

Illinois Tollway Base Sheet Revisions
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Section M	Base Sheet Drawings		
	Drawing	Modification Summary	Effective: 03-01-2023
	Erosion and Sediment Control (ESC) - Series 200		
	M-ESC-200	TEMPORARY PIPE SLOPE DRAIN	
		Changed dimensions of erosion control blanket toe in for consistency, adjusted notes and dimensions for clarity.	
	M-ESC-201	STONE OUTLET STRUCTURE SEDIMENT TRAP	
		Added Top of Bank callout to plan view for clarity.	
	M-ESC-203	TEMPORARY SWALE	
		Adjusted scale of slopes in cross section view, added cost information to Note 4.	
	M-ESC-204	DIVERSION DIKE	
		Adjusted scale of slopes in cross section view.	
	M-ESC-205	SEDIMENT BASIN DEWATERING DEVICE	
		Changed FEET to INCHES in table to match industry standards.	
	M-ESC-207	SEDIMENT FILTER BAG	
		Removed "temporary" from sheet title to match pay item.	

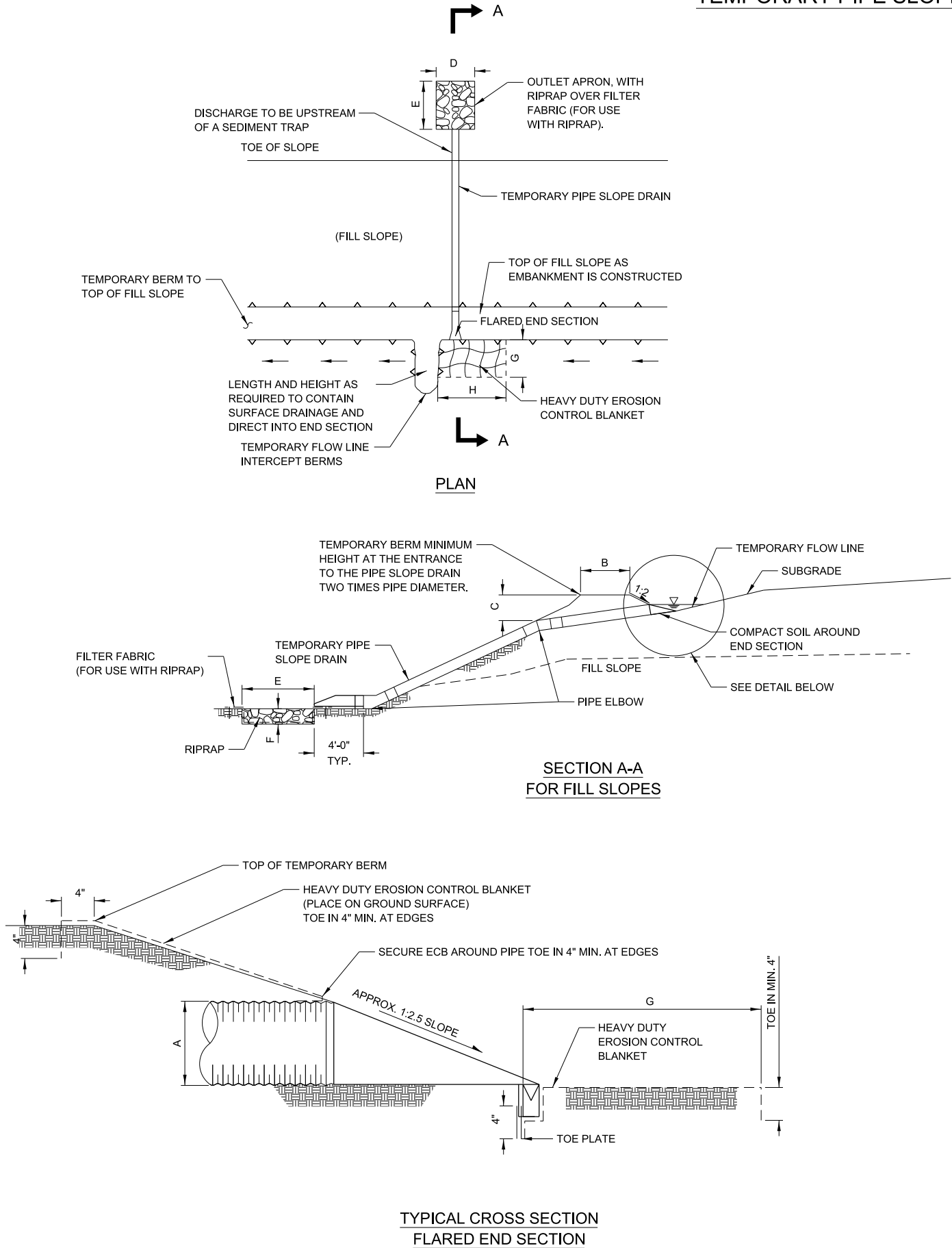
 New Sheet

 Retired Standard

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TEMPORARY PIPE SLOPE DRAIN



NOTES:

1. ALL TEMPORARY PIPE SLOPE DRAINS TO DISCHARGE INTO THE BACK OF SEDIMENT TRAPS, INTO SEDIMENT BASINS OR DITCHES DISCHARGING INTO TRAPS OR BASINS.
2. HEAVY DUTY EROSION CONTROL BLANKET SHALL BE PLACED AROUND THE FLARED END SECTION, AND SHALL EXTEND ALONG THE TEMPORARY FLOW LINE.
3. TEMPORARY PIPE SLOPE DRAINS WILL BE SIZED AND SPACED ALONG THE FILL TO ADEQUATELY HANDLE THE RUNOFF FROM THE CONTRIBUTING AREA. A MINIMUM TWO TEMPORARY PIPE SLOPE DRAINS WILL BE PLACED IN EVERY SAG.
4. THE PIPE SHALL BE INSTALLED WITH WATER-TIGHT CONNECTING BANDS AND SHALL BE SECURELY ANCHORED BY HOLD DOWN STAKES AND CABLES.
5. STAPLES SHALL BE USED TO ANCHOR HEAVY DUTY EROSION CONTROL BLANKET IN CONFORMANCE TO MANUFACTURER'S REQUIREMENTS.
6. THE OUTLET RIPRAP APRON PROTECTION SHALL BE BASED ON THE PIPE DIAMETER AND DISCHARGE VELOCITY OF STORM WATER FLOWS.
7. REFERENCE DESIGN CRITERIA:  
*ILLINOIS URBAN MANUAL AND IDOT BUREAU OF DESIGN AND ENVIRONMENTAL MANUAL.*
8. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

DESIGN ELEMENTS	UNITS	VALUES
DRAINAGE AREA/SLOPE DRAIN	X (ACRES)	
PIPE SLOPE DRAIN DIAMETER	A (INCHES)	
PIPE SLOPE DRAIN SPACING	S (FEET)	
BERM AT INLET TOP WIDTH	B (FEET)	
BERM AT INLET HEIGHT	C (FEET)	
OUTLET APRON LENGTH	D (FEET)	
OUTLET APRON WIDTH	E (FEET)	
OUTLET APRON DEPTH	F (FEET)	
OUTLET APRON RIPRAP	GRADATION	
EROSION CONTROL BLANKET WIDTH	G (FEET)	
EROSION CONTROL BLANKET LENGTH	H (FEET)	

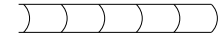
NOTE TO DESIGNER

THE DESIGNER SHALL DESIGN THE TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURE SHOWN ON THIS SHEET. DESIGN VALUES SHALL BE INSERTED INTO THE TABLE.

