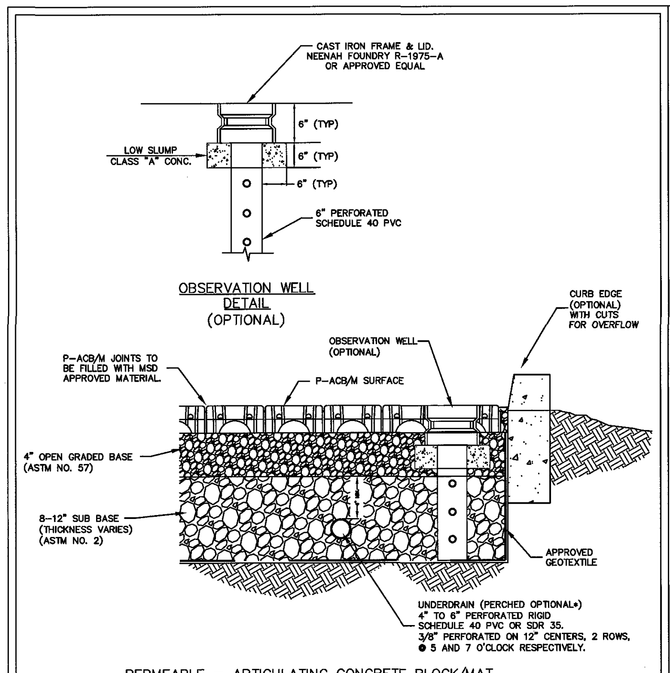


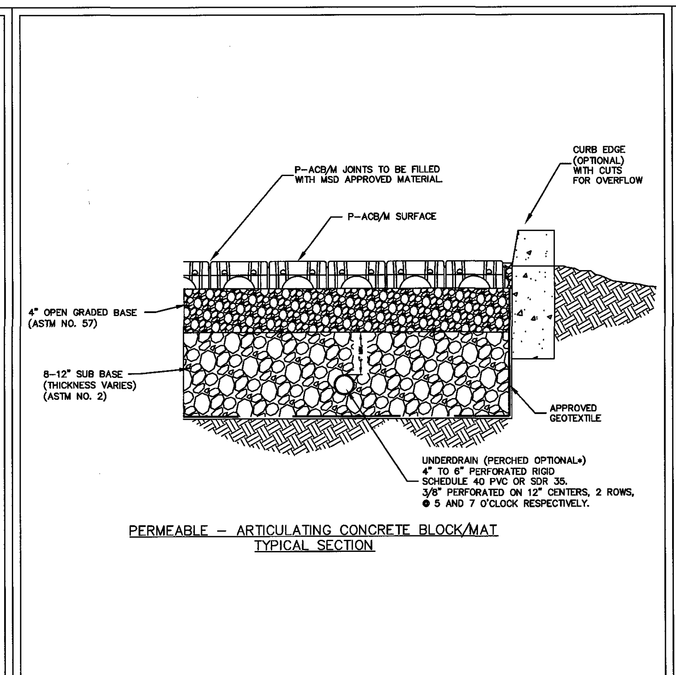
OBSERVATION WELL DETAIL (OPTIONAL)

PERMEABLE – ARTICULATING CONCRETE BLOCK/MAT TYPICAL SECTION

- THE NEED FOR A PERCHED UNDERDRAIN IS OPTIONAL AND IS DEPENDENT ON THE INFILTRATION RATE OF THE SUBGRADE SOIL. PLASTIC SOILS SHOULD NOT PERCH THE UNDERDRAIN. THE HORIZONTAL AND VERTICAL LOCATION OF ALL UNDERDRAINS SHALL BE DETERMINED BY THE ENGINEER, AND SHOWN ON THE PLANS.
- ADDITIONAL UNDERDRAINS MAY BE PERCHED ABOVE THE REQUIRED STORAGE ELEVATION AND WITHIN THE STORAGE BED IN ORDER TO PROTECT THE PAVER BLOCKS FROM UPFLOWS RESULTING FROM SURCHARGE.

