

UNITED STATES DEPARTMENT OF AGRICULTURE



FOREST SERVICE

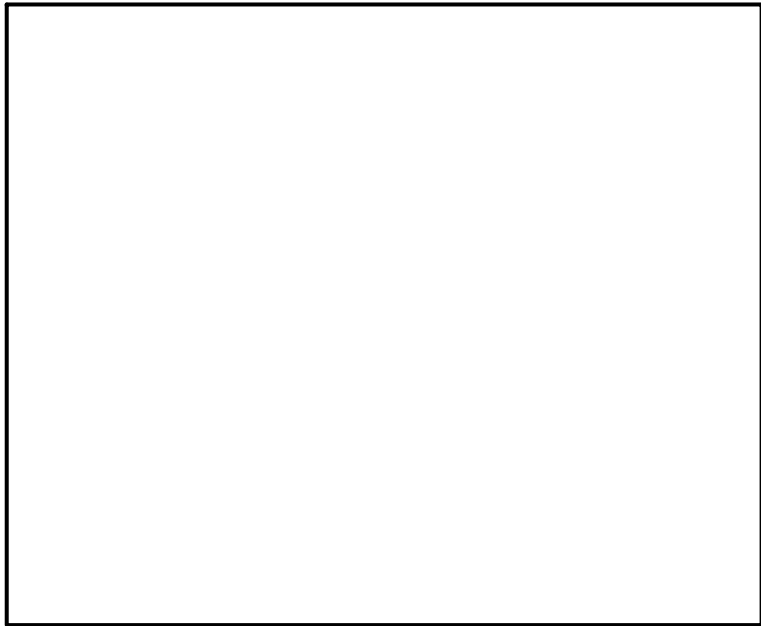


INDEX

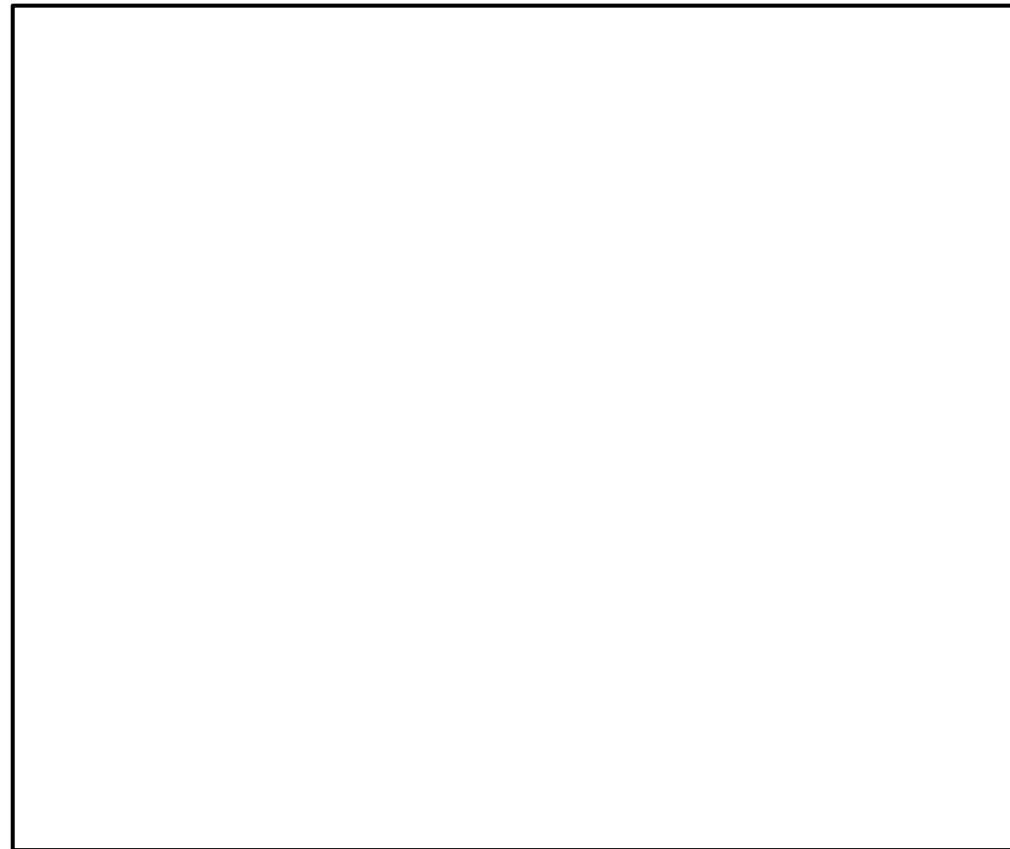
SHEET

SHEET NO.

TITLE ----- 1
VICINITY MAP ----- 2



• • •
TRAIL CONSTRUCTION PLANS FOR



PROJECT SITE

REVIEWED BY:

XXX DATE

XXX DATE

RECOMMENDED BY:

DISTRICT RANGER/PROGRAM MANAGER DATE

FOREST/STATION ENGINEER DATE

APPROVED BY:

FOREST SUPERVISOR/STATION DIRECTOR DATE

REGIONAL/RESEARCH ENGINEER DATE

REVISIONS:

No. 1	_____	DATE	INITIALS
No. 2	_____	DATE	INITIALS
No. 3	_____	DATE	INITIALS

DESIGN: _____ DATE _____
 DRAWN: _____ DATE _____
 CHECKED: _____ DATE _____

PROJECT NAME

SECTION

900-GENERAL

TYPICAL ID
TTL

REVISION DATE

XX/XX/XX

NO SCALE

DRAWING NO.

STD_900-01

SHEET

OF



U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE



STANDARD TRAIL PLAN

PROJECT NAME & LOCATION

DRAWING NAME
VICINITY MAP

SECTION
900 - GENERAL

TYPICAL ID
VCM

REVISION DATE
XX/XX/XX

NO SCALE

DRAWING NO.
STD_900-02

SHEET
OF

TYPICAL ID DEFINITIONS

GENERAL NOTES

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
STD_910-01	STT	STANDARD_TRAIL_TERMS	STD_933-60-01	WGR	GUARDRAIL
STD_911-01	TSF/TCS	TYPICAL_CROSS_SECTION_SLOPE_FINISH	STD_934-10-01	SP1	STANDARD_PUNCHEON
STD_911-02	TDD/TOC	TYPICAL_OBSTRUCTION_CLEARANCE_SECTION	STD_934-10-02	SP2	STANDARD_PUNCHEON
STD_911-03	TRT	TYPICAL_RETAINERS	STD_934-20-01	NDP	NO_DECK_PUNCHEON
STD_911-30-01	ETR	EXISTING_TRAIL_RESTORATION	STD_935-10-01	LCB	LOG_CRIB
STD_911-60-01	OBT	OBLITERATION_OF_TRAILS	STD_935-20-01	RRW	STACKED_ROCK_RETAINING_WALL
STD_912-01	CLT	CLEARING_LIMITS_TREES_LOGS	STD_935-30-01	BRW	GABION_BASKET_RETAINING_WALL
STD_912-02	CLB	CLEARING_LIMITS_BRUSHING	STD_935-40-01	MRW	MASONRY_ROCK_RETAINING_WALL
STD_913-01	TSS	TYPICAL_SURFACING_SECTION	STD_935-40-02	CUM	CONCRETE_MASONRY_UNIT_RETAINING_WALL
STD_913-02	TSR	TYPICAL_SURFACING_SECTION_W/RETAINERS	STD_935-50-01	CCW	CAST_INPLACE_CONCRETE_WALL
STD_913-03	THS	TYPICAL_HARDENED_SURFACING	STD_936-10-01	ITS	INDIVIDUAL_TIMBER_PINNED_STEP
STD_913-04	HSR	TYPICAL_HARDENED_SURFACING_W/RETAINERS	STD_936-10-02	IRS	INDIVIDUAL_ROCK_STEP
STD_913-40-01	GUS	GRID_UNIT_SURFACING	STD_936-20-01	ORS	OVERLAPPING_ROCK_STEP
STD_913-50-01	RRS	RIPRAP_SURFACING	STD_936-20-02	OTS	OVERLAPPING_TIMBER_STEP
STD_914-01	CTN	CLIMBING_TURN	STD_936-30-01	CRL	CRIB_LADDER
STD_915-01	TAS	TALUS_SECTION	STD_936-40-01	STC	STAIRCASE
STD_916-01	TPS/TOS	TURNOUT_&_PASSING_SECTION	STD_937-10-01	RLS	HANDRAIL_SYSTEM
STD_917-10-01	NFD	NATURAL_FORD	STD_938-10-01	SB1	STANDARD_BOARDWALK
STD_917-20-01	RF1	CONSTRUCTED_ROCK_FORD	STD_938-10-02	SB2	STANDARD_BOARDWALK
STD_917-20-02	RF2	CONSTRUCTED_ROCK_FORD	STD_938-10-03	SB3	STANDARD_BOARDWALK
STD_917-30-01	LF1	CONSTRUCTED_LOG_FORD	STD_938-20-01	EB1	ELEVATED_BOARDWALK
STD_917-30-02	LF2	CONSTRUCTED_LOG_FORD	STD_938-20-02	EB2	ELEVATED_BOARDWALK
STD_918-10-01	RKF	ROCK FOUNDATIONS	STD_938-20-03	EB3	ELEVATED_BOARDWALK
STD_918-20-01	GBF	GABION BASKET FOUNDATIONS	STD_938-20-04	EB4	ELEVATED_BOARDWALK
STD_918-30-01	CBF	CRIB FOUNDATIONS	STD_938-30-01	SNR	STEP_N_RUN
STD_918-40-01	GEF	GEOSYNTHETIC FOUNDATIONS	STD_941-10-01	PWF	POST_N_WIRE_FENCE
STD_918-50-01	CDF	CORDUROY FOUNDATIONS	STD_941-20-01	PRF	POST_N_RAIL_FENCE
STD_921-10-01	SCV	STANDARD_CULVERTS	STD_941-30-01	WWF	WOVEN_WIRE_FENCE
STD_921-20-01	CVH	STANDARD_CULVERTS_W/HEADWALLS	STD_941-40-01	JLF	JACK_LEG_FENCE
STD_921-30-01	RCV	ROCK_CULVERT	STD_941-50-01	SRF	STACKED_RAIL_(WORM)_FENCE
STD_921-40-01	TCV	TREATED_TIMBER_BOX_CULVERT	STD_942-10-01	WRG	WIRE_GATE
STD_921-50-01	OTD	OPEN_TOP_DRAIN	STD_942-10-02	WWG	WOVEN_WIRE_GATE
STD_921-60-01	ACV	BOTTOMLESS_ARCH_ROCK_HEADWALL	STD_942-20-01	MSG	METAL_SWING_GATE
STD_921-70-01	LCV	LOG_CULVERTS	STD_942-20-02	WSG	WOOD_SWING_GATE
STD_922-10-01	RWB	ROCK_WATERBAR	STD_942-20-03	WKG	WOOD_SWING_GATE (FOR KISSING GATES)
STD_922-20-01	TWB	LOG_OR_TREATED_TIMBER_WATERBAR	STD_942-30-01	LRG	LOOSE_RAIL_GATE
STD_922-30-01	BWB	BELTED_WATERBAR	STD_942-40-01	KG1	ACCESSIBLE_KISSING_GATE_IN_FENCE
STD_923-10-01	RSP	ROCK_SPILLWAY	STD_942-40-02	KG2	ACCESSIBLE_KISSING_GATE_ON_FENCE
STD_924-10-01	RUD	ROCK_UNDERDRAIN	STD_942-50-01	CHI	ACCESSIBLE_CHICANES
STD_924-20-01	SUD	SHEET_UNDERDRAIN	STD_944-10-01	STL	STILES
STD_924-20-02	SDP	SHEET_UNDERDRAIN_W/PIPE	STD_945-10-01	BLD	BOLLARDS
STD_925-01	TDS	TYPICAL_DITCH_SECTIONS	STD_950-01	SNM	SIGNS_&_MARKERS
STD_926-01	BRM	BERMS	STD_951-01	LIN	LOCATION_&_INFORMATION
STD_927-10-01	DD1	DRAIN_DIP	STD_951-02	SPI	SIGN_&_POST_INSTALLATION
STD_927-10-02	DD2	DRAIN_DIP_DETAILS	STD_952-01	RTM	ROUTE_MARKERS
STD_928-10-01	CKD	CHECK_DAM	STD_953-01	RSM	REASSURANCE_MARKER
STD_931-10-01	SW1	SWITCHBACK_TYPE_1	STD_955-01	RCC	ROCK_CAIRN_CONSTRUCTION
STD_931-20-01	SW2	SWITCHBACK_TYPE_2	STD_981-01	SMF	SEEDING_MULCHING_&_FERTILIZING
STD_931-30-01	SW3	SWITCHBACK_TYPE_3			



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

PROJECT NAME & LOCATION

DRAWING NAME
GENERAL NOTES

SECTION: **900 - GENERAL** TYPICAL ID: **GNT**

REVISION DATE
11/17/14

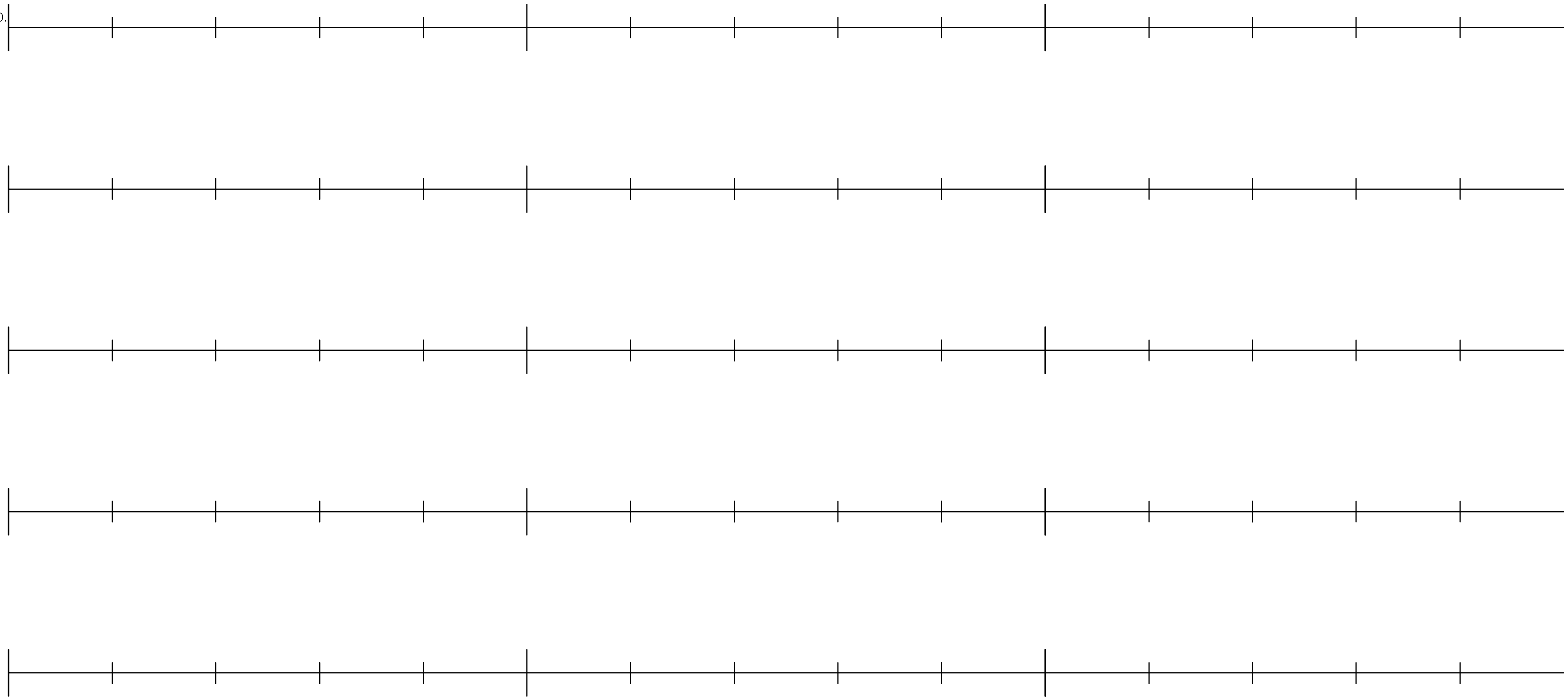
NO SCALE

DRAWING NO.
STD_900-03

SHEET OF

BOP
STA.

TRAIL NO.



TOPOGRAPHY (STREAMS, DRAWS, ETC.)	
SIDE SLOPE % UP DOWN	
EXISTING GROUND GRADE % (CENTERLINE)	
STATION	00
TRAIL BED WIDTH: 6' TYP	
SPECIAL SECTION ROCKFILL-SELECT BORROW TURNPIKE-SWITCHBACK-ETC.	
DRAINAGE ITEMS BRIDGES-B CULVERT-C DP-D WATERBAR-W	
AZIMUTH	

TOPOGRAPHY (STREAMS, DRAWS, ETC.)	
SIDE SLOPE % UP DOWN	
EXISTING GROUND GRADE % (CENTERLINE)	
STATION	00
TRAIL BED WIDTH: 6' TYP	
SPECIAL SECTION ROCKFILL-SELECT BORROW TURNPIKE-SWITCHBACK-ETC.	
DRAINAGE ITEMS BRIDGES-B CULVERT-C DP-D WATERBAR-W	
AZIMUTH	

TOPOGRAPHY (STREAMS, DRAWS, ETC.)	
SIDE SLOPE % UP DOWN	
EXISTING GROUND GRADE % (CENTERLINE)	
STATION	00
TRAIL BED WIDTH: 6' TYP	
SPECIAL SECTION ROCKFILL-SELECT BORROW TURNPIKE-SWITCHBACK-ETC.	
DRAINAGE ITEMS BRIDGES-B CULVERT-C DP-D WATERBAR-W	
AZIMUTH	



PROJECT NAME & LOCATION
XXPROJECT NAMEXX
XXX NATIONAL FOREST
XXX RANGER DISTRICT

DRAWING NAME
LINE DIAGRAM

SECTION
900 - GENERAL

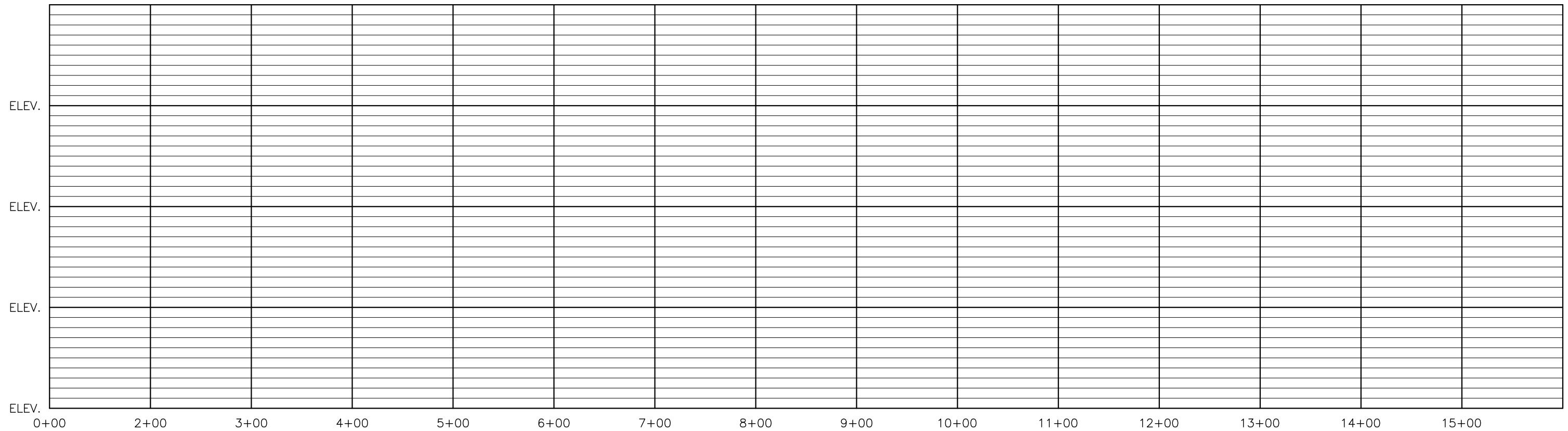
TYPICAL ID
LD2

REVISION DATE
XX/XX/XX

NO SCALE

DRAWING NO.
STD_900-06

SHEET
X OF **X**



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

PROJECT NAME & LOCATION

DRAWING NAME
PLAN AND PROFILE

SECTION
900 - GENERAL

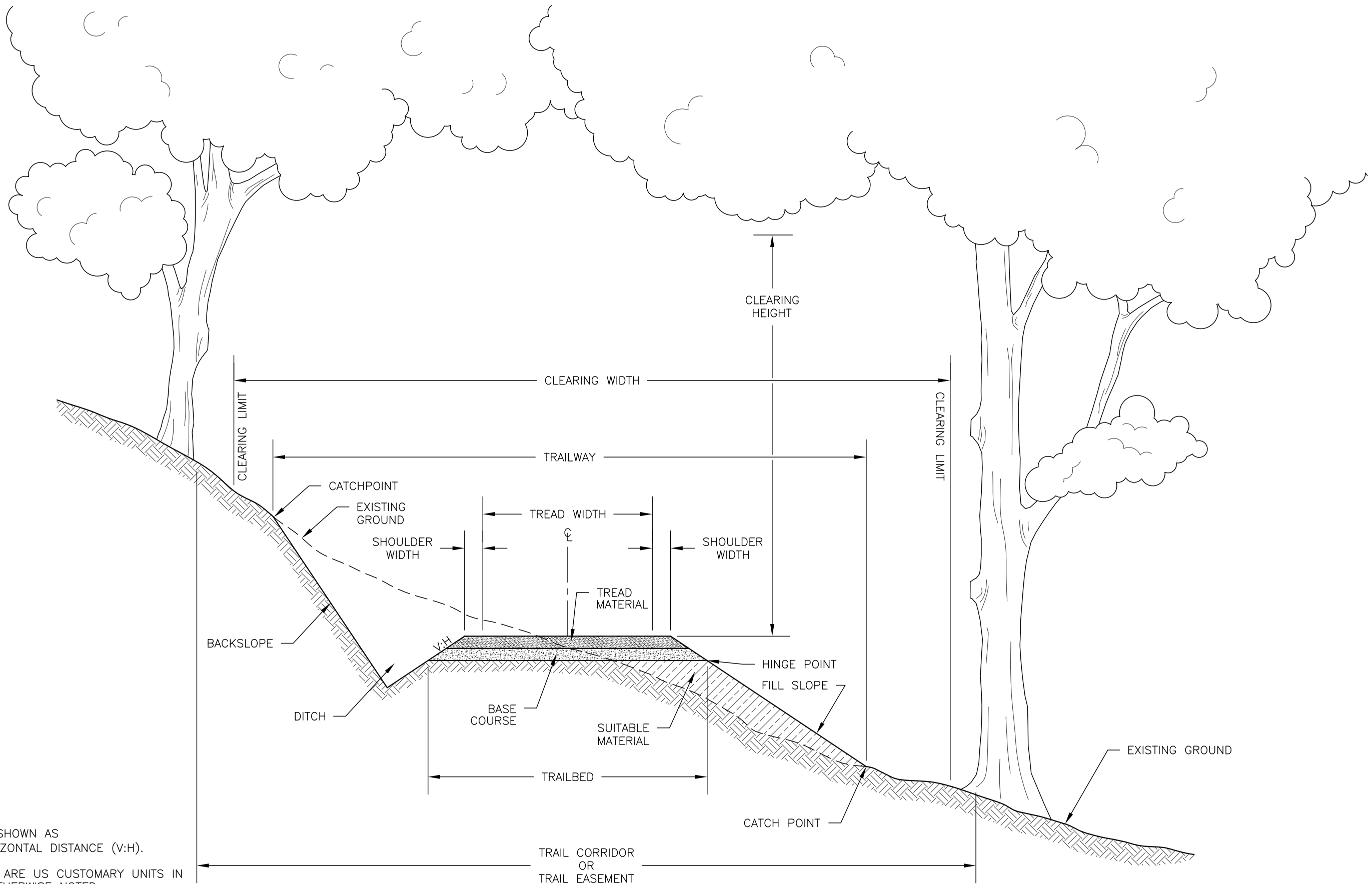
TYPICAL ID
PP1

REVISION DATE
XX/XX/XX

NO SCALE

DRAWING NO.
STD_900-07

SHEET
OF



NOTES:

ALL SLOPES ARE SHOWN AS VERTICAL-TO-HORIZONTAL DISTANCE (V:H).

ALL UNITS SHOWN ARE US CUSTOMARY UNITS IN INCHES UNLESS OTHERWISE NOTED.

U.S. DEPARTMENT OF AGRICULTURE
 FOREST SERVICE

STANDARD TRAIL PLAN

PROJECT NAME & LOCATION

DRAWING NAME
STANDARD TRAIL TERMS

SECTION
 910 - TRAILWAY

TYPICAL ID
 STT

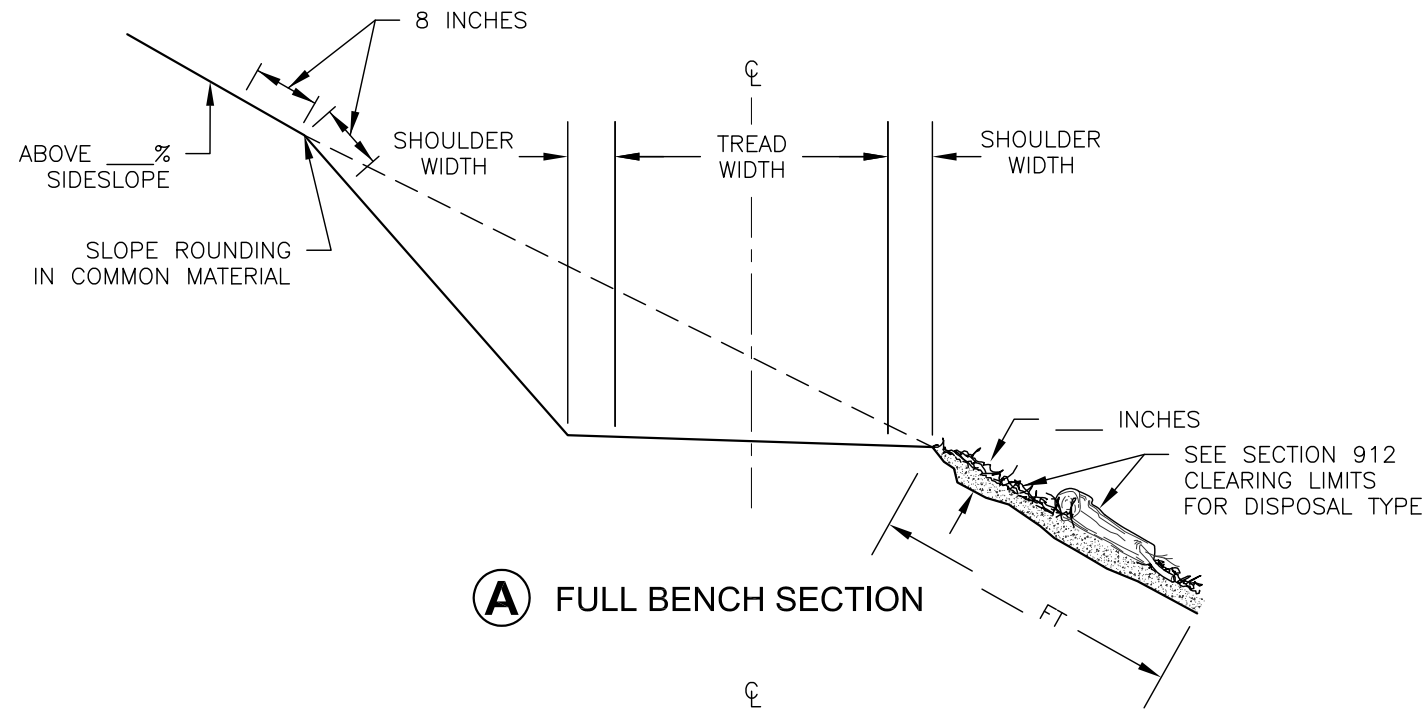
REVISION DATE
 XX/XX/XX

NOT TO SCALE

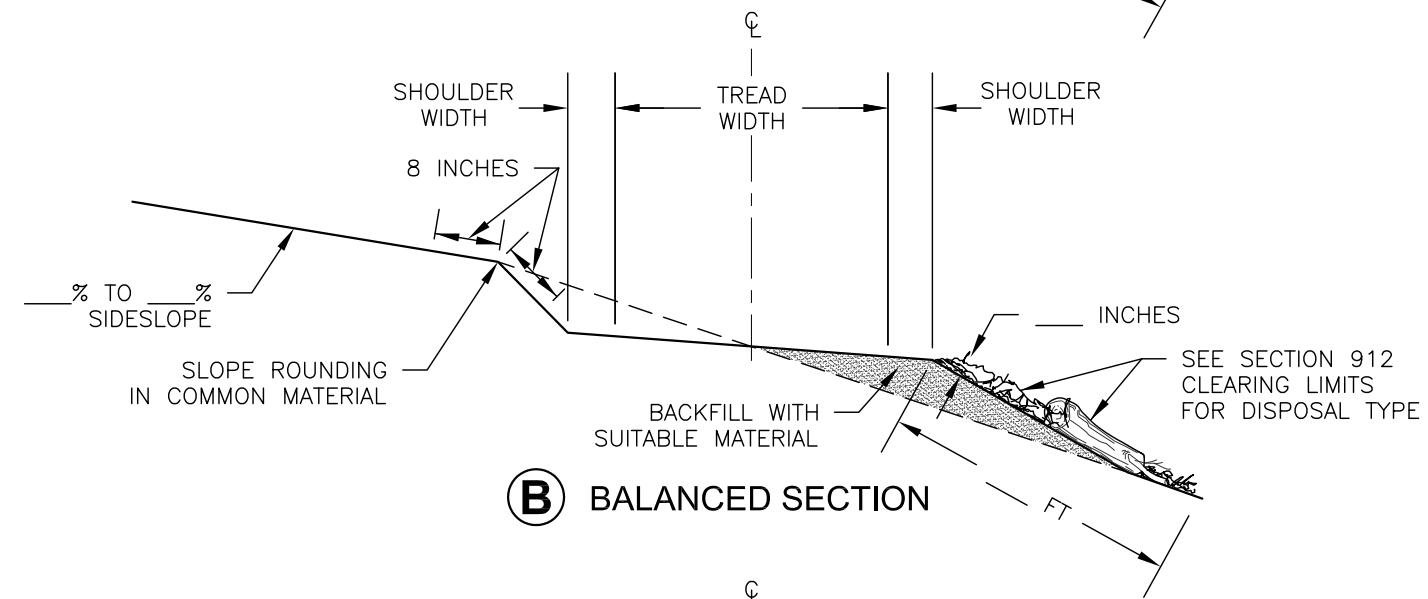
DRAWING NO.
STD_910-01

SHEET
 OF

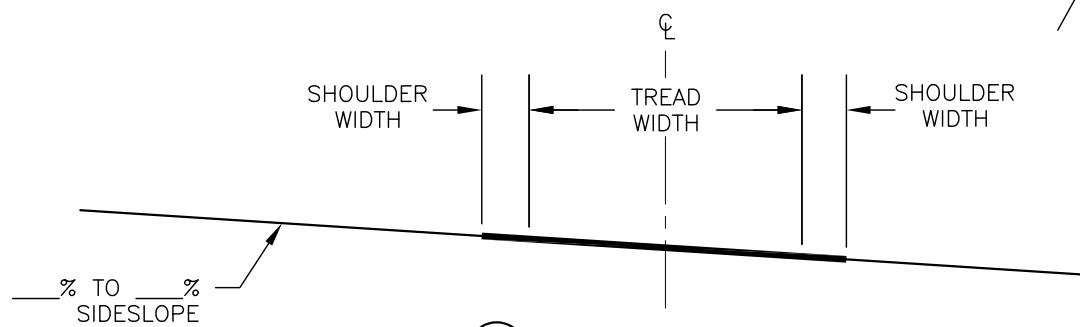
TYPICAL TRAIL CROSS SECTIONS



(A) FULL BENCH SECTION



(B) BALANCED SECTION



(C) FLAT SECTION

TYPICAL TRAIL TREAD AND SHOULDER WIDTH

TYPICAL ID	SECTION TYPE	TREAD FINISH	TREAD WIDTH	SHOULDER WIDTH		COMMENTS
				UPHILL	DOWNHILL	
TSF-1		T				

TREAD CROSS SLOPE

TYPICAL ID	OUTSLOPE	INSLOPE	CROWNED SECTION	COMMENTS
	%	%	%	

SLOPE AND TRAILBED FINISH

TREAD FINISH	ROOTS	LOOSE ROCK	EMBEDDED ROCK	COMMENTS
T1				
T2				
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.

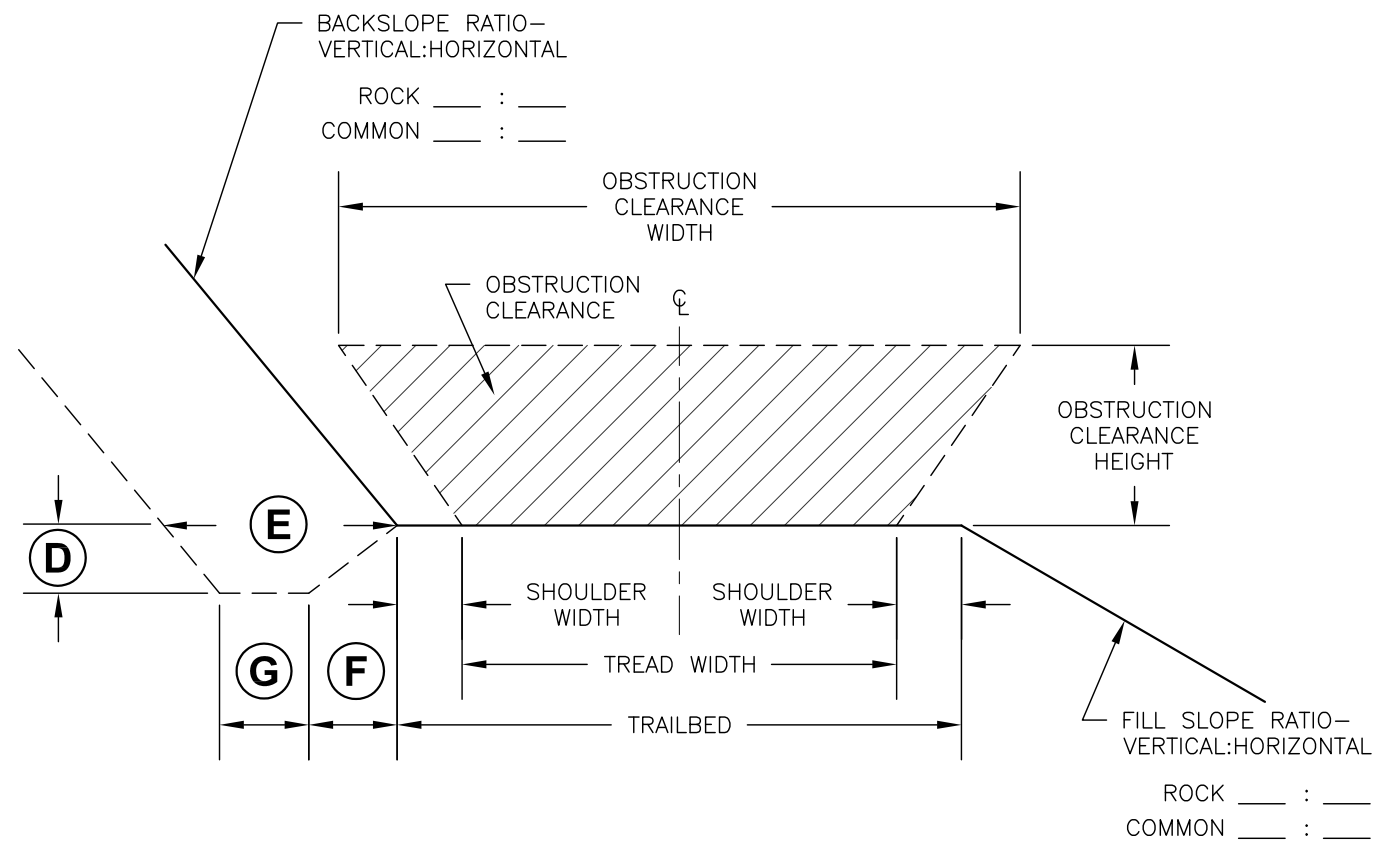
TRAILBED FINISH

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 WAY TO CATCH SEDIMENT MOVEMENT.
2. LIMB ALL TREES AND SHRUBS AND TAMP SLASH INTO GROUND SO THAT 80% OF SLASH IS IN CONTACT WITH THE GROUND.



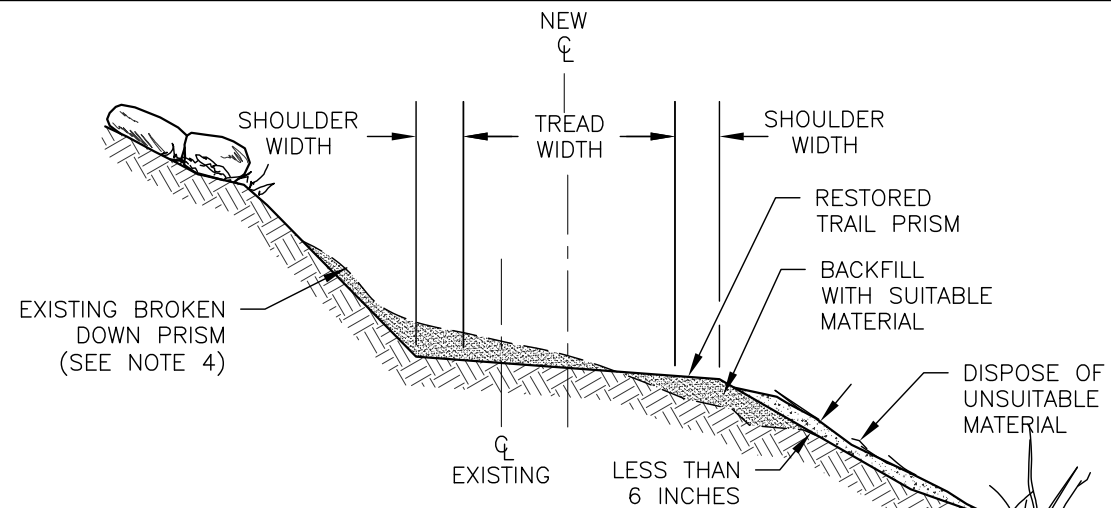
TYPICAL DITCH AND OBSTRUCTION CLEARANCE SECTION

TYPICAL DITCH DIMENSIONS

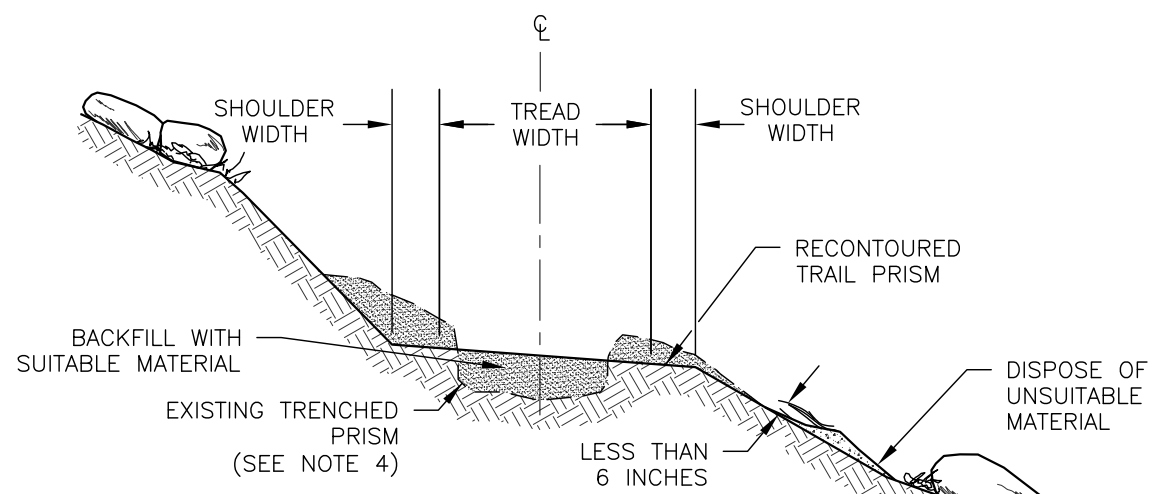
TYPICAL ID	DITCH DIMENSIONS (INCHES)				COMMENTS
	D	E	F	G	
TDD-1					

OBSTRUCTION CLEARANCE TABLE

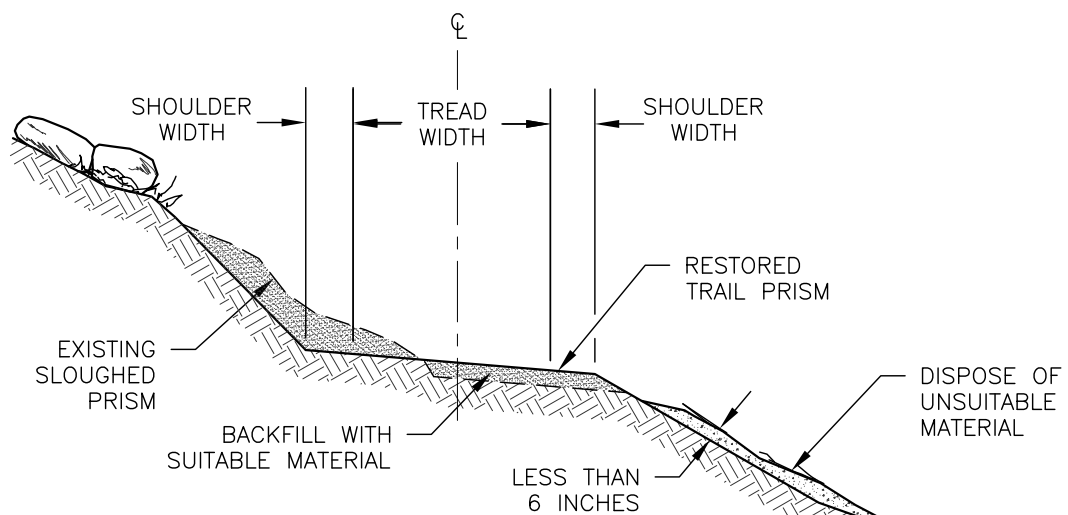
TYPICAL ID	OBSTRUCTION CLEARANCE		COMMENTS
	WIDTH	HEIGHT	
TOC-1			



(A) BROKEN DOWN SECTION



(B) TRENCHED SECTION



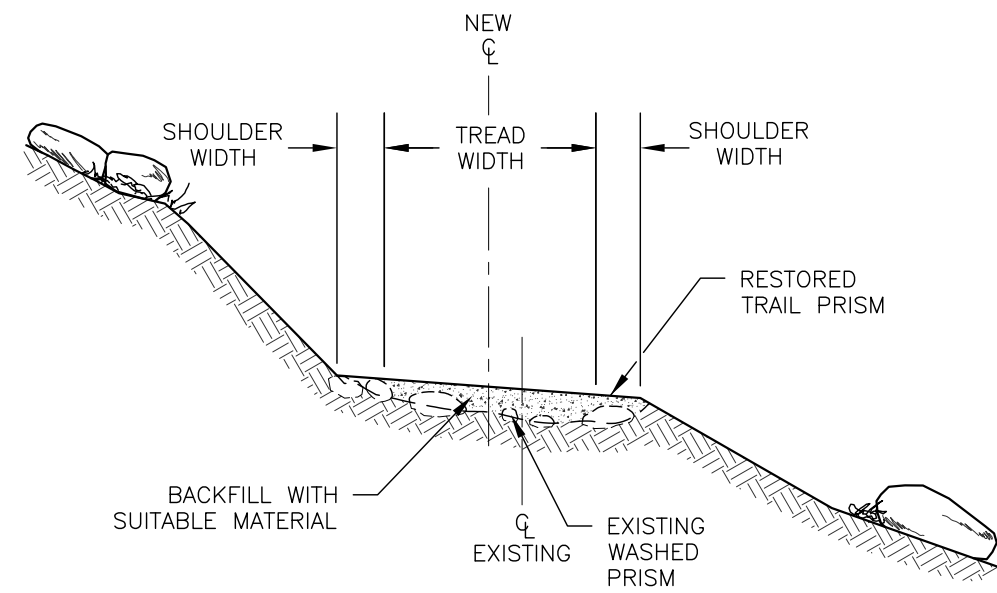
(C) SLOUGHED SECTION

EXISTING TRAIL RESTORATION

TYPICAL ID	SECTION TYPE	TREAD WIDTH	SHOULDER WIDTH		COMMENTS
			UPHILL	DOWNHILL	
ETR-1					

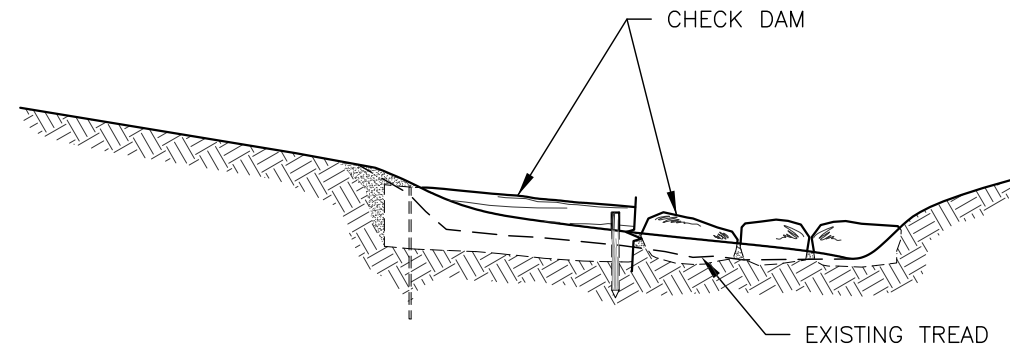
NOTES:

1. RE-ESTABLISH ORIGINAL DRAINAGE STRUCTURES TO MATCH NEW TREAD SURFACE.
2. INSTALL CHECK DAMS, DRAINAGE DIPS OR OTHER DRAINAGE STRUCTURES WHEN SPECIFIED.
3. DRAINAGE DIPS WILL BE STAKED IN THE FIELD WHEN REQUIRED AND WILL BE PAID SEPARATELY UNDER SECTION 927.
4. USE ONLY SUITABLE MATERIAL TO CONSTRUCT RESTORED TRAIL PRISMS. DISPOSE OF UNSUITABLE MATERIAL AS SHOWN ON PLANS.
5. SEEDING, FERTILIZING & MULCHING WHEN REQUIRED WILL BE PAID UNDER SECTION 981.



(D) WASHED SECTION

TRAIL OBLITERATION



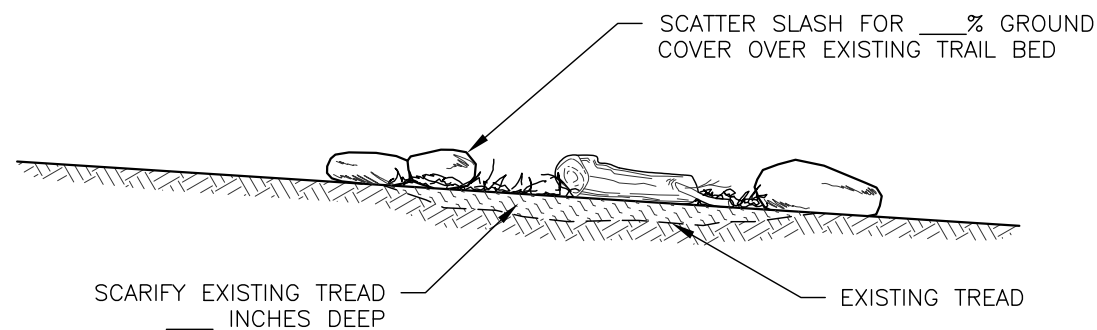
A CHECK DAM SECTION

CHECK DAM SPACING

DRAINAGE GRADE %	DRAINAGE SPACING (FEET)
<3	OCCASIONAL
3-7	50
8-12	25
>12	15

TYPICAL ID	SECTION TYPE	LENGTH	COMMENTS
OBT-1			

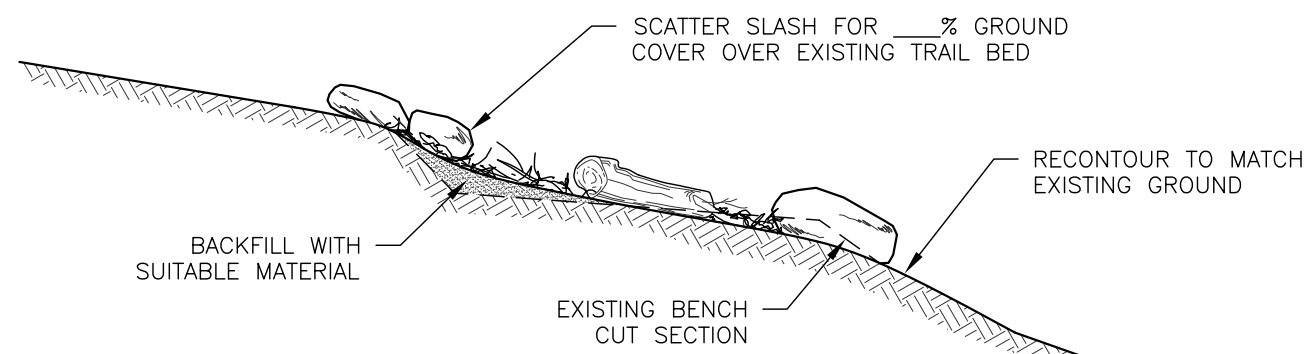
N/A WHEN NOT APPLICABLE
 ****FOR CHECK DAM SEE SHEET STD_928-01



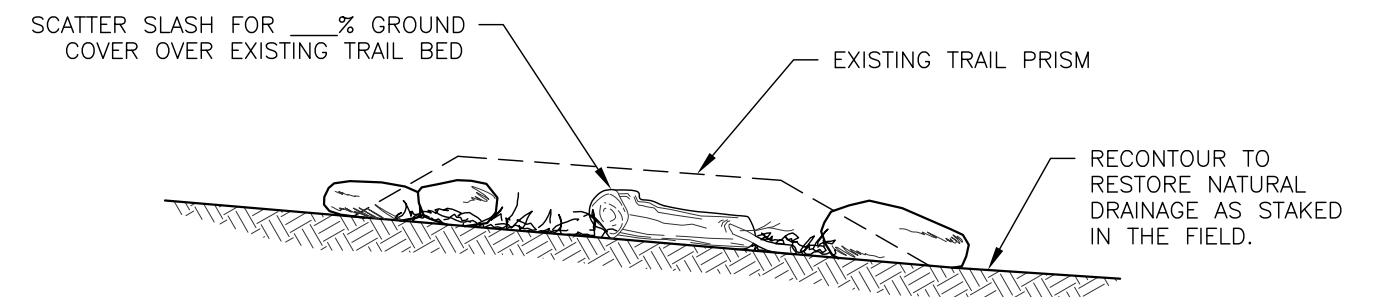
B SCARIFICATION AND SLASH PLACEMENT SECTION

NOTES:

1. SLASH CONSISTS OF LOGS, LIMBS, BRUSH, AND ROCKS PLACED IN A WAY TO CATCH SEDIMENT MOVEMENT.
2. SLASH TO BE SPREAD RANDOMLY ACROSS TRAIL BED. DO NOT SPREAD PARALLEL TO TRAIL SURFACE.
3. LIMB ALL TREES AND SHRUBS AND TAMP SLASH INTO GROUND SO THAT 80% OF SLASH IS IN CONTACT WITH THE GROUND.
4. DRAINAGE DIPS WILL BE STAKED IN THE FIELD WHEN REQUIRED AND WILL BE PAID SEPARATELY UNDER SECTION 927.
5. SEEDING, FERTILIZING & MULCHING WHEN REQUIRED WILL BE PAID UNDER SECTION 981.



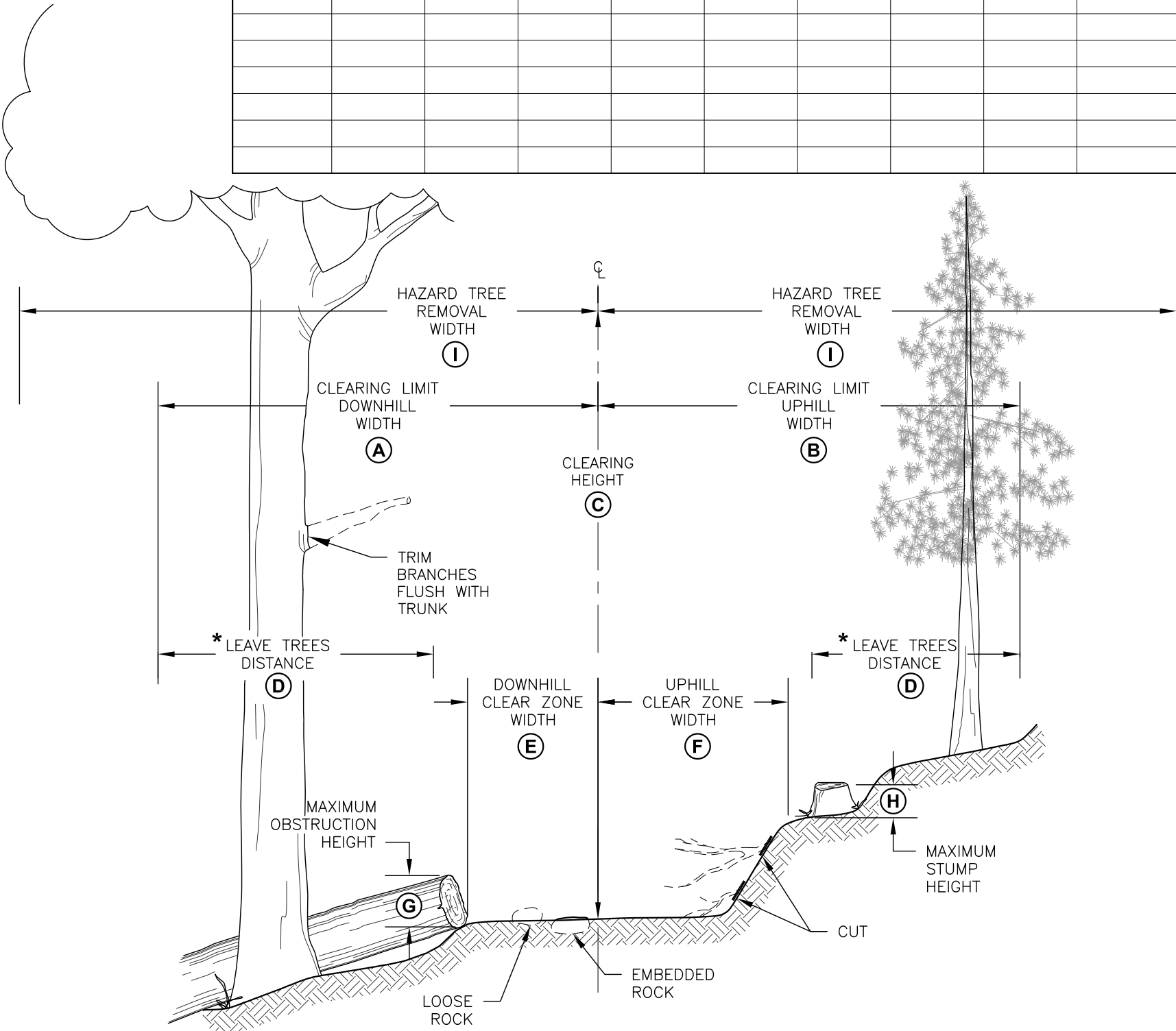
C RECONTOUR & SLASH PLACEMENT SECTION



D RESTORE NATURAL DRAINAGE SECTION

CLEARING LIMITS - TREES AND LOGS

TYPICAL ID	CLEARING METHOD	CLEARING LIMITS			* LEAVE TREES		CLEAR ZONE			STUMPS	HAZARD TREE	DISPOSAL METHOD	COMMENTS
		DOWNHILL WIDTH (A)	UPHILL WIDTH (B)	CLEARING HEIGHT (C)	DISTANCE (FEET) (D)	DIAMETER (INCHES)	DOWNHILL WIDTH (E)	UPHILL WIDTH (F)	MAXIMUM OBSTRUCTION HEIGHT (G)	MAXIMUM HEIGHT (H)	REMOVAL WIDTH (I)		
CLT-1	C											D	



CLEARING METHOD

CLEARING TYPE	CLEARING METHOD	COMMENTS
C1	NEW CONSTRUCTION	TREES, PRUNING, & BRUSH
C2	CLEARING LIMIT RESTORATION	TREES, PRUNING, LOGS, BRUSH & MAINTENANCE
C3	TRAIL OPENING	LOGGING OUT, LOOSE ROCK & DRAINAGE CLEARING
C4	HAZARD TREE REMOVAL	ALONG TRAIL CORRIDOR
C5	HAZARD TREE REMOVAL	INDIVIDUAL (AS MARKED)
C6	LOOSE ROCK & ROOT REMOVAL	
C7		

LEAVE TREES: LEAVE TREES SHOULD BE LIVE, SOUND & UNDAMAGED WITH UNCOMPROMISED ROOT SYSTEMS.

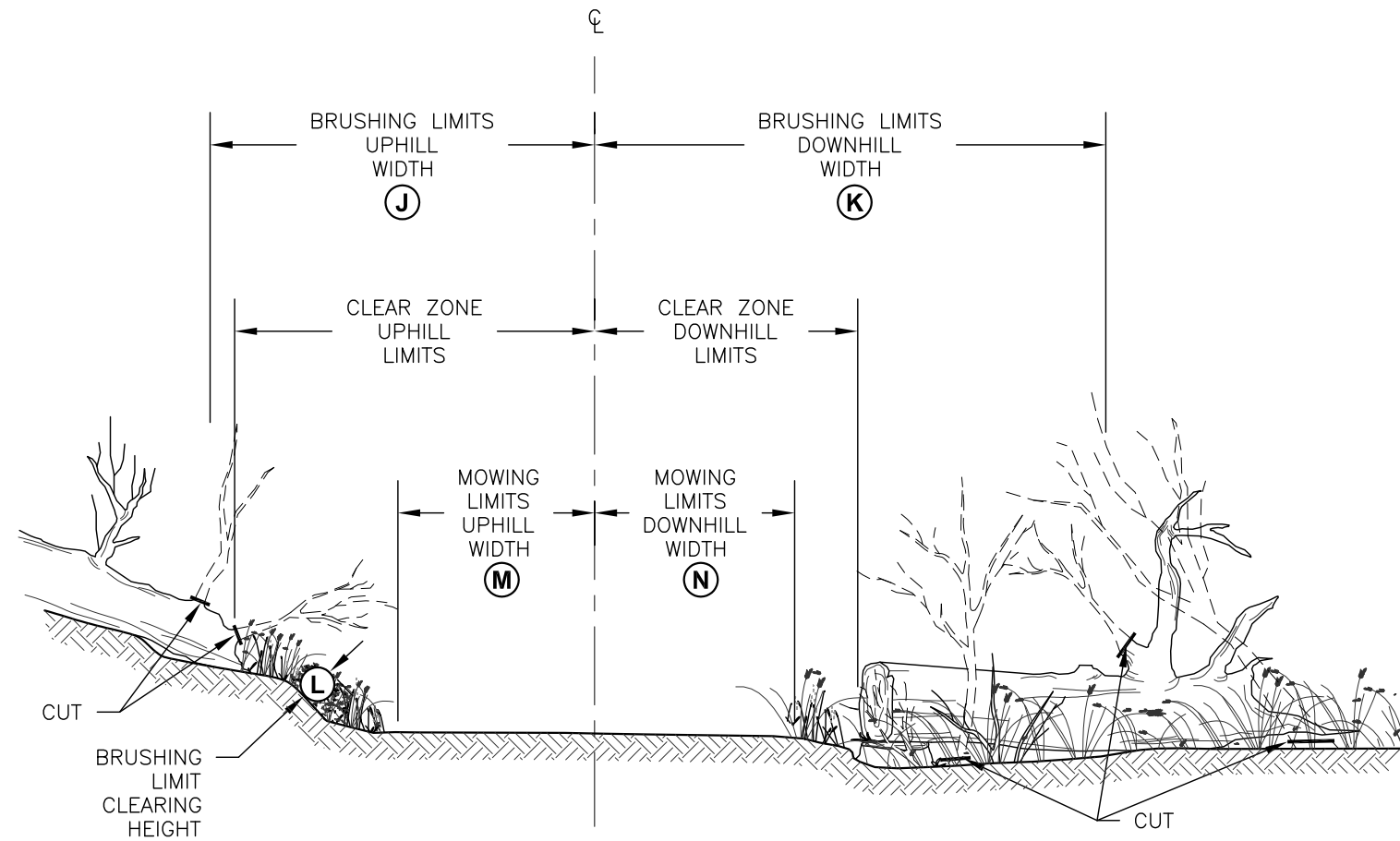
HAZARD TREES: HAZARD TREES ARE TREES THAT ARE STANDING OR LEANING DEAD TREES LARGER THAN 8 INCHES IN DIAMETER AND GREATER THAN 90 FEET IN HEIGHT.

DISPOSAL METHOD

DISPOSAL TYPE	DISPOSAL METHOD	COMMENTS
D1	LOP AND SCATTER OUTSIDE TRAILWAY	
D2	LOP AND SCATTER ON FILL SLOPE	
D3	PILE AND BURN	
D4	CHIP	
D5	HAUL TO DISPOSAL SITE	
D6		

CLEARING LIMITS - BRUSHING

TYPICAL ID	CLEARING METHOD	BRUSHING LIMITS			MOWING LIMITS		DISPOSAL METHOD	COMMENTS
		UPHILL WIDTH (J)	DOWNHILL WIDTH (K)	CLEARING HEIGHT (L)	UPHILL WIDTH (M)	DOWNHILL WIDTH (N)		
CLB-1	C						D	



CLEARING METHOD

CLEARING TYPE	CLEARING METHOD	COMMENTS
C9	BRUSHING	
C10	MOWING	
C11		

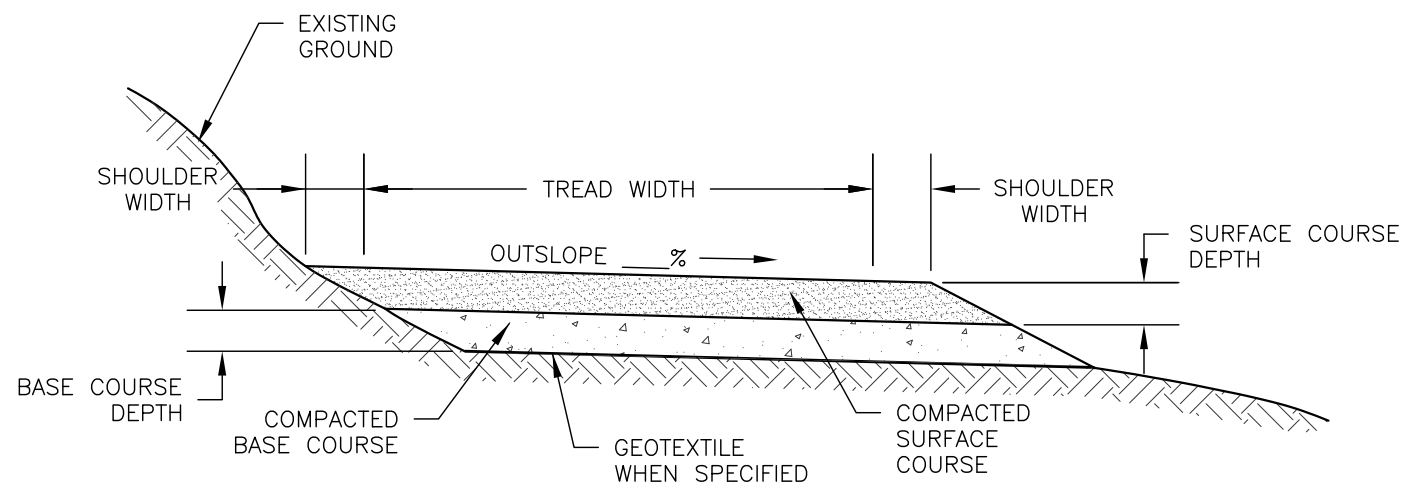
DISPOSAL METHOD

DISPOSAL TYPE	DISPOSAL METHOD	COMMENTS
D1	LOP AND SCATTER OUTSIDE TRAILWAY	
D2	LOP AND SCATTER ON FILL SLOPE	
D3	PILE AND BURN	
D4	CHIP	
D5	HAUL TO DISPOSAL SITE	
D6		

SURFACING SECTIONS

TYPICAL ID	SECTION TYPE	TREAD WIDTH	SHOULDER WIDTH		GEOTEXTILE TYPE	BASE COURSE		SURFACE COURSE		COMMENTS
			UPHILL	DOWNHILL		TYPE	DEPTH	TYPE	DEPTH	
TSS-1						B		S		

N/A WHEN NOT APPLICABLE



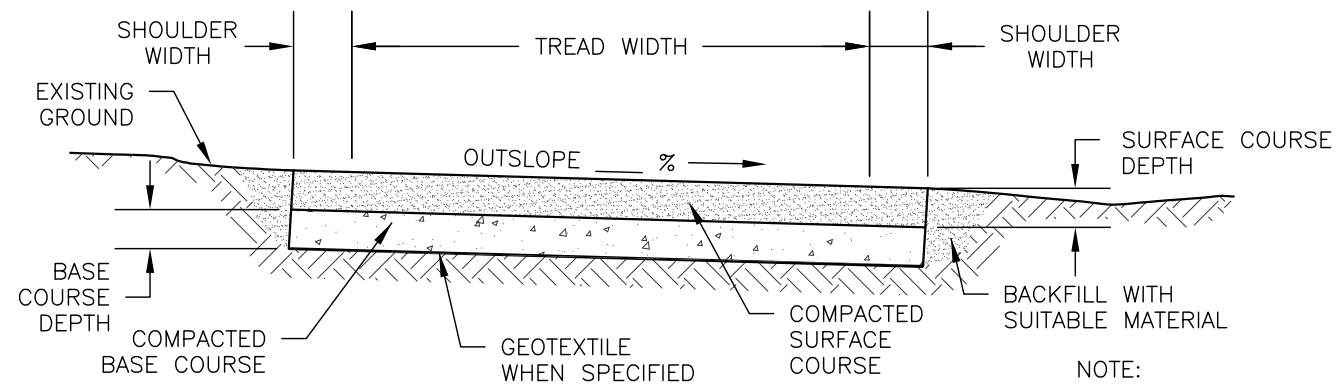
(A) OUTSLOPED SECTION

BASE COURSE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
B1	PITRUN		
B2	AGGREGATE		
B3			

SURFACE COURSE MATERIAL TYPE

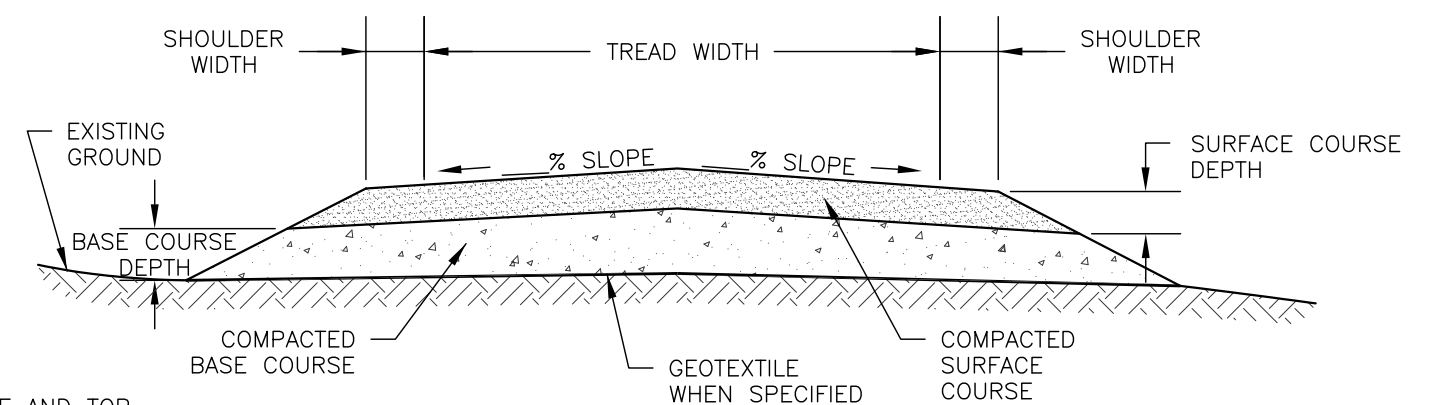
TYPE	MATERIAL	GRADATION	COMMENTS
S1	PITRUN		
S2	AGGREGATE		
S3	CLAY		
S4	WOODCHIPS		
S5			



(B) EXCAVATED SECTION

NOTE:

1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.



(C) RAISED SECTION

SURFACING SECTIONS

TYPICAL ID	SECTION TYPE	TREAD WIDTH	SHOULDER WIDTH		GEOTEXTILE TYPE	RETAINER*	SUBBASE		BASE COURSE		SURFACE COURSE		COMMENTS
			UPHILL	DOWNHILL		TYPE	DEPTH	WIDTH	TYPE	DEPTH	TYPE	DEPTH	
TSR-1						R	SB			B		S	

N/A WHEN NOT APPLICABLE
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03

SUBBASE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
SB1	PITRUN		
SB2	AGGREGATE		
SB3			

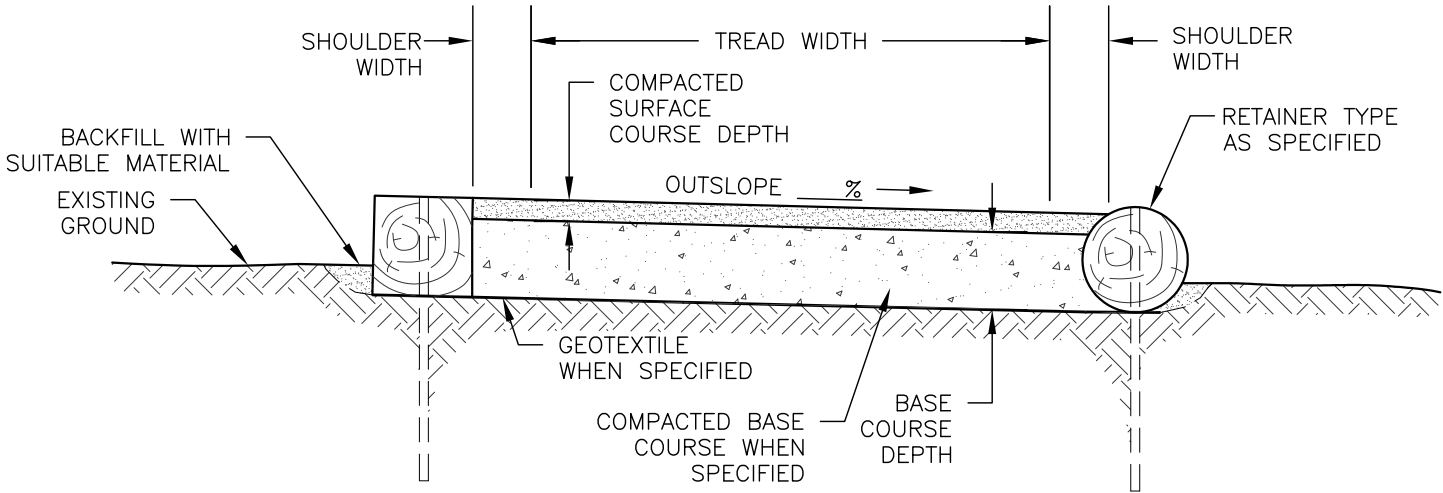
BASE COURSE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
B1	PITRUN		
B2	AGGREGATE		
B3			

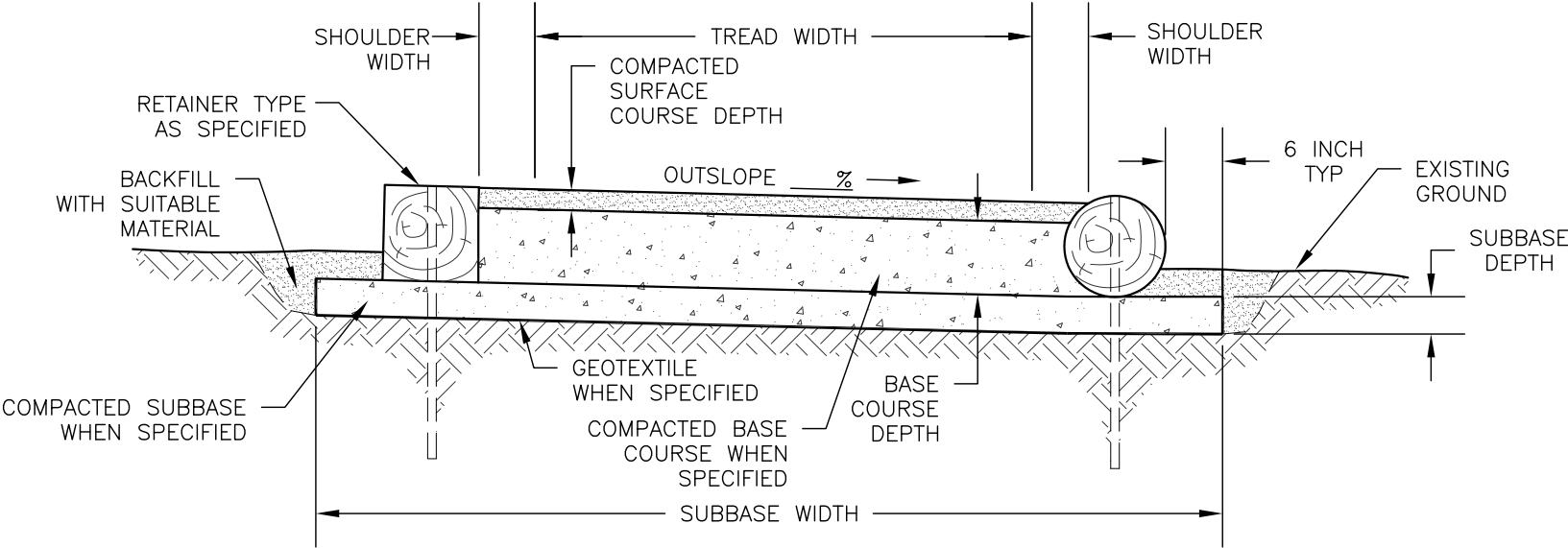
SURFACE COURSE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
S1	PITRUN		
S2	AGGREGATE		
S3	CLAY		
S4	WOODCHIPS		
S5			

- NOTE:
- REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
 - COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.



