

# US Forest Service Standard Trail Plans and Specifications

Step By Step Guide

V1.0 November 2014

# Topics Covered In This Guide

This guide will help you develop a trail construction package using the new standard trail plans and specifications. Topics include:

- What are Plan Sheets and how to use them
- How to fill out Plan Sheets:
  - Defining the location and scope
  - Detailing specific trail construction features
- Description of the Standard Specifications and how to use them

# What Are Plan Sheets And How To Use Them

- The plan sheets are typical trail drawings with tables you will edit to meet the design standards for your project
- Several sheets define the location and scope of your project.
- The remaining sheets provide details on specific trail construction features.

# What Are Plan Sheets And How To Use Them (Continued)

Sheets that define the **location and scope** of your trail project

- Title Sheet (STD\_900-01)
- Vicinity Map (STD\_900-02)
- General Notes (STD\_900-03)
- Work List (STD\_900-04)
- Line Diagram (STD\_900-05)  
or
- Plan and Profile (STD\_900-07)
- Summary of Quantities (STD\_906-01)

# What Are Plan Sheets And How To Use Them (Continued)

## Examples of sheets that detail **specific trail construction features**

- Typical Cross Section & Slope Finish (STD\_911-01)
- Typical Retainers (STD\_911-03)
- Existing Trail Restoration (STD\_911-30-01)
- Clearing Limits–Trees and Logs (STD\_912-01)
- Clearing Limits–Brushing (STD\_912-02)
- Typical Surfacing Sections (STD\_913-01)
- Rock Foundation (STD\_918-10-01)
- Standard Culvert (STD\_921-10-01)
- Drain Dip (STD\_927-10-01)
- Drain Dip Details (STD\_927-10-02)
- Reassurance Markers (STD\_953-01)
- Seeding, Fertilizing and Mulching (STD\_981-01)

# What Are Plan Sheets And How To Use Them

## (Continued)

- These plans supersede the 1996 Standard Drawings and Specifications for Construction and Maintenance of Trails
- Some plan sheets have tables that require you to provide values specific to the requirements of your project.
- The values you enter into the tables are determined by the Design Parameters appropriate for the Trail Management Objectives and Trail Class of your project.

# Defining the Location and Scope

**Title Sheet (STD\_900-01)**—This sheet is used to locate your project, display required signatures, and provide an index of sheets in your package.

**Step 1:** Insert a State map in the upper left corner block with the project location marked. Insert a map that has sufficient detail to accurately locate your project within the state.

**Step 2:** Insert a project location map in the center block with the project location marked. Insert a map that has sufficient detail (like a Forest Visitor Map) to accurately depict the location and scope of your project.

**Step 3:** Modify the top center title with the region name, forest name, district name, and project name.

**Step 4:** Modify the signature block to include the required forest and regional signatures of reviewers, recommenders, and approvers. The titles shown on the example are common. Your forest or region may have different requirements for approvals and signatures. Be sure to follow the signature requirements for your region and forest.

**Step 5:** Before submitting the final package, fill in the index with the sheet names and numbers included in your packet.

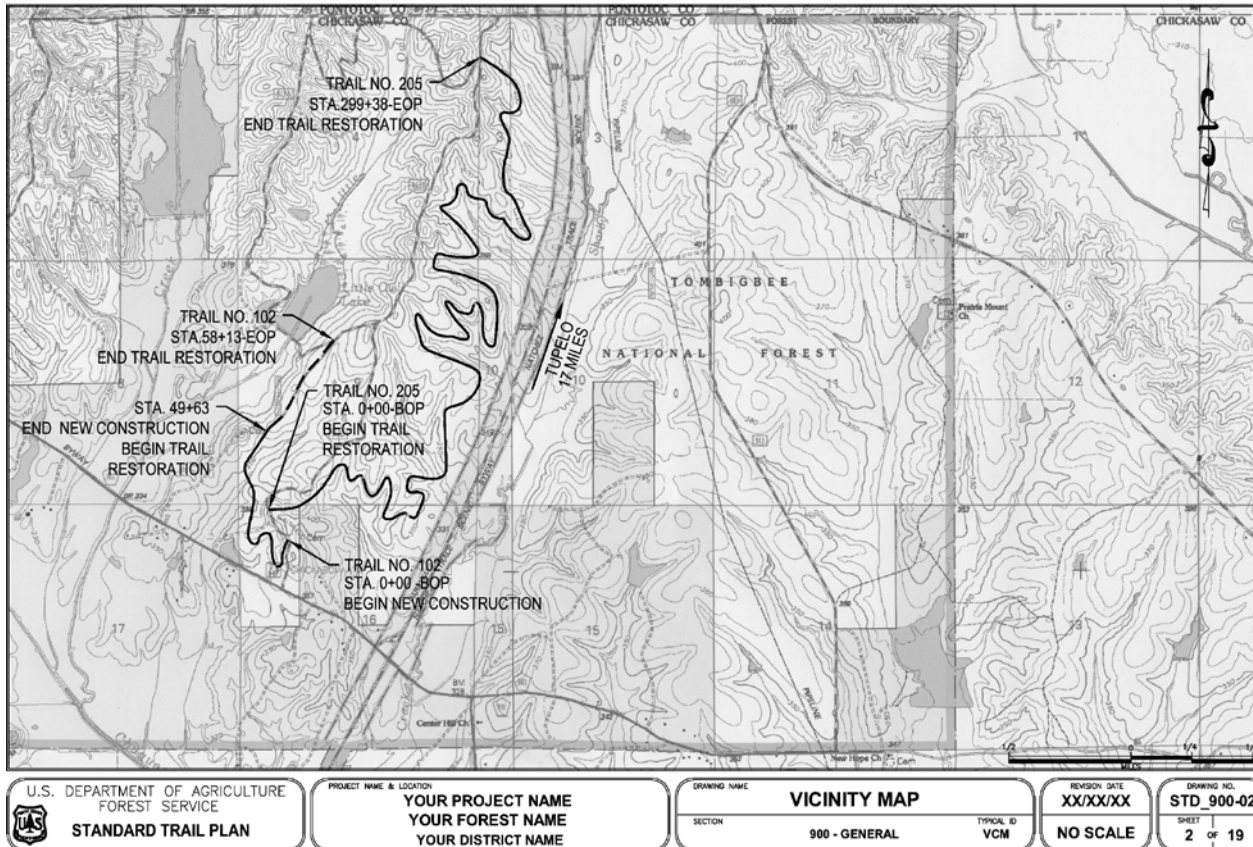
**Step 6:** Fill in the information block with the names of the designer, drafter, checker and project name.

The form includes the following sections:

- 1:** A map of the state with a red circle and arrow pointing to the 'PROJECT LOCATION' on the map.
- 2:** A detailed project location map with a red circle and arrow pointing to the 'PROJECT LOCATION' on the map.
- 3:** The title block containing:
  - YOUR REGION
  - YOUR FOREST NAME
  - YOUR DISTRICT NAME
  - TRAIL CONSTRUCTION PLANS FOR
  - YOUR PROJECT NAME
- 4:** The signature block with fields for:
  - REVIEWED BY: (NAME, DATE)
  - RECOMMENDED BY: (NAME, DATE)
  - APPROVED BY: (NAME, DATE)
- 5:** The INDEX table with columns for SHEET, INDEX, and SHEET NO.
- 6:** The information block at the bottom containing:
  - REVISIONS table
  - DESIGN, DRAWN, CHECKED, PROJECT NAME, PROJECT DATE, DRAWING NO.
  - SECTION, TYPICAL, NO SCALE, SHEET 1 OF 19

# Defining the Location and Scope

**Vicinity Map (STD\_900-02)**—This sheet is used to locate the trail under construction or restoration and to label beginning and end points and important details and structures. The elements in this map are also used in on other sheets. Use a topographic map of sufficient scale to depict the nature of your project work.



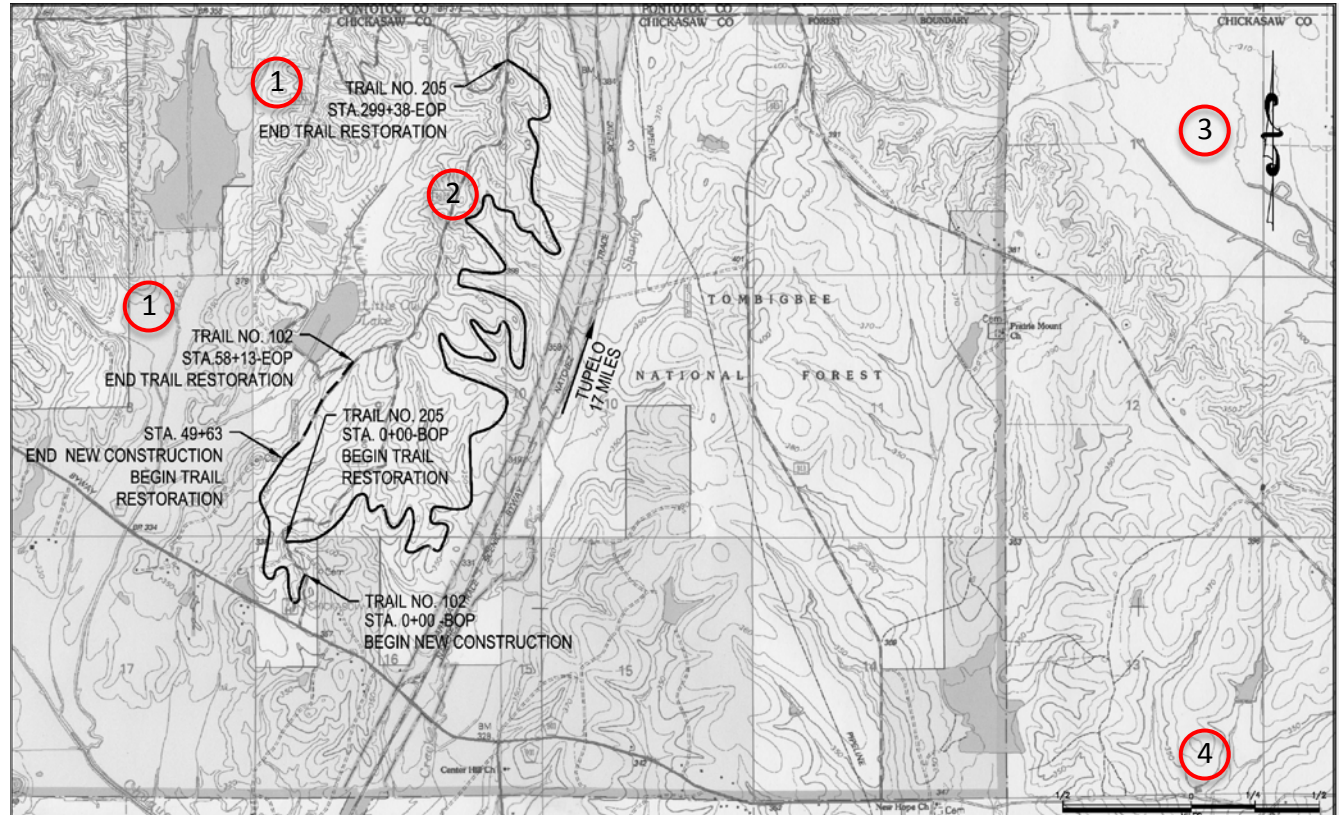


# Defining the Location and Scope

## Vicinity Map (continued)

**Step 7:** Insert a map that accurately locates the vicinity, location, and scope of the trail project including:


- ① Project trail numbers
- ② Trail location
- ③ North arrow
- ④ Scale bar



# Defining the Location and Scope

## Vicinity Map (continued)

**Step 8:** Fill in the information block with the project name, forest name, district name.

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE  STANDARD TRAIL PLAN	PROJECT NAME & LOCATION	DRAWING NAME	REVISION DATE	DRAWING NO.
	<b>YOUR PROJECT NAME</b> <b>YOUR FOREST NAME</b> <b>YOUR DISTRICT NAME</b>	<b>VICINITY MAP</b>	<b>XX/XX/XX</b>	<b>STD_900-02</b>
		SECTION	TYPICAL ID	SHEET
		900 - GENERAL	VCM	2 OF 19
			<b>NO SCALE</b>	

### Note:

**This information block must be filled in for every subsequent sheet in your trail package.**

# Defining the Location and Scope

**General Notes (STD\_900-03)**—This sheet provides definitions for the trail features used in standard trail packages.

The General Notes sheet provides typical identification numbers for trail features.

