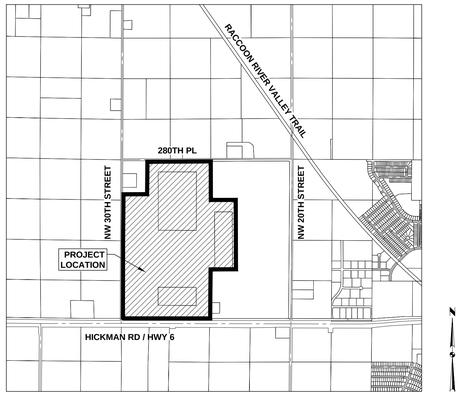
APPLE INC.
PROJECT MORGAN - WKE.94

APPLICABLE CODES		PROJECT ADDRESS	DOCUMENT PACKAGES	
BUILDING	2018 INTERNATIONAL BUILDING CODE	2995 W. HICKMAN RD WAUKEE, IA 50263	2025.06.12 100% CONSTRUCTION DOCUMENTS	
PLUMBING	2018 UNIFORM PLUMBING CODE		2025.06.20 ISSUE FOR PERMIT	
MECHANICAL	2018 INTERNATIONAL MECH. CODE			
ELECTRICAL	2018 NATIONAL ELECTRICAL CODE			
FIRE	2018 INTERNATIONAL FIRE CODE			
ENERGY	2012 IECC			
MUNCIPALITY	CITY OF WAUKEE ORDINANCES			
DISABILITY	2010 ADA			

VICINITY MAP (1"=2000')

2995 W. HICKMAN RD
WAUKEE, IA 50263



WAUKEE, IOWA

BULK REGULATIONS

FRONT YARD BUILDING SETBACK (MIN):	50'
REAR YARD BUILDING SETBACK (MIN):	50'
SIDE YARD BUILDING SETBACK (MIN):	25'
SETBACK BETWEEN BUILDINGS (MIN):	25'
MAXIMUM BUILDING HEIGHT:	80'

GOVERNING AGENCIES

REVIEW AGENCY:

CITY OF WAUKEE
230 HICKMAN ROAD
WAUKEE, IA 50263
PH: (515) 978-7897
CONTACT: ANDY KASS

FIRE DISTRICT:

CITY OF WAUKEE FIRE DEPARTMENT
1300 SE L.A. GRANT PARKWAY
WAUKEE, IA 50263
PH: (515) 978-7982
CONTACT: FIRE MARSHAL – JUSTIN FREDERICK

UTILITIES

GAS, STORM SEWER, SANITARY SEWER, AND WATER:

CITY OF WAUKEE PUBLIC WORKS
805 UNIVERSITY AVENUE
WAUKEE, IA 50263
PH: (515) 978-7920
CONTACT: ASSISTANT PUBLIC WORKS DIRECTOR OF OPERATIONS – TIM ROYER

SITE ZONING AND LAND USE

SITE:		
EXISTING LAND USE		AGRICULTURE
PROPOSED LAND USE		DATA CENTER
ZONING		M-1 / PD-1
SURROUNDING ZONING AND LAND USES:		
NORTH:	EXISTING LAND USE	AGRICULTURE
	EXISTING ZONING	NONE
EAST:	EXISTING LAND USE	AGRICULTURE
	EXISTING ZONING	A-1
SOUTH:	EXISTING LAND USE	AGRICULTURE
	EXISTING ZONING	M-1 / PD-1
WEST:	EXISTING LAND USE	AGRICULTURE
	EXISTING ZONING	M-1 / PD-1

WKE94 BUILDING INFORMATION

BUILDING AREA = 19936 SF

BUILDING HEIGHT = 22'-8"

BENCHMARKS

1. ALUMINUM ROD W/CAP STAMPED G-121 EAST SIDE OF R AVENUE (R16) 0.1 MILE SOUTH OF 300TH STREET. ELEVATION=1032.83
2. USGS MONUMENT STAMPED #259 HALF MILE NORTH OF HWY 6, WEST SIDE OF T AVENUE @ HOUSE #28461

LEGAL DESCRIPTION

A PART OF SECTION 30, TOWNSHIP 79 NORTH, RANGE 26 WEST OF THE FIFTH PRINCIPAL MERIDIAN, ALL OF PARCEL '17-271' AS SHOWN ON PLAT OF SURVEY RECORDED IN BOOK 2017, PAGE 24441, ALL OF PARCELS 'B' AND 'CC' AS SHOWN ON PLAT OF SURVEY RECORDED IN BOOK 2015, PAGE 11658, ALL OF PARCEL '2018-52' AS SHOWN ON PLAT OF SURVEY RECORDED IN BOOK 2018, PAGE 21204, AND ALL OF PARCEL '2018-53' AS SHOWN ON PLAT OF SURVEY RECORDED IN BOOK 2018, PAGE 21203, ALL BEING IN SAID SECTION 30 AND IN THE CITY OF WAUKEE, DALLAS COUNTY, IOWA AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION 30; THENCE SOUTH 00°19'44" WEST ALONG THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 2642.76 FEET TO THE EAST QUARTER CORNER OF SAID SECTION 30; THENCE SOUTH 00°19'21" WEST ALONG THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 2559.41 FEET TO THE NORTH LINE OF THE FORMER RAILROAD RIGHT OF WAY; THENCE SOUTH 89°55'20" WEST ALONG SAID NORTH LINE, 2640.56 FEET TO THE WEST LINE OF SAID SOUTHEAST QUARTER; THENCE SOUTH 89°34'55" WEST CONTINUING ALONG SAID NORTH LINE, 1319.80 FEET TO THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHWEST FRACTIONAL QUARTER OF SAID SECTION 30; THENCE SOUTH 89°34'41" WEST CONTINUING ALONG SAID NORTH LINE, 1572.46 FEET TO THE WEST LINE OF SAID SOUTHWEST FRACTIONAL QUARTER; THENCE NORTH 00°02'31" EAST ALONG SAID WEST LINE, 2544.70 FEET TO THE WEST QUARTER CORNER OF SAID SECTION 30; THENCE NORTH 00°21'50" EAST ALONG THE WEST LINE OF THE NORTHWEST FRACTIONAL QUARTER OF SAID SECTION 30, A DISTANCE OF 1518.05 FEET TO THE SOUTHWEST CORNER OF PARCEL '17-270' AS SHOWN ON THE PLAT OF SURVEY RECORDED IN BOOK 2017, PAGE 24441; THENCE NORTH 89°34'38" EAST ALONG THE SOUTH LINE OF SAID PARCEL '17-270', A DISTANCE OF 831.16 FEET TO THE SOUTHEAST CORNER OF SAID PARCEL '17-270'; THENCE NORTH 00°21'56" EAST ALONG THE EAST LINE OF SAID PARCEL '17-270', A DISTANCE OF 1124.82 FEET TO THE NORTH LINE OF SAID NORTHWEST FRACTIONAL QUARTER OF SAID SECTION 30; THENCE NORTH 89°34'43" EAST ALONG SAID NORTH LINE, 742.77 FEET TO THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SAID NORTHWEST FRACTIONAL QUARTER; THENCE NORTH 89°34'37" EAST CONTINUING ALONG SAID NORTH LINE, 1318.75 FEET TO THE NORTH QUARTER CORNER OF SAID SECTION 30; THENCE NORTH 89°36'38" EAST ALONG THE NORTH LINE OF SAID NORTHEAST QUARTER, 1325.51 FEET TO THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SAID NORTHEAST QUARTER; THENCE NORTH 89°36'36" EAST CONTINUING ALONG SAID NORTH LINE, 1325.59 FEET TO THE POINT OF BEGINNING AND CONTAINING 638.94 ACRES (27,832,099 SQUARE FEET). THE PROPERTY IS SUBJECT TO ROADWAY EASEMENTS AND OTHER EASEMENTS OF RECORD.

NOTES

1. SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE PROJECT SPECIFICATIONS, 2025 SUDAS STANDARD SPECIFICATIONS, AND 2025 WAUKEE STANDARDS FOR PUBLIC IMPROVEMENTS.
2. THE DESIGN SHOWN IS BASED UPON THE ENGINEER'S UNDERSTANDING OF THE EXISTING CONDITIONS. THIS PLAN DOES NOT REPRESENT A DETAILED FIELD SURVEY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING FIELD CONDITIONS PRIOR TO BIDDING THE PROPOSED SITE WORK IMPROVEMENTS. IF CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED. IF CONTRACTOR DOES NOT ACCEPT EXISTING SURVEY, INCLUDING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS/HER OWN EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR REVIEW.
3. CAUTION – NOTICE TO CONTRACTOR
   THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
4. ALL CONSTRUCTION WITHIN PUBLIC ROW/EASEMENTS, AND/OR ANY CONNECTION TO PUBLIC SEWERS AND STREETS SHALL COMPLY WITH THE CITY OF WAUKEE 2020 STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS AND 2021 SUDAS STANDARD SPECIFICATIONS SHALL APPLY TO ALL WORK PERFORMED ON THIS PROJECT EXCEPT AS MODIFIED HEREIN. ONSITE PRIVATE WORK SHALL COMPLY WITH 2021 SUDAS STANDARD SPECIFICATIONS AND PROJECT MORGAN SPECIFICATIONS.
5. AT LEAST ONE WEEK PRIOR TO ANY CONSTRUCTION WITHIN PUBLIC ROW/EASEMENTS AND/OR ANY CONNECTION TO PUBLIC SEWERS AND STREETS, THE CONTRACTOR SHALL CONTACT THE CITY OF WAUKEE TO SCHEDULE ANY REQUIRED INSPECTIONS. IT IS IMPORTANT TO NOTE CITY APPROVAL OF THIS PLAN IS SUBJECT TO THE APPLICANT OBTAINING ALL NECESSARY EASEMENTS/AGREEMENTS AND APPLICABLE PERMITS.

SHEET INDEX

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C-0000	COVER SHEET – CIVIL
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C-1100	DIMENSION PLAN – OVERALL
C-1137	DIMENSION PLAN
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C-1200	GRADING PLAN – OVERALL
C-1237	GRADING PLAN
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C-1300	STORM SEWER PLAN – OVERALL
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C-1632	WATER MAIN PLAN
C-1633	WATER MAIN PLAN
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C-1800	SANITARY SEWER PLAN – OVERALL
C-1832	SANITARY SEWER PLAN
C-1838	SANITARY SEWER PLAN
C-5101	DETAILS
C-5102	DETAILS
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L-1138	LANDSCAPE PLAN
L-1143	LANDSCAPE PLAN
L-1144	LANDSCAPE PLAN
L-4101	LANDSCAPE PLAN

UTILITY WARNING

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY AND RECORDS OBTAINED BY THIS SURVEYOR. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL THE UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION SHOWN.

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

RYAN A. HARDISTY 20811 LICENSED PROFESSIONAL ENGINEER IOWA

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.

RYAN A. HARDISTY, P.E. — DATE

LICENSE NUMBER 20811
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2025
PAGES OR SHEETS COVERED BY THIS SEAL:
ALL C AND L SERIES SHEETS

PROJECT TEAM

OWNER	ARCHITECT	CIVIL/ LANDSCAPE	STRUCTURAL	MEP
Apple Inc.	HDR 1917 S 67th Street Omaha, NE 68106 T: 402-548-5086 CONTACT: Kristopher Tourek email: kristopher.tourek@hdrinc.com	Civil Design Advantage 4121 NW Urbandale Drive Urbandale, IA 50322 T: 515-369-4400 F: 515-369-4410 CONTACT: Ryan Hardisty email: ryanh@cda-eng.com	HDR 1917 S 67th Street Omaha, NE 68106 T: 402-399-4879 CONTACT: Joel Fairfax email: joel.fairfax@hdrinc.com	HDR 1917 S 67th Street Omaha, NE 68106 T: 402-399-1029 CONTACT: Mitch Hain email: mitch.hain@hdrinc.com

C-0000 COVER SHEET - CIVIL

THESE DRAWINGS CONTAIN TRADEMARK SECRETS AND PROPRIETARY INFORMATION. THEY ARE NOT TO BE RELEASED FOR PUBLIC REVIEW.

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
Urbandale, IA 50322
515-369-4400

ISSUES
1 2025-06-12 100% CONSTRUCTION DOCUMENTS
2 2025-06-20 ISSUE FOR PERMIT

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PLAN N

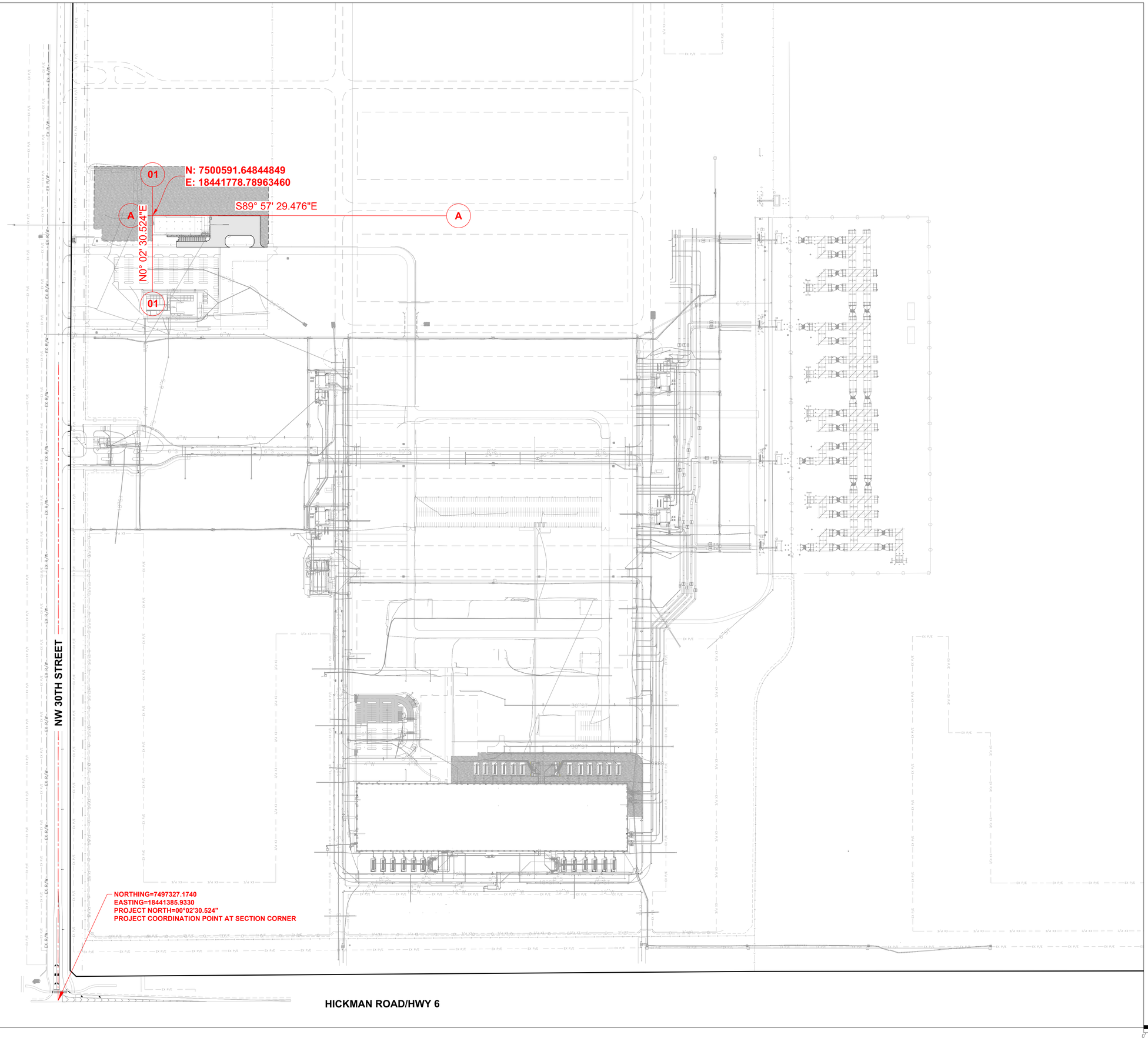
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COVER SHEET - CIVIL

SCALE
JOB 10430287
DATE 2025.06.20
SHEET

C-0000

APPLE PROJECT NO. F.21D42



C-1000 HORIZONTAL CONTROL PLAN

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
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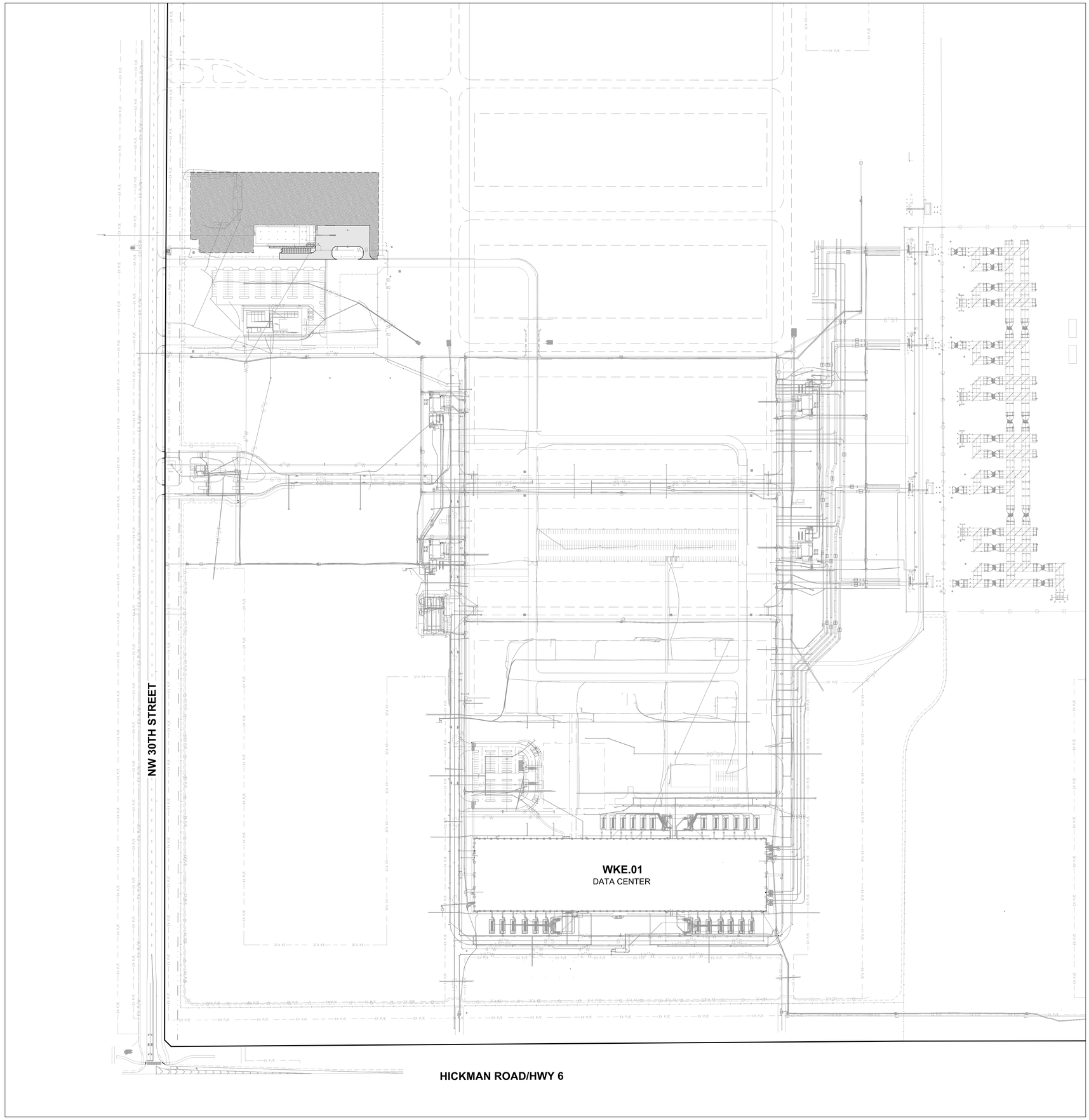
HORIZONTAL CONTROL PLAN

SCALE
JOB 10430287
DATE 2025.06.20
SHEET

C-1000

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APPLE PROJECT NO. F.21D42



LEGEND

- PROPERTY LINE
- LOT LINE
- PAVEMENT EDGE
- 8' CHAIN LINK FENCE
- 8' AMARISTAR IMPASSE II FENCE
- 8' TEMPORARY CHAIN LINK FENCE
- 4' CABLE GUARDRAIL
- WAT/E — PROPOSED WATER MAIN EASEMENT
- STRM/E — PROPOSED STORM SEWER EASEMENT
- DET/E — PROPOSED DETENTION EASEMENT
- 8" PCC PAVEMENT
- 6" PCC PAVEMENT
- GRAVEL
- 6" PCC SIDEWALK
- 4" PCC SIDEWALK
- BOLLARD
- SIGN
- WHEEL STOP
- ELECTRIC VEHICLE CHARGING STATION
- DETECTABLE WARNING PANEL

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES.
2. ALL WORK SHALL BE IN ACCORDANCE WITH OSHA CODES AND STANDARDS. NOTHING INDICATED ON THE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ANY APPROPRIATE SAFETY REGULATIONS.
3. PRIOR TO ANY WORK AT THE SITE, CONTRACTOR SHALL EXAMINE ANY APPLICABLE DRAWINGS AVAILABLE FROM THE OWNER, ENGINEER, AND/OR ARCHITECT, AND CONSULT WITH OWNER'S PERSONNEL AND UTILITY COMPANY REPRESENTATIVES. NO COMPENSATION WILL BE ALLOWED FOR DAMAGE FROM FAILURE TO COMPLY WITH THIS REQUIREMENT.
4. ONE WEEK PRIOR TO CONSTRUCTION WITHIN CITY R.O.W. OR ANY CONNECTION TO PUBLIC SEWERS OR WATER MAIN THE CONTRACTOR SHALL NOTIFY THE CITY'S PUBLIC WORKS DEPARTMENT.
5. ALL CONSTRUCTION WITHIN PUBLIC R.O.W./ EASEMENTS, AND/OR ANY CONNECTION TO PUBLIC SEWERS AND STREETS, SHALL COMPLY WITH THE CITY'S STANDARDS.
6. ALL DIMENSIONS ARE TO BACK OF CURB, BUILDING FACE OR PROPERTY LINE UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL VERIFY BUILDING DIMENSIONS WITH ARCHITECTURAL PLANS.
8. PLACE 3/4 INCH EXPANSION JOINT BETWEEN ALL P.C.C. PAVEMENT/SIDEWALKS AND BUILDING. PLACE 1/2 INCH EXPANSION JOINT BETWEEN SIDEWALKS AND P.C.C. PAVEMENT. REFER TO THE PROJECT SPECIFICATIONS FOR JOINT SEALANT REQUIREMENTS.
9. REMOVE ALL DEBRIS SPILLED INTO R.O.W. AT THE END OF EACH WORK DAY AND PRIOR TO A RAIN EVENT.
10. ALL PROPERTY PINS SHALL BE PROTECTED FROM GRADING OR OTHER OPERATIONS. ANY PINS DISTURBED SHALL BE RESET AT THE CONTRACTOR'S EXPENSE.
11. DO NOT STORE CONSTRUCTION MATERIALS AND EQUIPMENT IN THE RIGHT OF WAY.
12. THE CONTRACTOR SHALL NOT DISTURB DESIRABLE GRASS AREAS AND DESIRABLE TREES OUTSIDE THE CONSTRUCTION LIMITS. THE CONTRACTOR WILL NOT BE PERMITTED TO PARK OR SERVICE VEHICLES AND EQUIPMENT OR USE THESE AREAS FOR STORAGE OF MATERIALS. STORAGE, PARKING AND SERVICE AREAS WILL BE SUBJECT TO THE APPROVAL OF THE OWNER.
13. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY AREAS OF PAVEMENT OR SIDEWALK NOT TO BE REMOVED THAT IS DAMAGED DUE TO OPERATING EQUIPMENT ON THE PAVEMENT OR SIDEWALK.
14. THE CONTRACTOR MAY BE REQUIRED TO PLACE TEMPORARY WARNING DEVICES AND SAFETY FENCE AT CERTAIN LOCATIONS WHERE REPLACEMENT FEATURES ARE NOT INSTALLED THE SAME DAY, AS DIRECTED BY THE ENGINEER OR THE CITY.
15. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF WORK BETWEEN SUPPLIERS AND SUBCONTRACTORS INVOLVED IN THE PROJECT, INCLUDING STAGING OF CONSTRUCTION DETAILS.
16. ALL PERMITS AND ADDITIONAL FEES REQUIRED TO COMPLETE THE WORK SHALL BE INCLUDED IN THE CONTRACTOR BID.
17. MINIMUM FROST PROTECTION SHALL BE AT A DEPTH OF 42 INCHES BELOW FINISH GRADE.
18. APPLICANT AGREES TO PROVIDE ADDITIONAL SCREENING MEASURES IN FRONT OF THE LOADING DOCK IF THE LANDSCAPE BUFFER AND FENCING ALONG HICKMAN ROAD DO NOT ADEQUATELY SCREEN THE LOADING DOCK AND/OR ANY TRASH CONTAINMENT RECEPTACLES FROM PUBLIC VIEW. SCREENING MEASURES INCLUDE, BUT ARE NOT LIMITED TO ARCHITECTURAL WALLS, LANDSCAPING, OR FENCING.

