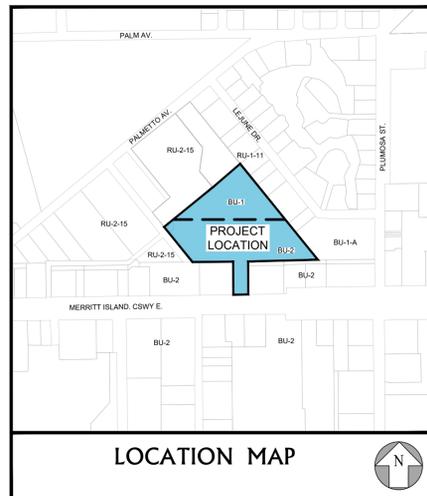
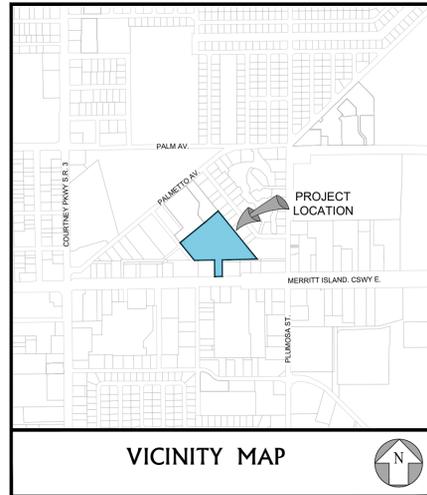


THE JADE AT MERRITT ISLAND APARTMENTS HOTEL TO MULTI-FAMILY APARTMENTS

260 E. MERRITT ISLAND CAUSEWAY (US 520)
SECTION 35, TOWNSHIP 24 S, RANGE 36 E
BREVARD COUNTY, FLORIDA

JANUARY, 2026



LEGAL DISCRPTION:

A PARCEL OF LAND LYING IN SECTION 35, TOWNSHIP 24 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHEAST CORNER OF THE NORTH 1/2 OF THE NORTHEAST 1/4 OF SAID SECTION 3 5 AND RUN NORTH 89 DEGREES 57 MINUTES 20 SECONDS WEST, ALONG THE SOUTH LINE OF SAID N01TH 1/2 OF THE NORTHEAST 1/4, A DISTANCE OF 367.07 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE CONTINUE N01TH 89 DEGREES 57 MINUTES 20 SECONDS WEST ALONG SAID SOUTH LINE, A DISTANCE OF 725.64 FEET; THENCE RUN NORTH 38 DEGREES 56 MINUTES 50 SECONDS WEST, ALONG THE EASTERLY RIGHT OF WAY LINE OF A 50 FOOT RIGHT OF WAY, A DISTANCE OF 269.60 FEET; THENCE RUN NORTH 51 DEGREES 13 MINUTES 19 SECONDS EAST 564.0 FEET TO A POINT ON THE WESTERLY BOUNDARY LINE OF THE REPLAT OF MERRITT LAKE ESTATES, AS RECORDED IN PLAT BOOK 11, PAGE 18, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA; THENCE RUN SOUTH 38 DEGREES 56 MINUTES 50 SECONDS EAST, ALONG SAID WESTERLY BOUNDARY LINE, A DISTANCE OF 724.51 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION.

ALSO A PARCEL LYING IN SAID SECTION 35, BEING DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF THE SOUTH 1/2 OF THE NORTHEAST 1/4 OF SAID SECTION 35, TOWNSHIP 24 SOUTH, RANGE 36 EAST, AND RUN NORTH 89 DEGREES 57 MINUTES 20 SECONDS WEST, ALONG THE NORTH LINE OF SAID SOUTH 1/2 OF THE NORTHEAST 1/4, A DISTANCE OF 774.99 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE SOUTH 00 DEGREES 25 MINUTES 35 SECONDS WEST 193.26 FEET TO A POINT ON THE NORTH RIGHT OF WAY LINE OF STATE ROAD NO. 520; THENCE RUN SOUTH 89 DEGREES 42 MINUTES 12 SECONDS WEST, ALONG SAID NORTH RIGHT OF WAY LINE, A DISTANCE OF 90.0 FEET; THENCE RUN N01TH 00 DEGREES 25 MINUTES 35 SECONDS EAST 193.68 FEET; THENCE RUN SOUTH 89 DEGREES 57 MINUTES 20 SECONDS EAST 90.0 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION.

THE NORTH 25 FEET OF THE ABOVE DESCRIBED PARCEL IS AN ALLEY EASEMENT AS SHOWN IN SURVEY BOOK 1, PAGE 90, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

OWNER / APPLICANT

JAY SRIAMBE LLC
1601 S. ATLANTIC AVE.
DAYTONA BEACH, FL 32118

ENGINEER



CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD., SUITE H
MELBOURNE, FL 32935
PH: (321) 253-1510
VERO BEACH, FL - PH: (772) 569-0035
FT. PIERCE, FL - PH: (772) 468-9055
PALM CITY, FL - PH: (772) 426-9959

SURVEYOR

CANVAS

LAND SURVEYING
300 N. RONALD REAGAN BOULEVARD
LONGWOOD, FL 32750
PHONE: (321) 689-5330
CANVASLANDSURVEYING.COM
CERTIFICATE OF AUTHORIZATION NO. LB 8320

ENVIRONMENTAL



1935 20th Street • Vero Beach, FL 32960
T: 772-299-4791 • F: 772-779-3617 • eMAIL: TimM@FL-Env.com

COUNTY PERMITTING NOTE

SITE REVIEW AND APPROVAL DOES NOT CONSTITUTE COUNTY APPROVAL OR REVIEW OF ANY PRIVATE PARTY DEED RESTRICTIONS, COVENANTS, PRIVATE EASEMENTS, OR OTHER PRIVATE AGREEMENTS. ANY CHANGES TO THE APPROVED PLAN MUST BE COORDINATED THROUGH LAND DEVELOPMENT SECTION. THE APPLICANT ASSUMES THE RISK THAT THE SITE PLAN MAY REQUIRE ADDITIONAL COUNTY REVIEWS INCLUDING ENGINEERING REVISIONS OR OTHER APPLICABLE COUNTY REVIEW PROCESSES SHOULD ANY ACTION TO ENFORCE ANY SUCH RESTRICTIONS REQUIRE REDESIGN OF THE SITE.

COUNTY ELECTRONIC CERTIFICATION NOTE

IF THIS DOCUMENT, OR SET OF DOCUMENTS, ARE ELECTRONICALLY CERTIFIED, PRINTED COPIES ARE NOT CONSIDERED SIGNED AND SEALED AND SIGNATURE MUST BE VERIFIED BY A THIRD PARTY.

Sheet List Table	
Sheet Number	Sheet Title
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G-002	GENERAL NOTES
C-100	EXISTING CONDITIONS PLAN
C-101	EROSION CONTROL PLAN
C-102	DEMOLITION PLAN (1 OF 4)
C-103	DEMOLITION PLAN (2 OF 4)
C-104	DEMOLITION PLAN (3 OF 4)
C-105	DEMOLITION PLAN (4 OF 4)
C-200	OVERALL SITE PLAN
C-201	GEOMETRY PLAN (1 OF 4)
C-202	GEOMETRY PLAN (2 OF 4)
C-203	GEOMETRY PLAN (3 OF 4)
C-204	GEOMETRY PLAN (4 OF 4)
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C-207	FIRE ACCESS PLAN
C-208	WASTE MANAGEMENT ACCESS PLAN
C-300	MASTER DRAINAGE PLAN
C-301	ADS STORMTECH PLAN AND DETAILS
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C-400	MASTER UTILITY PLAN
C-401	UTILITY PLAN (1 OF 4)
C-402	UTILITY PLAN (2 OF 4)
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C-801	EROSION CONTROL DETAILS
C-802	SITE DETAILS
C-803	UTILITY DETAILS
C-805	BREVARD COUNTY WATER SPECIFICATIONS
C-808	BREVARD COUNTY ENGINEERING NOTES
C-806	BREVARD COUNTY SANITARY SEWER SPECIFICATIONS-1
C-807	BREVARD COUNTY SANITARY SEWER SPECIFICATIONS-2

FLOOD ZONE:

THE SUBJECT PROPERTY IS LOCATED INSIDE THE FLOOD ZONE DESIGNATION "X" PER FLOOD INSURANCE RATE MAP #12009C 0427 H, DATED JANUARY 29TH, 2021.

PRIMARY BENCHMARK:

THE ELEVATION DATUM SHOWN HEREON ARE BASED ON N.G.S. BENCHMARK "F-649", BEING AT AN ELEVATION +9.56 (NAVD88), CONVERSION FACTOR FROM NGVD29 TO NAVD88: -1.378 FEET

REQUIRED PERMITS

BREVARD COUNTY SITE PLAN
BREVARD COUNTY CONCURRENCY
FDEP NPDES NOTICE OF INTENT
SJRWMD (ERP) ENVIRONMENTAL RESOURCE PERMIT
FDEP WATER, SEWER
CITY OF COCOA UTILITIES

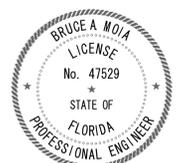
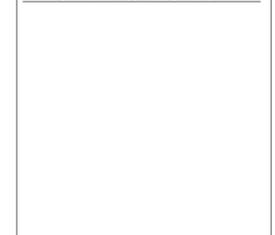
BREVARD COUNTY

COUNTY PERMIT NUMBER: TBD

SJRWMD

SJRWMD (ERP) ENVIRONMENTAL RESOURCE PERMIT: TBD
CITY OF COCOA UTILITIES: TBD

MUNICIPAL APPROVAL STAMP



BRUCE A. MOIA
FL. P.E. #47529 DATE: 2/4/2026

DATE: 2/4/2026

PROJECT: 24-1104

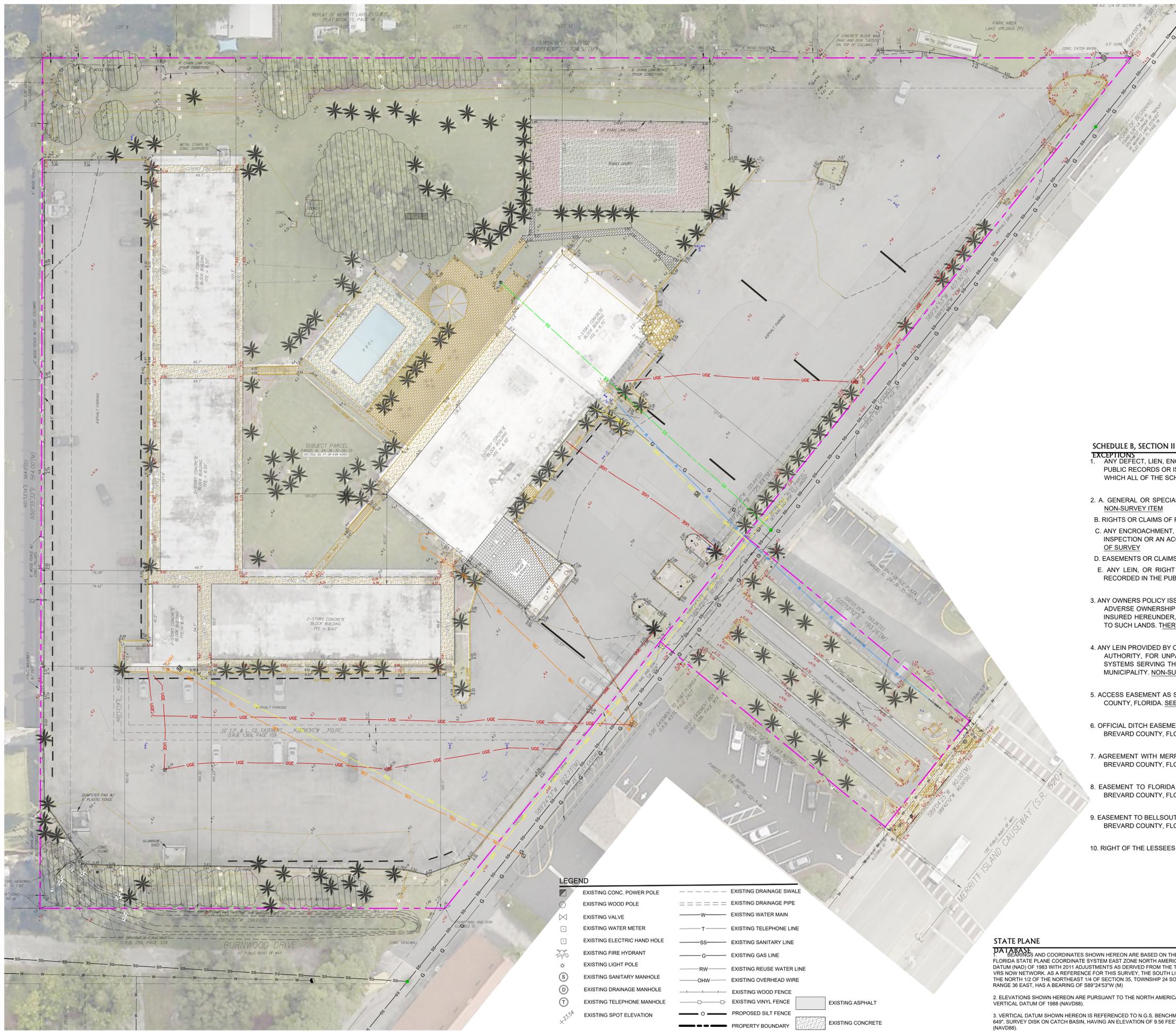
SHEET

G-001



This item has been digitally signed and sealed by Bruce A. Moia, P.E. on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



- SURVEYOR'S NOTES**
- BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM EAST ZONE NORTH AMERICAN DATUM (NAD) OF 1983 WITH 2011 ADJUSTMENTS AS DERIVED FROM THE TRIMBLE VRS NOW NETWORK. AS A REFERENCE FOR THIS SURVEY, THE SOUTH LINE OF THE NORTH 1/2 OF THE NORTHEAST 1/4 OF SECTION 35, TOWNSHIP 24 SOUTH, RANGE 36 EAST, HAS A BEARING OF S89°24'53"W (M).
 - BASED ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, COMMUNITY PANEL NUMBERS 12009C0427H, EFFECTIVE DATE JANUARY 29, 2021, THE PROPERTY SHOWN HEREON LIES WITHIN FLOOD ZONE "X" AND DOES NOT LIE WITHIN THE FLOOD HAZARD AREA (100 YEAR FLOOD).
 - ELEVATIONS SHOWN HEREON ARE PURSUANT TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 - VERTICAL DATUM SHOWN HEREON IS REFERENCED TO N.G.S. BENCHMARK "F 649", SURVEY DISK ON CATCH BASIN, HAVING AN ELEVATION OF 9.56 FEET (NAVD88).
 - THIS SURVEY HAS BEEN PREPARED WITH THE BENEFIT OF "COMMITMENT OF TITLE INSURANCE" BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, EFFECTIVE DATE OCTOBER 16, 2024, FILE NO. 1578041.
 - SUBJECT PARCEL AREA = 6.84 ACRES. (AREA CALCULATED).
 - SUBJECT PARCEL ADDRESS: 260 E. MERRITT ISLAND CAUSEWAY, MERRITT ISLAND, FLORIDA 32952.
 - UNDERGROUND FOUNDATIONS AND UTILITIES HAVE NOT BEEN LOCATED, EXCEPT AS SHOWN.
 - NORTH-SOUTH AND EAST-WEST TIES TO FOUND MONUMENTATION AND IMPROVEMENTS ARE BASED ON CARDINAL DIRECTION.
 - WETLAND AREAS, IF ANY, WERE NOT ADDRESSED AS PART OF THIS SURVEY.
 - ABUTTING PROPERTIES HAVE NOT BEEN RESEARCHED FOR GAPS, OVERLAPS AND/OR HIATUS.
 - NO EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS WAS OBSERVED DURING THE TIME FIELD WORK WAS PERFORMED ON THE SUBJECT PARCEL.
 - NO EVIDENCE OF THE SITE BEING USED AS A SOLID WASTE DUMP, SUMP, OR SANITARY LAND FILL WAS OBSERVED DURING THE TIME FIELD WORK WAS PERFORMED ON THE SUBJECT PARCEL.
 - USE OF THIS SURVEY BY ANYONE OTHER THAN THOSE PREPARED FOR CERTIFIED TO, WILL BE THE RE-USERS SOLE RISK WITHOUT LIABILITY TO THE SURVEYOR.
 - PRINTED DIMENSIONS SHOWN ON THE SURVEY SUPERCEDE SCALED DIMENSIONS. THERE MAY BE ITEMS DRAWN OUT OF SCALE TO GRAPHICALLY SHOW THEIR LOCATIONS.
 - THIS SURVEY AND THE COPIES THEREOF ARE NOT VALID WITHOUT AN AUTHENTICATED ELECTRONIC SIGNATURE AND AUTHENTICATED ELECTRONIC SEAL, OR A RAISED EMBOSSED SEAL.

REVISIONS	DATE	COMMENTS
1	2/14/2026	DATE ISSUED
2		CHECKED
3	JANUARY, 2026	DATE
4		DRAWN
5		BID
6		BID
7	24-1104	JOB NO.

MBV ENGINEERING, INC.
 MOA BOWLES VILLARIZ & ASSOCIATES
 CIVIL & STRUCTURAL SURVEYING • ENVIRONMENTAL
 1250 W. EAU GALLE BLVD. SUITE H
 MELBOURNE, FLORIDA 32935
 P: 321.475.2211 F: 321.475.2211
 ALSO WITH OFFICES IN:
 VERO: 772.669.0036, FT. PIERCE: 772.466.9056, PALM CITY: 772.456.9969

SCHEDULE B, SECTION II EXCEPTIONS

- ANY DEFECT, LIEN, ENCUMBRANCE, ADVERSE CLAIM, OR OTHER MATTER THAT APPEARS FOR THE FIRST TIME IN THE PUBLIC RECORDS OR IS CREATED, ATTACHES, OR IS DISCLOSED BETWEEN THE COMMITMENT DATE AND THE DATE ON WHICH ALL OF THE SCHEDULE B, PART I - REQUIREMENTS ARE MET. NON-SURVEY ITEM
- A. GENERAL OR SPECIAL TAXES AND ASSESSMENTS REQUIRED TO BE PAID IN THE 2024 AND SUBSEQUENT YEARS. NON-SURVEY ITEM
 B. RIGHTS OR CLAIMS OF PARTIES IN POSSESSION NOT RECORDED IN THE PUBLIC RECORDS. NON-SURVEY ITEM
 C. ANY ENCROACHMENT, ENCUMBRANCE, VIOLATION, OR ADVERSE CIRCUMSTANCE THAT WOULD BE DISCLOSED BY AN INSPECTION OR AN ACCURATE AND COMPLETE LAND SURVEY OF THE LAND AND INSPECTION OF THE LAND. SEE MAP OF SURVEY
 D. EASEMENTS OR CLAIMS TO EASEMENTS NOT RECORDED IN THE PUBLIC RECORDS. SEE MAP OF SURVEY
 E. ANY LEIN, OR RIGHT TO A LEIN, FOR SERVICES, LABOR OR MATERIAL FURNISHED, IMPOSED BY LAW AND NOT RECORDED IN THE PUBLIC RECORDS. NON-SURVEY ITEM
- ANY OWNERS POLICY ISSUED PURSUANT HERETO WILL CONTAIN UNDER SCHEDULE B THE FOLLOWING EXCEPTION: ANY ADVERSE OWNERSHIP CLAIM BY THE STATE OF FLORIDA BY RIGHT OF SOVEREIGNTY TO ANY PORTION OF THE LAND INSURED HEREUNDER, INCLUDING SUBMERGED, FILLED AND ARTIFICIALLY EXPOSED LANDS, AND LANDS ACCRETED TO SUCH LANDS. THERE ARE NO WATER BODIES ADJACENT TO THE SURVEYED PARCEL
- ANY LEIN PROVIDED BY COUNTY ORDINANCE OR BY CHAPTER 159, F.S., IN FAVOR OF ANY CITY, TOWN, VILLAGE OR PORT AUTHORITY, FOR UNPAID SERVICE CHARGES FOR SERVICES BY ANY WATER SYSTEMS, SEWER SYSTEMS OR GAS SYSTEMS SERVING THE LAND DESCRIBED HEREIN; AND ANY LIEN FOR WASTE FEES IN FAVOR OF ANY COUNTY OR MUNICIPALITY. NON-SURVEY ITEM
- ACCESS EASEMENT AS SHOWN ON THE PLAT RECORDED IN SURVEY BOOK 1, PAGE 90, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA. SEE MAP OF SURVEY
- OFFICIAL DITCH EASEMENT TO THE STATE OF FLORIDA RECORDED IN DEED BOOK 254, PAGE 339, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA. SEE MAP OF SURVEY
- AGREEMENT WITH MERRITT ISLAND SANITATION, INC. RECORDED IN O.R. BOOK 556, PAGE 974, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA. SEE MAP OF SURVEY
- EASEMENT TO FLORIDA POWER & LIGHT COMPANY RECORDED IN O.R. BOOK 1369, PAGE 108, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA. SEE MAP OF SURVEY
- EASEMENT TO BELL SOUTH TELECOMMUNICATIONS, INC. RECORDED IN O.R. BOOK 6375, PAGE 2427, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA. SEE MAP OF SURVEY
- RIGHT OF THE LESSEES UNDER UNRECORDED LEASES. NON-SURVEY ITEM

LEGEND

⊙	EXISTING CONC. POWER POLE	---	EXISTING DRAINAGE SWALE
⊙	EXISTING WOOD POLE	---	EXISTING DRAINAGE PIPE
⊙	EXISTING VALVE	—W—	EXISTING WATER MAIN
⊙	EXISTING WATER METER	—T—	EXISTING TELEPHONE LINE
⊙	EXISTING ELECTRIC HAND HOLE	—SS—	EXISTING SANITARY LINE
⊙	EXISTING FIRE HYDRANT	—G—	EXISTING GAS LINE
⊙	EXISTING LIGHT POLE	—RW—	EXISTING REUSE WATER LINE
⊙	EXISTING SANITARY MANHOLE	—OHW—	EXISTING OVERHEAD WIRE
⊙	EXISTING DRAINAGE MANHOLE	—X—	EXISTING WOOD FENCE
⊙	EXISTING TELEPHONE MANHOLE	—□—	EXISTING VINYL FENCE
⊙	EXISTING SPOT ELEVATION	—○—	PROPOSED SILT FENCE
		—	PROPERTY BOUNDARY
		▒	EXISTING ASPHALT
		▒	EXISTING CONCRETE

GRAPHIC SCALE
 (IN FEET)
 1 inch = 30 ft.

72 HOURS BEFORE DIGGING
 CALL TOLL FREE
811
 Know what's below.
 Call before you dig.

STATE PLANE DATUM
 BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM EAST ZONE NORTH AMERICAN DATUM (NAD) OF 1983 WITH 2011 ADJUSTMENTS AS DERIVED FROM THE TRIMBLE VRS NOW NETWORK. AS A REFERENCE FOR THIS SURVEY, THE SOUTH LINE OF THE NORTH 1/2 OF THE NORTHEAST 1/4 OF SECTION 35, TOWNSHIP 24 SOUTH, RANGE 36 EAST, HAS A BEARING OF S89°24'53"W (M)

- ELEVATIONS SHOWN HEREON ARE PURSUANT TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- VERTICAL DATUM SHOWN HEREON IS REFERENCED TO N.G.S. BENCHMARK "F 649", SURVEY DISK ON CATCH BASIN, HAVING AN ELEVATION OF 9.56 FEET (NAVD88).

MUNICIPAL APPROVAL STAMP

EXISTING CONDITIONS PLAN

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

FLORIDA
 BREVARD COUNTY

BRUCE A. MOIA
 P.E. #47529
 DATE: 2/14/2026

PROFESSIONAL ENGINEER

C-100

SHEET
 24-1104

PERMITTING SET



CONTRACTOR SHALL INSTALL ± 1,466 FEET OF FABRIC SILT FENCE AS SHOWN PRIOR TO ANY LAND DISTURBING ACTIVITIES. CONTRACTOR SHALL MAINTAIN SILT FENCE THROUGHOUT CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL REMOVE SILT FENCE ONLY AFTER DISTURBANCE AREAS HAVE BEEN ADEQUATELY STABILIZED. SEE SHEET C-801 SILT FENCE INSTALLATION DETAILS.

INSTALL INLET PROTECTION PER DETAIL SHEET C-801

LEGEND

◻	EXISTING CONC. POWER POLE	---	EXISTING DRAINAGE SWALE
○	EXISTING WOOD POLE	---	EXISTING DRAINAGE PIPE
⊗	EXISTING VALVE	—W—	EXISTING WATER MAIN
⊠	EXISTING WATER METER	—T—	EXISTING TELEPHONE LINE
⊞	EXISTING ELECTRIC HAND HOLE	—SS—	EXISTING SANITARY LINE
⊕	EXISTING FIRE HYDRANT	—G—	EXISTING GAS LINE
⊙	EXISTING LIGHT POLE	—X—X—	EXISTING WOOD FENCE
⊚	EXISTING SANITARY MANHOLE	—□—	EXISTING VINYL FENCE
⊛	EXISTING DRAINAGE MANHOLE	—○—	PROPOSED SILT FENCE
⊜	EXISTING TELEPHONE MANHOLE	---	PROPERTY BOUNDARY
⊝	EXISTING SPOT ELEVATION	▒	EXISTING ASPHALT
⊞	PROPOSED TREE REMOVAL	▒	DEMO ASPHALT
		▒	EXISTING CONCRETE
		▒	DEMO CONCRETE

STATE PLANE DATABASE
 BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM EAST ZONE NORTH AMERICAN DATUM (NAD) OF 1983 WITH 2011 ADJUSTMENTS AS DERIVED FROM THE TRIMBLE VRS NOW NETWORK, AS A REFERENCE FOR THIS SURVEY, THE SOUTH LINE OF THE NORTH 1/2 OF THE NORTHEAST 1/4 OF SECTION 35, TOWNSHIP 24 SOUTH, RANGE 36 EAST, HAS A BEARING OF S89°24'53"W (M)

2. ELEVATIONS SHOWN HEREON ARE PURSUANT TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

3. VERTICAL DATUM SHOWN HEREON IS REFERENCED TO N.G.S. BENCHMARK "F 649", SURVEY DISK ON CATCH BASIN, HAVING AN ELEVATION OF 9.56 FEET (NAVD88).

STORMWATER POLLUTION PREVENTION NOTES

1. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM FDEP AS REQUIRED TO MEET NPDES STANDARDS.
2. CONTRACTOR SHALL INCORPORATE BEST MANAGEMENT PRACTICES AND EROSION CONTROLS AS SHOWN OR NOTED ON THIS PLAN TO MINIMIZE OR ELIMINATE THE POTENTIAL FOR POLLUTION DISCHARGES.
3. CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM ALL WORK AND MAINTAIN ALL DEVICES IN ACCORDANCE WITH FDEP NPDES STANDARDS.
4. CONTRACTOR SHALL PERFORM ALL REQUIRED INSPECTIONS AND REPORTING.
5. CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION CONTROL DEVICES, AS MAYBE NECESSARY, TO PREVENT OFF-SITE POLLUTION DISCHARGES.
6. CONTRACTOR SHALL MAINTAIN UPDATED AND REVISED SWPP TO MATCH SITE CONDITIONS THROUGHOUT CONSTRUCTION.
7. CONTRACTOR SHALL REMOVE EROSION CONTROL DEVICES ONLY AFTER ALL DISTURBED AREAS ARE ADEQUATELY STABILIZED AS ACKNOWLEDGED BY APPLICABLE AGENCY INSPECTIONS.
8. CONTRACTOR SHALL FILE AND OBTAIN ALL REQUIRED CERTIFICATIONS OF COMPLETION FROM FDEP TO MEET NPDES STANDARDS.

EROSION AND SEDIMENTATION CONTROL

1. THE LAND-DISTURBING ACTIVITY SHALL CONFORM TO EXISTING TOPOGRAPHY AND SOIL TYPE SO AS TO CREATE THE LOWEST PRACTICAL EROSION POTENTIAL.
2. LAND-DISTURBING ACTIVITIES SHALL BE CONDUCTED IN A MANNER MINIMIZING EROSION.
3. THE DISTURBED AREA AND THE DURATION OF EXPOSURE TO EROSION SHALL BE MINIMIZED TO A PRACTICAL MINIMUM.
4. EROSION CONTROL MUST BE STRICTLY MAINTAINED DURING CUT AND FILL OPERATIONS.
5. DISTURBED SOIL SHALL BE STABILIZED AS QUICKLY AS PRACTICAL.
6. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED.
7. TEMPORARY VEGETATION OR MULCHING SHALL BE EMPLOYED TO PROTECT EXPOSED CRITICAL AREAS DURING DEVELOPMENT.
8. PERMANENT VEGETATION AND STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICAL.
9. ADEQUATE PROVISIONS MUST BE PROVIDED TO MINIMIZE DAMAGE FROM SURFACE WATER TO CUT THE FACE OF EXCAVATIONS OR THE SLOPING SURFACE OF FILLS.
10. TO THE EXTENT NECESSARY, SEDIMENT IN RUNOFF WATER MUST BE TRAPPED BY THE USE OF DEBRIS BASINS, SEDIMENT BASINS, SILT TRAPS OR SIMILAR MEASURES UNTIL THE DISTURBED AREA IS STABILIZED.
11. CUTS AND FILLS MUST BE CONSTRUCTED IN SUCH A MANNER THAT EROSION AND RUNOFF FROM THE SITE DOES NOT ENDANGER ADJOINING PROPERTY.
12. CONTRACTOR TO PLACE SILT FENCE IN ALL AREAS WHERE THE POTENTIAL FOR OFFSITE EROSION EXISTS.

FDEP NPDES CERTIFICATION STATEMENT

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

STANDARD DEVELOPMENT NOTES:

1. ALL SURVEY MONUMENTATION WITHIN THE PROPERTY LIMITS BY A FLORIDA LICENSED LAND SURVEYOR SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT AND/OR REPLACE POST CONSTRUCTION.

GRAPHIC SCALE
 30 0 30
 (IN FEET)
 1 inch = 30 ft.