TYPICAL ID DEFINITIONS					
DRAWING NUMBER	TYP ID	DRAWING NAME	DRAWING NUMBER	TYP ID	DRAWING NAME
STD_900-01	TTL	TITLE_SHEET	STD_932-10-01	TPK	TURNPIKE
STD_900-02	VCM	VICINITY_MAP	STD_932-20-01	TPF	TURNPIKE_W/FOUNDATION
STD_900-03	GNT	GENERAL_NOTES	STD_933-10-01	SRB	STACKED_ROCK_BARRIER
STD_900-04	WKL	WORK_LIST	STD_933-20-01	MRB	MASONRY_ROCK_BARRIER
STD_900-05	LD1	LINE_DIAGRAM	STD-933-20-02	CMB	CONCRETE_MASONRY_UNIT_BARRIER
STD_900-06	LD2	LINE_DIAGRAM	STD_933-30-01	BRG	BARRIER_RAIL_ON_GRADE
STD_900-07	PP1	PLAN_PROFILE_10	STD_933-40-01	BRP	BARRIER_RAIL_ON_POST
STD_900-08	PP2	PLAN_PROFILE_20	STD_933-40-02	TBP	TIMBER BARRIER ON POST
STD_906-01	SOQ	SUMMARY_OF_QUANTITIES	STD_933-50-01	CRB	CURBS

The General Notes sheet also provides space to enter notes that help define specific trail construction considerations the project may require.

GENERAL NOTES
<p>NOTES:</p> <ol style="list-style-type: none"> <li>1. TRAIL LOCATION FOR NEW CONSTRUCTION AS STAKED IN THE FIELD.</li> <li>2. CULVERT LOCATION AND SKEW AS STAKED IN THE FIELD.</li> <li>3. DRAIN DIPS AS STAKED IN THE FIELD.</li> </ol>



# Defining the Location and Scope

## Work List (continued)

**Step 9:** Identify the trail number for the tasks to be performed.

These trail number designations correspond to those identified on the vicinity map.

In this example, the project identifies work on more than one trail in a complex of trails.

TRAIL NO.	BEGIN STATION	END STATION	TASK
102(C)	0+00	49+63	CONSTRUCTION OF NEW TRAIL
	"	"	CLEARING-TREES AND LOGS
	"	"	CLEARING-BRUSHING
	"	"	SEEDING
	"	"	TRAIL BLAZER INSTALLATION
	"	"	CONSTRUCT DRAIN DIP
	41+71		INSTALL 24 IN X 12 FT CULVERT
102(R)	49+63	58+13	EXISTING TRAIL RESTORATION
	"	"	CLEARING-TREES AND LOGS
	"	"	CLEARING-BRUSHING
	"	"	SEEDING
	"	"	TRAIL BLAZER INSTALLATION
		51+75	53+20
205(R)	0+00	299+38	EXISTING TRAIL RESTORATION
	"	"	CLEARING-TREES AND LOGS
	"	"	CLEARING-BRUSHING
	"	"	SEEDING
	"	"	TRAIL BLAZER INSTALLATION

# Defining the Location and Scope

## Work List (continued)

**Step 10:** Next, record the beginning and ending station for each task.

Once again, this information corresponds to information identified on the vicinity map.

TRAIL NO.	BEGIN STATION	END STATION	TASK
102(C)	0+00	49+63	CONSTRUCTION OF NEW TRAIL
"	"	"	CLEARING-TREES AND LOGS
"	"	"	CLEARING-BRUSHING
"	"	"	SEEDING
"	"	"	TRAIL BLAZER INSTALLATION
"	"	"	CONSTRUCT DRAIN DIP
"	41+71		INSTALL 24 IN X 12 FT CULVERT
102(R)	49+63	58+13	EXISTING TRAIL RESTORATION
"	"	"	CLEARING-TREES AND LOGS
"	"	"	CLEARING-BRUSHING
"	"	"	SEEDING
"	"	"	TRAIL BLAZER INSTALLATION
"	51+75	53+20	CONSTRUCT ROCK FOUNDATION
205(R)	0+00	299+38	EXISTING TRAIL RESTORATION
"	"	"	CLEARING-TREES AND LOGS
"	"	"	CLEARING-BRUSHING
"	"	"	SEEDING
"	"	"	TRAIL BLAZER INSTALLATION

# Defining the Location and Scope

## Work List (continued)

**Step 11:** Provide a description of each task to be completed at each station.

TRAIL NO.	BEGIN STATION	END STATION	TASK
102(C)	0+00	49+63	CONSTRUCTION OF NEW TRAIL
"	"	"	CLEARING-TREES AND LOGS
"	"	"	CLEARING-BRUSHING
"	"	"	SEEDING
"	"	"	TRAIL BLAZER INSTALLATION
"	"	"	CONSTRUCT DRAIN DIP
	41+71		INSTALL 24 IN X 12 FT CULVERT
102(R)	49+63	58+13	EXISTING TRAIL RESTORATION
"	"	"	CLEARING-TREES AND LOGS
"	"	"	CLEARING-BRUSHING
"	"	"	SEEDING
"	"	"	TRAIL BLAZER INSTALLATION
	51+75	53+20	CONSTRUCT ROCK FOUNDATION
205(R)	0+00	299+38	EXISTING TRAIL RESTORATION
"	"	"	CLEARING-TREES AND LOGS
"	"	"	CLEARING-BRUSHING
"	"	"	SEEDING
"	"	"	TRAIL BLAZER INSTALLATION

# Defining the Location and Scope

## Work List (continued)

**Step 12:** A standard drawing sheet for each of the tasks is included in the final package. Record the drawing number for each task in the “Drawing No.” column.

**Step 13:** Referring to the General Notes sheet (900-03), enter the typical ID number that corresponds to the task to be performed at each station.

**Step 14:** Enter the specification number that corresponds to the task being performed at each station.

**Step 15:** Indicate if the task has a supplemental specification. Supplemental specifications modify the standard specifications and are unique to your project. These can also be special project specifications for work that does not modify a standard specification but is a feature unique to your project.

TASK	<b>12</b> DRAWING NO.	<b>13</b> TYPICAL ID	<b>14</b> SPECIFICATION NO.	<b>15</b> SUPPLEMENTAL SPECIFICATION
CONSTRUCTION OF NEW TRAIL	STD_911-01	TSF-1	911.10	NA
CLEARING-TREES AND LOGS	STD_912-01	CLT-1	912.10	NA
CLEARING-BRUSHING	STD_912-02	CLB-1	912.20	NA
SEEDING	STD_981-01	SMF-1	981	NA
TRAIL BLAZER INSTALLATION	STD_953-01	RSM-1	953	NA
CONSTRUCT DRAIN DIP	STD_927-10-01	DD1-1	927.10	NA
INSTALL 24 IN X 12 FT CULVERT	STD_921-10-01	SCV-1	911.10	NA



# Defining the Location and Scope

## Work List (continued)

**Step 16:** Enter a pay item number for each task to be performed. Pay item numbers are located in the standard pay item list.

**Step 17:** Enter the unit of measure for each task. These numbers are found in the “Standard Specifications for Construction of Trails and Trail Bridges on Federal Projects.”

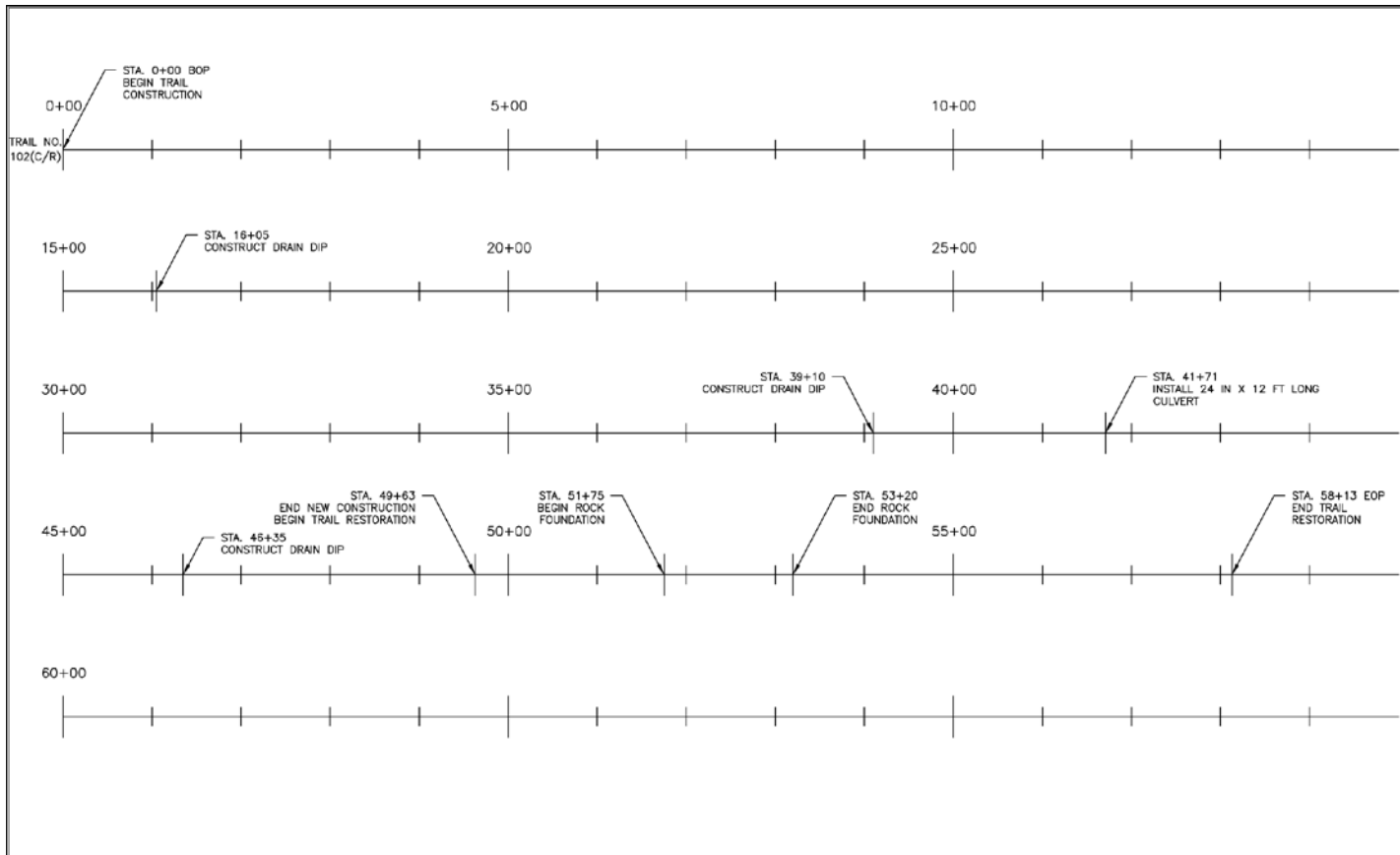
**Step 18:** The last column in this table contains the quantities (in the units of measure indicated) for each task to be performed.