SCALE
0' 75' 150' 300'

C-1100 DIMENSION PLAN - OVERALL

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
Urbandale, IA 50322
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RYAN HARDISTY

RYAN J. HARDISTY 20811 IOWA

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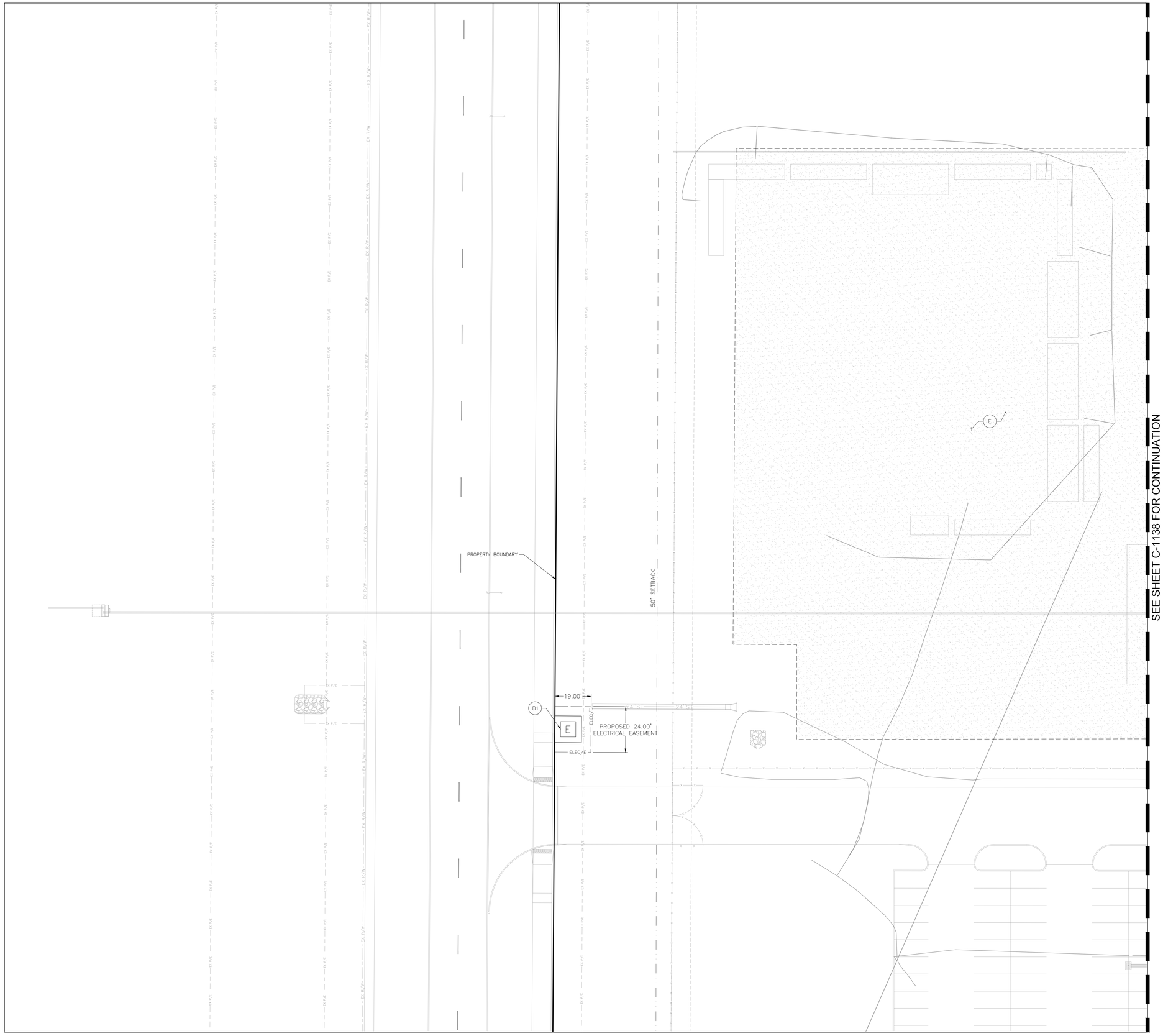
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DIMENSION PLAN - OVERALL

SCALE
JOB 10430287
DATE 2025.06.20
SHEET

C-1100

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- 6" PCC PAVEMENT
- GRAVEL
- 4" PCC SIDEWALK
- BOLLARD
- SIGN
- WHEEL STOP
- ELECTRIC VEHICLE CHARGING STATION
- DETECTABLE WARNING PANEL

SITE KEY (ALL CALLOUTS ARE TYPICAL)

- (A) 6" STANDARD CONCRETE CURB — 1 C-5101
- (B) CLASS 'A' INTEGRAL CONCRETE CURB — 2 C-5101
- (C) CONCRETE PAVEMENT — 5 C-5101
- (D) CONCRETE SIDEWALK — 3 C-5101
- (E) GRAVEL — 4 C-5101
- (F) SIDEWALK RAMP — 6,7 C-5101
- (G) BOLLARD — 1,2 C-5102
- (H) WHEEL STOP — 8 C-5101
- (I) DETECTABLE WARNING PANEL

SITE FEATURES (BY OTHERS)

(ALL CALLOUTS ARE TYPICAL)

- (B1) ELECTRICAL EQUIPMENT (REFER TO ELECTRICAL PLANS)
- (B2) SITE LIGHTING (REFER TO ELECTRICAL PLANS)
- (B3) TELECOM EQUIPMENT (REFER TO TELECOM PLANS)
- (B4) CONCRETE PAD (REFER TO STRUCTURAL PLANS)
- (B5) DOOR STOOP (REFER TO STRUCTURAL PLANS)
- (B6) LANDSCAPE AREA (REFER TO LANDSCAPE PLANS)
- (B7) MECHANICAL EQUIPMENT (REFER TO MECHANICAL PLANS)

STRIPING AND SIGNAGE KEY

(ALL CALLOUTS ARE TYPICAL; REFER TO APPLE INC. COMMUTE BUILDOUT GUIDELINES MANUAL FOR ADDITIONAL DETAILS)

- (P1) 4" WIDE, YELLOW PARKING STRIPE
- (P2) 4" WIDE, BLUE PARKING STRIPE
- (P3) 4" WIDE, WHITE PARKING STRIPE
- (P4) 4" WIDE, WHITE STRIPING 36" MAX. O.C. AT 45°
- (P5) 36" WHEELCHAIR PARKING SYMBOL, BLUE
- (P6) 12" MIN. HIGH LETTERING, WHITE
- (P7) CROSSWALK BAR, WHITE
- (P8) SHARED LANE SYMBOL, WHITE
- (P9) ACCESSIBLE PARKING SIGN
- (P10) ACCESSIBLE PARKING SIGN WITH VAN TAG

C-1137 DIMENSION PLAN

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
Urbandale, IA 50322
515-369-4400

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REVISIONS

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RYAN HARDISTY

RYAN J. HARDISTY — 27811 — IOWA — REGISTERED PROFESSIONAL ENGINEER

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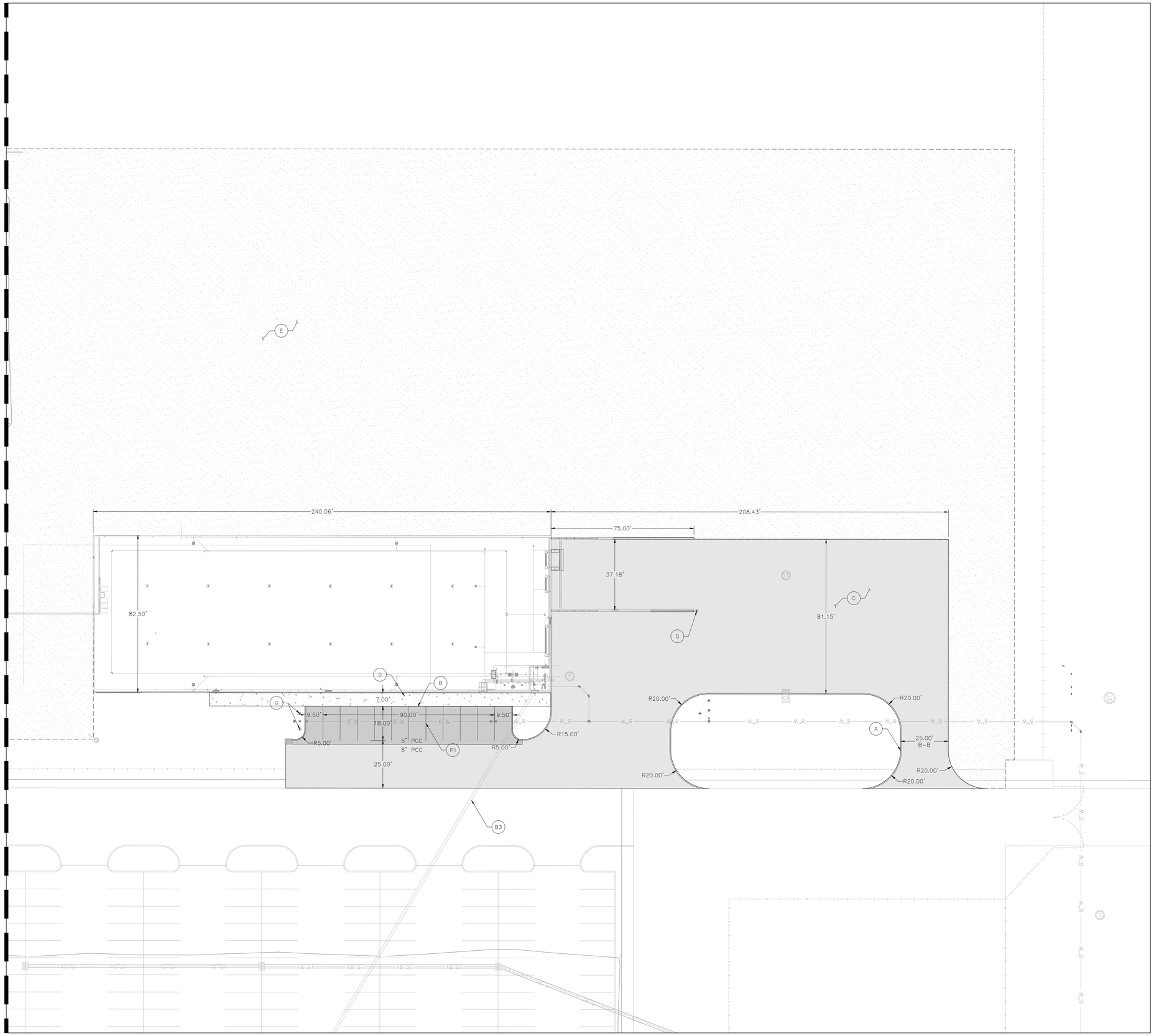
DIMENSION PLAN

SCALE
JOB 10430287
DATE 2025.06.20
SHEET

C-1137

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APPLE PROJECT NO. F.21D42



C-1138 DIMENSION PLAN

LEGEND

- PROPERTY LINE
- LOT LINE
- PAVEMENT EDGE
- 8" CHAIN LINK FENCE
- 8" AMARISTAR IMPASSE II FENCE
- 8" TEMPORARY CHAIN LINK FENCE
- 4" CABLE GUARDRAIL
- WAT/E — PROPOSED WATER MAIN EASEMENT
- STRM/E — PROPOSED STORM SEWER EASEMENT
- DET/E — PROPOSED DETENTION EASEMENT
- 8" PCC PAVEMENT
- 6" PCC PAVEMENT
- GRAVEL
- 4" PCC SIDEWALK
- BOLLARD
- SIGN
- WHEEL STOP
- ELECTRIC VEHICLE CHARGING STATION
- DETECTABLE WARNING PANEL

SITE KEY (ALL CALLOUTS ARE TYPICAL)

- (A) 6" STANDARD CONCRETE CURB — 1 C-5101
- (B) CLASS 'A' INTEGRAL CONCRETE CURB — 2 C-5101
- (C) CONCRETE PAVEMENT — 5 C-5101
- (D) CONCRETE SIDEWALK — 3 C-5101
- (E) GRAVEL — 4 C-5101
- (F) SIDEWALK RAMP — 6,7 C-5101
- (G) BOLLARD — 1,2 C-5102
- (H) WHEEL STOP — 8 C-5101
- (I) DETECTABLE WARNING PANEL

SITE FEATURES (BY OTHERS)

(ALL CALLOUTS ARE TYPICAL)

- (B1) ELECTRICAL EQUIPMENT (REFER TO ELECTRICAL PLANS)
- (B2) SITE LIGHTING (REFER TO ELECTRICAL PLANS)
- (B3) TELECOM EQUIPMENT (REFER TO TELECOM PLANS)
- (B4) CONCRETE PAD (REFER TO STRUCTURAL PLANS)
- (B5) DOOR STOOP (REFER TO STRUCTURAL PLANS)
- (B6) LANDSCAPE AREA (REFER TO LANDSCAPE PLANS)
- (B7) MECHANICAL EQUIPMENT (REFER TO MECHANICAL PLANS)

STRIPING AND SIGNAGE KEY

(ALL CALLOUTS ARE TYPICAL; REFER TO APPLE INC. COMMUTE BUILDOUT GUIDELINES MANUAL FOR ADDITIONAL DETAILS)

- (P1) 4" WIDE, YELLOW PARKING STRIPE
- (P2) 4" WIDE, BLUE PARKING STRIPE
- (P3) 4" WIDE, WHITE PARKING STRIPE
- (P4) 4" WIDE, WHITE STRIPING 36" MAX. O.C. AT 45°
- (P5) 36" WHEELCHAIR PARKING SYMBOL, BLUE
- (P6) 12" MIN. HIGH LETTERING, WHITE
- (P7) CROSSWALK BAR, WHITE
- (P8) SHARED LANE SYMBOL, WHITE
- (P9) ACCESSIBLE PARKING SIGN
- (P10) ACCESSIBLE PARKING SIGN WITH VAN TAG

N

SCALE
0' 10' 20' 40'

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PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
Urbandale, IA 50322
515-369-4400

ISSUES

1	2025-06-12	100% CONSTRUCTION DOCUMENTS
2	2025-06-20	ISSUE FOR PERMIT

REVISIONS

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RYAN HARDISTY

RYAN J. HARDISTY — 27811 — REGISTERED PROFESSIONAL ENGINEER — IOWA

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PLAN N

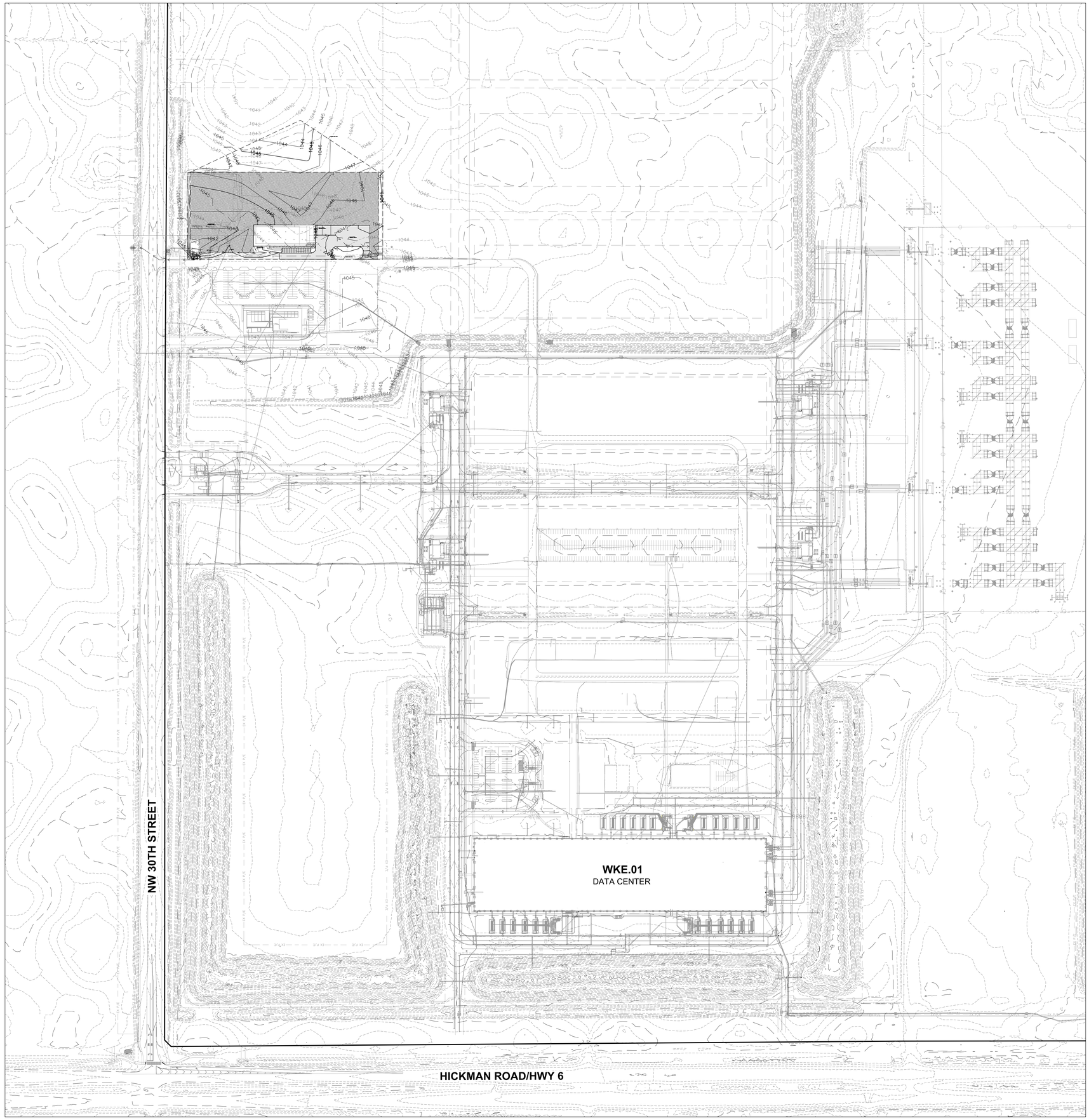
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DIMENSION PLAN

SCALE
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C-1138

APPLE PROJECT NO. F.21D42



GRADING NOTES

1. PRIOR TO ANY GRADING ON SITE, A COPY OF THE NPDES PERMIT SHALL BE PROVIDED TO THE CITY OF WAUKEE STORMWATER DEPARTMENT AND A CITY OF WAUKEE COSESCO PERMIT IS REQUIRED TO BE ISSUED.
2. CONTRACTOR SHALL STRIP ALL DELETERIOUS MATERIAL. THE TOP 8 INCHES OF TOPSOIL SHALL TO BE STOCKPILED AND RESPREAD AFTER GRADING IS COMPLETE. THE TOPSOIL RESPREAD DEPTH SHALL BE A MINIMUM OF 8 INCHES THICK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SUITABLE TOPSOIL STOCKPILE SITE.
3. MATCH EXISTING GRADES AT PROPERTY LINES AND/OR CONSTRUCTION LIMITS.
4. ALL SPOT ELEVATIONS ARE FORM GRADE (FG) OR TOP OF FINISHED SURFACES UNLESS OTHERWISE NOTED.
5. THE SITE SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS.
6. SLOPES IN PAVEMENT SHALL BE UNIFORM TO AVOID PONDING.
7. THE CONTRACTOR SHALL CONFINE HIS GRADING OPERATIONS TO WITHIN THE CONSTRUCTION LIMITS AND EASEMENTS SHOWN ON THE PLANS. ANY DAMAGE TO PROPERTIES OUTSIDE THE SITE BOUNDARY SHALL BE AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. THE CONTRACTOR SHALL APPLY NECESSARY MOISTURE CONTROL TO THE CONSTRUCTION AREA AND HAUL ROADS TO PREVENT THE SPREAD OF DUST.
9. REFER TO SEPARATE STORM WATER POLLUTION PREVENTION PLAN FOR DETAILS ON EROSION CONTROL.

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GRADING PLAN - OVERALL

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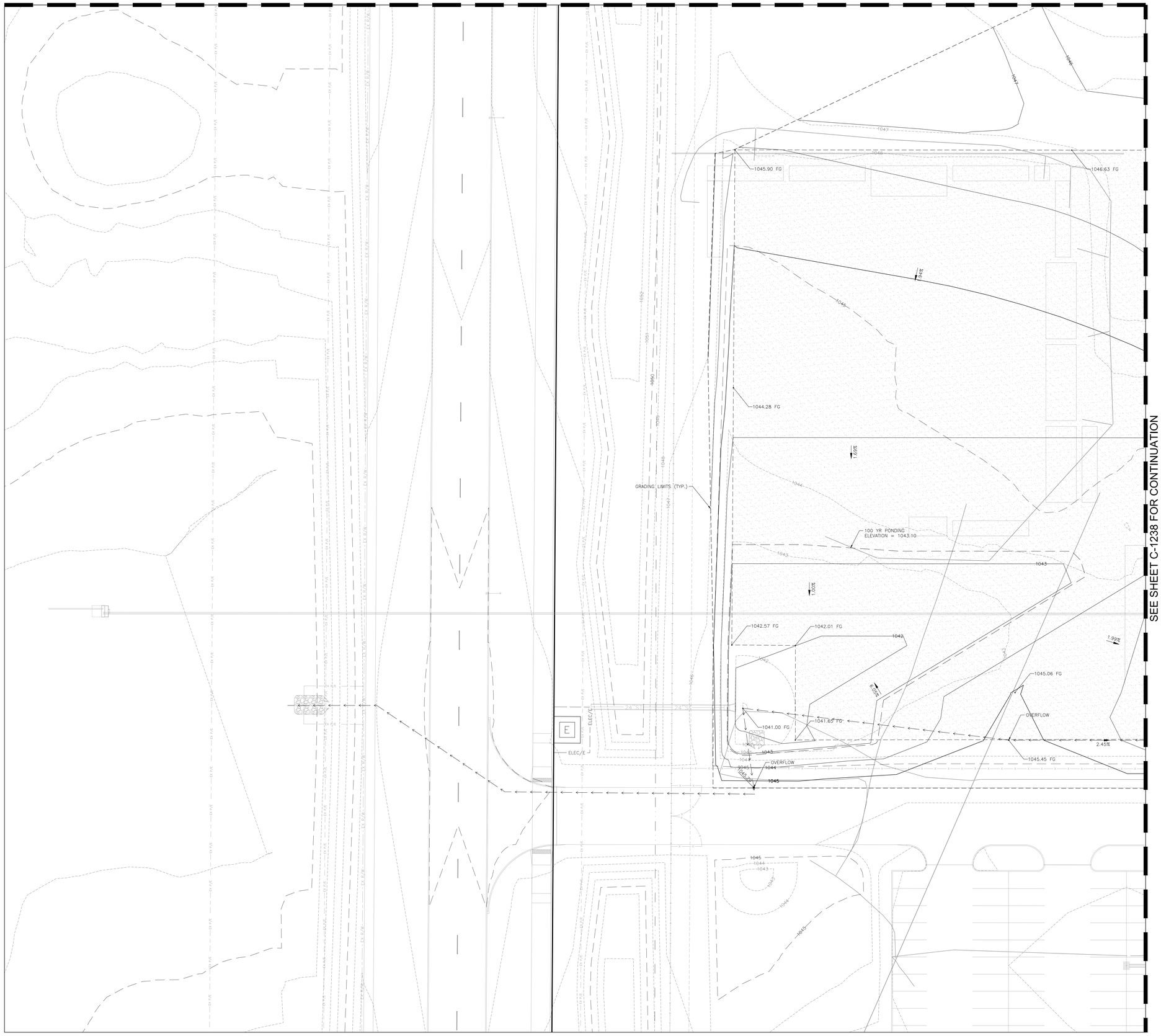
C-1200

C-1200 GRADING PLAN - OVERALL

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APPLE PROJECT NO. F.21D42

SEE SHEET C-1243 FOR CONTINUATION



LEGEND

PROPERTY LINE	
LOT LINE	
TP	TOP OF PAVEMENT
HP	HIGH POINT
LP	LOW POINT
FG	FINISH GRADE
TC	TOP OF CURB
BC	BOTTOM OF FACE OF CURB
TW	TOP OF WALL
BW	BOTTOM OF WALL
RIM	RIM ELEVATION
ME	MATCH ELEVATION

NOTES

1. ADJUST ALL RIMS TO FINISHED GRADE.
2. HIGH POINTS AND LOW POINTS ARE CRITICAL TO THE FUNCTION OF SURFACE WATER COLLECTION. CONTRACTOR TO CONTACT ENGINEER IF PROPOSED GRADES AT HIGH POINTS AND INTAKE RIM ELEVATIONS ARE UNABLE TO BE ACHIEVED.
3. TAKE CARE TO ENSURE A 2.0% MAXIMUM SLOPE IN ANY DIRECTION FOR ALL ACCESSIBLE PARKING STALLS AND TURNING SPACES.