72 HOURS BEFORE DIGGING
 CALL TOLL FREE
811
 Know what's below.
 Call before you dig.

MUNICIPAL APPROVAL STAMP

DATE	2/14/2026
REVISIONS	
COMMENTS	
DATE ISSUED	2/14/2026
CHECKED	BAM
DATE	JANUARY, 2026
DRAWN	BUD
BID	BUD
BID	24-1104
DESIGNED	24-1104
JOB NO.	24-1104

MBV ENGINEERING, INC.
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 CIVIL & STRUCTURAL • SURVEYING • ENVIRONMENTAL
 1250 W. EAU GALLE BLVD, SUITE H
 MELBOURNE, FLORIDA 32935
 P: 321.486.9911
 ALSO WITH OFFICES IN:
 FT. PIERCE: 772-466-9056, PALM CITY: 772-466-9969

EROSION CONTROL PLAN

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

FLORIDA

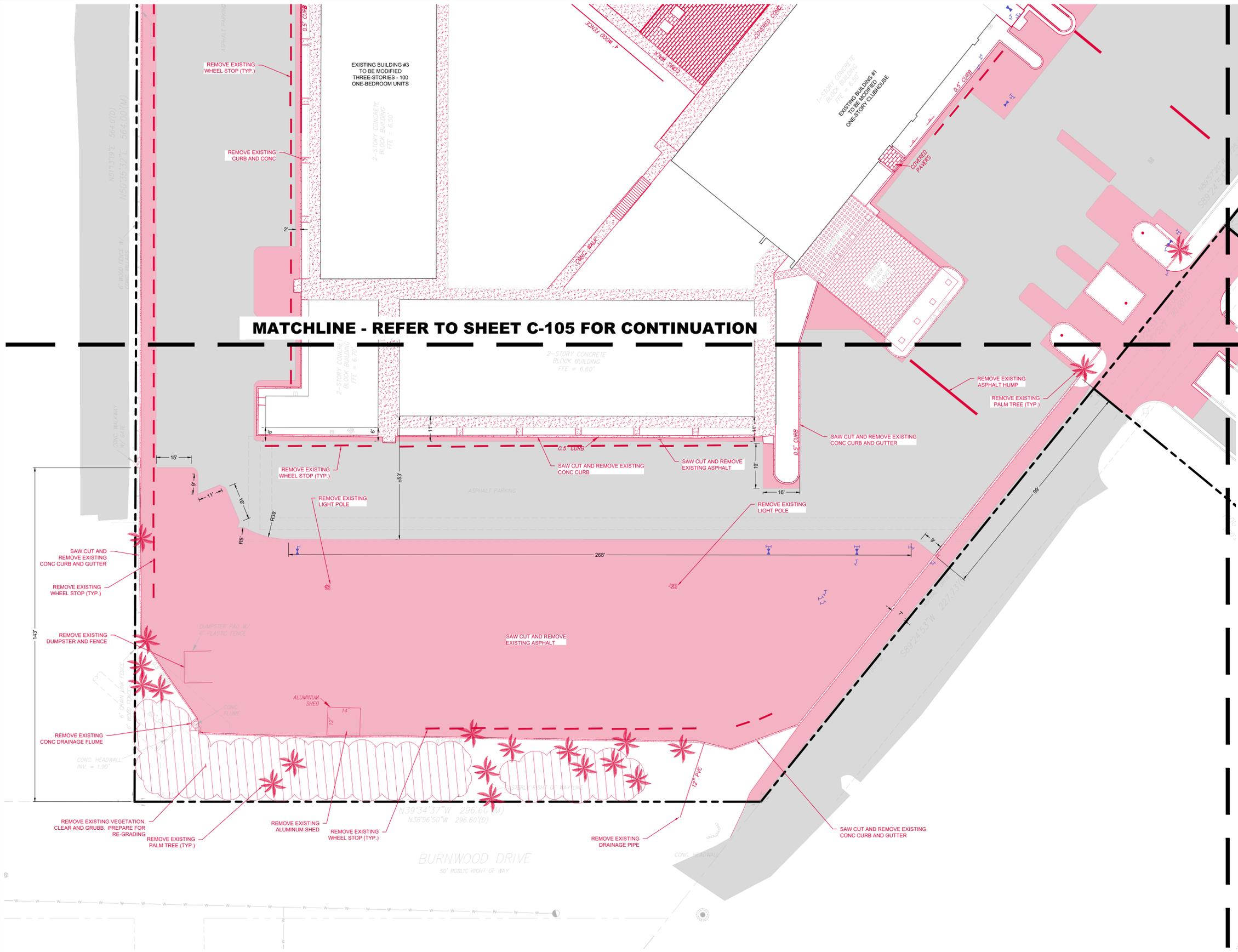
BRUCE A. MOIA
 LICENSE No. 47529
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER

BRUCE A. MOIA
 P.E. #47529 DATE: 2/14/2026

C-101

SHEET
 24-1104

PERMITTING SET



MATCHLINE - REFER TO SHEET C-105 FOR CONTINUATION

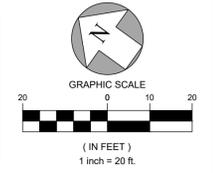
MATCHLINE - REFER TO SHEET C-102 FOR CONTINUATION

LEGEND

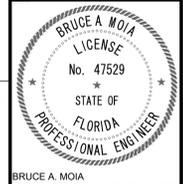
	EXISTING CONC. POWER POLE		EXISTING DRAINAGE SWALE
	EXISTING WOOD POLE		EXISTING DRAINAGE PIPE
	EXISTING VALVE		EXISTING WATER MAIN
	EXISTING WATER METER		EXISTING TELEPHONE LINE
	EXISTING ELECTRIC HAND HOLE		EXISTING SANITARY LINE
	EXISTING FIRE HYDRANT		EXISTING GAS LINE
	EXISTING LIGHT POLE		EXISTING REUSE WATER LINE
	EXISTING SANITARY MANHOLE		EXISTING OVERHEAD WIRE
	EXISTING DRAINAGE MANHOLE		EXISTING WOOD FENCE
	EXISTING TELEPHONE MANHOLE		EXISTING VINYL FENCE
	EXISTING SPOT ELEVATION		PROPOSED SILT FENCE
	EXISTING ASPHALT		PROPERTY BOUNDARY
	EXISTING CONCRETE		DEMO ASPHALT
	DEMO PAVERS		DEMO CONCRETE
	DEMO CONCRETE		DEMO CONCRETE
	DEMO VEGETATION		DEMO VEGETATION

DEMOLITION NOTES

1. THE CONTRACTOR SHALL DETERMINE LOCATIONS, SIZES, AND INVERTS OF EXISTING UTILITIES AND TAKE PROTECTIVE MEASURES WHEN NECESSARY PRIOR TO PROCEEDING WITH THE DEMOLITION PLAN.
2. ELEVATIONS ARE BASED ON N.A.V.D. OF 1988. SEE ALTAINSPS TITLE SURVEY PREPARED BY JOHN R. CAMPBELL SURVEYING, LLC, DATED DECEMBER 23, 2022.
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6. ANY EXISTING SERVICE LINES THAT NEED TO BE REMOVED OR RELOCATED MUST BE CUT/CAPPED AT THE CORPORATION STOP AT THE MAIN AND RUN A NEW SERVICE LINE.



MUNICIPAL APPROVAL STAMP



BRUCE A. MOIA
FL. P.E. #47529 DATE: 2/4/2026

C-103

SHEET
24-1104

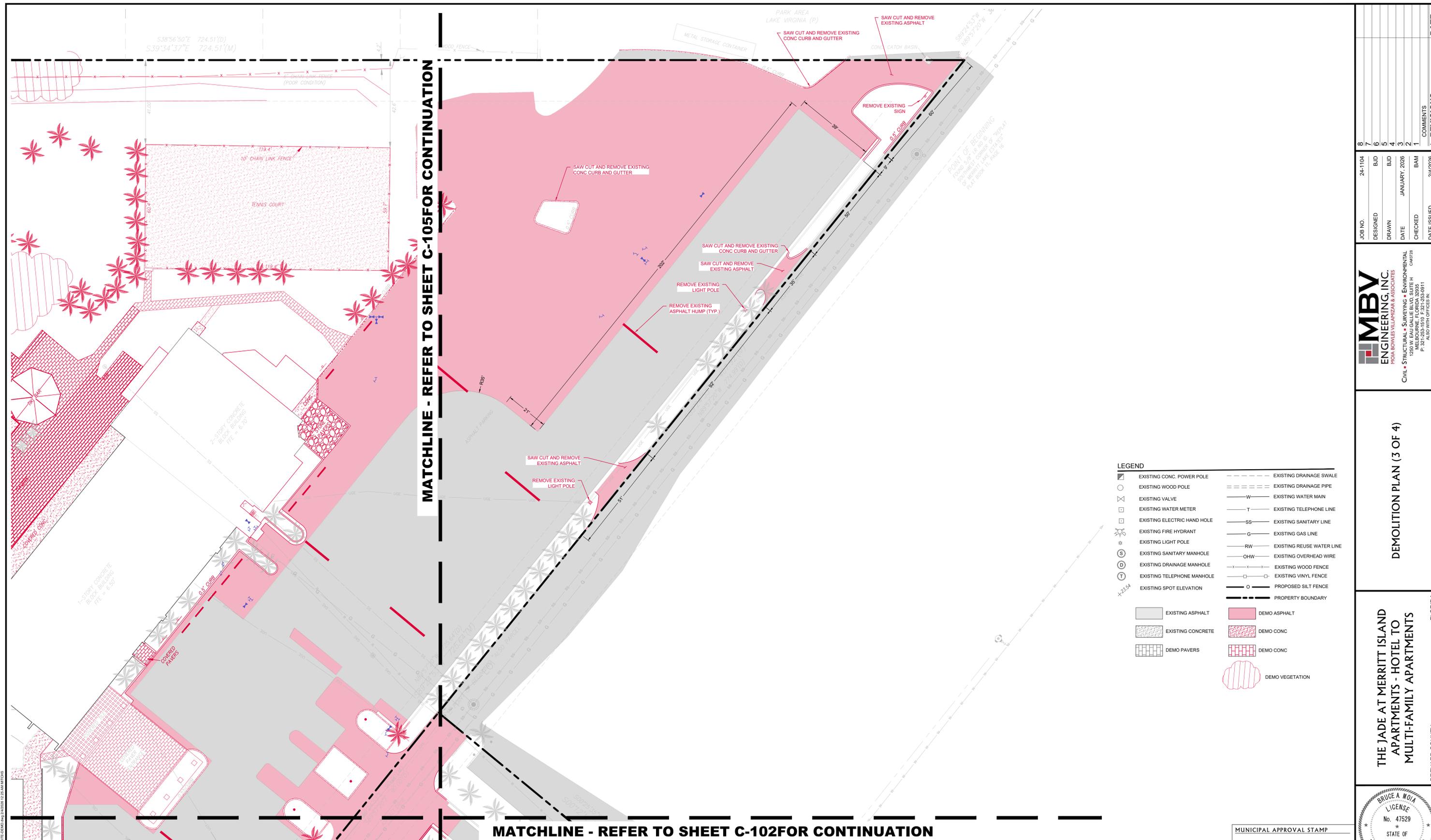
PERMITTING SET

8	24-1104	BID					
7		DESIGNED					
6		DRAWN					
5		BID					
4		DATE	JANUARY, 2026				
3		CHECKED					
2		BAM					
1		DATE ISSUED	2/4/2026				

MBV ENGINEERING, INC.
MOA BOWLES VILLANAZ & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-251-9911
F: 321-251-9911
ALSO WITH OFFICES IN:
VERO: 772-669-0036, FT. PIERCE: 772-466-9056, PALM CITY: 772-466-9669

DEMOLITION PLAN (2 OF 4)

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS
FLORIDA
BREVARD COUNTY



MATCHLINE - REFER TO SHEET C-105 FOR CONTINUATION

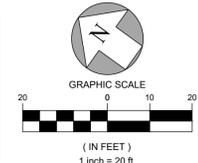
MATCHLINE - REFER TO SHEET C-102 FOR CONTINUATION

LEGEND

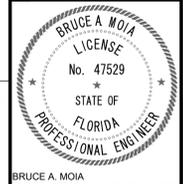
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	EXISTING WOOD POLE		EXISTING DRAINAGE PIPE
	EXISTING VALVE		EXISTING WATER MAIN
	EXISTING WATER METER		EXISTING TELEPHONE LINE
	EXISTING ELECTRIC HAND HOLE		EXISTING SANITARY LINE
	EXISTING FIRE HYDRANT		EXISTING GAS LINE
	EXISTING LIGHT POLE		EXISTING REUSE WATER LINE
	EXISTING SANITARY MANHOLE		EXISTING OVERHEAD WIRE
	EXISTING DRAINAGE MANHOLE		EXISTING WOOD FENCE
	EXISTING TELEPHONE MANHOLE		EXISTING VINYL FENCE
	EXISTING SPOT ELEVATION		PROPOSED SILT FENCE
	EXISTING ASPHALT		PROPERTY BOUNDARY
	EXISTING CONCRETE		DEMO ASPHALT
	DEMO PAVERS		DEMO CONC
	DEMO CONC		DEMO CONC
	DEMO VEGETATION		

DEMOLITION NOTES

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MUNICIPAL APPROVAL STAMP



BRUCE A. MOIA
P.E. #47529 DATE: 2/4/2026

C-104

SHEET
24-1104

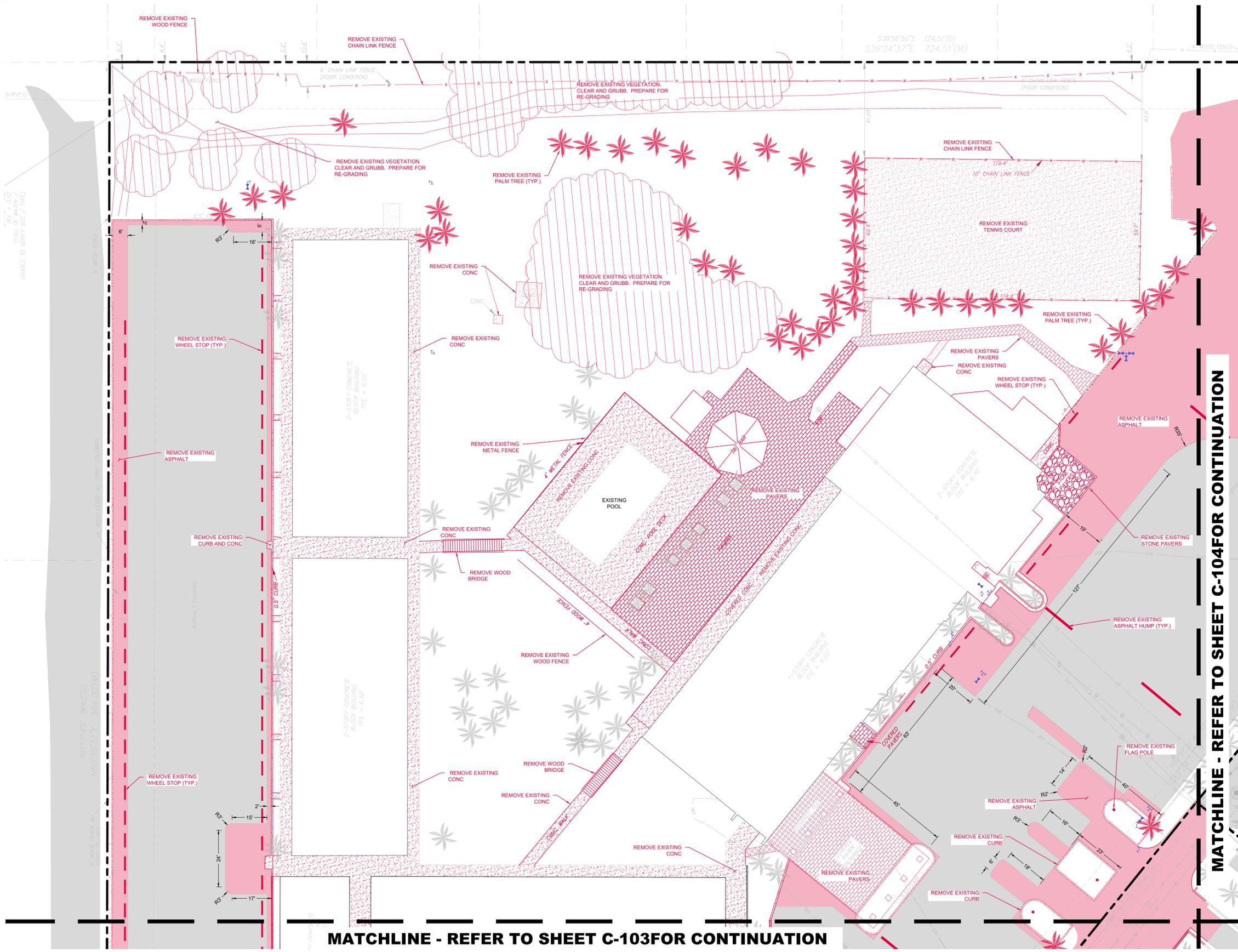
PERMITTING SET

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5	BID	24-1104			
4	BID				
3	DATE	JANUARY, 2026			
2	CHECKED	BAM			
1	DATE ISSUED	2/4/2026			
	COMMENTS				
	REVISIONS				
	DATE				

MBV ENGINEERING, INC.
MOA BOYLES VILLANAZ & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. GAULIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321.478.9911
F: 321.478.9911
ALSO WITH OFFICES IN:
VERO: 772-869-0036, FT. PIERCE: 772-466-6056, PALM CITY: 772-466-9969

DEMOLITION PLAN (3 OF 4)

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS
BREVARD COUNTY, FLORIDA



LEGEND

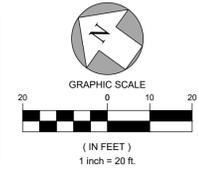
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	EXISTING WOOD POLE		EXISTING DRAINAGE PIPE
	EXISTING VALVE		EXISTING WATER MAIN
	EXISTING WATER METER		EXISTING TELEPHONE LINE
	EXISTING ELECTRIC HAND HOLE		EXISTING SANITARY LINE
	EXISTING FIRE HYDRANT		EXISTING GAS LINE
	EXISTING LIGHT POLE		EXISTING REUSE WATER LINE
	EXISTING SANITARY MANHOLE		EXISTING OVERHEAD WIRE
	EXISTING DRAINAGE MANHOLE		EXISTING WOOD FENCE
	EXISTING TELEPHONE MANHOLE		EXISTING VINYL FENCE
	EXISTING SPOT ELEVATION		PROPOSED SILT FENCE
	EXISTING ASPHALT		PROPERTY BOUNDARY
	EXISTING CONCRETE		DEMO ASPHALT
	DEMO PAVERS		DEMO CONC
	DEMO CONC		DEMO CONC
	DEMO VEGETATION		

MATCHLINE - REFER TO SHEET C-103 FOR CONTINUATION

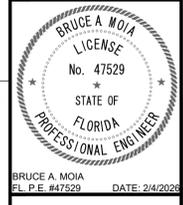
MATCHLINE - REFER TO SHEET C-104 FOR CONTINUATION

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MUNICIPAL APPROVAL STAMP



C-105

SHEET 24-1104 PERMITTING SET

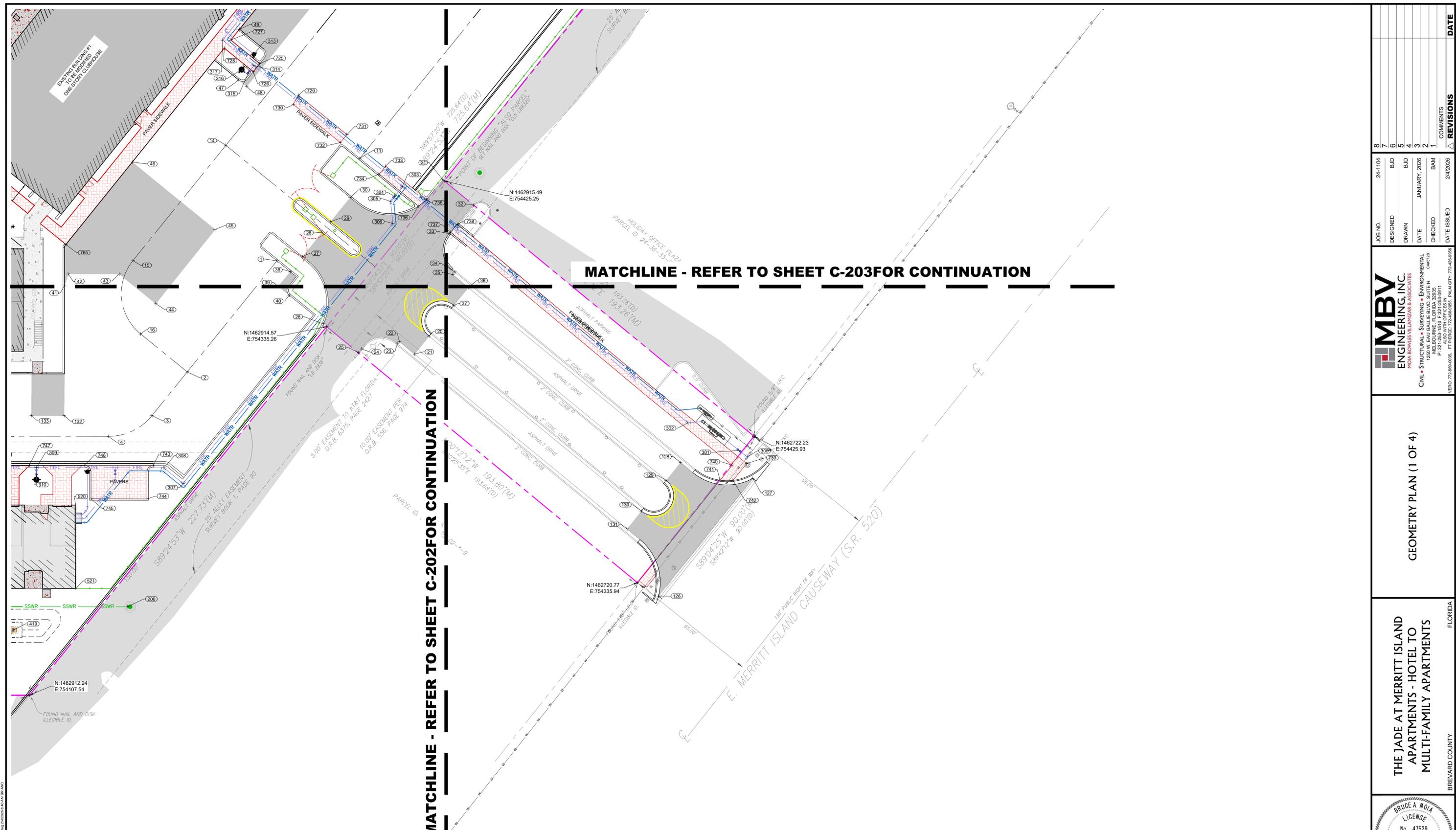
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DRAWN		BID	
DATE	JANUARY, 2026	DATE	
CHECKED		BAM	
DATE ISSUED	2/11/2026	COMMENTS	
		REVISIONS	
			DATE
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DEMOLITION (4 OF 4)

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

BRUCE A. MOIA
FL. P.E. #47529
DATE: 2/11/2026

FLORIDA
BREVARD COUNTY



NO.	DATE	BY	REVISIONS
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1			

MBV ENGINEERING, INC.
 MOA BOYLES VILLARIZ & ASSOCIATES
 CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
 1250 W. EAU GALLE BLVD. SUITE H
 MELBOURNE, FLORIDA 32935
 P: 321.981.9111
 ALSO WITH OFFICES IN:
 VERO BEACH, FLORIDA 33486
 FT. PIERCE, FLORIDA 34946
 PALM CITY, FLORIDA 32909

GEOMETRY PLAN (1 OF 4)

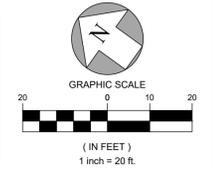
THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS
 BREVARD COUNTY, FLORIDA

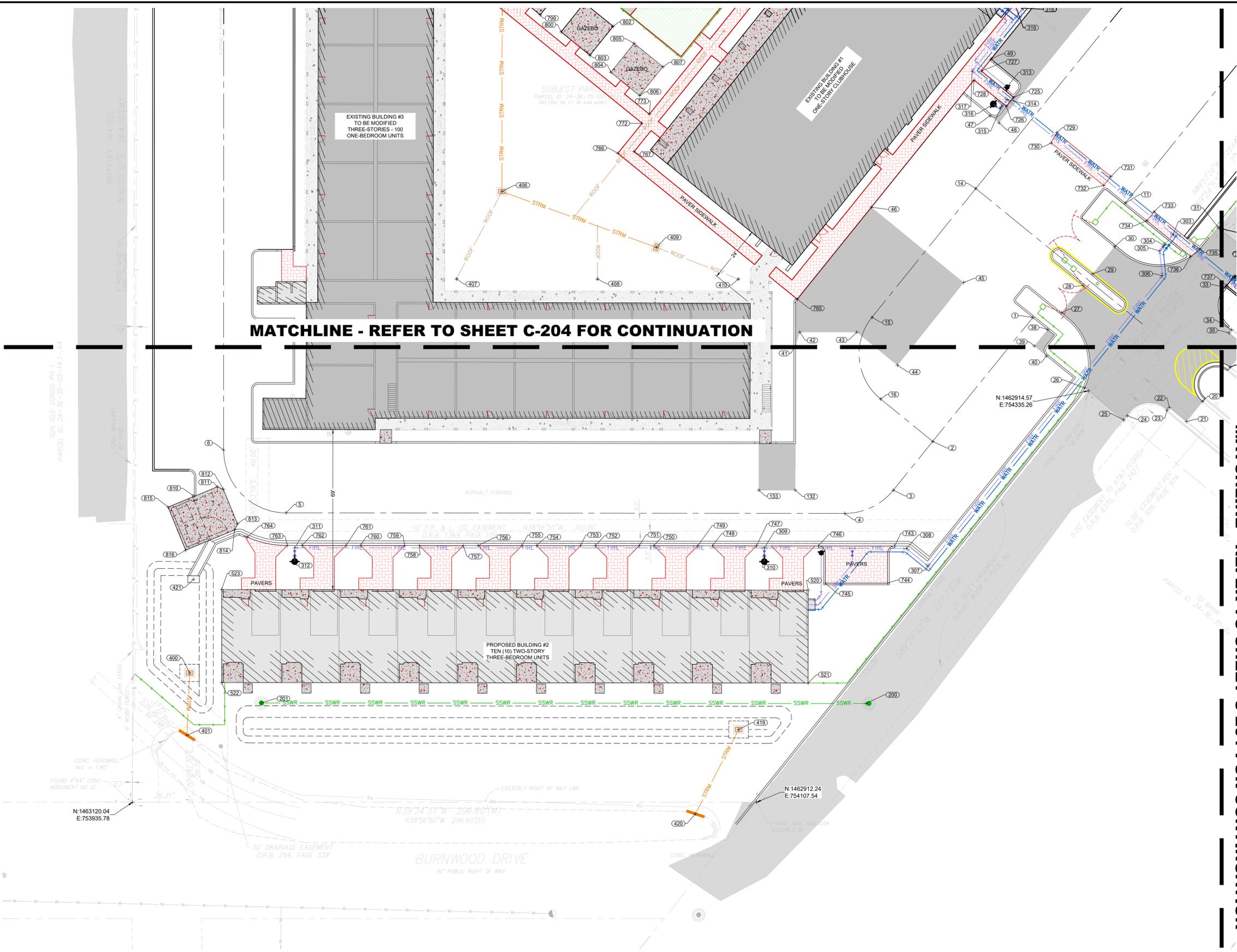
BRUCE A. MOIA
 P.E. #47529
 DATE: 2/4/2026

C-201
 SHEET
 24-1104
 PERMITTING SET

MATCHLINE - REFER TO SHEET C-203 FOR CONTINUATION

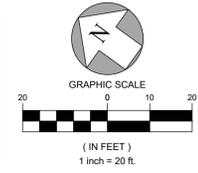
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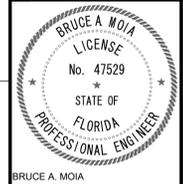


MATCHLINE - REFER TO SHEET C-204 FOR CONTINUATION

MATCHLINE - REFER TO SHEET C-201 FOR CONTINUATION



MUNICIPAL APPROVAL STAMP



BRUCE A. MOIA
P.E. #47529 DATE: 2/14/2026

C-202

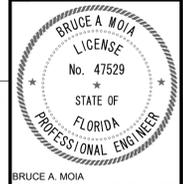
SHEET
24-1104

PERMITTING SET

JOB NO.	24-1104	DESIGNED	BID	24-1104	
DRAWN	BID	DATE	JANUARY, 2026	CHECKED	BAM
DATE	JANUARY, 2026	DATE ISSUED	2/14/2026	COMMENTS	
CHECKED	BAM	DATE ISSUED	2/14/2026	REVISIONS	
DATE					

GEOMETRY PLAN (2 OF 4)