PAVEDRAIN STANDARD DETAIL — CROSS-SECTION — OBSERVATION WELL — SOUTH'R

PAVE — 6880 W. ABBOTT AVE. GREENFIELD, WI. 53220 (414) 425-8151 WWW.PAVEDRAIN.COM



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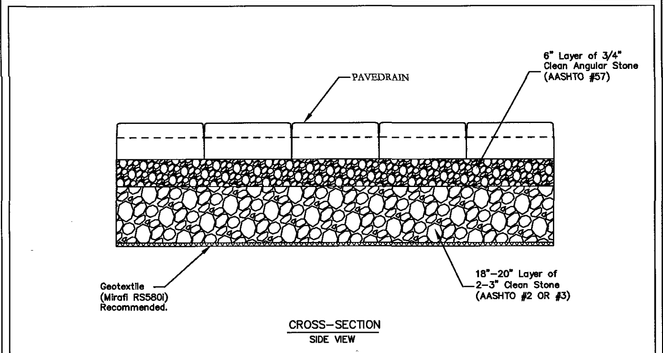
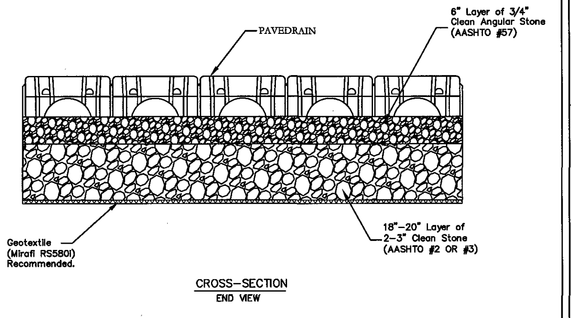
PAVEDRAIN STANDARD DETAIL — CROSS-SECTION — ROOF DRAIN

