

TYPICAL DETAILS FOR SITE AND ROADWAY INFRASTRUCTURE

TOWN OF LONDONDERRY, NH
Rockingham County



May 2009

Prepared by

Department of Public Works
268B Mammoth Road
Londonderry, NH 03053
(603) 432-1100 – x 193

PREFACE

This first edition of the Town of Londonderry Typical Details is prepared for the purpose of expediting the Town's review process and is applicable to all projects designed and submitted for approval to upgrade Town facilities, or submitted under the Town's Subdivision or Site Plan Regulations. These construction standards and standard construction details shall be referenced in the project drawings. If a construction detail is not included in this booklet but is a standard construction detail available from New Hampshire Department of Transportation (NHDOT), the Applicant can reference the specific NHDOT detail in the project drawings, if desired. All other construction details pertinent to the project which are not specifically included in this booklet, or those that are not a NHDOT standard and properly referenced on the plans, shall be included in the project drawing set and subject to review.

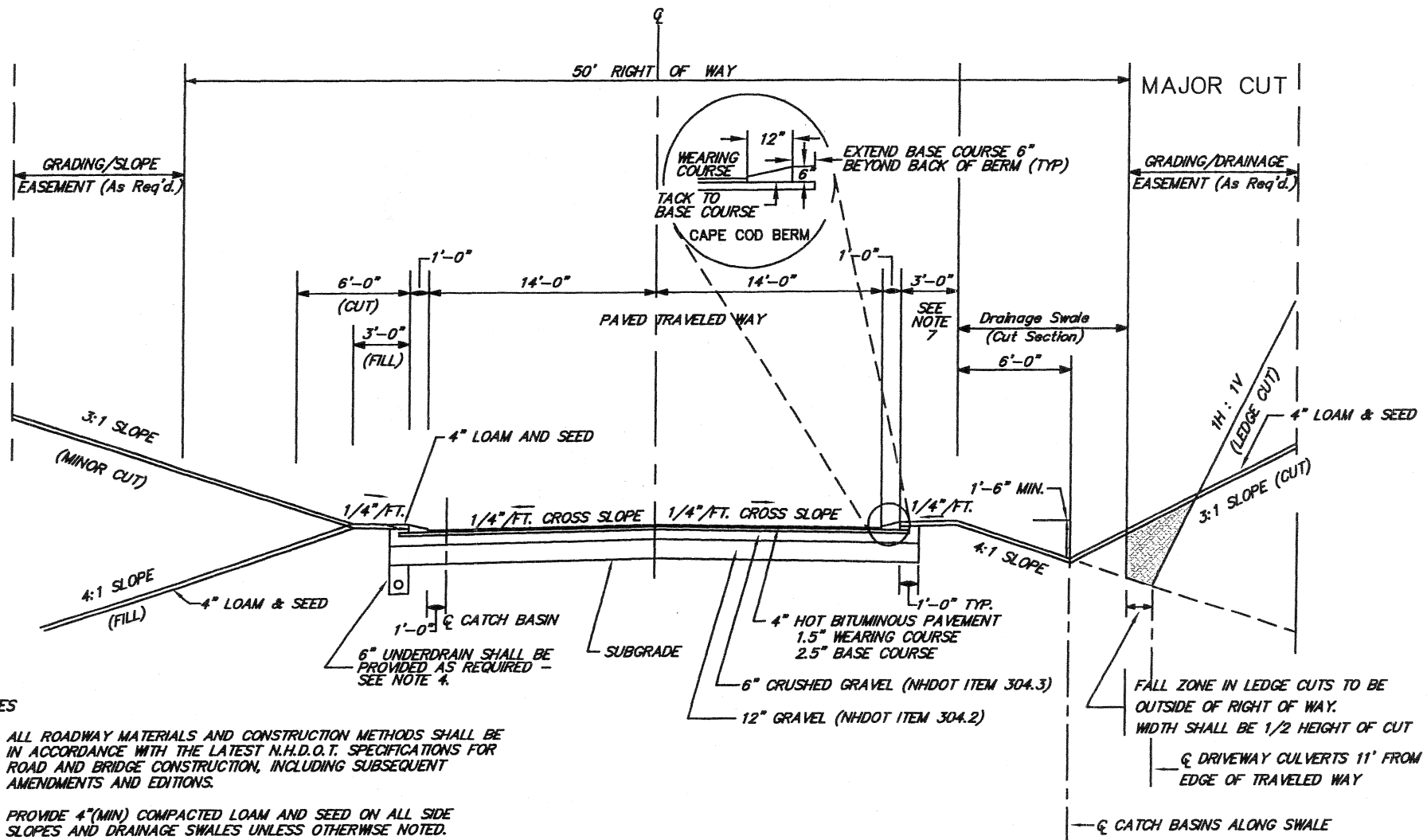
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I. REFERENCES:

Standards and Specifications: The following standards and specifications shall include but not be limited to the following in the design and construction of all improvements in the Town of Londonderry:

1. ZONING ORDINANCE - Town of Londonderry, current edition;
2. SUBDIVISION REGULATIONS - Town of Londonderry, current edition;
3. SITE PLAN REGULATIONS - Town of Londonderry, current edition;
4. MANUAL ON DRAINAGE DESIGN FOR HIGHWAYS - State of New Hampshire, Department of Public Works and Highways, April 1998;
5. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) - U.S. Department of Transportation, Federal Highway Administration, current edition;
6. STANDARDS SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION - State of New Hampshire, Department of Transportation, 2006 or latest revision;
7. HIGHWAY DESIGN MANUAL - State of New Hampshire, Highway Design Division, current edition;
8. A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS - AASHTO – current edition;
9. NEW HAMPSHIRE STORMWATER MANUAL – VOLUMES 1, 2 AND 3, December 2008, prepared by New Hampshire Department of Environmental Services, United States Environmental Protection Agency and Comprehensive Environmental, Inc.;
10. STATE OF NEW HAMPSHIRE STANDARDS OF DESIGN AND CONSTRUCTION FOR SEWERAGE AND WASTEWATER TREATMENT FACILITIES - New Hampshire Department of Environmental Services, Code of Administrative Rules, Env-Wq 700, 3-25-06 (or latest revision);
11. SUBDIVISION AND INDIVIDUAL SEWAGE DISPOSAL SYSTEM DESIGN RULES - New Hampshire Department of Environmental Services, Code of Administrative Rules, Env-Wq 1000, 2-9-08 (or latest revision);
12. STATE OF NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, ALTERATION OF TERRAIN RULES, Env-Wq 1500, 1-01-09 (or latest revision);
13. STATE OF NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, WETLANDS BUREAU RULES, Env-Wt 100-800, 11-30-05 (or latest revision);
14. STATE OF NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, SHORELAND PROTECTION RULES, Env-Wq 1400, 7-01-08 (or latest revision);
15. Other standards and specifications as approved by the Town of Londonderry.



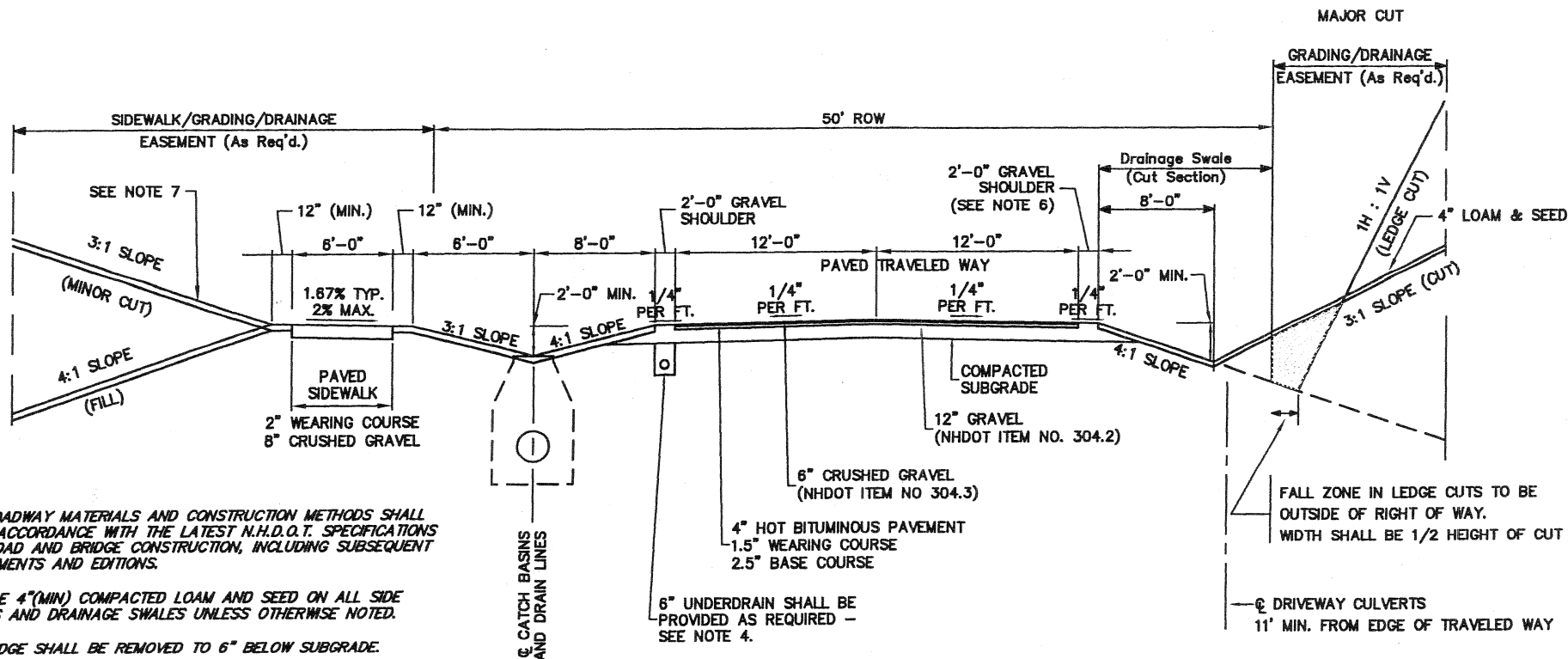
NOTES

1. ALL ROADWAY MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE LATEST N.H.D.O.T. SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, INCLUDING SUBSEQUENT AMENDMENTS AND EDITIONS.
2. PROVIDE 4"(MIN) COMPACTED LOAM AND SEED ON ALL SIDE SLOPES AND DRAINAGE SWALES UNLESS OTHERWISE NOTED.
3. ALL LEDGE SHALL BE REMOVED TO 6" BELOW SUBGRADE.
4. ROADWAY UNDERDRAIN SHALL BE PROVIDED IN ALL CUT SECTIONS (AT SIDE WITH CUT) AND WHERE SEASONAL HIGH WATER IS WITHIN FOUR (4) FEET OF FINISHED GRADE IN ALL OTHER AREAS. UNDERDRAIN SHALL HAVE A MINIMUM OF FOUR (4) FEET OF COVER.
5. GRANITE CURB SHALL BE PROVIDED WHERE SIDEWALK IS REQUIRED IN ACCORDANCE WITH EXHIBIT D4. FOR MINOR ROADWAYS SEE EXHIBIT D7 AND SECTION 3.09.
6. DIMENSIONS ARE FOR LOCAL ROADWAYS. SEE SECTION 3.09 - TABLE 1 FOR OTHER ROADWAY DIMENSIONS.
7. WHERE GUARDRAIL IS USED, MINIMUM WIDTH OF SHOULDER SHALL BE 6'-0" WITH FACE OF GUARDRAIL AT 4'-0" FROM EDGE OF TRAVELED WAY.

TYPICAL ROADWAY SECTION

NOT TO SCALE

EXHIBIT R101



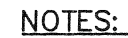
NOTES

1. ALL ROADWAY MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE LATEST N.H.D.O.T. SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, INCLUDING SUBSEQUENT AMENDMENTS AND EDITIONS.
2. PROVIDE 4" (MIN) COMPACTED LOAM AND SEED ON ALL SIDE SLOPES AND DRAINAGE SWALES UNLESS OTHERWISE NOTED.
3. ALL LEDGE SHALL BE REMOVED TO 6" BELOW SUBGRADE.
4. ROADWAY UNDERDRAIN SHALL BE PROVIDED IN ALL CUT SECTIONS (AT SIDE WITH CUT) AND WHERE SEASONAL HIGH WATER IS WITHIN FOUR (4) FEET OF FINISHED GRADE IN ALL OTHER AREAS. UNDERDRAIN SHALL HAVE A MINIMUM OF FOUR(4) FEET OF COVER.
5. DIMENSIONS ARE FOR MINOR ROADWAYS. SEE SECTION 3.09 - TABLE 1 FOR OTHER ROADWAY DIMENSIONS.
6. WHERE GUARDRAIL IS USED, MINIMUM WIDTH OF SHOULDER SHALL BE 6'-0" WITH FACE OF GUARDRAIL AT 3'-0" FROM EDGE OF TRAVELED WAY.
7. DRAINAGE SWALE REQUIRED ADJACENT TO SIDEWALK ALONG ALL MAJOR CUTS.

