

# CITY OF ALBUQUERQUE

Planning Department  
Alan Varela, Director



Mayor Timothy M. Keller

December 22, 2022

David Soule, P.E.  
Rio Grande Engineering  
P.O. Box 93924  
Albuquerque, NM 87199

**RE: 13420 Osage Orange - Addition  
Grading and Drainage Plan  
Engineer's Stamp Date: 11/23/22  
Hydrology File: E23D031**

Dear Mr. Soule:

Based upon the information provided in your submittal received 12/15/2022, the Grading and Drainage Plan is approved for Building Permit and Grading Permit. Since this project is an addition to an existing house, a pad certification is not needed for this project. Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

**PRIOR TO CERTIFICATE OF OCCUPANCY:**

1. Engineer's Certification, per the DPM Part 6-14 (F): Engineer's Certification Checklist For Non-Subdivision is required.

If you have any questions, please contact me at 924-3995 or [rbrissette@cabq.gov](mailto:rbrissette@cabq.gov).

Sincerely,

Renée C. Brissette, P.E. CFM  
Senior Engineer, Hydrology  
Planning Department



# City of Albuquerque

Planning Department  
Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: 13420 OSAGE ORANGE Building Permit #: \_\_\_\_\_ Hydrology File #: \_\_\_\_\_

DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ Work Order#: \_\_\_\_\_

Legal Description: LOT 53 UNIT 2 OVERLOOK

City Address: 13420 OSAGE ORANGE

Applicant: \_\_\_\_\_ Contact: \_\_\_\_\_

Address: \_\_\_\_\_

Phone#: \_\_\_\_\_ Fax#: \_\_\_\_\_ E-mail: \_\_\_\_\_

Other Contact: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924 ALB NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: david@riograndeengineering.com

TYPE OF DEVELOPMENT:  PLAT  RESIDENCE  DRB SITE  ADMIN SITE

Check all that Apply:

**DEPARTMENT:**

- HYDROLOGY/ DRAINAGE
- TRAFFIC/ TRANSPORTATION

**TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

- BUILDING PERMIT APPROVAL
- CERTIFICATE OF OCCUPANCY
- PRELIMINARY PLAT APPROVAL
- SITE PLAN FOR SUB'D APPROVAL
- SITE PLAN FOR BLDG. PERMIT APPROVAL
- FINAL PLAT APPROVAL

**TYPE OF SUBMITTAL:**

- ENGINEER/ARCHITECT CERTIFICATION
- PAD CERTIFICATION
- CONCEPTUAL G & D PLAN
- GRADING PLAN
- DRAINAGE REPORT
- DRAINAGE MASTER PLAN
- FLOODPLAIN DEVELOPMENT PERMIT APPLIC
- ELEVATION CERTIFICATE
- CLOMR/LOMR
- TRAFFIC CIRCULATION LAYOUT (TCL)
- TRAFFIC IMPACT STUDY (TIS)
- STREET LIGHT LAYOUT
- OTHER (SPECIFY) \_\_\_\_\_
- PRE-DESIGN MEETING?

- SIA/ RELEASE OF FINANCIAL GUARANTEE
- FOUNDATION PERMIT APPROVAL
- GRADING PERMIT APPROVAL
- SO-19 APPROVAL
- PAVING PERMIT APPROVAL
- GRADING/ PAD CERTIFICATION
- WORK ORDER APPROVAL
- CLOMR/LOMR
- FLOODPLAIN DEVELOPMENT PERMIT
- OTHER (SPECIFY) \_\_\_\_\_