NOTE TO DESIGNER

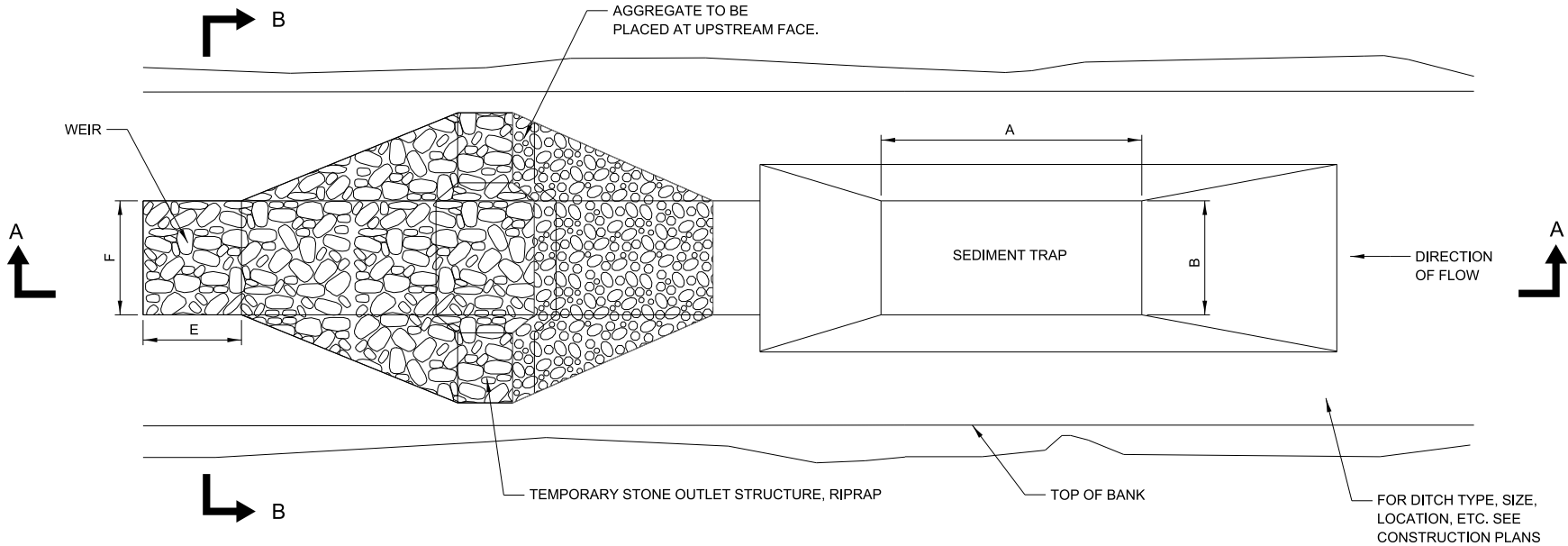
THIS BASE SHEET SHOWS TYPICAL CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

STANDARD SYMBOL

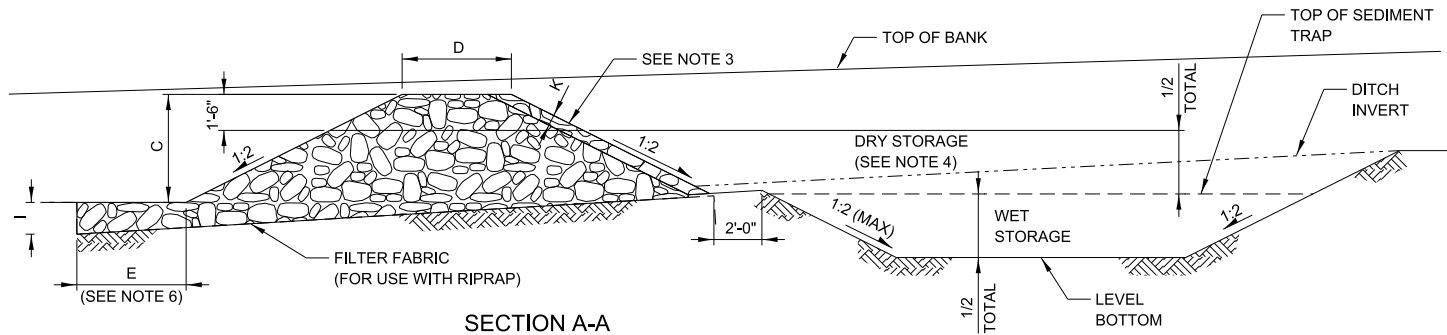


TEMPORARY PIPE SLOPE DRAIN

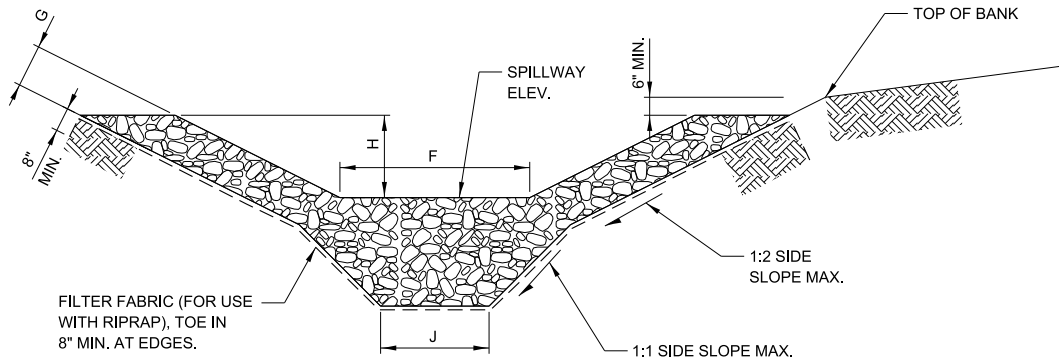
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PLAN



SECTION A-A



SECTION B-B

NOTES:

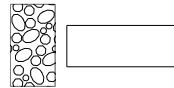
1. STONE OUTLET STRUCTURES TO BE USED IN EXISTING, PROPOSED AND TEMPORARY DITCHES OF ALL TYPES.
2. THE STONE OUTLET STRUCTURES SHALL BE REPLACED DUE TO WASHOUT, CONSTRUCTION TRAFFIC DAMAGE OR SILT ACCUMULATION. THE SILT SHALL BE CLEANED OUT WHEN WET STORAGE PORTION OF TRAP IS 50% FULL.
3. A LAYER OF AGGREGATE SHALL BE PLACED AGAINST THE UPSTREAM FACE OF THE TEMPORARY STONE OUTLET STRUCTURE.
4. THE DETENTION STORAGE SHALL BE COMPOSED OF EQUAL VOLUMES OF "WET" AND "DRY" STORAGE AREAS. HALF THE DETENTION STORAGE SHALL BE BELOW THE PERMEABLE FILL.
5. THE MINIMUM LENGTH TO WIDTH RATIO OF SEDIMENT TRAP SHALL BE 2:1.
6. THE SPILLWAY WEIR SHALL BE DETERMINED BY THE DRAINAGE RUNOFF FROM THE CONTRIBUTING AREA.
7. REFERENCE DESIGN CRITERIA: ILLINOIS URBAN MANUAL AND IDOT BUREAU OF DESIGN AND ENVIRONMENTAL MANUAL
8. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

DESIGN ELEMENTS	UNITS	VALUES
DRAINAGE AREA	X (ACRES)	
SEDIMENT TRAP: STORAGE CAPACITY	V (CU. YD.)	
WET DETENTION STORAGE	1/2 V (CU. YD)	
DRY DETENTION STORAGE	1/2 V (CU. YD)	
SEDIMENT TRAP LENGTH	A (FEET)	
SEDIMENT TRAP WIDTH	B (FEET)	
STONE OUTLET STRUCTURE HEIGHT	C (FEET)	
STONE OUTLET STRUCTURE TOP WIDTH	D (FEET)	
WEIR LENGTH	E (FEET)	
WEIR TOP WIDTH	F (FEET)	
WEIR SIDE SLOPE THICKNESS	G (FEET)	
WEIR SIDE SLOPE HEIGHT	H (FEET)	
WEIR DEPTH	I (FEET)	
WEIR BASE WIDTH	J (FEET)	
RIPRAP	GRADATION	
AGGREGATE	GRADATION	
STONE OUTLET AGGREGATE THICKNESS	K (FEET)	

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STANDARD SYMBOL



NOTE TO DESIGNER

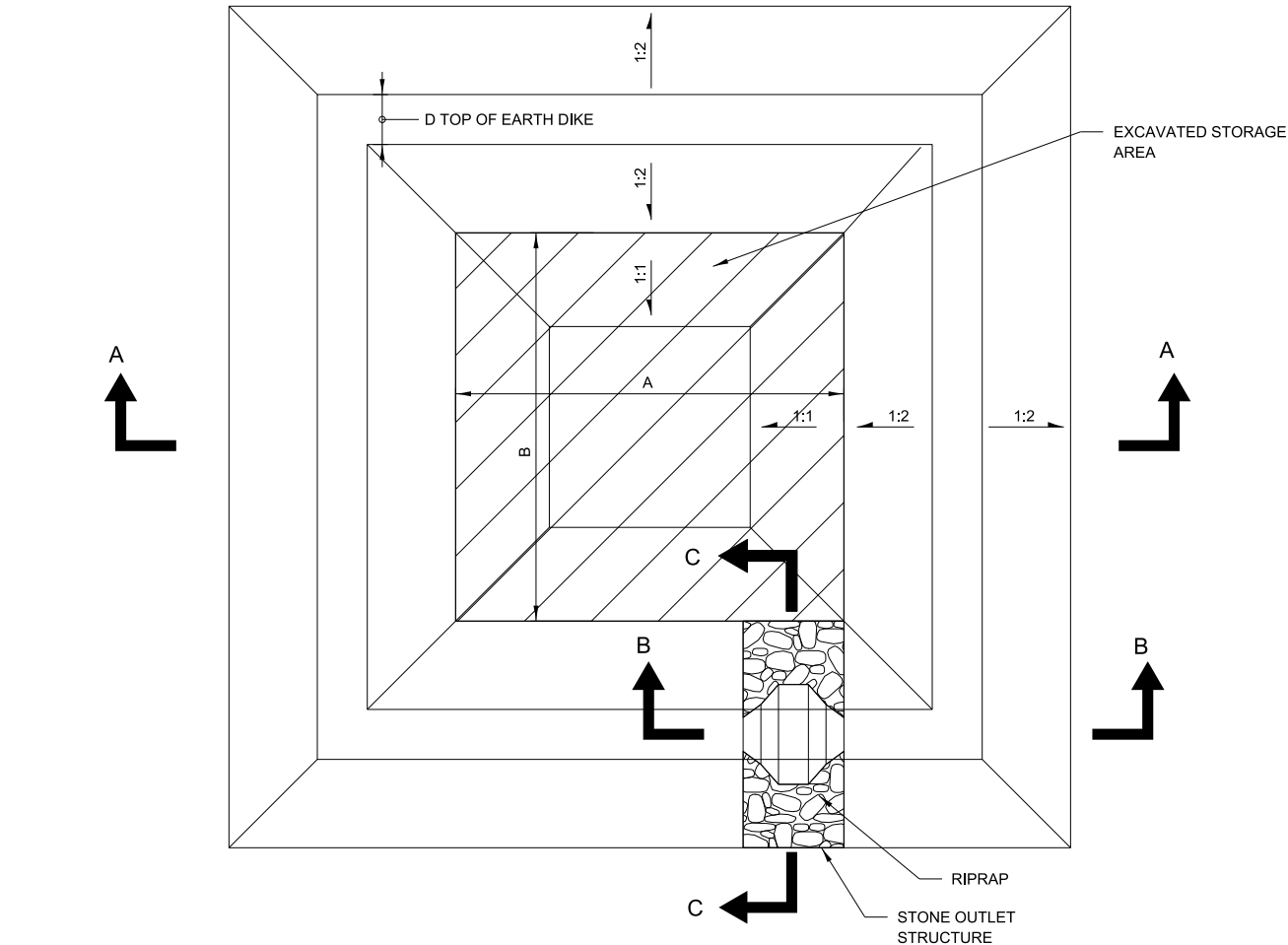
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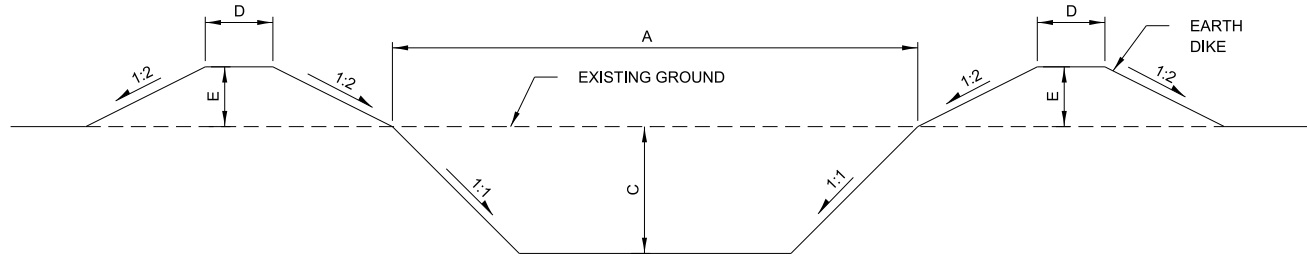
STONE OUTLET STRUCTURE  
SEDIMENT TRAP

