pavement)	L100	2	1
C-ROAD-HING	Roadway - Hinge Point	0	1	1
C-ROAD-JNTS	Roadway - Joints - Expansion, Centerline etc.	0	1	1
C-ROAD-LANE	Roadway - Edge of Lane	0	1	1
C-ROAD-MEDN	Roadway - Edge of Median	0	1	1
C-ROAD-MISC	Roadway - Miscellaneous Items	0	1	1
C-ROAD-NOTE	Roadway - Notes	0	2	1
C-ROAD-PNTS	Roadway - Points (Non-Plotting)	0	1	0
C-ROAD-PTRN	Roadway - Pattern	0	1	1
C-ROAD-SYMB	Roadway - Symbols	0	1	1
C-ROAD-TEXT	Roadway - Text	0	2	1
C-ROAD-TOEB	Roadway - Toe of Bank or Berm	0	1	1
C-ROAD-TOPB	Roadway - Top of Bank or Berm	0	1	1
C-ROAD-WORK	Roadway - User Work (Non-Plotting)	0	1	0
C-RWAY	Right of Way	0	1	1
C-RWAY-CTLA	Right of Way - Controlled Access	0	3	1
C-RWAY-DIMS	Right of Way - Dimensions	0	2	1
C-RWAY-FENC	Right of Way - Right-Of-Way Fence	0	3	1
C-RWAY-LGAL	Right of Way - (Copy of) placed as Legal ROW	L200	3	1
C-RWAY-LLOS	Right of Way - Legal Limit of Slope	0	1	1
C-RWAY-LMON	Right of Way - Monument	0	1	1
C-RWAY-NOTE	Right of Way - Notes	0	2	1
C-RWAY-PNTS	Right of Way - Points (Non-Plotting)	0	1	0
C-RWAY-PTRN	Right of Way - Pattern	0	1	1
C-RWAY-RROW	Right of Way - Required	L201	4	1

Name	Description	Style	Wt.	Plot
C-RWAY-SYMB	Right of Way - Symbols	0	1	1
C-RWAY-TEXT	Right of Way - Text	0	2	1
C-RWAY-WORK	Right of Way - User Work (Non-Plotting)	0	1	0
C-SHDR	Shoulders	0	1	1
C-SHDR-BOTM	Shoulders - Bottom of Shoulder	0	1	1
C-SHDR-DIMS	Shoulders - Dimensions	0	2	1
C-SHDR-EDGE	Shoulders - Edge of Shoulder	0	3	1
C-SHDR-NOTE	Shoulders - Notes	0	2	1
C-SHDR-PNTS	Shoulders - Points (Non-Plotting)	0	1	0
C-SHDR-PTRN	Shoulders - Pattern	0	1	1
C-SHDR-SYMB	Shoulders - Symbols	0	1	1
C-SHDR-TEXT	Shoulders - Text	0	2	1
C-SHDR-WORK	Shoulders - User Work (Non-Plotting)	0	1	0
C-SSWR	Sanitary Sewer	0	1	1
C-SSWR-BERM	Sanitary Sewer - Berm for liquids retention	0	1	1
C-SSWR-DIMS	Sanitary Sewer - Dimensions	0	2	1
C-SSWR-DUCT	Sanitary Sewer - Ducts and conduits (vacant) for future lines	0	1	1
C-SSWR-EQPM	Sanitary Sewer - Equipment and Pad	0	1	1
C-SSWR-GUYS	Sanitary Sewer - Guying equipment	0	1	1
C-SSWR-HYDR	Sanitary Sewer - Hydrants and Fire Department connections	0	1	1
C-SSWR-JBOX	Sanitary Sewer - Junction Box	0	1	1
C-SSWR-LINE	Sanitary Sewer - Lines	L440	5	1
C-SSWR-LINE-DBUR	Sanitary sewer - Direct Buried Underground Lines	L440	5	1
C-SSWR-LINE-OVHD	Sanitary Sewer - Overhead Lines	L440	5	1
C-SSWR-LINE-UNDR	Sanitary Sewer - Underground Lines	L440	5	1
C-SSWR-MARK	Sanitary Sewer - Cell - Above Ground Markers	0	1	1
C-SSWR-METR	Sanitary Sewer - Meters and instrumentation	0	1	1
C-SSWR-MHOL	Sanitary Sewer - Manholes and junction boxes	0	1	1
C-SSWR-NOTE	Sanitary Sewer - Notes	0	2	1
C-SSWR-PERC	Sanitary Sewer - Perc Test Holes and Pits	0	1	1
C-SSWR-PIPE	Sanitary Sewer - Pipe	L440	5	1
C-SSWR-PITS	Sanitary Sewer - Pits for vents, valves and other equipment	0	1	1
C-SSWR-PLNT	Sanitary Sewer - Plants, pumping stations, storage tanks and reservoirs	0	1	1
C-SSWR-PNTS	Sanitary Sewer - Points (Non-Plotting)	0	1	0
C-SSWR-POLE	Sanitary Sewer - Pole	0	1	1
C-SSWR-PTRN	Sanitary Sewer - Pattern	0	1	1
C-SSWR-SEPT	Sanitary Sewer - Septic Tank	0	1	1
C-SSWR-SITE	Sanitary Sewer - Line - Site (Interior boundary)	0	1	1

Name	Description	Style	Wt.	Plot
C-SSWR-SYMB	Sanitary Sewer - Symbols	0	1	1
C-SSWR-TEXT	Sanitary Sewer - Text	0	2	1
C-SSWR-TRCH	Sanitary Sewer - Fuel line trench	0	1	1
C-SSWR-WELL	Sanitary Sewer - Wells	0	1	1
C-SSWR-WORK	Sanitary Sewer - User Work (Non-Plotting)	0	1	0
C-SSWR-XFMR	Sanitary Sewer - Transformers	0	1	1
C-STRM	Storm Water Drainage	0	1	1
C-STRM-AREA	Storm Water - Area	0	1	1
C-STRM-CHUT	Storm Water - Chutes and Energy dissipator	0	1	1
C-STRM-CHUT-PAVE	Storm Water - Paved energy dissipator	0	1	1
C-STRM-CHUT-ROCK	Storm Water - Rock energy dissipator	0	1	1
C-STRM-CULV	Storm Water - Culvert	0	1	1
C-STRM-CULV-BOXC	Storm Water - Culvert Box	0	1	1
C-STRM-CULV-OPEN	Storm Water - Culvert Open	0	1	1
C-STRM-DETB	Storm Water - Detention Basins	0	1	1
C-STRM-DIMS	Storm Water - Dimensions	0	2	1
C-STRM-DTCH	Storm Water - Ditch	L301	1	1
C-STRM-HDWL	Storm Water - Headwalls and End walls	0	1	1
C-STRM-INLT	Storm Water - Inlets (curb, surface, and catch basins)	0	1	1
C-STRM-MARK	Storm Water - Surface Markers/Signs	0	1	1
C-STRM-MHOL	Storm Water - Manhole	0	1	1
C-STRM-NOTE	Storm Water - Notes	0	2	1
C-STRM-PIPE	Storm Water - Piping	L481	5	1
C-STRM-PIPE-ABOV	Storm Water - Piping, Above Ground	L481	5	1
C-STRM-PIPE-TEMP	Storm Water - Piping, Temporary slope drainage	L481	5	1
C-STRM-PIPE-UNDR	Storm Water - Piping, Below Ground	L481	5	1
C-STRM-PNTS	Storm Water - Points (Non-Plotting)	0	1	0
C-STRM-PTRN	Storm Water - Pattern	0	1	1
C-STRM-STRC	Storm Water - Structures	0	1	1
C-STRM-SYMB	Storm Water - Symbols	0	1	1
C-STRM-TEXT	Storm Water - Text	0	2	1
C-STRM-WORK	Storm Water - User Work (Non-Plotting)	0	1	0
C-SURF	Surface	0	1	1
C-SURF-BNDY	Surface - Boundary	0	1	1
C-SURF-BNDY-EXTR	Surface - Exterior Boundaries	0	1	1
C-SURF-BNDY-INTR	Surface - Interior Boundaries	0	1	1
C-SURF-CONT	Surface - Contours	0	1	1
C-SURF-CONT-MAJR	Surface - Contours Major	0	2	1

Name	Description	Style	Wt.	Plot
C-SURF-CONT-MINR	Surface - Contours Minor	0	1	1
C-SURF-CONT-SPOT	Surface - Contours Spot Elevations	0	1	1
C-SURF-DIMS	Surface - Dimensions	0	1	1
C-SURF-ELEV	Surface - Triangle Elevations	0	1	1
C-SURF-FALT	Surface - Fault / Break lines	0	1	1
C-SURF-LN00	Surface - Line 00	0	1	1
C-SURF-LN01	Surface - Line 01	0	1	1
C-SURF-LN02	Surface - Line 02	0	1	1
C-SURF-LN03	Surface - Line 03	0	1	1
C-SURF-LN04	Surface - Line 04	0	1	1
C-SURF-LN05	Surface - Line 05	0	1	1
C-SURF-LN06	Surface - Line 06	0	1	1
C-SURF-LN07	Surface - Line 07	0	1	1
C-SURF-LN08	Surface - Line 08	0	1	1
C-SURF-LN09	Surface - Line 09	0	1	1
C-SURF-LN10	Surface - Line 10	0	1	1
C-SURF-LN11	Surface - Line 11	0	1	1
C-SURF-LN12	Surface - Line 12	0	1	1
C-SURF-LN13	Surface - Line 13	0	1	1
C-SURF-LN14	Surface - Line 14	0	1	1
C-SURF-LN15	Surface - Line 15	0	1	1
C-SURF-LN16	Surface - Line 16	0	1	1
C-SURF-LN17	Surface - Line 17	0	1	1
C-SURF-LN18	Surface - Line 18	0	1	1
C-SURF-LN19	Surface - Line 19	0	1	1
C-SURF-LN20	Surface - Line 20	0	1	1
C-SURF-NOTE	Surface - Notes	0	1	1
C-SURF-PMTR	Surface - Perimeter	0	1	1
C-SURF-PNTS	Surface - Points (Non-Plotting)	0	1	0
C-SURF-PTRN	Surface - Pattern	0	1	1
C-SURF-SLOP	Surface - Triangle Slopes	0	1	1
C-SURF-SYMB	Surface - Symbols	0	1	1
C-SURF-TEXT	Surface - Text	0	2	1
C-SURF-TRIA	Surface - Triangles	0	1	1
C-SURF-WORK	Surface - User Work (Non-Plotting)	0	1	0
C-SURV	Survey Control Points	0	1	1
C-SURV-CTPT	Proposed survey control points	0	1	1
C-SURV-DIMS	Survey Control Points - Dimensions	0	1	1
C-SURV-NOTE	Survey Control Points - Notes	0	1	1

Name	Description	Style	Wt.	Plot
C-SURV-PNTS	Survey Control Points - Points (Non-Plotting)	0	1	0
C-SURV-PTRN	Survey Control Points - Pattern	0	1	1
C-SURV-SYMB	Survey Control Points - Symbols	0	1	1
C-SURV-TEXT	Survey Control Points - Text	0	2	1
C-SURV-WORK	Survey Control Points - User Work (Non-Plotting)	0	1	0
C-SWLK	Sidewalks	0	1	1
C-SWLK-DIMS	Sidewalks - Dimensions	0	2	1
C-SWLK-EDGE	Sidewalks - Edge of	0	1	1
C-SWLK-NOTE	Sidewalks - Notes	0	2	1
C-SWLK-PNTS	Sidewalks - Points (Non-Plotting)	0	1	1
C-SWLK-PTRN	Sidewalks - Pattern	0	1	1
C-SWLK-RAMP	Sidewalks - Handicap Ramp	0	1	1
C-SWLK-SYMB	Sidewalks - Symbols	0	1	1
C-SWLK-TEXT	Sidewalks - Text	0	2	1
C-SWLK-UNDR	Sidewalks - NON-PLOTTING	0	1	1
C-SWLK-WORK	Sidewalks - User Work (Non-Plotting)	0	1	0
C-TELP	Telephone	0	1	1
C-TELP-BERM	Telephone - Berm for liquids retention	0	1	1
C-TELP-DIMS	Telephone - Dimensions	0	2	1
C-TELP-DUCT	Telephone - Ducts and conduits (vacant) for future lines	0	1	1
C-TELP-EQPM	Telephone - Equipment and Pad	0	1	1
C-TELP-GUYS	Telephone - Guying equipment	0	1	1
C-TELP-HYDR	Telephone - Hydrants and Fire Department connections	0	1	1
C-TELP-JBOX	Telephone - Junction Box	0	1	1
C-TELP-LINE	Telephone - Lines	L400	1	1
C-TELP-LINE-DBUR	Telephone - Direct Buried Underground Lines	L402	4	1
C-TELP-LINE-OVHD	Telephone - Overhead Lines	L400	4	1
C-TELP-MARK	Telephone - Cell - Above Ground Markers	0	1	1
C-TELP-METR	Telephone - Meters and instrumentation	0	1	1
C-TELP-MHOL	Telephone - Manholes and junction boxes	0	1	1
C-TELP-NOTE	Telephone - Notes	0	2	1
C-TELP-PERC	Telephone - Perc Test Holes and Pits	0	1	1
C-TELP-PITS	Telephone - Pits for vents, valves and other equipment	0	1	1
C-TELP-PLNT	Telephone - Plants, pumping stations, storage tanks and reservoirs	0	1	1
C-TELP-PNTS	Telephone - Points (Non-Plotting)	0	1	0
C-TELP-POLE	Telephone - Pole	0	1	1
C-TELP-PTRN	Telephone - Pattern	0	1	1
C-TELP-SITE	Telephone - Line - Site (Interior boundary)	0	1	1