C-1237 GRADING PLAN

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GRADING PLAN

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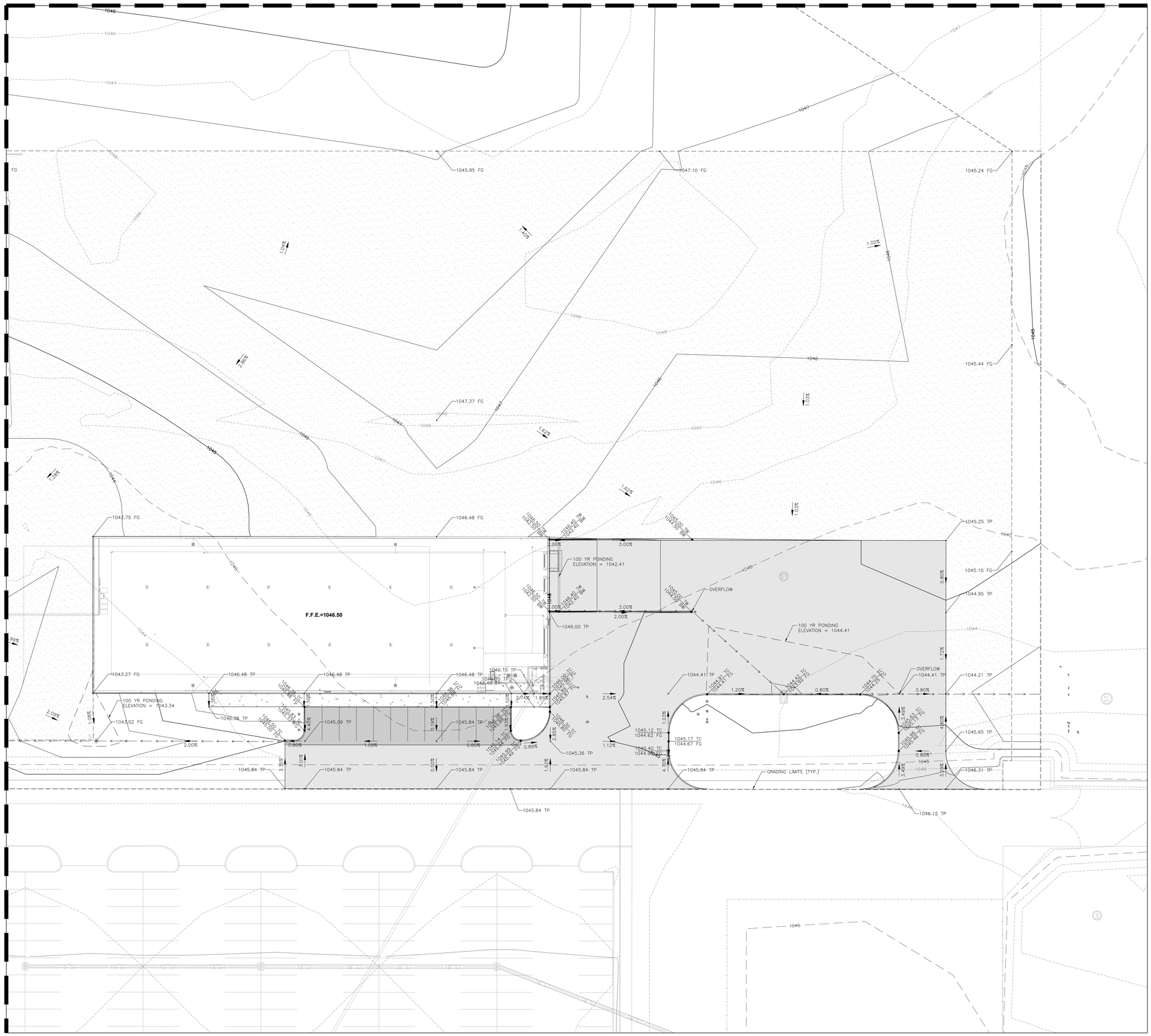
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APPLE PROJECT NO. F.21D42

SEE SHEET C-1244 FOR CONTINUATION

SEE SHEET C-1237 FOR CONTINUATION



LEGEND

	PROPERTY LINE
	LOT LINE
TP	TOP OF PAVEMENT
HP	HIGH POINT
LP	LOW POINT
FG	FINISH GRADE
TC	TOP OF CURB
BC	BOTTOM OF FACE OF CURB
TW	TOP OF WALL
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RIM	RIM ELEVATION
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SCALE
0' 10' 20' 40'

C-1238 GRADING PLAN

PROJECT MORGAN
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14834
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IOWA

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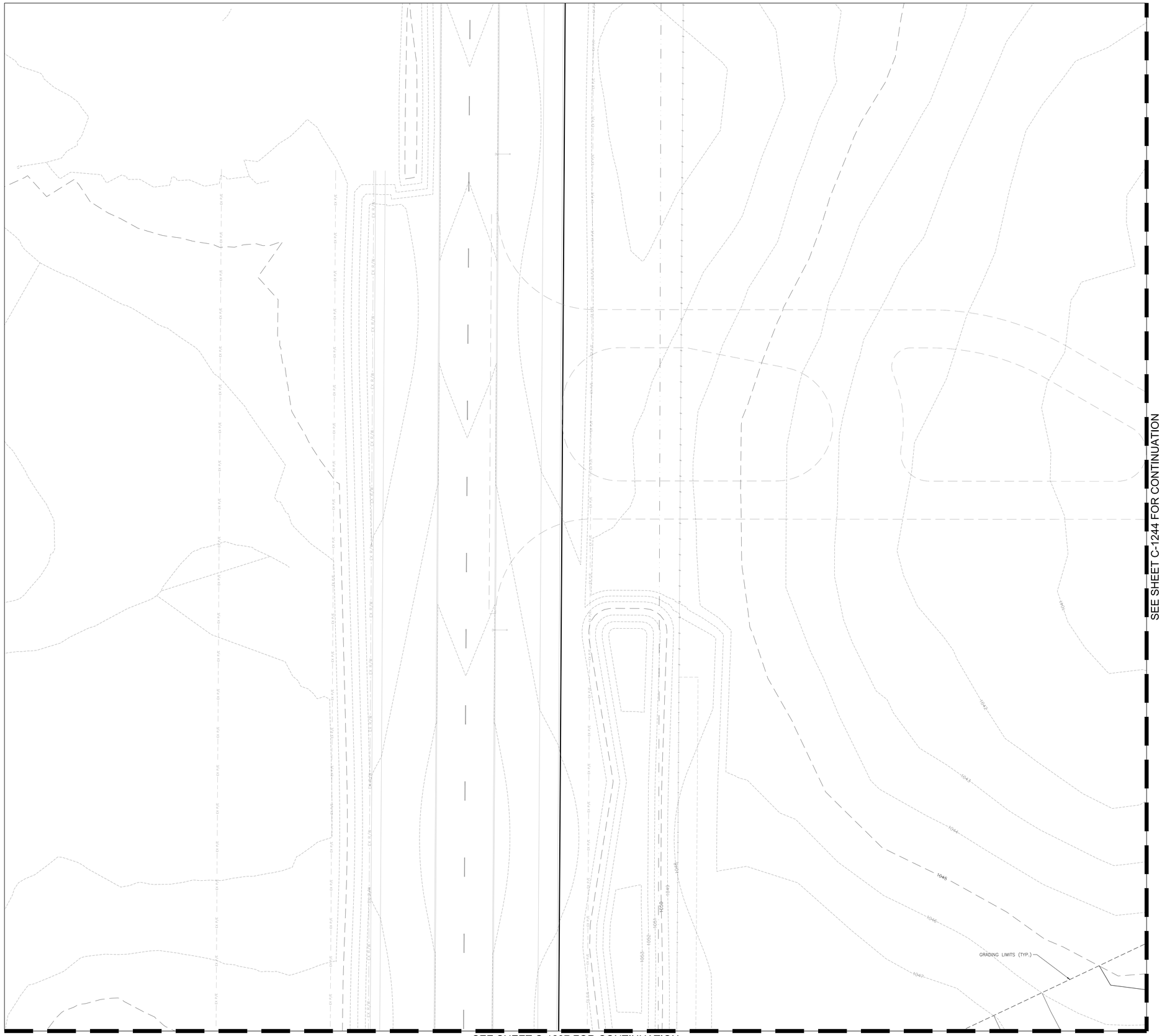
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LEGEND

PROPERTY LINE	
LOT LINE	
TP	TOP OF PAVEMENT
HP	HIGH POINT
LP	LOW POINT
FG	FINISH GRADE
TC	TOP OF CURB
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C-1243 GRADING PLAN

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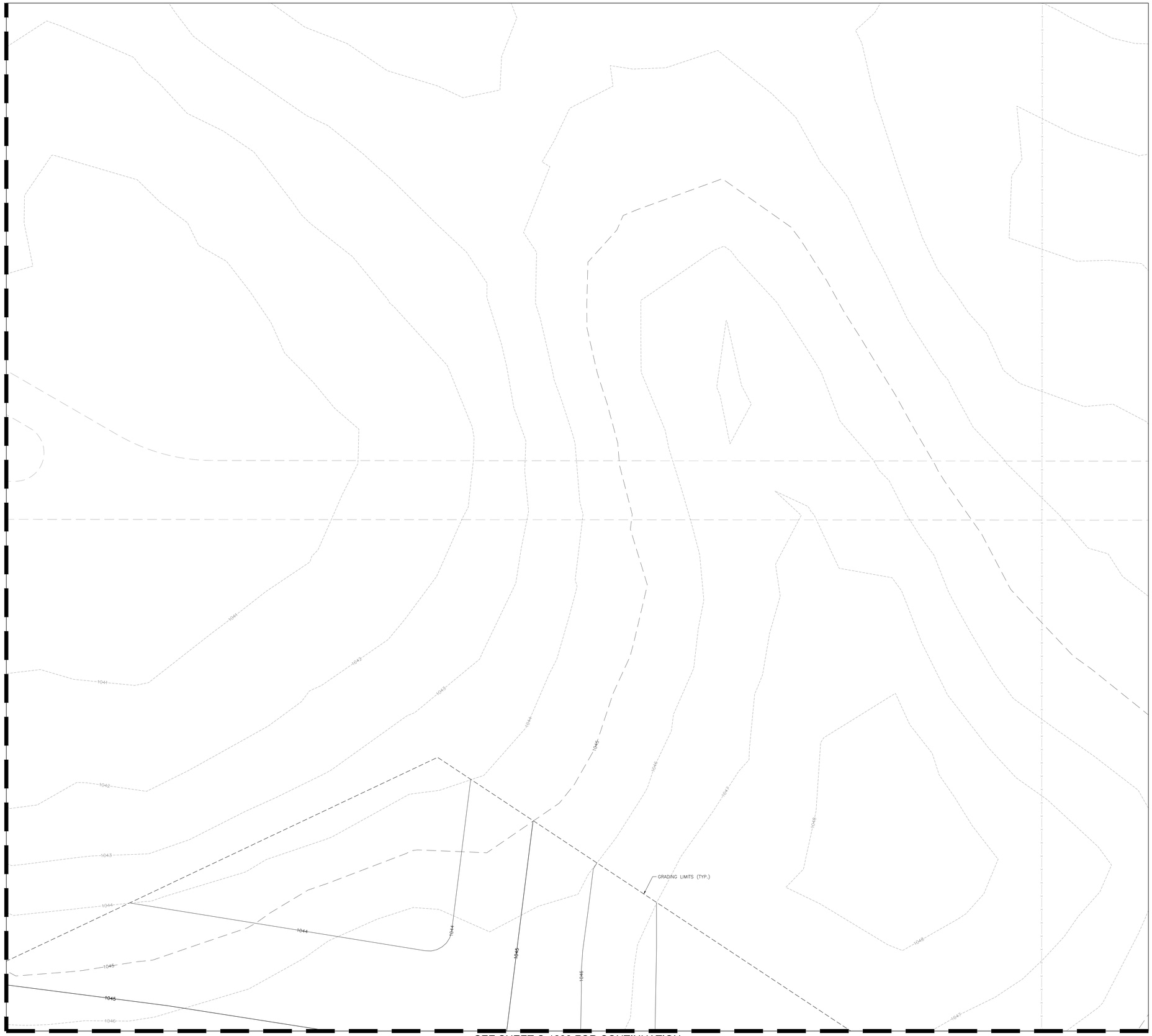
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APPLE PROJECT NO. F.21D42



LEGEND

——·——·——	PROPERTY LINE
———	LOT LINE
TP	TOP OF PAVEMENT
HP	HIGH POINT
LP	LOW POINT
FG	FINISH GRADE
TC	TOP OF CURB
BC	BOTTOM OF FACE OF CURB
TW	TOP OF WALL
BW	BOTTOM OF WALL
RIM	RIM ELEVATION
ME	MATCH ELEVATION

NOTES

1. ADJUST ALL RIMS TO FINISHED GRADE.
2. HIGH POINTS AND LOW POINTS ARE CRITICAL TO THE FUNCTION OF SURFACE WATER COLLECTION. CONTRACTOR TO CONTACT ENGINEER IF PROPOSED GRADES AT HIGH POINTS AND INTAKE RIM ELEVATIONS ARE UNABLE TO BE ACHIEVED.
3. TAKE CARE TO ENSURE A 2.0% MAXIMUM SLOPE IN ANY DIRECTION FOR ALL ACCESSIBLE PARKING STALLS AND TURNING SPACES.

C-1244 GRADING PLAN

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
Urbandale, IA 50322
515-369-4400

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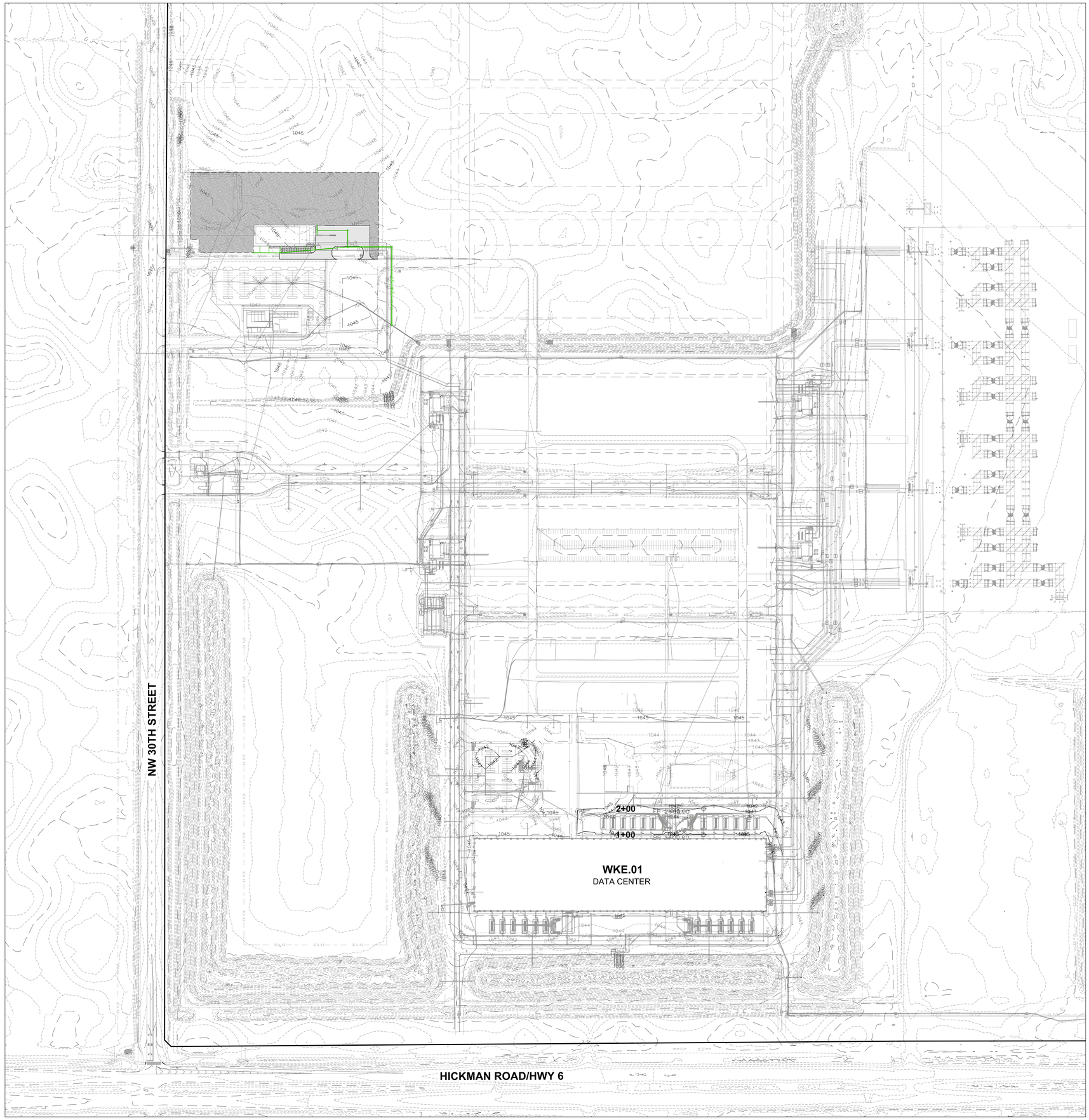
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STORM SEWER NOTES

1. FIELD VERIFY ELEVATIONS AND LOCATIONS OF ALL CONNECTIONS TO EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
2. PROVIDE TEMPORARY SUPPORT FOR EXISTING UTILITY LINES THAT ARE ENCOUNTERED DURING CONSTRUCTION UNTIL BACKFILLING IS COMPLETE.
3. ADJUST ALL MANHOLES AND INTAKES TO FINISHED GRADES.
4. 18" MINIMUM VERTICAL CLEARANCE BETWEEN STORM SEWER AND SANITARY SEWER PIPES. 18" MINIMUM VERTICAL CLEARANCE BETWEEN SEWER AND WATER MAIN.
5. MAINTAIN A MINIMUM OF 10' HORIZONTAL SEPARATION BETWEEN SEWER LINES AND WATER MAINS.
6. IF ANY EXISTING PIPES OR STRUCTURES TO REMAIN IN PLACE ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING PIPE OR STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
7. STORM DRAINAGE PIPE WITH LESS THAN 2'-3" COVER SHALL BE CLASS IV REINFORCED CONCRETE PIPE, OR APPROVED EQUAL TO SUSTAIN H-20 LOADING.
8. PRECAST STRUCTURES MAY BE USED AT THE CONTRACTOR'S PREFERENCE.
9. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
10. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR CHANNEL FROM INVERT IN TO INVERT OUT, UNLESS OTHERWISE SHOWN IN THE STRUCTURE DETAIL.
11. WHERE PUBLIC UTILITY FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THOSE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS. THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATIONS AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK. THE CONTRACTOR IS REQUIRED TO UTILIZE THE UTILITY ONE-CALL SERVICE AT 800-292-8989 AT LEAST 48 HOURS PRIOR TO EXCAVATING ANYWHERE ON THE PROJECT.
12. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE WORK OF ALL SUBCONTRACTOR(S) INVOLVED IN THE PROJECT.
13. THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL PRIVATE DETENTION FACILITIES AND PRIVATE UTILITIES.
14. CONTRACTOR SHALL PREVENT ENTRY OF MUD, DIRT, DEBRIS AND OTHER MATERIAL INTO NEW AND EXISTING SEWER SYSTEMS. SHOULD ANY CONTAMINATION OCCUR DURING CONSTRUCTION, THE CONTRACTOR SHALL CLEAN THE SEWER SYSTEM AT NO COST TO THE OWNER. INSTALL SILT FENCE AT ALL PERMANENT STORM SEWER INLETS.
15. CONTRACTOR SHALL REMOVE AND REINSTALL RIP RAP AS NECESSARY TO COMPLETE FES AND FOOTING INSTALLATION AT ALL STORM SEWER OUTLETS TO EXISTING PONDS

C-1300 STORM SEWER PLAN - OVERALL

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RYAN M. HARDISTY
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STORM SEWER PLAN - OVERALL

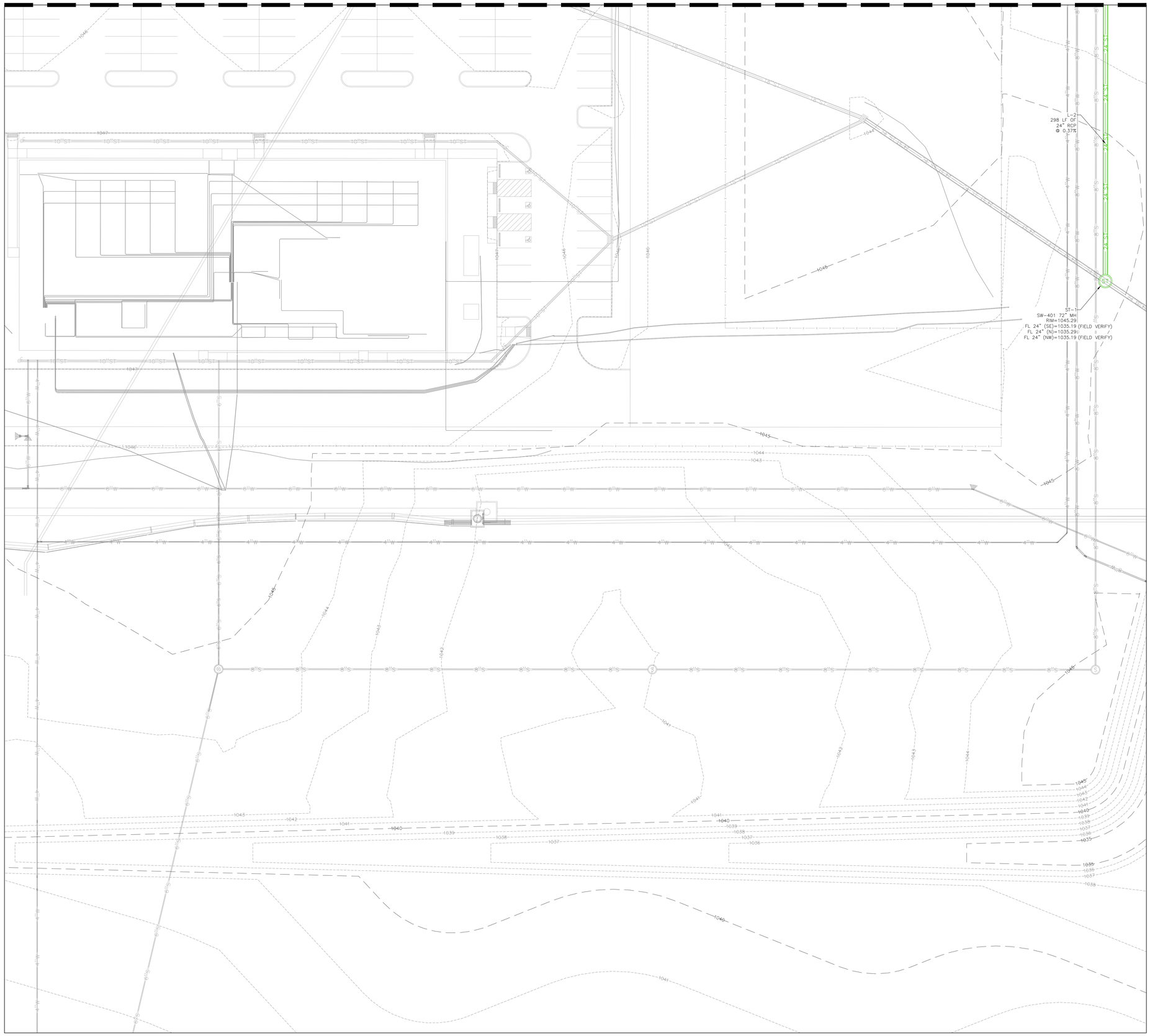
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SEE SHEET C-1338 FOR CONTINUATION



LEGEND

	PROPERTY LINE
	LOT LINE
	DETENTION OVERFLOW PATH
15"ST	STORM DRAIN PIPE WITH SIZE
	6" SUBDRAIN
	SW-401 STORM DRAIN MANHOLE (7 C-5201)
	SW-501 STORM DRAIN INTAKE (6 C-5201)
	SW-502 STORM DRAIN INTAKE (5 C-5201)
	SW-511 STORM DRAIN INTAKE (8 C-5201)
ST	HPDE STORM DRAIN INTAKE
	TRENCH DRAIN (9 C-5201)
	STORM DRAIN CLEANOUT
	WYE/ROOF DOWNSPOUT CONNECTION (1,2 C-5201)
MH	MANHOLE
INTK	INTAKE
RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE IRON PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
FL	FLOWLINE (INVERT)
TC	TOP OF CURB

SITE FEATURES (BY OTHERS)

(ALL CALLOUTS ARE TYPICAL)

- (B1) ELECTRICAL EQUIPMENT (REFER TO ELECTRICAL PLANS)
- (B2) MECHANICAL EQUIPMENT (REFER TO MECHANICAL PLANS)
- (B3) TELECOM EQUIPMENT (REFER TO TELECOM PLANS)

NOTES

1. THE CONTRACTOR SHALL CONNECT ROOF DRAIN DOWNSPOUTS TO PROPOSED STORM DRAIN COLLECTOR LINES. SEE ARCHITECTURAL PLAN FOR LOCATIONS OF DOWNSPOUTS FOR ROOF DRAIN CONNECTIONS.
2. ADJUST ALL RIMS (EXISTING AND PROPOSED) TO FINISH GRADE.
3. THE CONTRACTOR SHALL PROVIDE ALL PIPE FITTINGS (BENDS, REDUCERS, WYES, CONNECTIONS, ETC.) AS NECESSARY TO CONNECT THE DRAINAGE PIPES AND STRUCTURES INTO THE SITE DRAINAGE NETWORK.
4. PIPE LENGTHS SHOWN INCLUDE APRON LENGTH.
5. WHERE THE STORM SEWER CROSSES OVER OR LESS THEN 18 INCHES BELOW THE WATER MAIN, LOCATE ONE FULL LENGTH OF SEWER PIPE WITH GASKETED JOINTS SO BOTH JOINTS ARE AS FAR AS POSSIBLE FROM THE WATER MAIN.
6. INLET PROTECTION/SEDIMENT CONTROL SHALL BE INSTALLED AT ALL INLETS.
7. ALL UTILITIES SHOWN ARE PRIVATE UNLESS EXPLICITLY LABELED PUBLIC.
8. VAULT SUMP PUMP SHALL BE LIBERTY PUMPS ELV250 1/3 hp OR ENGINEER APPROVED EQUIVALENT. REFER TO ELECTRICAL DRAWINGS FOR POWER REQUIREMENTS.

HDR

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
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515-369-4400

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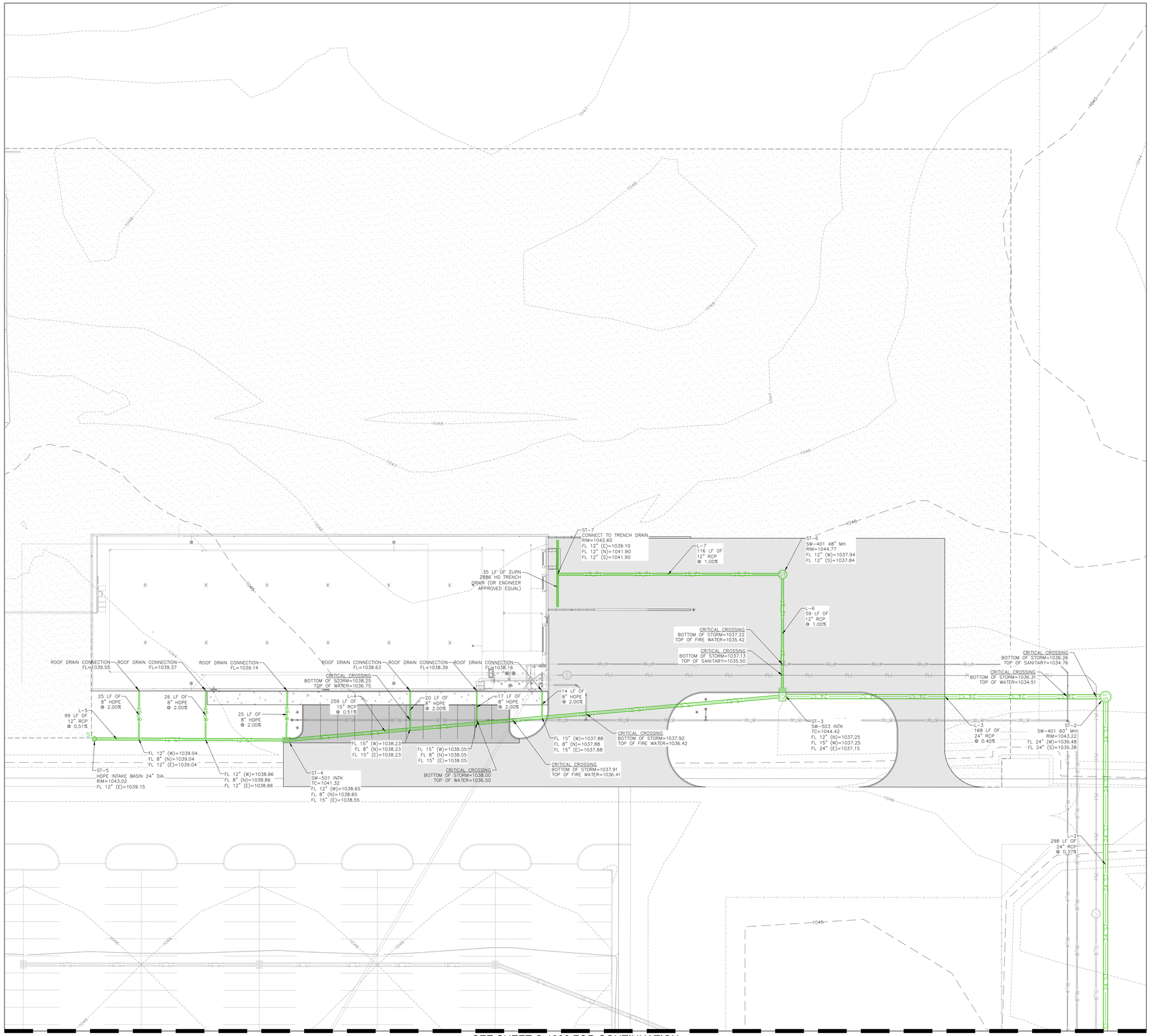
STORM SEWER PLAN

SCALE
JOB 10430287
DATE 2025.06.20
SHEET

C-1332

C-1332 STORM SEWER PLAN

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SEE SHEET C-1332 FOR CONTINUATION

LEGEND

	PROPERTY LINE
	LOT LINE
	DETENTION OVERFLOW PATH
15"ST	STORM DRAIN PIPE WITH SIZE
	6" SUBDRAIN
	SW-401 STORM DRAIN MANHOLE (7 C-5201)
	SW-501 STORM DRAIN INTAKE (6 C-5201)
	SW-502 STORM DRAIN INTAKE (5 C-5201)
	SW-511 STORM DRAIN INTAKE (8 C-5201)
ST	HPDE STORM DRAIN INTAKE
	TRENCH DRAIN (9 C-5201)
	STORM DRAIN CLEANOUT
	WYE/ROOF DOWNSPOUT CONNECTION (1,2 C-5201)
MH	MANHOLE
INTK	INTAKE
RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE IRON PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
FL	FLOWLINE (INVERT)
TC	TOP OF CURB

SITE FEATURES (BY OTHERS)

(ALL CALLOUTS ARE TYPICAL)

(B1) ELECTRICAL EQUIPMENT (REFER TO ELECTRICAL PLANS)

(B2) MECHANICAL EQUIPMENT (REFER TO MECHANICAL PLANS)

(B3) TELECOM EQUIPMENT (REFER TO TELECOM PLANS)

NOTES

1. THE CONTRACTOR SHALL CONNECT ROOF DRAIN DOWNSPOUTS TO PROPOSED STORM DRAIN COLLECTOR LINES. SEE ARCHITECTURAL PLAN FOR LOCATIONS OF DOWNSPOUTS FOR ROOF DRAIN CONNECTIONS.
2. ADJUST ALL RIMS (EXISTING AND PROPOSED) TO FINISH GRADE.
3. THE CONTRACTOR SHALL PROVIDE ALL PIPE FITTINGS (BENDS, REDUCERS, WYES, CONNECTIONS, ETC.) AS NECESSARY TO CONNECT THE DRAINAGE PIPES AND STRUCTURES INTO THE SITE DRAINAGE NETWORK.
4. PIPE LENGTHS SHOWN INCLUDE APRON LENGTH.
5. WHERE THE STORM SEWER CROSSES OVER OR LESS THEN 18 INCHES BELOW THE WATER MAIN, LOCATE ONE FULL LENGTH OF SEWER PIPE WITH GASKETED JOINTS SO BOTH JOINTS ARE AS FAR AS POSSIBLE FROM THE WATER MAIN.
6. INLET PROTECTION/SEDIMENT CONTROL SHALL BE INSTALLED AT ALL INLETS.
7. ALL UTILITIES SHOWN ARE PRIVATE UNLESS EXPLICITLY LABELED PUBLIC.
8. VAULT SUMP PUMP SHALL BE LIBERTY PUMPS ELV250 1/3 hp OR ENGINEER APPROVED EQUIVALENT. REFER TO ELECTRICAL DRAWINGS FOR POWER REQUIREMENTS.

