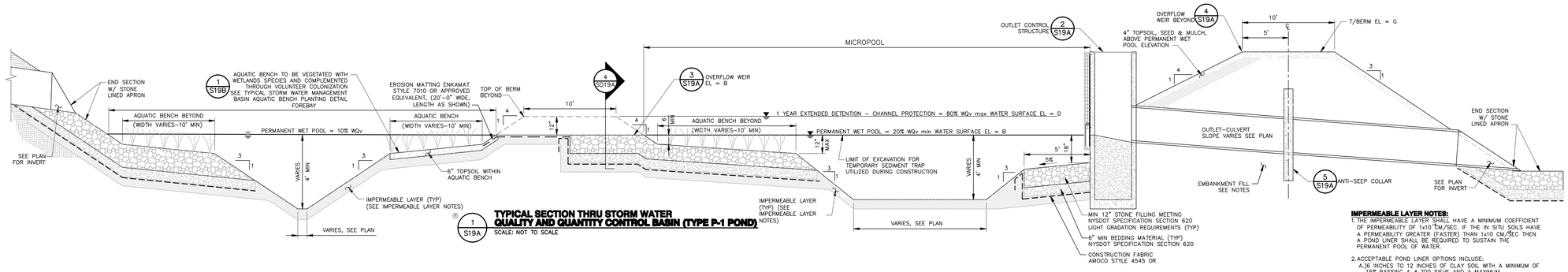
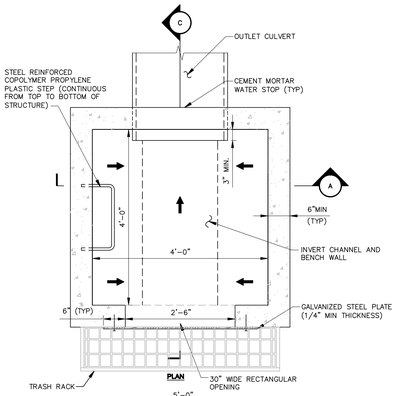
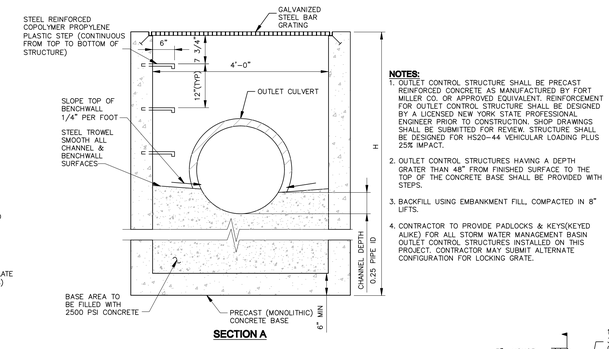


TYPICAL SECTION THRU STORM WATER QUALITY AND QUANTITY CONTROL BASIN (TYPE P-1 POND)
1 / S19A — SCALE: NOT TO SCALE

IMPERMEABLE LAYER NOTES:

1. THE IMPERMEABLE LAYER SHALL HAVE A MINIMUM COEFFICIENT OF PERMEABILITY OF $1x10^{-6}$CM/SEC. IF THE IN SITU SOILS HAVE A PERMEABILITY GREATER (FASTER) THAN $1x10^{-6}$ CM/SEC THEN A POND LINER SHALL BE REQUIRED TO SUSTAIN THE PERMANENT POOL OF WATER.
2. ACCEPTABLE POND LINER OPTIONS INCLUDE:
   A. ¾ INCHES TO 12 INCHES OF CLAY SOIL WITH A MINIMUM OF 15% PASSING A # 200 SIEVE AND A MAXIMUM PERMEABILITY OF $1x10^{-6}$ CM/SEC.
   B. 3A 30 MM POLY-LINER
   C. ADDITION OF BENTONITE TO THE UPPER 6 INCHES TO 12 INCHES OF THE IN SITU SOIL TO ACHIEVE A MAXIMUM PERMEABILITY OF LESS (SLOWER) THAN $1x10^{-6}$CM/SEC.
3. THE POND DESIGN IS PRELIMINARY IN NATURE AND THE ADEQUACY OF THE IN SITE SOIL FOR USE AS THE IMPERMEABLE LAYER, OR THE NEED FOR A POND LINER MUST BE CONFIRMED BY A GEOTECHNICAL ENGINEER PRIOR TO BIDDING AND COMMENCEMENT OF CONSTRUCTION.