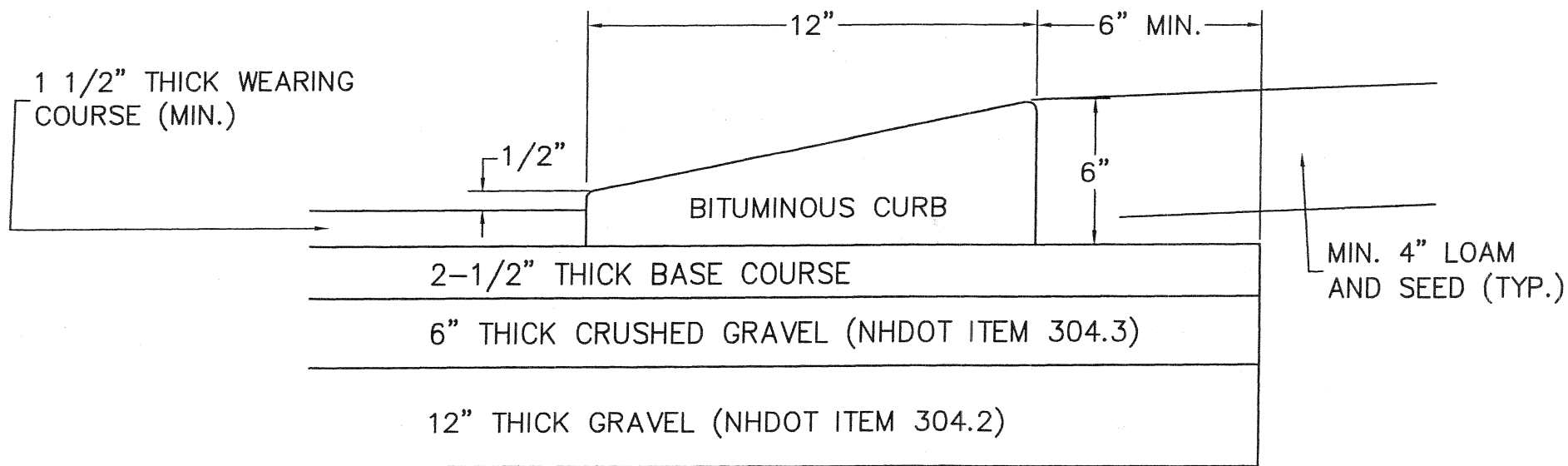
TYPICAL MINOR ROADWAY SECTION

NOT TO SCALE

EXHIBIT R102



- EXHIBIT R103



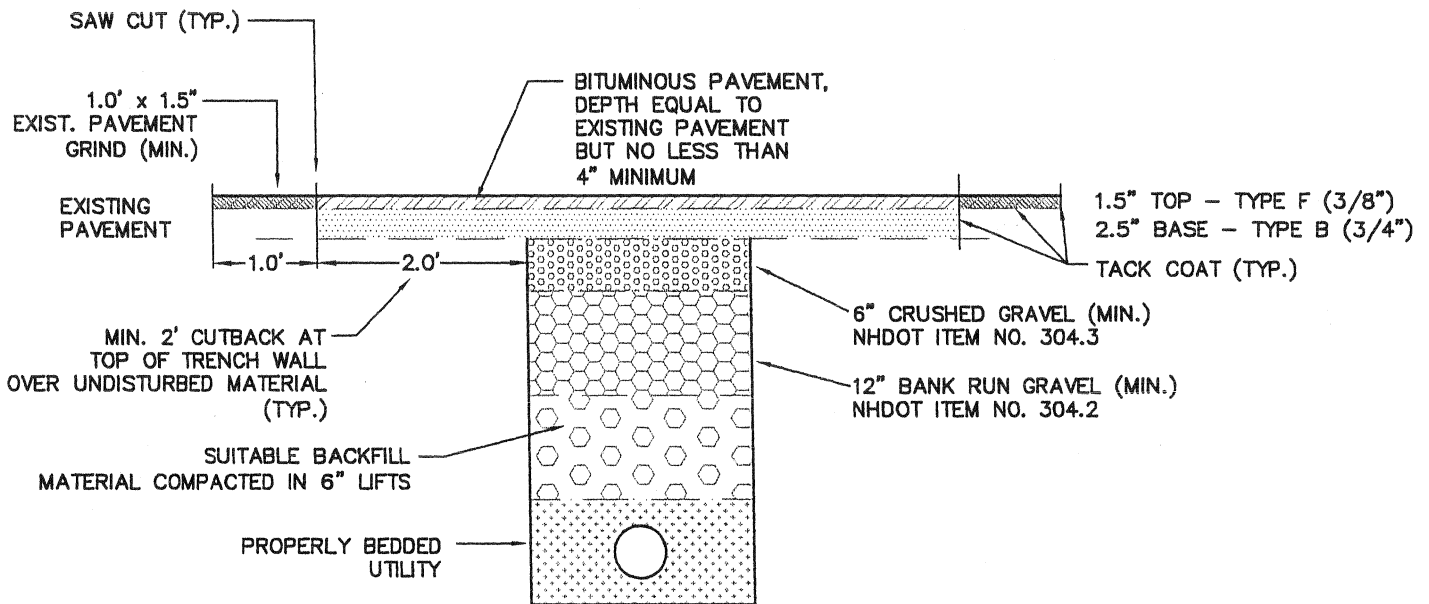
NOTES:

1. APPLY TACK COAT PRIOR TO PLACEMENT OF CURB
2. BITUMINOUS CURB MATERIAL SHALL MEET THE REQUIREMENTS OF NHDOT SECTION 609.
3. CAPE COD BERM DIMENSIONS SHALL MATCH THOSE GIVEN IN THIS DETAIL.