PAVE — 6880 W. ABBOTT AVE. GREENFIELD, WI. 53220 (414) 425-8151 WWW.PAVEDRAIN.COM



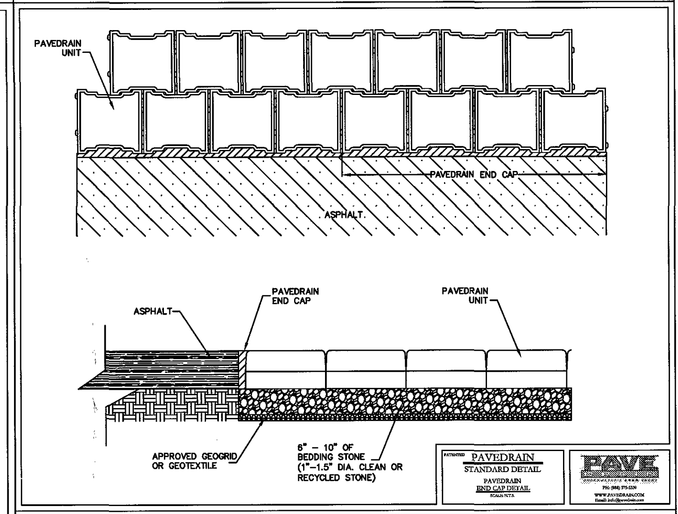
CROSS-SECTION
SIDE VIEW



CROSS-SECTION
END VIEW

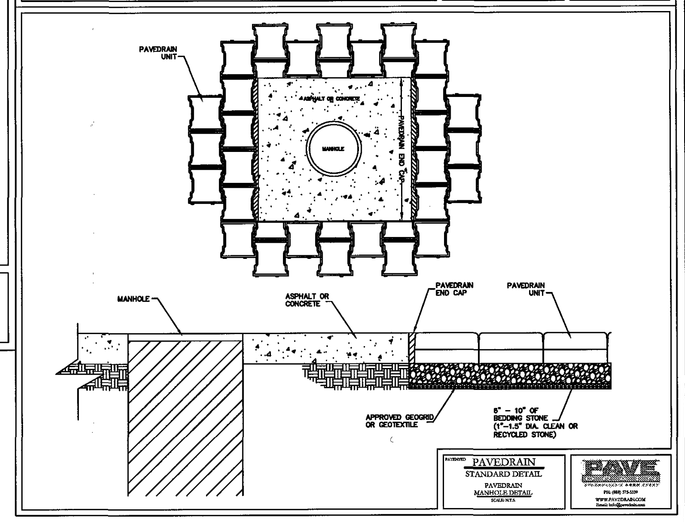
PAVEDRAIN STANDARD DETAIL — CROSS-SECTIONS — WWW.PAVEDRAIN.COM

PAVE — 6880 W. ABBOTT AVE. GREENFIELD, WI. 53220 (414) 425-8151 WWW.PAVEDRAIN.COM



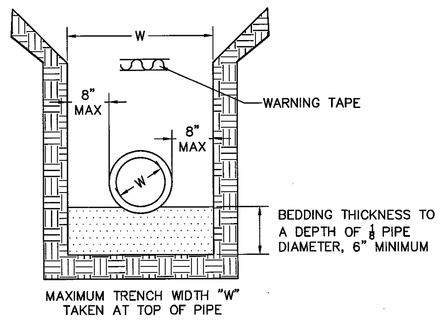
PAVEDRAIN STANDARD DETAIL — PAVEDRAIN END CAP DETAILS — WWW.PAVEDRAIN.COM

PAVE — 6880 W. ABBOTT AVE. GREENFIELD, WI. 53220 (414) 425-8151 WWW.PAVEDRAIN.COM



PAVEDRAIN STANDARD DETAIL — MANHOLE OR CATCH BASIN — WWW.PAVEDRAIN.COM

PAVE — 6880 W. ABBOTT AVE. GREENFIELD, WI. 53220 (414) 425-8151 WWW.PAVEDRAIN.COM

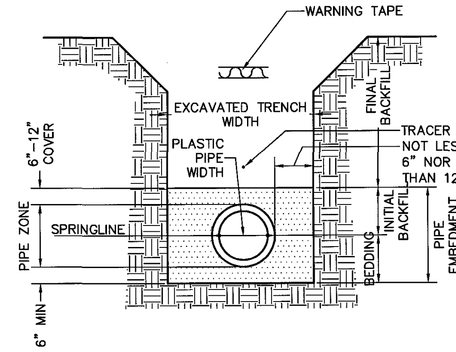


MAXIMUM TRENCH WIDTH "W" TAKEN AT TOP OF PIPE

NOTES:
1. BEDDING SHALL BE PROVIDED IN ACCORDANCE WITH THE SPECIFICATIONS.
2. ABOVE DETAIL APPLIES TO ALL STORM, SANITARY SEWER, AND WATER PIPING.

TRENCH CROSS SECTION FOR NON-PLASTIC PIPE

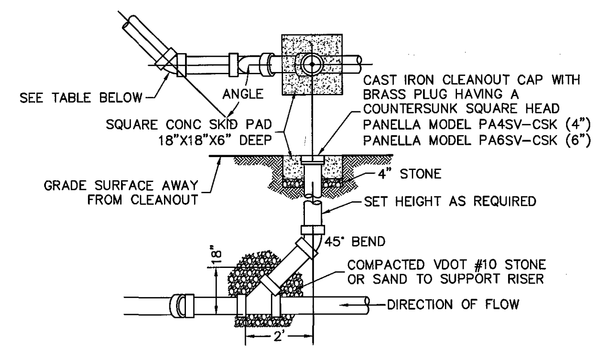
NO SCALE



NOTES:
1. BEDDING SHALL BE PROVIDED IN ACCORDANCE WITH THE SPECIFICATIONS.
2. ABOVE DETAIL APPLIES TO ALL STORM, SANITARY SEWER, AND WATER PIPING.

TRENCH CROSS SECTION FOR PLASTIC PIPE

NO SCALE

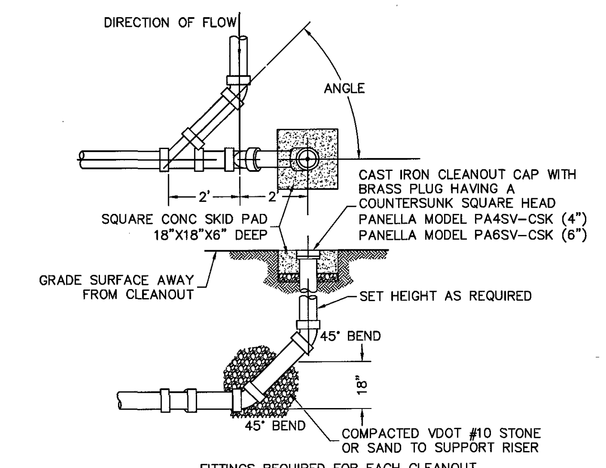


FITTINGS REQUIRED FOR EACH CLEANOUT

	∅	WYE	45° BEND	22½° BEND	CLEANOUT ADAPT
STRAIGHT	0	1	1	0	0
	11 1/4"	1	1	0	1
	22 1/2"	1	1	1	0
	33 3/4"	1	1	1	1
	45°	1	2	0	0

CLEANOUT DETAIL (FOR BENDS LESS THAN 45°)