IS THIS A RESUBMITTAL?:  Yes  No

DATE SUBMITTED: \_\_\_\_\_ By: \_\_\_\_\_

COA STAFF: \_\_\_\_\_

ELECTRONIC SUBMITTAL RECEIVED: \_\_\_\_\_

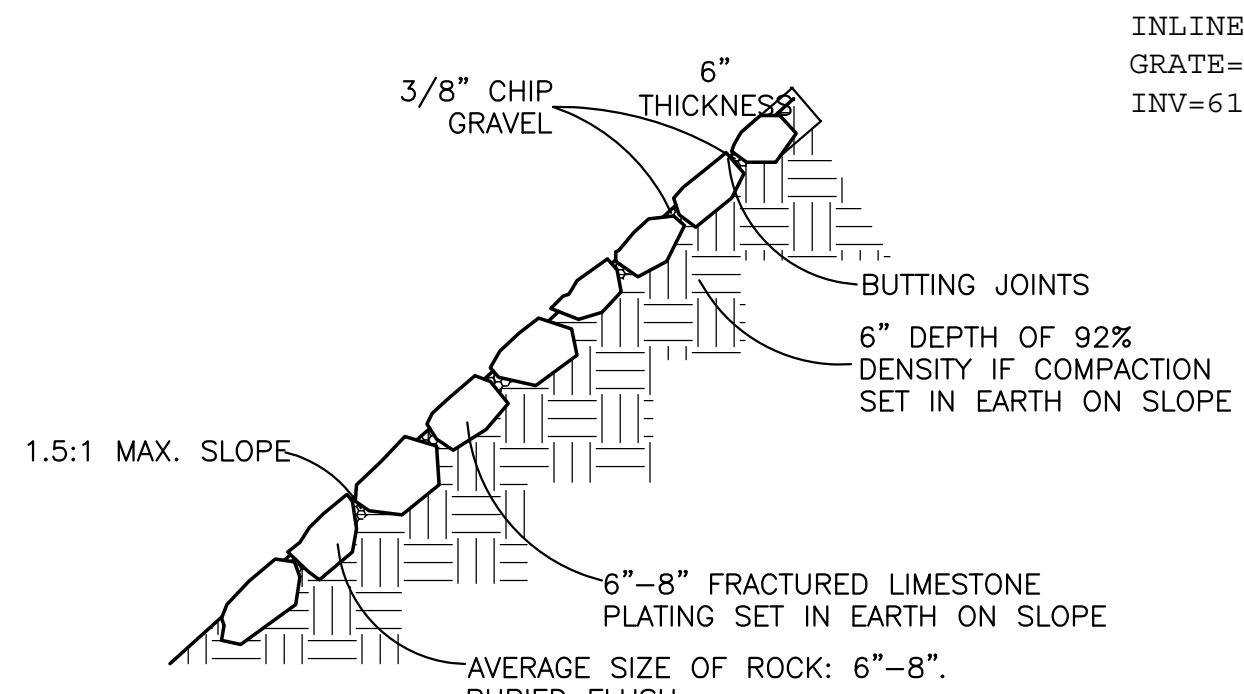
