

INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES

COF Contract Number: _____ - _____ Map: 079K,
Stormwater & Grading Permit # _____ COF # 6301 Map & Parcel No.: Parcel: 00400

Project Name & Address: Sudsys's Car Wash located at 1451 Murfreesboro Road,
Franklin, TN 37067

THIS AGREEMENT, made this ____ day of _____, 20____, by and between Sudsys Car Wash Inc.
hereinafter referred to as the "OWNER(S)" of the referenced property and City of Franklin, Tennessee, hereinafter referred
to as the "CITY",

WITNESSETH

WE, the OWNER(S), with full authority to execute deeds, mortgages, other covenants, all rights, titles, and interests
in the property described above, do hereby covenant with the CITY and agree as follows:

1. The OWNER(S) covenant and agree with the CITY that OWNER(S) shall provide for adequate long term maintenance and continuation of the stormwater control measures described in the Long Term Maintenance Plan and shown in the location map, deed of easement drawing or plat attached hereto to ensure that the facilities, are and remain in proper working condition in accordance with approved design standards, rules and regulations, and applicable laws. The OWNER(S) shall perform preventative maintenance activities at intervals described in the schedule included in the Long Term Maintenance Plan with necessary landscaping (grass cutting, etc.) and trash removal as part of regular maintenance.
2. The OWNER(S) shall submit to the CITY an annual report by July 1st of each year. The report will include the Long Term Maintenance Plan that document inspection schedule, times of inspection, remedial actions taken to repair, modify or reconstruct the system and the state of control measures.
3. The OWNER(S) shall grant to the CITY or its agent or contractor the right of entry at reasonable times and in a reasonable manner for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining or repairing the facility.
4. The OWNER(S) shall grant to the CITY the necessary easements and rights-of-way and maintain perpetual access from public rights-of-way to the facility for the CITY or its agent and contractor in accordance with the Stormwater Management Ordinance. The OWNER(S) agree that should maintenance not be properly performed, after due notice, the CITY may order the work performed. The OWNER(S) shall reimburse the CITY upon demand the costs incurred and any enforcement action costs according to the Stormwater Management Ordinance and is due upon receipt.
5. The CITY is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the CITY.
6. If the OWNER fails to pay the CITY for the above expenses after forty-five (45) days written notice, the OWNER authorizes the CITY to collect said expenses from the OWNER through appropriate legal action and the OWNER shall be liable for the reasonable expenses of collection, court cost, and attorney fees.
7. The OWNER(S) shall indemnify and save the CITY harmless from any and all claims for damages to persons or property arising from OWNER(S) actions or inaction relating to the construction, maintenance, and use of the facility.
8. The Agreement and covenants contained herein shall apply to and bind the OWNER(S) and the OWNER(S)' heirs, executors, successors, and assigns, and shall bind all present and subsequent owners of the property served by the facility.
9. The OWNER(S) shall not be able to modify its responsibilities with respect to this agreement without the CITY's written prior consent. Nothing herein shall be construed to prohibit a transfer by OWNER(S) to subsequent owners and assigns.
10. The OWNER(S) shall record a plat showing and accurately defining the easements for stormwater control facilities. The plat must reference the Instrument Number where this AGREEMENT and attachments are recorded and contain a note that the OWNER(S) is responsible for maintaining the stormwater management facilities.
11. The OWNER(S) shall record this AGREEMENT in the office of the Register of Deeds for the County of Williamson, Tennessee, and the AGREEMENT shall constitute a covenant running with the land, and shall be binding upon the OWNER(S) and the OWNER(S) heirs, administrators, executors, assigns, and any other successors in interest.

ATTEST:

FOR THE OWNER(S):

OWNER NAME

PRINT OWNER NAME

Title

OWNER ADDRESS

OWNER ADDRESS

PHONE NUMBER

REVIEWED BY:

**FOR THE CITY OF FRANKLIN,
DEPARTMENT OF ENGINEERING**

ATTEST:

_____ Date _____

PREPARED BY:
CITY OF FRANKLIN,
DEPARTMENT OF ENGINEERING
CITY HALL MALL
109 3rd AVENUE SOUTH
FRANKLIN, TN 37064

FOR THE OWNER(S):

STATE OF _____

COUNTY OF _____

Before me, _____ of the state and county mentioned, personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who, upon oath, acknowledged such person to be president (or other officer authorized to execute the instrument) of _____, the within named bargainor, a corporation, and that such president or officer as such _____, executed the foregoing instrument for the purpose therein contained, by personally signing the name of the corporation as _____

WITNESS my hand and seal this _____ day of _____, 20____.

NOTARY PUBLIC

My Commission Expires: _____

FOR THE CITY OF FRANKLIN:

STATE OF TENNESSEE

COUNTY OF WILLIAMSON

Before me, _____ of the state and county mentioned, personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledge themselves to be the Stormwater Management Coordinator of the City of Franklin, Tennessee and that as such Stormwater Management Coordinator, being authorized so to do, executed the foregoing instrument of the purposes therein contained.

WITNESS my hand and seal this _____ day of _____, 20____.

NOTARY PUBLIC

My Commission Expires: _____

Executive Summary

This Long Term Maintenance Plan (**LTMP** or **Plan**) describes the stormwater management and drainage system for the Sudsy's Car Wash site located at 1451 Murfreesboro Road, Franklin, Tennessee at the intersection of Highway 96 (Murfreesboro Road) and Quail Hollow Circle. It establishes inspection and maintenance schedules to insure the stormwater management and drainage system continues to function as designed and documented in the Stormwater Management Plan and in the Civil Construction drawings prepared for the site. As required by the City of Franklin, a post construction annual inspection report documenting the condition of the stormwater management and drainage system as well as the inspections and maintenance performed on the system is due to the City of Franklin Engineering Department no later than July 1st of each year.

System Description

The site consists of an automatized car wash building, queuing lanes, pay stations, landscaped islands, sidewalks, catch basins, underground stormwater pipe network, and a parking lot. In the parking lot, certain parking spaces have access to permanently installed vacuum cleaners. The site is bounded on the north and west side by a long retaining wall, and to the south and east sides by Quail Hollow Circle, and Highway 96 (Murfreesboro Road) respectively. Beyond the retaining wall to the west are stream buffers that for the pond on the adjacent property.

Stormwater falling on the parking lot, landscape islands, and queuing lanes is detained and treated onsite with Permeable Pavers, and an Underground Detention Pond. Catch basins installed in the curb line collect the stormwater runoff that does not infiltrate through the permeable pavers and conveys it to the underground storm pipe network which in turn conveys it to the underground detention pond. The underground detention pond is an ADS StormTech pond system with an Isolator Row. This Isolator Row is the first row of the pond and it filters stormwater entering the pond through a filter fabric lining the bottom of the row. Below the filter fabric and below the remaining rows of the underground detention pond is a rock layer that can be used to detain stormwater as well as promote infiltration on site. Stormwater infiltrating into the permeable pavers will be filtered by the pavers and detained within the rock layers below the pavers. An underdrain system at the bottom of the rock layers collects the stormwater and conveys it to the underground storm pipe network which in turn conveys it to the underground detention pond. From the detention pond, stormwater is discharged under/through the retaining wall to a Level Spreader that returns concentrated flow to sheet flow as it enters the adjacent Zone 2 stream buffer, and eventually flows to the existing pond on the adjacent property.

Stormwater falling on the automatized car wash building and the grassed area between the building and Highway 96 (Murfreesboro Road) is detained and treated in a Water Quality Swale. At the end of the water quality swale, stormwater flows down a steeper rip-rapped slope to a second Level Spreader that returns concentrated flow to sheet flow as it enters the adjacent Zone 2 stream buffer, and, eventually flows to the existing pond on the adjacent property.

The elements of the stormwater system have been designed based on the City of Franklin's Green Infrastructure Practices (GIPs). Below are the corresponding GIP numbers for each element;

- Permeable Pavers (Level 2): GIP-03
- Dry Pond / Extended Detention: GIP-06
- Water Quality Swale (Level 1): GIP-05
- Level Spreader: GIP-07
- Water Resources Buffers

This location of the drainage system and these elements can be seen on the attached exhibit that highlights the GIPs and components of the system.

Additionally, a large component of the stormwater management system is maintaining the landscaping onsite as shown in the approved site landscape plan.

Copies of the, Site Plan, Grading Plan, Storm water Management Plan, and Landscape Plan prepared for the site are attached.

Inspection and Maintenance:

The overall stormwater system, water resource buffers, and each GIP element of the system are to be inspected quarterly and after every 2-inch or greater rainfall event. An annual inspection report summarizing the quarterly inspections, maintenance performed on the system, and documenting the conditions of the GIPs is required by the City of Franklin. This annual report is due to the cities' engineering department by July 1st of each year.

The quarterly inspections should be performed by staff familiar with the site using the inspection forms attached to this report and walking the site to visually inspect each component of the stormwater management system. Copies of the attached forms should be made and a fresh copy completed during each inspection event. After being completed the inspection forms, and any concerns or recommendations for maintenance or housekeeping noted during the inspection, will be reviewed by Sudsy's management. Upon review of inspection forms, Sudsy's management will take appropriate action to address the concerns and recommendations noted.

Once completed, the inspection forms are to be maintained onsite in an orderly manner and be made available to Sudsy's Management and or the City of Franklin Engineering staff if requested, as well as, be made available when preparing the yearly inspection report.

Annual inspection reports are to be completed by a competent professional knowledgeable of stormwater systems, their function, and their design intent. The annual inspection should include a review of this Long Term Maintenance Plan (LTMP), the completed quarterly inspection report forms, a summary and review of any maintenance performed that year, and a thorough inspection of the site and elements of the stormwater system. Any revisions needed to this plan should be made

THERE SHALL BE NO MOWING, CLEARING, GRADING, CONSTRUCTION, STORAGE, OR DISTURBANCE OF VEGETATION OF ANY KIND EXCEPT AS PERMITTED BY THE CITY ENGINEER

and noted as revisions to this LTMP and a copy of the revised plan be submitted to the City of Franklin along with the annual report.

All trash, sediments, and any other pollutants collected in the stormwater system are to be disposed of at an approved landfill or disposal site in accordance with the City of Franklin, and TDEC regulations.

Plan Revisions

This plan shall be updated as necessary to insure that the discharge requirements of the City of Franklin are being met. Revisions are to be recorded in the following places.

DATE REVISED

ITEMS REVISED

LONG TERM MAINTENANCE PLAN (LTMP) AND AGREEMENT

(project name/subdivision/section, lot #)

**CITY OF FRANKLIN
WILLIAMSON COUNTY, TENNESSEE**

MAP & PARCEL #:

COF #:

LAT/LONG:

PREPARED BY & CONTACT INFO:

OWNER'S CONTACT INFO:

Name & Company:

Address:

Phone:

Email:

Owner shall submit Annual Inspection Reports to the City of Franklin's Engineering Dept. no later than July 1st of each year*STORMWATER SYSTEM FEATURES LOCATED ON SITE:**

Urban Bioretention/Rain Gardens	Infiltration Trenches	Dry Ponds
Water Quality Swales	Grass Swales	Wet Ponds
Oil Grit Separator/Water Quality Unit	Riparian Buffers	Wetland
Permeable Pavers/Concrete	Green Roof	Storm Sewer
Underground Detention	Other	

IMPERVIOUS SQ. FT. |

ALL OF THE FOLLOWING DOCUMENTS SHALL BE ATTACHED AND INCLUDED WITH THIS FORM:

Location Map

Stormwater Features Location Sheet: include detailed exhibits of the BMP's and a site map showing the location of all BMP's and stream buffers: CLEARLY LABELED

Oil Grit Separator/Water Quality Unit 2 year maintenance agreement

Maintenance narrative & description of each BMP to be inspected

BMP inspection and maintenance form for each BMP located on site

AS-BUILTS:

Upon completion of the site construction, as-built drawings of the stormwater controls will be provided to the City of Franklin Engineering Department for verification.

MAINTENANCE AGREEMENT

A copy of the inspection and Maintenance Agreement of Private Stormwater Management Facilities shall be completed, notarized and recorded in the Land Records of the County of Williamson, Tennessee with the document.

ACCESS

As agreed to with the Inspection and Maintenance Agreement, the owner shall grant to the City of Franklin or its agent or contractor the right of entry at reasonable times and in a reasonable manner for the purpose of inspecting, operation, installing, constructing, reconstructing, maintain, or repairing the facility.

WASTE DISPOSAL:

Trash and debris collected from the stormwater sewer system shall be properly disposed with a licensed sanitation company. All sediment and debris shall be disposed at a licensed landfill in accordance with all local, state, and federal laws. If any sediment is believed to be contaminate, the Tennessee Department of Environment and Conservation (TDEC)-Division of Water Pollution Control should be contacted at (615)-532-0625.