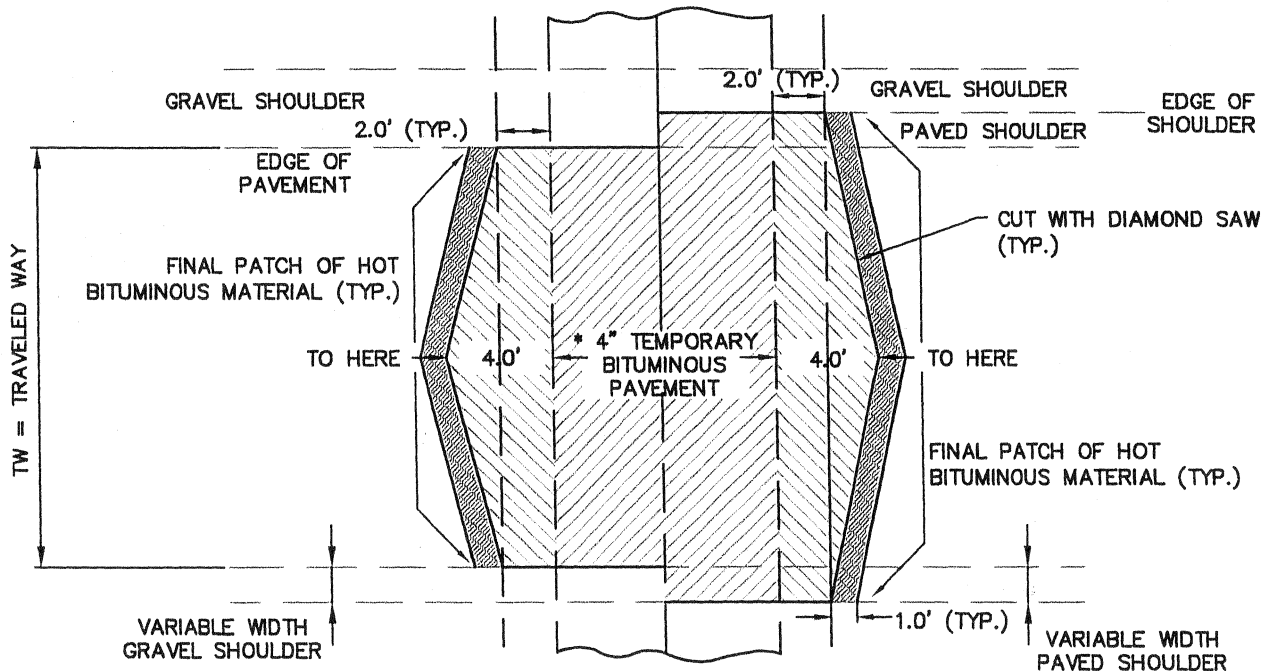
TYPICAL CAPE COD BERM

NOT TO SCALE

EXHIBIT R104



ELEVATION



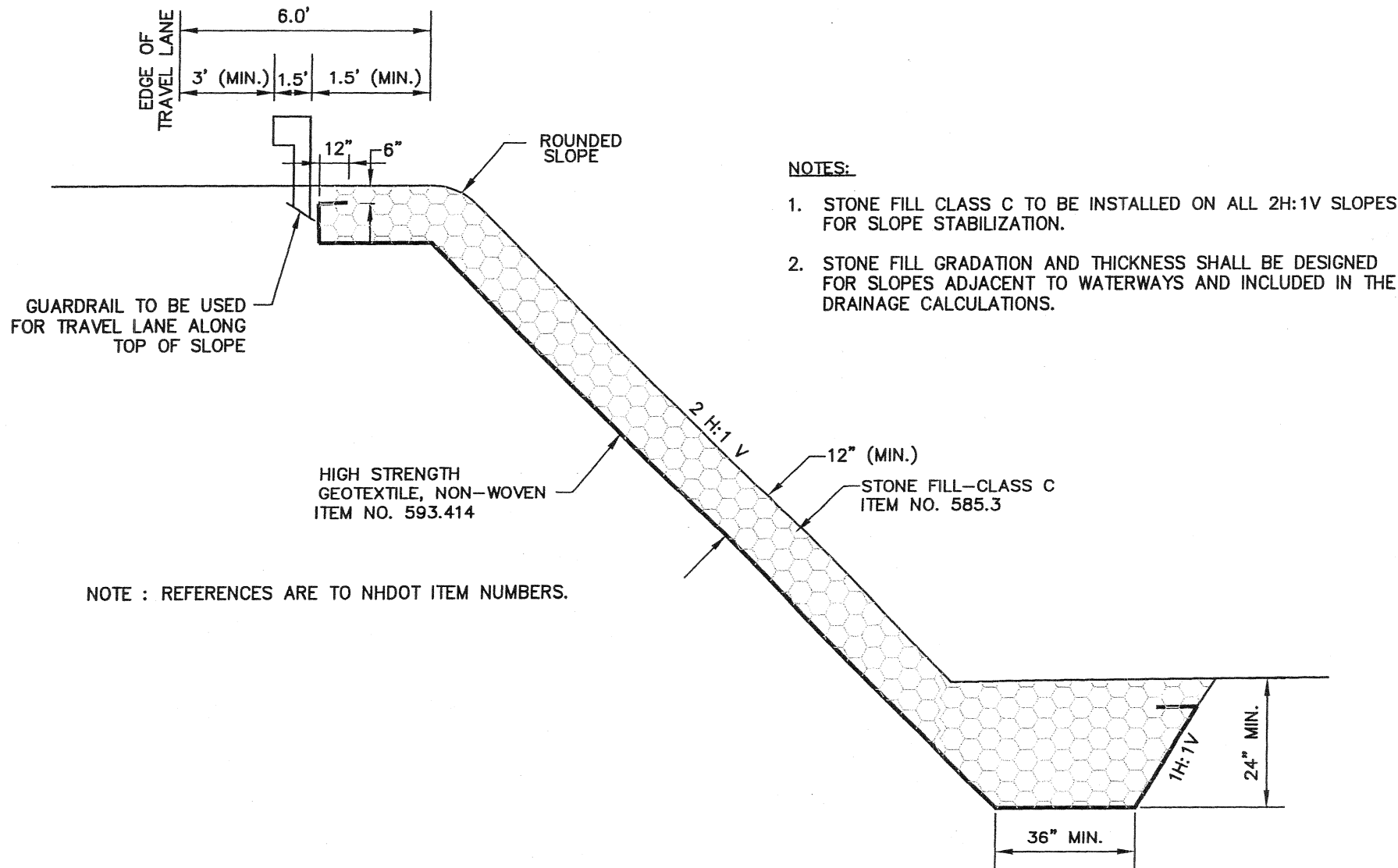
PLAN

* TO BE REMOVED FOR PERMANENT REPAIR

TYPICAL PERMANENT PAVEMENT REPAIR

NOT TO SCALE

EXHIBIT R105



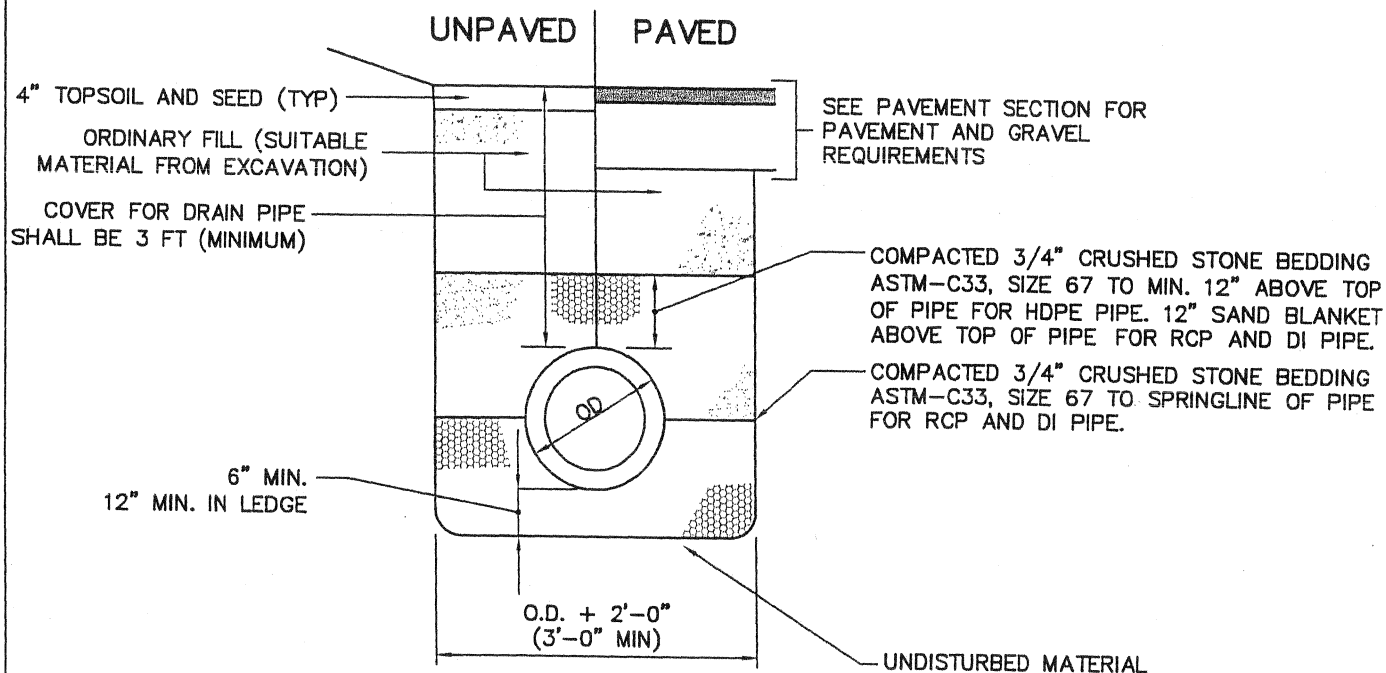
NOTES:

1. STONE FILL CLASS C TO BE INSTALLED ON ALL 2H:1V SLOPES FOR SLOPE STABILIZATION.
2. STONE FILL GRADATION AND THICKNESS SHALL BE DESIGNED FOR SLOPES ADJACENT TO WATERWAYS AND INCLUDED IN THE DRAINAGE CALCULATIONS.

TYPICAL STONE FILL SLOPE SECTION

NOT TO SCALE

EXHIBIT R106



NOTE:

DRAIN PIPE SHALL BE 15" DIAMETER MIN.

PLASTIC DRAIN PIPE (HDPE) SHALL BE ADS N-12 (CORRUGATED EXTERIOR/SMOOTH INTERIOR) OR EQUAL MEETING AASHTO M-252 AND H-20 LOADING.

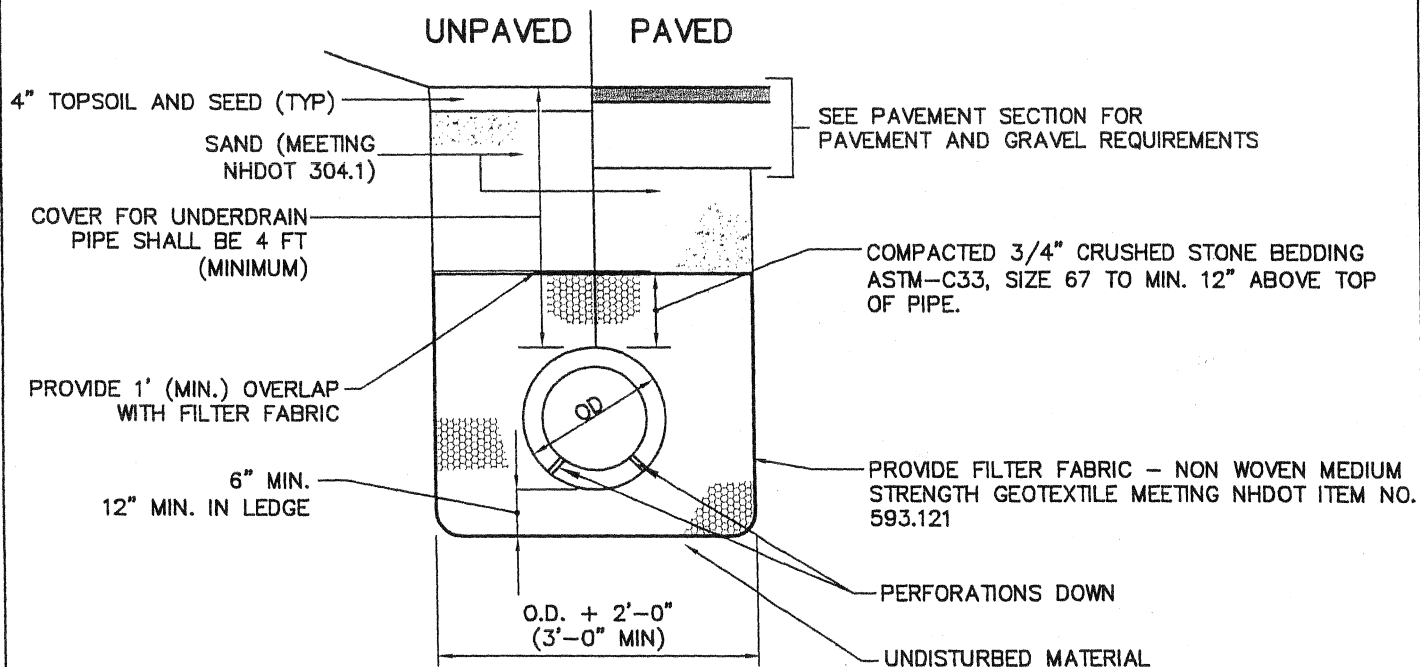
DI DRAIN PIPE SHALL BE CL. 50.

RC DRAIN PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.

TYPICAL DRAIN PIPE TRENCH

NOT TO SCALE

EXHIBIT D101



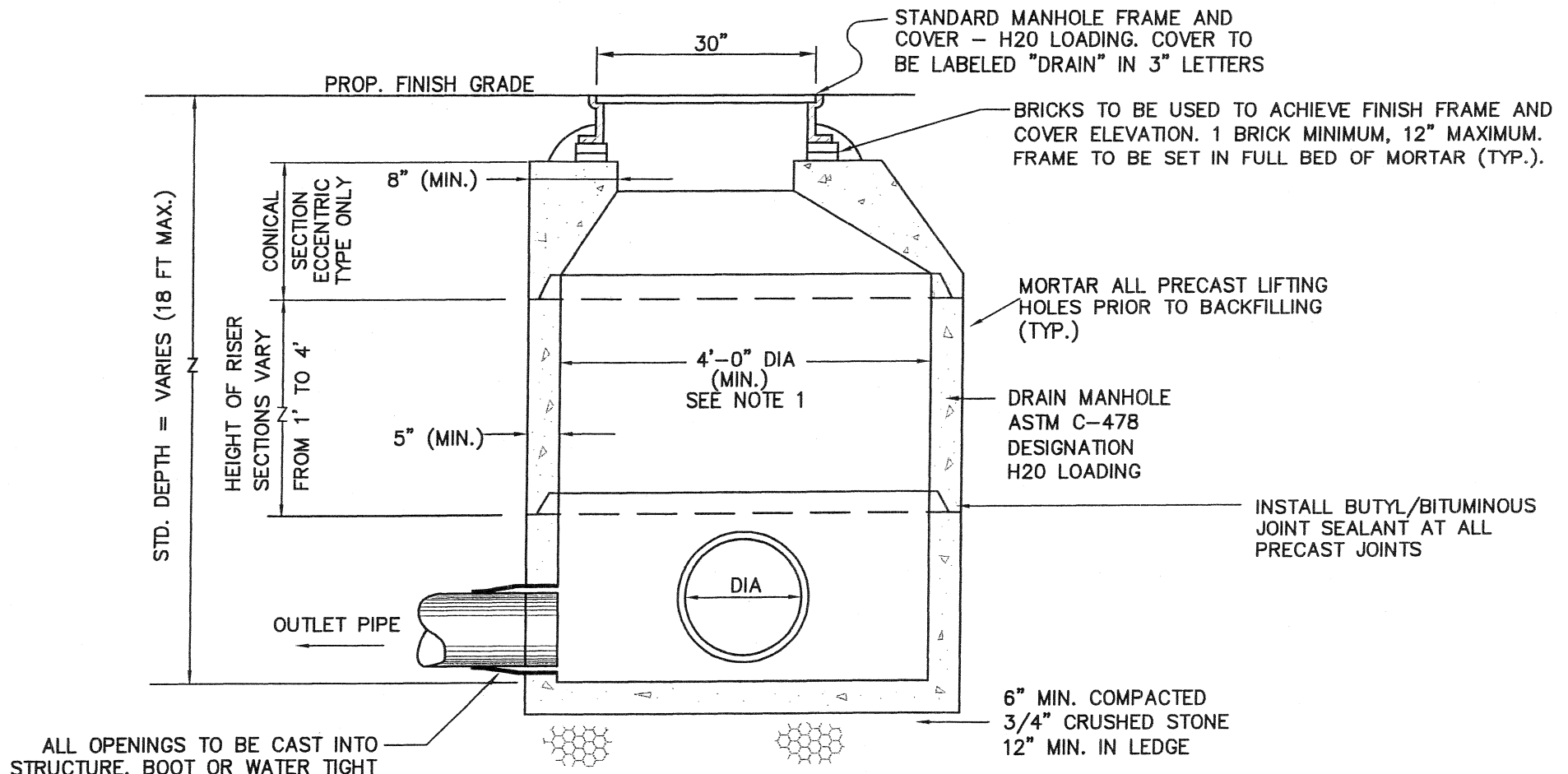
NOTE:

PLASTIC UNDERDRAIN PIPE (HDPE) SHALL BE 6" DIAMETER (MIN.) ADS N-12 (CORRUGATED EXTERIOR/SMOOTH INTERIOR) OR EQUAL MEETING AASHTO M-252 AND H-20 LOADING.

TYPICAL UNDERDRAIN PIPE TRENCH

NOT TO SCALE

EXHIBIT D102



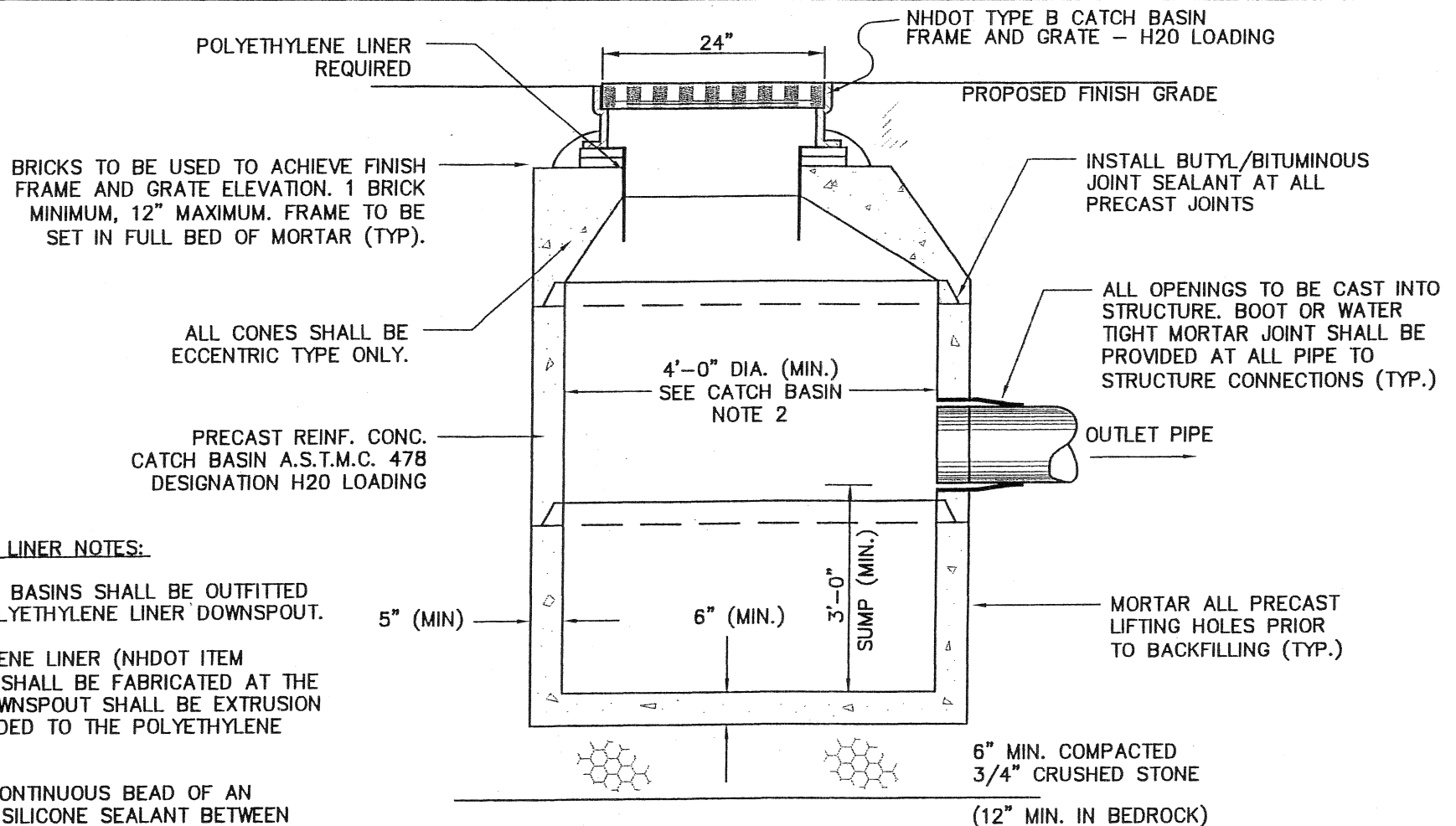
NOTES:

1. WHERE DEPTH EXCEEDS 12 FT, USE 5'-0" DIAMETER (MIN.)
2. MINIMUM PIPE DROP (INLET TO OUTLET) SHALL BE 3" UNLESS OTHERWISE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
3. ALL BOOTS, GASKETS AND SEALANTS SHALL BE IN ACCORDANCE WITH MANUFACTURES WRITTEN INSTRUCTIONS

PRECAST DRAIN MANHOLE DETAIL

NOT TO SCALE

EXHIBIT D103



POLYETHYLENE LINER NOTES:

1. ALL CATCH BASINS SHALL BE OUTFITTED WITH A POLYETHYLENE LINER DOWNSPOUT.
2. POLYETHYLENE LINER (NHDOT ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
3. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT BETWEEN FRAME AND POLYETHYLENE SHEET.
4. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
5. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH CURB).
6. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 3" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.

