SUBDIVISION DRAWINGS FOR

CRESTWOOD

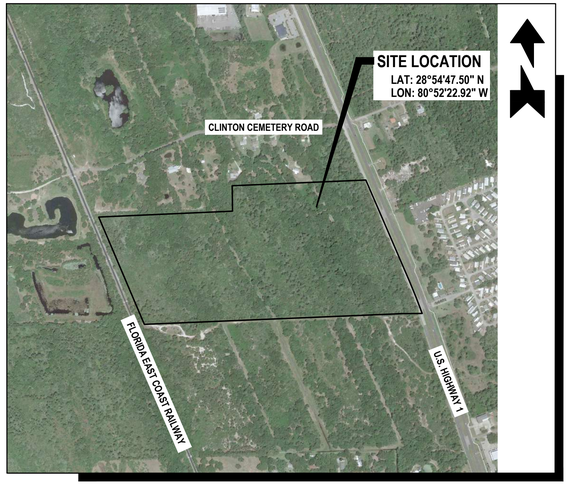
SECTION 24, TOWNSHIP 18 S, RANGE 34 E
842400000030 & 842400000040
U.S. HIGHWAY 1
EDGEWATER, FL 32141

JULY 2024
REVISED OCTOBER 2025

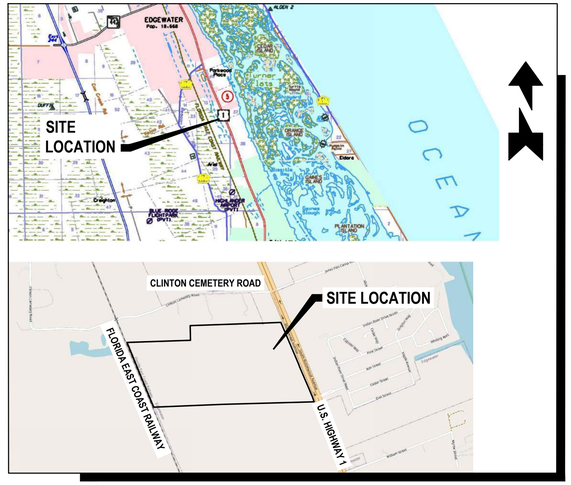
SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
C-01	COVER
SU1	BOUNDARY SURVEY
SU2	BOUNDARY SURVEY
SU3	TOPO SURVEY
SU4	TOPO SURVEY
SU5	TREE SURVEY
SU6	TREE SURVEY
SU7	TREE SURVEY
C-02	DEVELOPMENT INFORMATION AND CONSTRUCTION NOTES
C-03	DEVELOPMENT INFORMATION AND CONSTRUCTION NOTES
C-04	DEMOLITION, TREE REMOVAL AND SWPPP PLAN
C-05	DEMOLITION, TREE REMOVAL AND SWPPP PLAN
C-06	DEMOLITION, TREE REMOVAL AND SWPPP PLAN
C-07	DEMOLITION, TREE REMOVAL AND SWPPP PLAN
C-08	DEMOLITION, TREE REMOVAL AND SWPPP PLAN
C-09	DEMOLITION, TREE REMOVAL AND SWPPP PLAN
C-10	SWPPP DETAILS AND NOTES
C-11	SWPPP DETAILS AND NOTES
C-12	OVERALL DEVELOPMENT PLAN
C-13	SITE LAYOUT PLAN
C-14	SITE LAYOUT PLAN
C-15	SITE LAYOUT PLAN
C-16	SITE LAYOUT PLAN
C-17	SITE LAYOUT PLAN
C-18	SITE LAYOUT PLAN
C-18.1	RAISED INTERSECTION DETAILS
C-18.2	PET WASTE STATION PLAN
C-18.3	STREET LIGHT PLAN
C-18.4	PLAYGROUND PARK DETAILS
C-18.5	EMERGENCY ACCESS DETAIL PLAN
C-19	OVERALL U.S. HIGHWAY 1 RIGHT-OF-WAY
C-20	U.S. HIGHWAY 1 RIGHT-OF-WAY DEMOLITION AND SWPPP PLAN
C-21	RIGHT TURN LANE PLAN
C-22	LEFT TURN LANE PLAN
C-23	U.S. 1 RIGHT-OF-WAY GRADING AND DRAINAGE PLAN
C-24	U.S. 1 RIGHT TURN LANE CROSS SECTIONS
C-25	U.S. 1 LEFT TURN LANE CROSS SECTIONS
C-26	MASTER DRAINAGE PLAN
C-27	DRAINAGE PLAN
C-28	DRAINAGE PLAN
C-29	DRAINAGE PLAN
C-30	DRAINAGE PLAN
C-31	DRAINAGE PLAN
C-32	DRAINAGE PLAN
C-33	DRAINAGE DETAILS
C-34	DRAINAGE DETAILS
C-35	TURF REINFORCEMENT MAT DETAILS AND NOTES
C-36	TURF REINFORCEMENT MAT DETAILS AND NOTES
C-37	ARMORFLEX DETAILS AND NOTES
C-38	GRADING PLAN
C-39	GRADING PLAN
C-40	GRADING PLAN
C-41	GRADING PLAN
C-42	GRADING PLAN
C-43	GRADING PLAN
C-44	WET POND 1A PLAN
C-45	WET POND 1B PLAN
C-46	WET POND 2 PLAN
C-47	WET POND 3 PLAN
C-48	DRY POND 3 PLAN
C-49	DRY POND 4 PLAN
C-50	DRY POND 6 PLAN
C-51	DRY POND 7 PLAN
C-52	DRY POND 8 PLAN
C-53	DRY POND 9 PLAN
C-54	RETAINING WALL SECTIONS AND PROFILES
C-55	POND 2 TREE PROTECTION GRADING PLAN
C-56	POND 3 TREE PROTECTION GRADING PLAN
C-57	POND 7 TREE PROTECTION GRADING PLAN
C-58	POND 8 TREE PROTECTION GRADING PLAN
C-59	POND 9 TREE PROTECTION GRADING PLAN
C-60	MASTER UTILITY PLAN
C-61	DIRECTIONAL DRILL PLAN AND PROFILE
C-62	DIRECTIONAL DRILL PLAN AND PROFILE
C-63	PLAN & PROFILE - CRESTWOOD PARK BLVD STA. 0+00 - 7+00
C-64	PLAN & PROFILE - CRESTWOOD PARK BLVD STA. 7+00 - 15+00
C-65	PLAN & PROFILE - CRESTWOOD PARK BLVD STA. 15+00 - 24+03
C-66	PLAN & PROFILE - GREYWOOD CIRCLE STA. 0+00 - 7+00
C-67	PLAN & PROFILE - GREYWOOD CIRCLE STA. 7+00 - 15+00
C-68	PLAN & PROFILE - GREYWOOD CIRCLE STA. 15+00 - 23+00
C-69	PLAN & PROFILE - GREYWOOD CIRCLE STA. 23+00 - 26+84
C-70	PLAN & PROFILE - CORAL BELL DRIVE STA. 0+00 - 7+00
C-71	PLAN & PROFILE - BROOKDALE AVENUE STA. 0+00 - 5+00
C-72	PLAN & PROFILE - BROOKDALE AVENUE STA. 5+00 - 13+00
C-73	PLAN & PROFILE - BROOKDALE AVENUE STA. 13+00 - 21+00
C-74	PLAN & PROFILE - BROOKDALE AVENUE STA. 21+00 - 26+21
C-75	LIFT STATION (LS-01) DETAILS AND NOTES
C-76	CITY OF EDGEWATER DETAILS AND NOTES
C-77	CITY OF EDGEWATER DETAILS AND NOTES
C-78	CITY OF EDGEWATER DETAILS AND NOTES
C-79	VOLUSIA COUNTY DETAILS AND NOTES
C-80	VOLUSIA COUNTY DETAILS AND NOTES
C-81	FDOT DETAILS
C-82	FDOT DETAILS
C-83	FDOT DETAILS
C-84	FDOT DETAILS
C-85	FDOT DETAILS
C-86	MAINTENANCE OF TRAFFIC
C-87	EASEMENT PLAN
C-88	CONSERVATION EASEMENT PLAN
C-89	WETLAND IMPACT PLAN
C-90	OVERALL LOT TREE PLAN
C-91	OVERALL TREE PRESERVATION AND TREE COVERAGE CALCULATIONS
C-92	COMMON OPEN SPACE PLAN
L1	LANDSCAPE PLAN
L2	LANDSCAPE PLAN
L3	LANDSCAPE PLAN
L4	LANDSCAPE PLAN
L5	LANDSCAPE PLAN
L6	LANDSCAPE PLAN
L7	LANDSCAPE DETAILS AND NOTES
IR1	LOT IRRIGATION MAIN LAYOUT PLAN
IR2	LOT IRRIGATION MAIN LAYOUT PLAN
IR3	LOT IRRIGATION MAIN LAYOUT PLAN
IR4	LOT IRRIGATION MAIN LAYOUT PLAN
IR5	LOT IRRIGATION MAIN LAYOUT PLAN
IR6	LOT IRRIGATION MAIN LAYOUT PLAN
IR7	IRRIGATION PLAN
IR8	IRRIGATION PLAN
IR9	IRRIGATION PLAN
IR10	IRRIGATION PLAN
IR11	IRRIGATION PLAN
IR12	IRRIGATION PLAN
IR13	IRRIGATION DETAILS AND NOTES

THE GENERAL CONTRACTOR SHALL ENSURE THAT ANY SUBCONTRACTOR HAS A COMPLETE SET OF CONSTRUCTION DRAWINGS FOR ITS RESPECTIVE WORK. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR SUBCONTRACTORS ONLY UTILIZING INDIVIDUAL DRAWINGS FOR ITS WORK WHERE ADDITIONAL INFORMATION MAY BE CONTAINED ON OTHER DRAWINGS WITHIN THE SET.

THESE DRAWINGS ARE THE PROPERTY OF NEWKIRK ENGINEERING, INC. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING, INC. COPYRIGHT 2013 ALL RIGHTS RESERVED.



AERIAL MAP
SCALE: 1" = 700'



LOCATION MAP
SCALE: 1" = 1,200'

PROJECT STATEMENT
PROPOSE A RESIDENTIAL SUBDIVISION TO BE KNOWN AS "CRESTWOOD" CONSISTING OF 254 UNITS (150 SINGLE FAMILY LOTS & 104 TOWNHOME UNITS) ON 74.665 ACRES (3.40 UNITS PER ACRE).

LEGAL DESCRIPTION
SEE SU1-SU2 FOR LEGAL DESCRIPTION.

JURISDICTIONAL AGENCY	PERMIT No.
CITY OF EDGEWATER (SUBDIVISION & PLAT)	SD-2406
ST JOHNS RIVER WATER MANAGEMENT DISTRICT (STORMWATER)	89918-4
FDEP (NPDES NOI)	.
FDEP (WASTEWATER)	0461965-001-DWC-CM
FDOT (ACCESS)	2024-A-591-34
FDOT (DRAINAGE)	2024-D-591-29
FDOT (UTILITY)	2025-H-591-287
VOLUSIA COUNTY HEALTH DEPARTMENT (WATER)	P0349345-018
VOLUSIA COUNTY USE (COUNTY CANAL SYSTEM)	2024-P-USE-0750
VOLUSIA COUNTY (UTILITY)	SD-24026

PROJECT TEAM

PROPERTY OWNER/APPLICANT: CRESTWOOD INVESTMENT, LLC
36 CHARMING WAY
LAKEWOOD, NJ 08701
PHONE: (437) 922-5793
EMAIL: FIDDLERSHOLDINGS@GMAIL.COM

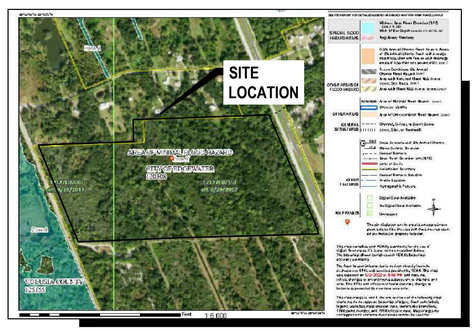
CIVIL ENGINEER / PROJECT MANAGER / LANDSCAPE ARCHITECT: NEWKIRK ENGINEERING, INC.
1230 NORTH US HIGHWAY 1, SUITE 3
ORMOND BEACH, FL 32174
PHONE: (386) 872-7794
EMAIL: HARRY@NEWKIRK-ENGINEERING.COM

SURVEYOR: AMERICAN SURVEYING & MAPPING INC.
221 CIRCLE DRIVE
MAITLAND, FL 32751
PHONE: (407) 426-7979
EMAIL: KLIPPI@ASMCORPORATE.COM

GEOTECHNICAL: UNIVERSAL ENGINEERING SCIENCES
911 BEVILLE ROAD, SUITE 3
SOUTH DAYTONA BEACH, FL 32119
PHONE: (386) 756-1105 EXT. 10413
FAX: (386) 760-4067
EMAIL: MMOHNEY@UNIVERSALENGINEERING.COM

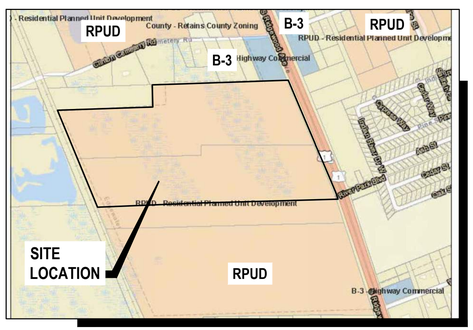
ENVIROMENTAL: ECOLOGICAL CONSULTING SOLUTIONS, INC
235 N. HUNT CLUB BLVD., SUITE 202
LONGWOOD, FL 32779
PHONE: (407) 869-9434
FAX: (407) 869-9436
EMAIL: CKRACK@ECSFL.CC

CONTACT NUMBERS
PERMITTING SERVICES - CITY OF EDGEWATER (386) 424-2400 EXT. 1514
WATER - VOLUSIA COUNTY (386) 943-7027
WASTEWATER - VOLUSIA COUNTY (386) 943-7027
ELECTRIC - FLORIDA POWER AND LIGHT COMPANY (386) 254-2353
GAS - TECO PEOPLES GAS (386) 672-2232
TELEPHONE - AT&T (386) 423-5858
CABLE - SPECTRUM (855) 222-0102



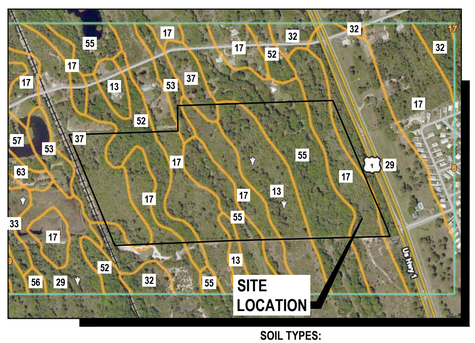
FLOOD ZONE MAP
SCALE: 1" = 800'

FLOOD ZONE "X" PANEL No. 12127C0715 J & 12127C0700 J, DATED SEPTEMBER 29, 2017



ZONING MAP
SCALE: 1" = 700'

RPUD (RESIDENTIAL PLANNED UNIT DEVELOPMENT)



SOILS MAP
SCALE: 1" = 700'

SOIL TYPES:
(13) CASSIA FINE SAND, 0 TO 2 PERCENT SLOPES
(17) DAYTONA SAND, 0 TO 5 PERCENT SLOPES
(37) ORSINO FINE SANDS, 0 TO 5 PERCENT SLOPES
(52) POMPANO FINE SAND
(53) POMPANO-PLACID COMPLEX
(55) RIVIERA FINE SAND

One Nation... One Number... 811 Know what's below. Call before you dig.

WARNING !!
CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering, Transportation, CEI & Landscape Architecture
NEWKIRK ENGINEERING INC.

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

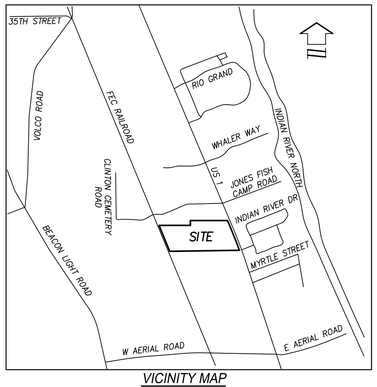
DRAWING NUMBER
C-01

PROJECT No. 2023-109

BOUNDARY SURVEY
for:
CRESTWOOD INVESTMENT LLC

SURVEY NOTES:

1. BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM ZONE 901 EAST, NORTH AMERICAN DATUM (NAD) OF 1983 WITH 2011 ADJUSTMENT REFERENCED FROM THE FLORIDA PERMANENT REFERENCE NETWORK VERIFIED TO FDOT CONTROL STATION 91101001–1990. AS A REFERENCE FOR THIS SURVEY, THE NORTH LINE OF THE SOUTHEAST 1/4 OF SECTION 24, TOWNSHIP 18 SOUTH, RANGE 34 EAST, HAS A BEARING OF NORTH 87°49'04" EAST.
2. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 DERIVED FROM FDOT CONTROL STATION 91101001–1990 HAVING AN ELEVATION OF 20.58 FEET.
3. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP (FIRM) PANEL NO. 12127C0715J, CITY OF EDGEWATER COMMUNITY NUMBER 120308, FLORIDA, EFFECTIVE DATE OF SEPTEMBER 29, 2017, THE PROPERTY DESCRIBED HEREON LIES WITHIN ZONE "X" (AREAS OF 0.2% ANNUAL CHANCE FLOOD).
4. THIS SURVEY WAS PREPARED WITH THE BENEFIT OF A PLAT TITLE OPINION BASED ON A TITLE SEARCH BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, REPORT 1649671, DATED 10/08/2025.
5. NORTH–SOUTH AND EAST–WEST TIES TO FOUND MONUMENTATION AND IMPROVEMENTS ARE BASED ON CARDINAL DIRECTION.
6. WETLAND AREAS WERE NOT ADDRESSED AS A PART OF THIS SURVEY.
7. THE ACCURACY OF THE SURVEY MEASUREMENTS USED FOR THIS SURVEY MEETS OR EXCEEDS THE EXPECTED USE OF THE PROPERTY DESCRIBED HEREON. (COMMERCIAL/HIGH RISK) 1 FOOT IN 10,000 FEET.
8. THERE ARE NO PARKING SPACES IN THE SUBJECT PARCEL.
9. UNDERGROUND UTILITIES WERE LOCATED BY ABOVE GROUND PHYSICAL EVIDENCE. OTHER BURIED FACILITIES MAY EXIST THAT WERE NOT IDENTIFIED AS PART OF THIS SURVEY.
10. SUBJECT PARCEL CONTAINS: 74.665 ACRES
    ADDRESS: 4200 US HIGHWAY 1, EDGEWATER, FLORIDA 32141
    ZONING: RPUD (RESIDENTIAL PLANNED UNIT DEVELOPMENT)
    SETBACKS: TO BE DETERMINED BY MASTER PLAN APPROVAL.
11. THERE WAS NO EVIDENCE OF EARTH MOVING WORK AT THE TIME OF THIS SURVEY, NO BUILDING CONSTRUCTION, OR BUILDING ADDITIONS WAS OBSERVED DURING THE TIME FIELD WORK WAS PERFORMED ON THE SUBJECT PARCEL.
12. NO EVIDENCE OF THE SITE BEING USED AS A SOLID WASTE DUMP, SUMP, OR SANITARY LANDFILL WAS OBSERVED DURING
    THE TIME FIELD WORK WAS PERFORMED ON THE SUBJECT PARCEL.
13. THE ELECTRONIC SIGNATURE HEREON IS IN COMPLIANCE WITH FLORIDA ADMINISTRATIVE CODE (FAC) 5J–17.062(3).
14. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY WILLIAM D. DONLEY, PSM 5381, ON 10/02/2025 PER FAC 5J–17.062(2).
15. BOUNDARY DIMENSIONS DEPICTED ON THE SUBJECT PARCEL ARE MEASURED UNLESS OTHERWISE NOTED AS (D) PER DESCRIPTION OR (C) CALCULATED.



VICINITY MAP
(NOT TO SCALE)

LEGAL DESCRIPTION:

(PER OLD REPUBLIC NATIONAL TITLE COMPANY REPORT NO. 1649671, DATED OCTOBER 8, 2025)

A PORTION OF THE SOUTH 1/2 OF SECTION 24, TOWNSHIP 18 SOUTH, RANGE 34 EAST AND A PORTION OF SECTION 19, TOWNSHIP 18 SOUTH, RANGE 35 EAST LYING WEST OF US HIGHWAY 1 AND EAST OF THE FLORIDA EAST COAST RAILWAY, VOLUSIA COUNTY, FLORIDA DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHWEST CORNER OF THE SOUTHEAST 1/4 OF SECTION 24, TOWNSHIP 18 SOUTH, RANGE 34 EAST; THENCE N87°49'04"E ALONG THE NORTH LINE OF THE SOUTHEAST 1/4 OF SAID SECTION 24, A DISTANCE OF 990.46 FEET TO THE NORTHEAST CORNER OF THE NORTH 247.70 FEET OF THE WEST 990.00 FEET OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 24 AND THE POINT OF BEGINNING; THENCE CONTINUE N87°49'04"E ALONG SAID NORTH LINE OF THE SOUTHEAST 1/4 OF SECTION 24, A DISTANCE OF 1308.16 FEET TO THE WESTERLY RIGHT OF WAY LINE OF US HIGHWAY 1 (STATE ROAD 5) (158.00 FOOT WIDE RIGHT OF WAY) PER FLORIDA DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP SECTION 7901 (112) 275; THENCE SOUTHERLY ALONG SAID WESTERLY RIGHT OF WAY LINE, THE FOLLOWING TWO COURSES AND DISTANCES: S23°00'08"E, A DISTANCE OF 1079.27 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 5669.65 FEET; A CENTRAL ANGLE OF 03°25'01", A CHORD BEARING OF S21°17'38"E AND A CHORD DISTANCE OF 338.07 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 338.12 FEET TO THE SOUTH LINE OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 19, TOWNSHIP 18 SOUTH, RANGE 35 EAST; THENCE DEPARTING SAID WESTERLY RIGHT OF WAY LINE, RUN S89°50'47"W, ALONG SAID SOUTH LINE, A DISTANCE OF 191.83 FEET TO THE SOUTHEAST CORNER OF THE NORTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 24; THENCE S87°57'10"W, ALONG THE SOUTH LINE OF THE NORTH 1/2 OF THE SOUTHEAST 1/4 OF SAID SECTION 24, A DISTANCE OF 2529.05 FEET TO THE EASTERLY RIGHT OF WAY LINE OF THE FLORIDA EAST COAST RAILWAY (50.00 FOOT WIDE RIGHT OF WAY) PER FLORIDA EAST COAST MAINLINE FLAGLER SYSTEM MAP SHEET 21; THENCE N22°39'02"W ALONG SAID EASTERLY RIGHT OF WAY LINE, A DISTANCE OF 1139.74 FEET TO THE SOUTH LINE OF THE NORTH 247.70 FEET OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 24; THENCE N87°49'04"E ALONG THE SOUTH LINE OF THE NORTH 247.70 FEET OF THE SOUTH 1/2 OF SECTION 24, A DISTANCE OF 1309.28 FEET TO THE EAST LINE OF THE NORTH 247.70 FEET OF THE WEST 990.00 FEET OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 24; THENCE N00°25'58"W, ALONG SAID EAST LINE, A DISTANCE OF 247.82 FEET TO THE POINT OF BEGINNING.

CONTAINING: 74.665 ACRES.

RECORDED EXCEPTIONS:

(PER OLD REPUBLIC NATIONAL TITLE COMPANY REPORT NO. 1649671, DATED OCTOBER 8, 2025)

1. MORTGAGE TO SA 2011 LLC DATED 1/20/2024 AND RECORDED 1/25/2024 IN OFFICIAL RECORDS BOOK 8510, PAGE 2448, AS DOCUMENT NO. 2024015604 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA. (AFFECTS–NOT PLOTTABLE)
2. EASEMENT IN FAVOR OF THE STATE OF FLORIDA CONTAINED IN INSTRUMENT RECORDED IN DEED BOOK 285, PAGE 125, AS AFFECTED BY DISCLAIMER RECORDED IN OFFICIAL RECORDS BOOK 128, PAGE 278, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA. (AFFECTS–PLOTTED HEREON)
3. SUBJECT TO ROAD AND HIGHWAY EASEMENTS AND DRAINAGE AND MAINTENANCE EASEMENTS CONTAINED IN WARRANTY DEED RECORDED IN OFFICIAL RECORDS BOOK 1307, PAGE 92, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA. (AFFECTS–PLOTTED HEREON)
4. EASEMENT TO FLORIDA POWER & LIGHT COMPANY RECORDED IN OFFICIAL RECORDS BOOK 3804, PAGE 2570, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA. (AFFECTS–PLOTTED HEREON)
5. RESIDENTIAL PLANNED UNIT DEVELOPMENT (RPUD) AGREEMENT CRESTWOOD BY AND BETWEEN CITY OF EDGEWATER, FLORIDA AND SA 2011, LLC, RECORDED IN OFFICIAL RECORDS BOOK 8523, PAGE 2050, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

SHEET INDEX:

SHEET 1: COVER
SHEETS 2: BOUNDARY DETAILS

LEGEND AND ABBREVIATIONS:

ALTA	AMERICAN LAND TITLE ASSOCIATION	IP	IRON PIPE	PNT	POINT OF NON–TANGENT		CURB INLET GRATE
BOT	BOTTOM	IR	IRON ROD	PRC	POINT OF REVERSE CURVATURE		CATCH BASIN
(C)	CALCULATED	IRC	IRON ROD AND CAP	PVC	POLYVINYL CHLORIDE		STORM MANHOLE
CB	CHORD BEARING	IRV	IRRIGATION CONTROL VALVE	(R)	RADIAL		SANITARY MANHOLE
CCR	CERTIFIED CORNER RECORD	L	ARC LENGTH	R	RADIUS		SANITARY CLEANOUT
CH	CHORD LENGTH	LB	LICENSED BUSINESS	RCP	REINFORCED CONCRETE PIPE		ELECTRIC MANHOLE
CLF	CHAIN LINK FENCE	LS	LAND SURVEYOR	RLS	REGISTERED LAND SURVEYOR		ELECTRIC METER
℄	CENTERLINE	(M)	MEASURED	R/W	RIGHT OF WAY		ELECTRIC RISER BOX
CM	CONCRETE MONUMENT	MB	MAP BOOK	SEC	SECTION		CABLE TELEVISION RISER BOX
CMP	CORRUGATED METAL PIPE	NAVD	NORTH AMERICAN VERTICAL DATUM	SF	SQUARE FEET		TELEPHONE RISER BOX
(D)	DESCRIPTION	NO.	NUMBER	TWP	TOWNSHIP		IRRIGATION CONTROL VALVE
DIP	DUCTILE IRON PIPE	(NR)	NOT RADIAL	Δ	DELTA (CENTRAL ANGLE)		WATER METER
EL.	ELEVATION	NSPS	NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS	⊡	FOUND CONCRETE MONUMENT AS NOTED		WATER VALVE
ESMT	EASEMENT	OR	OFFICIAL RECORDS BOOK	■	FOUND CONCRETE MONUMENT PRM LB 8501		FIRE HYDRANT
(FDOT)	FLORIDA DEPARTMENT OF TRANSPORTATION	(P)	PLAT	○	FOUND NAIL & DISK AS NOTED		CONCRETE UTILITY POLE
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	PB	PLAT BOOK	◎	FOUND NAIL & DISK (LB 8501)		METAL UTILITY POLE
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY	PC	POINT OF CURVATURE	◉	FOUND 5/8" IRON ROD & CAP LS4101		WOOD UTILITY POLE
FND	FOUND	PCC	POINT OF COMPOUND CURVATURE	●	FOUND IRON ROD AS NOTED		UTILITY POLE GUY ANCHOR
GR	GROUND	PC(S)	PAGE(S)	◍	SET NAIL & DISK (LB 8501)		LIGHT POLE
ID	IDENTIFICATION	POC	POINT OF COMMENCEMENT	◍	SET 5/8" IRON ROD & CAP (LB 8501)		SIGN
INV	INVERT	POB	POINT OF BEGINNING	◔	CONTROL/BENCHMARK AS DESCRIBED		

	LINE BREAK
x	FENCE LINE AS NOTED
OHL	OVERHEAD UTILITY LINE
TOB	TOP OF BANK
TOS	TOE OF SLOPE
100	EXISTING CONTOUR
S	SANITARY SEWER LINE
D	STORM DRAINAGE LINE
W	WATER LINE

CERTIFIED TO:

CRESTWOOD INVESTMENT LLC

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THIS SURVEY MEETS THE APPLICABLE "STANDARDS OF PRACTICE" AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN RULE 5J17.050–.052, FLORIDA ADMINISTRATIVE CODE.

William D. Donley

Digitally signed by William D. Donley
Date: 2025.10.08 13:33:10 -04'00'

WILLIAM D. DONLEY
FLORIDA LICENSED SURVEYOR & MAPPER NO. LS5381
THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

WILLIAM D. DONLEY · CERTIFICATE NO. 5381 · STATE OF FLORIDA · REGISTERED LAND SURVEYOR

REVISIONS				
FB/PG	DATE	DRAWN	REVISION	CKD

DONLEY CONSULTING GROUP, LLC
210 PARKTOWNE BOULEVARD, SUITE 1
EDGEWATER, FLORIDA 32132
PHONE: 407.947.4552
WWW.DONLEYCONSULTING.COM
CERTIFICATE OF AUTHORIZATION NO. LB 8501

A PORTION OF
SECTIONS 19 & 24, TOWNSHIP 18 SOUTH,
RANGE 35 EAST
VOLUSIA COUNTY, FLORIDA

BOUNDARY SURVEY for:

CRESTWOOD INVESTMENT LLC

FB/PG	FIELD DATE	PROJECT NO.
VOLUSIA FB 6	12/10/2024	109.006
DRAWING DATE	**BY** / **APPROVED**	SCALE
10/08/2025	WDD / WDD	1"=120'

REVISIONS				
FB/PG	DATE	DRAWN	REVISION	CKD

DONLEY CONSULTING GROUP, LLC

210 PARKTOWNE BOULEVARD, SUITE 1
EDGEWATER, FLORIDA 32132
PHONE: 407.947.4552
WWW.DONLEYCONSULTING.COM
CERTIFICATE OF AUTHORIZATION NO. LB 8501

A PORTION OF
SECTIONS 19 & 24, TOWNSHIP 18 SOUTH,
RANGE 35 EAST
VOLUSIA COUNTY, FLORIDA

BOUNDARY SURVEY for:

CRESTWOOD INVESTMENT LLC

FB/PG	FIELD DATE	PROJECT NO.
VOLUSIA FB 6	12/10/2024	109.006
DRAWING DATE	BY / APPROVED	SCALE
10/08/2025	WDD / WDD	1"=120'

GENERAL CONSTRUCTION NOTES

1. GOVERNING SPECIFICATIONS: CITY OF EDGEWATER LAND DEVELOPMENT CODE, CURRENT EDITION. VOLUSIA COUNTY UTILITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS, CURRENT EDITION.
2. ALL CONSTRUCTION WITHIN THE FDOT RIGHT-OF-WAY SHALL CONFORM TO THE 2025 / 2026 EDITION OF THE FDOT DESIGN STANDARD INDEXES, THE 2017 EDITION OF THE FDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION AND THE 2010 EDITION OF THE FDOT UTILITY ACCOMMODATIONS MANUAL.
3. ALL UTILITY MATERIAL, CONSTRUCTION AND TESTING COVERED BY THESE DRAWINGS SHALL COMPLY WITH THE VOLUSIA COUNTY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS, LATEST EDITION. ALL UTILITY WORK AND CONNECTIONS SHALL BE COORDINATED WITH THE VOLUSIA COUNTY UTILITIES AND INSPECTORS.
4. CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL REQUIRED PERMITS. THE CONTRACTOR SHALL MAINTAIN COPIES OF ALL PERMITS AVAILABLE ON THE JOB SITE AT ALL TIMES.
5. THE CONTRACTOR SHALL MAINTAIN AT THE JOB SITE A RECORD COPY OF ALL CONSTRUCTION DRAWINGS AND SPECIFICATIONS ON WHICH ALL FIELD CHANGES ARE TO BE SHOWN. ALL CHANGES TO PLANS SHALL BE INCORPORATED IN THE "AS-BUILT" RECORD DRAWINGS SURVEY PROVIDED BY CONTRACTOR FOR REVIEW AND APPROVAL FROM ENGINEER OF RECORD.
6. THE VOLUSIA COUNTY WILL OWN AND MAINTAIN ALL WATER, SEWER AND RECLAIM MAINS LOCATED WITHIN THE RIGHT-OF-WAY.
7. THE CONTRACTOR SHALL PAY FOR AND OBTAIN A SITE ENGINEERING BUILDING PERMIT. THE ENGINEER WILL SCHEDULE THE PRE-CONSTRUCTION CONFERENCE BEFORE THE CONTRACTOR'S START OF WORK. THE CONTRACTOR SHALL CONTACT THE BUILDING DEPARTMENT AT (386) 424-2400 EXTENSION 1514 FOR INFORMATION ON ISSUANCE OF CITY PERMITS AND / OR OTHER REQUIREMENTS.
8. SEPARATE BUILDING PERMIT APPLICATIONS ARE REQUIRED FOR: NEW BUILDINGS, CLUBHOUSE, TRASH COMPACTOR, RETAINING WALL, FENCE, SWIMMING POOL, GAZEBO, PLAYGROUND, LIGHT POLES AND SIGNS. CONTACT THE CITY OF EDGEWATER BUILDING DEPARTMENT AT (386) 424-2400 EXTENSION 1514.
9. ALL WATER SERVICE CONSTRUCTION SHALL BE IN ACCORDANCE WITH "VOLUSIA COUNTY UTILITY SPECIFICATIONS AND STANDARD UTILITY DETAILS, CURRENT EDITION.
10. ALL SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH "DESIGN AND CONSTRUCTION STANDARDS", VOLUSIA COUNTY UTILITIES DEPARTMENT, CURRENT EDITION.
11. ALL RECLAIMED WATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH "DESIGN AND CONSTRUCTION STANDARDS", VOLUSIA COUNTY UTILITIES DEPARTMENT, CURRENT EDITION.
12. ALL ROADWAY SIGNAGE AND MARKINGS SHALL BE IN CONFORMANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.
13. THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS.
14. LAND CLEARING OF THE PROJECT IS NOT ALLOWED UNTIL THE CITY ENGINEER AND/OR PLANNING DEPARTMENT ISSUES A LAND CLEARING PERMIT.
15. SHOP DRAWINGS AND CERTIFICATIONS FOR ALL MATERIALS AND STRUCTURES ARE REQUIRED. THE CONTRACTOR SHALL REVIEW AND SIGN ALL SHOP DRAWINGS. THE CONTRACTOR TO SUBMIT REVIEWED SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE MATERIALS REQUIRED FOR CONSTRUCTION.
16. THE LOCATION OF EXISTING UTILITIES HAS BEEN OBTAINED FROM THE MOST RELIABLE INFORMATION AVAILABLE TO THE ENGINEER. THIS INFORMATION IS NOT GUARANTEED AND IT SHALL BE EACH CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT NATURE OF ALL UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND TO NOTIFY NEWKIRK ENGINEERING, INC. AS TO DISCREPANCIES, IF ANY EXIST.
17. ALL SURVEY AND TOPOGRAPHICAL INFORMATION BASED ON SURVEY INFORMATION PROVIDED BY A1A SURVEYING INC.; CONTRACTOR TO COORDINATE WITH SURVEYOR FOR ALL CONSTRUCTION BENCHMARK INFORMATION.
18. ALL SURVEY AND TOPOGRAPHICAL INFORMATION IS BASED ON THE NAVD 1988 DATUM. ALL PROPOSED CONSTRUCTION ELEVATIONS ARE BASED ON THE NAVD 1988 DATUM. ALL PROPOSED ELEVATIONS REFER TO FINISH GRADES.
19. THESE DRAWINGS AND THE PROJECT MANUAL ARE COMPLEMENTARY, AND ANY REQUIREMENT OF ONE SHALL BE A REQUIREMENT OF THE OTHER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CAREFULLY EXAMINE THE DRAWINGS AND SPECIFICATIONS AND TO COMPARE THE REQUIREMENTS OF EACH DIVISION AND ENSURE THAT EACH TRADE OR SUBCONTRACTOR IS MAKING THE ALLOWANCES NECESSARY TO PROVIDE THE OWNER A COMPLETE FACILITY, OPERATIONAL IN ALL RESPECTS, UNLESS OTHERWISE SPECIFICALLY STATED IN THE DRAWINGS.
20. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR INSTRUCTING THE CONTRACTOR IN THE METHODS OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE METHOD TO CONSTRUCT THE IMPROVEMENTS AS SHOWN ON THE PLANS.
21. ANY CHANGES TO THE APPROVED PLANS REQUIRE COMPLETION OF THE CHANGE ORDER PROCESS.
22. LITTER CONTROL MEASURES TO PREVENT WIND-DRIVEN DEBRIS SHALL BE IMPLEMENTED THROUGHOUT THE DURATION OF CONSTRUCTION. ALL DEBRIS SHALL BE REMOVED AND THE PROJECT SITE CLEANED WITHIN 30 DAYS OF COMPLETION OF CONSTRUCTION.
23. AT NO TIME SHALL EXCAVATIONS BE LEFT UNCOVERED AFTER WORKING HOURS. CONTRACTOR SHALL SECURE THE WORK AREA AT THE END OF EACH DAY'S WORK.
24. AT ALL TIMES, THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT UNDERGROUND UTILITIES, STRUCTURES AND OTHER ASSOCIATED FACILITIES FROM DAMAGE DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE MEASURES OF PROTECTION. ANY DAMAGED FACILITIES SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE CITY OR ENGINEER AT THE CONTRACTORS EXPENSE.
25. THERE SHALL BE NO DEVIATIONS FROM THESE PLANS UNLESS APPROVED IN WRITING BY THE ENGINEER AND THE OWNER.
26. ALL DISTURBED AREAS SHALL BE FULLY SODDED.
27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CERTIFIED MATERIAL TEST RESULTS TO THE ENGINEER OF THE RECORD PRIOR TO THE RELEASE OF FINAL CERTIFICATION BY THE ENGINEER, TEST RESULTS MUST INCLUDE, BUT MAY NOT BE LIMITED TO, DENSITIES FOR SUBGRADE AND BASE DENSITIES AT UTILITY CROSSINGS, MANHOLES, INLETS, STRUCTURES. TEST SHALL INCLUDE ASPHALT GRADATION REPORTS, CONCRETE CYLINDERS, WATER MAIN TESTING, SANITARY SEWER TESTING, RECLAIM MAIN TESTING, ETC.
28. A MINIMUM OF 15'-0" OF VERTICAL CLEARANCE IS TO BE PROVIDED AND MAINTAINED FOR ALL ROADWAYS.
29. ALL ROADWAYS MUST HAVE A MINIMUM 23-FEET INSIDE AND 50-FEET OUTSIDE TURNING RADIUS.
30. WHERE NEW ASPHALT MEETS EXISTING ASPHALT, THE EXISTING ASPHALT SHALL BE SAW CUT TO PROVIDE A STRAIGHT EVEN LINE.
31. PRIOR TO REMOVING CURB OR GUTTER, THE ADJACENT ASPHALT SHALL BE SAW CUT TO PROVIDE A STRAIGHT EVEN LINE.
32. IF ANY MUCK-LIKE MATERIAL IS DISCOVERED, IT WILL BE REQUIRED TO BE REMOVED, BACKFILLED WITH APPROPRIATE FILL, COMPACTED, AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
33. FILL MATERIAL IS TO BE PLACED IN ONE FOOT LIFTS AND COMPACTED TO THE APPROPRIATE DENSITY (98% FOR PAVED AREAS AND 95% FOR BUILDING PADS AND ALL OTHER AREAS AS PER AASHTO T-180).
34. ROAD CLOSURES ARE SEPARATE FROM THE PERMIT AND REQUIRE PLAN REVIEW AND APPROVAL WITH 7 DAY ADVANCE NOTICE FROM THE OWNER OF THE AFFECTED RIGHT-OF-WAY PRIOR TO ANY ROAD CLOSURES. A MAINTENANCE OF TRAFFIC PLAN IS REQUIRED FOR ALL SITE CONSTRUCTION JOBS.
35. DURING CONSTRUCTION, AN H-20 LOAD RATED ALL WEATHER ACCESSIBLE ROADWAY SHALL BE MAINTAINED AT ALL TIMES FOR FIRE ACCESS AND EMERGENCY SERVICES.
36. ALL REQUIRED FIRE MAINS AND HYDRANTS SHALL BE INSTALLED AND OPERATIONAL PRIOR TO THE START OF VERTICAL BUILDING CONSTRUCTION.
37. NO BURYING OF ANY ORGANIC MATERIALS ALLOWED.
38. THERE WILL BE NO PROPOSED OVERHEAD UTILITY AND SERVICE LINES ASSOCIATED WITH THIS PROJECT. ALL UTILITY LINES AND SERVICES WILL BE INSTALLED UNDERGROUND.

EROSION CONTROL AND DEMOLITION CONSTRUCTION NOTES:

1. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING AT THE CITY OF EDGEWATER PRIOR TO COMMENCE OF CONSTRUCTION. CONTRACTOR TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH VOLUSIA COUNTY PRIOR TO CONSTRUCTION OF UTILITY IMPROVEMENTS.
2. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
3. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL DEVICES HAVE BEEN INSTALLED.
4. ALL REASONABLE EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO CONTROL AND PREVENT EROSION AND TRANSPORT OF SEDIMENT MATERIAL TO INLETS, SURFACE DRAINS, WETLAND AND LAKE AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATION EFFORTS THAT MAY BE REQUIRED.
5. THE INSTALLATION OF TEMPORARY EROSION CONTROL BARRIERS SHALL BE COORDINATED WITH THE CONSTRUCTION OF THE PERMANENT EROSION CONTROL FEATURES TO THE EXTENT NECESSARY TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS CONTROL OF EROSION AND WATER POLLUTION THROUGHOUT THE LIFE OF THE CONSTRUCTION PHASE.
6. THE TYPE OF EROSION CONTROL BARRIERS USED SHALL BE GOVERNED BY THE NATURE OF THE CONSTRUCTION OPERATION AND SOIL TYPE THAT WILL BE EXPOSED. SILTY AND CLAYEY MATERIAL USUALLY REQUIRE SOLID SEDIMENT BARRIERS TO PREVENT TURBID WATER DISCHARGE, WHILE SANDY MATERIAL MAY NEED ONLY SILT SCREENS TO PREVENT EROSION. DIVERSION DITCHES OR SWALES MAY BE REQUIRED TO PREVENT TURBID STORMWATER RUNOFF FROM BEING DISCHARGED TO OTHER WATER BODIES. IT MAY BE NECESSARY TO EMPLOY A COMBINATION OF BARRIERS, DITCHES, AND OTHER EROSION/TURBIDITY CONTROL MEASURES IF CONDITIONS WARRANT.
7. THE CONTRACTOR SHALL PROVIDE ROUTINE MAINTENANCE OF PERMANENT AND TEMPORARY EROSION CONTROL FEATURES UNTIL THE PROJECT IS COMPLETE AND ALL BARED SOIL STABILIZED. SILTATION ACCUMULATIONS GREATER THAN THE LESSER OF 12 INCHES OR ONE-HALF THE DEPTH OF THE SILTATION CONTROL BARRIER SHALL BE IMMEDIATELY REMOVED AND REPLACED IN UPLAND AREAS.
8. THE CONTRACTOR SHALL SWEEP ALL ADJACENT ROADWAYS AND PARKING AREAS THAT ARE AFFECTED BY THE CONSTRUCTION PROCESS ON A DAILY BASIS OR AS REQUIRED.
9. THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND MAINTAIN ALL EROSION CONTROL DEVICES AND KEEP THEM IN GOOD CONDITION. ANY IMPACTS DUE TO EROSION OR FAILURE OF ANY EROSION CONTROL DEVICES SHALL BE REPORTED TO THE ENGINEER OF RECORD IMMEDIATELY. CORRECTIVE MEASURES WILL BE THE CONTRACTOR'S RESPONSIBILITY.
11. ANY DISCHARGE OF STORMWATER RUNOFF FROM THIS SITE SHALL BE THROUGH A CONTROL DEVICE TO CONTROL TURBIDITY AND SEDIMENT TRANSPORT. THIS INCLUDES THE DISCHARGE FROM ANY DEWATERING OPERATIONS.
12. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL CRITERIA AS SET FORTH UNDER THE NPDES PERMITTING PROGRAM FOR CONSTRUCTION SITES OF THIS SIZE INCLUDING BUT NOT LIMITED TO THE ADHERENCE TO THE APPROVED POLLUTION PREVENTION CONTROL PLAN, TIMELY INSPECTIONS, PROJECT REPORTING AND DOCUMENTATION.
13. NO DEBRIS SHALL BE ALLOWED TO ENTER THE EXISTING STORM OR SANITARY SEWER SYSTEMS.
14. THE CONTRACTOR SHALL BECOME FAMILIAR WITH AND COMPLY WITH ALL REQUIREMENTS OF THE STATE PERMITS FOR THIS PROJECT. THE CONTRACTOR SHALL COMPLY WITH THE STORMWATER POLLUTION PREVENTION PLAN OF BOTH ON-SITE AND OFF-SITE IMPROVEMENTS. A SIGNED COPY OF THE STORMWATER POLLUTION PREVENTION PLAN IS TO BE KEPT ON THE PROJECT PREMISES AT ALL TIMES.
15. NO WORK WITHIN THE CITY RIGHT-OF-WAY, VOLUSIA COUNTY OR FLORIDA DEPARTMENT OF TRANSPORTATION SHALL BE COMMENCED WITHOUT 48 HOURS ADVANCE NOTICE TO THE CITY, COUNTY OR FDOT.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE CITY OF EDGEWATER PUBLIC WORKS / UTILITY DEPARTMENT, "811" AND EMERGENCY SERVICES FOR RESPECTIVE UTILITY LOCATIONS AND "NOTICE" OF CONSTRUCTION ACTIVITY.
17. THE CONTRACTOR SHALL POST "NO TRESPASSING" SIGNAGE AT ALL SITE ENTRANCES PRIOR TO CONSTRUCTION.
18. THE CONTRACTOR SHALL OBTAIN A TREE REMOVAL PERMIT FROM THE LOCAL JURISDICTION PRIOR TO REMOVING ANY TREES FROM THIS PROJECT.
19. ALL REMOVED MATERIAL SHALL BE HAULED OFF-SITE TO AN APPROVED LANDFILL. TREES MAY BE LOGGED OR MULCHED FOR OFF-SITE DISPOSAL AT THE CONTRACTOR'S DISCRETION.
20. THE CONTRACTOR SHALL NOT ALLOW DEBRIS AND RUBBISH TO ACCUMULATE ONT THE SITE.
21. THE CONTRACTOR SHALL CLEAN UP THE JOB SITE IN AREAS WHERE NO WORK IS TO BE PERFORMED UNDER THIS CONTRACT FOLLOWING DEMOLITION. THE CONTRACTOR SHALL REMOVE ALL DEBRIS, RUBBISH, TEMPORARY FACILITIES, AND EQUIPMENT. THE CONTRACTOR SHALL LEVEL SURFACE IRREGULARITIES AND LEAVE THE WORK IN A NEAT AND PRESENTABLE CONDITION.
22. CONTRACTOR SHALL ROUGH GRADE STORMWATER SWALES AND RETENTION PONDS PRIOR TO CONSTRUCTION OF SITE IMPROVEMENTS.
23. SITE PREPARATION AND FILL OPERATIONS SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND RECOMMENDATIONS.
24. EXISTING STORM DRAINAGE TO REMAIN IN OPERATION AT ALL TIMES. CONTRACTOR TO MAINTAIN THE EXISTING, NEW OR TEMPORARY PIPING.
25. RELOCATION OF UTILITY POLES AND LINES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY AND SHALL BE INCLUDED AS PART OF THE PROJECT SCOPE AND COST.
26. ALL ASPHALT PAVEMENT REMOVALS SHALL BE VERTICAL SAWCUT. ALL CONCRETE PAVEMENT REMOVALS SHALL BE EITHER AT EXISTING JOINTS OR VERTICAL SAWCUT. ACTIVE SERVICES SHALL BE SEVERED WITH PROPER NOTICE GIVEN TO LOCAL UTILITY COMPANIES HAVING JURISDICTION.
27. THE CONTRACTOR SHALL PROVIDE THE ENGINEER, CITY A MOT PLAN AT PRECONSTRUCTION MEETING. TRAFFIC SHALL BE ALLOWED TO CONTINUE DURING WORK. PROVIDE MEASURES TO DETOUR TRAFFIC AROUND OPEN EXCAVATION WITH ADEQUATE BARRICADES, SIGNAGE AND FLAGPERSON TO DIRECT TRAFFIC. EMERGENCY SERVICES SHALL BE NOTIFIED 48 HOUR IN ADVANCE.
28. IF ANY DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION THEN DEWATERING ACTIVITY SHALL ADHERE TO CHAPTER 40C-22 FAC MORE SPECIFICALLY AS FOLLOWS. PER 40C-22.030(3) A "NOTICED GENERAL SHORT-TERM DEWATERING PERMIT" IS REQUIRED "ONLY IF" DEWATERING EXCEEDS 4 MILLION GALLONS PER DAY, EXCEPT DURING THE FIRST 120 HOURS OF DEWATERING WHEN THE DAILY AND INSTANTANEOUS PUMPAGE RATES SHALL NOT EXCEED 6 MILLION GALLONS PER DAY. AVERAGE DAILY WITHDRAWAL SHALL NOT EXCEED 2 MILLION GALLONS PER DAY FOR THE FIRST 60 DAYS OF THE DEWATERING ACTIVITY AND SHALL NOT EXCEED ONE MILLION GALLONS PER DAY OF A 180 DAY DURATION. EACH SPECIFIC DEWATERING PROJECT SHALL NOT EXCEED 180 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ANY DEWATERING ACTIVITY IS BELOW THE SPECIFIED THRESHOLD. OTHERWISE A PERMIT WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE ITSELF WITH CHAPTER 40C-22 FAC AND BE SOLELY RESPONSIBLE FOR OBTAINING AND SUBMITTING FORM RDS-50 TO SJRWMD A MINIMUM OF 10 DAYS PRIOR TO ANY DEWATERING ACTIVITY. SUBMITTAL OF FORM RDS-50 IS NOT REQUIRED IF DEWATERING IS 300,000 GALLONS PER DAY OR LESS AND WILL NOT EXCEED 30 DAYS IN DURATION.

SWPPP INSPECTIONS AND RECORD KEEPING:

INSPECTIONS ARE REQUIRED AT LEAST EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS FOLLOWING A RAINFALL EVENT OF ONE-HALF (½) OF AN INCH OF RAINFALL OR GREATER AND SHALL CONTINUE UNTIL THE SITE COMPLIES WITH FINAL STABILIZATION (NOTICE OF TERMINATION). INSPECTIONS MUST BE CONDUCTED BY A "QUALIFIED" INSPECTOR. "QUALIFIED" IS DEFINED AS A PERSON THAT A). HAS SUCCESSFULLY COMPLETED AND MET ALL REQUIREMENTS NECESSARY TO BE FULLY CERTIFIED THROUGH THE FDEP STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM; B). HAS SUCCESSFULLY COMPLETED AN EQUIVALENT FORMAL TRAINING PROGRAM; OR C). THAT IS QUALIFIED BY OTHER TRAINING OR PRACTICAL EXPERIENCE IN THE FIELD OF STORMWATER POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL. EACH INSPECTION MUST BE FOLLOWED UP BY A REPORT DOCUMENTING THE INSPECTOR'S FINDINGS AND REQUEST THE REQUIRED MAINTENANCE AND/OR REPAIR FOR THE EROSION AND SEDIMENTATION CONTROL MEASURES. THESE RECORDS ARE USED TO PROVE THAT THE REQUIRED INSPECTION AND MAINTENANCE WERE PERFORMED AND SHALL BE PLACED IN THE SWPPP LEDGER. IN ADDITION TO INSPECTION AND MAINTENANCE REPORTS, RECORDS SHOULD BE KEPT OF CONSTRUCTION ACTIVITIES THAT OCCUR ON THE SITE. THE CONTRACTOR SHALL RETAIN COPIES OF THE SWPPP, ALL REPORTS AND DATA FOR A MINIMUM OF FIVE (5) YEARS AFTER THE PROJECT IS COMPLETE IN PAPER AND CD FORMAT.

SITE CLEARING AND GRADING CONSTRUCTION NOTES:

THE FOLLOWING MEASURES REPRESENT MINIMUM STANDARDS TO BE ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF A PROJECT. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO BE EMPLOYED WHEN WARRANTED BY EXTREME CONDITIONS AND/OR THE FAILURE OF THE CONTRACTOR TO EMPLOY THE APPROPRIATE EROSION CONTROL BEST MANAGEMENT PRACTICES. FAILURE TO COMPLY WITH THESE PROVISIONS SHALL RESULT IN THE ISSUANCE OF A "STOP WORK ORDER".

1. 6-FEET TALL SCREENED CONSTRUCTION FENCING TO BE INSTALLED ALONG NORTH TYMBER CEEK ROAD PRIOR TO SITE CLEARING.
2. NO DISTURBANCE OF PROPOSED CONSERVATION EASEMENTS, NATURAL BUFFERS, OR WATER BODIES IS PERMITTED. THE CONTRACTOR SHALL LOCATE THESE AREAS ON SITE AND BARRICADE THEM TO AVOID ANY UNAUTHORIZED CLEARING. BARRICADES AND OTHER PROTECTIVE FENCING ARE TO BE LOCATED AT THE DRIP LINE OF EXISTING NATIVE TREES OR AT THE EDGE OF THE NATIVE UNDER- STORY HABITAT, WHICHEVER IS NEAREST TO THE CONSTRUCTION ACTIVITY.
3. SPECIMEN AND HISTORIC TREES, CONSERVATION EASEMENTS, NATURAL VEGETATION BUFFERS, AND SIMILAR AREAS MUST BE PROTECTED BY BARRICADES OR FENCING PRIOR TO CLEARING. BARRICADES ARE TO BE SET AT THE DRIP LINE OF THE TREES AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. BARBED WIRE IS NOT PERMITTED AS A PROTECTIVE BARRIER.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL PROTECTIVE VEGETATION BARRICADES AND EROSION CONTROL STRUCTURES AND MEASURES IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK, INCLUDING PRELIMINARY GRUBBING. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY CONSTRUCTION FENCES, SYNTHETIC JUTE BALES, SILT FENCES, FLOATING TURBIDITY BARRIERS AND OTHER APPROVED BEST MANAGEMENT PRACTICES (BMP's). FURTHER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION CONTROL DEVICES THROUGHOUT THE DURATION OF THE ENTIRE PROJECT. MAINTENANCE SHALL INCLUDE PERIODIC INSPECTION AND REMOVAL OF DEBRIS ABUTTING EROSION CONTROL DEVICES.
5. PRIOR TO THE INSTALLATION OF ANY FILL MATERIALS ON SUBJECT SITE, SILT FENCES SHALL BE INSTALLED (1) ALONG SUBJECT SITE BOUNDARY AND PROPERTY LINES, (2) AT THE EDGE OF CONSERVATION EASEMENTS AND WETLANDS, (3) ADJACENT TO NATURAL LANDSCAPE BUFFERS, (4) AROUND THE PERIMETER OF EXISTING STORM WATER TREATMENT FACILITIES. THESE CONDITIONS SHALL APPLY IN ALL INSTANCES WHERE FILL MATERIAL IS BEING INSTALLED WITHIN 25 FEET OF ANY OF THE AFOREMENTIONED LOCATIONS.
6. WHERE FILL MATERIAL IS INTENDED TO BE INSTALLED ADJACENT TO EXISTING VEGETATION WHICH IS INTENDED TO REMAIN NATURAL. THE CONTRACTOR MAY INSTALL SILT FENCING AS A TREE PROTECTION MEASURE, IN LIEU OF INSTALLING EITHER WOOD BRACING OR ORANGE MESH FENCING. THIS PRACTICE IS ENCOURAGED BY THE CITY. IF THE SILT FENCE FAILS TO PROVIDE ADEQUATE PROTECTION FROM IMPACT DUE TO CONSTRUCTION, THEN ADDITIONAL CONSTRUCTION FENCING OR WOOD BRACING SHALL BE REQUIRED.
7. AT A MINIMUM, THE CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS. SUFFICIENT GRASS COVERAGE IS TO BE ESTABLISHED WITHIN TWO WEEKS.
8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THROUGH SCHEDULING, TO MINIMIZE THE DISTURBANCE OF SITE AREAS THAT HAVE BEEN BROUGHT TO THEIR PROPOSED FINAL GRADE. WITHIN SEVEN (7) DAYS OF BRINGING A SUBJECT AREA TO ITS FINAL GRADE OR INACTIVITY IN CONSTRUCTION, THE CONTRACTOR SHALL INSTALL SEED AND MULCH OR SOD, AS REQUIRED.
9. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED BY THE CONTRACTOR TO ALLOW THE GRASS TO BECOME ESTABLISHED.IF THE GRASS IS NOT ESTABLISHED WITHIN TWO WEEKS THE CITY MAY REQUIRE THE CONTRACTOR TO RE-SEED OR A NON-VEGETATIVE OPTION MAY BE EMPLOYED.
10. ABSOLUTELY NO BURYING OF CLEARED MATERIALS IS PERMITTED.
11. THE REMOVAL OF ALL VEGETATION AND TOPSOIL ON THE FUTURE ROADWAY, PARKING AND BUILDING LOT AREAS IS REQUIRED TO BE COMPLETED PRIOR TO THE PLACEMENT OF FILL ON THOSE AREAS. THE TOPSOIL MAY BE TEMPORARILY STOCKPILED AND USED AS TOPSOIL OVER OVER PROPOSED GREEN AREAS SUCH AS PLANT BEDS, SODDED AREAS, AND WHERE TREES ARE TO BE INSTALLED OR RELOCATED.
12. A SIGNED, DATED, AND SEALED LETTER FROM A SOILS ENGINEER OR THE ENGINEER OF RECORD CERTIFYING THAT THE AREAS TO BE FILLED HAVE BEEN STRIPPED OF ORGANIC MATERIALS, MUST BE SUBMITTED TO THE CITY PRIOR TO FILLING.
13. FILL MATERIAL IS TO BE PLACED IN ONE FOOT LIFTS AND COMPACTED TO THE APPROPRIATE DENSITY 98% FOR PAVED AREAS AND 95% FOR BUILDING PADS AND ALL OTHER AREAS AS PER AASHTO T-180).
14. IF ANY MUCK MATERIAL IS DISCOVERED, IT SHALL BE REQUIRED TO BE REMOVED AND REPLACED WITH A SUITABLE MATERIAL THAT IS PROPERLY BACKFILLED, COMPACTED AND TESTED USING AASHTO T-160 MODIFIED PROCTOR METHOD.
15. STOCKPILING IS NOT GENERALLY PERMITTED BY THE CITY. WHEN ALLOWED, STOCKPILES SHALL NOT EXCEED SIX FEET IN HEIGHT MEASURED FROM THE ORIGINAL GRADE. AT A MINIMUM, STOCK PILES THAT WILL REMAIN IN PLACE IN EXCESS OF TWENTY DAYS SHOULD BE SEEDED AND MULCHED IMMEDIATELY UPON PLACEMENT OF THE FINAL LIFT.
16. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES. ADEQUATE WATERING METHODS SHOULD BE EMPLOYED TO ALLOW DAILY COVERAGE OF THE ENTIRE LIMITS OF ALL AREAS THAT DO NOT HAVE AN ESTABLISHED VEGETATIVE COVER. METHODS TO BE EMPLOYED INCLUDE, BUT ARE NOT LIMITED TO, WATER TRUCKS, PERMANENT IRRIGATION SYSTEMS, TEMPORARY SPRINKLER SYSTEMS OPERATED BY PUMPING UNITS CONNECTED TO WET RETENTION PONDS, WATER CANNONS, TEMPORARY IRRIGATION SYSTEMS MOUNTED ATOP STOCKPILE AREAS, AND OTHER METHODS AS DEEMED NECESSARY BY THE CITY.
17. ALL FILL MATERIALS LOCATED BENEATH STRUCTURES AND PAVEMENT SHALL CONSIST OF CLEAN GRANULAR SAND FREE FROM ORGANICS AND SIMILAR MATERIAL 'THAT COULD DECOMPOSE.
18. FILL TO BE PLACED IN LANDSCAPED AREAS SHALL HAVE A Ph RANGE BETWEEN 5.5 AND 7.5, BE ORGANIC IN NATURE, FREE OF ROCKS AND DEBRIS, OR MATCH NATIVE EXISTING SOILS.
19. A 6' TALL CONSTRUCTION FENCING WITH FABRIC SCREEN TO BE INSTALLED ALONG MAJOR ROADWAYS (TYMBER CREEK ROAD). THE CONSTRUCTION FENCING NEEDS TO BE INSTALLED PRIOR TO SITE CLEARING.

TEMPORARY SEEDING SPECIFICATION:

GENERAL
SEEDING CAN BE USED FOR TEMPORARY STABILIZATION. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 7 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED. AREAS WHERE FINAL GRADING HAS BEEN COMPLETED FOR MORE THAN 7 DAYS SHALL BE TEMPORARILY SEEDED. TEMPORARY SEED MIXTURE IS SPECIFIED BELOW.
SEEDING MIXTURES
SEED MIXTURE SHALL BE BERMUDA COMMON 90 LB PURE LIVE SEED PER ACRE, FIBER 2000 LB PER ACRE, STABILIZER 120 LB PER ACRE AND FERTILIZER 300 LB PER ACRE.
ALL SLOPES AND FLAT GRADE
APPLY 6-20-20 COMMERCIAL ORGANIC FERTILIZER AT A RATE OF 300 LB PER ACRE AND SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:
TEMPORARY SEEDING

Grass Type	Optimal Planting Window (Central FL)	Seeding Rate	Notes
Bermudagrass (Hulled)	March 15 – July 31	5–10 lbs/acre (hulled) 10–15 lbs/acre (unhulled)	Fast germination; ideal for hot season; avoid late-summer/fall seeding
Bermudagrass (Common)	April 1 – July 15	8–15 lbs/acre	Slower establishment than hybrids; needs warm soil
Pensacola Bahiagrass	March 15 – August 31	20–30 lbs/acre	Strong drought tolerance; slower to germinate
Annual Ryegrass	October 15 – February 15	20–40 lbs/acre	Quick winter cover; dies back in spring
Rye Grain (Cereal Rye)	October 15 – January 15	90–120 lbs/acre	Deep-rooted; great for erosion and winter soil protection
Bahiagrass (General)	March 15 – August 31	20–30 lbs/acre	Same as Pensacola; broad use in roadside and disturbed areas

Central Florida Notes:

Soil Temps: Warm-season species (bermuda, bahia) require soil temps > 65°F for germination.
Irrigation: Spring and early summer seeding benefits from supplemental watering during dry spells.
Cool-season species (annual ryegrass and rye grain) are **not suitable for permanent coverage** and must be replaced in spring.

MULCH SEEDED AREA WITH 2 TONS PER ACRE CLEAN GRAIN STRAW. ANCHOR STRAW WITH HYDRAULIC WOOD FIBER MULCH AT THE RATE OF 1000 LB PER ACRE, OR 150-200 POUNDS OF ORGANIC MULCH TACKIFIER PER ACRE, OR USE NETTING.
HYDRO FIBER MULCH MIXTURE SHALL BE PERFORMED IN A TANK WITH A CONTINUOUS AGITATION AND RECIRCULATION SYSTEM WITH SUFFICIENT OPERATING CAPACITY TO PRODUCE A HOMOGENOUS SLURRY AND DISCHARGE SYSTEM WHICH WILL APPLY THE SLURRY AT A CONTINUOUS AND UNIFORM RATE. MIXTURE SHALL CONTAIN A GREEN FUGITIVE DYE AS AN APPLICATION INDICATOR.

FDEP WASTEWATER NOTES

LEGEND

NOTE: NOT ALL SYMBOLS SHOWN HERE MAY BE APPLICABLE TO THESE DRAWINGS, ALSO THERE MAY BE ADDITIONAL SYMBOLS WITHIN PLANS NOT SHOWN HERE, SEE INDIVIDUAL DRAWING LEGEND WHERE APPLICABLE.

#3	BENCHMARK ID		FOUND 4" BY 4" CONCRETE MONUMENT L.B. #3724
B24	BORING ID		EXISTING EASEMENT
TV	EXISTING CABLE TV PEDESTAL	FOC	EXISTING UNDERGROUND FIBER OPTIC CABLE
	EXISTING CAP OR PLUG	#FM	EXISTING FORCE MAIN (# INDICATES SIZE)
	EXISTING CLEAN OUT	GAS	EXISTING GAS MAIN
	EXISTING CONDUIT RISER/ MARKER	OHE	EXISTING OVERHEAD ELECTRIC CABLES
E	EXISTING ELECTRIC METER	OHT	EXISTING OVERHEAD TRAFFIC SIGNAL CABLE
+11.7	EXISTING ELEVATION (SOFT)	#RAW	EXISTING RAW WATER MAIN (# INDICATES SIZE)
5.0±	PROPOSED ELEVATION (SOFT)	#REC	EXISTING RECLAIM WATER MAIN (# INDICATES SIZE)
+11.70	EXISTING ELEVATION (HARD)	#SAN	PROPOSED SANITARY SEWER (# INDICATES SIZE)
5.00	PROPOSED ELEVATION (HARD)	#WM	PROPOSED WATER MAIN (# INDICATES SIZE)
	EXISTING FIRE HYDRANT	12	EXISTING CONTOUR
	PROPOSED FIRE HYDRANT	10	PROPOSED CONTOUR (SOFT)
	EXISTING FLOW DIRECTION	10	PROPOSED CONTOUR (HARD)
	PROPOSED FLOW DIRECTION	UTEL	EXISTING UNDERGROUND TELEPHONE CABLE
	EXISTING GAS METER	UTV	EXISTING UNDERGROUND TELEVISION CABLE
	EXISTING GAS VALVE	UGE	EXISTING UNDERGROUND ELECTRICAL POWER CABLE
	EXISTING GUY WIRE & ANCHOR PIN		JURISDICTIONAL WETLAND LINE
	EXISTING MAIL BOX	#SAN	EXISTING SANITARY SEWER (# INDICATES SIZE)
	EXISTING MANHOLE (UNKNOWN)	#WM	EXISTING WATER MAIN (# INDICATES SIZE)
	PROPOSED MANHOLE		EXISTING PIPE OR CONDUIT (TYPE SPECIFIED)
	EXISTING SANITARY SEWER CLEANOUT		EXISTING SWALE OR CENTER OF DITCH
S	EXISTING SANITARY SEWER MANHOLE		PROPOSED SWALE OR CENTER OF DITCH
	EXISTING ROAD SIGNS AND POSTS		EXISTING TOP OF DITCH BANK
	PROPOSED SIGN AND POST		EXISTING BOTTOM OF DITCH BANK
	EXISTING TEE		EXISTING WOOD FENCE
	EXISTING UTILITY POLE		EXISTING WIRE OR CHAIN LINK FENCE
IRR	EXISTING VALVE IRRIGATION		PROPOSED WIRE OR CHAIN LINK FENCE
	EXISTING VALVE WATER		PROPOSED SILT/SEDIMENT FENCE
	PROPOSED WATER VALVE		PROPOSED COIR ROLL OR WATTLE
	EXISTING WATER METER		PROPOSED FLOATING TURBIDITY BARRIER
	EXISTING STORM SEWER WITH INLET	TP	PROPOSED TREE PROTECTION
	PROPOSED STORM SEWER WITH INLET		
	FOUND 1/2" CAPPED IRON ROD L.B. #3724		
	FOUND 1/2" IRON ROD (NO I.D.)		

ABBREVIATIONS

AWWA	AMERICAN WATER WORKS ASSOCIATION	H/C	HANDICAP	SAN	SANITARY
CMP	CORRUGATED METAL PIPE	HDPE	HIGH DENSITY POLYETHYLENE	SH	SEASONAL HIGH
CPP	CORRUGATED PLASTIC PIPE	INV	INVERT	SJRWMD	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
CTV	CABLE TELEVISION	K_H	HORIZONTAL PERMEABILITY	SMH	SANITARY MANHOLE
DIP	DUCTILE IRON PIPE	K_V	VERTICAL PERMEABILITY	SS	SANITARY SEWER
ESMT	EASEMENT	KO	KNOCK OUT	SWPPP	STORMWATER POLLUTION PREVENTION PLAN
EXIST	EXISTING	LF	LINEAL FEET	TSB	TEMPORARY SEDIMENT BASIN
FAC	FLORIDA ADMINISTRATIVE CODE	MB	MAP BOOK	TYP	TYPICAL
FACBC	FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION	MES	MITERED END SECTION	UGE	UNDERGROUND ELECTRIC
		MJ	MECHANICAL JOINT	UGT	UNDERGROUND TELEPHONE
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	N/A	NOT APPLICABLE	USACOE	UNITED STATES ARMY CORP OF ENGINEERS
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	NIC	NOT IN CONTRACT	W	WATER (POTABLE)
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY	NGVD	NATIONAL GEODETIC VERTICAL DATUM		
FH	FIRE HYDRANT	OHE	OVERHEAD ELECTRIC		
FOC	FIBER OPTIC CABLE	OR	OFFICIAL RECORD		
FF EL	FINISH FLOOR ELEVATION	PG	PAGE		
FM	FORCE MAIN	PSI	POUNDS PER SQUARE INCH		
FPD	FEET PER DAY	PVC	POLYVINYL CHLORIDE		
G	GAS	PVMT	PAVEMENT		
GW	GROUND WATER	R	RADIUS		
		RCP	REINFORCED CONCRETE PIPE		
		RPM	REFLECTIVE PAVEMENT MARKER		
		R/W	RIGHT-OF-WAY		

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS - 2025 / 2026 AND QUALIFIED PRODUCTS LIST

INDEX NO.	DESCRIPTION	INDEX NO.	DESCRIPTION
102	TEMPORARY EROSION AND SEDIMENT CONTROL	514	OPTIONAL BASE GROUP AND STRUCTURAL NUMBERS
425-010	STRUCTURE BOTTOMS - TYPES J AND P	330-001	TURNOUTS
205	PIPE BACKFILL	546	SIGHT DISTANCE AT INTERSECTIONS
425-021	CURB INLET TOPS - TYPES 5 & 6	102-600	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES
425-024	CURB INLET TOP - TYPE 9		
425-052	DITCH BOTTOM INLETS - TYPES C, D, E AND H	102-602	TWO-LANE AND MULTILANE, WORK ON SHOULDER
430-022	SIDE DRAIN MITERED END SECTION	102-603	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY
520-001	CURB & CURB AND GUTTER	102-613	MULTILANE ROADWAY, LANE CLOSURES
522-002	PUBLIC SIDEWALK CURB RAMPS	102-660	SIDEWALK CLOSURE
350-001	CONCRETE PAVEMENT JOINTS	700-101	TYPICAL SECTIONS FOR PLACEMENT OF SINGLE & MULTIPLE-COLUMN SIGNS
522-001	CONCRETE SIDEWALK		
120-001	EMBANKMENT UTILIZATION	711-001	SPECIAL MARKING AREAS

FDOT RIGHT-OF-WAY GENERAL NOTES:

1. ALL CONSTRUCTION IN THE FDOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST EDITIONS OF THE FDOT DESIGN PLANS [INDEXES], THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE FDOT UTILITY ACCOMMODATION MANUAL.
2. MAINTENANCE OF TRAFFIC TO BE SUPERVISED BY A CERTIFIED PERSON (ON SITE).
3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK WITH IN THE FDOT R/W.
4. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO REPAIR ANY DAMAGE TO FDOT FACILITIES CAUSED BY THE CONSTRUCTION OF THIS PROJECT.
5. ANY TEST RESULTS TAKEN DURING CONSTRUCTION OF THE PERMITTED WORK SHALL BE PROVIDED TO THE DEPARTMENT UPON REQUEST.
6. ALL CONCRETE TO BE REMOVED SHALL BE SAW CUT TO NEAREST JOINT IN GOOD CONDITION, SO A CONNECTION THAT IS FREE OF CRACKS, DEFORMITIES OR VOIDS & IRREGULARITIES ARE NOT DEFECTIVE.
7. ALL STRIPING WITHIN THE FDOT RIGHT-OF-WAY SHALL BE PREFORMED THERMOPLASTIC.
8. ALL CONCRETE SHALL BE AN APPROVED FDOT MIX DESIGN OF 3,000 PSI.
9. ALL MATERIALS INSTALLED INSIDE FDOT R/W SHALL BE ON THE QUALIFIED PRODUCTS LIST OR APPROVED PRODUCTS LIST.
10. ALL CONSTRUCTION SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
11. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC AND BARRICADE PLAN TO THE ENGINEER FOR APPROVAL WITH THE BID. INCLUDE THE MOT PLAN AT THE PRECONSTRUCTION MEETING.
12. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND THE FDOT INSPECTOR NOTIFIED FOR APPROVAL.
13. ALL BARRICADES AND POSTED SIGNAGE SHALL REMAIN IN PLACE UNTIL PAVING WORK IS COMPLETE. ALL BARRICADES SHALL BE VERIFIED IN PLACE BY THE CONTRACTOR AT THE END OF EACH WORK DAY.
14. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA.
15. THE CONTRACTOR SHALL ENSURE THAT ALL SIDEWALKS AND CROSSWALKS CONFORM TO THE CURRENT REQUIREMENTS OF THE AMERICANS WITH DISABILITY ACT (ADA).
16. ALL SIGNS AND PAVEMENT MARKINGS THAT ARE REMOVED OR DAMAGED BY CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE TO BE REPLACED TO THEIR PRECONSTRUCTION CONDITIONS.
17. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO FDOT STANDARD INDEX No. 711-001.
18. IN THE EVENT PERMANENT VEHICLE DETECTION IS DISRUPTED, PROVIDE AN ALTERNATIVE MEANS OF DETECTION TO ALL LANES APPROACHING THE INTERSECTION, SEPARATING EACH MOVEMENT WHICH PREVIOUSLY HAD DETECTION. THE TYPE OF DETECTOR SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. EQUIPMENT SHALL ONLY DETECT THE INTENDED MOVEMENT.
19. THERE SHALL BE NO WORK WITHIN THE VICINITY OF THE SIGNALIZED INTERSECTION DURING 7 A.M. TO 7 P.M. MONDAY TO SUNDAY.
20. CONTRACTOR TO PROVIDE TEMPORARY VIDEO DETECTION FOR SIGNAL WHILE LOOPS ARE DISTURBED DURING MILLING AND RESURFACING.
21. PERMITTEE/APPLICANT WILL BE FULLY RESPONSIBLE TO UPDATE/ADD/REMOVE ANY SIGNS OR PAVEMENT MARKINGS THAT NEED TO BE UPDATED/ADDED/REMOVED IN THE FIELD WITH THE PROPOSED CHANGES EVEN THE FDOT PERMIT IS NOT COMPREHENSIVE AND DO NOT COVER EVERY ONE OF THE CHANGES REQUIRED.
22. FDOT LANE CLOSURE RESTRICTIONS FOR SECTION 79010 MP:

STATE ROAD NO.		COUNTY	SECTION	SHEET
5		VOLUSIA	79010000	1 OF 4
	COUNT STATION	799929		4-lanes
8.821	TO M.P.	14.176	DATE	09/22/22
4:00 PM	TO	6:00 PM	DIRECTION	NORTHBOUND
7:00 AM	TO	9:00 AM	DIRECTION	SOUTHBOUND

VOLUSIA COUNTY RIGHT-OF-WAY NOTES:

1. NOTIFY VOLUSIA COUNTY DEVELOPMENT ENGINEERING DIVISION AT (386) 736-5926 A MINIMUM OF 24 HOURS PRIOR TO THE START OF CONSTRUCTION. FAILURE OF THE PERMITTEE TO OBTAIN THE APPROPRIATE INSPECTIONS PRIOR TO PROCEEDING WITH WORK SHALL NOT RELIEVE THE PERMITTEE FROM REEXCAVATION OR OTHER MEASURES NECESSARY FOR THE INSPECTION OF WORK.
2. VOLUSIA COUNTY TRAFFIC ENGINEERING (386) 736-5968 IS NOT A MEMBER OF SUNSHINE ONE CALL. WHEN REQUESTING LOCATES, PLEASE PROVIDE A MINIMUM ADVANCED NOTIFICATION OF TWO (2) BUSINESS DAYS PRIOR TO PROPOSED WORK.
3. COORDINATION WITH VOLUSIA COUNTY TRAFFIC OPERATIONS (386) 239-6535 IS REQUIRED WITH A MINIMUM ADVANCED NOTICE OF SEVEN (7) DAYS PRIOR TO ANY SIDEWALK, LANE OR ROAD CLOSURE (INCLUDING FLAGGING OPERATIONS).
4. OPERATIONS WITHIN THE COUNTY RIGHT-OF-WAY SHALL NORMALLY BE CONDUCTED 7:00 AM TO 7:00 PM, MONDAY THROUGH FRIDAY. ANY DEVIATION FROM THESE HOURS REQUIRES PRIOR APPROVAL FROM THE COUNTY DEVELOPMENT ENGINEER. EMERGENCY REPAIRS ARE EXCLUDED FROM THIS TIME RESTRICTION.
5. ALL EXISTING SIDEWALKS WITHIN COUNTY RIGHT-OF-WAY SHALL EITHER REMAIN OPEN OR BE PROVIDED A TEMPORARY WALKWAY IN ACCORDANCE WITH THE CURRENT VERSION OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD INDEX NO. 660. ANY DAMAGE TO SIDEWALKS SHALL BE REPAIRED AND/OR REPLACED IN LIKE KIND BY THE CONTRACTOR. NEW SIDEWALKS AND SECTIONS THROUGH DRIVEWAYS MUST BE AT A 1.5% CROSS SLOPE AND 2% MAXIMUM CROSS SLOPE PER ADA STANDARDS.
6. DRIVING OR STAGING OF CONSTRUCTION VEHICLES OR MATERIALS IS NOT PERMITTED WITHIN THE COUNTY RIGHT-OF-WAY OR ON PEDESTRIAN WALKWAYS AND PATHS. THERE SHALL BE NO OVERNIGHT CONSTRUCTION VEHICLE RELATED PARKING, CONSTRUCTION MATERIAL PLACEMENT OR STORAGE OF ANY KIND PERMITTED WITHIN THE COUNTY RIGHT-OF-WAY.
7. NO TRENCH OR EXCAVATION SHALL BE LEFT OPEN OR UNATTENDED OVERNIGHT, UNLESS APPROVED BY THE COUNTY DEVELOPMENT ENGINEERING INSPECTOR. EXCAVATIONS SHALL MEET THE DROP OFF PROTECTION REQUIREMENTS OF THE LATEST FDOT DESIGN STANDARD INDEX NO. 600.
8. RESTORATION SHALL BE REQUIRED FOR ANY DAMAGE TO SIDEWALKS, CURBS, OR OTHER EXISTING STRUCTURES IN THE RIGHT-OF-WAY. ALL DISTURBED AREAS WITHIN THE COUNTY RIGHT OF WAY SHALL BE RE-GRADED AND SODDED. SEED AND MULCH IS NOT AN ACCEPTABLE ALTERNATIVE TO SODDING.

LANDSCAPE REQUIREMENTS:

1. A HIGH VOLUME IRRIGATION AREA SHALL NOT EXCEED 50 PERCENT OF THE LANDSCAPED AREA. LOW OR MEDIUM VOLUME IRRIGATION AREAS MAY BE UTILIZED IN LIEU OF ANY HIGH VOLUME IRRIGATION AREA.
2. A MEDIUM VOLUME IRRIGATION AREA SHALL NOT EXCEED 25 PERCENT OF THE LANDSCAPED AREA. HOWEVER, THE LANDSCAPED AREA MAY CONTAIN UP TO 75 PERCENT MEDIUM VOLUME IRRIGATION AREA, IF NO HIGH VOLUME IRRIGATION AREA IS UTILIZED ON SITE.
3. A LOW VOLUME IRRIGATION AREA MAY BE UTILIZED FOR AN ENTIRE LANDSCAPED AREA WITH THE EXCEPTION OF NATIVE VEGETATION AREAS REGULATED BY SECTION 50-373(b)(4).
4. IN THE ALTERNATIVE TO (1), (2), AND (3) ABOVE, IF 25 PERCENT OF THE PRE-EXISTING NATIVE VEGETATION IS RETAINED ON SITE, THE REMAINING 75 PERCENT OF THE LANDSCAPED AREA MAY BE A HIGH VOLUME IRRIGATION AREA. FOR ALL PRE-EXISTING NATIVE VEGETATION RETAINED ON A PARCEL:
   - NO SUPPLEMENTAL WATER SHALL BE APPLIED TO THE NATIVE VEGETATION AREA.
   - ONLY HAND PRUNING OF NATIVE VEGETATION IS ALLOWED.
   - MECHANICAL MOWING OR CLEARING IS PROHIBITED.

IRRIGATION NOTES:

1. AUTOMATIC IRRIGATION CONTROLLERS, WHEN UTILIZED, SHALL CONTAIN A FUNCTIONAL RAIN SENSOR DEVICE, CAPABLE OF BEING SET TO ONE MINUTE RUN TIMES, AND BATTERY BACKUP CAPABILITY TO RETAIN PROGRAMMING IN THE EVENT OF A POWER FAILURE.
2. A RAIN SENSOR PLACED ON A STATIONARY STRUCTURE, FREE AND CLEAR OF ANY OVERHEAD OBSTRUCTIONS AND ABOVE THE HEIGHT OF THE SPRINKLER COVERAGE.
3. EQUIPMENT WITH CHECK VALVES USED IN LOW-LYING AREAS TO PREVENT LOW HEAD DRAINAGE.
4. BACKFLOW PREVENTION METHODS AND OTHER PROVISIONS PRESCRIBED IN SECTION 74-42.
5. IRRIGATION DESIGN WITH THE APPROPRIATE UNIFORMITY FOR THE TYPE OF PLANT BEING GROWN AND FOR THE TYPE OF SOIL.
6. IRRIGATION SYSTEM EQUIPMENT INSTALLED AS DESIGNED.
7. IRRIGATION ZONES DIVIDED ACCORDING TO: AVAILABLE FLOW RATE, VEGETATED GROUPINGS (I.E., TURF, SHRUBS, NATIVE PLANTS, ETC.), SPRINKLER TYPES (I.E., SPRINKLERS WITH MATCHING PRECIPITATION RATES) AND SOIL CHARACTERISTICS.
8. SPRAY HEADS AND ROTORS NOT MIXED IN SAME ZONE.
9. DISTRIBUTION EQUIPMENT IN A GIVEN ZONE HAVING MATCHED PRECIPITATION RATES.
10. APPLICATION RATES THAT AVOID RUNOFF AND PERMIT UNIFORM WATER INFILTRATION INTO THE SOIL, CONSIDERING LAND SLOPE, SOIL HYDRAULIC PROPERTIES, VEGETATIVE GROUND COVER AND PREVAILING WINDS.
11. A MINIMUM SEPARATION OF FOUR INCHES BETWEEN DISTRIBUTION EQUIPMENT AND PAVEMENT.
12. A MINIMUM SEPARATION OF 12 INCHES BETWEEN DISTRIBUTION EQUIPMENT AND BUILDINGS AND OTHER VERTICAL STRUCTURES.
13. NO DIRECT SPRAY ONTO WALKWAYS, BUILDINGS, ROADWAYS AND DRIVES.
14. LAWN SPRAY PATTERNS PROVIDING HEAD TO HEAD COVERAGE.
15. WATER CONVEYANCE SYSTEMS WITH A FLOW VELOCITY OF FIVE FEET PER SECOND OR LESS.
16. PIPELINES DESIGNED TO PROVIDE THE SYSTEM WITH THE APPROPRIATE PRESSURE REQUIRED FOR MAXIMUM IRRIGATION UNIFORMITY.
17. PRESSURE REGULATING HEADS.
18. A MAINTENANCE CHECKLIST PROVIDED TO THE PROPERTY OWNER BY THE IRRIGATION CONTRACTOR ACCOMPANIED BY A RECOMMENDED MAINTENANCE SCHEDULE, PROPER IRRIGATION SYSTEM SETTINGS ACCORDING TO SEASON, RECOMMENDATIONS FOR CHECKING RAIN SENSOR DEVICE, FILTER CLEANING RECOMMENDATIONS AND INFORMATION ON THE CURRENT WATER RESTRICTIONS.
19. IRRIGATION SYSTEM DESIGN WILL BE PERMITTED THROUGH VOLUSIA COUNTY.

IRRIGATION CONTRACTOR LICENSE REQUIREMENTS:

NO PERSON MAY INSTALL OR REPAIR AN IRRIGATION SYSTEM IN VOLUSIA COUNTY UNLESS THEY POSSESS A VALID IRRIGATION CERTIFICATE OF COMPETENCY FROM THE DEPARTMENT. THE FOLLOWING PERSONS ARE EXEMPTED FROM HAVING TO POSSESS A CERTIFICATE OF COMPETENCY:

- LICENSED FLORIDA WATER WELL CONTRACTORS AND FLORIDA STATE CERTIFIED PLUMING CONTRACTORS.
- FLORIDA STATE REGISTERED PLUMBING CONTRACTORS.
- PROPERTY OWNERS WHO PERSONALLY PERFORM CONSTRUCTION, MAINTENANCE OR REPAIRS ON AN IRRIGATION SYSTEM THAT SERVES HIS OR HER OWNER-OCCUPIED SINGLE FAMILY RESIDENCE.

VOLUSIA COUNTY WATERING RESTRICTIONS:

WATERING RESTRICTIONS APPLY TO ALL COUNTY RESIDENTS, INCLUDING THOSE LIVING IN CITIES.

WATERING IS NOT ALLOWED BETWEEN 10 A.M. AND 4 P.M.

DURING EASTERN STANDARD TIME:

- RESIDENTIAL IRRIGATION IS LIMITED TO 4 P.M. TO 10 A.M. SATURDAYS FOR ODD-NUMBERED ADDRESSES AND SUNDAYS FOR EVEN-NUMBERED ADDRESSES.

DURING DAYLIGHT SAVING TIME:

- RESIDENTIAL IRRIGATION IS ALLOWED AT ODD-NUMBERED ADDRESSES FROM 4 P.M. TO 10 A.M. WEDNESDAYS AND SATURDAYS AND EVEN-NUMBER ADDRESSES THURSDAYS AND SUNDAYS.

DAYLIGHT SAVING TIME BEGINS THE SECOND SUNDAY IN MARCH AND ENDS THE FIRST SUNDAY IN NOVEMBER.

IRRIGATION IS LIMITED TO NO MORE THAN ONE HOUR AND THREE-QUARTERS INCH OF WATER PER ZONE PER IRRIGATION DAY. A TYPICAL YARD HAS FOUR IRRIGATION ZONES.

RESTRICTIONS APPLY TO ALL WATER SOURCES, INCLUDING PRIVATE WELLS, SURFACE WATER, AND WATER FROM PUBLIC AND PRIVATE UTILITIES, EXCEPT FOR RECLAIMED WATER (SEE YOUR RECLAIMED WATER PROVIDER FOR ANY RESTRICTIONS.)

NEW PLANTINGS MAY BE WATERED ANY TIME FOR 30 DAYS, THEN EVERY OTHER DAY FOR ANOTHER 30 DAYS. KEEP THE STORE RECEIPT FOR PROOF OF PURCHASE.

HAND WATERING IS ALLOWED ANY TIME WITH AN AUTOMATIC SHUTOFF ON THE HOSE.

WATERING OF CHEMICALS IS ALLOWED ANY TIME WITHIN 24 HOURS OF APPLICATION AND MAY NOT EXCEED A QUARTER-INCH OF WATER.

CITY OF EDGEWATER FIRE PREVENTION BUREAU NOTES:

1. GOVERNING SPECIFICATIONS: FLORIDA FIRE PREVENTION CODE (7TH EDITION).
2. 18.1.3.2 PLANS AND SPECIFICATIONS FOR FIRE HYDRANT SYSTEMS SHALL BE SUBMITTED TO THE FIRE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
3. 18.2.3.5.1 ALL ROADS SHALL MEET THIS CHAPTER FOR WIDTH AND VERTICAL CLEARANCE REQUIREMENT. MINIMUM 20 FEET IN WIDTH, 13.6 FEET IN VERTICAL CLEARANCE.
4. 18.2.3.5.3 ALL CUL-DE-SAC'S SHALL MEET THE MINIMUM REQUIREMENT OF 35 FEET AND MEET TURNING ANALYSIS PROVIDED.
5. 18.4.5.3.1 THE MINIMUM FIRE FLOW AND FLOW DURATION FOR A BUILDING OTHER THAN ONE AND TWO FAMILY DWELLINGS SHALL BE SPECIFIED IN TABLE 18.4.5.2.1.
6. 18.5.3 FIRE HYDRANTS SHALL BE SPACED PER THIS SECTION. THE MAXIMUM DISTANCE TO A FIRE HYDRANT FROM THE CLOSEST POINT ON A BUILDING SHALL NOT EXCEED 400 FEET. THE MAXIMUM DISTANCE BETWEEN FIRE HYDRANTS SHALL NOT EXCEED 500 FEET.
7. TWO POINTS OF INGRESS/EGRESS REQUIRED OUT OF SUBDIVISION.
8. DEAD END ROADS SHALL NO EXCEED 150 FEET.
9. FIRE ACCESS PROVIDED WITH ALL WEATHER STABILIZED SURFACE TO SUSTAIN 40-TON FIRE APPARATUS.
10. ALL CRITICAL INFRASTRUCTURE SUCH AS HYDRANTS AND FIRE DEPARTMENT ACCESS ROADS SHALL BE IN PLACE PRIOR TO ANY VERTICAL CONSTRUCTION.
11. ALL SHADE STRUCTURES (COMMON AREAS SUCH AS PLAYGROUND) SHALL MEET NFPA 701 REQUIREMENTS FOR FLAMMABILITY.

SITE AND GENERAL INFORMATION

1. THE PROPERTY AREA BOUNDARY CONSISTS OF 3,222,205 SF OR 73.972 ACRES. FOR BOUNDARY AND TOPOGRAPHIC SURVEY REFER TO THE SURVEY PERFORMED BY AMERICAN SURVEYING & MAPPING INC. (SEE SHEET No. 1 & 2 OF THESE PLANS).
2. THE EXISTING ZONING IS RPUD (RESIDENTIAL PLANNED UNIT DEVELOPMENT).
3. THE TAX PARCEL NUMBERS ARE 842400000030 & 842400000040.
4. THE EXISTING SITE CONDITION IS UNDEVELOPED. THE FLUCFCS LAND USE IS (191) UNDEVELOPED LAND WITHIN URBAN AREAS.
5. THE SITE IS LOCATED WITHIN ZONE "X" PER FEMA MAP PANEL No. 12127C0715 J, DATED SEPTEMBER 29, 2017.
6. ELECTRICAL UTILITY SERVICE WILL BE PROVIDED BY FLORIDA POWER & LIGHT. NATURAL GAS WILL BE PROVIDED BY TECO PEOPLES GAS COMPANY. TELEPHONE, CABLE AND INTERNET SERVICE WILL BE PROVIDED BY SPECTRUM. CABLE TV AND INTERNET CAN ALSO BE PROVIDED BY AT&T.
7. THE SITE IS NOT LOCATED WITHIN THE LIMITS OF A WELLHEAD PROTECTION ZONE AND THERE IS NO ORDINARY HIGH WATER (OHW) LINE WITHIN THE SITE.
8. STORMWATER WILL BE PROVIDED BY DRY RETENTION POND TO WET DETENTION POND FOR REMOVAL OF REQUIRED NITROGEN AND PHOSPHORUS NUTRIENTS.
9. POTABLE WATER AND WASTEWATER UTILITIES PROVIDED BY VOLUSIA COUNTY.
10. IRRIGATION SERVICE WILL BE PROVIDED BY 6" RECLAIM MAIN.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
6/10/25	FDOT COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

DEVELOPMENT INFORMATION AND CONSTRUCTION NOTES

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

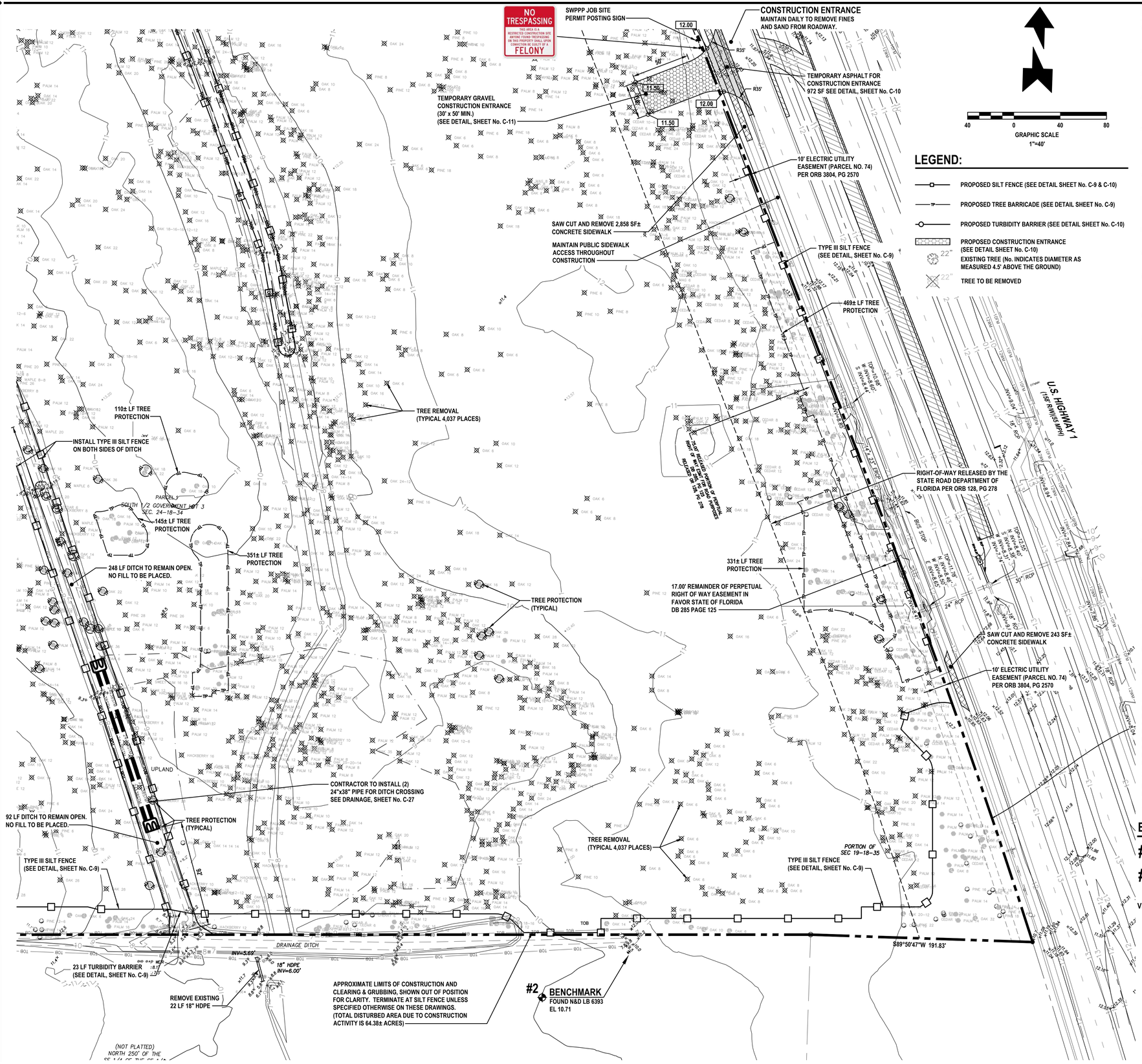
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

C-03



LEGEND:

- PROPOSED SILT FENCE (SEE DETAIL SHEET No. C-9 & C-10)
- PROPOSED TREE BARRICADE (SEE DETAIL SHEET No. C-9)
- PROPOSED TURBIDITY BARRIER (SEE DETAIL SHEET No. C-10)
- PROPOSED CONSTRUCTION ENTRANCE (SEE DETAIL SHEET No. C-10)
- 22" EXISTING TREE (No. INDICATES DIAMETER AS MEASURED 4.5' ABOVE THE GROUND)
- 22" TREE TO BE REMOVED

DEMOLITION AND SWPPP NOTES:

1. ALL EROSION CONTROL DEVICES AND VISIBLE BARRICADES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE START OF CLEARING AND GRUBBING.
2. THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AS SPECIFIED PRIOR TO START OF CONSTRUCTION.
3. THE SITE SHALL BE CLEARED AND GRUBBED OF ALL VEGETATION AND DEBRIS WITHIN THE APPROXIMATE LIMITS OF CLEARING AS INDICATED ON THE DRAWING.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE VOLUSIA COUNTY UTILITY DEPARTMENT, FLORIDA SUNSHINE AND EMERGENCY SERVICES FOR RESPECTIVE UTILITY LOCATIONS AND "NOTICE" OF CONSTRUCTION ACTIVITY.
5. ALL REMOVED MATERIAL SHALL BE HAULED OFF-SITE TO AN APPROVED LANDFILL. TREES MAY BE LOGGED OR MULCHED FOR OFF-SITE DISPOSAL AT THE CONTRACTOR'S DISCRETION.
6. ALL EROSION CONTROL DEVICES SHALL BE PLACED PRIOR TO THE START OF WORK AND REMAIN IN PLACE UNTIL ALL WORK IS COMPLETE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PERIODIC INSPECTION AND REMOVAL OF DEBRIS AND SILT BEHIND EROSION CONTROL DEVICES.
8. ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY INLET PROTECTION MEASURES TO PREVENT SILTATION IN THE DRAINAGE SYSTEM (SEE DETAILS THIS DRAWING). THE ENTIRE DRAINAGE SYSTEM SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE.
9. ALL OFF-SITE AREAS DISTURBED DURING CONSTRUCTION ACTIVITY SHALL BE IMMEDIATELY RESTORED TO PRIOR CONDITION UPON COMPLETION OF WORK.
10. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION, BLOWING SAND AND THE IMPACT TO NEIGHBORING PROPERTIES.
11. THE CONTRACTOR SHALL PROVIDE THE ENGINEER, CITY A MOT PLAN AT PRECONSTRUCTION MEETING. TRAFFIC SHALL BE ALLOWED TO CONTINUE DURING WORK. PROVIDE MEASURES TO DETOUR TRAFFIC AROUND OPEN EXCAVATION WITH ADEQUATE BARRICADES, SIGNAGE AND FLAGPERSON TO DIRECT TRAFFIC. EMERGENCY SERVICES SHALL BE NOTIFIED 48 HOUR IN ADVANCE.
12. EXISTING DRIVEWAYS SHOWN ADJACENT TO OR OUTSIDE LIMITS OF CONSTRUCTION SHALL REMAIN IN-SERVICE. EXISTING UTILITIES AND DRIVEWAYS SHALL NOT BE REMOVED UNLESS OTHERWISE NOTED.
13. IF ANY DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION THEN DEWATERING ACTIVITY SHALL ADHERE TO CHAPTER 40C-22 FAC MORE SPECIFICALLY AS FOLLOWS. PER 40C-22.030(3) A "NOTICED GENERAL SHORT-TERM DEWATERING PERMIT" IS REQUIRED "ONLY IF" DEWATERING EXCEEDS 4 MILLION GALLONS PER DAY, EXCEPT DURING THE FIRST 120 HOURS OF DEWATERING WHEN THE DAILY AND INSTANTANEOUS PUMPAGE RATES SHALL NOT EXCEED 6 MILLION GALLONS PER DAY. AVERAGE DAILY WITHDRAWAL SHALL NOT EXCEED 2 MILLION GALLONS PER DAY FOR THE FIRST 60 DAYS OF THE DEWATERING ACTIVITY AND SHALL NOT EXCEED ONE MILLION GALLONS PER DAY OF A 180 DAY DURATION. EACH SPECIFIC DEWATERING PROJECT SHALL NOT EXCEED 180 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ANY DEWATERING ACTIVITY IS BELOW THE SPECIFIED THRESHOLD. OTHERWISE A PERMIT WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE ITSELF WITH CHAPTER 40C-22 FAC AND BE SOLELY RESPONSIBLE FOR OBTAINING AND SUBMITTING FORM RDS-50 TO SJRWMD A MINIMUM OF 10 DAYS PRIOR TO ANY DEWATERING ACTIVITY. SUBMITTAL OF FORM RDS-50 IS NOT REQUIRED IF DEWATERING IS 300,000 GALLONS PER DAY OR LESS AND WILL NOT EXCEED 30 DAYS IN DURATION.

EROSION CONTROL NOTES:

1. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
2. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL DEVICES HAVE BEEN INSTALLED.
3. THE CONTRACTOR SHALL POST "NO TRESPASSING" SIGNAGE AT ALL SITE ENTRANCES PRIOR TO CONSTRUCTION.
4. MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN AND AT LEAST ONCE A WEEK.
5. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
6. GENERAL CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
7. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
8. NO TURBID WATER SHALL BE DISCHARGED OFF-SITE FROM THE DEWATERING OPERATION. CONTRACTOR SHALL TAKE MEASURES TO CONTROL TURBIDITY.
9. IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OF NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
11. PROVIDE DUST CONTROL FOR ALL EARTHWORK OPERATIONS. COVER AREA WITH LIGHT COATING OF WATER OR OTHER APPROVED METHOD.

SWPPP INSPECTIONS AND RECORD KEEPING:

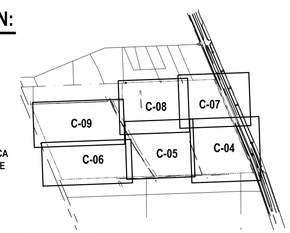
INSPECTIONS ARE REQUIRED AT LEAST EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS FOLLOWING A RAINFALL EVENT OF ONE-HALF (1/2) OF AN INCH OF RAINFALL OR GREATER AND SHALL CONTINUE UNTIL THE SITE COMPLIES WITH FINAL STABILIZATION (NOTICE OF TERMINATION). INSPECTIONS MUST BE CONDUCTED BY A "QUALIFIED" INSPECTOR. "QUALIFIED" IS DEFINED AS A PERSON THAT A). HAS SUCCESSFULLY COMPLETED AND MET ALL REQUIREMENTS NECESSARY TO BE FULLY CERTIFIED THROUGH THE FDEP STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM; B). HAS SUCCESSFULLY COMPLETED AN EQUIVALENT FORMAL TRAINING PROGRAM; OR C). THAT IS QUALIFIED BY OTHER TRAINING OR PRACTICAL EXPERIENCE IN THE FIELD OF STORMWATER POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL. EACH INSPECTION MUST BE FOLLOWED UP BY A REPORT DOCUMENTING THE INSPECTOR'S FINDINGS AND REQUEST THE REQUIRED MAINTENANCE AND/OR REPAIR FOR THE EROSION AND SEDIMENTATION CONTROL MEASURES. THESE RECORDS ARE USED TO PROVE THAT THE REQUIRED INSPECTION AND MAINTENANCE WERE PERFORMED AND SHALL BE PLACED IN THE SWPPP LEDGER. IN ADDITION TO INSPECTION AND MAINTENANCE REPORTS, RECORDS SHOULD BE KEPT OF CONSTRUCTION ACTIVITIES THAT OCCUR ON THE SITE. THE CONTRACTOR SHALL RETAIN COPIES OF THE SWPPP, ALL REPORTS AND DATA FOR A MINIMUM OF FIVE (5) YEARS AFTER THE PROJECT IS COMPLETE IN PAPER AND CD FORMAT.

BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393 ELEVATION = 10.81

#2 FOUND N&D, LB 6393 ELEVATION = 10.71

VERTICAL DATA
ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE "T 211", ELEVATION = 16.93 FEET.



KEY MAP
NOT TO SCALE

One Nation... One Number... 811 Know what's below. Call before you dig.

WARNING !!
CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. © 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

DEMOLITION, TREE REMOVAL AND SWPPP PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

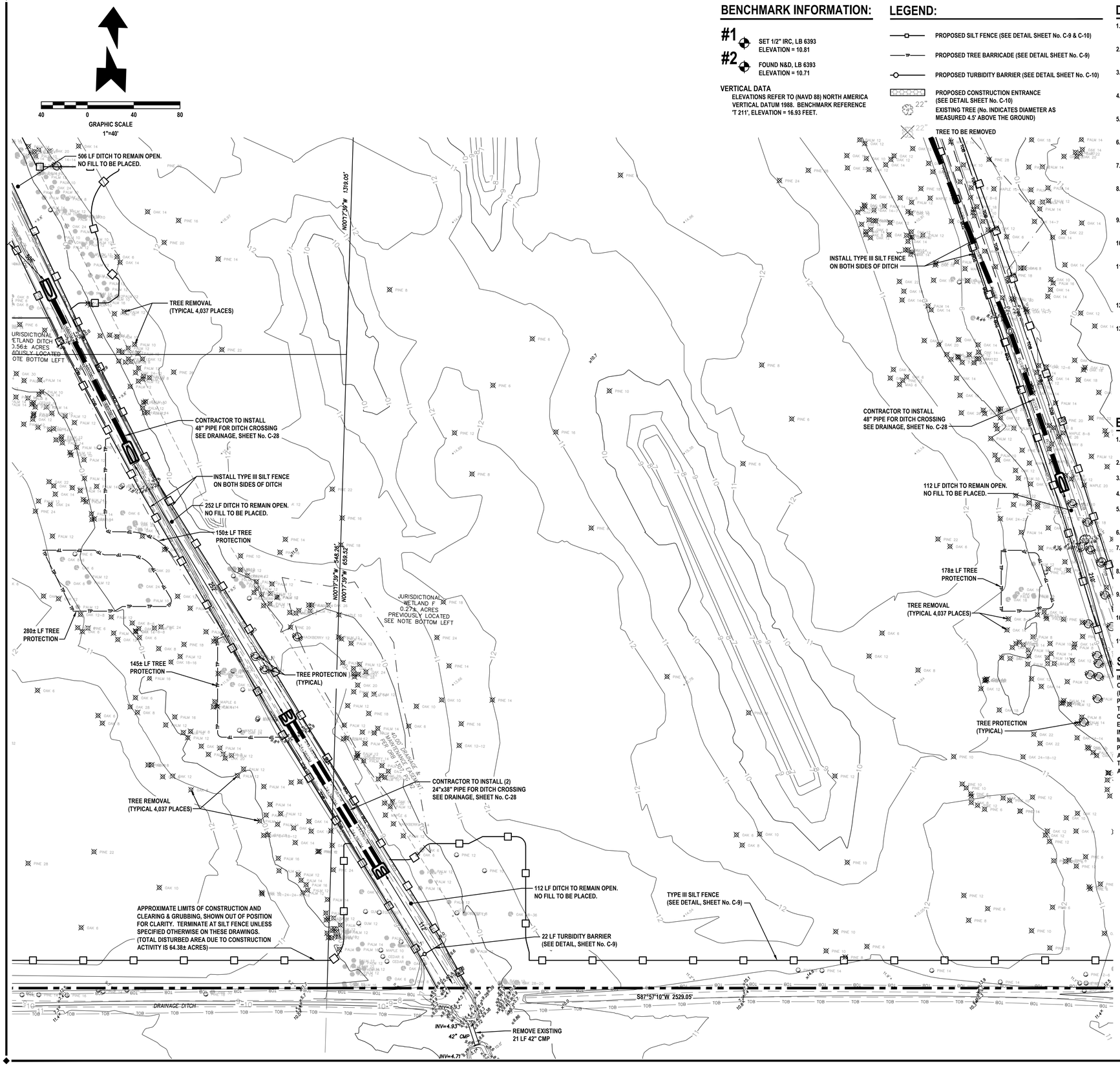
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-04



BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA
ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE 'T 211', ELEVATION = 16.93 FEET.

LEGEND:

- PROPOSED SILT FENCE (SEE DETAIL SHEET No. C-9 & C-10)
- PROPOSED TREE BARRICADE (SEE DETAIL SHEET No. C-9)
- PROPOSED TURBIDITY BARRIER (SEE DETAIL SHEET No. C-10)
- PROPOSED CONSTRUCTION ENTRANCE (SEE DETAIL SHEET No. C-10)
- EXISTING TREE (No. INDICATES DIAMETER AS MEASURED 4.5' ABOVE THE GROUND)
- TREE TO BE REMOVED

DEMOLITION AND SWPPP NOTES:

1. ALL EROSION CONTROL DEVICES AND VISIBLE BARRICADES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE START OF CLEARING AND GRUBBING.
2. THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AS SPECIFIED PRIOR TO START OF CONSTRUCTION.
3. THE SITE SHALL BE CLEARED AND GRUBBED OF ALL VEGETATION AND DEBRIS WITHIN THE APPROXIMATE LIMITS OF CLEARING AS INDICATED ON THE DRAWING.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE VOLUSIA COUNTY UTILITY DEPARTMENT, FLORIDA SUNSHINE AND EMERGENCY SERVICES FOR RESPECTIVE UTILITY LOCATIONS AND "NOTICE" OF CONSTRUCTION ACTIVITY.
5. ALL REMOVED MATERIAL SHALL BE HAULED OFF-SITE TO AN APPROVED LANDFILL. TREES MAY BE LOGGED OR MULCHED FOR OFF-SITE DISPOSAL AT THE CONTRACTOR'S DISCRETION.
6. ALL EROSION CONTROL DEVICES SHALL BE PLACED PRIOR TO THE START OF WORK AND REMAIN IN PLACE UNTIL ALL WORK IS COMPLETE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PERIODIC INSPECTION AND REMOVAL OF DEBRIS AND SILT BEHIND EROSION CONTROL DEVICES.
8. ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY INLET PROTECTION MEASURES TO PREVENT SILTATION IN THE DRAINAGE SYSTEM (SEE DETAILS THIS DRAWING). THE ENTIRE DRAINAGE SYSTEM SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE.
9. ALL OFF-SITE AREAS DISTURBED DURING CONSTRUCTION ACTIVITY SHALL BE IMMEDIATELY RESTORED TO PRIOR CONDITION UPON COMPLETION OF WORK.
10. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION, BLOWING SAND AND THE IMPACT TO NEIGHBORING PROPERTIES.
11. THE CONTRACTOR SHALL PROVIDE THE ENGINEER, CITY A MOT PLAN AT PRECONSTRUCTION MEETING. TRAFFIC SHALL BE ALLOWED TO CONTINUE DURING WORK. PROVIDE MEASURES TO DETOUR TRAFFIC AROUND OPEN EXCAVATION WITH ADEQUATE BARRICADES, SIGNAGE AND FLAGPERSON TO DIRECT TRAFFIC. EMERGENCY SERVICES SHALL BE NOTIFIED 48 HOUR IN ADVANCE.
12. EXISTING DRIVEWAYS SHOWN ADJACENT TO OR OUTSIDE LIMITS OF CONSTRUCTION SHALL REMAIN IN-SERVICE. EXISTING UTILITIES AND DRIVEWAYS SHALL NOT BE REMOVED UNLESS OTHERWISE NOTED.
13. IF ANY DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION THEN DEWATERING ACTIVITY SHALL ADHERE TO CHAPTER 40C-22 FAC MORE SPECIFICALLY AS FOLLOWS. PER 40C-22.030(3) A "NOTICED GENERAL SHORT-TERM DEWATERING PERMIT" IS REQUIRED "ONLY IF" DEWATERING EXCEEDS 4 MILLION GALLONS PER DAY, EXCEPT DURING THE FIRST 120 HOURS OF DEWATERING WHEN THE DAILY AND INSTANTANEOUS PUMPAGE RATES SHALL NOT EXCEED 6 MILLION GALLONS PER DAY. AVERAGE DAILY WITHDRAWAL SHALL NOT EXCEED 2 MILLION GALLONS PER DAY FOR THE FIRST 60 DAYS OF THE DEWATERING ACTIVITY AND SHALL NOT EXCEED ONE MILLION GALLONS PER DAY OF A 180 DAY DURATION. EACH SPECIFIC DEWATERING PROJECT SHALL NOT EXCEED 180 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ANY DEWATERING ACTIVITY IS BELOW THE SPECIFIED THRESHOLD. OTHERWISE A PERMIT WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE ITSELF WITH CHAPTER 40C-22 FAC AND BE SOLELY RESPONSIBLE FOR OBTAINING AND SUBMITTING FORM RDS-50 TO SJRWMD A MINIMUM OF 10 DAYS PRIOR TO ANY DEWATERING ACTIVITY. SUBMITTAL OF FORM RDS-50 IS NOT REQUIRED IF DEWATERING IS 300,000 GALLONS PER DAY OR LESS AND WILL NOT EXCEED 30 DAYS IN DURATION.

EROSION CONTROL NOTES:

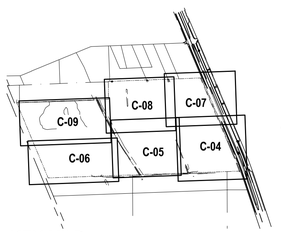
1. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
2. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL DEVICES HAVE BEEN INSTALLED.
3. THE CONTRACTOR SHALL POST "NO TRESPASSING" SIGNAGE AT ALL SITE ENTRANCES PRIOR TO CONSTRUCTION.
4. MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN AND AT LEAST ONCE A WEEK.
5. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
6. GENERAL CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
7. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
8. NO TURBID WATER SHALL BE DISCHARGED OFF-SITE FROM THE DEWATERING OPERATION. CONTRACTOR SHALL TAKE MEASURES TO CONTROL TURBIDITY.
9. IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OF NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
11. PROVIDE DUST CONTROL FOR ALL EARTHWORK OPERATIONS. COVER AREA WITH LIGHT COATING OF WATER OR OTHER APPROVED METHOD.

SWPPP INSPECTIONS AND RECORD KEEPING:

INSPECTIONS ARE REQUIRED AT LEAST EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS FOLLOWING A RAINFALL EVENT OF ONE-HALF (1/2) OF AN INCH OF RAINFALL OR GREATER AND SHALL CONTINUE UNTIL THE SITE COMPLIES WITH FINAL STABILIZATION (NOTICE OF TERMINATION). INSPECTIONS MUST BE CONDUCTED BY A "QUALIFIED" INSPECTOR. "QUALIFIED" IS DEFINED AS A PERSON THAT A). HAS SUCCESSFULLY COMPLETED AND MET ALL REQUIREMENTS NECESSARY TO BE FULLY CERTIFIED THROUGH THE FDEP STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM; B). HAS SUCCESSFULLY COMPLETED AN EQUIVALENT FORMAL TRAINING PROGRAM; OR C). THAT IS QUALIFIED BY OTHER TRAINING OR PRACTICAL EXPERIENCE IN THE FIELD OF STORMWATER POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL. EACH INSPECTION MUST BE FOLLOWED UP BY A REPORT DOCUMENTING THE INSPECTOR'S FINDINGS AND REQUEST THE REQUIRED MAINTENANCE AND/OR REPAIR FOR THE EROSION AND SEDIMENTATION CONTROL MEASURES. THESE RECORDS ARE USED TO PROVE THAT THE REQUIRED INSPECTION AND MAINTENANCE WERE PERFORMED AND SHALL BE PLACED IN THE SWPPP LEDGER. IN ADDITION TO INSPECTION AND MAINTENANCE REPORTS, RECORDS SHOULD BE KEPT OF CONSTRUCTION ACTIVITIES THAT OCCUR ON THE SITE. THE CONTRACTOR SHALL RETAIN COPIES OF THE SWPPP, ALL REPORTS AND DATA FOR A MINIMUM OF FIVE (5) YEARS AFTER THE PROJECT IS COMPLETE IN PAPER AND CD FORMAT.

One Nation... One Number... 811 Know what's below. Call before you dig.

WARNING !!
CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.



KEY MAP
NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

DEMOLITION, TREE REMOVAL AND SWPPP PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

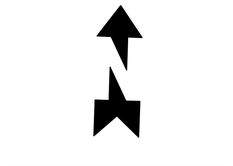
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-05



BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA

ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE 'T 211', ELEVATION = 16.93 FEET.

SWPPP INSPECTIONS AND RECORD KEEPING:

INSPECTIONS ARE REQUIRED AT LEAST EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS FOLLOWING A RAINFALL EVENT OF ONE-HALF (1/2) OF AN INCH OF RAINFALL OR GREATER AND SHALL CONTINUE UNTIL THE SITE COMPLIES WITH FINAL STABILIZATION (NOTICE OF TERMINATION). INSPECTIONS MUST BE CONDUCTED BY A "QUALIFIED" INSPECTOR. "QUALIFIED" IS DEFINED AS A PERSON THAT A). HAS SUCCESSFULLY COMPLETED AND MET ALL REQUIREMENTS NECESSARY TO BE FULLY CERTIFIED THROUGH THE FDEP STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM; B). HAS SUCCESSFULLY COMPLETED AN EQUIVALENT FORMAL TRAINING PROGRAM; OR C). THAT IS QUALIFIED BY OTHER TRAINING OR PRACTICAL EXPERIENCE IN THE FIELD OF STORMWATER POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL. EACH INSPECTION MUST BE FOLLOWED UP BY A REPORT DOCUMENTING THE INSPECTOR'S FINDINGS AND REQUIST THE REQUIRED MAINTENANCE AND/OR REPAIR FOR THE EROSION AND SEDIMENTATION CONTROL MEASURES. THESE RECORDS ARE USED TO PROVE THAT THE REQUIRED INSPECTION AND MAINTENANCE WERE PERFORMED AND SHALL BE PLACED IN THE SWPPP LEDGER. IN ADDITION TO INSPECTION AND MAINTENANCE REPORTS, RECORDS SHOULD BE KEPT OF CONSTRUCTION ACTIVITIES THAT OCCUR ON THE SITE. THE CONTRACTOR SHALL RETAIN COPIES OF THE SWPPP, ALL REPORTS AND DATA FOR A MINIMUM OF FIVE (5) YEARS AFTER THE PROJECT IS COMPLETE IN PAPER AND CD FORMAT.

EROSION CONTROL NOTES:

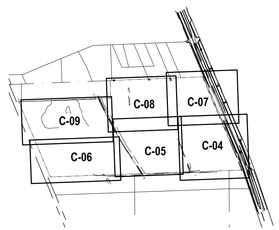
1. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
2. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL DEVICES HAVE BEEN INSTALLED.
3. THE CONTRACTOR SHALL POST "NO TRESPASSING" SIGNAGE AT ALL SITE ENTRANCES PRIOR TO CONSTRUCTION.
4. MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN AND AT LEAST ONCE A WEEK.
5. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
6. GENERAL CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
7. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
8. NO TURBID WATER SHALL BE DISCHARGED OFF-SITE FROM THE DEWATERING OPERATION. CONTRACTOR SHALL TAKE MEASURES TO CONTROL TURBIDITY.
9. IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OF NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
11. PROVIDE DUST CONTROL FOR ALL EARTHWORK OPERATIONS. COVER AREA WITH LIGHT COATING OF WATER OR OTHER APPROVED METHOD.

DEMOLITION AND SWPPP NOTES:

1. ALL EROSION CONTROL DEVICES AND VISIBLE BARRICADES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE START OF CLEARING AND GRUBBING.
2. THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AS SPECIFIED PRIOR TO START OF CONSTRUCTION.
3. THE SITE SHALL BE CLEARED AND GRUBBED OF ALL VEGETATION AND DEBRIS WITHIN THE APPROXIMATE LIMITS OF CLEARING AS INDICATED ON THE DRAWING.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE VOLUSIA COUNTY UTILITY DEPARTMENT, FLORIDA SUNSHINE AND EMERGENCY SERVICES FOR RESPECTIVE UTILITY LOCATIONS AND "NOTICE" OF CONSTRUCTION ACTIVITY.
5. ALL REMOVED MATERIAL SHALL BE HAULED OFF-SITE TO AN APPROVED LANDFILL. TREES MAY BE LOGGED OR MULCHED FOR OFF-SITE DISPOSAL AT THE CONTRACTOR'S DISCRETION.
6. ALL EROSION CONTROL DEVICES SHALL BE PLACED PRIOR TO THE START OF WORK AND REMAIN IN PLACE UNTIL ALL WORK IS COMPLETE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PERIODIC INSPECTION AND REMOVAL OF DEBRIS AND SILT BEHIND EROSION CONTROL DEVICES.
8. ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY INLET PROTECTION MEASURES TO PREVENT SILTATION IN THE DRAINAGE SYSTEM (SEE DETAILS THIS DRAWING). THE ENTIRE DRAINAGE SYSTEM SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE.
9. ALL OFF-SITE AREAS DISTURBED DURING CONSTRUCTION ACTIVITY SHALL BE IMMEDIATELY RESTORED TO PRIOR CONDITION UPON COMPLETION OF WORK.
10. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION, BLOWING SAND AND THE IMPACT TO NEIGHBORING PROPERTIES.
11. THE CONTRACTOR SHALL PROVIDE THE ENGINEER, CITY A MOT PLAN AT PRECONSTRUCTION MEETING. TRAFFIC SHALL BE ALLOWED TO CONTINUE DURING WORK. PROVIDE MEASURES TO DETOUR TRAFFIC AROUND OPEN EXCAVATION WITH ADEQUATE BARRICADES, SIGNAGE AND FLAGPERSON TO DIRECT TRAFFIC. EMERGENCY SERVICES SHALL BE NOTIFIED 48 HOUR IN ADVANCE.
12. EXISTING DRIVEWAYS SHOWN ADJACENT TO OR OUTSIDE LIMITS OF CONSTRUCTION SHALL REMAIN IN-SERVICE. EXISTING UTILITIES AND DRIVEWAYS SHALL NOT BE REMOVED UNLESS OTHERWISE NOTED.
13. IF ANY DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION THEN DEWATERING ACTIVITY SHALL ADHERE TO CHAPTER 40C-22 FAC MORE SPECIFICALLY AS FOLLOWS. PER 40C-22.030(3) A "NOTICED GENERAL SHORT-TERM DEWATERING PERMIT" IS REQUIRED "ONLY IF" DEWATERING EXCEEDS 4 MILLION GALLONS PER DAY, EXCEPT DURING THE FIRST 120 HOURS OF DEWATERING WHEN THE DAILY AND INSTANTANEOUS PUMPAGE RATES SHALL NOT EXCEED 6 MILLION GALLONS PER DAY. AVERAGE DAILY WITHDRAWAL SHALL NOT EXCEED 2 MILLION GALLONS PER DAY FOR THE FIRST 60 DAYS OF THE DEWATERING ACTIVITY AND SHALL NOT EXCEED ONE MILLION GALLONS PER DAY OF A 180 DAY DURATION. EACH SPECIFIC DEWATERING PROJECT SHALL NOT EXCEED 180 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ANY DEWATERING ACTIVITY IS BELOW THE SPECIFIED THRESHOLD. OTHERWISE A PERMIT WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE ITSELF WITH CHAPTER 40C-22 FAC AND BE SOLELY RESPONSIBLE FOR OBTAINING AND SUBMITTING FORM RDS-50 TO SJRWMD A MINIMUM OF 10 DAYS PRIOR TO ANY DEWATERING ACTIVITY. SUBMITTAL OF FORM RDS-50 IS NOT REQUIRED IF DEWATERING IS 300,000 GALLONS PER DAY OR LESS AND WILL NOT EXCEED 30 DAYS IN DURATION.

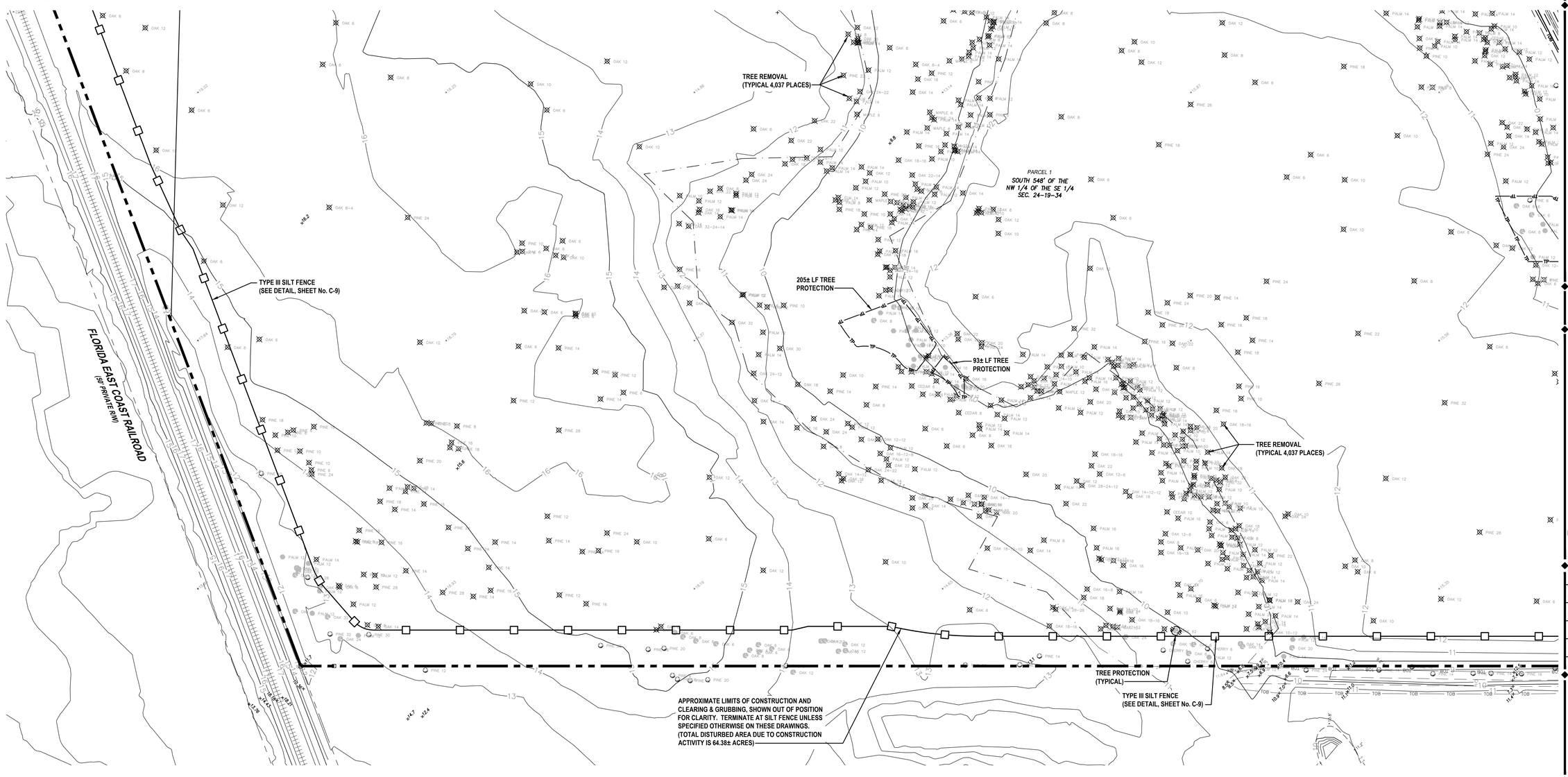
LEGEND:

- PROPOSED SILT FENCE (SEE DETAIL SHEET No. C-9 & C-10)
- PROPOSED TREE BARRICADE (SEE DETAIL SHEET No. C-9)
- PROPOSED TURBIDITY BARRIER (SEE DETAIL SHEET No. C-10)
- PROPOSED CONSTRUCTION ENTRANCE (SEE DETAIL SHEET No. C-10)
- 22" EXISTING TREE (No. INDICATES DIAMETER AS MEASURED 4.5' ABOVE THE GROUND)
- 22" TREE TO BE REMOVED



KEY MAP

NOT TO SCALE



REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

DEMOLITION, TREE REMOVAL AND SWPPP PLAN

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

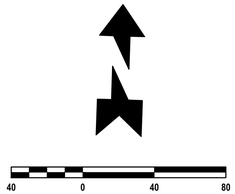
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

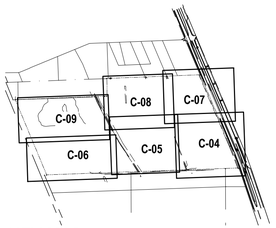
DRAWING NUMBER

C-06



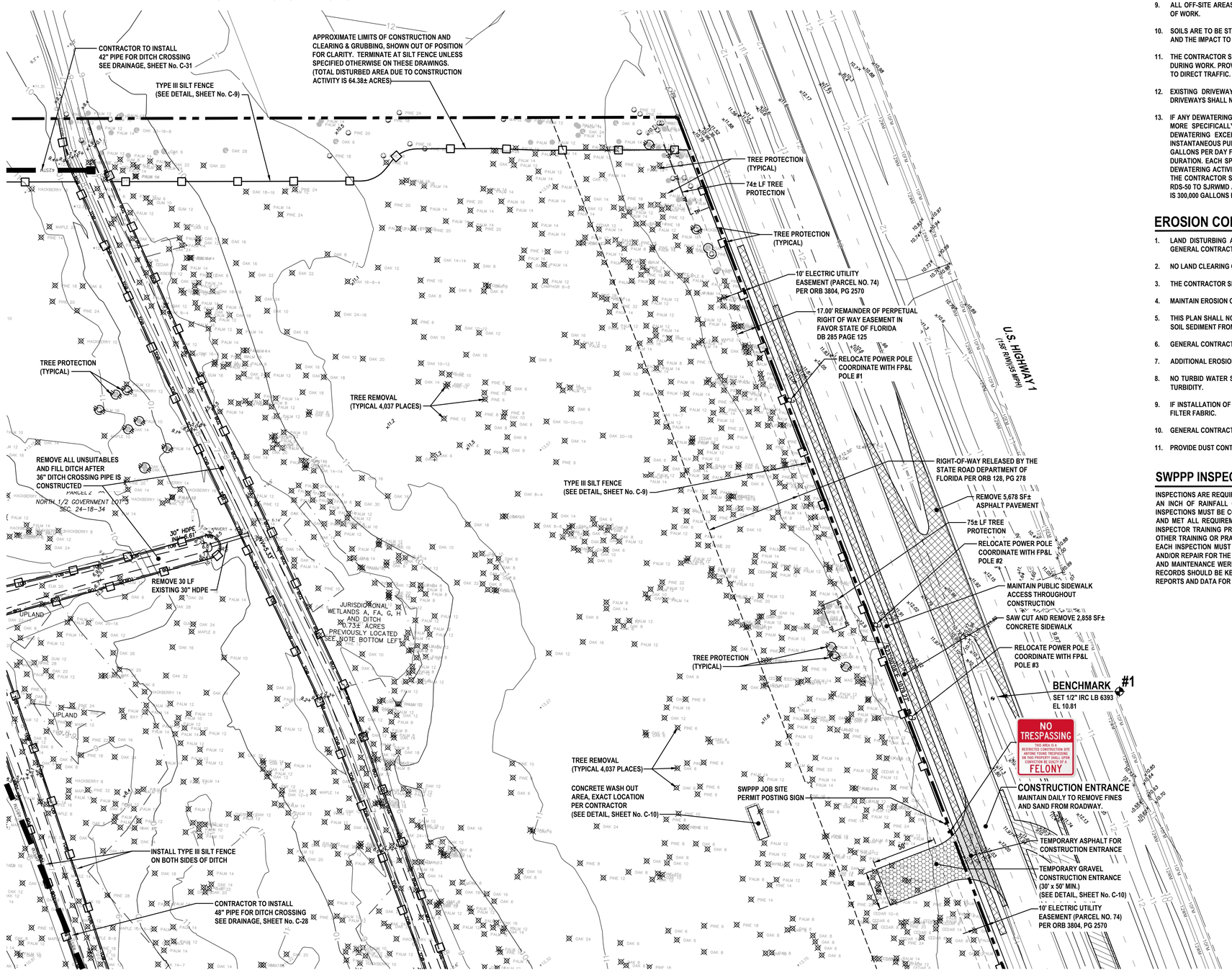
WARNING !!

CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.



KEY MAP

NOT TO SCALE



DEMOLITION AND SWPPP NOTES:

1. ALL EROSION CONTROL DEVICES AND VISIBLE BARRICADES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE START OF CLEARING AND GRUBBING.
2. THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AS SPECIFIED PRIOR TO START OF CONSTRUCTION.
3. THE SITE SHALL BE CLEARED AND GRUBBED OF ALL VEGETATION AND DEBRIS WITHIN THE APPROXIMATE LIMITS OF CLEARING AS INDICATED ON THE DRAWING.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE VOLUSIA COUNTY UTILITY DEPARTMENT, FLORIDA SUNSHINE AND EMERGENCY SERVICES FOR RESPECTIVE UTILITY LOCATIONS AND "NOTICE" OF CONSTRUCTION ACTIVITY.
5. ALL REMOVED MATERIAL SHALL BE HAULED OFF-SITE TO AN APPROVED LANDFILL. TREES MAY BE LOGGED OR MULCHED FOR OFF-SITE DISPOSAL AT THE CONTRACTOR'S DISCRETION.
6. ALL EROSION CONTROL DEVICES SHALL BE PLACED PRIOR TO THE START OF WORK AND REMAIN IN PLACE UNTIL ALL WORK IS COMPLETE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PERIODIC INSPECTION AND REMOVAL OF DEBRIS AND SILT BEHIND EROSION CONTROL DEVICES.
8. ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY INLET PROTECTION MEASURES TO PREVENT SILTATION IN THE DRAINAGE SYSTEM (SEE DETAILS THIS DRAWING). THE ENTIRE DRAINAGE SYSTEM SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE.
9. ALL OFF-SITE AREAS DISTURBED DURING CONSTRUCTION ACTIVITY SHALL BE IMMEDIATELY RESTORED TO PRIOR CONDITION UPON COMPLETION OF WORK.
10. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION, BLOWING SAND AND THE IMPACT TO NEIGHBORING PROPERTIES.
11. THE CONTRACTOR SHALL PROVIDE THE ENGINEER, CITY A MOT PLAN AT PRECONSTRUCTION MEETING. TRAFFIC SHALL BE ALLOWED TO CONTINUE DURING WORK. PROVIDE MEASURES TO DETOUR TRAFFIC AROUND OPEN EXCAVATION WITH ADEQUATE BARRICADES, SIGNAGE AND FLAGPERSON TO DIRECT TRAFFIC. EMERGENCY SERVICES SHALL BE NOTIFIED 48 HOUR IN ADVANCE.
12. EXISTING DRIVEWAYS SHOWN ADJACENT TO OR OUTSIDE LIMITS OF CONSTRUCTION SHALL REMAIN IN-SERVICE. EXISTING UTILITIES AND DRIVEWAYS SHALL NOT BE REMOVED UNLESS OTHERWISE NOTED.
13. IF ANY DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION THEN DEWATERING ACTIVITY SHALL ADHERE TO CHAPTER 40C-22 FAC MORE SPECIFICALLY AS FOLLOWS. PER 40C-22.030(3) A "NOTICED GENERAL SHORT-TERM DEWATERING PERMIT" IS REQUIRED "ONLY IF" DEWATERING EXCEEDS 4 MILLION GALLONS PER DAY, EXCEPT DURING THE FIRST 120 HOURS OF DEWATERING WHEN THE DAILY AND INSTANTANEOUS PUMPAGE RATES SHALL NOT EXCEED 6 MILLION GALLONS PER DAY. AVERAGE DAILY WITHDRAWAL SHALL NOT EXCEED 2 MILLION GALLONS PER DAY FOR THE FIRST 60 DAYS OF THE DEWATERING ACTIVITY AND SHALL NOT EXCEED ONE MILLION GALLONS PER DAY OF A 180 DAY DURATION. EACH SPECIFIC DEWATERING PROJECT SHALL NOT EXCEED 180 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ANY DEWATERING ACTIVITY IS BELOW THE SPECIFIED THRESHOLD. OTHERWISE A PERMIT WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE ITSELF WITH CHAPTER 40C-22 FAC AND BE SOLELY RESPONSIBLE FOR OBTAINING AND SUBMITTING FORM RDS-50 TO SJRWMD A MINIMUM OF 10 DAYS PRIOR TO ANY DEWATERING ACTIVITY. SUBMITTAL OF FORM RDS-50 IS NOT REQUIRED IF DEWATERING IS 300,000 GALLONS PER DAY OR LESS AND WILL NOT EXCEED 30 DAYS IN DURATION.

EROSION CONTROL NOTES:

1. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
2. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL DEVICES HAVE BEEN INSTALLED.
3. THE CONTRACTOR SHALL POST "NO TRESPASSING" SIGNAGE AT ALL SITE ENTRANCES PRIOR TO CONSTRUCTION.
4. MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN AND AT LEAST ONCE A WEEK.
5. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
6. GENERAL CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
7. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
8. NO TURBID WATER SHALL BE DISCHARGED OFF-SITE FROM THE DEWATERING OPERATION. CONTRACTOR SHALL TAKE MEASURES TO CONTROL TURBIDITY.
9. IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OF NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
11. PROVIDE DUST CONTROL FOR ALL EARTHWORK OPERATIONS. COVER AREA WITH LIGHT COATING OF WATER OR OTHER APPROVED METHOD.

SWPPP INSPECTIONS AND RECORD KEEPING:

INSPECTIONS ARE REQUIRED AT LEAST EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS FOLLOWING A RAINFALL EVENT OF ONE-HALF (1/2) OF AN INCH OF RAINFALL OR GREATER AND SHALL CONTINUE UNTIL THE SITE COMPLIES WITH FINAL STABILIZATION (NOTICE OF TERMINATION). INSPECTIONS MUST BE CONDUCTED BY A "QUALIFIED" INSPECTOR. "QUALIFIED" IS DEFINED AS A PERSON THAT A). HAS SUCCESSFULLY COMPLETED AND MET ALL REQUIREMENTS NECESSARY TO BE FULLY CERTIFIED THROUGH THE FDEP STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM; B). HAS SUCCESSFULLY COMPLETED AN EQUIVALENT FORMAL TRAINING PROGRAM; OR C). THAT IS QUALIFIED BY OTHER TRAINING OR PRACTICAL EXPERIENCE IN THE FIELD OF STORMWATER POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL. EACH INSPECTION MUST BE FOLLOWED UP BY A REPORT DOCUMENTING THE INSPECTOR'S FINDINGS AND REQUEST THE REQUIRED MAINTENANCE AND/OR REPAIR FOR THE EROSION AND SEDIMENTATION CONTROL MEASURES. THESE RECORDS ARE USED TO PROVE THAT THE REQUIRED INSPECTION AND MAINTENANCE WERE PERFORMED AND SHALL BE PLACED IN THE SWPPP LEDGER. IN ADDITION TO INSPECTION AND MAINTENANCE REPORTS, RECORDS SHOULD BE KEPT OF CONSTRUCTION ACTIVITIES THAT OCCUR ON THE SITE. THE CONTRACTOR SHALL RETAIN COPIES OF THE SWPPP, ALL REPORTS AND DATA FOR A MINIMUM OF FIVE (5) YEARS AFTER THE PROJECT IS COMPLETE IN PAPER AND CD FORMAT.

LEGEND:

- PROPOSED SILT FENCE (SEE DETAIL SHEET No. C-9 & C-10)
- PROPOSED TREE BARRICADE (SEE DETAIL SHEET No. C-9)
- PROPOSED TURBIDITY BARRIER (SEE DETAIL SHEET No. C-10)
- PROPOSED CONSTRUCTION ENTRANCE (SEE DETAIL SHEET No. C-10)
- 22" EXISTING TREE (No. INDICATES DIAMETER AS MEASURED 4.5' ABOVE THE GROUND)
- 22" TREE TO BE REMOVED

BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA

ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE "T 211', ELEVATION = 16.93 FEET.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

DEMOLITION, TREE REMOVAL AND SWPPP PLAN

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

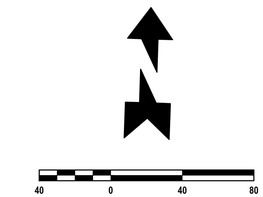
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

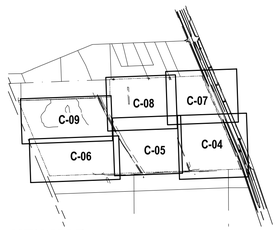
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-07





KEY MAP

NOT TO SCALE

BENCHMARK INFORMATION:

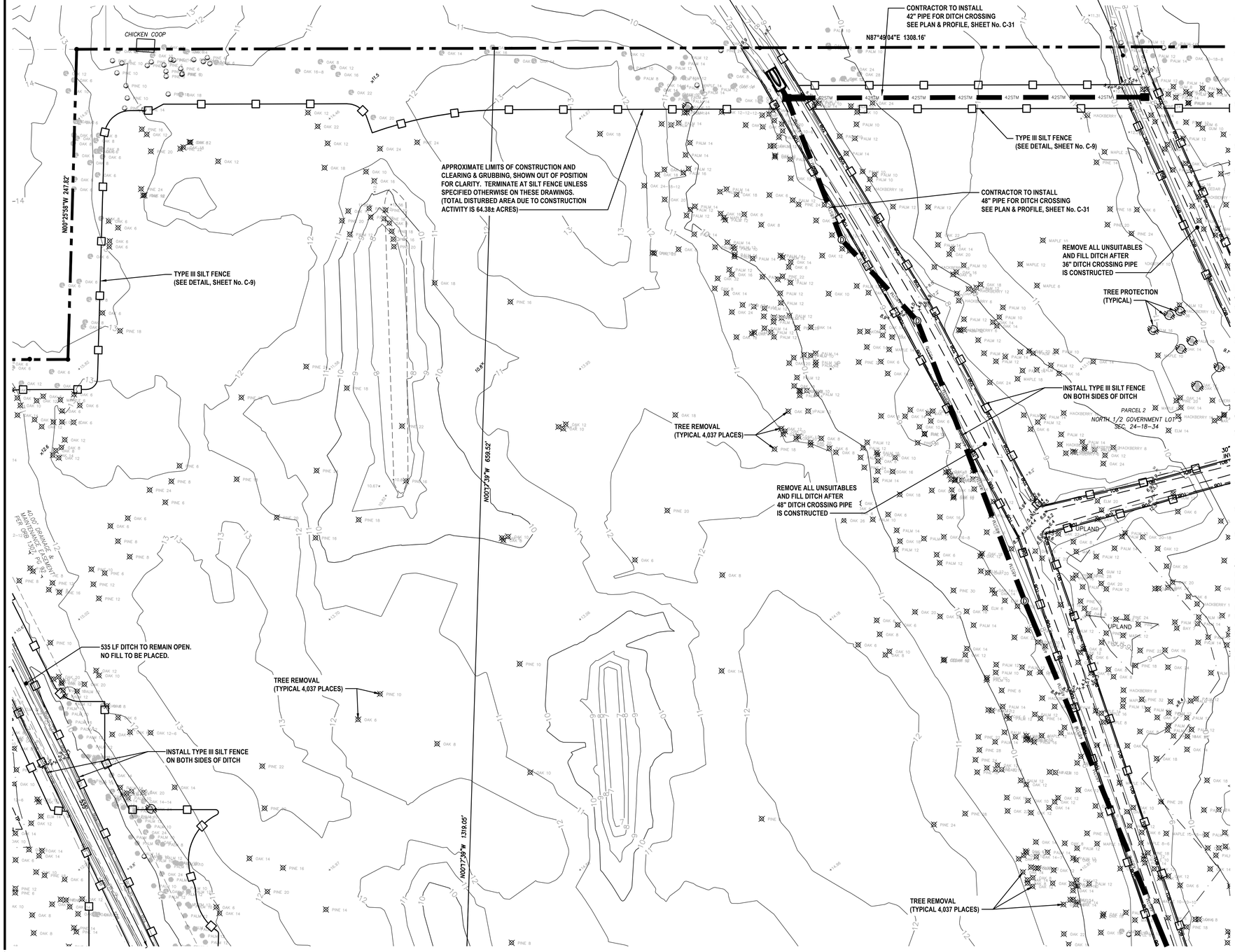
#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA
ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE 'T 211', ELEVATION = 16.93 FEET.

LEGEND:

- PROPOSED SILT FENCE (SEE DETAIL SHEET No. C-9 & C-10)
- PROPOSED TREE BARRICADE (SEE DETAIL SHEET No. C-9)
- PROPOSED TURBIDITY BARRIER (SEE DETAIL SHEET No. C-10)
- PROPOSED CONSTRUCTION ENTRANCE (SEE DETAIL SHEET No. C-10)
- EXISTING TREE (No. INDICATES DIAMETER AS MEASURED 4.5' ABOVE THE GROUND)
- TREE TO BE REMOVED



DEMOLITION AND SWPPP NOTES:

1. ALL EROSION CONTROL DEVICES AND VISIBLE BARRICADES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE START OF CLEARING AND GRUBBING.
2. THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AS SPECIFIED PRIOR TO START OF CONSTRUCTION.
3. THE SITE SHALL BE CLEARED AND GRUBBED OF ALL VEGETATION AND DEBRIS WITHIN THE APPROXIMATE LIMITS OF CLEARING AS INDICATED ON THE DRAWING.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE VOLUSIA COUNTY UTILITY DEPARTMENT, FLORIDA SUNSHINE AND EMERGENCY SERVICES FOR RESPECTIVE UTILITY LOCATIONS AND "NOTICE" OF CONSTRUCTION ACTIVITY.
5. ALL REMOVED MATERIAL SHALL BE HAULED OFF-SITE TO AN APPROVED LANDFILL. TREES MAY BE LOGGED OR MULCHED FOR OFF-SITE DISPOSAL AT THE CONTRACTOR'S DISCRETION.
6. ALL EROSION CONTROL DEVICES SHALL BE PLACED PRIOR TO THE START OF WORK AND REMAIN IN PLACE UNTIL ALL WORK IS COMPLETE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PERIODIC INSPECTION AND REMOVAL OF DEBRIS AND SILT BEHIND EROSION CONTROL DEVICES.
8. ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY INLET PROTECTION MEASURES TO PREVENT SILTATION IN THE DRAINAGE SYSTEM (SEE DETAILS THIS DRAWING). THE ENTIRE DRAINAGE SYSTEM SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE.
9. ALL OFF-SITE AREAS DISTURBED DURING CONSTRUCTION ACTIVITY SHALL BE IMMEDIATELY RESTORED TO PRIOR CONDITION UPON COMPLETION OF WORK.
10. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION, BLOWING SAND AND THE IMPACT TO NEIGHBORING PROPERTIES.
11. THE CONTRACTOR SHALL PROVIDE THE ENGINEER, CITY A MOT PLAN AT PRECONSTRUCTION MEETING. TRAFFIC SHALL BE ALLOWED TO CONTINUE DURING WORK. PROVIDE MEASURES TO DETOUR TRAFFIC AROUND OPEN EXCAVATION WITH ADEQUATE BARRICADES, SIGNAGE AND FLAGPERSON TO DIRECT TRAFFIC. EMERGENCY SERVICES SHALL BE NOTIFIED 48 HOUR IN ADVANCE.
12. EXISTING DRIVEWAYS SHOWN ADJACENT TO OR OUTSIDE LIMITS OF CONSTRUCTION SHALL REMAIN IN-SERVICE. EXISTING UTILITIES AND DRIVEWAYS SHALL NOT BE REMOVED UNLESS OTHERWISE NOTED.
13. IF ANY DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION THEN DEWATERING ACTIVITY SHALL ADHERE TO CHAPTER 40C-22 FAC MORE SPECIFICALLY AS FOLLOWS. PER 40C-22.030(3) A "NOTICED GENERAL SHORT-TERM DEWATERING PERMIT" IS REQUIRED "ONLY IF" DEWATERING EXCEEDS 4 MILLION GALLONS PER DAY, EXCEPT DURING THE FIRST 120 HOURS OF DEWATERING WHEN THE DAILY AND INSTANTANEOUS PUMPAGE RATES SHALL NOT EXCEED 6 MILLION GALLONS PER DAY. AVERAGE DAILY WITHDRAWAL SHALL NOT EXCEED 2 MILLION GALLONS PER DAY FOR THE FIRST 60 DAYS OF THE DEWATERING ACTIVITY AND SHALL NOT EXCEED ONE MILLION GALLONS PER DAY OF A 180 DAY DURATION. EACH SPECIFIC DEWATERING PROJECT SHALL NOT EXCEED 180 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ANY DEWATERING ACTIVITY IS BELOW THE SPECIFIED THRESHOLD. OTHERWISE A PERMIT WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE ITSELF WITH CHAPTER 40C-22 FAC AND BE SOLELY RESPONSIBLE FOR OBTAINING AND SUBMITTING FORM RDS-50 TO SJRWMD A MINIMUM OF 10 DAYS PRIOR TO ANY DEWATERING ACTIVITY. SUBMITTAL OF FORM RDS-50 IS NOT REQUIRED IF DEWATERING IS 300,000 GALLONS PER DAY OR LESS AND WILL NOT EXCEED 30 DAYS IN DURATION.

