# PRELIMINARY DEVELOPMENT PLAN AND SPECIAL USE PERMIT PLANS

# FLEX SPACE 60 SE THOMPSON DR.

CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI NW  $\frac{1}{4}$ , SECTION S17, TOWNSHIP 47N, RANGE 31W

#### PROJECT TEAM

#### OWNER: CAPITAL BUILDERS 1507 NE WALL ST. LEE'S SUMMIT, MO. 64086 CONTACT: MATT HENDRICKSON EMAIL: MATT@CAPITALBUILDERSKC.COM

CIVIL ENGINEER: KIMLEY-HORN AND ASSOCIATES, INC. 805 PENNSYLVANIA AVE. SUITE 150, KANSAS CITY, MO 64105 CONTACT: PATRICK JOYCE, P.E.

TEL: (785) 550-8994 EMAIL: PATRICK.JOYCE@KIMLEY-HORN.COM

SIXTWENTYONE 1705 SUMMIT ST. KANSAS CITY, MO 64108 CONTACT: JACOB LITTRELL, RA, LEED AP BD+C TEL: (816) 694-1369

LANDSCAPE LANDWORKS STUDIO 102 S CHERRY ST. OLATHE, KS 66061

EMAIL: JACOB@SIXTWENTYONE.COM

ARCHITECT

CONTACT: ERICA FLAD, PLA, LEED GA TEL: (913) 780-6707 EMAIL: ERICA@LANDWORKSSTUDIO.COM

#### UTILITY AND GOVERNING AGENCY CONTACTS

**RONALD GIPFERT** 

TEL: (816) 275-1550

RICHARD FROCK

3025 SW CLOVER DR.

TEL: (816) 472-3489

LEE'S SUMMIT, MO 64082

KANSAS CITY, MO 64106

MISSOURI GAS ENERGY:

500 E 8TH ST.

SANITARY & WATER: STORMWATER: CITY OF LEE'S SUMMIT PUBLIC WORKS 220 SE GREEN ST. LEE'S SUMMIT, MISSOURI 64063

STREETS: CITY OF LEE'S SUMMIT MICHAEL PARK 220 SE GREEN ST. LEE'S SUMMIT, MO 64063 TEL: (8160 969-1800

CITY OF LEE'S SUMMIT

1200 SE HAMBLEN RD.

TEL: (816) 969-1900

LEE'S SUMMIT. MO 64081

**EVERGY**: 1300 SE HAMBLEN RD. LEE'S SUMMIT, MO 64081 TEL: (816) 347-4320

#### **GENERAL NOTES:** TEL: (816) 969-1800

- 1. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO ALL APPLICABLE STANDARDS AND SPECIFICATIONS OF THE PUBLIC WORKS DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI, IN ALL USAGE AND ALL SUPPLEMENTS THERE TO.
- 2. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, BONDS, AND INSURANCE REQUIRED BY THE CITY

- 5. THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND ARE APPROXIMATE ONLY. THEY DO NOT CONSTITUTE ACTUAL FIELD
- 7. ALL EXCESS MATERIAL SHALL BE REMOVED LEGALLY FROM SITE AND DISPOSED OF OFF SITE
- 8. TRAFFIC CONTROL AND MAINTENANCE OF TRAFFIC DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH THE
- 10. ANY EXISTING OR NEW STORM SEWER INLETS IN USE DURING DEMOLITION, GRADING OR CONSTRUCTION SHALL HAVE INLET PROTECTION AS SPECIFIED



**VICINITY MAP** 

#### HISTORIC INFORMATION

THIS STRUCTURE IS NOT LISTED IN THE NATIONAL REGISTER OF HISTORIC PLACES.

THIS SITE IS NOT LOCATED IN A LOCAL HISTORIC DISTRICT PER THE MISSOURI DEPARTMENT OF NATURAL RESOURCES HISTORIC DISTRICTS AND SITES DATABASE, ACCESSED JUNE 27, 2023.

#### FEMA INFORMATION

THIS SITE IS LOCATED WITHIN ZONE X PER FEMA FIRM MAPS 29095C0438G: EFFECTIVE DATE JANUARY 20, 2017. NO LETTERS OF MAP AMENDMENT OR REVISION ARE BEING PROPOSED.

#### LEGAL DESCRIPTION

LOT 3A, DECKER STREET MINOR PLAT, LOTS 2A AND 3A, A SUBDIVISION IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, ACCORDING TO THE PLAT RECORDED AUGUST 6, 2021.