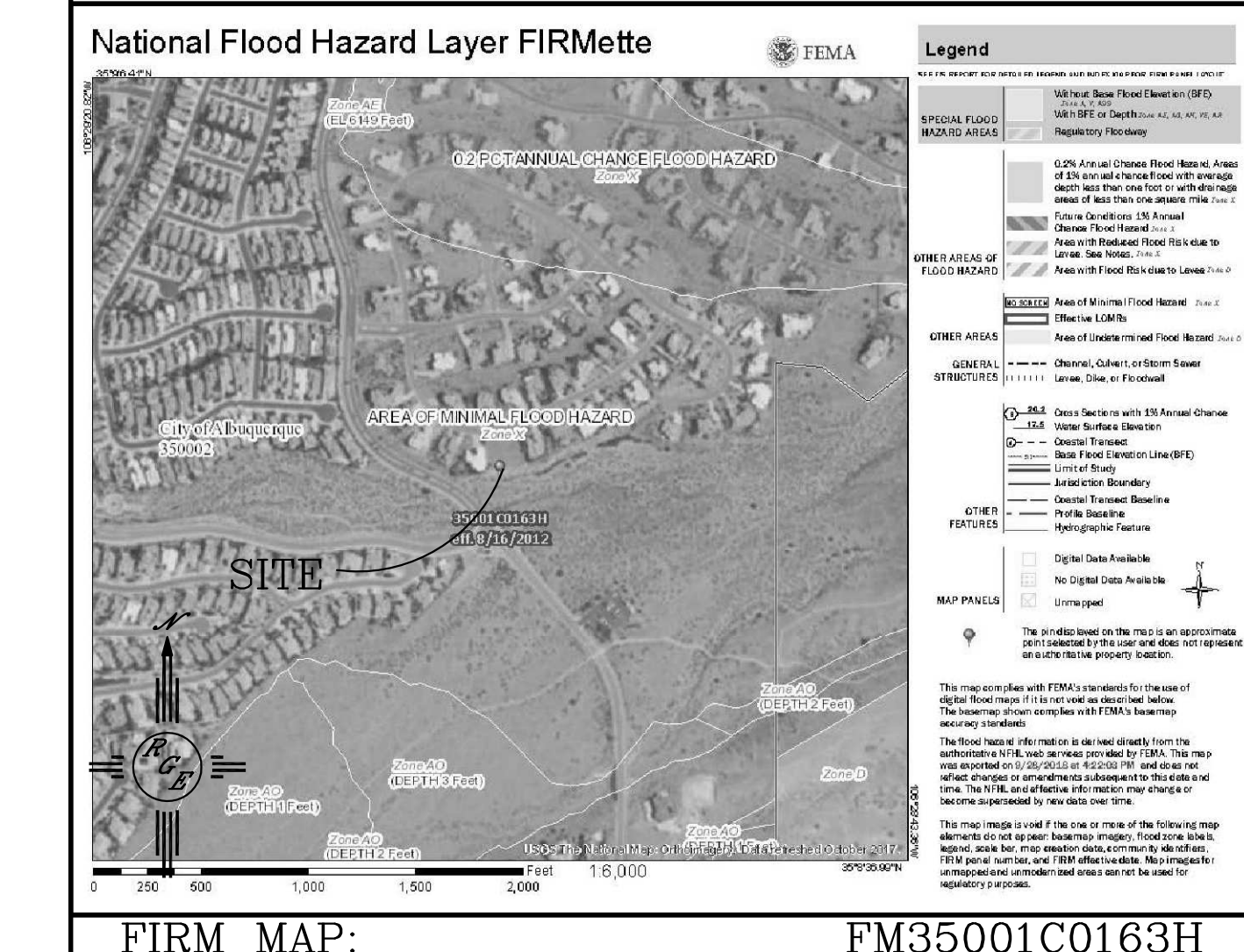
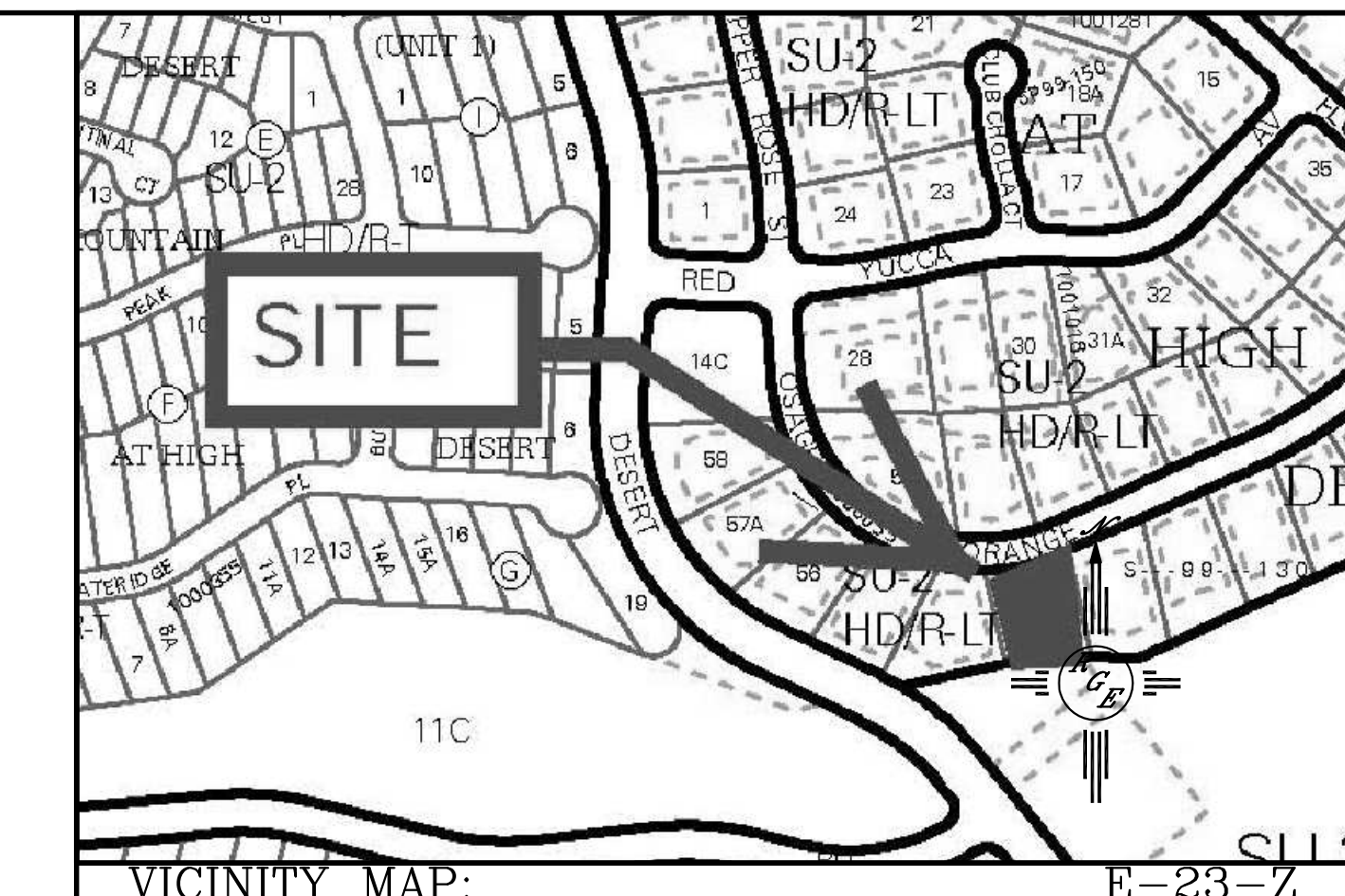
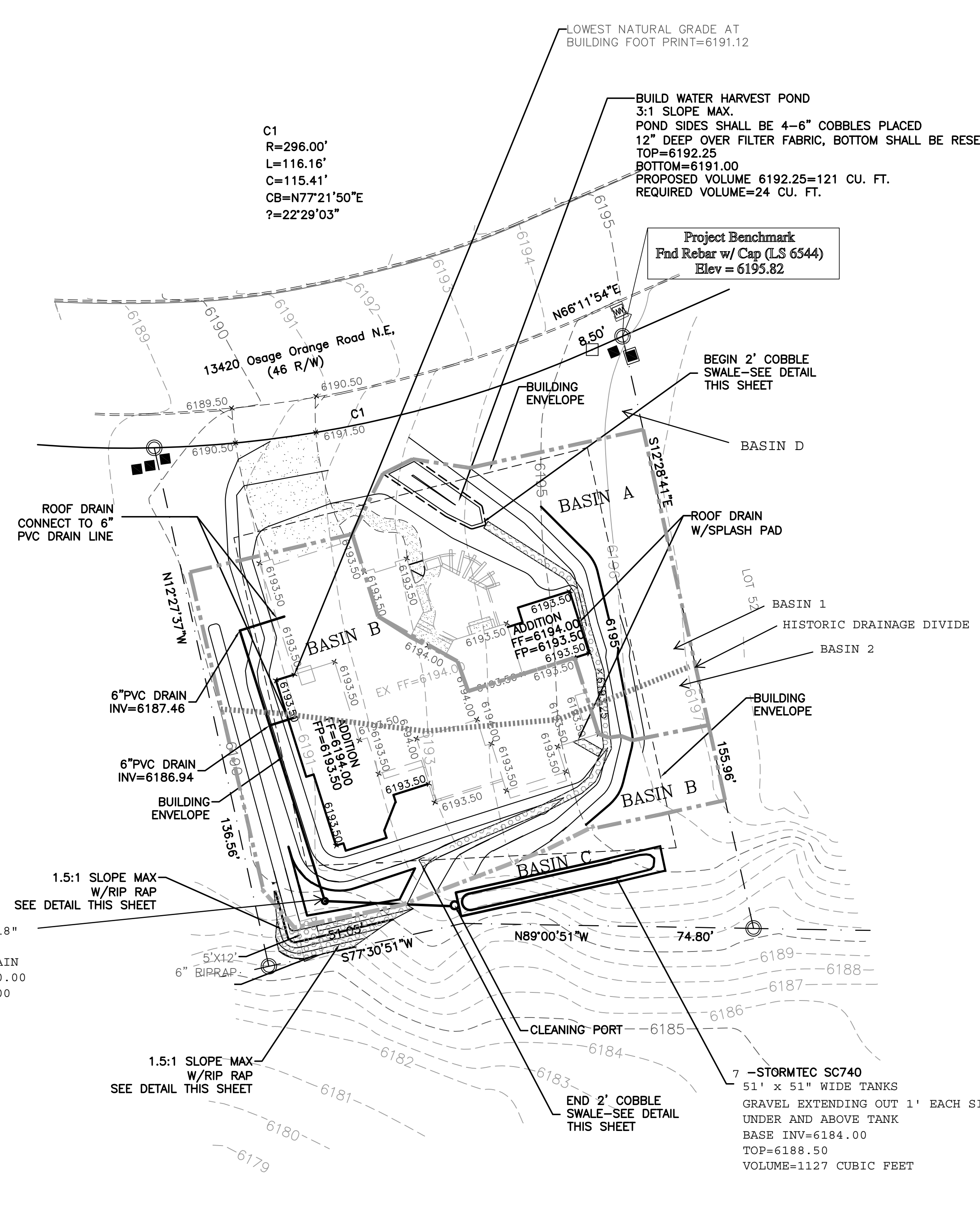
FEE PAID: \_\_\_\_\_