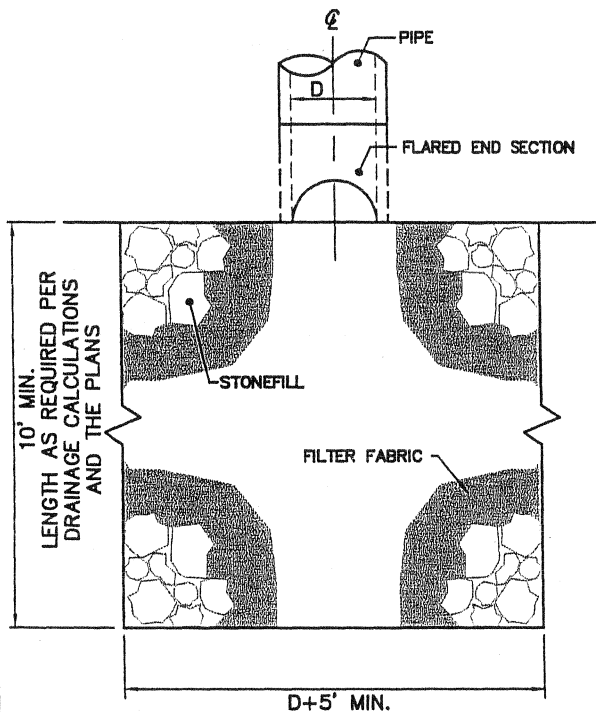
CATCH BASIN NOTES:

1. WHERE DEPTH EXCEEDS 12 FT, USE 5'-0" DIAMETER (MIN.)
MAXIMUM DEPTH = 18 FEET
2. MINIMUM PIPE DROP (INLET TO OUTLET) SHALL BE 3" UNLESS OTHERWISE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
3. ALL BOOTS, GASKETS AND SEALANTS SHALL BE IN ACCORDANCE WITH MANUFACTURES WRITTEN INSTRUCTIONS

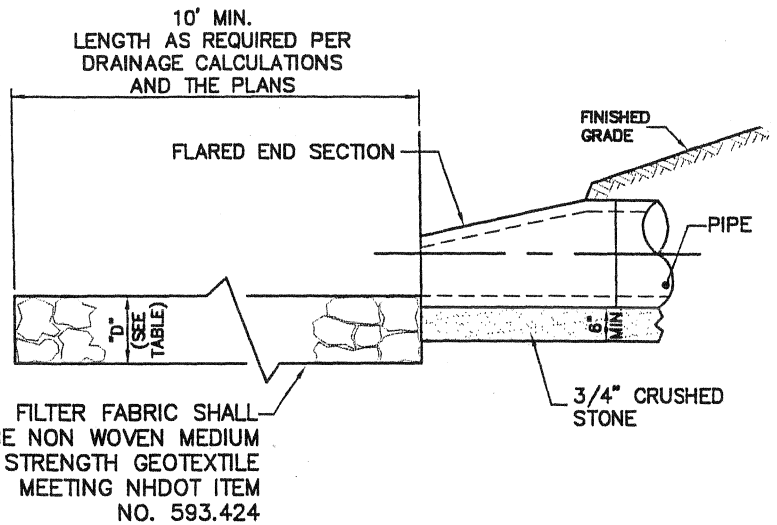
CATCH BASIN DETAIL

NOT TO SCALE

EXHIBIT D104



PLAN



ELEVATION

NOTE: STONEFILL SHALL CONFORM TO THE LATEST EDITION OF THE NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 585, STONE FILL WITH THE FOLLOWING REQUIREMENTS:

	STONE SIZES		
	C1	C2	C3
% OF PASSING BY WEIGHT	D = BLANKET THICKNESS		
	12"	18"	24"
100%	8"	12"	18"
85%	7"	11"	16"
50%	5"	8"	12"
15%	2"	3"	4"

NOTE: ALL STONEFILL TO BE SIZE "C1" MIN. EXCEPT WHERE OTHERWISE REQUIRED PER DRAINAGE CALCULATIONS AND THE PLANS.

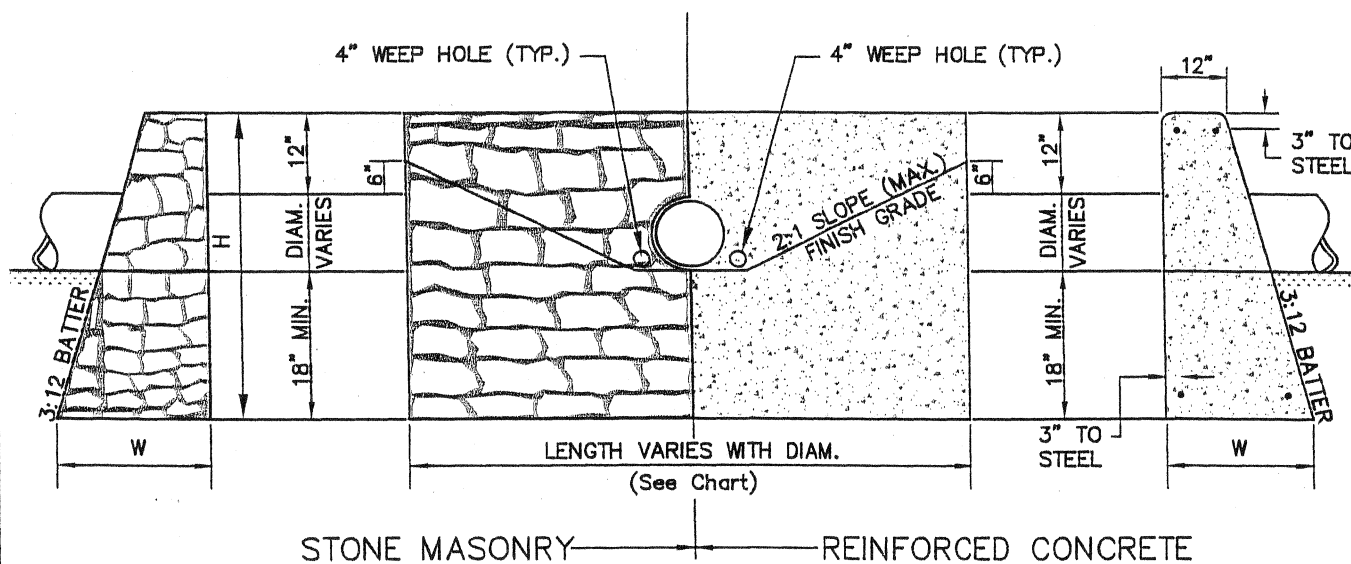
TYPICAL PIPE END SECTION (FLARED END) WITH STONEFILL APRON

NOT TO SCALE

EXHIBIT D105

DRAIN PIPE DIAMETER	12"	15"	18"	24"	30"
LENGTH	3'-6"	4'-6"	5'-6"	7'-6"	9'-6"
HEIGHT (H)	3'-6"	3'-9"	4'-0"	4'-6"	5'-0"
BOTTOM WIDTH (W)	1'-10.5"	1'-11.25"	2'-0"	2'-1.5"	2'-3"
CONC. (Cu.Yd.)	0.61	0.85	1.13	1.78	2.58
STEEL (Lbs.)	9	11	14	20	25

ALL STEEL SHALL BE #4 BARS, MEETING NHDOT REQUIREMENTS



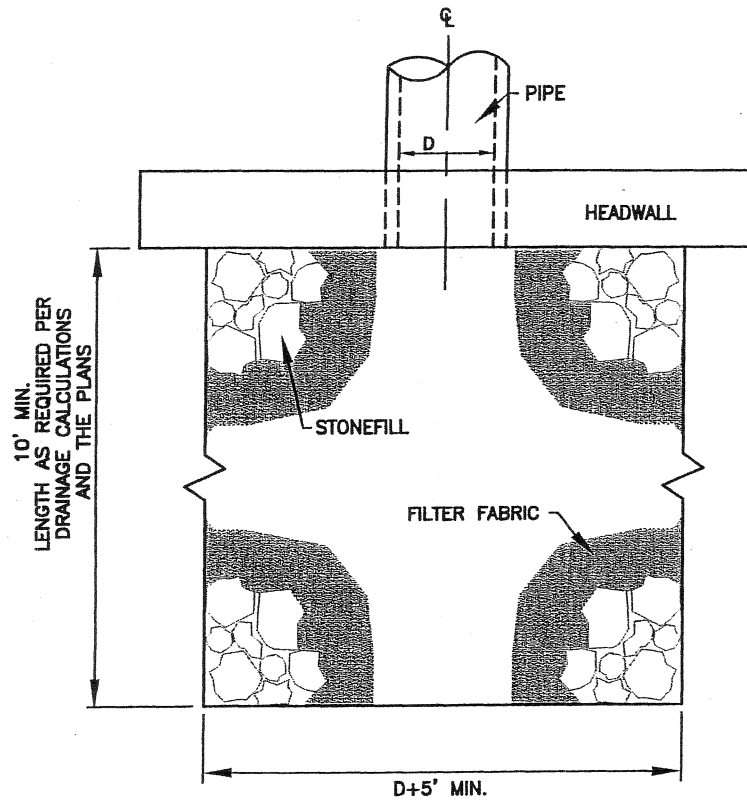
NOTES:

1. ALL CONCRETE SHALL BE CLASS A
2. ALL HEADWALLS SHALL MEET NHDOT REQUIREMENTS. FOR LARGER PIPE DIAMETERS, USE THE NHDOT STANDARD PLANS.

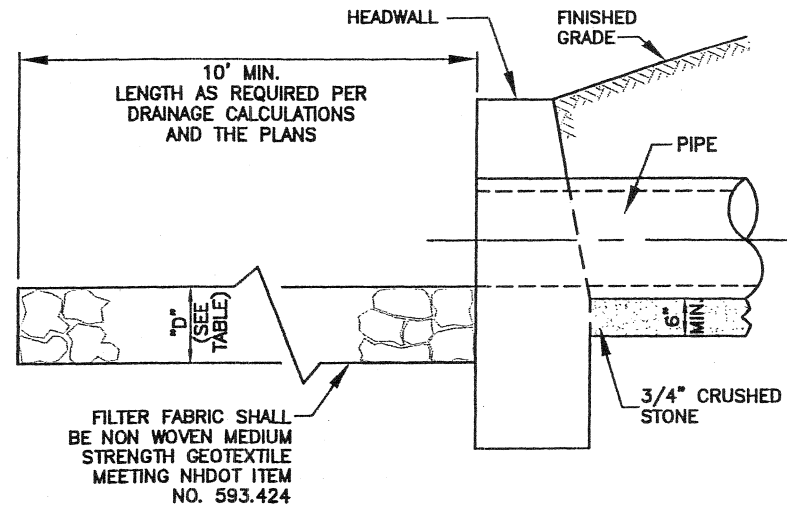
HEADWALLS (MASONRY & CONCRETE)

NOT TO SCALE

EXHIBIT D106



PLAN



ELEVATION

NOTE: STONEFILL SHALL CONFORM TO THE LATEST EDITION OF THE NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 585, STONE FILL WITH THE FOLLOWING REQUIREMENTS:

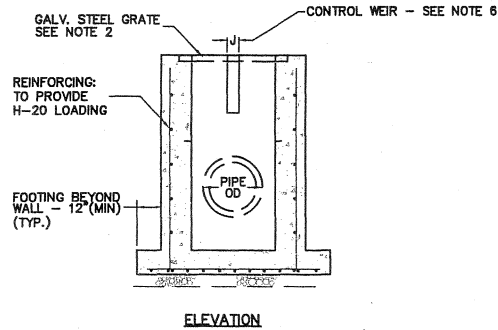
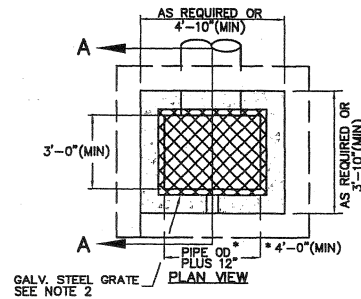
% OF PASSING BY WEIGHT	STONE SIZES		
	C1	C2	C3
	D = BLANKET THICKNESS		
	12"	18"	24"
100%	8"	12"	18"
85%	7"	11"	16"
50%	5"	8"	12"
15%	2"	3"	4"

NOTE: ALL STONEFILL TO BE SIZE "C1" MIN. EXCEPT WHERE OTHERWISE REQUIRED PER DRAINAGE CALCULATIONS AND THE PLANS.

