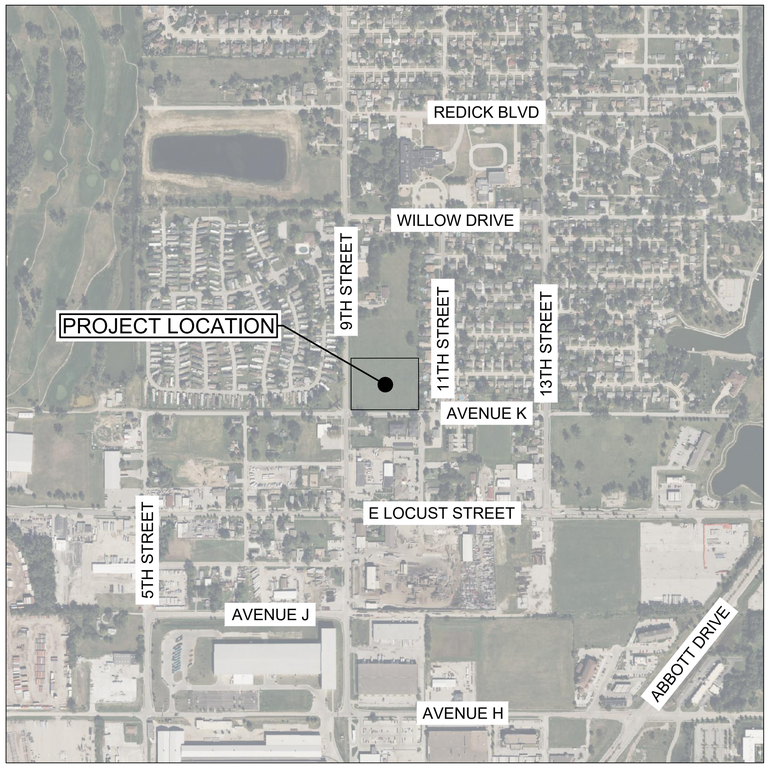
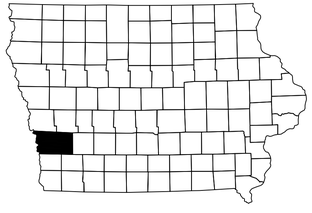
SITE PLANS
FOR
THE RESIDENCE AT CARTER LAKE
9TH STREET & AVENUE K
CITY OF CARTER LAKE, POTTAWATTAMIE COUNTY, IOWA



SCALE: 1" = 500'

VICINITY MAP



OWNER / DEVELOPER

AUSTIN KACK
OVERLAND PROPERTY GROUP
5345 W. 151ST TERRACE
LEAWOOD, KS 66224

INDEX OF SHEETS

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.

Elizabeth A. Hunter, P.E. — 08/01/2025 (Date)

License Number P18178

My License Renewal Date is December 31, 2026

Pages or sheets covered by this seal: C1 THRU C12

LICENSED PROFESSIONAL ENGINEER — ELIZABETH A HUNTER — P18178 — IOWA

MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = 500'	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C1

THE RESIDENCE AT CARTER LAKE

CARTER LAKE, IOWA

TITLE

SNYDER & ASSOCIATES, INC.
231 BENNETT AVENUE
COUNCIL BLUFFS, IOWA 51503
712-322-3202 | www.snyder-associates.com

SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C1

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LEGEND

FEATURES	FOUND	SET
Section Corner	▲	△
1/2" Rebar, Cap # 23722 (Unless Otherwise Noted)	●	○
ROW Marker	■	□
ROW Rail	⋈	⋈
Control Point	CCP	
Bench Mark	◕	
Platted Distance	P	
Measured Bearing & Distance	M	
Recorded As	R	
Deed Distance	D	
Calculated Distance	C	
Minimum Protection Elevation	MPE	
Centerline		
Section Line		
1/4 Section Line		
1/4 1/4 Section Line		
Easement Line		

FEATURES	EXISTING	PROPOSED
Spot Elevation	X (1225.25)	X 1225.25
Contour Elevation	1225	1225
Fence (Barbed, Field, Hog)	X	X
Fence (Chain Link)	//	//
Fence (Wood)	□	□
Fence (Silt)	○	●
Tree Line		
Tree Removal Limits		
Tree Stump		
Deciduous Tree \\ Shrub		
Coniferous Tree \\ Shrub		
Communication	C(*)	C
Overhead Communication	OC(*)	OC
Fiber Optic	FO(*)	FO
Underground Electric	E(*)	E
Overhead Electric	OE(*)	OE
Duct Bank	DUCT(*)	DUCT
Gas Main with Size	G(*)	G
High Pressure Gas Main with Size	HPG(*)	HPG
Water Main with Size	W(*)	W
Sanitary Sewer with Size	S(*)	S
Sanitary Manhole	⊘	⊘
Storm Sewer with Size	ST(*)	
Storm Manhole	⊘	⊘
Single Storm Sewer Intake	▭	▭
Double Storm Sewer Intake	▭▭	▭▭

(*) Denotes the survey quality service level for utilities

Fire Hydrant		
Fire Hydrant on Building		
Water Main Valve	⋈	⋈
Water Service Valve	⊖	⊖
Well	Ⓦ	Ⓦ
Utility Pole		
Guy Anchor		
Utility Pole with Light		
Utility Pole with Transformer		
Street Light		
Yard Light		
Electric Box	EB	EB
Electric Transformer	E	E
Traffic Sign		
Communication Pedestal	C	C
Communication Manhole	C	C
Communication Handhole	C	C
Fiber Optic Manhole	FO	FO
Fiber Optic Handhole	FO	FO
Gas Valve		
Gas Manhole	G	G
Gas Apparatus	G	G
Fence Post or Guard Post	●	●
Underground Storage Tank	UST	
Above Ground Storage Tank	AST	
Sign		
Satellite Dish		
Mailbox		
Sprinkler Head	+	+
Irrigation Control Valve	ICV	ICV
Soil Boring	B-2	
Test Hole Location for SUE w/ID		

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.
QUALITY LEVEL (D) INFORMATION IS DERIVED FROM EXISTING UTILITY RECORDS OR ORAL RECOLLECTIONS.
QUALITY LEVEL (C) INFORMATION IS OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION WITH
QUALITY D INFORMATION.
QUALITY LEVEL (B) INFORMATION IS OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES.
QUALITY LEVEL (A) IS HORIZONTAL AND VERTICAL POSITION OF UNDERGROUND UTILITIES OBTAINED BY ACTUAL EXPOSURE OR VERIFICATION OF PREVIOUSLY EXPOSED SUBSURFACE UTILITIES, AS WELL AS THE TYPE, SIZE, CONDITION, MATERIAL, AND OTHER CHARACTERISTICS.

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, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN ARE IN THE EXACT LOCATION INDICATED EXCEPT WHERE NOTED AS QUALITY LEVEL A.

GENERAL NOTES

1. 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.
2. CONSTRUCTION OF ALL STREET AND UTILITY IMPROVEMENTS SHALL CONFORM TO THE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS AND METROPOLITAN UTILITIES DISTRICT (MUD) STANDARD SPECIFICATIONS AND THE SOILS REPORTS PREPARED BY OTHERS.
3. LENGTH OF UTILITIES SHOWN ON PLANS ARE DIMENSIONED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE.
4. ALL TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH REQUIREMENTS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). WHEN CONSTRUCTION ACTIVITIES OBSTRUCT PORTIONS OF THE ROADWAY, FLAGGERS SHALL BE PROVIDED. FLAGGERS SHALL CONFORM TO THE MUTCD IN APPEARANCE, EQUIPMENT AND ACTIONS.
5. NOTIFY OWNER, ENGINEER, METROPOLITAN UTILITIES DISTRICT, AND CARTER LAKE PUBLIC WORKS AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.
6. CONSTRUCT MANHOLES AND APPURTENANCES AS WORK PROGRESSES. BACKFILL WITH SUITABLE MATERIAL AND COMPACT TO 95% MAXIMUM DENSITY.
7. IN THE EVENT OF A DISCREPANCY BETWEEN THE QUANTITY ESTIMATES AND THE DETAILED PLANS, THE DETAILED PLANS SHALL GOVERN.
8. ALL FIELD TILES ENCOUNTERED DURING CONSTRUCTION SHALL BE RECONNECTED AND NOTED ACCORDINGLY ON THE AS-BUILT DOCUMENTS.
9. DIMENSIONS, BUILDING LOCATION, UTILITIES AND GRADING OF THIS SITE ARE BASED ON AVAILABLE INFORMATION AT THE TIME OF DESIGN. DEVIATIONS MAY BE NECESSARY IN THE FIELD. ANY SUCH CHANGES OR CONFLICTS BETWEEN THIS PLAN AND FIELD CONDITIONS ARE TO BE REPORTED TO THE ARCHITECT/ENGINEER PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT VERIFICATION OF ALL SITE IMPROVEMENTS PRIOR TO CONSTRUCTION.
10. CONTRACTOR TO LOAD AND TRANSPORT ALL MATERIALS CONSIDERED TO BE UNDESIRABLE TO BE INCORPORATED INTO THE PROJECT TO AN APPROVED OFF-SITE WASTE SITE.
11. CONTRACTOR TO STRIP AND STOCKPILE TOPSOIL FROM ALL AREAS TO BE CUT OR FILLED. RESPREAD TO MINIMUM 6" DEPTH TO FINISH GRADES.
12. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN ARE FINISHED GRADES AND/OR TOP OF PAVING SLAB (GUTTER), UNLESS OTHERWISE NOTED.
13. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING DIRT AND DEBRIS FROM NEIGHBORING STREETS, DRIVEWAYS, AND SIDEWALKS CAUSED BY CONSTRUCTION ACTIVITIES IN A TIMELY MANNER.
14. THE ADJUSTMENT OF ANY EXISTING UTILITY APPURTENANCES TO FINAL GRADE IS CONSIDERED INCIDENTAL TO THE SITE WORK.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING EROSION CONTROL MEASURES AS NECESSARY. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING ANY EXISTING EROSION CONTROL MEASURES ON SITE AT THE TIME OF CONSTRUCTION. GRADING AND SOIL EROSION CONTROL CODE REQUIREMENTS SHALL BE MET BY CONTRACTOR. A GRADING PERMIT IS REQUIRED FOR THIS PROJECT.
16. CONTRACTOR TO COORDINATE NATURAL GAS, ELECTRICAL, TELEPHONE AND ANY OTHER FRANCHISE UTILITY SERVICES WITH UTILITY SERVICE PROVIDER, CARTER LAKE, AND THE OWNER PRIOR TO CONSTRUCTION.
17. CONTRACTOR TO VERIFY ALL UTILITY CROSSINGS AND MAINTAIN MINIMUM 18" VERTICAL AND HORIZONTAL CLEARANCE BETWEEN UTILITIES. CONTRACTOR TO COORDINATE UTILITY ROUTING TO BUILDING AND VERIFY CONNECTION LOCATIONS AND INVERTS PRIOR TO CONSTRUCTION.

NOTES

1. BUILDING LINES AND CORNERS ARE FOR USE IN PREPARING CIVIL SITE PLAN DOCUMENTS. BUILDING CORNERS AND BUILDING LINES SHOULD BE SPECIFICALLY VERIFIED, AS NECESSARY, PRIOR TO DESIGN FOR CONSTRUCTION OF ANY PROPOSED EXPANSION OR CONNECTION OF BUILDING COMPONENTS.
2. FOR CLARITY PURPOSES, SURVEY SPOT ELEVATIONS ARE NOT SHOWN ON THIS SURVEY, BUT ARE CONTAINED WITHIN THE DIGITAL CADD FILES.
3. FOR THE PURPOSE OF THIS SURVEY, STORM SEWER, SANITARY SEWER AND WATER MAIN LINES ARE ASSUMED TO FOLLOW A STRAIGHT LINE FROM STRUCTURE TO STRUCTURE.
4. UTILITY SERVICE LINES TO BUILDINGS ARE APPROXIMATE ONLY. AN INTERNAL BUILDING INVESTIGATION, EXCAVATION AND/OR SUBSURFACE LOCATING/DESIGNATING WOULD NEED TO BE PERFORMED TO DETERMINE THE LOCATION OF SERVICES ENTERING THE BUILDING.
5. UNDERGROUND PIPE MATERIALS AND SIZES ARE BASED UPON VISIBLE EVIDENCE VIEWED FROM ACCESS MANHOLES/STRUCTURES. DUE TO THE CONFIGURATION AND/OR CONSTRUCTION OF THE STRUCTURE, IT MAY BE DIFFICULT TO ACCURATELY DETERMINE THE PIPE MATERIAL AND/OR SIZE. THE SURVEYOR WILL USE THEIR JUDGMENT AND EXPERIENCE TO ATTEMPT TO DETERMINE, BUT COMPLETE ACCURACY CANNOT BE GUARANTEED.
6. BOUNDARY LINES SHOWN ON THE EXISTING SITE SURVEY ARE TO FACILITATE DESIGN OR CONCEPT NEEDS AND ENABLE CREATION OF SAID CONSTRUCTION DOCUMENTS. THESE LINES DO NOT CONSTITUTE A CERTIFIED BOUNDARY SURVEY AND MISSING MONUMENTS WILL NOT BE SET.

PROPERTY ADDRESS

LOCATED AT THE NORTHEAST CORNER OF 9TH STREET AND AVENUE K

ZONING

R-2, URBAN RESIDENTIAL MIXED DENSITY DISTRICT

BULK REGULATIONS

FRONT YARD SETBACK: 25'
DETACHED SIDE YARD SETBACK: 10'
STREET SIDE YARD SETBACK: 15'
REAR YARD SETBACK: 25'

PARKING REQUIREMENTS

DWELLING, MULTI-FAMILY
2 SPACES PER 1-BEDROOM UNIT
2 SPACES PER 2-BEDROOM UNIT
= 54 UNITS X 2 SPACES = 108 SPACES TOTAL REQUIRED
108 SPACES PROVIDED (102 STALLS + 6 ADA ACCESSIBLE STALLS)

UTILITY CONTACT INFORMATION

UTILITY CONTACT FOR MAPPING INFORMATION SHOWN AS RECEIVED FROM THE IOWA ONE CALL DESIGN REQUEST SYSTEM, TICKET NUMBER 552503660.