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS
BREVARD COUNTY, FLORIDA

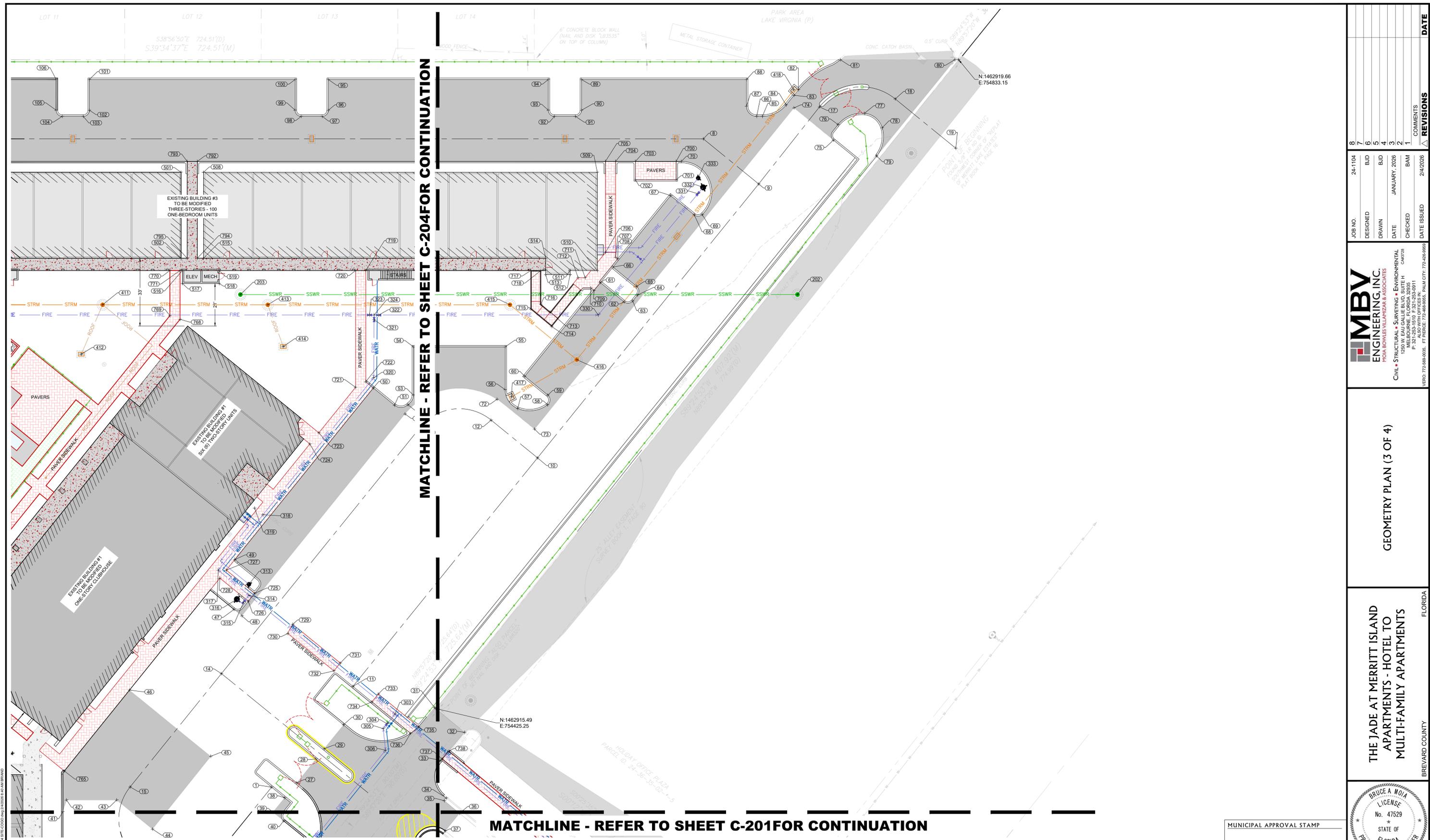


BRUCE A. MOIA
P.E. #47529 DATE: 2/14/2026

C-202

SHEET
24-1104

PERMITTING SET



MATCHLINE - REFER TO SHEET C-204 FOR CONTINUATION

MATCHLINE - REFER TO SHEET C-201 FOR CONTINUATION

NO.	DATE	REVISIONS	COMMENTS
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7			
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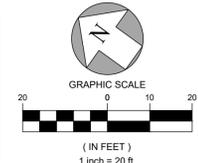
JOB NO.	24-1104
DESIGNED	BID
DRAWN	BID
DATE	JANUARY, 2026
CHECKED	BAM
DATE ISSUED	2/14/2026

MBV ENGINEERING, INC.
 MOA BOWLES VILLALBA & ASSOCIATES
 CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
 1250 W. EAU GALLE BLVD. SUITE H
 MELBOURNE, FLORIDA 32935
 P: 321-255-9911
 ALSO WITH OFFICES IN:
 VERO: 772-669-0035, FT. PIERCE: 772-466-9056, PALM CITY: 772-466-9969

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS
 BREVARD COUNTY, FLORIDA

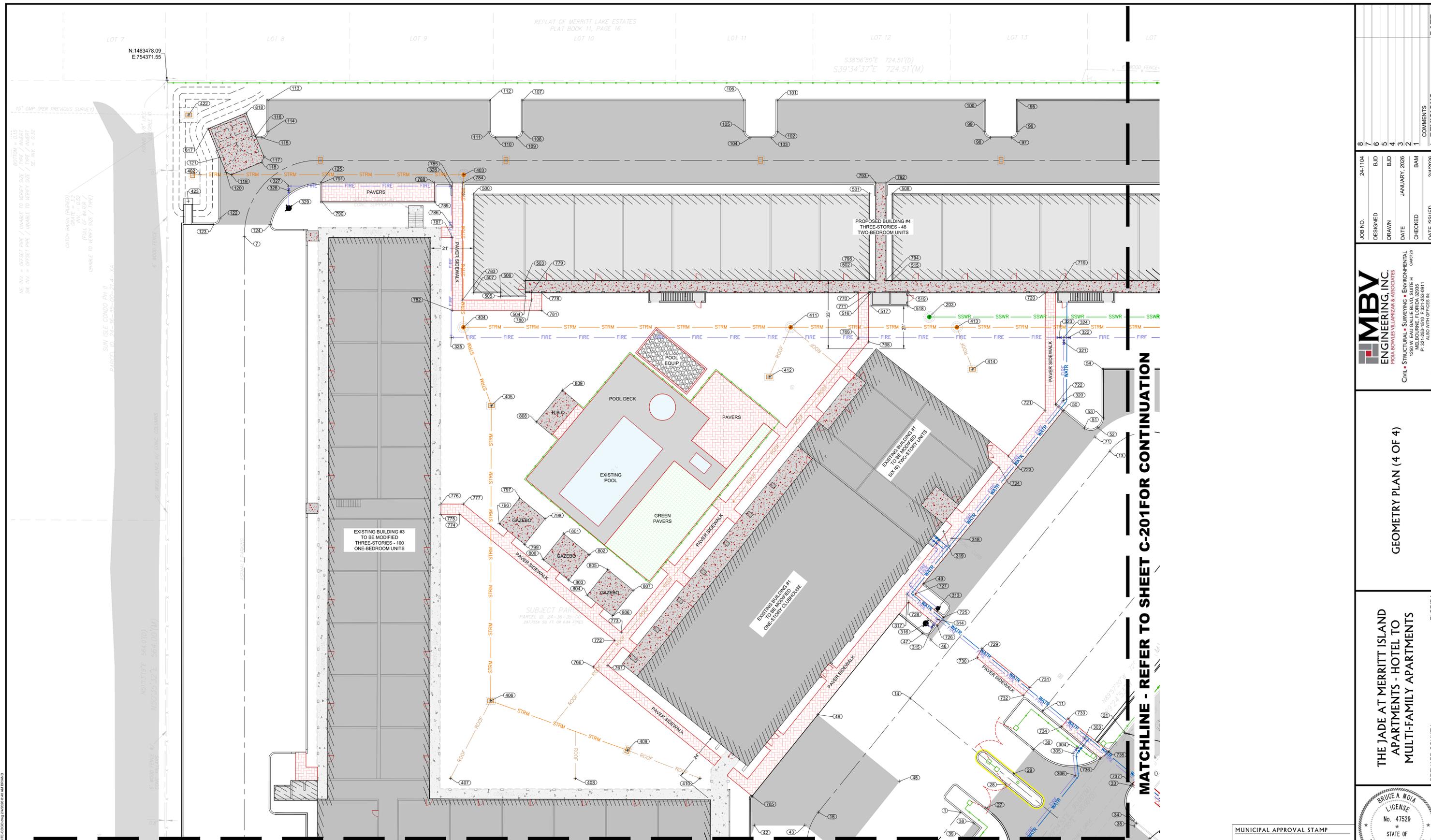
BRUCE A. MOIA
 LICENSE No. 47529
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 DATE: 2/14/2026

C-203
 SHEET 24-1104
 PERMITTING SET



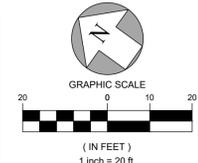
MUNICIPAL APPROVAL STAMP

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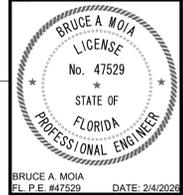


MATCHLINE - REFER TO SHEET C-202 FOR CONTINUATION

MATCHLINE - REFER TO SHEET C-201 FOR CONTINUATION



MUNICIPAL APPROVAL STAMP



BRUCE A. MOIA
P.E. #47529 DATE: 2/14/2026

C-204

SHEET
24-1104

NO.	DATE	BY	REVISIONS
1			COMMENTS
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MBV
ENGINEERING, INC.
MOA BOWLES VILLALBA & ASSOCIATES
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GEOMETRY PLAN (4 OF 4)

**THE JADE AT MERRITT ISLAND
APARTMENTS - HOTEL TO
MULTI-FAMILY APARTMENTS**

FLORIDA
BREVARD COUNTY

DATE ISSUED: 2/14/2026
CHECKED: BMM
DATE: JANUARY, 2026
DRAWN: BMM
DESIGNED: BMM
JOB NO.: 24-1104

\P\2024-104-01-01-HOTEL CONVERSION\DWG\CADD\1104-SITE-C202.dwg 2/14/2026 8:47 AM BMM

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
1	CENTERLINE	1462953.146965	754344.308824
2	CENTERLINE	1462952.521169	754275.645110
3	CENTERLINE	1462952.273877	754248.648322
4	CENTERLINE	1462962.089762	754227.574463
5	CENTERLINE	1463148.201517	754074.022615
6	CENTERLINE	1463186.197553	754077.649837
7	CENTERLINE	1463400.763003	754337.297228
8	CENTERLINE	1462991.613999	754723.495287
9	CENTERLINE	1462956.627342	754723.815148
10	CENTERLINE	1462955.051657	754551.487367
11	CENTERLINE	1462953.736870	754407.653065
12	CENTERLINE	1462984.322182	754551.188437
13	CENTERLINE	1463008.899613	754525.935880
14	CENTERLINE	1463007.486377	754371.355153
15	CENTERLINE	1463006.758696	754300.122939
16	CENTERLINE	1462981.504623	754275.379620
17	CENTERLINE	1462957.619155	754771.864862
18	CENTERLINE	1462931.445519	754798.554844
19	CENTERLINE	1462893.131521	754798.911908
20	ASPHALT	1462873.620755	754363.162363

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
61	ASPHALT	1462985.833002	754637.184096
62	ASPHALT	1462970.841058	754637.321611
63	ASPHALT	1462967.868730	754640.351980
64	ASPHALT	1462967.906555	754644.075320
65	ASPHALT	1462970.933143	754647.044726
66	ASPHALT	1462985.925488	754337.485310
67	ASPHALT	1462986.336864	754691.909190
68	ASPHALT	1462971.450274	754692.041905
69	ASPHALT	1462968.501428	754694.659868
70	ASPHALT	1462992.936091	754708.131001
71	ASPHALT	1463018.831507	754526.593284
72	ASPHALT	1462988.586510	754560.916292
73	ASPHALT	1462965.141473	754561.392511
74	ASPHALT	1462966.970317	754763.517573
75	ASPHALT	1462941.985148	754763.740375
76	ASPHALT	1462945.058607	754771.023539
77	ASPHALT	1462938.609542	754783.501330
78	ASPHALT	1462927.378084	754783.615866
79	ASPHALT	1462920.875842	754771.266845
80	ASPHALT	1462921.075087	754831.960004

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
121	ASPHALT	1463434.498409	754359.282880
122	ASPHALT	1463415.672743	754336.501789
123	ASPHALT	1463416.074268	754332.278191
124	ASPHALT	1463394.852382	754349.814627
125	ASPHALT	1463388.806222	754380.906812
126	ASPHALT	1462708.830725	754337.485310
127	ASPHALT	1462709.768714	754409.987636
128	ASPHALT	1462741.512578	754393.684896
129	ASPHALT	1462741.398609	754382.681207
130	ASPHALT	1462741.192097	754363.651221
131	ASPHALT	1462741.073008	754352.641430
132	ASPHALT	1462984.939541	754221.664137
133	ASPHALT	1462997.062111	754211.662726
200	SANITARY	1462902.863255	754170.419947
201	SANITARY	1463104.318053	754004.212817
202	SANITARY	1462907.516766	754694.303869
203	SANITARY	1463118.308408	754520.068269
300	WATER	1462718.302148	754416.173238
301	WATER	1462723.388344	754416.081501
302	WATER	1462750.817740	754410.624979

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
409	STORMWATER	1463097.694232	754263.961875
410	STORMWATER	1463091.724366	754276.015745
411	STORMWATER	1463167.266262	754473.103958
412	STORMWATER	1463159.979590	754447.827218
413	STORMWATER	1463104.764534	754524.771202
414	STORMWATER	1463085.884732	754513.880128
415	STORMWATER	1463013.116768	754600.532108
416	STORMWATER	1462970.773616	754600.735677
417	STORMWATER	1462983.931994	754566.268847
418	STORMWATER	1462972.606201	754770.268278
419	STORMWATER	1462938.177431	754126.741705
420	STORMWATER	1462929.424344	754086.865030
421	STORMWATER	1463180.805385	754026.546337
422	STORMWATER	1463459.343070	754365.458828
423	STORMWATER	1463432.803408	754333.046736
500	BUILDING	1463327.823338	754424.375607
501	BUILDING	1463178.839467	754547.549071
502	BUILDING	1463152.079006	754515.174731
503	BUILDING	1463281.566053	754406.141412
504	BUILDING	1463276.469228	754401.975363

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
713	PAVERS	1462995.592073	754610.393769
714	PAVERS	1462990.546152	754605.393769
715	PAVERS	1463003.934913	754605.393769
716	PAVERS	1463001.581036	754610.393769
717	PAVERS	1463015.942414	754619.920235
718	PAVERS	1463012.089386	754623.05128
719	PAVERS	1463078.374456	754568.314235
720	PAVERS	1463082.228303	754565.128665
721	PAVERS	1463045.857178	754521.127510
722	PAVERS	1463043.746974	754526.422511
723	PAVERS	1463045.595612	754492.517230
724	PAVERS	1463045.531584	754485.513805
725	PAVERS	1463019.876721	754412.019710
726	PAVERS	1463019.844422	754407.019836
727	PAVERS	1463037.865075	754411.852070
728	PAVERS	1463037.818296	754406.832542
729	PAVERS	1462995.840112	754412.223186
730	PAVERS	1462994.835889	754407.231878
731	PAVERS	1462965.788203	754412.511581
732	PAVERS	1462965.748217	754407.556128

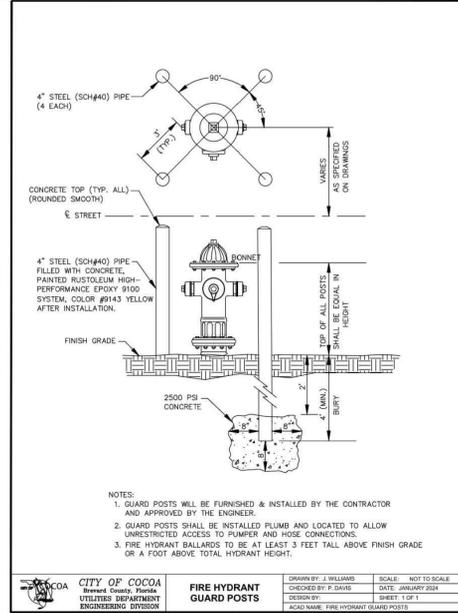
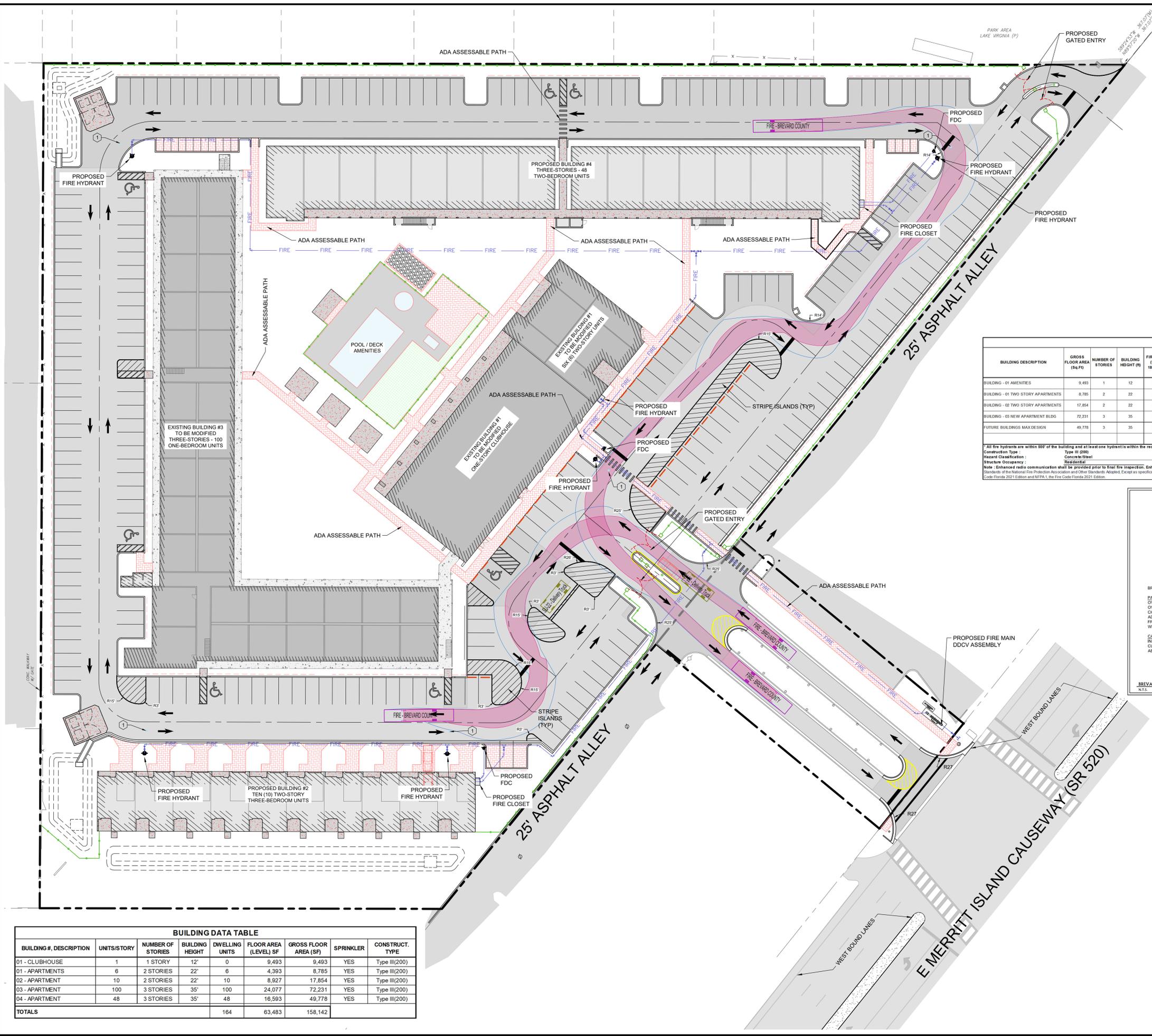
POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
773	PAVERS	1463136.525528	754306.160471
774	PAVERS	1463233.799027	754300.166500
775	PAVERS	1463240.912276	754294.311483
776	PAVERS	1463244.089857	754298.171920
777	PAVERS	1463235.614369	754305.148216
778	PAVERS	1463217.577384	754408.613700
779	PAVERS	1463275.431232	754405.428129
780	PAVERS	1463273.193904	754402.721449
781	PAVERS	1463266.154486	754402.053172
782	PAVERS	1463299.772718	754374.264516
783	PAVERS	1463299.104441	754381.303934
784	PAVERS	1463335.320666	754425.117693
785	PAVERS	1463339.174514	754421.932123
786	PAVERS	1463325.536490	754405.433444
787	PAVERS	1463322.334959	754401.560206
788	PAVERS	1463345.874352	754416.394072
789	PAVERS	1463340.155608	754409.483974
790	PAVERS	1463382.547939	754374.442693
791	PAVERS	1463388.266947	754381.353111
792	CONC	1463176.069202	754566.754125

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
21	ASPHALT	1462873.010623	754352.075575
22	ASPHALT	1462883.031601	754352.039368
23	ASPHALT	1462883.085509	754350.533885
24	ASPHALT	1462894.781003	754337.711011
25	ASPHALT	1462894.817077	754335.351452
26	ASPHALT	1462916.564701	754335.247634
27	ASPHALT	1462944.977312	754353.740266
28	ASPHALT	1462945.135918	754368.740780
29	ASPHALT	1462945.200770	754375.242719
30	ASPHALT	1462945.354987	754390.241371
31	ASPHALT	1462916.297045	754425.243921
32	ASPHALT	1462897.145669	754425.310127
33	ASPHALT	1462897.432151	754407.227413
34	ASPHALT	1462883.582696	754394.858280
35	ASPHALT	1462883.549653	754393.208383
36	ASPHALT	1462873.893091	754393.214854
37	ASPHALT	1462873.797318	754382.150917
38	ASPHALT	1462944.881275	754344.393260
39	ASPHALT	1462944.793172	754335.301814
40	ASPHALT	1462938.088954	754335.369643

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
81	ASPHALT	1462964.397825	754796.154748
82	ASPHALT	1462970.919809	754771.764594
83	ASPHALT	1462970.887855	754768.267075
84	ASPHALT	1462970.831863	754762.144941
85	ASPHALT	1462976.274525	754750.446268
86	ASPHALT	1462978.432400	754748.662579
87	ASPHALT	1462985.471818	754749.330857
88	ASPHALT	1462977.075092	754191.174769
89	ASPHALT	1463056.186633	754759.744620
90	ASPHALT	1463046.829922	754696.183078
91	ASPHALT	1463047.030888	754691.959427
92	ASPHALT	1463054.969814	754685.397152
93	ASPHALT	1463059.193465	754685.798118
94	ASPHALT	1463068.750176	754697.359661
95	ASPHALT	1463151.993284	754628.551341
96	ASPHALT	1463142.436573	754616.899798
97	ASPHALT	1463142.837539	754612.766147
98	ASPHALT	1463150.776466	754606.203872
99	ASPHALT	1463155.000116	754606.604839
100	ASPHALT	1463164.568827	754618.166382

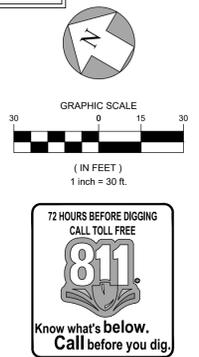
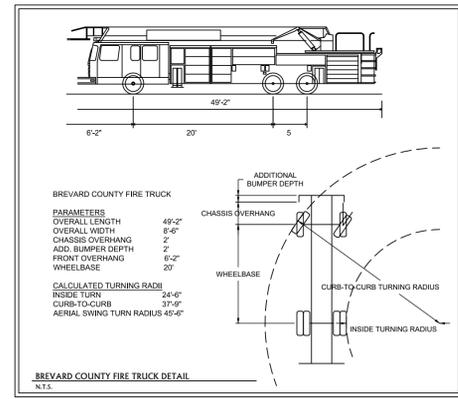
POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
303	WATER	1462929.199873	754410.408188
304	WATER	1462929.155782	754404.241317
305	WATER	1462929.125137	754401.241474
306	WATER	1462921.529143	754393.799106
307	WATER	1462919.887011	754233.051040
308	WATER	1462931.919322	754232.928122
309	WATER	1462979.381589	754193.971317
310	WATER	1462977.075092	754191.174769
311	WATER	1463135.749606	754064.766010
312	WATER	1463133.443109	754061.969491
313	WATER	1463024.889685	754413.592516
314	WATER	1463021.414522	754409.501565
315	WATER	1463021.389620	754405.366269
316	WATER	1463024.804091	754404.213863
317	WATER	1463040.903461	754409.309957
318	WATER	1463041.224837	754444.144687
319	WATER	1463046.443293	754444.078483
320	WATER	1463042.012841	754503.425188
321	WATER	1463059.912264	754552.442244
322	WATER	1463059.605269	754555.566037

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
505	BUILDING	1463285.718303	754394.330125
506	BUILDING	1463286.992509	754395.871638
507	BUILDING	1463297.269259	754387.376930
508	BUILDING	1463170.381148	754554.557205
509	BUILDING	1463021.348276	754677.730469
510	BUILDING	1462990.765197	754640.731592
511	BUILDING	1463001.041947	754632.236884
512	BUILDING	1462999.767741	754630.695372
513	BUILDING	1463009.016815	754623.050135
514	BUILDING	1463014.130640	754629.216185
515	BUILDING	1463143.606087	754522.182865
516	BUILDING	1463147.742550	754510.974929
517	BUILDING	1463143.707564	754506.093473
518	BUILDING	1463128.839551	754517.561329
519	BUILDING	1463133.868938	754522.442785
520	BUILDING	1462953.245553	754192.089461
521	BUILDING	1462927.789283	754161.235915
522	BUILDING	1463123.173161	75



BUILDING DESCRIPTION	GROSS FLOOR AREA (Sq Ft)	NUMBER OF STORIES	BUILDING HEIGHT (ft)	FIRE FLOW (TABLE 18.4.1.2)	Building Type	CONSTR. TYPE (C)	FIRE FLOW SUBTOTAL (GPM)	HAZARD CLASSIF. %	FIRE FLOW SUBTOTAL (GPM)	EXPOSURE %	REQUIRED FIRE FLOW (GPM)	AUTOMATED SPRINKLER REDUCTION (25%)	ACTUAL FIRE FLOW REQUIREMENT (GPM)	HYDRANTS REQUIRED	HYDRANTS SUPPLIED
BUILDING - 01 AMENITIES	9,493	1	12	2,000	Type II (200)	1.0	2,000	0%	2,000	10%	2,200	1,650	1,000	1	1
BUILDING - 01 TWO STORY APARTMENTS	8,785	2	22	2,000	Type II (200)	1.0	2,000	0%	2,000	10%	2,200	1,650	1,000	1	1
BUILDING - 02 TWO STORY APARTMENTS	17,854	2	22	2,750	Type II (200)	1.0	2,750	0%	2,750	10%	3,025	2,269	1,000	1	1
BUILDING - 03 NEW APARTMENT BLDG	72,231	3	35	5,750	Type II (200)	1.0	5,750	0%	5,750	10%	6,325	4,744	1,581	2	2
FUTURE BUILDINGS MAX DESIGN	49,778	3	35	5,500	Type II (200)	1.0	5,500	0%	5,500	10%	6,050	4,538	1,513	2	2

All fire hydrants are within 500' of the building and at least one hydrant is within the required distance of the farther building exterior point.
Construction Type: Type II (200) Concrete/Steel
Hazard Classification: Residential
Structure Occupancy: Residential
Note: Enhanced radio communication shall be provided prior to final fire inspection. Enhanced Affidavit must be signed and submitted prior to site plan approval.
Standards of the National Fire Protection Association and Other Standards Adopted, Except as specifically modified by statute or by the State Fire Marshal's rules, the "Florida Fire Prevention Code, 8th Edition (2023)," which is comprised of the Florida specific edition of NFPA 101, the Life Safety Code Florida 2021 Edition and NFPA 1, the Fire Code Florida 2021 Edition.



