

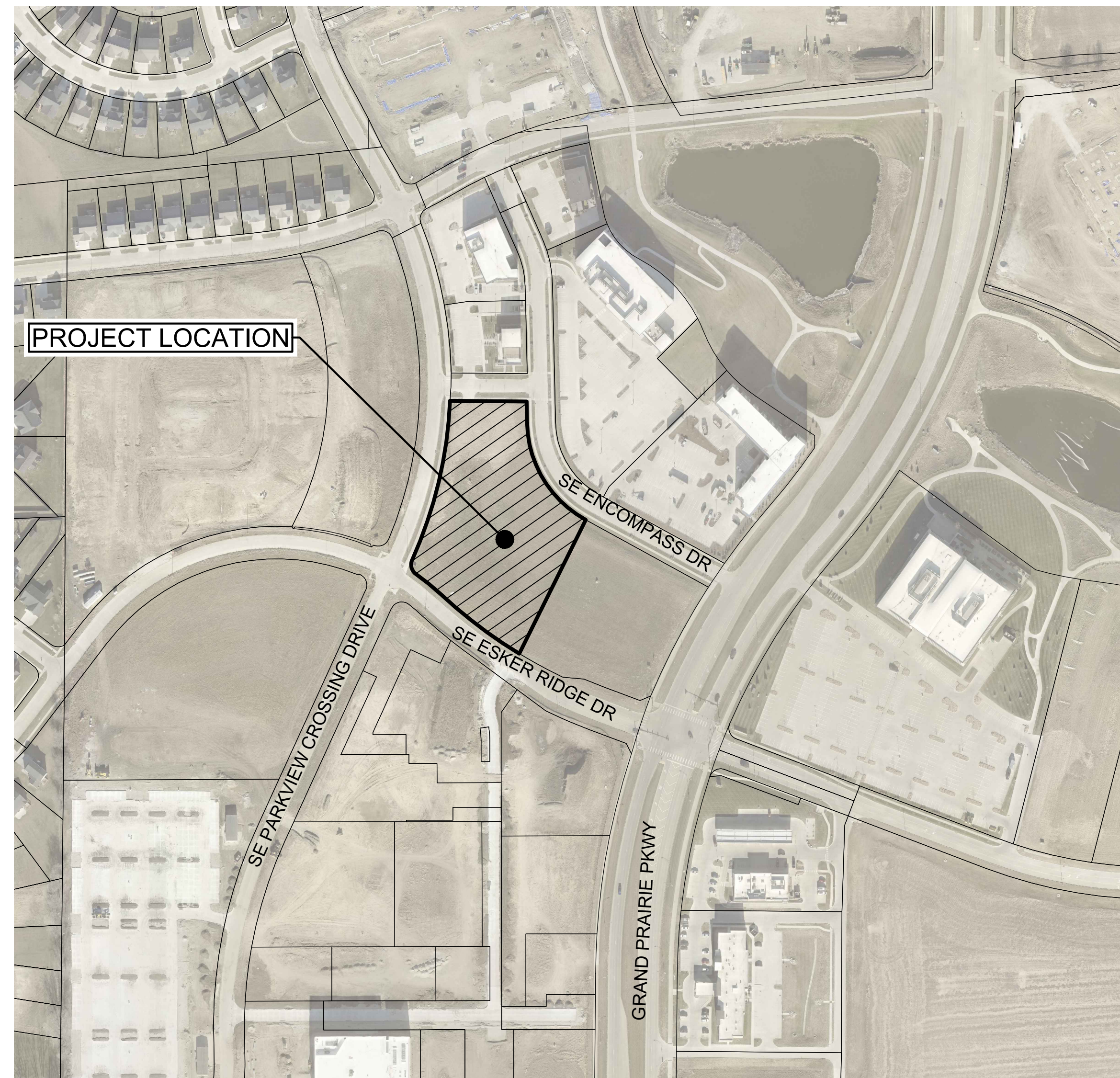
# SITE PLAN / PRELIMINARY PLAT FOR CALIBER KETTLESTONE PLAT 1

915 & 845 SE ESKER RIDGE DRIVE  
CITY OF WAUKEE, DALLAS COUNTY, IOWA

**OWNER**  
MN WAUKEE HOLDINGS LLC  
1409 N RIVERFRONT DR  
MANKATO, MN 56001

**ENGINEER**  
SNYDER & ASSOCIATES  
2727 SW SNYDER BLVD.  
ANKENY, IOWA 50023  
CONTACT: ERIC CANNON, P.E.  
PHONE: (515) 964-2020

**ARCHITECT**  
J CORP DESIGN BUILD  
3611 NE OTTERVIEW CIRCLE #42  
ANKENY, IOWA 50021  
CONTACT: NICK JENSEN  
PHONE: (515) 290-3401



VICINITY MAP

**Sheet List Table**

- C100 TITLE SHEET
- C101 PROJECT INFORMATION
- C200 DIMENSION PLAN
- C300 UTILITY PLAN
- C400 GRADING AND EROSION CONTROL PLAN
- C401 DETAILED GRADING PLAN
- C402 RAMP DETAILS
- C500 PLANTING PLAN
- C600 SITE DETAILS
- C601 SITE DETAILS

	<p>I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed Professional Landscape Architect under the laws of the State of Iowa.</p> <p>Clay R. Schneckloth, PLA _____ Date License Number 512</p> <p>Pages or sheets covered by this seal: C500</p>
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	<p>I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.</p> <p>Eric D. Cannon, P.E. _____ Date License Number P18954 My License Renewal Date is December 31, 2027</p> <p>Pages or sheets covered by this seal: C100-C401, C600-C601</p>
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**CALIBER KETTLESTONE PLAT 1**

**TITLE SHEET**

**SNYDER & ASSOCIATES, INC. I**

**WAUKEE, IOWA**

2727 SW SNYDER BLVD  
ANKENY, IOWA 50023  
515-964-2020 | www.snyder-associates.com

Project No: 125.1396.01

Sheet C100

4	AS PER CITY COMMENTS	02-05-26	LJM	BY	
3	AS PER CITY COMMENTS	01-20-26	LJM	DATE	
2	AS PER CITY COMMENTS	01-06-26	LJM	DATE	
1	AS PER CITY COMMENTS	12-29-25	LJM	DATE	
MARK		REVISION	DATE	BY	
Engineer: LMW		Checked By: EDC	Scale: 1" = 200'		
Technician: LJM		Date: 12-09-25	T-R-S: TTN-RRW-SS		
Project No: 125.1396.01					Sheet C100

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LEGEND

Table with 2 columns: FEATURES and FOUND. Lists various survey features like Section Corner, ROW Marker, Control Point, etc., with their corresponding symbols and 'FOUND' status.

Table with 2 columns: FEATURES and PROPOSED. Lists various utility features like Spot Elevation, Contour Elevation, Fence, etc., with their corresponding symbols and 'PROPOSED' status.

(\*) Denotes the survey quality service level for utilities

Table with 2 columns: Sanitary Manhole, Storm Sewer with Size, etc. Lists various utility symbols and their corresponding 'FOUND' or 'PROPOSED' status.

UTILITY QUALITY SERVICE LEVELS

QUALITY LEVELS OF UTILITIES ARE SHOWN IN THE PARENTHESES WITH THE UTILITY TYPE AND WHEN APPLICABLE, SIZE. THE QUALITY LEVELS ARE BASED ON THE CI / ASCE 38-02 STANDARD.

UTILITY WARNING

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN COMPRISE ALL SUCH ITEMS IN THE AREA.

GENERAL USE

APARTMENTS

PROPERTY DESCRIPTION

THE SHOPS AT KETTLESTONE NORTH PLAT 10, LOTS 1 & 2

PROPERTY ADDRESS

915 & 845 SE ESKER RIDGE DRIVE WAUKEE, IOWA 50263

ZONING

K-MU/PD-1 OVERLAY: KETTLESTONE MULTI-FAMILY/ PLANNED DEVELOPMENT DISTRICT OVERLAY (BK 2020, PG 25377) (PER ZONING ORDINANCE #2970)

OPEN SPACE

LOT 1: SITE AREA: 49,530 SF (1.14 AC) IMPERVIOUS AREA: 36,206 SF (73.1%) OPEN SPACE AREA: 13,324 SF (26.9%)

LOT 2: SITE AREA: 73,073 SF (1.68 AC) IMPERVIOUS AREA: 54,025 SF (73.9%) OPEN SPACE AREA: 19,048 SF (26.1%)

BULK REGULATIONS

LOT AREA: NO MINIMUM REQUIREMENT

LOT WIDTH: NO MINIMUM REQUIREMENT

FRONT YARDS: NO MINIMUM FOR PRINCIPAL PERMITTED USES. 20 FEET FOR ACCESSORY STRUCTURES

SIDE YARDS: NO MINIMUM FOR PRINCIPAL PERMITTED USES UNLESS ADJACENT TO ADJOINING SINGLE-FAMILY, IN WHICH CASE THE MINIMUM SETBACK SHALL BE 50 FEET, 5 FEET FOR ACCESSORY STRUCTURES.

REAR YARD: NO MINIMUM FOR PRINCIPAL PERMITTED USES UNLESS ADJACENT TO ADJOINING SINGLE-FAMILY, IN WHICH CASE THE MINIMUM SETBACK SHALL BE 50 FEET, 5 FEET FOR ACCESSORY STRUCTURES.

MAXIMUM HEIGHT: PRINCIPAL BUILDING - 8 STORIES ACCESSORY BUILDING - 1 STORY

PARKING REQUIREMENTS

1 SPACE PER BEDROOM 1 SPACE PER 5 UNITS

136 BEDROOMS = 136 SPACES REQUIRED 108 UNITS/ 5 = 22 SPACES REQUIRED

158 TOTAL SPACES REQUIRED 160 SPACES PROVIDED (INCLUDING 6 ACCESSIBLE SPACES)

BUILDING DESCRIPTION

LOT 1: 42-PLEX BUILDING= 33,993 SF BUILDING HEIGHT= 40'-6" (3 STORIES) PROPOSED FLOOR AREA RATIO: 0.23

LOT 2: 66-PLEX BUILDING= 53,970 SF BUILDING HEIGHT= 40'-6" (3 STORIES) PROPOSED FLOOR AREA RATIO: 0.25

UNITSCHEDULE-42 PLEX

Table with 3 columns: TYPE, COUNT, AREA. Lists unit counts and areas for 1BED, 1BED-TYPEA, 2BED, and SUITE.

UNITSCHEDULE-66 PLEX

Table with 3 columns: TYPE, COUNT, AREA. Lists unit counts and areas for 1BED, 1BED-TYPEA, 2BED, and SUITE.

UTILITY CONTACT INFORMATION

UTILITY CONTACT FOR MAPPING INFORMATION SHOWN AS RECEIVED FROM THE IOWA ONE CALL DESIGN REQUEST SYSTEM, TICKET NUMBER 552402093.

Table with 2 columns: Utility Type (e.g., FO1-FIBER OPTIC, UE1-UNDERGROUND ELECTRIC) and Contact Information (Name, Phone, Email).