CERTIFICATION:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

PRINT NAME:

SIGNATURE:

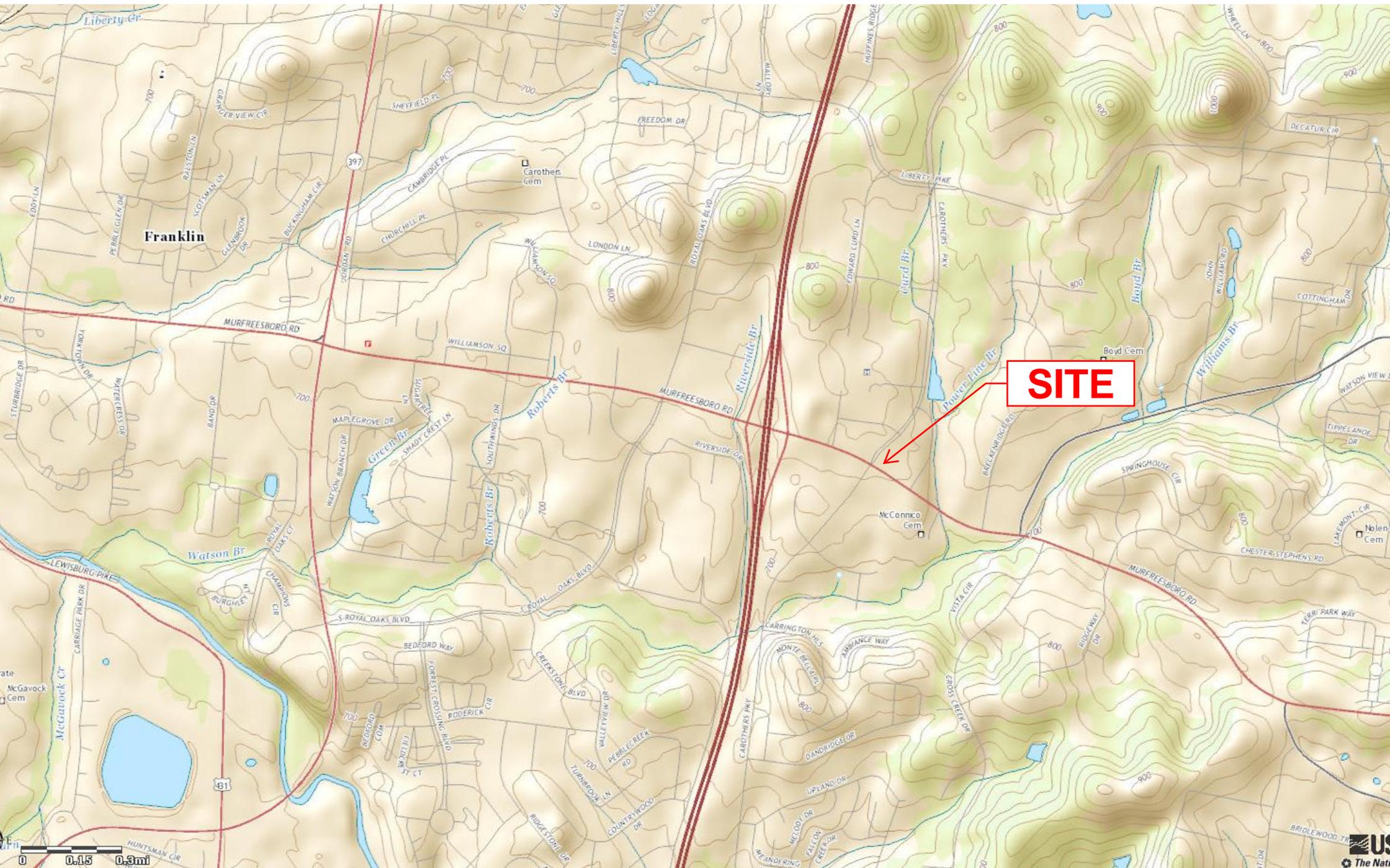
DATE:

APPENDIX A

LOCATION MAPS AND AND SITE PLANS

Sudsys - Car Wash - Vin Map

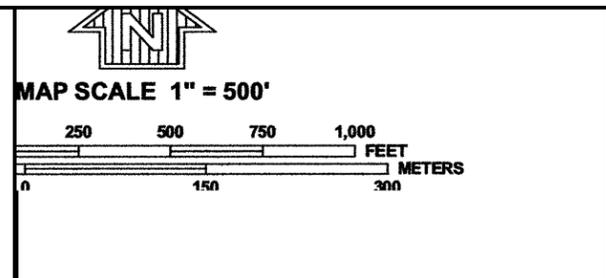
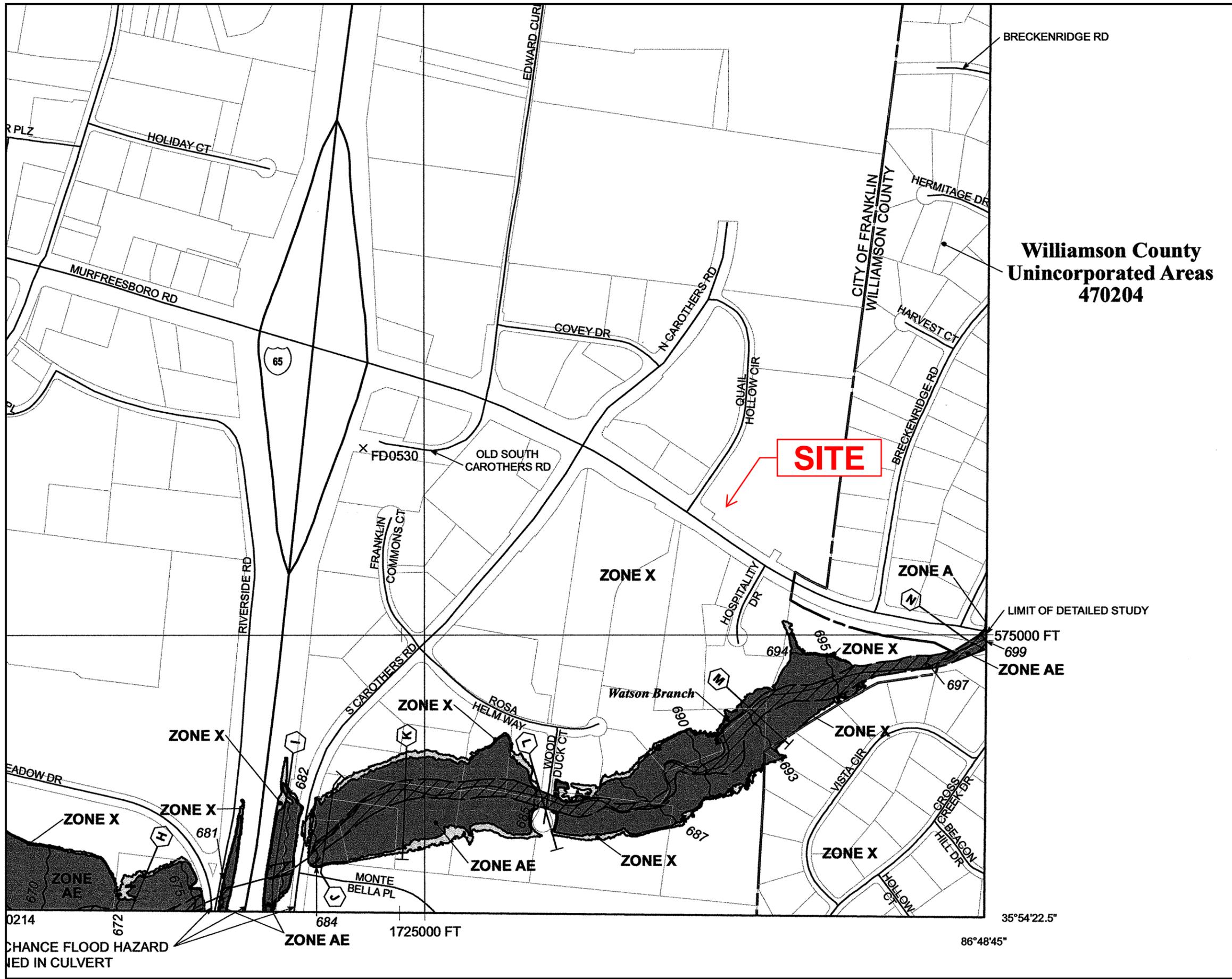
NOTES: Data available from U.S. Geological Survey, National Geospatial Program.



Sudsys - Car Wash - Aerial Map

NOTES: Data available from U.S. Geological Survey, National Geospatial Program.





PANEL 0212F

**Williamson County
Unincorporated Areas
470204**

FIRM
FLOOD INSURANCE RATE MAP
**WILLIAMSON COUNTY,
TENNESSEE**
AND INCORPORATED AREAS

PANEL 212 OF 485
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRANKLIN, CITY OF	470206	0212	F
WILLIAMSON COUNTY	470204	0212	F

BEST AVAILABLE COPY
AT THIS TIME

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



**MAP NUMBER
47187C0212F**
**MAP REVISED
SEPTEMBER 29, 2006**

Federal Emergency Management Agency

0214 672 684 1725000 FT 35°54'22.5" 86°48'45"

CHANCE FLOOD HAZARD
SHOWN IN CULVERT

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FINAL EROSION CONTROL NARRATIVE:

ONCE WORK ON SITE IS COMPLETE AND VEGETATION IS COMPLETELY ESTABLISHED, CONTRACTOR TO COORDINATE WITH CITY FOR INSPECTIONS AND THEN REMOVE ALL TEMPORARY EROSION CONTROLS. FOLLOWING THE REMOVAL OF TEMPORARY EROSION CONTROLS, OWNER TO ASSUME RESPONSIBILITY AND FOLLOW INSPECTION AND REPORTING MEASURES AS OUTLINED IN THE LONG TERM MAINTENANCE PLAN (LTMP) PREPARED FOR THIS SITE.

Pervious Concrete/Paver Construction Sequencing

1. Construction of the permeable pavement shall only begin after the entire contributing drainage area has been stabilized.
2. Contractor is to provide method of diverting runoff flow around the construction of the pavement area during periods of rainfall to ensure sediment does not enter the area. EPSC measures may need to be utilized during the installation. Construction materials that are contaminated by sediments must be removed and replaced with clean materials.
3. Excavate the area. Excavators or backhoes should work from the sides to excavate the area to the design depth and dimensions. Excavating equipment should have scoops with adequate reach so they do not sit inside the footprint of the area.
4. **CALL CITY OF FRANKLIN INSPECTOR FOR INSPECTION 615-791-3218.**
5. Scarify subgrade by ripping the bottom soils to a depth of 12 inches prior to stone placement
6. Install filter fabric on the bottom and sides of the area.
7. Install underdrain, if applicable.
8. **IF UNDERDRAIN IS INSTALLED CALL CITY OF FRANKLIN INSPECTOR FOR INSPECTION 615-791-3218.**
9. Install aggregate base; install curb restraints and pavement barriers; install bedding layer.
10. Install pavement. Paving materials shall be installed in accordance with manufacturer or industry specifications for the particular type of pavement.
11. Protect the pavement through project completion. It is preferable to have the permeable pavement installed at the end of the site construction timeline. If that is not possible, it is important to protect the permeable pavement through project completion. This may be done by:
 - Route construction access through other portions of the site so that no construction traffic passes through the permeable pavement site. Install barriers or fences as needed.
 - If this is not possible, protect the pavement per the construction documents. Protection techniques that may be specified include mats, plastic sheeting, barriers to limit access, or moving the stabilized construction entrance.
 - Schedule street sweeping during and after construction to prevent sediment from accumulating on the pavement.

PROPOSED LEGEND

-  RIVER STONE RIP-RAP D50 TO BE 8 INCHES, PLACED 12 INCHES THICK (MIN)
-  PERMANENT TURF REINFORCED MATTING
-  HEAVY DUTY CONCRETE PERMEABLE PAVERS PER MANUFACTURER SPECS - SEE DETAIL SHEETS

GENERAL EROSION CONTROL NOTES

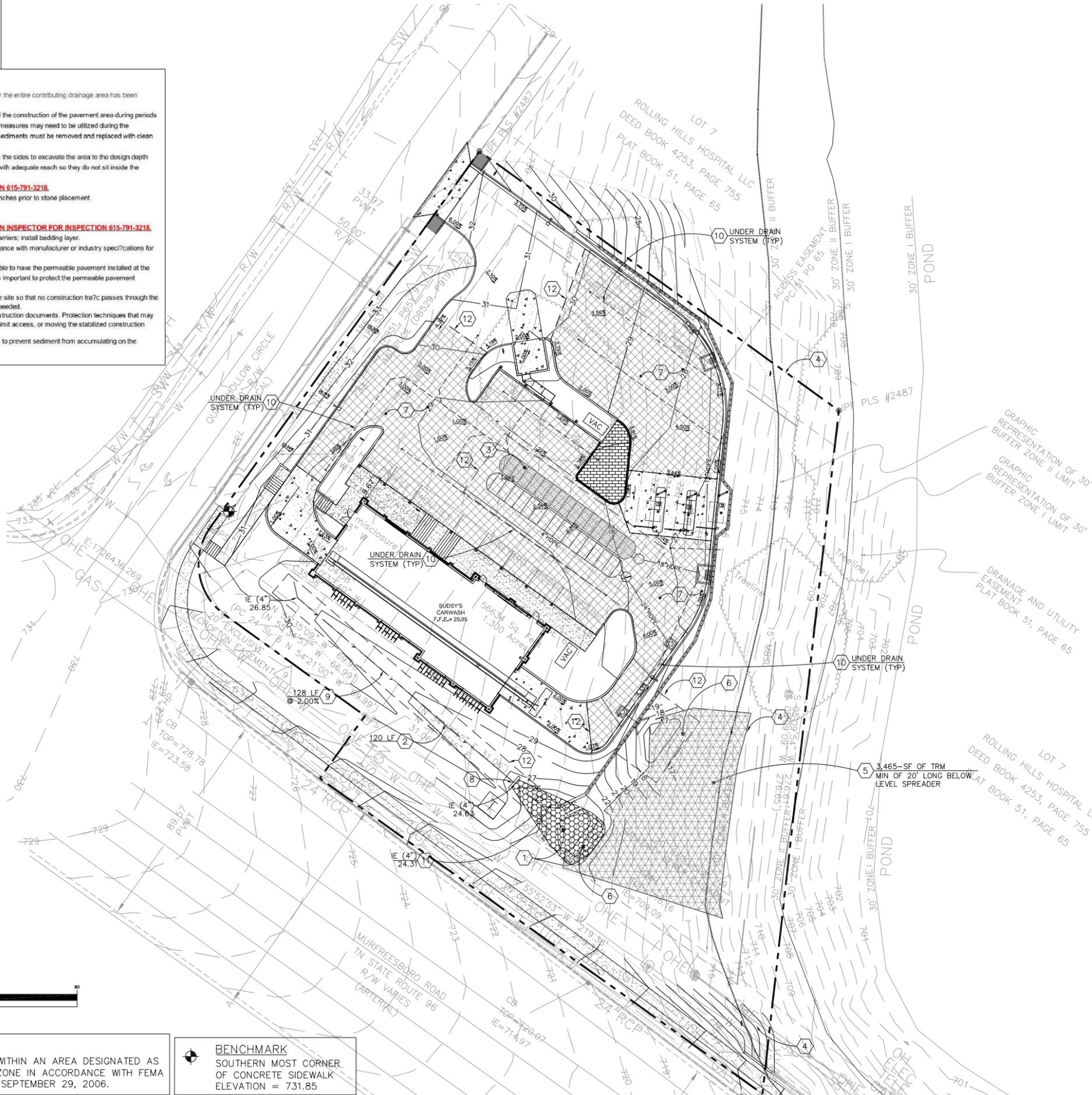
SEE SHEET C3.2 FOR EROSION CONTROL NOTES