D SURFACING SECTION WITH RETAINERS



E SURFACING SECTION WITH RETAINERS AND SUB BASE

HARDENED SURFACING SECTIONS

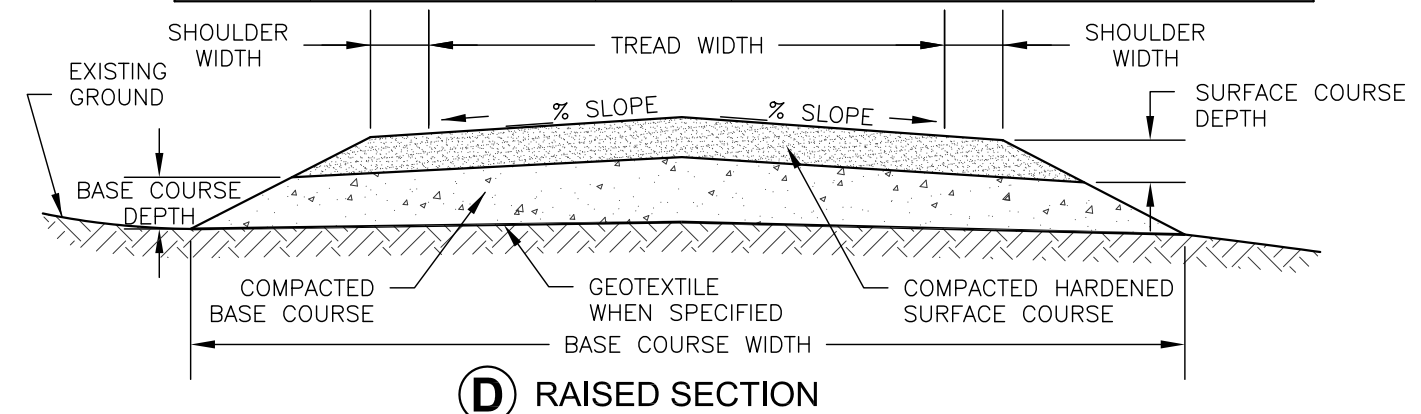
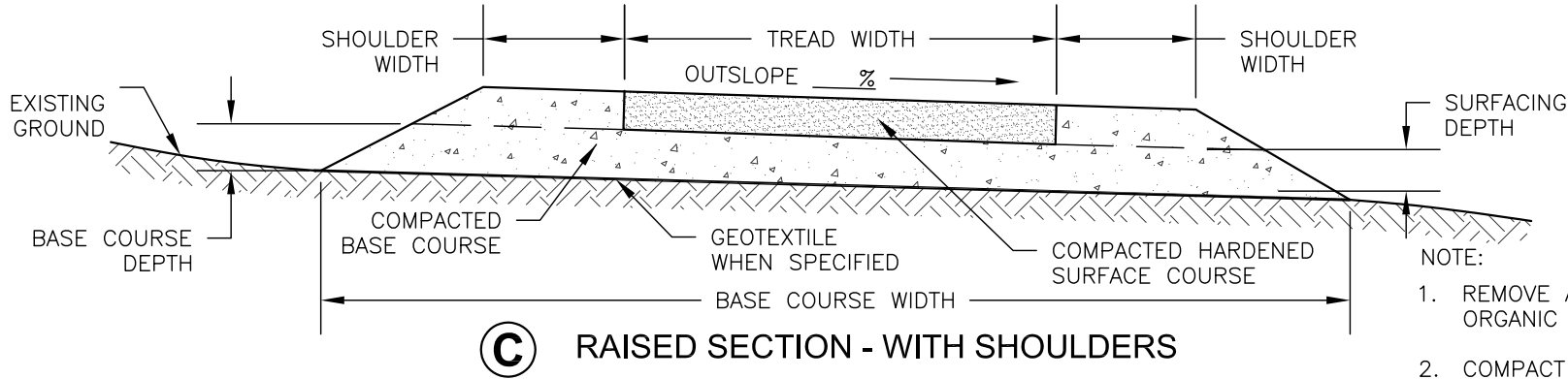
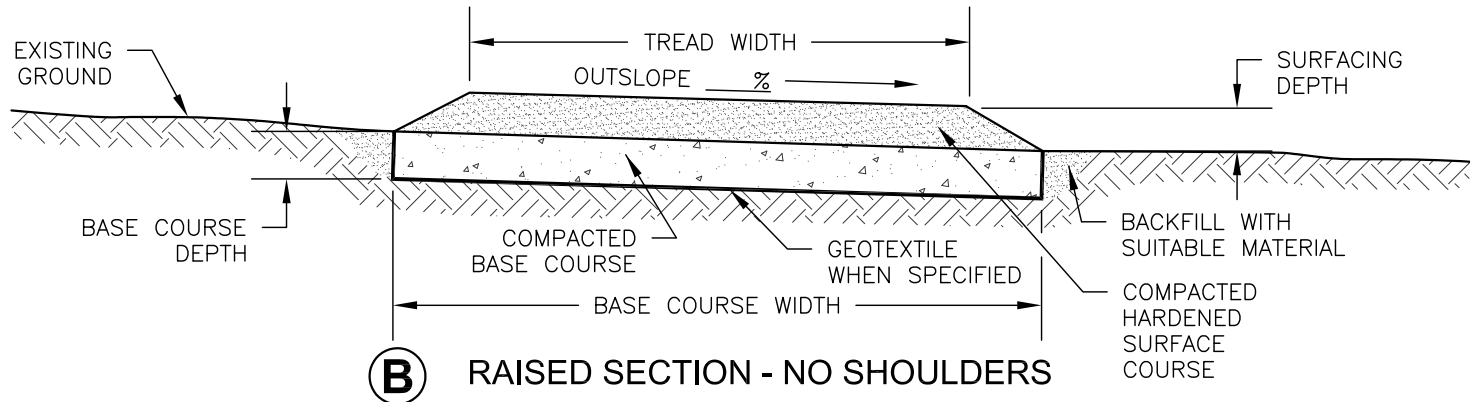
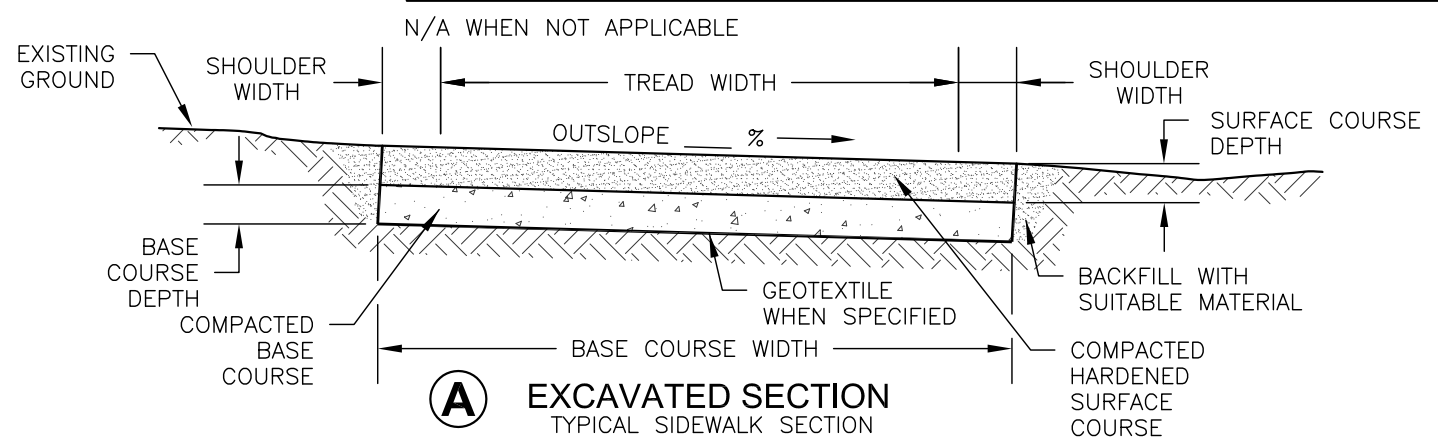
TYPICAL ID	SECTION TYPE	TREAD WIDTH	SHOULDER WIDTH		GEOTEXTILE TYPE	BASE COURSE		HARDENED SURFACE COURSE		COMMENTS
			UPHILL	DOWNHILL		TYPE	DEPTH	TYPE	DEPTH	
THS-1						B		HS		

BASE COURSE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
B1	PITRUN		
B2	AGGREGATE		
B3			

HARDENED SURFACE COURSE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
HS1	HOT ASPHALT		
HS2	COLD ASPHALT		
HS3	WARM ASPHALT		
HS4	BST - CHIP SEAL		
HS5	STABILIZED AGGREGATE		
HS6	CONCRETE		
HS7			



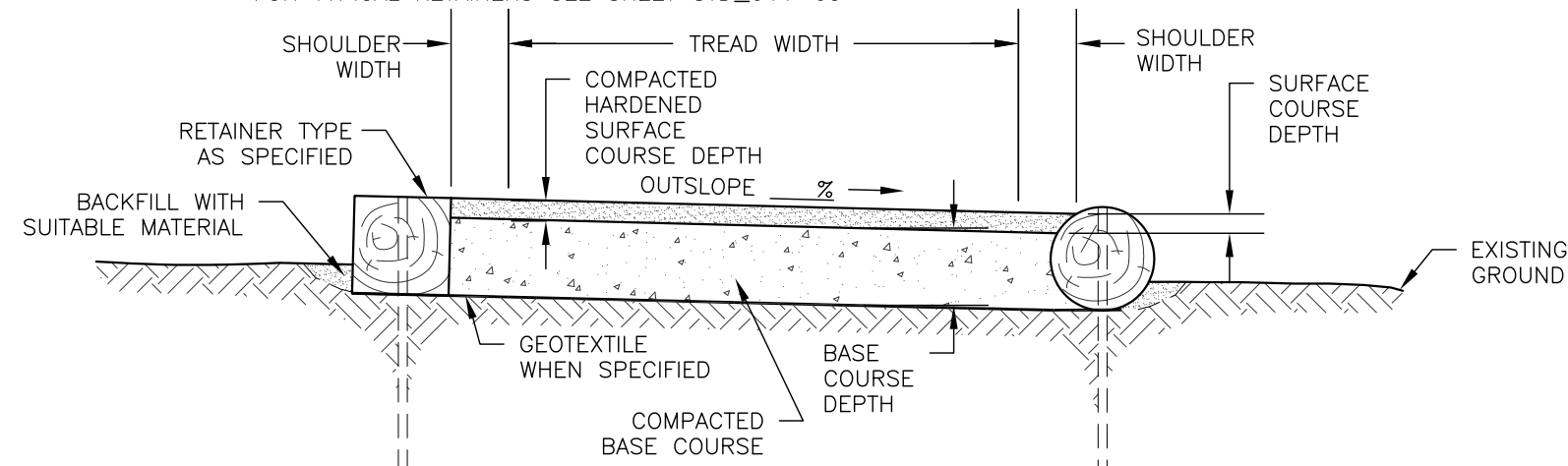
- NOTE:
- REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
 - COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

HARDENED SURFACING SECTIONS WITH RETAINERS

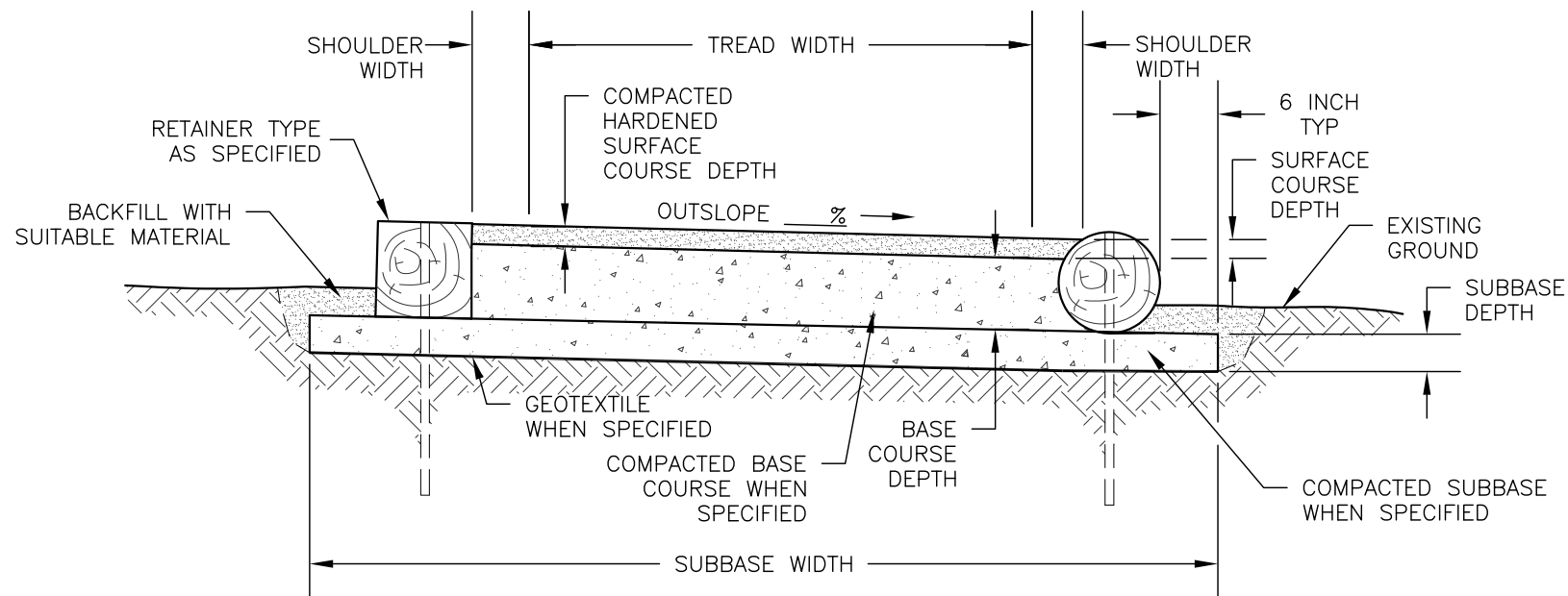
TYPICAL ID	SECTION TYPE	TREAD WIDTH	SHOULDER WIDTH		GEOTEXTILE TYPE	RETAINER*				SUBBASE		BASE COURSE		HARDENED SURFACE COURSE		COMMENTS
			UPHILL	DOWNHILL		TYPE	TYPE	DEPTH	WIDTH	TYPE	DEPTH	TYPE	DEPTH			
HSR-1						R		SB			B		HS			

N/A WHEN NOT APPLICABLE

*FOR TYPICAL RETAINERS SEE SHEET STD_911-03



E HARDENED SURFACE WITH RETAINERS



F HARDENED SURFACE SECTION WITH RETAINERS AND SUB BASE

SUBBASE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
SB1	PITRUN		
SB2	AGGREGATE		
SB3			

BASE COURSE MATERIAL TYPE

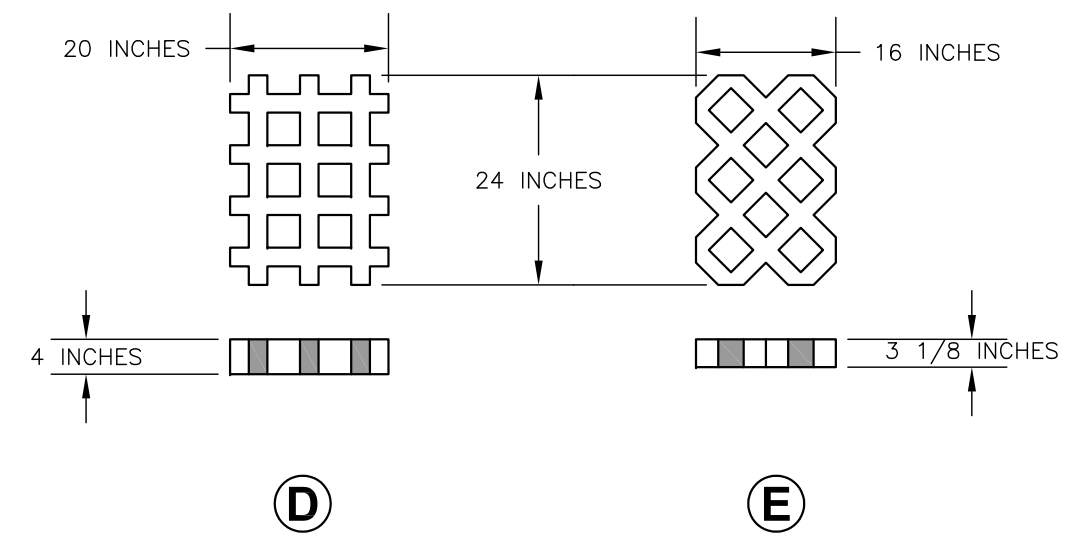
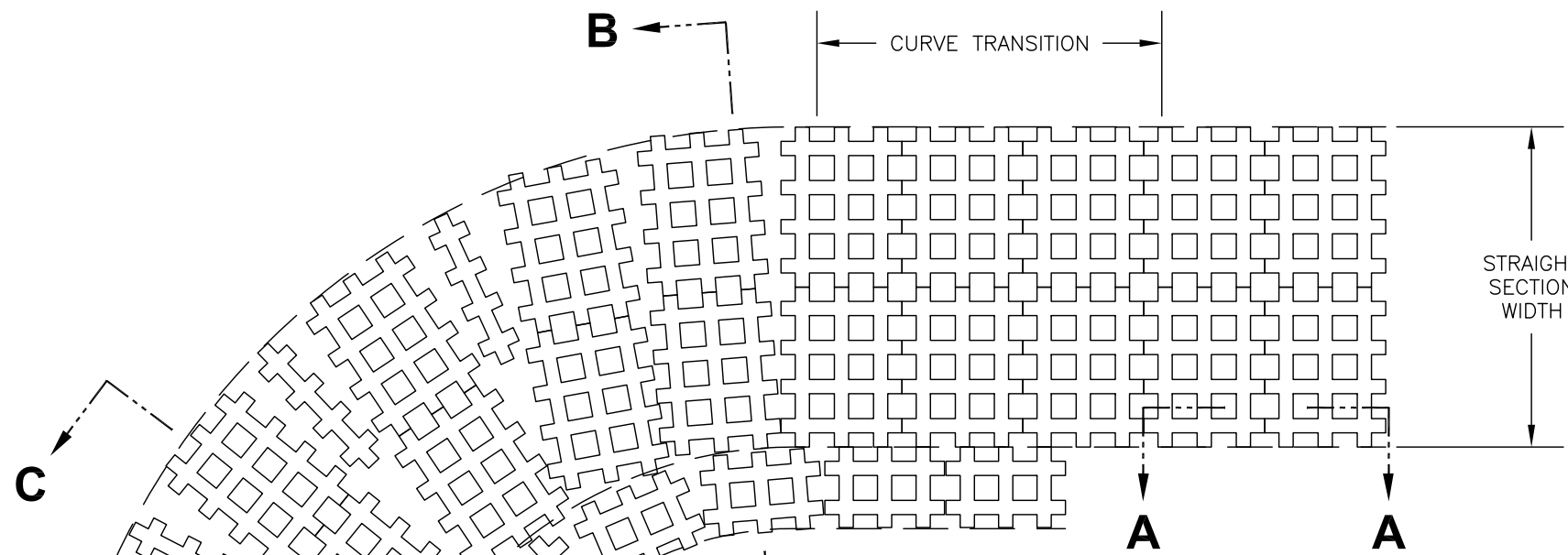
TYPE	MATERIAL	GRADATION	COMMENTS
B1	PITRUN		
B2	AGGREGATE		
B3			

HARDENED SURFACE COURSE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
HS1	HOT ASPHALT		
HS2	COLD ASPHALT		
HS3	WARM ASPHALT		
HS4	BST - CHIP SEAL		
HS5	STABILIZED AGGREGATE		
HS6			

NOTE:

1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.



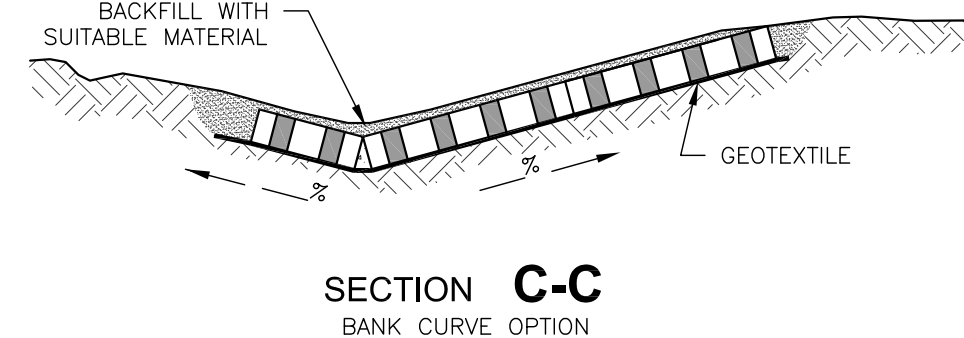
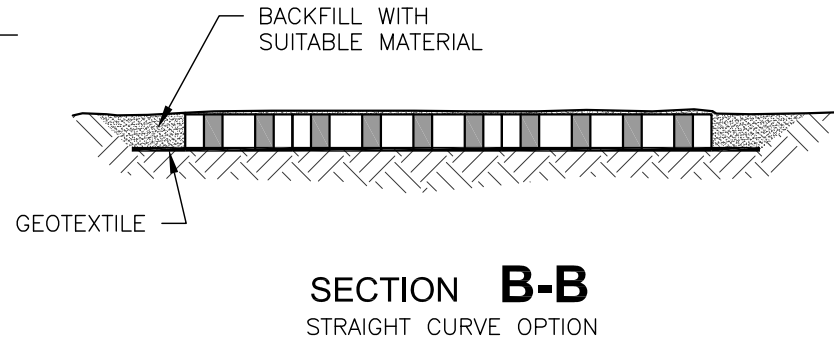
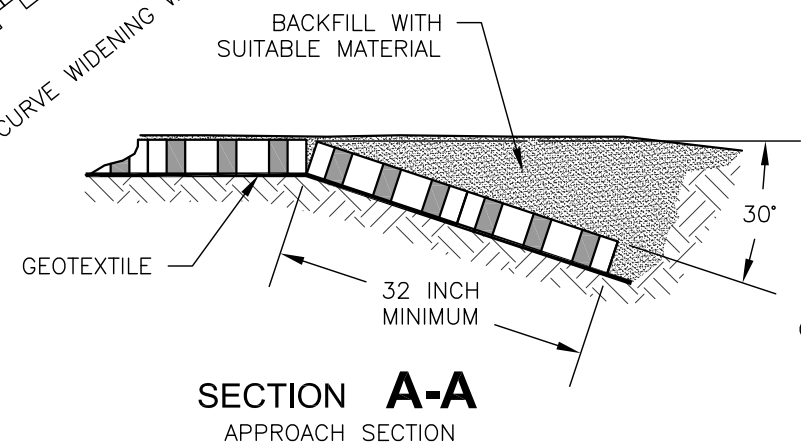
GRID UNIT TYPE

GRID UNIT SURFACING

TYPICAL ID	GEOTEXTILE TYPE	STRAIGHT SECTION WIDTH	BANK CURVE WIDTH	CURVE WIDENING WIDTH	CURVE TRANSITION LENGTH	GRID UNIT TYPE	COMMENTS
GUS-1							

N/A WHEN NOT APPLICABLE

- NOTE:
1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
 2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.



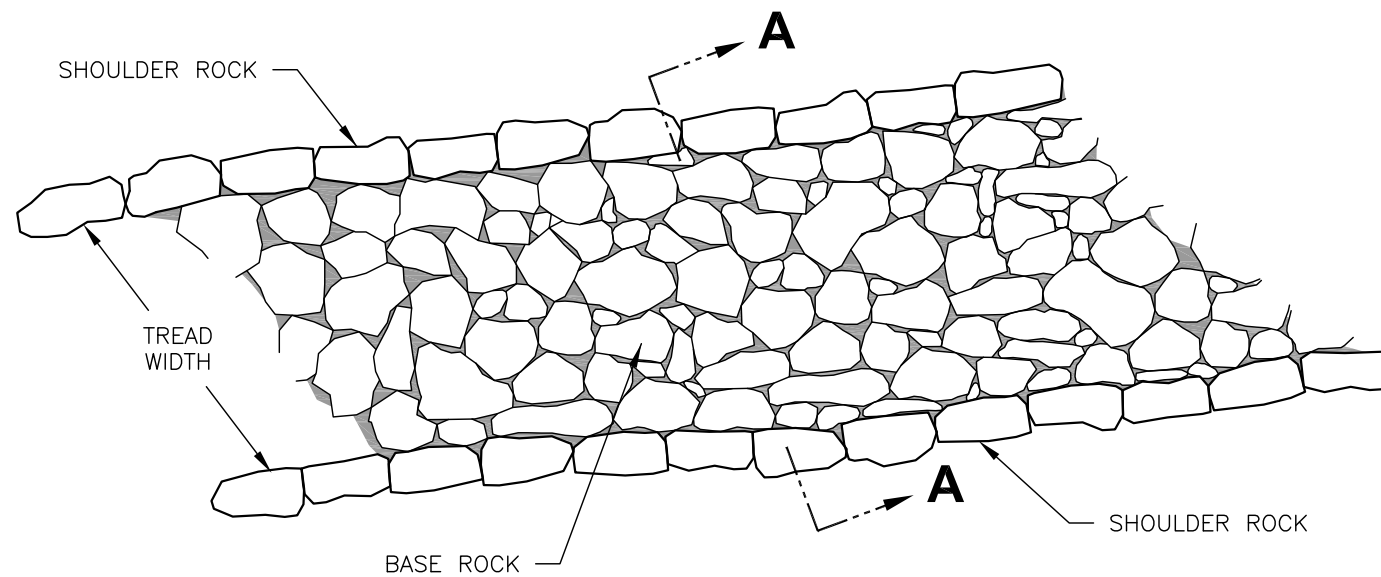
RIPRAP SURFACING

TYPICAL ID	TREAD WIDTH	GEOTEXTILE TYPE	LEVELING COURSE TYPE	MINIMUM ROCK SIZE		COMMENTS
				SHOULDER ROCK (LBS)	BASE ROCK (LBS)	
RRS-1			L			

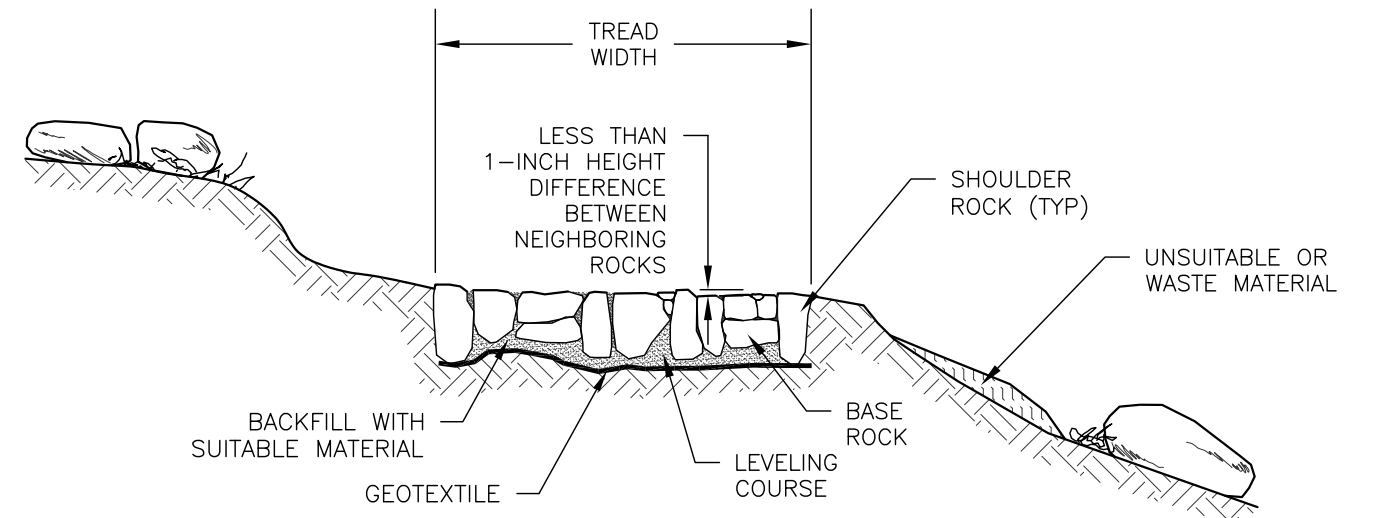
N/A WHEN NOT SPECIFIED

LEVELING COURSE MATERIAL

TYPE	MATERIAL	GRADATION	COMMENTS
L1	PITRUN		
L2	AGGREGATE		
L3			



PLAN VIEW



SECTION **A-A**

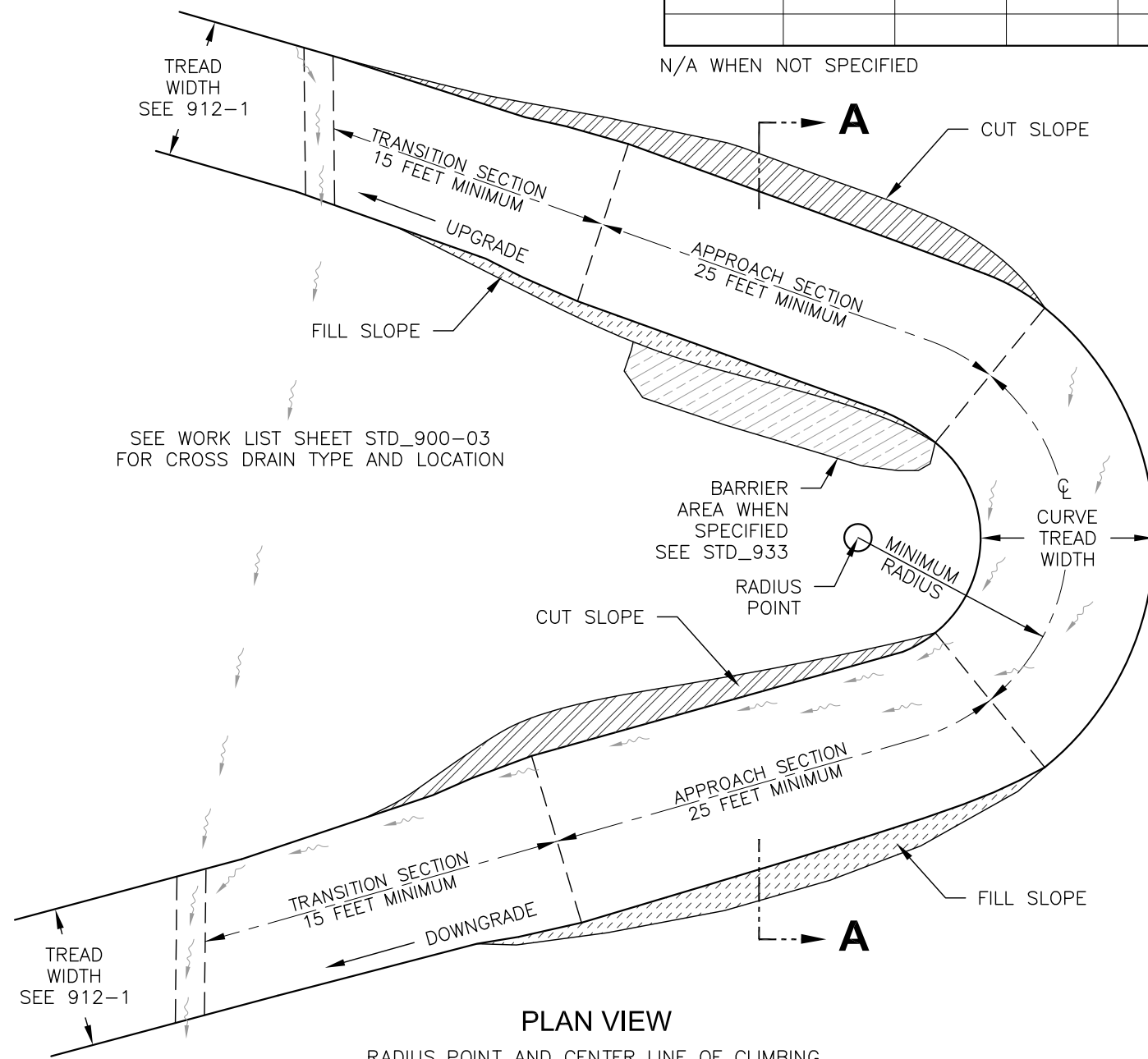
NOTES:

1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
2. PROVIDE ORGANIC-FREE BACKFILL MATERIAL WHERE SHOWN ON DRAWINGS FOR LEVELING AND SUPPORT OF BASE ROCK.
3. LAY ROCK WITH A MINIMUM OF 3 POINTS OF CONTACT WITH ADJACENT ROCKS.
4. LAY ROCKS IN A RANDOM ARRANGEMENT.
5. FILL VOIDS WITH BROKEN ROCK OR SUITABLE BACKFILL.

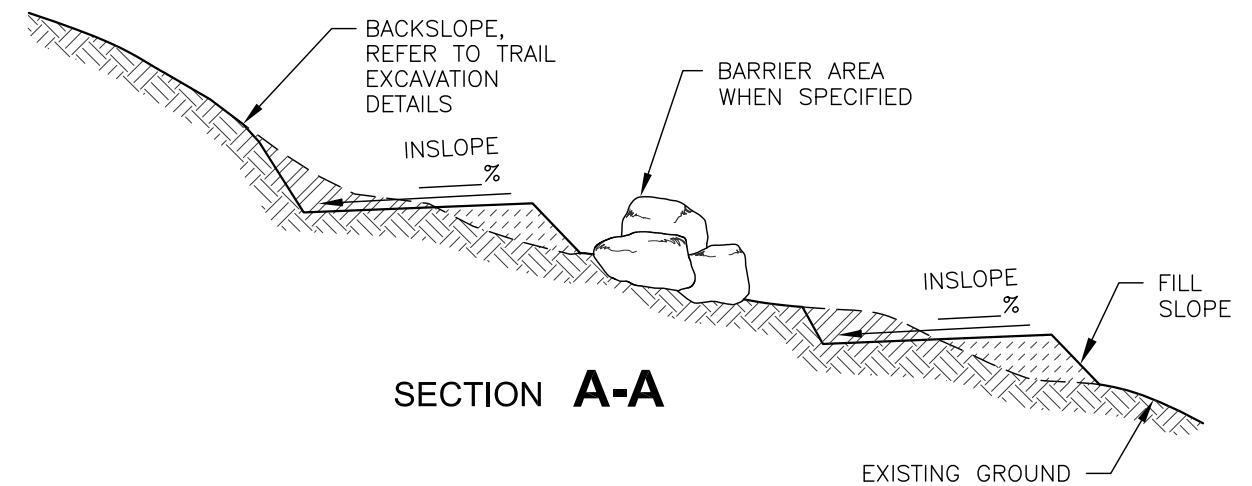
CLIMBING TURN SECTIONS

TYPICAL ID	MINIMUM RADIUS	CURVE TREAD WIDTH	BARRIER TYPE	COMMENTS
CTN-1				

N/A WHEN NOT SPECIFIED

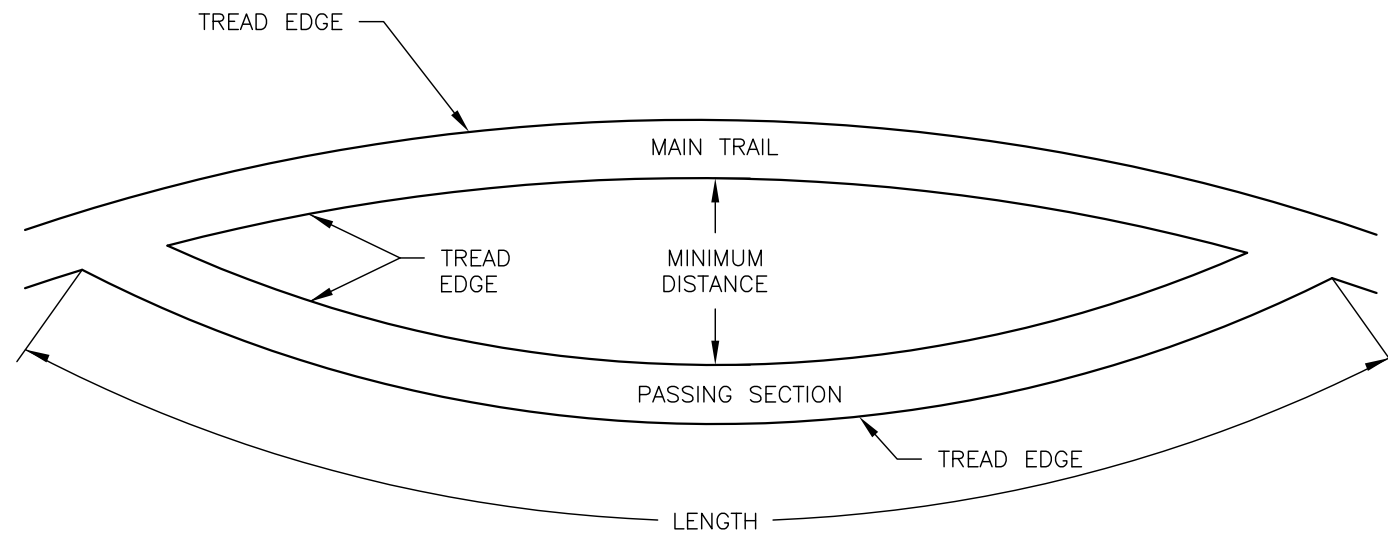


PLAN VIEW
RADIUS POINT AND CENTER LINE OF CLIMBING TURN WILL STAKED ON THE GROUND.



SECTION A-A

NOTE:
CONSTRUCT CONSTANT GRADE THROUGH BOTH APPROACH SECTIONS.

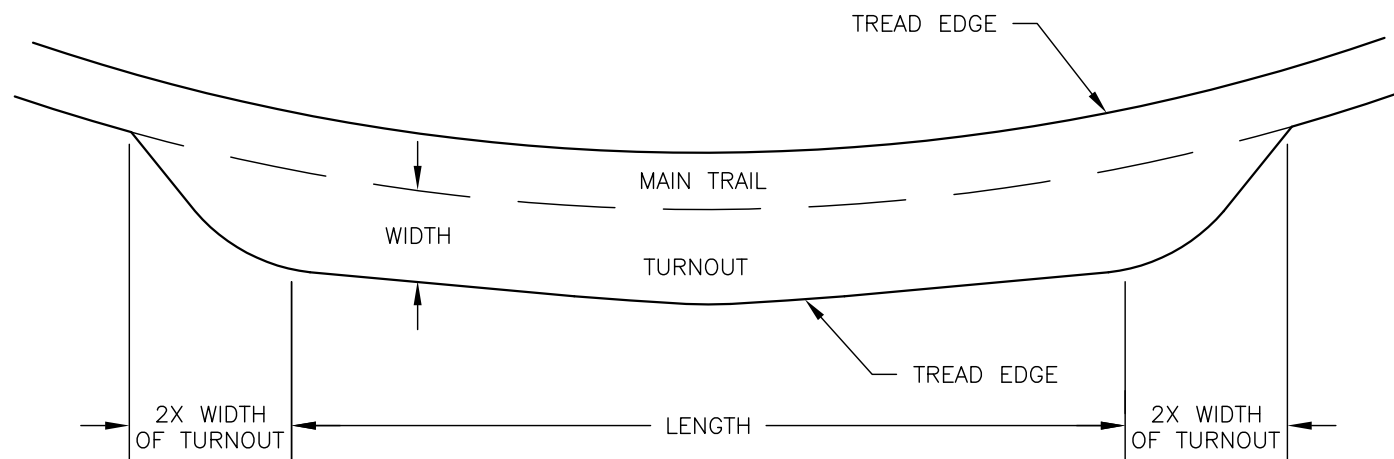


PASSING SECTION
 FULL BENCH CONSTRUCTION
 AS STAKED IN THE FIELD

PASSING SECTION

PASSING SECTION				
TYPICAL ID	WIDTH	LENGTH	MINIMUM DISTANCE	COMMENTS
TPS-1				

NOTE:
 PASSING SECTIONS AND TURNOUTS SHALL BE CONSTRUCTED TO THE SAME STANDARD AS THE MAIN TRAIL UNLESS NOTED IN THE COMMENTS.



TURNOUT SECTION

TURNOUT SECTION

TURNOUT SECTION			
TYPICAL ID	WIDTH	LENGTH	COMMENTS
TOS-1			

NOTE:
 TURNOUT SECTIONS AND TURNOUTS SHALL BE CONSTRUCTED TO THE SAME STANDARD AS THE MAIN TRAIL UNLESS NOTED IN THE COMMENTS.

NATURAL FORD STRUCTURE

TYPICAL ID	FORD WIDTH	APPROACHES				SIDE RETAINERS*		MINIMUM ROCK SIZE			COMMENTS
		WIDTH	GRADE	SURFACE TYPE	SURFACE DEPTH	TYPE	SIZE	CHECK DAM**** TYPE	STEPPING ROCK (LBS)	RETAINER ROCK (LBS)	
NFD-1				S		R					

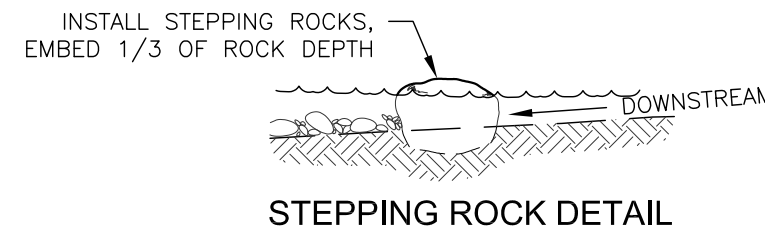
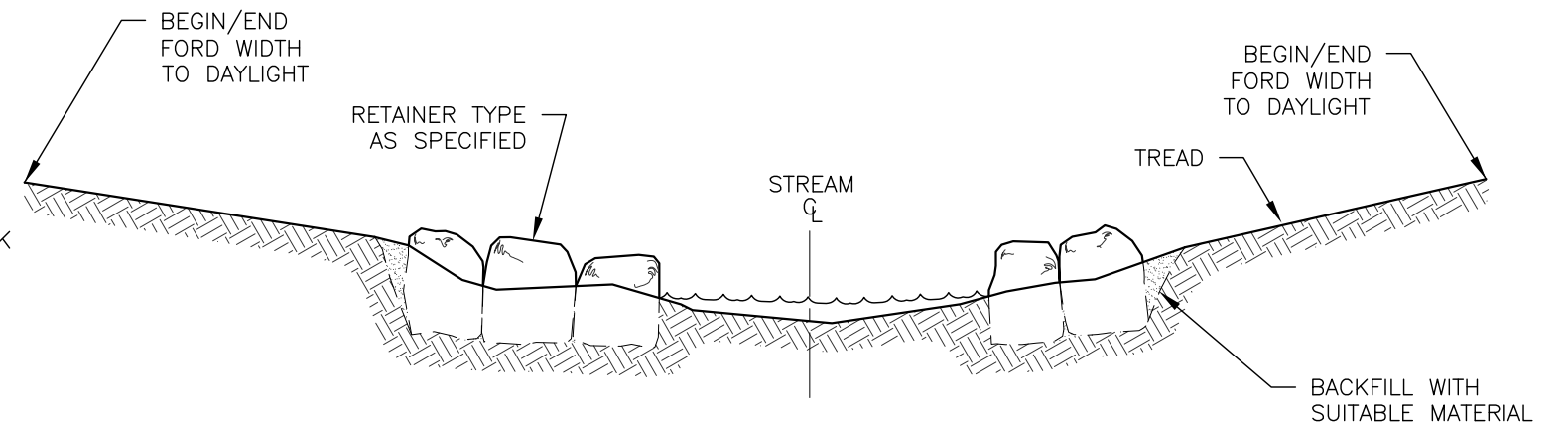
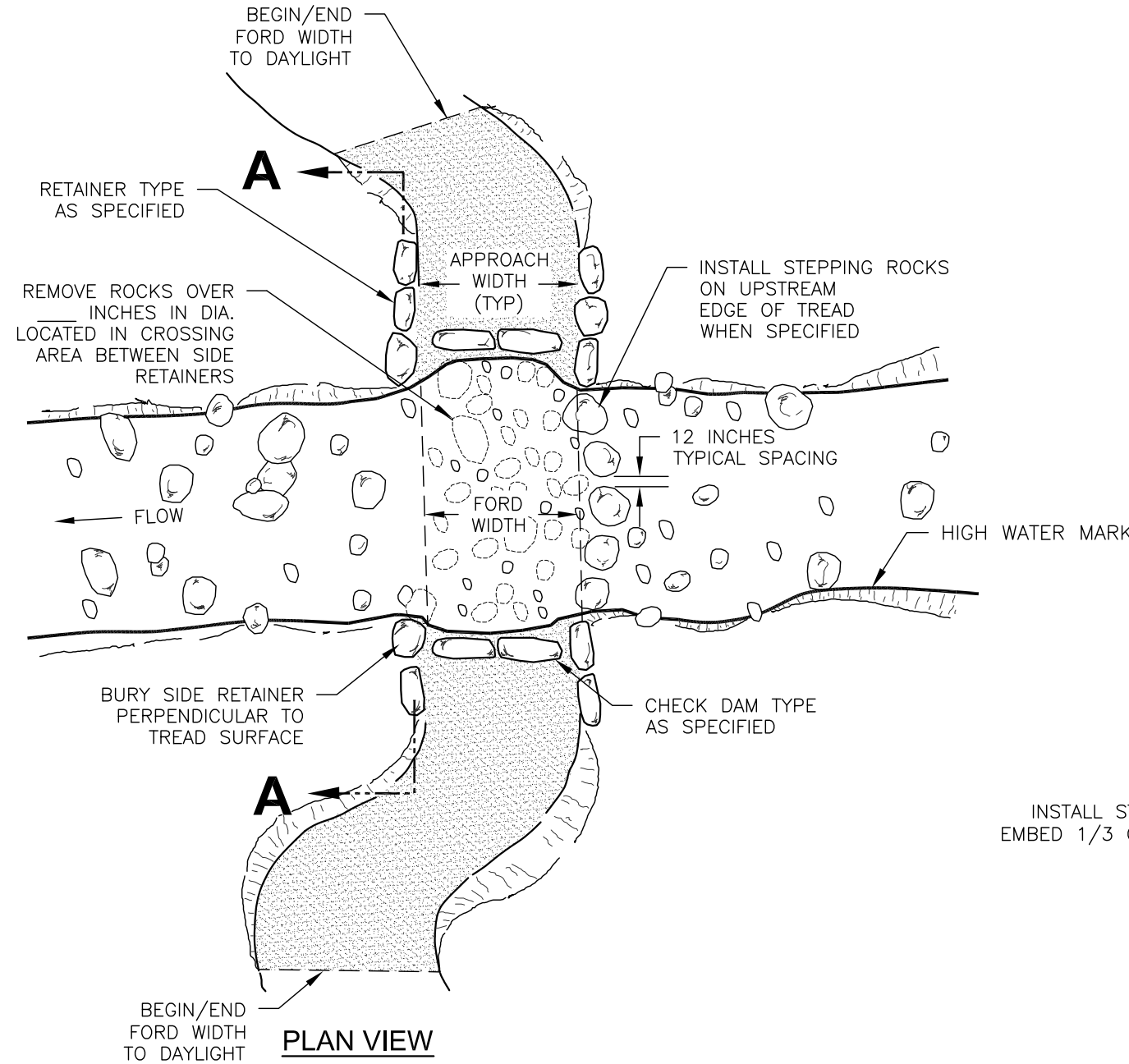
N/A WHEN NOT APPLICABLE

*FOR TYPICAL RETAINERS SEE SHEET STD_911-03

****FOR CHECK DAM SEE SHEET STD_928-01

SURFACE COURSE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
S1	PITRUN		
S2	AGGREGATE		
S3	CLAY		
S4	WOODCHIPS		
S5			



CONSTRUCTED FORD - ROCK STRUCTURE

TYPICAL ID	FORD LENGTH	APPROACHES		RETAINERS*		FOUNDATION**			SURFACE COURSE			ROCK DAM		COMMENTS		
		% GRADE		TYPE	LENGTH	TYPE	DEPTH	LENGTH	GEOTEXTILE TYPE	TYPE	DEPTH	LENGTH	MINIMUM LENGTH		MINIMUM FACE ROCK SIZE (LBS)	STEPPING ROCK MINIMUM SIZE (LBS)
		NEAR	FAR													
RF1-1				R		F			G	S						

N/A WHEN NOT REQUIRED
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03
 **FOR FOUNDATIONS SEE SECTION STD_918

GEOTEXTILE TYPE

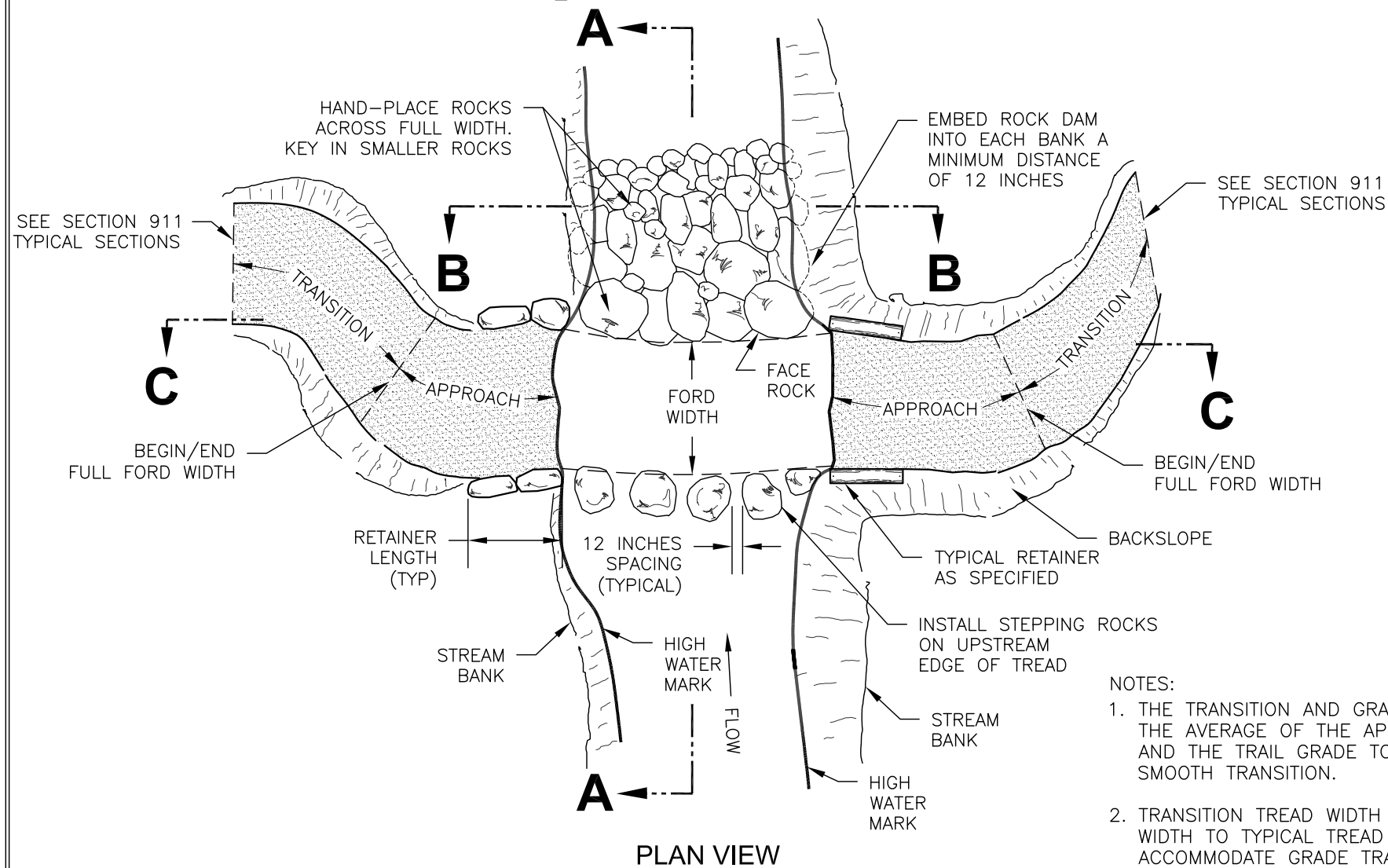
TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3	GEOGRID	
G4		
G5		
G6		

FOUNDATION MATERIAL TYPE

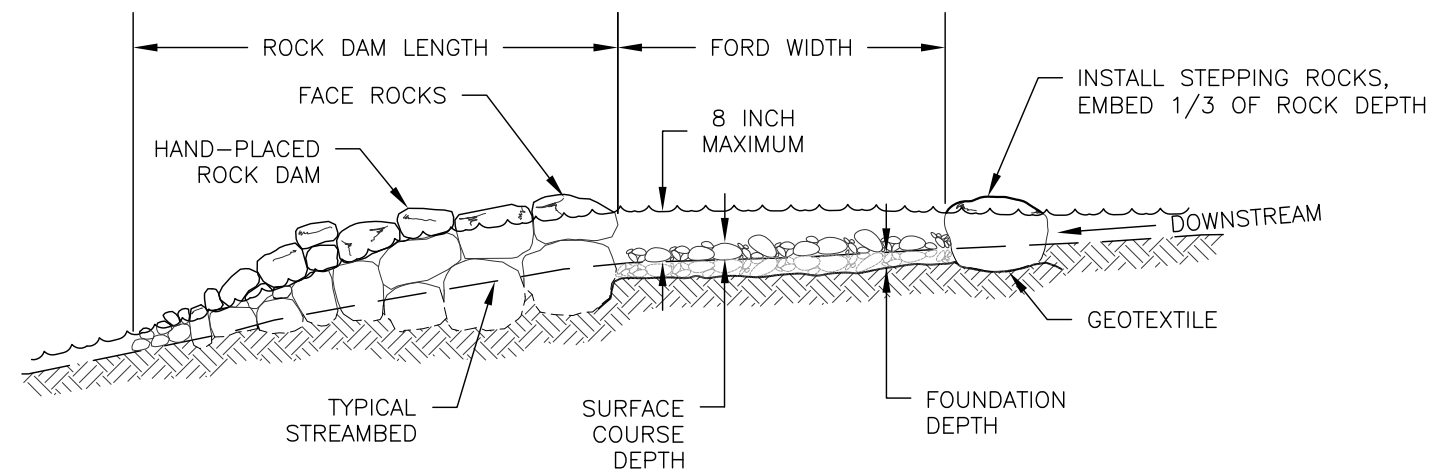
TYPE	MATERIAL	COMMENTS
F1	GRAVEL	SMALL ROCKS LESS THAN 3 INCHES
F2	PAVING BLOCK	
F3	GEOCELL	
F4		

SURFACE COURSE MATERIAL TYPE

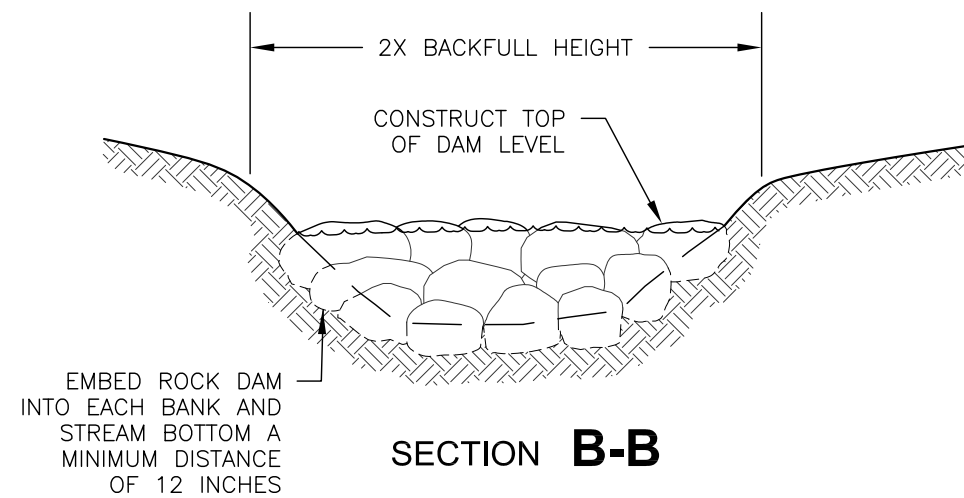
TYPE	MATERIAL	GRADATION	COMMENTS
S1	PITRUN		
S2	AGGREGATE		
S3	CLAY		
S4	WOODCHIPS		
S5			



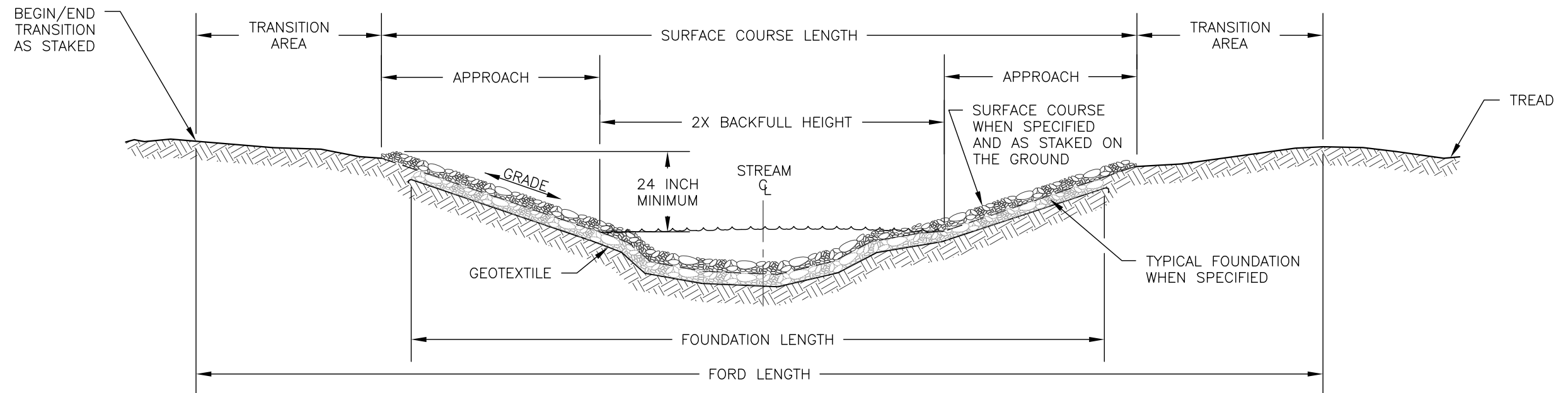
- NOTES:
1. THE TRANSITION AND GRADE SHALL BE THE AVERAGE OF THE APPROACH GRADE AND THE TRAIL GRADE TO CREATE A SMOOTH TRANSITION.
 2. TRANSITION TREAD WIDTH FROM FORD WIDTH TO TYPICAL TREAD WIDTH TO ACCOMMODATE GRADE TRANSITION.



SECTION **A-A**



SECTION **B-B**

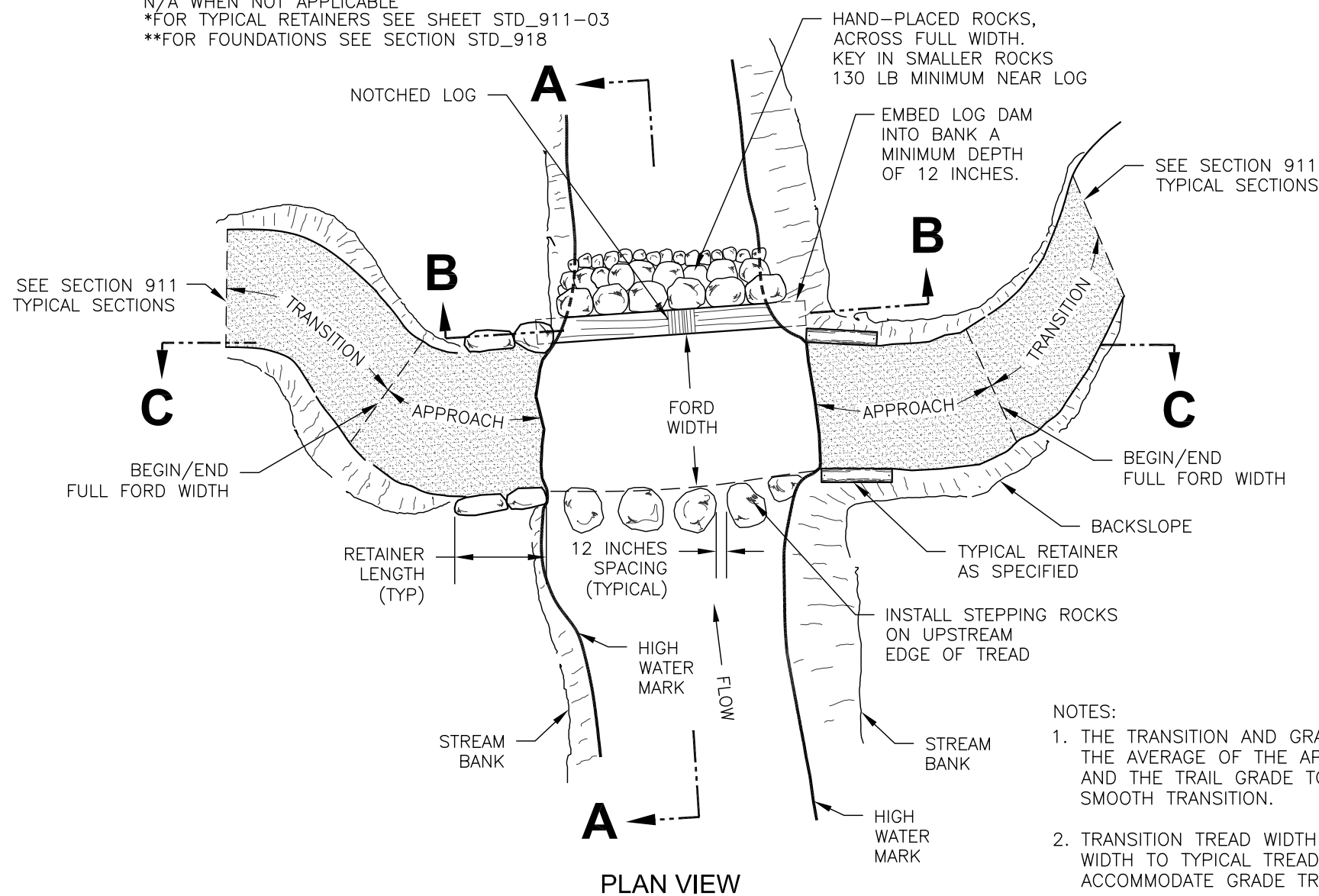


SECTION **C-C**

CONSTRUCTED FORD - LOG STRUCTURE

TYPICAL ID	FORD WIDTH	APPROACHES		RETAINER*		FOUNDATION**				SURFACE COURSE			LOG DAM		COMMENTS	
		% GRADE		TYPE	SIZE	TYPE	DEPTH	LENGTH	GEOTEXTILE TYPE	TYPE	DEPTH	LENGTH	SPECIES TYPE	SIZE		
		NEAR	FAR													%
LF1-1				R		F			G	S			R			

N/A WHEN NOT APPLICABLE
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03
 **FOR FOUNDATIONS SEE SECTION STD_918



- NOTES:
1. THE TRANSITION AND GRADE SHALL BE THE AVERAGE OF THE APPROACH GRADE AND THE TRAIL GRADE TO CREATE A SMOOTH TRANSITION.
 2. TRANSITION TREAD WIDTH FROM FORD WIDTH TO TYPICAL TREAD WIDTH TO ACCOMMODATE GRADE TRANSITION.

GEOTEXTILE TYPE

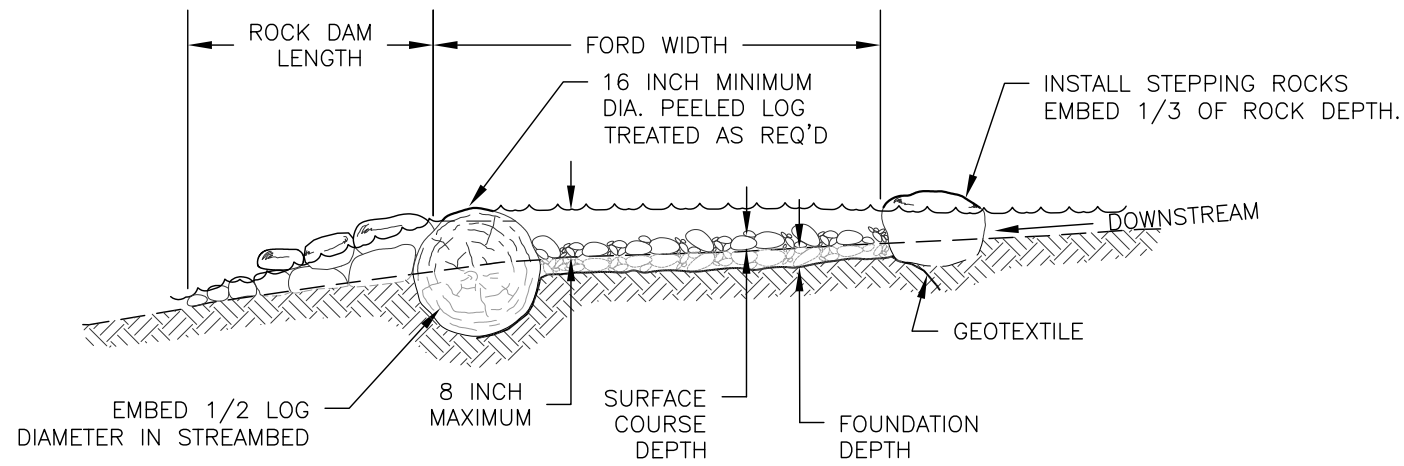
TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3	GEOGRID	
G4		
G5		
G6		

FOUNDATION MATERIAL TYPE

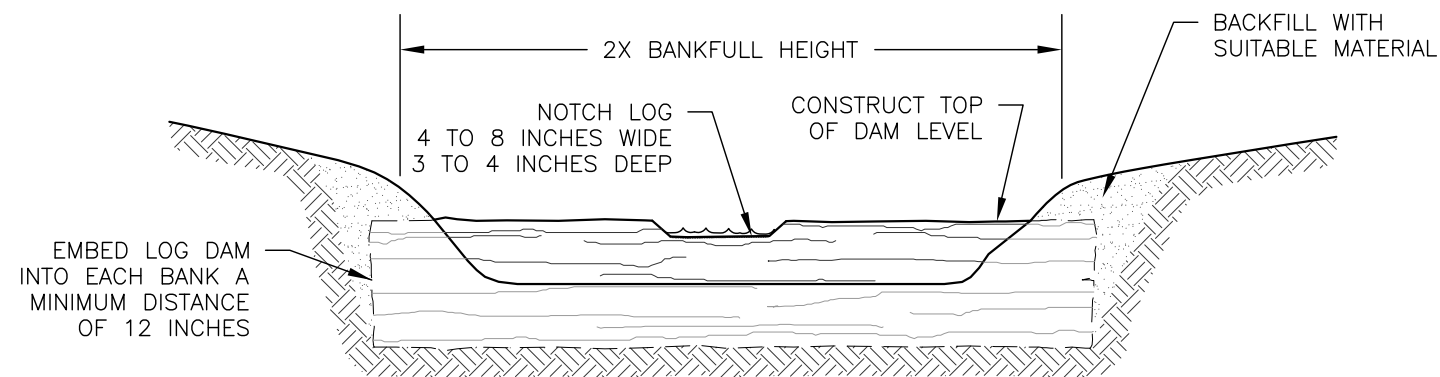
TYPE	MATERIAL	COMMENTS
F1	GRAVEL	SMALL ROCKS LESS THAN 3 INCHES
F2	PAVING BLOCK	
F3	GEOCELL	
F4		

SURFACE COURSE MATERIAL TYPE

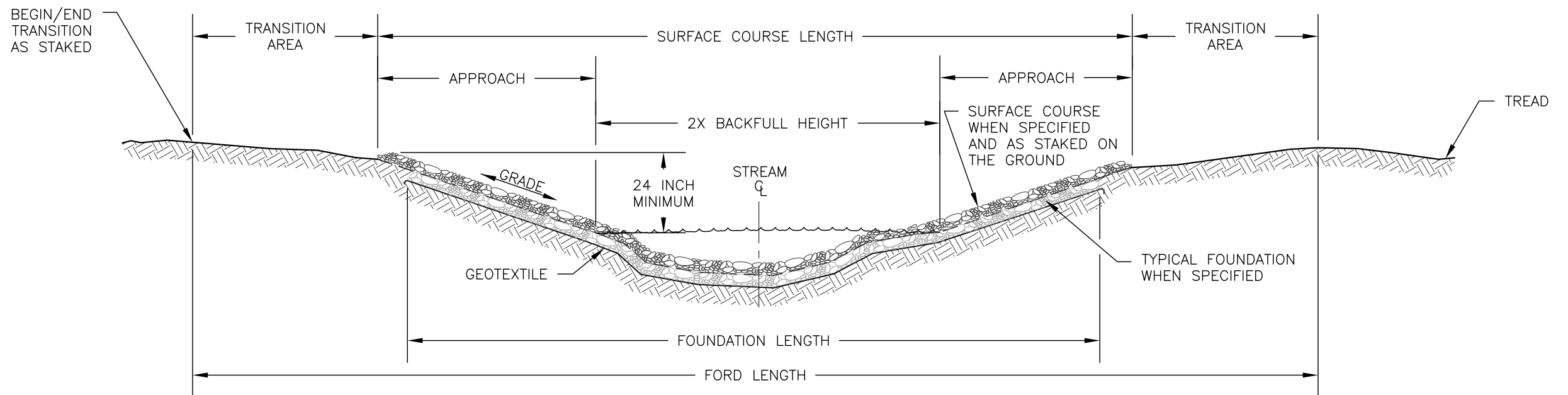
TYPE	MATERIAL	GRADATION	COMMENTS
S1	PITRUN		
S2	AGGREGATE		
S3	CLAY		
S4	WOODCHIPS		
S5			



SECTION **A-A**



SECTION **B-B**

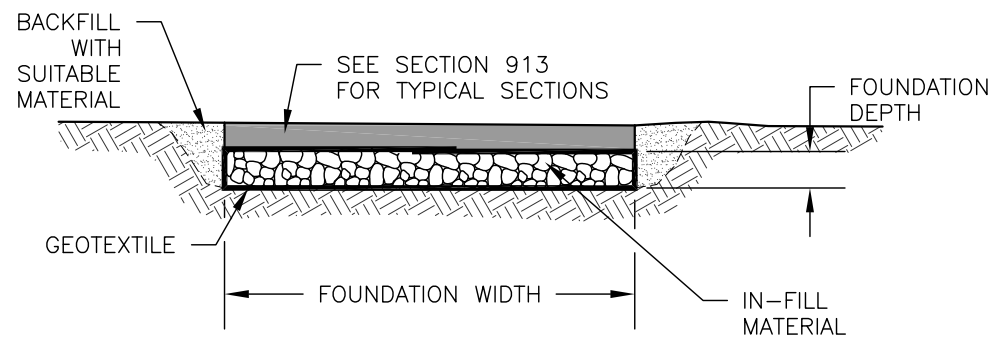


SECTION **C-C**

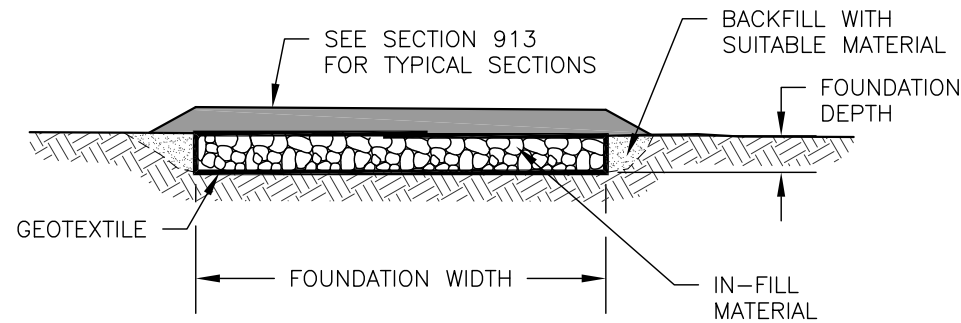
ROCK FOUNDATIONS

TYPICAL ID	SECTION TYPE	GEOTEXTILE TYPE	FOUNDATION			RETAINER*	COMMENTS
			DEPTH	WIDTH	IN-FILL MATERIAL TYPE	TYPE	
RKF-1		G			FM	R	

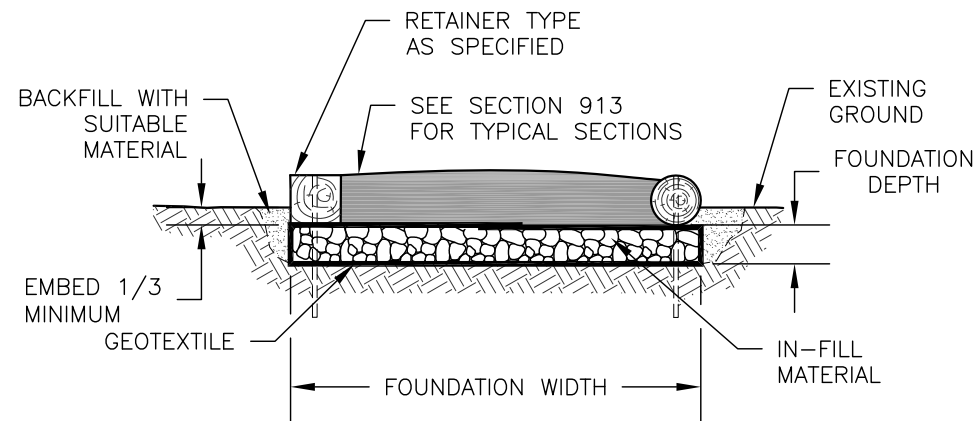
N/A WHEN NOT APPLICABLE
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03



(A) EXCAVATED SECTION



(B) RAISED SECTION



(C) RETAINER SECTION

NOTE:

1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
3. OVERLAP GEOTEXTILE A MINIMUM OF 12 INCHES AT CENTER AND AT ENDS.
4. A 6 INCH MINIMUM COVER IS REQUIRED OVER ALL GEOTEXTILE AND GEOCELL FOUNDATIONS.

GEOTEXTILE TYPE

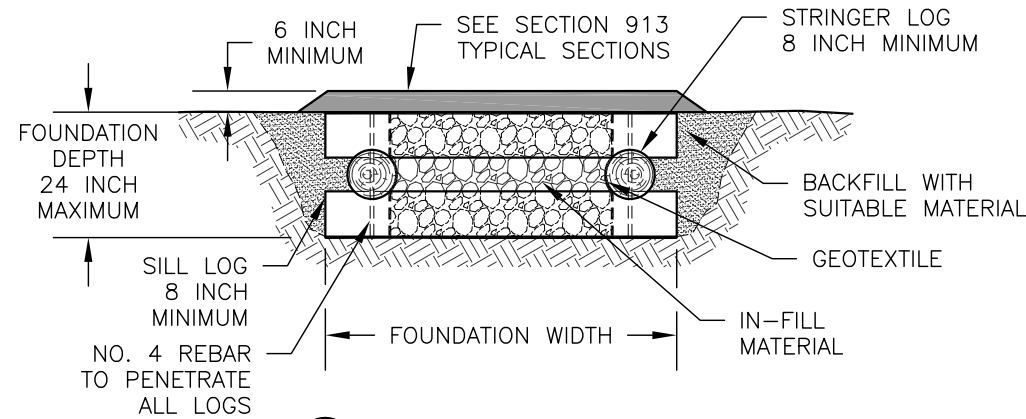
TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3		

TYPE	MATERIAL	ROCK SIZE	GRADATION %	COMMENTS
FM1	AGGREGATE	1 INCH MINUS		
FM2	COARSE AGGREGATE	3 INCH MINUS		
FM3	ROCK	3 TO 6 INCH		
FM4	ROCK	4 TO 8 INCH		
FM5	HEAVY ROCK	8 INCH PLUS		
FM6				

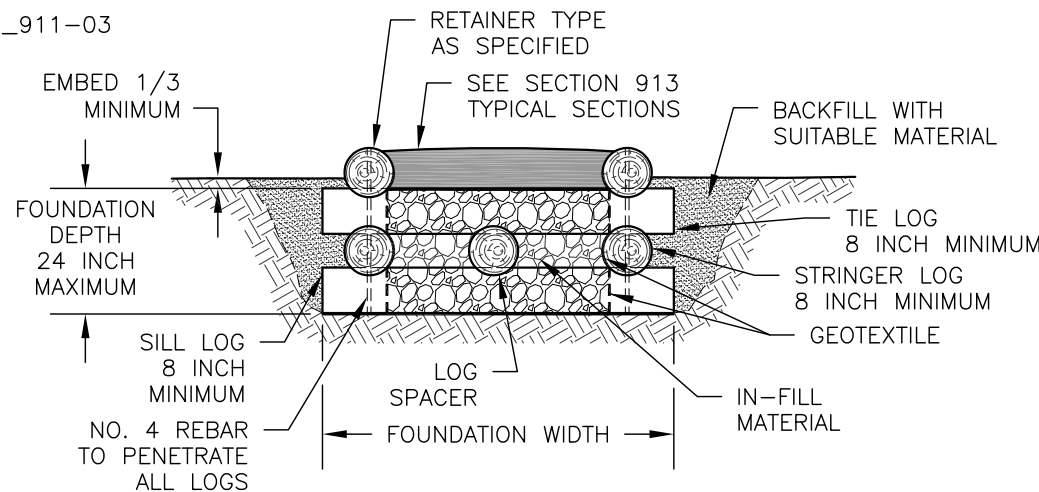
CRIB FOUNDATIONS

TYPICAL ID	SECTION TYPE	GEOTEXTILE TYPE	FOUNDATION					RETAINER*	COMMENTS
			DEPTH	WIDTH	IN-FILL MATERIAL TYPE	LOG SIZE	PRESERV. TYPE	TYPE	
CBF-1		G			FM		P	R	

N/A WHEN NOT APPLICABLE
*FOR TYPICAL RETAINERS SEE SHEET STD_911-03



A CRIB LOG SECTION



B CRIB LOG W/RETAINERS SECTION

PROVIDE A NOTCH DEPTH BETWEEN 1/4 AND 1/3 THE LOG DIAMETER. VARY NOTCH DEPTH AND WIDTH AS REQUIRED TO OBTAIN SNUG FIT. DO NOT EXCEED 1/2 INCH SPACE BETWEEN LOGS. LOGS TO BE INSTALLED WITH NOTCH FACES DOWN.