SUPPLEMENTAL SPECIFICATION	16 PAY ITEM	17 UNIT OF MEASURE	18 QUANTITY
NA	91101	LF	4963
NA	91203	LS	1
NA	91212	LS	1
NA	98102	LS	1
NA	95301	EA	50
NA	92701	EA	3
NA	92101	LF	12



# Defining the Location and Scope

**Line Diagram (STD\_900-05)**—This sheet uses a line diagram which is a graphical representation of work to be done by location on a designated trail. The line diagram provides the basis for the summary of quantities sheet that follows.

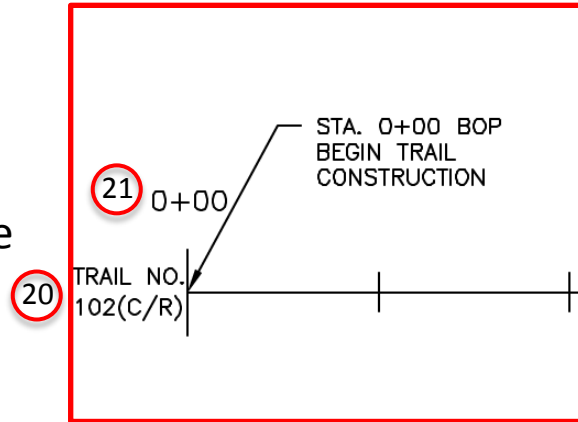


 U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE <b>STANDARD TRAIL PLAN</b>	PROJECT NAME & LOCATION <b>YOUR PROJECT NAME</b> <b>YOUR FOREST NAME</b> <b>YOUR DISTRICT NAME</b>	DRAWING NAME <b>LINE DIAGRAM</b>	REVISION DATE <b>XX/XX/XX</b>	DRAWING NO. <b>STD_900-05</b>
	SECTION <b>900 -GENERAL</b>	TYPICAL ID <b>LD1</b>	<b>NO SCALE</b>	SHEET <b>5</b> OF <b>19</b>

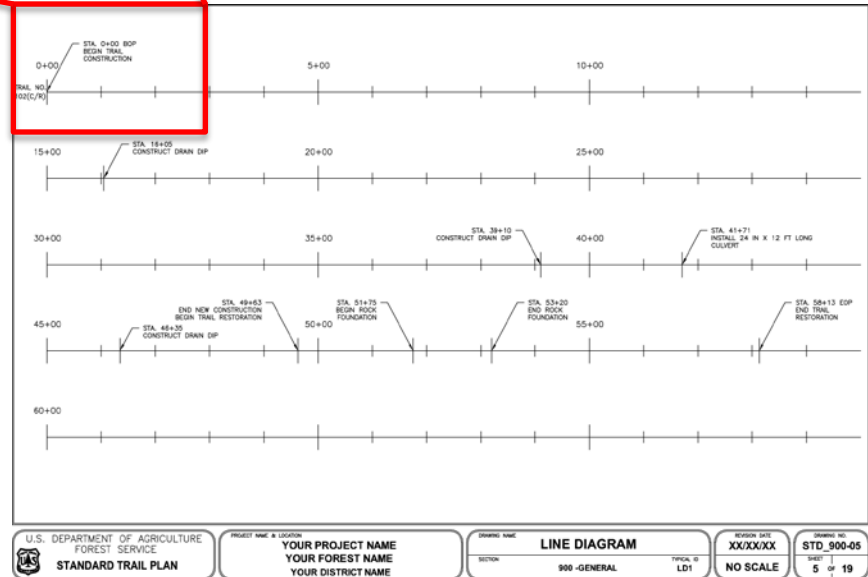
# Defining the Location and Scope

## Line Diagram (continued)

**Step 20:** Label the trail number at the beginning of the line diagram.



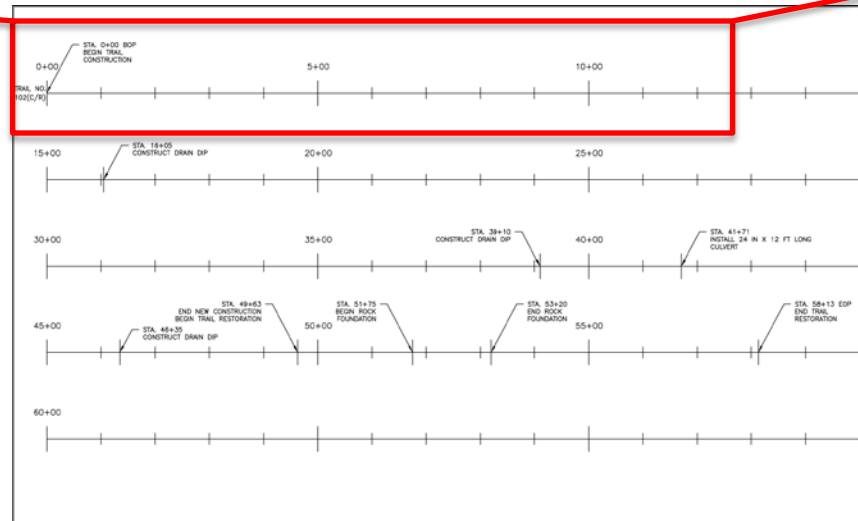
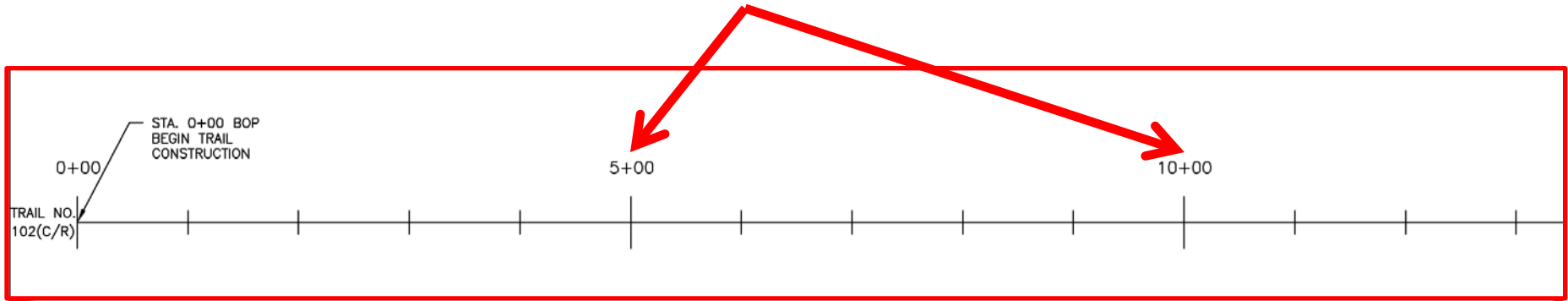
**Step 21:** label the station number (0+00) at the beginning of the project.



# Defining the Location and Scope

## Line Diagram (continued)

**Step 22:** Label trail stationing at major ticks on the line diagram.

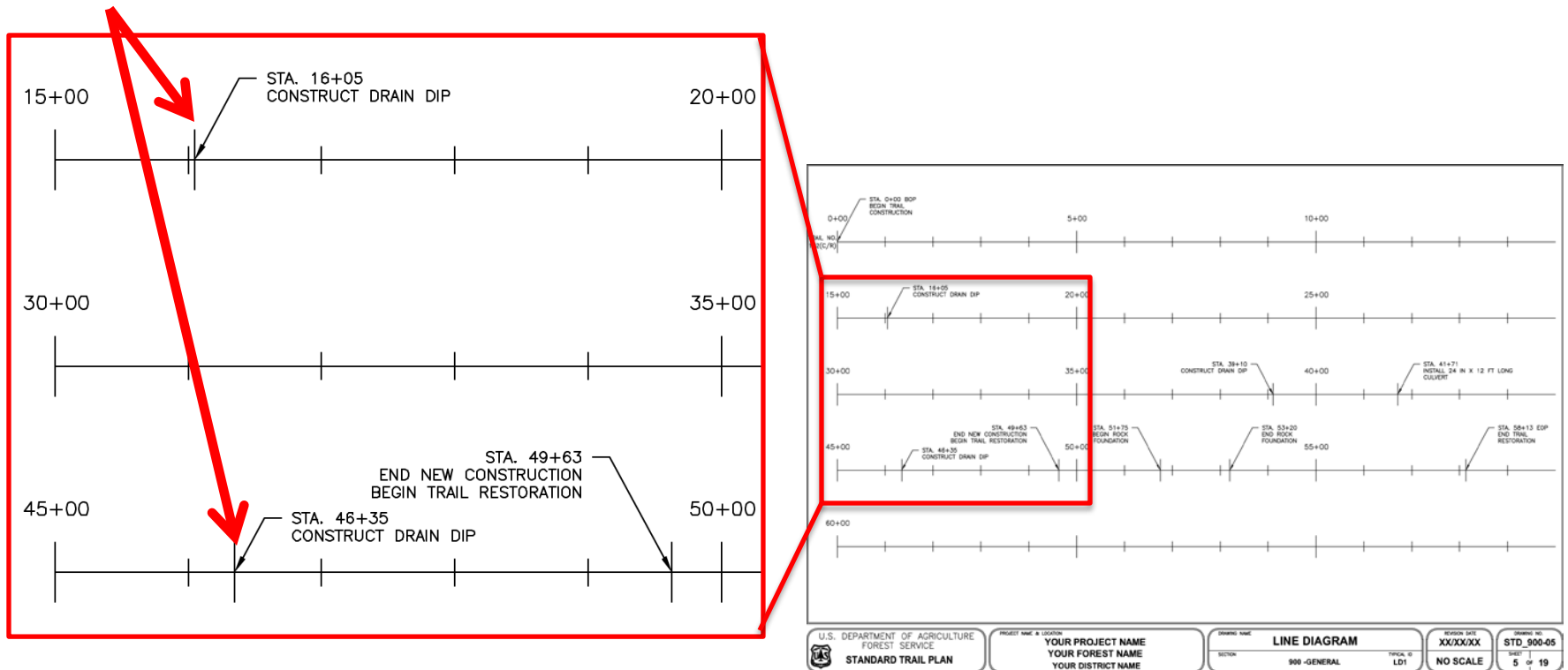


U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE STANDARD TRAIL PLAN	PROJECT NAME & LOCATION YOUR PROJECT NAME YOUR FOREST NAME YOUR DISTRICT NAME	DRAWING NAME LINE DIAGRAM	REVISION DATE XX/XX/XX	DRAWING NO. STD_900-05
		SECTION 900-GENERAL	TYPICAL & LD1	SHEET 5 OF 19