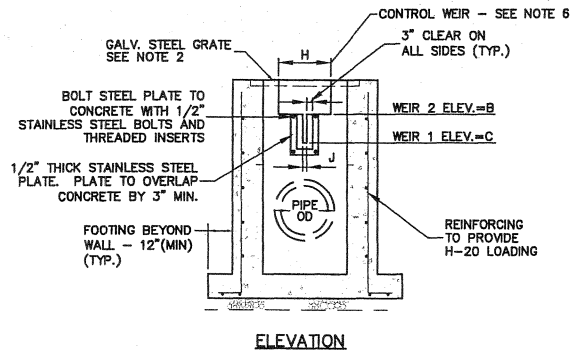
HEADWALL WITH STONEFILL APRON

NOT TO SCALE

EXHIBIT D107



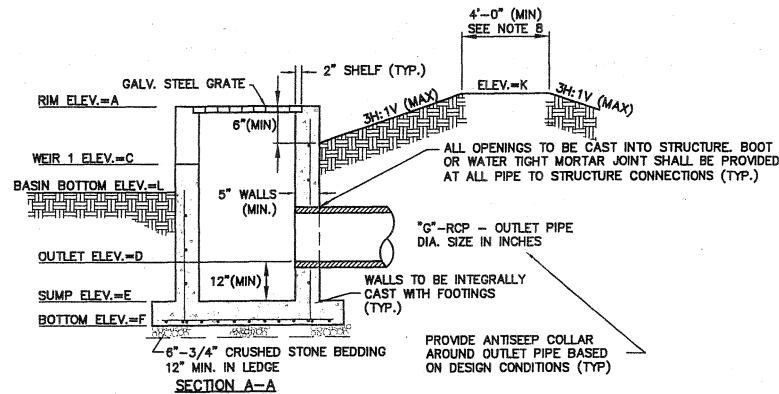
SINGLE WEIR OUTLET STRUCTURE



DOUBLE WEIR OUTLET STRUCTURE

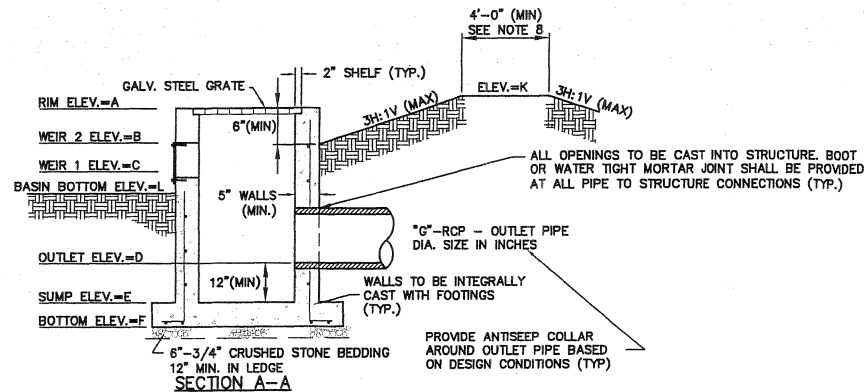
THIS TABLE MUST BE PROVIDED WITH THE PROJECT PLANS

		ELEVATIONS/DIMENSIONS										
STRUCTURE ID#	OUTLET STRUCTURE	A	B	C	D	E	F	G	H	J	K	L
	OS#1											
	OS#2											

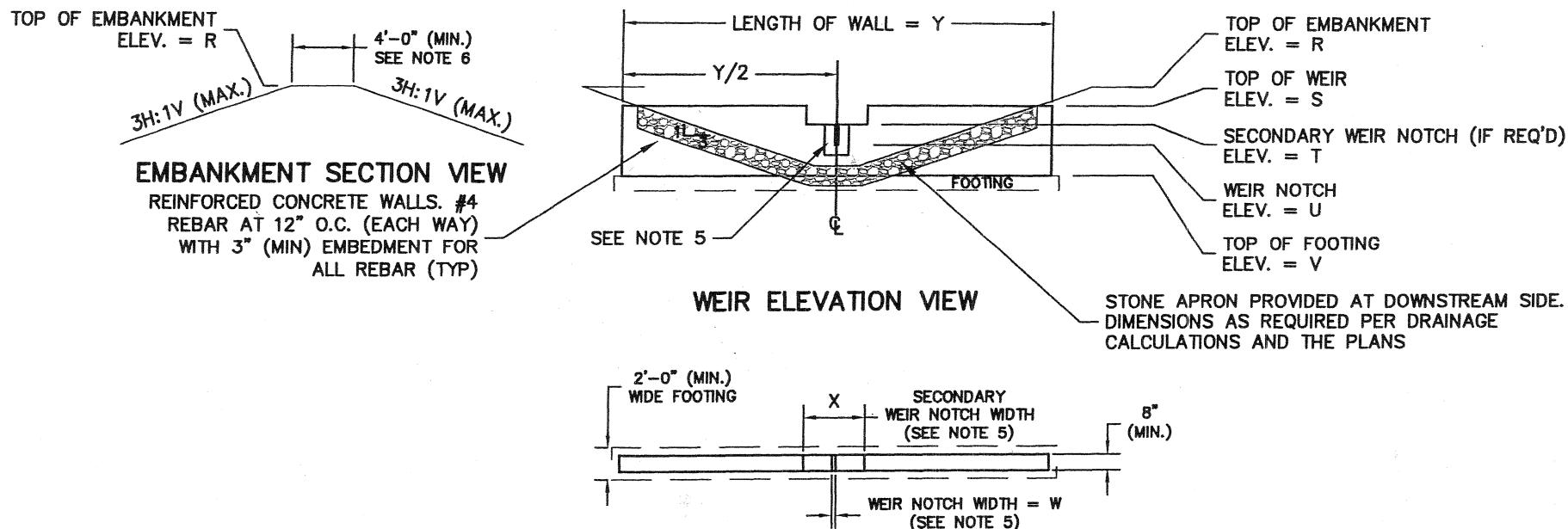


NOTES:

1. ALL CEMENT CONCRETE TO BE 4000 PSI(MIN).
2. GALVANIZED STEEL GRATE SHALL BE BOLTED TO TOP OF STRUCTURE WITH 1/2" STAINLESS STEEL BOLTS AND THREADED INSERTS.
3. OUTLET PIPE SHALL NOT BE LESS THAN 15" DIAMETER AND SHALL BE SIZED FOR A 50-YEAR STORM.
4. ALL OPENINGS SHALL BE CAST IN AS REQUIRED. MINIMUM CONCRETE WEIR WIDTH SHALL BE 2 INCHES.
5. PRECAST REINFORCED CONCRETE STRUCTURE TO MEET ASTM C-478 DESIGNATION AND H-20 LOADING.
6. CONTROL WEIR SHALL BE SIZED TO MITIGATE DESIGN STORM AS REQUIRED BY THE REGULATIONS AND IN ACCORDANCE WITH THE APPROVED DRAINAGE CALCULATIONS. STAINLESS STEEL PLATE SHALL BE USED FOR CONTROL WEIRS LESS THAN 2 INCHES WIDE.
7. ALL STAINLESS STEEL SHALL BE GRADE 316.
8. MINIMUM EMBANKMENT ELEVATION TO BE 12" ABOVE 50-YEAR STORM ELEVATION.



**TYPICAL OUTLET STRUCTURE AT
DETENTION BASINS**
(PRECAST CONCRETE CONTROL STRUCTURE)
NOT TO SCALE
EXHIBIT D108



NOTES:

1. ALL CEMENT CONCRETE TO BE 4000 PSI (MIN).
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS INDICATING DESIGN DETAILS AND STEEL REINFORCING PREPARED BY A NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
3. LOW FLOW STRUCTURE CAN BE USED AT DETENTION BASINS WITH INFLOWS OF LESS THAN 3 CFS.
4. CONTROL WEIRS SHALL BE CAST IN AS REQUIRED. MINIMUM CONCRETE WEIR WIDTH SHALL BE 2 INCHES.
5. CONTROL WEIR(S) SHALL BE SIZED TO MITIGATE DESIGN STORM AS REQUIRED BY THE REGULATIONS AND IN ACCORDANCE WITH THE APPROVED DRAINAGE CALCULATIONS. STAINLESS STEEL PLATE SHALL BE USED FOR CONTROL WEIR LESS THAN 2 INCHES ATTACHED PER EXHIBIT D107. STAINLESS STEEL SHALL BE GRADE 316.
6. MINIMUM EMBANKMENT ELEVATION TO BE 12" ABOVE 50-YEAR STORM ELEVATION.