NO SCALE

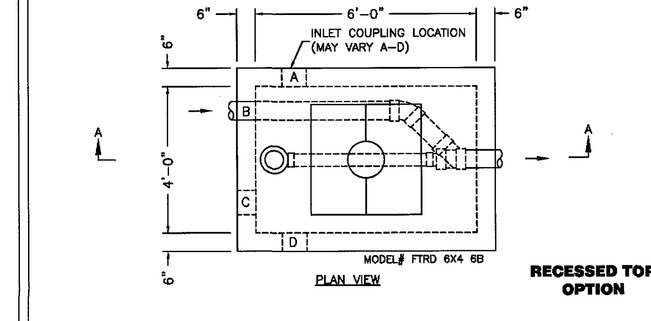


FITTINGS REQUIRED FOR EACH CLEANOUT

	ANGLE	WYE	45° BEND	22½° BEND	11¼° BEND	CLEANOUT ADAPT
BEND	56 1/4"	1	2	0	1	1
	67 1/2"	1	2	1	0	1
	78 3/4"	1	2	1	1	1
	90°	1	3	0	0	1

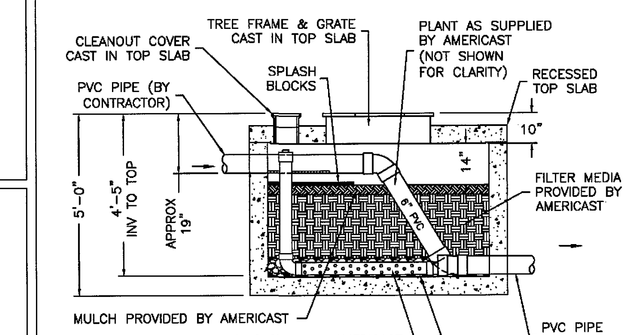
CLEANOUT DETAIL (FOR BENDS 45° OR MORE)

NO SCALE



PLAN VIEW

RECESSED TOP OPTION



SECTION A–A

MODIFICATIONS OF DRAWINGS ARE ONLY PERMITTED BY WRITTEN AUTHORIZATION FROM FILTERRA

DRAWING AVAILABLE IN TIF FILE FORMAT.

AMERICAST — Copyright © 2007 by Americast

DATE: 03-23-10 DWG: FTRD 6x4 6B

6x4' PRECAST FILTERRA® ROOF DRAIN CONFIGURATION WITH 6" PVC PIPED IN

filterra® US PAT. 6,277,274 AND 6,569,321

FILTERRA SCHEDULE

STRUCTURE	SIZE	NOTES	OUTLET PIPE ∅	FILTERRA INV IN	FILTERRA INV OUT	FILTERRA TOP
F1	6' X 4'	RECESSED LID	6"	1047.90	1045.08	1049.50
F2	6' X 4'	RECESSED LID	6"	1047.90	1045.08	1049.50

FILTERRA STANDARD PLAN NOTES

CONSTRUCTION & INSTALLATION

A. EACH UNIT SHALL BE CONSTRUCTED AT THE LOCATIONS AND ELEVATIONS ACCORDING TO THE SIZES SHOWN ON THE APPROVED DRAWINGS. ANY MODIFICATIONS TO THE ELEVATION OR LOCATION SHALL BE AT THE DIRECTION AND APPROVAL OF THE ENGINEER.

B. IF THE FILTERRA®IS STORED BEFORE INSTALLATION, THE TOP SLAB MUST BE PLACED ON THE BOX USING THE 2X4 WOOD PROVIDED, TO PREVENT ANY CONTAMINATION FROM THE SITE. ALL INTERNAL FITTINGS SUPPLIED (IF ANY), MUST BE LEFT IN PLACE AS PER THE DELIVERY.

C. THE UNIT SHALL BE PLACED ON A COMPACTED SUB-GRADE WITH A MINIMUM 6-INCH GRAVEL BASE MATCHING THE FINAL GRADE OF THE CURB LINE IN THE AREA OF THE UNIT. THE UNIT SHALL BE PLACED SUCH THAT THE UNIT AND TOP SLAB MATCH THE GRADE OF THE CURB IN THE AREA OF THE UNIT. COMPACT UNDISTURBED SUB-GRADE MATERIALS TO 95% OF MAXIMUM DENSITY AT +1-2% OF OPTIMUM MOISTURE. UNSUITABLE MATERIAL BELOW SUB-GRADE SHALL BE REPLACED TO THE SITE ENGINEER'S APPROVAL.