EROSION CONTROL NOTES:

1. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
2. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL DEVICES HAVE BEEN INSTALLED.
3. THE CONTRACTOR SHALL POST "NO TRESPASSING" SIGNAGE AT ALL SITE ENTRANCES PRIOR TO CONSTRUCTION.
4. MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN AND AT LEAST ONCE A WEEK.
5. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
6. GENERAL CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
7. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
8. NO TURBID WATER SHALL BE DISCHARGED OFF-SITE FROM THE DEWATERING OPERATION. CONTRACTOR SHALL TAKE MEASURES TO CONTROL TURBIDITY.
9. IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OF NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
11. PROVIDE DUST CONTROL FOR ALL EARTHWORK OPERATIONS. COVER AREA WITH LIGHT COATING OF WATER OR OTHER APPROVED METHOD.

SWPPP INSPECTIONS AND RECORD KEEPING:

INSPECTIONS ARE REQUIRED AT LEAST EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS FOLLOWING A RAINFALL EVENT OF ONE-HALF (1/2) OF AN INCH OF RAINFALL OR GREATER AND SHALL CONTINUE UNTIL THE SITE COMPLIES WITH FINAL STABILIZATION (NOTICE OF TERMINATION). INSPECTIONS MUST BE CONDUCTED BY A "QUALIFIED" INSPECTOR. "QUALIFIED" IS DEFINED AS A PERSON THAT A). HAS SUCCESSFULLY COMPLETED AND MET ALL REQUIREMENTS NECESSARY TO BE FULLY CERTIFIED THROUGH THE FDEP STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM; B). HAS SUCCESSFULLY COMPLETED AN EQUIVALENT FORMAL TRAINING PROGRAM; OR C). THAT IS QUALIFIED BY OTHER TRAINING OR PRACTICAL EXPERIENCE IN THE FIELD OF STORMWATER POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL. EACH INSPECTION MUST BE FOLLOWED UP BY A REPORT DOCUMENTING THE INSPECTOR'S FINDINGS AND REQUEST THE REQUIRED MAINTENANCE AND/OR REPAIR FOR THE EROSION AND SEDIMENTATION CONTROL MEASURES. THESE RECORDS ARE USED TO PROVE THAT THE REQUIRED INSPECTION AND MAINTENANCE WERE PERFORMED AND SHALL BE PLACED IN THE SWPPP LEDGER. IN ADDITION TO INSPECTION AND MAINTENANCE REPORTS, RECORDS SHOULD BE KEPT OF CONSTRUCTION ACTIVITIES THAT OCCUR ON THE SITE. THE CONTRACTOR SHALL RETAIN COPIES OF THE SWPPP, ALL REPORTS AND DATA FOR A MINIMUM OF FIVE (5) YEARS AFTER THE PROJECT IS COMPLETE IN PAPER AND CD FORMAT.

WARNING !!
CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

DEMOLITION, TREE REMOVAL AND SWPPP PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-08

BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

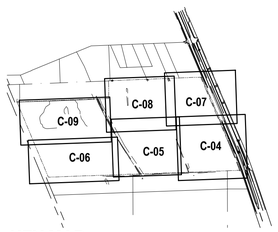
#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA

ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE 'T 211', ELEVATION = 16.93 FEET.

40 0 40 80

GRAPHIC SCALE
1"=40'



KEY MAP

NOT TO SCALE

One Nation... One Number... 811 Know what's below. Call before you dig.

SWPPP INSPECTIONS AND RECORD KEEPING:

INSPECTIONS ARE REQUIRED AT LEAST EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS FOLLOWING A RAINFALL EVENT OF ONE-HALF (1/2) OF AN INCH OF RAINFALL OR GREATER AND SHALL CONTINUE UNTIL THE SITE COMPLIES WITH FINAL STABILIZATION (NOTICE OF TERMINATION). INSPECTIONS MUST BE CONDUCTED BY A "QUALIFIED" INSPECTOR. "QUALIFIED" IS DEFINED AS A PERSON THAT A). HAS SUCCESSFULLY COMPLETED AND MET ALL REQUIREMENTS NECESSARY TO BE FULLY CERTIFIED THROUGH THE FDEP STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM; B). HAS SUCCESSFULLY COMPLETED AN EQUIVALENT FORMAL TRAINING PROGRAM; OR C). THAT IS QUALIFIED BY OTHER TRAINING OR PRACTICAL EXPERIENCE IN THE FIELD OF STORMWATER POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL. EACH INSPECTION MUST BE FOLLOWED UP BY A REPORT DOCUMENTING THE INSPECTOR'S FINDINGS AND REQUIST THE REQUIRED MAINTENANCE AND/OR REPAIR FOR THE EROSION AND SEDIMENTATION CONTROL MEASURES. THESE RECORDS ARE USED TO PROVE THAT THE REQUIRED INSPECTION AND MAINTENANCE WERE PERFORMED AND SHALL BE PLACED IN THE SWPPP LEDGER. IN ADDITION TO INSPECTION AND MAINTENANCE REPORTS, RECORDS SHOULD BE KEPT OF CONSTRUCTION ACTIVITIES THAT OCCUR ON THE SITE. THE CONTRACTOR SHALL RETAIN COPIES OF THE SWPPP, ALL REPORTS AND DATA FOR A MINIMUM OF FIVE (5) YEARS AFTER THE PROJECT IS COMPLETE IN PAPER AND CD FORMAT.

LEGEND:

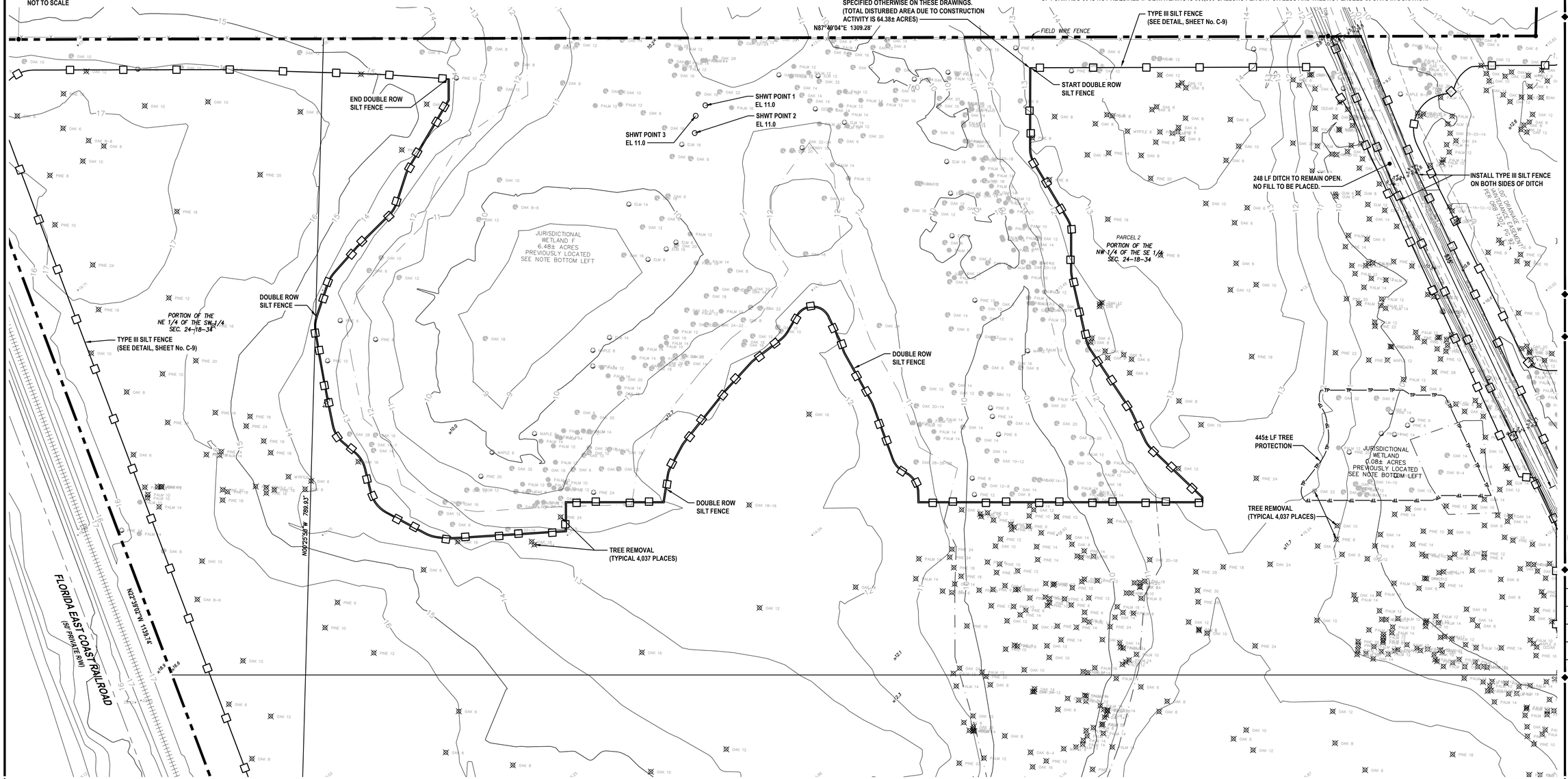
- PROPOSED SILT FENCE (SEE DETAIL SHEET No. C-9 & C-10)
- PROPOSED TREE BARRICADE (SEE DETAIL SHEET No. C-9)
- PROPOSED TURBIDITY BARRIER (SEE DETAIL SHEET No. C-10)
- PROPOSED CONSTRUCTION ENTRANCE (SEE DETAIL SHEET No. C-10)
- 22" EXISTING TREE (No. INDICATES DIAMETER AS MEASURED 4.5' ABOVE THE GROUND)
- 22" TREE TO BE REMOVED

EROSION CONTROL NOTES:

1. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
2. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL DEVICES HAVE BEEN INSTALLED.
3. THE CONTRACTOR SHALL POST "NO TRESPASSING" SIGNAGE AT ALL SITE ENTRANCES PRIOR TO CONSTRUCTION.
4. MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN AND AT LEAST ONCE A WEEK.
5. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
6. GENERAL CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
7. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
8. NO TURBID WATER SHALL BE DISCHARGED OFF-SITE FROM THE DEWATERING OPERATION. CONTRACTOR SHALL TAKE MEASURES TO CONTROL TURBIDITY.
9. IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OF NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
11. PROVIDE DUST CONTROL FOR ALL EARTHWORK OPERATIONS. COVER AREA WITH LIGHT COATING OF WATER OR OTHER APPROVED METHOD.

DEMOLITION AND SWPPP NOTES:

1. ALL EROSION CONTROL DEVICES AND VISIBLE BARRICADES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE START OF CLEARING AND GRUBBING.
2. THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AS SPECIFIED PRIOR TO START OF CONSTRUCTION.
3. THE SITE SHALL BE CLEARED AND GRUBBED OF ALL VEGETATION AND DEBRIS WITHIN THE APPROXIMATE LIMITS OF CLEARING AS INDICATED ON THE DRAWING.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE VOLUSIA COUNTY UTILITY DEPARTMENT, FLORIDA SUNSHINE AND EMERGENCY SERVICES FOR RESPECTIVE UTILITY LOCATIONS AND "NOTICE" OF CONSTRUCTION ACTIVITY.
5. ALL REMOVED MATERIAL SHALL BE HAULED OFF-SITE TO AN APPROVED LANDFILL. TREES MAY BE LOGGED OR MULCHED FOR OFF-SITE DISPOSAL AT THE CONTRACTOR'S DISCRETION.
6. ALL EROSION CONTROL DEVICES SHALL BE PLACED PRIOR TO THE START OF WORK AND REMAIN IN PLACE UNTIL ALL WORK IS COMPLETE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PERIODIC INSPECTION AND REMOVAL OF DEBRIS AND SILT BEHIND EROSION CONTROL DEVICES.
8. ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY INLET PROTECTION MEASURES TO PREVENT SILTATION IN THE DRAINAGE SYSTEM (SEE DETAILS THIS DRAWING). THE ENTIRE DRAINAGE SYSTEM SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE.
9. ALL OFF-SITE AREAS DISTURBED DURING CONSTRUCTION ACTIVITY SHALL BE IMMEDIATELY RESTORED TO PRIOR CONDITION UPON COMPLETION OF WORK.
10. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION, BLOWING SAND AND THE IMPACT TO NEIGHBORING PROPERTIES.
11. THE CONTRACTOR SHALL PROVIDE THE ENGINEER, CITY A MOT PLAN AT PRECONSTRUCTION MEETING. TRAFFIC SHALL BE ALLOWED TO CONTINUE DURING WORK. PROVIDE MEASURES TO DETOUR TRAFFIC AROUND OPEN EXCAVATION WITH ADEQUATE BARRICADES, SIGNAGE AND FLAGPERSON TO DIRECT TRAFFIC. EMERGENCY SERVICES SHALL BE NOTIFIED 48 HOUR IN ADVANCE.
12. EXISTING DRIVEWAYS SHOWN ADJACENT TO OR OUTSIDE LIMITS OF CONSTRUCTION SHALL REMAIN IN-SERVICE. EXISTING UTILITIES AND DRIVEWAYS SHALL NOT BE REMOVED UNLESS OTHERWISE NOTED.
13. IF ANY DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION THEN DEWATERING ACTIVITY SHALL ADHERE TO CHAPTER 40C-22 FAC MORE SPECIFICALLY AS FOLLOWS. PER 40C-22.030(3) A "NOTICED GENERAL SHORT-TERM DEWATERING PERMIT" IS REQUIRED "ONLY IF" DEWATERING EXCEEDS 4 MILLION GALLONS PER DAY, EXCEPT DURING THE FIRST 120 HOURS OF DEWATERING WHEN THE DAILY AND INSTANTANEOUS PUMPAGE RATES SHALL NOT EXCEED 6 MILLION GALLONS PER DAY. AVERAGE DAILY WITHDRAWAL SHALL NOT EXCEED 2 MILLION GALLONS PER DAY FOR THE FIRST 60 DAYS OF THE DEWATERING ACTIVITY AND SHALL NOT EXCEED ONE MILLION GALLONS PER DAY OF A 180 DAY DURATION. EACH SPECIFIC DEWATERING PROJECT SHALL NOT EXCEED 180 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ANY DEWATERING ACTIVITY IS BELOW THE SPECIFIED THRESHOLD. OTHERWISE A PERMIT WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE ITSELF WITH CHAPTER 40C-22 FAC AND BE SOLELY RESPONSIBLE FOR OBTAINING AND SUBMITTING FORM RDS-50 TO SJRWMD A MINIMUM OF 10 DAYS PRIOR TO ANY DEWATERING ACTIVITY. SUBMITTAL OF FORM RDS-50 IS NOT REQUIRED IF DEWATERING IS 300,000 GALLONS PER DAY OR LESS AND WILL NOT EXCEED 30 DAYS IN DURATION.



REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

DEMOLITION, TREE REMOVAL AND SWPPP PLAN

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

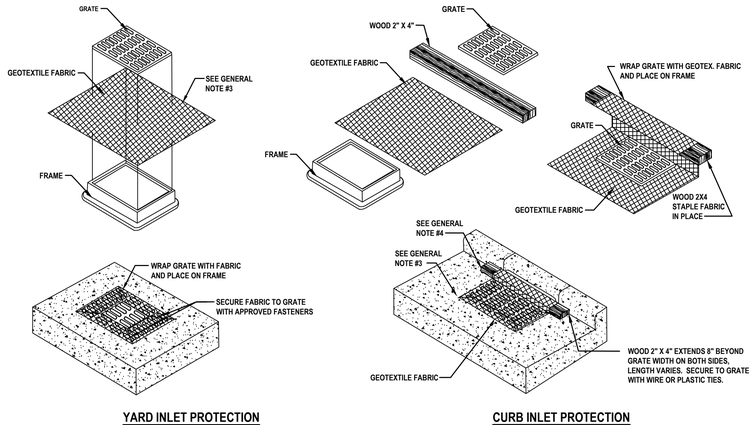
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-09



YARD INLET PROTECTION
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)

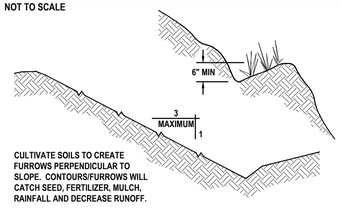
CURB INLET PROTECTION

GENERAL NOTES:

1. GEOTEXTILE TO BE MIRAFI FILTERWEAVE 402 OR GEOTEX 111F. ALTERNATIVES INCLUDE APPROVED EQUAL ASTM D4491 OR 100 TO 150 GALLON PER MINUTE PER SQUARE FOOT.
2. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.
3. FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
4. FOR CURB INLET PROTECTION AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
5. TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.
6. THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS, OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

GEOTEXTILE FABRIC INLET PROTECTION

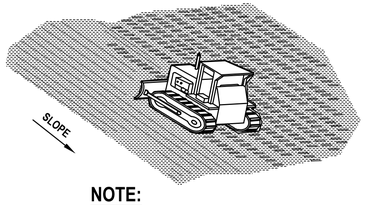
NOT TO SCALE



CULTIVATE SOILS TO CREATE FURROWS PERPENDICULAR TO SLOPE. CONTOURS/FURROWS WILL CATCH SEED, FERTILIZER, MULCH, RAINFALL AND DECREASE RUNOFF.

SURFACE ROUGHENING

(NOT TO SCALE)

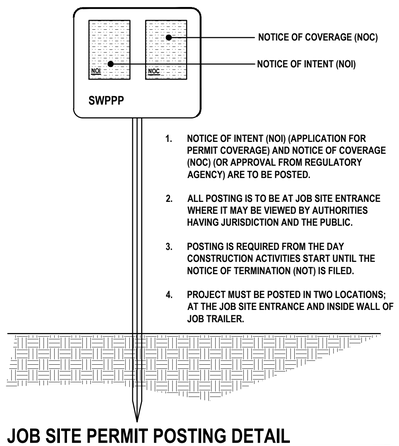


NOTE:

USE DOZER TRACKS TO CREATE GROOVES PERPENDICULAR TO THE SLOPE. GROOVES WILL CATCH SEED, FERTILIZER, MULCH, RAINFALL AND DECREASE SEDIMENT IN RUNOFF.

TRACKING DETAIL

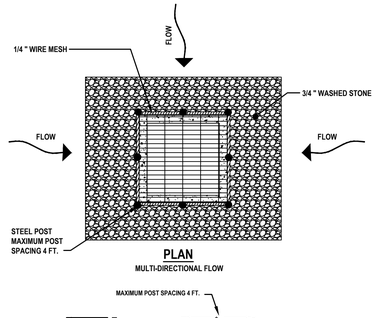
NOT TO SCALE



1. NOTICE OF INTENT (NOI) (APPLICATION FOR PERMIT COVERAGE) AND NOTICE OF COVERAGE (NOC) (OR APPROVAL FROM REGULATORY AGENCY) ARE TO BE POSTED.
2. ALL POSTING IS TO BE AT JOB SITE ENTRANCE WHERE IT MAY BE VIEWED BY AUTHORITIES HAVING JURISDICTION AND THE PUBLIC.
3. POSTING IS REQUIRED FROM THE DAY CONSTRUCTION ACTIVITIES START UNTIL THE NOTICE OF TERMINATION (NOT) IS FILED.
4. PROJECT MUST BE POSTED IN TWO LOCATIONS; AT THE JOB SITE ENTRANCE AND INSIDE WALL OF JOB TRAILER.

JOB SITE PERMIT POSTING DETAIL

NOT TO SCALE



NOTE:

1. SEDIMENT CONTROL STONE SHALL BE 3/4" WASHED STONE.
2. WIRE MESH SHALL BE HARDWARE CLOTH 23 GAUGE MIN. AND SHALL HAVE 1/4 INCH MESH
3. TOP OF WIRE MESH SHALL BE A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR ANY DIVERSION POINT.
4. STEEL POST SHALL BE 5 FT. IN LENGTH, BE INSTALLED 1.5 FT. DEEP MINIMUM, AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.
5. WOOD POST SHALL BE 5 FT. IN HEIGHT, BE INSTALLED TO 1.5 FT. DEEP MINIMUM, AND BE 3 INCHES IN DIAMETER.
6. POST SPACING SHALL BE A MAXIMUM OF 4 FT.

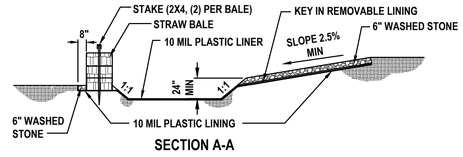
HARDWARE CLOTH INLET PROTECTION

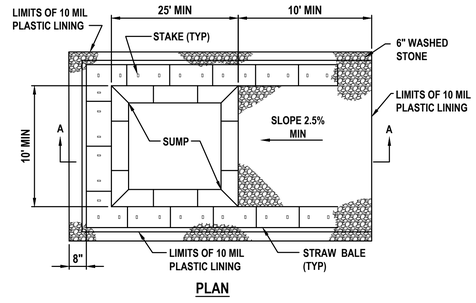
NOT TO SCALE

PAVEMENT STRUCTURAL SECTION IS SN = 3.28

TEMPORARY ASPHALT SECTION

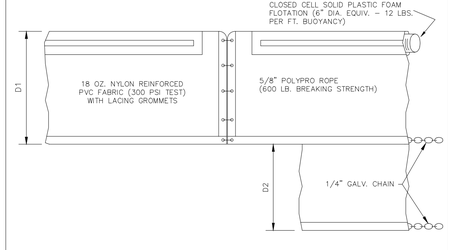
NOT TO SCALE





CONCRETE WASHOUT AREA

NOT TO SCALE



FLOATING TURBIDITY BARRIER
F.D.O.T. INDEX NO. 103

D1 – 5 FT. STD. SINGLE PANEL FOR DEPTHS 5 FT. OR LESS

D2 – 5 FT. STD. ADDITIONAL PANEL FOR DEPTHS GREATER THAN 5 FT.

CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FT. TWO PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FT.

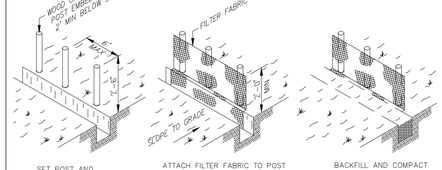
CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES

THE FOLLOWING MEASURES REPRESENT MINIMUM STANDARDS TO BE ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF A PROJECT. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO BE EMPLOYED WHEN WARRANTED BY EXTREME CONDITIONS AND/OR THE FAILURE OF THE CONTRACTOR TO EMPLOY THE APPROPRIATE EROSION CONTROL BEST MANAGEMENT PRACTICES. FAILURE TO COMPLY WITH THESE PROVISIONS SHALL RESULT IN THE ISSUANCE OF A "STOP WORK ORDER".

1. NO DISTURBANCE OF PROPOSED CONSERVATION EASEMENTS, NATURAL BUFFERS, OR WATER BODIES IS PERMITTED. THE CONTRACTOR SHALL LOCATE THESE AREAS ON SITE AND BARRICADE THEM TO AVOID ANY UNAUTHORIZED CLEARING. BARRICADES AND OTHER PROTECTIVE FENCING ARE TO BE LOCATED AT THE DRIP LINE OF EXISTING NATIVE TREES OR AT THE EDGE OF THE NATIVE UNDER–STORY HABITAT, WHICHEVER IS NEAREST TO THE CONSTRUCTION ACTIVITY.
2. SPECIMEN AND HISTORIC TREES, CONSERVATION EASEMENTS, NATURAL VEGETATION BUFFERS, AND SIMILAR AREAS MUST BE PROTECTED BY BARRICADES OR FENCING PRIOR TO CLEARING. BARRICADES ARE TO BE SET AT THE DRIP LINE OF THE TREES AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. BARBED WIRE IS NOT PERMITTED AS A PROTECTIVE BARRIER.
3. WHERE A CHANGE OF GRADE OCCURS AT THE DRIP LINE OF A SPECIMEN TREE, SILT FENCES WILL BE REQUIRED DURING CONSTRUCTION AND RETAINING WALLS MUST BE INSTALLED PRIOR TO FINAL ACCEPTANCE BY THE CITY.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL PROTECTIVE VEGETATION BARRICADES AND EROSION CONTROL STRUCTURES AND MEASURES IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK, INCLUDING PRELIMINARY GRUBBING. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY CONSTRUCTION FENCES, HAY BALES, SILT FENCES, AND FLOATING TURBIDITY BARRIERS. FURTHER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION CONTROL DEVICES THROUGHOUT THE DURATION OF THE ENTIRE PROJECT. MAINTENANCE SHALL INCLUDE PERIODIC INSPECTION AND REMOVAL OF DEBRIS ABUTTING EROSION CONTROL DEVICES.
5. PRIOR TO THE INSTALLATION OF ANY FILL MATERIALS ON SUBJECT SITE, SILT FENCES SHALL BE INSTALLED (1) ALONG SUBJECT SITE BOUNDARY AND PROPERTY LINES, (2) AT THE EDGE OF CONSERVATION EASEMENTS AND WETLANDS, (3) ADJACENT TO NATURAL LANDSCAPE BUFFERS, (4) AROUND THE PERIMETER OF EXISTING STORM WATER TREATMENT FACILITIES, AND (5) AT ANY ADDITIONAL AREAS THAT THE CITY DEEMS NECESSARY TO BE PROTECTED FROM POTENTIAL EROSION IMPACTS DURING CONSTRUCTION. THESE CONDITIONS SHALL APPLY IN ALL INSTANCES WHERE FILL MATERIAL IS BEING INSTALLED WITHIN 25 FEET OF ANY OF THE AFOREMENTIONED LOCATIONS. WHILE THESE ITEMS REPRESENT THE MINIMUM REQUIREMENTS, THE CITY RESERVES THE RIGHT TO IMPOSE ADDITIONAL PROTECTIVE MEASURES, AS DETERMINED DURING ACTUAL SITE VISITS CONDUCTED AS PART OF THE STANDARD REVIEW OF THE SITE–SPECIFIC CLEARING PERMIT APPLICATION AND THROUGHOUT PROJECT CONSTRUCTION.
6. WHERE FILL MATERIAL IS INTENDED TO BE INSTALLED ADJACENT TO EXISTING VEGETATION WHICH IS INTENDED TO REMAIN NATURAL, THE CONTRACTOR MAY INSTALL SILT FENCING AS A TREE PROTECTION MEASURE, IN LIEU OF INSTALLING EITHER WOOD BRACING OR ORANGE MESH FENCING. THIS PRACTICE IS ENCOURAGED BY THE CITY. IF THE SILT FENCE FAILS TO PROVIDE ADEQUATE PROTECTION FROM IMPACT DUE TO CONSTRUCTION, THEN ADDITIONAL CONSTRUCTION FENCING OR WOOD BRACING SHALL BE REQUIRED.
7. AT A MINIMUM, THE CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS. SUFFICIENT GRASS COVERAGE IS TO BE ESTABLISHED WITHIN THIRTY DAYS. – DISTURBED AREAS IN CITY RIGHT–OF–WAYS OR CITY PROPERTY SHALL BE SODDED.
8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THROUGH SCHEDULING, TO MINIMIZE THE DISTURBANCE OF SITE AREAS THAT HAVE BEEN BROUGHT TO THEIR PROPOSED FINAL GRADE WITHIN TWENTY DAYS OF BRINGING A SUBJECT AREA TO ITS FINAL GRADE, THE CONTRACTOR SHALL INSTALL SEED AND MULCH OR SOD, AS REQUIRED.

CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES (CONTD.)

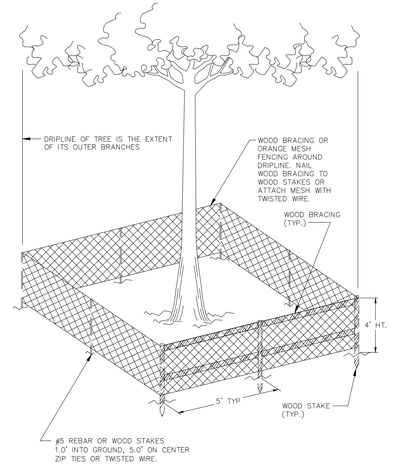
9. FOR INDIVIDUAL CONSTRUCTION PROJECTS INVOLVING MULTIPLE PHASES, UPON COMPLETION OF EACH PHASE OF THE PROJECT, SEEDING AND MULCHING AND OR/ SODDING IS TO BE PERFORMED PRIOR TO COMMENCING THE NEXT PHASE OF CONSTRUCTION.
10. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED BY THE CONTRACTOR TO ALLOW THE GRASS TO BECOME ESTABLISHED.
11. ANY BURNING OF CLEARED MATERIALS MUST BE INSPECTED AND PERMITTED ON A DAILY BASIS. CONTACT THE CITY FIRE MARSHALL AT 424–2412 PRIOR TO EACH DAY OF DESIRED BURNING.
12. ABSOLUTELY NO BURYING OF CLEARED MATERIALS IS PERMITTED.
13. THE REMOVAL OF ALL VEGETATION AND TOPSOIL ON THE FUTURE ROADWAY, PARKING AND BUILDING LOT AREAS IS REQUIRED TO BE COMPLETED PRIOR TO THE PLACEMENT OF FILL ON THOSE AREAS. THE TOPSOIL MAY BE TEMPORARILY STOCKPILED AND USED AS TOPSOIL OVER OVER PROPOSED GREEN AREAS SUCH AS PLANT BEDS, SODDED AREAS, AND WHERE TREES ARE TO BE INSTALLED OR RELOCATED.
14. A SIGNED, DATED, AND SEALED LETTER FROM A SOILS ENGINEER OR THE ENGINEER OF RECORD CERTIFYING THAT THE AREAS TO BE FILLED HAVE BEEN STRIPPED OF ORGANIC MATERIALS, MUST BE SUBMITTED TO THE CITY PRIOR TO FILLING.
15. FILL MATERIAL IS TO BE PLACED IN ONE FOOT LIFTS AND COMPACTED TO THE APPROPRIATE DENSITY (98% FOR PAVED AREAS AND 95% FOR BUILDING PADS AND ALL OTHER AREAS AS PER AASHTO T–180).
16. DURING SUBDIVISION DEVELOPMENT WHEN FUTURE BUILDING LOTS ARE FILLED AS PART OF THE OVERALL SUBDIVISION IMPROVEMENTS, COMPACTION TEST REPORTS MUST BE PERFORMED ON THE BUILDING LOTS AT 300 FOOT INTERVALS. THESE TESTS ARE TO BE PERFORMED IN ONE–FOOT VERTICAL INCREMENTS. THE RESULTS OF THESE TESTS ARE TO BE SUBMITTED TO THE CITY UPON COMPLETION OF THE TESTS.
17. IF ANY MUCK MATERIAL IS DISCOVERED, IT SHALL BE REQUIRED TO BE REMOVED AND REPLACED WITH A SUITABLE MATERIAL THAT IS PROPERLY BACKFILLED, COMPACTED AND TESTED USING AASHTO T–180 MODIFIED PROCTOR METHOD.
18. STOCKPILING IS NOT GENERALLY PERMITTED BY THE CITY. WHEN ALLOWED, STOCKPILES SHALL NOT EXCEED SIX FEET IN HEIGHT MEASURED FROM THE ORIGINAL GRADE. AT A MINIMUM, STOCKPILES THAT WILL REMAIN IN PLACE IN EXCESS OF TWENTY DAYS SHOULD BE SEEDED AND MULCHED IMMEDIATELY UPON PLACEMENT OF THE FINAL LIFT.
19. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES. ADEQUATE WATERING METHODS SHOULD BE EMPLOYED TO ALLOW DAILY COVERAGE OF THE ENTIRE LIMITS OF ALL AREAS THAT DO NOT HAVE AN ESTABLISHED VEGETATIVE COVER. METHODS TO BE EMPLOYED INCLUDE, BUT ARE NOT LIMITED TO, WATER TRUCKS, PERMANENT IRRIGATION SYSTEMS, TEMPORARY SPRINKLER SYSTEMS OPERATED BY PUMPING UNITS CONNECTED TO WET RETENTION PONDS, WATER CANNONS, TEMPORARY IRRIGATION SYSTEMS MOUNTED ATOP STOCKPILE AREAS, AND OTHER METHODS AS DEEMED NECESSARY BY THE CITY.
20. ALL FILL MATERIALS LOCATED BENEATH STRUCTURES AND PAVEMENT SHALL CONSIST OF CLEAN GRANULAR SAND FREE FROM ORGANICS AND SIMILAR MATERIAL THAT COULD DECOMPOSE.
21. ALL FILL TO BE PLACED IN LANDSCAPED AREAS SHALL HAVE A Ph RANGE BETWEEN 5.5 AND 7.5, BE ORGANIC IN NATURE, FREE OF ROCKS AND DEBRIS, OR MATCH NATIVE EXISTING SOILS.



SILT FENCE DETAIL
F.D.O.T. INDEX NO. 102

NOTES:

1. MATERIALS, CONSTRUCTION METHODS AND MAINTENANCE SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND DESIGN STANDARDS CURRENT EDITION.
2. CONTRACTOR SHALL PROVIDE SILT FENCES AND HAY BALES AT ALL STORMWATER DISCHARGE POINTS FOR EROSION CONTROL AND SEDIMENT CONTROL DURING CONST.
3. CONTRACTOR SHALL ROUGH GRADE STORM–WATER SWALES AND RETENTION AREAS PRIOR TO CONSTRUCTION OF SITE IMPROVEMENTS.
4. CONTRACTOR SHALL MEET ALL PERMIT CONDITIONS AS ESTABLISHED BY THE CITY AND ALL OTHER APPLICABLE AGENCIES, INCLUDING BUT NOT LIMITED TO COUNTY, FDOT, AND THE SJRWMD.



NOTE: BARBED WIRE FENCING IS NOT PERMISSIBLE

STANDARD CONSTRUCTION DETAIL FLOATING TURBIDITY BARRIER	FILE NAME: EW_R24.DWG DETAIL REF: R–24	STANDARD CONSTRUCTION DETAIL CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES	FILE NAME: EW_R25.DWG DETAIL REF: R–25
STANDARD CONSTRUCTION DETAIL CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES	FILE NAME: EW_R26.DWG DETAIL REF: R–26	STANDARD CONSTRUCTION DETAIL SILT FENCE TURBIDITY BARRIER	FILE NAME: EW_R22.DWG DETAIL REF: R–22
STANDARD CONSTRUCTION DETAIL TREE PROTECTION BARRICADE	FILE NAME: EW_R23.DWG DETAIL REF: R–23		

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

SWPPP DETAILS AND NOTES

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

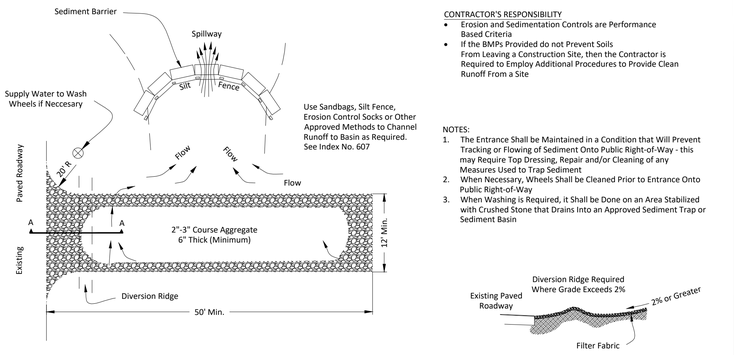
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

C-10



PLAN VIEW
N.T.S.

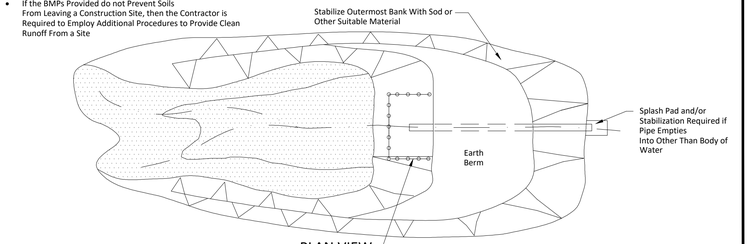
CONTRACTOR'S RESPONSIBILITY
- Erosion and Sedimentation Controls are Performance Based Criteria
- If the BMPs Provided do not Prevent Soils From Leaving a Construction Site, then the Contractor is Required to Employ Additional Procedures to Provide Clean Runoff From a Site

NOTES:
1. The Entrance Shall be Maintained in a Condition that Will Prevent Tracking or Flowing of Sediment Onto Public Right-of-Way - this may Require Top Dressing, Repair and/or Cleaning of any Measures Used to Trap Sediment
2. When Necessary, Wheels Shall be Cleaned Prior to Entrance Onto Public Right-of-Way
3. When Washing is Required, it Shall be Done on an Area Stabilized with Crushed Stone that Drains Into an Approved Sediment Trap or Sediment Basin

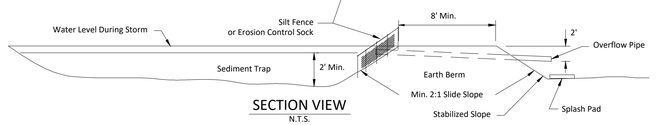
SECTION A - A
N.T.S.

TEMPORARY CONSTRUCTION ENTRANCE DETAIL

CONTRACTOR'S RESPONSIBILITY
- Erosion and Sedimentation Controls are Performance Based Criteria
- If the BMPs Provided do not Prevent Soils From Leaving a Construction Site, then the Contractor is Required to Employ Additional Procedures to Provide Clean Runoff From a Site



PLAN VIEW
N.T.S.

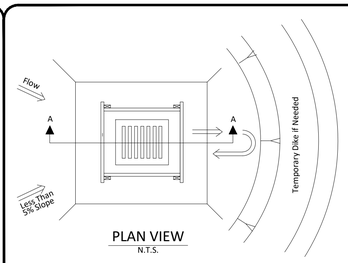


SECTION VIEW
N.T.S.

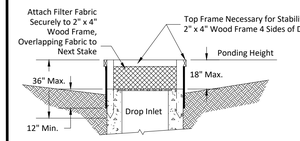
TEMPORARY EROSION CONTROL SEDIMENT BASIN

CONTRACTOR'S RESPONSIBILITY
- Erosion and Sedimentation Controls are Performance Based Criteria
- If the BMPs Provided do not Prevent Soils From Leaving a Construction Site, then the Contractor is Required to Employ Additional Procedures to Provide Clean Runoff From a Site

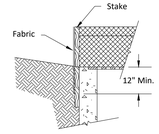
NOTES:
1. Drop Inlet Sediment Barriers are to be Used for Small, Nearly Level Drainage Areas. (Less Than 5%)
2. Use 2" x 4" Wood or Equivalent Metal Stakes (3' Min. Length).
3. Install 2" x 4" Wood Top Frame to Insure Stability
4. The Top of the Frame (Ponding Height) Must be Well Below the Ground Elevation Downslope to Prevent Runoff From Bypassing the Inlet - A Temporary Dike May be Necessary on the Downslope Side of the Structure
5. Mirafi or Approved Erosion Control Fabric Shall be Wrapped Around Grate
6. The Method Shall not Apply to Inlets Receiving Concentrated Flows, Such as in Street or Highway Medians.



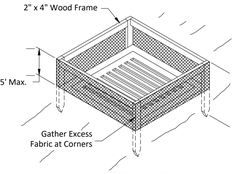
PLAN VIEW
N.T.S.



SECTION A-A
N.T.S.



DETAIL OF STAKE & FABRIC ORIENTATION
N.T.S.

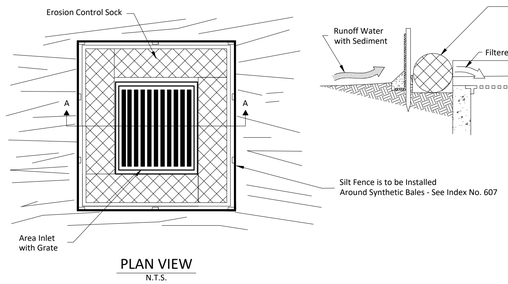


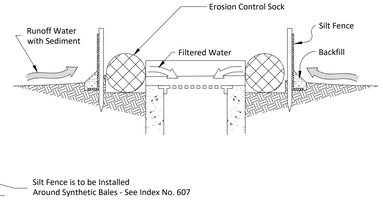
ISOMETRIC VIEW
N.T.S.

TEMPORARY SEDIMENT BARRIER AT A DROP INLET

CONTRACTOR'S RESPONSIBILITY
- Erosion and Sedimentation Controls are Performance Based Criteria
- If the BMPs Provided do not Prevent Soils From Leaving a Construction Site, then the Contractor is Required to Employ Additional Procedures to Provide Clean Runoff From a Site

SECTION A-A
N.T.S.





Silt Fence is to be Installed Around Synthetic Bales - See Index No. 607

PLAN VIEW
N.T.S.

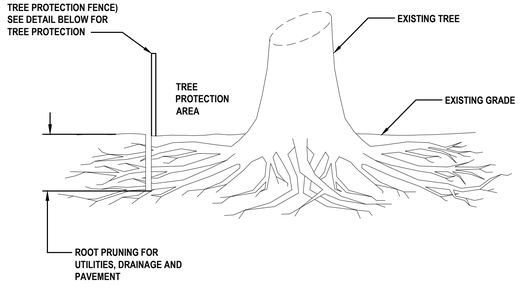
This Method of Inlet Protection is Applicable Where the Inlet Drains a Relatively Flat Area (Slopes No Greater Than 5%) Where Sheet or Overland Flows (not Exceeding 0.5 CFS) are Typical
The Method Shall Not Apply to Inlets Receiving Concentrated Flows, such as Street or Highway Medians

TEMPORARY SEDIMENT BARRIER AT STORM DRAIN DROP INLET

CONTRACTOR TO USE DOSKO OR VERMEER MECHANICAL ROOT PRUNER EQUIPMENT WHEN WITHIN CRITICAL ROOT ZONE OR TREE PROTECTION AREA FOR INSTALLATION OF 4" CONDUITS FOR ELECTRICAL, CABLE, TELECOMMUNICATIONS AND IRRIGATION SERVICES

MECHANICAL ROOT PRUNER EQUIPMENT DETAIL

NOT TO SCALE



1. INSTALL ALL TREE PROTECTION BARRIERS PRIOR TO CONSTRUCTION. LOCATION OF ALL TREE PROTECTION MUST BE APPROVED BY ISA CERTIFIED ARBORIST AND CITY OF NEW SMYRNA BEACH PRIOR TO CONSTRUCTION.
2. ROOT PRUNING METHODS AND MEANS MUST BE IN ACCORDANCE WITH ANSI A300.
3. ROOT PRUNING SHALL BE CONDUCTED WITH THE SUPERVISION OF AN ISA CERTIFIED ARBORIST.
4. ALL ROOT PRUNING MUST BE MADE CLEANLY WITH A SHARP ROOT PRUNING TOOL (SUCH AS A DOSKO OR VERMEER ROOT MECHANICAL ROOT PRUNER EQUIPMENT.
4. ROOTS OVER 1.5" DIAMETER SHALL HAVE A CLEAN CUT MADE BY A CLEAN SAW ON THE SURFACE OF THE ROOT; WHICH IS STILL ATTACHED TO THE TREE. DO NOT PAINT THE CUT ROOT END. IF EXCAVATION IS FOR INSTALLATION OF UNDERGROUND UTILITIES AND DRAINAGE AND ROOTS ARE BROKEN OR CHOPPED; THEN ALL ROOTS SHALL BE CLEANED SAW AT CHOPPED OR BROKEN POINT.

ROOT PRUNING DETAIL

NOT TO SCALE

TEMPORARY SEEDING SPECIFICATION:

GENERAL
SEEDING CAN BE USED FOR TEMPORARY STABILIZATION. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 7 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED. AREAS WHERE FINAL GRADING HAS BEEN COMPLETED FOR MORE THAN 7 DAYS SHALL BE TEMPORARILY SEEDED. TEMPORARY SEED MIXTURE IS SPECIFIED BELOW.
SEEDING MIXTURES
SEED MIXTURE SHALL BE BERMUDA COMMON 90 LB PURE LIVE SEED PER ACRE, FIBER 2000 LB PER ACRE, STABILIZER 120 LB PER ACRE AND FERTILIZER 300 LB PER ACRE.
ALL SLOPES AND FLAT GRADE
APPLY 6:20:20 COMMERCIAL ORGANIC FERTILIZER AT A RATE OF 300 LB PER ACRE AND SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:
TEMPORARY SEEDING

Grass Type	Optimal Planting Window (Central FL)	Seeding Rate	Notes
Bermudagrass (Hulled)	March 15 – July 31	5–10 lbs/acre (hulled) 10–15 lbs/acre (unhulled)	Fast germination; ideal for hot season; avoid late-summer/fall seeding
Bermudagrass (Common)	April 1 – July 15	8–15 lbs/acre	Slower establishment than hybrids; needs warm soil
Pensacola Bahiagrass	March 15 – August 31	20–30 lbs/acre	Strong drought tolerance; slower to germinate
Annual Ryegrass	October 15 – February 15	20–40 lbs/acre	Quick winter cover; dies back in spring
Rye Grain (Cereal Rye)	October 15 – January 15	90–120 lbs/acre	Deep-rooted; great for erosion and winter soil protection
Bahiagrass (General)	March 15 – August 31	20–30 lbs/acre	Same as Pensacola; broad use in roadside and disturbed areas

Central Florida Notes:

Soil Temps: Warm-season species (bermuda, bahia) require soil temps > 65°F for germination.
Irrigation: Spring and early summer seeding benefits from supplemental watering during dry spells.
Cool-season species (annual ryegrass and rye grain) are **not suitable for permanent coverage** and must be replaced in spring.

MULCH SEEDED AREA WITH 2 TONS PER ACRE CLEAN GRAIN STRAW. ANCHOR STRAW WITH HYDRAULIC WOOD FIBER MULCH AT THE RATE OF 1000 LB PER ACRE, OR 150-200 POUNDS OF ORGANIC MULCH TACKIFIER PER ACRE, OR USE NETTING.
HYDRO FIBER MULCH MIXTURE SHALL BE PERFORMED IN A TANK WITH A CONTINUOUS AGITATION AND RECIRCULATION SYSTEM WITH SUFFICIENT OPERATING CAPACITY TO PRODUCE A HOMOGENOUS SLURRY AND DISCHARGE SYSTEM WHICH WILL APPLY THE SLURRY AT A CONTINUOUS AND UNIFORM RATE. MIXTURE SHALL CONTAIN A GREEN FUGITIVE DYE AS AN APPLICATION INDICATOR.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.NewKirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

SWPPP DETAILS AND NOTES

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

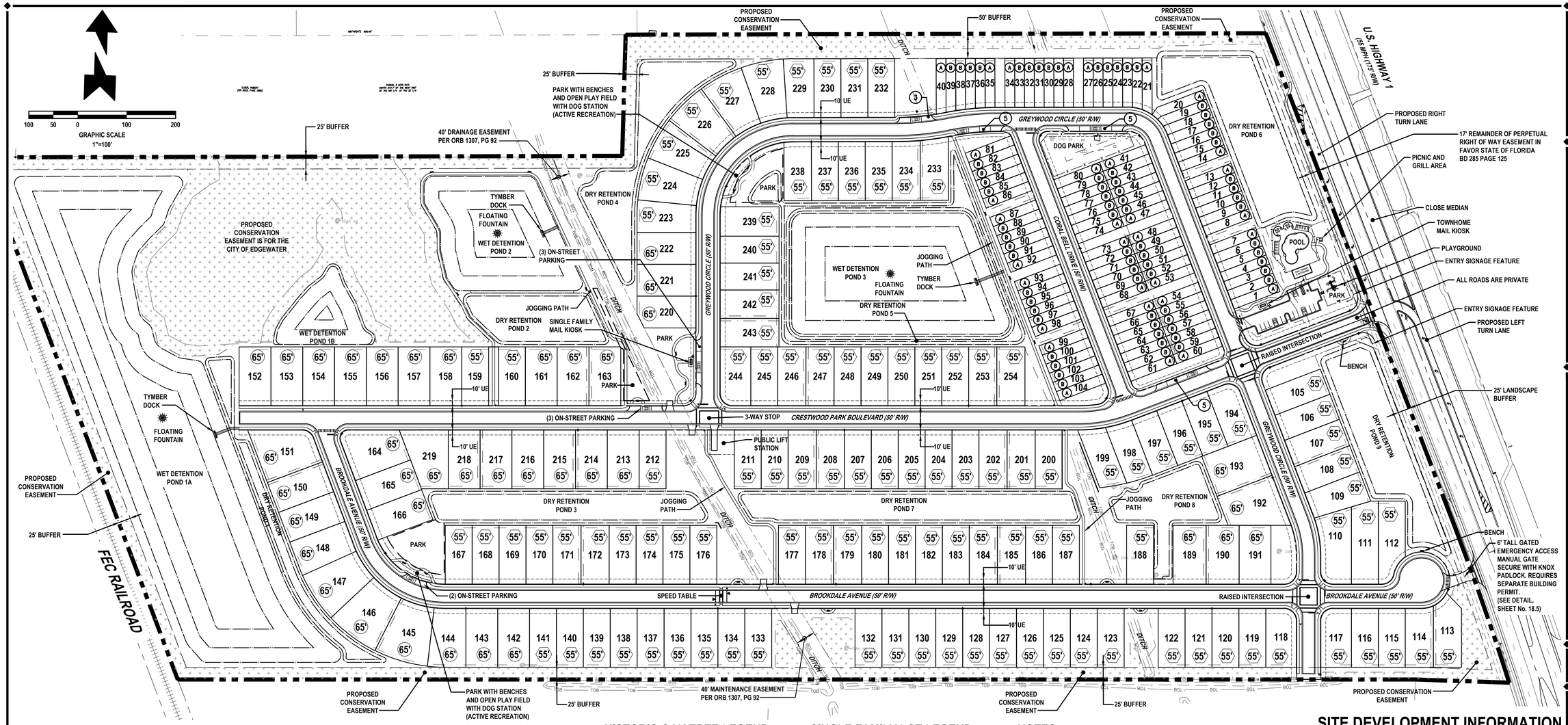
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

C-11



TOWNHOME GARAGE LEGEND

		TOTAL	%
A	2 CAR GARAGE FRONT DOOR LOCATED ON SIDE OF UNIT	32	30.8
B	1 CAR GARAGE FRONT DOOR LOCATED IN FRONT OF UNIT	72	69.2

HISTORIC OAK TREE LEGEND

	EXISTING	REMOVE	REMAIN
	10	0	10

SINGLE FAMILY LOT LEGEND

LOT	TOTAL	%
55'	112	74.7%
65'	38	25.3%
TOTAL	150	100.0%

NOTES

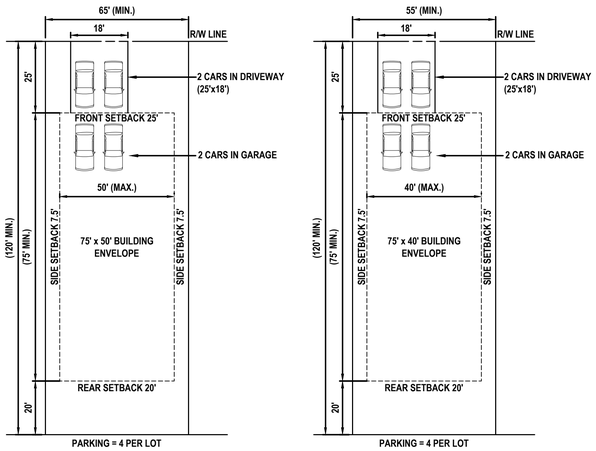
1. ALL ROADS TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOA.
2. NO FENCES SHALL BE ALLOWED ON ANY TOWNHOME RESIDENTIAL LOT.
3. COMMON OPEN SPACE: ACTIVE AND PASSIVE RECREATIONAL AREAS INCLUDING BENCHES, PONDS WITH OBSERVATION AREAS, AMENITY CENTER AND OPEN PLAY FIELDS,

EASEMENT LEGEND

UE — UTILITY EASEMENT

(5) — NUMBER OF TOWNHOME OVERFLOW PARKING SPACES

PROPOSED CONSERVATION EASEMENT

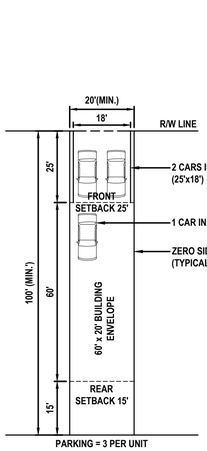


PROPOSED TYPICAL 65' LOT

SCALE: 1" = 20'

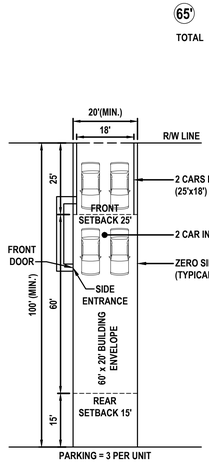
PROPOSED TYPICAL 55' LOT

SCALE: 1" = 20'



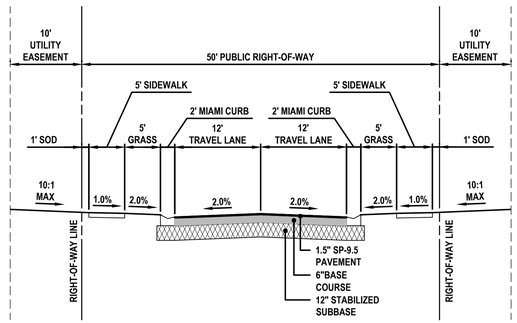
PROPOSED TOWNHOME INTERIOR UNIT

SCALE: 1" = 20'



PROPOSED TOWNHOME EXTERIOR UNIT

SCALE: 1" = 20'



ROADWAY TYPICAL SECTION 50' PUBLIC RIGHT-OF-WAY

NOT TO SCALE

SITE DEVELOPMENT INFORMATION

PROPERTY INFORMATION	
FUTURE LAND USE (FLU)	LDR (LOW DENSITY RESIDENTIAL)
ZONING (w/ OVERLAY)	PUD (PLANNED UNIT DEVELOPMENT)
FLOODZONE	X
PROPOSED UNITS	150 SINGLE FAMILY + 104 TOWNHOMES = 254 UNITS
PUD MAX ALLOWABLE UNITS	288 UNITS
PROPOSED DENSITY	3.40

DIMENSIONAL REQUIREMENTS	TOWNHOUSE	SINGLE-FAMILY
MAX. BUILDING HEIGHT	35 FT	35 FT
MAX. LOT IMPERVIOUS	80%	70%
MAX BUILDING COVERAGE	60%	50%
MIN. LOT AREA	1,440 SF (2 BEDROOM) 1,800 SF (3 BEDROOM)	6,600 SF
MIN. LOT WIDTH (2 BEDROOM)	20 FT	55 FT
MIN. LOT WIDTH (3+ BEDROOM)	20 FT	55 FT
MIN. LOT DEPTH	90 FT	120 FT
FRONT	25 FT	25 FT
REAR	15 FT	20 FT
SIDE	0 FT	7.5 FT
SIDE/CORNER	15 FT	15 FT

PROPOSED SITE COVERAGE			
AREA TYPE	SF	ACRE	% OF SITE
LOT IMPERVIOUS	930,409	21.359	28.6%
ROW IMPERVIOUS	325,923	7.482	10.0%
DRY POND	308,032	7.071	9.5%
WET POND	422,947	9.710	13.0%
GREEN SPACE	1,265,113	29.043	38.9%
TOTAL SITE	3,252,424	74.665	100.0%
TOTAL IMPERVIOUS	1,256,332	28.841	38.6%
TOTAL OPEN SPACE	1,996,092	45.824	61.4%
COMMON OPEN SPACE	987,766	22.676	30.4%

AREA CALCS			
AREA TYPE	SF	ACRE	% OF SITE
GROSS DENSITY AREA	3,252,424	74.665	100.0%
GROSS DENSITY	3.40	UNITS / ACRE	

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
9/26/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

OVERALL DEVELOPMENT PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

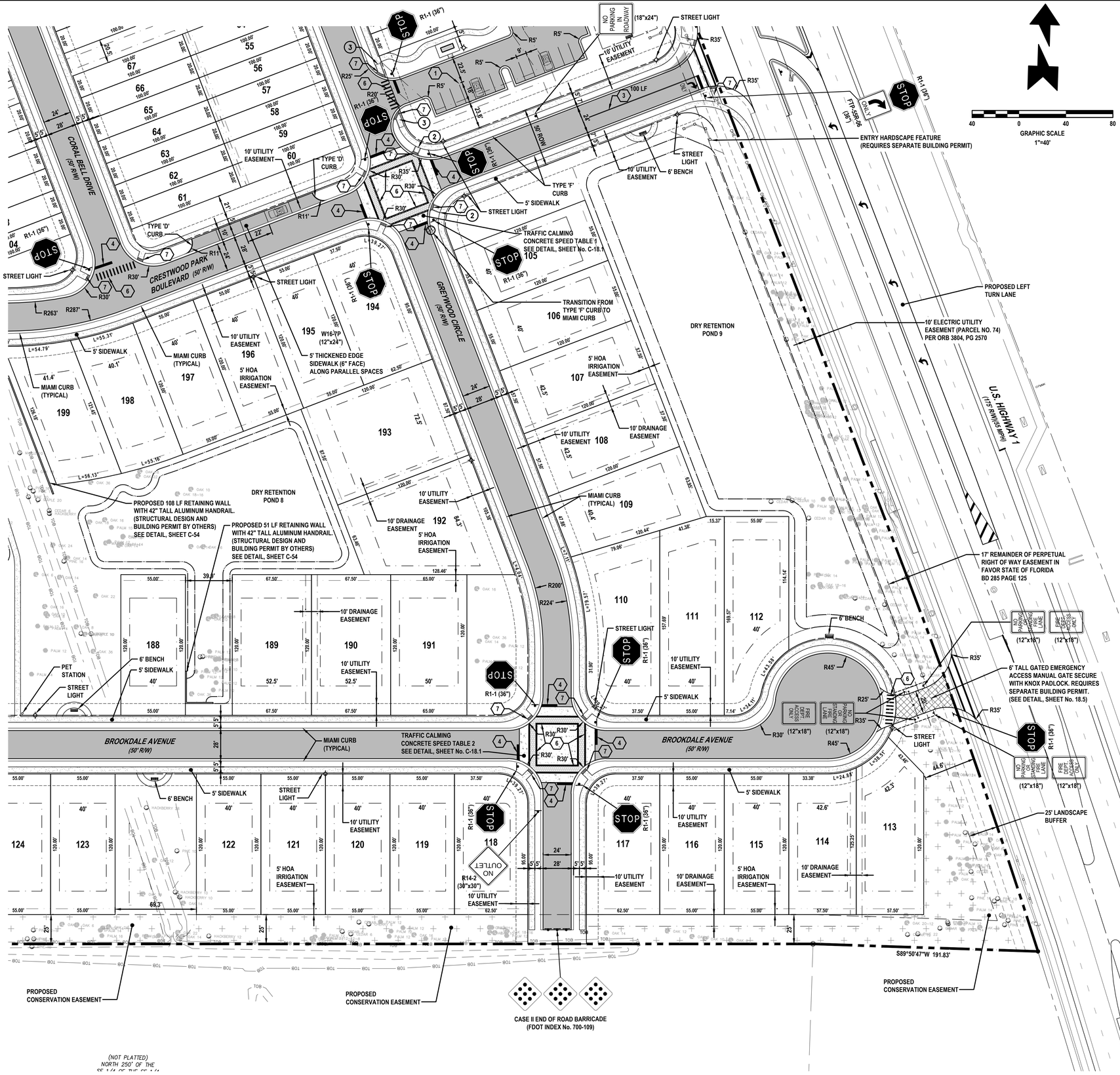
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-12



GENERAL NOTES:

1. CITY OF EDGEWATER BUILDING PERMITS ARE REQUIRED FOR BUILDING, DUMPSTER ENCLOSURE, LIGHT POLES, AND SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING APPROPRIATE INFORMATION (ENGINEERING, SPECIFICATIONS, ETC.) FOR LIGHT POLES AND FIXTURES AT TIME OF PERMIT.
2. PERMITS ARE REQUIRED FOR: CONSTRUCTION OF NEW BUILDING; MONUMENT AND ART SIGNS; AND, DUMPSTER ENCLOSURE. CONTACT THE BUILDING DIVISION IF THERE ARE QUESTIONS OR CONCERNS ABOUT PERMIT REQUIREMENTS FOR WORK NOT SPECIFICALLY MENTIONED HEREIN.
3. ALL SERVICE AREAS AND MECHANICAL EQUIPMENT (GROUND, WALL OR ROOF) INCLUDING, BUT NOT LIMITED TO AIR CONDITIONING CONDENSERS, HEATING UNITS, SATELLITE DISHES, IRRIGATION PUMPS, AND PROPANE TANKS, DISPLAYS AND REFILLING AREAS, SHALL BE SCREENED USING ARCHITECTURAL FEATURES CONSISTENT WITH THE STRUCTURE, OR LANDSCAPING OF SUFFICIENT DENSITY AND MATURITY AT PLANTING TO PROVIDE OPAQUE SCREENING.
4. EXTERNAL DOWNSPOUTS VISIBLE FROM ANY RIGHTS-OF-WAY ARE NOT PERMITTED, UNLESS THEY ARE DECORATIVE. IN LOCATIONS THAT ARE CLEARLY VISIBLE FROM A PUBLIC RIGHT-OF-WAY, DOWNSPOUTS MAY BE INSTALLED EXTERNALLY ONLY IF THEY HAVE A HIGH-QUALITY, DECORATIVE DESIGN AND APPEARANCE OF COPPER, STEEL, TIN, OR SILVER OR SIMILAR NATURAL METALLIC MATERIAL. IN LOCATIONS THAT ARE MOSTLY OR COMPLETELY SCREENED FROM A PUBLIC RIGHT-OF-WAY, EXTERNAL DOWNSPOUTS ARE NOT REQUIRED TO BE DECORATIVE AS ABOVE BUT MUST BE PAINTED TO MATCH THE BUILDING EXTERIOR ON WHICH THEY ARE MOUNTED.
5. ALL DIMENSIONS AND TIES ARE TO THE EDGE OF PAVEMENT AND OUTSIDE FACE OF BUILDING.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION OR GPS. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
7. THE CONTRACTOR SHALL COORDINATE WITH THE EXISTING ADJACENT BUSINESSES TO ENSURE THERE IS NO DISRUPTION TO THEIR RESPECTIVE OPERATIONS.
8. THE CONTRACTOR AT ITS OWN DISCRETION SHALL MAINTAIN THE CONSTRUCTION SITE SECURE FROM TRESPASS.
9. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA SOD.
10. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
11. ALL PAVEMENT EDGE SHALL HAVE TYPE "F1" CURBING UNLESS OTHERWISE NOTED ON THESE PLANS.
12. ALL WALL-MOUNTED EQUIPMENT SUCH AS ELECTRICAL METERS, IRRIGATION METERS, PHONE/CABLE BOXES, EXTERNAL VENTS AND LOUVERS, ETC., SHALL BE PAINTED TO MATCH THE WALL ON WHICH IT IS MOUNTED OR OTHERWISE CONSISTENT WITH THE COLOR(S) OF THE BUILDING.
13. ALL MATERIALS, MACHINERY AND VEHICLES SHALL BE STORED ON-SITE IN AN ORDERLY ORGANIZED FASHION.
14. COMMERCIAL IMPACT FEE SHALL BE CALCULATED, DUE AND PAYABLE WITHIN 30 DAYS OF INITIATION OF PERMANENT ELECTRIC SERVICE.
15. CONTRACTOR TO PROVIDE PREMISE IDENTIFICATION FOR BUILDING DURING CONSTRUCTION.
16. SITE LIGHTING MUST NOT SHINE DIRECTLY UPON ANY ADJACENT RESIDENCE AND MUST NOT PRODUCE EXCESSIVE GLARE. GLARE GUARDS WILL BE INSTALLED IF NEEDED.

PAVEMENT MARKING NOTES:

1. PAINTED PAVEMENT MARKINGS SHALL BE APPLIED AFTER PAVEMENT SURFACE HAS CURED. SURFACE SHALL BE FREE OF FINE SAND AND DEBRIS PRIOR TO APPLICATIONS.
2. APPLY PAINTED PAVEMENT MARKINGS AT LAST STAGE OF CONSTRUCTION AFTER LANDSCAPE PLANTINGS ARE INSTALLED.
3. PAINT SHALL BE SHERWIN WILLIAMS LOW-VOC ACRYLIC PRO PARK PAINT, APPLY PER MANUFACTURER'S RECOMMENDATIONS. REFER TO DRAWINGS FOR LOCATIONS OF SPECIFIC COLORS.
4. ALL STOP BARS SHALL BE THERMOPLASTIC.
5. ALL REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 17352.
6. ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH INDEX NO. 17301 AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
7. LOCATION OF SIGNS IS APPROXIMATE ONLY AND IS SUBJECT TO CHANGE AS DIRECTED BY THE ENGINEER.
8. FOR ADDITIONAL DETAILS SEE INDEX NO. 700-010, 11863, 700-101, 17344 AND 706-001.
9. ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED USING 3M BRAND "SCOTCHLITE" SHEETING (ENGINEER GRADE) ON MINIMUM .08 GA ALUMINUM BLANKS. ALL 36"x48" SIGNS SHALL BE .100 GA MINIMUM AND SHALL BE INSTALLED USING 3"x12" ROUND ALUMINUM POST. ALL STOP SIGNS SHALL BE 36" OCTAGON INSTALLED ON 12.3 LBS/FT "U" CHANNEL POST RAIL STEEL ONLY OR 3"x12" ROUND ALUMINUM POSTS. "U" CHANNEL POSTS MAY BE USED FOR SIGNS SMALLER THAN 36"x36". ALL SPEED LIMIT SIGNS SHALL BE 24"x30".

PAVING LEGEND

ASPHALT PAVEMENT		1.5" SP-9.5 ASPHALT; MINIMUM MARSHALL FIELD STABILITY 1500, COMPACTED TO 98% DENSITY PER FM 1-T238 (METHOD B). 6" LIMEROCK OR CRUSHED CONCRETE BASE COMPACTED TO 98% MAXIMUM DENSITY, MINIMUM LBR 100. 12" STABILIZED SUBGRADE (LBR 40) COMPACTED TO A MINIMUM OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (AASHTO T-180)
CONCRETE PAVEMENT		6" CONCRETE (4,000 P.S.I. @ 28 DAYS) 12" STABILIZED SUBGRADE (LBR 40) MIN OF 98% MODIFIED PROCTOR MAX DRY DENSITY PER ASTM D1557, AASHTO T-180 (6" LIFTS) 12'x12' CONTROL JOINTS, 2" SAW CUT DEPTH SEE DETAIL R-19, SHEET No. C-77
CONCRETE SIDEWALK		4" THICK CLASS I CONCRETE (3,000 P.S.I. @ 28 DAYS) PER FDOT INDEX 522-001 SEE DETAIL SHEETS No. C-76, C-84, & C-85
STABILIZED GRASS FIRE ACCESS		GRASS PAVE 2 (SEE DETAIL, SHEET No. 18.5) 12" COMPACTED SUBBASE MIN OF 98% MODIFIED PROCTOR MAX DENSITY PER AASHTO T-180

STRIPING KEYNOTES: (PER FDOT INDEX No. 711-001, ONLY THERMOPLASTIC IN R/W)

1. 6" SOLID WHITE LINE
2. 6" SOLID YELLOW LINE
3. 6" SOLID DOUBLE YELLOW LINE
4. 24" WHITE STOP BAR
5. WHITE DIRECTIONAL ARROW
6. STANDARD CROSSWALK
7. 24" DETECTABLE WARNING MAT (PER FDOT INDEX No. 522-002)
8. 6" WHITE SKIP LINE (6' - 10')
9. 6" YELLOW LINE @ 45° SPACED 10' ON CENTER
10. 18" WHITE LINE @ 45° SPACED 10' ON CENTER
11. 18" YELLOW LINE @ 45° SPACED 10' ON CENTER

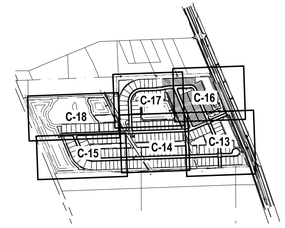
LEGEND

- MIAMI CURB
- TYPE "F" CURB
- TYPE "E" CURB
- SITE LIGHT POLES
- MAIL KIOSK
- TRANSITION FROM TYPE 'F' CURB TO MIAMI CURB
- PROPOSED CONSERVATION EASEMENT
- 50' R/W — 50 FEET PUBLIC RIGHT-OF-WAY

CURB RAMP KEYNOTES:

1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)

ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.



KEY MAP

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
9/26/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

SITE LAYOUT PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

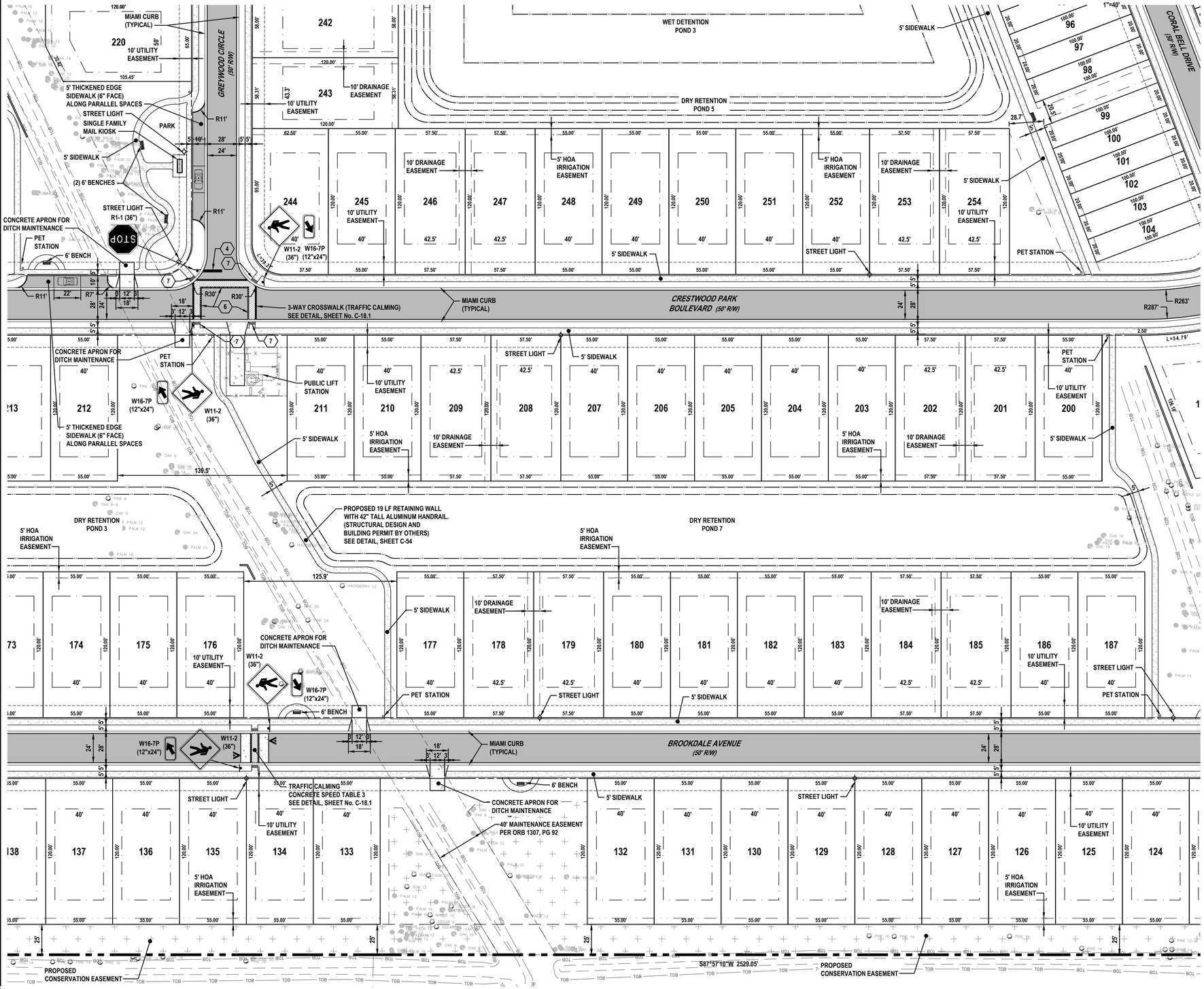
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-13



GENERAL NOTES:

1. CITY OF EDGEWATER BUILDING PERMITS ARE REQUIRED FOR BUILDING, DUMPSTER ENCLOSURE, LIGHT POLES, AND SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING APPROPRIATE INFORMATION (ENGINEERING, SPECIFICATIONS, ETC.) FOR LIGHT POLES AND FIXTURES AT TIME OF PERMIT.
2. PERMITS ARE REQUIRED FOR: CONSTRUCTION OF NEW BUILDING; MONUMENT AND ART SIGNS; AND, DUMPSTER ENCLOSURE. CONTACT THE BUILDING DIVISION IF THERE ARE QUESTIONS OR CONCERNS ABOUT PERMIT REQUIREMENTS FOR WORK NOT SPECIFICALLY MENTIONED HEREIN.
3. ALL SERVICE AREAS AND MECHANICAL EQUIPMENT (GROUND, WALL OR ROOF) INCLUDING, BUT NOT LIMITED TO AIR CONDITIONING CONDENSERS, HEATING UNITS, SATELLITE DISHES, IRRIGATION PUMPS, AND PROPANE TANKS, DISPLAYS AND REFILLING AREAS, SHALL BE SCREENED USING ARCHITECTURAL FEATURES CONSISTENT WITH THE STRUCTURE, OR LANDSCAPING OF SUFFICIENT DENSITY AND MATURITY AT PLANTING TO PROVIDE OPAQUE SCREENING.
4. EXTERNAL DOWNSPOUTS VISIBLE FROM ANY RIGHTS-OF-WAY ARE NOT PERMITTED, UNLESS THEY ARE DECORATIVE. IN LOCATIONS THAT ARE CLEARLY VISIBLE FROM A PUBLIC RIGHT-OF-WAY, DOWNSPOUTS MAY BE INSTALLED EXTERNALLY ONLY IF THEY HAVE A HIGH-QUALITY, DECORATIVE DESIGN AND APPEARANCE OF COPPER, STEEL, TIN, OR SILVER OR SIMILAR NATURAL METALLIC MATERIAL. IN LOCATIONS THAT ARE MOSTLY OR COMPLETELY SCREENED FROM A PUBLIC RIGHT-OF-WAY, EXTERNAL DOWNSPOUTS ARE NOT REQUIRED TO BE DECORATIVE AS ABOVE BUT MUST BE PAINTED TO MATCH THE BUILDING EXTERIOR ON WHICH THEY ARE MOUNTED.
5. ALL DIMENSIONS AND TIES ARE TO THE EDGE OF PAVEMENT AND OUTSIDE FACE OF BUILDING.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION OR GPS. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
7. THE CONTRACTOR SHALL COORDINATE WITH THE EXISTING ADJACENT BUSINESSES TO ENSURE THERE IS NO DISRUPTION TO THEIR RESPECTIVE OPERATIONS.
8. THE CONTRACTOR AT ITS OWN DISCRETION SHALL MAINTAIN THE CONSTRUCTION SITE SECURE FROM TRESPASS.
9. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA SOD.
10. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
11. ALL PAVEMENT EDGE SHALL HAVE TYPE "F1" CURBING UNLESS OTHERWISE NOTED ON THESE PLANS.
12. ALL WALL-MOUNTED EQUIPMENT SUCH AS ELECTRICAL METERS, IRRIGATION METERS, PHONE/CABLE BOXES, EXTERNAL VENTS AND LOUVERS, ETC., SHALL BE PAINTED TO MATCH THE WALL ON WHICH IT IS MOUNTED OR OTHERWISE CONSISTENT WITH THE COLOR(S) OF THE BUILDING.
13. ALL MATERIALS, MACHINERY AND VEHICLES SHALL BE STORED ON-SITE IN AN ORDERLY ORGANIZED FASHION.
14. COMMERCIAL IMPACT FEE SHALL BE CALCULATED, DUE AND PAYABLE WITHIN 30 DAYS OF INITIATION OF PERMANENT ELECTRIC SERVICE.
15. CONTRACTOR TO PROVIDE PREMISE IDENTIFICATION FOR BUILDING DURING CONSTRUCTION.
16. SITE LIGHTING MUST NOT SHINE DIRECTLY UPON ANY ADJACENT RESIDENCE AND MUST NOT PRODUCE EXCESSIVE GLARE. GLARE GUARDS WILL BE INSTALLED IF NEEDED.

PAVEMENT MARKING NOTES:

1. PAINTED PAVEMENT MARKINGS SHALL BE APPLIED AFTER PAVEMENT SURFACE HAS CURED. SURFACE SHALL BE FREE OF FINE SAND AND DEBRIS PRIOR TO APPLICATIONS.
2. APPLY PAINTED PAVEMENT MARKINGS AT LAST STAGE OF CONSTRUCTION AFTER LANDSCAPE PLANTINGS ARE INSTALLED.
3. PAINT SHALL BE SHERWIN WILLIAMS LOW-VOC ACRYLIC PRO PARK PAINT, APPLY PER MANUFACTURER'S RECOMMENDATIONS. REFER TO DRAWINGS FOR LOCATIONS OF SPECIFIC COLORS.
4. ALL STOP BARS SHALL BE THERMOPLASTIC.
5. ALL REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 17352.
6. ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH INDEX NO. 17301 AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
7. LOCATION OF SIGNS IS APPROXIMATE ONLY AND IS SUBJECT TO CHANGE AS DIRECTED BY THE ENGINEER.
8. FOR ADDITIONAL DETAILS SEE INDEX NO. 700-010, 11863, 700-101, 17344 AND 706-001.
9. ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED USING 3M BRAND "SCOTCHLITE" SHEETING (ENGINEER GRADE) ON MINIMUM .08 GA ALUMINUM BLANKS. ALL 36"x48" SIGNS SHALL BE .100 GA MINIMUM AND SHALL BE INSTALLED USING 3"x12" ROUND ALUMINUM POST. ALL STOP SIGNS SHALL BE 36" OCTAGON INSTALLED ON 12.3 LBS/FT "U" CHANNEL POST RAIL STEEL ONLY OR 3"x12' ROUND ALUMINUM POSTS. "U" CHANNEL POSTS MAY BE USED FOR SIGNS SMALLER THAN 36"x36". ALL SPEED LIMIT SIGNS SHALL BE 24"x30".

PAVING LEGEND

ASPHALT PAVEMENT		1.5" SP-9.5 ASPHALT; MINIMUM MARSHALL FIELD STABILITY 1500, COMPACTED TO 98% DENSITY PER FM 1-T238 (METHOD B). 6" LIMEROCK OR CRUSHED CONCRETE BASE COMPACTED TO 98% MAXIMUM DENSITY, MINIMUM LBR 100. 12" STABILIZED SUBGRADE (LBR 40) COMPACTED TO A MINIMUM OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (AASHTO T-180)
CONCRETE PAVEMENT		6" CONCRETE (4,000 P.S.I. @ 28 DAYS) 12" STABILIZED SUBGRADE (LBR 40) MIN OF 98% MODIFIED PROCTOR MAX DRY DENSITY PER ASTM D1557, AASHTO T-180 (6" LIFTS) 12'x12' CONTROL JOINTS, 2" SAW CUT DEPTH SEE DETAIL R-19, SHEET No. C-77
CONCRETE SIDEWALK		4" THICK CLASS I CONCRETE (3,000 P.S.I. @ 28 DAYS) PER FDOT INDEX 522-001 SEE DETAIL SHEETS No. C-76, C-84, & C-85
PAVER CROSSWALK		TRAFFIC PAVER, 3-1/8" THICKNESS MINIMUM (HERRINGBONE PATTERN) COLOR BY OWNER 7/8" COMPACTED BEDDING SAND CONFORMING TO ASTM C33 6" THICK4,000 PSI CONCRETE

STRIPING KEYNOTES: (PER FDOT INDEX No. 711-001, ONLY THERMOPLASTIC IN R/W)

1. 6" SOLID WHITE LINE
2. 6" SOLID YELLOW LINE
3. 6" SOLID DOUBLE YELLOW LINE
4. 24" WHITE STOP BAR
5. WHITE DIRECTIONAL ARROW
6. STANDARD CROSSWALK
7. 24" DETECTABLE WARNING MAT (PER FDOT INDEX No. 522-002)
8. 6" WHITE SKIP LINE (6' - 10')
9. 6" YELLOW LINE @ 45° SPACED 10' ON CENTER
10. 18" WHITE LINE @ 45° SPACED 10' ON CENTER
11. 18" YELLOW LINE @ 45° SPACED 10' ON CENTER

CURB RAMP KEYNOTES:

1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)

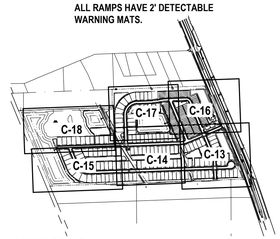
ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.

LEGEND

- MIAMI CURB
- TYPE "F" CURB
- TYPE "E" CURB
- SITE LIGHT POLES
- MAIL KIOSK
- TRANSITION FROM TYPE 'F' CURB TO MIAMI CURB
- PROPOSED CONSERVATION EASEMENT
- 50 FEET PUBLIC RIGHT-OF-WAY

KEY MAP

NOT TO SCALE



REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

SITE LAYOUT PLAN
CRESTWOOD PARK
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-14

STRIPING KEYNOTES: (PER FDOT INDEX No. 711-001, ONLY THERMOPLASTIC IN R/W)

1. 6" SOLID WHITE LINE
2. 6" SOLID YELLOW LINE
3. 6" SOLID DOUBLE YELLOW LINE
4. 24" WHITE STOP BAR
5. WHITE DIRECTIONAL ARROW
6. STANDARD CROSSWALK
7. 24" DETECTABLE WARNING MAT (PER FDOT INDEX No. 522-002)
8. 6" WHITE SKIP LINE (6' - 10')
9. 6" YELLOW LINE @ 45° SPACED 10' ON CENTER
10. 18" WHITE LINE @ 45° SPACED 10' ON CENTER
11. 18" YELLOW LINE @ 45° SPACED 10' ON CENTER

GRAPHIC SCALE
1"=40'
40 0 40 80

LEGEND

- MIAMI CURB
- TYPE "F" CURB
- TYPE "E" CURB
- SITE LIGHT POLES
- MAIL KIOSK
- TRANSITION FROM TYPE 'F' CURB TO MIAMI CURB
- PROPOSED CONSERVATION EASEMENT
- 50' R/W — 50 FEET PUBLIC RIGHT-OF-WAY

CURB RAMP KEYNOTES:

1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)

ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.

PAVING LEGEND

- ASPHALT PAVEMENT: 1.5" SP-9.5 ASPHALT; MINIMUM MARSHALL FIELD STABILITY 1500, COMPACTED TO 98% DENSITY PER FM 1-T238 (METHOD B). 6" LIMEROCK OR CRUSHED CONCRETE BASE COMPACTED TO 98% MAXIMUM DENSITY, MINIMUM LBR 100. 12" STABILIZED SUBGRADE (LBR 40) COMPACTED TO A MINIMUM OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (AASHTO T-180)
- CONCRETE PAVEMENT: 6" CONCRETE (4,000 P.S.I. @ 28 DAYS) 12" STABILIZED SUBGRADE (LBR 40) MIN OF 98% MODIFIED PROCTOR MAX DRY DENSITY PER ASTM D1557, AASHTO T-180 (6" LIFTS) 12'x12' CONTROL JOINTS, 2" SAW CUT DEPTH SEE DETAIL R-19, SHEET No. C-77
- CONCRETE SIDEWALK: 4" THICK CLASS I CONCRETE (3,000 P.S.I. @ 28 DAYS) PER FDOT INDEX 522-001 SEE DETAIL SHEETS No. C-76, C-84, & C-85
- PAVER CROSSWALK: TRAFFIC PAVER, 3-1/8" THICKNESS MINIMUM (HERRINGBONE PATTERN) COLOR BY OWNER 7/8" COMPACTED BEDDING SAND CONFORMING TO ASTM C33 6" THICK4,000 PSI CONCRETE

PAVEMENT MARKING NOTES:

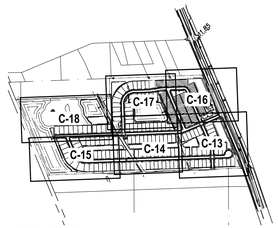
1. PAINTED PAVEMENT MARKINGS SHALL BE APPLIED AFTER PAVEMENT SURFACE HAS CURED. SURFACE SHALL BE FREE OF FINE SAND AND DEBRIS PRIOR TO APPLICATIONS.
2. APPLY PAINTED PAVEMENT MARKINGS AT LAST STAGE OF CONSTRUCTION AFTER LANDSCAPE PLANTINGS ARE INSTALLED.
3. PAINT SHALL BE SHERWIN WILLIAMS LOW-VOC ACRYLIC PRO PARK PAINT, APPLY PER MANUFACTURER'S RECOMMENDATIONS. REFER TO DRAWINGS FOR LOCATIONS OF SPECIFIC COLORS.
4. ALL STOP BARS SHALL BE THERMOPLASTIC.
5. ALL REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 17352.
6. ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH INDEX NO. 17301 AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
7. LOCATION OF SIGNS IS APPROXIMATE ONLY AND IS SUBJECT TO CHANGE AS DIRECTED BY THE ENGINEER.
8. FOR ADDITIONAL DETAILS SEE INDEX NO. 700-010, 11863, 700-101, 17344 AND 706-001.
9. ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED USING 3M BRAND "SCOTCHLITE" SHEETING (ENGINEER GRADE) ON MINIMUM .08 GA ALUMINUM BLANKS. ALL 36"x48" SIGNS SHALL BE .100 GA MINIMUM AND SHALL BE INSTALLED USING 3"x12" ROUND ALUMINUM POST. ALL STOP SIGNS SHALL BE 36" OCTAGON INSTALLED ON 12.3 LBS/FT "U" CHANNEL POST RAIL STEEL ONLY OR 3"x12' ROUND ALUMINUM POSTS. "U" CHANNEL POSTS MAY BE USED FOR SIGNS SMALLER THAN 36"x36". ALL SPEED LIMIT SIGNS SHALL BE 24"x30".

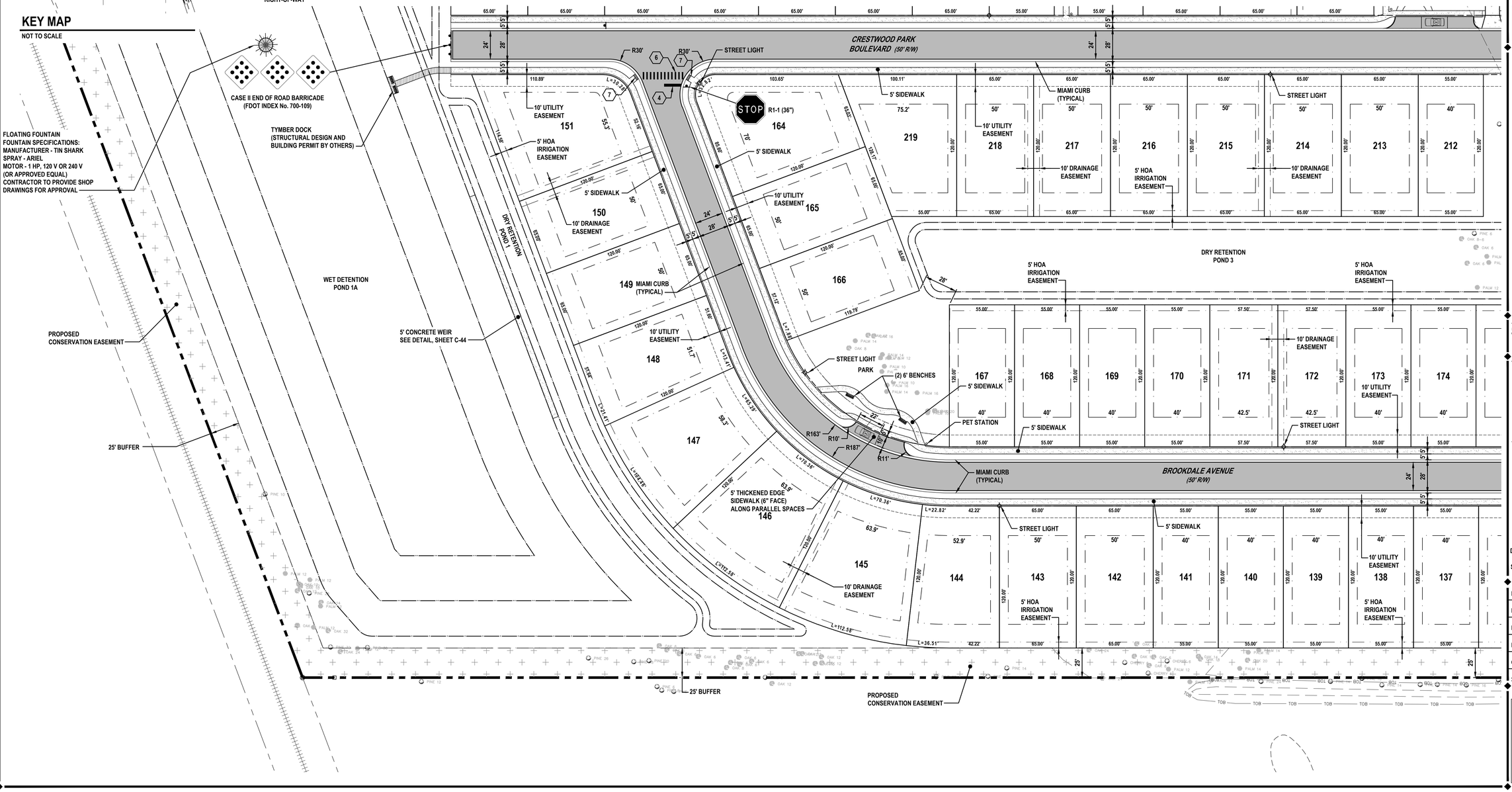
GENERAL NOTES:

1. CITY OF EDGEWATER BUILDING PERMITS ARE REQUIRED FOR BUILDING, DUMPSTER ENCLOSURE, LIGHT POLES, AND SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING APPROPRIATE INFORMATION (ENGINEERING, SPECIFICATIONS, ETC.) FOR LIGHT POLES AND FIXTURES AT TIME OF PERMIT.
2. PERMITS ARE REQUIRED FOR: CONSTRUCTION OF NEW BUILDING; MONUMENT AND ART SIGNS; AND, DUMPSTER ENCLOSURE. CONTACT THE BUILDING DIVISION IF THERE ARE QUESTIONS OR CONCERNS ABOUT PERMIT REQUIREMENTS FOR WORK NOT SPECIFICALLY MENTIONED HEREIN.
3. ALL SERVICE AREAS AND MECHANICAL EQUIPMENT (GROUND, WALL OR ROOF) INCLUDING, BUT NOT LIMITED TO AIR CONDITIONING CONDENSERS, HEATING UNITS, SATELLITE DISHES, IRRIGATION PUMPS, AND PROPANE TANKS, DISPLAYS AND REFILLING AREAS, SHALL BE SCREENED USING ARCHITECTURAL FEATURES CONSISTENT WITH THE STRUCTURE, OR LANDSCAPING OF SUFFICIENT DENSITY AND MATURITY AT PLANTING TO PROVIDE OPAQUE SCREENING.
4. EXTERNAL DOWNSPOUTS VISIBLE FROM ANY RIGHTS-OF-WAY ARE NOT PERMITTED, UNLESS THEY ARE DECORATIVE. IN LOCATIONS THAT ARE CLEARLY VISIBLE FROM A PUBLIC RIGHT-OF-WAY, DOWNSPOUTS MAY BE INSTALLED EXTERNALLY ONLY IF THEY HAVE A HIGH-QUALITY, DECORATIVE DESIGN AND APPEARANCE OF COPPER, STEEL, TIN, OR SILVER OR SIMILAR NATURAL METALLIC MATERIAL. IN LOCATIONS THAT ARE MOSTLY OR COMPLETELY SCREENED FROM A PUBLIC RIGHT-OF-WAY, EXTERNAL DOWNSPOUTS ARE NOT REQUIRED TO BE DECORATIVE AS ABOVE BUT MUST BE PAINTED TO MATCH THE BUILDING EXTERIOR ON WHICH THEY ARE MOUNTED.
5. ALL DIMENSIONS AND TIES ARE TO THE EDGE OF PAVEMENT AND OUTSIDE FACE OF BUILDING.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION OR GPS. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
7. THE CONTRACTOR SHALL COORDINATE WITH THE EXISTING ADJACENT BUSINESSES TO ENSURE THERE IS NO DISRUPTION TO THEIR RESPECTIVE OPERATIONS.
8. THE CONTRACTOR AT ITS OWN DISCRETION SHALL MAINTAIN THE CONSTRUCTION SITE SECURE FROM TRESPASS.
9. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA SOD.
10. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
11. ALL PAVEMENT EDGE SHALL HAVE TYPE "F1" CURBING UNLESS OTHERWISE NOTED ON THESE PLANS.
12. ALL WALL-MOUNTED EQUIPMENT SUCH AS ELECTRICAL METERS, IRRIGATION METERS, PHONE/CABLE BOXES, EXTERNAL VENTS AND LOUVERS, ETC., SHALL BE PAINTED TO MATCH THE WALL ON WHICH IT IS MOUNTED OR OTHERWISE CONSISTENT WITH THE COLOR(S) OF THE BUILDING.
13. ALL MATERIALS, MACHINERY AND VEHICLES SHALL BE STORED ON-SITE IN AN ORDERLY ORGANIZED FASHION.
14. COMMERCIAL IMPACT FEE SHALL BE CALCULATED, DUE AND PAYABLE WITHIN 30 DAYS OF INITIATION OF PERMANENT ELECTRIC SERVICE.
15. CONTRACTOR TO PROVIDE PREMISE IDENTIFICATION FOR BUILDING DURING CONSTRUCTION.
16. SITE LIGHTING MUST NOT SHINE DIRECTLY UPON ANY ADJACENT RESIDENCE AND MUST NOT PRODUCE EXCESSIVE GLARE. GLARE GUARDS WILL BE INSTALLED IF NEEDED.

KEY MAP

NOT TO SCALE





1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

SITE LAYOUT PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

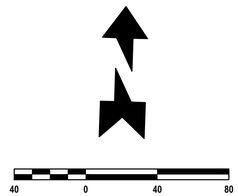
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

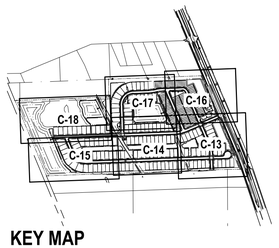
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-15





KEY MAP

NOT TO SCALE

DOG PARK / PLAYGROUND KEYNOTES:

HTTPS://PARKWAREHOUSE.COM/PRODUCT/INTERMEDIATE-COURSE-BARKPARK-DOG-AGILITY-COURSE/

- A GYMS FOR DOGS 6' PARK BENCH (622DP235)
- B DOG PARK PET CLEAN UP WASTE STATION (DL-PWR-FT)
- C KING OF THE HILL (622DP100)
- D PAWS TABLE (622DP110)
- E STEPPING PAWS (622DP130)
- F HOOP JUMP (622DP115)
- G DOGGIE CRAWL (622DP150)
- H ROVER JUMP OVER (622DP125)
- I DRINKING FOUNTAIN (648WF345)

GENERAL NOTES:

1. CITY OF EDGEWATER BUILDING PERMITS ARE REQUIRED FOR BUILDING, DUMPSTER ENCLOSURE, LIGHT POLES, AND SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING APPROPRIATE INFORMATION (ENGINEERING, SPECIFICATIONS, ETC.) FOR LIGHT POLES AND FIXTURES AT TIME OF PERMIT.
2. PERMITS ARE REQUIRED FOR: CONSTRUCTION OF NEW BUILDING; MONUMENT AND ART SIGNS; AND, DUMPSTER ENCLOSURE. CONTACT THE BUILDING DIVISION IF THERE ARE QUESTIONS OR CONCERNS ABOUT PERMIT REQUIREMENTS FOR WORK NOT SPECIFICALLY MENTIONED HEREIN.
3. ALL SERVICE AREAS AND MECHANICAL EQUIPMENT (GROUND, WALL OR ROOF) INCLUDING, BUT NOT LIMITED TO AIR CONDITIONING CONDENSERS, HEATING UNITS, SATELLITE DISHES, IRRIGATION PUMPS, AND PROPANE TANKS, DISPLAYS AND REFILLING AREAS, SHALL BE SCREENED USING ARCHITECTURAL FEATURES CONSISTENT WITH THE STRUCTURE, OR LANDSCAPING OF SUFFICIENT DENSITY AND MATURITY AT PLANTING TO PROVIDE OPAQUE SCREENING.
4. EXTERNAL DOWNSPOUTS VISIBLE FROM ANY RIGHTS-OF-WAY ARE NOT PERMITTED, UNLESS THEY ARE DECORATIVE. IN LOCATIONS THAT ARE CLEARLY VISIBLE FROM A PUBLIC RIGHT-OF-WAY, DOWNSPOUTS MAY BE INSTALLED EXTERNALLY ONLY IF THEY HAVE A HIGH-QUALITY, DECORATIVE DESIGN AND APPEARANCE OF COPPER, STEEL, TIN, OR SILVER OR SIMILAR NATURAL METALLIC MATERIAL. IN LOCATIONS THAT ARE MOSTLY OR COMPLETELY SCREENED FROM A PUBLIC RIGHT-OF-WAY, EXTERNAL DOWNSPOUTS ARE NOT REQUIRED TO BE DECORATIVE AS ABOVE BUT MUST BE PAINTED TO MATCH THE BUILDING EXTERIOR ON WHICH THEY ARE MOUNTED.
5. ALL DIMENSIONS AND TIES ARE TO THE EDGE OF PAVEMENT AND OUTSIDE FACE OF BUILDING.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION OR GPS. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
7. THE CONTRACTOR SHALL COORDINATE WITH THE EXISTING ADJACENT BUSINESSES TO ENSURE THERE IS NO DISRUPTION TO THEIR RESPECTIVE OPERATIONS.
8. THE CONTRACTOR AT ITS OWN DISCRETION SHALL MAINTAIN THE CONSTRUCTION SITE SECURE FROM TRESPASS.
9. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA SOD.
10. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
11. ALL PAVEMENT EDGE SHALL HAVE TYPE "F1" CURBING UNLESS OTHERWISE NOTED ON THESE PLANS.
12. ALL WALL-MOUNTED EQUIPMENT SUCH AS ELECTRICAL METERS, IRRIGATION METERS, PHONE/CABLE BOXES, EXTERNAL VENTS AND LOUVERS, ETC., SHALL BE PAINTED TO MATCH THE WALL ON WHICH IT IS MOUNTED OR OTHERWISE CONSISTENT WITH THE COLOR(S) OF THE BUILDING.
13. ALL MATERIALS, MACHINERY AND VEHICLES SHALL BE STORED ON-SITE IN AN ORDERLY ORGANIZED FASHION.
14. COMMERCIAL IMPACT FEE SHALL BE CALCULATED, DUE AND PAYABLE WITHIN 30 DAYS OF INITIATION OF PERMANENT ELECTRIC SERVICE.
15. CONTRACTOR TO PROVIDE PREMISE IDENTIFICATION FOR BUILDING DURING CONSTRUCTION.
16. SITE LIGHTING MUST NOT SHINE DIRECTLY UPON ANY ADJACENT RESIDENCE AND MUST NOT PRODUCE EXCESSIVE GLARE. GLARE GUARDS WILL BE INSTALLED IF NEEDED.

PAVEMENT MARKING NOTES:

1. PAINTED PAVEMENT MARKINGS SHALL BE APPLIED AFTER PAVEMENT SURFACE HAS CURED. SURFACE SHALL BE FREE OF FINE SAND AND DEBRIS PRIOR TO APPLICATIONS.
2. APPLY PAINTED PAVEMENT MARKINGS AT LAST STAGE OF CONSTRUCTION AFTER LANDSCAPE PLANTINGS ARE INSTALLED.
3. PAINT SHALL BE SHERWIN WILLIAMS LOW-VOC ACRYLIC PRO PARK PAINT, APPLY PER MANUFACTURER'S RECOMMENDATIONS. REFER TO DRAWINGS FOR LOCATIONS OF SPECIFIC COLORS.
4. ALL STOP BARS SHALL BE THERMOPLASTIC.
5. ALL REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 17352.
6. ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH INDEX NO. 17301 AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
7. LOCATION OF SIGNS IS APPROXIMATE ONLY AND IS SUBJECT TO CHANGE AS DIRECTED BY THE ENGINEER.
8. FOR ADDITIONAL DETAILS SEE INDEX NO. 700-010, 11863, 700-101, 17344 AND 706-001.
9. ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED USING 3M BRAND "SCOTCHLITE" SHEETING (ENGINEER GRADE) ON MINIMUM .08 GA ALUMINUM BLANKS. ALL 36"x48" SIGNS SHALL BE .100 GA MINIMUM AND SHALL BE INSTALLED USING 3"x12" ROUND ALUMINUM POST. ALL STOP SIGNS SHALL BE 36" OCTAGON INSTALLED ON 12.3 LBS/FT "U" CHANNEL POST RAIL STEEL ONLY OR 3"x12' ROUND ALUMINUM POSTS. "U" CHANNEL POSTS MAY BE USED FOR SIGNS SMALLER THAN 36"x36". ALL SPEED LIMIT SIGNS SHALL BE 24"x30".

PAVING LEGEND

ASPHALT PAVEMENT		1.5" SP-9.5 ASPHALT; MINIMUM MARSHALL FIELD STABILITY 1500, COMPACTED TO 98% DENSITY PER FM 1-T238 (METHOD B). 6" LIMEROCK OR CRUSHED CONCRETE BASE COMPACTED TO 98% MAXIMUM DENSITY, MINIMUM LBR 100. 12" STABILIZED SUBGRADE (LBR 40) COMPACTED TO A MINIMUM OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (AASHTO T-180)
CONCRETE PAVEMENT		6" CONCRETE (4,000 P.S.I. @ 28 DAYS) 12" STABILIZED SUBGRADE (LBR 40) MIN OF 98% MODIFIED PROCTOR MAX DRY DENSITY PER ASTM D1557, AASHTO T-180 (6" LIFTS) 12'x12' CONTROL JOINTS, 2" SAW CUT DEPTH SEE DETAIL R-19, SHEET No. C-77
CONCRETE SIDEWALK		4" THICK CLASS I CONCRETE (3,000 P.S.I. @ 28 DAYS) PER FDOT INDEX 522-001 SEE DETAIL SHEETS No. C-76, C-84, & C-85
PAVER CROSSWALK		TRAFFIC PAVER, 3-1/8" THICKNESS MINIMUM (HERRINGBONE PATTERN) COLOR BY OWNER 7/8" COMPACTED BEDDING SAND CONFORMING TO ASTM C33 6" THICK4,000 PSI CONCRETE

STRIPING KEYNOTES: (PER FDOT INDEX No. 711-001, ONLY THERMOPLASTIC IN R/W)

1. 6" SOLID WHITE LINE
2. 6" SOLID YELLOW LINE
3. 6" SOLID DOUBLE YELLOW LINE
4. 24" WHITE STOP BAR
5. WHITE DIRECTIONAL ARROW
6. STANDARD CROSSWALK
7. 24" DETECTABLE WARNING MAT (PER FDOT INDEX No. 522-002)
8. 6" WHITE SKIP LINE (6' - 10')
9. 6" YELLOW LINE @ 45° SPACED 10' ON CENTER
10. 18" WHITE LINE @ 45° SPACED 10' ON CENTER
11. 18" YELLOW LINE @ 45° SPACED 10' ON CENTER

LEGEND

- MIAMI CURB
- TYPE "F" CURB
- TYPE "E" CURB
- SITE LIGHT POLES
- MAIL KIOSK
- TRANSITION FROM TYPE 'F' CURB TO MIAMI CURB
- PROPOSED CONSERVATION EASEMENT
- 50' R/W — 50 FEET PUBLIC RIGHT-OF-WAY

CURB RAMP KEYNOTES:

1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)

ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

SITE LAYOUT PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2023 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

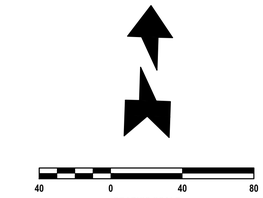
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

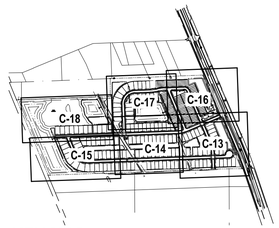
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

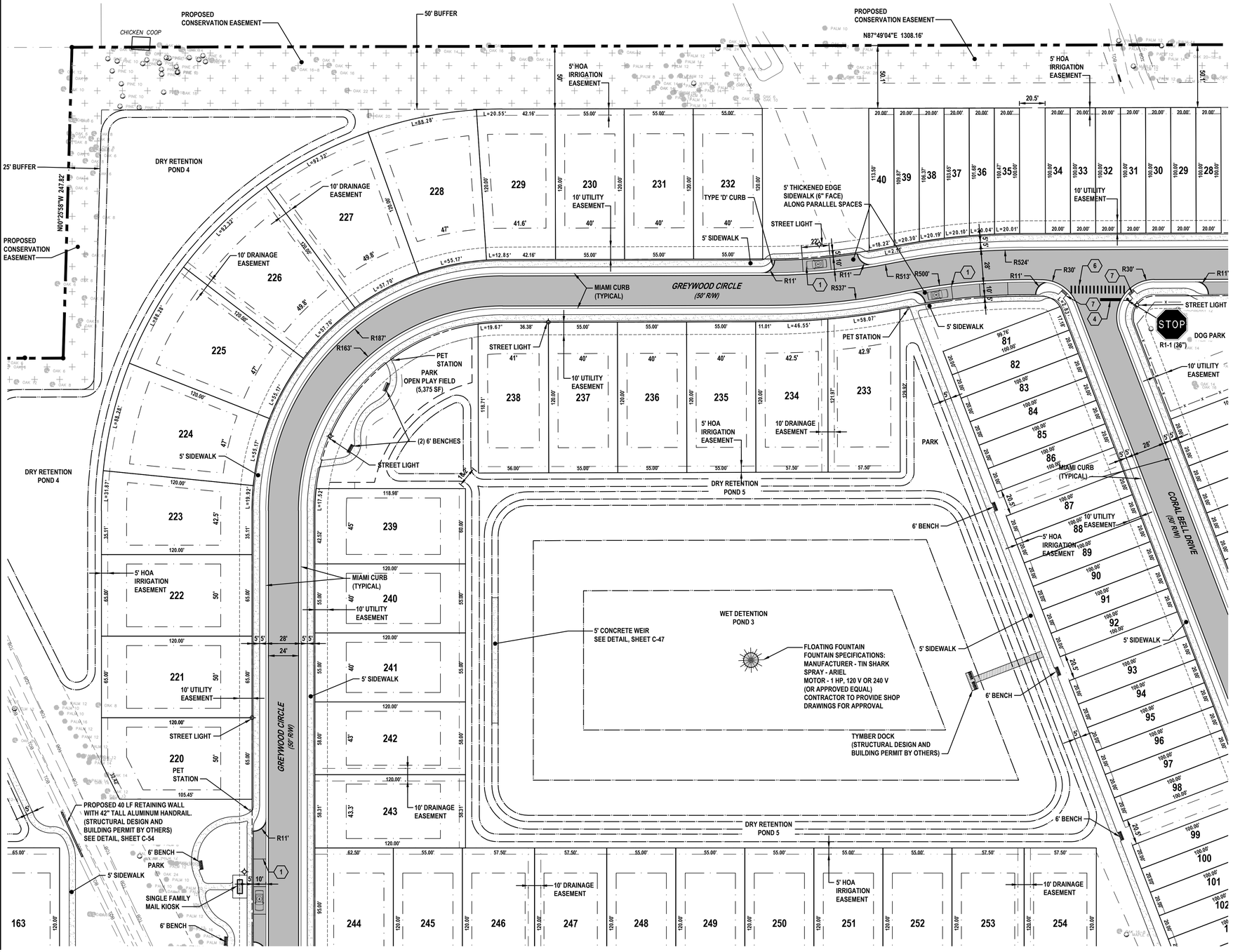
DRAWING NUMBER

C-16





KEY MAP
NOT TO SCALE



GENERAL NOTES:

1. CITY OF EDGEWATER BUILDING PERMITS ARE REQUIRED FOR BUILDING, DUMPSTER ENCLOSURE, LIGHT POLES, AND SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING APPROPRIATE INFORMATION (ENGINEERING, SPECIFICATIONS, ETC.) FOR LIGHT POLES AND FIXTURES AT TIME OF PERMIT.
2. PERMITS ARE REQUIRED FOR: CONSTRUCTION OF NEW BUILDING; MONUMENT AND ART SIGNS; AND, DUMPSTER ENCLOSURE. CONTACT THE BUILDING DIVISION IF THERE ARE QUESTIONS OR CONCERNS ABOUT PERMIT REQUIREMENTS FOR WORK NOT SPECIFICALLY MENTIONED HEREIN.
3. ALL SERVICE AREAS AND MECHANICAL EQUIPMENT (GROUND, WALL OR ROOF) INCLUDING, BUT NOT LIMITED TO AIR CONDITIONING CONDENSERS, HEATING UNITS, SATELLITE DISHES, IRRIGATION PUMPS, AND PROPANE TANKS, DISPLAYS AND REFILLING AREAS, SHALL BE SCREENED USING ARCHITECTURAL FEATURES CONSISTENT WITH THE STRUCTURE, OR LANDSCAPING OF SUFFICIENT DENSITY AND MATURITY AT PLANTING TO PROVIDE OPAQUE SCREENING.
4. EXTERNAL DOWNSPOUTS VISIBLE FROM ANY RIGHTS-OF-WAY ARE NOT PERMITTED, UNLESS THEY ARE DECORATIVE. IN LOCATIONS THAT ARE CLEARLY VISIBLE FROM A PUBLIC RIGHT-OF-WAY, DOWNSPOUTS MAY BE INSTALLED EXTERNALLY ONLY IF THEY HAVE A HIGH-QUALITY, DECORATIVE DESIGN AND APPEARANCE OF COPPER, STEEL, TIN, OR SILVER OR SIMILAR NATURAL METALLIC MATERIAL. IN LOCATIONS THAT ARE MOSTLY OR COMPLETELY SCREENED FROM A PUBLIC RIGHT-OF-WAY, EXTERNAL DOWNSPOUTS ARE NOT REQUIRED TO BE DECORATIVE AS ABOVE BUT MUST BE PAINTED TO MATCH THE BUILDING EXTERIOR ON WHICH THEY ARE MOUNTED.
5. ALL DIMENSIONS AND TIES ARE TO THE EDGE OF PAVEMENT AND OUTSIDE FACE OF BUILDING.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION OR GPS. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
7. THE CONTRACTOR SHALL COORDINATE WITH THE EXISTING ADJACENT BUSINESSES TO ENSURE THERE IS NO DISRUPTION TO THEIR RESPECTIVE OPERATIONS.
8. THE CONTRACTOR AT ITS OWN DISCRETION SHALL MAINTAIN THE CONSTRUCTION SITE SECURE FROM TRESPASS.
9. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA SOD.
10. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
11. ALL PAVEMENT EDGE SHALL HAVE TYPE "F1" CURBING UNLESS OTHERWISE NOTED ON THESE PLANS.
12. ALL WALL-MOUNTED EQUIPMENT SUCH AS ELECTRICAL METERS, IRRIGATION METERS, PHONE/CABLE BOXES, EXTERNAL VENTS AND LOUVERS, ETC., SHALL BE PAINTED TO MATCH THE WALL ON WHICH IT IS MOUNTED OR OTHERWISE CONSISTENT WITH THE COLOR(S) OF THE BUILDING.
13. ALL MATERIALS, MACHINERY AND VEHICLES SHALL BE STORED ON-SITE IN AN ORDERLY ORGANIZED FASHION.
14. COMMERCIAL IMPACT FEE SHALL BE CALCULATED, DUE AND PAYABLE WITHIN 30 DAYS OF INITIATION OF PERMANENT ELECTRIC SERVICE.
15. CONTRACTOR TO PROVIDE PREMISE IDENTIFICATION FOR BUILDING DURING CONSTRUCTION.
16. SITE LIGHTING MUST NOT SHINE DIRECTLY UPON ANY ADJACENT RESIDENCE AND MUST NOT PRODUCE EXCESSIVE GLARE. GLARE GUARDS WILL BE INSTALLED IF NEEDED.

PAVEMENT MARKING NOTES:

1. PAINTED PAVEMENT MARKINGS SHALL BE APPLIED AFTER PAVEMENT SURFACE HAS CURED. SURFACE SHALL BE FREE OF FINE SAND AND DEBRIS PRIOR TO APPLICATIONS.
2. APPLY PAINTED PAVEMENT MARKINGS AT LAST STAGE OF CONSTRUCTION AFTER LANDSCAPE PLANTINGS ARE INSTALLED.
3. PAINT SHALL BE SHERWIN WILLIAMS LOW-VOC ACRYLIC PRO PARK PAINT, APPLY PER MANUFACTURER'S RECOMMENDATIONS. REFER TO DRAWINGS FOR LOCATIONS OF SPECIFIC COLORS.
4. ALL STOP BARS SHALL BE THERMOPLASTIC.
5. ALL REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 17352.
6. ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH INDEX NO. 17301 AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
7. LOCATION OF SIGNS IS APPROXIMATE ONLY AND IS SUBJECT TO CHANGE AS DIRECTED BY THE ENGINEER.
8. FOR ADDITIONAL DETAILS SEE INDEX NO. 700-010, 11863, 700-101, 17344 AND 706-001.
9. ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED USING 3M BRAND "SCOTCHLITE" SHEETING (ENGINEER GRADE) ON MINIMUM .08 GA ALUMINUM BLANKS. ALL 36"x48" SIGNS SHALL BE .100 GA MINIMUM AND SHALL BE INSTALLED USING 3"x12" ROUND ALUMINUM POST. ALL STOP SIGNS SHALL BE 36" OCTAGON INSTALLED ON 12.3 LBS/FT "U" CHANNEL POST RAIL STEEL ONLY OR 3"x12' ROUND ALUMINUM POSTS. "U" CHANNEL POSTS MAY BE USED FOR SIGNS SMALLER THAN 36"x36". ALL SPEED LIMIT SIGNS SHALL BE 24"x30".

PAVING LEGEND

ASPHALT PAVEMENT		1.5" SP-9.5 ASPHALT; MINIMUM MARSHALL FIELD STABILITY 1500, COMPACTED TO 98% DENSITY PER FM 1-T238 (METHOD B). 6" LIMEROCK OR CRUSHED CONCRETE BASE COMPACTED TO 98% MAXIMUM DENSITY, MINIMUM LBR 100. 12" STABILIZED SUBGRADE (LBR 40) COMPACTED TO A MINIMUM OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (AASHTO T-180)
CONCRETE PAVEMENT		6" CONCRETE (4,000 P.S.I. @ 28 DAYS) 12" STABILIZED SUBGRADE (LBR 40) MIN OF 98% MODIFIED PROCTOR MAX DRY DENSITY PER ASTM D1557, AASHTO T-180 (6" LIFTS) 12'x12' CONTROL JOINTS, 2" SAW CUT DEPTH SEE DETAIL R-19, SHEET No. C-77
CONCRETE SIDEWALK		4" THICK CLASS I CONCRETE (3,000 P.S.I. @ 28 DAYS) PER FDOT INDEX 522-001 SEE DETAIL SHEETS No. C-76, C-84, & C-85
PAVER CROSSWALK		TRAFFIC PAVER, 3-1/8" THICKNESS MINIMUM (HERRINGBONE PATTERN) COLOR BY OWNER 7/8" COMPACTED BEDDING SAND CONFORMING TO ASTM C33 6" THICK4,000 PSI CONCRETE

STRIPING KEYNOTES: (PER FDOT INDEX No. 711-001, ONLY THERMOPLASTIC IN R/W)

1. 6" SOLID WHITE LINE
2. 6" SOLID YELLOW LINE
3. 6" SOLID DOUBLE YELLOW LINE
4. 24" WHITE STOP BAR
5. WHITE DIRECTIONAL ARROW
6. STANDARD CROSSWALK
7. 24" DETECTABLE WARNING MAT (PER FDOT INDEX No. 522-002)
8. 6" WHITE SKIP LINE (6' - 10')
9. 6" YELLOW LINE @ 45° SPACED 10' ON CENTER
10. 18" WHITE LINE @ 45° SPACED 10' ON CENTER
11. 18" YELLOW LINE @ 45° SPACED 10' ON CENTER

LEGEND

- MIAMI CURB
- TYPE "F" CURB
- TYPE "E" CURB
- SITE LIGHT POLES
- MAIL KIOSK
- TRANSITION FROM TYPE 'F' CURB TO MIAMI CURB
- PROPOSED CONSERVATION EASEMENT
- 50' R/W — 50 FEET PUBLIC RIGHT-OF-WAY

CURB RAMP KEYNOTES:

1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)

ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

SITE LAYOUT PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

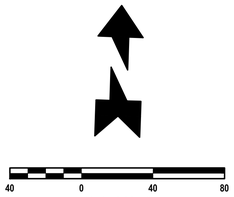
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-17



STRIPING KEYNOTES: (PER FDOT INDEX No. 711-001, ONLY THERMOPLASTIC IN R/W)

1. 6" SOLID WHITE LINE
2. 6" SOLID YELLOW LINE
3. 6" SOLID DOUBLE YELLOW LINE
4. 24" WHITE STOP BAR
5. WHITE DIRECTIONAL ARROW
6. STANDARD CROSSWALK
7. 24" DETECTABLE WARNING MAT (PER FDOT INDEX No. 522-002)
8. 6" WHITE SKIP LINE (6' - 10')
9. 6" YELLOW LINE @ 45° SPACED 10' ON CENTER
10. 18" WHITE LINE @ 45° SPACED 10' ON CENTER
11. 18" YELLOW LINE @ 45° SPACED 10' ON CENTER

PAVING LEGEND

ASPHALT PAVEMENT		1.5" SP-9.5 ASPHALT; MINIMUM MARSHALL FIELD STABILITY 1500, COMPACTED TO 98% DENSITY PER FM 1-T238 (METHOD B). 6" LIMEROCK OR CRUSHED CONCRETE BASE COMPACTED TO 98% MAXIMUM DENSITY, MINIMUM LBR 100. 12" STABILIZED SUBGRADE (LBR 40) COMPACTED TO A MINIMUM OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (AASHTO T-180)
CONCRETE PAVEMENT	S4	6" CONCRETE (4,000 P.S.I. @ 28 DAYS) 12" STABILIZED SUBGRADE (LBR 40) MIN OF 98% MODIFIED PROCTOR MAX DRY DENSITY PER ASTM D1557, AASHTO T-180 (6" LIFTS) 12'x12' CONTROL JOINTS, 2" SAW CUT DEPTH SEE DETAIL R-19, SHEET No. C-77
CONCRETE SIDEWALK		4" THICK CLASS I CONCRETE (3,000 P.S.I. @ 28 DAYS) PER FDOT INDEX 522-001 SEE DETAIL SHEETS No. C-76, C-84, & C-85
PAVER CROSSWALK		TRAFFIC PAVER, 3-1/8" THICKNESS MINIMUM (HERRINGBONE PATTERN) COLOR BY OWNER 7/8" COMPACTED BEDDING SAND CONFORMING TO ASTM C33 6" THICK4,000 PSI CONCRETE

PAVEMENT MARKING NOTES:

1. PAINTED PAVEMENT MARKINGS SHALL BE APPLIED AFTER PAVEMENT SURFACE HAS CURED. SURFACE SHALL BE FREE OF FINE SAND AND DEBRIS PRIOR TO APPLICATIONS.
2. APPLY PAINTED PAVEMENT MARKINGS AT LAST STAGE OF CONSTRUCTION AFTER LANDSCAPE PLANTINGS ARE INSTALLED.
3. PAINT SHALL BE SHERWIN WILLIAMS LOW-VOC ACRYLIC PRO PARK PAINT, APPLY PER MANUFACTURER'S RECOMMENDATIONS. REFER TO DRAWINGS FOR LOCATIONS OF SPECIFIC COLORS.
4. ALL STOP BARS SHALL BE THERMOPLASTIC.
5. ALL REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 17352.
6. ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH INDEX NO. 17301 AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
7. LOCATION OF SIGNS IS APPROXIMATE ONLY AND IS SUBJECT TO CHANGE AS DIRECTED BY THE ENGINEER.
8. FOR ADDITIONAL DETAILS SEE INDEX NO. 700-010, 11863, 700-101, 17344 AND 706-001.
9. ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED USING 3M BRAND "SCOTCHLITE" SHEETING (ENGINEER GRADE) ON MINIMUM .08 GA ALUMINUM BLANKS. ALL 36"x48" SIGNS SHALL BE .100 GA MINIMUM AND SHALL BE INSTALLED USING 3"x12" ROUND ALUMINUM POST. ALL STOP SIGNS SHALL BE 36" OCTAGON INSTALLED ON 12.3 LBS/FT "U" CHANNEL POST RAIL STEEL ONLY OR 3"x12' ROUND ALUMINUM POSTS. "U" CHANNEL POSTS MAY BE USED FOR SIGNS SMALLER THAN 36"x36". ALL SPEED LIMIT SIGNS SHALL BE 24"x30".

GENERAL NOTES:

1. CITY OF EDGEWATER BUILDING PERMITS ARE REQUIRED FOR BUILDING, DUMPSTER ENCLOSURE, LIGHT POLES, AND SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING APPROPRIATE INFORMATION (ENGINEERING, SPECIFICATIONS, ETC.) FOR LIGHT POLES AND FIXTURES AT TIME OF PERMIT.
2. PERMITS ARE REQUIRED FOR: CONSTRUCTION OF NEW BUILDING; MONUMENT AND ART SIGNS; AND, DUMPSTER ENCLOSURE. CONTACT THE BUILDING DIVISION IF THERE ARE QUESTIONS OR CONCERNS ABOUT PERMIT REQUIREMENTS FOR WORK NOT SPECIFICALLY MENTIONED HEREIN.
3. ALL SERVICE AREAS AND MECHANICAL EQUIPMENT (GROUND, WALL OR ROOF) INCLUDING, BUT NOT LIMITED TO AIR CONDITIONING CONDENSERS, HEATING UNITS, SATELLITE DISHES, IRRIGATION PUMPS, AND PROPANE TANKS, DISPLAYS AND REFILLING AREAS, SHALL BE SCREENED USING ARCHITECTURAL FEATURES CONSISTENT WITH THE STRUCTURE, OR LANDSCAPING OF SUFFICIENT DENSITY AND MATURITY AT PLANTING TO PROVIDE OPAQUE SCREENING.
4. EXTERNAL DOWNSPOUTS VISIBLE FROM ANY RIGHTS-OF-WAY ARE NOT PERMITTED, UNLESS THEY ARE DECORATIVE. IN LOCATIONS THAT ARE CLEARLY VISIBLE FROM A PUBLIC RIGHT-OF-WAY, DOWNSPOUTS MAY BE INSTALLED EXTERNALLY ONLY IF THEY HAVE A HIGH-QUALITY, DECORATIVE DESIGN AND APPEARANCE OF COPPER, STEEL, TIN, OR SILVER OR SIMILAR NATURAL METALLIC MATERIAL. IN LOCATIONS THAT ARE MOSTLY OR COMPLETELY SCREENED FROM A PUBLIC RIGHT-OF-WAY, EXTERNAL DOWNSPOUTS ARE NOT REQUIRED TO BE DECORATIVE AS ABOVE BUT MUST BE PAINTED TO MATCH THE BUILDING EXTERIOR ON WHICH THEY ARE MOUNTED.
5. ALL DIMENSIONS AND TIES ARE TO THE EDGE OF PAVEMENT AND OUTSIDE FACE OF BUILDING.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION OR GPS. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
7. THE CONTRACTOR SHALL COORDINATE WITH THE EXISTING ADJACENT BUSINESSES TO ENSURE THERE IS NO DISRUPTION TO THEIR RESPECTIVE OPERATIONS.
8. THE CONTRACTOR AT ITS OWN DISCRETION SHALL MAINTAIN THE CONSTRUCTION SITE SECURE FROM TRESPASS.
9. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA SOD.
10. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
11. ALL PAVEMENT EDGE SHALL HAVE TYPE "F1" CURBING UNLESS OTHERWISE NOTED ON THESE PLANS.
12. ALL WALL-MOUNTED EQUIPMENT SUCH AS ELECTRICAL METERS, IRRIGATION METERS, PHONE/CABLE BOXES, EXTERNAL VENTS AND LOUVERS, ETC., SHALL BE PAINTED TO MATCH THE WALL ON WHICH IT IS MOUNTED OR OTHERWISE CONSISTENT WITH THE COLOR(S) OF THE BUILDING.
13. ALL MATERIALS, MACHINERY AND VEHICLES SHALL BE STORED ON-SITE IN AN ORDERLY ORGANIZED FASHION.
14. COMMERCIAL IMPACT FEE SHALL BE CALCULATED, DUE AND PAYABLE WITHIN 30 DAYS OF INITIATION OF PERMANENT ELECTRIC SERVICE.
15. CONTRACTOR TO PROVIDE PREMISE IDENTIFICATION FOR BUILDING DURING CONSTRUCTION.
16. SITE LIGHTING MUST NOT SHINE DIRECTLY UPON ANY ADJACENT RESIDENCE AND MUST NOT PRODUCE EXCESSIVE GLARE. GLARE GUARDS WILL BE INSTALLED IF NEEDED.

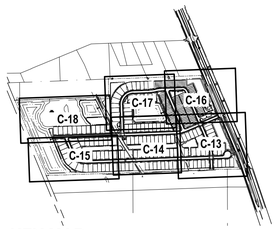
LEGEND

- MIAMI CURB
- TYPE "F" CURB
- TYPE "E" CURB
- SITE LIGHT POLES
- MAIL KIOSK
- TRANSITION FROM TYPE 'F' CURB TO MIAMI CURB
- PROPOSED CONSERVATION EASEMENT
- 50' R/W — 50 FEET PUBLIC RIGHT-OF-WAY

CURB RAMP KEYNOTES:

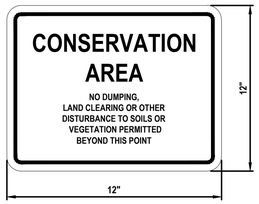
1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)

ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.



KEY MAP

NOT TO SCALE



SEE PLAN FOR LOCATIONS, SPACE AT 100' O.C.

CONSERVATION EASEMENT SIGN

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
8/21/25	SJRWMD COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

SITE LAYOUT PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

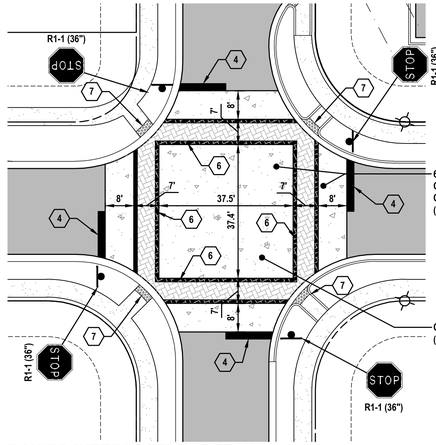
C-18

STRIPING KEYNOTES: (PER FDOT INDEX No. 711-001, ONLY THERMOPLASTIC IN R/W)

1. 6" SOLID WHITE LINE
2. 6" SOLID YELLOW LINE
3. 6" SOLID DOUBLE YELLOW LINE
4. 24" WHITE STOP BAR
5. WHITE DIRECTIONAL ARROW
6. STANDARD CROSSWALK
7. 24" DETECTABLE WARNING MAT (PER FDOT INDEX No. 522-002)
8. 6" WHITE SKIP LINE (6' - 10')
9. 6" YELLOW LINE @ 45° SPACED 10' ON CENTER
10. 18" WHITE LINE @ 45° SPACED 10' ON CENTER
11. 18" YELLOW LINE @ 45° SPACED 10' ON CENTER

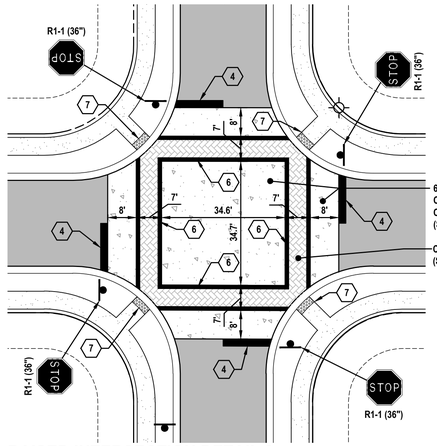
PAVING LEGEND

ASPHALT PAVEMENT		1.5" SP-9.5 ASPHALT; MINIMUM MARSHALL FIELD STABILITY 1500, COMPACTED TO 98% DENSITY PER FM 1-T238 (METHOD B). 6" LIMEROCK OR CRUSHED CONCRETE BASE COMPACTED TO 98% MAXIMUM DENSITY, MINIMUM LBR 100. 12" STABILIZED SUBGRADE (LBR 40) COMPACTED TO A MINIMUM OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (AASHTO T-180)
CONCRETE PAVEMENT		6" CONCRETE (4,000 P.S.I. @ 28 DAYS) WITH COLOR TINT. COLOR BY OWNER COORDINATE WITH PAVER COLOR 12" STABILIZED SUBGRADE (LBR 40) MIN OF 98% MODIFIED PROCTOR MAX DRY DENSITY PER ASTM D1557, AASHTO T-180 (6" LIFTS) 12'x12' CONTROL JOINTS, 2" SAW CUT DEPTH SEE DETAIL R-19, SHEET No. C-77
CONCRETE SIDEWALK		4" THICK CLASS I CONCRETE (3,000 P.S.I. @ 28 DAYS) PER FDOT INDEX 522-001 SEE DETAIL SHEETS No. C-76, C-84, & C-85
PAVER CROSSWALK		TRAFFIC PAVER, 3-1/8" THICKNESS MINIMUM (HERRINGBONE PATTERN) COLOR BY OWNER 7/8" COMPACTED BEDDING SAND CONFORMING TO ASTM C33 6" THICK 4,000 PSI CONCRETE



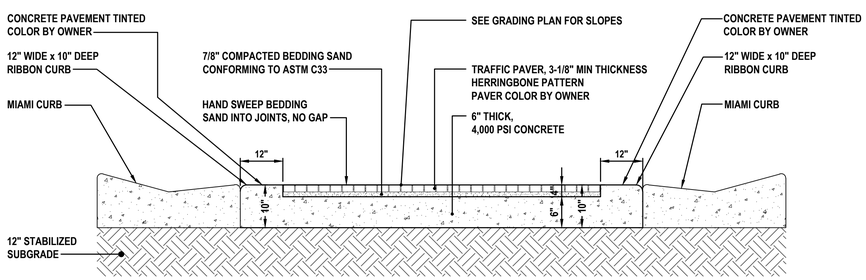
RAISED INTERSECTION DETAIL 1

SCALE: 1" = 20'



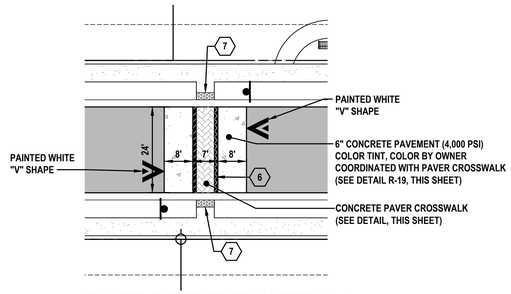
RAISED INTERSECTION DETAIL 2

SCALE: 1" = 20'



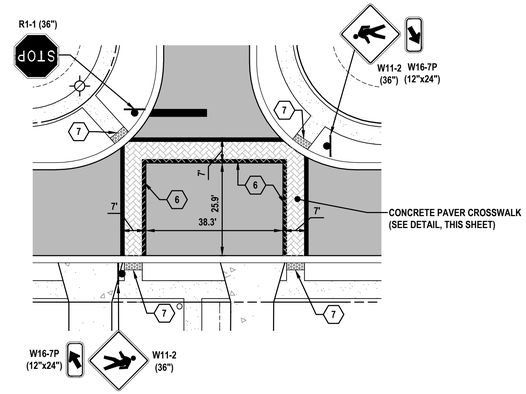
CONCRETE PAVEMENT PAVER DETAIL

NOT TO SCALE



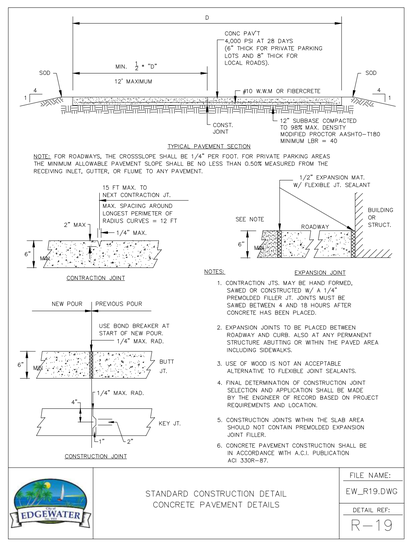
RAISED INTERSECTION DETAIL 3

SCALE: 1" = 20'



3-WAY CROSSWALK DETAIL

SCALE: 1" = 20'



STANDARD CONSTRUCTION DETAIL
CONCRETE PAVEMENT DETAILS

FILE NAME: EW_R19.DWG
DETAIL REF: R-19

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

RAISED INTERSECTION DETAILS
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	AS SHOWN

DRAWING NUMBER

C-18.1

100 50 0 100 200

GRAPHIC SCALE
1"=100'

LEGEND

COMPLETE PET WASTE STATION
MODEL: 3278
ET&T DISTRIBUTORS, INC.

50' BUFFER
25' BUFFER
25' BUFFER
U.S. HIGHWAY 1
(55 MPH (175' R/W)
GREYWOOD CIRCLE (50' R/W)
DRY RETENTION POND 6
COMPLETE PET WASTE STATION
COMPLETE PET WASTE STATION
COMPLETE PET WASTE STATION
DRY RETENTION POND 4
PROPOSED CONSERVATION EASEMENT
FLOATING FOUNTAIN
WET DETENTION POND 2
DRY RETENTION POND 2
WET DETENTION POND 3
FLOATING FOUNTAIN
DRY RETENTION POND 5
GREYWOOD CIRCLE (50' R/W)
CORAL BELL DRIVE (50' R/W)
WET DETENTION POND 1B
COMPLETE PET WASTE STATION
COMPLETE PET WASTE STATION
CRESTWOOD PARK BOULEVARD (50' R/W)
COMPLETE PET WASTE STATION
COMPLETE PET WASTE STATION
25' LANDSCAPE BUFFER
DRY RETENTION POND 9
WET DETENTION POND 1A
DRY RETENTION POND 1
BROOKDALE AVENUE (50' R/W)
DRY RETENTION POND 3
DRY RETENTION POND 7
DRY RETENTION POND 8
GREYWOOD CIRCLE (50' R/W)
25' BUFFER
FEC RAILROAD
COMPLETE PET WASTE STATION
COMPLETE PET WASTE STATION
BROOKDALE AVENUE (50' R/W)
BROOKDALE AVENUE (50' R/W)
25' BUFFER
25' BUFFER

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

PET WASTE STATION PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-18.2

GRAPHIC SCALE
100 50 0 100 200
1"=100'

LEGEND

STREET LIGHT

50' BUFFER
25' BUFFER
25' BUFFER
25' BUFFER
25' BUFFER
25' BUFFER
25' LANDSCAPE BUFFER

U.S. HIGHWAY 1
(55 MPH (175' R/W)

GREYWOOD CIRCLE (50' R/W)
CRESTWOOD PARK BOULEVARD (50' R/W)
BROOKDALE AVENUE (50' R/W)
CRESTWOOD CIRCLE (50' R/W)
CAMPBELL DRIVE (50' R/W)
BROOKDALE AVENUE (50' R/W)

FEC RAILROAD

PROPOSED CONSERVATION EASEMENT

FLOATING FOUNTAIN
WET DETENTION POND 2

WET DETENTION POND 1A
WET DETENTION POND 1B
DRY RETENTION POND 1
DRY RETENTION POND 2
DRY RETENTION POND 3
DRY RETENTION POND 4
WET DETENTION POND 3
FLOATING FOUNTAIN
DRY RETENTION POND 5
DRY RETENTION POND 6
DRY RETENTION POND 7
DRY RETENTION POND 8
DRY RETENTION POND 9

STREET LIGHT

201.6'
234.3'
234.4'
196.1'
224.5'
213.3'
310.9'
248.8'
246.7'
194.5'
334.5'
212.5'
235.5'
245.2'
237.5'
230.4'
314.1'
2.5'
281.7'
280.8'
198.2'
240.3'
274.7'
241.2'
259.1'
261.9'
247.4'
229.8'
253.5'

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

STREET LIGHT PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

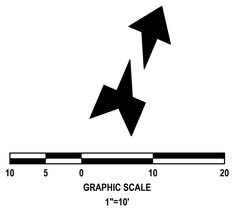
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

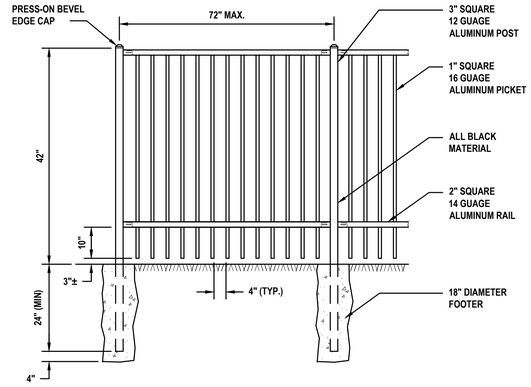
DRAWING NUMBER

C-18.3



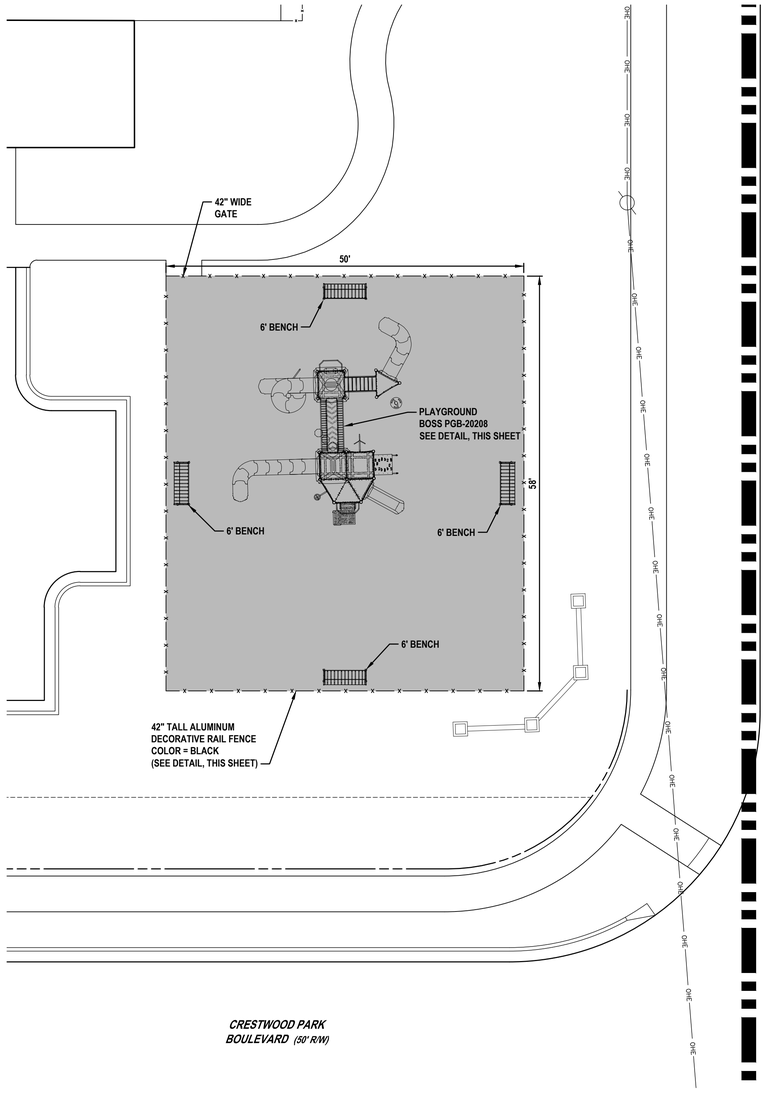
LEGEND

ARTIFICIAL TURF — PLAY TIME ARTIFICIAL TURF (1-1/4" WITH PAD)
COLOR = MEADOW GREEN
INSTALL PER MANUFACTURER SPECIFICATIONS
SEE DETAIL, THIS SHEET



ALUMINIMUM RAIL FENCE DETAIL

NOT TO SCALE



GrassTex Transforming Turf Technology

PLAY TIME

SYNTHETIC TURF SYSTEMS

FEATURES AND BENEFITS

- High performance quality
- Reacts naturally
- Improved durability and safety
- Virtually maintenance free
- Clean and can be cleaned easily
- Consistent performance over time and use

APPLICATION

This new landscape product offers thatch, resulting in a plush body, reducing the amount of infill needed. This product was designed as a next generation playground product but can be used for landscapes, pet areas, fringes, and much more. This product can be installed indoors or outdoors on concrete or a compacted aggregate base.

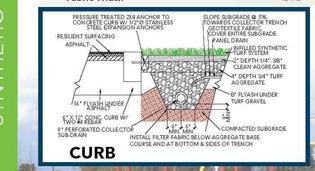
*Custom colors available upon request

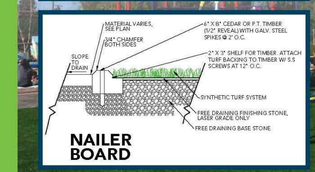
GRASS-TEX.COM | 800 544 0439 | 200 HOWELL DR , DALTON, GA 30721

PLAY TIME

SYNTHETIC TURF SYSTEMS

PROPERTY	DESCRIPTION
Primary/Stalk Yarn Polymer	Polyethylene
Secondary/Thatch Yarn Polymer	Polypropylene
Yarn Cross Section	Polyethylene Monofilament Classic Spine/ Texturized Polypropylene
Standard Colors	Field with Forest/Olive Thatch
Additional Colors	Red; White; Blue; Yellow; Black;
UV Stabilized	Yes
Fabric Construction	Tufted
Primary Backing	Dual layered woven polypropylene
Coating Type(s)	SilverBack™ Polyurethane
Perforations	Yes
Polyethylene Yarn Denier/Ends	1500/6
Texturized Polyproylene Denier/Ends (Thatch)	4600/8
Recommended Infill	2-3 lbs. Silica Sand
Pile Height	1 1/4"
Total Weight	87 oz.
Fabric Width	15 Ft.





GRASS-TEX.COM | 800 544 0439 | 200 HOWELL DR , DALTON, GA 30721 9/11/14

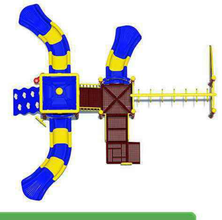
PLAYGROUND BOSS

Ages 5-12

Use Zone: 32ft x 32ft
Child Capacity: 34
Play Activities: 8

Jungle Gym

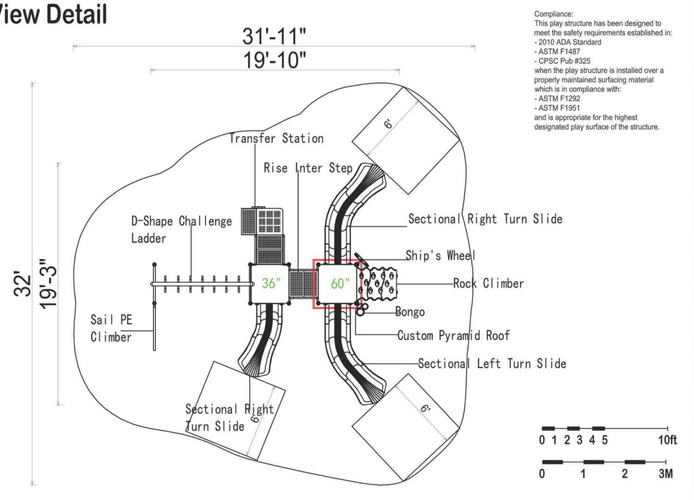
SKU: PGB-20208



Call Us
1-800-878-0320

PlaygroundBoss.com

Top View Detail



Compliance:
This play structure has been designed to meet the safety requirements established in:
- 2010 ADA Standard
- ASTM F1487
- CPSC Pub #325
when the play structure is installed over a properly maintained surfacing material which is in compliance with:
- ASTM F1292
- ASTM F1951
and is appropriate for the highest designated play surface of the structure.