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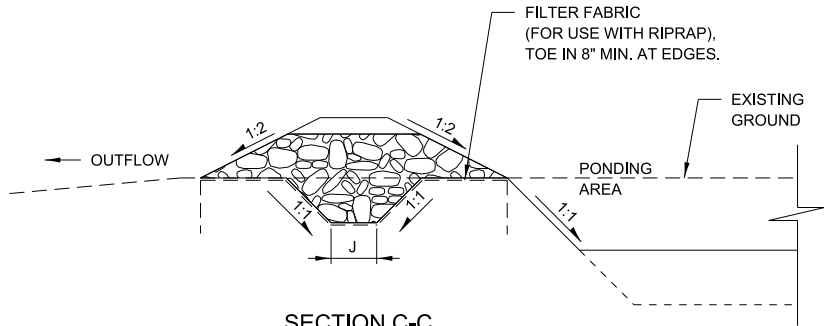
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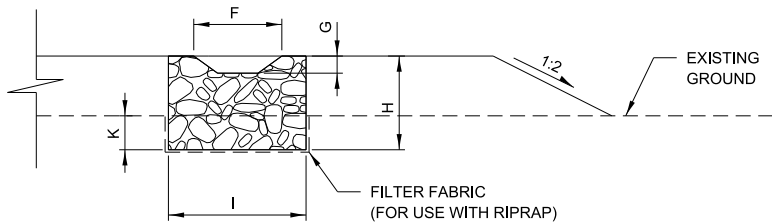
PLAN VIEW



SECTION A-A



SECTION C-C



SECTION B-B

NOTES:

1. ANY DEWATERING OF THE CONSTRUCTION AREA SHALL BE FILTERED THROUGH A DEWATERING BASIN PRIOR TO ENTERING RECEIVING WATERS.
2. PUMPING INTO THESE BASINS SHALL CEASE WHEN THE EFFLUENT FROM THE BASIN BECOMES SEDIMENT LADEN. SURFACE FLOWS SHALL BE DIVERTED AROUND THIS DEVICE.
3. ONCE THE DEWATERING BASIN BECOMES FILLED TO  $\frac{1}{2}$  OF THE EXCAVATED DEPTH, ACCUMULATED SEDIMENT SHALL BE REMOVED.
4. THE OUTFALL FROM THE BASIN(S) SHALL HAVE A STABILIZED CONVEYANCE TO RECEIVING WATERS.
5. REFERENCE DESIGN CRITERIA: ILLINOIS URBAN MANUAL AND IDOT BUREAU OF DESIGN AND ENVIRONMENTAL MANUAL.
6. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

DESIGN ELEMENTS	UNITS	VALUE
STORAGE CAPACITY	V (CU. YD.)	
BASIN TOP WIDTH	A (FEET)	
BASIN TOP LENGTH	B (FEET)	
BASIN DEPTH	C (FEET)	
EARTH DIKE TOP WIDTH	D (FEET)	
EARTH DIKE HEIGHT	E (FEET)	
STONE OUTLET STRUCTURE RIPRAP	GRADATION	
STONE OUTLET SPILLWAY TOP WIDTH	F (FEET)	
STONE OUTLET SPILLWAY DEPTH	G (FEET)	
STONE OUTLET STRUCTURE HEIGHT	H (FEET)	
STONE OUTLET BASE WIDTH	I (FEET)	
STONE OUTLET BASE LENGTH	J (FEET)	
STONE OUTLET BASE DEPTH	K (FEET)	

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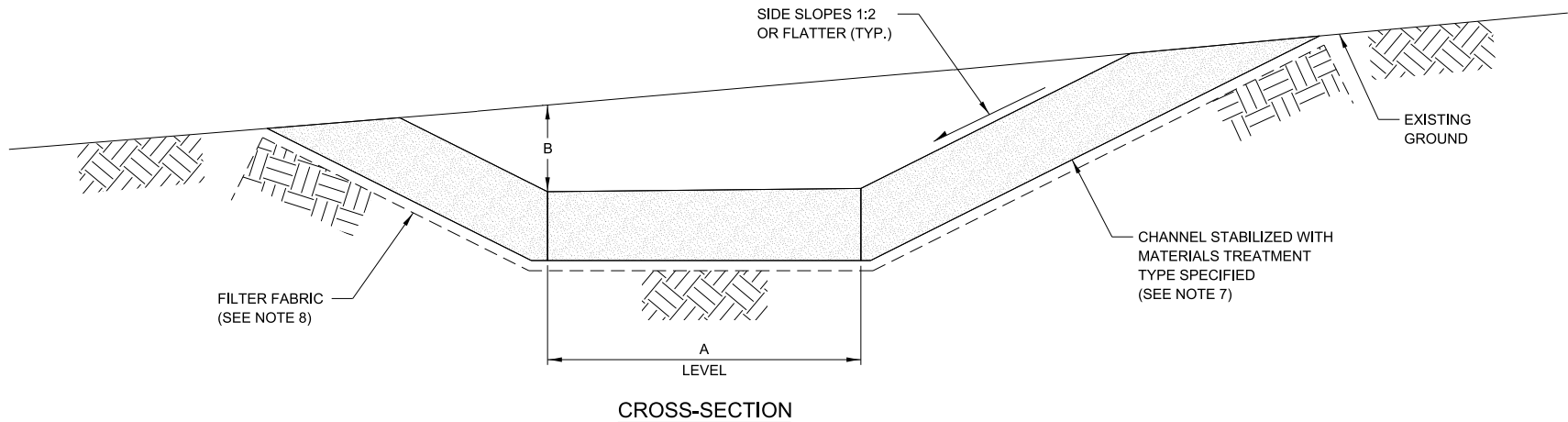
STANDARD SYMBOL

DB



DEWATERING BASIN

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NOTES:

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE. THIS WORK SHALL BE INCIDENTAL TO THE COST OF THE TEMPORARY SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS-SECTION AS REQUIRED TO MEET THE DESIGN CRITERIA AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE, SHALL BE STABILIZED.
7. CHANNEL STABILIZATION TYPE TO BE DETERMINED BY CHANNEL GRADE (%) AND DRAINAGE AREA INTO THE TEMPORARY SWALE.
8. FILTER FABRIC TO BE USED ONLY WITH TREATMENT TYPES II AND III.
9. WIDTH OF FLOW CHANNEL TO BE SIZED FOR DRAINAGE AREA INTO THE TEMPORARY SWALE.
10. REFERENCE DESIGN CRITERIA:  
*ILLINOIS URBAN MANUAL AND IDOT BUREAU OF DESIGN AND ENVIRONMENTAL MANUAL.*
11. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

**NOTE TO DESIGNER**

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DESIGN ELEMENTS	DATA	VALUES
DRAINAGE AREA	X (ACRES)	
FLOW CHANNEL WIDTH	A (FEET)	
FLOW CHANNEL DEPTH	B (FEET)	
CHANNEL GRADE	%	
CHANNEL STABILIZATION	TREATMENT TYPE	

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STANDARD SYMBOL



TEMPORARY SWALE

VERSION: 2023-03	STANDARD: M-ESC-203	SHEET: 1 OF 1
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1. ALL DIKES SHALL BE COMPACTED.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
7. STABILIZATION OF FLOW AREA ALONG DIVERSION DIKE TO BE DETERMINED BY CHANNEL GRADE (%) AND DRAINAGE AREA INTO DIVERSION DIKE.
8. DIVERSION DIKE AND EMBANKMENT FLOW STABILIZATION DIMENSION TO BE SIZED FOR DRAINAGE AREA INTO DIVERSION DIKE.
9. REFERENCE DESIGN CRITERIA:  
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10. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

DESIGN ELEMENTS	DATA	VALUES
DRAINAGE AREA	X (ACRES)	
WIDTH OF DIKE	A (FEET)	
HEIGHT OF DIKE	B (FEET)	
CHANNEL FLOW HEIGHT	C (FEET)	
CHANNEL FLOW WIDTH	D (FEET)	
CHANNEL GRADE	%	
CHANNEL STABILIZATION	TREATMENT TYPE	



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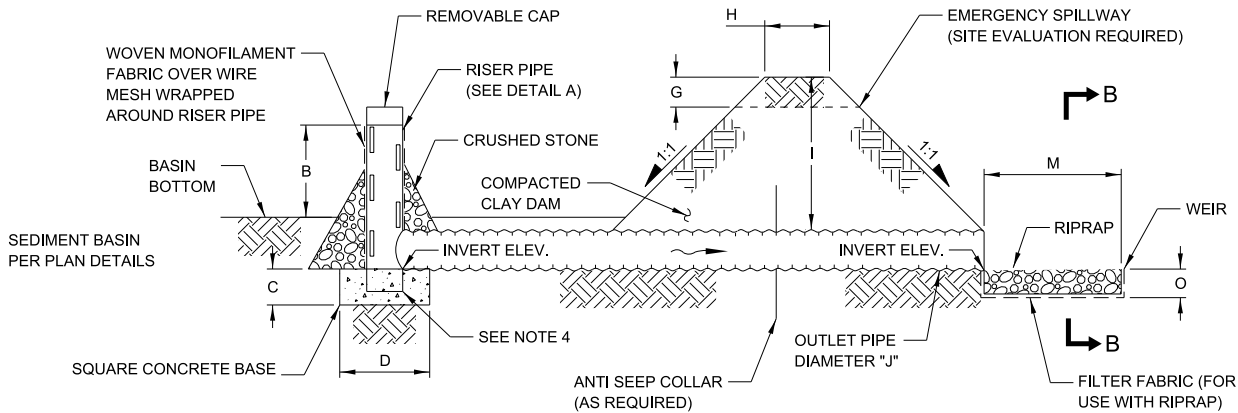


## DIVERSION DIKE

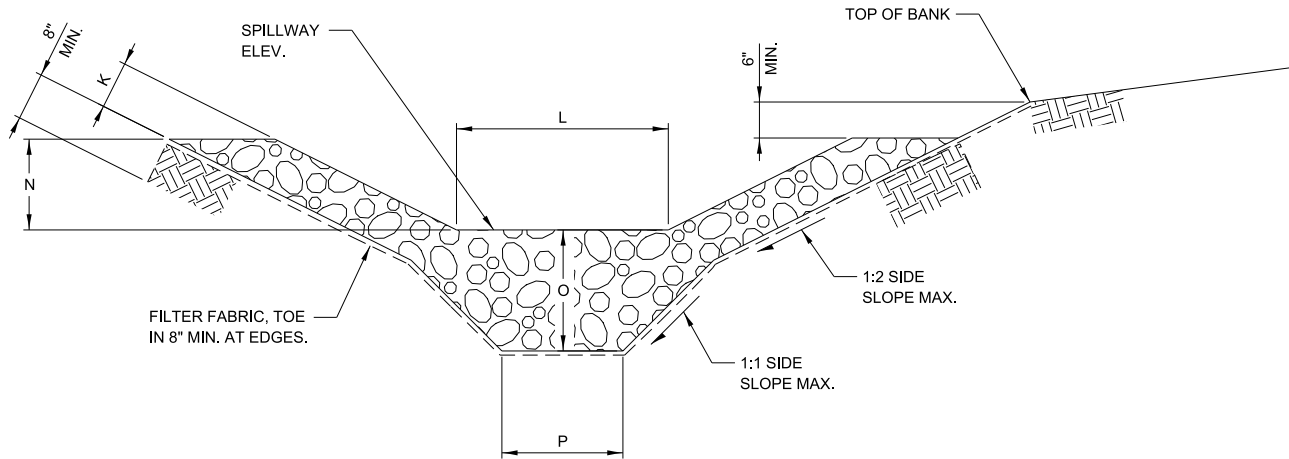
VERSION: 2023-03	STANDARD: M-ESC-204	SHEET: 1 OF 1
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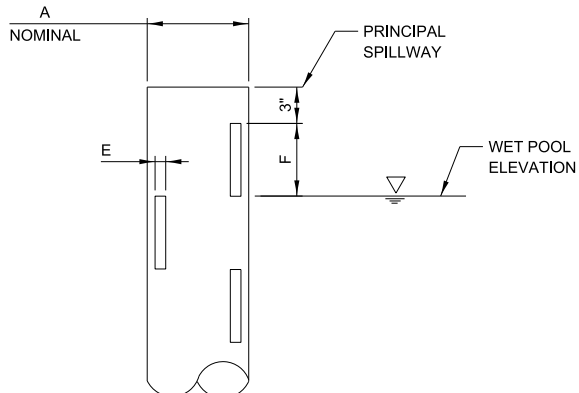
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SECTION ON CENTERLINE



SECTION B-B



DETAIL A  
RISER PIPE-SLOTTED INLET

NOTES:

- OUTLET PIPE AND SLOTTED RISER SHALL BE FABRICATED FROM CORRUGATED METAL, SMOOTH STEEL OR PVC.
- SLOTS SHALL BE CUT CLEANLY AND DEBURRED. ENDS OF SLOTS MAY BE ROUND OR SQUARE.
- ROWS OF VERTICAL SLOTS TO BE CENTERED AND PLACED BASED ON RISER DIAMETER.
- FABRICATED OR STANDARD ELBOW; FABRICATED OR STANDARD TEE WITH THE PIPE OR PLUG IN UPSTREAM END; OR STANDARD TEE WITH ONE END EMBEDDED IN CONCRETE.
- THE RISER PIPE AND DRAIN PIPE TO BE SIZED TO CARRY THE PEAK IN FLOW PER DESIGN STORM CRITERIA.
- HOLES MAY BE SUBSTITUTED FOR SLOTS IN RISER PIPE. PROVIDE THE REQUIRED NUMBER OF HOLES PER FOOT OF RISER FOR THE SPECIFIED DIAMETER OF RISER PIPE.
- AN ALTERNATE TO THE PERFORATED RISER PIPE IS A SKIMMER DEVICE.
- SEDIMENT TO BE REMOVED WHEN BASIN IS 50% FULL.
- WOVEN MONOFILAMENT FABRIC OVER WIRE MESH SHALL BE WRAPPED AROUND THE RISER STAND PIPE.
- REFERENCE DESIGN CRITERIA:  
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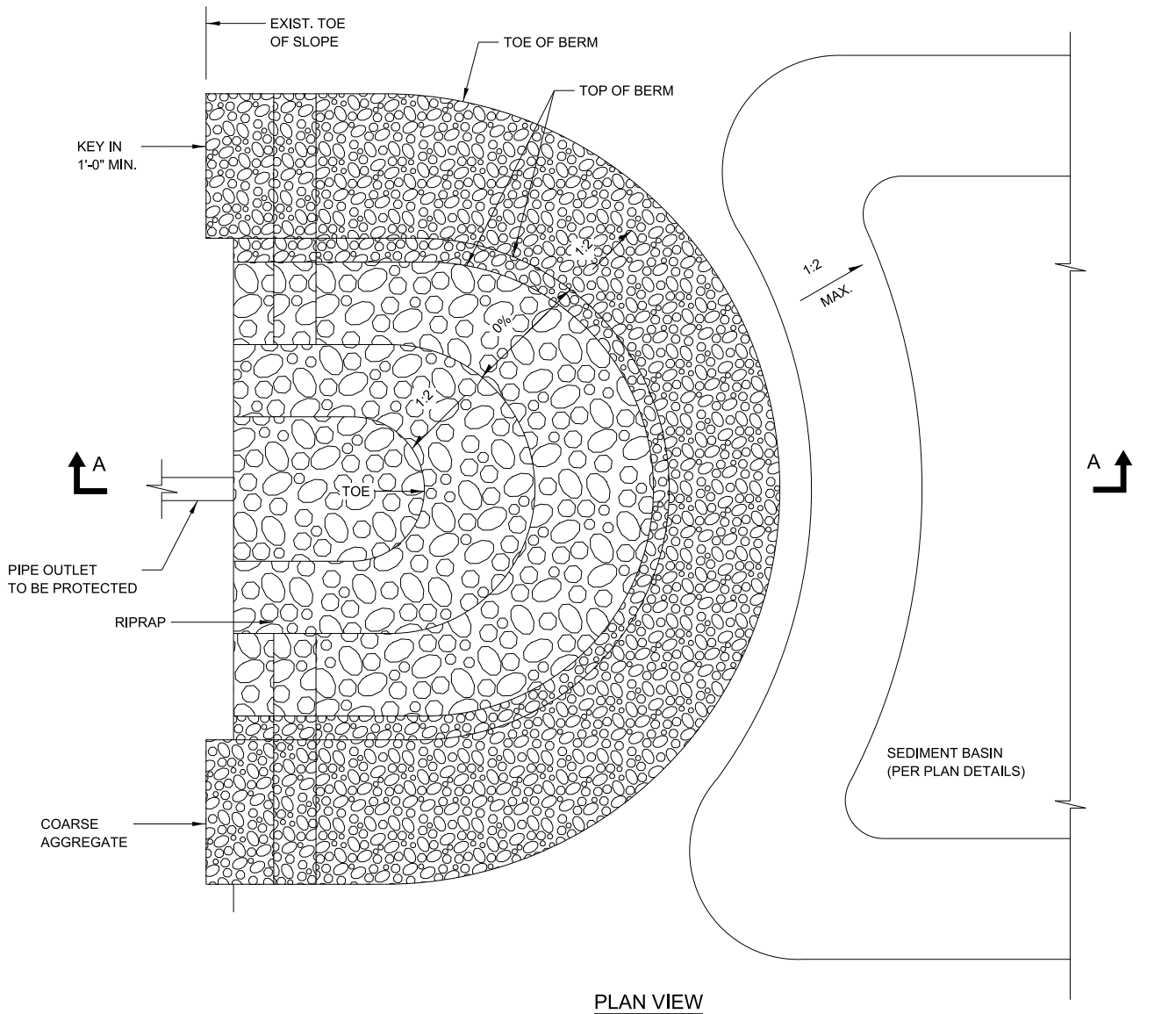
DESIGN ELEMENTS	DATA	VALUES
STORAGE VOLUME	V (CU. YD.)	
CLAY DAM TOP WIDTH	H (FEET)	
CLAY DAM HEIGHT	I (FEET)	
INLET CAPACITY OF RISER PIPE	Q (CU. FT./SEC.)	
VERTICAL RISER PIPE DIAMETER	A (INCHES)	
VERTICAL RISER PIPE HEIGHT	B (FEET)	
RISER CONCRETE BASE DEPTH	C (FEET)	
RISER CONCRETE WIDTH/LENGTH	D (FEET)	
SLOTTED INLETS	X (NUMBER)	
SLOTTED INLET WIDTH	E (INCHES)	
SLOTTED INLET LENGTH	F (INCHES)	
HORIZONTAL OUTLET PIPE DIAMETER	J (INCHES)	
ANTI SEEP COLLAR PIPE DIAMETER	R (INCHES)	
FREEBOARD HEIGHT	G (FEET)	
CRUSHED STONE	GRADATION	
WEIR LENGTH	M (FEET)	
WEIR TOP WIDTH	L (FEET)	
WEIR SIDE SLOPE THICKNESS	K (FEET)	
WEIR SIDE SLOPE HEIGHT	N (FEET)	
WEIR DEPTH	O (FEET)	
WEIR BASE WIDTH	P (FEET)	
RIPRAP	GRADATION	