(CLC) CARTER LAKE, CITY OF
Company name : CARTER LAKE, CITY OF
Design contact: BOB MCCLOUD
Phone: 4026101069
Email: CLMAINTENANCE@CARTERLAKE-IA.GOV

(COX) COX COMMUNICATIONS
Company name : COX COMMUNICATIONS
Design contact: JEREMY DIXON
Phone: 4052135142
Email: JEREMY.DIXON@COX.COM

(CTLIA01) CENTURYLINK
Company name : CENTURYLINK
Design contact: SADIE HULL
Phone: 9185470147
Email: sadie.hull@lumen.com

(MUD) METROPOLITAN UTILITIES DISTRIC
Company name : METROPOLITAN UTILITIES DISTRIC Design contact: Steve Slezak
Phone: 4025047760
Email: steve_slezak@mudnebr.com

(OPP) OMAHA PUBLIC POWER DISTRICT
Company name : OMAHA PUBLIC POWER DISTRICT Design contact: Gerald J Hakenholz
Phone: 4025525470
Email: ghakenholz@oppd.com

(P17) BLACK HILLS ENGY COUNCIL BLUFF
Company name : BLACK HILLS ENGY COUNCIL BLUFF Design contact: Chris Dewey
Phone: 7125806028
Email: chris.dewey@blackhillscorp.com

CONTROL POINTS

IOWA REGIONAL COORDINATE SYSTEM ZONE 6 (COUNCIL BLUFFS)
NAD83(2011)(EPOCH 2010.00) IARTN DERIVED - US SURVEY FEET

CP1 N=6977803.06 E=16449707.87 Z=979.18
SET 1/2" REBAR WITH RED SNYDER CONTROL CAP (AS SHOWN ON SURVEY)

CP2 N=6977833.78 E=16449220.96 Z=974.84
SET 1/2" REBAR WITH RED SNYDER CONTROL CAP (AS SHOWN ON SURVEY)

CP3 N=6978449.68 E=16449219.89 Z=976.19
SET 1/2" REBAR WITH RED SNYDER CONTROL CAP (AS SHOWN ON SURVEY)

CP4 N=6978513.28 E=16449674.70 Z=976.84
SET 1/2" REBAR WITH RED SNYDER CONTROL CAP (AS SHOWN ON SURVEY)

BENCHMARKS

NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88 - GEOID12A)
IARTN DERIVED - US SURVEY FEET

BM500 ELEV=981.08
ARROW HEAD OF FIRE HYDRANT

BM501 ELEV=975.92
CENTER OF NO DUMPING ALUMINUM DISK

DATE OF SURVEY

JUNE 23, 2025

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = NONE	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C2

THE RESIDENCE AT CARTER LAKE
GENERAL INFORMATION
CARTER LAKE, IOWA

SNYDER & ASSOCIATES, INC.
231 BENNETT AVENUE
COUNCIL BLUFFS, IOWA 51503
712-322-3202 | www.snyder-associates.com

SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C2

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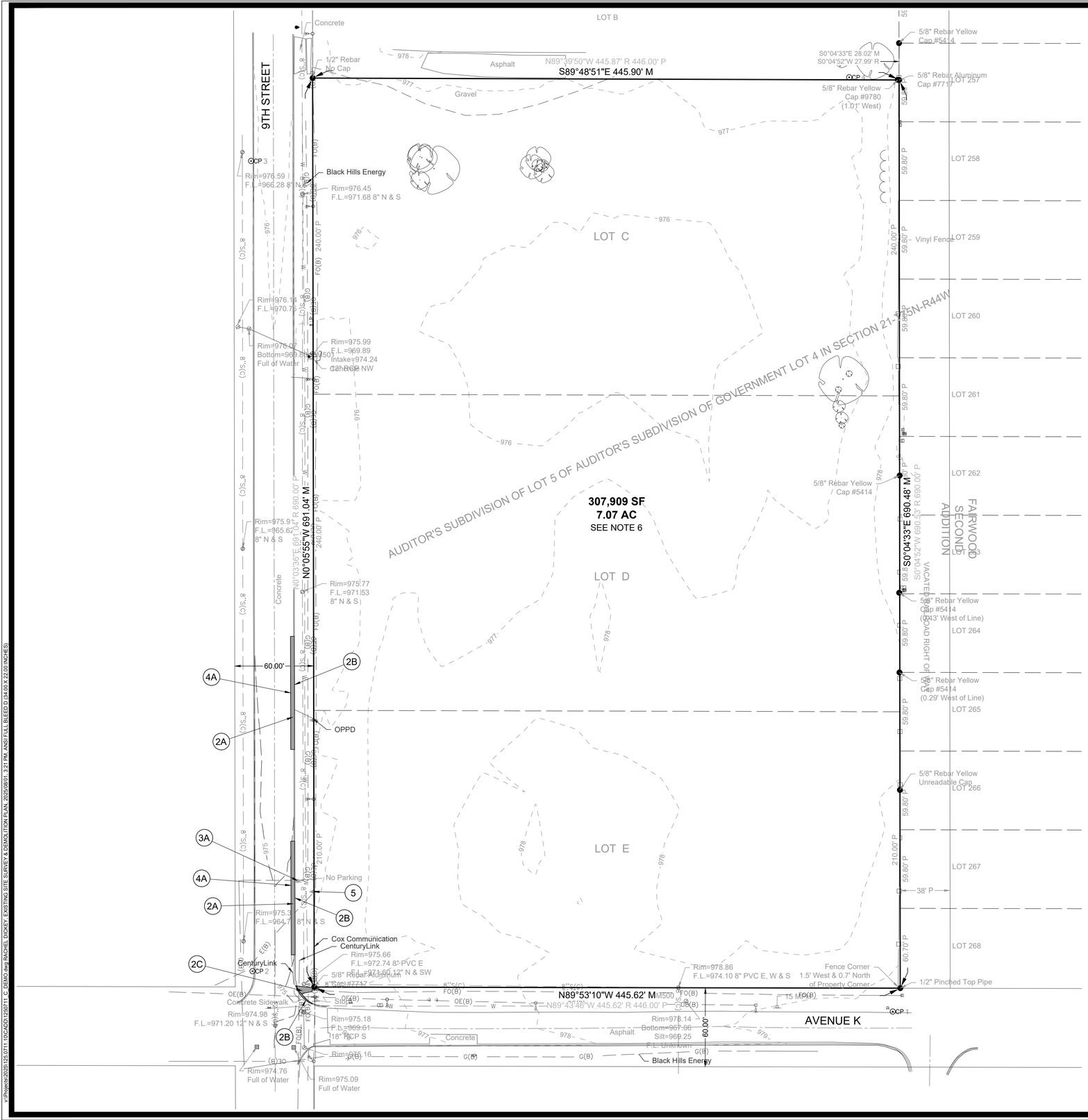


DEMOLITION PLAN NOTES

1. EXISTING FEATURES, PROTECT THE FOLLOWING:
   A. PAVEMENT TO REMAIN.
   B. EXISTING UTILITIES. COORDINATE ANY RELOCATIONS OR ADJUSTMENTS WITH UTILITY SERVICE PROVIDER AS NECESSARY.
2. REMOVAL AND DISPOSAL OF THE FOLLOWING:
   A. PCC PAVEMENT.
   B. CURB.
   C. PCC SIDEWALK RAMP.
3. REMOVAL AND REPLACEMENT OF THE FOLLOWING:
   A. "NO PARKING" STREET SIGN, COORDINATE NEW LOCATION WITH CITY OF CARTER LAKE.
4. SAWCUT THE FOLLOWING LOCATIONS:
   A. ALONG 9TH STREET.
5. RELOCATION OF 1 POWER POLE TO BE COMPLETED BY OPPD. CONTRACTOR TO COORDINATE AS NEEDED..
6. REFERENCE THE NEW PLAT FOR FINAL INTERIOR LOT LINE LOCATIONS.

MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = 40'	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C3

THE RESIDENCE AT CARTER LAKE

CARTER LAKE, IOWA

EXISTING SITE SURVEY & DEMOLITION PLAN

SNYDER & ASSOCIATES, INC.

231 BENNETT AVENUE
COUNCIL BLUFFS, IOWA 51503
712-322-3202 | www.snyder-associates.com

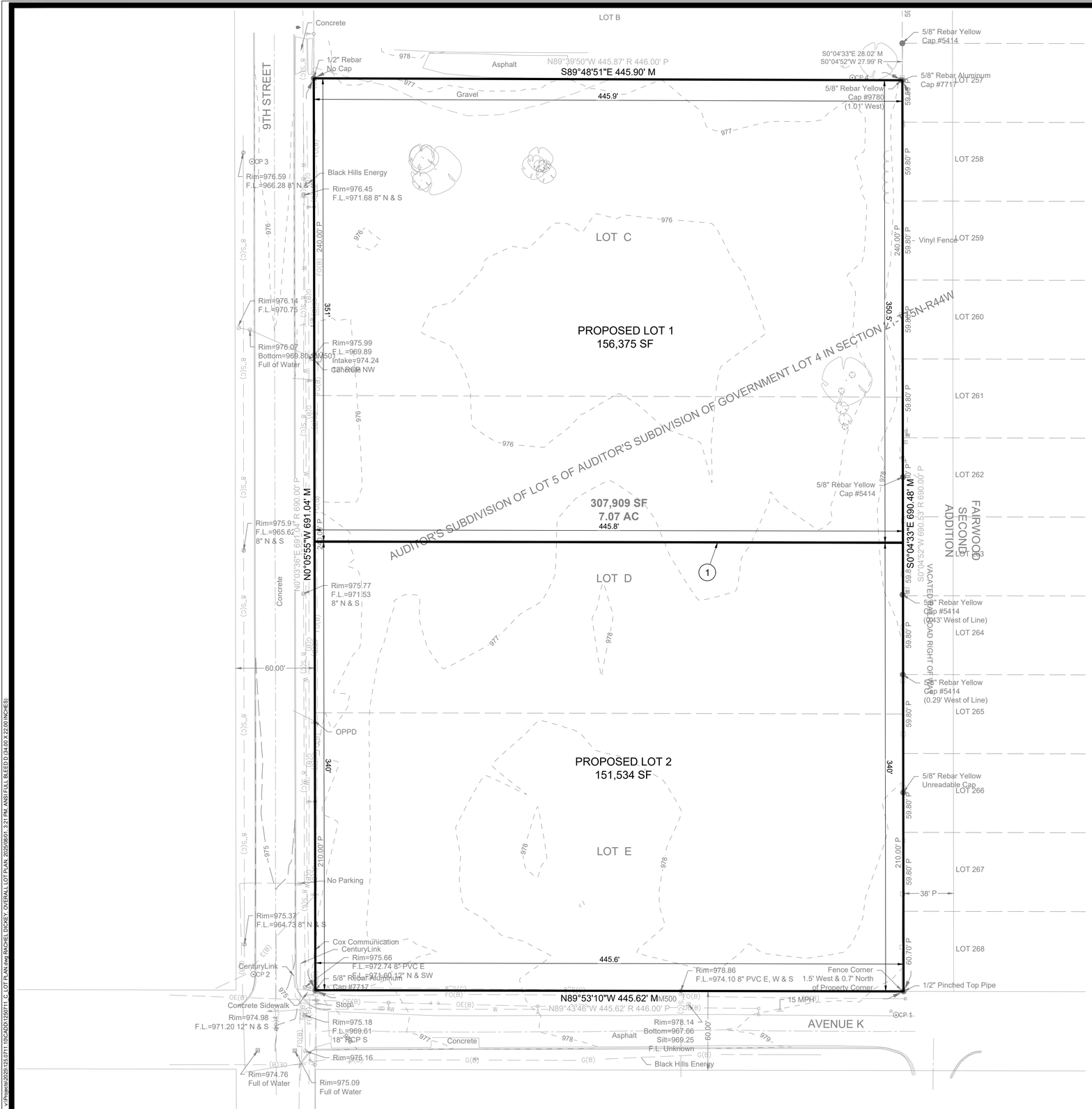
SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C3

0 40
FEET

v:\Projects\2025\125.0711.10\CADD\125071 C_DEMO.dwg RACHEL DICKEY EXISTING SITE SURVEY & DEMOLITION PLAN, 2025/08/01, 3:21 PM, ANSI FULL BLEED D (34.00 X 22.00 INCHES)



GENERAL NOTES

1. PROPOSED LOT LINE, REFERENCE THE NEW PLAT FOR FINAL INTERIOR LOT LINE LOCATIONS.

MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = 40'	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C3A

THE RESIDENCE AT CARTER LAKE

CARTER LAKE, IOWA

OVERALL LOT PLAN

SNYDER & ASSOCIATES, INC.

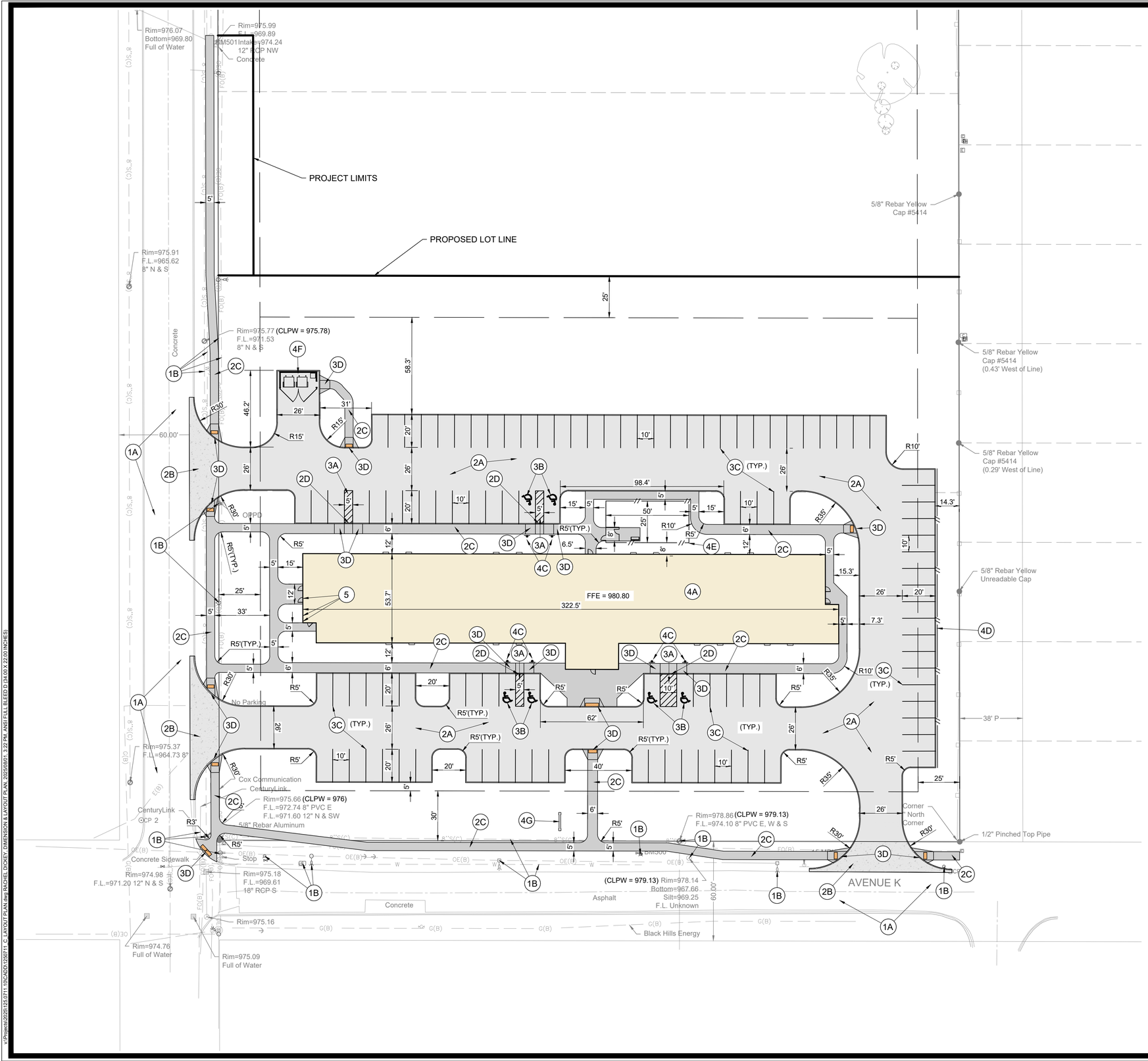
231 BENNETT AVENUE
COUNCIL BLUFFS, IOWA 51503
712-322-3202 | www.snyder-associates.com

SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C3A

v:\Projects\2025\125.0711.10\CADD\125071 C_LOT PLAN.dwg RACHEL DICKEY OVERALL LOT PLAN 2025/08/01 3:21 PM, ANSI FULL BLEED D (34.00 X 22.00 INCHES)



DIMENSION PLAN CONSTRUCTION NOTES

1. EXISTING FEATURES, PROTECT THE FOLLOWING:
   A. PAVEMENT TO REMAIN.
   B. EXISTING UTILITIES. COORDINATE ANY RELOCATIONS OR ADJUSTMENTS WITH UTILITY SERVICE PROVIDER AS NECESSARY.