NOTES

- A. NOTIFY UTILITY PROVIDERS PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES AND COORDINATE WITH UTILITY PROVIDERS AS NECESSARY DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTENCE, EXACT LOCATION, AND DEPTH OF ALL UTILITIES. PROTECT ALL UTILITY LINES AND STRUCTURES NOT SHOWN FOR REMOVAL OR MODIFICATION. ANY DAMAGES TO UTILITY ITEMS NOT SHOWN FOR REMOVAL OR MODIFICATION SHALL BE REPAIRED TO THE UTILITY OWNER'S SPECIFICATIONS AT THE CONTRACTOR'S EXPENSE.

FIRE SAFETY CONSTRUCTION NOTE

A. APPROVED FIRE APPARATUS ACCESS ROADS SHALL BE PROVIDED AS SOON AS CONSTRUCTION COMMENCES. IF PAVING IS NOT INSTALLED PRIOR TO BUILDING CONSTRUCTION COMMENCING AFTER FOOTING INSTALLED, AN APPROVED ROUTE AROUND THE EXTERIOR OF THE BUILDING TO EXTEND WITHIN 100 FEET OF ALL PORTIONS OF THE EXTERIOR WALLS SHALL BE PROVIDED AND COMPLY WITH THE REQUIREMENTS OF SECTION 503.2 OF THE IFC.

CONTROL POINTS

IOWA SOUTH STATE PLANE COORDINATE SYSTEM NAD83(2011)(EPOCH 2010.00) IARTN DERIVED - US SURVEY FEET

Table with 2 columns: Control Point ID (CP1, CP3, CP100, CP101) and Description (Coordinates, Location, Survey Reference).

BENCHMARKS

NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88 - GEOID18) IARTN DERIVED - US SURVEY FEET

Table with 2 columns: Benchmark ID (BM501) and Description (Coordinates, Location, Survey Reference).

POLLUTION PREVENTION NOTES

A. POLLUTION PREVENTION AND EROSION PROTECTION

- 1. CODE COMPLIANCE: THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL POTENTIAL POLLUTION AND SOIL EROSION CONTROL REQUIREMENTS OF THE IOWA CODE, THE IOWA DEPARTMENT OF NATURAL RESOURCES (IDNR) NPDES PERMIT, THE U.S. CLEAN WATER ACT AND ANY LOCAL ORDINANCES. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO PROTECT AGAINST EROSION AND POLLUTION FROM THIS PROJECT SITE AND ALL OFF-SITE BORROW OR DEPOSIT AREAS DURING PERFORMANCE OR AS A RESULT OF PERFORMANCE.

C. POLLUTION PREVENTION PLAN

- 1. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS A SEPARATE DOCUMENT IN ADDITION TO THESE PLAN DRAWINGS. THE CONTRACTOR SHOULD REFER TO THE SWPPP FOR ADDITIONAL REQUIREMENTS AND MODIFICATIONS TO THE POLLUTION PREVENTION PLAN MADE DURING CONSTRUCTION.

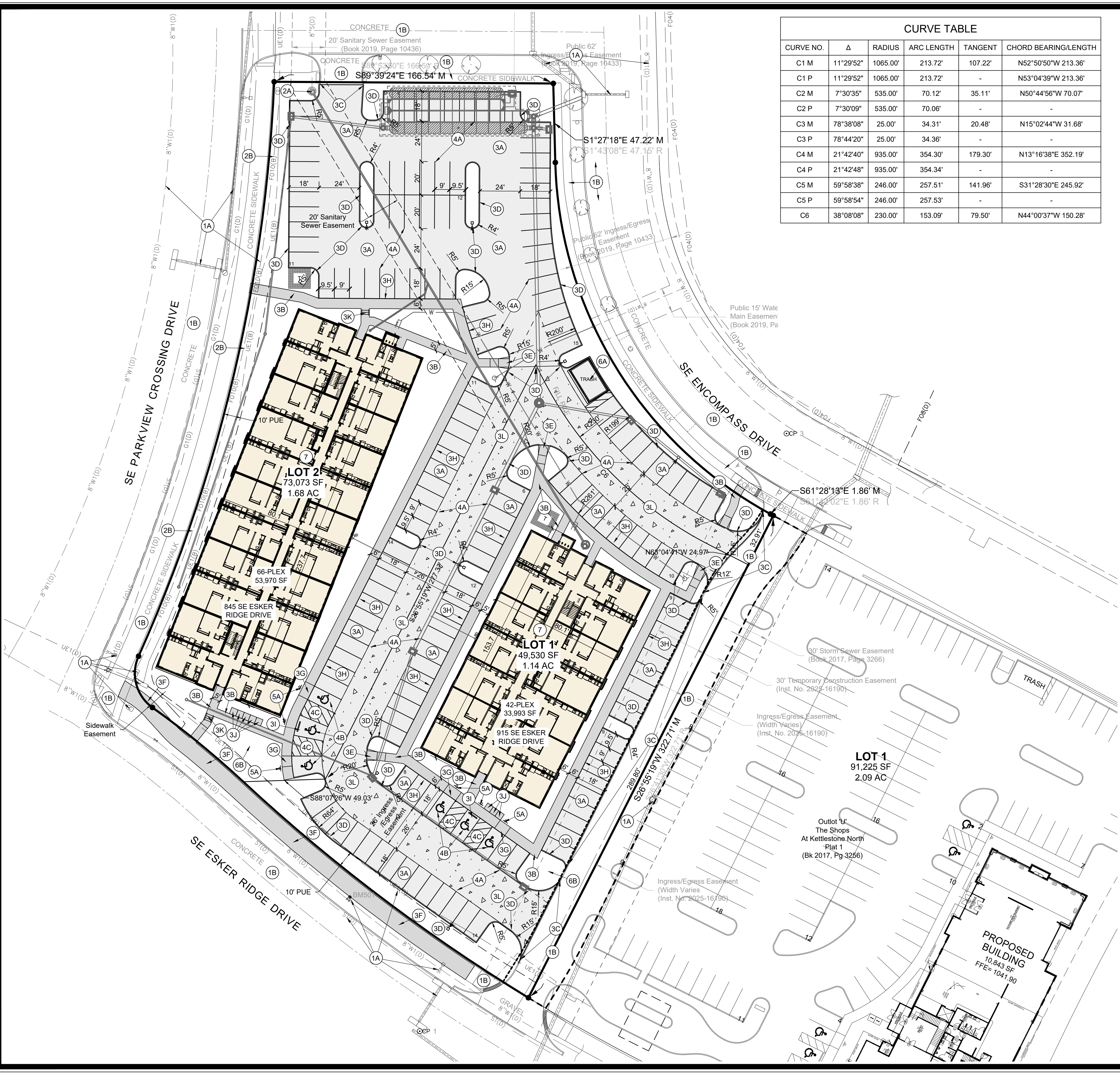
Table with 4 columns: AS PER CITY COMMENTS, LUM, DATE, BY. Lists revision history for the document.

Vertical project information including 'WAUKEE, IOWA', 'PROJECT INFORMATION', 'CALIBER KETTLESTONE PLAT 1', and 'SNYDER & ASSOCIATES, INC. I'.

Project information including 'Project No: 125.1396.01', 'Sheet C101', and the Snyder & Associates logo.

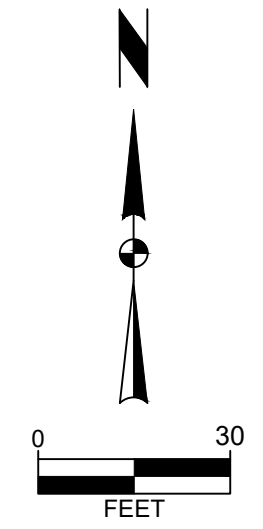
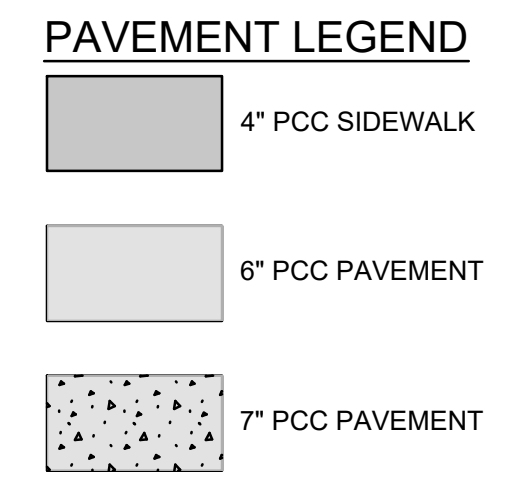
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CURVE TABLE					
CURVE NO.	Δ	RADIUS	ARC LENGTH	TANGENT	CHORD BEARING/LENGTH
C1 M	11°29'52"	1065.00'	213.72'	107.22'	N52°50'50"W 213.36'
C1 P	11°29'52"	1065.00'	213.72'	-	N53°04'39"W 213.36'
C2 M	7°30'35"	535.00'	70.12'	35.11'	N50°44'56"W 70.07'
C2 P	7°30'09"	535.00'	70.06'	-	-
C3 M	78°38'08"	25.00'	34.31'	20.48'	N15°02'44"W 31.68'
C3 P	78°44'20"	25.00'	34.36'	-	-
C4 M	21°42'40"	935.00'	354.30'	179.30'	N13°16'38"E 352.19'
C4 P	21°42'48"	935.00'	354.34'	-	-
C5 M	59°58'38"	246.00'	257.51'	141.96'	S31°28'30"E 245.92'
C5 P	59°58'54"	246.00'	257.53'	-	-
C6	38°08'08"	230.00'	153.09'	79.50'	N44°00'37"W 150.28'

