APPENDIX I

Stormwater Management Plan

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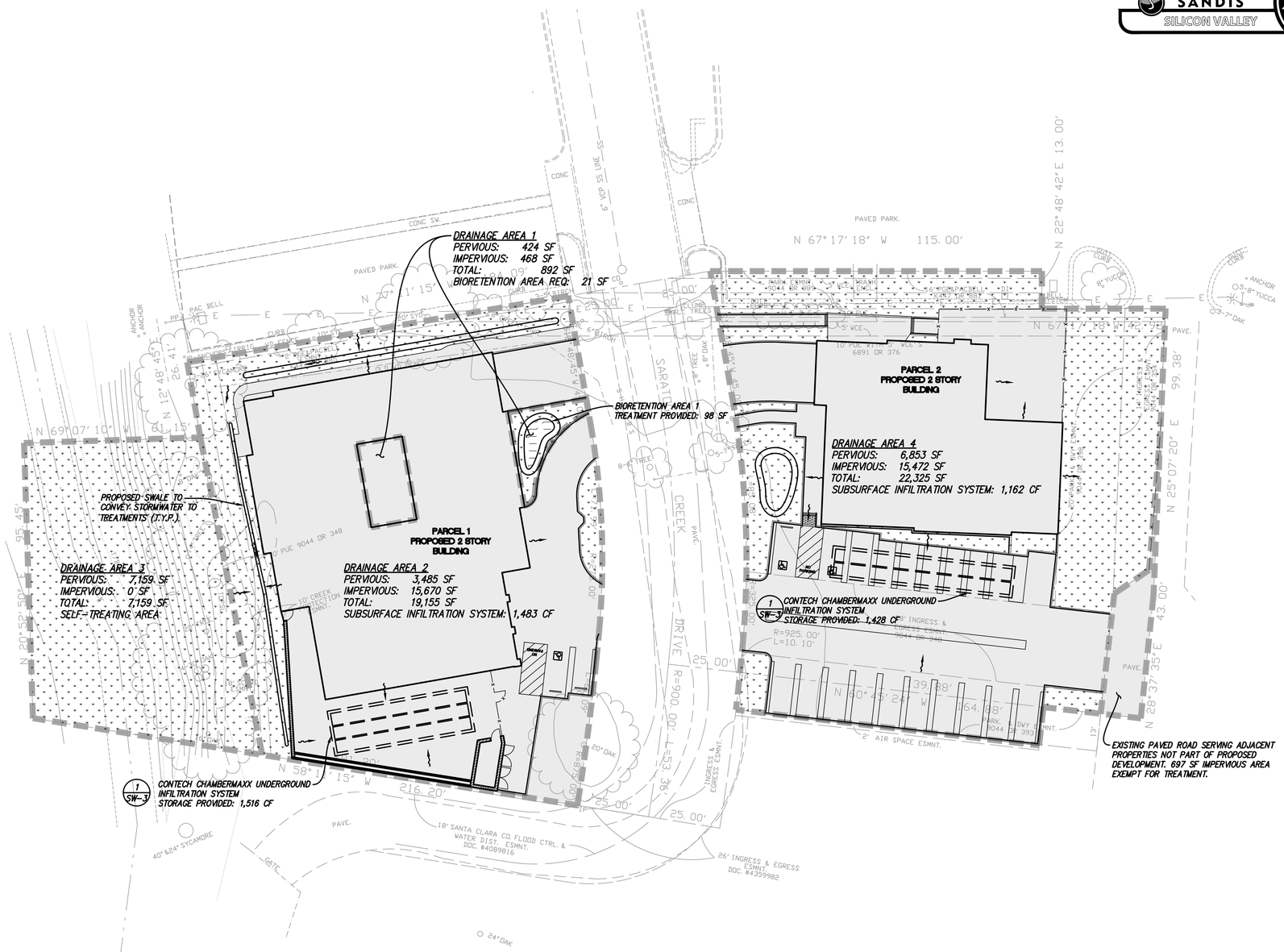
SANDIS SILICON VALLEY