2. PAVEMENTS, PROVIDE THE FOLLOWING:
   A. 6" DEPTH PCC ON 12" PREPARED SUBGRADE.
   B. 7" DEPTH PCC ON 12" PREPARED SUBGRADE TO R.O.W. LINE.
   C. 4" DEPTH PCC SIDEWALK ON 6" DEPTH PREPARED SUBGRADE.
   D. CURB DROP.

3. PAVEMENT MARKINGS, PROVIDE THE FOLLOWING:
   A. PAINTED ACCESSIBLE AISLE. 45° STRIPING AT 3' ON CENTER.
   B. ACCESSIBLE SYMBOL AS PER ADA STANDARDS.
   C. YELLOW 4" WIDE PAINTED PARKING STALL LINES.
   D. ACCESSIBLE CURB RAMP WITH LANDINGS AS PER ADA STANDARDS. PROVIDE DETECTABLE WARNING WHERE SHOWN ON PLANS.

4. PROVIDE THE FOLLOWING SITE IMPROVEMENTS WHERE SHOWN ON PLAN:
   A. BUILDING; SEE ARCHITECTURAL PLANS FOR DETAILS.
   B. REFER TO THE MEP PLANS FOR UTILITIES CONNECTING INTO THE BUILDING.
   C. VAN ACCESSIBLE PARKING SIGNAGE AS PER ADA STANDARDS.
   D. 6' TALL SCREENING FENCE; SEE ARCHITECTURAL PLANS FOR DETAIL.
   E. 4' TALL ALLUM. FENCE TO SURROUND DOG PARK; SEE ARCHITECTURAL PLANS FOR DETIAL.
   F. TRASH ENCLOSURE WITH FENCE & GATE; SEE ARCHITECTURAL PLANS FOR DETAIL.
   G. MONUMENT SIGN; SEE ARCHITECTURAL PLANS FOR DETAIL.

5. SEE UTILITY SHEET FOR WATER SERVICE, STORM SEWER AND SANITARY SEWER INFORMATION.

LEGEND

- 6" DEPTH PCC ON 12" PREPARED SUBGRADE
- 7" DEPTH PCC ON 12" PREPARED SUBGRADE TO R.O.W. LINE
- 4" DEPTH PCC SIDEWALK ON 6" DEPTH PREPARED SUBGRADE

MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = 30'	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C4

THE RESIDENCE AT CARTER LAKE

CARTER LAKE, IOWA

DIMENSION & LAYOUT PLAN

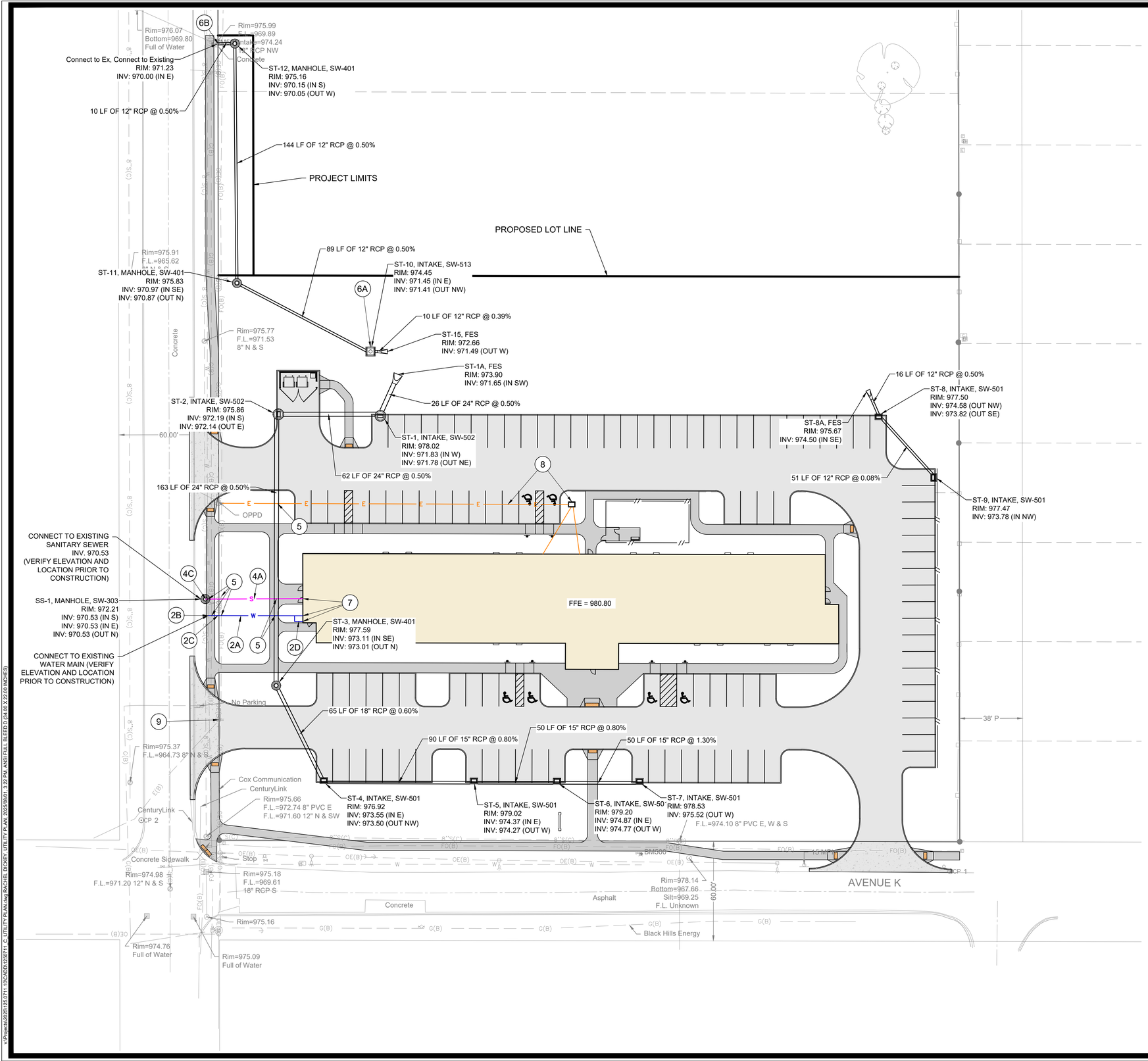
SNYDER & ASSOCIATES, INC.
231 BENNETT AVENUE
COUNCIL BLUFFS, IOWA 51503
712-322-3202 | www.snyder-associates.com

SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C4

v:\Projects\2025\125.0711.10\CADD\125071 C LAYOUT PLAN.dwg RACHEL DICKEY, DIMENSION & LAYOUT PLAN, 2025/08/01 3:22 PM, ANSI FULL BLEED D (34.00 X 22.00 INCHES)



UTILITY CONSTRUCTION NOTES

1. EXISTING FEATURES, PROTECT THE FOLLOWING:
   A. PROTECT EXISTING UTILITIES.
   B. PROTECT EXISTING PAVEMENTS.

2. WATER SERVICE, PROVIDE THE FOLLOWING:
   A. 3" WATER SERVICE. COORDINATE BUILDING CONNECTION WITH ARCHITECTURAL PLANS. SEE MUD STANDARD 3" SERVICE TAP FOR ADDITIONAL INFORMATION. APPROXIMATELY 57' FROM BUILDING CONNECTION TO WATER MAIN CONNECTION.
   B. CONNECT TO EXISTING WATER MAIN WITH 3" TAPPING VALVE AND SLEEVE. ALL WORK UP TO THE CURB STOP MUST BE COMPLETED WITH MUD INSPECTOR PRESENT. ALL WATER MAIN SHALL BE COMPLETED TO MUD STANDARDS.
   C. CURB STOP AND BOX. SEE MUD STANDARD 3" SERVICE DETAIL FOR ADDITIONAL INFORMATION.
   D. 6" FIRE SERVICE LINE.

3. STORM AND SANITARY IMPROVEMENTS SHALL BE PROVIDED AND INSTALLED PER SUDAS STANDARD SPECIFICATIONS.

4. SANITARY SEWER, PROVIDE THE FOLLOWING:
   A. 8" SANITARY SEWER SERVICE LINE. APPROXIMATELY 58' FROM BUILDING CONNECTION TO EXSITING SANITARY SEWER CONNECTION.
   B. MAINTAIN 18" MINIMUM SEPARATION FROM WATER SERVICE. PLACE SANITARY SERVICE LOWER THAN WATER SERVICE IF POSSIBLE.
   C. CONNECT TO EXISTING 8" SANITARY SEWER WITH SW-303 MANHOLE PER SUDAS STANDARD SPECIFICATIONS SECTION 4010.

5. CRITICAL CROSSING. MAINTAIN 18" MIN. SEPARATION. VERIFY CROSSING WITH EXISTING UTILITIES PRIOR TO CONSTRUCTION.

6. STORM SEWER IMPROVEMENTS, PROVIDE THE FOLLOWING:
   A. SEE SHEET C12 FOR OUTLET STRUCTURE DETAILS.
   B. CONNECT TO EXISTING 8" STORM SEWER MANHOLE. VERIFY LOCATION, DEPTH AND SIZE PRIOR TO CONSTRUCTION.

7. CONNECT SANITARY AND WATER TO BUILDING SERVICE. COORDINATE SIZE, LOCATION, AND ELEVATION WITH MECHANICAL PLANS PRIOR TO CONSTRUCTION.

8. ESTIMATED LOCATION OF ELECTRICAL TRANSFORMER AND CONDUIT LINES, FINAL LOCATION TO BE COORDINATED WITH OPPD.

9. RELOCATION OF 1 POWER POLE TO BE COMPLETED BY OPPD. CONTRACTOR TO COORDINATE AS NEEDED.

LEGEND

- W — PROPOSED WATER LINE
- S — PROPOSED SEWER LINE
- E — PROPOSED FIBER OPTIC LINE

MARK	REVISION	DATE	BY
Engineer: EDH		Scale: 1" = 30'	
Technician: RMD	Checked By: CHKD	T-R-S: 75N-44W-21	
	Date: 08/01/2025		

Project No: 125.0711.10

Sheet C5

THE RESIDENCE AT CARTER LAKE

UTILITY PLAN

CARTER LAKE, IOWA

SNYDER & ASSOCIATES, INC.
231 BENNETT AVENUE
COUNCIL BLUFFS, IOWA 51503
712-322-3202 | www.snyder-associates.com

SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C5

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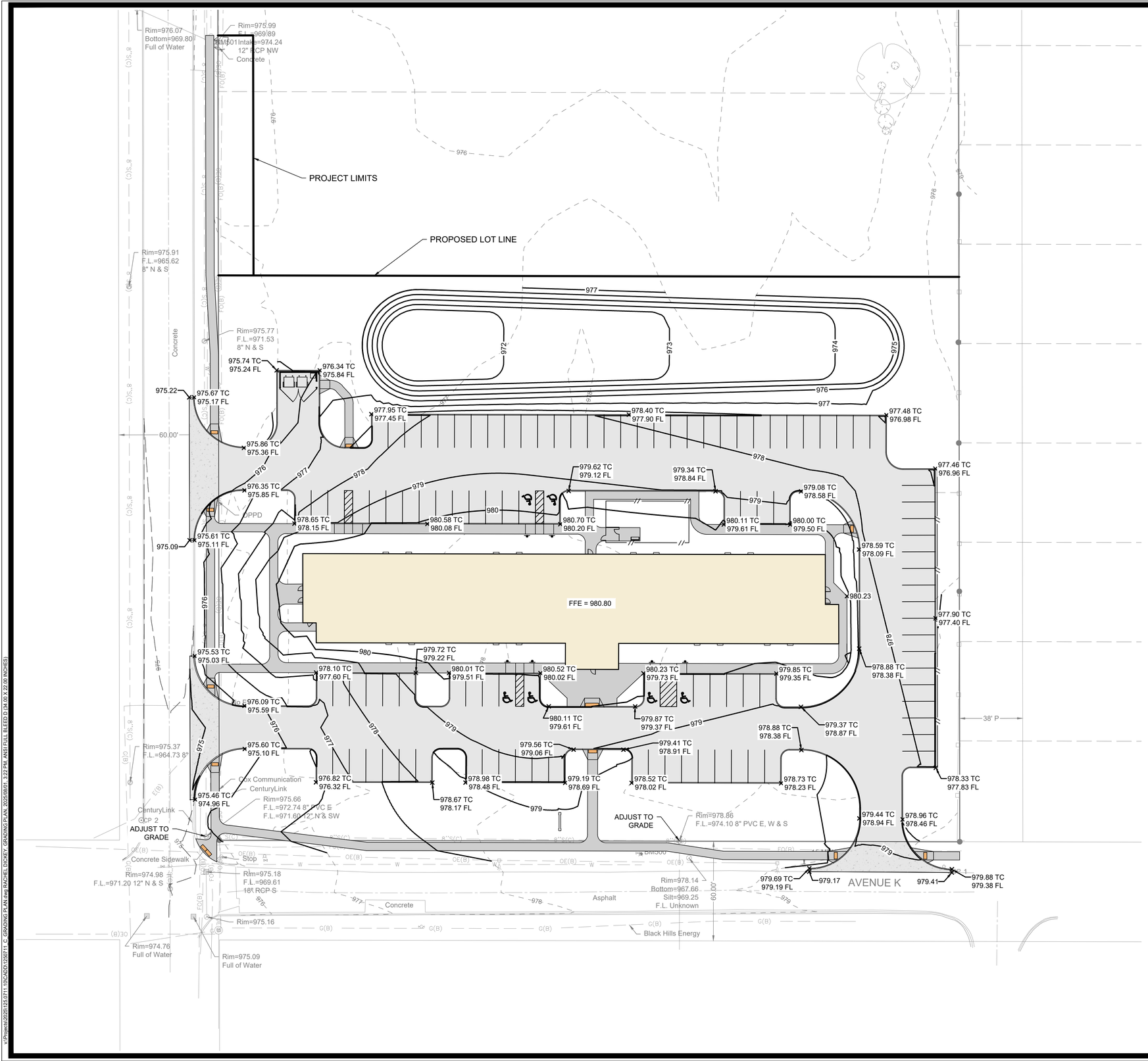

GRADING PLAN NOTES

1. CONTRACTOR TO STRIP AND STOCKPILE TOPSOIL ON ALL AREAS TO BE CUT OR FILLED. RE-SPREAD TO MINIMUM 6" DEPTH TO FINISH GRADES.
2. ANY EXCESS CUT TO BE SPREAD ON SITE AS DIRECTED BY ENGINEER DURING CONSTRUCTION. PLACE TOPSOIL OVER ALL AREAS DISTURBED.
3. GRADES SHOWN ARE FINISHED GRADE AND/OR TOP OF PAVING SLAB (GUTTER), UNLESS OTHERWISE NOTED.