#### WATERSHED

THIS SITE IS LOCATED WITHIN THE BIG CREEK WATERSHED

#### PROJECT SPECIFICATIONS

2. KANSAS CITY METRO APWA

THE SPECIFICATIONS FOR THIS PROJECT SHALL BE THE FOLLOWING: THE CITY OF LEE'S SUMMIT, MISSOURI

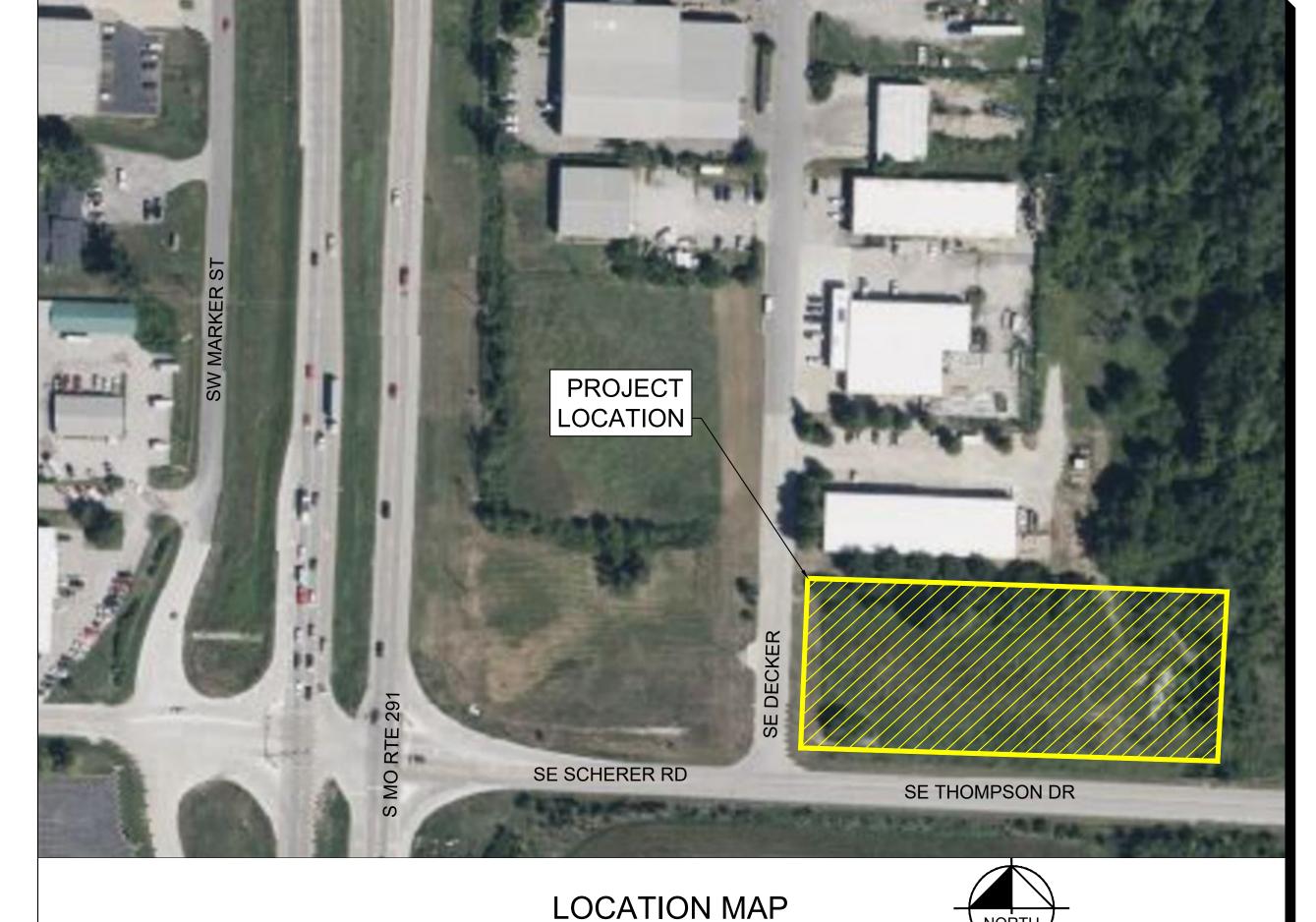
THE STANDARD SPECIFICATIONS THROUGH AND INCLUDING THE LATEST AMENDMENTS SHALL BE PART OF THESE PROJECT DRAWINGS AND SPECIFICATION AND ARE INCORPORATED HEREIN BY REFERENCE. THE MORE STRINGENT OF THESE STANDARD SPECIFICATIONS AND THOSE PREPARED BY THE ENGINEERING PREPARING THESE PLANS SHALL GOVERN.

#### OIL AND GAS WELL NOTES

NO ABANDONED OIL OR GAS WELLS HAVE BEEN IDENTIFIED WITHIN THE PROPERTY LIMITS OF THE PROPOSED CONSTRUCITON ACTIVITIES, PER THE MISSOURI DEPARTMENT OF NATURAL RESOURCES (MDNR) PERMITTED OIL AND GAS DATABASE, ACCESSED JUNE 27, 2023.

### APPROXIMATE TOTAL ACREAGE: 2.13 AC

LIMITS OF DISTURBANCE: 1.53 AC DATE: 7/14/2023



Sheet List Table					
Sheet Number	Sheet Title				
C001	COVER SHEET				
C002	EXISTING CONDITIONS				
C003	SITE PLAN				
C004	GRADING PLAN				
C005	UTILITY & STORMWATER PLAN				
C006	STORMWATER DETAILS				
L001	LANDSCAPE PLAN				
A101	FLOOR PLANS				
A201	ELEVATIONS - BUILDING A				
A202	ELEVATIONS - BUILDING B				
A203	RENDERINGS				