SCALE: 1"=20'



STORMWATER MANAGEMENT PLAN LEGEND

- PROPOSED PERVIOUS AREA
- PROPOSED IMPERVIOUS AREA
- BIO-RETENTION AREA (1/SW-2)
- DRAINAGE AREA BOUNDARY
- FLOW LINE
- FLOW DIRECTION

HYDROMODIFICATION NOTE:

THE PROJECT IS EXEMPT FROM HYDROMODIFICATION REQUIREMENTS PER THE SANTA CLARA COUNTY C.3 TECHNICAL GUIDANCE DOCUMENT. THE PROJECT IS EXEMPT FROM HYDROMODIFICATION DUE TO IMPERVIOUS AREA ADDED OR REPLACED BEING LESS THAN 1 ACRE.

SITE TREATMENT AREA NOTE:

THIS PROJECT IS REPLACING MORE THAN 50% OF THE EXISTING IMPERVIOUS AREA AND THEREFORE MUST TREAT THE ENTIRE SITE.

STORMWATER MANAGEMENT NOTES:

1. THIS PLAN PRESENTS METHODS AND CALCULATIONS FOR COMPLYING WITH THE REQUIREMENTS OF PROVISION C.3 OF THE MUNICIPAL REGIONAL STORMWATER PERMIT IN ACCORDANCE WITH THE SANTA CLARA COUNTY PROGRAM AND THE CITY OF SARATOGA REQUIREMENTS.

2. THE FOLLOWING TREATMENT MEASURES ARE PROPOSED TO REGULATE THE QUALITY OF STORM WATER LEAVING THE SITE

   2.1. SELF-TREATING AREA – RUNOFF IN THIS AREA ORIGINATES IN AND FLOWS THROUGH PLANTING PRIOR TO EXITING THE PROJECT SITE, NO TREATMENT IS REQUIRED

   2.2. BIO-RETENTION AREA – RUNOFF IN THIS AREA IS DIRECTED TO A BIO-RETENTION PLANTER/AREA FOR FILTRATION, INFILTRATION AND EVAPOTRANSPIRATION PRIOR TO EXISTING THE SITE. PLANTING AND SOIL REQUIREMENTS APPLY, SEE DETAIL

   2.3. SUBSURFACE INFILTRATION SYSTEM – RUNOFF IN THIS AREA IS DIRECTED TO A SUBSURFACE INFILTRATION SYSTEM FOR STORAGE AND INFILTRATION PRIOR TO EXISTING THE SITE.

C.3 STORMWATER TREATMENT MEASURES:

PARCEL 1

Table D: BMP Summary Table

Drainage Area	TOTAL AREA		IMPERVIOUS AREA		PERVIOUS AREA		Percent Impervious	Net Impervious	Net Runoff Coefficient, c	Q (cfs) Required	Treatment Area	C.3 LID Method	Treatment Provided (sf)
	sq. ft.	Ac.	sq. ft.	Ac.	sq. ft.	Ac.							
Treatment (Flow/Volume Calculation)													
1	892.0	0.02	424.0	0.01	468	0.01	47.5%	424.0	0.585	0.002	21	BRA	98
2	19,155.0	0.44	15,670.0	0.36	3,485.0	0.08	81.8%	15,670.0	0.791	0.070	1,483	SIS	1,516

PARCEL 2

Table D: BMP Summary Table

Drainage Area	TOTAL AREA		IMPERVIOUS AREA		PERVIOUS AREA		Percent Impervious	Net Impervious	Net Runoff Coefficient, c	Q (cfs) Required	Treatment Area	C.3 LID Method	Treatment Provided (sf)
	sq. ft.	Ac.	sq. ft.	Ac.	sq. ft.	Ac.							
Treatment (Flow/Volume Calculation)													
3	22,325.0	0.51	15,472.0	0.36	6,853.0	0.16	69.3%	15,472.0	0.716	0.073	1,356	SIS	1,428