SPOT ELEVATIONS INDICATE TOP OF SLAB, FINISH FLOOR ELEVATION, OR FINISH GRADE, UNLESS OTHERWISE NOTED.
TC= TOP OF CURB
FL= FLOW LINE
FFE= FINISHED FLOOR ELEVATION

MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = 30'	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C6

THE RESIDENCE AT CARTER LAKE

CARTER LAKE, IOWA

GRADING PLAN

SNYDER & ASSOCIATES, INC.
231 BENNETT AVENUE
COUNCIL BLUFFS, IOWA 51503
712-322-3202 | www.snyder-associates.com

SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C6

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MAINTENANCE SCHEDULE

THE FOLLOWING MAINTENANCE SCHEDULE HAS BEEN PROVIDED. THE INSPECTOR MUST PERFORM THE INSPECTIONS. THE OPERATOR/CONTRACTOR MUST PERFORM ALL NEEDED MAINTENANCE. FURTHERMORE, ALL EROSION CONTROL FEATURE REQUIRING MAINTENANCE MAY NOT BE LISTED BELOW. THE OPERATOR/CONTRACTOR AND INSPECTOR MUST PERFORM THEIR RESPECTIVE DUTIES ON ALL BMP'S THAT ARE NOT LISTED BELOW AS WELL.

1. CONSTRUCTION ENTRANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.
2. STRAW BALE BARRIER - THE MAINTENANCE MEASURES ARE AS FOLLOWS: (2.1) STRAW BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL; (2.2) CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES; (2.3) NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY; (2.4) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH RAINFALL, THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER; AND (2.5) ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE STRAW BALE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
3. SILT FENCE - THE MAINTENANCE MEASURES ARE AS FOLLOWS: (3.1) SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL, ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY; (3.2) CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING; (3.3) SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY; (3.4) SEDIMENT DEPOSITS MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER; AND (3.5) ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
4. STORM DRAIN INLET PROTECTION - THE MAINTENANCE MEASURES ARE AS FOLLOWS: (4.1) STRUCTURES SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NECESSARY AND (4.2) STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
5. TEMPORARY DIVERSION DIKE - THE MEASURE SHALL BE INSPECTED AFTER EVERY STORM AND REPAIRS MADE TO THE DIKE, FLOW CHANNEL, OUTLET OR SEDIMENT TRAPPING FACILITY, AS NECESSARY. ONCE EVERY TWO WEEKS, WHETHER A STORM EVENT HAS OCCURRED OR NOT, THE MEASURE SHALL BE INSPECTED AND REPAIRS MADE IF NEEDED. DAMAGES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY MUST BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
6. TEMPORARY FILL DIVERSION - SINCE THE PRACTICE IS TEMPORARY AND UNDER MOST SITUATIONS WILL BE COVERED THE NEXT WORKING DAY. THE MAINTENANCE REQUIRED SHOULD BE LOW. IF THE PRACTICE IS TO REMAIN IN USE FOR MORE THAN ONE DAY, AN INSPECTION SHALL BE MADE AT THE END OF EACH WORK DAY AND REPAIRS MADE TO THE MEASURE IF NEEDED. THE OPERATOR/CONTRACTOR SHOULD AVOID THE PLACEMENT OF ANY MATERIAL OVER THE STRUCTURE WHILE IT IS IN USE. CONSTRUCTION TRAFFIC SHOULD NOT BE PERMITTED TO CROSS THE DIVERSION.
7. TEMPORARY SEDIMENT TRAP - THE MAINTENANCE MEASURES ARE AS FOLLOWS: (7.1) SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN VOLUME OF THE WET STORAGE, SEDIMENT REMOVAL FROM THE BASIN SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS; (7.2) FILTER STONE SHALL BE REGULARLY CHECKED TO ENSURE THAT FILTRATION PERFORMANCE IS MAINTAINED, STONE CHOKED WITH SEDIMENT SHALL BE REMOVED AND CLEANED OR REPLACED; AND (7.3) THE STRUCTURE SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT, THE HEIGHT OF THE STONE OUTLET SHOULD BE CHECKED TO ENSURE THAT ITS CENTER IS AT LEAST 1 FOOT BELOW THE TOP OF THE EMBANKMENT.
8. TEMPORARY SEDIMENT BASIN - THE BASIN EMBANKMENT SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. THE EMERGENCY SPILLWAY SHOULD BE CHECKED REGULARLY TO ENSURE THAT ITS LINING IS WELL ESTABLISHED AND EROSION-RESISTANT. THE BASIN SHOULD BE CHECKED AFTER EACH RUNOFF PRODUCING RAINFALL FOR SEDIMENT CLEANOUT AND TRASH REMOVAL. WHEN THE SEDIMENT REACHES THE CLEANOUT LEVEL, IT SHALL BE REMOVED AND PROPERLY DISPOSED OF.
9. TEMPORARY SEEDING - AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RE-SEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED. CONTROL WEEDS BY MOWING.
10. PERMANENT SEEDING - THE MAINTENANCE MEASURES ARE AS FOLLOWS: (10.1) IN GENERAL, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL IT HAS BEEN MAINTAINED FOR ONE FULL YEAR AFTER PLANNING; (10.2) NEW SEEDLINGS SHALL BE SUPPLIED WITH ADEQUATE MOISTURE, SUPPLY WATER AS NEEDED, ESPECIALLY LATE IN THE SEASON, IN ABNORMALLY HOT OR DRY CONDITIONS, OR ON ADVERSE SITES, WATER APPLICATIONS SHALL BE CONTROLLED TO PREVENT EXCESSIVE RUNOFF; (10.3) INSPECT ALL SEEDED AREAS FOR FAILURES AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE; [10.3.A] IF STAND IS INADEQUATE FOR EROSION CONTROL, OVER SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED; [10.3.B] IF STAND IS 60% DAMAGED, RE-ESTABLISH FOLLOWING SEEDBED AND SEEDING RECOMMENDATIONS; [10.3.C] IF STAND HAS LESS THAN 40% COVER, RE-EVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER, THE SOIL MUST BE TESTED TO DETERMINE IF ACIDITY OR NUTRIENT IMBALANCES ARE RESPONSIBLE, RE-ESTABLISH THE STAND FOLLOWING SEEDBED AND SEEDING RECOMMENDATIONS.
11. MULCHING - ALL MULCHES AND SOIL COVERINGS SHOULD BE INSPECTED PERIODICALLY (PARTICULARLY AFTER RAINSTORMS) TO CHECK FOR EROSION. WHERE EROSION IS OBSERVED IN MULCHED AREAS, ADDITIONAL MULCH SHOULD BE APPLIED. NETS AND MATS SHOULD BE INSPECTED AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, REINSTALL NETTING OR MATTING AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. INSPECTIONS SHOULD TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE; REPAIR AS NEEDED.
12. SOIL STABILIZATION BLANKETS & MATTING - ALL SOIL STABILIZATION BLANKETS AND MATTING SHOULD BE INSPECTED PERIODICALLY FOLLOWING INSTALLATION, PARTICULARLY AFTER RAINSTORMS TO CHECK FOR EROSION AND UNDERMINING. ANY DISLOCATION OR FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUTS OR BREAKAGE OCCURS, REINSTALL THE MATERIAL AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. CONTINUE TO MONITOR THESE AREAS UNTIL WHICH TIME THEY BECOME PERMANENTLY STABILIZED; AT THAT TIME AN ANNUAL INSPECTIONS SHOULD BE ADEQUATE.
13. STREET CLEANING / SWEEPING - THE MAINTENANCE MEASURES ARE AS FOLLOWS: (13.1) EVALUATE ACCESS POINTS DAILY FOR SEDIMENT TRACKING; (13.2) WHEN TRACKED OR SPILLED SEDIMENT IS FOUND ON PAVED SURFACES, IT WILL BE REMOVED DAILY, DURING TIMES OF HEAVY TRACK-OUT, SUCH AS DURING RAINS, CLEANING MAY BE DONE SEVERAL TIMES THROUGHOUT THE DAY; (13.3) UNKNOWN SPILLS OR OBJECTS WILL NOT BE MIXED WITH THE SEDIMENT; AND (13.4) IF SEDIMENT IS MIXED WITH OTHER POLLUTANTS, IT WILL BE DISPOSED OF PROPERLY AT AN AUTHORIZED LANDFILL.

CONSTRUCTION ACTIVITIES & SCHEDULING

ACTIVITY	SCHEDULE
INSTALL ALL BMP'S NEEDED AND ASSOCIATED WITH THE GRADING PHASE SUCH AS STABILIZED CONSTRUCTION ENTRANCES, SILT BASINS, RISER PIPES, OUTLET PIPES, SILT TRAPS, SILT FENCE, DIVERSIONS, TERRACES, AND ETCETERA.	PRIOR TO ANY STRIPPING OF EXISTING VEGETATION OR GRADING.
PROCEED WITH STRIPPING OF EXISTING VEGETATION AND GRADING IN ACCORDANCE WITH THE GRADING PLAN, WHILE DISTURBING NO MORE THAN NECESSARY.	AFTER INSTALLING ALL BMP'S NEEDED AND ASSOCIATED WITH THE GRADING PHASE. FURTHERMORE, INSPECTOR APPROVAL MUST BE OBTAINED BEFORE THE START OF ANY STRIPPING OF EXISTING VEGETATION OR GRADING.
PROCEED WITH INFRASTRUCTURE INSTALLATION.	INFRASTRUCTURE INSTALLATION MUST OCCUR PRIOR TO ANY LOT DEVELOPMENT.
IMPLEMENT THE INSTALLATION OF PERMANENT SEEDING, AND/OR MULCHING, MATTING.	STABILIZATION MEASURES MUST BE INITIATED AS SOON AS POSSIBLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
IMPLEMENT THE INSTALLATION ALL BMP'S NEEDED AND ASSOCIATED WITH THE BUILDING PHASE.	BUILDING PHASE BMP'S MUST BE INSTALLED CONCURRENTLY WITH LOT DEVELOPMENT.
PROCEED WITH REMOVAL OF BMP'S.	BMP'S MAY NOT BE REMOVED UNTIL EACH IMPACTED DRAINAGE BASIN HAS BEEN FULLY DEVELOPED. FULL DEVELOPMENT SHALL MEAN INSTALLATION OF PAVEMENT, BUILDINGS, AND UTILITIES, LANDSCAPING, AND FULLY ESTABLISHED PERMANENT SEEDING. FURTHERMORE, INSPECTOR APPROVAL MUST BE OBTAINED BEFORE THE REMOVAL OF ANY BMP'S.

MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = ##	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C7

CARTER LAKE, IOWA

THE RESIDENCE AT CARTER LAKE

SWPPP NOTES

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SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C7

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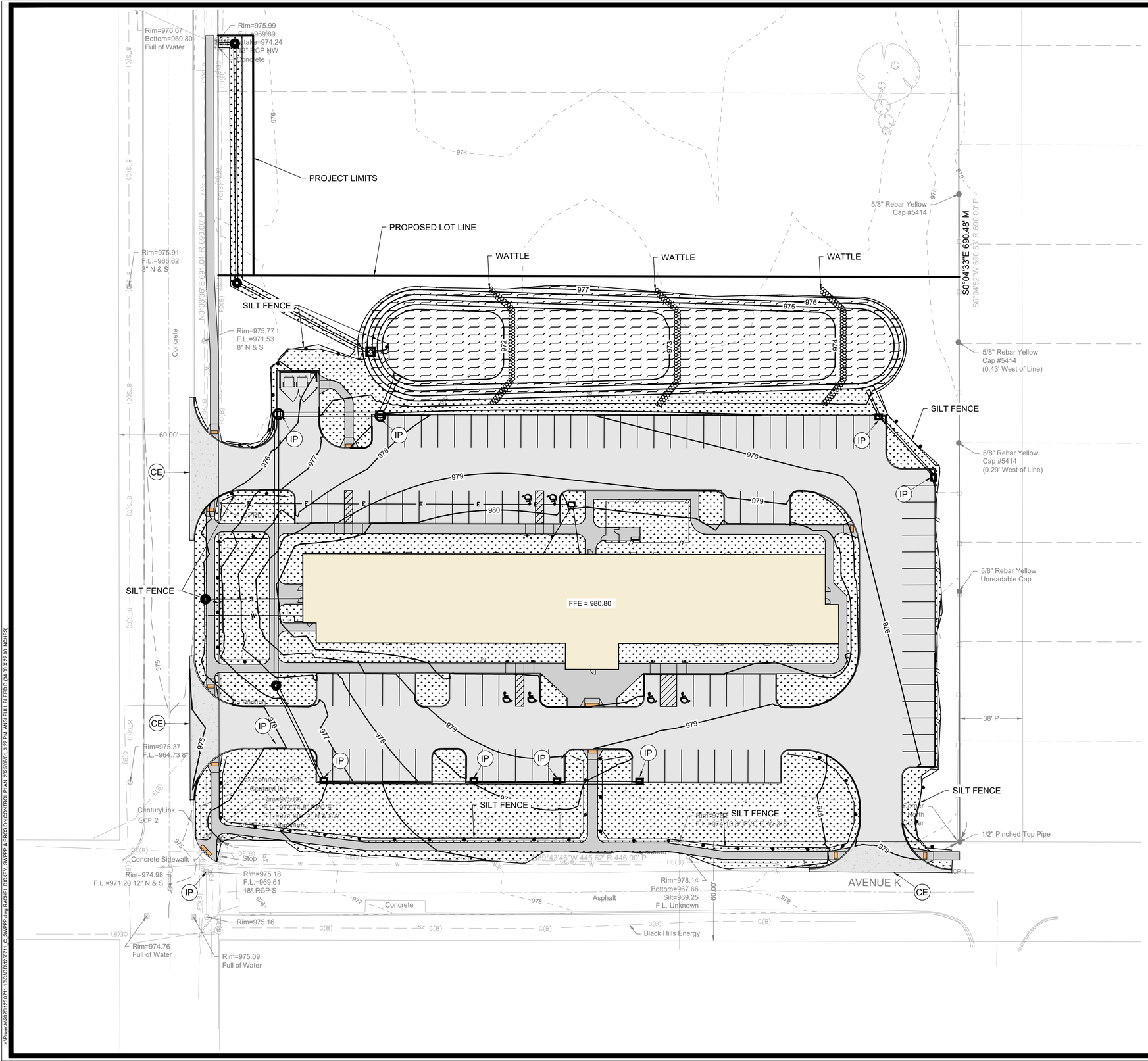

EROSION CONTROL NOTES

1. ALL DRAINAGE SWALES AND SLOPES 5 TO 1 OR GREATER TO BE SEEDED AND MATTED USING COMMERCIALLY AVAILABLE EROSION CONTROL SEED. MIXTURE APPLIED AT RATE RECOMMENDED BY SUPPLIER.
2. EROSION CONTROL: SEED THE SITE AFTER ROUGH GRADING HAS BEEN COMPLETED. PLACE SILT FENCE AND MAINTAIN IN PROBLEM AREAS AFTER GROUND COVER HAS BEEN ESTABLISHED. COMPLY WITH EROSION CONTROL LAW.
3. PROVIDE BELOW GRADE INLET PROTECTION SUCH AS WATTLES OR SEDIMENT BASKETS IN PAVED AREAS FOLLOWING PAVING OPERATIONS.
4. CONTRACTOR TO INSTALL INLET PROTECTION PER SUDAS AT THE LOCATIONS INDICATED.
5. CONTRACTOR TO INSTALL STABILIZED CONSTRUCTION ENTRANCE AT EACH LOCATION USED DURING CONSTRUCTION.

LEGEND

- SEEDING - SUDAS TYPE 1 SEED MIX
- SEEDING - SUDAS WETLAND MIX
- 6" EROSION CONTROL WATTLE
- SILT FENCE
- (IP) INLET PROTECTION
- (CE) STABILIZED CONSTRUCTION ENTRANCE

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MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = 30'	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C8

CARTER LAKE, IOWA

THE RESIDENCE AT CARTER LAKE

SWPPP & EROSION CONTROL PLAN

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SNYDER & ASSOCIATES, INC.

SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C8

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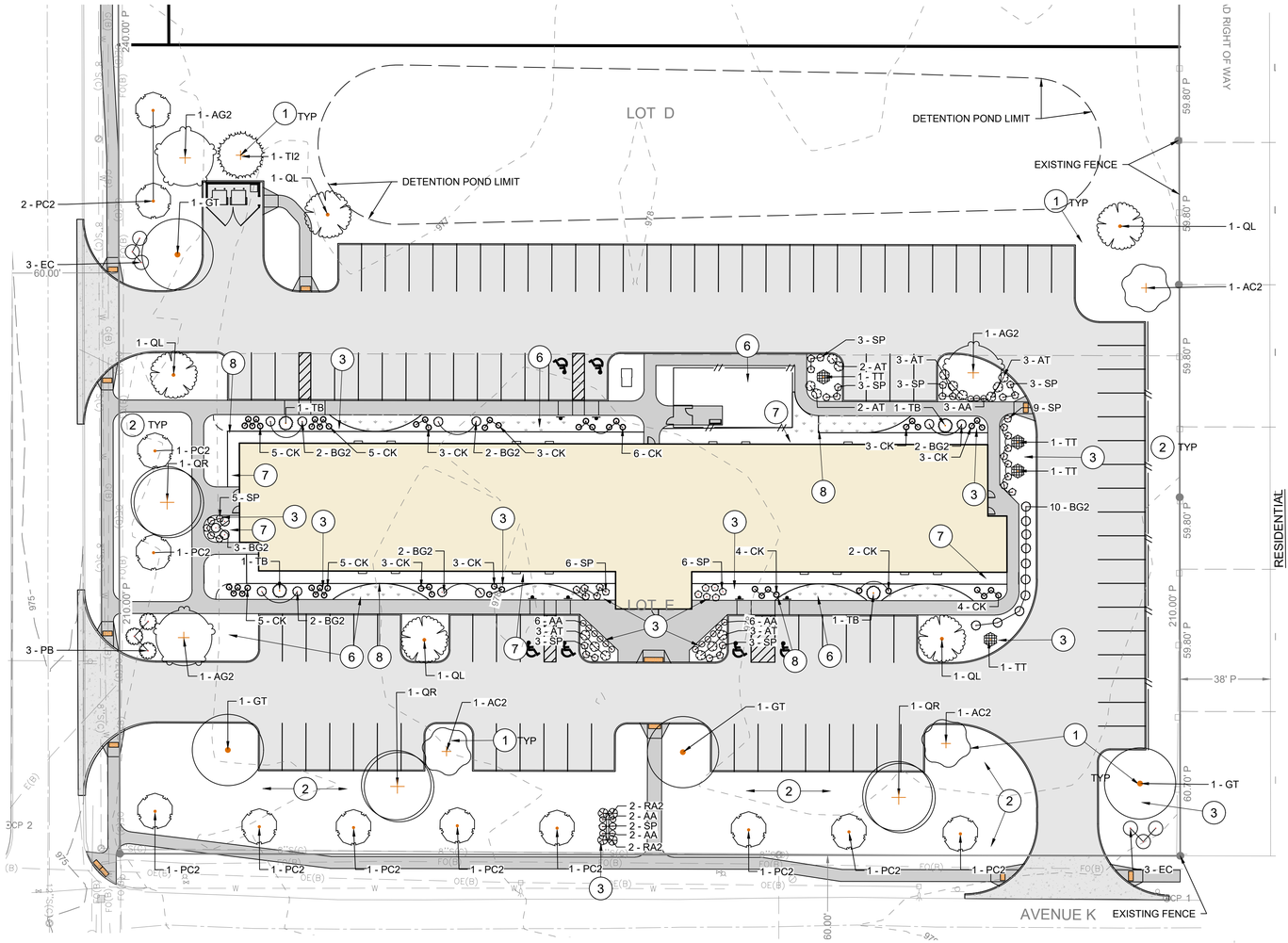


GENERAL PLANTING NOTES

A. UTILITY WARNING:
THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEES 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.

B. 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 CONTRACTORS CARELESSNESS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COORDINATE AND COOPERATE WITH UTILITY COMPANIES DURING CONSTRUCTION.

C. ALL PLANT MATERIAL SHALL AT LEAST MEET MINIMUM REQUIREMENTS SHOWN IN THE "AMERICAN STANDARDS FOR NURSERY STOCK" (ANSI Z60.1 - LATEST EDITION).

D. CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR PERIOD OF ONE YEAR FROM DATE OF INSTALLATION.

PLANTING CONSTRUCTION NOTES

1. PROVIDE 3-INCH DEPTH SHREDDED HARDWOOD MULCH AROUND ALL TREES TO A MIN. 3-FOOT PERIMETER, AND ALL AREAS INDICATED ON PLAN.

2. CONTRACTOR TO SEED ALL AREA DISTURBED BY CONSTRUCTION WITH 90/10 GREENYARD OR APPROVED EQUAL AT 450 LBS / AC SEED RATE UNLESS NOTED OTHERWISE.

   PRODUCT: GREENYARD 90 / 10 OR EQUAL.
   AGRILAND FS, INC
   INDIANOLA, IA 50125
   WWW.AGRILANDFS.COM
   CONTACT: CURT MYERS
   T: (515) 961-8408

3. CONTRACTOR TO PROVIDE A 3-INCH DEPTH SHREDDED HARDWOOD MULCH IN PLANT BED AREAS UNLESS OTHERWISE NOTED ON PLAN. PROVIDE VERTICAL CUT SPADE CUT EDGE TO A DEPTH OF 4-INCHES.

4. PLANTING SUBSTITUTIONS SHALL BE APPROVED IN WRITING BY THE OWNER.

5. REFER TO DETAIL SHEET C10 FOR PLANTING REQUIREMENTS.

6. SOD.

7. PROVIDE1" CLEAN RIVER ROCK MULCH TO 3-INCH DEPTH WITHIN PLANTERS WITH 5 OZ FILTER FABRIC.

8. CONTRACTOR TO INSTALL 4" BY $\frac{3}{8}$ - INCH THICK BLACK METAL EDGING AT LOCATIONS SHOWN ON PLAN.

PLANTING PLAN REQUIREMENTS

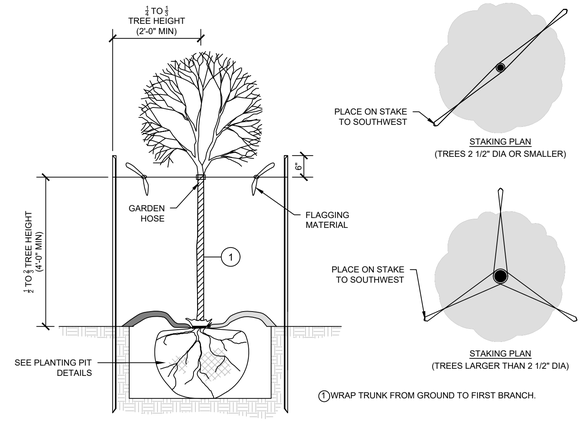
LANDSCAPE REQUIREMENTS AND CALCULATIONS:
(AS PER CARTER LAKE ZONING CODE REQUIREMENTS)

TOTAL LOT AREA = 151,527 SF - 17,475 SF (BUILDING SF)
134,052 SF X10% = 13,405 SF REQUIRED.
134,052 SF - 59,358 SF = 74,694 SF PROVIDED.

FRONTAGE STREET TREES:
492 TOTAL LF/35 LF = 14 EA REQUIRED (14 PROVIDED)

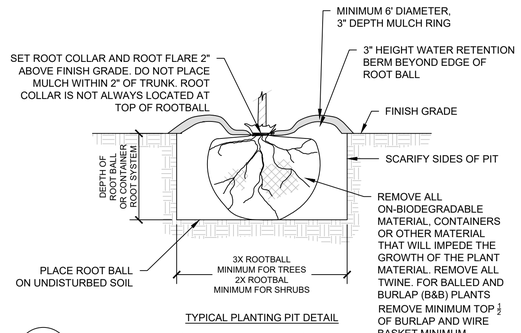
ON SITE TREE PLANTING:
59,358 SF PAVEMENT AREA / 3,000 SF = 19.78 EA TREE REQUIRED (20 PROVIDED)
PARKING LOT TREES: 6 PROVIDED
FRONTAGE TREES: 14 PROVIDED

LANDSCAPE BUFFER:
EAST BUFFER TO RESIDENTIAL ZONE. SATISFIED BY EXISTING FENCE AS SHOWN ON PLANS.
SOUTH AND WEST: STREET FRONTAGE
NORTH: NO BUFFER REQUIRED



1 WRAP TRUNK FROM GROUND TO FIRST BRANCH.

1 / C9 DECIDUOUS TREES STAKING DETAIL
NO SCALE



TYPICAL PLANTING PIT DETAIL

2 / C9 PLANTING PIT DETAILS
NO SCALE

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	TYPE
TREES					
AC2	3	Acer rubrum 'Columnare'	Columnar Red Maple	2" Cal.	B&B
GT	4	Gleditsia triacanthos inermis 'Skyline'	Skyline Honey Locust	2" Cal.	B&B
QL	5	Quercus robur x bicolor 'Long'	Regal Prince® Oak	2" Cal.	B&B
QR	3	Quercus rubra	Red Oak	2" Cal.	B&B
EVERGREEN TREES					
TB	4	Thuja occidentalis 'Brandon'	Brandon Arborvitae	4` Ht.	B&B
TT	4	Thuja occidentalis 'Techny'	Techny Arborvitae	4` Ht.	B&B
TI2	1	Thuja x 'Green Giant'	Green Giant Arborvitae	4` Ht.	
ORNAMENTAL TREES					
AG2	3	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	#7	Pot
PC2	12	Prunus sargentii 'Columnaris'	Columnar Sargent Cherry	1.5" Cal.	B&B
CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
SHRUBS					
BG2	23	Buxus x 'Green Velvet'	Green Velvet Boxwood	3 gal.	
EC	6	Euonymus alatus 'Compactus'	Compact Burning Bush	3 gal.	Pot
PB	3	Physocarpus opulifolius 'Monlo'	Diabolo® Ninebark	3 gal.	Pot
GRASSES					
CK	54	Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	1 gal.	Pot
SP	46	Sporobolus heterolepis	Prairie Dropseed	1 gal.	Pot
PERENNIALS					
AT	16	Asclepias tuberosa	Butterfly Milkweed	4" Plug	
AA	19	Aster dumosus 'Alert'	Alert Fall Aster	1 gal.	Pot
RA2	4	Rudbeckia amplexicaulis	Black-eyed Susan	4" Plug	

GROUNDCOVER PATTERN

SOD

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MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = 30'	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C11

CARTER LAKE, IOWA

231 BENNETT AVENUE
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THE RESIDENCE AT CARTER LAKE

LANDSCAPING PLAN

SNYDER & ASSOCIATES, INC.

SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C9

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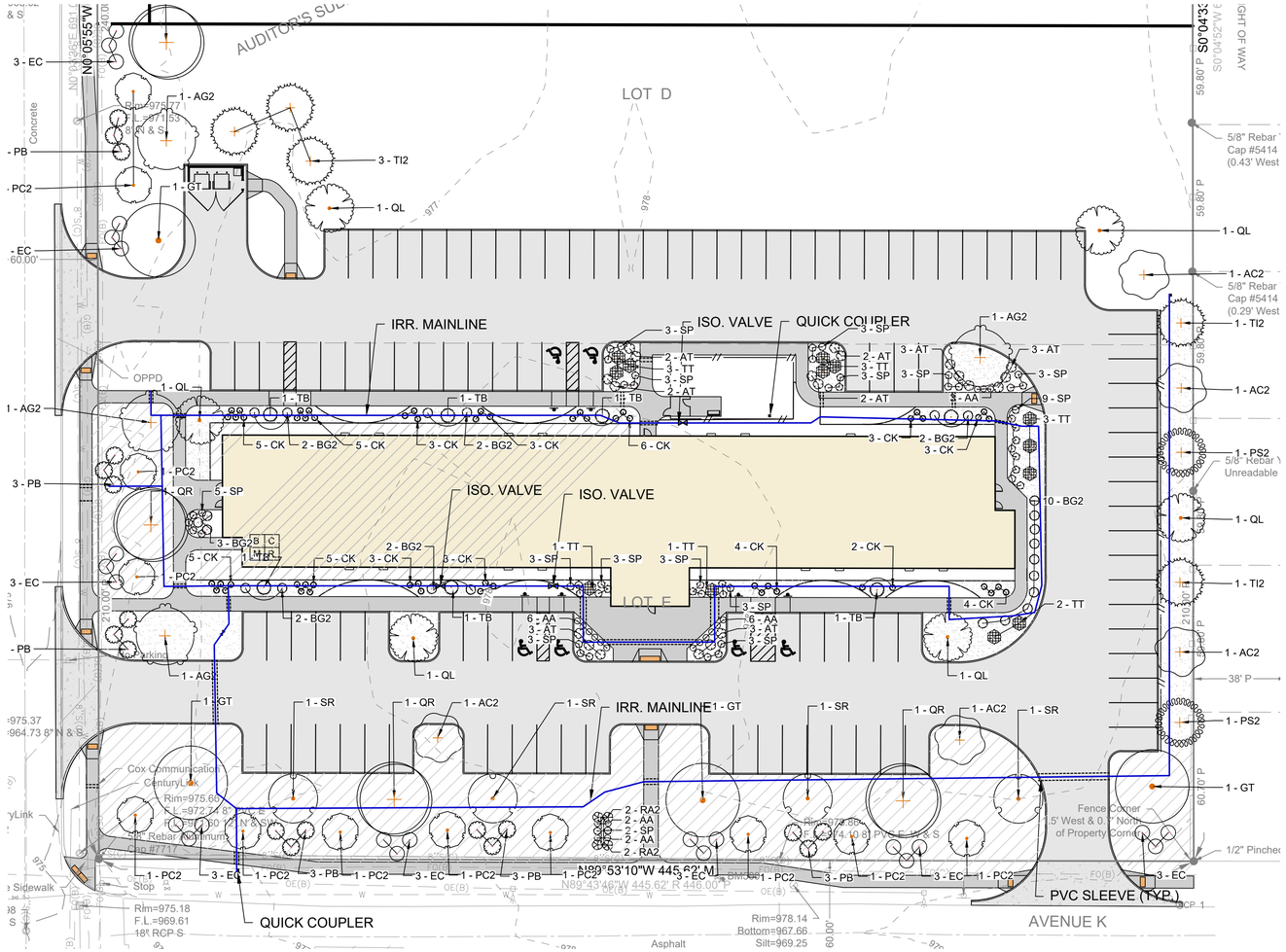

LEGEND

■	¾" QUICK COUPLER VALVE	RAINBIRD 44-RC
C	CONTROLLER	RAINBIRD ESP SERIES
B	BACKFLOW PREVENTER	BY PLUMBING CONTRACTOR
⚌⚌⚌⚌	PVC SLEEVE	AS SPECIFIED
⋈	ISOLATION VALVE WITH VALVE BOX	NIBCO T-FP-600A
R	WIRELESS RAIN SENSOR	RAINBIRD WR2-RFC
———	IRRIGATION MAIN LINE	PVC MAINLINE (24" MINIMUM DEPTH)
M	METER	BY PLUMBING CONTRACTOR

IRRIGATED AREAS

SPRAY HEAD IRRIGATION TREE / TURF ZONE AREAS, TOTAL: 20,542 SQ. FT.

DRIP IRRIGATION SHRUB / PERENNIAL ZONE AREAS, TOTAL: 4,122 SQ. FT.