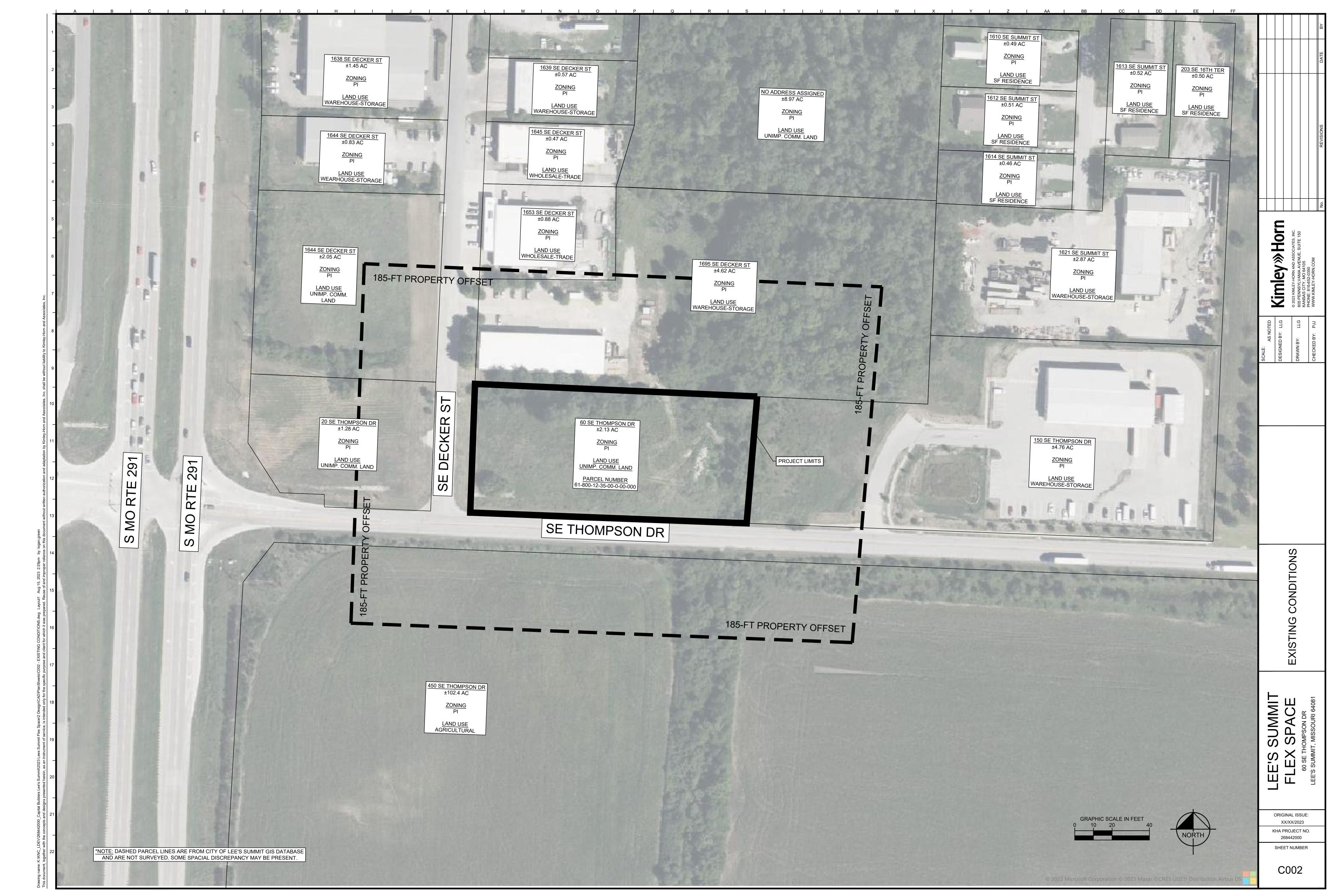


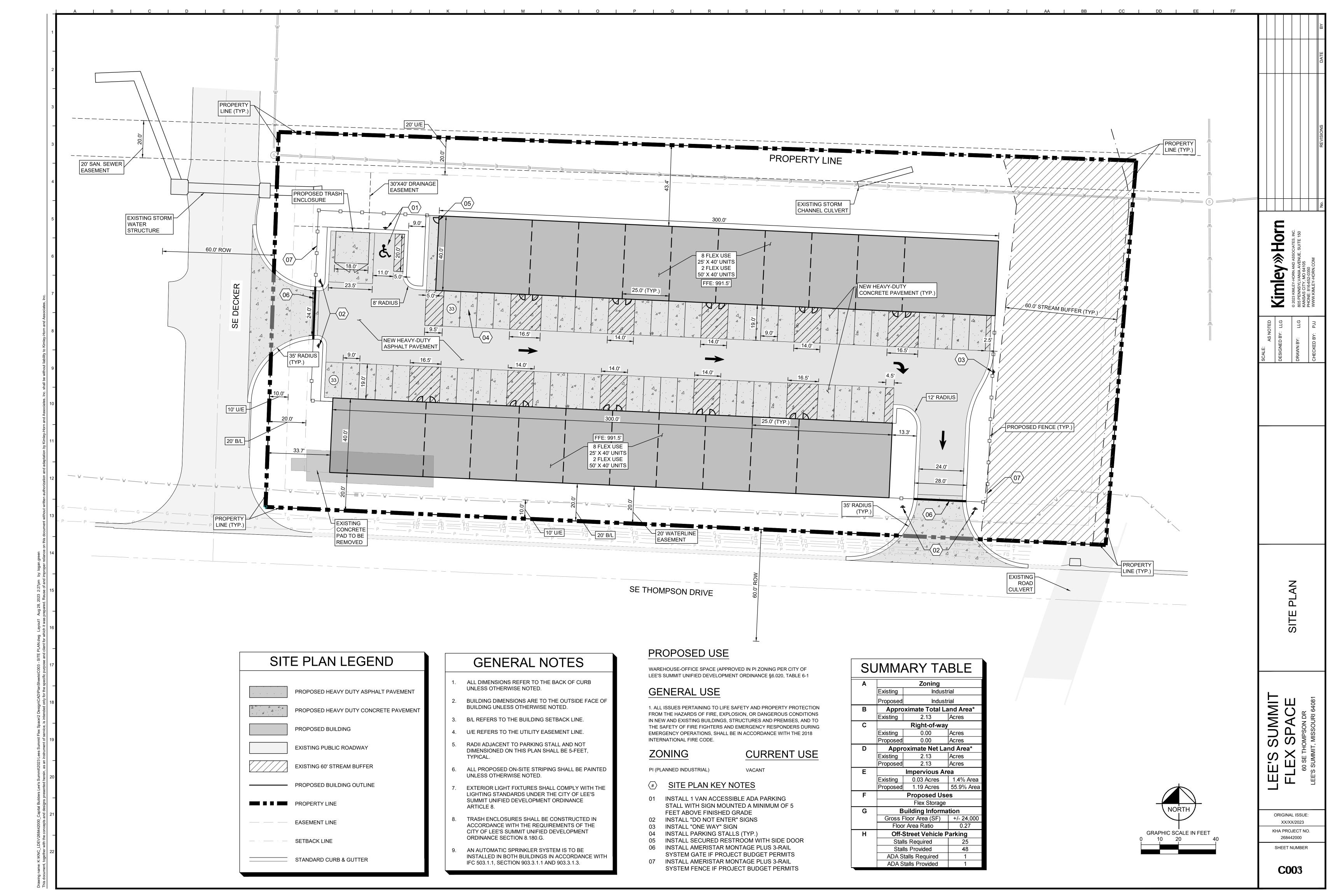
Know what's **below.**Call before you dig.

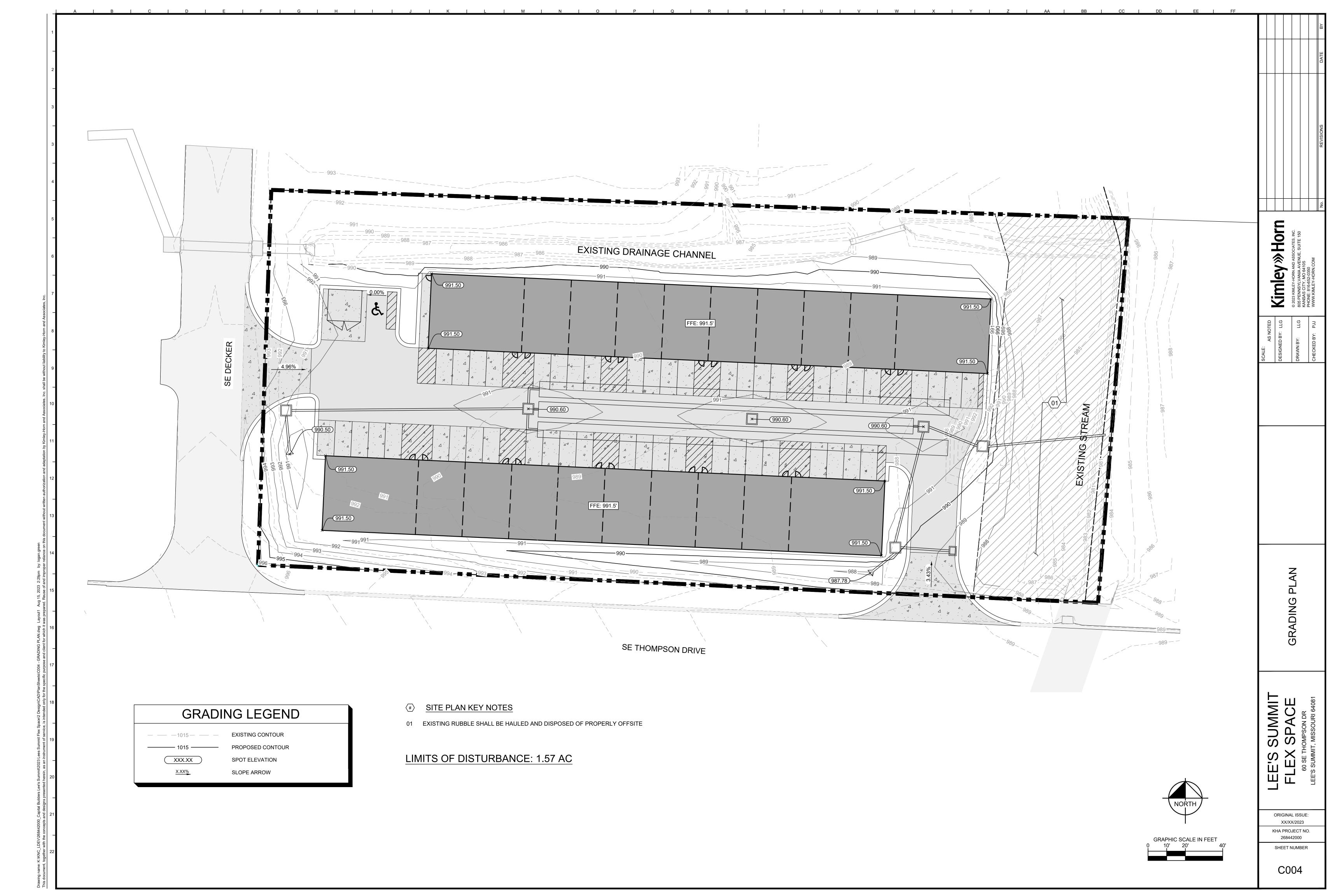
ORIGINAL ISSUE: XX/XX/2023 KHA PROJECT NO. 268442000