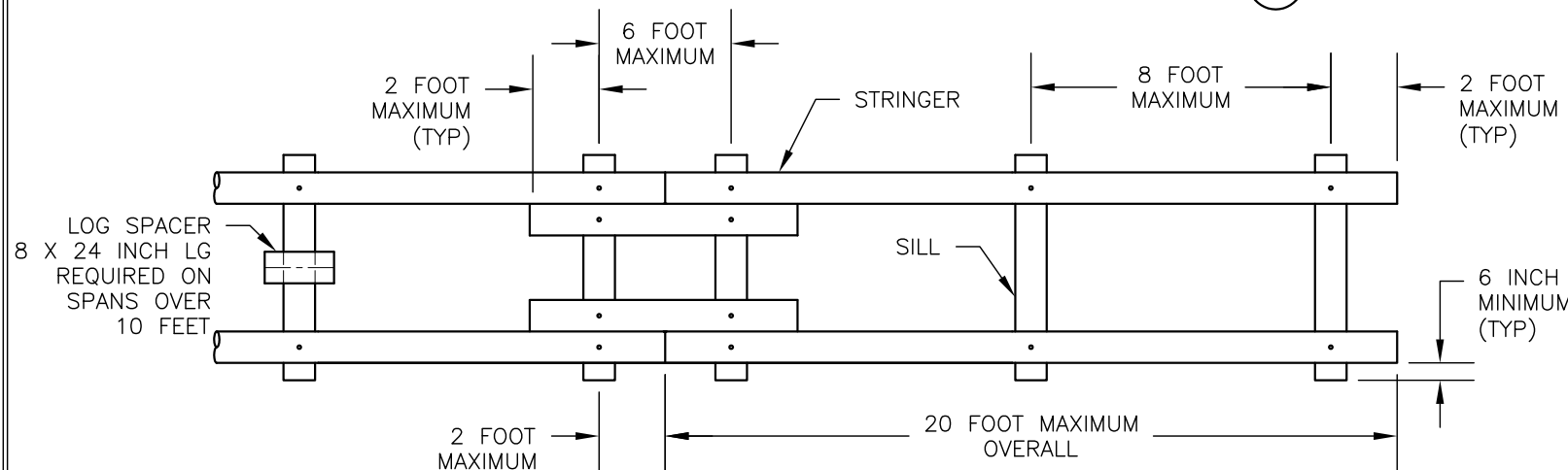
NOTCHING DETAIL

GEOTEXTILE TYPE

TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3		

IN-FILL MATERIAL TYPE

TYPE	MATERIAL	ROCK SIZE	GRADATION %	COMMENTS
FM1	AGGREGATE	1 INCH MINUS		
FM2	COARSE AGGREGATE	3 INCH MINUS		
FM3	ROCK	3 TO 6 INCH		
FM4	ROCK	4 TO 8 INCH		
FM5	HEAVY ROCK	8 INCH PLUS		
FM6				



SILL AND STRINGER LAYOUT

NOTES:

1. STRAIGHTNESS REQUIREMENTS: THE TRUE CENTER OF EACH LOG DEVIATES NO MORE THAN 2 INCHES FROM A STRAIGHT LINE BETWEEN THE CENTERS OF THE ENDS OF THE LOG.
2. PRE-DRILL HOLES FOR REBAR TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS.
3. RECESS END OF REBAR 1/2 INCH BELOW TOP OF TIMBER HEADER LOG. PLACE REBAR A MINIMUM OF 10 INCHES FROM EACH END OF TIMBER WITH MAXIMUM REBAR SPACING AS SHOWN ON THE DRAWINGS.
4. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
5. ALL FIELD DRILLED HOLES AND CUTS SHALL BE FIELD TREATED.

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

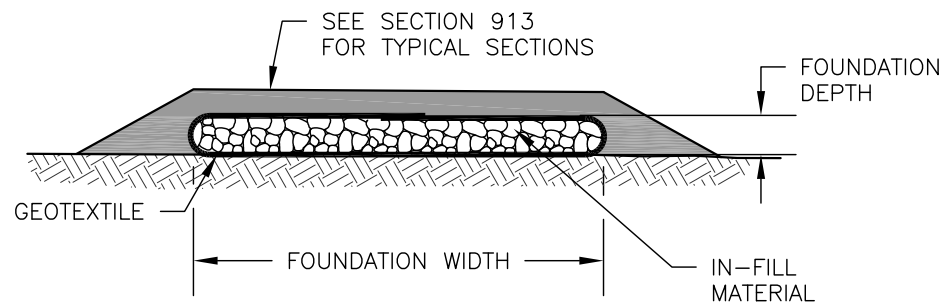
TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

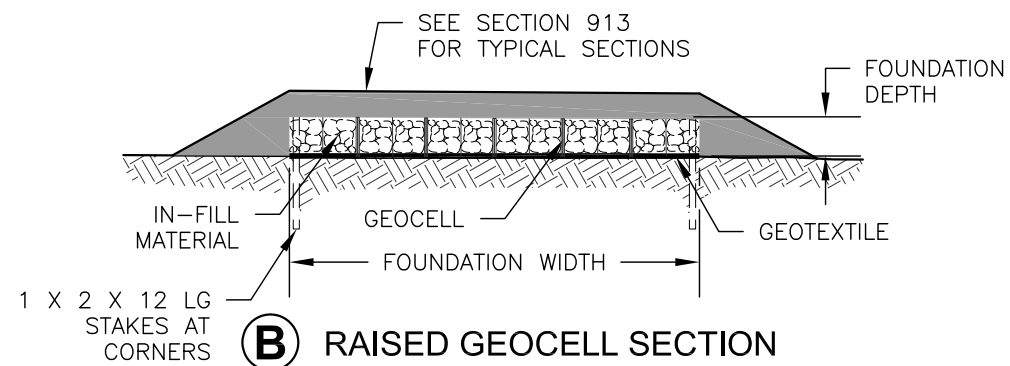
GEOSYNTHETIC FOUNDATIONS

TYPICAL ID	SECTION TYPE	GEOTEXTILE TYPE	GEOSYNTHETIC TYPE	FOUNDATION				COMMENTS
				DEPTH	WIDTH	IN-FILL MATERIAL TYPE	LOG SIZE	
GEF-1		G	G			FM		

N/A WHEN NOT APPLICABLE



(A) RAISED ENVELOPED SECTION



(B) RAISED GEOCELL SECTION

GEOSYNTHETIC TYPE

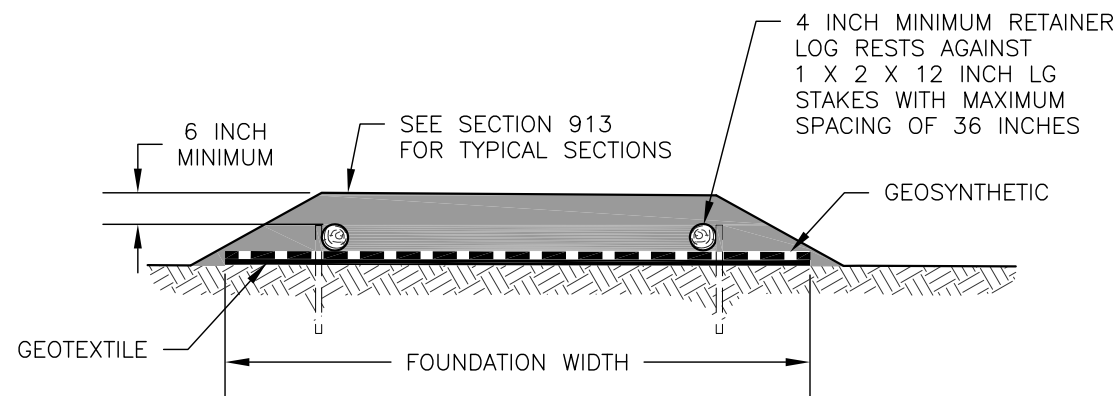
TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3	GEOCELL	
G4	GEOGRID	
G5		

NOTE:

1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
3. OVERLAP GEOTEXTILE A MINIMUM OF 12 INCHES AT CENTER AND AT ENDS.
4. A 6 INCH MINIMUM COVER IS REQUIRED OVER ALL GEOTEXTILE AND GEOCELL FOUNDATIONS.

IN-FILL MATERIAL TYPE

TYPE	MATERIAL	ROCK SIZE	GRADATION %	COMMENTS
FM1	AGGREGATE	1 INCH MINUS		
FM2	COARSE AGGREGATE	3 INCH MINUS		
FM3	ROCK	3 TO 6 INCH		
FM4	ROCK	4 TO 8 INCH		
FM5	HEAVY ROCK	8 INCH PLUS		
FM6				

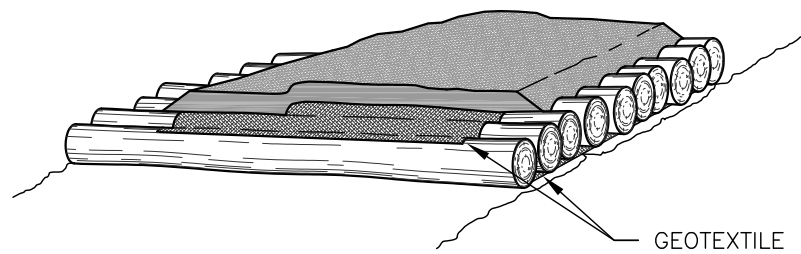


(C) RAISED REINFORCED SECTION

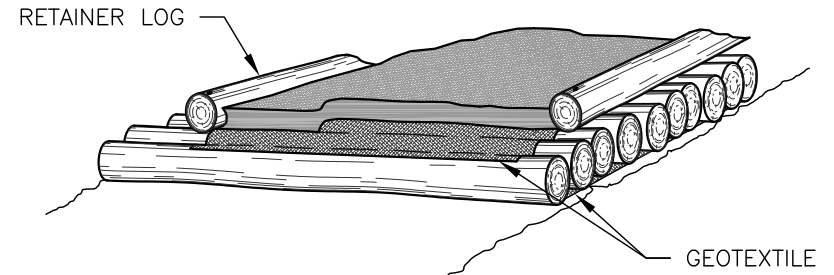
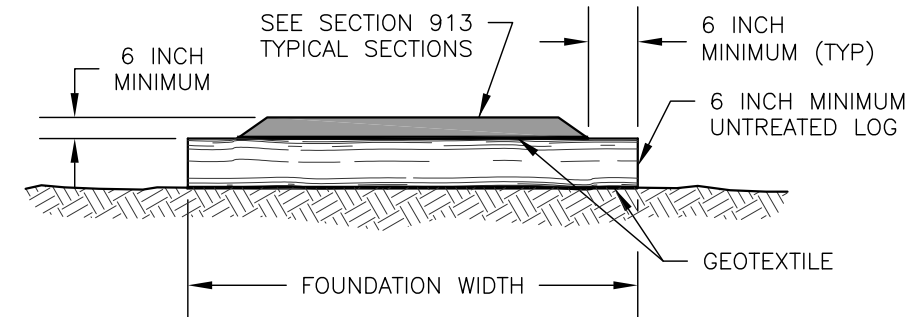
CORDUROY FOUNDATION

TYPICAL ID	SECTION TYPE	GEOTEXTILE		FOUNDATION			COMMENTS
		TYPE		WIDTH	LOG SIZE	SUITABLE MATERIAL DEPTH	
		TOP	BTM				
CDF-1		G	G				

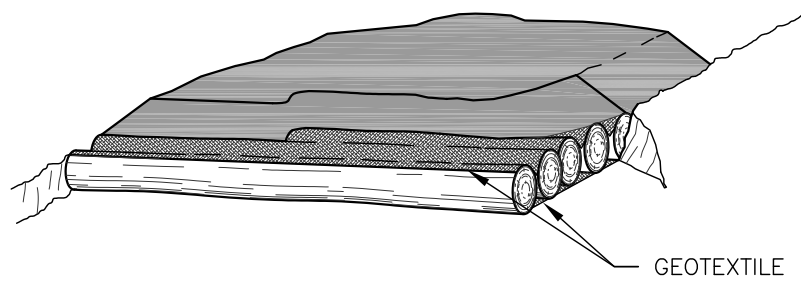
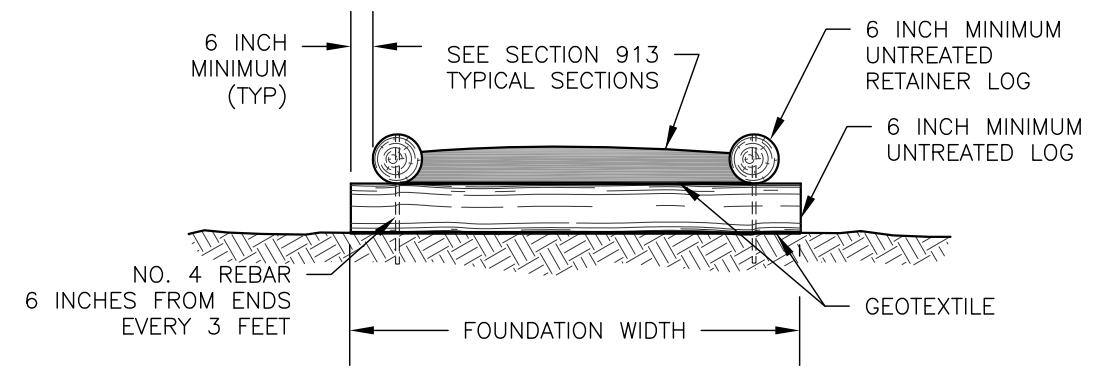
N/A WHEN NOT APPLICABLE



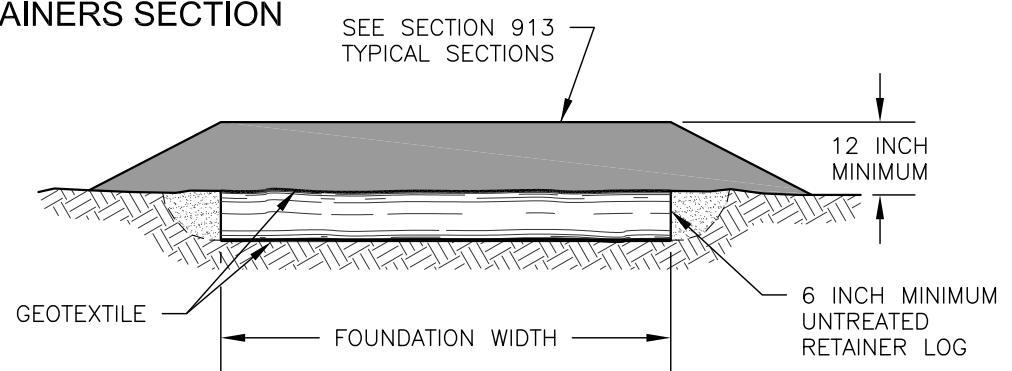
(A) CORDUROY SECTION



(B) CORDUROY W/ RETAINERS SECTION



(C) EXCAVATED CORDUROY SECTION



- NOTE:
- OVERLAP GEOTEXTILE A MINIMUM OF 12 INCHES AT ENDS.
 - A 6 INCH MINIMUM COVER IS REQUIRED OVER GEOTEXTILE FOUNDATIONS.
 - ADJACENT LOGS SHALL NOT HAVE AN ELEVATION DIFFERENCE OF MORE THAN 1 INCH.

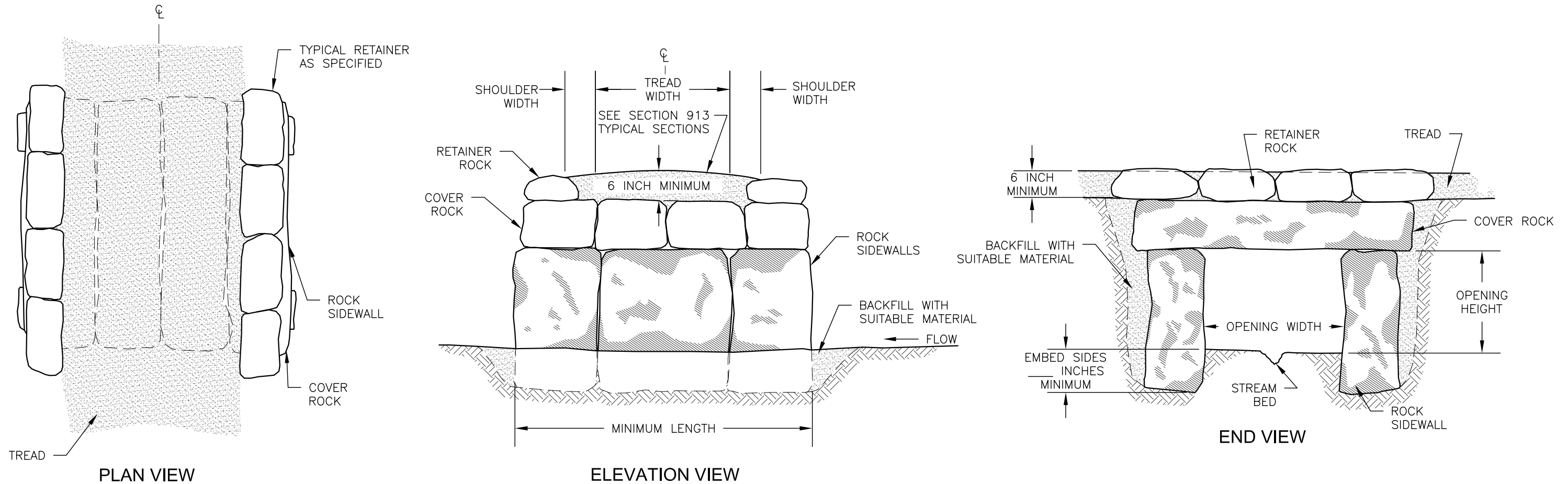
GEOTEXTILE TYPE

TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3		

ROCK CULVERT

TYPICAL ID	ROCK CULVERT			ROCK SIDEWALL		COVER ROCK (FLAT)		RETAINER ROCK*		COMMENTS
	OPENING WIDTH	OPENING HEIGHT	MINIMUM LENGTH	MINIMUM WEIGHT (LBS)	MINIMUM THICKNESS (INCHES)	MINIMUM WEIGHT (LBS)	MINIMUM THICKNESS (INCHES)	MINIMUM WEIGHT (LBS)	MAXIMUM WEIGHT (LBS)	
RCV-1										

N/A WHEN NOT APPLICABLE
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03

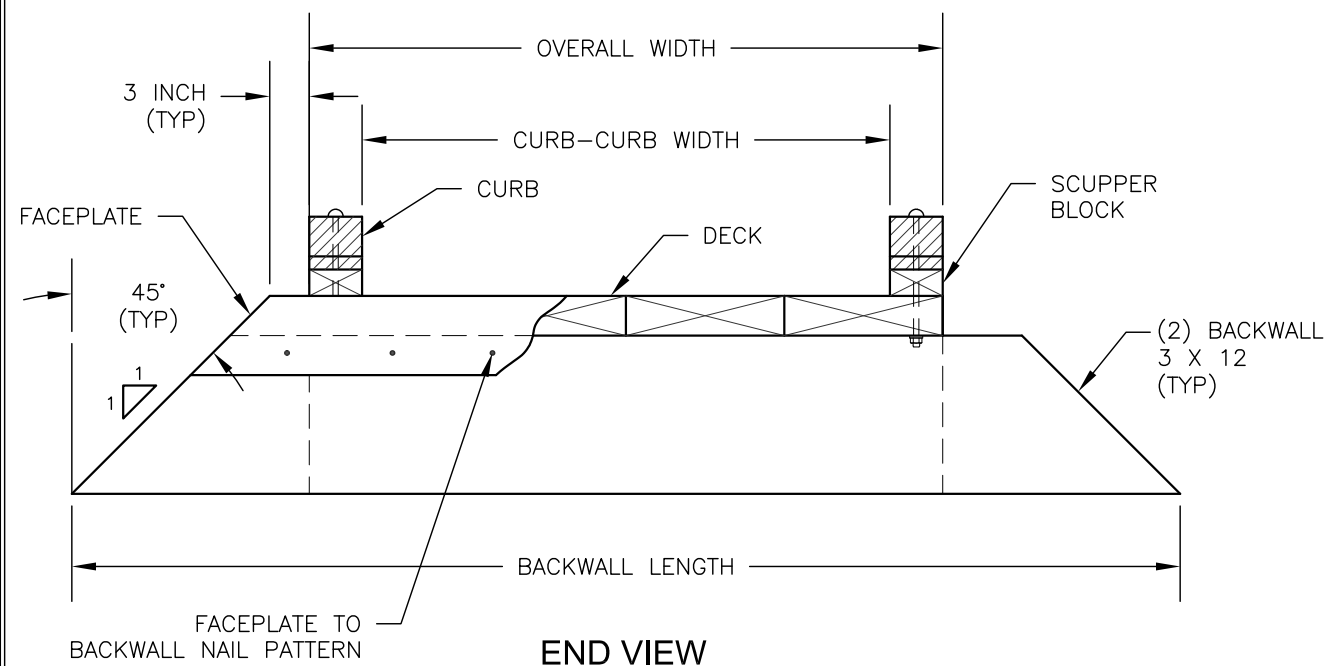


NOTE:
 1. COMPACT BACKFILL IN 6 INCH LIFTS
 UNTIL NO VISUAL DISPLACEMENT.

TREATED TIMEBER BOX CULVERT & CURB

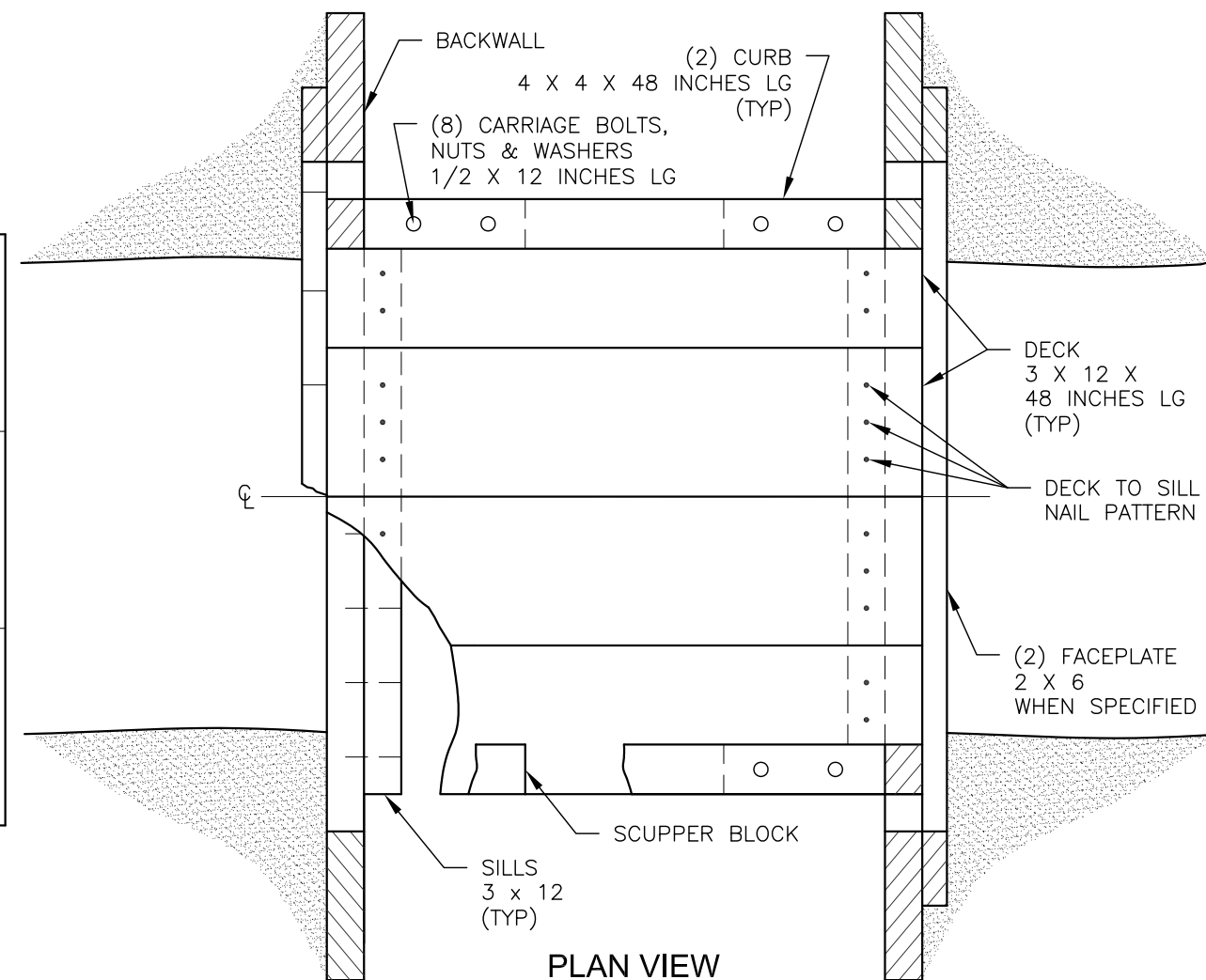
TYPICAL ID	CURB-CURB WIDTH	OVERALL WIDTH	BACKWALL/SILL/FACEPLATE			DECK		CURBS/SCUPPER BLOCKS		COMMENTS
			LENGTH	SPECIES	PRESERV. TYPE	SPECIES	PRESERV. TYPE	SPECIES	PRESERV. TYPE	
TCV-1					P		P		P	

N/A WHEN NOT APPLICABLE

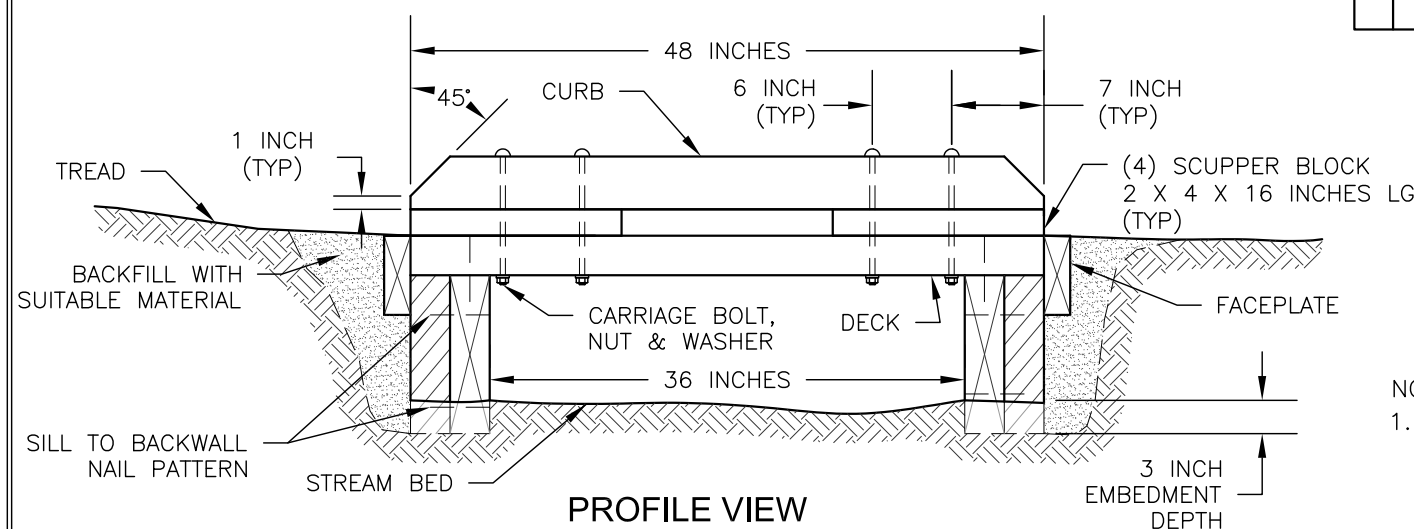


END VIEW

NAIL PATTERN	FACEPLATE TO BACKWALL	30d NAILS @ 12 INCHES ON CENTER.
	SILL TO BACKWALL	30d NAILS IN TWO 6 INCH STAGGERED ROWS, 2 INCH MINIMUM FROM EDGE OF SILL.
	DECK TO SILL	(3) 60d NAILS THROUGH EACH END OF DECK PLANK INTO SILL, 6 INCHES FROM EDGE OF DECK PLANK.



PLAN VIEW



PROFILE VIEW

- NOTES:
1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

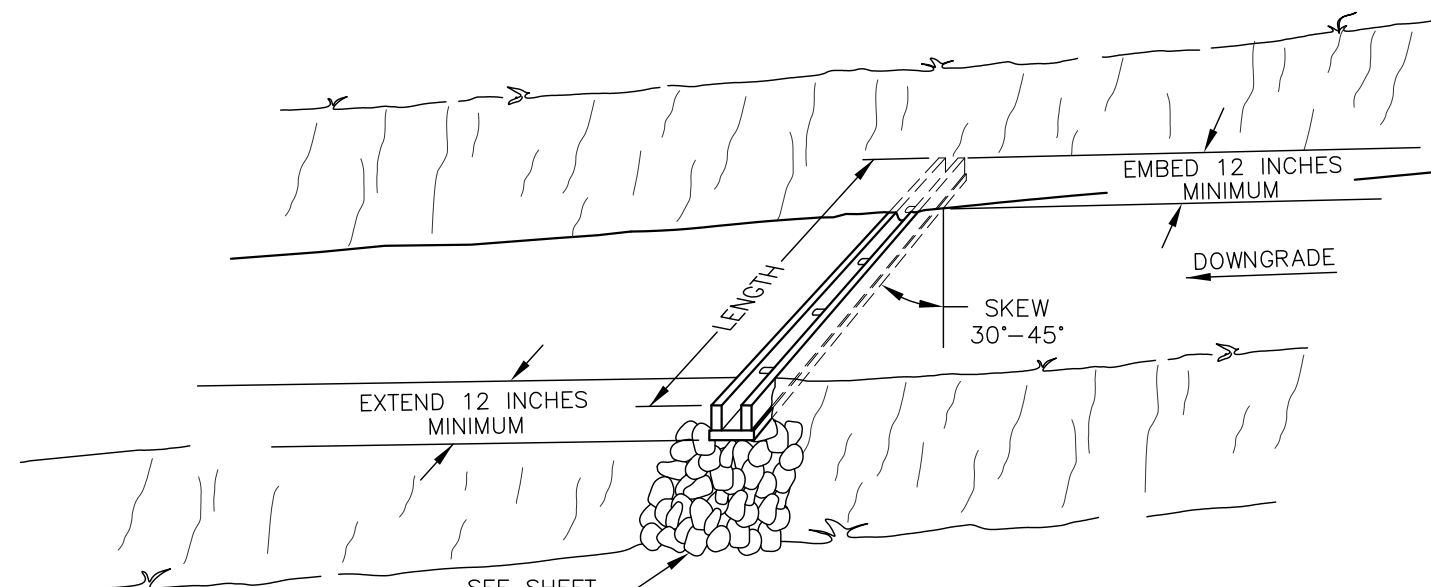
SKEW

TRAIL GRADE	SKEW ANGLE
<5%	45° MAX
>5%	30° MIN

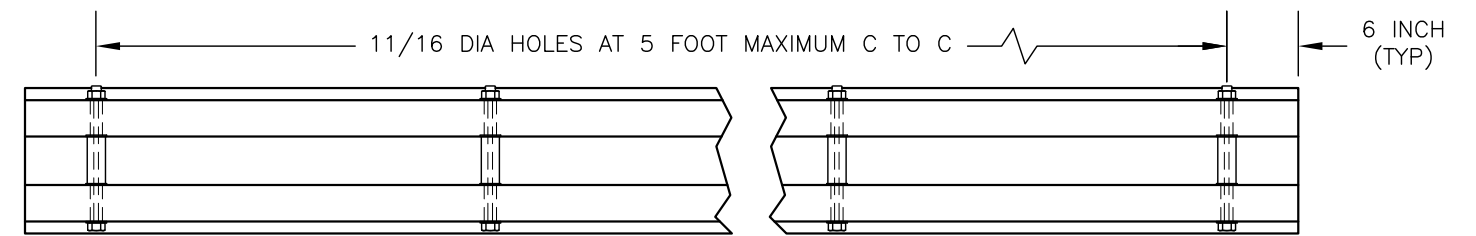
OPEN-TOP DRAIN

TYPICAL ID	SPECIES	PRESERV. TYPE	ROCK*** SPILLWAY	SKEW	COMMENTS
OTD-1		P			

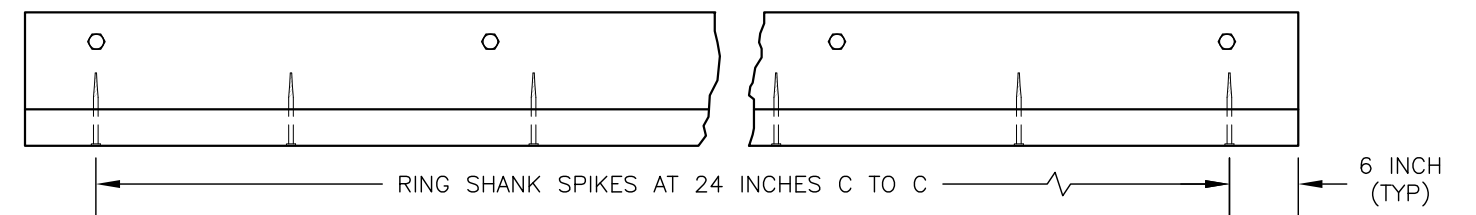
N/A WHEN NOT APPLICABLE
 ***FOR ROCK SPILLWAY SEE SHEET STD_923-10-01



PERSPECTIVE VIEW



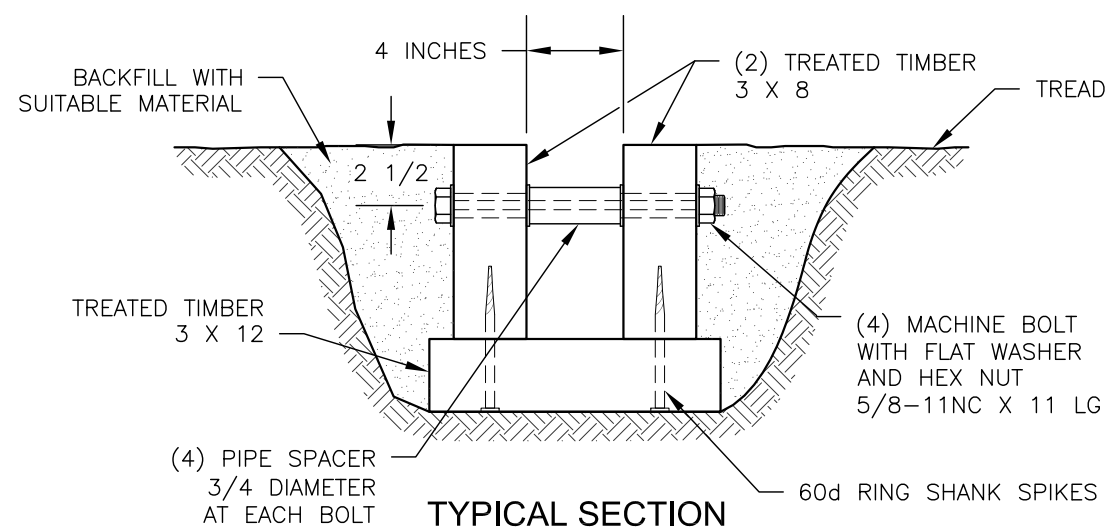
PLAN VIEW



ELEVATION VIEW

NOTES:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.



TYPICAL SECTION

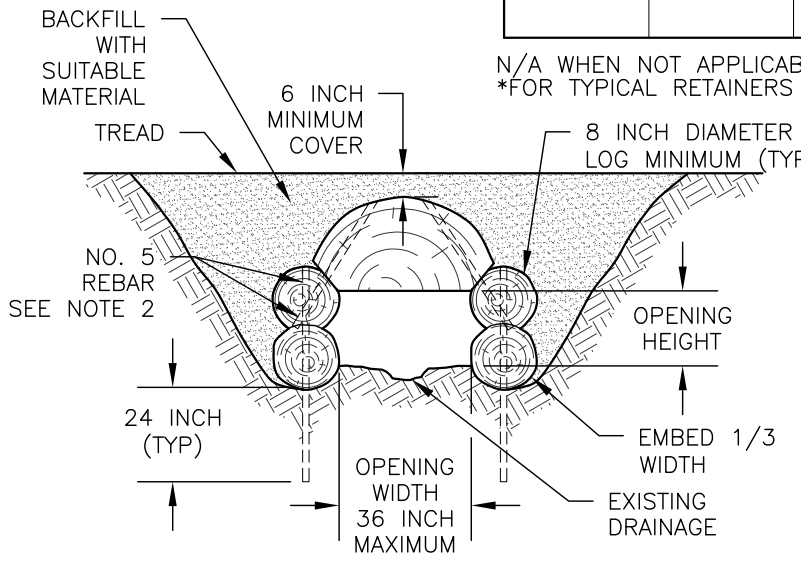
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE
 WB = WATERBORNE
 OT = OIL-BORNE

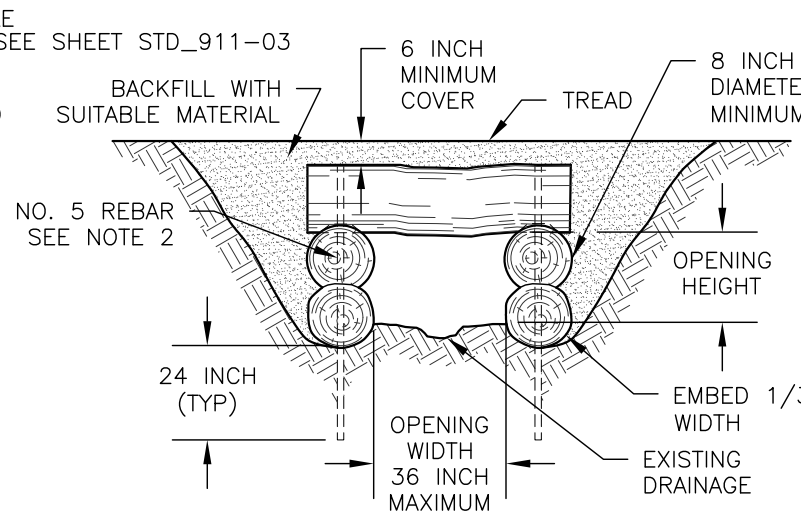
USE CATEGORY
 UC3B = ABOVE GROUND - EXPOSED
 UC4A = GROUND CONTACT - GENERAL USE
 UC4B = GROUND CONTACT - HEAVY DUTY

LOG CULVERT

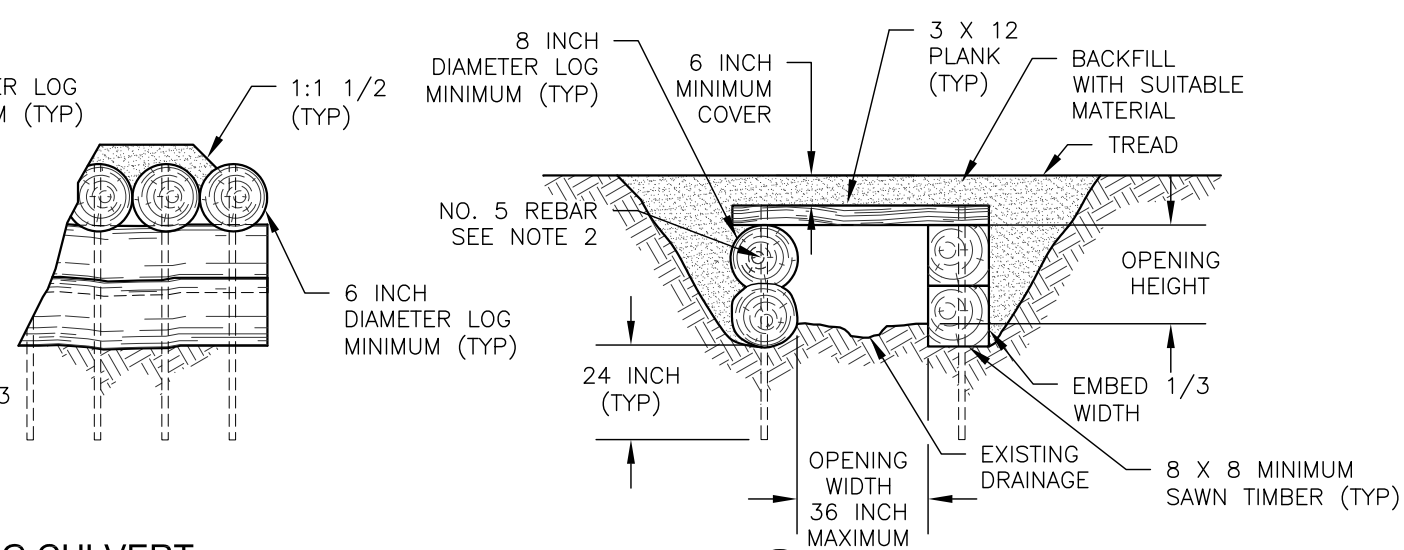
TYPICAL ID	CULVERT						FOUNDATION LOG			RETAINER*	COMMENTS
	LENGTH	SECTION TYPE	OPENING WIDTH	OPENING HEIGHT	MATERIAL TYPE	PRESERV. TYPE	MATERIAL TYPE	SIZE	PRESERV. TYPE	TYPE	
LCV-1										R	



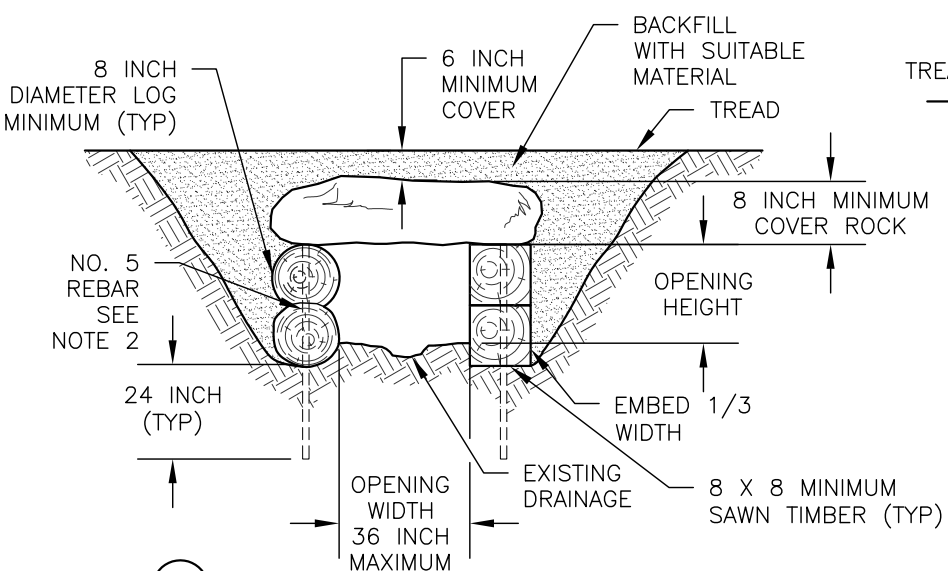
A SINGLE SPLIT/ROUND LOG CULVERT
RETAINER NOT SHOWN FOR CLARITY



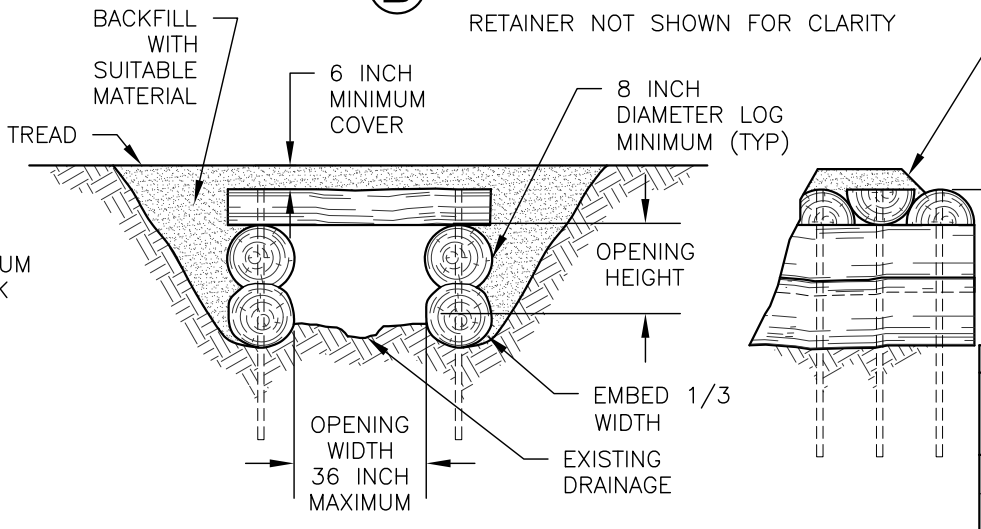
B SOLID MULTI-LOG CULVERT
RETAINER NOT SHOWN FOR CLARITY



C PLANK
RETAINER NOT SHOWN FOR CLARITY



D ROCK-LOG/TIMBER CULVERT
RETAINER NOT SHOWN FOR CLARITY



E SPLIT MULTI-LOG CULVERT
RETAINER NOT SHOWN FOR CLARITY

- NOTES:
- PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS.
 - RECESS END OF REBAR 1/2 INCH BELOW TOP OF TIMBER. PLACE REBAR 6 INCHES FROM EACH END OF TIMBER WITH MAXIMUM REBAR SPACING OF 36 INCHES.
 - COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE: WB = WATERBORNE, OT = OIL-BORNE
 USE CATEGORY: UC3B = ABOVE GROUND - EXPOSED, UC4A = GROUND CONTACT - GENERAL USE, UC4B = GROUND CONTACT - HEAVY DUTY

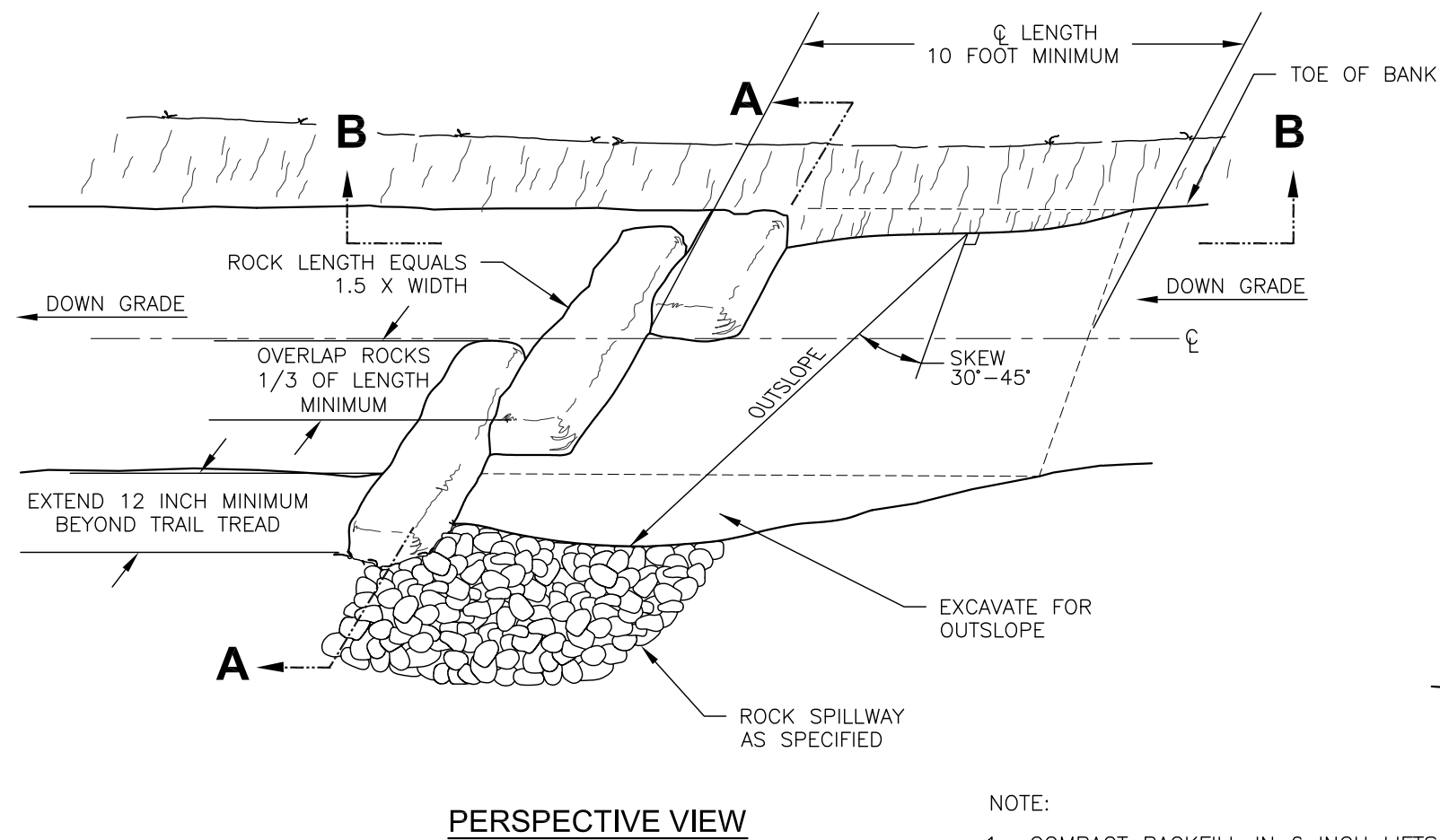
ROCK WATERBAR

SKEW

TRAIL GRADE	SKEW ANGLE
<5%	45° MAX
>5%	30° MIN

TYPICAL ID	MINIMUM ROCK SIZE (LBS)	OUTSLOPE	☉ LENGTH	ROCK*** SPILLWAY	COMMENTS
RWB-1					

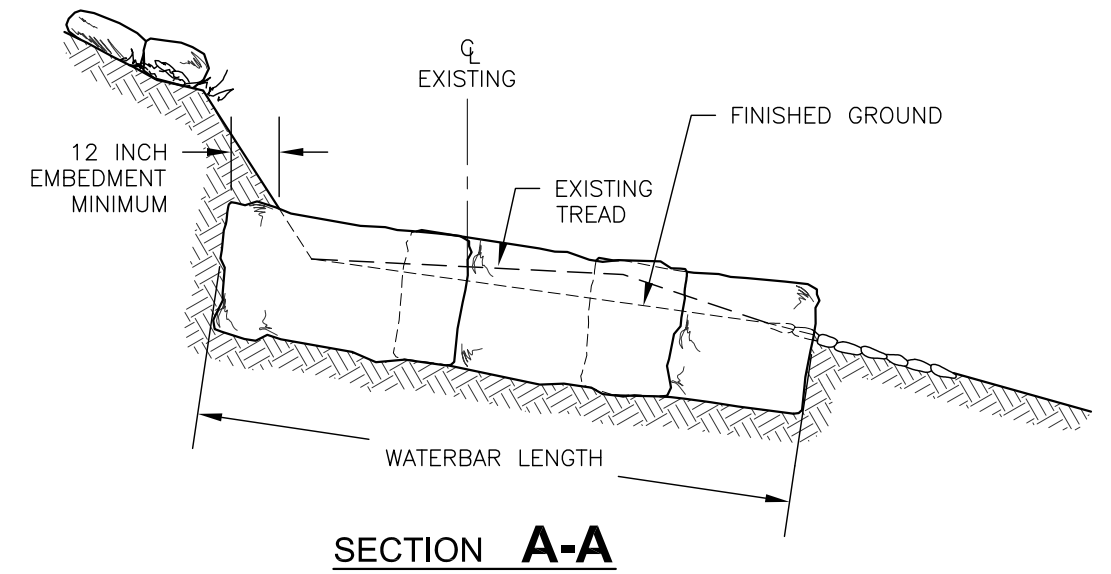
N/A WHEN NOT APPLICABLE
 ***FOR ROCK SPILLWAY SEE SHEET STD_923-10-01



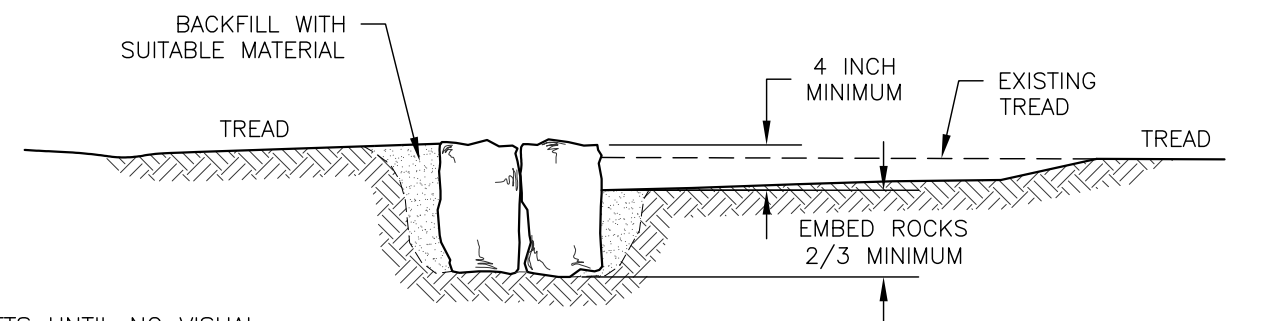
PERSPECTIVE VIEW

NOTE:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
2. ALL EXCAVATED SECTIONS FOR WATERBARS SHALL BE OUTSLOPED TO DAYLIGHT.



SECTION A-A



SECTION B-B

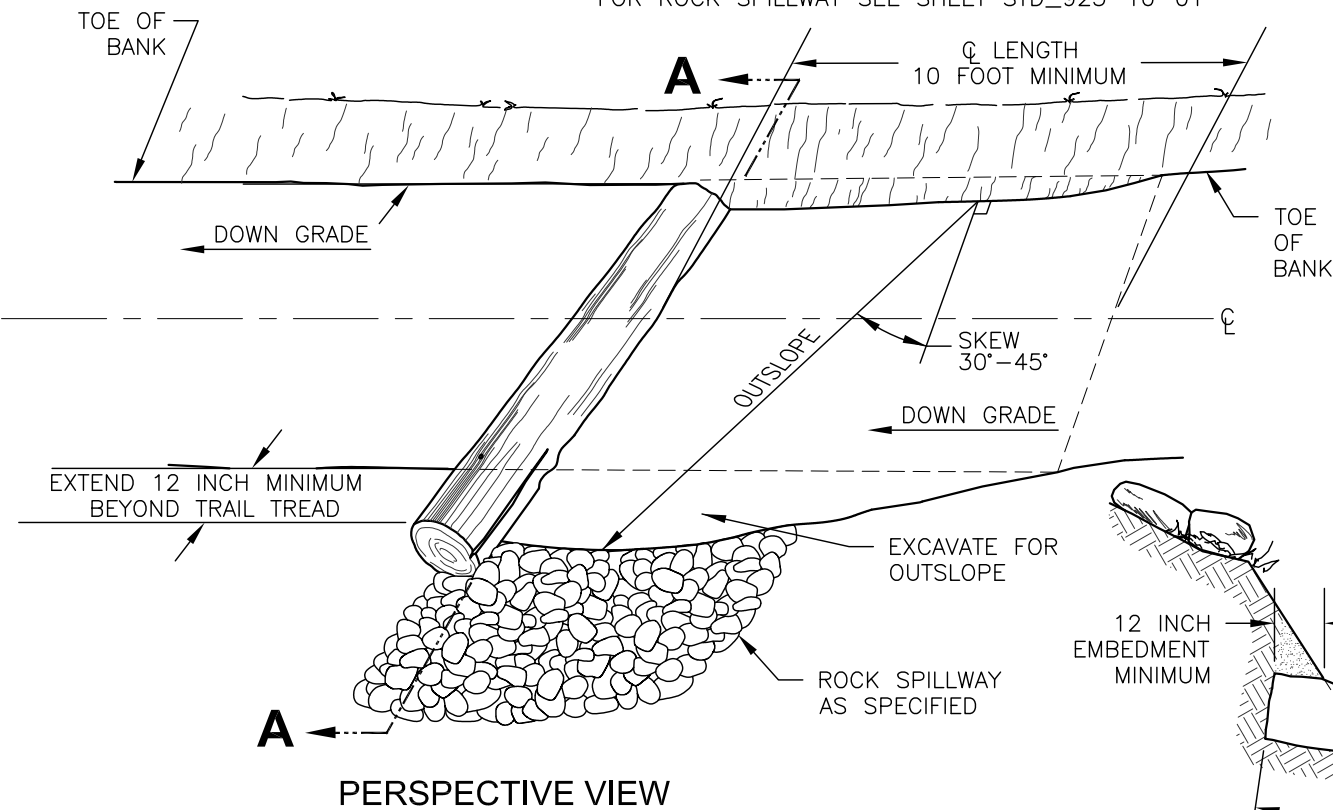
SKEW

TRAIL GRADE	SKEW ANGLE
<5%	45° MAX
>5%	30° MIN

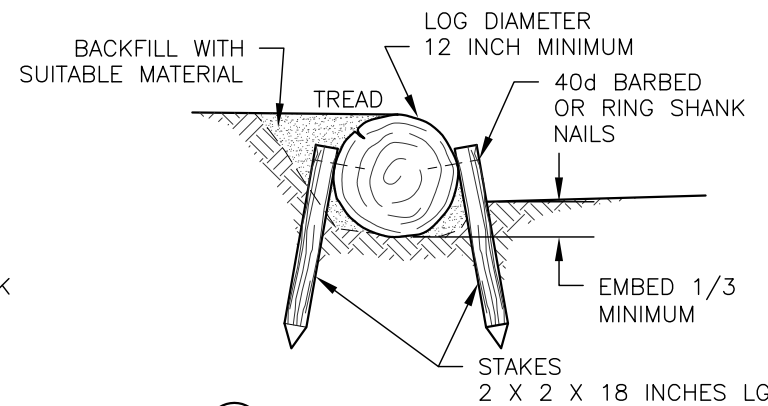
LOG OR TREATED TIMBER WATERBAR

TYPICAL ID	MATERIAL TYPE	ANCHOR SECTION TYPE	SPECIES	PRESERV. TYPE	OUTSLOPE	℄ LENGTH	ROCK SPILLWAY***	COMMENTS
TWB-1	M			P				

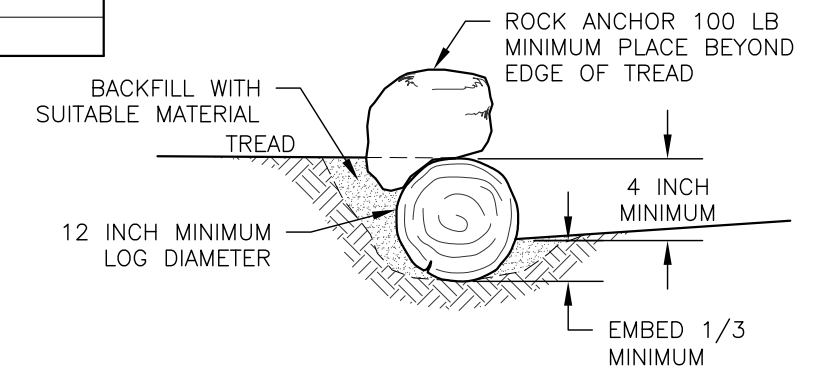
N/A WHEN NOT APPLICABLE
 ***FOR ROCK SPILLWAY SEE SHEET STD_923-10-01



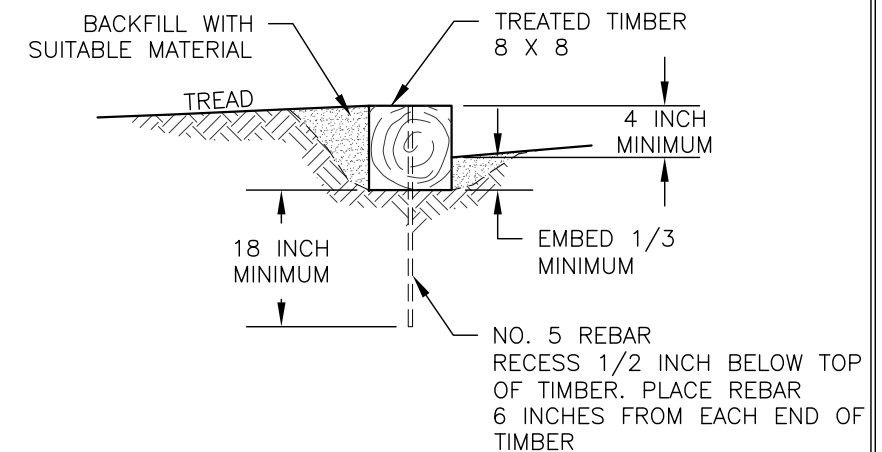
PERSPECTIVE VIEW



A LOG ANCHOR SECTION
 PLACE STAKE ANCHOR BEYOND EDGE OF TREAD



B LOG WITH ROCK ANCHOR SECTION



C TREATED TIMBER ANCHOR SECTION

SECTION A-A

MATERIAL TYPE

TYPE	MATERIAL	SIZE	COMMENTS
M1	LOG		
M2	SAWN TIMBER		
M3	RAIL ROAD TIES		
M4			

NOTES:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
2. PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF LOGS OR SAWN TIMBER.

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE
 WB = WATERBORNE
 OT = OIL-BORNE

USE CATEGORY
 UC3B = ABOVE GROUND - EXPOSED
 UC4A = GROUND CONTACT - GENERAL USE
 UC4B = GROUND CONTACT - HEAVY DUTY

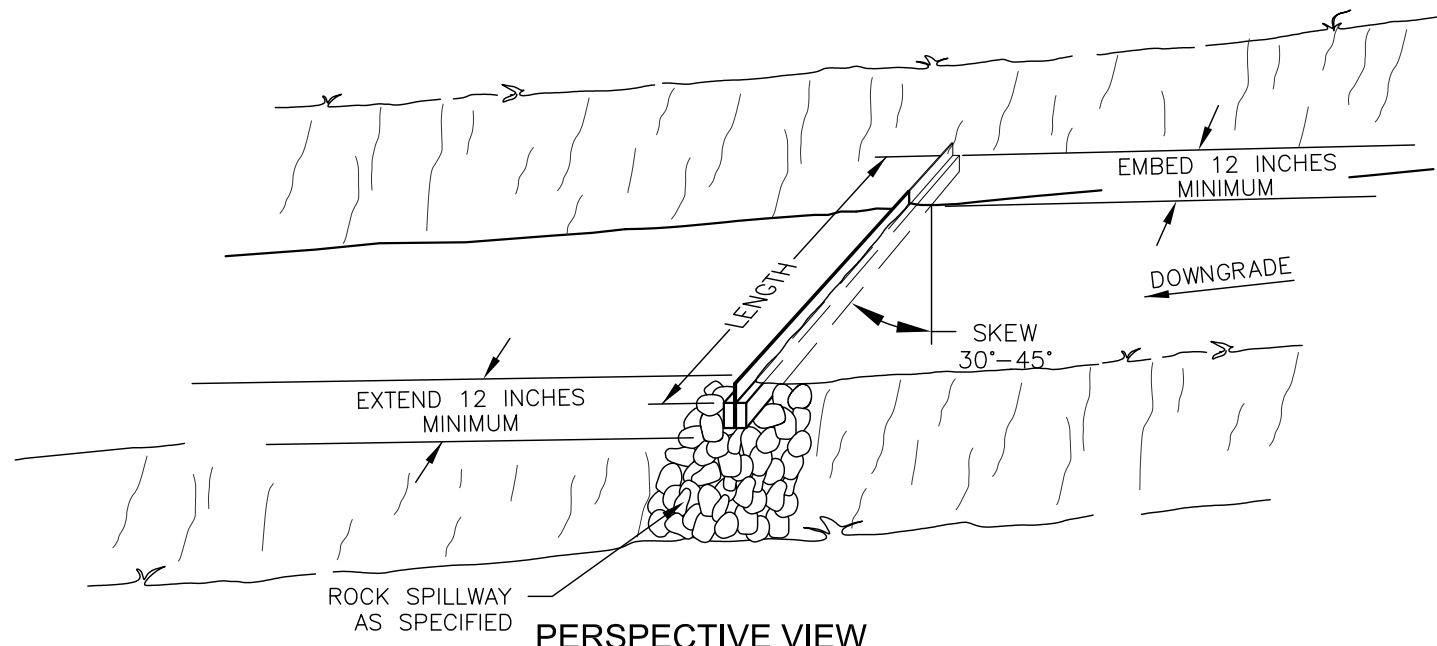
SKEW

TRAIL GRADE	SKEW ANGLE
<5%	45° MAX
>5%	30° MIN

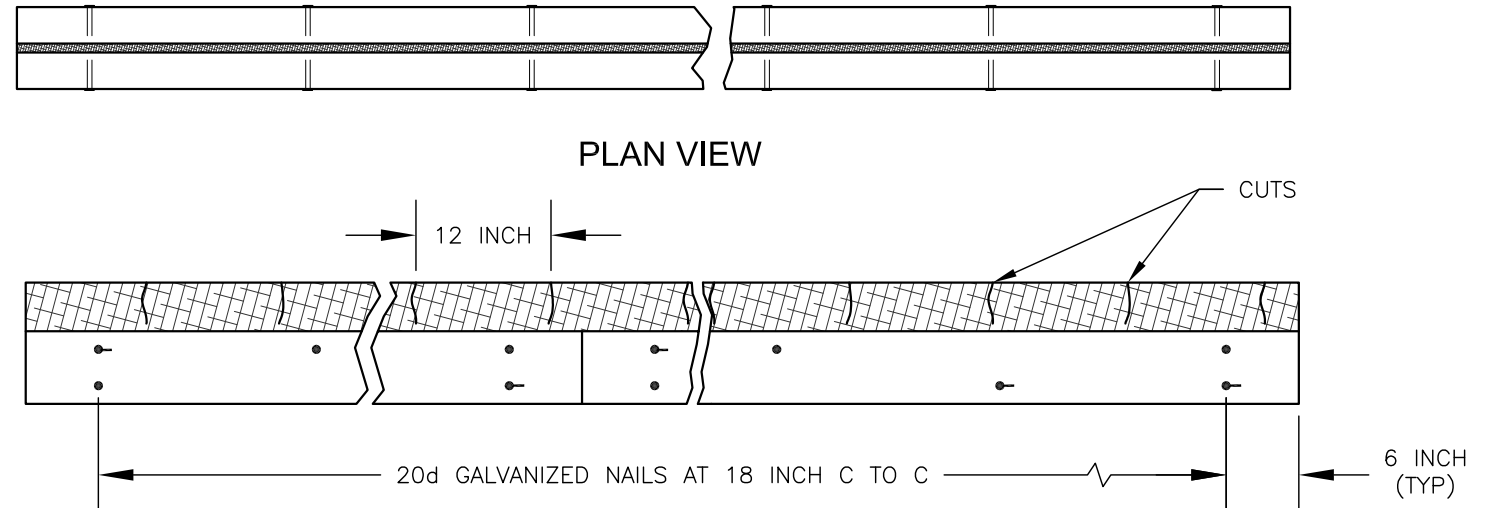
BELTED WATERBAR PLACEMENT

TYPICAL ID	SPECIES	PRESERV. TYPE	ROCK*** SPILLWAY	SKEW	COMMENTS
BWB-1		P			

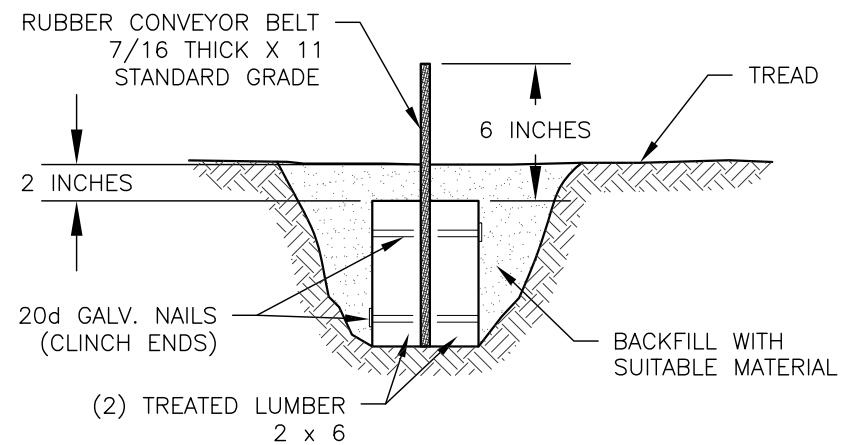
N/A WHEN NOT APPLICABLE
 ***FOR ROCK SPILLWAY SEE SHEET STD_923-10-01



PERSPECTIVE VIEW



ELEVATION VIEW



TYPICAL SECTION

NOTES:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE: WB = WATERBORNE, OT = OIL-BORNE
 USE CATEGORY: UC3B = ABOVE GROUND - EXPOSED, UC4A = GROUND CONTACT - GENERAL USE, UC4B = GROUND CONTACT - HEAVY DUTY

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

PROJECT NAME & LOCATION

DRAWING NAME: **BELTED WATERBAR**
 SECTION: **922 - WATERBARS**
 TYPICAL ID: **BWB**

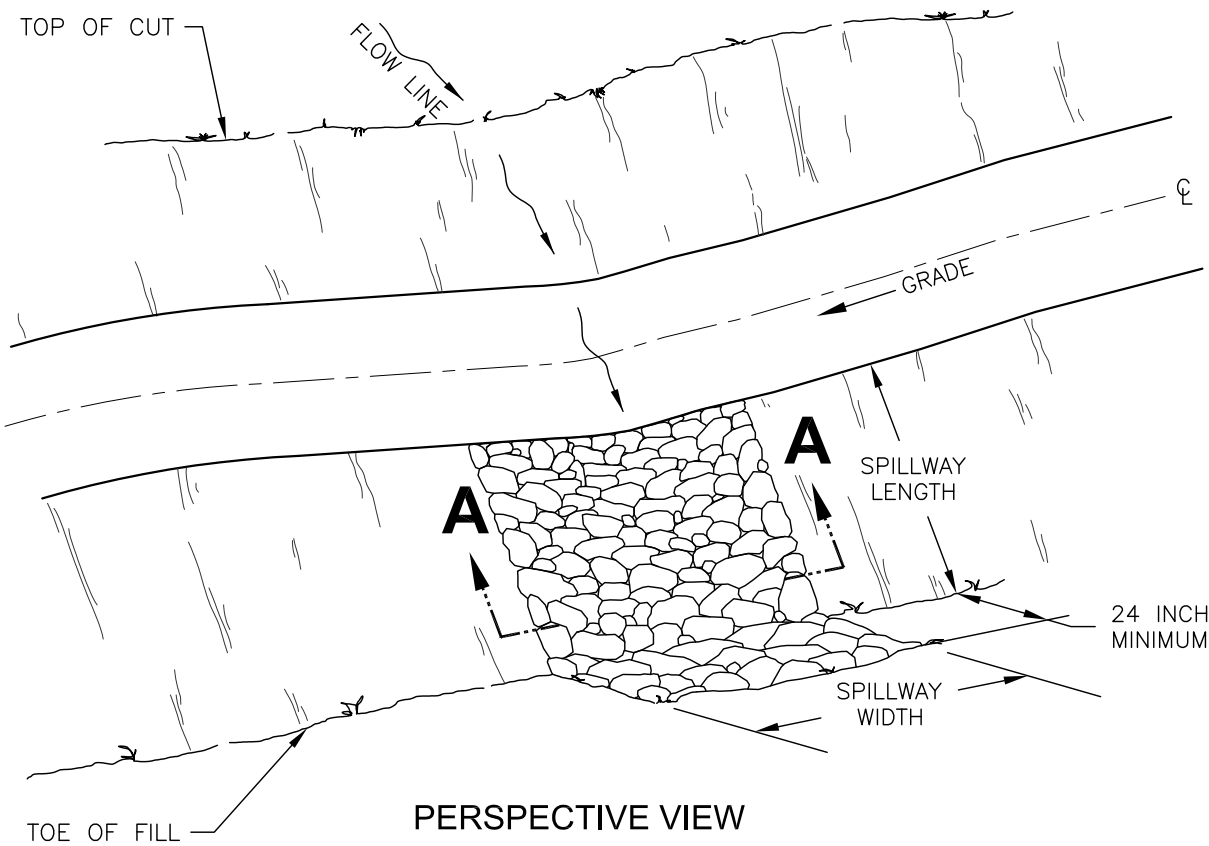
REVISION DATE: **XX/XX/XX**
NO SCALE

DRAWING NO.: **STD_922-30-01**
 SHEET OF

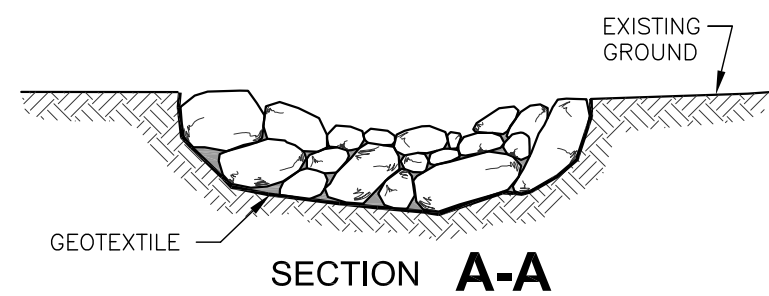
ROCK SPILLWAY

TYPICAL ID	SPILLWAY WIDTH	SPILLWAY LENGTH	GEOTEXTILE TYPE	MINIMUM ROCK SIZE (LBS)	MAXIMUM ROCK SIZE (LBS)	RETAINER* TYPE	COMMENTS
RSP-1						R	

N/A WHEN NOT APPLICABLE
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03



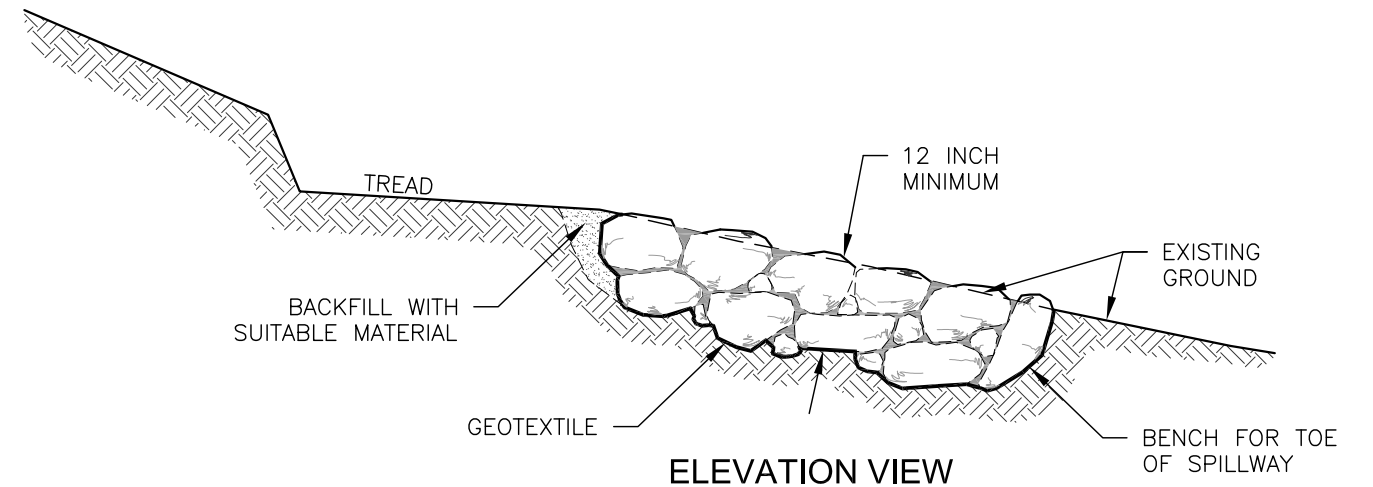
PERSPECTIVE VIEW



SECTION A-A

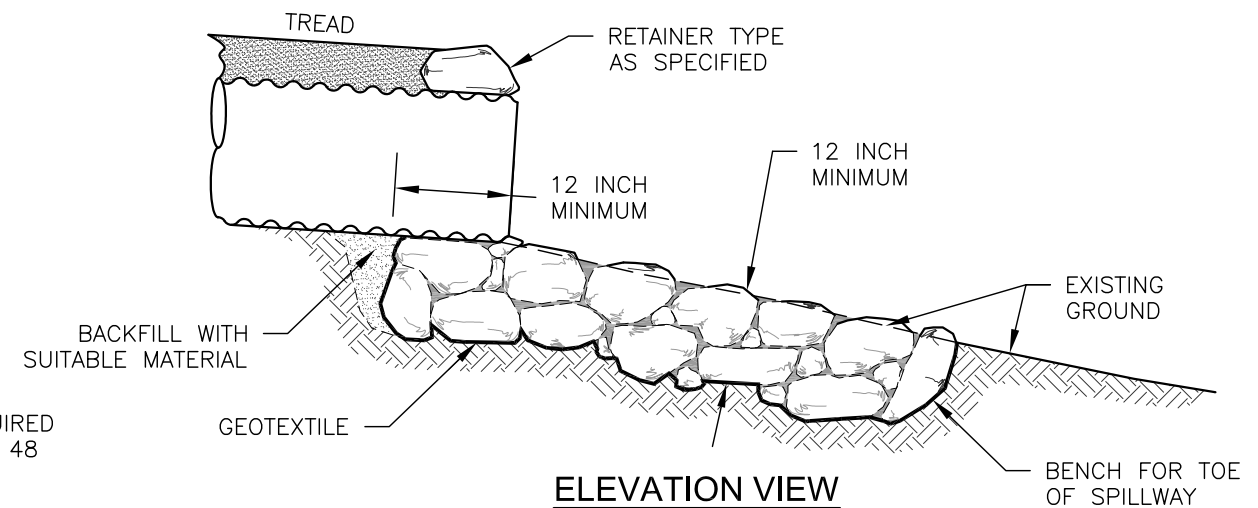
NOTES:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
2. UNLESS OTHERWISE SPECIFIED WHEN ROCK SPILLWAY IS REQUIRED DIMENSION SHALL BE 36 INCHES WIDE X 12 INCHES DEEP X 48 INCHES LONG. THE AS BUILT FILL SLOPE SHALL BE SUBEXCAVATED 12 INCHES PRIOR TO PLACEMENT OF THE SPILLWAY SO THE FINISHED SURFACE OF THE RIPRAP WILL BE AT THE SAME ELEVATION AS THE ADJACENT SLOPE.