IRRIGATION LAYOUT SHOWN INDICATES DESIGN INTENT ONLY. CONTRACTOR IS RESPONSIBLE FOR ADJUSTMENT OF HEAD LOCATIONS TO PROVIDE ADEQUATE COVERAGE.

IRRIGATION PLAN SHOWS SCHEMATIC LAYOUT OF IRRIGATION COMPONENTS. CONTRACTOR TO FIELD ADJUST DESIGN OF SYSTEM AS CONDITIONS WARRANT.

SEE SHEET C12 FOR IRRIGATION SPECS.

IRRIGATION GENERAL NOTES

A. CONTRACTOR TO LOCATE AND PROTECT EXISTING UTILITIES IN AND NEAR THE AREA OF WORK. DAMAGE OCCURRING AS A RESULT OF CONSTRUCTION ACTIVITY SHALL BE REPAIRED/REPLACED BY THE CONTRACTOR TO THE OWNER'S SATISFACTION AT NO COST TO THE OWNER.

B. CONTRACTOR TO FURNISH ALL MATERIALS, IRRIGATION EQUIPMENT, PIPE FITTINGS AND ACCESSORIES REQUIRED TO COMPLETE A FULLY-FUNCTIONING SYSTEM.

C. ALL PRIMARY AND SECONDARY WIRE TAPS AND CONNECTIONS SHALL CONFORM WITH STATE AND LOCAL CODES AND BE PERFORMED BY A LICENSED ELECTRICIAN IN THE STATE OF IOWA.

D. ALL WIRE TO BE UL APPROVED FOR DIRECT BURY.

E. ALL PRODUCTS SHALL BE INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS, REQUIREMENTS AND RECOMMENDATIONS.

F. FLOW RATES THROUGH PIPES SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS.

G. INSTALL CONCRETE THRUST BLOCKS AT ALL MAIN LINE PIPE BENDS AND INTERSECTIONS. SEE DETAIL.

H. ALL IRRIGATED AREAS SHALL BE COVERED BY HEAD-TO-HEAD COVERAGE.

I. CONTRACTOR RESPONSIBLE FOR FIELD ADJUSTING IRRIGATION SYSTEM TO PREVENT OVER SPRAY ONTO PAVEMENT, BUILDINGS, FENCES OR STRUCTURES.

J. VALVES SHALL BE CLUSTERED AND COMBINED TO MINIMIZE THE AMOUNT OF VALVE BOXES. ALL BOXES SHALL BE LOCATED IN OUT OF BOUNDS AREAS AS FAR FROM THE FIELD OF PLAY AS POSSIBLE.

K. THE ROUTING OF ANY IRRIGATION LINE UNDER PAVEMENTS, THROUGH WALLS, ETC. SHALL BE FED THROUGH SCHEDULE 40 PVC CONDUITS TWICE THE SIZE OF THE IRRIGATION PIPE TO BE CARRIED. INSTALLATION OF CONDUITS ARE TO BE COORDINATED BY THE PRIME CONTRACTOR AND IRRIGATION CONTRACTOR PRIOR TO CONSTRUCTION.

L. IRRIGATION LAYOUT INDICATES DESIGN INTENT. CONTRACTOR RESPONSIBLE FOR ADJUSTING HEAD AND VALVE LOCATIONS, SELECTION OF NOZZLES, ETC. TO ENSURE ADEQUATE COVERAGE.

M. THE IRRIGATION SYSTEM IS DESIGNED TO BE COMPLETELY DRAINED BY THE USE OF AIR COMPRESSORS TO PROTECT THE PIPE FROM DAMAGE DURING FREEZING TEMPERATURE.

N. CONTRACTOR RESPONSIBLE FOR TRACKING ANY CHANGES OR ADDITIONAL INFORMATION ON AS-BUILT DRAWINGS AND SUBMIT ELECTRONICALLY TO THE ENGINEER FOR FINAL REVIEW.

O. SEE SPECIFICATION SECTION 323000 FOR IRRIGATION INFORMATION, PRODUCTS AND INSTALLATION.

IRRIGATION INSTALLATION NOTES

1. POINT OF CONNECTION
   A. THE POINT OF CONNECTION FOR THE IRRIGATION SYSTEM IS LOCATED IN THE BUILDING LOCATED TO THE WEST SIDE OF THE BUILDING.
   B. IRRIGATION PUMP LOCATION. SEE SPECIFICATIONS.
2. INSTALL ISOLATION VALVE IN IRRIGATION BOX PRIOR TO NEW ELECTRONIC ZONE VALVES. SEE SPECIFICATIONS.
3. ELECTRONIC ZONE VALVES. CLUSTER VALVES IN COMMON VALVE BOX AND LOCATE IN MULCH PLANT BED AREAS.
4. IRRIGATION HEAD WITH SWING JOINT. SEE LEGEND AND SPECIFICATIONS FOR HEAD TYPE.
5. QUICK COUPLER VALVE. COORDINATE LOCATION WITH ENGINEER PRIOR TO INSTALLATION.

SYSTEM REQUIREMENTS
P.O.C. - LOCATED IN A MECHANICAL ROOM WEST SIDE OF THE BUILDING. SEE OWNER FOR ACCESS.

AVAILABLE FLOW
AVAILABLE PRESSURE (ESTIMATED)- 65 PSI

CONTRACTOR TO TEST PRESSURE PRIOR TO SUBSTANTIAL COMPLETION AND SUBMIT TEST RESULTS TO ENGINEER FOR APPROVAL.

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FEET

MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = 30'	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C10

CARTER LAKE, IOWA

231 BENNETT AVENUE
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THE RESIDENCE AT CARTER LAKE

IRRIGATION PLAN

SNYDER & ASSOCIATES, INC.

SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C10

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IRRIGATION SYSTEM

PART 1 - GENERAL REQUIREMENTS

1.1 GENERAL

A. THE FOLLOWING IRRIGATION SYSTEM WHEN FULLY COMPLETED SHALL WATER ALL AREAS AS SHOWN ON THE PLANS. IT IS THE INTENT OF THE DIAGRAMMATIC IRRIGATION PLAN TO INSTALL ALL PRODUCTS WITHIN THE AREAS TO BE IRRIGATED.
B. THE CONTRACTOR SHALL PROVIDE ALL DESIGN, LABOR, MATERIALS, EQUIPMENT, AND SUPERVISION REQUIRED TO CONSTRUCT THE IRRIGATION SYSTEM.
C. IRRIGATION SYSTEM SHALL BE INSTALLED AS A COMPLETE COORDINATED SYSTEM. ALL SYSTEM COMPONENTS SHALL BE COORDINATED TO PROVIDE A FULLY COMPATIBLE FUNCTIONING SYSTEM.
D. IRRIGATION SYSTEM COMPONENTS SHALL BE INSTALLED WITH RAIN BIRD EQUIPMENT, OR APPROVED EQUAL PRIOR TO BIDDING.
E. PROVIDE AND INSTALL IRRIGATION CONTROLLER ON SEPARATE CIRCUIT. COORDINATE LOCATION WITH OWNER. 120 VAC WIRING BY ELECTRICAL CONTRACTOR.
F. PROVIDE AND INSTALL SLEEVES UNDER WALKS AND DRIVES AS REQUIRED. BOTH PIPING AND 24 VAC WIRING SLEEVES SHALL BE SCHEDULE 40 PVC. SIZE, DEPTH, AND LOCATION AS REQUIRED. COORDINATE WITH OWNER.

1.2 IRRIGATION DESIGN

A. THE IRRIGATION CONTRACTOR SHALL PREPARE A DETAILED IRRIGATION DESIGN SHOP DRAWING FOR THE ENGINEER AND OWNER'S REVIEW BASED ON THE SCHEMATIC IRRIGATION DRAWING. DESIGN SHALL INCLUDE THE LOCATION OF IRRIGATION CONTROL SYSTEMS, COMPONENTS, LINE SIZES AND OTHER ITEMS TO ENSURE A FULLY-FUNCTIONING IRRIGATION SYSTEM AS INDICATED ON THE DRAWINGS.

1.3 CODES, INSPECTIONS, AND PERMITS

A. THE ENTIRE INSTALLATION SHALL FULLY COMPLY WITH ALL LOCAL AND STATE LAWS AND ORDINANCES, AND WITH ALL THE ESTABLISHED CODES APPLICABLE THERETO.
B. THE CONTRACTOR SHALL TAKE OUT ALL REQUIRED PERMITS, ARRANGE FOR ALL NECESSARY INSPECTIONS AND SHALL PAY ANY FEES AND EXPENSES IN CONJUNCTION WITH THE SAME AS A PART OF THE WORK UNDER THIS SECTION.

1.4 GUARANTEE

A. FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE OF WORK PERFORMED UNDER THIS SECTION, THE CONTRACTOR SHALL PROMPTLY FURNISH AND INSTALL ANY AND ALL PARTS AND EQUIPMENT WHICH PROVE DEFECTIVE IN MATERIALS, WORKMANSHIP, OR INSTALLATION AT NO ADDITIONAL COST TO OWNER.
B. DURING THE ONE (1) YEAR GUARANTEE PERIOD, THE CONTRACTOR SHALL DRAIN THE IRRIGATION SYSTEM AND WINTERIZE IT FOR EACH WINTER DURING THE GUARANTEE PERIOD AND SHALL PUT THE IRRIGATION SYSTEM BACK INTO OPERATION IN THE SPRING AT NO ADDITIONAL COST TO OWNER.

1.5 SUBMITTALS

A. SUBMIT THREE (3) COPIES OF MANUFACTURER'S TECHNICAL DATA AND SPECIFICATIONS FOR ALL COMPONENT PARTS OF THE IRRIGATION SYSTEM. INCLUDE MANUFACTURER'S PRINTED LITERATURE FOR OPERATION AND MAINTENANCE OF OPERATING SYSTEM ELEMENTS.
B. DESCRIBE IN DETAIL, IN THE BID FOR THIS WORK, ANY PROPOSED DEVIATION OR VARIANCE FROM THE EQUIPMENT OR INSTALLATION DESCRIBED HEREIN.
C. SUBMIT THREE (3) COPIES OF THE IRRIGATION DESIGN DRAWING AS PREPARED BY THE IRRIGATION CONTRACTOR, FOR THE ENGINEER'S REVIEW PRIOR TO ORDERING MATERIALS.
D. SUBMIT RESULTS OF A PRESSURE TEST AT THE POINT OF CONNECTION (POC) PRIOR TO SYSTEM INSTALLATION TO VERIFY ADEQUATE PRESSURE AND OPERATION FOR THE PROPOSED IRRIGATION SYSTEM.
E. SUBMIT THREE (3) COPIES OF THE IRRIGATION DESIGN AND INSTALLATION DRAWINGS FOR THE SYSTEM INCLUDING IRRIGATION ZONE ROUTING, VALVE LOCATIONS, PIPING, IRRIGATION CONTROLS, SLEEVING, SPRAY HEADS, CONTROL ZONE COMPONENTS, SHOP DRAWINGS AND OTHER PERTINENT INFORMATION FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION. SHOP DRAWINGS TO INCLUDE PRODUCT/COMPONENT LOCATIONS, CRITICAL DIMENSIONS AND ANY MODIFICATIONS TO THE STANDARD MANUFACTURER'S INSTALLATION DETAILS.

PART 2 - PRODUCTS

2.1 GENERAL

A. ALL IRRIGATION COMPONENTS SHALL BE RAIN BIRD AS MANUFACTURED BY THE RAIN BIRD CORPORATION (WWW.RAINBIRD.COM), OR APPROVED EQUAL. ALL APPROVED EQUAL SUBSTITUTIONS ARE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER AND OWNER FOR EQUALITY TO ORIGINAL EQUIPMENT SELECTIONS. THE CONTRACTOR SHALL SUBMIT ALL REQUESTS FOR APPROVED EQUAL SUBSTITUTIONS TO THE ENGINEER IN WRITING A MINIMUM 10 DAYS PRIOR TO THE BID OPENING FOR APPROVAL.

2.2 COPPER PIPING
A. AS PER LOCAL CODES.

2.3 P.V.C.
A. SIZES 1" DIAMETER AND LARGER.
B. VIRGIN, HIGH IMPACT, POLY-VINYL CHLORIDE (P.V.C.) PIPE, SCHEDULE 1120-1220. MAINLINE PIPING: CLASS 200, HAVING A MINIMUM OF 200 PSI WORKING PRESSURE RATING. LATERAL PIPING: CLASS 200, HAVING A MINIMUM OF 200 PSI WORKING PRESSURE RATING.
C. CONTINUOUSLY AND PERMANENTLY MARKED WITH MANUFACTURER'S NAME, MATERIAL, SIZE, AND SCHEDULE OR TYPE.
D. PIPE: CONFORM TO CS 207-60 OR LATEST REVISION.
E. MATERIAL: CONFORM TO CS 256-63 OR LATEST REVISION.

2.4 P.V.C. PIPE FITTINGS
A. SCHEDULE 40 P.V.C. SOLVENT WELD OR BELLED FITTINGS; SADDLES PROHIBITED.
B. CONFORM TO ASTM D1784, ASTM D2466.

2.5 SLEEVES
A. SEE PLAN FOR LOCATIONS. INSTALL SCHEDULE 40 PVC FOR SLEEVES TO ACCOMMODATE IRRIGATION LINE AND WIRING.

B. COORDINATE THE TIMING OF THE INSTALLATION OF THE SLEEVES TO OCCUR PRIOR TO WALL FOUNDATION CONSTRUCTION AND PAVEMENT TO ENSURE THE SLEEVES ARE PLACED IN THE CORRECT LOCATION AND DEPTH UNDER OR THROUGH PROPOSED IMPROVEMENTS.

2.6 ELECTRONIC CONTROL VALVES

A. RAIN BIRD ELECTRIC CONTROL VALVES, GLOBE AND ANGLE VALVES OPERATED BY LOW-POWER SOLENOID, NORMALLY CLOSED, AND MANUAL FLOW ADJUSTMENT.
B. GROUP VALVES TOGETHER IN VALVE BOXES AS OFTEN AS POSSIBLE.

2.7 CONTROL CABLE

A. ALL ELECTRICAL CONTROL AND GROUND WIRE SHALL BE "UF" DIRECT BURIAL.
B. 12 GA. WHITE COMMON NEUTRAL; 14 G. RED CONTROL WIRE.
C. A SEPARATE COMMON NEUTRAL WIRE IS REQUIRED FROM CONTROLLER A LONG ENTIRE MAIN LINE.
D. PROVIDE ONE SPARE CONTROL WIRE FROM CONTROLLER ALONG ENTIRE MAIN LINE.
E. NO ALUMINUM WIRE ALLOWED.
F. WIRING USED FOR CONNECTING AUTOMATIC REMOTE CONTROL VALVE TO AUTOMATIC CONTROLLERS SHALL BE TYPE "UF", 600 VOLT, SOLID COPPER, SINGLE CONDUCTOR WIRE WITH P.V.C. INSULATION AND BEAR "UL" APPROVAL FOR DIRECT UNDERGROUND BURIAL FEEDER CABLE.
G. DIRECT BURY SPLICE KIT: 3M DBY.

2.8 IRRIGATION HEADS

A. PROVIDE RAINBIRD SPRAY HEADS; SELECT NOZZLES BASED ON AREAS TO BE IRRIGATED. MEET ALL MANUFACTURER'S SPECIFICATIONS, REQUIREMENTS AND RECOMMENDATIONS.
B. SPACING OF HEADS SHALL NOT EXCEED MANUFACTURER'S MAXIMUM RECOMMENDATIONS. HEAD-TO-HEAD COVERAGE IS REQUIRED.
C. MATCHED PRECIPITATION WILL BE REQUIRED ON ALL SPRINKLERS OPERATING ON THE SAME ZONE.
D. CONFORM TO MANUFACTURER'S SPECIFICATIONS CONCERNING DIAMETER OF THROW AND GALLONS AT GIVEN PRESSURES.