- ### DIMENSION PLAN CONSTRUCTION NOTES
- PROTECT ALL SITE FEATURES NOT SCHEDULED FOR DEMOLITION OR MODIFICATION. ANY DAMAGES TO ITEMS NOT SHOWN FOR REMOVAL SHALL BE REPAIRED BY THE CONTRACTOR TO THE OWNERS SPECIFICATIONS WITHOUT ADDITIONAL COMPENSATION.
    - EXISTING UTILITIES. COORDINATE ANY NECESSARY RELOCATIONS OR ADJUSTMENTS WITH THE OWNER AND UTILITY PROVIDER PRIOR TO CONSTRUCTION. ADJUSTMENTS OF UTILITY APPURTENANCE TO FINISH GRADE IS CONSIDERED INCIDENTAL TO THE PROJECT.
    - EXISTING PAVEMENTS TO REMAIN.
  - DEMOLITION, REMOVE AND DISPOSE OF THE FOLLOWING EXISTING ITEMS:
    - ADJUST MANHOLE TO GRADE. SEE UTILITY PLAN FOR MORE INFORMATION.
    - CONTRACTOR TO LOCATE AND ADJUST ELECTRIC AND FIBER LINE AS NECESSARY. COORDINATE WITH FRANCHISE UTILITY PROVIDER FOR ANY ADJUSTMENTS PRIOR TO CONSTRUCTION.
  - PAVEMENTS, PROVIDE THE FOLLOWING:
    - 6" DEPTH PCC PAVEMENT ON 12" DEPTH PREPARED SUBGRADE COMPACTED TO 95% STANDARD PROCTOR DENSITY. (C4 PCC MIX).
    - 4" DEPTH PCC SIDEWALK ON 6" DEPTH PREPARED SUBGRADE COMPACTED TO 95% STANDARD PROCTOR DENSITY. PROVIDE 6" DEPTH PCC RAMP AT DRIVEWAY ENTRANCES.
    - CONNECT TO EXISTING PAVEMENTS.
    - 6" STANDARD CURB.
    - PEDESTRIAN RAMP WITH A MAXIMUM SLOPE OF 8.33%. PROVIDE DETECTABLE WARNING SYSTEM AT RAMP WHERE PEDESTRIAN TRAFFIC MEETS VEHICULAR TRAFFIC. 6" DEPTH PCC RAMP.
    - 6" DEPTH PCC TRAIL. CONNECT TO EXISTING AT NEAREST JOINT.
    - ADA ACCESSIBLE RAMP AT 8.33% MAXIMUM SLOPE. TAPER FROM 6" INTEGRAL CURB TO NO CURB. 6" DEPTH PCC RAMP.
    - 6" INTEGRAL SIDEWALK AND CURB.
    - PRECAST PCC PARKING BARRIER.
    - 4' X 4' CLUSTER MAILBOX PAD.
    - PCC STAIRS W/ RAILING.
    - 7" DEPTH PCC PAVEMENT ON 12" DEPTH PREPARED SUBGRADE COMPACTED TO 95% STANDARD PROCTOR DENSITY. (C4 PCC MIX).
  - PAVEMENT MARKINGS PROVIDE THE FOLLOWING:
    - 4" WIDE PAINTED PARKING STALL LINES. COLOR AS PER OWNER.
    - PAINTED STATE OF IOWA APPROVED ACCESSIBLE SYMBOL.
    - 45' STRIPING AT 3' ON CENTER SPACING WHERE SHOWN.
  - ACCESSIBLE PARKING SIGNAGE:
    - PROVIDE SIGN WITH VAN ACCESSIBLE SYMBOL AS PER "ADAAG" STANDARDS.
  - SITE AMENITIES, PROVIDE THE FOLLOWING:
    - TRASH ENCLOSURE WITH 7" PCC PAD. SEE ARCHITECTURAL PLANS FOR DETAILS.
    - TRANSFORMER LOCATION.
  - SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR DETAILED BUILDING CONSTRUCTION INFORMATION.



**CALIBER KETTLESTONE PLAT 1**  
**DIMENSION PLAN**  
**SNYDER & ASSOCIATES, INC. I**



Project No: 125.1396.01  
Sheet C200

MARK	REVISION	DATE	BY
4	AS PER CITY COMMENTS	02-05-26	LJM
3	AS PER CITY COMMENTS	01-20-26	LJM
2	AS PER CITY COMMENTS	01-06-26	LJM
1	AS PER CITY COMMENTS	12-25-25	LJM

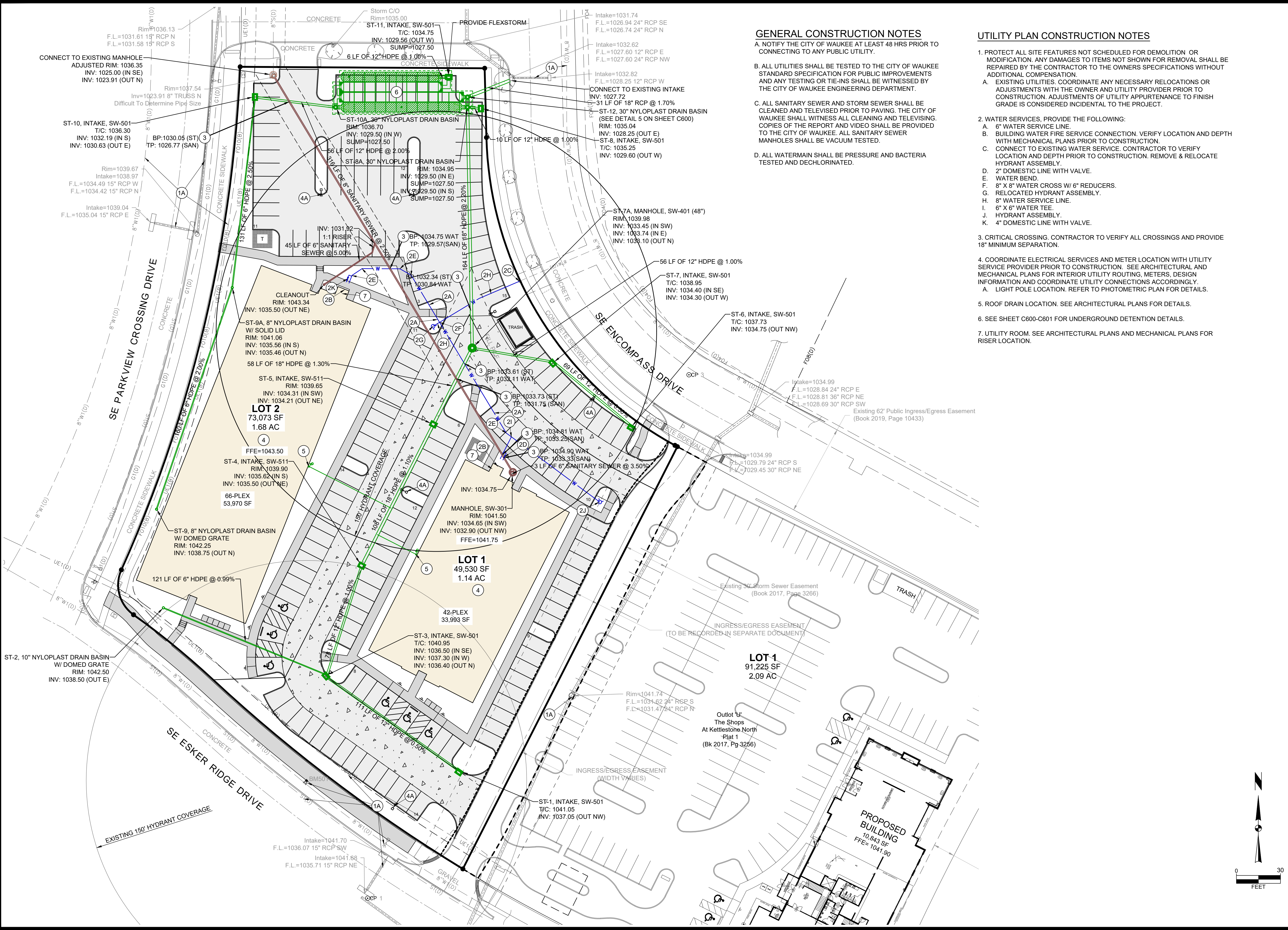
Checked By: EDC  
 Date: 12-09-25  
 Engineer: LMW  
 Technician: LJM  
 Scale: 1" = 30'  
 T-R-S: TTN-RRW-SS

Sheet C200

Project No: 125.1396.01

WAUKEE, IOWA  
 2727 S.W. SNYDER BLVD  
 ANKENY, IOWA 50023  
 515-964-2020 | www.snyder-associates.com

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### GENERAL CONSTRUCTION NOTES

- A. NOTIFY THE CITY OF WAUKEE AT LEAST 48 HRS PRIOR TO CONNECTING TO ANY PUBLIC UTILITY.
- B. ALL UTILITIES SHALL BE TESTED TO THE CITY OF WAUKEE STANDARD SPECIFICATION FOR PUBLIC IMPROVEMENTS AND ANY TESTING OR TIE-INS SHALL BE WITNESSED BY THE CITY OF WAUKEE ENGINEERING DEPARTMENT.
- C. ALL SANITARY SEWER AND STORM SEWER SHALL BE CLEANED AND TELEVIEWED PRIOR TO PAVING. THE CITY OF WAUKEE SHALL WITNESS ALL CLEANING AND TELEVIEWING. COPIES OF THE REPORT AND VIDEO SHALL BE PROVIDED TO THE CITY OF WAUKEE. ALL SANITARY SEWER MANHOLES SHALL BE VACUUM TESTED.
- D. ALL WATERMAIN SHALL BE PRESSURE AND BACTERIA TESTED AND DECHLORINATED.

### UTILITY PLAN CONSTRUCTION NOTES

- 1. PROTECT ALL SITE FEATURES NOT SCHEDULED FOR DEMOLITION OR MODIFICATION. ANY DAMAGES TO ITEMS NOT SHOWN FOR REMOVAL SHALL BE REPAIRED BY THE CONTRACTOR TO THE OWNERS SPECIFICATIONS WITHOUT ADDITIONAL COMPENSATION.
  - A. EXISTING UTILITIES. COORDINATE ANY NECESSARY RELOCATIONS OR ADJUSTMENTS WITH THE OWNER AND UTILITY PROVIDER PRIOR TO CONSTRUCTION. ADJUSTMENTS OF UTILITY APPURTENANCE TO FINISH GRADE IS CONSIDERED INCIDENTAL TO THE PROJECT.
- 2. WATER SERVICES. PROVIDE THE FOLLOWING:
  - A. 6" WATER SERVICE LINE.
  - B. BUILDING WATER FIRE SERVICE CONNECTION. VERIFY LOCATION AND DEPTH WITH MECHANICAL PLANS PRIOR TO CONSTRUCTION.
  - C. CONNECT TO EXISTING WATER SERVICE. CONTRACTOR TO VERIFY LOCATION AND DEPTH PRIOR TO CONSTRUCTION. REMOVE & RELOCATE HYDRANT ASSEMBLY.
  - D. 2" DOMESTIC LINE WITH VALVE.
  - E. WATER BEND.
  - F. 8" X 8" WATER CROSS W/ 6" REDUCERS.
  - G. RELOCATED HYDRANT ASSEMBLY.
  - H. 8" WATER SERVICE LINE.
  - I. 6" X 6" WATER TEE.
  - J. HYDRANT ASSEMBLY.
  - K. 4" DOMESTIC LINE WITH VALVE.
- 3. CRITICAL CROSSING. CONTRACTOR TO VERIFY ALL CROSSINGS AND PROVIDE 18" MINIMUM SEPARATION.
- 4. COORDINATE ELECTRICAL SERVICES AND METER LOCATION WITH UTILITY SERVICE PROVIDER PRIOR TO CONSTRUCTION. SEE ARCHITECTURAL AND MECHANICAL PLANS FOR INTERIOR UTILITY ROUTING, METERS, DESIGN INFORMATION AND COORDINATE UTILITY CONNECTIONS ACCORDINGLY.
  - A. LIGHT POLE LOCATION. REFER TO PHOTOMETRIC PLAN FOR DETAILS.
- 5. ROOF DRAIN LOCATION. SEE ARCHITECTURAL PLANS FOR DETAILS.
- 6. SEE SHEET C600-C601 FOR UNDERGROUND DETENTION DETAILS.
- 7. UTILITY ROOM. SEE ARCHITECTURAL PLANS AND MECHANICAL PLANS FOR RISER LOCATION.