BUILDING #, DESCRIPTION	UNITS/STORY	NUMBER OF STORIES	BUILDING HEIGHT	DWELLING UNITS	FLOOR AREA (LEVEL) SF	GROSS FLOOR AREA (SF)	SPRINKLER	CONSTRUCT. TYPE
01 - CLUBHOUSE	1	1 STORY	12'	0	9,493	9,493	YES	Type III(200)
01 - APARTMENTS	6	2 STORIES	22'	6	4,393	8,785	YES	Type III(200)
02 - APARTMENT	10	2 STORIES	22'	10	8,927	17,854	YES	Type III(200)
03 - APARTMENT	100	3 STORIES	35'	100	24,077	72,231	YES	Type III(200)
04 - APARTMENT	48	3 STORIES	35'	48	16,593	49,778	YES	Type III(200)
TOTALS				164	63,483	158,142		



MUNICIPAL APPROVAL STAMP

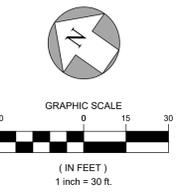
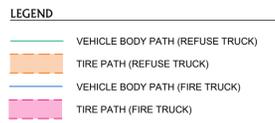
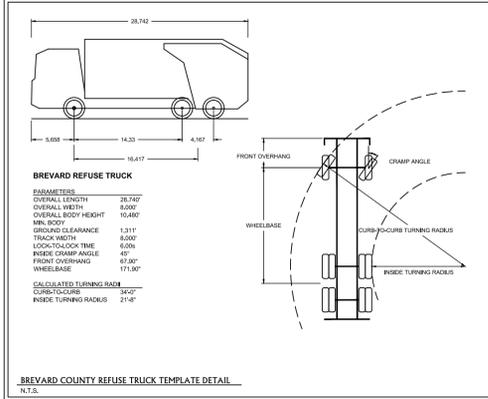
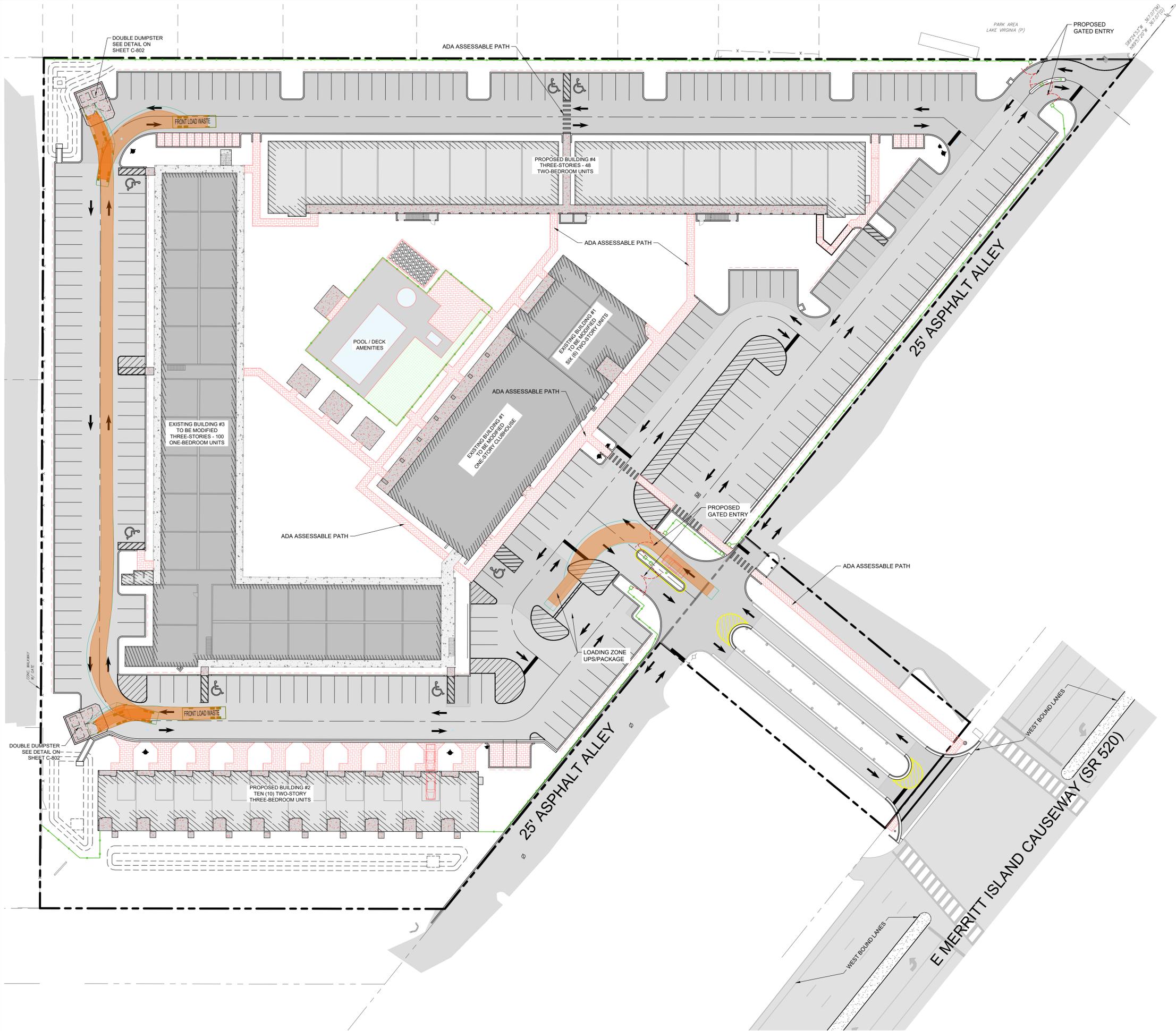
DATE	2/4/2026
REVISIONS	
COMMENTS	
DATE ISSUED	2/4/2026
CHECKED	BAM
DATE	JANUARY, 2026
DRAWN	BID
DESIGNED	BID
JOB NO.	24-1104

MBV ENGINEERING, INC.
MOA BOWEN VILLALBA & ASSOCIATES
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THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

BRUCE A. MOIA
FL. P.E. #47529
DATE: 2/4/2026

C-207
SHEET 24-1104
PERMITTING SET



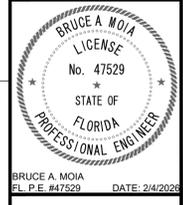
MUNICIPAL APPROVAL STAMP

NO.	DATE	BY	REVISIONS
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2			COMMENTS
3			
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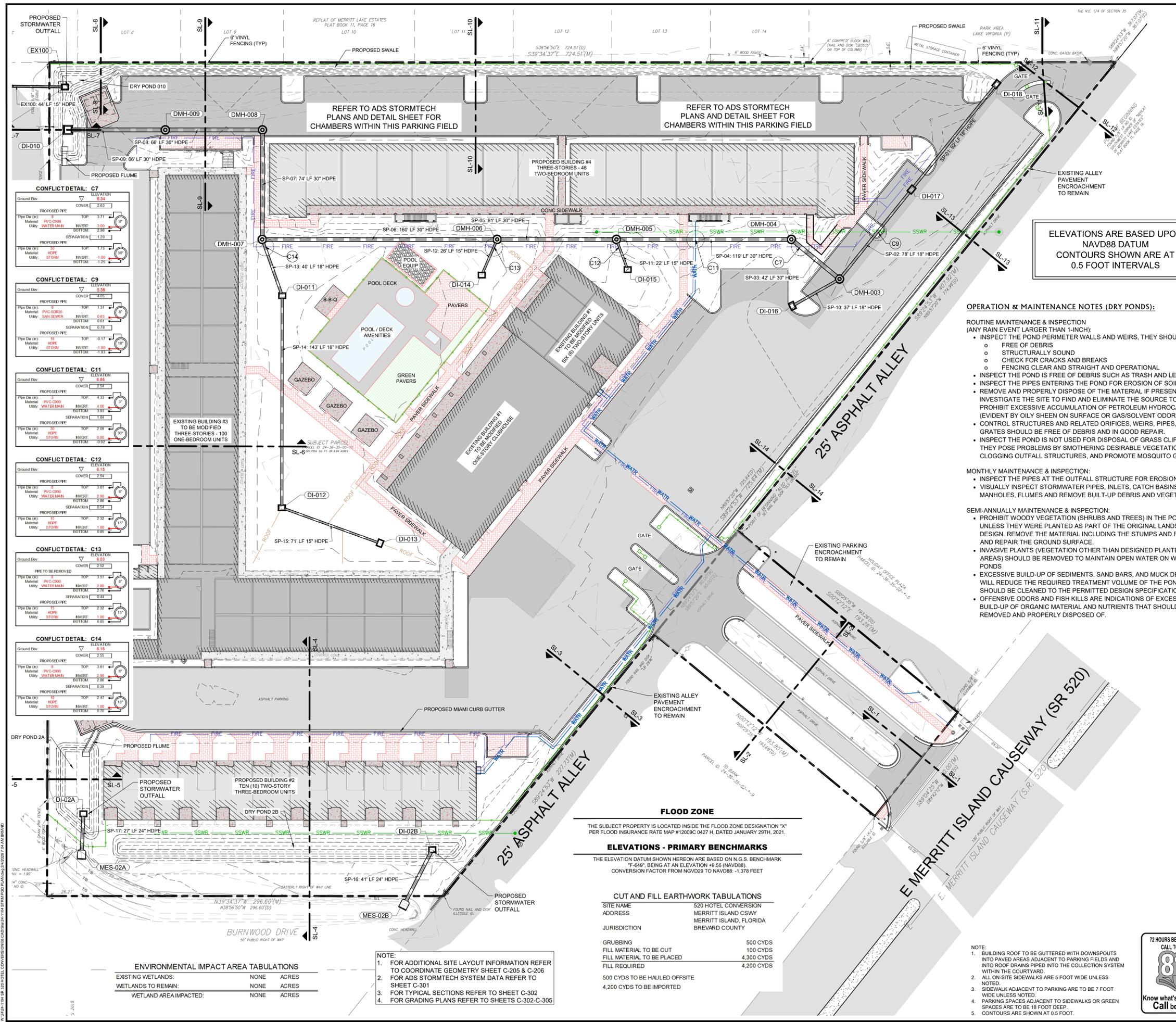
MBV ENGINEERING, INC.
 MOA BOWLES VILLANAZ & ASSOCIATES
 CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
 1250 W. EAU GALIE BLVD, SUITE H
 MELBOURNE, FLORIDA 32935
 P: 321.486.9911
 ALSO WITH OFFICES IN:
 VERO BEACH, FLORIDA 34985
 FT. PIERCE, FLORIDA 34946
 PALM CITY, FLORIDA 32909

WASTE MANAGEMENT ACCESS PLAN

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS



C-208
 SHEET 24-1104
 PERMITTING SET



STORM DRAIN PIPE SCHEDULE									
PIPE ID	UPSTREAM	DOWNSTREAM	LENGTH	SIZE	TYPE / CLASS	SLOPE	COMMENTS		
EX100		DI-010	44'	15"	Corrugated Metal Pipe	0%	Existing Outfall to Remain		
SP-01	DI-017	DI-018	92'	18"	HDPE Pipe	0.00%			
SP-02	DMH-003	DI-017	78'	18"	HDPE Pipe	0.00%			
SP-03	DMH-004	DMH-003	42'	30"	HDPE Pipe	0.00%			
SP-04	DMH-005	DMH-004	119'	30"	HDPE Pipe	0.00%			
SP-05	DMH-006	DMH-005	81'	30"	HDPE Pipe	0.00%			
SP-06	DMH-007	DMH-006	160'	30"	HDPE Pipe	0.00%			
SP-07	DMH-008	DMH-007	74'	30"	HDPE Pipe	0.00%			
SP-08	DMH-009	DMH-008	66'	30"	HDPE Pipe	-1.52%			
SP-09	DI-010	DMH-009	66'	30"	HDPE Pipe	-1.52%			
SP-10	DMH-003	DI-015	37'	18"	HDPE Pipe	0.00%			
SP-11	DMH-005	DI-015	22'	18"	HDPE Pipe	0.00%			
SP-12	DMH-006	DI-014	26'	18"	HDPE Pipe	0.00%			
SP-13	DMH-007	DI-011	40'	24"	HDPE Pipe	0.00%			
SP-14	DI-011	DI-012	143'	18"	HDPE Pipe	0.00%			
SP-15	DI-012	DI-013	71'	18"	HDPE Pipe	0.00%			
SP-16	MES-02B	DI-02B	41'	24"	HDPE Pipe	0.00%			
SP-17	MES-02A	DI-02A	27'	24"	HDPE Pipe	0.00%			

STORM DRAIN STRUCTURE SCHEDULE					
STRUCTURE:	DETAILS:	PIPES IN:	PIPES OUT:		
Index No. 425-052 - Ditch Bottom Inlet - Type D 4.1' x 3.1'	RIM = 4.50 SUMP = 1.50 INV OUT = 1.50		SP-17 27' LF 24" HDPE @ 0.00% INV IN = 1.50 (SW)		
Index No. 425-052 - Ditch Bottom Inlet - Type D 4.1' x 3.1'	RIM = 4.50 SUMP = 1.50 INV OUT = 1.50		SP-16 41' LF 24" HDPE @ 0.00% INV IN = 1.50 (SW)		
Index No. 425-052 - Ditch Bottom Inlet - Type D 4.1' x 3.1'	RIM = 4.00 SUMP = -1.00 INV OUT = -1.00		SP-09 66' LF 30" HDPE @ -1.52% INV IN = -1.00 (SE)		
Index No. 425-052 - Ditch Bottom Inlet - Type D 4.1' x 3.1'	RIM = 5.50 SUMP = 1.00 INV OUT = 2.00	SP-14 143' LF 18" HDPE @ 0.00% INV IN = -2.00 (SW)	SP-13 40' LF 18" HDPE @ 0.00% INV IN = 1.00 (NE)		
Index No. 425-052 - Ditch Bottom Inlet - Type D 4.1' x 3.1'	RIM = 5.50 SUMP = 2.00 INV OUT = 2.00	SP-15 15' LF 15" HDPE @ 0.00% INV IN = 2.00 (S)	SP-14 143' LF 18" HDPE @ 0.00% INV IN = 2.00 (NE)		
Index No. 425-052 - Ditch Bottom Inlet - Type D 4.1' x 3.1'	RIM = 5.52 SUMP = 2.00 INV OUT = 2.00	SP-15 71' LF 15" HDPE @ 0.00% INV IN = 2.00 (S)	SP-15 71' LF 15" HDPE @ 0.00% INV IN = 2.00 (NE)		
Index No. 425-052 - Ditch Bottom Inlet - Type D 4.1' x 3.1'	RIM = 5.50 SUMP = 1.00 INV OUT = 1.00	SP-11 22' LF 15" HDPE @ 0.00% INV IN = 1.00 (NE)	SP-12 26' LF 15" HDPE @ 0.00% INV IN = 1.00 (SE)		
Index No. 425-052 - Ditch Bottom Inlet - Type D 4.1' x 3.1'	RIM = 5.50 SUMP = 1.00 INV OUT = 1.00	SP-11 22' LF 15" HDPE @ 0.00% INV IN = 1.00 (NE)	SP-11 22' LF 15" HDPE @ 0.00% INV IN = 1.00 (NE)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 5.08 SUMP = 2.00 INV OUT = 2.00	SP-10 37' LF 18" HDPE @ 0.00% INV IN = 2.00 (E)	SP-10 37' LF 18" HDPE @ 0.00% INV IN = 2.00 (E)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 4.50 SUMP = -1.80 INV OUT = -1.80	SP-02 78' LF 18" HDPE @ 0.00% INV IN = -1.80 (W)	SP-01 92' LF 18" HDPE @ 0.00% INV IN = -2.00 (E)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 4.50 SUMP = 2.00 INV OUT = 2.00	SP-01 37' LF 18" HDPE @ 0.00% INV IN = 2.00 (W)	SP-01 37' LF 18" HDPE @ 0.00% INV IN = 2.00 (W)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 5.00 SUMP = 1.00 INV IN = 0.00	SP-03 42' LF 30" HDPE @ 0.00% INV IN = 1.00 (NW)	SP-02 78' LF 18" HDPE @ 0.00% INV IN = 1.00 (E)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 5.00 SUMP = 1.00 INV IN = 0.00	SP-04 119' LF 30" HDPE @ 0.00% INV IN = 0.00 (NW)	SP-03 42' LF 30" HDPE @ 0.00% INV IN = 1.00 (SE)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 6.38 SUMP = 0.00 INV IN = 1.00	SP-05 81' LF 30" HDPE @ 0.00% INV IN = 1.00 (NW)	SP-04 119' LF 30" HDPE @ 0.00% INV IN = 0.00 (SE)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 6.38 SUMP = 0.00 INV IN = 1.00	SP-05 81' LF 30" HDPE @ 0.00% INV IN = 1.00 (NW)	SP-05 81' LF 30" HDPE @ 0.00% INV IN = 1.00 (SE)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 6.19 SUMP = 1.00 INV IN = 1.00	SP-06 160' LF 30" HDPE @ 0.00% INV IN = 1.00 (NW)	SP-05 81' LF 30" HDPE @ 0.00% INV IN = 1.00 (SE)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 6.19 SUMP = 1.00 INV IN = 1.00	SP-06 160' LF 30" HDPE @ 0.00% INV IN = 1.00 (NW)	SP-06 160' LF 30" HDPE @ 0.00% INV IN = 1.00 (SE)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 6.05 SUMP = 1.00 INV IN = 1.00	SP-07 74' LF 30" HDPE @ 0.00% INV IN = 1.00 (NE)	SP-06 160' LF 30" HDPE @ 0.00% INV IN = 1.00 (SE)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 6.05 SUMP = 1.00 INV IN = 1.00	SP-07 74' LF 30" HDPE @ 0.00% INV IN = 1.00 (NE)	SP-07 74' LF 30" HDPE @ 0.00% INV IN = 1.00 (SE)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 7.28 SUMP = 1.00 INV IN = 1.00	SP-08 66' LF 30" HDPE @ -1.52% INV IN = 1.00 (NW)	SP-07 74' LF 30" HDPE @ 0.00% INV IN = 1.00 (SE)		
Index No. 425-052 - Ditch Bottom Inlet - Type E 3.0' x 4.5'	RIM = 7.11 SUMP = 1.00 INV IN = 0.00	SP-09 66' LF 30" HDPE @ -1.52% INV IN = 0.00 (NW)	SP-08 66' LF 30" HDPE @ 0.00% INV IN = 0.00 (SE)		
Index No. 425-052 - Ditch Bottom Inlet - Type D 4.1' x 3.1'	RIM = 5.20 SUMP = 0.52 INV OUT = 0.52	SP-17 27' LF 24" HDPE @ 0.00% INV IN = 1.50 (NE)	EX100 44' LF 15" HDPE @ 0.45% INV IN = 0.52 (NW)		
Index No. 430-021 - Cross Drain MES with 1:4 Slope	INV IN = 1.50	SP-17 27' LF 24" HDPE @ 0.00% INV IN = 1.50 (NE)			
Index No. 430-021 - Cross Drain MES with 1:4 Slope	INV IN = 1.50	SP-16 41' LF 24" HDPE @ 0.00% INV IN = 1.50 (E)			

OPERATION & MAINTENANCE NOTES (DRY PONDS):

ROUTINE MAINTENANCE & INSPECTION (ANY RAIN EVENT LARGER THAN 1-INCH):

- INSPECT THE POND PERIMETER WALLS AND WEIRS, THEY SHOULD BE
 - FREE OF DEBRIS
 - STRUCTURALLY SOUND
 - CHECK FOR CRACKS AND BREAKS
 - FENCING CLEAR AND STRAIGHT AND OPERATIONAL
- INSPECT THE POND IS FREE OF DEBRIS SUCH AS TRASH AND LEAVES
- INSPECT THE PIPES ENTERING THE POND FOR EROSION OF SOIL
- REMOVE AND PROPERLY DISPOSE OF THE MATERIAL IF PRESENT AND INVESTIGATE THE SITE TO FIND AND ELIMINATE THE SOURCE TO PROHIBIT EXCESSIVE ACCUMULATION OF PETROLEUM HYDROCARBONS (EVIDENT BY OILY SHEEN ON SURFACE OR GAS/SOLVENT ODORS)
- CONTROL STRUCTURES AND RELATED ORIFICES, WEIRS, PIPES, AND GRATES SHOULD BE FREE OF DEBRIS AND IN GOOD REPAIR.
- INSPECT THE POND IS NOT USED FOR DISPOSAL OF GRASS CLIPPINGS, THEY POSE PROBLEMS BY SMOTHERING DESIRABLE VEGETATION, CLOGGING OUTFALL STRUCTURES, AND PROMOTE MOSQUITO GROWTH.

MONTHLY MAINTENANCE & INSPECTION:

- INSPECT THE PIPES AT THE OUTFALL STRUCTURE FOR EROSION OF SOIL
- VISUALLY INSPECT STORMWATER PIPES, INLETS, CATCH BASINS, MANHOLES, FLUMES AND REMOVE BUILT-UP DEBRIS AND VEGETATION.

SEMI-ANNUALLY MAINTENANCE & INSPECTION:

- PROHIBIT WOODY VEGETATION (SHRUBS AND TREES) IN THE POND UNLESS THEY WERE PLANTED AS PART OF THE ORIGINAL LANDSCAPE DESIGN. REMOVE THE MATERIAL INCLUDING THE STUMPS AND ROOTS AND REPAIR THE GROUND SURFACE.
- INVASIVE PLANTS (VEGETATION OTHER THAN DESIGNED PLANTED AREAS) SHOULD BE REMOVED TO MAINTAIN OPEN WATER ON WET PONDS
- EXCESSIVE BUILD-UP OF SEDIMENTS, SAND BARS, AND MUCK DEPOSITS WILL REDUCE THE REQUIRED TREATMENT VOLUME OF THE POND AND SHOULD BE CLEANED TO THE PERMITTED DESIGN SPECIFICATIONS.
- OFFENSIVE ODORS AND FISH KILLS ARE INDICATIONS OF EXCESSIVE BUILD-UP OF ORGANIC MATERIAL AND NUTRIENTS THAT SHOULD BE REMOVED AND PROPERLY DISPOSED OF.

OPERATION & MAINTENANCE NOTES:

TURBIDITY BARRIERS AND OTHER BEST MANAGEMENT PRACTICES MAY BE REQUIRED FOR ORGANIC MATERIAL REMOVAL, OR AQUATIC VEGETATION REMOVAL TO PREVENT OFFSITE CONTAMINATION DURING MAINTENANCE ACTIVITIES.

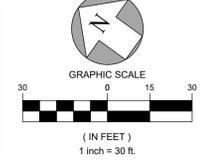
ALTERATIONS (FILLING, ENLARGING, ETC.) OF ANY PART OF THE STORMWATER FACILITY IS NOT PERMITTED WITHOUT APPROVAL FROM ALL APPLICABLE GOVERNING AGENCIES.

INSPECTIONS ARE ESTIMATED BETWEEN \$100 AND \$1,500, DEPENDING ON WHICH SERVICES ARE INCLUDED AT THE TIME OF THE INSPECTION.

REMOVAL AND DISPOSAL OF MATERIALS ARE ESTIMATED BETWEEN \$5,000 AND \$10,000 DEPENDING ON WHICH MATERIALS ARE BEING REMOVED AND IF PERFORMED SEPARATELY OR COMBINED WITH OTHER COMPONENTS OF THE STORMWATER SYSTEM.

TURBIDITY BARRIERS AND OTHER BMP'S ARE ESTIMATED BETWEEN \$100 AND \$500.

MUNICIPAL APPROVAL STAMP



FLOOD ZONE

THE SUBJECT PROPERTY IS LOCATED INSIDE THE FLOOD ZONE DESIGNATION "X" PER FLOOD INSURANCE RATE MAP #12009C 0427 H, DATED JANUARY 29TH, 2021.

ELEVATIONS - PRIMARY BENCHMARKS

THE ELEVATION DATUM SHOWN HEREON ARE BASED ON N.G.S. BENCHMARK "F-649", BEING AT AN ELEVATION +9.56 (NAVD88). CONVERSION FACTOR FROM NGVD29 TO NAVD88: -1.378 FEET

CUT AND FILL EARTHWORK TABULATIONS

SITE NAME	520 HOTEL CONVERSION
ADDRESS	MERRITT ISLAND CSWY MERRITT ISLAND, FLORIDA
JURISDICTION	BREVARD COUNTY
GRUBBING	500 CYDS
FILL MATERIAL TO BE CUT	100 CYDS
FILL MATERIAL TO BE PLACED	4,300 CYDS
FILL REQUIRED	4,200 CYDS
500 CYDS TO BE HAULED OFFSITE	
4,200 CYDS TO BE IMPORTED	

NOTE:

- FOR ADDITIONAL SITE LAYOUT INFORMATION REFER TO COORDINATE GEOMETRY SHEET C-205 & C-206
- FOR ADS STORMTECH SYSTEM DATA REFER TO SHEET C-301
- FOR TYPICAL SECTIONS REFER TO SHEET C-302
- FOR GRADING PLANS REFER TO SHEETS C-302-C-305

CONFLICT DETAIL: C7

Ground Elev. ELEVATION 6.34
COVER 2.63

PROPOSED PIPE TOP: 3.71
Material: PVC-C900 WATER MAIN
Invert: 3.00
Bottom: 2.96
SEPARATION: 1.20

PROPOSED PIPE TOP: 1.75
Material: HDPE STORM
Invert: -1.80
Bottom: -1.25

CONFLICT DETAIL: C9

Ground Elev. ELEVATION 6.38
COVER 4.05

PROPOSED PIPE TOP: 1.31
Material: PVC-C900 SAN SEWER
Invert: 0.63
Bottom: 0.61
SEPARATION: 0.78

PROPOSED PIPE TOP: -0.17
Material: HDPE STORM
Invert: -1.80
Bottom: -1.93

CONFLICT DETAIL: C11

Ground Elev. ELEVATION 6.82
COVER 2.92

PROPOSED PIPE TOP: 4.33
Material: PVC-C900 WATER MAIN
Invert: 3.90
Bottom: 3.76
SEPARATION: 1.24

PROPOSED PIPE TOP: 2.09
Material: HDPE STORM
Invert: 0.99
Bottom: 0.92

CONFLICT DETAIL: C12

Ground Elev. ELEVATION 6.31
COVER 2.54

PROPOSED PIPE TOP: 3.81
Material: PVC-C900 WATER MAIN
Invert: 2.96
Bottom: 2.86
SEPARATION: 0.54

PROPOSED PIPE TOP: 2.32
Material: HDPE STORM
Invert: 1.00
Bottom: 0.85

CONFLICT DETAIL: C13

Ground Elev. ELEVATION 6.03
COVER 2.52

PIPE TO BE REMOVED TOP: 3.51
Material: PVC-C900 WATER MAIN
Invert: 2.90
Bottom: 2.76
SEPARATION: 0.44

PROPOSED PIPE TOP: 2.32
Material: HDPE STORM
Invert: 1.00
Bottom: 0.85

CONFLICT DETAIL: C14

Ground Elev. ELEVATION 6.15
COVER 2.55

PROPOSED PIPE TOP: 3.61
Material: PVC-C900 WATER MAIN
Invert: 2.90
Bottom: 2.86
SEPARATION: 0.39

PROPOSED PIPE TOP: 2.47
Material: HDPE STORM
Invert: 1.00
Bottom: 0.79

ENVIRONMENTAL IMPACT AREA TABULATIONS

EXISTING WETLANDS:	NONE	ACRES
WETLANDS TO REMAIN:	NONE	ACRES
WETLAND AREA IMPACTED:	NONE	ACRES

DATE: 2/4/2026

REVISIONS:

NO.	DATE	DESCRIPTION
1		BAM
2	JANUARY, 2026	CHECKED
3	JANUARY, 2026	DRAWN
4		BUD
5		BUD
6		DESIGNED
7		DESIGNED

JOB NO. 24-1104

MBV ENGINEERING, INC.
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MASTER DRAINAGE PLAN

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

FLORIDA

BREVARD COUNTY

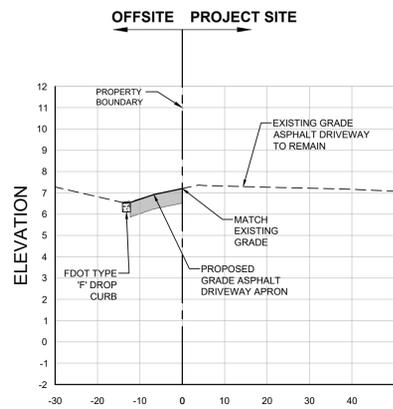
BRUCE A. MOIA
LICENSE No. 47529
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DATE: 2/4/2026

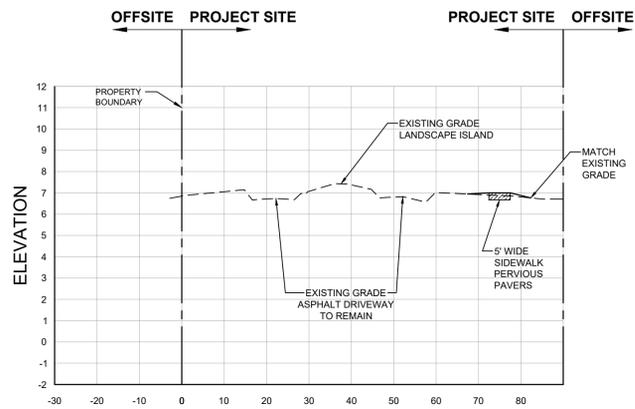
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SHEET 24-1104

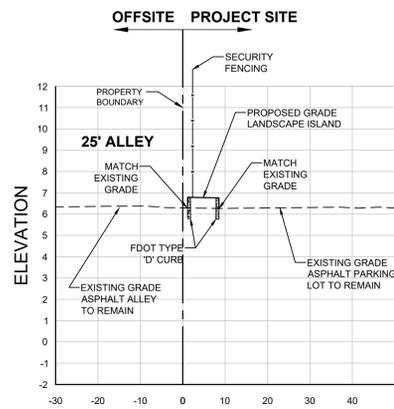
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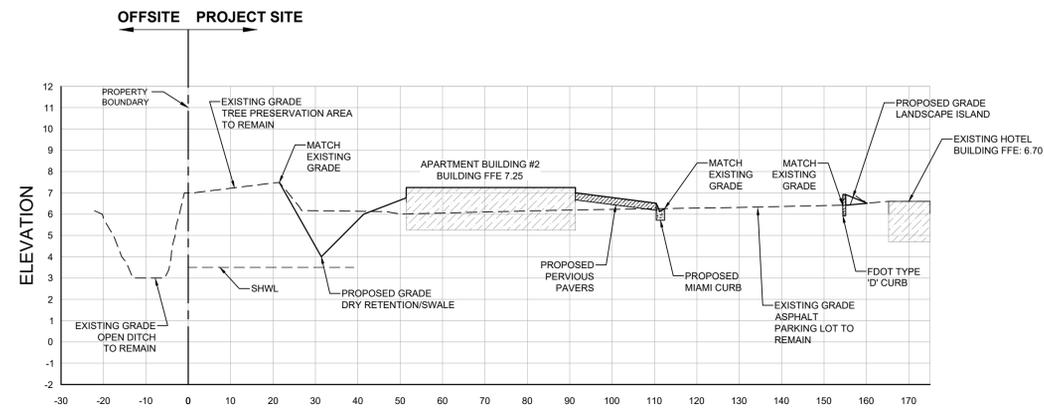
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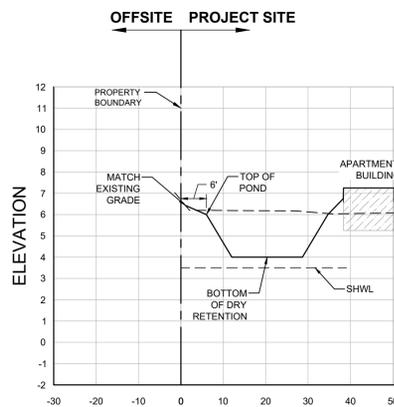
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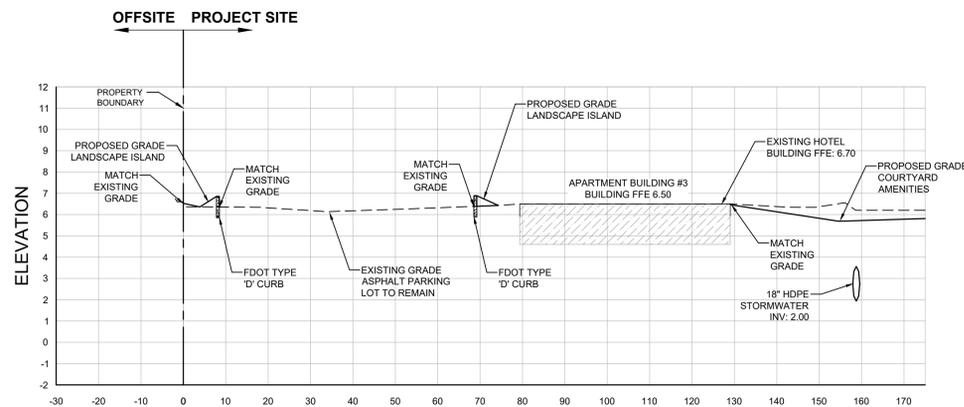
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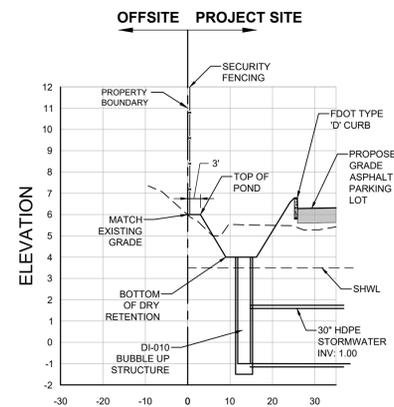
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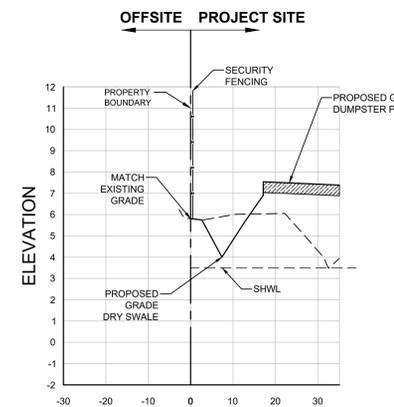
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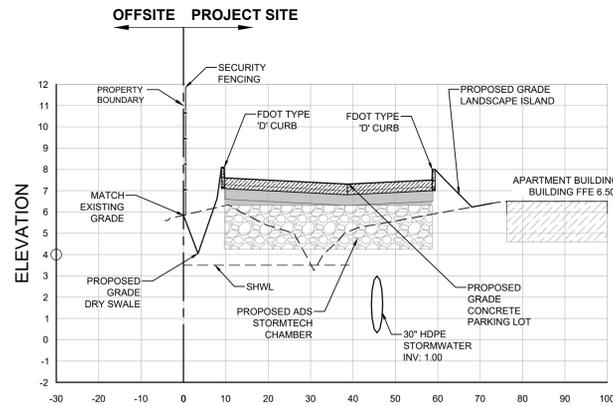
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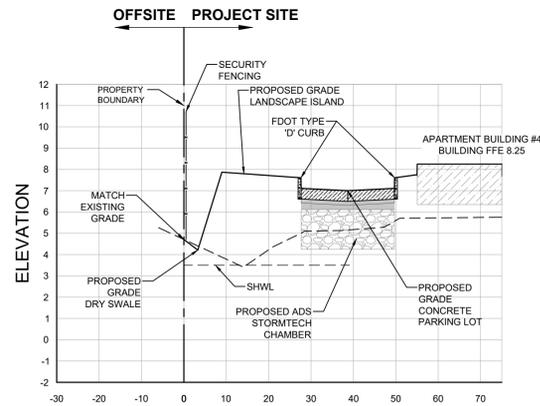
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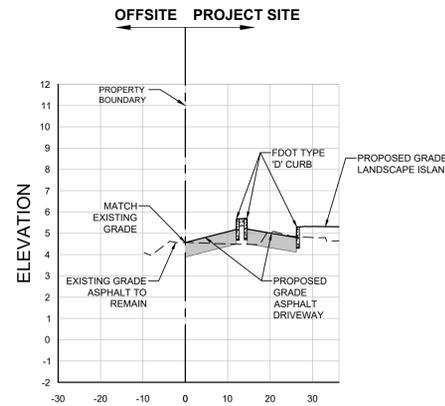
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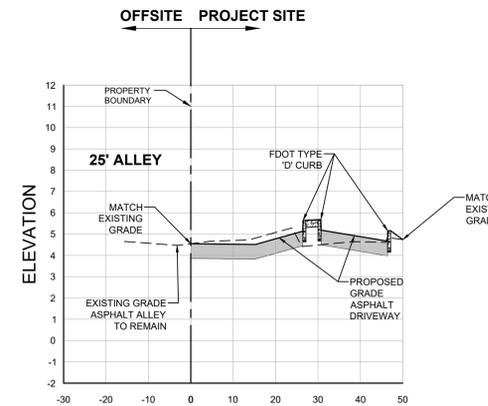
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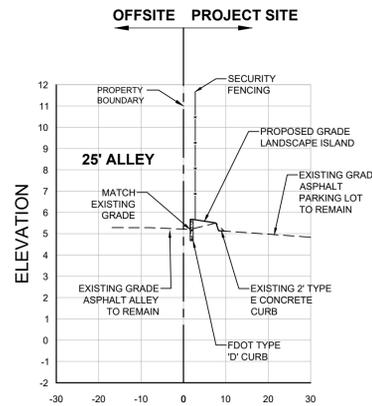
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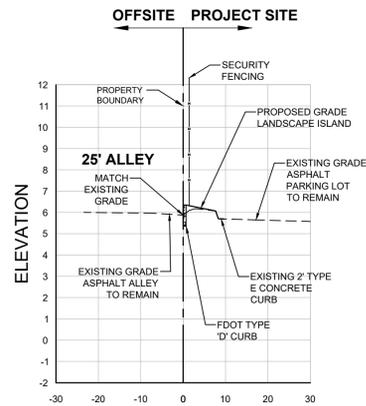
SECTION SL-11



SECTION SL-12



SECTION SL-13



SECTION SL-14

FLOOD ZONE
THE SUBJECT PROPERTY IS LOCATED INSIDE THE FLOOD ZONE DESIGNATION "X" PER FLOOD INSURANCE RATE MAP #12039C/0427 H, DATED JANUARY 29TH, 2021.