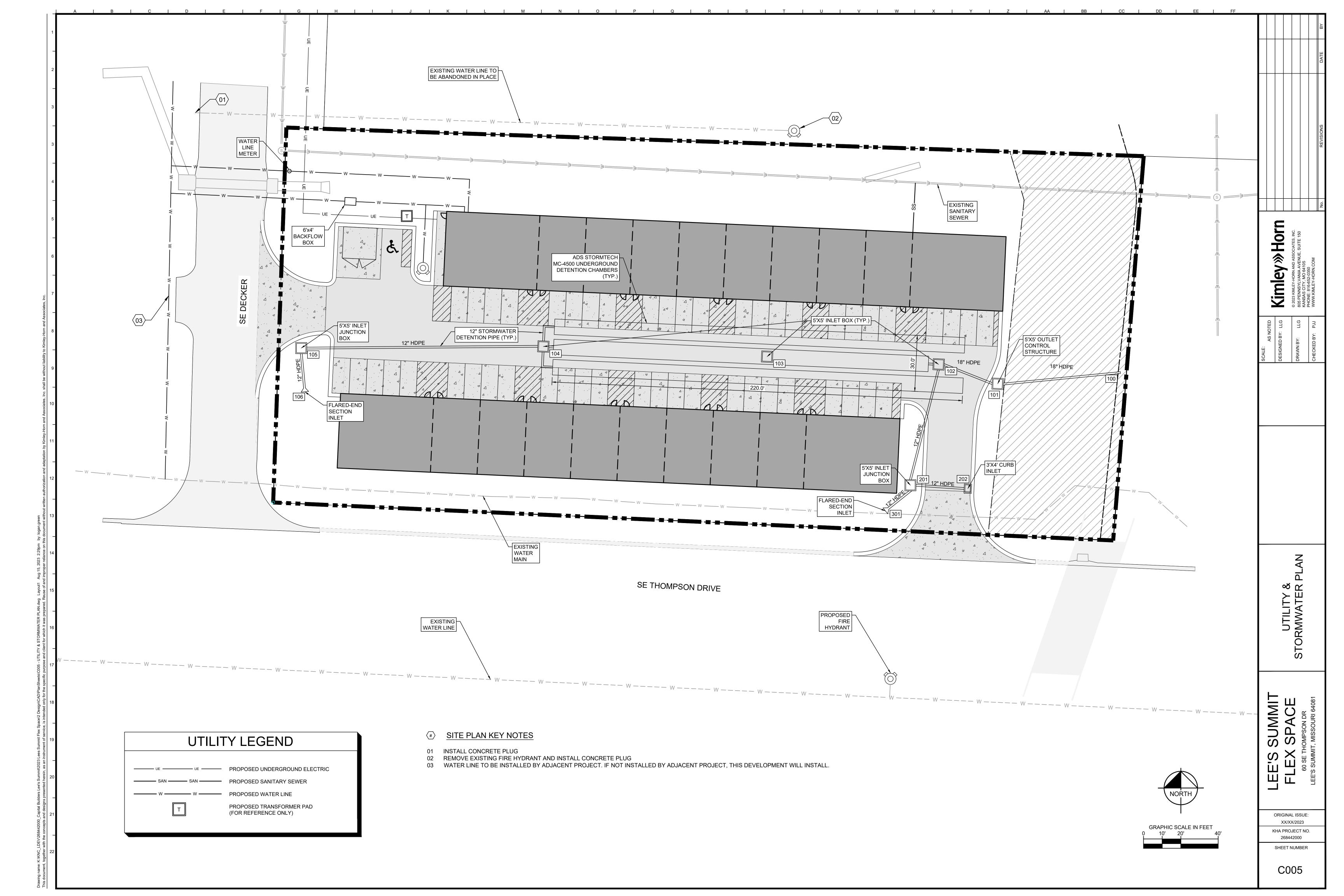
C001

SHEET NUMBER











- OPTIONAL INSPECTION PORT



STORMTECH

CHAMBERS

 STORMTECH END CAP

NUMBER AND SIZE OF UNDERDRAINS PER SITE DESIGN ENGINEER

6" (150 mm) TYP FOR SC-740, DC-780, MC-3500, MC-4500 & MC-7200 SYSTEMS

4" (100 mm) TYP FOR SC-310 & SC-160LP SYSTEMS

#### MC-4500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-4500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHAL 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.
- CHAMBERS SHALL BE DESIGNED. TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLÒWABLÉ COVER WITH PARKED (1-WEEK) AASHTO
- REQUIREMENTS FOR HANDLING AND INSTALLATION
- TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL.
- TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE
- TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION. a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
- THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE STRUCTURAL EVALUATION SHALL DEMONSTRATE 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 SECTIONS 3 AND 12.12 OF THE
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- 9. 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

- STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS.
- 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 MEETING THE AASHTO M43
- 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
- 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

STORMTECH RECOMMENDS 3 BACKELL METHODS:

- 1. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500
- 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
- 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

#### CONVEYANCE PIPE MATERIAL MAY VARY (PVC, HDPE, ETC.) 11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE **INSERTA TEE** CONNECTION INSERTA TEE TO BE INSTALLED, CENTERED OVER CORRUGATION PLACE ADSPLUS WOVEN GEOTEXTILE (CENTERED ON INSERTA-TEE INLET) OVER **SECTION A-A** SIDE VIEW BEDDING STONE FOR SCOUR PROTECTION AT SIDE INLET CONNECTIONS, GEOTEXTILE MUST EXTEND 6" (150 mm) PAST CHAMBER HEIGHT FROM BASE OF MAX DIAMETER OF CHAMBER (X) **INSERTA TEE** 6" (150 mm 4" (100 mm) 10" (250 mm) 4" (100 mm) SC-740 10" (250 mm) 4" (100 mm) DC-780 MC-3500 12" (300 mm) 6" (150 mm) PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE MC-4500 12" (300 mm) 8" (200 mm) INFORMATION. 12" (300 mm) MC-7200 8" (200 mm) CONTACT ADS ENGINEERING SERVICES IF INSERTA TEE INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS INLET MUST BE RAISED AS NOT ALL INVERTS ARE GASKETED & SOLVENT WELD. N-12. HP STORM. C-900 OR DUCTILE IRON