Drawing No: PGB-20208		Structure Size:	19'-10" x 19'-3" x 14'-11"	HDPS:	7'
Date:	27-01-2022	Recommended Use Zone:	31'-11" x 32'	Age Group:	5-12
Scale:	To Fit	Surface Area:	1024 Sq Ft	Capacity:	32-36
				Weight:	1500 lbs

PLAYGROUND BOSS

Playground Boss

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. © 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

PLAYGROUND PARK DETAILS

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

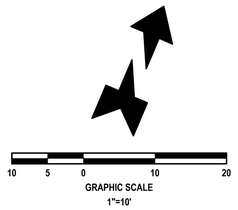
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 10'

DRAWING NUMBER

C-18.4



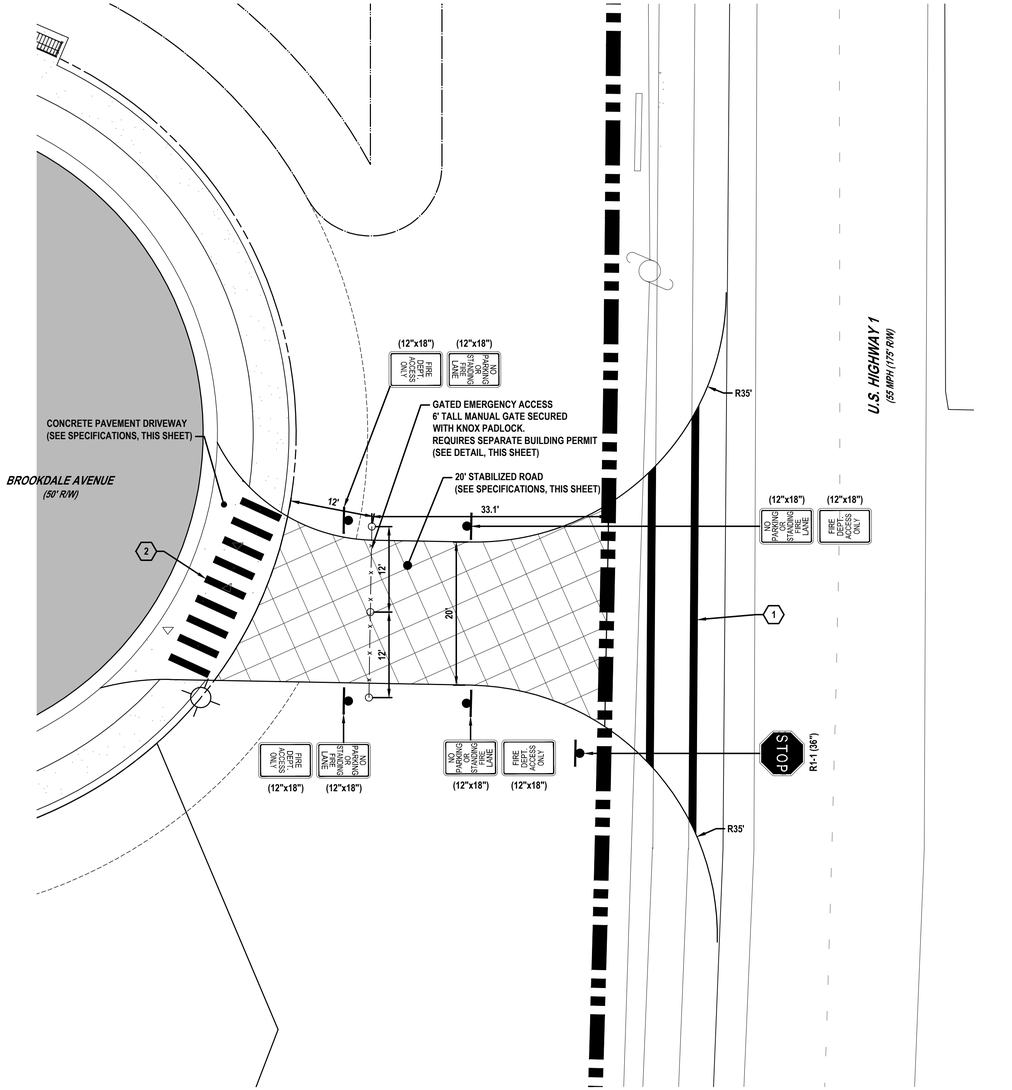
STRIPING KEYNOTES:

(PER FDOT INDEX No. 711-001, ONLY THERMOPLASTIC IN R/W)

1. STANDARD CROSSWALK
2. 24" DETECTABLE WARNING MAT (PER FDOT INDEX No. 522-002)

PAVING LEGEND

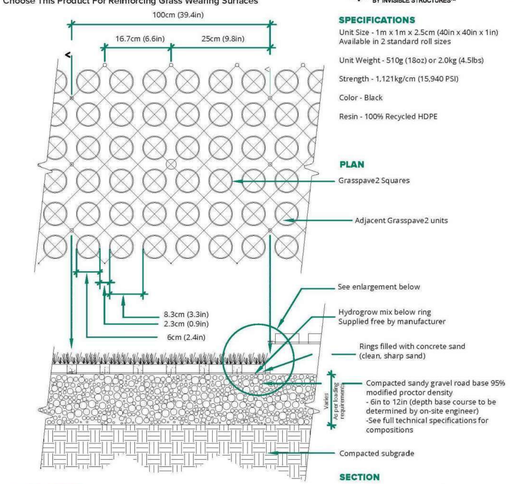
U.S. 1 ASPHALT PAVEMENT		1.5" FC-12.5 OPEN GRADED FRICTION COURSE (TL-C) 2" SP-12.5 TL-C ASPHALT (FDOT SPECS) 10" LIMEROCK BASE, LBR 100 12" STABILIZED SUB-GRADE (LBR 40)
ASPHALT PAVEMENT		1.5" SP-9.5 ASPHALT; MINIMUM MARSHALL FIELD STABILITY 1500, COMPACTED TO 98% DENSITY PER FM 1-T238 (METHOD B). 6" LIMEROCK OR CRUSHED CONCRETE BASE COMPACTED TO 98% MAXIMUM DENSITY, MINIMUM LBR 100. 12" STABILIZED SUBGRADE (LBR 40) COMPACTED TO A MINIMUM OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (AASHTO T-180)
CONCRETE PAVEMENT		6" CONCRETE (4,000 P.S.I. @ 28 DAYS) 12" STABILIZED SUBGRADE (LBR 40) MIN OF 98% MODIFIED PROCTOR MAX DRY DENSITY PER ASTM D1557, AASHTO T-180 (6" LIFTS) 12'x12' CONTROL JOINTS, 2" SAW CUT DEPTH SEE DETAIL R-19, SHEET No. C-77
STABILIZED GRASS FIRE ACCESS		GRASS PAVE 2 (SEE DETAIL, THIS SHEET) 12" COMPACTED SUBBASE MIN OF 98% MODIFIED PROCTOR MAX DENSITY PER AASHTO T-180



GRASSPAVE2 - UNIT DETAILS

Choose This Product For Reinforcing Grass Wearing Surfaces

GRASSPAVE2 BY INVISIBLE STRUCTURES™



SPECIFICATIONS

Unit Size - 1m x 1m x 2.5cm (40in x 40in x 1in)
Available in 2 standard roll sizes

Unit Weight - 510g (18oz) or 2.0kg (4.5lbs)

Strength - 1,121kg/cm (15,940 PSI)

Color - Black

Resin - 100% Recycled HDPE

PLAN

Grasspave2 Squares

Adjacent Grasspave2 units

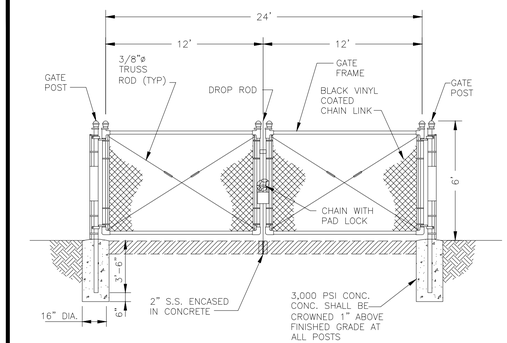
SECTION

Note: Grass/Plant types shall be specified by a landscape architect or landscape designer

NOT FOR SCALE

InvisibleStructures.com 303.233.8383

1 of 1



NOTES:

1. TRUSS RODS ARE REQUIRED FOR EACH GATE SECTION AND THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.
2. PROVIDE GATE KEEPERS.
3. ALL POSTS, FABRIC, HARDWARE TO BE BLACK VINYL COATED.
4. PIPE ENCASED IN CONCRETE SHALL BE INSTALLED IN ALL DIRT AND GRAVEL DRIVEWAYS. PIPE SHALL BE 3 FEET LONG, STAINLESS STEEL AND ENCASED IN A 12"ø SONATUBE 12" DEEP.

DOUBLE SWING GATE DETAIL

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
9/26/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

EMERGENCY ACCESS DETAIL PLAN

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

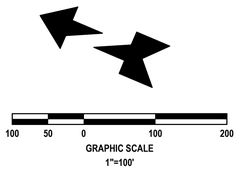
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 10'

DRAWING NUMBER

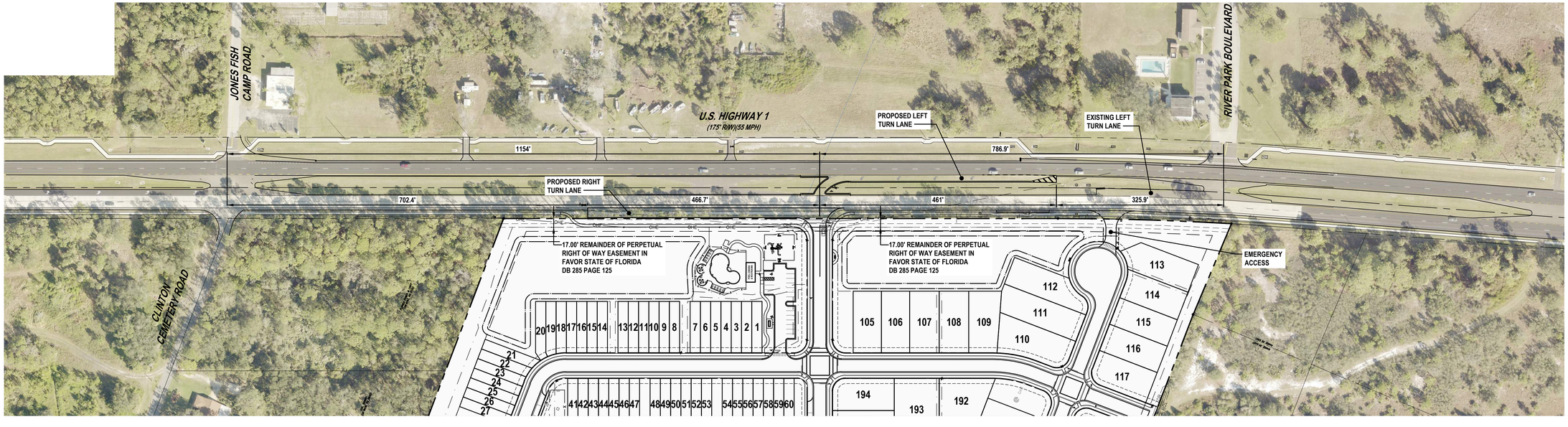
C-18.5



FDOT RIGHT-OF-WAY GENERAL NOTES:

1. ALL CONSTRUCTION IN THE FDOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST EDITIONS OF THE FDOT DESIGN PLANS [INDEXES], THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE FDOT UTILITY ACCOMMODATION MANUAL.
2. MAINTENANCE OF TRAFFIC TO BE SUPERVISED BY A CERTIFIED PERSON (ON SITE).
3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK WITH IN THE FDOT R/W.
4. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO REPAIR ANY DAMAGE TO FDOT FACILITIES CAUSED BY THE CONSTRUCTION OF THIS PROJECT.
5. ANY TEST RESULTS TAKEN DURING CONSTRUCTION OF THE PERMITTED WORK SHALL BE PROVIDED TO THE DEPARTMENT UPON REQUEST.
6. ALL CONCRETE TO BE REMOVED SHALL BE SAW CUT TO NEAREST JOINT IN GOOD CONDITION, SO A CONNECTION THAT IS FREE OF CRACKS, DEFORMITIES OR VOIDS & IRREGULARITIES ARE NOT DEFECTIVE.
7. ALL STRIPING WITHIN THE FDOT RIGHT-OF-WAY SHALL BE PREFORMED THERMOPLASTIC.
8. ALL CONCRETE SHALL BE AN APPROVED FDOT MIX DESIGN OF 3,000 PSI.
9. ALL MATERIALS INSTALLED INSIDE FDOT R/W SHALL BE ON THE QUALIFIED PRODUCTS LIST OR APPROVED PRODUCTS LIST.
10. ALL CONSTRUCTION SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
11. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC AND BARRICADE PLAN TO THE ENGINEER FOR APPROVAL WITH THE BID. INCLUDE THE MOT PLAN AT THE PRECONSTRUCTION MEETING.
12. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND THE FDOT INSPECTOR NOTIFIED FOR APPROVAL.
13. ALL BARRICADES AND POSTED SIGNAGE SHALL REMAIN IN PLACE UNTIL PAVING WORK IS COMPLETE. ALL BARRICADES SHALL BE VERIFIED IN PLACE BY THE CONTRACTOR AT THE END OF EACH WORK DAY.
14. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA.
15. THE CONTRACTOR SHALL ENSURE THAT ALL SIDEWALKS AND CROSSWALKS CONFORM TO THE CURRENT REQUIREMENTS OF THE AMERICANS WITH DISABILITY ACT (ADA).
16. ALL SIGNS AND PAVEMENT MARKINGS THAT ARE REMOVED OR DAMAGED BY CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE TO BE REPLACED TO THEIR PRECONSTRUCTION CONDITIONS.
17. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO FDOT STANDARD INDEX No. 711-001.
18. IN THE EVENT PERMANENT VEHICLE DETECTION IS DISRUPTED, PROVIDE AN ALTERNATIVE MEANS OF DETECTION TO ALL LANES APPROACHING THE INTERSECTION, SEPARATING EACH MOVEMENT WHICH PREVIOUSLY HAD DETECTION. THE TYPE OF DETECTOR SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. EQUIPMENT SHALL ONLY DETECT THE INTENDED MOVEMENT.
19. THERE SHALL BE NO WORK WITHIN THE VICINITY OF THE SIGNALIZED INTERSECTION DURING 7 A.M. TO 7 P.M. MONDAY TO SUNDAY.
20. CONTRACTOR TO PROVIDE TEMPORARY VIDEO DETECTION FOR SIGNAL WHILE LOOPS ARE DISTURBED DURING MILLING AND RESURFACING.
21. PERMITTEE/APPLICANT WILL BE FULLY RESPONSIBLE TO UPDATE/ADD/REMOVE ANY SIGNS OR PAVEMENT MARKINGS THAT NEED TO BE UPDATED/ADDED/REMOVED IN THE FIELD WITH THE PROPOSED CHANGES EVEN THE FDOT PERMIT IS NOT COMPREHENSIVE AND DO NOT COVER EVERY ONE OF THE CHANGES REQUIRED.
22. FDOT LANE CLOSURE RESTRICTIONS FOR SECTION 79010 MP:

STATE ROAD NO.		COUNTY	SECTION	SHEET
5		VOLUSIA	79010000	1 OF 4
	COUNT STATION	799929		4-lanes
8.821	TO M.P.	14.176	DATE	09/22/22
4:00 PM	TO	6:00 PM	DIRECTION	NORTHBOUND
7:00 AM	TO	9:00 AM	DIRECTION	SOUTHBOUND



REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
6/10/25	FDOT COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

OVERALL U.S. HIGHWAY 1 RIGHT-OF-WAY

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-19

LEGEND:

- PROPOSED SILT FENCE (PER FDOT EROSION AND SEDIMENT CONTROL MANUAL)
- CONSTRUCTION ENTRANCE
- VEGETATION AND UNSUITABLE SOIL REMOVAL
- SIDEWALK REMOVAL
- ASPHALT REMOVAL
- TEMPORARY ASPHALT CONSTRUCTION ENTRANCE

20 10 0 20 40
GRAPHIC SCALE
1"=20'

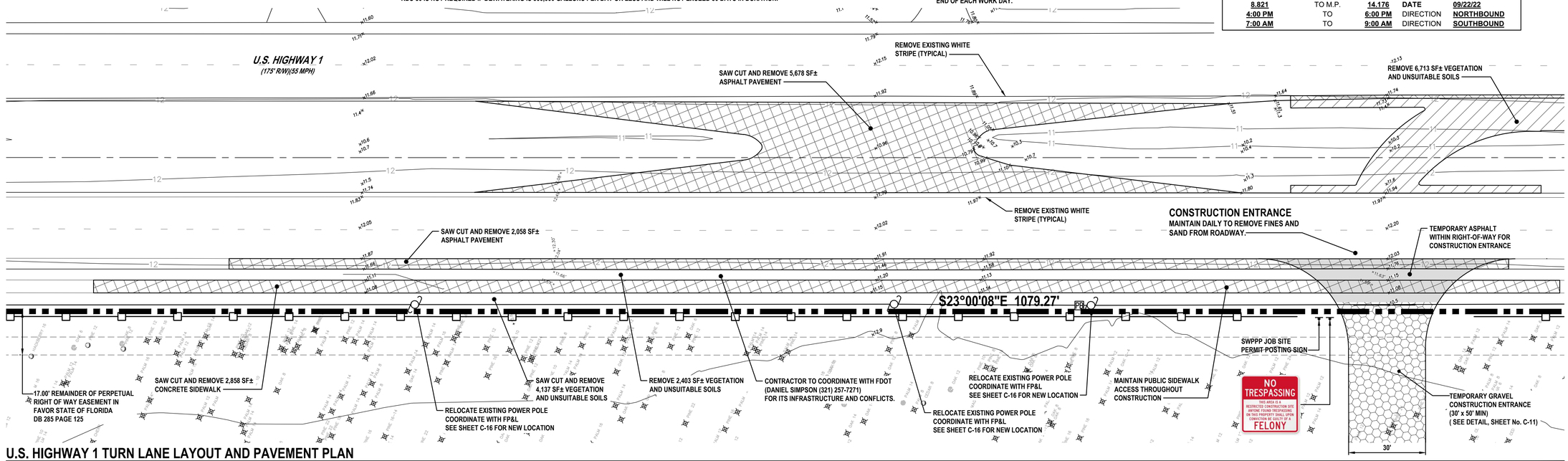
DEMOLITION AND SWPPP NOTES:

1. ALL EROSION CONTROL DEVICES AND VISIBLE BARRICADES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE START OF CLEARING AND GRUBBING.
2. THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AS SPECIFIED PRIOR TO START OF CONSTRUCTION.
3. THE SITE SHALL BE CLEARED AND GRUBBED OF ALL VEGETATION AND DEBRIS WITHIN THE APPROXIMATE LIMITS OF CLEARING AS INDICATED ON THE DRAWING.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE CITY OF OAK HILL UTILITY DEPARTMENT, FLORIDA SUNSHINE AND EMERGENCY SERVICES FOR RESPECTIVE UTILITY LOCATIONS AND "NOTICE" OF CONSTRUCTION ACTIVITY.
5. ALL REMOVED MATERIAL SHALL BE HAULED OFF-SITE TO AN APPROVED LANDFILL. TREES MAY BE LOGGED OR MULCHED FOR OFF-SITE DISPOSAL AT THE CONTRACTOR'S DISCRETION.
6. ALL EROSION CONTROL DEVICES SHALL BE PLACED PRIOR TO THE START OF WORK AND REMAIN IN PLACE UNTIL ALL WORK IS COMPLETE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PERIODIC INSPECTION AND REMOVAL OF DEBRIS AND SILT BEHIND EROSION CONTROL DEVICES..
8. ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY INLET PROTECTION MEASURES TO PREVENT SILTATION IN THE DRAINAGE SYSTEM (SEE DETAILS THIS DRAWING). THE ENTIRE DRAINAGE SYSTEM SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE.
9. ALL OFF-SITE AREAS DISTURBED DURING CONSTRUCTION ACTIVITY SHALL BE IMMEDIATELY RESTORED TO PRIOR CONDITION UPON COMPLETION OF WORK.
10. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION, BLOWING SAND AND THE IMPACT TO NEIGHBORING PROPERTIES.
11. THE CONTRACTOR SHALL PROVIDE THE ENGINEER, CITY A MOT PLAN AT PRECONSTRUCTION MEETING. TRAFFIC SHALL BE ALLOWED TO CONTINUE DURING WORK. PROVIDE MEASURES TO DETOUR TRAFFIC AROUND OPEN EXCAVATION WITH ADEQUATE BARRICADES, SIGNAGE AND FLAGPERSON TO DIRECT TRAFFIC. EMERGENCY SERVICES SHALL BE NOTIFIED 48 HOUR IN ADVANCE.
12. EXISTING DRIVEWAYS SHOWN ADJACENT TO OR OUTSIDE LIMITS OF CONSTRUCTION SHALL REMAIN IN-SERVICE. EXISTING UTILITIES AND DRIVEWAYS SHALL NOT BE REMOVED UNLESS OTHERWISE NOTED.
13. IF ANY DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION THEN DEWATERING ACTIVITY SHALL ADHERE TO CHAPTER 40C-22 FAC MORE SPECIFICALLY AS FOLLOWS. PER 40C-22.030(3) A "NOTICED GENERAL SHORT-TERM DEWATERING PERMIT" IS REQUIRED "ONLY IF" DEWATERING EXCEEDS 4 MILLION GALLONS PER DAY, EXCEPT DURING THE FIRST 120 HOURS OF DEWATERING WHEN THE DAILY AND INSTANTANEOUS PUMPAGE RATES SHALL NOT EXCEED 6 MILLION GALLONS PER DAY. AVERAGE DAILY WITHDRAWAL SHALL NOT EXCEED 2 MILLION GALLONS PER DAY FOR THE FIRST 60 DAYS OF THE DEWATERING ACTIVITY AND SHALL NOT EXCEED ONE MILLION GALLONS PER DAY OF A 180 DAY DURATION. EACH SPECIFIC DEWATERING PROJECT SHALL NOT EXCEED 180 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ANY DEWATERING ACTIVITY IS BELOW THE SPECIFIED THRESHOLD. OTHERWISE A PERMIT WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE ITSELF WITH CHAPTER 40C-22 FAC AND BE SOLELY RESPONSIBLE FOR OBTAINING AND SUBMITTING FORM RDS-50 TO SJRWMD A MINIMUM OF 10 DAYS PRIOR TO ANY DEWATERING ACTIVITY. SUBMITTAL OF FORM RDS-50 IS NOT REQUIRED IF DEWATERING IS 300,000 GALLONS PER DAY OR LESS AND WILL NOT EXCEED 30 DAYS IN DURATION.

FDOT GENERAL NOTES:

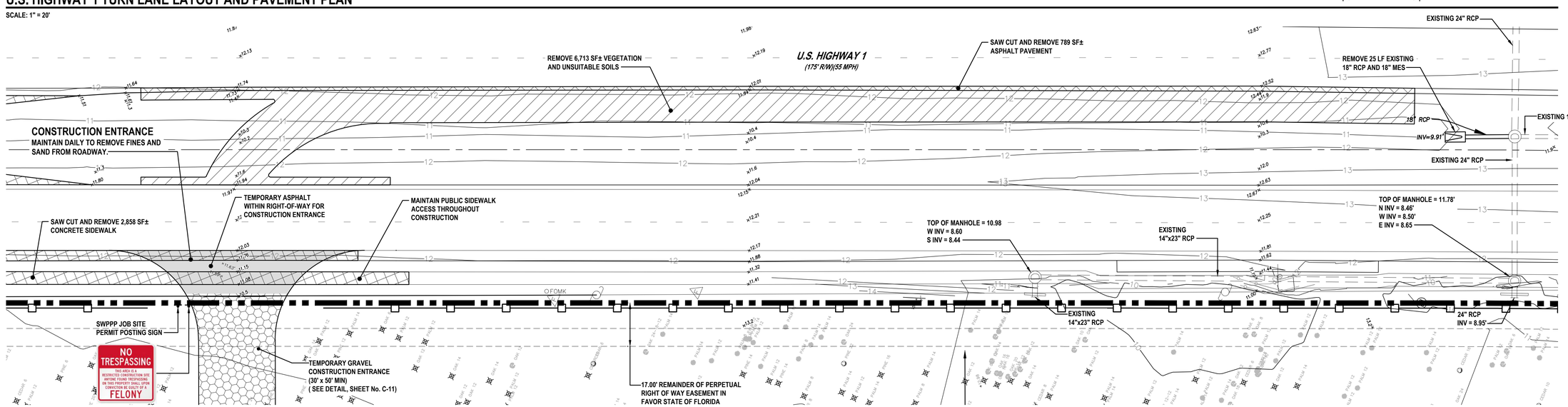
1. ALL CONSTRUCTION IN THE FDOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST EDITIONS OF THE FDOT DESIGN PLANS (INDEXES), THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE FDOT UTILITY ACCOMMODATION MANUAL.
2. MAINTENANCE OF TRAFFIC TO BE SUPERVISED BY A CERTIFIED PERSON (ON SITE).
3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK WITH IN THE FDOT R/W.
4. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO REPAIR ANY DAMAGE TO FDOT FACILITIES CAUSED BY THE CONSTRUCTION OF THIS PROJECT.
5. ANY TEST RESULTS TAKEN DURING CONSTRUCTION OF THE PERMITTED WORK SHALL BE PROVIDED TO THE DEPARTMENT UPON REQUEST.
6. ALL CONCRETE TO BE REMOVED SHALL BE SAW CUT TO NEAREST JOINT IN GOOD CONDITION, SO A CONNECTION THAT IS FREE OF CRACKS, DEFORMITIES OR VOIDS & IRREGULARITIES ARE NOT DEFECTIVE.
7. ALL STRIPING WITHIN THE FDOT RIGHT-OF-WAY SHALL BE PREFORMED THERMOPLASTIC.
8. ALL CONCRETE SHALL BE AN APPROVED FDOT MIX DESIGN OF 3,000 PSI.
9. ALL MATERIALS INSTALLED INSIDE FDOT R/W SHALL BE ON THE QUALIFIED PRODUCTS LIST OR APPROVED PRODUCTS LIST.
10. ALL CONSTRUCTION SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
11. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC AND BARRICADE PLAN TO THE ENGINEER FOR APPROVAL WITH THE BID. INCLUDE THE MOT PLAN AT THE PRECONSTRUCTION MEETING.
12. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND THE FDOT INSPECTOR NOTIFIED FOR APPROVAL.
13. ALL BARRICADES AND POSTED SIGNAGE SHALL REMAIN IN PLACE UNTIL PAVING WORK IS COMPLETE. ALL BARRICADES SHALL BE VERIFIED IN PLACE BY THE CONTRACTOR AT THE END OF EACH WORK DAY.
14. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA.
15. THE CONTRACTOR SHALL ENSURE THAT ALL SIDEWALKS AND CROSSWALKS CONFORM TO THE CURRENT REQUIREMENTS OF THE AMERICANS WITH DISABILITY ACT (ADA).
16. ALL SIGNS AND PAVEMENT MARKINGS THAT ARE REMOVED OR DAMAGED BY CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE TO BE REPLACED TO THEIR PRECONSTRUCTION CONDITIONS.
17. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO FDOT STANDARD INDEX No. 711-001.
18. IN THE EVENT PERMANENT VEHICLE DETECTION IS DISRUPTED, PROVIDE AN ALTERNATIVE MEANS OF DETECTION TO ALL LANES APPROACHING THE INTERSECTION, SEPARATING EACH MOVEMENT WHICH PREVIOUSLY HAD DETECTION. THE TYPE OF DETECTOR SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. EQUIPMENT SHALL ONLY DETECT THE INTENDED MOVEMENT.
19. THERE SHALL BE NO WORK WITHIN THE VICINITY OF THE SIGNALIZED INTERSECTION DURING 7 A.M. TO 7 P.M. MONDAY TO SUNDAY.
20. CONTRACTOR TO PROVIDE TEMPORARY VIDEO DETECTION FOR SIGNAL WHILE LOOPS ARE DISTURBED DURING MILLING AND RESURFACING.
21. PERMITTEE/APPLICANT WILL BE FULLY RESPONSIBLE TO UPDATE/ADD/REMOVE ANY SIGNS OR PAVEMENT MARKINGS THAT NEED TO BE UPDATED/ADDED/REMOVED IN THE FIELD WITH THE PROPOSED CHANGES EVEN THE FDOT PERMIT IS NOT COMPREHENSIVE AND DO NOT COVER EVERY ONE OF THE CHANGES REQUIRED.
22. FDOT LANE CLOSURE RESTRICTIONS FOR SECTION 79010 MP:

STATE ROAD NO.		COUNTY	SECTION	SHEET
5		VOLUSIA	79010000	1 OF 4
	COUNT STATION	799929		4-lanes
8.821	TO M.P.	14.176	DATE	09/22/22
4:00 PM	TO	6:00 PM	DIRECTION	NORTHBOUND
7:00 AM	TO	9:00 AM	DIRECTION	SOUTHBOUND



U.S. HIGHWAY 1 TURN LANE LAYOUT AND PAVEMENT PLAN

SCALE: 1" = 20'



U.S. HIGHWAY 1 TURN LANE STRIPING AND SIGNAGE PLAN

SCALE: 1" = 20'

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
6/10/25	FDOT COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

U.S. HIGHWAY 1 RIGHT-OF-WAY DEMOLITION AND SWPPP PLAN

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

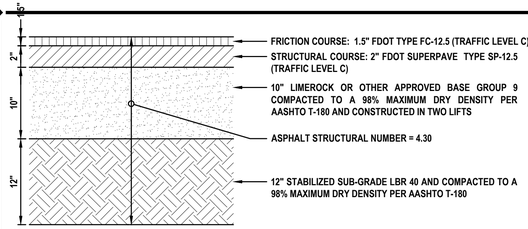
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 20'

DRAWING NUMBER

C-20



NOTE:
ALL ASPHALT MIX DESIGNS MUST BE PREAPPROVED BY FDOT BEFORE PLACEMENT.

FDOT ASPHALT SECTION

NOT TO SCALE

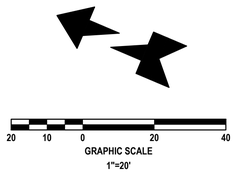
LEGEND

- MIAMI CURB
- TYPE "F" CURB
- TYPE "E" CURB
- SITE LIGHT POLES

PAVING LEGEND U.S. HIGHWAY 1

U.S. 1 ASPHALT PAVEMENT (TURN LANE) (SN = 4.30) — 1.5" FC-12.5 OPEN GRADED FRICTION COURSE (TL-C)
2" SP-12.5 TL-C ASPHALT (FDOT SPECS)
10" LIMEROCK BASE, LBR 100
12" STABILIZED SUB-GRADE (LBR 40)

CONCRETE SIDEWALK — CONCRETE SIDEWALK PER FDOT INDEX No. 522-001 (SEE DETAILS, SHEET C-78 & C-79)



STRIPING KEYNOTES: (PER FDOT INDEX No. 711-001, ONLY THERMOPLASTIC IN R/W)

1. 6" SOLID WHITE LINE
2. 24" WHITE STOP BAR
3. WHITE DIRECTIONAL ARROW
4. STANDARD CROSSWALK
5. 6" WHITE SKIP LINE (2' - 4')
6. 18" WHITE LINE @ 45° SPACED 10' ON CENTER
7. 24" DETECTABLE WARNING MAT (PER FDOT INDEX No. 522-002)
8. 6" SOLID DOUBLE YELLOW LINE
9. 6" SOLID YELLOW LINE
10. WHITE DIRECTIONAL ARROW, WHITE HELMETED BICYCLIST SYMBOL PER FDOT INDEX No. 711-002
11. 18" YELLOW LINE @ 45° SPACED 10' ON CENTER

SEE SHEET No. 64 FOR FDOT INDEX No. 711-001

NOTE:
1. RPM'S SHALL BE PROVIDED FOR ALL CONSTRUCTION WITH PUBLIC RIGHTS-OF-WAY OF ALL THOROUGHFARES AND SHALL BE INSTALLED IN ACCORDANCE WITH FDOT STANDARD INDEX No. 706-001.
2. ALL STRIPING WITHIN PUBLIC RIGHT OF WAY SHALL BE THERMOPLASTIC AND INSTALLED IN ACCORDANCE TO FDOT INDEX No. 711-001.

FDOT RIGHT-OF-WAY GENERAL NOTES:

1. ALL CONSTRUCTION IN THE FDOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST EDITIONS OF THE FDOT DESIGN PLANS [INDEXES], THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE FDOT UTILITY ACCOMMODATION MANUAL.
2. MAINTENANCE OF TRAFFIC TO BE SUPERVISED BY A CERTIFIED PERSON (ON SITE).
3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK WITH IN THE FDOT R/W.
4. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO REPAIR ANY DAMAGE TO FDOT FACILITIES CAUSED BY THE CONSTRUCTION OF THIS PROJECT.
5. ANY TEST RESULTS TAKEN DURING CONSTRUCTION OF THE PERMITTED WORK SHALL BE PROVIDED TO THE DEPARTMENT UPON REQUEST.
6. ALL CONCRETE TO BE REMOVED SHALL BE SAW CUT TO NEAREST JOINT IN GOOD CONDITION, SO A CONNECTION THAT IS FREE OF CRACKS, DEFORMITIES OR VOIDS & IRREGULARITIES ARE NOT DEFECTIVE.
7. ALL STRIPING WITHIN THE FDOT RIGHT-OF-WAY SHALL BE PREFORMED THERMOPLASTIC.
8. ALL CONCRETE SHALL BE AN APPROVED FDOT MIX DESIGN OF 3,000 PSI.
9. ALL MATERIALS INSTALLED INSIDE FDOT R/W SHALL BE ON THE QUALIFIED PRODUCTS LIST OR APPROVED PRODUCTS LIST.
10. ALL CONSTRUCTION SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
11. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC AND BARRICADE PLAN TO THE ENGINEER FOR APPROVAL WITH THE BID. INCLUDE THE MOT PLAN AT THE PRECONSTRUCTION MEETING.
12. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND THE FDOT INSPECTOR NOTIFIED FOR APPROVAL.
13. ALL BARRICADES AND POSTED SIGNAGE SHALL REMAIN IN PLACE UNTIL PAVING WORK IS COMPLETE. ALL BARRICADES SHALL BE VERIFIED IN PLACE BY THE CONTRACTOR AT THE END OF EACH WORK DAY.
14. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA.
15. THE CONTRACTOR SHALL ENSURE THAT ALL SIDEWALKS AND CROSSWALKS CONFORM TO THE CURRENT REQUIREMENTS OF THE AMERICANS WITH DISABILITY ACT (ADA).
16. ALL SIGNS AND PAVEMENT MARKINGS THAT ARE REMOVED OR DAMAGED BY CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE TO BE REPLACED TO THEIR PRECONSTRUCTION CONDITIONS.
17. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO FDOT STANDARD INDEX No. 711-001.
18. IN THE EVENT PERMANENT VEHICLE DETECTION IS DISRUPTED, PROVIDE AN ALTERNATIVE MEANS OF DETECTION TO ALL LANES APPROACHING THE INTERSECTION, SEPARATING EACH MOVEMENT WHICH PREVIOUSLY HAD DETECTION. THE TYPE OF DETECTOR SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. EQUIPMENT SHALL ONLY DETECT THE INTENDED MOVEMENT.
19. THERE SHALL BE NO WORK WITHIN THE VICINITY OF THE SIGNALIZED INTERSECTION DURING 7 A.M. TO 7 P.M. MONDAY TO SUNDAY.
20. CONTRACTOR TO PROVIDE TEMPORARY VIDEO DETECTION FOR SIGNAL WHILE LOOPS ARE DISTURBED DURING MILLING AND RESURFACING.
21. PERMITTEE/APPLICANT WILL BE FULLY RESPONSIBLE TO UPDATE/ADD/REMOVE ANY SIGNS OR PAVEMENT MARKINGS THAT NEED TO BE UPDATED/ADDED/REMOVED IN THE FIELD WITH THE PROPOSED CHANGES EVEN THE FDOT PERMIT IS NOT COMPREHENSIVE AND DO NOT COVER EVERY ONE OF THE CHANGES REQUIRED.
22. FDOT LANE CLOSURE RESTRICTIONS FOR SECTION 79010 MP:

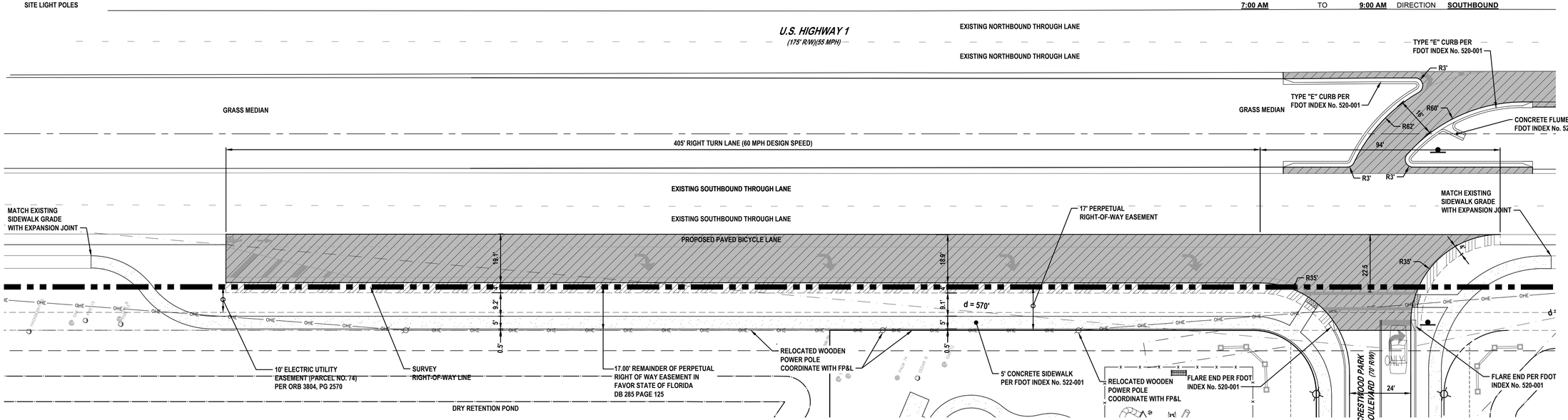
STATE ROAD NO.	COUNTY	SECTION	SHEET
5	VOLUSIA	79010000	1 OF 4

COUNT STATION 799929 — 4-lanes

8.821 TO M.P. 14.176 — DATE 09/22/22

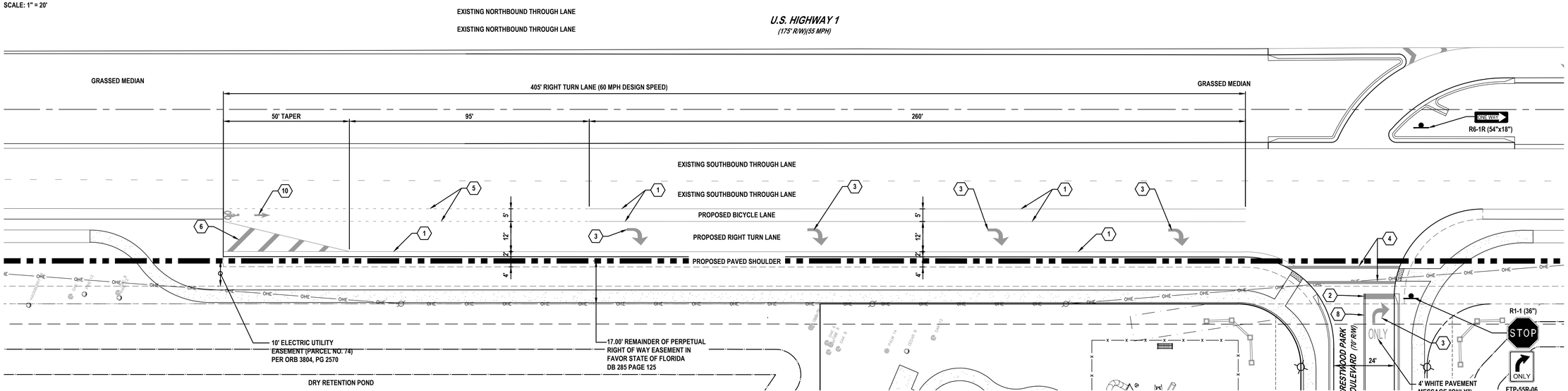
4:00 PM TO 6:00 PM — DIRECTION NORTHBOUND

7:00 AM TO 9:00 AM — DIRECTION SOUTHBOUND



U.S. HIGHWAY 1 TURN LANE LAYOUT AND PAVEMENT PLAN

SCALE: 1" = 20'



U.S. HIGHWAY 1 TURN LANE STRIPING AND SIGNAGE PLAN

SCALE: 1" = 20'

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
6/10/25	FDOT COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

U.S. HIGHWAY 1 RIGHT-OF-WAY IMPROVEMENTS

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

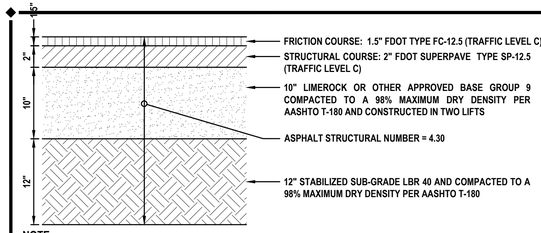
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 20'

DRAWING NUMBER

C-21



NOTE:
ALL ASPHALT MIX DESIGNS MUST BE PREAPPROVED BY FDOT BEFORE PLACEMENT.

FDOT ASPHALT SECTION

NOT TO SCALE

LEGEND

- MIAMI CURB
- TYPE "F" CURB
- TYPE "E" CURB
- SITE LIGHT POLES

PAVING LEGEND U.S. HIGHWAY 1

U.S. 1 ASPHALT PAVEMENT (TURN LANE) (SN = 4.30)	1.5" FC-12.5 OPEN GRADED FRICTION COURSE (TL-C) 2" SP-12.5 TL-C ASPHALT (FDOT SPECS) 10" LIMEROCK BASE, LBR 100 12" STABILIZED SUB-GRADE (LBR 40)
CONCRETE SIDEWALK	CONCRETE SIDEWALK PER FDOT INDEX No. 522-001 (SEE DETAILS, SHEET C-78 & C-79)

GRAPHIC SCALE
20 10 0 20 40
1"=20'

STRIPING KEYNOTES: (PER FDOT INDEX No. 711-001, ONLY THERMOPLASTIC IN R/W)

1. 6" SOLID WHITE LINE
2. 24" WHITE STOP BAR
3. WHITE DIRECTIONAL ARROW
4. STANDARD CROSSWALK
5. 6" WHITE SKIP LINE (2' - 4')
6. 18" WHITE LINE @ 45° SPACED 10' ON CENTER
7. 24" DETECTABLE WARNING MAT (PER FDOT INDEX No. 522-002)
8. 6" SOLID DOUBLE YELLOW LINE
9. 6" SOLID YELLOW LINE
10. WHITE DIRECTIONAL ARROW, WHITE HELMETED BICYCLIST SYMBOL PER FDOT INDEX No. 711-002
11. 18" YELLOW LINE @ 45° SPACED 10' ON CENTER

SEE SHEET No. 64 FOR FDOT INDEX No. 711-001

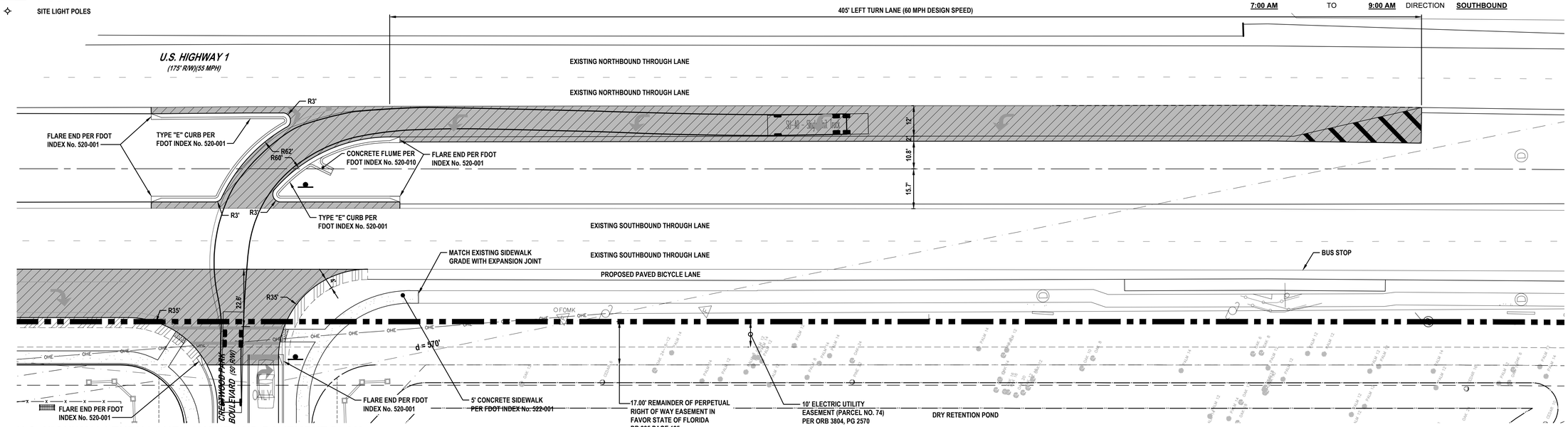
NOTE:
1. RPM'S SHALL BE PROVIDED FOR ALL CONSTRUCTION WITH PUBLIC RIGHTS-OF-WAY OF ALL THOROUGHFARES AND SHALL BE INSTALLED IN ACCORDANCE WITH FDOT STANDARD INDEX No. 706-001.
2. ALL STRIPING WITHIN PUBLIC RIGHT OF WAY SHALL BE THERMOPLASTIC AND INSTALLED IN ACCORDANCE TO FDOT INDEX No. 711-001.

FDOT RIGHT-OF-WAY GENERAL NOTES:

1. ALL CONSTRUCTION IN THE FDOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST EDITIONS OF THE FDOT DESIGN PLANS [INDEXES], THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE FDOT UTILITY ACCOMMODATION MANUAL.
2. MAINTENANCE OF TRAFFIC TO BE SUPERVISED BY A CERTIFIED PERSON (ON SITE).
3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK WITH IN THE FDOT R/W.
4. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO REPAIR ANY DAMAGE TO FDOT FACILITIES CAUSED BY THE CONSTRUCTION OF THIS PROJECT.
5. ANY TEST RESULTS TAKEN DURING CONSTRUCTION OF THE PERMITTED WORK SHALL BE PROVIDED TO THE DEPARTMENT UPON REQUEST.
6. ALL CONCRETE TO BE REMOVED SHALL BE SAW CUT TO NEAREST JOINT IN GOOD CONDITION, SO A CONNECTION THAT IS FREE OF CRACKS, DEFORMITIES OR VOIDS & IRREGULARITIES ARE NOT DEFECTIVE.
7. ALL STRIPING WITHIN THE FDOT RIGHT-OF-WAY SHALL BE PREFORMED THERMOPLASTIC.
8. ALL CONCRETE SHALL BE AN APPROVED FDOT MIX DESIGN OF 3,000 PSI.
9. ALL MATERIALS INSTALLED INSIDE FDOT R/W SHALL BE ON THE QUALIFIED PRODUCTS LIST OR APPROVED PRODUCTS LIST.
10. ALL CONSTRUCTION SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
11. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC AND BARRICADE PLAN TO THE ENGINEER FOR APPROVAL WITH THE BID. INCLUDE THE MOT PLAN AT THE PRECONSTRUCTION MEETING.
12. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND THE FDOT INSPECTOR NOTIFIED FOR APPROVAL.
13. ALL BARRICADES AND POSTED SIGNAGE SHALL REMAIN IN PLACE UNTIL PAVING WORK IS COMPLETE. ALL BARRICADES SHALL BE VERIFIED IN PLACE BY THE CONTRACTOR AT THE END OF EACH WORK DAY.
14. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA.
15. THE CONTRACTOR SHALL ENSURE THAT ALL SIDEWALKS AND CROSSWALKS CONFORM TO THE CURRENT REQUIREMENTS OF THE AMERICANS WITH DISABILITY ACT (ADA).
16. ALL SIGNS AND PAVEMENT MARKINGS THAT ARE REMOVED OR DAMAGED BY CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE TO BE REPLACED TO THEIR PRECONSTRUCTION CONDITIONS.
17. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO FDOT STANDARD INDEX No. 711-001.
18. IN THE EVENT PERMANENT VEHICLE DETECTION IS DISRUPTED, PROVIDE AN ALTERNATIVE MEANS OF DETECTION TO ALL LANES APPROACHING THE INTERSECTION, SEPARATING EACH MOVEMENT WHICH PREVIOUSLY HAD DETECTION. THE TYPE OF DETECTOR SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. EQUIPMENT SHALL ONLY DETECT THE INTENDED MOVEMENTS.
19. THERE SHALL BE NO WORK WITHIN THE VICINITY OF THE SIGNALIZED INTERSECTION DURING 7 A.M. TO 7 P.M. MONDAY TO SUNDAY.
20. CONTRACTOR TO PROVIDE TEMPORARY VIDEO DETECTION FOR SIGNAL WHILE LOOPS ARE DISTURBED DURING MILLING AND RESURFACING.
21. PERMITTEE/APPLICANT WILL BE FULLY RESPONSIBLE TO UPDATE/ADD/REMOVE ANY SIGNS OR PAVEMENT MARKINGS THAT NEED TO BE UPDATED/ADDED/REMOVED IN THE FIELD WITH THE PROPOSED CHANGES EVEN THE FDOT PERMIT IS NOT COMPREHENSIVE AND DO NOT COVER EVERY ONE OF THE CHANGES REQUIRED.
22. FDOT LANE CLOSURE RESTRICTIONS FOR SECTION 79010 ARE:

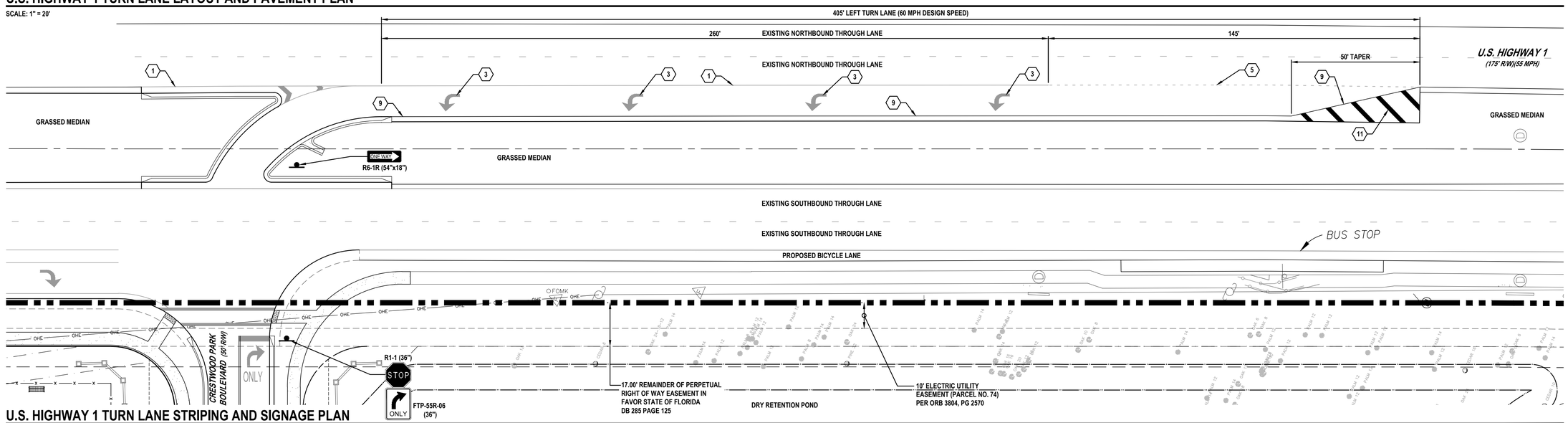
STATE ROAD NO.	COUNTY	SECTION	SHEET
5	VOLUSIA	79010000	1 OF 4

	COUNT STATION	799929		4-lanes
8.821	TO M.P.	14.176	DATE	09/22/22
4:00 PM	TO	6:00 PM	DIRECTION	NORTHBOUND
7:00 AM	TO	9:00 AM	DIRECTION	SOUTHBOUND



U.S. HIGHWAY 1 TURN LANE LAYOUT AND PAVEMENT PLAN

SCALE: 1" = 20'



U.S. HIGHWAY 1 TURN LANE STRIPING AND SIGNAGE PLAN

SCALE: 1" = 20'

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
6/10/25	FDOT COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

U.S. HIGHWAY 1 RIGHT-OF-WAY IMPROVEMENTS

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

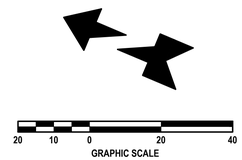
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

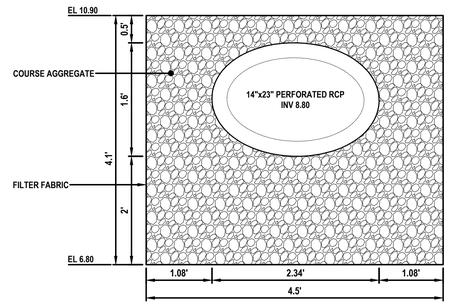
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 20'

DRAWING NUMBER

C-22





SPECIFICATIONS

1. COURSE AGGREGATE: No. 4 COURSE AGGREGATE
2. FILTER FABRIC (D-3): US FABRICS, US 670

EXFILTRATION TRENCH DETAIL

NOT TO SCALE

STORMWATER LEGEND

- PROPOSED TYPE "E" INLET
- PROPOSED TYPE "S" CURB INLET
- PROPOSED TYPE "6" CURB INLET
- PROPOSED MITERED END SECTION
- PROPOSED STORM PIPE (24STM)

BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA

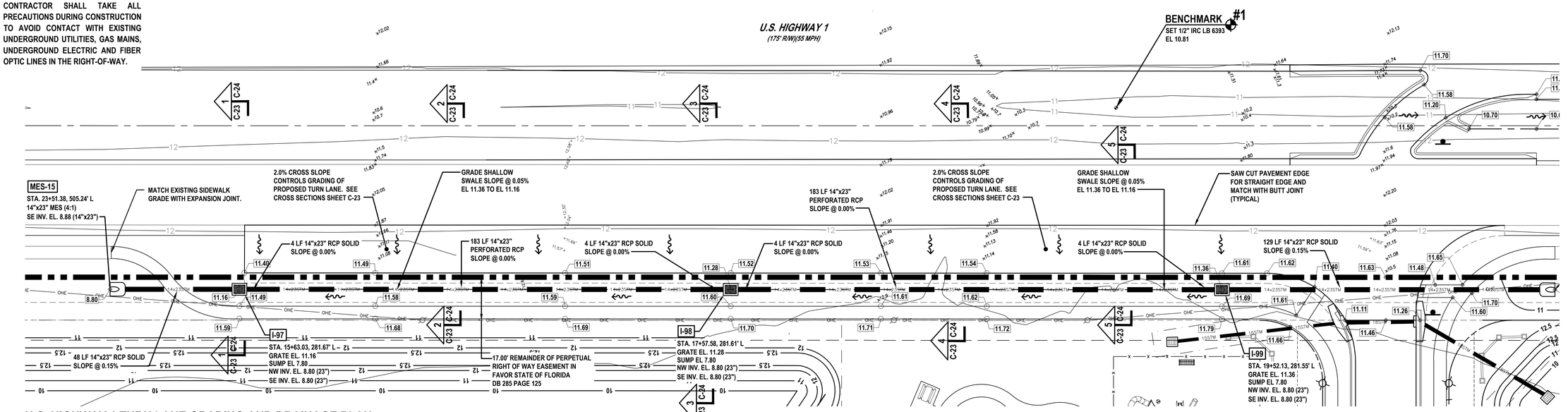
ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE 'T 211', ELEVATION = 16.93 FEET.

GRADING LEGEND

- × 22.8 — EXISTING SPOT ELEVATION
- 25.00 — PROPOSED SPOT ELEVATION
- 25 — PROPOSED CONTOUR
- DRAINAGE FLOW ARROW
- SILT FENCE

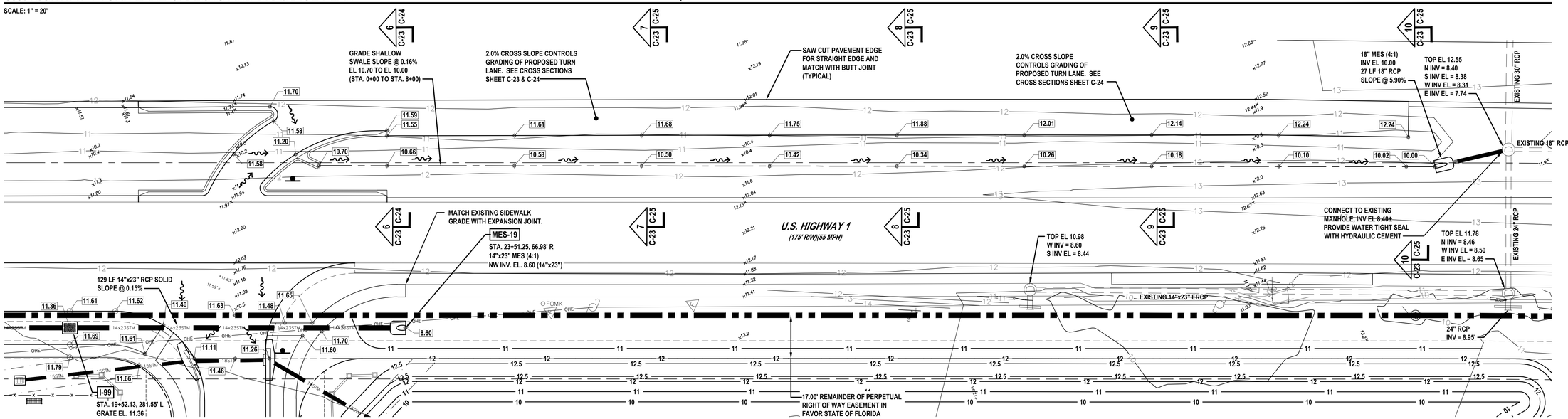
WARNING !!

CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES, GAS MAINS, UNDERGROUND ELECTRIC AND FIBER OPTIC LINES IN THE RIGHT-OF-WAY.



U.S. HIGHWAY 1 TURN LANE GRADING AND DRAINAGE PLAN

SCALE: 1" = 20'



U.S. HIGHWAY 1 TURN LANE GRADING AND DRAINAGE PLAN

SCALE: 1" = 20'

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
6/10/25	FDOT COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

U.S. 1 RIGHT-OF-WAY GRADING AND DRAINAGE PLAN

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

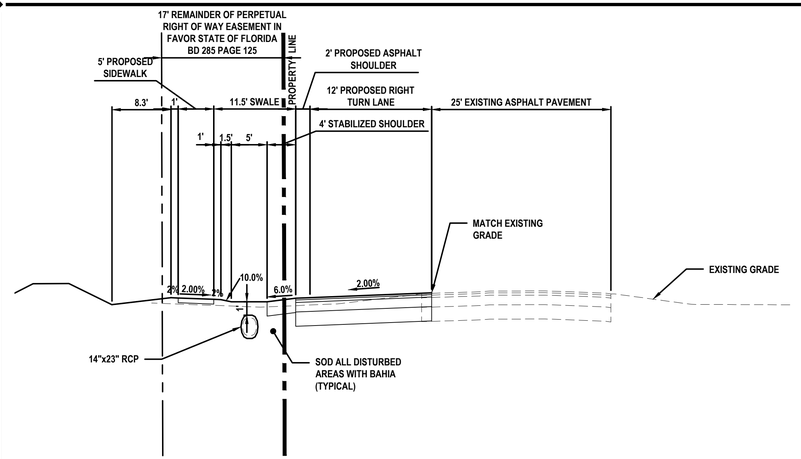
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 20'

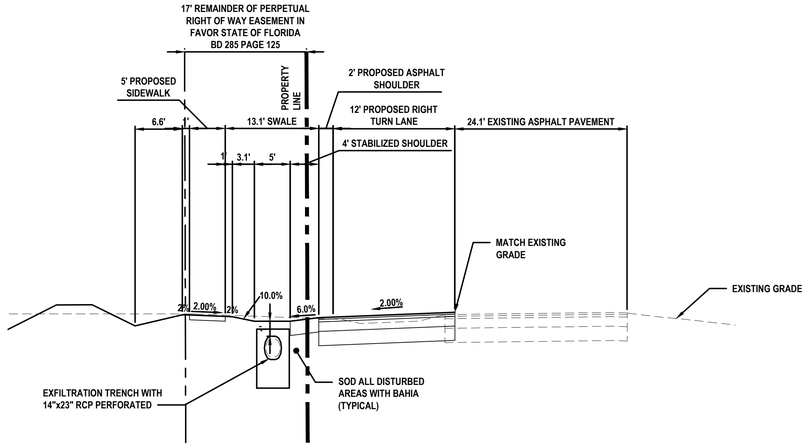
DRAWING NUMBER

C-23



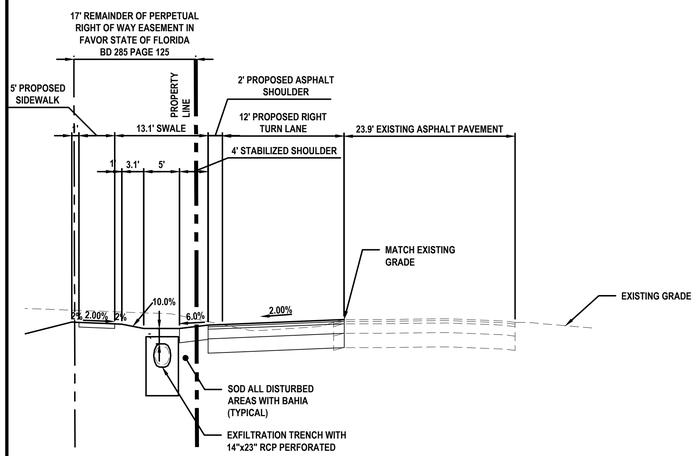
SECTION 1

NOT TO SCALE



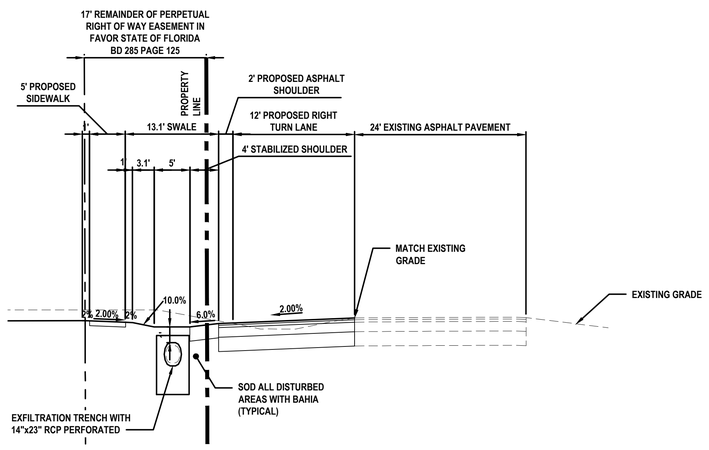
SECTION 2

NOT TO SCALE



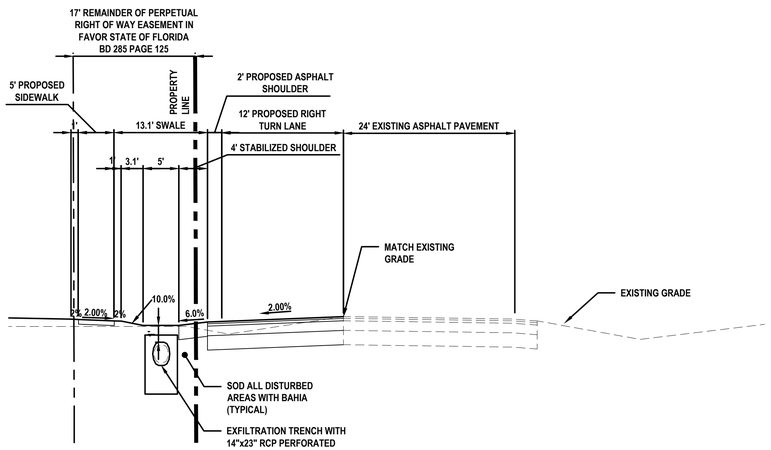
SECTION 3

NOT TO SCALE



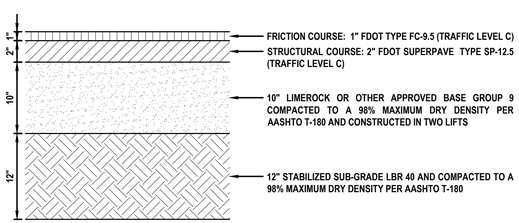
SECTION 4

NOT TO SCALE



SECTION 5

NOT TO SCALE



NOTE:
ALL ASPHALT MIX DESIGNS MUST BE PREAPPROVED BY FDOT BEFORE PLACEMENT.

FDOT ASPHALT SECTION

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
6/10/25	FDOT COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

U.S. 1 RIGHT TURN LANE
CROSS SECTIONS
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2023 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

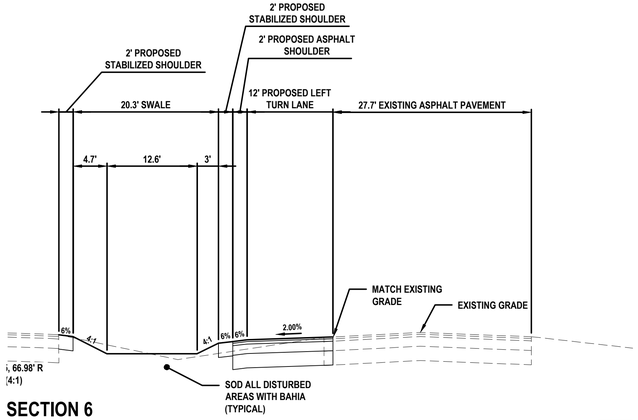
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	NOT TO SCALE

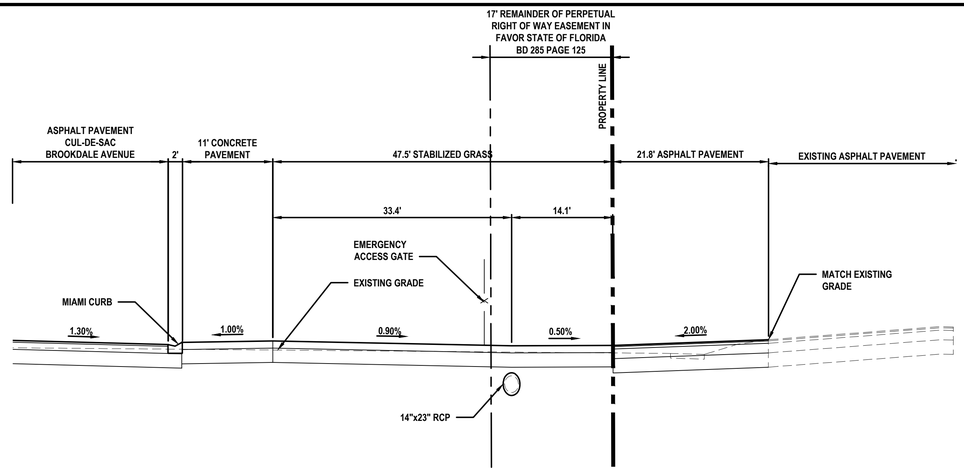
DRAWING NUMBER

C-24



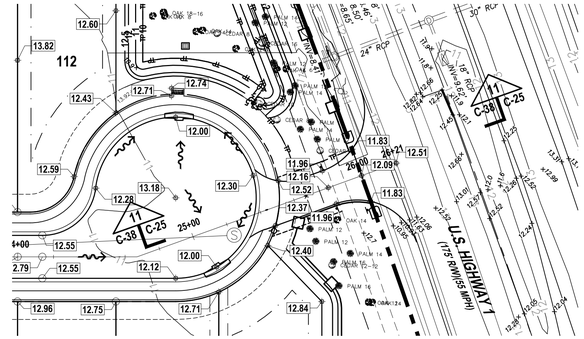
SECTION 6

NOT TO SCALE



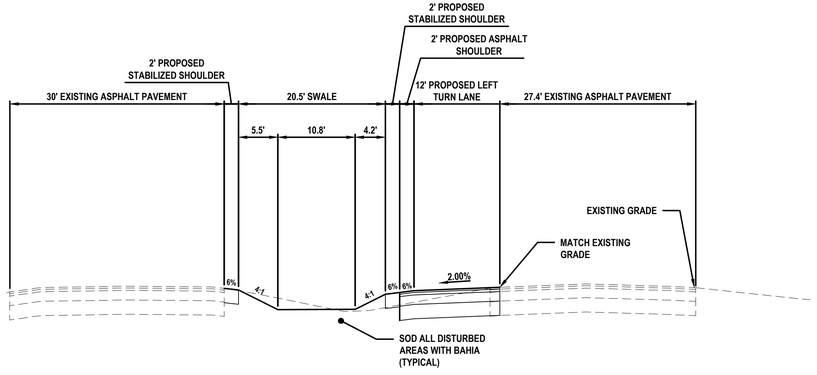
SECTION ACCESS ROAD (SECTION 11)

NOT TO SCALE



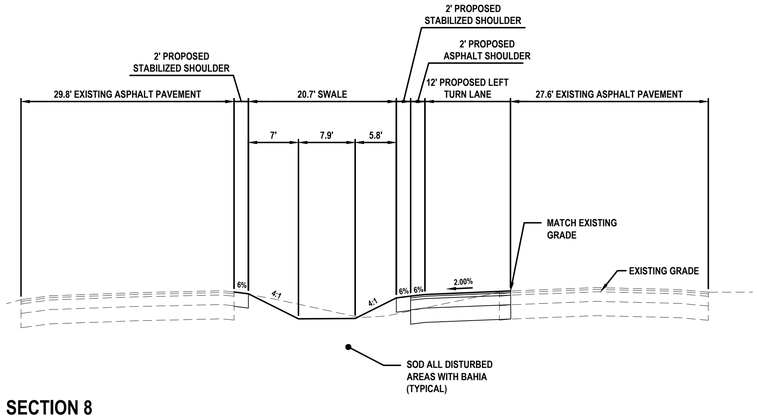
GRADING PLAN (SEE GRADING PLAN SHEET C-38)

NOT TO SCALE



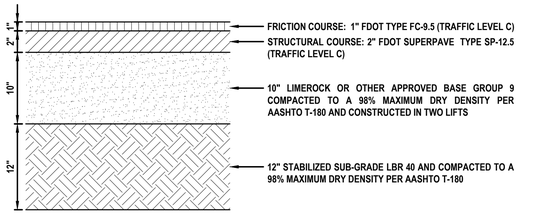
SECTION 7

NOT TO SCALE



SECTION 8

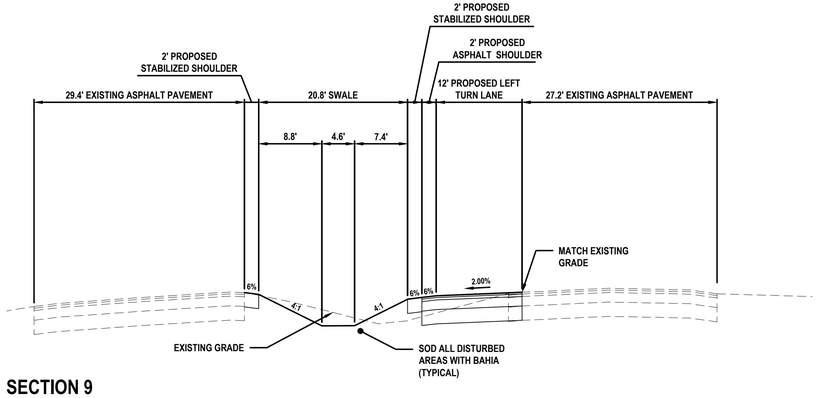
NOT TO SCALE



NOTE:
ALL ASPHALT MIX DESIGNS MUST BE PREAPPROVED BY FDOT BEFORE PLACEMENT.

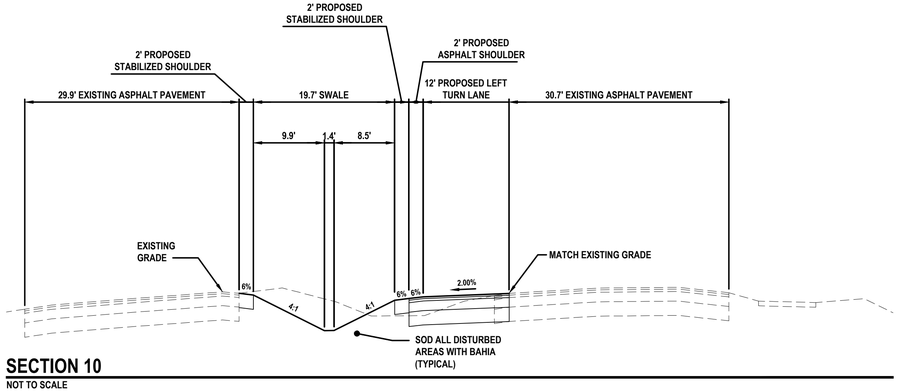
FDOT ASPHALT SECTION

NOT TO SCALE



SECTION 9

NOT TO SCALE



SECTION 10

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
6/10/25	FDOT COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

U.S. 1 LEFT TURN LANE CROSS SECTIONS

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	NOT TO SCALE

DRAWING NUMBER

C-25

100 50 0 100 200

GRAPHIC SCALE

1"=100'

One Nation... One Number... 811 Know what's below. Call before you dig.

WARNING !!

CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

DRAINAGE PIPE MINIMUM SLOPE REQUIREMENTS

PIPE SIZE (IN)	SELF-CLEANSING VELOCITY (FPS)	MANNINGS (N)	RADIUS (FT)	CROSS-SECTIONAL AREA (FT)	WETTED PERIMETER	MINIMUM SLOPE (FT / 100 FT)
18	3.0	0.012	0.75	1.767	FULL & ¾ FULL	0.0022
24	3.0	0.012	1.00	3.142	FULL & ¾ FULL	0.0015
30	3.0	0.012	1.3	4.90859	7.8538	0.0011
36	3.0	0.012	1.5	7.06838	9.4245	0.0009
42	3.0	0.012	1.75	9.62113	10.996	0.0008
48	3.0	0.012	2.00	12.56637	12.566	0.0007

DRAINAGE PIPE NOTES:

1. ALL ON SITE DRAINAGE PIPES SHALL BE RCP OR HDPE INSTALLED PER FDOT SPECIFICATIONS (PLANS SHOW AS RCP).
2. ALL DRAINAGE PIPES WITHIN RIGHT-OF-WAY ARE REQUIRED TO BE RCP INSTALLED PER FDOT SPECIFICATIONS. NO SUBSTITUTES ALLOWED.

STORMWATER MANAGEMENT NOTES:

THE STORMWATER MANAGEMENT SYSTEM WILL BE DESIGNED PER CITY OF EDGEWATER LAND DEVELOPMENT CODE, ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD), FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) AND FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) REQUIREMENTS.

SUMMARY OF DRAINAGE:

THE MINIMUM WATER QUALITY TREATMENT VOLUME REQUIRED IS EQUAL TO THE GREATER OF:

1. SJRWMD PRESUMPTIVE REQUIRED TREATMENT VOLUME FOR OFW (i.e. INDIAN RIVER NORTH) FOR PRE-TREATED WET DETENTION SYSTEMS BY WAY OF DRY RETENTION (SECTION 8 SUBSECTIONS 1 THRU 13, ERP A.H. VOL II).
2. BMP TRAINS NUTRIENT REMOVAL TREATMENT VOLUME REQUIRED TO OBTAIN A NET IMPROVEMENT OF NITROGEN AND PHOSPHORUS REMOVAL FROM THE DISCHARGE.

STORMWATER TREATMENT IS PROVIDED BY WET DETENTION PONDS THAT ARE DOWNSTREAM OF DRY RETENTION PONDS FOR PRE-TREATMENT. THE TREATMENT SYSTEM IS DESIGNED SO THAT THE POST DEVELOPMENT DISCHARGE RATE AND VOLUME DOES NOT EXCEED THE PRE-DEVELOPMENT DISCHARGE RATE AND VOLUME FOR THE MEAN ANNUAL, 10-YEAR, 25-YEAR, 100-YEAR - 24 HOUR STORM EVENTS.

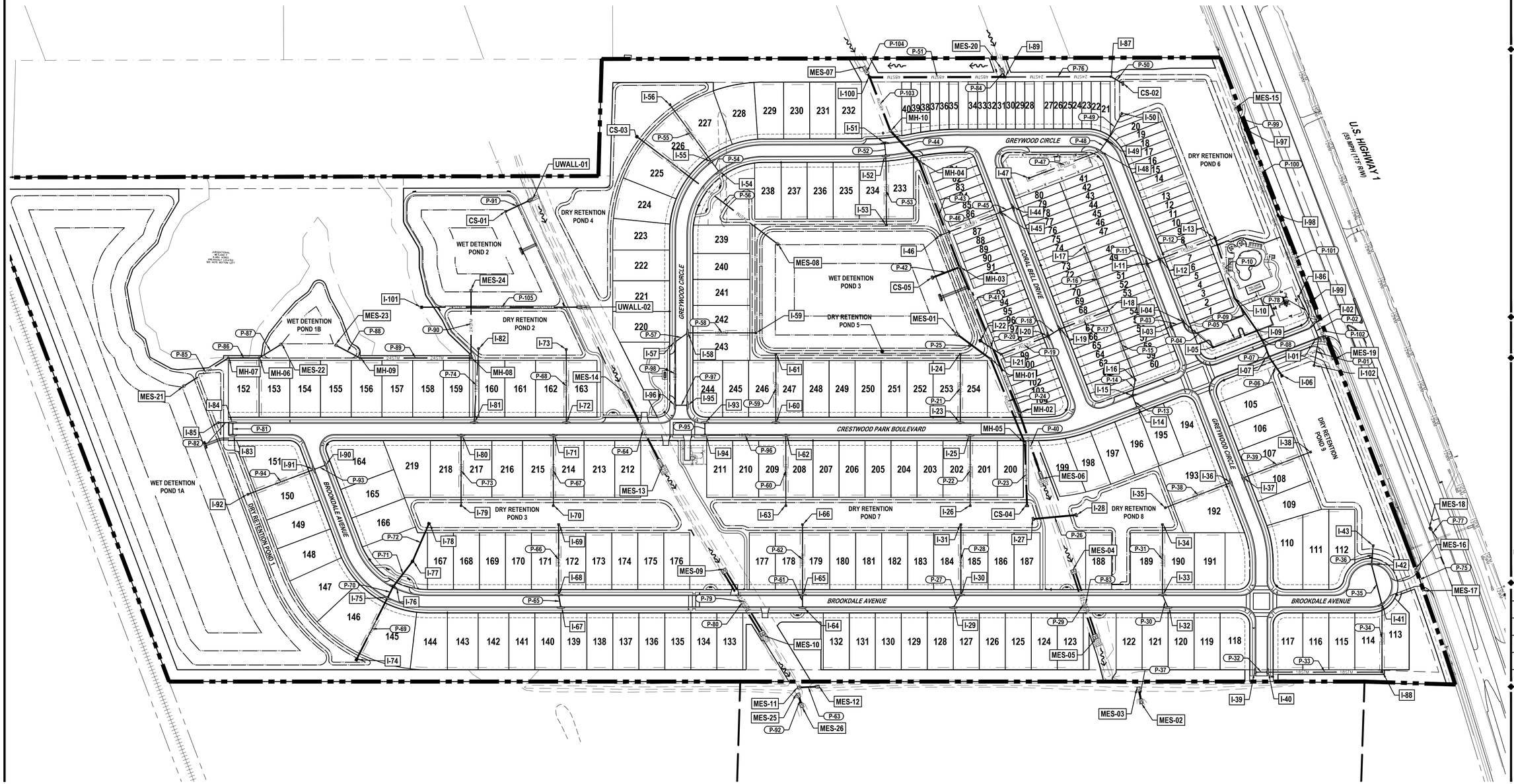
THE SUBMITTED STORMWATER REPORT CALCLULATES THE GREATER TREATMENT VOLUME REQUIRED AND HOW THE SITE MEETS THE REQUIREMENTS.

DRAINAGE STRUCTURE NOTES:

1. ROUND STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'A'.
2. SQUARE / RECTANGULAR STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'B'.
3. 4'-0" DIAMETER AND SMALLER AND 3'-6" SQUARE STANDARD STRUCTURE BOTTOMS ARE FDOT TYPE DESIGNATED 'P' LARGER STANDARD STRUCTURE BOTTOMS ARE DESIGNATED TYPE 'J'.
4. ALL STRUCTURES SHALL HAVE A 12" SUMP.
5. CONTRACTOR SHALL WORK WITH STRUCTURE FABRICATOR TO DETERMINE ADEQUATE STRUCTURE BOTTOM SIZE FOR THE PROPOSED PIPE SIZES AND ANGLES.
6. EOP = EDGE OF PAVEMENT
7. NO WEEP HOLES ALLOWED IN BOTTOM OF STRUCTURES.

STORMWATER LEGEND

- PROPOSED TYPE "C" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "E" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "S" CURB INLET
- PROPOSED TYPE "6" CURB INLET
- PROPOSED TYPE "V" GUTTER INLET
- PROPOSED MITERED END SECTION
- PROPOSED U - TYPE CONCRETE ENDWALL
- PROPOSED STORM PIPE
- PROPOSED SANITARY SEWER MANHOLE



1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

MASTER DRAINAGE PLAN

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

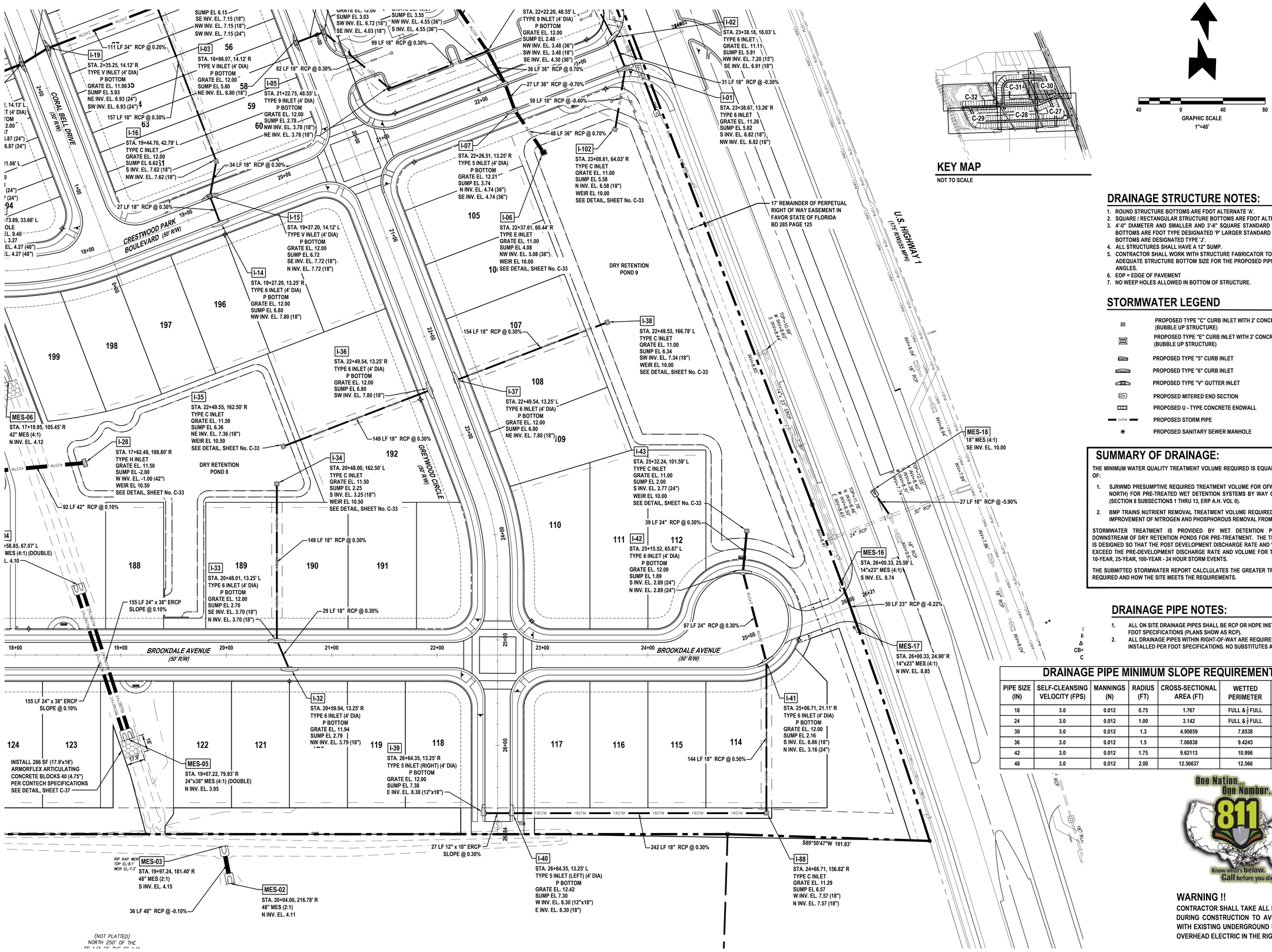
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-26



KEY MAP

NOT TO SCALE

GRAPHIC SCALE
40 0 40 80
1"=40'

DRAINAGE STRUCTURE NOTES:

1. ROUND STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'A'.
2. SQUARE / RECTANGULAR STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'B'.
3. 4'-0" DIAMETER AND SMALLER AND 3'-6" SQUARE STANDARD STRUCTURE BOTTOMS ARE FDOT TYPE DESIGNATED 'P' LARGER STANDARD STRUCTURE BOTTOMS ARE DESIGNATED TYPE 'J'.
4. ALL STRUCTURES SHALL HAVE A 12" SUMP.
5. CONTRACTOR SHALL WORK WITH STRUCTURE FABRICATOR TO DETERMINE ADEQUATE STRUCTURE BOTTOM SIZE FOR THE PROPOSED PIPE SIZES AND ANGLES.
6. EOP = EDGE OF PAVEMENT
7. NO WEEP HOLES ALLOWED IN BOTTOM OF STRUCTURE.

STORMWATER LEGEND

- PROPOSED TYPE "C" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "E" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "5" CURB INLET
- PROPOSED TYPE "6" CURB INLET
- PROPOSED TYPE "V" GUTTER INLET
- PROPOSED MITERED END SECTION
- PROPOSED U - TYPE CONCRETE ENDWALL
- PROPOSED STORM PIPE
- PROPOSED SANITARY SEWER MANHOLE

SUMMARY OF DRAINAGE:

THE MINIMUM WATER QUALITY TREATMENT VOLUME REQUIRED IS EQUAL TO THE GREATER OF:

1. SJRWMD PRESUMPTIVE REQUIRED TREATMENT VOLUME FOR OFW (i.e. INDIAN RIVER NORTH) FOR PRE-TREATED WET DETENTION SYSTEMS BY WAY OF DRY RETENTION (SECTION 8 SUBSECTIONS 1 THRU 13, ERP A.H. VOL II).
2. BMP TRAINS NUTRIENT REMOVAL TREATMENT VOLUME REQUIRED TO OBTAIN A NET IMPROVEMENT OF NITROGEN AND PHOSPHOROUS REMOVAL FROM THE DISCHARGE.

STORMWATER TREATMENT IS PROVIDED BY WET DETENTION PONDS THAT ARE DOWNSTREAM OF DRY RETENTION PONDS FOR PRE-TREATMENT. THE TREATMENT SYSTEM IS DESIGNED SO THAT THE POST DEVELOPMENT DISCHARGE RATE AND VOLUME DOES NOT EXCEED THE PRE-DEVELOPMENT DISCHARGE RATE AND VOLUME FOR THE MEAN ANNUAL, 10-YEAR, 25-YEAR, 100-YEAR - 24 HOUR STORM EVENTS.

THE SUBMITTED STORMWATER REPORT CALCULATES THE GREATER TREATMENT VOLUME REQUIRED AND HOW THE SITE MEETS THE REQUIREMENTS.

DRAINAGE PIPE NOTES:

1. ALL ON SITE DRAINAGE PIPES SHALL BE RCP OR HDPE INSTALLED PER FDOT SPECIFICATIONS (PLANS SHOW AS RCP).
2. ALL DRAINAGE PIPES WITHIN RIGHT-OF-WAY ARE REQUIRED TO BE RCP INSTALLED PER FDOT SPECIFICATIONS. NO SUBSTITUTES ALLOWED.

DRAINAGE PIPE MINIMUM SLOPE REQUIREMENTS

PIPE SIZE (IN)	SELF-CLEANSING VELOCITY (FPS)	MANNINGS (N)	RADIUS (FT)	CROSS-SECTIONAL AREA (FT)	WETTED PERIMETER	MINIMUM SLOPE (FT / 100 FT)
18	3.0	0.012	0.75	1.767	FULL & ½ FULL	0.0022
24	3.0	0.012	1.00	3.142	FULL & ½ FULL	0.0015
30	3.0	0.012	1.3	4.90859	7.8538	0.0011
36	3.0	0.012	1.5	7.06838	9.4245	0.0009
42	3.0	0.012	1.75	9.62113	10.996	0.0008
48	3.0	0.012	2.00	12.56637	12.566	0.0007

One Nation... One Number... 811 Know what's below. Call before you dig.

WARNING !!

CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.NewkirkEngineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering, Transportation, CEI &, Landscape Architecture
NEWKIRK ENGINEERING INC.

DRAINAGE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

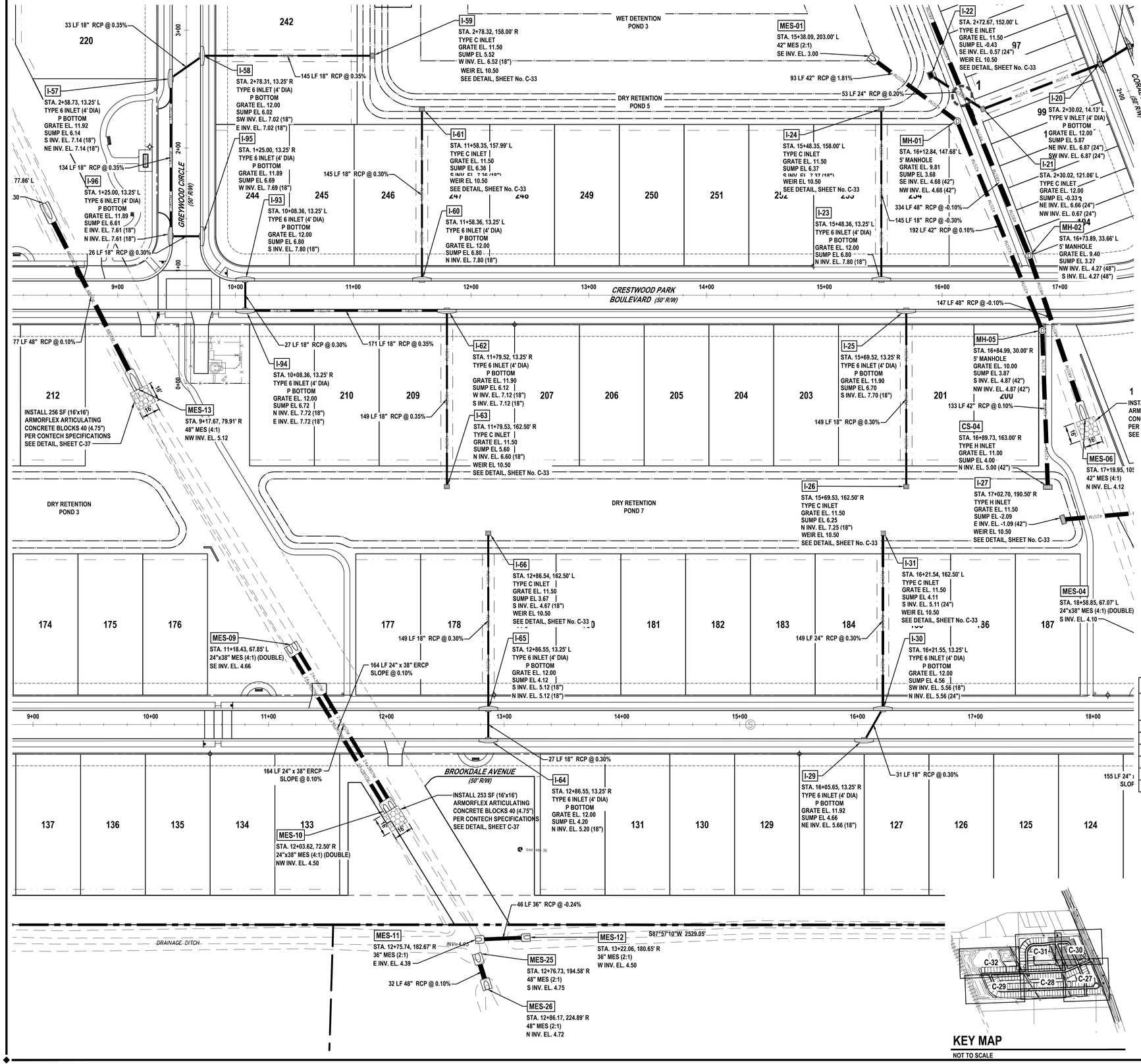
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

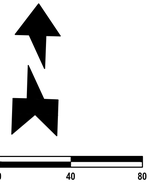
DRAWING NUMBER

C-27



KEY MAP

NOT TO SCALE



GRAPHIC SCALE
1"=40'

DRAINAGE STRUCTURE NOTES:

1. ROUND STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'A'.
2. SQUARE / RECTANGULAR STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'B'.
3. 4'-0" DIAMETER AND SMALLER AND 3'-6" SQUARE STANDARD STRUCTURE BOTTOMS ARE FDOT TYPE DESIGNATED 'P' LARGER STANDARD STRUCTURE BOTTOMS ARE DESIGNATED TYPE 'J'.
4. ALL STRUCTURES SHALL HAVE A 12" SUMP.
5. CONTRACTOR SHALL WORK WITH STRUCTURE FABRICATOR TO DETERMINE ADEQUATE STRUCTURE BOTTOM SIZE FOR THE PROPOSED PIPE SIZES AND ANGLES.
6. EOP = EDGE OF PAVEMENT
7. NO WEEP HOLES ALLOWED IN BOTTOM OF STRUCTURE.

STORMWATER LEGEND

- PROPOSED TYPE "C" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "E" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "S" CURB INLET
- PROPOSED TYPE "6" CURB INLET
- PROPOSED TYPE "V" GUTTER INLET
- PROPOSED MITERED END SECTION
- PROPOSED U - TYPE CONCRETE ENDWALL
- 24STM — PROPOSED STORM PIPE
- PROPOSED SANITARY SEWER MANHOLE

SUMMARY OF DRAINAGE:

THE MINIMUM WATER QUALITY TREATMENT VOLUME REQUIRED IS EQUAL TO THE GREATER OF:

1. SJRWMD PRESUMPTIVE REQUIRED TREATMENT VOLUME FOR OFW (i.e. INDIAN RIVER NORTH) FOR PRE-TREATED WET DETENTION SYSTEMS BY WAY OF DRY RETENTION (SECTION 8 SUBSECTIONS 1 THRU 13, ERP A.H. VOL II).
2. BMP TRAINS NUTRIENT REMOVAL TREATMENT VOLUME REQUIRED TO OBTAIN A NET IMPROVEMENT OF NITROGEN AND PHOSPHORUS REMOVAL FROM THE DISCHARGE.

STORMWATER TREATMENT IS PROVIDED BY WET DETENTION PONDS THAT ARE DOWNSTREAM OF DRY RETENTION PONDS FOR PRE-TREATMENT. THE TREATMENT SYSTEM IS DESIGNED SO THAT THE POST DEVELOPMENT DISCHARGE RATE AND VOLUME DOES NOT EXCEED THE PRE-DEVELOPMENT DISCHARGE RATE AND VOLUME FOR THE MEAN ANNUAL, 10-YEAR, 25-YEAR, 100-YEAR - 24 HOUR STORM EVENTS.

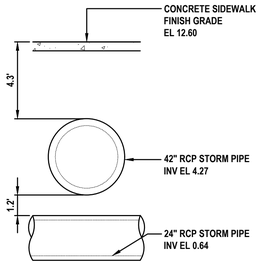
THE SUBMITTED STORMWATER REPORT CALCLULATES THE GREATER TREATMENT VOLUME REQUIRED AND HOW THE SITE MEETS THE REQUIREMENTS.

DRAINAGE PIPE NOTES:

1. ALL ON SITE DRAINAGE PIPES SHALL BE RCP OR HDPE INSTALLED PER FDOT SPECIFICATIONS (PLANS SHOW AS RCP).
2. ALL DRAINAGE PIPES WITHIN RIGHT-OF-WAY ARE REQUIRED TO BE RCP INSTALLED PER FDOT SPECIFICATIONS. NO SUBSTITUTES ALLOWED.

DRAINAGE PIPE MINIMUM SLOPE REQUIREMENTS

PIPE SIZE (IN)	SELF-CLEANSING VELOCITY (FPS)	MANNINGS (N)	RADIUS (FT)	CROSS-SECTIONAL AREA (FT)	WETTED PERIMETER	MINIMUM SLOPE (FT / 100 FT)
18	3.0	0.012	0.75	1.767	FULL & ½ FULL	0.0022
24	3.0	0.012	1.00	3.142	FULL & ½ FULL	0.0015
30	3.0	0.012	1.3	4.90859	7.8538	0.0011
36	3.0	0.012	1.5	7.06838	9.4245	0.0009
42	3.0	0.012	1.75	9.62113	10.996	0.0008
48	3.0	0.012	2.00	12.56637	12.566	0.0007



CONFLICT POINT 1

UTILITY CONFLICT DETAIL

NOT TO SCALE

One Nation... One Number... 811 Know what's below. Call before you dig.

WARNING !!

CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. © 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

DRAINAGE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-28

GRAPHIC SCALE
1"=40'
40 0 40 80

One Nation... One Number... 811 Know what's below. Call before you dig.

WARNING !!
CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

DRAINAGE PIPE MINIMUM SLOPE REQUIREMENTS

PIPE SIZE (IN)	SELF-CLEANSING VELOCITY (FPS)	MANNINGS (N)	RADIUS (FT)	CROSS-SECTIONAL AREA (FT)	WETTED PERIMETER	MINIMUM SLOPE (FT / 100 FT)
18	3.0	0.012	0.75	1.767	FULL & ½ FULL	0.0022
24	3.0	0.012	1.00	3.142	FULL & ½ FULL	0.0015
30	3.0	0.012	1.3	4.90859	7.8538	0.0011
36	3.0	0.012	1.5	7.06838	9.4245	0.0009
42	3.0	0.012	1.75	9.62113	10.996	0.0008
48	3.0	0.012	2.00	12.56637	12.566	0.0007

SUMMARY OF DRAINAGE:

THE MINIMUM WATER QUALITY TREATMENT VOLUME REQUIRED IS EQUAL TO THE GREATER OF:

1. SJRWMD PRESUMPTIVE REQUIRED TREATMENT VOLUME FOR OFW (i.e. INDIAN RIVER NORTH) FOR PRE-TREATED WET DETENTION SYSTEMS BY WAY OF DRY RETENTION (SECTION 8 SUBSECTIONS 1 THRU 13, ERP A.H. VOL II).
2. BMP TRAINS NUTRIENT REMOVAL TREATMENT VOLUME REQUIRED TO OBTAIN A NET IMPROVEMENT OF NITROGEN AND PHOSPHORUS REMOVAL FROM THE DISCHARGE.

STORMWATER TREATMENT IS PROVIDED BY WET DETENTION PONDS THAT ARE DOWNSTREAM OF DRY RETENTION PONDS FOR PRE-TREATMENT. THE TREATMENT SYSTEM IS DESIGNED SO THAT THE POST DEVELOPMENT DISCHARGE RATE AND VOLUME DOES NOT EXCEED THE PRE-DEVELOPMENT DISCHARGE RATE AND VOLUME FOR THE MEAN ANNUAL, 10-YEAR, 25-YEAR, 100-YEAR - 24 HOUR STORM EVENTS.

THE SUBMITTED STORMWATER REPORT CALCLULATES THE GREATER TREATMENT VOLUME REQUIRED AND HOW THE SITE MEETS THE REQUIREMENTS.

DRAINAGE PIPE NOTES:

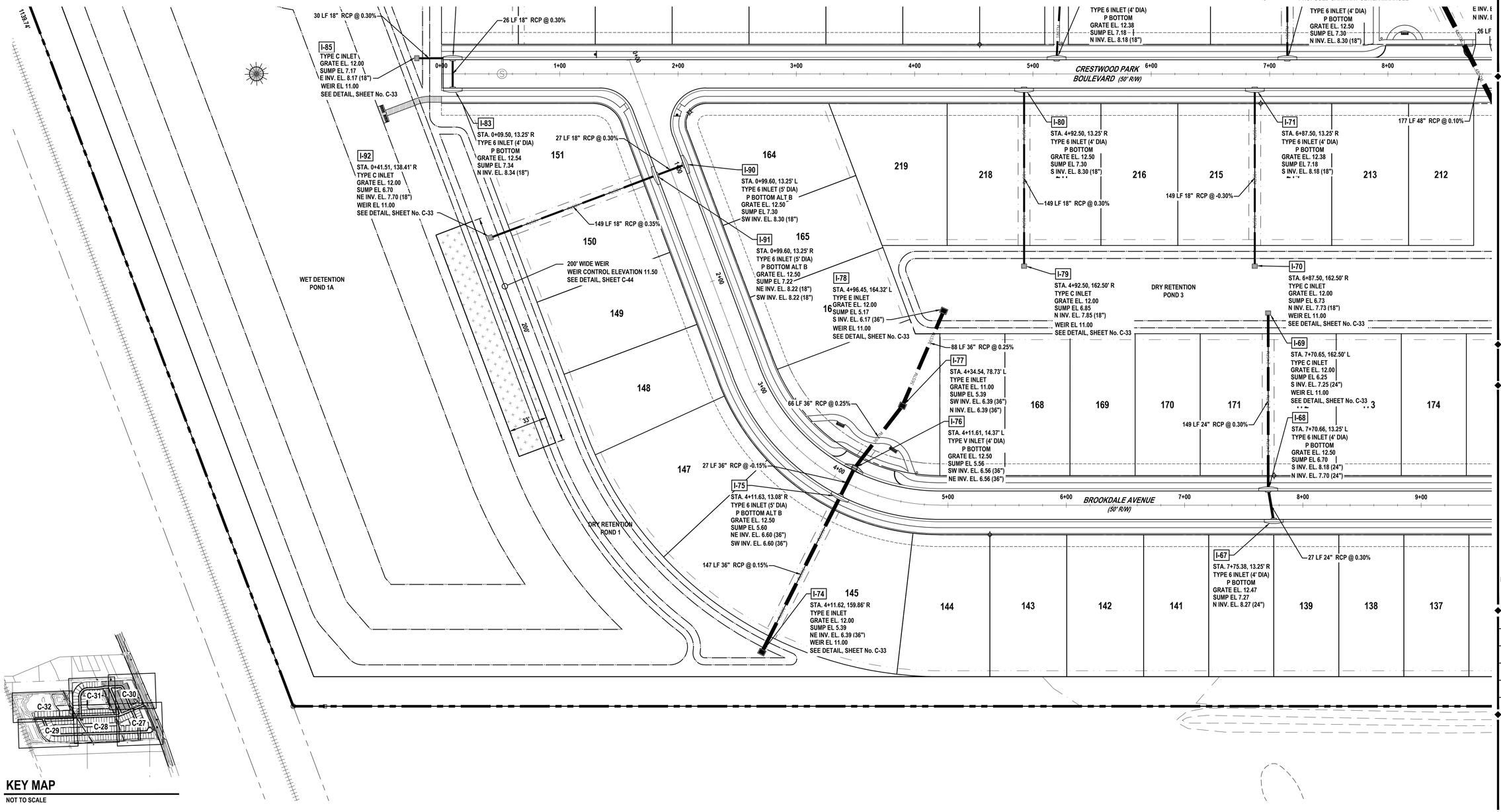
1. ALL ON SITE DRAINAGE PIPES SHALL BE RCP OR HDPE INSTALLED PER FDOT SPECIFICATIONS (PLANS SHOW AS RCP).
2. ALL DRAINAGE PIPES WITHIN RIGHT-OF-WAY ARE REQUIRED TO BE RCP INSTALLED PER FDOT SPECIFICATIONS. NO SUBSTITUTES ALLOWED.

DRAINAGE STRUCTURE NOTES:

1. ROUND STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'A'.
2. SQUARE / RECTANGULAR STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'B'.
3. 4'-0" DIAMETER AND SMALLER AND 3'-6" SQUARE STANDARD STRUCTURE BOTTOMS ARE FDOT TYPE DESIGNATED 'P' LARGER STANDARD STRUCTURE BOTTOMS ARE DESIGNATED TYPE 'J'.
4. ALL STRUCTURES SHALL HAVE A 12" SUMP.
5. CONTRACTOR SHALL WORK WITH STRUCTURE FABRICATOR TO DETERMINE ADEQUATE STRUCTURE BOTTOM SIZE FOR THE PROPOSED PIPE SIZES AND ANGLES.
6. EOP = EDGE OF PAVEMENT
7. NO WEEP HOLES ALLOWED IN BOTTOM OF STRUCTURES.

STORMWATER LEGEND

- PROPOSED TYPE "C" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "E" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "5" CURB INLET
- PROPOSED TYPE "6" CURB INLET
- PROPOSED TYPE "V" GUTTER INLET
- PROPOSED MITERED END SECTION
- PROPOSED U - TYPE CONCRETE ENDWALL
- PROPOSED STORM PIPE (24"SW)
- PROPOSED SANITARY SEWER MANHOLE



KEY MAP
NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

DRAINAGE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

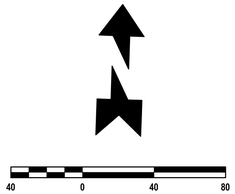
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

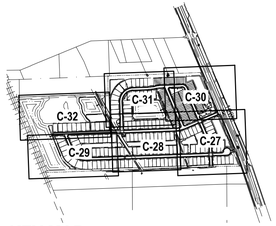
DRAWING NUMBER

C-29



WARNING !!

CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.



KEY MAP

NOT TO SCALE

DRAINAGE PIPE MINIMUM SLOPE REQUIREMENTS

PIPE SIZE (IN)	SELF-CLEANSING VELOCITY (FPS)	MANNINGS (N)	RADIUS (FT)	CROSS-SECTIONAL AREA (FT)	WETTED PERIMETER	MINIMUM SLOPE (FT / 100 FT)
18	3.0	0.012	0.75	1.767	FULL & ¾ FULL	0.0022
24	3.0	0.012	1.00	3.142	FULL & ¾ FULL	0.0015
30	3.0	0.012	1.3	4.90859	7.8538	0.0011
36	3.0	0.012	1.5	7.06838	9.4245	0.0009
42	3.0	0.012	1.75	9.62113	10.996	0.0008
48	3.0	0.012	2.00	12.56637	12.566	0.0007

DRAINAGE STRUCTURE NOTES:

1. ROUND STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'A'.
2. SQUARE / RECTANGULAR STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'B'.
3. 4'-0" DIAMETER AND SMALLER AND 3'-6" SQUARE STANDARD STRUCTURE BOTTOMS ARE FDOT TYPE DESIGNATED 'P' LARGER STANDARD STRUCTURE BOTTOMS ARE DESIGNATED TYPE 'J'.
4. ALL STRUCTURES SHALL HAVE A 12" SUMP.
5. CONTRACTOR SHALL WORK WITH STRUCTURE FABRICATOR TO DETERMINE ADEQUATE STRUCTURE BOTTOM SIZE FOR THE PROPOSED PIPE SIZES AND ANGLES.
6. EOP = EDGE OF PAVEMENT
7. NO WEEP HOLES ALLOWED IN BOTTOM OF STRUCTURES.

STORMWATER LEGEND

- PROPOSED TYPE "C" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "E" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "5" CURB INLET
- PROPOSED TYPE "6" CURB INLET
- PROPOSED TYPE "V" GUTTER INLET
- PROPOSED MITERED END SECTION
- PROPOSED U - TYPE CONCRETE ENDWALL
- PROPOSED STORM PIPE
- PROPOSED SANITARY SEWER MANHOLE

SUMMARY OF DRAINAGE:

THE MINIMUM WATER QUALITY TREATMENT VOLUME REQUIRED IS EQUAL TO THE GREATER OF:

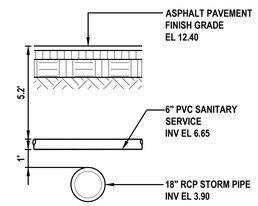
1. SJRWMD PRESUMPTIVE REQUIRED TREATMENT VOLUME FOR OFW (i.e. INDIAN RIVER NORTH) FOR PRE-TREATED WET DETENTION SYSTEMS BY WAY OF DRY RETENTION (SECTION 8 SUBSECTIONS 1 THRU 13, ERP A.H. VOL II).
2. BMP TRAINS NUTRIENT REMOVAL TREATMENT VOLUME REQUIRED TO OBTAIN A NET IMPROVEMENT OF NITROGEN AND PHOSPHORUS REMOVAL FROM THE DISCHARGE.

STORMWATER TREATMENT IS PROVIDED BY WET DETENTION PONDS THAT ARE DOWNSTREAM OF DRY RETENTION PONDS FOR PRE-TREATMENT. THE TREATMENT SYSTEM IS DESIGNED SO THAT THE POST DEVELOPMENT DISCHARGE RATE AND VOLUME DOES NOT EXCEED THE PRE-DEVELOPMENT DISCHARGE RATE AND VOLUME FOR THE MEAN ANNUAL, 10-YEAR, 25-YEAR, 100-YEAR - 24 HOUR STORM EVENTS.

THE SUBMITTED STORMWATER REPORT CALCULATES THE GREATER TREATMENT VOLUME REQUIRED AND HOW THE SITE MEETS THE REQUIREMENTS.

DRAINAGE PIPE NOTES:

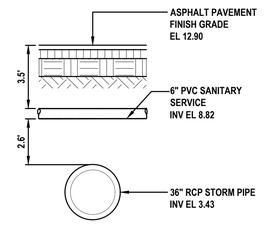
1. ALL ON SITE DRAINAGE PIPES SHALL BE RCP OR HDPE INSTALLED PER FDOT SPECIFICATIONS (PLANS SHOW AS RCP).
2. ALL DRAINAGE PIPES WITHIN RIGHT-OF-WAY ARE REQUIRED TO BE RCP INSTALLED PER FDOT SPECIFICATIONS. NO SUBSTITUTES ALLOWED.



CONFLICT POINT 1

UTILITY CONFLICT DETAIL

NOT TO SCALE



CONFLICT POINT 2

UTILITY CONFLICT DETAIL

NOT TO SCALE

I-89
STA. 12+74.68, 135.00' L
TYPE E INLET
GRATE EL. 10.13
SUMP EL 4.34
E INV. EL. 5.34 (24")
NW INV. EL. 5.34 (30")
W INV. EL. 5.34 (48")
DOUBLE SLOT (E & W)

I-87
STA. 14+63.50, 141.74' L
TYPE C INLET
GRATE EL. 10.66
SUMP EL 5.46
SE INV. EL. 6.46 (24")
W INV. EL. 6.46 (24")
DOUBLE SLOT (E & W)

I-20
12+67.45, 153.00' L
ES (4:1)
V. EL. 5.36

RCP @ 0.12%

225 LF 24" RCP @ 0.50%

29 LF 24" RCP @ 0.48%

CS-02
STA. 14+72.30, 135.82' L
TYPE H INLET 4 GRATES
GRATE EL. 12.00
SUMP EL 3.00
NW INV. EL. 6.60 (24")
SEE DETAIL, SHEET No. C-48

I-50
STA. 14+82.32, 78.75' L
TYPE C INLET
GRATE EL. 11.00
SUMP EL 5.25
SW INV. EL. 6.25 (18")
WEIR EL 10.00
SEE DETAIL, SHEET No. C-33

65 LF 18" RCP @ 0.30%

17' REMAINDER OF PERPETUAL RIGHT OF WAY EASEMENT IN FAVOR STATE OF FLORIDA BD 285 PAGE 125

GREYWOOD CIRCLE (50' R/W)

I-49
STA. 14+85.43, 13.65' L
TYPE V INLET (4' DIA)
P BOTTOM
GRATE EL. 12.00
SUMP EL 5.44
SW INV. EL. 6.44 (18")
NE INV. EL. 6.44 (18")

28 LF 18" RCP @ 0.30%

I-47
STA. 13+25.32, 79.33' R
TYPE C INLET
GRATE EL. 10.00
SUMP EL 6.00
NE INV. EL. 7.00 (18")

160 LF 18" RCP @ 0.30%

I-48
STA. 14+85.42, 13.89' R
TYPE 6 INLET (4' DIA)
P BOTTOM
GRATE EL. 12.00
SUMP EL 5.52
SW INV. EL. 6.52 (18")
NE INV. EL. 6.52 (18")

DRY RETENTION POND 6

I-44
STA. 5+11.02, 14.12' R
TYPE V INLET (4' DIA)
P BOTTOM
GRATE EL. 12.00
SUMP EL 6.80
SW INV. EL. 7.80 (18")

28 LF 18" RCP @ 0.30%

I-13
STA. 17+54.23, 140.00' L
TYPE E INLET
GRATE EL. 11.00
SUMP EL 2.24
SW INV. EL. 5.51 (18")
S INV. EL. 3.24 (36")
WEIR EL 10.00
SEE DETAIL, SHEET No. C-33

126 LF 18" RCP @ 1.75%

U.S. HIGHWAY 1
(175 R/W/55 MPH)

SEE SHEET C-23 & C-24 FOR US HIGHWAY 1 DRAINAGE

136 LF 18" RCP @ 3.04%

I-17
STA. 3+78.54, 125.00' R
TYPE C INLET
GRATE EL. 12.00
SUMP EL 7.00
SE INV. EL. 8.00 (18")

CORAL BELL DRIVE (50' R/W)

133 LF 36" RCP @ 0.11%

I-12
STA. 17+54.24, 14.12' L
TYPE V INLET (4' DIA)
P BOTTOM
GRATE EL. 12.00
SUMP EL 6.72
NE INV. EL. 7.72 (18")
SW INV. EL. 7.72 (18")

28 LF 18" RCP @ -0.30%

I-10
STA. 18+87.30, 133.05' L
TYPE C INLET
GRATE EL. 12.00
SUMP EL 2.50
SE INV. EL. 3.39 (36")
N INV. EL. 3.39 (36")
POND 6 & RES1902**

I-86
STA. 19+32.45, 260.87' L
TYPE C INLET
(SLOT N & S)
GRATE EL. 11.00
SUMP EL 6.50
SE INV. EL. 7.50 (15")

MH-03
STA. 4+33.55, 137.07' L
5' MANHOLE
GRATE EL. 12.78
SUMP EL 3.60
SW INV. EL. 5.84 (42")
SE INV. EL. 4.60 (48")
NW INV. EL. 4.60 (48")

I-11
STA. 17+54.24, 14.13' R
TYPE V INLET (4' DIA)
P BOTTOM
GRATE EL. 12.00
SUMP EL 6.80
NE INV. EL. 7.80 (18")

143 LF 18" RCP @ 0.59%

I-18
STA. 2+35.25, 125.00' R
TYPE C INLET
GRATE EL. 12.00
SUMP EL 6.15
SE INV. EL. 7.15 (18")
NW INV. EL. 7.15 (18")
SW INV. EL. 7.15 (24")

29 LF 24" RCP @ 0.20%

I-04
STA. 18+96.04, 13.99' L
TYPE V INLET (4' DIA)
P BOTTOM
GRATE EL. 12.00
SUMP EL 3.03
SW INV. EL. 6.72 (18")
SE INV. EL. 4.03 (18")

I-08
STA. 22+26.83, 13.25' L
TYPE 5 INLET (4' DIA)
P BOTTOM
GRATE EL. 12.21
SUMP EL 3.55
NW INV. EL. 4.55 (36")
S INV. EL. 4.55 (36")

83 LF 36" RCP @ 0.11%

I-09
STA. 22+22.20, 48.55' L
TYPE 9 INLET (4' DIA)
P BOTTOM
GRATE EL. 12.00
SUMP EL 2.48
NW INV. EL. 3.48 (36")
SW INV. EL. 3.48 (18")
SE INV. EL. 4.30 (36")

67 LF 15" RCP @ 0.45%

I-02
STA. 23+38.18, 18.03' L
TYPE 6 INLET
GRATE EL. 11.11
SUMP EL 5.91
NW INV. EL. 7.20 (15")
SE INV. EL. 6.91 (18")

31 LF 18" RCP @ -0.30%

I-22
STA. 2+72.67, 152.00' L
TYPE E INLET
GRATE EL. 11.50
SUMP EL -0.43
SE INV. EL. 0.57 (24")

111 LF 24" RCP @ 0.20%

I-19
STA. 2+35.25, 14.12' R
TYPE V INLET (4' DIA)
P BOTTOM
GRATE EL. 11.98
SUMP EL 5.93
NE INV. EL. 6.93 (24")
SW INV. EL. 6.93 (24")

I-03
STA. 18+96.07, 14.12' R
TYPE V INLET (4' DIA)
P BOTTOM
GRATE EL. 12.00
SUMP EL 5.80
NE INV. EL. 6.80 (18")

99 LF 18" RCP @0.30%

82 LF 18" RCP @ 0.30%

36 LF 36" RCP @ 0.70%

27 LF 36" RCP @ -0.70%

59 LF 18" RCP @ -0.40%

48 LF 36" RCP @ 0.70%

I-05
STA. 21+22.75, 48.55' L
TYPE 9 INLET (4' DIA)
P BOTTOM
GRATE EL. 12.00
SUMP EL 2.78
NW INV. EL. 3.78 (18")
NE INV. EL. 3.78 (18")

I-20
STA. 2+30.02, 14.13' L
TYPE V INLET (4' DIA)
P BOTTOM
GRATE EL. 12.00
SUMP EL 5.87
NE INV. EL. 6.87 (24")

157 LF 18" RCP @ 0.30%

I-16

CRESTWOOD PARK BOULEVARD (50' R/W)

I-01
STA. 23+38.67, 13.26' R
TYPE 6 INLET
GRATE EL. 11.26
SUMP EL 5.82
S INV. EL. 6.82 (18")

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

DRAINAGE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

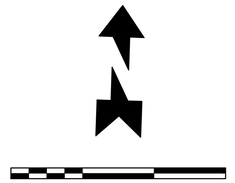
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

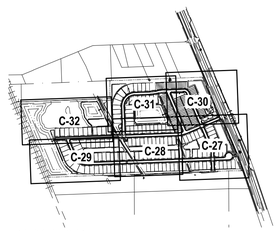
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-30





KEY MAP

NOT TO SCALE

DRAINAGE PIPE NOTES:

1. ALL ON SITE DRAINAGE PIPES SHALL BE RCP OR HDPE INSTALLED PER FDOT SPECIFICATIONS (PLANS SHOW AS RCP).
2. ALL DRAINAGE PIPES WITHIN RIGHT-OF-WAY ARE REQUIRED TO BE RCP INSTALLED PER FDOT SPECIFICATIONS. NO SUBSTITUTES ALLOWED.

DRAINAGE PIPE MINIMUM SLOPE REQUIREMENTS

PIPE SIZE (IN)	SELF-CLEANSING VELOCITY (FPS)	MANNINGS (N)	RADIUS (FT)	CROSS-SECTIONAL AREA (FT)	WETTED PERIMETER	MINIMUM SLOPE (FT / 100 FT)
18	3.0	0.012	0.75	1.767	FULL & ½ FULL	0.0022
24	3.0	0.012	1.00	3.142	FULL & ½ FULL	0.0015
30	3.0	0.012	1.3	4.90859	7.8538	0.0011
36	3.0	0.012	1.5	7.06838	9.4245	0.0009
42	3.0	0.012	1.75	9.62113	10.996	0.0008
48	3.0	0.012	2.00	12.56637	12.566	0.0007

DRAINAGE STRUCTURE NOTES:

1. ROUND STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'A'.
2. SQUARE / RECTANGULAR STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'B'.
3. 4'-0" DIAMETER AND SMALLER AND 3'-6" SQUARE STANDARD STRUCTURE BOTTOMS ARE FDOT TYPE DESIGNATED 'P' LARGER STANDARD STRUCTURE BOTTOMS ARE DESIGNATED TYPE 'J'.
4. ALL STRUCTURES SHALL HAVE A 12" SUMP.
5. CONTRACTOR SHALL WORK WITH STRUCTURE FABRICATOR TO DETERMINE ADEQUATE STRUCTURE BOTTOM SIZE FOR THE PROPOSED PIPE SIZES AND ANGLES.
6. EOP = EDGE OF PAVEMENT
7. NO WEEP HOLES ALLOWED IN BOTTOM OF STRUCTURES.

STORMWATER LEGEND

- PROPOSED TYPE "C" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "E" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "5" CURB INLET
- PROPOSED TYPE "6" CURB INLET
- PROPOSED TYPE "V" GUTTER INLET
- PROPOSED MITERED END SECTION
- PROPOSED U - TYPE CONCRETE ENDWALL
- PROPOSED STORM PIPE
- PROPOSED SANITARY SEWER MANHOLE

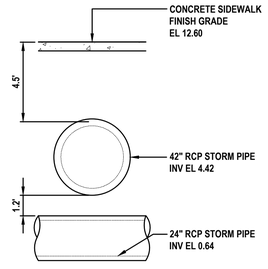
SUMMARY OF DRAINAGE:

THE MINIMUM WATER QUALITY TREATMENT VOLUME REQUIRED IS EQUAL TO THE GREATER OF:

1. SJRWMD PRESUMPTIVE REQUIRED TREATMENT VOLUME FOR OFW (i.e. INDIAN RIVER NORTH) FOR PRE-TREATED WET DETENTION SYSTEMS BY WAY OF DRY RETENTION (SECTION 8 SUBSECTIONS 1 THRU 13, ERP A.H. VOL II).
2. BMP TRAINS NUTRIENT REMOVAL TREATMENT VOLUME REQUIRED TO OBTAIN A NET IMPROVEMENT OF NITROGEN AND PHOSPHORUS REMOVAL FROM THE DISCHARGE.

STORMWATER TREATMENT IS PROVIDED BY WET DETENTION PONDS THAT ARE DOWNSTREAM OF DRY RETENTION PONDS FOR PRE-TREATMENT. THE TREATMENT SYSTEM IS DESIGNED SO THAT THE POST DEVELOPMENT DISCHARGE RATE AND VOLUME DOES NOT EXCEED THE PRE-DEVELOPMENT DISCHARGE RATE AND VOLUME FOR THE MEAN ANNUAL, 10-YEAR, 25-YEAR, 100-YEAR - 24 HOUR STORM EVENTS.

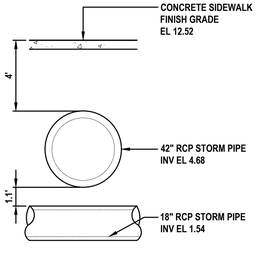
THE SUBMITTED STORMWATER REPORT CALCULATES THE GREATER TREATMENT VOLUME REQUIRED AND HOW THE SITE MEETS THE REQUIREMENTS.



CONFLICT POINT 1

UTILITY CONFLICT DETAIL

NOT TO SCALE



CONFLICT POINT 2

UTILITY CONFLICT DETAIL

NOT TO SCALE

One Nation... One Number... 811 Know what's below. Call before you dig.

WARNING !!

CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

DRAINAGE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

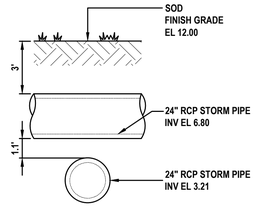
DRAWING NUMBER

C-31

GRAPHIC SCALE
40 0 40 80
1"=40'

WARNING !!

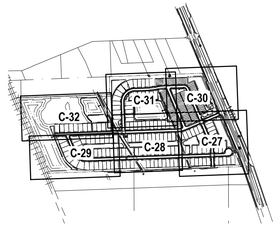
CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.



CONFLICT POINT 1
UTILITY CONFLICT DETAIL
NOT TO SCALE

DRAINAGE PIPE MINIMUM SLOPE REQUIREMENTS

PIPE SIZE (IN)	SELF-CLEANSING VELOCITY (FPS)	MANNINGS (N)	RADIUS (FT)	CROSS-SECTIONAL AREA (FT)	WETTED PERIMETER	MINIMUM SLOPE (FT / 100 FT)
18	3.0	0.012	0.75	1.767	FULL & ½ FULL	0.0022
24	3.0	0.012	1.00	3.142	FULL & ½ FULL	0.0015
30	3.0	0.012	1.3	4.90859	7.8538	0.0011
36	3.0	0.012	1.5	7.06838	9.4245	0.0009
42	3.0	0.012	1.75	9.62113	10.996	0.0008
48	3.0	0.012	2.00	12.56637	12.566	0.0007



KEY MAP
NOT TO SCALE

SUMMARY OF DRAINAGE:

THE MINIMUM WATER QUALITY TREATMENT VOLUME REQUIRED IS EQUAL TO THE GREATER OF:

1. SJRWMD PRESUMPTIVE REQUIRED TREATMENT VOLUME FOR OFW (i.e. INDIAN RIVER NORTH) FOR PRE-TREATED WET DETENTION SYSTEMS BY WAY OF DRY RETENTION (SECTION 8 SUBSECTIONS 1 THRU 13, ERP A.H. VOL II).
2. BMP TRAINS NUTRIENT REMOVAL TREATMENT VOLUME REQUIRED TO OBTAIN A NET IMPROVEMENT OF NITROGEN AND PHOSPHOROUS REMOVAL FROM THE DISCHARGE.

STORMWATER TREATMENT IS PROVIDED BY WET DETENTION PONDS THAT ARE DOWNSTREAM OF DRY RETENTION PONDS FOR PRE-TREATMENT. THE TREATMENT SYSTEM IS DESIGNED SO THAT THE POST DEVELOPMENT DISCHARGE RATE AND VOLUME DOES NOT EXCEED THE PRE-DEVELOPMENT DISCHARGE RATE AND VOLUME FOR THE MEAN ANNUAL, 10-YEAR, 25-YEAR, 100-YEAR - 24 HOUR STORM EVENTS.

THE SUBMITTED STORMWATER REPORT CALCLULATES THE GREATER TREATMENT VOLUME REQUIRED AND HOW THE SITE MEETS THE REQUIREMENTS.

DRAINAGE PIPE NOTES:

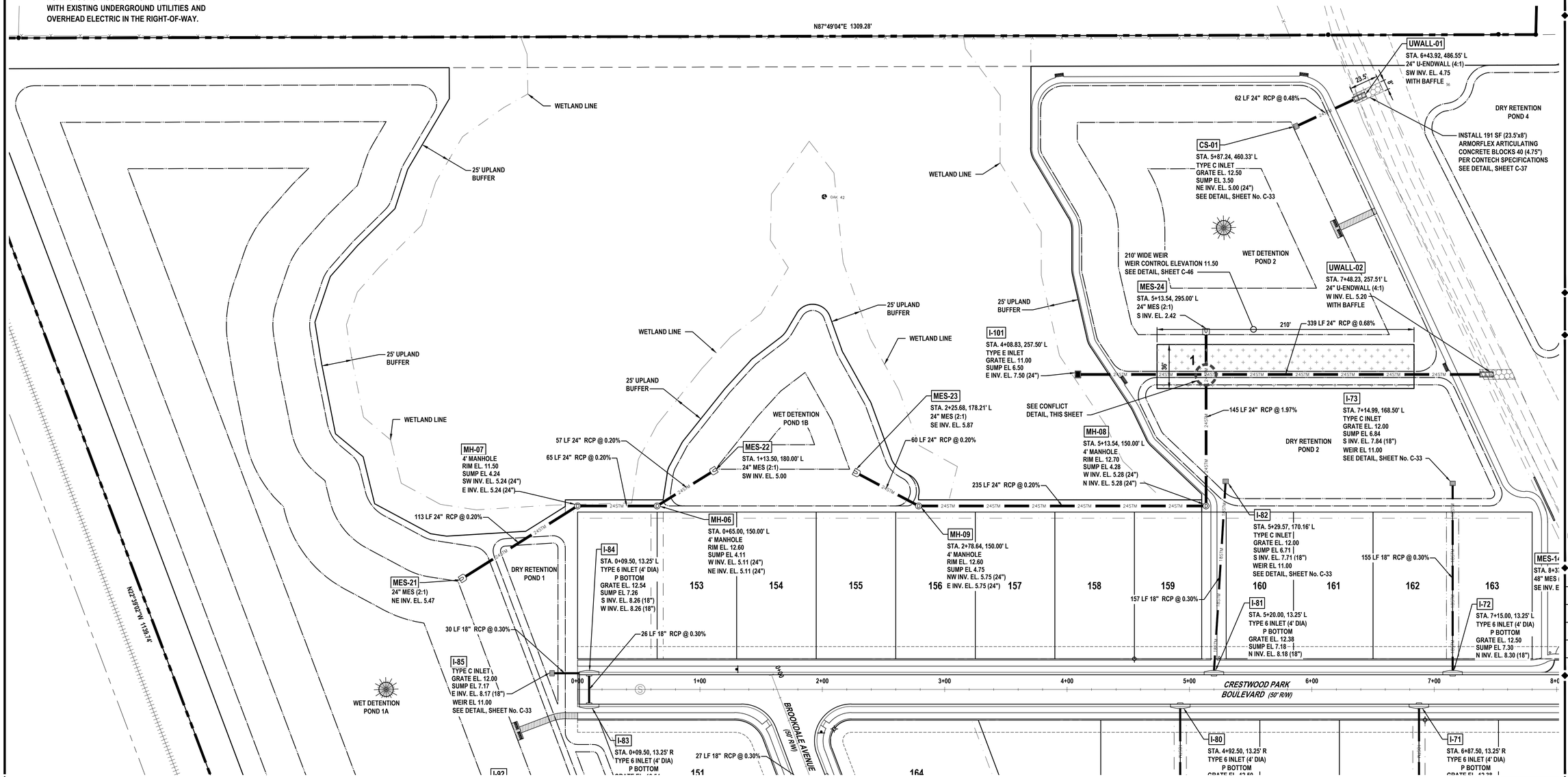
1. ALL ON SITE DRAINAGE PIPES SHALL BE RCP OR HDPE INSTALLED PER FDOT SPECIFICATIONS (PLANS SHOW AS RCP).
2. ALL DRAINAGE PIPES WITHIN RIGHT-OF-WAY ARE REQUIRED TO BE RCP INSTALLED PER FDOT SPECIFICATIONS. NO SUBSTITUTES ALLOWED.

DRAINAGE STRUCTURE NOTES:

1. ROUND STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'A'.
2. SQUARE / RECTANGULAR STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'B'.
3. 4'-0" DIAMETER AND SMALLER AND 3'-6" SQUARE STANDARD STRUCTURE BOTTOMS ARE FDOT TYPE DESIGNATED 'P' LARGER STANDARD STRUCTURE BOTTOMS ARE DESIGNATED TYPE 'J'.
4. ALL STRUCTURES SHALL HAVE A 12" SUMP.
5. CONTRACTOR SHALL WORK WITH STRUCTURE FABRICATOR TO DETERMINE ADEQUATE STRUCTURE BOTTOM SIZE FOR THE PROPOSED PIPE SIZES AND ANGLES.
6. EOP = EDGE OF PAVEMENT
7. NO WEEP HOLES ALLOWED IN BOTTOM OF STRUCTURES.