**EROSION CONTROL NOTES:**

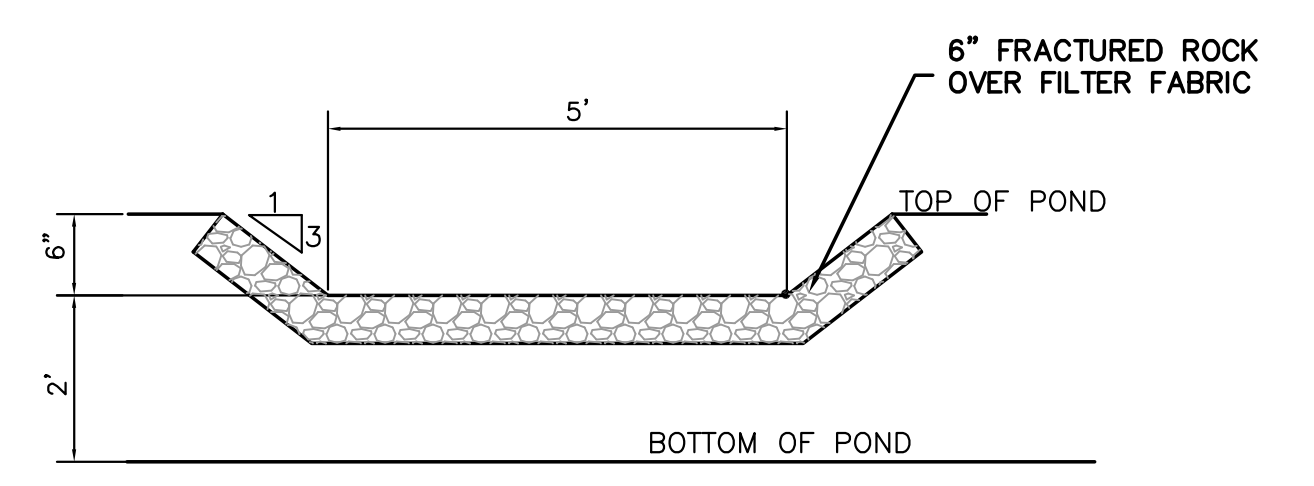
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.

**CAUTION:**

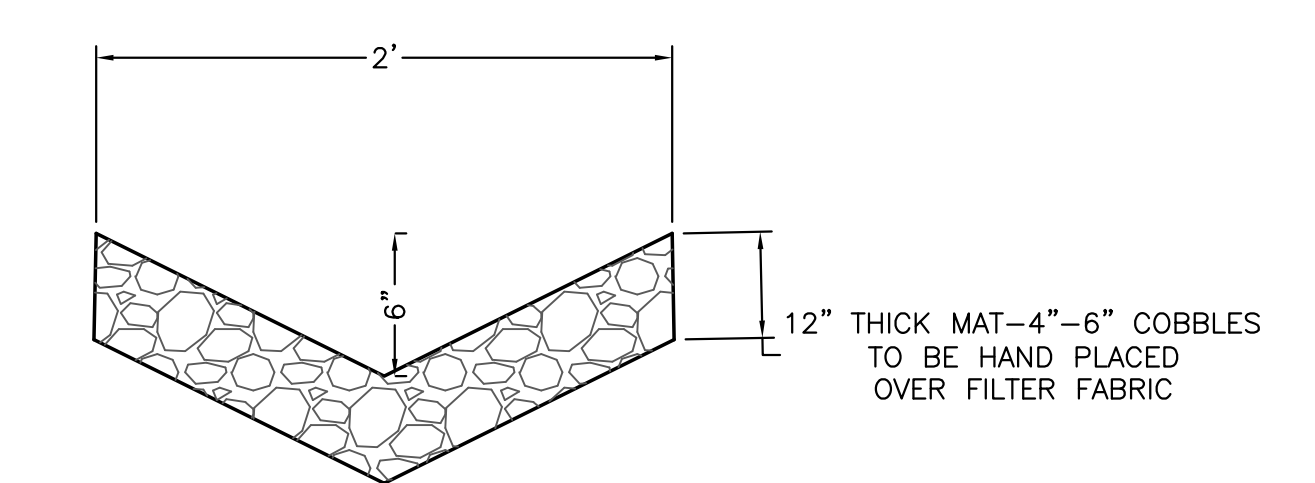
EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.