Name	Description	Style	Wt.	Plot
C-TELP-SYMB	Telephone - Symbols	0	1	1
C-TELP-TEXT	Telephone - Text	0	2	1
C-TELP-TRCH	Telephone - Fuel line trench	0	1	1
C-TELP-WELL	Telephone - Wells	0	1	1
C-TELP-WORK	Telephone - User Work (Non-Plotting)	0	1	0
C-TELP-XFMR	Telephone - Transformers	0	1	1
C-TOPO	Topography	0	1	1
C-TOPO-BKLN	Topography - Break lines	0	1	1
C-TOPO-BLBD-DBBL	Topography - Billboard Double	0	1	1
C-TOPO-BLBD-SNGL	Topography - Billboard Single	0	1	1
C-TOPO-CUTT	Topography - Cut	0	1	1
C-TOPO-DIMS	Topography - Dimensions	0	2	1
C-TOPO-FENC	Topography - Fence	L230	1	1
C-TOPO-FILL	Topography - Fill	L108	1	1
C-TOPO-NOTE	Topography - Notes	0	2	1
C-TOPO-PNTS	Topography - Points (Non-Plotting)	0	1	0
C-TOPO-PTRN	Topography - Pattern	0	1	1
C-TOPO-SYMB	Topography - Symbols	0	1	1
C-TOPO-TEXT	Topography - Text	0	2	1
C-TOPO-WORK	Topography - User Work (Non-Plotting)	0	1	0
C-TRAL	Trails or Paths	0	1	1
C-TRAL-DIMS	Trails - Dimensions	0	2	1
C-TRAL-EDGE	Trails - Edge of	0	1	1
C-TRAL-LINE	Trails - Lines	0	1	1
C-TRAL-NOTE	Trails - Notes	0	2	1
C-TRAL-PNTS	Trails - Points (Non-Plotting)	0	1	0
C-TRAL-PTRN	Trails - Pattern	0	1	1
C-TRAL-SYMB	Trails - Symbols	0	1	1
C-TRAL-TEXT	Trails - Text	0	2	1
C-TRAL-WORK	Trails - User Work (Non-Plotting)	0	1	0
C-UTIL	Utility	0	1	1
C-UTIL-BERM	Utility - Berm for liquids retention	0	1	1
C-UTIL-COMB	Utility - Combined	0	4	1
C-UTIL-DIMS	Utility - Dimensions	0	2	1
C-UTIL-DUCT	Utility - Ducts and conduits (vacant) for future lines	0	1	1
C-UTIL-EQPM	Utility - Equipment and Pad	0	1	1
C-UTIL-GUYS	Utility - Guying equipment	0	1	1

Name	Description	Style	Wt.	Plot
C-UTIL-HYDR	Utility - Hydrants and Fire Department connections	0	1	1
C-UTIL-JBOX	Utility - Junction Box	0	1	1
C-UTIL-LINE	Utility - Lines	0	1	1
C-UTIL-LINE-DBUR	Utility - Direct Buried Underground Lines	0	1	1
C-UTIL-LINE-OVHD	Utility - Overhead Lines	0	1	1
C-UTIL-LINE-UNDR	Utility - Underground Lines	0	1	1
C-UTIL-MARK	Utility - Cell - Above Ground Markers	0	1	1
C-UTIL-METR	Utility - Meters and instrumentation	0	1	1
C-UTIL-MHOL	Utility - Manholes and junction boxes	0	1	1
C-UTIL-NOTE	Utility - Notes	0	2	1
C-UTIL-PERC	Utility - Perc Test Holes and Pits	0	1	1
C-UTIL-PITS	Utility - Pits for vents, valves and other equipment	0	1	1
C-UTIL-PLNT	Utility - Plants, pumping stations, storage tanks and reservoirs	0	1	1
C-UTIL-PNTS	Utility - Points (Non-Plotting)	0	1	0
C-UTIL-POLE	Utility - Pole	0	1	1
C-UTIL-PTRN	Utility - Pattern	0	1	1
C-UTIL-SITE	Utility - Line - Site (Interior boundary)	0	1	1
C-UTIL-SYMB	Utility - Symbols	0	1	1
C-UTIL-TEXT	Utility - Text	0	2	1
C-UTIL-TRCH	Utility - Fuel line trench	0	1	1
C-UTIL-VLVE	Utility - Valve	0	1	1
C-UTIL-WELL	Utility - Wells	0	1	1
C-UTIL-WORK	Utility - User Work (Non-Plotting)	0	1	0
C-UTIL-XFMR	Utility - Transformers	0	1	1
C-VEGE	Vegetation	0	1	1
C-VEGE-BEDS	Vegetation - Planting beds	L503	1	1
C-VEGE-BUSH	Vegetation - Bushes and shrubs (e.g., evergreen, deciduous, etc.)	L500	1	1
C-VEGE-DIMS	Vegetation - Dimensions	0	1	1
C-VEGE-HEDG	Vegetation - Hedge	L505	1	1
C-VEGE-IRRG	Vegetation - Irrigation System	0	1	1
C-VEGE-NOTE	Vegetation - Notes	0	2	1
C-VEGE-ORCH	Vegetation - Orchard	L502	1	1
C-VEGE-PLNT	Vegetation - Planters and planting structures	0	1	1
C-VEGE-PLTS	Vegetation - Planting plants (e.g., ornamental annuals and perennials)	0	1	1
C-VEGE-PNTS	Vegetation - Points (Non-Plotting)	0	1	0
C-VEGE-PTRN	Vegetation - Pattern	0	1	1
C-VEGE-SYMB	Vegetation - Symbols	0	1	1
C-VEGE-TEXT	Vegetation - Text	0	2	1
C-VEGE-TREE	Vegetation - Trees (e.g., evergreen, deciduous, etc.)	L500	1	1

Name	Description	Style	Wt.	Plot
C-VEGE-TURF	Vegetation - Lawn areas (turfing limits)	L503	1	1
C-VEGE-VINE	Vegetation - Vine	L504	1	1
C-VEGE-WOOD	Vegetation - Woods line	L501	1	1
C-VEGE-WORK	Vegetation - User Work (Non-Plotting)	0	1	0
C-WALL	Wall (General, as shown on Civil plans)	0	1	1
C-WALL-BARR	Wall - Barrier WALL	0	1	1
C-WALL-CTLJ	Wall - Control Joints	0	1	1
C-WALL-DIMS	Wall - Dimensions	0	1	1
C-WALL-NOTE	Wall - Notes	0	2	1
C-WALL-NSBR	Wall - Noise Barrier	0	1	1
C-WALL-PNTS	Wall - Points (Non-Plotting)	0	1	0
C-WALL-PTRN	Wall - Pattern	0	1	1
C-WALL-RTWL	Wall - Retaining	0	1	1
C-WALL-SHEA	Wall - Structural Bearing or Shear	0	1	1
C-WALL-STON	Wall - Stone Wall	0	1	1
C-WALL-SYMB	Wall - Symbols	0	1	1
C-WALL-TEXT	Wall - Text	0	2	1
C-WALL-WORK	Wall - User Work (Non-Plotting)	0	1	0
C-WATR	Water	0	1	1
C-WATR-BERM	Water - Berm for liquids retention	0	1	1
C-WATR-DIMS	Water - Dimensions	0	2	1
C-WATR-DUCT	Water - Ducts and conduits (vacant) for future lines	0	1	1
C-WATR-EQPM	Water - Equipment and Pad	0	1	1
C-WATR-GUYS	Water - Guying equipment	0	1	1
C-WATR-HYDR	Water - Hydrants and Fire Department connections	0	1	1
C-WATR-JBOX	Water - Junction Box	0	1	1
C-WATR-LINE	Water - Lines	L450	4	1
C-WATR-LINE-DBUR	Water - Direct Buried Underground Lines	L450	4	1
C-WATR-LINE-OVHD	Water - Overhead Lines	L450	4	1
C-WATR-LINE-UNDR	Water - Underground Lines	L450	4	1
C-WATR-MARK	Water - Cell - Above Ground Markers	0	1	1
C-WATR-METR	Water - Meters and instrumentation	0	1	1
C-WATR-MHOL	Water - Manholes and junction boxes	0	1	1
C-WATR-NOTE	Water - Notes	0	2	1
C-WATR-PERC	Water - Perc Test Holes and Pits	0	1	1
C-WATR-PITS	Water - Pits for vents, valves and other equipment	0	1	1
C-WATR-PLNT	Water - Plants, pumping stations, storage tanks and reservoirs	0	1	1

Name	Description	Style	Wt.	Plot
C-WATR-PNTS	Water - Points (Non-Plotting)	0	1	0
C-WATR-POLE	Water - Pole	0	1	1
C-WATR-PTRN	Water - Pattern	0	1	1
C-WATR-SITE	Water - Line - Site (Interior boundary)	0	1	1
C-WATR-SYMB	Water - Symbols	0	1	1
C-WATR-TEXT	Water - Text	0	2	1
C-WATR-TRCH	Water - Fuel line trench	0	1	1
C-WATR-WELL	Water - Wells	0	1	1
C-WATR-WORK	Water - User Work (Non-Plotting)	0	1	0
C-WATR-XFMR	Water - Transformers	0	1	1
C-WETL	Wetlands	0	1	1
C-WETL-BOGS	Wetlands - Bogs	0	1	1
C-WETL-DIMS	Wetlands - Dimensions	0	2	1
C-WETL-MRSH	Wetlands - Marshes	L304	1	1
C-WETL-NOTE	Wetlands - Notes	0	2	1
C-WETL-OTLN	Wetlands - Outline	L304	1	1
C-WETL-PNTS	Wetlands - Points (Non-Plotting)	0	1	0
C-WETL-PTRN	Wetlands - Pattern	0	1	1
C-WETL-SYMB	Wetlands - Symbols	0	1	1
C-WETL-TEXT	Wetlands - Text	0	2	1
C-WETL-WORK	Wetlands - User Work (Non-Plotting)	0	1	0
Default		0	0	1
PLT-BNDY		7	0	1
S-ABUT	Abutment	0	0	1
S-ABUT-CNTR	Abutment Centerlines	4	1	1
S-ABUT-CONC	Abutment Concrete Lines	0	2	1
S-ABUT-DRAN	Abutment Drainage	0	2	1
S-ABUT-DRAN-EXST	Abutment Existing Drainage	0	0	1
S-ABUT-EXST-CONC	Abutment Existing Concrete	0	1	1
S-ABUT-EXST-REBR	Abutment Existing Rebar	2	2	1
S-ABUT-HATC	Abutment Hatching	0	1	1
S-ABUT-HIDL	Abutment Hidden Line	2	1	1
S-ABUT-MISC	Abutment Miscellaneous	0	0	1
S-ABUT-PILE	Abutment Piling	0	0	1
S-ABUT-PTRN-01	Abutment Patterning	0	1	1
S-ABUT-PTRN-02	Abutment Patterning	0	1	1