EROSION NOTE BLOCKS

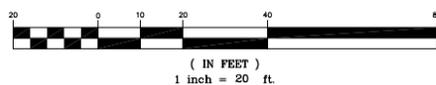
- 1 RIVER STONE RIP-RAP D50 TO BE 8 INCHES, PLACED 12 INCHES THICK (MIN)
- 2 WATER QUALITY SWALE PER CITY OF FRANKLIN - SEE GIP-05 SPECIFICATIONS - SEE DETAIL SHEET C6.1
- 3 ADS UNDERGROUND DETENTION WITH ISOLATOR ROW FOR WATER QUALITY - SEE ADS DETAIL SHEETS
- 4 AS PER FMC 23-107(S) BUFFER BOUNDARIES SHALL BE MARKED WITH SIGNS THAT PERSIST BEFORE, DURING, AND AFTER CONSTRUCTION. SIGNAGE SHALL BE POSTED AT THE EDGE OF THE BUFFER ZONE, EACH LOT LINE, AND AT A MAXIMUM SPACING OF ONE HUNDRED (100) FEET. THIS SPACING CAN BE REDUCED FOR LARGE SCALE DEVELOPMENT AS APPROVED BY THE CITY'S ENGINEERING DEPT. THE LOCATION OF THE SIGNAGE SHALL BE SHOWN ON THE STORMWATER MANAGEMENT PLAN, EPSC PLANS, GRADING PLANS, DRAINAGE PLANS AND BUFFER MANAGEMENT PLANS. THESE SIGNS SHALL BE SUPPLIED BY THE CITY OF FRANKLIN'S STORMWATER INSPECTORS AT INITIAL SITE PRE-CONSTRUCTION MEETINGS AND BE INSTALLED BY THE FIRST EPSC INSPECTION.
- 5 INSTALL PERMANENT TURF REINFORCED MATTING AT OUTLET, LEVELSPREADER AND DOWNSIDE SLOPE, TO PROVIDE VEGETATED STABILIZATION. EROSION CONTROL MATTING TO BE CONTECH LANDLOCK S2 OR APPROVED EQUAL.
- 6 PROVIDE 10' LONG LEVEL SPREADER PER CITY OF FRANKLIN DETAILS GIP-07 - SEE GRADING PLAN FOR ELEVATIONS
- 7 HEAVY DUTY CONCRETE PERMEABLE PAVERS PER MANUFACTURER SPECS - SEE DETAIL SHEETS - SEE DETAIL SHEET C6.1
- 8 7'x2'0x6"W CONCRETE CHECK DAM TO EXTEND 6" ABOVE PROPOSED GRADE - TO BE COORDINATED WITH WATER QUALITY SWALE - SEE DETAIL SHEET
- 9 PROVIDE 4" PERFORATED PIPE WITH FILTER SOCK 2' DEEP, AT CENTER OF WATER QUALITY SWALE - SEE DETAIL SHEET C6.1 - SEE LANDSCAPE PLAN - SEE GRADING PLAN
- 10 UNDERDRAIN SYSTEM - SEE DETAILS ON SHEET C6.1
- 11 DAYLIGHT UNDERDRAIN PIPE AT RIP-RAP
- 12 DRAINAGE / WATER QUALITY EASEMENT

WATER QUALITY AND DETENTION NOTES

1. ALL PERMEABLE PAVERS AS SHOWN IN PARKING LOTS, AND ISLEWAYS, TO BE PERMEABLE PAVERS WITH EXTEND DEPTH OF ROCK BASE IN ACCORDANCE WITH GIP-03.
2. PERMEABLE PAVEMENT SYSTEM TO BE INSTALLED WITH AN UNDERDRAIN SYSTEM AS SHOWN ON PLANS.
3. STORMWATER DETENTION TO BE PROVIDED IN THE EXTENDED ROCK BASE UNDER THE PERMEABLE PAVEMENT SYSTEM, AS WELL AS IN THE UNDERGROUND DETENTION POND.
4. THE PERMEABLE PAVEMENT UNDER DRAIN SYSTEM TO DAYLIGHT INTO THE UNDERGROUND DETENTION POND.



GRAPHIC SCALE



FLOOD STATEMENT

NO PORTION OF THIS PROPERTY LIES WITHIN AN AREA DESIGNATED AS A PORTION OF THE 100 YEAR FLOOD ZONE IN ACCORDANCE WITH FEMA PANEL NUMBER 4718C 0212F, DATED: SEPTEMBER 29, 2006.

BENCHMARK
SOUTHERN MOST CORNER OF CONCRETE SIDEWALK
ELEVATION = 731.85

NOTE:
CONTRACTOR TO INSTALL ALL WATER QUALITY BMPS AS DIRECTED IN THE INSTALLATION GUIDELINES SET FORTH IN THE CITY OF FRANKLIN BMP MANUAL CURRENT EDITION

NOTE:
WATER QUALITY BMPS SHALL NOT BE INSTALLED UNTIL CONSTRUCTION ON SITE IS NEAR COMPLETION TO PREVENT CONSTRUCTION DEBRIS AND SEDIMENTS FROM ENTERING WATER QUALITY BMPS. CONTRACTOR TO TAKE PRECAUTIONS NECESSARY TO AVOID COMPACTION OF BMP AREAS. IF COMPACTION OCCURS CONTRACTOR TO LOOSEN AND OR TILL SOILS PRIOR TO CONSTRUCTION OF BMPS.

NOTE:
CITY OF FRANKLIN IS NOT A MEMBER OF TENNESSEE ONE CALL. G.C. TO CONTACT: COF WATER MANAGEMENT DEPARTMENT
ATTN: UTILITY INSPECTOR
124 LUMBER DR, FRANKLIN, TN
(615)794-4554



NO.	DATE	REVISIONS

INITIAL DATE: 10/23/2016
DRAWN BY: YWH
CHECKED BY: RGF
COF# - 6301

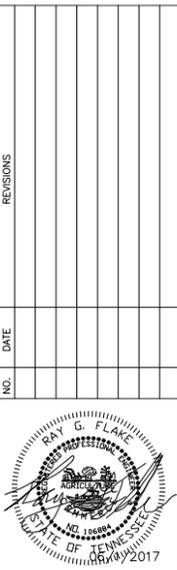
FINAL EROSION AND WQ CONTROL PLAN
SUDSY'S CAR WASH
1451 MURFREESBORO ROAD
FRANKLIN, TENNESSEE

SHEET NO.
C3.4
JOB NO.: 2016-0825

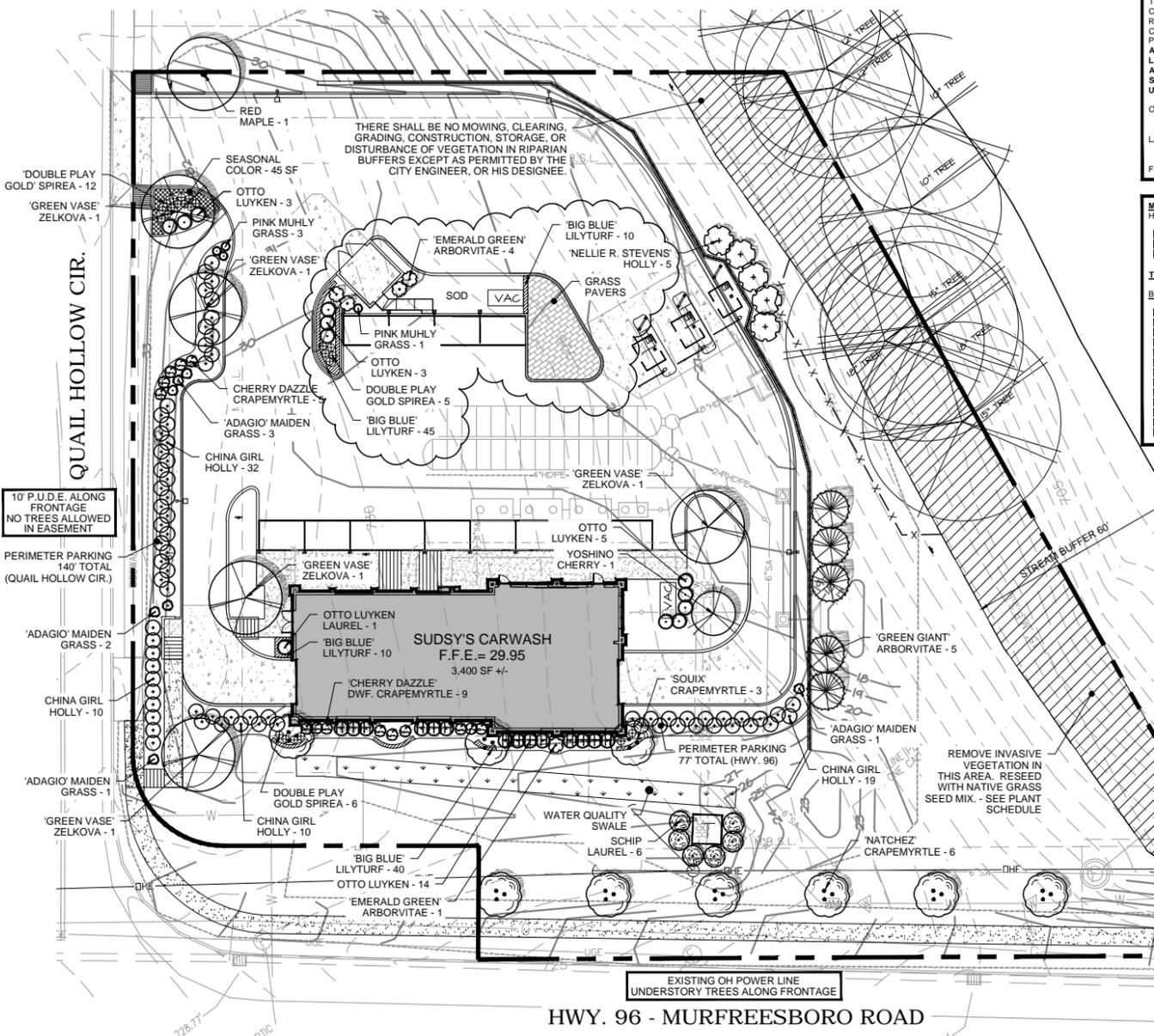


SUDSY'S CAR WASH
Troy VanLiere
PH# (615) 479-9905
www.sudsys.com

Civil Engineering Services
7705 Spicier Farm Lane
Fairview, Tennessee 37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: roy@civilengineering.com



ISSUED FOR PERMIT



ATTENTION OWNER/INSTALLER:
 THIS LANDSCAPE PLAN HAS BEEN DESIGNED TO MEET THE MINIMUM REQUIREMENTS OF THE CITY OF FRANKLIN ZONING ORDINANCE, THE APPROVAL OF THE PLANNING COMMISSION, AND PLANNING DEPARTMENT POLICY. RELOCATING, SUBSTITUTING, RESIZING, REDUCING, OR DELETING MATERIAL MAY CAUSE THE SITE TO NO LONGER CONFORM TO THE REQUIREMENTS. THIS PROBLEM MAY ARISE WITH RELEASING THE PERFORMANCE/MAINTENANCE BOND FOR LANDSCAPING. DEVIATION FROM THE APPROVED LANDSCAPE PLAN SHALL NOT BE MADE WITHOUT FIRST CONSULTING THE LANDSCAPE ARCHITECT WHO DESIGNED THE PROJECT. THE DESIGNING LANDSCAPE ARCHITECT SHALL REVIEW PROPOSED SUBSTITUTIONS TO ENSURE THAT ALL CITY STANDARDS AND REQUIREMENTS ARE MET. THE CITY SHALL BE NOTIFIED IN WRITING UPON FINAL APPROVAL OF ANY PLANT SUBSTITUTIONS.

OWNER: SUDDY'S CAR WASH
 Contact: Troy VanLiere (615) 479-9905
 E-MAIL: troy@suuddyscarwash.com
 LANDSCAPE ARCHITECT: KITA LANDSCAPE DESIGN
 Contact: Kevin Reff (615) 469-1222
 E-MAIL: kreff@kitadesign.biz
 FRANKLIN PLANNING DEPARTMENT: (615) 791-3212

MINIMUM BUFFERING / SCREENING REQUIREMENTS:
 HVAC UNITS, COOLING AND/OR MECHANICAL EQUIPMENT MOUNTED ON THE:
 ROOFTOP
 GROUND
 NOT APPLICABLE

THIS DEVELOPMENT IS REQUIRED TO HAVE THE FOLLOWING LANDSCAPE IMPROVEMENTS:

BUFFER / SCREENING TYPE:	PURPOSE:
<input type="checkbox"/> NOT APPLICABLE	BUFFERING/SCREENING NOT REQUIRED
<input type="checkbox"/> FOUNDATION PLANTING	ALONG PRIMARY FACADE
<input type="checkbox"/> PERIMETER PLANTING STRIP	SCREEN VUA'S AND TO CREATE 'MOODULES'
<input type="checkbox"/> INTERIOR VUA PLANTING	CREATE VUA 'MODULES'
<input type="checkbox"/> UTILITY BOX SCREEN	SCREEN FROM VIEW
<input type="checkbox"/> HVAC SCREEN	SCREEN HVAC FROM VIEW
<input type="checkbox"/> DUMPSTER SCREEN	SCREEN DUMPSTER FROM VIEW
<input type="checkbox"/> LOADING/SERVICE AREA	BUFFER THE STREET OR RESIDENTIAL PROPERTY
<input type="checkbox"/> INCOMPATIBLE USE BUFFER	BUFFER THE ADJACENT LESS INTENSIVE USE
<input type="checkbox"/> 30-FOOT FRONT YARD BUFFER	BUFFER THE ADJACENT HATCHER BYPASS
<input type="checkbox"/> 40-FOOT FRONT YARD BUFFER	BUFFER THE ADJACENT INTERSTATE 65
<input type="checkbox"/> STREET TREES	SPATIAL DEFINITION/ENVIRONMENTAL MITIGATION
<input type="checkbox"/> OTHER:	

AFTER INSTALLATION, THE PROPOSED LANDSCAPE WILL MAINTAINED BY THE OWNER. ADDITIONAL SCREENING MAY BE REQUIRED IF THE INSPECTION FOR RELEASE OF THE PERFORMANCE SURETY REVEALS THAT THE SCREENING IS NOT EFFECTIVE.