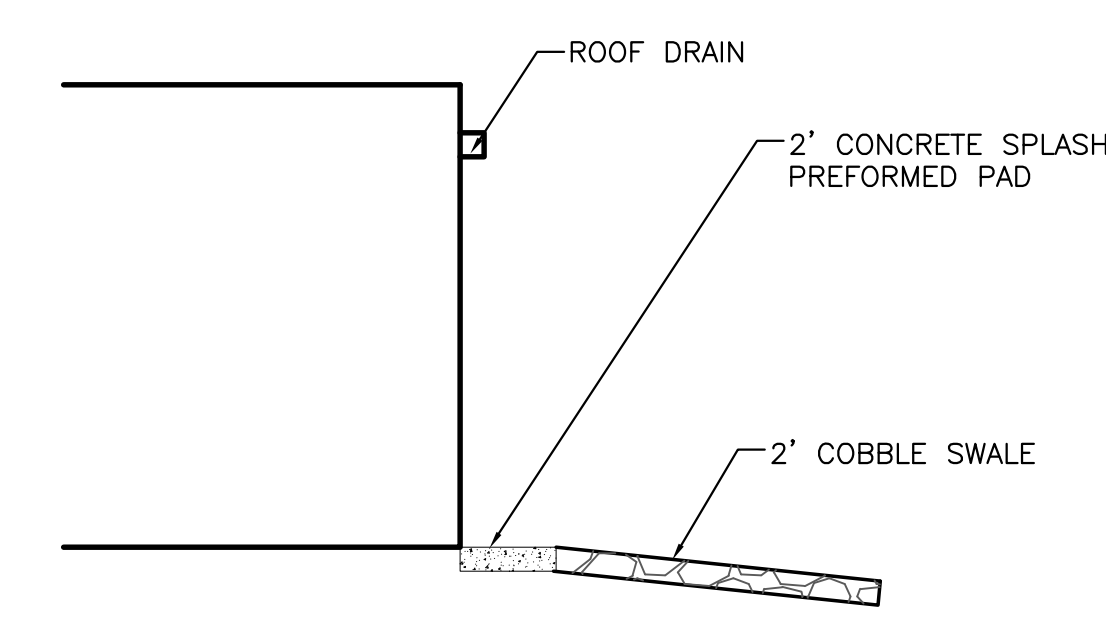
**ROCK PLATING DETAIL**  
NTS



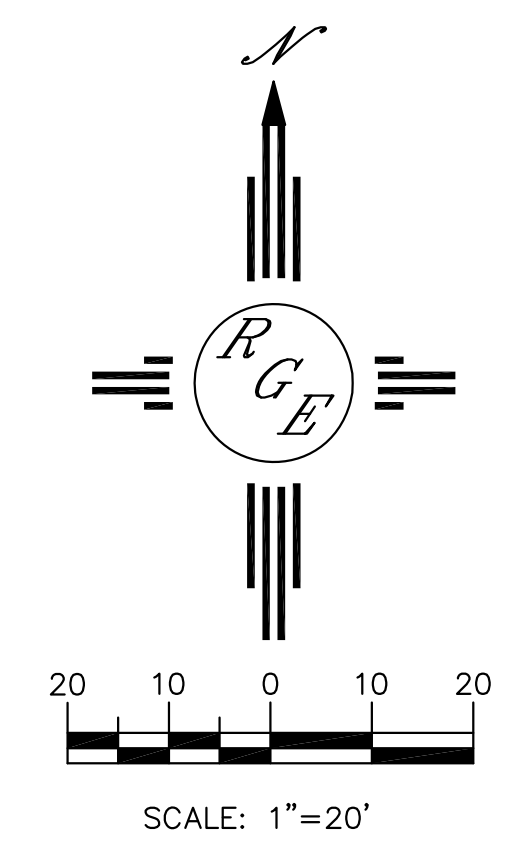
**EMERGENCY OVERFLOW DETAIL**  
NTS



**COBBLE SWALE DETAIL**  
NTS



**ROOF DRAIN SPLASH PAD DETAIL**  
NTS



**LEGAL DESCRIPTION:**  
Lot 53, Overlook at High Desert, Unit 2

**NOTES:**

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
2. ALL ROOF DRAINS SHALL HAVE A SLASH PAD AND 2' COBBLE SWALE THAT SHALL TIE TO MAIN COBBLES SWALES AROUND THE HOUSE PER DETAIL THIS SHEET.
3. ALL DISTURBED AREAS SHALL BE RESEEDED WITH APPROVED HIGH DESERT MIX WITHIN 30 DAYS AFTER THE END OF DISTURBANCE.
4. ALL SLOPES SHALL BE 3:1 MAX. AND GRAVEL OR NATIVE SEEDING PRIOR TO CO.
5. SURVEY PROVIDED BY COMMUNITY SCIENCES CORPORATION, BASED UPON NAVD 1988 DATUM.

**LEGEND**

---XXXX---	EXISTING CONTOUR
- - - - -	EXISTING INDEX CONTOUR
-----	PROPOSED CONTOUR
---XXXX---	PROPOSED INDEX CONTOUR
▲	SLOPE TIE
• XXXXX	EXISTING SPOT ELEVATION
• XXXXX	PROPOSED SPOT ELEVATION
-----	BOUNDARY
-----	CENTERLINE
-----	RIGHT-OF-WAY
=====	PROPOSED CURB AND GUTTER
-----	EXISTING EDGE OF ASPHALT
=====	PROPOSED 1'-2' LANDSCAPE WALL
=====	2' COBBLE SWALE-SEE DETAIL THIS SHEET
-----	BASIN LIMITS

	13420 OSAGE ORANGE	DRAWN BY WCWJ
	ADDITION	DATE 8-09-22
	GRADING AND DRAINAGE PLAN	218145-LAYOUT-10-02-19
	SHEET #	
11/23/22		JOB # 21740
DAVID SOULE P.E. #14522	1606 CENTRAL AVENUE SE SUITE 201 ALBUQUERQUE, NM 87106 (505) 872-0389	

SITE HYDROLOGY

Weighted E Method  
per city of Albuquerque Development Process Manual- chapter 22

