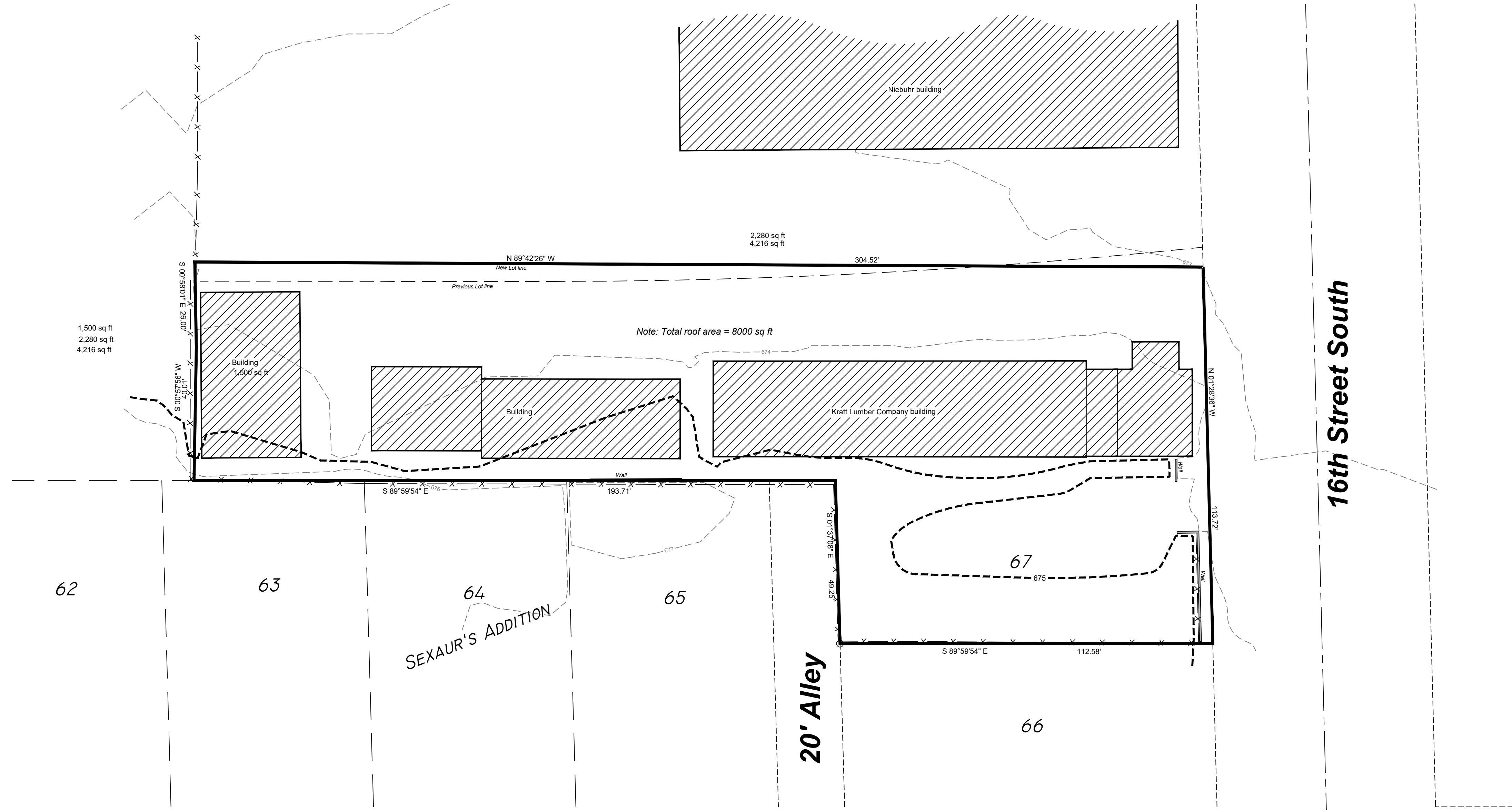


DRAWN JAW	CHECKED	DATE JUNE 20, 2022	SHEET AS NOTED	C1
JIM WEBB, PE <i>Engineering & Construction, LLC</i> 1224 King Street La Crosse, WI 54601 (608) 780-4672				
GRADING AND STORM WATER PLANS FOR: KRATT LUMBER 1714 S. 16TH STREET LA CROSSE, WISCONSIN				
VICINITY MAP				