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SILICON VALLEY TRI-VALLEY CENTRAL VALLEY SACRAMENTO EAST BAY/SF

DATE: 01/22/18
SCALE: 1"=20'
DRAWN BY: LW
APPROVED BY: ND
DRAWING NO.: 217040

DATE _____, 2018

CHAD J. BROWNING
R.C.E. NO. 68315, EXPIRES 9-30-19

No.	REVISION/ISSUE	DATE	BY

PALM VILLAS SARATOGA CREEK DRIVE
STORMWATER MANAGEMENT PLAN
SARATOGA CALIFORNIA

SHEET SW1 OF 3 SHEETS

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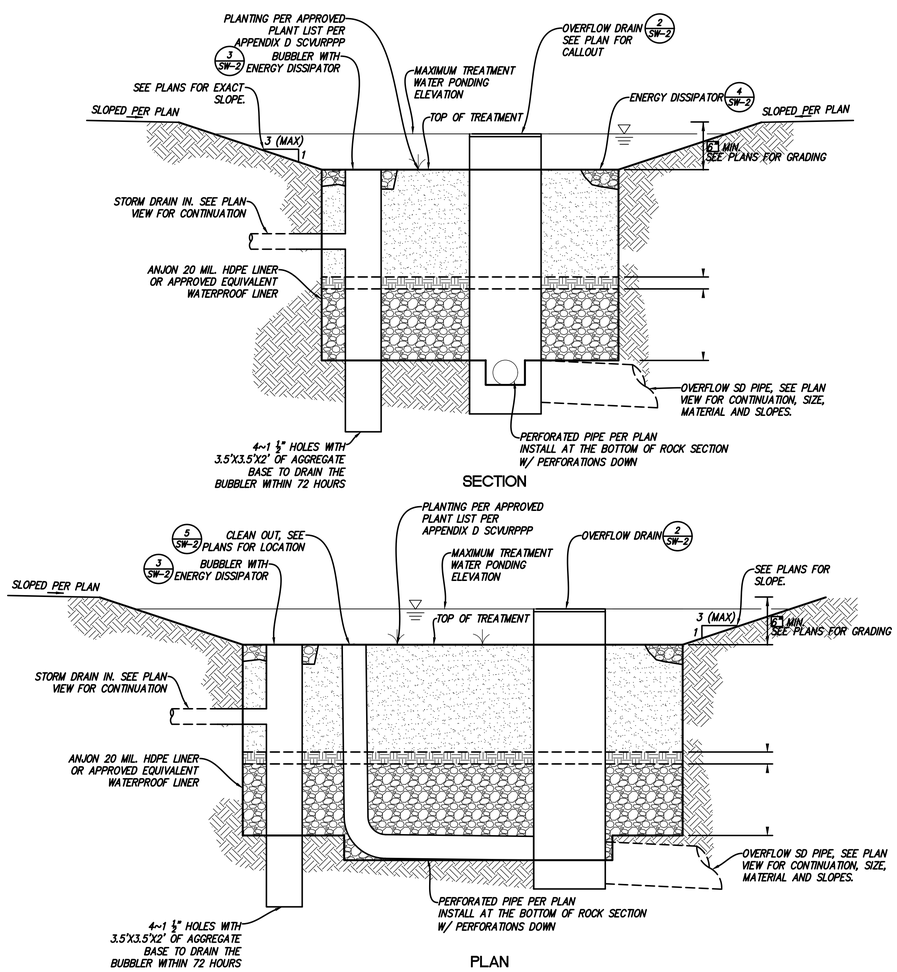
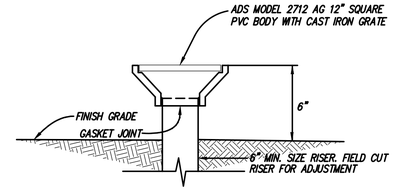
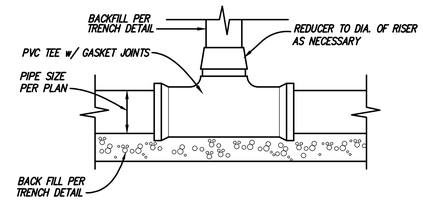