Existing Developed Basins

Basin	Area (sf)	Area (acres)	Treatment A				Treatment B				Treatment C				Treatment D				100-Year, 6-hr			10-day		
			%	(acres)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Volume (ac-ft)				
BASIN A(Proposed)	4686.00	0.108	28%	0.0301	26%	0.028	20%	0.02152	26%	0.028	1.568	0.014	0.35	0.018										
BASIN B(Proposed)	7782.00	0.179	10%	0.0179	20.0%	0.036	24.0%	0.04288	46%	0.082	2.990	0.031	0.67	0.042										
BASIN C(Proposed)	2450.00	0.056	66%	0.0371	26.0%	0.015	8.0%	0.0045	0%	0.000	0.845	0.004	0.13	0.004										
BASIN D(Proposed)	2205.00	0.051	72%	0.0364	22.0%	0.011	0.0%	0	6%	0.003	0.957	0.004	0.12	0.004										
BASIN 1(HISTORIC)	9854.00	0.226	85%	0.1923	15%	0.034	0%	0	0%	0.000	0.789	0.015	0.49	0.015										
BASIN 2(HISTORIC)	7269.00	0.167	80%	0.1335	20.0%	0.033	0%	0	0%	0.000	0.798	0.011	0.37	0.011										
NATIVE	17123.00	0.393	83%	0.3258	17.0%	0.067	0%	0	0%	0.000	0.793	0.026	0.86	0.026										

COMPARISON

Equations:  
Weighted E = Ea\*Aa + Eb\*Ab + Ec\*Ac + Ed\*Ad / (Total Area)

Volume = Weighted D \* Total Area

Flow = Qa \* Aa + Qb \* Ab + Qc \* Ac + Qd \* Ad

Where for 100-year, 6-hour storm(ZONE 4)

Ea= 0.76	Qa= 2.09
Eb= 0.95	Qb= 2.73
Ec= 1.2	Qc= 3.41
Ed= 3.34	Qd= 4.78

TOTAL FLOW FOR BASIN B 1355.6244

PEAK FLOW SUMMARY

	HISTORIC	PROPOSED
TO FRONT/SIDE	0.49	0.47
TO REAR/SIDE	0.37	0.12

DRAINAGE NARRATIVE

THIS SITE IS GOVERNED BY THE HIGH DESERT MASTER DRAINAGE PLAN. THE DOWN STREAM IMPROVEMENTS ARE IN PLACE. THE IMPROVEMENT INCLUDE TWO ADDITIONS DUE TO THIS SITE BEING GOVERNED BY THE GUIDELINES FOR SUSTAINABILITY. THE SITE MUST MATCH THE HISTORICAL 100-YEAR, 6-HOUR PEAK DISCHARGE RATE THE SITE HISTORICALLY DISCHARGES .86 CFS. THE SITE HISTORICALLY DISCHARGES .49 CFS TO THE FRONT OF THE ADJACENT LOT AND TO OSAGE ORANGE STREET, AND .37 CFS TO THE REAR OF THE ADJACENT LOT. THE DEVELOPED SITE WILL CONTAIN 4 DRAINAGE BASINS. BASIN A CONTAINS THE HOUSE AND FRONT YARD AREA FRONT OF LOT THAT DRAINS THRU A WATER QUALITY POND. THIS BASIN DISCHARGES .35 CFS THAT PASSES THROUGH A WATER QUALITY POND. THE REMAINING PORTION OF FRONT YARD GENERATES 0.13 CFS. THE COMBINED DEVELOPED FLOW LEAVING THE SITE TO THE FRONT OF THE LOT AND THE OSAGE ORANGE CONVEYANCE IS .48 CFS. BASIN B CONTAINS THE MAJORITY OF THE HOUSE AND A PORTION AROUND THE HOUSE. THIS BASIN GENERATES .68 CFS WHICH IS ALL CAPTURED BY AN UNDERGROUND DRAINAGE SYSTEM THAT ALLOWS FOR INFILTRATION (STORMTECH SC 740). THE BASIN GENERATES 1356 CUBIC FEET OF STORM WATER. THE SEVEN SC740 CHAMBERS RETAINS THE ENTIRE AMOUNT. THEREFOR NO STORM WATER IS DISCHARGED FROM THIS BASIN DURING THE 6 HOUR EVENT. LARGER EVENTS ARE ALLOWED TO OVERFLOW TO HISTORIC OUTFALL. THE PEAK DISCHARGE IS REDUCED TO .59 CFS FOR THE TOTAL SITE COMPARD OT. .86 CFS. THE HISTORIC DISCHARGE TO EACH DOWNSTREAM BASIN HAS BEEN REDUCED AS WELL.

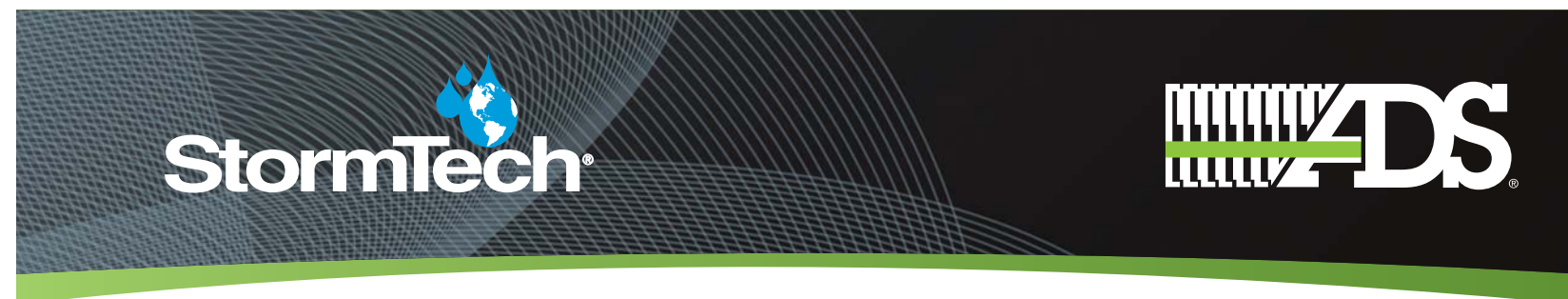
Project:

Chamber Model -	SC-740
Units -	Imperial
Number of chambers -	7
Voids in the stone (porosity) -	30 %
Base of Stone Elevation -	83.00 ft
Amount of Stone Above Chambers -	18 in
Area of system -	692 sq. ft