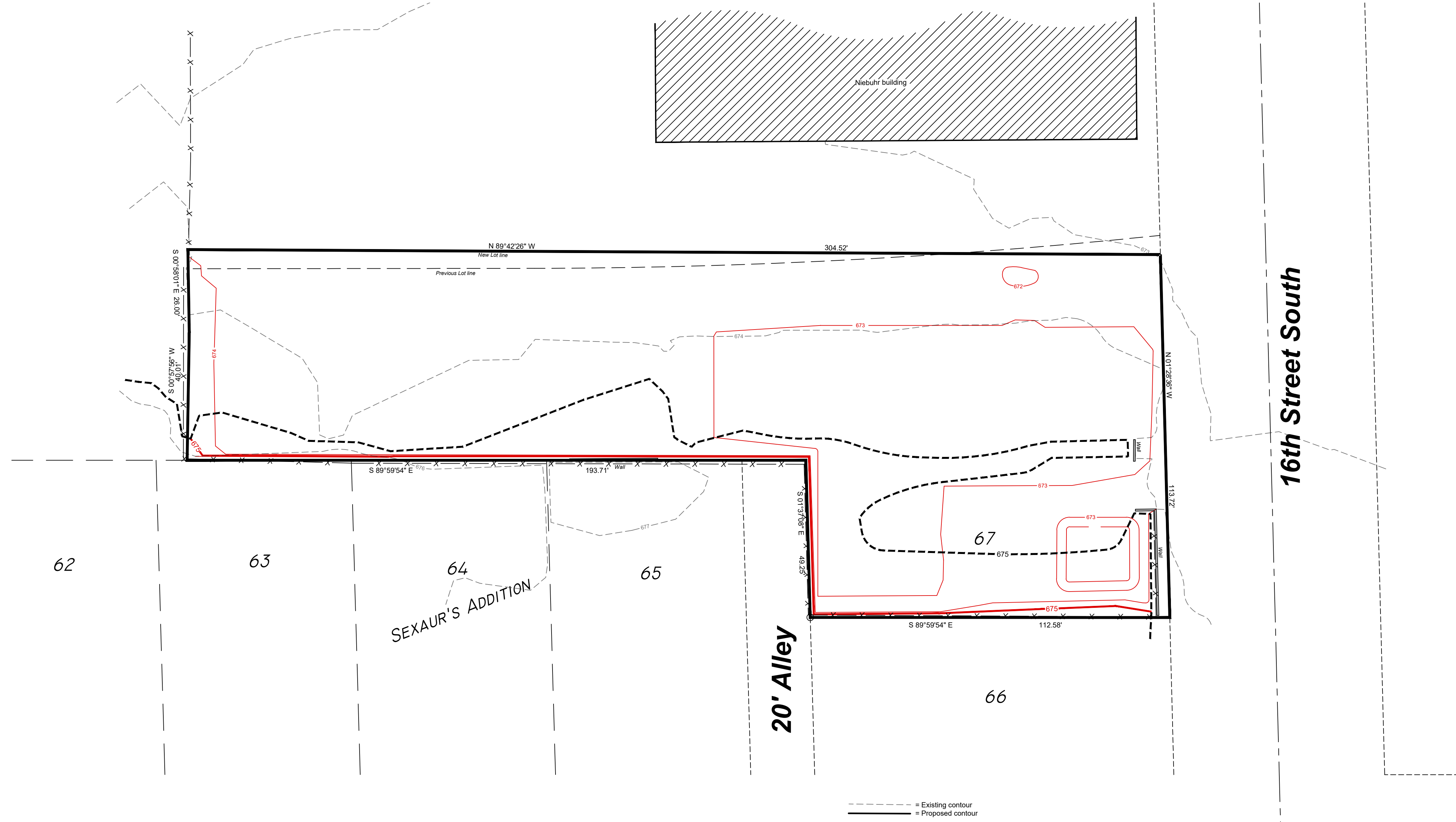


1 EXISTING SITE PLAN

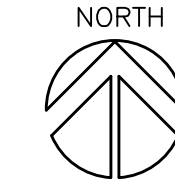
1" = 20'-0"



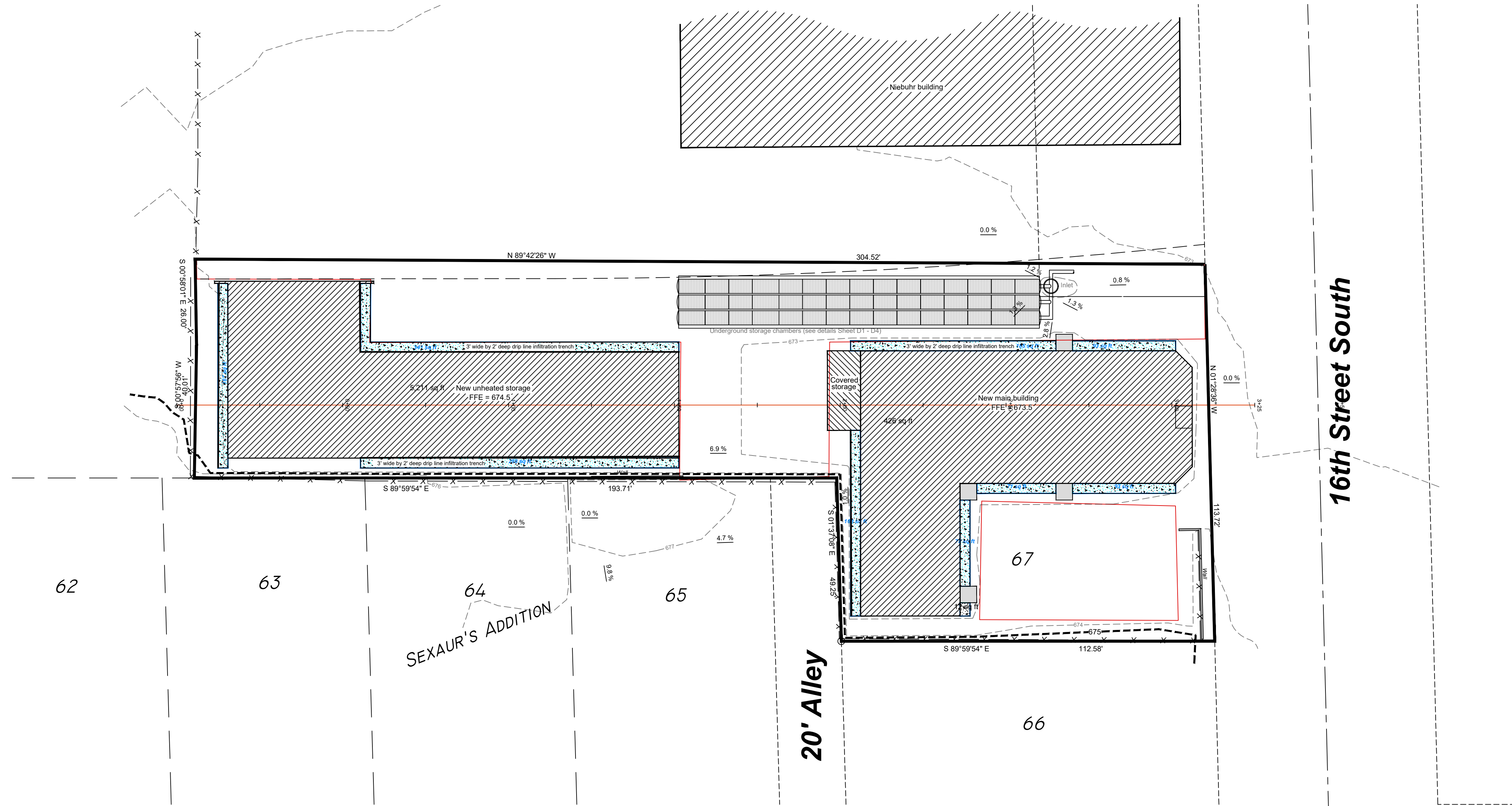
DRAWN JAW	CHECKED	DATE JUNE 20, 2022	SHEET AS NOTED	C2
JIM WEBB, PE <i>Engineering & Construction, LLC</i> 1224 King Street La Crosse, WI 54601 (608) 780-4672				
GRADING AND STORM WATER PLANS FOR: KRATT LUMBER 1714 S. 16TH STREET LA CROSSE, WISCONSIN				
EXISTING SITE PLAN				



1 GRADING PLAN
1" = 20'-0"



DRAWN JAW	CHECKED	DATE JUNE 20, 2022	SHEET AS NOTED	C3
GRADING AND STORM WATER PLANS FOR:				
KRATT LUMBER 1714 S. 16TH STREET LA CROSSE, WISCONSIN				
GRADING PLAN				