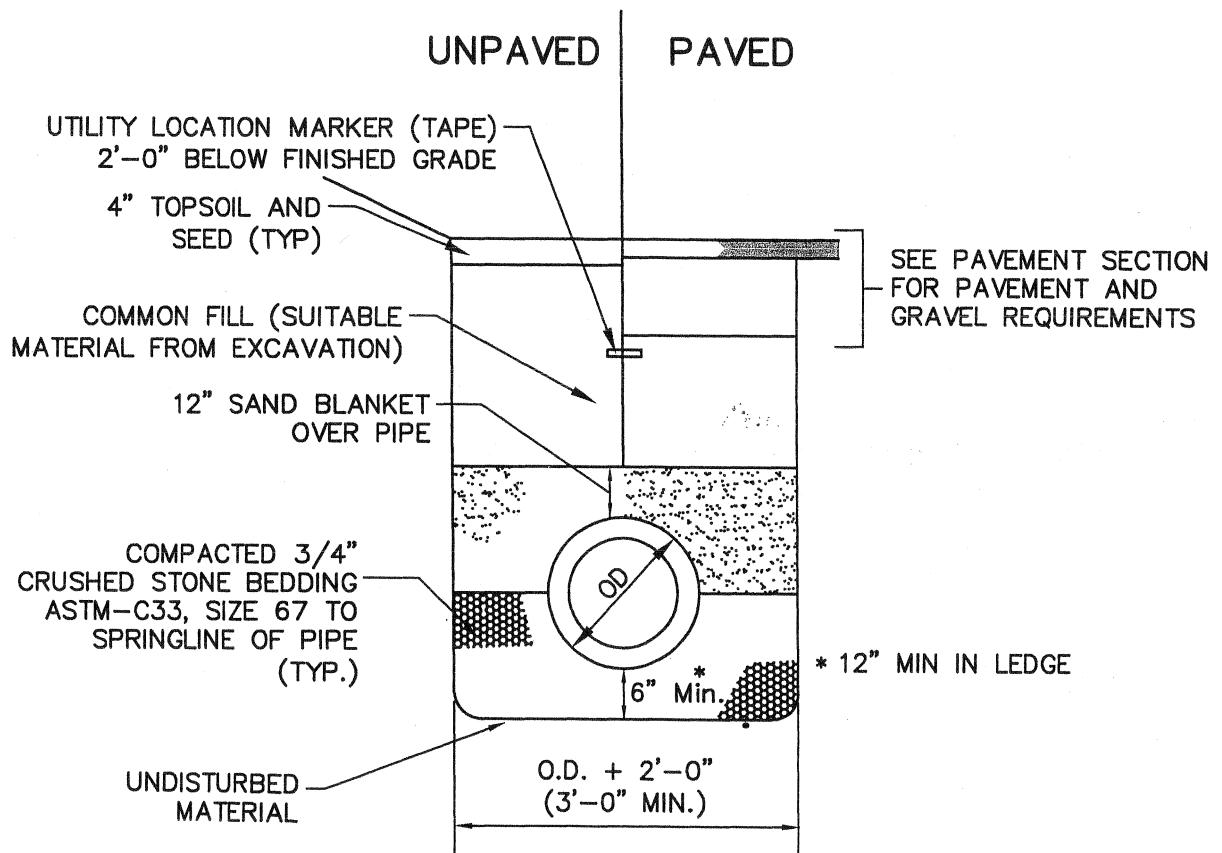
WEIR PLAN VIEW

LOCATION	ELEVATIONS/DIMENSIONS							
	R	S	T	U	V	W	X	Y

TYPICAL LOW FLOW OUTLET STRUCTURE AT DETENTION BASINS

NOT TO SCALE

EXHIBIT D109



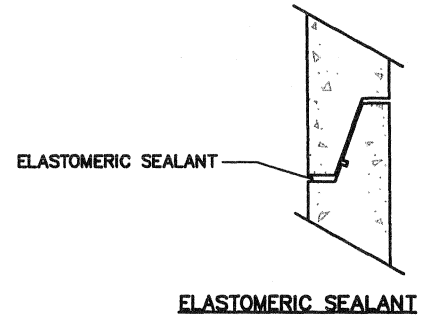
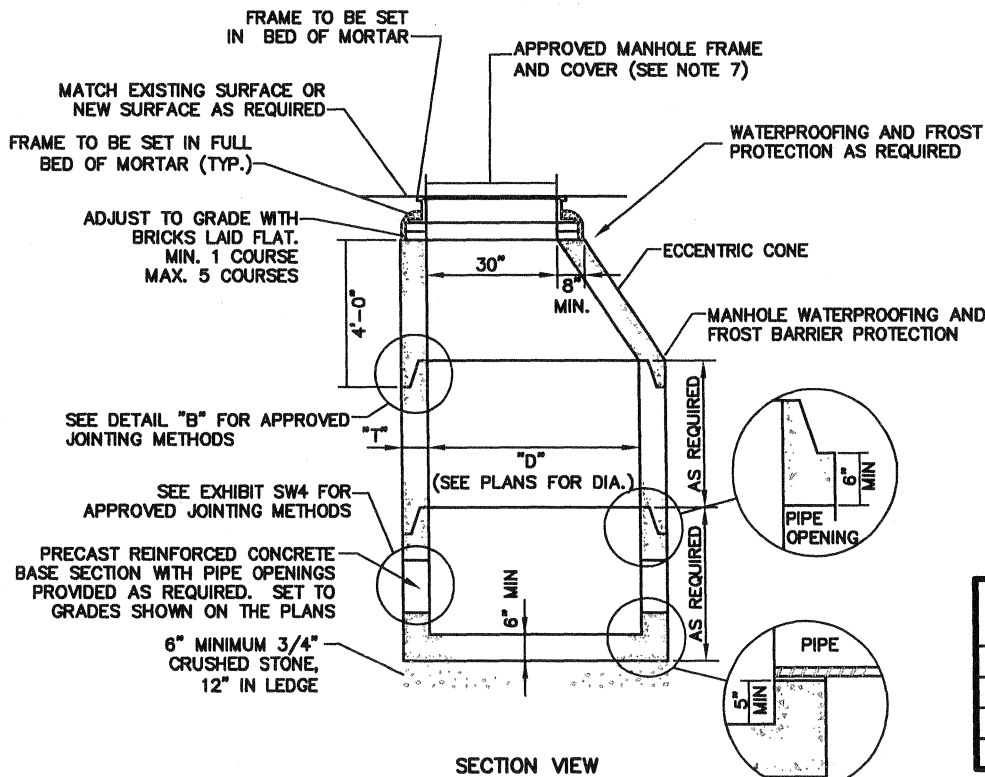
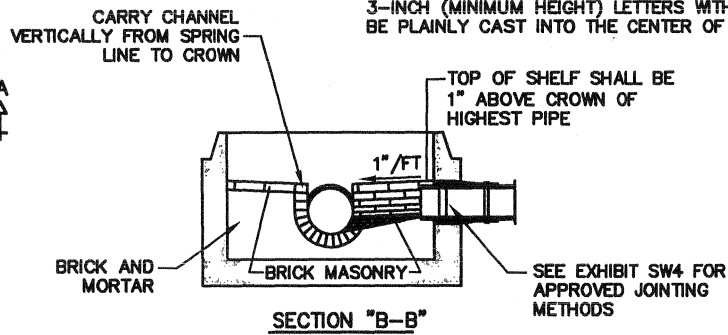
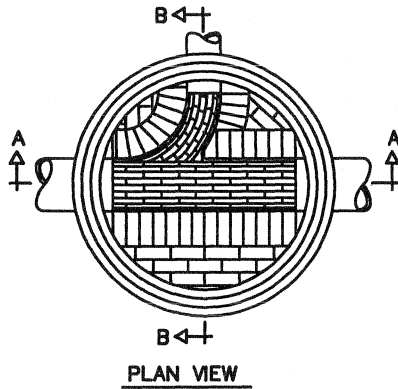
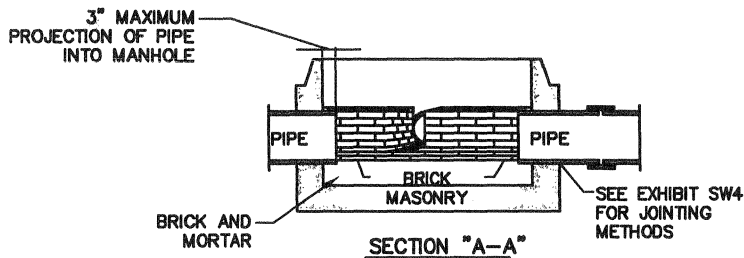
TYPICAL SEWER PIPE TRENCH

NOT TO SCALE

EXHIBIT SW1

NOTES:

- 1) IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT AND ADEQUATE JOINTING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND HS-20-44 LOADING INCLUDING THE FRAME AND COVER.
- 2) SEWER MANHOLE DIAMETER SHALL BE AS INDICATED ON THE PLANS.
- 3) LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF LONDONDERRY AND NHDES REQUIREMENTS. INVERT AND SHELF TO BE PLACED AFTER PASSING THE LEAKAGE TEST
- 4) CARE SHALL BE TAKEN TO ENSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. BASE SECTION TO BE FULL
- 5) MANHOLE CHANNELS REQUIRING CHANGE IN ALIGNMENT ARE TO BE BUILT ON A SMOOTH RADIUS
- 6) IN CROSS COUNTRY AREAS BEYOND ROADWAY RIGHT-OF-WAYS, THE MANHOLE FRAME ELEVATION SHALL BE A MINIMUM OF 6" ABOVE FINISHED GRADE. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE MANHOLE.
- 7) FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH (MINIMUM HEIGHT) LETTERS WITH THE WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH MANHOLE COVER



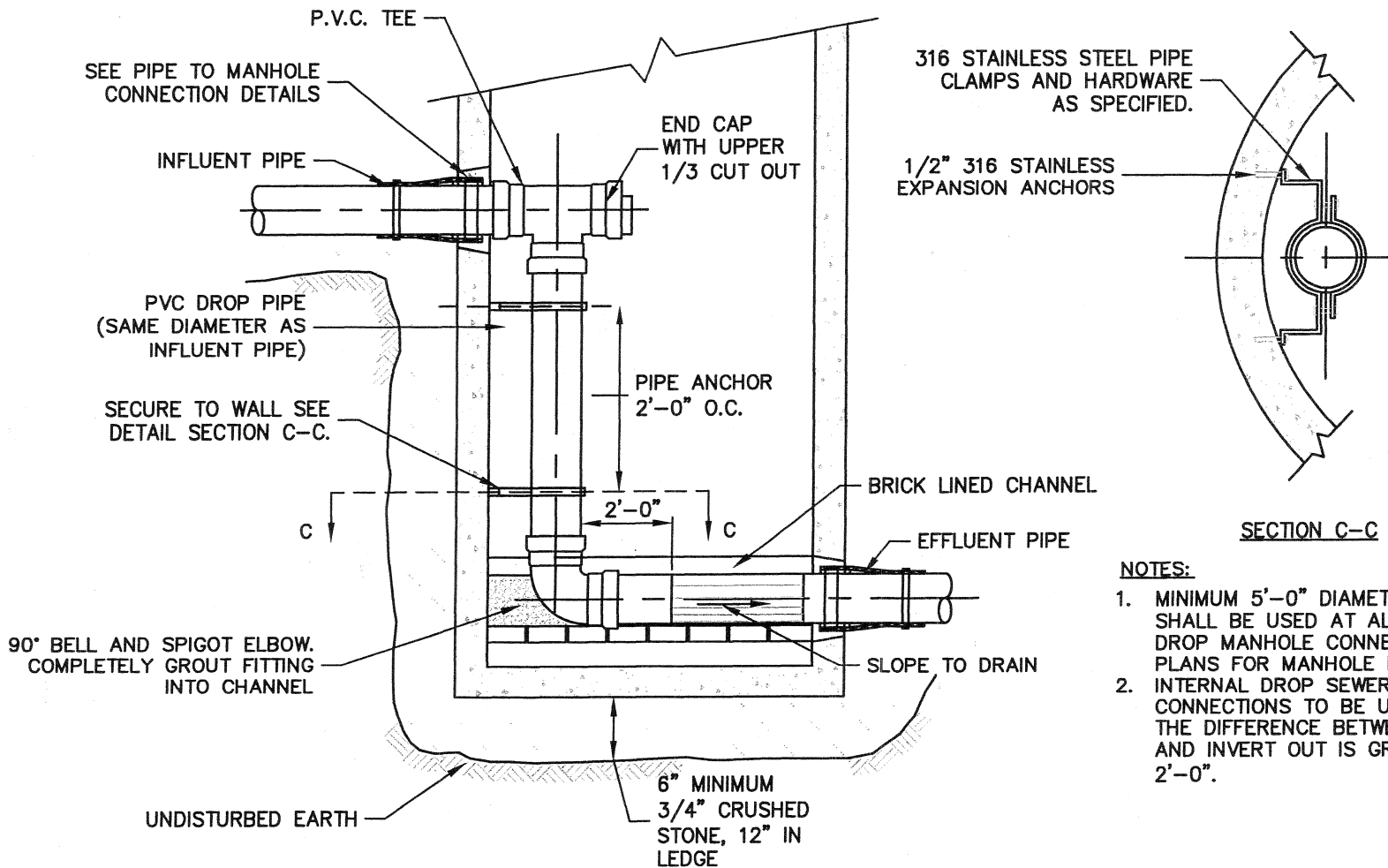
NOTE:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

MANHOLE DIAMETER "D"	MAX. PIPE DIAMETER STRAIGHT THROUGH TO 45° DEFLECTION	"T" (WALL THICKNESS)
48" (MIN.)	30" OD MAX.	5" (MIN.)
60"	44" OD MAX.	6"
72"	51" OD MAX.	7"
96"	72" OD MAX.	9"

TYPICAL SEWER MANHOLE

NOT TO SCALE

EXHIBIT SW2



NOTES:

1. MINIMUM 5'-0" DIAMETER MANHOLES SHALL BE USED AT ALL INTERNAL DROP MANHOLE CONNECTIONS. SEE PLANS FOR MANHOLE DIAMETER.
2. INTERNAL DROP SEWER MANHOLE CONNECTIONS TO BE USED WHERE THE DIFFERENCE BETWEEN INVERT IN AND INVERT OUT IS GREATER THAN 2'-0".

TYPICAL SEWER MANHOLE WITH INTERNAL DROP CONNECTION

NOT TO SCALE

EXHIBIT SW3

INSIDE FACE OF MANHOLE

FILL WITH MORTAR

STAINLESS STEEL
INTERNAL CLAMP

PIPE

STAINLESS STEEL CLAMP

RUBBER-LIKE KOR-N-SEAL BOOT

KOR-N-SEAL JOINT SLEEVE
(OR ACCEPTABLE SUBSTITUTE)

PATCH DETAIL FOR
REPAIRS

INSIDE FACE OF MANHOLE

FILL WITH MORTAR

PIPE

STAINLESS STEEL STRAP

RUBBER-LIKE FLEXIBLE SLEEVE

LOCK-JOINT FLEXIBLE MANHOLE SLEEVE
(OR ACCEPTABLE SUBSTITUTE)