ELEVATION VIEW

ROCK SPILLWAY FOR DRAINAGE DIP OR CROSS DRAIN



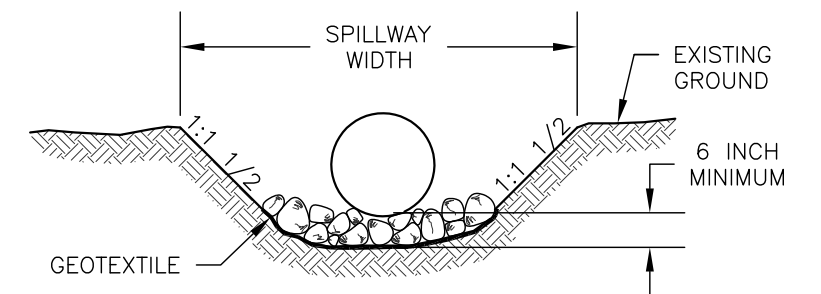
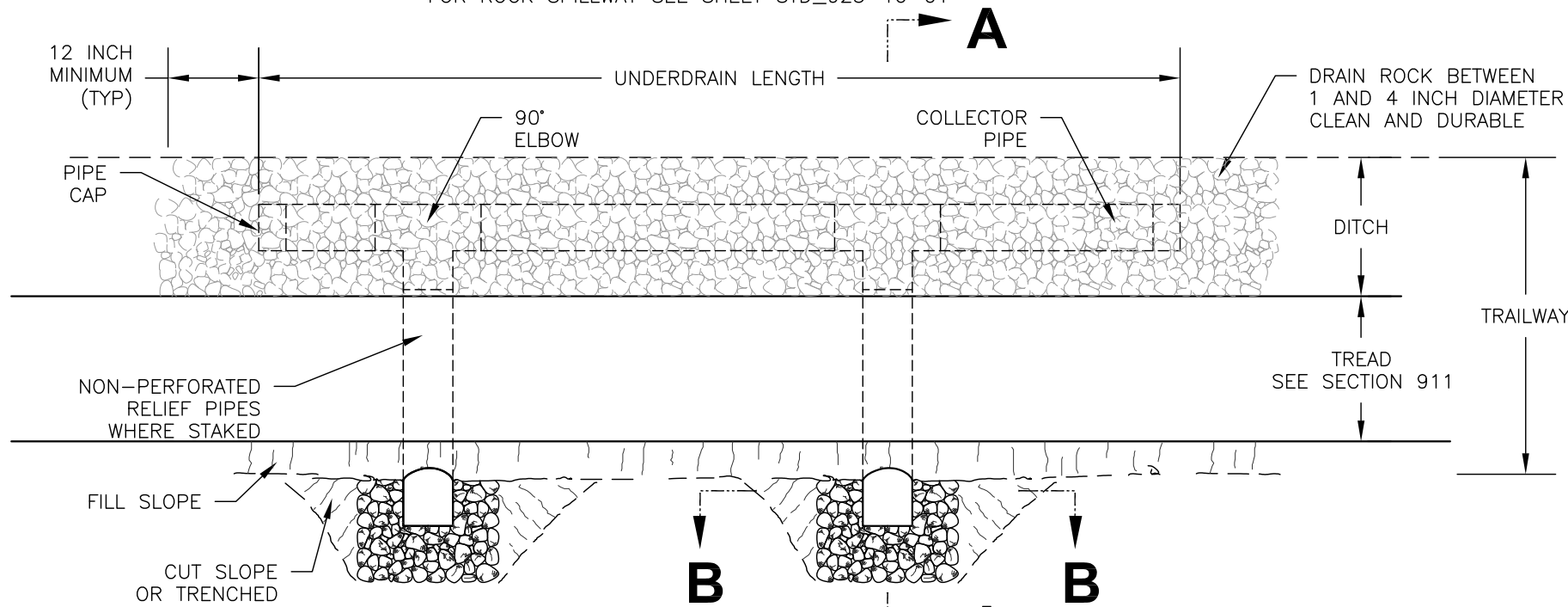
ELEVATION VIEW

ROCK SPILLWAY FOR CULVERT OUTLET

ROCK UNDERDRAIN

TYPICAL ID	GEOTEXTILE TYPE	UNDERDRAIN			COLLECTOR PIPE		RELIEF PIPE			ROCK*** SPILLWAY	COMMENTS
		WIDTH	HEIGHT	LENGTH	DIAMETER	TYPE	NO. OF PIPES	DIAMETER	LENGTH		
RUD-1	G					CP					

N/A WHEN NOT APPLICABLE
 ***FOR ROCK SPILLWAY SEE SHEET STD_923-10-01



SECTION B-B

GEOTEXTILE TYPE

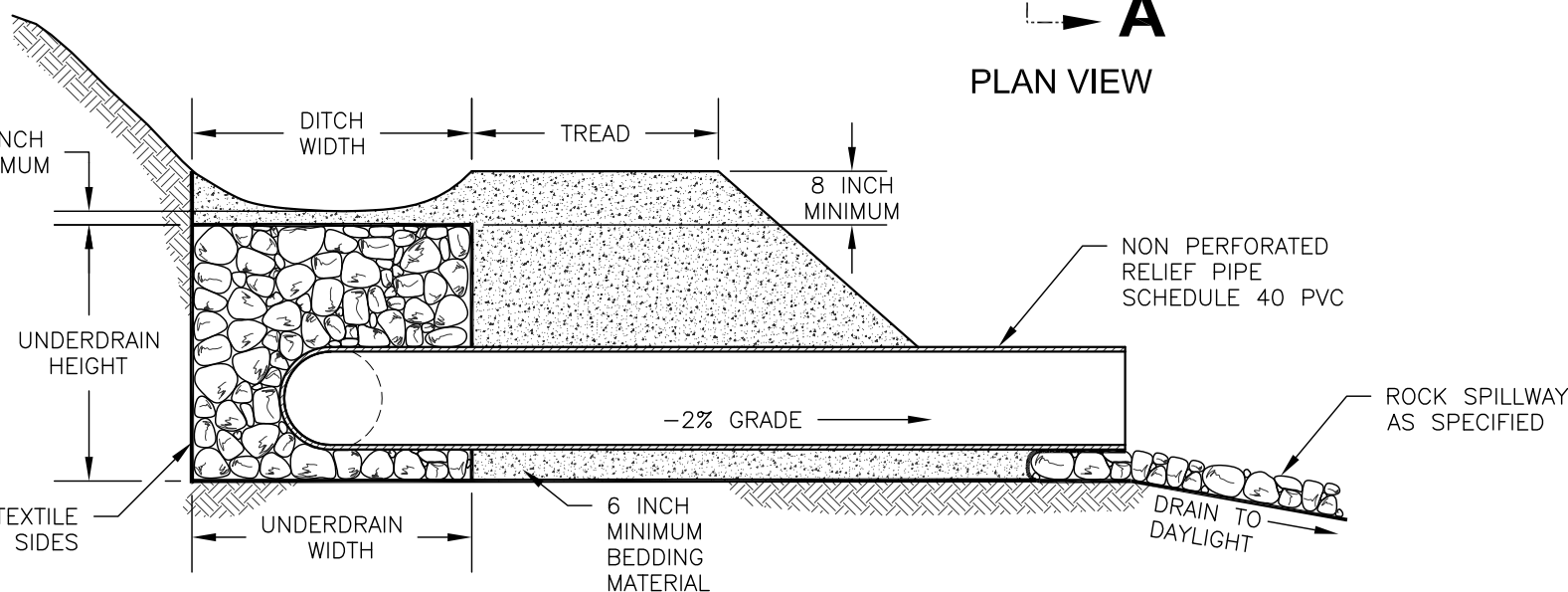
TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3		

COLLECTOR PIPE TYPE

TYPE	MATERIAL	COMMENTS
CP1	NON-PERFORATED	
CP2	PERFORATED	
CP3		

NOTES:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
2. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
3. BEDDING AND BACKFILL AROUND RELIEF PIPE SHALL BE FREE OF ROCK GREATER THAN 2 INCHES.



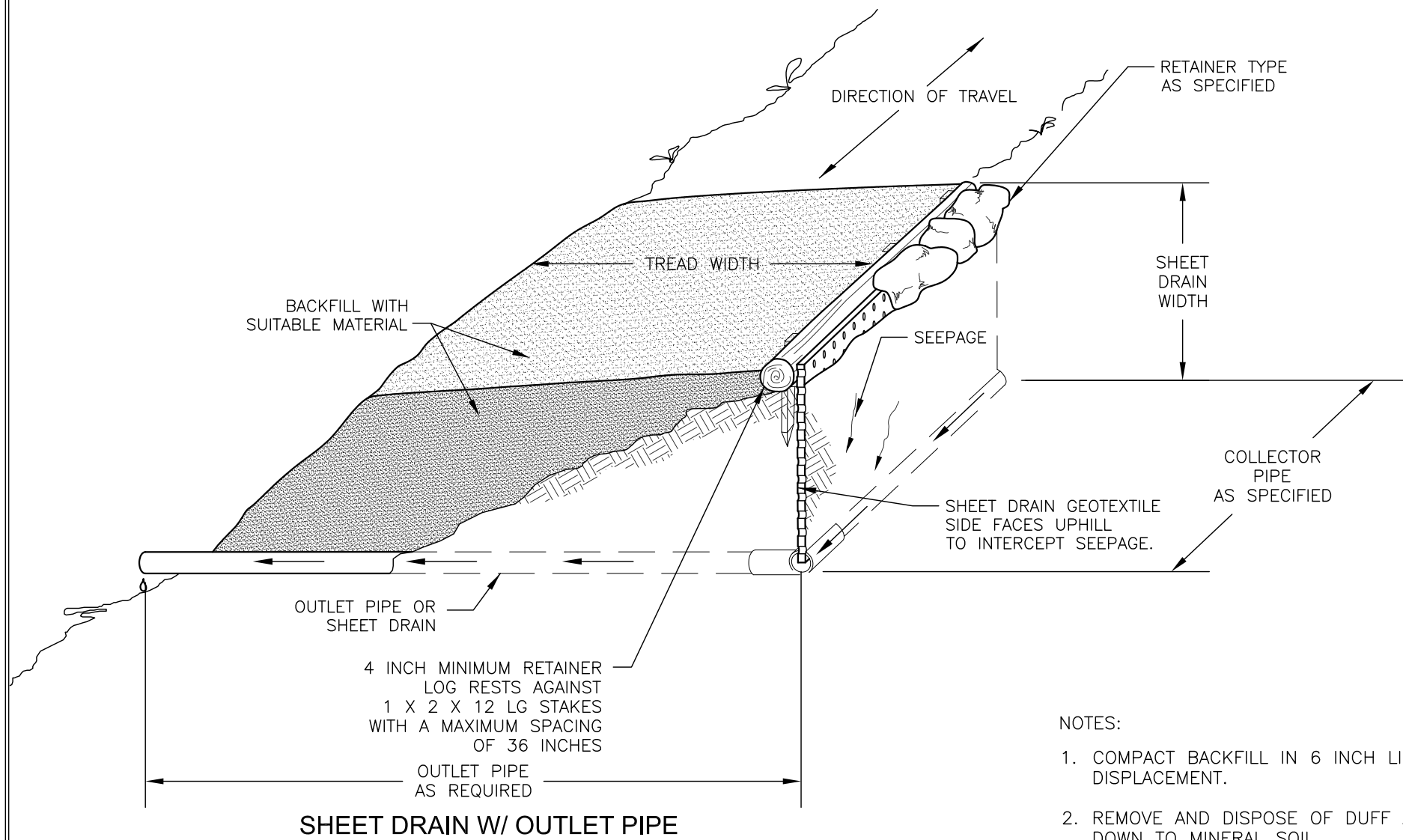
SECTION A-A

PLAN VIEW

SHEET DRAIN WITH OUTLET PIPE

TYPICAL ID	SHEET DRAIN		DRAIN PIPE TYPE				RETAINER* ROCK	COMMENTS
	TYPE	SIZE	COLLECTOR PIPE		OUTLET PIPE			
			TYPE	DIAMETER	TYPE	DIAMETER		
SDP-1	G		CP		CP		R	

N/A WHEN NOT APPLICABLE
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03



COLLECTOR PIPE TYPE

TYPE	MATERIAL	COMMENTS
CP1	SOLID	
CP2	PERFORATED	
CP3		

GEOSYNTHETIC TYPE

TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3	GEOCELL	
G4	GEOGRID	
G5		

NOTES:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
2. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.

TYPICAL DITCH SECTIONS

TYPICAL ID	DITCH TYPE	GEOTEXTILE TYPE	DITCH DIMENSIONS (INCHES)					LINING MATERIAL		SPACING (FEET)	DITCH BLOCK MATERIAL	DITCH BLOCK		COMMENTS
			D	E	F	G	H	J	TYPE			LT	RT	
TDS-1										DL				

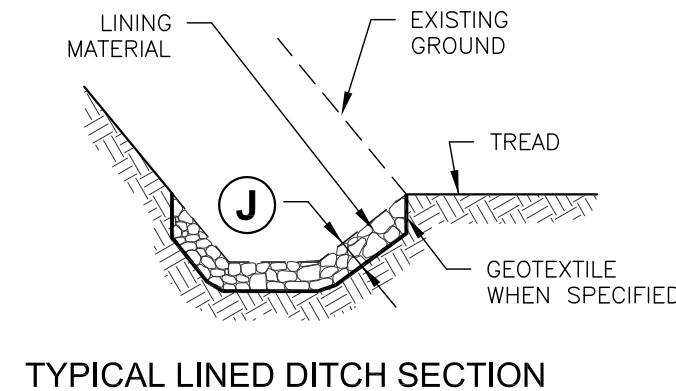
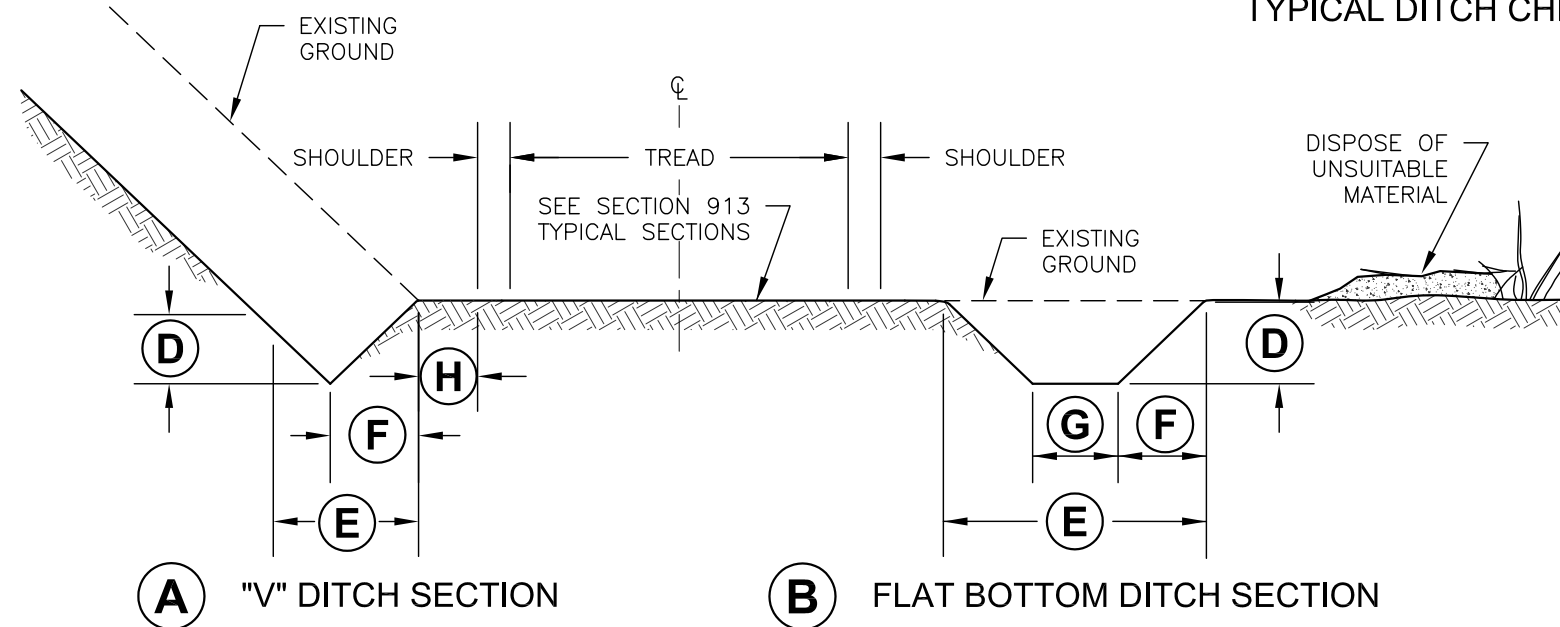
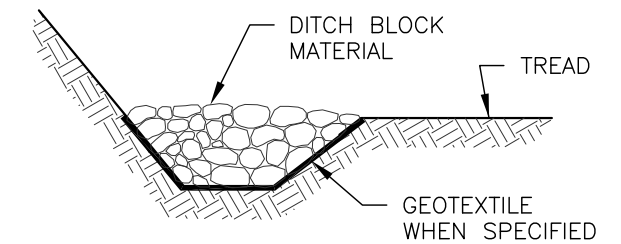
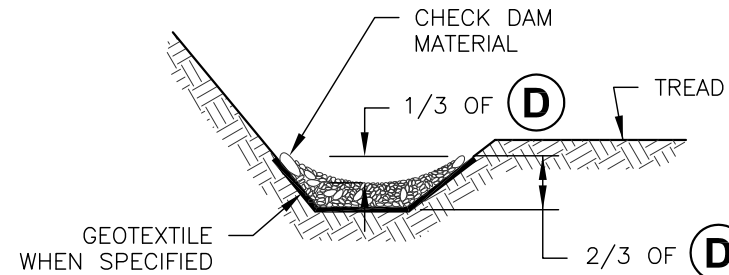
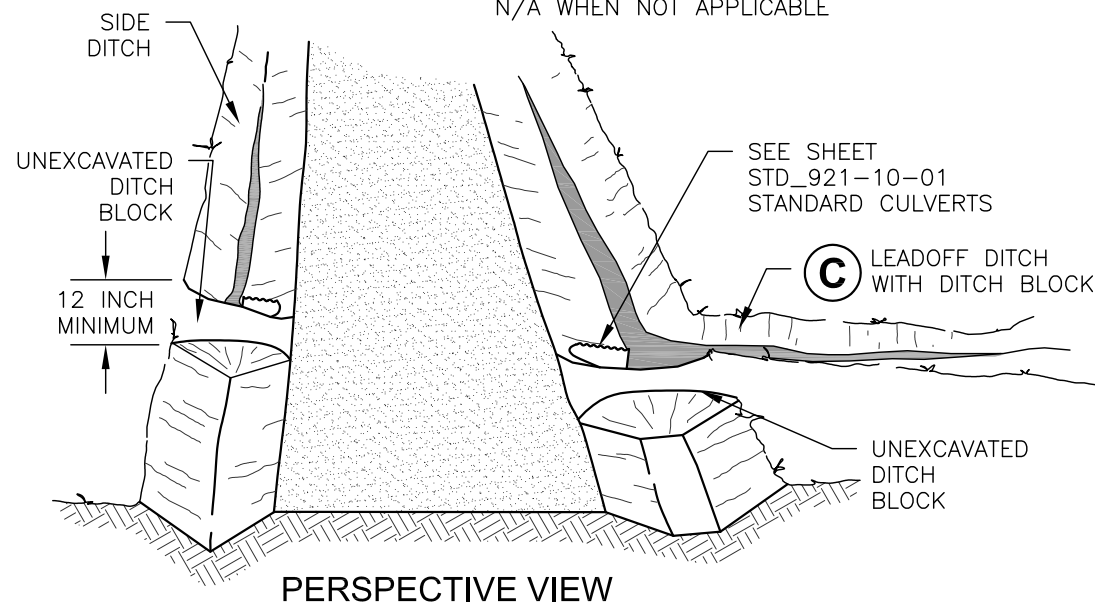
N/A WHEN NOT APPLICABLE

DITCH LINING OR CHECK DAM MATERIAL

TYPE	MATERIAL	GRADATION	COMMENTS
DL1	GRAVEL		
DL2	ROCK		
DL3			

LEAD OFF DITCH/ CHECK DAM SPACING

DRAINAGE GRADE	DRAINAGE SPACING (FEET)
<3	OCCASIONAL
3-7	60
8-12	30
>12	18

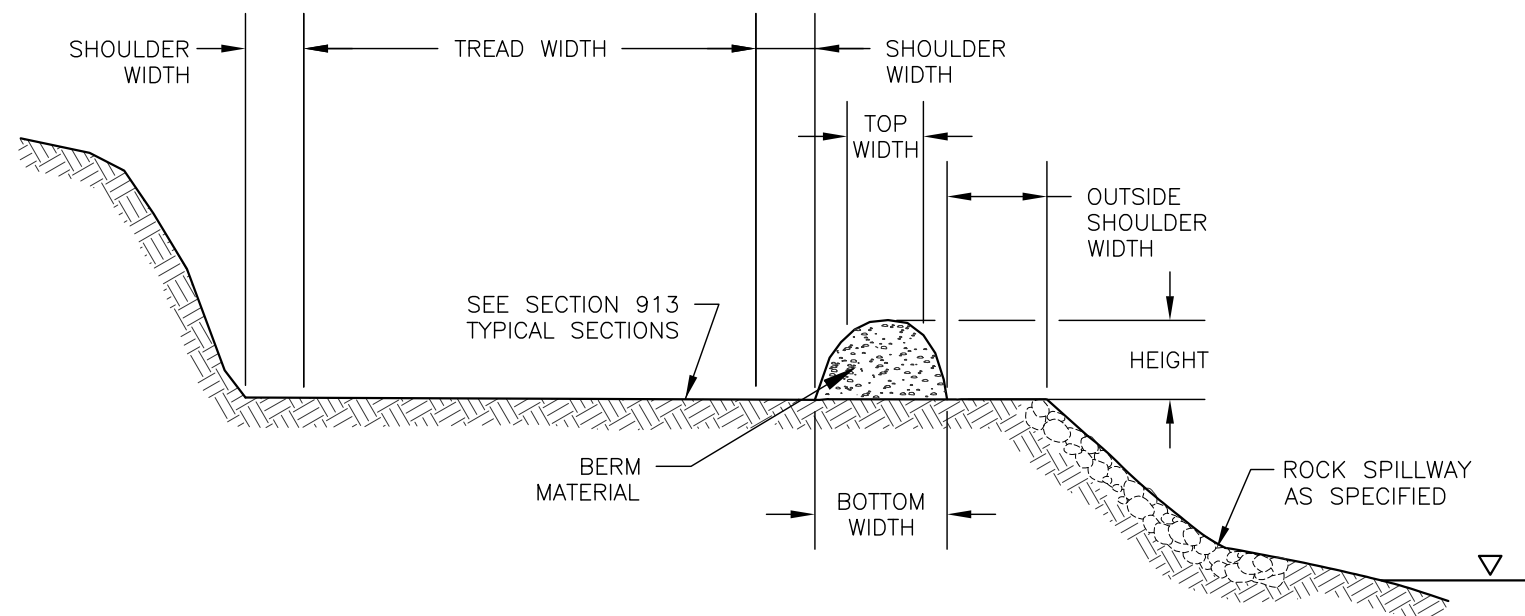


- NOTES:
- LEAD-OFF DITCHES SHALL UTILIZE AS MUCH NATURAL DRAINAGE AS POSSIBLE.
 - LEAD-OFF DITCH SHALL DRAIN TO DAYLIGHT.

BERMS

TYPICAL ID	MATERIAL TYPE	OUTSIDE SHOULDER WIDTH	HEIGHT	TOP WIDTH	BOTTOM WIDTH	ROCK*** SPILLWAY	COMMENTS
BRM-1	B						

N/A WHEN NOT APPLICABLE
 ***FOR ROCK SPILLWAY SEE SHEET STD_923-10-01



TYPICAL BERM SECTION

BERM MATERIAL TYPE

TYPE	MATERIAL	SIZE	GRADATION %	COMMENTS
B1	AGGREGATE	1 INCH MINUS		
B2	COARSE AGGREGATE	3 INCH MINUS		
B3	ROCK	3 TO 6 INCH		
B4	ROCK	4 TO 8 INCH		
B5	HEAVY ROCK	8 INCH PLUS		
B6				
B7				

NOTES:

1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

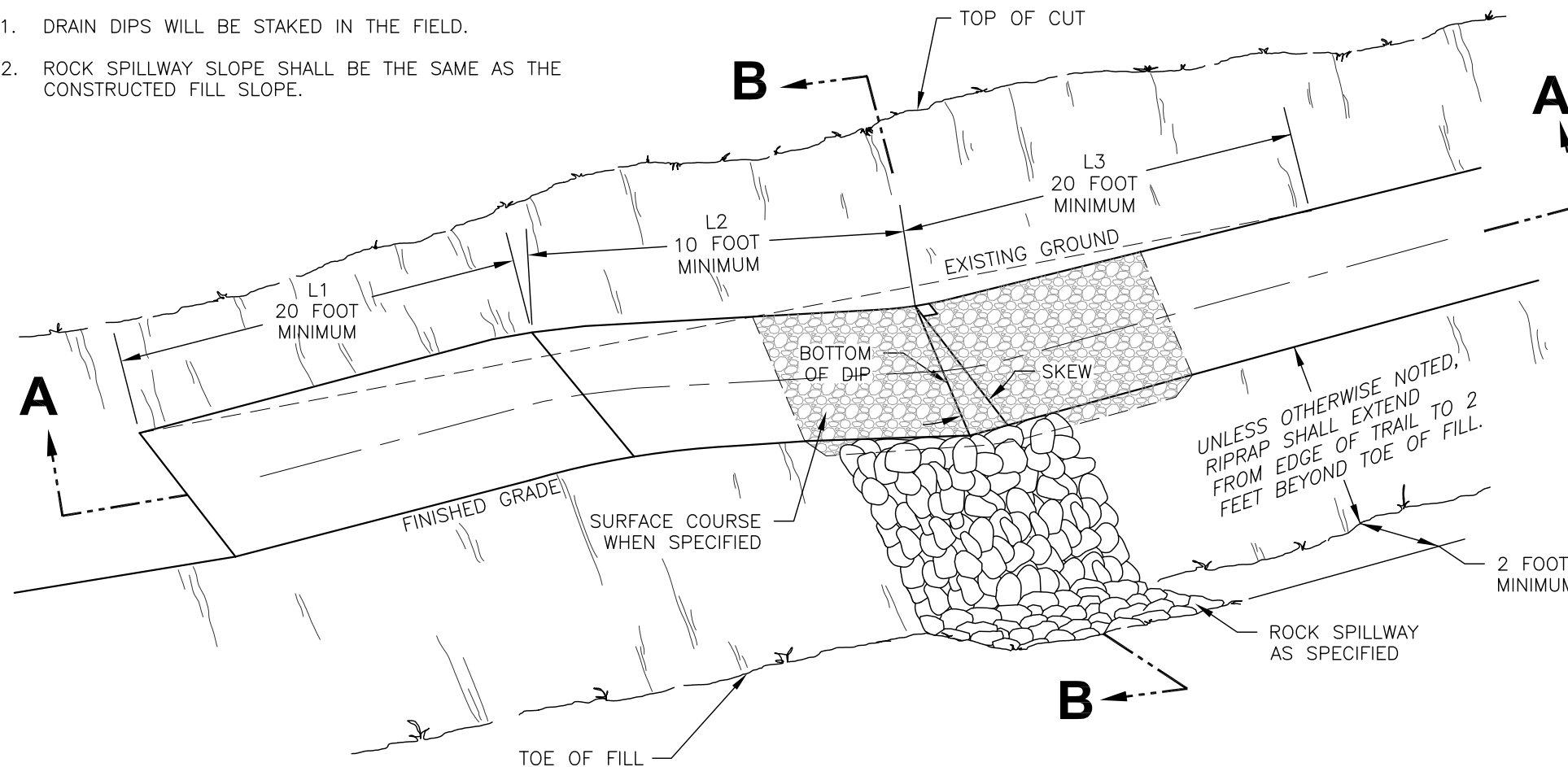
DRAIN DIP SECTION

TYPICAL ID	DRAIN DIP TYPE	GEOTEXTILE TYPE	SKEW	SURFACE COURSE		ROCK SPILLWAY***	COMMENTS
				TYPE	DEPTH		
DD1-1	DD	G		S			

N/A WHEN NOT APPLICABLE
 ***FOR ROCK SPILLWAY SEE SHEET STD_923-10-01

NOTES:

1. DRAIN DIPS WILL BE STAKED IN THE FIELD.
2. ROCK SPILLWAY SLOPE SHALL BE THE SAME AS THE CONSTRUCTED FILL SLOPE.



GEOTEXTILE TYPE

TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3		

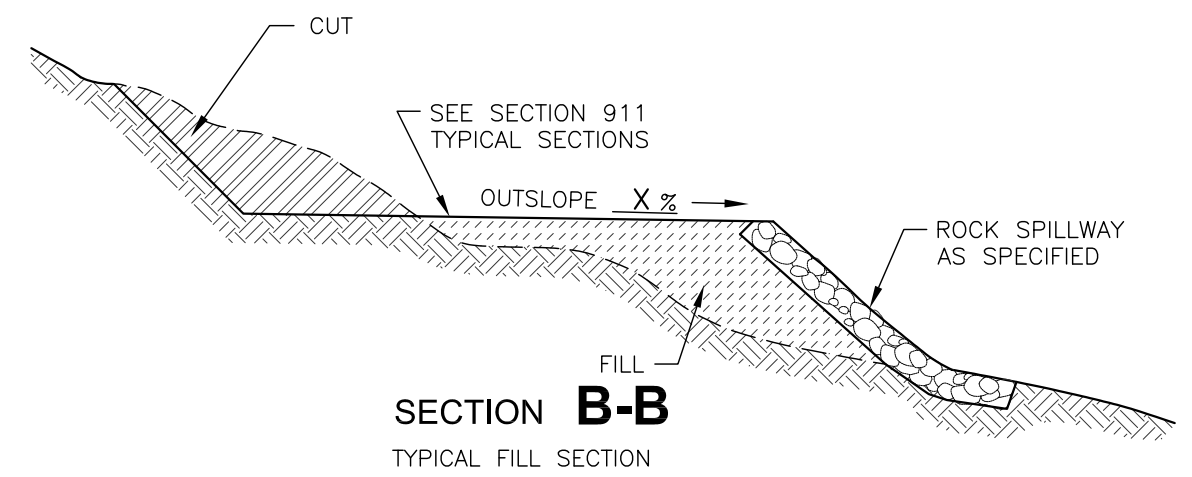
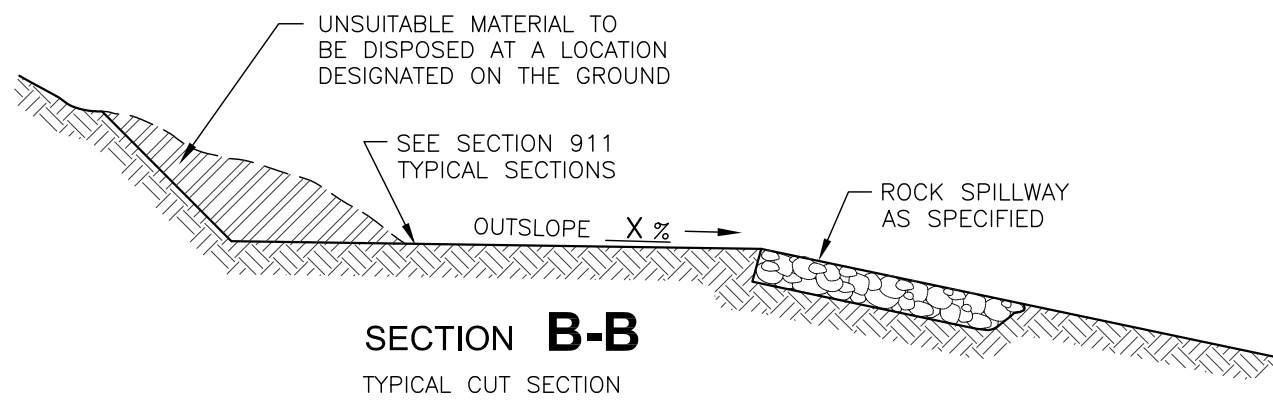
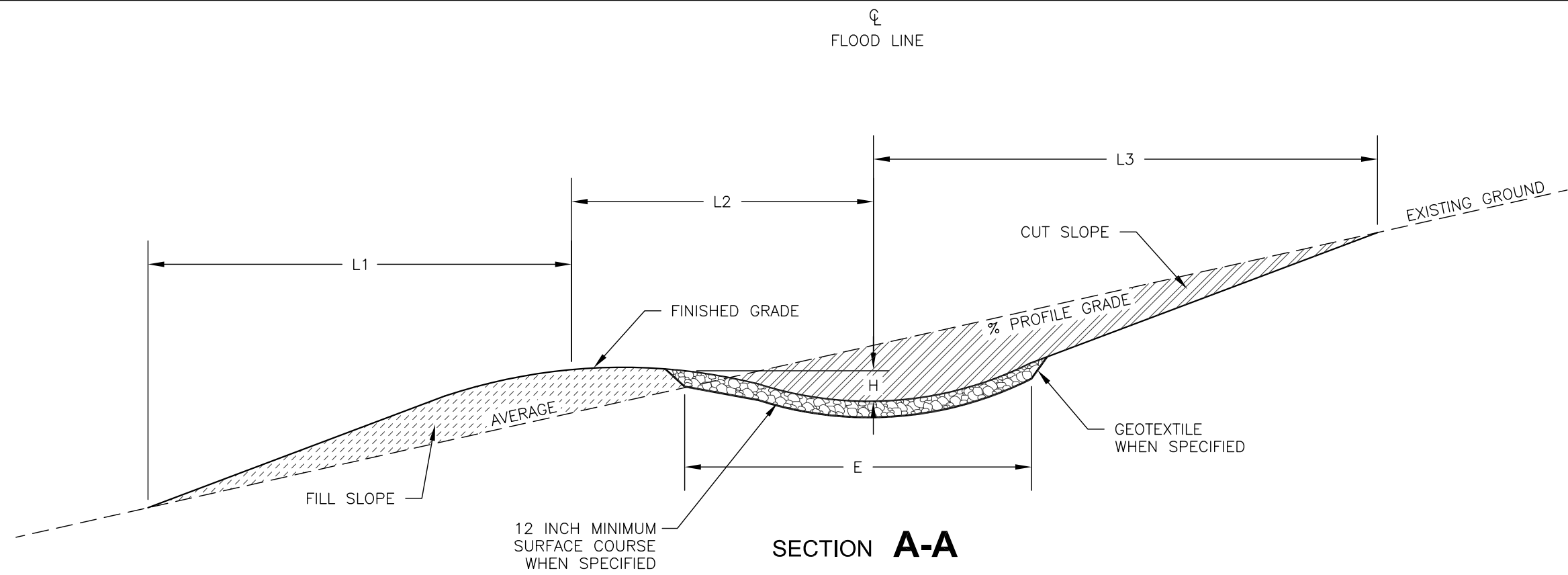
SURFACE COURSE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
S1	PITRUN		
S2	AGGREGATE		
S3			

DRAIN DIP CONSTRUCTION DIMENSIONS

DRAIN DIP TYPE	% PROFILE GRADE	L1	L2	L3	(H)	(E)
DD1	0 TO 4					
DD2	5 TO 6					
DD3	7 TO 8					
DD4	9 TO 10					
DD5						

OVER 10% NOT RECOMMENDED
 H = $\frac{1}{2}$ OF TREAD



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

PROJECT NAME & LOCATION

DRAWING NAME
DRAIN DIP DETAILS

SECTION
927 - DRAIN DIPS

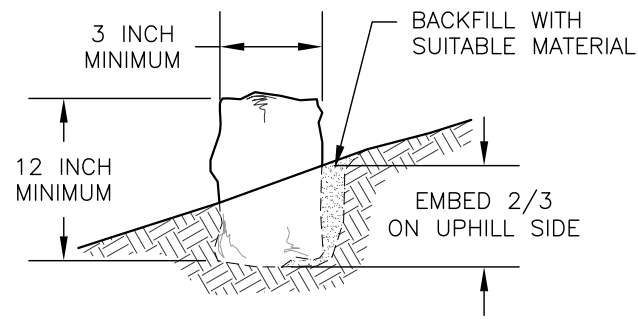
TYPICAL ID
DD2

REVISION DATE
XX/XX/XX

NO SCALE

DRAWING NO.
STD_927-10-02

SHEET
OF



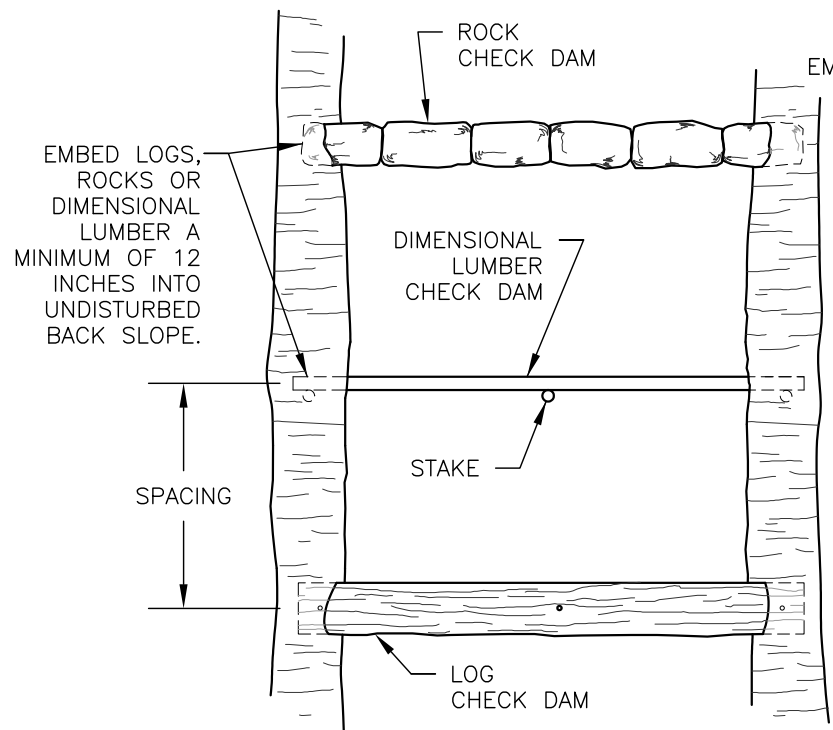
C1 ROCK

CHECK DAM

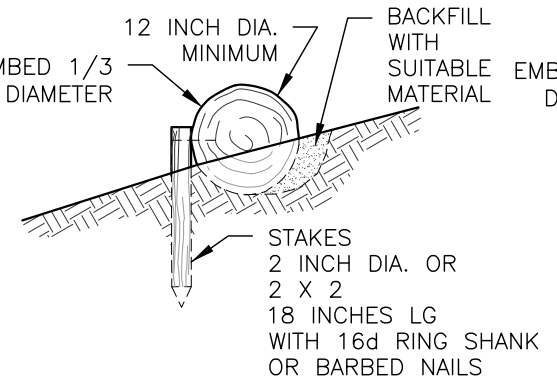
TYPICAL ID	CHECK DAM			COMMENTS
	CHECK DAM TYPE	CHECK DAM SPACING (FEET)	NO. OF CHECK DAMS	
CKD-1	C			

- NOTES:
1. PRE-DRILL HOLES FOR REBAR TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS.
 2. RECESS END OF REBAR 1/2 INCH BELOW TOP OF TIMBER. PLACE REBAR 6 INCHES FROM EACH END OF TIMBER WITH MAXIMUM REBAR SPACING OF 36 INCHES.
 3. PLACE STAKES 6 INCHES FROM EACH END OF TIMBER WITH MAXIMUM SPACING OF 36 INCHES.
 4. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

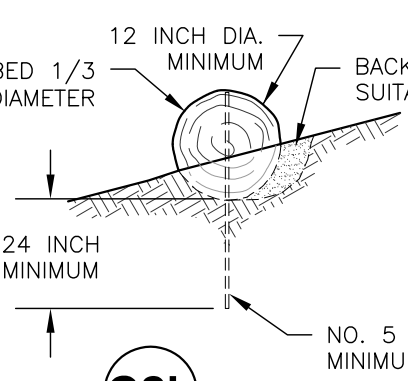
N/A WHEN NOT APPLICABLE



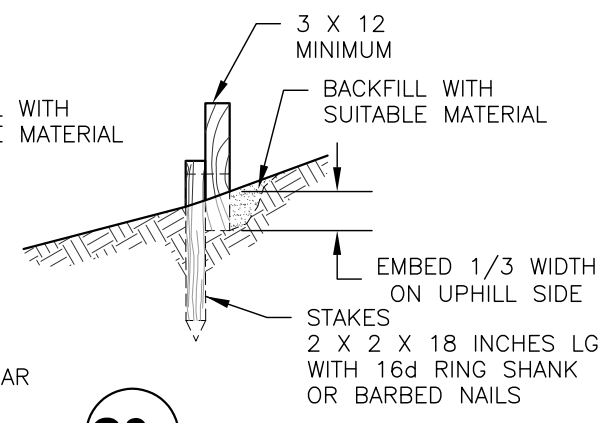
PLAN VIEW



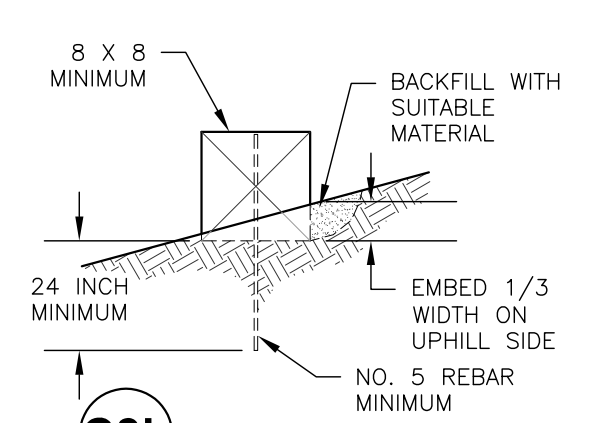
C2a LOG



C2b LOG



C3a SAWN TIMBER

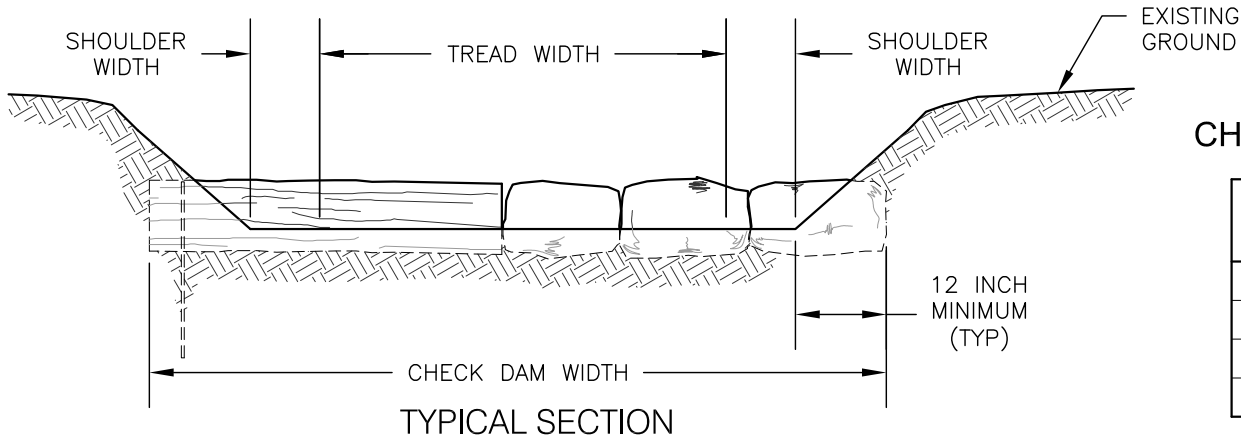


C3b SAWN TIMBER

C4 RAIL ROAD TIE

CHECK DAM TYPE

CHECK DAM TYPE	MATERIAL	SIZE	SPECIES/ GRADE	PRESERV. TYPE	COMMENTS
C1	ROCK				
C2a	LOG				
C2b	LOG				
C3a	SAWN TIMBER				
C3b	SAWN TIMBER				
C4	RAIL ROAD TIES				
C5					



TYPICAL SECTION

CHECK DAM SPACING

DRAINAGE GRADE %	DRAINAGE SPACING (FEET)
<3	OCCASIONAL
3-7	60
8-12	30
>12	18

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)

PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE: WB = WATERBORNE, OT = OIL-BORNE

USE CATEGORY: UC3B = ABOVE GROUND - EXPOSED, UC4A = GROUND CONTACT - GENERAL USE, UC4B = GROUND CONTACT - HEAVY DUTY

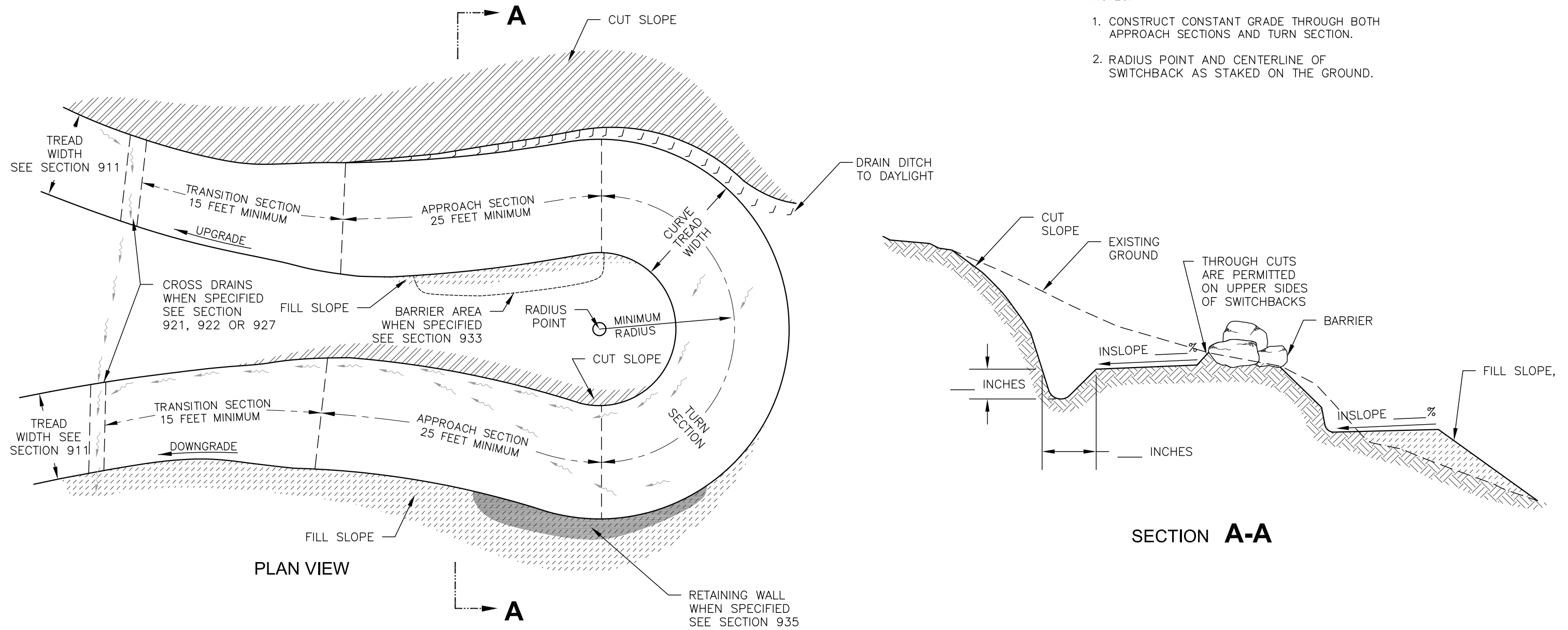
TYPE 1 RADIUS SWITCHBACK SECTIONS

TYPICAL ID	MINIMUM RADIUS	CURVE TREAD WIDTH	BARRIER TYPE	RETAININ WALL TYPE	CROSS DRAINS	COMMENTS
SW1-1						

N/A WHEN NOT APPLICABLE

NOTES:

1. CONSTRUCT CONSTANT GRADE THROUGH BOTH APPROACH SECTIONS AND TURN SECTION.
2. RADIUS POINT AND CENTERLINE OF SWITCHBACK AS STAKED ON THE GROUND.



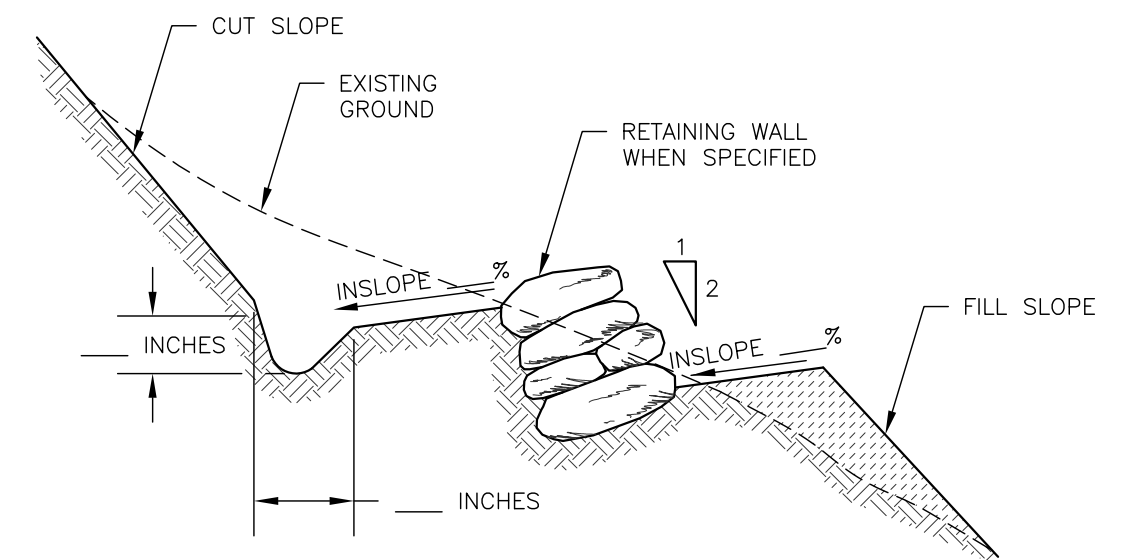
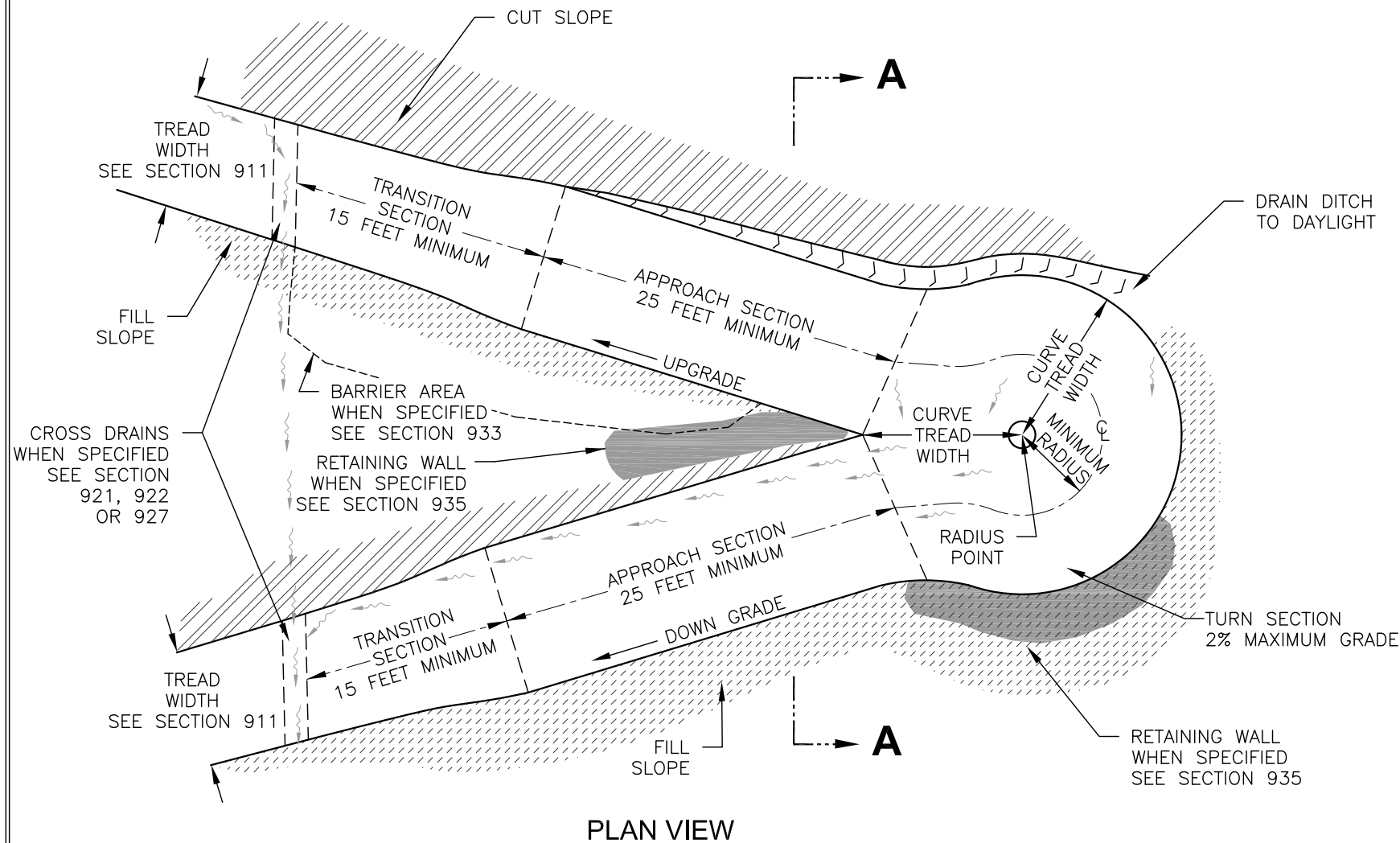
TYPE 2 CIRCULAR LANDING SWITCHBACK SECTIONS

TYPICAL ID	MINIMUM RADIUS	CURVE TREAD WIDTH	BARRIER TYPE	RETAINING WALL TYPE	CROSS DRAINS	COMMENTS
SW2-1						

N/A WHEN NOT SPECIFIED

NOTE:

RADIUS POINT AND CENTERLINE OF SWITCHBACK AS STAKED ON THE GROUND.



SECTION A-A

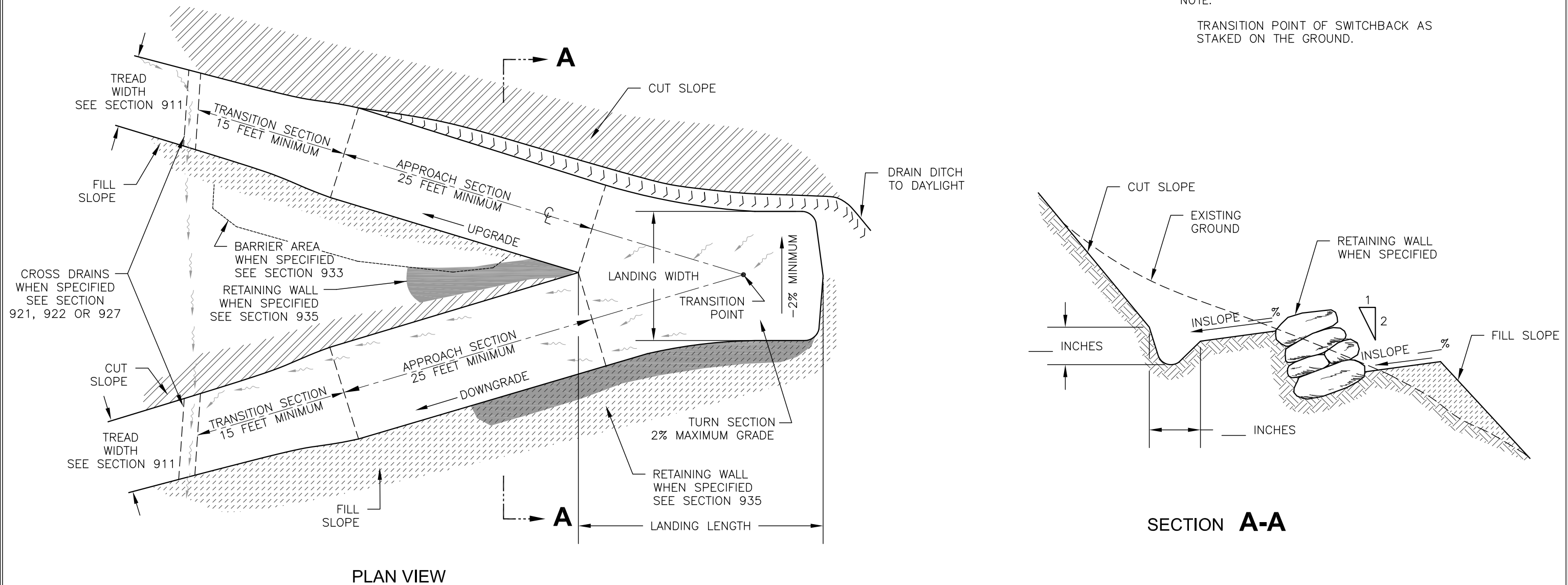
TYPE 3 RECTANGULAR LANDING SWITCHBACK SECTIONS

TYPICAL ID	LANDING LENGTH (FEET)	LANDING WIDTH (FEET)	BARRIER TYPE	RETAINING WALL TYPE	CROSS DRAINS	COMMENTS
SW3-1						

N/A WHEN NOT SPECIFIED

NOTE:

TRANSITION POINT OF SWITCHBACK AS STAKED ON THE GROUND.



TYPE 1 - STANDARD TURNPIKE

TYPICAL ID	GEOTEXTILE TYPE	RETAINER*		DITCH						COMMENTS
		TYPE	TYPE	LOCATION		DIMENSIONS (INCHES)				
				LT	RT	D	E	F	G	
TPK-1	G	R								

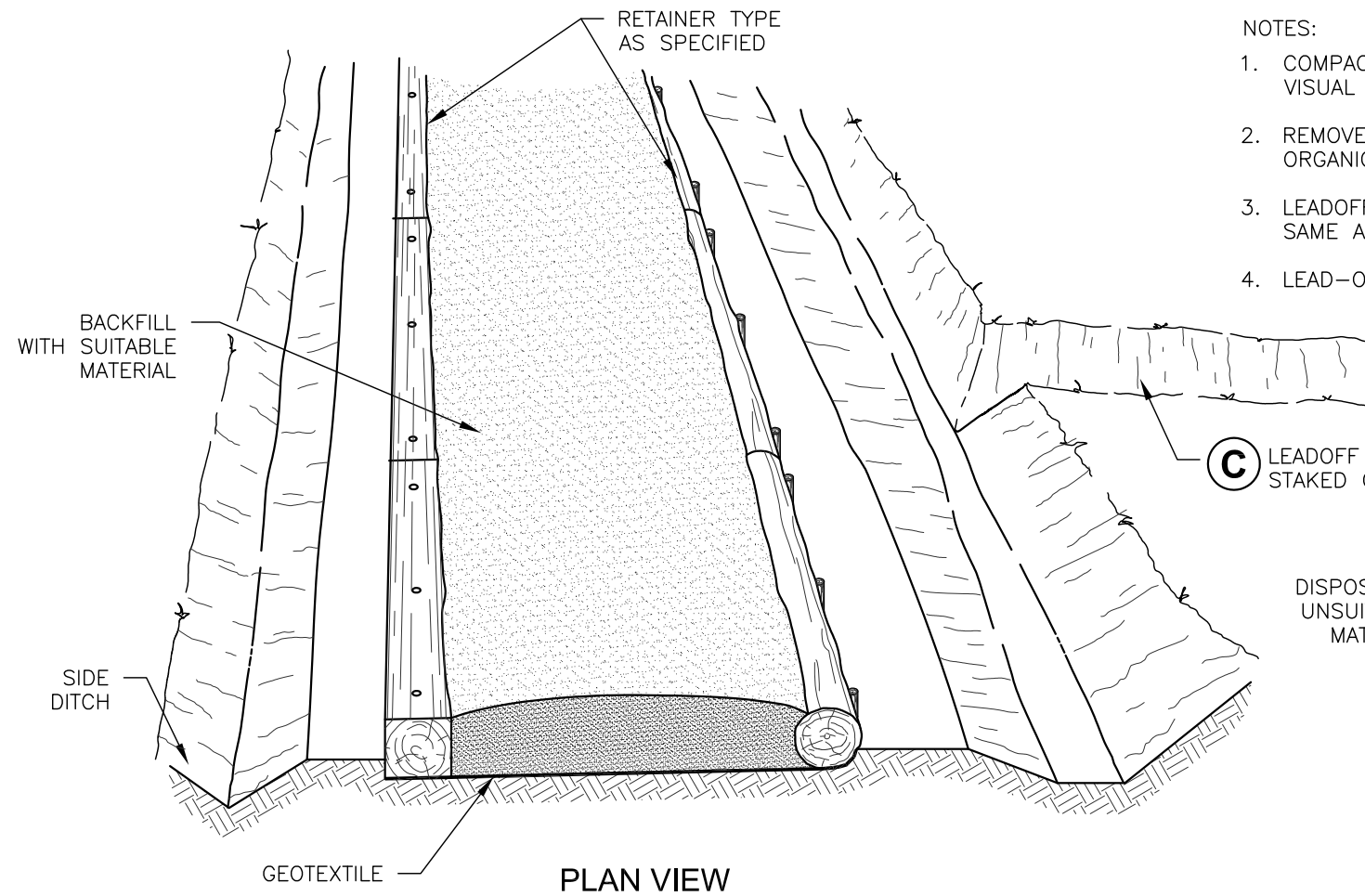
N/A WHEN NOT APPLICABLE
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03

GEOTEXTILE TYPE

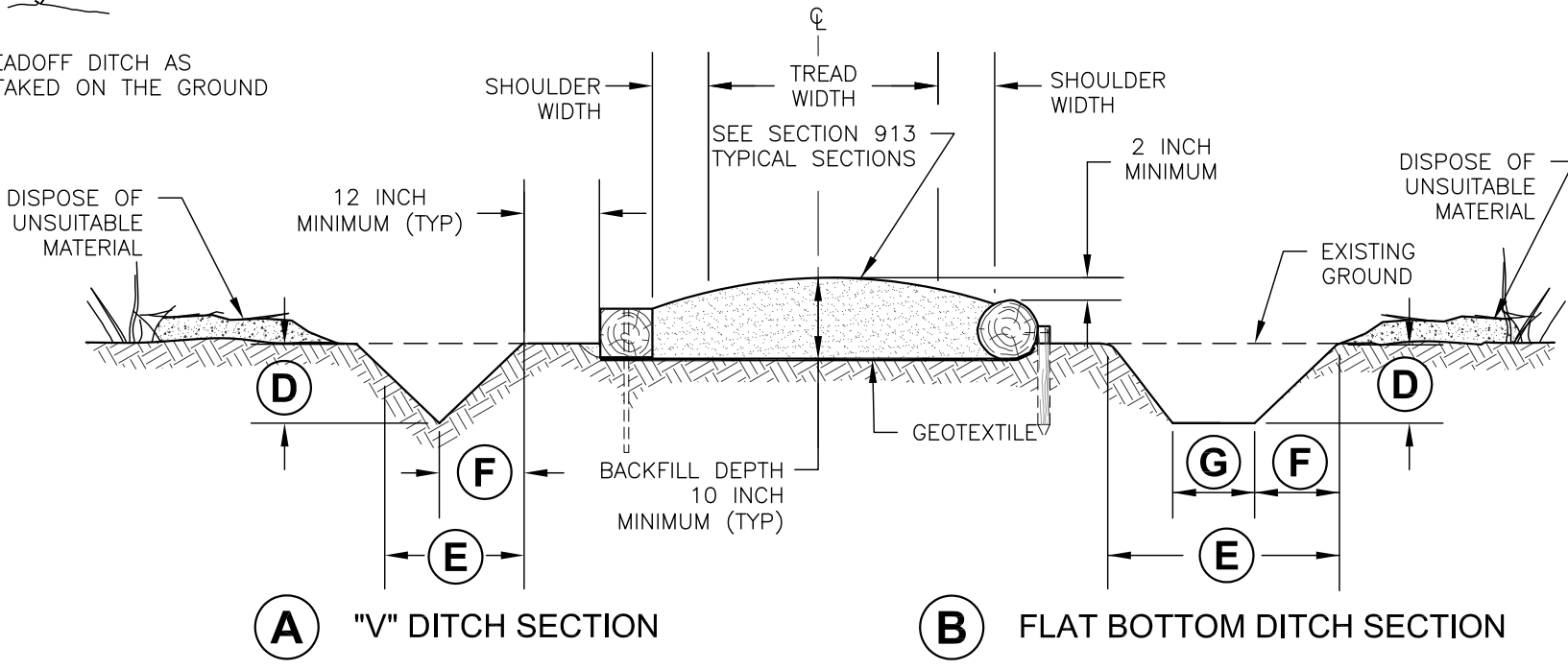
TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3		

NOTES:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
2. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
3. LEADOFF DITCH TO BE CONSTRUCTED THE SAME AS SIDE DITCHES.
4. LEAD-OFF DITCH TO DRAIN TO DAYLIGHT.



(C) LEADOFF DITCH AS STAKED ON THE GROUND



(A) "V" DITCH SECTION

(B) FLAT BOTTOM DITCH SECTION

TYPICAL CROSS SECTION

TYPE 2 - STANDARD TURNPIKE WITH FOUNDATION

TYPICAL ID	GEOTEXTILE			RETAINER*		DITCH					FOUNDATION**	COMMENTS	
	TYPE	TOP	BTM	TYPE	TYPE	LOCATION				TYPE			
						LT	RT	(D)	(E)		(F)		(G)
TPF-1	G			R								FD	

N/A WHEN NOT APPLICABLE
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03
 **FOR FOUNDATIONS SEE SECTION STD_918

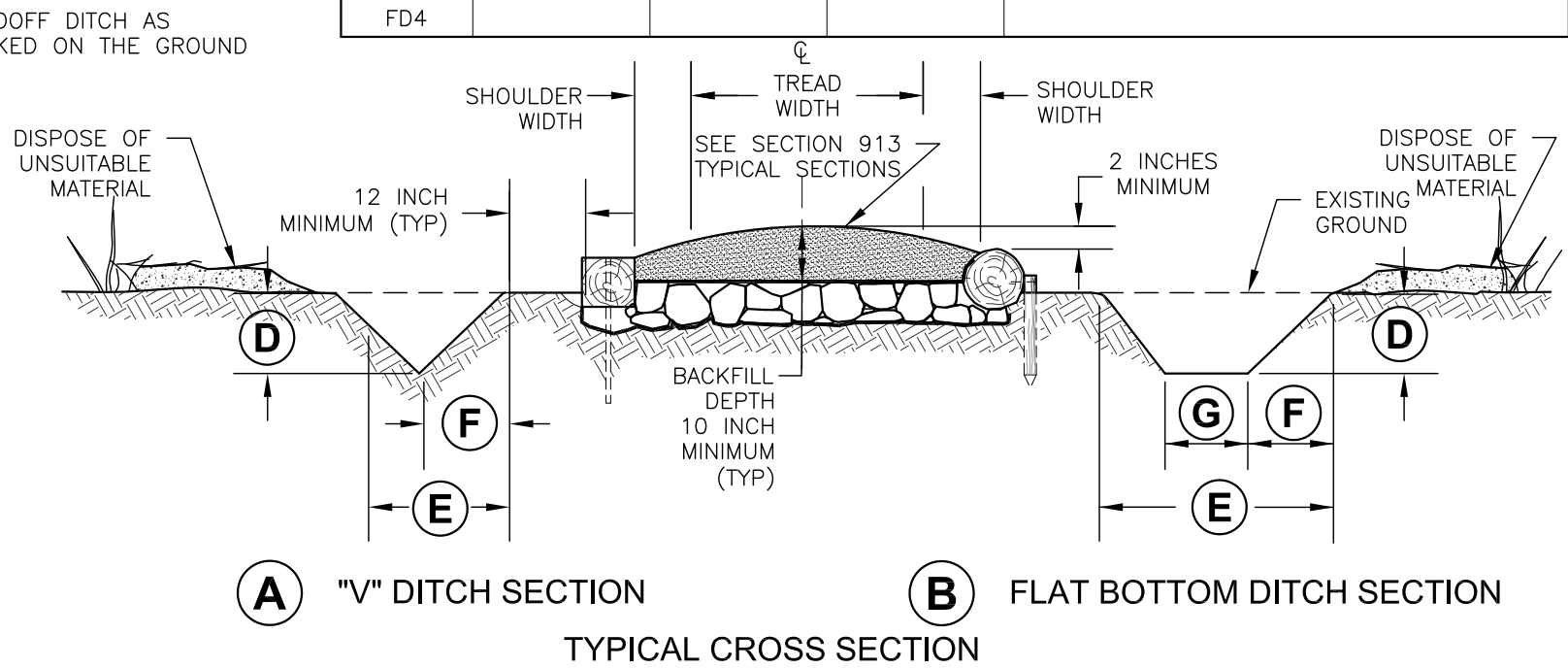
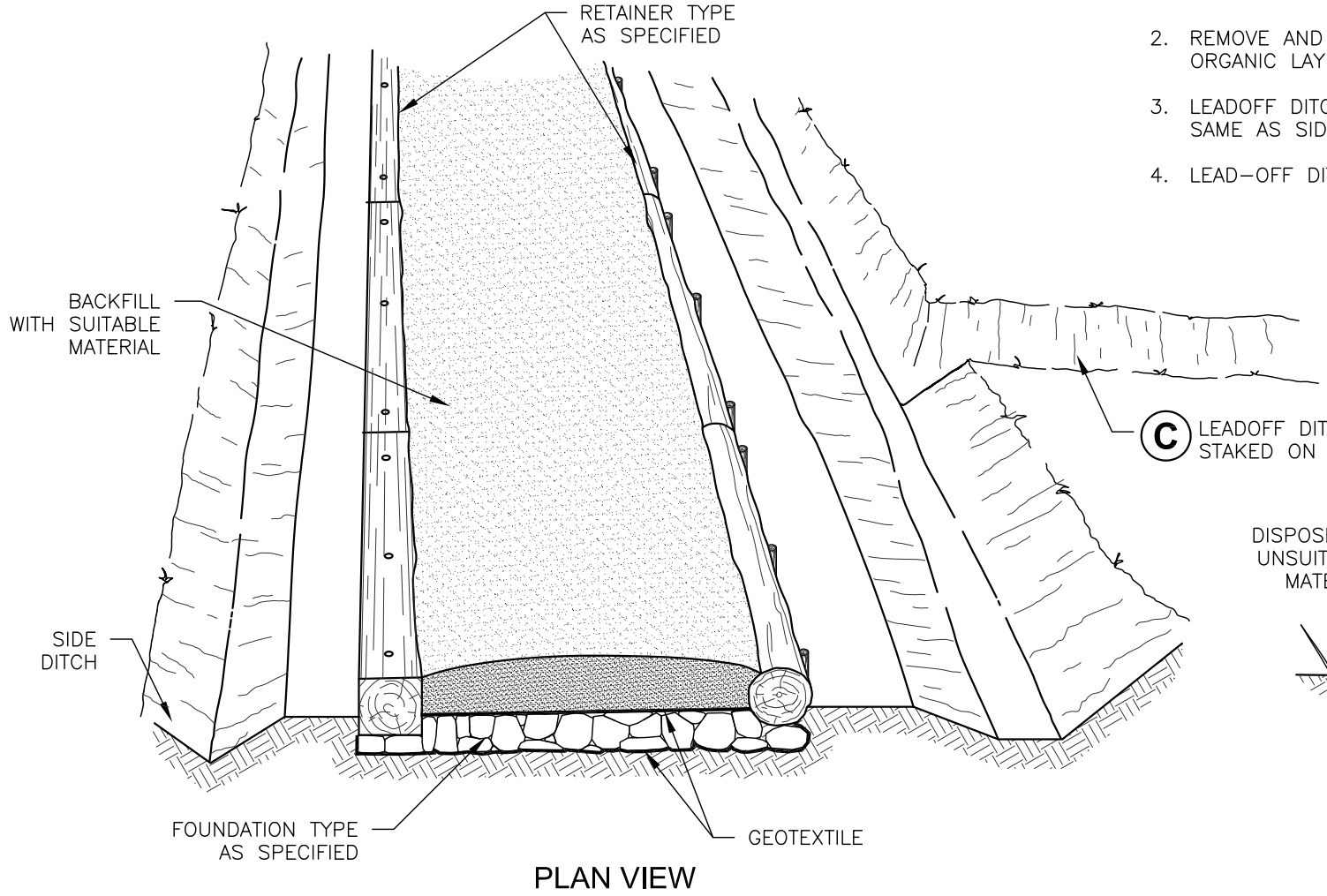
- NOTES:
1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
 2. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
 3. LEADOFF DITCH TO BE CONSTRUCTED THE SAME AS SIDE DITCHES.
 4. LEAD-OFF DITCH TO DRAIN TO DAYLIGHT.

