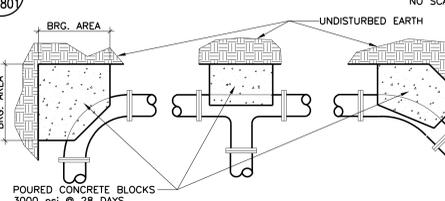


CASTING SCHEDULE		
CATCH BASIN/MANHOLE/RISER	GRATE TYPE (NEENAH)	REMARKS
A,C,D	R-3250-1	STORM SEWER CURB INLET
B	R-2571-A	STORM SEWER AREA DRAIN
E,F,H,M,P,Q,R	R-1642	STORM SEWER MANHOLE COVER
G,J,K,L,N	DOWNSPOUT DRAINS	DRAINS AT BUILDING DOWNSPOUTS, SEE DETAIL 9/C-801
1,2	R-1642	SANITARY SEWER MANHOLE COVER

NOTE:  
 1. CASTINGS SHALL BE NEENAH FOUNDRY CASTINGS OR APPROVED EQUIVALENT, UNLESS NOTED OTHERWISE.  
 2. CASTINGS SHALL BE STAMPED WITH APPROPRIATE UTILITY NAME ("STORM SEWER", "SANITARY SEWER")

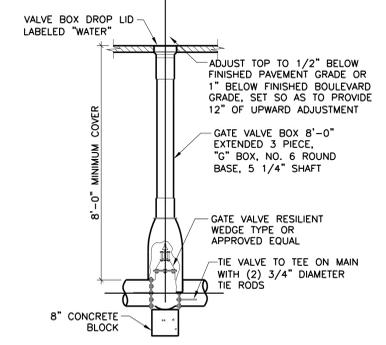
3 CASTING SCHEDULE NO SCALE



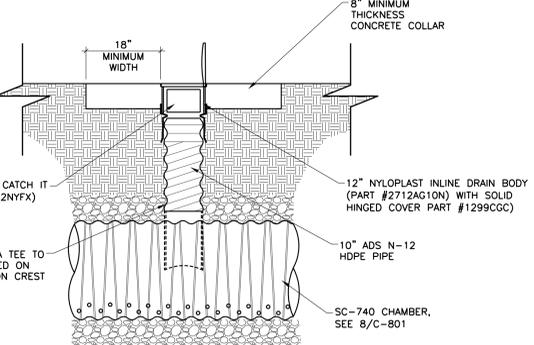
BEARING AREA OF BLOCK IN SQ. FT.			
FITTING SIZE	TEE & END	90° BEND	45° BEND
3"	0.6	0.9	0.5
4"	1.1	1.5	0.8
6"	2.4	3.4	1.9
8"	4.3	6.1	3.3
10"	6.7	9.5	5.2
12"	9.7	13.7	7.4

NOTE:  
 1. CONTRACTOR MAY PROVIDE "MEGALUG" JOINT RESTRAINT AS AN ALTERNATIVE TO CONCRETE THRUST BLOCKS. THE MINIMUM 3 JOINTS EACH SIDE OF FITTING.