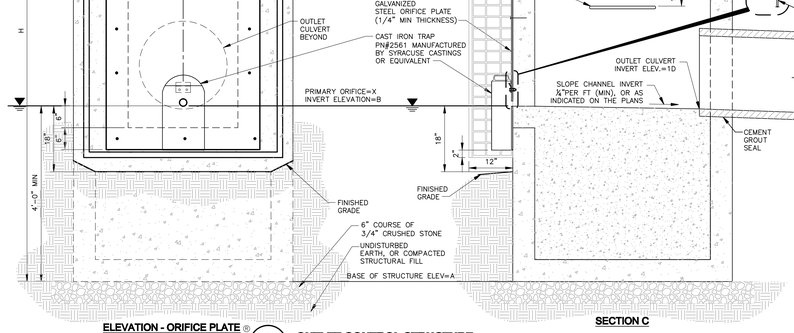


SECTION A

NOTES:

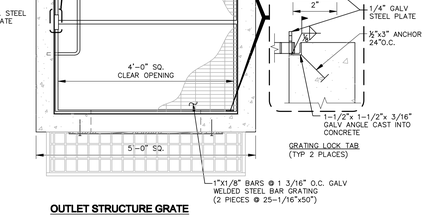
1. OUTLET CONTROL STRUCTURE SHALL BE PRECAST REINFORCED CONCRETE AS MANUFACTURED BY FORT MILLER CO. OR APPROVED EQUIVALENT. REINFORCEMENT FOR OUTLET CONTROL STRUCTURE SHALL BE DESIGNED BY A LICENSED NEW YORK STATE PROFESSIONAL ENGINEER PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW. STRUCTURE SHALL BE DESIGNED FOR HS20-44 VEHICULAR LOADING PLUS 25% IMPACT.
2. OUTLET CONTROL STRUCTURES HAVING A DEPTH GRATER THAN 48" FROM FINISHED SURFACE TO THE TOP OF THE CONCRETE BASE SHALL BE PROVIDED WITH STEPS.
3. BACKFILL USING EMBANKMENT FILL, COMPACTED IN 8" LIFTS.
4. CONTRACTOR TO PROVIDE PADLOCKS & KEYS(KEYED ALIKE) FOR ALL STORM WATER MANAGEMENT BASIN OUTLET CONTROL STRUCTURES INSTALLED ON THIS PROJECT. CONTRACTOR MAY SUBMIT ALTERNATE CONFIGURATION FOR LOCKING GRATE.

OUTLET STRUCTURE & DETENTION BASIN ELEVATIONS					
		STRUCTURE/BASIN#	1	2	3
DETENTION BASIN		DESCRIPTION			
	B	BOTTOM OF POND ELEVATION	164.50	151.00	153.00
	G	PERMANENT WATER SURFACE ELEVATION	169.50	155.00	157.00
	C	TOP OF BERM EL=	178.00	160.50	161.50
ORIFICE PLATE	X	ORIFICE DIAMETER (INCHES)	3.50	3.0	3.0
	B	ORIFICE INVERT ELEVATION	169.50	155.00	157.00
	X1	ORIFICE DIAMETER (10-YR STORM) (IN)	12.00	15.00	15.00
	B1	ORIFICE INVERT ELEVATION (10-YR STORM)	170.90	156.30	158.10
	lW	SHARP-CRESTED WEIR LENGTH (FT)	2.5	–	–
	J	SHARP-CRESTED WEIR ELEVATION	172.44	–	–
	K	BROAD-CRESTED OVERFLOW WEIR ELEVATION	177.00	159.50	160.50
STRUCTURE	ID	OUTLET PIPE DIAMETER (IN)	36.00	18.00	18.00
	Z	OUTLET PIPE INVERT	168.50	154.92	156.92
	A	BASE ELEVATION OF STRUCTURE	164.50	151.00	152.00
	C	TOP OF STRUCTURE ELEVATION	178.00	160.50	161.50
	H	HEIGHT OF STRUCTURE	13.50	9.50	9.50
	T	TRASH RACK UPPER	fR101002		
		TRASH RACK LOWER	fR101002	fR101402	fR101202