# Defining the Location and Scope

## Line Diagram (continued)

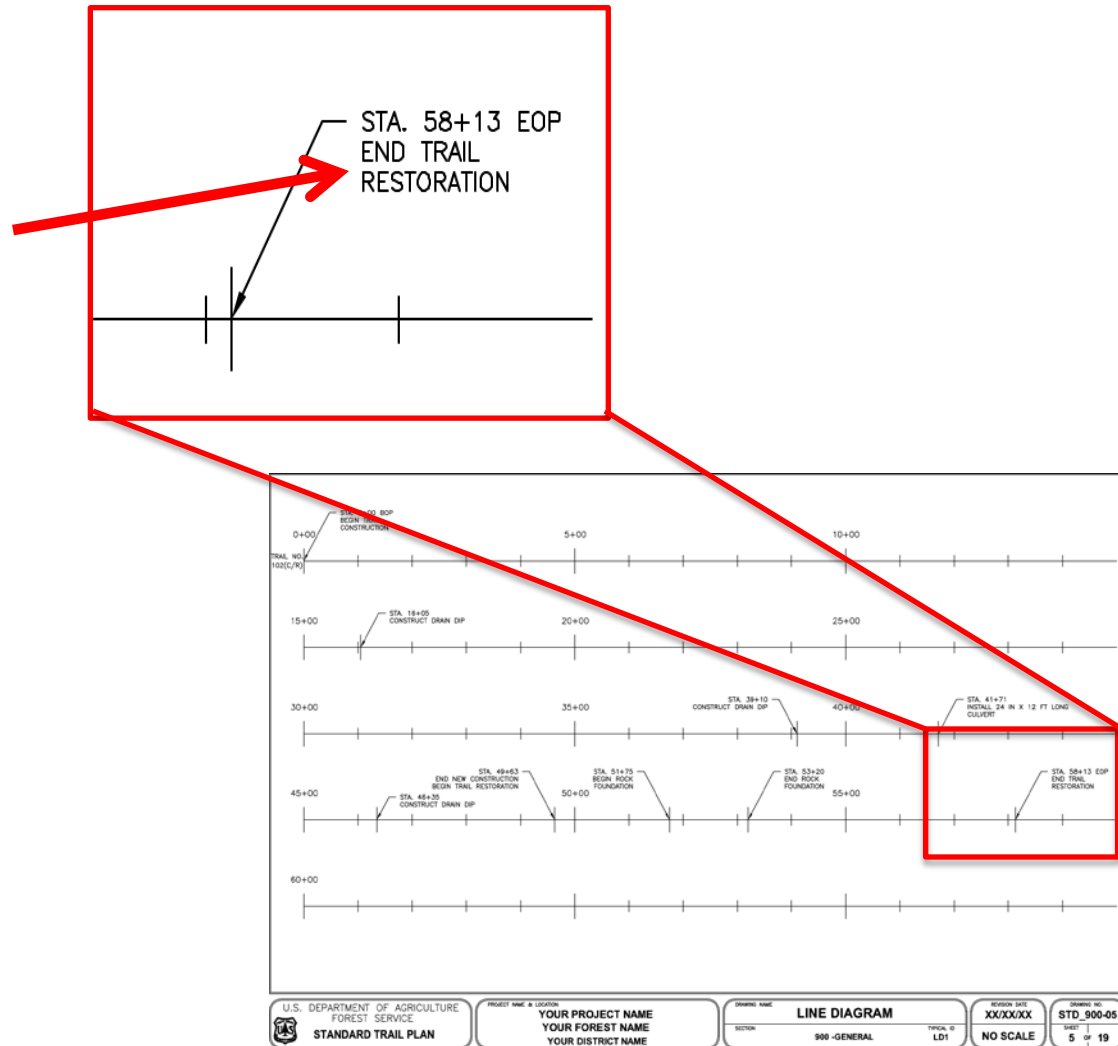
**Step 23:** Insert hash marks for specific trail construction activities such as drainage structures, trail structures, trail bridges, and so forth, and label each construction activity.



# Defining the Location and Scope

## Line Diagram (continued)

**Step 24:** Label the end of the project and the last station of the project on the line diagram.







# Defining the Location and Scope

## Summary of Quantities (continued)

**Step 25:** Insert the trail number in the space provided at the top of each column.

TRAIL NO.	102(C)	102(R)	
TRAIL LENGTH	0.94 (MI)	0.16 (MI)	5
METH. OF MEAS.	UNIT OF MEAS.	STA. TO STA.	STA. TO STA.
		0+00 TO 49+63	49+63 TO 58+13

**Step 26:** Insert the length of the trail section for each column.

SUMMARY OF QUANTITIES											
PAY ITEM NO.	DESCRIPTION	TRAIL NO. 102(C)		102(R)		105(R)				PROJECT TOTAL	COMMENTS
		TRAIL LENGTH	0.94 (M)	0.16 (M)	0.67 (M)	(M)	(M)	(M)			
		METH. OF MEAS.	UNIT OF MEAS.	STA. TO STA.	0+00 TO 49+63	49+63 TO 58+13	0+00 TO 299+38	STA. TO STA.	STA. TO STA.	STA. TO STA.	
90701	MOBILIZATION	LSQ	LS								1
91101	EXCAVATION	LSQ	LF	496.3							496.3
91106	EXISTING TRAIL RESTORATION	LSQ	LS		850						850
91107	EXISTING TRAIL RESTORATION	LSQ	LS								1
91203A	CLEARING AND GRUBBING	LSQ	LS	1							1
91203B	CLEARING AND GRUBBING	LSQ	LS		1						1
91203C	CLEARING AND GRUBBING	LSQ	LS			1					1
91212A	BRUSH CUTTING	LSQ	LS	1							1
91212B	BRUSH CUTTING	LSQ	LS		1						1
91212C	BRUSH CUTTING	LSQ	LS			1					1
91802	ROCK FOUNDATION, TYPE RETAINER SECTION	AQ	LF		145						145
92101	24 IN CORRUGATED, TYPE HOPE PIPE	AQ	LF	12							12
92701	DRAIN DIP	AQ	EA	3							3
95301A	REASSURANCE MARKER, TYPE TB-1	AQ	EA	50	10						60
95301B	REASSURANCE MARKER, TYPE TB-2	AQ	EA			120					120
98102	SEEDING	LSQ	LS	AS REQ'D	AS REQ'D	AS REQ'D					1

**Step 27:** Insert the beginning and ending station of the trail sections. Beginning and ending stations should match the line diagram.

# Defining the Location and Scope

## Summary of Quantities (Continued)

For further guidance on how the method of measurement relates to the unit of measure consult your Contracting Officer's Representative (COR).

**Step 28:** Insert the pay item number. These numbers are found in the standard pay items list.

**Step 29:** Insert the description of the pay item from the standard pay items list.

**Step 30:** Insert the method of measurement from Section 906 of the "Standard Specifications for Construction of Trails and Trail Bridges on Federal Projects."

PAY ITEM NO.	DESCRIPTION	METH. OF MEAS.	UNIT OF MEAS.	STA. TO STA.	TRAIL LENGTH (mi)	0.54 (mi)	0.10 (mi)
28 90701	29 MOBILIZATION	30 LSQ	LS	0+00 TO 49+63	-	-	-
91101	EXCAVATION	SQ	LF	4963			
91106	EXISTING TRAIL RESTORATION	SQ	LF			850	
91107	EXISTING TRAIL RESTORATION	LSQ	LS				
91203A	CLEARING AND GRUBBING	LSQ	LS	1			
91203B	CLEARING AND GRUBBING	LSQ	LS				1
91203C	CLEARING AND GRUBBING	LSQ	LS				
91212A	BRUSH CUTTING	LSQ	LS	1			

SUMMARY OF QUANTITIES											
PAY ITEM NO.	DESCRIPTION	METH. OF MEAS.	UNIT OF MEAS.	102(C)		102(R)		205(R)		PROJECT TOTAL	COMMENTS
				STA. TO STA.	STA. TO STA.	STA. TO STA.	STA. TO STA.	(M)	(M)		
90701	MOBILIZATION	LSQ	LS	-	-	-	-	-	-	1	
91101	EXCAVATION	SQ	LF	4963						4963	
91106	EXISTING TRAIL RESTORATION	SQ	LF		850					850	
91107	EXISTING TRAIL RESTORATION	LSQ	LS			1				1	
91203A	CLEARING AND GRUBBING	LSQ	LS	1						1	
91203B	CLEARING AND GRUBBING	LSQ	LS		1					1	
91203C	CLEARING AND GRUBBING	LSQ	LS			1				1	
91212A	BRUSH CUTTING	LSQ	LS	1						1	
91212B	BRUSH CUTTING	LSQ	LS		1					1	
91802	ROCK FOUNDATION, TYPE RETAINER SECTION	AQ	LF			145				145	
92101	24 IN CORRUGATED, TYPE HDPE PIPE	AQ	LF	12						12	
92701	DRAIN DIP	AQ	EA	3						3	
95301A	REASSURANCE MARKER, TYPE TB-1	AQ	EA	50	10					60	
95301B	REASSURANCE MARKER, TYPE TB-2	AQ	EA			120				120	
98102	SEEDING	LSQ	LS	AS REQ'D	AS REQ'D	AS REQ'D				1	

# Defining the Location and Scope

## Summary of Quantities (Continued)

**Step 31:** Insert the units of measure from the pay items list. This is also recorded on the Work List sheet (STD\_900-04) in the package.

**Step 32:** Insert the quantities for each trail section in the box that corresponds to its station column.

These quantities are also listed on the Work List sheet (STD\_900-04) in the package.

PAY ITEM NO.	DESCRIPTION	METH. OF MEAS.	UNIT OF MEAS.	TRAIL LENGTH	
				0.54 (mi)	0.10 (mi)
90701	MOBILIZATION	LSQ	LS	—	—
91101	EXCAVATION	SQ	LF	4963	
91106	EXISTING TRAIL RESTORATION	SQ	LF		850
91107	EXISTING TRAIL RESTORATION	LSQ	LS		
91203A	CLEARING AND GRUBBING	LSQ	LS	1	
91203B	CLEARING AND GRUBBING	LSQ	LS		1
91203C	CLEARING AND GRUBBING	LSQ	LS		
91212A	BRUSH CUTTING	LSQ	LS	1	

SUMMARY OF QUANTITIES												
PAY ITEM NO.	DESCRIPTION	METH. OF MEAS.	UNIT OF MEAS.	TRAIL NO.			TRAIL LENGTH			PROJECT TOTAL	COMMENTS	
				102(C)	102(R)	205(R)	0.54 (mi)	0.16 (mi)	0.10 (mi)			
90701	MOBILIZATION	LSQ	LS								1	
91101	EXCAVATION	SQ	LF		4963						4963	
91106	EXISTING TRAIL RESTORATION	SQ	LF			850					850	
91107	EXISTING TRAIL RESTORATION	LSQ	LS				1				1	
91203A	CLEARING AND GRUBBING	LSQ	LS	1							1	
91203B	CLEARING AND GRUBBING	LSQ	LS		1						1	
91203C	CLEARING AND GRUBBING	LSQ	LS			1					1	
91212A	BRUSH CUTTING	LSQ	LS	1							1	
91212B	BRUSH CUTTING	LSQ	LS			1					1	
91802	ROCK FOUNDATION, TYPE RETAINER SECTION	AQ	LF			145					145	
92101	24 IN CORRUGATED, TYPE HDPE PIPE	AQ	LF	12							12	
92701	DRAIN DIP	AQ	EA	3							3	
95301A	REASSURANCE MARKER, TYPE TB-1	AQ	EA	50	10						60	
95301B	REASSURANCE MARKER, TYPE TB-2	AQ	EA			120					120	
98102	SEEDING	LSQ	LS	AS REQ'D	AS REQ'D	AS REQ'D					1	