NATIVE GRASS MIX:
 15% Switchgrass, 15% Weeping Lovegrass, 15% Beaked Panicgrass, 15% Redtop Panicgrass, 11% Virginia Wildrye, 5% Lurid (Shallow) Sedge, 3% Soft Rush, 3% Swamp (Narrowleaf) Sunflower, 3% Common Sneezeweed, 2% Hop Sedge, 2% Globe Beaksedge, 2% Crimsoneyed Rosemallow, 2% Lizard's Tail, 2% Showy Thickseed Sunflower, 2% Woolgrass, 1% New York Ironweed, 1% Meadowbeauty, 1% Leathery Rush
 Seeding Rate: 20 lbs per acre Broadcast, 40lbs per acre Hydroseeded

LANDSCAPE CONTRACTOR SHALL COORDINATE ALL STREAM BUFFER ENHANCEMENT EFFORTS WITH THE CITY'S STORMWATER INSPECTOR FOR THE SITE. THE CONTRACTOR SHALL CONTACT THE INSPECTOR BEFORE BEGINNING WORK TO OUTLINE SCOPE OF WORK WITHIN THE STREAM BUFFERS. THE CITY INSPECTOR WILL DOCUMENT ALL STAGES OF WORK THROUGH FINAL STABILIZATION. FAILURE TO CONTACT THE CITY INSPECTOR MAY RESULT IN PARTIAL OR FULL LANDSCAPE BOND WITHHOLDING.

STREAM BUFFER ENHANCEMENT SHALL BE COMPLETED BEFORE THE PROPERTY OWNER WILL BE RELIEVED OF THEIR EPSC MAINTENANCE REQUIREMENTS.

WATER QUALITY SWALE GRASS MIX:
 75% Tall Fescue, 25% Timothy - Seeding Rate of 150 lbs per acre broadcast, 300 lbs per acre hydroseeded.

PLANT SCHEDULE							
QTY.	COMMON NAME	BOTANICAL NAME	HEIGHT	TRUNK	ACI	COMMENTS	
CANOPY TREES							
5	'Green Giant' Arborvitae	Thuja (standish x plicata) 'Green Giant'	6' - 7'	2" Cal.	10		
5	'Green Vase' Japanese Zelkova	Zelkova serrate 'Green Vase'	10' - 12'	2" Cal.	10		
1	Red Maple	Acer rubrum	10' - 12'	2" Cal.	2		
11	TOTAL - CANOPY TREES						22
UNDERSTORY TREES							
6	'Natchez' Crapemyrtle	Lagerstroemia indica 'Natchez'	8' - 10'	3" Cal.	18	Multi-trunk, (3) 1" canes min.	
3	'Souix' Crapemyrtle	Lagerstroemia indica 'Souix'	6' - 7'	2" Cal.	6	Multi-trunk, (3) 1/2" canes min.	
5	'Nellie R. Stevens' Holly	Ilex x 'Nellie R. Stevens'	6' Min.		10		
1	Yoshino Cherry	Prunus yedoensis	8' - 10'	2" Cal.	2		
15	TOTAL - UNDERSTORY TREES						36
SHRUBS							
14	'Cherry Dazzle' Dwarf Crapemyrtle	Lagerstroemia 'Gamad I'	18" Min.				
71	China Girl Holly	Ilex meserveae 'Mesog'	30" Min.				
23	'Double Play Gold' Spirea	Spirea japonica 'Double Play Gold'	12" Min.				
5	'Emerald Green' Arborvitae	Thuja occidentalis 'Emerald Green'	6' Min.			Plant 4' o.c.	
26	Otto Luyken	Prunus laurocerasus 'Otto Luyken'	24" Min.	5 Gal.			
6	Schip Laurel	Prunus laurocerasus 'Schipkaensis'	30" Min.	5 Gal.			
145	TOTAL - SHRUBS						
ORNAMENTAL GRASSES							
7	'Adagio' Maiden Grass	Hakonechloa macra 'All Gold'	24" Min.				
4	Pink Muhly Grass	Muhlenbergia capillaris	24" Min.				
GROUND COVER/PERENNIAL FLOWERS							
105	'Big Blue' Lilyturf	Liriope muscari 'Big Blue'	8" - 10"	1 Gal.		Change flowers each season	
45 SF	Seasonal Color	Various annual flowers	-	-		Change flowers each season	
TURF							
SOD	Improved Tall Type Fescue Varieties	Drought tolerant Fescue blend				See Civil Sheets	
SEED	Native Grass Mix	Various native grasses seed mix				Hogan Seed Co. 888-224-6426	

CITY OF FRANKLIN MINIMUM PLANT QUALITY AND SIZE STANDARDS:

- ALL NEWLY PLANTED LANDSCAPE MATERIAL SHALL CONFORM TO THE LATEST VERSION OF THE AMERICAN STANDARD OF NURSERY STOCK (ANSI Z60.1).
- ALL TREE 1, 2, AND 3 TREES (AS DEFINED IN ANSI Z60.1) USED TO MEET THE REQUIREMENTS OF THIS SUBSECTION SHALL HAVE THE FOLLOWING CHARACTERISTICS:
 - DECIDUOUS TREES SHALL HAVE ONE DOMINANT TRUNK WITH THE TIP OF THE LEADER ON THE MAIN TRUNK LEFT INTACT AND THE TERMINAL BUD ON THE CENTRAL LEADER AS THE HIGHEST POINT ON THE TREE.
 - TREES WITH FORKED TRUNKS ARE ACCEPTABLE IF ALL THE FOLLOWING CONDITIONS ARE MET:
 - THE FORK OCCURS IN THE UPPER ONE-THIRD OF THE TREE.
 - ONE FORK IS LESS THAN TWO-THIRDS THE DIAMETER OF THE DOMINANT FORK; AND
 - THE TOP ONE-THIRD OF THE SMALLER FORK IS REMOVED AT THE TIME OF PLANTING.
 - NO BRANCH IS GREATER THAN TWO-THIRDS THE DIAMETER OF THE TRUNK DIRECTLY ABOVE THE BRANCH.
 - SEVERAL BRANCHES ARE LARGER IN DIAMETER AND OBVIOUSLY MORE DOMINANT.
 - BRANCHING HABIT IS MORE HORIZONTAL THAN VERTICAL, AND NO BRANCHES ARE ORIENTED NEARLY VERTICAL TO THE TRUNK.
 - BRANCHES ARE EVENLY DISTRIBUTED AROUND THE TRUNK WITH NO MORE THAN ONE MAJOR BRANCH LOCATED DIRECTLY ABOVE ANOTHER AND THE CROWN IN FULL OF FOLIAGE THAT IS EVENLY DISTRIBUTED AROUND THE TREE.

CITY OF FRANKLIN LANDSCAPE NOTES:

- ANY PLANT MATERIAL THAT DIES, TURNS BROWN OR DEFOLIATES SHALL BE REPLACED WITHIN ONE YEAR OR BY THE NEXT GROWING SEASON, WHICHEVER COMES FIRST. OTHER DEFECTIVE LANDSCAPE MATERIAL SHALL BE REPLACED WITHIN THREE MONTHS.
- ALL TREES SHALL BE STRAIGHT TRUNKED, FULL HEADED AND MEET ALL REQUIREMENTS SPECIFIED. ALL TREES AND SHRUBS MUST BE CONTAINER GROWN OR BALLED AND BURLAPPED WITH SIZES INDICATED IN THE PLANT SCHEDULE ON THE APPROVED PLAN. ALL PLANTS SHALL BE HEALTHY, VIGOROUS MATERIAL, FREE OF PEST AND DISEASE. ALL ROOTBALLS, CONTAINERS AND HEIGHT TO WIDTH RATIOS SHALL CONFORM TO THE SIZE STANDARDS SET FORTH IN THE AMERICAN STANDARDS FOR NURSERY STOCK, CURRENT EDITION.
- ALL REQUIRED TREES AND SHRUBS SHALL MEET THE MINIMUM SIZE STANDARDS AS LISTED IN THE PLANT SCHEDULE.
- PLANT MATERIAL SHALL NOT OBSCURE TRAFFIC OR PARKING SIGNS/SIGNALS OR VEHICULAR SIGHT LINES.
- TREE TOPPING IS NOT PERMITTED.
- ADDITIONAL SCREENING MAY BE REQUIRED IF THE INSPECTION FOR THE RELEASE OF THE PERFORMANCE BOND REVEALS THAT THE REQUIRED SCREENING IS NOT EFFECTIVE.
- ALL REQUIRED TREE PROTECTION SCREENING SHALL BE INSTALLED PRIOR TO LAND DISTURBING ACTIVITIES AND SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL ALL CONSTRUCTION ACTIVITY IS COMPLETED.
- ANY SITE OR LANDSCAPE CHANGES (INCLUDING BUT NOT LIMITED TO A CHANGE IN DESIGN, A REDUCTION IN SIZE OR NUMBER OF PLANT MATERIAL, OR THE RELOCATION OF OVERHEAD OR UNDERGROUND UTILITIES) SHALL REQUIRE A REVISED LANDSCAPE PLAN TO BE SUBMITTED AND APPROVED PRIOR TO LANDSCAPE INSTALLATION.
- EXISTING TREES ACCEPTED IN PARTIAL COMPLIANCE OF THE LANDSCAPE REQUIREMENTS FOR THIS SITE SHALL BE ACCESSIBLE AND FLAGGED PRIOR TO ALL LANDSCAPE INSPECTIONS.
- ANY EXISTING TREE, SHOWN AS BEING PRESERVED ON APPROVED PLANS, WHETHER FOR CREDIT OR NOT, THAT IS REMOVED, DIES OR IS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH THE EQUIVALENT NUMBER OF CALIPER INCHES OF A SIMILAR SPECIES IN AN APPROVED LOCATION.
- SCREENING PROPOSED AROUND ANY UTILITY BOX OR TRANSFORMER IS REQUIRED TO BE EVERGREEN AND ADEQUATELY SCREEN THE OBJECT. THE PROPOSED EVERGREEN PLANT MATERIAL SHALL BE REPLACED IF IT IS NOT OF A HEIGHT SUFFICIENT TO SCREEN THE OBJECT.
- ALL PLANT MATERIAL SHALL BE FROM THE FRANKLIN PLANT LIST UNLESS PRIOR APPROVAL IS RECEIVED FROM THE CITY.
- ALL TREE-PROTECTION FENCING SHALL BE IN PLACE PRIOR TO ISSUANCE OF THE GRADING PERMIT AND SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL ALL CONSTRUCTION ACTIVITY IS COMPLETED. ANY REQUIRED EROSION CONTROL MEASURES SHALL BE PLACED OUTSIDE OF ANY TREE PROTECTION FENCING.
- TOP SOIL USED IN ALL LANDSCAPE AREAS SHALL BE SCREENED PRIOR TO DEPOSITION IN PLANTING AREAS AND ISLANDS.
- ANY PLANT MATERIAL LOCATED ADJACENT TO A PARKING AREA SHALL BE PLANTED SO AS TO ALLOW FOR A TWO AND A HALF FOOT VEHICULAR BUMPER OVERHANG FROM THE FACE OF CURB TO THE EDGE OF THE ADJACENT PLANT MATERIAL.
- THE OWNER ACKNOWLEDGES THAT PLANTING LANDSCAPE MATERIAL IN A DEDICATED EASEMENT DOES NOT WAIVE OR MODIFY THE CITY OF FRANKLIN'S RIGHTS AS THE EASEMENT HOLDER. THE OWNER UNDERSTANDS THAT THE CITY OF FRANKLIN, ITS AUTHORIZED CONTRACTOR OR APPLICABLE PRIVATE UTILITY MAY AT ANY TIME AND FOR ANY REASON PERFORM WORK WITHIN THE DEDICATED EASEMENT. THE CITY'S AUTHORIZED CONTRACTOR OR APPLICABLE PRIVATE UTILITY SHALL HAVE NO LIABILITY TO THE OWNER FOR ANY DAMAGE TO THE LANDSCAPE MATERIAL IN THE EASEMENT WHEN SAID DAMAGE IS DUE TO WORK WITHIN THE EASEMENT. THE OWNER MAY BE HELD RESPONSIBLE FOR THE REMOVAL OF THE LANDSCAPE MATERIAL TO ENABLE WORK TO BE DONE. THE OWNER SHALL BE SOLELY RESPONSIBLE FOR ANY COSTS INCURRED IN REPAIRING AND/OR REPLACING THE REQUIRED LANDSCAPE MATERIAL.