STORMTECH -

**SECTION A-A** 

SECTION B-B

DO NOT INSTAL

**INSERTA-TEE AT** 

PERFORATED HDPE

UNDERDRAIN

FOUNDATION STONE

BENEATH CHAMBERS

ADS GEOSYNTHETICS 601T

NON-WOVEN GEOTEXTILE

FOUNDATION STONE

BENEATH CHAMBERS

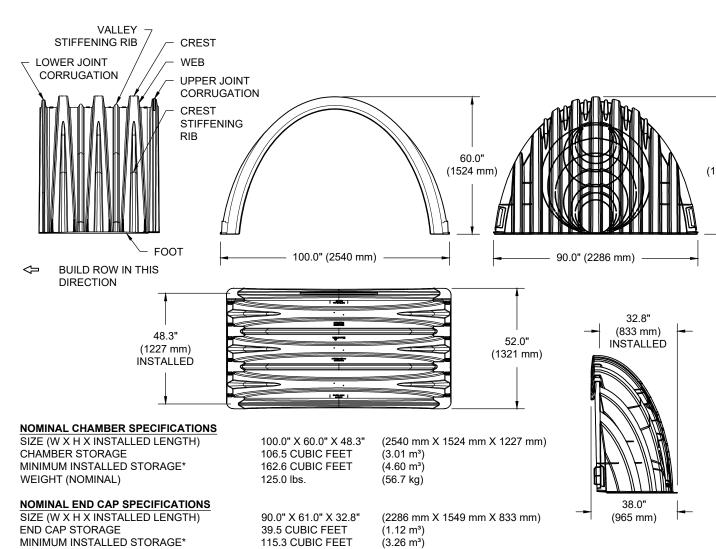
ADS GEOSYNTHETICS 601T

NON-WOVEN GEOTEXTILE

**UNDERDRAIN DETAIL** 

STORMTECH

END CAP



WEIGHT (NOMINAL) (40.8 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. PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B" PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T" END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W" PART# 42.54" (1081 mm) MC4500IEPP06T 6" (150 mm) 0.86" (22 mm) MC4500IEPP06B 40.50" (1029 mm) MC4500IEPP08T 8" (200 mm) MC4500IEPP08B 1.01" (26 mm) 38.37" (975 mm) MC4500IEPP10T 10" (250 mm) MC4500IEPP10B 35.69" (907 mm 12" (300 mm) 1.55" (39 mm) MC4500IEPP12E 32.72" (831 mm) MC4500IEPP157 15" (375 mm) 1.70" (43 mm) MC4500IEPP15B MC4500IEPP18T 29.36" (746 mm) CUSTOM PREFABRICATED INVERTS MC4500IEPP18TW 18" (450 mm) ARE AVAILABLE UPON REQUEST. MC4500IFPP18B INVENTORIED MANIFOLDS INCLUDE 1.97" (50 mm) MC4500IEPP18BW 12-24" (300-600 mm) SIZE ON SIZE MC4500IEPP24T AND 15-48" (375-1200 mm) 23.05" (585 mm) MC4500IEPP24TW ECCENTRIC MANIFOLDS. CUSTOM 24" (600 mm) INVERT LOCATIONS ON THE MC-4500 MC4500IEPP24B END CAP CUT IN THE FIELD ARE NOT MC4500IEPP24BW RECOMMENDED FOR PIPE SIZES MC4500IEPP30BW 2.95" (75 mm) GREATER THAN 10" (250 mm). THE MC4500IEPP36BW 36" (900 mm) 3.25" (83 mm) INVERT LOCATION IN COLUMN 'B' 3.55" (90 mm) 42" (1050 mm) MC4500IEPP42BW

ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

TAIL

DE

0

**INSERTA-TEE SIDE INLET DETAIL** 

MC-4500 TECHNICAL SPECIFICATIONS

#### **INSPECTION & MAINTENANCE**

INSPECT ISOLATOR ROW PLUS FOR SEDIMENT A. INSPECTION PORTS (IF PRESENT)

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

- 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

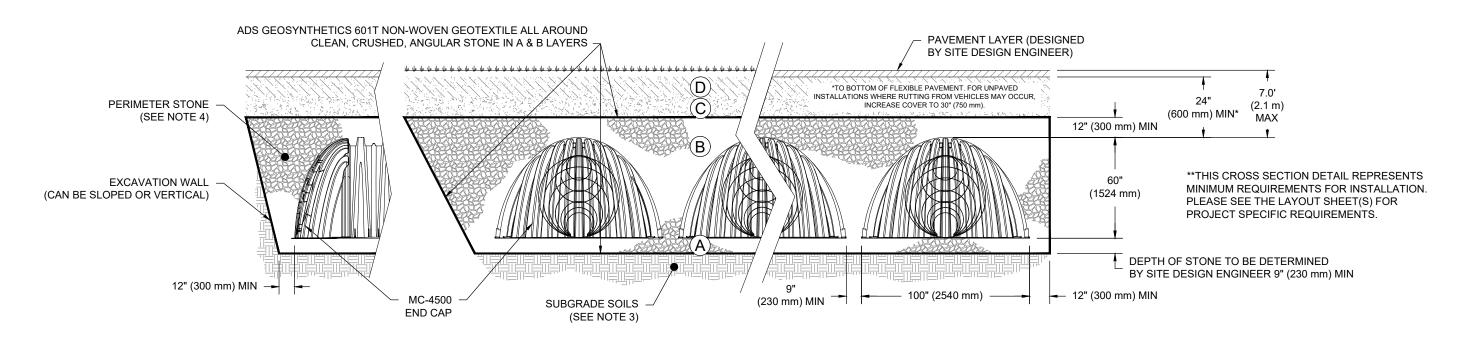
#### ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

NOTE: ALL DIMENSIONS ARE NOMINAL

	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	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
С	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.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.  MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3  OR  AASHTO M43 <sup>1</sup> 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.
В	<b>EMBEDMENT STONE</b> : FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	NO COMPACTION REQUIRED.
А	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

PLEASE NOTE: 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"

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 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 4. 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.