Name	Description	Style	Wt.	Plot
S-ABUT-REBR	Abutment Rebar	0	3	1
S-ABUT-WORK	Abutment User Work / Scratch (Non-Plotting)	0	0	0
S-ANNO	Structure Annotation	0	0	1
S-ANNO-ATAB	Structure Auto Tab Import	0	0	1
S-ANNO-CELL	Structure Misc. Cells	0	0	1
S-ANNO-DIMS-AUTO	Structure automatic dimensioning	0	1	1
S-ANNO-DIMS-MANL	Structure dimensions, extension lines & arrows	0	1	1
S-ANNO-SCAL-01	Structure bar scale cells	0	2	1
S-ANNO-SCAL-02	Structure bar scale cells	0	2	1
S-ANNO-SCAL-03	Structure bar scale cells	0	2	1
S-ANNO-SEAL	Structure PE Seal	0	2	1
S-ANNO-SHTS	Structure Sheet Cells	0	0	1
S-ANNO-SYMB	Structure Symbols (cells)	0	2	1
S-ANNO-T120-01	Structure leroy 120 text	0	2	1
S-ANNO-T120-02	Structure leroy 120 text	0	2	1
S-ANNO-T120-03	Structure leroy 120 text	0	2	1
S-ANNO-T175	Structure leroy 175 text	0	3	1
S-ANNO-T200-01	Structure leroy 200 text	0	4	1
S-ANNO-T200-02	Structure leroy 200 text	0	4	1
S-ANNO-T200-03	Structure leroy 200 text	0	4	1
S-ANNO-T240	Structure leroy 240 text	0	4	1
S-ANNO-TABL	Structure Tables	0	0	1
S-ANNO-TEXT-EXST	Structure Text - Existing	0	0	1
S-ANNO-WORK	Structure Annotation User Work / Scratch (Non-Plotting)	0	0	0
S-ANNO-XMRK	Structure Cross Section Marks	0	0	1
S-APSL	Approach Slab	0	0	1
S-APSL-CNTR	Approach Slab Centerlines	4	1	1
S-APSL-CONC	Approach Slab Concrete Lines	0	2	1
S-APSL-EXST-CONC	Approach Slab Existing Concrete	0	1	1
S-APSL-EXST-REBR	Approach Slab Existing Rebar	0	2	1
S-APSL-HATC	Approach Slab Hatching	0	1	1
S-APSL-HIDL	Approach Slab Hidden Line	2	1	1
S-APSL-MISC	Approach Slab Miscellaneous	0	0	1
S-APSL-PTRN-01	Approach Slab Patterning	0	1	1
S-APSL-PTRN-02	Approach Slab Patterning	0	1	1
S-APSL-REBR-01	Approach Slab Rebar	0	3	1
S-APSL-REBR-02	Approach Slab Rebar	0	3	1
S-APSL-WORK	Approach Slab User Work / Scratch (Non-Plotting)	0	0	0

Name	Description	Style	Wt.	Plot
S-BEAM	Beam	0	0	1
S-BEAM-BEAR	Beam Bearings	0	0	1
S-BEAM-CNTR	Beam Centerlines	4	1	1
S-BEAM-CONC	Beam Concrete Lines	0	2	1
S-BEAM-EXST-CONC	Beam Existing Concrete	0	1	1
S-BEAM-EXST-REBR	Beam Existing Rebar	0	2	1
S-BEAM-HATC	Beam Hatching	0	1	1
S-BEAM-HIDL	Beam Hidden Line	2	1	1
S-BEAM-MISC	Beam Miscellaneous	0	0	1
S-BEAM-PTRN-01	Beam Patterning	0	1	1
S-BEAM-PTRN-02	Beam Patterning	0	1	1
S-BEAM-REBR	Beam Rebar	0	3	1
S-BEAM-STEL	Beam Steel (non-rebar)	0	0	1
S-BEAM-STRD	Beam Strand	0	0	1
S-BEAM-WORK	Beam User Work / Scratch (Non-Plotting)	0	0	0
S-BRDG	Structure Roadway Features	0	0	1
S-BRDG-BARR	Structure Barrier	0	2	1
S-BRDG-BORE	Structure Core Boring	0	0	1
S-BRDG-EROS	Structure Erosion & Sediment Controls	0	0	1
S-BRDG-EXCA-01	Structure Excavation 01	0	3	1
S-BRDG-EXCA-02	Structure Excavation 02	0	3	1
S-BRDG-EXCA-03	Structure Excavation 03	0	3	1
S-BRDG-GRAL	Structure Guide Rail	0	0	1
S-BRDG-LITE	Structure Lighting	0	0	1
S-BRDG-MISC-01	Structure Miscellaneous 01	0	0	1
S-BRDG-MISC-02	Structure Miscellaneous 02	0	0	1
S-BRDG-MISC-03	Structure Miscellaneous 03	0	0	1
S-BRDG-REVI	Structure Revisions	0	0	1
S-BRDG-SHOR	Structure Shoring	0	4	1
S-BRDG-WORK	Structure Bridge User Work / Scratch (Non-Plotting)	0	0	0
S-CULV	Box Culvert	0	0	1
S-CULV-CELL	Box Culvert Cells	0	0	1
S-CULV-CNTR	Box Culvert Centerlines	4	1	1
S-CULV-CONC	Box Culvert Concrete Lines	0	2	1
S-CULV-DRAN	Box Culvert Drainage - Proposed	0	0	1
S-CULV-DRAN-EXST	Box Culvert Drainage - Existing	0	0	1
S-CULV-EXST-CONC	Box Culvert Existing Concrete	0	1	1

Name	Description	Style	Wt.	Plot
S-CULV-EXST-REBR	Box Culvert Existing Rebar	0	2	1
S-CULV-HATC	Box Culvert Hatching	2	1	1
S-CULV-HIDL	Box Culvert Hidden Line	0	1	1
S-CULV-MISC	Box Culvert Miscellaneous	0	0	1
S-CULV-PTRN-01	Box Culvert Patterning	0	1	1
S-CULV-PTRN-02	Box Culvert Patterning	0	1	1
S-CULV-REBR-01	Box Culvert Rebar	0	3	1
S-CULV-REBR-02	Box Culvert Rebar	0	3	1
S-CULV-WORK	Box Culvert User Work / Scratch (Non-Plotting)	0	0	0
S-DECK	Deck	0	0	1
S-DECK-CNTR	Deck Centerlines	4	1	1
S-DECK-CONC	Deck Concrete Lines	0	2	1
S-DECK-DRAN	Deck Drainage - Proposed	0	0	1
S-DECK-DRAN-EXST	Deck Drainage - Existing	0	0	1
S-DECK-EXDM	Deck Expansion Dams	0	0	1
S-DECK-EXST-CONC	Deck Existing Concrete	0	1	1
S-DECK-EXST-REBR	Deck Existing Rebar	0	2	1
S-DECK-HATC	Deck Hatching	0	1	1
S-DECK-HIDL	Deck Hidden Line	2	1	1
S-DECK-MISC	Deck Miscellaneous	0	0	1
S-DECK-PTRN-01	Deck Patterning	0	1	1
S-DECK-PTRN-02	Deck Patterning	0	1	1
S-DECK-REBR-01	Deck Rebar	0	3	1
S-DECK-REBR-02	Deck Rebar	0	3	1
S-DECK-WORK	Deck User Work / Scratch (Non-Plotting)	0	0	0
S-FOOT	Footing	0	0	1
S-FOOT-CNTR	Footing Centerlines	4	1	1
S-FOOT-CONC	Footing Concrete Lines	0	2	1
S-FOOT-EXST-CONC	Footing Existing Concrete	0	1	1
S-FOOT-EXST-REBR	Footing Existing Rebar	0	2	1
S-FOOT-HATC	Footing Hatching	0	1	1
S-FOOT-HIDL	Footing Hidden Line	2	1	1
S-FOOT-MISC	Footing Miscellaneous	0	0	1
S-FOOT-PILE	Footing Piling	0	0	1
S-FOOT-PTRN-01	Footing Patterning	0	1	1
S-FOOT-PTRN-02	Footing Patterning	0	1	1
S-FOOT-REBR-01	Footing Rebar	0	3	1
S-FOOT-REBR-02	Footing Rebar	0	3	1

Name	Description	Style	Wt.	Plot
S-FOOT-WORK	Footing User Work / Scratch (Non-Plotting)	0	0	0
S-PIER	Pier	0	0	1
S-PIER-CNTR	Pier Centerlines	4	1	1
S-PIER-CONC	Pier Concrete Lines	0	2	1
S-PIER-EXST-CONC	Pier Existing Concrete	0	1	1
S-PIER-EXST-REBR	Pier Existing Rebar	0	2	1
S-PIER-HATC	Pier Hatching	0	1	1
S-PIER-HIDL	Pier Hidden Line	2	1	1
S-PIER-MISC	Pier Miscellaneous	0	0	1
S-PIER-PTRN-01	Pier Patterning	0	1	1
S-PIER-PTRN-02	Pier Patterning	0	1	1
S-PIER-REBR	Pier Rebar	0	3	1
S-PIER-WORK	Pier User Work / Scratch (Non-Plotting)	0	0	0
S-RWAY	Right of Way	0	0	1
S-RWAY-LGAL	Right of Way - Legal (Existing)	L200	3	1
S-RWAY-MISC	Right of Way - Miscellaneous	0	0	1
S-RWAY-REQD	Right of Way - Required	L201	4	1
S-RWAY-TEMP	Right of Way - Temporary Construction Easement	0	1	1
S-RWAY-WORK	Right of Way - User Work / Scratch (Non-Plotting)	0	0	0
S-STKE	Structure Stake-Out	0	0	1
S-STKE-BLIN	Structure Stake-Out L101s	0	1	1
S-STKE-CELL	Structure Stake-Out Cells	0	2	1
S-STKE-CNTR	Structure Stake-Out Centerlines	4	1	1
S-STKE-CONC	Structure Stake-Out Concrete Lines	0	2	1
S-STKE-DIMS-AUTO	Structure Stake-Out Dimensions - Automatic	0	1	1
S-STKE-DIMS-MANL	Structure Stake-Out Dimensions - Manual	0	1	1
S-STKE-MISC	Structure Stake-Out Miscellaneous	0	0	1
S-STKE-TEXT	Structure Stake-Out Text	0	2	1
S-STKE-WORK	Structure Stake-Out User Work / Scratch (Non-Plotting)	0	0	0
S-TOPO	Topo	0	0	1
S-TOPO-CONT	Topo - Surface Contours	0	1	1
S-TOPO-CONT-EXST	Topo - Surface Contours - Existing	0	1	1
S-TOPO-GRND	Topo - Ground Lines	0	1	1
S-TOPO-MISC	Topo - Miscellaneous	0	0	1
S-TOPO-ROCK	Topo - Rock Line	0	1	1
S-TOPO-SBED	Topo - Stream Bed	0	1	1

Name	Description	Style	Wt.	Plot
S-TOPO-WORK	Topo - User Work / Scratch (Non-Plotting)	0	0	0
S-UTIL	Utilities	0	0	1
S-UTIL-CATV	Utilities - Cable TV	0	4	1
S-UTIL-COMB	Utilities - Combined	0	4	1
S-UTIL-COND	Utilities - Conduit	0	4	1
S-UTIL-EXST	Utilities - Existing	0	1	1
S-UTIL-FIBR	Utilities - Fiber Optic	0	4	1
S-UTIL-NGAS	Utilities - Natural Gas	0	4	1
S-UTIL-POWR	Utilities - Power / Electric	0	4	1
S-UTIL-PTRO	Utilities - Petroleum	0	4	1
S-UTIL-TELP	Utilities - Telephone	0	4	1
S-UTIL-WORK	Utilities User Work / Scratch (Non-Plotting)	0	0	0
T-LITE	Traffic Lighting	0	1	1
T-LITE-DIMS	Traffic Lighting - Dimensions	0	1	1
T-LITE-EQPM	Traffic Lighting - Equipment and Pads	0	1	1
T-LITE-JBOX	Traffic Lighting - Conduits / Junction Boxes	0	1	1
T-LITE-MAST	Traffic Lighting - Mast Arm	0	1	1
T-LITE-NOTE	Traffic Lighting - Note	0	2	1
T-LITE-PNTS	Traffic Lighting - Points (Non-Plotting)	0	1	1
T-LITE-POLE	Traffic Lighting - Pole	0	1	1
T-LITE-PTRN	Traffic Lighting - Pattern	0	1	1
T-LITE-SYMB	Traffic Lighting - Symbols	0	1	1
T-LITE-TCRV	Traffic Lighting - Template Curves	0	1	1
T-LITE-TEXT	Traffic Lighting - Text	0	2	1
T-LITE-WORK	Traffic Lighting - User Work (Non-Plotting)	0	1	0
T-MPTX	Maintenance and Protection of Traffic	0	1	1
T-MPTX-ARST	MPTX - Arresting Systems	0	1	1
T-MPTX-ATTN	MPTX - Attenuators	0	1	1
T-MPTX-BARR	MPTX - Barriers; Temporary	0	1	1
T-MPTX-BLDG	MPTX - Gate House, Guard House	0	1	1
T-MPTX-CRSH	MPTX - Collision Symbols	0	1	1
T-MPTX-DIMS	MPTX - Dimensions	0	1	1
T-MPTX-EQPM	MPTX - Equipment, Temporary; Barrels	0	1	1
T-MPTX-FLOW	MPTX - Flow Arrows, Turning Movement	0	1	1
T-MPTX-NOTE	MPTX - Notes	0	2	1
T-MPTX-PNTS	MPTX - Points (Non-Plotting)	0	1	0
T-MPTX-PTRN	MPTX - Pattern	0	1	1