STORMWATER LEGEND

- PROPOSED TYPE "C" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "E" CURB INLET WITH 2' CONCRETE APRON (BUBBLE UP STRUCTURE)
- PROPOSED TYPE "S" CURB INLET
- PROPOSED TYPE "6" CURB INLET
- PROPOSED TYPE "V" GUTTER INLET
- PROPOSED MITERED END SECTION
- PROPOSED U - TYPE CONCRETE ENDWALL
- 24STM PROPOSED STORM PIPE
- PROPOSED SANITARY SEWER MANHOLE



REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

DRAINAGE PLAN
CRESTWOOD PARK BOULEVARD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

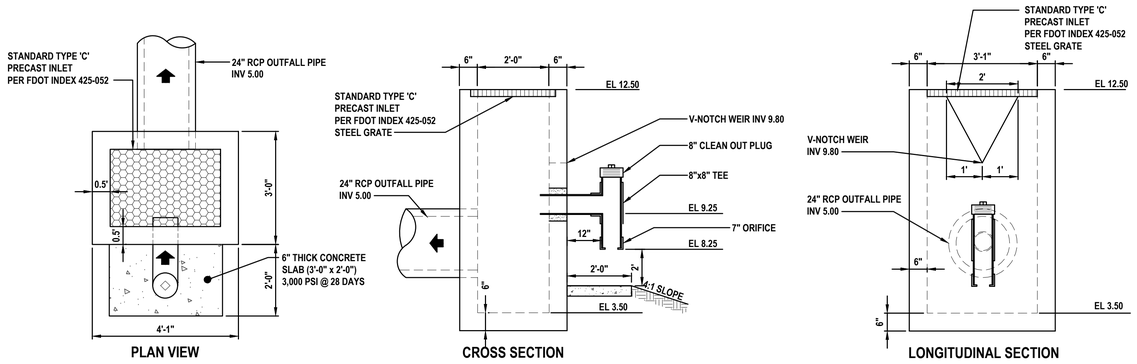
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

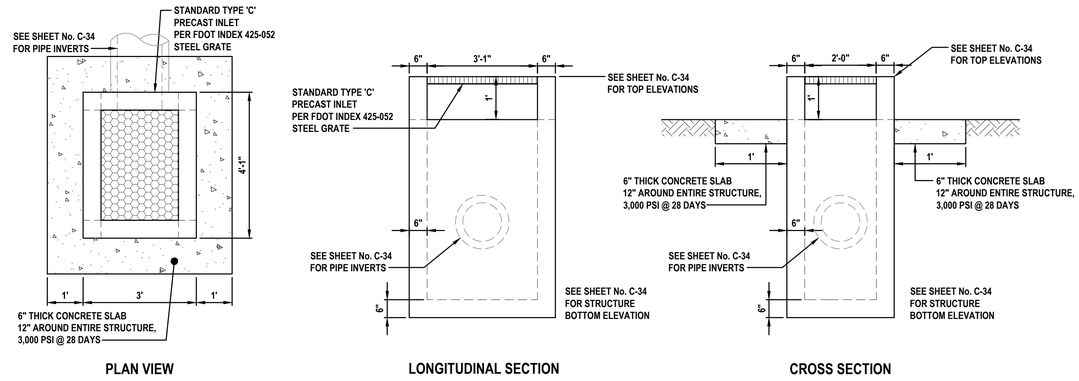
DRAWING NUMBER

C-32



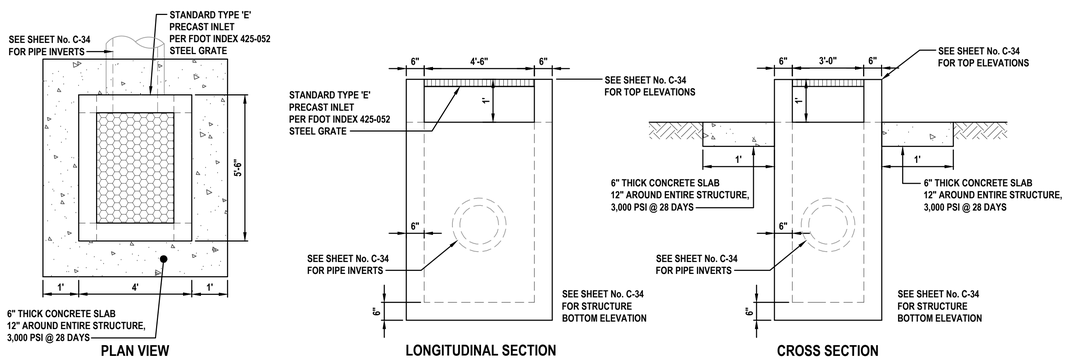
CONTROL STRUCTURE CS-01 DETAIL

NOT TO SCALE



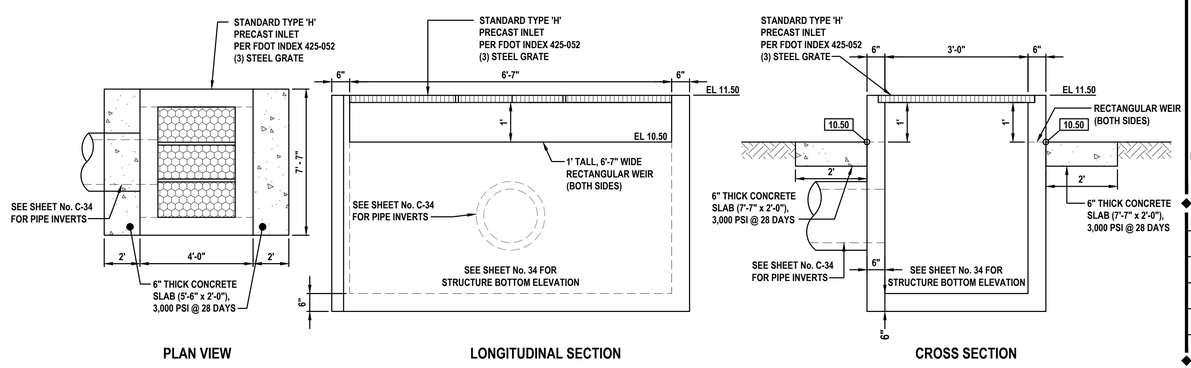
TYPE 'C' BUBBLE-UP STRUCTURE DETAIL: INLETS 24, 26, 31, 34, 35, 38, 43, 46, 50, 53, 56, 59, 61, 63, 66, 69, 70, 73, 79, 82, 85, 92 & 102

NOT TO SCALE



TYPE 'E' BUBBLE-UP STRUCTURE DETAIL: INLETS 6, 13, 22, 74, 78, 89 & 100

NOT TO SCALE



TYPE 'H' BUBBLE-UP STRUCTURE DETAIL: INLETS 27 & 28

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

DRAINAGE DETAILS

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	AS SHOWN

DRAWING NUMBER

C-33

DRAINAGE STRUCTURE SCHEDULE

I.D.	STA. OFFSET	ROAD	STRUCTURE TYPE	TOP EL SUMP EL	CONNECTIONS
CS-01	5+87.24 460.33' L	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 12.50 SUMP 3.50	24" - NE INV 5.00
CS-02	14+72.30 135.82' L	GREYWOOD CIRCLE	TYPE H INLET 4 GRATES	TOP 12.00 SUMP 3.00	24" - NW INV 6.60
CS-03	6+02.68 163.21' L	GREYWOOD CIRCLE	TYPE E INLET	TOP 11.00 SUMP 6.50	24" - SE INV 7.50
CS-04	16+89.73 163.00' R	CRESTWOOD PARK BOULEVARD	TYPE H INLET	TOP 11.00 SUMP 4.00	42" - N INV 5.00
CS-05	4+33.54 198.51' L	CORAL BELL DRIVE	TYPE H INLET	TOP 10.69 SUMP 3.00	42" - NE INV 5.90
I-01	23+38.67 13.26' R	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET	TOP 11.26 SUMP 5.82	18" - S INV 6.82 18" - NW INV 6.82
I-02	23+38.18 18.03' L	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET	TOP 11.11 SUMP 5.91	15" - NW INV 7.20 18" - SE INV 6.91
I-03	18+96.07 14.12' R	GREYWOOD CIRCLE	TYPE V INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 5.80	18" - NE INV 6.80
I-04	18+96.04 13.99' L	GREYWOOD CIRCLE	TYPE V INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 3.03	18" - SW INV 6.72 18" - SE INV 4.03
I-05	21+22.75 48.55' L	CRESTWOOD PARK BOULEVARD	TYPE 9 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 2.78	18" - NE INV 3.78 18" - NW INV 3.78
I-06 ★	22+37.61 60.44' R	CRESTWOOD PARK BOULEVARD	TYPE E INLET	TOP 11.00 SUMP 4.08	36" - NW INV 5.08
I-07	22+26.51 13.25' R	CRESTWOOD PARK BOULEVARD	TYPE 5 INLET (4' DIA) P BOTTOM	TOP 12.21 SUMP 3.74	36" - N INV 4.74 36" - SE INV 4.74
I-08	22+26.83 13.25' L	CRESTWOOD PARK BOULEVARD	TYPE 5 INLET (4' DIA) P BOTTOM	TOP 12.21 SUMP 3.55	36" - NW INV 4.55 36" - S INV 4.55
I-09	22+22.20 48.55' L	CRESTWOOD PARK BOULEVARD	TYPE 9 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 2.48	36" - NW INV 3.48 18" - SW INV 3.48 36" - SE INV 4.30
I-10	18+87.30 133.05' L	GREYWOOD CIRCLE	TYPE C INLET	TOP 12.00 SUMP 2.50	36" - SE INV 3.39 36" - N INV 3.39
I-11	17+54.24 14.13' R	GREYWOOD CIRCLE	TYPE V INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.80	18" - NE INV 7.80
I-12	17+54.24 14.12' L	GREYWOOD CIRCLE	TYPE V INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.72	18" - SW INV 7.72 18" - NE INV 7.72
I-13 ★	17+54.23 140.00' L	GREYWOOD CIRCLE	TYPE E INLET	TOP 11.00 SUMP 2.24	18" - SW INV 5.51 36" - S INV 3.24
I-14	19+27.20 13.25' R	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.80	18" - NW INV 7.80
I-15	19+27.20 14.12' L	CRESTWOOD PARK BOULEVARD	TYPE V INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.72	18" - SE INV 7.72 18" - N INV 7.72
I-16	19+44.70 42.79' L	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 12.00 SUMP 6.62	18" - S INV 7.62 18" - NW INV 7.62
I-17	3+78.54 125.00' R	CORAL BELL DRIVE	TYPE C INLET	TOP 12.00 SUMP 7.00	18" - SE INV 8.00
I-18	2+35.25 125.00' R	CORAL BELL DRIVE	TYPE C INLET	TOP 12.00 SUMP 6.15	18" - SE INV 7.15 18" - NW INV 7.15 24" - SW INV 7.15
I-19	2+35.25 14.12' R	CORAL BELL DRIVE	TYPE V INLET (4' DIA) P BOTTOM	TOP 11.98 SUMP 5.93	24" - NE INV 6.93 24" - SW INV 6.93
I-20	2+30.02 14.13' L	CORAL BELL DRIVE	TYPE V INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 5.87	24" - NE INV 6.87 24" - SW INV 6.87
I-21	2+30.02 121.06' L	CORAL BELL DRIVE	TYPE C INLET	TOP 12.00 SUMP -0.33	24" - NE INV 6.66 24" - NW INV 0.67
I-22 ★	2+72.67 152.00' L	CORAL BELL DRIVE	TYPE E INLET	TOP 11.50 SUMP -0.43	24" - SE INV 0.57
I-23	15+48.36 13.25' L	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.80	18" - N INV 7.80
I-24 ★	15+48.35 158.00' L	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 11.50 SUMP 6.37	18" - S INV 7.37
I-25	15+69.52 13.25' R	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 11.90 SUMP 6.70	18" - S INV 7.70
I-26 ★	15+69.53 162.50' R	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 11.50 SUMP 6.25	18" - N INV 7.25
I-27 ★	17+02.70 190.50' R	CRESTWOOD PARK BOULEVARD	TYPE H INLET	TOP 11.50 SUMP -2.09	42" - E INV -1.09
I-28 ★	17+62.48 188.80' R	CRESTWOOD PARK BOULEVARD	TYPE H INLET	TOP 11.50 SUMP -2.00	42" - W INV -1.00
I-29	16+05.65 13.25' R	BROOKDALE AVENUE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 11.92 SUMP 4.66	18" - NE INV 5.66
I-30	16+21.55 13.25' L	BROOKDALE AVENUE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 4.56	18" - SW INV 5.56 24" - N INV 5.56
I-31 ★	16+21.54 162.50' L	BROOKDALE AVENUE	TYPE C INLET	TOP 11.50 SUMP 4.11	24" - S INV 5.11
I-32	20+59.94 13.25' R	BROOKDALE AVENUE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 11.94 SUMP 2.79	18" - NW INV 3.79
I-33	20+48.01 13.25' L	BROOKDALE AVENUE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 2.70	18" - SE INV 3.70 18" - N INV 3.70
I-34 ★	20+48.00 162.50' L	BROOKDALE AVENUE	TYPE C INLET	TOP 11.50 SUMP 2.25	18" - S INV 3.25
I-35 ★	22+49.55 162.50' R	GREYWOOD CIRCLE	TYPE C INLET	TOP 11.50 SUMP 6.36	18" - NE INV 7.36

DRAINAGE STRUCTURE SCHEDULE

I.D.	STA. OFFSET	ROAD	STRUCTURE TYPE	TOP EL SUMP EL	CONNECTIONS
I-36	22+49.54 13.25' R	GREYWOOD CIRCLE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.80	18" - SW INV 7.80
I-37	22+49.54 13.25' L	GREYWOOD CIRCLE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.80	18" - NE INV 7.80
I-38 ★	22+49.53 166.78' L	GREYWOOD CIRCLE	TYPE C INLET	TOP 11.00 SUMP 6.34	18" - SW INV 7.34
I-39	26+64.35 13.25' R	GREYWOOD CIRCLE	TYPE 5 INLET (RIGHT) (4' DIA) P BOTTOM	TOP 12.00 SUMP 7.38	18" - E INV 8.38
I-40	26+64.35 13.25' L	GREYWOOD CIRCLE	TYPE 5 INLET (LEFT) (4' DIA) P BOTTOM	TOP 12.42 SUMP 7.30	18" - W INV 8.30 18" - E INV 8.30
I-41	25+06.71 21.11' R	BROOKDALE AVENUE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 2.16	24" - N INV 3.16 18" - S INV 6.86
I-42	25+15.52 65.87' L	BROOKDALE AVENUE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 1.89	24" - S INV 2.89 24" - N INV 2.89
I-43 ★	25+32.24 101.59' L	BROOKDALE AVENUE	TYPE C INLET	TOP 11.00 SUMP 2.00	24" - S INV 2.77
I-44	5+11.02 14.12' R	CORAL BELL DRIVE	TYPE V INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.80	18" - SW INV 7.80
I-45	5+11.02 14.13' L	CORAL BELL DRIVE	TYPE V INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 4.15	18" - NE INV 7.72 18" - SW INV 5.15
I-46 ★	5+11.01 150.06' L	CORAL BELL DRIVE	TYPE C INLET	TOP 11.50 SUMP 0.01	18" - NE INV 1.01
I-47	13+25.32 79.33' R	GREYWOOD CIRCLE	TYPE C INLET	TOP 10.00 SUMP 6.00	18" - NE INV 7.00
I-48	14+85.42 13.89' R	GREYWOOD CIRCLE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 5.52	18" - SW INV 6.52 18" - NE INV 6.52
I-49	14+85.43 13.65' L	GREYWOOD CIRCLE	TYPE V INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 5.44	18" - SW INV 6.44 18" - NE INV 6.44
I-50 ★	14+82.32 78.75' L	GREYWOOD CIRCLE	TYPE C INLET	TOP 11.00 SUMP 5.25	18" - SW INV 6.25
I-51	10+20.14 14.19' L	GREYWOOD CIRCLE	TYPE V INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.80	18" - S INV 7.80
I-52	10+20.12 13.19' R	GREYWOOD CIRCLE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.72	18" - N INV 7.72 18" - S INV 7.72
I-53 ★	10+11.39 159.59' R	GREYWOOD CIRCLE	TYPE C INLET	TOP 11.50 SUMP 6.28	18" - N INV 7.28
I-54	6+53.34 13.45' R	GREYWOOD CIRCLE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.80	18" - NW INV 7.80
I-55	6+53.34 13.08' L	GREYWOOD CIRCLE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.72	18" - SE INV 7.72 18" - NW INV 7.72
I-56 ★	6+53.30 162.52' L	GREYWOOD CIRCLE	TYPE C INLET	TOP 11.50 SUMP 6.27	18" - SE INV 7.27
I-57	2+58.73 13.25' L	GREYWOOD CIRCLE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 11.92 SUMP 6.14	18" - NE INV 7.14 18" - S INV 7.14
I-58	2+78.31 13.25' R	GREYWOOD CIRCLE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.02	18" - SW INV 7.02 18" - E INV 7.02
I-59 ★	2+78.32 158.00' R	GREYWOOD CIRCLE	TYPE C INLET	TOP 11.50 SUMP 5.52	18" - W INV 6.52
I-60	11+58.36 13.25' L	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.80	18" - N INV 7.80
I-61 ★	11+58.35 157.99' L	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 11.50 SUMP 6.36	18" - S INV 7.36
I-62	11+79.52 13.25' R	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 11.90 SUMP 6.12	18" - W INV 7.12 18" - S INV 7.12
I-63 ★	11+79.53 162.50' R	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 11.50 SUMP 5.60	18" - N INV 6.60
I-64	12+86.55 13.25' R	BROOKDALE AVENUE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 4.20	18" - N INV 5.20
I-65	12+86.55 13.25' L	BROOKDALE AVENUE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 4.12	18" - S INV 5.12 18" - N INV 5.12
I-66 ★	12+86.54 162.50' L	BROOKDALE AVENUE	TYPE C INLET	TOP 11.50 SUMP 3.67	18" - S INV 4.67
I-67	7+75.38 13.25' R	BROOKDALE AVENUE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.47 SUMP 7.27	24" - N INV 8.27
I-68	7+70.66 13.25' L	BROOKDALE AVENUE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.50 SUMP 6.70	24" - S INV 8.18 24" - N INV 7.70
I-69 ★	7+70.65 162.50' L	BROOKDALE AVENUE	TYPE C INLET	TOP 12.00 SUMP 6.25	24" - S INV 7.25
I-70 ★	6+87.50 162.50' R	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 12.00 SUMP 6.73	18" - N INV 7.73
I-71	6+87.50 13.25' R	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.38 SUMP 7.18	18" - S INV 8.18
I-72	7+15.00 13.25' L	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.50 SUMP 7.30	18" - N INV 8.30
I-73 ★	7+14.99 168.50' L	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 12.00 SUMP 6.84	18" - S INV 7.84
I-74 ★	4+11.62 159.86' R	BROOKDALE AVENUE	TYPE E INLET	TOP 12.00 SUMP 5.39	36" - NE INV 6.39
I-75	4+11.63 13.08' R	BROOKDALE AVENUE	TYPE 6 INLET (5' DIA) P BOTTOM ALT B	TOP 12.50 SUMP 5.60	36" - NE INV 6.60 36" - SW INV 6.60

DRAINAGE STRUCTURE SCHEDULE

I.D.	STA. OFFSET	ROAD	STRUCTURE TYPE	TOP EL SUMP EL	CONNECTIONS
I-76	4+11.61 14.37' L	BROOKDALE AVENUE	TYPE V INLET (4' DIA) P BOTTOM	TOP 12.50 SUMP 5.56	36" - SW INV 6.56 36" - NE INV 6.56
I-77	4+34.54 78.73' L	BROOKDALE AVENUE	TYPE E INLET	TOP 11.00 SUMP 5.39	36" - SW INV 6.39 36" - N INV 6.39
I-78 ★	4+96.45 164.32' L	BROOKDALE AVENUE	TYPE E INLET	TOP 12.00 SUMP 5.17	36" - S INV 6.17
I-79 ★	4+92.50 162.50' R	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 12.00 SUMP 6.85	18" - N INV 7.85
I-80	4+92.50 13.25' R	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.50 SUMP 7.30	18" - S INV 8.30
I-81	5+20.00 13.25' L	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.38 SUMP 7.18	18" - N INV 8.18
I-82 ★	5+29.57 170.16' L	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 12.00 SUMP 6.71	18" - S INV 7.71
I-83	0+09.50 13.25' R	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.54 SUMP 7.34	18" - N INV 8.34
I-84	0+09.50 13.25' L	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.54 SUMP 7.26	18" - S INV 8.26 18" - W INV 8.26
I-85 ★		CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 12.00 SUMP 7.17	18" - E INV 8.17
I-86	19+32.45 260.87' L	GREYWOOD CIRCLE	TYPE C INLET (SLOT N & S)	TOP 11.00 SUMP 6.50	15" - SE INV 7.50
I-87	14+63.50 141.74' L	GREYWOOD CIRCLE	TYPE C INLET	TOP 10.66 SUMP 5.46	24" - SE INV 6.46 24" - W INV 6.46
I-88	24+66.71 156.82' R	BROOKDALE AVENUE	TYPE C INLET	TOP 11.29 SUMP 6.57	18" - W INV 7.57 18" - N INV 7.57
I-89 ★	12+74.68 135.00' L	GREYWOOD CIRCLE	TYPE E INLET	TOP 10.13 SUMP 4.34	24" - E INV 5.34 48" - W INV 5.34 30" - NW INV 5.34
I-90	0+99.60 13.25' L	BROOKDALE AVENUE	TYPE 6 INLET (5' DIA) P BOTTOM ALT B	TOP 12.50 SUMP 7.30	18" - SW INV 8.30
I-91	0+99.60 13.25' R	BROOKDALE AVENUE	TYPE 6 INLET (5' DIA) P BOTTOM ALT B	TOP 12.50 SUMP 7.22	18" - NE INV 8.22 18" - SW INV 8.22
I-92 ★	0+41.51 138.41' R	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 12.00 SUMP 6.70	18" - NE INV 7.70
I-93	10+08.36 13.25' L	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.80	18" - S INV 7.80
I-94	10+08.36 13.25' R	CRESTWOOD PARK BOULEVARD	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 12.00 SUMP 6.72	18" - N INV 7.72 18" - E INV 7.72
I-95	1+25.00 13.25' R	GREYWOOD CIRCLE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 11.89 SUMP 6.69	18" - W INV 7.69
I-96	1+25.00 13.25' L	GREYWOOD CIRCLE	TYPE 6 INLET (4' DIA) P BOTTOM	TOP 11.89 SUMP 6.61	18" - E INV 7.61 18" - N INV 7.61
I-97	15+63.03 281.67' L	GREYWOOD CIRCLE	TYPE E INLET	TOP 11.16 SUMP 7.80	23" - SE INV 8.80 23" - NW INV 8.80
I-98	17+57.58 281.61' L	GREYWOOD CIRCLE	TYPE E INLET	TOP 11.28 SUMP 7.80	23" - NW INV 8.80 23" - SE INV 8.80
I-99	19+52.13 281.55' L	GREYWOOD CIRCLE	TYPE E INLET	TOP 11.36 SUMP 7.80	23" - NW INV 8.80 23" - SE INV 8.80
I-100	9+92.71 154.66' L	GREYWOOD CIRCLE	TYPE E INLET	TOP 10.38 SUMP 4.05	48" - E INV 5.05 48" - SE INV 5.05 48" - NW INV 5.05
I-101	4+08.83 257.50' L	CRESTWOOD PARK BOULEVARD	TYPE E INLET	TOP 11.00 SUMP 6.50	24" - E INV 7.50
I-102 ★	23+08.61 64.03' R	CRESTWOOD PARK BOULEVARD	TYPE C INLET	TOP 11.00 SUMP 5.58	18" - N INV 6.58
MES-01	15+38.09 203.00' L	CRESTWOOD PARK BOULEVARD	42" MES (2:1)		42" - SE INV 3.00
MES-02	20+04.00 216.78' R	BROOKDALE AVENUE	48" MES (2:1)		48" - N INV 4.11
MES-03	19+97.24 181.40' R	BROOKDALE AVENUE	48" MES (2:1)		48" - S INV 4.15
MES-04	18+58.85 67.07' L	BROOKDALE AVENUE	24"X38" MES (4:1) (DOUBLE)		38" - S INV 4.10 38" - S INV 4.10
MES-05	19+07.22 79.93' R	BROOKDALE AVENUE	24"X38" MES (4:1) (DOUBLE)		38" - N INV 3.95 38" - N INV 3.95
MES-06	17+19.95 105.45' R	CRESTWOOD PARK BOULEVARD	42" MES (4:1)		48" - N INV 4.12
MES-07	9+74.77 177.29' L	GREYWOOD CIRCLE	48" MES (4:1)		48" - SE INV 5.08
MES-08	7+93.92 199.03' R	GREYWOOD CIRCLE	24" MES (2:1)		24" - NW INV 3.96
MES-09	11+18.43 67.85' L	BROOKDALE AVENUE	24"X38" MES (4:1) (DOUBLE)		38" - SE INV 4.66 38" - SE INV 4.66
MES-10	12+03.62 72.50' R	BROOKDALE AVENUE	24"X38" MES (4:1) (DOUBLE)		38" - NW INV 4.50 38" - NW INV 4.50
MES-11	12+75.74 182.67' R	BROOKDALE AVENUE	36" MES (2:1)		36" - E INV 4.39
MES-12	13+22.06 180.65' R	BROOKDALE AVENUE	36" MES (2:1)		36" - W INV 4.50
MES-13	9+17.67 79.91' R	CRESTWOOD PARK BOULEVARD	48" MES (4:1)		48" - NW INV 5.12

DRAINAGE STRUCTURE SCHEDULE

I.D.	STA. OFFSET	ROAD	STRUCTURE TYPE	TOP EL SUMP EL	CONNECTIONS
MES-14	8+37.30 77.86' L	CRESTWOOD PARK BOULEVARD	48" MES (4:1)		48" - SE INV 5.30
MES-15	23+51.38 505.24' L	CRESTWOOD PARK BOULEVARD	14"X23" MES (4:1)		23" - SE INV 8.88
MES-16	26+00.33 25.59' L	BROOKDALE AVENUE	14"X23" MES (4:1)		23" - S INV 8.74
MES-17	26+00.33 24.90' R	BROOKDALE AVENUE	14"X23" MES (4:1)		23" - N INV 8.85
MES-18			18" MES (4:1)		18" - SE INV 10.00
MES-19	23+51.25 66.98' R	CRESTWOOD PARK BOULEVARD	14"X23" MES (4:1)		23" - NW INV 8.60
MES-20	12+67.45 153.00' L	GREYWOOD CIRCLE	30" MES (4:1)		30" - SE INV 5.36
MES-21			24" MES (2:1)		24" - NE INV 5.47
MES-22	1+13.50 180.00' L	CRESTWOOD PARK BOULEVARD	24" MES (2:1)		24" - SW INV 5.00
MES-23	2+25.68 178.21' L	CRESTWOOD PARK BOULEVARD	24" MES (2:1)		24" - SE INV 5.87
MES-24	5+13.54 295.00' L	CRESTWOOD PARK BOULEVARD	24" MES (2:1)		24" - S INV 2.42
MES-25	12+76.73 194.58' R	BROOKDALE AVENUE	48" MES (2:1)		48" - S INV 4.75
MES-26	12+86.17 224.89' R	BROOKDALE AVENUE	48" MES (2:1)		48" - N INV 4.72
MH-01	16+12.84 147.68' L	CRESTWOOD PARK BOULEVARD	5' MANHOLE		42" - SE INV 4.68 42" - NW INV 4.68
MH-02	16+73.89 33.66' L	CRESTWOOD PARK BOULEVARD	5' MANHOLE	TOP 9.40 SUMP 3.27	48" - NW INV 4.27 48" - S INV 4.27
MH-03	4+33.55 137.07' L	CORAL BELL DRIVE	5' MANHOLE	TOP 12.78 SUMP 3.60	48" - NW INV 4.60 42" - SW INV 5.84 48" - SE INV 4.60
MH-04	10+85.74 35.42' R	GREYWOOD CIRCLE	5' MANHOLE	TOP 12.00 SUMP 3.84	48" - NW INV 4.84 48" - SE INV 4.84
MH-05	16+84.99 30.00' R	CRESTWOOD PARK BOULEVARD	5' MANHOLE	TOP 10.00 SUMP 3.87	42" - S INV 4.87 42" - NW INV 4.87
MH-06	0+65.00 150.00' L	CRESTWOOD PARK BOULEVARD	4' MANHOLE	TOP 12.60 SUMP 4.11	24" - W INV 5.11 24" - NE INV 5.11
MH-07		CRESTWOOD PARK BOULEVARD	4' MANHOLE	TOP 11.50 SUMP 4.24	24" - SW INV 5.24 24" - E INV 5.24
MH-08	5+13.54 150.00' L	CRESTWOOD PARK BOULEVARD	4' MANHOLE	TOP 12.70 SUMP 4.28	24" - W INV 5.28 24" - N INV 5.28
MH-09	2+78.64 150.00' L	CRESTWOOD PARK BOULEVARD	4' MANHOLE	TOP 12.60 SUMP 4.75	24" - NW INV 5.75 24" - E INV 5.75
MH-10	10+35.67 38.32' L	GREYWOOD CIRCLE	5' MANHOLE	TOP 11.50 SUMP 3.93	48" - SE INV 4.93 48" - NW INV 4.93
UWALL-01	6+43.92 486.55' L	CRESTWOOD PARK BOULEVARD	24" U-ENDWALL (4:1)		24" - SW INV 4.75
UWALL-02	7+48.23 257.51' L	CRESTWOOD PARK BOULEVARD	24" U-ENDWALL (4:1)		24" - W INV 5.20

I.D. WITH * SEE DETAIL, SHEET C-33

STORM PIPE SCHEDULE

NAME	DIA.	LENGTH	SLOPE	LINK
P-01	18"	60'	-0.40%	I-01 <--> I-102
P-02	18"	32'	-0.30%	I-02 <--> I-01
P-03	18"	29'	0.30%	I-03 <--> I-04
P-04	18"	83'	0.30%	I-04 <--> I-05
P-05	18"	100'	0.30%	I-05 <--> I-09
P-06	36"	49'	0.70%	I-06 <--> I-07
P-07	36"	27'	-0.70%	I-08 <--> I-07
P-08	36"	36'	0.70%	I-08 <--> I-09
P-09	36"	84'	0.11%	I-09 <--> I-10
P-10	36"	134'	0.11%	I-10 <--> I-13
P-11	18"	28'	-0.30%	I-11 <--> I-12
P-12	18"	127'	1.75%	I-12 <--> I-13
P-13	18"	29'	0.30%	I-14 <--> I-15
P-14	18"	34'	0.30%	I-15 <--> I-16
P-15	18"	158'	0.30%	I-16 <--> I-18
P-16	18"	144'	0.59%	I-17 <--> I-18
P-17	24"	111'	0.20%	I-18 <--> I-19
P-18	24"	29'	0.20%	I-19 <--> I-20
P-19	24"	108'	0.20%	I-20 <--> I-21
P-20	24"	53'	0.20%	I-21 <--> I-22
P-21	18"	144'	-0.30%	I-23 <--> I-24
P-22	18"	149'	0.30%	I-25 <--> I-26
P-23	42"	134'	0.10%	CS-04 <--> MH-05
P-24	42"	192'	0.10%	MH-05 <--> MH-01
P-25	42"	93'	1.81%	MH-01 <--> MES-01
P-26	42"	92'	0.10%	I-28 <--> I-27
P-27	18"	33'	0.30%	I-29 <--> I-30
P-28	24"	149'	0.30%	I-30 <--> I-31
P-29	38"	155'	0.10%	MES-04 <--> MES-05
P-30	18"	31'	0.30%	I-32 <--> I-33
P-31	18"	149'	0.30%	I-33 <--> I-34
P-32	18"	28'	0.30%	I-39 <--> I-40
P-33	18"	242'	0.30%	I-40 <--> I-88
P-34	18"	143'	0.50%	I-88 <--> I-41
P-35	24"	89'	0.30%	I-41 <--> I-42
P-36	24"	40'	0.30%	I-42 <--> I-43
P-37	48"	37'	-0.10%	MES-02 <--> MES-03
P-38	18"	149'	0.30%	I-36 <--> I-35
P-39	18"	153'	0.30%	I-37 <--> I-38
P-40	48"	147'	-0.10%	MES-06 <--> MH-02
P-41	48"	334'	-0.10%	MH-02 <--> MH-03
P-42	42"	62'	0.09%	CS-05 <--> MH-03
P-43	48"	240'	-0.10%	MH-03 <--> MH-04
P-44	48"	89'	-0.10%	MH-04 <--> MH-10
P-45	18"	28'	0.30%	I-44 <--> I-45
P-46	18"	137'	3.04%	I-45 <--> I-46
P-47	18"	161'	0.30%	I-47 <--> I-48
P-48	18"	29'	0.30%	I-48 <--> I-49
P-49	18"	65'	0.30%	I-49 <--> I-50
P-50	24"	30'	0.48%	CS-02 <--> I-87
P-51	48"	286'	0.10%	I-89 <--> I-100
P-52	18"	29'	0.30%	I-51 <--> I-52
P-53	18"	146'	0.30%	I-52 <--> I-53
P-54	18"	29'	0.30%	I-54 <--> I-55
P-55	18"	149'	0.30%	I-55 <--> I-56
P-56	24"	378'	-0.94%	MES-08 <--> CS-03
P-57	18"	35'	0.35%	I-57 <--> I-58
P-58	18"	144'	0.35%	I-58 <--> I-59
P-59	18"	146'	0.30%	I-60 <--> I-61
P-60	18"	149'	0.35%	I-62 <--> I-63

STORM PIPE SCHEDULE

NAME	DIA.	LENGTH	SLOPE	LINK
P-61	18"	29'	0.30%	I-64 <--> I-65
P-62	18"	149'	0.30%	I-65 <--> I-66
P-63	36"	47'	-0.24%	MES-11 <--> MES-12
P-64	48"	178'	0.10%	MES-14 <--> MES-13
P-65	24"	29'	0.30%	I-67 <--> I-68
P-66	24"	149'	0.30%	I-68 <--> I-69
P-67	18"	150'	-0.30%	I-71 <--> I-70
P-68	18"	156'	0.30%	I-72 <--> I-73
P-69	36"	147'	0.15%	I-75 <--> I-74
P-70	36"	28'	-0.15

Thank you for purchasing the LANDLOK® Turf Reinforcement Mat (TRM) by Propex Operating Company, LLC (Propex). This document provides installation and maintenance guidelines for LANDLOK used as slope armoring to increase earthen slope resiliency. LANDLOK provides permanent erosion protection on either the flood side and/ or protected side of an earthen slope.

Temporary securing pins (pins) are used during installation to hold LANDLOK in place. Pins also promote vegetation establishment keeping LANDLOK in intimate contact with the soil.

LANDLOK is an engineered solution with a unique design for each specific project. While Propex has made every effort to ensure general validity, this information should not be used for a specific application without independent professional examination and verification of its suitability, applicability, and accuracy. The information provided herein is for general information only, and is intended to present installation guidance. Project specific contract documents take precedence when pin placements are different than what is represented in this document. Depending upon the critical nature of the structure to be armored, work restrictions may be in place such as limiting work based on growing seasons, weather patterns, etc. Work should be performed under the provisions set forth for the specific project. Propex Engineering Services is available for support during installation to consult for solving constructability issues encountered in specific applications. Please feel free to call our technical support hotline at (423) 553-2450.

BEFORE INSTALLATION BEGINS

- *Coordinate with a Propex Representative:* A pre-construction meeting is suggested with the construction team and a representative from Propex. This meeting should be scheduled by the contractor with at least a two week notice.
- *Gather the Tools Needed:* Tools that you will need to install LANDLOK include a pair of industrial shears to cut LANDLOK, tape measure, and mallet or hammer.
- *Determine how to Establish Vegetation:* The method of vegetation establishment should be determined prior to the start of installation. Different vegetation establishment methods require different orders of installation. Refer to *Establish Vegetation* for further guidance.

INSTALLATION OF LANDLOK ON SLOPES

PREPARE THE SITE

It is recommended during all stages of site preparation that disturbed soils remain unprotected for not more than a single day. Depending on project size this may require progressive site preparation during installation.

1. Grade and compact the area on the slope where LANDLOK will be installed. The slope surface should be uniform and smooth, having all rocks, clods, vegetation or other objects removed so that during *LANDLOK Laydown*, LANDLOK comes in direct, intimate contact with the slope surface.
2. Prepare the area to be armored with LANDLOK by loosening the topsoil to promote better vegetation establishment. This may be accomplished with a rotary tiller on slopes 3:1 or flatter. For slopes greater than 3:1, prepare topsoil in a safe manner.
3. Excavate a Crest of Slope (COS) trench 12 in x 12 in (300 mm x 300 mm) minimum at a distance of 3 ft (900 mm) from the crest of the slope. (Figure 1).

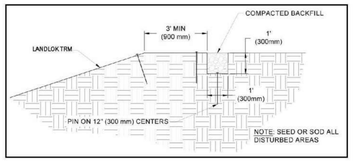


Figure 1: Crest of Slope (COS) Trench

4. Excavate a Toe of Slope (TOS) trench 12 in x 12 in (300 mm x 300 mm) minimum at a minimum distance of 5 ft (1.5 m) from the toe of the slope. (Figure 2)
5. If seeding, refer to *Vegetation Establishment* for additional considerations during site preparation.

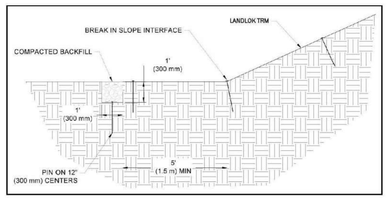


Figure 2: Toe of Slope (TOS) Trench

LANDLOK LAYDOWN

1. Begin the LANDLOK laydown process by starting with the downstream / downwind end of the site. To ensure proper pining of the overlapped areas the proceeding roll width must be laid out before the current roll width can be pinned with exception to the final roll width. For straight sections of a slope, LANDLOK panel lengths should be long enough to construct COS and TOS trenches while also covering the surface of the slope being armored (Figure 12). Panel edges should rest approximately perpendicular to the slope center line. For best results, panels of LANDLOK should be continuous and free from seams or roll end overlaps that are parallel to the centerline of the slope. Panel edge overlapping should follow a pattern of placing each proceeding panel's edge overtop the previous panel edge, shingling the panels in the direction of the water flow or prevailing wind.

2. Starting at the COS trench, lay LANDLOK roll so that the roll ends point towards the crest of the slope (Figure 3), with a 3 inch (75 mm) overlap created at adjacent panel edge locations. Ensure that adjacent panel edges maintain a minimum 3 inch overlap during *LANDLOK laydown*. (Figure 8)

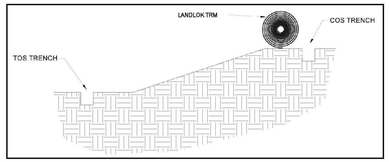


Figure 3: Crest of Slope (COS) Trench Alignment

3. Secure LANDLOK with pins in the COS trench. Pins should be made of steel with a 0.20 in (5 mm) minimum diameter, having a 1.5 in (38mm) diameter washer at the head, and a length between 12 and 24 in (300-600 mm) with sufficient ground penetration to resist pullout (Figure 4). Longer pins may be required for looser soils. Heavier metal stakes may be required in rocky soils. Suggested placement of pins for the COS trench is along the bottom of the trench with pins on 12 in (300 mm) centers. Pins should also be installed on panel edge overlaps in the COS trench.

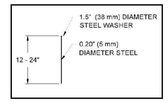


Figure 4: Securing Pin

4. Backfill and compact the COS trench in the location of the first LANDLOK panel only (Figure 5).

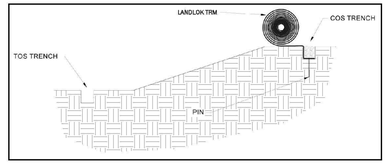


Figure 5: Crest of Slope (COS) Trench Placement

5. Unroll the LANDLOK roll on the slope surface in the area to be armored (Figure 6). Ensure that LANDLOK has intimate contact with the ground and all irregular surfaces beneath LANDLOK are removed.

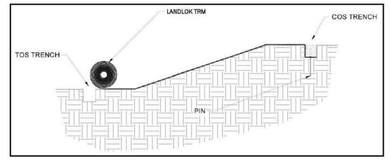


Figure 6: Placement of LANDLOK across Slope

6. Secure LANDLOK panels in place using pins across the slope surface according to the project's engineered design. Pin placement should reflect a staggered checkerboard pattern across the slope surface for best results (Figure 7 and Figure 8).
   - The leading edge of the first LANDLOK panel should be secured on the Slope Armoring Edge (SAE) with pins on 12 in (300 mm) centers.
   - Roll edges shall be overlapped a minimum of 3 in (75 mm) with pins placed on 12 in (300 mm) centers (Figure 8).
   - Roll ends shall be overlapped a minimum of 6 in (150 mm) with upstream / upwind panel on top. Secure roll end overlaps with two rows of pins staggered 6 in (150 mm) apart on 12 in (300 mm) centers (Figure 9)
   - For slope lengths greater than 45 ft (13.7 m), install simulated check slots. This method includes placing two rows of pins 12 in (300 mm) apart on 12 in (300 mm) centers at 45 ft (13.7 m) maximum intervals or across the midpoint of the slope for slope lengths less than 60 ft (18.2 m) (Figure 10).
   - At the break in slope interface towards the TOS, it is suggested that pins be installed on 4 ft (1.2 m) centers (Figure 11).

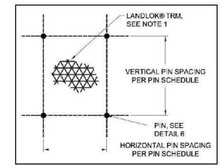


Figure 7: Example Pin Pattern

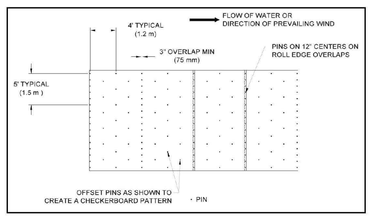


Figure 8: Example of Panel Overlap

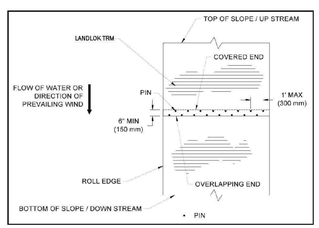


Figure 9: Roll End Overlap

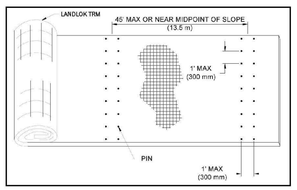


Figure 10: Simulated Check Slot

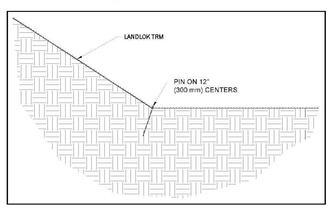


Figure 11: Break in Slope Interface

7. Secure LANDLOK with pins in the TOS trench. Suggested placement of pins for the TOS trench is along the bottom of the trench with pins on 12 in (300 mm) centers (Figure 12).

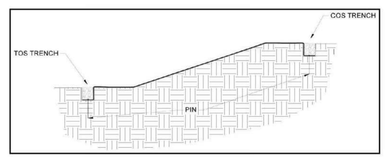


Figure 12: Crest of Slope (COS) Trench and Toe of Slope (TOS) Trench Complete

8. Backfill and compact the TOS trench. (Figure 12)
9. Continue to work down the length of the slope by repeating steps 1 through 8 overlapping each adjacent LANDLOK panel by 3 inches (75 mm) (Figure 8). The last LANDLOK panel should terminate on the Slope Armoring Edge (SAE) with pins on 12 in (300 mm) centers. At a minimum, LANDLOK panels should be pinned entirely across the slope surface, pins should be installed in the trenches, and the trenches should be backfilled and compacted at the end of each day to minimize rework in the case of a major rain event. Specific project conditions may warrant further evaluation of installation order for ease. An example isometric view (Figure 13) of a slope armored with LANDLOK can be seen below for overall reference. Consult Propex Engineering Services at (423) 553-2450 with any questions that you may have.

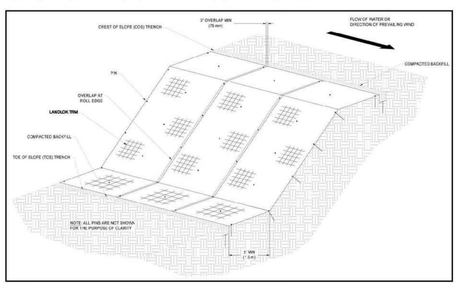


Figure 13: Completed Slope Isometric View

ESTABLISH VEGETATION

Vegetation can be established with LANDLOK by broadcast seeding, hydraulic seed application (hydroseeding), or sodding. Seed application rate, seed type, sod type, and irrigation rate should be selected based on local or site specific knowledge and time of year. For best results, consider having a site specific soil test performed to help determine what soil amendments, such as lime and fertilizer, need to be incorporated into the soil to promote healthy vegetation.

Irrigate as necessary to establish and maintain vegetation until 75% of vegetation has established and has reached a height of 2 inches. Frequent, light irrigation will need to be applied to seeded areas if natural rain events have not occurred within two weeks of seeding. When watering seeded areas, use a fine spray to prevent erosion of seeds or soil. Do not over irrigate. Proper irrigation guidance is provided under the Maintenance portion of this document.

CONSIDER PROJECT SPECIFIC NEEDS

1. A deeper terminal trench and/or hard armoring may be required when slopes have severe scour potential at the toe location.
2. For installing LANDLOK panels around curved sections of a slope, trim panels at an angle so that no more than two layers of LANDLOK overlap at any point in time. Additional pins may be needed to secure panel edges towards the toe of the slope depending upon the radius of the curved slope. Install pins as necessary to securely fasten LANDLOK to the ground.
3. Vehicular traffic should not be allowed on LANDLOK at any time.
4. Disturbed areas should be reseeded. If ruts or depressions develop for any reason, rework soil until smooth and reseed such areas.

SHORT-TERM AND LONG-TERM MAINTENANCE OF LANDLOK

The purpose of this section is to provide some general guidelines for performing short-term and long-term maintenance of LANDLOK with respect to maintaining vegetation reinforced with LANDLOK, and patching of LANDLOK (in the event it needs to be removed or replaced). These procedures are to be considered minimum guidelines for proper maintenance, and further maintenance techniques may be appropriate considering local practices and procedures.

LANDLOK PROTECTED SLOPES

For LANDLOK to be most effective, it is important to ensure that it is properly maintained both during construction and after construction. Identifying trouble areas is easy with LANDLOK, and it can make identifying potential threats much simpler and manageable. Look for areas with sparse, dying, or no vegetation as these are obvious signs that LANDLOK is losing intimate contact with the slope surface. If loss of ground surface occurs, LANDLOK will need to be removed and reinstalled as described in *Patching and Repairs* Section after the eroded area is backfilled with compacted soil that is similar to material of the slope. After LANDLOK is reinstalled, re-establish vegetation on the newly installed LANDLOK and disturbed areas. Monitor the sites to determine if frequent watering may be required to establish vegetation.

To minimize exposure to unwanted maintenance and repair, LANDLOK armored slopes should be free of vehicular traffic. Routine maintenance and slope inspections should be performed by foot traffic only. Tracked equipment such as skid steers, excavators, or dozers should only be allowed to traffic over LANDLOK in times of emergency after vegetation establishment is complete. Failure to control unauthorized traffic can result in LANDLOK being damaged resulting in erosion below LANDLOK during storm events.

MAINTAINING VEGETATION

Good vegetative cover will ensure maximum performance of LANDLOK. Vegetative cover care starts before a project is complete and is ongoing until all LANDLOK is installed. Vegetative cover should be given every opportunity to grow and establish well.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

TURF REINFORCEMENT MAT
DETAILS AND NOTES

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	AS SHOWN

DRAWING NUMBER

C-35

This will require that a contractor periodically fertilize and water the grasses as needed until a project is complete in the short-term, with the owner of the slope fulfilling the maintenance of the slope in a similar fashion for the long-term. For the entire lifecycle of LANDLOK, every effort must be made to prevent unauthorized encroachments, grazing, vehicle traffic, the misuse of chemicals, or burning during inappropriate seasons.

1. After the installation of vegetation is complete, immediately water and soak the entire area using a fine spray to prevent erosion and loss of seeds. A suggested amount of water is identified below. Prior to installation if using sod, the sod pads in storage should be kept moist at all times and not stored for more than 24 hours from site arrival to installation. Warmer weather will necessitate more frequent applications than listed below.
   A. For each reach/segment of installed vegetation, watering shall be conducted immediately after each installation or the day's work.
   B. For initial vegetation establishment, water vegetation in a manner consistent with best practices for vegetation type and location.
   C. Establish a watering schedule and follow until vegetation is well established and will thrive in the absence of manual watering.
   D. Avoid excessive application of water, so that surface runoff does not occur. Runoff should be prohibited. However, additional watering may be required for repaired or damaged areas.
2. Fertilizer should be applied as needed to address any nutrient deficiencies revealed in soil testing.
3. Mowing over LANDLOK is not permitted at any time.

PATCHING AND REPAIRS

LANDLOK may require localized repair at times. For emergency repairs, an adequate supply of LANDLOK should be maintained in inventory with the necessary tools to install. This will allow for a timely, initial repair of the system.

1. In order to identify areas in need of repair, the site should be patrolled immediately after rain events of 2 inches or more. When patrolling look for areas of sparse vegetation, exposed edges of LANDLOK, and areas where direct contact between LANDLOK and the slope surface is compromised. LANDLOK should be rated as *Acceptable*, *Minimally Acceptable*, or *Unacceptable* during inspection.
   A. *Acceptable* (A) - The rated area is in satisfactory, acceptable condition, and will function as designed and intended during the rain event. LANDLOK has no exposed edges, is installed tightly by maintaining direct contact to the slope surface with no rilling beneath, and has over 90% vegetation cover. There is no noticeable damage present.
   B. *Minimally Acceptable* (M) - The rated area has a minor deficiency that needs to be corrected. The minor deficiency will not seriously impair the functioning of the area during the next rain event; however, the overall reliability of the project will be lowered because of the minor deficiency. LANDLOK has 75% vegetation cover with un-vegetated patches as large as one square yard. Edges of LANDLOK are exposed with noticeable damage. Minimal erosion has occurred underneath LANDLOK.
   C. *Unacceptable* (U) - The rated area is unsatisfactory. The deficiency is so serious that the area will not adequately function in the next rain event. LANDLOK has been physically torn, ripped, or lifted from the slope surface. Less than 75% vegetation cover is present with un-vegetated patches being greater than 1 square yard, and there is evidence that erosion is occurring beneath LANDLOK.
2. Repair any raised or exposed edges of LANDLOK by driving existing and additional pins along the edges as necessary to securely fasten to the ground. Inspect areas where the vegetation is not growing on top of LANDLOK. Many times this is an indicator that LANDLOK has lost contact with the ground beneath. Check for voids beneath LANDLOK and fill any holes, gullies, etc. with compacted fill material if possible. Replace LANDLOK as described below.

3. To repair LANDLOK, cut out and remove damaged areas in a square configuration a minimum size of 2 ft by 2 ft. Remove all vegetation and debris atop of LANDLOK. Loosen the top 1 to 2 in of soil in the patch area then seed. The subgrade of area to be patched shall be prepared to be smooth and uniform and transition smoothly into the in-situ area. Cut a square LANDLOK patch a minimum of 12 in greater than the damaged area for all four sides of the patch. Overlap the patch area in all directions a minimum of 12 in. The patch overlaps shall be tucked under the existing damaged LANDLOK material (Figure 14 and Figure 15)

Figure 14: LANDLOK Patch Cross Section

Figure 15: LANDLOK Patch Plan View

4. Install pins on 6 in (150 mm) (max) centers. For larger areas of damage, pins should be installed to match existing pin pattern. Once LANDLOK is in place, vegetate per project specifications.

SUMMARY

Maintenance should consist of watering and weeding, repair of all erosion, and any re-seeding as necessary to establish a uniform stand of vegetation during construction and beyond. A minimum of 70% of the armored area should be covered with no bare or dead spots greater than 10 ft² (1 m²). Throughout the duration of the project, the Contractor should water all grassed areas as often as necessary to establish satisfactory growth and to maintain its growth throughout the duration of the project.

After the project is complete, it is the responsibility of the Owner to maintain and upkeep all LANDLOK installed areas for long term performance and best results as described herein for superior slope armoring.

Product Data
LANDLOK® 450

LANDLOK® 450 turf reinforcement mat (TRM) features X3® technology that consists of a dense web of interlocking, multi-lobed polypropylene fibers positioned between two biaxially oriented nets and mechanically bound together by parallel stitching with polypropylene thread. The TRM is designed to accelerate seedling emergence, exhibit high resiliency, and possess strength and elongation properties to limit stretching in a saturated condition. Every component of LANDLOK® 450 is stabilized against chemical and ultraviolet degradation which are normally found in a natural soil environment. Furthermore, the TRM contains no biodegradable components.

LANDLOK® 450 conforms to the property values listed below[1] and is manufactured at a Propex facility having achieved ISO 9001:2008 certification. Propex performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP).

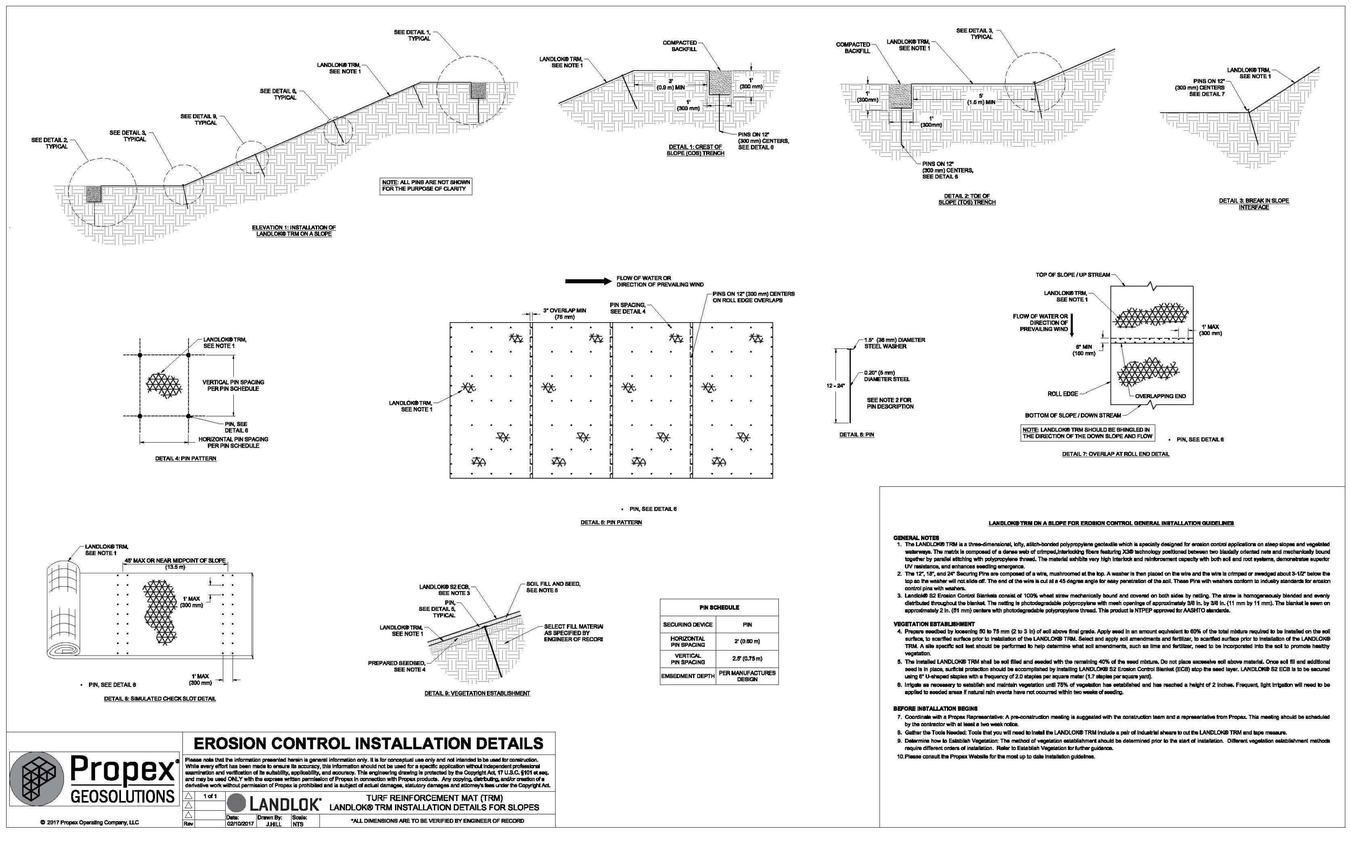
PROPERTY	TEST METHOD	ENGLISH	METRIC
ORIGIN OF MATERIALS			
% U.S. Manufactured		100%	100%
PHYSICAL			
Mass/Unit Area [2]	ASTM D-6566	10.0 oz/yd²	339 g/m²
Thickness [2]	ASTM D-6525	0.50 in	12.7 mm
Light Penetration (% Passing) [2]	ASTM D-6567	20%	20%
Color	Visual	Green or Tan	
MECHANICAL			
Tensile Strength [2]	ASTM D-6818	425 x 350 lbs/ft	6.2 x 5.1 kN/m
Elongation [2]	ASTM D-6818	50%	50%
Resiliency [2]	ASTM D-6524	90%	90%
Flexibility [2]	ASTM D-6575	0.026 in-lb	30,000 mg-cm
ENDURANCE			
UV Resistance % Retained at 1,000 hrs [2]	ASTM D-4355	80%	80%
PERFORMANCE			
Velocity (Vegetated) [2, 3]	Large Scale	18 ft/sec	5.5 m/sec
Shear Stress (Vegetated) [2, 3]	Large Scale	10 lb/ft²	479 Pa
Manning's n (Unvegetated) [2, 4]	Calculated	0.025	0.025
Seedling Emergence [2]	ASTM D-7322	409%	409%
ROLL SIZES		8 ft x 140 ft 16 ft x 140 ft 16 ft x 348.75 ft	2.45 m x 42.7 m 4.88 m x 42.7 m 4.88 m x 106.3 m

NOTES
1. The property values listed above are effective 01/22/2020 and are subject to change without notice.
2. Values represent testing at time of manufacture and are shown as typical values.
3. Maximum permissible velocity and shear stress has been obtained through vegetated testing programs featuring specific soil types, vegetation classes, flow conditions, and failure criteria. These conditions may not be relevant to every project nor are they replicated by other manufacturers. Please contact Propex for further information.
4. Calculated as typical values from large-scale flexible channel lining test programs with a flow depth of 6 to 12 inches.

Propex GEOSOLUTIONS
ENGINEERED EARTH SOLUTIONS™
www.propexglobal.com

Propex Operating Company, LLC · 4019 Industry Drive · Chattanooga, TN 37416 · ph 800 621 1273 · ph 423 855 1466

ARMORMAT®, PYRAMAT®, LANDLOK®, X3®, PYRAWALL®, SCOURLOK®, GEOTEX®, PETROMAT®, PETROTAC®, REFLECTEX® and GRIDPRO™ are registered trademarks of Propex Operating Company, LLC.
This publication should not be construed as engineering advice. While information contained in this publication is accurate to the best of our knowledge, Propex does not warrant its accuracy or completeness. The ultimate customer and user of the products should assume sole responsibility for the final determination of the suitability of the information and the products for the contemplated and actual use. The only warranty made by Propex for its products is set forth in our product data sheets for the product, or such other written warranty as may be agreed by Propex and individual customers. Propex specifically disclaims all other warranties, express or implied, including without limitation, warranties of merchantability or fitness for a particular purpose, or arising from provision of samples, a course of dealing or usage of trade.
© 2020 Propex Operating Company, LLC



PIN SCHEDULE	
SECURING DEVICE	PIN
HORIZONTAL PIN SPACING	3' (0.90 m)
VERTICAL PIN SPACING	2.5' (0.75 m)
EMBEDMENT DEPTH	PER MANUFACTURER'S DESIGN

LANDLOK® TRM ON A SLOPE FOR EROSION CONTROL GENERAL INSTALLATION GUIDELINES

GENERAL NOTES
1. The LANDLOK® TRM is a three-dimensional, lofty, stitch-bonded polypropylene geotextile which is specially designed for erosion control applications on steep slopes and vegetated waterways. The matrix is composed of a dense web of crimped,interlocking fibers featuring X3® technology positioned between two biaxially oriented nets and mechanically bound together by parallel stitching with polypropylene thread. The material exhibits very high interlock and reinforcement capacity with both soil and root systems, demonstrates superior UV resistance, and enhances seedling emergence.
2. The 12", 18", and 24" Securing Pins are composed of a wire, mushroomed at the top. A washer is then placed on the wire and the wire is crimped or swedged about 3-1/2" below the top as the washer will not slide off. The end of the wire is cut at a 45 degree angle for easy penetration of the soil. These Pins with washers conform to industry standards for erosion control pins with washers.
3. LANDLOK® S2 Erosion Control Blankets consist of 100% wheat straw mechanically bound and covered on both sides by netting. The straw is homogeneously blended and evenly distributed throughout the blanket. The netting is photodegradable polypropylene with mesh openings of approximately 3/8 in, by 3/8 in. (11 mm by 11 mm). The blanket is sewn on approximately 2 in. (51 mm) centers with photodegradable polypropylene thread. This product is NTPEP approved for AASHTO standards.

VEGETATION ESTABLISHMENT
4. Prepare seedbed by loosening 60 to 75 mm (2 to 3 in) of soil above final grade. Apply seed in an amount equivalent to 60% of the total mixture required to be installed on the soil surface, to scarified surface prior to installation of the LANDLOK® TRM. Select and apply soil amendments and fertilizer, to scarified surface prior to installation of the LANDLOK® TRM. A site specific soil test should be performed to help determine what soil amendments, such as lime and fertilizer, need to be incorporated into the soil to promote healthy vegetation.
5. The installed LANDLOK® TRM shall be soil filled and seeded with the remaining 40% of the seed mixture. Do not place excessive soil above material. Once soil fill and additional seed is in place, surficial protection should be accomplished by installing LANDLOK® S2 Erosion Control Blanket (ECB) atop the seed layer. LANDLOK® S2 ECB is to be secured using 6" U-shaped staples with a frequency of 2.0 staples per square meter (1.7 staples per square yard).
6. Irrigate as necessary to establish and maintain vegetation until 75% of vegetation has established and has reached a height of 2 inches. Frequent, light irrigation will need to be applied to seeded areas if natural rain events have not occurred within two weeks of seeding.

BEFORE INSTALLATION BEGINS
7. Coordinate with a Propex Representative: A pre-construction meeting is suggested with the construction team and a representative from Propex. This meeting should be scheduled by the contractor with at least a two week notice.
8. Gather the Tools Needed: Tools that you will need to install the LANDLOK® TRM include a pair of industrial shears to cut the LANDLOK® TRM and tape measure.
9. Determine how to Establish Vegetation: The method of vegetation establishment should be determined prior to the start of installation. Different vegetation establishment methods require different orders of installation. Refer to Establish Vegetation for further guidance.
10. Please consult the Propex Website for the most up to date installation guidelines.

EROSION CONTROL INSTALLATION DETAILS

Propex GEOSOLUTIONS

Please note that the information presented herein is general information only. It is for conceptual use only and not intended to be used for construction. While every effort has been made to ensure its accuracy, this information should not be used for a specific application without independent professional examination and verification of its suitability, applicability, and accuracy. This engineering drawing is protected by the Copyright Act, 17 U.S.C. §101 et seq. and may be used ONLY with the express written permission of Propex in connection with Propex products. Any copying, distributing, and/or creation of a derivative work without permission of Propex is prohibited and is subject of actual damages, statutory damages and attorney's fees under the Copyright Act.

Rev	Date:	Drawn By:	Scale:
1 of 1	02/10/2017	J.HILL	NTS

LANDLOK® TURF REINFORCEMENT MAT (TRM)
LANDLOK® TRM INSTALLATION DETAILS FOR SLOPES
*ALL DIMENSIONS ARE TO BE VERIFIED BY ENGINEER OF RECORD

© 2017 Propex Operating Company, LLC

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1239 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

TURF REINFORCEMENT MAT DETAILS AND NOTES

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-36

Knowledge. Solutions. Service.

CONTECH CONSTRUCTION PRODUCTS INC.

ArmorFlex
Field Cabling Instructions

9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
Phone: (513) 645-7000
Toll Free: (800) 338-1122
www.contech-cpi.com

ARMORTEC
Erosion Control Solutions

These instructions are intended for use by first time installers, including general and subcontractors, of ArmorFlex block by the methods of placing and lacing in a field environment. The users of this instruction sheet should be familiar with the items listed in the "equipment and parts" section of the instructions. This paper should be provided during the bid process and during any construction phase whereas questions may arise.

Instructions for Placing and Lacing of ArmorFlex Block in a Field Environment

If you have a basic understanding of construction methodologies and practices, you can install ArmorFlex Erosion Control Mattresses by the placing and lacing method, in a cost effective method. ArmorFlex Erosion Control blocks provide a great alternative to rip rap crushed stone. Once ArmorFlex is installed properly it provides an aesthetically pleasing, permanent erosion control solution.

The installation of ArmorFlex block can be divided in these steps: (1) Preparing the Sub-grade, (2) Installing the geotextile, (3) Installing the ArmorFlex Block, (4) Installing cable to lace ArmorFlex Mattresses, (5) Finishing Installation

Equipment and Parts

In order to install ArmorFlex correctly you will need the following tools:

- Rakes
- Shovels
- Sand and / or additional stone (0.5" -1.0" diameter)
- Geotextile Fabric
- Fabric staples
- 5,000lb capacity forklift
- Quantity of ArmorFlex block to fulfill appropriate area of coverage
- 3/16" Galvanized Aircraft Cable
- 3/8" ID x 1 ¾" OD Flat Fender Washers
- 3/16" Aluminum Duplex Sleeves
- Hammer
- Excavator
- Optional:
  - Plate Compactor
  - Backfill materials with seeding

Preparing the Sub-grade for ArmorFlex Installation

WARNING: Sub-grade Preparation is **CRITICAL**.

NOTE: *Due to the area of coverage is the determining factor of material quantities required, calculate the area to be covered prior to purchasing the accessory materials, by measuring the square footage area using length and width calculations.*

Purchase the block, fabric and cable.

1. Order the block equal to the amount area of coverage required.
   NOTE: *Purchase 3% extra block to take into account normal installation breakage.*
2. Order cable by calculating the square footage and multiplying it by two.
3. Order Fabric by calculating 20% above area of coverage to allow for overlap.

ArmorFlex block can be installed on any slope and in any soil conditions, best results can be achieved by providing a level, smooth sub-grade. In order to ensure an aesthetically pleasing installation, the following steps are required to be followed to ensure a level sub-grade.

1. Clear the area of any foreign debris. Use of small hand tools, such as rakes and shovels to obtain a smooth slope is recommended.
2. Soft soils may require the use of additional stone (0.5"-1.0" diameter) to be dispersed among the sub-grade.

Figure 1. Preparing the Sub grade

Installing the Geotextile Fabric

1. Roll the fabric out across the sub-grade.
2. Install fabric staples every 3 feet around the outer edges of the rolled out fabric.

Figure 2. Installing the Geotextile

Installing the ArmorFlex Block

1. Individual block are shipped on pallets. Typical pallets weigh approximately 2,600 lbs. Blocks are shipped upright.

   WARNING: Blocks do **NOT** need to be "flipped" for installation.
2. Place ArmorFlex blocks side-by-side, getting the block as close together as possible.
3. Each individual block is surrounded by six adjacent units; two above, two below and one on each side.
4. Upon reaching the right / left outer edges of coverage area, proceed down to next row and repeat steps 2 and 3 until you reach the bottom edge of coverage area.

Figure 3. ArmorFlex on Pallets

Figure 4. ArmorFlex Block in Matrix

Installing Cable to Lace ArmorFlex Mattresses

1. Feed cable through both cable ducts on each and every block.
   NOTE: The ducts are located on the horizontal side of the ArmorFlex Block.
2. Continue feeding the cable through the block from the top of the slope towards the bottom of the slope.
3. One cable has been fed through the blocks, cut the cable with approximately 6"-10" of slack.
4. Install the washer on the cable protruding from the block.
5. Feed on (1) aluminum duplex sleeve onto exposed cable.
6. Take exposed cable, form and form a loop by placing the cut edge of the cable back through the duplex sleeve. ***NOTE:*** *Larger loops are acceptable.*
7. Smash the aluminum sleeve with a hammer.
8. Repeat steps 3-7 for at the top and bottom of edge of the blocks.

Figure 5. Washer Installed

Figure 6. Loop Formation

Figure 7. Loop Formation Complete

Finishing Installation

1. Fill the sides of the mattresses with a "half" block to even out the finished edges.
2. Take a backhoe to backfill soil material on the outside edges of blocks for the top, sides, and bottom.
3. Optional: Take soil and seed material to fill in vegetative void spaces to enhance vegetative properties.

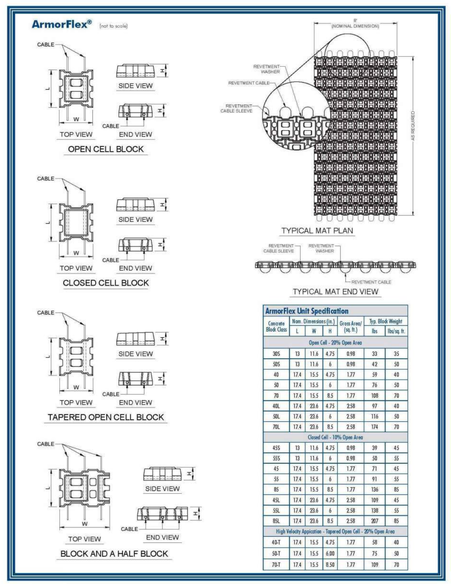
Figure 8. Complete ArmorFlex Block installed

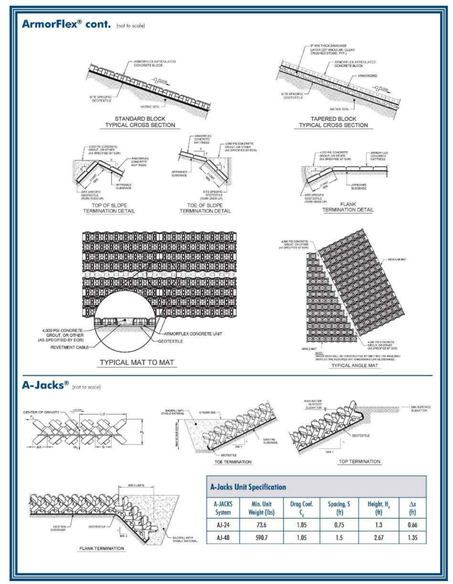
Figure 9. Seeded ArmorFlex

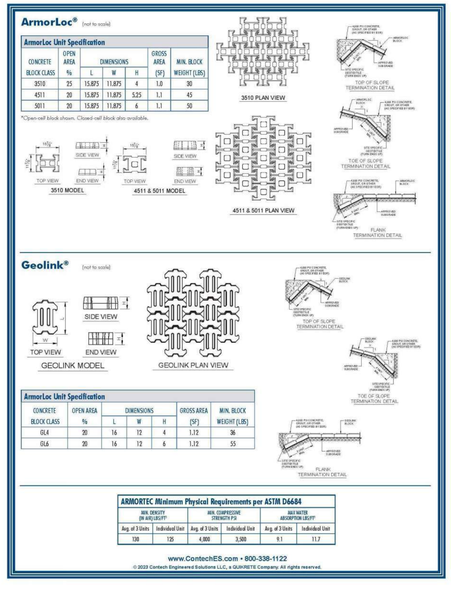
Figure 10. Six months after Installation

Now that you have installed your first ArmorFlex place and lace project, enjoy the aesthetic and environmentally friendly future of your project.

Figure 11. One Year after Installation







1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

ARMORFLEX DETAILS AND NOTES

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

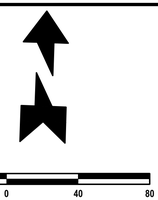
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	AS SHOWN

DRAWING NUMBER

C-37



GENERAL EARTHWORK NOTES:

1. REMOVE ALL ORGANIC OR UNSUITABLE MATERIALS. IF ANY MUCK OR MUCK-LIKE MATERIAL IS DISCOVERED, IT WILL BE REQUIRED TO BE REMOVED, BACKFILLED WITH APPROPRIATE FILL, COMPACTED, AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
2. ALL FILLING IS TO BE PERFORMED IN ONE-FOOT LIFTS. THE COMPACTION REQUIREMENT IS 98% FOR PAVED AREAS AND 95% FOR UNPAVED AREAS PER AASHTO T-180 MODIFIED PROCTOR TEST.
3. TEMPORARY FILL STOCKPILING IS NOT PERMITTED IN LIFTS GREATER THAN SIX FEET.
4. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES.
5. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED TO ALLOW THE GRASS TO GROW.
6. ALL NON-PAVED AREAS MUST BE PLANTED, GRASSED, OR MULCHED.

GENERAL GRADING NOTES:

1. CROSS SLOPES OF ACCESSIBLE PARKING SPACES AND ACCESS AISLE SHALL NOT EXCEED 1:48 IN ACCORDANCE WITH SECTION 502.4 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
2. THE MAXIMUM ELEVATION CHANGE AT THE ENTRANCE DOOR MAY NOT EXCEED 1/2 INCH.
3. ALL SIDEWALK LANDINGS SHALL HAVE SLOPES NO GREATER THAN 1/4 INCH / 1 FOOT IN MANEUVERING SPACES AT ALL DOORWAYS.
4. ALL SIDEWALKS SHALL HAVE A 1.0% CROSS SLOPE (2.0% MAXIMUM).
5. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FACBC.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEY OR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR.

BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA
ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE 'T 211', ELEVATION = 16.93 FEET.

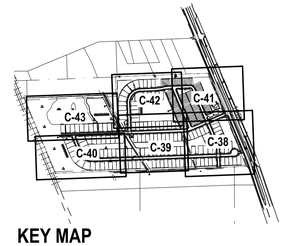
GRADING LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DRAINAGE FLOW ARROW
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- M.E.G. MATCH EXISTING GRADE

CURB RAMP KEYNOTES:

1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)
4. SIDEWALK CURB RAMP D (SEE DETAIL, SHEET No. C-85)

ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.



KEY MAP

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

GRADING PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-38

40 0 40 80

GRAPHIC SCALE
1"=40'

GENERAL EARTHWORK NOTES:

1. REMOVE ALL ORGANIC OR UNSUITABLE MATERIALS. IF ANY MUCK OR MUCK-LIKE MATERIAL IS DISCOVERED, IT WILL BE REQUIRED TO BE REMOVED, BACKFILLED WITH APPROPRIATE FILL, COMPACTED, AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
2. ALL FILLING IS TO BE PERFORMED IN ONE-FOOT LIFTS. THE COMPACTION REQUIREMENT IS 98% FOR PAVED AREAS AND 95% FOR UNPAVED AREAS PER AASHTO T-180 MODIFIED PROCTOR TEST.
3. TEMPORARY FILL STOCKPILING IS NOT PERMITTED IN LIFTS GREATER THAN SIX FEET.
4. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES.
5. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED TO ALLOW THE GRASS TO GROW.
6. ALL NON-PAVED AREAS MUST BE PLANTED, GRASSED, OR MULCHED.

GENERAL GRADING NOTES:

1. CROSS SLOPES OF ACCESSIBLE PARKING SPACES AND ACCESS AISLE SHALL NOT EXCEED 1:48 IN ACCORDANCE WITH SECTION 502.4 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
2. THE MAXIMUM ELEVATION CHANGE AT THE ENTRANCE DOOR MAY NOT EXCEED 1/2 INCH.
3. ALL SIDEWALK LANDINGS SHALL HAVE SLOPES NO GREATER THAN 1/4 INCH / 1 FOOT IN MANEUVERING SPACES AT ALL DOORWAYS.
4. ALL SIDEWALKS SHALL HAVE A 1.0% CROSS SLOPE (2.0% MAXIMUM).
5. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FACBC.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEY OR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR.

BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA
ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1968. BENCHMARK REFERENCE 'T 211', ELEVATION = 16.93 FEET.

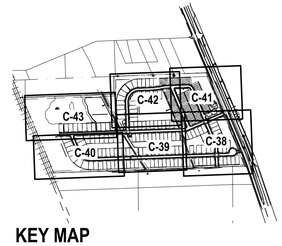
GRADING LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DRAINAGE FLOW ARROW
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- M.E.G. MATCH EXISTING GRADE

CURB RAMP KEYNOTES:

1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)
4. SIDEWALK CURB RAMP D (SEE DETAIL, SHEET No. C-85)

ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.



KEY MAP

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

GRADING PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

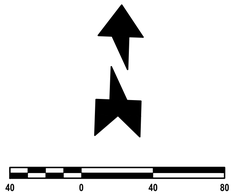
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

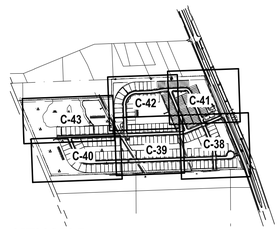
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-39





KEY MAP

NOT TO SCALE

CURB RAMP KEYNOTES:

1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)
4. SIDEWALK CURB RAMP D (SEE DETAIL, SHEET No. C-85)

ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.

BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA

ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE 'T 211', ELEVATION = 16.93 FEET.

GRADING LEGEND:

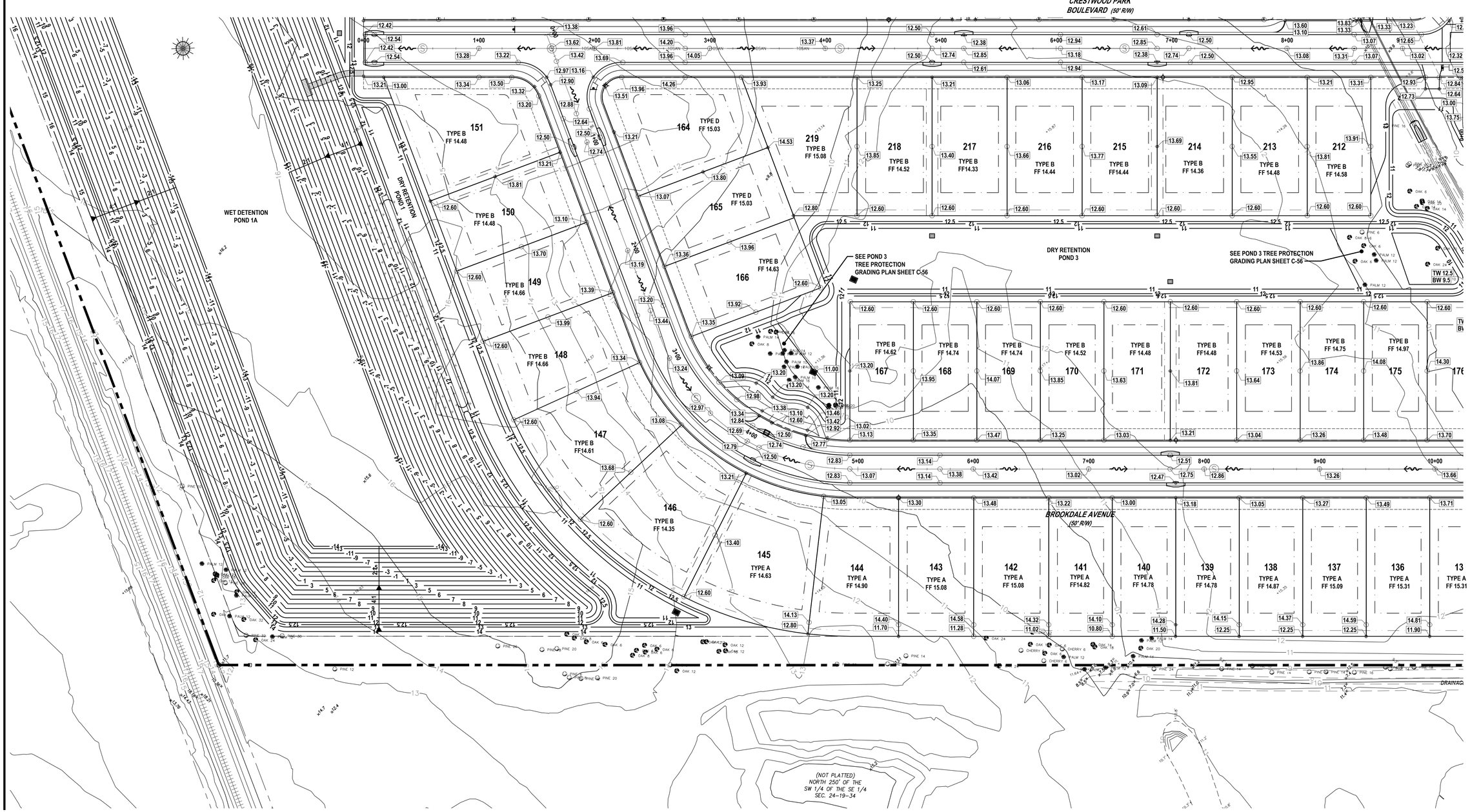
- EXISTING CONTOUR
- PROPOSED CONTOUR
- DRAINAGE FLOW ARROW
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- M.E.G. MATCH EXISTING GRADE

GENERAL GRADING NOTES:

1. CROSS SLOPES OF ACCESSIBLE PARKING SPACES AND ACCESS AISLE SHALL NOT EXCEED 1:48 IN ACCORDANCE WITH SECTION 502.4 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
2. THE MAXIMUM ELEVATION CHANGE AT THE ENTRANCE DOOR MAY NOT EXCEED 1/2 INCH.
3. ALL SIDEWALK LANDINGS SHALL HAVE SLOPES NO GREATER THAN 1/4 INCH / 1 FOOT IN MANEUVERING SPACES AT ALL DOORWAYS.
4. ALL SIDEWALKS SHALL HAVE A 1.0% CROSS SLOPE (2.0% MAXIMUM).
5. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FACBC.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEY OR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR.

GENERAL EARTHWORK NOTES:

1. REMOVE ALL ORGANIC OR UNSUITABLE MATERIALS. IF ANY MUCK OR MUCK-LIKE MATERIAL IS DISCOVERED, IT WILL BE REQUIRED TO BE REMOVED, BACKFILLED WITH APPROPRIATE FILL, COMPACTED, AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
2. ALL FILLING IS TO BE PERFORMED IN ONE-FOOT LIFTS. THE COMPACTION REQUIREMENT IS 98% FOR PAVED AREAS AND 95% FOR UNPAVED AREAS PER AASHTO T-180 MODIFIED PROCTOR TEST.
3. TEMPORARY FILL STOCKPILING IS NOT PERMITTED IN LIFTS GREATER THAN SIX FEET.
4. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES.
5. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED TO ALLOW THE GRASS TO GROW.
6. ALL NON-PAVED AREAS MUST BE PLANTED, GRASSED, OR MULCHED.



1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

GRADING PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

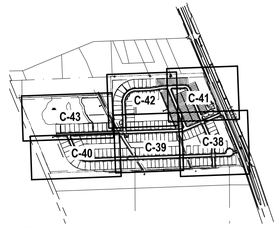
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

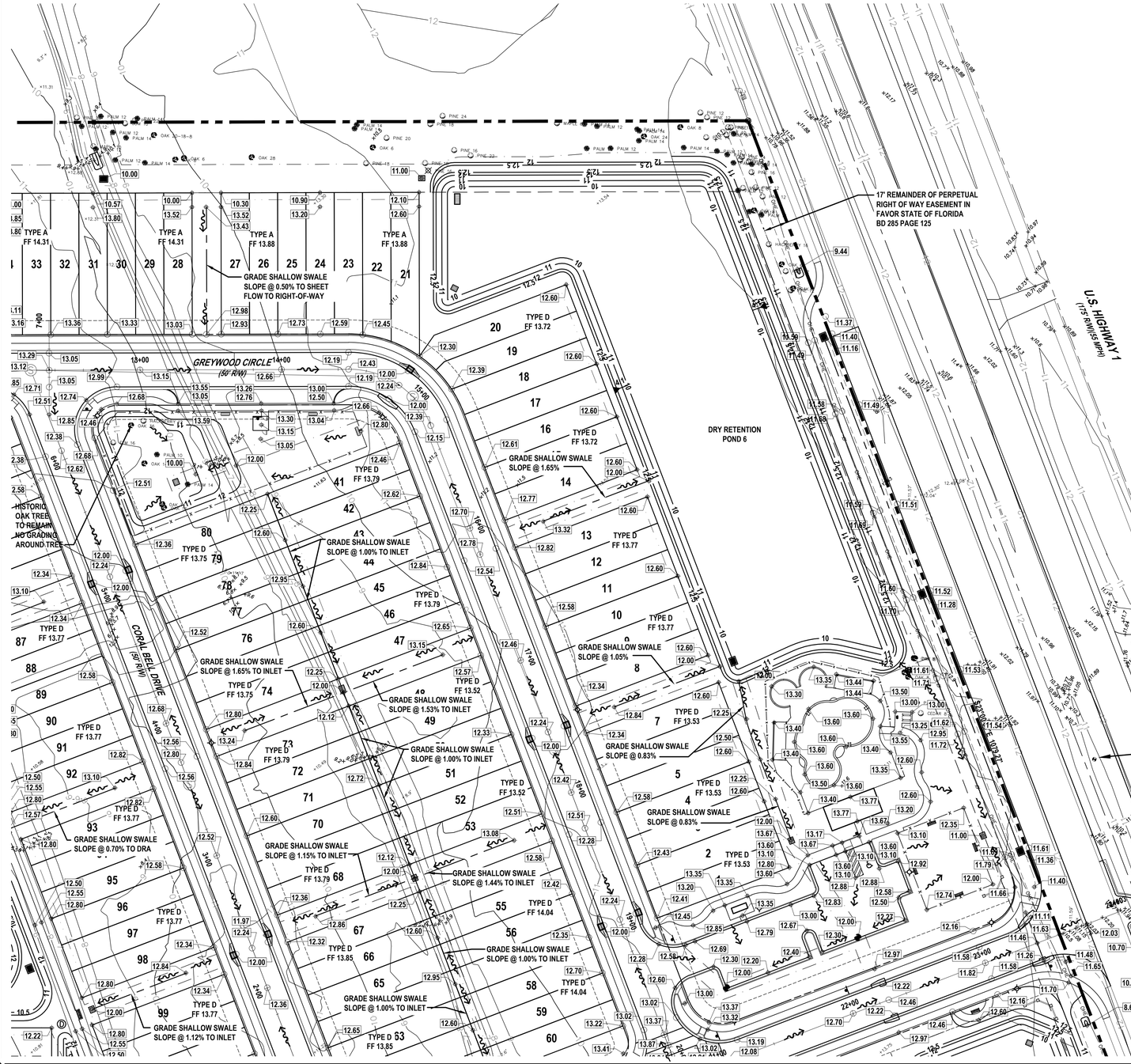
DRAWING NUMBER

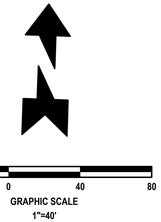
C-40



KEY MAP

NOT TO SCALE





GENERAL EARTHWORK NOTES:

1. REMOVE ALL ORGANIC OR UNSUITABLE MATERIALS. IF ANY MUCK OR MUCK-LIKE MATERIAL IS DISCOVERED, IT WILL BE REQUIRED TO BE REMOVED, BACKFILLED WITH APPROPRIATE FILL, COMPACTED, AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
2. ALL FILLING IS TO BE PERFORMED IN ONE-FOOT LIFTS. THE COMPACTION REQUIREMENT IS 98% FOR PAVED AREAS AND 95% FOR UNPAVED AREAS PER AASHTO T-180 MODIFIED PROCTOR TEST.
3. TEMPORARY FILL STOCKPILING IS NOT PERMITTED IN LIFTS GREATER THAN SIX FEET.
4. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES.
5. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED TO ALLOW THE GRASS TO GROW.
6. ALL NON-PAVED AREAS MUST BE PLANTED, GRASSED, OR MULCHED.

GENERAL GRADING NOTES:

1. CROSS SLOPES OF ACCESSIBLE PARKING SPACES AND ACCESS AISLE SHALL NOT EXCEED 1:48 IN ACCORDANCE WITH SECTION 502.4 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
2. THE MAXIMUM ELEVATION CHANGE AT THE ENTRANCE DOOR MAY NOT EXCEED 1/2 INCH.
3. ALL SIDEWALK LANDINGS SHALL HAVE SLOPES NO GREATER THAN 1/4 INCH / 1 FOOT IN MANEUVERING SPACES AT ALL DOORWAYS.
4. ALL SIDEWALKS SHALL HAVE A 1.0% CROSS SLOPE (2.0% MAXIMUM).
5. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FACBC.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEY OR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR.

BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA
ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE "T 211", ELEVATION = 16.93 FEET.

GRADING LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DRAINAGE FLOW ARROW
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- M.E.G. MATCH EXISTING GRADE

CURB RAMP KEYNOTES:

1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)
4. SIDEWALK CURB RAMP D (SEE DETAIL, SHEET No. C-85)

ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.

REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

GRADING PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

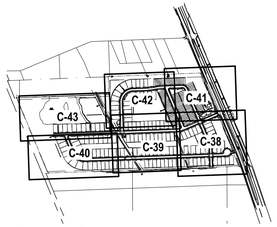
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

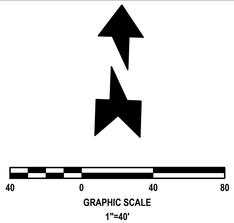
DRAWING NUMBER

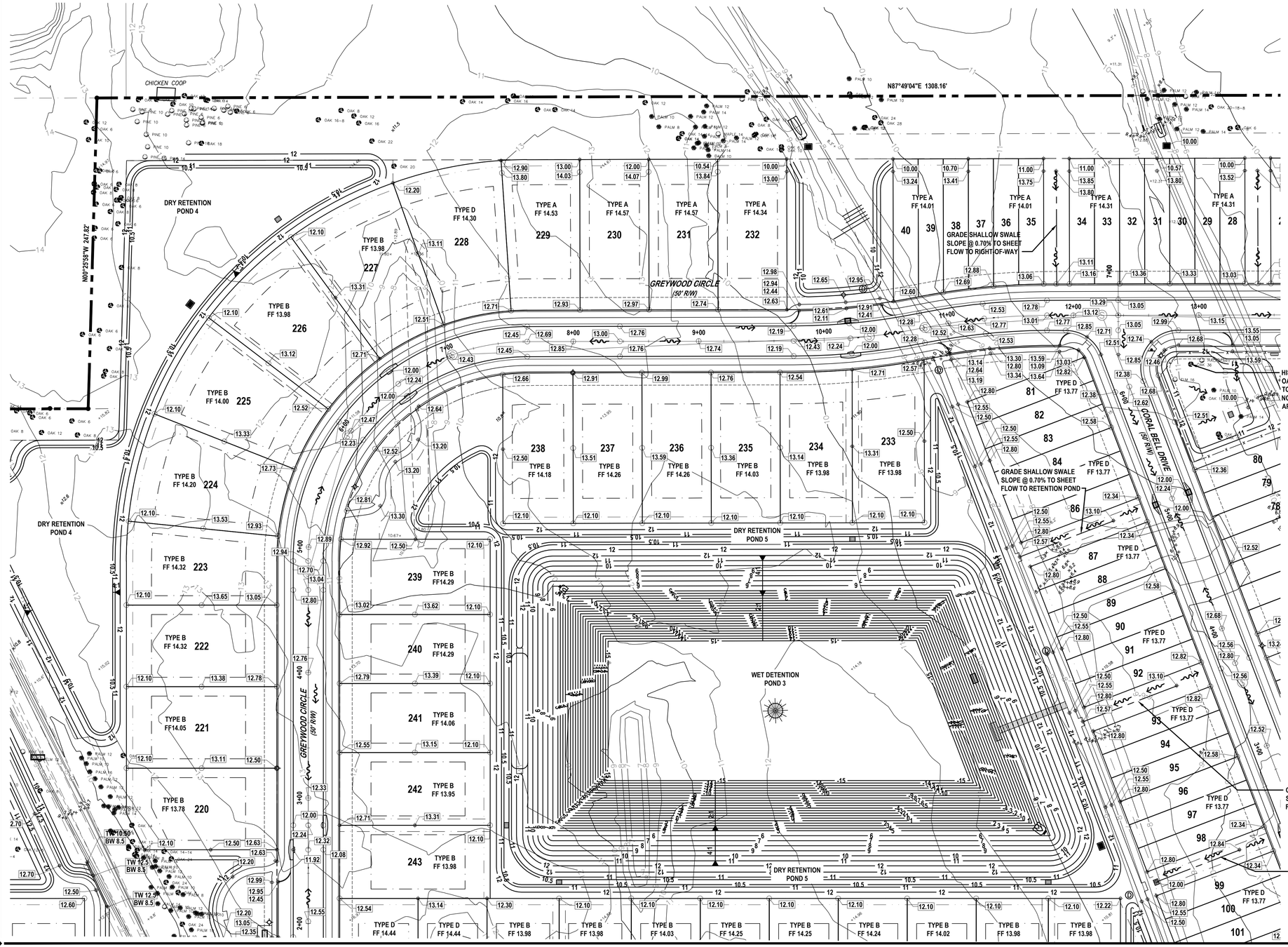
C-41



KEY MAP

NOT TO SCALE





GENERAL EARTHWORK NOTES:

1. REMOVE ALL ORGANIC OR UNSUITABLE MATERIALS. IF ANY MUCK OR MUCK-LIKE MATERIAL IS DISCOVERED, IT WILL BE REQUIRED TO BE REMOVED, BACKFILLED WITH APPROPRIATE FILL, COMPACTED, AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
2. ALL FILLING IS TO BE PERFORMED IN ONE-FOOT LIFTS. THE COMPACTION REQUIREMENT IS 98% FOR PAVED AREAS AND 95% FOR UNPAVED AREAS PER AASHTO T-180 MODIFIED PROCTOR TEST.
3. TEMPORARY FILL STOCKPILING IS NOT PERMITTED IN LIFTS GREATER THAN SIX FEET.
4. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES.
5. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED TO ALLOW THE GRASS TO GROW.
6. ALL NON-PAVED AREAS MUST BE PLANTED, GRASSED, OR MULCHED.

GENERAL GRADING NOTES:

1. CROSS SLOPES OF ACCESSIBLE PARKING SPACES AND ACCESS AISLE SHALL NOT EXCEED 1:48 IN ACCORDANCE WITH SECTION 502.4 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
2. THE MAXIMUM ELEVATION CHANGE AT THE ENTRANCE DOOR MAY NOT EXCEED 1/2 INCH.
3. ALL SIDEWALK LANDINGS SHALL HAVE SLOPES NO GREATER THAN 1/4 INCH / 1 FOOT IN MANEUVERING SPACES AT ALL DOORWAYS.
4. ALL SIDEWALKS SHALL HAVE A 1.0% CROSS SLOPE (2.0% MAXIMUM).
5. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FACBC.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEY OR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR.

BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA
ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE "T 211', ELEVATION = 16.93 FEET.

GRADING LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DRAINAGE FLOW ARROW
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- M.E.G. MATCH EXISTING GRADE

CURB RAMP KEYNOTES:

1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)
4. SIDEWALK CURB RAMP D (SEE DETAIL, SHEET No. C-85)

ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

GRADING PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

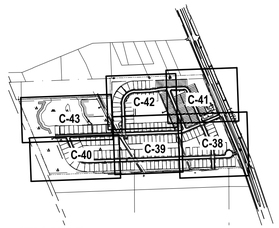
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-42

GRAPHIC SCALE
1"=40'
40 0 40 80



KEY MAP
NOT TO SCALE

CURB RAMP KEYNOTES:

1. HANDICAP PARKING SPACE RAMP (CR-C) (SEE DETAIL, SHEET No. C-85)
2. SIDEWALK CURB RAMP E (SEE DETAIL, SHEET No. C-85)
3. SIDEWALK CURB RAMP G (SEE DETAIL, SHEET No. C-85)
4. SIDEWALK CURB RAMP D (SEE DETAIL, SHEET No. C-85)

ALL RAMPS HAVE 2' DETECTABLE WARNING MATS.

BENCHMARK INFORMATION:

#1 SET 1/2" IRC, LB 6393
ELEVATION = 10.81

#2 FOUND N&D, LB 6393
ELEVATION = 10.71

VERTICAL DATA
ELEVATIONS REFER TO (NAVD 88) NORTH AMERICA VERTICAL DATUM 1988. BENCHMARK REFERENCE 'T 211', ELEVATION = 16.93 FEET.

GRADING LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DRAINAGE FLOW ARROW
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- M.E.G. MATCH EXISTING GRADE

GENERAL GRADING NOTES:

1. CROSS SLOPES OF ACCESSIBLE PARKING SPACES AND ACCESS AISLE SHALL NOT EXCEED 1:48 IN ACCORDANCE WITH SECTION 502.4 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
2. THE MAXIMUM ELEVATION CHANGE AT THE ENTRANCE DOOR MAY NOT EXCEED 1/2 INCH.
3. ALL SIDEWALK LANDINGS SHALL HAVE SLOPES NO GREATER THAN 1/4 INCH / 1 FOOT IN MANEUVERING SPACES AT ALL DOORWAYS.
4. ALL SIDEWALKS SHALL HAVE A 1.0% CROSS SLOPE (2.0% MAXIMUM).
5. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FACBC.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEY OR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR.

GENERAL EARTHWORK NOTES:

1. REMOVE ALL ORGANIC OR UNSUITABLE MATERIALS. IF ANY MUCK OR MUCK-LIKE MATERIAL IS DISCOVERED, IT WILL BE REQUIRED TO BE REMOVED, BACKFILLED WITH APPROPRIATE FILL, COMPACTED, AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
2. ALL FILLING IS TO BE PERFORMED IN ONE-FOOT LIFTS. THE COMPACTION REQUIREMENT IS 98% FOR PAVED AREAS AND 95% FOR UNPAVED AREAS PER AASHTO T-180 MODIFIED PROCTOR TEST.
3. TEMPORARY FILL STOCKPILING IS NOT PERMITTED IN LIFTS GREATER THAN SIX FEET.
4. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES.
5. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED TO ALLOW THE GRASS TO GROW.
6. ALL NON-PAVED AREAS MUST BE PLANTED, GRASSED, OR MULCHED.

N87°49'04"E 1309.28'

FIELD WIRE FENCE

SHWT POINT 1
EL 11.0

SHWT POINT 2
EL 11.0

SHWT POINT 3
EL 11.0

JURISDICTIONAL WETLAND F
6.48± ACRES
PREVIOUSLY LOCATED
SEE NOTE BOTTOM LEFT

WET DETENTION POND 1A

WET DETENTION POND 1B

WET DETENTION POND 2

DRY RETENTION POND 1

DRY RETENTION POND 2

DRY RETENTION POND 4

SEE POND 2 TREE PROTECTION GRADING PLAN SHEET C-55

N22°39'02"W 1139.74'

CRESTWOOD PARK BOULEVARD (80' R/W)

BROOKDALE AVENUE (50' R/W)

	TYPE B	TYPE B	TYPE B	TYPE B	TYPE D	TYPE A	TYPE A	TYPE D	TYPE B	TYPE B	TYPE B
	FF 14.48	FF 14.77	FF 15.11	FF 15.44	FF 15.55	FF 15.55	FF 15.10	FF 14.66	FF 14.44	FF 14.44	FF 14.48
	152	153	154	155	156	157	158	159	160	161	162

TYPE B FF 15.70 — 151

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
8/21/25	SJRWMD

GRADING PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

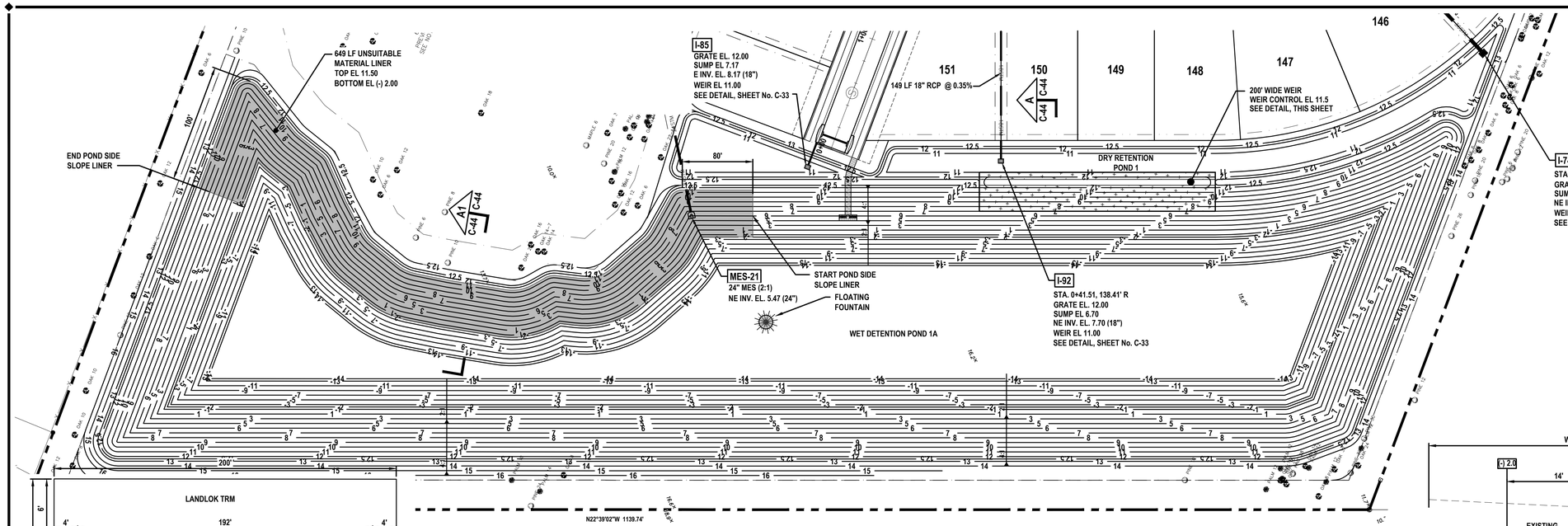
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

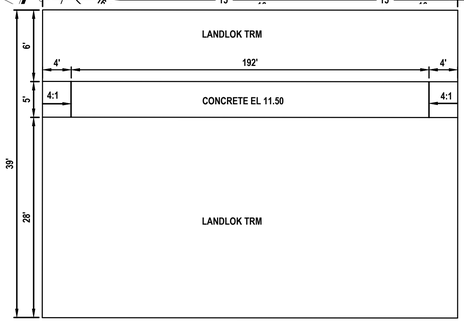
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

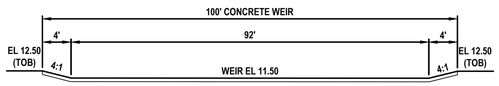
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

C-43





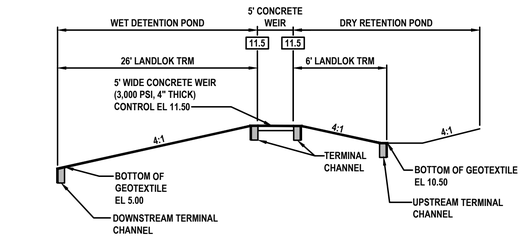


TURF WEIR PLAN VIEW & SECTION

NOT TO SCALE

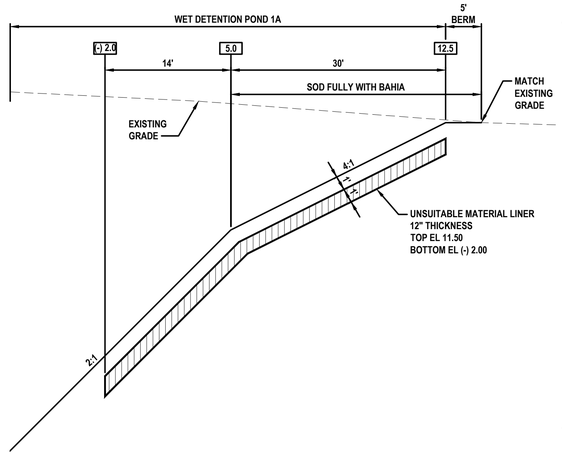
DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. THE POND SIDE SLOPES AND THE POND BOTTOM SHALL BE SODDED WITH SAND-GROWN SOD, NOT MUCK-GROWN SOD.



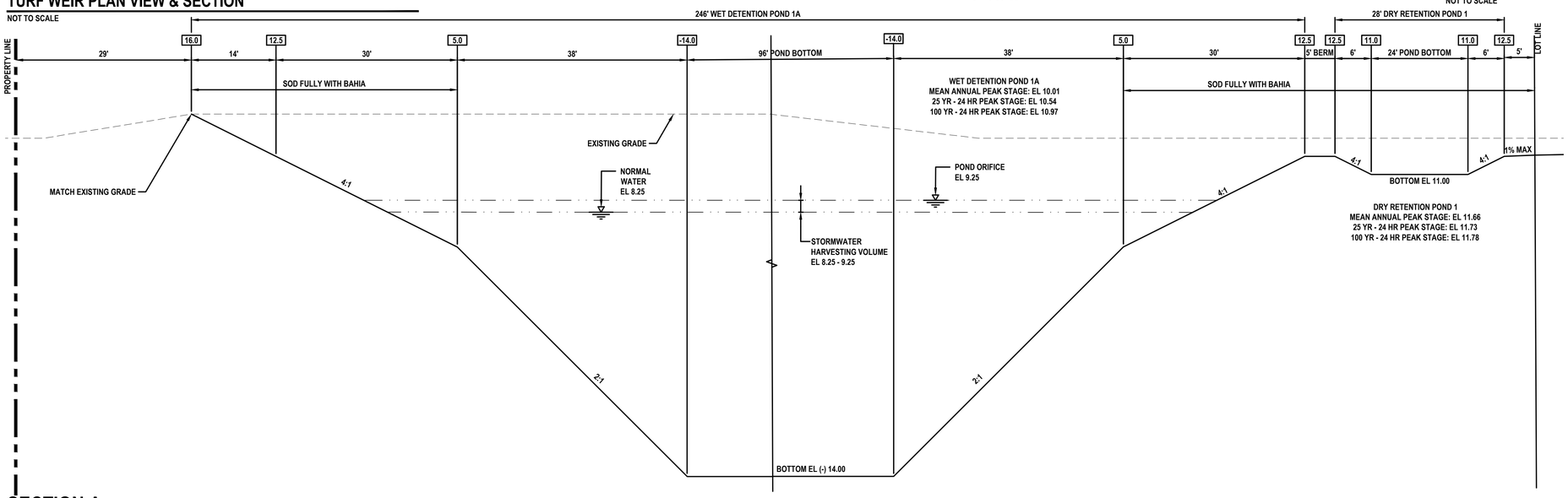
SECTION A-A GRASS WEIR 4 (DRY POND 1 TO WET POND 1A)

NOT TO SCALE



SECTION A1 (POND SIDE SLOPE LINER)

NOT TO SCALE



SECTION A

NOT TO SCALE

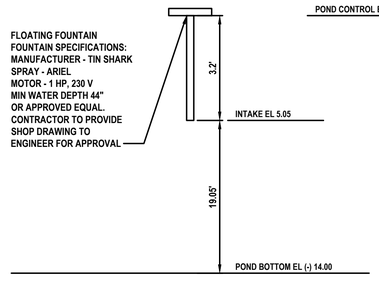
LEGEND

POND SIDE SLOPE LINER

649 LF UNSUITABLE MATERIAL LINER
TOP EL 11.50
BOTTOM EL (-) 2.00

MATERIAL REQUIREMENTS
1. BLEND SITE SOILS WITH POWDERED SODIUM BENTONITE AT 5-12 LB/SQ FT OR COMMERCIAL SOIL SEALANT.
2. TARGET PI>10 AND PERMEABILITY <1x10^-6 CM/S.
3. MIXING CAN BE DONE IN SITU (RECLAIMING TILLER) OR VIA OFF-SITE BLENDING.

PLACEMENT
1. MINIMUM 12 IN FINISHED THICKNESS AFTER COMPACTION.
2. UNIFORM MIXING VERIFIED BY VISUAL COLOR UNIFORMITY AND SIEVE CONFIRMATION.
3. COMPACTION: 95% STANDARD PROCTOR, ASTM D698.
4. MOISTURE CONTENT MAINTAINED WITHIN ± 2% OF OPTIMUM.



FLOATING FOUNTAIN DETAIL

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

STORMWATER WET POND 1A PLAN

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

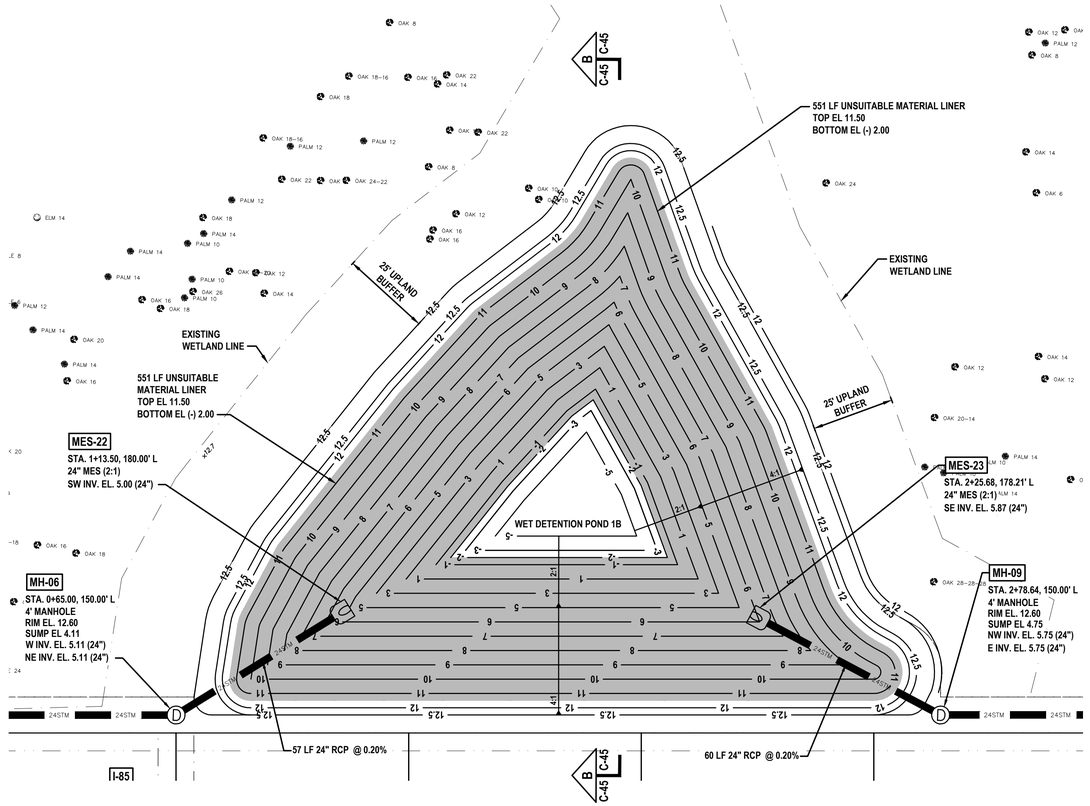
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

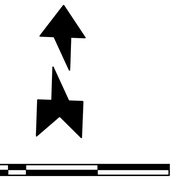
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 50'

DRAWING NUMBER

C-44



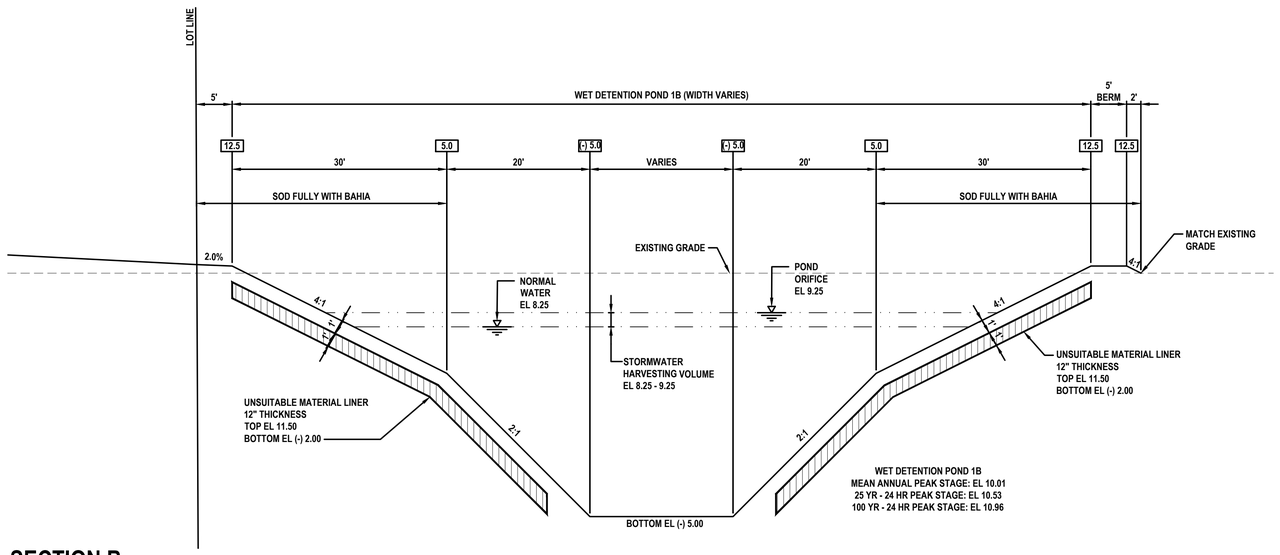


LEGEND

POND SIDE SLOPE LINER — 551 LF UNSUITABLE MATERIAL LINER, TOP EL 11.50, BOTTOM EL (-) 2.00

MATERIAL REQUIREMENTS
1. BLEND SITE SOILS WITH POWDERED SODIUM BENTONITE AT 5-12 LB/SQ FT OR COMMERCIAL SOIL SEALANT.
2. TARGET PI>10 AND PERMEABILITY < 1x10^-6 CM/S.
3. MIXING CAN BE DONE IN SITU (RECLAIMING TILLER) OR VIA OFF-SITE BLENDING.

PLACEMENT
1. MINIMUM 12 IN FINISHED THICKNESS AFTER COMPACTION.
2. UNIFORM MIXING VERIFIED BY VISUAL COLOR UNIFORMITY AND SIEVE CONFIRMATION.
3. COMPACTION: 95% STANDARD PROCTOR, ASTM D698.
4. MOISTURE CONTENT MAINTAINED WITHIN ± 2% OF OPTIMUM.



SECTION B

NOT TO SCALE

REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

STORMWATER WET POND 1B PLAN

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

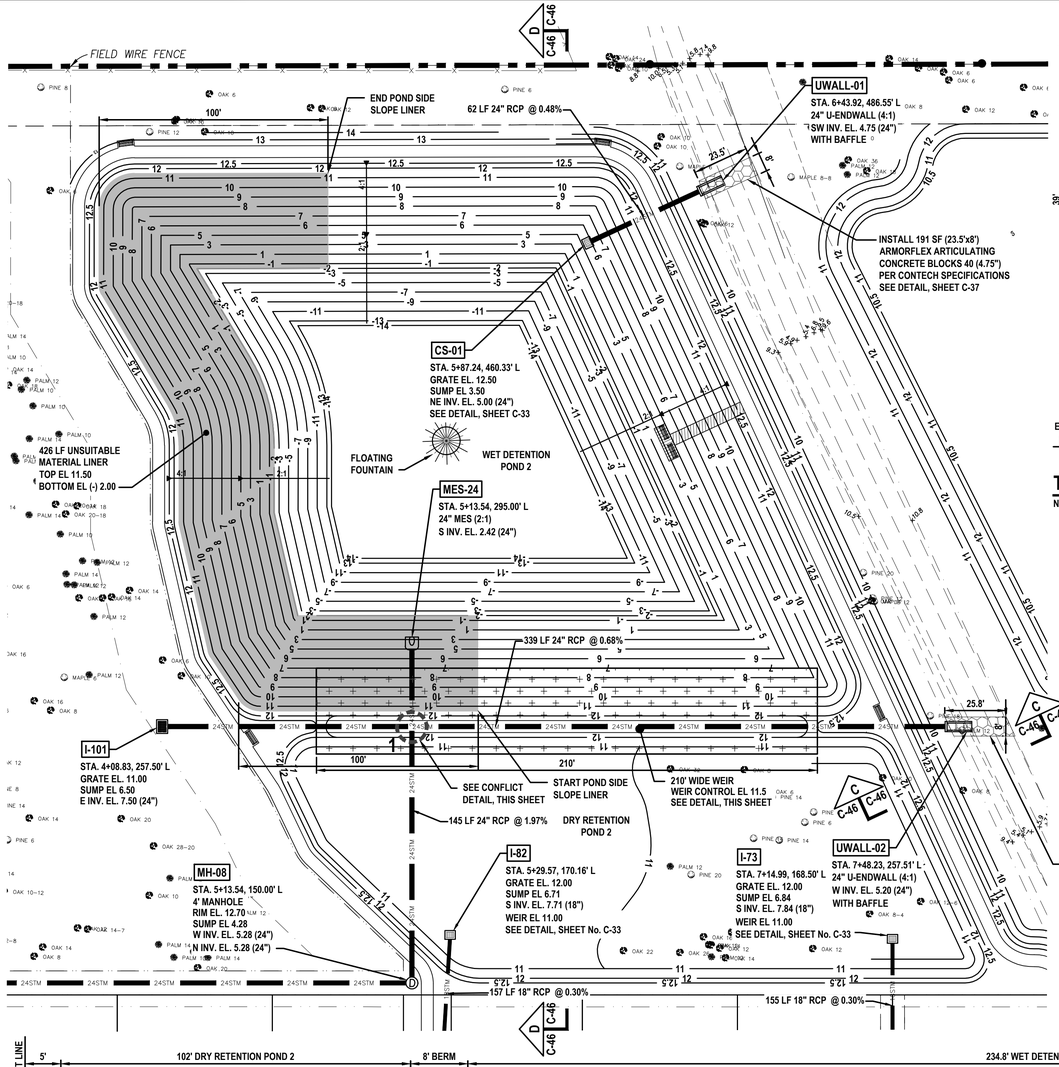
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

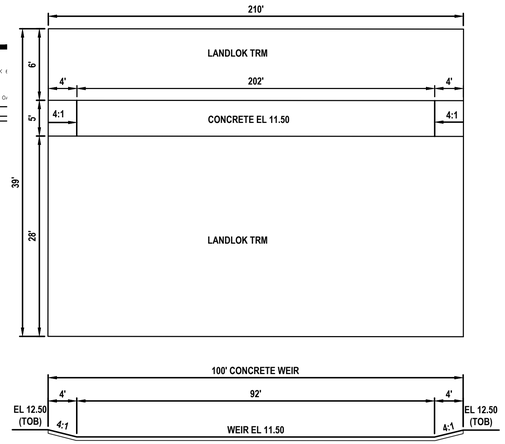
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 20'

DRAWING NUMBER

C-45



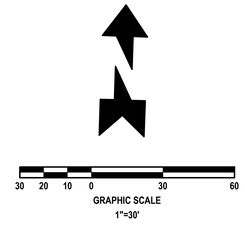


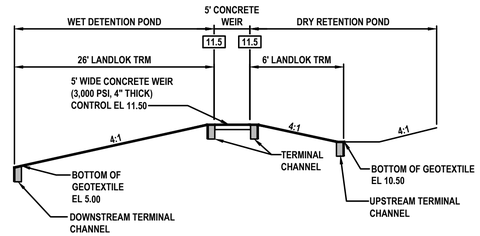
TURF WEIR PLAN VIEW & SECTION

NOT TO SCALE

DRY RETENTION POND CONSTRUCTION NOTES:

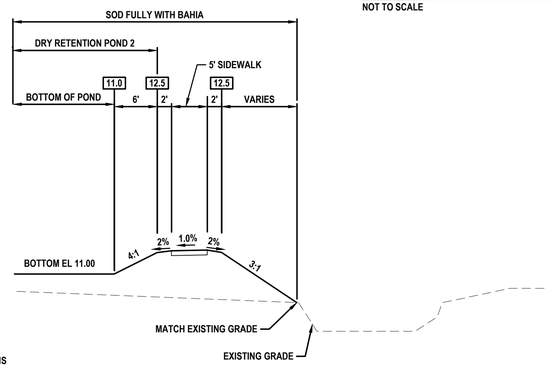
1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. THE POND SIDE SLOPES AND THE POND BOTTOM SHALL BE SODDED WITH SAND-GROWN SOD, NOT MUCK-GROWN SOD.

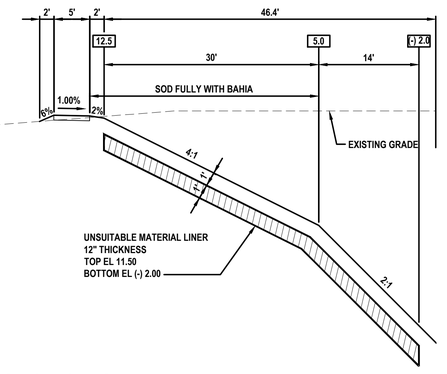




SECTION A-A GRASS WEIR 4 (DRY POND 1 TO WET POND 1A)

NOT TO SCALE



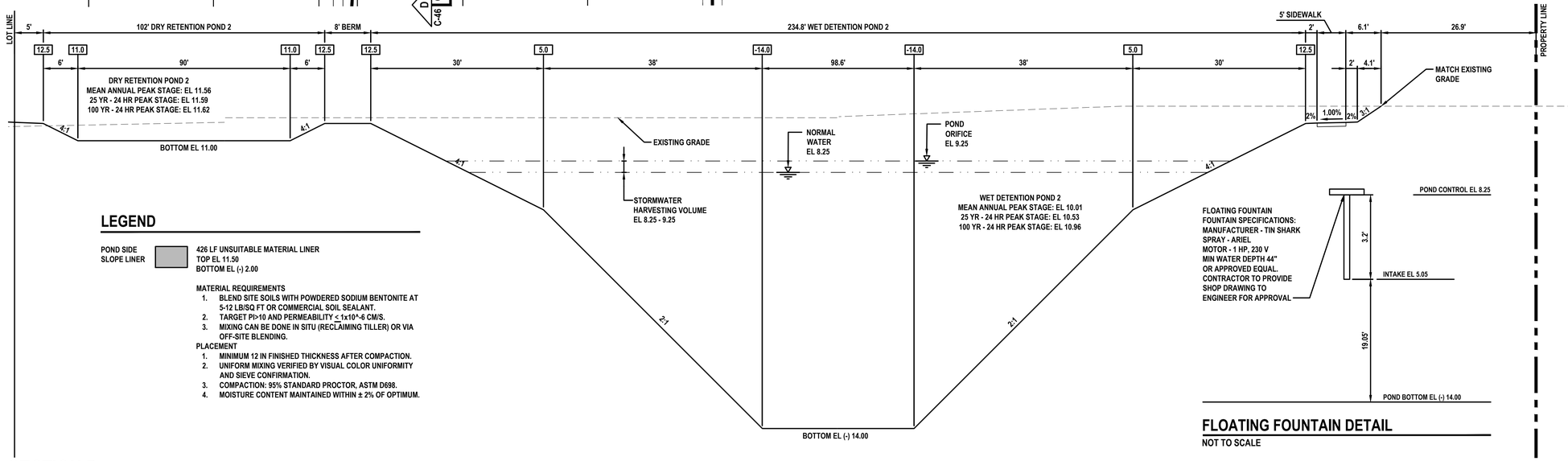


SECTION C

NOT TO SCALE

SECTION C2

NOT TO SCALE



LEGEND

POND SIDE SLOPE LINER

426 LF UNSUITABLE MATERIAL LINER
TOP EL 11.50
BOTTOM EL (-) 2.00

MATERIAL REQUIREMENTS
1. BLEND SITE SOILS WITH POWDERED SODIUM BENTONITE AT 5-12 LB/SQ FT OR COMMERCIAL SOIL SEALANT.
2. TARGET PI>10 AND PERMEABILITY < 1x10^-6 CM/S.
3. MIXING CAN BE DONE IN SITU (RECLAIMING TILLER) OR VIA OFF-SITE BLENDING.

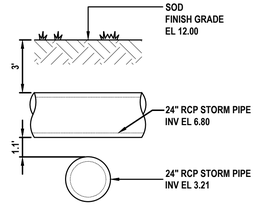
PLACEMENT
1. MINIMUM 12 IN FINISHED THICKNESS AFTER COMPACTION.
2. UNIFORM MIXING VERIFIED BY VISUAL COLOR UNIFORMITY AND SIEVE CONFIRMATION.
3. COMPACTION: 95% STANDARD PROCTOR, ASTM D698.
4. MOISTURE CONTENT MAINTAINED WITHIN ± 2% OF OPTIMUM.

SECTION D

NOT TO SCALE

FLOATING FOUNTAIN DETAIL

NOT TO SCALE



CONFLICT POINT 1

UTILITY CONFLICT DETAIL

NOT TO SCALE

REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

STORMWATER DRY POND 2 PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

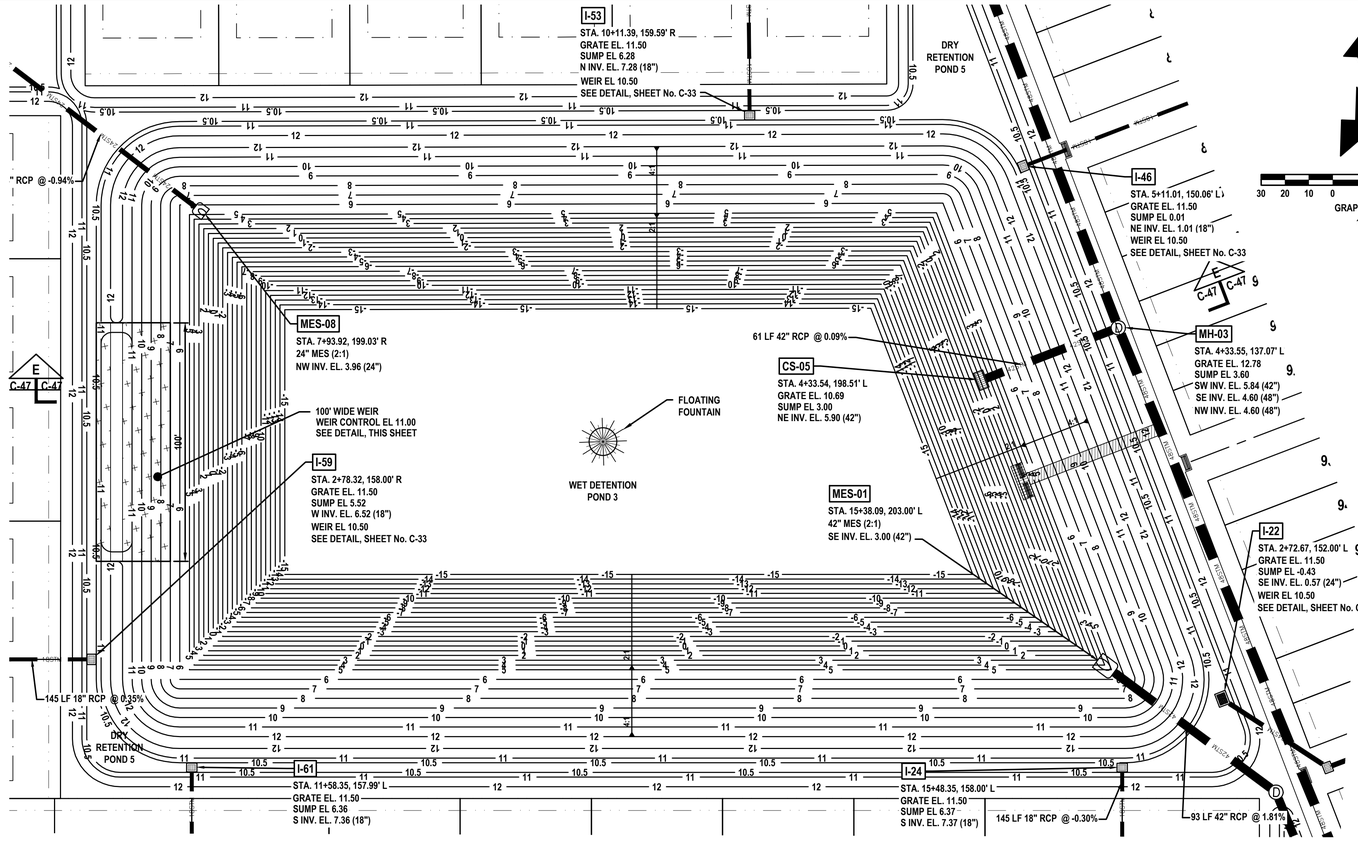
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

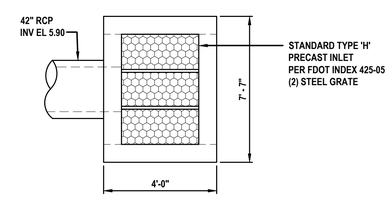
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

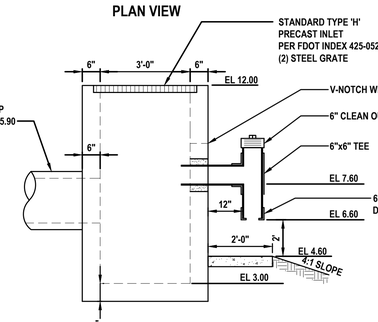
DRAWING NUMBER

C-46





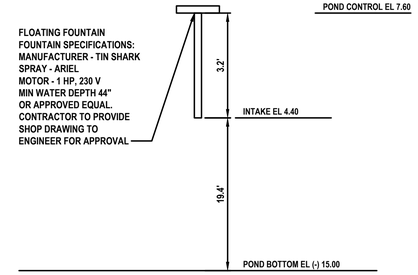
PLAN VIEW



CROSS SECTION

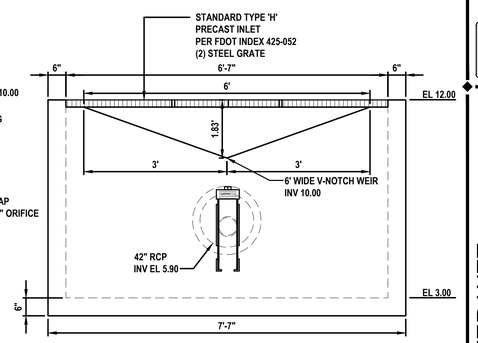
CONTROL STRUCTURE CS-05 DETAIL

NOT TO SCALE

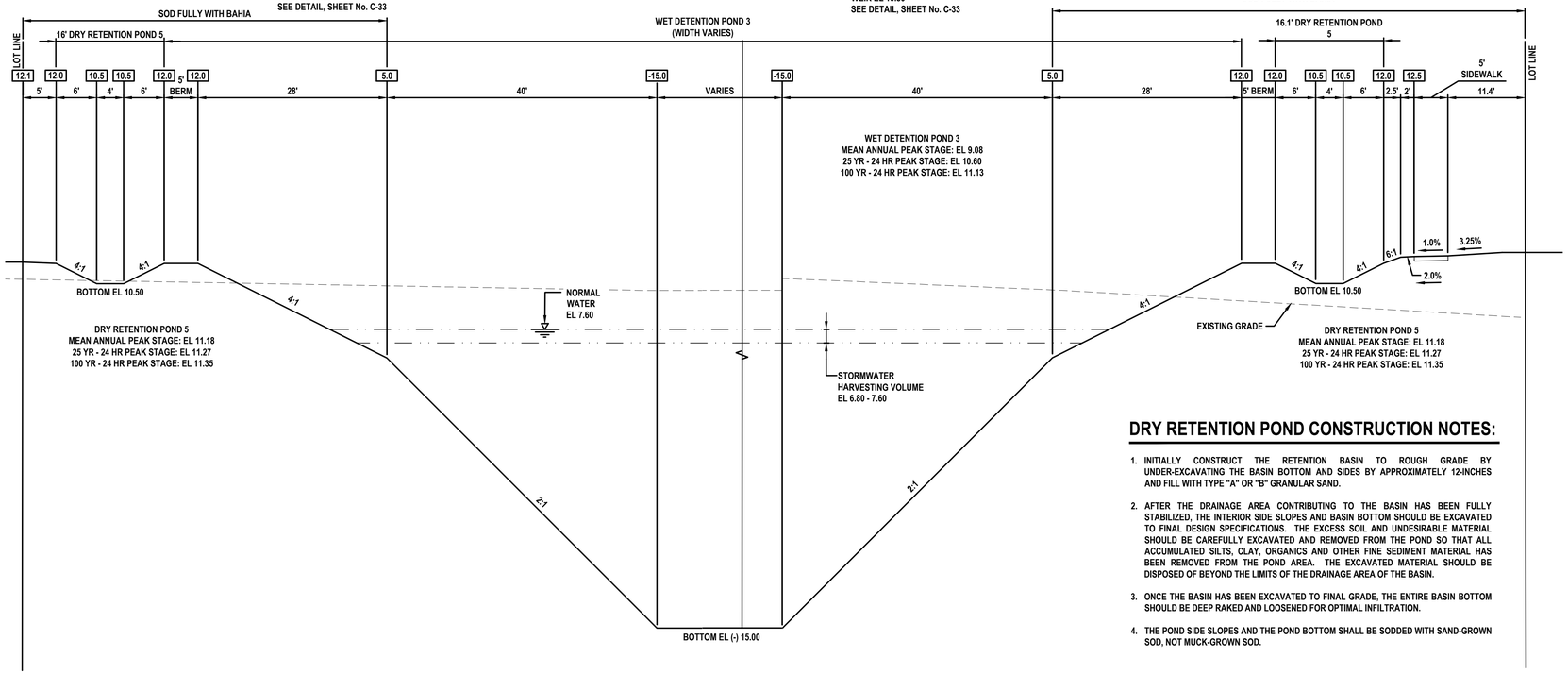


FLOATING FOUNTAIN DETAIL

NOT TO SCALE



LONGITUDINAL SECTION

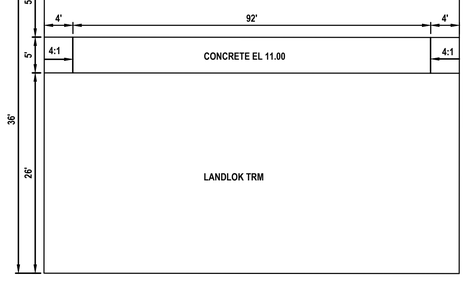


SECTION E

NOT TO SCALE

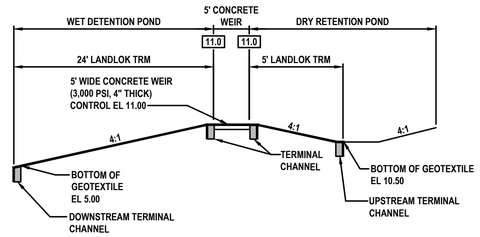
DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. THE POND SIDE SLOPES AND THE POND BOTTOM SHALL BE SODDED WITH SAND-GROWN SOD, NOT MUCK-GROWN SOD.



TURF WEIR PLAN VIEW & SECTION

NOT TO SCALE



SECTION A-A GRASS WEIR 3 (DRY POND 5 TO WET POND 2)

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
8/21/25	SJRWMD COMMENTS
9/26/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

STORMWATER WET POND 3 PLAN

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

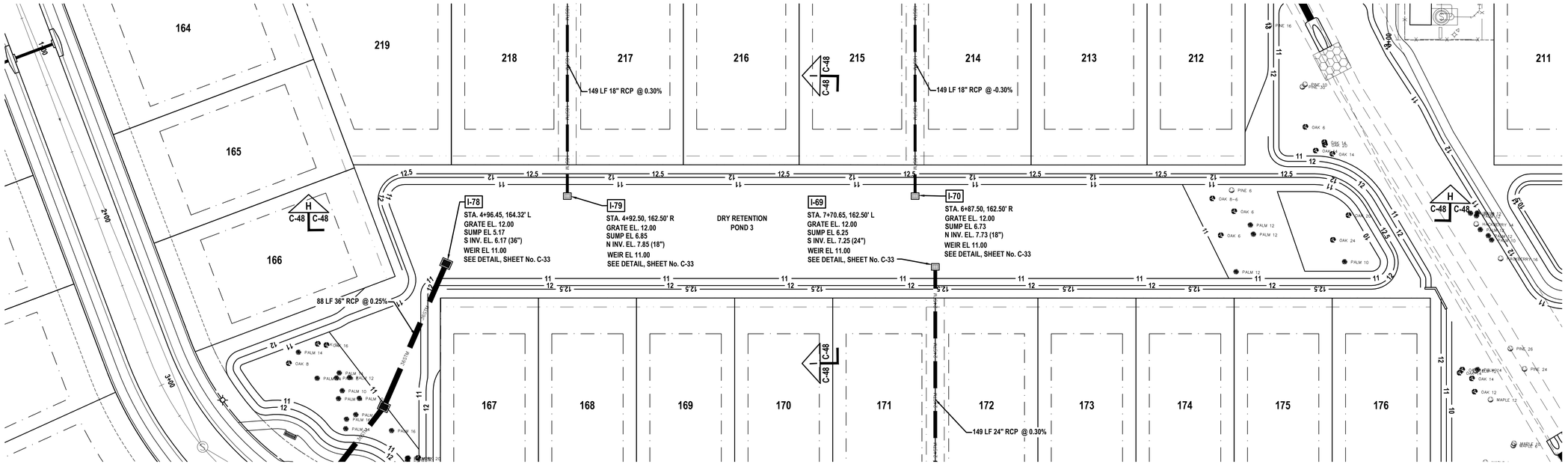
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

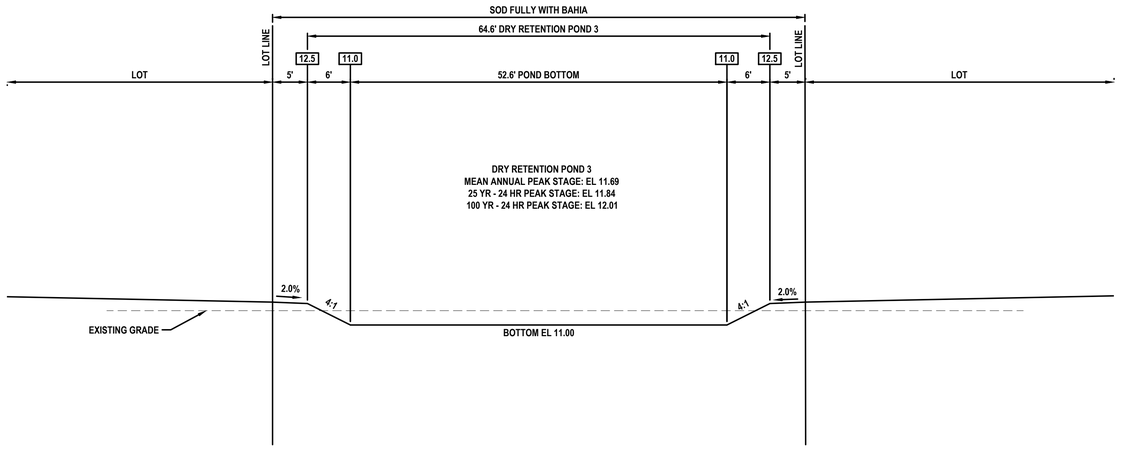
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

DRAWING NUMBER

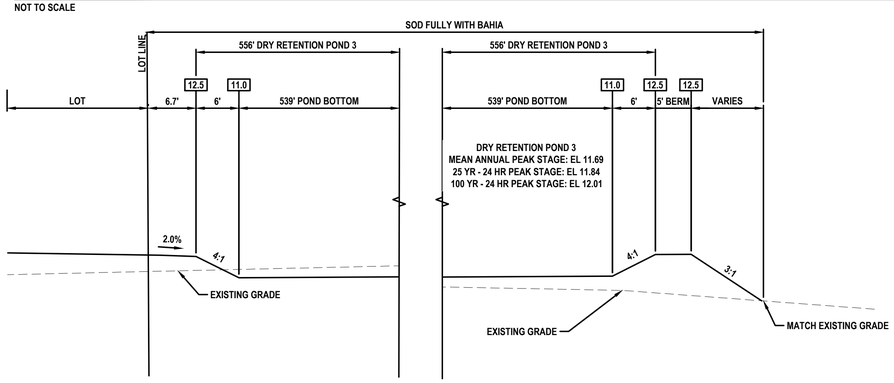
C-47





SECTION I

NOT TO SCALE

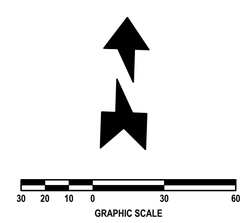


SECTION H

NOT TO SCALE

DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. THE POND SIDE SLOPES AND THE POND BOTTOM SHALL BE SODDED WITH SAND-GROWN SOD, NOT MUCK-GROWN SOD.



REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

STORMWATER DRAINAGE POND 3 PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

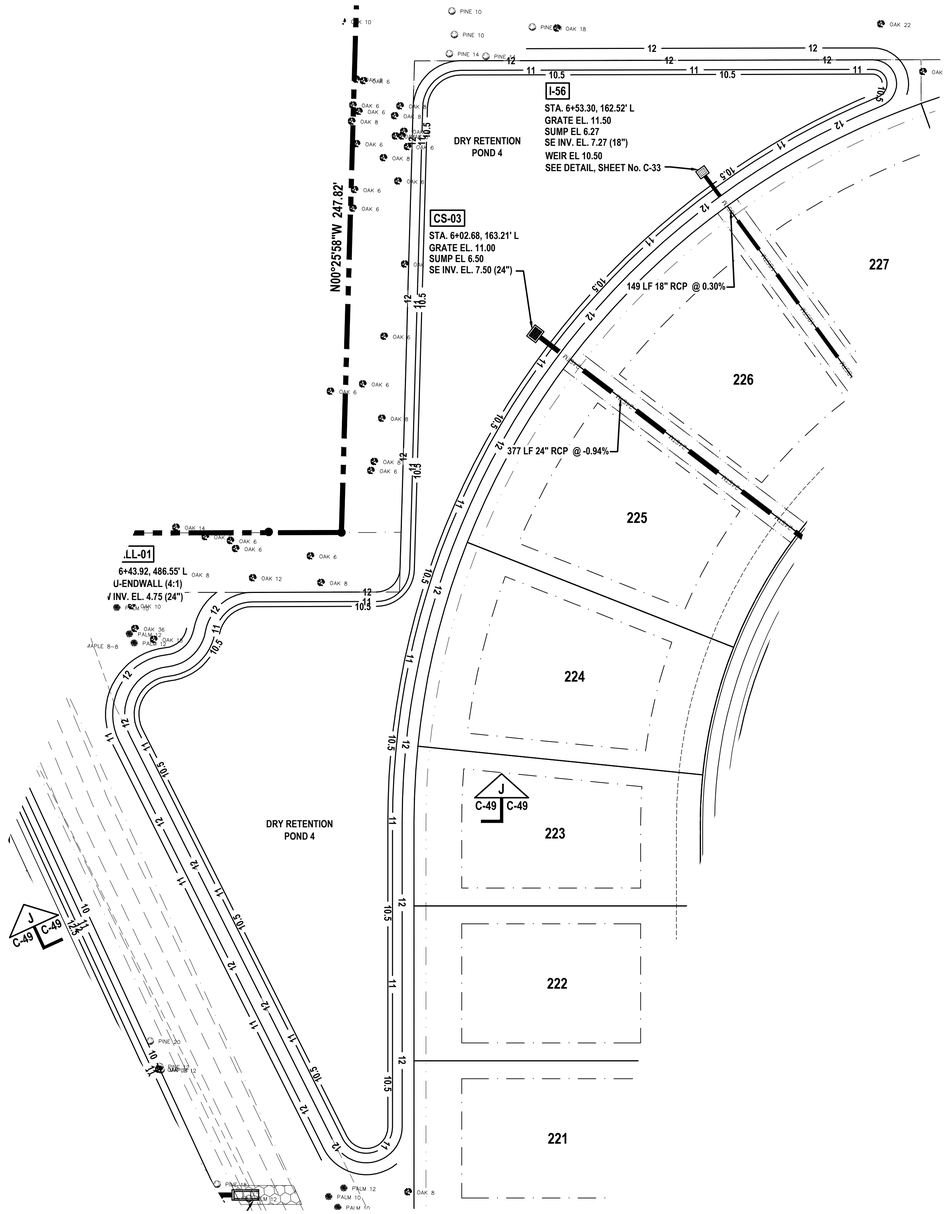
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

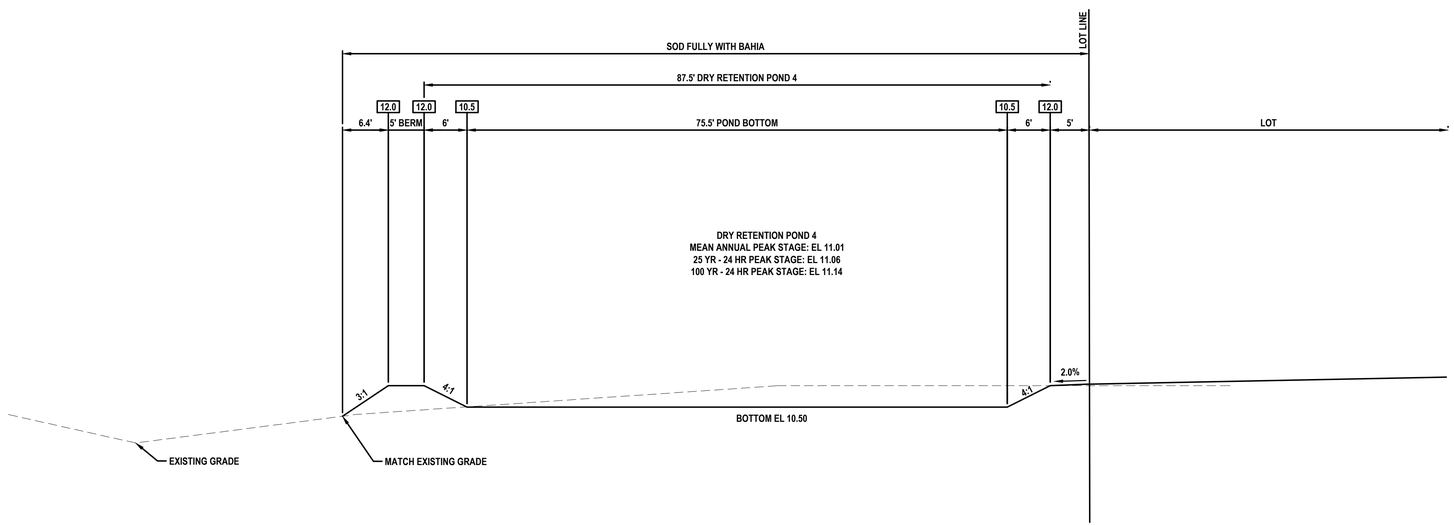
DRAWING NUMBER

C-48



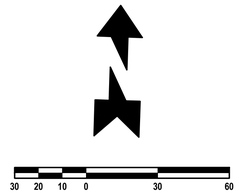
DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. THE POND SIDE SLOPES AND THE POND BOTTOM SHALL BE SODDED WITH SAND-GROWN SOD, NOT MUCK-GROWN SOD.



SECTION J

NOT TO SCALE



REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

STORMWATER DRY POND 4 PLAN

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

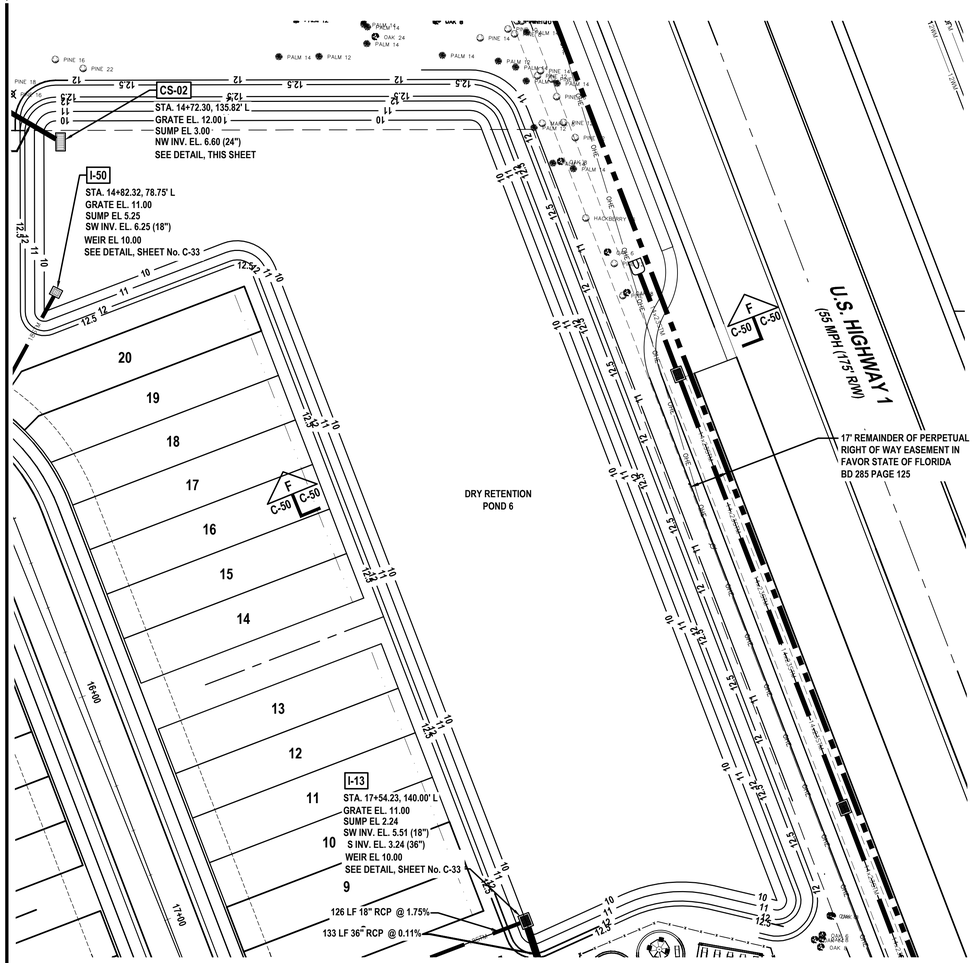
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

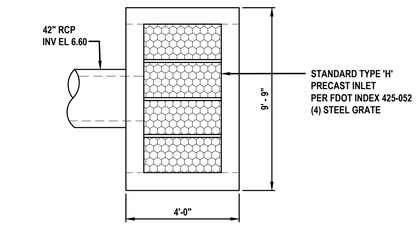
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

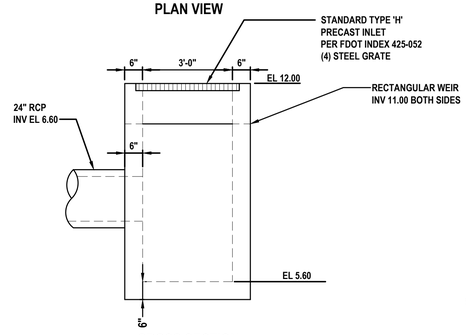
DRAWING NUMBER

C-49

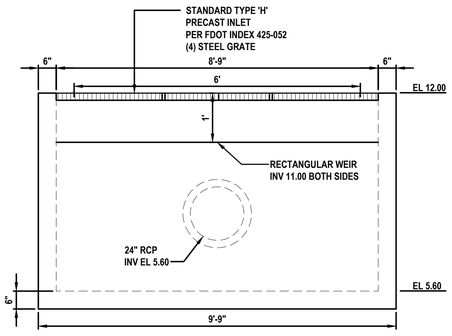




PLAN VIEW



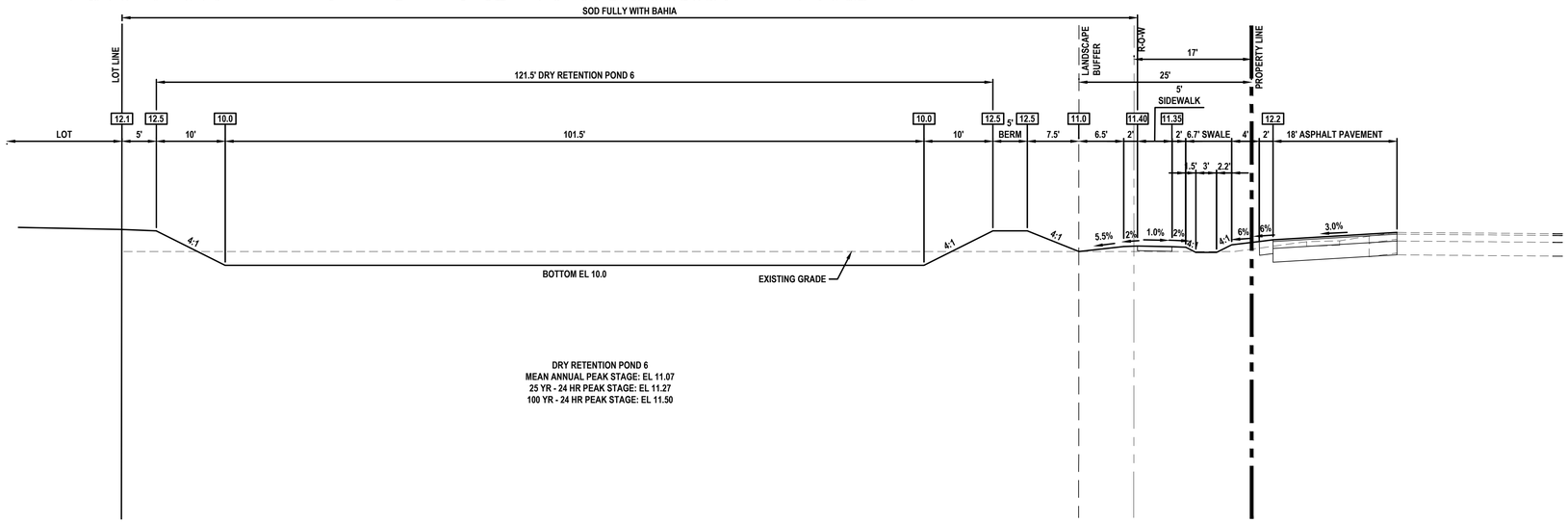
CROSS SECTION



LONGITUDINAL SECTION

CONTROL STRUCTURE CS-02 DETAIL

NOT TO SCALE

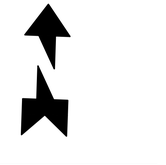


SECTION F

NOT TO SCALE

DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. THE POND SIDE SLOPES AND THE POND BOTTOM SHALL BE SODDED WITH SAND-GROWN SOD, NOT MUCK-GROWN SOD.



REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
8/21/25	SJRWMD COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

STORMWATER DRY POND 6 PLAN

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

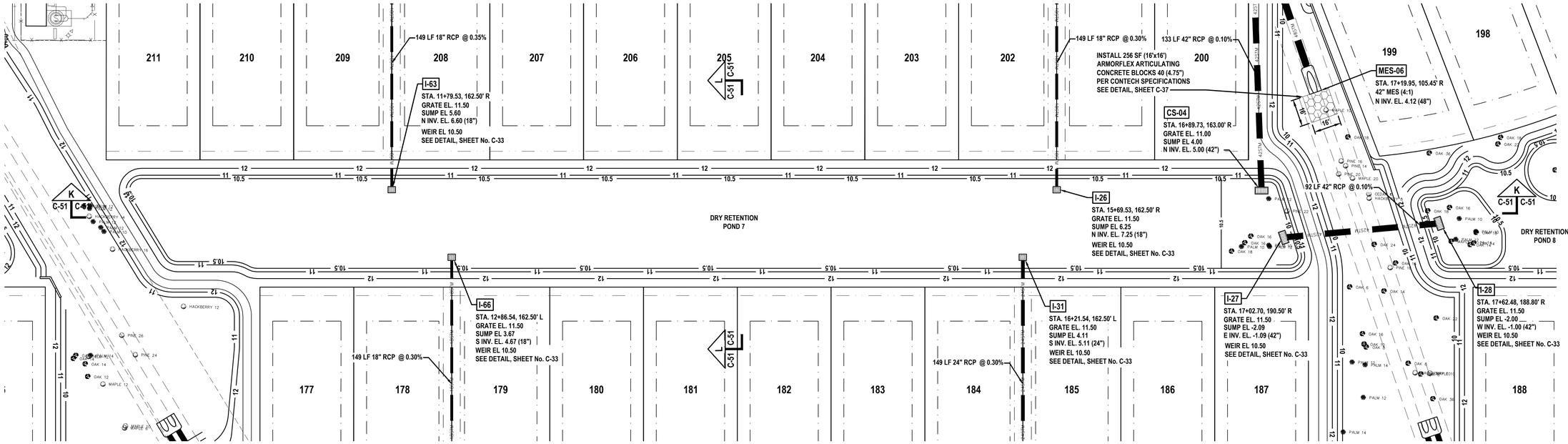
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

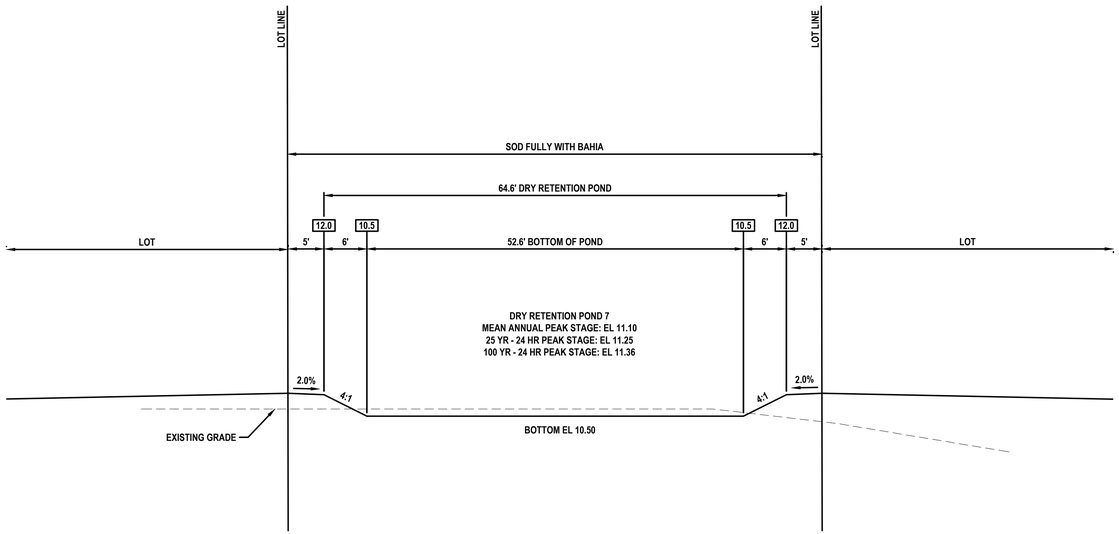
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

DRAWING NUMBER

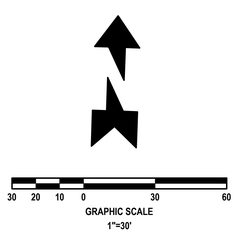
C-50





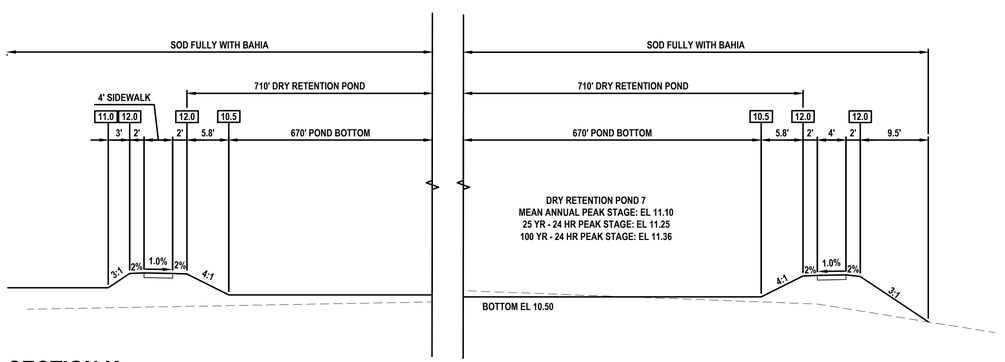
SECTION L

NOT TO SCALE



DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. THE POND SIDE SLOPES AND THE POND BOTTOM SHALL BE SODDED WITH SAND-GROWN SOD, NOT MUCK-GROWN SOD.