U.S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
STANDARD TRAIL PLAN

PROJECT NAME & LOCATION  
YOUR PROJECT NAME  
YOUR FOREST NAME  
YOUR DISTRICT NAME

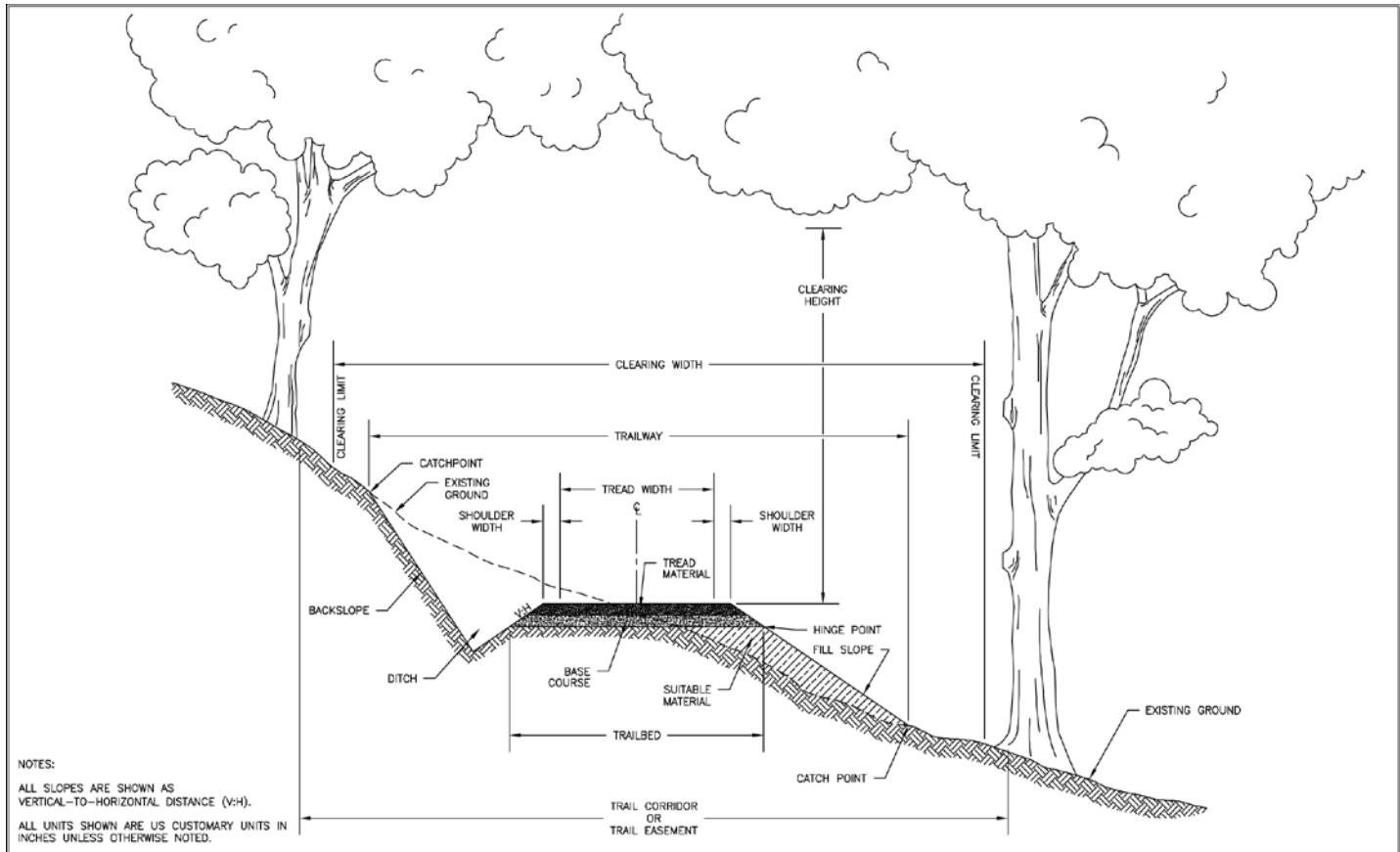
DRAWING NAME  
SUMMARY OF QUANTITIES  
SECTION 906 - MEASUREMENT & PAYMENT

REVISION DATE  
XX/XX/XX  
NOT TO SCALE

DRAWING NO.  
STD\_906-01  
SHEET 6 OF 19

# Defining the Location and Scope

**Standard Trail Terms (STD\_910-01)**—This sheet provides a visualization of the standard features of trails. It is included in every trail plan package and ensures that common terms are used in subsequent plans and specifications.



U.S. DEPARTMENT OF AGRICULTURE  
 FOREST SERVICE  
**STANDARD TRAIL PLAN**

PROJECT NAME & LOCATION  
**YOUR PROJECT NAME**  
**YOUR FOREST NAME**  
**YOUR DISTRICT NAME**

DRAWING NAME  
**STANDARD TRAIL TERMS**  
 SECTION 910 - TRAILWAY  
 TYPICAL ID STT

REVISION DATE  
 XX/XX/XX  
**NOT TO SCALE**

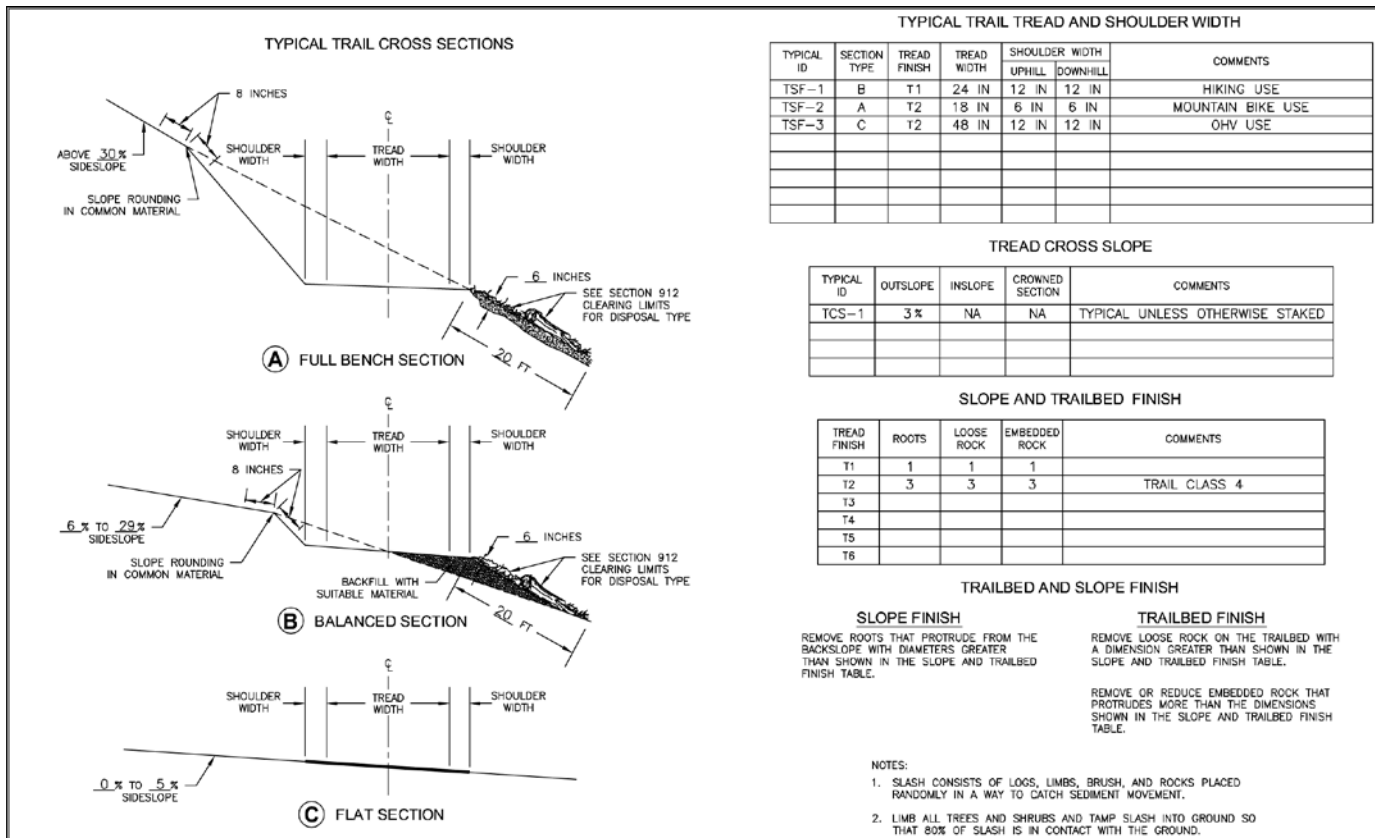
DRAWING NO.  
**STD\_910-01**  
 SHEET 7 OF 19

# Detailing Specific Trail Construction Features

- After filling in the required fields for the sheets that define the location and scope of the project, the remainder of the sheets in the package will focus on details that are relevant to your trail project.
- In this guide the discussion is focused on one sheet as a way of showing how the associated tables are modified to meet your needs.
- The tables are used to define specific details of how to construct a feature.

# Detailing Specific Trail Construction Features

- Typical Cross Section and Slope Finish (STD\_911-01)**—This sheet details the specifics of constructing a new trail. This task is also referenced in the Work List Sheet (STD\_900-04). This sheet describes (in detail) the dimensions of the new trail to be constructed.



# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

The main table for this sheet, “Typical Trail Tread and Shoulder Width,” is located at the top of the sheet.

Subsequent sheets that detail specific trail construction features use a similar layout. For example, the main table for Typical Retainers (STD\_911-03) is located at the top of the sheet and labeled as such.

This “Typical Cross Section & Slope Finish” sheet has two other tables that provide further information to supplement the main table. These supplemental tables are also described in this guide.

Several other standard plan sheets also have one or more supplemental tables.

TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	SHOULDER WIDTH		COMMENTS
				UPHILL	DOWNHILL	
TSF-1	B	T1	24 IN	12 IN	12 IN	HIKING USE
TSF-2	A	T2	18 IN	6 IN	6 IN	MOUNTAIN BIKE USE
TSF-3	C	T2	48 IN	12 IN	12 IN	OHV USE

**TYPICAL TRAIL CROSS SECTIONS**

(A) FULL BENCH SECTION: Shows a cross-section with a shoulder width of 8 inches, a tread width of 24 inches, and a shoulder width of 12 inches. The slope is rounded with a 30% sideslope. A note indicates to see Section 912 for clearing limits for disposal type.

(B) BALANCED SECTION: Shows a cross-section with a shoulder width of 8 inches, a tread width of 18 inches, and a shoulder width of 6 inches. The slope is rounded with a 30% sideslope. A note indicates to see Section 912 for clearing limits for disposal type.

(C) FLAT SECTION: Shows a cross-section with a shoulder width of 8 inches, a tread width of 48 inches, and a shoulder width of 12 inches. The slope is rounded with a 5% sideslope. A note indicates to see Section 912 for clearing limits for disposal type.

**TYPICAL TRAIL TREAD AND SHOULDER WIDTH**

TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	SHOULDER WIDTH UPHILL	SHOULDER WIDTH DOWNHILL	COMMENTS
TSF-1	B	T1	24 IN	12 IN	12 IN	HIKING USE
TSF-2	A	T2	18 IN	6 IN	6 IN	MOUNTAIN BIKE USE
TSF-3	C	T2	48 IN	12 IN	12 IN	OHV USE

**TREAD CROSS SLOPE**

TYPICAL ID	OUTSLOPE	INSLOPE	CROWNED SECTION	COMMENTS
TCS-1	3%	NA	NA	TYPICAL UNLESS OTHERWISE STAKED

**SLOPE AND TRAILBED FINISH**

TREAD FINISH	ROOTS	LOOSE ROCK	EMBEDDED ROCK	COMMENTS
T1	1	1	1	
T2	3	3	3	TRAIL CLASS 4
T3				
T4				
T5				
T6				

**TRAILBED AND SLOPE FINISH**

**SLOPE FINISH**  
REMOVE ROOTS THAT PROTRUDE FROM THE BACKSLOPE WITH DIAMETERS GREATER THAN SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.