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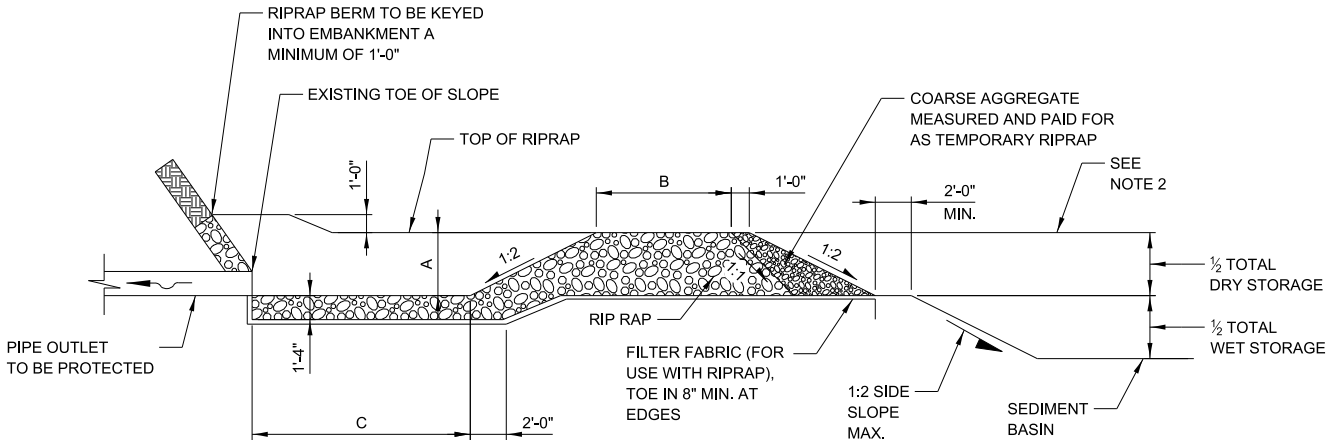


SEDIMENT BASIN  
DEWATERING DEVICE

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PLOT NAME: M-ESC-206  
PLOT NAME: p:\wsp-us-pw-bentley.com\wsp-us-pw-02\Documents\Illinois Tollway GEG (99768R)\\_PWS\Setup\WorkSet\Illinois Tollway GEG (99768R)\Standards\2\_Working\Standard Drawings and Base Sheets\Base Sheets\Section - M/200 ESC/M-ESC-206.dgn



PLAN VIEW



SECTION A-A

NOTES:

1. WHEN SEDIMENT BASIN AGGREGATE BERM IS USED FOR OUTLET CONTROL, THE DETENTION STORAGE SHALL BE COMPOSED OF EQUAL VOLUMES OF "WET" AND "DRY" STORAGE AREAS. HALF THE DETENTION STORAGE SHALL BE BELOW THE PERMEABLE FILL. DRAINAGE AREA INCLUDES BOTH ON-SITE AND OFF-SITE TRIBUTARY AREAS.
2. TO MINIMIZE EXCAVATION, THE BOTTOM OF THE WET STORAGE BASIN MAY BE DESIGNED AT THE PIPE OUTLET INVERT ELEVATION. PROVIDE COMPACTED CLAY DAM BELOW AGGREGATE BERM.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED. THE AGGREGATE BERM SHALL BE REPLACED IF WASHED OUT, DAMAGED BY CONSTRUCTION OR SILT ACCUMULATION. THE SILT SHALL BE CLEANED OUT WHEN THE WET STORAGE POOL PORTION OF BASIN IS 50% FULL.
4. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
5. SEDIMENT BASIN AGGREGATE BERM SHALL BE USED WHEN EXISTING OR PROPOSED DETENTION BASIN OR INFIELD AREA IS USED FOR A SEDIMENT BASIN.

NOTE TO DESIGNER

THE DESIGNER SHALL DESIGN THE TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURE SHOWN ON THIS SHEET. DESIGN VALUES SHALL BE INSERTED INTO THE TABLE.

DESIGN ELEMENTS	DATA	VALUES
DRAINAGE AREA	X (ACRES)	
SEDIMENT BASIN: STORAGE CAPACITY	V (CU. YD.)	
WET DETENTION STORAGE	1/2 V (CU. YD.)	
DRY DETENTION STORAGE	1/2 V (CU. YD.)	
AGGREGATE BERM HEIGHT	A (FEET)	
AGGREGATE BERM TOP WIDTH	B (FEET)	
OUTLET WEIR LENGTH	C (FEET)	
RIPRAP	GRADATION	
COARSE AGGREGATE	GRADATION	

STANDARD SYMBOL



NOTE TO DESIGNER

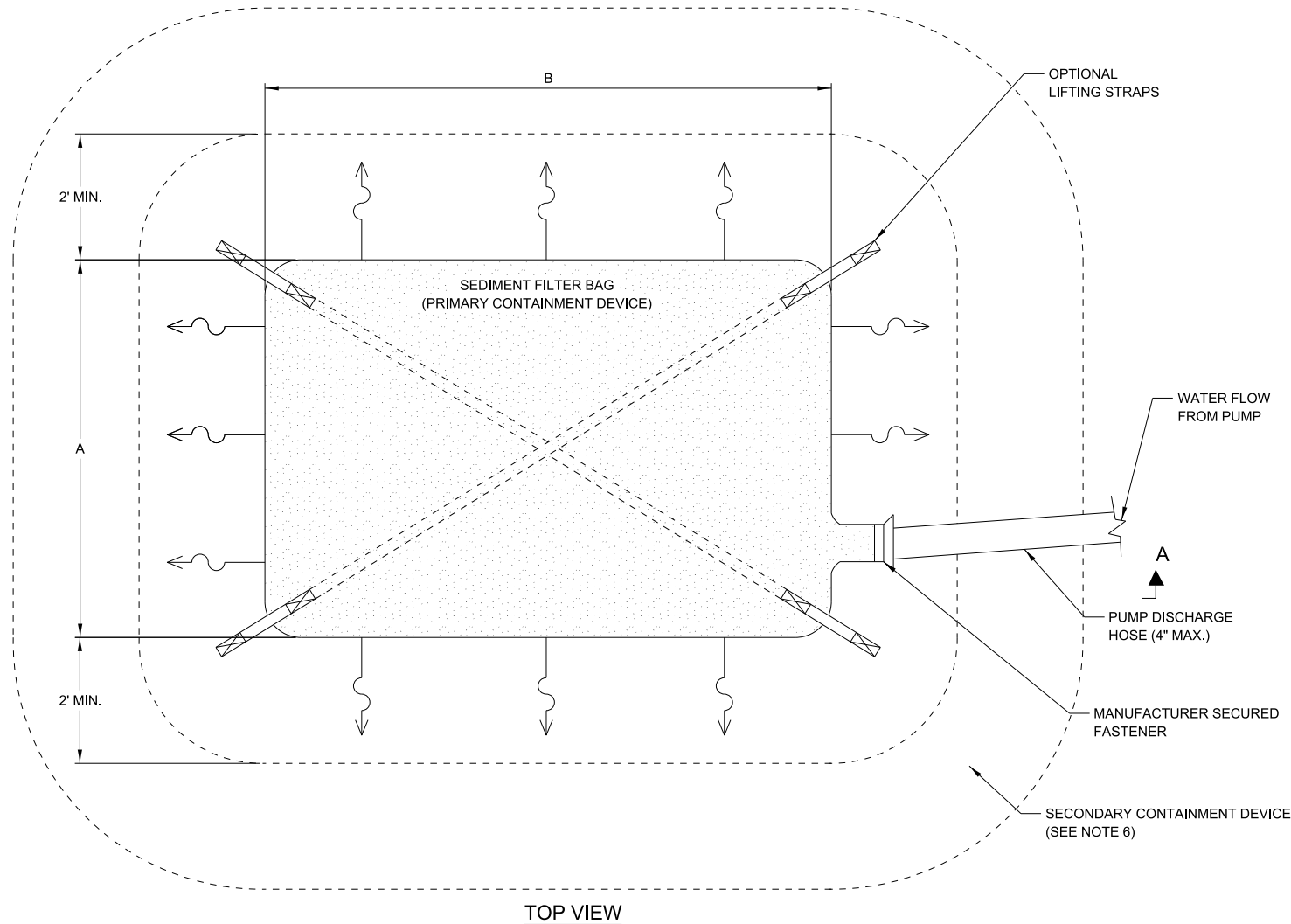
THIS BASE SHEET SHOWS TYPICAL CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.