SECTION K

NOT TO SCALE

REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.NewkirkEngineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

STORMWATER DRY POND 7 PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

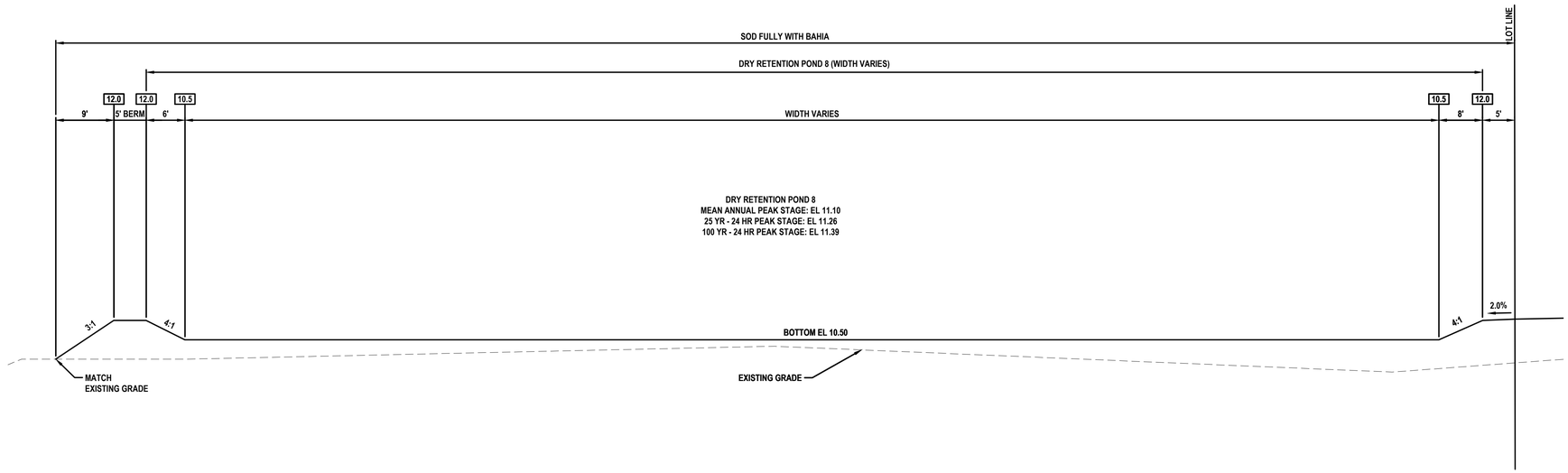
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 20'

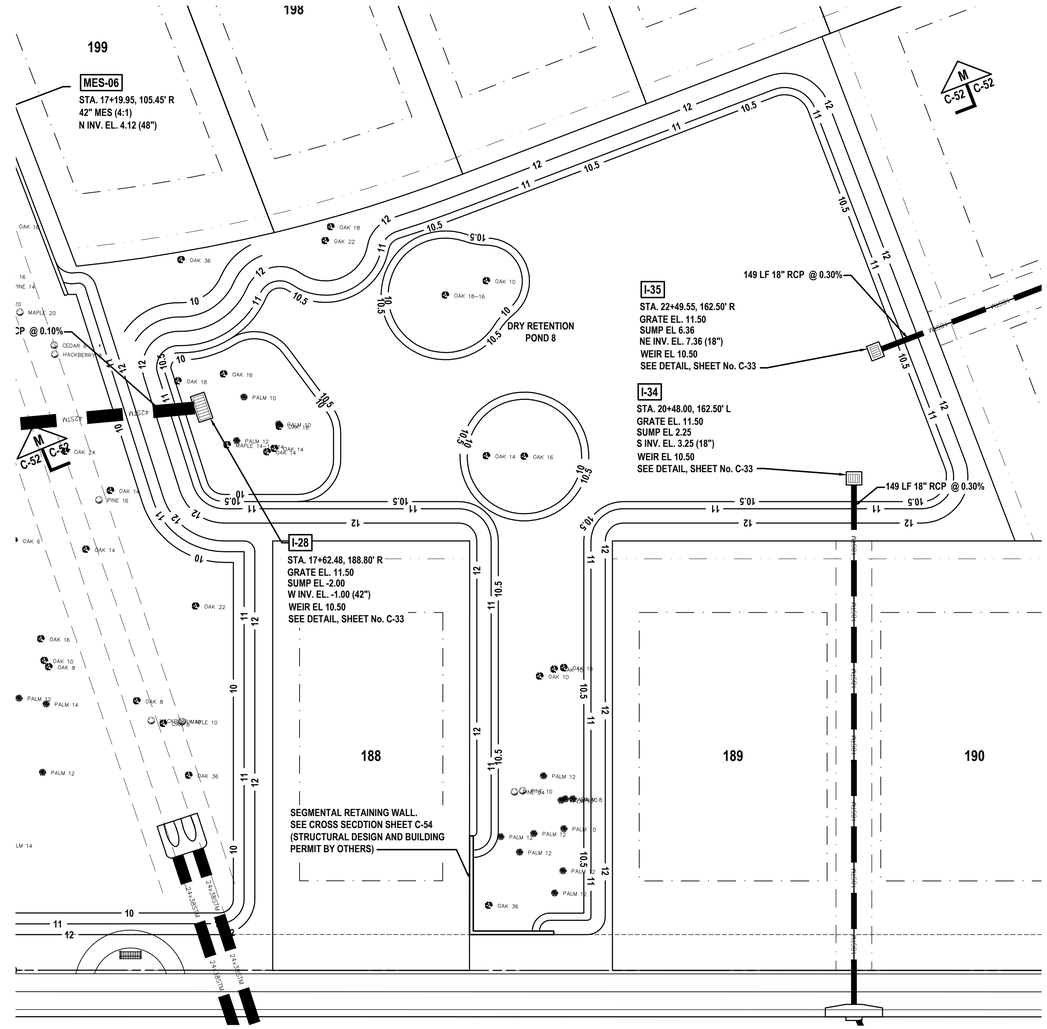
DRAWING NUMBER

C-51



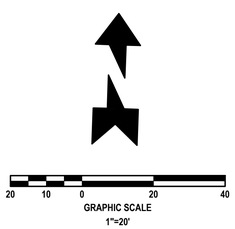
SECTION M

NOT TO SCALE



DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. THE POND SIDE SLOPES AND THE POND BOTTOM SHALL BE SODDED WITH SAND-GROWN SOD, NOT MUCK-GROWN SOD.



REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

STORMWATER DRY POND 8 PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

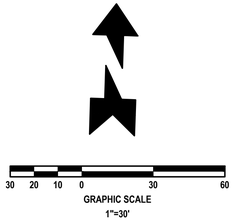
HARRY NEWKIRK
LICENSE
NO. 62971
STATE OF FLORIDA
PROFESSIONAL ENGINEER

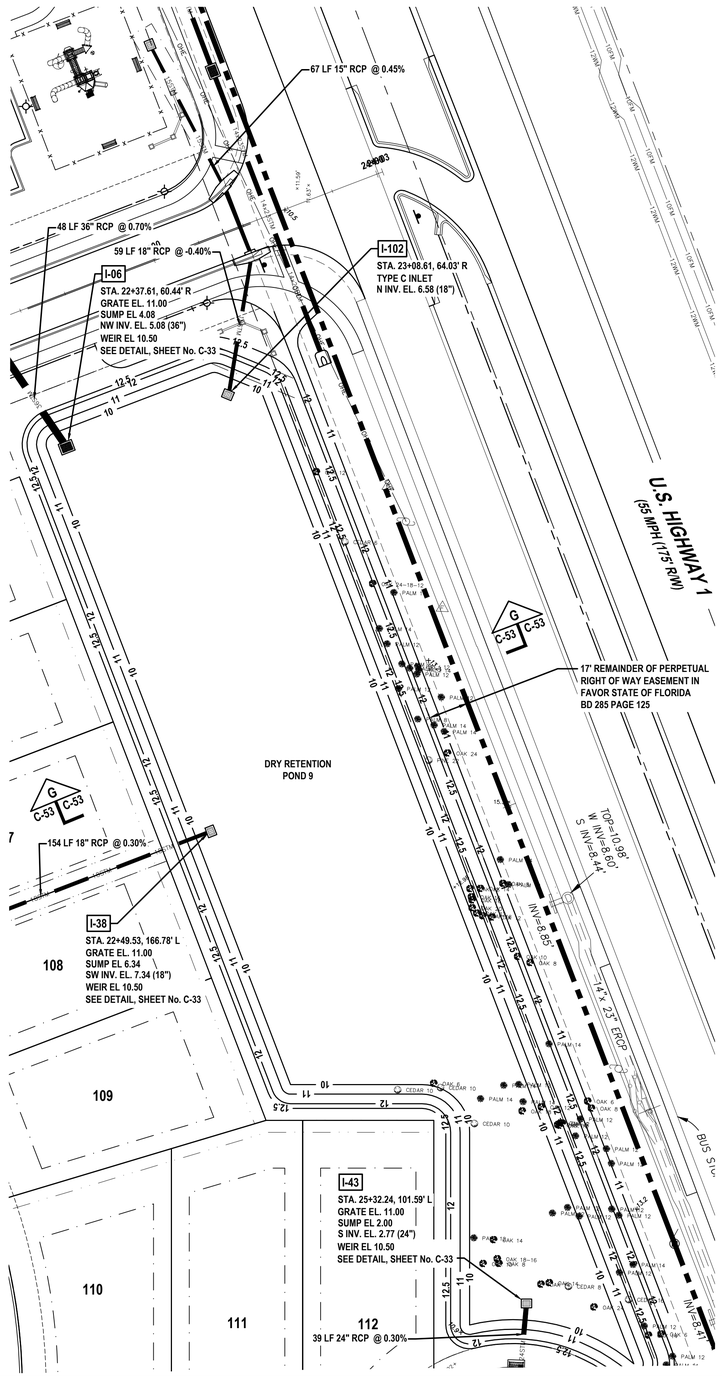
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

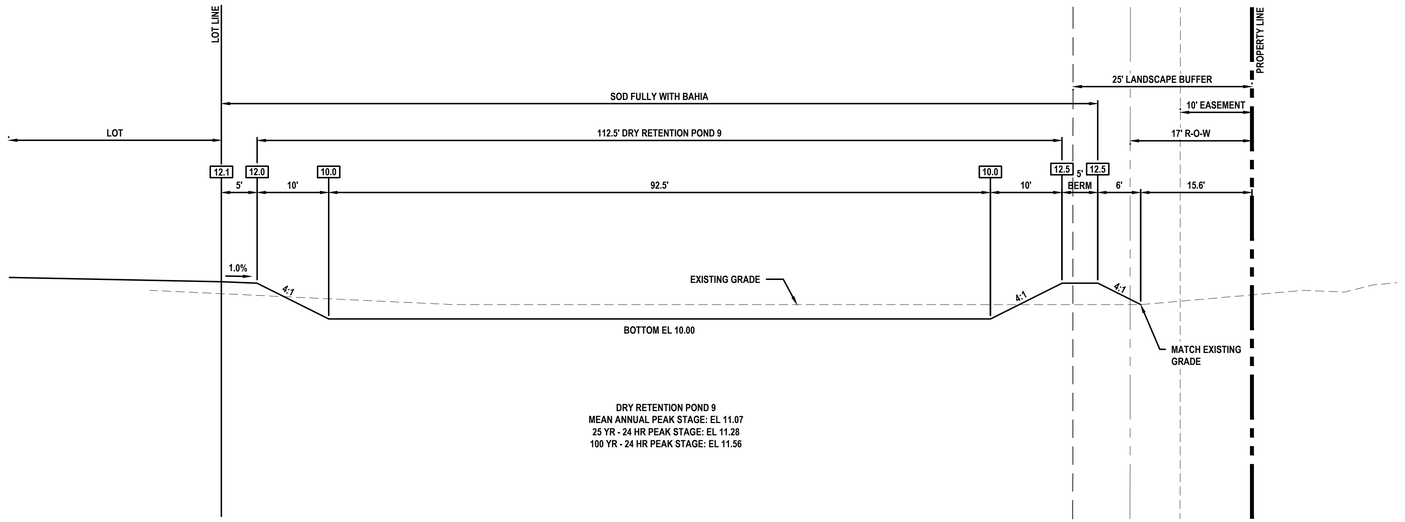
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 20'

DRAWING NUMBER

C-52







SECTION G

NOT TO SCALE

DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. THE POND SIDE SLOPES AND THE POND BOTTOM SHALL BE SODDED WITH SAND-GROWN SOD, NOT MUCK-GROWN SOD.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

STORMWATER DRY POND 9 PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

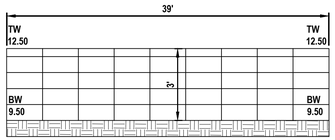
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

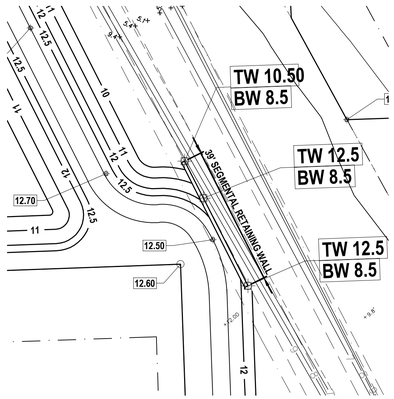
DRAWING NUMBER

C-53



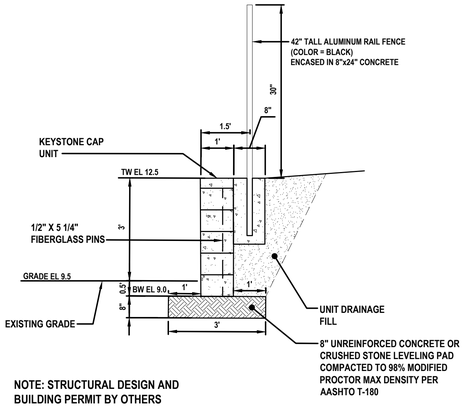
RETAINING 1 WALL ELEVATION

NOT TO SCALE



RETAINING WALL 1 DETAIL

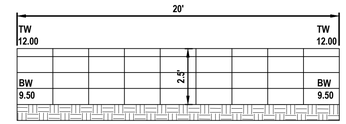
NOT TO SCALE



NOTE: STRUCTURAL DESIGN AND
BUILDING PERMIT BY OTHERS

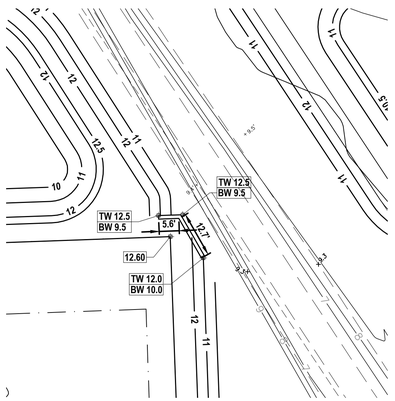
RETAINING WALL TYPICAL CROSS SECTION 1

NOT TO SCALE



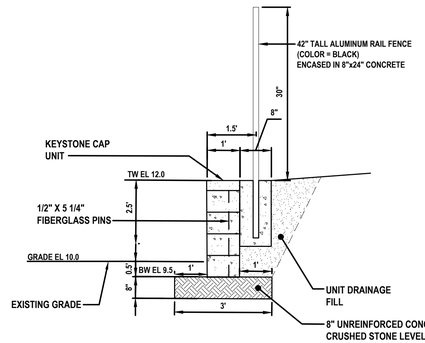
RETAINING 2 WALL ELEVATION

NOT TO SCALE



RETAINING WALL 2 DETAIL

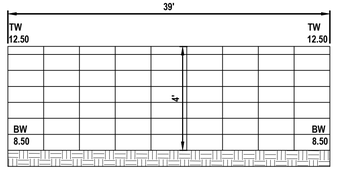
NOT TO SCALE



NOTE: STRUCTURAL DESIGN AND
BUILDING PERMIT BY OTHERS

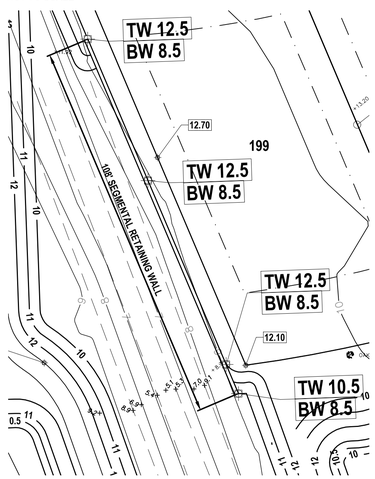
RETAINING WALL TYPICAL CROSS SECTION 2

NOT TO SCALE



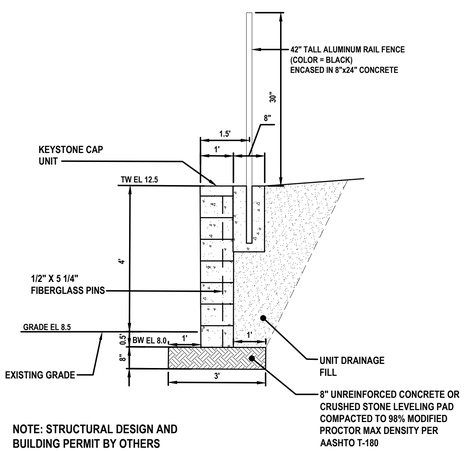
RETAINING 3 WALL ELEVATION

NOT TO SCALE



RETAINING WALL 3 DETAIL

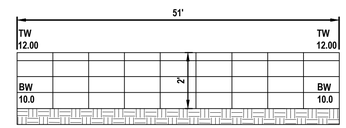
NOT TO SCALE



NOTE: STRUCTURAL DESIGN AND
BUILDING PERMIT BY OTHERS

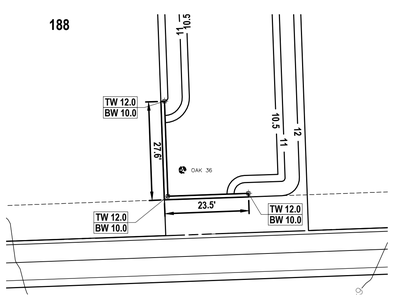
RETAINING WALL TYPICAL CROSS SECTION 1

NOT TO SCALE



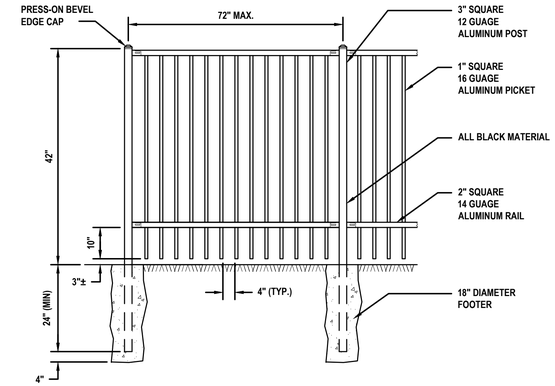
RETAINING 4 WALL ELEVATION

NOT TO SCALE



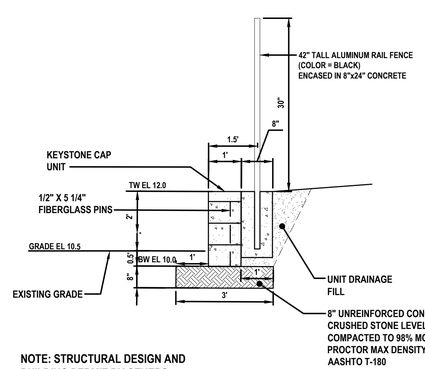
RETAINING WALL 4 DETAIL

NOT TO SCALE



ALUMINIMUM RAIL FENCE DETAIL

NOT TO SCALE



NOTE: STRUCTURAL DESIGN AND
BUILDING PERMIT BY OTHERS

RETAINING WALL TYPICAL CROSS SECTION 2

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK
ENGINEERING INC.

RETAINING WALL SECTIONS AND PROFILES

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

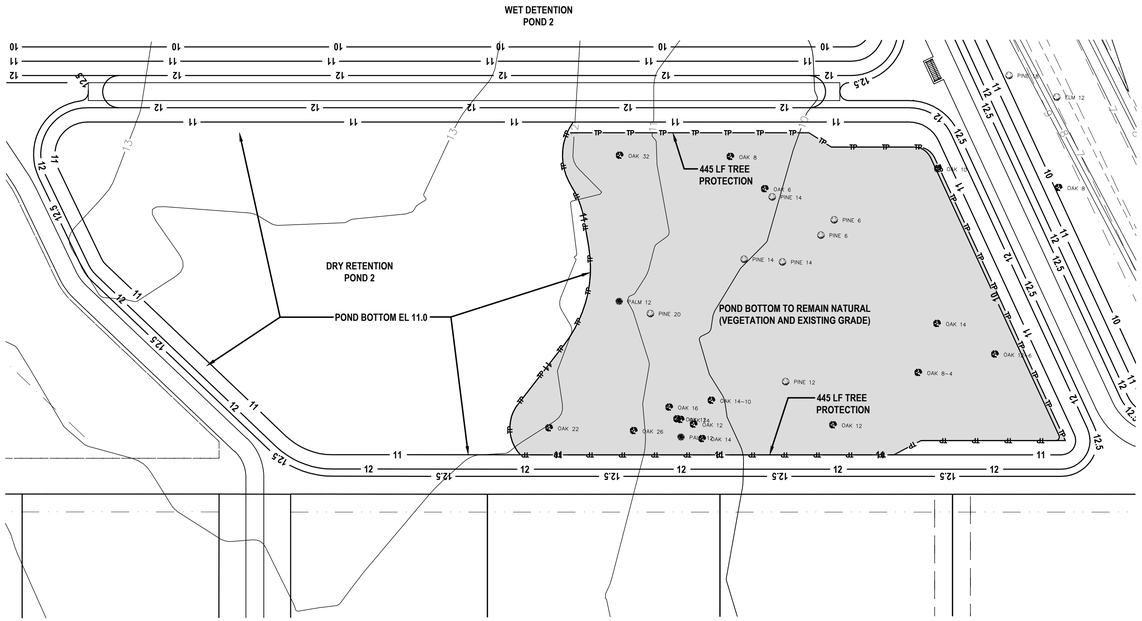
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

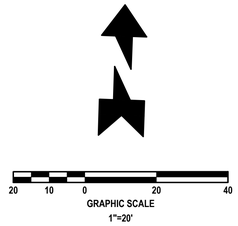
DRAWING NUMBER

C-54



TREE PROTECTION GRADING PLAN

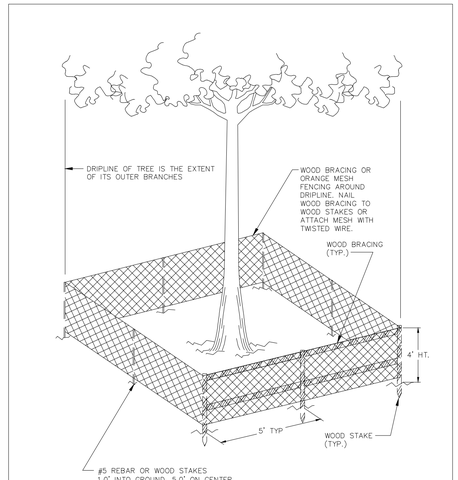
SCALE: 1" = 20'



TREE PROTECTION LEGEND:

TREE PROTECTION AREA TO REMAIN NATURAL (VEGETATION AND EXISTING GRADES)

—TP— PROPOSED TREE BARRICADE (SEE DETAIL, THIS SHEET)



NOTE: BARBED WIRE FENCING IS NOT PERMISSIBLE

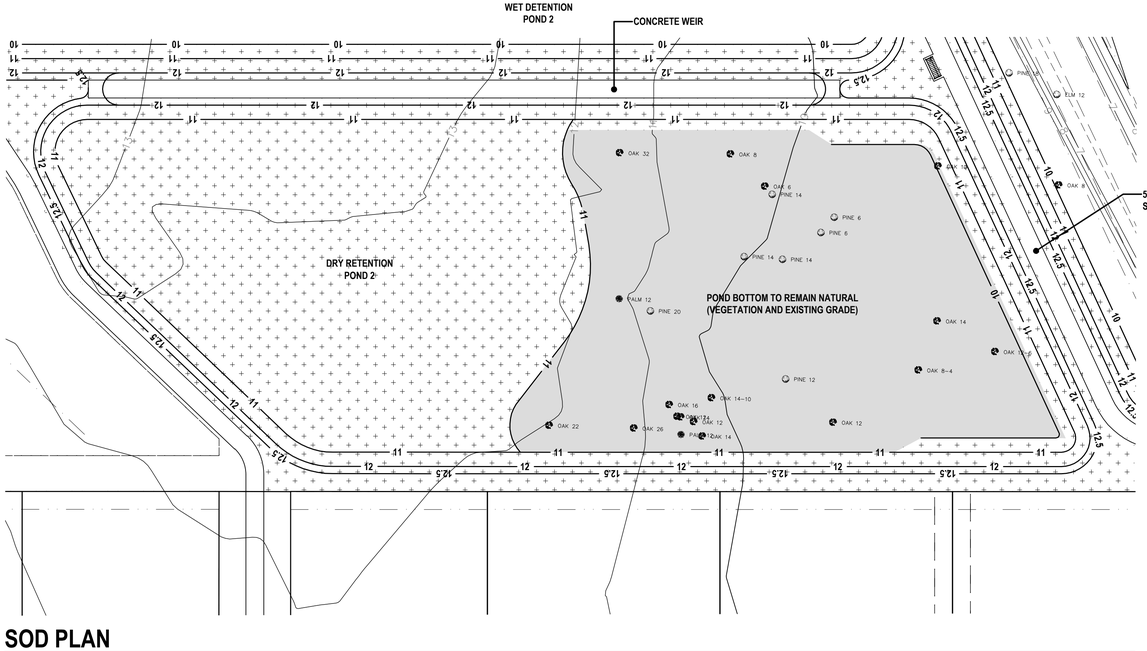
STANDARD CONSTRUCTION DETAIL
TREE PROTECTION BARRICADE

FILE NAME: EW_R23.DWG

DETAIL REF: R-23

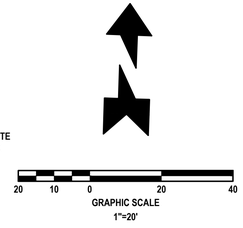
DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. FINALLY, THE BASIN SHOULD BE STABILIZED WITH BAHIA SOD.



SOD PLAN

SCALE: 1" = 20'



SOD LEGEND:

BAHIA SOD — BAHIA SOD SHALL BE SAND-GROWN, NOT MUCK-GROWN SOD

TREE PROTECTION AREA — TREE PROTECTION AREA TO REMAIN NATURAL BOTTOM. SOD RETENTION POND SIDE SLOPES ONLY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

POND 2 TREE PROTECTION GRADING PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

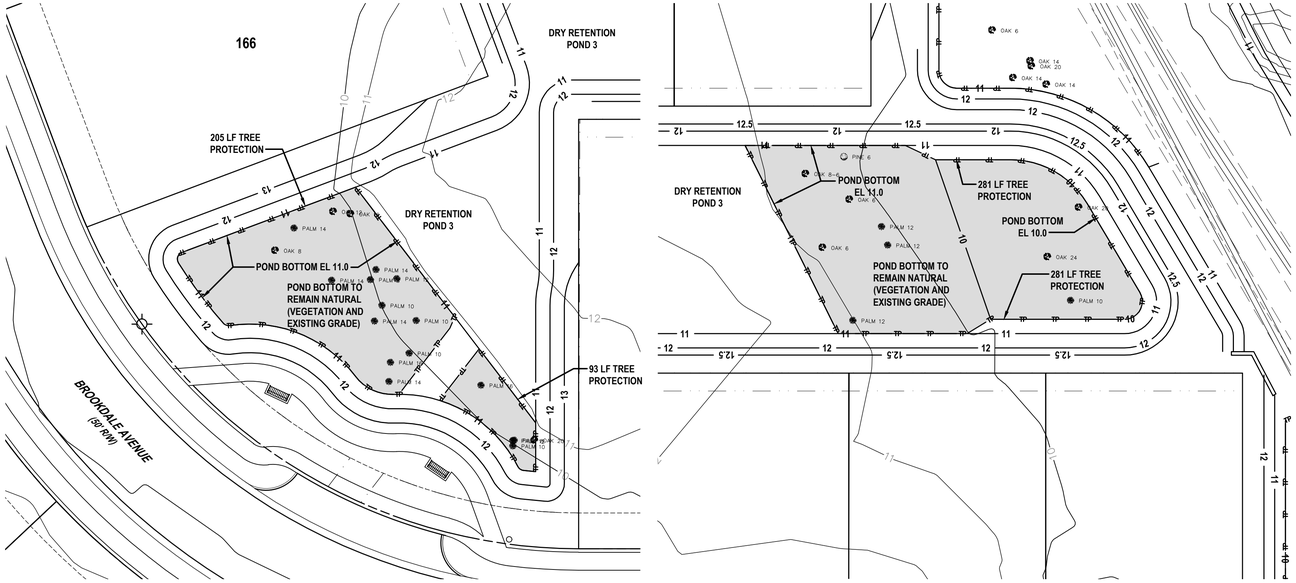
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	AS SHOWN

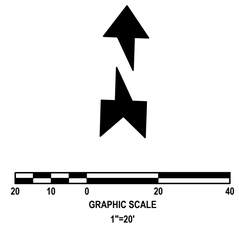
DRAWING NUMBER

C-55



TREE PROTECTION GRADING PLAN

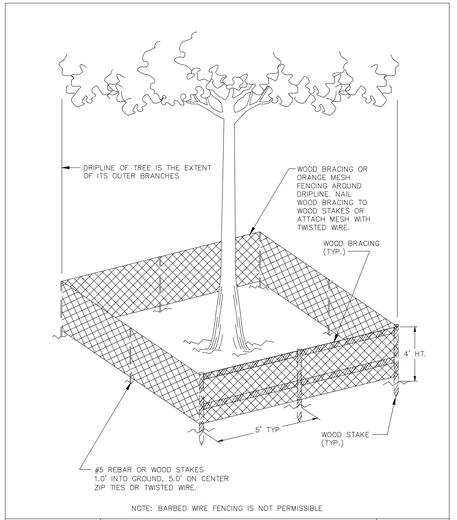
SCALE: 1" = 20'



TREE PROTECTION LEGEND:

TREE PROTECTION AREA TO REMAIN NATURAL (VEGETATION AND EXISTING GRADES)

TP — PROPOSED TREE BARRICADE (SEE DETAIL, THIS SHEET)



NOTE: BARBED WIRE FENCING IS NOT PERMISSIBLE

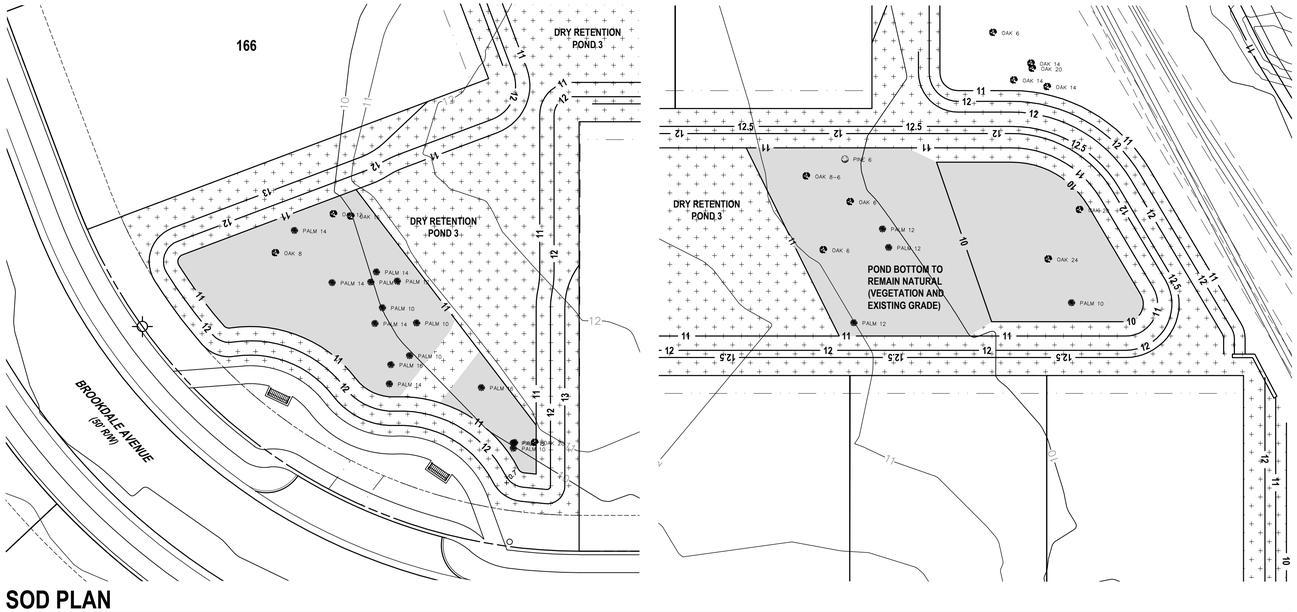
STANDARD CONSTRUCTION DETAIL
TREE PROTECTION BARRICADE

FILE NAME: EW_R23.DWG

DETAIL REF: R-23

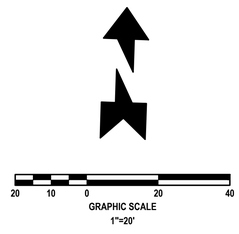
DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. FINALLY, THE BASIN SHOULD BE STABILIZED WITH BAHIA SOD.



SOD PLAN

SCALE: 1" = 20'



SOD LEGEND:

BAHIA SOD — BAHIA SOD SHALL BE SAND-GROWN, NOT MUCK-GROWN SOD

TREE PROTECTION AREA — TREE PROTECTION AREA TO REMAIN NATURAL BOTTOM. SOD RETENTION POND SIDE SLOPES ONLY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

POND 3 TREE PROTECTION GRADING PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

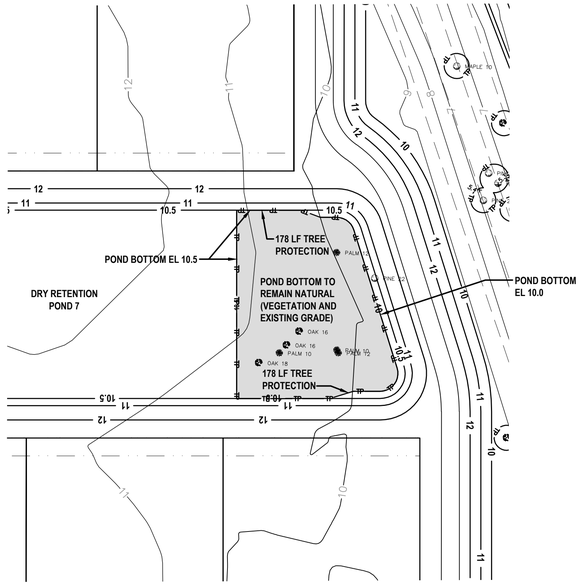
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	AS SHOWN

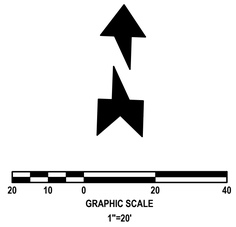
DRAWING NUMBER

C-56



TREE PROTECTION GRADING PLAN

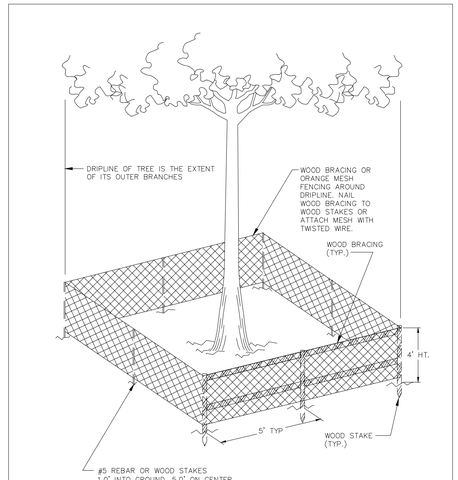
SCALE: 1" = 20'



TREE PROTECTION LEGEND:

TREE PROTECTION AREA TO REMAIN NATURAL (VEGETATION AND EXISTING GRADES)

—— TP —— PROPOSED TREE BARRICADE (SEE DETAIL, THIS SHEET)



NOTE: BARBED WIRE FENCING IS NOT PERMISSIBLE

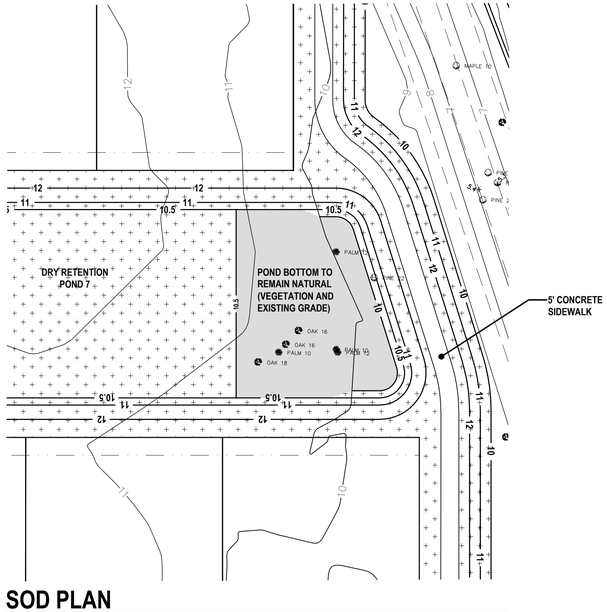
STANDARD CONSTRUCTION DETAIL
TREE PROTECTION BARRICADE

FILE NAME: EW_R23.DWG

DETAIL REF: R-23

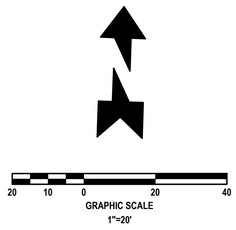
DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. FINALLY, THE BASIN SHOULD BE STABILIZED WITH BAHIA SOD.



SOD PLAN

SCALE: 1" = 20'



SOD LEGEND:

BAHIA SOD — BAHIA SOD SHALL BE SAND-GROWN, NOT MUCK-GROWN SOD

TREE PROTECTION AREA — TREE PROTECTION AREA TO REMAIN NATURAL BOTTOM. SOD RETENTION POND SIDE SLOPES ONLY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.NewkirkEngineering.com
C.A. # 30209
L.C. # 26000584
© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

POND 7 TREE PROTECTION GRADING PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

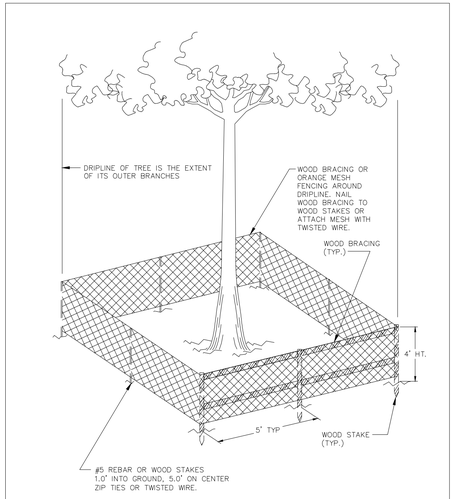
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	AS SHOWN

DRAWING NUMBER

C-57



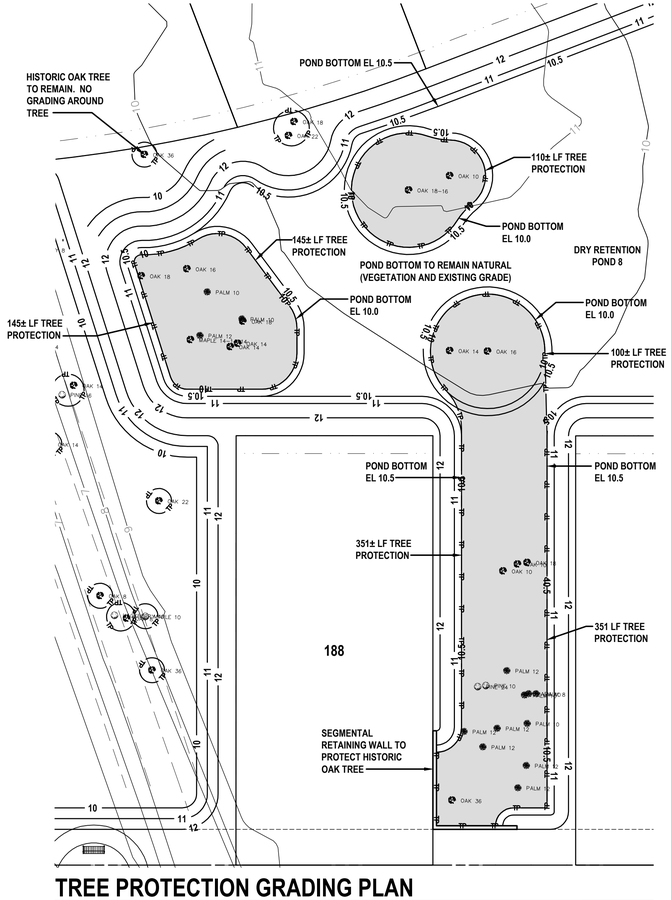
STANDARD CONSTRUCTION DETAIL
TREE PROTECTION BARRICADE

FILE NAME: EW_R23.DWG

DETAIL REF: R-23

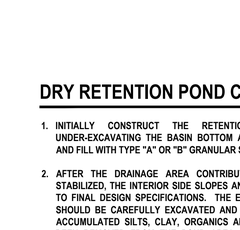
DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. FINALLY, THE BASIN SHOULD BE STABILIZED WITH BAHIA SOD.



TREE PROTECTION GRADING PLAN

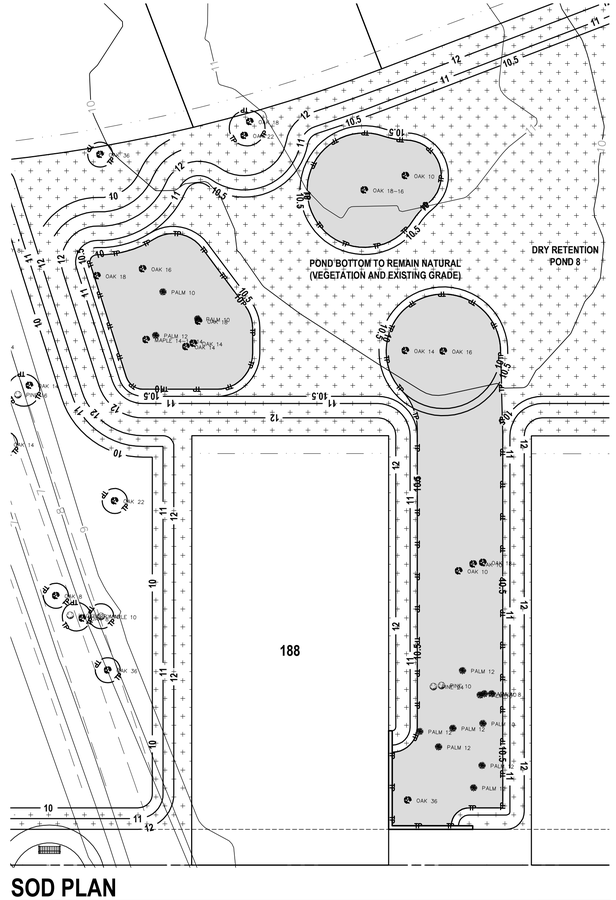
SCALE: 1" = 20'



TREE PROTECTION LEGEND:

TREE PROTECTION AREA TO REMAIN NATURAL (VEGETATION AND EXISTING GRADES)

TP PROPOSED TREE BARRICADE (SEE DETAIL, THIS SHEET)



SOD PLAN

SCALE: 1" = 20'

SOD LEGEND:

BAHIA SOD — BAHIA SOD SHALL BE SAND-GROWN, NOT MUCK-GROWN SOD

TREE PROTECTION AREA — TREE PROTECTION AREA TO REMAIN NATURAL BOTTOM. SOD RETENTION POND SIDE SLOPES ONLY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

POND 8 TREE PROTECTION GRADING PLAN

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

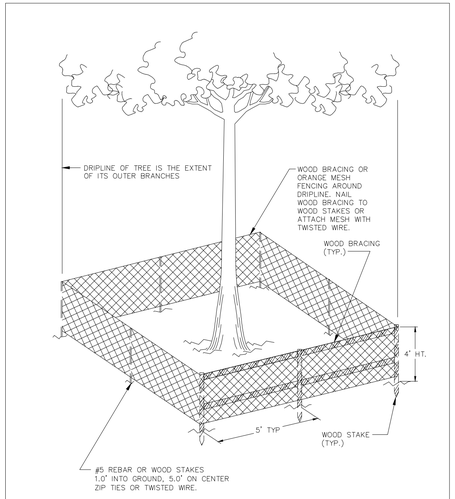
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	AS SHOWN

DRAWING NUMBER

C-58



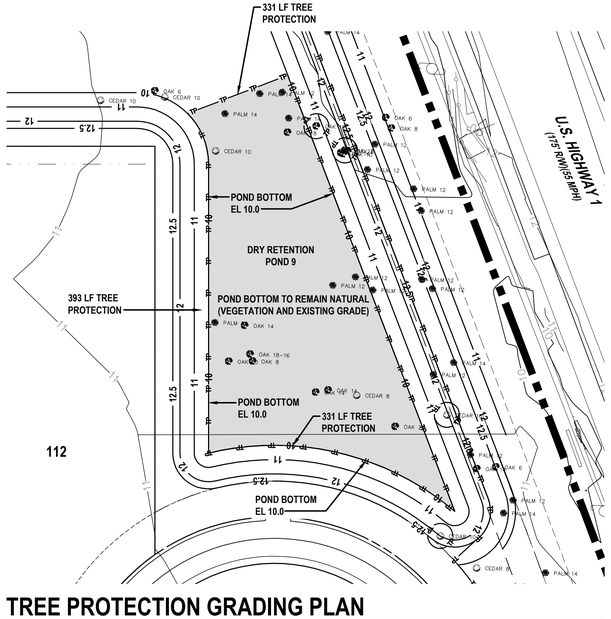
STANDARD CONSTRUCTION DETAIL
TREE PROTECTION BARRICADE

FILE NAME: EW_R23.DWG

DETAIL REF: R-23

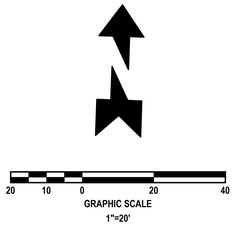
DRY RETENTION POND CONSTRUCTION NOTES:

1. INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES AND FILL WITH TYPE "A" OR "B" GRANULAR SAND.
2. AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
3. ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION.
4. FINALLY, THE BASIN SHOULD BE STABILIZED WITH BAHIA SOD.



TREE PROTECTION GRADING PLAN

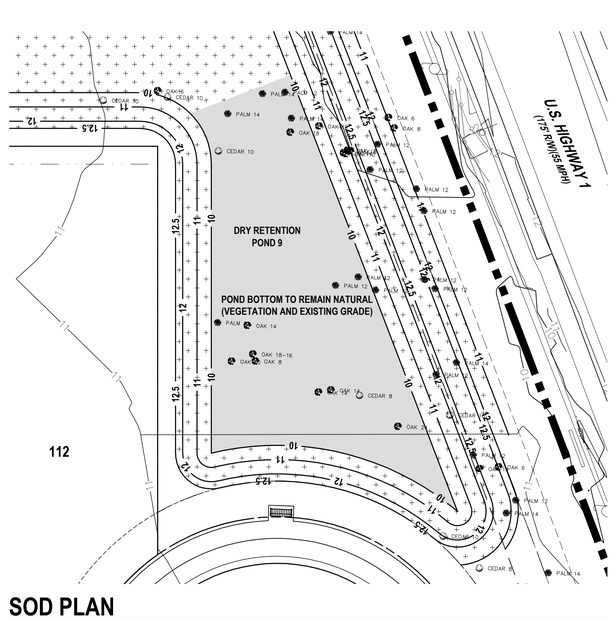
SCALE: 1" = 20'



TREE PROTECTION LEGEND:

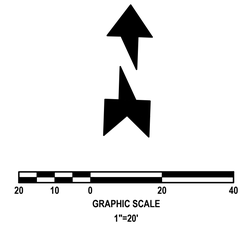
TREE PROTECTION AREA TO REMAIN NATURAL (VEGETATION AND EXISTING GRADES)

TP — PROPOSED TREE BARRICADE (SEE DETAIL, THIS SHEET)



SOD PLAN

SCALE: 1" = 20'



SOD LEGEND:

BAHIA SOD — BAHIA SOD SHALL BE SAND-GROWN, NOT MUCK-GROWN SOD

TREE PROTECTION AREA — TREE PROTECTION AREA TO REMAIN NATURAL BOTTOM. SOD RETENTION POND SIDE SLOPES ONLY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

POND 9 TREE PROTECTION GRADING PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	AS SHOWN

DRAWING NUMBER

C-59

100 50 0 100 200

GRAPHIC SCALE

1"=100'

One Nation... One Number... 811

Know what's below. Call before you dig.

WARNING !!

CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES, GAS MAINS AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

GRAVITY SEWER STRUCTURE TABLE			
NAME:	DETAILS:	INVERTS	MH DEPTH
LS-01	96" DIA RIM = 14.25	12" N INV EL = 0.22	19.25'
MH-01	48" DIA RIM = 12.37	12" S INV EL = 0.37 12" E INV EL = 0.47 8" NW INV EL = 0.47 10" W INV EL = 0.47	12.00'
MH-02	48" DIA RIM = 12.69	10" E INV EL = 1.29 12" W INV EL = 1.19	11.50'
MH-03	48" DIA RIM = 12.67	10" E INV EL = 2.48 10" W INV EL = 2.38	10.28'
MH-04	48" DIA RIM = 13.60	10" W INV EL = 3.03 8" NW INV EL = 3.13 10" NE INV EL = 3.13	10.55'
MH-05	48" DIA RIM = 14.31	10" SW INV EL = 3.88 8" NW INV EL = 3.98 10" SE INV EL = 3.98	9.93'
MH-06	48" DIA RIM = 12.20	8" SE INV EL = 1.48 8" N INV EL = 1.58	11.41'
MH-07	48" DIA RIM = 12.98	8" S INV EL = 3.29 8" N INV EL = 3.39	9.69'
MH-08	48" DIA RIM = 12.49	8" S INV EL = 3.84 8" NE INV EL = 3.94	8.65'
MH-09	48" DIA RIM = 12.44	8" SW INV EL = 4.37 8" E INV EL = 4.47	8.07'
MH-10	48" DIA RIM = 12.31	8" W INV EL = 5.80	6.51'
MH-11	48" DIA RIM = 12.53	8" E INV EL = 6.54	5.99'
MH-12	48" DIA RIM = 13.23	8" SE INV EL = 5.75 8" W INV EL = 5.75 8" E INV EL = 5.75	7.48'
MH-13	48" DIA RIM = 12.74	8" NW INV EL = 4.49 8" SE INV EL = 4.39	8.34'
MH-14	48" DIA RIM = 12.30	8" W INV EL = 6.74	5.56'
MH-15	48" DIA RIM = 12.29	8" SE INV EL = 6.29	6.00'
MH-16	48" DIA RIM = 12.29	8" SE INV EL = 4.98 8" NW INV EL = 5.08	7.32'
MH-17	48" DIA RIM = 12.85	10" S INV EL = 5.09 10" NW INV EL = 4.99	7.79'
MH-18	48" DIA RIM = 14.51	10" N INV EL = 5.57 8" W INV EL = 5.67 8" E INV EL = 5.67 10" S INV EL = 5.67	8.51'

GRAVITY SEWER STRUCTURE TABLE			
NAME:	DETAILS:	INVERTS	MH DEPTH
MH-19	48" DIA RIM = 12.21	8" W INV EL = 6.73	5.48'
MH-20	48" DIA RIM = 12.74	8" E INV EL = 7.00 8" W INV EL = 7.10	5.74'
MH-21	48" DIA RIM = 12.37	8" E INV EL = 8.43	3.94'
MH-22	48" DIA RIM = 12.70	8" W INV EL = 8.81	3.89'
MH-23	48" DIA RIM = 13.46	8" W INV EL = 7.13 8" E INV EL = 7.23	6.14'
MH-24	48" DIA RIM = 12.90	8" E INV EL = 5.90 10" W INV EL = 5.80	7.10'
MH-25	48" DIA RIM = 12.93	10" E INV EL = 4.75 10" NW INV EL = 4.65	8.27'
MH-26	48" DIA RIM = 13.05	10" SE INV EL = 4.31 10" NW INV EL = 4.21	8.81'
MH-27	48" DIA RIM = 13.01	8" E INV EL = 5.47	8.73'
MH-28	48" DIA RIM = 13.62	10" E INV EL = 3.13 8" W INV EL = 3.23 10" SE INV EL = 3.23	10.43'
MH-29	48" DIA RIM = 13.29	10" W INV EL = 2.38 10" E INV EL = 2.28	10.66'
MH-30	48" DIA RIM = 12.96	10" W INV EL = 1.54 10" E INV EL = 1.44	11.52'
MH-31	48" DIA RIM = 12.29	10" N INV EL = 6.15	6.14'

UTILITY LEGEND

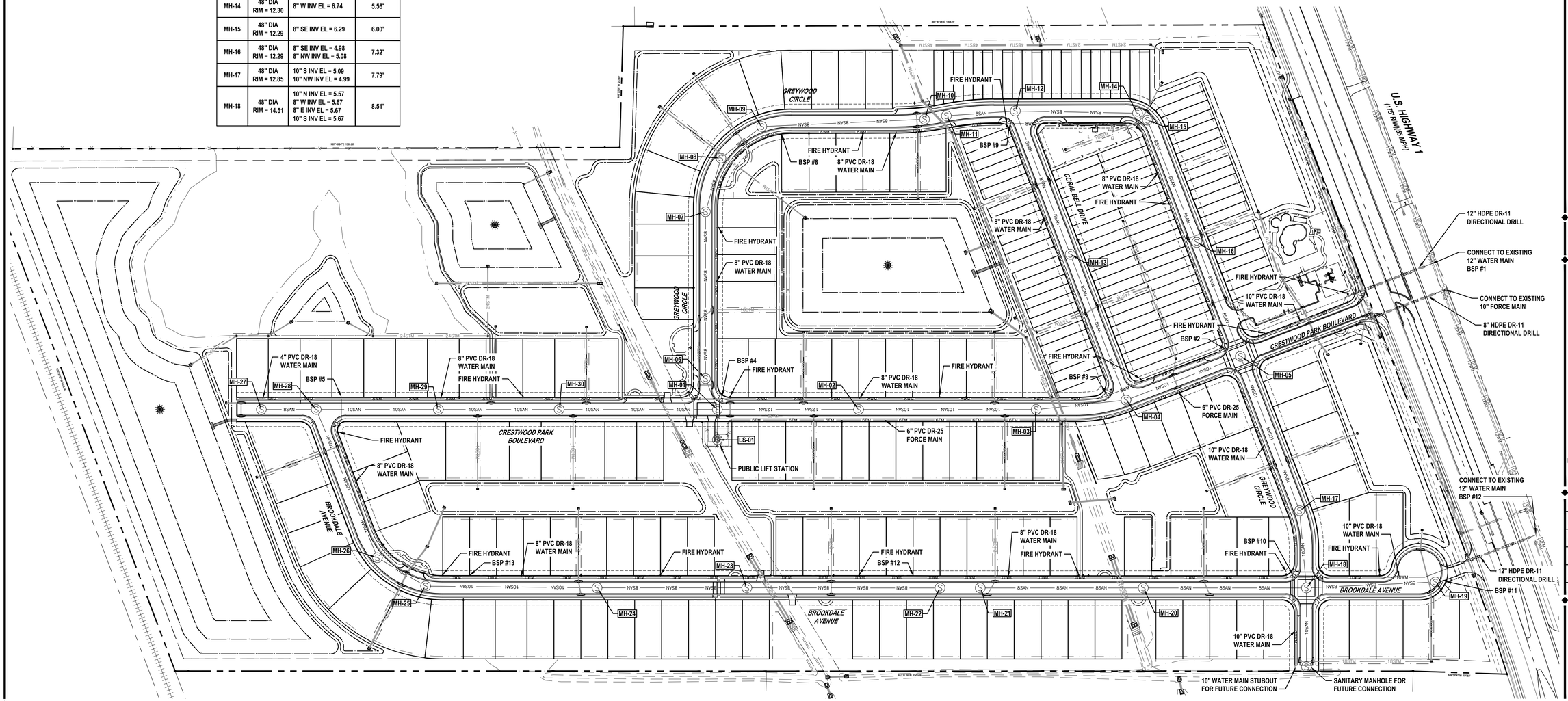
- PROPOSED 11.25° BEND
- PROPOSED 22.5° BEND
- PROPOSED 45° BEND
- PROPOSED 90° BEND
- PROPOSED TEE
- PROPOSED GATE VALVE
- PROPOSED FIRE HYDRANT ASSEMBLY
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED SHORT SIDE WATER SERVICE
- PROPOSED LONG SIDE DOUBLE WATER SERVICE
- 6SAN — PROPOSED 6" PVC SDR-26 SANITARY SEWER LATERAL (SLOPE @ 2.0% MIN.)
- 12WM — PROPOSED 12" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 10WM — PROPOSED 10" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 8WM — PROPOSED 8" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 6WM — PROPOSED 6" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 4WM — PROPOSED 4" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 2WS — PROPOSED 2" PE 4710 (SDR 9) WATER SERVICE (30" MINIMUM COVER)
- 1WS — PROPOSED 1" PE 4710 (SDR 9) WATER SERVICE (30" MINIMUM COVER)
- 12SAN — PROPOSED 12" PVC SDR 26 SANITARY MAIN
- 10SAN — PROPOSED 10" PVC SDR 26 SANITARY MAIN
- 8SAN — PROPOSED 8" PVC SDR 26 SANITARY MAIN
- 6FM — PROPOSED 6" PVC (DR 25) C-900 FORCE MAIN (3' MIN. AND 5' MAX. COVER)
- BSP — BACTERIOLOGICAL SAMPLING POINT LOCATION

VOLUSIA COUNTY & CITY OF EDGEWATER FIRE PREVENTION BUREAU NOTES:

1. GOVERNING SPECIFICATIONS: FLORIDA FIRE PREVENTION CODE (7TH EDITION).
2. 18.1.3.2 PLANS AND SPECIFICATIONS FOR FIRE HYDRANT SYSTEMS SHALL BE SUBMITTED TO THE FIRE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
3. 18.2.3.5.1 ALL ROADS SHALL MEET THIS CHAPTER FOR WIDTH AND VERTICAL CLEARANCE REQUIREMENT. MINIMUM 20 FEET IN WIDTH, 13.6 FEET IN VERTICAL CLEARANCE.
4. 18.2.3.5.3 ALL CUL-DE-SAC'S SHALL MEET THE MINIMUM REQUIREMENT OF 35 FEET AND MEET TURNING ANALYSIS PROVIDED.
5. 18.4.5.3.1 THE MINIMUM FIRE FLOW AND FLOW DURATION FOR A BUILDING OTHER THAN ONE AND TWO FAMILY DWELLINGS SHALL BE SPECIFIED IN TABLE 18.4.5.2.1.
6. 18.5.3 FIRE HYDRANTS SHALL BE SPACED PER THIS SECTION. THE MAXIMUM DISTANCE TO A FIRE HYDRANT FROM THE CLOSEST POINT ON A BUILDING SHALL NOT EXCEED 400 FEET. THE MAXIMUM DISTANCE BETWEEN FIRE HYDRANTS SHALL NOT EXCEED 500 FEET.
7. TWO POINTS OF INGRESS/EGRESS REQUIRED OUT OF SUBDIVISION.
8. DEAD END ROADS SHALL NO EXCEED 150 FEET.
9. FIRE ACCESS PROVIDED WITH ALL WEATHER STABILIZED SURFACE TO SUSTAIN 40-TON FIRE APPARATUS.
10. ALL CRITICAL INFRASTRUCTURE SUCH AS HYDRANTS AND FIRE DEPARTMENT ACCESS ROADS SHALL BE IN PLACE PRIOR TO ANY VERTICAL CONSTRUCTION.
11. ALL SHADE STRUCTURES (COMMON AREAS SUCH AS PLAYGROUND) SHALL MEET NFPA 701 REQUIREMENTS FOR FLAMMABILITY.

VOLUSIA COUNTY UTILITY NOTES:

1. FITTINGS AND VALVES ARE REQUIRED TO BE LOCATED OUTSIDE PAVEMENT AREAS TO ENSURE EFFECTIVE MAINTENANCE AND REPAIR BY VCU. IF FITTINGS SHOW SOME OVERLAP BETWEEN ROW AND PAVEMENT, THEN CONTRACTOR SHALL ADJUST FITTINGS AND VALVES TO AREAS OUTSIDE OF PAVEMENT.
2. WHERE POTABLE WATER MAINS ARE IN VERTICAL CONFLICT WITH STORM SEWERS, THE COUNTY PREFERS THE WATER MAIN BE DIP OVER THE STORM WITH A 6" SEPARATION, WHILE PROVIDING A MINIMUM 30" OF COVER.
3. WHERE SANITARY FORCE MAINS ARE IN VERTICAL CONFLICT WITH STORM SEWERS, THE COUNTY PREFERS THE FORCE MAIN BE HDPE OVER THE STORM WITH 6" SEPARATION, WHILE PROVIDING A MINIMUM 30" OF COVER.



REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

MASTER UTILITY PLAN

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

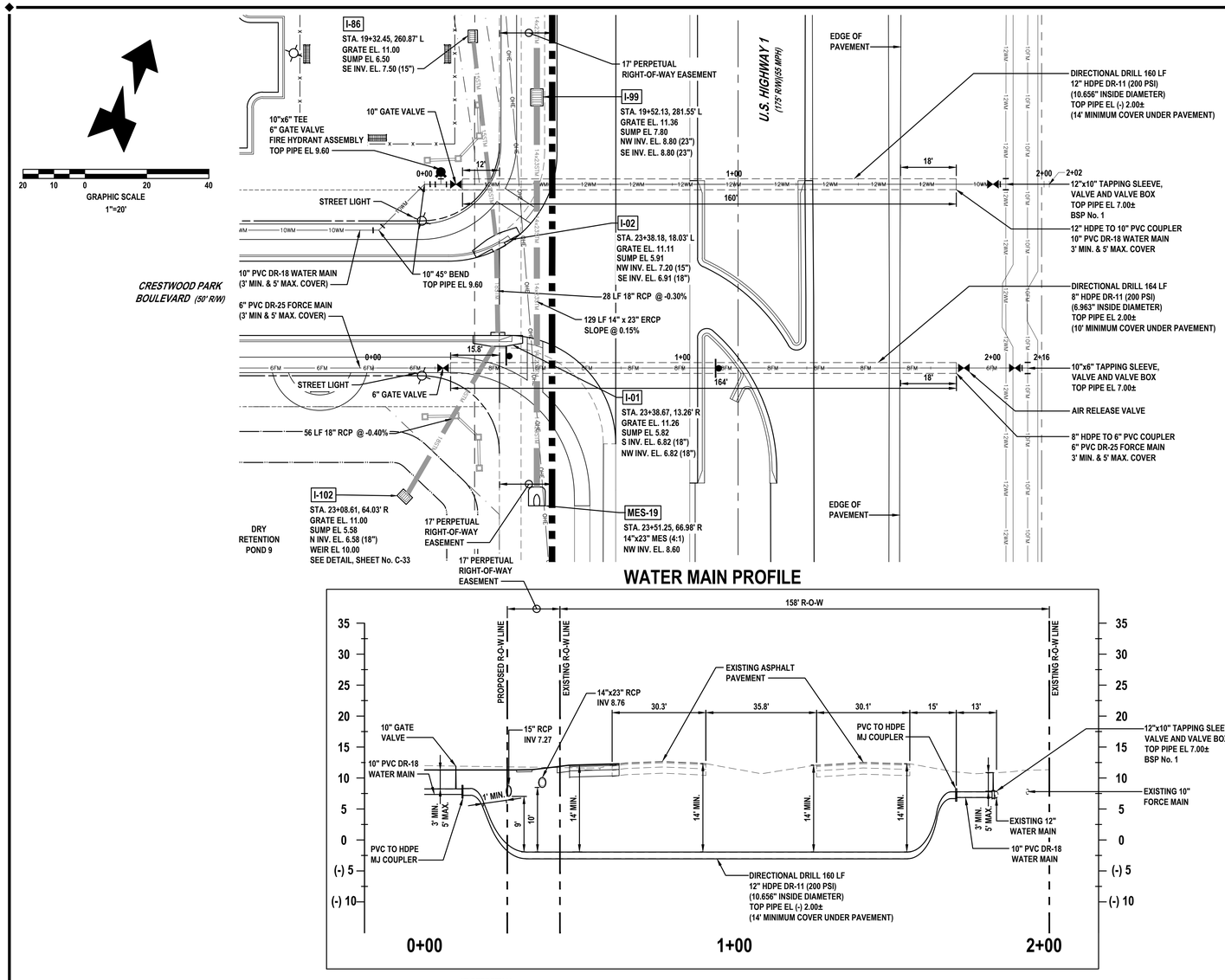
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

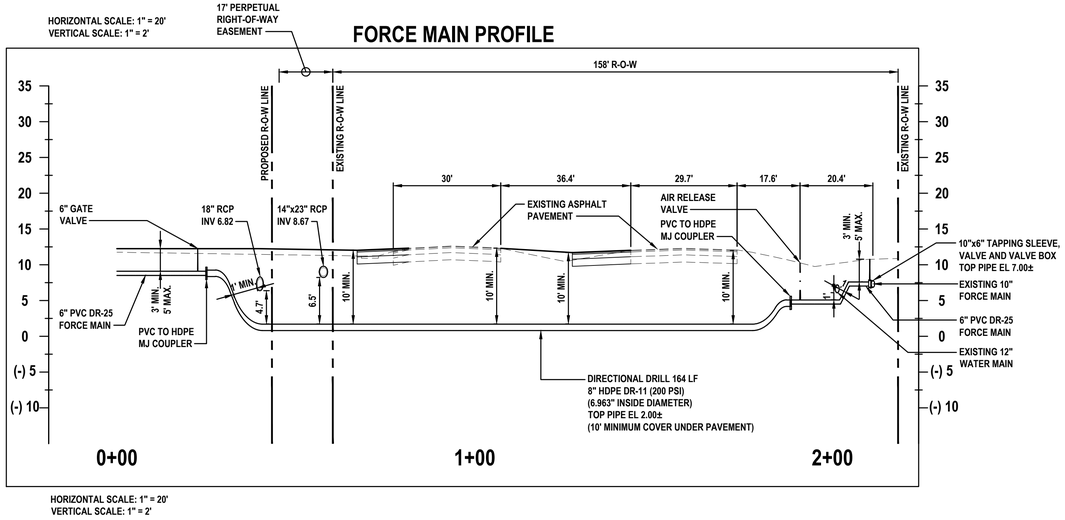
C-60



WATER MAIN PROFILE

FORCE MAIN PROFILE

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'



HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

FDOT GENERAL NOTES:

1. MAINTENANCE OF TRAFFIC TO BE SUPERVISED BY A CERTIFIED PERSON (ON SITE).
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK WITH IN THE FDOT R/W.
3. ALL WORK PERFORMED WITH IN THE FDOT R/W SHALL BE IN ACCORDANCE WITH THE 2019 EDITION OF THE FDOT DESIGN STANDARDS & SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, 2017 EDITION OF THE FDOT UTILITY ACCOMMODATION MANUAL AND FDOT STANDARD PLANS FY 2023-24.
4. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO REPAIR ANY DAMAGE TO FDOT FACILITIES CAUSED BY THE CONSTRUCTION OF THIS PROJECT.
5. ANY TEST RESULTS TAKEN DURING CONSTRUCTION OF THE PERMITTED WORK SHALL BE PROVIDED TO THE DEPARTMENT UPON REQUEST.
6. ALL CONCRETE TO BE REMOVED SHALL BE SAW CUT TO NEAREST JOINT IN GOOD CONDITION, SO A CONNECTION THAT IS FREE OF CRACKS, DEFORMITIES OR VOIDS & IRREGULARITIES ARE NOT DEFECTIVE.
7. ALL STRIPING WITHIN THE FDOT RIGHT-OF-WAY SHALL BE PREFORMED THERMOPLASTIC.
8. ALL CONCRETE SHALL BE AN APPROVED FDOT MIX DESIGN OF 3,000 PSI.
9. ALL MATERIALS INSTALLED INSIDE FDOT R/W SHALL BE ON THE QUALIFIED PRODUCTS LIST OR APPROVED PRODUCTS LIST.
10. ALL CONSTRUCTION SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
11. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC AND BARRICADE PLAN TO THE ENGINEER FOR APPROVAL WITH THE BID. INCLUDE THE MOT PLAN AT THE PRECONSTRUCTION MEETING.
12. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND THE FDOT INSPECTOR NOTIFIED FOR APPROVAL.
13. ALL BARRICADES AND POSTED SIGNAGE SHALL REMAIN IN PLACE UNTIL PAVING WORK IS COMPLETE. ALL BARRICADES SHALL BE VERIFIED IN PLACE BY THE CONTRACTOR AT THE END OF EACH WORK DAY.
14. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA.
15. THE CONTRACTOR SHALL ENSURE THAT ALL SIDEWALKS AND CROSSWALKS CONFORM TO THE CURRENT REQUIREMENTS OF THE AMERICANS WITH DISABILITY ACT (ADA).
16. ALL SIGNS AND PAVEMENT MARKINGS THAT ARE REMOVED OR DAMAGED BY CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE TO BE REPLACED TO THEIR PRECONSTRUCTION CONDITIONS.
17. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO FDOT STANDARD INDEX No. 711-001.
18. IN THE EVENT PERMANENT VEHICLE DETECTION IS DISRUPTED, PROVIDE AN ALTERNATIVE MEANS OF DETECTION TO ALL LANES APPROACHING THE INTERSECTION, SEPARATING EACH MOVEMENT WHICH PREVIOUSLY HAD DETECTION. THE TYPE OF DETECTOR SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. EQUIPMENT SHALL ONLY DETECT THE INTENDED MOVEMENT.
19. THERE SHALL BE NO SR 44 LANE CLOSURES DURING 7 A.M. TO 7 P.M. MONDAY TO SUNDAY.
20. THERE SHALL BE NO WORK WITHIN THE VICINITY OF THE SIGNALIZED INTERSECTION DURING 7 A.M. TO 7 P.M. MONDAY TO SUNDAY.
21. CONTRACTOR TO PROVIDE TEMPORARY VIDEO DETECTION FOR SIGNAL WHILE LOOPS ARE DISTURBED DURING MILLING AND RESURFACING.

VOLUSIA COUNTY & CITY OF EDGEWATER FIRE PREVENTION BUREAU NOTES:

1. GOVERNING SPECIFICATIONS: FLORIDA FIRE PREVENTION CODE (7TH EDITION).
2. 18.1.3.2 PLANS AND SPECIFICATIONS FOR FIRE HYDRANT SYSTEMS SHALL BE SUBMITTED TO THE FIRE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
3. 18.2.3.5.1 ALL ROADS SHALL MEET THIS CHAPTER FOR WIDTH AND VERTICAL CLEARANCE REQUIREMENT. MINIMUM 20 FEET IN WIDTH, 13.6 FEET IN VERTICAL CLEARANCE.
4. 18.2.3.5.3 ALL CUL-DE-SAC'S SHALL MEET THE MINIMUM REQUIREMENT OF 35 FEET AND MEET TURNING ANALYSIS PROVIDED.
5. 18.4.5.3.1 THE MINIMUM FIRE FLOW AND FLOW DURATION FOR A BUILDING OTHER THAN ONE AND TWO FAMILY DWELLINGS SHALL BE SPECIFIED IN TABLE 18.4.5.2.1.
6. 18.5.3 FIRE HYDRANTS SHALL BE SPACED PER THIS SECTION. THE MAXIMUM DISTANCE TO A FIRE HYDRANT FROM THE CLOSEST POINT ON A BUILDING SHALL NOT EXCEED 400 FEET. THE MAXIMUM DISTANCE BETWEEN FIRE HYDRANTS SHALL NOT EXCEED 500 FEET.
7. TWO POINTS OF INGRESS/EGRESS REQUIRED OUT OF SUBDIVISION.
8. DEAD END ROADS SHALL NO EXCEED 150 FEET.
9. FIRE ACCESS PROVIDED WITH ALL WEATHER STABILIZED SURFACE TO SUSTAIN 40-TON FIRE APPARATUS.
10. ALL CRITICAL INFRASTRUCTURE SUCH AS HYDRANTS AND FIRE DEPARTMENT ACCESS ROADS SHALL BE IN PLACE PRIOR TO ANY VERTICAL CONSTRUCTION.
11. ALL SHADE STRUCTURES (COMMON AREAS SUCH AS PLAYGROUND) SHALL MEET NFPA 701 REQUIREMENTS FOR FLAMMABILITY.

VOLUSIA COUNTY UTILITY NOTES:

1. FITTINGS AND VALVES ARE REQUIRED TO BE LOCATED OUTSIDE PAVEMENT AREAS TO ENSURE EFFECTIVE MAINTENANCE AND REPAIR BY VCU. IF FITTINGS SHOW SOME OVERLAP BETWEEN ROW AND PAVEMENT, THEN CONTRACTOR SHALL ADJUST FITTINGS AND VALVES TO AREAS OUTSIDE OF PAVEMENT.
2. WHERE POTABLE WATER MAINS ARE IN VERTICAL CONFLICT WITH STORM SEWERS, THE COUNTY PREFERS THE WATER MAIN BE DIP OVER THE STORM WITH A 6" SEPARATION, WHILE PROVIDING A MINIMUM 30" OF COVER.
3. WHERE SANITARY FORCE MAINS ARE IN VERTICAL CONFLICT WITH STORM SEWERS, THE COUNTY PREFERS THE FORCE MAIN BE HDPE OVER THE STORM WITH 6" SEPARATION, WHILE PROVIDING A MINIMUM 30" OF COVER.

UTILITY LEGEND

- PROPOSED 11.25° BEND
- PROPOSED 22.5° BEND
- PROPOSED 45° BEND
- PROPOSED 90° BEND
- PROPOSED TEE
- PROPOSED GATE VALVE
- PROPOSED FIRE HYDRANT ASSEMBLY
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED SHORT SIDE WATER SERVICE
- PROPOSED LONG SIDE DOUBLE WATER SERVICE
- 6SAN — PROPOSED 6" PVC SDR-26 SANITARY SEWER LATERAL (SLOPE @ 2.0% MIN.)
- 12WM — PROPOSED 12" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 10WM — PROPOSED 10" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 8WM — PROPOSED 8" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 6WM — PROPOSED 6" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 4WM — PROPOSED 4" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 2WS — PROPOSED 2" PE 4710 (SDR 9) WATER SERVICE (30" MINIMUM COVER)
- 1WS — PROPOSED 1" PE 4710 (SDR 9) WATER SERVICE (30" MINIMUM COVER)
- 12SAN — PROPOSED 12" PVC SDR 26 SANITARY MAIN
- 10SAN — PROPOSED 10" PVC SDR 26 SANITARY MAIN
- 8SAN — PROPOSED 8" PVC SDR 26 SANITARY MAIN
- 6FM — PROPOSED 6" PVC (DR 25) C-900 FORCE MAIN (3' MIN. AND 5' MAX. COVER)
- BSP — BACTERIOLOGICAL SAMPLING POINT LOCATION
- 1 — CONFLICT DETAIL

One Nation... One Number... 811
Know what's below. Call before you dig.

WARNING !!

CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES, GAS MAINS AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

DIRECTIONAL DRILL PLAN AND PROFILE

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

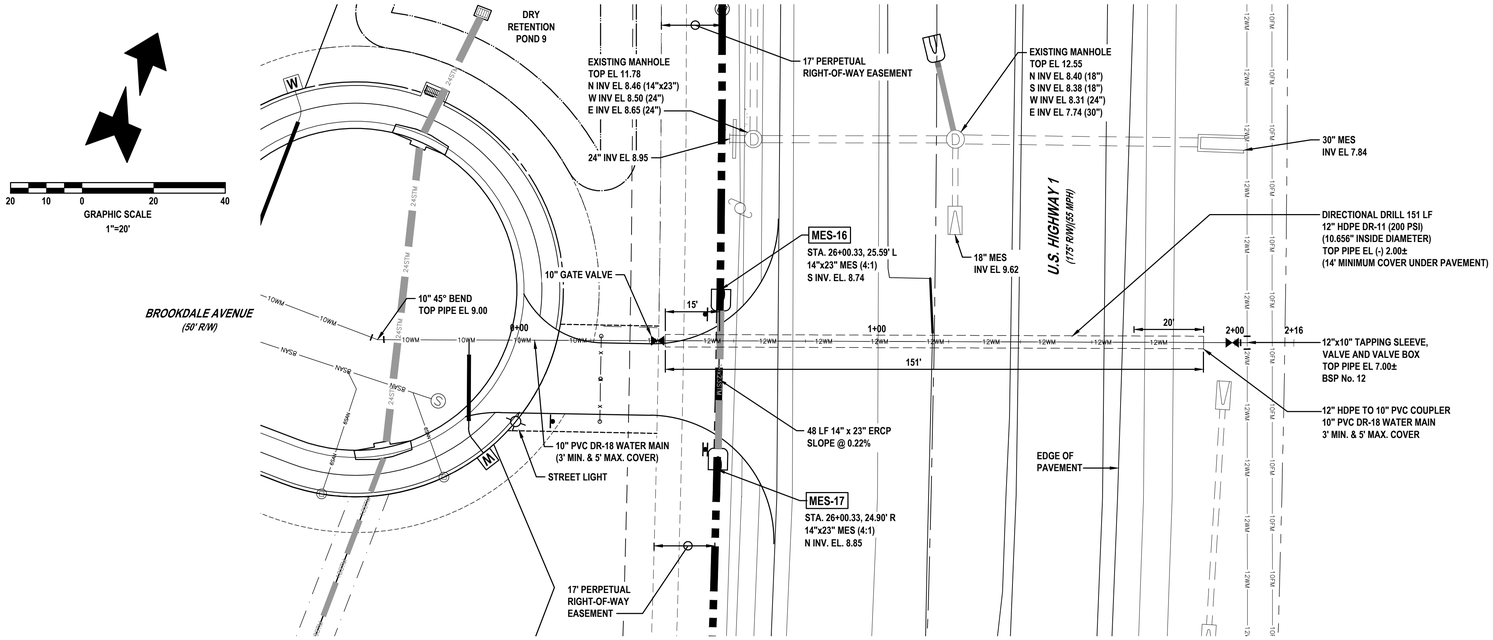
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

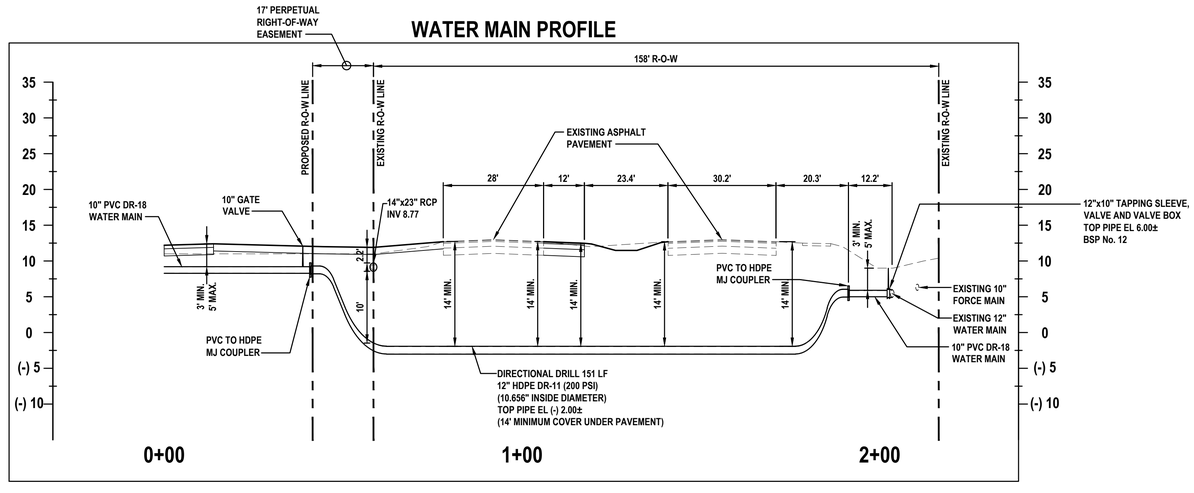
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 20'

DRAWING NUMBER

C-61



WATER MAIN PROFILE



FDOT GENERAL NOTES:

1. MAINTENANCE OF TRAFFIC TO BE SUPERVISED BY A CERTIFIED PERSON (ON SITE).
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK WITH IN THE FDOT R/W.
3. ALL WORK PERFORMED WITH IN THE FDOT R/W SHALL BE IN ACCORDANCE WITH THE 2019 EDITION OF THE FDOT DESIGN STANDARDS & SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, 2017 EDITION OF THE FDOT UTILITY ACCOMMODATION MANUAL AND FDOT STANDARD PLANS FY 2023-24.
4. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO REPAIR ANY DAMAGE TO FDOT FACILITIES CAUSED BY THE CONSTRUCTION OF THIS PROJECT.
5. ANY TEST RESULTS TAKEN DURING CONSTRUCTION OF THE PERMITTED WORK SHALL BE PROVIDED TO THE DEPARTMENT UPON REQUEST.
6. ALL CONCRETE TO BE REMOVED SHALL BE SAW CUT TO NEAREST JOINT IN GOOD CONDITION, SO A CONNECTION THAT IS FREE OF CRACKS, DEFORMITIES OR VOIDS & IRREGULARITIES ARE NOT DEFECTIVE.
7. ALL STRIPING WITHIN THE FDOT RIGHT-OF-WAY SHALL BE PREFORMED THERMOPLASTIC.
8. ALL CONCRETE SHALL BE AN APPROVED FDOT MIX DESIGN OF 3,000 PSI.
9. ALL MATERIALS INSTALLED INSIDE FDOT R/W SHALL BE ON THE QUALIFIED PRODUCTS LIST OR APPROVED PRODUCTS LIST.
10. ALL CONSTRUCTION SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
11. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC AND BARRICADE PLAN TO THE ENGINEER FOR APPROVAL WITH THE BID. INCLUDE THE MOT PLAN AT THE PRECONSTRUCTION MEETING.
12. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND THE FDOT INSPECTOR NOTIFIED FOR APPROVAL.
13. ALL BARRICADES AND POSTED SIGNAGE SHALL REMAIN IN PLACE UNTIL PAVING WORK IS COMPLETE. ALL BARRICADES SHALL BE VERIFIED IN PLACE BY THE CONTRACTOR AT THE END OF EACH WORK DAY.
14. SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA.
15. THE CONTRACTOR SHALL ENSURE THAT ALL SIDEWALKS AND CROSSWALKS CONFORM TO THE CURRENT REQUIREMENTS OF THE AMERICANS WITH DISABILITY ACT (ADA).
16. ALL SIGNS AND PAVEMENT MARKINGS THAT ARE REMOVED OR DAMAGED BY CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE TO BE REPLACED TO THEIR PRECONSTRUCTION CONDITIONS.
17. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO FDOT STANDARD INDEX No. 711-001.
18. IN THE EVENT PERMANENT VEHICLE DETECTION IS DISRUPTED, PROVIDE AN ALTERNATIVE MEANS OF DETECTION TO ALL LANES APPROACHING THE INTERSECTION, SEPARATING EACH MOVEMENT WHICH PREVIOUSLY HAD DETECTION. THE TYPE OF DETECTOR SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. EQUIPMENT SHALL ONLY DETECT THE INTENDED MOVEMENT.
19. THERE SHALL BE NO SR 44 LANE CLOSURES DURING 7 A.M. TO 7 P.M. MONDAY TO SUNDAY.
20. THERE SHALL BE NO WORK WITHIN THE VICINITY OF THE SIGNALIZED INTERSECTION DURING 7 A.M. TO 7 P.M. MONDAY TO SUNDAY.
21. CONTRACTOR TO PROVIDE TEMPORARY VIDEO DETECTION FOR SIGNAL WHILE LOOPS ARE DISTURBED DURING MILLING AND RESURFACING.

VOLUSIA COUNTY & CITY OF EDGEWATER FIRE PREVENTION BUREAU NOTES:

1. GOVERNING SPECIFICATIONS: FLORIDA FIRE PREVENTION CODE (7TH EDITION).
2. 18.1.3.2 PLANS AND SPECIFICATIONS FOR FIRE HYDRANT SYSTEMS SHALL BE SUBMITTED TO THE FIRE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
3. 18.2.3.5.1 ALL ROADS SHALL MEET THIS CHAPTER FOR WIDTH AND VERTICAL CLEARANCE REQUIREMENT. MINIMUM 20 FEET IN WIDTH, 13.6 FEET IN VERTICAL CLEARANCE.
4. 18.2.3.5.3 ALL CUL-DE-SAC'S SHALL MEET THE MINIMUM REQUIREMENT OF 35 FEET AND MEET TURNING ANALYSIS PROVIDED.
5. 18.4.5.3.1 THE MINIMUM FIRE FLOW AND FLOW DURATION FOR A BUILDING OTHER THAN ONE AND TWO FAMILY DWELLINGS SHALL BE SPECIFIED IN TABLE 18.4.5.2.1.
6. 18.5.3 FIRE HYDRANTS SHALL BE SPACED PER THIS SECTION. THE MAXIMUM DISTANCE TO A FIRE HYDRANT FROM THE CLOSEST POINT ON A BUILDING SHALL NOT EXCEED 400 FEET. THE MAXIMUM DISTANCE BETWEEN FIRE HYDRANTS SHALL NOT EXCEED 500 FEET.
7. TWO POINTS OF INGRESS/EGRESS REQUIRED OUT OF SUBDIVISION.
8. DEAD END ROADS SHALL NO EXCEED 150 FEET.
9. FIRE ACCESS PROVIDED WITH ALL WEATHER STABILIZED SURFACE TO SUSTAIN 40-TON FIRE APPARATUS.
10. ALL CRITICAL INFRASTRUCTURE SUCH AS HYDRANTS AND FIRE DEPARTMENT ACCESS ROADS SHALL BE IN PLACE PRIOR TO ANY VERTICAL CONSTRUCTION.
11. ALL SHADE STRUCTURES (COMMON AREAS SUCH AS PLAYGROUND) SHALL MEET NFPA 701 REQUIREMENTS FOR FLAMMABILITY.

VOLUSIA COUNTY UTILITY NOTES:

1. FITTINGS AND VALVES ARE REQUIRED TO BE LOCATED OUTSIDE PAVEMENT AREAS TO ENSURE EFFECTIVE MAINTENANCE AND REPAIR BY VCU. IF FITTINGS SHOW SOME OVERLAP BETWEEN ROW AND PAVEMENT, THEN CONTRACTOR SHALL ADJUST FITTINGS AND VALVES TO AREAS OUTSIDE OF PAVEMENT.
2. WHERE POTABLE WATER MAINS ARE IN VERTICAL CONFLICT WITH STORM SEWERS, THE COUNTY PREFERS THE WATER MAIN BE DIP OVER THE STORM WITH A 6" SEPARATION, WHILE PROVIDING A MINIMUM 30" OF COVER.
3. WHERE SANITARY FORCE MAINS ARE IN VERTICAL CONFLICT WITH STORM SEWERS, THE COUNTY PREFERS THE FORCE MAIN BE HDPE OVER THE STORM WITH 6" SEPARATION, WHILE PROVIDING A MINIMUM 30" OF COVER.

UTILITY LEGEND

- PROPOSED 11.25° BEND
- PROPOSED 22.5° BEND
- PROPOSED 45° BEND
- PROPOSED 90° BEND
- PROPOSED TEE
- PROPOSED GATE VALVE
- PROPOSED FIRE HYDRANT ASSEMBLY
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED SHORT SIDE WATER SERVICE
- PROPOSED LONG SIDE DOUBLE WATER SERVICE
- 6SAN — PROPOSED 6" PVC SDR-26 SANITARY SEWER LATERAL (SLOPE @ 2.0% MIN.)
- 12WM — PROPOSED 12" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 10WM — PROPOSED 10" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 8WM — PROPOSED 8" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 6WM — PROPOSED 6" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 4WM — PROPOSED 4" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 2WS — PROPOSED 2" PE 4710 (SDR 9) WATER SERVICE (30" MINIMUM COVER)
- 1WS — PROPOSED 1" PE 4710 (SDR 9) WATER SERVICE (30" MINIMUM COVER)
- 12SAN — PROPOSED 12" PVC SDR 26 SANITARY MAIN
- 10SAN — PROPOSED 10" PVC SDR 26 SANITARY MAIN
- 8SAN — PROPOSED 8" PVC SDR 26 SANITARY MAIN
- 6FM — PROPOSED 6" PVC (DR 25) C-900 FORCE MAIN (3' MIN. AND 5' MAX. COVER)
- BSP — BACTERIOLOGICAL SAMPLING POINT LOCATION
- 1 — CONFLICT DETAIL

One Nation... One Number... 811
Know what's below. Call before you dig.

WARNING !!

CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES, GAS MAINS AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

DIRECTIONAL DRILL PLAN AND PROFILE

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

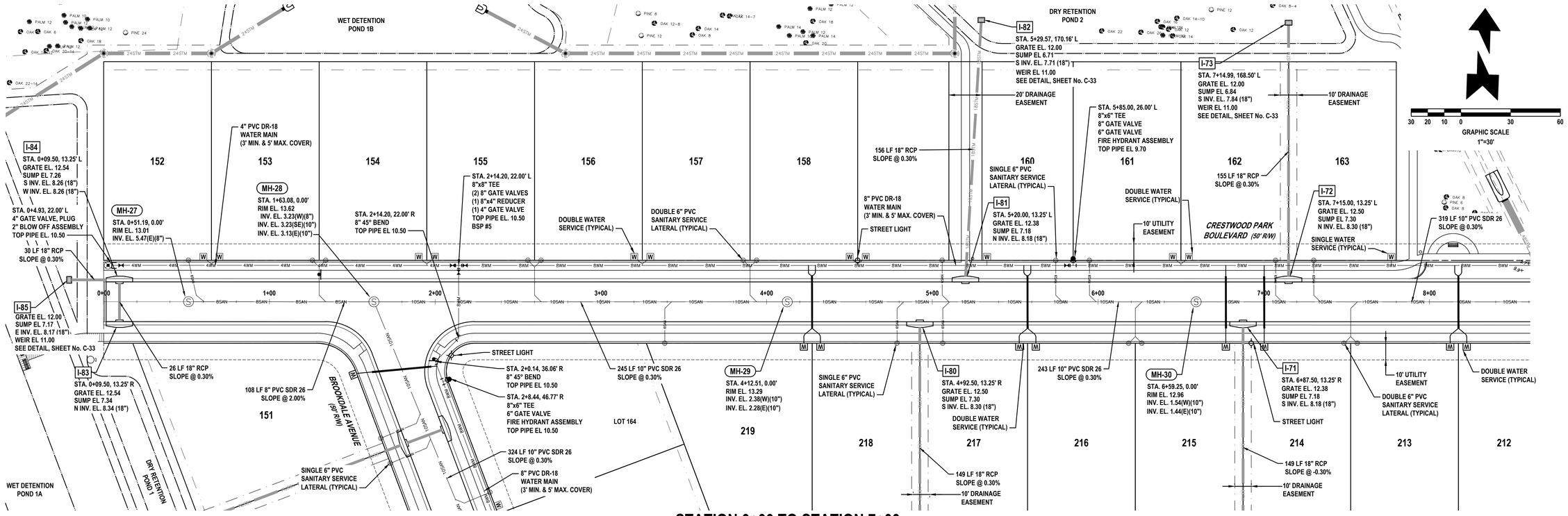
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

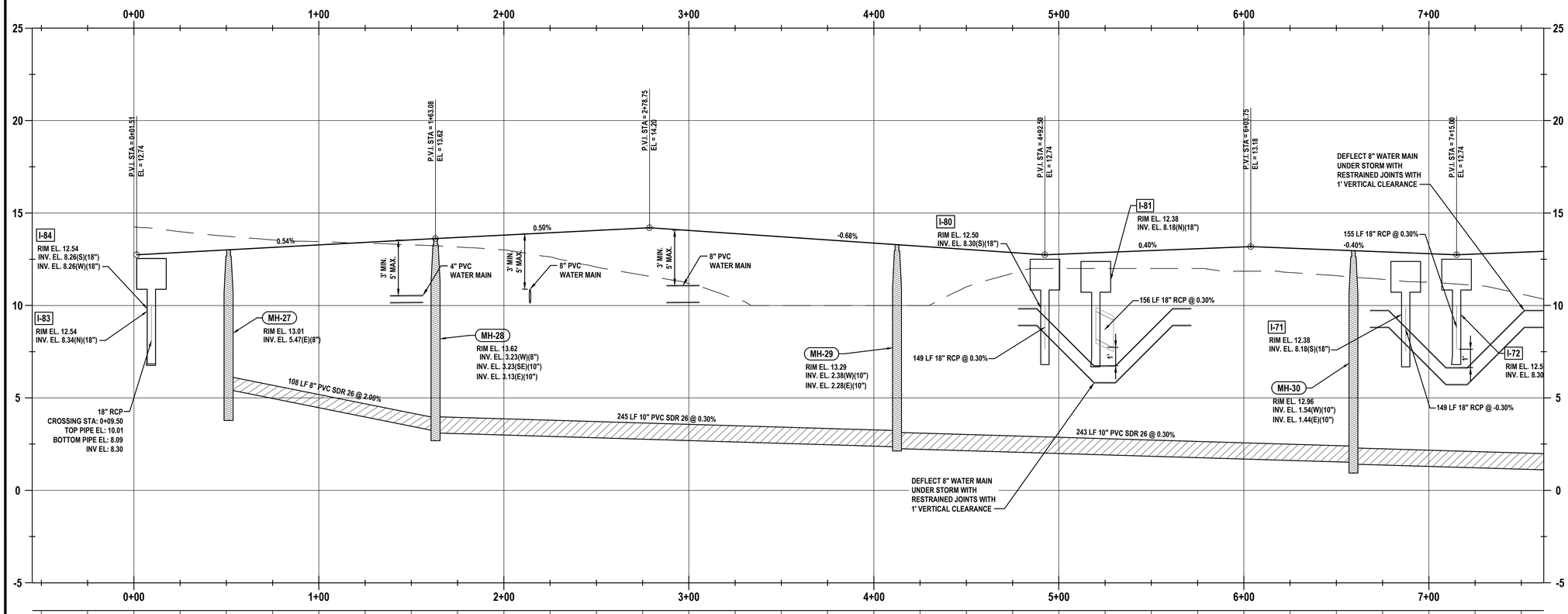
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 20'

DRAWING NUMBER

C-62



STATION 0+00 TO STATION 7+00



REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

PLAN & PROFILE - CRESTWOOD PARK BLVD STA. 0+00 - 7+00

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

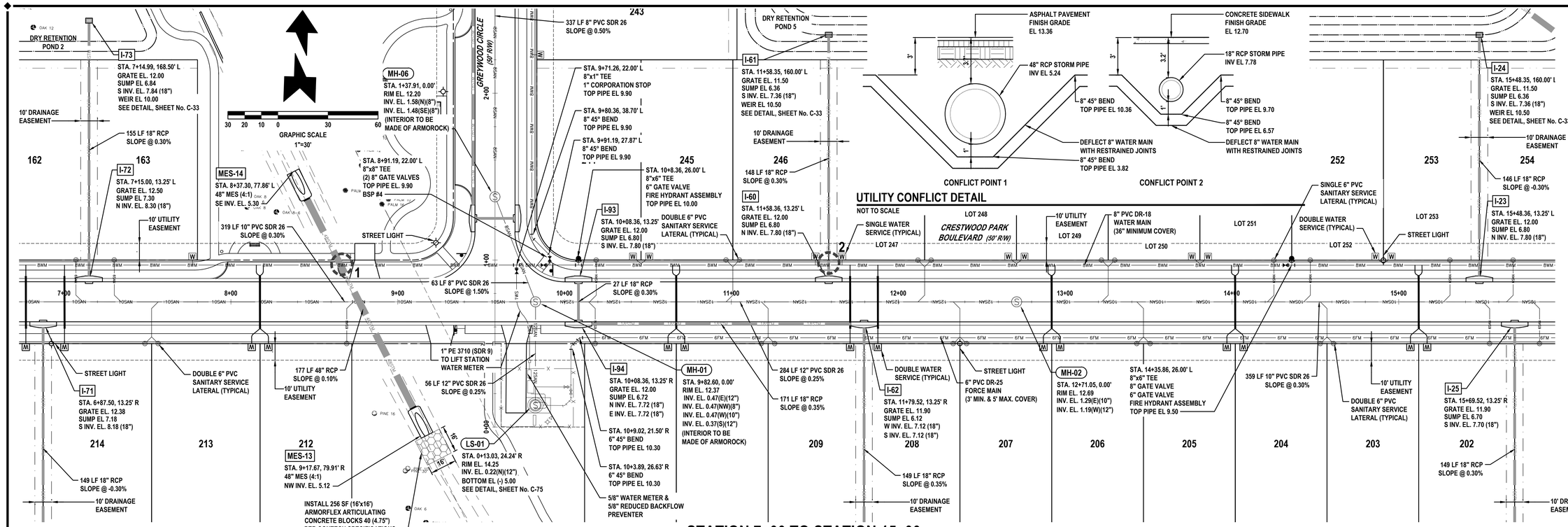
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

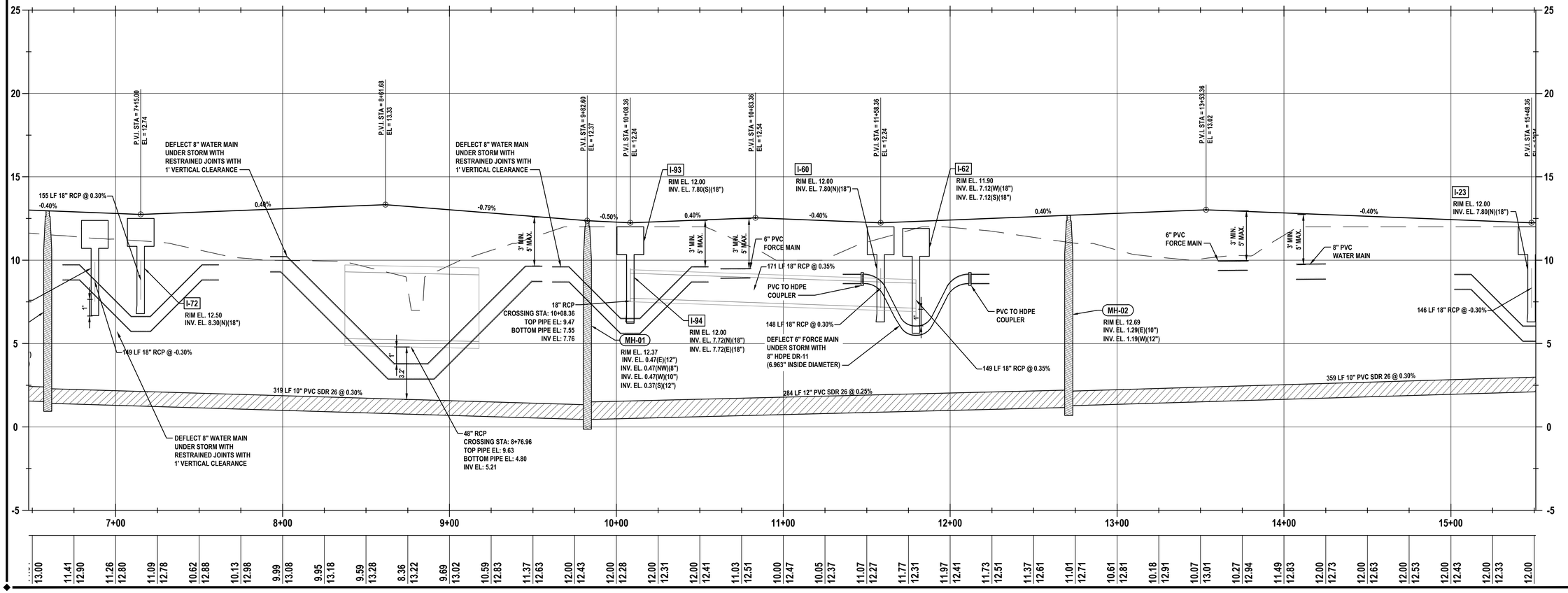
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

DRAWING NUMBER

C-63



STATION 7+00 TO STATION 15+00



REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

PLAN & PROFILE - CRESTWOOD BLVD STA. 7+00 - 15+00

CRESTWOOD PARK BOULEVARD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

DRAWING NUMBER

C-64

CONCRETE SIDEWALK
FINISH GRADE
EL 13.15

10" PVC WATER MAIN
TOP PIPE EL 10.15

DEFLECT 6" FORCE MAIN
WITH RESTRAINED JOINTS
TOP PIPE EL 6.65

GRAPHIC SCALE
1"=30'

CONFLICT POINT 1
UTILITY CONFLICT DETAIL
NOT TO SCALE

STATION 15+00 TO STATION 24+03

CRESTWOOD PARK BOULEVARD (50' R/W)(25 MPH)
CORAL BELL DRIVE (50' R/W)
GREYWOOD CIRCLE (50' R/W)
U.S. HIGHWAY 1 (SR 55)(175' R/W)
POOL CABANA & RESTROOMS
POOL CABANA WATER METER
DRY RETENTION POND 9

8" PVC DR-18 WATER MAIN (3' MIN. & 5' MAX. COVER)
SINGLE 6" PVC SANITARY SERVICE LATERAL (TYPICAL)
DOUBLE 6" PVC SANITARY SERVICE LATERAL (TYPICAL)
DOUBLE WATER SERVICE (TYPICAL)
SINGLE WATER SERVICE (TYPICAL)
STREET LIGHT
10' UTILITY EASEMENT

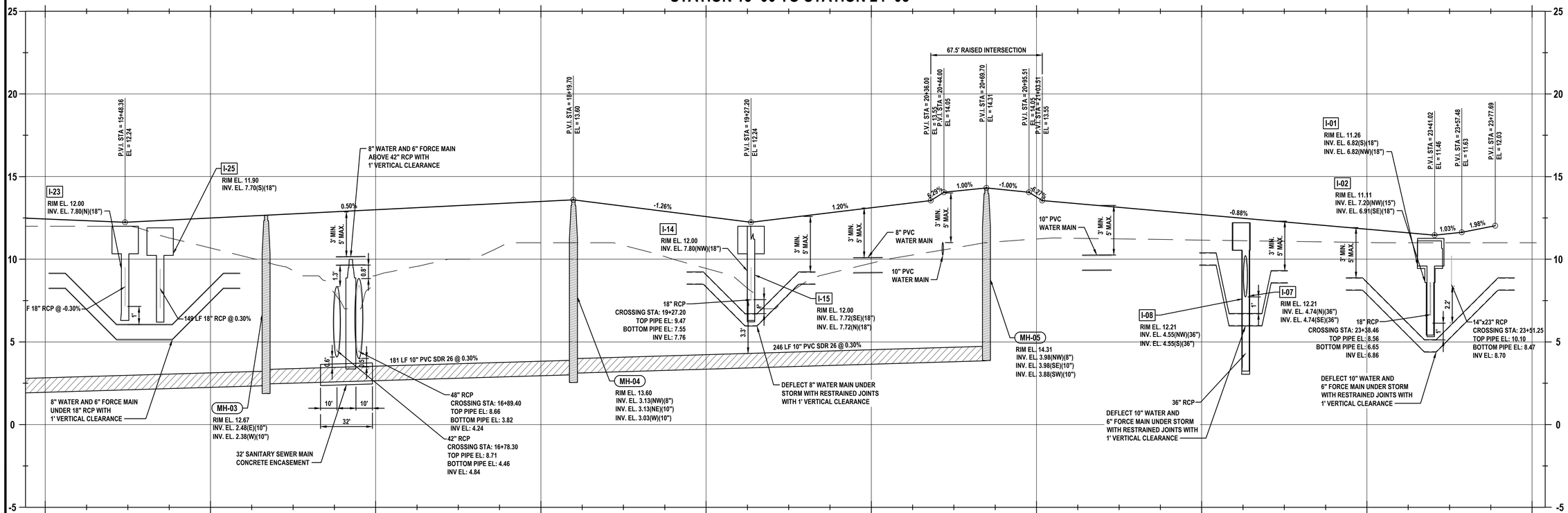
MH-02 — STA. 16+73.89, 33.66' L, 5' MANHOLE, RIM EL. 9.40, SUMP EL 3.27, NW INV. EL. 4.27 (48"), S INV. EL. 4.27 (48")
MH-03 — STA. 16+33.68, 0.00', RIM EL. 12.67, INV. EL. 2.48(E)(10"), INV. EL. 2.38(W)(10")
MH-04 — STA. 18+19.70, 0.00', RIM EL. 13.60, INV. EL. 3.13(NW)(8"), INV. EL. 3.13(NE)(10"), INV. EL. 3.03(W)(10")
MH-05 — STA. 20+69.70, 0.00', RIM EL. 14.31, INV. EL. 3.98(NW)(8"), INV. EL. 3.98(SE)(10"), INV. EL. 3.88(SW)(10")

I-15 — STA. 19+27.20, 14.12' L, GRATE EL. 12.00, SUMP EL 6.72, SE INV. EL. 7.72 (18"), N INV. EL. 7.72 (18")
I-16 — STA. 19+44.70, 42.79' L, GRATE EL. 12.00, SUMP EL 6.62, S INV. EL. 7.62 (18"), NW INV. EL. 7.62 (18")
I-14 — STA. 19+27.20, 13.25' R, GRATE EL. 12.00, SUMP EL 6.80, NW INV. EL. 7.80 (18")
I-08 — STA. 22+26.83, 13.25' L, GRATE EL. 12.21, SUMP EL 3.55, NW INV. EL. 4.55 (36"), S INV. EL. 4.55 (36")
I-07 — STA. 22+26.51, 13.25' R, GRATE EL. 12.21, SUMP EL 3.74, N INV. EL. 4.74 (36"), SE INV. EL. 4.74 (36")
I-06 — STA. 22+37.61, 60.44' R, GRATE EL. 11.00, SUMP EL 4.08, NW INV. EL. 5.08 (36"), WEIR EL 10.00, SEE DETAIL, SHEET No. C-33
I-102 — STA. 23+08.61, 64.03' R, GRATE EL. 11.00, SUMP EL 5.58, N INV. EL. 6.58 (18"), WEIR EL 10.50, SEE DETAIL, SHEET No. C-33
I-02 — STA. 23+38.18, 18.03' L, GRATE EL. 11.11, SUMP EL 5.91, NW INV. EL. 7.20 (15"), S INV. EL. 6.91 (18")
I-01 — STA. 23+38.67, 13.26' R, GRATE EL. 11.26, SUMP EL 5.82, S INV. EL. 6.82 (18"), NW INV. EL. 6.82 (18")
I-99 — STA. 19+52.13, 281.55' L, GRATE EL. 11.36, SUMP EL 7.80, NW INV. EL. 8.80 (23"), SE INV. EL. 8.80 (23")
MES-19 — STA. 23+51.25, 66.98' R, 14"x23" MES (4:1), NW INV. EL. 8.60

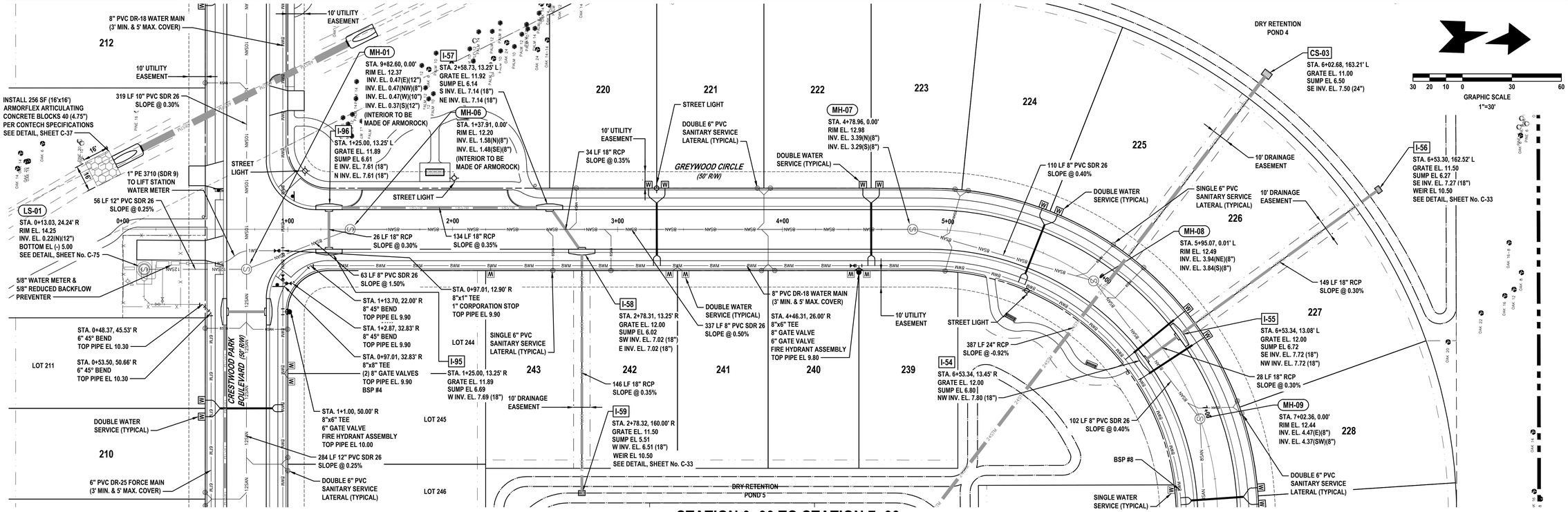
315 LF 8" PVC SDR 26 SLOPE @ 0.40%
34 LF 18" RCP SLOPE @ 0.30%
192 LF 42" RCP SLOPE @ 0.10%
359 LF 10" PVC SDR 26 SLOPE @ 0.30%
181 LF 10" PVC SDR 26 SLOPE @ 0.30%
246 LF 10" PVC SDR 26 SLOPE @ 0.30%
334 LF 10" PVC SDR 26 SLOPE @ 0.30%
147 LF 48" RCP SLOPE @ -0.10%
28 LF 18" RCP SLOPE @ 0.30%
61 LF 6" PVC SDR 26 SLOPE @ 2.00%
55 LF 6" PVC SDR 26 SLOPE @ 2.00%
64 LF 6" PVC SDR 26 SLOPE @ 2.00%
245 LF 8" PVC SDR 26 SLOPE @ 0.40%
27 LF 36" RCP SLOPE @ -0.70%
48 LF 36" RCP SLOPE @ 0.70%
31 LF 18" RCP SLOPE @ -0.30%
129 LF 14" x 23" ERCP SLOPE @ 0.15%
59 LF 18" RCP SLOPE @ -0.40%

6" C.O. INV EL 9.50
6" C.O. INV EL 7.18
6" C.O. INV EL 8.40
STA. 21+32.36, 26.00' L 10"x6" TEE 10" GATE VALVE 6" GATE VALVE FIRE HYDRANT ASSEMBLY TOP PIPE EL 10.00
STA. 20+47.70, 22.00' L 10"x8" TEE (1) 8" GATE VALVE TOP PIPE EL. 10.00
STA. 20+43.02, 22.00' L 10"x8" TEE (1) 10" GATE VALVE (1) 8" GATE VALVE TOP PIPE EL. 10.00 BSP #2
STA. 18+62.56, 30.00' L 8"x6" TEE 8" GATE VALVE 6" GATE VALVE FIRE HYDRANT ASSEMBLY TOP PIPE EL 9.60
STA. 17+94.31, 41.21' L 8" 45° BEND TOP PIPE EL. 9.60
STA. 17+83.43, 29.58' L 8" 45° BEND TOP PIPE EL. 9.60
STA. 17+84.66, 20.24' L 8"x8" TEE (2) 8" GATE VALVES TOP PIPE EL. 9.60 BSP #3
STA. 20+47.70, 21.97' R 10" 45° BEND TOP PIPE EL. 9.70
STA. 20+43.47, 20.53' R 10" 45° BEND TOP PIPE EL. 9.70

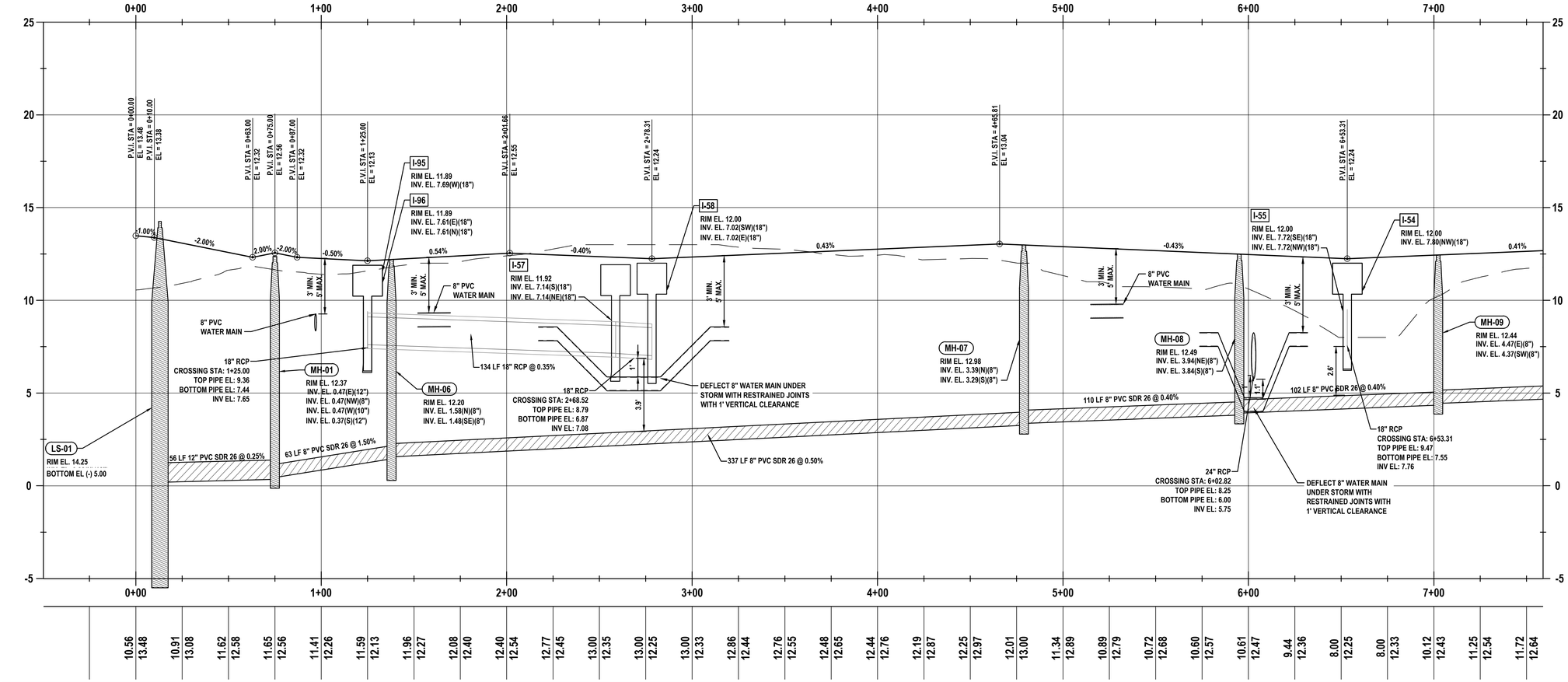
192 LF 42" RCP SLOPE @ 0.10%
10' UTILITY EASEMENT
6" PVC DR-25 FORCE MAIN (3' MIN. & 5' MAX. COVER)
10" PVC DR-18 WATER MAIN (3' MIN. & 5' MAX. COVER)



| 12.00 | 12.43 | 12.00 | 12.33 | 12.00 | 12.25 | 11.29 | 12.37 | 10.68 | 12.50 | 10.06 | 12.62 | 9.32 | 12.75 | 7.94 | 12.87 | 9.02 | 13.00 | 9.57 | 13.12 | 10.00 | 13.25 | 10.74 | 13.37 | 11.00 | 13.50 | 11.00 | 13.53 | 10.84 | 13.21 | 10.16 | 12.90 | 9.45 | 12.58 | 8.25 | 12.27 | 7.87 | 12.51 | 9.16 | 12.82 | 9.77 | 13.12 | 10.26 | 13.42 | 10.67 | 14.11 | 11.05 | 14.26 | 11.23 | 13.77 | 11.27 | 13.36 | 11.23 | 13.14 | 11.20 | 12.92 | 11.16 | 12.70 | 11.12 | 12.48 | 11.09 | 12.26 | 11.05 | 12.04 | 11.01 | 11.82 | 11.00 | 11.60 | 11.00 | 11.55 | 11.00 | 11.98 | 11.00 |
|---|---|---



STATION 0+00 TO STATION 7+00



REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

PLAN & PROFILE - GREYWOOD CIRCLE STA. 0+00 - 7+00

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

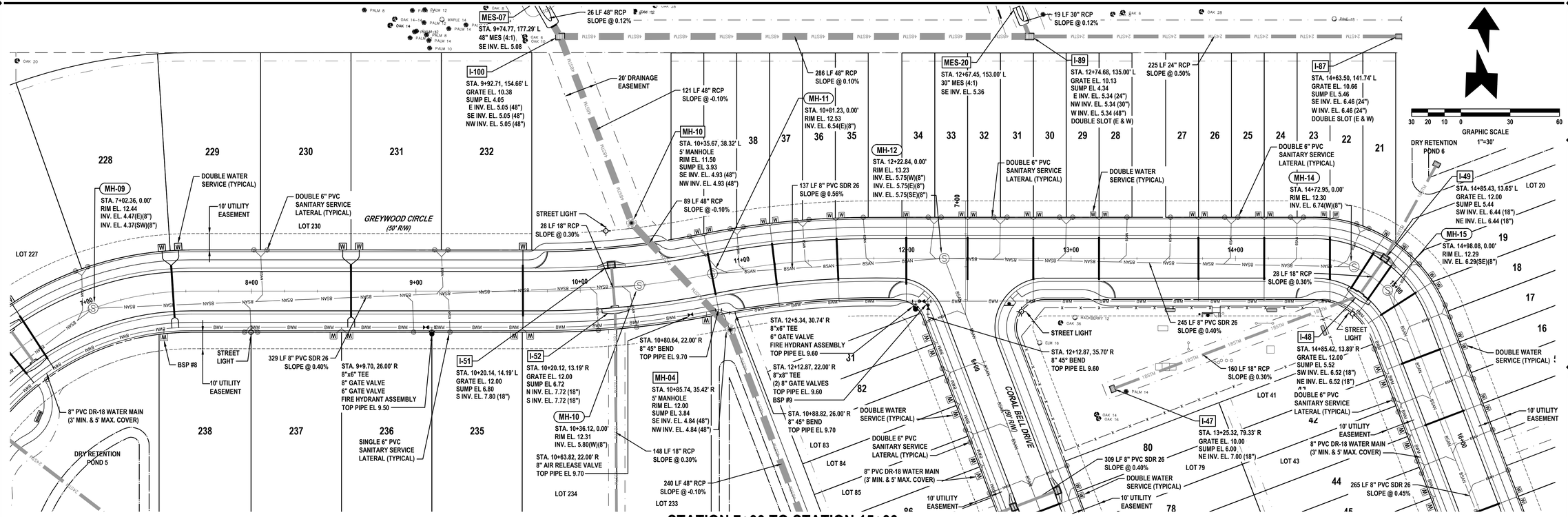
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

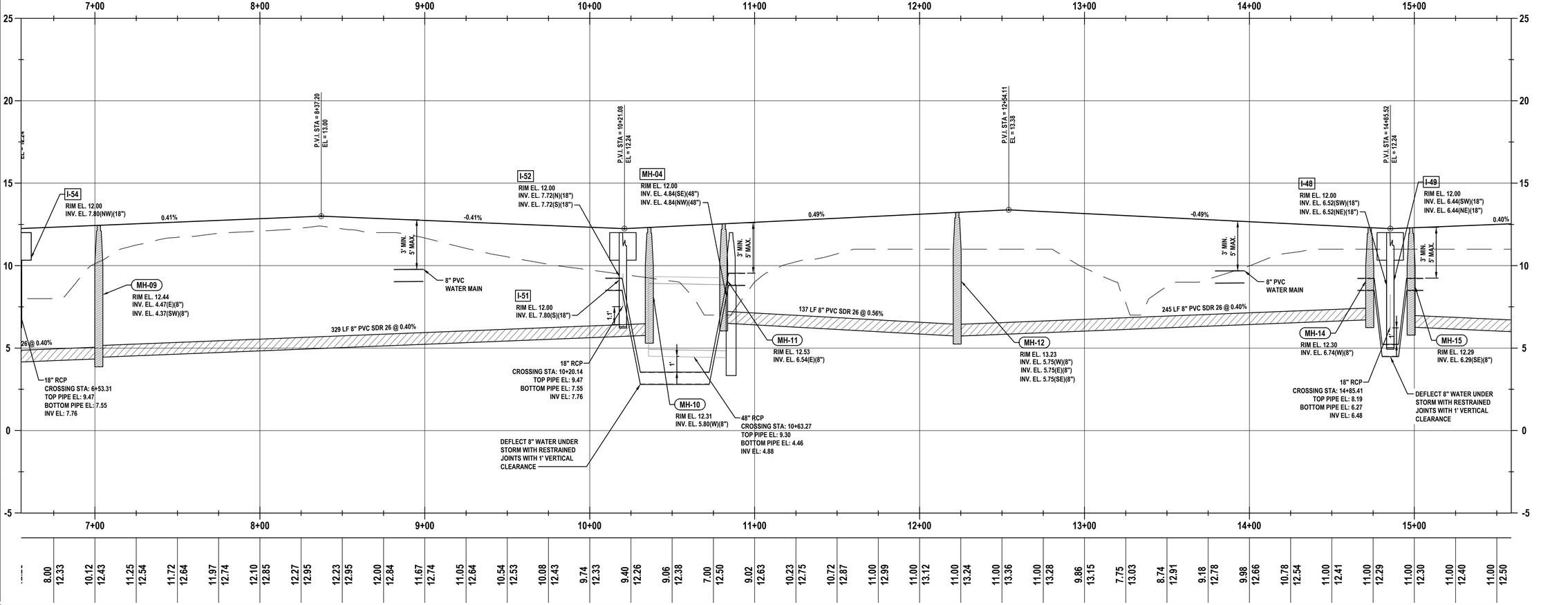
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

DRAWING NUMBER

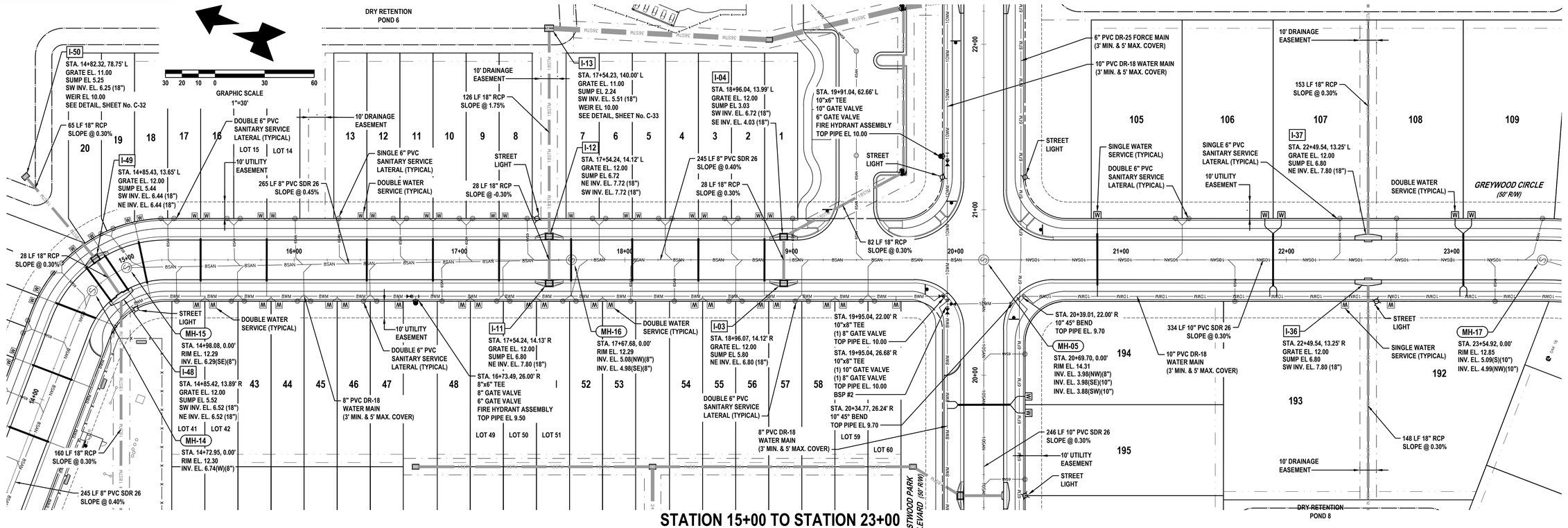
C-66

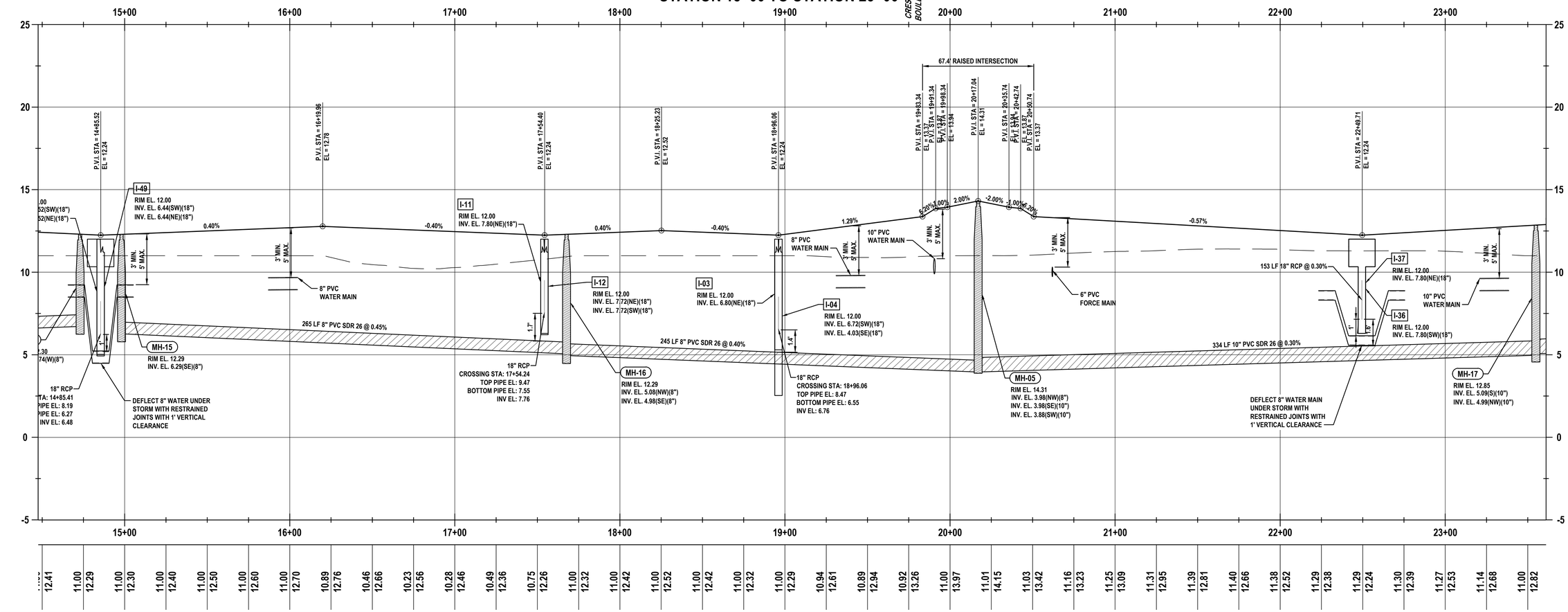


STATION 7+00 TO STATION 15+00



| | | |





REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

PLAN & PROFILE - GREYWOOD CIRCLE STA. 15+00 - 23+00

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

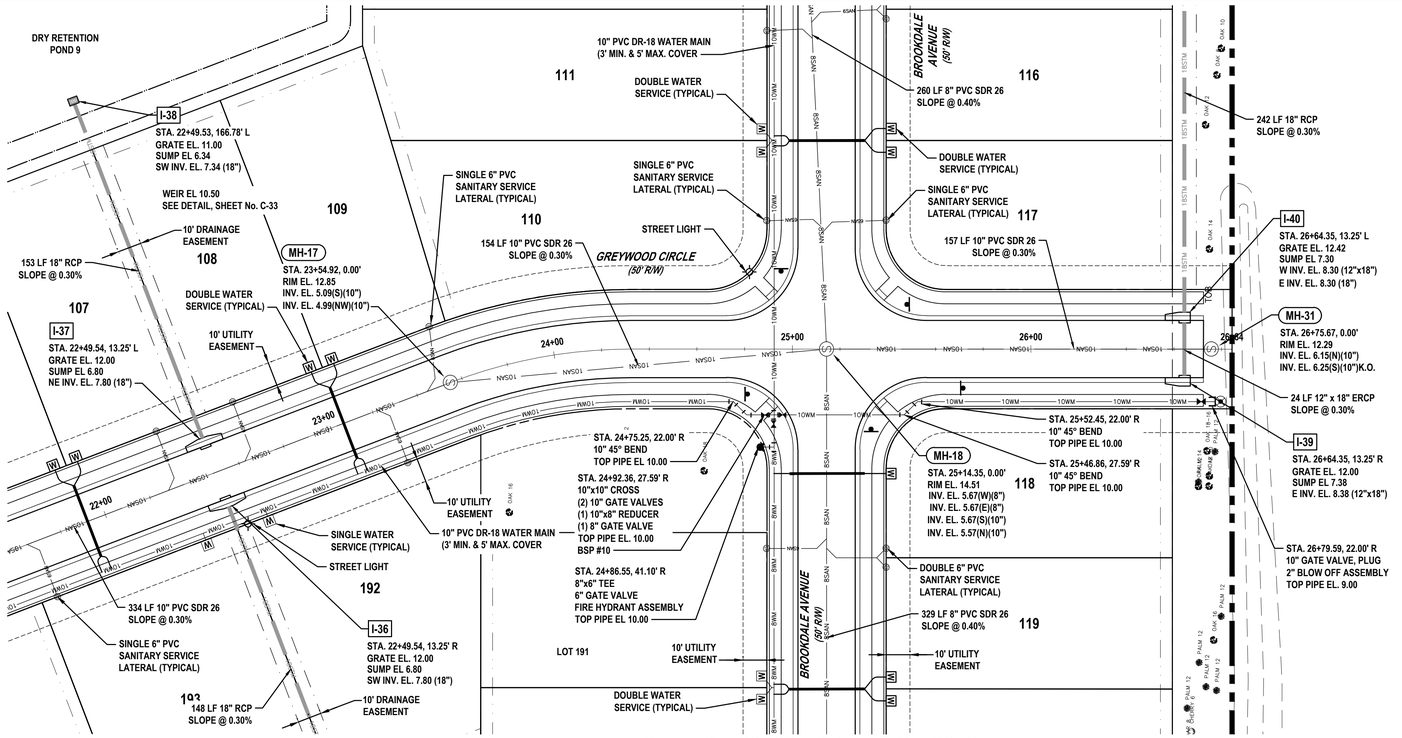
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

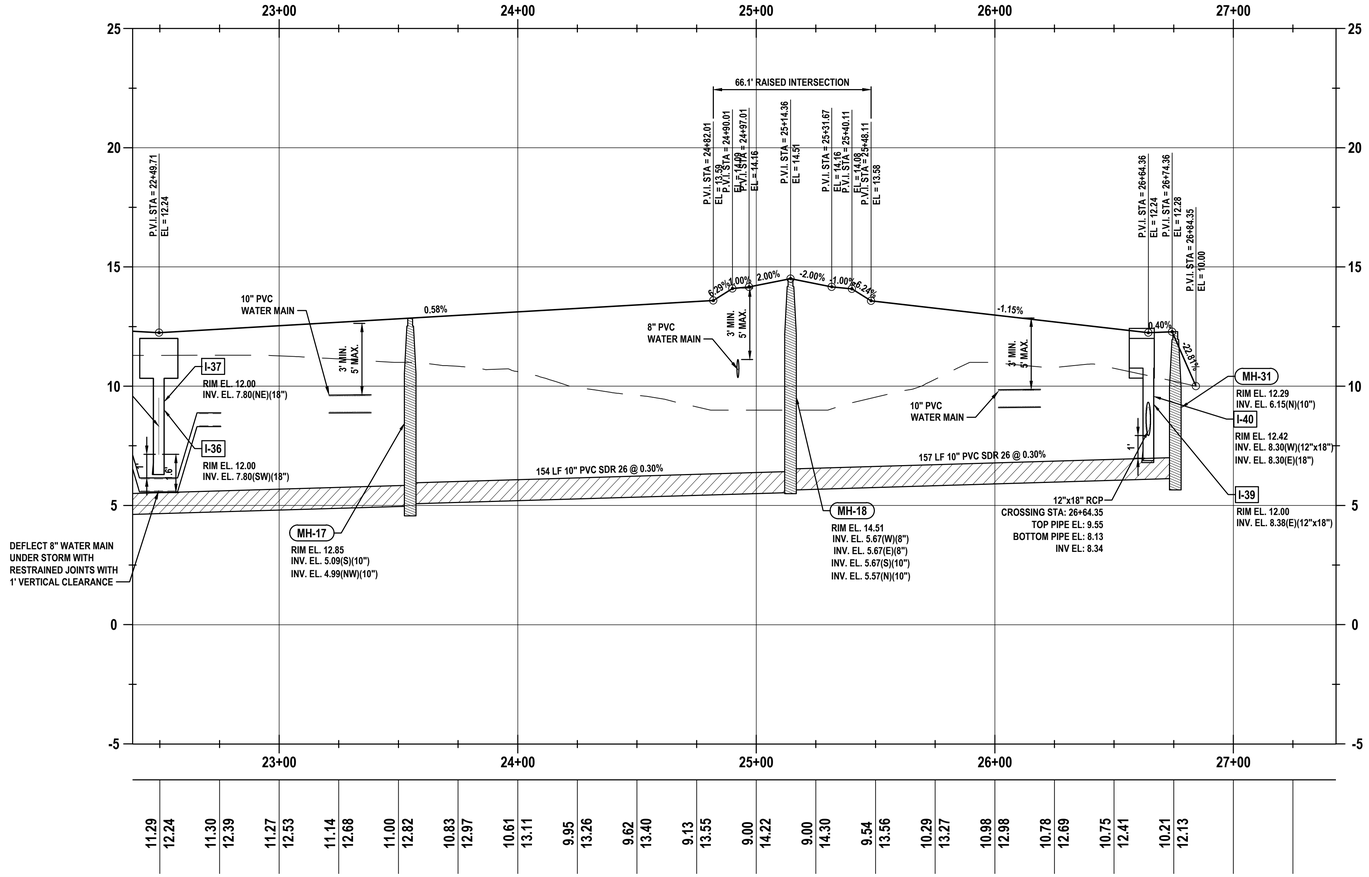
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

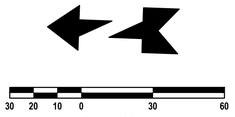
DRAWING NUMBER

C-68



STATION 23+00 TO STATION 26+84





UTILITY LEGEND

	PROPOSED 11.25° BEND
	PROPOSED 22.5° BEND
	PROPOSED 45° BEND
	PROPOSED 90° BEND
	PROPOSED TEE
	PROPOSED GATE VALVE
	PROPOSED FIRE HYDRANT ASSEMBLY
	PROPOSED SANITARY SEWER MANHOLE
	PROPOSED SHORT SIDE WATER SERVICE
	PROPOSED LONG SIDE DOUBLE WATER SERVICE
6SAN	PROPOSED 6" PVC SDR-26 SANITARY SEWER LATERAL (SLOPE @ 2.0% MIN.)
12WM	PROPOSED 12" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
10WM	PROPOSED 10" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
8WM	PROPOSED 8" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
6WM	PROPOSED 6" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
4WM	PROPOSED 4" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
2WS	PROPOSED 2" PE 4710 (SDR 9) WATER SERVICE (30" MINIMUM COVER)
1WS	PROPOSED 1" PE 4710 (SDR 9) WATER SERVICE (30" MINIMUM COVER)
12SAN	PROPOSED 12" PVC SDR 26 SANITARY MAIN
10SAN	PROPOSED 10" PVC SDR 26 SANITARY MAIN
8SAN	PROPOSED 8" PVC SDR 26 SANITARY MAIN
6FM	PROPOSED 6" PVC (DR 25) C-900 FORCE MAIN (3' MIN. AND 5' MAX. COVER)
BSP	BACTERIOLOGICAL SAMPLING POINT LOCATION

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

PLAN & PROFILE - GREYWOOD CIRCLE STA. 23+00 - 26+84

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

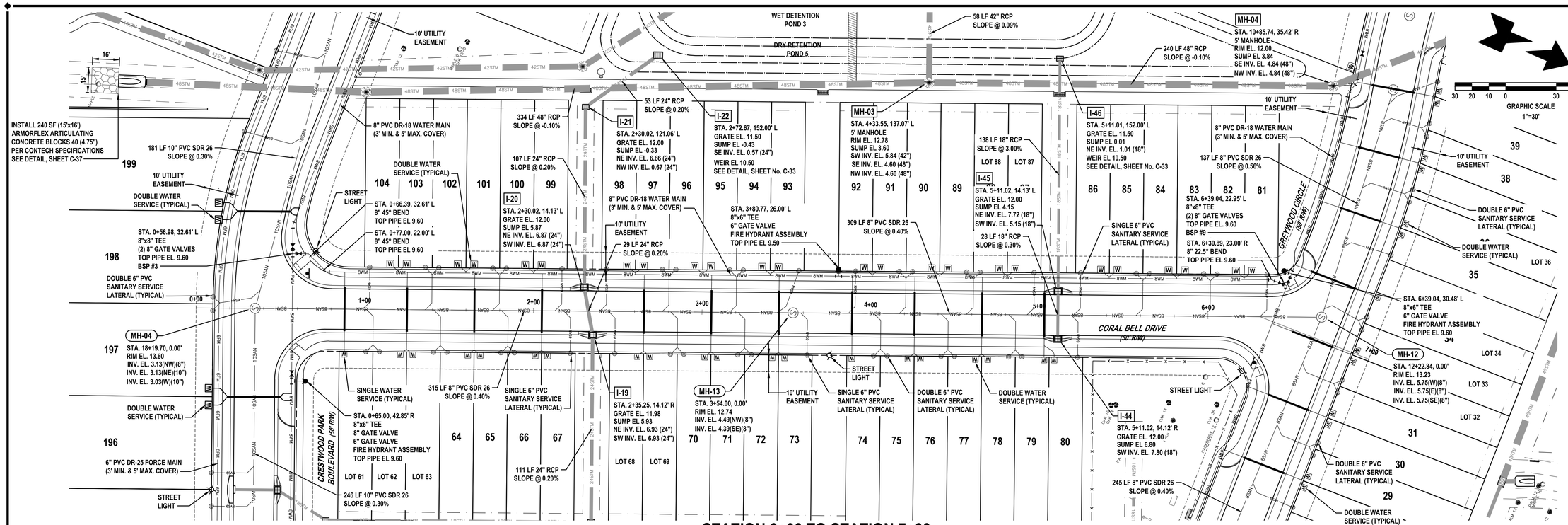
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

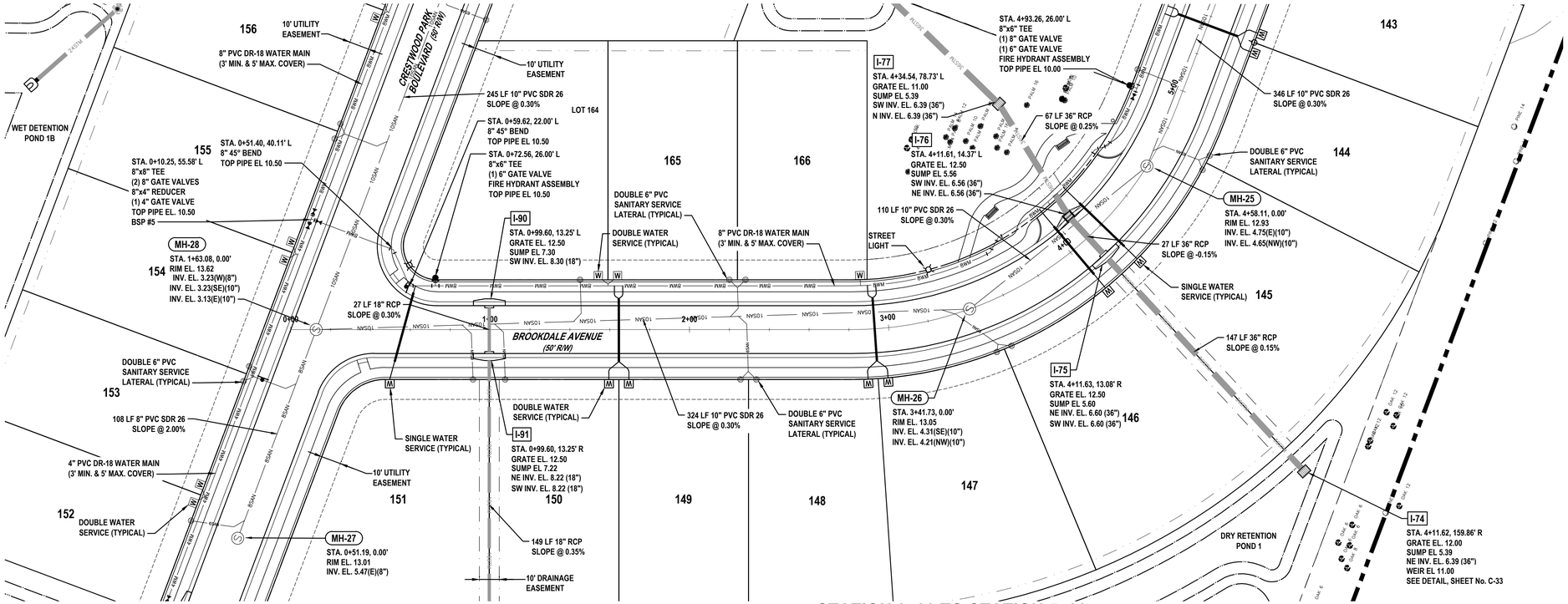
DRAWING NUMBER

C-69

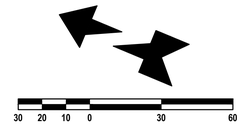


STATION 0+00 TO STATION 7+00

| | | |



STATION 0+00 TO STATION 5+00



UTILITY LEGEND

- PROPOSED 11.25° BEND
- PROPOSED 22.5° BEND
- PROPOSED 45° BEND
- PROPOSED 90° BEND
- PROPOSED TEE
- PROPOSED GATE VALVE
- PROPOSED FIRE HYDRANT ASSEMBLY
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED SHORT SIDE WATER SERVICE
- PROPOSED LONG SIDE DOUBLE WATER SERVICE
- 6SAN — PROPOSED 6" PVC SDR-26 SANITARY SEWER LATERAL (SLOPE @ 2.0% MIN.)
- 12WM — PROPOSED 12" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 10WM — PROPOSED 10" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 8WM — PROPOSED 8" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 6WM — PROPOSED 6" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 4WM — PROPOSED 4" PVC CLASS 150 (DR-18) WATER MAIN (3' MIN. AND 5' MAX. COVER)
- 2WS — PROPOSED 2" PE 4710 (SDR 9) WATER SERVICE (30" MINIMUM COVER)
- 1WS — PROPOSED 1" PE 4710 (SDR 9) WATER SERVICE (30" MINIMUM COVER)
- 12SAN — PROPOSED 12" PVC SDR 26 SANITARY MAIN
- 10SAN — PROPOSED 10" PVC SDR 26 SANITARY MAIN
- 8SAN — PROPOSED 8" PVC SDR 26 SANITARY MAIN
- 6FM — PROPOSED 6" PVC (DR 25) C-900 FORCE MAIN (3' MIN. AND 5' MAX. COVER)
- BSP — BACTERIOLOGICAL SAMPLING POINT LOCATION

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering, Transportation, CEI & Landscape Architecture
NEWKIRK ENGINEERING INC.