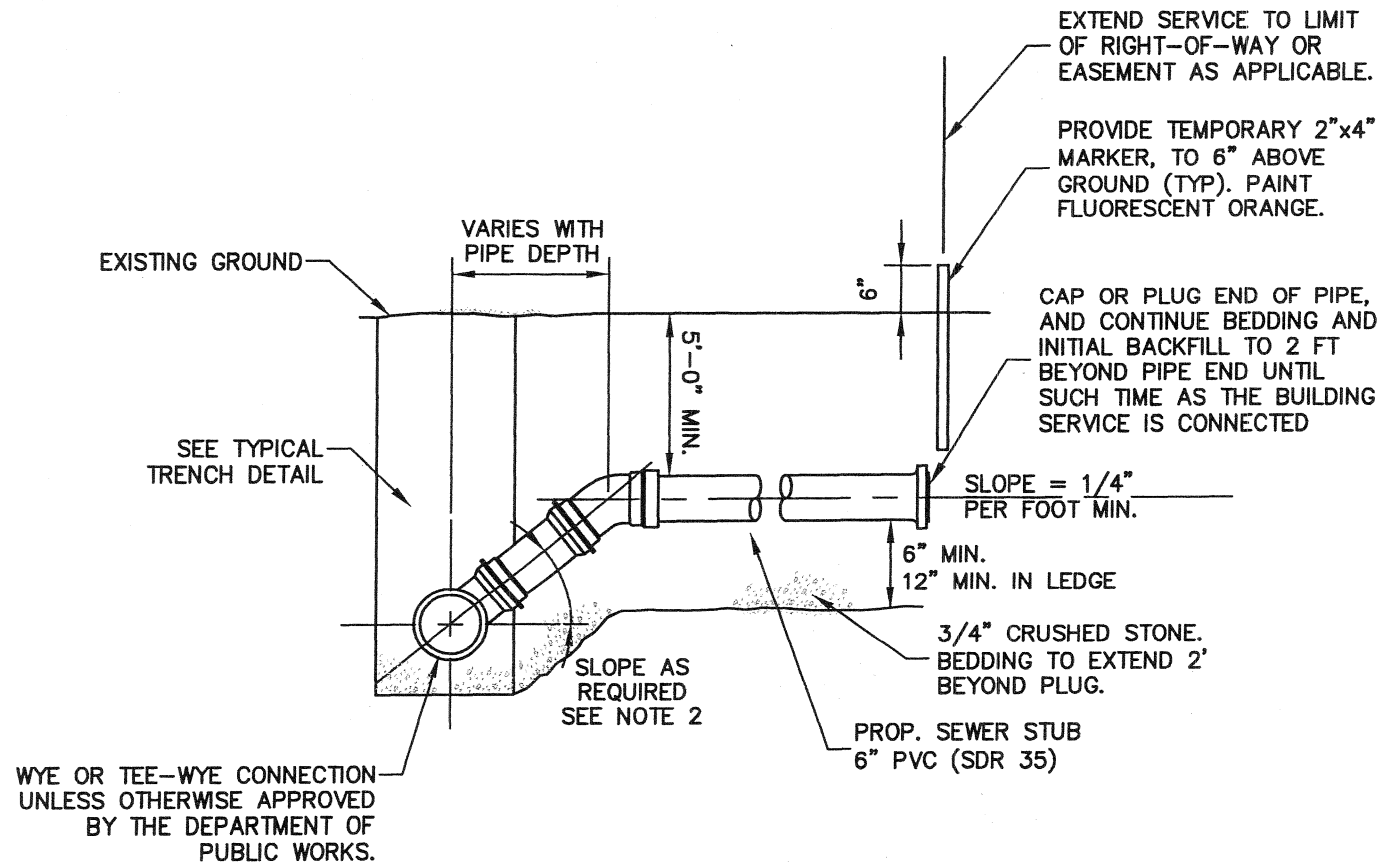
NOTE:

ALL GASKETS, SEALANTS,
MORTAR, ETC... SHALL BE
INSTALLED IN ACCORDANCE
WITH MANUFACTURERS'
WRITTEN INSTRUCTIONS

PIPE TO SEWER MANHOLE JOINTS

NOT TO SCALE

EXHIBIT SW4



NOTES:

1. ALL SERVICE CONNECTIONS TO BE 6" MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. USE CHIMNEY DETAIL WHERE SERVICE CONNECTION ENTERS SEWER AT GREATER THAN 60° TO THE HORIZONTAL.

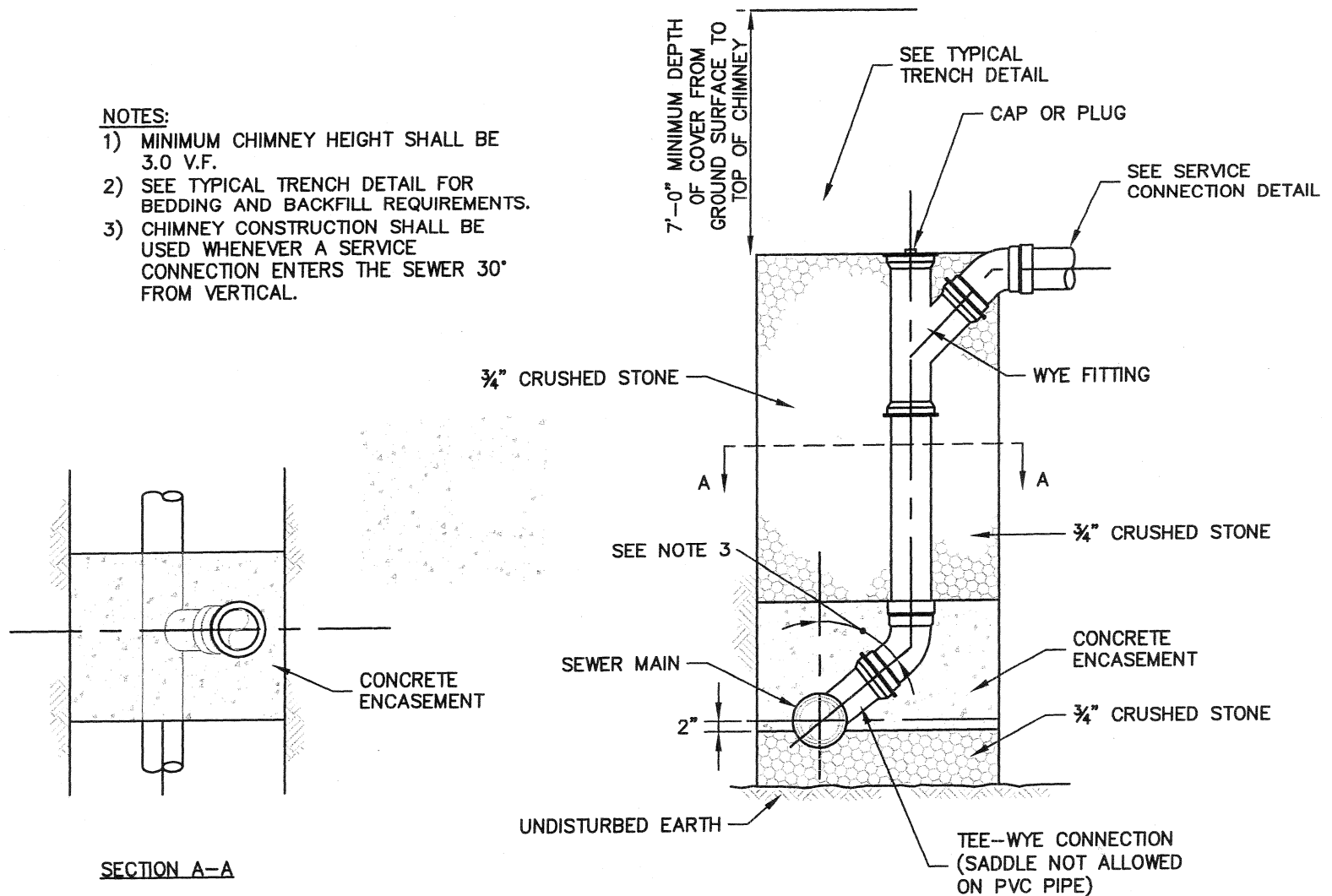
DETAIL FOR SEWER SERVICE CONNECTION

NOT TO SCALE

EXHIBIT SW5

NOTES:

- 1) MINIMUM CHIMNEY HEIGHT SHALL BE 3.0 V.F.
- 2) SEE TYPICAL TRENCH DETAIL FOR BEDDING AND BACKFILL REQUIREMENTS.
- 3) CHIMNEY CONSTRUCTION SHALL BE USED WHENEVER A SERVICE CONNECTION ENTERS THE SEWER 30° FROM VERTICAL.

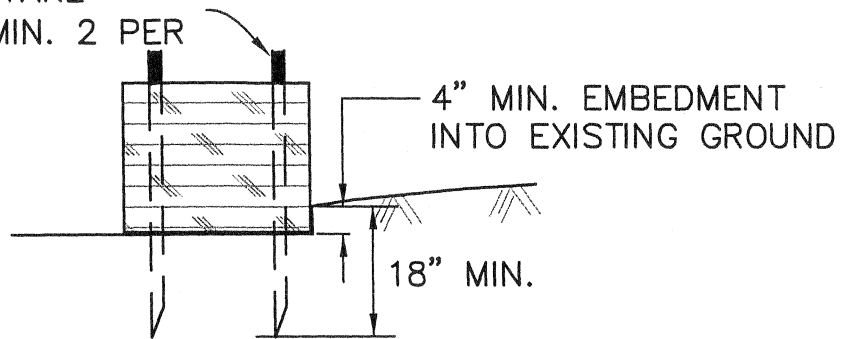


DETAIL FOR SEWER SERVICE CHIMNEY CONNECTION

NOT TO SCALE

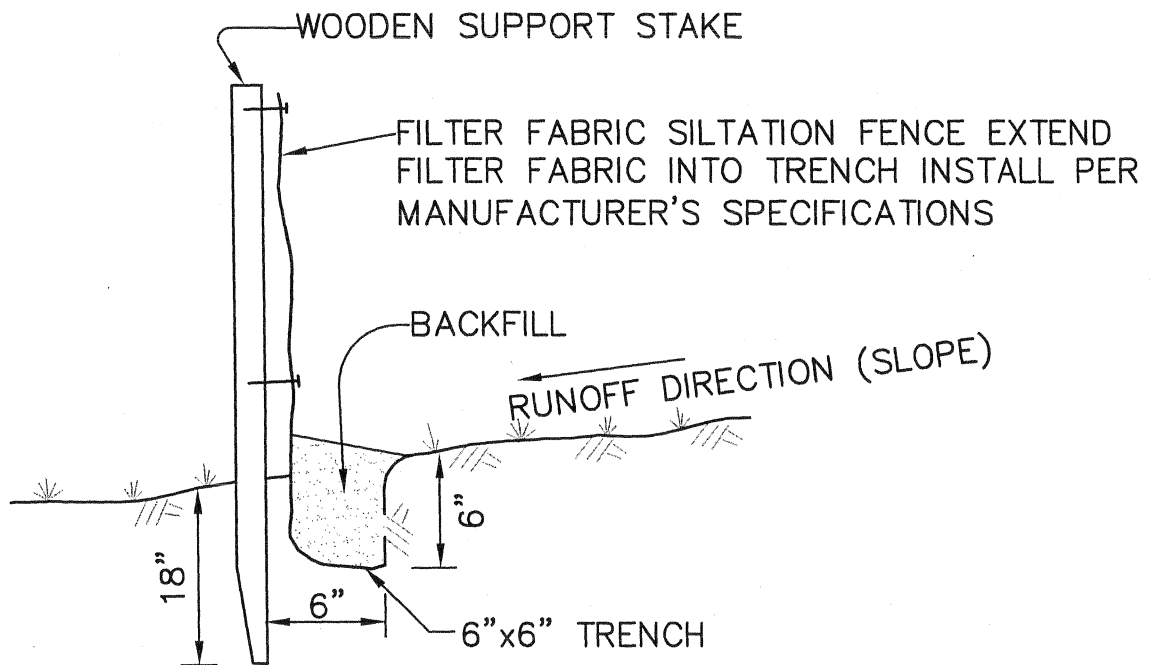
EXHIBIT SW6

WOOD STAKE
(TYP.) MIN. 2 PER
BALE



STAKED HAYBALE DETAIL

(NOT TO SCALE)



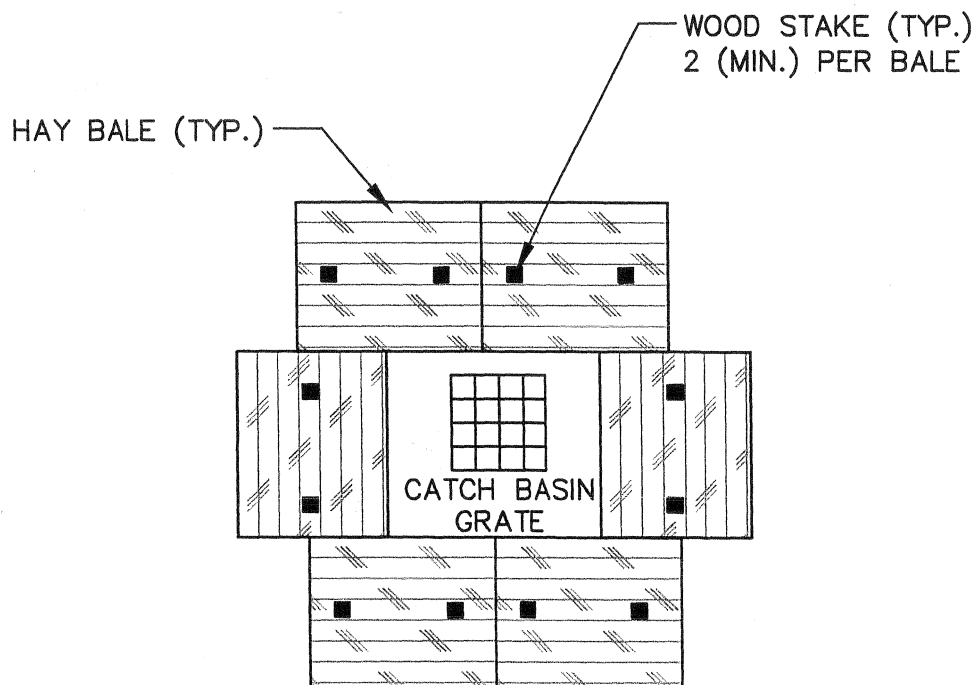
SILT FENCE DETAIL

(NOT TO SCALE)