Name	Description	Style	Wt.	Plot
T-MPTX-PVMK	MPTX - Pavement Markings	0	1	1
T-MPTX-SYMB	MPTX - Symbols	0	1	1
T-MPTX-TEXT	MPTX - Text	0	2	1
T-MPTX-TURN	MPTX - Turning Templates	0	1	1
T-MPTX-VOLS	MPTX - Volume Data	0	1	1
T-MPTX-WORK	MPTX - User Work (Non-Plotting)	0	1	0
T-SGNL	Traffic Signals	0	1	1
T-SGNL-CRPL	Traffic Signals - Circle Pullout	0	1	1
T-SGNL-DIMS	Traffic Signals - Dimensions	0	2	1
T-SGNL-EQPM	Traffic Signals - Equipment and Pads	0	1	1
T-SGNL-HEAD	Traffic Signals - Signal Head	0	1	1
T-SGNL-ICTR	Traffic Signals - Interconnect Controller	0	1	1
T-SGNL-IJBX	Traffic Signals - Interconnect Junction Box and Conduit	0	1	1
T-SGNL-JBOX	Traffic Signals - Junction Box and Conduit	0	1	1
T-SGNL-LOOP	Traffic Signals - Loop Detector	0	1	1
T-SGNL-MAST	Traffic Signals - Mast Arm and Signal Head	0	1	1
T-SGNL-MRKG	Traffic Signals - Misc Pavement Marking Lines	0	1	1
T-SGNL-NOTE	Traffic Signals - Notes	0	2	1
T-SGNL-PFDN	Traffic Signals - Pole Foundation	0	1	1
T-SGNL-PNTS	Traffic Signals - Points (Non-Plotting)	0	1	0
T-SGNL-POLE	Traffic Signals - Pole and/or Controller	0	1	1
T-SGNL-PTRN	Traffic Signals - Pattern	0	1	1
T-SGNL-SIGN	Traffic Signals - Post Mounted Sign	0	1	1
T-SGNL-SYMB	Traffic Signals - Symbols	0	1	1
T-SGNL-TEXT	Traffic Signals - Text	0	2	1
T-SGNL-WORK	Traffic Signals - User Work (Non-Plotting)	0	1	0
T-SIGN	Traffic Signing (possibly superseded by traffic levels)	0	1	1
T-SIGN-DIMS	Traffic Signing - Dimensions	0	1	1
T-SIGN-FNDN	Traffic Signing - Sign Structure Foundation	0	1	1
T-SIGN-NOTE	Traffic Signing - Notes	0	2	1
T-SIGN-PANL	Traffic Signing - Sign Panel	0	1	1
T-SIGN-PNTS	Traffic Signing - Points (Non-Plotting)	0	1	0
T-SIGN-POLE	Traffic Signing - Pole	0	1	1
T-SIGN-PTRN	Traffic Signing - Pattern	0	1	1
T-SIGN-STRC	Traffic Signing - Sign Structure	0	1	1
T-SIGN-SYMB	Traffic Signing - Symbols	0	1	1
T-SIGN-TEXT	Traffic Signing - Text	0	2	1
T-SIGN-WORK	Traffic Signing - User Work (Non-Plotting)	0	1	0

Name	Description	Style	Wt.	Plot
VA-AFLD	AIRFIELD	0	0	1
VA-AFLD-LITE	AIRFIELD LIGHTS	0	0	1
VA-AFLD-RUNW	AIRFIELD RUNWAY	0	0	1
VA-AFLD-SIGN	AIRFIELD SIGNS	0	0	1
VA-ALGN	Alignments	0	0	1
VA-ALGN-DATA	Alignment coordinates and curve data	0	2	1
VA-ALGN-LINE	Alignment line	L100	1	1
VA-ALGN-MAJR	Alignment major stationing and tick marks	0	2	1
VA-ALGN-MARK	Alignment tick marks	0	1	1
VA-ALGN-MINR	Alignment minor stationing and tick marks	0	2	1
VA-ALGN-STAT	Alignment stationing and tick marks, alignment PI stations	0	2	1
VA-ALGN-SYMB	Alignment symbols (PIs)	0	0	1
VA-ALGN-TEXT	Alignment text, annotation with associated leaders	0	2	1
VA-BLDG	BUILDING	0	0	1
VA-BLDG-ANNO	BUILDING ANNOTATION	0	2	1
VA-BLDG-BARN	BUILDING BARN	0	1	1
VA-BLDG-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-BLDG-FPLC	BUILDING FIREPLACE	0	1	1
VA-BLDG-GARG	BUILDING GARAGE	0	1	1
VA-BLDG-OTLN	BUILDING OUTLINE	0	1	1
VA-BLDG-OVHG	BUILDING OVERHANG	0	1	1
VA-BLDG-PRCH	BUILDING PORCH	0	1	1
VA-BLDG-PRCH-BOTM	BUILDING PORCH BOTTOM	0	1	1
VA-BLDG-PRCH-TOPP	BUILDING PORCH TOP	0	1	1
VA-BLDG-SDWK	BUILDING SIDEWALK	0	1	1
VA-BLDG-SHED	BUILDING SHED	0	1	1
VA-BLDG-SILO	BUILDING SILO	0	1	1
VA-BLDG-SLAB	BUILDING CONCRETE SLAB	0	1	1
VA-BLDG-STEP	BUILDING STEP	0	1	1
VA-BLDG-TANK	BUILDING TANKS	0	1	1
VA-BNDY	BOUNDARY LINES (UNCONTROLLED)	0	0	1
VA-BNDY-ANNO	BOUNDARY LINES, ANNOTATION	0	2	1
VA-BNDY-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-BNDY-LINE	DEEDPLOT LEVEL	L203	1	1
VA-BNDY-MUNI	BOUNDARY LINES, MUNICIPAL	L204	3	1

Name	Description	Style	Wt.	Plot
VA-BRDG	BRIDGE (UNCONTROLLED)	0	0	1
VA-BRDG-ABUT-BOTM	BRIDGE ABUTMENT BOTTOM	0	1	1
VA-BRDG-ABUT-TOPP	BRIDGE ABUTMENT TOP	0	1	1
VA-BRDG-ANNO	BRIDGE ANNOTATION	0	2	1
VA-BRDG-AWNG	BRIDGE ABUTMENT AND WINGS	0	1	1
VA-BRDG-BEAM-BOTM	BRIDGE BEAM BOTTOM LINE	0	1	1
VA-BRDG-BEAM-SEAT	BRIDGE BEAM SEAT	0	1	1
VA-BRDG-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-BRDG-CHRD-LOWW	BRIDGE LOW CHORD	0	1	1
VA-BRDG-CRWN	BRIDGE CROWN	0	1	1
VA-BRDG-CURB-BOTM	BRIDGE CURB BOTTOM	0	1	1
VA-BRDG-CURB-TOPP	BRIDGE CURB TOP	0	1	1
VA-BRDG-DECK	BRIDGE DECK	0	1	1
VA-BRDG-DKJT	BRIDGE DECK JOINT	0	1	1
VA-BRDG-FTNG	BRIDGE FOOTING	0	1	1
VA-BRDG-GNRL	BRIDGE GENERAL	0	1	1
VA-BRDG-PARA-BOTM	BRIDGE PARAPET BOTTOM	0	1	1
VA-BRDG-PARA-TOPP	BRIDGE PARAPET TOP	0	1	1
VA-BRDG-PEDS-TOPP	BRIDGE PEDESTAL	0	1	1
VA-BRDG-PIER	BRIDGE PIER	0	1	1
VA-BRDG-PIER-BOTM	BRIDGE PIER BOTTOM	0	1	1
VA-BRDG-PIER-TOPP	BRIDGE PIER TOP	0	1	1
VA-BRDG-SDWK	BRIDGE SIDEWALK	0	1	1
VA-BRDG-WHGD	BRIDGE WHEEL GUARD	0	1	1
VA-BRDG-WING-BOTM	BRIDGE WING	0	1	1
VA-BRDG-WING-TOPP	BRIDGE WING	0	1	1
VA-CATV	CABLE TV	0	0	1
VA-CATV-ANNO	CABLE TV ANNOTATION	0	2	1
VA-CATV-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-CATV-LINE	CABLE TV UNDERGROUND LINE	L407	0	1
VA-CATV-MARK	CABLE TV MARKER	0	0	1
VA-CATV-OVHD	CABLE TV OVERHEAD	L406	0	1
VA-DRIV	DRIVEWAY	0	0	1
VA-DRIV-ANNO	DRIVEWAY ANNOTATION	0	2	1
VA-DRIV-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-DRIV-EDGE	DRIVEWAY EDGE	0	1	1
VA-DTCH	DITCH	0	0	1
VA-DTCH-ANNO	DITCH ANNOTATION	2	0	1

Name	Description	Style	Wt.	Plot
VA-DTCH-BOTM	DITCH BOTTOM	L301	0	1
VA-DTCH-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-DTCH-DRAW	DITCH DRAW	0	0	1
VA-DTCH-PAVE	DITCH PAVE	0	0	1
VA-DTCH-SWAL	DITCH SWALE	L302	0	1
VA-DTCH-TOPD	DITCH TOP	0	0	1
VA-ESMT	EASEMENT	0	0	1
VA-ESMT-ANNO	EASEMENT ANNOTATION	0	2	1
VA-ESMT-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-ESMT-LINE	PROPERTY LINES - DEEDPLOT LEVEL	4	1	1
VA-ESMT-RWAY	LEGAL RIGHT OF WAY LINES	L200	3	1
VA-FIBR	FIBER OPTIC	0	0	1
VA-FIBR-ANNO	FIBER OPTIC ANNOTATION	0	2	1
VA-FIBR-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-FIBR-MHOL	FIBER OPTIC MANHOLE	0	0	1
VA-FIBR-OHVD	FIBER OPTIC OVERHEAD	L409	0	1
VA-FIBR-POLE	FIBER OPTIC POLE	0	0	1
VA-FIBR-UNDR	FIBER OPTIC UNDERGROUND	L410	0	1
VA-GRAL	GUIDE RAIL	0	0	1
VA-GRAL-ANNO	GUIDE RAIL ANNOTATION	0	2	1
VA-GRAL-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-GRAL-LINE	GUIDE RAIL LINE	L406	1	1
VA-GRAL-STRG	GUIDE RAIL STRONG POST	L406	1	1
VA-GRAL-WEAK	GUIDE RAIL WEAK POST	L406	1	1
V-ALG0	Alignment 0 - Base level (Uncontrolled)	0	1	1
V-ALG0-COGO	Alignment 0 - COGO points	0	1	1
V-ALG0-DIMS	Alignment 0 - Dimensions, Stationing	0	2	1
V-ALG0-LINE	Alignment 0 - Center/Base Line	L100	1	1
V-ALG0-LINE-CRCL	Alignment 0 - Center/Base Line	L100	1	1
V-ALG0-LINE-SPRL	Alignment 0 - Center/Base Line	L100	1	1
V-ALG0-LINE-TNGT	Alignment 0 - Center/Base Line	L100	1	1
V-ALG0-NOTE	Alignment 0 - Notes, Curve Data	0	2	1
V-ALG0-PNTS	Alignment 0 - Points (Non-Plotting)	0	1	0
V-ALG0-PTRN	Alignment 0 - Pattern	0	1	1
V-ALG0-SYMB	Alignment 0 - Symbols	0	1	1

Name	Description	Style	Wt.	Plot
V-ALG0-TEXT	Alignment 0 - Annotation text	0	2	1
V-ALG0-WORK	Alignment 0 - User work (Non-Plotting)	0	1	0
V-ALG1	Alignment 1 - Base level (Uncontrolled)	0	1	1
V-ALG1-COGO	Alignment 1 - COGO points	0	1	1
V-ALG1-DIMS	Alignment 1 - Dimensions, Stationing	0	2	1
V-ALG1-LINE	Alignment 1 - Center/Base Line	L100	1	1
V-ALG1-LINE-CRCL	Alignment 1 - Center/Base Line	L100	1	1
V-ALG1-LINE-SPRL	Alignment 1 - Center/Base Line	L100	1	1
V-ALG1-LINE-TNGT	Alignment 1 - Center/Base Line	L100	1	1
V-ALG1-NOTE	Alignment 1 - Notes, Curve Data	0	2	1
V-ALG1-PNTS	Alignment 1 - Points (Non-Plotting)	0	1	0
V-ALG1-PTRN	Alignment 1 - Pattern	0	1	1
V-ALG1-SYMB	Alignment 1 - Symbols	0	1	1
V-ALG1-TEXT	Alignment 1 - Annotation text	0	2	1
V-ALG1-WORK	Alignment 1 - User work (Non-Plotting)	0	1	0
V-ALG2	Alignment 2 - Base level (Uncontrolled)	0	1	1
V-ALG2-COGO	Alignment 2 - COGO points	0	1	1
V-ALG2-DIMS	Alignment 2 - Dimensions, Stationing	0	2	1
V-ALG2-LINE	Alignment 2 - Center/Base Line	L100	1	1
V-ALG2-LINE-CRCL	Alignment 2 - Center/Base Line	L100	1	1
V-ALG2-LINE-SPRL	Alignment 2 - Center/Base Line	L100	1	1
V-ALG2-LINE-TNGT	Alignment 2 - Center/Base Line	L100	1	1
V-ALG2-NOTE	Alignment 2 - Notes, Curve Data	0	2	1
V-ALG2-PNTS	Alignment 2 - Points (Non-Plotting)	0	1	0
V-ALG2-PTRN	Alignment 2 - Pattern	0	1	1
V-ALG2-SYMB	Alignment 2 - Symbols	0	1	1
V-ALG2-TEXT	Alignment 2 - Annotation text	0	2	1
V-ALG2-WORK	Alignment 2 - User work (Non-Plotting)	0	1	0
V-ALG3	Alignment 3 - Base level (Uncontrolled)	0	1	1
V-ALG3-COGO	Alignment 3 - COGO points	0	1	1
V-ALG3-DIMS	Alignment 3 - Dimensions, Stationing	0	2	1
V-ALG3-LINE	Alignment 3 - Center/Base Line	L100	1	1
V-ALG3-LINE-CRCL	Alignment 3 - Center/Base Line	L100	1	1
V-ALG3-LINE-SPRL	Alignment 3 - Center/Base Line	L100	1	1
V-ALG3-LINE-TNGT	Alignment 3 - Center/Base Line	L100	1	1
V-ALG3-NOTE	Alignment 3 - Notes, Curve Data	0	2	1
V-ALG3-PNTS	Alignment 3 - Points (Non-Plotting)	0	1	0