2.9 CONTROL EQUIPMENT

A. RAIN BIRD ESP SERIES IRRIGATION CONTROLLER, WALL MOUNTED.
B. PROVIDE IN AN INTERIOR WALL-MOUNTED CONTROLLER BOX WITH LOCKABLE ACCESS. COORDINATE LOCATION WITH MECHANICAL AND ELECTRICAL EQUIPMENT LOCATIONS.
C. FURNISH LOW VOLTAGE SYSTEM MANUFACTURED EXPRESSLY FOR CONTROL OF AUTOMATIC CIRCUIT VALVES OF UNDERGROUND IRRIGATION SYSTEMS. PROVIDE UNIT(S) OF CAPACITY TO SUIT NUMBER OF CIRCUITS, WITH ROOM FOR A MINIMUM FOUR ADDITIONAL ZONES IN THE FUTURE.
D. TRANSFORMER: TO CONVERT SERVICE VOLTAGE TO CONTROL VOLTAGE OF 24 VOLTS.
E. CIRCUIT CONTROL: EACH CIRCUIT VARIABLE FROM APPROXIMATELY 5 TO 60 MINUTES. INCLUDE SWITCH FOR MANUAL OR AUTOMATIC OPERATION OF EACH CIRCUIT.
F. TIMING DEVICE: ADJUSTABLE, 24-HOUR AND 7 OR 14 DAY CLOCKS TO OPERATE ANY TIME OF DAY AND SKIP ANY DAY IN A 7 OR 14 DAY PERIOD.
G. SETTINGS: SOLID STATE.
H. COORDINATE FINAL MOUNTING LOCATION OF CONTROLLER WITH OWNER.
I. NO TIME LAG BETWEEN SECTIONS OR STATIONS.

2.10 REDUCED PRESSURE BACKFLOW DEVICE (RPZ)

A. TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
B. CONNECTION TO BACKFLOW DEVICE SHALL BE INSTALLED ACCORDING TO LOCAL CODES AND MANUFACTURER'S SPECIFICATIONS, REQUIREMENTS AND RECOMMENDATIONS.
C. PROVIDE ALL PIPING, FITTINGS AND SUPPORT EQUIPMENT FRAME WORK AND FASTENERS TO PROVIDE REQUIRED CLEARANCES. PROVIDE STEEL SUPPORTS AND ANCHOR TO CONCRETE SLAB TO SUPPORT DEVICE.
D. SUBMIT PRODUCT INFORMATION TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
E. TO BE INSTALLED IN THE BUILDING MECHANICAL ROOM. LOCATION AS PER THE MECHANICAL/ELECTRICAL/PLANTING PLANS. COORDINATE LOCATION WITH OTHER MECHANICAL WORK AND EQUIPMENT PRIOR TO CONSTRUCTION.

2.11 IRRIGATION METER

A. CONTRACTOR TO PROVIDE AS PER LOCAL CODE.

2.12 QUICK COUPLING VALVES

A. LOCATED IN INTERVALS ALONG ALL MAINLINE PIPE. VERIFY FINAL LOCATIONS WITH OWNER. SEE PLAN FOR LOCATIONS.
B. INSTALL QUICK COUPLING VALVE IN 10" VALVE BOX.
C. PROVIDE MATCHING QUICK COUPLER KEYS. ONE KEY FOR EACH 3 COUPLING VALVES.

2.13 ISOLATION GATE VALVES

A. SEE PLANS FOR LOCATION AND VERIFY FINAL LOCATIONS WITH THE OWNER.
B. SIZE VALVE TO MATCH LINE SIZE.
C. NIBCO BRASS BALL VALVE S-FP-600A TWO PIECE VALVE, OR EQUAL, AS PER MANUFACTURER'S SPECIFICATIONS.
D. INSTALL ISOLATION GATE VALVES IN 10" VALVE BOX IN LOCATIONS SHOWN ON PLANS.

2.14 VALVE BOX FOR ELECTRICAL CONTROL VALVES

A. ALL VALVE BOX LOCATIONS TO BE APPROVED BY OWNER PRIOR TO INSTALLATION
B. SINGLE VALVE SETUP: 12" CIRCULAR BOX.
C. MULTI-VALVE SETUP: OVERSIZED BOX. USE MANUFACTURER'S RECOMMENDED EXTENSION KITS IF REQUIRED.

2.15 SLEEVES

A. COORDINATE WITH OWNER AS NECESSARY FOR LOCATIONS. INSTALL SCHEDULE 40 PVC FOR SLEEVES TO ACCOMMODATE IRRIGATION LINE AND WIRING.

2.16 SWING JOINTS

A. LASCO 360 DEG. SWING JOINT ASSEMBLY AS MANUFACTURED BY PHILIPS INDUSTRIES OR APPROVED EQUAL.

2.17 DRIP IRRIGATION COMPONENTS

A. PROVIDE AND INSTALL ALL EQUIPMENT AND MATERIALS, DELIVERED NEW TO THE SITE IN UNOPENED CONTAINERS WITHOUT FLAWS OR DEFECTS.
B. PROVIDE CONTROL ZONE KIT ASSEMBLY AS MANUFACTURED BY RAIN BIRD THAT INCLUDES CONTROL VALVE FILTRATION AND PRESSURE REGULATION SIZED TO MEET WATER DEMANDS AND FLOW REQUIREMENTS. MEET ALL MANUFACTURER'S SPECIFICATIONS, REQUIREMENTS AND RECOMMENDATIONS.
C. PROVIDE FLEXIBLE DUAL-LAYERED PRESSURE COMPENSATING XF SERIES DRIPLINE ON-SURFACE DRIPLINE WITH EMITTER SPACING AND DRIPLINE ROW SPACING TO DELIVERED RECOMMENDED WATER SUPPLY TO PLANT MATERIAL AS SHOWN IN THE AREAS INDICATED IN THE PLANS AND APPROVED SHOP DRAWING.
D. PROVIDE INSERT OR COMPRESSION FITTINGS THAT ARE COMPATIBLE WITH INLINE EMITTER TUBING AS REQUIRED.
E. PROVIDE LOW-VOLUME POINT-SOURCE EMISSION DEVICES TO EFFICIENTLY DELIVER IRRIGATION WATER TO THE PLANT ROOT ZONE.

PART 3 - EXECUTION

3.1 SYSTEM DESIGN

A. DESIGN PRESSURE: VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION.
B. LOCATION OF IRRIGATION MAIN LINE: LOCATE LINES AS PER MANUFACTURER'S RECOMMENDATIONS. MAKE ADJUSTMENTS AS NECESSARY TO AVOID PLANTINGS AND OTHER OBSTRUCTIONS. EXACT LOCATIONS OF PIPING, VALVES, AND OTHER COMPONENTS SHALL BE ESTABLISHED BY THE CONTRACTOR IN THE FIELD AT TIME OF INSTALLATION AND ON THE APPROVED SHOP DRAWINGS.
C. LOCATION OF HEADS: LOCATE HEADS AS PER MANUFACTURER'S RECOMMENDATIONS. MAKE MINOR ADJUSTMENTS AS NECESSARY TO AVOID PLANTINGS AND OTHER OBSTRUCTIONS. IRRIGATION SYSTEM LAYOUT IS DIAGRAMMATIC. EXACT LOCATIONS OF PIPING, SPRINKLER HEADS, VALVES, AND OTHER COMPONENTS SHALL BE ESTABLISHED BY THE CONTRACTOR IN THE FIELD AT TIME OF INSTALLATION AND ON THE APPROVED SHOP DRAWINGS.
D. MINIMUM WATER COVERAGE: SYSTEM TO BE DESIGNED TO DELIVER THE EQUIVALENT OF 1.5" OF RAINFALL PER WEEK. SYSTEM OPERATING TIME NOT T EXCEED 8 HOURS PER 24 HOUR DAY.
E. MINOR ADJUSTMENTS TO SYSTEM FIELD LAYOUT WILL BE PERMITTED TO CLEAR EXISTING FIXED OBSTRUCTIONS; FINAL FIELD LAYOUT SHALL BE ACCEPTABLE TO THE OWNER BASED ON THE APPROVED SHOP DRAWINGS.

3.2 INSTALLATION

A. EXCAVATING AND BACKFILLING:
1. EXCAVATION SHALL INCLUDE ALL MATERIALS ENCOUNTERED, EXCEPT MATERIALS THAT CANNOT BE EXCAVATED BY NORMAL MECHANICAL MEANS.
   a. ROCK EXCAVATION: SUBMIT A UNIT COST PER FOOT OF TRENCH FOR ROCK EXCAVATION. INCLUDE IN PRICE ADDITIONAL BACKFILL MATERIALS REQUIRED TO REPLACE EXCAVATED ROCK.
2. EXCAVATE TRENCHES OF SUFFICIENT DEPTH AND WIDTH TO PERMIT PROPER HANDLING AND INSTALLATION OF PIPE AND FITTINGS.
3. IF THE PULLING METHOD IS USED, THE PIPE "PLOW" SHALL BE A VIBRATORY TYPE. STARTING AND FINISHING HOLES FOR PIPE PULLING SHALL NOT EXCEED A 1'-0" BY 3'-0" OPENING.
4. EXCAVATE TO DEPTHS REQUIRED TO PROVIDE 2" DEPTH OF EARTH FILL OR SAND BEDDING FOR PIPING WHEN ROCK OR OTHER UNSUITABLE BEARING MATERIAL IS ENCOUNTERED.
5. FILL TO MATCH ADJACENT GRADE ELEVATIONS WITH APPROVED EARTH FILL MATERIAL. PLACE AND COMPACT FILL IN LAYERS NOT GREATER THAN 8" DEPTH.
   a. PROVIDE APPROVED EARTH FILL OR SAND TO A POINT 4" ABOVE THE TOP OF PIPE.
   b. OVERFILL WITH APPROVED EXCAVATED OR BORROW FILL MATERIALS FREE OF LUMPS OR ROCKS LARGER THAN 3" IN ANY DIMENSION. LEVEL, COMPACT AND WATER SETTLE. SHOULD SETTLEMENT OCCUR, REFILL AND RE-SOD AS REQUIRED.
6. EXCEPT AS INDICATED, INSTALL IRRIGATION MAINS WITH A MINIMUM COVER OF 18" BASED ON FINISHED GRADES. INSTALL IRRIGATION LATERALS WITH A MINIMUM COVER OF 12" BASED ON FINISHED GRADES.
7. EXCAVATE TRENCHES AND INSTALL PIPING AND FILL DURING THE SAME WORKING DAY. DO NOT LEAVE OPEN TRENCHES OR PARTIALLY FILLED TRENCHES OPEN OVERNIGHT.

B. POLYETHYLENE PIPE (PE)

1. INSTALL POLYETHYLENE PIPE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE FOR THERMAL EXPANSION AND CONTRACTION.
2. WHERE NECESSARY SAW CUT POLYETHYLENE PIPE, USING A SQUARE-IN SAWING DEVICE TO ENSURE A SQUARE CUT. REMOVE BURRS AND SHAVINGS AT CUT ENDS PRIOR TO INSTALLATION.
3. MAINTAIN PIPE INTERIORS FREE OF DIRT AND DEBRIS. CLOSE OPEN ENDS OF PIPE BY ACCEPTABLE METHODS WHEN PIPE INSTALLATION IS NOT IN PROGRESS AND OVER ALL NON-WORKING HOURS.

C. HEADS, FITTINGS, VALVES, AND ACCESSORIES:

1. INSTALL FITTINGS, VALVES, SPRINKLER HEADS, RISERS, AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
   a. PROVIDE CONCRETE THRUST BLOCKS WHERE REQUIRED AT FITTINGS VALVES AND ALL CHANGE OF DIRECTIONS.
2. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADES, EXCEPT AS OTHERWISE INDICATED.
3. INSTALL ROTORS WITH MANUFACTURED O-RING SWING JOINTS.
4. OBTAIN OWNER'S REVIEW AND ACCEPTANCE OF HEIGHT FOR PROPOSED SPRINKLER HEADS AND VALVES PRIOR TO INSTALLATION.
5. LOCATE SPRINKLER HEADS TO ASSURE PROPER COVERAGE OF INDICATED AREAS. DO NOT EXCEED SPRINKLER HEAD SPACING DISTANCES INDICATED.
6. INSTALL GEAR-DRIVEN SPRINKLERS ON 360-DEGREE SWING JOINT ASSEMBLY AS PER MANUFACTURER'S RECOMMENDATION.
7. INSTALL QUICK-COUPLING VALVES IN 10" VALVE BOX ON 360-DEGREE SWING JOINT ASSEMBLY AS PER MANUFACTURER'S RECOMMENDATION WITH STABILIZER.
8. INSTALL FITTINGS AND ACCESSORIES AS SHOWN OR REQUIRED TO COMPLETE THE SYSTEM.
9. INSTALL CONTROLLER:
   a. COORDINATE LOCATION WITH OWNER.
   b. WATERPROOF WIRE CONDUIT TO PROVIDE A COMPLETE, WATERPROOF, PERMANENT AND NEAT JOB.
   c. GROUND CONTROLLER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
10. INSTALL IN-GROUND CONTROL VALVES IN A VALVE ACCESS BOX AS INDICATED.
11. INSTALL VALVE ACCESS BOXES ON A SUITABLE BASE OF GRAVEL TO PROVIDE A LEVEL FOUNDATION AT PROPER GRADE TO PROVIDE DRAINAGE OF THE ACCESS BOX.
12. SEAL THREADED CONNECTIONS ON PRESSURE SIDE OF CONTROL VALVES AS PER MANUFACTURER'S RECOMMENDATIONS.

D. CONTROL WIRING:

1. INSTALL ELECTRIC CONTROL CABLE IN THE PIPING TRENCHES WHEREVER POSSIBLE. PLACE WIRE IN TRENCH ADJACENT TO PIPE. INSTALL WIRE WITH SLACK TO ALLOW FOR THERMAL EXPANSION AND CONTRACTION. EXPANSION JOINTS IN WIRE SHALL BE PROVIDED AS PER MANUFACTURER'S RECOMMENDATIONS. WHERE NECESSARY TO RUN WIRE IN A SEPARATE TRENCH, PROVIDE A MINIMUM COVER OF 12".
2. PROVIDE SUFFICIENT SLACK AT SITE CONNECTIONS AT REMOTE CONTROL VALVES IN CONTROL BOXES, AND AT ALL WIRE SPLICES TO ALLOW RAISING THE VALVE BONNET OR SPLICE TO THE SURFACE WITHOUT DISCONNECTING THE WIRES WHEN REPAIR IS REQUIRED.
3. MAKE WIRE CONNECTIONS TO REMOTE CONTROL ELECTRIC VALVES AND SPLICES OF WIRE IN THE FIELD, USING 3M DBY OR 3M DBR DIRECT BURY SPLICE KIT (OR APPROVED EQUAL).
4. PROVIDE TIGHT JOINTS TO PREVENT LEAKAGE OR WATER AND CORROSION BUILD-UP ON THE JOINT.

E. SLEEVES: COORDINATE WITH OWNER. INSTALL SLEEVES PRIOR TO INSTALLATION OF PAVEMENT AND RETAINING WALLS. THE SCHEDULING AND COORDINATION OF THE IRRIGATION SLEEVES IS THE IRRIGATION CONTRACTOR'S RESPONSIBILITY.