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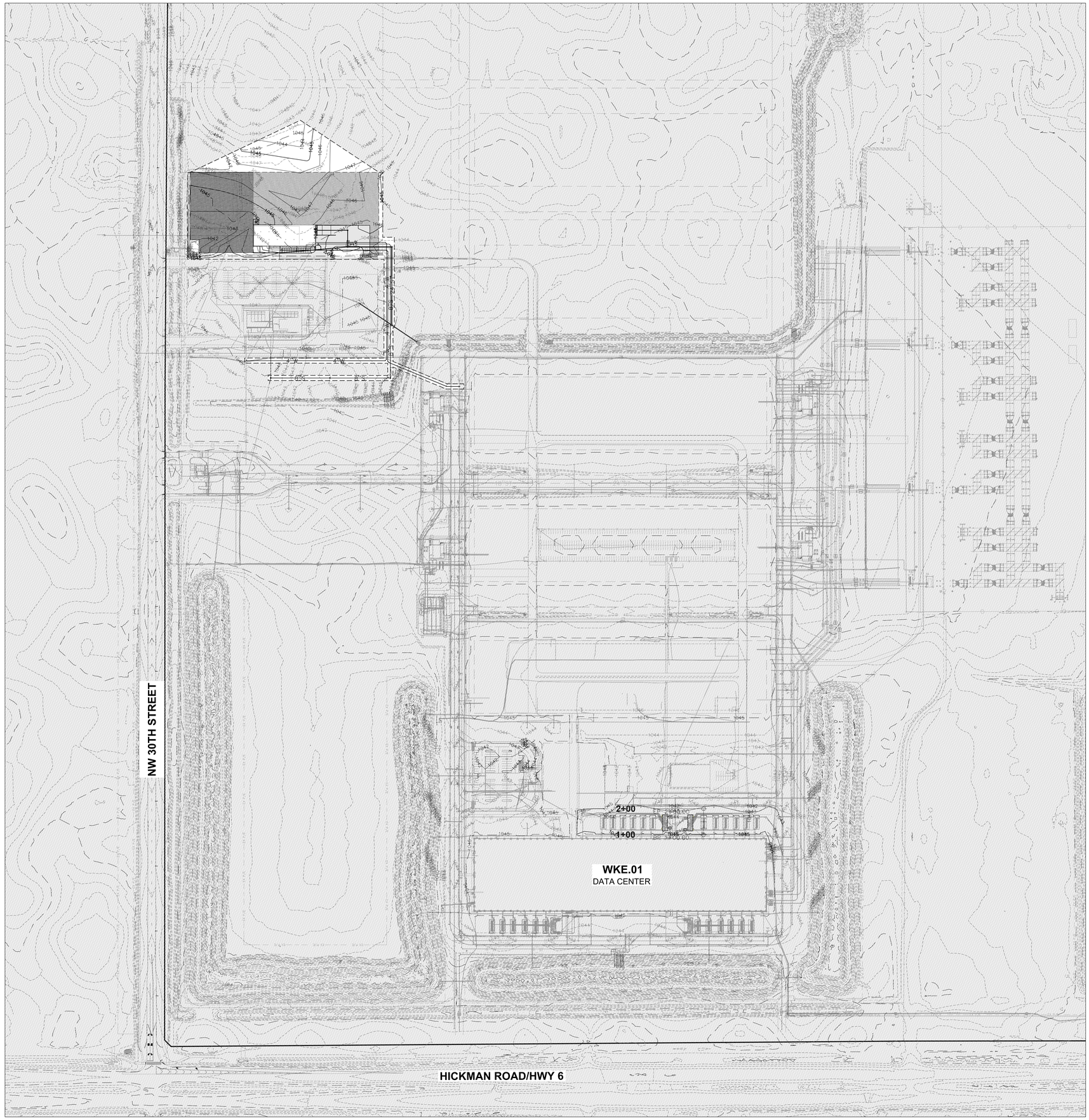
STORM SEWER PLAN

SCALE
JOB 10430287
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SHEET

C-1338

C-1338 STORM SEWER PLAN

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EROSION AND SEDIMENT CONTROL NOTES

1. NO STANDPIPES ARE SHOWN IN THE TEMPORARY SEDIMENT BASINS. WATER RELEASES FROM THE PONDS FROM THE SURFACE. THE LENGTH AND DEPTHS OF THE PONDS AND THE DISTANCE FROM THE INLET TO THE OUTLET STRUCTURES WILL ALLOW SEDIMENT TO SETTLE PRIOR TO DISCHARGING FROM THE PONDS.
2. PROPERLY TREAT ALL WATER TO REMOVE SUSPENDED SEDIMENT BEFORE IT RE-ENTERS A BODY OF WATER OR DISCHARGES FROM THE SITE.
3. WATER FROM ANY DEWATERING ACTIVITIES SHALL BE DISCHARGED INTO A TEMPORARY SEDIMENT BASIN OR SHALL RUN THROUGH A DEWATERING SILT SACK PRIOR TO LEAVING THE SITE. MEASURES SHALL ALSO BE TAKEN TO PREVENT SCOUR EROSION AT THE DEWATERING DISCHARGE POINT.
4. DISTURBED AREAS SHALL BE TEMPORARILY SEEDED AND/OR MULCHED IMMEDIATELY WHENEVER CLEARING, GRADING, EXCAVATING, OR OTHER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS.
5. DISTURBED AREAS SHALL BE TEMPORARILY SEEDED AND/OR MULCHED PRIOR TO THE SITE SHUTTING DOWN FOR WINTER CONDITIONS.
6. STORM SEWERS AND DRAINAGE WAYS SHALL BE PROTECTED FROM CONCRETE SLURRY PRODUCED BY SAW CUTTING AND CONCRETE GRINDING.
7. REFER TO LANDSCAPE SHEETS FOR PERMANENT SEED MIX TYPES, SPECIFIC QUANTITIES, AND LOCATIONS.

STABILIZATION QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
1	SILT FENCE	LF	3,218
2	FILTER SOCK	LF	248
3	INLET PROTECTION DEVICES	EA	3
4	CONCRETE WASHOUT PIT	LS	1

DISCHARGE POINT SUMMARY

DISCHARGE POINT #1 TO LITTLE WALNUT CREEK ±6,000 FT

TOTAL AREA DISTURBED TO DISCHARGE POINT	8.52 ACRES
STORAGE VOLUME REQUIRED (# OF ACRES*3600 CU FT)	30,672 CU FT
VOLUME PROVIDED IN FILTER SOCK (248 LF @ 2.0 CU FT/LF OF SOCK)	496 CU FT
VOLUME PROVIDED IN SILT FENCE (3,218 LF @ 4.5 CU FT/LF OF FENCE)	14,481 CU FT
VOLUME PROVIDED IN TEMPORARY SEDIMENT BASIN #1	376,710 CU FT
TOTAL VOLUME PROVIDED	391,687 CU FT

C-1400 EROSION CONTROL PLAN - OVERALL

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EROSION CONTROL PLAN - OVERALL

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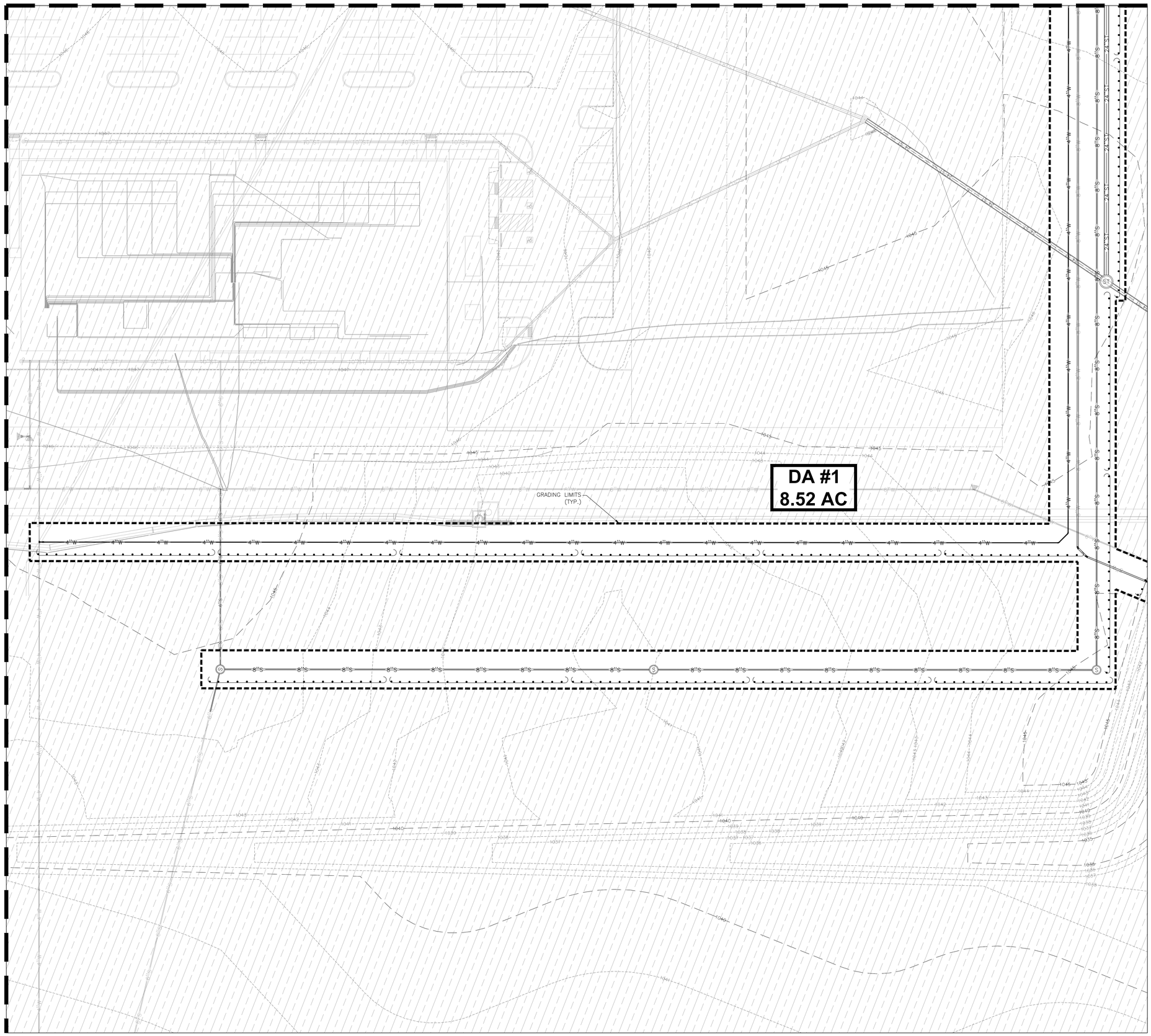
C-1400

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APPLE PROJECT NO. F.21D42

SEE SHEET C-1438 FOR CONTINUATION

SEE SHEET C-1431 FOR CONTINUATION



LEGEND

- DRAINAGE ARROW
- GRADING LIMITS
- FILTER SOCK (10 / C-5101)
- SILT FENCE (9 / C-5101)
- INLET PROTECTION
- R — PORTABLE RESTROOM
- CONCRETE WASHOUT PIT
- PERMANENT SEEDING
- TEMPORARY SEEDING
- UNDISTURBED AREA
- RIP-RAP
- TOP SOIL STOCK PILE
- GRAVEL ENTRANCE
- STAGING AREA
- TSB # — TEMPORARY SEDIMENT BASIN

SCALE
0' 10' 20' 40'

C-1432 EROSION CONTROL PLAN

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C-1432

SEE SHEET C-1438 FOR CONTINUATION

SEE SHEET C-1431 FOR CONTINUATION

GRADING LIMITS (TYP.)

LEGEND

- DRAINAGE ARROW
- GRADING LIMITS
- FILTER SOCK (10 / C-5101)
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- STAGING AREA
- TSB # — TEMPORARY SEDIMENT BASIN

N

SCALE
0' 10' 20' 40'

C-1433 EROSION CONTROL PLAN

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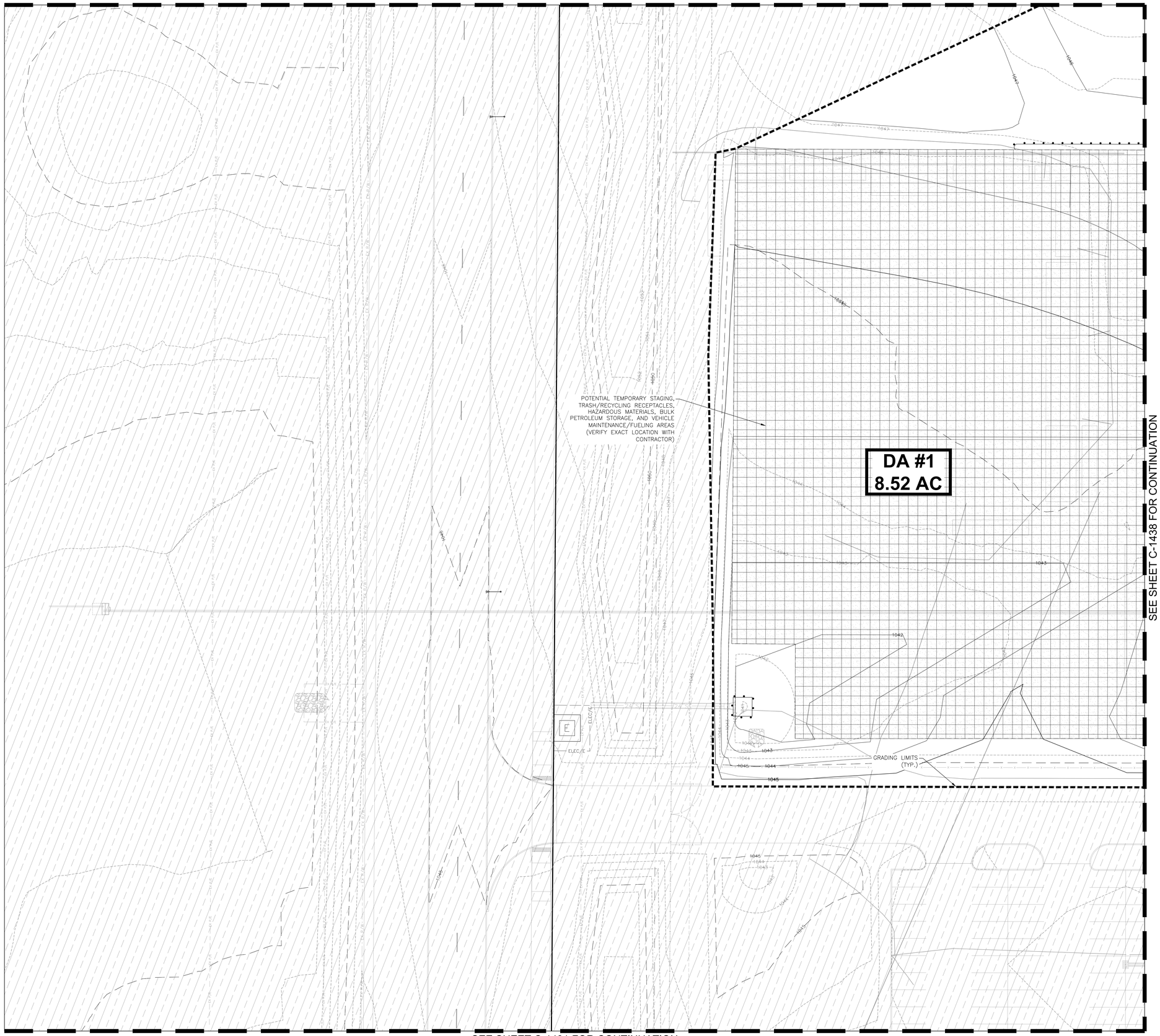
EROSION CONTROL PLAN

SCALE
JOB 10430287
DATE 2025.06.20
SHEET

C-1433

APPLE PROJECT NO. F.21D42

SEE SHEET C-1443 FOR CONTINUATION



LEGEND

- DRAINAGE ARROW
- GRADING LIMITS
- FILTER SOCK (10 / C-5101)
- SILT FENCE (9 / C-5101)
- INLET PROTECTION
- PORTABLE RESTROOM
- CONCRETE WASHOUT PIT
- PERMANENT SEEDING
- TEMPORARY SEEDING
- UNDISTURBED AREA
- RIP-RAP
- TOP SOIL STOCK PILE
- GRAVEL ENTRANCE
- STAGING AREA
- TSB # — TEMPORARY SEDIMENT BASIN

C-1437 EROSION CONTROL PLAN

PROJECT MORGAN
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WAUKEE, IA 50263

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SEE SHEET C-1444 FOR CONTINUATION

SEE SHEET C-1437 FOR CONTINUATION

C-1438 EROSION CONTROL PLAN

SEE SHEET C-1432 FOR CONTINUATION

GRADING LIMITS (TYP.)

DA #1
8.52 AC

POTENTIAL TEMPORARY STAGING, TRASH/RECYCLING RECEPTACLES, HAZARDOUS MATERIALS, BULK PETROLEUM STORAGE, AND VEHICLE MAINTENANCE/FUELING AREAS (VERIFY EXACT LOCATION WITH CONTRACTOR)

POTENTIAL PORTABLE RESTROOM LOCATION

R

INLET PROTECTION (TYP.)

FILTER SOCK (TYP.)

LEGEND

- DRAINAGE ARROW
- GRADING LIMITS
- FILTER SOCK (10 / C-5101)
- SILT FENCE (9 / C-5101)
- INLET PROTECTION
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SCALE
0' 10' 20' 40'

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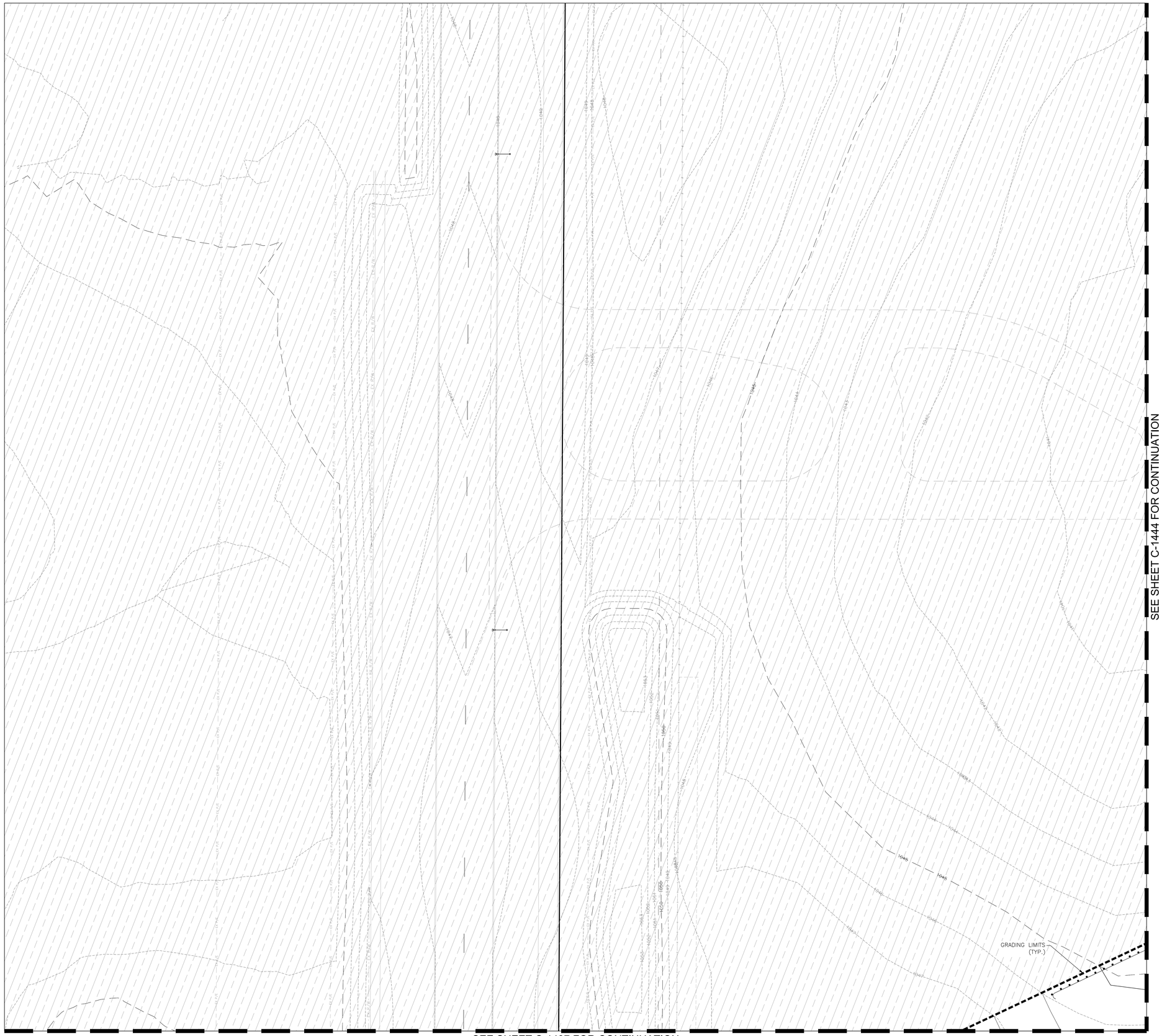
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LEGEND

- DRAINAGE ARROW (X.XX %)
- GRADING LIMITS
- FILTER SOCK (10 / C-5101)
- SILT FENCE (9 / C-5101)
- INLET PROTECTION
- PORTABLE RESTROOM (R)
- CONCRETE WASHOUT PIT
- PERMANENT SEEDING
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- RIP-RAP
- TOP SOIL STOCK PILE
- GRAVEL ENTRANCE
- STAGING AREA
- TEMPORARY SEDIMENT BASIN (TSB #)

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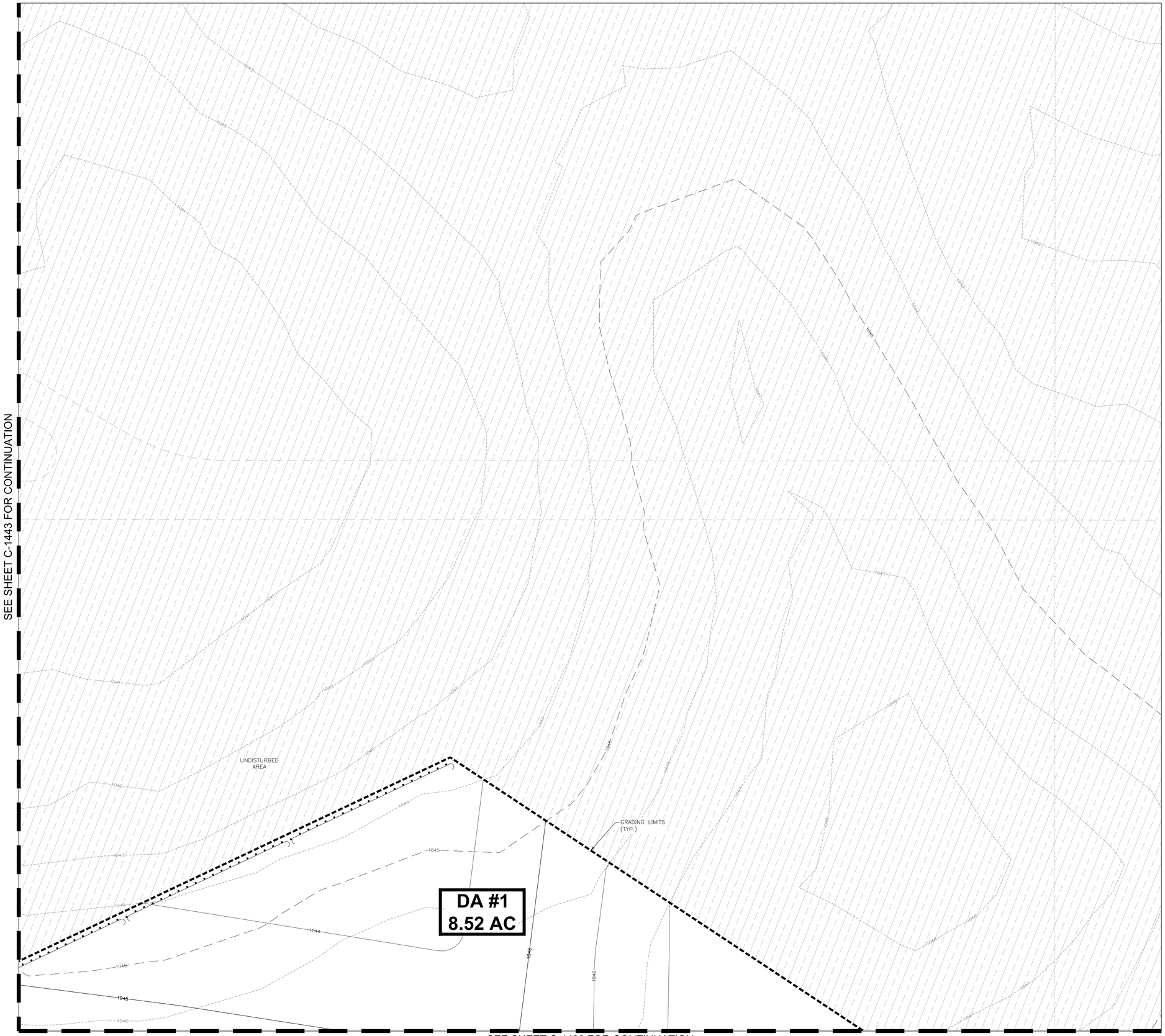
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C-1444 EROSION CONTROL PLAN