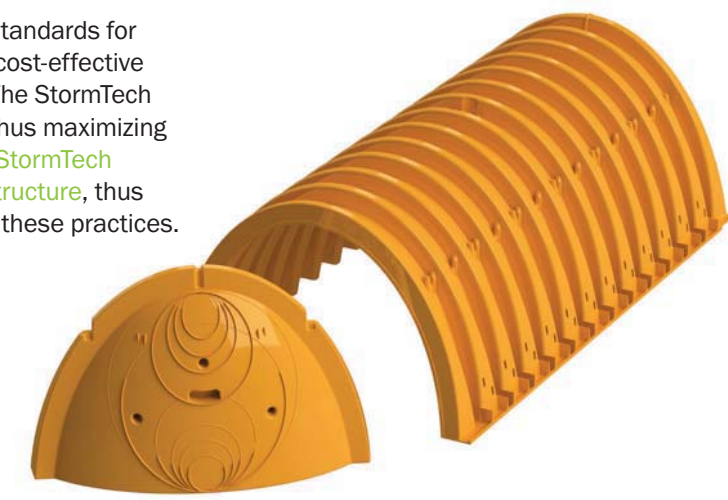
Include Perimeter Stone in Calculations

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Total Chamber (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch & St Chamber (cubic feet)	Cumulative Chamber (cubic feet)	Elevation (feet)
66	0.00	0.00	17.30	17.30	1366.96	88.50
65	0.00	0.00	17.30	17.30	1349.66	88.42
64	0.00	0.00	17.30	17.30	1332.36	88.33
63	0.00	0.00	17.30	17.30	1315.06	88.25
62	0.00	0.00	17.30	17.30	1297.76	88.17
61	0.00	0.00	17.30	17.30	1280.46	88.08
60	0.00	0.00	17.30	17.30	1263.16	88.00
59	0.00	0.00	17.30	17.30	1245.86	87.92
58	0.00	0.00	17.30	17.30	1228.56	87.83
57	0.00	0.00	17.30	17.30	1211.26	87.75
56	0.00	0.00	17.30	17.30	1193.96	87.67
55	0.00	0.00	17.30	17.30	1176.66	87.58
54	0.00	0.00	17.30	17.30	1159.36	87.50
53	0.00	0.00	17.30	17.30	1142.06	87.42
52	0.00	0.00	17.30	17.30	1124.76	87.33
51	0.00	0.00	17.30	17.30	1107.46	87.25
50	0.00	0.00	17.30	17.30	1090.16	87.17
49	0.00	0.00	17.30	17.30	1072.86	87.08
48	0.05	0.38	17.18	17.57	1055.56	87.00
47	0.16	1.14	16.96	18.10	1037.99	86.92
46	0.28	1.97	16.71	18.68	1019.89	86.83
45	0.60	4.23	16.03	20.26	1001.21	86.75
44	0.80	5.61	15.62	21.23	980.95	86.67
43	0.95	6.65	15.30	21.96	959.72	86.58
42	1.07	7.52	15.04	22.57	937.76	86.50
41	1.18	8.26	14.82	23.08	915.20	86.42
40	1.27	8.86	14.64	23.50	892.11	86.33
39	1.36	9.49	14.45	23.94	868.61	86.25
38	1.45	10.18	14.25	24.43	844.67	86.17
37	1.52	10.67	14.10	24.77	820.25	86.08
36	1.58	11.08	13.98	25.05	795.48	86.00
35	1.64	11.50	13.85	25.35	770.42	85.92
34	1.70	11.90	13.73	25.63	745.08	85.83
33	1.75	12.27	13.62	25.89	719.45	85.75
32	1.80	12.62	13.51	26.13	693.56	85.67
31	1.85	12.98	13.40	26.39	667.43	85.58
30	1.89	13.25	13.32	26.58	641.04	85.50
29	1.93	13.54	13.24	26.78	614.46	85.42
28	1.97	13.82	13.15	26.98	587.68	85.33
27	2.01	14.07	13.08	27.15	560.71	85.25
26	2.04	14.31	13.01	27.32	533.56	85.17
25	2.07	14.52	12.94	27.47	506.24	85.08
24	2.10	14.73	12.88	27.61	478.77	85.00
23	2.13	14.92	12.82	27.75	451.16	84.92
22	2.15	15.08	12.78	27.85	423.41	84.83
21	2.18	15.24	12.73	27.97	395.56	84.75
20	2.20	15.39	12.68	28.07	367.59	84.67
19	2.21	15.45	12.66	28.12	339.52	84.58
18	0.00	0.00	17.30	17.30	311.40	84.50
17	0.00	0.00	17.30	17.30	294.10	84.42
16	0.00	0.00	17.30	17.30	276.80	84.33
15	0.00	0.00	17.30	17.30	259.50	84.25
14	0.00	0.00	17.30	17.30	242.20	84.17
13	0.00	0.00	17.30	17.30	224.90	84.08
12	0.00	0.00	17.30	17.30	207.60	84.00
11	0.00	0.00	17.30	17.30	190.30	83.92
10	0.00	0.00	17.30	17.30	173.00	83.83
9	0.00	0.00	17.30	17.30	155.70	83.75
8	0.00	0.00	17.30	17.30	138.40	83.67
7	0.00	0.00	17.30	17.30	121.10	83.58
6	0.00	0.00	17.30	17.30	103.80	83.50
5	0.00	0.00	17.30	17.30	86.50	83.42
4	0.00	0.00	17.30	17.30	69.20	83.33
3	0.00	0.00	17.30	17.30	51.90	83.25
2	0.00	0.00	17.30	17.30	34.60	83.17
1	0.00	0.00	17.30	17.30	17.30	83.08



STORMTECH SC-740 CHAMBER

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.



STORMTECH SC-740 CHAMBER (not to scale)

Nominal Chamber Specifications

Size (L x W x H)  
85.4" x 51" x 30"  
2,170 mm x 1,295 mm x 762 mm

Chamber Storage

45.9 ft<sup>3</sup> (1.30 m<sup>3</sup>)

Min. Installed Storage\*

74.9 ft<sup>3</sup> (2.12 m<sup>3</sup>)

Weight

74.0 lbs (33.6 kg)

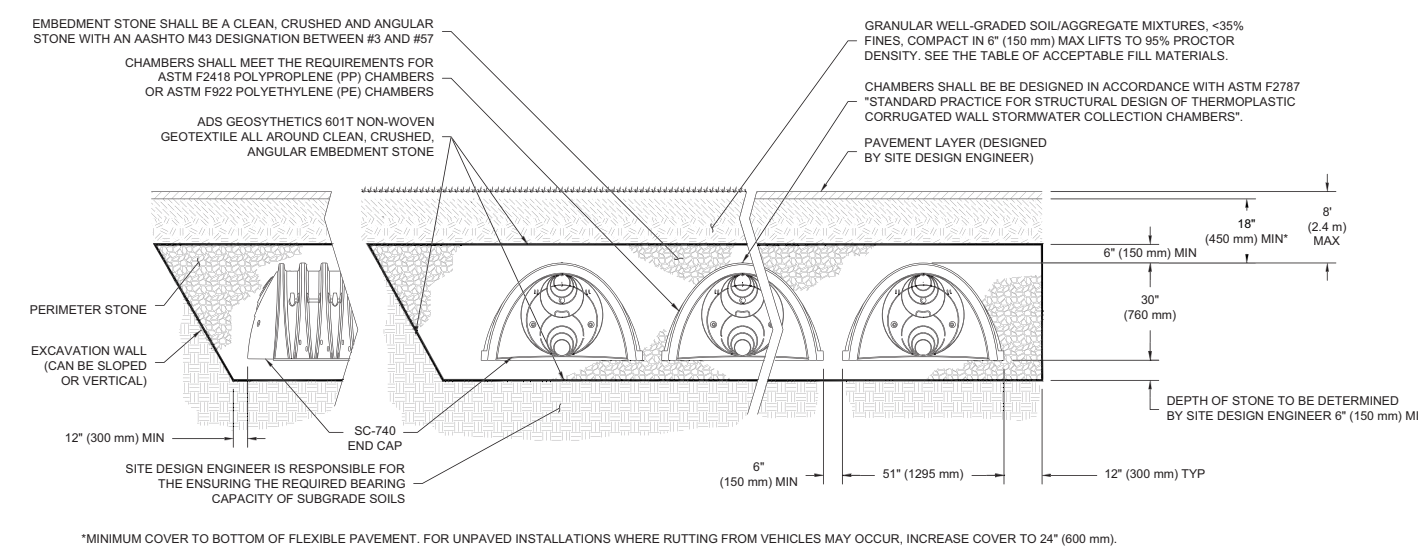
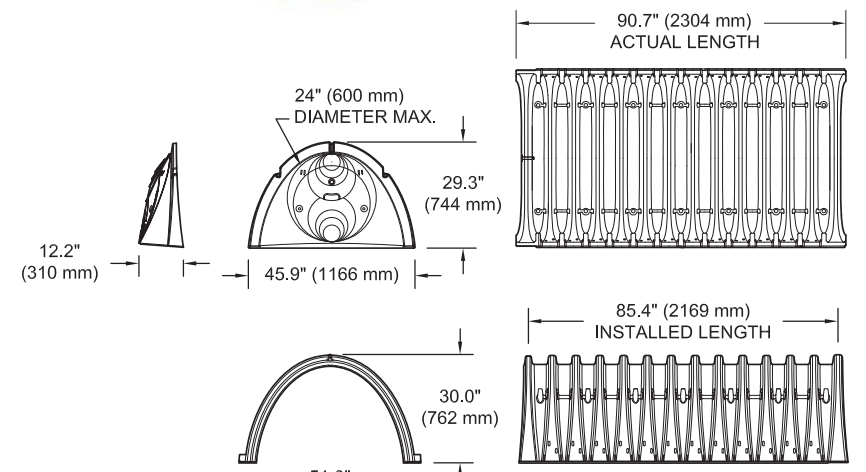
Shipping