Name	Description	Style	Wt.	Plot
V-ALG3-PTRN	Alignment 3 - Pattern	0	1	1
V-ALG3-SYMB	Alignment 3 - Symbols	0	1	1
V-ALG3-TEXT	Alignment 3 - Annotation text	0	2	1
V-ALG3-WORK	Alignment 3 - User work (Non-Plotting)	0	1	0
V-ALG4	Alignment 4 - Base level (Uncontrolled)	0	1	1
V-ALG4-COGO	Alignment 4 - COGO points	0	1	1
V-ALG4-DIMS	Alignment 4 - Dimensions, Stationing	0	2	1
V-ALG4-LINE	Alignment 4 - Center/Base Line	L100	1	1
V-ALG4-LINE-CRCL	Alignment 4 - Center/Base Line	L100	1	1
V-ALG4-LINE-SPRL	Alignment 4 - Center/Base Line	L100	1	1
V-ALG4-LINE-TNGT	Alignment 4 - Center/Base Line	L100	1	1
V-ALG4-NOTE	Alignment 4 - Notes, Curve Data	0	2	1
V-ALG4-PNTS	Alignment 4 - Points (Non-Plotting)	0	1	0
V-ALG4-PTRN	Alignment 4 - Pattern	0	1	1
V-ALG4-SYMB	Alignment 4 - Symbols	0	1	1
V-ALG4-TEXT	Alignment 4 - Annotation text	0	2	1
V-ALG4-WORK	Alignment 4 - User work (Non-Plotting)	0	1	0
V-ALG5	Alignment 5 - Base level (Uncontrolled)	0	1	1
V-ALG5-COGO	Alignment 5 - COGO points	0	1	1
V-ALG5-DIMS	Alignment 5 - Dimensions, Stationing	0	2	1
V-ALG5-LINE	Alignment 5 - Center/Base Line	L100	1	1
V-ALG5-LINE-CRCL	Alignment 5 - Center/Base Line	L100	1	1
V-ALG5-LINE-SPRL	Alignment 5 - Center/Base Line	L100	1	1
V-ALG5-LINE-TNGT	Alignment 5 - Center/Base Line	L100	1	1
V-ALG5-NOTE	Alignment 5 - Notes, Curve Data	0	2	1
V-ALG5-PNTS	Alignment 5 - Points (Non-Plotting)	0	1	0
V-ALG5-PTRN	Alignment 5 - Pattern	0	1	1
V-ALG5-SYMB	Alignment 5 - Symbols	0	1	1
V-ALG5-TEXT	Alignment 5 - Annotation text	0	2	1
V-ALG5-WORK	Alignment 5 - User work (Non-Plotting)	0	1	0
V-ALG6	Alignment 6 - Base level (Uncontrolled)	0	1	1
V-ALG6-COGO	Alignment 6 - COGO points	0	1	1
V-ALG6-DIMS	Alignment 6 - Dimensions, Stationing	0	2	1
V-ALG6-LINE	Alignment 6 - Center/Base Line	L100	1	1
V-ALG6-LINE-CRCL	Alignment 6 - Center/Base Line	L100	1	1
V-ALG6-LINE-SPRL	Alignment 6 - Center/Base Line	L100	1	1
V-ALG6-LINE-TNGT	Alignment 6 - Center/Base Line	L100	1	1

Name	Description	Style	Wt.	Plot
V-ALG6-NOTE	Alignment 6 - Notes, Curve Data	0	2	1
V-ALG6-PNTS	Alignment 6 - Points (Non-Plotting)	0	1	0
V-ALG6-PTRN	Alignment 6 - Pattern	0	1	1
V-ALG6-SYMB	Alignment 6 - Symbols	0	1	1
V-ALG6-TEXT	Alignment 6 - Annotation text	0	2	1
V-ALG6-WORK	Alignment 6 - User work (Non-Plotting)	0	1	0
V-ALG7	Alignment 7 - Base level (Uncontrolled)	0	1	1
V-ALG7-COGO	Alignment 7 - COGO points	0	1	1
V-ALG7-DIMS	Alignment 7 - Dimensions, Stationing	0	2	1
V-ALG7-LINE	Alignment 7 - Center/Base Line	L100	1	1
V-ALG7-LINE-CRCL	Alignment 7 - Center/Base Line	L100	1	1
V-ALG7-LINE-SPRL	Alignment 7 - Center/Base Line	L100	1	1
V-ALG7-LINE-TNGT	Alignment 7 - Center/Base Line	L100	1	1
V-ALG7-NOTE	Alignment 7 - Notes, Curve Data	0	2	1
V-ALG7-PNTS	Alignment 7 - Points (Non-Plotting)	0	1	0
V-ALG7-PTRN	Alignment 7 - Pattern	0	1	1
V-ALG7-SYMB	Alignment 7 - Symbols	0	1	1
V-ALG7-TEXT	Alignment 7 - Annotation text	0	2	1
V-ALG7-WORK	Alignment 7 - User work (Non-Plotting)	0	1	0
V-ALG8	Alignment 8 - Base level (Uncontrolled)	0	1	1
V-ALG8-COGO	Alignment 8 - COGO points	0	1	1
V-ALG8-DIMS	Alignment 8 - Dimensions, Stationing	0	2	1
V-ALG8-LINE	Alignment 8 - Center/Base Line	L100	1	1
V-ALG8-LINE-CRCL	Alignment 8 - Center/Base Line	L100	1	1
V-ALG8-LINE-SPRL	Alignment 8 - Center/Base Line	L100	1	1
V-ALG8-LINE-TNGT	Alignment 8 - Center/Base Line	L100	1	1
V-ALG8-NOTE	Alignment 8 - Notes, Curve Data	0	2	1
V-ALG8-PNTS	Alignment 8 - Points (Non-Plotting)	0	1	0
V-ALG8-PTRN	Alignment 8 - Pattern	0	1	1
V-ALG8-SYMB	Alignment 8 - Symbols	0	1	1
V-ALG8-TEXT	Alignment 8 - Annotation text	0	2	1
V-ALG8-WORK	Alignment 8 - User work (Non-Plotting)	0	1	0
V-ALG9	Alignment 9 - Base level (Uncontrolled)	0	1	1
V-ALG9-COGO	Alignment 9 - COGO points	0	1	1
V-ALG9-DIMS	Alignment 9 - Dimensions, Stationing	0	2	1
V-ALG9-LINE	Alignment 9 - Center/Base Line	L100	1	1
V-ALG9-LINE-CRCL	Alignment 9 - Center/Base Line	L100	1	1

Name	Description	Style	Wt.	Plot
V-ALG9-LINE-SPRL	Alignment 9 - Center/Base Line	L100	1	1
V-ALG9-LINE-TNGT	Alignment 9 - Center/Base Line	L100	1	1
V-ALG9-NOTE	Alignment 9 - Notes, Curve Data	0	2	1
V-ALG9-PNTS	Alignment 9 - Points (Non-Plotting)	0	1	0
V-ALG9-PTRN	Alignment 9 - Pattern	0	1	1
V-ALG9-SYMB	Alignment 9 - Symbols	0	1	1
V-ALG9-TEXT	Alignment 9 - Annotation text	0	2	1
V-ALG9-WORK	Alignment 9 - User work (Non-Plotting)	0	1	0
V-ALGN	Alignments	0	0	1
V-ALGN-CELL	Alignment Cells	0	0	1
V-ALGN-COGO	Alignment Cogo Points	0	0	1
V-ALGN-DATA	Alignment coordinates and curve data	0	2	1
V-ALGN-LINE-01	Alignment line	L100	1	1
V-ALGN-LINE-02	Alignment line	L100	1	1
V-ALGN-LINE-03	Alignment line	L100	1	1
V-ALGN-LINE-04	Alignment line	L100	1	1
V-ALGN-LINE-05	Alignment line	L100	1	1
V-ALGN-LINE-06	Alignment line	L100	1	1
V-ALGN-LINE-07	Alignment line	L100	1	1
V-ALGN-LINE-08	Alignment line	L100	1	1
V-ALGN-LINE-09	Alignment line	L100	1	1
V-ALGN-LINE-10	Alignment line	L100	1	1
V-ALGN-LINE-11	Alignment line	L100	1	1
V-ALGN-LINE-12	Alignment line	L100	1	1
V-ALGN-MAJR	Alignment major stationing and tick marks	0	2	1
V-ALGN-MARK	Alignment tick marks	0	1	1
V-ALGN-MINR	Alignment minor stationing and tick marks	0	2	1
V-ALGN-PNTS	Alignment point symbols	0	0	1
V-ALGN-STAT	Alignment stationing and tick marks, alignment PI stations	0	2	1
V-ALGN-SYMB	Alignment symbols (PIs)	0	0	1
V-ALGN-TEXT	Alignment text, annotation with associated leaders	0	2	1
VA-MAPI	MAP INFORMATION	0	0	1
VA-MAPI-ANNO	MAP ANNOTATION	0	2	1
VA-MAPI-DTML	MAP INFORMATION: DTM LIMIT LINE	0	0	1
VA-MAPI-MAPL	MAP INFORMATION: MAPPING LIMITS LINE	0	0	1
VA-MAPI-MODL	MAP INFORMATION: NEAT MODEL LINE	0	0	1
VA-MAPI-MTCH	MAP INFORMATION: MATCH LINE	0	0	1
VA-MAPI-SHLD	MAP INFORMATION: ROAD NAMES, SHIELDS	0	0	1

Name	Description	Style	Wt.	Plot
VA-MAPI-TBLK	MAP INFORMATION: TITLE BLOCK	0	0	1
VA-NGAS	NATURAL GAS	0	0	1
VA-NGAS-ANNO	NATURAL GAS ANNOTATION	0	2	1
VA-NGAS-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-NGAS-LINE	NATURAL GAS LINE	L460	0	1
VA-NGAS-MARK	NATURAL GAS MARKER	0	0	1
VA-NGAS-METR	NATURAL GAS METER	0	0	1
VA-NGAS-MHOL	NATURAL GAS MANHOLE	0	0	1
VA-NGAS-VLVE	NATURAL GAS VALVE	0	0	1
VA-NGAS-VLVE-STOP	NATURAL GAS VALVE STOP	0	0	1
VA-NGAS-WELL	NATURAL GAS WELL	0	0	1
V-ANNO	Annotation - General Information	0	2	1
V-ANNO-CELL	Annotation - Cells	0	0	1
V-ANNO-DIMS	Annotation - Dimensions	0	2	1
V-ANNO-LINE-HIDN	Annotation - Hidden Line	0	0	1
V-ANNO-PTRN	Annotation - Pattern	0	0	1
V-ANNO-SYMB	Annotation - Symbols	0	0	1
V-ANNO-TEXT	Annotation - Annotation text	0	2	1
V-ANNO-WORK	Annotation - User Work (Non-Plotting)	0	0	0
VA-POWR	POWER	0	0	1
VA-POWR-ANNO	POWER ANNOTATION	0	2	1
VA-POWR-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-POWR-MHOL	POWER MANHOLE	0	0	1
VA-POWR-OHVD	POWER OVERHEAD	L409	0	1
VA-POWR-POLE	POWER POLE	0	0	1
VA-POWR-UNDR	POWER UNDERGROUND	L410	0	1
VA-PRKG	PARKING	0	0	1
VA-PRKG-ANNO	PARKING ANNOTATION	0	2	1
VA-PRKG-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-PRKG-EDGE	PARKING EDGE	L102	0	1
VA-PRKG-METR	PARKING METER	0	0	1
VA-PTRO	PETROLEUM	0	0	1
VA-PTRO-ANNO	PETROLEUM ANNOTATION	0	2	1
VA-PTRO-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-PTRO-ISLN	PETROLEUM ISLAND	0	0	1