PLAN & PROFILE - BROOKDALE AVENUE STA. 0+00 - 5+00

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

DRAWING NUMBER

C-71

STATION 5+00 TO STATION 13+00

DRY RETENTION POND 3

DRY RETENTION POND 7

I-78
STA. 4+96.45, 164.32' L
GRATE EL. 12.00
SUMP EL 5.17
S INV. EL. 6.17 (36")
WEIR EL 11.00
SEE DETAIL, SHEET No. C-33

88 LF 36" RCP
SLOPE @ 0.25%

I-77
STA. 4+34.54, 78.73' L
GRATE EL. 11.00
SUMP EL 5.39
SW INV. EL. 6.39 (36")
N INV. EL. 6.39 (36")

STA. 4+93.26, 26.00' L
8"x6" TEE
8" GATE VALVE
6" GATE VALVE
FIRE HYDRANT ASSEMBLY
TOP PIPE EL 10.00

BSP #13

DOUBLE 6" PVC SANITARY SERVICE LATERAL (TYPICAL)

DOUBLE WATER SERVICE (TYPICAL)

10' UTILITY EASEMENT

346 LF 10" PVC SDR 26 @ 0.30%

10' DRAINAGE EASEMENT

148 LF 24" RCP
SLOPE @ 0.30%

I-69
STA. 7+70.65, 162.50' L
GRATE EL. 12.00
SUMP EL 6.25
S INV. EL. 7.25 (24")
WEIR EL 11.00
SEE DETAIL, SHEET No. C-33

I-68
STA. 7+70.66, 13.25' L
GRATE EL. 12.50
SUMP EL 6.70
S INV. EL. 8.18 (24")
N INV. EL. 7.70 (24")

28 LF 24" RCP
SLOPE @ 0.30%

STREET LIGHT

I-67
STA. 7+75.38, 13.25' R
GRATE EL. 12.47
SUMP EL 7.27
N INV. EL. 8.27 (24")

BROOKDALE AVENUE
(50' R/W)

MH-25
STA. 4+58.11, 0.00'
RIM EL. 12.93
INV. EL. 4.75(E)(10")
INV. EL. 4.65(NW)(10")

STREET LIGHT

10' UTILITY EASEMENT

DOUBLE WATER SERVICE (TYPICAL)

DOUBLE 6" PVC SANITARY SERVICE LATERAL (TYPICAL)

MH-24
STA. 8+08.66, 0.00'
RIM EL. 12.90
INV. EL. 5.90(E)(8")
INV. EL. 5.80(W)(10")

8" PVC DR-18 WATER MAIN
(3' MIN. & 5' MAX. COVER)

302 LF 8" PVC SDR 26
SLOPE @ 0.40%

LOT 175

STA. 9+38.16, 26.00' L
8"x6" TEE
8" GATE VALVE
6" GATE VALVE
FIRE HYDRANT ASSEMBLY
TOP PIPE EL 10.20

10' UTILITY EASEMENT

DOUBLE WATER SERVICE (TYPICAL)

DOUBLE 6" PVC SANITARY SERVICE LATERAL (TYPICAL)

MES-09
STA. 11+18.43, 67.85' L
24"x38" MES (4:1) (DOUBLE)
SE INV. EL. 4.66

SINGLE 6" PVC SANITARY SERVICE LATERAL (TYPICAL)

STREET LIGHT

MH-23
STA. 11+14.60, 0.00'
RIM EL. 13.46
INV. EL. 7.23(E)(8")
INV. EL. 7.13(W)(8")

159 LF 24" x 38" ERCP
SLOPE @ 0.10%

159 LF 24" x 38" ERCP
SLOPE @ 0.10%

I-65
STA. 12+86.55, 13.25' L
GRATE EL. 12.00
SUMP EL 4.12
S INV. EL. 5.12 (18")
N INV. EL. 5.12 (18")

28 LF 18" RCP
SLOPE @ 0.30%

148 LF 18" RCP
SLOPE @ 0.30%

STREET LIGHT

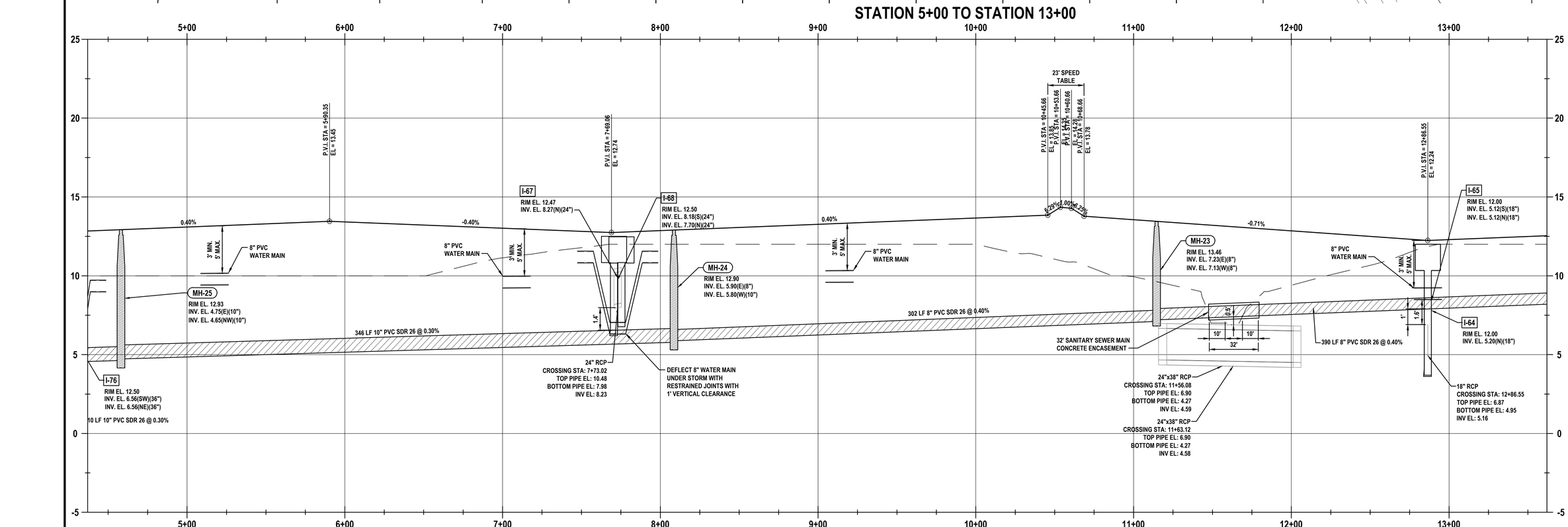
390 LF 8" PVC SDR 26 @ 0.40%

I-64
STA. 12+86.55, 13.25' R
GRATE EL. 12.00
SUMP EL 4.20
N INV. EL. 5.20 (18")

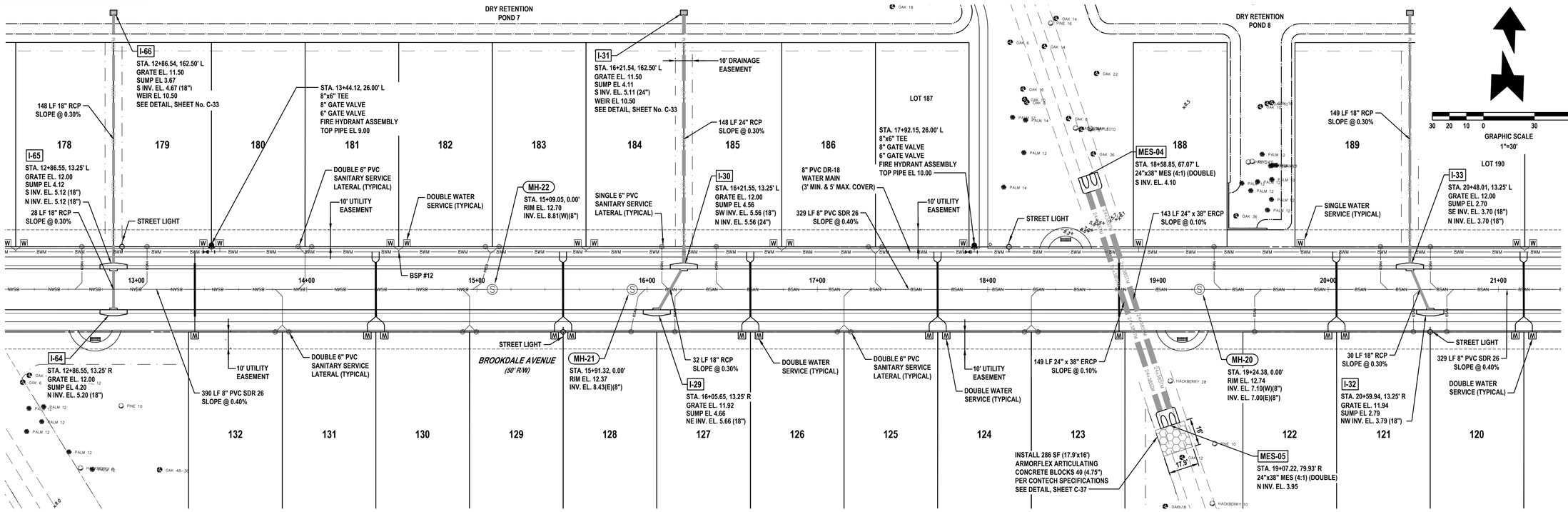
INSTALL 253 SF (16'x16')
ARMORFLEX ARTICULATING
CONCRETE BLOCKS 40 (4.75")
PER CONTECH SPECIFICATIONS
SEE DETAIL, SHEET C-37

MES-10
STA. 12+03.62, 72.50' R
24"x38" MES (4:1) (DOUBLE)
NW INV. EL. 4.50

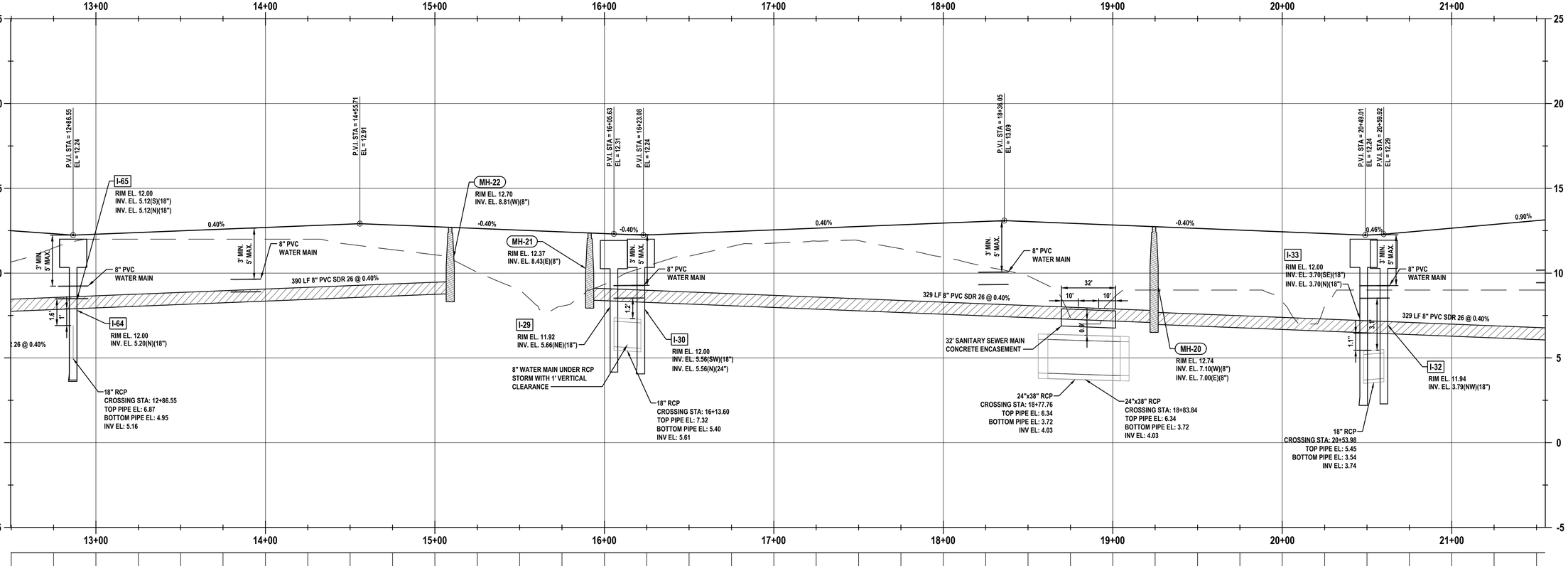
GRAPHIC SCALE
1"=30'
30 20 10 0 30 60



| | | |



STATION 13+00 TO STATION 21+00



REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

PLAN & PROFILE - BROOKDALE AVENUE STA. 13+00 - 21+00

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

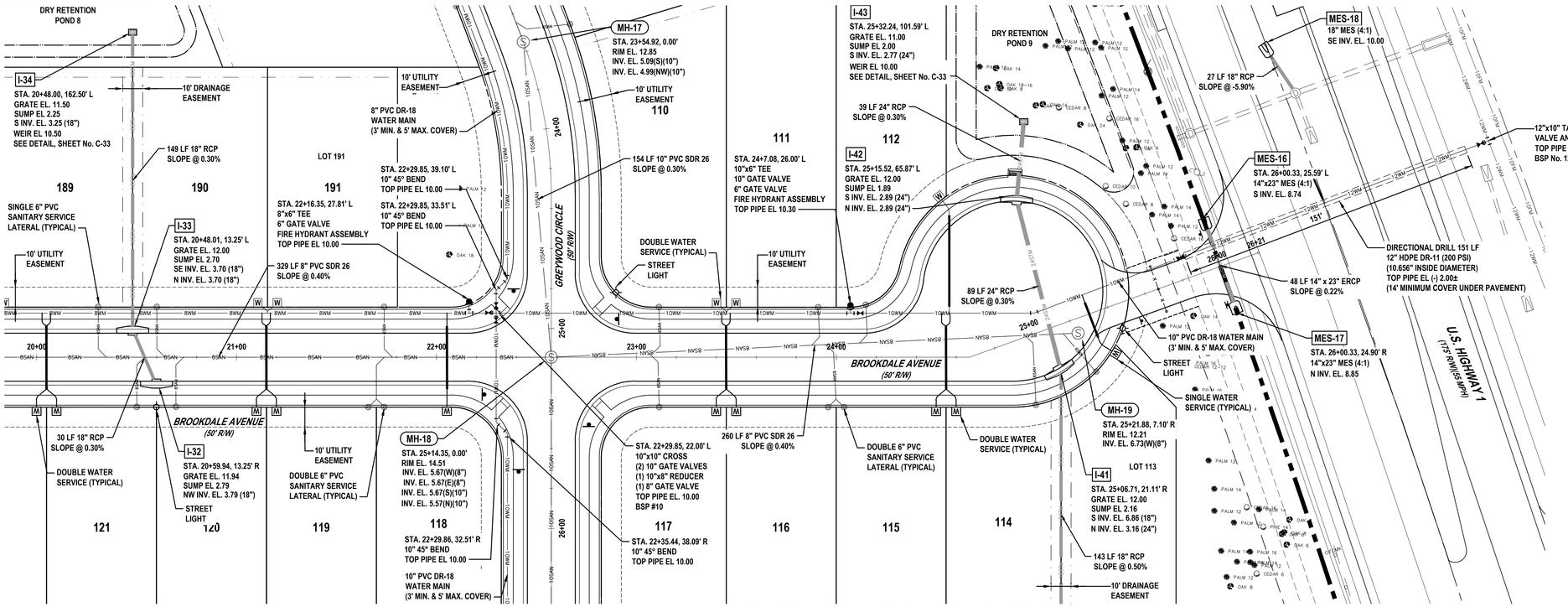
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

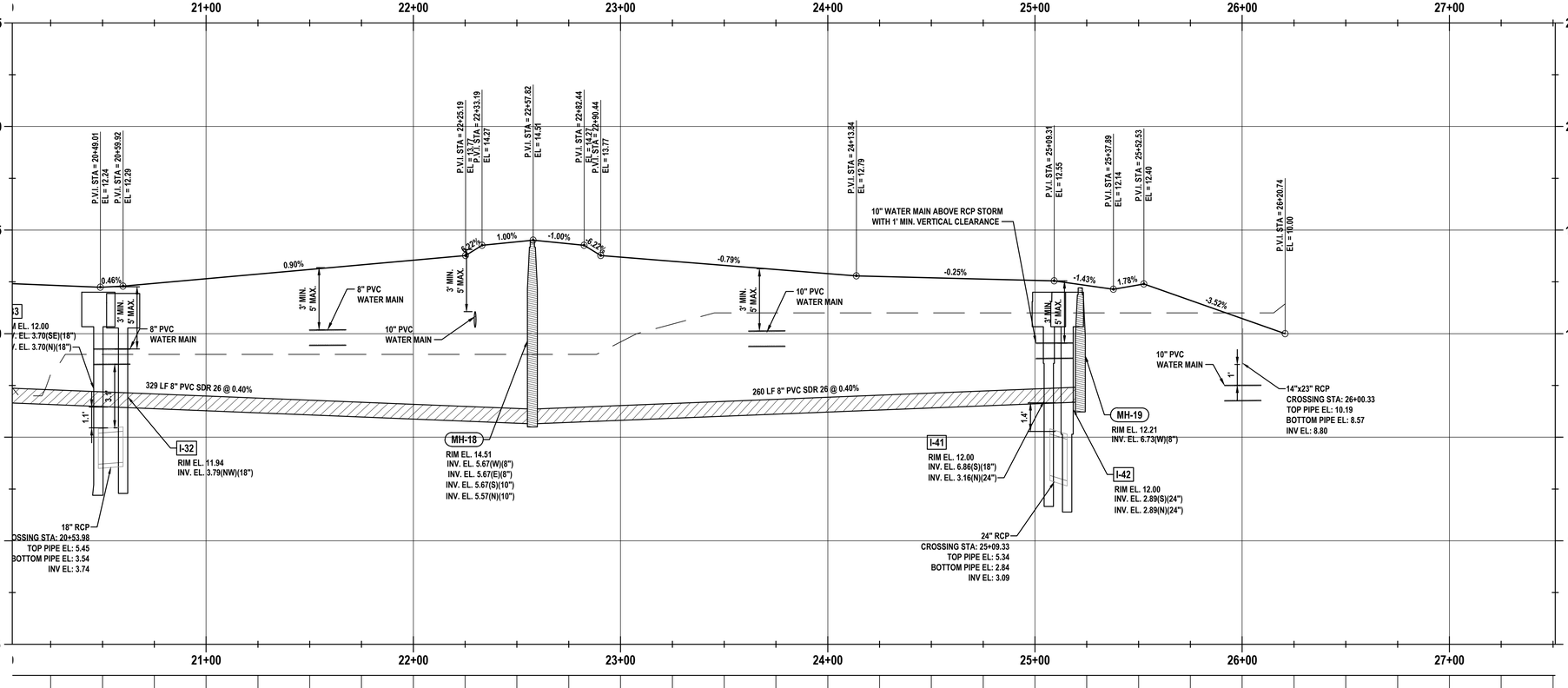
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 30'

DRAWING NUMBER

C-73



STATION 21+00 TO STATION 26+21

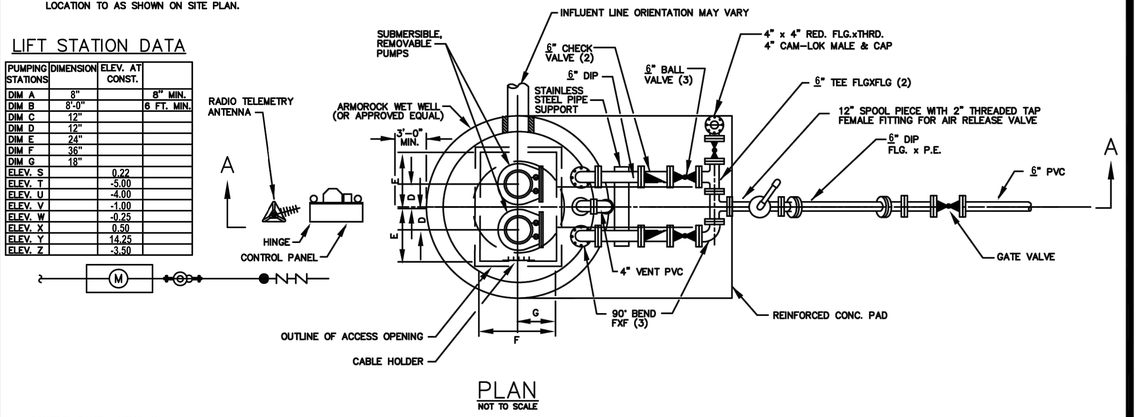


| | | |

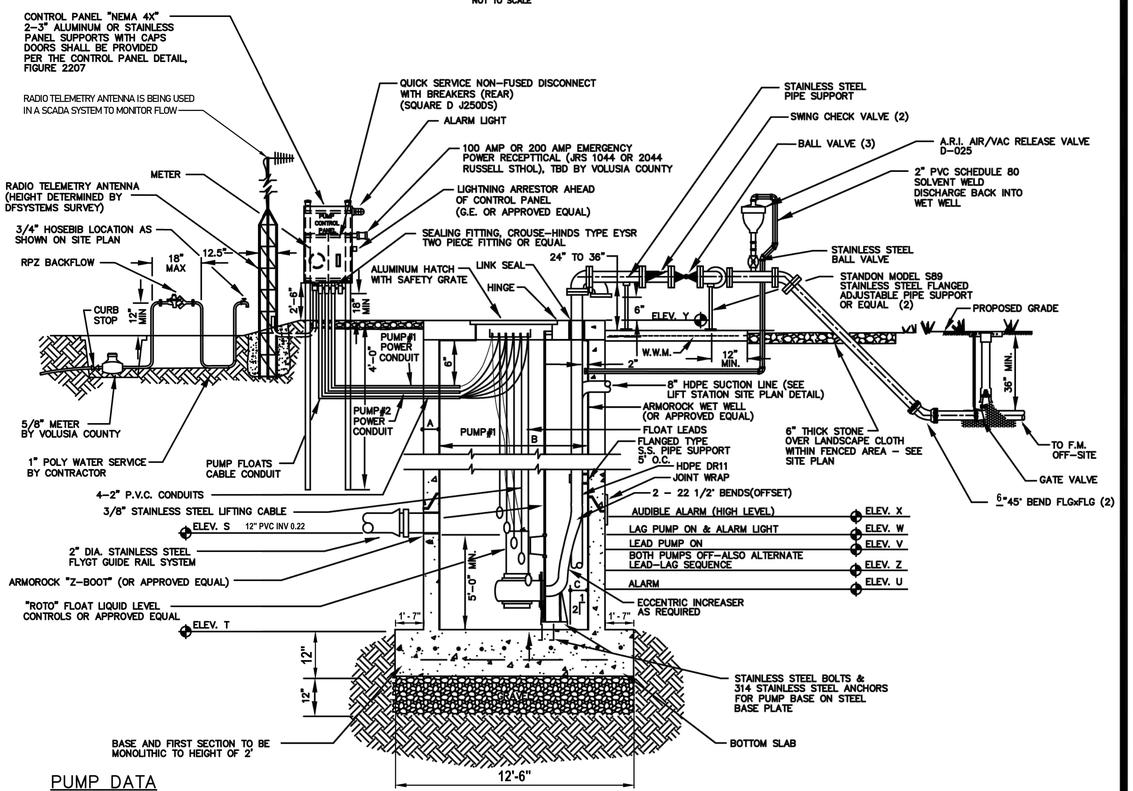
CONTRACTOR TO FURNISH 1" POLY-TUBE WATER SERVICE AND BOX. COUNTY TO FURNISH METER. CONTRACTOR TO FURNISH 3/4" HOSE BIBB. LOCATION TO AS SHOWN ON SITE PLAN.

LIFT STATION DATA

PUMPING STATIONS	DIMENSION	ELEV. AT CONST.	
DIM A	8"		8" MIN.
DIM B	8'-0"		6 FT. MIN.
DIM C	12"		
DIM D	12"		
DIM E	24"		
DIM F	36"		
DIM G	18"		
ELEV. S		0.22	
ELEV. T		-5.00	
ELEV. U		-4.00	
ELEV. V		-1.00	
ELEV. W		-0.25	
ELEV. X		0.50	
ELEV. Y		14.25	
ELEV. Z		-3.50	



PLAN
NOT TO SCALE



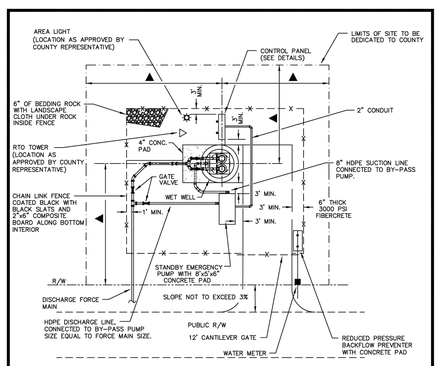
PUMP DATA

MANUFACTURER:	FLYGT	MODEL:	NP 3127 SH 3
IMPELLER NO.:	N3127.920 21-11-2AS-WIE3	NOMINAL SIZE:	155 mm
SPEED:	3600 RPM	DISCHARGE SIZE:	3"
VOLTAGE:	230	PHASE:	3
HORSEPOWER:	12	MIN. SOLID SIZE:	3"
OPERATING CONDITIONS SHALL BE 240 GPM @ 105.2 THD. MIN. SHUT OFF HEAD 164 FT.			

SECTION A-A
NOT TO SCALE

LIFT STATION DETAIL

VOL. UTL. STD. UPDATED JANUARY 2025 (FIG. 2202)



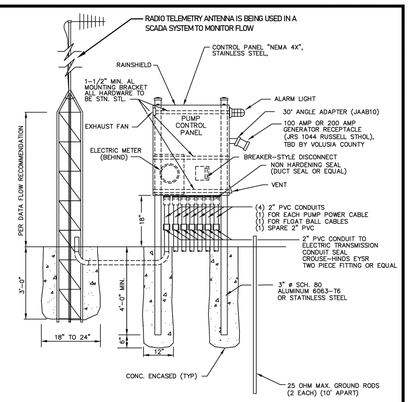
▲ THIS DIMENSION SHALL BE EQUAL TO THE DEPTH OF THE WET WELL OR GREATER, AS DETERMINED BY THE COUNTY

NOTES:

1. SEE LIFT STATION DETAIL SHEET FOR EQUIPMENT AND STRUCTURE DESIGN.
2. ENGINEER SHALL PROVIDE A SCALED (1"=20' MIN.) SITE SPECIFIC DETAIL.
3. THE HOA OR OTHER PRIVATE ENTITY SHALL BE RESPONSIBLE FOR MAINTENANCE IF LANDSCAPING IS INSTALLED.
4. LIFT STATION SITE TO BE GRADED TO DRAIN AWAY FROM WET WELL.
5. DRIVEWAY AND GENERATOR PAD FINISHED ELEVATION TO BE 0.1 TO 0.2 FEET BELOW TO OF WET WELL WITHIN FENCED AREA, WITH POSITIVE DRAINAGE AWAY FROM WET WELL.
6. GRADING OF SITE OUTSIDE OF FENCE SHALL NOT EXCEED 4:1 SLOPE.

LIFT STATION SITE PLAN

VOL. UTL. STD. UPDATED JANUARY 2025 (FIG. 2201)



NOTES

1. DRAWING IS SHOWN FOR 230 VOLT POWER SUPPLY. THE ELECTRICAL UTILITY SHALL DETERMINE THE SERVICE CONFIGURATION.
2. POWER SUPPLY SHALL BE UNDERGROUND ON THE LIFT STATION SITE AND SHALL BE 3 PHASE FROM A 3 PHASE SOURCE ONLY.

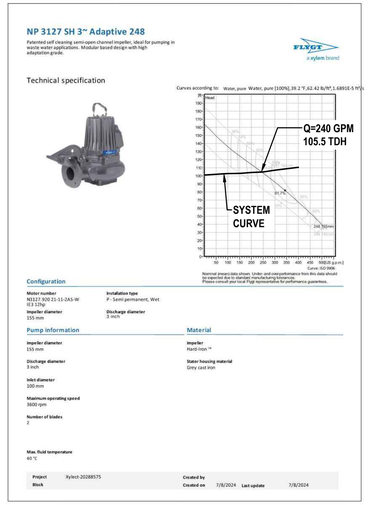
CONTROL PANEL/ ANTENNA ELEVATION
N.T.S.

VOL. UTL. STD. UPDATED JANUARY 2025 (FIG. 2204)

1. THE LIFT STATION SHALL BE DESIGNED IN ACCORDANCE WITH SECTIONS 61-63 OF VOLUSIA COUNTY'S UTILITY SPECIFICATIONS, AVAILABLE ONLINE AT www.volusia.org/core/fileparse.php/4157/urlt/UtilitySpecifications_032714.pdf
2. SHOP DRAWINGS ARE REQUIRED FOR PUMPS, PIPING, VALVES, FITTINGS, ELECTRICAL EQUIPMENT AND PRE-CAST CONCRETE STRUCTURES.
3. ALL PRECAST STRUCTURES SHALL BE DESIGNED PER ACI 315 & 318 "MANUAL OF STANDARD PRACTICE".
4. ALL EXPOSED METAL, EXCLUDING STAINLESS STEEL OR ALUMINUM MATERIALS, SHALL BE PAINTED WITH (2) COATS OF EXTERIOR, OIL BASE, ENAMEL PAINT. PIPING SHALL COME WITH STD. RED PRIMER.
5. WET WELL SHALL BE ARMOROCK OR APPROVED EQUAL AND REQUIRES JOINT WRAP TAPE.
6. WET WELL ACCESS HATCHES SHALL BE MINIMUM 36"x 48", 1/4" THICK ALUMINUM FLOOR PLATE REINFORCED TO 150 P.S.F. LIVE LOAD. DOORS SHALL HAVE FLUSH ALUMINUM DROP HANDLE AND AN AUTOMATIC HOLD OPEN ARM WITH RELEASE HANDLE. ALL FASTENERS AND ACCESSORIES SHALL BE 316 STAINLESS STEEL. HATCH FRAMES TO BE INTEGRALLY CAST INTO CONCRETE TOPS. THE HATCHES SHALL BE SERIES WIR WITH A SERIES X RETRO-GRATE MANUFACTURED BY "HALLIDAY", OR APPROVED EQUAL.
7. ALL NUTS, BOLTS, WASHERS AND MISCELLANEOUS HARDWARE ARE TO BE 316 STAINLESS STEEL.
8. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY. FOR ELECTRICAL SERVICE TO THE LIFT STATION SITE, AND SHALL MEET ALL POWER COMPANY REQUIREMENTS WITHOUT ADDITIONAL COMPENSATION.
9. ALL WET WELL JOINTS TO BE SEALED WITH "RAM-NEK" JOINT SEALER AND WRAPPED WITH 8" WIDE JOINT TAPE ON THE OUTSIDE PERIMETER.
10. ALL EXPOSED AND EMBEDDED CONDUITS TO BE PVC.
11. TESTING OF FORCE MAIN AND LIFT STATION SHALL BE REQUIRED. LIFT STATION SHALL BE TESTED WITH FIRST PUMP ON, SECOND PUMP ON, AND BOTH PUMPS ON.
12. ALL M.J. AND FLANGED D.I. PIPE AND FITTINGS SHALL BE POLYETHYLENE LINED (40 MILS. NOMINAL) CONFORMING TO ASTM D-1248.
13. ALL SUPPORTS AND HARDWARE FOR ELECTRICAL EQUIPMENT SHALL BE PVC COATED ALUMINUM OR STAINLESS STEEL.
14. THE ENTIRE AREA WITHIN THE SECURITY FENCE SHALL HAVE A MINIMUM OF 6" STONE OVER LAYER OF LANDSCAPE CLOTH.
15. THE LIFT STATION SHALL BE EQUIPPED WITH DATA FLOW SYSTEMS PUMP CONTROLS AND TELEMETRY EQUIPMENT. THE DATA FLOW SYSTEM CONTROLLER SHALL BE EQUIPPED WITH A TRANSMITTER AND ANTENNA CAPABLE OF COMMUNICATING WITH THE COUNTY'S S.W. WATER RECLAMATION FACILITY, AS WELL AS CONFORMING TO VOLUSIA COUNTY DATA FLOW STANDARDS.

LIFT STATION NOTES

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2208)



1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
6/24/25	FDEP COMMENTS

LIFT STATION (LS-01) DETAILS AND NOTES

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

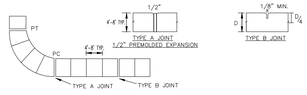
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	AS SHOWN

DRAWING NUMBER

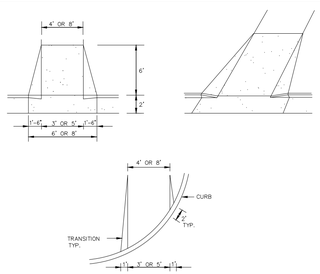
C-75



SIDEWALK CONSTRUCTION REQUIREMENTS

1. SIDEWALKS, BIKEPATHS, RAMPS, AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3 INCHES, A MINIMUM DEVELOPED COMPRESSIVE STRENGTH OF 2500 P.S.I. IN 28 DAYS, AND A MINIMUM UNIFORM THICKNESS OF 4 INCHES WHERE INTENDED SOLELY FOR PEDESTRIAN TRAFFIC, AND 6 INCHES THICK WHERE MOTOR VEHICLES ARE LIKELY TO CROSS.
2. SIDEWALKS AND BIKEPATHS SHALL BE PLACED PARALLEL, TO, AND ONE FOOT WITHIN THE RIGHT-OF-WAY LINE EXCEPT THAT THE CITY MAY APPROVE DEVIATIONS TO SAVE SPECIMEN TREES PROVIDED THAT THE SIDEWALK REMAINS WITHIN THE RIGHT-OF-WAY OR AN APPROVED SIDEWALK EASEMENT ABUTTING THE RIGHT OF WAY. SIDEWALKS AND BIKE PATHS SHOULD BE LOCATED AT LEAST 4 FEET FROM THE EDGE OF THE STREET PAVEMENT UNLESS OTHERWISE APPROVED BY THE CITY.
3. THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6 INCHES ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND.
4. ISOLATION JOINTS (TYPE A JOINTS) SHALL BE INSTALLED SO END PRODUCT IS FLUSH WITH EXISTING AND NEW CONCRETE AS TO PREVENT TRIP HAZARDS , TO SEPARATE PEDESTRIAN SECTIONS FROM SECTIONS WHICH WILL ENCOUNTER VEHICLE TRAFFIC, TO SEPARATE FRESH PLACEMENT FROM CONCRETE WHICH HAS SET FOR MORE THAN 60 MINUTES, AND NO FARTHER APART THAN 100 FEET IN SIDEWALKS AND BIKEPATHS. JOINT MATERIAL SHALL BE AS SPECIFIED IN F.D.O.T. STANDARDS AND SPECIFICATIONS AND SHALL BE RUBBER, PLASTIC OR OTHER APPROVED NON-BIODEGRADABLE ELASTOMERIC MATERIAL. WOOD AND DECCA-DRAIN STYLE POOL DRAINS ARE STRICTLY PROHIBITED.
5. CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOLED INTO THE FRESH CONCRETE TO A DEPTH EQUAL TO 1/4 THE SLAB THICKNESS AND SPACED APART A DISTANCE EQUAL TO THE WIDTH OF THE SLAB OR 5 FEET WHICHEVER IS GREATEST.
6. THE SLAB SURFACE SHALL BE BROOM FINISHED TO BE SUP RESISTANT, AND SHALL MATCH AS CLOSELY AS POSSIBLE THE FINISH OF EXISTING ADJACENT SLABS AND ALL EDGES SHALL BE TOOLED TO ELIMINATE SHARP CORNERS.
7. THE BEARING SUBSURFACE SHALL HAVE ALL ORGANIC, LOOSE, AND DELETERIOUS MATTER REMOVED, AND THE REMAINING CLEAN SOIL SHALL BE SMOOTH, SOUND, AND SOLID. ANY FILL MATERIAL SHALL BE COMPACTED WITH A VIBRATORY OR IMPACT COMPACTION MACHINE IN MAXIMUM 12 INCH LIFTS OR COMPACTED WITH A HAND TAMPER IN MAXIMUM 4 INCH LIFTS THE CITY SHALL REQUIRE A COMPACTION TEST FOR EACH LIFT IF THE TOTAL FILLED SECTION IS MORE THAN 12 INCHES DEEP OR IF THE SUBSURFACE HAS BEEN DISTURBED MORE THAN 12 INCHES DEEP. WHERE SUCH TEST IS REQUIRED, THE RESULTS SHALL SHOW A MINIMUM PROCTOR FIELD DENSITY OF 95 PERCENT.
8. ALL CONCRETE WORK IN THE RIGHT-OF-WAY SHALL BE INSPECTED BY THE CITY AFTER THE SUBSOIL IS PREPARED AND THE FORMS ARE SET, BUT BEFORE THE CONCRETE PLACEMENT BEGINS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CITY ACCEPTS OR APPROVES THE SLAB, AFTER WHICH TIME THE OWNER OF THE ABUTTING LAND SHALL BE RESPONSIBLE FOR THE SLAB IN ACCORDANCE WITH THE CITY CODE. ANY SLAB SECTION DAMAGED OR VANDALIZED PRIOR TO ACCEPTANCE OR APPROVAL SHALL BE CUT OUT BETWEEN JOINTS AND REPLACED. REPAIRS ARE NOT ACCEPTABLE.
10. SIDEWALKS LOCATED WITHIN THE RIGHT-OF-WAY SHALL NOT BE TINTED, STAINED, COLORED, OR COATED.
11. ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL AND THE DISTURBED GROUND SHALL BE BACKFILLED, REGRADED, AND SODDED SO THAT THE NEAR SURFACE OF THE CONCRETE IS REASONABLY FLUSH WITH THE ADJACENT GRADE.

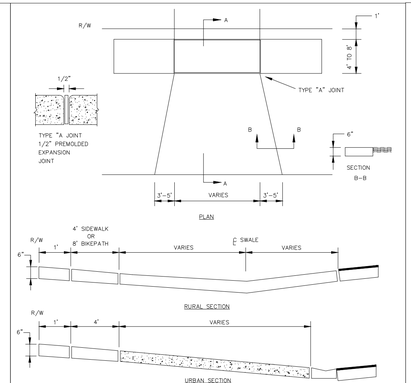
STANDARD CONSTRUCTION DETAIL SIDEWALK CONSTRUCTION REQUIREMENTS	FILE NAME: EW_M2.DWG	DETAIL REF: M-2



NOTES:

1. RAMP LOCATIONS ARE TO BE COORDINATED WITH AND IN CONFORMANCE WITH CROSSWALK MARKING DETAILS SHOWN IN THE PLANS.
2. CURBED RAMPS SHALL HAVE FLARED SIDES WITH A MAXIMUM SLOPE OF 10:1.
3. RAMPS SHALL HAVE A TACTILIKE SURFACE, TEXTURED TO A DEPTH NOT EXCEEDING 1/8".
4. RAMPS ARE TO BE CONSTRUCTED AT ALL LOCATIONS SHOWN IN THE PLANS EVEN WHEN A SIDEWALK IS NOT CONSTRUCTED CONCURRENTLY.
5. NO CURB TRANSITION IS NEEDED FOR MIAMI CURBS.
6. ALL RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT INDEX NO. 304 AND HANDICAPPED ACCESSIBILITY REQUIREMENTS IN ACCORDANCE WITH THE AMERICAN DISABILITIES ACT.

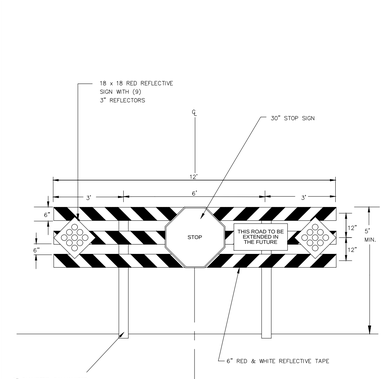
STANDARD CONSTRUCTION DETAIL SIDEWALK AND BIKEPATH RAMP	FILE NAME: EW_M3.DWG	DETAIL REF: M-3



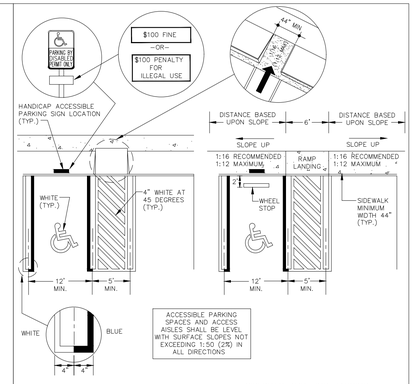
NOTES:

1. DRIVEWAY APRON BASE TO BE COMPACTED AND TESTED TO 98% DENSITY WITH MINIMUM L.B.R. 40 BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.
2. CONCRETE DRIVEWAY APRON TO BE 28 DAY, 3000 P.S.I.
3. DRIVEWAY WIDTHS OF 14' OR MORE SHALL HAVE A CONTROL JOINT LENGTH-WISE.

STANDARD CONSTRUCTION DETAIL DRIVEWAY APRON	FILE NAME: EW_M4.DWG	DETAIL REF: M-4



STANDARD CONSTRUCTION DETAIL ROAD BARRICADE	FILE NAME: EW_M7.DWG	DETAIL REF: M-7



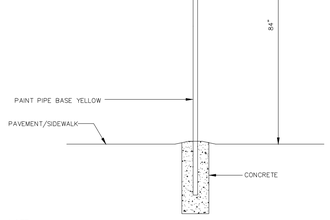
SIDEWALK RAMP DETAIL

SIDEWALK ABUTTING PARKING LOT DETAIL

NOTE:

1. WHEN HEADER CURB IS USED IN LIEU OF WHEEL STOPS, SIDEWALK ABUTTING CURB MUST BE WIDENED BY 18" SO THAT THE TOTAL SIDEWALK WIDTH IS 62", ALLOWING FOR 44" MINIMUM CLEAR ACCESSIBLE ROUTE.
2. FOR COMPLETE DETAIL OF HANDICAPPED SIGN, REFER TO DETAIL M-10.

STANDARD CONSTRUCTION DETAIL HANDICAP ACCESSIBLE PARKING SPACES	FILE NAME: EW_M9.DWG	DETAIL REF: M-9



NOTE:

1. HANDICAPPED PARKING SIGN SHALL CONFORM WITH CURRENT STATE AND LOCAL AND FEDERAL CODES AND REGULATIONS.
2. ALL SIGNS SHALL BE DESIGNED TO WITHSTAND 100 M.P.H. WINDLOAD.

STANDARD CONSTRUCTION DETAIL HANDICAP SIGN	FILE NAME: EW_M10.DWG	DETAIL REF: M-10

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

1. PAVEMENT AND CURB WIDTHS SHALL BE VERIFIED AND DIMENSIONED FOR EACH STREET AT EACH BLOCK. (FOR SUBDIVISIONS) AND AS APPROPRIATE TO CONFIRM PAVING LIMITS (ON SITE PLANS).
2. ALL RADII AT INTERSECTIONS SHALL BE VERIFIED AND DIMENSIONED. THIS INFORMATION IS TO BE CLEARLY INDICATED ON THE AS-BUILT.
3. ROADWAY ELEVATIONS SHALL BE RECORDED AT ALL GRADE CHANGES, 100' INTERVALS ALONG ROADWAY, AND OTHER INTERVALS AS NEEDED ALONG ALL STREETS. STREET CENTERLINE AND CURB INVERT ELEVATIONS SHALL BE RECORDED AS NOTED. THE AS-BUILT CENTERLINE PROFILE OF ALL STREETS SHALL ALSO BE SHOWN ON THE PLAN AND PROFILE SO IT MAY BE COMPARED TO THE DESIGN PROFILE GRADE LINES. IN THE EVENT THAT THE AS-BUILT CENTERLINE LONGITUDINAL GRADE DOES NOT MEET THE CITY MINIMUM STANDARDS, ADDITIONAL LONGITUDINAL GRADES OF THE ADJACENT CURBING AND SIMILAR ROADWAY CROSS-SECTION SURVEYS TO VERIFY THE CORRECT CROSS SLOPE, SHALL BE REQUIRED TO VERIFY THAT THE SYSTEM WILL FUNCTION AS ORIGINALLY DESIGNED.
4. STORM DRAINAGE STRUCTURES SHALL BE LOCATED AND / OR DIMENSIONED FROM CENTERLINES OR LOT LINES AS APPROPRIATE.
5. STORM DRAINAGE PIPE INVERT AND INLET ELEVATIONS SHALL BE RECORDED AND CLEARLY DENOTED AS AS-BUILT INFORMATION. DESIGN ELEVATIONS SHALL BE CROSSED OUT AND AS-BUILT INFORMATION WRITTEN NEXT TO IT.
6. STORM DRAINAGE PIPE MATERIAL, LENGTH, AND SIZE SHALL BE MEASURED AND / OR VERIFIED. THIS INFORMATION IS TO BE CLEARLY INDICATED AS BEING AS-BUILT INFORMATION.
7. ALL APPLICABLE TOPOGRAPHIC INFORMATION PERTINENT TO THE ON-SITE DRAINAGE SYSTEM, SUCH AS DITCHES, SWALES, LAKES, CANALS, ETC. THAT ARE DEEMED NECESSARY BY THE CITY TO VERIFY THE FUNCTIONAL PERFORMANCE OF THE STORMWATER SYSTEM, SHALL BE NOTED. NORMALLY, RECORDING ELEVATIONS EVERY 100 FEET AT THE TOP OF BANK AND TOE OF SLOPE WILL BE REQUIRED. MEASUREMENTS SHALL BE TAKEN AND RECORDED IN ORDER TO ACCURATELY TIE DOWN THESE FEATURES TO THE ROADWAY CENTERLINES AND TO PLAT LINES. WHENEVER POSSIBLE, CONTOUR LINES SHALL BE UTILIZED TO GRAPHICALLY DESCRIBE THESE TOPOGRAPHIC FEATURES .
8. RETENTION AREAS SHALL HAVE THEIR TOP-OF BANK AND BOTTOM ELEVATIONS RECORDED. ACTUAL MEASUREMENTS SHALL BE TAKEN AND DIMENSIONS RECORDED OF THE SIZE OF ALL RETENTION AREAS. MEASUREMENTS SHALL BE DONE FROM TOP-OF-BANK TO TOP-OF-BANK WITH SIDE SLOPES INDICATED. SEPARATE CALCULATIONS SHALL BE SUBMITTED TO INDICATE REQUIRED AND PROVIDED RETENTION VOLUMES.
9. ACTUAL MATERIALS USED AND ELEVATIONS AND DIMENSIONS OF OVERFLOW WEIR STRUCTURES AND SKIMMERS SHALL BE NOTED ON THE AS-BUILT.
10. STORM DRAINAGE SWALE CENTERLINES SHALL BE LOCATED AND ELEVATIONS OF FLOW LINE AND TOP OF BANK SHALL BE RECORDED EVERY 100 FEET. SIDE SLOPES SHALL ALSO BE INDICATED.
11. SANITARY SEWER MANHOLES SHALL BE VERIFIED AND DIMENSIONED FROM STREET CENTERLINES OR LOT LINES AS APPROPRIATE. ALL RIM AND INVERT ELEVATIONS SHALL BE VERIFIED AND RECORDED. THIS INFORMATION SHALL BE CLEARLY INDICATED AS BEING AS-BUILT INFORMATION. DESIGN ELEVATIONS SHALL BE CROSSED OUT AND AS-BUILT INFORMATION WRITTEN NEXT TO IT.
12. FOR SUBDIVISIONS, PROPOSED DESIGN FINISHED FLOOR ELEVATIONS SHALL APPEAR ON ALL SUBDIVISION LOTS ON THE APPROPRIATE PLAN AND PROFILE SHEET AS WELL AS ON THE MASTER DRAINAGE PLAN.

STANDARD CONSTRUCTION DETAIL REQUIREMENTS FOR AS-BUILT DRAWINGS	FILE NAME: EW_M11.DWG	DETAIL REF: M-11

REQUIREMENTS FOR AS-BUILT DRAWINGS (CONT'D)

13. SANITARY SEWER LINE LENGTHS, SIZES, MATERIAL, ETC., SHALL BE VERIFIED AND RECORDED. THIS INFORMATION IS TO BE CLEARLY INDICATED AS BEING AS-BUILT INFORMATION.
14. SEWER LATERALS SHALL BE VERIFIED AND RECORDED AT THEIR CLEAN-OUT LOCATIONS. STATIONING AND OFFSET DISTANCES SHALL BE MEASURED FROM DOWNSTREAM MANHOLES TOWARDS UPSTREAM MANHOLES.
15. LIFT STATIONS AND FORCE MAINS SHALL BE VERIFIED AND DIMENSIONED FROM STREET CENTERLINES OR LOT LINES AS APPROPRIATE. FORCE MAIN DEPTH AND LOCATION INCLUDING VALVES WILL BE PROVIDED AND TIED TO PERMANENT ABOVE GRADE FEATURES. DIMENSIONAL AND ELEVATION INFORMATION INDICATED ON THE APPROVED PLAN SHALL BE VERIFIED AND RECORDED. THIS INFORMATION SHALL BE CLEARLY INDICATED AS BEING AS-BUILT INFORMATION. BURIED ELECTRICAL SERVICE LINE SHALL BE CLEARLY DIMENSIONED, LOCATED, AND LABELED.
16. CURB CUTS OR METAL TABS, USED TO MARK SEWER LATERALS, WATER SERVICES AND WATER VALVES, SHALL BE VERIFIED FOR PRESENCE AND ACCURACY OF LOCATION.
17. POTABLE AND RECLAIMED WATER MAIN LINES SHALL BE DIMENSIONED OFF THE BACK OF CURB, OR EDGE OF PAVEMENT IF NO CURB IS PRESENT. WATER MAIN LINE MATERIAL SIZE, LENGTH AND DEPTH PLACED SHALL ALSO BE NOTED. LOCATIONS OF VALVES SHALL BE TIED TO PERMANENT ABOVE GRADE FEATURES. THIS INFORMATION SHALL BE CLEARLY INDICATED AS BEING AS-BUILT INFORMATION.
18. POTABLE AND RECLAIMED WATER VALVES, TEES, BENDS, ALL SERVICES, AND FIRE HYDRANTS SHALL BE LOCATED BY TYING THEM TO SANITARY SEWER MANHOLES. SIMILARLY, FORCE MAIN VALVES, TEES, AND BENDS SHALL BE LOCATED IN THE SAME MANNER. STATIONING AND OFFSET DISTANCES SHALL BE MEASURED FROM DOWNSTREAM MANHOLES TO UPSTREAM MANHOLES.
19. FOR PERPENDICULAR CROSSINGS OF STORMWATER, SANITARY SEWER, POTABLE WATER, OR RECLAIMED WATER, THE AS-BUILT PLANS SHALL CLEARLY INDICATE WHICH UTILITIES ARE LOCATED OVER OR UNDER OTHER UTILITIES, AS NECESSARY.
20. ANY SPECIAL FEATURES SUCH AS, CONCRETE FLUMES, LAKE BANKS, WALLS, FENCING, ETC., WHICH WERE A PART OF THE APPROVED CONSTRUCTION DRAWINGS SHOULD ALSO BE LOCATED AND DIMENSIONED.
21. IF AN APPROVED SUBDIVISION PLAT OR SITE PLAN SHOWS A CONSERVATION EASEMENT, THE PROJECT SURVEYOR SHOULD PROVIDE THE EXACT LOCATION OF THE SPECIMEN TREE(S) FROM THE RIGHT-OF-WAY OR PROPERTY LINES AND PROPOSED EASEMENT BOUNDARIES ON THE AS-BUILT DRAWING. THE AS-BUILT LOCATION OF THESE TREES WILL HELP VERIFY THE SUFFICIENCY OF THE CONSERVATION EASEMENT PRIOR TO PLAT RECORDING OR CERTIFICATE OF OCCUPANCY.
22. WHEN STORMWATER, POTABLE WATER, RECLAIMED WATER, OR SANITARY SEWER IMPROVEMENTS ARE ARE LOCATED WITHIN AN EASEMENT, THE AS-BUILT DRAWING SHALL ACCURATELY DEPICT THE LOCATION OF THE EASEMENT ITSELF AS WELL AS THE EXACT LOCATION OF THE IMPROVEMENTS WITHIN THE EASEMENT. THIS IS REQUIRED IN ORDER TO VERIFY THAT THE IMPROVEMENTS HAVE BEEN PROPERLY LOCATED AND TO ENSURE THAT FUTURE SUBSURFACE EXCAVATION TO PERFORM REMEDIAL REPAIR CAN BE ACCOMPLISHED WITHOUT DISTURBANCE BEYOND THE EASEMENT.

NOTE:

1. REFERENCES TO WATER SHALL MEAN BOTH POTABLE AND RECLAIMED WATER.

STANDARD CONSTRUCTION DETAIL REQUIREMENTS FOR AS-BUILT DRAWINGS	FILE NAME: EW_M12.DWG	DETAIL REF: M-12

STREET AND WALKWAY LIGHTS

WALKWAY LIGHTS: (HEIGHT: 10 TO 20 FEET)

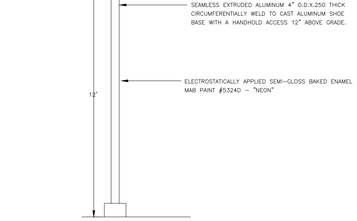
1. WALKWAY LIGHTING SHALL BE PROVIDED IN ALL PUBLIC PARKING AND WALKWAY AREAS. LIGHT STYLES AND SPACING SHALL BE DETERMINED BY THE COMMUNITY DEVELOPMENT DEPT. AT THE TIME OF SITE PLAN REVIEW.
2. UNLESS SPECIFIED OTHERWISE, THE WALKWAY LIGHTS SHALL BE ANY OF THE THREE (3) STYLES DETAILED HEREIN OR THE FOLLOWING: STERNBERG GEORGETOWN (0650 / 4408-DFP), WILLIAMSBURG (0405-TF / 3610-T) OR COLONIAL (4620TF-UF). ALL CITY MAINTAINED WALKWAY LIGHTS ARE TO BE FLORIDA POWER AND LIGHT (FPL) SUPPLIED LIGHTS, UTILIZING 150 WATT HPS.
4. SPACING SHALL BE A MAXIMUM OF 100 FEET ON CENTER.

STREET LIGHTS: (HEIGHT: 20+ FEET)

1. ALL CITY MAINTAINED STREET LIGHTS ARE TO BE FPL SUPPLIED STREET LIGHTS.
2. PRIVATELY MAINTAINED STREET LIGHTS SHALL BE: GARDCO LIGHTING EH / 26" / 1 / 3 / 150 HPS / 240 / BRA / PC (NOTE: POLE SHALL BE CONCRETE AVAILABLE THROUGH F.P.L. AND SPACED AT INTERVALS OF 300 TO 400 FEET.)

STANDARD CONSTRUCTION DETAIL STREET AND WALKWAY LIGHTS	FILE NAME: EW_M14.DWG	DETAIL REF: M-14

THE FLORIDIAN

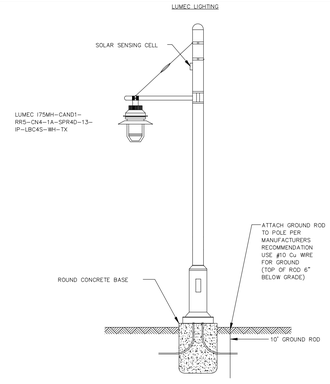


NOTE:

1. ALL WALKLIGHTS SHALL BE FITTED WITH SOLAR CELLS AND LOCATED ON 100' CENTERS. THE PLANNING DIVISION SHALL BE CONTACTED AT (386) 424-2412 TO FIELD VERIFY THE PROPOSED LOCATIONS FOR WALKLIGHTS. MAINTENANCE AND OPERATION OF WALKLIGHTS SHALL BE GRANTED TO THE CITY FOLLOWING INSTALLATION AND OPERATION, TO THE CITY'S FULL SATISFACTION.
2. ALL LIGHT POLES SHALL BE DESIGNED TO WITHSTAND 120 M.P.H. WINDLOADS

STANDARD CONSTRUCTION DETAIL STREET AND WALKWAY LIGHTS "THE FLORIDIAN"	FILE NAME: EW_M15.DWG	DETAIL REF: M-15

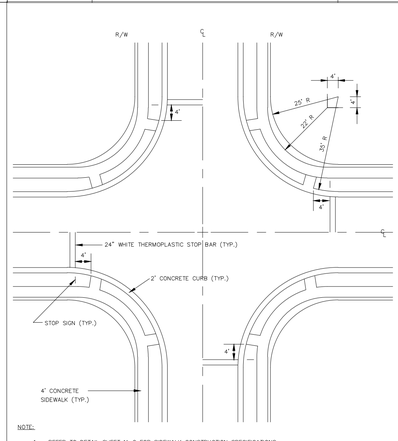
LUMEC LIGHTING



NOTE:

1. ALL WALKLIGHTS SHALL BE FITTED WITH SOLAR CELLS AND LOCATED ON 100' CENTERS. THE PLANNING DIVISION SHALL BE CONTACTED AT (386) 424-2412 TO FIELD VERIFY THE PROPOSED LOCATIONS FOR WALKLIGHTS. MAINTENANCE AND OPERATION OF WALKLIGHTS SHALL BE GRANTED TO THE CITY FOLLOWING INSTALLATION AND OPERATION, TO THE CITY'S FULL SATISFACTION.
2. ALL LIGHT POLES SHALL BE DESIGNED TO WITHSTAND 120 M.P.H. WINDLOADS.

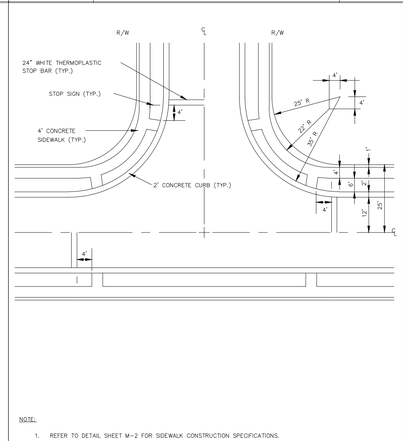
STANDARD CONSTRUCTION DETAIL STREET AND WALKWAY LIGHTS "LUMEC LIGHTING"	FILE NAME: EW_M17.DWG	DETAIL REF: M-17



NOTE:

1. REFER TO DETAIL SHEET M-2 FOR SIDEWALK CONSTRUCTION SPECIFICATIONS.
2. REFER TO DETAIL SHEET M-3 FOR SIDEWALK & BIKEPATH RAMP SPECIFICATIONS.

STANDARD CONSTRUCTION DETAIL SIDEWALK CONSTRUCTION AT INTERSECTIONS	FILE NAME: EW_M18.DWG	DETAIL REF: M-18



NOTE:

1. REFER TO DETAIL SHEET M-2 FOR SIDEWALK CONSTRUCTION SPECIFICATIONS.
2. REFER TO DETAIL SHEET M-3 FOR SIDEWALK & BIKEPATH RAMP SPECIFICATIONS.

STANDARD CONSTRUCTION DETAIL SIDEWALK CONSTRUCTION AT INTERSECTIONS	FILE NAME: EW_M19.DWG	DETAIL REF: M-19

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

CITY OF EDGEWATER DETAILS AND NOTES

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

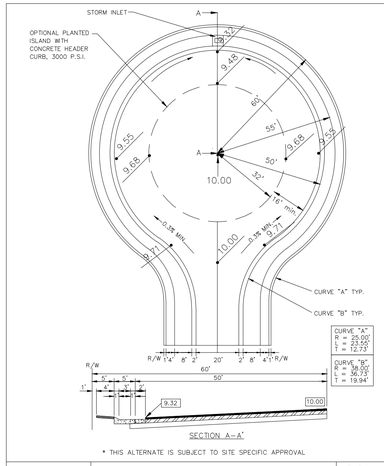
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

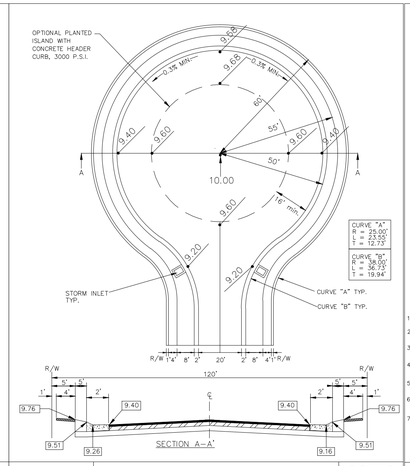
DRAWING NUMBER

C-76

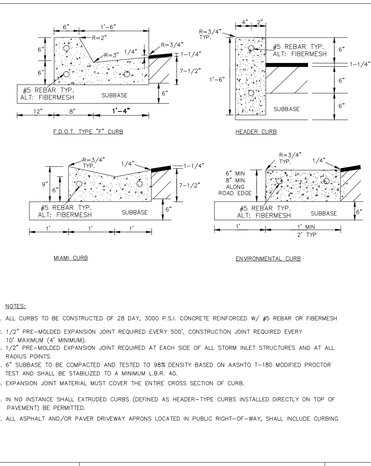


* THIS ALTERNATE IS SUBJECT TO SITE SPECIFIC APPROVAL

EDGEWATER	STANDARD CONSTRUCTION DETAIL STANDARD CUL-DE-SAC DETAIL WITH SINGLE STORM INLET "ALTERNATE"	FILE NAME: EW_R7A.DWG DETAIL REF: R-7



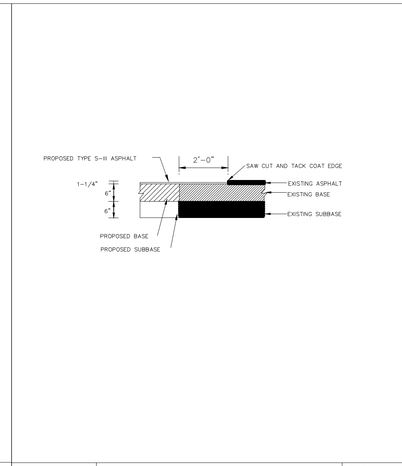
EDGEWATER	STANDARD CONSTRUCTION DETAIL STANDARD CUL-DE-SAC DETAIL WITH DUAL STORM INLET "PREFERRED"	FILE NAME: EW_R8A.DWG DETAIL REF: R-8



NOTES:

1. ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 3000 P.S.I. CONCRETE REINFORCED W/ #5 REBAR OR FIBERMESH
2. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 500', CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4" MINIMUM).
3. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADIUS POINTS.
4. 6" SUBBASE TO BE COMPACTED AND TESTED TO 98% DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST AND SHALL BE STABILIZED TO A MINIMUM L.B.R. 40.
5. EXPANSION JOINT MATERIAL MUST COVER THE ENTIRE CROSS SECTION OF CURB.
6. IN NO INSTANCE SHALL EXTRUDED CURBS (DEFINED AS HEADER-TYPE CURBS INSTALLED DIRECTLY ON TOP OF PAVEMENT) BE PERMITTED.
7. ALL ASPHALT AND/OR PAVER DRIVEWAY APRONS LOCATED IN PUBLIC RIGHT-OF-WAY, SHALL INCLUDE CURBING

EDGEWATER 2016-03-21	STANDARD CONSTRUCTION DETAIL STANDARD CURB CONSTRUCTION	FILE NAME: EW_R9.DWG DETAIL REF: R-9



EDGEWATER	STANDARD CONSTRUCTION DETAIL PAVEMENT BUTT JOINT	FILE NAME: EW_R11.DWG DETAIL REF: R-11

ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES

ALL MATERIALS AND INSTALLATION METHODS USED FOR LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS FOR SUBDIVISIONS AND SITE PLANS SHALL BE IN CONFORMANCE WITH THE CITY, FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AND THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS (LATEST EDITION).

1. ALL RIGHT-OF-WAY OTHER THAN ROADWAY AREAS SHALL BE SODDED. ALL SLOPES STEEPER THAN 6:1 SHALL REQUIRE SODDING. THE CITY RESERVES THE RIGHT TO REQUIRE SODDING IN SPECIAL AREAS WHERE EROSION IS A CONCERN.
2. THE FOLLOWING WILL BE THE STANDARD PROTECTION FOR DITCHES UNLESS DRAINAGE CALCULATIONS INDICATE OTHERWISE:

SWALE PROFILE GRADES:	PROTECTION REQUIRED:
0.2% - 1.0%	GRASSING AND MULCHING
1.0% - 4.0%	SODDING
4.0% AND GREATER	DITCH PAVING

3. THE PAVEMENT, BASE, AND SUBBASE THICKNESS PRESENTED ON DETAILS REPRESENTS THE MINIMUM REQUIREMENTS FOR LOCAL PUBLIC STREETS AND PRIVATE PARKING LOTS. THE CITY RESERVES THE RIGHT AT IT'S DISCRETION TO INCREASE THESE REQUIREMENTS FOR COLLECTOR AND ARTERIAL ROADWAYS AND PRIVATE PARKING LOTS SUBJECTED TO HEAVY VEHICULAR COMMERCIAL TRAFFIC.
4. THE DEVELOPER SHALL PROVIDE AT THEIR OWN EXPENSE A CERTIFIED SOILS ENGINEERING LABORATORY TO PERFORM ALL FIELD AND LABORATORY TESTING REQUIRED TO VERIFY THAT THE CONSTRUCTION IS IN COMPLIANCE WITH THE CITY'S MINIMUM STANDARDS. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO ENSURE THAT COPIES OF ALL TEST REPORTS ARE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR PRIOR TO THE PROJECT FINAL INSPECTION IN ORDER TO ALLOW PROJECT ACCEPTANCE BY THE CITY.
5. THE LIMITS OF STABILIZED SUBBASE SHALL EXTEND TO A DEPTH OF SIX INCHES (6") BELOW THE BOTTOM OF THE BASE AND OUTWARD TO TWELVE INCHES (12") BEYOND THE CURB.
6. THE STABILIZING MATERIAL, IF REQUIRED, SHOULD BE A HIGH BEARING VALUE SOIL, SAND-CLAY, LIMEROCK, RECYCLED CONCRETE, SHELL, OR OTHER MATERIAL AS APPROVED BY THE CITY'S DESIGNATED SITE INSPECTOR AND A LICENSED SOILS ENGINEER.
7. THE SUBBASE SHALL BE STABILIZED NOT LESS THAN FORTY (40) POUNDS LIMEROCK BEARING RATIO (LBR) TO A 6" MINIMUM DEPTH. A COMPACTION OF NO LESS THAN NINETY-EIGHT (98 %) PERCENT DENSITY BASED ON AASHTO T-180 SHALL BE REQUIRED.
8. FOR ROADWAYS, TESTS FOR SUBBASE BEARING CAPACITY AND COMPACTION SHALL BE DONE AT A MINIMUM OF EVERY 300 FEET AND SHALL BE STAGGERED TO THE LEFT, RIGHT, AND AT CENTER LINE OF THE ROADWAY. FOR SITE PLANS, TEST SHALL BE PERFORMED FOR EVERY 600 SQUARE YARDS OF STABILIZED AREA, OR PORTIONS THEREOF.
9. BASES FOR ALL STREETS SHALL HAVE A MINIMUM SIX INCH (6") DEPTH. SOIL CEMENT BASES SHALL HAVE A STRENGTH OF 350 POUNDS PER SQUARE INCH AT 7 DAYS COMPACTED TO 98% DENSITY PER AASHTO T-99 STANDARD PROCTOR TEST IN CONFORMANCE WITH SECTION 270 OF STANDARD F.D.O.T. SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION). RECYCLED CONCRETE OR LIMEROCK BASES SHALL BE COMPACTED TO 98% MAXIMUM DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.
9. ROADWAY DEFINITIONS
   a. ARTERIALS: PROVIDE REGIONAL MOBILITY VIA BOTH UNINTERRUPTED FLOW AND INTERRUPTED FLOW SEGMENTS. ARTERIALS PROVIDE MOBILITY AROUND AND THROUGH URBAN AND COMMUNITY CORES, AND ACCOMMODATE RELATIVELY LONG TRIP LENGTHS AS OPPOSED TO PROVIDING ACCESS TO ADJACENT PROPERTIES. ARTERIAL ROADS ARE U.S. #1 AND S.R. #442.
   b. COLLECTORS: PROVIDE FOR MOVEMENT BETWEEN LOCAL STREETS AND THE ARTERIAL NETWORK. COLLECTORS SERVE RESIDENTIAL, COMMERCIAL AND INDUSTRIAL AREAS.
   c. LOCAL ROADS: PROVIDE DIRECT ACCESS TO ABUTTING PROPERTIES. LOCAL ROADS ACCOMMODATE TRAFFIC ORIGINATING IN OR TRAVELING TO PROPERTIES WITHIN A NEIGHBORHOOD, COMMERCIAL OR INDUSTRIAL DEVELOPMENT. LOCAL ROADS ARE NOT CONSIDERED PART OF THE MAJOR THOROUGHFARE SYSTEM.

EDGEWATER	STANDARD CONSTRUCTION DETAIL ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES	FILE NAME: EW_R12.DWG DETAIL REF: R-12

ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES
(CONTD.)

10. SOIL CEMENT AND RECYCLED CONCRETE MIX DESIGNS SHALL BE SUBMITTED BY A LICENSED SOILS ENGINEER TO THE CITY'S DESIGNATED SITE INSPECTOR PRIOR TO THE START OF SUBBASE PREPARATION. ALL MIX DESIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE CITY.
11. CEMENT DELIVERY TICKETS SHALL BE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR AT THE TIME OF PLACEMENT. IF THE INSPECTOR IS NOT ON SITE THROUGHOUT THE ENTIRE INSTALLATION, ACCUMULATED DELIVERY TICKETS CAN BE PROVIDED TO THE INSPECTOR BY THE CONTRACTOR ON THE FOLLOWING DAY.
12. TESTING OF THE IN-PLACE BASE SHALL BE DONE AT INTERVALS EQUIVALENT TO SUBGRADE TESTING AND SHALL CONSIST OF, AS A MINIMUM, A MOISTURE CONTENT AND COMPACTION TEST.
13. PORTLAND CEMENT CONCRETE, LIMEROCK, RECYCLED CONCRETE, OR FULL DEPTH ASPHALT PAVEMENT MAY BE USED IN PLACE OF SOIL CEMENT BASE. ALL BASE AND ROADWAY DESIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE CITY.
14. SOIL CEMENT BASE MATERIAL CONSTRUCTION SHALL BE CONTINUOUSLY SUPERVISED BY A SOILS TESTING LABORATORY AT THE DEVELOPER'S EXPENSE. THE TESTING LABORATORY SHALL PROVIDE AN ON-SITE TECHNICIAN CERTIFIED IN THE INSTALLATION OF SOIL CEMENT WITH THE CERTIFICATION RECOGNIZED BY F.D.O.T.
15. SOIL CEMENT PAVEMENT BASES WITH THE CURE COAT APPLIED SHALL BE ALLOWED TO CURE A MINIMUM OF SEVEN (7) DAYS UNDER NO TRAFFIC PRIOR TO PLACING ANY ASPHALT SURFACE. (TEST REPORTS ARE REQUIRED TO BE DELIVERED TO THE CITY'S DESIGNATED SITE INSPECTOR PRIOR TO TRAFFIC USAGE.)
16. RECYCLED CONCRETE CAN BE USED AS AN ALTERNATIVE BASE MATERIAL PROVIDED THE MATERIAL IS A MINIMUM OF 60 % CARBONATE OF CALCIUM AND MAGNESIUM. THE MATERIAL SHALL BE LIMITED TO MAXIMUM OF 3 % OF WATER SENSITIVE CLAY MATERIAL. LIQUID LIMIT SHALL NOT EXCEED 35 AND BE NON-PLASTIC, AND THE PLASTICITY INDEX SHALL NOT EXCEED 10. THE MATERIAL SHALL NOT CONTAIN ORGANIC MATERIAL, CHERTY OR OTHER EXTREMELY HARD PIECES, LUMPS, BALLS OR POCKETS OF SAND-SIZE MATERIAL OF A QUANTITY AS TO BE DETRIMENTAL TO THE PROPER BONDING, FINISHING, OR STRENGTH OF THE RECYCLED CONCRETE BASE. FOR BASE APPLICATIONS, AT LEAST 97 % (BY WEIGHT) OF THE MATERIAL SHALL PASS A 1" SIEVE AND FOR SUBBASE APPLICATIONS, AT LEAST 97 % (BY WEIGHT) OF THE MATERIAL SHALL PASS A 1-1/2" SIEVE. FOR BOTH APPLICATIONS, THE MATERIAL SHALL BE GRADED UNIFORMLY DOWN TO DUST AND THE MINIMUM LBR VALUES ARE TO BE NOT LESS THAN 130. COARSE AGGREGATE USED IN THE RECYCLED CONCRETE SHALL HAVE A MAXIMUM LOSS OF 45 % PER LOS ANGELES ABRASION TEST. ALL MATERIALS SHALL BE WELL GRADED IN ACCORDANCE WITH REQUIREMENTS SET FORTH IN SECTION 204, F.D.O.T., STANDARD SPEC. FOR ROAD AND BRIDGE CONSTRUCTION., (LATEST EDITION).
17. RECYCLED CONCRETE OR LIMEROCK FOR BASE OR SUBBASE APPLICATIONS SHALL BE ALLOWED ON CITY ROADWAYS ONLY WHERE THE LOWEST ELEVATION OF THE ROADWAY SUBBASE IS A MINIMUM OF 6" ABOVE THE SEASONAL HIGH GROUNDWATER TABLE AS CERTIFIED BY A FLORIDA LICENSED PROFESSIONAL SOILS ENGINEER AND SUBSEQUENTLY APPROVED FOR BY THE CITY. IN AREAS NOT MEETING THESE STANDARDS A SOIL CEMENT BASE WILL BE REQUIRED. ALL CRUSHING OF RECYCLED CONCRETE SHALL BE DONE PRIOR TO THE MATERIAL BEING PLACED IN THE ROADWAY. TESTING SHALL HAVE THE SAME REQUIREMENTS AND BE PERFORMED AT THE SAME LOCATION AND INTERVALS AS REQUIRED FOR LIMEROCK.

EDGEWATER	STANDARD CONSTRUCTION DETAIL ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES	FILE NAME: EW_R13.DWG DETAIL REF: R-13

ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES
(CONTD.)

18. DESIGN MIXES AND PRODUCT GRADATION INFORMATION FOR ALL MATERIALS TO BE INSTALLED AS PART OF THE LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS SHALL BE SUBMITTED TO THE CITY'S DESIGNATED SITE INSPECTOR FOR ACCEPTANCE BY THE CITY. THE INFORMATION SHALL BE SUBMITTED NO LESS THAN THREE (3) WORKING DAYS PRIOR TO ANY CONSTRUCTION. SUBMITTALS SHALL INCLUDE, BUT NOT BE LIMITED TO, INFORMATION TO EVALUATE THE MATERIALS PROPOSED FOR INSTALLATION AS SUBBASE, BASE, AND PAVEMENT FOR ALL ROADWAY AND PARKING AREA SURFACES AS WELL AS SIMILAR INFORMATION FOR ALL OTHER CONCRETE SIDEWALKS, CURBING, AND COMPARABLE STRUCTURES AND APPLICATIONS.
19. PRIOR TO PLACEMENT FLORIDA STATE CERTIFIED BATCH PLANTS MUST CERTIFY TO THE CITY'S RESIDENT PROJECT INSPECTOR THAT THE ASPHALT DELIVERED TO THE SITE IS IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
20. EXTRACTION AND GRADATION TESTS ON ASPHALT MIXES SHALL BE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR FOR EVERY 2500 SQUARE YARDS OF ASPHALT, OR PART THEREOF, TO ENSURE THAT DESIGN MIXES MEET THE CITY STANDARD SPECIFICATIONS.
21. FIELD TESTING OF THE ASPHALT PAVEMENT SHALL BE DONE AT INTERVALS EQUIVALENT TO SUBGRADE TESTING AND SHALL CONSIST OF, AS A MINIMUM, A COMPACTION TEST. ASPHALT PAVEMENT SHALL BE COMPACTED TO 98% DENSITY PER FM 1-T238 (METHOD B). NUCLEAR DENSITY TEST, "BACKSCATTER" METHOD.
22. IN ADDITION TO THE FIELD DENSITY TESTS NOTED, THE CITY RESERVES THE RIGHT TO REQUIRE CORE SAMPLES OF PAVEMENT SECTIONS EXTRACTED AND TESTED BY A CERTIFIED SOILS ENGINEERING LABORATORY AT THE DEVELOPER'S EXPENSE. THE CITY'S DESIGNATED SITE INSPECTOR SHALL DESIGNATE THE LOCATIONS OF THE TEST CORE LOCATIONS.
23. THE ROADWAY CROWN SHALL HAVE A STANDARD ONE QUARTER INCH (1/4") PER FOOT SLOPE.
24. ALL ROADWAYS WITH CURB AND GUTTER SECTIONS SHALL HAVE AS A STANDARD A MINIMUM LONGITUDINAL SLOPE OF 0.30%. THE ROADWAY CENTERLINE SHALL BE CLEARLY MARKED ON THE DESIGN PLANS. AT A MINIMUM, DESIGN ROADWAY CENTERLINE ELEVATIONS SHALL BE NOTED AT ALL GRADE CHANGES AND AT 100' INTERVALS ALONG THE ROADWAY PROFILE ON BOTH THE DESIGN PLANS AND AS-BUILT DRAWINGS.
25. THE FINISHED PAVEMENT EDGE SHALL BE WITHIN ONE QUARTER INCH (1/4") ABOVE THE ADJACENT CONCRETE CURB FOR CURBS COLLECTING AND CONVEYING STORMWATER.
26. CONCRETE CURBS SHALL BE PROVIDED ON BOTH SIDES OF ALL STREETS AND ALL CONCRETE CURBS SHALL BE CONSTRUCTED WITH 3000 P.S.I. CONCRETE AT 28 DAYS.

EDGEWATER	STANDARD CONSTRUCTION DETAIL ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES	FILE NAME: EW_R14.DWG DETAIL REF: R-14

ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES
(CONTD.)

27. CONCRETE CURBING, SIDEWALKS, PAVEMENT AND SIMILAR CONCRETE AREAS SHALL BE SAW CUT WITHIN 4 TO 18 HOURS OF PLACEMENT. SAW CUTS SHALL BE 1/4" IN WIDTH TO A DEPTH OF 1/4 OF THE TOTAL DEPTH OF CONCRETE OR 1-1/2", WHICHEVER IS LESS. SAW CUTS SHALL BE LOCATED AT INTERVALS OF TEN FEET (10') WITH EXPANSION JOINTS AT STREET INTERSECTIONS, RADIUS POINTS, STRUCTURES, AND ALONG CURVES AT SIXTY FEET (60') INTERVALS. ALL EXPANSION JOINT MATERIAL IS REQUIRED TO BE INSTALLED THROUGH THE ENTIRE DEPTH OF THE CONCRETE CURB. FOR LINEAL SECTIONS OF CURBS, EXPANSION JOINTS SHALL BE LOCATED AT A MAXIMUM SPACING OF FIVE-HUNDRED FEET (500') AND SHALL BE 1/2" IN WIDTH.
28. AN "X" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF WATER DISTRIBUTION SYSTEM VALVE.
29. A "V" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL SEWER SERVICES.
30. A " $\frac{1}{2}$ SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL RECLAIMED WATER SERVICES.
31. A " $\frac{3}{4}$" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL POTABLE WATER SERVICES.
32. BLUE REFLECTORS SHALL BE PLACED IN THE MIDDLE OF THE DRIVING LANE ON THE SIDE OF THE ROADWAY AND IN FRONT OF WHERE FIRE HYDRANTS ARE LOCATED.
33. THREE (3) CONCRETE CYLINDERS SHALL BE TAKEN AND TESTED (1 IN 14 DAYS AND 1 IN 28 DAYS) FOR EVERY SEVENTY-FIVE (75) CUBIC YARDS OF CONCRETE OR LESS PLACED. TEST RESULTS SHALL THEN BE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR AS THEY BECOME AVAILABLE.
34. A CONCRETE SLUMP TEST SHALL BE REQUIRED WITHIN THE FIRST 30 CUBIC YARDS OF CONCRETE. THEREAFTER, SLUMP TESTS SHALL BE REQUIRED FOR EVERY THIRTY (30) CUBIC YARDS OF CONCRETE, OR FRACTION THEREOF, WITH COPIES OF THE RESULTS PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR. THE SLUMP TEST SHALL MEET THE REQUIRED MIX DESIGN ON EACH LOAD DELIVERED.
35. THE DEVELOPER SHALL PROVIDE ALL REQUIRED PAVEMENT MARKINGS ON ALL ROADWAYS PER CITY, COUNTY, AND STATE REQUIREMENTS. CENTERLINE STRIPES SHALL BE PROVIDED ON EXTENSIONS OF CITY COLLECTOR OR ARTERIAL ROADS, COUNTY ROADS, STATE HIGHWAYS, AND ALONG LOCAL STREETS IN THE VICINITY OF THEIR INTERSECTION WITH THE ABOVE MENTIONED ROADWAYS.
36. A FDOT APPROVED STOP SIGN AND A 24"-WIDE WHITE THERMOPLASTIC STOP BAR ARE REQUIRED AT ALL ROADWAY INTERSECTIONS.
37. ALL TRAFFIC CONTROL DEVICES PLACED AT INTERSECTIONS, PRIVATE STREETS, PUBLIC STREETS, COUNTY ROADS, AND STATE HIGHWAYS WITHIN THE CITY LIMITS SHALL BE INSTALLED ACCORDING TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION. THE MAINTENANCE-OF-TRAFFIC (MOT) INSTALLATION AND SUBSEQUENT OPERATION SHALL BE OVERSEEN BY A CONTRACTOR CERTIFIED BY THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION, OR EQUIVALENT CERTIFICATION RECOGNIZED BY FDOT.

EDGEWATER	STANDARD CONSTRUCTION DETAIL ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES	FILE NAME: EW_R15.DWG DETAIL REF: R-15

ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES
(CONTD.)

38. THE DEVELOPER IS RESPONSIBLE FOR PAYING FEES FOR TRAFFIC CONTROL DEVICES TO THE CITY FOR INSTALLATION. STREET SIGNS AND STOP SIGNS SHALL BE PLACED AT ALL INTERSECTIONS, INCLUDING BUT NOT LIMITED TO PRIVATE STREETS, PUBLIC STREETS, COUNTY ROADS, AND STATE HIGHWAYS WITHIN THE CITY LIMITS.
39. THE DEVELOPER IS RESPONSIBLE FOR PAYING FEES FOR ALL STREET LIGHTS PRIOR TO ACCEPTANCE OF THE PROJECT BY THE CITY.
40. FOUR FOOT (4') WIDE SIDEWALKS SHALL BE PROVIDED ON BOTH SIDES OF ALL RESIDENTIAL STREETS. (SEE DETAIL, INDEXES M-2 AND M-3)
41. BIKE PATHS SHALL BE CONSTRUCTED AT A MINIMUM OF SIX-FOOT WIDTH, PREFERABLY EIGHT-FOOT WIDTH AS DIRECTED BY THE CITY IN ACCORDANCE WITH THE BICYCLE AND PEDESTRIAN TRAIL MASTER PLAN.
42. STANDARD TURNING RADII FOR INTERSECTIONS:

RESIDENTIAL STREETS WITH STATE & COUNTY ROADWAYS OR MAJOR THOROUGHFARES WITHIN THE CITY	35-50 FT.
ENTRANCES TO COMMERCIAL SITES OFF OF CITY STREETS	35 FT.
INTERSECTIONS INTERIOR IN SUBDIVISIONS	35 FT.

SHOULD VOLUSIA COUNTY OR THE FLORIDA DEPARTMENT OF TRANSPORTATION (F.D.O.T.) DETERMINE THAT LARGER RADII ARE WARRANTED WITHIN THEIR RIGHT-OF-WAY, THE LARGER RADII SHALL PREVAIL.

43. CONSTRUCTION METHODS AND DESIGN FOR CONCRETE PAVEMENT SHALL CONFORM TO FDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
44. ALL CONTRACTORS THAT ARE PERFORMING THE CONSTRUCTION OF LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS (INCLUDING WATER MAINS, SANITARY SEWER MAINS, RECLAIMED WATER MAINS, STORM WATER PIPES AND INLETS, ROADWAYS, AND PARKING FACILITIES) SHALL BE CERTIFIED WITH THE STATE OF FLORIDA BOARD OF PROFESSIONAL REGULATIONS (BPR) FOR THE TYPE OF WORK THAT THEY PERFORM.
45. ALL CONTRACTORS THAT ARE PERFORMING THE CONSTRUCTION WORK OF LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS SHALL BE LICENSED BY THE STATE OF FLORIDA AND REGISTERED WITH THE CITY. THE LICENSE AND REGISTRATION SHALL PERTAIN DIRECTLY TO THE TYPE OF WORK BEING PERFORMED.
46. EXCEPT AS PROVIDED IN THE LAND DEVELOPMENT CODE,, ALL ELECTRIC, TELEPHONE, TELEVISION LINES AND SIMILAR UTILITIES ARE REQUIRED TO BE INSTALLED UNDERGROUND AT THE EXPENSE OF THE OWNER, DEVELOPER, AND BUILDER.

EDGEWATER	STANDARD CONSTRUCTION DETAIL ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES	FILE NAME: EW_R16.DWG DETAIL REF: R-16

ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES
(CONTD.)

47. UTILITY DEPTH:
   A. HIGH VOLTAGE UTILITIES SUCH AS POWER (FEEDER, SERVICE, AND DROPS) SHALL BE BURIED A MINIMUM OF 30 INCHES IN DEPTH.
   B. LOW VOLTAGE UTILITIES SUCH AS PHONE AND CABLE TV SHALL BE BURIED A MINIMUM OF 24 INCHES IN DEPTH FOR FEEDER AND SERVICES. SERVICE DROPS SHALL BE BURIED A MINIMUM OF 18 INCHES IN DEPTH.
   C. IN NO INSTANCE SHALL THE DEPTH OF COVER BE LESS THAN 30" FROM FINISHED GRADE TO THE TOP OF PIPE FOR POTABLE WATER MAINS, SANITARY SEWER MAINS, AND RECLAIMED WATER MAINS. HOWEVER, IN THE EVENT THAT THIS CONDITION CANNOT BE MET DUE TO UNANTICIPATED CONFLICTS DURING THE CONSTRUCTION PROCESS, DUCTILE IRON PRESSURE CLASS 350 OR CONCRETE ENCASEMENT MAY BE USED AS APPROVED BY THE CITY PUBLIC UTILITIES DEPARTMENT.
48. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE DESIGN LOCATION OF PLANTINGS RELATIVE TO THE LOCATION OF UNDERGROUND AND OVERHEAD PUBLIC UTILITIES AND STORMWATER INFRASTRUCTURE IN ORDER TO EVALUATE POTENTIAL CONFLICTS.

EDGEWATER	STANDARD CONSTRUCTION DETAIL ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES	FILE NAME: EW_R17.DWG DETAIL REF: R-17

TECHNICAL SPECIFICATIONS
FOR SITE PLANS AND SUBDIVISIONS TESTING

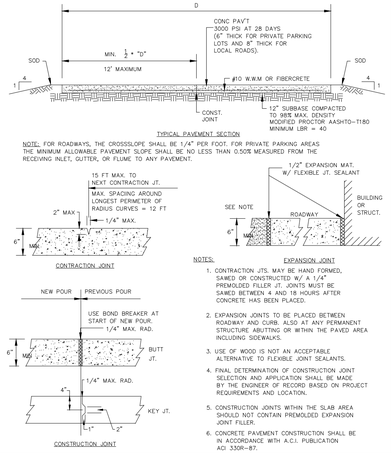
A. MATERIALS

THE INSPECTION AND TESTING OF MATERIALS AND FINISHED ARTICLES TO BE INCORPORATED IN THE WORK SHALL BE MADE BY MANUFACTURERS, LABORATORIES, OR AGENCIES APPROVED BY THE ENGINEER OF RECORD. THE CONTRACTOR SHALL SUBMIT SUCH SAMPLES, OR SUCH SPECIAL OR TEST PIECES OF MATERIALS AS THE ENGINEER OF RECORD MAY REQUIRE. THE CONTRACTOR SHALL NOT INCORPORATE ANY MATERIAL OR FINISHED ARTICLE INTO THE WORK UNTIL THE RESULTS OF THE INSPECTIONS OR TESTS ARE KNOWN AND THE CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER OF RECORD THAT THE MATERIAL OR FINISHED ARTICLE IS ACCEPTED. ALL MATERIALS MUST BE OF THE SPECIFIED QUALITY AND BE EQUAL TO THE APPROVED SAMPLE IF A SAMPLE HAS BEEN SUBMITTED. CERTIFIED COPIES OF ALL TESTS MADE SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AS WELL AS TO THE CITY'S DESIGNATED SITE INSPECTOR. THE CITY'S DESIGNATED SITE INSPECTOR MUST RECEIVE COPIES OF ALL TESTING REPORTS AND CERTIFICATES PRIOR TO THE ENGINEER OF RECORD REQUESTING A FINAL PROJECT INSPECTION FROM THE CITY.

B. LABORATORY CONTROL AND CERTIFICATES

1. SPECIFICATIONS - SAMPLING, TESTING, AND LABORATORY METHODS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE AASHTO OR ASTM. WHERE AASHTO OR ASTM SPECIFICATIONS ARE USED, THE REFERENCE SHALL BE CONSTRUED TO BE THE MOST RECENT STANDARD SPECIFICATIONS OR TENTATIVE SPECIFICATIONS OF THE AASHTO OR ASTM IN FORCE ON THE DATE OF THE TEST.
2. TEST & CERTIFICATES - THE CONTRACTOR SHALL ENGAGE AN APPROVED TESTING LABORATORY TO PROVIDE THE FOLLOWING TESTS AND CERTIFICATIONS SIGNED BY A REGISTERED ENGINEER OF THE STATE OF FLORIDA. ALL TECHNICIANS PERFORMING THE TESTS SHALL BE STATE CERTIFIED FOR THE TESTING PERFORMED. ADDITIONAL TESTS THAT MAY BE REQUIRED BY EITHER THE ENGINEER OF RECORD OR THE CITY SHALL ALSO BE PROVIDED BY THE CONTRACTOR, AND THE FOLLOWING SHALL NOT BE TAKEN AS A COMPLETE AND EXHAUSTIVE LIST OF THE CONTRACTOR'S TESTING RESPONSIBILITIES.
   A. SOIL ANALYSIS FOR STRUCTURAL FILL MATERIAL PRIOR TO INSTALLATION.
   B. PROCTOR DENSITIES, MOISTURE CONTENT, COMPACTED FIELD DENSITIES, AND ATTERBERG LIMITS.
   C. SOIL CEMENT MIX DESIGNS AND COMPRESSIVE STRENGTH TESTS (FOR SOIL CEMENT ROAD BASE ONLY).
   D. SUPERVISION OF ALL SOIL CEMENT BASE CONSTRUCTION.
   E. ANALYSIS OF RECYCLED CONCRETE BASE MATERIAL PRIOR TO INSTALLATION.
   F. ASPHALT MIX DESIGN, BITUMEN CONTENT, SIEVE ANALYSIS, HUBBARD FIELD STABILITY TESTS, NUCLEAR DENSITY TESTS (BACKSCATTER METHOD), AND ANALYSIS OF CORE SAMPLES.
   G. CONCRETE MIX DESIGNS FOR ALL APPLICATIONS INCLUDING PAVEMENT, CAST-IN-PLACE STRUCTURES, CURBING, GUTTERS, SIDEWALKS, BIKE PATHS, APRONS AND DRIVEWAYS.
   H. COMPRESSIVE TEST CYLINDERS AND SLUMP TESTS FOR ALL APPLICATIONS OF CONCRETE, INCLUDING PAVEMENT, CAST-IN-PLACE STRUCTURES, CURBING, GUTTERS, SIDEWALKS, BIKE PATHS, APRONS, AND DRIVEWAYS.
   I. CHLORINE RESIDUAL AND BACTERIOLOGICAL TESTING OF WATER MAINS.
   J. PRESSURIZED LEAK TESTING OF WATER MAINS, FORCE MAINS, AND RECLAIMED WATER MAINS.

EDGEWATER	STANDARD CONSTRUCTION DETAIL TECHNICAL SPECIFICATIONS FOR SITE PLANS AND SUBDIVISIONS TESTING	FILE NAME: EW_R18.DWG DETAIL REF: R-18

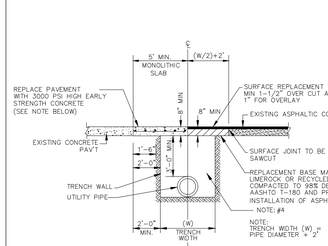

D
CONC PAVT
3000 PSI AT 28 DAYS
(6" THICK FOR PRIVATE PARKING
LOTS AND 8" THICK FOR
LOCAL ROADS).
MIN. $\frac{1}{2}$ " D"
12" MAXIMUM
SOD
#10 W.W.M. OR FIBERCRETE
SOD
4
1
4
1
CONST.
JOINT
12" SUBBASE COMPACTED
TO 98% MAX. DENSITY
MODIFIED PROCTOR AASHTO-T180
MINIMUM LBR = 40
TYPICAL PAVEMENT SECTION
NOTE: FOR ROADWAYS, THE CROSSSLOPE SHALL BE 1/4" PER FOOT. FOR PRIVATE PARKING AREAS THE MINIMUM ALLOWABLE PAVE

	IN CITY RIGHT-OF-WAY:		ON RESIDENTIAL PRIVATE PROPERTY (SINGLE FAMILY OR DUPLEX)
	TRANSVERSE (FROM ROAD TO PROPERTY)	LONGITUDINAL (E.G. IMPROVING A SHELL ROAD)	
DRIVEWAY WIDTH:	9' MIN – 24' MAX (CUMULATIVE)	18' MIN – 50% R/W MAX	6' MIN
TURN-OUT GEOMETRY:	≤ 30 MPH: MAX 10' TOTAL WIDER THAN DRIVEWAY 35–45 MPH: R=25' MIN (SEE NOTE 5) >45 MPH: FDOT STANDARD	≤30–45 MPH: R=25' MIN (SEE NOTE 5) >45 MPH: FDOT STANDARD	N/A
ALLOWABLE MATERIALS:	ASPHALT (PER DETAIL R–1, ITEMS E, F, & G) CONCRETE (PER DETAIL R–19) THE FOLLOWING ARE BY WRITTEN CONSENT ONLY: PAVERS (OR SIMILAR) TURFBLOCK (OR SIMILAR) THE FOLLOWING ARE NOT ALLOWED: GRANULAR MATERIALS PAVED WHEELPATHS	ASPHALT (PER DETAIL R–1, ITEMS E, F, & G) CONCRETE (PER DETAIL R–19) THE FOLLOWING ARE BY WRITTEN CONSENT ONLY: PAVERS (OR SIMILAR) TURFBLOCK (OR SIMILAR) IMPROVED GRANULAR MATLS PAVED WHEELPATHS	ASPHALT (PER DETAIL R–1, ITEMS E, F, & G) CONCRETE (PER DETAIL R–19) PAVERS (OR SIMILAR) TURFBLOCK (OR SIMILAR) IMPROVED GRANULAR MATLS PAVED WHEELPATHS

NOTES:

1. PAVERS, GRAVEL, MILLINGS AND OTHER IMPROVED GRANULAR OR NON–UNIFORM SURFACES ARE ONLY ALLOWED IN LIMITED APPLICATIONS WITHIN THE CITY RIGHT–OF–WAY WITHIN CONSENT OF THE TECHNICAL REVIEW COMMITTEE. SUCH SURFACES ARE NOT CONSIDERED EQUAL TO HARDSCAPE PAVING (I.E. CONCRETE OR ASPHALT). PROPERTY OWNERS WISHING TO INSTALL SUCH SURFACE ADJACENT TO THEIR PROPERTY SHALL EXECUTE A HOLD HARMLESS AGREEMENT INDEMNIFYING THE CITY AGAINST THE MAINTENANCE, REPAIR, AND/OR REPLACEMENT OF SIMILAR SURFACE.
2. FOR ASPHALT PAVEMENT, REFER TO ITEMS E, F, & G OF DETAIL R–1.
   FOR CONCRETE PAVEMENT, REFER TO DETAIL R–19. CAN BE 4" THICK ON RESIDENTIAL PROPERTY WITH REINFORCEMENT.
   (THE LATEST VERSION OF FDOT SPECIFICATIONS SHALL BE ACCEPTED IN LIEU OF THE ABOVE.)
   FOR ALL OTHER SURFACES:
   12" SUBBASE COMPACTED TO 98% MAX DENSITY MODIFIED PROCTOR AASHTO T–180 MIN LBR=40
3. FOR IMPROVED GRANULAR SURFACE (E.G. ANY GRANULAR SURFACE OTHER THAN SHELL OR DIRT):
   – CONSTRUCT CURBING ALONG ALL EDGES. SEE DETAIL R–9 FOR CURB OPTIONS AND SPECIFICATIONS.
   – FINISHED THICKNESS OF IMPROVED GRANULAR MATERIAL TO BE MIN 6". CAN BE MIN 4" THICK ON RESIDENTIAL PROPERTY.
   – COMPACT GRANULAR MATERIAL VIA ROLLER OR PLATE. MILLINGS MUST BE ROLLED.
4. PAVERS, MILLINGS, AND OTHER SIMILAR SURFACES SHALL INCORPORATE A CROSS–SLOPE OF 1/4"/FT DIRECTED TO THE NEAREST ADJACENT STORMWATER FEATURE (EXISTING OR PLANNED).
5. MINIMUM TURN–OUT RADIUS MAY BE INCREASED DUE TO ANTICIPATED TRAFFIC VOLUMES AT DISCRETION OF TECHNICAL REVIEW COMMITTEE.

EDGEWATER 2016–03–17 | STANDARD CONSTRUCTION DETAIL DRIVEWAY DETAIL – RESIDENTIAL | FILE NAME: EW_R27.DWG | DETAIL REF: R–27



PORTLAND CEMENT CONCRETE SURFACE | ASPHALTIC CONCRETE SURFACE

NOTES:

1. PAVING REPLACEMENT SHALL INCLUDE RAISING ALL MANHOLE FRAMES AND LIDS AND VALVE BOXES AND LIDS (AND SIMILAR APPURTENANCES) TO FINAL ELEVATION PRIOR TO RESURFACING
2. SUBBASE TO BE COMPACTED TO 98% MAXIMUM DENSITY AASHTO T–180
3. IN AREAS WHERE CONCRETE PAVEMENT IS TO BE UTILIZED, 3000 PSI – 28 DAY STRENGTH CONCRETE PAVEMENT MAY BE PERMITTED PROVIDED THAT THE SUBJECT AREA WILL REMAIN FREE OF VEHICULAR TRAFFIC FOR A MINIMUM OF 3 DAYS.
4. 350 PSI. FLOWABLE FILL SHALL BE USED UPON DIRECTION BY CITY ENGINEER.

EDGEWATER | STANDARD CONSTRUCTION DETAIL PAVEMENT TRENCH RESTORATION | FILE NAME: EW_ST3.DWG | DETAIL REF: ST–3

STORM DRAINAGE DESIGN AND CONSTRUCTION NOTES

ALL MATERIALS AND INSTALLATION METHODS USED FOR LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS FOR SUBDIVISIONS AND SITE PLANS SHALL BE IN CONFORMANCE WITH THE CITY, FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AND THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS (LATEST EDITION).

1. ALL STORM SEWERS AND CULVERTS (LOCATED IN ROADWAY RIGHTS–OF–WAY AND ROADWAY EASEMENTS SHALL BE A MINIMUM OF CLASS III REINFORCED CONCRETE PIPE. PRIVATE SITES AND AREAS OUTSIDE OF ROADWAY EASEMENTS AND R.O.W., PIPE MAY BE MADE OF ALTERNATE MATERIALS INCLUDING:
   A. SMOOTH INNER WALL HIGH DENSITY POLYETHYLENE (HDPE) IN ACCORDANCE WITH AASHTO M–294, AASHTO M252, ASTM D3350 AND ASTM D2412 FOR SIZES UP TO 42" IN DIAMETER OR
   B. PVC IN ACCORDANCE WITH THE PROVISION NOTED IN THE "SEWER DETAILS" OF THESE SPECIFICATIONS.
2. ALL STORM SEWER PIPE JOINTS LOCATED IN ROADWAY RIGHTS–OF–WAY AND ROADWAY EASEMENTS SHALL BE ENTIRELY WRAPPED WITH FILTER FABRIC WITH A MINIMUM WIDTH OF 24" AND A MINIMUM OF 12" OVERLAP SECURED WITH PLASTIC OR STAINLESS BANDS. GASKETS ARE NOT PERMITTED AS AN EQUIVALENT SUBSTITUTE FOR MEETING THIS REQUIREMENT. THIS PRACTICE IS REQUIRED ON PRIVATE SITES ADDITIONALLY, ALL JOINTS SHALL BE RUBBER GASKETED FOR BOTH ROUND AND ELLIPTICAL PIPE.
3. DEPTH OF COVER MEASURED TO THE TOP OF PIPE (NOT INCLUDING THE BELL JOINT) SHALL BE A MINIMUM OF 1 FOOT. DEVIATION FROM THIS REQUIREMENT MAY BE ALLOWED BY INCREASING THE PIPE'S STRUCTURAL CAPACITY. THIS DEVIATION MUST BE SPECIFIED ON THE PLANS APPROVED FOR CONSTRUCTION AND SUBSEQUENTLY REFLECTED ON THE SHOP DRAWINGS AND AS–BUILT PLANS.
4. ALL STORM DRAINAGE PIPES LOCATED IN ROADWAY RIGHTS–OF–WAY AND ROADWAY EASEMENTS SHALL BE A MINIMUM OF TWELVE INCH (12") DIAMETER OR EQUIVALENT AND BE DESIGNED FOR A MINIMUM OF A TWENTY–FIVE (25) YEAR STORM OF TWENTY–FOUR (24) HOUR DURATION. STORM DRAINAGE PIPES SMALLER THAN 12" ARE PERMITTED ON PRIVATE SITE PLANS PROVIDING THAT MAINTENANCE SHALL BE PERFORMED BY THE OWNER.
5. STORM INLETS, MANHOLES, AND CATCH BASINS SHALL BE EITHER POURED IN PLACE OR PRECAST REINFORCED CONCRETE. STRUCTURES SHALL BE REQUIRED AT EACH CHANGE OF PIPE SIZE OR CHANGE IN PIPE DIRECTION. ALL STRUCTURES SHALL BE IN COMPLIANCE WITH ASTM C–478 AND SHALL HAVE 8" THICK WALLS. 6" THICK WALLS MAY BE PERMITTED PROVIDING THAT THE PLANS SPECIFY INCREASED REINFORCEMENT IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 201 IN ADDITION, THIS REQUIREMENT MUST BE REFLECTED ON BOTH THE SHOP DRAWING AND AS–BUILT PLANS. NOTE: INLET APRONS MAY REQUIRE EXPANSION JOINTS AROUND THE STRUCTURE AS DICTATED BY THE CITY.
6. STORM INLETS SHALL BE SPACED IN SUCH A MANNER AS TO ACCEPT ONE HUNDRED (100) PERCENT OF THE DESIGN STORM RUNOFF WITHOUT IMPEDING THE FLOW OF TRAFFIC. FOR ROADWAY SECTIONS WITH DESIGN SPEEDS OF 45 MPH AND LESS AND WITHOUT FULL WIDTH SHOULDERS, SPREAD RESULTING FROM A RAINFALL INTENSITY OF FOUR INCHES (4 ") PER HOUR SHALL NOT EXCEED ONE–HALF OF THE TRAVEL LANE ADJACENT TO THE GUTTER. FOR SITE PLANS, INLET SPACING SHALL BE DESIGNED TO ACCEPT ONE HUNDRED (100) PERCENT OF THE RUNOFF FROM A RAINFALL INTENSITY OF FOUR INCHES (4 ") PER HOUR WITHOUT RESULTING IN PONDING OF WATER AROUND THE INLET.
7. LAKE DEPTHS SHALL BE EIGHT FEET (8') MINIMUM TO TWELVE FEET (12') MAXIMUM, AS MEASURED FROM HIGH WATER MARK. DEEPER MAXIMUM DEPTHS MAY BE APPROVED BY THE CITY ENGINEER.

EDGEWATER 2024–07–20 | STANDARD CONSTRUCTION DETAIL STORM DRAINAGE DESIGN AND CONSTRUCTION NOTES | FILE NAME: EW_ST4.DWG | DETAIL REF: ST–4

STORM DRAINAGE DESIGN AND CONSTRUCTION NOTES (CONT.)

8. FOR CONNECTIONS BETWEEN INLETS WITH PIPING 15" IN DIAMETER AND LARGER, THE MAXIMUM DISTANCES BETWEEN INLETS AND / OR CLEAN–OUT JUNCTION BOXES SHALL BE 300 FEET. CULVERTS SHALL BE SLOPED TO MAINTAIN A MINIMUM SELF–CLEANING VELOCITY OF 3 FEET PER SECOND USING A MANNING'S "n" OF 0.012. SPACING FOR CLEAN–OUTS AND INLETS FOR SMALLER PIPING SHALL BE REVIEWED AND EVALUATED ON A CASE BY CASE BASIS.
9. THE MAXIMUM PERMISSIBLE SLOPE OF ANY NEW SITE GRADING IS 4:1 (HORIZONTAL:VERTICAL). THIS LIMIT SHALL BE APPLIED TO ALL AREAS EXCEPT STORMWATER CONVEYANCE AND TREATMENT SYSTEMS WHICH MAY HAVE A MAXIMUM SLOPE OF 4:1. PERMANENTLY WETTED SOILS 2FT BELOW THE WATER NORMAL WATER TABLE MAY BE SLOPED NO STEEPER THAN 2:1 (H:V).
10. ALL DEVELOPMENT SHALL CONTINUE TO ACCOMMODATE EXISTING OFFSITE CONTRIBUTING FLOW AND PASS SUCH QUANTITY TO AN APPROPRIATE DOWNSTREAM PUBLIC CONVEYANCE WITH NO INCREASE IN UPSTREAM STAGE DURING ALL DESIGN STORM EVENTS. ALL FILL SLOPES IN PROXIMITY TO PROPERTY BOUNDARIES SHALL INCLUDE AN INTERCEPTING SWALE AT THE TOE OF SLOPE.
11. SWALES THAT ARE NORMALLY DRY AND INTENDED FOR CONVEYANCE OF STORMWATER RUNOFF AND ARE NOT INTENDED FOR RETENTION SHALL HAVE A MINIMUM DRAINAGE MAINTENANCE EASEMENT WIDTH MEASURING 15 FEET. SWALED AREAS INTENDED FOR RETENTION SHALL PROVIDE APPROPRIATE EASEMENT AREAS FOR ACCESS AND MAINTENANCE MEASURED UPLAND FROM THE TOP OF BANK. AT A MINIMUM, THE SAID EASEMENT SHALL MEASURE 10' FEET IN WIDTH FROM THE TOP OF THE SWALE.
12. PIPED STORMWATER SYSTEMS SHALL HAVE A MINIMUM DRAINAGE MAINTENANCE EASEMENT WIDTH OF 20 FEET, AND MAY BE INCREASED DEPENDING UPON THE SIZE AND DEPTH OF PIPE.
13. NORMAL ROADSIDE SWALES ARE PERMITTED TO BE CONSTRUCTED TO A MAXIMUM DEPTH OF 18" BELOW THE OUTSIDE EDGE OF PAVEMENT OR CONCRETE CURB.
14. CONCRETE EROSION CONTROL MUST BE PROVIDED WHERE SWALES OR CULVERTS INTERCEPT DRAINAGE DITCHES.
15. WHEN A LAKE IS INCORPORATED WITHIN A SUBDIVISION AND IS ABUTTED BY LOTS, SUCH ABUTTING LOT LINES SHALL BE EXTENDED INTO THE LAKE PROPORTIONATELY ENCOMPASSING ALL OF THE LAKE AREA.
16. LAKE INFLOW AND OUTLET STRUCTURES SHALL GENERALLY BE CONSTRUCTED WITH REINFORCED CONCRETE AND SHALL BE SUBJECT TO THE APPROVAL OF THE CITY. SKIMMERS FOR WET PONDS SHALL BE CONSTRUCTED SUCH THAT THE BOTTOM EXTENDS 6" BELOW THE NORMAL WATER LEVEL AND 6" ABOVE THE OVERFLOW. FOR DRY PONDS, THE SKIMMER BOTTOM SHALL BE SET 6" BELOW THE LOWEST OVERFLOW ELEVATION AND 6" ABOVE THE HIGHEST POINT OF OVERFLOW. ALL SKIMMERS SHALL BE CONSTRUCTED OF MINIMUM 1/4" THICK ALUMINUM OR FIBERGLASS ADEQUATELY SUPPORTED TO PREVENT DEFLECTION.

EDGEWATER 2024–07–20 | STANDARD CONSTRUCTION DETAIL STORM DRAINAGE DESIGN AND CONSTRUCTION NOTES | FILE NAME: EW_ST5.DWG | DETAIL REF: ST–5

STORM DRAINAGE DESIGN AND CONSTRUCTION NOTES (CONT.)

17. EROSION AND SEDIMENT CONTROL PLANS AS APPROVED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SHALL BE EMPLOYED AT ALL TIMES. AT A MINIMUM, BEST MANAGEMENT PRACTICES (BMP's) SHALL BE UTILIZED.
18. THE CITY MAY REQUEST THAT THE DEVELOPER SUBMIT A REPORT BY A QUALIFIED HYDROLOGIST ON THE IMPACT THE LAKE WILL HAVE ON NEIGHBORING WATER TABLE ELEVATIONS BOTH DURING CONSTRUCTION AND AFTER LAKE COMPLETION. THE CITY MAY REQUIRE GROUNDWATER MONITORING DURING THE LAKE EXCAVATION.
19. ADEQUATE MAINTENANCE EASEMENTS OR RIGHTS–OF–WAY AS APPROVED BY THE CITY SHALL BE PROVIDED AROUND THE ENTIRE PERIMETER OF ALL LAKES AND ASSOCIATED OUTFALLS DISCHARGING INTO AND OUT OF LAKES. APPLICABLE CROSS SECTIONS SHALL BE INCLUDED ON ALL FINAL DEVELOPMENT PLANS.
20. DEVELOPMENT PLANS FOR ALL STORMWATER MANAGEMENT SYSTEMS SHALL CONTAIN POP–OUT DATA (OVERFLOW), BOTTOM ELEVATION, NORMAL WATER LEVELS, MEAN ANNUAL SEASONAL HIGH WATER TABLE ELEVATION, TREATMENT VOLUME AND CORRESPONDING ELEVATION, 100 YEAR HIGH WATER LEVELS, AND THE DESIGN TAILWATER ELEVATION (IF APPLICABLE).
21. IN GENERAL, ALL RETENTION / DETENTION SITES MUST BE CONSTRUCTED ON ALL PROJECTS PRIOR TO ANY ROAD, PARKING LOT, OR BUILDING CONSTRUCTION COMMENCING OR AS CURRENT PERMIT CONDITIONS DICTATE. SEWER AND WATER MAINS MAY BE INSTALLED PRIOR TO RETENTION/DETENTION SITE CONSTRUCTION IF DEWATERING IS NOT REQUIRED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ANY AND ALL DEWATERING PERMITS THAT MAY BE REQUIRED.
23. WHEN CULVERTS ARE INSTALLED TO MAINTAIN THE FLOW OF EXISTING DRAINAGE WAYS WHERE NEWLY PROPOSED ROADS WOULD OTHERWISE SEVER THE DRAINAGE WAY, THEN CULVERTS CROSSING RIGHTS–OF–WAY SHALL EXTEND FROM RIGHT–OF–WAY LINE TO RIGHT–OF–WAY LINE UNDER THE ROADWAY. CULVERTS SHALL BE DESIGNED TO ACCOMODATE THE FLOW FROM THE 100 YEAR – 24 HOUR STORM EVENT WITHOUT FLOODING ADJACENT PROPERTY OR SURCHARGING THE SAID ROADWAY.
24. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND MAINTAIN A COPY OF THE SJRWMD PERMIT AND/ OR NPDES CONSTRUCTION PERMIT AT THE CONSTRUCTION SITE, AND ABIDE BY ALL CONDITIONS OF THE PERMIT.
25. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE DESIGN LOCATION OF PLANTINGS RELATIVE TO THE LOCATION OF PUBLIC UTILITIES AND STORMWATER INFRASTRUCTURE IN ORDER TO EVALUATE POTENTIAL CONFLICTS.
26. ALL STRUCTURES SHALL BE GRADED TO HAVE POSITIVE RUNOFF PATTERNS TOWARD A STORMWATER COLLECTION AND MANAGEMENT SYSTEM. ALL NEW BUILDING SHALL BE TYPE "A" OR TYPE "B" GRADING. TYPES "C" & "D" GRADING SHALL ONLY BE APPROVED FOR RETROFITS. SEE DETAIL ST–14 FOR TYPICAL LOT GRADING.

EDGEWATER 2024–07–20 | STANDARD CONSTRUCTION DETAIL STORM DRAINAGE DESIGN AND CONSTRUCTION NOTES | FILE NAME: EW_ST6.DWG | DETAIL REF: ST–6

CANAL AND WATERWAY DESIGN AND CONSTRUCTION NOTES

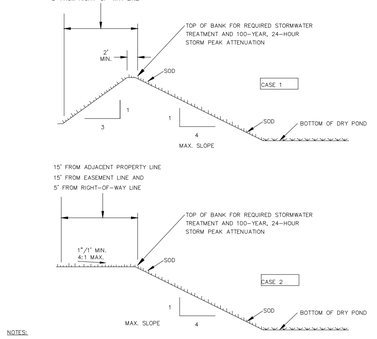
1. CANALS AND WATERWAYS SHALL BE AVOIDED EXCEPT WHEN APPROVED AND DEEMED BY THE CITY TO BE UNAVOIDABLE OR NECESSARY, WHEREIN LITERAL ENFORCEMENT OF THIS CHAPTER WOULD DEPRIVE THE DEVELOPER OF THE REASONABLE USE OF HIS LAND.
2. IN THE EVENT OF SUCH APPROVAL, THE CANALS OR WATERWAYS SHALL HAVE A MINIMUM OF TWENTY FEET (20') ADDITIONAL WIDTH ON EACH BANK MEASURED FROM THE TOP OF BANK AND LOCATED ALONG THE ENTIRE LENGTH OF THE CANAL FOR MAINTENANCE.
3. SUCH CANALS SHALL BE A MAXIMUM OF FORTY FEET (40') IN WIDTH PLUS REQUIRED MAINTENANCE AREAS.
4. CANALS SHALL HAVE A MINIMUM BOTTOM WIDTH OF THREE FEET (3') AND MAXIMUM PERMISSIBLE SIDE SLOPES OF 4:1 (HORIZONTAL: VERTICAL). SHARPER SLOPES MAY BE CONSIDERED BELOW THE NORMAL WATER LEVEL PROVIDING THAT ADDITIONAL BANK STABILIZATION MEASURES ARE INSTALLED BASED UPON THE RECOMMENDATIONS OF A CERTIFIED GEOTECHNICAL ENGINEER. CANAL BANKS SHALL BE SODDED.
5. WATERWAYS AFFECTED BY TIDAL ACTION SHALL HAVE A MINIMUM DEPTH OF NINE FEET (9') BELOW SEA LEVEL REFERENCING THE NATIONAL GEODETIC VERTICAL DATUM (N.G.V.D.). THESE WATERWAYS SHALL BE SEPARATED FROM FRESH WATER BY SALINITY DAMS WITH SPILLWAY ELEVATIONS AS APPROVED BY THE CITY.
6. TWENTY FEET (20') WIDE DRAINAGE/MAINTENANCE EASEMENTS SHALL BE REQUIRED IN ORDER TO PROVIDE FOR THE NORMAL MAINTENANCE OF THESE WATER BODIES. THESE EASEMENTS SHALL BE ESTABLISHED BY THE CITY BASED ON EXISTING AND FUTURE CONDITIONS AS WELL AS THE TYPES OF MAINTENANCE EQUIPMENT AVAILABLE.

EDGEWATER | STANDARD CONSTRUCTION DETAIL CANAL AND WATERWAY DESIGN AND CONSTRUCTION NOTES | FILE NAME: EW_ST7.DWG | DETAIL REF: ST–7

BRIDGE DESIGN AND CONSTRUCTION NOTES

1. BRIDGES SHALL BE CONSTRUCTED WITH HEADER CURB ON BOTH SIDES RUNNING ITS COMPLETE LENGTH.
2. STANDARD 4'–WIDE SIDEWALKS SHALL BE PROVIDED ON BOTH SIDES AS FAR AWAY AS POSSIBLE FROM THE ROADWAY, BUT AT NO TIME CLOSER THAN TWO (2) FEET FROM THE EDGE OF THE FUTURE ROADWAY.
3. APPROACH GUARDRAILS OR FENCES SHALL BE PROVIDED WHERE REQUIRED FOR SAFETY BY THE CITY.
4. BRIDGE GEOMETRY, BRIDGE DESIGN, AND LOADING SHALL CONFORM TO THE DESIGN CRITERIA OF THE LATEST EDITION OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
5. PRIOR TO ACTUAL DESIGN OF THE BRIDGE, THE APPLICANT SHALL SUBMIT DESIGN LOAD CRITERIA TO THE CITY FOR APPROVAL.

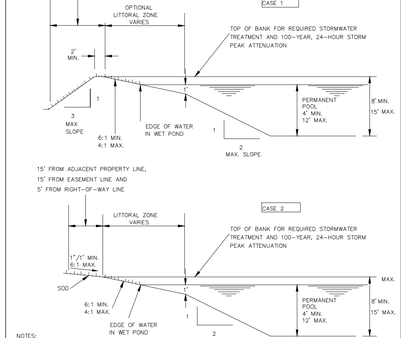
EDGEWATER | STANDARD CONSTRUCTION DETAIL BRIDGE DESIGN AND CONSTRUCTION NOTES | FILE NAME: EW_ST8.DWG | DETAIL REF: ST–8



NOTES:

1. SOD IS TO BE PLACED TO BOTTOM OF DRY POND.
2. BOTTOM OF DRY POND TO BE SEEDED AND MULCHED (EXCEPT WHERE "A"–TYPE SOILS ARE PRESENT WHICH REQUIRES SODDING OF ENTIRE BOTTOM OF POND).
3. CASE 1 BERM SHALL REQUIRE THE INSTALLATION OF LIMITING SOILS OR OTHER MATERIALS TO REDUCE LATERAL TRANSMISSIVITY.

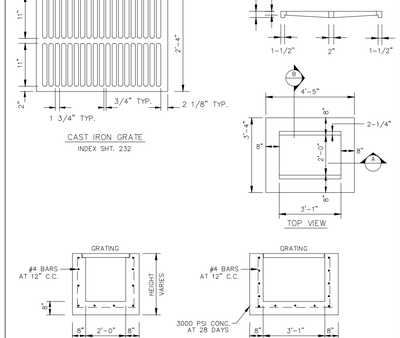
EDGEWATER | STANDARD CONSTRUCTION DETAIL DRY RETENTION POND PLACEMENT BY R/W AND EASEMENT LINES | FILE NAME: EW_ST9.DWG | DETAIL REF: ST–9



NOTES:

1. SOD IS TO BE PLACED TO EDGE OF WATER.
2. A PLANTED LITTORAL ZONE IS NOT PERMISSIBLE FOR SLOPES EXCEEDING 6:1.
3. AS AN OPTION TO A LITTORAL ZONE, THE DESIGNER CAN EITHER:
   A) PROVIDE AN ADDITIONAL 50% OF THE PERMANENT POOL VOLUME, AS REQUIRED, OR
   B) PROVIDE PRETREATMENT OF THE STORMWATER PRIOR TO ENTERING THE WET DETENTION POND.
4. CASE 1 BERM SHALL REQUIRE THE INSTALLATION OF LIMITING SOILS OR OTHER MATERIALS TO REDUCE LATERAL TRANSMISSIVITY.

EDGEWATER | STANDARD CONSTRUCTION DETAIL WET RETENTION POND PLACEMENT BY R/W AND EASEMENT LINES | FILE NAME: EW_ST10.DWG | DETAIL REF: ST–10

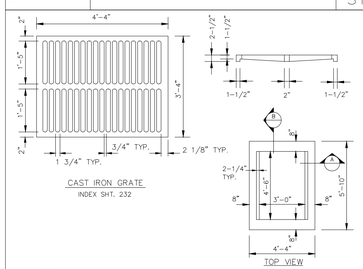


NOTE:

• 6" THICK WALLS MAY BE PERMITTED, PROVIDING THAT THE INCREASED REINFORCEMENT IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 201 IS INSTALLED. THIS MUST BE REFLECTED ON THE DESIGN PLANS, SHOP DRAWINGS, AND AS–BUILTS.

F.D.O.T. TYPE C INLET
INDEX SHT. 232

EDGEWATER | STANDARD CONSTRUCTION DETAIL TYPE "C" STORM INLET | FILE NAME: EW_ST11.DWG | DETAIL REF: ST–11



NOTE:

• 6" THICK WALLS MAY BE PERMITTED, PROVIDING THAT THE INCREASED REINFORCEMENT IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 201 IS INSTALLED. THIS MUST BE REFLECTED ON THE DESIGN PLANS, SHOP DRAWINGS, AND AS–BUILTS.

F.D.O.T. TYPE E INLET
INDEX SHT. 232

EDGEWATER | STANDARD CONSTRUCTION DETAIL TYPE "E" STORM INLET | FILE NAME: EW_ST12.DWG | DETAIL REF: ST–12

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

CITY OF EDGEWATER DETAILS AND NOTES

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

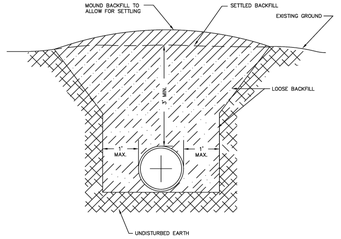
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

C-78



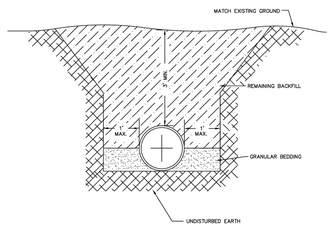
NOTES

1. PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH BY UNDISTURBED EARTH. DIG OUT HOLLOW AT PIPE BELL.
2. TRENCH SHALL BE DRY DURING PLACEMENT
3. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK, STICKS, ROOTS & OTHER DEBRIS.
4. ALL BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF AASHTO T-180 MODIFIED PROCTOR WHEN LOCATED GREATER THAN 4 FEET FROM THE EDGE OF PAVEMENT OR BACK OF CURB.
5. ALL BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 98% OF AASHTO T-180 MODIFIED PROCTOR WHEN LOCATED LESS THAN 4 FEET FROM THE EDGE OF PAVEMENT OR BACK OF CURB.

TYPICAL TYPE I TRENCH DETAIL

(GRANULAR SOILS)

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 1001)



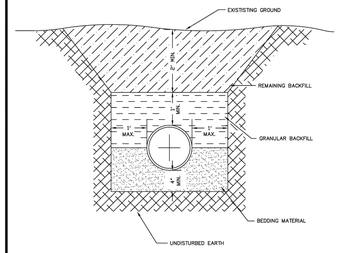
NOTES

1. PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER PIPE HAUNCHES.
2. TRENCH SHALL BE DRY DURING PLACEMENT
3. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK, STICKS, ROOTS & OTHER DEBRIS.
4. ALL BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF AASHTO T-180 MODIFIED PROCTOR WHEN LOCATED GREATER THAN 4 FEET FROM THE EDGE OF PAVEMENT OR BACK OF CURB.
5. ALL BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 98% OF AASHTO T-180 MODIFIED PROCTOR WHEN LOCATED LESS THAN 4 FEET FROM THE EDGE OF PAVEMENT OR BACK OF CURB.

TYPICAL TYPE 2 TRENCH DETAIL

(SILTS AND CLAYS)

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 1002)



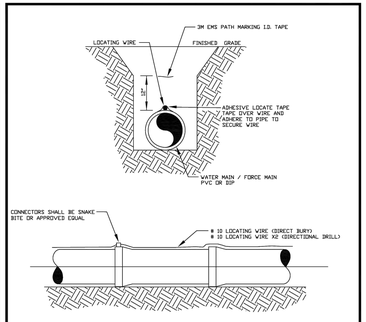
NOTES

1. PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER PIPE HAUNCHES.
2. TRENCH SHALL BE DRY DURING PLACEMENT
3. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK, STICKS, ROOTS & OTHER DEBRIS.
4. ALL BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF AASHTO T-180 MODIFIED PROCTOR WHEN LOCATED GREATER THAN 4 FEET FROM THE EDGE OF PAVEMENT OR BACK OF CURB.
5. ALL BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 98% OF AASHTO T-180 MODIFIED PROCTOR WHEN LOCATED LESS THAN 4 FEET FROM THE EDGE OF PAVEMENT OR BACK OF CURB.

TYPICAL TYPE 3 TRENCH DETAIL

(HIGHLY ORGANIC SOILS "PEAT")

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 1003)



NOTES:

1. ALL PIPE SHALL REQUIRE INSULATED METALLIC SOLID LOCATING WIRE CAPABLE OF DETECTION BY A CABLE LOCATOR AND SHALL BE BURIED DIRECTLY ABOVE CENTERLINE OF PIPE.
2. LOCATING WIRE SHALL TERMINATE AT THE TOP OF EACH VALVE BOX AND BE CAPABLE OF EXTENDING 12" ABOVE TOP OF BOX IN SUCH A MANNER SO AS NOT TO INTERFERE WITH VALVE OPERATION (SEE GATE VALVE AND BOX DETAIL, FIGURE 2307).
3. ADHESIVE I.D. TAPE AS NECESSARY TO HOLD WIRE DIRECTLY ON THE TOP OF THE PIPE.
4. LOCATE WIRE AND LOCATE TAPE (TWO TYPES) SHALL BE ON ALL PIPES.
5. DIRECTIONAL DRILL INSTALLATION SHALL USE TWO SEPARATE COPPER CLAD SOLID STEEL WIRES, 10 GAUGE.
6. CONNECTIONS SHALL BE SNAKE BITE CONNECTORS, OR APPROVED EQUAL.
7. REFER TO VOLUSIA COUNTY ELECTRONIC BALL DETAIL.

PIPE LOCATING DETAIL

N.T.S.

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 1003)

Electronic Marker Balls for Gravity Mains
Electronic Balls shall be provided at one foot from the termination of all sanitary sewer service laterals. Balls shall be Scotchmark model 1404, Electronic Full-Range Marker manufactured by 3M.

Electronic Marker Balls for Sewer Force Mains
Electronic Balls shall be provided at fittings, valves, crosses, tees, changes in direction and every 100-ft on straight sections of pipe. Balls shall also be provided at the termination of sewer services. Electronic marker Balls shall be Scotchmark model 1404, Electronic Full-Range Marker Balls manufactured by 3M.

Electronic Marker Balls for Potable Water Mains
Electronic Balls shall be provided at fittings, valves, crosses, tees, changes in direction and every 100-ft on straight sections of pipe. Balls shall also be provided at the termination of water services. Balls shall be Scotchmark model 1403, Electronic Full-Range Marker Balls manufactured by 3M.

Electronic Marker Balls for Reclaimed Water Mains
Electronic Balls shall be at fittings, valves, crosses, tees, changes in direction and every 100-ft on straight sections of pipe. Balls shall also be provided at the termination of water services. Balls shall be Scotchmark model 1408, Electronic Full-Range Marker Balls manufactured by 3M.

ELECTRONIC MARKER

VOL. UTL. STD. UPDATED APRIL 2025

SINGLE SET, METER SET FOR 5/8", 3/4" AND 1" METERS
SINGLE SERVICE SET (WATER AND RECLAIM)

NO POLYTUBING UNDER ROAD ALLOWED WITHOUT 2" CASING

1. 1" TAPPING SADDLE CC THREAD, EPOXY COATED WITH STAINLESS STEEL STRA.
2. 1" CORPORATION STOP FORD FB1000-4-Q (1" BALLVALVE, INLET, OUTLET) MUELLER EQUAL.
3. 1" CURB STOP, FORD B43-342W-NL (3/4" VALVE, 1" INLET PE END PACK JOINT-CTS, MUELLER EQUAL (THIS IS FOR 5/8" AND 3/4" METER SETS) IF 1" METER SET USE FORD CURB STOP B41-344W-NL.
4. 1" 200 PSI, SDR 9 ENDOT ENDPURE BLUE WATER SERVICE TUBING (POTABLE), PURPLE (RECLAIMED) WITH TRACER WIRE AND SNAKE BITE CONNECTORS.
5. 2" PVC SCHEDULE 40, CASING PIPE WHITE, IF INSTALLATION UNDER ROAD (PAVED OR DIRT).

DOUBLE SET OR DUAL SET
METER SET FOR 5/8" AND 3/4" METERS (WATER ONLY)

NO POLYTUBING UNDER ROAD ALLOWED WITHOUT 2" CASING

1. 1" TAPPING SADDLE CC THREAD, EPOXY COATED WITH STAINLESS STEEL STRAP.
2. 1" CORPORATION STOP FORD FB1000-4-Q (1" BALLVALVE, INLET, OUTLET) MUELLER EQUAL.
3. 1" x 3/4" U BRANCH PACK JOINT-CTS FORD U48-43-NL 7.5 OR MUELLER H1460.
4. 3/4" CURB STOP, FORD B13-332W-NL OR MUELLER EQUAL.
5. 1" 200 PSI, SDR 9 ENDOT ENDPURE BLUE WATER SERVICE TUBING (POTABLE), PURPLE (RECLAIMED) WITH TRACER WIRE AND SNAKE BITE CONNECTORS.
6. 2" PVC SCHEDULE 40, CASING PIPE WHITE, IF INSTALLATION UNDER ROAD (PAVED OR DIRT).

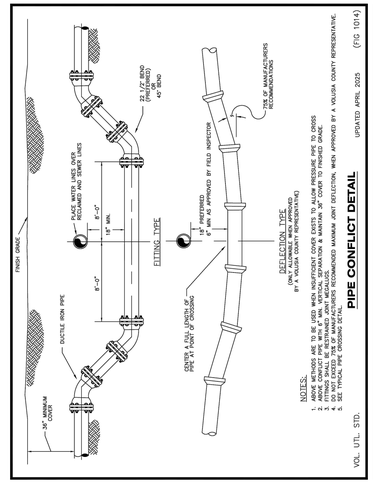
2" WATER SERVICE CONNECTION FOR 1 1/2" AND 2" METER SETS
(WATER AND RECLAIM)

NO POLYTUBING UNDER ROAD ALLOWED WITHOUT 4" CASING

1. 2" TAPPING SADDLE CC THREAD, EPOXY COATED WITH STAINLESS STEEL STRAP.
2. 2" CORPORATION STOP FORD FB1101-7-Q (2" BALLVALVE X PIT X CTS) MUELLER EQUAL.
3. 2" CURB STOP, BF43-777W-NL (2" VALVE, 2" CTS X 2" FLANGE) FLANGE WILL FIT 1 1/2" OR 2" FLANGE METER.
4. 2" 200 PSI, SDR 9 ENDOT ENDPURE BLUE WATER SERVICE TUBING (POTABLE), PURPLE (RECLAIMED) WITH TRACER WIRE AND SNAKE BITE CONNECTORS.
5. 4" PVC SCHEDULE 40, CASING PIPE WHITE, IF INSTALLATION UNDER ROAD (PAVED OR DIRT).

WATER & RECLAIMED SERVICE DETAIL

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 1011)

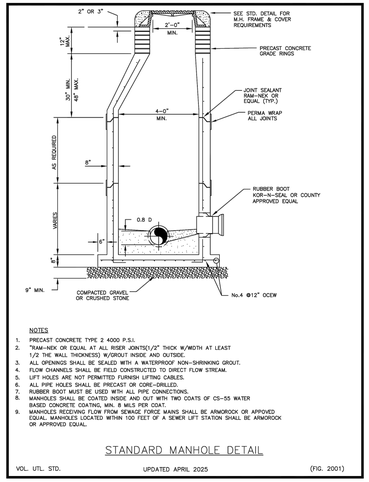


NOTES:

1. ABOVE METHODS ARE TO BE USED WHEN INSUFFICIENT COVER EXISTS TO ALLOW PRESSURE PIPE TO CROSS UNDER GRAVITY SEWER. FITTINGS SHALL BE RESTRAINED JOINT METALLICS.
2. 24 1/2" RJ (PREFERRED) 45° BEND OR APPROVED MAXIMUM JOINT DEFLECTION, WHEN APPROVED BY A VOLUSIA COUNTY REPRESENTATIVE.
3. SEE TYPICAL PIPE CROSSING DETAIL (FIG. 1014)

PIPE CONFLICT DETAIL

UPDATED APRIL 2025 (FIG. 1014)

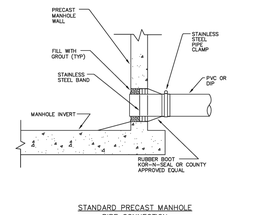


NOTES

1. PRECAST CONCRETE TYPE 2 4000 P.S.I.
2. "RAM-NEK OR EQUAL AT ALL RISER JOINTS(1/2" THICK W/WIDTH AT LEAST 1/2 THE WALL THICKNESS) W/GROUT INSIDE AND OUTSIDE.
3. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT.
4. FLOW CHANNELS SHALL BE FIELD CONSTRUCTED TO DIRECT FLOW STREAM.
5. LIFT HOLES ARE NOT PERMITTED DURING LIFTING CABLES.
6. ALL PIPE HOLES SHALL BE PRECAST OR CORE-DRILLED.
7. RUBBER BOOT MUST BE USED WITH ALL PIPE CONNECTIONS.
8. MANHOLES SHALL BE COATED INSIDE AND OUT WITH TWO COATS OF CS-55 WATER BASED CONCRETE COATING, MIN. 8 MILS PER COAT.
9. MANHOLES RECEIVING FLOW FROM SEWAGE FORCE MAINS SHALL BE ARMOROK OR APPROVED EQUAL. MANHOLES LOCATED WITHIN 100 FEET OF A SEWER LIFT STATION SHALL BE ARMOROK OR APPROVED EQUAL.

STANDARD MANHOLE DETAIL

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2001)



STANDARD PRECAST MANHOLE PIPE CONNECTION

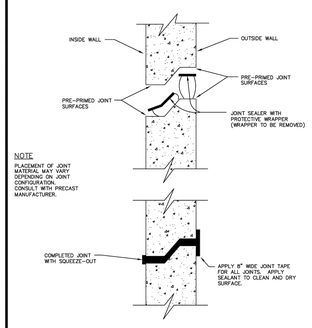
NOTES:

1. DROP PIPE AND FITTINGS SHALL BE OF EQUAL SIZE AND MATERIAL AS THE INFLUENT SEWER.
2. AN INSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT WHICH HAVE AN INVERT 18" OR MORE ABOVE THE MANHOLE INVERT.

MANHOLE JOINT DETAIL FOR PRECAST SECTIONS

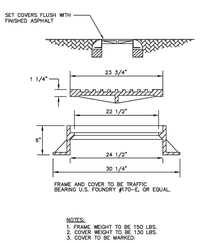
MANHOLE CONNECTION DETAILS

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2002)



NOTE
PLACEMENT OF JOINT MATERIAL MAY VARY DEPENDING ON JOINT CONFIGURATION. CONSULT WITH PRECAST MANUFACTURER.

VOLUSIA COUNTY
SANITARY SEWER
COVER TO HAVE TWO OPPOSING PICK HOLES

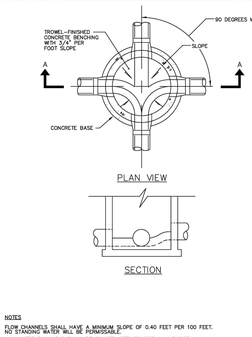


FRAME AND COVER TO BE TRAFFIC BEARING U.S. FOUNDRY #170-E, OR EQUAL.

NOTES:
1. FRAME WEIGHT TO BE 150 LBS.
2. COVER WEIGHT TO BE 130 LBS.
3. COVER TO BE MARKED
VOLUSIA COUNTY SANITARY SEWER
4. WEIGHTS TO BE STAMPED ON FRAME & COVER.
5. FRAME & COVER TO HAVE MACHINED SURFACES.

SANITARY MANHOLE FRAME AND COVER

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2004)



PLAN VIEW

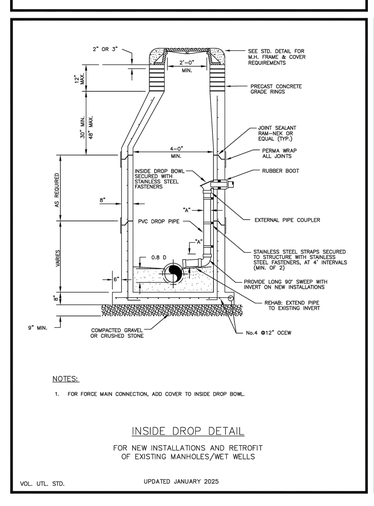
SECTION

NOTES

1. FLOW CHANNELS SHALL HAVE A MINIMUM SLOPE OF 0.40 FEET PER 100 FEET. FLOW CHANNELS ALIGNMENT SHALL BE PERMISSIBLE.
2. ALL INVERT CHANNELS SHALL BE CONSTRUCTED TO OBTAIN A SMOOTH FLOW WITHOUT OBSTRUCTIONS.
3. SERVICE LATERALS SHALL NOT ENTER MANHOLES UNLESS SPECIFIED ON PLANS AND THEN MUST BE CONNECTED AS MAINS.
4. BRICK AND CONCRETE SHALL BE USED FOR FLOW CHANNEL BUILD UP.
5. SIDE OF FLOW CHANNEL SHALL BE AT LEAST HALF OF PIPE HEIGHT AT ALL POINTS.
6. PROTECTED SHAPED SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH CONSISTENT INVERT ELEVATIONS TO PROVIDE FOR SMOOTH FLOWS.
7. LATERAL PIES SHALL NOT ENTER THE MANHOLE AT ANGLES GREATER THAN 90 DEGREES TO THE FLOW LINE.

MANHOLE FLOW CHANNEL DETAIL

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2006)



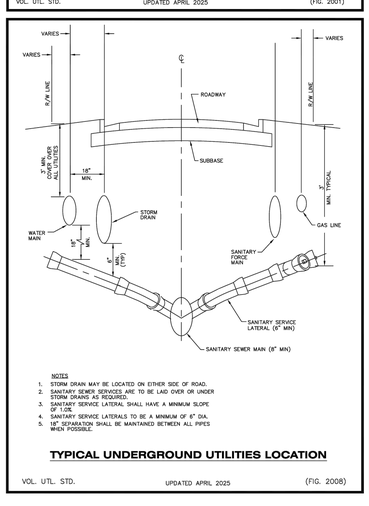
NOTES:

1. FOR FORCE MAIN CONNECTION, ADD COVER TO INSIDE DROP BOWL.

INSIDE DROP DETAIL

FOR NEW INSTALLATIONS AND RETROFIT OF EXISTING MANHOLES/WET WELLS

VOL. UTL. STD. UPDATED JANUARY 2025

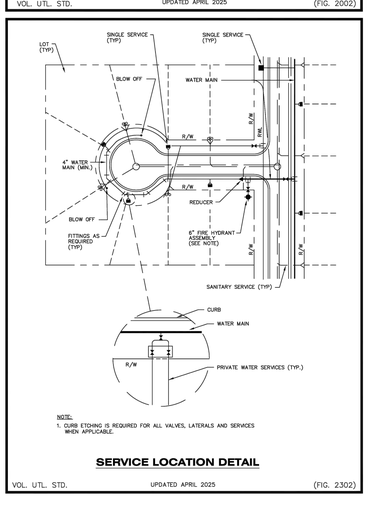


NOTES

1. STORM DRAIN MAY BE LOCATED ON EITHER SIDE OF ROAD.
2. SANITARY SEWER SERVICES ARE TO BE LAID OVER OR UNDER STORM DRAINS AS REQUIRED.
3. SANITARY SERVICE LATERAL SHALL HAVE A MINIMUM SLOPE OF 2%.
4. SANITARY SERVICE LATERALS TO BE A MINIMUM OF 6" DIA.
5. 18" SEPARATION SHALL BE MAINTAINED BETWEEN ALL PIPES WHEN POSSIBLE.

TYPICAL UNDERGROUND UTILITIES LOCATION

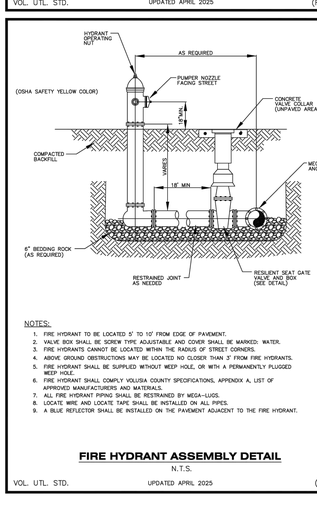
VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2008)



NOTE:
1. CURB ETCHING IS REQUIRED FOR ALL VALVES, LATERALS AND SERVICES WHEN APPLICABLE.

SERVICE LOCATION DETAIL

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2302)



NOTES:

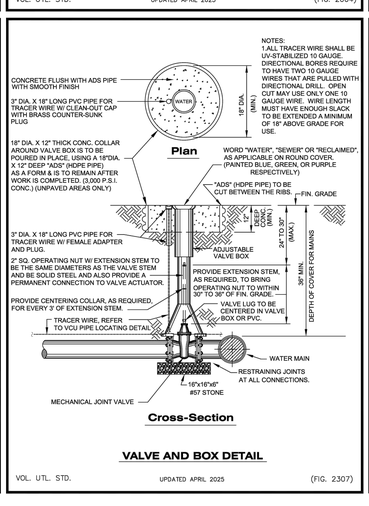
1. FIRE HYDRANT TO BE LOCATED 5' TO 10' FROM EDGE OF PAVEMENT.
2. VALVE BOX SHALL BE SCREW TYPE ADJUSTABLE AND COVER SHALL BE MARKED: WATER.
3. FIRE HYDRANTS CANNOT BE LOCATED WITHIN THE RADIUS OF STREET CORNERS.
4. ABOVE GROUND OBSTRUCTIONS MAY BE LOCATED NO CLOSER THAN 3' FROM FIRE HYDRANTS.
5. FIRE HYDRANT SHALL BE SUPPLIED WITHOUT WEEP HOLE, OR WITH A PERMANENTLY PLUGGED WEEP HOLE.
6. FIRE HYDRANT SHALL COMPLY VOLUSIA COUNTY SPECIFICATIONS, APPENDIX A, LIST OF APPROVED MANUFACTURERS AND MATERIALS.
7. ALL FIRE HYDRANT PIPING SHALL BE RESTRAINED BY MEGA-LUGS.
8. LOCATE WIRE AND LOCATE TAPE SHALL BE INSTALLED ON ALL PIPES.
9. A BLUE REFLECTOR SHALL BE INSTALLED ON THE PAVEMENT ADJACENT TO THE FIRE HYDRANT.

FIRE HYDRANT ASSEMBLY DETAIL

N.T.S.

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2306)

NOTES:
1. ALL TRACER WIRE SHALL BE UV-STABILIZED 10 GAUGE. DIRECTIONAL BORES REQUIRE TO HAVE TWO 10 GAUGE WIRES THAT ARE PULLED WITH DIRECTIONAL DRILL. OPEN CUT MAY USE ONLY ONE 10 GAUGE WIRE. WIRE LENGTH MUST HAVE ENOUGH SLACK TO BE EXTENDED A MINIMUM OF 18" ABOVE GRADE FOR USE.



Cross-Section

VALVE AND BOX DETAIL

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2307)

SEPARATION REQUIREMENTS:

1. A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET OUTSIDE SHALL BE MAINTAINED BETWEEN WATER MAINS AND SANITARY GRAVITY SEWER OR STORM SEWER LINES. (SEE DETAIL"A")
2. A MINIMUM HORIZONTAL SEPARATION OF THREE (3) FEET OUTSIDE TO OUTSIDE SHALL BE MAINTAINED BETWEEN WATER MAINS AND RECLAIMED WATER LINES CARRYING UNRESTRICTED PUBLIC ACCESS REUSE WATER OR WELL SUPPLY MAINS.
3. THERE SHALL BE AT LEAST A TEN (10) FOOT SEPARATION BETWEEN NEW WATER MAINS AND NEW SANITARY SEWER FORCE MAINS WITHOUT EXCEPTION. FIELD PROBLEMS SHALL BE REPORTED TO THE ENGINEER. SPECIAL SOLUTIONS MUST BE ACCEPTED BY D.E.P. PRIOR TO IMPLEMENTATION.
4. A MINIMUM VERTICAL SEPARTION OF EIGHTEEN (18) INCHES OUTSIDE TO OUTSIDE SHALL BE MAINTAINED BETWEEN WATER MAIN AND THE HAZARD LINES (I.E. SANITARY GRAVITY SEWER, STORM SEWER OR RECLAIMED WATER LINES) ONE FULL LENGTH OF PIPE SHALL BE CENTERED AT THE POINTOF CROSSING FOR BOTH PIPES.
5. THERE SHALL BE AN EIGHTEEN (18) INCH VERTICAL SEPARATION BETWEEN NEW WATER MAINS AND NEW SANITARY SEWER FORCE MAINS AT CROSSING WITHOUT EXCEPTION. WHERE IT IS NOT POSSIBLE TO MAINTAIN THE REQUIRED SEPARATION, CONFLICTS WITH EXISTING LINES SHALL BE REPORTED TO THE ENGINEER, SPECIAL SOLUTIONS MUST BE ACCEPTED BY D.E.P. PRIOR TO IMPLEMENTATION. AT PIPE CROSSINGS,THE PIPES SHALL BE SITUATED SUCH THAT THE JOINTS ARE AS FAR AS POSSIBLE FROM EACH OTHER.
6. NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SANITARY SEWER MANHOLE OR STORM SEWER STRUCTURE.

SOLUTIONS TO SEPARATION CONFLICTS

1. IN AREAS WHERE IT IS NOT PRACTICAL TO MAINTAIN THE REQUIRED SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SANITARY GRAVITY SEWER, STORM SEWER OR RECLAIMED WATER LINE AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE OTHER LINE. (SEE DETAIL"B")
2. IF THE MINIMUM ALLOWABLE (10') HORIZONTAL SEPARATION OR 18" VERTICAL IN A SEPARATE TRENCH CANNOT BE MAINTAINED, UPGRADE THE WATER MAIN TO DUCTILE IRON IF THE OTHER LINE IS A STORM SEWER OR AN EXISTING SANITARY GRAVITY SEWER.
3. IF THE NON-CONFORMING LINE IS A NEW GRAVITY SANITARY SEWER, AND 10' HORIZONTAL SEPARATION OR 18" VERTICAL SEPARATION IN A SEPARATE TRENCH CANNOT BE MAINTAINED, THEN
   A. PLACE THE HAZARD LINE WITHIN A CONCRETE SEALED PVC SDR 35 CARRIER PIPE. (SEE DETAIL"C")
   B. ENCASE THE HAZARD PIPE IN CONCRETE ENCASEMENT. DETAIL THIS SHEET
   C. UPGRADE THE NEW GRAVITY SANITARY SEWER TO AWWA C-900, DR. 18 PVC AND HYDROSTATICALLY TEST IT TO 150 PSI AT PIPE. CROSSINGS, THE PIPES SHALL BE SITUATED SUCH THAT THE JOINTS ARE AS FAR AS POSSIBLE FROM EACH OTHER.
4. IF THE HAZARD LINE IS A RECLAIMED WATER LINE AND THE ABOVE SEPARATION REQUIREMENTS ARE NOT MET, UPGRADE THE RECLAIMED WATER LINE MATERIAL TO DUCTILE IRON OR ENCASED PIPE IN CONCRETE.
5. WHEN THERE IS LESS THAN 18" OF VERTICAL CLEARANCE BETWEEN THE WATER MAIN AND STORM SEWER, AT THE POINT OF CROSSING (SEE DETAIL"D").
6. WHEN THE WATER MAIN CROSSES BELOW THE HAZARD LINE, THE WATER MAIN SHALL HAVE A MINIMUM VERTICAL SEPARATION OF 18" FROM THE HAZARD LINE. ONE FULL LENGTH OF PIPE SHALL BE CENTERED AT THE POINT OF CROSSING (FOR BOTH PIPES WHEN CROSSING SANITARY SEWER). (SEE DETAIL"E")
7. SPECIAL STRUCTURAL SUPPORT OR CONCRETE SADDLES MAY BE NECESSARY AT THE CROSSING LOCATION.
8. IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE CROSSING HAZARD. RECEIVE SPECIFIC APPROVAL BY D.E.P. PRIOR TO IMPLEMENTATION.

WATER MAIN SEPARATION NOTES

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2311)

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

VOLUSIA COUNTY DETAILS AND NOTES

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN PERMISSION OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

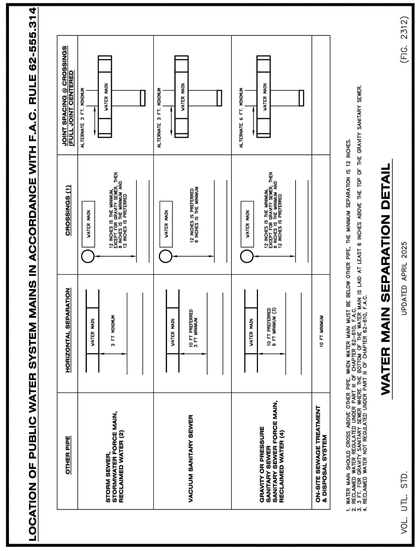
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

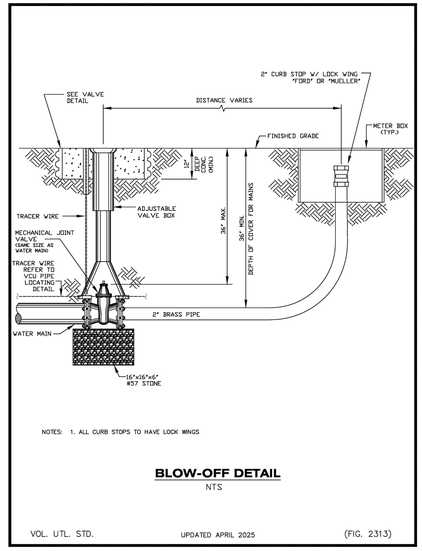
C-79



WATER MAIN SEPARATION DETAIL (FIG. 2312)

UPDATED APRIL 2025

VOL. UTL. STD.