ELEVATIONS - PRIMARY BENCHMARKS
THE ELEVATION DATUM SHOWN HEREON ARE BASED ON N.G.S. BENCHMARK "F-649" BEING AT AN ELEVATION +9.56 (NAVD88).
CONVERSION FACTOR FROM NGVD29 TO NAVD88: -1.378 FEET

PROFILE SCALE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 4'

MUNICIPAL APPROVAL STAMP

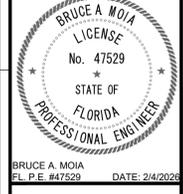


NO.	DATE	REVISIONS	COMMENTS
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2			CHECKED
3			DATE
4			DRAWN
5			BID
6			DESIGNED
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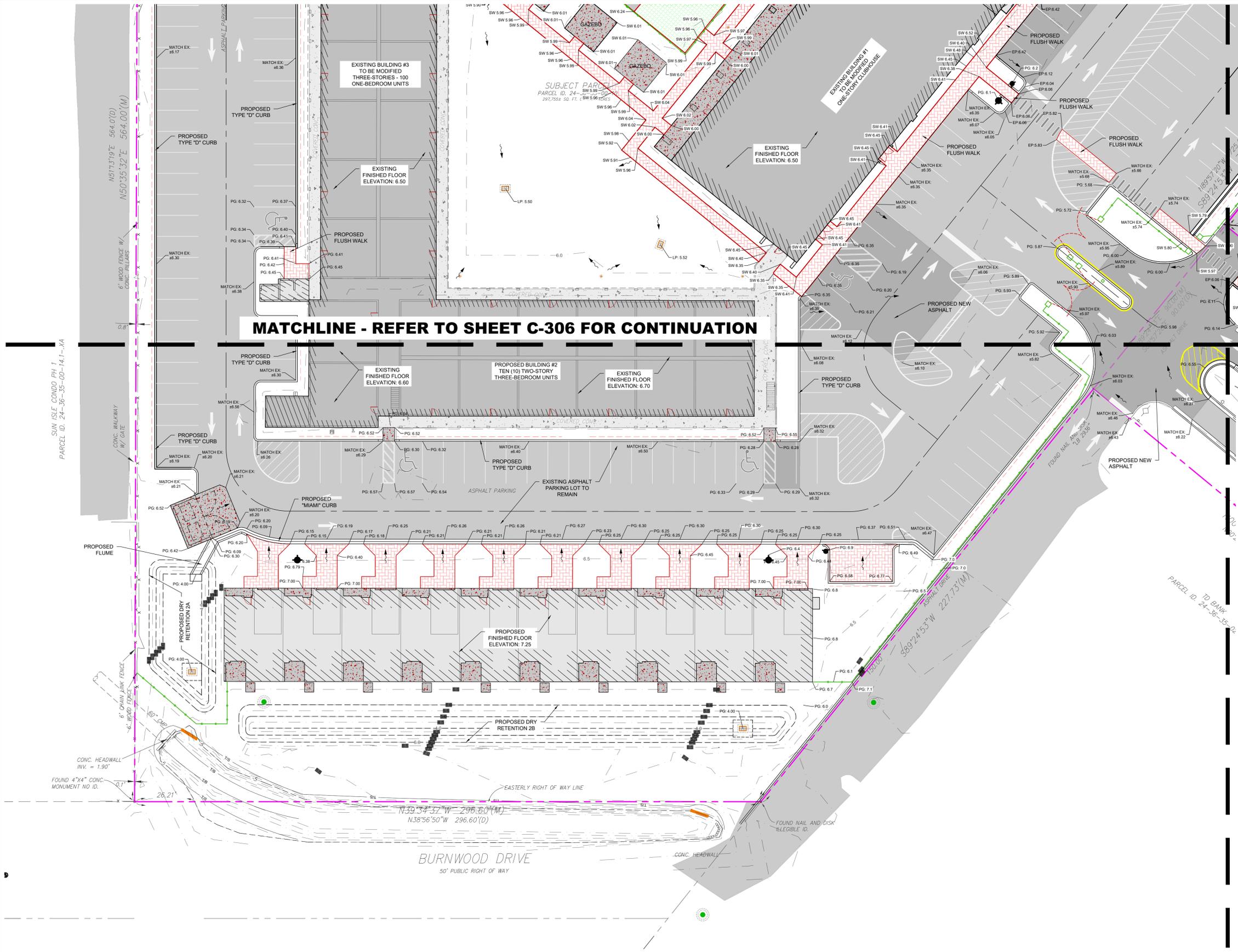
MBV ENGINEERING, INC.
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TYPICAL SECTIONS

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS
FLORIDA
BREVARD COUNTY



BRUCE A. MOIA
P.E. #47529 DATE: 2/4/2026



MATCHLINE - REFER TO SHEET C-306 FOR CONTINUATION

MATCHLINE - REFER TO SHEET C-303 FOR CONTINUATION

ELEVATIONS ARE BASED UPON NAVD88 DATUM
CONTOURS SHOWN ARE AT 0.5 FOOT INTERVALS

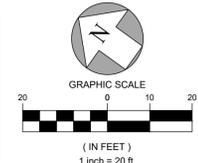
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ELEVATIONS - PRIMARY BENCHMARKS

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CONVERSION FACTOR FROM NGVD29 TO NAVD88: -1.378 FEET

MUNICIPAL APPROVAL STAMP

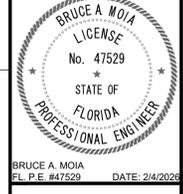


NO.	DATE	REVISIONS	COMMENTS
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2			
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4	JANUARY, 2026	BAM	DRAWN
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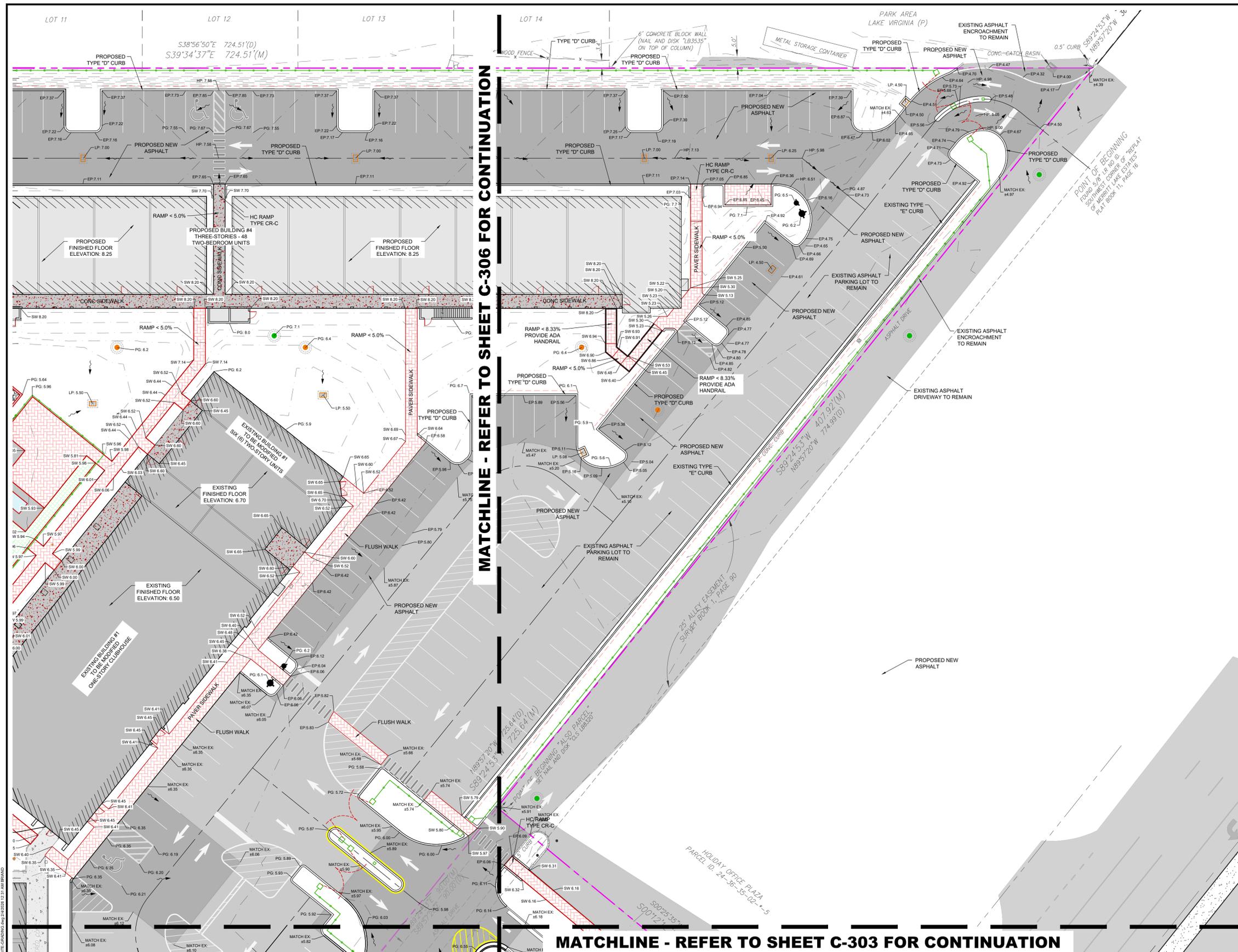
MBV ENGINEERING, INC.
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GRADING PLAN (2 OF 4)

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS
 BREVARD COUNTY, FLORIDA



C-304
 SHEET 24-1104
 PERMITTING SET

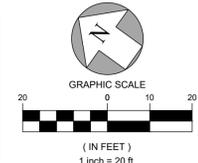


ELEVATIONS ARE BASED UPON NAVD88 DATUM
 CONTOURS SHOWN ARE AT 0.5 FOOT INTERVALS

FLOOD ZONE
 THE SUBJECT PROPERTY IS LOCATED INSIDE THE FLOOD ZONE DESIGNATION "X" PER FLOOD INSURANCE RATE MAP #12009C 0427 H, DATED JANUARY 29TH, 2021.

ELEVATIONS - PRIMARY BENCHMARKS
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MUNICIPAL APPROVAL STAMP



NO.	REVISIONS	DATE
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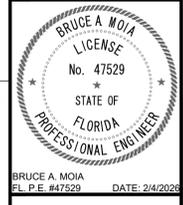
JOB NO.	24-1104
DESIGNED	BID
DRAWN	BID
DATE	JANUARY, 2026
CHECKED	BAM
DATE ISSUED	2/4/2026

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 VERO: 772.669.0036, FT. PIERCE: 772.466.9056, PALM CITY: 772.466.9969

GRADING PLAN (3 OF 4)

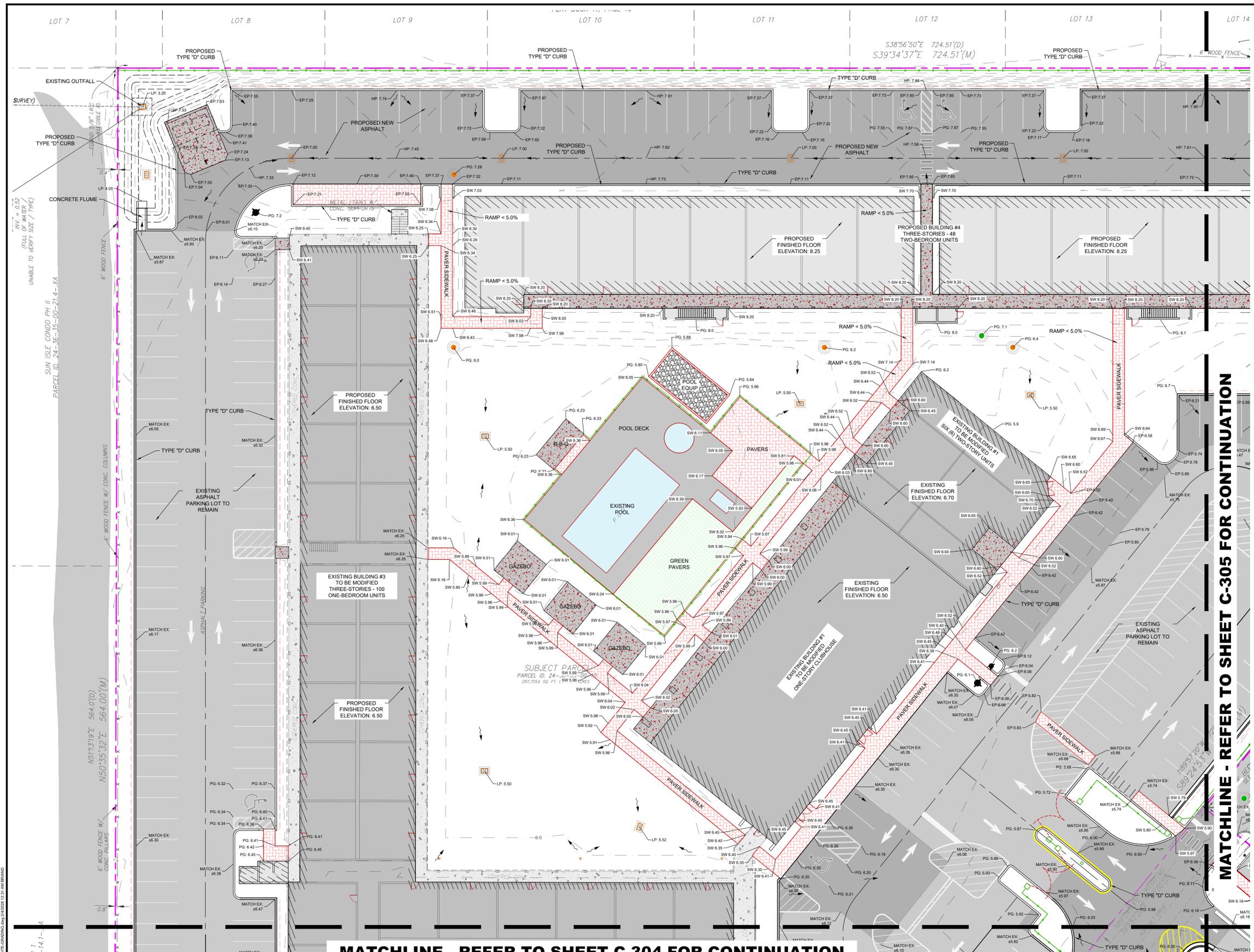
THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

FLORIDA
 BREVARD COUNTY



BRUCE A. MOIA
 P.E. #47529 DATE: 2/4/2026

C-305
 SHEET 24-1104
 PERMITTING SET



UNABLE TO VERIFY SIZE / TYPE /

SUN ISLE CONDO PH II

PARCEL ID. 24-36-35-00-21.4-A

N51°13'19"E 564.0'(D)

N50°35'32"E 564.00'(M)

6" WOOD FENCE W/ CONG. PILLARS

S38°56'50"E 724.51'(D)
S39°34'37"E 724.51'(M)

MATCHLINE - REFER TO SHEET C-304 FOR CONTINUATION

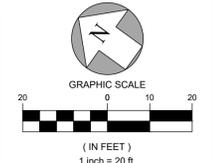
MATCHLINE - REFER TO SHEET C-305 FOR CONTINUATION

ELEVATIONS ARE BASED UPON NAVD88 DATUM
CONTOURS SHOWN ARE AT 0.5 FOOT INTERVALS

FLOOD ZONE
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ELEVATIONS - PRIMARY BENCHMARKS
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CONVERSION FACTOR FROM NGVD29 TO NAVD88: -1.378 FEET

MUNICIPAL APPROVAL STAMP



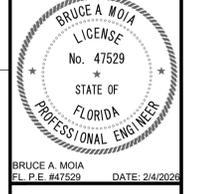
NO.	DATE	REVISIONS
1	2/1/2026	DATE ISSUED
2		CHECKED
3		DATE
4		DRAWN
5		BID
6		DESIGNED
7		JOB NO.
8		24-1104

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GRADING PLAN (4 OF 4)

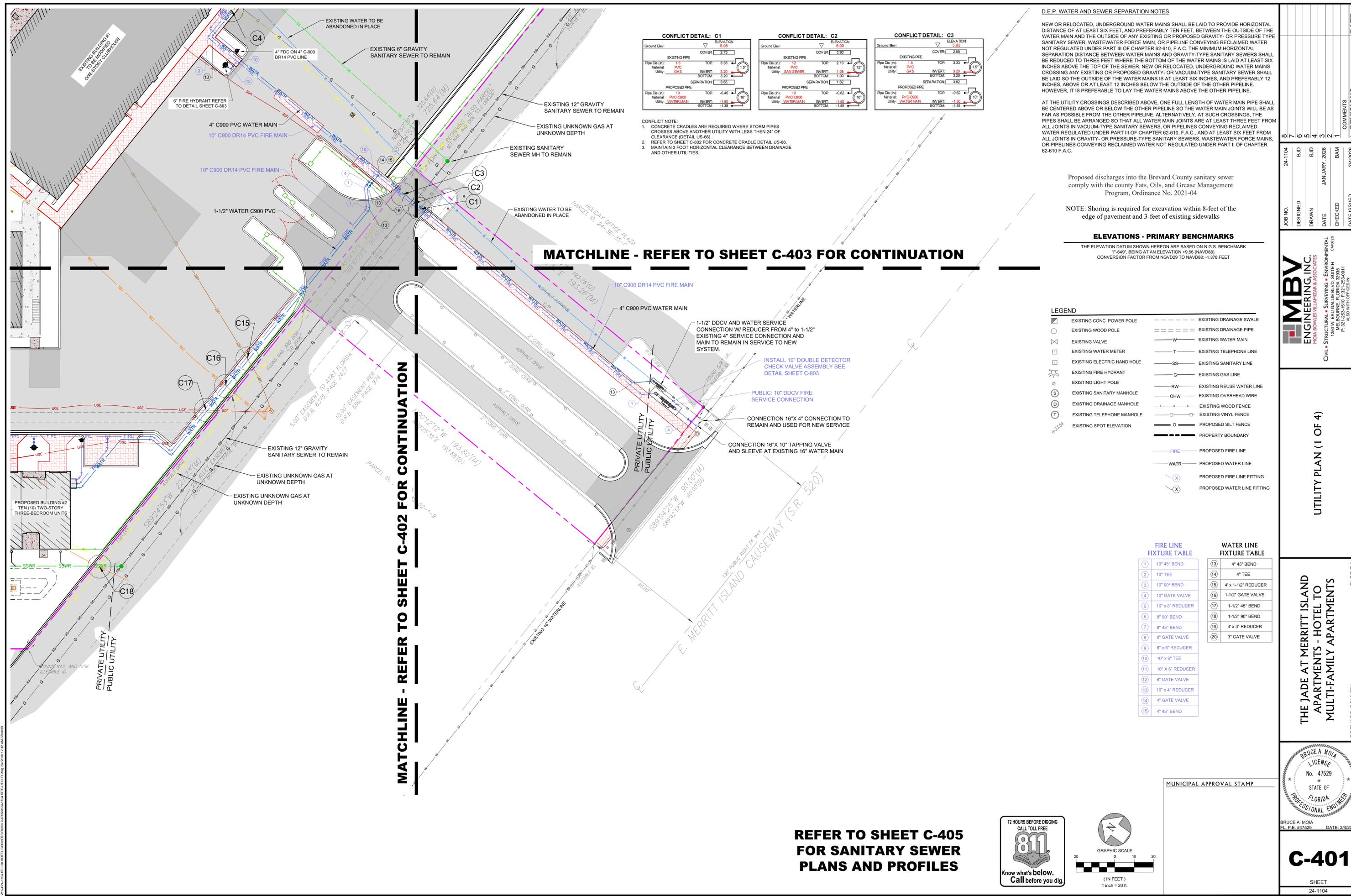
THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

FLORIDA



C-306
SHEET 24-1104

PERMITTING SET



CONFLICT DETAIL: C1		CONFLICT DETAIL: C2		CONFLICT DETAIL: C3	
Ground Elev.	ELEVATION	Ground Elev.	ELEVATION	Ground Elev.	ELEVATION
	COVER 2.73		COVER 3.90		COVER 2.58
EXISTING PIPE		EXISTING PIPE		EXISTING PIPE	
Pipe Dia (in): 18"	TOP: 3.33	Pipe Dia (in): 12"	TOP: 2.10	Pipe Dia (in): 18"	TOP: 3.33
Material: PVC	INVERT: 3.20	Material: PVC	INVERT: 1.05	Material: PVC	INVERT: 3.20
Utility: GAS	BOYDGE: 3.28	Utility: SAN SEWER	BOYDGE: 1.00	Utility: GAS	BOYDGE: 3.20
	SEPARATION: 3.65		SEPARATION: 1.62		SEPARATION: 3.62
PROPOSED PIPE		PROPOSED PIPE		PROPOSED PIPE	
Pipe Dia (in): 10"	TOP: -0.45	Pipe Dia (in): 10"	TOP: -0.62	Pipe Dia (in): 10"	TOP: -0.62
Material: PVC-C900	INVERT: -1.50	Material: PVC-C900	INVERT: -1.50	Material: PVC-C900	INVERT: -1.50
Utility: WATER MAIN	BOYDGE: -1.38	Utility: WATER MAIN	BOYDGE: -1.58	Utility: WATER MAIN	BOYDGE: -1.58

CONFLICT NOTE:
 1. CONCRETE CRADLES ARE REQUIRED WHERE STORM PIPES CROSS ABOVE ANOTHER UTILITY WITH LESS THAN 24" OF CLEARANCE (DETAIL US-66)
 2. REFER TO SHEET C-802 FOR CONCRETE CRADLE DETAIL US-66
 3. MAINTAIN 3 FOOT HORIZONTAL CLEARANCE BETWEEN DRAINAGE AND OTHER UTILITIES.

D.E.P. WATER AND SEWER SEPARATION NOTES
 NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAINS IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER, NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAINS IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAINS ABOVE THE OTHER PIPELINE.

AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART II OF CHAPTER 62-610 F.A.C.

Proposed discharges into the Brevard County sanitary sewer comply with the county Fats, Oils, and Grease Management Program, Ordinance No. 2021-04
 NOTE: Shoring is required for excavation within 8-feet of the edge of pavement and 3-feet of existing sidewalks

ELEVATIONS - PRIMARY BENCHMARKS
 THE ELEVATION DATUM SHOWN HEREON ARE BASED ON N.G.S. BENCHMARK "1-649" BEING AT AN ELEVATION OF +9.56 (NAVD89).
 CONVERSION FACTOR FROM NAVD89 TO NAVD83: -1.378 FEET

LEGEND

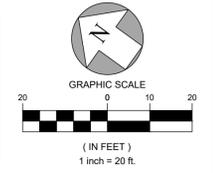
EXISTING CONC. POWER POLE	EXISTING DRAINAGE SWALE
EXISTING WOOD POLE	EXISTING DRAINAGE PIPE
EXISTING VALVE	EXISTING WATER MAIN
EXISTING WATER METER	EXISTING TELEPHONE LINE
EXISTING ELECTRIC HAND HOLE	EXISTING SANITARY LINE
EXISTING FIRE HYDRANT	EXISTING GAS LINE
EXISTING LIGHT POLE	EXISTING REUSE WATER LINE
EXISTING SANITARY MANHOLE	EXISTING OVERHEAD WIRE
EXISTING DRAINAGE MANHOLE	EXISTING WOOD FENCE
EXISTING TELEPHONE MANHOLE	EXISTING VINYL FENCE
EXISTING SPOT ELEVATION	PROPOSED SILT FENCE
	PROPERTY BOUNDARY
	FIRE - PROPOSED FIRE LINE
	WATR - PROPOSED WATER LINE
	PROPOSED FIRE LINE FITTING
	PROPOSED WATER LINE FITTING

FIRE LINE FIXTURE TABLE		WATER LINE FIXTURE TABLE	
1	10" 45° BEND	13	4" 45° BEND
2	10" TEE	14	4" TEE
3	10" 90° BEND	15	4" x 1-1/2" REDUCER
4	10" GATE VALVE	16	1-1/2" GATE VALVE
5	10" x 8" REDUCER	17	1-1/2" 45° BEND
6	8" 90° BEND	18	1-1/2" 90° BEND
7	8" 45° BEND	19	4" x 3" REDUCER
8	8" GATE VALVE	20	3" GATE VALVE
9	8" x 6" REDUCER		
10	10" x 6" TEE		
11	10" x 6" REDUCER		
12	6" GATE VALVE		
13	10" x 4" REDUCER		
14	4" GATE VALVE		
15	4" 45° BEND		

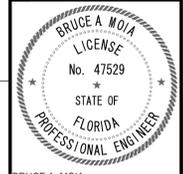
MATCHLINE - REFER TO SHEET C-403 FOR CONTINUATION

MATCHLINE - REFER TO SHEET C-402 FOR CONTINUATION

REFER TO SHEET C-405 FOR SANITARY SEWER PLANS AND PROFILES



MUNICIPAL APPROVAL STAMP



BRUCE A. MOIA
 P.E. #47529 DATE: 2/4/2026

C-401

SHEET 24-1104

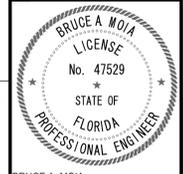
PERMITTING SET

NO.	REVISIONS	DATE
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MBV ENGINEERING, INC.
 MOIA BOWLES VILLALBA & ASSOCIATES
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 P: 321.475.2911
 ALSO WITH OFFICES IN:
 VERO BEACH, FLORIDA 334
 FT. PIERCE, FLORIDA 772-486-9606 PALM CITY, FLORIDA 772-486-9606

UTILITY PLAN (1 OF 4)

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

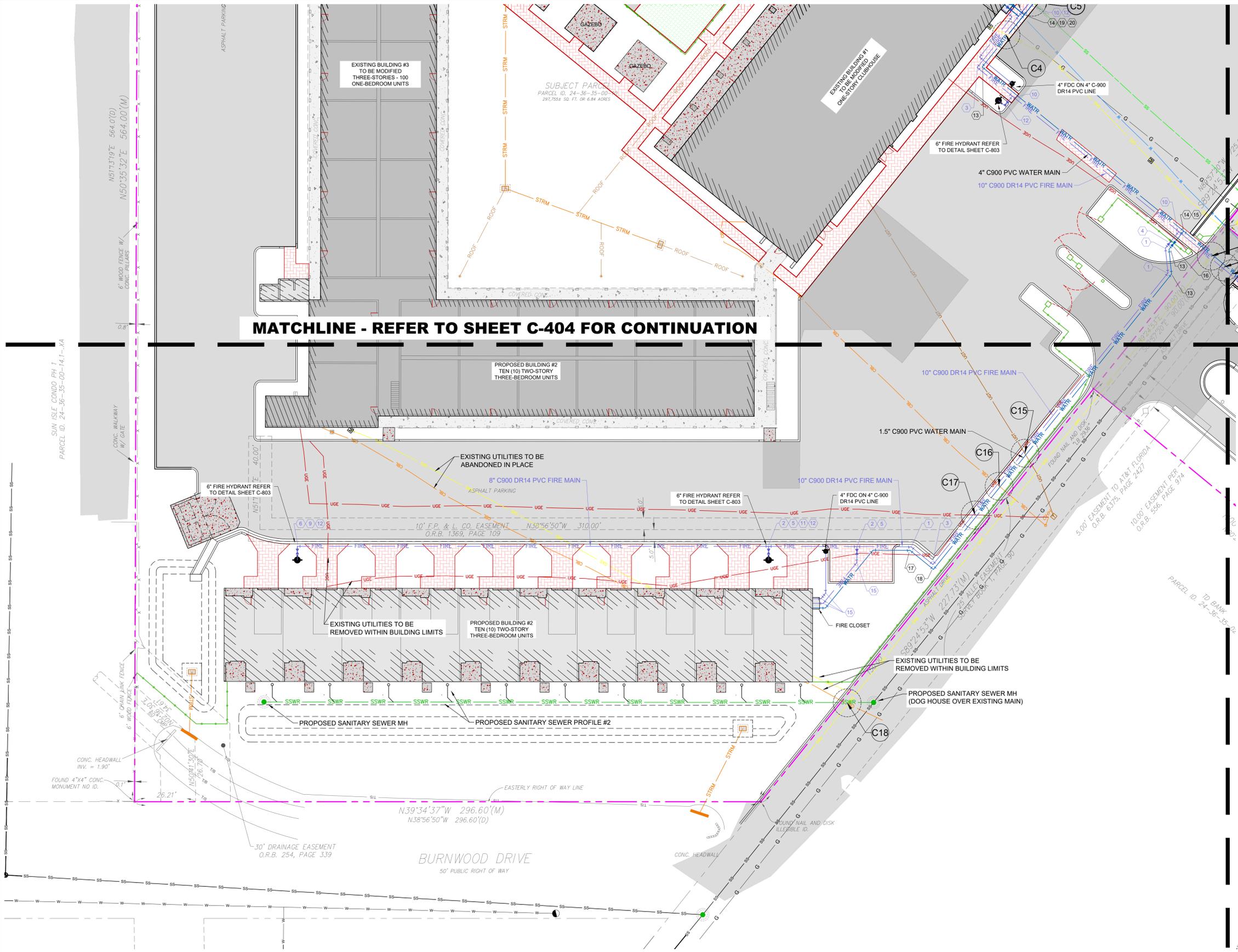


BRUCE A. MOIA
 P.E. #47529 DATE: 2/4/2026

C-401

SHEET 24-1104

PERMITTING SET



MATCHLINE - REFER TO SHEET C-404 FOR CONTINUATION

MATCHLINE - REFER TO SHEET C-401 FOR CONTINUATION

ELEVATIONS - PRIMARY BENCHMARKS

THE ELEVATION DATUM SHOWN HEREON ARE BASED ON N.G.S. BENCHMARK
 "F-649", BEING AT AN ELEVATION +9.56 (NAVD88).
 CONVERSION FACTOR FROM NGVD29 TO NAVD88: -1.378 FEET

CONFLICT NOTE:
 1. CONCRETE CRADLES ARE REQUIRED WHERE STORM PIPES
 CROSSES ABOVE ANOTHER UTILITY WITH LESS THAN 24" OF
 CLEARANCE (DETAIL US-66).
 2. REFER TO SHEET C-802 FOR CONCRETE CRADLE DETAIL US-66.
 3. MAINTAIN 3 FOOT HORIZONTAL CLEARANCE BETWEEN DRAINAGE
 AND OTHER UTILITIES.