Name	Description	Style	Wt.	Plot
VA-RAIL	RAILROAD	0	0	1
VA-RAIL-ANNO	RAILROAD ANNOTATION	0	2	1
VA-RAIL-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-RAIL-CNTR	RAILROAD CENTERLINE	L100	0	1
VA-RAIL-EQPM	RAILROAD CROSSING GATE	0	0	1
VA-RAIL-SGNL	RAILROAD SIGNALS	0	0	1
VA-RAIL-SIGN	RAILROAD SIGNS	0	0	1
VA-RAIL-TRAK	RAILROAD TRACK, TOP OF RAIL	L260	0	1
VA-ROAD	ROAD	0	0	1
VA-ROAD-ANNO	ROAD ANNOTATION	0	2	1
VA-ROAD-BARR-BOTM	ROAD MEDIAN BARRIER BOTTOM	0	0	1
VA-ROAD-BARR-TOPP	ROAD MEDIAN BARRIER TOP	0	0	1
VA-ROAD-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-ROAD-CRWN	ROAD CROWN	0	0	1
VA-ROAD-CURB	ROAD CURB	0	1	1
VA-ROAD-CURB-BOTM	ROAD CURB BOTTOM	0	1	1
VA-ROAD-CURB-MOUN	ROAD CURB MOUNTABLE	0	1	1
VA-ROAD-CURB-TOPP	ROAD CURB TOP	0	1	1
VA-ROAD-EDGE	ROAD EDGE	L102	1	1
VA-ROAD-EDGE-DIRT	ROAD EDGE DIRT	L102	1	1
VA-ROAD-LINE	ROAD LINE	0	0	1
VA-ROAD-MRKG	ROAD MARKING	0	1	1
VA-ROAD-SHLD	ROAD SHOULDER	0	3	1
VA-ROAD-SHLD-DIRT	ROAD SHOULDER DIRT	0	3	1
VA-SITE	SITE OUTLINES	0	0	1
VA-SITE-ATHL	SITE OUTLINES: ATHLETIC FIELD	0	0	1
VA-SITE-CEMR	SITE OUTLINES: CEMETERY	0	0	1
VA-SITE-GOLF	SITE OUTLINES: GOLF COURSE	0	0	1
VA-SITE-UCON	SITE OUTLINES: AREA UNDER CONSTRUCTION	0	0	1
VA-SSWR	SANITARY SEWER	0	0	1
VA-SSWR-ANNO	SANITARY SEWER ANNOTATION	0	2	1
VA-SSWR-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-SSWR-CESS	SANITARY SEWER CESSPOOL	0	0	1
VA-SSWR-DFLD	SANITARY SEWER DRAIN FIELD	0	0	1
VA-SSWR-MHOL	SANITARY SEWER MANHOLE	0	0	1
VA-SSWR-PERC	SANITARY SEWER PERC HOLE	0	0	1

Name	Description	Style	Wt.	Plot
VA-SSWR-PIPE	SANITARY SEWER PIPE	L440	0	1
VA-SSWR-SEPT	SANITARY SEWER SEPTIC TANK	0	0	1
VA-SSWR-STPT	SANITARY SEWER SOIL TEST PIT	0	0	1
VA-SSWR-VENT	SANITARY SEWER VENT	0	0	1
VA-STRM	STORM WATER	0	0	1
VA-STRM-ANNO	STORM WATER ANNOTATION	0	2	1
VA-STRM-ARCH	STORM WATER ARCH PIPE	L480	0	1
VA-STRM-BXCL	STORM WATER BOX CULVERT	0	0	1
VA-STRM-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-STRM-HDWL	STORM WATER HEAD WALL	0	0	1
VA-STRM-INLT	STORM WATER INLET	0	0	1
VA-STRM-MHOL	STORM WATER MANHOLE	0	0	1
VA-STRM-PIPE	STORM WATER PIPE	L480	0	1
VA-STRM-STRC	STORM WATER END SECTION	0	0	1
VA-SUEI	SUBSURFACE UTILITY ENGINEERING DATA	0	0	1
VA-SUEI-DEPU	DEAD END POINT OF UTILITY	0	0	1
VA-SUEI-LOSD	LIMIT OF SUE DATA	L490	0	1
VA-SUEI-STPL	SUE TEST PIT LOCATION	0	0	1
VA-SUEI-UQLC	SUE - UTILITY QUALITY LEVEL CHANGE	0	0	1
VA-SURF	SURFACE	0	0	1
VA-SURF-BRKL	SURFACE, CREATED BREAKLINES	0	0	1
VA-SURF-CONT-ANNO	CONTOURS ANNOTATION	0	0	1
VA-SURF-CONT-MAJR	CONTOURS MAJOR	1	3	1
VA-SURF-CONT-MINR	CONTOURS MINOR	2	0	1
VA-SURF-CONT-SPOT	CONTOURS SPOT ELEVATIONS	0	0	1
VA-SURF-PMTR	SURFACE PERIMETER	0	0	1
VA-SURF-PROF	SURFACE PROFILED	0	0	1
VA-SURF-RNDM	SURFACE, CREATED RANDOM POINTS	0	0	1
VA-SURF-TRIG	SURFACE TRIANGLES	0	0	1
VA-SURV	SURVEY	0	0	1
VA-SURV-ANNO	SURVEY ANNOTATION	0	0	1
VA-SURV-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-SURV-CHCK	SURVEY CHECK SHOTS	0	0	1
VA-SURV-CONS-BSLN	SURVEY CONSTRUCTION BASE LINE	L101	0	1
VA-SURV-CTPT	SURVEY PLAN AXLE, BENCHMARKS, MONUMENTS, CONSTRUCTION PTS	0	0	1
VA-SURV-DATA	SURVEY DATA	0	0	1

Name	Description	Style	Wt.	Plot
VA-SURV-DATA-CODE	SURVEY DATA POINT CODES	0	0	1
VA-SURV-DATA-ELEV	SURVEY DATA POINT ELEVATIONS	0	0	1
VA-SURV-DATA-ERRO	SURVEY DATA POINT ERRORS	0	0	1
VA-SURV-DATA-NAME	SURVEY DATA POINT NAMES	0	0	1
VA-SURV-DATA-NETW	SURVEY DATA NETWORK	0	0	1
VA-SURV-DATA-NOTE	SURVEY DATA NOTES	0	0	1
VA-SURV-DATA-SYMB	SURVEY DATA SYMBOLS	0	0	1
VA-SURV-DEFT	SURVEY DEFAULT SHOT	0	0	1
VA-SURV-DEFT-LINR	SURVEY DEFAULT LINEAR	0	0	1
VA-SURV-FDPT	SURVEY CONTROL POINTS	0	0	1
VA-SURV-PLAN-BSLN	SURVEY PLAN BASE LINE	0	0	1
VA-SURV-PLAN-CNTR	SURVEY PLAN CENTER LINE	0	0	1
VA-SURV-PLAN-PNTS	SURVEY PLAN POINTS	0	0	1
VA-SURV-TRAV	SURVEY TRAVERSE POINTS	0	0	1
VA-TELP	TELEPHONE	0	0	1
VA-TELP-ANNO	TELEPHONE ANNOTATION	0	0	1
VA-TELP-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-TELP-LINE	TELEPHONE UNDERGROUND LINE	0	0	1
VA-TELP-MARK	TELEPHONE MARKER	0	0	1
VA-TELP-MHOL	TELEPHONE MANHOLE	0	0	1
VA-TELP-OHVD	TELEPHONE OVERHEAD	0	0	1
VA-TELP-POLE	TELEPHONE POLE	0	0	1
VA-TOPO	TOPO	0	0	1
VA-TOPO-ANNO	TOPO ANNOTATION	0	0	1
VA-TOPO-ANTN	TOPO BORE HOLE	0	0	1
VA-TOPO-ARLB	TOPO AREA LABEL	0	0	1
VA-TOPO-BANK-BOTM	TOPO BANK BOTTOM	0	0	1
VA-TOPO-BANK-TOPP	TOPO BANK TOP	0	0	1
VA-TOPO-BLBD-DBBL	TOPO BILLBOARD DOUBLE	0	0	1
VA-TOPO-BLBD-SNGL	TOPO BILLBOARD SINGLE	0	0	1
VA-TOPO-BLDR	TOPO BOULDERS	0	0	1
VA-TOPO-BORE	TOPO BORE HOLE	0	0	1
VA-TOPO-BRKL	TOPO BREAKLINES	0	0	1
VA-TOPO-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-TOPO-FENC	TOPO FENCE	0	0	1
VA-TOPO-GABI	TOPO GABIONS	0	0	1
VA-TOPO-GATE	TOPO GATES	0	0	1
VA-TOPO-MLBX	TOPO MAILBOX	0	0	1

Name	Description	Style	Wt.	Plot
VA-TOPO-OBSC-NODT	TOPO OBSCURED AREA NO DATA	0	0	1
VA-TOPO-OBSC-WDAT	TOPO OBSCURED AREA WITH DATA	0	0	1
VA-TOPO-OLDG	TOPO OLD GROUND	0	0	1
VA-TOPO-PNTS-REGL	TOPO SURVEY REGULAR POINTS	0	0	1
VA-TOPO-POLE-POST	TOPO POLE POST	0	0	1
VA-TOPO-ROCK	TOPO ROCKS	0	0	1
VA-TOPO-RRAP	TOPO RIPRAP	0	0	1
VA-TOPO-SATD	TOPO SATELLITE DISH	0	0	1
VA-TOPO-SIGN	TOPO SIGN	0	0	1
VA-TOPO-SROW	TOPO STONE ROW	0	0	1
VA-TOPO-WALL-BOTM	TOPO WALL BOTTOM	0	0	1
VA-TOPO-WALL-RETN	TOPO WALL RETAINING	0	0	1
VA-TOPO-WALL-TOPP	TOPO WALL TOP	0	0	1
VA-TRAF	TRAFFIC	0	0	1
VA-TRAF-ANNO	TRAFFIC ANNOTATION	0	0	1
VA-TRAF-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-TRAF-SIGS	TRAFFIC SIGNAL	0	0	1
VA-UTIL	UNIDENTIFIED UTILITY	0	0	1
VA-UTIL-ANNO	UNIDENTIFIED UTILITY ANNOTATION	0	0	1
VA-UTIL-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-UTIL-COMB	UNIDENTIFIED COMBINED UTILITIES	0	0	1
VA-UTIL-GUYP	UNIDENTIFIED UTILITY POLE GUYS	0	0	1
VA-UTIL-GUYS	UNIDENTIFIED UTILITY GUYS	0	0	1
VA-UTIL-JBOX	UNIDENTIFIED UTILITY JUNCTION BOX	0	0	1
VA-UTIL-MHOL	UNIDENTIFIED UTILITY MANHOLE	0	0	1
VA-UTIL-OGTC	UNIDENTIFIED UTILITY OIL/GAS TANK CAP	0	0	1
VA-UTIL-OVHG	UNIDENTIFIED UTILITY OVERHANG	0	0	1
VA-UTIL-OVHD	UNIDENTIFIED UTILITY OVERHEAD	0	0	1
VA-UTIL-POLE	UNIDENTIFIED UTILITY POLE	0	0	1
VA-UTIL-POLE-LITE	UNIDENTIFIED UTILITY POLE LIGHTING	0	0	1
VA-UTIL-POLE-PRVT	UNIDENTIFIED UTILITY PRIVATE POLE	0	0	1
VA-UTIL-TANK	UNIDENTIFIED UTILITY TANK	0	0	1
VA-UTIL-VLVE	UNIDENTIFIED UTILITY VALVE	0	0	1
VA-VEGE	VEGETATION	0	0	1
VA-VEGE-ANNO	VEGETATION ANNOTATION	0	0	1
VA-VEGE-BEDS	VEGETATION BEDS	0	0	1
VA-VEGE-BRSH	VEGETATION BRUSH LINE	0	0	1

Name	Description	Style	Wt.	Plot
VA-VEGE-BUSH	VEGETATION BUSH	0	0	1
VA-VEGE-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-VEGE-HEDG	VEGETATION HEDGE	0	0	1
VA-VEGE-ORCH	VEGETATION ORCHARD	0	0	1
VA-VEGE-PLTR	VEGETATION PLANTER	0	0	1
VA-VEGE-SHRB	VEGETATION SHRUB	0	0	1
VA-VEGE-STMP	VEGETATION STUMP	0	0	1
VA-VEGE-TREE	VEGETATION TREE	0	0	1
VA-VEGE-TRER	VEGETATION TREE ROW	0	0	1
VA-VEGE-VINE	VEGETATION VINEYARD	0	0	1
VA-VEGE-WDRW	VEGETATION WOODS ROW	0	0	1
VA-VEGE-WODE	VEGETATION, EDGE OF WOODS	0	0	1
VA-VEGE-WTLN	VEGETATION WETLAND DELINEATION	0	0	1
VA-WATR	DOMESTIC WATER	0	0	1
VA-WATR-ANNO	DOMESTIC WATER ANNOTATION	0	0	1
VA-WATR-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-WATR-CIST	DOMESTIC WATER CISTERN	0	0	1
VA-WATR-FHYD	DOMESTIC WATER FIRE HYDRANT	0	0	1
VA-WATR-LINE	DOMESTIC WATER LINE	0	0	1
VA-WATR-METR	DOMESTIC WATER METER	0	0	1
VA-WATR-POOL	DOMESTIC WATER POOL	0	0	1
VA-WATR-SPRG	DOMESTIC WATER SPRING EDGE	0	0	1
VA-WATR-VLVE	DOMESTIC WATER VALVE	0	0	1
VA-WATR-VLVE-STOP	DOMESTIC WATER VALVE STOP	0	0	1
VA-WATR-WELL	DOMESTIC WATER WELL	0	0	1
VA-WWAY	WATER-WAYS	0	0	1
VA-WWAY-ANNO	WATER-WAY ANNOTATION	0	0	1
VA-WWAY-BOAT	WATER-WAY BOAT LAUNCH	0	0	1
VA-WWAY-CANL	WATER-WAY CANAL	0	0	1
VA-WWAY-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
VA-WWAY-CREK	WATER-WAY CREEK	0	0	1
VA-WWAY-DAMM	WATER-WAY DAM	0	0	1
VA-WWAY-DRYB	WATER-WAY DRY CREEK BED	0	0	1
VA-WWAY-LAKE	WATER-WAY LAKE	0	0	1
VA-WWAY-LEVE	WATER-WAY LEVEE	0	0	1
VA-WWAY-POND	WATER-WAY POND	0	0	1
VA-WWAY-RIVR	WATER-WAY RIVER	0	0	1
VA-WWAY-RRAP	WATER-WAY EROSION RIPRAP ROCK LINING	0	0	1