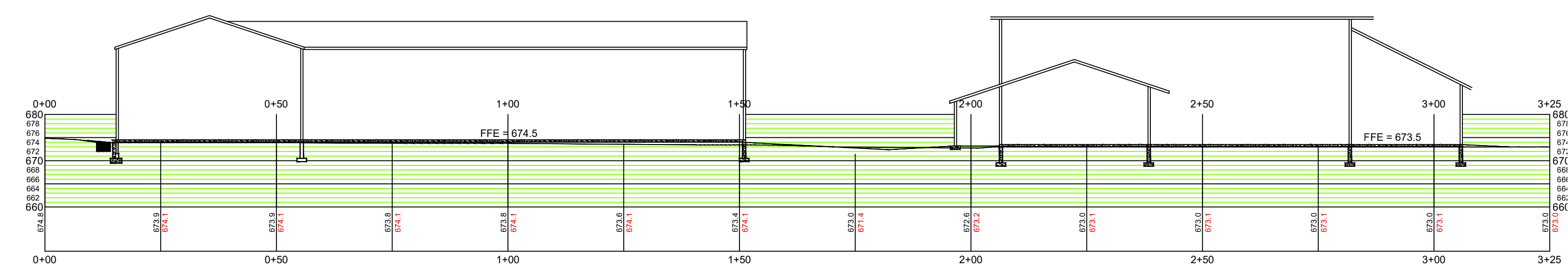
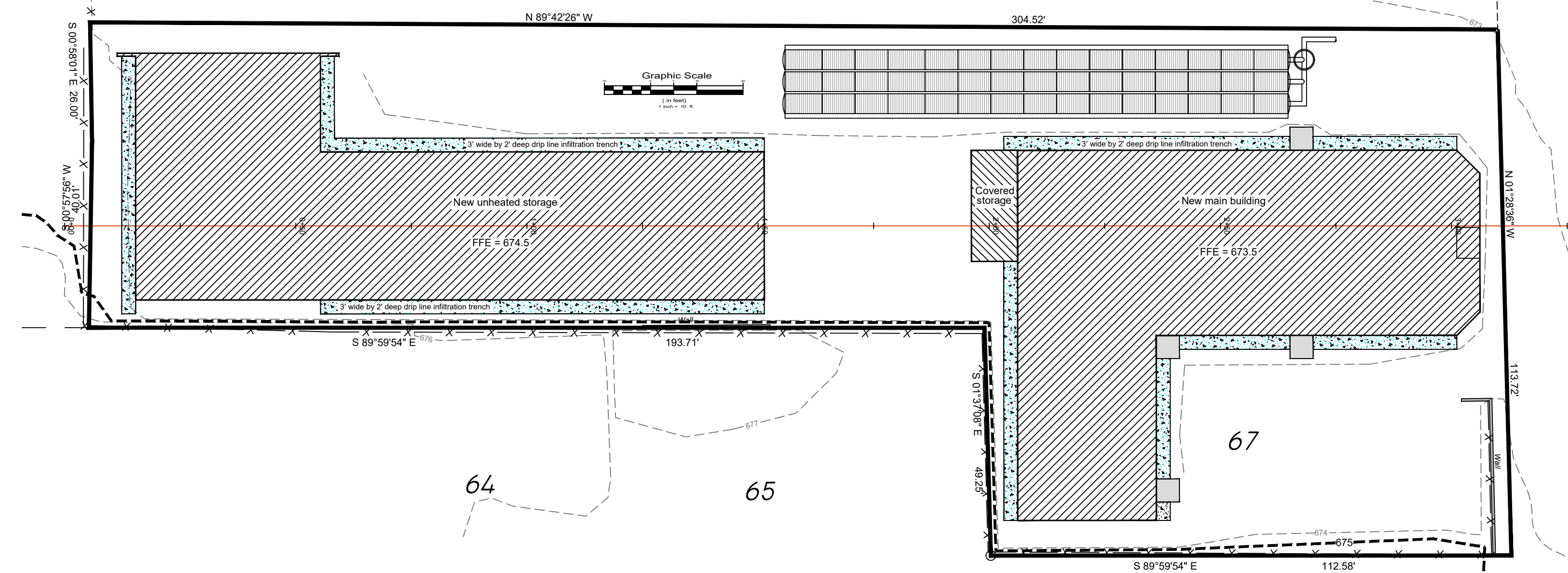


1 PROPOSED SITE PLAN

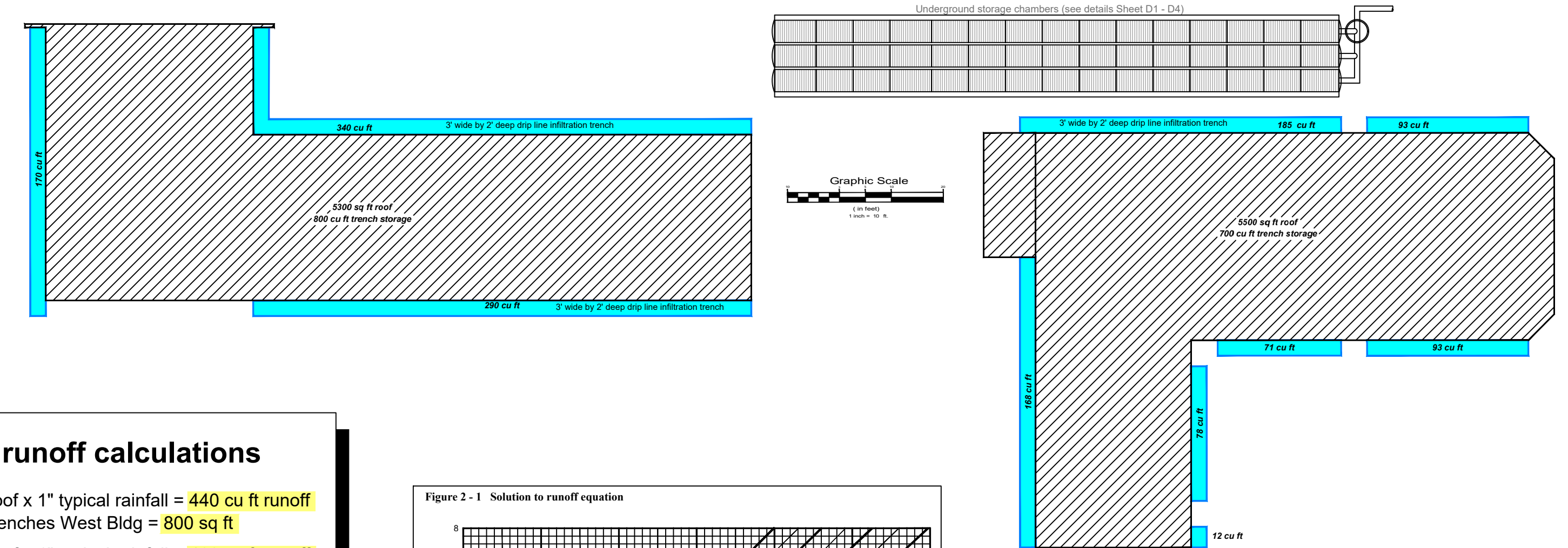
1" = 20'-0"