LANDSCAPE NOTES:

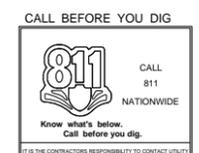
- WHEN APPLICABLE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING TREES TO REMAIN. NO HEAVY EQUIPMENT SHOULD BE PERMITTED TO OPERATE OR BE STORED, NOR ANY MATERIALS TO BE HANDLED OR STORED, WITHIN THE DRIPLINES OF TREES OUTSIDE THE LIMIT OF GRADING.
- THE QUANTITIES INDICATED ON THE PLANT LIST AND PLAN ARE PROVIDED FOR THE BENEFIT OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN QUANTITY CALCULATIONS AND THE LIABILITY WHICH PERTAINS TO THOSE QUANTITIES AND TO ANY RELATED CONTRACT DOCUMENTS AND/OR PRICE QUOTATIONS. QUESTIONS SHOULD BE DIRECTED TO THE LANDSCAPE ARCHITECT.
- ALL PLANT MATERIALS SHALL BE NURSERY GROWN, GRADE 'A' QUALITY, UNLESS OTHERWISE NOTED AND SHALL COMPLY WITH THE AMERICAN STANDARD FOR NURSERY STOCK: ANSI Z60.1, LATEST EDITION, FOR SIZE AND QUALITY.
- NO SUBSTITUTIONS AS TO TYPE, SIZE, OR SPACING OF PLANT MATERIALS SPECIFIED ON THIS PLAN MAY BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT. KITA LANDSCAPE DESIGN (615) 469-1222.
- THE CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES AND TO PROTECT UTILITIES THAT ARE TO REMAIN. THE CONTRACTOR SHALL REPAIR ANY DAMAGE ACCORDING TO LOCAL STANDARDS AT THE CONTRACTOR'S EXPENSE. COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE UTILITY COMPANY.
- ALL AREAS DISTURBED BY UTILITY TRENCHING, SITE AND BUILDING CONSTRUCTION SHALL BE STABILIZED WITH SEEDING AND SODDING AS SHOWN BY THE PLAN.
- SOIL USED FOR PLANTING SHALL CONSIST OF (5) PARTS TOPSOIL, (1) PART SAND AND (2) PARTS ORGANIC MATTER, MIXED WITH 1 POUND OF FERTILIZER PER CUBIC YARD. A SAND SHALL BE CLEAN MASONRY SAND. ORGANIC MATTER SHALL BE PEAT MOSS, OR WELL COMPOSTED PINE BARK, OR APPROVED EQUAL AND SHALL BE FINELY GROUND AND FREE OF WEEDS. C. ALL FERTILIZER SHALL BE 10-10-10 WITH MINOR ELEMENTS. FERTILIZER SHALL HAVE 40-50% OF ITS TOTAL NITROGEN IN A WATER INSOLUBLE FORM.
- PRE-EMERGENT HERBICIDE SHALL BE APPLIED TO ALL PLANT BEDS AND SOD AREAS PRIOR TO INSTALLATION. TRIFLORAL OR AN APPROVED EQUAL SHALL BE USED.
- ALL PLANT BEDS SHALL HAVE A MINIMUM OF 3" DEEP MULCH. MULCH SHALL BE SHREDDED HARDWOOD.
- IT IS THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO CONFIRM MATERIAL QUANTITIES. IN THE EVENT OF A DISCREPANCY, THE QUANTITIES SHOWN ON THE PLAN SHALL TAKE PRECEDENCE OVER QUANTITIES SHOWN ON THE PLANT LIST.
- PRIOR TO FINAL PAYMENT, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE OWNER WITH COMPLETE WRITTEN INSTRUCTIONS ON PROPER CARE OF ALL SPECIFIED PLANT MATERIALS.
- THE LANDSCAPE INSTALLATION SHALL BE COORDINATED WITH THE IRRIGATION INSTALLATION WHEN APPLICABLE.
- THE LANDSCAPE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM STRUCTURES AND TAKE SPECIAL CARE TO INSURE THAT BED PREPARATION DOES NOT INHIBIT DRAINAGE.
- ALL LAWN AREAS SHALL BE CULTIVATED TO A DEPTH OF 4" PRIOR TO SODDING AND SEEDING. PREPARED TURF BEDS SHALL BE FREE FROM STONES OVER 2" DIAMETER, WEEDS AND OTHER DELETERIOUS MATERIAL.
- THE LANDSCAPE CONTRACTOR SHALL RAKE SMOOTH ALL SEED OR SOD AREAS PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR BACKFILLING BEHIND THE CURB SO GRADE IS LEVEL WITH TOP OF CURB.
- SODDED AREAS SHALL HAVE NO BARE AREAS. SEEDED AREAS SHALL BE CONSIDERED ACCEPTABLE WHEN FULL COVERAGE OF THE PERMANENT TURF GRASS SPECIES IS ESTABLISHED.
- CUT AWAY ROPES OR WIRES FROM BAB PLANTS. PULL BACK BURLAP FROM TOP OF ROOT BALL. DO NOT ALLOW BURLAP TO BE EXPOSED AT SURFACE. TOTALLY REMOVE BURLAP IF IT IS SYNTHETIC.
- IF CONTAINER GROWN PLANTS SHOW SIGNS OF BEING ROOT BOUND, SCORE ROOTS VERTICALLY.
- ALL PLANT MATERIAL SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
- ALL REPLACEMENTS SHALL BE OF THE SAME TYPE, SIZE, AND QUALITY AS SPECIFIED ON THE PLANT LIST, UNLESS APPROVED OTHERWISE IN WRITING BY THE LANDSCAPE ARCHITECT.
- ANY MATERIAL THAT IS DEEMED TO BE 25% DEAD OR MORE SHALL BE CONSIDERED DEAD, AND MUST BE REPLACED AT NO CHARGE. A TREE IS CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED BACK, OR MORE THAN 25% OF THE CROWN IS DEAD.
- REPLACEMENTS SHALL BE MADE DURING THE NEXT PLANTING SEASON UNLESS THE LANDSCAPE CONTRACTOR AGREES TO AN EARLIER DATE.
- PLANTING DATES: SPRING: MARCH 15 - APRIL 15 FALL: OCTOBER 1 - NOVEMBER 30
- THE LANDSCAPE CONTRACTOR WILL NOT BE RESPONSIBLE FOR PLANT MATERIAL THAT HAS BEEN DAMAGED BY VANDALISM, FIRE, RELOCATION, WILDLIFE, THEFT, OR OTHER ACTIVITIES BEYOND THE LANDSCAPE CONTRACTOR'S CONTROL.
- CONTRACTOR TO IRRIGATE ALL NEW LANDSCAPE PLANTINGS AND LAWN AREAS WITH AN AUTOMATED UNDERGROUND IRRIGATION SYSTEM.
- IRRIGATION TO HAVE A SEPARATE METER.
- GENERAL CONTRACTOR TO COORDINATE AND BE RESPONSIBLE FOR WATERING ALL PLANTS AND SEEDED AREAS AFTER PLANTING UNTIL IRRIGATION SYSTEM IS OPERABLE.

LANDSCAPE REQUIREMENTS: (ACI)

LSR = 0.30 Credit for preserved trees: (114) LSA = 0.70 Acres	QUANTITY PROVIDED			INCHES PROVIDED
	EXISTING TREES	PROPOSED	TOTAL PROVIDED	
EXISTING TREES = 14'	4	@1.25	4	82.5
EX. TREES (SEE TREE INVENTORY)				
5'+ CALIPER CANOPY TREES				
3' CALIPER CANOPY TREES		11	11	22
2' CALIPER CANOPY TREES				
AGGREGATE CANOPY CALIPER INCHES PROVIDED				104.5
AGGREGATE CANOPY CALIPER INCHES REQUIRED				307
2' CALIPER UNDERSTORY TREES		15	15	30
1.5' CALIPER UNDERSTORY TREES				
AGGREGATE UNDERSTORY CALIPER INCHES PROVIDED				30
AGGREGATE UNDERSTORY CALIPER INCHES REQUIRED				-
MIN. 18" HEIGHT SHRUBS			50	
MIN. 30" HEIGHT SHRUBS			77	
TOTAL SHRUBS PROVIDED			127	
TOTAL SHRUBS REQUIRED			-	

LANDSCAPE DATA

SITE ACREAGE:	(56,636 SF) 1.30 AC
SITE ZONING CLASSIFICATION AND OVERLAYS:	GC
DEVELOPMENT STANDARDS: (TRADITIONAL/CONVENTIONAL):	CONVENTIONAL
MIN. REQUIRED LANDSCAPE SURFACE RATIO (RATIO AND ACREAGE):	(0.13 AC) 10%
PROVIDED LANDSCAPE SURFACE RATIO (RATIO AND ACREAGE):	(0.70 AC) 53%
PERCENT AND ACREAGE OF ORIGINAL CANOPY COVER:	(5,755 SF - 0.13 AC) 10.2%
(INDICATE IF SITE TREE REMOVAL GRANDFATHERED)	
PERCENT AND ACREAGE TREE CANOPY COVER REQUIRED:	
PERCENT AND ACREAGE OF PRESERVED CANOPY COVER PROVIDED:	(48,480 SF) 1.11 AC
NUMBER AND DBH OF SPECIMEN TREES REMOVED:	NONE (0 DBH)



SUDDY'S CAR WASH
 Troy VanLiere
 PH# (615) 479-9905
 www.suddys.com



NO.	DATE	REVISIONS
1	04/06/17	REVISED AREA FOR FIRE TRUNK RADIUS



INITIAL DATE: 11/07/2016
 DRAWN BY: KJR
 CHECKED BY: KJR
 COF# - 6301

LANDSCAPE PLAN
 SUDDY'S CAR WASH
 1451 MURFREESBORO ROAD
 FRANKLIN, TENNESSEE

SHEET NO. 1.1
 JOB NO.: XXX

ISSUED FOR PERMIT

APPENDIX B

GIP EXHIBIT

FINAL EROSION CONTROL NARRATIVE:

ONCE WORK ON SITE IS COMPLETE AND VEGETATION IS COMPLETELY ESTABLISHED, CONTRACTOR TO COORDINATE WITH CITY FOR INSPECTIONS AND THEN REMOVE ALL TEMPORARY EROSION CONTROLS. FOLLOWING THE REMOVAL OF TEMPORARY EROSION CONTROLS, OWNER TO ASSUME RESPONSIBILITY AND FOLLOW INSPECTION AND REPORTING MEASURES AS OUTLINED IN THE LONG TERM MAINTENANCE PLAN (LTMP) PREPARED FOR THIS SITE.

Previous Concrete/Paver Construction Sequencing

1. Construction of the permeable pavement shall only begin after the entire contributing drainage area has been stabilized.
2. Contractor is to provide method of diverting runoff flow around the construction of the pavement area during periods of rainfall to ensure sediment does not enter the area. EPSC measures may need to be utilized during the installation. Construction materials that are contaminated by sediments must be removed and replaced with clean materials.
3. Excavate the area. Excavators or backhoes should work from the sides to excavate the area to the design depth and dimensions. Excavating equipment should have scoops with adequate reach so they do not sit inside the footprint of the area.
4. **CALL CITY OF FRANKLIN INSPECTOR FOR INSPECTION 615-791-3218.**
5. Scarify subgrade by ripping the bottom soils to a depth of 12 inches prior to stone placement
6. Install filter fabric on the bottom and sides of the area.
7. Install underdrain, if applicable.
8. **IF UNDERDRAIN IS INSTALLED CALL CITY OF FRANKLIN INSPECTOR FOR INSPECTION 615-791-3218.**
9. Install aggregate base; install curb restraints and pavement barriers; install bedding layer.
10. Install pavement. Paving materials shall be installed in accordance with manufacturer or industry specifications for the particular type of pavement.
11. Protect the pavement through project completion. It is preferable to have the permeable pavement installed at the end of the site construction timeline. If that is not possible, it is important to protect the permeable pavement through project completion. This may be done by:
 - Route construction access through other portions of the site so that no construction traffic passes through the permeable pavement site. Install barriers or fences as needed.
 - If this is not possible, protect the pavement per the construction documents. Protection techniques that may be specified include mats, plastic sheeting, barriers to limit access, or moving the stabilized construction entrance.
 - Schedule street sweeping during and after construction to prevent sediment from accumulating on the pavement.

THERE SHALL BE NO MOWING, CLEARING, GRADING, STORAGE, OR DISTURBANCE OF VEGETATION OF ANY KIND EXCEPT AS PERMITTED BY THE CITY ENGINEER

PROPOSED LEGEND

- RIVER STONE RIP-RAP D50 TO BE 8 INCHES, PLACED 12 INCHES THICK (MIN)
- PERMANENT TURF REINFORCED MATTING
- HEAVY DUTY CONCRETE PERMEABLE PAVERS PER MANUFACTURER SPECS - SEE DETAIL SHEETS

GENERAL EROSION CONTROL NOTES

SEE SHEET C3.2 FOR EROSION CONTROL NOTES

EROSION NOTE BLOCKS

- 1 RIVER STONE RIP-RAP D50 TO BE 8 INCHES, PLACED 12 INCHES THICK (MIN)
- 2 WATER QUALITY SWALE PER CITY OF FRANKLIN - SEE GP-05 SPECIFICATIONS - SEE DETAIL SHEET C6.1
- 3 ADS UNDERGROUND DETENTION WITH ISOLATOR ROW FOR WATER QUALITY - SEE ADS DETAIL SHEETS
- 4 AS PER FMC 23-107(S)(D) BUFFER BOUNDARIES SHALL BE MARKED WITH SIGNS THAT PERSIST BEFORE, DURING, AND AFTER CONSTRUCTION. SIGNAGE SHALL BE POSTED AT THE EDGE OF THE BUFFER ZONE, EACH LOT LINE, AND AT A MAXIMUM SPACING OF ONE HUNDRED (100) FEET. THIS SPACING CAN BE REDUCED FOR LARGE SCALE DEVELOPMENT AS APPROVED BY THE CITY'S ENGINEERING DEPT. THE LOCATION OF THE SIGNAGE SHALL BE SHOWN ON THE STORMWATER MANAGEMENT PLAN, EPSC PLANS, GRADING PLANS, DRAINAGE PLANS AND BUFFER MANAGEMENT PLANS. THESE SIGNS SHALL BE SUPPLIED BY THE CITY OF FRANKLIN'S STORMWATER INSPECTORS AT INITIAL SITE PRE-CONSTRUCTION MEETINGS AND BE INSTALLED BY THE FIRST EPSC INSPECTION.
- 5 INSTALL PERMANENT TURF REINFORCED MATTING AT OUTLET, LEVELSPREADER AND DOWNSIDE SLOPE, TO PROVIDE VEGETATED STABILIZATION. EROSION CONTROL MATTING TO BE CONTECH LANDLOCK S2 OR APPROVED EQUAL.
- 6 PROVIDE 10' LONG LEVEL SPREADER PER CITY OF FRANKLIN DETAILS GP-07 - SEE GRADING PLAN FOR ELEVATIONS
- 7 HEAVY DUTY CONCRETE PERMEABLE PAVERS PER MANUFACTURER SPECS - SEE DETAIL SHEETS - SEE DETAIL SHEET C6.1
- 8 71x2'Dx6"W CONCRETE CHECK DAM TO EXTEND 6" ABOVE PROPOSED GRADE - TO BE COORDINATED WITH WATER QUALITY SWALE - SEE DETAIL SHEET
- 9 PROVIDE 4" PERFORATED PIPE WITH FILTER SOCK 2' DEEP, AT CENTER OF WATER QUALITY SWALE - SEE DETAIL SHEET C6.1 - SEE LANDSCAPE PLAN - SEE GRADING PLAN
- 10 UNDERDRAIN SYSTEM - SEE DETAILS ON SHEET C6.1
- 11 DAYLIGHT UNDERDRAIN PIPE AT RIP-RAP
- 12 DRAINAGE / WATER QUALITY EASEMENT