DETAILS FOR HAYBALE AND SILT FENCE INSTALLATION

NOT TO SCALE

EXHIBIT EC1



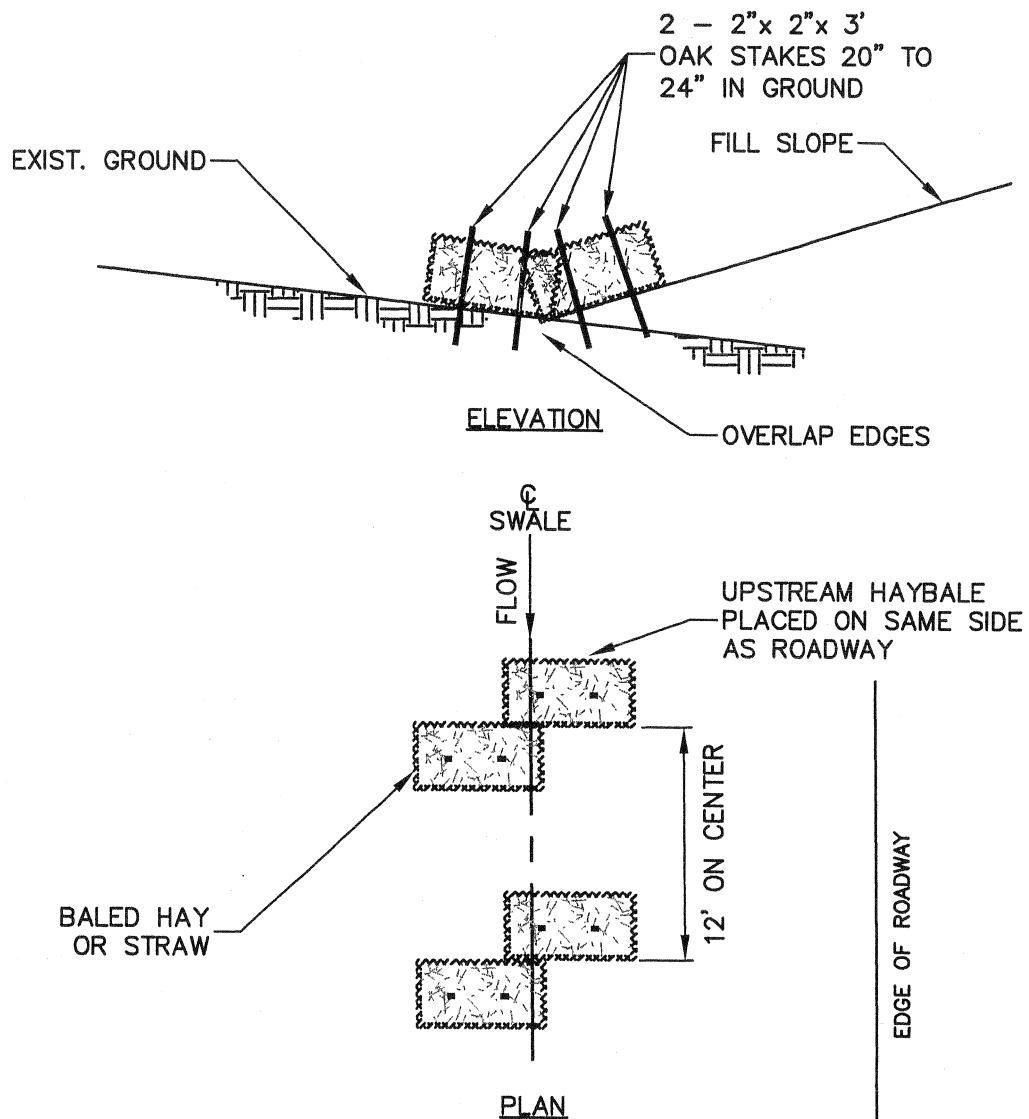
NOTES:

1. BALES TO REMAIN UNTIL SUBBASE PREPARATION IS COMPLETE AND ROADWAY PAVING IS TO BEGIN OR UNTIL ALL UPSTREAM AREAS ARE STABILIZED WITH VEGETATION.
2. HAYBALES AROUND CATCH BASINS TO BE USED IN NON-PAVED AREAS ONLY. FOR CATCH BASINS IN PAVED AREAS USE INLET FILTER BASKETS. SEE EXHIBIT EC6.
3. EACH CATCH BASIN LOCATION SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM ENTERING THE DRAINAGE PIPING SYSTEM AND/OR CAUSING SURFACE FLOODING.

DETAILS FOR SEDIMENT CONTROL AT CATCH BASINS

NOT TO SCALE

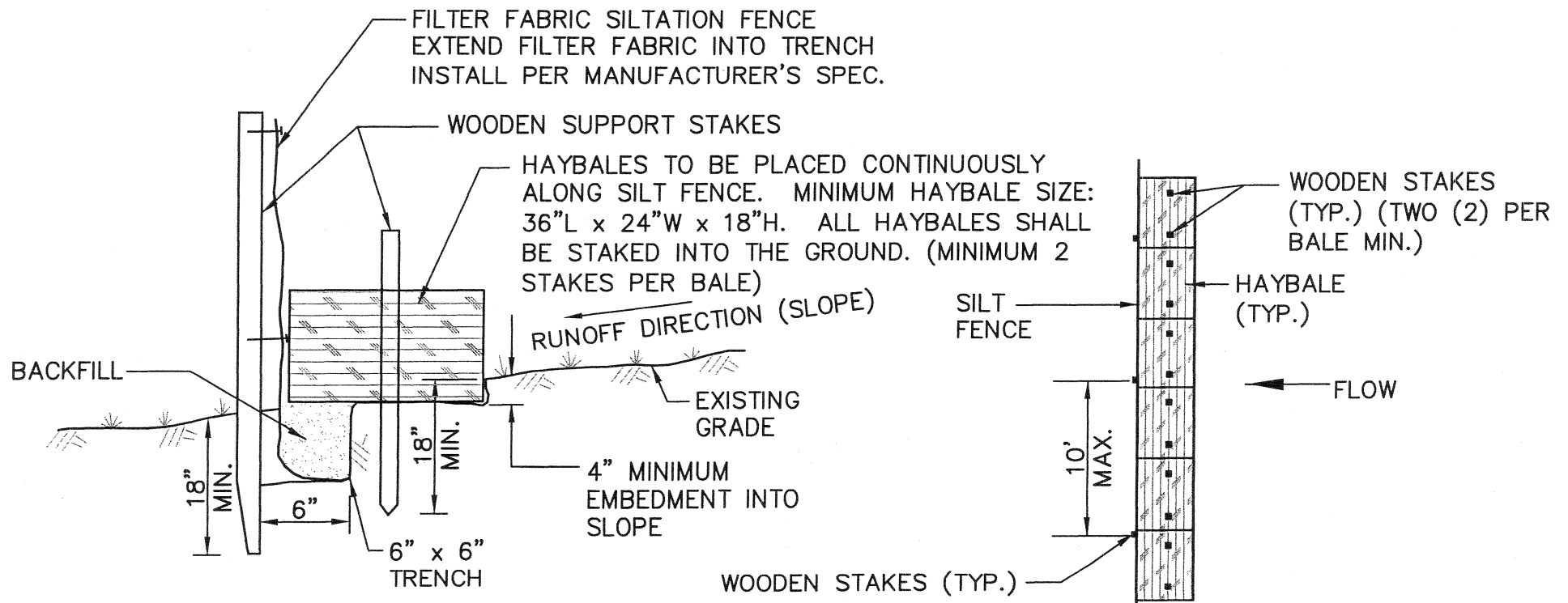
EXHIBIT EC2



DETAILS FOR HAY BALE CHECK DAM

NOT TO SCALE

EXHIBIT EC3



SECTION VIEW

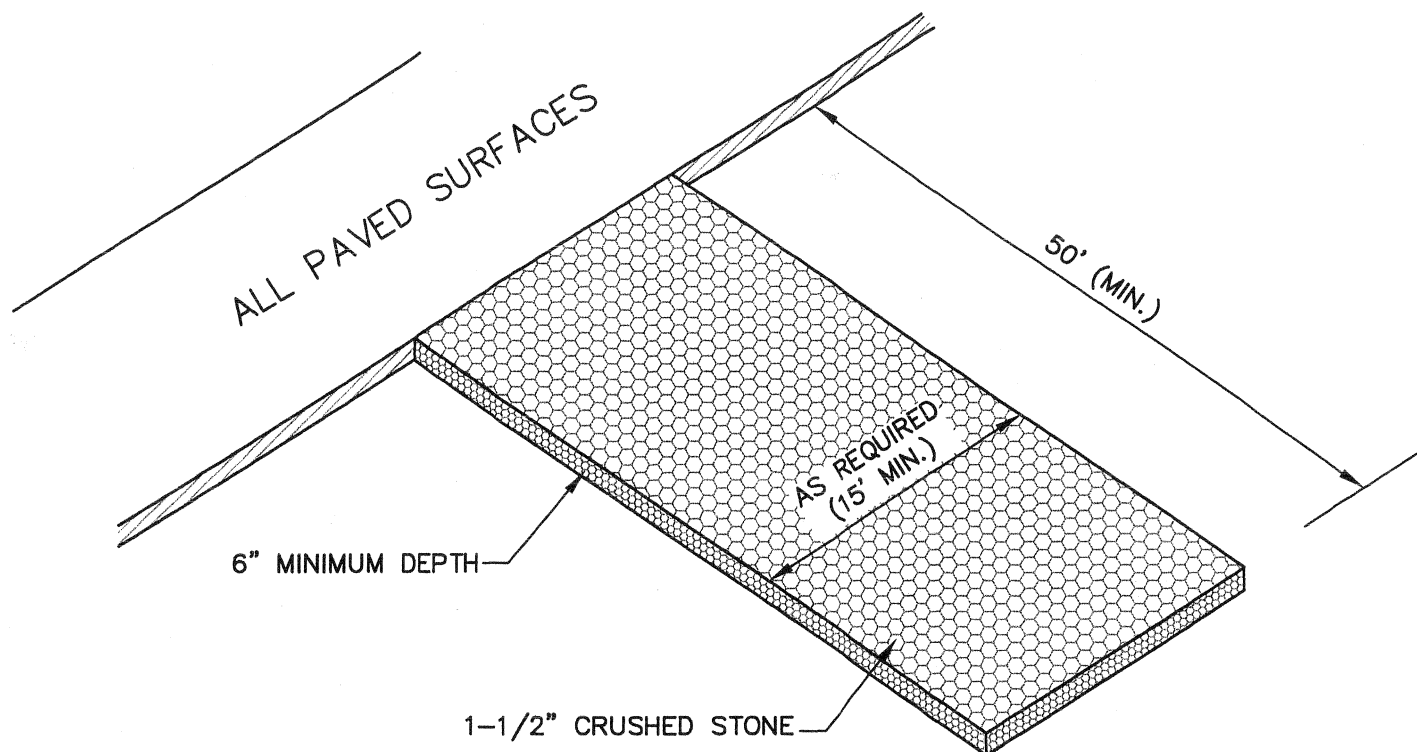
PLAN VIEW

NOTE: TO BE USED AT INLET END OF ALL CULVERTS AND DRAINAGE STRUCTURES.

DETAIL FOR SILT FENCE WITH HAY BALES

NOT TO SCALE

EXHIBIT EC4



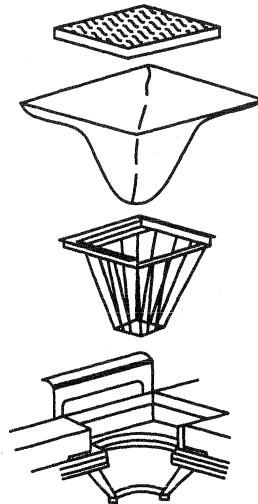
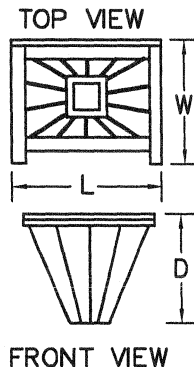
TO BE USED AT ALL STOCKPILE AND/OR STAGING AREAS.

DETAIL FOR CRUSHED STONE CONSTRUCTION ENTRANCE

NOT TO SCALE

EXHIBIT EC5

SQUARE OR
RECTANGULAR



FILTER BASKET NOTES:

1. INLET BASKETS SHALL BE USED ON ALL CATCH BASINS WITHIN THE PROJECT LIMITS WITHIN PAVED AREAS. INLET FILTER BASKETS SHALL BE "SILT SACK®" OR APPROVED EQUAL.
2. FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND EXTEND AT LEAST 6 INCHES PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.
3. THE FILTER FABRIC SHALL BE A GEO-TEXTILE FABRIC: POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
GRAB STRENGTH: 300 lb. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D-4632).
MULLEN BURST STRENGTH: MINIMUM 800 psi (ASTM D-3786).
4. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 40 U.S. STANDARD SIEVE AND MINIMUM PERMEABILITY OF 40 gpm/sq. ft.
5. THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM ENTERING THE DRAINAGE PIPING SYSTEM AND/OR CAUSING SURFACE FLOODING.
6. INLET BASKETS SHALL BE MAINTAINED IN PLACE UNTIL ALL PAVING IS COMPLETED AND ALL UNPAVED AREAS HAVE BEEN STABILIZED WITH VEGETATION.

DETAIL FOR INLET FILTER BASKET

NOT TO SCALE

EXHIBIT EC6