NOTES: 1. ALL CURB STOPS TO HAVE LOCK WINGS

BLOW-OFF DETAIL

NTS

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2313)

Revised 1/1/2024

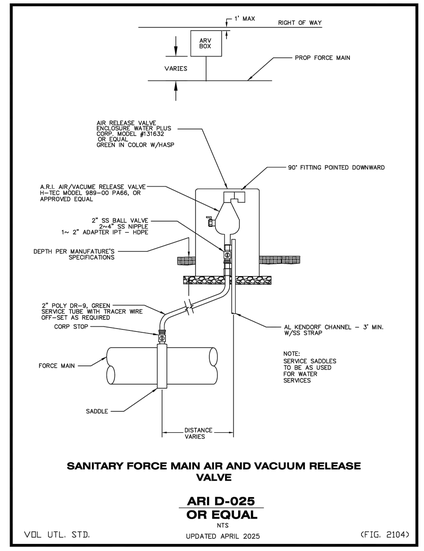
UTILITY RECORD DRAWING REQUIREMENTS

The DEVELOPER'S ENGINEER shall submit a certified set of Record Drawings to the COUNTY prior to issuance of Certificate of Completion for the improvements. The DEVELOPER'S ENGINEER shall be responsible for recording information on the approved PLANS concurrently with construction progress. Record Drawings submitted to the COUNTY as part of the project acceptance shall comply with the following requirements:

1. Drawings shall be legible marked to record actual construction.
2. Drawings shall show actual location of all underground and above ground water and wastewater piping related appurtenances. All changes to piping location including horizontal and vertical locations of utilities and appurtenances shall be clearly shown and referenced to permanent surface improvements. Drawings shall also show actual installed pipe material, class, etc.
3. Drawings shall clearly show all field changes of dimension and detail including changes made by field order or by change order.
4. Drawings shall clearly show all details not on original contract drawings but constructed in the field. All equipment and piping relocation shall be clearly shown.
5. At each manhole, fitting, hydrant, service line at yoke, valve, and valve box location, provide an item callout with type, size, material, invert, grade elevation, GPS point, etc. Dimensions between each manhole shall be field verified and provided on the respective plan sheet. Each manhole, valve, service line at yoke, and fire hydrant shall be marked on the record drawing with GPS coordinates in the item callout. Additionally, a separate electronic spreadsheet file shall be submitted to include each item description and size with GPS coordinate. This data will be referenced in the Florida State Plane Coordinate System, East Zone in US Survey Feet. The horizontal datum is NAD83/(1990) HARN and the vertical datum is NAVD 88 Feet, in accordance with Florida Statutes, Chapter 177.151.

Each sheet of the PLANS shall be signed, sealed and dated by the DEVELOPER'S ENGINEER as being "Record Drawings". Construction PLANS simply stamped "As-Builts" or "Record Drawings" and lacking in above requirements will not be accepted, and will be returned to the DEVELOPER'S ENGINEER. The "Certificate of Completion" will not be issued until correct "Record Drawings" have been submitted.

Two (2) blueline prints and a digital file containing a complete set of "Record Drawing" as accepted by the COUNTY along with digital copies of all permits and clearances shall be provided. Digital documents shall be .dwg (AutoCAD) and a digitally signed and sealed PDF file.

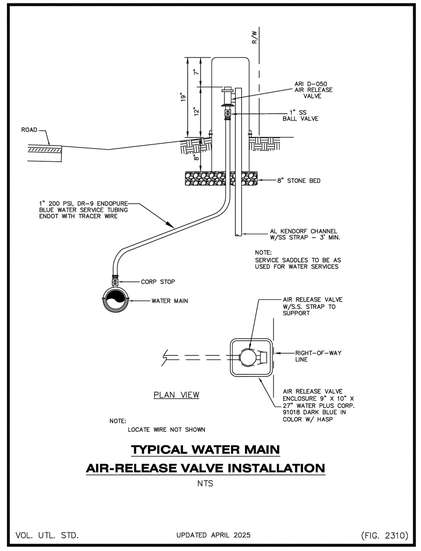


SANITARY FORCE MAIN AIR AND VACUUM RELEASE VALVE

ARI D-025 OR EQUAL

NTS

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2104)



TYPICAL WATER MAIN AIR-RELEASE VALVE INSTALLATION

NTS

VOL. UTL. STD. UPDATED APRIL 2025 (FIG. 2310)

PIPE JOINT RESTRAINT TABULATION
(ALL RESTRAINT JOINT LENGTHS SHOWN ARE IN FEET)
SOURCE: EBAA RESTRAINT JOINT CALCULATOR v7.1.2

HORIZONTAL BENDS
EVERY JOINT WITHIN THE LENGTH SPECIFIED BELOW (IN FEET) SHALL BE RESTRAINED ON BOTH SIDES OF THE FITTING

PIPE SIZE AND TYPE	90 Deg.	45 Deg.	22.5 Deg.	11.25 Deg.	DEAD ENDS
3" PVC	17	7	4	2	36
4" PVC	18	8	4	2	39
6" PVC	25	11	5	3	55
8" PVC	33	14	7	4	72
10" PVC	39	16	8	4	87
12" PVC	45	19	9	5	102
14" PVC	52	22	11	6	119
16" PVC	57	24	12	6	131
18" PVC	63	26	13	7	145
20" PVC	68	29	14	7	159
24" PVC	79	33	16	8	185

SMALLER PIPE SIZE		3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
REDUCER (LARGER PIPE RESTRAINT)	3"	-	-	-	-	-	-	-	-	-	-
	4"	13	-	-	-	-	-	-	-	-	-
	6"	37	29	-	-	-	-	-	-	-	-
	8"	59	52	31	-	-	-	-	-	-	-
	10"	76	71	53	29	-	-	-	-	-	-
	12"	93	89	74	54	30	-	-	-	-	-
	14"	111	107	95	78	57	31	-	-	-	-
	16"	124	121	111	96	78	56	30	-	-	-
	18"	139	136	127	114	98	79	56	30	-	-
	20"	154	151	143	131	117	100	79	56	30	-

BRANCH SIZE →		3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
TEE (BRANCH RESTRAINT)	3"	18	-	-	-	-	-	-	-	-	-
	4"	12	21	-	-	-	-	-	-	-	-
	6"	1	12	37	-	-	-	-	-	-	-
	8"	1	3	31	54	-	-	-	-	-	-
	10"	1	1	24	49	68	-	-	-	-	-
	12"	1	1	18	44	64	83	-	-	-	-
	14"	1	1	11	39	60	80	100	-	-	-
	16"	1	1	3	33	55	76	96	112	-	-
	18"	1	1	1	27	50	72	93	109	125	-
	20"	1	1	1	21	45	68	89	106	122	139

NOTES :
1. TEST PRESSURE=150 PSI, SOIL GROUP=SM, TRENCH TYPE=3, DEPTH=3, SAFETY FACTOR=1.5; ACTUAL FIELD CONDITIONS MAY VARY
2. RESTRAINED LENGTHS FOR VERTICAL OFFSETS MUST BE INDIVIDUALLY CALCULATED.
3. MINIMUM PIPE LENGTH ALONG TEE RUN=5FEET OR LARGER.
4. ALWAYS ROUND UP PARTIAL LENGTHS TO THE NEXT PIPE JOINT.
5. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
6. ALL VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 150 PSI TEST PRESSURE IN EITHER DIRECTION.
7. IF THE TEE BRANCH DIAMETER IS LARGER THAN THE RUN DIAMETER, THE ENGINEER OF RECORD MUST SPECIFY THE RESTRAINT LENGTHS.
8. FOR HOT TAPS THE MAIN LINE SHALL BE RESTRAINED A MIN OF 20 FT IN EACH DIRECTION WITH BELL RESTRAINTS IF NOT RESTRAINED IN EXISTING STATE.

RESTRAINED JOINT TABLE FOR PVC PRESSURE PIPE

PIPE JOINT RESTRAINT TABULATION
(ALL RESTRAINT JOINT LENGTHS SHOWN ARE IN FEET)
SOURCE: EBAA RESTRAINT JOINT CALCULATOR v7.1.2

HORIZONTAL BENDS
EVERY JOINT WITHIN THE LENGTH SPECIFIED BELOW (IN FEET) SHALL BE RESTRAINED ON BOTH SIDES OF THE FITTING

PIPE SIZE AND TYPE	90 Deg.	45 Deg.	22.5 Deg.	11.25 Deg.	DEAD ENDS
3" PVC	12	5	3	2	21
4" PVC	15	6	3	2	25
6" PVC	20	9	4	2	36
8" PVC	26	11	6	3	46
10" PVC	31	13	7	4	56
12" PVC	36	15	8	4	65
14" PVC	41	17	9	4	74
16" PVC	46	19	10	5	84
18" PVC	50	21	10	5	92
20" PVC	55	23	11	6	101
24" PVC	63	27	13	7	118

SMALLER PIPE SIZE		3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
REDUCER (LARGER PIPE RESTRAINT)	3"	-	-	-	-	-	-	-	-	-	-
	4"	8	-	-	-	-	-	-	-	-	-
	6"	24	19	-	-	-	-	-	-	-	-
	8"	38	34	20	-	-	-	-	-	-	-
	10"	49	45	34	19	-	-	-	-	-	-
	12"	60	57	48	35	20	-	-	-	-	-
	14"	69	67	59	48	35	19	-	-	-	-
	16"	79	77	71	61	50	36	19	-	-	-
	18"	89	87	81	73	63	50	36	19	-	-
	20"	98	96	91	84	75	64	51	36	19	-

BRANCH SIZE →		3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
TEE (BRANCH RESTRAINT)	3"	10	-	-	-	-	-	-	-	-	-
	4"	7	14	-	-	-	-	-	-	-	-
	6"	1	8	24	-	-	-	-	-	-	-
	8"	1	2	20	35	-	-	-	-	-	-
	10"	1	1	16	31	43	-	-	-	-	-
	12"	1	1	11	28	41	53	-	-	-	-
	14"	1	1	7	25	38	51	62	-	-	-
	16"	1	1	2	21	35	48	60	71	-	-
	18"	1	1	1	17	32	46	58	69	80	-
	20"	1	1	1	13	29	43	56	67	78	88

NOTES :
1. TEST PRESSURE=150 PSI, SOIL GROUP=SM, TRENCH TYPE=3, DEPTH=3, SAFETY FACTOR = 1.5; ACTUAL FIELD CONDITIONS MAY VARY
2. RESTRAINED LENGTHS FOR VERTICAL OFFSETS MUST BE INDIVIDUALLY CALCULATED.
3. MINIMUM PIPE LENGTH ALONG TEE RUN=5FEET OR LARGER.
4. ALWAYS ROUND UP PARTIAL LENGTHS TO THE NEXT PIPE JOINT.
5. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
6. ALL VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 150 PSI TEST PRESSURE IN EITHER DIRECTION.
7. IF THE TEE BRANCH DIAMETER IS LARGER THAN THE RUN DIAMETER, THE ENGINEER OF RECORD MUST SPECIFY THE RESTRAINT LENGTHS.
8. FOR HOT TAPS THE MAIN LINE SHALL BE RESTRAINED A MIN OF 20 FT IN EACH DIRECTION WITH BELL RESTRAINTS IF NOT RESTRAINED IN EXISTING STATE.

RESTRAINED JOINT TABLE FOR D.I. PRESSURE PIPE

NEWKIRK ENGINEERING RESTRAINED JOINT TABLE DETAILS

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

VOLUSIA COUNTY
DETAILS AND NOTES
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

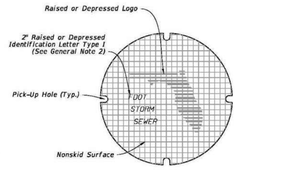
C-80

GENERAL NOTES:

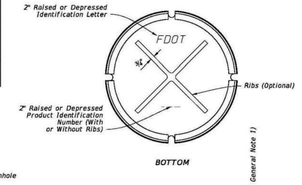
1. Use a 1-piece cover, unless the 2-piece cover is called for in the Plans, except at inlets and manholes with sump bottoms. Use the 2-piece cover when the sump depth exceeds 2', unless otherwise noted.
2. Include "Adjustable" on the cover for Type 1 manhole adjustable frames.
3. For square or rectangular precast drainage structures, use either deformed or smooth WWR meeting the requirements of Specification 931. WWR must be continuous around the box and lapped in accordance with Option 1 or 3 as shown in the Wall Reinforcing Splice Details.
4. Lap splice horizontal steel in the walls of rectangular structures in accordance with Option 1, 2 or 3 as shown in the Wall Reinforcing Splice Details.
5. Welding of splices and laps is permitted. Use AASHTO M259 requirements and restrictions on welds.
6. Rebar straight end embedment of peripheral reinforcement may be used in lieu of ACI standard hooks for top and bottom slabs, except when hooks are specifically called for in the Plans.
7. Precast opening for pipe must be the pipe OD plus 6" (± 2" tolerance). Use mortar to seal the pipe into the opening of such a mix that shrinkage will not cause leakage into or out of the structure. Dry-pack mortar may be used to seal openings less than 2½" wide.

TABLE OF CONTENTS:

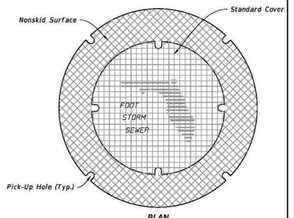
Sheet	Description
1	General Notes, Contents, Manhole Top Overview, and Manhole Covers
2	Manhole Frames and Manhole Tops
3	Inlet Locking Grates, Subgrade and Base Temporary Drains, and Pipe to Structure Geotextile Wrap
4	Drainage Structure Invert, Sump Bottom, Wall Reinforcing Splice Details, and Typical Slab to Wall Details
5	Precast Option and Equivalent Reinforcement substitution
6	Construction Joints and Minimum Box Riser Segment Dimensions
7	Skewed Pipe in Rectangular Structures
8	Miscellaneous Pipe Connection Details



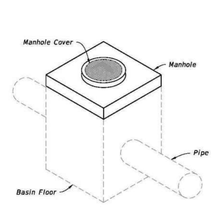
PLAN



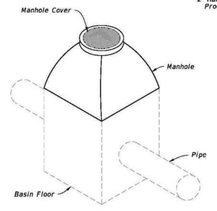
BOTTOM



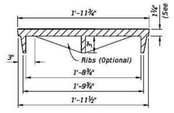
PLAN



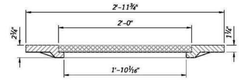
TYPE 7



TYPE 8



ELEVATION
1-PIECE COVER



ELEVATION
2-PIECE COVER

MANHOLE TOPS

MANHOLE COVERS

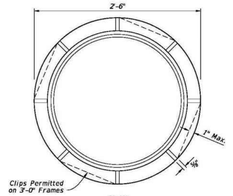
8/30/2024 11:29:27 AM

LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX	SHEET
11/01/23	REVISION				425-001	1 of 8

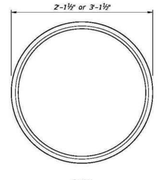
TABLE 1
WEIGHT OF CASTINGS (lb)

Frame Type	2'-0" OPENING Frame	2'-0" OPENING Cover (Std.)	3'-0" OPENING Frame	3'-0" OPENING 2-Piece Cover Inside	3'-0" OPENING 2-Piece Cover Outside	3'-0" OPENING 2-Piece Cover Total
I	155	190	220	190	220	410
II	145	190	255	190	220	410
III	90	190	180	190	220	410

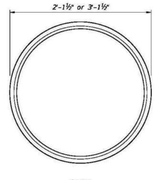
NOTE:
Frame Type I in Table 1, includes Adjustable frames.



PLAN

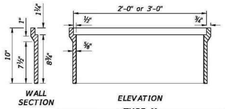


PLAN

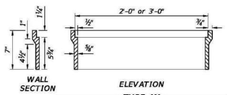


PLAN

ELEVATION
TYPE I
(For Manholes)

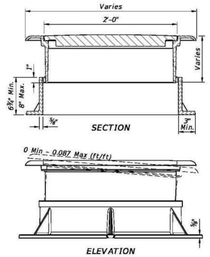


WALL SECTION
ELEVATION
TYPE II
(For Curb Inlets Types 1, 2, 3, & 4)

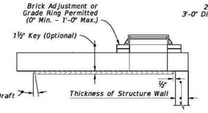


WALL SECTION
ELEVATION
TYPE III
(For Curb Inlets Types 7 & 8)

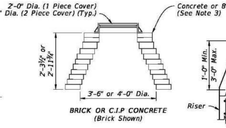
MANHOLE FRAMES

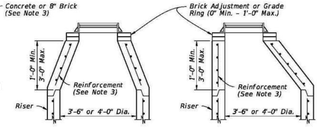


SECTION
ELEVATION
TYPE I ADJUSTABLE FRAME



TYPE 7





TYPE 8

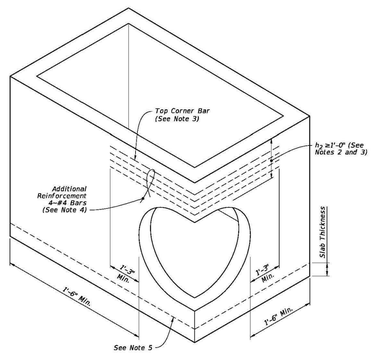
NOTES:
1. Use Class II concrete for Manhole top Type 7 slabs.
2. Manhole top Type 7 slabs may be of cast-in-place or precast construction. The optional key is for precast tops and in lieu of dowels. Omit frame and slab openings when top is used over a junction box.
3. Manhole top Type 8 may be of cast-in-place, precast concrete construction, or brick construction. For concrete construction, use the same concrete and steel reinforcement as the supporting wall unit. An eccentric cone may be used.
4. Use construction joint options, as shown on Sheet 6 to secure manhole tops to structures.
5. Frames may be adjusted to a maximum 12" height with brick or precast ASTM C478 grade rings.
6. Manhole top Type 8 may be substituted for a Type 7, if the minimum dimensions are not reduced.
7. Manhole top Type 7 may be substituted for Type 8, if the minimum thickness (h) above pipe opening cannot be maintained with Type 8.

MANHOLE TOPS

MANHOLE FRAMES AND MANHOLE TOPS

8/30/2024 11:28:34 AM

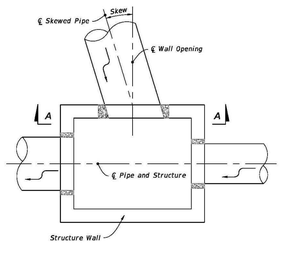
LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX	SHEET
11/01/20	REVISION				425-001	2 of 8



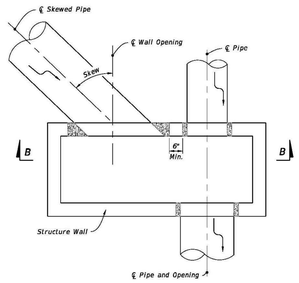
NOTES:

1. Submit Shop Drawings of corner openings for approval by the Engineer.
2. h_2 may be less than 1'-0" when a minimum 1'-0" deep segment, 8" slab or curb inlet is provided above the corner opening.
3. For inlet segments at finish grade elevation, substitute a #8 Bar for the top corner bar when $1'-0" \le h_2 < 2'-0"$.
4. Install bars continuously around corner and evenly spaced. Tie additional reinforcement to the outside of vertical wall reinforcement.
5. Dowel construction joint or monolithically cast wall and slabs.

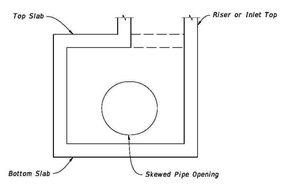
PIPE OPENING AT CORNER



PLAN

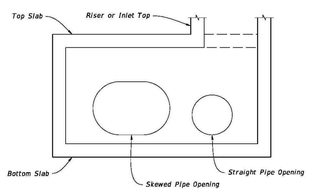


PLAN



SECTION A-A

SKEWS ≤ 45°
(Not Centered)



SECTION B-B

SKEWS > 45°
(Not Centered)

SKEWED PIPE IN RECTANGULAR STRUCTURES
(See Table 4 on Sheet 8)

SKEWED PIPE IN RECTANGULAR STRUCTURES

8/30/2024 11:29:13 AM

LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX	SHEET
11/01/20	REVISION				425-001	7 of 8

GENERAL NOTES:

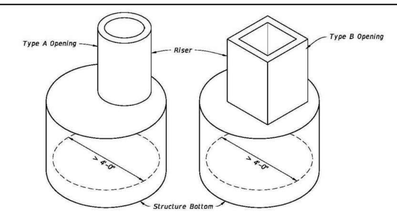
1. Work this Index with Specification 425 and Index 425-001.
2. Type P standard structure bottoms are 4'-0"diameter and smaller (Alt. A) and 3'-6" square (Alt. B) . Larger standard structure bottoms are designated Type J. Risers are permitted for all structures.
3. Walls of circular structures (Alt. A) constructed in place may be of brick or reinforced concrete. Construct precast and rectangular structures (Alt. B) with reinforced concrete only.
4. Wall thickness and reinforcement are for either reinforced cast-in-place or precast concrete units except that precast circular units may be furnished with walls in accordance with ASTM C478 (See Table 1).
5. Top and bottom slab thickness and reinforcement are for precast and cast-in-place construction. Use Class II concrete, except when Class IV concrete is shown in the Plans.
6. Alt. A or Alt. B structure bottoms may be used in conjunction with curb inlet tops Types 1, 2, 3, 4, 5, 6, 9, and 10, and any manhole or junction box. Alt. B structure bottoms may be used in conjunction with curb inlet Types 7 & 8, or any ditch bottom inlet.
7. Rectangular structures may be rotated as directed by the Engineer in order to facilitate connections between the structure walls and pipes.
8. Use straight embedment reinforcement in top and bottom slabs ,except when ACI hooks are specifically required.
9. Construct corner fillets as shown for rectangular structures used with circular risers and inlet throats, and when used on skew with rectangular risers, inlets, and inlet throats. Construct fillets in the top slab of the Alt. A structure bottoms when used with the Type B risers. Reinforce each fillet with two #5 bars.
10. Units larger than specified standards may be substituted at the contractor's option when these units will not cause or increase the severity of utility conflicts. Furnish such larger units at no additional cost to the Department. Larger Alt. A units cannot replace Alt. B units without approval of the Engineer. This Note applies to this Index only.

REINFORCEMENT NOTES:

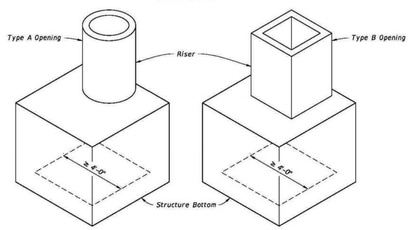
1. Locate wall reinforcement in rectangular structures as shown in the WALL REINFORCEMENT SPLICE DETAILS in Index 425-001.
2. Provide a minimum 2"clear cover for all reinforcement unless otherwise noted and except for 36"diameter ASTM C478 units.
3. Additional bars used to restrain hole formers for precast structures with grouted pipe connections may be left flush with the hole surface.
4. Cut or bend reinforcement at pipe openings to maintain cover.
5. Remove exposed ends of reinforcing at precast pipe openings and grouted joints to 1" below the concrete surface and seal with a Type F Epoxy meeting the requirements of Specification 926.
6. Equivalent area smooth or deformed welded wire reinforcement may be substituted in accordance with Index 425-001.

TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Dimensional and Reinforcing Details
3	Tables 1, 2, 3, and 4
4	Tables 5 and 6

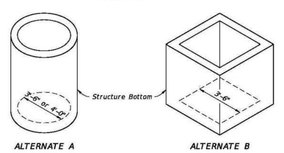


ALTERNATE A



ALTERNATE B

TYPE J



ALTERNATE A
ALTERNATE B

TYPE P

8/30/2024 11:29:52 AM

LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	STRUCTURE BOTTOMS TYPE J AND P	INDEX	SHEET
11/01/20	REVISION				425-010	1 of 4

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering, Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

FDOT DETAILS
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

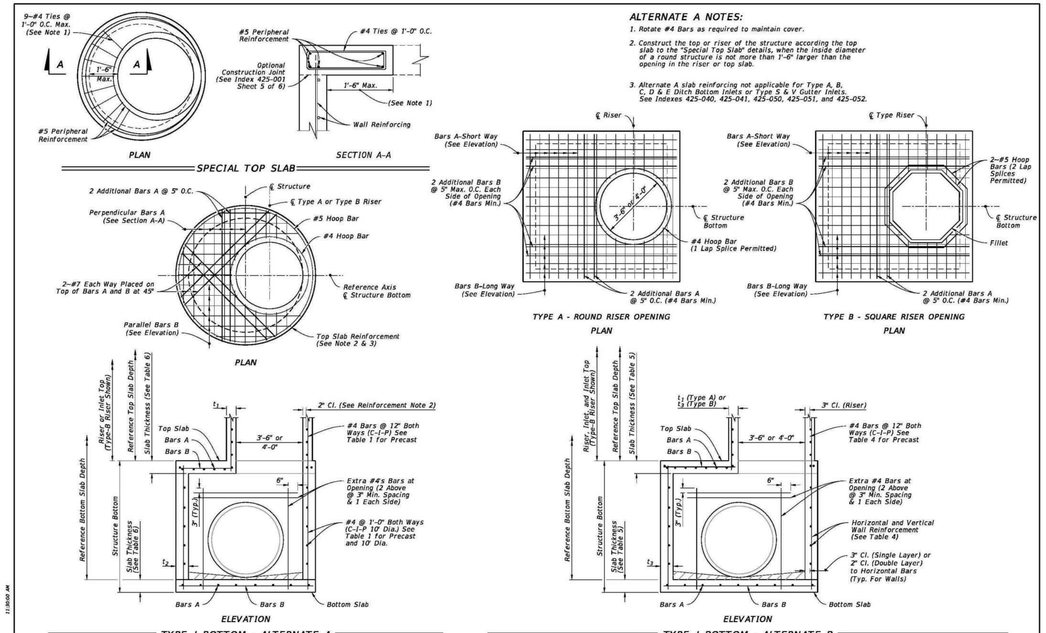
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

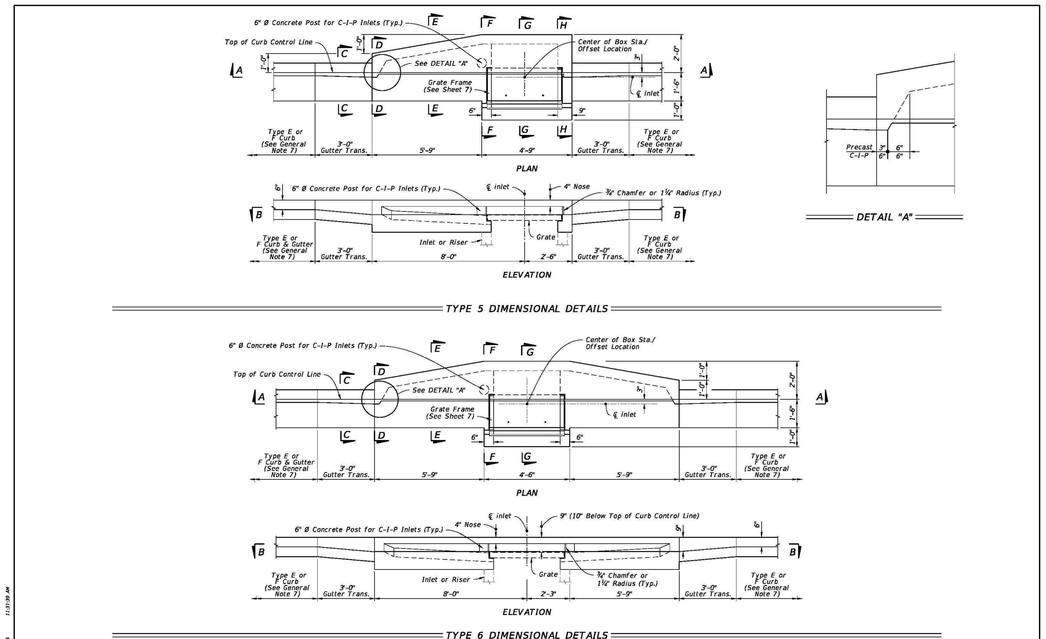
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

C-81



LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	STRUCTURE BOTTOMS TYPE J AND P	INDEX	SHEET
11/01/20					425-010	2 of 4



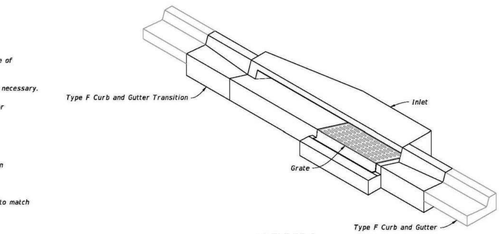
LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX	SHEET
11/01/20					425-021	2 of 7

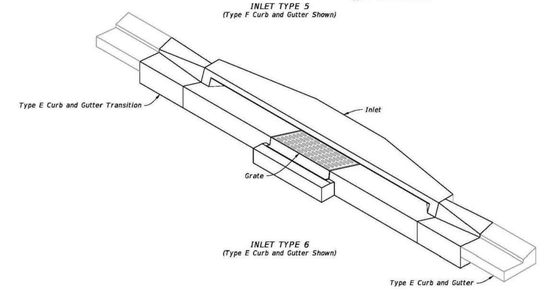
GENERAL NOTES:

1. Work this Index with Index 425-001 and Index 425-010.
2. Conform the finished grade and slope of the inlet tops with the finished cross slope and grade of the proposed sidewalk and/or border.
3. For inlets constructed on a curve, refer to the plans to determine the radius. Bend steel when necessary.
4. Use Grade 60 reinforcing bars with 1½" minimum cover unless otherwise shown, see Sheet 6 for equivalent area Welded Wire Reinforcement details.
5. Inlet tops may be either cast-in-place or precast concrete. Conform precast units to the dimensions shown or in accordance with approved shop drawings.
6. Corner fillets are required at inlet opening for precast units or C-I-P units used in conjunction with circular inlet bottoms or skewed rectangular inlet boxes. Finish top of fillets flush with drain throat bottom and match slope.
7. For Type E curb and gutter, transition the shape of the curb over the gutter transition length to match the face of the inlet (Type F1).
8. Meet the requirements of ASTM A36/A36M with steel used for frames and grates.
9. Use either cast iron grates or steel grates.

TABLE OF CONTENTS:

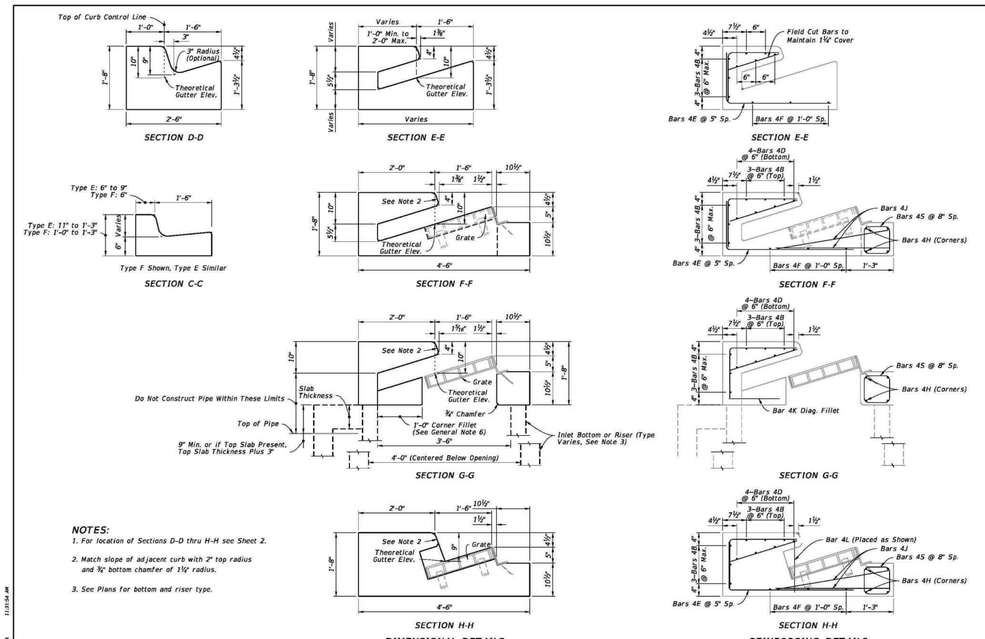
Sheet	Description
1	General Notes and Contents
2	Type 5 and 6 Dimensional Details
3	Type 5 and 6 Reinforcing and Bar Bending Details
4	Precast Dimensional and Reinforcing Details
5	Cast-in-Place Dimensional and Reinforcing Details
6	Alternate Welded Wire Reinforcing (WWR) Details
7	Grate, Anchor, and Grouting Details





CURB INLETS TOPS

LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX	SHEET
11/01/20					425-021	1 of 7



LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX	SHEET
11/01/20					425-021	4 of 7

REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

FDOT DETAILS
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

C-82

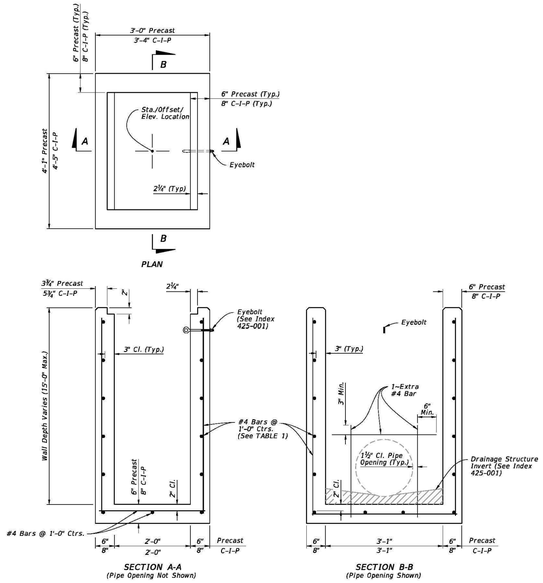


TABLE 1
HORIZONTAL WALL REINFORCING SCHEDULE

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING	
			BARS	WWF
0' - 15'	A12	0.20	12"	8"

NOTES:
1. Grate, Concrete Apron, and Sod not shown on structure detail.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.

LAST REVISION	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX	SHEET
11/01/20	REVISION			425-052	2 of 14

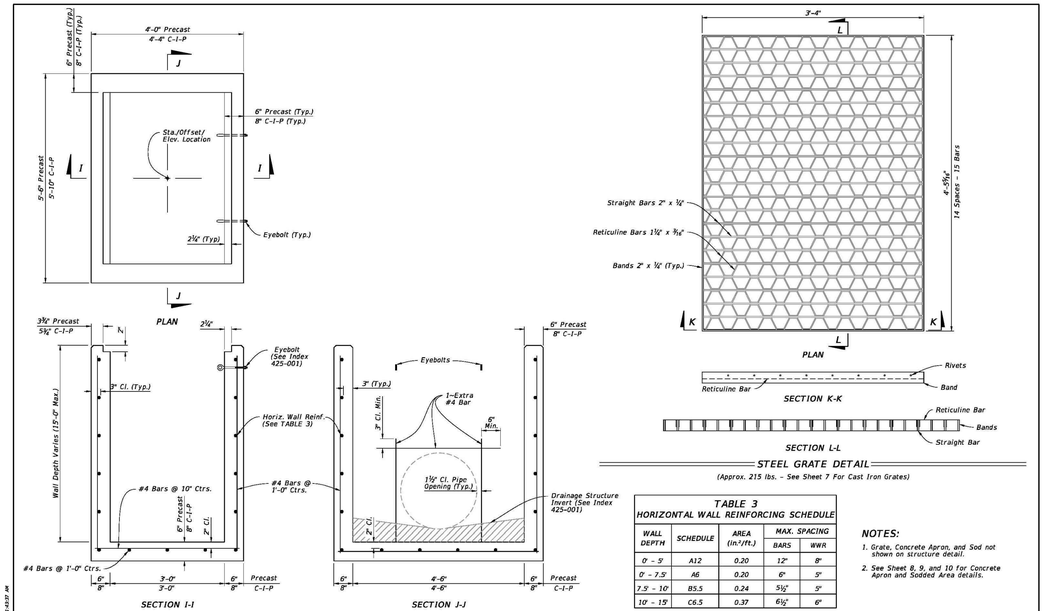


TABLE 3
HORIZONTAL WALL REINFORCING SCHEDULE

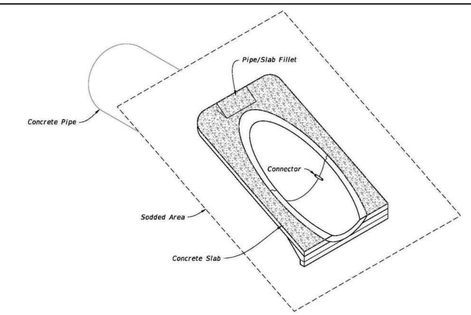
WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING	
			BARS	WWR
0' - 5'	A12	0.20	12"	8"
0' - 7.5'	A6	0.20	6"	5"
7.5' - 10'	B5.5	0.24	5½"	5"
10' - 15'	C6.5	0.37	6½"	6"

NOTES:
1. Grate, Concrete Apron, and Sod not shown on structure detail.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.

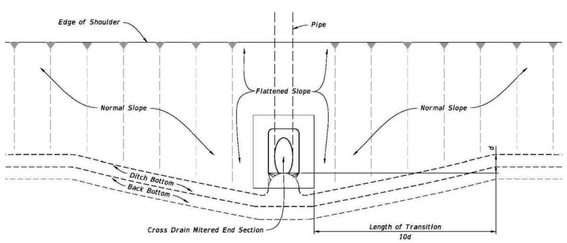
LAST REVISION	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX	SHEET
11/01/20	REVISION			425-052	4 of 14

GENERAL NOTES:

1. Unless otherwise designated in the plans, concrete pipe mitered end sections may be used with any type of cross drain pipe; corrugated steel pipe mitered end sections may be used with any type of cross drain pipe except aluminum pipe; and, corrugated aluminum mitered end sections may be used with any type of cross drain pipe except steel pipe. When bituminous coated metal pipe is specified for cross drain pipe, construct the mitered end sections with like pipe or concrete pipe. When the mitered end section pipe is dissimilar to the cross drain pipe, construct a concrete jacket in accordance with Index 430-001.
2. Use either corrugated metal or concrete mitered end sections for corrugated polyethylene pipe (HDPE), polyvinyl-chloride pipe (PVC), steel reinforced polyethylene pipe (SRPE), and polypropylene pipe (PP). When used in conjunction with corrugated mitered end sections, make connection using either a formed metal band specifically designated to join HDPE, PVC, SRPE, or PP pipe, with metal pipe. When used in conjunction with a concrete mitered end sections, construct concrete jacket in accordance with Index 430-001.
3. Class NS concrete cast-in-place reinforced slabs are required for all sizes of cross drain pipes. Construct slabs at 3½" thick, unless 3" thickness is called for in the Plans.
4. Select lengths of concrete pipe that avoid excessive connections in the assembly of the mitered end section.
5. Repair corrugated metal pipe galvanizing that is damaged during beveling and perforating.
6. When existing multiple cross drain pipes are spaced other than the dimensions shown in this Index, have nonparallel axes, or non-uniform sections, either construct the mitered end sections separately as single pipe or collectively as multiple pipe end sections as directed by the Engineer.
7. Saddle Slope:
   1:4 Miter - Slope to ℄ of pipe for round pipes less than or equal to 18" diameter and 1:1 for round pipes greater than or equal to 24" diameter.
   Slope to the major axis for elliptical pipes 24"x38" or smaller and 1:2 for pipes 29"x45" or larger.
   Slope to the span line for pipe arch 28"x20" or smaller and 1:2 for pipe arch 35"x24" or larger.
   1:2 Miter - Slope to ℄ of pipe for round pipes less than or equal to 18"diameter and 1:2 for round pipes greater than or equal to 24" diameter.
   Slope to the major axis for elliptical pipes 29"x45" or smaller and 1:1 for pipes 34"x53" or larger.
   Slope 1:1 for all pipe arch sizes.
8. Quantities shown are for estimating purposes only.



CROSS DRAIN MITERED END SECTION
(Concrete Pipe Shown, Corrugated Metal Pipe Similar)

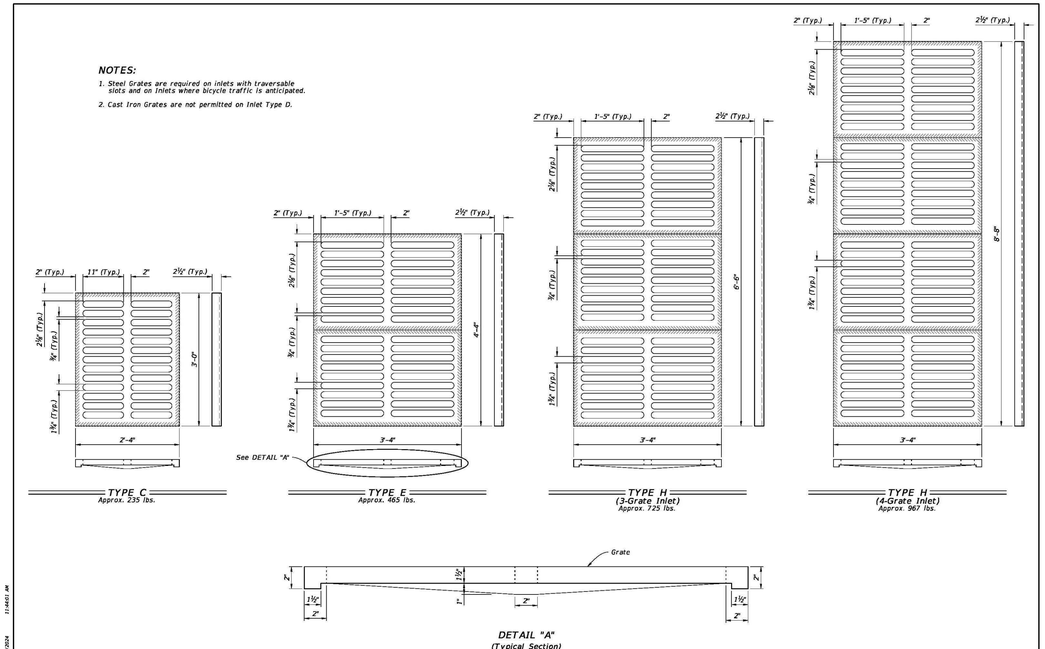


SLOPE AND DITCH TRANSITIONS

TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Single and Multiple Concrete Pipe
3	Concrete Pipe Dimensions and Quantities
4	Single and Multiple Corrugated Metal Pipe
5	Corrugated Metal Pipe Dimensions and Quantities
6	Concrete Pipe Connections and Corrugated Metal Pipe (CMP) Anchor Detail

LAST REVISION	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	INDEX	SHEET
11/01/19	REVISION			430-021	1 of 6



CAST IRON GRATE DETAILS

LAST REVISION	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX	SHEET
11/01/20	REVISION			425-052	7 of 14

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.NewkirkEngineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

FDOT DETAILS
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

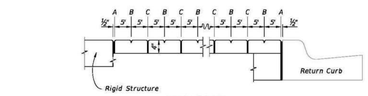
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

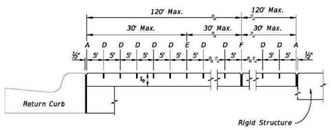
C-83

GENERAL NOTES:

1. Construct sidewalks in accordance with Specification 522. Use 6" concrete for Sidewalks and Curb Ramps Located within Curb Returns (See Plan View). Install all other concrete with thickness as shown, unless otherwise detailed in the Plans.
2. Include detectable warnings on sidewalk curb ramps in accordance with Index 522-002.
3. For Driveways see Index 522-003.
4. Bond breaker material can be any impermeable coated or sheet membrane or preformed material having a thickness of not less than 6 mils and not more than ½".
5. Construct sidewalks with Edge Beam through the limits of any surface mounted Pedestrian/Bicycle Railing or Pipe Guiderail shown in the plans. (See RAILING DETAIL)



OPEN JOINTS



SAWED JOINTS

LONGITUDINAL SECTION

LEGEND:

A- ½" Expansion Joints (Preformed Joint Filler) between the sidewalk and; driveways, sidewalk-intersections, and all other fixed objects (e.g. drainage inlets and utility poles).

B- ¼" Dummy Joints, Tooled

C- ¼" Formed Open Joints

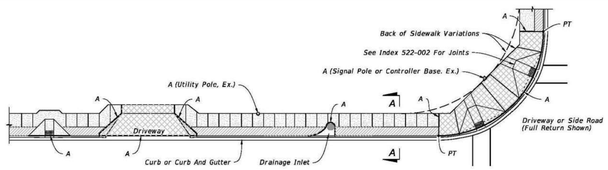
D- ¾" Saw Cut Joints, 1½" Deep (within 96 hours) Max. 5' Centers

E- ¾" Saw Cut Joints, 1½" Deep (within 12 hours) Max. 30' Centers Joint(s) Required When Length Exceeds 30'

F- ½" Expansion Joint When Run Of Sidewalk Exceeds 120'. Intermediate locations when called for in the plans or at locations as directed by the Engineer.

G- Cold Joint With Bond Breaker, Tooled

SIDEWALK JOINTS

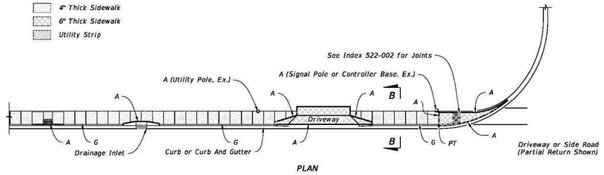


PLAN

SIDEWALK WITH UTILITY STRIP

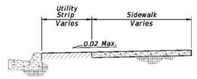
LEGEND:

4" Thick Sidewalk
6" Thick Sidewalk
Utility Strip



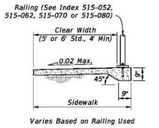
PLAN

SIDEWALK WITHOUT UTILITY STRIP



SECTION A-A

SECTION B-B



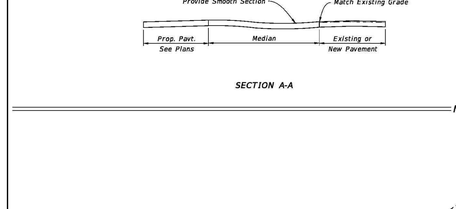
Varies Based on Railing Used

RAILING DETAIL

GENERAL NOTES AND CONCRETE SIDEWALK ON CURBED ROADWAYS

LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	INDEX	SHEET
11/01/18			CONCRETE SIDEWALK	522-001	1 of 2

OPEN JOINTS



SAWED JOINTS

LONGITUDINAL SECTION

LEGEND:

A- ½" Expansion Joints (Preformed Joint Filler) between the sidewalk and driveways, sidewalk-intersections, and all other fixed objects (e.g. drainage inlets and utility poles).

B- ¼" Dummy Joints, Tooled

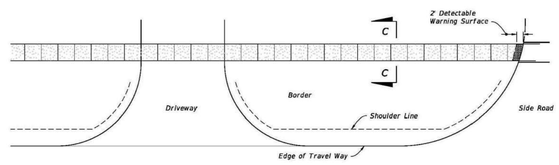
C- ¼" Formed Open Joints

D- ¾" Saw Cut Joints, 1½" Deep (within 96 hours) Max. 5' Centers

E- ¾" Saw Cut Joints, 1½" Deep (within 12 hours) Max. 30' Centers Joint(s) Required When Length Exceeds 30'

F- ½" Expansion Joint When Run Of Sidewalk Exceeds 120'. Intermediate locations when called for in the plans or at locations as directed by the Engineer.

SIDEWALK JOINTS

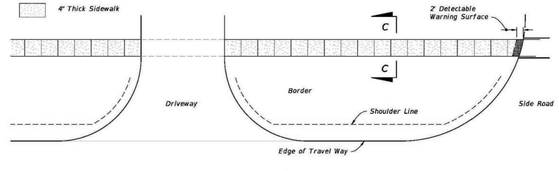


PLAN

CONTINUOUS SIDEWALK

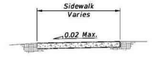
LEGEND:

4" Thick Sidewalk



PLAN

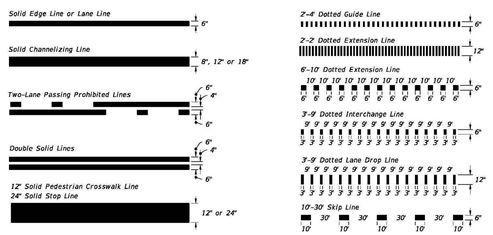
DISCONTINUOUS SIDEWALK



SECTION C-C

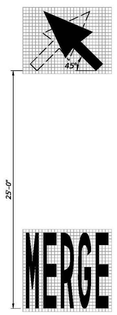
CONCRETE SIDEWALK ON FLUSH SHOULDER ROADWAYS

LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	INDEX	SHEET
11/01/18			CONCRETE SIDEWALK	522-001	2 of 2

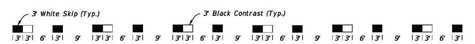


PAVEMENT MARKING LINES

10'-30' SKIP LINE WITH CONTRAST MARKINGS

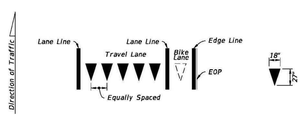


MARKINGS FOR MERGE



DOTTED LINE WITH ALTERNATING CONTRAST MARKINGS
(3'-9' Dotted Line Shown, Other Dotted Lines Similar)

LONGITUDINAL SOLID LANE LINE WITH CONTRAST MARKINGS
(Not For Use On Edge Lines)

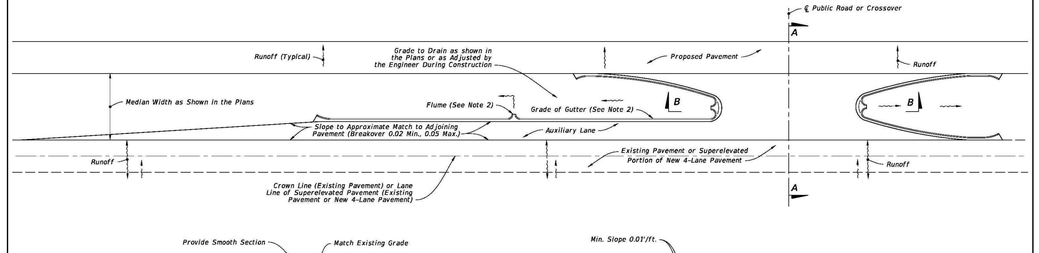


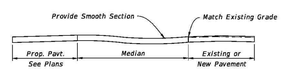
Yield Lines consist of five - 18" X 72" white triangles which face traffic. Equally space triangles within traffic lane. When a bike lane is present, add one additional triangle in the center of the bike lane.

YIELD LINES

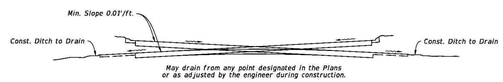
PAVEMENT MARKINGS

LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	INDEX	SHEET
11/01/22			PAVEMENT MARKINGS	711-001	2 of 13





SECTION A-A

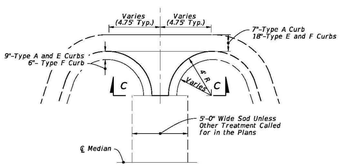


SECTION B-B

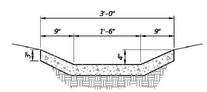
MEDIAN OPENING DETAIL

NOTES:

1. These details are to apply to projects which provide for the conversion of 2-lane sections to 4-lane divided highway sections and for superelevated sections of new 4-lane divided highways. Layout above is illustration only.
2. See Plans for flume length and location and grade of gutter. Flume locations may be adjusted by the Engineer during construction. If necessary to provide minimum gutter grade, warp surface of the median pavement within limits of the median curb or curb and gutter.



PLAN VIEW



SECTION CC

FLUME DETAIL

LAST REVISION	DESCRIPTION:	FDOT	FY 2025-26 STANDARD PLANS	INDEX	SHEET
11/01/21			MEDIAN OPENING FLUME	520-010	1 of 1

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.NewkirkEngineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering, Transportation, CEI & Landscape Architecture

NEWKIRK ENGINEERING INC.

FDOT DETAILS
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

C-84

GENERAL NOTES:

1. Cross Slopes and Grades:

   A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.

   B. Landings must have cross-slopes less than or equal to 0.02 in any direction.

   C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.

   D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.

2. Curb, Curb and Gutter and/or Sidewalk:

   A. Refer to Index 522-001 for concrete thickness and sidewalk details.

   B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.

   C. Width of Curb Ramp is 4'-0" minimum. Match sidewalk or Shared Use Path width as shown in the Plans.

3. Curb Ramp Alpha-Identification:

   A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.

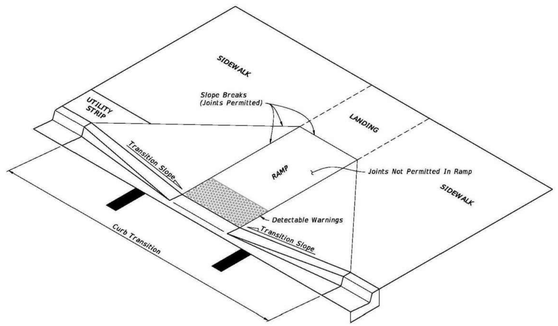
   B. Alpha-identifications CR-I and CR-J are intentionally omitted.

4. Detectable Warnings:

   A. Install detectable warnings in accordance with Specification 527.

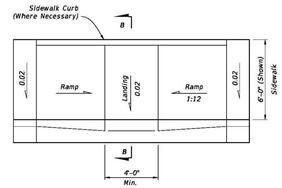
   B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.

   C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.



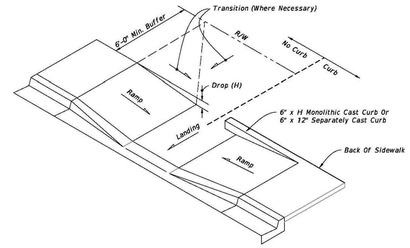
CURB RAMP NOMENCLATURE

LAST REVISION 11/01/21	DESCRIPTION:	FY 2025-26 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 1 of 7

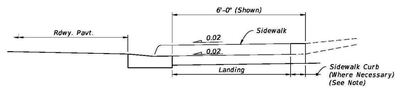


PLAN VIEW

CR-C

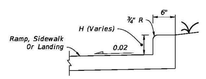


CONSTRUCTION OF SIDEWALK CURB IN CUT SECTIONS

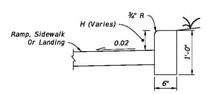


NOTE: For additional information on sidewalk curb construction, see SIDEWALK CURB OPTIONS details.

SECTION B-B



MONOLITHIC CAST CURB

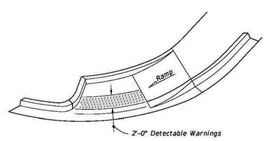


SEPARATELY CAST CURB

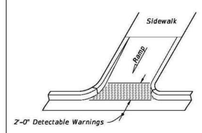
SIDEWALK CURB OPTIONS

SIDEWALK CURB RAMPS CR-C AND SIDEWALK CURB

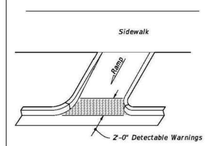
LAST REVISION 11/01/20	DESCRIPTION:	FY 2025-26 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 3 of 7



ISOMETRIC VIEW

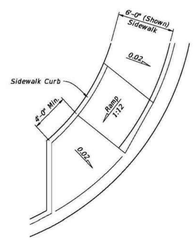


OPTION A



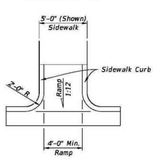
OPTION B

ISOMETRIC VIEW



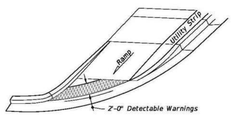
PLAN VIEW

CR-D

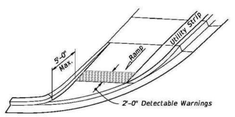


PLAN VIEW

CR-E

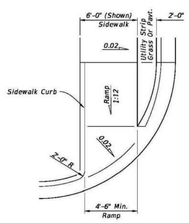


OPTION A



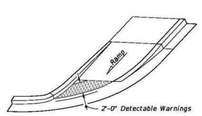
OPTION B

ISOMETRIC VIEW

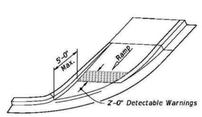


PLAN VIEW

CR-F

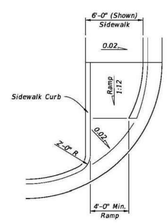


OPTION A



OPTION B

ISOMETRIC VIEW



PLAN VIEW

CR-G

SIDEWALK CURB RAMPS CR-D, CR-E, CR-F & CR-G

LAST REVISION 11/01/21	DESCRIPTION:	FY 2025-26 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 4 of 7

REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

FDOT DETAILS
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

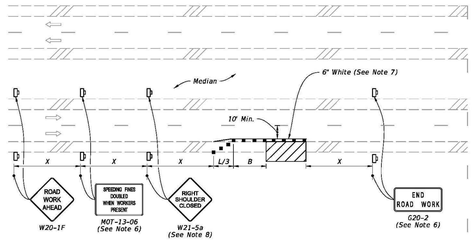
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

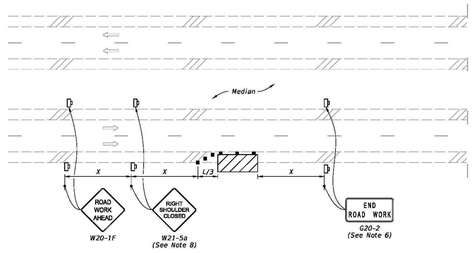
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

C-85



MULTILANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY WITH WORK ZONE SPEED OF 45 MPH OR LESS



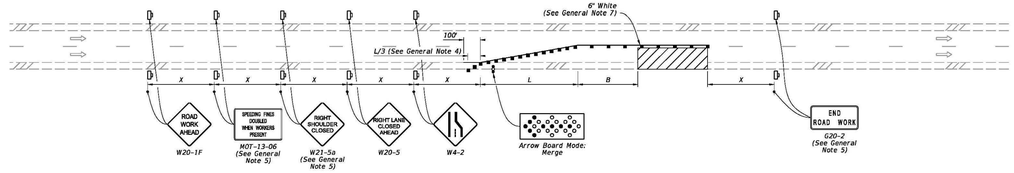
MULTILANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification and Direction of Traffic

8/16/2024 10:05:44 AM

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	TWO-LANE AND MULTILANE, WORK ON SHOULDER	INDEX 102-602	SHEET 2 of 2



SINGLE LANE CLOSURE

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Arrow Board
- Lane Identification and Direction of Traffic

GENERAL NOTE:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Distance
   See Index 102-600 for "L", "B", "X", and channelizing device spacing values.
2. On undivided highways the median signs as shown are to be omitted.
3. On limited access facilities, omit "Right Shoulder Closed" signs (W21-5a) and associated work zone sign spacing distances.
4. If the paved shoulder is less than 4' in width, omit the taper and channelizing devices from the paved shoulder.
5. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2) and "Right Shoulder Closed" (W21-5a), along with associated work zone sign distances, may be omitted when the work operation will be in place for 24 hours or less. For Single Lane Closures, arrow boards and buffer (B) may also be omitted when the work operation will be in place for 60 minutes or less and the speed limit is 45 mph or less.
6. Use inverted plan of the illustrations for work on left side of roadways.
7. Temporary pavement markings may be omitted when the work operation is in place for 3 days or less.

8/16/2024 11:05:30 AM

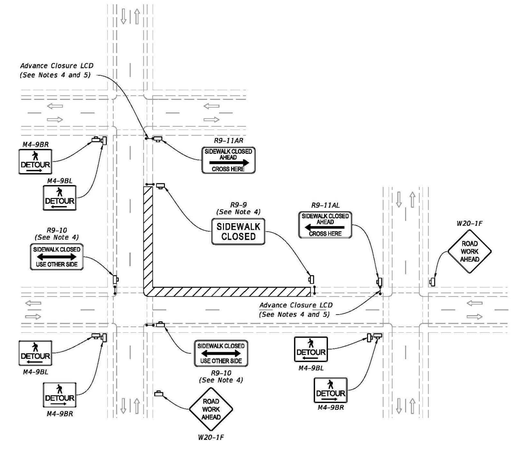
LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	MULTILANE ROADWAY, LANE CLOSURES	INDEX 102-613	SHEET 1 of 5

NOTES:

1. Cover or deactivate pedestrian traffic signal display(s) controlling closed crosswalks.
2. Place pedestrian LCDs across the full width of the closed sidewalk.
3. For post mounted signs located near or adjacent to a sidewalk, maintain a minimum 7' clearance from the bottom of the sign panel to the surface of the sidewalk.
4. "Sidewalk Closed" signs (R9-XX) may be mounted on pedestrian LCDs in accordance with the manufacturer's instructions.
5. Omit the Advance Closure LCD if it blocks access to other pedestrian facilities (e.g., transit stops, residences, or business entrances).

SYMBOLS:

- Work Area
- Work Zone Sign
- Pedestrian Longitudinal Channelizing Device (LCD)
- Lane Identification and Direction of Traffic



PEDESTRIAN DETOUR

8/16/2024 11:11:54 AM

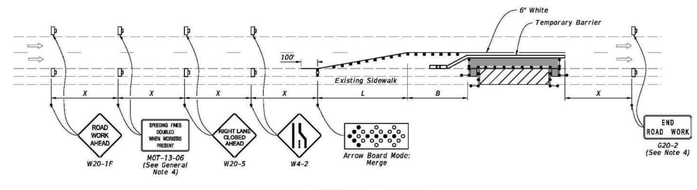
LAST REVISION 11/01/20	REVISION	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	SIDEWALK CLOSURE	INDEX 102-660	SHEET 1 of 2

NOTES:

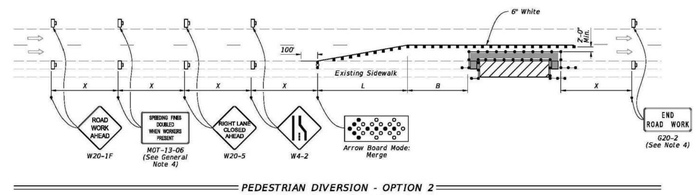
1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Distance
   See Index 102-600 for "L", "B", "X", channelizing device spacing values.
2. Provide a 5' wide temporary pedestrian way with a maximum cross-slope of 0.02, except where space restrictions warrant a minimum width of 4'. Provide a 5' x 5' passing space for temporary pedestrian ways less than 5' in width at intervals not to exceed 200'.
3. When temporary pedestrian ways require curb ramps, meet the requirements of Index 522-002. Detectable warnings are not required for curb ramps diverting pedestrian traffic into a closed lane.
4. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign distances, may be omitted when the work operation will be in place for 24 hours or less.
5. Pedestrian Diversion Option 2 may only be used when called for in the Plans or as approved by an Engineer.

SYMBOLS:

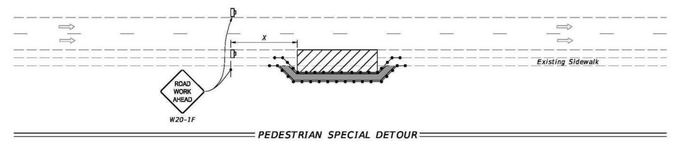
- Work Area
- Temporary Pedestrian Way
- Channelizing Device (See Index 102-600)
- Pedestrian Longitudinal Channelizing Device (LCD)
- Work Zone Sign
- Arrow Board
- Crash Cushion
- Lane Identification and Direction of Traffic



PEDESTRIAN DIVERSION - OPTION 1
(Temporary Barrier Shown, Low Profile Barrier Similar)



PEDESTRIAN DIVERSION - OPTION 2
(Work Zone Speed 45 mph or Less)



PEDESTRIAN SPECIAL DETOUR

8/16/2024 11:13:17 AM

LAST REVISION 11/01/23	REVISION	DESCRIPTION:	FDOT FY 2025-26 STANDARD PLANS	SIDEWALK CLOSURE	INDEX 102-660	SHEET 2 of 2

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

MAINTENANCE OF TRAFFIC
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

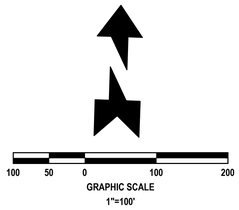
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	

DRAWING NUMBER

C-86

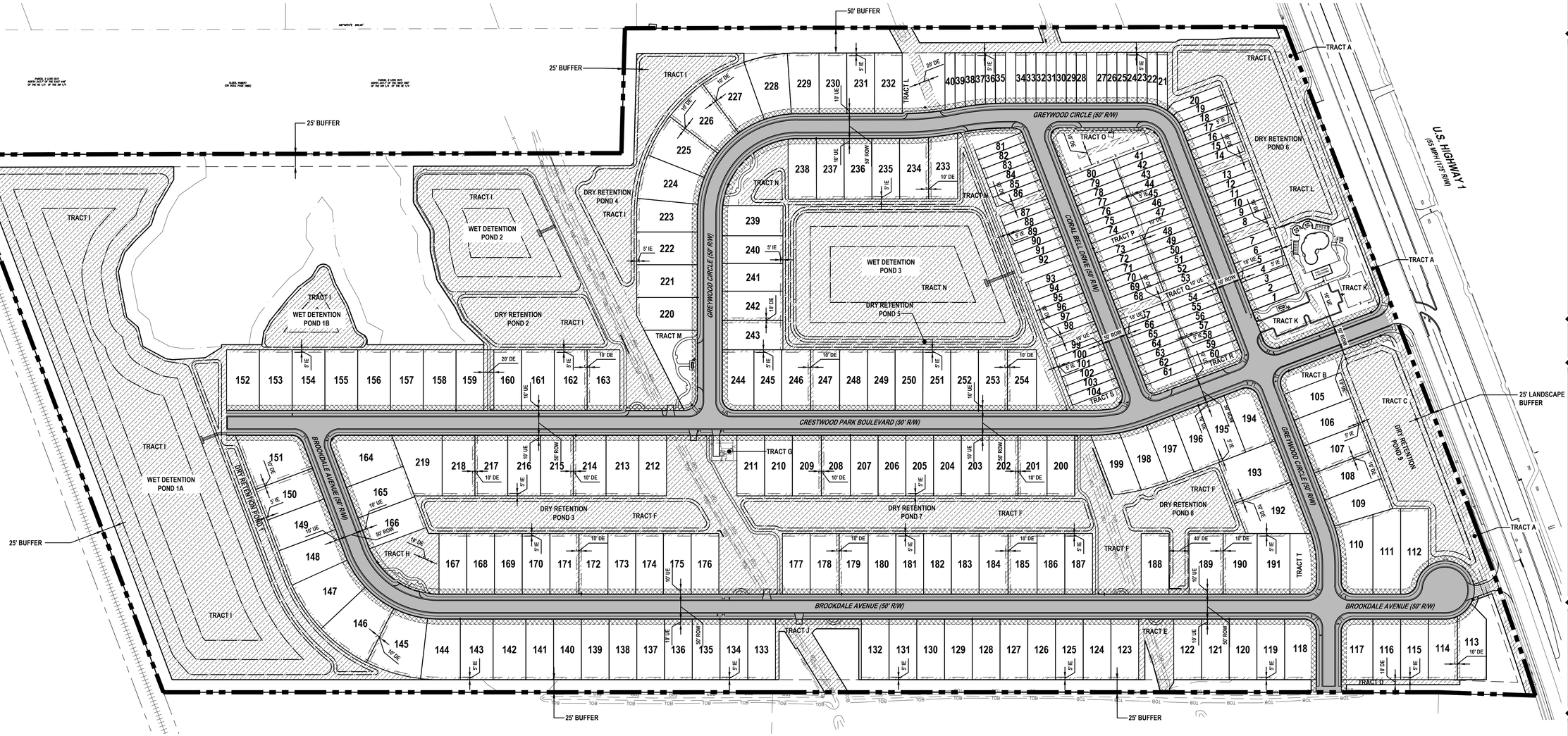


EASEMENT LEGEND:

- PROPOSED PUBLIC RIGHT-OF-WAY (ROW)
- PROPOSED ACCESS, DRAINAGE AND UTILITY EASEMENT (ADUE)
- PROPOSED UTILITY EASEMENT (UE)
- PROPOSED DRAINAGE EASEMENT (DE)
- PROPOSED HOA IRRIGATION EASEMENT (IE)
- EXISTING PERPETUAL RIGHT-OF-WAY EASEMENT

TRACT TABLE		
TRACT	DESCRIPTION	ACREAGE
TRACT A	RIGHT-OF-WAY DEDICATION	0.553
TRACT B	COMMON AREA	0.157
TRACT C	COMMON AREA / DRAINAGE EASEMENT	1.189
TRACT D	DRAINAGE EASEMENT	0.052
TRACT E	DRAINAGE EASEMENT	0.182
TRACT F	COMMON AREA / DRAINAGE EASEMENT	4.135
TRACT G	PUBLIC LIFT STATION	0.057
TRACT H	COMMON AREA / DRAINAGE EASEMENT	0.277
TRACT I	COMMON AREA / DRAINAGE EASEMENT	11.774
TRACT J	CONSERVATION EASEMENT	0.233
TRACT K	DRAINAGE EASEMENT	0.888
TRACT L	COMMON AREA / DRAINAGE EASEMENT	2.221
TRACT M	COMMON AREA	0.236
TRACT N	COMMON AREA / DRAINAGE EASEMENT	4.027
TRACT O	COMMON AREA / DRAINAGE EASEMENT	0.303
TRACT P	COMMON AREA / DRAINAGE EASEMENT	0.094
TRACT Q	COMMON AREA / DRAINAGE EASEMENT	0.094
TRACT R	COMMON AREA	0.112
TRACT S	COMMON AREA	0.059
TRACT T	COMMON AREA	0.099
	TOTAL	26.742

SEE SHEET 88 FOR CONSERVATION EASEMENTS



REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

EASEMENT PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

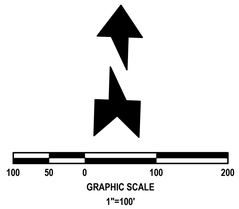
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-87



EASEMENT LEGEND:

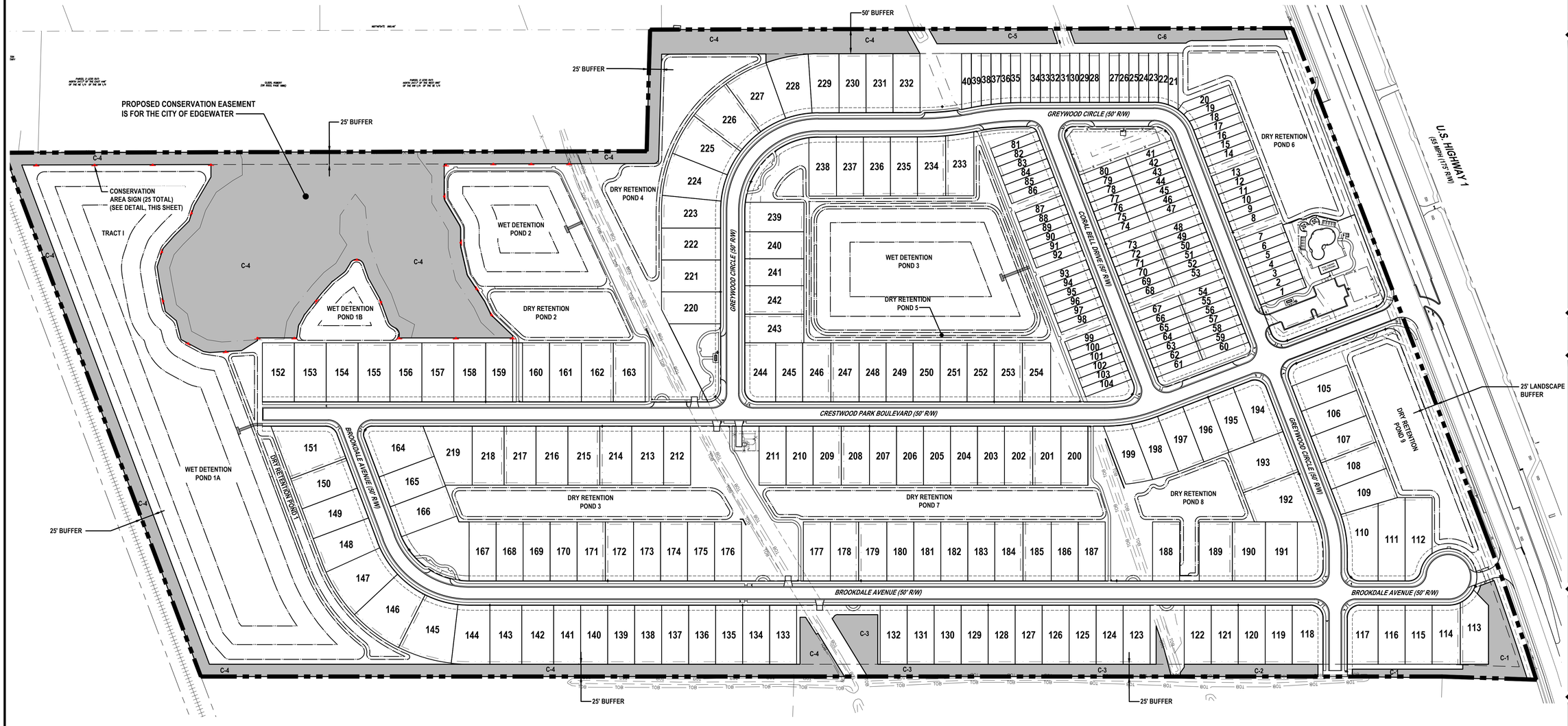
PROPOSED CONSERVATION EASEMENT (CE) IS FOR THE CITY OF EDGEWATER

CONSERVATION EASEMENT TABLE		
EASEMENT	DESCRIPTION	ACREAGE
C-1	CONSERVATION	0.347
C-2	CONSERVATION	0.159
C-3	CONSERVATION	0.535
C-4	CONSERVATION	7.374
C-5	CONSERVATION	0.172
C-6	CONSERVATION	0.270
TOTAL		8.857

SEE PLAN FOR LOCATIONS, SPACE AT 100' O.C.

CONSERVATION EASEMENT SIGN

NOT TO SCALE



REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
8/21/25	SJRWMD COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

CONSERVATION EASEMENT PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-88

100 50 0 100 200

GRAPHIC SCALE
1"=100'

LEGEND

- SURFACE WATER IMPACTS (EXISTING DITCHES)
- WETLAND IMPACT AREA
- WETLAND PRESERVATION AREA
- UPLAND BUFFER PRESERVATION AREA

WETLAND IMPACT AREAS		
	SF	ACRE
IMPACT AREA 1	123,970	2.846
IMPACT AREA 2	3,674	0.084
IMPACT AREA 3	11,995	0.275
IMPACT AREA 4	47,880	1.099
IMPACT AREA 5	21,509	0.494
IMPACT AREA 6	2,247	0.052
IMPACT AREA 7	6,634	0.152
TOTAL IMPACTS	**217,909**	**5.003**

WETLAND PRESERVATION AREAS		
	SF	ACRE
PRESERVATION AREA 1	158,392	3.636
TOTAL PRESERVATION AREA	**158,392**	**3.636**

UPLAND BUFFER PRESERVATION AREAS		
	SF	ACRE
PRESERVATION AREA 1	2,560	0.059
PRESERVATION AREA 2	4,772	0.110
PRESERVATION AREA 3	842	0.019
TOTAL PRESERVATION AREA	**8174**	**0.188**

SURFACE WATER IMPACTS				
	AREA SF	AREA ACRE	IMPACT SF	IMPACT ACRE
SURFACE WATER 1	23,245	0.534	4,341	0.100
SURFACE WATER 2	31,095	0.714	20,392	0.468
SURFACE WATER 3	17,023	0.391	16,324	0.375
TOTAL	**71,363**	**1.638**	**41,057**	**0.943**

	SF	ACRE	%
SURFACE WATER IMPACT	41,057	0.943	57.5%
SURFACE WATER NO IMPACT	30,306	0.696	42.5%
TOTAL SURFACE WATER	71,363	1.638	100.0%

UPLAND BUFFER PRESERVATION AREA 1
WETLAND PRESERVATION AREA 1
UPLAND BUFFER PRESERVATION AREA 2
UPLAND BUFFER PRESERVATION AREA 3
WETLAND IMPACT AREA 1
WETLAND IMPACT AREA 2
WETLAND IMPACT AREA 3
WETLAND IMPACT AREA 4
WETLAND IMPACT AREA 5
WETLAND IMPACT AREA 6
WETLAND IMPACT AREA 7
SURFACE WATER 1 (DITCH) IMPACT AREA
SURFACE WATER 2 (DITCH) IMPACT AREA
SURFACE WATER 3 (DITCH) IMPACT AREA
GREYWOOD CIRCLE
CRESTWOOD PARK BOULEVARD
BROOKDALE AVENUE
CORAL BELL DRIVE
U.S. HIGHWAY 1 (55 MPH (175' R/W))

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
9/26/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

WETLAND IMPACT PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

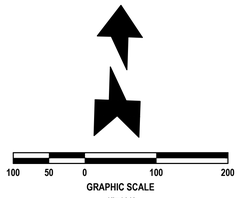
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-89

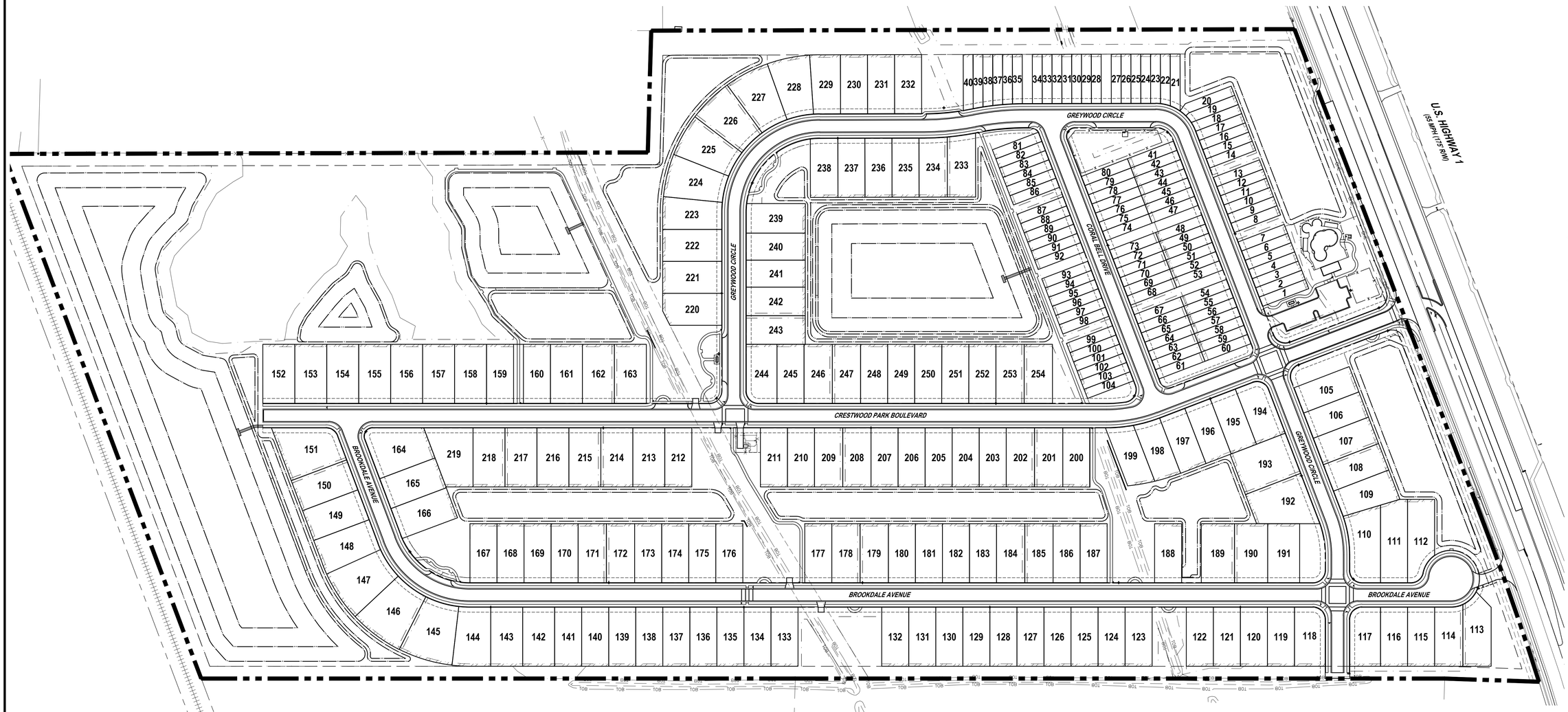


LOT NUMBERS	SQUARE FEET	TREES REQUIRED	LOT TREES PROVIDED	LOT NUMBERS	SQUARE FEET	TREES REQUIRED	LOT TREES PROVIDED	LOT NUMBERS	SQUARE FEET	TREES REQUIRED	LOT TREES PROVIDED	LOT NUMBERS	SQUARE FEET	TREES REQUIRED	LOT TREES PROVIDED	LOT NUMBERS	SQUARE FEET	TREES REQUIRED	LOT TREES PROVIDED	LOT NUMBERS	SQUARE FEET	TREES REQUIRED	LOT TREES PROVIDED	LOT NUMBERS	SQUARE FEET	TREES REQUIRED	LOT TREES PROVIDED
LOTS 1-7	14,000	10	10	LOT 252	6,600	5	5	LOT 127	6,600	5	5	LOT 152	7,800	6	6	LOT 179	6,900	5	5	LOT 204	6,600	5	5	LOT 229	7,063	5	5
LOTS 8-13	12,000	8	8	LOT 253	6,900	5	5	LOT 128	6,600	5	5	LOT 153	7,800	6	6	LOT 180	6,600	5	5	LOT 205	6,600	5	5	LOT 230	6,600	5	5
LOTS 14-20	14,310	10	10	LOT 254	6,900	5	5	LOT 129	6,600	5	5	LOT 154	7,800	6	6	LOT 181	6,600	5	5	LOT 206	6,600	5	5	LOT 231	6,600	5	5
LOTS 21-27	14,253	10	10	LOT 105	6,600	5	5	LOT 130	6,600	5	5	LOT 155	7,800	6	6	LOT 182	6,600	5	5	LOT 207	6,600	5	5	LOT 232	6,600	5	5
LOTS 28-34	14,000	10	10	LOT 106	6,600	5	5	LOT 131	6,600	5	5	LOT 156	7,800	6	6	LOT 183	6,600	5	5	LOT 208	6,900	5	5	LOT 233	7,212	5	5
LOTS 35-40	12,571	9	10	LOT 107	6,900	5	5	LOT 132	6,600	5	5	LOT 157	7,800	6	6	LOT 184	6,900	5	5	LOT 209	6,900	5	5	LOT 234	6,931	5	5
LOTS 41-47	14,000	10	10	LOT 108	6,900	5	5	LOT 133	6,600	5	5	LOT 158	7,800	6	6	LOT 185	6,900	5	5	LOT 210	6,600	5	5	LOT 235	6,600	5	5
LOTS 48-53	12,000	8	8	LOT 109	7,137	5	5	LOT 134	6,600	5	5	LOT 159	6,600	5	5	LOT 186	6,600	5	5	LOT 211	6,600	5	5	LOT 236	6,600	5	5
LOTS 54-60	14,000	10	10	LOT 110	9,502	7	7	LOT 135	6,600	5	5	LOT 160	6,600	5	5	LOT 187	6,600	5	5	LOT 212	6,600	5	5	LOT 237	6,600	5	5
LOTS 61-67	14,000	10	10	LOT 111	9,091	7	7	LOT 136	6,600	5	5	LOT 162	7,800	6	6	LOT 188	6,600	5	5	LOT 213	7,800	6	6	LOT 238	6,712	5	5
LOTS 68-73	12,000	8	8	LOT 112	8,207	6	6	LOT 137	6,600	5	5	LOT 164	10,373	7	7	LOT 189	8,100	6	6	LOT 214	7,800	6	6	LOT 239	7,194	5	5
LOTS 74-80	14,000	10	10	LOT 113	7,792	6	6	LOT 138	6,600	5	5	LOT 165	7,800	6	6	LOT 190	8,100	6	6	LOT 215	7,800	6	6	LOT 240	6,600	5	5
LOTS 81-86	12,000	8	8	LOT 114	6,942	5	5	LOT 139	6,600	5	5	LOT 166	7,800	6	6	LOT 191	7,800	6	6	LOT 216	7,800	6	6	LOT 241	6,600	5	5
LOTS 87-92	12,000	8	8	LOT 115	6,600	5	5	LOT 140	6,600	5	5	LOT 167	6,600	5	5	LOT 192	10,374	7	7	LOT 217	7,800	6	6	LOT 242	6,960	5	5
LOTS 93-98	12,000	8	8	LOT 116	6,600	5	5	LOT 141	6,600	5	5	LOT 168	6,600	5	5	LOT 193	10,500	7	7	LOT 218	7,800	6	6	LOT 243	6,998	5	5
LOTS 99-104	12,000	8	8	LOT 117	7,366	5	5	LOT 142	7,800	6	6	LOT 169	6,600	5	5	LOT 194	7,366	5	5	LOT 219	9,307	7	7	LOT 244	7,366	5	5
LOT 161	7,800	6	6	LOT 118	7,366	5	5	LOT 143	7,800	6	6	LOT 170	6,600	5	5	LOT 195	6,600	5	5	LOT 220	7,589	6	6	TOTALS	1,299,280	957	958
LOT 163	7,800	6	6	LOT 119	6,600	5	5	LOT 144	8,626	6	6	LOT 171	6,900	5	5	LOT 196	6,600	5	5	LOT 221	7,800	6	6				
LOT 245	6,600	5	5	LOT 120	6,600	5	5	LOT 145	10,977	8	8	LOT 172	6,900	5	5	LOT 197	6,600	5	5	LOT 222	7,800	6	6				
LOT 246	6,900	5	5	LOT 121	6,600	5	5	LOT 146	10,977	8	8	LOT 173	6,600	5	5	LOT 198	6,626	5	5	LOT 223	7,320	5	5				
LOT 247	6,900	5	5	LOT 122	6,600	5	5	LOT 147	10,185	7	7	LOT 174	6,600	5	5	LOT 199	6,793	5	5	LOT 224	8,607	6	6				
LOT 248	6,600	5	5	LOT 123	6,600	5	5	LOT 148	8,284	6	6	LOT 175	6,600	5	5	LOT 200	6,600	5	5	LOT 225	8,607	6	6				
LOT 249	6,600	5	5	LOT 124	6,600	5	5	LOT 149	7,800	6	6	LOT 176	6,600	5	5	LOT 201	6,900	5	5	LOT 226	9,001	7	7				
LOT 250	6,600	5	5	LOT 125	6,600	5	5	LOT 150	7,800	6	6	LOT 177	6,600	5	5	LOT 202	6,900	5	5	LOT 227	9,001	7	7				
LOT 251	6,600	5	5	LOT 126	6,600	5	5	LOT 151	10,988	8	8	LOT 178	6,900	5	5	LOT 203	6,600	5	5	LOT 228	8,607	6	6				

TOTAL LOT REPLACEMENT TREE	958	TREES
REQUIRED CALIPER	2.5	INCHES
REQUIRED HEIGHT	10	FEET

REPLACEMENT LOT TREES

1. REPLACEMENT TREES SHALL BE A MINIMUM OF 2.5 INCHES IN DIAMETER MEASURED 6 INCHES ABOVE THE SOIL LINE OR 10 FEET IN HEIGHT ABOVE THE SOIL LINE. AN APPLICATION FOR THE PERMIT IS AVAILABLE IN THE DEVELOPMENT SERVICES DEPARTMENT. FIFTY-PERCENT (50%) OF REPLACEMENT TREES SHALL BE SPECIMEN TREES AS IDENTIFIED IN SECTION 21-55-06.
2. TREE SPECIES PER CITY OF EDGEWATER LAND DEVELOPMENT CODE.



1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

OVERALL LOT TREE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-90

100 50 0 100 200

GRAPHIC SCALE
1"=100'

OVERALL TREE COUNTS			
SPECIES	EXISTING	REMOVED	REMAINING
BAY 7	1	1	0
BAY 8	1	1	0
CAMPHOR 8	1	1	0
CEDAR 10	22	17	5
CEDAR 12	26	23	3
CEDAR 14	4	4	0
CEDAR 16	9	5	4
CEDAR 6	31	24	7
CEDAR 8	28	24	4
CHERRY 10	2	1	1
CHERRY 12	1	1	0
CHERRY 6	7	3	4
ELM 12	9	6	3
ELM 14	8	5	3
ELM 16	1	0	1
ELM 20	1	1	0
ELM 6	4	3	1
ELM 9	1	1	0
GUM 10	3	2	1
GUM 12	5	3	2
GUM 18	2	2	0
GUM 20	1	0	1
GUM 6	5	5	0
GUM 8	4	4	0
HACKBERRY 10	8	4	4
HACKBERRY 12	4	2	2
HACKBERRY 14	3	2	1
HACKBERRY 16	5	3	2
HACKBERRY 20	2	2	0
HACKBERRY 28	1	0	1
HACKBERRY 8	9	7	2
HICKORY 6	1	1	0
HICKORY 8	1	1	0
MAG 10	1	1	0
MAG 6	3	3	0
MAG 8	2	1	1
MAPLE 10	14	8	6
MAPLE 16	6	6	0
MAPLE 12	16	12	4
MAPLE 14	9	6	3
MAPLE 20	5	4	1
MAPLE 6	24	19	5
MAPLE 8	9	7	2
MYRTLE 6	2	2	0
OAK 10	188	161	27
OAK 12	342	279	63
OAK 14	325	244	81
OAK 16	157	127	30
OAK 18	140	118	22
OAK 20	75	54	21
OAK 22	44	38	6
OAK 24	76	61	15
OAK 25	2	2	0
OAK 26	15	14	1
OAK 28	19	13	6
OAK 30	7	5	2
OAK 32	14	9	5
OAK 34	1	1	0
OAK 35	1	1	0
OAK 36	5	0	5
OAK 42	2	0	2
OAK 48	1	0	1
OAK 6	378	306	72
OAK 8	281	225	56
OAK 16	1	1	0
PALM 10	195	147	48
PALM 12	935	768	167
PALM 14	571	477	94
PALM 16	75	61	14
PALM 20	1	1	0
PALM 8	132	120	12
PINE 10	72	58	14
PINE 12	81	66	15
PINE 14	96	71	25
PINE 16	73	64	9
PINE 18	61	50	11
PINE 20	45	37	8
PINE 22	33	27	6
PINE 24	46	39	7
PINE 26	9	8	1
PINE 28	19	19	0
PINE 30	4	3	1
PINE 32	14	14	0
PINE 6	77	62	15
PINE 8	55	46	9
TOTALS	4970	4025	945

SPECIMEN TREES (12"+)			
SPECIES	EXISTING	REMOVED	REMAINING
BAY	0	0	0
CEDAR	39	32	7
ELM	19	12	7
GUM	8	5	3
HACKBERRY	20	14	6
HICKORY	0	0	0
MAGNOLIA	0	0	0
MAPLE	36	28	8
OAK	1226	966	260
PINE (18"+)	231	197	34
TOTALS	1579	1254	325

Number of Specimen Trees Per Acre	Requirement Site
Less than 3 per acre or portion thereof	80% of all specimen trees
3.0 to 5.0 per acre	65% of all specimen trees
5.1 to 8.0 per acre	50% of all specimen trees
8.0 or more per acre	4 specimen trees per acre

Site Area =	74.67 acres
Total Site Specimen Trees =	4970 trees
Specimen Trees Per Acre =	66.56 trees/acre
Required Specimen Tree For Site	4.0 per acre
Required Specimen Trees Preserved	**299 trees**
Provided Specimen Trees Preserved	**369 trees**

HISTORIC TREES (36"+)			
SPECIES	EXISTING	REMOVED	REMAINING
BAY	0	0	0
CAMPHOR	0	0	0
CEDAR	0	0	0
CHERRY	0	0	0
ELM	0	0	0
GUM	0	0	0
HACKBERRY	0	0	0
HICKORY	0	0	0
MAGNOLIA	0	0	0
MAPLE	0	0	0
MYRTLE	0	0	0
OAK	9	0	9
PALM	0	0	0
PINE	0	0	0
	9	0	9

TREE PRESERVATION AREA REQUIREMENT	
Required Tree Preservation =	15.0 %
Total site =	74.665 acres
Required Tree Preservation (15% of site) =	11.200 acres
Provided Tree Preservation	12.409 acres
Provided Tree Preservation Percentage	16.6 %

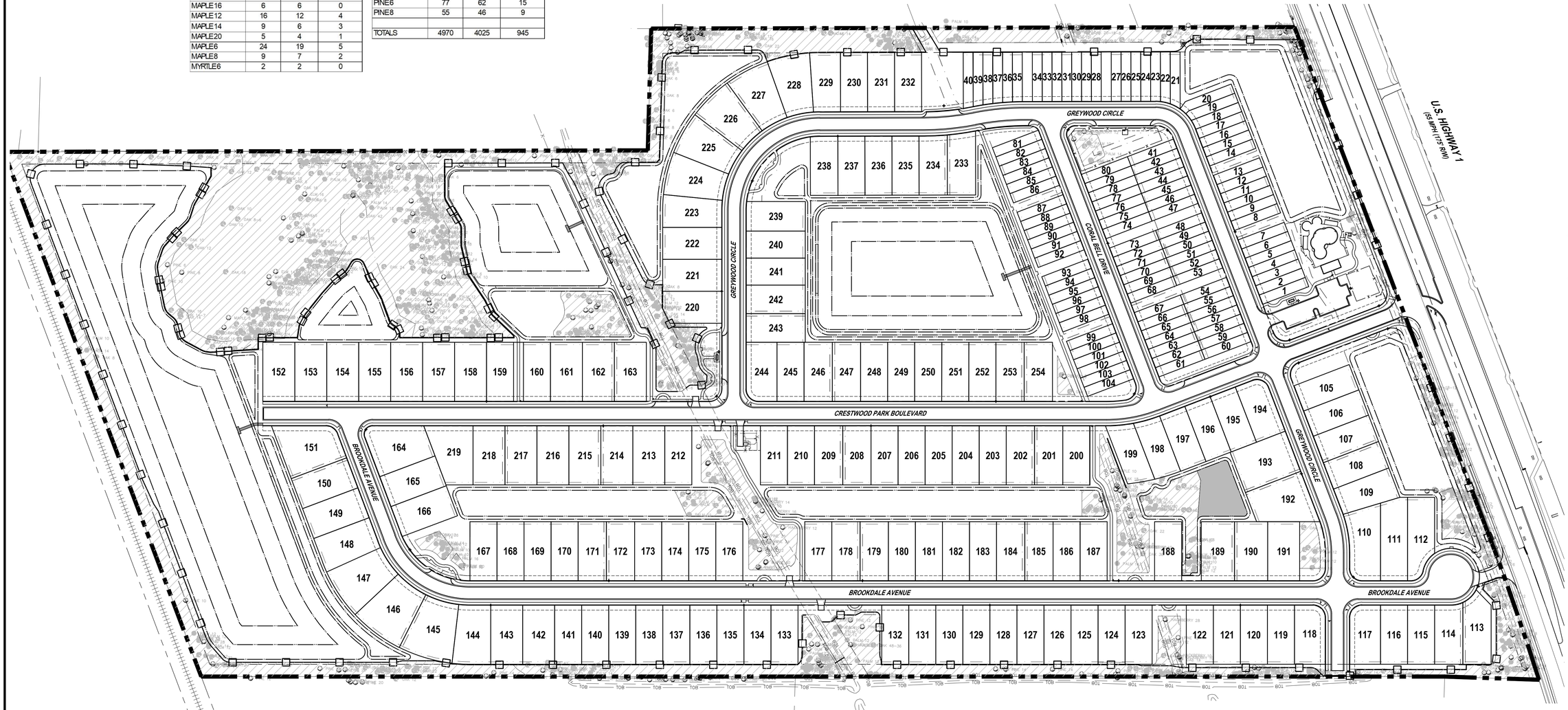
MINIMUM REQUIRED TREE COVERAGE	
Site Area	74.665 acres
Required tree coverage (1 tree / 1,500 sf)	2,168 trees

PROVIDED TREE COVERAGE	
Tree Type	Total
Existing Protected Trees	590
Existing Specimen Trees	325
Existing Historic Trees	9
Lot Trees	958
Proposed Palm Trees (3:1)	6
Proposed Understory Tree	47
Proposed Shade Tree	235
Total Provided Tree Coverage	**2170**

LEGEND

PROVIDED TREE PRESERVATION AREA

PROJECT AREA BOUNDARY (3,252,424 SF / 74.665 AC)



REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

OVERALL TREE PRESERVATION AND TREE COVERAGE CALCULATIONS

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-91

100 50 0 100 200

GRAPHIC SCALE
1"=100'

SIGN #1: WETLAND INFORMATION
SIGN #2: BIRDS INFORMATION
SIGN #3: ALLIGATOR INFORMATION
SIGN #4: DEER INFORMATION

INTERACTIVE/CULTURAL INTEREST PARK SIGN

NOT TO SCALE

COMMON OPEN SPACE CALCULATIONS

REQUIRED COMMON OPEN SPACE = 3,252,424 SF x 0.25 = 813,106 SF OR 18.67 ACRES (25%)
COMMON OPEN SPACE PROVIDED = 919,624 SF OR 21.112 ACRES (28.3%)

LEGEND

COMMON OPEN SPACE
(919,624 SF / 21.112 AC) (28.3%)

POND #3
COMMON OPEN SPACE INCLUDES 5' SIDEWALK, (3) BENCHES, FLOATING FOUNTAIN AND TYMBER DOCK

ALL SIDEWALKS ARE COMMON OPEN SPACE FOR RECREATIONAL USE FOR JOGGING AND ACCESS TO ALL COMMON AREAS

POND #2
COMMON OPEN SPACE INCLUDES 5' SIDEWALK, (4) BENCHES AND FLOATING FOUNTAIN

PASSIVE AND ACTIVE RECREATION

BENCH

FLOATING FOUNTAIN

INTERACTIVE / CULTURAL INTEREST PARK SIGN (TYPICAL 4 PLACES)

SIGN #4

SIGN #3

SIGN #2

SIGN #1

TYMBER DOCK

GREYWOOD CIRCLE

CORAL BELL DRIVE

CRESTWOOD PARK BOULEVARD

BROOKDALE AVENUE

U.S. HIGHWAY 1
(45 MPH (175 R/M)

DOG PARK

POOL AMENITIES

PLAYGROUND

OPEN PLAY FIELD

FLOATING FOUNTAIN

TYMBER DOCK

PASSIVE RECREATION

POND #1A
COMMON OPEN SPACE INCLUDES FLOATING FOUNTAIN AND TYMBER DOCK

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

COMMON OPEN SPACE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

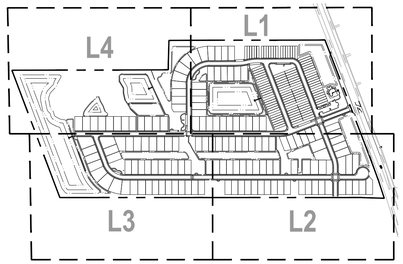
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 100'

DRAWING NUMBER

C-92



KEY MAP

NOT TO SCALE

HARDSCAPE SCHEDULE

SYMBOL	DESCRIPTION
H-101	TRASH CAN MODEL: YAHARA WITH COVERED SQUARE LID MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT/BLACK POWDER COAT FINISH METAL FRAME
H-102	COMPLETE PET WASTE STATION MODEL: 3278 ET&T DISTRIBUTORS, INC.
H-103	BENCH WITH BACK MODEL: 6` YAHARA (YHB-6) MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED WALNUT WITH BLACK POWDER COAT METAL FRAME
H-104	BACKLESS BENCH MODEL: 6` YAHARA MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT WITH BLACK POWDER COAT METAL FRAME

LANDSCAPE REFERENCE NOTES

CODE	DESCRIPTION
L-101	EXISTING TREE TO REMAIN, SEE EXISTING TREE NOTES SHEET L7
L-102	AREA TO REMAIN NATURAL, SEE NOTE 30 SHEET L7
L-103	MULCH AREA
L-104	SEE CIVIL PLANS FOR POND SOD REQUIREMENTS

50 0 50 100
GRAPHIC SCALE
1"=50'

LEGEND

- ST. AUGUSTINE SOD
- BAHIA SOD
- AREA TO REMAIN NATURAL
- EXISTING TREE
- EXISTING PALM TREE

EXISTING TREE LEGEND

AR	MAPLE
CG	HICKORY
CO	HACKBERRY
JV	CEDAR
MG	MAGNOLIA
PE	PINE
QV	OAK
UA	ELM

MATCH-LINE SEE SHEET L4

1126.07' BUFFER TO REMAIN NATURAL

50' LANDSCAPE BUFFER

DRY POND 4 BHAIA SOD

L-102 L-101

ENLARGEMENT, SEE SHEET L6

GREYWOOD CIRCLE

H-102

MIX 1 (39 sf)
(16) AA2
(16) TV
(8) ZA

MIX 1 (49 sf)
(20) AA2
(20) TV
(10) ZA

IVS 6

10' UTILITY EASEMENT

JH 7

EG 15

QV 1

ZP 15

IVS 10

IVS 9

10' DRAINAGE EASEMENT

PET WASTE STATION

DOG PARK

PARK 1

BHAIA SOD

DRY POND 5

L-104

TD 3

AR 2

JOGGING PATH

WET POND 3

CORAL BELL DRIVE

BAHIA SOD

PROPOSED SIDEWALK

25' LANDSCAPE BUFFER

17' FDOT ROW DEDICATION

DRY POND 6

ENLARGEMENT, SEE SHEET L6

U.S. HIGHWAY 1

POOL

PLAYGROUND

MAIL KIOSK

ENTRY SIGNAGE FEATURE

ENLARGEMENT, SEE SHEET L5

DRY POND 9

16" QV
6" AR
BHAIA SOD
12" QV

SOD

CRESTWOOD PARK BOULEVARD

MATCH-LINE SEE SHEET L4

MATCH-LINE SEE SHEET L2

MATCH-LINE SEE SHEET L2

REVISIONS

DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

LANDSCAPE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams

Digitally signed by Lauren A Adams
DN: C=US, E=laurena@newkirk-engineering.com, OU=LA 6667278, CN=Lauren A Adams
Date: 2025.10.13 10:47:18-04'00'

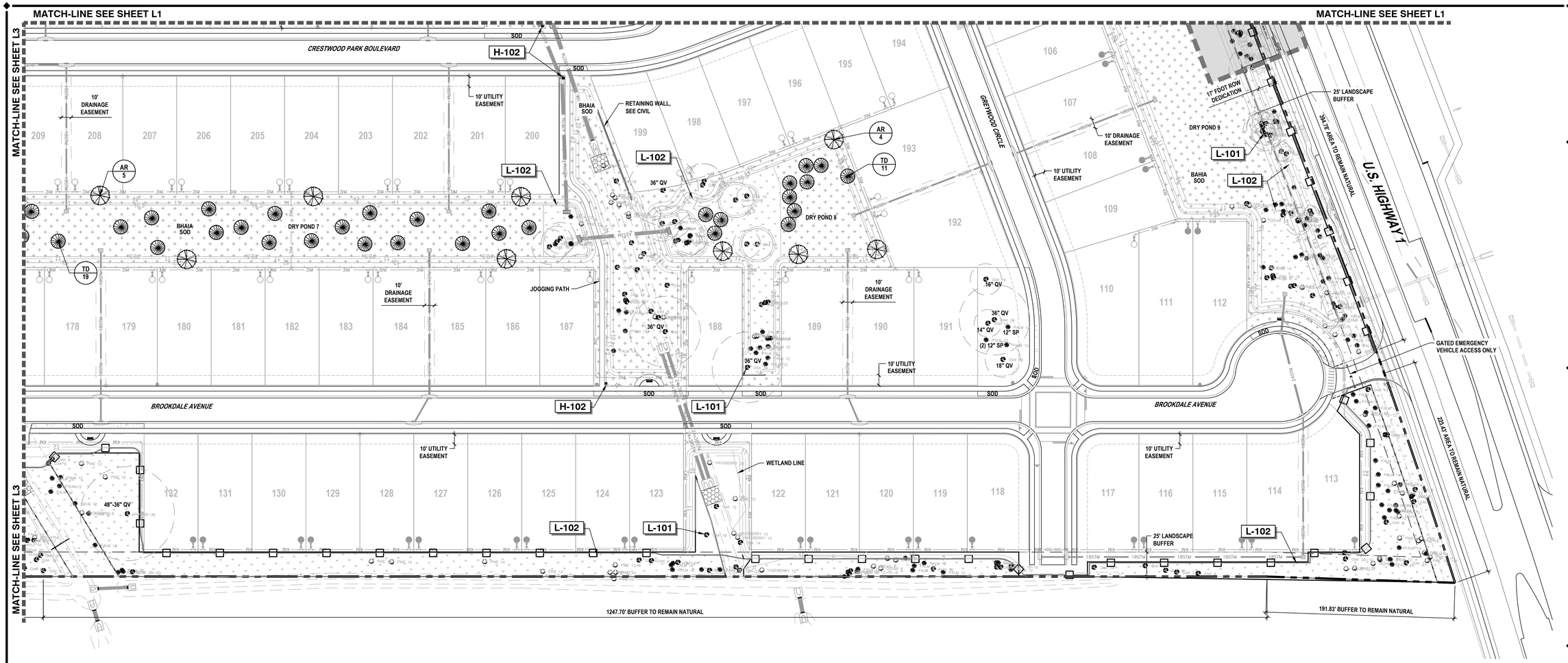
LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	1" = 50'

DRAWING NUMBER

L1



LEGEND

- ST. AUGUSTINE SOD
- BAHIA SOD
- AREA TO REMAIN NATURAL
- EXISTING TREE
- EXISTING PALM TREE

EXISTING TREE LEGEND

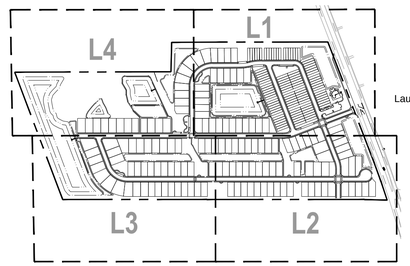
AR	MAPLE
CG	HICKORY
CO	HACKBERRY
JV	CEDAR
MG	MAGNOLIA
PE	PINE
QV	OAK
UA	ELM

HARDSCAPE SCHEDULE

SYMBOL	DESCRIPTION
H-101	TRASH CAN MODEL: YAHARA WITH COVERED SQUARE LID MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT/BLACK POWDER COAT FINISH METAL FRAME
H-102	COMPLETE PET WASTE STATION MODEL: 3278 ET&T DISTRIBUTORS, INC.
H-103	BENCH WITH BACK MODEL: 6` YAHARA (YHB-6) MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED WALNUT WITH BLACK POWDER COAT METAL FRAME
H-104	BACKLESS BENCH MODEL: 6` YAHARA MANUFACTURER: THOMAS STEELE MATERIAL: RECYLCED PLASTIC WALNUT WITH BLACK POWDER COAT METAL FRAME

LANDSCAPE REFERENCE NOTES

CODE	DESCRIPTION
L-101	EXISTING TREE TO REMAIN, SEE EXISTING TREE NOTES SHEET L7
L-102	AREA TO REMAIN NATURAL, SEE NOTE 30 SHEET L7
L-103	MULCH AREA
L-104	SEE CIVIL PLANS FOR POND SOD REQUIREMENTS



KEY MAP

NOT TO SCALE

50 0 50 100

GRAPHIC SCALE
1"=50'

REVISIONS

DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

LANDSCAPE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams

Digitally signed by Lauren A Adams
DN: c=US, E=lauren@newkirk-engineering.com, OU=LA 6667278, CN=Lauren A Adams
Date: 2025.09.23 10:47:29-04'00'

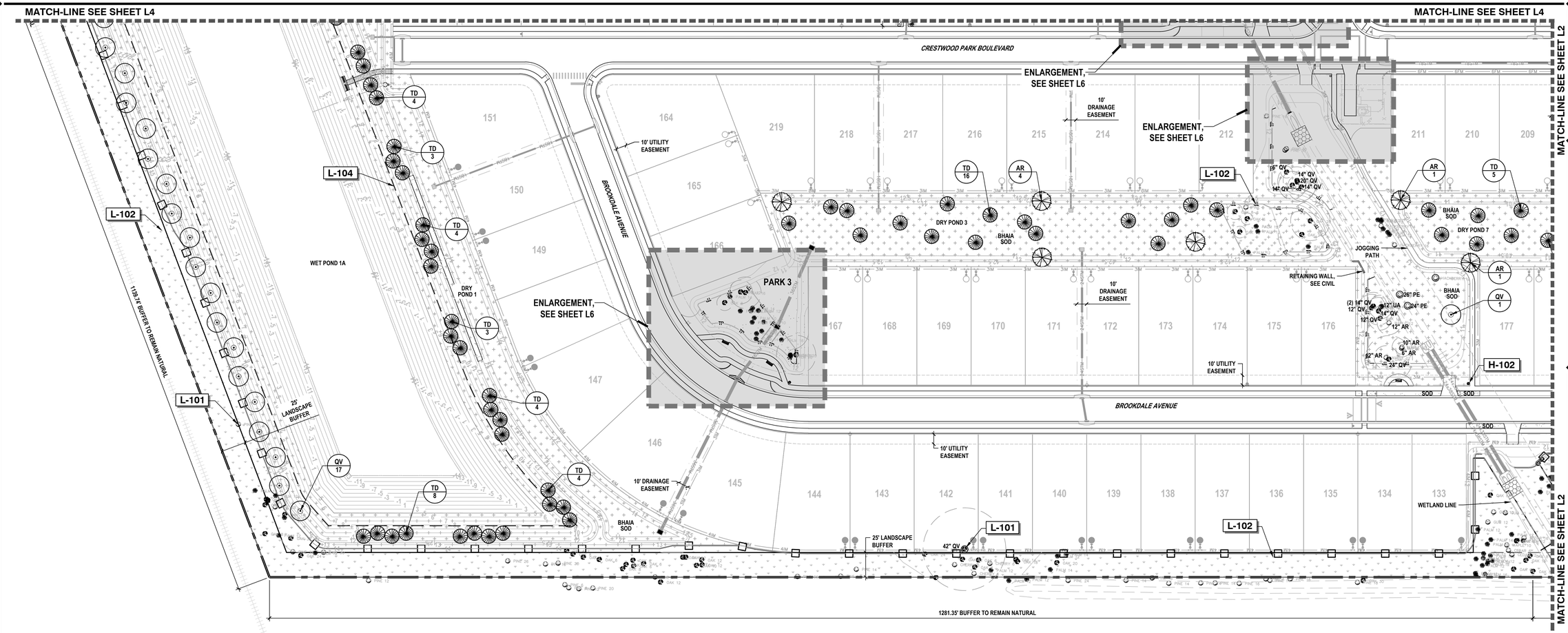
LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	1" = 50'

DRAWING NUMBER

L2



PLANT MIX SCHEDULE

MIX 1	**673 SF**			
FLOWER MIX				
AGAPANTHUS AFRICANUS / AFRICAN LILY	280	1 GAL.	40% @ 12" o.c.	
TULBAGHIA VIOLACEA / SOCIETY GARLIC	280	1 GAL.	40% @ 12" o.c.	
ZEPHYRANTHES ATAMASCO / ATAMASCO LILY	138	3" HT, X 3" SPRD	20% @ 12" o.c.	
NATIVE MIX	**429 SF**			
ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	6	1 GAL.	5% @ 24" o.c.	
ERAGROSTIS SPECTABILIS / PURPLE LOVE GRASS	5	1 GAL.	10% @ 36" o.c.	
MUHLENBERGIA CAPILLARIS / PINK MUHLY GRASS	7	3 GAL.	15% @ 36" o.c.	
SPARTINA BAKERI / SAND CORDGRASS	15	1 GAL.	30% @ 36" o.c.	
THELYPTERIS PALUSTRIS / EASTERN MARSH FERN	5	4" POT, 6"-8" HT	10% @ 36" o.c.	
YUCCA FILAMENTOSA / ADAM`S NEEDLE	1	1 GAL.	5% @ 48" o.c.	
LZ MIX A	**11,406 SF**			
LITTORAL ZONE A (+1/2` TO TOB)				
MUHLENBERGIA CAPILLARIS / PINK MUHLY GRASS	527	1 GAL.	40% @ 36" o.c.	
SPARTINA BAKERI / SAND CORDGRASS	790	1 GAL.	60% @ 36" o.c.	
LZ MIX C	**2,381 SF**			
LITTORAL ZONE C (-1/2` TO -3`)				
PONTEDERIA CORDATA / PICKEREL WEED	137	1 GAL.	50% @ 36" o.c.	
SAGITTARIA LANCIFOLIA / DUCK POTATO	137	BARE ROOT	50% @ 36" o.c.	
LZ MIX B	**1,871 SF**			
LITTORAL ZONE B (-1/2` TO +1/2`)				
ELEOCHARIS CELLULOSA / COASTAL SPIKERUSH	486	BARE ROOT	25% @ 12" o.c.	
IRIS VIRGINICA / BLUE FLAG IRIS	233	1 GAL.	75% @ 30" o.c.	

NOTES:
1. PLANTS IN MIX 1 SHOULD BE RANDOMLY PLANTED AND MIXED TOGETHER.
2. PLANTS IN PLANT MIX SCHEDULE ARE ALSO INCLUDED IN THE PLANT SCHEDULE.
3. FOR LZ MIXES SEE SHEET L4, DETAIL 1.

LEGEND

- ST. AUGUSTINE SOD
- BAHIA SOD
- AREA TO REMAIN NATURAL
- EXISTING TREE
- EXISTING PALM TREE

EXISTING TREE LEGEND

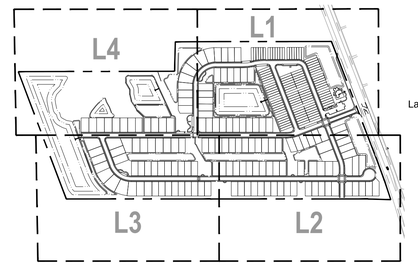
AR	MAPLE
CG	HICKORY
CO	HACKBERRY
JV	CEDAR
MG	MAGNOLIA
PE	PINE
QV	OAK
UA	ELM

HARDSCAPE SCHEDULE

SYMBOL	DESCRIPTION
H-101	TRASH CAN MODEL: YAHARA WITH COVERED SQUARE LID MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT/BLACK POWDER COAT FINISH METAL FRAME
H-102	COMPLETE PET WASTE STATION MODEL: 3278 ET&T DISTRIBUTORS, INC.
H-103	BENCH WITH BACK MODEL: 6` YAHARA (YHB-6) MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED WALNUT WITH BLACK POWDER COAT METAL FRAME
H-104	BACKLESS BENCH MODEL: 6` YAHARA MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT WITH BLACK POWDER COAT METAL FRAME

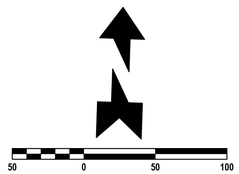
LANDSCAPE REFERENCE NOTES

CODE	DESCRIPTION
L-101	EXISTING TREE TO REMAIN, SEE EXISTING TREE NOTES SHEET L7
L-102	AREA TO REMAIN NATURAL, SEE NOTE 30 SHEET L7
L-103	MULCH AREA
L-104	SEE CIVIL PLANS FOR POND SOD REQUIREMENTS



KEY MAP

NOT TO SCALE



REVISIONS	
DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

LANDSCAPE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams

Digitally signed by Lauren A Adams
DN: C=US, E=laurena@newkirk-engineering.com, CN=Lauren A Adams, O=Newkirk Engineering Inc, OU=Landscape Architecture, L=Edgewater, S=Florida, T=6667278
Date: 2025.08.22 10:47:36-04'00'

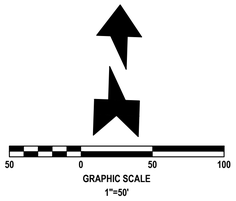
LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	1" = 50'

DRAWING NUMBER

L3



LEGEND

- ST. AUGUSTINE SOD
- BAHIA SOD
- AREA TO REMAIN NATURAL
- EXISTING TREE
- EXISTING PALM TREE

EXISTING TREE LEGEND

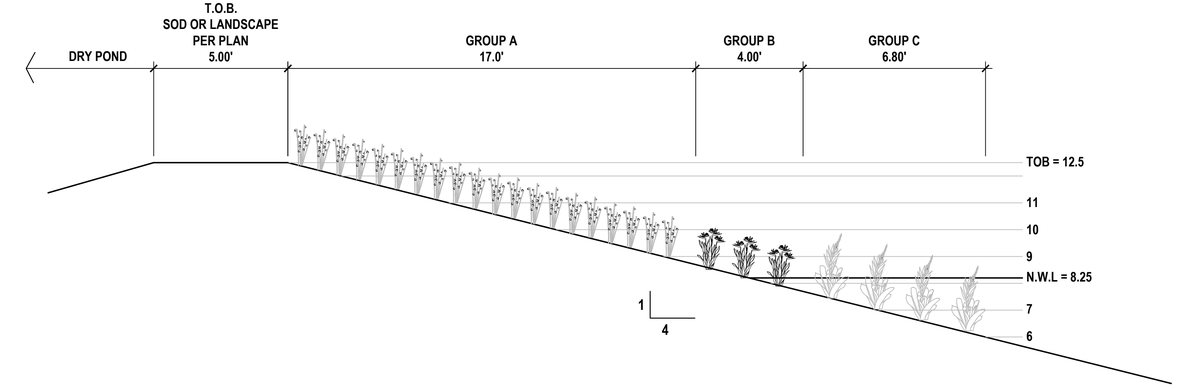
AR	MAPLE
CG	HICKORY
CO	HACKBERRY
JV	CEDAR
MG	MAGNOLIA
PE	PINE
QV	OAK
UA	ELM

HARDSCAPE SCHEDULE

SYMBOL	DESCRIPTION
H-101	TRASH CAN MODEL: YAHARA WITH COVERED SQUARE LID MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT/BLACK POWDER COAT FINISH METAL FRAME
H-102	COMPLETE PET WASTE STATION MODEL: 3278 ET&T DISTRIBUTORS, INC.
H-103	BENCH WITH BACK MODEL: 6' YAHARA (YHB-6) MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED WALNUT WITH BLACK POWDER COAT METAL FRAME
H-104	BACKLESS BENCH MODEL: 6' YAHARA MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT WITH BLACK POWDER COAT METAL FRAME

LANDSCAPE REFERENCE NOTES

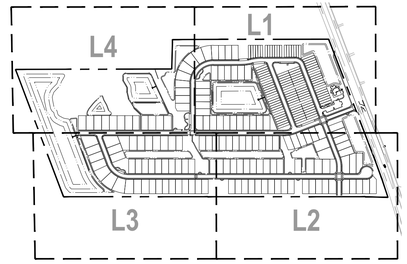
CODE	DESCRIPTION
L-101	EXISTING TREE TO REMAIN, SEE EXISTING TREE NOTES SHEET L7
L-102	AREA TO REMAIN NATURAL, SEE NOTE 30 SHEET L7
L-103	MULCH AREA
L-104	SEE CIVIL PLANS FOR POND SOD REQUIREMENTS



1 LITTORAL PLANTING

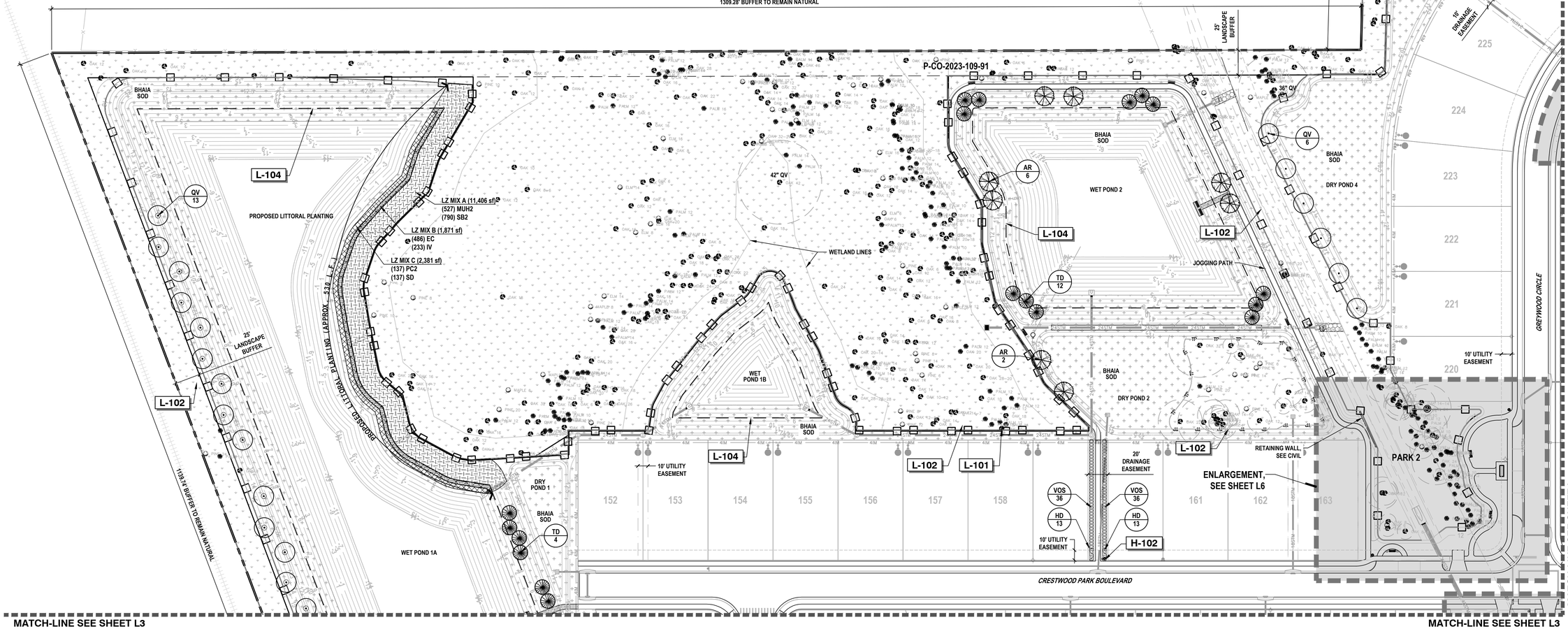
3/8" = 1'-0"

P-CO-2023-109-91



KEY MAP

NOT TO SCALE



REVISIONS

DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

LANDSCAPE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams

Digitally signed by Lauren A Adams
DN: C=US, E=laadams@newkirk-engineering.com, O=NEI, CN=Lauren A Adams
Date: 2025.10.13 14:47:42 -04'00'

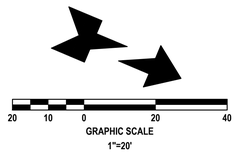
LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	1" = 50'

DRAWING NUMBER

L4



HARDSCAPE SCHEDULE

SYMBOL	DESCRIPTION
H-101	TRASH CAN MODEL: YAHARA WITH COVERED SQUARE LID MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT/BLACK POWDER COAT FINISH METAL FRAME
H-102	COMPLETE PET WASTE STATION MODEL: 3278 ET&T DISTRIBUTORS, INC.
H-103	BENCH WITH BACK MODEL: 6' YAHARA (YHB-6) MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED WALNUT WITH BLACK POWDER COAT METAL FRAME
H-104	BACKLESS BENCH MODEL: 6' YAHARA MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT WITH BLACK POWDER COAT METAL FRAME

LANDSCAPE REFERENCE NOTES

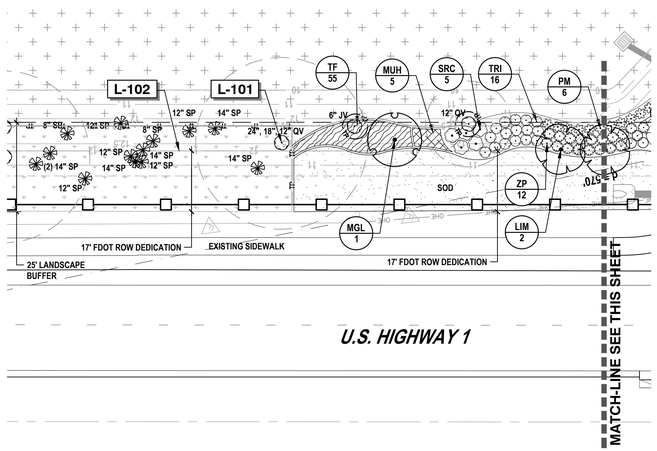
CODE	DESCRIPTION
L-101	EXISTING TREE TO REMAIN, SEE EXISTING TREE NOTES SHEET L7
L-102	AREA TO REMAIN NATURAL, SEE NOTE 30 SHEET L7
L-103	MULCH AREA
L-104	SEE CIVIL PLANS FOR POND SOD REQUIREMENTS

LEGEND

- ST. AUGUSTINE SOD
- BAHIA SOD
- AREA TO REMAIN NATURAL
- EXISTING TREE
- EXISTING PALM TREE

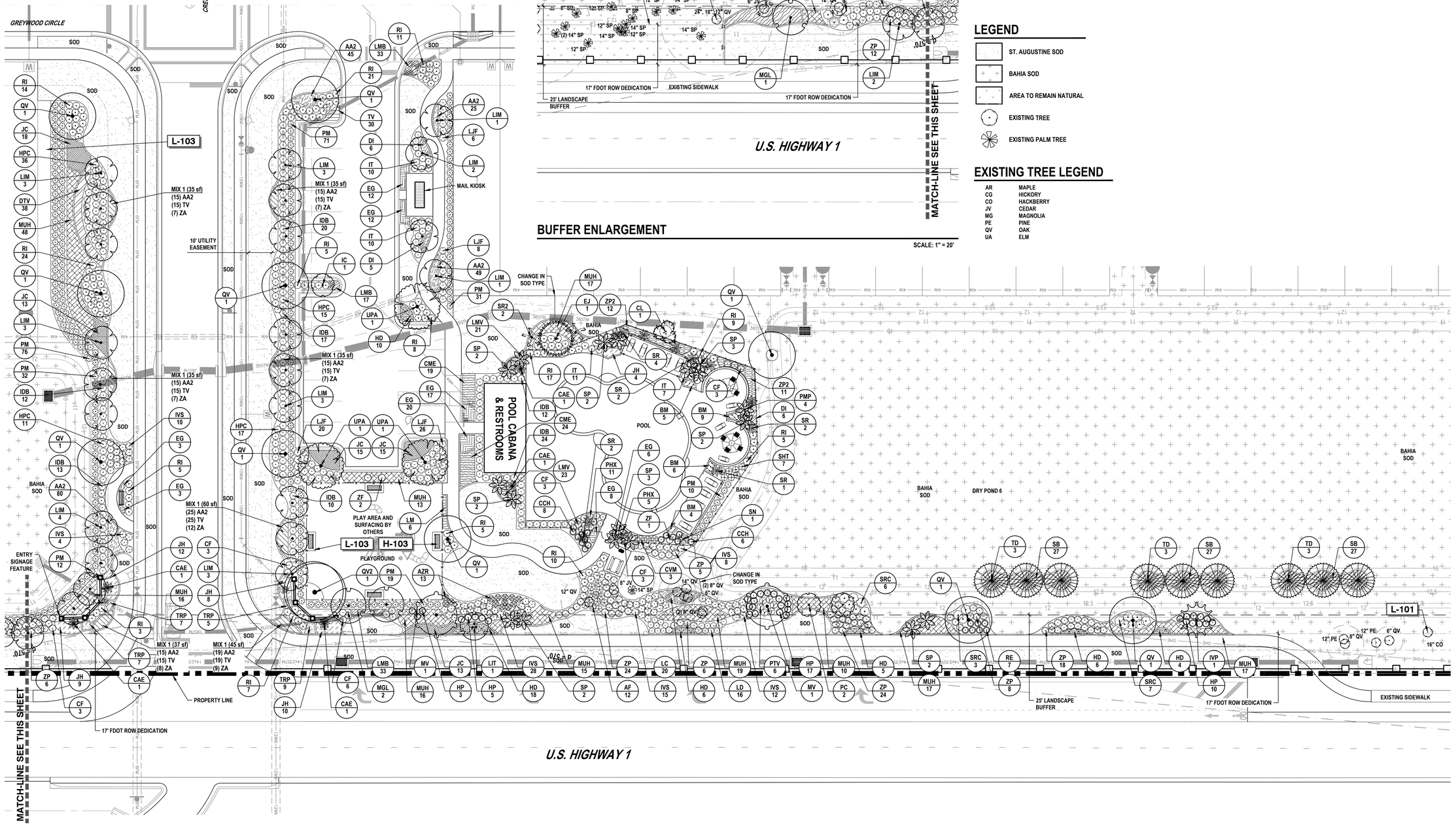
EXISTING TREE LEGEND

AR	MAPLE
CG	HICKORY
CO	HACKBERRY
JV	CEDAR
MG	MAGNOLIA
PE	PINE
QV	OAK
UA	ELM



BUFFER ENLARGEMENT

SCALE: 1" = 20'



AMENITY CENTER AND BUFFER ENLARGEMENT

SCALE: 1" = 20'

REVISIONS	
DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

LANDSCAPE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams

Digitally signed by Lauren A Adams
DN: C=US, E=laadams@newkirk-engineering.com, CN=LA 6667278, CN=Lauren A Adams
Date: 2025.10.13 10:47:49-04'00'

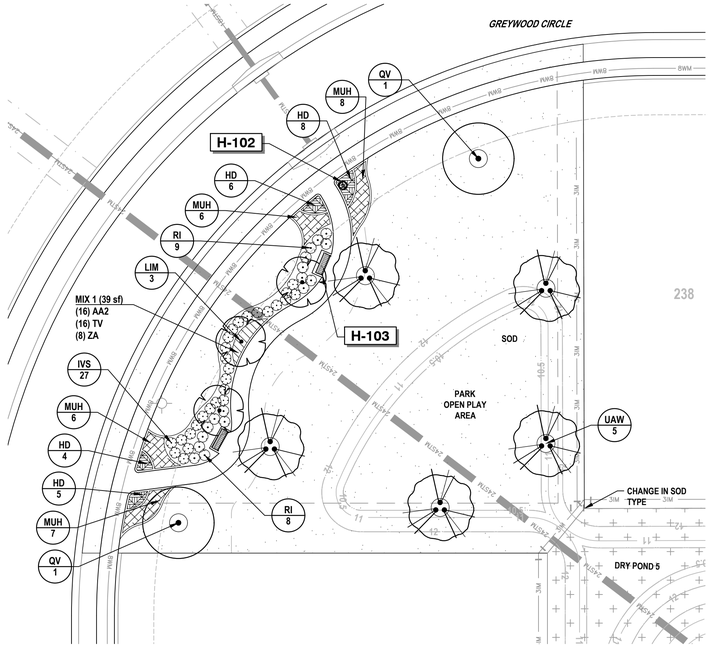
LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	AS SHOWN

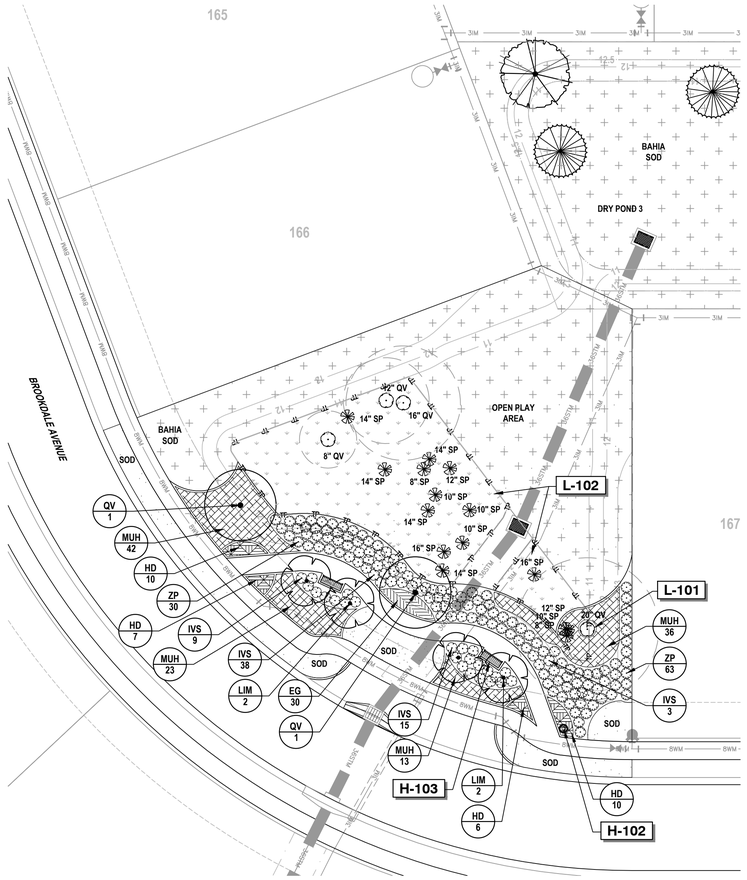
DRAWING NUMBER

L5



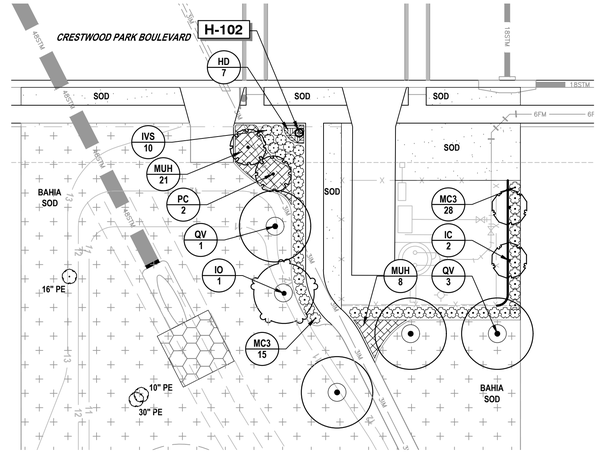
PARK 1 ENLARGEMENT

SCALE: 1" = 20'



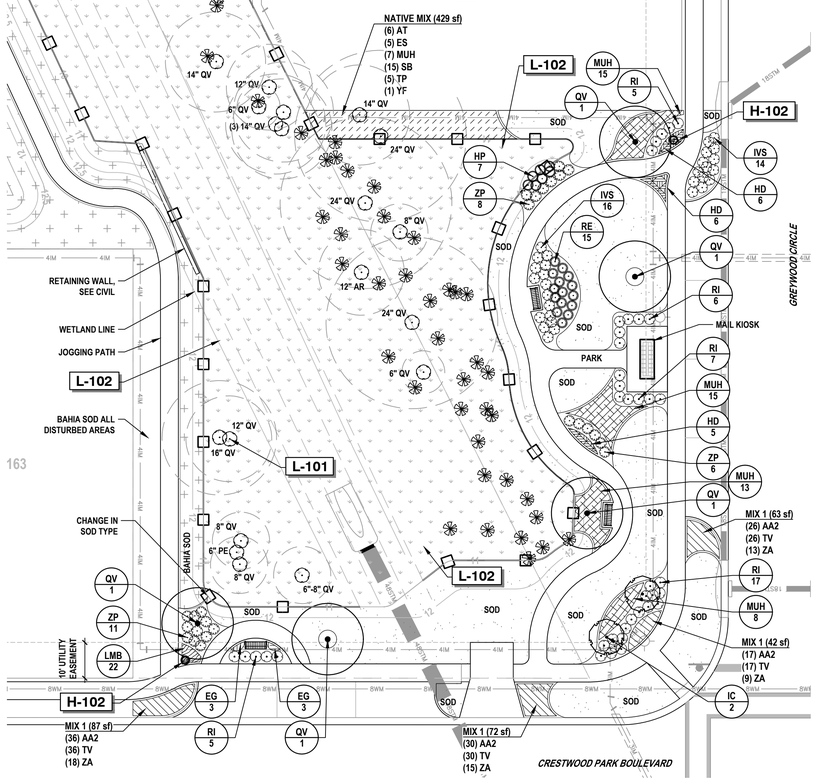
PARK 3 ENLARGEMENT

SCALE: 1" = 20'



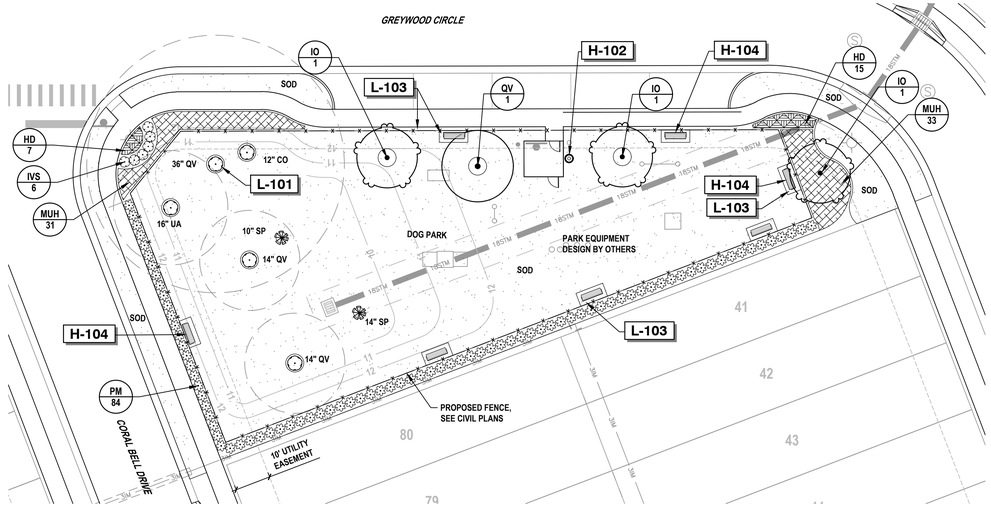
LIFT STATION ENLARGEMENT

SCALE: 1" = 20'



PARK 2 ENLARGEMENT

SCALE: 1" = 20'



DOG PARK ENLARGEMENT

SCALE: 1" = 20'

HARDSCAPE SCHEDULE

SYMBOL	DESCRIPTION
H-101	TRASH CAN MODEL: YAHARA WITH COVERED SQUARE LID MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT/BLACK POWDER COAT FINISH METAL FRAME
H-102	COMPLETE PET WASTE STATION MODEL: 3278 ET&T DISTRIBUTORS, INC.
H-103	BENCH WITH BACK MODEL: 6´ YAHARA (YHB-6) MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED WALNUT WITH BLACK POWDER COAT METAL FRAME
H-104	BACKLESS BENCH MODEL: 6´ YAHARA MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT WITH BLACK POWDER COAT METAL FRAME

LANDSCAPE REFERENCE NOTES

CODE	DESCRIPTION
L-101	EXISTING TREE TO REMAIN, SEE EXISTING TREE NOTES SHEET L7
L-102	AREA TO REMAIN NATURAL, SEE NOTE 30 SHEET L7
L-103	MULCH AREA
L-104	SEE CIVIL PLANS FOR POND SOD REQUIREMENTS

LEGEND

- ST. AUGUSTINE SOD
- BAHIA SOD
- AREA TO REMAIN NATURAL
- EXISTING TREE
- EXISTING PALM TREE

EXISTING TREE LEGEND

AR	MAPLE
CG	HICKORY
CO	HACKBERRY
JV	CEDAR
MG	MAGNOLIA
PE	PINE
QV	OAK
UA	ELM

REVISIONS

DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

LANDSCAPE PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Digitally signed by Lauren A Adams
DN: C=US, E=ladams@newkirk-engineering.com, CN=LAUREN A ADAMS 6667278, OU=Lauren A Adams
Date: 2025-07-03 13:10:48-02'04'00"

Lauren A Adams

LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	AS SHOWN

DRAWING NUMBER

L6

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
PALM TREES					
CL	1	CHRYSALIDOCARPUS LUTESCENS	ARECA PALM	15 GAL.	
SP	18	SABAL PALMETTO	CABBAGE PALMETTO	10`, 14`, 18` HT.	STAGGERED HEIGHTS
SR2	2	SYAGRUS ROMANZOFFIANA	QUEEN PALM	14`, 18`, 24` HT.	STAGGERED HEIGHTS
SHADE TREES					
AR	27	ACER RUBRUM	RED MAPLE	2.5" CAL., 10` HT.	
IO	4	ILEX OPACA	AMERICAN HOLLY	2.5" CAL., 10` HT.	
MV	2	MAGNOLIA VIRGINIANA	SWEET BAY MAGNOLIA	2.5" CAL., 10` HT.	
QV	66	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	2.5" CAL., 10` HT.	
QV2	1	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	25` - 30` HT.	ROOT PRUNED
TD	127	TAXODIUM DISTICHUM	BALD CYPRESS	2.5" CAL., 10` HT.	
UAW	5	ULMUS ALATA	WINGED ELM	2.5" CAL., 10` HT.	
UPA	3	ULMUS PARVIFOLIA `DRAKE`	DRAKE CHINESE ELM	2.5" CAL., 10` HT.	
UNDERSTORY TREES					
EJ	1	ERIOBOTRYA JAPONICA	LOQUAT	2.5" CAL., 10` HT.	
IC	5	ILEX CASSINE	DAHOON HOLLY	2.5" CAL., 10` HT.	3` C.T.
IVP	1	ILEX VOMITORIA 'PENDULA'	WEEPING YAUPON HOLLY	1.5" CAL., 8` HT.	
LIM	32	LAGERSTROEMIA INDICA X FAURIEI `MUSKOGEE`	MUSKOGEE CRAPE MYRTLE	30 GAL., 1.5" CAL., 10` HT	M.T. LILAC
LIT	1	LAGERSTROEMIA INDICA X FAURIEI `TONTO`	TONTO CRAPE MYRTLE	1.5" CAL., 8` HT.	
MGL	3	MAGNOLIA GRANDIFLORA `LITTLE GEM`	DWARF SOUTHERN MAGNOLIA	2.5" CAL., 10` HT.	
PC	4	PRUNUS CAROLINIANA	CAROLINA LAUREL CHERRY	2.5" CAL., 10` HT.	
SHRUBS					
AF	12	AZALEA INDICA 'FORMOSA'	FORMOSA INDICA AZALEA	3 GAL.	36" O.C.
AZR	13	AZALEA X `RED RUFFLES`	RED RUFFLES AZALEA	3 GAL., 24" HT, X 18" SPRD.	36" O.C.
CCH	14	CHRYSOBALANUS ICACO 'HORIZONTALIS'	HORIZONTAL COCO PLUM	3 GAL.	36" O.C.
CVM	3	CODIAEUM VARIEGATUM	CROTON	3 GAL.	36" O.C.
CF	21	CORDYLINE FRUTICOSA	TI PLANT	7 GAL.	36" O.C.
CAE	5	CRINUM AUGUSTUM `QUEEN EMMA`	QUEEN EMMA CRINUM LILY	15 GAL., 48" HT, X 18" SPRD.	FLORIDA FANCY
HP	42	HAMELIA PATENS	FIREBUSH	3 GAL., 24" HT, X 12" SPRD	36" O.C.
HPC	79	HAMELIA PATENS 'COMPACTA'	DWARF FIREBUSH	3 GAL., 12" HT, X 12" SPRD.	36" O.C.
IDB	108	ILEX CORNUTA 'BURFORDII NANA'	DWARF BURFORD HOLLY	3 GAL., 24" HT, X 18" SPRD.	36" O.C.
IVS	240	ILEX VOMITORIA `STOKES DWARF`	STOKES DWARF YAUPON HOLLY	3 GAL., 12" HT, X 18" SPRD.	36" O.C.
LJF	60	LIGUSTRUM JAPONICUM 'JACK FROST'	JACK FROST JAPANESE PRIVET	3 GAL., 18" HT, X 18" SPRD.	36" O.C.
LD	16	LOROPETALUM CHINENSE `DARUMA`	DARUMA DWARF LOROPETALUM	3 GAL., 24" HT, X 12" SPRD	30" O.C.
MC3	43	MYRICA CERIFERA	WAX MYRTLE	3 GAL.	36" O.C.
PTV	6	PITTOSPORUM TOBIRA 'VARIEGATA'	VARIEGATED JAPANESE PITTOSPORUM	3 GAL.	36" O.C.
PM	341	PODOCARPUS MACROPHYLLUS	YEW PINE	3 GAL., 24" HT. X 6" SPRD.	36" O.C.
RI	201	RHAPHIOLEPIS INDICA	INDIAN HAWTHORN	3 GAL., 15" HT. X 15" SPRD.	36" O.C.
RE	22	RUSSELIA EQUISETIFORMIS	FIRECRACKER PLANT	3 GAL., 15" HT.	36" O.C.
SHT	7	SCHEFFLERA ARBORICOLA 'DWARF'	DWARF SCHEFFLERA	3 GAL.	36" O.C.
SRC	21	SERENOA REPENS `CINEREA`	SILVER SAW PALMETTO	7 GAL.	48" O.C.
SN	1	STRELITZIA NICOLAI	GIANT BIRD OF PARADISE	7 GAL., 48" HT. X 16" SPRD.	3 PPP
SR	11	STRELITZIA REGINAE	BIRD OF PARADISE	7 GAL.	48" HT.
TRI	16	TRIPSACUM DACTYLOIDES	FAKAHATCHEE GRASS	1 GAL, 24" HT.	36" O.C.
VOS	72	VIBURNUM OBOVATUM 'SELECT'	WALTER'S VIBURNUM	3 GAL., 15" HT. X 15" SPRD.	36" O.C.
ZF	3	ZAMIA FURFURACEA	CARDBOARD PALM	3 GAL.	36" O.C.
ZP	236	ZAMIA PUMILA	COONTIE CYCAD	3 GAL.	36" O.C.
SMALL PLANTS					
IT	38	IXORA TAIWANENSIS	DWARF RED IXORA	3 GAL., 18" HT. X 9" SPRD.	36" O.C.
PHX	16	PHILODENDRON X `XANADU`	XANADU PHILODENDRON	3 GAL., 12" HT, X 12" SPRD.	36" O.C.
PMP	4	PODOCARPUS MACROPHYLLUS `PRINGLES`	DWARF PODOCARPUS	3 GAL., 12" HT, X 9" SPRD.	30" O.C.
GROUND COVERS					
BM	24	AECHMEA ALOPECURUS	BROMELIAD	1 GAL., 6" HT.	18" O.C.
AA2	479	AGAPANTHUS AFRICANUS	AFRICAN LILY	1 GAL.	12" O.C.
AT	6	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	1 GAL.	24" O.C.
CME	43	CARISSA MACROCARPA `EMERALD BLANKET`	EMERALD BLANKET NATAL PLUM	3 GAL.	24" O.C.
DTV	38	DIANELLA TASMANICA `VARIEGATA`	VARIEGATED FLAX LILY	1 GAL.	24" O.C.
DI	17	DIETES IRIDOIDES	AFRICAN IRIS	1 GAL.	24" O.C.
EC	486	ELEOCHARIS CELLULOSA	COASTAL SPIKERUSH	BARE ROOT	12" O.C.
ES	5	ERAGROSTIS SPECTABILIS	PURPLE LOVE GRASS	1 GAL.	36" O.C.
EG	132	EVOLVULUS GLOMERATUS `BLUE DAZE`	BRAZILIAN DWARF MORNING GLORY	1 GAL.	18" - 24" O.C.
HD	177	HELIANTHUS DEBILIS	DUNE SUNFLOWER	1 GAL.	24" O.C.
IV	233	IRIS VIRGINICA	BLUE FLAG IRIS	1 GAL.	30" O.C.
JC	74	JUNIPERUS CONFERTA	SHORE JUNIPER	1 GAL., 3" HT.	30" O.C.
JH	50	JUNIPERUS HORIZONTALIS 'BLUE RUG'	BLUE RUG JUNIPER	3 GAL.	2.5" O.C.
LC	20	LANTANA DEPRESSA VAR. DEPRESSA	GOLD LANTANA	1 GAL.	24" O.C.
LM	6	LANTANA MONTEVIDENSIS	PURPLE TRAILING LANTANA	1 GAL.	24" O.C.
LMB	105	LIRIOPE MUSCARI `BIG BLUE`	BIG BLUE LILYTURF	1 GAL.	12" O.C.
LMV	44	LIRIOPE MUSCARI `VARIEGATA`	VARIEGATED LILY TURF	1 GAL., 6" HT.	18" O.C.
MUH2	527	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	1 GAL.	FULL, 36" O.C.
MUH	485	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	3 GAL.	36" O.C.
PC2	137	PONTEDERIA CORDATA	PICKEREL WEED	1 GAL.	36" O.C.
SD	137	SAGITTARIA LANCIFOLIA	DUCK POTATO	BARE ROOT	36" O.C.
SB2	790	SPARTINA BAKERI	SAND CORDGRASS	1 GAL.	36" O.C.
SB	96	SPARTINA BAKERI	SAND CORDGRASS	1 GAL.	36" O.C.
TP	5	THELYPTERIS PALUSTRIS	EASTERN MARSH FERN	4" POT, 6"-8" HT	36" O.C.
TRP	28	TRADESCANTIA PALLIDA `PURPLE HEART`	PURPLE QUEEN SPIDERWORT	1 GAL.	18" O.C.
TF	55	TRIPSACUM FLORIDANUM	FLORIDA GAMAGRASS	1 GAL.	24" O.C.
TV	310	TULBAGHIA VIOLACEA	SOCIETY GARLIC	1 GAL.	12" O.C.
YF	1	YUCCA FILAMENTOSA	ADAM`S NEEDLE	1 GAL.	48" O.C.
ZP2	23	ZAMIA PUMILA	COONTIE CYCAD	1 GAL.	36" O.C.
ZA	138	ZEPHYRANTHES ATAMASCO	ATAMASCO LILY	3" HT, X 3" SPRD	12" O.C.