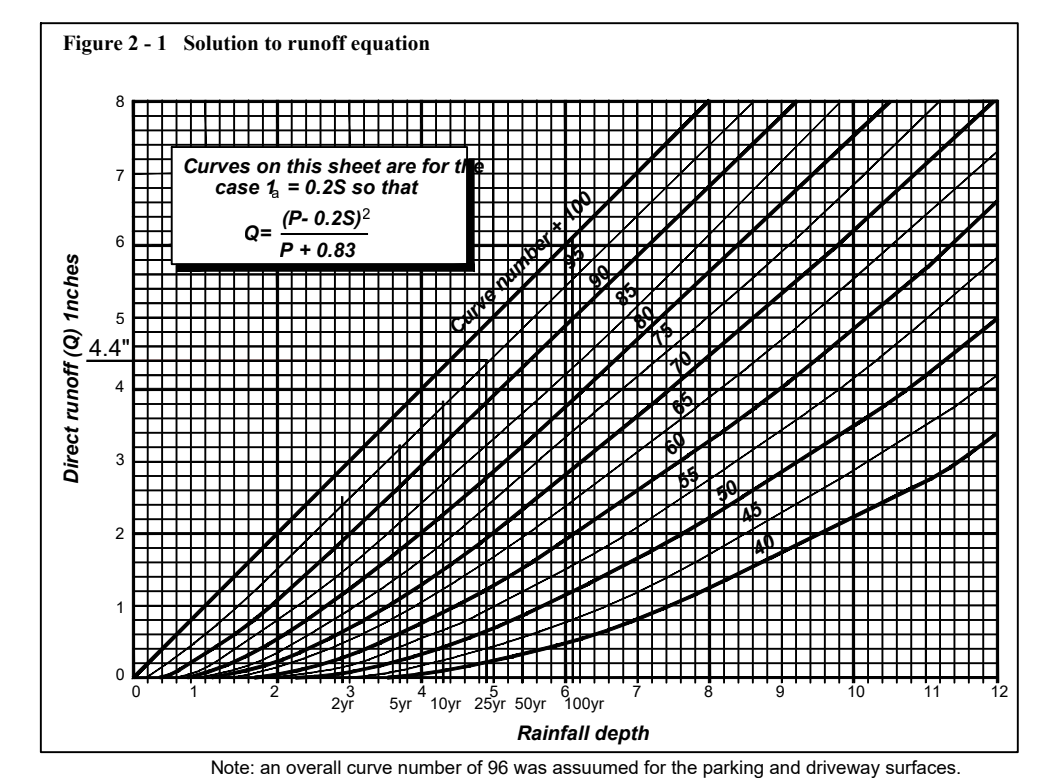
GRADING AND STORM WATER PLANS FOR: KRATT LUMBER 1714 S. 16TH STREET LA CROSSE, WISCONSIN	DRAWN JAW	CHECKED	C4
	DATE JUNE 20, 2022	AS NOTED SHEET	
PROPOSED SITE PLAN	JIM WEBB, PE <i>Engineering & Construction, LLC</i> 1224 King Street La Crosse, WI 54601 (608) 780-4672		