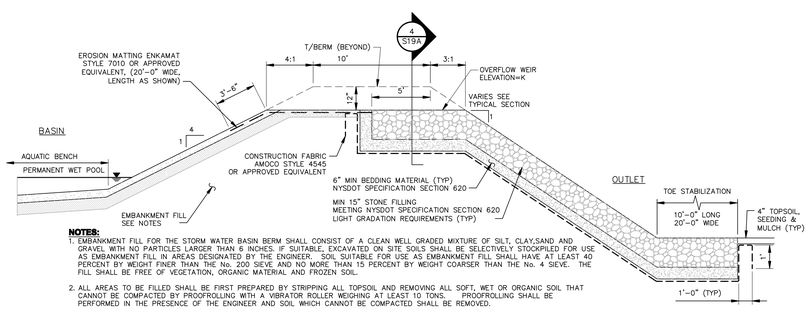
ELEVATION - ORIFICE PLATE

SECTION C



OUTLET STRUCTURE GRATE

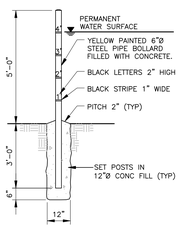
2 / S19A — OUTLET CONTROL STRUCTURE
SCALE: 3/4" = 1'-0"



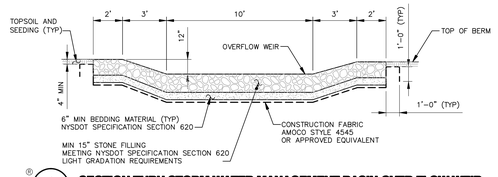
NOTES:

1. EMBANKMENT FILL FOR THE STORM WATER BASIN BERM SHALL CONSIST OF A CLEAN WELL GRADED MIXTURE OF SILT, CLAY,SAND AND GRAVEL WITH NO PARTICLES LARGER THAN 6 INCHES IF SUITABLE, EXCAVATED ON SITE SOILS SHALL BE SELECTIVELY STOCKPILED FOR USE AS EMBANKMENT FILL IN AREAS DESIGNATED BY THE ENGINEER. SOIL SUITABLE FOR USE AS EMBANKMENT FILL SHALL HAVE AT LEAST 40 PERCENT BY WEIGHT FINER THAN THE No. 200 SIEVE AND NO MORE THAN 15 PERCENT BY WEIGHT COARSER THAN THE No. 4 SIEVE. THE FILL SHALL BE FREE OF VEGETATION, ORGANIC MATERIAL AND FROZEN SOIL.
2. ALL AREAS TO BE FILLED SHALL BE FIRST PREPARED BY STRIPPING ALL TOPSOIL AND REMOVING ALL SOFT, WET OR ORGANIC SOIL THAT CANNOT BE COMPACTED BY PROOFROLLING WITH A VIBRATOR ROLLER WEIGHING AT LEAST 10 TONS. PROOFROLLING SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER AND SOIL WHICH CANNOT BE COMPACTED SHALL BE REMOVED.
3. ALL FILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS WHEN LOOSE AND BE COMPACTED TO A DENSITY OF AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM-1557. ROUGH UP SUBGRADE TO BLEND WITH FIRST LIFT. ALL FILL SHALL BE PLACED UNDER THE FULL TIME OBSERVATION OF THE ENGINEER.

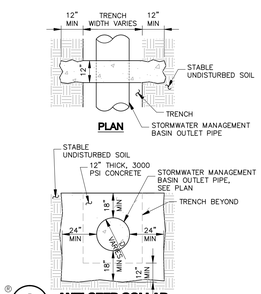
3 / S19A — TYPICAL SECTION THRU OVERFLOW WEIR
SCALE: NOT TO SCALE



6 / S19A — SEDIMENT MARKER
SCALE: NOT TO SCALE



4 / S19A — SECTION THRU STORM WATER MANAGEMENT BASIN OVER FLOW WEIR
SCALE: NOT TO SCALE



5 / S19A — ANTI-SEEP COLLAR
SCALE: 3/4" = 1'-0"

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Planners
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North Country Office: 100 Glen Street, Glens Falls, New York 12801, Phone: (518) 812-0513

rev.	date	description
5	02/26/08	GENERAL REVISIONS PER TOWN AND ACOE COMMENTS
4	9/27/07	REV PER TOWN 5/23/07 COMMENTS
3	2/20/07	REVISED BASIN DETAILS
2	09/15/06	REVISED PER TOWN 07/12/06 COMMENTS
1	3/4/05	REVISED PER TOWN COMMENTS

ELM AVENUE EAST RESIDENTIAL DEVELOPMENT

TYPICAL DETENTION BASIN DETAILS

TOWN OF BETHLEHEM, ALBANY COUNTY, NEW YORK

drawn	checked
CJB	JML
date	scale
12/19/03	AS NOTED
project no.	30337.00
sheet no.	S19A

Drawing Name: S:\J\30300-30399\30337_00\ENG\DWG\01_S19A_30337-00_BASIN DETS.dwg
Xref's Attached: XTB-30377-00-34x44
Date Printed: Aug 26, 2009, 10:32am