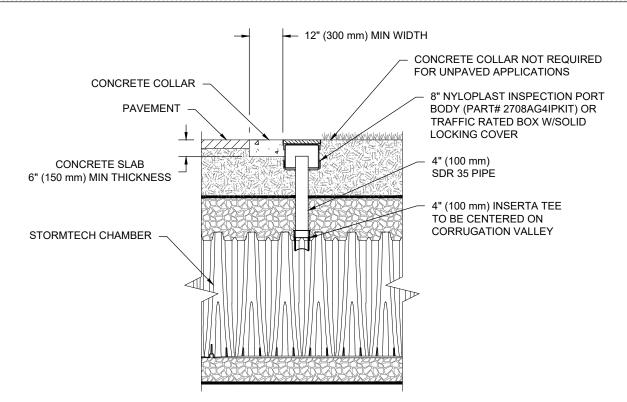


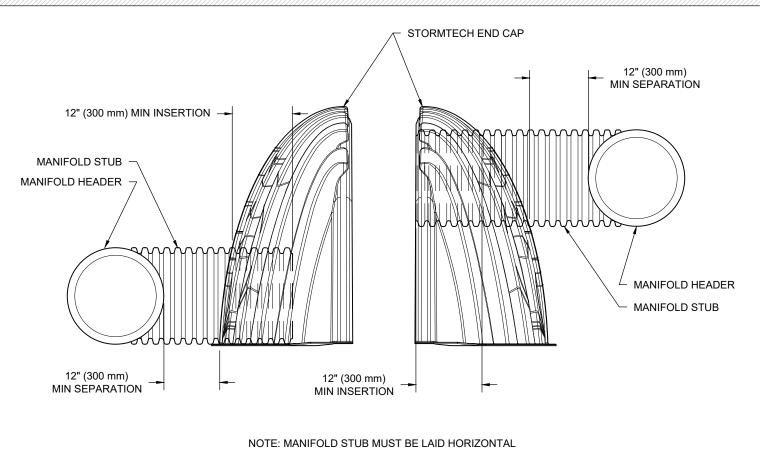
#### **NOTES:**

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418. "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
- MC-4500 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
- 4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS. TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
- TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%.
- AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

# SITE DESIGN ENGINEER 24" [600 mm] MIN RECOMMENDED)

## MC-4500 ISOLATOR ROW PLUS DETAIL





4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)

INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

MC-SERIES END CAP INSERTION DETAIL

FOR A PROPER FIT IN END CAP OPENING.

MC-4500 CROSS SECTION DETAIL

SHEET

DECKER STREET 200 FEET / 30 = 7 TREES AND 10 SHRUBS

PROVIDED:

PLOTTED BY: ER/CA File Path: p:\23-054 flex

THOMPSON DRIVE 15 TREES AND 23 SHRUBS
DECKER STREET 7 TREES AND 10 SHRUBS

OPEN YARD AREAS

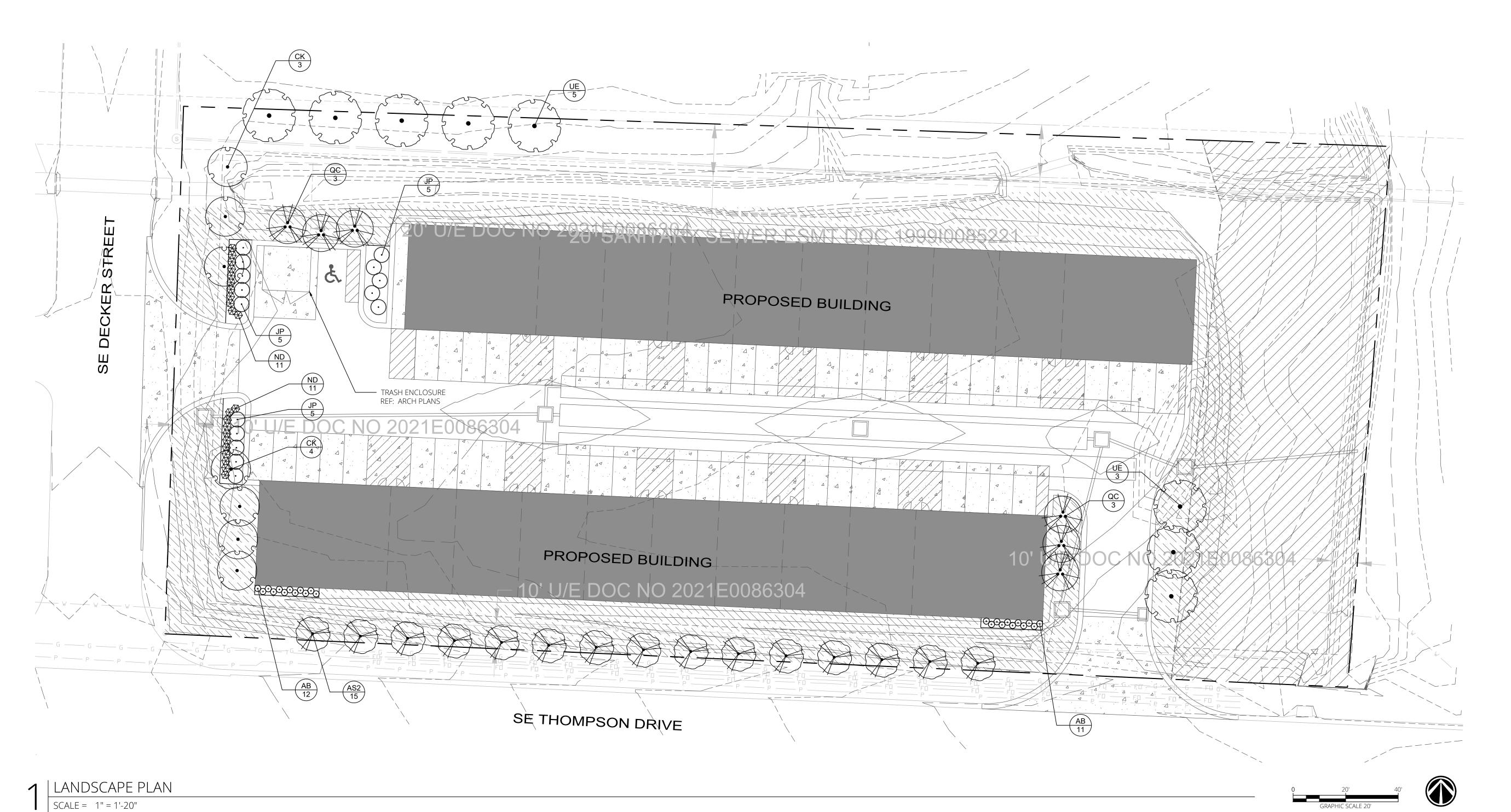
REQUIRED: 1 TREE AND 2 SHRUBS PER 5,000 SQUARE FEET OF TOTAL LOT AREA EXCLUDING BUILDING FOOTPRINT AREA