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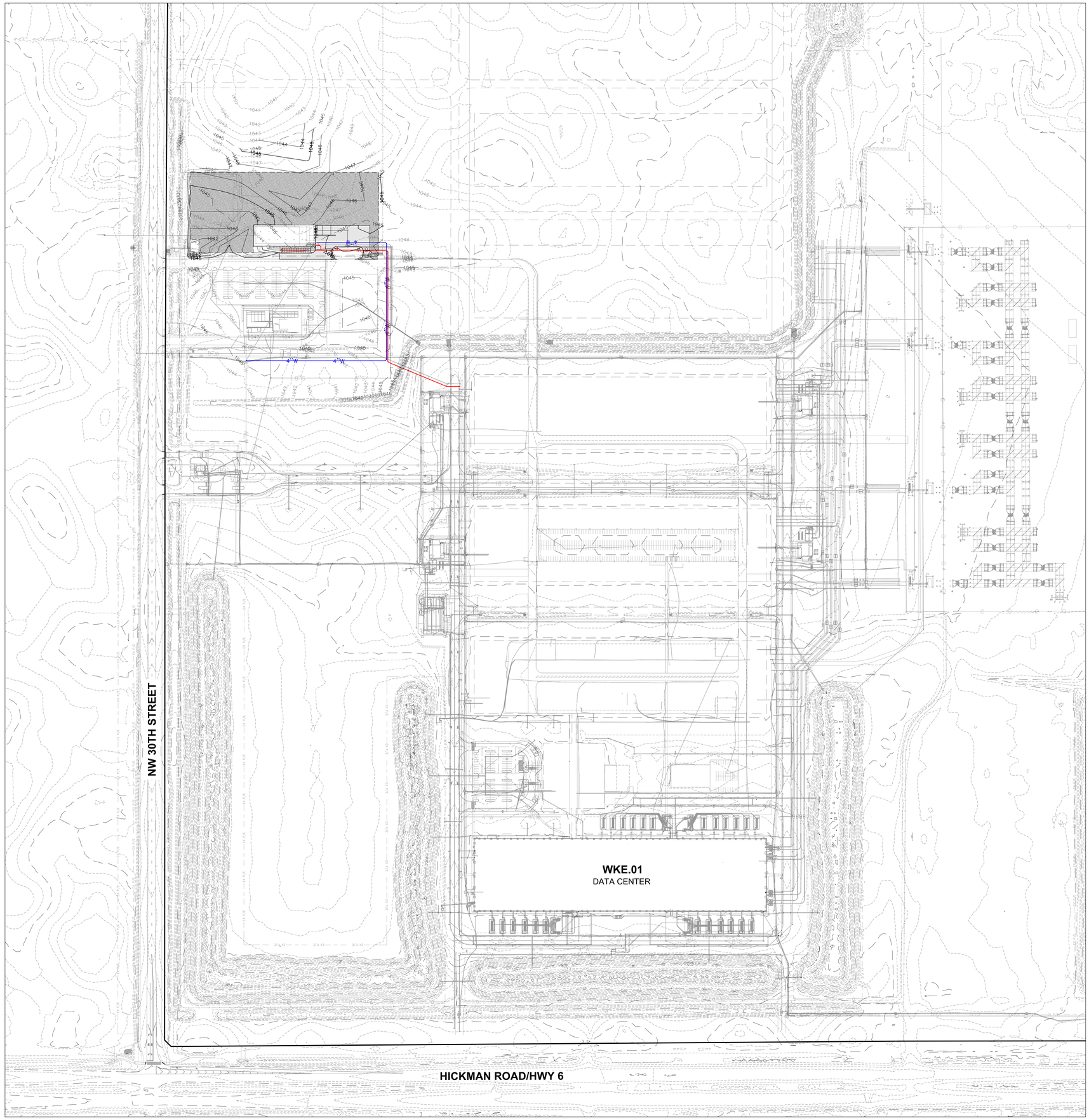
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WATER NOTES

1. REFER TO MECHANICAL, ELECTRICAL AND PLUMBING PLANS FOR UTILITY SERVICE SIZES AND EXACT LOCATIONS. REFER TO ELECTRICAL PLANS FOR ELECTRIC AND FIBER SERVICE CONSTRUCTION DETAILS.
2. FIELD VERIFY ELEVATIONS AND LOCATIONS OF ALL CONNECTIONS TO EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
3. PROVIDE TEMPORARY SUPPORT FOR EXISTING UTILITY LINES THAT ARE ENCOUNTERED DURING CONSTRUCTION UNTIL BACKFILLING IS COMPLETE.
4. MAINTAIN 6.0 FEET OF COVER OVERALL WATER MAIN PIPE TYPICAL. MINIMUM COVER OVER WATER MAIN IS 5.5 FEET.
5. ALL UTILITIES SHALL BE STUBBED TO 5 FEET FROM BUILDINGS. REFER TO MEP PLANS FOR DESIGN FROM 5 FEET OUTSIDE OF BUILDING FACE.
6. ADJUST ALL VALVES AND HYDRANTS TO FINISHED GRADES.
7. MAINTAIN A MINIMUM 18" VERTICAL CLEARANCE BETWEEN SEWER AND WATER MAIN.
8. MAINTAIN A MINIMUM OF 10' HORIZONTAL SEPARATION BETWEEN SEWER LINES AND WATER MAINS.
9. WHERE PUBLIC UTILITY FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THOSE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS. THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATIONS AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK. THE CONTRACTOR IS REQUIRED TO UTILIZE THE UTILITY ONE-CALL SERVICE AT 800-292-8989 AT LEAST 48 HOURS PRIOR TO EXCAVATING ANYWHERE ON THE PROJECT.
10. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE WORK OF ALL SUBCONTRACTOR(S) INVOLVED IN THE PROJECT.
11. THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL PRIVATE UTILITIES.
12. THE CONTRACTOR SHALL INSTALL A CATHODIC PROTECTION SYSTEM TO ALL DUCTILE IRON PIPE.
13. ALL DUCTILE IRON PIPE SHALL BE PRESSURE CLASS 350.

C-1600 WATER MAIN PLAN - OVERALL

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
Urbandale, IA 50322
515-369-4400

ISSUES

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PLAN N

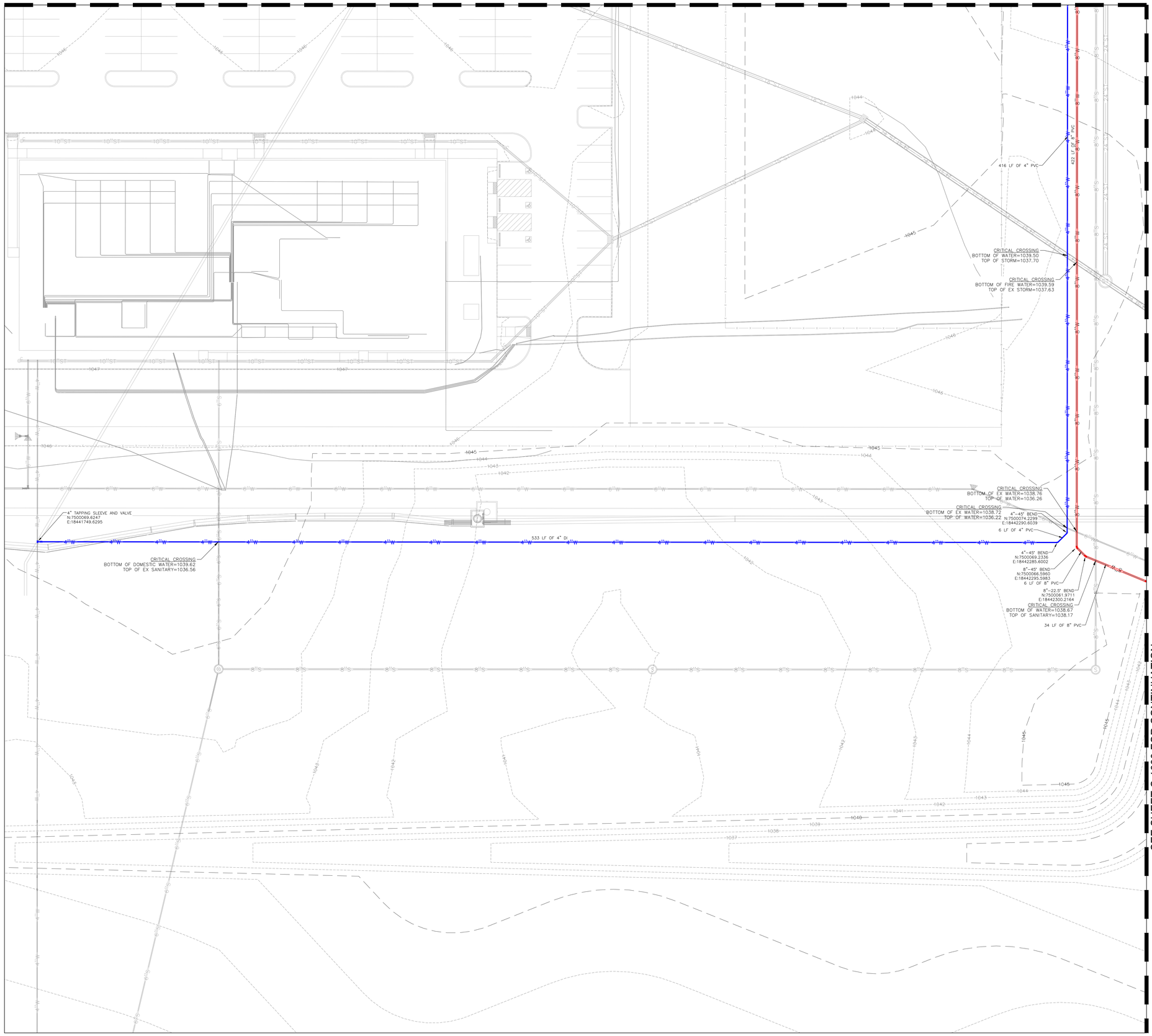
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WATER MAIN PLAN - OVERALL

SCALE
JOB 10430287
DATE 2025.06.20
SHEET

C-1600

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LEGEND

- PROPERTY LINE
- LOT LINE
- FIRE PROTECTION MAIN PIPE WITH SIZE (2 / C-5601)
- FIRE PROTECTION FIRE HYDRANT (1 / C-5601)
- FIRE PROTECTION GATE VALVE (4 / C-5601)
- FIRE PROTECTION TEE
- FIRE PROTECTION BEND
- DOMESTIC WATER MAIN PIPE WITH SIZE (2 / C-5601)
- DOMESTIC WATER POST HYDRANT (1 / C-5601)
- DOMESTIC WATER GATE VALVE (4 / C-5601)
- DOMESTIC WATER TEE
- DOMESTIC WATER BEND
- DOMESTIC WATER CURB STOP
- THRUST BLOCK (5 / C-5601)

DIP	DUCTILE IRON PIPE
PVC	POLYVINYL CHLORIDE
CP	COPPER PIPE
FGH	FINISHED GRADE AT HYDRANT

SITE FEATURES (BY OTHERS)

(ALL CALLOUTS ARE TYPICAL)

- (B1) ELECTRICAL EQUIPMENT (REFER TO ELECTRICAL PLANS)
- (B2) MECHANICAL EQUIPMENT (REFER TO MECHANICAL PLANS)
- (B3) TELECOM EQUIPMENT (REFER TO TELECOM PLANS)

NOTES

1. ALL RESTRAINED JOINTS (RJ) SHALL BE MEGA-LUG OR APPROVED EQUAL.
2. ALL PIPES SHALL BE SUPPLIED WITH A GRIPPER GASKET (GRIPPER GASKET LLC OR APPROVED EQUAL).
3. THE CONTRACTOR SHALL ENSURE ALL VALVE RIMS DO NOT CONFLICT WITH ADJACENT CURB.
4. WHERE THE STORM SEWER CROSSES OVER OR LESS THEN 18 INCHES BELOW THE WATER MAIN, LOCATE ONE FULL LENGTH OF SEWER PIPE WITH GASKETED JOINTS SO BOTH JOINTS ARE AS FAR AS POSSIBLE FROM THE WATER MAIN.
5. THE CONTRACTOR SHALL PROVIDE ALL FITTINGS (BENDS, REDUCERS, CONNECTIONS, TEES, CROSSES, ETC.) AS NECESSARY TO CONNECT THE WATER PIPES AND STRUCTURES TO THE SITE AND PUBLIC WATER SYSTEM.
6. ALL UTILITIES SHOWN ARE PRIVATE UNLESS EXPLICITLY LABELED PUBLIC.
7. THE CONTRACTOR SHALL INSTALL A CATHODIC PROTECTION SYSTEM ON ALL DUCTILE IRON PIPE.

C-1632 WATER MAIN PLAN

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
Urbandale, IA 50322
515-369-4400

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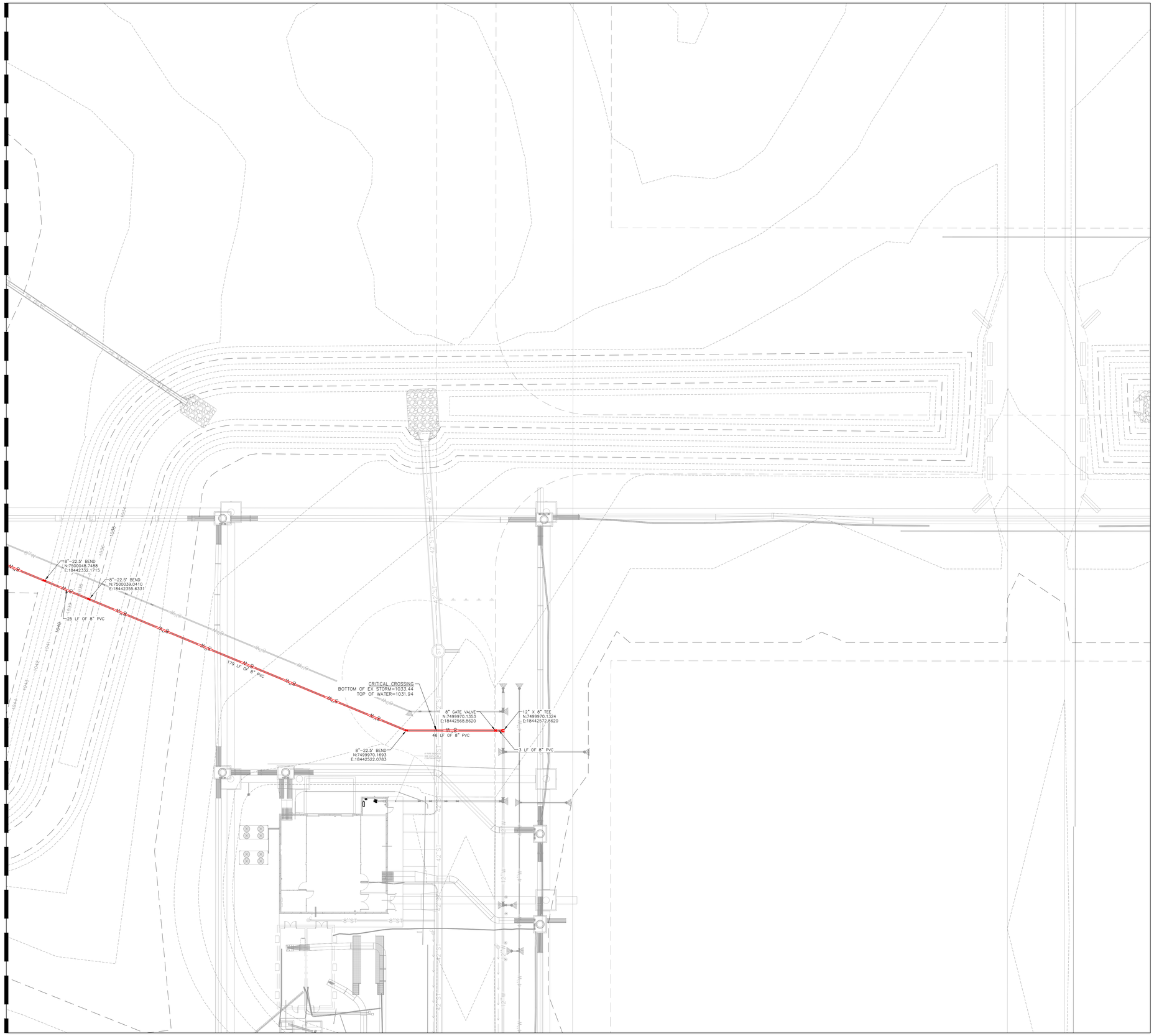
WATER MAIN PLAN

SCALE
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C-1632

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APPLE PROJECT NO. F.21D42



C-1633 WATER MAIN PLAN

LEGEND

- PROPERTY LINE
- LOT LINE
- FIRE PROTECTION MAIN PIPE WITH SIZE (2 C-5601)
- FIRE PROTECTION FIRE HYDRANT (1 C-5601)
- FIRE PROTECTION GATE VALVE (4 C-5601)
- FIRE PROTECTION TEE
- FIRE PROTECTION BEND
- DOMESTIC WATER MAIN PIPE WITH SIZE (2 C-5601)
- DOMESTIC WATER POST HYDRANT (1 C-5601)
- DOMESTIC WATER GATE VALVE (4 C-5601)
- DOMESTIC WATER TEE
- DOMESTIC WATER BEND
- DOMESTIC WATER CURB STOP
- THRUST BLOCK (5 C-5601)

DIP	DUCTILE IRON PIPE
PVC	POLYVINYL CHLORIDE
CP	COPPER PIPE
FGH	FINISHED GRADE AT HYDRANT

SITE FEATURES (BY OTHERS)

(ALL CALLOUTS ARE TYPICAL)

- (B1) ELECTRICAL EQUIPMENT (REFER TO ELECTRICAL PLANS)
- (B2) MECHANICAL EQUIPMENT (REFER TO MECHANICAL PLANS)
- (B3) TELECOM EQUIPMENT (REFER TO TELECOM PLANS)

NOTES

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3. THE CONTRACTOR SHALL ENSURE ALL VALVE RIMS DO NOT CONFLICT WITH ADJACENT CURB.
4. WHERE THE STORM SEWER CROSSES OVER OR LESS THEN 18 INCHES BELOW THE WATER MAIN, LOCATE ONE FULL LENGTH OF SEWER PIPE WITH GASKETED JOINTS SO BOTH JOINTS ARE AS FAR AS POSSIBLE FROM THE WATER MAIN.
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7. THE CONTRACTOR SHALL INSTALL A CATHODIC PROTECTION SYSTEM ON ALL DUCTILE IRON PIPE.

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PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
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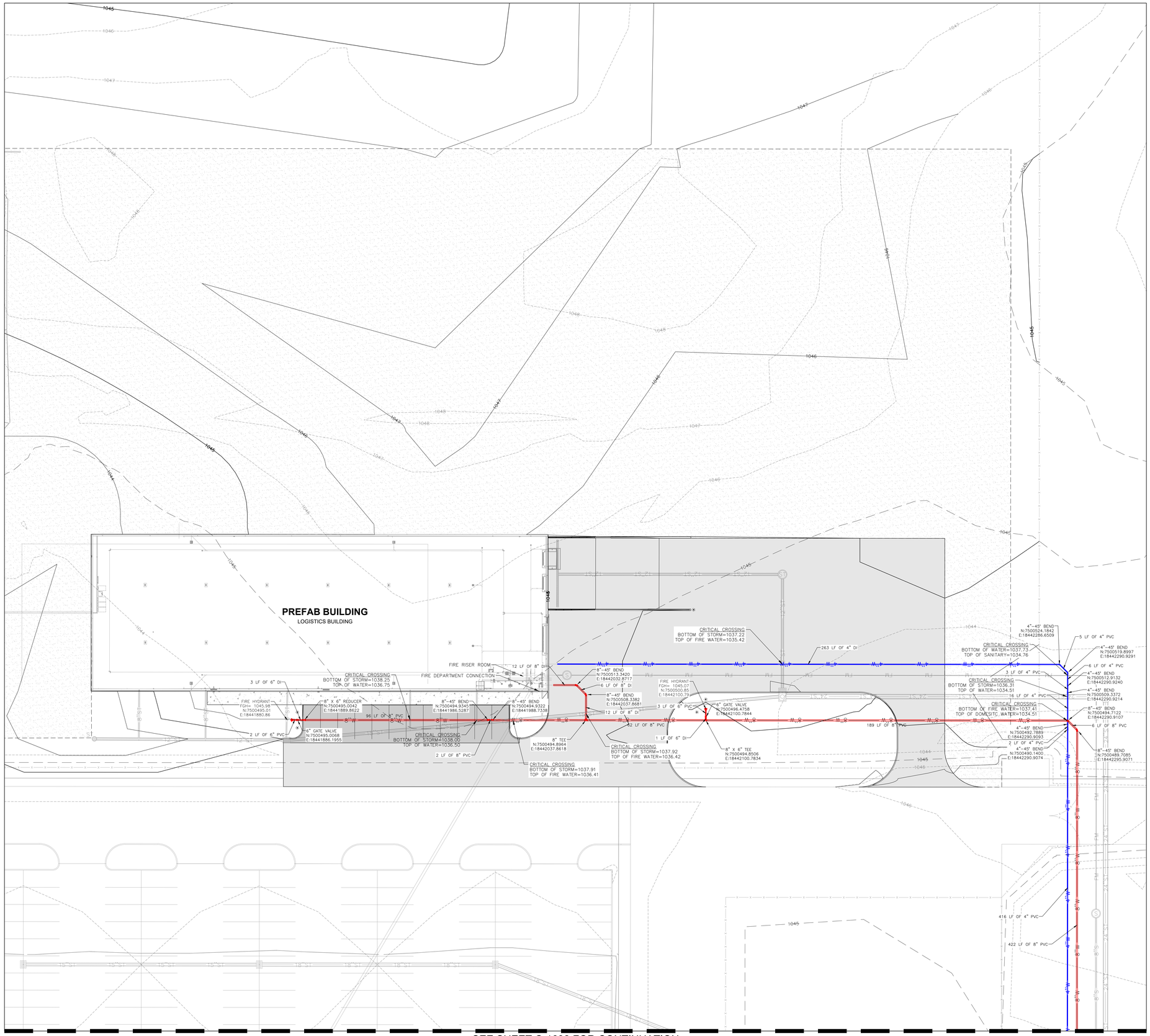
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WATER MAIN PLAN

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SHEET

C-1633



SEE SHEET C-1632 FOR CONTINUATION

LEGEND

- PROPERTY LINE
- LOT LINE
- FIRE PROTECTION MAIN PIPE WITH SIZE (2 C-5601)
- FIRE PROTECTION FIRE HYDRANT (1 C-5601)
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- DOMESTIC WATER TEE
- DOMESTIC WATER BEND
- DOMESTIC WATER CURB STOP
- THRUST BLOCK (5 C-5601)

DIP	DUCTILE IRON PIPE
PVC	POLYVINYL CHLORIDE
CP	COPPER PIPE
FGH	FINISHED GRADE AT HYDRANT

SITE FEATURES (BY OTHERS)

(ALL CALLOUTS ARE TYPICAL)

- (B1) ELECTRICAL EQUIPMENT (REFER TO ELECTRICAL PLANS)
- (B2) MECHANICAL EQUIPMENT (REFER TO MECHANICAL PLANS)
- (B3) TELECOM EQUIPMENT (REFER TO TELECOM PLANS)

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6. ALL UTILITIES SHOWN ARE PRIVATE UNLESS EXPLICITLY LABELED PUBLIC.
7. THE CONTRACTOR SHALL INSTALL A CATHODIC PROTECTION SYSTEM ON ALL DUCTILE IRON PIPE.