GEOTEXTILE TYPE

TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3		

IN-FILL MATERIAL TYPE

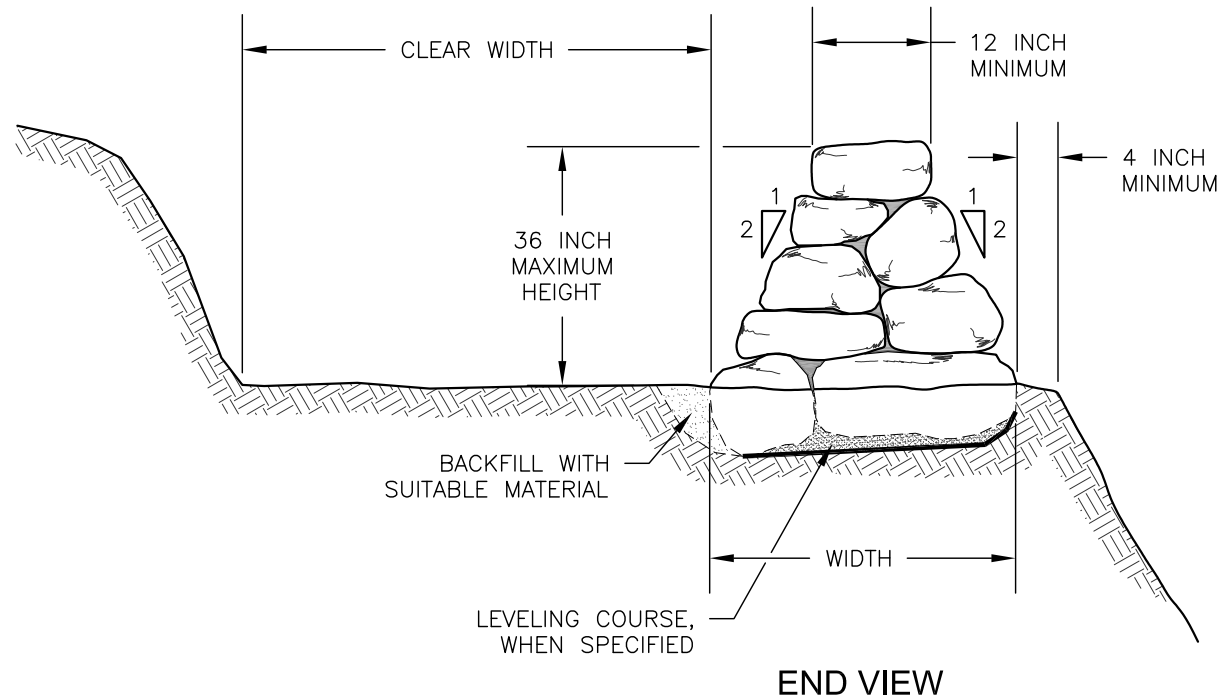
TYPE	MATERIAL	ROCK SIZE	GRADATION %	COMMENTS
FD1	AGGREGATE	1 INCH MINUS		
FD2	COARSE ROCK	4 TO 6 INCH		
FD3	HEAVY ROCK	8 INCH +		
FD4				



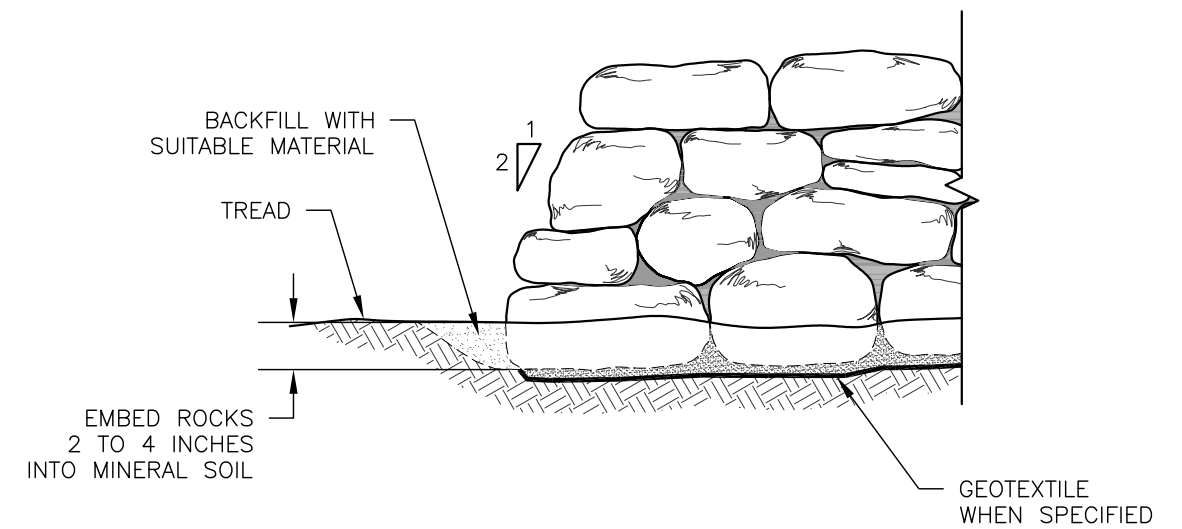
STACKED ROCK BARRIER

TYPICAL ID	CLEAR WIDTH	GEOTEXTILE TYPE	LEVELING COURSE TYPE	HEIGHT	WIDTH	COMMENTS
SRB-1			L			

N/A WHEN NOT APPLICABLE



END VIEW



ELEVATION VIEW

NOTES:

1. USE ROCKS OF GENERAL RECTANGULAR SHAPE BETWEEN 45 AND 120 LBS. PLACE LARGER ROCKS ON BOTTOM.
2. USE ROCK CHIPS TO WEDGE LARGER ROCKS IN PLACE TO FORM A STABLE WALL.
3. LEAVE A 4 INCH GAP EVERY 8 TO 10 FEET OR USE FLEXIBLE PIPE ON BOTTOM COURSE FOR DRAINAGE.
4. PROVIDE ORGANIC-FREE BACKFILL MATERIAL WHERE SHOWN ON DRAWINGS FOR LEVELING AND SUPPORT OF BASE ROCK.
5. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
6. CLEAR WIDTH IS GREATER OR EQUAL TO THE TREAD AND SHOULDER WIDTHS DEFINED IN SECTION 911.

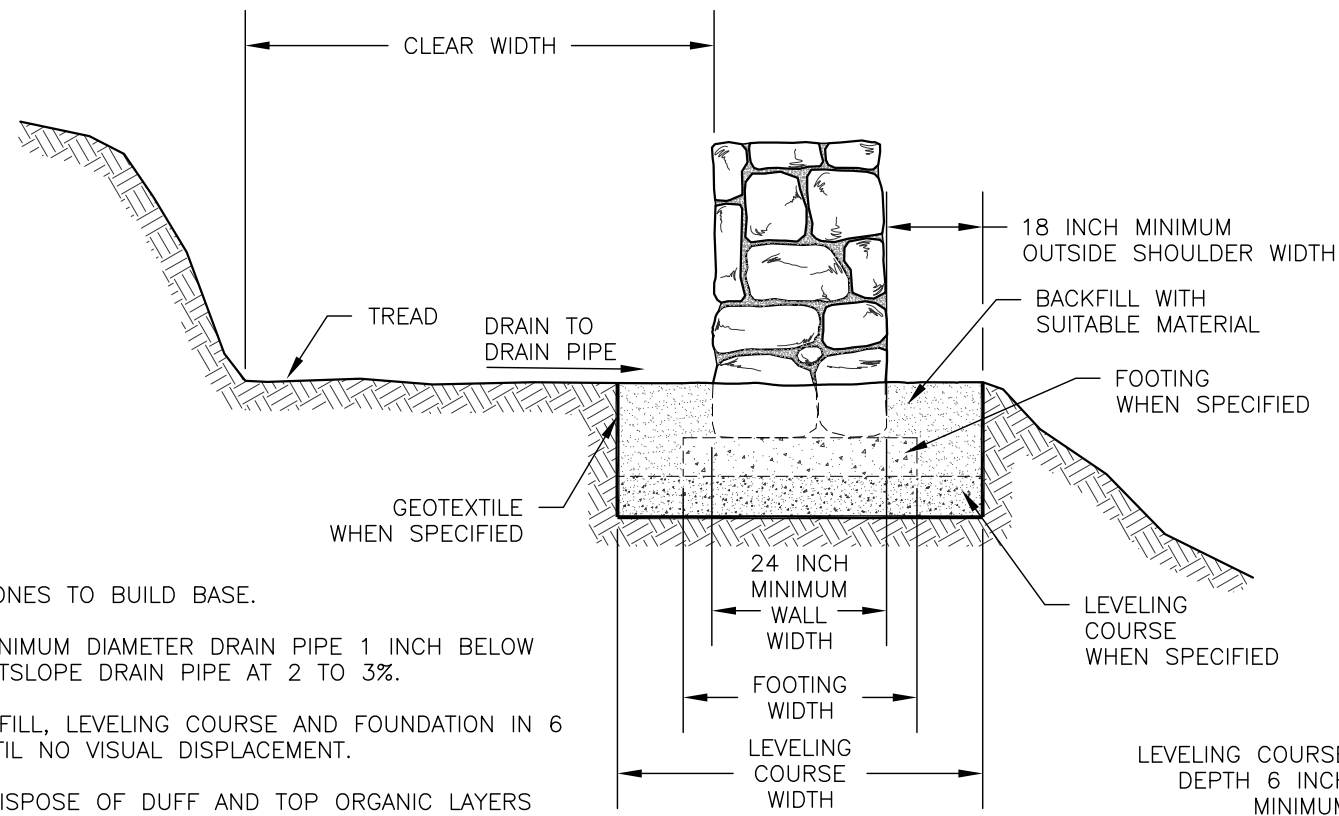
LEVELING COURSE MATERIAL

TYPE	MATERIAL	GRADATION	COMMENTS
L1	PITRUN		
L2	AGGREGATE		
L3			

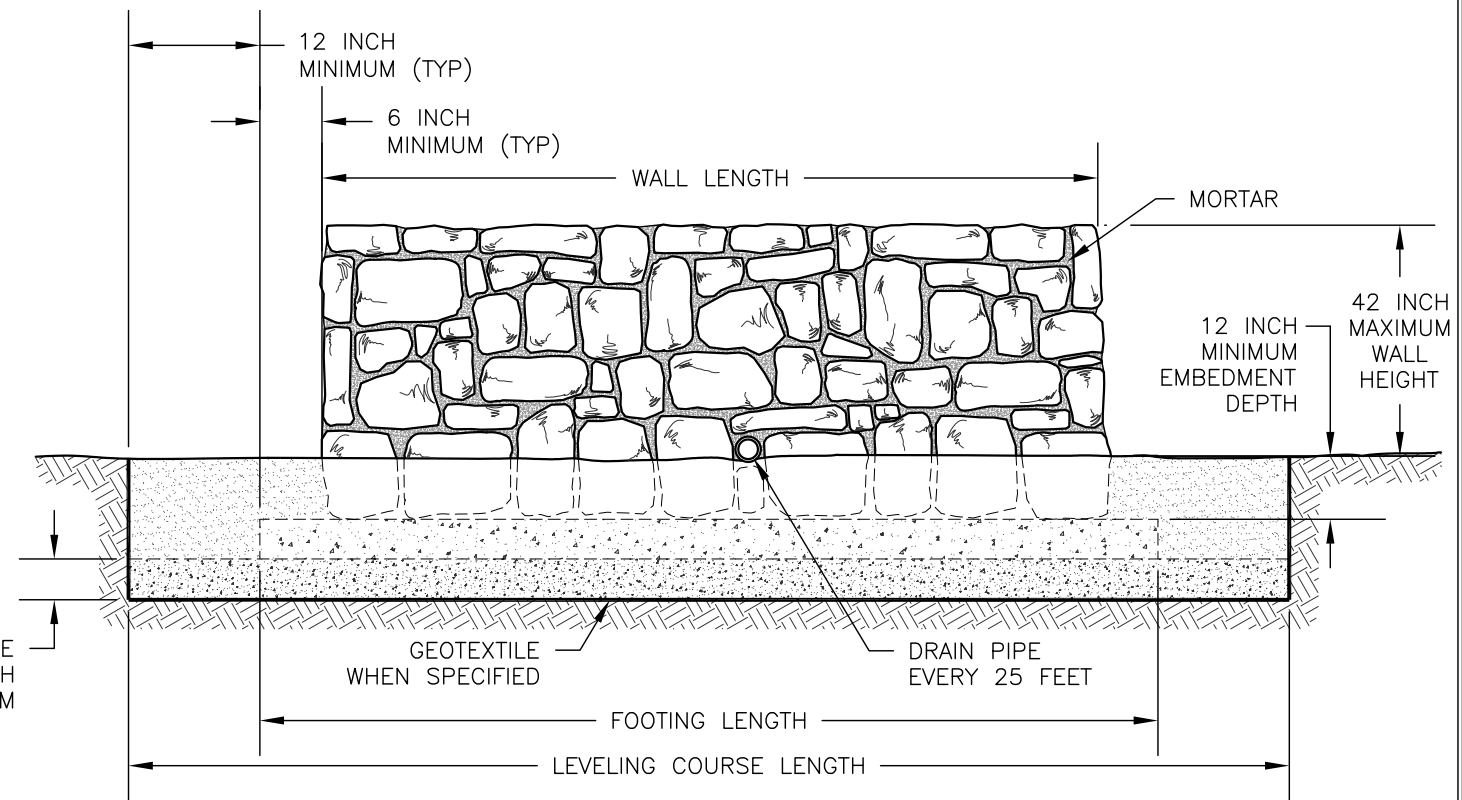
MASONRY ROCK BARRIER

TYPICAL ID	CLEAR WIDTH	GEOTEXTILE TYPE	LEVELING COURSE			FOOTING			MASONRY WALL					COMMENTS	
			TYPE	DEPTH	WIDTH	TYPE	DEPTH	WIDTH	HEIGHT	WIDTH	EMBEDMENT DEPTH	MINIMUM ROCK SIZE (LBS)	MAXIMUM ROCK SIZE (LBS)		MORTAR TYPE
MRB-1		G	L			FT									

N/A WHEN NOT APPLICABLE



END VIEW



ELEVATION VIEW

NOTES:

1. USE LARGE STONES TO BUILD BASE.
2. SET 2 INCH MINIMUM DIAMETER DRAIN PIPE 1 INCH BELOW TREAD AND OUTSLOPE DRAIN PIPE AT 2 TO 3%.
3. COMPACT BACKFILL, LEVELING COURSE AND FOUNDATION IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
4. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
5. CLEAR WIDTH IS GREATER OR EQUAL TO THE TREAD AND SHOULDER WIDTHS DEFINED IN SECTION 911.

GEOTEXTILE TYPE

LEVELING COURSE MATERIAL

FOOTING MATERIAL

GEOTEXTILE TYPE	GEOTEXTILE MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3	GEOGRID	
G4		

TYPE	MATERIAL	GRADATION	COMMENTS
L1	PITRUN		
L2	AGGREGATE		
L3			

TYPE	MATERIAL	GRADATION	COMMENTS
FT1	CONCRETE		
FT2	AGGREGATE		
FT3			

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

STANDARD TRAIL PLAN

PROJECT NAME & LOCATION

DRAWING NAME
MASONRY ROCK BARRIER

SECTION: **933 - SIDE BARRIERS** TYPICAL ID: **MRB**

REVISION DATE
XX/XX/XX

NO SCALE

DRAWING NO.
STD_933-20-01

SHEET OF

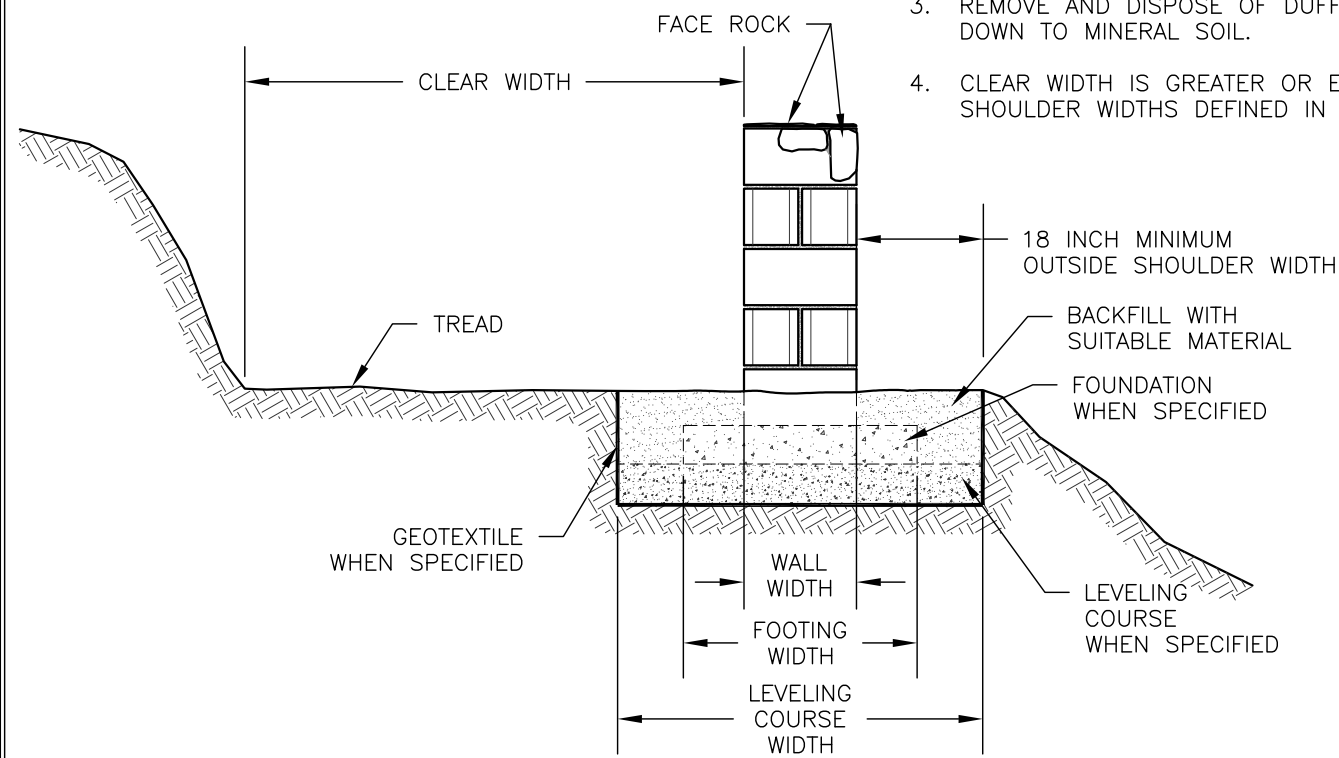
CONCRETE MASONRY UNIT BARRIER

TYPICAL ID	CLEAR WIDTH	GEOTEXTILE TYPE	LEVELING COURSE			FOOTING			HEIGHT	EMBEDMENT DEPTH	CMU WALL			MORTER TYPE	COMMENTS
			TYPE	DEPTH	WIDTH	TYPE	DEPTH	WIDTH			FACE ROCK	END TYPE	FACE ROCK		
CMB-1		G	L			FT									

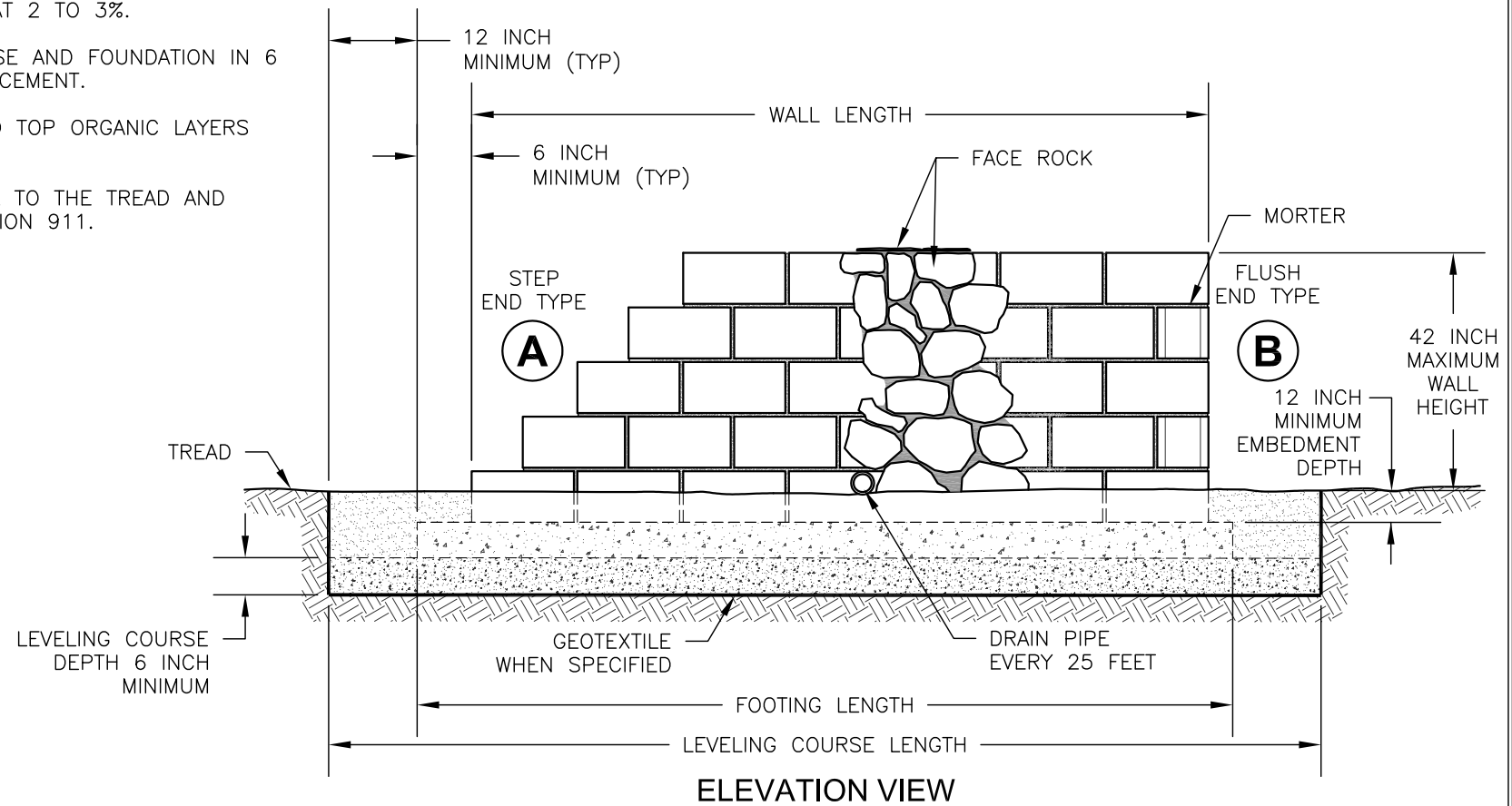
N/A WHEN NOT APPLICABLE

NOTES:

1. SET 2 INCH MINIMUM DIAMETER DRAIN PIPE 1 INCH BELOW TREAD AND OUTSLOPE DRAIN PIPE AT 2 TO 3%.
2. COMPACT BACKFILL, LEVELING COURSE AND FOUNDATION IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
3. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
4. CLEAR WIDTH IS GREATER OR EQUAL TO THE TREAD AND SHOULDER WIDTHS DEFINED IN SECTION 911.



GEOTEXTILE TYPE END VIEW



ELEVATION VIEW

LEVELING COURSE MATERIAL

FOOTING MATERIAL

GEOTEXTILE TYPE	GEOTEXTILE MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3	GEOGRID	
G4		

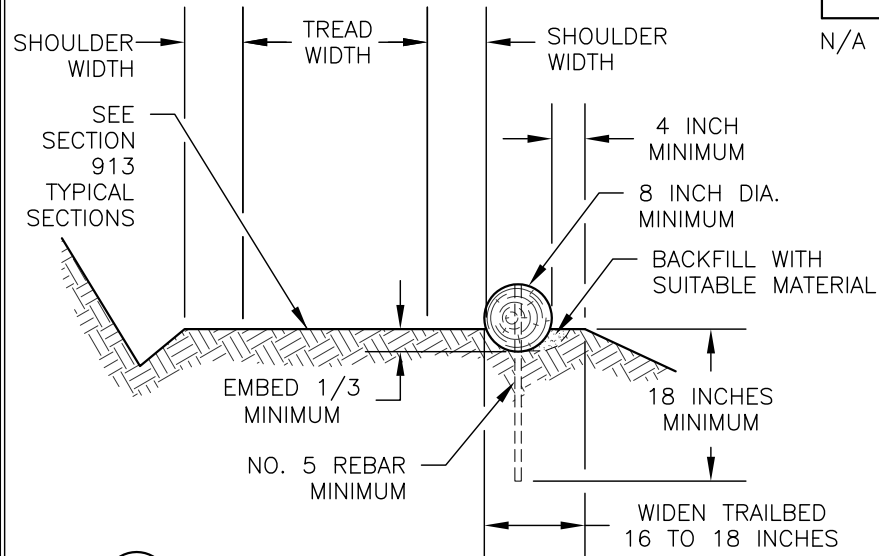
TYPE	MATERIAL	GRADATION	COMMENTS
L1	PITRUN		
L2	AGGREGATE		
L3			

TYPE	MATERIAL	GRADATION	COMMENTS
FT1	CONCRETE		
FT2	AGGREGATE		
FT3			

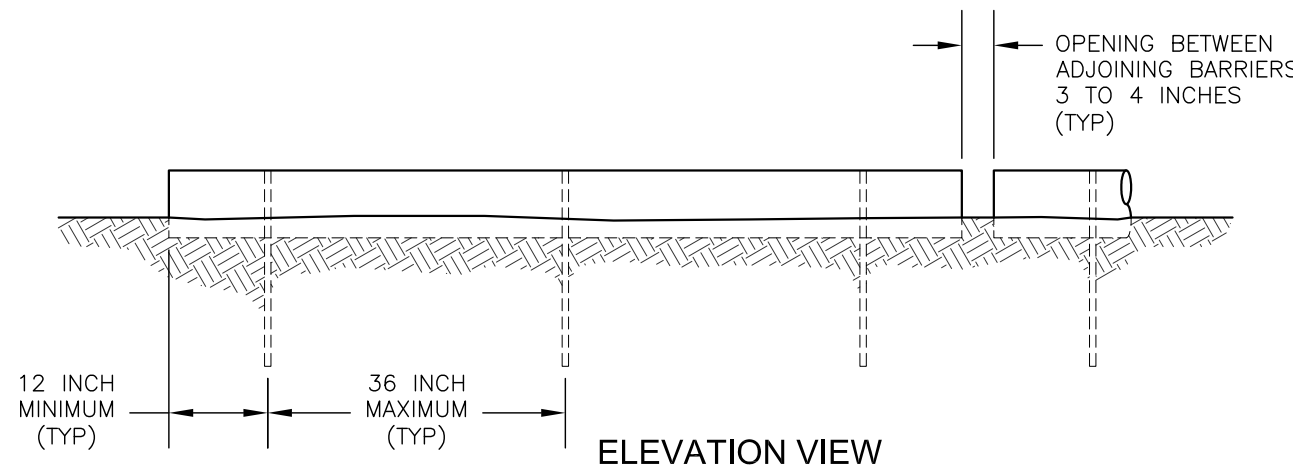
BARRIER RAIL ON GRADE

BARRIER RAIL					
TYPICAL ID	SECTION TYPE	SIZE	SPECIES	PRESERV. TYPE	COMMENTS
BRG-1				P	

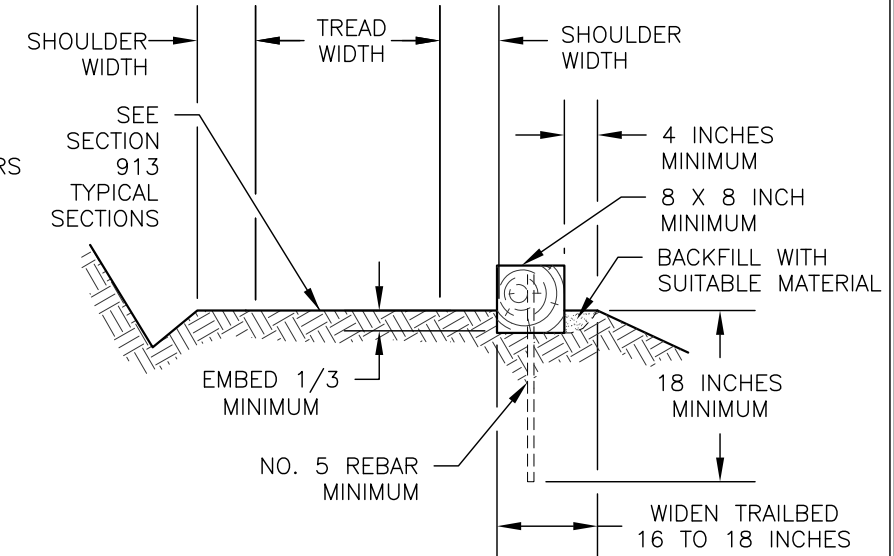
N/A WHEN NOT APPLICABLE



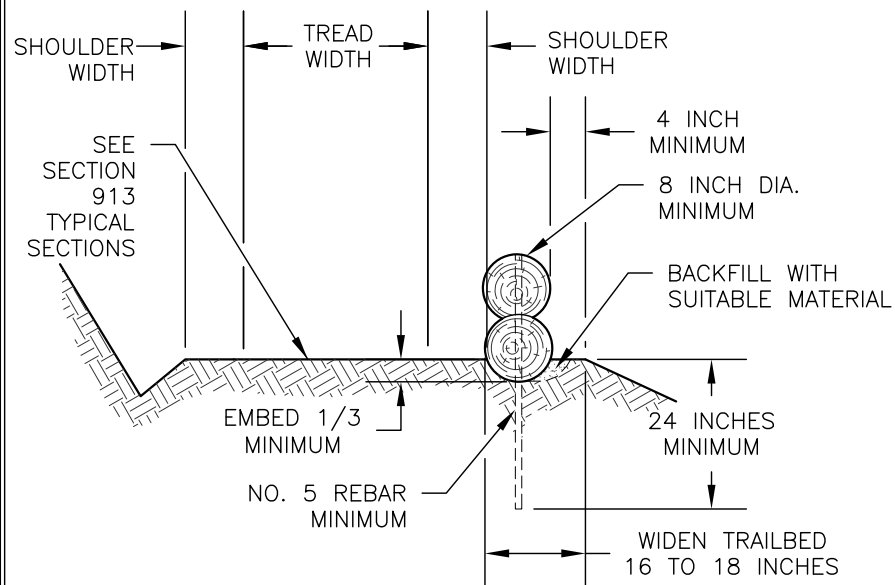
A TYPICAL ONE LOG SECTION



ELEVATION VIEW



C TYPICAL ONE TIMBER SECTION



B TYPICAL TWO LOG SECTION
TOP LOG SHALL BE SCRIBED AND NOTCHED TO LOWER LOG WHEN SPECIFIED

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE

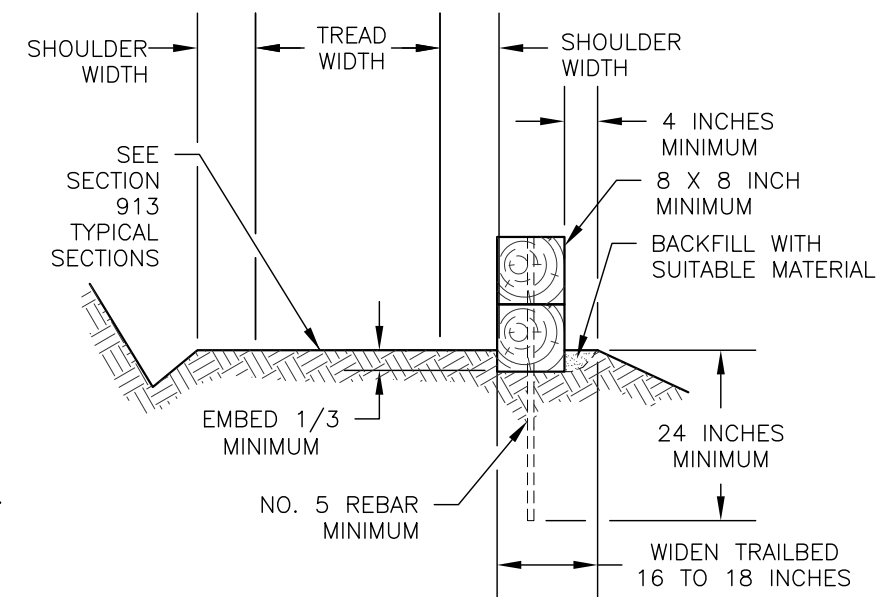
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY

UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

NOTES:

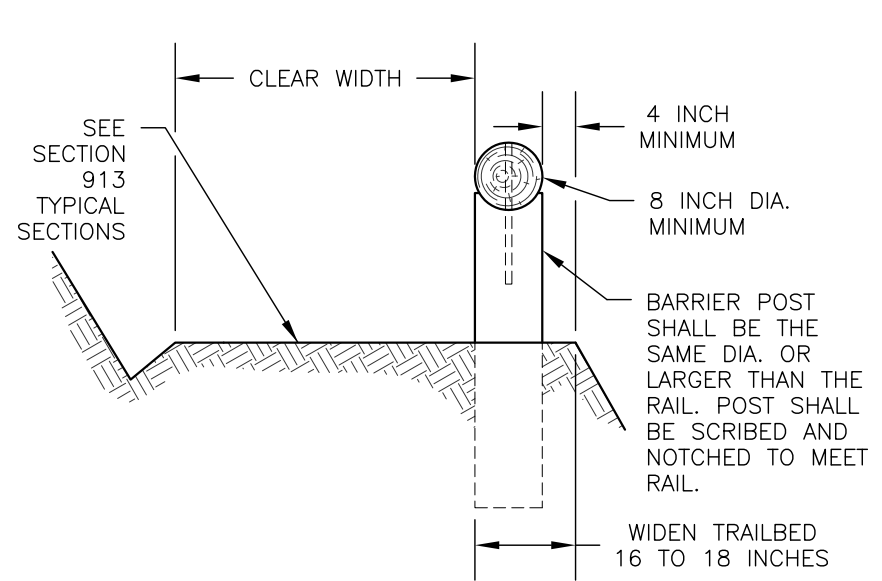
1. PRE-DRILL HOLES FOR REBAR TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS. RECESS END OF REBAR 1/2 INCH BELOW TOP OF TIMBER.
2. PLACE REBAR 6 INCHES FROM EACH END OF TIMBER WITH MAXIMUM SPACING OF 36 INCHES. FOR STACKED RETAINERS STAGGER JOINTS 24 INCHES MINIMUM.
3. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
4. FIELD TREAT ALL FIELD CUTS AND PRE-DRILLED HOLES.
5. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.



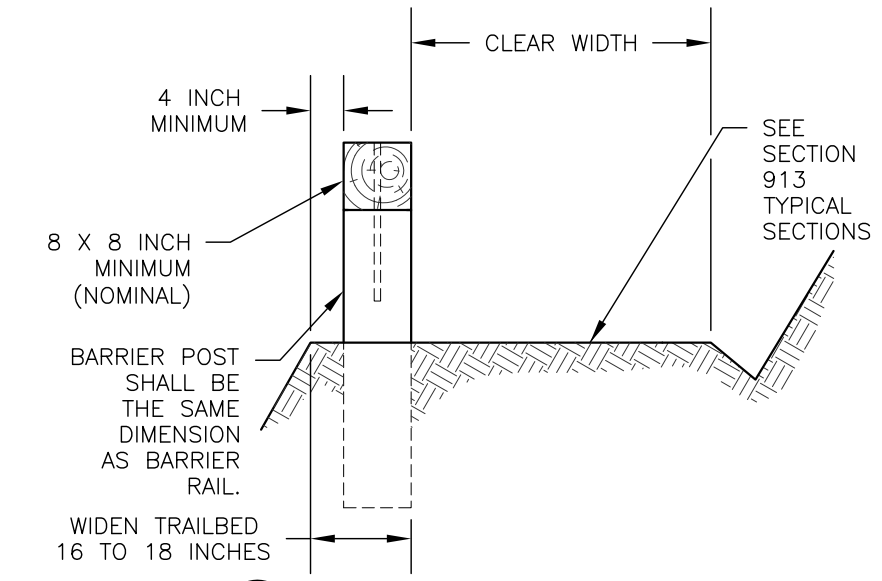
D TYPICAL TWO TIMBER SECTION

BARRIER RAIL ON POST

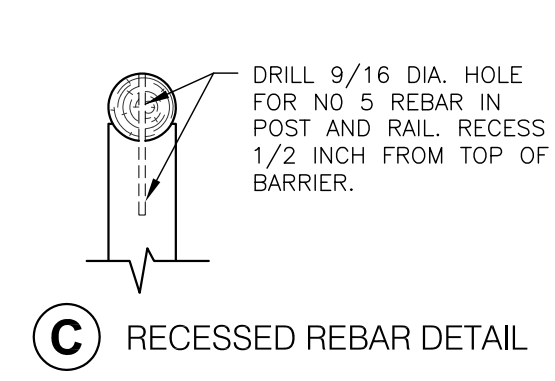
TYPICAL ID	CLEAR WIDTH	SECTION TYPE	BARRIER POST				BARRIER RAIL			CONNECTION DETAIL TYPE	COMMENTS	
			SIZE	HEIGHT	EMBEDMENT DEPTH	SPECIES	PRESERV. TYPE	SIZE	SPECIES			PRESERV. TYPE
BRP-1										P		



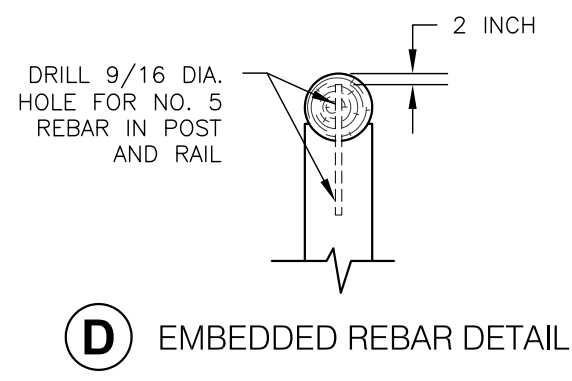
A TYPICAL LOG BARRIER SECTION



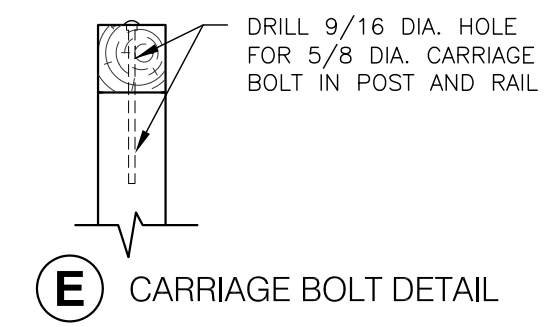
B TYPICAL TIMBER BARRIER SECTION



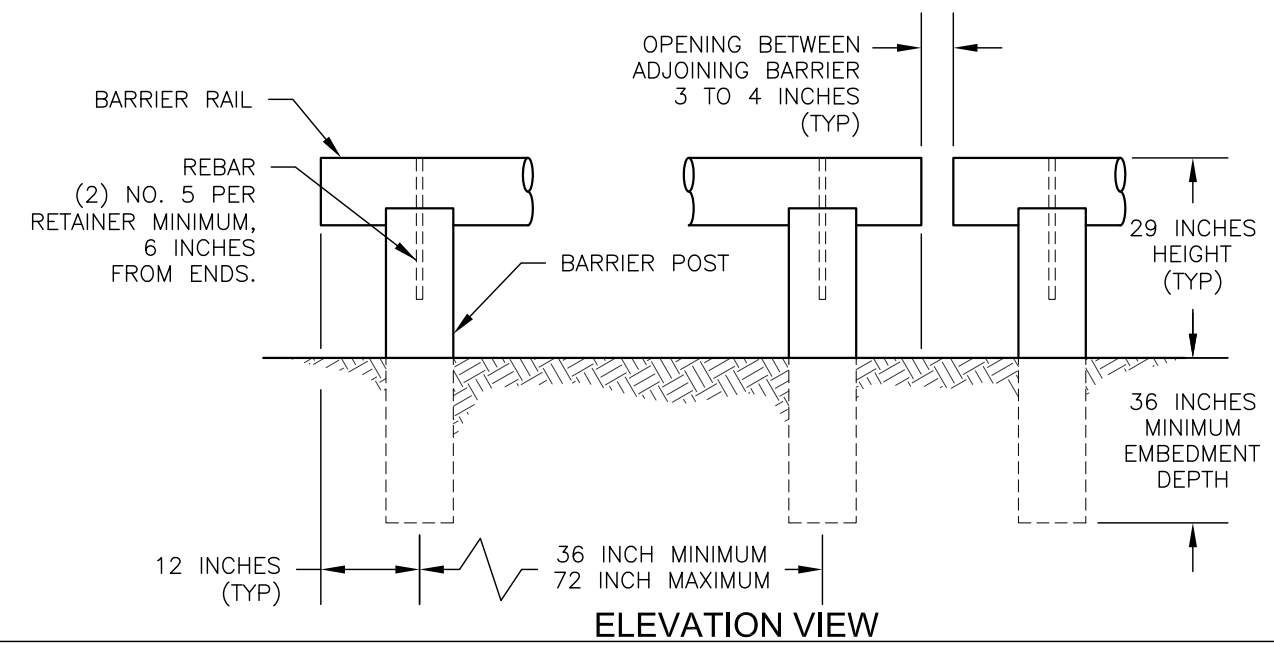
C RECESSED REBAR DETAIL



D EMBEDDED REBAR DETAIL



E CARRIAGE BOLT DETAIL



A ELEVATION VIEW

- NOTES:
1. PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS.
 2. REBAR LENGTH SHALL BE 2.5X THE DEPTH OF THE RAIL WITH A MINIMUM OF 18 INCHES LONG.
 3. COMPACT AND BACKFILL POST HOLES IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
 4. FIELD TREAT ALL FIELD CUTS AND PRE-DRILLED HOLES.
 5. CLEAR WIDTH IS GREATER OR EQUAL TO THE TREAD AND SHOULDER WIDTHS DEFINED IN SECTION 911.

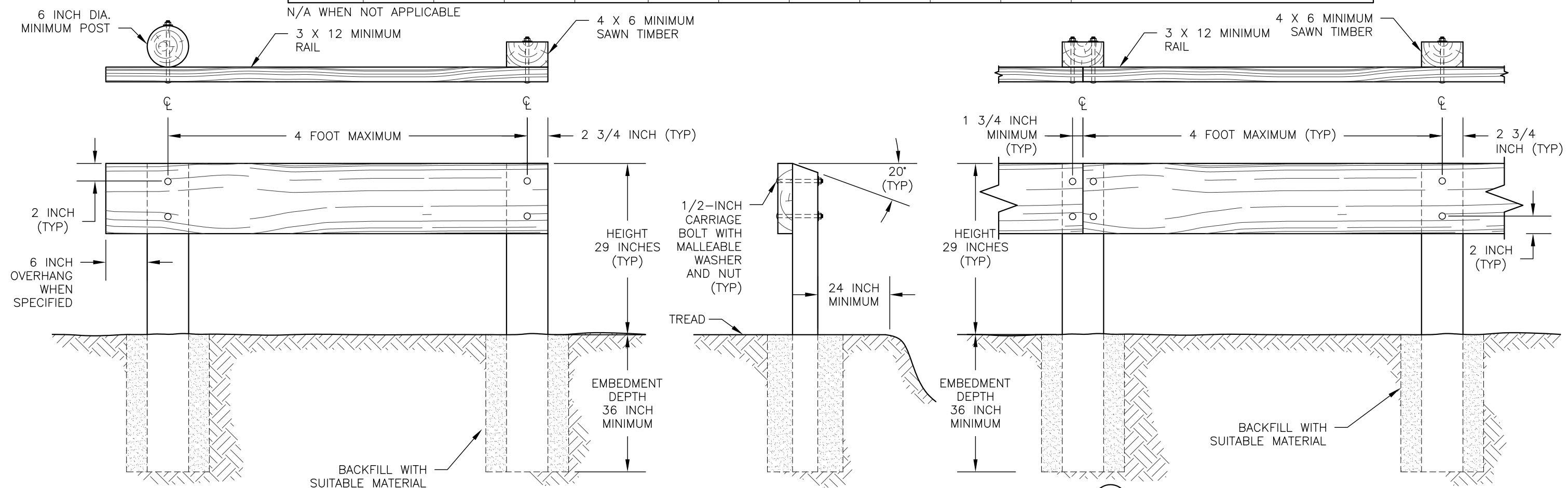
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE: WB = WATERBORNE, OT = OIL-BORNE

USE CATEGORY: UC3B = ABOVE GROUND - EXPOSED, UC4A = GROUND CONTACT - GENERAL USE, UC4B = GROUND CONTACT - HEAVY DUTY

TIMBER BARRIER ON POST

TYPICAL ID	SECTION TYPE	POST					RAIL				COMMENTS	
		SIZE	LENGTH	EMBEDMENT DEPTH	SPECIES	PRESERV. TYPE	SIZE	OVERHANG	SPECIES	PRESERV. TYPE		
TBP-1												



A SINGLE GUARDRAIL SECTION

B CONTINUOUS GUARDRAIL SECTION

- NOTES:
- PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS.
 - COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
 - FIELD TREAT ALL FIELD CUTS AND PRE-DRILLED HOLES.
 - ALL HARDWARE SHALL BE GALVANIZED OR STAINLESS STEEL.

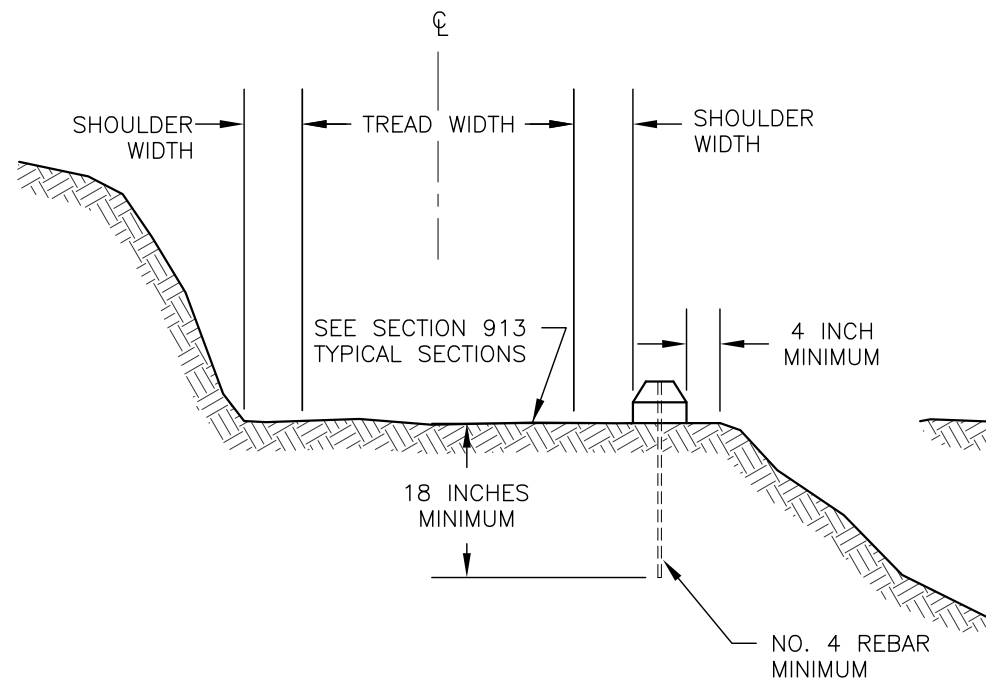
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE	USE CATEGORY
WB = WATERBORNE OT = OIL-BORNE	UC3B = ABOVE GROUND - EXPOSED UC4A = GROUND CONTACT - GENERAL USE UC4B = GROUND CONTACT - HEAVY DUTY

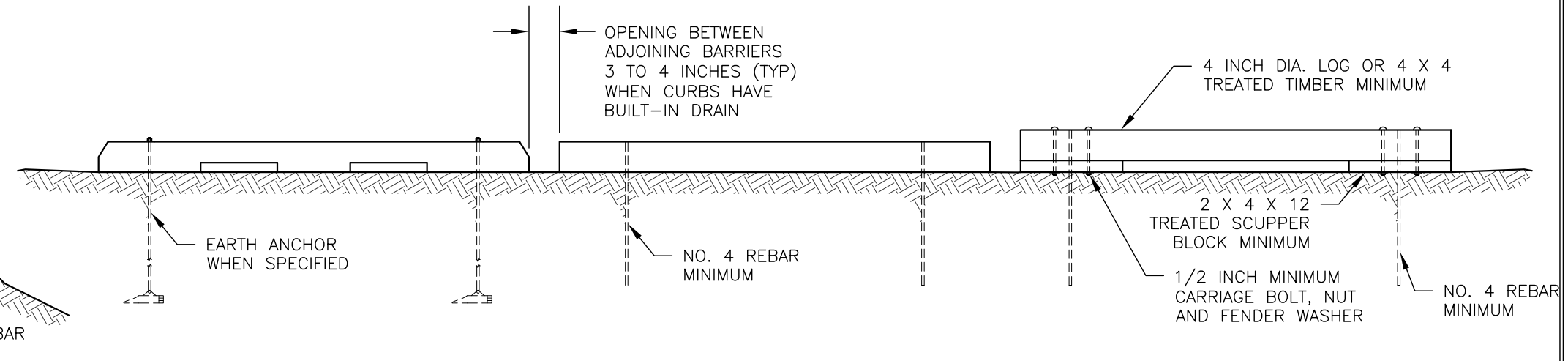
CURB

TYPICAL ID	SIZE	SPECIES/ GRADE	PRESERV. TYPE	ANCHOR TYPE	ANCHOR SIZE	COMMENTS
CRB-1			P			

N/A WHEN NOT APPLICABLE



TYPICAL CURB SECTION



ELEVATION VIEW

NOTES:

1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
2. ALL FIELD DRILLED HOLES AND CUTS SHALL BE FIELD TREATED.

CURB TYPE

TYPE	MATERIAL	COMMENTS
CB1	CONCRETE	
CB2	PLASTIC	
CB3	LOG	
CB4	SAWN TIMBER	
CB5	RAIL ROAD TIES	
CB6		

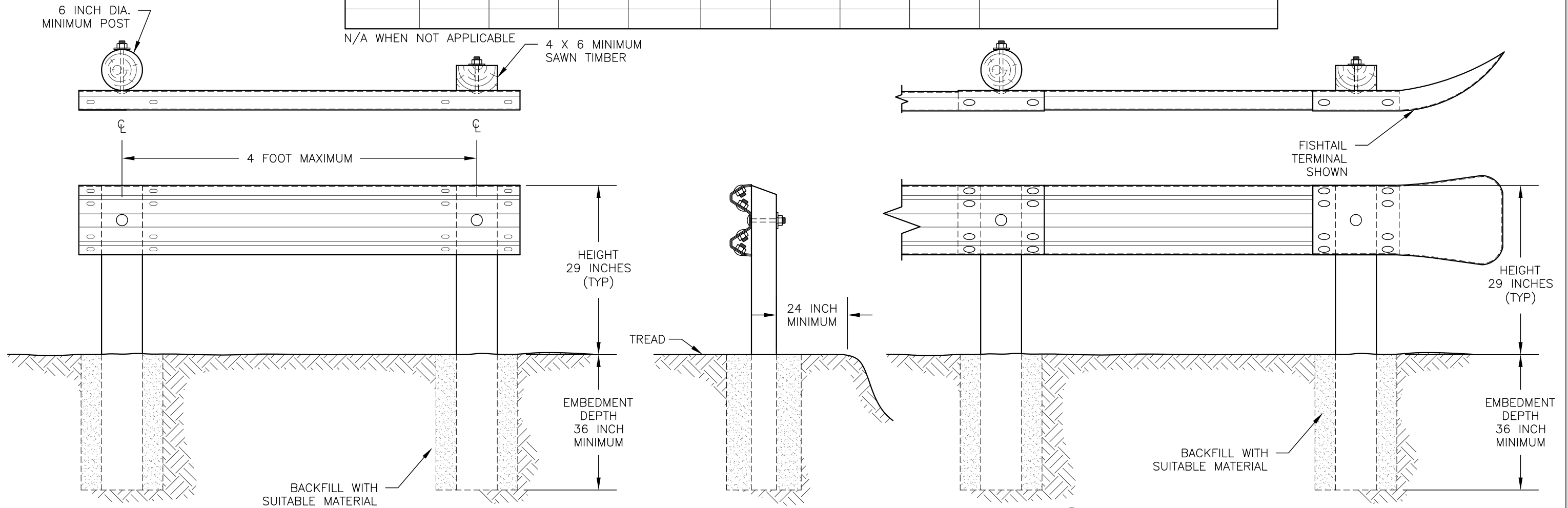
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

GUARDRAIL

TYPICAL ID	SECTION TYPE	POST					RAIL		COMMENTS
		SIZE	LENGTH	EMBEDMENT DEPTH	SPECIES	PRESERV. TYPE	SIZE	END	
WGR-1						P			



A SINGLE GUARDRAIL SECTION

B CONTINUOUS GUARDRAIL SECTION

NOTES:

1. PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS.
2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
3. ALL FIELD DRILLED HOLES AND CUTS SHALL BE FIELD TREATED.
4. ALL HARDWARE SHALL BE GALVANIZED OR STAINLESS STEEL.
5. USE ONLY HARDWARE MANUFACTURED FOR GUARDRAILS.

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)

PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE

WB = WATERBORNE
OT = OIL-BORNE

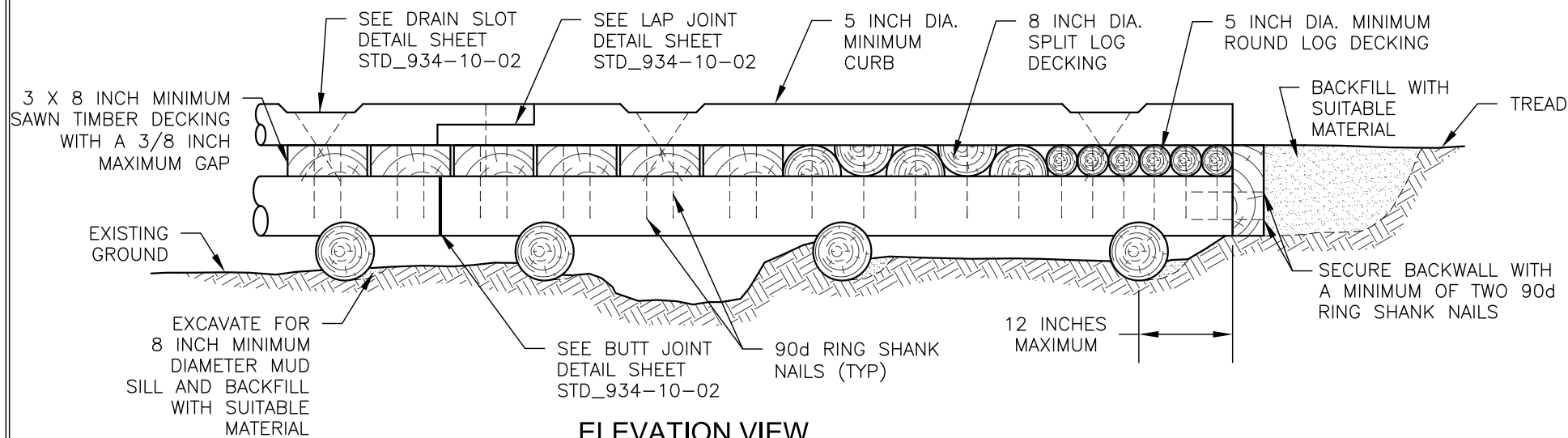
USE CATEGORY

UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

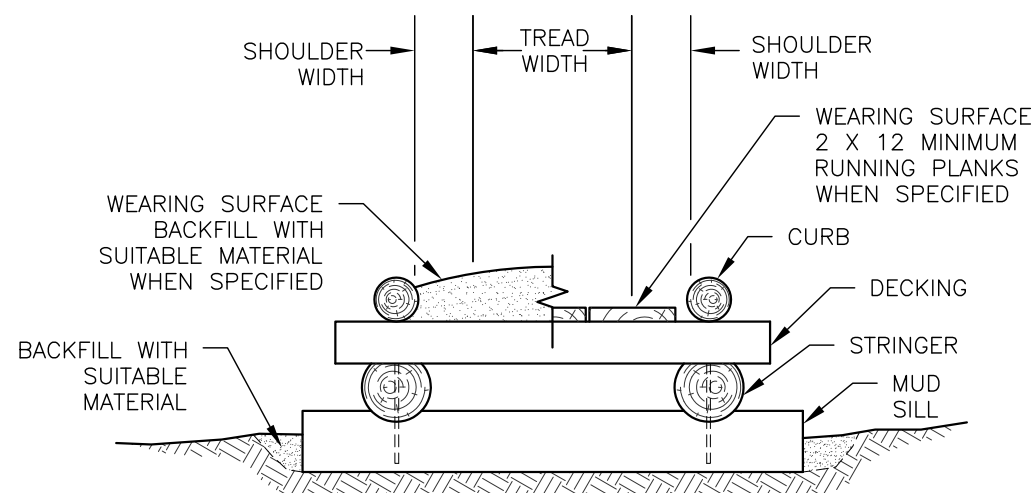
STANDARD PUNCHEON

TYPICAL ID	STRINGER/MUD SILL				DECK/BACKWALL				CURB			WEARING SURFACE				COMMENTS
	SIZE	SPECIES	NUMBER	PRESERV. TYPE	TYPE	SIZE	SPECIES	PRESERV. TYPE	SIZE	SPECIES	PRESERV. TYPE	TYPE	SIZE	SPECIES	PRESERV. TYPE	
SP1-1				P				P			P				P	

N/A WHEN NOT APPLICABLE



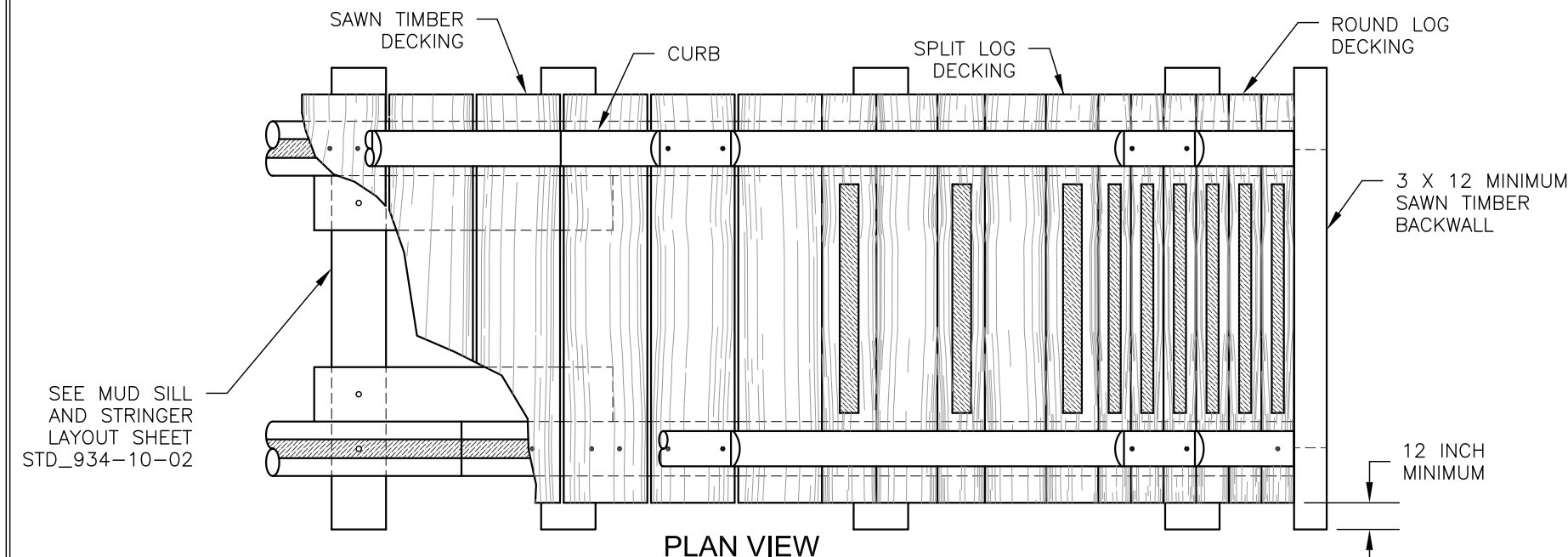
ELEVATION VIEW



TYPICAL SECTION

NOTES:

1. PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS.
2. RECESS END OF REBAR 1/2 INCH BELOW TOP OF STRINGERS.
3. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
4. ALL FIELD DRILLED HOLES AND CUTS SHALL BE FIELD TREATED.
5. FINAL DECK ELEVATION FOR RUNNING PLANKS OR DECKING SHALL BE NO MORE THAN 1/2 INCH DIFFERENCE IN ELEVATION.



PLAN VIEW

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)

PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

SHEET
1 OF 2

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

STANDARD TRAIL PLAN

PROJECT NAME & LOCATION

DRAWING NAME
STANDARD PUNCHEON

SECTION TYPICAL ID

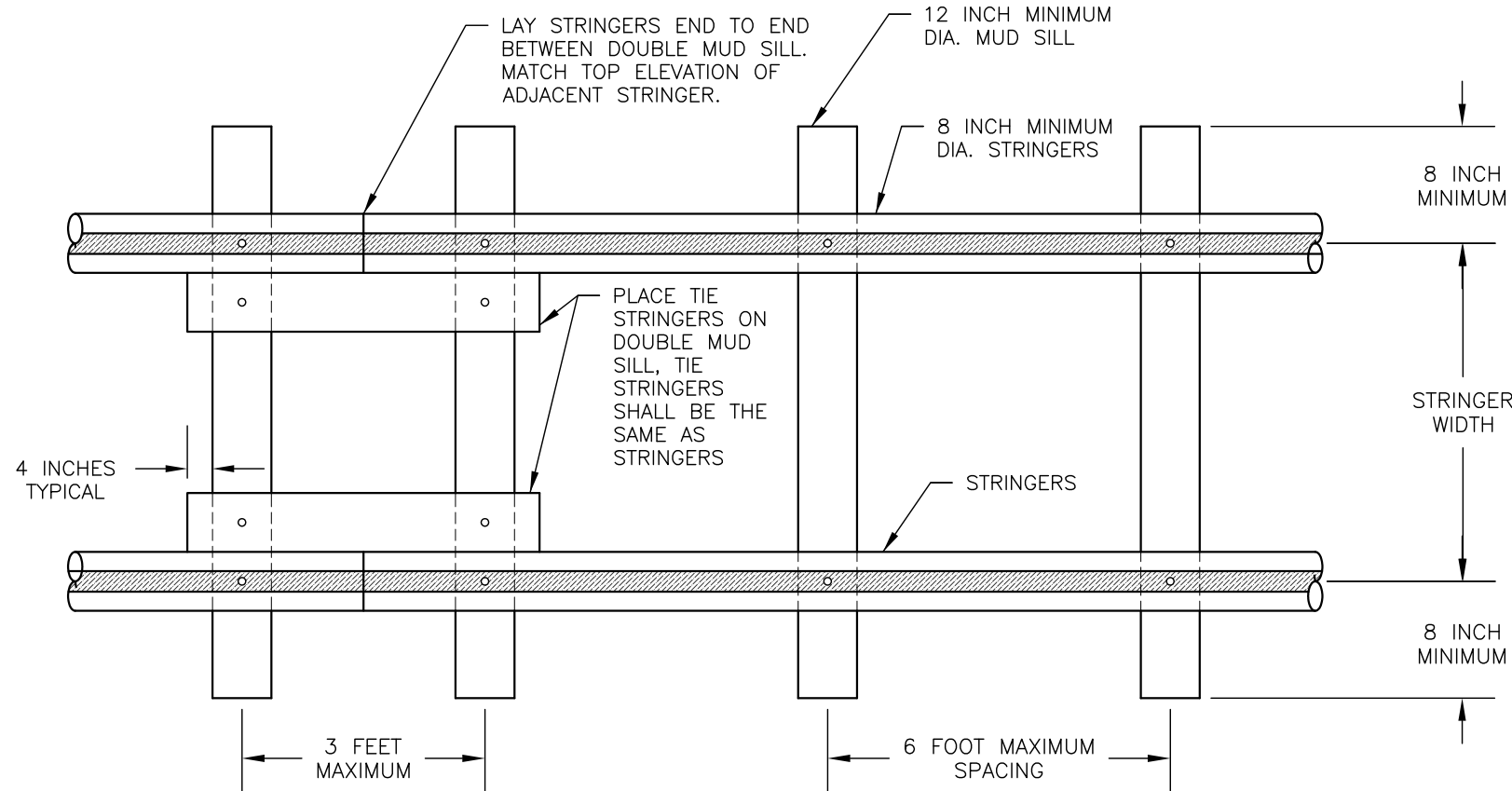
934 - PUNCHEONS SP1

REVISION DATE
XX/XX/XX

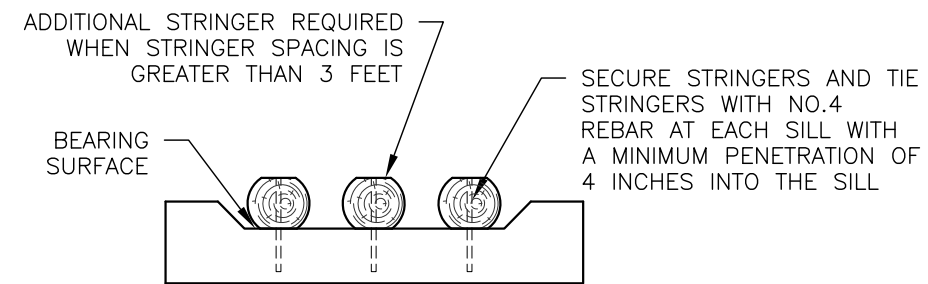
NO SCALE

DRAWING NO.
STD_934-10-01

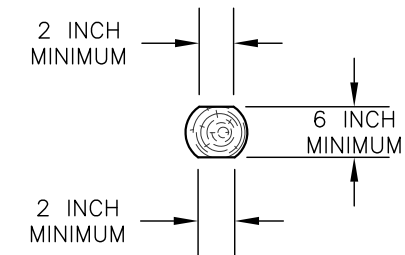
SHEET OF



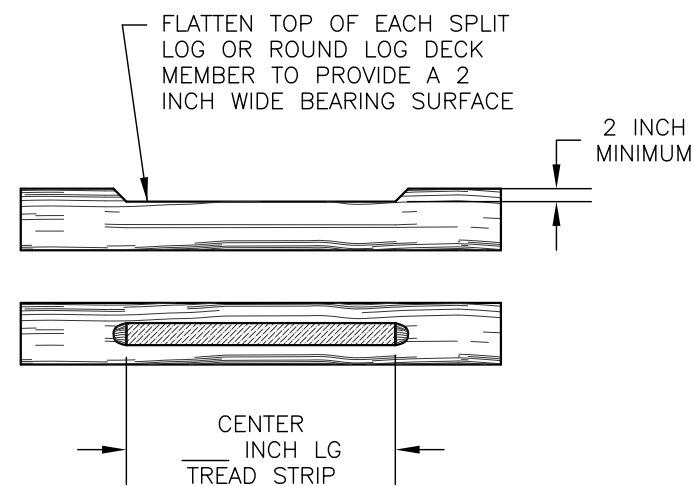
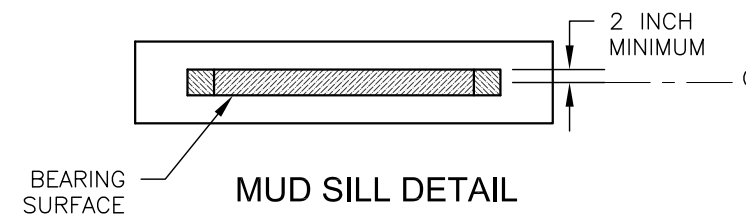
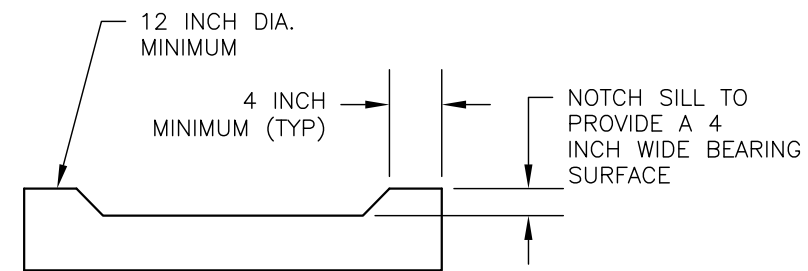
MUD SILL AND STRINGER LAYOUT



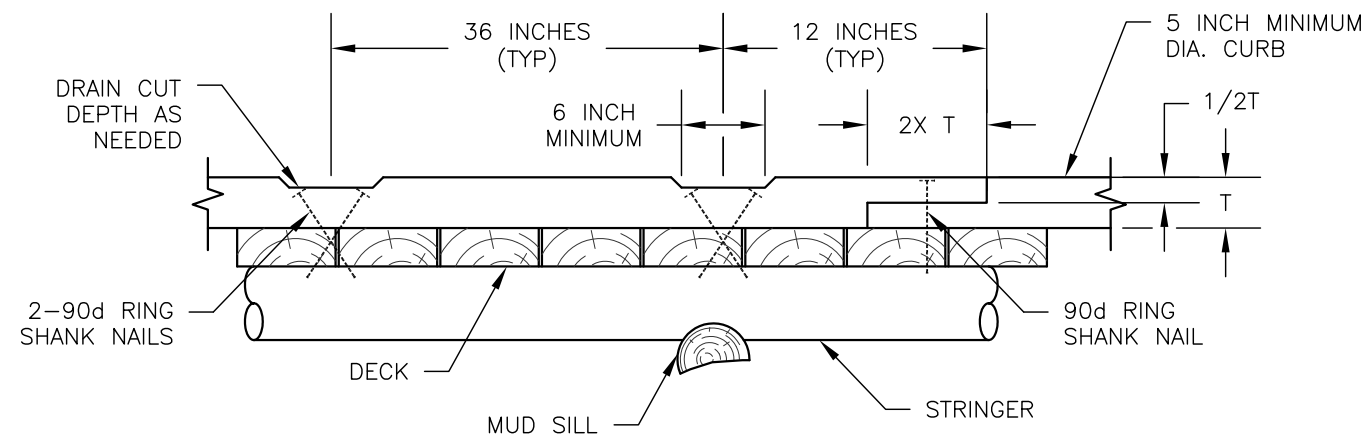
MUD SILL AND STRINGER LAYOUT



LOG STRINGER DETAIL

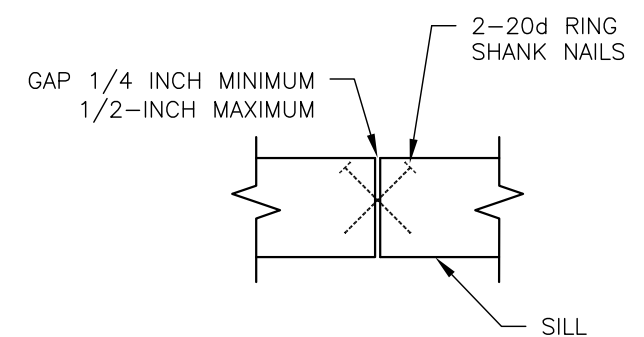


TREAD STRIP DETAIL



DRAIN SLOT DETAIL

TYPICAL LAP JOINT
T = THICKNESS OF RETAINER



TYPICAL BUTT JOINT

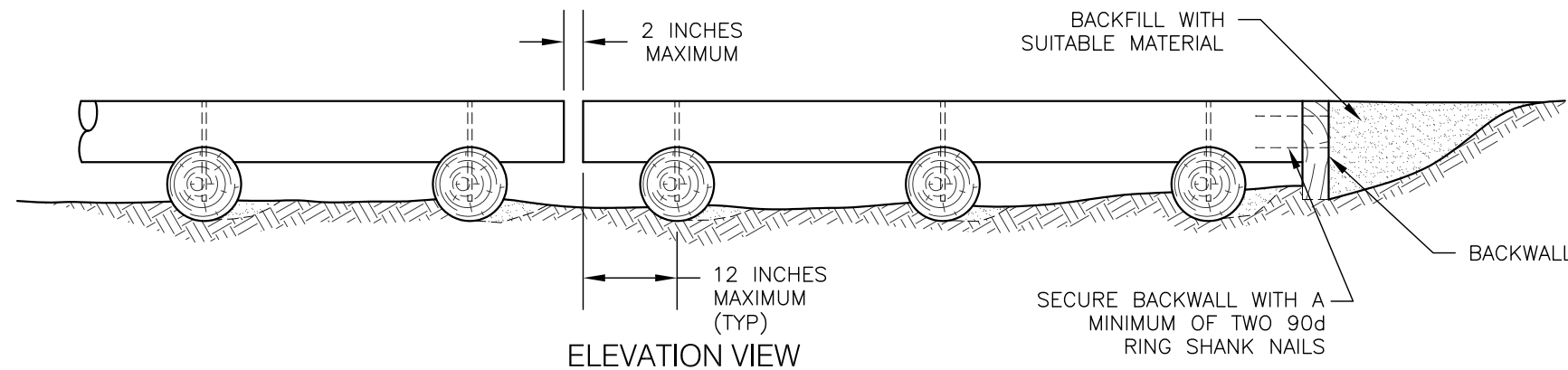
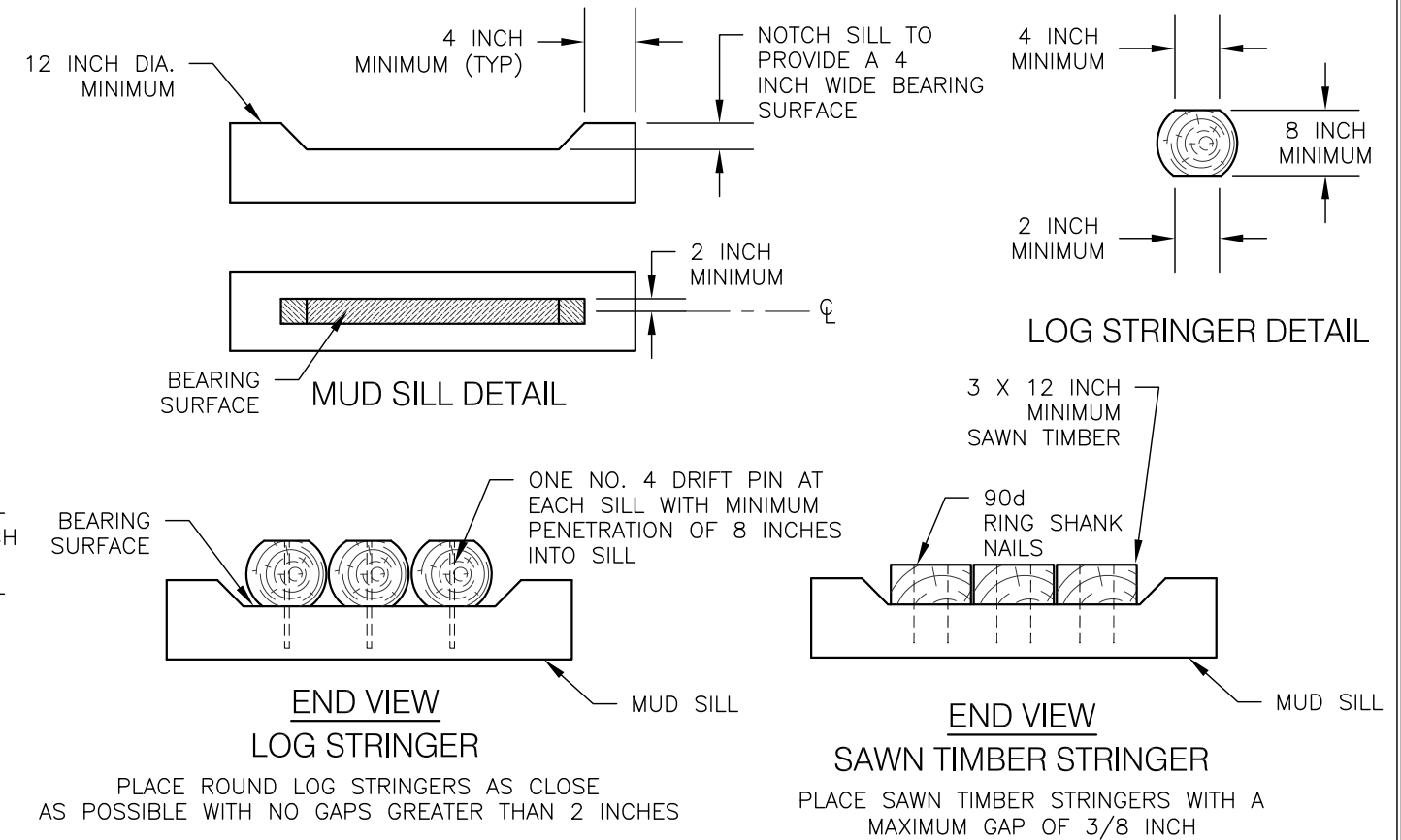
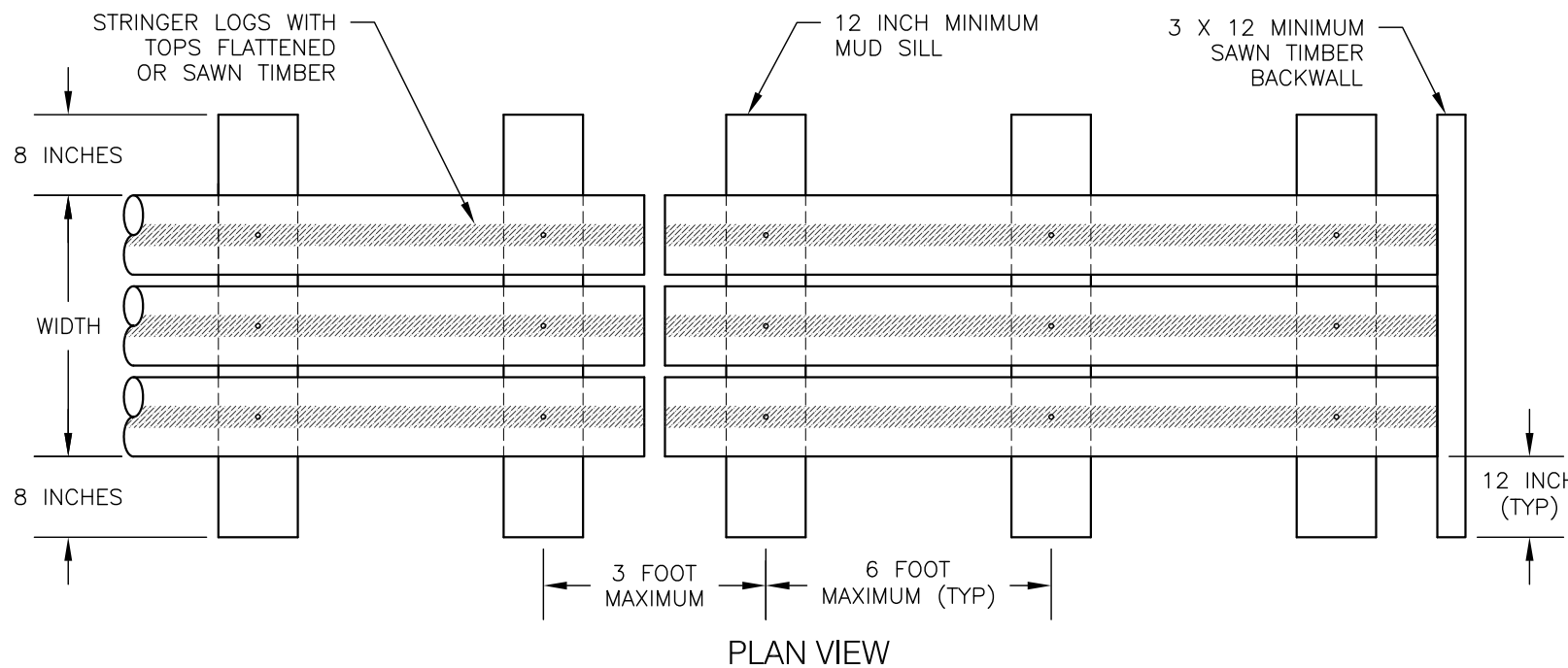
PUNCHEON WITHOUT DECKING

TYPICAL ID	WIDTH	MUD SILL		STRINGER			BACKWALL		COMMENTS
		SPECIES	PRESERV. TYPE	TYPE	SIZE	PRESERV. TYPE	SIZE	PRESERV. TYPE	
NDP-1			P					P	

NOTES:

1. PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS.
2. RECESS END OF REBAR 1/2 INCH BELOW TOP OF STRINGERS.
3. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
4. ALL FIELD DRILLED HOLES AND CUTS SHALL BE FIELD TREATED.
5. FINAL DECK ELEVATION FOR RUNNING PLANKS OR DECKING SHALL BE NO MORE THAN 1/2 INCH DIFFERENCE IN ELEVATION.