**TRAILBED FINISH**  
REMOVE LOOSE ROCK ON THE TRAILBED WITH A DIMENSION GREATER THAN SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.  
REMOVE OR REDUCE EMBEDDED ROCK THAT PROTRUDES MORE THAN THE DIMENSIONS SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.

**NOTES:**  
1. SLASH CONSISTS OF LOGS, LIMBS, BRUSH, AND ROCKS PLACED RANDOMLY IN A ROW TO GROUND MOVEMENT.  
2. LIMB ALL TREES AND SHRUBS AND TAMP SLASH INTO GROUND SO THAT BOX OF SLASH IS IN CONTACT WITH THE GROUND.

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE STANDARD TRAIL PLAN  
YOUR PROJECT NAME YOUR FOREST NAME YOUR DISTRICT NAME  
TYPICAL CROSS SECTION & SLOPE FINISH  
111 - TREAD AND PRISM TSF/TCS  
REVISION DATE: XXXXXX  
NO SCALE  
DRAWING NO. STD\_911-01  
SHEET 8 OF 19

# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

**Step 33:** The typical ID numbers for the main table is formed by taking the three letters from the information block and adding a number to the end, sequentially.

In this case TSF-1, TSF-2, and TSF-3.

TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	SHOULDER WIDTH		COMMENTS
				UPHILL	DOWNHILL	
TSF-1	B	T1	24 IN	12 IN	12 IN	HIKING USE
TSF-2	A	T2	18 IN	6 IN	6 IN	MOUNTAIN BIKE USE
TSF-3	C	T2	48 IN	12 IN	12 IN	OHV USE

**TYPICAL TRAIL CROSS SECTIONS**

**(A) FULL BENCH SECTION**  
 8 INCHES SHOULDER WIDTH  
 ABOVE 30% SLOPE SLOPE ROUNDING IN COMMON MATERIAL  
 TREAD WIDTH  
 SHOULDER WIDTH  
 6 INCHES SEE SECTION #12 CLEARING LIMITS FOR DISPOSAL TYPE  
 20 FT

**(B) BALANCED SECTION**  
 8 INCHES SHOULDER WIDTH  
 6% TO 20% SLOPE SLOPE ROUNDING IN COMMON MATERIAL  
 SHOULDER WIDTH  
 TREAD WIDTH  
 SHOULDER WIDTH  
 6 INCHES SEE SECTION #12 CLEARING LIMITS FOR DISPOSAL TYPE  
 20 FT

**(C) FLAT SECTION**  
 0.5% TO 0.5% SLOPE  
 SHOULDER WIDTH  
 TREAD WIDTH  
 SHOULDER WIDTH

**TYPICAL TRAIL TREAD AND SHOULDER WIDTH**

TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	SHOULDER WIDTH		COMMENTS
				UPHILL	DOWNHILL	
TSF-1	B	T1	24 IN	12 IN	12 IN	HIKING USE
TSF-2	A	T2	18 IN	6 IN	6 IN	MOUNTAIN BIKE USE
TSF-3	C	T2	48 IN	12 IN	12 IN	OHV USE

**TREAD CROSS SLOPE**

TYPICAL ID	OUTSLOPE	INSLOPE	CROWNED SECTION	COMMENTS
TCS-1	3%	NA	NA	TYPICAL UNLESS OTHERWISE STAKED

**SLOPE AND TRAILBED FINISH**

TREAD FINISH	ROOTS	LOOSE ROCK	EMBEDDED ROCK	COMMENTS
T1	1	1		
T2	3	3	3	TRAIL CLASS 4
T3				
T4				
T5				
T6				

**TRAILBED AND SLOPE FINISH**

**SLOPE FINISH**  
 REMOVE ROOTS THAT PROTRUDE FROM THE BACKSLOPE WITH DIAMETERS GREATER THAN SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.

**TRAILBED FINISH**  
 REMOVE LOOSE ROCK ON THE TRAILBED WITH A DIMENSION GREATER THAN SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.  
 REMOVE OR REDUCE EMBEDDED ROCK THAT PROTRUDES MORE THAN THE DIMENSIONS SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.

**NOTES:**  
 1. SLASH CONSISTS OF LOGS, LIMBS, BRUSH, AND ROCKS PLACED RANDOMLY IN A ROW TO CHECK GROUND MOVEMENT.  
 2. LIMB ALL TREES AND SHRUBS AND TAMP SLASH INTO GROUND SO THAT BOX OF SLASH IS IN CONTACT WITH THE GROUND.

DRAWING NAME	<b>TYPICAL CROSS SECTION &amp; SLOPE FINISH</b>	
SECTION	911 - TREAD AND PRISM	TYPICAL ID <b>TSF/TCS</b>

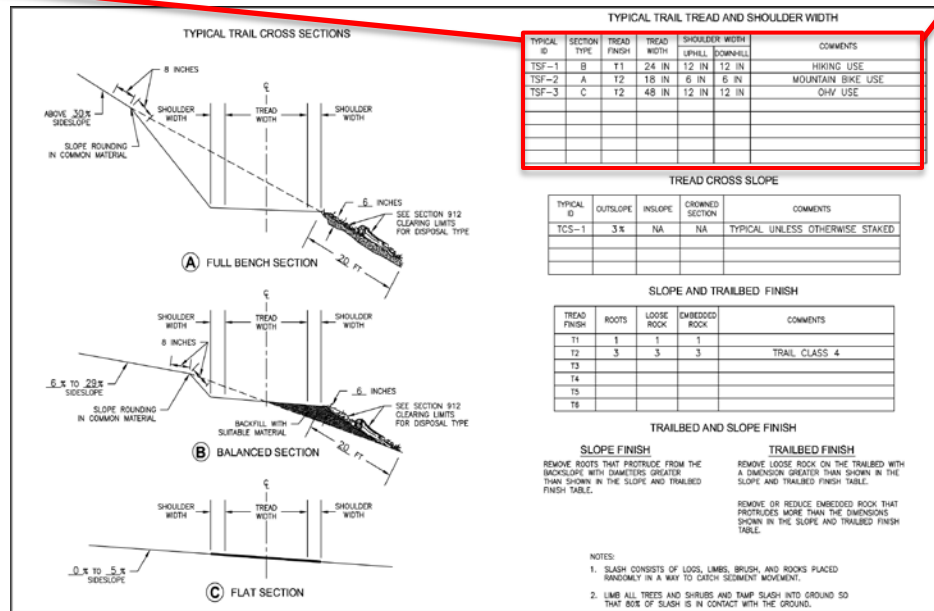


# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

**Step 34**(continued):  
 Insert the typical ID numbers from the first part of step 1 into the main table.

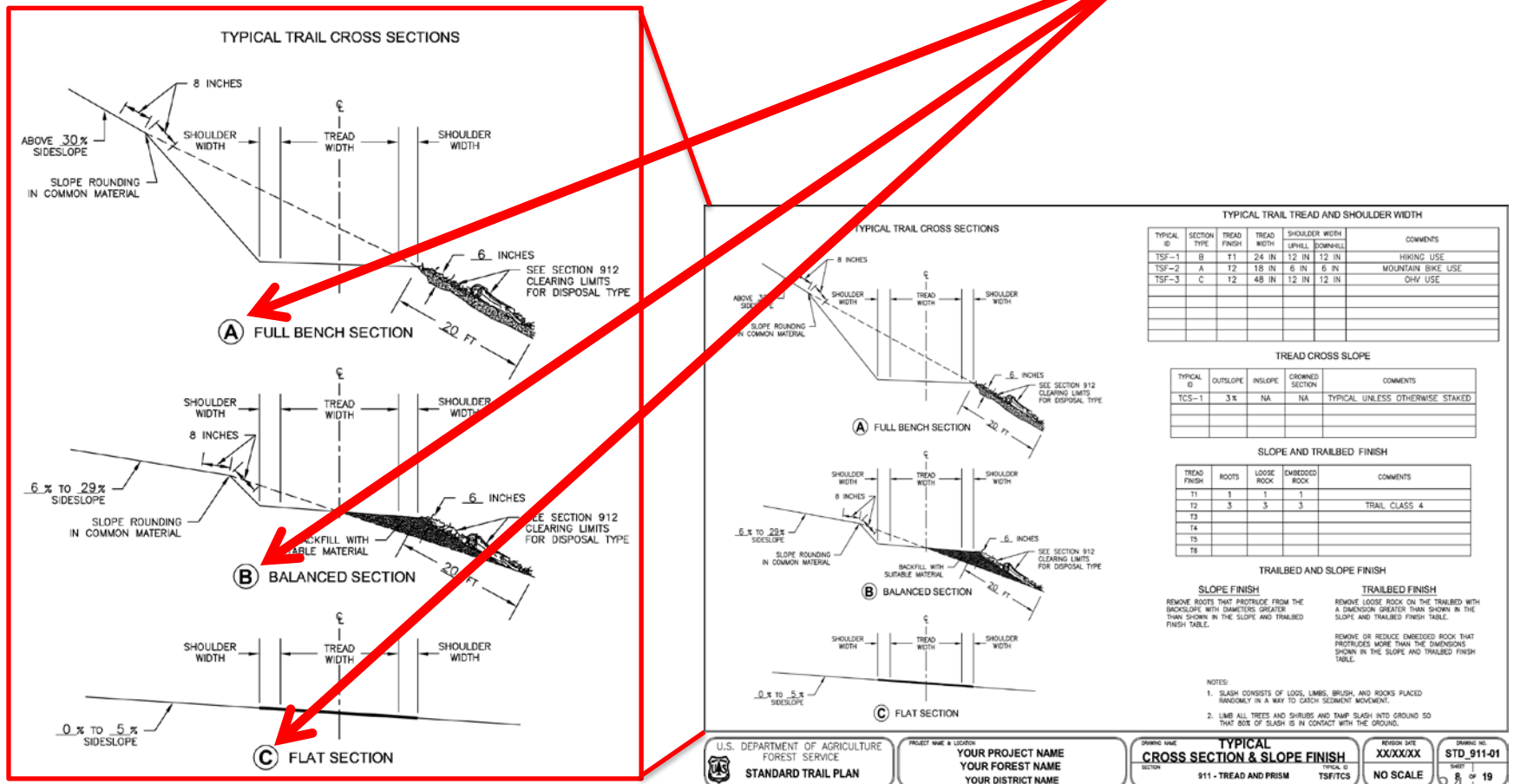
TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	SHOULDER WIDTH		COMMENTS
				UPHILL	DOWNHILL	
TSF-1	B	T1	24 IN	12 IN	12 IN	HIKING USE
TSF-2	A	T2	18 IN	6 IN	6 IN	MOUNTAIN BIKE USE
TSF-3	C	T2	48 IN	12 IN	12 IN	OHV USE



# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

**Step 35:** Identifying the section types – on the plan sheet the section types for typical trail construction are shown in cross section and labeled by a circled letter.



# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

**Step 35**(continued):

Insert the section types into this location on the main table.