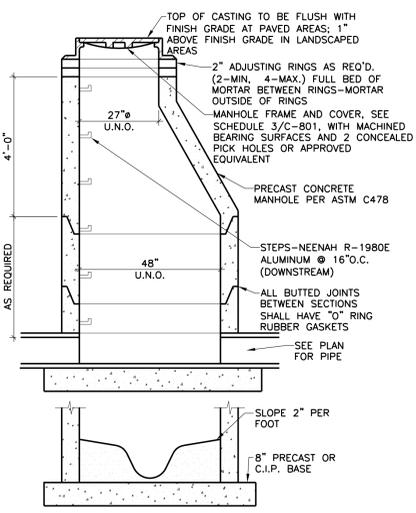
4 TYPICAL THRUST BLOCK DETAIL NO SCALE



5 GATE VALVE AND BOX NO SCALE

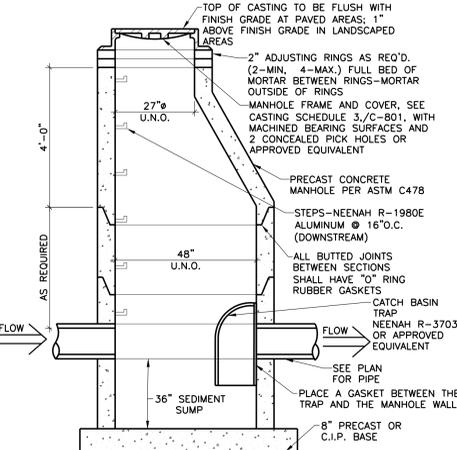


6 STORMTECH INSPECTION PORT DETAIL NO SCALE



NOTES:  
 1. MANHOLES 8" OR DEEPER - THE PRECAST SECTION IMMEDIATELY BELOW THE CONCRETE SECTION SHALL BE 1'-0" HIGH.  
 2. PROVIDE STEPS IN MANHOLES OVER 4'-0" IN DEPTH.  
 3. REINFORCING SHALL BE A MINIMUM OF A SINGLE LINE WIRE FABRIC HAVING AN AREA OF NOT LESS THAN 0.12 SQ. IN. PER FOOT OF HEIGHT.  
 4. PROVIDE SNAP-IN BOOT AT ALL SANITARY SEWER CONNECTIONS TO MANHOLES.  
 5. ALL STORM SEWER PIPING RUNS SHALL USE RESILIENT RUBBER JOINTS AT PIPE CONNECTIONS TO CATCH BASINS FOR WATER TIGHT CONNECTION PER PLUMBING CODE.

1 STANDARD SEWER MANHOLE NO SCALE

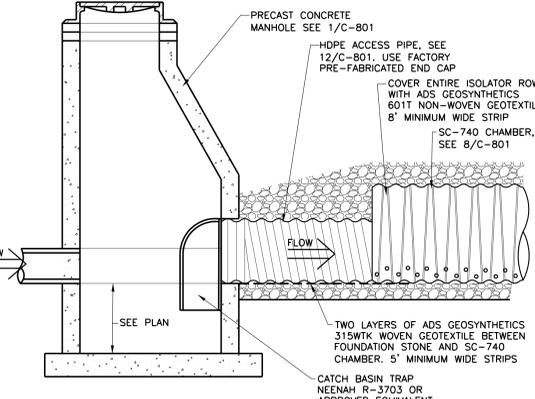


2 CATCH BASIN WITH SUMP NO SCALE

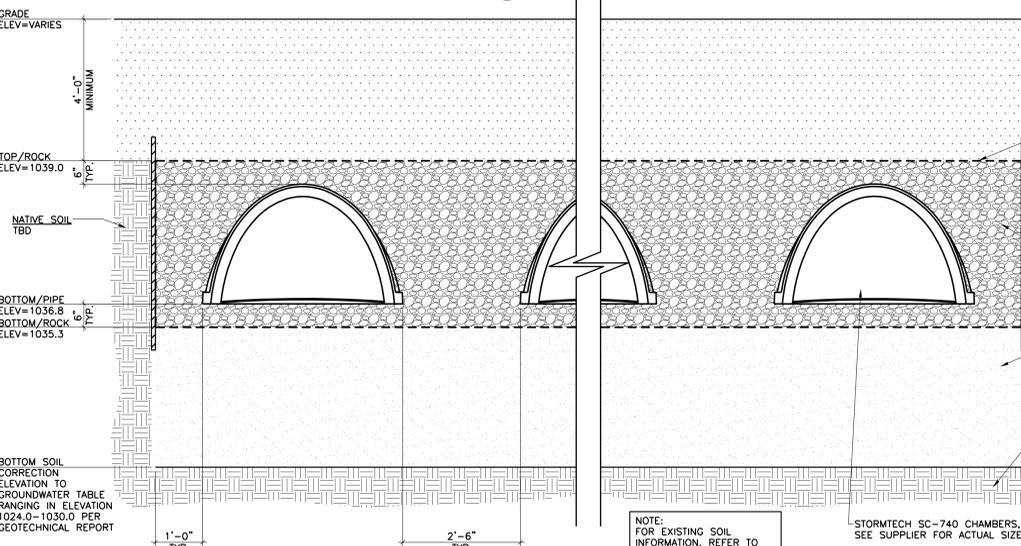
4 TYPICAL THRUST BLOCK DETAIL NO SCALE

5 GATE VALVE AND BOX NO SCALE

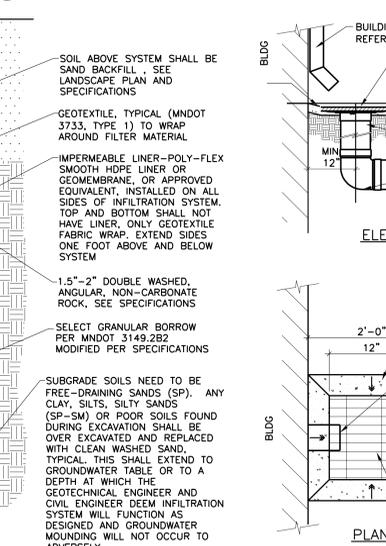
6 STORMTECH INSPECTION PORT DETAIL NO SCALE