Name	Description	Style	Wt.	Plot
VA-WWAY-SNDG	WATER-WAY SOUNDING	0	0	1
VA-WWAY-SPLW	WATER-WAY SPILLWAY	0	0	1
VA-WWAY-STRM	WATER-WAY STREAM	0	0	1
VA-WWAY-WATR	WATER-WAY WATER	0	0	1
V-BLDG	BUILDING	0	1	1
V-BLDG-ANNO	BUILDING ANNOTATION	0	2	1
V-BLDG-BARN	BUILDING BARN	0	1	1
V-BLDG-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	1	1
V-BLDG-FPLC	BUILDING FIREPLACE	0	1	1
V-BLDG-GARG	BUILDING GARAGE	0	1	1
V-BLDG-OTLN	BUILDING OUTLINE	0	1	1
V-BLDG-OVHG	BUILDING OVERHANG	0	1	1
V-BLDG-PRCH	BUILDING PORCH	0	1	1
V-BLDG-PRCH-BOTM	BUILDING PORCH BOTTOM	0	1	1
V-BLDG-PRCH-TOPP	BUILDING PORCH TOP	0	1	1
V-BLDG-SDWK	BUILDING SIDEWALK	0	1	1
V-BLDG-SHED	BUILDING SHED	0	1	1
V-BLDG-SILO	BUILDING SILO	0	1	1
V-BLDG-SLAB	BUILDING CONCRETE SLAB	0	1	1
V-BLDG-STEP	BUILDING STEP	0	1	1
V-BLDG-TANK	BUILDING TANKS	0	1	1
V-BNDY	BOUNDARY LINES (UNCONTROLLED)	0	0	1
V-BNDY-ANNO	BOUNDARY LINES, ANNOTATION	0	2	1
V-BNDY-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-BNDY-LINE	DEEDPLOT LEVEL	L203	1	1
V-BNDY-MUNI	BOUNDARY LINES, MUNICIPAL	L204	3	1
V-BRDG	BRIDGE (UNCONTROLLED)	0	0	1
V-BRDG-ABUT-BOTM	BRIDGE ABUTMENT BOTTOM	0	1	1
V-BRDG-ABUT-TOPP	BRIDGE ABUTMENT TOP	0	1	1
V-BRDG-ANNO	BRIDGE ANNOTATION	0	2	1
V-BRDG-AWNG	BRIDGE ABUTMENT AND WINGS	0	1	1
V-BRDG-BEAM-BOTM	BRIDGE BEAM BOTTOM LINE	0	1	1
V-BRDG-BEAM-SEAT	BRIDGE BEAM SEAT	0	1	1
V-BRDG-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-BRDG-CHRD-LOWW	BRIDGE LOW CHORD	0	1	1
V-BRDG-CRWN	BRIDGE CROWN	0	1	1
V-BRDG-CURB-BOTM	BRIDGE CURB BOTTOM	0	1	1

Name	Description	Style	Wt.	Plot
V-BRDG-CURB-TOPP	BRIDGE CURB TOP	0	1	1
V-BRDG-DECK	BRIDGE DECK	0	1	1
V-BRDG-DKJT	BRIDGE DECK JOINT	0	1	1
V-BRDG-FTNG	BRIDGE FOOTING	0	1	1
V-BRDG-GNRL	BRIDGE GENERAL	0	1	1
V-BRDG-PARA-BOTM	BRIDGE PARAPET BOTTOM	0	1	1
V-BRDG-PARA-TOPP	BRIDGE PARAPET TOP	0	1	1
V-BRDG-PEDS-TOPP	BRIDGE PEDESTAL	0	1	1
V-BRDG-PIER	BRIDGE PIER	0	1	1
V-BRDG-PIER-BOTM	BRIDGE PIER BOTTOM	0	1	1
V-BRDG-PIER-TOPP	BRIDGE PIER TOP	0	1	1
V-BRDG-SDWK	BRIDGE SIDEWALK	0	1	1
V-BRDG-WHGD	BRIDGE WHEEL GUARD	0	1	1
V-BRDG-WING-BOTM	BRIDGE WING BOTTOM	0	1	1
V-BRDG-WING-TOPP	BRIDGE WING TOP	0	1	1
V-CATV	CABLE TV	0	0	1
V-CATV-ANNO	CABLE TV ANNOTATION	0	2	1
V-CATV-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-CATV-LINE	CABLE TV LINE	L407	1	1
V-CATV-MARK	CABLE TV MARKER	0	1	1
V-CATV-OVHD	CABLE TV OVERHEAD	L406	1	1
V-CATV-UNDR	CABLE TV UNDERGROUND	L407	1	1
V-DRIV	DRIVEWAY	0	0	1
V-DRIV-ANNO	DRIVEWAY ANNOTATION	0	2	1
V-DRIV-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-DRIV-EDGE	DRIVEWAY EDGE	0	1	1
V-DTCH	DITCH	0	1	1
V-DTCH-ANNO	DITCH ANNOTATION	0	2	1
V-DTCH-BOTM	DITCH BOTTOM	L301	1	1
V-DTCH-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-DTCH-DRAW	DITCH DRAW	0	1	1
V-DTCH-PAVE	DITCH PAVE	0	1	1
V-DTCH-SWAL	DITCH SWALE	L302	1	1
V-DTCH-TOPD	DITCH TOP	0	1	1
V-ESMT	EASEMENT	0	0	1
V-ESMT-ANNO	EASEMENT ANNOTATION	0	2	1

Name	Description	Style	Wt.	Plot
V-ESMT-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-ESMT-LINE	PROPERTY LINES - DEEDPLOT LEVEL	L203	1	1
V-ESMT-RWAY	LEGAL RIGHT OF WAY LINES	L200	3	1
V-FIBR	FIBER OPTIC	0	1	1
V-FIBR-ANNO	FIBER OPTIC ANNOTATION	0	2	1
V-FIBR-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-FIBR-DBUR	FIBER OPTIC DIRECT BURIED	0	1	1
V-FIBR-MHOL	FIBER OPTIC MANHOLE	0	0	1
V-FIBR-OVHD	FIBER OPTIC OVERHEAD	L403	1	1
V-FIBR-POLE	FIBER OPTIC POLE	0	0	1
V-FIBR-UNDR	FIBER OPTIC UNDERGROUND	L404	1	1
V-GRAL-ANNO	GUIDE RAIL ANNOTATION	0	2	1
V-GRAL-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-GRAL-LINE	GUIDE RAIL LINE	L106	1	1
V-GRAL-STRG	GUIDE RAIL STRONG POST	L106	1	1
V-GRAL-WEAK	GUIDE RAIL WEAK POST	L106	1	1
V-NGAS	NATURAL GAS	0	1	1
V-NGAS-ANNO	NATURAL GAS ANNOTATION	0	2	1
V-NGAS-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-NGAS-LINE	NATURAL GAS LINE	L460	1	1
V-NGAS-MARK	NATURAL GAS MARKER	0	0	1
V-NGAS-METR	NATURAL GAS METER	0	0	1
V-NGAS-MHOL	NATURAL GAS MANHOLE	0	0	1
V-NGAS-VLVE	NATURAL GAS VALVE	0	0	1
V-NGAS-VLVE-STOP	NATURAL GAS VALVE STOP	0	0	1
V-NGAS-WELL	NATURAL GAS WELL	0	0	1
V-POWR	POWER	0	0	1
V-POWR-ANNO	POWER ANNOTATION	0	2	1
V-POWR-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-POWR-COND	POWER CONDUIT	0	1	1
V-POWR-DBUR	POWER DIRECT BURIED	0	1	1
V-POWR-MHOL	POWER MANHOLE	0	0	1
V-POWR-OVHG	POWER OVERHANG	L409	0	1
V-POWR-OVHD	POWER OVERHEAD	L409	1	1
V-POWR-POLE	POWER POLE	0	0	1
V-POWR-UNDR	POWER UNDERGROUND	L410	1	1

Name	Description	Style	Wt.	Plot
V-PRKG	PARKING	0	0	1
V-PRKG-ANNO	PARKING ANNOTATION	0	2	1
V-PRKG-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-PRKG-EDGE	PARKING EDGE	L102	1	1
V-PRKG-METR	PARKING METER	0	0	1
V-PTRO	PETROLEUM	0	0	1
V-PTRO-ANNO	PETROLEUM ANNOTATION	0	2	1
V-PTRO-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-PTRO-ISLN	PETROLEUM ISLAND	0	1	1
V-PTRO-UNDR	PETROLEUM LINE UNDERGROUND	L460	1	1
V-RAIL	RAILROAD	0	0	1
V-RAIL-ANNO	RAILROAD ANNOTATION	0	2	1
V-RAIL-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-RAIL-CNTR	RAILROAD CENTERLINE	L100	1	1
V-RAIL-EQPM	RAILROAD CROSSING GATE	0	0	1
V-RAIL-SGNL	RAILROAD SIGNALS	0	0	1
V-RAIL-SIGN	RAILROAD SIGNS	0	0	1
V-RAIL-TRAK	RAILROAD TRACK, TOP OF RAIL	L260	1	1
V-ROAD	ROAD	0	0	1
V-ROAD-ANNO	ROAD ANNOTATION	0	2	1
V-ROAD-BARR-BOTM	ROAD MEDIAN BARRIER BOTTOM	0	1	1
V-ROAD-BARR-TOPP	ROAD MEDIAN BARRIER TOP	0	1	1
V-ROAD-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-ROAD-CRWN	ROAD CROWN	0	1	1
V-ROAD-CURB	ROAD CURB	L103	1	1
V-ROAD-CURB-BOTM	ROAD CURB BOTTOM	0	1	1
V-ROAD-CURB-MOUN	ROAD CURB MOUNTABLE	L103	1	1
V-ROAD-CURB-TOPP	ROAD CURB TOP	0	1	1
V-ROAD-EDGE	ROAD EDGE	L102	1	1
V-ROAD-EDGE-DIRT	ROAD EDGE DIRT	L102	1	1
V-ROAD-LINE	ROAD LINE	0	1	1
V-ROAD-MRKG	ROAD MARKING	0	1	1
V-ROAD-SHLD	ROAD SHOULDER	0	1	1
V-ROAD-SHLD-DIRT	ROAD SHOULDER DIRT	0	1	1
V-SSWR	SANITARY SEWER	0	0	1

Name	Description	Style	Wt.	Plot
V-SSWR-ANNO	SANITARY SEWER ANNOTATION	0	2	1
V-SSWR-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-SSWR-CESS	SANITARY SEWER CESSPOOL	0	0	1
V-SSWR-DFLD	SANITARY SEWER DRAIN FIELD	0	1	1
V-SSWR-MHOL	SANITARY SEWER MANHOLE	0	0	1
V-SSWR-PERC	SANITARY SEWER PERC HOLE	0	0	1
V-SSWR-PIPE	SANITARY SEWER PIPE	L440	1	1
V-SSWR-SEPT	SANITARY SEWER SEPTIC TANK	0	0	1
V-SSWR-STPT	SANITARY SEWER SOIL TEST PIT	0	0	1
V-SSWR-VENT	SANITARY SEWER VENT	0	0	1
V-STRM	STORM WATER	0	0	1
V-STRM-ANNO	STORM WATER ANNOTATION	0	2	1
V-STRM-ARCH	STORM WATER ARCH PIPE	L480	0	1
V-STRM-BXCL	STORM WATER BOX CULVERT	0	2	1
V-STRM-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-STRM-HDWL	STORM WATER HEAD WALL	0	2	1
V-STRM-INLT	STORM WATER INLET	0	1	1
V-STRM-MHOL	STORM WATER MANHOLE	0	0	1
V-STRM-PIPE	STORM WATER PIPE	L480	1	1
V-STRM-STRC	STORM WATER END SECTION	0	0	1
V-SUEI	SUBSURFACE UTILITY ENGINEERING DATA	0	0	1
V-SUEI-DEPU	DEAD END POINT OF UTILITY	0	0	1
V-SUEI-LOSD	LIMIT OF SUE DATA	L490	2	1
V-SUEI-STPL	SUE TEST PIT LOCATION	0	0	1
V-SUEI-UQLC	SUE - UTILITY QUALITY LEVEL CHANGE	0	0	1
V-SURF	SURFACE	0	0	1
V-SURF-BRKL	SURFACE, CREATED BREAKLINES	0	0	1
V-SURF-CONT-ANNO	CONTOURS ANNOTATION	0	2	1
V-SURF-CONT-MAJR	CONTOURS MAJOR	0	1	1
V-SURF-CONT-MINR	CONTOURS MINOR	0	0	1
V-SURF-CONT-SPOT	CONTOURS SPOT ELEVATIONS	0	0	1
V-SURF-PMTR	SURFACE PERIMETER	2	2	1
V-SURF-PROF	SURFACE PROFILED	0	0	1
V-SURF-RNDM	SURFACE, CREATED RANDOM POINTS	0	0	1
V-SURF-TRIG	SURFACE TRIANGLES	0	0	1
V-SURV	SURVEY	0	0	1
V-SURV-ANNO	SURVEY ANNOTATION	0	2	1