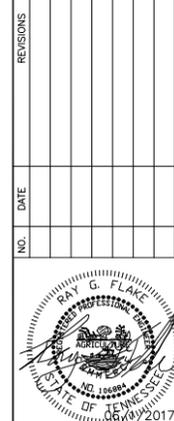
WATER QUALITY AND DETENTION NOTES

1. ALL PERMEABLE PAVERS AS SHOWN IN PARKING LOTS, AND ISLEWAYS, TO BE PERMEABLE PAVERS WITH EXTEND DEPTH OF ROCK BASE IN ACCORDANCE WITH GP-03.
2. PERMEABLE PAVEMENT SYSTEM TO BE INSTALLED WITH AN UNDERDRAIN SYSTEM AS SHOWN ON PLANS.
3. STORMWATER DETENTION TO BE PROVIDED IN THE EXTENDED ROCK BASE UNDER THE PERMEABLE PAVEMENT SYSTEM, AS WELL AS IN THE UNDERGROUND DETENTION POND.
4. THE PERMEABLE PAVEMENT UNDER DRAIN SYSTEM TO DAYLIGHT INTO THE UNDERGROUND DETENTION POND.



SUDSY'S CAR WASH
Troy VanLiere
PH# (615) 479-9905
www.sudsys.com

Civil Engineering Services
7705 Spiccer Farm Lane
Fairview, Tennessee 37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: roy@civilengineering.com



INITIAL DATE: 10/23/2016
DRAWN BY: YWH
CHECKED BY: RGF
COF# - 6301

FINAL EROSION AND WQ CONTROL PLAN
SUDSY'S CAR WASH
1451 MURFREESBORO ROAD
FRANKLIN, TENNESSEE

SHEET NO. **C3.4**
JOB NO.: 2016-0825

ISSUED FOR PERMIT

Permeable Pavers

Permeable Pavers

30' Zone 2 Buffer

30' Zone 1 Buffer

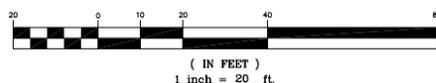
Underground Detention Pond

Water Quality Swale

Level Spreader

Level Spreader

GRAPHIC SCALE



FLOOD STATEMENT

NO PORTION OF THIS PROPERTY LIES WITHIN AN AREA DESIGNATED AS A PORTION OF THE 100 YEAR FLOOD ZONE IN ACCORDANCE WITH FEMA PANEL NUMBER 4718C 0212F, DATED: SEPTEMBER 29, 2006.

BENCHMARK
SOUTHERN MOST CORNER OF CONCRETE SIDEWALK
ELEVATION = 731.85

NOTE:
CONTRACTOR TO INSTALL ALL WATER QUALITY BMPS AS DIRECTED IN THE INSTALLATION GUIDELINES SET FORTH IN THE CITY OF FRANKLIN BMP MANUAL CURRENT EDITION

NOTE:
WATER QUALITY BMPS SHALL NOT BE INSTALLED UNTIL CONSTRUCTION ON SITE IS NEAR COMPLETION TO PREVENT CONSTRUCTION DEBRIS AND SEDIMENTS FROM ENTERING WATER QUALITY BMPS. CONTRACTOR TO TAKE PRECAUTIONS NECESSARY TO AVOID COMPACTION OF BMP AREAS. IF COMPACTION OCCURS CONTRACTOR TO LOOSEN AND OR TILL SOILS PRIOR TO CONSTRUCTION OF BMPS.



APPENDIX C

STORMWATER MANAGEMENT INSPECTION/MAINTENANCE FORMS



Permeable Pavement Inspection and Maintenance Checklist

Site Name: _____ Owner Change since last inspection? Y N

Location: _____

Owner Name: _____

Address: _____ Phone Number: _____

Site Status: _____

Date: _____ Time: _____ Site conditions: _____

*****Conduct maintenance inspection in the spring of each year.

Pavement Type: Pervious Concrete/Asphalt D Modular Pavers D Grass/Gravel Pavers D

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Pavement Area				
Pavement area free of debris?	A/M			
Staining or sediment?	A/M			
Inlets and outlets unobstructed and sediment free?	A/M			
All contributing drainage area free of erosion and sources of sediment?	A/M			
Water standing after a storm event?	S			
Any evidence of clogged pores that require vacuum-sweeping?	A/M			
Has area been vacuum swept in the past 12 months?	A/M			
Access to pervious pavement (egress and ingress routes) safe and efficient?	A/M			
Has drawdown rate been measured at observation well and is well capped?*	A			
Structural integrity of the pavement intact? Look for deterioration such as: slumping, cracking, spalling, or broken pavers.	A/M			
Grass Pavers				
Adjacent area fully stabilized (no evidence	A			



Stormwater Pond Inspections and Maintenance Checklist

Site Name: _____ Owner Change since last inspection? Y N

Location: _____

Owner Name: _____

Address: _____ Phone Number: _____

Site Status: _____

Date: _____ Time: _____ Site conditions: _____

Stormwater Pond Type: Wet Pond Wet ED Pond Micropool Pond Multiple Pond System
 Dry Pond

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Embankment and Emergency Spillway				
Vegetation healthy?	A/S			
Erosion on embankment?	A/S			
Animal burrows in embankment?	A/S			
Cracking, sliding, bulging of dam?	A/S			
Drains blocked or not functioning?	A/S			
Leaks or seeps on embankment?	A/S			
Slope protection failure functional?	A/S			
Emergency spillway obstructed?	A/S			
Erosion in/around emergency spillway?	A/S			
Other (describe)	A/S			
Riser and Principal Spillway				(describe type: concrete pipe, slotted weir, channel, etc.)
Low-flow orifice functional?	A/S			
Trash rack (Debris removal needed? Corrosion noted?)	A/S			
Sediment buildup in riser?	A			
Concrete/masonry condition (Cracks or displacement? Spalling?)	A			
Metal pipe in good condition?	A			
Control valve operation?	A			
Pond drain valve operation?	A			
Outfall channels function, not eroding?	A			
Other (describe)	A			
Sediment Forebays				
Sedimentation description				
Sediment cleanout needed (over 50	A/S			



Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
percent full)?				
Permanent Pool Areas (if applicable)				
Undesirable vegetation growth?	A/M			
Visible pollution?	A/M			
Shoreline erosion?	A/M			
Erosion at outfalls into pond?	A/M			
Headwalls and endwalls in good condition?	A/M			
Encroachment into pond or easement area by other activities?	A/M			
Evidence of sediment accumulation?	A			
Dry Pond Areas (if applicable)				
Vegetation adequate?	A/M			
Undesirable vegetation or woody plant growth?	A/M			
Excessive sedimentation?	A			
Hazards				
Have there been complaints from residents?	A/M			
Public hazards noted?	A/M			

Inspector Comments: _____

Overall Condition of Facility: Acceptable Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
 (date)

Inspected by: (signature) _____
Inspected by: (printed) _____



Storm Sewer Inspections and Maintenance Checklist

Site Name: _____ Owner Change since last inspection? Y N

Location: _____

Owner Name: _____

Address: _____ Phone Number: _____

Site Status: _____

Date: _____ Time: _____ Site conditions: _____

Indicate Features Present: Catch Basins Storm Pipe Headwalls Outfalls Catch Basin Inlets

Inspection Frequency Key: A=annual; M=monthly; S=after major storms

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Catch Basins				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition ensure all are set properly in place over inlets	A/S			
Check for sediment, leaf, or debris clogging grates and remove	A/S			
Catch Basin Inlets				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition	A/S			
Inspect for blockage or sediment accumulation and remove when capacity is diminished by 20% or greater	A/S			
Pipes				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition	A/S			
Inspect for blockage or sediment accumulation and remove when capacity is diminished by 20% or greater.	A/S			
Concrete/masonry condition of pipes and joints? (Cracks or displacement? Spalling?)	A/S			



Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Headwalls and Endwalls				
Ensure all are structurally sound and in good condition. Note any deficiencies and repair to proper working condition	A/S			
Inspect for blockage or sediment	A/S			
Check for erosion or scouring around headwall inlets and repair	A/S			
Evidence of staining?	A/S			
If flowing water is present does it appear to contain anything other than stormwater? I.e. Discoloration, odors, sheens, etc? Note location and describe.	A/S			
Hazards				
Have there been complaints from residents?	A/S			

Inspector Comments: _____

Overall Condition of Facility: Acceptable Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
 (date)

Inspected by: (signature) _____
 Inspected by: (printed) _____



Water Resource Buffers Inspection and Maintenance Checklist

Site Name: _____ Owner Change since last inspection? Y N

Location: _____

Owner Name: _____

Address: _____ Phone Number: _____

Site Status: _____

Date: _____ Time: _____ Site conditions: _____

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	
Disturbance				
Are there any signs of clearing, grading, construction, storage, mowing or other disturbance of vegetation or soil taken place in the buffer??	A/M			
Are there any signs of erosion within the buffer or banks of the stream?	A/M			
Are there any surrounding disturbances that might be threats to the buffer or water quality?	A/M			
Buffer State				
Would the general state of the buffer be described as an undisturbed native successional forest or similar?	A/M			
Are there any diseased, dying, or endangering trees in the buffer?	A/M			
Is the buffer contain more than 30% exotic invasive material?	A/M			
Signs				
Are buffer signs still clearly visible and in good legible condition? If not clear back vegetation or replace.	A/M			

City of Franklin, Tn
Stormwater Division
615-791-3218



To be submitted as part of
annual report to City

REV 2/2015

Note: There shall be no clearing, grading, construction, storage or disturbance of vegetation or soil allowed in the Water Resource Buffer except as permitted by the City Engineer. There is to be no mowing of grass or cutting of trees in the buffers except for vegetation that is diseased, dying or in danger of adjacent structures. Report any of this in the comments section below.

Inspector Comments: _____

Overall Condition of Facility: Acceptable Unacceptable

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed," list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____
(date)

Inspected by: (signature) _____
Inspected by: (printed) _____



Water Quality Swale Inspections and Maintenance Checklist

Site Name: _____ Owner Change since last inspection? Y N

Location: _____

Owner Name: _____

Address: _____ Phone Number: _____

Site Status: _____

Date: _____ Time: _____ Site conditions: _____

Inspection Frequency Key: A=annual (required); M=monthly (recommended); S=after major storms (recommended)

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	
Pre-Treatment Area				
Area free of debris?	A/M			
Standing water longer than 24 hours after a storm event?	A/S			
Bare soil or erosion?	M/S			
Excessive landscape waste/yard clippings?	A/M			
Inlet/Outlet Structures				
Inlets provide stable conveyance into the facility?	A			
Evidence of erosion at or around inlet?	A			
If connected to extended detention, is outlet to pond functioning properly?	A			
Other	A			
Basin				
Adjacent area fully stabilized (no evidence of eroding material into Bioretention area)?	A			
Adequate media layer present?	A			
Plant composition according to approved plan?	A			
Invasive species/weeds present?	A			



Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	
Dead vegetation or exposed soil present?	A			
Maintenance access to facility?	A			
Excessive trash/debris/sediment?	A			
Evidence of erosion?	A			
Evidence of standing water (Ponding, Noticeable Odors, Water Stains, Algae)?	A/M			
If underdrain system, is it broken or clogged?	A/M			
Overflow structure free of blockage and operating properly?	A			
Other	A			
Hazards				
Have there been complaints from residents?	A/M			
Public hazards noted?	A/M			
Mosquito proliferation?	A/M			
Is there encroachment on pervious area or easement by buildings or other structures?	A/S			

Inspector Comments: _____

Overall Condition of Facility: Acceptable Unacceptable

If any of the above Inspection Items are checked “Yes” for “Maintenance Needed,” list Maintenance actions and their completion dates below:

Maintenance Action Needed	Due Date

The next routine inspection is scheduled for approximately: _____

(date)

Inspected by: (signature) _____

Inspected by: (printed) _____

APPENDIX D

UNDERGROUND DETENTION POND PRODUCT INFORMATION

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	SANDY COLLINS-CAMARGO 859-421-6429 SANDY.CAMARGO@ADS-PIPE.COM
ADS SALES REP:	BRAIN MULLIGAN (615) 330-2307 BRIAN.MULLIGAN@ADS-PIPE.COM
PROJECT NO:	164760



ADVANCED DRAINAGE SYSTEMS, INC.