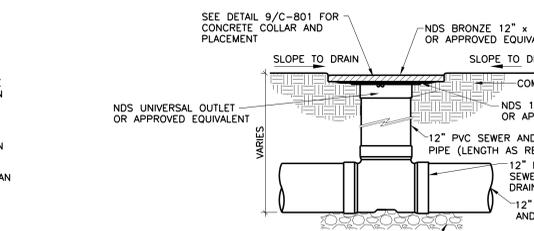
7 STORMTECH ISOLATOR ROW DETAIL NO SCALE



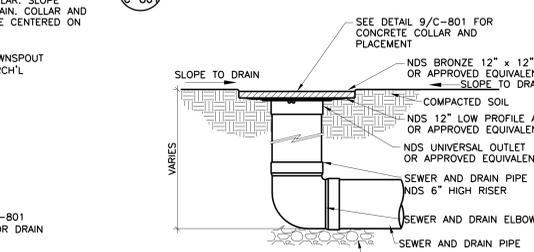
8 UNDERGROUND INFILTRATION SYSTEM - CROSS SECTION STORMTECH NO SCALE



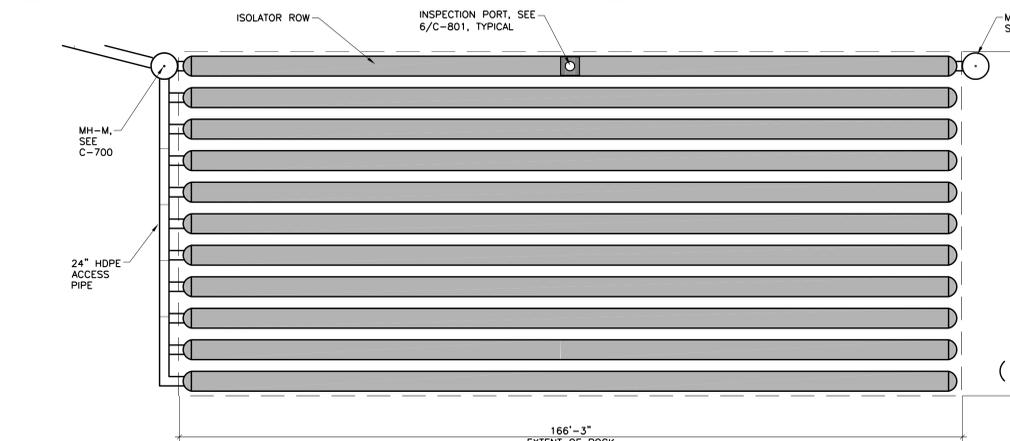
9 AREA DRAIN AT DOWNSPOUT NO SCALE



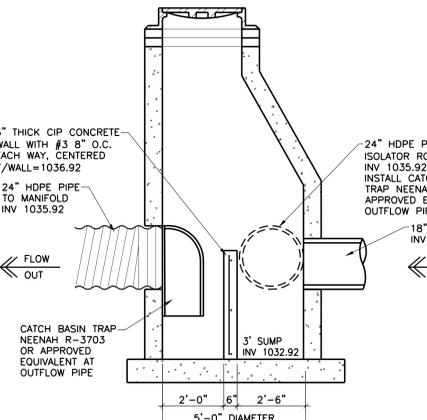
10 12\"/>



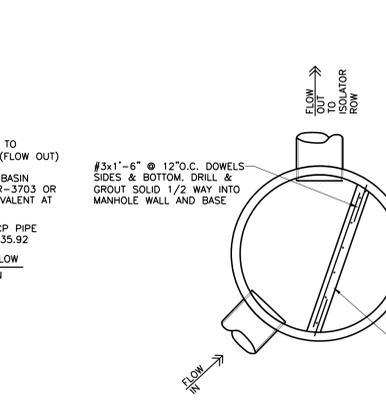
11 12\"/>



12 UNDERGROUND INFILTRATION SYSTEM - PLAN VIEW NO SCALE



13 MANHOLE M SECTION NO SCALE



14 MANHOLE M PLAN VIEW NO SCALE

NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	12/01/10
1	REVISED	07/29/10

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**3.03BT**  
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 6 WEST 6TH STREET SUITE 800H ST. PAUL, MN 55102 (651) 788-7461

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**Rhonda S. Poire**  
 Licensed Professional Engineer under the laws of the State of Minnesota.  
 Date: 11/05/2015 Reg. No. 41333

APPROVED SERVICE LINE DESIGN	APPROVED INSPECTION CONTROL BOARD	DATE

PROJECT NO.	DATE
CIVIL DETAILS	
ST. CLOUD VA M.C. COMMUNITY LIVING CENTER COTTAGE #2	
PROJECT NO.	656-342
SCALE	RSP ALA

**St. Cloud VA Health Care System**  
 Brainerd | Montevideo | Alexandria  
 VA MEDICAL CENTER ST. CLOUD, MN 56303