Name	Description	Style	Wt.	Plot
V-SURV-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-SURV-CHCK	SURVEY CHECK SHOTS	0	0	1
V-SURV-CONS-BSLN	SURVEY CONSTRUCTION BASE LINE	L101	1	1
V-SURV-CTPT	SURVEY PLAN AXLE, BENCHMARKS, MONUMENTS, CONSTRUCTION PTS	0	0	1
V-SURV-DATA	SURVEY DATA	0	0	1
V-SURV-DATA-CODE	SURVEY DATA POINT CODES	0	0	1
V-SURV-DATA-ELEV	SURVEY DATA POINT ELEVATIONS	0	0	1
V-SURV-DATA-ERRO	SURVEY DATA POINT ERRORS	0	0	1
V-SURV-DATA-NAME	SURVEY DATA POINT NAMES	0	0	1
V-SURV-DATA-NETW	SURVEY DATA NETWORK	0	0	1
V-SURV-DATA-NOTE	SURVEY DATA NOTES	0	2	1
V-SURV-DATA-SYMB	SURVEY DATA SYMBOLS	0	0	1
V-SURV-DEFT	SURVEY DEFAULT SHOT	0	0	1
V-SURV-DEFT-LINR	SURVEY DEFAULT LINEAR	0	0	1
V-SURV-FDPT	SURVEY CONTROL POINTS	0	0	1
V-SURV-PLAN-BSLN	SURVEY PLAN BASE LINE	L101	1	1
V-SURV-PLAN-CNTR	SURVEY PLAN CENTER LINE	L102	1	1
V-SURV-PLAN-PNTS	SURVEY PLAN POINTS	0	0	1
V-SURV-TRAV	SURVEY TRAVERSE POINTS	0	0	1
V-TELP	TELEPHONE	0	0	1
V-TELP-ANNO	TELEPHONE ANNOTATION	0	2	1
V-TELP-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-TELP-DBUR	TELEPHONE DIRECT BURIED LINE	L402	1	1
V-TELP-LINE	TELEPHONE LINE	L400	1	1
V-TELP-MARK	TELEPHONE MARKER	0	0	1
V-TELP-MHOL	TELEPHONE MANHOLE	0	0	1
V-TELP-OVHG	TELEPHONE OVERHANG	0	0	1
V-TELP-OVHD	TELEPHONE OVERHEAD	L400	1	1
V-TELP-POLE	TELEPHONE POLE	0	0	1
V-TELP-UNDR	TELEPHONE UNDERGROUND LINE	L401	1	1
V-TOPO	TOPO	0	0	1
V-TOPO-ANNO	TOPO ANNOTATION	0	2	1
V-TOPO-ARLB	TOPO AREA LABEL	0	2	1
V-TOPO-BANK-BOTM	TOPO BANK BOTTOM	0	0	1
V-TOPO-BANK-TOPP	TOPO BANK TOP	0	0	1
V-TOPO-BLBD-DBBL	TOPO BILLBOARD DOUBLE	0	0	1
V-TOPO-BLBD-SNGL	TOPO BILLBOARD SINGLE	0	0	1

Name	Description	Style	Wt.	Plot
V-TOPO-BLDR	TOPO BOULDERS	0	0	1
V-TOPO-BORE	TOPO BORE HOLE	0	0	1
V-TOPO-BRKL	TOPO BREAKLINES	0	0	1
V-TOPO-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-TOPO-FENC	TOPO FENCE	L230	1	1
V-TOPO-GABI	TOPO GABIONS	0	0	1
V-TOPO-GATE	TOPO GATES	L230	0	1
V-TOPO-MLBX	TOPO MAILBOX	0	0	1
V-TOPO-OLDG	TOPO OLD GROUND	0	0	1
V-TOPO-PNTS-REGL	TOPO SURVEY REGULAR POINTS	0	0	1
V-TOPO-POLE-POST	TOPO POLE POST	0	0	1
V-TOPO-ROCK	TOPO ROCKS	0	0	1
V-TOPO-RRAP	TOPO RIPRAP	0	0	1
V-TOPO-SIGN	TOPO SIGN	0	0	1
V-TOPO-SROW	TOPO STONE ROW	0	0	1
V-TOPO-WALL-BOTM	TOPO WALL BOTTOM	0	0	1
V-TOPO-WALL-RETN	TOPO WALL RETAINING	0	0	1
V-TOPO-WALL-TOPP	TOPO WALL TOP	0	0	1
V-TRAF	TRAFFIC	0	0	1
V-TRAF-ANNO	TRAFFIC ANNOTATION	0	2	1
V-TRAF-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-TRAF-SIGS	TRAFFIC SIGNAL	0	0	1
V-UTIL	UNIDENTIFIED UTILITY	0	0	1
V-UTIL-ANNO	UNIDENTIFIED UTILITY ANNOTATION	0	2	1
V-UTIL-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-UTIL-COMB	UNIDENTIFIED COMBINED UTILITIES	0	1	1
V-UTIL-GUYP	UNIDENTIFIED UTILITY POLE GUYS	0	0	1
V-UTIL-GUYS	UNIDENTIFIED UTILITY GUYS	0	0	1
V-UTIL-JBOX	UNIDENTIFIED UTILITY JUNCTION BOX	0	0	1
V-UTIL-MHOL	UNIDENTIFIED UTILITY MANHOLE	0	0	1
V-UTIL-OGTC	UNIDENTIFIED UTILITY OIL/GAS TANK CAP	0	0	1
V-UTIL-OVHG	UNIDENTIFIED UTILITY OVERHANG	0	0	1
V-UTIL-OVHD	UNIDENTIFIED UTILITY OVERHEAD	L411	0	1
V-UTIL-POLE	UNIDENTIFIED UTILITY POLE	0	0	1
V-UTIL-POLE-LITE	UNIDENTIFIED UTILITY POLE LIGHTING	0	0	1
V-UTIL-POLE-PRVT	UNIDENTIFIED UTILITY PRIVATE POLE	0	0	1
V-UTIL-TANK	UNIDENTIFIED UTILITY TANK	0	0	1
V-UTIL-VLVE	UNIDENTIFIED UTILITY VALVE	0	0	1

Name	Description	Style	Wt.	Plot
V-VEGE	VEGETATION	0	0	1
V-VEGE-ANNO	VEGETATION ANNOTATION	0	2	1
V-VEGE-BEDS	VEGETATION BEDS	L503	1	1
V-VEGE-BRSH	VEGETATION BRUSH LINE	0	1	1
V-VEGE-BUSH	VEGETATION BUSH	0	0	1
V-VEGE-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-VEGE-HEDG	VEGETATION HEDGE	L505	1	1
V-VEGE-ORCH	VEGETATION ORCHARD	L503	1	1
V-VEGE-PLTR	VEGETATION PLANTER	0	0	1
V-VEGE-SHRB	VEGETATION SHRUB	0	0	1
V-VEGE-STMP	VEGETATION STUMP	0	0	1
V-VEGE-TREE	VEGETATION TREE	0	0	1
V-VEGE-TRER	VEGETATION TREE ROW	L502	1	1
V-VEGE-VINE	VEGETATION VINEYARD	L504	1	1
V-VEGE-WDRW	VEGETATION WOODS ROW	L500	1	1
V-VEGE-WODE	VEGETATION, EDGE OF WOODS	L500	1	1
V-VEGE-WTLN	VEGETATION WETLAND DELINEATION	L304	0	1
V-WATR	DOMESTIC WATER	0	0	1
V-WATR-ANNO	DOMESTIC WATER ANNOTATION	0	2	1
V-WATR-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-WATR-CIST	DOMESTIC WATER CISTERN	0	0	1
V-WATR-FHYD	DOMESTIC WATER FIRE HYDRANT	0	0	1
V-WATR-LINE	DOMESTIC WATER LINE	L450	1	1
V-WATR-METR	DOMESTIC WATER METER	0	0	1
V-WATR-POOL	DOMESTIC WATER POOL	0	1	1
V-WATR-SPRG	DOMESTIC WATER SPRING EDGE	L303	1	1
V-WATR-VLVE	DOMESTIC WATER VALVE	0	0	1
V-WATR-VLVE-STOP	DOMESTIC WATER VALVE STOP	0	0	1
V-WATR-WELL	DOMESTIC WATER WELL	0	0	1
V-WWAY	WATER-WAYS	0	0	1
V-WWAY-ANNO	WATER-WAY ANNOTATION	0	2	1
V-WWAY-CANL	WATER-WAY CANAL	0	1	1
V-WWAY-CELL	ALL LINEAR FEATURES POINT CELLS WILL BE PLACED ON THIS LEVEL	0	0	1
V-WWAY-CREK	WATER-WAY CREEK	L300	1	1
V-WWAY-LAKE	WATER-WAY LAKE	L300	1	1
V-WWAY-LEVE	WATER-WAY LEVEE	0	1	1
V-WWAY-POND	WATER-WAY POND	L300	1	1

Name	Description	Style	Wt.	Plot
V-WWAY-RIVR	WATER-WAY RIVER	L300	1	1
V-WWAY-RRAP	WATER-WAY EROSION RIPRAP ROCK LINING	0	1	1
V-WWAY-SNDG	WATER-WAY SOUNDING	0	1	1
V-WWAY-STRM	WATER-WAY STREAM	L300	1	1
V-WWAY-WATR	WATER-WAY WATER	L300	1	1
XCS-FRAM	XCS-CROSS SECTION FRAME	0	0	1
XCS-GRID-BLTX	XCS-CROSS SECTION BASE LINE TEXT	0	0	1
XCS-GRID-CLTX	XCS-CROSS SECTION CENTERLINE TEXT	0	0	1
XCS-GRID-HVGL	XCS-CROSS SECTION HEAVY VERTICAL LINE	0	0	1
XCS-GRID-MAJ	XCS-CROSS SECTION MAJOR GRID LINE	0	0	1
XCS-XSEC	Cross Section	0	1	1
XCS-XSEC-AXIS	Cross Section - Axis	0	1	1
XCS-XSEC-AXIS-TEXT	Cross Section - Axis - Text	0	1	1
XCS-XSEC-AXIS-TITL	Cross Section - Axis - Title	0	1	1
XCS-XSEC-CELL	Cross Section - Cells	0	1	1
XCS-XSEC-DIMS	Cross Section - Dimensions	0	1	1
XCS-XSEC-FRAM	Cross Section - Frame	0	1	1
XCS-XSEC-GRID	Cross Section - Grid	0	1	1
XCS-XSEC-GRID-BLTX	Cross Section - Grid - Base Line Text	0	1	1
XCS-XSEC-GRID-CLTX	Cross Section - Grid - Center Line Text	0	1	1
XCS-XSEC-GRID-HVGL	Cross Section - Grid - Center Line Text	0	1	1
XCS-XSEC-GRID-MAJR	Cross Section - Grid major lines	0	1	1
XCS-XSEC-GRID-MINR	Cross Section - Grid minor lines	0	1	1
XCS-XSEC-LINE	Cross Section - Lines	0	1	1
XCS-XSEC-NAME	Cross Section - Name	0	1	1
XCS-XSEC-NAME-TEXT	Cross Section - Name Text	0	1	1
XCS-XSEC-NOTE	Cross Section - Notes	0	1	1
XCS-XSEC-PNTS	Cross Section - Points (Non-Plotting)	0	1	0
XCS-XSEC-PTRN	Cross Section - Pattern	0	1	1
XCS-XSEC-SYMB	Cross Section - Symbols	0	1	1
XCS-XSEC-TEXT	Cross Section - Text	0	1	1
XCS-XSEC-WORK	Cross Section - User Work (Non-Plotting)	0	1	0