SUDSY'S CAR WASH

FRANKLIN, TN

STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-4500 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
 - a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
 - b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
 - c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-4500 CHAMBER SYSTEM

1. STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm) MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-4500 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

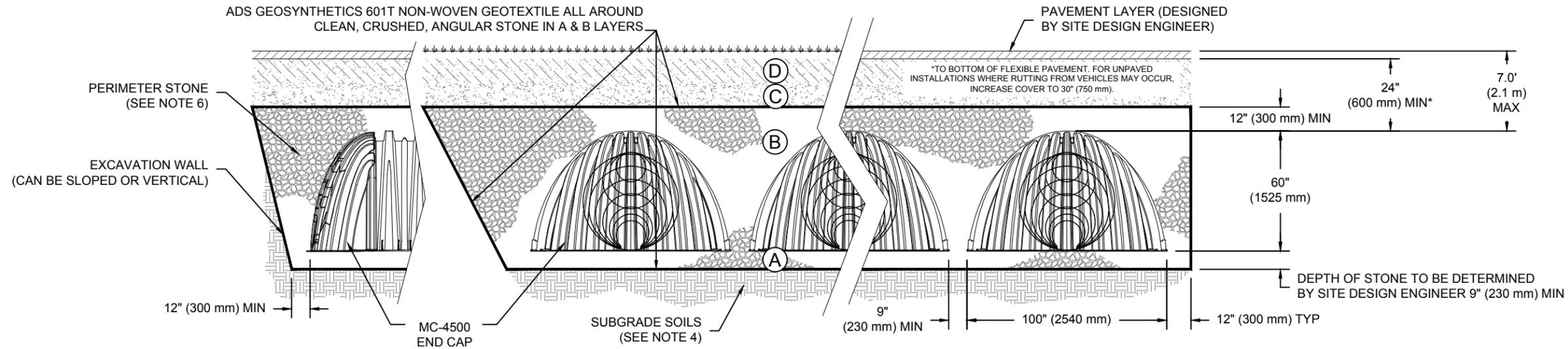
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 ¹ 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 ¹ 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

1. MC-4500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

DESCRIPTION

CHK

DRW

REV

SUDSY'S CAR WASH
FRANKLIN, TN

DATE: 10-18-16

DRAWN: LAH

CHECKED: KMS

PROJECT #: 164760

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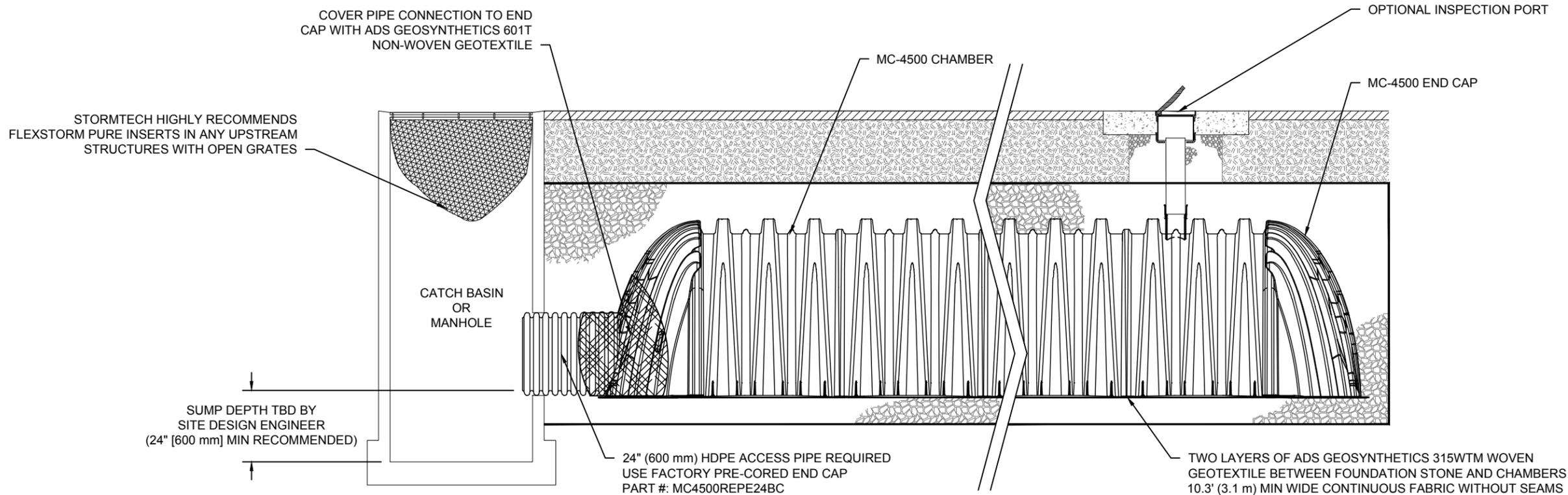
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HILLIARD, OH 43026

ADS
ADVANCED DRAINAGE SYSTEMS, INC.

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SHEET

3 OF 5



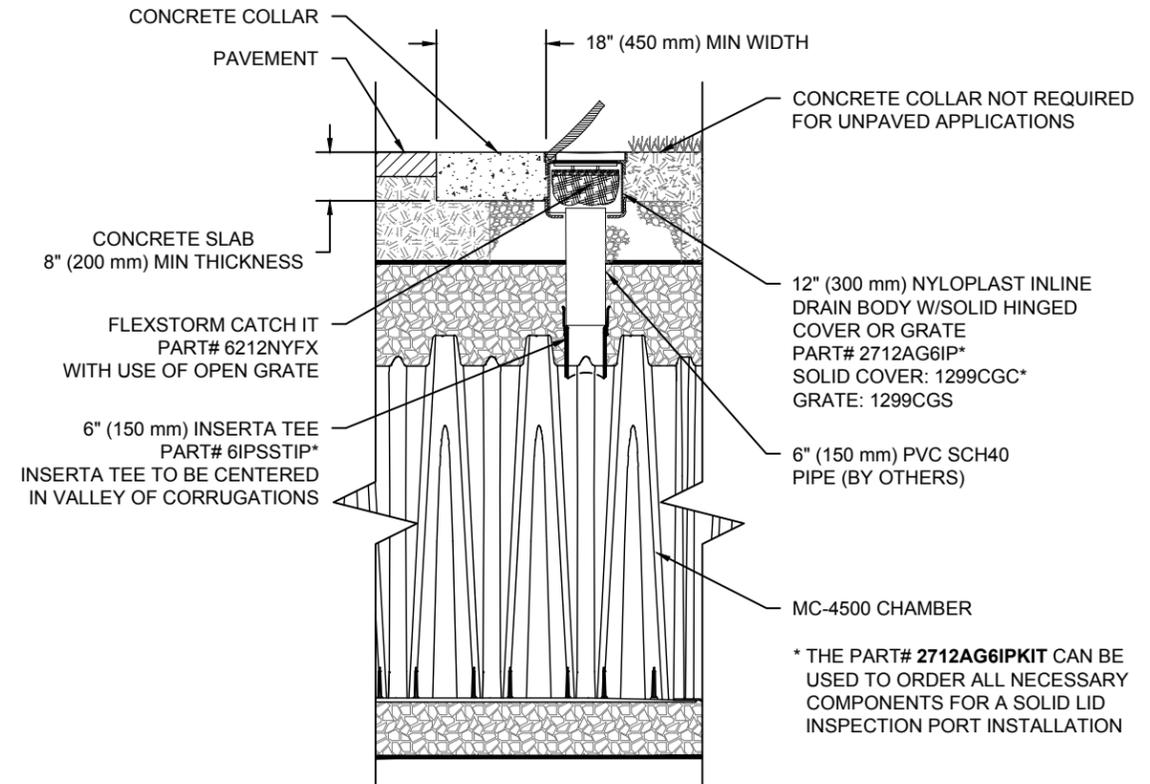
MC-4500 ISOLATOR ROW DETAIL
NTS

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
 - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - B. ALL ISOLATOR ROWS
 - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
 - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
 - B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



MC-4500 6" INSPECTION PORT DETAIL
NTS

DESCRIPTION	SUDSY'S CAR WASH FRANKLIN, TN
DRW	LAH
CHK	LAH
REV	LAH
DATE	10-18-16
PROJECT #	164760
CHECKED	KMS

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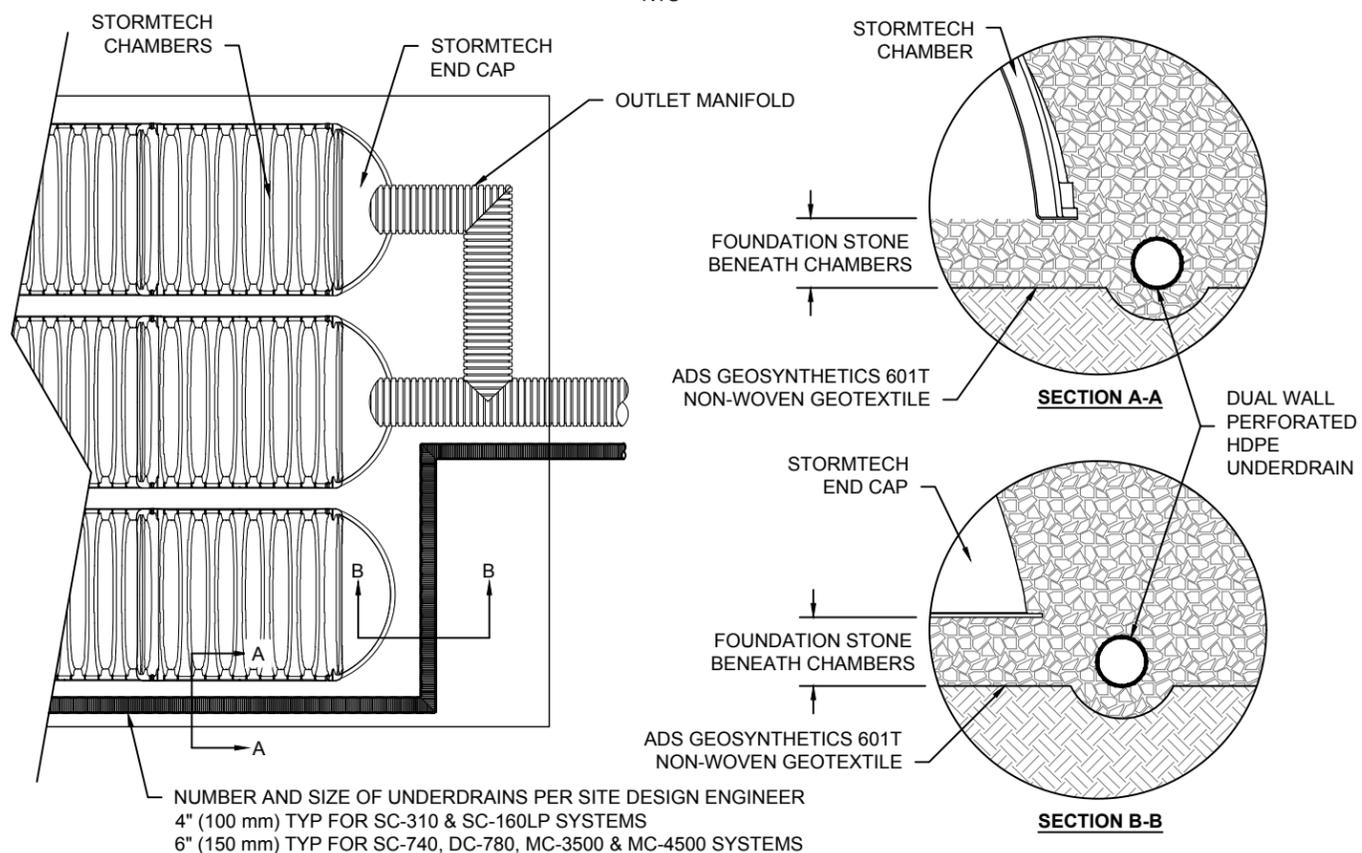
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4640 TRUJEMAN BLVD
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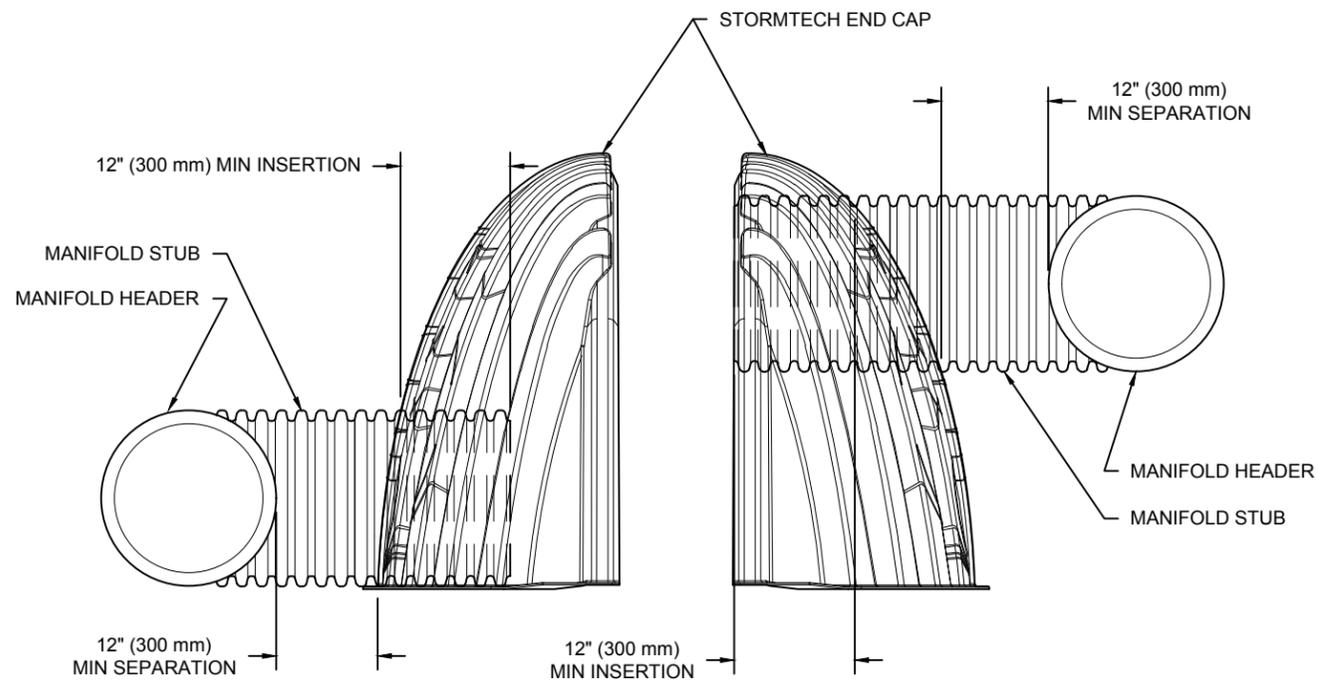
UNDERDRAIN DETAIL