NON-INFILTRATING PIPE FLOWED BIORETENTION AREA 1



GRATE & RISER DETAIL



TEE & RISER DETAIL

OVERFLOW DRAIN 2

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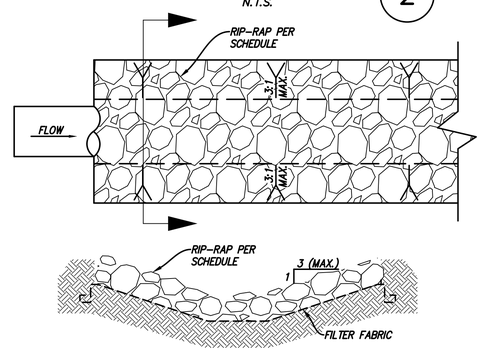

NOTE:

RIP RAP SIZING TO BE DETERMINED BY ENGINEER

"d50" DIA.	"X" DEPTH	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (IN.)
ø≤6"	0.5'	70-100	12
		50-70	9
		35-50	6
		2-10	2

ENERGY DISSIPATOR 4

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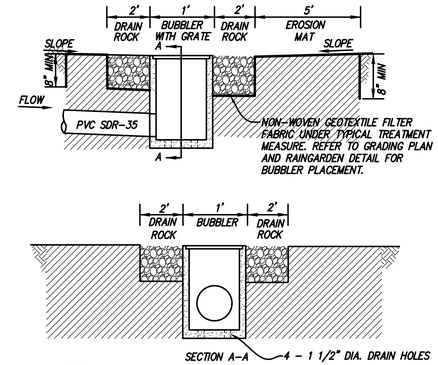
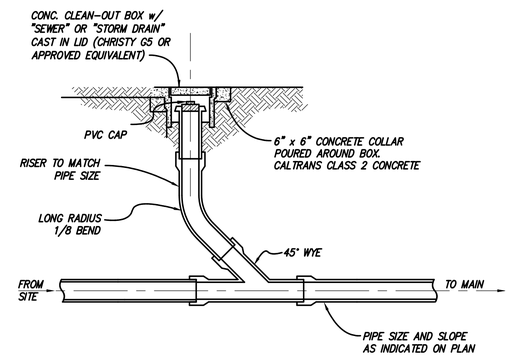


NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

BUBBLER/ENERGY DISSIPATOR 3

N.T.S.



CLEANOUT WITH LATERAL STUB 5

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DATE: 01/22/18
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DRAWING NO.: 217040

DATE _____, 2018

CHAD J. BROWNING
R.C.E. NO. 68315, EXPIRES 9-30-19

No.	REVISION/ISSUE	DATE	BY

PALM VILLAS SARATOGA CREEK DRIVE
STORM WATER MANAGEMENT DETAILS
SARATOGA CALIFORNIA

SHEET SW2 OF 3 SHEETS

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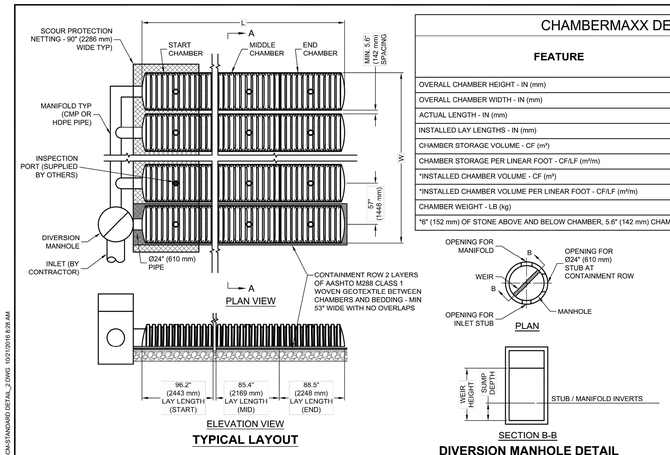