N/A WHEN NOT APPLICABLE



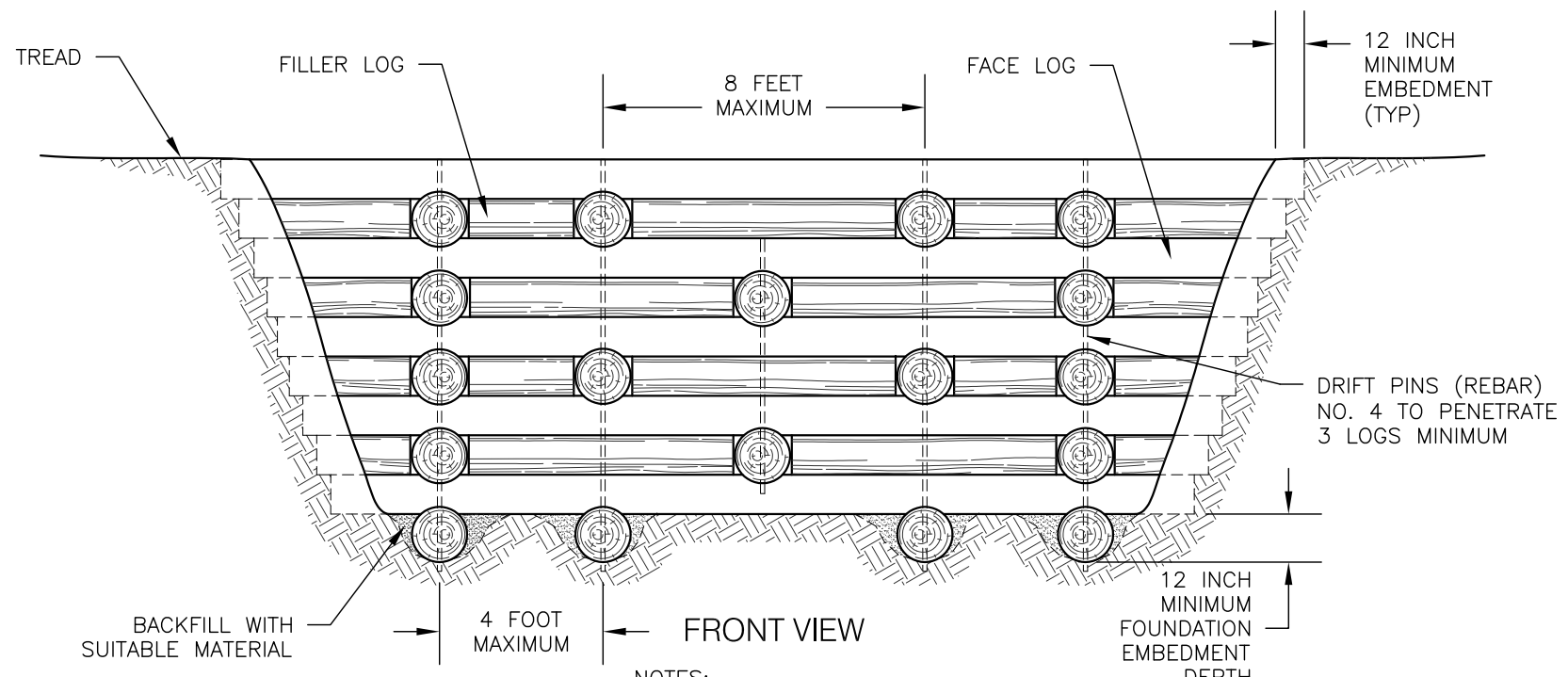
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

<p>TREATMENT TYPE</p> <p>WB = WATERBORNE OT = OIL-BORNE</p>	<p>USE CATEGORY</p> <p>UC3B = ABOVE GROUND - EXPOSED UC4A = GROUND CONTACT - GENERAL USE UC4B = GROUND CONTACT - HEAVY DUTY</p>
--	--

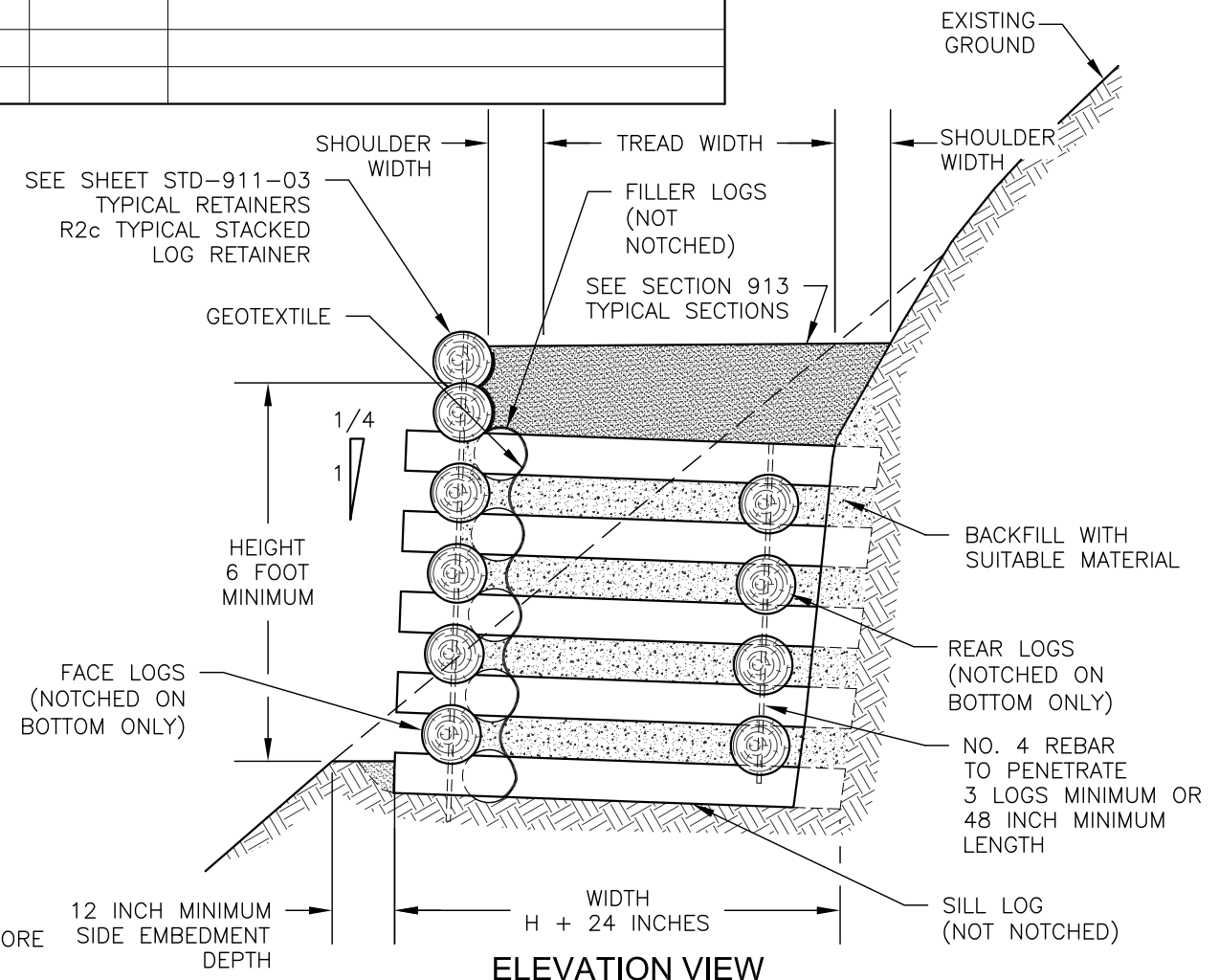
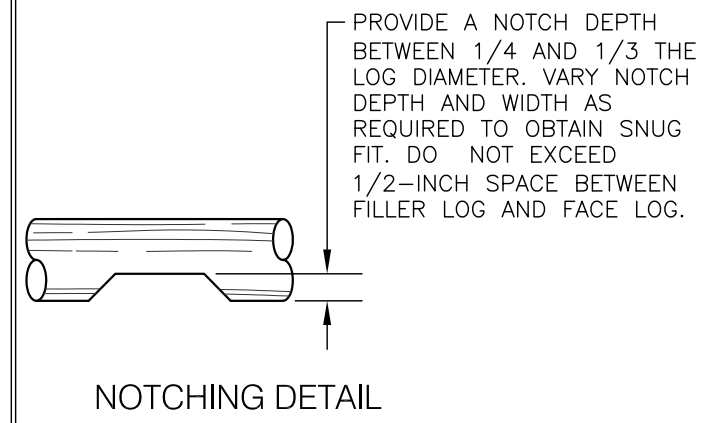
LOG CRIB

TYPICAL ID	GEOTEXTILE TYPE	EMBEDMENT DEPTH		HEIGHT	SILL LOG DIAMETER	FILLER LOG DIAMETER	HEADER LOG DIAMETER	REAR LOG DIAMETER	FACE LOG DIAMETER	RETAINER* TYPE	SPECIES	PRESERV. TYPE	COMMENTS
		SIDE	FOUNDATION										
CRL-1										R2c		P	

N/A WHEN NOT APPLICABLE
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03



- NOTES:
1. STRAIGHTNESS REQUIREMENTS: THE TRUE CENTER OF EACH LOG DEVIATES NO MORE THAN 2 INCHES FROM A STRAIGHT LINE BETWEEN THE CENTERS OF THE ENDS OF THE LOG.
 2. PRE-DRILL HOLES FOR DRIFT PINS AND OTHER FASTENERS TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS.
 3. RECESS END OF REBAR 1/2 INCH BELOW TOP OF TIMBER TOP HEADER LOG. PLACE REBAR A MINIMUM OF 12 INCHES FROM EACH END OF TIMBER WITH MAXIMUM REBAR SPACING AS SHOWN ON THE DRAWINGS.
 4. COMPACT BACKFILL AND FOUNDATION IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
 5. FIELD TREAT ALL FIELD CUTS AND PRE-DRILLED HOLES.
 6. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.



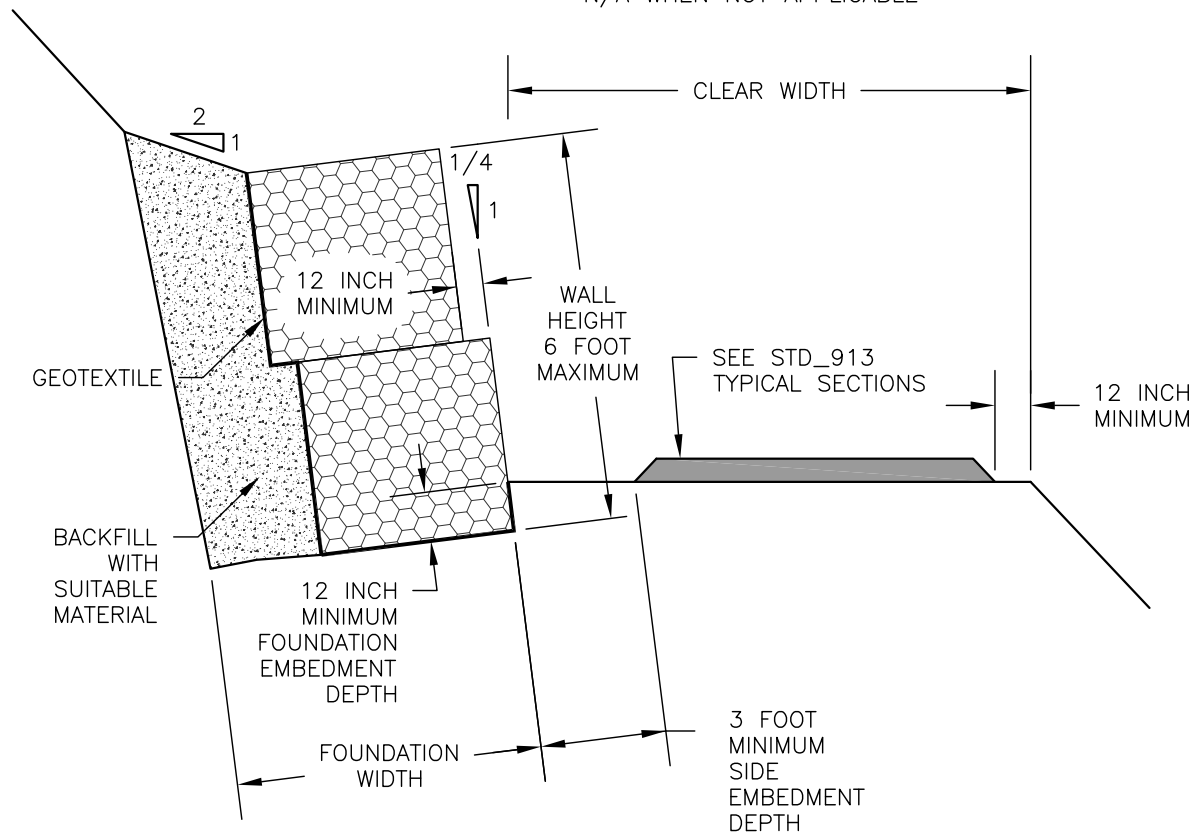
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE: WB = WATERBORNE, OT = OIL-BORNE
 USE CATEGORY: UC3B = ABOVE GROUND - EXPOSED, UC4A = GROUND CONTACT - GENERAL USE, UC4B = GROUND CONTACT - HEAVY DUTY

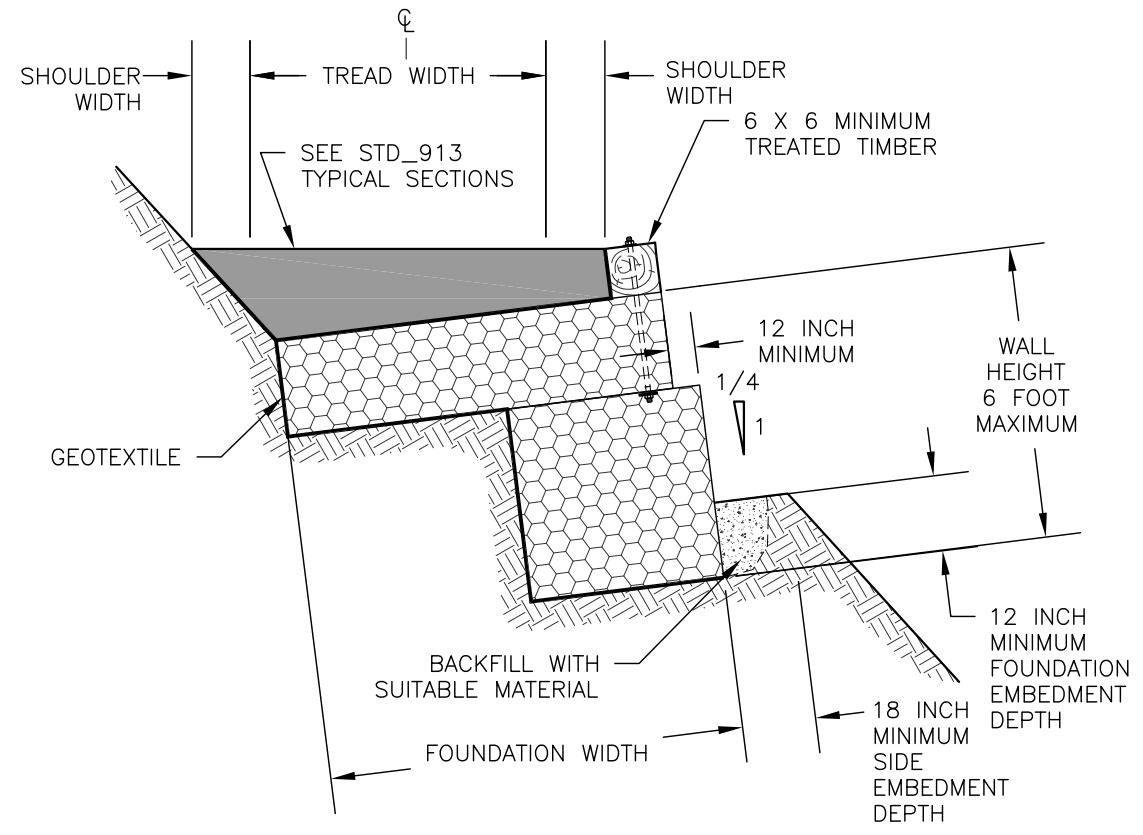
GABION BASKET RETAINING WALL

TYPICAL ID	SECTION TYPE	GEOTEXTILE TYPE	FOUNDATION			BASKET				COMMENTS
			HEIGHT	WIDTH	EMBEDMENT DEPTH	NUMBER OF ROWS	SIZE	SIDE EMBEDMENT DEPTH	IN-FILL MATERIAL TYPE	
BRW-1		G					x		FM	

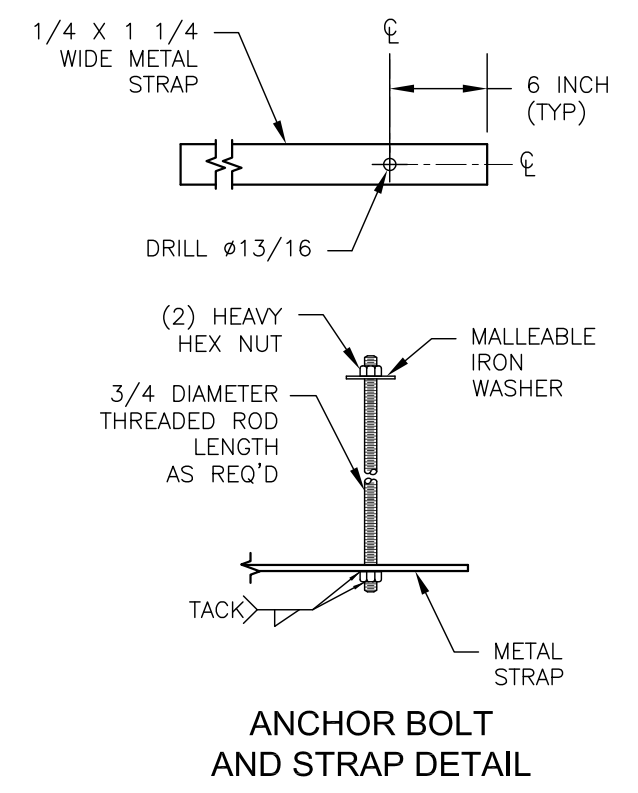
N/A WHEN NOT APPLICABLE



A UPHILL RETAINING WALL SECTION



B UNDERTREAD RETAINING WALL SECTION



ANCHOR BOLT AND STRAP DETAIL

IN-FILL MATERIAL TYPE

GEOTEXTILE TYPE

GEOTEXTILE TYPE	GEOTEXTILE MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3	GEOGRID	
G4		

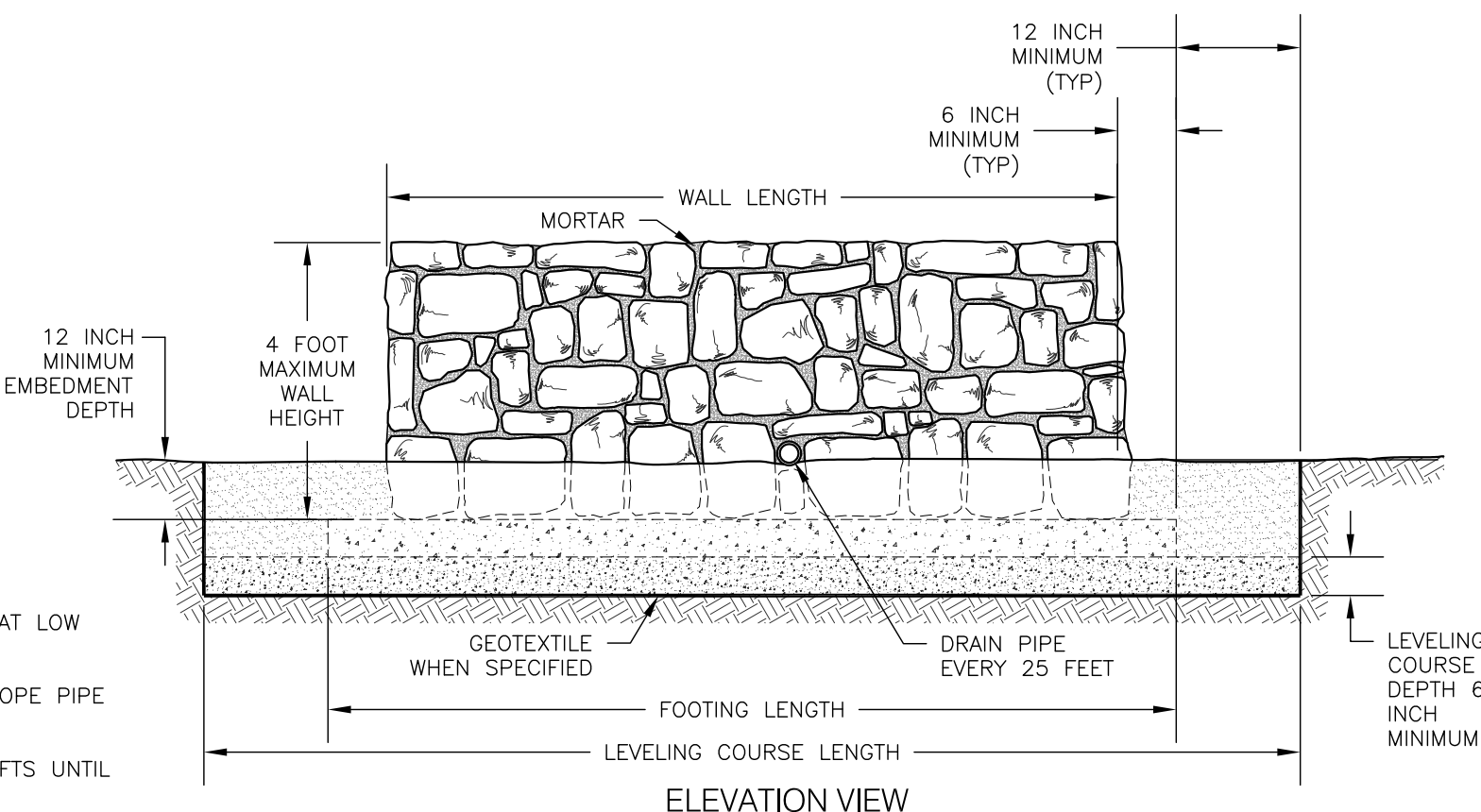
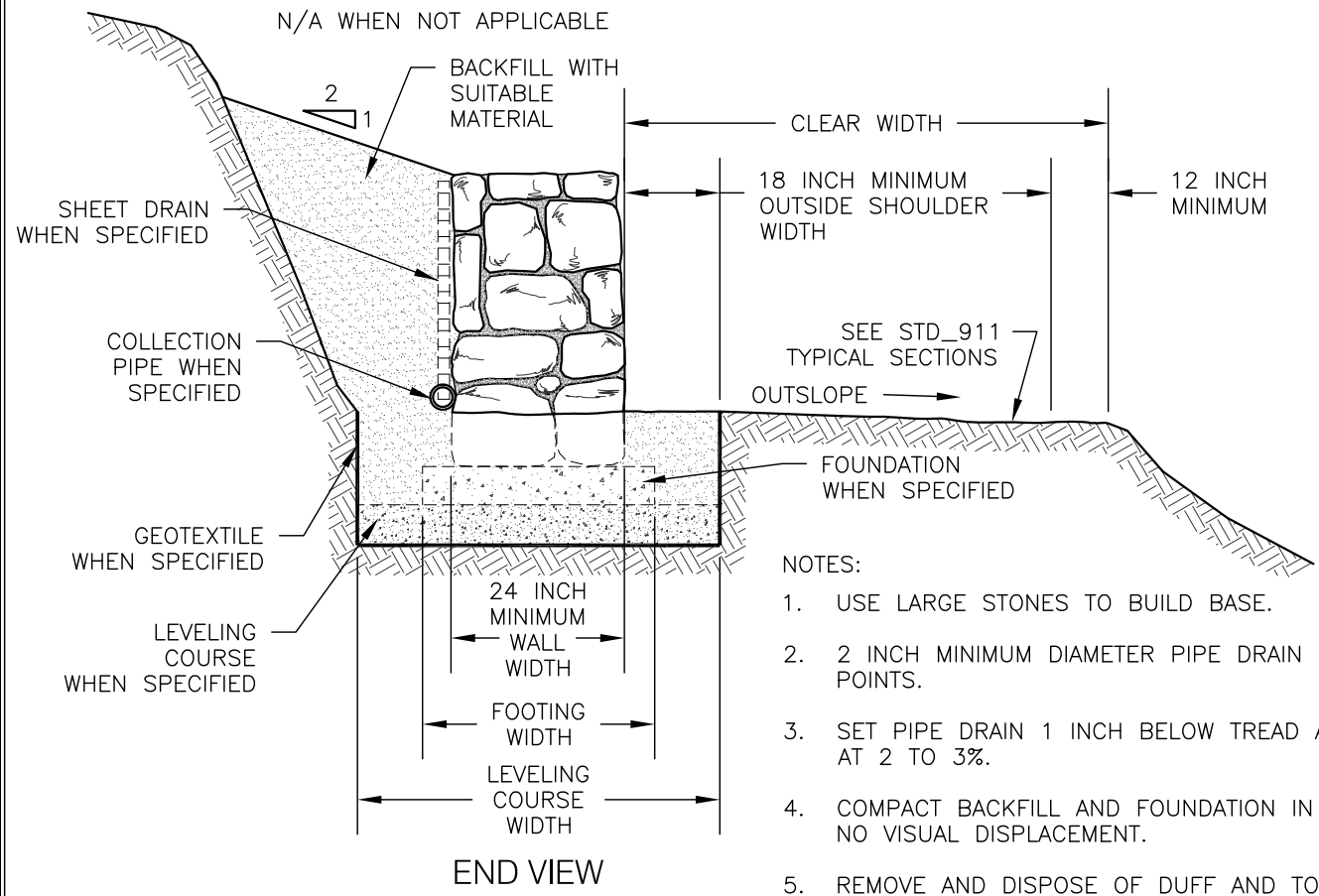
NOTES:

1. GABION BASKETS SHALL BE ASSEMBLED ACCORDING TO MANUFACTURERS INSTRUCTIONS.
2. COMPACT BACKFILL AND FOUNDATION IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
3. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
4. CLEAR WIDTH IS GREATER OR EQUAL TO THE TREAD AND SHOULDER WIDTHS DEFINED IN SECTION 911.

TYPE	MATERIAL	ROCK SIZE	GRADATION %	COMMENTS
FM1	AGGREGATE	1 INCH MINUS		
FM2	COARSE AGGREGATE	3 INCH MINUS		
FM3	ROCK	3 TO 6 INCH		
FM4	ROCK	4 TO 8 INCH		
FM5	HEAVY ROCK	8 INCH PLUS		
FM6				

MASONRY ROCK RETAINING WALL

TYPICAL ID	CLEAR WIDTH	GEOTEXTILE TYPE	LEVELING COURSE			FOOTING			MASONRY WALL					COMMENTS	
			TYPE	DEPTH	WIDTH	TYPE	DEPTH	WIDTH	HEIGHT	WIDTH	EMBEDMENT DEPTH	MINIMUM ROCK SIZE (LBS)	MAXIMUM ROCK SIZE (LBS)		MORTAR TYPE
MRW-1		G	L			FT									



- NOTES:
1. USE LARGE STONES TO BUILD BASE.
 2. 2 INCH MINIMUM DIAMETER PIPE DRAIN REQUIRED AT LOW POINTS.
 3. SET PIPE DRAIN 1 INCH BELOW TREAD AND OUTSLOPE PIPE AT 2 TO 3%.
 4. COMPACT BACKFILL AND FOUNDATION IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
 5. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
 6. CLEAR WIDTH IS GREATER OR EQUAL TO THE TREAD AND SHOULDER WIDTHS DEFINED IN SECTION 911.

GEOTEXTILE TYPE

GEOTEXTILE TYPE	GEOTEXTILE MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3	GEOGRID	
G4		

LEVELING COURSE MATERIAL

TYPE	MATERIAL	GRADATION	COMMENTS
L1	PITRUN		
L2	AGGREGATE		
L3			

FOOTING MATERIAL

TYPE	MATERIAL	GRADATION	COMMENTS
FT1	CONCRETE		
FT2	AGGREGATE		
FT3			

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

PROJECT NAME & LOCATION

DRAWING NAME
MASONRY ROCK RETAINING WALL

SECTION: **935 - RETAINING WALLS** TYPICAL ID: **MRW**

REVISION DATE
XX/XX/XX

NO SCALE

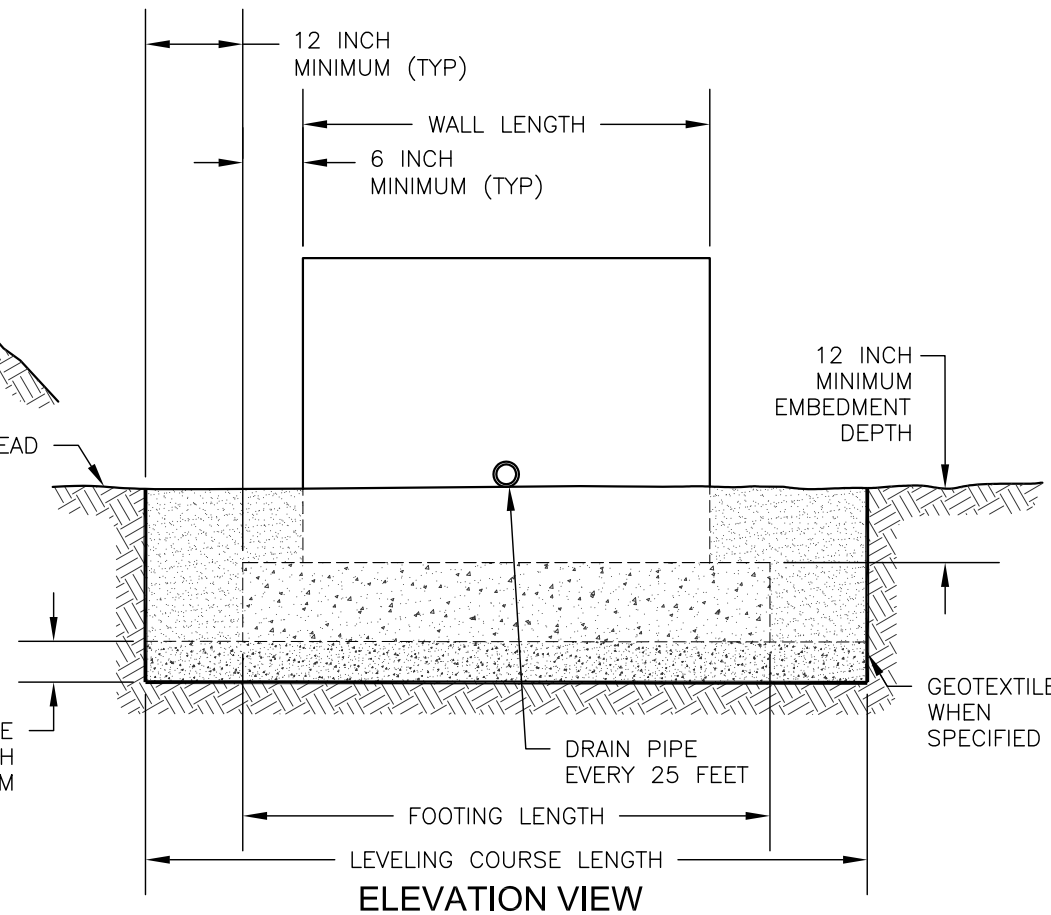
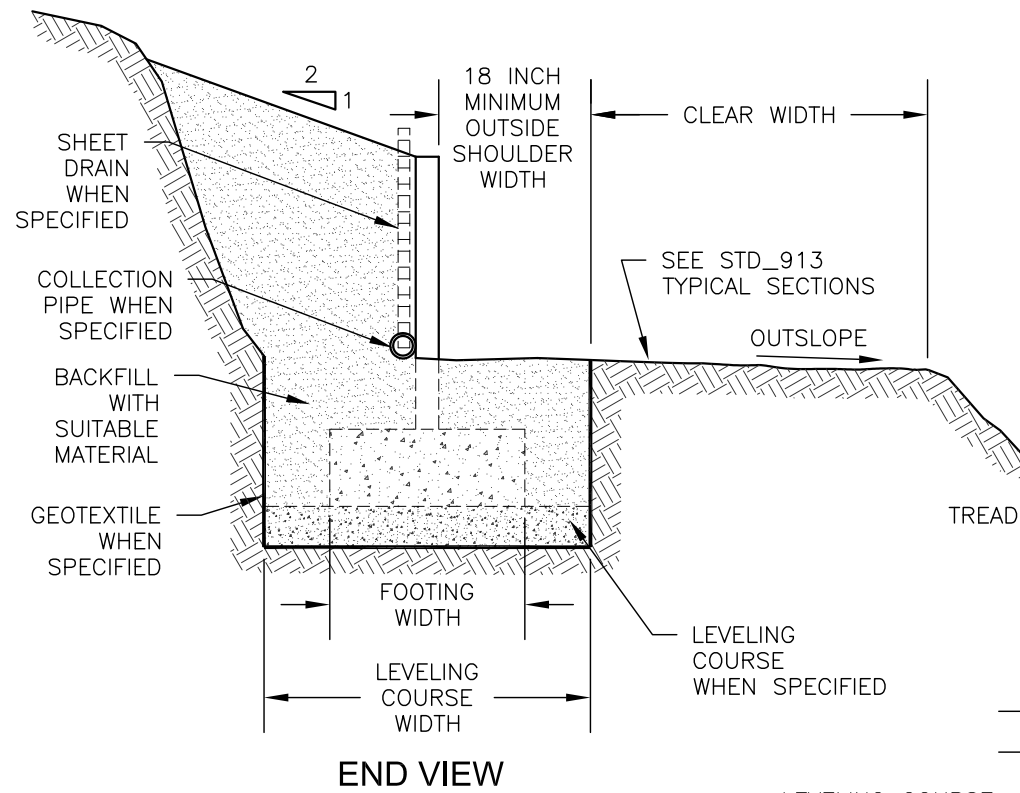
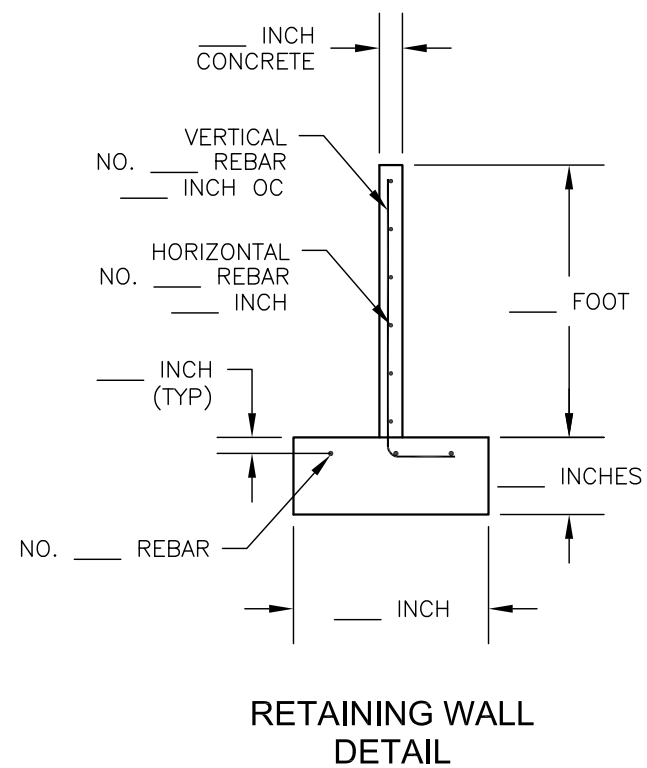
DRAWING NO.
STD_935-40-01

SHEET _____ OF _____

CAST IN PLACE CONCRETE RETAINING WALL

TYPICAL ID	CLEAR WIDTH	GEOTEXTILE TYPE	LEVELING COURSE			PRECAST WALL			COMMENTS
			TYPE	DEPTH	WIDTH	WIDTH	HEIGHT	EMBEDMENT DEPTH	
CCW-1		G	L						

N/A WHEN NOT APPLICABLE



NOTES:

1. 2 INCH MINIMUM DIAMETER PIPE DRAIN REQUIRED AT LOW POINTS.
2. SET PIPE DRAIN 1 INCH BELOW TREAD AND OUTSLOPE PIPE AT 2 TO 3%.
3. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
4. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
5. CLEAR WIDTH IS GREATER OR EQUAL TO THE TREAD AND SHOULDER WIDTHS DEFINED IN SECTION 911.

GEOTEXTILE TYPE

GEOTEXTILE TYPE	GEOTEXTILE MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3	GEOGRID	
G4		
G5		
G6		

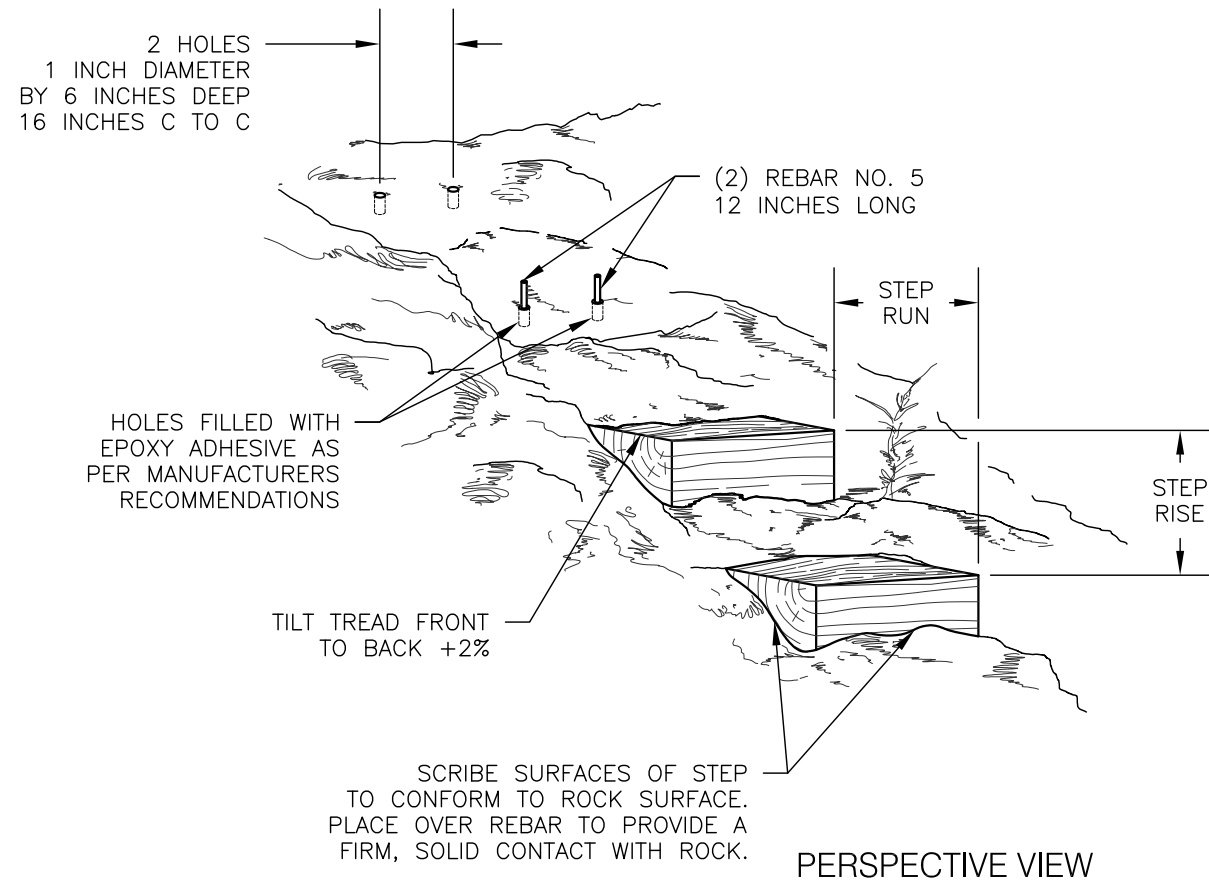
LEVELING COURSE MATERIAL

TYPE	MATERIAL	GRADATION	COMMENTS
L1	PITRUN		
L2	AGGREGATE		
L3			

INDIVIDUAL TIMBER PINNED STEP

TYPICAL ID	MORTAR/RESISTANT MATERIAL	STEP WIDTH	STEP RISE	STEP RUN	MATERIAL TYPE	SPECIES	EPOXY TYPE	PRESERV. TYPE	COMMENTS
ITS-1								P	

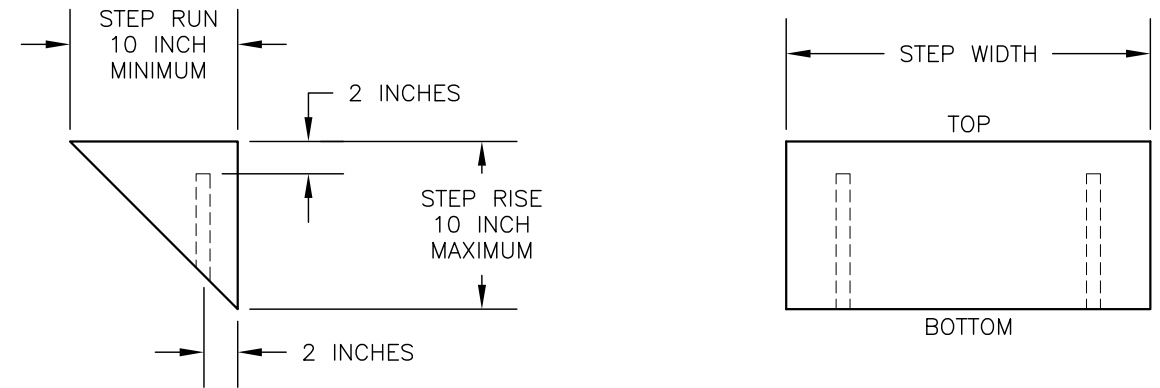
N/A WHEN NOT APPLICABLE



PERSPECTIVE VIEW

NOTES:

1. PRE-DRILL HOLES FOR REBAR TO PREVENT SPLITTING OF TIMBER.
2. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.



STEP

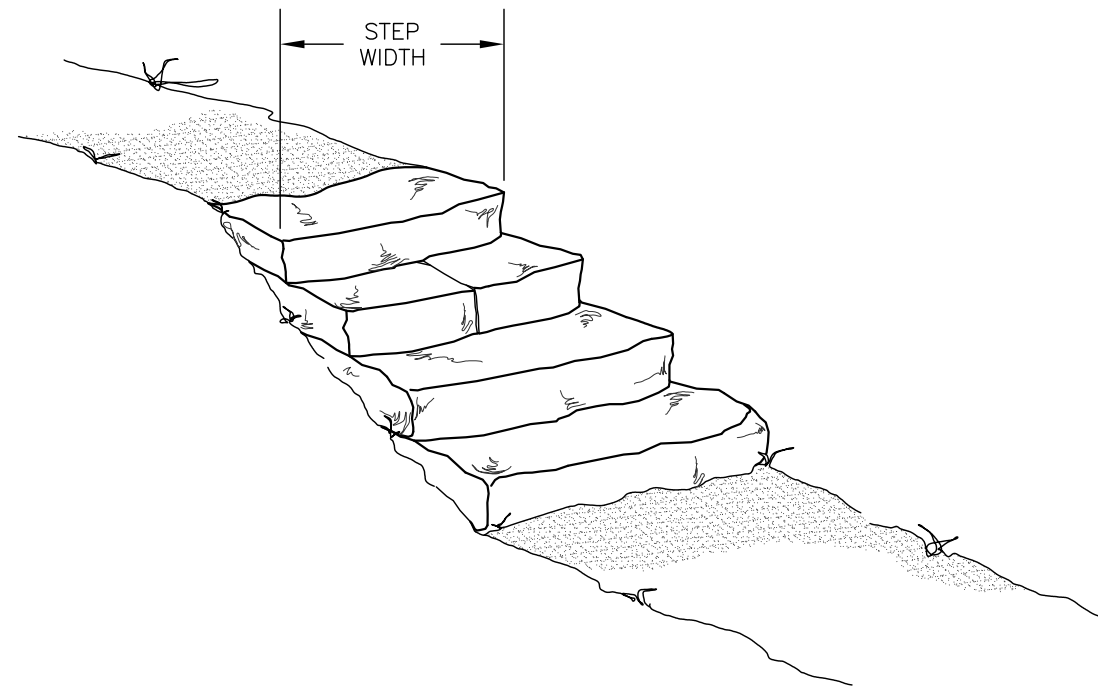
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

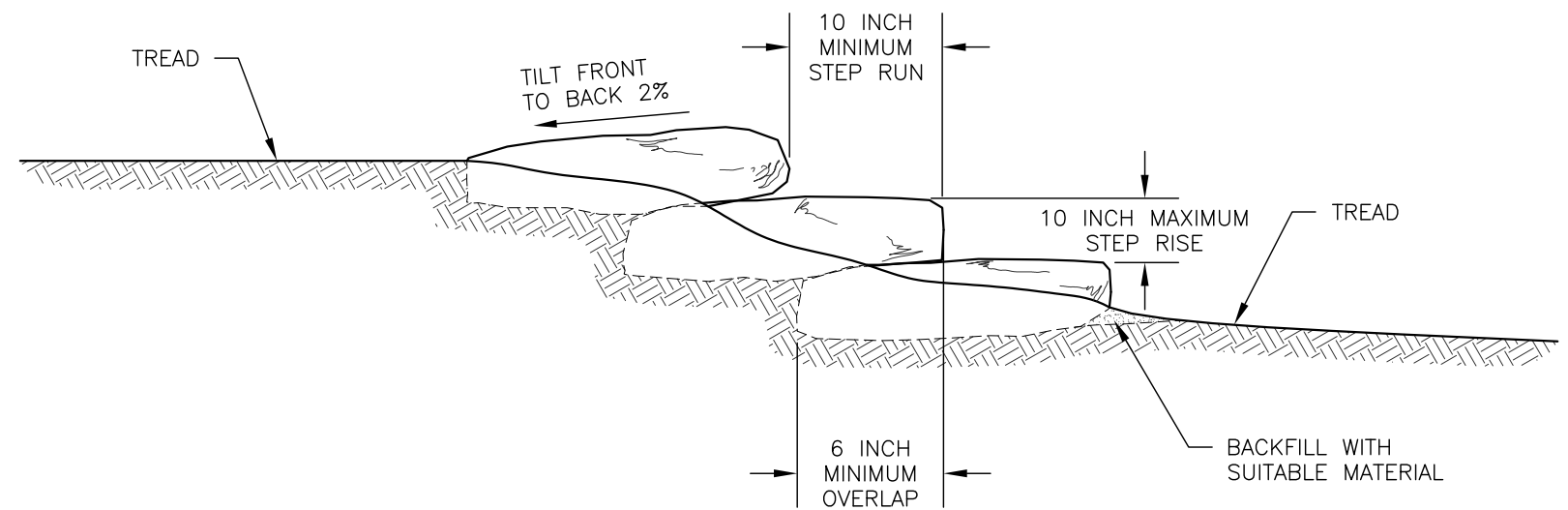
USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

OVERLAPPING ROCK STEP

TYPICAL ID	STEP WIDTH	STEP RUN	STEP RISE	STEP OVERLAP	MINIMUM ROCK WEIGHT	COMMENTS
ORS-1						



PERSPECTIVE VIEW



ELEVATION VIEW

OVERLAPPING ROCK STAIRWAY

NOTES:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
2. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.

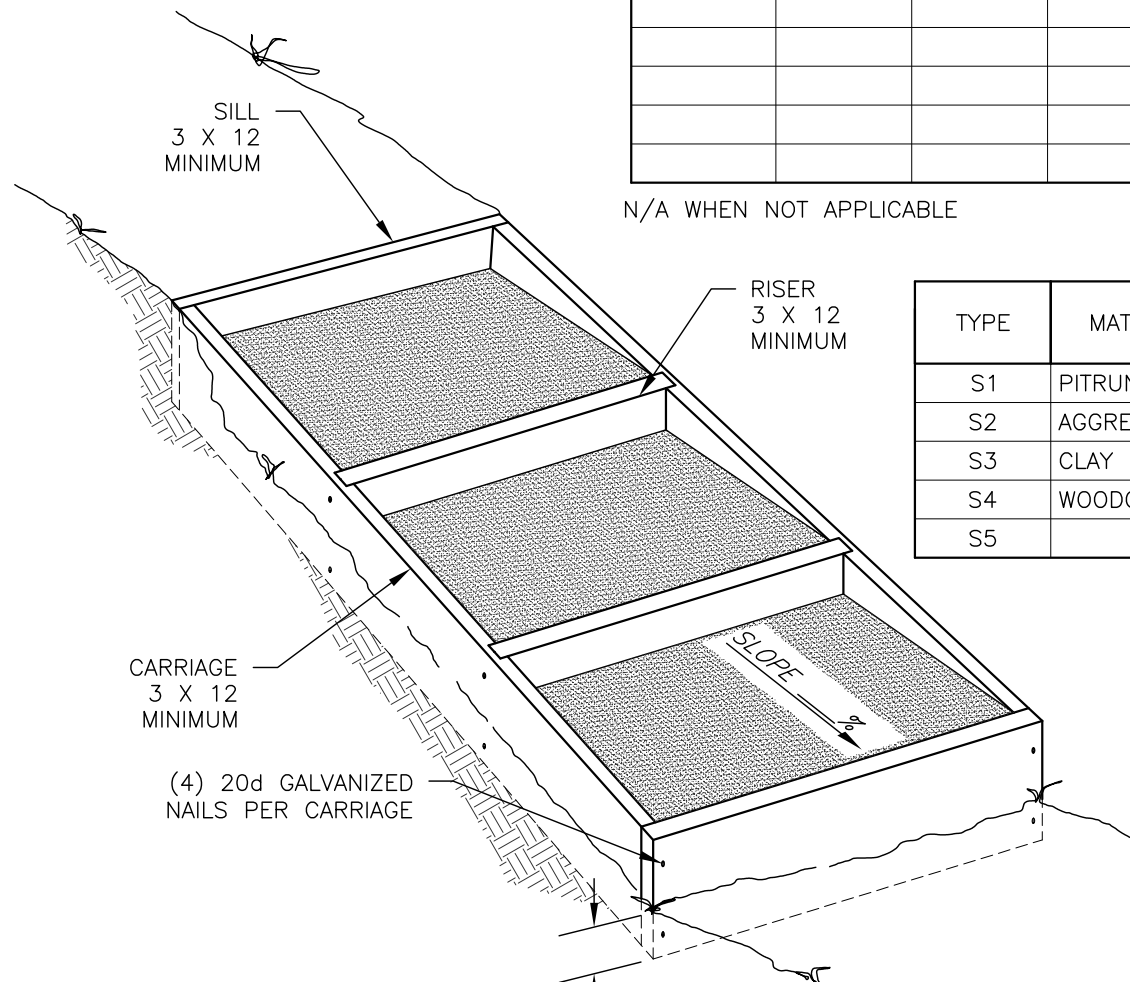
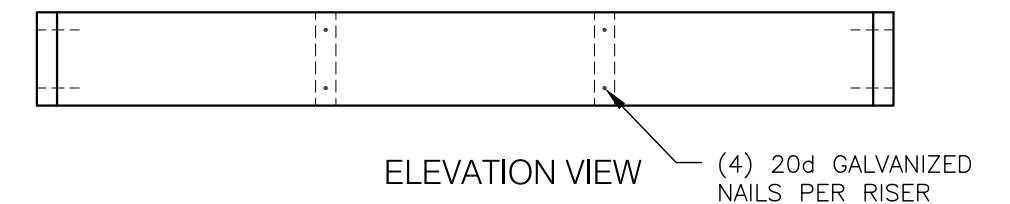
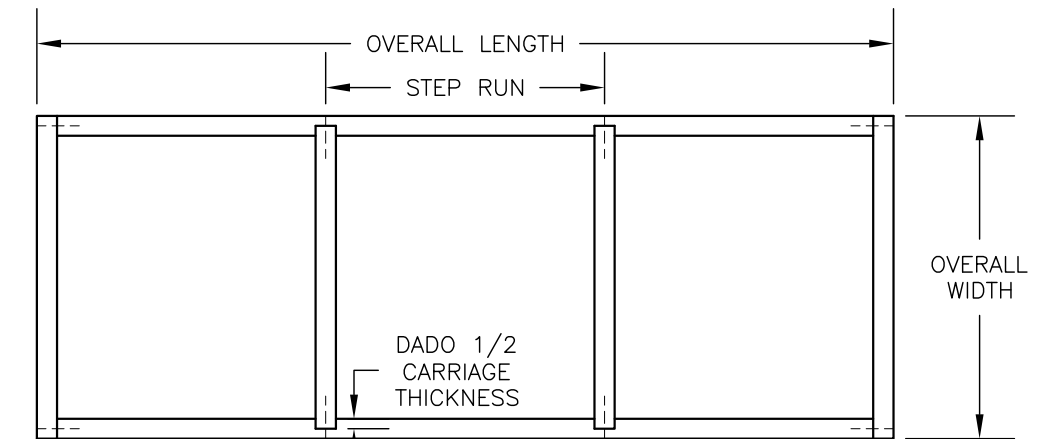
CRIB LADDER

TYPICAL ID	LADDER					SURFACE COURSE		COMMENTS
	OVERALL WIDTH	OVERALL LENGTH	STEP RUN	LUMBER DIMENSION	SPECIES	PRESERV. TYPE	TYPE	
CRL-1				x		P	S	

N/A WHEN NOT APPLICABLE

SURFACE COURSE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
S1	PITRUN		
S2	AGGREGATE		
S3	CLAY		
S4	WOODCHIPS		
S5			



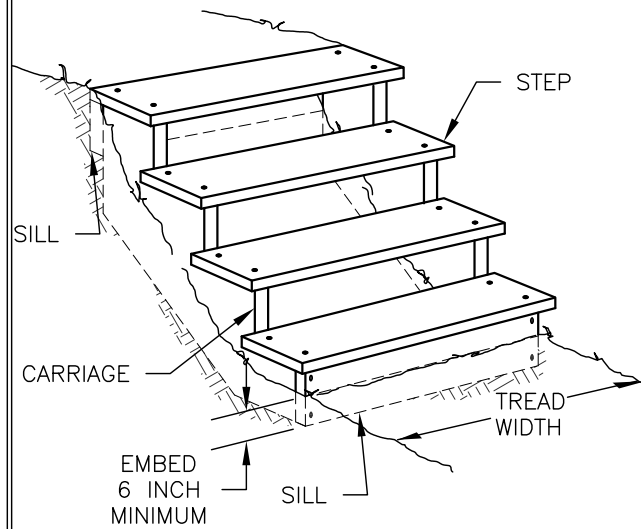
NOTES:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
2. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
3. ALL FIELD DRILLED HOLES AND CUTS SHALL BE FIELD TREATED.

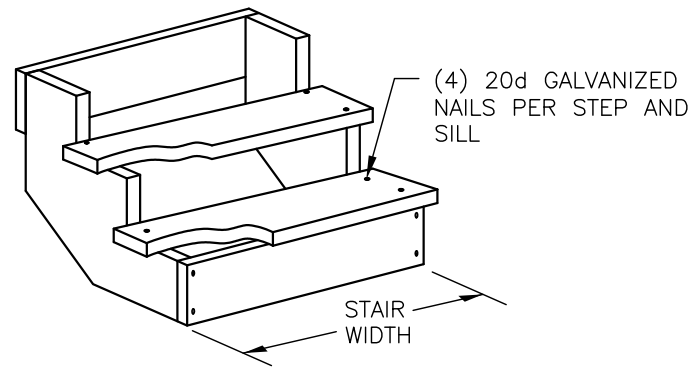
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

<p>TREATMENT TYPE</p> <p>WB = WATERBORNE OT = OIL-BORNE</p>	<p>USE CATEGORY</p> <p>UC3B = ABOVE GROUND - EXPOSED UC4A = GROUND CONTACT - GENERAL USE UC4B = GROUND CONTACT - HEAVY DUTY</p>
--	--

STAIRCASE

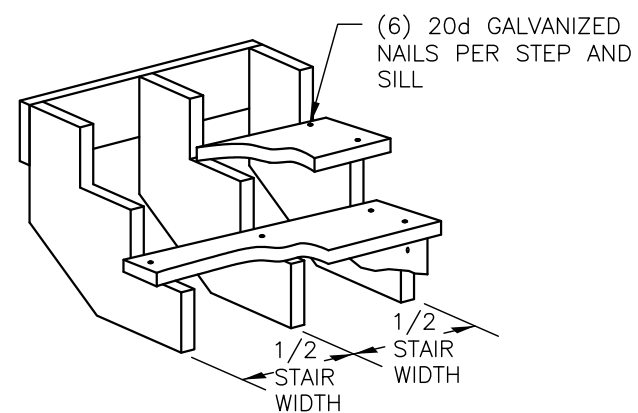


TYPICAL ID	SPAN	CARRIAGE		SILL	STEP				SPECIES	PRESERV. TYPE	COMMENTS
		NO. OF CARRIAGES	MATERIAL DIMENSION	MATERIAL DIMENSION	WIDTH	MATERIAL DIMENSION	RUN	RISE			
STC-1			X	X		X				P	



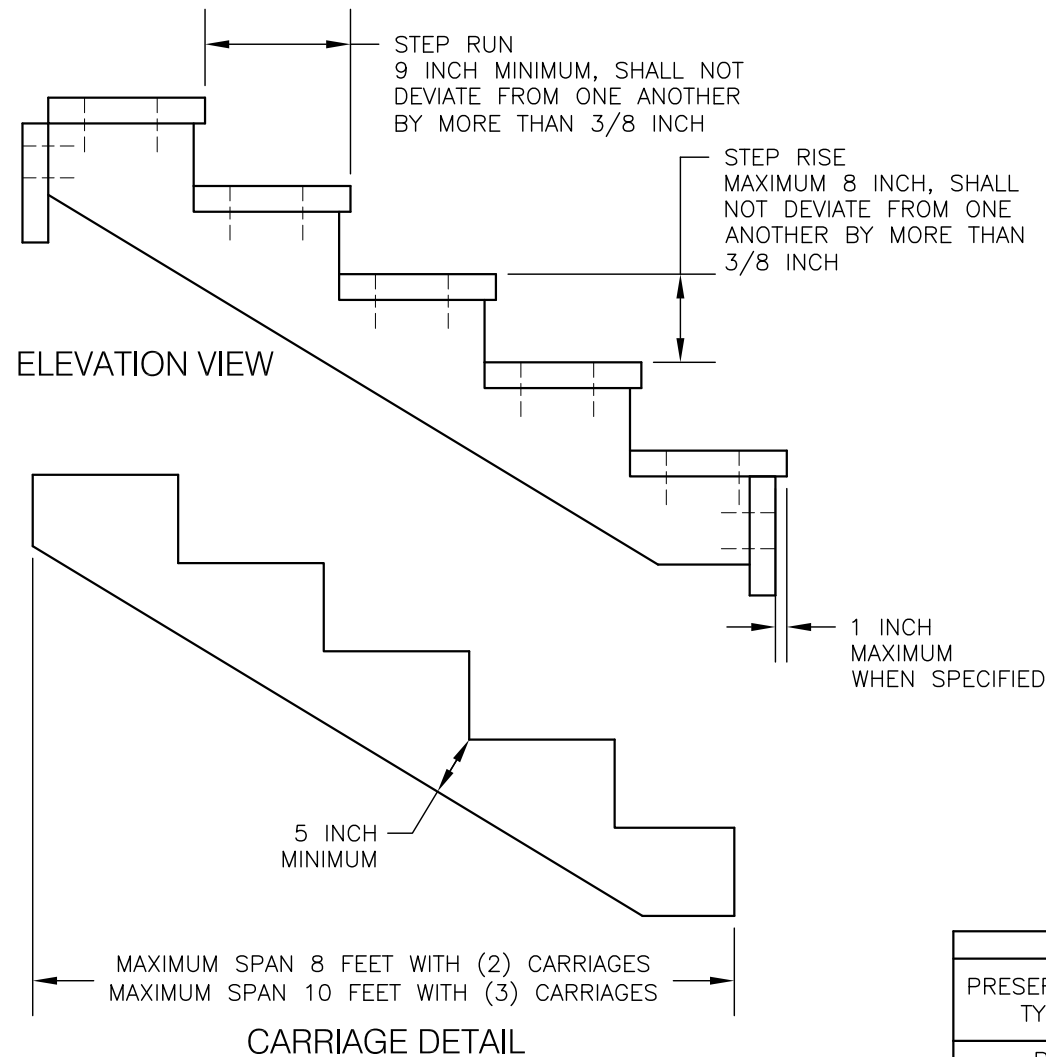
TWO CARRIAGE OPTION

FOR 3 FOOT OR LESS STEP WIDTH



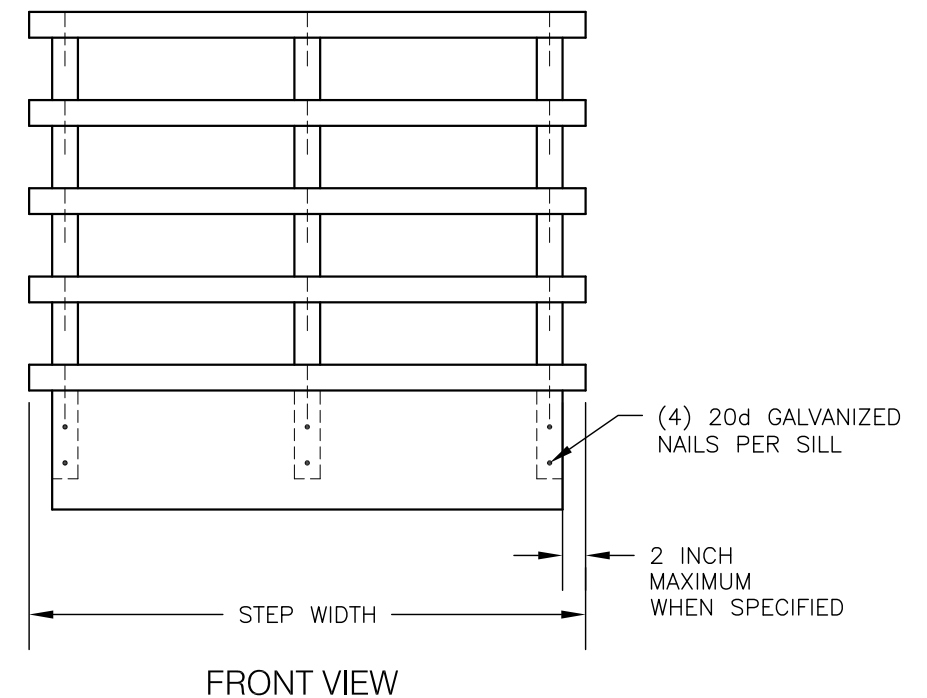
THREE CARRIAGE OPTION

FOR 3 TO 6 FOOT STEP WIDTH



NOTES:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
2. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.



PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

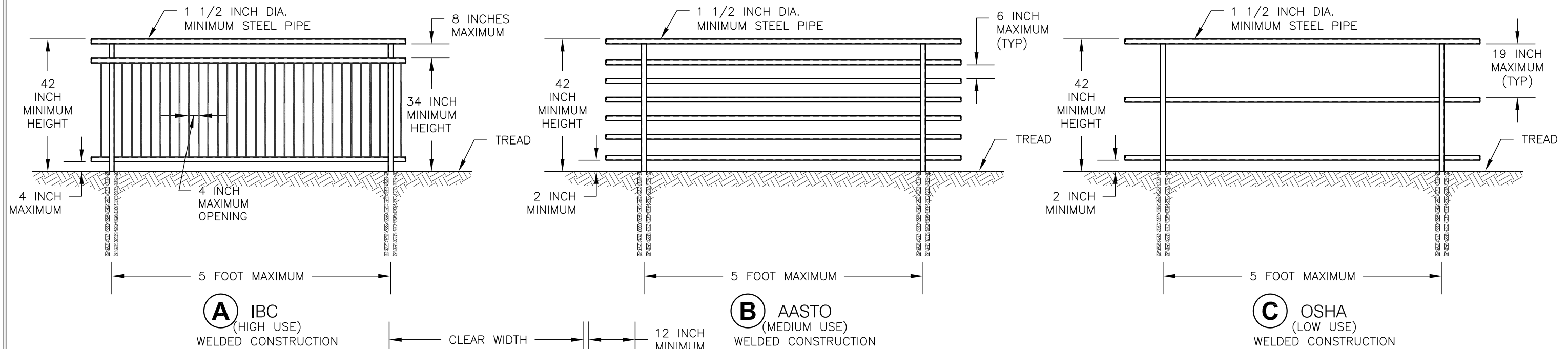
TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

RAILING SYSTEM

TYPICAL ID	CLEAR WIDTH	SECTION TYPE	POST			RAIL	HANDRAIL	COMMENTS
			SIZE	HEIGHT	EMBEDMENT DEPTH	SIZE	TYPE	
RLS-1								

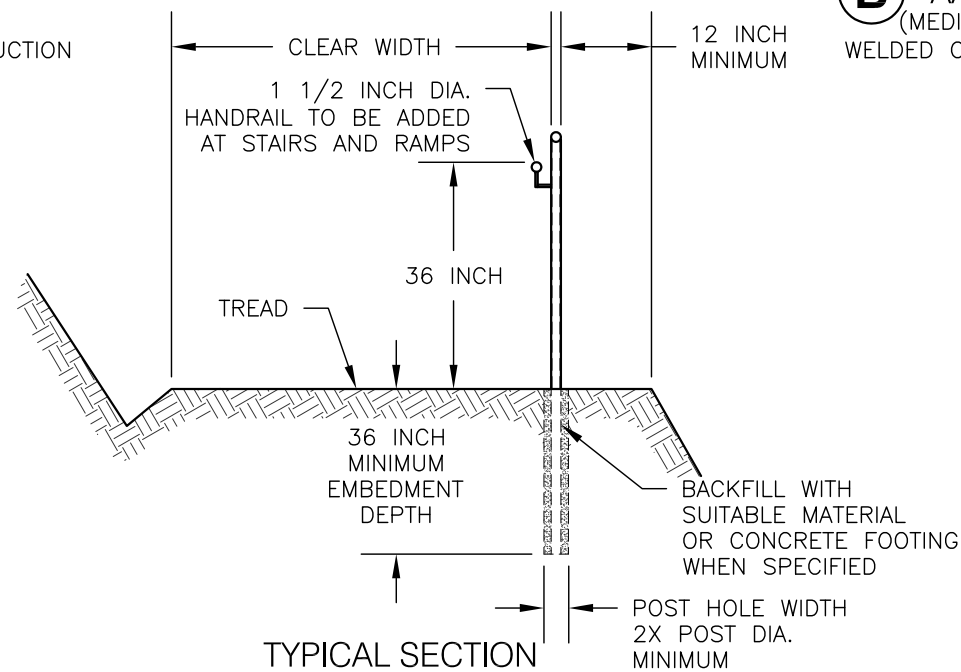
N/A WHEN NOT APPLICABLE



(A) IBC
(HIGH USE)
WELDED CONSTRUCTION

(B) AASTO
(MEDIUM USE)
WELDED CONSTRUCTION

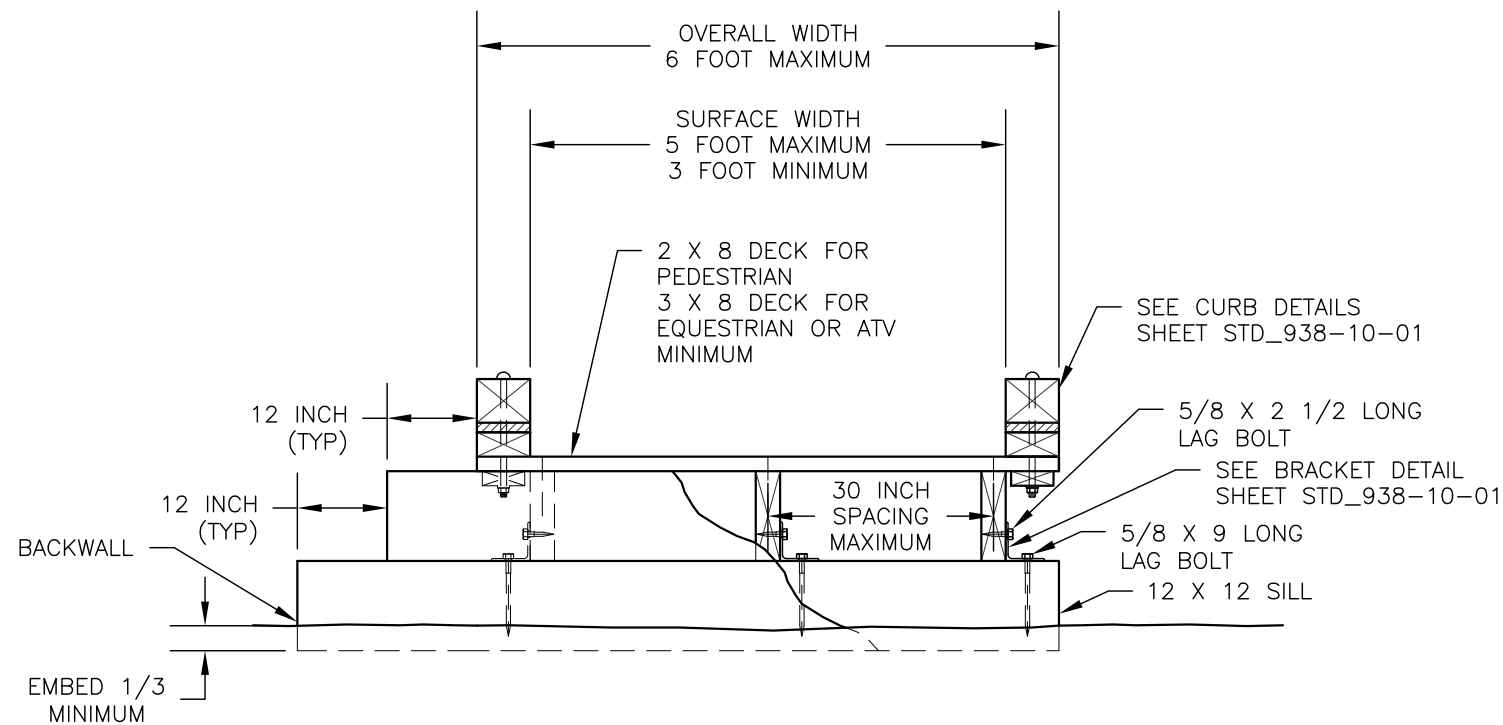
(C) OSHA
(LOW USE)
WELDED CONSTRUCTION



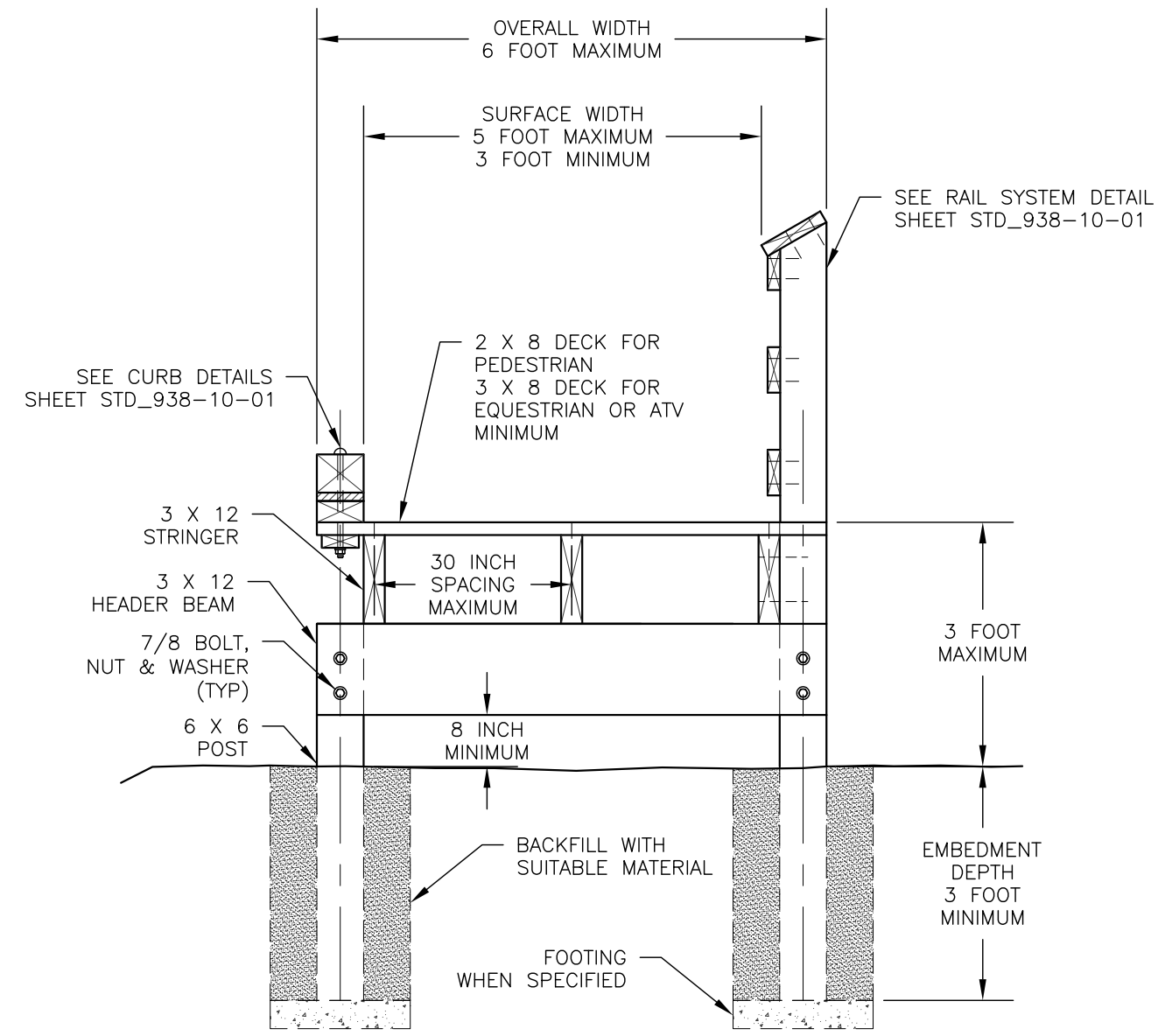
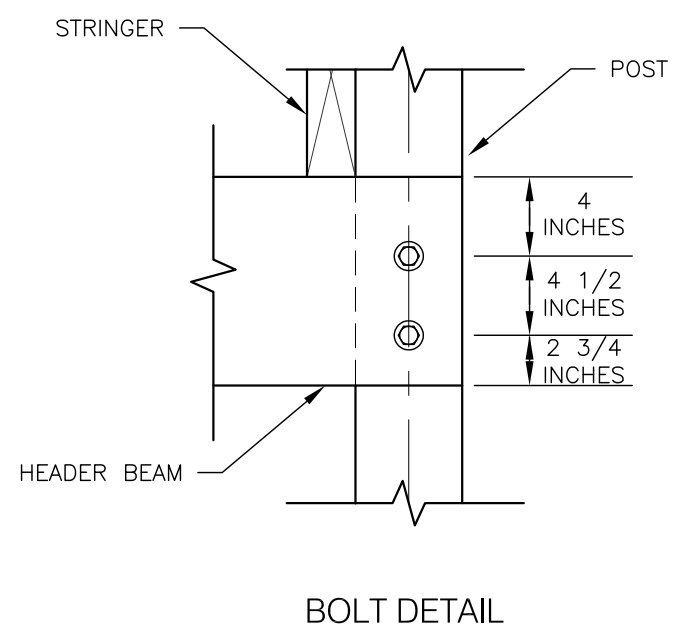
TYPICAL SECTION

NOTES:

1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
3. 1/8 INCH WEEP HOLES ARE REQUIRED AT BOTTOMS AND LOW POINTS OF RAILS AND POSTS.
4. ALL ENDS TO BE CAPPED.
5. ALL SHARP EDGES TO BE GROUND SMOOTH.
6. CLEAR WIDTH IS GREATER OR EQUAL TO THE TREAD AND SHOULDER WIDTHS DEFINED IN SECTION 911.

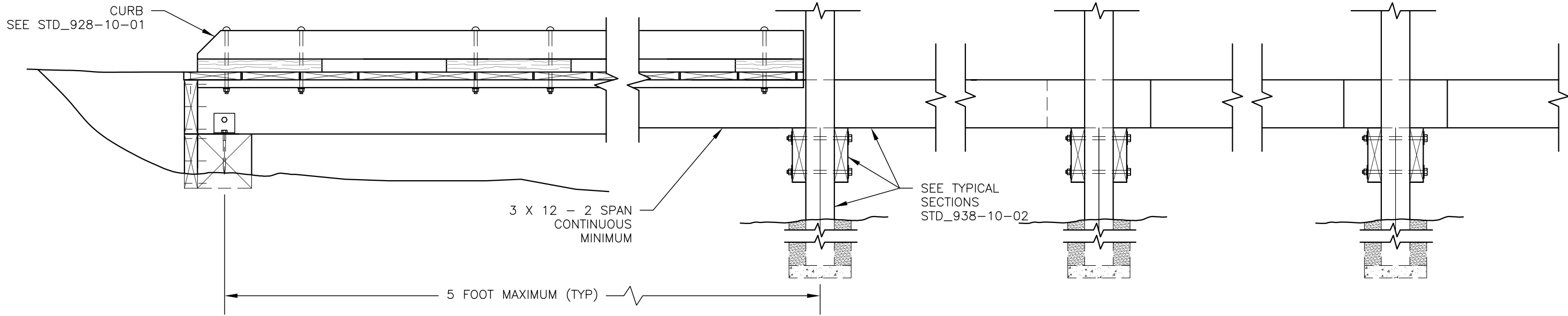


A TYPICAL GROUND SECTION
BLOCKING REQUIRED AT EVERY SUPPORT NOT SHOWN FOR CLARITY



B TYPICAL ELEVATED SECTION
LESS THAN 3 FEET WITH CURB
BLOCKING REQUIRED AT EVERY SUPPORT NOT SHOWN FOR CLARITY

C TYPICAL ELEVATED SECTION
LESS THAN 3 FEET WITH CURB
BLOCKING REQUIRED AT EVERY SUPPORT NOT SHOWN FOR CLARITY



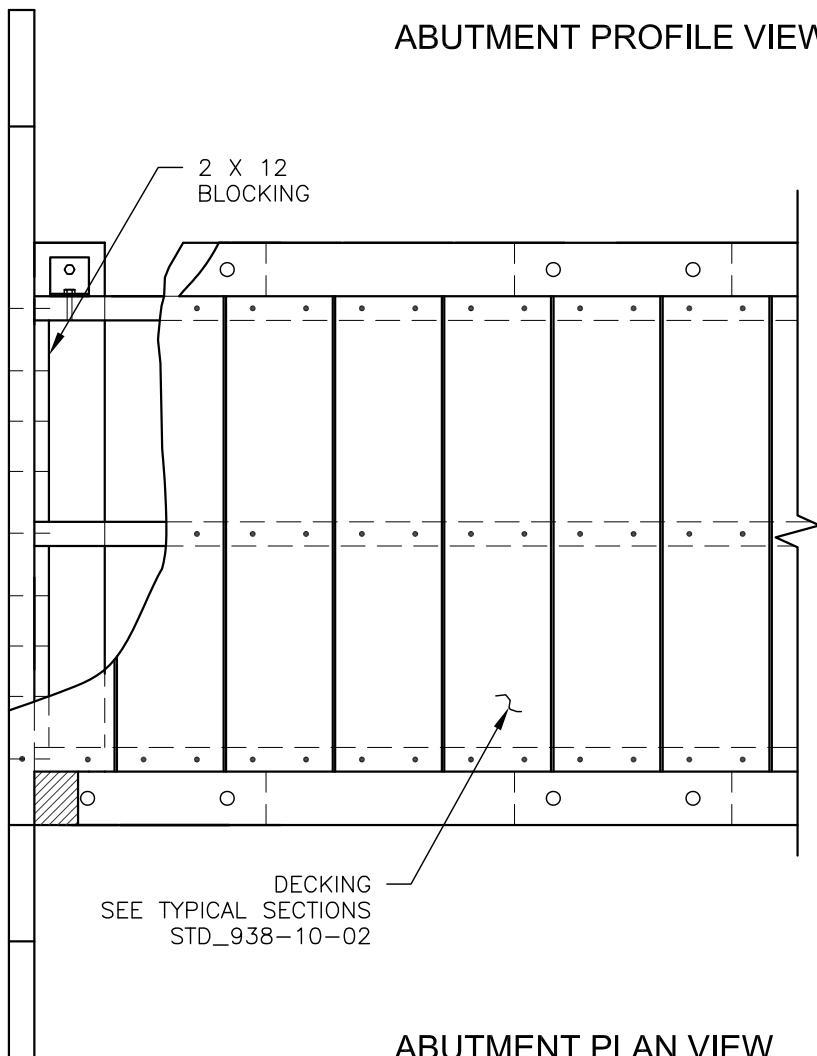
ABUTMENT PROFILE VIEW

TYPICAL STRINGER
DETAIL

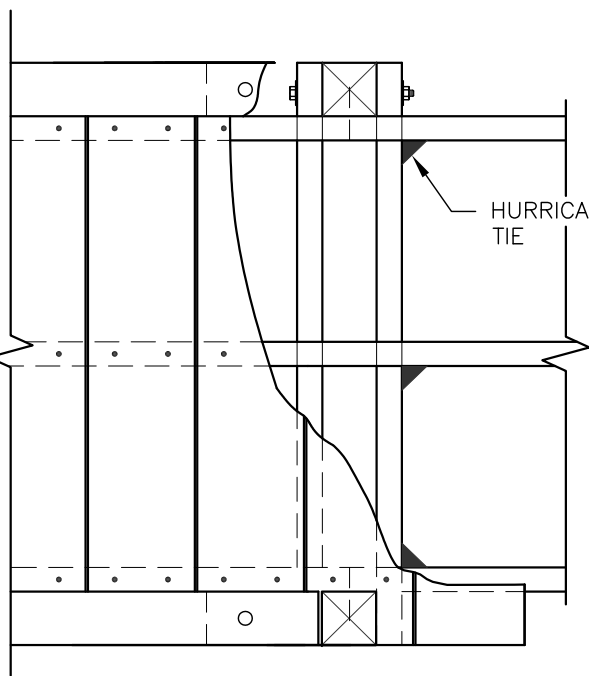
STRINGER LAP JOINT
DETAIL

STRINGER BLOCKING
DETAIL

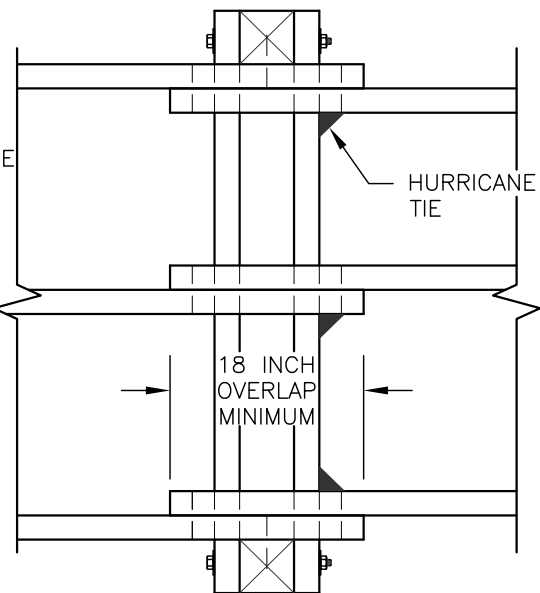
PIER PROFILE VIEW
BLOCKING, CROSS BRACING, DECKING AND RAIL SYSTEM NOT SHOWN FOR CLARITY



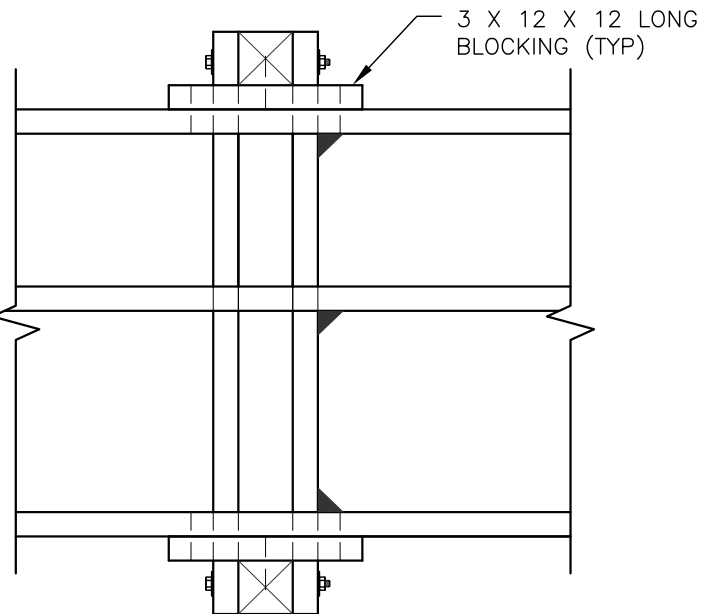
ABUTMENT PLAN VIEW



TYPICAL STRINGER
DETAIL

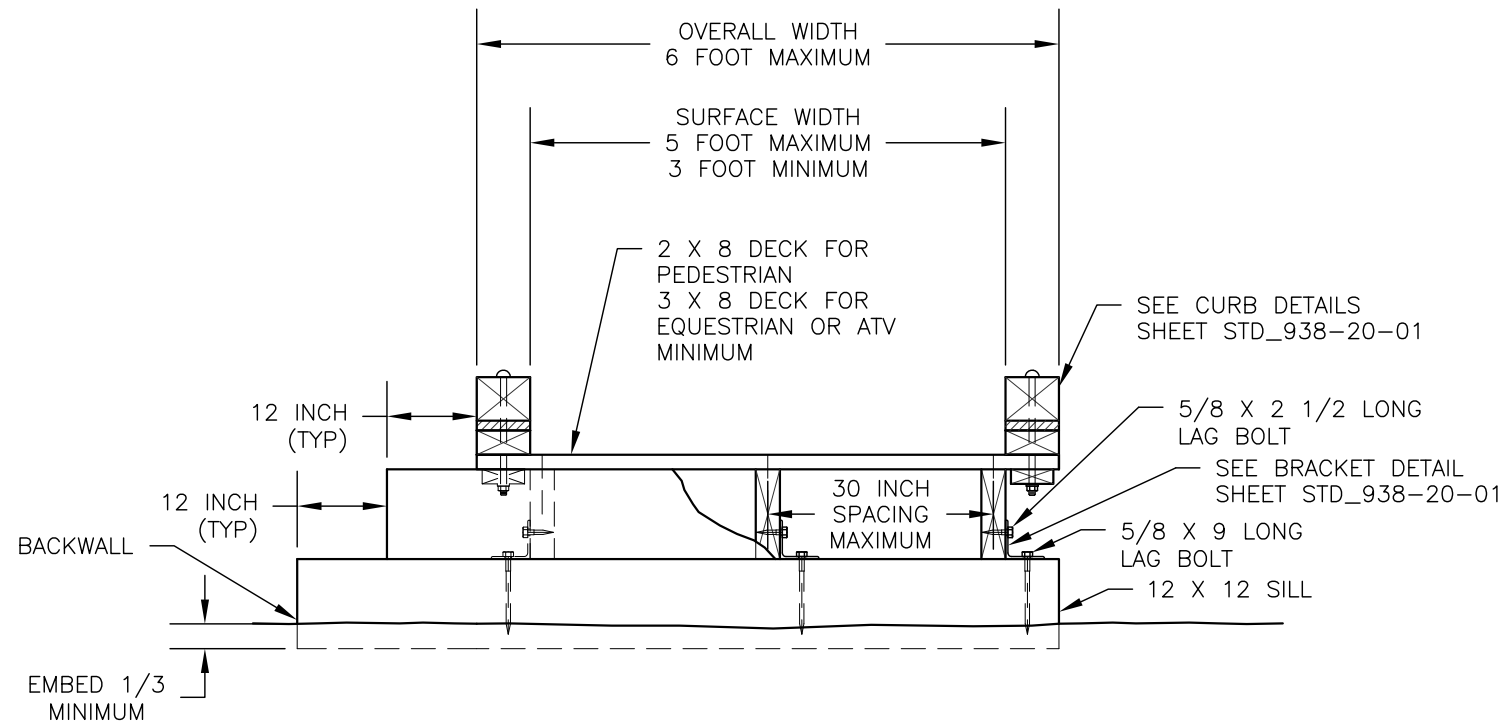


STRINGER LAP JOINT
DETAIL

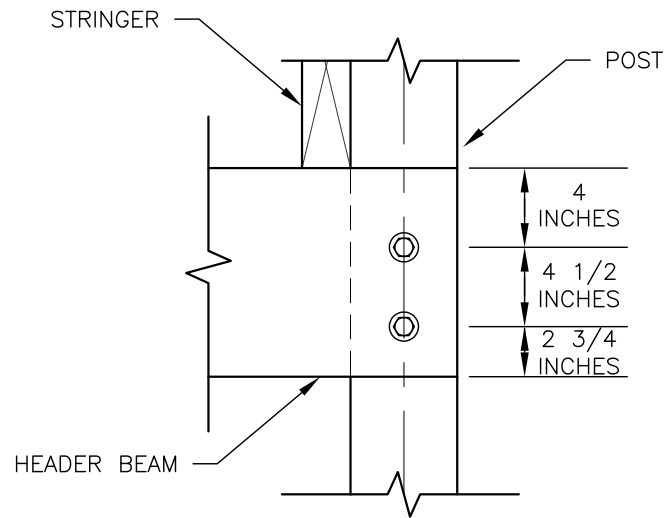


STRINGER BLOCKING
DETAIL

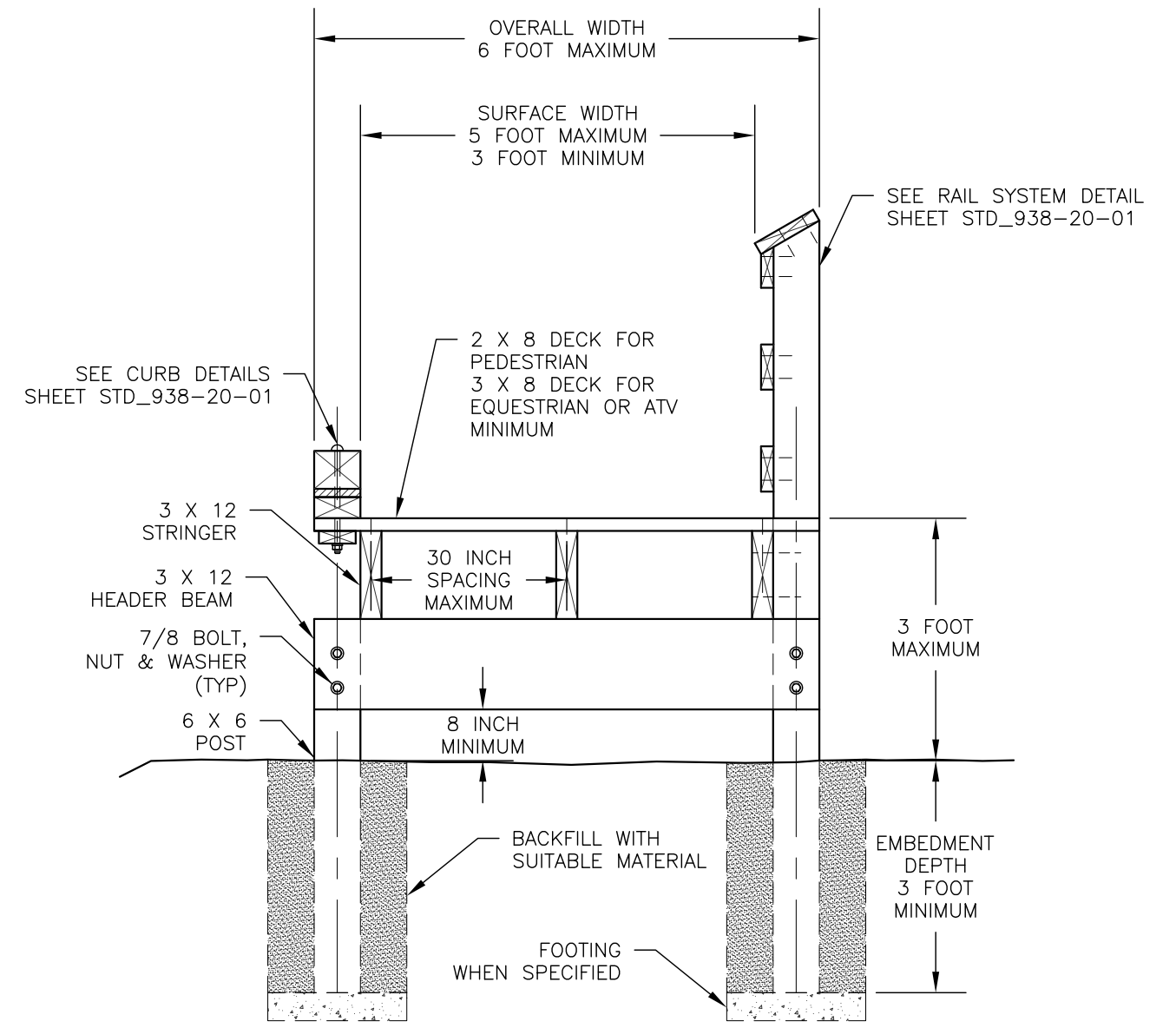
PIER PLAN VIEW
BLOCKING, CROSS BRACING, DECKING AND RAIL SYSTEM NOT SHOWN FOR CLARITY



A TYPICAL GROUND SECTION
BLOCKING REQUIRED AT EVERY SUPPORT NOT SHOWN FOR CLARITY

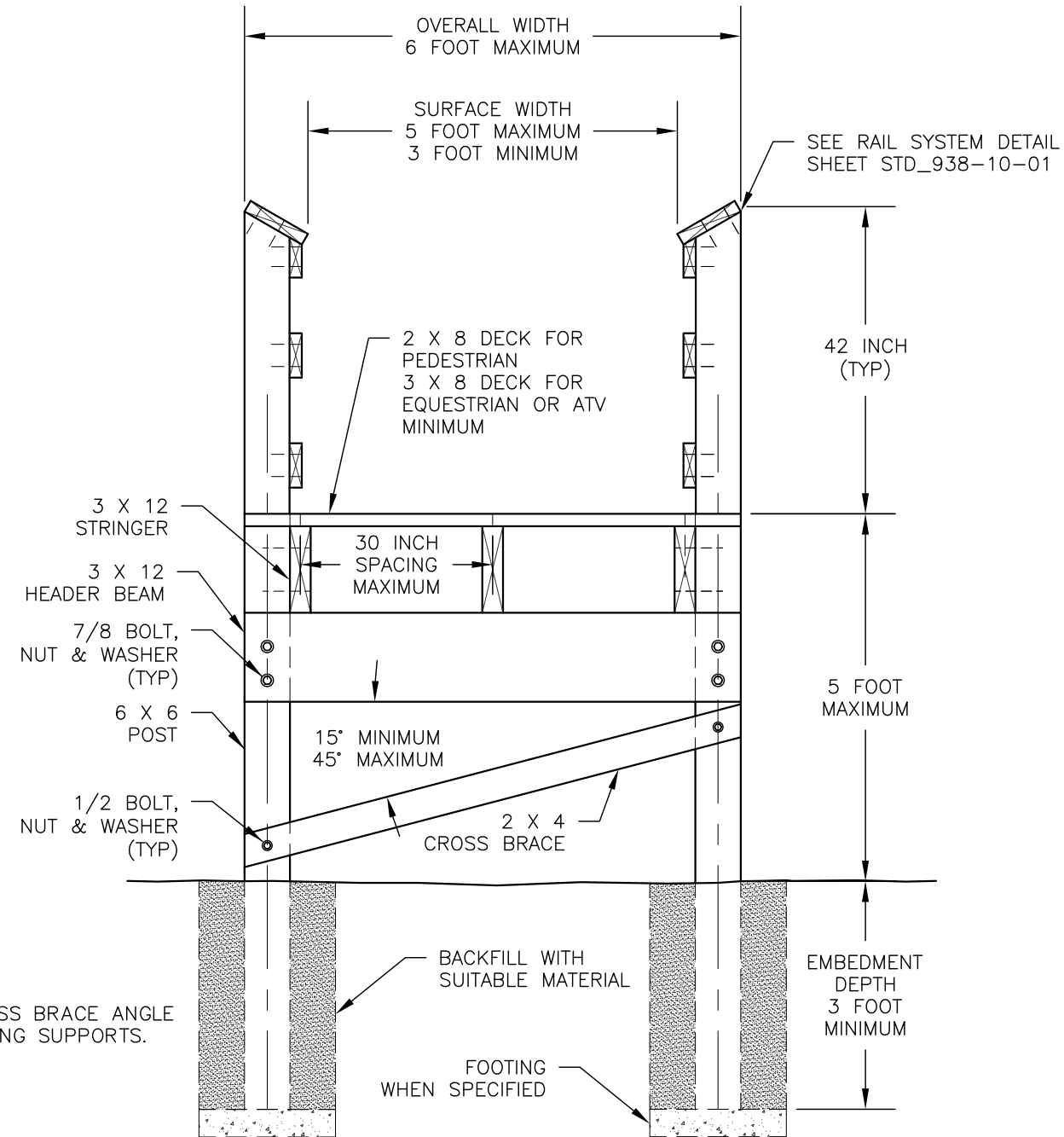


BOLT DETAIL



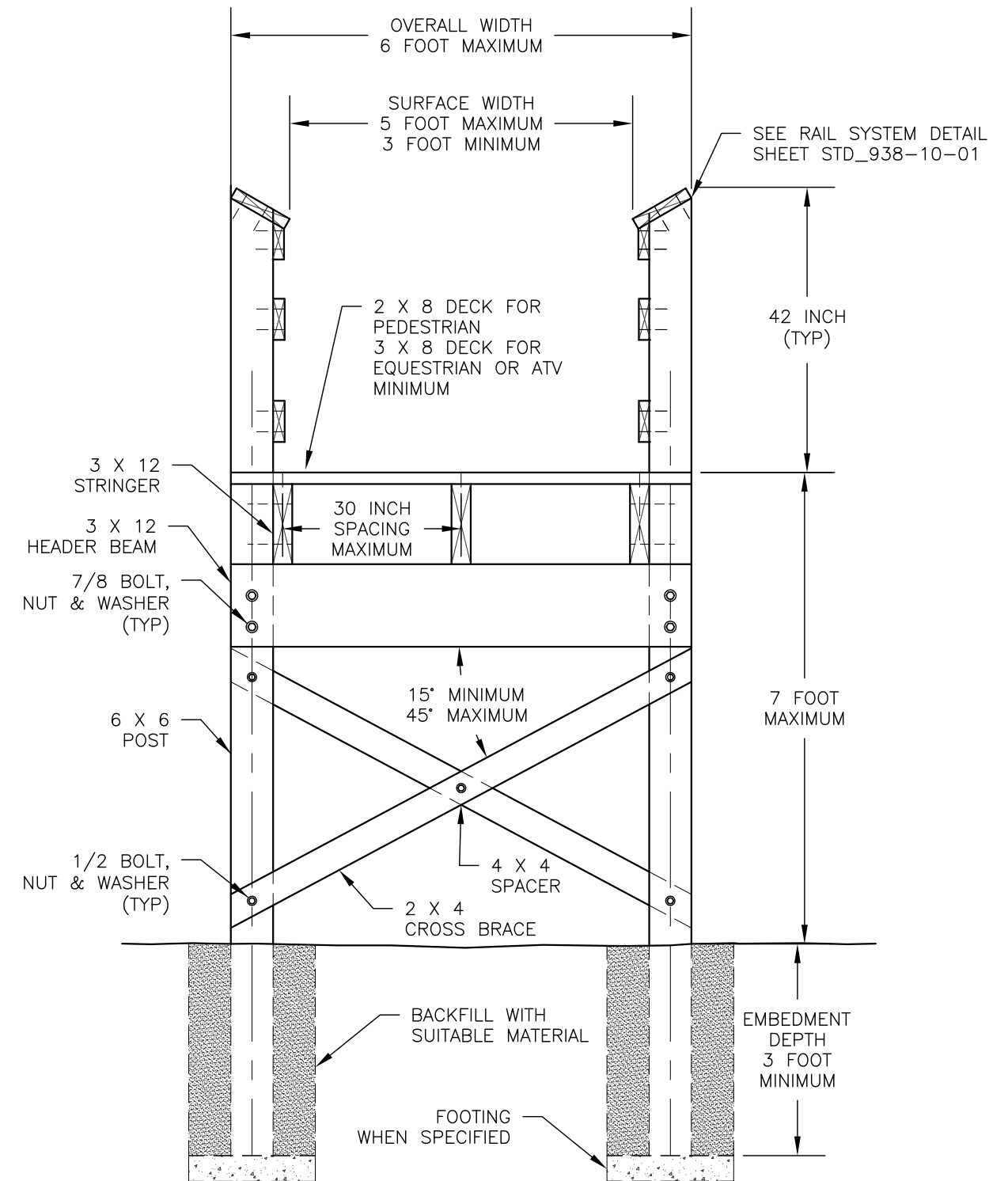
B TYPICAL ELEVATED SECTION
LESS THAN 3 FEET WITH CURB
BLOCKING REQUIRED AT EVERY SUPPORT NOT SHOWN FOR CLARITY

C TYPICAL ELEVATED SECTION
LESS THAN 3 FEET WITH CURB
BLOCKING REQUIRED AT EVERY SUPPORT NOT SHOWN FOR CLARITY



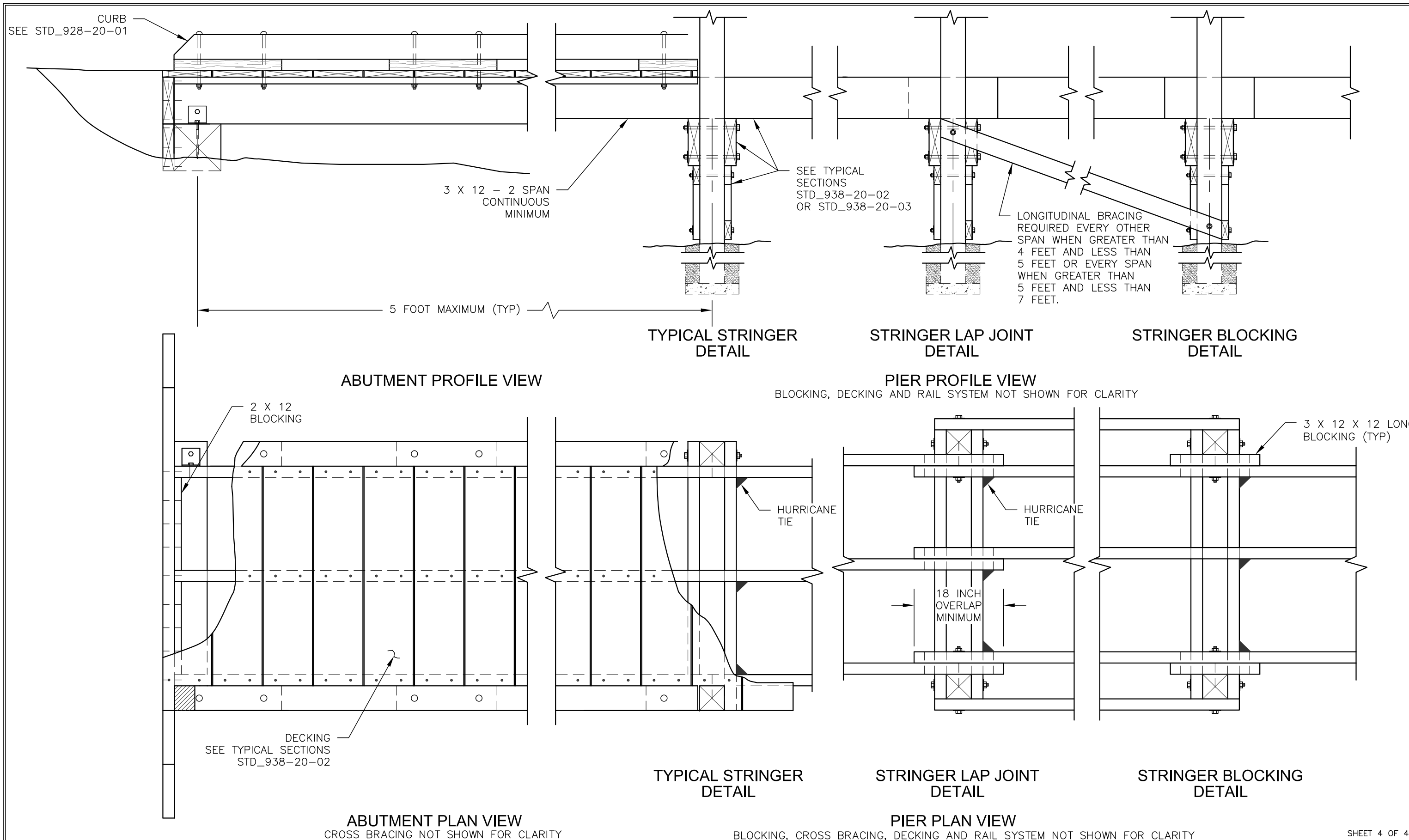
D TYPICAL ELEVATED SECTION

GREATER THAN 3 FEET LESS THAN 5 FEET BLOCKING REQUIRED AT EVERY SUPPORT NOT SHOWN FOR CLARITY



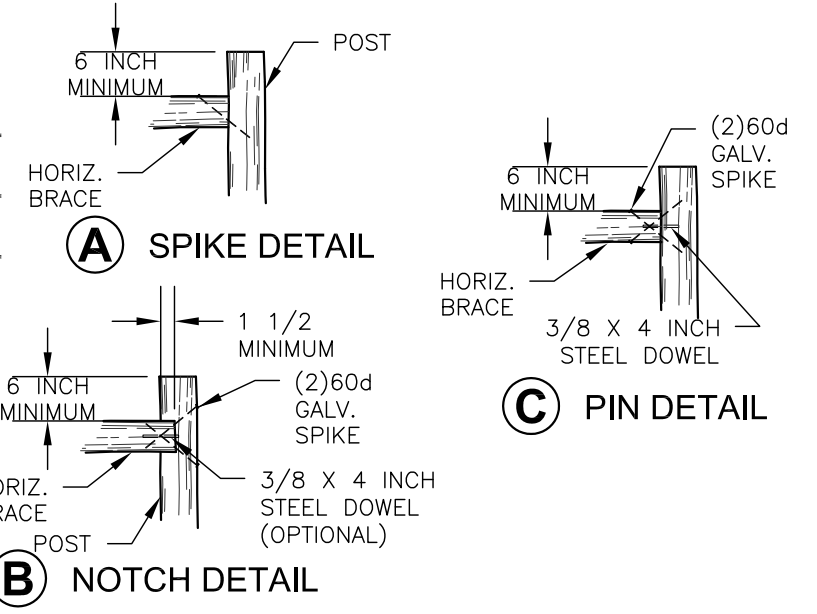
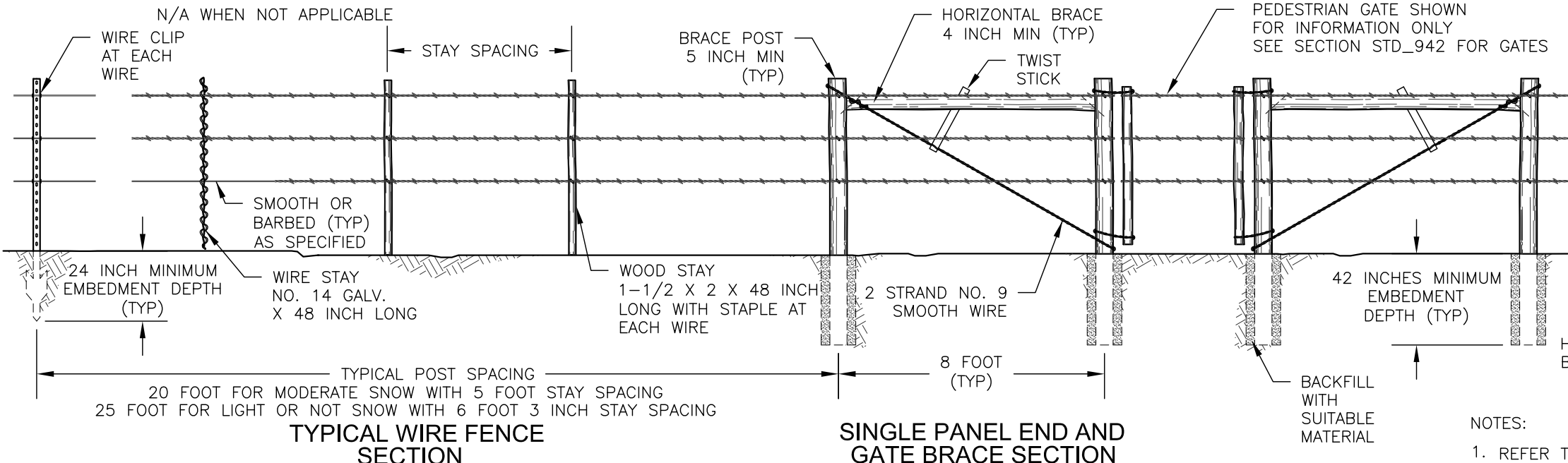
E TYPICAL ELEVATED SECTION

GREATER THAN 5 FEET LESS THAN 7 FEET BLOCKING REQUIRED AT EVERY SUPPORT NOT SHOWN FOR CLARITY

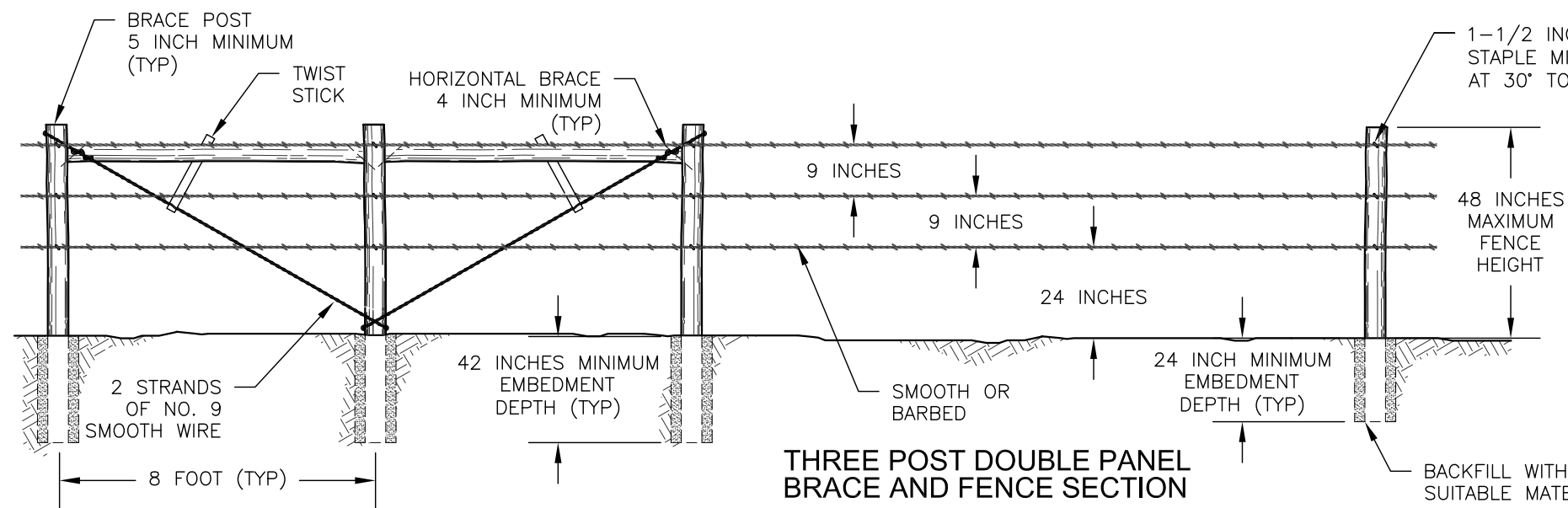


POST AND WIRE FENCE

TYPICAL ID	FENCE		POST					STAYS	HORIZONTAL BRACING				COMMENTS	
	WIRE TYPE	HEIGHT (INCHES)	TYPE	SIZE	LENGTH (FEET)	EMBEDMENT DEPTH	SPACING (FEET)		PRESERV. TYPE	TYPE	SIZE	3-POST SPACING (FEET)		EMBEDMENT DEPTH
PWF-1								P						



- NOTES:
- REFER TO THE PUBLICATION "FENCES" PREPARED BY THE MISSOULA TECHNOLOGY AND DEVELOPMENT CENTER FOR ADDITIONAL CONSTRUCTION DETAILS AND INSTALLATION PROCEDURES.
 - FENCE AND GATE LOCATIONS AS STAKED IN THE FIELD.
 - PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF BRACING OR POSTS.
 - COMPACT AND BACKFILL POST HOLES IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.



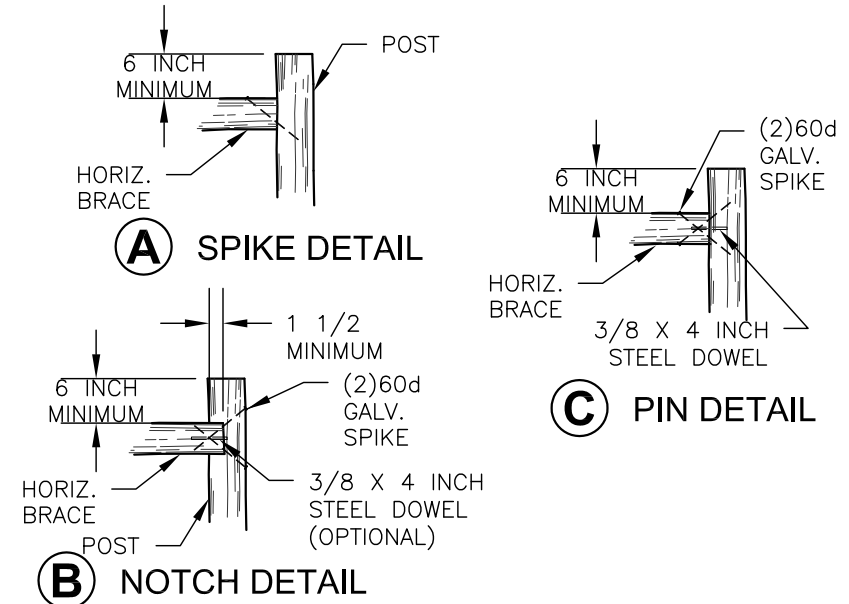
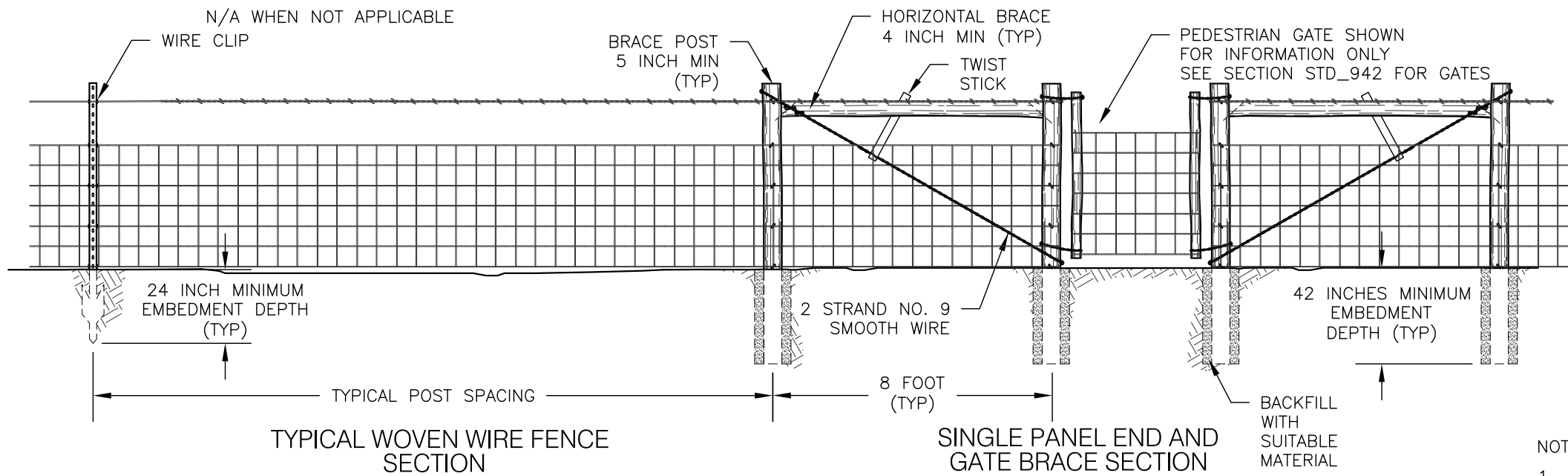
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE: WB = WATERBORNE, OT = OIL-BORNE

USE CATEGORY: UC3B = ABOVE GROUND - EXPOSED, UC4A = GROUND CONTACT - GENERAL USE, UC4B = GROUND CONTACT - HEAVY DUTY

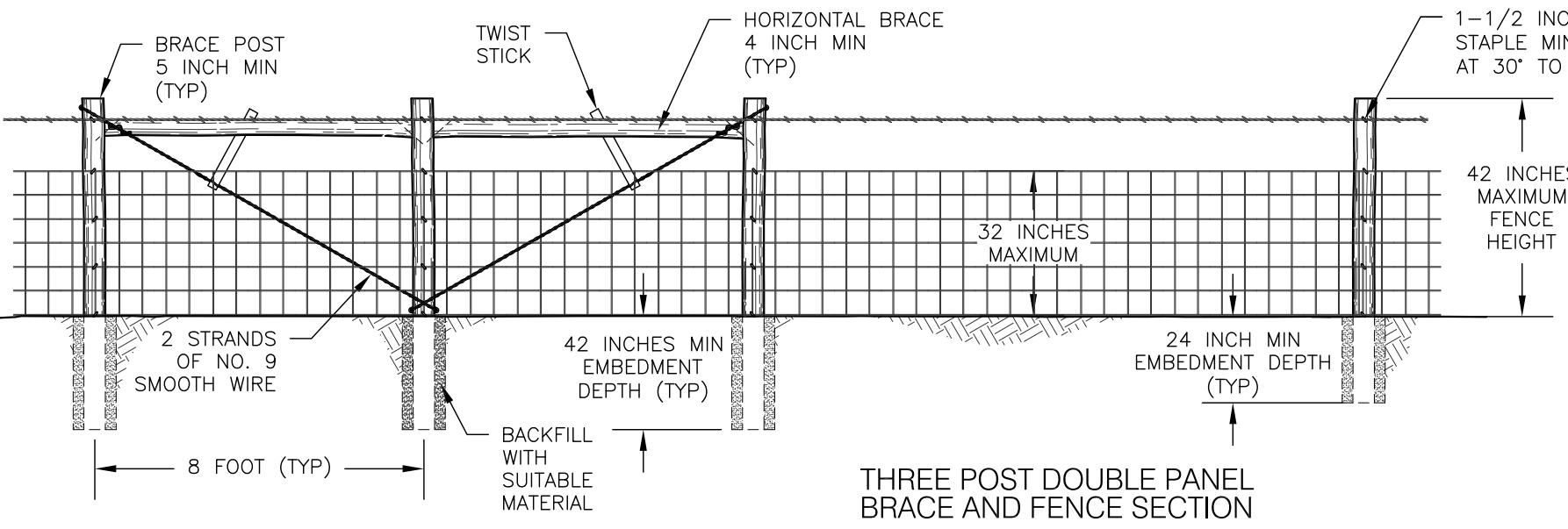
WOVEN WIRE FENCE

TYPICAL ID	FENCE		POST						HORIZONTAL BRACING			COMMENTS	
	WOVEN WIRE TYPE	HEIGHT (INCHES)	TYPE	SIZE	LENGTH (FEET)	EMBEDMENT DEPTH	SPACING (FEET)	PRESERV. TYPE	SIZE	3-POST SPACING (FEET)	EMBEDMENT DEPTH		POST CONNECTION DETAIL
WWF-1								P					



NOTES:

- REFER TO THE PUBLICATION "FENCES" PREPARED BY THE MISSOULA TECHNOLOGY AND DEVELOPMENT CENTER FOR ADDITIONAL CONSTRUCTION DETAILS AND INSTALLATION PROCEDURES.
- FENCE AND GATE LOCATIONS AS STAKED IN THE FIELD.
- PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF BRACING OR POSTS.
- COMPACT AND BACKFILL POST HOLES IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.



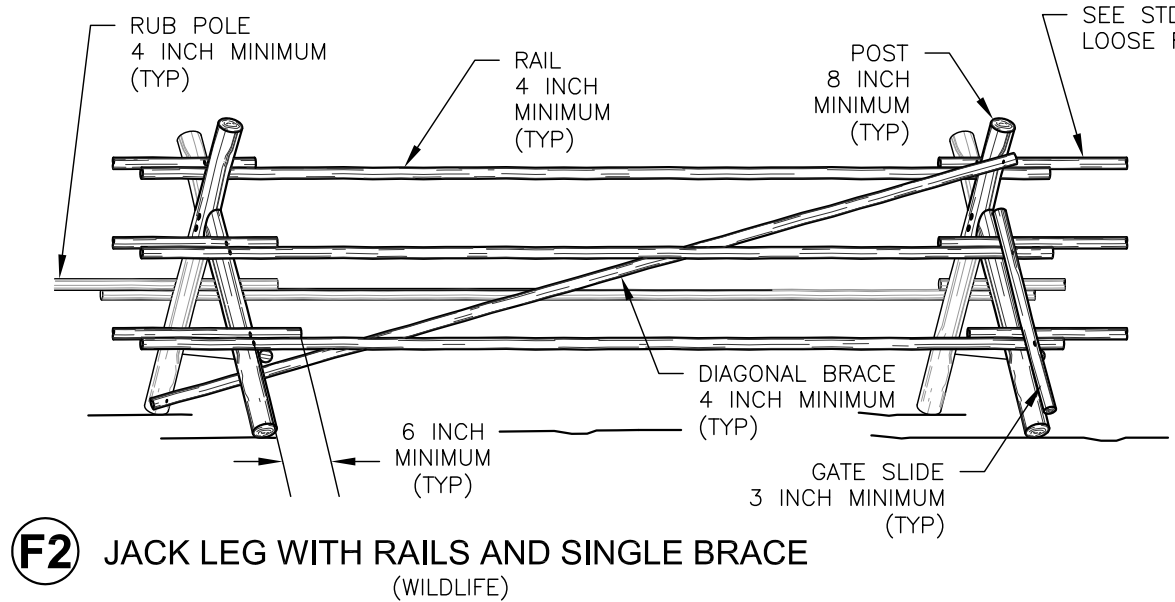
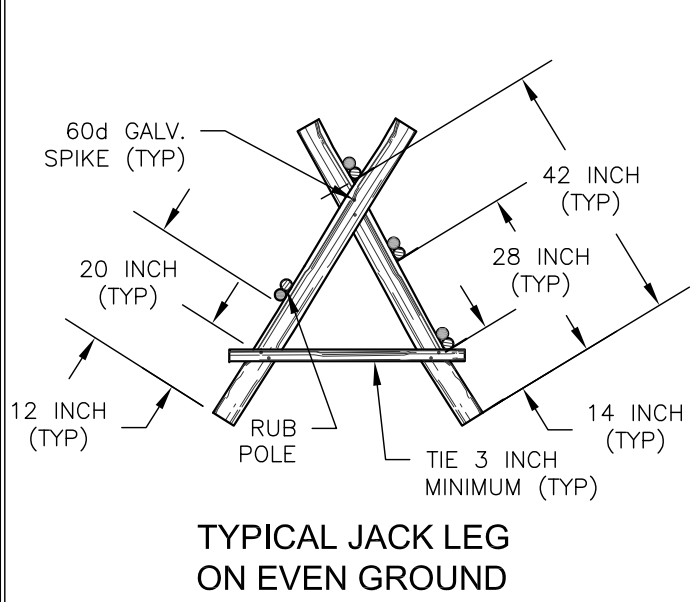
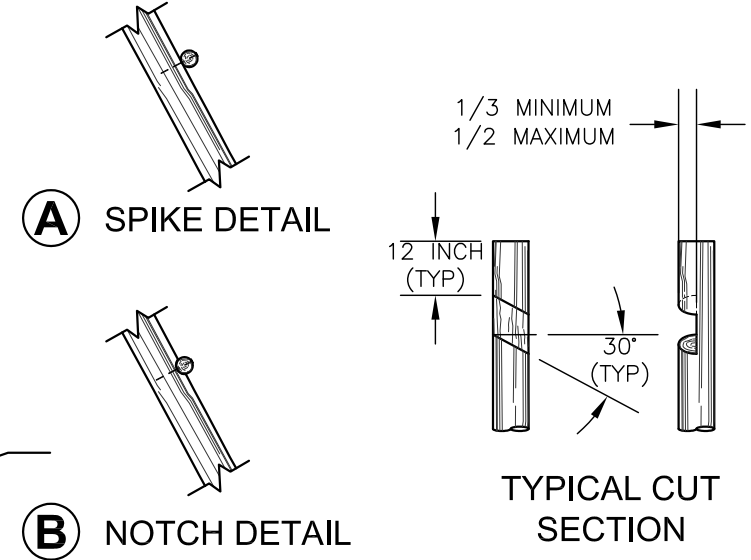
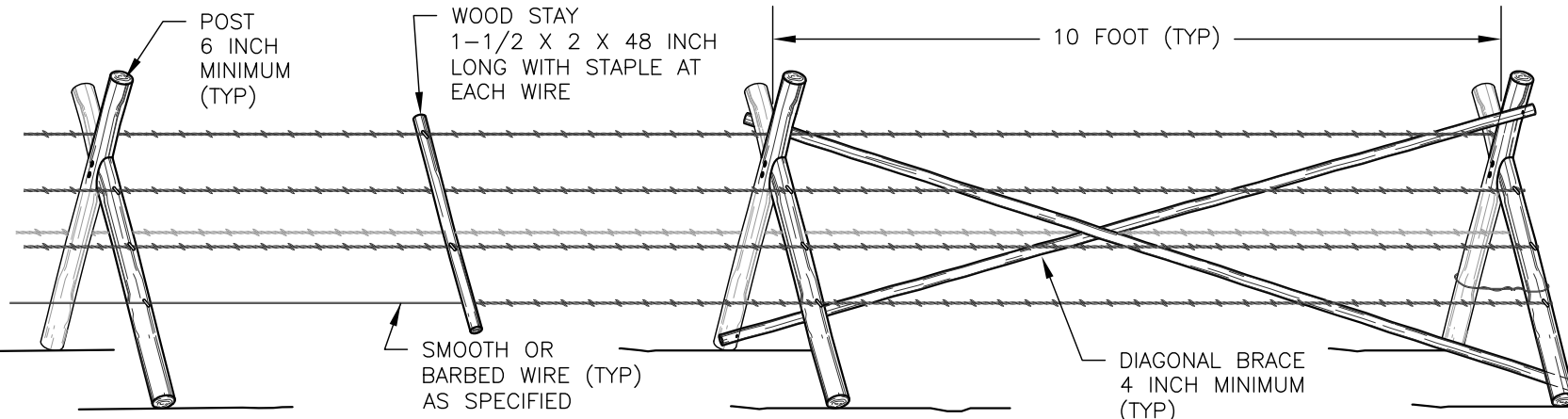
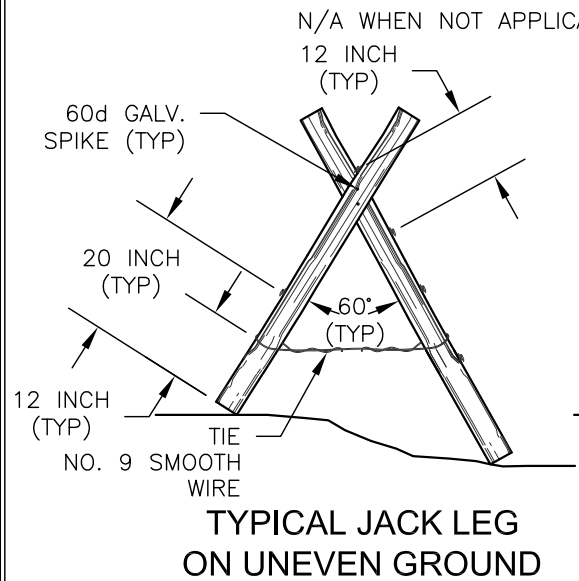
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE: WB = WATERBORNE, OT = OIL-BORNE

USE CATEGORY: UC3B = ABOVE GROUND - EXPOSED, UC4A = GROUND CONTACT - GENERAL USE, UC4B = GROUND CONTACT - HEAVY DUTY

JACK LEG FENCE

TYPICAL ID	FENCE		POST					STAYS	HORIZONTAL BRACING				COMMENTS
	WIRE TYPE	HEIGHT (INCHES)	TYPE	SIZE	LENGTH (FEET)	SPACING (FEET)	PRESERV. TYPE		TYPE	SIZE	3-POST SPACING (FEET)	EMBEDMENT DEPTH	
JLF-1							P						



- NOTES:
- REFER TO THE PUBLICATION "FENCES" PREPARED BY THE MISSOULA TECHNOLOGY AND DEVELOPMENT CENTER FOR ADDITIONAL CONSTRUCTION DETAILS AND INSTALLATION PROCEDURES.
 - FENCE AND GATE LOCATIONS AS STAKED IN THE FIELD.
 - PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF BRACING OR POSTS.
 - COMPACT AND BACKFILL POST HOLES IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE: WB = WATERBORNE, OT = OIL-BORNE

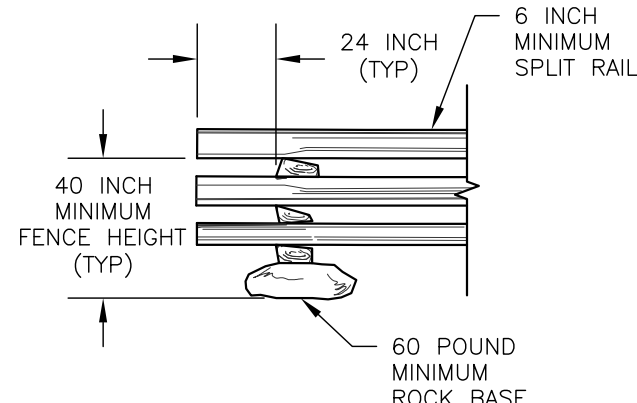
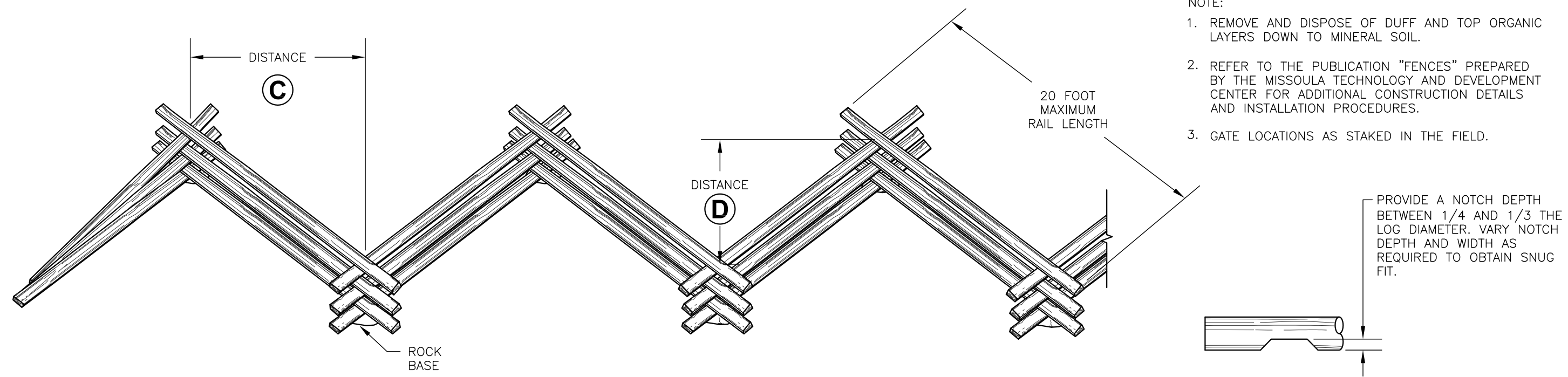
USE CATEGORY: UC3B = ABOVE GROUND - EXPOSED, UC4A = GROUND CONTACT - GENERAL USE, UC4B = GROUND CONTACT - HEAVY DUTY

STACKED RAIL (WORM) FENCE

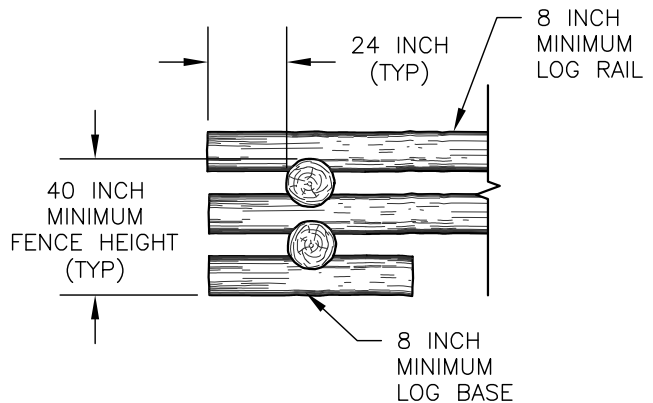
TYPICAL ID	SECTION TYPE	FENCE		RAIL			DISTANCE		COMMENTS
		BASE TYPE	HEIGHT	SIZE	LENGTH	PRESERV. TYPE	Ⓒ	Ⓓ	
SRF-1						P			

N/A WHEN NOT APPLICABLE

- NOTE:
1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
 2. REFER TO THE PUBLICATION "FENCES" PREPARED BY THE MISSOULA TECHNOLOGY AND DEVELOPMENT CENTER FOR ADDITIONAL CONSTRUCTION DETAILS AND INSTALLATION PROCEDURES.
 3. GATE LOCATIONS AS STAKED IN THE FIELD.



A TYPICAL SPLIT RAIL SECTION



B TYPICAL LOG SECTION

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

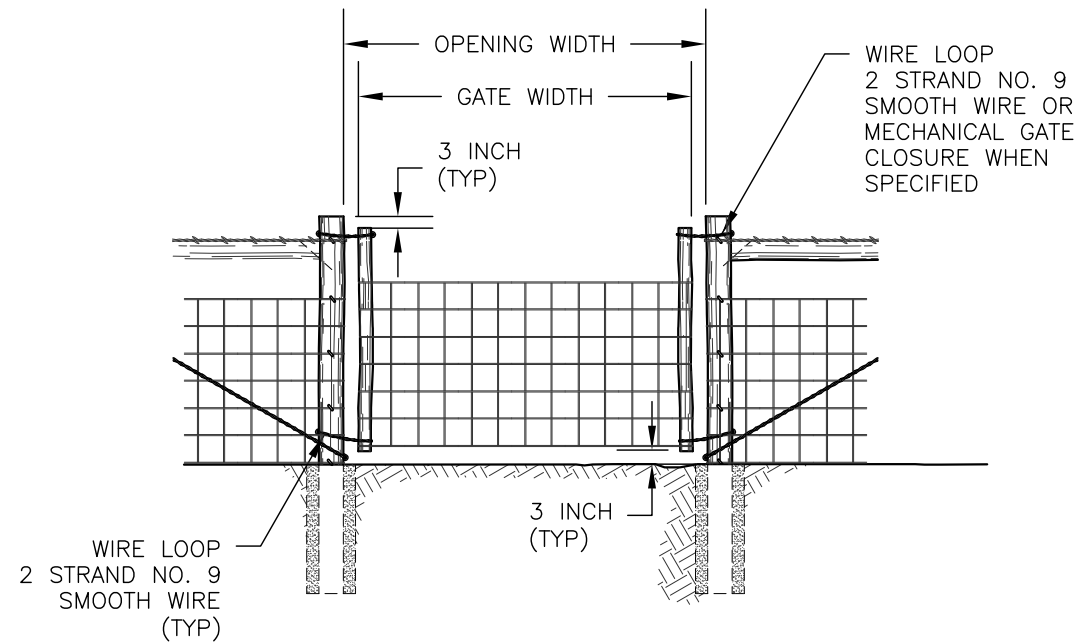
TREATMENT TYPE: WB = WATERBORNE, OT = OIL-BORNE

USE CATEGORY: UC3B = ABOVE GROUND - EXPOSED, UC4A = GROUND CONTACT - GENERAL USE, UC4B = GROUND CONTACT - HEAVY DUTY

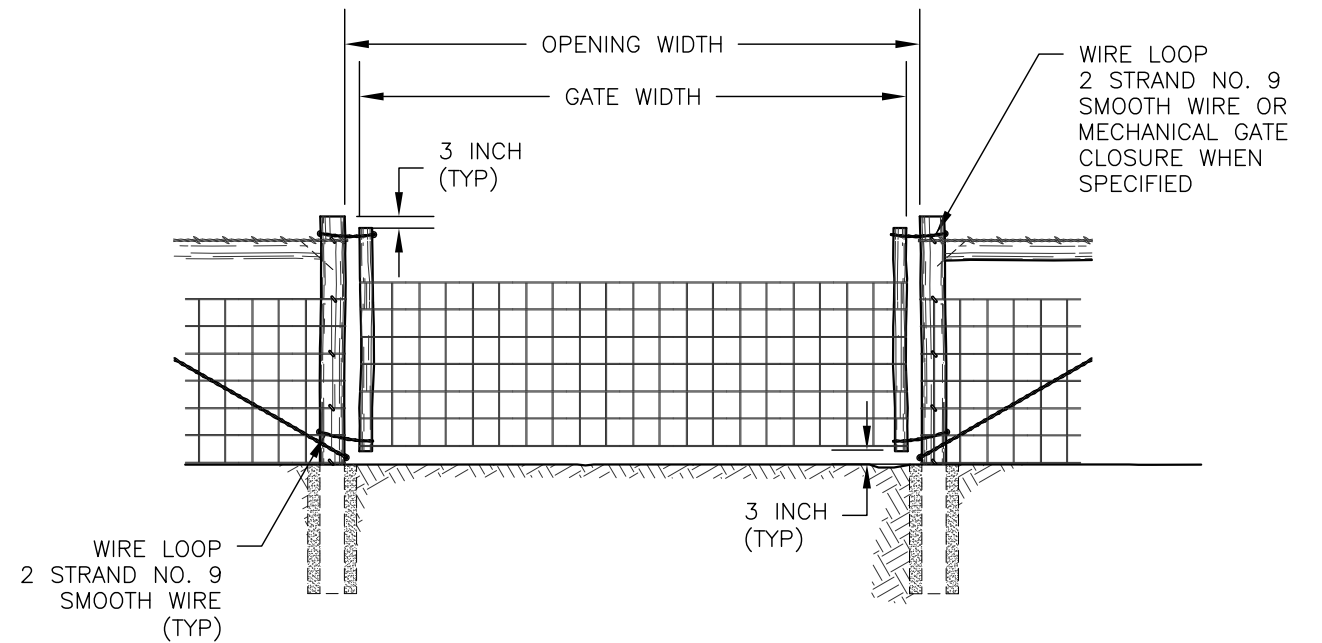
WOVEN WIRE GATE

TYPICAL ID	OPENING WIDTH	GATE			STAY					LATCH CLOSURE TYPE	HINGE TYPE	COMMENTS
		TYPE	WIDTH	WIRE TYPE	TYPE	SIZE	LENGTH	NO. OF STAYS	PRESERV. TYPE			
WWG-1		G							P			

N/A WHEN NOT APPLICABLE



G1 TYPICAL WOVEN WIRE GATE FOR TRAILS



G2 TYPICAL WOVEN WIRE GATE FOR ROADS

NOTES:

1. REFER TO THE PUBLICATION "FENCES" PREPARED BY THE MISSOULA TECHNOLOGY AND DEVELOPMENT CENTER FOR ADDITIONAL CONSTRUCTION DETAILS AND INSTALLATION PROCEDURES.
2. GATE LOCATIONS AS STAKED IN THE FIELD.
3. WIRE TYPE AND SPACING SHALL BE THE SAME AS ADJOINING FENCING SECTION UNLESS OTHERWISE SPECIFIED.