## CALIBER KETTLESTONE PLAT 1

### UTILITY PLAN

# SNYDER & ASSOCIATES, INC. I



Project No: 125.1396.01

Sheet C300

MARK	REVISION	DATE	BY
4	AS PER CITY COMMENTS	02-05-26	LJM
3	AS PER CITY COMMENTS	01-20-26	LJM
2	AS PER CITY COMMENTS	01-06-26	LJM
1	AS PER CITY COMMENTS	12-29-25	LJM

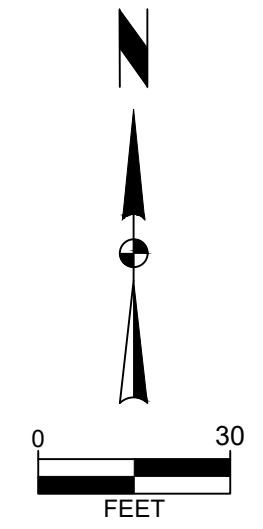
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 Checked By: EDC  
 Date: 12-09-25  
 Engineer: LMW  
 Technician: LJM  
 T-R-S: TTN-RRW-SS

Sheet C300

Project No: 125.1396.01

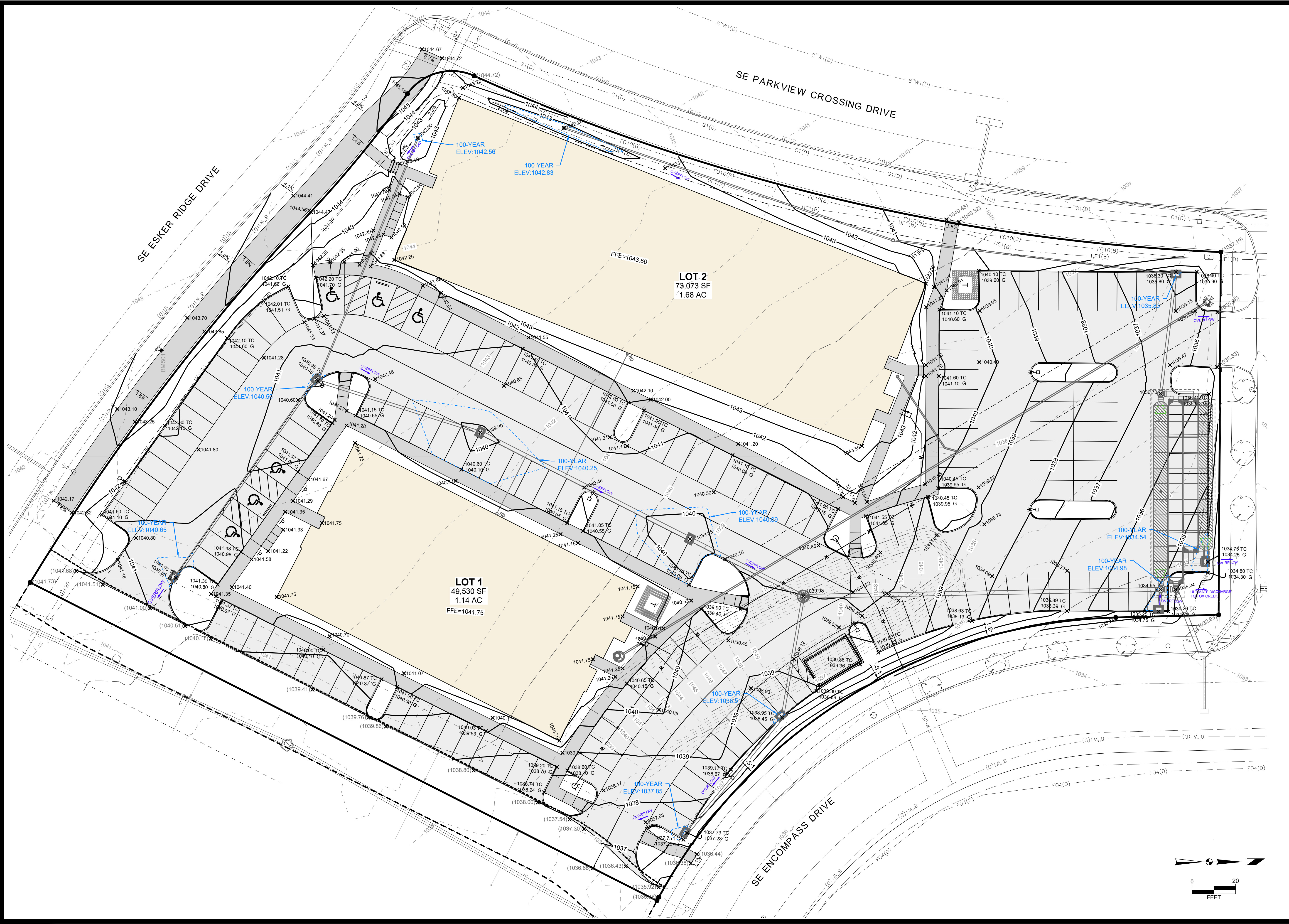
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515-964-2020 | www.snyder-associates.com

WAUKEE, IOWA





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# CALIBER KETTLESTONE PLAT 1