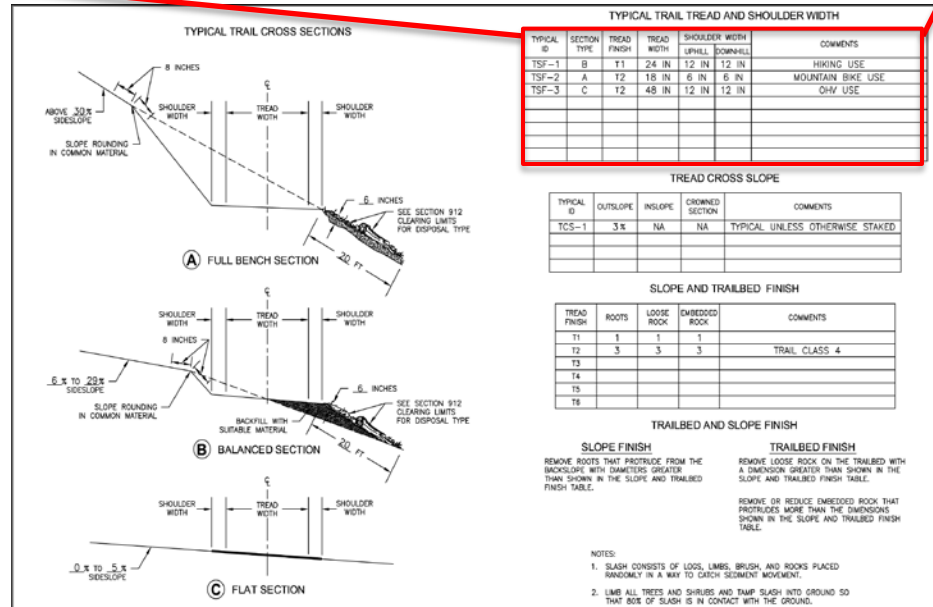
In this case the section types are:

A = Full bench section

B = Balanced section

C = Flat section

TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	SHOULDER WIDTH		COMMENTS
				UPHILL	DOWNHILL	
TSF-1	B	T1	24 IN	12 IN	12 IN	HIKING USE
TSF-2	A	T2	18 IN	6 IN	6 IN	MOUNTAIN BIKE USE
TSF-3	C	T2	48 IN	12 IN	12 IN	OHV USE



# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

**Step 36:** Insert the tread finish.

The tread finish comes from the sub-table (“Slope and Trailbed Finish” table) below the main table.

Continue to the next slide for a discussion of the “Slope and Trailbed Finish” table.

TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	SHOULDER WIDTH		COMMENTS
				UPHILL	DOWNHILL	
TSF-1	B	T1	24 IN	12 IN	12 IN	HIKING USE
TSF-2	A	T2	18 IN	6 IN	6 IN	MOUNTAIN BIKE USE
TSF-3	C	T2	48 IN	12 IN	12 IN	OHV USE

**TYPICAL TRAIL TREAD AND SHOULDER WIDTH**

TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	SHOULDER WIDTH UPHILL	SHOULDER WIDTH DOWNHILL	COMMENTS
TSF-1	B	T1	24 IN	12 IN	12 IN	HIKING USE
TSF-2	A	T2	18 IN	6 IN	6 IN	MOUNTAIN BIKE USE
TSF-3	C	T2	48 IN	12 IN	12 IN	OHV USE

**TREAD CROSS SLOPE**

TYPICAL ID	OUTSLOPE	INSLOPE	CROWNED SECTION	COMMENTS
TCS-1	3%	NA	NA	TYPICAL UNLESS OTHERWISE STAKED

**SLOPE AND TRAILBED FINISH**

TREAD FINISH	ROOTS	LOOSE ROCK	EMBEDDED ROCK	COMMENTS
T1	1	1	1	
T2	3	3	3	TRAIL CLASS 4
T3				
T4				
T5				

**TRAILBED AND SLOPE FINISH**

**SLOPE FINISH**  
REMOVE ROOTS THAT PROTRUDE FROM THE BACKSLOPE WITH DIAMETERS GREATER THAN SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.

**TRAILBED FINISH**  
REMOVE LOOSE ROCK ON THE TRAILBED WITH A DIMENSION GREATER THAN SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.  
REMOVE OR REDUCE EMBEDDED ROCK THAT PROTRUDES MORE THAN THE DIMENSIONS SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.

**NOTES:**  
1. SLASH CONSISTS OF LOGS, LIMBS, BRUSH, AND ROCKS PLACED RANDOMLY IN A ROW TO CATCH SEGMENT MOVEMENT.  
2. LIMB ALL TREES AND SHRUBS AND TAMP SLASH INTO GROUND SO THAT BOLE OF SLASH IS IN CONTACT WITH THE GROUND.

TREAD FINISH	ROOTS	LOOSE ROCK	EMBEDDED ROCK	COMMENTS
T1	1	1	1	
T2	3	3	3	TRAIL CLASS 4
T3				
T4				
T5				
T6				

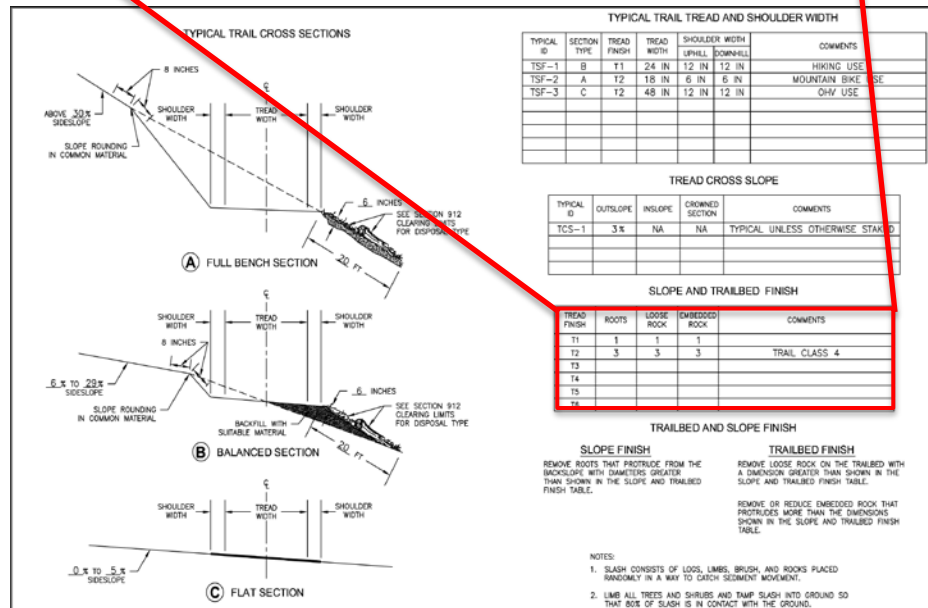
# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

**Step 36** (continued): For this example, a tread finish of T2 requires all roots that are protruding more than 3 inches be removed, loose rocks larger than 3 inches be removed, and embedded rock larger than 3 inches be removed or reduced.

The “Tread Finish” table is filled out by the designer based on the Trail Management Objectives. The specific Design Parameters can be found in the National Design Parameters at <http://fsweb.wo.fs.fed.us/rhw/ibsc/tr-fund.shtml>.

TREAD FINISH	ROOTS	LOOSE ROCK	EMBEDDED ROCK	COMMENTS
T1	1	1	1	
T2	3	3	3	TRAIL CLASS 4
T3				
T4				
T5				
T6				



# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

**Step 36 (continued):** A description of the detail in the “Trailbed and Slope Finish” table is also provided on the sheet.

**TRAILBED AND SLOPE FINISH**

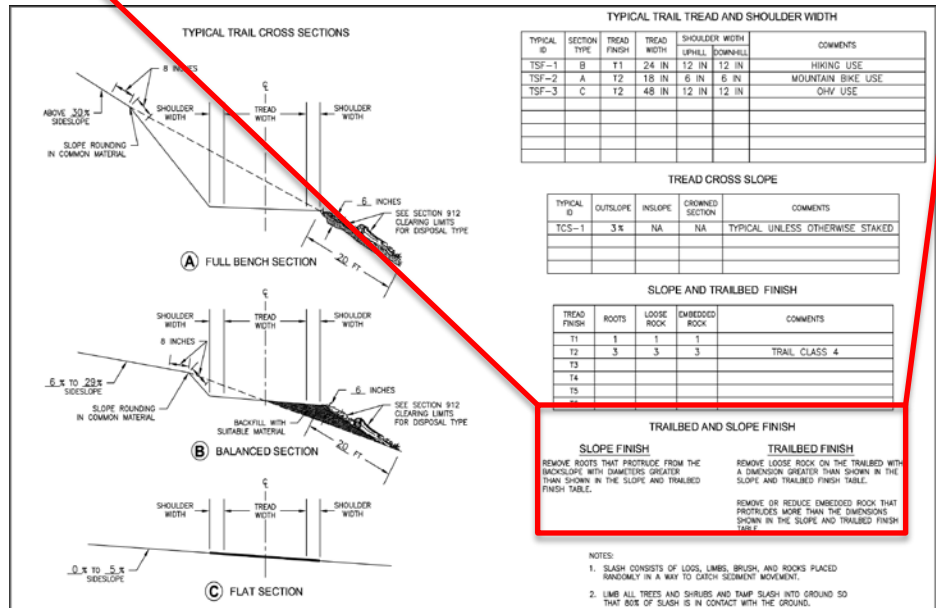
**SLOPE FINISH**

REMOVE ROOTS THAT PROTRUDE FROM THE BACKSLOPE WITH DIAMETERS GREATER THAN SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.

**TRAILBED FINISH**

REMOVE LOOSE ROCK ON THE TRAILBED WITH A DIMENSION GREATER THAN SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.

REMOVE OR REDUCE EMBEDDED ROCK THAT PROTRUDES MORE THAN THE DIMENSIONS SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.



# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

**Step 37:** Insert the Tread width in inches.

The information for tread width is found in the National Design Parameters at <http://fsweb.wo.fs.fed.us/rhwr/ibsc/tr-fund.shtml>.

**Step 38:** Insert the shoulder width for both uphill and downhill trail.

This information is found in the National Design Parameters at <http://fsweb.wo.fs.fed.us/rhwr/ibsc/tr-fund.shtml>.

TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	SHOULDER WIDTH		COMMENTS
				UPHILL	DOWNHILL	
TSF-1	B	T1	24 IN	12 IN	12 IN	HIKING USE
TSF-2	A	T2	18 IN	6 IN	6 IN	MOUNTAIN BIKE USE
TSF-3	C	T2	48 IN	12 IN	12 IN	OHV USE

**TYPICAL TRAIL CROSS SECTIONS**

(A) FULL BENCH SECTION: Shows a cross-section with a 30% slope, 8-inch shoulder width, and 24-inch tread width. Includes a note for slope rounding and a 20-foot dimension.

(B) BALANCED SECTION: Shows a cross-section with a 30% slope, 8-inch shoulder width, and 24-inch tread width. Includes a note for slope rounding and a 20-foot dimension.

(C) FLAT SECTION: Shows a cross-section with a 5% slope, 8-inch shoulder width, and 24-inch tread width. Includes a note for slope rounding.

**TYPICAL TRAIL TREAD AND SHOULDER WIDTH**

TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	UPHILL SHOULDER WIDTH	DOWNHILL SHOULDER WIDTH	COMMENTS
TSF-1	B	T1	24 IN	12 IN	12 IN	HIKING USE
TSF-2	A	T2	18 IN	6 IN	6 IN	MOUNTAIN BIKE USE
TSF-3	C	T2	48 IN	12 IN	12 IN	OHV USE

**TREAD CROSS SLOPE**

TYPICAL ID	OUTSLOPE	INSLOPE	CROWNED SECTION	COMMENTS
TCS-1	3%	NA	NA	TYPICAL UNLESS OTHERWISE STAKED

**SLOPE AND TRAILBED FINISH**

TREAD FINISH	ROOTS	LOOSE ROCK	EMBEDDED ROCK	COMMENTS
T1	1	1	1	
T2	3	3	3	TRAIL CLASS 4
T3				
T4				
T5				
T6				

**TRAILBED AND SLOPE FINISH**

**SLOPE FINISH:** REMOVE ROOTS THAT PROTRUDE FROM THE BACKSLOPE WITH DIAMETERS GREATER THAN SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.