NTS



MC-SERIES END CAP INSERTION DETAIL

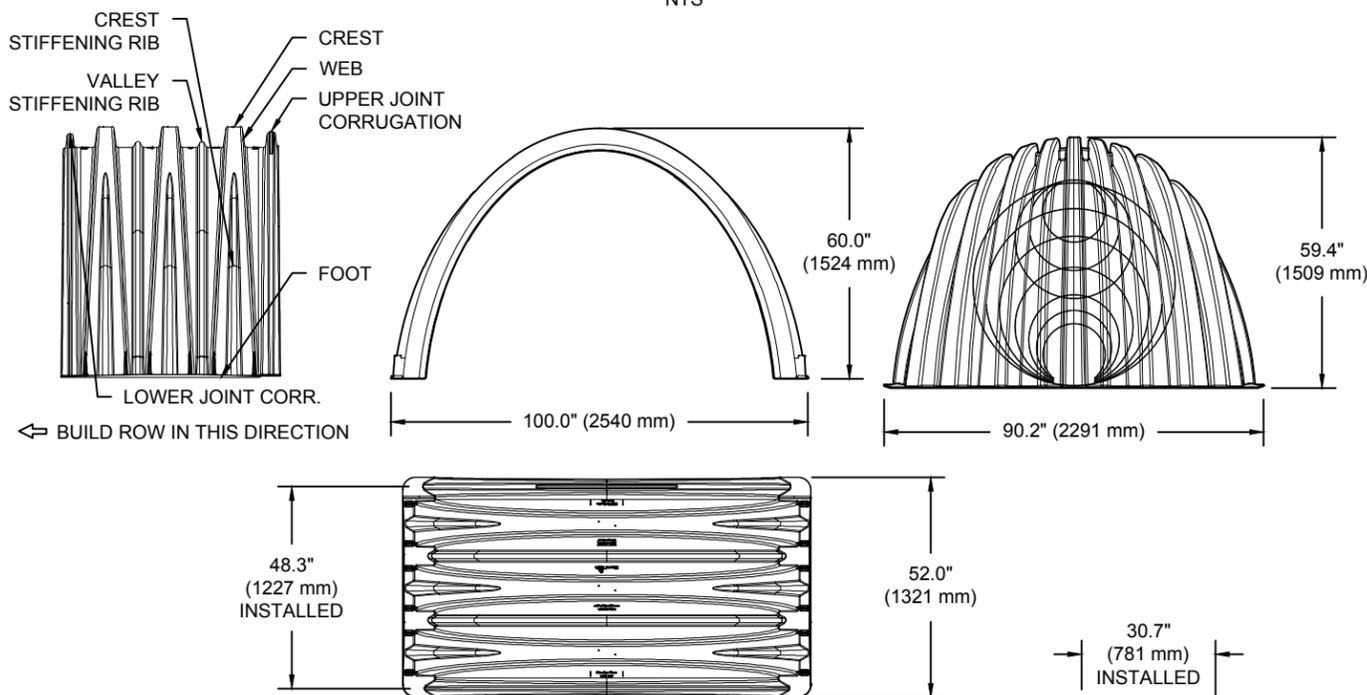
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NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-4500 TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 48.3"	(2540 mm X 1524 mm X 1227 mm)
CHAMBER STORAGE	106.5 CUBIC FEET	(3.01 m ³)
MINIMUM INSTALLED STORAGE*	162.6 CUBIC FEET	(4.60 m ³)
WEIGHT	130.0 lbs.	(59.0 kg)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	90.2" X 59.4" X 30.7"	(2291 mm X 1509 mm X 781 mm)
END CAP STORAGE	35.7 CUBIC FEET	(1.01 m ³)
MINIMUM INSTALLED STORAGE*	108.7 CUBIC FEET	(3.08 m ³)
WEIGHT	135.0 lbs.	(61.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
 STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	B	C
MC4500REPE06T	6" (150 mm)	42.54" (1.081 m)	---
MC4500REPE06B		---	0.86" (22 mm)
MC4500REPE08T	8" (200 mm)	40.50" (1.029 m)	---
MC4500REPE08B		---	1.01" (26 mm)
MC4500REPE10T	10" (250 mm)	38.37" (975 mm)	---
MC4500REPE10B		---	1.33" (34 mm)
MC4500REPE12T	12" (300 mm)	35.69" (907 mm)	---
MC4500REPE12B		---	1.55" (39 mm)
MC4500REPE15T	15" (375 mm)	32.72" (831 mm)	---
MC4500REPE15B		---	1.70" (43 mm)
MC4500REPE18TC	18" (450 mm)	29.36" (746 mm)	---
MC4500REPE18BC		---	1.97" (50 mm)
MC4500REPE24TC	24" (600 mm)	23.05" (585 mm)	---
MC4500REPE24BC		---	2.26" (57 mm)
MC4500REPE30BC	30" (750 mm)	---	2.95" (75 mm)
MC4500REPE36BC	36" (900 mm)	---	3.25" (83 mm)
MC4500REPE42BC	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PRECURED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-4500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm) THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

SUDSY'S CAR WASH
FRANKLIN, TN

DATE: 10-18-16
 DRAWN: LAH
 PROJECT #: 164760
 CHECKED: KMS

DESCRIPTION

DRW CHK

REV

StormTech
 Determined Performance Water Quality
 70 INWOOD ROAD, SUITE 3 | ROCKY HILL, CT | 06067
 860-528-8188 | 888-892-2894 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
 HILLIARD, OH 43026
ADS
 ADVANCED DRAINAGE SYSTEMS, INC.

SHEET
5 OF 5

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**Save Valuable Land and
Protect Water Resources**



Isolator[®] Row O&M Manual
StormTech[®] Chamber System for Stormwater Management

1.0 The Isolator[®] Row

1.1 INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a patented technique to inexpensively enhance Total Suspended Solids (TSS) removal and provide easy access for inspection and maintenance.



Looking down the Isolator Row from the manhole opening, woven geotextile is shown between the chamber and stone base.

1.2 THE ISOLATOR ROW

The Isolator Row is a row of StormTech chambers, either SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-4500 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC-310-3 and SC-740 models) allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

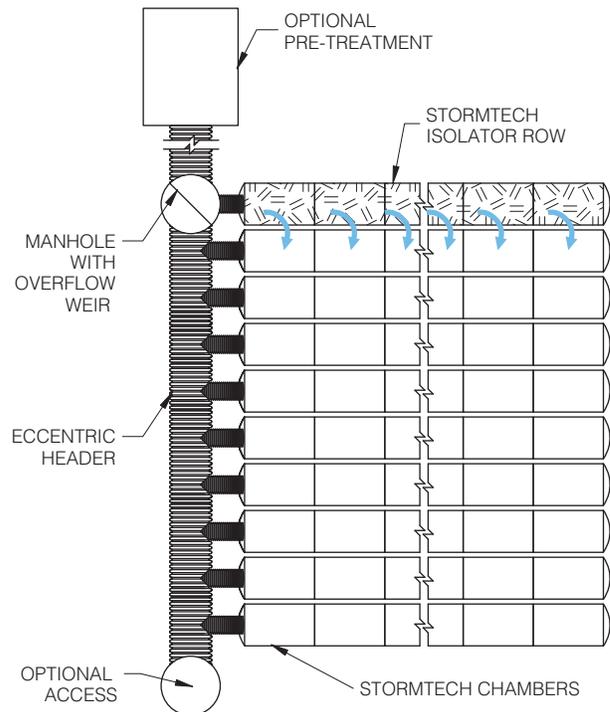
Two different fabrics are used for the Isolator Row. A woven geotextile fabric is placed between the stone and the Isolator Row chambers. The tough geotextile provides a media for storm water filtration and provides a durable surface for maintenance operations. It is also designed to prevent scour of the underlying stone and remain intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber. The non-woven fabric is not required over the DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

The Isolator Row is typically designed to capture the “first flush” and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but typically includes a high flow weir such that storm water flowrates or volumes that exceed the capacity of the Isolator Row overtop the over flow weir and discharge through a manifold to the other chambers.

The Isolator Row may also be part of a treatment train. By treating storm water prior to entry into the chamber system, the service life can be extended and pollutants such as hydrocarbons can be captured. Pre-treatment best management practices can be as simple as deep sump catch basins, oil-water separators or can be innovative storm water treatment devices. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.

StormTech Isolator Row with Overflow Spillway (not to scale)



2.0 Isolator Row Inspection/Maintenance



2.1 INSPECTION

The frequency of Inspection and Maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

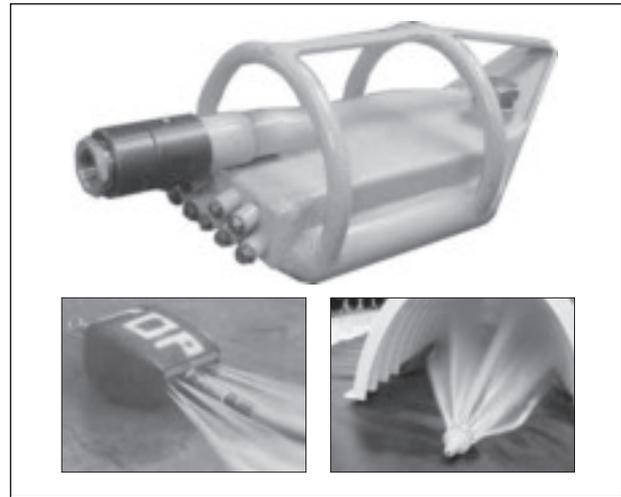
At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

2.2 MAINTENANCE

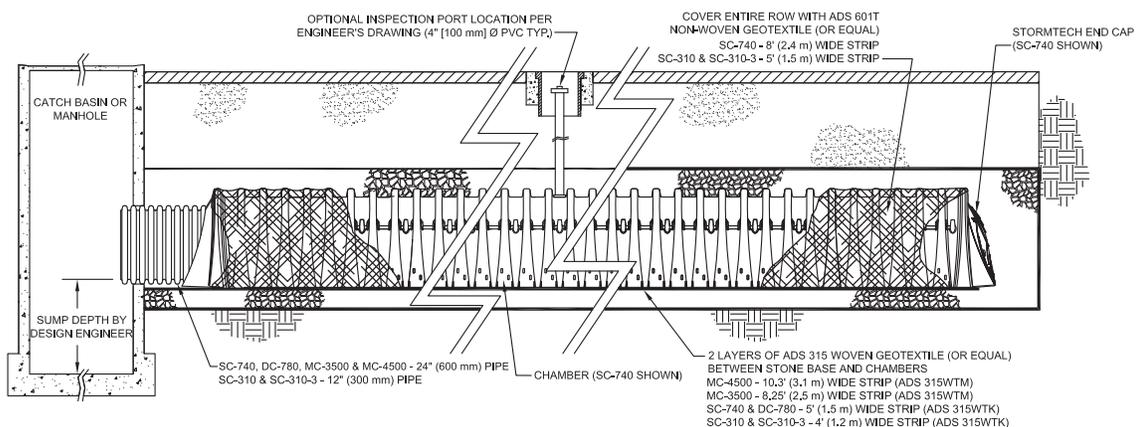
The Isolator Row was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.



Examples of culvert cleaning nozzles appropriate for Isolator Row maintenance. (These are not StormTech products.)

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45” are best. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.**

StormTech Isolator Row (not to scale)



NOTE: NON-WOVEN FABRIC IS ONLY REQUIRED OVER THE INLET PIPE CONNECTION INTO THE END CAP FOR DC-780, MC-3500 AND MC-4500 CHAMBER MODELS AND IS NOT REQUIRED OVER THE ENTIRE ISOLATOR ROW.

3.0 Isolator Row Step By Step Maintenance Procedures

Step 1) Inspect Isolator Row for sediment

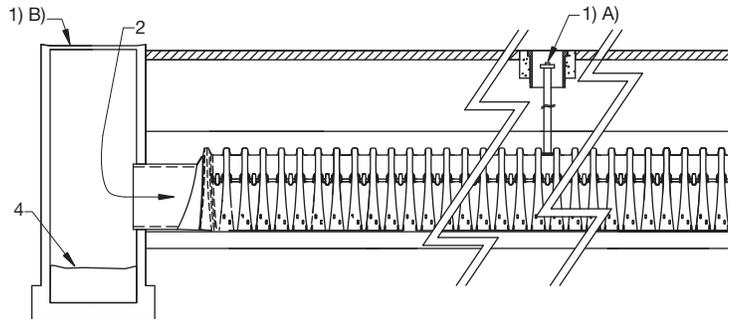
A) Inspection ports (if present)

- i. Remove lid from floor box frame
- ii. Remove cap from inspection riser
- iii. Using a flashlight and stadia rod, measure depth of sediment and record results on maintenance log.
- iv. If sediment is at, or above, 3 inch depth proceed to Step 2. If not proceed to step 3.

B) All Isolator Rows

- i. Remove cover from manhole at upstream end of Isolator Row
- ii. Using a flashlight, inspect down Isolator Row through outlet pipe
 1. Mirrors on poles or cameras may be used to avoid a confined space entry
 2. Follow OSHA regulations for confined space entry if entering manhole
- iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches) proceed to Step 2. If not proceed to Step 3.

StormTech Isolator Row (not to scale)



Step 2) Clean out Isolator Row using the JetVac process

- A) A fixed culvert cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
- B) Apply multiple passes of JetVac until backflush water is clean
- C) Vacuum manhole sump as required

Step 3) Replace all caps, lids and covers, record observations and actions

Step 4) Inspect & clean catch basins and manholes upstream of the StormTech system

Sample Maintenance Log

Date	Stadia Rod Readings		Sediment Depth (1) - (2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/01	6.3 ft.	none		New installation. Fixed point is CI frame at grade	djm
9/24/01		6.2	0.1 ft.	Some grit felt	sm
6/20/03		5.8	0.5 ft.	Mucky feel, debris visible in manhole and in Isolator row, maintenance due	rv
7/7/03	6.3 ft.		0	System jetted and vacuumed	djm



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