1 PROFILE (H & V)
1" = 20'-0"

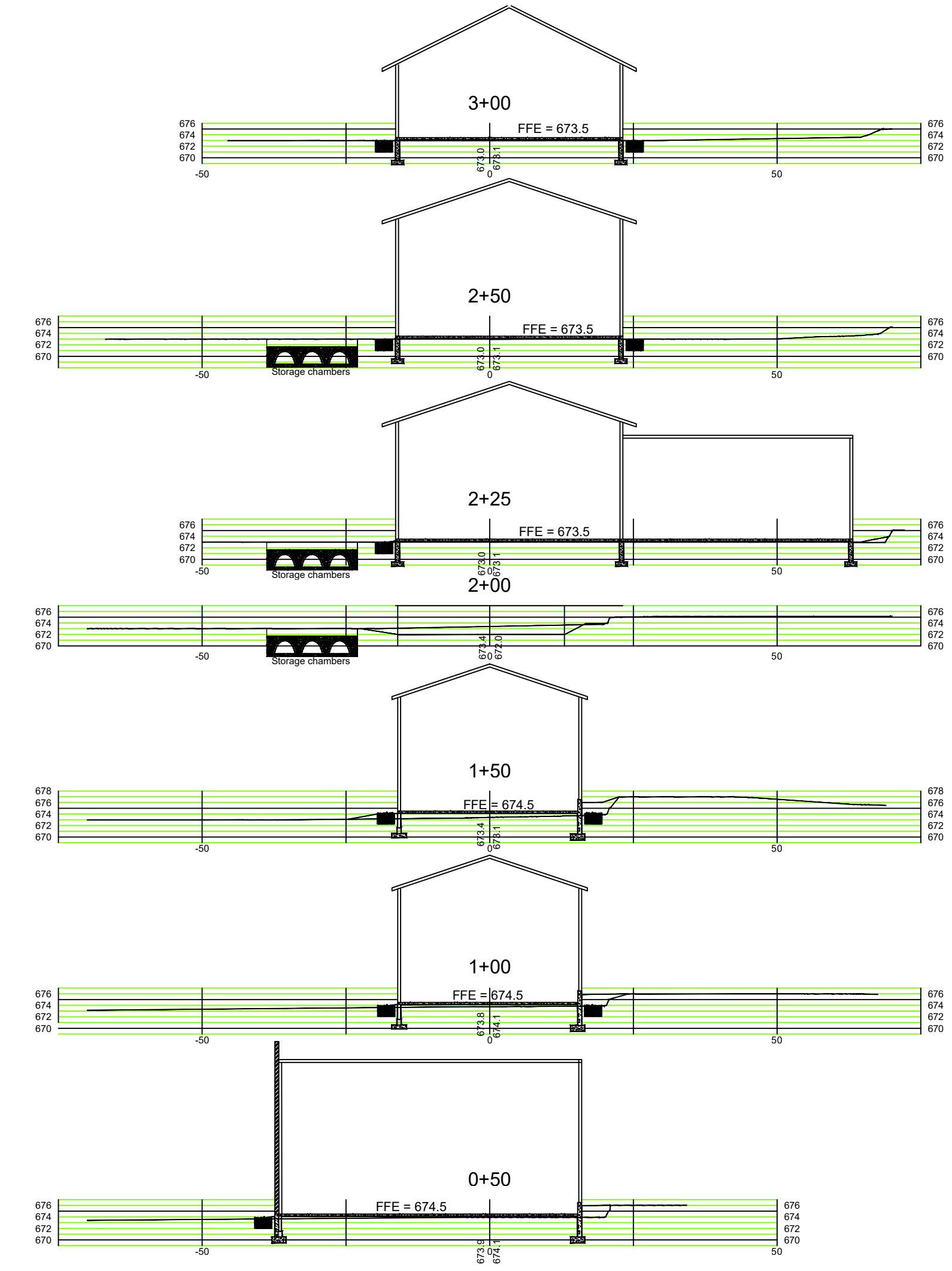
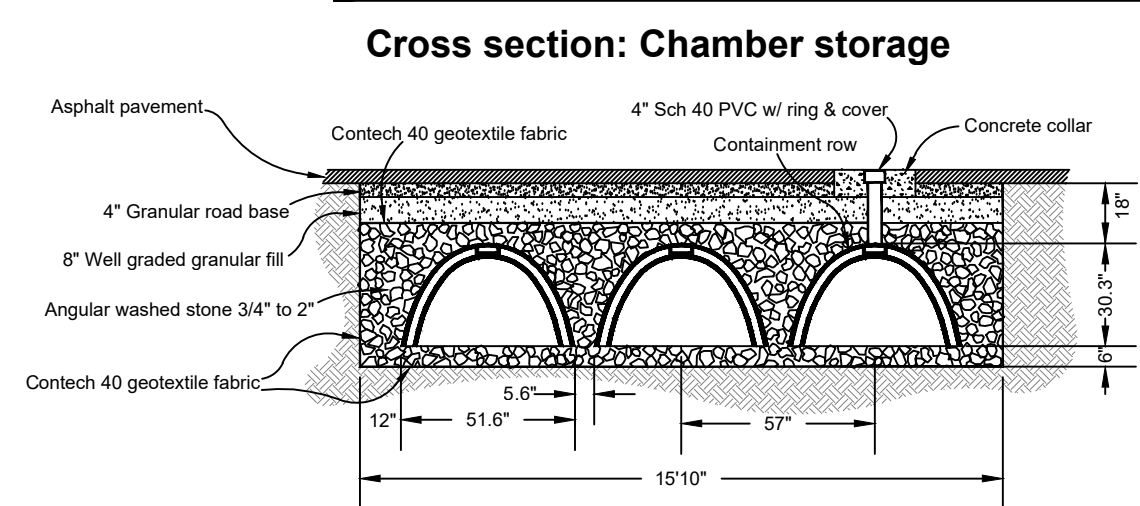


Roof runoff calculations
 5300 sq ft roof x 1" typical rainfall = 440 cu ft runoff
 Infiltration trenches West Bldg = 800 sq ft
 5500 sq ft roof x 1" typical rainfall = 460 cu ft runoff
 Infiltration trenches East Bldg = 700 cu ft
 Total required = 900 cu ft
 Total provided = 1500 cu ft

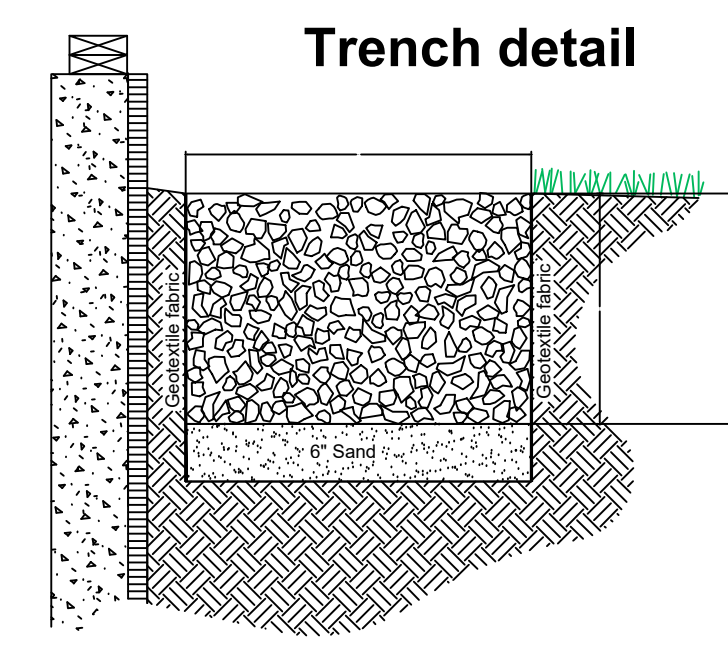


Runoff Storage Plan
 The intent of this plan is to contain all the runoff from a 25 yr storm event and infiltrate it on site. The relatively clean roof runoff will be infiltrated into drip trenches below the eaves of the buildings and will not mix with runoff from parking and driveway surfaces.
 The runoff from the nearby impervious vehicular area will be directed into an inlet manhole approximately 50' west of the east property line. The runoff entering this inlet will flow to a manifold system which directs it to three rows of underground chambers, each about 120 feet in length. The combination of chamber storage and the backfill storage will be enough to contain all the runoff from said 25 year event.

Gravel runoff calculations
 25 yr rainfall event (4.4")
 1100 sq ft parking & drive x 4.4" = 4030 cu ft runoff
 Chamber storage volume = 2272 cu ft
 Manifold storage volume = 16 cu ft
 Backfill storage volume = 1763 cu ft
 Total storage provided = 4051 cu ft