## DETAILED GRADING PLAN

### SNYDER & ASSOCIATES, INC. I



Project No: 125.1396.01

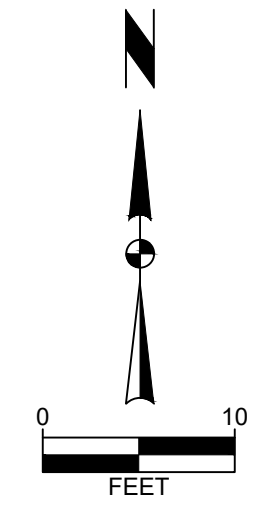
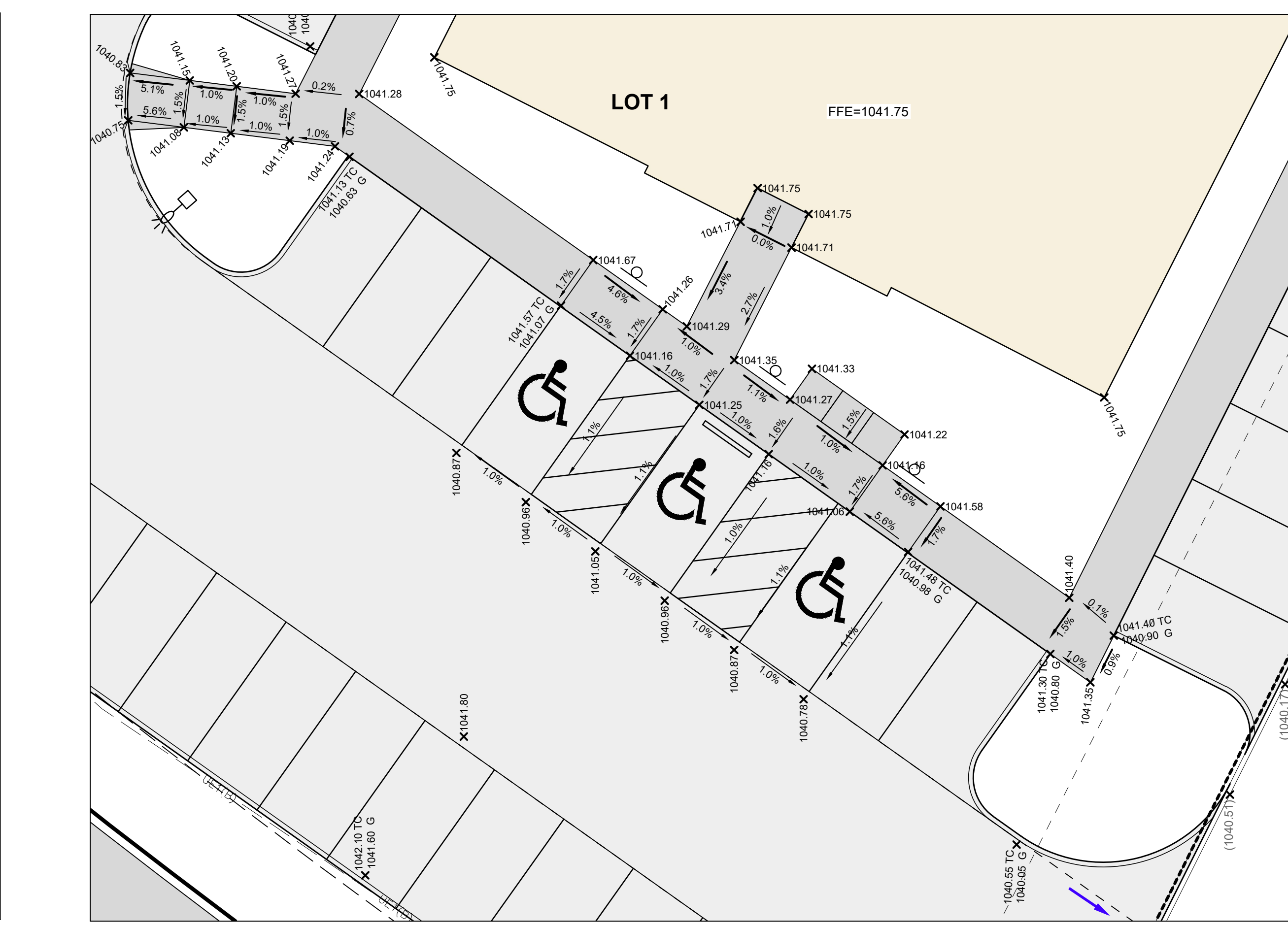
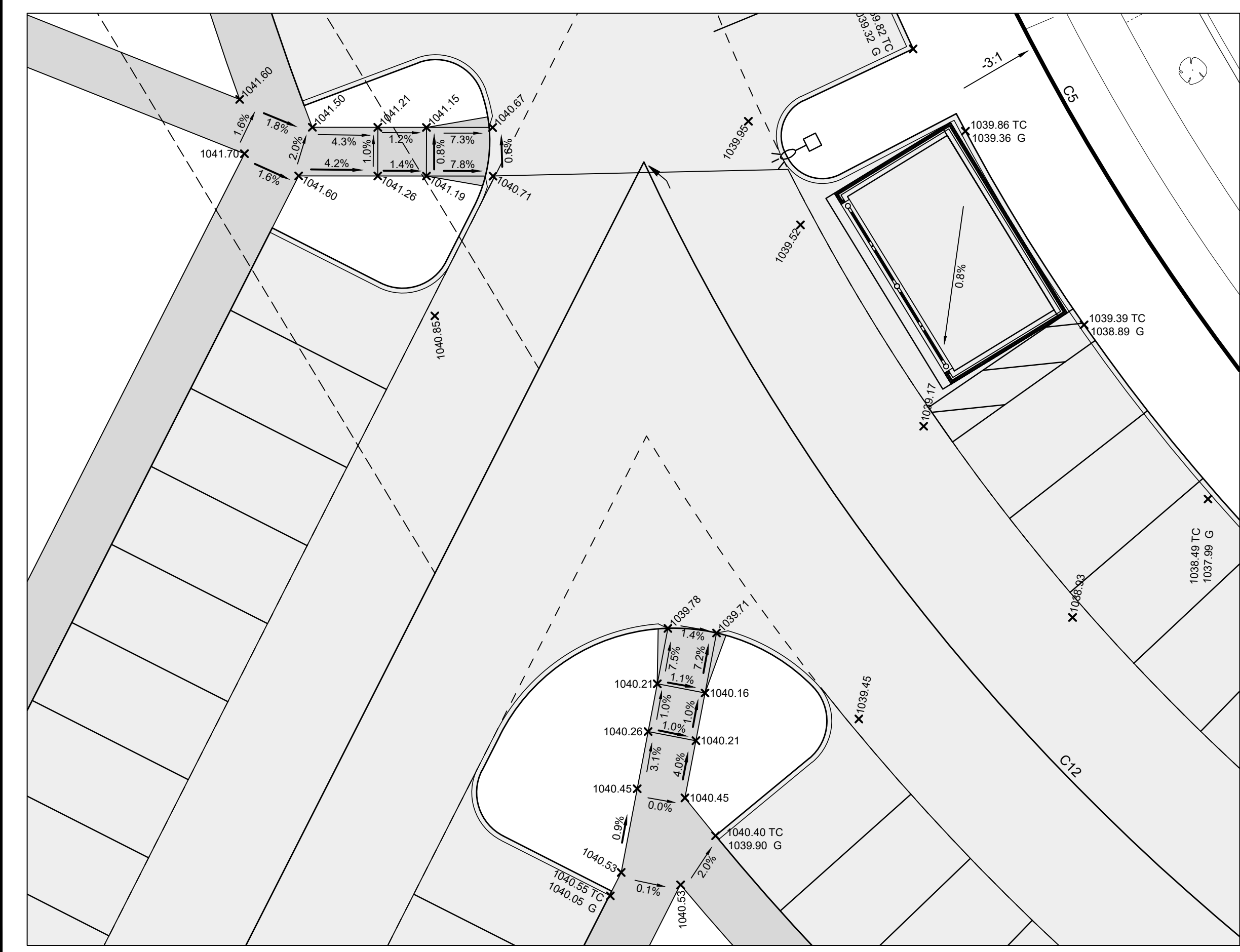
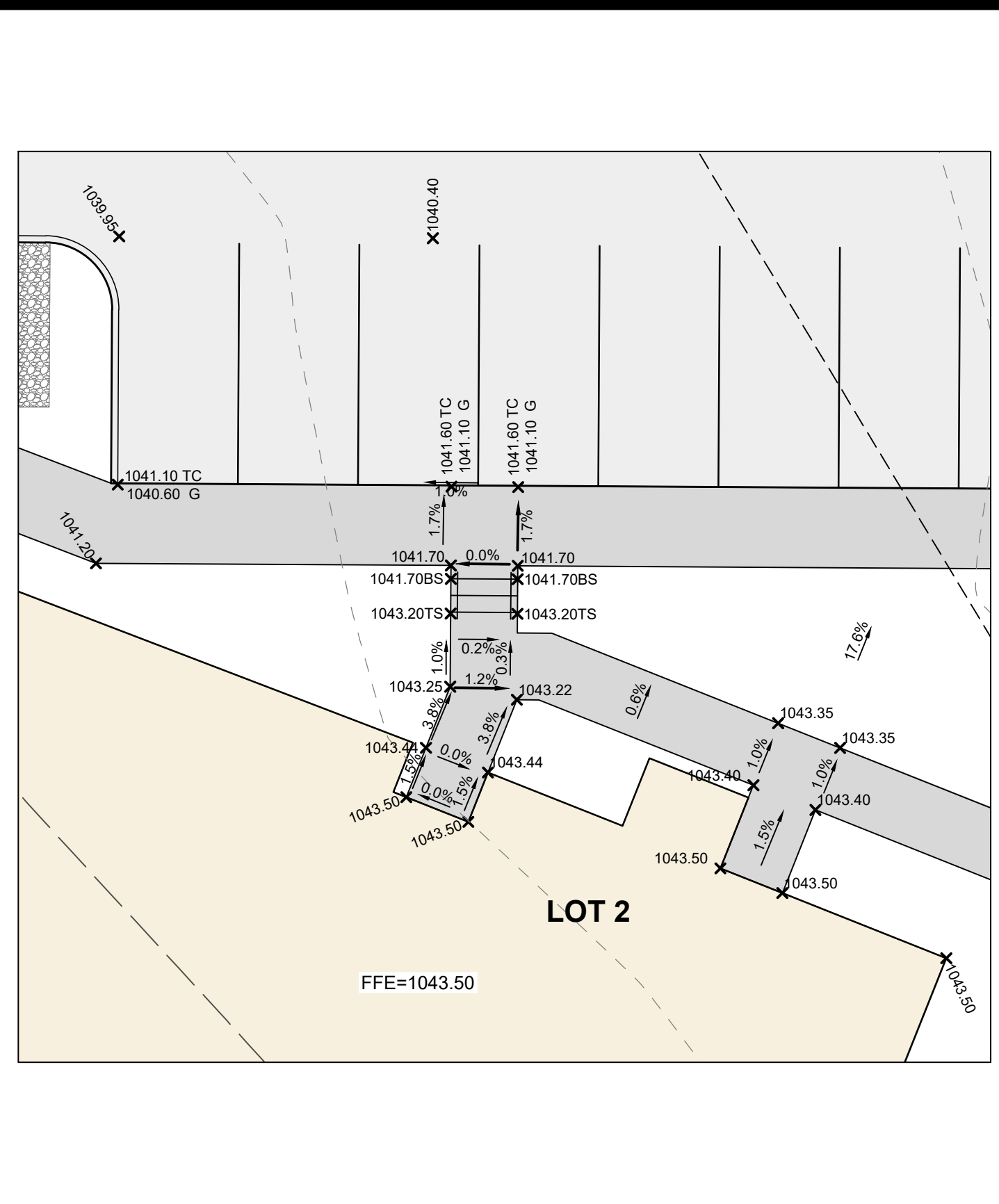
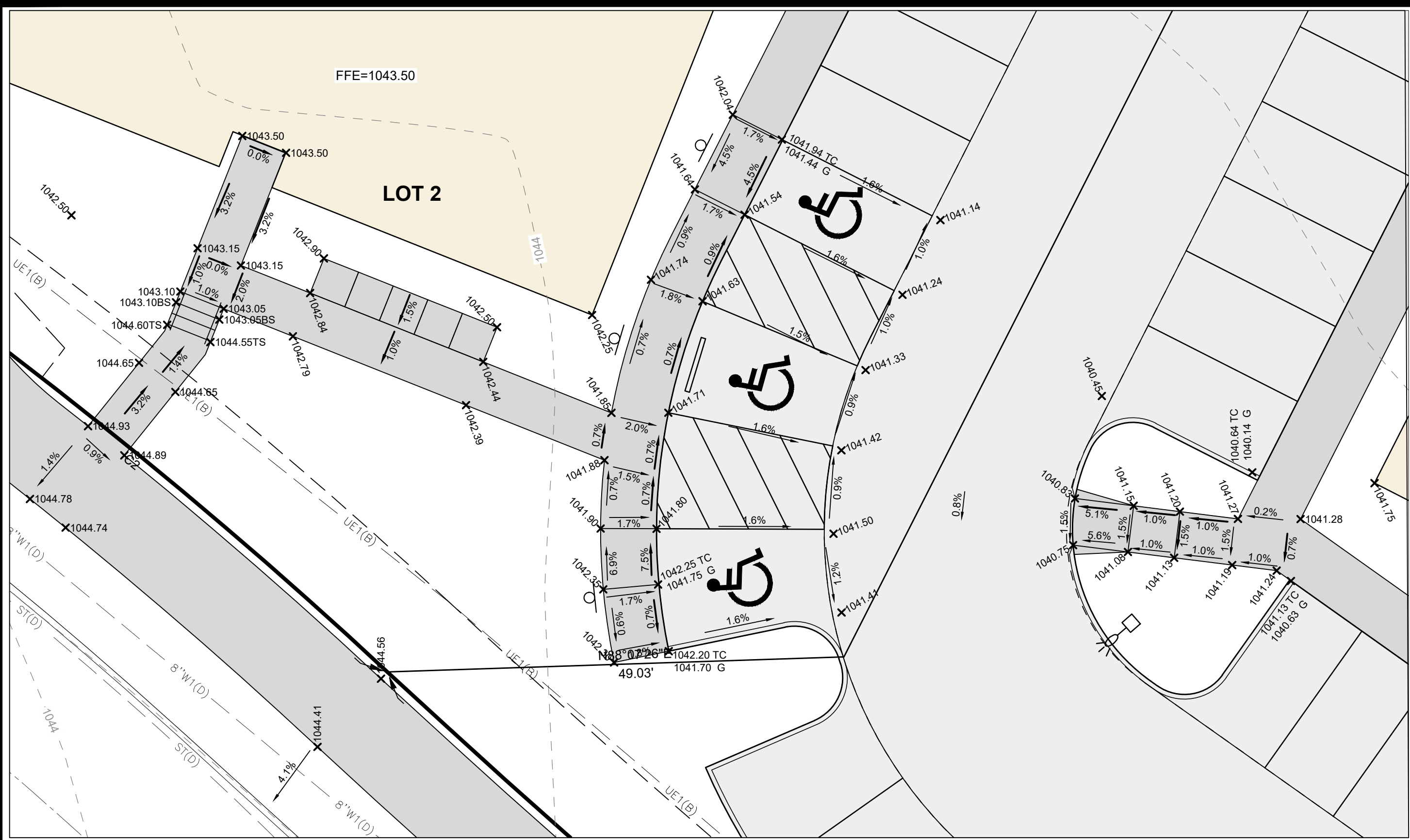
Sheet C401

WAUKEE, IOWA

2727 S.W. SNYDER BLVD  
 ANKENY, IOWA 50023  
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4	AS PER CITY COMMENTS	02-05-26	LJM	BY
3	AS PER CITY COMMENTS	01-20-26	LJM	DATE
2	AS PER CITY COMMENTS	01-06-26	LJM	REVISION
1	AS PER CITY COMMENTS	12-23-25	LJM	DATE
	MARK			BY
	Engineer: LMW	Checked By: EDC	Scale: 1" = 20'	
	Technician: LJM	Date: 12-09-25	T-R-S: TTN-RRW-SS	
			Project No: 125.1396.01	Sheet C401

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3	AS PER CITY COMMENTS	01-20-26	LJM
2	AS PER CITY COMMENTS	01-06-26	LJM
1	AS PER CITY COMMENTS	12-23-25	LJM
	MARK	REVISION	DATE
	Engineer: LMW	Checked By: EDC	Scale: 1" = 10'
	Technician: LJM	Date: 12-09-25	T-R-S: TTN-RRW-SS

**WAUKEE, IOWA**

2727 S.W. SNYDER BLVD  
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**CALIBER KETTLESTONE PLAT 1**

**RAMP DETAILS**

**SNYDER & ASSOCIATES, INC. I**



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### PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	TYPE
<b>TREES</b>					
AA2	2	Acer rubrum 'Armstrong'	Armstrong Red Maple	2" Cal.	B&B
CB	5	Carpinus betulus	European Hornbeam	2" Cal.	B&B
GB	6	Ginkgo biloba	Maidenhair Tree	2" Cal.	B&B
GI	10	Gleditsia triacanthos inermis	Thornless Honey Locust	2" Cal.	B&B
QL	4	Quercus robur x bicolor 'Long'	Regal Prince® Oak	2" Cal.	B&B
QR	3	Quercus rubra	Red Oak	2" Cal.	B&B
TA	3	Tilia americana	American Linden	2" Cal.	B&B
<b>EVERGREEN TREES</b>					
TT	12	Thuja occidentalis 'Techny'	Techny Arborvitae	6" Ht.	B&B
TI	4	Thuja x 'Green Giant'	Green Giant Arborvitae	6" Ht.	B&B
<b>ORNAMENTAL TREES</b>					
AG2	6	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	6" Ht.	B&B
MS	9	Malus x 'Spring Snow'	Spring Snow Crabapple	6" Ht.	B&B
MD	6	Malus x adstringens 'Dureo'	Gladiator™ Crabapple	6" Ht.	B&B
SR	7	Syringa reticulata	Japanese Tree Lilac	6" Ht.	B&B
CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
<b>SHRUBS</b>					
BG	51	Buxus x 'Green Gem'	Green Gem Boxwood	3 gal.	Pot
CF	19	Cornus sericea 'Farrow'™	Arctic Fire Red Twig Dogwood	3 gal.	Pot
EC	12	Euonymus alatus 'Compactus'	Compact Burning Bush	3 gal.	Pot
HA	19	Hydrangea arborescens 'Annabelle'	Annabelle Hydrangea	3 gal.	Pot
<b>GRASSES</b>					
CK	43	Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	1 gal.	Pot
PS	47	Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass	1 gal.	Pot