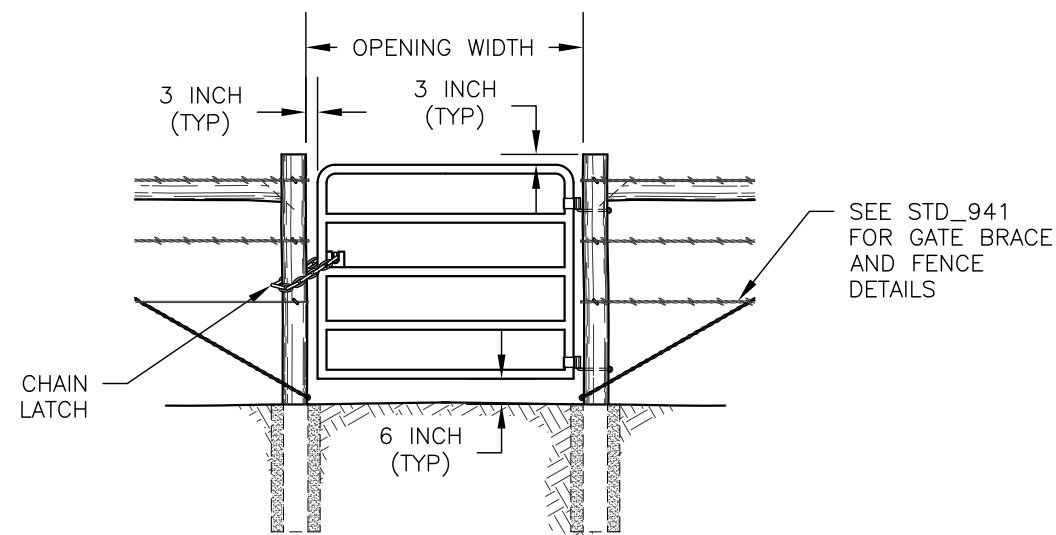
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

<u>TREATMENT TYPE</u>	<u>USE CATEGORY</u>
WB = WATERBORNE OT = OIL-BORNE	UC3B = ABOVE GROUND - EXPOSED UC4A = GROUND CONTACT - GENERAL USE UC4B = GROUND CONTACT - HEAVY DUTY

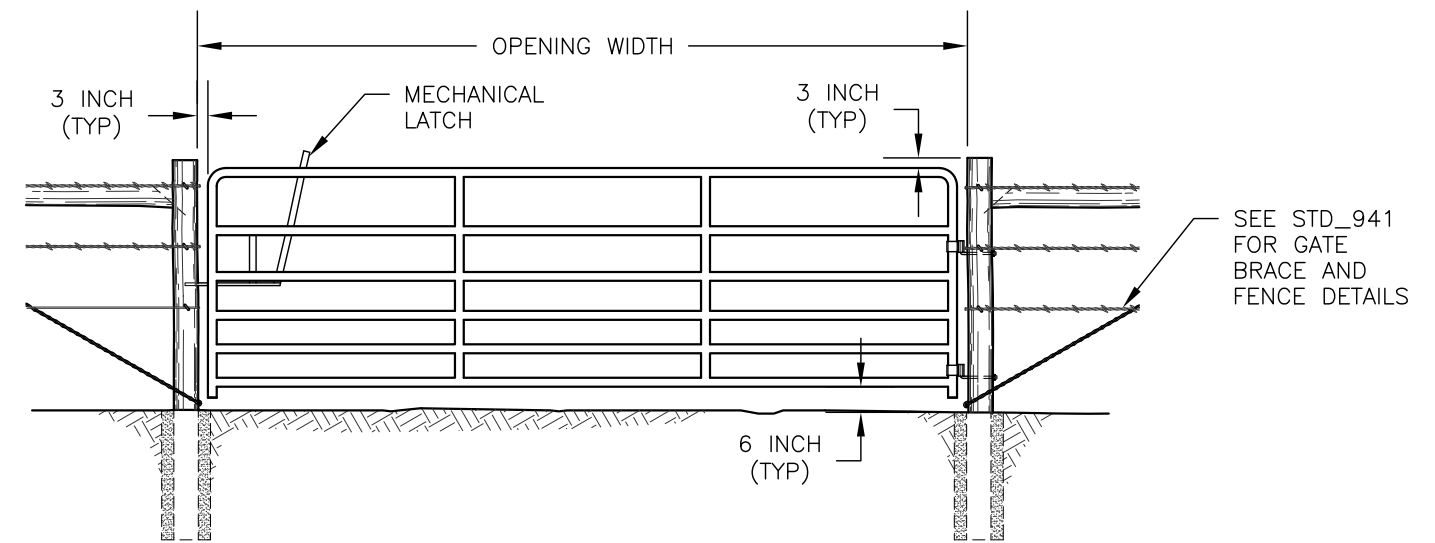
METAL SWING GATE

TYPICAL ID	OPENING WIDTH	GATE				COMMENTS
		TYPE	SIZE	LATCH CLOSURE TYPE	HINGE TYPE	
MSG-1		G	X			

N/A WHEN NOT APPLICABLE



G1 TYPICAL METAL SWING GATE FOR TRAILS



G2 TYPICAL METAL SWING GATE FOR ROADS

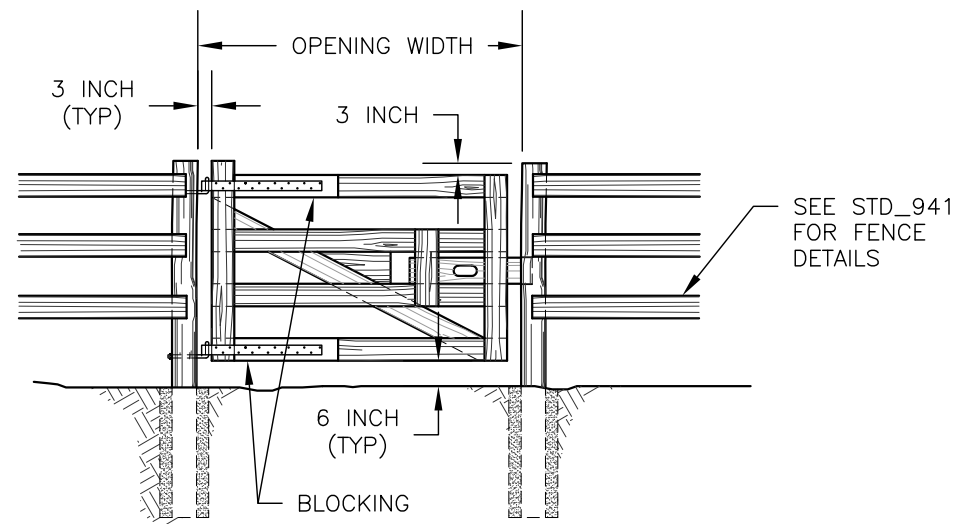
NOTES:

1. REFER TO THE PUBLICATION "FENCES" PREPARED BY THE MISSOULA TECHNOLOGY AND DEVELOPMENT CENTER FOR ADDITIONAL CONSTRUCTION DETAILS AND INSTALLATION PROCEDURES.
2. GATE LOCATIONS AS STAKED IN THE FIELD.
3. PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF POSTS.
4. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
5. GATE DIMENSIONS AS PER MANUFACTURER OR APPROVED EQUAL.

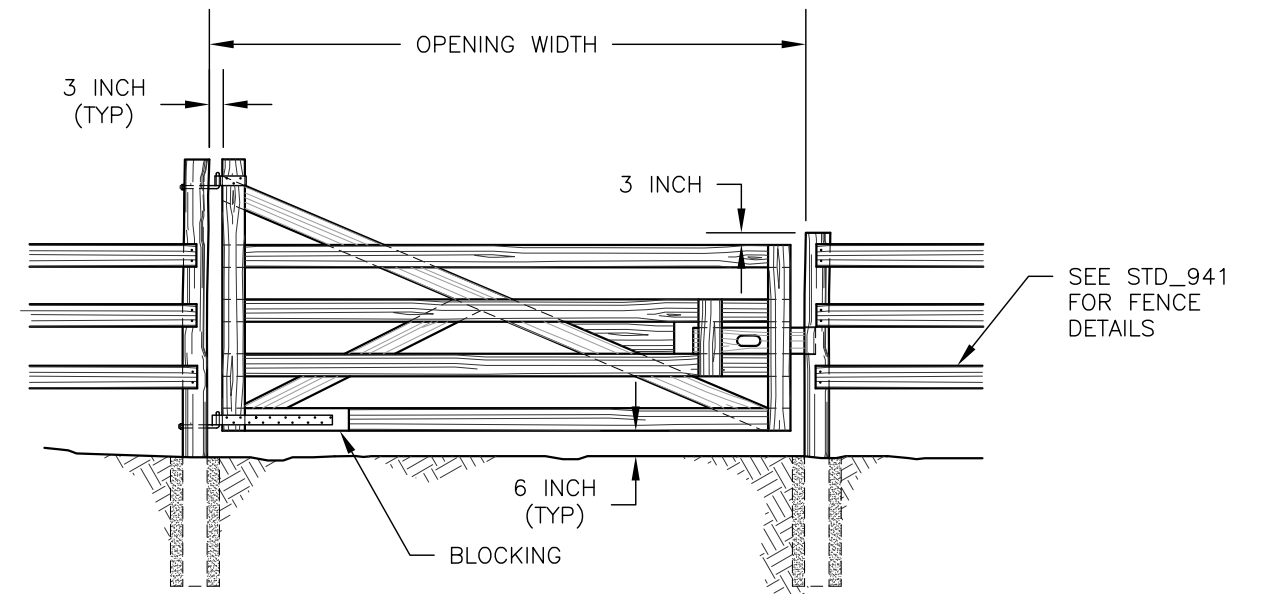
WOOD SWING GATE

TYPICAL ID	OPENING WIDTH	GATE					COMMENTS
		TYPE	SIZE	PRESERV. TYPE	LATCH CLOSURE TYPE	HINGE TYPE	
WSG-1		G	X	P			

N/A WHEN NOT APPLICABLE



G1 TYPICAL WOOD SWING GATE FOR TRAILS



G2 TYPICAL WOOD SWING GATE FOR ROADS

NOTES:

1. REFER TO THE PUBLICATION "FENCES" PREPARED BY THE MISSOULA TECHNOLOGY AND DEVELOPMENT CENTER FOR ADDITIONAL CONSTRUCTION DETAILS AND INSTALLATION PROCEDURES.
2. FENCE AND GATE LOCATIONS AS STAKED IN THE FIELD.
3. PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS.
4. BLOCKING SHALL BE REQUIRED ON GATES AT HINGE LOCATIONS FOR STABILITY.

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

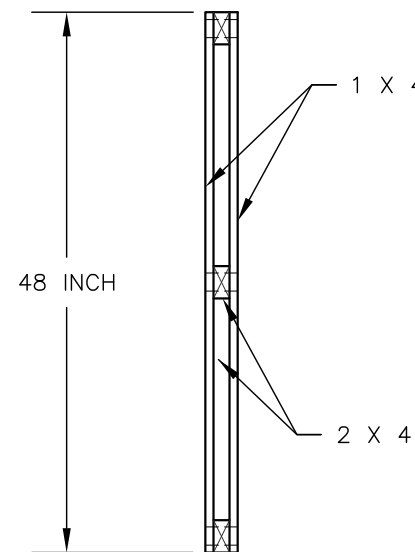
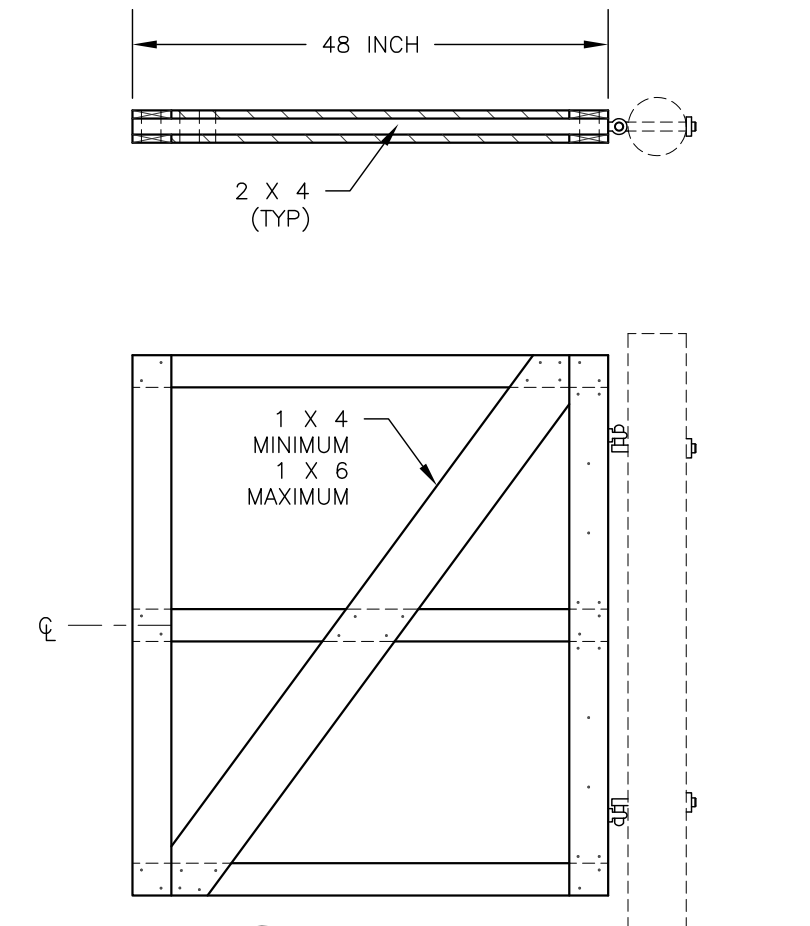
WOOD SWING GATE

NOTES:

1. REFER TO THE PUBLICATION "FENCES" PREPARED BY THE MISSOULA TECHNOLOGY AND DEVELOPMENT CENTER FOR ADDITIONAL CONSTRUCTION DETAILS AND INSTALLATION PROCEDURES.
2. FENCE AND GATE LOCATIONS AS STAKED IN THE FIELD.
3. PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF SAWN TIMBERS.
4. BLOCKING SHALL BE REQUIRED ON GATES AT HINGE LOCATIONS FOR STABILITY.
5. ALL FASTENERS SHALL BE GALVANIZED SCREWS.

TYPICAL ID	GATE			COMMENTS
	SIZE	PRESERV. TYPE	HINGE TYPE	
WSG-1	X	P		

N/A WHEN NOT APPLICABLE



PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

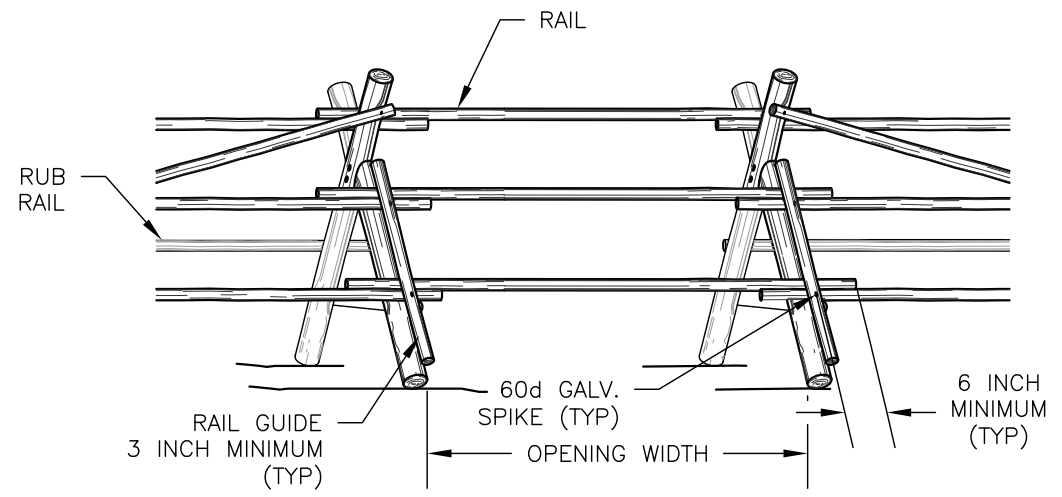
TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

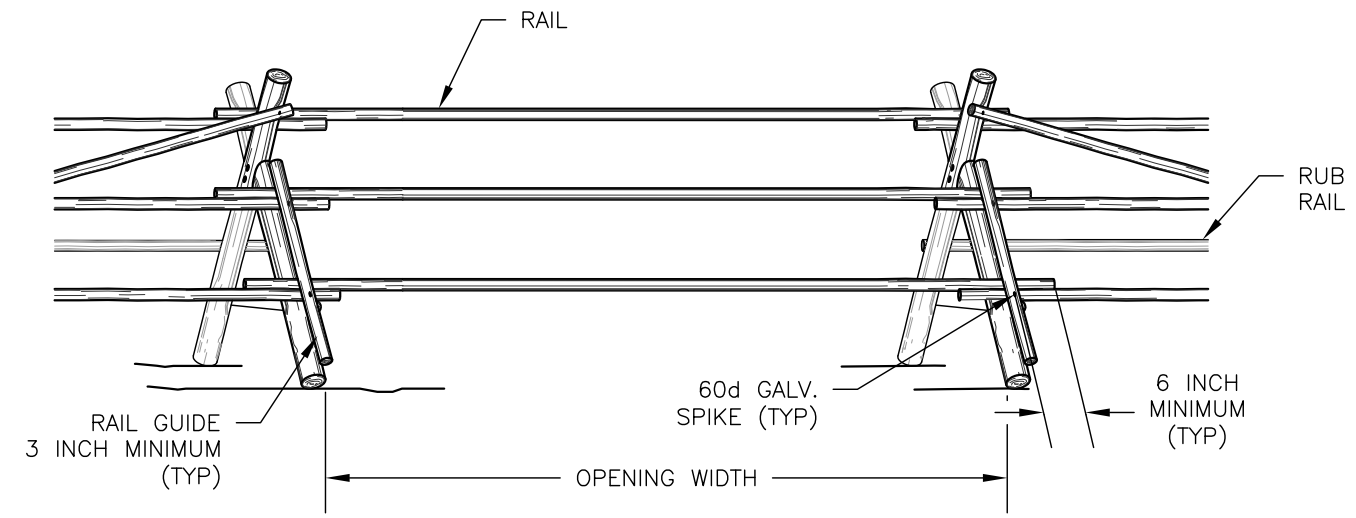
LOOSE RAIL GATE

TYPICAL ID	OPENING WIDTH	RAIL					GUIDE			COMMENTS
		TYPE	SIZE	LENGTH	NO. OF RAILS	PRESERV. TYPE	SIZE	LENGTH	PRESERV. TYPE	
LRG-1		G							P	

N/A WHEN NOT APPLICABLE



G1 TYPICAL LOOSE RAIL GATE FOR TRAILS



G2 TYPICAL LOOSE RAIL GATE FOR ROADS

NOTES:

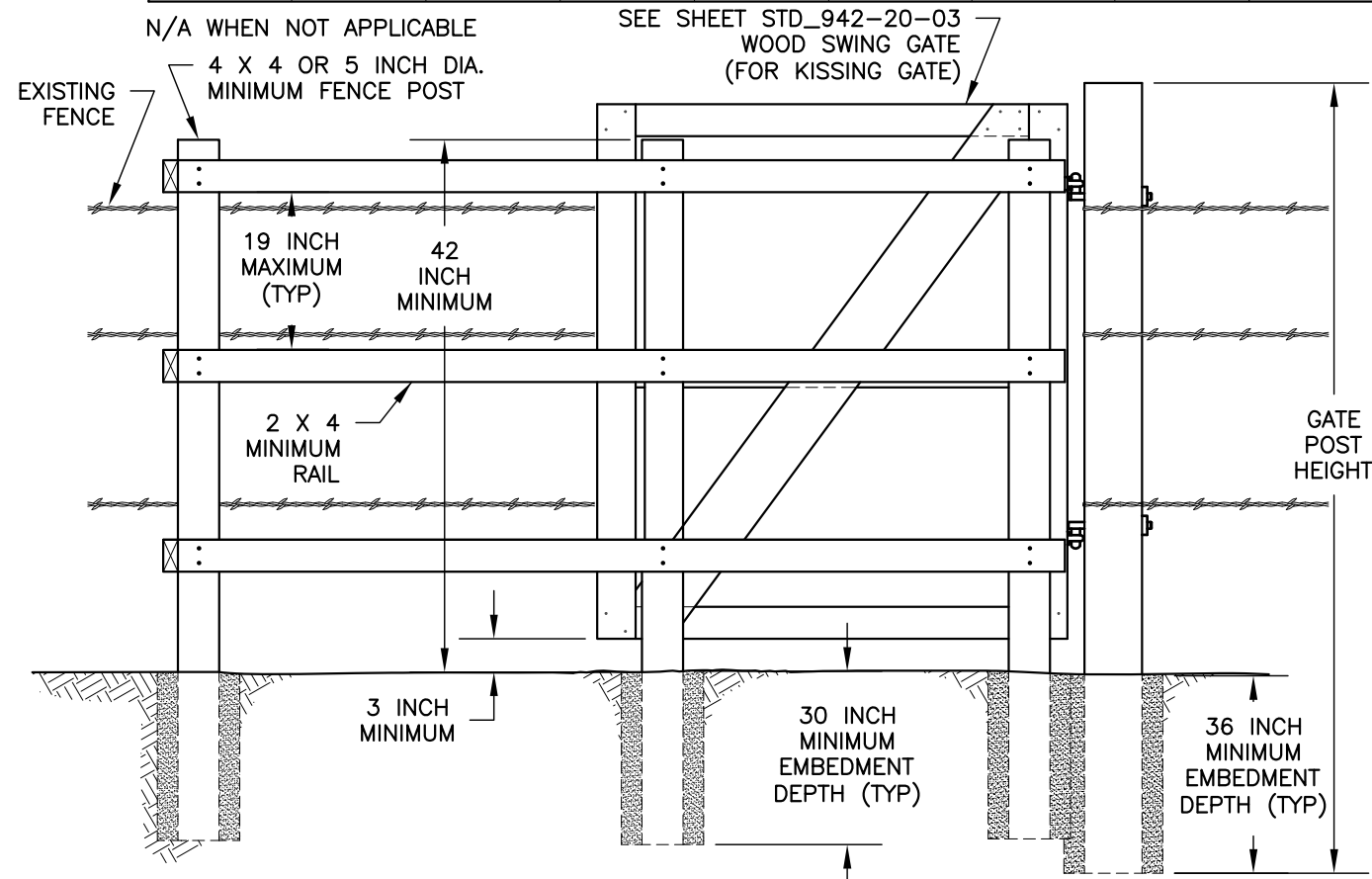
1. REFER TO THE PUBLICATION "FENCES" PREPARED BY THE MISSOULA TECHNOLOGY AND DEVELOPMENT CENTER FOR ADDITIONAL CONSTRUCTION DETAILS AND INSTALLATION PROCEDURES.
2. FENCE AND GATE LOCATIONS AS STAKED IN THE FIELD.
3. PRE-DRILL HOLES FOR FASTENERS TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS.

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

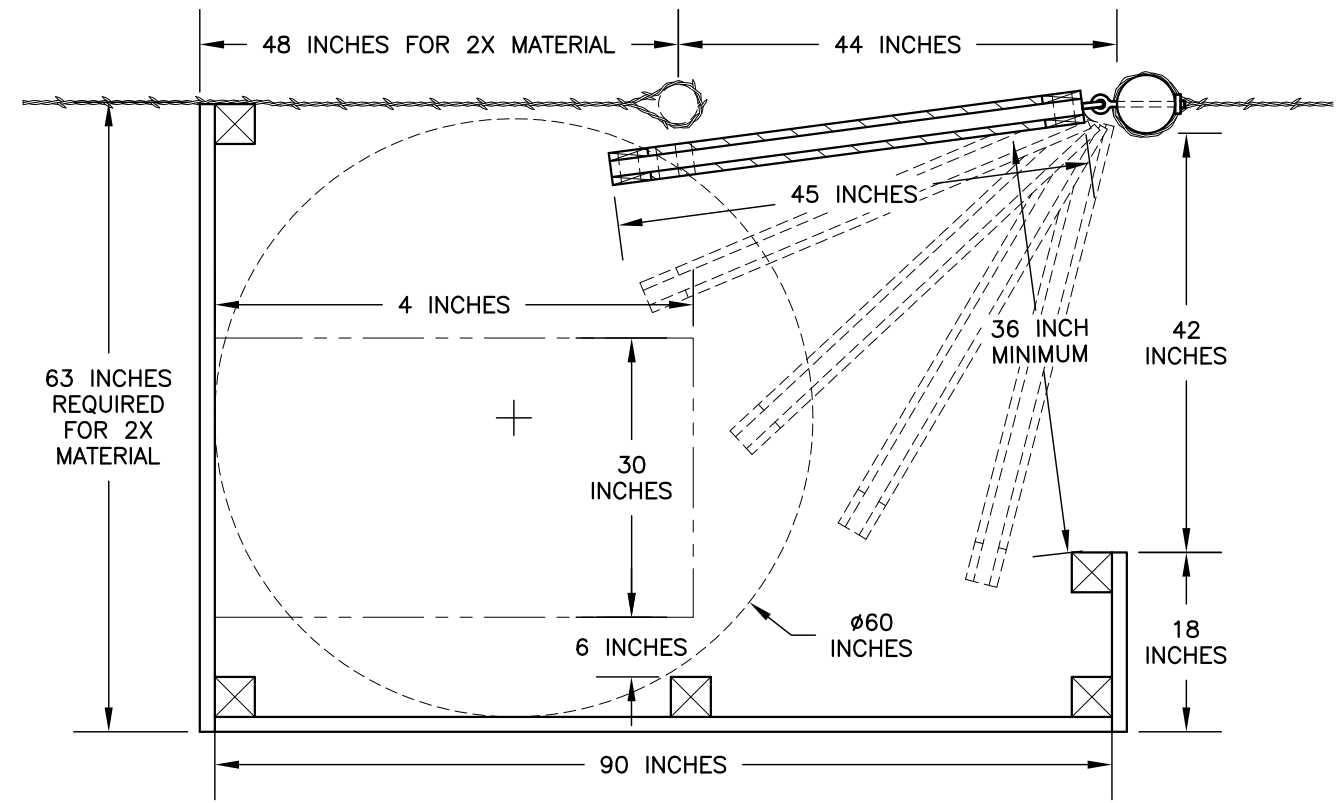
<u>TREATMENT TYPE</u>	<u>USE CATEGORY</u>
WB = WATERBORNE OT = OIL-BORNE	UC3B = ABOVE GROUND - EXPOSED UC4A = GROUND CONTACT - GENERAL USE UC4B = GROUND CONTACT - HEAVY DUTY

ACCESSIBLE KISSING GATE

TYPICAL ID	FENCE						GATE					COMMENTS
	MATERIAL TYPE	RAIL SIZE	POST SIZE	POST EMBEDMENT DEPTH	SPECIES	PRESERV. TYPE	HEIGHT	POST SIZE	POST EMBEDMENT DEPTH	SPECIES	PRESERV. TYPE	
KG2-1	M	X	X			P					P	



ELEVATION VIEW



PLAN VIEW

FENCE MATERIAL TYPE

TYPE	MATERIAL	COMMENTS
M1	SAWN TIMBER	
M2	LOG	
M3	METAL PIPE	
M4		

- NOTES:**
- REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
 - COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

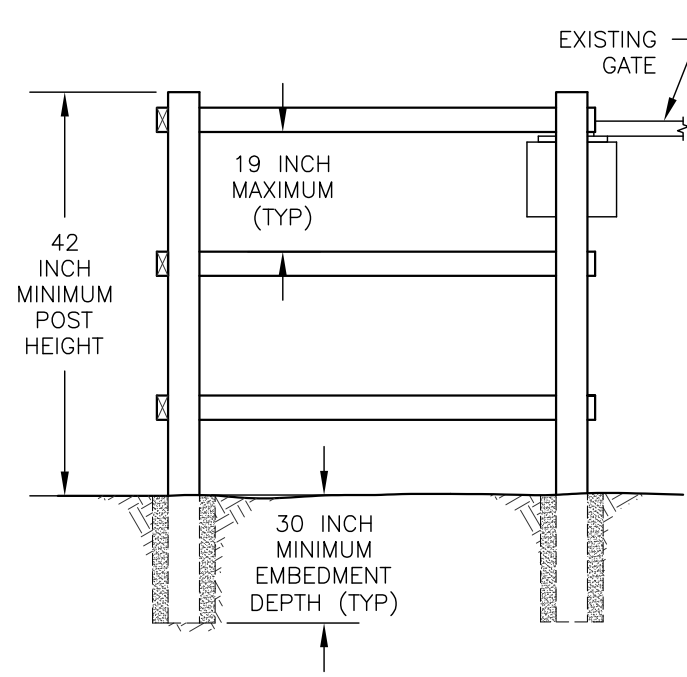
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE
 WB = WATERBORNE
 OT = OIL-BORNE

USE CATEGORY
 UC3B = ABOVE GROUND - EXPOSED
 UC4A = GROUND CONTACT - GENERAL USE
 UC4B = GROUND CONTACT - HEAVY DUTY

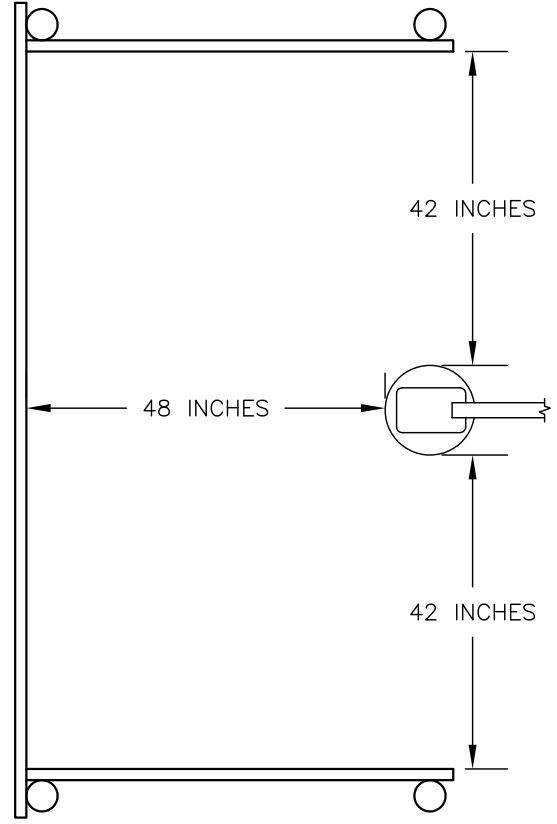
ACCESSIBLE GATES CHICANES

TYPICAL ID	SECTION TYPE	MATERIAL TYPE	POST			RAILS		SPECIES	PRESERV. TYPE	COMMENTS
			HEIGHT	EMBEDMENT DEPTH	MATERIAL DIMENSION	MATERIAL DIMENSION				
CHI-1		M			X	X				

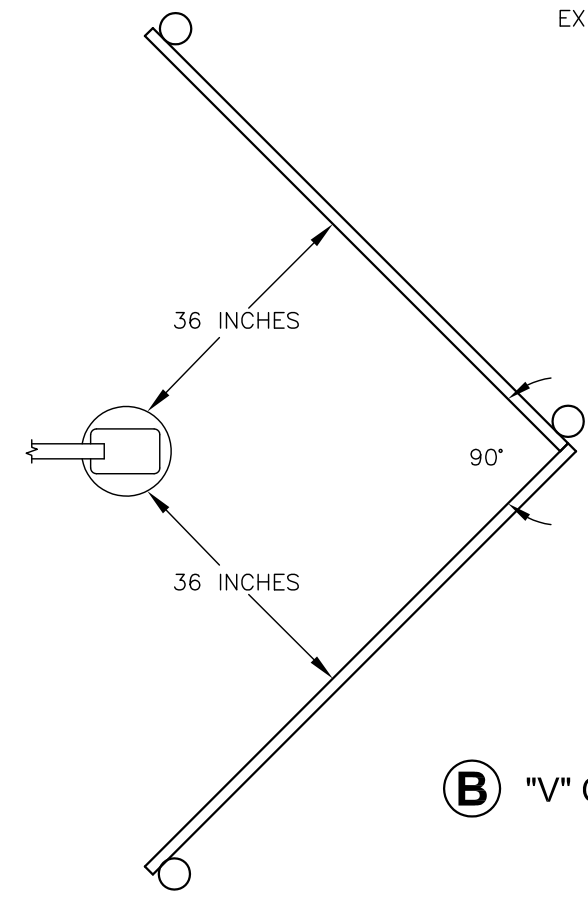


ELEVATION VIEW

A "U" CHICANE SECTION

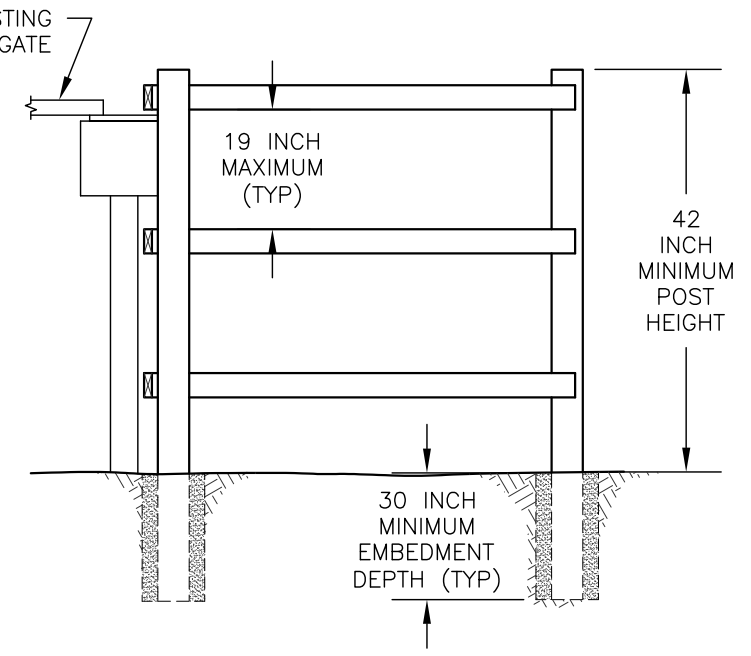


PLAN VIEW



PLAN VIEW

B "V" CHICANE SECTION



ELEVATION VIEW

FENCE MATERIAL TYPE

TYPE	MATERIAL	COMMENTS
M1	SAWN TIMBER	
M2	LOG	
M3	METAL PIPE	
M4		

NOTES:

1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

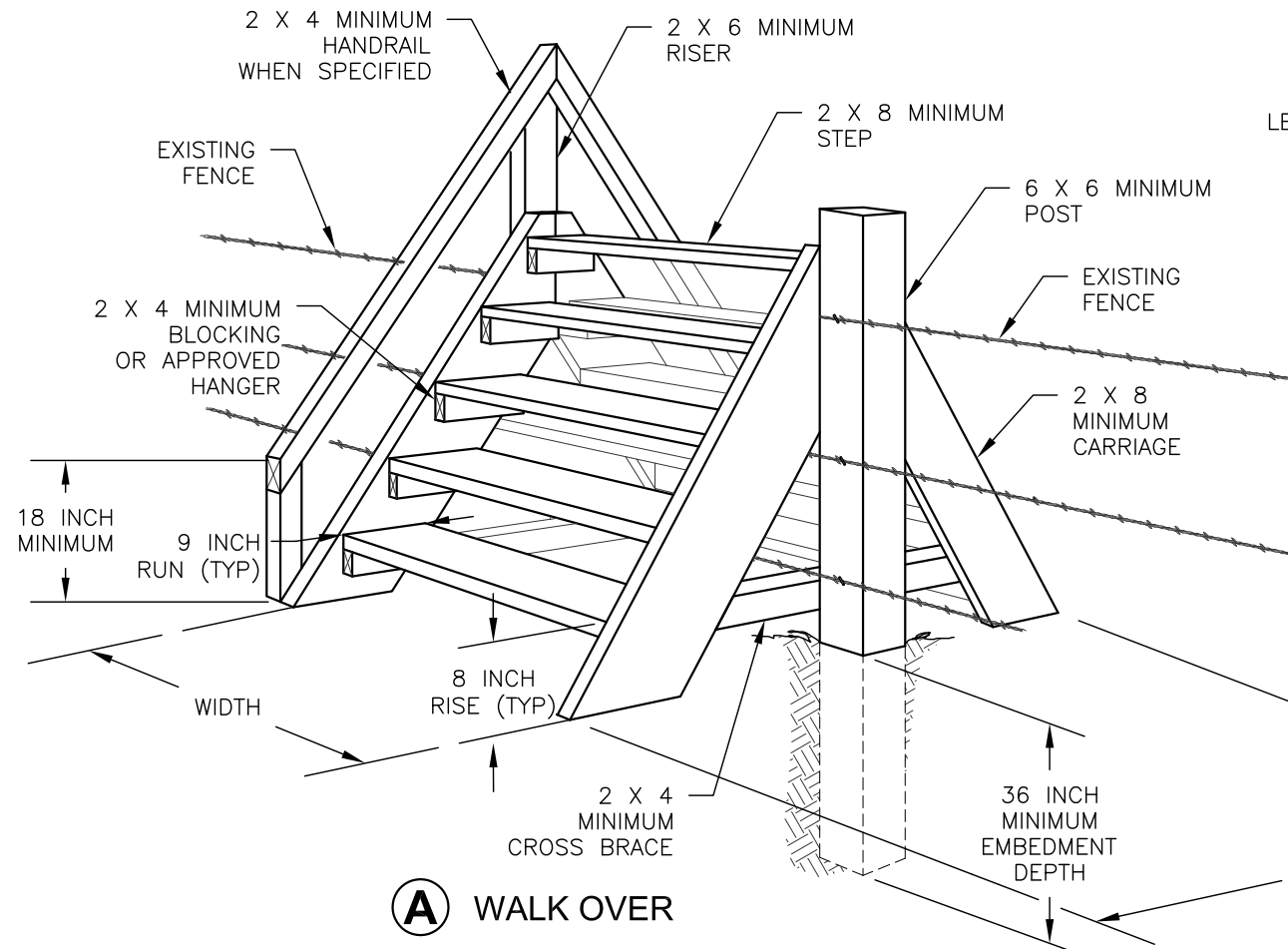
TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

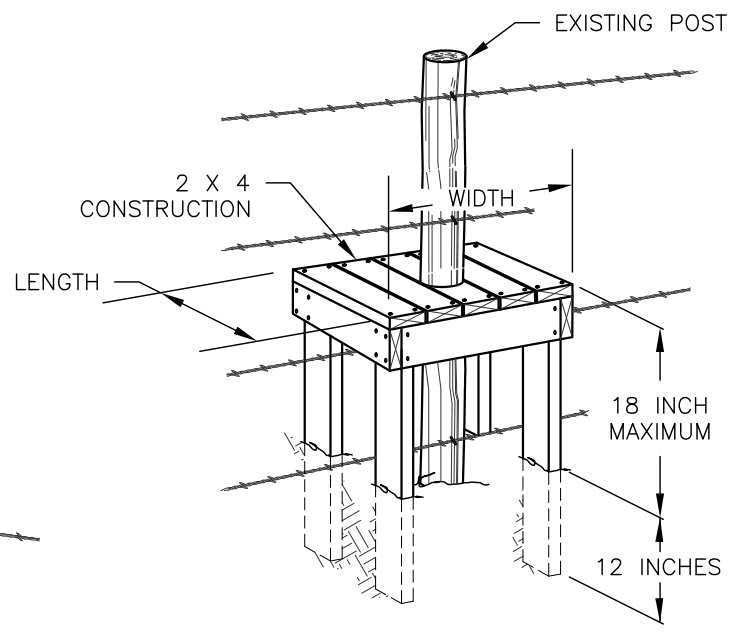
STILES

TYPICAL ID	SECTION TYPE	CARRIAGE		STEP				HANDRAIL	RISER	SPECIES	PRESERV. TYPE	COMMENTS
		NO. OF CARRIAGES	MATERIAL DIMENSION	LENGTH	WIDTH	RISE	RUN					
STL-1			X								P	

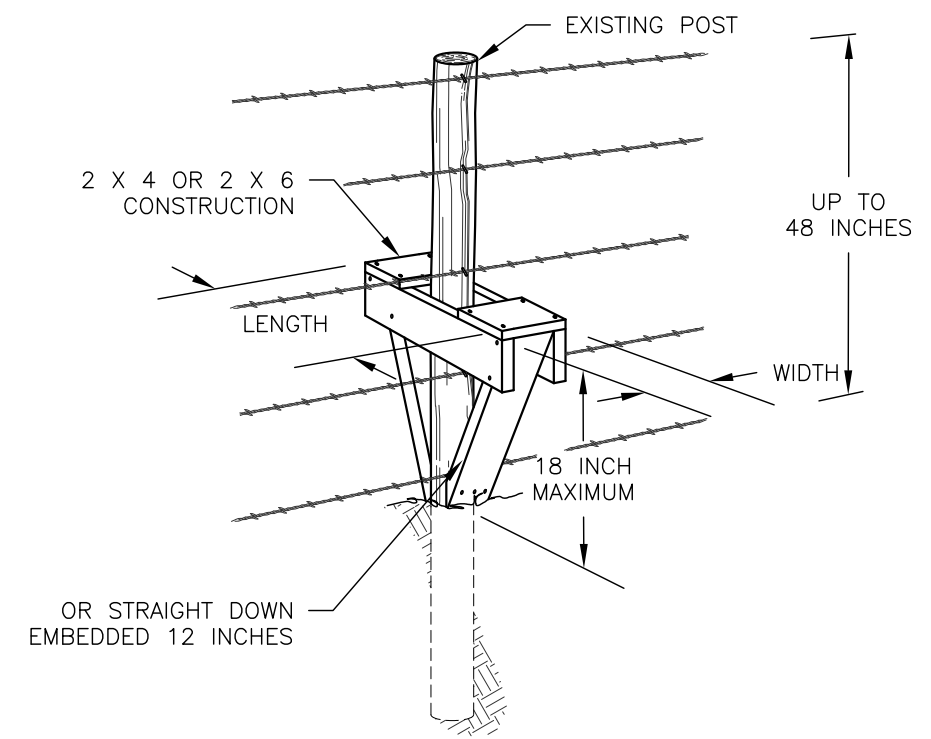
N/A WHEN NOT APPLICABLE



A WALK OVER



B PLATFORM STEP OVER



C STEP OVER

NOTE:
1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

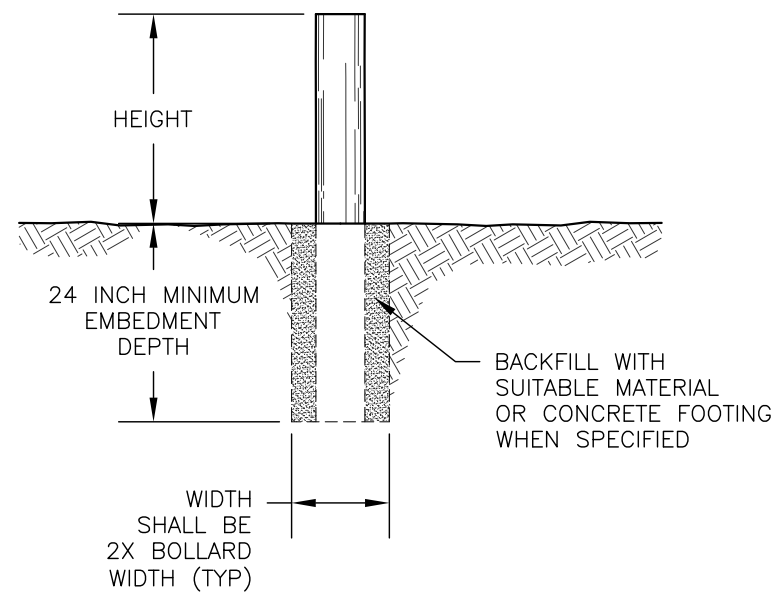
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE: WB = WATERBORNE, OT = OIL-BORNE
USE CATEGORY: UC3B = ABOVE GROUND - EXPOSED, UC4A = GROUND CONTACT - GENERAL USE, UC4B = GROUND CONTACT - HEAVY DUTY

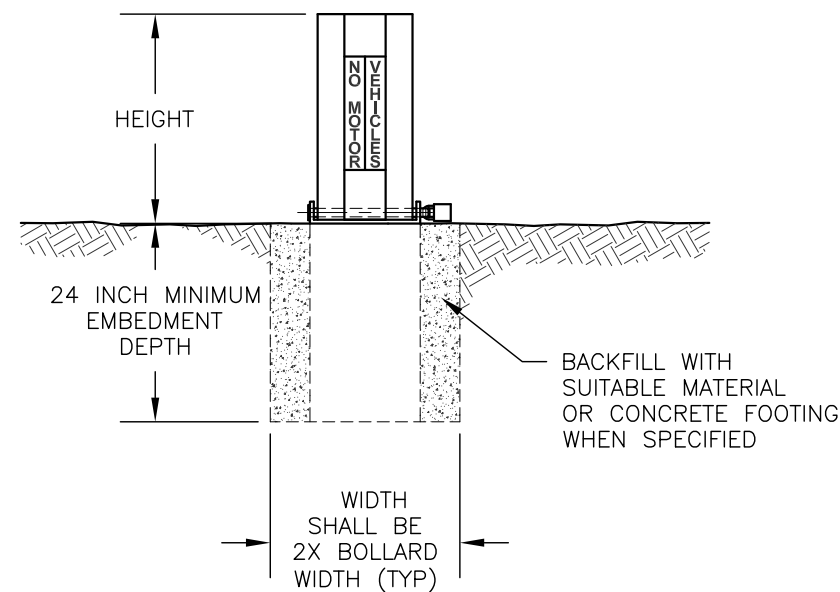
BOLLARDS

TYPICAL ID	SECTION TYPE	BOLLARD			EMBEDMENT DEPTH	PRESERV. TYPE	COMMENTS
		TYPE	SIZE	HEIGHT			
BLD-1		BD				P	

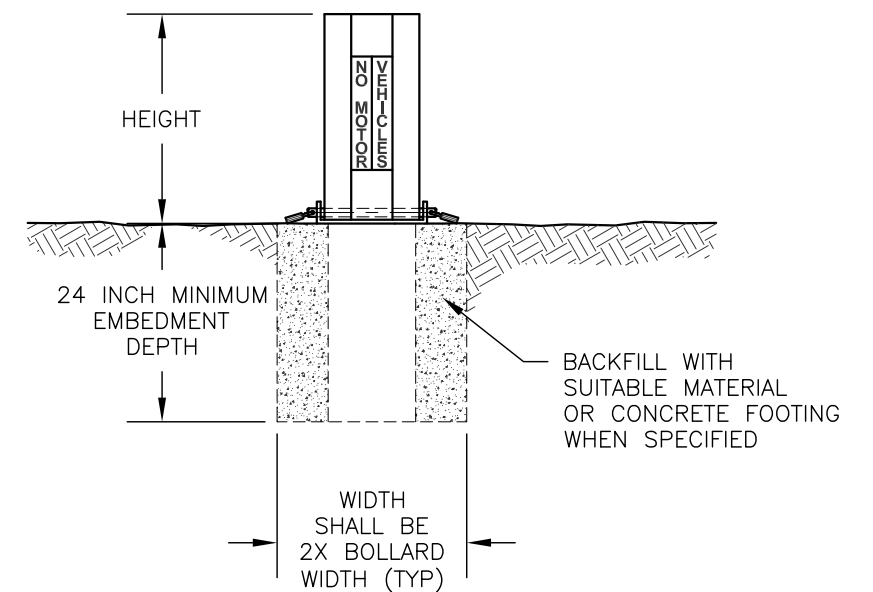
N/A WHEN NOT APPLICABLE



A PERMANENT INSTALLATION SECTION



B REMOVABLE INSTALLATION SECTION
SINGLE LOCK SYSTEM SHOWN



C DROP-DOWN INSTALLATION SECTION
DUAL LOCK SYSTEM SHOWN

BOLLARD MATERIAL

TYPE	MATERIAL	COMMENTS
BD1	LOG	
BD2	STEEL	
BD3	CONCRETE	
BD4	TIMBER	
BD5	RAILROAD TIE	
BD6	MANUFACTURED	
BD7		

NOTES:

1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
3. WHEN SPECIFIED INSTALL PER MANUFACTURERS INSTRUCTION.
4. OBJECT MARKERS REQUIRED ON MOTORIZED TRAILS.

PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	
P2	WB	UC3B	
P3			

TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

BOP STA.

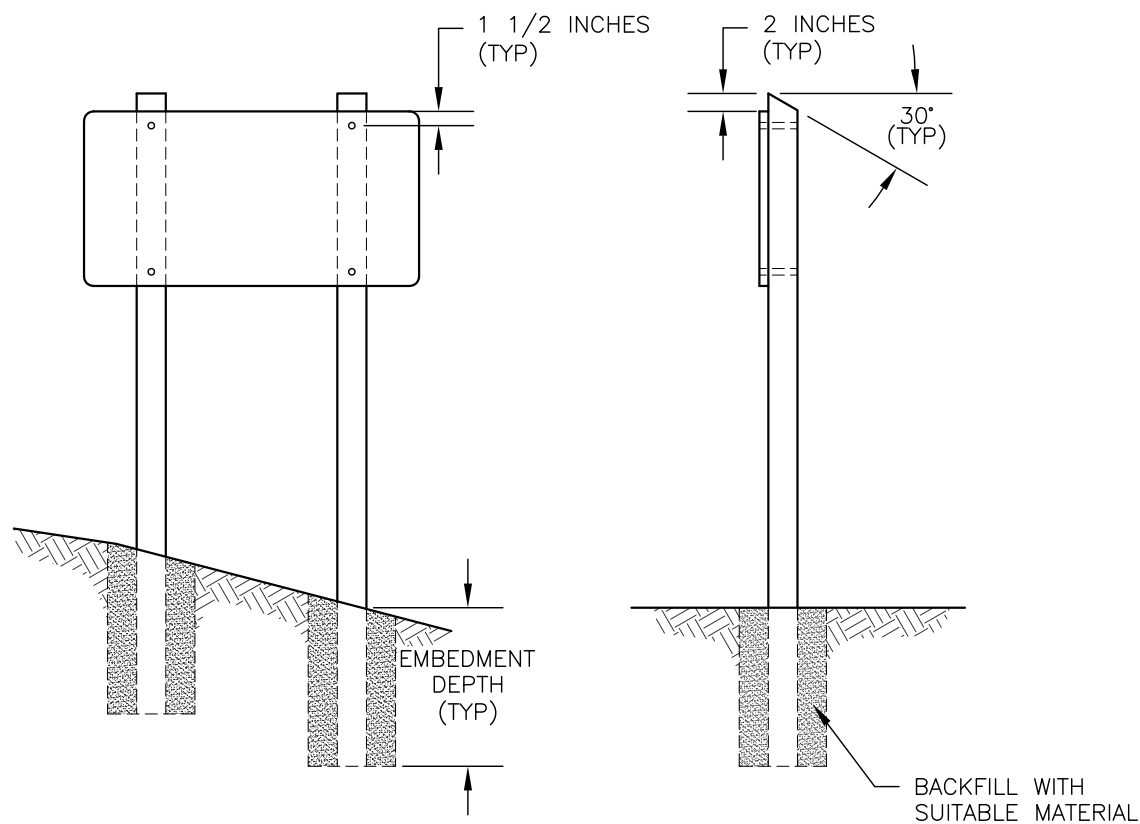
TRAIL NO.

INFORMATION FOR GENERAL LAYOUT. SEE TABLES FOR ACTUAL STATIONING.

NOTE:

1. REFER TO "EM-7100-15, SIGN AND POSTER GUIDELINES, FOR THE FS" FOR SIGN SPECIFICATIONS, MATERIALS, AND PLACEMENT.

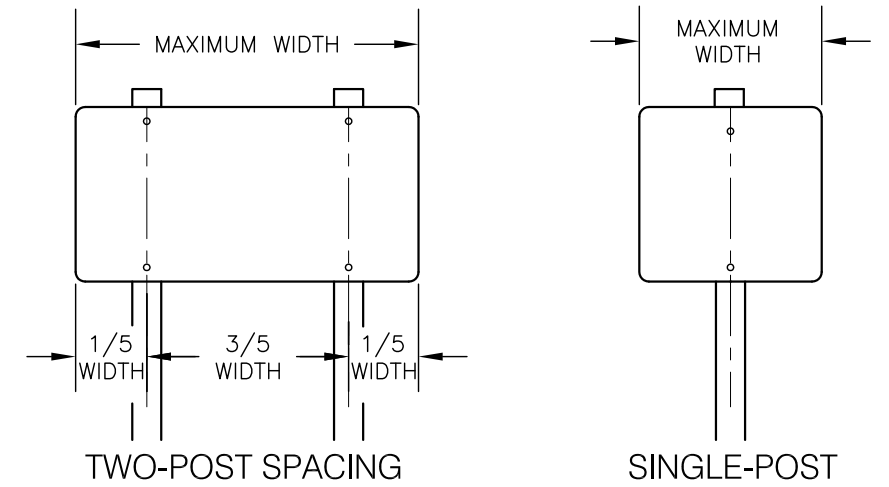
LEGEND		
SIGN TYPE		
(A)		STOP
(B)		YIELD
(C)		OTHER REGULATORY
(D)		WARNING
(E)		RAIL GRADE CROSSING
(F)		TYPE 2 OBJECT MARKER
(G)		MODIFIED TYPE 2 OBJECT MARKER
(H)		TYPE 3 OBJECT MARKER
(I)		TYPE 4 OBJECT MARKER (RED)
(J)		BARRICADE MARKER
(K)		GUIDE SIGN
(L)		OTHER
(M-O)		ROUTE MARKER
(P-R)		REASSURANCE MARKER
(S)		MILEAGE MARKER
(T-V)		CAIRN SEE SHEET STD_955-01



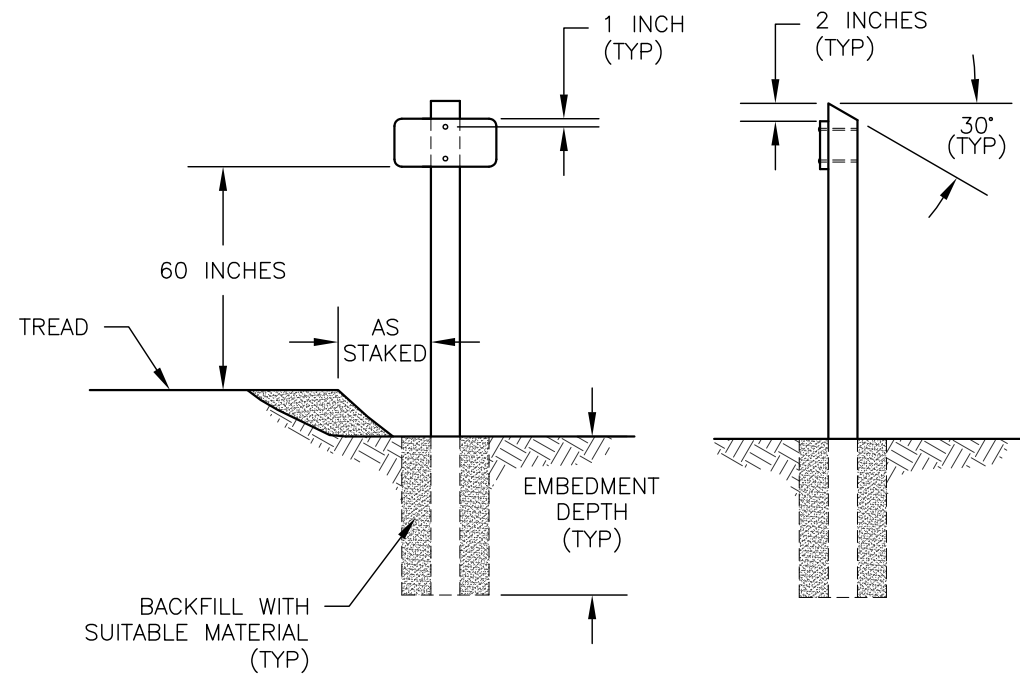
WOOD SIGN POST SPACING AND SIZE REQUIREMENTS

POST SIZE (IN)	SINGLE POST		TWO-POST		MINIMUM EMBEDMENT DEPTH (FT)
	MAX SIGN WIDTH (IN)	MAX SIGN AREA (SQ.FT)	MAX SIGN WIDTH (IN)	MAX SIGN AREA (SQ.FT)	
4 X 4	*48	10	72	20	3
4 X 6	48	20	72	50	4
6 X 6	48	20	96	95	4

*THE MAXIMUM WIDTH IS 36 INCHES FOR DIAMOND-SHAPED SIGNS.



GUIDLINES FOR WOOD SIGN POSTS



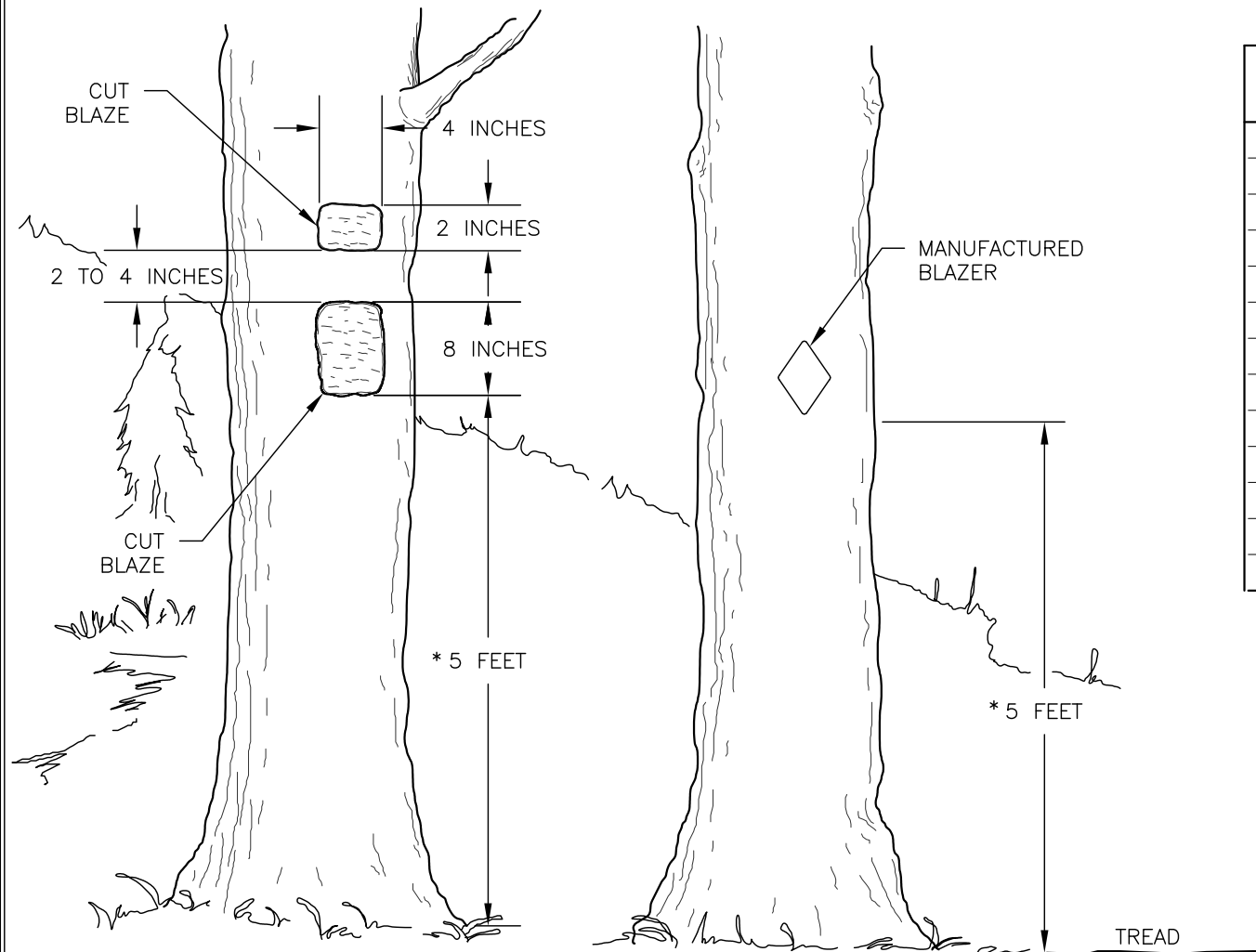
SIGN AND POST INSTALLATION

NOTES:

- REFER TO "EM-7100-15 SIGN AND POSTER GUIDELINES FOR THE FS" FOR SIGN SPECIFICATIONS, MATERIALS, AND PLACEMENT.
- POST SPACING APPLIES TO BOTH WOOD AND STEEL POSTS.
- FOR SIZES OF STEEL POSTS, REFER TO EM 7100-15.
- ALL HARDWARE SHALL BE ALUMINUM OR GALVANIZED.
- LAG SCREW FASTENERS REQUIRE LEAD HOLES IN POSTS AND SHALL BE DRILLED PRIOR TO INSTALLATION.
- BOLT HOLES IN POSTS TO BE 1/16 INCH LARGER (MAXIMUM) LARGER THAN THE BOLT HOLE REQUIREMENT.
- SIGN AND MARKER POSTS ONLY SHALL BE TREATED WITH CCA (CHROMATED COPPER ARSENATE) FOR UC4A GROUND CONTACT FOR GENERAL USE.
- COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

REASSURANCE MARKER

TYPICAL ID	REASSURANCE MARKER		BLAZE(R)	SUPPORT			COMMENTS
	TYPE	LOCATION	LOCATION	TYPE	SIZE	QUANTITY	
RSM-1							



REASSURANCE MARKER LOCATION ON TRAIL

L	LEFT SIDE
R	RIGHT SIDE
BOTH	BOTH SIDES

BLAZE(R) LOCATION ON SUPPORT

FR	FRONT SIDE
BA	BACK SIDE
BOTH	BOTH SIDES

SUPPORT TYPE

TR	TREE
WP	WOOD POST
SP	STEEL POST
FP	FLEXIBLE POST

P

TYPICAL CUT BLAZE

Q

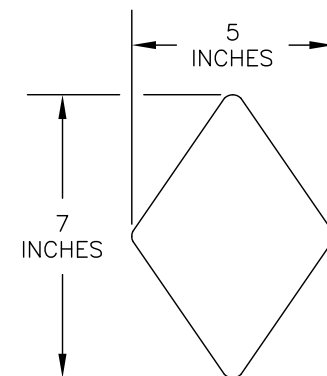
TYPICAL MANUFACTURED BLAZER

PAINTED AND SCRIBED BLAZES NOT SHOWN FOR CLARITY

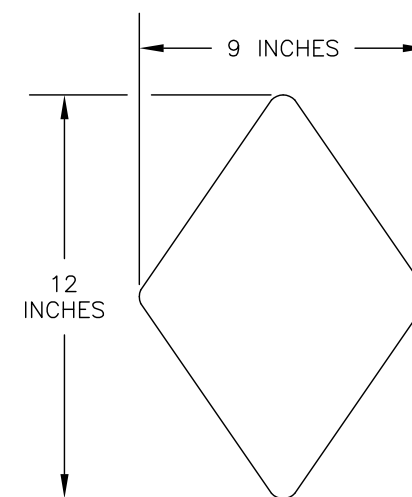
* MINIMUM MOUNTING HEIGHT FOR HIKER/PEDESTRIAN, PACK AND SADDLE, BICYCLE AND OHV.

NOTES:

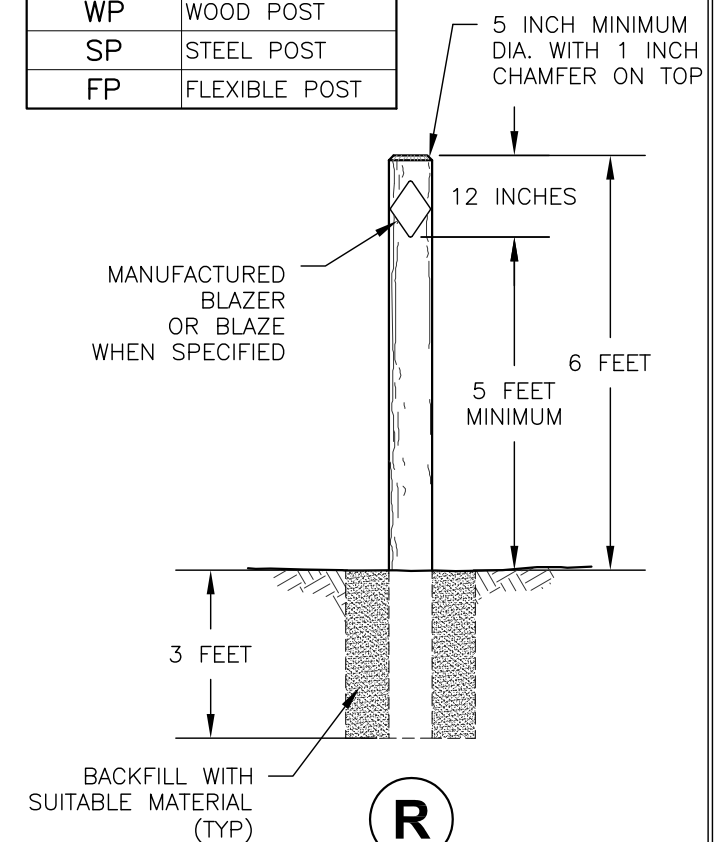
- REFER TO "EM-7100-15 SIGN AND POSTER GUIDELINES, FOR THE FS" FOR SIGN SPECIFICATIONS, MATERIALS, AND PLACEMENT.
- CUT BLAZE NO DEEPER THAN NECESSARY FOR CLEAR VISIBILITY. CUT ON BOTH SIDES, VISIBLE FROM BOTH DIRECTIONS.
- REFER TO EM 7100-15 FOR BLAZER COLOR.



TB-1
MANUFACTURED
BLAZER



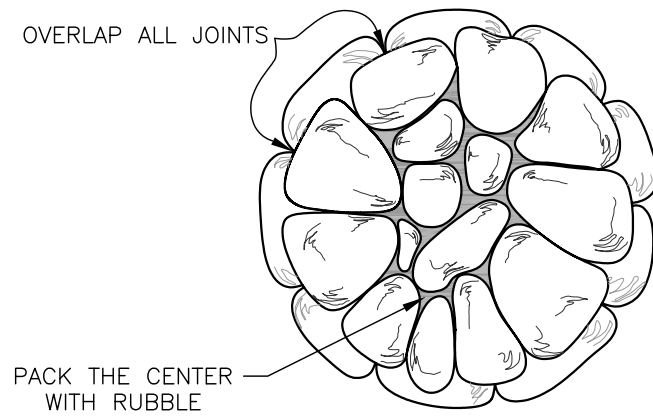
TB-2
MANUFACTURED
BLAZER



R
REASSURANCE MARKER
SUPPORT WITH BLAZE(R)

ROCK CAIRN CONSTRUCTION

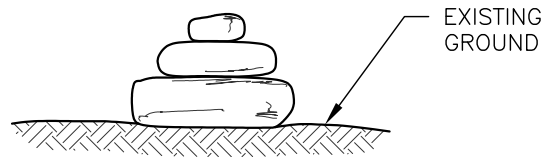
TYPICAL ID	CAIRN TYPE	CAIRN INTERVAL	MINIMUM ROCK SIZE	MAXIMUM ROCK SIZE
RCC-1				



TOP VIEW
SECOND LAYER OF ROCK CAIRN

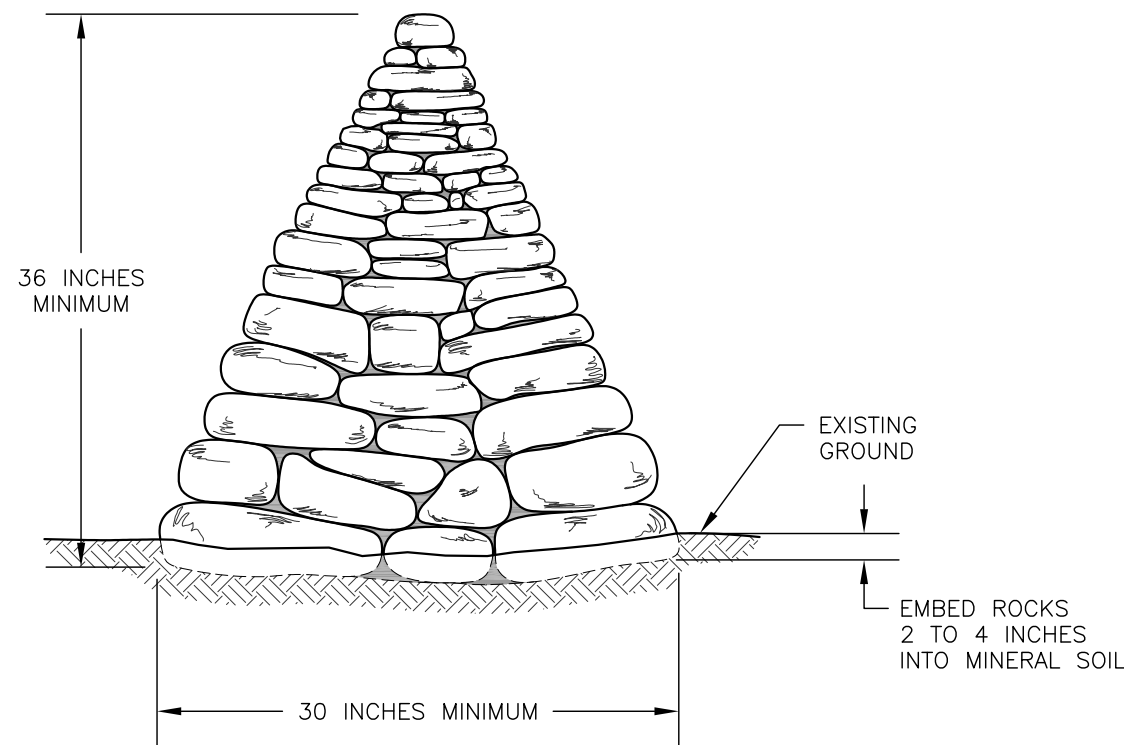


TOP VIEW
FIRST LAYER OF ROCK CAIRN
OR TYPICAL SECTION OF SHEEPHERDERS CAIRN

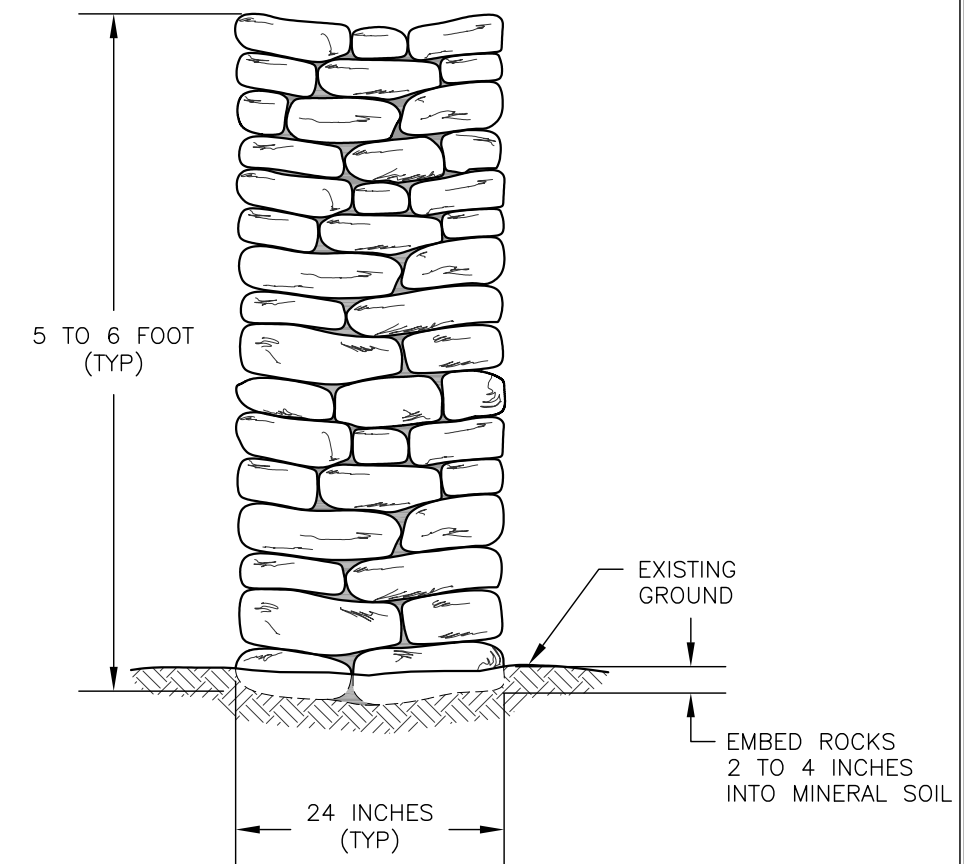


T SIMPLE ROCK CAIRN

- NOTES:
1. REFER TO "EM-7100-15 SIGN AND POSTER GUIDELINES FOR THE FS" FOR SIGN SPECIFICATIONS, MATERIALS, AND PLACEMENT.
 2. USE LARGE STONES TO BUILD BASE.
 3. USE FLAT STONES AND OVERLAP JOINTS.
 4. SLOPE STONES INWARD.
 5. DO NOT WEDGE SMALL ROCKS INTO CRACKS BETWEEN LARGE ROCKS TO STABILIZE THE LARGE ROCKS.
 6. JOINTS OF FIRST LAYER ARE BRIDGED BY THE SECOND LAYER.



U ROCK CAIRN



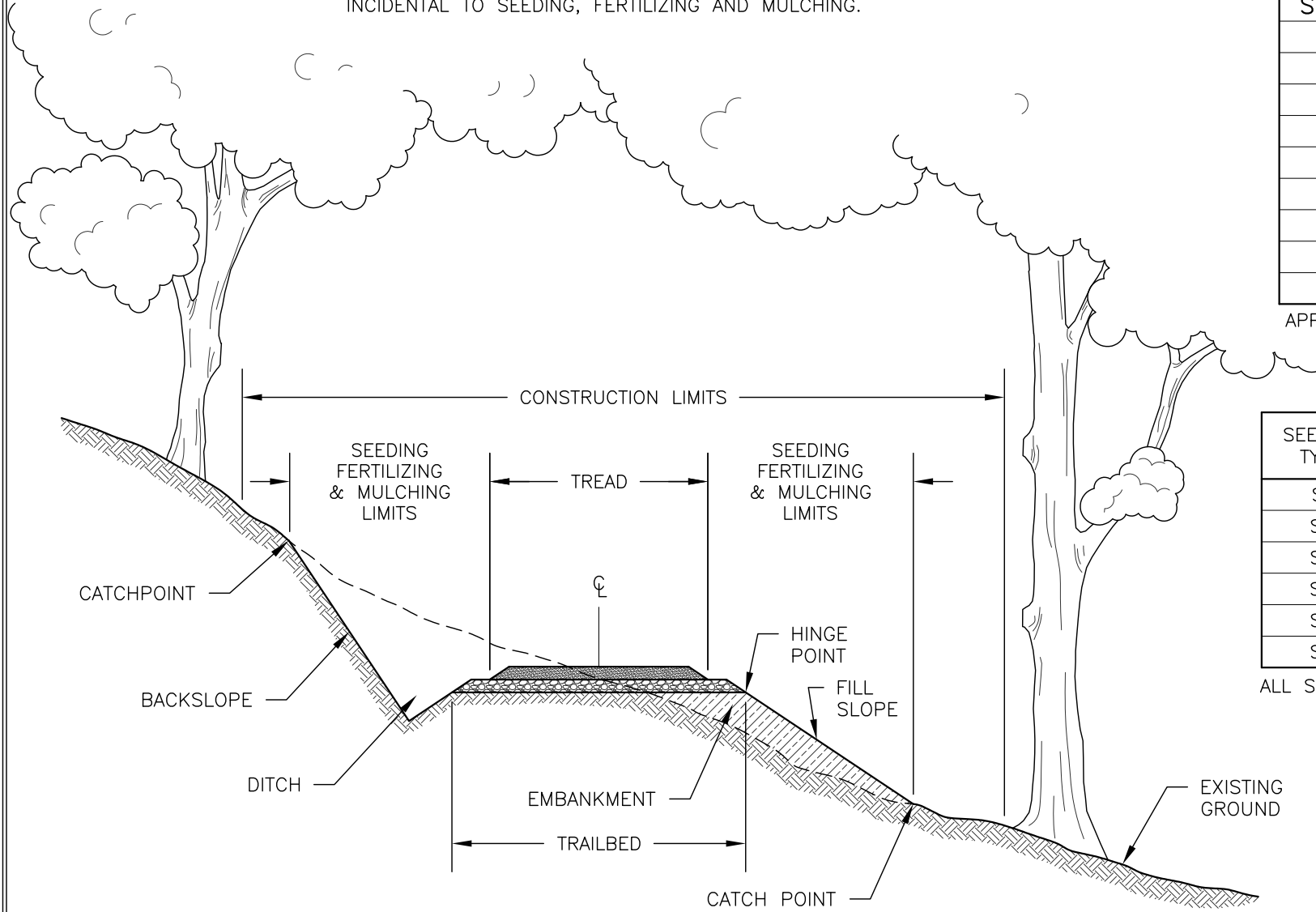
V SHEEPHERDERS CAIRN

APPLICATION OF
SEED, FERTILIZER & MULCH

NOTE: CONTRACTOR SHALL SEED, FERTILIZE AND MULCH ANY DISTURBED AREA THAT WAS CAUSED BY CONTRACTORS OPERATION, OUTSIDE SEEDING, FERTILIZING AND MULCHING LIMITS. THIS WORK SHALL BE INCIDENTAL TO SEEDING, FERTILIZING AND MULCHING.

TYPICAL ID	APPLICATION TYPE	SEEDING TYPE	FERTILIZING TYPE	MULCHING TYPE	APPLICATION SEASON	APPLICATION METHOD	TOTAL NO. APPLICATIONS
SMF-1		S	F	M			

APPLICATION METHOD: H = HAND SPREAD M = MECHANICAL SPREAD



APPLICATION TYPE

- A** SEEDING
- B** SEEDING & MULCHING
- C** SEEDING, FERTILIZING AND MULCHING
- D** SEEDING AND FERTILIZING
- E** MULCHING
- F** EROSION CONTROL BLANKET

SEED

SEEDING TYPE	SPECIES OR SEED MIXTURE	PURITY	GERMINATION	APPLICATION RATE (LB/ACRE)	WEED CONTENT	CROP SEEDS	INERT MATTER	ORIGIN
S1		%	%		%	%	%	
S2								
S3								
S4								
S5								
S6								

ALL SEED TO BE CERTIFIED WEED FREE

FERTILIZER

FERTILIZING TYPE	APPLICATION RATE (LB/ACRE)	NUTRIENT	NUTRIENT			NO. OF APPLICATIONS
			NITROGEN, N	PHOSPHORUS P205	POTASSIUM	
F1		%	%	%	%	
F2						
F3						

MULCH

MULCHING TYPE	TYPE	APPLICATION RATE (TONS/ACRE)
M1		
M2		
M3		

ALL MULCHING MATERIAL TO BE CERTIFIED WEED FREE