92,667 SF - 24,000 SF = 68,667 SF / 5,000 = 14 TREES AND 27 SHRUBS

PROVIDED: 14 TREES AND 27 SHRUBS

#### PLANT SCHEDULE

DECIDUOUS TREES	CODE	QTY	COMMON / BOTANICAL NAME	CONT	CAL
	AS2	15	SUGAR CONE SUGAR MAPLE / ACER SACCHARUM 'SUGAR CONE'	B & B	3"CA
	QC	6	CRIMSON SPIRE™ OAK / QUERCUS ROBUR X ALBA 'CRIMSCHMIDT'	В&В	3"CA
	UE	8	ALLEE LACEBARK ELM / ULMUS PARVIFOLIA `EMER II` TM	B & B	3"CA
ORNAMENTAL TREE	CODE	<u>QTY</u>	COMMON / BOTANICAL NAME	CONT	CAL
•	СК	7	KOUSA DOGWOOD / CORNUS KOUSA	B & B	3"CA
DECIDUOUS SHRUBS	CODE	<u>QTY</u>	COMMON / BOTANICAL NAME	CONT	
+	AB	23	LOW SCAPE HEDGER BLACK CHOKEBERRY / ARONIA MELANOCARPA `UCONNAM166` TM	2 GAL	
$\bigotimes$	ND	22	FIREPOWER DWARF NANDINA / NANDINA DOMESTICA 'FIREPOWER'	2 GAL	
EVERGREEN SHRUBS	CODE	<u>QTY</u>	COMMON / BOTANICAL NAME	CONT	
$\odot$	JP	15	SEA GREEN JUNIPER / JUNIPERUS X PFITZERIANA `SEA GREEN`	5 GAL	
GROUND COVERS	CODE	<u>QTY</u>	COMMON / BOTANICAL NAME	CONT	
	TTF	18,486 SF	TURF TYPE TALL FSCUE / DROUGHT TOLERANT FESCUE BLEND	SOD	