C-1638 WATER MAIN PLAN

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
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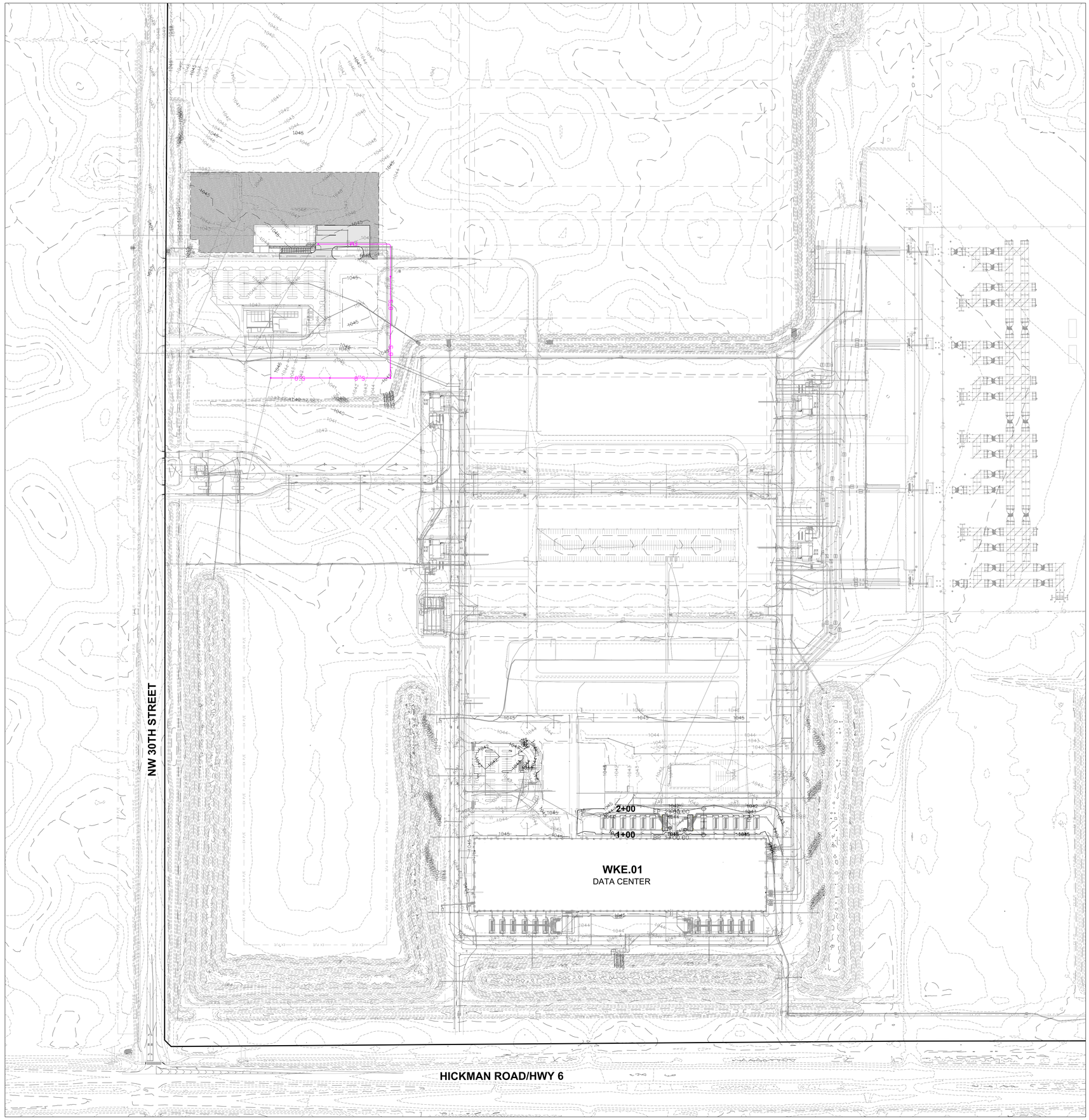
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WATER MAIN PLAN

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C-1638

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SANITARY SEWER NOTES

1. REFER TO MECHANICAL, ELECTRICAL AND PLUMBING PLANS FOR UTILITY SERVICE SIZES AND EXACT LOCATIONS. REFER TO ELECTRICAL PLANS FOR ELECTRIC AND FIBER SERVICE CONSTRUCTION DETAILS.
2. FIELD VERIFY ELEVATIONS AND LOCATIONS OF ALL CONNECTIONS TO EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
3. PROVIDE TEMPORARY SUPPORT FOR EXISTING UTILITY LINES THAT ARE ENCOUNTERED DURING CONSTRUCTION UNTIL BACKFILLING IS COMPLETE.
4. ALL UTILITIES SHALL BE STUBBED TO 5 FEET FROM BUILDINGS. REFER TO MEP PLANS FOR DESIGN FROM 5 FEET OUTSIDE OF BUILDING FACE.
5. ADJUST ALL MANHOLES AND INTAKES TO FINISHED GRADES.
6. 18" MINIMUM VERTICAL CLEARANCE BETWEEN STORM SEWER AND SANITARY SEWER PIPES. 18" MINIMUM VERTICAL CLEARANCE BETWEEN SEWER AND WATER MAIN.
7. MAINTAIN A MINIMUM OF 10' HORIZONTAL SEPARATION BETWEEN SEWER LINES AND WATER MAINS.
8. WHERE PUBLIC UTILITY FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THOSE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS. THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATIONS AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK. THE CONTRACTOR IS REQUIRED TO UTILIZE THE UTILITY ONE-CALL SERVICE AT 800-292-8989 AT LEAST 48 HOURS PRIOR TO EXCAVATING ANYWHERE ON THE PROJECT.
9. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE WORK OF ALL SUBCONTRACTOR(S) INVOLVED IN THE PROJECT.
10. THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL PRIVATE DETENTION FACILITIES AND PRIVATE UTILITIES.
11. CONTRACTOR SHALL PREVENT ENTRY OF MUD, DIRT, DEBRIS AND OTHER MATERIAL INTO NEW AND EXISTING SEWER SYSTEMS. SHOULD ANY CONTAMINATION OCCUR DURING CONSTRUCTION, THE CONTRACTOR SHALL CLEAN THE SEWER SYSTEM AT NO COST TO THE OWNER. INSTALL SILT FENCE AT ALL PERMANENT STORM SEWER INLETS.

C-1800 SANITARY SEWER PLAN - OVERALL

HDR

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
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515-369-4400

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SANITARY SEWER PLAN - OVERALL

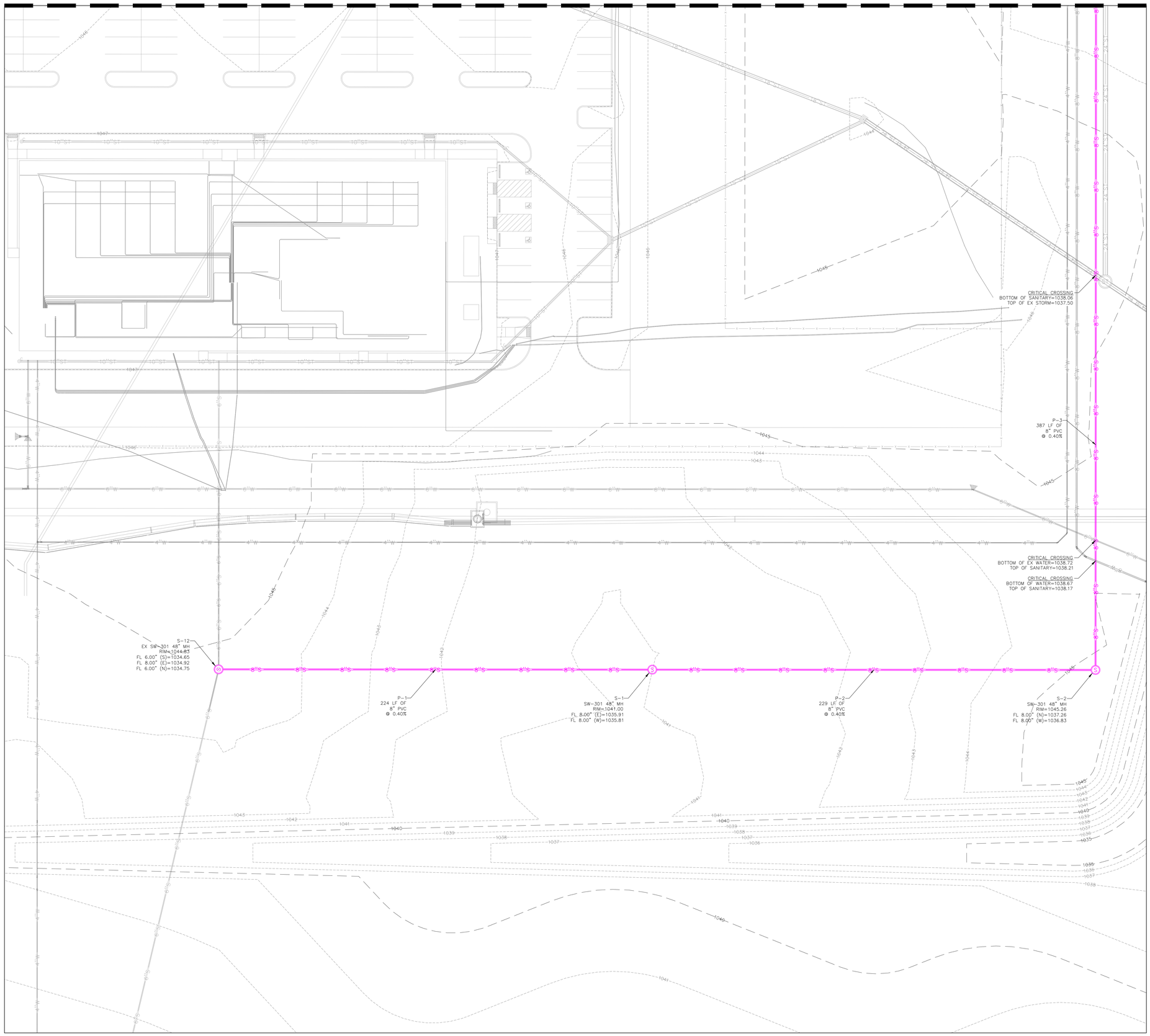
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C-1800

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APPLE PROJECT NO. F.21D42

SEE SHEET C-1838 FOR CONTINUATION



C-1832 SANITARY SEWER PLAN

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WAUKEE, IA 50263

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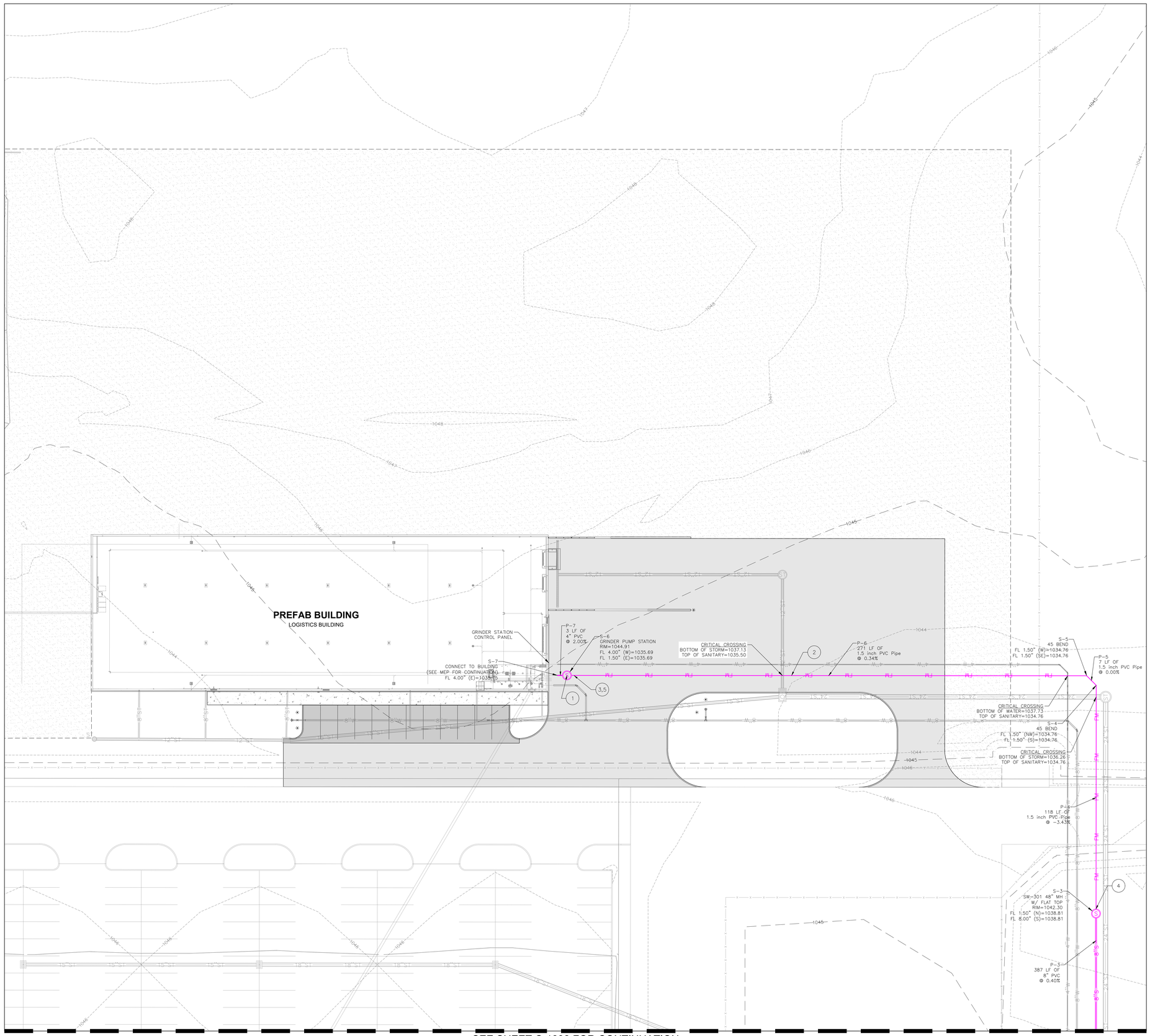
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SANITARY SEWER PLAN

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C-1832

APPLE PROJECT NO. F.21D42



SEE SHEET C-1832 FOR CONTINUATION

LEGEND

	PROPERTY LINE
	LOT LINE
8"S	SANITARY SEWER PIPE WITH SIZE (4 / C-5201)
	SANITARY SEWER MANHOLE
	SANITARY SEWER CLEANOUT
	WYE / BEND (2 / C-5201)
MH	MANHOLE
PVC	POLYVINYL CHLORIDE
DIP	DUCTILE IRON PIPE
FL	FLOWLINE (INVERT)

SITE KEY

(ALL CALLOUTS ARE TYPICAL)

1. INSTALL AN E/ONE GRINDER PUMP STATION OR ENGINEER APPROVED EQUIVALENT WITH 1.25" CONNECTION. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER FOR DELEGATED DESIGN OF GRINDER PUMP SYSTEM. INSTALL COMPLETE SYSTEM PER MANUFACTURER SPECIFICATIONS. PROVIDE 240V POWER PER MANUFACTURER REQUIREMENTS.
2. INSTALL SCH 40 1.5" PVC PIPE BETWEEN MANHOLE AND GRINDER PUMP STATION. TOP OF PIPE MINIMUM OF 66" BELOW GRADE.
3. INSTALL E/ONE STAINLESS STEEL LATERAL KIT COMPATIBLE FOR USE WITH 1.5" SCH 40 PVC PIPE EQUIPPED WITH AN EXTENSION TYPE CURB BOX WITH A LENGTH SUITABLE FOR USE WITH A 66" MINIMUM DEPTH OF BURY.
4. CONNECT 1.5" PVC FORCE MAIN TO MANHOLE.
5. CONTRACTOR TO INSTALL 1.25"x1.5" EXPANDER BETWEEN GRINDER PUMP STATION DISCHARGE AND NEAREST CLEANOUT.

SITE FEATURES (BY OTHERS)

(ALL CALLOUTS ARE TYPICAL)

- B1 ELECTRICAL EQUIPMENT (REFER TO ELECTRICAL PLANS)
- B2 MECHANICAL EQUIPMENT (REFER TO MECHANICAL PLANS)
- B3 TELECOM EQUIPMENT (REFER TO TELECOM PLANS)

NOTES

1. ALL UTILITIES SHOWN ARE PRIVATE UNLESS EXPLICITLY LABELED PUBLIC.
2. THE CONTRACTOR SHALL PROVIDE ALL PIPE FITTINGS (BENDS, WYES, CONNECTIONS, ETC.) AS NECESSARY TO CONNECT THE SEWER PIPES AND STRUCTURES INTO THE SITE AND PUBLIC SANITARY SEWER NETWORK.
3. ALL SANITARY SEWER FORCE MAIN PIPE SHALL BE SCH 40 POLYVINYL CHLORIDE (PVC). ALL SANITARY SEWER PIPE AND FITTINGS SHALL MEET THE REQUIREMENTS OF ASTM D1785 AND D2672, RESPECTIVELY. JOINTS SHALL BE SECURED WITH SOLVENT CEMENT MEETING ASTM SPECIFICATION D2564. SOLVENT CEMENT JOINTS SHALL BE MADE PER ASTM D2855. PRIMERS USED IN CONJUNCTION WITH SOLVENT CEMENT SHALL MEET THE CRITERIA OF ASTM F656. THE DEPTH TO THE TOP OF PIPE FOR ALL SANITARY SEWER PIPING SHALL BE A MINIMUM OF 66" BELOW GRADE.
4. INSTALLATION OF PRESSURE PIPE AND FITTINGS SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS FOR PIPE JOINT ASSEMBLY AND APPURTENANCE INSTALLATION IN AWWA M23, CHAPTER 7, "INSTALLATION" AND AS INDICATED.
5. LIFT STATION SHALL BE PLACED UPON A MINIMUM 6" BED OF GRAVEL, NATURALLY ROUNDED AGGREGATE, CLEAN AND FREE FLOWING, WITH PARTICLES NOT LESS THAN 1/8" OR MORE THAN 3/4" IN DIAMETER.
6. CONTRACTOR SHALL PROVIDE OPERATIONS AND MAINTENANCE MANUAL FROM VENDOR FOR GRINDER PUMP SYSTEM AND IT SHALL BE KEPT IN WKE94 FOR FUTURE MAINTENANCE.

C-1838 SANITARY SEWER PLAN

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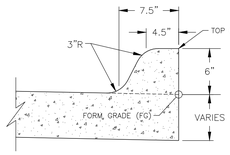
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01	02	03	04	05	06	

SANITARY SEWER PLAN

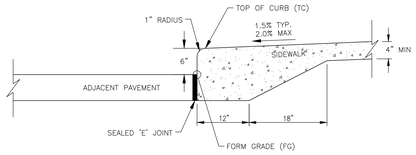
SCALE
JOB 10430287
DATE 2025.06.20
SHEET

C-1838

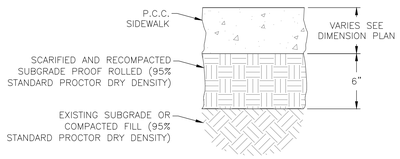
APPLE PROJECT NO. F.21D42



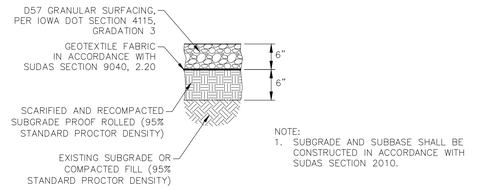
1 6" STANDARD CURB
NOT TO SCALE



2 CLASS 'A' INTEGRAL CURB AND SIDEWALK
NOT TO SCALE

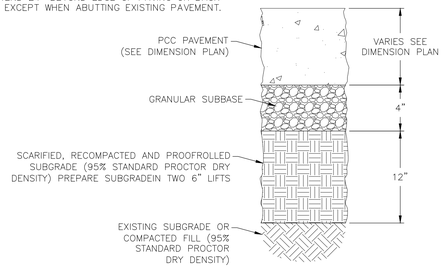


3 P.C.C. SIDEWALK
NOT TO SCALE

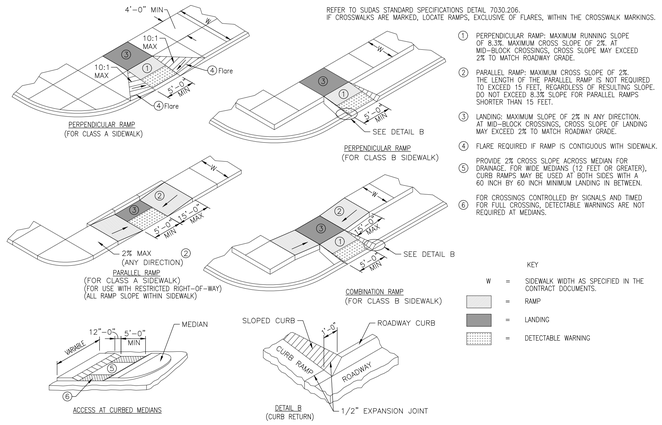


4 GRAVEL SURFACING
NOT TO SCALE

NOTES:
1. SUBGRADE PREPARATION AND GRANULAR SUBBASE SHALL EXTEND 24" BEYOND EDGE OF PAVING OR BACK OF CURB. EXCEPT WHEN ABUTTING EXISTING PAVEMENT.



5 P.C.C. PAVING
NOT TO SCALE



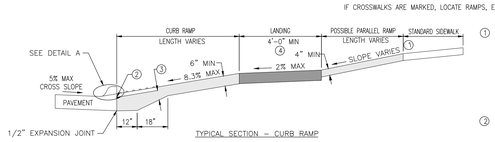
REFER TO SUDAS STANDARD SPECIFICATIONS DETAIL 7030.206.
IF CROSSWALKS ARE MARKED, LOCATE RAMPS, EXCLUSIVE OF FLARES, WITHIN THE CROSSWALK MARKINGS.

1. PERPENDICULAR RAMP: MAXIMUM RUNNING SLOPE OF 8.3%. MAXIMUM CROSS SLOPE OF 2% AT MID-BLOCK CROSSINGS. CROSS SLOPE MAY EXCEED 2% TO MATCH ROADWAY GRADE.
2. PARALLEL RAMP: MAXIMUM CROSS SLOPE OF 2%. THE LENGTH OF THE PARALLEL RAMP IS NOT REQUIRED TO EXCEED 15 FEET, REGARDLESS OF RESULTING SLOPE. DO NOT EXCEED 8.3% SLOPE FOR PARALLEL RAMPS SHORTER THAN 15 FEET.
3. LANDING: MAXIMUM SLOPE OF 2% IN ANY DIRECTION. AT MID-BLOCK CROSSINGS, CROSS SLOPE OF LANDING MAY EXCEED 2% TO MATCH ROADWAY GRADE.
4. FLARE REQUIRED IF RAMP IS CONTIGUOUS WITH SIDEWALK.
5. PROVIDE 2% CROSS SLOPE ACROSS MEDIAN FOR DRAINAGE. FOR WIDE MEDIANS (12 FEET OR GREATER), CURB RAMPS MAY BE USED AT BOTH SIDES WITH A 60 INCH BY 60 INCH MINIMUM LANDING IN BETWEEN.
6. FOR CROSSINGS CONTROLLED BY SIGNALS AND TIMED FOR FULL CROSSING, DETECTABLE WARNINGS ARE NOT REQUIRED AT MEDIANS.

KEY
W = SIDEWALK WIDTH AS SPECIFIED IN THE CONTRACT DOCUMENTS.
= RAMP
= LANDING
= DETECTABLE WARNING

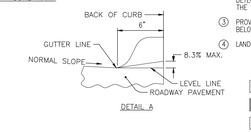
6 CURB RAMPS OUTSIDE OF INTERSECTION RADIUS
NOT TO SCALE

IF CROSSWALKS ARE MARKED, LOCATE RAMPS, EXCLUSIVE OF FLARES, WITHIN THE CROSSWALK MARKINGS.



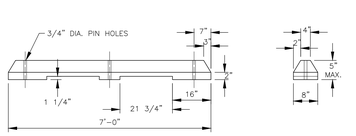
1. PARALLEL RAMP: IF NORMAL SIDEWALK ELEVATION CANNOT BE ACHIEVED WITH THE PERPENDICULAR RAMP BETWEEN THE STREET AND LANDING DUE TO LIMITED RAMP LENGTH, PROVIDE A PARALLEL RAMP TO MAKE UP THE ELEVATION DIFFERENCE BETWEEN THE LANDING AND THE STANDARD SIDEWALK.

   THE LENGTH OF THE PARALLEL RAMP IS NOT REQUIRED TO EXCEED 15 FEET, REGARDLESS OF THE RESULTING SLOPE. DO NOT EXCEED 8.3% SLOPE FOR PARALLEL RAMPS SHORTER THAN 15 FEET.
2. INSTALL A 24 INCH WIDE (MIN) STRIP OF DETECTABLE WARNINGS AT THE BACK OF CURB. EXTEND THE DETECTABLE WARNINGS ACROSS THE FULL WIDTH OF THE RAMP.
3. PROVIDE A MINIMUM OF 6 INCHES OF CONCRETE BELOW THE DETECTABLE WARNING PANEL.
4. LANDING: MAXIMUM SLOPE OF 2% IN ANY DIRECTION.



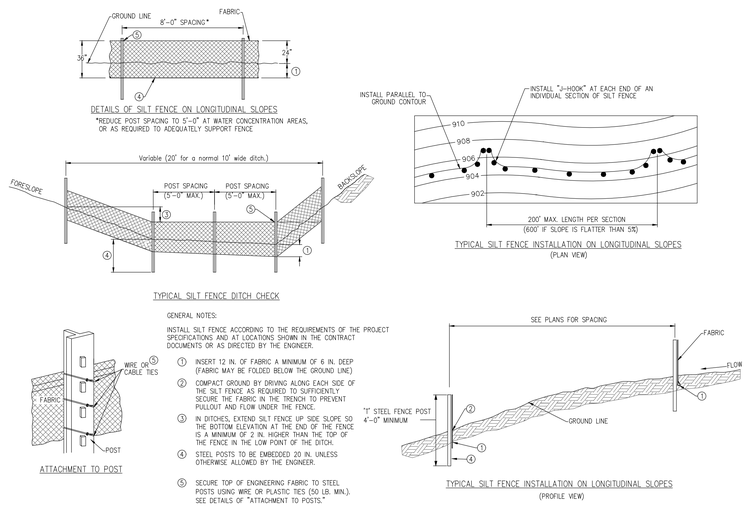
KEY
= RAMP
= LANDING
= DETECTABLE WARNING

7 CURB RAMPS - GENERAL SECTION
NOT TO SCALE



NOTES:
1. DETAILS INDICATED HEREON ARE TYPICAL ONLY. ALTERNATE DESIGNS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY ALTERNATE DESIGN APPROVED FOR USE ON CONSTRUCTION SHALL CONFORM TO THE MINIMUM REQUIREMENTS AS SHOWN. REFER TO ADDITIONAL PORTIONS OF THE PROJECT PLANS FOR COMPLETE DATA AS TO INSTALLATION, LOCATION, ETC.
2. ANY PRECAST P.C.C. WHEELSTOP MEASURING LONGER THAN 6'-0" WILL REQUIRE 3 ANCHOR PINS TO HOLD WHEELSTOP IN POSITION.
3. ANCHOR PINS SHALL BE 5/8" DIAMETER, 1'-6" LONG. ANCHOR PINS THAT ARE NOT BEDDED IN CONCRETE SHALL BE GALVANIZED. GROUT ANCHOR PINS MINIMUM OF 2" DEEP.
4. REINFORCING STEEL USED IN PRECAST P.C.C. WHEELSTOPS SHALL HAVE A MINIMUM OF 2" CLEARANCE TO THE CONCRETE SURFACES.
5. MINIMUM CONCRETE STRENGTH IS 4,000 PSI. LOCATE 6" FROM EDGE OF PAVEMENT TO CENTER OF WHEELSTOP. CENTER WHEELSTOP IN EACH SPACE.

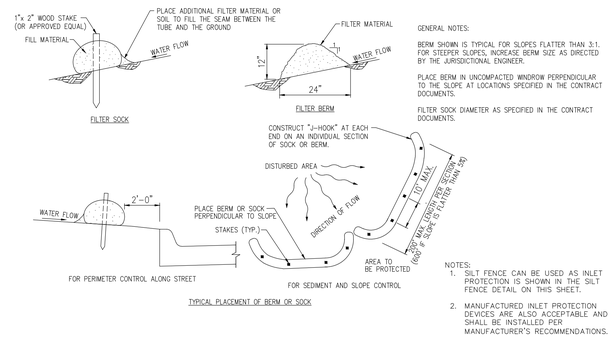
8 P.C.C WHEELSTOP
NOT TO SCALE



GENERAL NOTES:
INSTALL SILT FENCE ACCORDING TO THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS AND AT LOCATIONS SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE ENGINEER.

1. INSERT 12 IN. OF FABRIC A MINIMUM OF 6 IN. DEEP (FABRIC MAY BE FOLDED BELOW THE GROUND LINE)
2. COMPACT GROUND BY DRIVING ALONG EACH SIDE OF THE SILT FENCE AS REQUIRED TO SUFFICIENTLY SECURE THE FABRIC IN THE TRENCH TO PREVENT PULLOUT AND FLOW UNDER THE FENCE.
3. IN DITCHES, EXTEND SILT FENCE UP SIDE SLOPE SO THE BOTTOM ELEVATION AT THE END OF THE FENCE IS A MINIMUM OF 2 IN. HIGHER THAN THE TOP OF THE FENCE IN THE LOW POINT OF THE DITCH.
4. STEEL POSTS TO BE EMBEDDED 20 IN. UNLESS OTHERWISE ALLOWED BY THE ENGINEER.
5. SECURE TOP OF ENGINEERING FABRIC TO STEEL POSTS USING WIRE OR PLASTIC TIES (50 LB. MIN.). SEE DETAILS OF "ATTACHMENT TO POSTS."