TYPICAL LAYOUT

CHAMBERMAXX DESIGN DETAILS

FEATURE	START CHAMBER	MIDDLE CHAMBER	END CHAMBER
OVERALL CHAMBER HEIGHT - IN (mm)	30.3 (770)	30.3 (770)	30.3 (770)
OVERALL CHAMBER WIDTH - IN (mm)	51.4 (1306)	51.4 (1306)	51.4 (1306)
ACTUAL LENGTH - IN (mm)	98.4 (2500)	91.0 (2311)	92.0 (2337)
INSTALLED LAY LENGTHS - IN (mm)	96.2 (2443)	85.4 (2169)	88.5 (2248)
CHAMBER STORAGE VOLUME - CF (m³)	50.2 (1.421)	47.2 (1.336)	46.2 (1.307)
CHAMBER STORAGE PER LINEAR FOOT - CF/LF (m³/m)	6.3 (0.582)	6.6 (0.616)	6.3 (0.582)
*INSTALLED CHAMBER VOLUME - CF (m³)	78.1 (2.211)	75.1 (2.127)	74.1 (2.098)
*INSTALLED CHAMBER VOLUME PER LINEAR FOOT - CF/LF (m³/m)	9.7 (0.905)	10.6 (0.981)	10.0 (0.934)
CHAMBER WEIGHT - LB (kg)	83 (37.65)	73 (33.11)	76 (34.47)

*6" (152 mm) OF STONE ABOVE AND BELOW CHAMBER, 5.6" (142 mm) CHAMBER SPACING AND 40% POROSITY

* SITE SPECIFIC DATA REQUIREMENTS

FOR DETAILED DESIGN ASSISTANCE REFERENCE CHAMBERMAXX DYCOS (DESIGN YOUR OWN DETENTION SYSTEM) SOFTWARE AND CHAMBERMAXX STAGE STORAGE CALCULATOR @ WWW.CONTECHSTORMWATER.COM

TOTAL REQUIRED STORAGE VOLUME (CF OR m³)	
DEPTH TO INVERT BELOW ASPHALT (FT OR m)	
LIMITING WIDTH (FT OR m)	
LIMITING LENGTH (FT OR m)	
POROUS STONE ABOVE CHAMBER (IN OR mm)	
POROUS STONE BELOW CHAMBER (IN OR mm)	
STONE POROSITY (0 TO 40%)	
MANIFOLD SYSTEM DIAMETER (IN OR mm)	