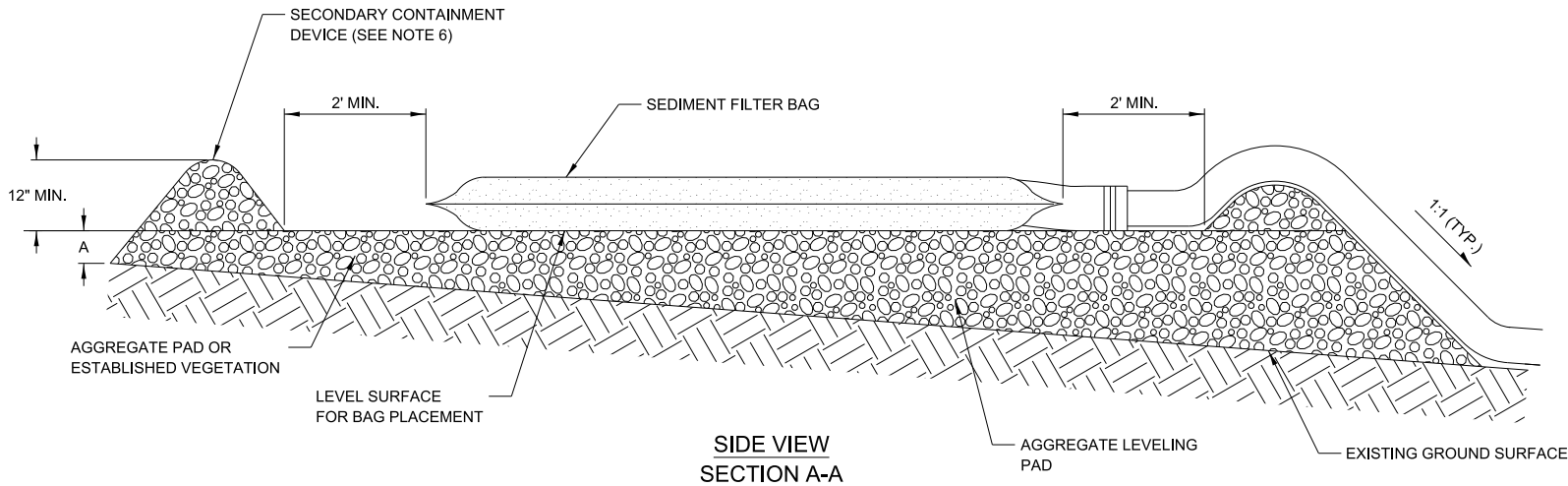
SEDIMENT BASIN AGGREGATE BERM



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PLOT DATE: 1/20/2023  
PLOT TIME: 3:05:40 PM  
PLOT BY: bruddy  
PLOT NAME: M-ESC-207  
PLOT NAME: p:\wsp-us-pw-bentley.com\wsp-us-pw-02\Documents\Illinois Tollway GEG (99768R)\\_PWS\Setup\WorkSec\Illinois Tollway GEG (99768R)\Standards\2\_Working\Standard Drawings and Base Sheets\Base Sheets\Section - M/200 ESC/M-ESC-207.dgn



TOP VIEW



SIDE VIEW  
SECTION A-A

NOTES:

1. SEDIMENT FILTER BAGS TO BE CONSIDERED AN ALTERNATE FOR SITES WHERE SEDIMENT BASIN INSTALLATION IS PROBLEMATIC.
2. SEDIMENT FILTER BAGS TO BE SIZED BASED ON VOLUME OF WATER BEING PUMPED, QUANTITY AND TYPE OF SEDIMENT AND THE PERMITTIVITY OF THE SPECIFIC BAG SIZE. THE MINIMUM BAG SIZE SHALL BE 10 FEET BY 15 FEET WITH A USABLE SURFACE AREA OF 300 SQUARE FEET.
3. MULTIPLE DISCHARGES INTO A SINGLE BAG ARE NOT PERMITTED.
4. SEDIMENT FILTER BAG SHALL BE ORIENTED TO DIRECT FLOW AWAY FROM CONSTRUCTION AREA AND DISCHARGE FILTERED WATER INTO APPROVED RECEIVING AREA OR CONTAINMENT SYSTEM.
5. SEDIMENT FILTER BAG SHALL BE REPLACED WHEN IT BECOMES  $\frac{1}{2}$  FULL OF SEDIMENT OR WHEN THE SEDIMENT HAS REDUCED DISCHARGE FLOW RATE BELOW DESIGN REQUIREMENTS.
6. SECONDARY CONTAINMENT DEVICE SHALL BE COMPRISED OF AGGREGATE MATERIAL, TEMPORARY DITCH CHECK OR EQUIVALENT.
7. PLACE STRAPS, CROSS CHAINS, PALLETS OR OTHER LIFTING DEVICE UNDER THE SEDIMENT FILTER BAG WHEN REPLACEMENT IS ANTICIPATED.

NOTE TO DESIGNER  
THE DESIGNER SHALL DESIGN THE TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURE SHOWN ON THIS SHEET. DESIGN VALUES SHALL BE INSERTED INTO THE TABLE.

DESIGN ELEMENTS	DATA	VALUES
AGGREGATE PAD AND SECONDARY CONTAINMENT DEVICE	GRADATION	
AGGREGATE PAD DEPTH (MIN.)	A (INCH)	

NOTE TO DESIGNER  
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SEDIMENT FILTER BAG