D. OUTLET CONNECTIONS SHALL BE ALIGNED AND SEALED TO MEET THE APPROVED DRAWINGS WITH MODIFICATIONS NECESSARY TO MEET SITE CONDITIONS AND LOCAL REGULATIONS.

E. ONCE THE UNIT IS SET, THE INTERNAL WOODEN FORMS AND PROTECTIVE MESH COVER MUST BE LEFT INTACT. REMOVE ONLY THE TEMPORARY WOODEN SHIPPING BLOCKS BETWEEN THE BOX AND TOP SLAB. THE TOP LID SHOULD BE SEALED ONTO THE BOX SECTION BEFORE BACKFILLING, USING A NONSHRINK GROUT, BUTYL RUBBER OR SIMILAR WATERPROOF SEAL. THE BOARDS ON TOP OF THE LID AND BOARDS SEALED IN THE UNIT'S THROAT MUST NOT BE REMOVED. THE SUPPLIER (AMERICAST OR ITS AUTHORIZED DEALER) WILL REMOVE THESE SECTIONS AT THE TIME OF ACTIVATION. BACKFILLING SHOULD BE PERFORMED IN A CAREFUL MANNER, BRINGING THE APPROPRIATE FILL MATERIAL UP IN 6"LIFTS ON ALL SIDES. PRECAST SECTIONS SHALL BE SET IN A MANNER THAT WILL RESULT IN A WATERTIGHT JOINT. IN ALL INSTANCES, INSTALLATION OF FILTERRA®UNIT SHALL CONFORM TO ASTM SPECIFICATION C891 'STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST UTILITY STRUCTURES', UNLESS DIRECTED OTHERWISE IN CONTRACT DOCUMENTS.

F. CURB AND GUTTER CONSTRUCTION (WHERE PRESENT) SHALL ENSURE THAT THE FLOW-LINE OF THE FILTERRA®UNITS IS AT A GREATER ELEVATION THAN THE FLOW-LINE OF THE BYPASS STRUCTURE OR RELIEF (DROP INLET, CURB CUT OR SIMILAR). FAILURE TO COMPLY WITH THIS GUIDELINE MAY CAUSE FAILURE AND/OR DAMAGE TO THE FILTERRA®ENVIRONMENTAL DEVICE.

G. EACH FILTERRA®UNIT MUST RECEIVE ADEQUATE IRRIGATION TO ENSURE SURVIVAL OF THE LIVING SYSTEM DURING PERIODS OF DRIER WEATHER. THIS MAY BE ACHIEVED THROUGH GUTTER FLOW OR THROUGH THE TREE GRATE.

ACTIVATION

A. ACTIVATION OF THE FILTERRA®UNIT IS PERFORMED ONLY BY THE SUPPLIER. PURCHASER IS RESPONSIBLE FOR FILTERRA® INLET PROTECTION AND SUBSEQUENT CLEAN OUT COST. THIS PROCESS CANNOT COMMENCE UNTIL THE PROJECT SITE IS FULLY STABILIZED AND CLEANED (FULL LANDSCAPING, GRASS COVER, FINAL PAVING AND STREET SWEEPING COMPLETED), NEGATING THE CHANCE OF CONSTRUCTION MATERIALS CONTAMINATING THE FILTERRA®SYSTEM. CARE SHALL BE TAKEN DURING CONSTRUCTION NOT TO DAMAGE THE PROTECTIVE THROAT AND TOP PLATES.

B. ACTIVATION INCLUDES INSTALLATION OF PLANT(S) AND MULCH LAYERS AS NECESSARY.

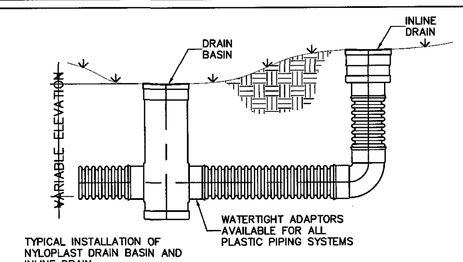
MAINTENANCE

A. EACH CORRECTLY INSTALLED FILTERRA®UNIT IS TO BE MAINTAINED BY THE SUPPLIER, OR A SUPPLIER APPROVED CONTRACTOR FOR A MINIMUM PERIOD OF 1 YEAR. THE COST OF THIS SERVICE IS TO BE INCLUDED IN THE PRICE OF EACH FILTERRA®UNIT. EXTENDED MAINTENANCE CONTRACTS ARE AVAILABLE AT EXTRA COST UPON REQUEST.