9 SILT FENCE
NOT TO SCALE



GENERAL NOTES:

BERM SHOWN IS TYPICAL FOR SLOPES FLATTER THAN 3:1. FOR STEEPER SLOPES, INCREASE BERM SIZE AS DIRECTED BY THE JURISDICTIONAL ENGINEER.

PLACE BERM IN UNCOMPACTED WINDROW PERPENDICULAR TO THE SLOPE AT LOCATIONS SPECIFIED IN THE CONTRACT DOCUMENTS.

FILTER SOCK DIAMETER AS SPECIFIED IN THE CONTRACT DOCUMENTS.

NOTES:
1. SILT FENCE CAN BE USED AS INLET PROTECTION IS SHOWN IN THE SILT FENCE DETAIL ON THIS SHEET.
2. MANUFACTURED INLET PROTECTION DEVICES ARE ALSO ACCEPTABLE AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

10 FILTER BERM AND FILTER SOCK
NOT TO SCALE

C-5101 DETAILS

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PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
Urbandale, IA 50322
515-369-4400

ISSUES
1	2025-06-12	100% CONSTRUCTION DOCUMENTS
2	2025-06-20	ISSUE FOR PERMIT

REVISIONS

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RYAN HARDISTY



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Date of issue:
06.20.2025

PLAN N

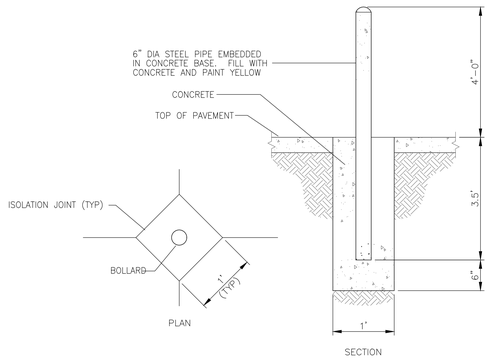
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DETAILS

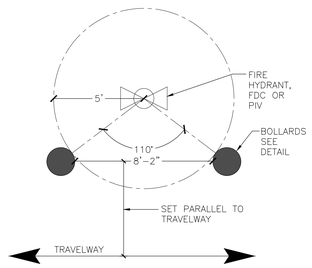
SCALE
JOB 10430287
DATE 2025.06.20
SHEET

C-5101

APPLE PROJECT NO. F.21D42



1 BOLLARD
NOT TO SCALE



2 BOLLARD SPACING AROUND HYDRANT
NOT TO SCALE

C-5102 DETAILS

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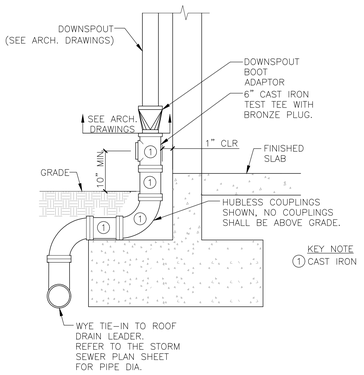
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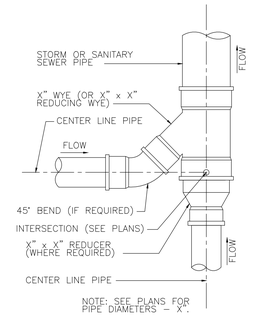
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DETAILS

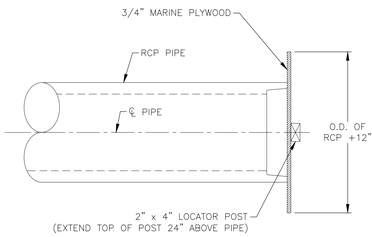
SCALE
JOB 10430287
DATE 2025.06.20
SHEET



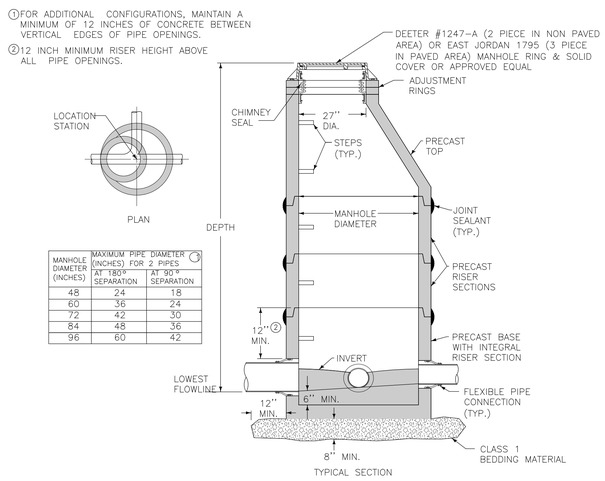
1 ROOF DRAIN CONNECTION WITH TEE
NOT TO SCALE



2 WYE CONNECTION
NOT TO SCALE

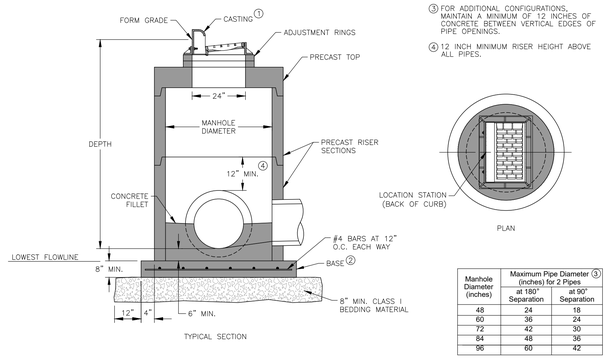


3 RCP STORM SEWER PIPE PLUG
NOT TO SCALE



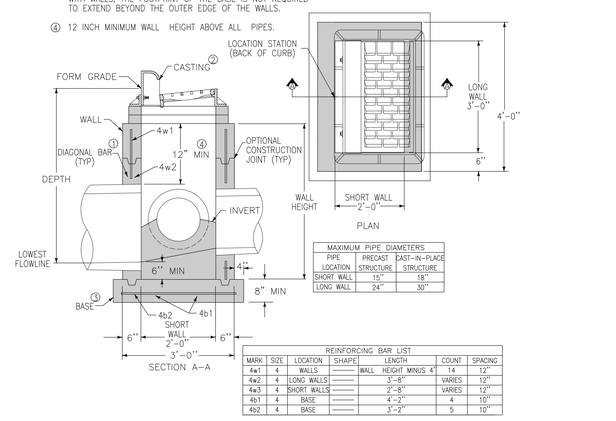
MANHOLE DIAMETER (INCHES)	MAXIMUM PIPE DIAMETER (INCHES) FOR 2 PIPES 3	
	AT 180° SEPARATION	AT 90° SEPARATION
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42

4 SW-301 CIRCULAR SANITARY SEWER MANHOLE
NOT TO SCALE



Manhole Diameter (inches)	Maximum Pipe Diameter 3 (inches) for 2 Pipes	
	at 180° Separation	at 90° Separation
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42

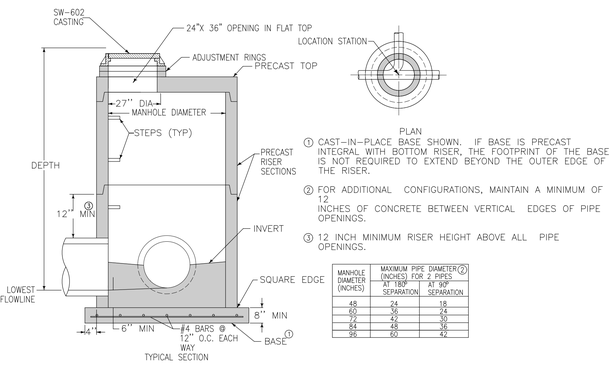
5 SW-502 CIRCULAR STORM SEWER INTAKE
NOT TO SCALE



MAXIMUM PIPE DIAMETERS		
PIPE LOCATION	PRECAST STRUCTURE	CAST-IN-PLACE STRUCTURE
SHORT WALL	15"	18"
LONG WALL	24"	30"

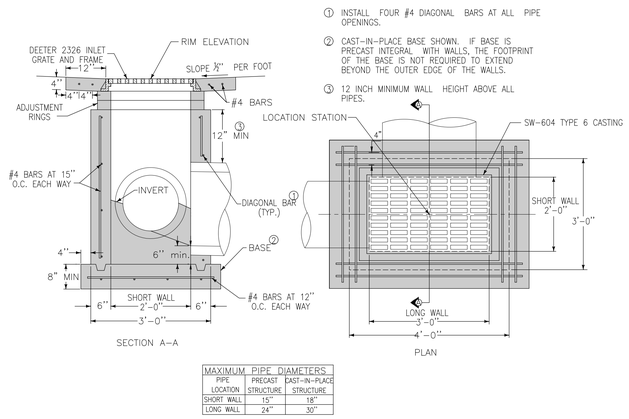
REINFORCING BAR LIST						
MARK	SIZE	LOCATION	SHAPE	LENGTH	COUNT	SPACING
4w1	4	WALLS	———	WALL HEIGHT MINUS 4"	14	12"
4w2	4	LONG WALLS	———	3'-8"	VARIES	12"
4w3	4	SHORT WALLS	———	2'-8"	VARIES	12"
4b1	4	BASE	———	4'-2"	4	10"
4b2	4	BASE	———	3'-2"	5	10"

6 SW-501 SINGLE GRATE INTAKE
NOT TO SCALE



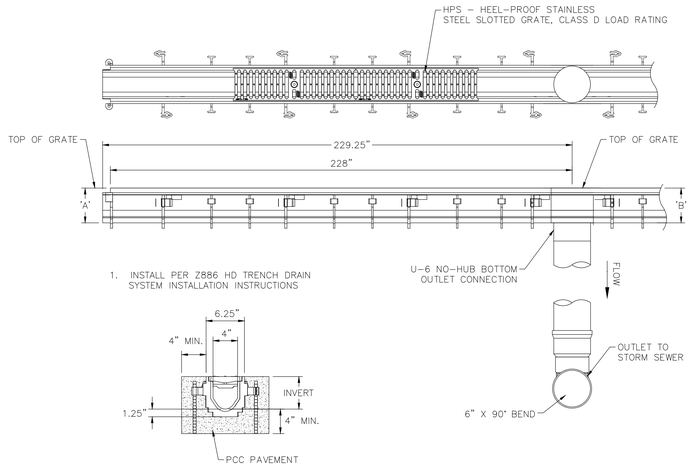
MANHOLE DIAMETER (INCHES)	MAXIMUM PIPE DIAMETER (INCHES) FOR 2 PIPES 2	
	AT 180° SEPARATION	AT 90° SEPARATION
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42

7 SW-401 CIRCULAR STORM SEWER MANHOLE
NOT TO SCALE



MAXIMUM PIPE DIAMETERS		
PIPE LOCATION	PRECAST STRUCTURE	CAST-IN-PLACE STRUCTURE
SHORT WALL	15"	18"
LONG WALL	24"	30"

8 SW-511 RECTANGULAR AREA INTAKE
NOT TO SCALE



9 ZURN Z886 HD - TRENCH DRAIN
NOT TO SCALE

C-5201 DETAILS

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
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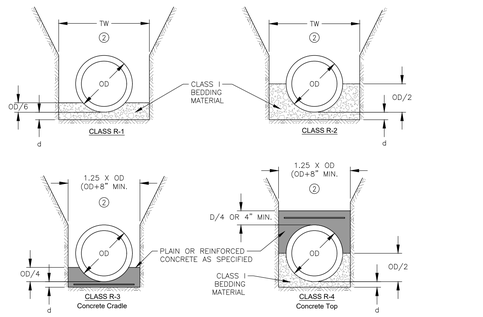
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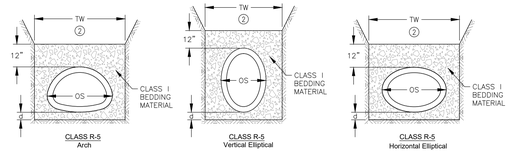
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APPLE PROJECT NO. F.21D42

RCP AND VCP CIRCULAR PIPE BEDDING ①



REINFORCED CONCRETE ARCH AND ELLIPTICAL PIPE BEDDING



① USE BEDDING CLASS R-1 OR R-2 UNLESS SPECIFIED OTHERWISE.

② PLACE REMAINDER OF BEDDING AND BACKFILL MATERIALS AS SPECIFIED IN THE CONTRACT DOCUMENTS.

KEY:
OD = OUTSIDE DIAMETER OF PIPE

OS = OUTSIDE SPAN OF PIPE

TW = TRENCH WIDTH AT TOP OF PIPE:
MIN. = OD+18 INCHES
MAX.= 1.25XOD+12 INCHES OR
54 INCHES (WHICHEVER IS GREATER)

d = DEPTH OF BEDDING MATERIAL BELOW PIPE:
OD/8 OR OS/8, OR 4 INCHES
(WHICHEVER IS GREATER)

ALLOWABLE BURY DEPTH

CLASS III RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	7'	10'	15'	19'	27'
15	8'	10'	16'	19'	27'
18	8'	11'	16'	20'	40'
21	8'	11'	18'	26'	40'
24	8'	12'	23'	36'	40'
27	10'	15'	30'	40'	40'
30	11'	15'	29'	40'	40'
33	11'	15'	28'	40'	40'
36	11'	15'	27'	40'	40'
42	11'	15'	26'	38'	40'
48	11'	15'	26'	36'	40'
54	11'	15'	25'	34'	40'
60	11'	15'	25'	33'	40'
66	11'	15'	24'	32'	40'
72	11'	15'	24'	32'	40'

As = Area of Steel Reinforcing

CLASS IV RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	12'	15'	23'	28'	40'
15	12'	16'	23'	30'	40'
18	13'	16'	29'	40'	40'
21	13'	18'	40'	40'	40'
24	16'	23'	40'	40'	40'
27	19'	30'	40'	40'	40'
30	19'	29'	40'	40'	40'
33	19'	28'	40'	40'	40'
36	19'	28'	40'	40'	40'
42	18'	27'	40'	40'	40'
48	18'	26'	40'	40'	40'
54	18'	25'	40'	40'	40'
60	18'	25'	40'	40'	40'
66	18'	25'	40'	40'	40'
72	18'	24'	40'	40'	40'

As = Area of Steel Reinforcing

CLASS V RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	18'	23'	35'	40'	40'
15	19'	24'	40'	40'	40'
18	19'	30'	40'	40'	40'
21	25'	40'	40'	40'	40'
24	34'	40'	40'	40'	40'
27	40'	40'	40'	40'	40'
30	40'	40'	40'	40'	40'
33	40'	40'	40'	40'	40'
36	40'	40'	40'	40'	40'
42	37'	40'	40'	40'	40'
48	35'	40'	40'	40'	40'
54	33'	40'	40'	40'	40'
60	32'	40'	40'	40'	40'
66	31'	40'	40'	40'	40'
72	31'	40'	40'	40'	40'

As = Area of Steel Reinforcing

EXTRA STRENGTH VCP

Pipe Dia. (in)	Bedding Class				
	R-1	R-2	R-3 & R-4		
			No Steel	As=0.4%	As=1.0%
6	25'	30'	30'	30'	30'
8	20'	26'	30'	30'	30'
10	18'	23'	30'	30'	30'
12	16'	20'	30'	30'	30'
15	15'	19'	28'	30'	30'
18	14'	18'	30'	30'	30'
21	15'	22'	30'	30'	30'
24	18'	28'	30'	30'	30'
27	20'	30'	30'	30'	30'
30	19'	29'	30'	30'	30'
33	20'	30'	30'	30'	30'
36	20'	30'	30'	30'	30'
39	19'	29'	30'	30'	30'
42	18'	26'	30'	30'	30'

As = Area of Steel Reinforcing

CONCRETE ARCH PIPE

Pipe Size (in x in)	Equiv. Dia. (in)	Pipe Class	
		A-III	A-IV
18 x 11	15	6'	11'
22 x 13	18	6'	11'
26 x 15	21	6'	13'
29 x 18	24	7'	15'
36 x 22	30	8'	15'
44 x 27	36	8'	14'
51 x 31	42	8'	15'
58 x 36	48	8'	15'
65 x 40	54	8'	15'
73 x 45	60	8'	14'
88 x 54	72	9'	14'

Based on Class R-5 bedding

HORIZONTAL ELLIPTICAL RCP

Pipe Size (in x in)	Equiv. Dia. (in)	Pipe Class	
		HE-III	HE-IV
14 x 23	18	12'	22'
19 x 30	24	15'	29'
22 x 34	27	15'	28'
24 x 38	30	15'	27'
27 x 42	33	15'	27'
29 x 45	36	15'	26'
32 x 49	39	15'	26'
34 x 54	42	15'	25'
38 x 60	48	15'	25'
43 x 68	54	15'	24'
48 x 76	60	15'	24'
53 x 83	66	15'	24'
58 x 91	72	15'	24'
63 x 98	78	15'	23'
68 x 106	84	15'	23'

Based on Class R-5 bedding

VERTICAL ELLIPTICAL RCP

Pipe Size (in x in)	Equiv. Dia. (in)	Pipe Class			
		VE-III	VE-IV	VE-V	VE-VI
23 x 14	18	10'	15'	22'	33'
30 x 19	24	10'	16'	34'	40'
34 x 22	27	11'	20'	40'	40'
38 x 24	30	12'	23'	40'	40'
42 x 27	33	15'	30'	40'	40'
45 x 29	36	15'	29'	40'	40'
49 x 32	39	15'	29'	40'	40'
54 x 34	42	15'	28'	40'	40'
60 x 38	48	15'	27'	40'	40'
68 x 43	54	15'	27'	40'	40'
76 x 48	60	15'	26'	40'	40'
83 x 53	66	15'	25'	40'	40'
91 x 58	72	15'	25'	40'	40'
98 x 63	78	15'	25'	40'	40'
106 x 68	84	15'	24'	40'	40'

Based on Class R-5 bedding

① SW-102 RIGID GRAVITY PIPE TRENCH BEDDING
NOT TO SCALE

BEDDING CLASSES

① PLACE REMAINDER OF BEDDING AND BACKFILL MATERIALS AS SPECIFIED IN THE CONTRACT DOCUMENTS.

② MINIMUM DEPTH OF BURY 12 INCHES OR AS SPECIFIED BY THE MANUFACTURER.

ALLOWABLE BEDDING CLASSES

PIPE MATERIAL	STORM SEWER	SANITARY SEWER
Ductile Iron	F-1, F-2, F-3	F-1, F-2, F-3
HDPE	F-2, F-3	Not allowed
Polypropylene	F-2, F-3	F-3
PVC	F-2, F-3	F-3

KEY:

OD = OUTSIDE DIAMETER OF PIPE

TW = TRENCH WIDTH AT TOP OF PIPE: MIN. = OD+18 INCHES OR 1.25XOD+12 INCHES (WHICHEVER IS GREATER)

ALLOWABLE BURY DEPTH ②

PVC PIPE

Pipe Diameter (in)	ASTM D 3034			ASTM F 679	ASTM F 949	ASTM F 1803	ASTM D 2680
	Solid Wall			Solid Wall	Corrug. Exterior	Closed Profile	Composite (Truss Type)
	SDR 23.5	SDR 26	SDR 35	SDR 35			
8	30'	28'	24'	– – –	24'	– – –	32'
10	30'	28'	24'	– – –	24'	– – –	32'
12	30'	28'	24'	– – –	24'	– – –	32'
15	30'	28'	24'	– – –	24'	– – –	32'
18	– – –	– – –	– – –	24'	24'	– – –	– – –
21	– – –	– – –	– – –	24'	24'	24'	– – –
24	– – –	– – –	– – –	24'	24'	24'	– – –
27	– – –	– – –	– – –	24'	– – –	24'	– – –
30	– – –	– – –	– – –	24'	24'	24'	– – –
33	– – –	– – –	– – –	24'	– – –	– – –	– – –
36	– – –	– – –	– – –	24'	24'	24'	– – –
42	– – –	– – –	– – –	24'	– – –	24'	– – –
48	– – –	– – –	– – –	24'	– – –	24'	– – –
54	– – –	– – –	– – –	– – –	– – –	24'	– – –
60	– – –	– – –	– – –	– – –	– – –	24'	– – –

DUCTILE IRON, AWWA C151, CLASS 52

Pipe Diameter (in)	Class F-1 Bedding	Class F-2 Bedding	Class F-3 Bedding
4	40'	40'	40'
6	40'	40'	40'
8	40'	40'	40'
10	40'	40'	40'
12	37'	40'	40'
14	31'	40'	40'
16	28'	37'	40'
18	25'	34'	40'
20	23'	32'	40'
24	20'	29'	38'
30	18'	23'	31'
36	16'	22'	30'
42	17'	21'	29'
48	16'	19'	27'
54	16'	19'	27'

HDPE PIPE

Pipe Diameter (in)	AASHTO M 294
12	8'
15	9'
18	9'
24	9'
30	9'
36	9'
42	8'
48	8'
54	8'
60	8'

POLYPROPYLENE PIPE

Pipe Diameter (in)	ASTM F 2764
12	24'
15	25'
18	22'
24	20'
30	22'
36	21'
42	22'
48	23'
54	21'
60	21'

② SW-103 FLEXIBLE GRAVITY PIPE TRENCH BEDDING
NOT TO SCALE

C-5202 DETAILS

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
Urbandale, IA 50322
515-369-4400

ISSUES

1	2025-06-12	100% CONSTRUCTION DOCUMENTS
2	2025-06-20	ISSUE FOR PERMIT

REVISIONS

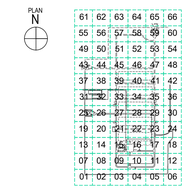
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Date of issue:
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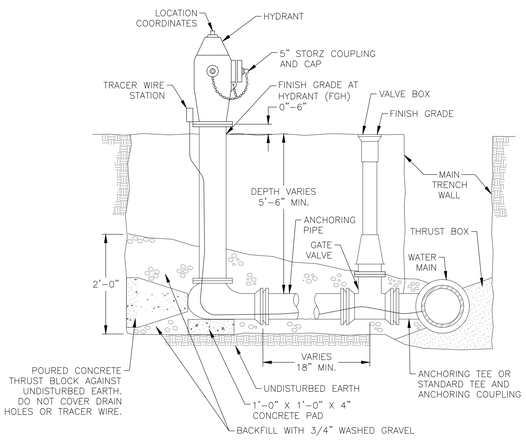


DETAILS

SCALE
JOB 10430287
DATE 2025.06.20
SHEET

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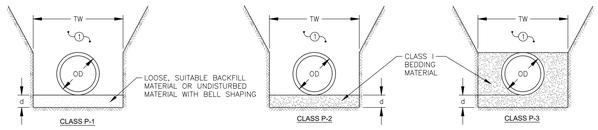
APPLE PROJECT NO. F.21D42



NOTES:
1. MINIMUM SIZE FOR PIPING, VALVES AND FITTINGS FROM WATER MAIN TO HYDRANT INLET: 6".
2. PROVIDE TRACER WIRE AND TRACER WIRE STATION.
3. WRAP HYDRANT, PIPE AND FITTINGS WITH POLYETHYLENE ENCASEMENT.

1 FIRE HYDRANT ASSEMBLY
NOT TO SCALE

BEDDING CLASSES



① PLACE REMAINDER OF BEDDING AND BACKFILL MATERIAL AS SPECIFIED IN THE CONTRACT DOCUMENTS.

KEY:

OD = OUTSIDE DIAMETER OF PIPE

TW = TRENCH WIDTH AT TOP OF PIPE; MIN. = OD+18 INCHES OR 1.25XOD+12 INCHES (WHICHEVER IS GREATER)

d = DEPTH OF BEDDING MATERIAL BELOW PIPE; MIN. = OD/8 OR 4 INCHES (WHICHEVER IS GREATER)

ALLOWABLE BURY DEPTH

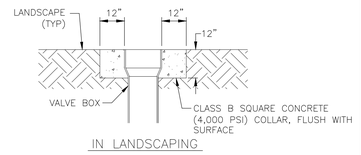
DUCTILE IRON, AWWA C151, CLASS 52

Pipe Diameter (inches)	Class P-1 Bedding	Class P-2 Bedding	Class P-3 Bedding
4	40'	40'	40'
6	40'	40'	40'
8	40'	40'	40'
10	36'	40'	40'
12	31'	40'	40'
14	26'	40'	40'
16	23'	37'	40'
18	20'	34'	40'
20	18'	32'	40'
24	16'	29'	38
30	13'	23'	31'
36	13'	22'	30'
42	13'	21'	29'
48	13'	19'	27'
54	13'	19'	27'

PVC, AWWA C900, DR18

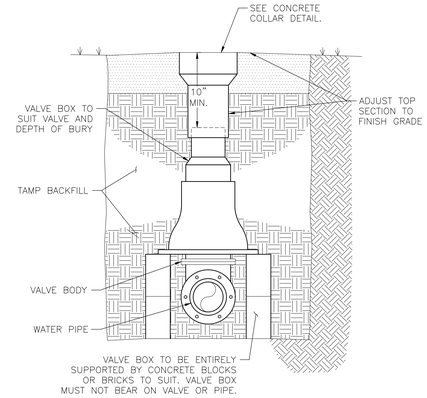
Pipe Diameter (inches)	Class P-1 Bedding	Class P-2 Bedding	Class P-3 Bedding
4	19'	23'	40'
6	19'	23'	40'
8	19'	23'	40'
10	19'	23'	40'
12	19'	23'	40'
14	19'	23'	40'
16	19'	23'	40'
18	19'	23'	40'
20	19'	23'	40'
24	19'	23'	40'

2 SW-104 PRESSURE PIPE TRENCH BEDDING
NOT TO SCALE

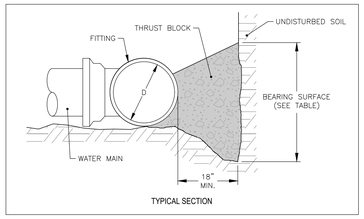


3 CONCRETE COLLAR
NOT TO SCALE

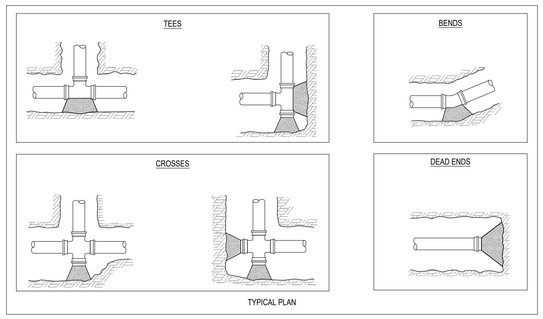
NOTES:
1. ALL MAIN LINE GATE VALVES SHALL BE RESILIENT SEAT GATE VALVES (MUELLER VALVES OR APPROVED EQUAL).
2. ALL GATE VALVES LOCATED IN LANDSCAPE AREA SHALL HAVE CONCRETE COLLAR.
3. PAINT LID TO MATCH REFLECTOR STRIP ON VALVE MARKER.
4. VALVES SHALL BE FITTED WITH VALCOM SPIDER LOK POSITION INDICATORS (OR APPROVED EQUAL) PER SPECIFICATION 33-01-00.
5. RISING STEM TO SUPPORT / OPERATE THE SPIDER LOK TO BE FIELD ADJUSTED.
6. VALVES ON HYDRANT LATERALS WILL NOT BE REQUIRED TO HAVE A SPIDER LOK.