2 CROSS SECTIONS (H & V)
1" = 20'-0"

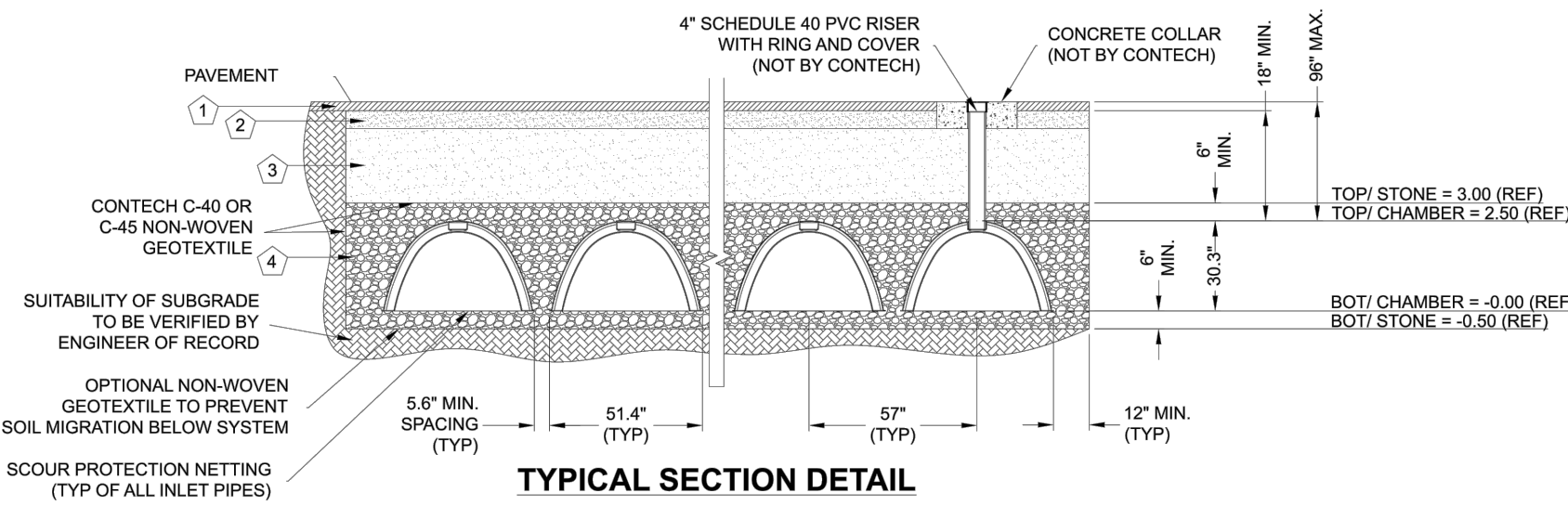


3 RUN OFF STORAGE PLAN
1" = 20'-0"

DRAWN JAW	CHECKED	DATE JUNE 20, 2022	SHEET AS NOTED	C5
	JIM WEBB, PE			
GRADING AND STORM WATER PLANS FOR: KRATT LUMBER 1714 S. 16TH STREET LA CROSSE, WISCONSIN			1224 King Street La Crosse, WI 54601 (608) 780-4672	
PROFILE (H & V), CROSS SECTIONS (H & V)				

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, 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" BEYOND OUTSIDE EDGE OF INLET CHAMBERS.
4. COVER ANY OPEN VOID SPACES GREATER THAN 3/4" ON CHAMBERS WITH A NON-WOVEN GEOTEXTILE TO PREVENT INFILTRATION OF BACKFILL MATERIAL.
5. STONE EMBEDMENT MATERIAL SHALL BE INSTALLED TO 85% STANDARD PROCTOR DENSITY AND PLACED IN 6-INCH TO 8-INCH 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 90% 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. THE BACKFILL MATERIAL SHALL BE FREE-DRAINING ANGULAR WASHED STONE 3/4" - 2" PARTICLE SIZE. MATERIAL SHALL BE PLACED IN 6"-10" MAXIMUM LIFTS. MATERIAL SHALL BE WORKED INTO THE CHAMBER SPACING BY MEANS OF SHOVEL-SLICING, RODDING, AIR-TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS. COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE PROJECT ENGINEER OR THEIR REPRESENTATIVE IS SATISFIED WITH THE LEVEL OF COMPACTION. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE DEFLECTIONS WITHIN THE SYSTEM AND SETTLEMENT OF THE SOILS OVER THE BACKFILL PROCESS. BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON ANY PIPES IN THE SYSTEM.

EQUIPMENT USED TO PLACE AND COMPACT THE BACKFILL SHALL BE OF A SIZE AND TYPE SO AS NOT TO DISTORT, DAMAGE, OR DISPLACE THE CHAMBERS. ATTENTION MUST BE GIVEN TO PROVIDING ADEQUATE MINIMUM COVER FOR SUCH EQUIPMENT, AND MAINTAIN BALANCED LOADING ON ALL CHAMBERS IN THE SYSTEM DURING ALL SUCH OPERATIONS. OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS. CONTACT YOUR LOCAL CONTECH REPRESENTATIVE FOR DETAILS.

PROJECT SUMMARY

DESIGN PARAMETERS

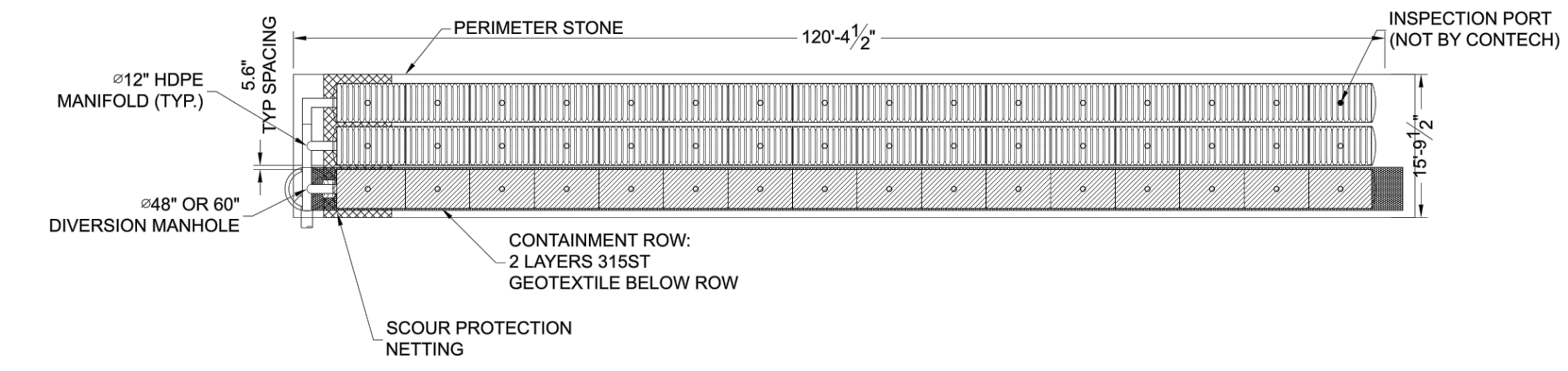
- PRE-TREATMENT METHOD = Containment Row
- STORAGE VOLUME REQUIRED = 4000^{ft}³
- INVERT DEPTH = 6"
- MANFOLD DIAMETER = 12"
- SPACING BETWEEN CHAMBERS = 5.6in.
- SIDE PERIMETER STONE WIDTH = 12in.
- END PERIMETER STONE WIDTH = 12in.
- TOP PERIMETER STONE WIDTH = 6in.
- BOTTOM PERIMETER STONE WIDTH = 6in.
- STONE POROSITY = 40%