30 chambers/pallet

60 end caps/pallet

12 pallets/truck

\*Assumes 6" (150 mm) stone above, below and between chambers and 40% stone porosity.



OVERFLOW

Weir Equation:

$Q = CLH^{3/2}$

$Q = 0.67$

$C = 2.95$

$H = 0.67$  ft

$L =$  Length of weir

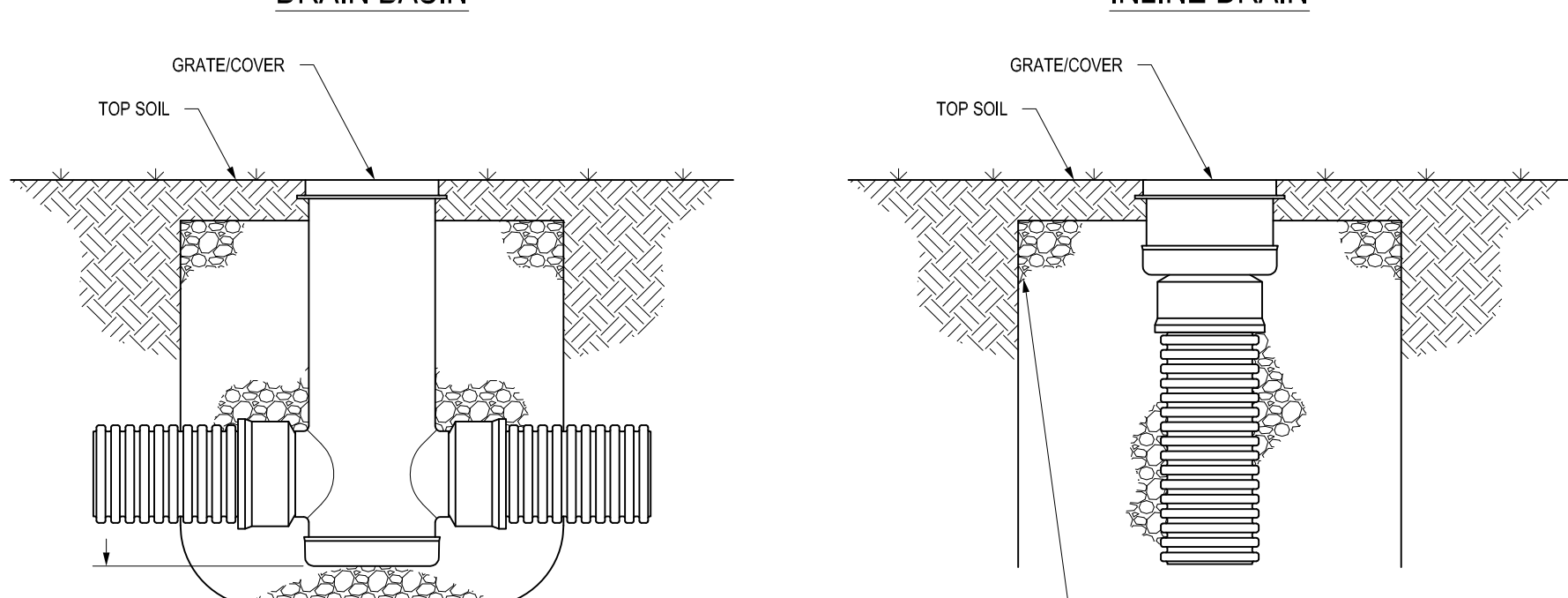
POND OVERFLOW

$Q = 2.95 * 5 * ((0.50)^{3/2}) = 5.21$  CFS

NON TRAFFIC INSTALLATION

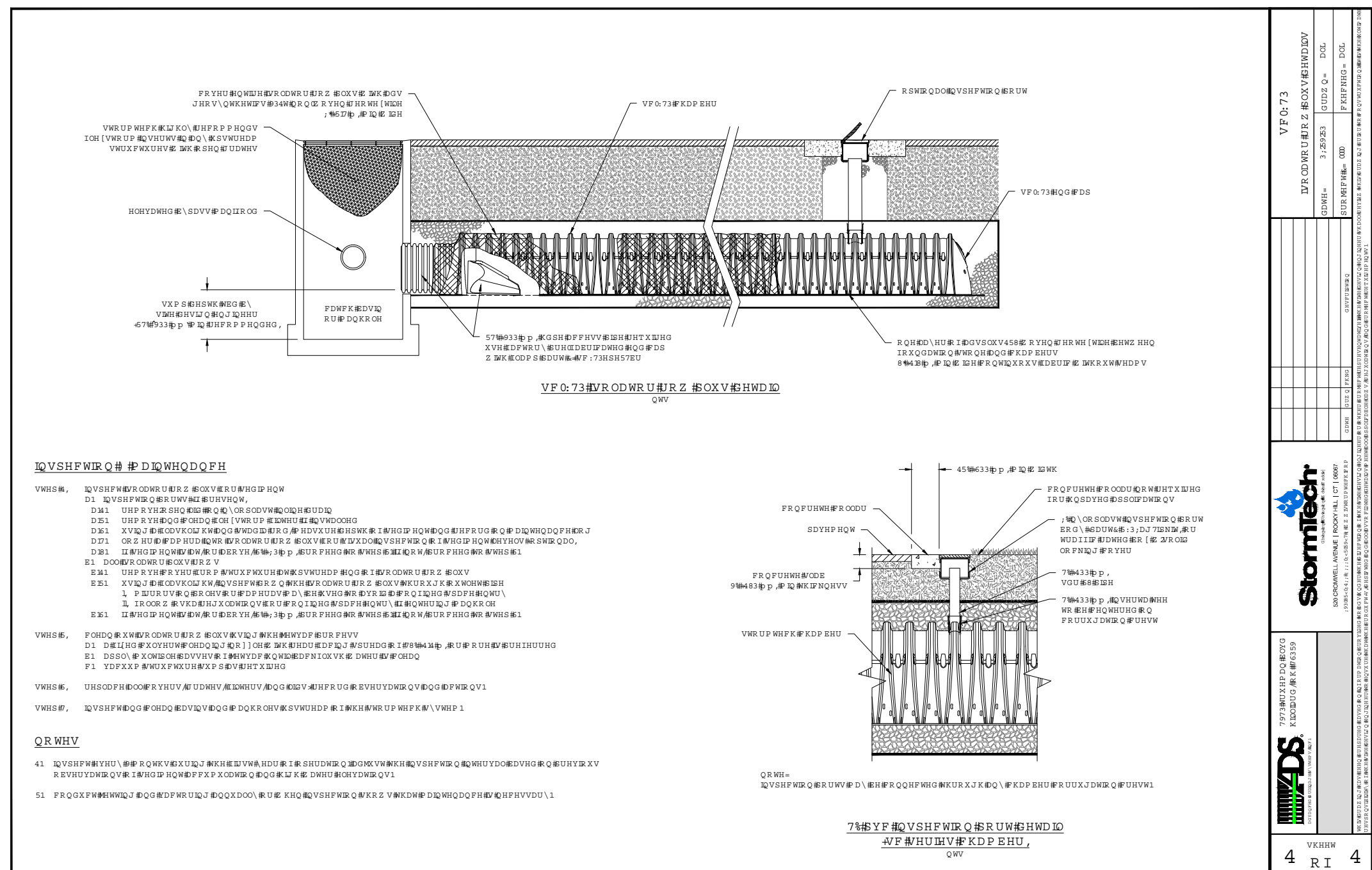
DRAIN BASIN

INLINE DRAIN



THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I OR CLASS II MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE WELL PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

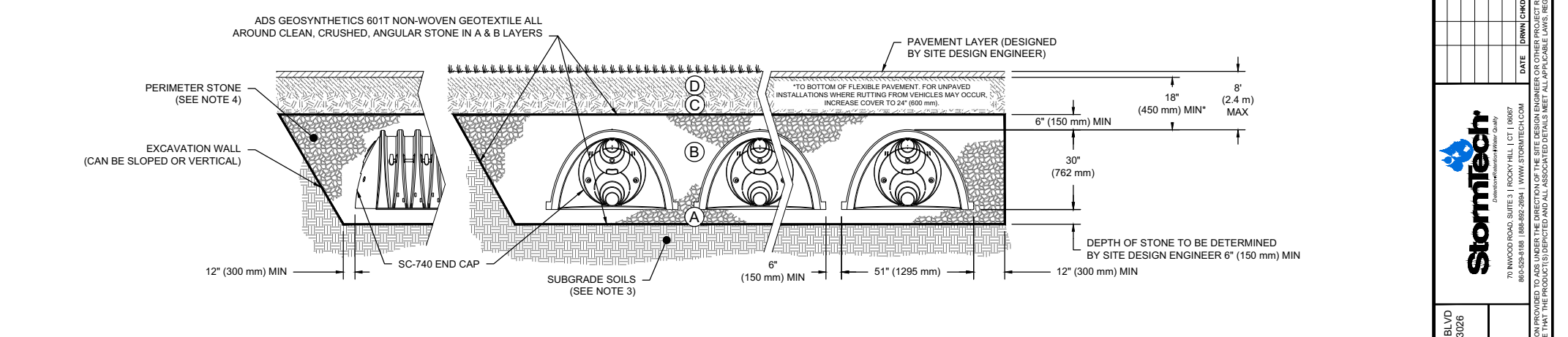
DATE	9-30-09	REVISION	BY	PROJECT NO.	DATE	12-29-11	DWG SIZE	A	SCALE	1:25	SHEET	1 OF 1
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ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	ASTM MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL MATERIAL FOR LAYER D STARTS FROM THE TOP OF THE LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THIS LAYER.	ANY SOIL/ROCK MATERIAL, NATIVE SOILS OR PER ENGINEER'S PLAN. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRONGER MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL FILL MATERIAL FOR LAYER C STARTS FROM THE TOP OF THE EMBEDED STONE (OR LAYER D) TO 180 mm ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	GRANULAR WELL-GRADED SOLID AGGREGATE MATERIALS - <3% FINES OR PROCESSED AGGREGATE. OR ASHTO M45* A1, A-24, A-3 OR ASHTO M45* 3, 3.57, 4, 4.67, 5, 5.6, 6, 6.7, 6.7, 7, 7.6, 8, 8.9, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL COVER THE CHAMBER IS REACHED. COMPACT ADDITIONAL LAYERS OF 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL-GRADED MATERIALS AND 90% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROOVE VEHICLE WEIGHT NOT TO EXCEED 20,000 lb (90 kN).
B	EMBEDDED STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (OR LAYER D) TO THE 'C' LAYER ABOVE.	ASHTO M45* 3, 3.57, 4, 4.67, 5, 5.6, 6, 6.7	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT BOTTOM OF THE CHAMBER.	ASHTO M45* 3, 3.57, 4, 4.67, 5, 5.6, 6, 6.7	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>13</sup>

PLEASE NOTE:  
1. THE LISTED ASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR AN STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (ASHTO M45) STONE."  
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR A LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) MAX LIFTS USING TWO FULL COVERSAGES WITH A VIBRATORY COMPACTOR.  
3. UNPAVED INSTALLATION SURFACES MAY BE COMPROMISED BY COMPACTION FOR STANDARD DESIGN LOAD CONDITIONS. A FLAT SURFACE MAY BE ACHIEVED BY RAMPING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD CONDITIONS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.  
4. ONCE LAYER D IS PLACED, ANY SOL 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 D' OR AT THE SITE DESIGN ENGINEER'S DISCRETION.



- NOTES:
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
  - SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
  - 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.
  - PERIMETER STONE MUST BE EXTENDED HORIZONTALY TO THE SPREAD OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 7".
  - REQUIREMENTS FOR HANDLING AND INSTALLATION:
    - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTERNAL INTERLOCKING STACKING LOGS.
    - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 7".
    - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 360 LB/IN. AND IN 1) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 77 °F / 25 °C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



City of Albuquerque Planning Department Development Review Services  
**HYDROLOGY SECTION APPROVED**  
DATE: 12/22/22  
BY: David Soule  
HydroTrans # E23D031

13420 OSAGE ORANGE  
ADDITION  
DETAIL/CALCULATION SHEET

11/23/22

DAVID SOULE P.E. #14522

1606 CENTRAL AVENUE SE SUITE 201 ALBUQUERQUE, NM 87106 (505) 872-0589

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