F. FLUSHING, TESTING, AND ADJUSTMENT:

1. AFTER SPRINKLER PIPING AND RISERS/SWING JOINTS ARE INSTALLED AND BEFORE SPRINKLER HEADS ARE INSTALLED, OPEN CONTROL VALVES AND FLUSH OUT THE SYSTEM WITH FULL HEAD OF WATER.
2. PERFORM SYSTEM TESTING UPON COMPLETION OF EACH SECTION. MAKE NECESSARY REPAIRS AND RE-TEST REPAIRED SECTIONS AS REQUIRED.
3. ADJUST SPRINKLERS AFTER INSTALLATION FOR PROPER AND ADEQUATE DISTRIBUTION OF THE WATER OVER THE COVERAGE PATTERN. ADJUST FOR THE PROPER ARC OF COVERAGE.
4. TIGHTEN NOZZLES ON SPRAY TYPE SPRINKLERS AFTER INSTALLATION. ADJUST SPRINKLER ADJUSTING SCREW ON LATERAL LINE OR CIRCUIT AS REQUIRED FOR PROPER RADIUS. INTERCHANGE NOZZLES PATTERNS AS DIRECTED BY THE OWNER TO GIVE BEST ARC OF COVERAGE.
5. ADJUST ALL ELECTRIC REMOTE CONTROL VALVE FLOW CONTROL STEMS FOR SYSTEM BALANCE.
6. TEST AND DEMONSTRATE THE CONTROLLER BY OPERATING APPROPRIATE DAY, HOUR, AND STATION SELECTION FEATURES AS REQUIRED TO AUTOMATICALLY START AND SHUT DOWN IRRIGATION CYCLES TO ACCOMMODATE PLANT REQUIREMENTS AND WEATHER CONDITIONS.

G. PVC PIPE AND FITTINGS:

1. USE ONLY STRAP-TYPE FRICTION WRENCHES FOR THREADED PLASTIC PIPE.
2. PVC SOLVENT WELD PIPE AND FITTINGS:
   a. USE APPROPRIATE PRIMER AND SOLVENT CEMENT. JOIN PIPE IN MANNER RECOMMENDED BY PIPE AND FITTING MANUFACTURERS AND IN ACCORDANCE WITH ACCEPTED INDUSTRY PRACTICES.
   b. CURE FOR THIRTY (30) MINUTES BEFORE HANDLING AND TWENTY-FOUR (24) HOURS BEFORE PRESSURIZING OR INSTALLING WITH VIBRATORY PLOW.
   c. SNAKE PIPE FROM SIDE TO SIDE WITHIN TRENCH.
3. PVC THREADED CONNECTIONS:
   a. USE ONLY FACTORY-FORMED THREADS. FIELD-CUT THREADS ARE NOT PERMITTED.
   b. APPLY THREAD SEALANT IN MANNER RECOMMENDED BY COMPONENT, PIPE AND SEALANT MANUFACTURERS AND IN ACCORDANCE WITH ACCEPTED INDUSTRY PRACTICES.

H. DRIPLINE TUBING AND FITTINGS:
I. USE ONLY MANUFACTURED DRIPLINE TUBING CONNECTIONS OR TRANSITIONS AS RECOMMENDED BY MANUFACTURER.

3.3 DRIPLINE LAYOUT OF WORK

A. LAYOUT OUT DRIPLINE IRRIGATION SYSTEM BEFORE INSTALLATION OF ANY COMPONENTS. ITEMS INCLUDE MANIFOLD/HEADER PIPE AND TUBING, SLEEVES, CONTROL ZONE ASSEMBLIES, FLUSH VALVES, AIR RELIEF VALVES AND CHECK VALVES BASED ON THE APPROVED SHOP DRAWING.

B. DETERMINE ANY CONFLICTS AND NECESSARY CHANGES AND CONTACT THE ENGINEER WITH ANY REQUIRED ADJUSTMENTS PRIOR TO INSTALLATION. MARK ANY REVISIONS TO THE AS-BUILT DRAWINGS.

3.4 DRIPLINE EXCAVATION, TRENCHING AND BACKFILL

A. EXCAVATE AND INSTALL PIPES AT MINIMUM COVER INDICATED ON THE DRAWINGS OR SPECIFICATIONS.
B. MINIMUM COVER FOR DRIPLINE COMPONENTS (TOP OF PIPE TO FINISHED GRADE):
   I. BURIED PVC MANIFOLD AND SUPPLY HEADER PIPE TO DRIPLINE GRID LAYOUTS: 12" TO TOP OF PIPE.
   2. BURIED DRIPLINE LATERAL PIPE DOWNSTREAM OF PVC MANIFOLD AND SUPPLY HEADER PIPE: 4" TO TOP OF PIPE
   3. ON-GRADE DRIP LINE LATERAL PIPE DOWNSTREAM PVC MANIFOLD AND SUPPLY HEADER PIPE: SECURE TO FINISHED GRADE WITH APPROVED TUBING STAKES.
C. INSTALL AND TEST PIPING PRIOR TO INSTALLATION OF LANDSCAPE FABRIC AND MULCH.
D. BACKFILL ONLY AFTER BURIED LINES HAVE BEEN REVIEWED, TESTED AND APPROVED.
E. EXCAVATED MATERIAL IS GENERALLY SATISFACTORY FOR BACKFILL. USE BACKFILL FREE OF SHARP ANGLES, RUBBISH, VEGETATIVE MATTER, FROZEN MATERIALS AND STONES LARGER THAN 1" DIAMETER. REMOVE MATERIAL NOT SUITABLE FOR BACKFILL.
F. DRESS BACKFILL AREAS TO ORIGINAL GRADE.
CONTACT ENGINEER FOR TRENCH DEPTH ADJUSTMENTS WHERE UTILITIES CONFLICT WITH IRRIGATION TRENCHING AND PIPEWORK.

3.5 INSTALLATION OF DRIPLINE IRRIGATION COMPONENTS

A. CONTROL ZONE KIT ASSEMBLY
   1. FLUSH MAINLINE BEFORE INSTALLING CONTROL ZONE KIT ASSEMBLY.
   2. CONNECT CONTROL WIRES TO REMOTE CONTROL VALVE WIRES USING SPECIFIED WIRE CONNECTORS AND WATERPROOF SEALANT. PROVIDE CONNECTORS AND SEALANT AS PER MANUFACTURER'S RECOMMENDATIONS.
   3. INSTALL A MAXIMUM OF FOUR (4) LOW FLOW OR MEDIUM FLOW CONTROL ZONE KITS PER STANDARD RECTANGULAR VALVE BOX. INSTALL A MAXIMUM OF ONE (1) MEDIUM FLOW COMMERCIAL CONTROL ZONE KIT PER RECTANGULAR VALVE BOX. INSTALL A MAXIMUM OF ONE HIGH FLOW COMMERCIAL CONTROL ZONE KITS PER JUMBO RECTANGULAR VALVE BOX.
      a. LOCATE VALVE BOXES AT LEAST 12" FROM AND ALIGN WITH, NEARBY WALLS OR EDGES OF PAVED AREAS.
      b. GROUP CONTROL ZONE KIT ASSEMBLIES TOGETHER WHERE PRACTICAL. ALIGN GROUPED BOXES IN UNIFORM PATTERNS. ALLOW AT LEAST 12" BETWEEN BOXES.
      c. BRAND CONTROLLER LETTER AND STATION NUMBERS ON THE VALVE BOX LID.

B. LATERAL PIPING AND DRIPLINE TUBING

   1. INSTALL LATERAL PIPING AND DRIPLINE TUBING AT LOCATIONS AND IN GRID PATTERNS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
   2. THOROUGHLY FLUSH PVC LATERAL PIPING, SUPPLY HEADERS AND DRIPLINE TUBING IMMEDIATELY UPON INSTALLATION.

C. AIR RELIEF VALVE KIT ASSEMBLY: INSTALL AT ALL HIGH POINTS IN DRIPLINE TUBING GRID AND AS RECOMMENDED BY MANUFACTURER.
D. FLUSH POINT ASSEMBLY: INSTALL IN FLUSH HEADER OR AT ENDS OF EACH DRIPLINE ZONE SEGMENT AS SHOWN AND DIRECTED ON DRAWINGS AND INSTALLATION DETAILS. INSTALL AT LEAST 12 INCHES FROM AND ALIGN WITH ADJACENT WALLS OR EDGES OF PAVED AREAS.

3.6 SPARE PARTS

A. PROVIDE:
   3. ONE EXTRA SPRINKLER HEAD OF EACH SIZE AND TYPE.
   4. ONE EXTRA VALVE OF EACH SIZE.
   5. ONE EXTRA VALVE ACCESS BOX.
   6. ONE QUICK COUPLER VALVE KEY FOR EACH 3 QUICK COUPLER VALVES.

3.7 AS-BUILT DRAWING
A. FURNISH ACCURATE REPRODUCIBLE "AS-BUILT" DRAWINGS OF ALL COMPONENTS. STATE THE SIZE, MANUFACTURER, MODEL NUMBER, PART NUMBER, SIZE, AND EXACT LOCATION OF EACH AND EVERY ITEM FURNISHED AND INSTALLED BY THIS CONTRACTOR. FINAL PAYMENT CAN BE WITHHELD UNTIL "AS-BUILT" HAS BEEN PROVIDED TO AND APPROVED THE OWNER.
B. CONTRACTOR WILL FURNISH OWNER WITH 2 BOUND COPIES OF INSTRUCTION SHEETS AND PARTS LISTS COVERING ALL OPERATING EQUIPMENT.

3.8 ACCEPTANCE

A. TEST AND DEMONSTRATE TO THE OWNER THE SATISFACTORY OPERATION OF THE SYSTEM FREE OF LEAKS.
B. INSTRUCT THE OWNER'S STAFF IN THE OPERATION OF THE SYSTEM, INCLUDING ADJUSTMENT OF SPRINKLERS, CONTROLLER(S), VALVES, AND PUMP CONTROLS.
C. THE IRRIGATION SYSTEM MUST BE IN FULL OPERATION WITHIN ONE WEEK OF PLANTING OPERATIONS. IT IS THE INTENT AND MANDATORY REQUIREMENT THAT THE SYSTEM BE INSTALLED TO PROVIDE THE WATER FOR THE NEWLY INSTALLED PLANT MATERIAL.

MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = N/A	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C11

THE RESIDENCE AT CARTER LAKE

IRRIGATION PERFORMANCE SPECIFICATIONS

CARTER LAKE, IOWA

SNYDER & ASSOCIATES, INC.
231 BENNETT AVENUE
COUNCIL BLUFFS, IOWA 51503
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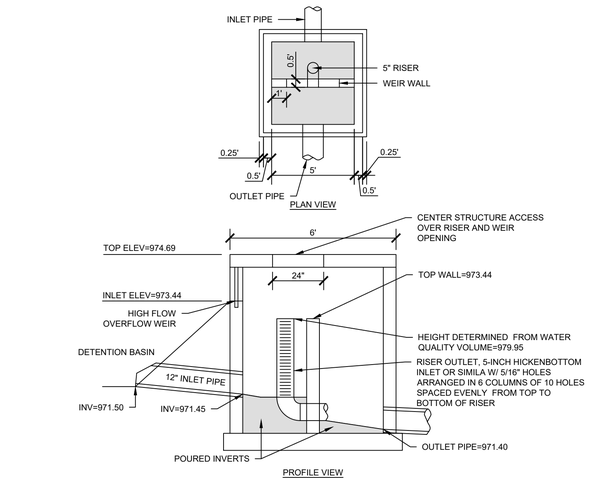
SNYDER & ASSOCIATES

Project No: 125.0711.10

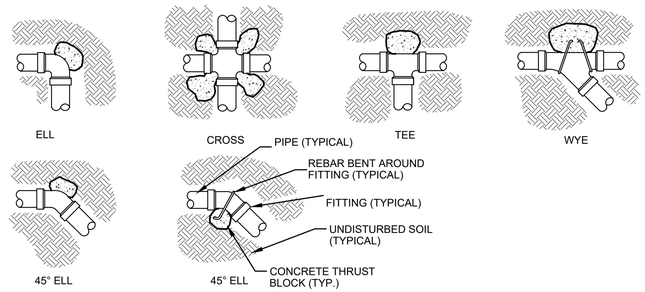
Sheet C11

v:\Projects\2025\125.0711.10\CADD\125071 C_LANDSCAPING_IRRIG.dwg RACHEL DICKEY, IRRIGATION PERFORMANCE SPECIFICATIONS, 2025/08/01, 3:23 PM, ANSI FULL BLEED D (34.00 X 22.00 INCHES)



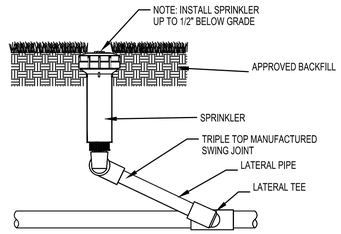
1 C12 MODIFIED OPEN-SIDED AREA INTAKE OUTLET STRUCTURE

NO SCALE



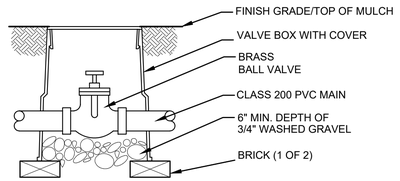
2 C12 IRRIGATION THRUST BLOCK DETAILS

NO SCALE



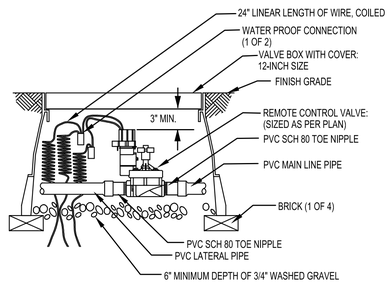
3 C12 SPRINKLER WITH SWING JOINT

NO SCALE



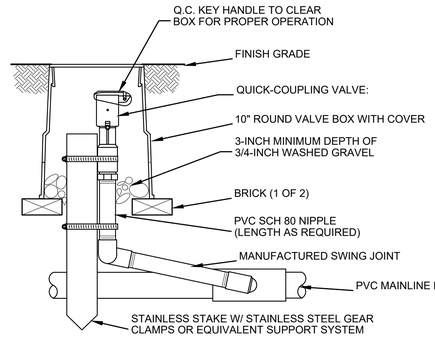
4 C12 ISOLATION VALVE AND BOX

NO SCALE



5 C12 ELECTRIC VALVE AND VALVE BOX

NO SCALE

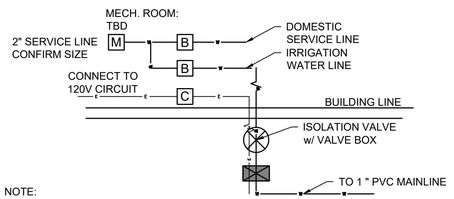


NOTE:

1. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.

6 C12 QUICK COUPLER

NO SCALE



NOTE:
EQUIPMENT TO BE LOCATED INSIDE BUILDING. CONTRACTOR TO COORDINATE LOCATION AND ROUTING OF WATER SERVICE WITH PLUMBING PLANS PRIOR TO CONSTRUCTION.

7 C12 SCHEMATIC IRRIGATION CONNECTION

NO SCALE

MARK	REVISION	DATE	BY
Engineer: EDH	Checked By: CHKD	Scale: 1" = N/A	
Technician: RMD	Date: 08/01/2025	T-R-S: 75N-44W-21	

Project No: 125.0711.10

Sheet C12

CARTER LAKE, IOWA

THE RESIDENCE AT CARTER LAKE

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SNYDER & ASSOCIATES, INC.

SNYDER & ASSOCIATES

Project No: 125.0711.10

Sheet C12

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