- ### PLANTING PLAN GENERAL NOTES
- UTILITY WARNING: THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
  - NOTIFY UTILITY OWNERS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTENCE, EXACT LOCATION AND DEPTH OF ALL UTILITIES. AVOID DAMAGE TO UTILITIES AND SERVICES DURING CONSTRUCTION. ANY DAMAGE DUE TO THE CONTRACTOR'S CARELESSNESS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COORDINATE AND COOPERATE WITH UTILITY COMPANIES DURING CONSTRUCTION.
  - ALL PLANT MATERIAL SHALL AT LEAST MEET MINIMUM REQUIREMENTS SHOWN IN THE "AMERICAN STANDARDS FOR NURSERY STOCK" (ANSI Z60.1-LATEST EDITION).
  - CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR FROM DATE OF INSTALLATION.

- ### PLANTING PLAN CONSTRUCTION NOTES
- SOD ALL DISTURBED AREAS UNLESS NOTED OTHERWISE. REFER TO EROSION CONTROL PLAN FOR ADDITIONAL INFORMATION.
  - PROVIDE A 3-IN DEPTH SHREDDED HARDWOOD MULCH IN A 3-FOOT PERIMETER RING AROUND ALL TREES. PROVIDE VERTICAL CUT NATURAL EDGE TO A DEPTH OF 4-INCHES.
  - PROVIDE 1-2" RIVER ROCK TO A DEPTH OF 4-INCHES. TAPER MULCH DEPTH TOWARDS BED EDGING AND/OR PAVEMENT EDGE EXPOSING 1-INCH HEIGHT OF EDGE.
  - PROVIDE 3/16" BLACK STEEL EDGER WITH STAKES.
  - PLANTING SUBSTITUTIONS SHALL BE APPROVED IN WRITING BY THE COMMUNITY DEVELOPMENT DEPARTMENT.
  - ALL AREAS IN THE RIGHT-OF-WAY WILL BE REQUIRED TO BE SODDED.

### PLANTING PLAN REQUIREMENTS

(LANDSCAPE CALCULATIONS BASED UPON CITY OF WAUKEE ZONING CODE REQUIREMENTS)

**OPEN SPACE:**  
 20% OPEN SPACE REQUIRED  
 122,701.9 SF, 2.8 ACRES(TOTAL LOT) x 20% = 24,540.2 SF REQUIRED (25,416 SF OR 20.7% PROVIDED)

1.5 OVERSTORY TREES, 0.5 UNDERSTORY TREES, AND 2 SHRUB PER 1,000 SF OF REQUIRED OPEN SPACE.  
 MINIMUM OF 50% OF TOTAL REQUIRED TREES SHALL BE OVERSTORY SHADE TREES.  
 24,540.2 SF / 1,000 = 24.5 PLANT UNITS (PU'S)  
 1.5 OVERSTORY TREES x 24.5 PU'S = 36.75 TREES REQUIRED (50 TREES PROVIDED, 33 OVERSTORY, 16 EVERGREEN)  
 0.5 UNDERSTORY TREES x 18.3 PU'S = 12.25 UNDERSTORY TREES REQUIRED (13 PROVIDED)  
 2 SHRUBS x 24.5 PU'S = 49 SHRUBS REQUIRED (55 PROVIDED)

**STREET TREE REQUIREMENTS:**  
 ONE TREE FOR EVERY 40 FEET OF STREET FRONTAGE, NOT INCLUDING DRIVEWAY  
 SE ESKER RIDGE PKWY:  
 280.2/40 = 7 TREES REQUIRED (7 PROVIDED)  
 SE PARKVIEW CROSSING DRIVE:  
 360/40 = 9 TREES REQUIRED (9 PROVIDED)  
 SE ENCOMPASS DRIVE:  
 275/40 = 6.8 TREES REQUIRED (7 PROVIDED)

**BUFFER REQUIREMENT:**  
 NO BUFFER REQUIRED.

**OFF-STREET PARKING AREA REQUIREMENT:**  
 1 TREE FOR EVERY PARKING LOT ISLAND  
 16 PARKING LOT ISLANDS  
 16 TREES REQUIRED (16 TREES PROVIDED)

**TREE HEIGHT MINIMUM REQUIREMENTS**  
 OVERSTORY TREES MUST BE 8 FEET TALL MINIMUM AT TIME OF PLANTING.  
 EVERGREEN TREES MUST BE 6 FEET TALL MINIMUM AT TIME OF PLANTING.  
 ORNAMENTAL TREES MUST BE 6 FEET TALL MINIMUM AT TIME OF PLANTING.  
 STREET TREES MUST BE 12 FEET TALL MINIMUM AT TIME OF PLANTING.

MARK	REVISION	DATE	BY
4	AS PER CITY COMMENTS	02-05-26	LJM
3	AS PER CITY COMMENTS	01-20-26	LJM
2	AS PER CITY COMMENTS	01-06-26	LJM
1	AS PER CITY COMMENTS	12-25-25	LJM

Checked By: EDC  
 Date: 12-09-25  
 Scale: 1" = 30'  
 T-R-S: TTN-RRW-SS

CALIBER KETTLESTONE PLAT 1

PLANTING PLAN

WAUKEE, IOWA

SNYDER & ASSOCIATES, INC. I

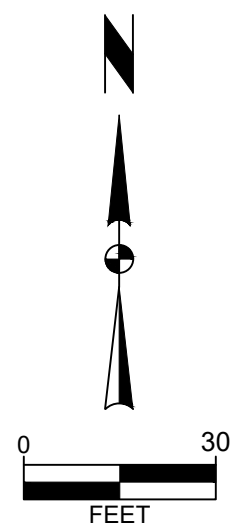
Project No: 125.1396.01

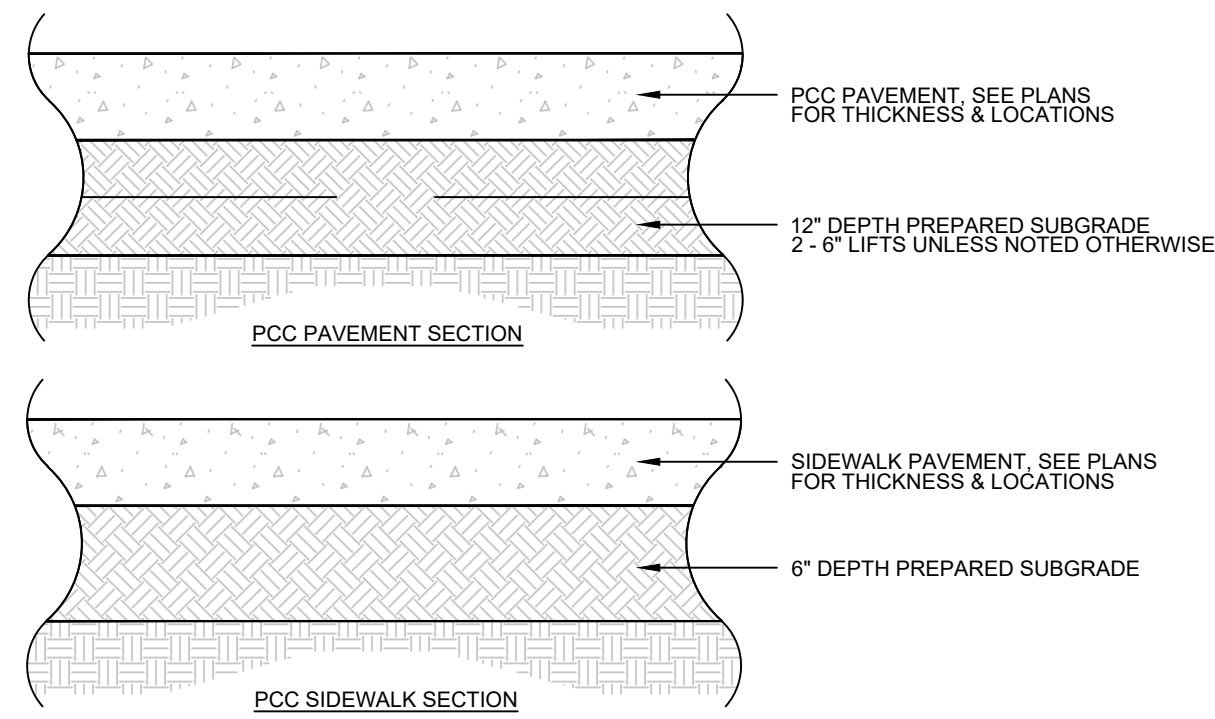
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2727 S.W. SNYDER BLVD  
 ANKENY, IOWA 50023  
 515-964-2020 | www.snyder-associates.com

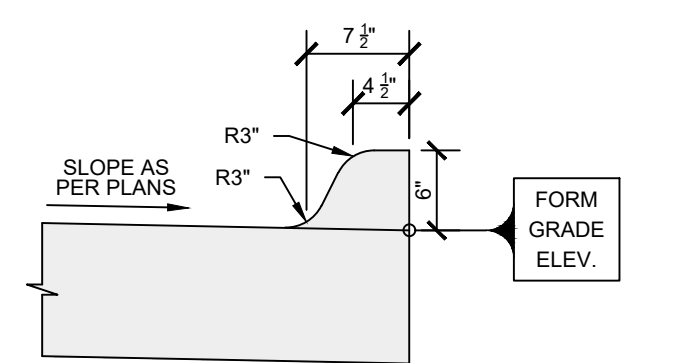
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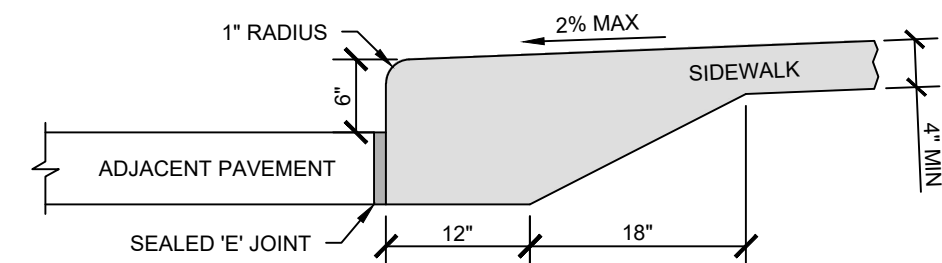