# UMMIT, MISSOURI

current submittal

Special Use Permit Plan

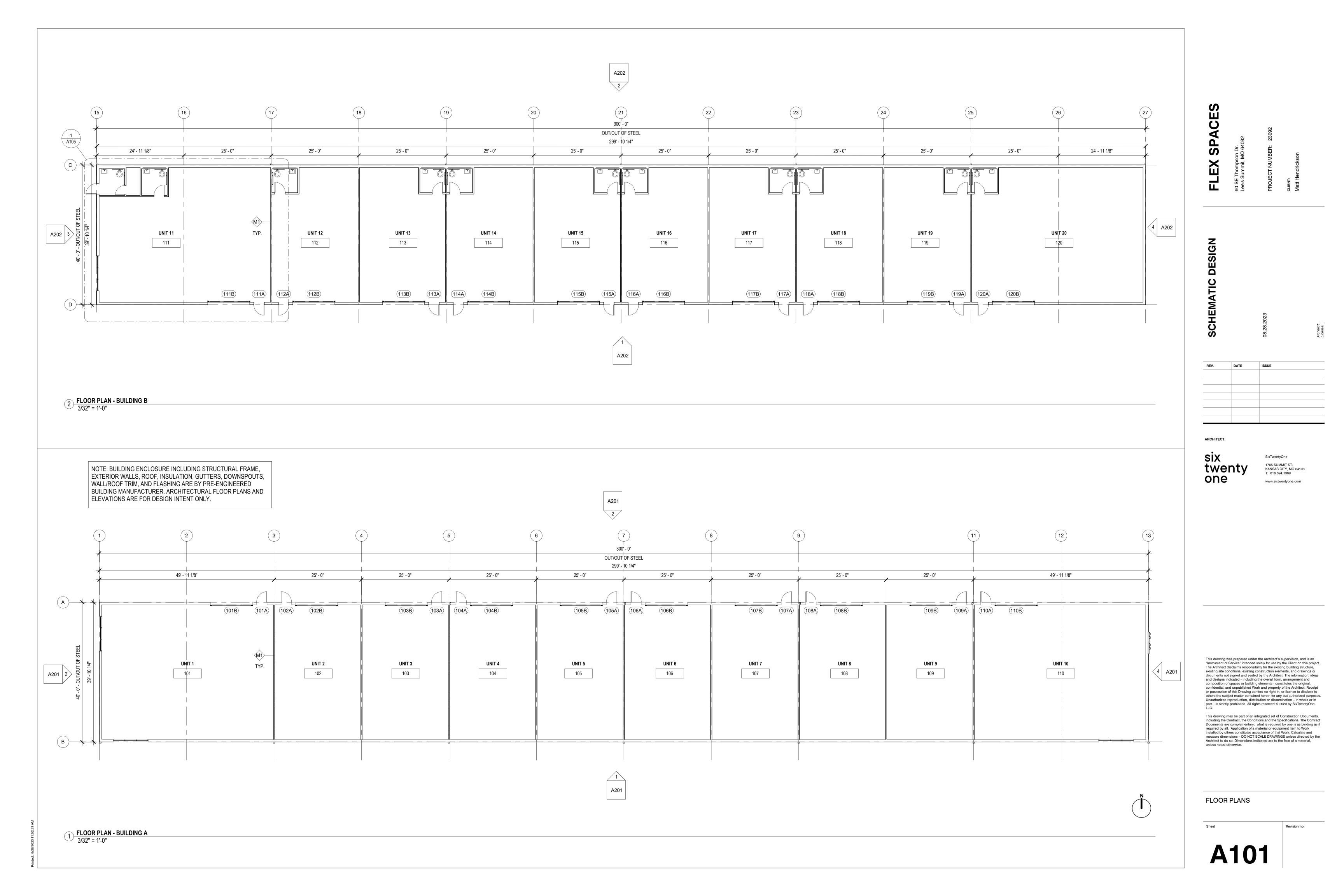
issued: 08/15/2023

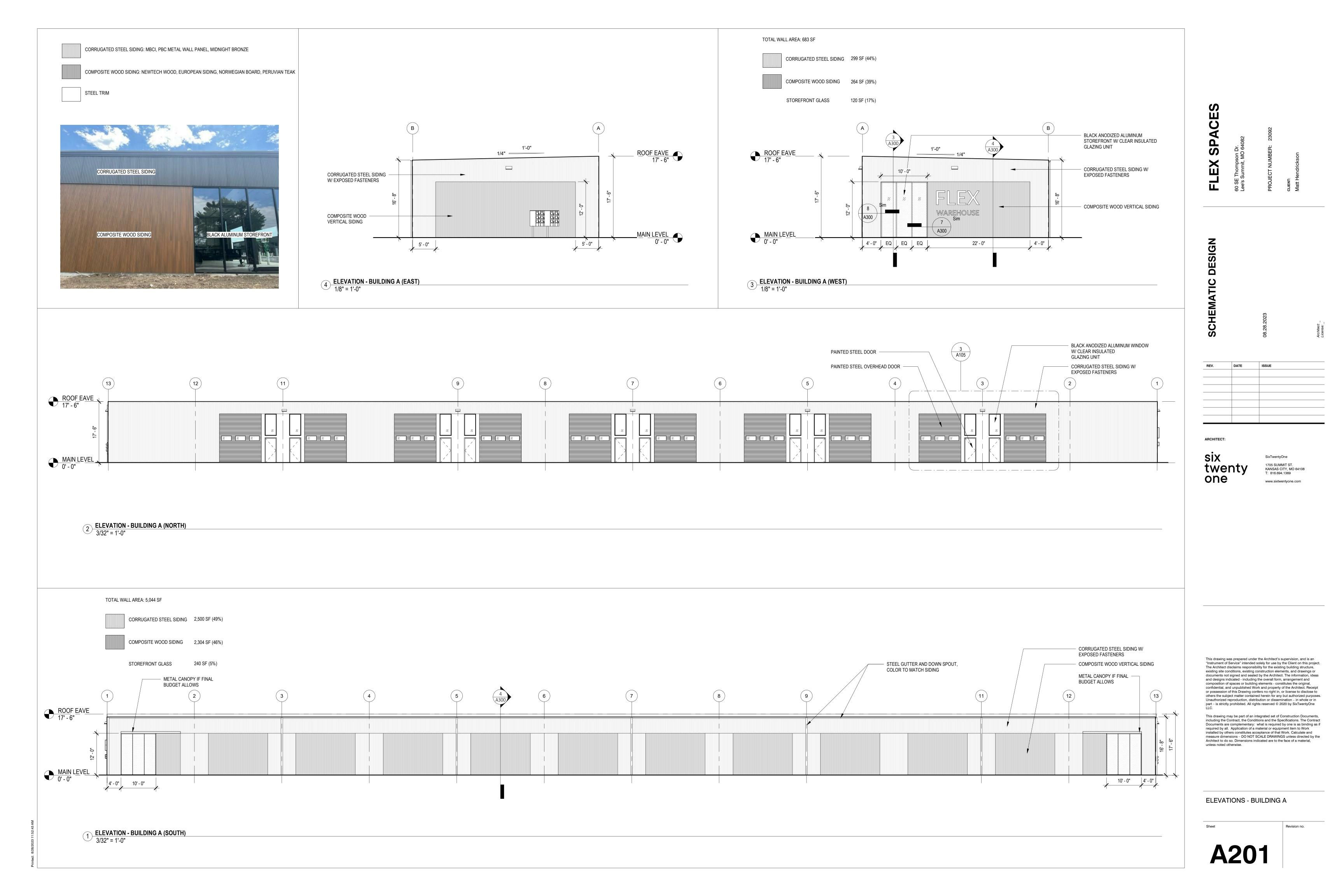
professional seal

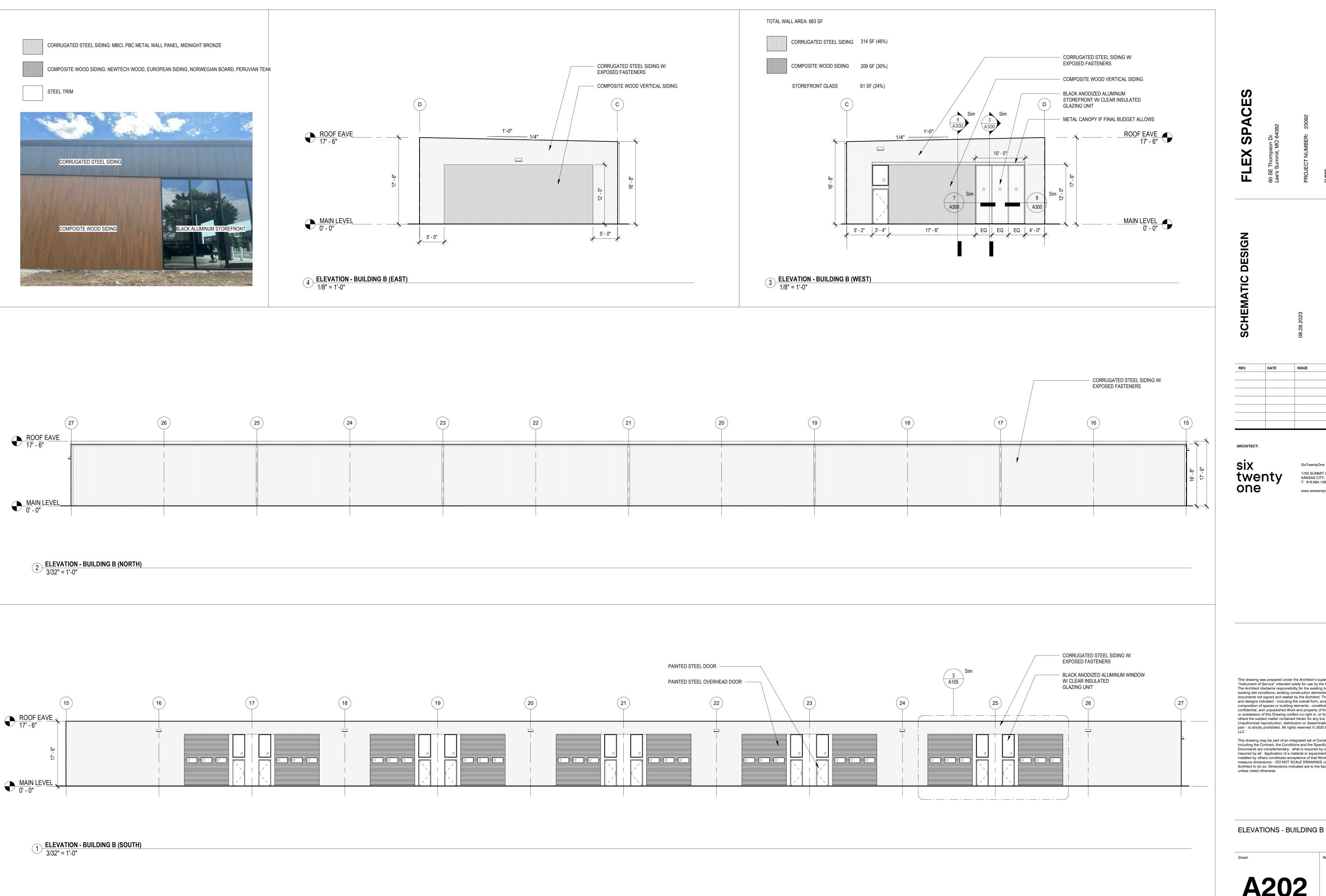
Date No.

LANDSCAPE PLAN

L001







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BUILDING A - EAST AND NORTH ELEVATIONS



BUILDING B - WEST AND SOUTH ELEVATIONS



BUILDING B - SOUTH AND EAST ELEVATIONS

SPACES

ee's Summit, MO 64082

08.28

REV. DATE ISSUE

7.11.51.11.5

six twenty one

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RENDERINGS

Sheet

**A203**