B. ANNUAL MAINTENANCE CONSISTS OF A MAXIMUM OF (2) SCHEDULED VISITS. THE VISITS ARE SCHEDULED SEASONALLY; THE SPRING VISIT AIMS TO CLEAN UP AFTER WINTER LOADS INCLUDING SALTS AND SANDS. THE FALL VISIT HELPS THE SYSTEM BY REMOVING EXCESSIVE LEAF LITTER.

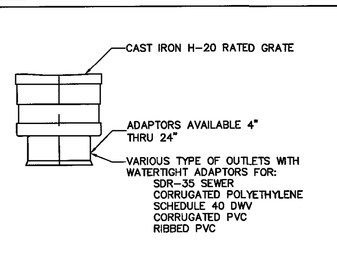
C. EACH MAINTENANCE VISIT CONSISTS OF THE FOLLOWING TASKS.
1. FILTERRA®UNIT INSPECTION
2. FOREIGN DEBRIS, SILT, MULCH & TRASH REMOVAL
3. FILTER MEDIA EVALUATION AND RECHARGE AS NECESSARY
4. PLANT HEALTH EVALUATION AND PRUNING OR REPLACEMENT AS NECESSARY
5. REPLACEMENT OF MULCH
6. DISPOSAL OF ALL MAINTENANCE REFUSE ITEMS
7. MAINTENANCE RECORDS UPDATED AND STORED (REPORTS AVAILABLE UPON REQUEST)

D. THE BEGINNING AND ENDING DATE OF SUPPLIER'S OBLIGATION TO MAINTAIN THE INSTALLED SYSTEM SHALL BE DETERMINED BY THE SUPPLIER AT THE TIME THE SYSTEM IS ACTIVATED. OWNERS MUST PROMPTLY NOTIFY THE SUPPLIER OF ANY DAMAGE TO THE PLANT(S), WHICH CONSTITUTE(S) AN INTEGRAL PART OF THE BIORETENTION TECHNOLOGY.

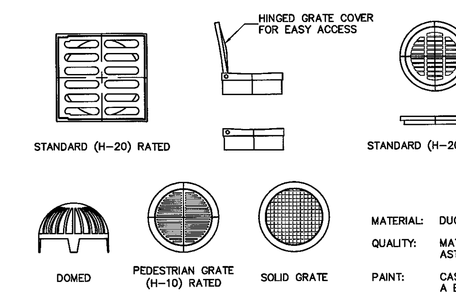


TYPICAL INSTALLATION OF NYLOPLAST DRAIN BASIN AND INLINE DRAIN

TYPICAL INSTALLATIONS

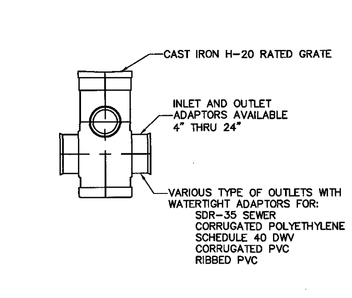


INLINE DRAIN



MATERIAL: DUCTILE IRON
QUALITY: MATERIAL SHALL CONFROM TO ASTM A48 – CLASS 30B
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT

CAST IRON GRATES



DRAIN BASIN

NYLOPLAST YARD DRAIN DETAILS

NO SCALE

COMMONWEALTH OF VIRGINIA — WILLIAM A. SHELTON — Lic. No. 031651 — 8/22/14 — PROFESSIONAL ENGINEER

OWPR — ARCHITECTS AND ENGINEERS

#	DESCRIPTION	DATE
4	90% DOCUMENTS FOR REVIEW	08/15/2014

Addition & Renovation
CITY OF ROANOKE

RALEIGH COURT BRANCH

2112 GRANDIN ROAD SW, VIRGINIA 24015

PROJECT NO: 14001

SCALE: AS INDICATED

STORM DRAINAGE DETAILS

C3.3

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Suite 300
Cleveland, Ohio
44113
t: 216.241.1100
www.HBMarchitects.com

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BM Shelton – C:\Users\bshelton\Desktop\Civil\Dwg\1414 SHEETS – C3 GRADE & STORM.dwg – Fri, 22 Aug, 2014 – 9:35