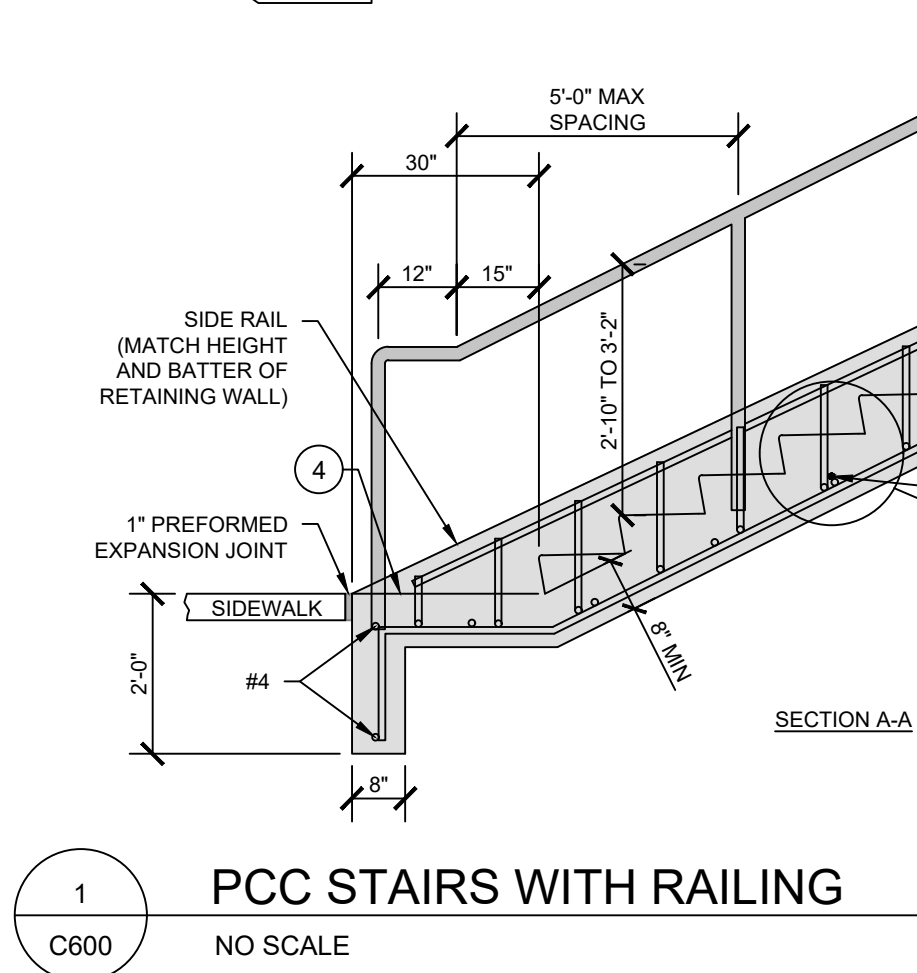
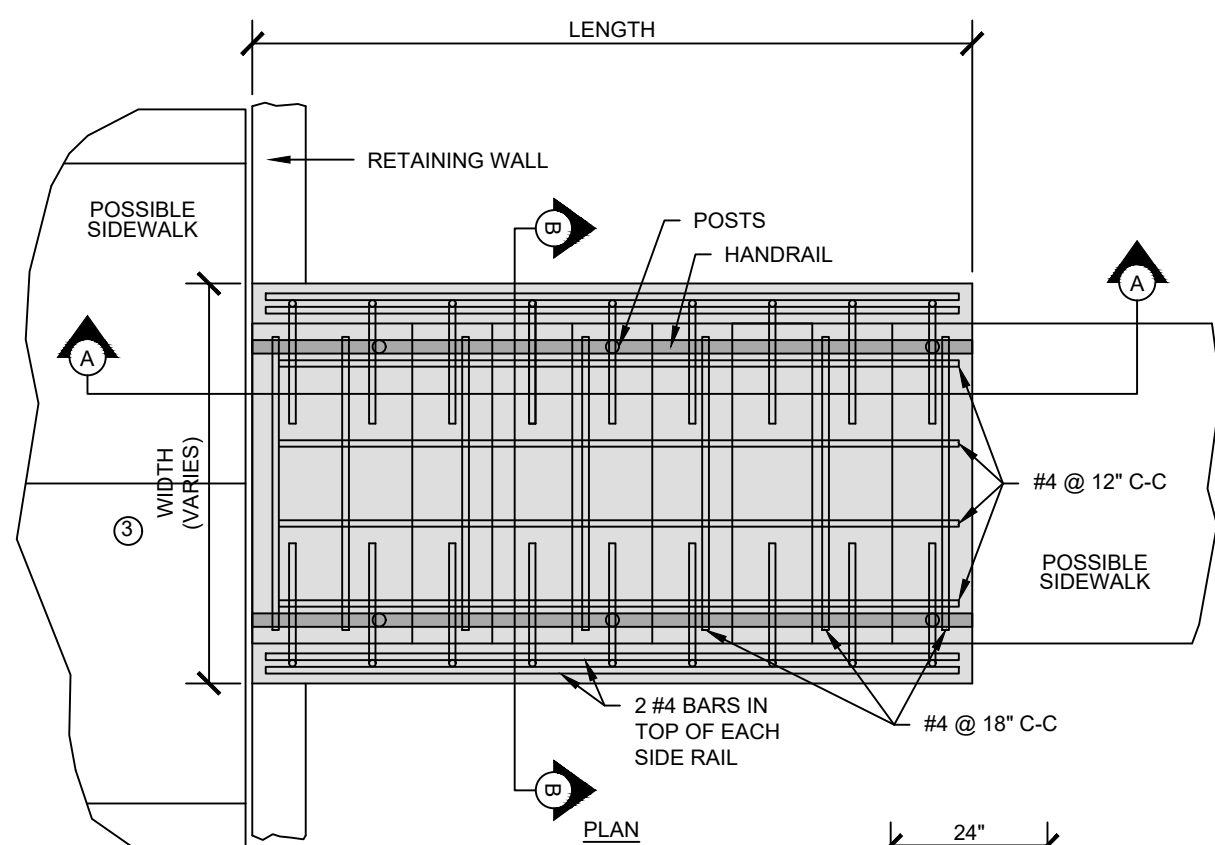
2 TYPICAL PAVEMENT CROSS SECTIONS  
 C600 NO SCALE



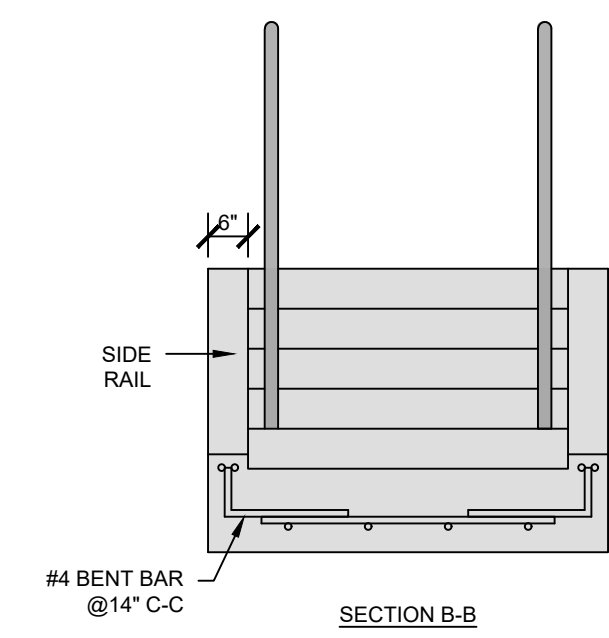
3 6-INCH STANDARD CURB  
 C600 NO SCALE



4 INTEGRAL SIDEWALK AND CURB DETAIL  
 C600 NO SCALE

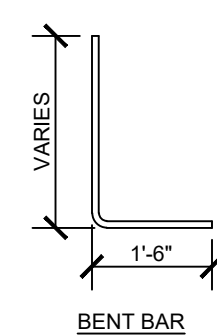


1 PCC STAIRS WITH RAILING  
 C600 NO SCALE

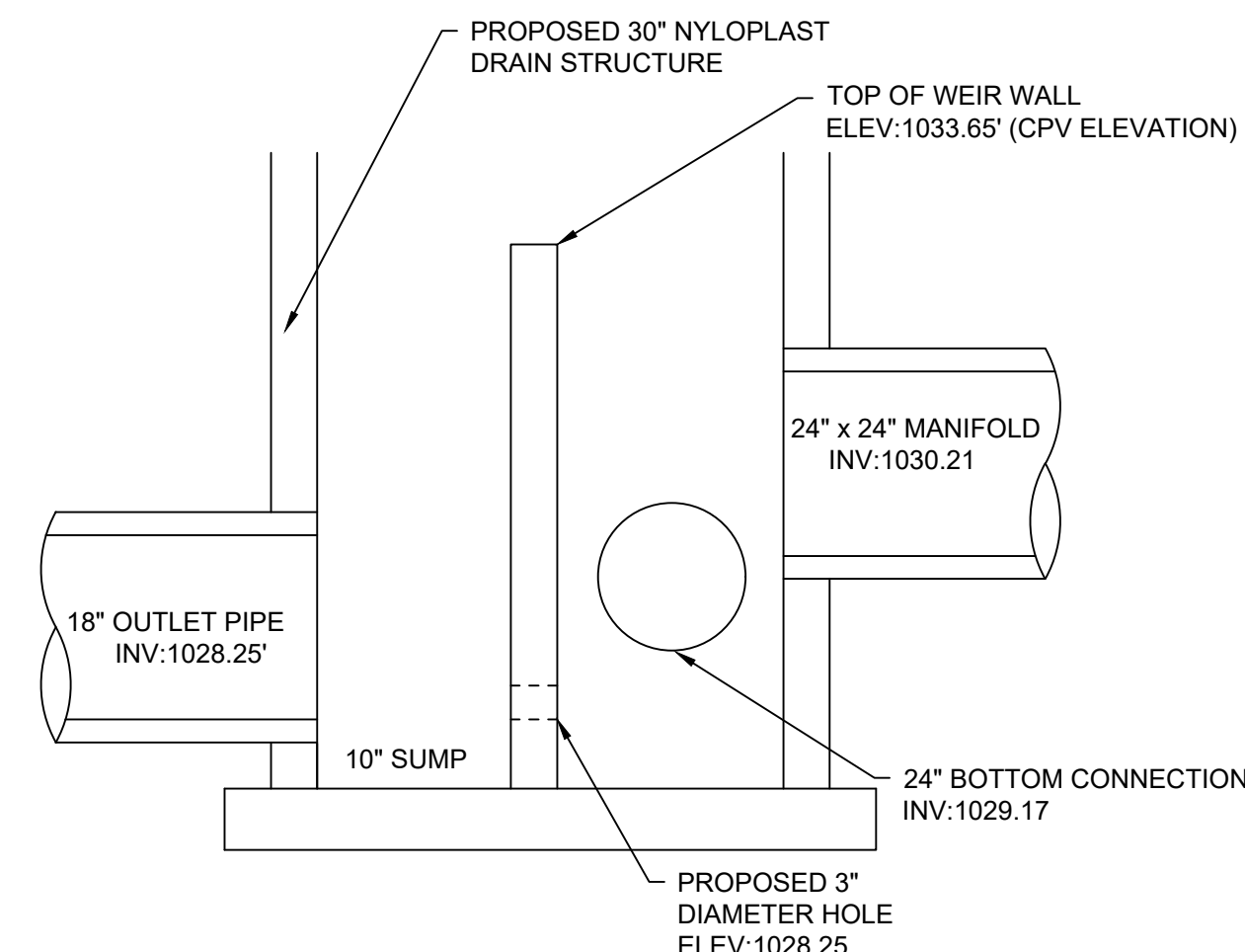


- 1 PROVIDE A MINIMUM OF 2 INCHES OF COVER FOR ALL REINFORCING.
- 2 ENSURE ALL RISERS ARE AN EQUAL HEIGHT AND ALL TREADS ARE AN EQUAL DEPTH WITHIN A FLIGHT OF STAIRS.
- 3 MATCH EXISTING SIDEWALK WIDTH.
- 4 CONSTRUCT CROSS SLOPE OF LANDING TO MATCH ADJACENT SIDEWALK.
- 5 HANDRAIL TO BE 1 1/2" O.D. POWDER-COATED STEEL HANDRAIL SET IN SLEEVE PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS. COLOR TO BE APPROVED BY OWNER.