SYSTEM DETAILS

- TOTAL ELBOW MANIFOLDS = 1
 - TOTAL TEE MANIFOLDS = 2
 - TOTAL START CHAMBERS = 3
 - TOTAL MID CHAMBERS = 42
 - TOTAL END CHAMBERS = 3
 - TOTAL NUMBER OF CHAMBERS = 48
 - NUMBER OF ROWS = 3
 - CHAMBERS IN CONTAINMENT ROW = 16
 - CHAMBERS PER ROW = 16
 - CHAMBER STORAGE VOLUME = 2271.6^{ft}³
 - MANIFOLD STORAGE VOLUME = 16.4^{ft}³
 - BACKFILL STORAGE VOLUME = 1763.32^{ft}³
 - TOTAL STORAGE PROVIDED = 4251.31^{ft}³
- SYSTEM DIMENSIONS AND OTHER MATERIALS**
- RECTANGULAR FOOTPRINT = 120.36x15.78'
 - TOTAL EXCAVATION = 457.32^{ft}³
 - STONE BACKFILL = 163.27^{ft}³
 - REMAINING BACKFILL TO PAVEMENT = 209.31^{ft}³
 - WOVEN GEOTEXTILE QTY = 86.62^{ft}²
 - NON-WOVEN GEOTEXTILE QTY = 211.07^{ft}²
 - SCOUR PROTECTION FITTING = 15.78x7.5'
 - APPROXIMATE TRUCKLOADS = 1

GENERAL NOTES

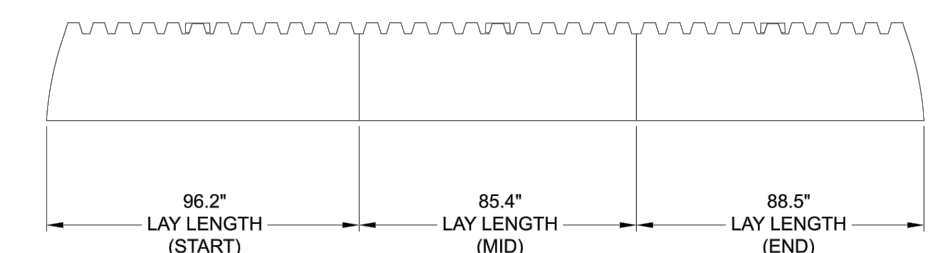
1. ALL ELEVATIONS, DIMENSIONS AND LOCATIONS OF RISERS AND INLETS SHALL BE VERIFIED BY THE ENGINEER OF RECORD.
2. PRIOR TO INSTALLATION OF THE CHAMBERMAXX SYSTEM A PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED. THOSE REQUIRED TO ATTEND ARE THE SUPPLIER OF THE SYSTEM, THE GENERAL CONTRACTOR, SUB-CONTRACTORS 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 TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR COVER HEIGHTS GREATER THAN 96-INCHES 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 (800) 925-5240



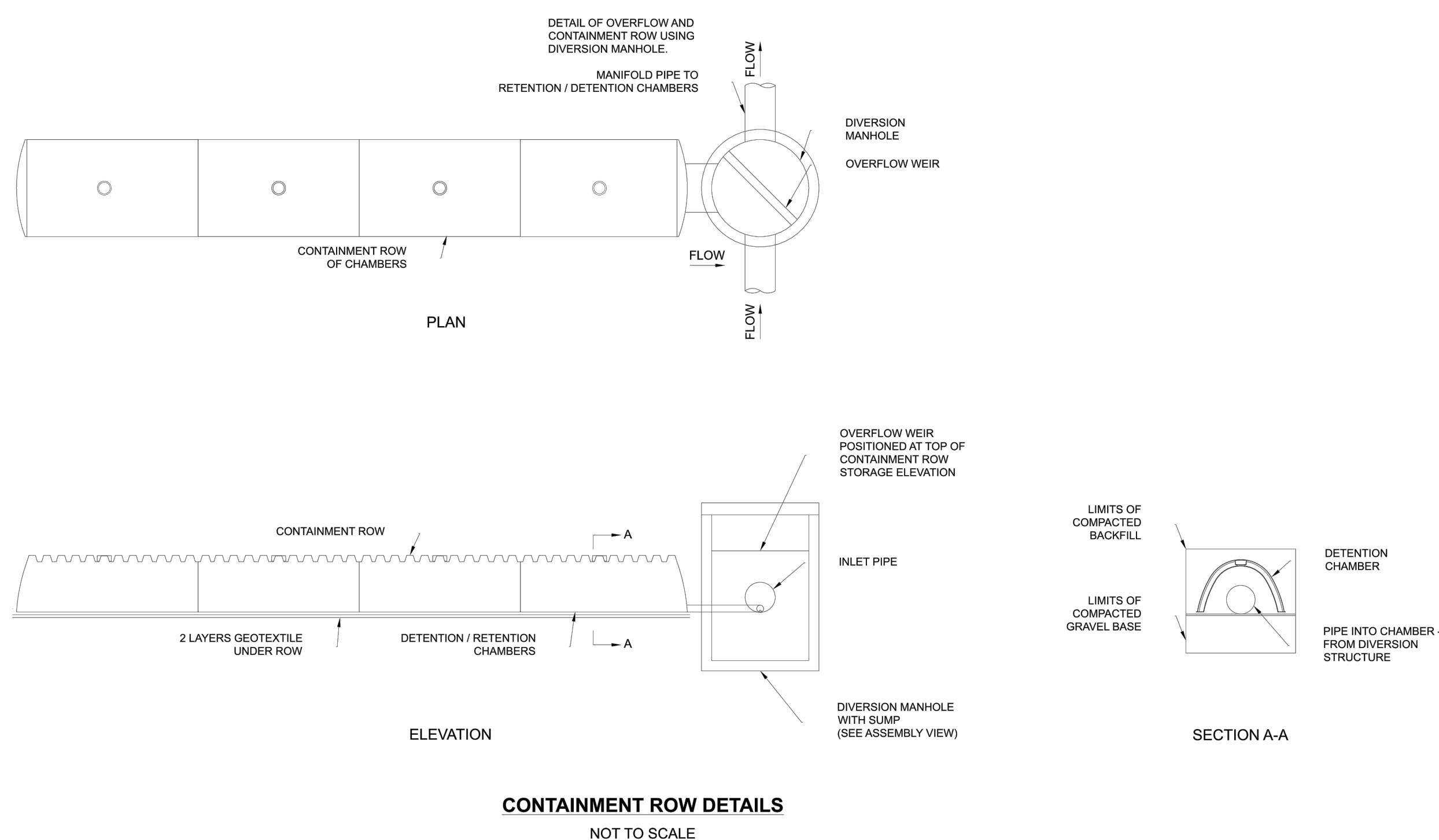
ASSEMBLY SCALE: 1"=20'