* PER ENGINEER OF RECORD

DIVERSION MANHOLE DETAIL

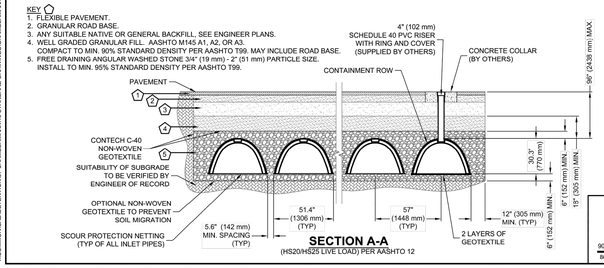
GENERAL NOTES

1. ALL ELEVATIONS, DIMENSIONS AND LOCATIONS OF RISERS AND INLETS SHALL BE VERIFIED BY THE ENGINEER OF RECORD.
2. PRIOR TO INSTALLATION OF THE CHAMBERMAXX SYSTEM A PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED. THOSE REQUIRED TO ATTEND ARE THE SUPPLIER OF THE SYSTEM, THE GENERAL CONTRACTOR, SUB-CONTRACTORS AND THE ENGINEER.
3. CHAMBERMAXX CHAMBERS ARE MANUFACTURED FROM POLYPROPYLENE PLASTIC.
4. CHAMBERMAXX SYSTEM TO MEET AASHTO HS20/HS25 LIVE LOADING, PER AASHTO LRFD SECTION 12.
5. ACCESS COVERS TO MEET AASHTO HS20/HS25 LIVE LOADING.
6. MINIMUM COVER IS 18-INCHES (457 mm) AND MAXIMUM COVER IS 96-INCHES (2438 mm) TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR COVER HEIGHTS GREATER THAN 96-INCHES (2438 mm) CONTACT YOUR LOCAL REPRESENTATIVE.
7. ALL PARTS PROVIDED BY CONTECH UNLESS OTHERWISE NOTED.
8. FOR INFORMATION ON PRE-TREATMENT SYSTEMS, REFERENCE CONTECH PRE-TREATMENT SYSTEM STANDARD DETAILS OR CONTACT YOUR LOCAL REPRESENTATIVE.
9. CHAMBERMAXX BY CONTECH ENGINEERED SOLUTIONS, LLC

INSTALLATION NOTES

1. CHAMBERMAXX INSTALLATION GUIDE TO BE REVIEWED BY CONTRACTOR PRIOR TO INSTALLATION.
2. PRIOR TO PLACING BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, A GEOGRID SHALL BE UTILIZED OR UNSUITABLE MATERIAL SHALL BE REMOVED AND BROUGHT BACK TO GRADE WITH FILL MATERIAL AS APPROVED BY THE ENGINEER OF RECORD. ONCE THE FOUNDATION PREPARATION IS COMPLETE, THE BEDDING MATERIAL CAN BE PLACED.
3. THE SCOUR PROTECTION NETTING TO EXTEND 1'-0" (305 mm) BEYOND OUTSIDE EDGE OF INLET CHAMBERS.
4. COVER ANY OPEN VOID SPACES GREATER THAN ¾" (19 mm) ON CHAMBERS WITH A NON-WOVEN GEOTEXTILE TO PREVENT INFILTRATION OF BACKFILL MATERIAL.
5. STONE EMBEDMENT MATERIAL SHALL BE INSTALLED TO 95% STANDARD PROCTOR DENSITY AND PLACED IN 6-INCH (152 mm) TO 8-INCH (203 mm) LIFTS SUCH THAT THERE IS NO MORE THAN A TWO LIFT DIFFERENTIAL BETWEEN ANY OF THE CHAMBERS AT ANY TIME. GRANULAR BACKFILL MATERIAL SHALL BE COMPACTED TO 95% SPD. BACKFILLING SHALL BE ADVANCED ALONG THE LENGTH OF THE CHAMBER ROWS AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING AND DISPLACEMENT OF THE CHAMBERS. THE MINIMUM CHAMBER SPACING MUST BE MAINTAINED.
6. REFER TO CHAMBERMAXX INSTALLATION GUIDE FOR TEMPORARY CONSTRUCTION LOADING GUIDELINES.
7. IT IS ALWAYS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.
8. GENERAL INSTALLATION METHODS AND MATERIALS TO BE IN ACCORDANCE WITH ASTM D2321.

KEY
1. FLEXIBLE PAVEMENT.
2. GRANULAR ROAD BASE.
3. ANY SUITABLE NATIVE OR GENERAL BACKFILL, SEE ENGINEER PLANS.
4. WELL GRADED GRANULAR FILL. AASHTO M145 A1, A2, OR A3. COMPACT TO MIN. 90% STANDARD DENSITY PER AASHTO T99. MAY INCLUDE ROAD BASE.
5. FREE DRAINING ANGULAR WASHED STONE 3/4" (19 mm) - 2" (51 mm) PARTICLE SIZE. INSTALL TO MIN. 95% STANDARD DENSITY PER AASHTO T99.



SECTION A-A
(HS20/HS25 LIVE LOAD) PER AASHTO 12

CHAMBERMaxx®
PATENT PENDING

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CHAMBERMAXX STORMWATER RETENTION
STANDARD DETAIL
CONTAINMENT ROW OPTION

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SUBSURFACE INFILTRATION SYSTEM DETAILS (1)
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