Rise	Tread
Y	Z
6"	15"



NOTE:  
 THE OWNER WILL INSPECT THE SYSTEM ON A BI-ANNUAL BASIS.  
 IF SEDIMENT IS BLOCKING THE 3" ORIFICE IN THE OUTLET STRUCTURE, JET / VACUUM THE SYSTEM TO REMOVE THE SEDIMENT.



5 OUTLET STRUCTURE DETAIL (ST-12)  
 C600 NO SCALE

**PROJECT INFORMATION**

ENGINEERED PRODUCT MANAGER  
 ADS SALES REP  
 PROJECT NO.

**SHOPS AT KETTLESTONE**  
 WAUKEE, IA, USA

ADS  
 SiteAssist  
 INSTALLATION INSTRUCTIONS  
 VISIT OUR APP

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**MC-3500 STORMTECH CHAMBER SPECIFICATIONS**

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2118, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 4475 DESIGNATION IS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. 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.
6. 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) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STAKING LOGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1/2"
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 500 LB/FT<sup>2</sup>. THE ABC IS DEFINED IN SECTION 6.2.9 OF ASTM F2118, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (AND 70° F / 21° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. 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 SIGNED BY A REGISTERED PROFESSIONAL ENGINEER.
  - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.85 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 D2418 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.
10. MANHOLE SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #32 FOR MANHOLE SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANHOLE COMPONENTS IN THE FIELD.
11. ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL TO LINES AND SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTECHNICAL PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

**IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM**

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
  - STONEHOPPER 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 LEVELLED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM 6" (150 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 OR RECYCLED CONCRETE, AASHTO M43 3, 357, 4, 467, 5, 96, OR 57.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. 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-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
  - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
  - NO RUBBER TIED LOADS, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION GUIDE".
  - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION 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 1-800-821-6710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT	PROPOSED ELEVATIONS	PART TYPE	ITEM ON LAYOUT	DESCRIPTION	*INVERT ABOVE BASE OF CHAMBER	MAX FLOW
40 STORMTECH MC-3500 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT UNPAVED): 1040.75					
5 STORMTECH MC-3500 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC): 1034.15		A	24" TOP PRE-CORED END CAP PART# MC3500EP24TC1 TYP OF ALL 24" TOP CONNECTIONS	14.48'	
12 STONE ABOVE (H)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC): 1034.15		B	54" BOTTOM PRE-CORED END CAP PART# MC3500EP54TC1 TYP OF ALL 54" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06'	
5 STONE BELOW (H)	MINIMUM ALLOWABLE GRADE (TOP OF ROAD CONCRETE PAVEMENT): 1034.15		C	24" TOP PRE-CORED END CAP PART# MC3500EP24TC1 TYP OF ALL 24" TOP CONNECTIONS AND ISOLATOR PLUS ROWS	14.48'	
12 STONE BELOW (H)	MINIMUM ALLOWABLE GRADE (TOP OF ROAD CONCRETE PAVEMENT): 1034.15		D	24" TOP PRE-CORED END CAP PART# MC3500EP24TC1 TYP OF ALL 24" TOP CONNECTIONS AND ISOLATOR PLUS ROWS	14.48'	
4011 INSTALLED SYSTEM VOLUME (FT <sup>3</sup> )	TOP OF MC-3500 CHAMBER: 1033.15		E	24" x 24" TOP MANIFOLD, ADS N-12	14.48'	
4011 PRECAST STONE (INCLUDED)	TOP OF MC-3500 CHAMBER: 1033.15		F	24" x 24" TOP MANIFOLD, ADS N-12	14.48'	
4011 PRECAST STONE (INCLUDED)	TOP OF MC-3500 CHAMBER: 1033.15		G	24" x 24" TOP MANIFOLD, ADS N-12	14.48'	
2025 SYSTEM AREA (FT <sup>2</sup> )	TOP OF MC-3500 CHAMBER: 1033.15		H	30" DIAMETER (24" O.D.) SLUMP MIN.	8.5 CFS IN	
2025 SYSTEM PERIMETER (H)	TOP OF MC-3500 CHAMBER: 1033.15		I	30" DIAMETER (24" O.D.) SLUMP MIN.	8.5 CFS IN	
2025 SYSTEM PERIMETER (H)	TOP OF MC-3500 CHAMBER: 1033.15		J	30" DIAMETER (24" O.D.) SLUMP MIN.	17.5 CFS IN	
2025 SYSTEM PERIMETER (H)	TOP OF MC-3500 CHAMBER: 1033.15		K	30" DIAMETER (DESIGN BY ENGINEER)	14.0 CFS OUT	
2025 SYSTEM PERIMETER (H)	TOP OF MC-3500 CHAMBER: 1033.15		L	12" ADS N-12 DUAL WALL PERFORATED HOPE UNDERDRAIN		
2025 SYSTEM PERIMETER (H)	TOP OF MC-3500 CHAMBER: 1033.15		M	12" ADS N-12 DUAL WALL PERFORATED HOPE UNDERDRAIN		
2025 SYSTEM PERIMETER (H)	TOP OF MC-3500 CHAMBER: 1033.15		N	12" ADS N-12 DUAL WALL PERFORATED HOPE UNDERDRAIN		

**SHOPS AT KETTLESTONE**  
 WAUKEE, IA, USA

StormTech Chamber System

4640 TRUMAN BLVD  
 WAUKEE, IA 50259  
 515-964-2020 | www.snyder-associates.com

DATE: 01/20/2025  
 PROJECT: 125-1396-SS  
 DRAWN: JLM  
 CHECKED: MAA

2 OF 6

L:\Projects\2023\21131\_1396\_010CAD\ISP\_1251396\_1396.dwg, LOGAN MYERS, SITE DETAILS, 2/25/24, ANS I FULL BLEED D (24.00 X 22.00 INCHES)

### ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 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.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE TO LAYER 'D' ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <3% 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>2</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. 90% 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.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE <sup>3</sup>	AASHTO M43 <sup>2</sup> 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE <sup>3</sup>	AASHTO M43 <sup>2</sup> 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

**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 6" (230 mm) 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.  
 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.  
 5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".

**NOTES:**  
 1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 450/76 DESIGNATION IS.  
 2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".  
 3. 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. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.  
 4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.  
 5. REQUIREMENTS FOR HANDLING AND INSTALLATION:  
 a. TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.  
 b. TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".  
 c. TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT<sup>2</sup>. 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.

### INSPECTION & MAINTENANCE

**STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT**  
 A. INSPECTION PORTS (IF PRESENT)  
 A.1. REMOVE/OPEN LID ON NYLONPLAST 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 CAMERA INTO ISOLATOR ROW PLUS 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 ROW PLUS  
 B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS  
 B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS 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 PLUS 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 BACKLUSH 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.

### UNDERDRAIN DETAIL

### MC-3500 TECHNICAL SPECIFICATION

**NOMINAL CHAMBER SPECIFICATIONS**  
 SIZE (W X H X INSTALLED LENGTH)  
 CHAMBER STORAGE  
 MINIMUM INSTALLED STORAGE<sup>2</sup>  
 WEIGHT

77.0" X 45.0" X 66.0"	(1956 mm X 1143 mm X 2184 mm)	109.9 CUBIC FEET (3.11 m <sup>3</sup> )	175.0 CUBIC FEET (4.96 m <sup>3</sup> )	134 lbs. (60.8 kg)
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**NOMINAL END CAP SPECIFICATIONS**  
 SIZE (W X H X INSTALLED LENGTH)  
 END CAP STORAGE  
 MINIMUM INSTALLED STORAGE<sup>2</sup>  
 WEIGHT

75.0" X 45.0" X 22.2"	(1895 mm X 1143 mm X 564 mm)	14.9 CUBIC FEET (0.42 m <sup>3</sup> )	45.1 CUBIC FEET (1.28 m <sup>3</sup> )	49 lbs. (22.2 kg)
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<sup>2</sup>ASSUMES 12" (305 mm) STONE ABOVE 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 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"  
 END CAPS WITH A WELDED CROWN PLATE END WITH "C"  
 END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500EP18BT	6" (150 mm)	33.21" (844 mm)	0.66" (17 mm)
MC3500EP18BT	6" (200 mm)	31.18" (791 mm)	0.81" (21 mm)
MC3500EP18BT	10" (250 mm)	29.04" (738 mm)	0.93" (24 mm)
MC3500EP18T	12" (300 mm)	26.38" (670 mm)	1.35" (34 mm)
MC3500EP18T	15" (375 mm)	23.39" (594 mm)	1.50" (38 mm)
MC3500EP18B	20.93" (529 mm)	—	—
MC3500EP18TW	18" (450 mm)	—	1.77" (45 mm)
MC3500EP18TW	—	14.48" (368 mm)	—
MC3500EP24BT	24" (600 mm)	—	2.06" (52 mm)
MC3500EP24BT	—	—	2.75" (70 mm)

CUSTOM PRECURED INVERTS ARE AVAILABLE UPON REQUEST  
 INVENTORED MANIFOLDS INCLUDE 12.5" (300-600 mm) SIZE ON SIZE AND 1.5-4" (375-1000 mm) 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.

**CALIBER KETTLESTONE PLAT 1**

**SITE DETAILS**

**WAUKEE, IOWA**

**SNYDER & ASSOCIATES, INC. I**



Project No: 125.1396.01  
 Sheet C601

MARK	REVISION	DATE	BY
4	AS PER CITY COMMENTS	02-05-26	LJM
3	AS PER CITY COMMENTS	01-20-26	LJM
2	AS PER CITY COMMENTS	01-06-26	LJM
1	AS PER CITY COMMENTS	12-23-25	LJM

Scale: 1" = \_\_\_\_\_  
 Checked By: EDC  
 Date: 12-09-25  
 T-R-S: TTN-RRW-SS

Project No: 125.1396.01  
 Sheet C601

4640 TREHMAN BLVD  
 HILLIARD, OH 43027  
 1-800-753-7473

StormTech  
 Chamber System

SHOPS AT KETTLESTONE  
 WAUKEE, IA, USA  
 DRAWN: JM  
 CHECKED: VVA  
 PROJECT #  
 DATE: 12/23/2025