**TRAILBED FINISH:** REMOVE LOOSE ROCK ON THE TRAILBED WITH A DIMENSION GREATER THAN SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.

**REMOVE OR REDUCE EMBEDDED ROCK THAT PROTRUDES MORE THAN THE DIMENSIONS SHOWN IN THE SLOPE AND TRAILBED FINISH TABLE.**

**NOTES:**

- SLASH CONSISTS OF LOGS, LIMBS, BRUSH, AND ROCKS PLACED RANDOMLY IN A ROW TO CHECK SEGMENT MOVEMENT.
- LIMIT ALL TREES AND SHRUBS AND TAMP SLASH INTO GROUND SO THAT BOX OF SLASH IS IN CONTACT WITH THE GROUND.

**U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE STANDARD TRAIL PLAN**

**YOUR PROJECT NAME**  
**YOUR FOREST NAME**  
**YOUR DISTRICT NAME**

**TYPICAL CROSS SECTION & SLOPE FINISH**  
SECTION 911 - TREAD AND PRISM TYPICAL ID TSF/TC3

**REVISION DATE** XXXXXX  
**NO SCALE**

**DRAWING NO.** STD\_911-01  
**SHEET** 8 OF 19

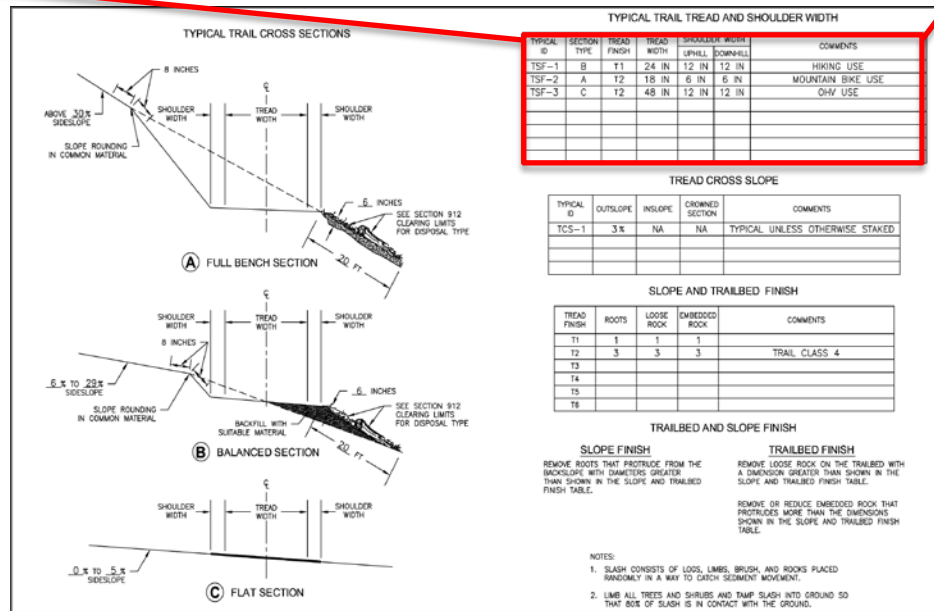
# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

**Step 39:** Add any comments about the typical trail section describing the user group for this typical section.

Regions and forests are encouraged to set up typical cross section and slope finish sheets with typical dimensions, materials, and other construction requirements that meet local needs.

TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	SHOULDER WIDTH		COMMENTS
				UPHILL	DOWNHILL	
TSF-1	B	T1	24 IN	12 IN	12 IN	HIKING USE
TSF-2	A	T2	18 IN	6 IN	6 IN	MOUNTAIN BIKE USE
TSF-3	C	T2	48 IN	12 IN	12 IN	OHV USE





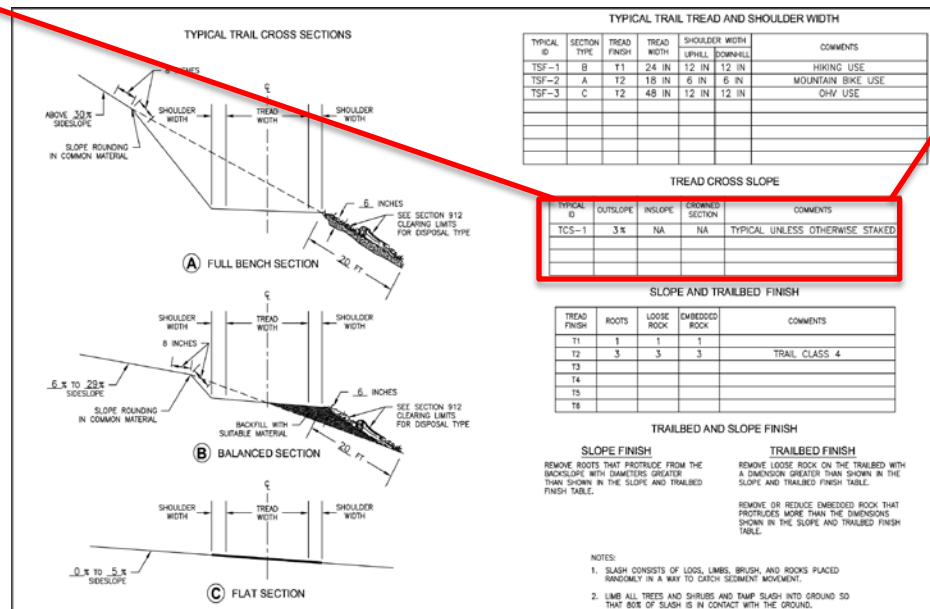
# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

**Step 40:** Fill out the “Tread Cross Slope” table.

The “Tread Cross Slope” table is filled out by the designer. The information for this table is found in the National Design Parameters at <http://fsweb.wo.fs.fed.us/rhwr/ibsc/tr-fund.shtml>

TYPICAL ID	OUTSLOPE	INSLOPE	CROWNED SECTION	COMMENTS
TCS-1	3 %	NA	NA	TYPICAL UNLESS OTHERWISE STAKED

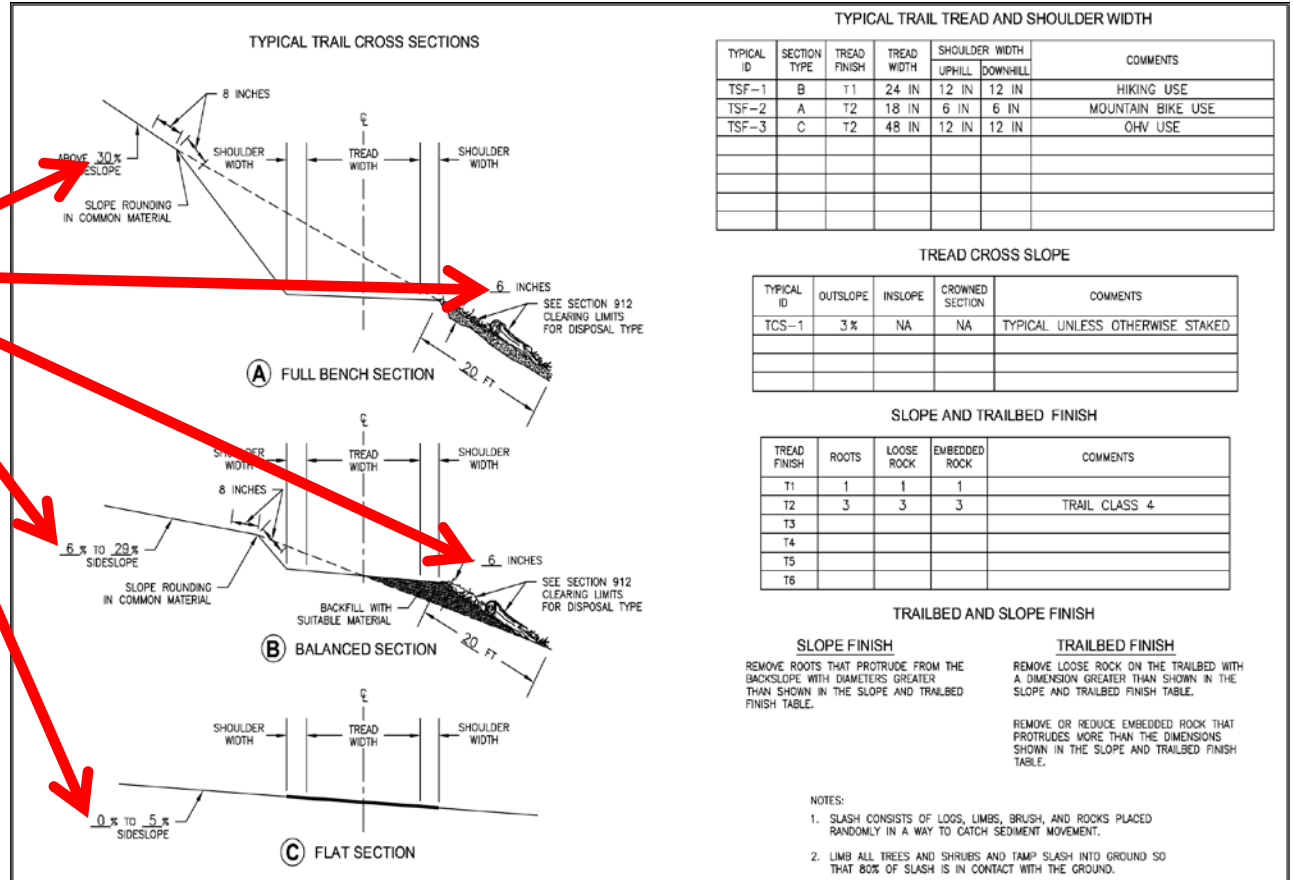


# Detailing Specific Trail Construction Features

## Typical Cross Section and Slope Finish (continued)

Step 41: Fill in the X's on the details.

For example



U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE <b>STANDARD TRAIL PLAN</b>	PROJECT NAME & LOCATION <b>YOUR PROJECT NAME</b> <b>YOUR FOREST NAME</b> <b>YOUR DISTRICT NAME</b>	DRAWING NAME <b>TYPICAL CROSS SECTION &amp; SLOPE FINISH</b> SECTION: 911 - TREAD AND PRISM      TYPICAL ID: TSF/TCS	REVISION DATE <b>XX/XX/XX</b> NO SCALE	DRAWING NO. <b>STD_911-01</b> SHEET 8 OF 19

# Detailing Specific Trail Construction Features

Completing The Other Specific Trail Construction Feature Sheets in the Trail Construction Package.

- All other plan sheets in the package are modified in a way similar to those described for the “Typical Cross-Section & Slope Finish” sheet (STD\_911-01).
- Each of the other sheets have a main table that details the specifics of construction and supplemental tables and comments that assist the designer in filling out the specific information.

# How to Use Standard Specifications In Your Trail Plan Package

- The specifications provide technical guidance for trail project designers.
- Include the entire specification document in the contract package, regardless of the specific plan sheets used in the project.
- Including the entire specification document ensures the requisite information is included regardless of what specific plan sheets are needed for a particular project.
- The specifications provide information that expands on information found on the plans.
- At times, a constructed trail feature may be determined by a standard specification without including an attendant plan sheet.