4 GATE VALVE
NOT TO SCALE



TYPICAL SECTION



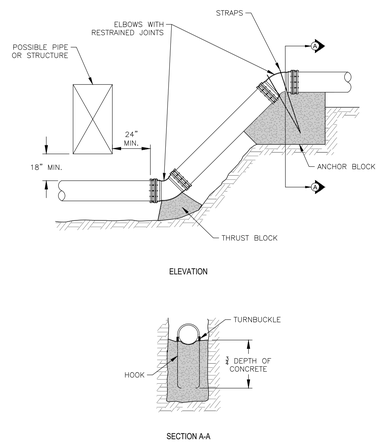
TYPICAL PLAN

NOTES:
1. EXTEND THRUST BLOCKS TO UNDISTURBED SOIL. EXCAVATION INTO TRENCH WALL MAY BE NECESSARY.
2. FORM VERTICAL SURFACES OF POURED CONCRETE THRUST BLOCKS EXCEPT ON BEARING SURFACE.
3. ENCASE ALL FITTINGS IN POLYETHYLENE WRAP. DO NOT ALLOW CONCRETE TO DIRECTLY CONTACT JOINTS OR FITTING BOLTS.

Diameter of Pipe, D (inches)	MINIMUM BEARING SURFACE (sf)				
	Bends				Tees and Dead Ends
	11.25°	22.5°	45°	90°	
4	1	1	2	4	3
6	1	2	4	8	6
8	2	4	7	14	10
10	3	6	11	21	15
12	4	8	16	29	21
14	5	11	21	39	28
16	7	14	27	50	36
18	9	17	34	63	45
20	11	21	42	78	55
24	15	31	60	111	78
30	24	47	92	171	120
36	34	67	132	244	173

Minimum surface area based on water pressure of 150 psi and allowable soil pressure of 1,000 psf.

CHANGES IN PIPE DEPTH

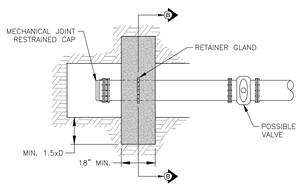


ELEVATION

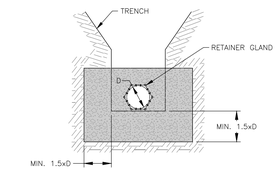
SECTION A-A

DEAD ENDS (ALTERNATE METHOD)

USE ONLY WHEN ALLOWED BY THE ENGINEER, OR WHEN SPECIFIED IN THE CONTRACT DOCUMENTS.



PLAN



SECTION B-B

5 WM-101 THRUST BLOCKS
NOT TO SCALE

C-5601 DETAILS

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PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
Urbandale, IA 50322
515-369-4400

ISSUES

1	2025-06-12	100% CONSTRUCTION DOCUMENTS
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REVISIONS

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PLAN
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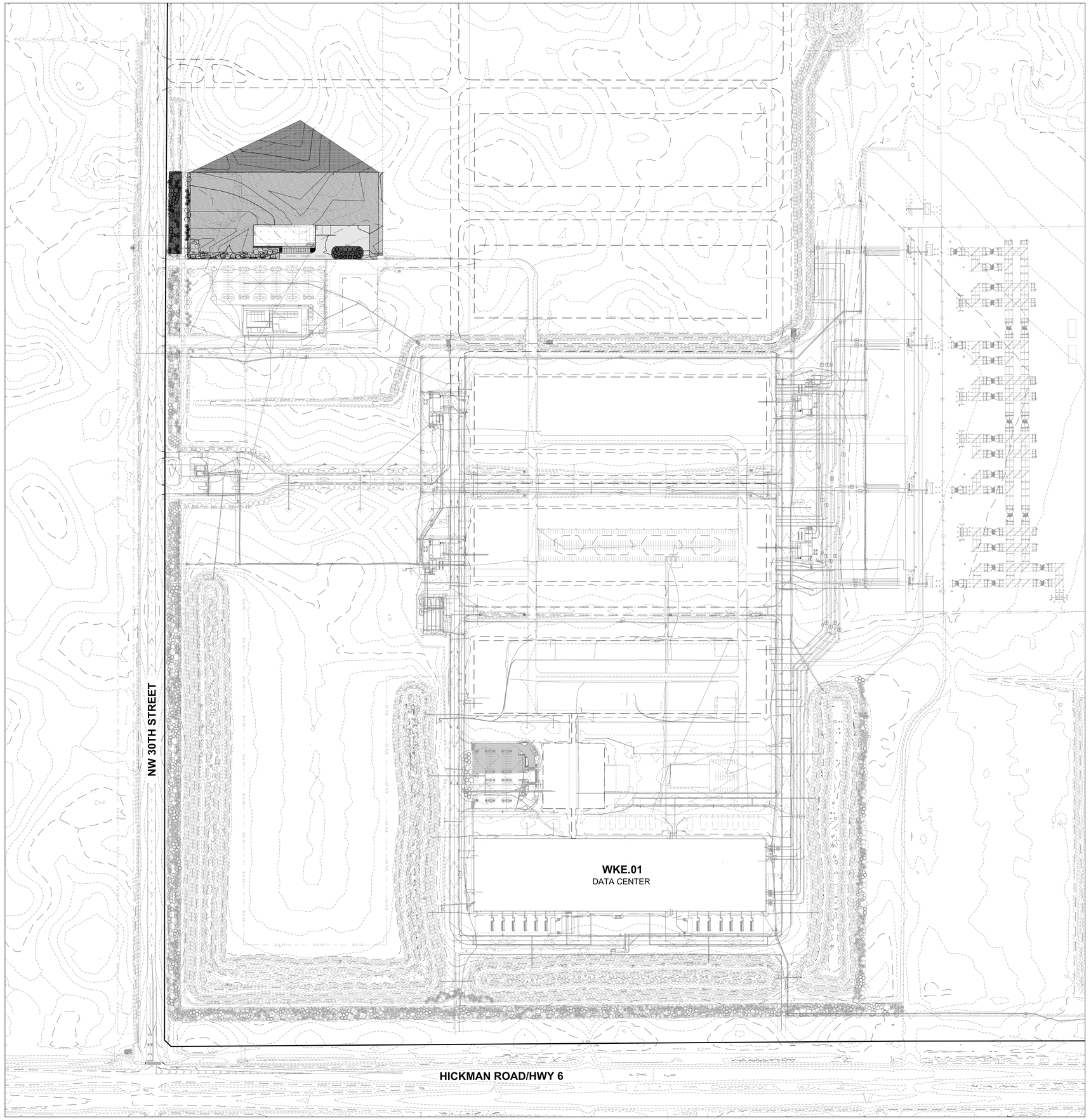
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19	20	21	22	23	24	
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01	02	03	04	05	06	

DETAILS

SCALE
JOB 10430287
DATE 2025.06.20
SHEET

[redacted]

APPLE PROJECT NO. F.21D42



L-1100 LANDSCAPE PLAN - OVERALL

LANDSCAPE NOTES

1. LOCATE ALL UTILITIES BEFORE ANY PLANTING BEGINS.
2. ALL WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE PROJECT MORGAN SPECIFICATIONS AND THE 2021 SUDAS STANDARD SPECIFICATIONS.
3. TYPE, SIZE, AND QUALITY OF PLANT MATERIAL SHALL CONFORM TO THE MOST CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1
4. ALL PLANT MATERIAL SHALL BE HEALTHY SPECIMENS WITHOUT DEFORMITIES, VOIDS AND OPEN SPACES, WITH WELL DEVELOPED BRANCH AND ROOT SYSTEMS; TRUE TO HEIGHT, SHAPE AND CHARACTER OF GROWTH OF THE SPECIES OR VARIETY.
5. SEED (LOW-GROW GRASS MIXTURE FROM UNITED SEEDS) ALL DISTURBED AREAS AS DIRECTED BY OWNER.
6. BACKFILL TO TOP OF CURB. (MINUS 1 1/2" FOR SOD, IF REQUIRED.)
7. WEED PREVENTER (PRE-EMERGENT) SHALL BE SPREAD OVER SOIL AFTER PLANTING AND BEFORE MULCHING IN ALL PLANTING BEDS PER MANUFACTURER'S RECOMMENDATIONS.
8. SHREDDED HARDWOOD MULCH SHALL BE PLACED AROUND ALL TREES, SHRUBS AND IN ALL PLANTING BEDS TO A (MIN) DEPTH OF 3".
9. ALL EDGING SHALL BE SPADE CUT EDGE.
10. PLANT QUANTITIES ARE SHOWN FOR INFORMATION ONLY, THE DRAWING SHALL PREVAIL IF ANY CONFLICTS ARISE.
11. ALL DEBRIS SPILLED IN THE PUBLIC R.O.W. SHALL BE PICKED UP BY THE CONTRACTOR AT THE END OF EACH WORK DAY.
12. CONTRACTOR SHALL WARRANTY ALL PLANT MATERIALS FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE.
13. TOPSOIL SHALL BE PLACED AT A MINIMUM DEPTH OF 8 INCHES.
14. ALL BERMS WITHIN THE LANDSCAPE BUFFERS SHALL BE PLACED WITH TOPSOIL TO A MAXIMUM HEIGHT/ DEPTH OF BERM IF AVAILABLE.

SEED MIX

MIX 1 – SUPER SHADE FINE FESCUE GRASS MIXTURE	0.49 ACRES (21,489 SF)
MIX 2 – SUPER TURF II LS	0.42 ACRES (18,475 SF)
MIX 3 – SUDAS TYPE 2	1.67 ACRES (72,684 SF)

MINIMUM PLANTING REQUIREMENTS

MINIMUM SIZE:
THE MINIMUM SIZE FOR REQUIRED PLANTINGS, OTHER THAN THOSE IN REQUIRED BUFFERS, SHALL BE AS FOLLOWS:

A. DECIDUOUS OVERSTORY TREES SHALL BE A MINIMUM OF EIGHT (8) FEET IN HEIGHT.
B. EVERGREEN OVERSTORY TREES SHALL BE A MINIMUM OF SIX (6) FEET IN HEIGHT.
C. DECIDUOUS ORNAMENTAL TREES SHALL BE A MINIMUM OF SIX (6) FEET IN HEIGHT.

S AVENUE BUFFER LANDSCAPE REQUIREMENTS

317 LF

3 OVERSTORY TREES, 4 EVERGREEN TREES AND 3 ORNAMENTAL TREES PER 50 LF OF BUFFER

REQUIRED:
- OVERSTORY TREES = 19 TREES
- EVERGREEN TREES = 26 TREES
- ORNAMENTAL TREES = 19 TREES

PROVIDED:
- OVERSTORY TREES = 19 TREES
- EVERGREEN TREES = 26 TREES
- ORNAMENTAL TREES = 19 TREES

PLANT SCHEDULE S AVENUE BUFFER

CODE	QTY	COMMON NAME	BOTANICAL NAME	CONDITION AND SIZE
OVERSTORY TREES				
AB	4	AUTUMN BLAZE RED MAPLE	ACER RUBRUM 'AUTUMN BLAZE'	B&B, 2" CALIPER
AE	2	ENDOWMENT MAPLE	ACER SACCHARUM 'ENDOWMENT'	B&B, 2" CALIPER
BM	2	BLACK MAPLE	ACER NIGRUM	B&B, 2" CALIPER
PO	2	AMERICAN SYCAMORE	PLATANUS OCCIDENTALIS	B&B, 2" CALIPER
QB	5	SWAMP WHITE OAK	QUERCUS BICOLOR	B&B, 2" CALIPER
QC	4	ENGLISH OAK	QUERCUS ROBUR 'CRIMSCHMIDT' TM	B&B, 2" CALIPER
EVERGREEN TREES				
AC	5	WHITE FIR	ABIES CONCOLOR	B&B, 6' HEIGHT
PB	7	BLACK HILLS SPRUCE	PICEA GLAUCA DENSATA	B&B, 6' HEIGHT
PC	5	COLORADO SPRUCE	PICEA PUNGENS	B&B, 6' HEIGHT
PS	9	WHITE PINE	PINUS STROBUS	B&B, 6' HEIGHT
UNDERSTORY TREES				
AS	5	SERVICEBERRY	AMELANCHIER ALNIFOLIA	B&B, 6' MULTI-STEM
CE	5	EASTERN REDBUD MULTI-TRUNK	CERCIS CANADENSIS	B&B, 1.5" CALIPER
MS	9	PINK SPIRES CRAB APPLE	MALUS X 'PINK SPIRES'	B&B, 1.5" CALIPER

OPEN SPACE CALCULATIONS

TOTAL AREA	= 324,977 SF
OPEN SPACE REQUIRED (20%)	= 64,995 SF
IMPERVIOUS AREAS	
BUILDINGS	= 19,679 SF
PARKING & DRIVES	= 25,966 SF
SIDEWALK	= 903 SF
GRAVEL	= 177,121 SF
TOTAL	= 223,669 SF
OPEN SPACE PROVIDED	= 101,308 SF (31.2%)

1 TREE PER 1,000 SQUARE FEET OF REQUIRED OPEN SPACE.
1 SHRUB PER 1,000 SQUARE FEET OF REQUIRED OPEN SPACE.

TREES REQUIRED	= 65
TREES PROVIDED	= 65
SHRUBS REQUIRED	= 65
SHRUBS PROVIDED	= 65
PERENNIALS/GRASSES PROVIDED	= 73

PLANT SCHEDULE INTERIOR AREA

CODE	QTY	COMMON NAME	BOTANICAL NAME	CONDITION AND SIZE
OVERSTORY TREES				
AE	13	ENDOWMENT MAPLE	ACER SACCHARUM 'ENDOWMENT'	B&B, 2" CALIPER
QA	17	WHITE OAK	QUERCUS ALBA	B&B, 2" CALIPER
QR	15	RED OAK	QUERCUS RUBRA	B&B, 2" CALIPER
EVERGREEN TREES				
PB	6	BLACK HILLS SPRUCE	PICEA GLAUCA DENSATA	B&B, 6' HEIGHT
PS	10	WHITE PINE	PINUS STROBUS	B&B, 6' HEIGHT
UNDERSTORY TREES				
PN	14	NEWPORT FLOWERING PLUM	PRUNUS CERASIFERA 'NEWPORT'	B&B, 1.5" CALIPER
SHRUBS				
CH2	16	IVORY HALO DOGWOOD	CORNUS ALBA 'BAILHALO' TM	5 GAL
RG2	19	GRO-LOW FRAGRANT SUMAC	RHUS AROMATICA 'GRO-LOW'	5 GAL
SM	30	DWARF KOREAN LILAC	SYRINGA MEYERI 'PALIBIN'	5 GAL
GRASSES				
PH	138	HAMELN DWARF FOUNTAIN GRASS	PENNISETUM ALOPECUROIDES 'HAMELN'	1 GAL
PP	17	RED SWITCH GRASS	PANICUM VIRGATUM 'PRAIRE FIRE'	1 GAL
ANNUALS/PERENNIALS				
PA	18	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	1 GAL

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ROCK MULCH
1"-3" GRANITE CHIPS, SLATE COLOR, MINIMUM DEPTH OF 3" OVER MIRASCAPE LANDSCAPE FABRIC (OR EQUAL). EDGING BETWEEN ROCK MULCH AND GRASS SHALL BE 4" STEEL LANDSCAPE EDGING.

SCALE
0' 75' 150' 300'

HDR

PROJECT MORGAN
WKE.SITE
2995 W. HICKMAN RD
WAUKEE, IA 50263

Civil Design Advantage
4121 NW Urbandale Drive
Urbandale, IA 50322
515-369-4400

ISSUES

1	2025-06-12	100% CONSTRUCTION DOCUMENTS
2	2025-06-20	ISSUE FOR PERMIT

REVISIONS

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LANDSCAPE PLAN - OVERALL

SCALE
JOB 10430287
DATE 2025.06.20
SHEET

L-1100

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APPLE PROJECT NO. F.21D42

SEE SHEET L-1143 FOR CONTINUATION

PLANT SCHEDULES ARE LOCATED ON SHEET L-1100

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SEE SHEET L-1138 FOR CONTINUATION

L-1137 LANDSCAPE PLAN

SCALE
0' 10' 20' 40'

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LANDSCAPE PLAN

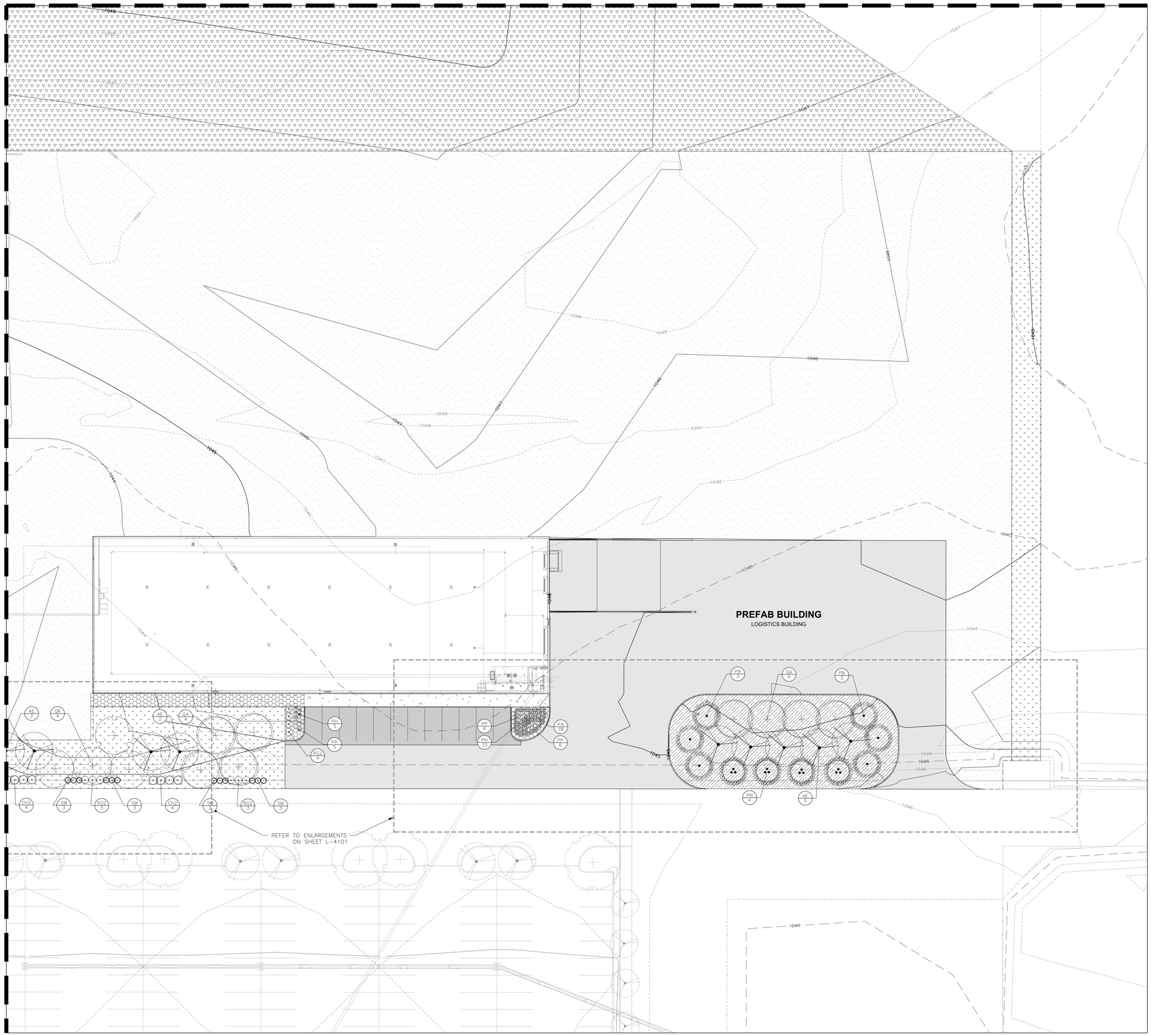
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L-1137

APPLE PROJECT NO. F.21D42

SEE SHEET L-1144 FOR CONTINUATION

SEE SHEET L-1137 FOR CONTINUATION



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L-1138 LANDSCAPE PLAN

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RYAN HARDISTY
PROFESSIONAL ENGINEER
20811
IOWA

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SEE SHEET L-1144 FOR CONTINUATION

SEE SHEET L-1137 FOR CONTINUATION

SCALE
0' 10' 20' 40'

L-1143 LANDSCAPE PLAN

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SEE SHEET L-1138 FOR CONTINUATION

L-1144 LANDSCAPE PLAN

SCALE
0' 10' 20' 40'

PROJECT MORGAN
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RYAN J. HARDISTY
25811
IOWA
PROFESSIONAL ENGINEER

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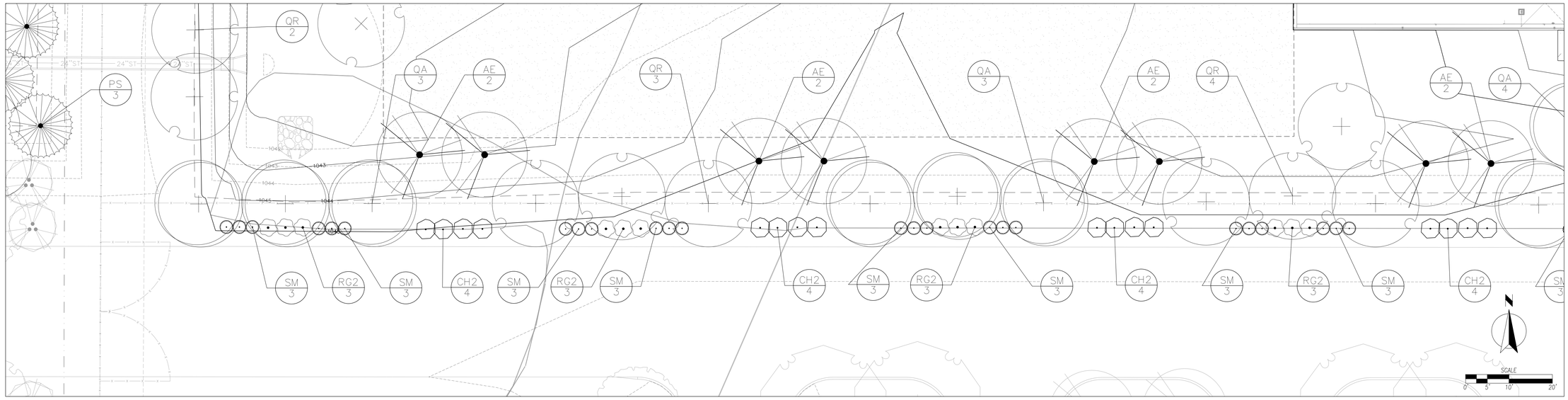
LANDSCAPE PLAN

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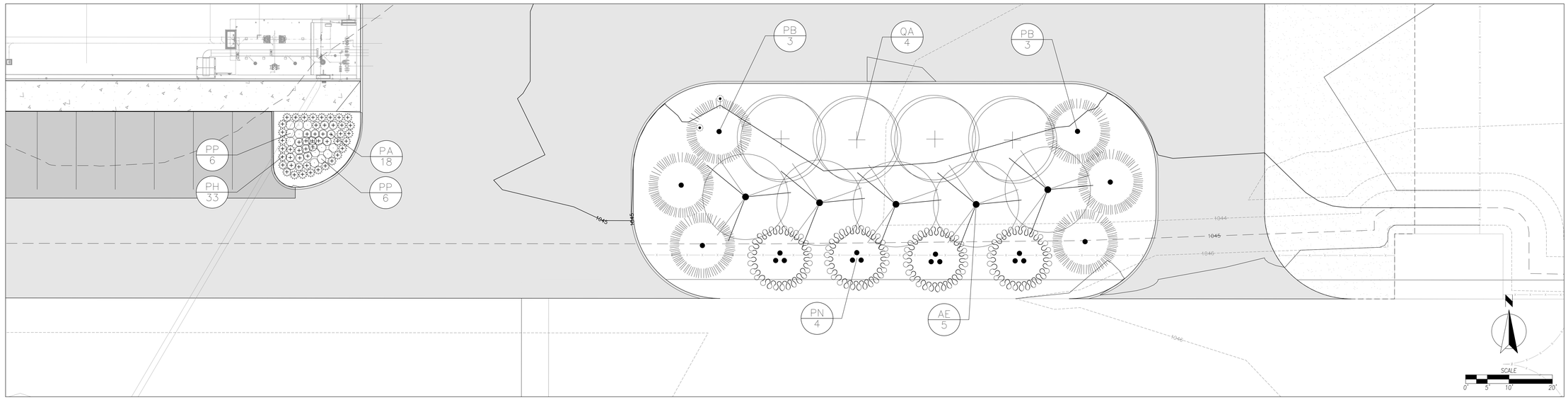
L-1144

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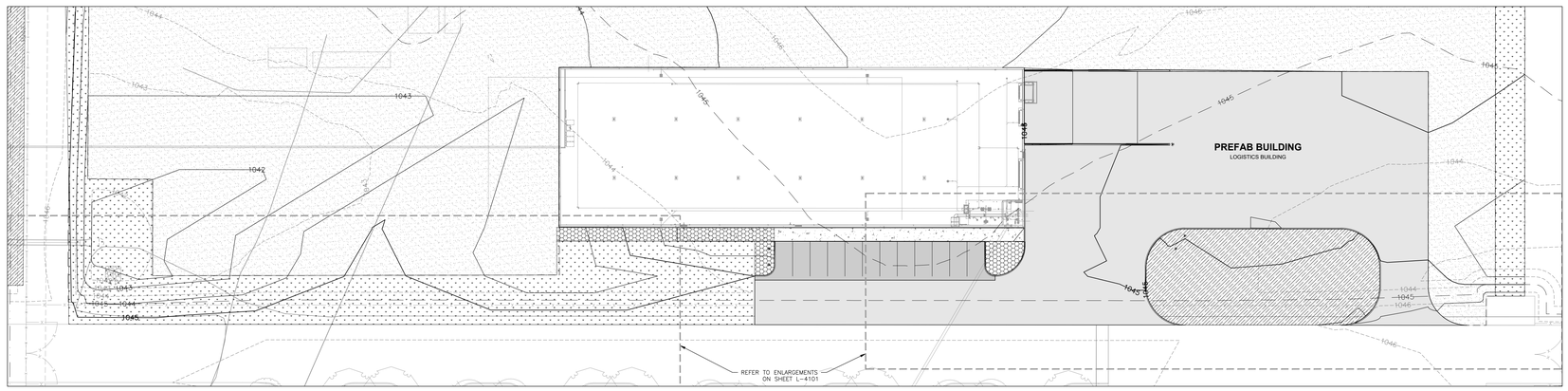
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PARKING AREA PLANTING PLAN - WEST



PARKING AREA PLANTING PLAN - EAST



PARKING AREA GROUND COVER

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L-4101 LANDSCAPE PLAN

HDR

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LANDSCAPE PLAN

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