CHAMBERMAXX DESIGN DETAILS			
FEATURE	START CHAMBER	MIDDLE CHAMBER	END CHAMBER
OVERALL CHAMBER HEIGHT - IN	30.3	30.3	30.3
OVERALL CHAMBER WIDTH - IN	51.4	51.4	51.4
ACTUAL LENGTH - IN	98.4	91.0	92.0
INSTALLED LAY LENGTHS - IN	96.2	85.4	88.5
CHAMBER STORAGE VOLUME - CF	50.2	47.2	46.2
CHAMBER STORAGE PER LINEAR FOOT - CF/FT	6.3	6.6	6.3
*MIN. INSTALLED CHAMBER VOLUME - CF	78.1	75.1	74.1
*MIN. INSTALLED CHAMBER VOLUME PER LINEAR FOOT - CF/FT	9.7	10.6	10.0
CHAMBER WEIGHT - LB	83	73	76

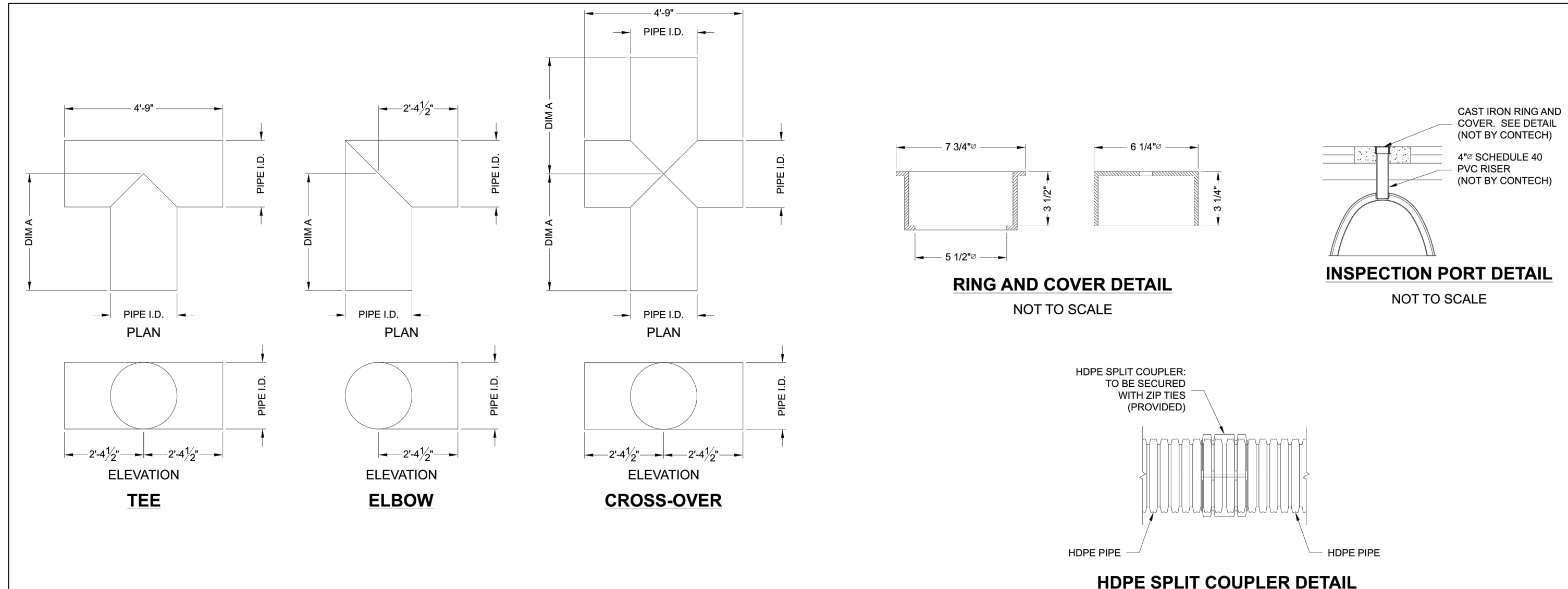
*8" OF STONE ABOVE AND BELOW CHAMBER, 5.6" CHAMBER SPACING AND 40% POROSITY



TYPICAL ELEVATION VIEW NOT TO SCALE



CONTAINMENT ROW DETAILS NOT TO SCALE



STANDARD MANIFOLD COMPONENTS - NOT TO SCALE				
AVAILABLE DIAMETERS - INCHES				
TEE	12	15	18	24
ELBOW	12	15	18	24
DMA	42	42	48	48

- GENERAL NOTES:**
1. FITTING MATERIAL TO BE MANUFACTURED FROM CORRUGATED HIGH DENSITY POLYETHYLENE, AASHTO M254 PIPE.
 2. FITTINGS TO BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENT OF AASHTO M294.
 3. FITTINGS DESIGNED TO PROTRUDE 6" INTO THE END OF THE INLET CHAMBERS.
 4. MANIFOLD TEE AND ELBOW JOINT TO BE CONNECTED UTILIZING HDPE SPLIT COUPLERS.

TYPICAL MANIFOLD DETAILS

HDPE SPLIT COUPLERS	
COUPLER SIZE	PART NUMBER
12" SPLIT COUPLER	PEF12SPCP
15" SPLIT COUPLER	PEF15SPCP
18" SPLIT COUPLER	PEF18SPCP
24" SPLIT COUPLER	PEF24SPCP

DRAWN	UJW
CHECKED	
DATE	JUNE 20, 2022
AS NOTED	
SHEET	

JIM WEBB, PE
Engineering & Construction, LLC
 1224 King Street
 La Crosse, WI 54601
 (608) 780-4672

GRADING AND STORM WATER PLANS FOR:
 KRATT LUMBER
 1714 S. 16TH STREET
 LA CROSSE, WISCONSIN

STORM WATER SUMMARY AND DETAILS

C5