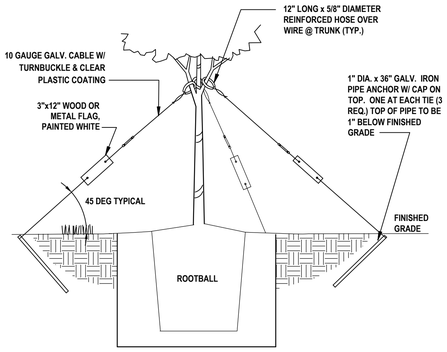
EXISTING TREE NOTES

NOTE: FOR TREES NOT LOCATED IN A NATURAL AREA TO REMAIN.

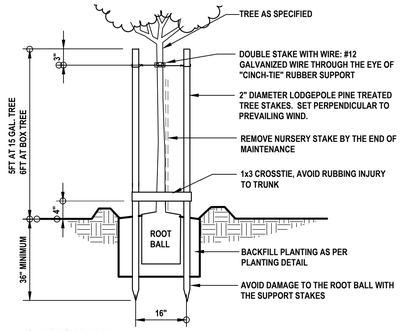
1. PRUNE ALL TREES TO REMAIN IN ACCORDANCE WITH ANSI A 300 PRUNING STANDARDS AS PERFORMED BY AN ARBORIST CERTIFIED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) OR A REGISTERED CONSULTING ARBORIST WITH THE AMERICAN SOCIETY OF CONSULTING ARBORISTS (ASCA).
2. REMOVE ALL EXISTING MULCH AND ENSURE ONE OR TWO LARGE ROOTS ARE EXPOSED. ADD NEW MULCH TO A DEPTH OF 3" TO BED SURROUNDING TREES. KEEP MULCH 6" FROM TRUNK. DO NOT PILE MULCH AGAINST TRUNK.

PLANT SPECIFICATION NOTES

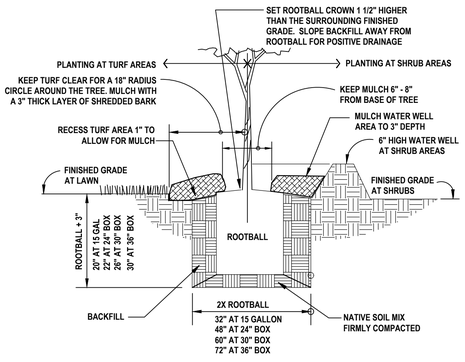
1. PLANT DESCRIPTIONS ARE FOR MINIMUM ACCEPTABLE SPECIFICATIONS. ALL CRITERIA LISTED FOR CONTAINER SIZE, CALIPER, HEIGHT, SPREAD, ETC. MUST BE MET FOR PLANT MATERIAL ACCEPTANCE. FOR EXAMPLE, IF A THREE (3) GALLON SHRUB DOES NOT MEET THE HEIGHT OR SPREAD SPECIFICATION, IT WILL NOT BE ACCEPTED.
2. IF SPECIFIED PLANTS ARE UNAVAILABLE AT THE TIME OF CONSTRUCTION, CONTRACTOR MAY REPLACE SPECIFIED PLANTS WITH PLANTS APPROVED BY LANDSCAPE ARCHITECT AND CITY STAFF.



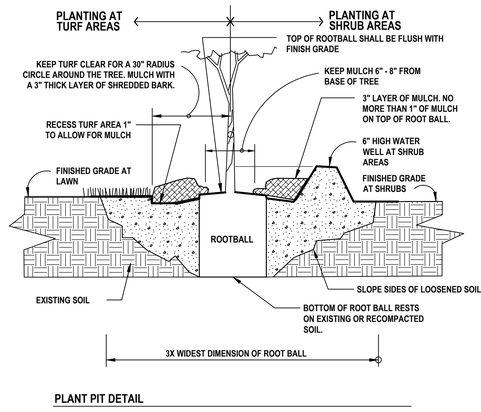
STAKING DETAIL



STAKING DETAIL



PLANT PIT DETAIL



PLANT PIT DETAIL

LANDSCAPE NOTES

1. ALL PLANT MATERIAL SHALL CONFORM TO THE STANDARDS FOR FLORIDA #1 OR BETTER AS DESCRIBED IN THE CURRENT "GRADES AND STANDARDS FOR NURSERY PLANTS", STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE, TALLAHASSEE, OR THEIR EQUAL AS DETERMINED BY THE LANDSCAPE ARCHITECT. PLANT MATERIAL SHALL BE CLEARLY IDENTIFIED AS FLORIDA #1 OR BETTER ON EITHER LABELS OR INVOICES.
2. ALL PLANT SPECIFICATIONS MUST BE MET OR EXCEEDED. SIZES IN PLANT SCHEDULE ARE MINIMUMS AND EACH MUST BE MET. CONTAINERS MAY NEED TO BE UP SIZED TO MEET ALL SPECIFICATIONS.
3. ALL MULCH SHALL BE PINE BARK AND INSTALLED 3" DEEP. TREES IN SOD TO BE IN A 5' MINIMUM-MULCHED RING. ALL PALMS TO BE IN A 3' MULCH RING. MULCH TO BE INSTALLED 6" FROM TRUNK AND 2" FROM PLANTS.
4. SOD SHALL BE ST. AUGUSTINE "FLORITAM" UNLESS OTHERWISE NOTED ON THE PLAN AND SHALL BE 95% WEED-FREE. WHERE SPECIFIED, BAHIA SOD SHALL BE 85% WEED-FREE. ALL SOD SHALL BE INSTALLED WITH TIGHT JOINTS, ROLLED AND FERTILIZED.
5. ALL DIMENSIONS SHALL BE FIELD-CHECKED BY THE LANDSCAPE CONTRACTOR PRIOR TO CONSTRUCTION, WITH ANY DISCREPANCIES REPORTED IMMEDIATELY TO THE LANDSCAPE ARCHITECT.
6. THE PLANT MATERIALS SCHEDULE IS PROVIDED FOR THE CONVENIENCE OF THE LANDSCAPE CONTRACTOR; SHOULD THERE BE ANY DISCREPANCY BETWEEN THE PLAN AND THE PLANT LIST, THE PLAN WILL PREVAIL.
7. ALL MATERIALS MUST BE AS SPECIFIED AS ON THE LANDSCAPE PLAN. IF MATERIALS OR LABOR DO NOT ADHERE TO THE SPECIFICATIONS, THEY WILL BE REJECTED AT NO ADDITIONAL COST TO THE OWNER.
8. NO SUBSTITUTIONS OR CHANGES OF ANY KIND WILL BE ALLOWED AT THE TIME OF BIDDING SO AS TO PROVIDE FOR FAIR COMPARISON.
9. VERIFY EXISTENCE AND LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND CONDITIONS PRIOR TO HIS COMMENCEMENT OF THE ANY WORK.
10. ALL BUILDING MATERIALS AND LABOR SHALL CONFORM TO THE FLORIDA BUILDING CODE AND ALSO TO ALL LOCAL CODES THAT HAVE JURISDICTION.
11. EQUIPMENT SHALL BE OPERATED IN A MANNER AS NOT TO INJURE OR DESTROY ANY TREES SHOWN TO REMAIN. CONTRACTOR SHALL NOT CAUSE OR ALLOW THE CLEANING OF EQUIPMENT OR MATERIAL WITHIN THE DRIP LINE OF ANY TREE OR GROUPS OF TREES TO BE RETAINED OR THOSE PROPOSED. NOR SHALL THE CONTRACTOR ALLOW THE DISPOSAL OF WASTE MATERIAL, SUCH AS PAINT, OIL SOLVENTS, ASPHALT, CONCRETE, MORTAR OR ANY OTHER MATERIAL HARMFUL TO THE LIFE OF A TREE WITHIN THE DRIP LINE OF ANY TREE OR GROUP OF TREES. NO ATTACHMENT, WIRES (OTHER THAN PROTECTIVE GUY WIRES), SIGNS, OR PERMITS MAY BE FASTENED TO A TREE.
12. ANY EXISTING TREES CREDITED TOWARDS REQUIRED BUFFERS OR LANDSCAPE REQUIREMENTS REMOVED FOR ANY REASON SHALL BE REPLACED WITH TREES MEETING CITY APPROVAL WITH REGARDS TO SPECIES AND SIZE.
13. ALL QUESTIONS CONCERNING THE PLAN AND/OR SPECIFICATIONS SHALL BE DIRECTED TO THE LANDSCAPE ARCHITECT (386) 872-7794.
14. ALL TREES AND PALMS MUST BE STAKED USING THE DETAILS PROVIDED OR ARBORGUY STAKING SYSTEMS. ANY STAKING SYSTEM NOT INCLUDED MUST BE APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.
15. ALL DISTURBED AREA SHALL BE SODDED WITH BAHIA UNLESS OTHERWISE NOTED ON THE LANDSCAPE PLAN.
16. THE CONTRACTOR SHALL GUARANTEE ALL INSTALLED PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR AFTER ACCEPTANCE IN WRITING BY OWNER OR OWNER'S REPRESENTATIVE. ALL PLANT MATERIAL SHALL BE WATERED REGULARLY AS NEEDED UNTIL ESTABLISHED. FOR TREES, UP TO ONE YEAR AND FOR SHRUBS/GROUNDCOVER, GENERALLY 2 -3 MONTHS.
17. REMOVE ALL CONSTRUCTION DEBRIS, LIMEROCK, EXCESS OF BUILDERS SAND, CONCRETE AND MORTAR DEBRIS, EXISTING WEEDS AND GRASS, AND ALL FOREIGN MATERIALS IN THE PLANTING BED AND SOD AREAS.
18. ALL EXISTING TREES AND PALMS WILL BE PROPERLY PRUNED AND CLEANED OF DEADWOOD, BROKEN BRANCHES, DEAD FROND AND VINES AS NEEDED. ALL STRUCTURAL PRUNING OF HARDWOOD TREES SHALL BE PERFORMED UNDER THE DIRECTION OF A CERTIFIED ARBORIST.
19. ALL NOXIOUS OR EXOTIC VEGETATION THAT DETRACTS FROM THE APPEARANCE OF THE EXISTING OR PLANTED VEGETATION WITHIN THE TREE PROTECTION AREA OR BUFFERS SHALL BE REMOVED. THE EDGE OF THE AREAS TO REMAIN NATURAL SHALL BE MULCHED 5' IN AND A CURVILINEAR BED LINE SHALL BE CREATED ADJACENT TO SODDED AREAS.
20. ALL PLANTS SHALL BE INSTALLED ACCORDING TO THE FLORIDA FRIENDLY BEST MANAGEMENT PRACTICES FOR PROTECTION OF WATER RESOURCES BY THE GREEN INDUSTRIES.
30. NATURAL AREA: AREAS TO REMAIN NATURAL SHALL BE CLEANED OF ALL INVASIVE PLANT SPECIES AND UNDERBRUSH SHOULD BE REMOVED WITHIN 5' OF EDGE. PINE STRAW MULCH SHOULD BE APPLIED CREATING A CURVED BEDLINE.

LANDSCAPE SOIL SPECIFICATIONS

1. CONTRACTOR WILL BE RESPONSIBLE FOR ANY REQUIRED EXCAVATION AND FOR RAKING AND SMOOTHING OF GRADE. IT IS RECOMMENDED THAT LANDSCAPE CONTRACTOR COORDINATE WITH GRADING CONTRACTOR TO ESTABLISH SUBGRADES FOR PLANTING AREAS AS REQUIRED BELOW.
2. LANDSCAPE SOIL REFERS TO STOCKPILED TOPSOIL OR THE PLANTING MIXTURE AS SPECIFIED BELOW. STRUCTURAL SOIL OR FILL DIRT SHALL NOT BE USED IN PLANTED AREAS.
3. TOPSOIL SHALL BE STOCKPILED IF THE SITE CONSISTS OF NATIVE PLANT COMMUNITIES. IF NOXIOUS AND/OR INVASIVE PLANT SPECIES ARE PRESENT, TOPSOIL SHALL NOT BE STOCKPILED AND THE PLANTING MIXTURE BELOW SHALL BE USED.
4. IF STOCKPILED, THE TOPSOIL SHALL BE SALVAGED TO A DEPTH OF 4 TO 6 INCHES AND STOCKPILED NO HIGHER THAN 3 FEET IN HEIGHT.
5. TOPSOIL SHALL BE STORED FOR AS SHORT A DURATION AS POSSIBLE TO ENSURE SURVIVAL OF SEEDS AND SOIL ORGANISMS.
6. IF TOPSOIL HAS NOT BEEN STOCKPILED, PLANTING MIXTURE FOR TREES AND SHRUBS SHALL CONSIST OF 1/3 "COMPOST", 1/3 COARSE SAND, AND 1/3 EXISTING SOIL, THOROUGHLY MIXED. IF THE EXISTING SOIL IS NOT NATIVE AND FREE OF INVASIVES, THEN TOPSOIL SHALL BE IMPORTED FOR THIS COMPONENT.
7. MIXTURE FOR PALMS SHALL BE 50 PERCENT COARSE SAND AND 50 PERCENT EXISTING SOIL. MIX THOROUGHLY WITH EXISTING SOIL.
8. LANDSCAPE SOIL SHALL BE USED IN ALL PLANT BEDS CONSISTING OF SHRUBS AND GROUNDCOVER TO A DEPTH OF 6" AND MULCH TO A DEPTH OF 3".
9. LANDSCAPE SOIL SHALL BE FREE OF DEBRIS, WEEDS, PARTICLES LARGER THAN 0.50 INCHES AND RINSATE CONTAINING LIME OR TOXIC MATERIALS.
10. EXISTING SOIL SHOULD NOT BE CONTINUOUSLY EXCAVATED BENEATH THE DRIP LINE OF EXISTING TREES. IN THIS CASE, IF SHRUBS OR GROUNDCOVER ARE PROPOSED, THEY SHOULD BE PLANTED IN NATIVE SOIL WITHOUT AMENDMENT.

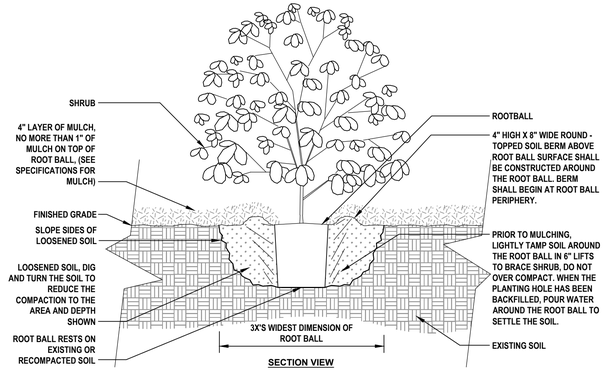
REFER TO LANDSCAPE DETAILS FOR MINIMUM PLANTING PIT DIMENSIONS.

1 TREE PLANTING DETAIL

1" = 1'-0" — P-CO-2023-109-01

2 SMALL TREE PLANTING DETAIL

1" = 1'-0" — P-CO-2023-109-03



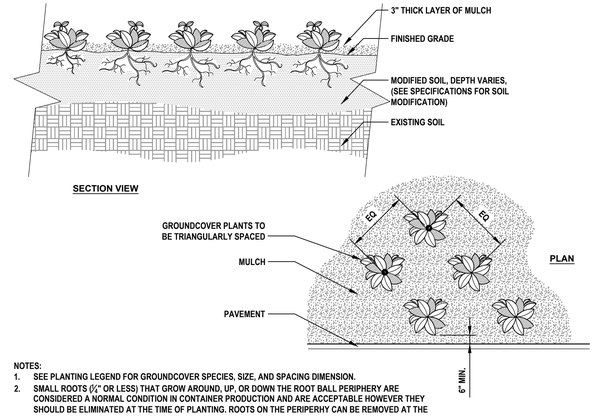
SECTION VIEW

NOTES:
1. SHRUBS SHALL BE OF QUALITY PRESCRIBED IN THE ROOT OBSERVATIONS DETAIL AND SPECIFICATIONS.
2. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS RELATED TO THIS DETAIL.

3 SHRUB PLANTING DETAIL

NTS — P-CO-2023-109-04

URBAN TREE FOUNDATION © 2014
OPEN SOURCE FREE TO USE



NOTES:
1. SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES, SIZE, AND SPACING DIMENSION.
2. SMALL ROOTS (¼" OR LESS) THAT GROW AROUND, UP, OR DOWN THE ROOT BALL PERIPHERY ARE CONSIDERED A NORMAL CONDITION IN CONTAINER PRODUCTION AND ARE ACCEPTABLE HOWEVER THEY SHOULD BE ELIMINATED AT THE TIME OF PLANTING. ROOTS ON THE PERIPERHY CAN BE REMOVED AT THE TIME OF PLANTING. (SEE ROOT BALL SHAVING CONTAINER DETAIL).
3. SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PRIOR TO MULCHING.

4 GROUNDCOVER LAYOUT

1/16" = 1'-0" — P-CO-2023-109-02

REVISIONS

DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

LANDSCAPE DETAILS AND NOTES
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams — Digitally signed by Lauren A Adams
DN: C=US, E=laadams@newkirk-engineering.com, O=Newkirk Engineering Inc, CN=Lauren A Adams
Date: 2025.12.22 09:45:13 -05'00'

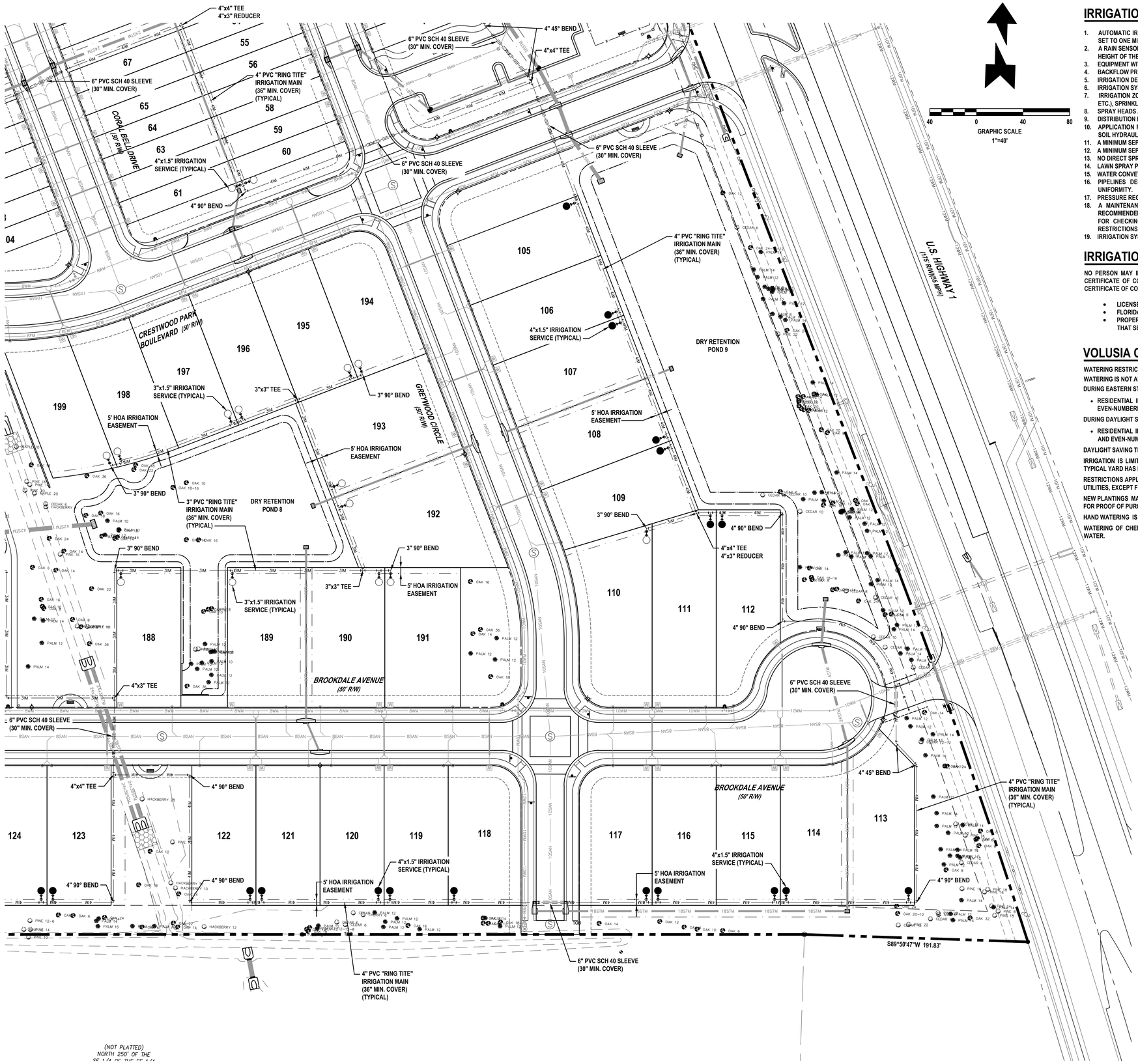
LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	AS SHOWN

DRAWING NUMBER

L7



IRRIGATION NOTES:

1. AUTOMATIC IRRIGATION CONTROLLERS, WHEN UTILIZED, SHALL CONTAIN A FUNCTIONAL RAIN SENSOR DEVICE, CAPABLE OF BEING SET TO ONE MINUTE RUN TIMES, AND BATTERY BACKUP CAPABILITY TO RETAIN PROGRAMMING IN THE EVENT OF A POWER FAILURE.
2. A RAIN SENSOR PLACED ON A STATIONARY STRUCTURE, FREE AND CLEAR OF ANY OVERHEAD OBSTRUCTIONS AND ABOVE THE HEIGHT OF THE SPRINKLER COVERAGE.
3. EQUIPMENT WITH CHECK VALVES USED IN LOW-LYING AREAS TO PREVENT LOW HEAD DRAINAGE.
4. BACKFLOW PREVENTION METHODS AND OTHER PROVISIONS PRESCRIBED IN SECTION 74-42.
5. IRRIGATION DESIGN WITH THE APPROPRIATE UNIFORMITY FOR THE TYPE OF PLANT BEING GROWN AND FOR THE TYPE OF SOIL.
6. IRRIGATION SYSTEM EQUIPMENT INSTALLED AS DESIGNED.
7. IRRIGATION ZONES DIVIDED ACCORDING TO: AVAILABLE FLOW RATE, VEGETATED GROUPINGS (I.E., TURF, SHRUBS, NATIVE PLANTS, ETC.), SPRINKLER TYPES (I.E., SPRINKLERS WITH MATCHING PRECIPITATION RATES) AND SOIL CHARACTERISTICS.
8. SPRAY HEADS AND ROTORS NOT MIXED IN SAME ZONE.
9. DISTRIBUTION EQUIPMENT IN A GIVEN ZONE HAVING MATCHED PRECIPITATION RATES.
10. APPLICATION RATES THAT AVOID RUNOFF AND PERMIT UNIFORM WATER INFILTRATION INTO THE SOIL, CONSIDERING LAND SLOPE, SOIL HYDRAULIC PROPERTIES, VEGETATIVE GROUND COVER AND PREVAILING WINDS.
11. A MINIMUM SEPARATION OF FOUR INCHES BETWEEN DISTRIBUTION EQUIPMENT AND PAVEMENT.
12. A MINIMUM SEPARATION OF 12 INCHES BETWEEN DISTRIBUTION EQUIPMENT AND BUILDINGS AND OTHER VERTICAL STRUCTURES.
13. NO DIRECT SPRAY ONTO WALKWAYS, BUILDINGS, ROADWAYS AND DRIVES.
14. LAWN SPRAY PATTERNS PROVIDING HEAD TO HEAD COVERAGE.
15. WATER CONVEYANCE SYSTEMS WITH A FLOW VELOCITY OF FIVE FEET PER SECOND OR LESS.
16. PIPELINES DESIGNED TO PROVIDE THE SYSTEM WITH THE APPROPRIATE PRESSURE REQUIRED FOR MAXIMUM IRRIGATION UNIFORMITY.
17. PRESSURE REGULATING HEADS.
18. A MAINTENANCE CHECKLIST PROVIDED TO THE PROPERTY OWNER BY THE IRRIGATION CONTRACTOR ACCOMPANIED BY A RECOMMENDED MAINTENANCE SCHEDULE, PROPER IRRIGATION SYSTEM SETTINGS ACCORDING TO SEASON, RECOMMENDATIONS FOR CHECKING RAIN SENSOR DEVICE, FILTER CLEANING RECOMMENDATIONS AND INFORMATION ON THE CURRENT WATER RESTRICTIONS.
19. IRRIGATION SYSTEM DESIGN WILL BE PERMITTED THROUGH VOLUSIA COUNTY.

IRRIGATION CONTRACTOR LICENSE REQUIREMENTS:

NO PERSON MAY INSTALL OR REPAIR AN IRRIGATION SYSTEM IN VOLUSIA COUNTY UNLESS THEY POSSESS A VALID IRRIGATION CERTIFICATE OF COMPETENCY FROM THE DEPARTMENT. THE FOLLOWING PERSONS ARE EXEMPTED FROM HAVING TO POSSESS A CERTIFICATE OF COMPETENCY:

- LICENSED FLORIDA WATER WELL CONTRACTORS AND FLORIDA STATE CERTIFIED PLUMING CONTRACTORS.
- FLORIDA STATE REGISTERED PLUMBING CONTRACTORS.
- PROPERTY OWNERS WHO PERSONALLY PERFORM CONSTRUCTION, MAINTENANCE OR REPAIRS ON AN IRRIGATION SYSTEM THAT SERVES HIS OR HER OWNER-OCCUPIED SINGLE FAMILY RESIDENCE.

VOLUSIA COUNTY WATERING RESTRICTIONS:

WATERING RESTRICTIONS APPLY TO ALL COUNTY RESIDENTS, INCLUDING THOSE LIVING IN CITIES.

WATERING IS NOT ALLOWED BETWEEN 10 A.M. AND 4 P.M.

DURING EASTERN STANDARD TIME:

- RESIDENTIAL IRRIGATION IS LIMITED TO 4 P.M. TO 10 A.M. SATURDAYS FOR ODD-NUMBERED ADDRESSES AND SUNDAYS FOR EVEN-NUMBERED ADDRESSES.

DURING DAYLIGHT SAVING TIME:

- RESIDENTIAL IRRIGATION IS ALLOWED AT ODD-NUMBERED ADDRESSES FROM 4 P.M. TO 10 A.M. WEDNESDAYS AND SATURDAYS AND EVEN-NUMBER ADDRESSES THURSDAYS AND SUNDAYS.

DAYLIGHT SAVING TIME BEGINS THE SECOND SUNDAY IN MARCH AND ENDS THE FIRST SUNDAY IN NOVEMBER.

IRRIGATION IS LIMITED TO NO MORE THAN ONE HOUR AND THREE-QUARTERS INCH OF WATER PER ZONE PER IRRIGATION DAY. A TYPICAL YARD HAS FOUR IRRIGATION ZONES.

RESTRICTIONS APPLY TO ALL WATER SOURCES, INCLUDING PRIVATE WELLS, SURFACE WATER, AND WATER FROM PUBLIC AND PRIVATE UTILITIES, EXCEPT FOR RECLAIMED WATER (SEE YOUR RECLAIMED WATER PROVIDER FOR ANY RESTRICTIONS.)

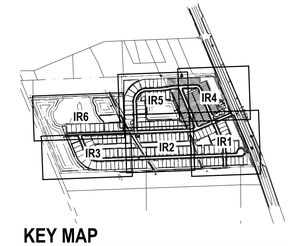
NEW PLANTINGS MAY BE WATERED ANY TIME FOR 30 DAYS, THEN EVERY OTHER DAY FOR ANOTHER 30 DAYS. KEEP THE STORE RECEIPT FOR PROOF OF PURCHASE.

HAND WATERING IS ALLOWED ANY TIME WITH AN AUTOMATIC SHUTOFF ON THE HOSE.

WATERING OF CHEMICALS IS ALLOWED ANY TIME WITHIN 24 HOURS OF APPLICATION AND MAY NOT EXCEED A QUARTER-INCH OF WATER.

IRRIGATION LEGEND

- PROPOSED 4"x1.5" IRRIGATION SERVICE
- PROPOSED 3"x1.5" IRRIGATION SERVICE
- 3M — PROPOSED 3" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- 4M — PROPOSED 4" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- PROPOSED 5' HOA IRRIGATION EASEMENT



KEY MAP
NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

LOT IRRIGATION MAIN LAYOUT PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

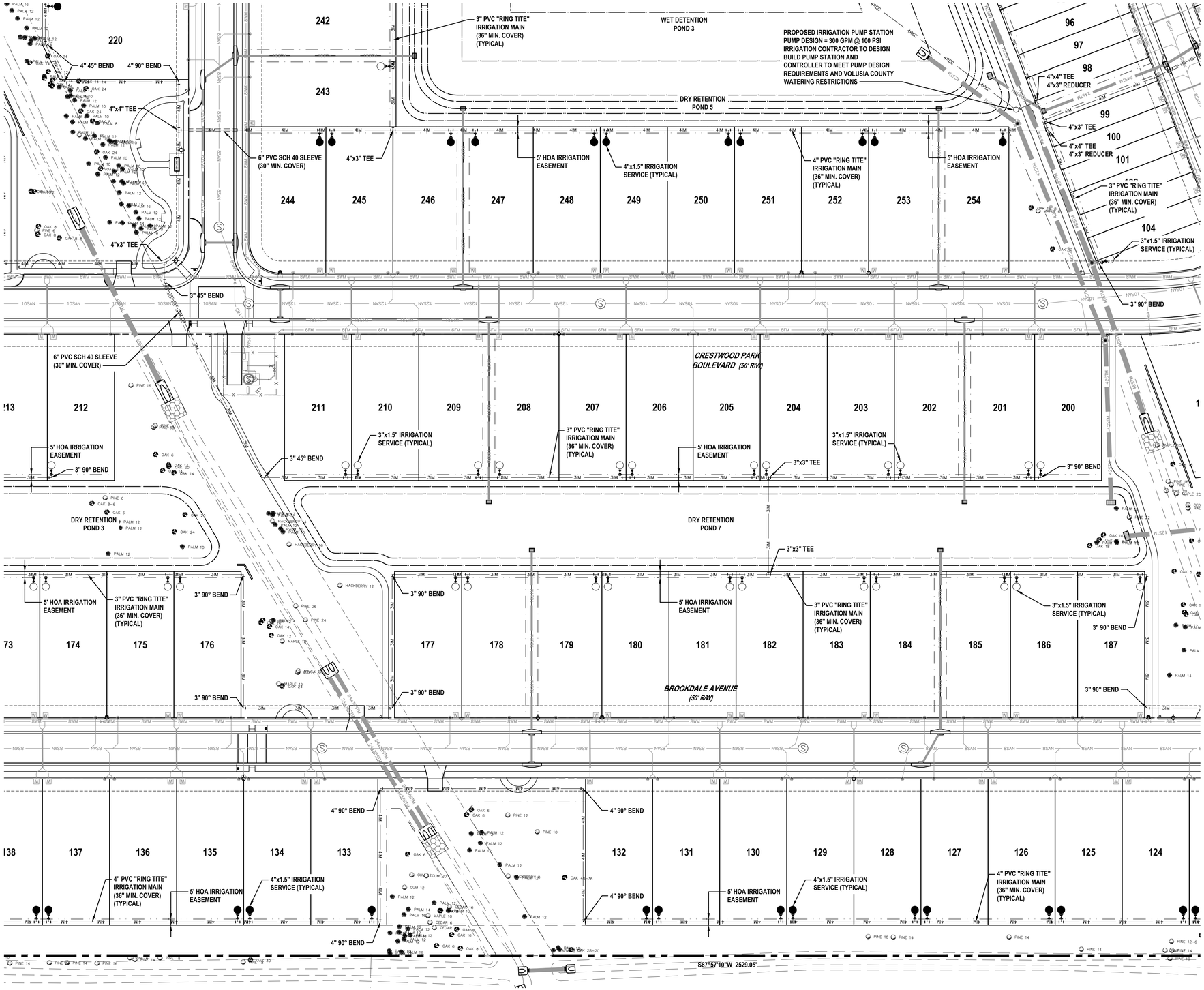
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

IR1



40 0 40 80

GRAPHIC SCALE
1"=40'

IRRIGATION NOTES:

1. AUTOMATIC IRRIGATION CONTROLLERS, WHEN UTILIZED, SHALL CONTAIN A FUNCTIONAL RAIN SENSOR DEVICE, CAPABLE OF BEING SET TO ONE MINUTE RUN TIMES, AND BATTERY BACKUP CAPABILITY TO RETAIN PROGRAMMING IN THE EVENT OF A POWER FAILURE.
2. A RAIN SENSOR PLACED ON A STATIONARY STRUCTURE, FREE AND CLEAR OF ANY OVERHEAD OBSTRUCTIONS AND ABOVE THE HEIGHT OF THE SPRINKLER COVERAGE.
3. EQUIPMENT WITH CHECK VALVES USED IN LOW-LYING AREAS TO PREVENT LOW HEAD DRAINAGE.
4. BACKFLOW PREVENTION METHODS AND OTHER PROVISIONS PRESCRIBED IN SECTION 74-42.
5. IRRIGATION DESIGN WITH THE APPROPRIATE UNIFORMITY FOR THE TYPE OF PLANT BEING GROWN AND FOR THE TYPE OF SOIL.
6. IRRIGATION SYSTEM EQUIPMENT INSTALLED AS DESIGNED.
7. IRRIGATION ZONES DIVIDED ACCORDING TO: AVAILABLE FLOW RATE, VEGETATED GROUPINGS (I.E., TURF, SHRUBS, NATIVE PLANTS, ETC.), SPRINKLER TYPES (I.E., SPRINKLERS WITH MATCHING PRECIPITATION RATES) AND SOIL CHARACTERISTICS.
8. SPRAY HEADS AND ROTORS NOT MIXED IN SAME ZONE.
9. DISTRIBUTION EQUIPMENT IN A GIVEN ZONE HAVING MATCHED PRECIPITATION RATES.
10. APPLICATION RATES THAT AVOID RUNOFF AND PERMIT UNIFORM WATER INFILTRATION INTO THE SOIL, CONSIDERING LAND SLOPE, SOIL HYDRAULIC PROPERTIES, VEGETATIVE GROUND COVER AND PREVAILING WINDS.
11. A MINIMUM SEPARATION OF FOUR INCHES BETWEEN DISTRIBUTION EQUIPMENT AND PAVEMENT.
12. A MINIMUM SEPARATION OF 12 INCHES BETWEEN DISTRIBUTION EQUIPMENT AND BUILDINGS AND OTHER VERTICAL STRUCTURES.
13. NO DIRECT SPRAY ONTO WALKWAYS, BUILDINGS, ROADWAYS AND DRIVES.
14. LAWN SPRAY PATTERNS PROVIDING HEAD TO HEAD COVERAGE.
15. WATER CONVEYANCE SYSTEMS WITH A FLOW VELOCITY OF FIVE FEET PER SECOND OR LESS.
16. PIPELINES DESIGNED TO PROVIDE THE SYSTEM WITH THE APPROPRIATE PRESSURE REQUIRED FOR MAXIMUM IRRIGATION UNIFORMITY.
17. PRESSURE REGULATING HEADS.
18. A MAINTENANCE CHECKLIST PROVIDED TO THE PROPERTY OWNER BY THE IRRIGATION CONTRACTOR ACCOMPANIED BY A RECOMMENDED MAINTENANCE SCHEDULE, PROPER IRRIGATION SYSTEM SETTINGS ACCORDING TO SEASON, RECOMMENDATIONS FOR CHECKING RAIN SENSOR DEVICE, FILTER CLEANING RECOMMENDATIONS AND INFORMATION ON THE CURRENT WATER RESTRICTIONS.
19. IRRIGATION SYSTEM DESIGN WILL BE PERMITTED THROUGH VOLUSIA COUNTY.

IRRIGATION CONTRACTOR LICENSE REQUIREMENTS:

NO PERSON MAY INSTALL OR REPAIR AN IRRIGATION SYSTEM IN VOLUSIA COUNTY UNLESS THEY POSSESS A VALID IRRIGATION CERTIFICATE OF COMPETENCY FROM THE DEPARTMENT. THE FOLLOWING PERSONS ARE EXEMPTED FROM HAVING TO POSSESS A CERTIFICATE OF COMPETENCY:

- LICENSED FLORIDA WATER WELL CONTRACTORS AND FLORIDA STATE CERTIFIED PLUMING CONTRACTORS.
- FLORIDA STATE REGISTERED PLUMBING CONTRACTORS.
- PROPERTY OWNERS WHO PERSONALLY PERFORM CONSTRUCTION, MAINTENANCE OR REPAIRS ON AN IRRIGATION SYSTEM THAT SERVES HIS OR HER OWNER-OCCUPIED SINGLE FAMILY RESIDENCE.

VOLUSIA COUNTY WATERING RESTRICTIONS:

WATERING RESTRICTIONS APPLY TO ALL COUNTY RESIDENTS, INCLUDING THOSE LIVING IN CITIES.

WATERING IS NOT ALLOWED BETWEEN 10 A.M. AND 4 P.M.

DURING EASTERN STANDARD TIME:

- RESIDENTIAL IRRIGATION IS LIMITED TO 4 P.M. TO 10 A.M. SATURDAYS FOR ODD-NUMBERED ADDRESSES AND SUNDAYS FOR EVEN-NUMBERED ADDRESSES.

DURING DAYLIGHT SAVING TIME:

- RESIDENTIAL IRRIGATION IS ALLOWED AT ODD-NUMBERED ADDRESSES FROM 4 P.M. TO 10 A.M. WEDNESDAYS AND SATURDAYS AND EVEN-NUMBER ADDRESSES THURSDAYS AND SUNDAYS.

DAYLIGHT SAVING TIME BEGINS THE SECOND SUNDAY IN MARCH AND ENDS THE FIRST SUNDAY IN NOVEMBER.

IRRIGATION IS LIMITED TO NO MORE THAN ONE HOUR AND THREE-QUARTERS INCH OF WATER PER ZONE PER IRRIGATION DAY. A TYPICAL YARD HAS FOUR IRRIGATION ZONES.

RESTRICTIONS APPLY TO ALL WATER SOURCES, INCLUDING PRIVATE WELLS, SURFACE WATER, AND WATER FROM PUBLIC AND PRIVATE UTILITIES, EXCEPT FOR RECLAIMED WATER (SEE YOUR RECLAIMED WATER PROVIDER FOR ANY RESTRICTIONS.)

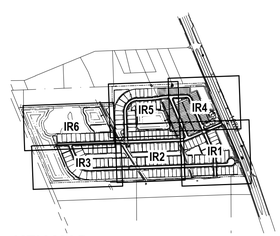
NEW PLANTINGS MAY BE WATERED ANY TIME FOR 30 DAYS, THEN EVERY OTHER DAY FOR ANOTHER 30 DAYS. KEEP THE STORE RECEIPT FOR PROOF OF PURCHASE.

HAND WATERING IS ALLOWED ANY TIME WITH AN AUTOMATIC SHUTOFF ON THE HOSE.

WATERING OF CHEMICALS IS ALLOWED ANY TIME WITHIN 24 HOURS OF APPLICATION AND MAY NOT EXCEED A QUARTER-INCH OF WATER.

IRRIGATION LEGEND

- PROPOSED 4"x1.5" IRRIGATION SERVICE
- PROPOSED 3"x1.5" IRRIGATION SERVICE
- 3IM — PROPOSED 3" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- 4IM — PROPOSED 4" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- PROPOSED 5' HOA IRRIGATION EASEMENT



KEY MAP
NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

IRRIGATION MAIN LAYOUT PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132
SECTION 1, TOWNSHIP 17 SOUTH, RANGE 33 EAST

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

IR2

IRRIGATION LEGEND

- PROPOSED 4"x1.5" IRRIGATION SERVICE
- PROPOSED 3"x1.5" IRRIGATION SERVICE
- 3IM — PROPOSED 3" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- 4IM — PROPOSED 4" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- PROPOSED 5' HOA IRRIGATION EASEMENT

IRRIGATION NOTES:

1. AUTOMATIC IRRIGATION CONTROLLERS, WHEN UTILIZED, SHALL CONTAIN A FUNCTIONAL RAIN SENSOR DEVICE, CAPABLE OF BEING SET TO ONE MINUTE RUN TIMES, AND BATTERY BACKUP CAPABILITY TO RETAIN PROGRAMMING IN THE EVENT OF A POWER FAILURE.
2. A RAIN SENSOR PLACED ON A STATIONARY STRUCTURE, FREE AND CLEAR OF ANY OVERHEAD OBSTRUCTIONS AND ABOVE THE HEIGHT OF THE SPRINKLER COVERAGE.
3. EQUIPMENT WITH CHECK VALVES USED IN LOW-LYING AREAS TO PREVENT LOW HEAD DRAINAGE.
4. BACKFLOW PREVENTION METHODS AND OTHER PROVISIONS PRESCRIBED IN SECTION 74-42.
5. IRRIGATION DESIGN WITH THE APPROPRIATE UNIFORMITY FOR THE TYPE OF PLANT BEING GROWN AND FOR THE TYPE OF SOIL.
6. IRRIGATION SYSTEM EQUIPMENT INSTALLED AS DESIGNED.
7. IRRIGATION ZONES DIVIDED ACCORDING TO: AVAILABLE FLOW RATE, VEGETATED GROUPINGS (I.E., TURF, SHRUBS, NATIVE PLANTS, ETC.), SPRINKLER TYPES (I.E., SPRINKLERS WITH MATCHING PRECIPITATION RATES) AND SOIL CHARACTERISTICS.
8. SPRAY HEADS AND ROTORS NOT MIXED IN SAME ZONE.
9. DISTRIBUTION EQUIPMENT IN A GIVEN ZONE HAVING MATCHED PRECIPITATION RATES.
10. APPLICATION RATES THAT AVOID RUNOFF AND PERMIT UNIFORM WATER INFILTRATION INTO THE SOIL, CONSIDERING LAND SLOPE, SOIL HYDRAULIC PROPERTIES, VEGETATIVE GROUND COVER AND PREVAILING WINDS.
11. A MINIMUM SEPARATION OF FOUR INCHES BETWEEN DISTRIBUTION EQUIPMENT AND PAVEMENT.
12. A MINIMUM SEPARATION OF 12 INCHES BETWEEN DISTRIBUTION EQUIPMENT AND BUILDINGS AND OTHER VERTICAL STRUCTURES.
13. NO DIRECT SPRAY ONTO WALKWAYS, BUILDINGS, ROADWAYS AND DRIVES.
14. LAWN SPRAY PATTERNS PROVIDING HEAD TO HEAD COVERAGE.
15. WATER CONVEYANCE SYSTEMS WITH A FLOW VELOCITY OF FIVE FEET PER SECOND OR LESS.
16. PIPELINES DESIGNED TO PROVIDE THE SYSTEM WITH THE APPROPRIATE PRESSURE REQUIRED FOR MAXIMUM IRRIGATION UNIFORMITY.
17. PRESSURE REGULATING HEADS.
18. A MAINTENANCE CHECKLIST PROVIDED TO THE PROPERTY OWNER BY THE IRRIGATION CONTRACTOR ACCOMPANIED BY A RECOMMENDED MAINTENANCE SCHEDULE, PROPER IRRIGATION SYSTEM SETTINGS ACCORDING TO SEASON, RECOMMENDATIONS FOR CHECKING RAIN SENSOR DEVICE, FILTER CLEANING RECOMMENDATIONS AND INFORMATION ON THE CURRENT WATER RESTRICTIONS.
19. IRRIGATION SYSTEM DESIGN WILL BE PERMITTED THROUGH VOLUSIA COUNTY.

IRRIGATION CONTRACTOR LICENSE REQUIREMENTS:

NO PERSON MAY INSTALL OR REPAIR AN IRRIGATION SYSTEM IN VOLUSIA COUNTY UNLESS THEY POSSESS A VALID IRRIGATION CERTIFICATE OF COMPETENCY FROM THE DEPARTMENT. THE FOLLOWING PERSONS ARE EXEMPTED FROM HAVING TO POSSESS A CERTIFICATE OF COMPETENCY:

- LICENSED FLORIDA WATER WELL CONTRACTORS AND FLORIDA STATE CERTIFIED PLUMING CONTRACTORS.
- FLORIDA STATE REGISTERED PLUMBING CONTRACTORS.
- PROPERTY OWNERS WHO PERSONALLY PERFORM CONSTRUCTION, MAINTENANCE OR REPAIRS ON AN IRRIGATION SYSTEM THAT SERVES HIS OR HER OWNER-OCCUPIED SINGLE FAMILY RESIDENCE.

VOLUSIA COUNTY WATERING RESTRICTIONS:

WATERING RESTRICTIONS APPLY TO ALL COUNTY RESIDENTS, INCLUDING THOSE LIVING IN CITIES.

WATERING IS NOT ALLOWED BETWEEN 10 A.M. AND 4 P.M.

DURING EASTERN STANDARD TIME:

- RESIDENTIAL IRRIGATION IS LIMITED TO 4 P.M. TO 10 A.M. SATURDAYS FOR ODD-NUMBERED ADDRESSES AND SUNDAYS FOR EVEN-NUMBERED ADDRESSES.

DURING DAYLIGHT SAVING TIME:

- RESIDENTIAL IRRIGATION IS ALLOWED AT ODD-NUMBERED ADDRESSES FROM 4 P.M. TO 10 A.M. WEDNESDAYS AND SATURDAYS AND EVEN-NUMBER ADDRESSES THURSDAYS AND SUNDAYS.

DAYLIGHT SAVING TIME BEGINS THE SECOND SUNDAY IN MARCH AND ENDS THE FIRST SUNDAY IN NOVEMBER.

IRRIGATION IS LIMITED TO NO MORE THAN ONE HOUR AND THREE-QUARTERS INCH OF WATER PER ZONE PER IRRIGATION DAY. A TYPICAL YARD HAS FOUR IRRIGATION ZONES.

RESTRICTIONS APPLY TO ALL WATER SOURCES, INCLUDING PRIVATE WELLS, SURFACE WATER, AND WATER FROM PUBLIC AND PRIVATE UTILITIES, EXCEPT FOR RECLAIMED WATER (SEE YOUR RECLAIMED WATER PROVIDER FOR ANY RESTRICTIONS.)

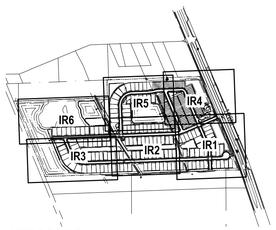
NEW PLANTINGS MAY BE WATERED ANY TIME FOR 30 DAYS, THEN EVERY OTHER DAY FOR ANOTHER 30 DAYS. KEEP THE STORE RECEIPT FOR PROOF OF PURCHASE.

HAND WATERING IS ALLOWED ANY TIME WITH AN AUTOMATIC SHUTOFF ON THE HOSE.

WATERING OF CHEMICALS IS ALLOWED ANY TIME WITHIN 24 HOURS OF APPLICATION AND MAY NOT EXCEED A QUARTER-INCH OF WATER.

40 0 40 80

GRAPHIC SCALE
1"=40'



KEY MAP

NOT TO SCALE

PROPOSED IRRIGATION PUMP STATION
PUMP DESIGN = 300 PGM @ 100 PSI
IRRIGATION CONTRACTOR TO DESIGN
BUILD PUMP STATION AND
CONTROLLER TO MEET PUMP DESIGN
REQUIREMENTS AND VOLUSIA COUNTY
WATERING RESTRICTIONS

4"x4" TEE
4" 45° BEND
4" 90° BEND
CRESTWOOD PARK BOULEVARD (50' R/W)
3" 90° BEND
3"x1.5" IRRIGATION SERVICE (TYPICAL)
5' HOA IRRIGATION EASEMENT
3"x3" TEE
3" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER) (TYPICAL)
DRY RETENTION POND 1
WET DETENTION POND 1A
4"x1.5" IRRIGATION SERVICE (TYPICAL)
3" 45° BEND
4" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER) (TYPICAL)
3" 11.25° BEND
BROOKDALE AVENUE (50' R/W)
6" PVC SCH 40 SLEEVE (30" MIN. COVER)
4"x3" TEE

151 150 149 148 147 146 145 164 165 166 167 168 169 170 171 172 173 174 219 218 217 216 215 214 213 212 144 143 142 141 140 139 138 137

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

LOT IRRIGATION MAIN LAYOUT PLAN

CRESTWOOD

U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

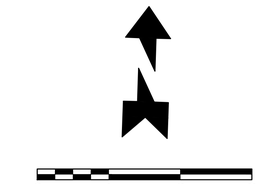
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

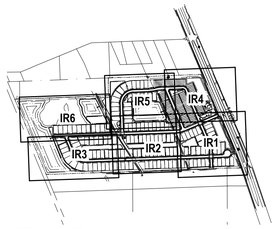
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

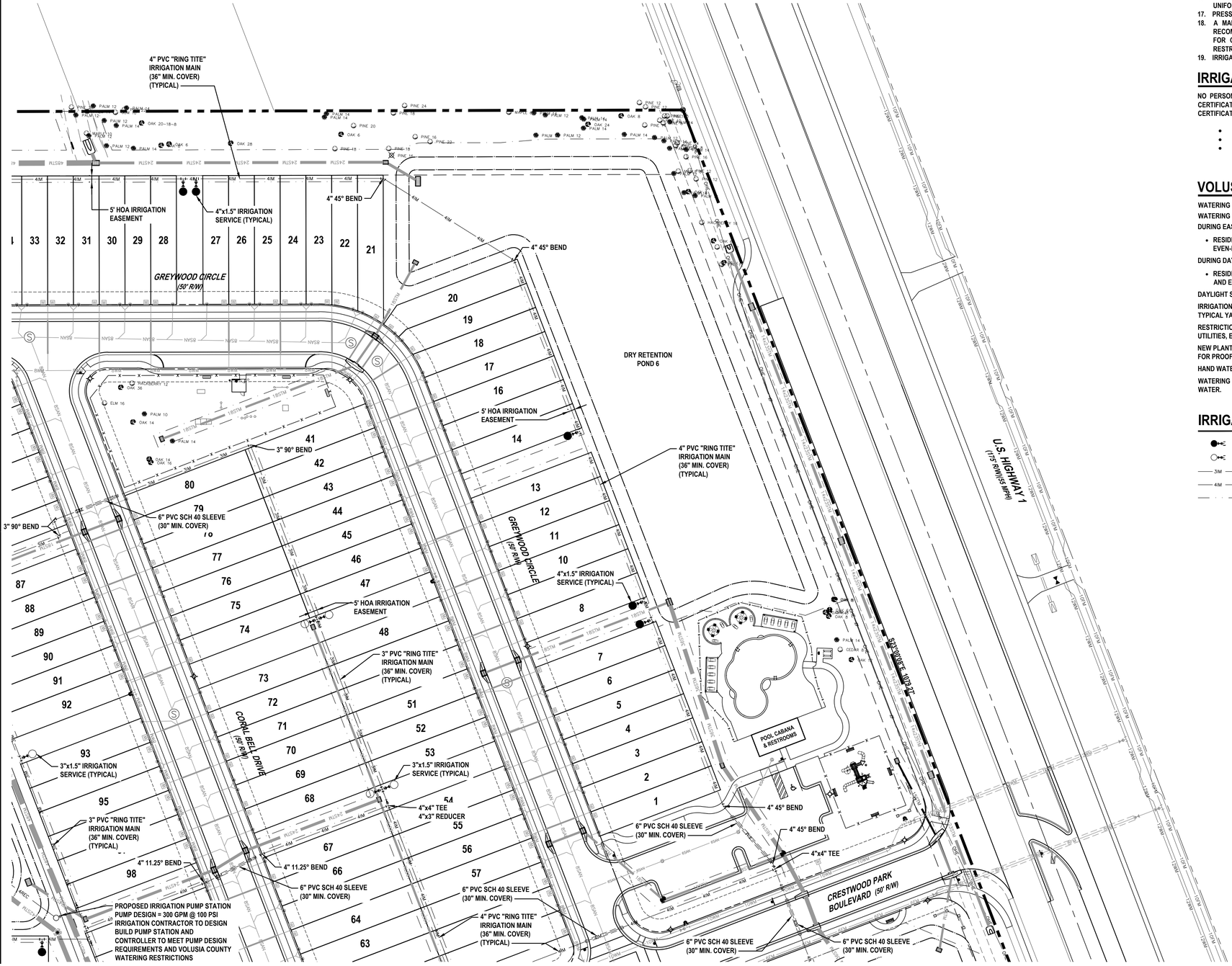
IR3





KEY MAP

NOT TO SCALE



IRRIGATION NOTES:

1. AUTOMATIC IRRIGATION CONTROLLERS, WHEN UTILIZED, SHALL CONTAIN A FUNCTIONAL RAIN SENSOR DEVICE, CAPABLE OF BEING SET TO ONE MINUTE RUN TIMES, AND BATTERY BACKUP CAPABILITY TO RETAIN PROGRAMMING IN THE EVENT OF A POWER FAILURE.
2. A RAIN SENSOR PLACED ON A STATIONARY STRUCTURE, FREE AND CLEAR OF ANY OVERHEAD OBSTRUCTIONS AND ABOVE THE HEIGHT OF THE SPRINKLER COVERAGE.
3. EQUIPMENT WITH CHECK VALVES USED IN LOW-LYING AREAS TO PREVENT LOW HEAD DRAINAGE.
4. BACKFLOW PREVENTION METHODS AND OTHER PROVISIONS PRESCRIBED IN SECTION 74-42.
5. IRRIGATION DESIGN WITH THE APPROPRIATE UNIFORMITY FOR THE TYPE OF PLANT BEING GROWN AND FOR THE TYPE OF SOIL.
6. IRRIGATION SYSTEM EQUIPMENT INSTALLED AS DESIGNED.
7. IRRIGATION ZONES DIVIDED ACCORDING TO: AVAILABLE FLOW RATE, VEGETATED GROUPINGS (I.E., TURF, SHRUBS, NATIVE PLANTS, ETC.), SPRINKLER TYPES (I.E., SPRINKLERS WITH MATCHING PRECIPITATION RATES) AND SOIL CHARACTERISTICS.
8. SPRAY HEADS AND ROTORS NOT MIXED IN SAME ZONE.
9. DISTRIBUTION EQUIPMENT IN A GIVEN ZONE HAVING MATCHED PRECIPITATION RATES.
10. APPLICATION RATES THAT AVOID RUNOFF AND PERMIT UNIFORM WATER INFILTRATION INTO THE SOIL, CONSIDERING LAND SLOPE, SOIL HYDRAULIC PROPERTIES, VEGETATIVE GROUND COVER AND PREVAILING WINDS.
11. A MINIMUM SEPARATION OF FOUR INCHES BETWEEN DISTRIBUTION EQUIPMENT AND PAVEMENT.
12. A MINIMUM SEPARATION OF 12 INCHES BETWEEN DISTRIBUTION EQUIPMENT AND BUILDINGS AND OTHER VERTICAL STRUCTURES.
13. NO DIRECT SPRAY ONTO WALKWAYS, BUILDINGS, ROADWAYS AND DRIVES.
14. LAWN SPRAY PATTERNS PROVIDING HEAD TO HEAD COVERAGE.
15. WATER CONVEYANCE SYSTEMS WITH A FLOW VELOCITY OF FIVE FEET PER SECOND OR LESS.
16. PIPELINES DESIGNED TO PROVIDE THE SYSTEM WITH THE APPROPRIATE PRESSURE REQUIRED FOR MAXIMUM IRRIGATION UNIFORMITY.
17. PRESSURE REGULATING HEADS.
18. A MAINTENANCE CHECKLIST PROVIDED TO THE PROPERTY OWNER BY THE IRRIGATION CONTRACTOR ACCOMPANIED BY A RECOMMENDED MAINTENANCE SCHEDULE, PROPER IRRIGATION SYSTEM SETTINGS ACCORDING TO SEASON, RECOMMENDATIONS FOR CHECKING RAIN SENSOR DEVICE, FILTER CLEANING RECOMMENDATIONS AND INFORMATION ON THE CURRENT WATER RESTRICTIONS.
19. IRRIGATION SYSTEM DESIGN WILL BE PERMITTED THROUGH VOLUSIA COUNTY.

IRRIGATION CONTRACTOR LICENSE REQUIREMENTS:

NO PERSON MAY INSTALL OR REPAIR AN IRRIGATION SYSTEM IN VOLUSIA COUNTY UNLESS THEY POSSESS A VALID IRRIGATION CERTIFICATE OF COMPETENCY FROM THE DEPARTMENT. THE FOLLOWING PERSONS ARE EXEMPTED FROM HAVING TO POSSESS A CERTIFICATE OF COMPETENCY:

- LICENSED FLORIDA WATER WELL CONTRACTORS AND FLORIDA STATE CERTIFIED PLUMING CONTRACTORS.
- FLORIDA STATE REGISTERED PLUMBING CONTRACTORS.
- PROPERTY OWNERS WHO PERSONALLY PERFORM CONSTRUCTION, MAINTENANCE OR REPAIRS ON AN IRRIGATION SYSTEM THAT SERVES HIS OR HER OWNER-OCCUPIED SINGLE FAMILY RESIDENCE.

VOLUSIA COUNTY WATERING RESTRICTIONS:

WATERING RESTRICTIONS APPLY TO ALL COUNTY RESIDENTS, INCLUDING THOSE LIVING IN CITIES.

WATERING IS NOT ALLOWED BETWEEN 10 A.M. AND 4 P.M.

DURING EASTERN STANDARD TIME:

- RESIDENTIAL IRRIGATION IS LIMITED TO 4 P.M. TO 10 A.M. SATURDAYS FOR ODD-NUMBERED ADDRESSES AND SUNDAYS FOR EVEN-NUMBERED ADDRESSES.

DURING DAYLIGHT SAVING TIME:

- RESIDENTIAL IRRIGATION IS ALLOWED AT ODD-NUMBERED ADDRESSES FROM 4 P.M. TO 10 A.M. WEDNESDAYS AND SATURDAYS AND EVEN-NUMBER ADDRESSES THURSDAYS AND SUNDAYS.

DAYLIGHT SAVING TIME BEGINS THE SECOND SUNDAY IN MARCH AND ENDS THE FIRST SUNDAY IN NOVEMBER.

IRRIGATION IS LIMITED TO NO MORE THAN ONE HOUR AND THREE-QUARTERS INCH OF WATER PER ZONE PER IRRIGATION DAY. A TYPICAL YARD HAS FOUR IRRIGATION ZONES.

RESTRICTIONS APPLY TO ALL WATER SOURCES, INCLUDING PRIVATE WELLS, SURFACE WATER, AND WATER FROM PUBLIC AND PRIVATE UTILITIES, EXCEPT FOR RECLAIMED WATER (SEE YOUR RECLAIMED WATER PROVIDER FOR ANY RESTRICTIONS.)

NEW PLANTINGS MAY BE WATERED ANY TIME FOR 30 DAYS, THEN EVERY OTHER DAY FOR ANOTHER 30 DAYS. KEEP THE STORE RECEIPT FOR PROOF OF PURCHASE.

HAND WATERING IS ALLOWED ANY TIME WITH AN AUTOMATIC SHUTOFF ON THE HOSE.

WATERING OF CHEMICALS IS ALLOWED ANY TIME WITHIN 24 HOURS OF APPLICATION AND MAY NOT EXCEED A QUARTER-INCH OF WATER.

IRRIGATION LEGEND

- PROPOSED 4"x1.5" IRRIGATION SERVICE
- PROPOSED 3"x1.5" IRRIGATION SERVICE
- 3M — PROPOSED 3" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- 4IM — PROPOSED 4" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- PROPOSED 5' HOA IRRIGATION EASEMENT

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
7/18/25	SJRWMD COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

LOT IRRIGATION MAIN LAYOUT PLAN

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

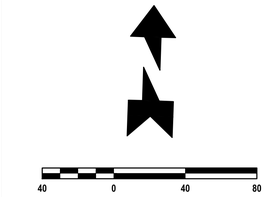
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

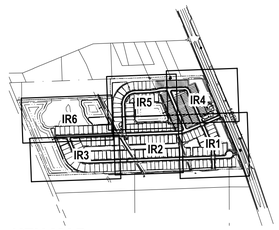
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

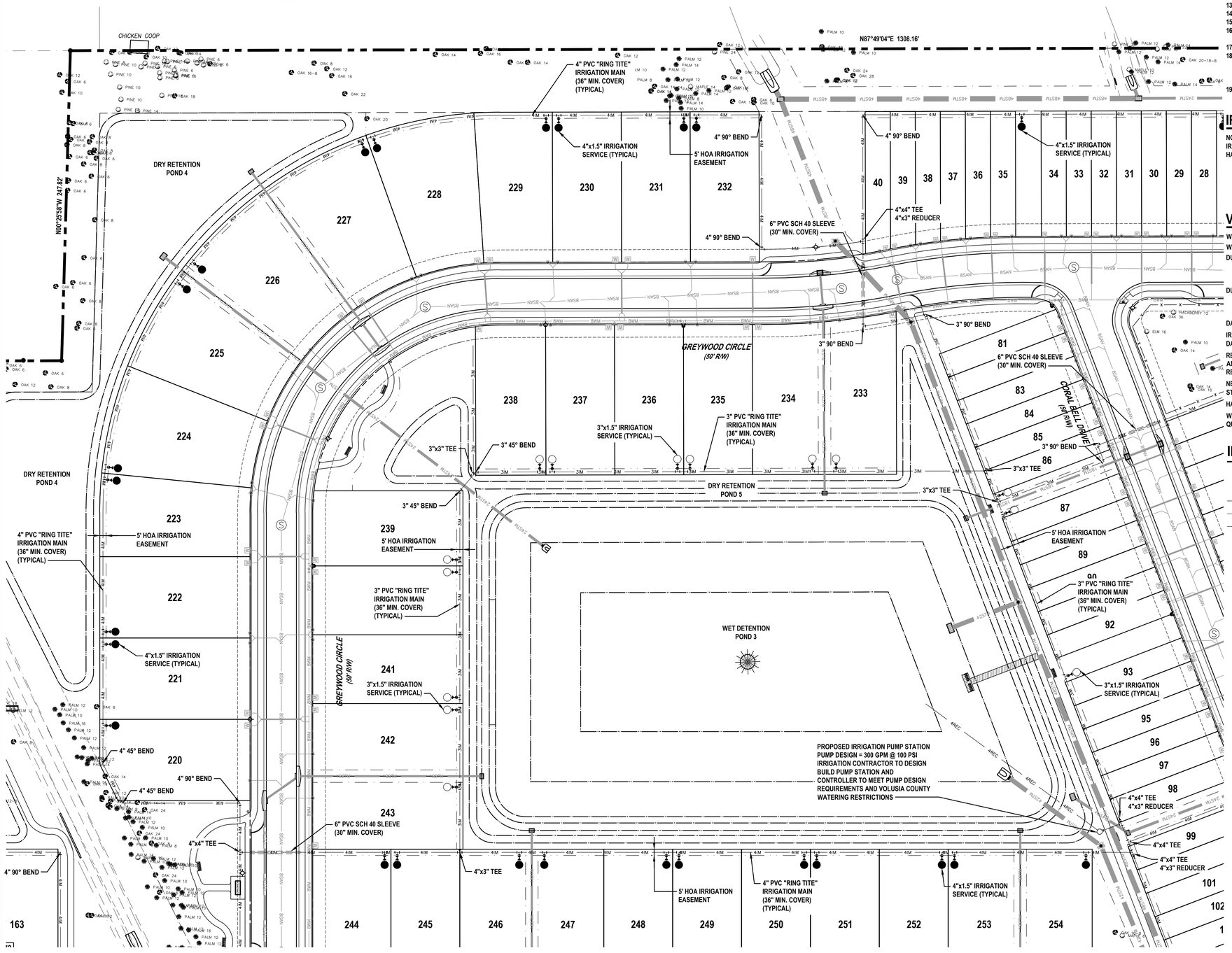
IR4





KEY MAP

NOT TO SCALE



IRRIGATION NOTES:

1. AUTOMATIC IRRIGATION CONTROLLERS, WHEN UTILIZED, SHALL CONTAIN A FUNCTIONAL RAIN SENSOR DEVICE, CAPABLE OF BEING SET TO ONE MINUTE RUN TIMES, AND BATTERY BACKUP CAPABILITY TO RETAIN PROGRAMMING IN THE EVENT OF A POWER FAILURE.
2. A RAIN SENSOR PLACED ON A STATIONARY STRUCTURE, FREE AND CLEAR OF ANY OVERHEAD OBSTRUCTIONS AND ABOVE THE HEIGHT OF THE SPRINKLER COVERAGE.
3. EQUIPMENT WITH CHECK VALVES USED IN LOW-LYING AREAS TO PREVENT LOW HEAD DRAINAGE.
4. BACKFLOW PREVENTION METHODS AND OTHER PROVISIONS PRESCRIBED IN SECTION 74-42.
5. IRRIGATION DESIGN WITH THE APPROPRIATE UNIFORMITY FOR THE TYPE OF PLANT BEING GROWN AND FOR THE TYPE OF SOIL.
6. IRRIGATION SYSTEM EQUIPMENT INSTALLED AS DESIGNED.
7. IRRIGATION ZONES DIVIDED ACCORDING TO: AVAILABLE FLOW RATE, VEGETATED GROUPINGS (I.E., TURF, SHRUBS, NATIVE PLANTS, ETC.), SPRINKLER TYPES (I.E., SPRINKLERS WITH MATCHING PRECIPITATION RATES) AND SOIL CHARACTERISTICS.
8. SPRAY HEADS AND ROTORS NOT MIXED IN SAME ZONE.
9. DISTRIBUTION EQUIPMENT IN A GIVEN ZONE HAVING MATCHED PRECIPITATION RATES.
10. APPLICATION RATES THAT AVOID RUNOFF AND PERMIT UNIFORM WATER INFILTRATION INTO THE SOIL, CONSIDERING LAND SLOPE, SOIL HYDRAULIC PROPERTIES, VEGETATIVE GROUND COVER AND PREVAILING WINDS.
11. A MINIMUM SEPARATION OF FOUR INCHES BETWEEN DISTRIBUTION EQUIPMENT AND PAVEMENT.
12. A MINIMUM SEPARATION OF 12 INCHES BETWEEN DISTRIBUTION EQUIPMENT AND BUILDINGS AND OTHER VERTICAL STRUCTURES.
13. NO DIRECT SPRAY ONTO WALKWAYS, BUILDINGS, ROADWAYS AND DRIVES.
14. LAWN SPRAY PATTERNS PROVIDING HEAD TO HEAD COVERAGE.
15. WATER CONVEYANCE SYSTEMS WITH A FLOW VELOCITY OF FIVE FEET PER SECOND OR LESS.
16. PIPELINES DESIGNED TO PROVIDE THE SYSTEM WITH THE APPROPRIATE PRESSURE REQUIRED FOR MAXIMUM IRRIGATION UNIFORMITY.
17. PRESSURE REGULATING HEADS.
18. A MAINTENANCE CHECKLIST PROVIDED TO THE PROPERTY OWNER BY THE IRRIGATION CONTRACTOR ACCOMPANIED BY A RECOMMENDED MAINTENANCE SCHEDULE, PROPER IRRIGATION SYSTEM SETTINGS ACCORDING TO SEASON, RECOMMENDATIONS FOR CHECKING RAIN SENSOR DEVICE, FILTER CLEANING RECOMMENDATIONS AND INFORMATION ON THE CURRENT WATER RESTRICTIONS.
19. IRRIGATION SYSTEM DESIGN WILL BE PERMITTED THROUGH VOLUSIA COUNTY.

IRRIGATION CONTRACTOR LICENSE REQUIREMENTS:

NO PERSON MAY INSTALL OR REPAIR AN IRRIGATION SYSTEM IN VOLUSIA COUNTY UNLESS THEY POSSESS A VALID IRRIGATION CERTIFICATE OF COMPETENCY FROM THE DEPARTMENT. THE FOLLOWING PERSONS ARE EXEMPTED FROM HAVING TO POSSESS A CERTIFICATE OF COMPETENCY:

- LICENSED FLORIDA WATER WELL CONTRACTORS AND FLORIDA STATE CERTIFIED PLUMING CONTRACTORS.
- FLORIDA STATE REGISTERED PLUMBING CONTRACTORS.
- PROPERTY OWNERS WHO PERSONALLY PERFORM CONSTRUCTION, MAINTENANCE OR REPAIRS ON AN IRRIGATION SYSTEM THAT SERVES HIS OR HER OWNER-OCCUPIED SINGLE FAMILY RESIDENCE.

VOLUSIA COUNTY WATERING RESTRICTIONS:

WATERING RESTRICTIONS APPLY TO ALL COUNTY RESIDENTS, INCLUDING THOSE LIVING IN CITIES.

WATERING IS NOT ALLOWED BETWEEN 10 A.M. AND 4 P.M.

DURING EASTERN STANDARD TIME:

- RESIDENTIAL IRRIGATION IS LIMITED TO 4 P.M. TO 10 A.M. SATURDAYS FOR ODD-NUMBERED ADDRESSES AND SUNDAYS FOR EVEN-NUMBERED ADDRESSES.

DURING DAYLIGHT SAVING TIME:

- RESIDENTIAL IRRIGATION IS ALLOWED AT ODD-NUMBERED ADDRESSES FROM 4 P.M. TO 10 A.M. WEDNESDAYS AND SATURDAYS AND EVEN-NUMBER ADDRESSES THURSDAYS AND SUNDAYS.

DAYLIGHT SAVING TIME BEGINS THE SECOND SUNDAY IN MARCH AND ENDS THE FIRST SUNDAY IN NOVEMBER.

IRRIGATION IS LIMITED TO NO MORE THAN ONE HOUR AND THREE-QUARTERS INCH OF WATER PER ZONE PER IRRIGATION DAY. A TYPICAL YARD HAS FOUR IRRIGATION ZONES.

RESTRICTIONS APPLY TO ALL WATER SOURCES, INCLUDING PRIVATE WELLS, SURFACE WATER, AND WATER FROM PUBLIC AND PRIVATE UTILITIES, EXCEPT FOR RECLAIMED WATER (SEE YOUR RECLAIMED WATER PROVIDER FOR ANY RESTRICTIONS.)

NEW PLANTINGS MAY BE WATERED ANY TIME FOR 30 DAYS, THEN EVERY OTHER DAY FOR ANOTHER 30 DAYS. KEEP THE STORE RECEIPT FOR PROOF OF PURCHASE.

HAND WATERING IS ALLOWED ANY TIME WITH AN AUTOMATIC SHUTOFF ON THE HOSE.

WATERING OF CHEMICALS IS ALLOWED ANY TIME WITHIN 24 HOURS OF APPLICATION AND MAY NOT EXCEED A QUARTER-INCH OF WATER.

IRRIGATION LEGEND

- PROPOSED 4"x1.5" IRRIGATION SERVICE
- PROPOSED 3"x1.5" IRRIGATION SERVICE
- PROPOSED 3" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- PROPOSED 4" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- PROPOSED 5' HOA IRRIGATION EASEMENT

REVISIONS

DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

LOT IRRIGATION MAIN LAYOUT PLAN

CRESTWOOD

U.S. HIGHWAY 1

EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEGIN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

DRAWING NUMBER

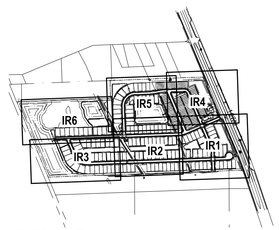
IR5

IRRIGATION LEGEND

- PROPOSED 4"x1.5" IRRIGATION SERVICE
- PROPOSED 3"x1.5" IRRIGATION SERVICE
- 3IM — PROPOSED 3" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- 4IM — PROPOSED 4" PVC "RING TITE" IRRIGATION MAIN (36" MIN. COVER)
- PROPOSED 5' HOA IRRIGATION EASEMENT

40 0 40 80

GRAPHIC SCALE
1"=40'



KEY MAP
NOT TO SCALE

IRRIGATION NOTES:

1. AUTOMATIC IRRIGATION CONTROLLERS, WHEN UTILIZED, SHALL CONTAIN A FUNCTIONAL RAIN SENSOR DEVICE, CAPABLE OF BEING SET TO ONE MINUTE RUN TIMES, AND BATTERY BACKUP CAPABILITY TO RETAIN PROGRAMMING IN THE EVENT OF A POWER FAILURE.
2. A RAIN SENSOR PLACED ON A STATIONARY STRUCTURE, FREE AND CLEAR OF ANY OVERHEAD OBSTRUCTIONS AND ABOVE THE HEIGHT OF THE SPRINKLER COVERAGE.
3. EQUIPMENT WITH CHECK VALVES USED IN LOW-LYING AREAS TO PREVENT LOW HEAD DRAINAGE.
4. BACKFLOW PREVENTION METHODS AND OTHER PROVISIONS PRESCRIBED IN SECTION 74-42.
5. IRRIGATION DESIGN WITH THE APPROPRIATE UNIFORMITY FOR THE TYPE OF PLANT BEING GROWN AND FOR THE TYPE OF SOIL.
6. IRRIGATION SYSTEM EQUIPMENT INSTALLED AS DESIGNED.
7. IRRIGATION ZONES DIVIDED ACCORDING TO: AVAILABLE FLOW RATE, VEGETATED GROUPINGS (I.E., TURF, SHRUBS, NATIVE PLANTS, ETC.), SPRINKLER TYPES (I.E., SPRINKLERS WITH MATCHING PRECIPITATION RATES) AND SOIL CHARACTERISTICS.
8. SPRAY HEADS AND ROTORS NOT MIXED IN SAME ZONE.
9. DISTRIBUTION EQUIPMENT IN A GIVEN ZONE HAVING MATCHED PRECIPITATION RATES.
10. APPLICATION RATES THAT AVOID RUNOFF AND PERMIT UNIFORM WATER INFILTRATION INTO THE SOIL, CONSIDERING LAND SLOPE, SOIL HYDRAULIC PROPERTIES, VEGETATIVE GROUND COVER AND PREVAILING WINDS.
11. A MINIMUM SEPARATION OF FOUR INCHES BETWEEN DISTRIBUTION EQUIPMENT AND PAVEMENT.
12. A MINIMUM SEPARATION OF 12 INCHES BETWEEN DISTRIBUTION EQUIPMENT AND BUILDINGS AND OTHER VERTICAL STRUCTURES.
13. NO DIRECT SPRAY ONTO WALKWAYS, BUILDINGS, ROADWAYS AND DRIVES.
14. LAWN SPRAY PATTERNS PROVIDING HEAD TO HEAD COVERAGE.
15. WATER CONVEYANCE SYSTEMS WITH A FLOW VELOCITY OF FIVE FEET PER SECOND OR LESS.
16. PIPELINES DESIGNED TO PROVIDE THE SYSTEM WITH THE APPROPRIATE PRESSURE REQUIRED FOR MAXIMUM IRRIGATION UNIFORMITY.
17. PRESSURE REGULATING HEADS.
18. A MAINTENANCE CHECKLIST PROVIDED TO THE PROPERTY OWNER BY THE IRRIGATION CONTRACTOR ACCOMPANIED BY A RECOMMENDED MAINTENANCE SCHEDULE, PROPER IRRIGATION SYSTEM SETTINGS ACCORDING TO SEASON, RECOMMENDATIONS FOR CHECKING RAIN SENSOR DEVICE, FILTER CLEANING RECOMMENDATIONS AND INFORMATION ON THE CURRENT WATER RESTRICTIONS.
19. IRRIGATION SYSTEM DESIGN WILL BE PERMITTED THROUGH VOLUSIA COUNTY.

IRRIGATION CONTRACTOR LICENSE REQUIREMENTS:

NO PERSON MAY INSTALL OR REPAIR AN IRRIGATION SYSTEM IN VOLUSIA COUNTY UNLESS THEY POSSESS A VALID IRRIGATION CERTIFICATE OF COMPETENCY FROM THE DEPARTMENT. THE FOLLOWING PERSONS ARE EXEMPTED FROM HAVING TO POSSESS A CERTIFICATE OF COMPETENCY:

- LICENSED FLORIDA WATER WELL CONTRACTORS AND FLORIDA STATE CERTIFIED PLUMING CONTRACTORS.
- FLORIDA STATE REGISTERED PLUMBING CONTRACTORS.
- PROPERTY OWNERS WHO PERSONALLY PERFORM CONSTRUCTION, MAINTENANCE OR REPAIRS ON AN IRRIGATION SYSTEM THAT SERVES HIS OR HER OWNER-OCCUPIED SINGLE FAMILY RESIDENCE.

VOLUSIA COUNTY WATERING RESTRICTIONS:

WATERING RESTRICTIONS APPLY TO ALL COUNTY RESIDENTS, INCLUDING THOSE LIVING IN CITIES.

WATERING IS NOT ALLOWED BETWEEN 10 A.M. AND 4 P.M.

DURING EASTERN STANDARD TIME:

- RESIDENTIAL IRRIGATION IS LIMITED TO 4 P.M. TO 10 A.M. SATURDAYS FOR ODD-NUMBERED ADDRESSES AND SUNDAYS FOR EVEN-NUMBERED ADDRESSES.

DURING DAYLIGHT SAVING TIME:

- RESIDENTIAL IRRIGATION IS ALLOWED AT ODD-NUMBERED ADDRESSES FROM 4 P.M. TO 10 A.M. WEDNESDAYS AND SATURDAYS AND EVEN-NUMBER ADDRESSES THURSDAYS AND SUNDAYS.

DAYLIGHT SAVING TIME BEGINS THE SECOND SUNDAY IN MARCH AND ENDS THE FIRST SUNDAY IN NOVEMBER.

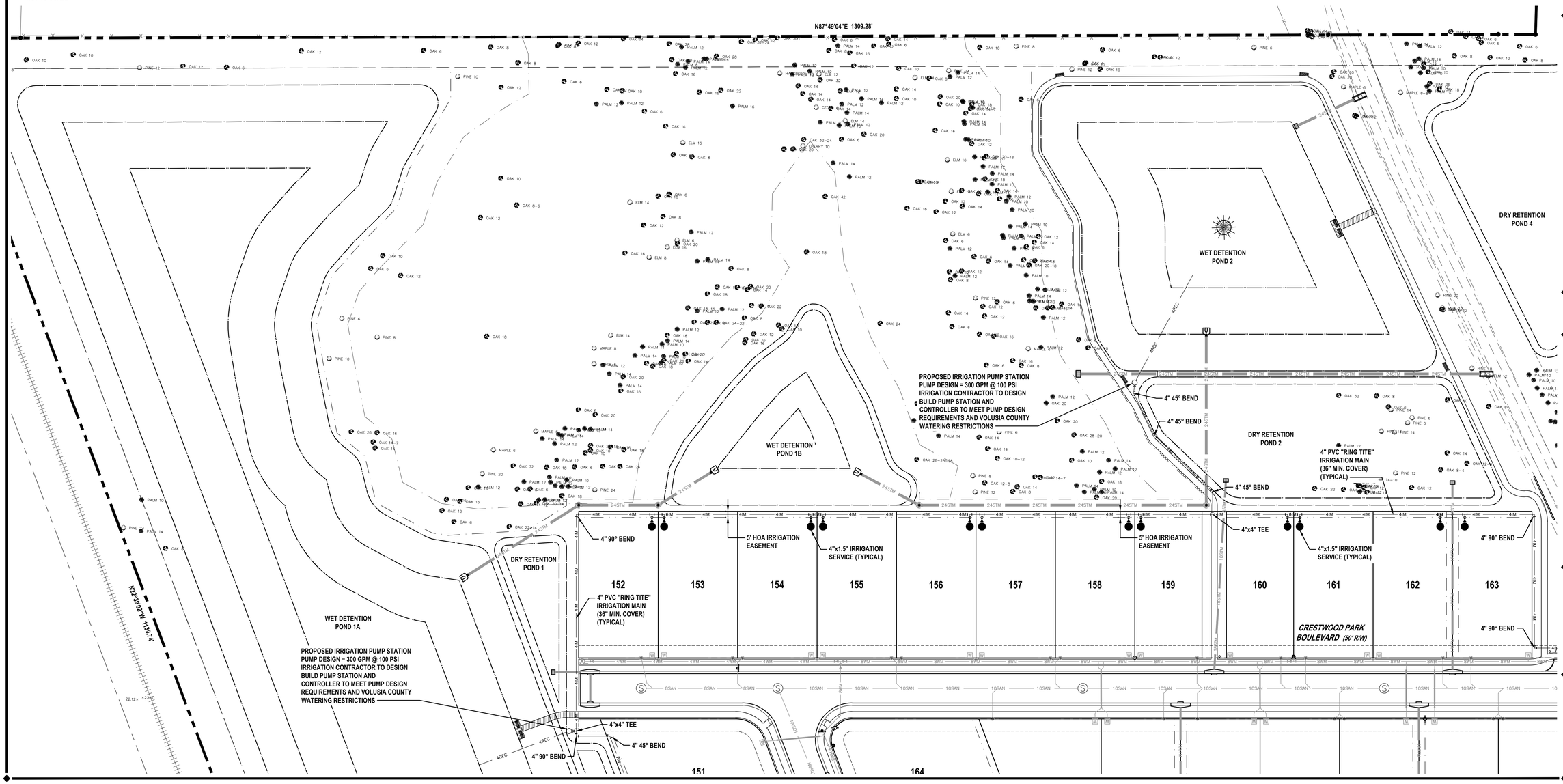
IRRIGATION IS LIMITED TO NO MORE THAN ONE HOUR AND THREE-QUARTERS INCH OF WATER PER ZONE PER IRRIGATION DAY. A TYPICAL YARD HAS FOUR IRRIGATION ZONES.

RESTRICTIONS APPLY TO ALL WATER SOURCES, INCLUDING PRIVATE WELLS, SURFACE WATER, AND WATER FROM PUBLIC AND PRIVATE UTILITIES, EXCEPT FOR RECLAIMED WATER (SEE YOUR RECLAIMED WATER PROVIDER FOR ANY RESTRICTIONS.)

NEW PLANTINGS MAY BE WATERED ANY TIME FOR 30 DAYS, THEN EVERY OTHER DAY FOR ANOTHER 30 DAYS. KEEP THE STORE RECEIPT FOR PROOF OF PURCHASE.

HAND WATERING IS ALLOWED ANY TIME WITH AN AUTOMATIC SHUTOFF ON THE HOSE.

WATERING OF CHEMICALS IS ALLOWED ANY TIME WITHIN 24 HOURS OF APPLICATION AND MAY NOT EXCEED A QUARTER-INCH OF WATER.



REVISIONS	
DATE	DESCRIPTION
4/3/25	CITY COMMENTS
7/1/25	CITY COMMENTS
7/18/25	SJRWMD COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7784
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584

© 2013

Civil Engineering
Transportation, CEI &
Landscape Architecture

NEWKIRK ENGINEERING INC.

IRRIGATION LAYOUT PLAN

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HARRY NEWKIRK, PE # 62971 ON

Harry Newkirk

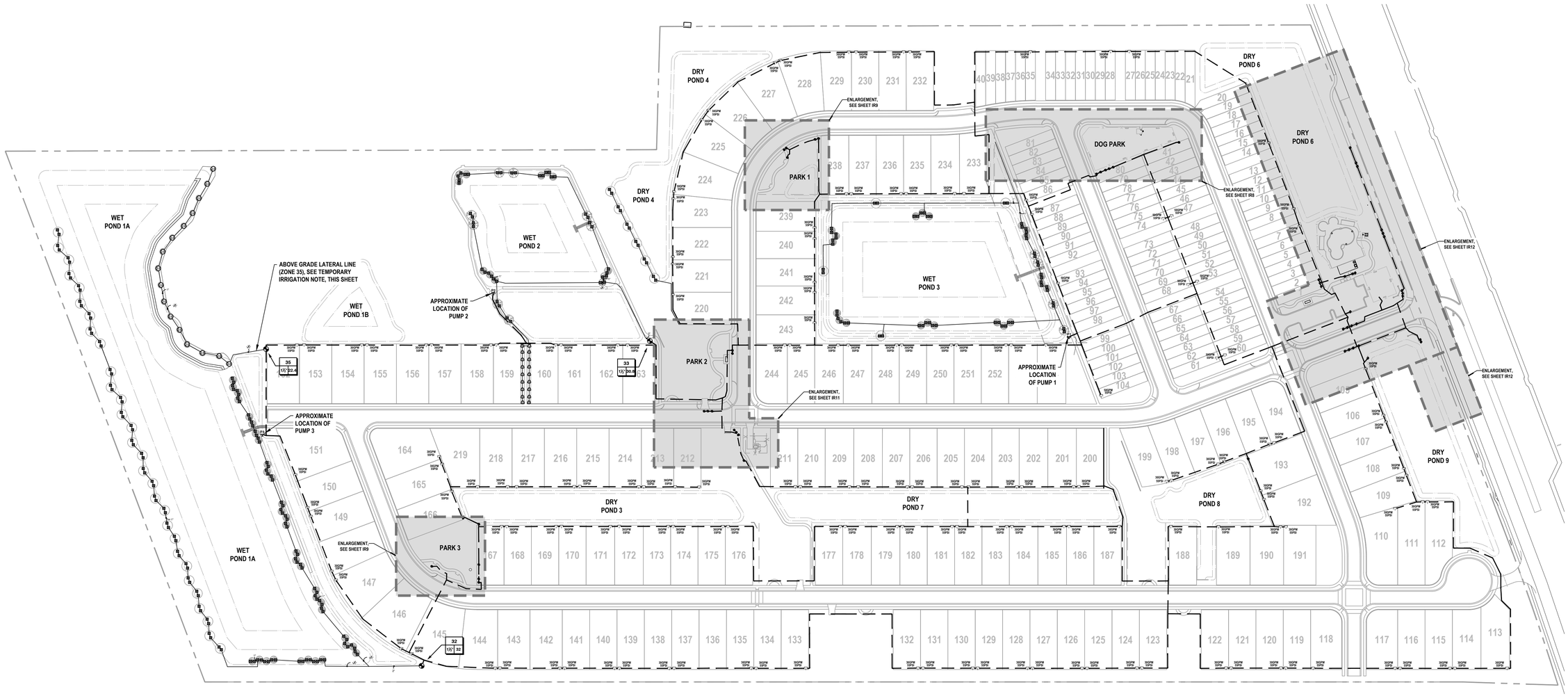
HARRY NEWKIRK LICENSE NO. 62971 STATE OF FLORIDA PROFESSIONAL ENGINEER

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	HHN
DRAWN BY:	NWS
CHECKED BY:	HHN
SCALE:	1" = 40'

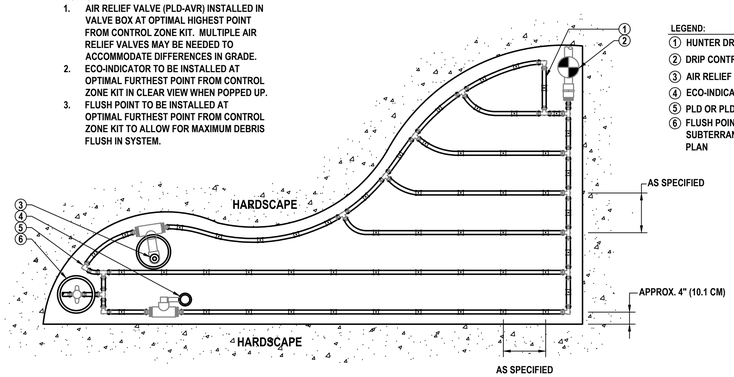
DRAWING NUMBER

IR6



OVERALL IRRIGATION PLAN

NOTES:
1. AIR RELIEF VALVE (PLD-AVR) INSTALLED IN VALVE BOX AT OPTIMAL HIGHEST POINT FROM CONTROL ZONE KIT. MULTIPLE AIR RELIEF VALVES MAY BE NEEDED TO ACCOMMODATE DIFFERENCES IN GRADE.
2. ECO-INDICATOR TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT IN CLEAR VIEW WHEN POPPED UP.
3. FLUSH POINT TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT TO ALLOW FOR MAXIMUM DEBRIS FLUSH IN SYSTEM.



LEGEND:
1. HUNTER DRIPLINE PER PLAN
2. DRIP CONTROL ZONE KIT PER PLAN
3. AIR RELIEF VALVE IN VALVE BOX
4. ECO-INDICATOR ON SWING ARM
5. PLD OR PLD-LOCK FITTING (TYP.)
6. FLUSH POINT (PLD-BV) IN SUBTERRANEAN BOX PER PLAN

1 DRIPLINE FOR IRREGULAR BED

1 1/2" = 1'-0" P-CO-2023-109-11

TEMPORARY IRRIGATION NOTE

1. LATERAL LINE TO BE RUN ON TOP OF GRADE AND SHALL BE PAINTED HUNTER GREEN.
2. TEMPORARY ZONE SHALL BE REMOVED AFTER A 2 (TWO) YEAR WATERING IN PERIOD.
3. TEMPORARY ZONE IS ZONE 35
4. ALL HEADS SHOULD BE INSTALLED WITH A HUNTER MP STAKE KIT.

100 50 0 100 200
GRAPHIC SCALE
1"=100'

REVISIONS	
DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS
07/18/25	SJRWMD

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

OVERALL IRRIGATION PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams
Digitally signed by Lauren A Adams
DN: C=US, E=lauren@newkirk-engineering.com, CN=LAUREN A ADAMS, OU=Lauren A Adams
Date: 2025.10.13 10:46:30-04'00'

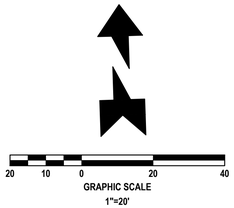
LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	1" = 100'

DRAWING NUMBER

IR7

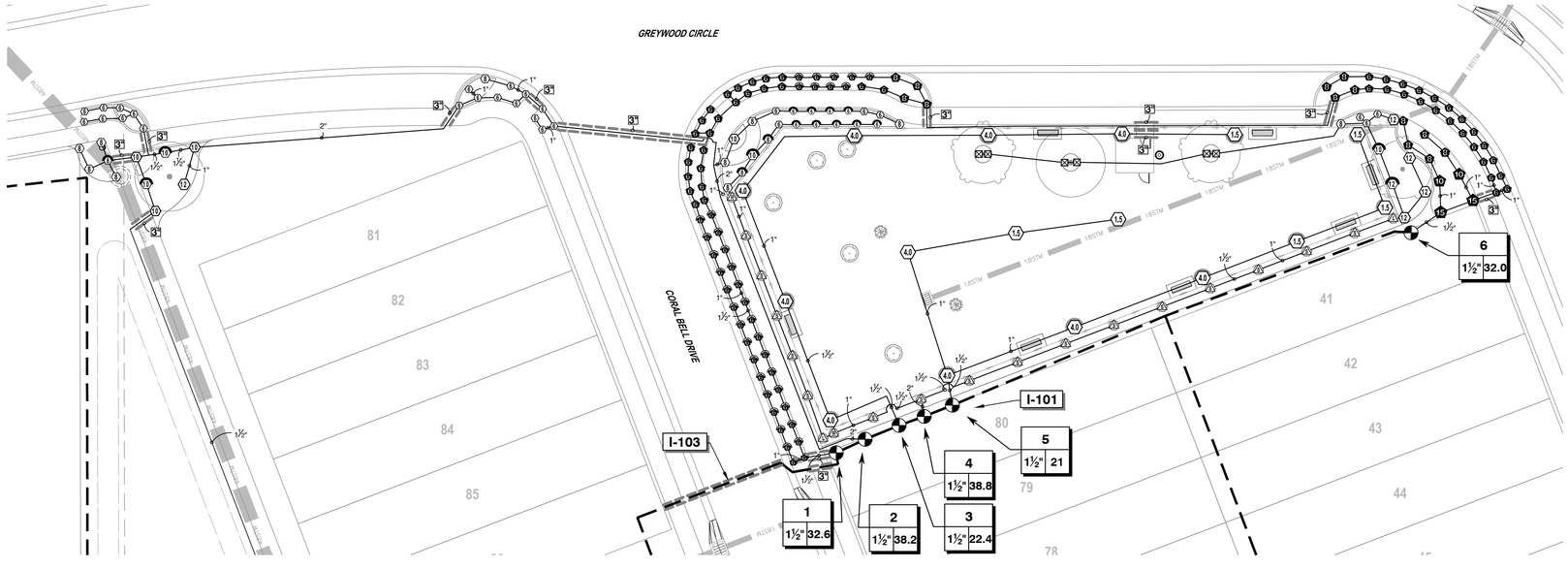


WATERING SCHEDULE

NUMBER	MODEL	TYPE	PRECIP	SUN	MON	TUE	WED	THU	FRI	SAT	IN./WEEK	MIN./WEEK	GAL./WEEK	GAL./DAY
1	HUNTER ICV-G-FS-R	TURF SPRAY	1.21 in/h		19 min	19 min		19 min	19 min		1.5	75	2,963	741
1	HUNTER ICV-G-FS-R	TURF SPRAY	2.44 in/h		10 min	10 min		10 min	10 min		1.5	37	877	219
1	HUNTER ICV-G-FS-R	TURF SPRAY	3.61 in/h		7 min	7 min		7 min	7 min		1.5	25	816	204
1	HUNTER ICV-G-FS-R	TURF SPRAY	1.09 in/h		21 min	21 min		21 min	21 min		1.5	83	2,957	739
1	HUNTER ICV-G-FS-R	TURF SPRAY	2.53 in/h		9 min	9 min		9 min	9 min		1.5	36	1,348	337
2	HUNTER ICV-G-FS-R	TURF SPRAY	1.74 in/h		13 min	13 min		13 min	13 min		1.5	52	1,963	491
2	HUNTER ICV-G-FS-R	SHRUB SPRAY	1.66 in/h		7 min	7 min		7 min	7 min		0.75	28	671	168
2	HUNTER ICV-G-FS-R	TURF SPRAY	3.19 in/h		8 min	8 min		8 min	8 min		1.5	29	1,055	264
2	HUNTER ICV-G-FS-R	SHRUB SPRAY	1.27 in/h		9 min	9 min		9 min	9 min		0.75	36	1,578	395
2	HUNTER ICV-G-FS-R	SHRUB SPRAY	1.32 in/h		9 min	9 min		9 min	9 min		0.75	34	1,299	325
3	HUNTER ICV-G-FS-R	TURF SPRAY	1.75 in/h		13 min	13 min		13 min	13 min		1.5	52	1,925	481
3	HUNTER ICV-G-FS-R	TURF SPRAY	1.67 in/h		14 min	14 min		14 min	14 min		1.5	54	2,135	534
3	HUNTER ICV-G-FS-R	TURF ROTOR	0.56 in/h		40 min	40 min		40 min	40 min		1.5	160	2,112	528
3	HUNTER ICV-G-FS-R	TURF ROTOR	0.54 in/h		42 min	42 min		42 min	42 min		1.5	167	3,741	935
3	HUNTER ICV-G-FS-R	SHRUB SPRAY	2.03 in/h		6 min	6 min		6 min	6 min		0.75	23	730	183
4	HUNTER ICV-G-FS-R	TURF SPRAY	4.33 in/h		6 min	6 min		6 min	6 min		1.5	21	487	122
4	HUNTER ICV-G-FS-R	SHRUB SPRAY	1.35 in/h		9 min	9 min		9 min	9 min		0.75	34	886	221
4	HUNTER ICV-G-FS-R	SHRUB SPRAY	2.35 in/h		5 min	5 min		5 min	5 min		0.75	20	714	178
4	HUNTER ICV-G-FS-R	TURF SPRAY	3.36 in/h		7 min	7 min		7 min	7 min		1.5	27	919	230
4	HUNTER ICV-G-FS-R	SHRUB SPRAY	1.58 in/h		8 min	8 min		8 min	8 min		0.75	29	1,127	282
5	HUNTER ICV-G-FS-R	TURF ROTOR	0.43 in/h		53 min	53 min		53 min	53 min		1.5	209	4,389	1,097
5	HUNTER ICV-G-FS-R	TURF SPRAY	1.39 in/h		17 min	17 min		17 min	17 min		1.5	65	2,491	623
5	HUNTER ICV-G-FS-R	TURF SPRAY	0.88 in/h		26 min	26 min		26 min	26 min		1.5	103	3,613	903
5	HUNTER ICV-G-FS-R	SHRUB SPRAY	2.0 in/h		6 min	6 min		6 min	6 min		0.75	23	810	203
5	HUNTER ICV-G-FS-R	BUBBLER	1.1 in/h		11 min	11 min		11 min	11 min		0.75	41	410	103
6	HUNTER ICV-G-FS-R	SHRUB SPRAY	1.59 in/h		8 min	8 min		8 min	8 min		0.75	29	610	153
6	HUNTER ICV-G-FS-R	SHRUB SPRAY	2.1 in/h		6 min	6 min		6 min	6 min		0.75	22	667	167
6	HUNTER ICV-G-FS-R	TURF SPRAY	3.31 in/h		7 min	7 min		7 min	7 min		1.5	28	895	224
7	HUNTER ICV-G-FS-R	TURF SPRAY	1.18 in/h		20 min	20 min		20 min	20 min		1.5	77	1,739	435
7	HUNTER ICV-G-FS-R	TURF SPRAY	1.63 in/h		14 min	14 min		14 min	14 min		1.5	56	2,156	539
8	HUNTER ICV-G-FS-R	TURF SPRAY	1.61 in/h		14 min	14 min		14 min	14 min		1.5	56	1,326	332
8	HUNTER ICV-G-FS-R	TURF SPRAY	0.92 in/h		25 min	25 min		25 min	25 min		1.5	99	3,703	926
9	HUNTER ICZ-151-XL-40	DRIP EMITTER	1.44 in/h		8 min	8 min		8 min	8 min		0.75	32	532	133
9	HUNTER ICV-G-FS-R	BUBBLER	1.1 in/h		11 min	11 min		11 min	11 min		0.75	42	1,008	252
10	HUNTER ICZ-151-XL-40	AREA FOR DRIPLINE	1.45 in/h		8 min	8 min		8 min	8 min		0.75	32	458	114
11	HUNTER ICV-G-FS-R	TURF SPRAY	1.43 in/h		16 min	16 min		16 min	16 min		1.5	63	2,302	576
12	HUNTER ICZ-151-XL-40	AREA FOR DRIPLINE	1.44 in/h		8 min	8 min		8 min	8 min		0.75	32	325	81.4
13	HUNTER ICV-G-FS-R	SHRUB SPRAY	1.78 in/h		7 min	7 min		7 min	7 min		0.75	26	914	229
14	HUNTER ICV-G-FS-R	TURF SPRAY	1.86 in/h		13 min	13 min		13 min	13 min		1.5	49	1,802	450
15	HUNTER ICV-G-FS-R	TURF SPRAY	1.49 in/h		16 min	16 min		16 min	16 min		1.5	61	2,303	576
16	HUNTER ICV-G-FS-R	SHRUB SPRAY	1.48 in/h		8 min	8 min		8 min	8 min		0.75	31	1,093	273
17	HUNTER ICV-G-FS-R	TURF SPRAY	1.36 in/h		17 min	17 min		17 min	17 min		1.5	67	2,465	616
18	HUNTER ICV-G-FS-R	TURF SPRAY	0.93 in/h		25 min	25 min		25 min	25 min		1.5	97	3,432	858
19	HUNTER ICV-G-FS-R	SHRUB SPRAY	1.3 in/h		9 min	9 min		9 min	9 min		0.75	35	1,196	299
20	HUNTER ICV-G-FS-R	TURF SPRAY	1.77 in/h		13 min	13 min		13 min	13 min		1.5	51	1,851	463
21	HUNTER ICV-G-FS-R	TURF SPRAY	2.01 in/h		12 min	12 min		12 min	12 min		1.5	45	1,462	365
22	HUNTER ICV-G-FS-R	TURF SPRAY	1.57 in/h		15 min	15 min		15 min	15 min		1.5	58	1,954	488
23	HUNTER ICV-G-FS-R	TURF SPRAY	1.79 in/h		13 min	13 min		13 min	13 min		1.5	51	1,657	414
24	HUNTER ICV-G-FS-R	SHRUB SPRAY	1.68 in/h		7 min	7 min		7 min	7 min		0.75	27	1,014	253
25	HUNTER ICV-G-FS-R	SHRUB SPRAY	2.55 in/h		5 min	5 min		5 min	5 min		0.75	18	691	173
26	HUNTER ICV-G-FS-R	SHRUB SPRAY	2.09 in/h		6 min	6 min		6 min	6 min		0.75	22	793	198
27	HUNTER ICV-G-FS-R	TURF SPRAY	1.62 in/h		14 min	14 min		14 min	14 min		1.5	56	1,853	463
32	HUNTER ICV-G-FS-R	BUBBLER	0.85 in/h		14 min	14 min		14 min	14 min		0.75	53	1,696	424
33	HUNTER ICV-G-FS-R	BUBBLER	1.26 in/h		9 min	9 min		9 min	9 min		0.75	36	1,109	277
34	HUNTER ICV-G-FS-R	BUBBLER	1.02 in/h		12 min	12 min		12 min	12 min		0.75	45	338	84.4
35	HUNTER ICV-G-FS-R	SHRUB ROTOR	0.3 in/h		38 min	38 min		38 min	38 min		0.75	149	3,338	834

IRRIGATION SCHEDULE

CODE	DESCRIPTION
I-101	VALVES AND IRRIGATION LINES SHOWN IN PAVEMENT OR OUT OF LANDSCAPE BEDS FOR CLARITY ONLY. VALVES ARE TO BE LOCATED IN LANDSCAPE BEDS.
I-102	4" SLEEVE WATER 2" SLEEVE WIRE
I-103	6" SLEEVE WATER 2" SLEEVE WIRE



DOG PARK ENLARGEMENT

SCALE: 1" = 20'

REVISIONS

DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS
07/18/25	SJRWMD

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

IRRIGATION PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams

Digitally signed by Lauren A Adams
DN: C=US, E=lauren@newkirk-engineering.com, CN=LA 6667278, CN=Lauren A Adams
Date: 2025.10.13 10:46:38-04'00'

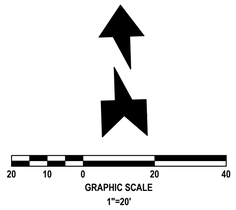
LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	AS SHOWN

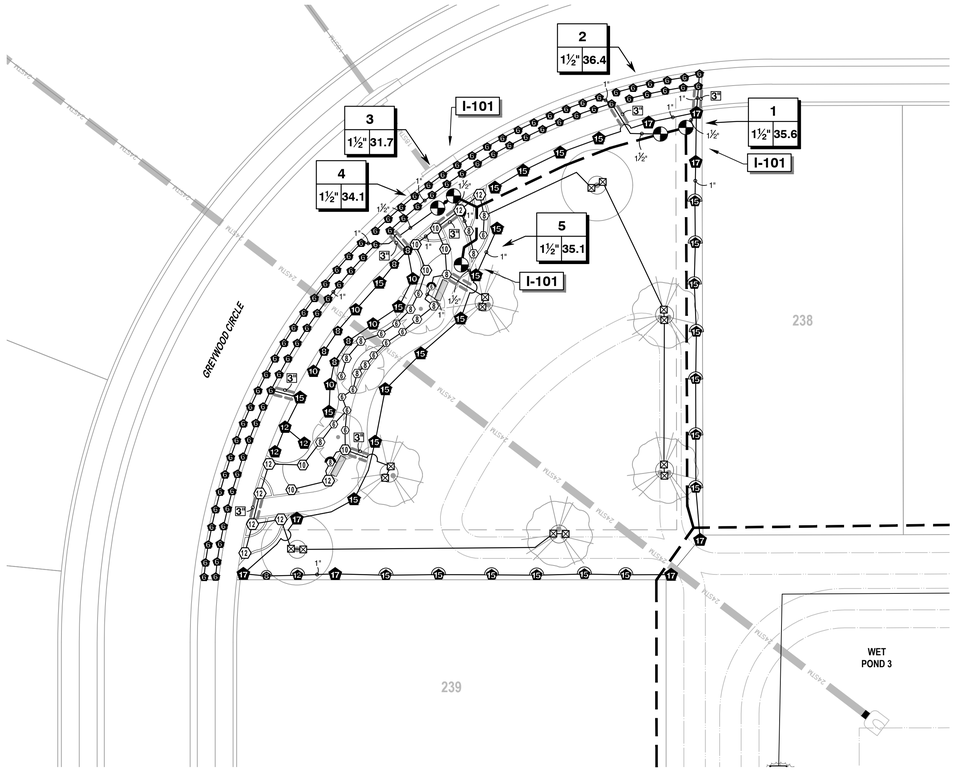
DRAWING NUMBER

IR8



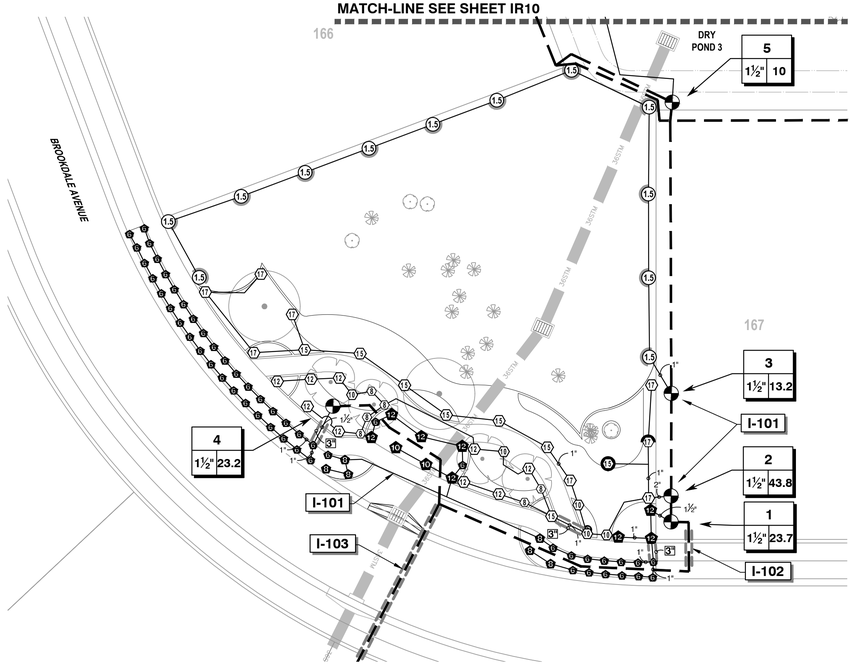
IRRIGATION SCHEDULE

CODE	DESCRIPTION
I-101	VALVES AND IRRIGATION LINES SHOWN IN PAVEMENT OR OUT OF LANDSCAPE BEDS FOR CLARITY ONLY. VALVES ARE TO BE LOCATED IN LANDSCAPE BEDS.
I-102	4" SLEEVE WATER 2" SLEEVE WIRE
I-103	6" SLEEVE WATER 2" SLEEVE WIRE



PARK 1 ENLARGEMENT

SCALE: 1" = 20'



PARK 3 ENLARGEMENT

SCALE: 1" = 20'

REVISIONS

DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS
07/18/25	SJRWMD

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK
ENGINEERING INC.

IRRIGATION PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams

Digitally signed by Lauren A Adams
DN: C=US, E=laurena@newkirk-engineering.com, CN=LA 6667278, CN=Lauren A Adams
Date: 2025.10.13 10:46:49-04'00'

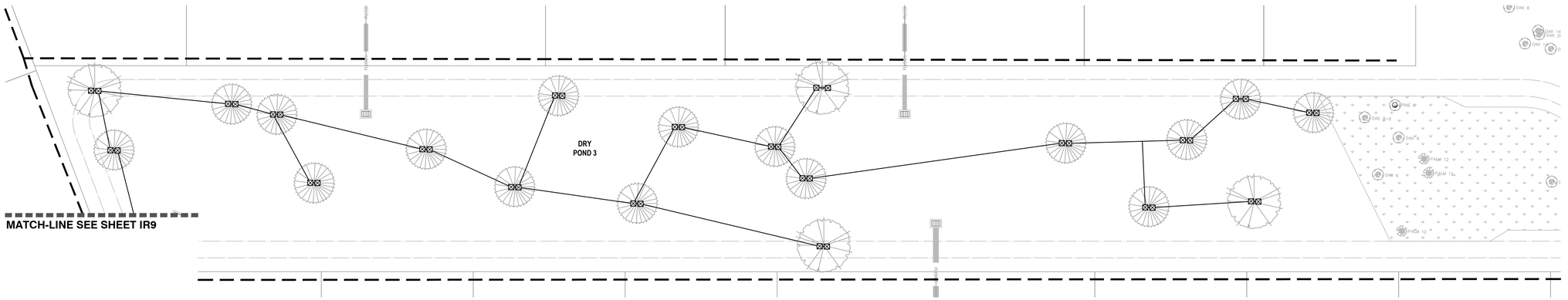
LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

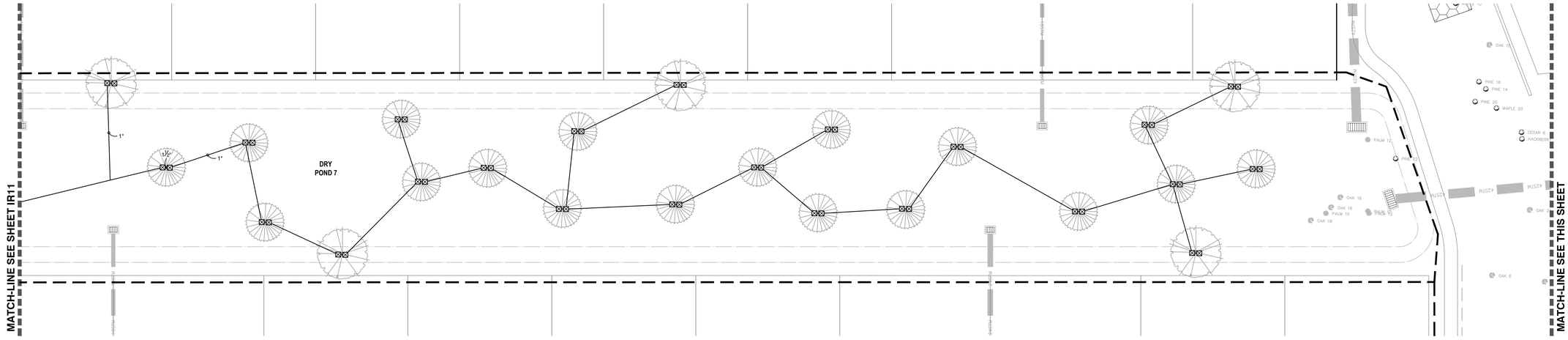
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

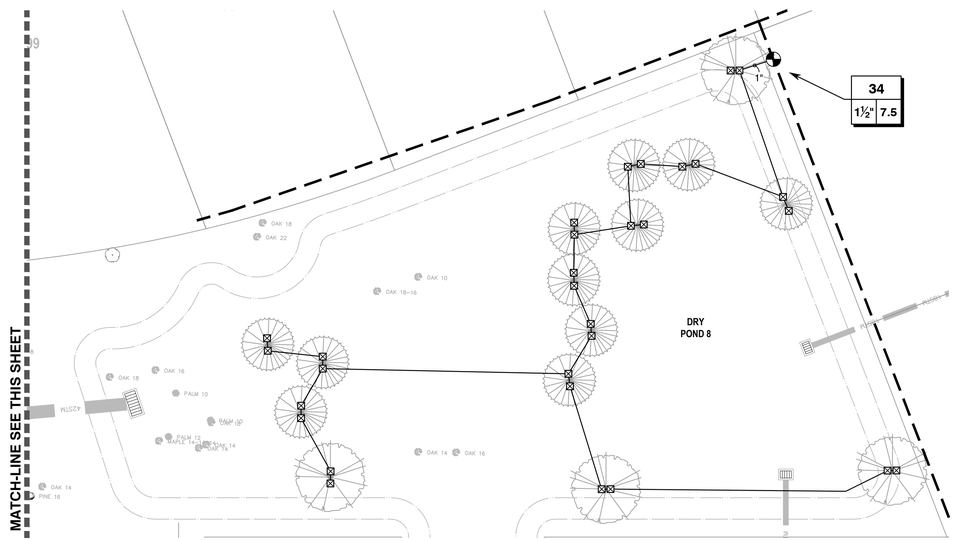
PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	AS SHOWN

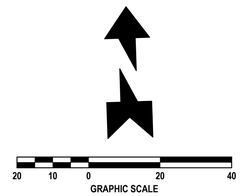
DRAWING NUMBER

IR9









REVISIONS

DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS
07/18/25	SJRWMD

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK
ENGINEERING INC.

IRRIGATION PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams

Digitally signed by Lauren A Adams
DN: C=US, E=Lauren@newkirk-engineering.com, OU=LA 6667278, CN=Lauren A Adams
Date: 2025.08.13 10:46:55-04'00'

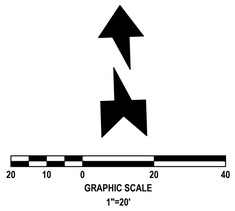
LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	AS SHOWN

DRAWING NUMBER

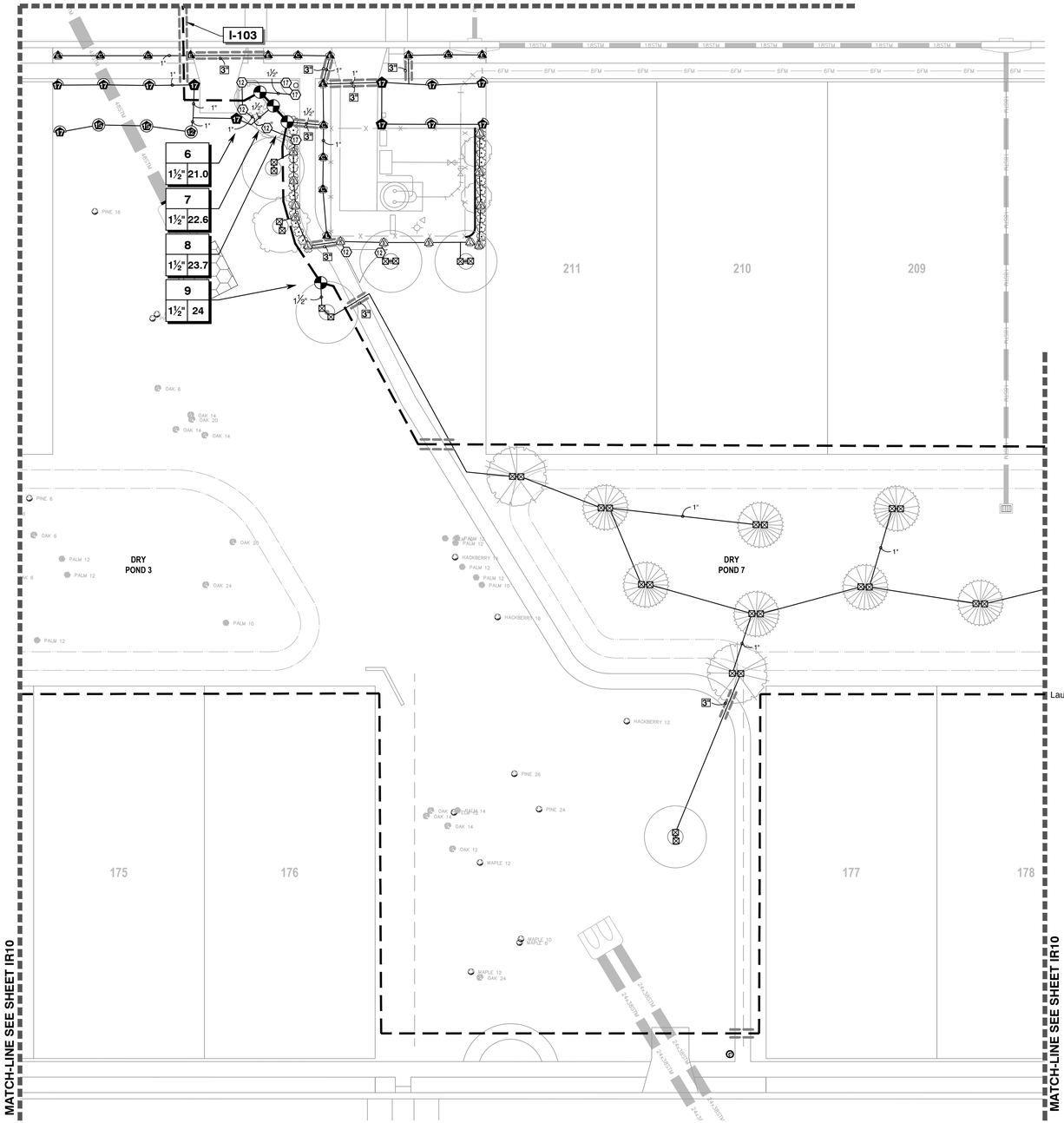
IR10



IRRIGATION SCHEDULE

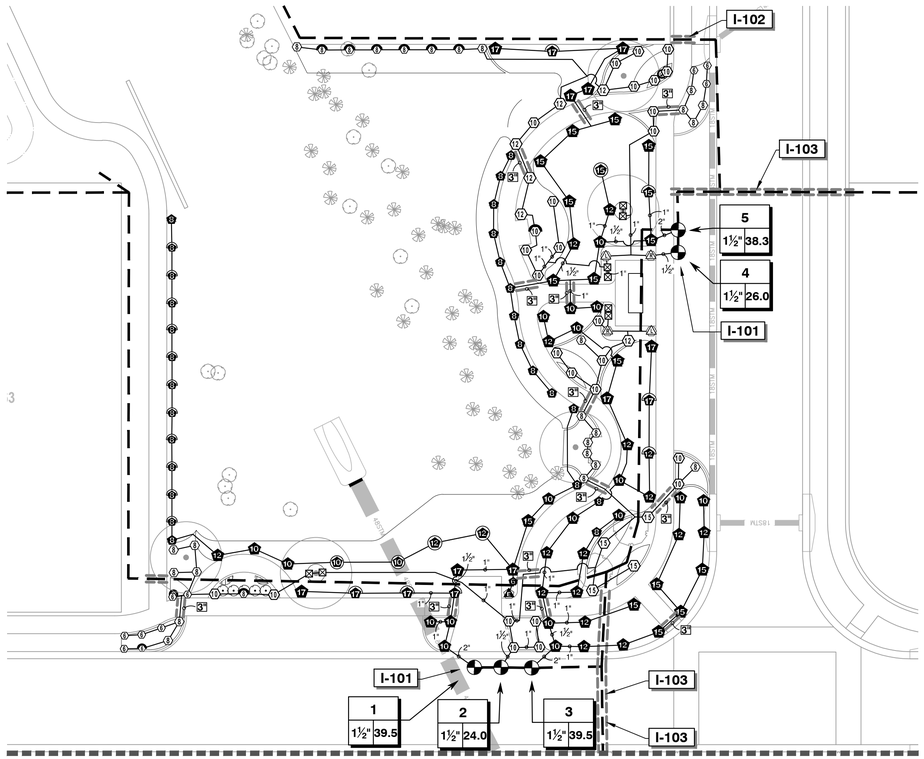
CODE	DESCRIPTION
I-101	VALVES AND IRRIGATION LINES SHOWN IN PAVEMENT OR OUT OF LANDSCAPE BEDS FOR CLARITY ONLY. VALVES ARE TO BE LOCATED IN LANDSCAPE BEDS.
I-102	4" SLEEVE WATER 2" SLEEVE WIRE
I-103	6" SLEEVE WATER 2" SLEEVE WIRE

MATCH-LINE SEE THIS SHEET



LIFT STATION ENLARGEMENT

SCALE: 1" = 20'



MATCH-LINE SEE THIS SHEET

PARK 2 ENLARGEMENT

SCALE: 1" = 20'

REVISIONS

DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS
07/18/25	SJRWMD

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

IRRIGATION PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams

Digitally signed by Lauren A Adams
DN: C=US, E=laadams@newkirk-engineering.com, O=LA ARCITS, CN=Lauren A Adams
Date: 2025.10.13 10:47:03-04'00'

LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

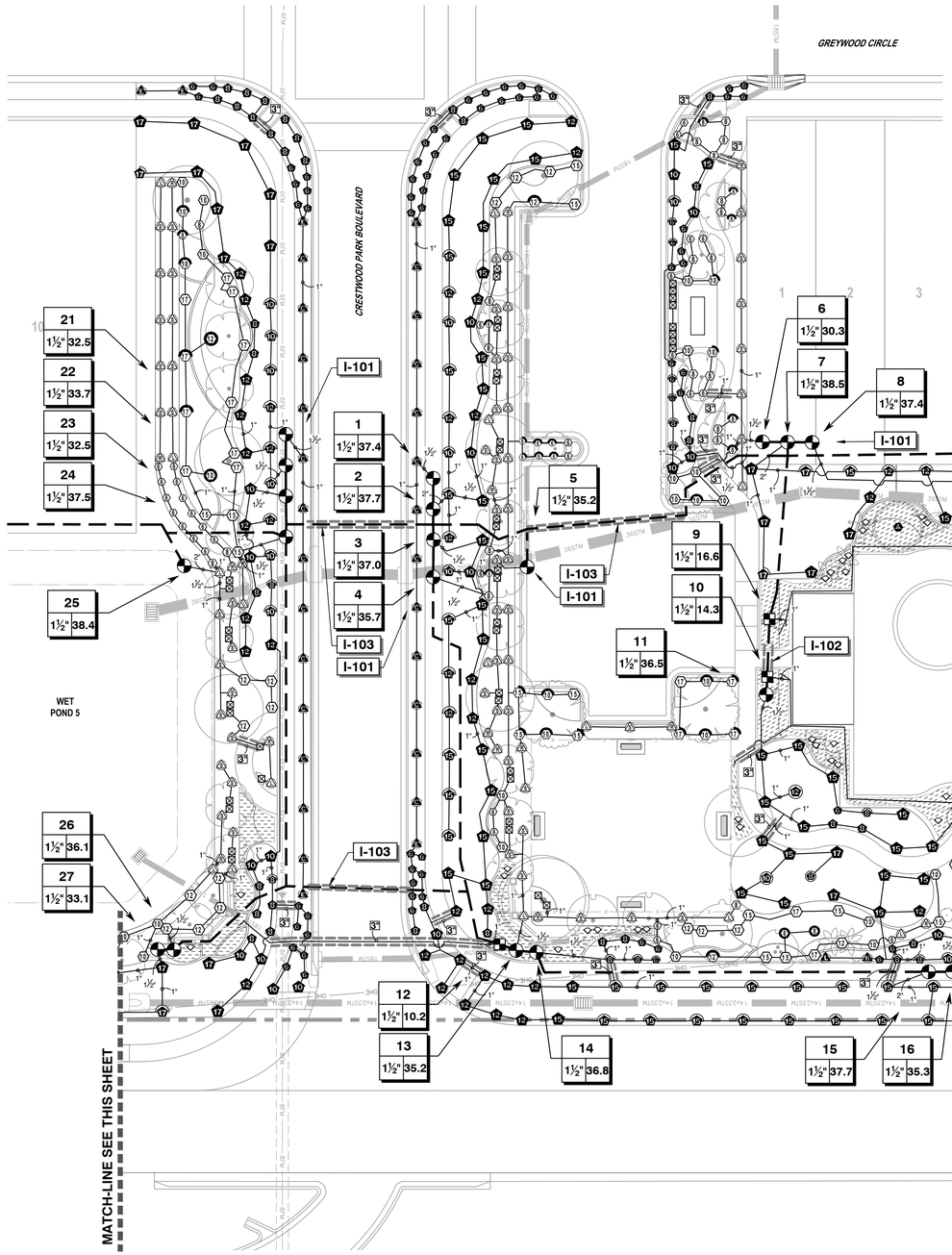
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	AS SHOWN

DRAWING NUMBER

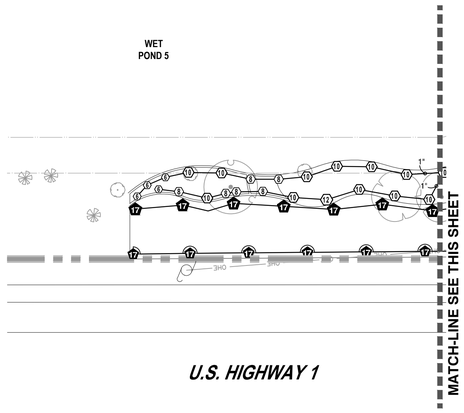
IR11

GRAPHIC SCALE
20 10 0 20 40
1"=20'



AMENITY CENTER AND BUFFER ENLARGEMENT

SCALE: 1" = 20'



BUFFER ENLARGEMENT

SCALE: 1" = 20'

IRRIGATION SCHEDULE

CODE	DESCRIPTION
I-101	VALVES AND IRRIGATION LINES SHOWN IN PAVEMENT OR OUT OF LANDSCAPE BEDS FOR CLARITY ONLY. VALVES ARE TO BE LOCATED IN LANDSCAPE BEDS.
I-102	4" SLEEVE WATER 2" SLEEVE WIRE
I-103	6" SLEEVE WATER 2" SLEEVE WIRE

REVISIONS

DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS
07/18/25	SJRWMD

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

IRRIGATION PLAN
CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams

Digitally signed by Lauren A Adams
DN: C=US, E=lauren@newkirk-engineering.com, OU=LA 6667278, CN=Lauren A Adams
Date: 2025.10.13 10:47:06-04'00'

LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	AS SHOWN

DRAWING NUMBER

IR12

IRRIGATION SCHEDULE

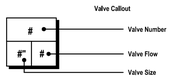
SYMBOL	MANUFACTURER/MODEL	QTY
2Q 2H 4Q 4H 6Q 6H	HUNTER PROS-06-PRS30-CV-F-R SHORT RADIUS NOZZLES	45
ES LCS RCS CS SS	HUNTER PROS-06-PRS30-CV-F-R 5` STRIP SPRAY	49
Q T H F	HUNTER PROS-06-PRS30-CV-F-R 8` RADIUS	27
Q T H F	HUNTER PROS-06-PRS30-CV-F-R 10` RADIUS	17
Q T H TT TQ F	HUNTER PROS-06-PRS30-CV-F-R 12` RADIUS	16
Q T H TT TQ F	HUNTER PROS-06-PRS30-CV-F-R 15` RADIUS	90
Q H	HUNTER PROS-06-PRS30-CV-F-R 17` RADIUS	28
10 12 15 17	HUNTER PROS-06-PRS30-CV-F-R ADJUSTABLE ARC	579
2Q 2H 4Q 4H 6Q 6H	HUNTER PROS-00-PRS30-CV-R SHORT RADIUS NOZZLES	21
ES LCS RCS CS SS	HUNTER PROS-00-PRS30-CV-R 5` STRIP SPRAY	144
Q T H F	HUNTER PROS-00-PRS30-CV-R 8` RADIUS	18
Q T H F	HUNTER PROS-00-PRS30-CV-R 10` RADIUS	24
Q T H TT TQ F	HUNTER PROS-00-PRS30-CV-R 12` RADIUS	6
Q T H TT TQ F	HUNTER PROS-00-PRS30-CV-R 15` RADIUS	5
Q H	HUNTER PROS-00-PRS30-CV-R 17` RADIUS	7
4 6 8 10 12 15 17	HUNTER PROS-00-PRS30-CV-R ADJUSTABLE ARC	374
25 50 10 20	HUNTER PCB-R 10	458

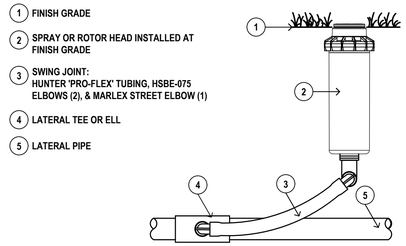
SYMBOL	MANUFACTURER/MODEL	QTY
1.5	HUNTER I-20-06-PRB-SR 1.5	12
1.5	HUNTER PGP-04-PRB 1.5	6
4.0	HUNTER PGP-04-PRB 4.0	10
2.0	HUNTER I-20-12-PRB 2.0	16

SYMBOL	MANUFACTURER/MODEL	QTY
	HUNTER ICZ-151-XL-40	3
0.5 1.0 2.0 4.0 6.0	HUNTER HE-B 10HE-B	57
	TREE RING - 15 PSI	3
	AREA TO RECEIVE DRIPLINE HUNTER HDL-09-12-R	2,706 LF

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	HUNTER ICV-G-FS-R 1", 1-1/2", 2", AND 3" PLASTIC ELECTRIC REMOTE CONTROL VALVES, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE. WITH FILTER SENTRY FACTORY INSTALLED OPTION, AND RECLAIMED WATER ID, PURPLE HANDLE.	53
C1	HUNTER I2C-3200-PL 32 STATION OUTDOOR MODULAR CONTROLLER. WITH THREE ICM-800 MODULE. COMMERCIAL USE. PLASTIC CABINET.	1
S1	HUNTER SOLAR-SYNC SOLAR, RAIN FREEZE SENSOR WITH OUTDOOR INTERFACE, CONNECTS TO HUNTER PCC, PRO-C, AND I-CORE CONTROLLERS, INSTALL AS NOTED. INCLUDES 10 YEAR LITHIUM BATTERY AND RUBBER MODULE COVER, AND GUTTER MOUNT BRACKET. WIRED.	1
X X	CAP FOR FUTURE USE CAP AT THE MAINLINE OR LATERAL LINE FOR FUTURE USE. THE PRESSURE AND FLOW PROVIDED TO THAT LOCATION ARE INDICATED NEXT TO THE CAP SYMBOL.	166
P1	POINT OF CONNECTION PUMP STATIONS, SEE NOTES SHEET XXX	1
P2	POINT OF CONNECTION PUMP STATIONS, SEE NOTES SHEET XXX	1
P3	POINT OF CONNECTION PUMP STATIONS, SEE NOTES SHEET XXX	1
	IRRIGATION LATERAL LINE: PVC CLASS 160 SDR 26	23,989 LF
	IRRIGATION MAINLINE: PVC CLASS 200 SDR 21	18,757 LF
	PIPE SLEEVE: PVC SCHEDULE 40	1,043 LF

Valve Callout

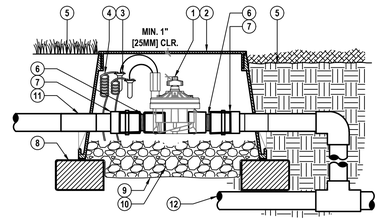




1. FINISH GRADE
2. SPRAY OR ROTOR HEAD INSTALLED AT FINISH GRADE
3. SWING JOINT: HUNTER 'PRO-FLEX' TUBING, HSBE-075 ELBOWS (2), & MARLEX STREET ELBOW (1)
4. LATERAL TEE OR ELL
5. LATERAL PIPE

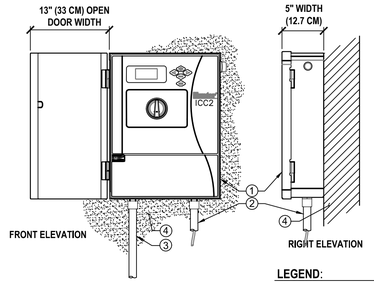
LEGEND

1. HUNTER REMOTE CONTROL VALVE (ICV) WITH FLOW CONTROL
2. IRRIGATION VALVE BOX: HEAT STAMP LID WITH 'RCV' IN 2" LETTERS
3. WATERPROOF CONNECTORS (2)
4. 18"-24" COILED WIRE TO CONTROLLER
5. FINISH GRADE AT ADJACENT SURFACE (TURF OR MULCH)
6. SCH. 80 CLOSE NIPPLE, SIZE PER RCV
7. PVC SLIP X FPT ADAPTOR
8. BRICK SUPPORTS (4)
9. FILTER FABRIC - WRAP TWICE AROUND BRICK SUPPORTS
10. 3/4" WASHED GRAVEL - 4" MIN. DEPTH
11. IRRIGATION LATERAL
12. MAINLINE AND FITTINGS



1 SPRAY HEAD AND ROTOR DETAIL

1/4" = 1'-0" P-CO-2023-109-17



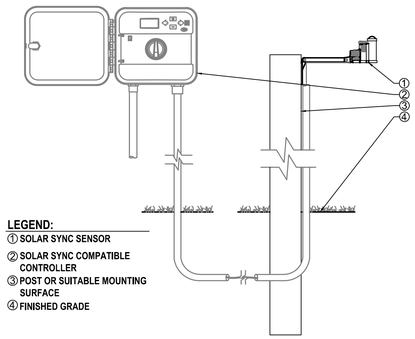
NOTE:
MOUNT CONTROLLER LCD SCREEN AT EYE LEVEL, CONTROLLER SHALL BE HARD-WIRED TO GROUNDED 110 VAC POWER SOURCE

LEGEND:

1. IRRIGATION CONTROLLER (12C-800-M) PER PLAN
2. IRRIGATION CONTROL WIRE IN CONDUIT SIZE AND TYPE PER LOCAL CODES
3. ELECTRICAL SUPPLY CONDUIT CONNECT TO POWER SOURCE, J-BOX INSIDE CONTROLLER
4. ADJACENT SURFACE TO MOUNT CONTROLLER PER PLAN

2 HUNTER REMOTE CONTROL VALVE (ICV)

1 1/2" = 1'-0" P-CO-2023-109-20



LEGEND:

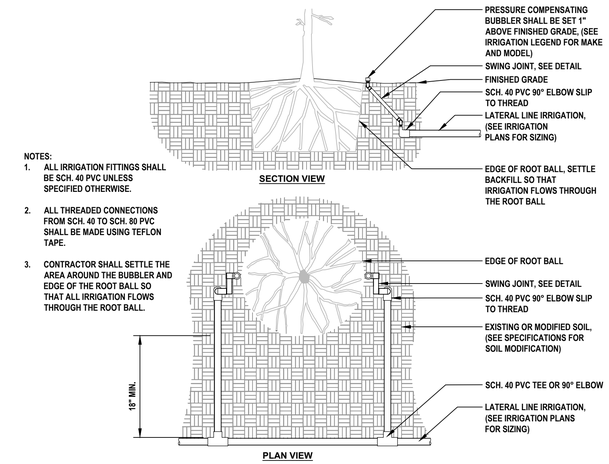
1. SOLAR SYNC SENSOR
2. SOLAR SYNC COMPATIBLE CONTROLLER
3. POST OR SUITABLE MOUNTING SURFACE
4. FINISHED GRADE

3 HUNTER ICC2 CONTROLLER

1/8" = 1'-0" P-CO-2023-109-21

4 HUNTER SOLAR SYNC SENSOR

1/8" = 1'-0" P-CO-2023-109-22

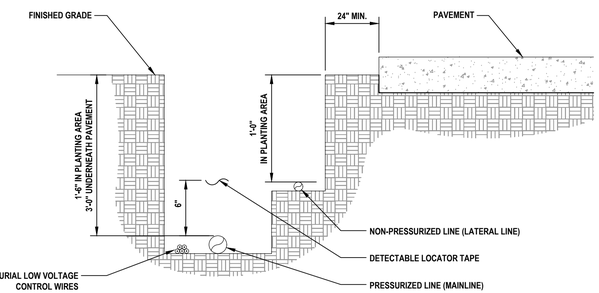


NOTES:
1. ALL IRRIGATION FITTINGS SHALL BE SCH. 40 PVC UNLESS SPECIFIED OTHERWISE.
2. ALL THREADED CONNECTIONS FROM SCH. 40 TO SCH. 80 PVC SHALL BE MADE USING TEFLON TAPE.
3. CONTRACTOR SHALL SETTLE THE AREA AROUND THE BUBBLER AND EDGE OF THE ROOT BALL SO THAT ALL IRRIGATION FLOWS THROUGH THE ROOT BALL.

5 IRRIGATION BUBBLER (2) W/ LAYOUT

3/4" = 1'-0" P-CO-2023-109-06

URBAN TREE FOUNDATION © 2014 OPEN SOURCE FREE TO USE



NOTES:
1. SEE IRRIGATION LEGEND FOR MAINLINE AND LATERAL LINE PIPE SIZE AND TYPE.
2. DIRECT BURIAL CONTROL WIRES SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT IF REQUIRED.
3. 2-WIRE IRRIGATION WIRE SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT.
4. DETECTABLE LOCATOR TAPE SHALL BE LOCATED SIX INCHES (6") ABOVE THE ENTIRE MAINLINE RUN.

6 IRRIGATION TRENCHING

1 1/2" = 1'-0" P-CO-2023-109-15

URBAN TREE FOUNDATION © 2014 OPEN SOURCE FREE TO USE

IRRIGATION NOTES

1. THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL EXISTING UTILITIES AND CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
2. *CHECK PRESSURE AND GPM OF WATER SUPPLY BEFORE BEGINNING JOB AND REPORT FINDING TO LANDSCAPE ARCHITECT. LANDSCAPE ARCHITECT WILL MAKE ANY ADJUSTMENT NECESSARY TO MAKE SYSTEM WORK AT ITS BEST.*
3. THE PLAN IS SCHEMATIC ONLY. THE CONTRACTOR SHALL INSTALL PIPING IN A MINIMUM NUMBER OF TRENCHES AND SHALL INSTALL PIPE IN A MINIMUM LENGTH.
4. IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY AND ARE INTENDED TO SHOW DISTRIBUTION ZONES ONLY. LINES LOCATED UNDER PAVEMENT SHALL BE KEPT TO A MINIMUM AND ALL PIPING UNDER PAVED AREAS SHALL BE SLEEVED.
5. WHEN INSTALLING IRRIGATION PIPING IN ISLAND AND OTHER NARROW PLANTING AREAS RUN PIPING CLOSE TO CURB AND NOT DOWN THE MIDDLE OF THE PLANTING AREA. (BEFORE DOING IRRIGATION GET A COPY OF THE LANDSCAPE PLAN AND KEEP IRRIGATION LINES OUT OF PLANTING AREAS WHERE POSSIBLE.)
6. QUANTITIES FOR IRRIGATION MATERIALS MAY BE ESTIMATES. CONTRACTOR SHALL DO THEIR OWN TAKEOFF.
7. INSTALL SLEEVE PIPING WHERE SHOWN ON THE DRAWINGS AT THE PROPER DEPTH. ALL SLEEVE PIPE SHALL BE SCHEDULE 40 PVC PIPE INSTALLED A MINIMUM OF 20" BELOW FINISHED PAVING GRADES. ALL SLEEVES WHEN PLACED IN FIELD ARE TO BE LOCATED BY A METAL PIPE AT EACH END AND LOCATED FROM TWO STATIONARY POINTS BY TAPE MEASUREMENTS.
8. ALL LATERAL PIPE SHALL BE INSTALLED A MINIMUM OF 12" BELOW GRADE.
9. ALL TRENCHING SHALL BE KEPT OUT OF THE DRIP LINE AREA OF ALL EXISTING TREES. USE RADIAL LINES OR TUNNELING WHEN NECESSARY TO ENCROACH INTO THE DRIP LINE AREA OF TREES.
10. LOCATE ALL VALVES AND OTHER IRRIGATION EQUIPMENT IN PLANT BED AREAS WITHIN THE PROJECT LIMITS FOR CONCEALMENT PURPOSES.
11. RISERS ARE TO BE HIDDEN COMPLETELY IN SHRUBBERY OR PAINTED BLACK AND IN NO CASE BE HIGHER THAN THE SHRUBBERY INSTALLED.
12. ALL VALVES SHALL BE INSTALLED IN VALVE BOXES. PROVIDE A 6" GRAVEL SUMP AT THE BOTTOM OF ALL VALVE BOXES AND INSTALL 1/2" TO 1" DIAMETER GRAVEL AT THE BOTTOM OF THE VALVE PIT.
13. IRRIGATION SHALL MEET ALL APPLICABLE CURRENT MUNICIPAL, COUNTY, STATE OR FEDERAL CODES, ORDINANCES AND REGULATIONS THAT HAVE JURISDICTION.
14. THERE SHALL BE A MINIMUM OF FOUR (4) INCHES OFFSET BETWEEN THE IRRIGATION EQUIPMENT AND PAVEMENT.
15. THERE SHALL BE A MINIMUM OF TWELVE (12) INCHES BETWEEN THE IRRIGATION EQUIPMENT AND STRUCTURES.
16. THERE SHALL BE NO DIRECT SPRAY ON WALKWAYS, BUILDINGS, DRIVES OR ROADWAYS.
17. ALL TURF IRRIGATION HEADS SHALL PROVIDE 100% HEAD TO HEAD COVERAGE.
18. ALL FITTINGS SHALL BE SCHEDULE 40 PVC.
19. ALL SPRAY HEADS ARE TO BE A MINIMUM OF 6" POP-UP AND ALL HEADS IN PLANTING AREAS TO BE 12" POP-UP OR RISERS. RISERS SHALL BE PAINTED HUNTER GREEN.
20. ALL DRIP ZONES SHALL INCLUDE AN AIR RELIEF VALVE INSTALLED IN A VALVE BOX AT OPTIMAL HIGHEST POINT FROM THE CONTROL ZONE KIT. MULTIPLE AIR RELIEF VALVES MAY BE NEEDED TO ACCOMMODATE DIFFERENCES IN GRADE. ECO-INDICATOR TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT IN CLEAR VIEW WHEN POPPED UP. FLUSH POINT TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT TO ALLOW FOR MAXIMUM DEBRIS FLUSH IN SYSTEM.
21. ALL DRIP ROWS SHALL BE SPACED A MINIMUM OF 12" APART AND A MAXIMUM OF 18" APART.
22. ELECTRICAL TO CONTROLLER SHALL BE SUPPLIED BY ELECTRICAL CONTRACTOR (NOT IRRIGATION CONTRACTOR).
23. TREE PROTECTION AREA. HAND TRENCH ALL PIPING IN THESE AREAS TO AVOID IMPACTING THE CRITICAL PROTECTION ZONE OF THE EXISTING TREES TO REMAIN (TYP).
24. CONTRACTOR TO PROVIDE CONTROLLER HANDBOOK AND OPERATION INSTRUCTIONS, AS-BUILT ZONE DIAGRAM, INCLUDING LOCATIONS AND SIZE OF COMPONENTS, AND SOLID MOISTURE SENSOR PROBE LOCATION IF APPLICABLE, PRECIPITATION RATES FOR EACH ZONE, AND SCHEDULE RUN TIMES, WINTER AND SUMMER TO THE OWNER.
25. *PURPLE IRRIGATION EQUIPMENT MUST BE USED FOR ALL IRRIGATION IF REUSE WATER IS BEING USED.*

PLANT ESTABLISHMENT

1. IRRIGATE EVERY DAY FOR ONE MONTH.
2. IRRIGATE EVERY OTHER DAY FOR ONE ADDITIONAL MONTH.
3. IRRIGATE TWICE A WEEK THEREAFTER OR MORE OFTEN DURING DRY PERIODS IF PLANTS ARE SHOWING SIGNS OF DISTRESS SUCH AS WILTING OR BROWNING.
4. ENSURE RAIN SENSOR IS OPERATING CORRECTLY AND SYSTEM IS NOT WATERING ON DAYS WHEN IT RAINS.

IRRIGATION SYSTEM NOTES

1. EACH HOME HAS A MAX DEMAND AT ONE TIME OF 30 GPM AND 55 PSI.
2. EACH TOWNHOME BUILDING HAS A MAX DEMAND AT ONE TIME OF 50 GPM AND 55 PSI.
3. EACH TOWNHOME BUILDING, EACH SINGLE FAMILY LOT, AND EACH OPEN SPACE AREA SHALL HAVE A SEPARATE SHUT OFF VALVE.
4. THE MAXIMUM DEMAND AT ONE TIME FOR THE SYSTEM IS 750 GALLONS PER MINUTE.

REVISIONS

DATE	DESCRIPTION
04/03/25	CITY COMMENTS
07/01/25	CITY COMMENTS
07/18/25	SJRWMD

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 672-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
C 2013
Civil Engineering
Transportation, CEI &
Landscape Architecture
NEWKIRK ENGINEERING INC.

IRRIGATION DETAILS AND NOTES

CRESTWOOD
U.S. HIGHWAY 1
EDGEWATER, FL 32132

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING COPYRIGHT 2013 ALL RIGHTS RESERVED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY LAUREN ADAMS, RLA # 6667278 ON

Lauren A Adams

Digitally signed by Lauren A Adams
DN: C=US, E=laurena@newkirk-engineering.com, CN=LA 6667278, CN=Lauren A Adams
Date: 2025.10.13 10:47:11-04'00'

LAUREN ADAMS LICENSE NO. 6667278 STATE OF FLORIDA LANDSCAPE ARCHITECT

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No:	2023-109
DATE:	JULY 2024
DESIGN BY:	LAA
DRAWN BY:	BWV
CHECKED BY:	LAA
SCALE:	AS SHOWN

DRAWING NUMBER

IR13