LEGEND

- EXISTING CONC. POWER POLE
- EXISTING WOOD POLE
- EXISTING VALVE
- EXISTING WATER METER
- EXISTING ELECTRIC HAND HOLE
- EXISTING FIRE HYDRANT
- EXISTING LIGHT POLE
- EXISTING SANITARY MANHOLE
- EXISTING DRAINAGE MANHOLE
- EXISTING TELEPHONE MANHOLE
- EXISTING SPOT ELEVATION
- EXISTING DRAINAGE SWALE
- EXISTING DRAINAGE PIPE
- EXISTING WATER MAIN
- EXISTING TELEPHONE LINE
- EXISTING SANITARY LINE
- EXISTING GAS LINE
- EXISTING REUSE WATER LINE
- EXISTING OVERHEAD WIRE
- EXISTING WOOD FENCE
- EXISTING VINYL FENCE
- PROPOSED SILT FENCE
- PROPERTY BOUNDARY
- PROPOSED FIRE LINE
- PROPOSED WATER LINE
- PROPOSED FIRE LINE FITTING
- PROPOSED WATER LINE FITTING

FIRE LINE FIXTURE TABLE

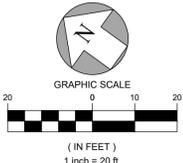
1	10" 45° BEND
2	10" TEE
3	10" 90° BEND
4	10" GATE VALVE
5	10" x 8" REDUCER
6	8" 90° BEND
7	8" 45° BEND
8	8" GATE VALVE
9	8" x 6" REDUCER
10	10" x 6" TEE
11	10" x 6" REDUCER
12	6" GATE VALVE
13	10" x 4" REDUCER
14	4" GATE VALVE
15	4" 45° BEND

WATER LINE FIXTURE TABLE

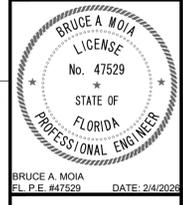
13	4" 45° BEND
14	4" TEE
15	4" x 1-1/2" REDUCER
16	1-1/2" GATE VALVE
17	1-1/2" 45° BEND
18	1-1/2" 90° BEND
19	4" x 3" REDUCER
20	3" GATE VALVE

CONFLICT DETAIL: C15	CONFLICT DETAIL: C16	CONFLICT DETAIL: C18	CONFLICT DETAIL: C18
<p>Ground Elev. 8.71</p> <p>EXISTING PIPE COVER: 2.83</p> <p>Pipe Dia (in): 1.5 Material: PVC Utility: ELECTRICAL TOP: 3.88 INVERT: 3.75 BOTTOM: 3.75 SEPARATION: 1.30</p> <p>PROPOSED PIPE Pipe Dia (in): 10 Material: PVC-C900 Utility: WATER MAIN TOP: 2.55 INVERT: 1.50 BOTTOM: 1.62</p>	<p>Ground Elev. 8.71</p> <p>EXISTING PIPE COVER: 2.91</p> <p>Pipe Dia (in): 1.5 Material: PVC Utility: ELECTRICAL TOP: 3.88 INVERT: 3.75 BOTTOM: 3.75 SEPARATION: 1.30</p> <p>PROPOSED PIPE Pipe Dia (in): 10 Material: PVC-C900 Utility: WATER MAIN TOP: 2.55 INVERT: 1.50 BOTTOM: 1.62</p>	<p>Ground Elev. 8.98</p> <p>EXISTING PIPE COVER: 3.00</p> <p>Pipe Dia (in): 1.5 Material: PVC Utility: ELECTRICAL TOP: 3.88 INVERT: 3.75 BOTTOM: 3.75 SEPARATION: 1.30</p> <p>PROPOSED PIPE Pipe Dia (in): 10 Material: PVC-C900 Utility: WATER MAIN TOP: 2.55 INVERT: 1.50 BOTTOM: 1.62</p>	<p>Ground Elev. 8.57</p> <p>EXISTING PIPE COVER: 2.89</p> <p>Pipe Dia (in): 1.5 Material: PVC Utility: GAS TOP: 3.88 INVERT: 3.75 BOTTOM: 3.75 SEPARATION: 1.01</p> <p>PROPOSED PIPE Pipe Dia (in): 10 Material: PVC-C900 Utility: SAN SEWER TOP: 2.73 INVERT: 1.80 BOTTOM: 2.03</p>

REFER TO SHEET C-405 FOR SANITARY SEWER PLANS AND PROFILES



MUNICIPAL APPROVAL STAMP



C-402

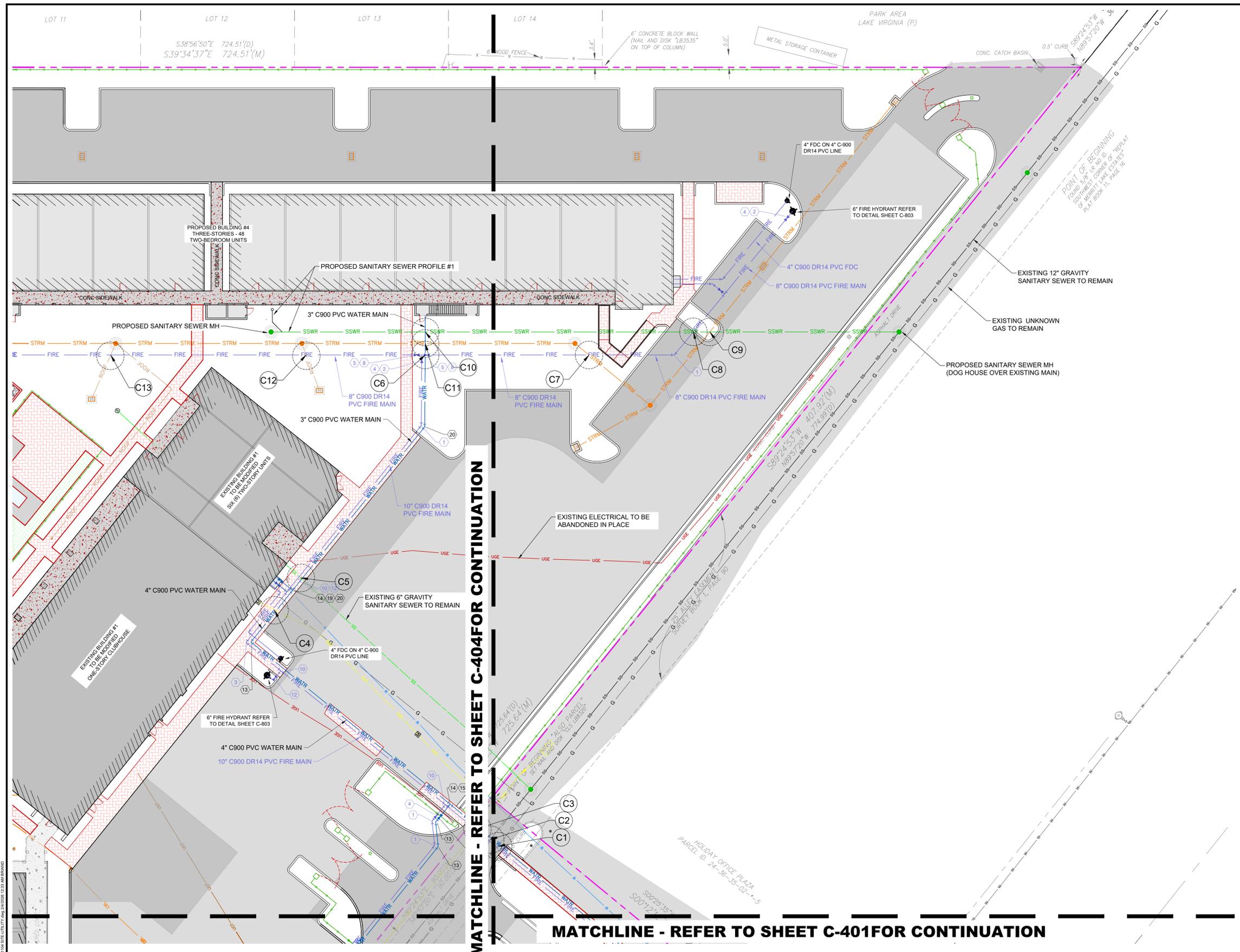
SHEET 24-1104

UTILITY PLAN (2 OF 4)

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

MBV ENGINEERING, INC.
 MOA BOWLES VILLALBA & ASSOCIATES
 CIVIL & STRUCTURAL • SURVEYING • ENVIRONMENTAL
 1250 W. EAU GALIE BLVD, SUITE H
 MELBOURNE, FLORIDA 32935
 P: 321-475-9911
 ALSO WITH OFFICES IN:
 VERO: 772-669-0036, FT. PIERCE: 772-468-6056, PALM CITY: 772-426-9969

NO.	DATE	REVISIONS	COMMENTS
1	2/14/2026	BAM	DATE ISSUED
2			
3			
4	JANUARY, 2026		CHECKED
5			DRAWN
6			DESIGNED
7	24-1104		JOB NO.



ELEVATIONS - PRIMARY BENCHMARKS
 THE ELEVATION DATUM SHOWN HEREON ARE BASED ON N.G.S. BENCHMARK
 "F-649", BEING AT AN ELEVATION +9.56 (NAVD88).
 CONVERSION FACTOR FROM NGVD29 TO NAVD88: -1.378 FEET

- CONFLICT NOTE:
 1. CONCRETE CRADLES ARE REQUIRED WHERE STORM PIPES CROSS ABOVE ANOTHER UTILITY WITH LESS THAN 24" OF CLEARANCE (DETAIL US-66).
 2. REFER TO SHEET C-802 FOR CONCRETE CRADLE DETAIL US-66.
 3. MAINTAIN 3 FOOT HORIZONTAL CLEARANCE BETWEEN DRAINAGE AND OTHER UTILITIES.

LEGEND

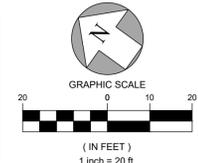
◻	EXISTING CONC. POWER POLE	---	EXISTING DRAINAGE SWALE
○	EXISTING WOOD POLE	---	EXISTING DRAINAGE PIPE
⊗	EXISTING VALVE	—W—	EXISTING WATER MAIN
⊕	EXISTING WATER METER	—T—	EXISTING TELEPHONE LINE
⊖	EXISTING ELECTRIC HAND HOLE	—SS—	EXISTING SANITARY LINE
⊙	EXISTING FIRE HYDRANT	—G—	EXISTING GAS LINE
⊛	EXISTING LIGHT POLE	—RW—	EXISTING REUSE WATER LINE
⊜	EXISTING SANITARY MANHOLE	—OHW—	EXISTING OVERHEAD WIRE
⊝	EXISTING DRAINAGE MANHOLE	—X—X—	EXISTING WOOD FENCE
⊞	EXISTING TELEPHONE MANHOLE	—□—□—	EXISTING VINYL FENCE
⊟	EXISTING SPOT ELEVATION	—○—	PROPOSED SILT FENCE
		---	PROPERTY BOUNDARY
		—FIRE—	PROPOSED FIRE LINE
		—WATR—	PROPOSED WATER LINE
		—(X)—	PROPOSED FIRE LINE FITTING
		—(X)—	PROPOSED WATER LINE FITTING

FIRE LINE FIXTURE TABLE		WATER LINE FIXTURE TABLE	
1	10" 45° BEND	13	4" 45° BEND
2	10" TEE	14	4" TEE
3	10" 90° BEND	15	4" x 1-1/2" REDUCER
4	10" GATE VALVE	16	1-1/2" GATE VALVE
5	10" x 8" REDUCER	17	1-1/2" 45° BEND
6	8" 90° BEND	18	1-1/2" 90° BEND
7	8" 45° BEND	19	4" x 3" REDUCER
8	8" GATE VALVE	20	3" GATE VALVE
9	8" x 6" REDUCER		3" 45° BEND
10	10" x 6" TEE		
11	10" x 6" REDUCER		
12	6" GATE VALVE		
13	10" x 4" REDUCER		
14	4" GATE VALVE		
15	4" 45° BEND		

MATCHLINE - REFER TO SHEET C-404 FOR CONTINUATION

MATCHLINE - REFER TO SHEET C-401 FOR CONTINUATION

REFER TO SHEET C-405 FOR SANITARY SEWER PLANS AND PROFILES



MUNICIPAL APPROVAL STAMP

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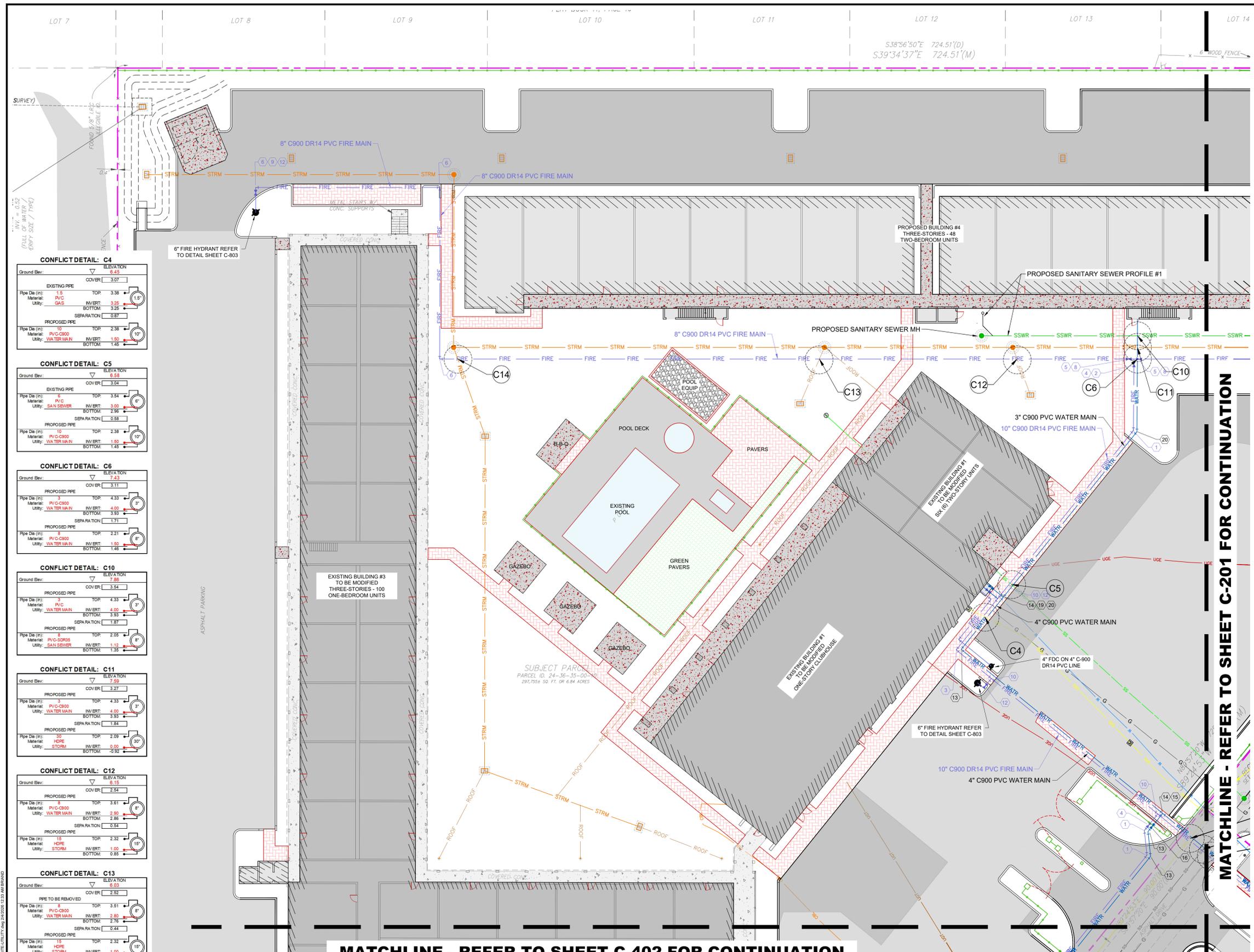
MBV ENGINEERING, INC.
 MOA BOWEN VILLARIZ & ASSOCIATES
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 ALSO WITH OFFICES IN:
 FT. PIERCE: 772-466-9056, PALM CITY: 772-426-9969

UTILITY PLAN (3 OF 4)

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS
 BREVARD COUNTY, FLORIDA

BRUCE A. MOIA
 FL. P.E. #47529
 DATE: 2/4/2026

C-403
 SHEET 24-1104
 PERMITTING SET



ELEVATIONS - PRIMARY BENCHMARKS
 THE ELEVATION DATUM SHOWN HEREON ARE BASED ON N.G.S. BENCHMARK
 "F-849", BEING AT AN ELEVATION +9.56 (NAVD88).
 CONVERSION FACTOR FROM NAVD29 TO NAVD88: -1.378 FEET

CONFLICT NOTE:
 1. CONCRETE CRADLES ARE REQUIRED WHERE STORM PIPES
 CROSSES ABOVE ANOTHER UTILITY WITH LESS THAN 24" OF
 CLEARANCE (DETAIL US-66).
 2. REFER TO SHEET C-802 FOR CONCRETE CRADLE DETAIL US-66.
 3. MAINTAIN 3 FOOT HORIZONTAL CLEARANCE BETWEEN DRAINAGE
 AND OTHER UTILITIES.

CONFLICT DETAIL: C4

Ground Elev:	ELEVATION	8.45
COVER:	COVER	3.97
EXISTING PIPE	TOP:	3.38
Material: T-5	INVERT:	3.28
Utility: GAS	BOTTOM:	3.25
SEPARATION:		0.87
PROPOSED PIPE	TOP:	2.38
Material: PVC-C900	INVERT:	1.50
Utility: WATER MAIN	BOTTOM:	1.48
SEPARATION:		10"

CONFLICT DETAIL: C5

Ground Elev:	ELEVATION	6.58
COVER:	COVER	3.04
EXISTING PIPE	TOP:	3.54
Material: PVC	INVERT:	3.00
Utility: SAN SEWER	BOTTOM:	2.99
SEPARATION:		0.53
PROPOSED PIPE	TOP:	2.38
Material: PVC-C900	INVERT:	1.50
Utility: WATER MAIN	BOTTOM:	1.48
SEPARATION:		10"

CONFLICT DETAIL: C6

Ground Elev:	ELEVATION	7.43
COVER:	COVER	3.11
EXISTING PIPE	TOP:	4.33
Material: PVC-C900	INVERT:	4.00
Utility: WATER MAIN	BOTTOM:	3.93
SEPARATION:		1.11
PROPOSED PIPE	TOP:	2.21
Material: PVC-C900	INVERT:	1.50
Utility: WATER MAIN	BOTTOM:	1.48
SEPARATION:		6"

CONFLICT DETAIL: C10

Ground Elev:	ELEVATION	7.59
COVER:	COVER	3.54
EXISTING PIPE	TOP:	4.33
Material: PVC	INVERT:	4.00
Utility: WATER MAIN	BOTTOM:	3.93
SEPARATION:		1.87
PROPOSED PIPE	TOP:	2.05
Material: PVC-C900	INVERT:	1.12
Utility: SAN SEWER	BOTTOM:	1.35
SEPARATION:		6"

CONFLICT DETAIL: C11

Ground Elev:	ELEVATION	7.59
COVER:	COVER	3.27
EXISTING PIPE	TOP:	4.33
Material: PVC-C900	INVERT:	4.00
Utility: WATER MAIN	BOTTOM:	3.93
SEPARATION:		1.84
PROPOSED PIPE	TOP:	2.09
Material: HDPE	INVERT:	0.00
Utility: STORM	BOTTOM:	-0.92
SEPARATION:		30"

CONFLICT DETAIL: C12

Ground Elev:	ELEVATION	6.15
COVER:	COVER	2.54
EXISTING PIPE	TOP:	3.61
Material: PVC-C900	INVERT:	2.50
Utility: WATER MAIN	BOTTOM:	2.46
SEPARATION:		0.54
PROPOSED PIPE	TOP:	2.32
Material: HDPE	INVERT:	1.00
Utility: STORM	BOTTOM:	0.85
SEPARATION:		15"

CONFLICT DETAIL: C13

Ground Elev:	ELEVATION	6.13
COVER:	COVER	2.52
EXISTING PIPE	TOP:	3.51
Material: PVC-C900	INVERT:	2.50
Utility: WATER MAIN	BOTTOM:	2.14
SEPARATION:		0.44
PROPOSED PIPE	TOP:	2.47
Material: HDPE	INVERT:	1.00
Utility: STORM	BOTTOM:	0.70
SEPARATION:		15"

CONFLICT DETAIL: C14

Ground Elev:	ELEVATION	6.16
COVER:	COVER	2.55
EXISTING PIPE	TOP:	3.61
Material: PVC-C900	INVERT:	2.50
Utility: WATER MAIN	BOTTOM:	2.46
SEPARATION:		0.39
PROPOSED PIPE	TOP:	2.47
Material: HDPE	INVERT:	1.00
Utility: STORM	BOTTOM:	0.70
SEPARATION:		15"

LEGEND

EXISTING CONC. POWER POLE	EXISTING DRAINAGE SWALE
EXISTING WOOD POLE	EXISTING DRAINAGE PIPE
EXISTING VALVE	EXISTING WATER MAIN
EXISTING WATER METER	EXISTING TELEPHONE LINE
EXISTING ELECTRIC HAND HOLE	EXISTING SANITARY LINE
EXISTING FIRE HYDRANT	EXISTING GAS LINE
EXISTING LIGHT POLE	EXISTING REUSE WATER LINE
EXISTING SANITARY MANHOLE	EXISTING OVERHEAD WIRE
EXISTING DRAINAGE MANHOLE	EXISTING WOOD FENCE
EXISTING TELEPHONE MANHOLE	EXISTING VINYL FENCE
EXISTING SPOT ELEVATION	PROPOSED SILT FENCE
	PROPERTY BOUNDARY
	PROPOSED FIRE LINE
	PROPOSED WATER LINE
	PROPOSED FIRE LINE FITTING
	PROPOSED WATER LINE FITTING

FIRE LINE FIXTURE TABLE

1	10" 45° BEND
2	10" TEE
3	10" 90° BEND
4	10" GATE VALVE
5	10" x 8" REDUCER
6	8" 90° BEND
7	8" 45° BEND
8	8" GATE VALVE
9	8" x 6" REDUCER
10	10" x 6" TEE
11	10" x 6" REDUCER
12	6" GATE VALVE
13	10" x 4" REDUCER
14	4" GATE VALVE
15	4" 45° BEND

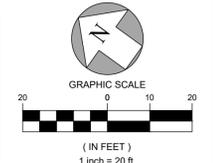
WATER LINE FIXTURE TABLE

13	4" 45° BEND
14	4" TEE
15	4" x 1-1/2" REDUCER
16	1-1/2" GATE VALVE
17	1-1/2" 45° BEND
18	1-1/2" 90° BEND
19	4" x 3" REDUCER
20	3" GATE VALVE

MATCHLINE - REFER TO SHEET C-201 FOR CONTINUATION

MATCHLINE - REFER TO SHEET C-402 FOR CONTINUATION

REFER TO SHEET C-405 FOR SANITARY SEWER PLANS AND PROFILES



MUNICIPAL APPROVAL STAMP

DATE	2/14/2026
REVISIONS	
COMMENTS	
NO.	1
DATE	JANUARY, 2026
DRAWN	BAM
DESIGNED	BAM
JOB NO.	24-1104

MBV ENGINEERING, INC.
 MOA BOWLES VILLALBA & ASSOCIATES
 CIVIL & STRUCTURAL SURVEYING & ENVIRONMENTAL
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 ALSO WITH OFFICES IN:
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UTILITY PLAN (4 OF 4)

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

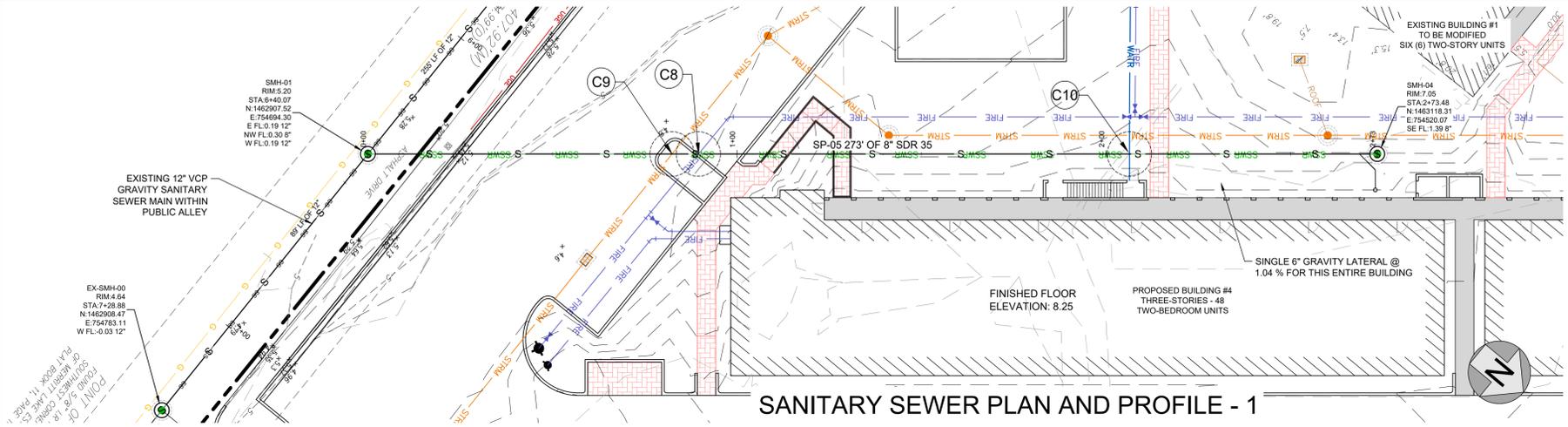
BREVARD COUNTY, FLORIDA

BRUCE A. MOIA
 LICENSE No. 47529
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER

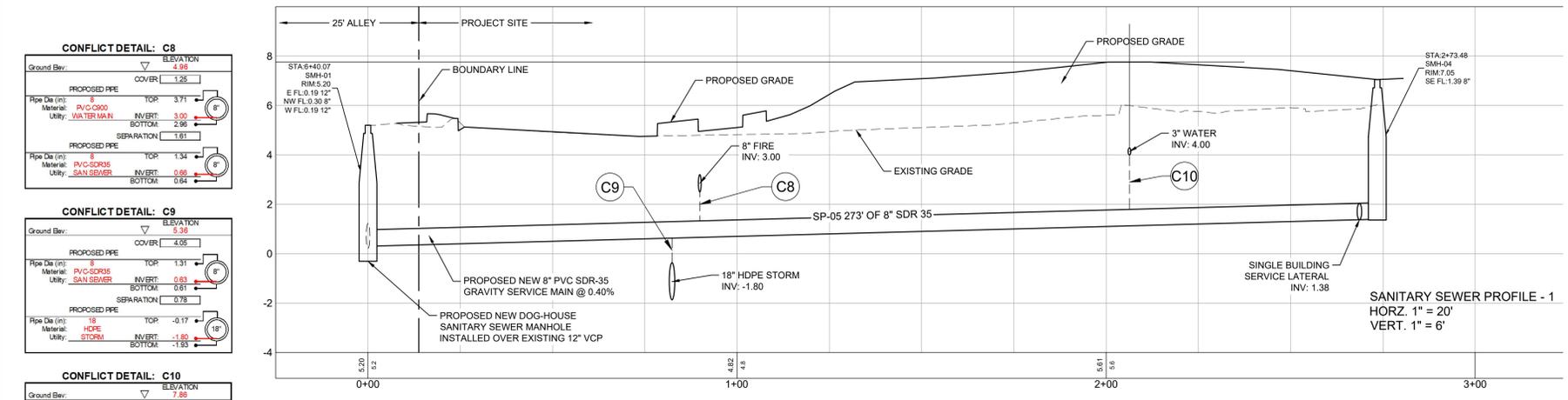
BRUCE A. MOIA
 P.E. #47529 DATE: 2/14/2026

C-404

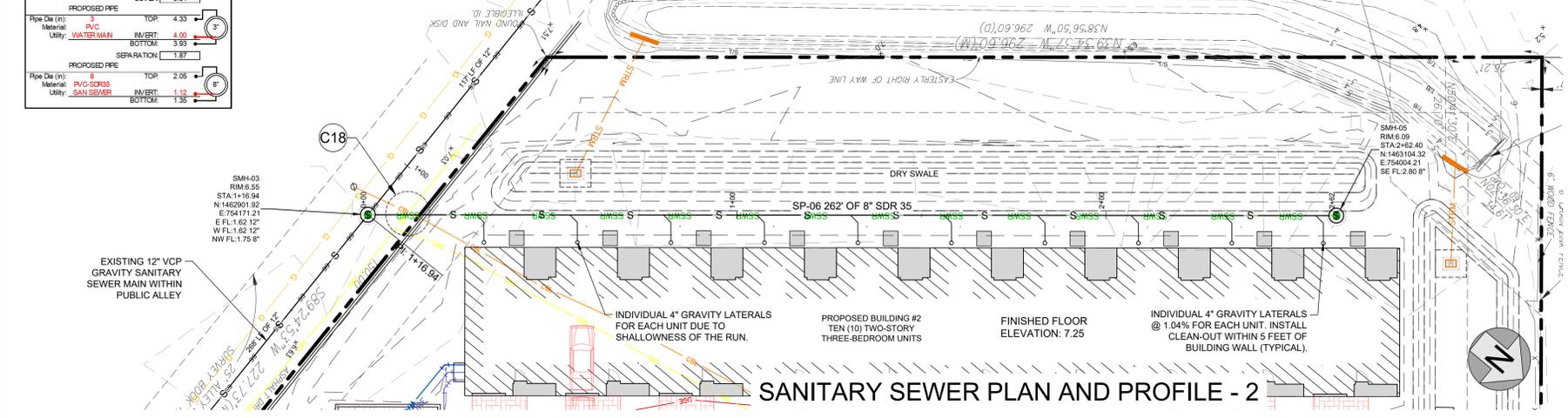
SHEET 24-1104 PERMITTING SET



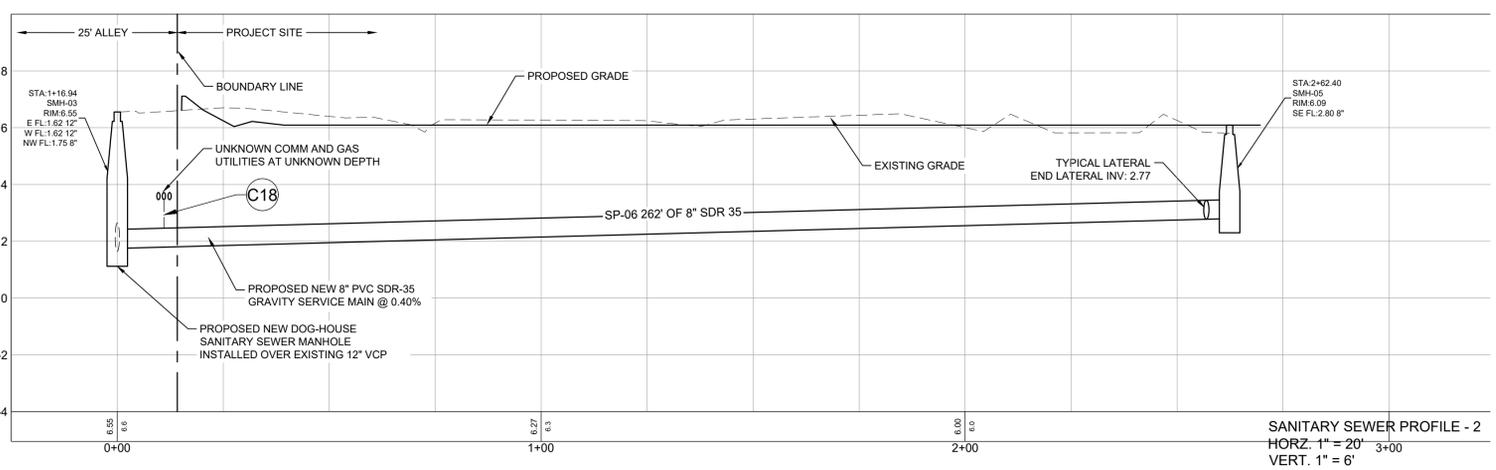
SANITARY SEWER PLAN AND PROFILE - 1



SANITARY SEWER PROFILE - 1
HORZ. 1" = 20'
VERT. 1" = 6'



SANITARY SEWER PLAN AND PROFILE - 2



SANITARY SEWER PROFILE - 2
HORZ. 1" = 20'
VERT. 1" = 6'

D.E.P. WATER AND SEWER SEPARATION NOTES

NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAINS IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER, NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAINS IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAINS ABOVE THE OTHER PIPELINE.

AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART II OF CHAPTER 62-610 F.A.C.

- NOTE:**
- ALL SEWER CONSTRUCTION SHALL CONFORM TO THE CRITERIA FOR WATER AND SANITARY SEWERAGE SYSTEMS WITHIN CITY OF COCOA AND BREVARD COUNTY, LATEST EDITION.
 - UNHINDERED, STABILIZED ACCESS TO ALL SEWER INFRASTRUCTURE IS REQUIRED.
 - MANHOLES SHALL BE DESIGNED SO STORMWATER RUNOFF WILL BE DIRECTED AWAY FROM THE STRUCTURES.
 - PRIVATE SANITARY MANHOLE LIDS TO READ "PRIVATE" "SANITARY SEWER", PUBLIC SANITARY SEWER MANHOLE LIDS TO READ "BREVARD COUNTY" "SANITARY SEWER"
 - INSTALL ADA COMPLIANT COVERS FOR THE SANITARY SEWER CLEANOUTS WITHIN SIDEWALKS AND H20 RATED CLEANOUTS WITHIN THE ASPHALT.
 - A SEPARATE PERMIT IS REQUIRED BY BREVARD COUNTY FIRE DEPARTMENT FOR WATER MAINS CONTAINING FIRE FIGHTING HYDRANTS OR SPRINKLER SYSTEMS. THE PROPOSED WATER MAIN EXTENSION IS UTILIZED FOR FIRE FIGHTING THUS A PERMIT IS REQUIRED.
 - ALL WATER UTILITY WORK IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST CITY OF COCOA AND BREVARD COUNTY STANDARDS.
 - REGARDLESS OF PRIVATE OR PUBLIC DEDICATION, THERE SHALL BE NO UTILITY CONNECTIONS WITHIN PROPOSED SIDEWALKS.
 - ALL PRIVATE WATERLINES AND FIRE PROTECTION APPURTENANCES WILL BE PERMITTED, INSPECTED, AND APPROVED BY LOCAL FIRE JURISDICTION AUTHORITY PRIOR TO FINAL CLEARANCE.

ELEVATIONS ARE BASED UPON NAVD88 DATUM
CONTOURS SHOWN ARE AT 1.0 FOOT INTERVALS

FLOOD ZONE

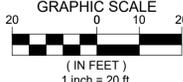
THE SUBJECT PROPERTY IS LOCATED INSIDE THE FLOOD ZONE DESIGNATION "X" PER FLOOD INSURANCE RATE MAP #12099C 0427 H1, DATED JANUARY 29TH, 2021.

ELEVATIONS - PRIMARY BENCHMARKS

THE ELEVATION DATUM SHOWN HEREON ARE BASED ON N.G.S. BENCHMARK "F-649", BEING AT AN ELEVATION +9.56 (NAVD88).
CONVERSION FACTOR FROM NGVD29 TO NAVD88 = -1.378 FEET

- NOTE:**
- FOR ADDITIONAL SITE LAYOUT INFORMATION REFER TO COORDINATE GEOMETRY SHEET C-205 & C-206.
 - FOR TRAFFIC PAVEMENT MARKING AND SIGNAGE INFORMATION REFER TO SHEET C-208.
 - FOR FIRE FLOW CALCULATIONS REFER TO FIRE ACCESS PLAN SHEET C-209.

- CONFLICT NOTE:**
- CONCRETE CRADLES ARE REQUIRED WHERE STORM PIPES CROSS ABOVE ANOTHER UTILITY WITH LESS THAN 24" OF CLEARANCE (DETAIL US-66).
 - REFER TO SHEET C-302 FOR CONCRETE CRADLE DETAIL US-66.
 - MAINTAIN 3 FOOT HORIZONTAL CLEARANCE BETWEEN DRAINAGE AND OTHER UTILITIES.



SANITARY SEWER STRUCTURE TABLE		
STRUCTURE NAME	DESCRIPTION	STRUCTURE DATA
SMH-01 NEW DOG-HOUSE 4' DIA.	Concentric Cylindrical Structure PRECAST CONCRETE	RIM = 5.20 EX-P01 INV IN = 0.19 SP-05 INV IN = 0.30 EX-P02 INV OUT = 0.19
SMH-03 NEW DOG-HOUSE 4' DIA.	Concentric Cylindrical Structure PRECAST CONCRETE	RIM = 6.55 EX-P03 INV IN = 1.62 EX-P04 INV OUT = 1.62 SP-06 INV IN = 1.75
SMH-04 4' DIA.	Concentric Cylindrical Structure PRECAST CONCRETE	RIM = 7.05 SP-05 INV OUT = 1.39
SMH-05 4' DIA.	Concentric Cylindrical Structure PRECAST CONCRETE	RIM = 6.09 SP-06 INV OUT = 2.80

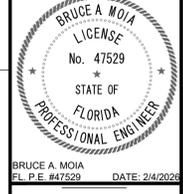
SANITARY SEWER PIPE TABLE				
PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
SP-05	8"Ø	273'	0.40%	PVC SDR35
SP-06	8"Ø	262'	0.40%	PVC SDR35

NO.	REVISIONS	DATE
1	COMMENTS	
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1250 W. EAU GALLE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
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VERO: 772.669.0036, FT. PIERCE: 772.466.9056, PALM CITY: 772.466.9690

SANITARY SEWER PLAN AND PROFILE

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS



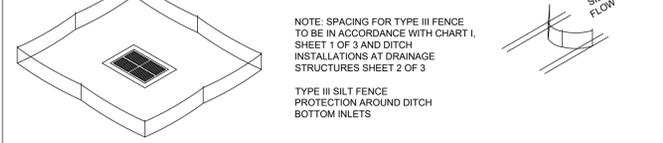
C-405

SHEET 24-1104

PERMITTING SET



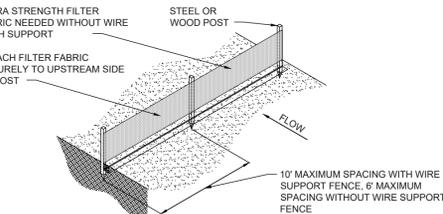
TYPE III SILT FENCE



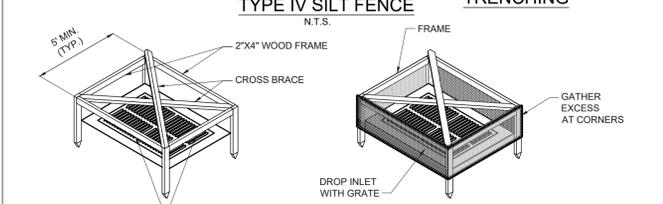
DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

SILT FENCE APPLICATIONS

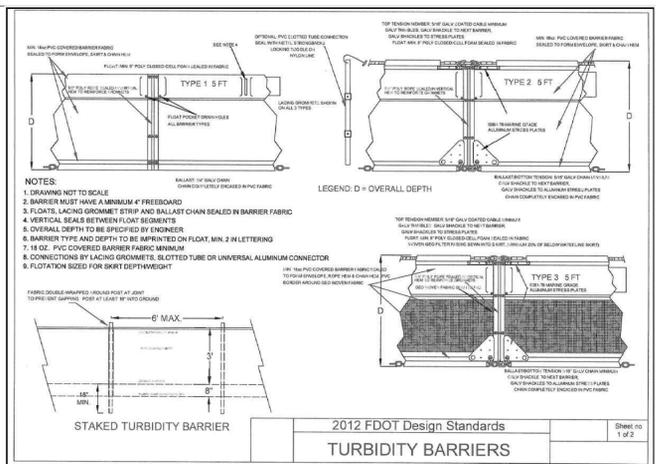
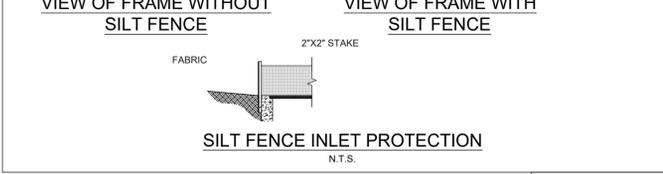
- SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
- INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
- REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.



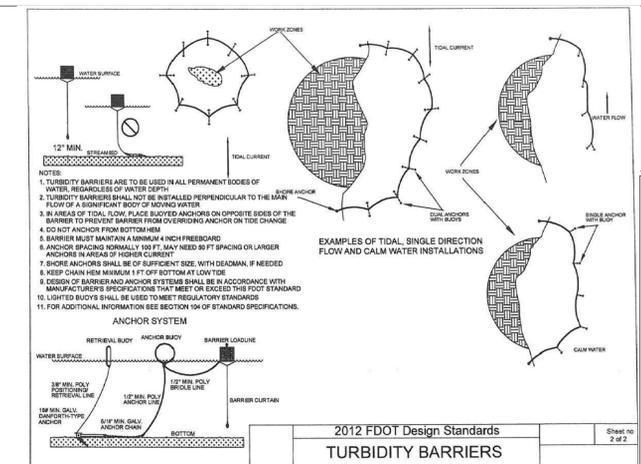
TYPE IV SILT FENCE



SILT FENCE INLET PROTECTION

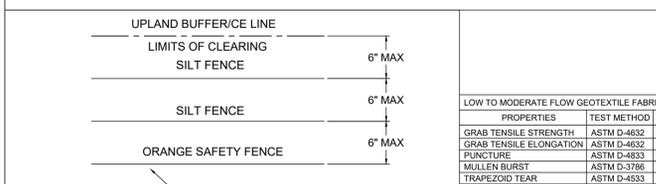


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TURBIDITY BARRIERS

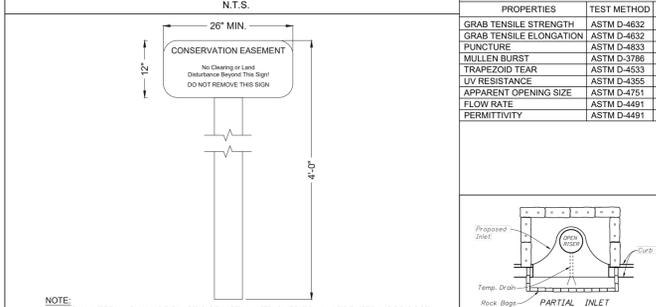


2012 FDOT Design Standards
TURBIDITY BARRIERS

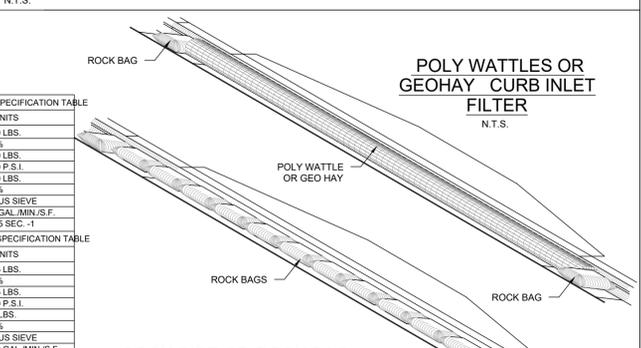
TURBIDITY BARRIER APPLICATIONS



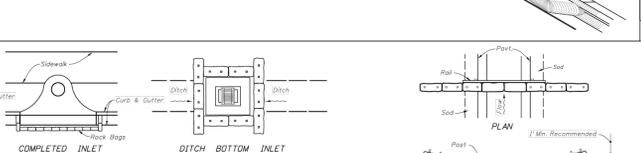
SILT FENCE/ORANGE FENCE PLACEMENT DETAIL AROUND WETLANDS



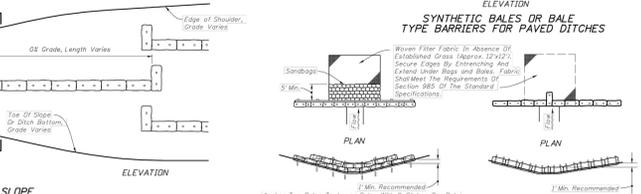
CONSERVATION EASEMENT SIGN



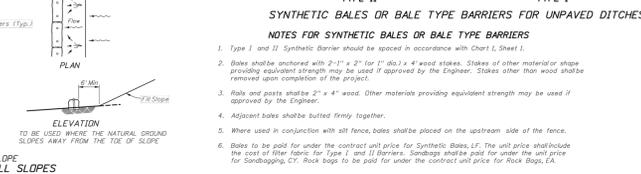
SOCK-PIPE OR ROCK BAG INLET FILTER



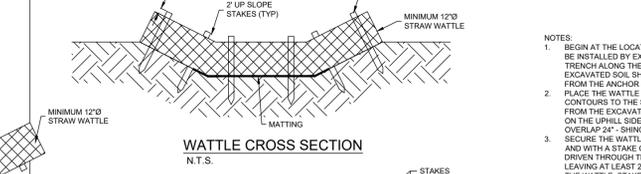
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



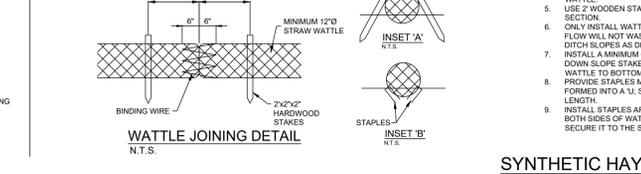
SYNTHETIC BALES OR BALE TYPE BARRIERS FOR UNPAVED DITCHES



WATTLE CROSS SECTION



WATTLE TOP VIEW

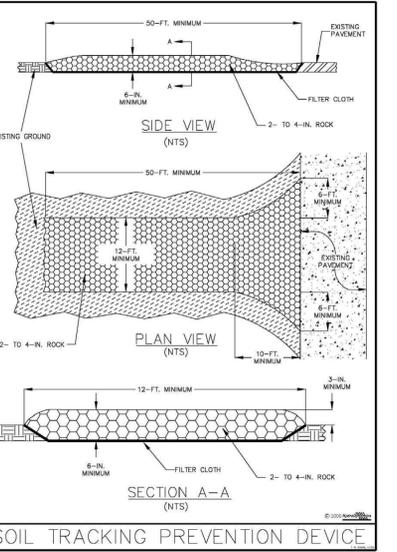


SYNTHETIC HAY BALE DETAILS

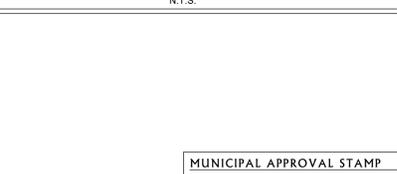
EROSION AND SEDIMENTATION CONTROL NOTES
CONSTRUCTION ACTIVITIES CAN RESULT IN THE GENERATION OF SIGNIFICANT AMOUNTS OF POLLUTANTS WHICH MAY REACH SURFACE OR GROUND WATERS. ONE OF THE PRIMARY POLLUTANTS OF SURFACE WATERS IS SEDIMENT DUE TO EROSION. EXCESSIVE QUANTITIES OF SEDIMENT WHICH REACH WATER BODIES OF FLOOD PLAINS HAVE BEEN SHOWN TO ADVERSELY AFFECT THEIR PHYSICAL, BIOLOGICAL AND CHEMICAL PROPERTIES. TRANSPORTED SEDIMENT CAN OBSTRUCT STREAM CHANNELS, REDUCE HYDRAULIC CAPACITY OF WATER BODIES OF FLOOD PLAINS, REDUCE THE DESIGN CAPACITY OF CULVERTS AND OTHER WORKS, AND ELIMINATE BENTHIC INVERTEBRATES AND FISH SPAWNING SUBSTRATES BY SILTATION. EXCESSIVE SUSPENDED SEDIMENTS REDUCE LIGHT PENETRATION AND THEREFORE, REDUCE PRIMARY PRODUCTIVITY.

MINIMUM STANDARDS

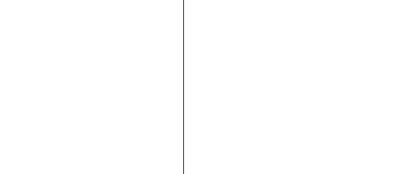
- SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON SITE. PERIMETER STRUCTURES SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OR TRASH FROM FLOWING OR FLOATING ON TO ADJACENT PROPERTIES.
- PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENIED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENIED AREAS THAT MAY NOT BE ACCOMPLISHED. THE DEVELOPER, OWNER AND/OR CONTRACTOR SHALL BE CONTINUALLY RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON THE SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENIED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE REVIEWER, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
- AFTER ANY SIGNIFICANT RAINFALL, SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED FOR INTEGRITY. ANY DAMAGED DEVICES SHALL BE CONCRETED IMMEDIATELY.
- CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
- WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH OR CHANNEL. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT AND WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
- BEFORE TEMPORARY OR NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
- WHEN CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE WITH CURBS AND GUTTERS, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- PROPERTIES AND WATERWAYS DOWNSTREAM FROM CONSTRUCTION SITE SHALL BE PROTECTED FROM SEDIMENT DISPOSITION AND EROSION.
- PHASED PROJECTS SHOULD BE CLEARED IN CONJUNCTION WITH CONSTRUCTION OF EACH PHASE.
- EROSION CONTROL DESIGN AND CONSTRUCTION SHALL FOLLOW THE REQUIREMENTS OF THE FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL MANUAL (JULY 2016).
- THE REVIEWER MAY APPROVE MODIFICATIONS OR ALTER PLANS TO THESE EROSION CONTROL CRITERIA DUE TO SITE SPECIFIC CONDITIONS.



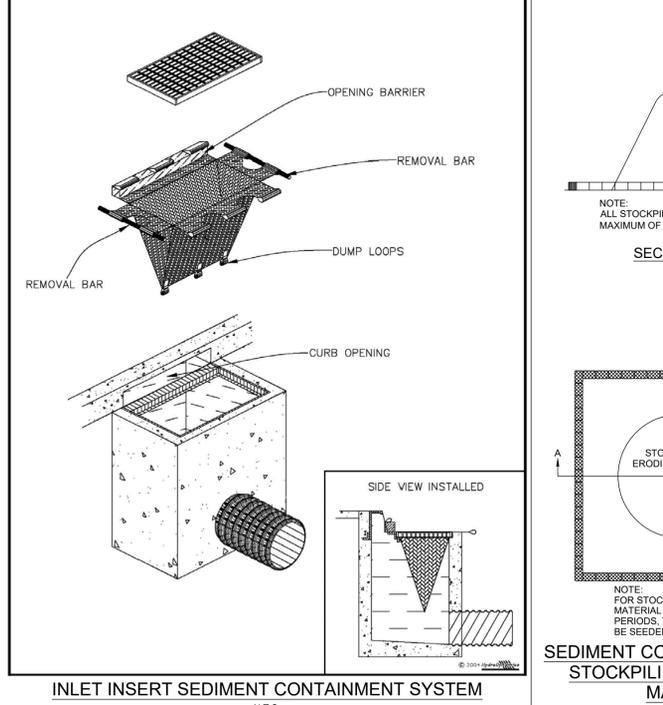
SOIL TRACKING PREVENTION DEVICE



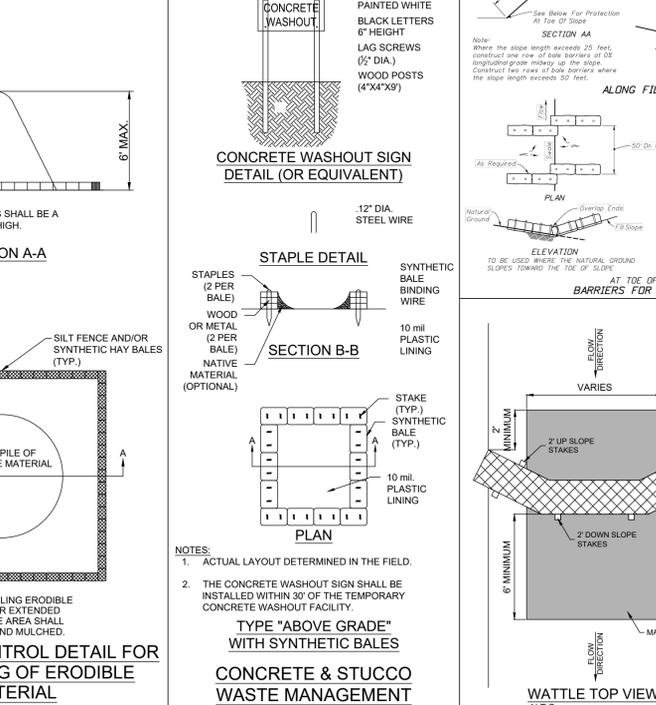
CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)



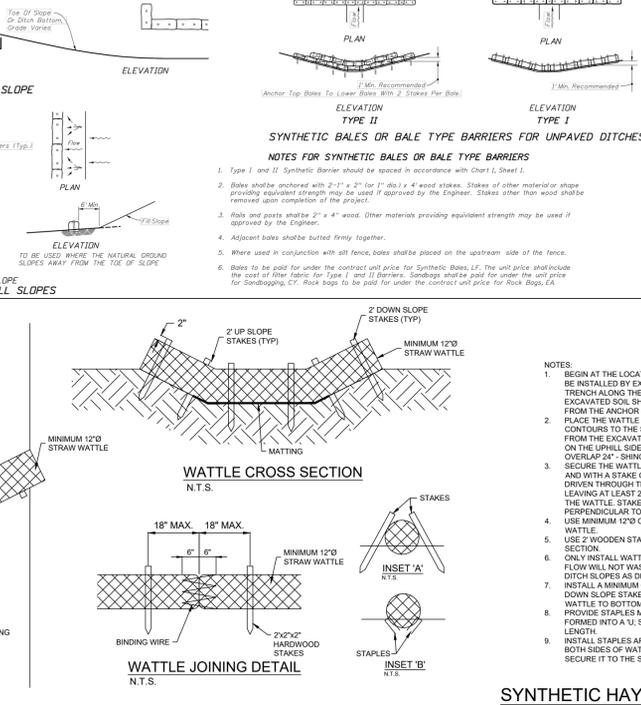
WATTLE CROSS SECTION



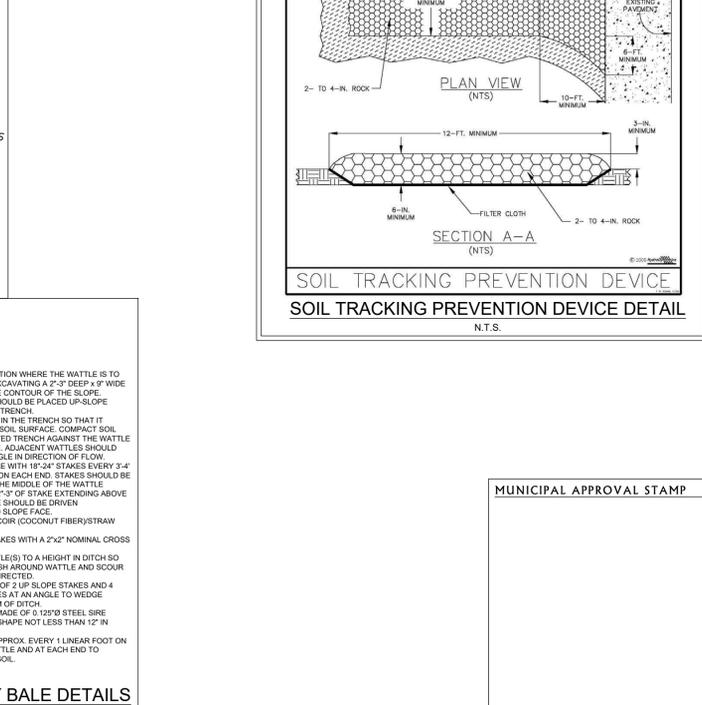
INLET INSERT SEDIMENT CONTAINMENT SYSTEM



CONCRETE & STUCCO WASTE MANAGEMENT



CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)



CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

BRUCE A MOIA LICENSE No. 47529 STATE OF FLORIDA PROFESSIONAL ENGINEER

BRUCE A MOIA FL. P.E. #47529 DATE: 2/14/2026

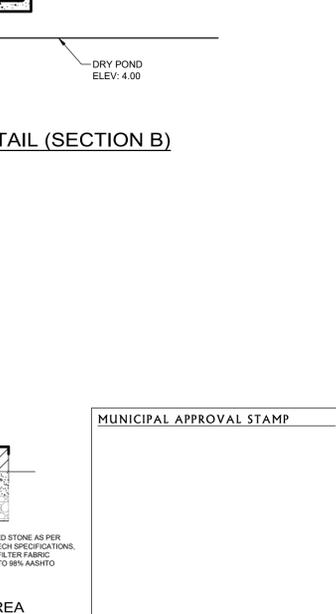
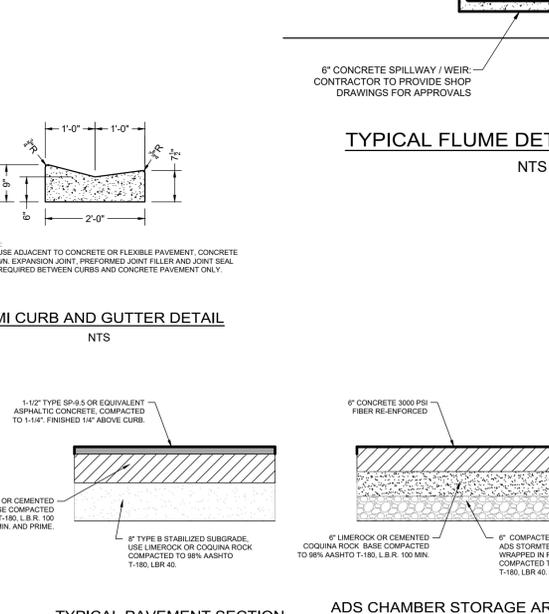
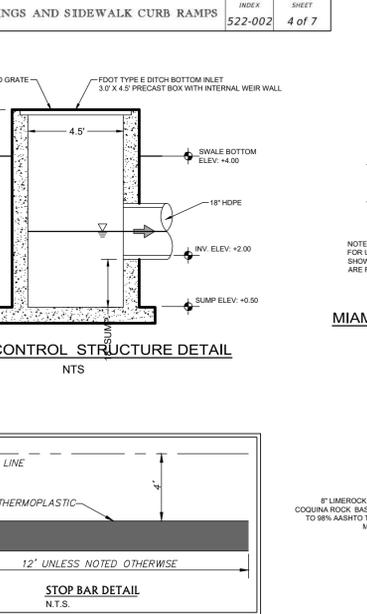
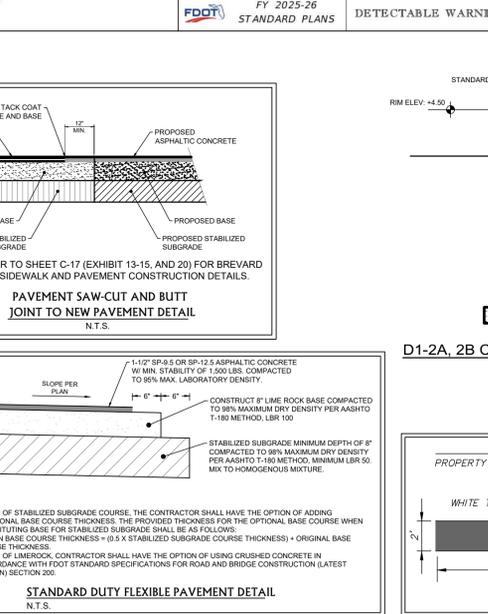
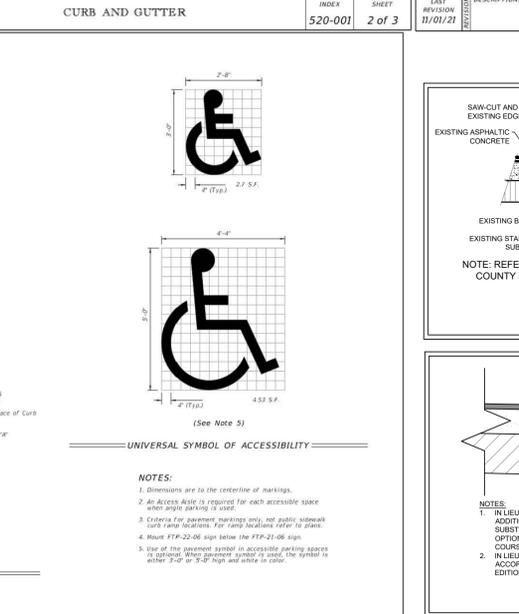
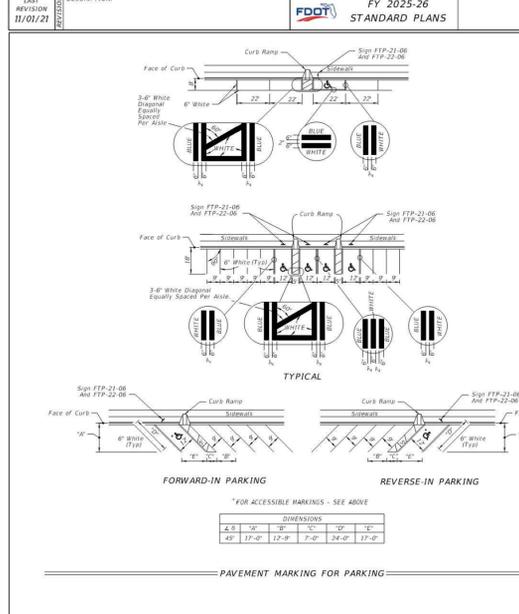
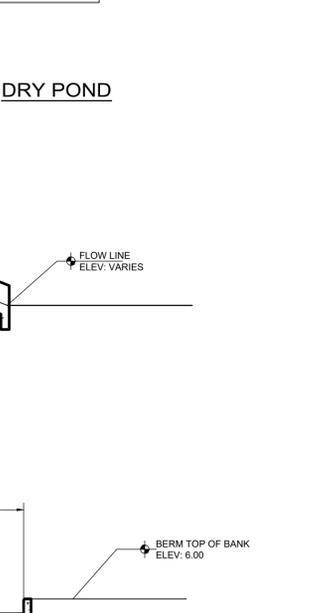
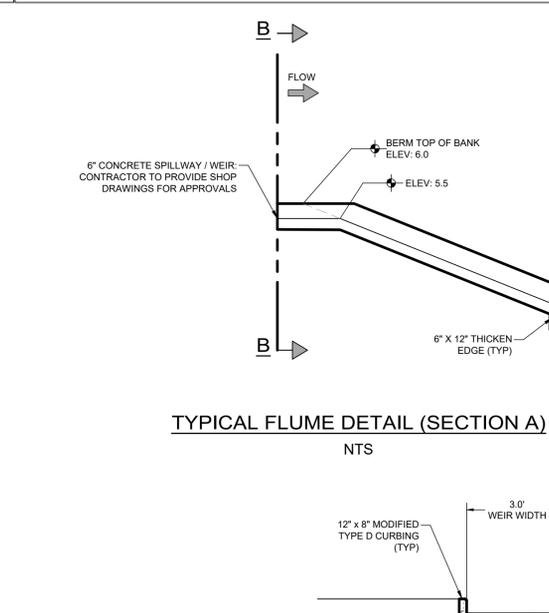
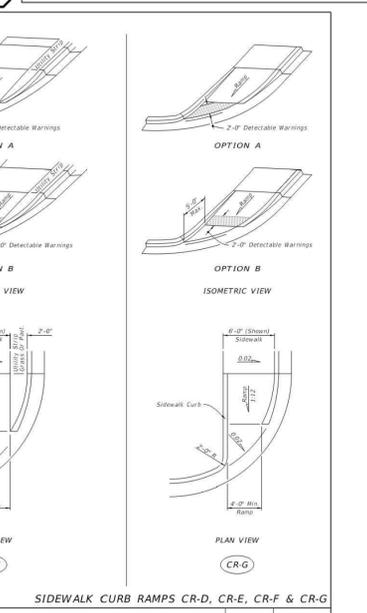
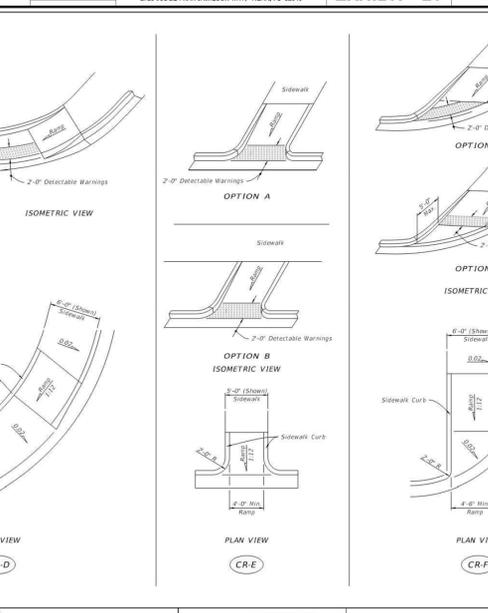
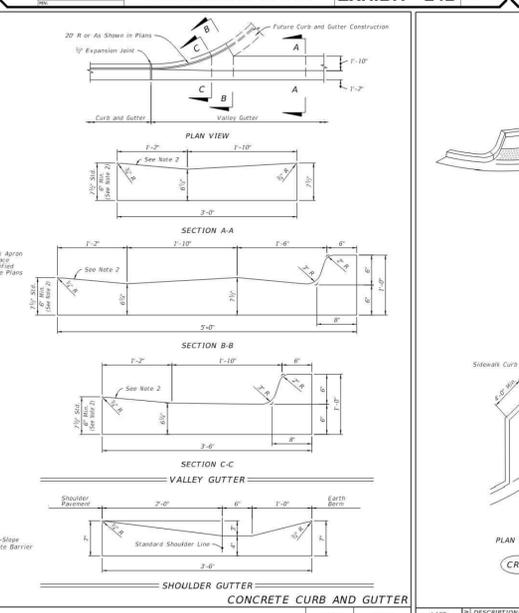
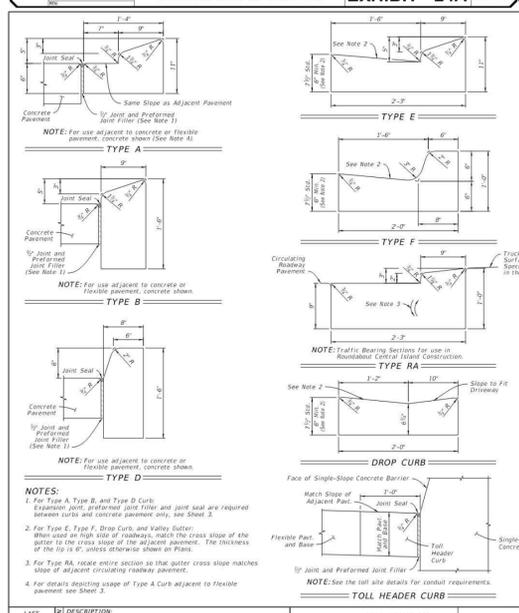
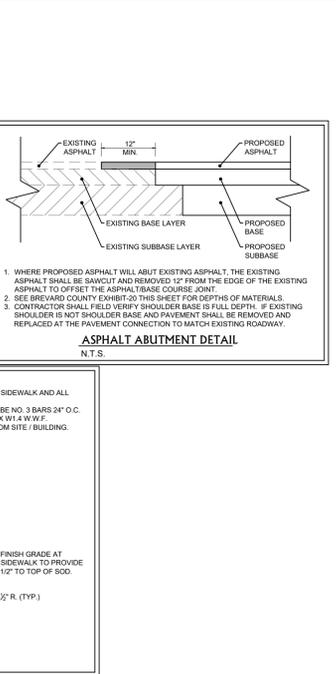
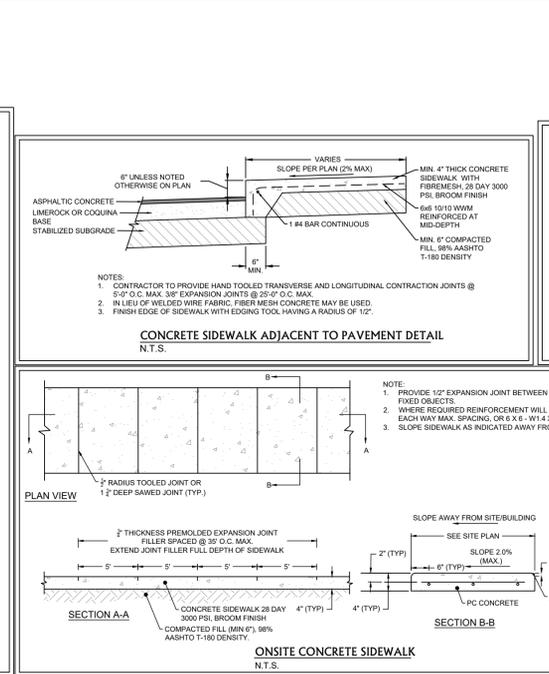
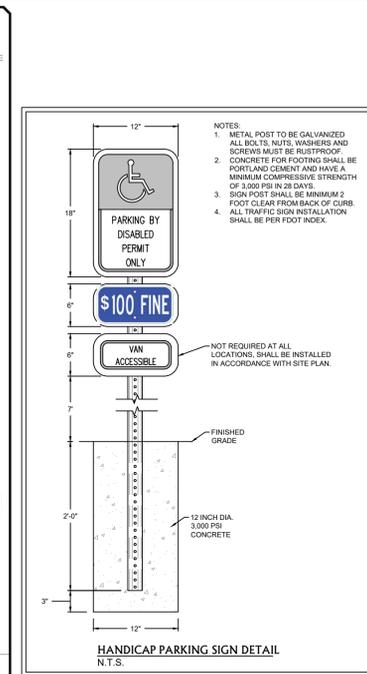
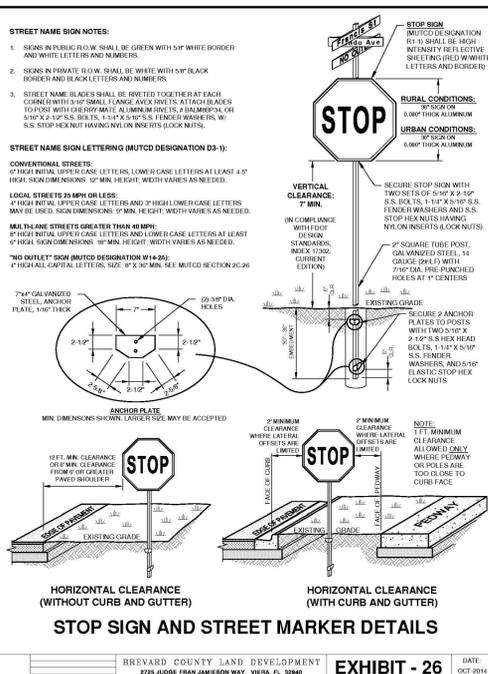
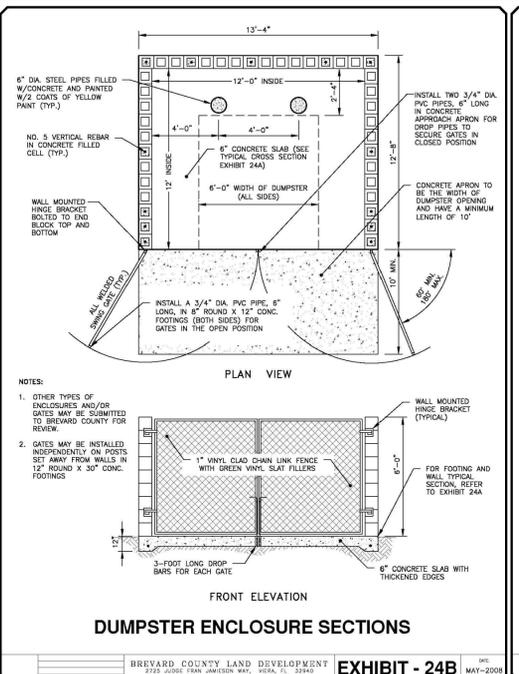
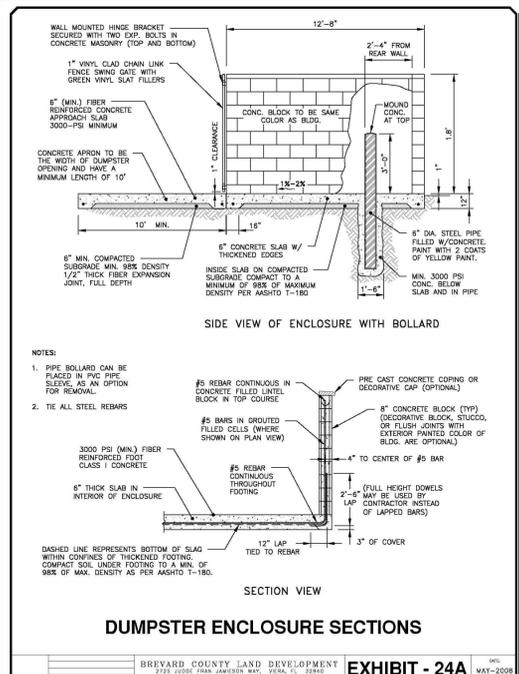
C-801

SHEET 24-1104 PERMITTING SET

JOB NO. 24-1104
DESIGNED BY [blank]
DRAWN BY [blank]
DATE JANUARY, 2026
CHECKED BY [blank]
DATE ISSUED 2/14/2026

COMMENTS: [blank]

REVISIONS: [blank]



NO.	DATE	REVISIONS	COMMENTS
1	2/14/2026	BAM	DATE ISSUED
2			
3			
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MBV ENGINEERING, INC.
 MOA BOWEN VILLALBAZAR & ASSOCIATES
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 VERO: 772.689.0036, FT. PIERCE: 772.466.6056, PALM CITY: 772.466.9690

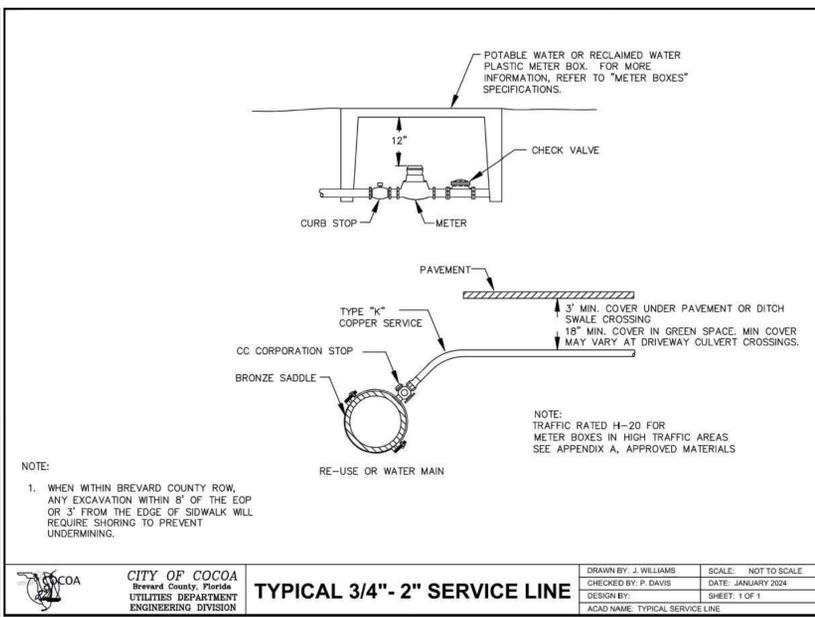
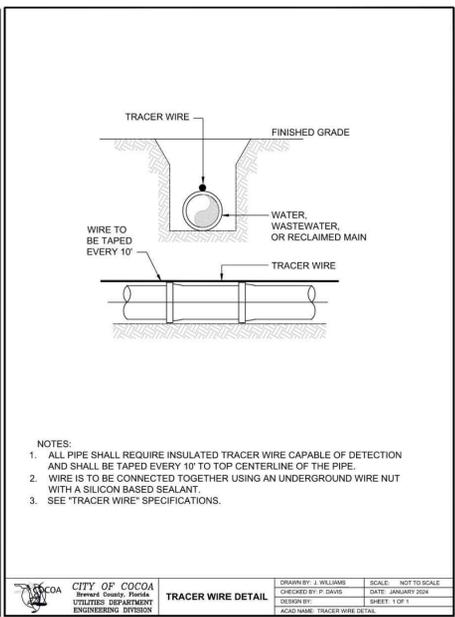
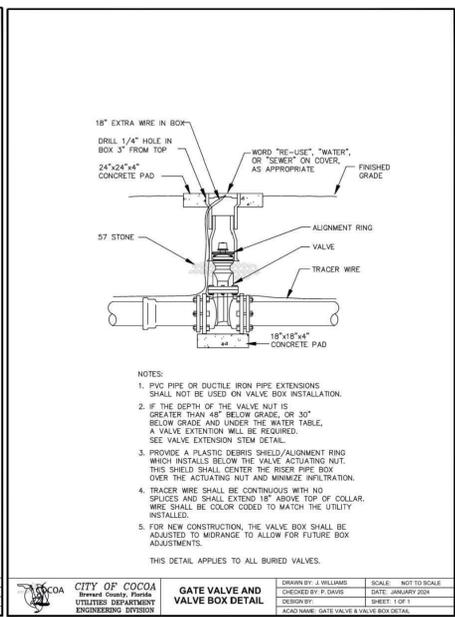
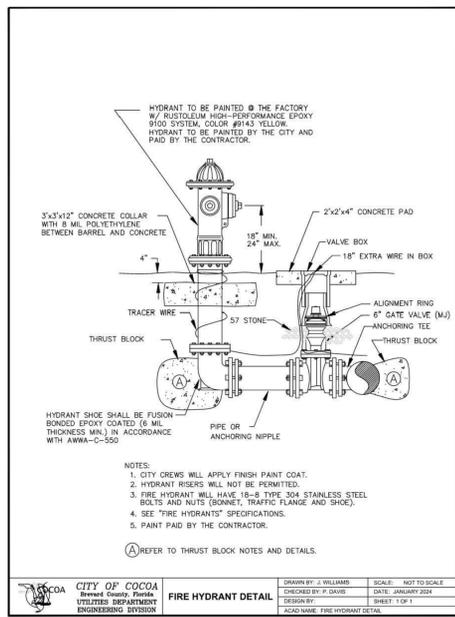
THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS

FLORIDA

BRUCE A. MOIA LICENSE No. 47529 STATE OF FLORIDA PROFESSIONAL ENGINEER

C-802

SHEET 24-1104 PERMITTING SET



RESTRAINED PIPE TABLE
FORCE MAINS

TYPE	PIPE SIZE			
	4"	6"	10"	16"
90° BEND	11	16	20	24
45° BEND	5	7	9	11
22-1/2° BEND	3	4	4	5
11-1/4° BEND	2	2	2	3
PLUG, BRANCH OF TEE, VALVE	25	35	45	64

NOTES:

- FITTINGS SHALL BE RESTRAINED JOINTS.
- INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN SHOWN IN THE TABLE.
- WHERE TWO OR MORE FITTINGS ARE TOGETHER, USE FITTING WHICH YIELDS GREATEST LENGTH OF RESTRAINED PIPE.
- ALL LINE VALVES AND THROUGH RUN OF TEES SHALL BE RESTRAINED.
- LENGTHS SHOWN IN THE TABLE HAVE BEEN CALCULATED USING THE EBMA IRON RESTRAINT LENGTH CALCULATOR WITH THE FOLLOWING ASSUMPTIONS:
WORKING PRESSURE: 70 PSI
SOIL DESIGNATION: SM (SAND SILT)
SAFETY FACTOR: 2.0 TO 1
TRENCH TYPE: 3
DEPTH OF BURY: 3 FT
- TABLE IS FOR PVC ONLY. RESTRAINED LENGTH FOR ALTERNATE MATERIALS WILL NEED TO BE SUBMITTED TO THE ENGINEERING DIVISION FOR APPROVAL.

CITY OF COCOA
Brevard County, Florida
UTILITIES DEPARTMENT
ENGINEERING DIVISION

DRIVEN BY: P. DAVIS
CHECKED BY: S. JOSEPH
SCALE: NOT TO SCALE
DATE: JANUARY 2024
DESIGN BY: P. DAVIS
SHEET: 1 OF 1
ACAD NAME: RESTRAINED PIPE TABLE FORCE MAINS

THRUST BLOCK NOTES

- WRAP ALL FITTINGS WITH POLYETHYLENE FILM BEFORE POURING THRUST BLOCK, MAKING CERTAIN TO KEEP CONCRETE AWAY FROM ALL BOLTS, GLANDS, AND FLANGES.
- THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED EARTH.
- REQUIRED VOLUMES OF BEARING AREAS TO BE AS SHOWN IN CHART. ADJUSTMENTS, IF NEEDED, WILL BE ALLOWED TO CONFORM TO TEST PRESSURE AND ALLOWABLE SOIL BEARING STRESS AS SHOWN IN SPECIFICATIONS.
- BEARING AREA FOR TRANSIT BLOCKS ON HORIZONTAL BENDS IS BASED ON A TEST PRESSURE OF 150 P.S.I. AND SOIL BEARING STRESS OF 2,000 P.S.F. THE DEPTH TO THE THRUST BLOCK BASE TO BE EQUAL TO OR GREATER THAN TWICE THE HEIGHT. (EXAMPLE: IF BLOCK IS 2" THICK, THE BASE IS TO BE NO GREATER THAN 4" BELOW GRADE.)
- VERTICAL BEND THRUST BLOCKS TO BE THE SAME AS HORIZONTAL BENDS.
- BEARING AREA OF THRUST BLOCK TO BE NOT LESS THAN ONE SQUARE FOOT.

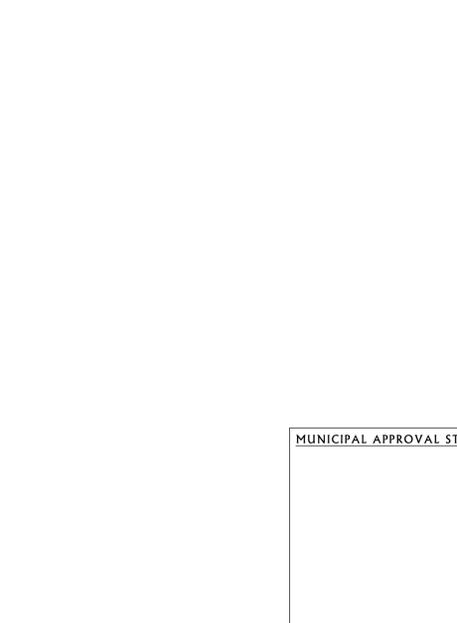
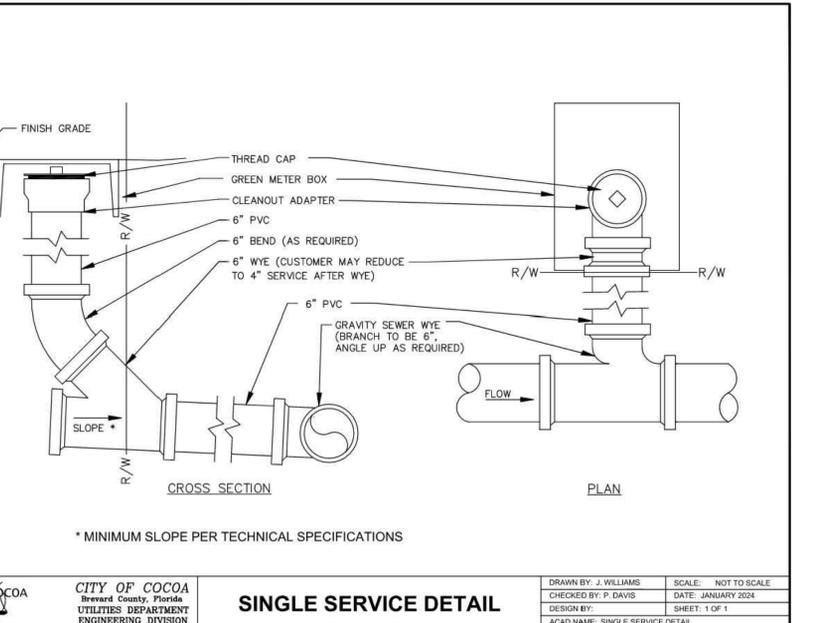
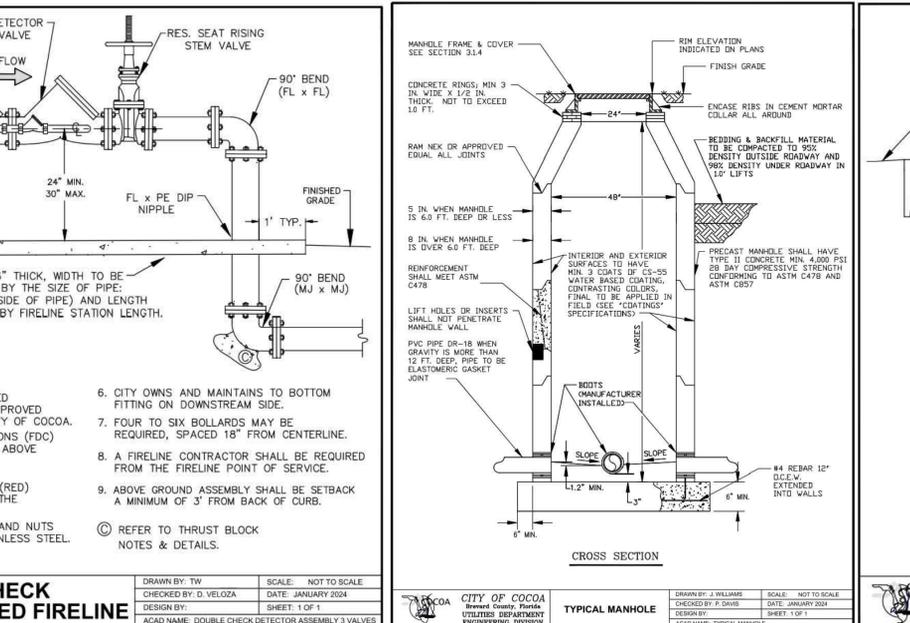
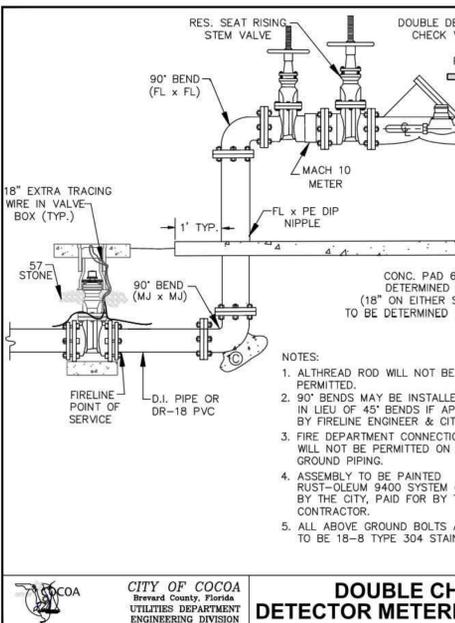
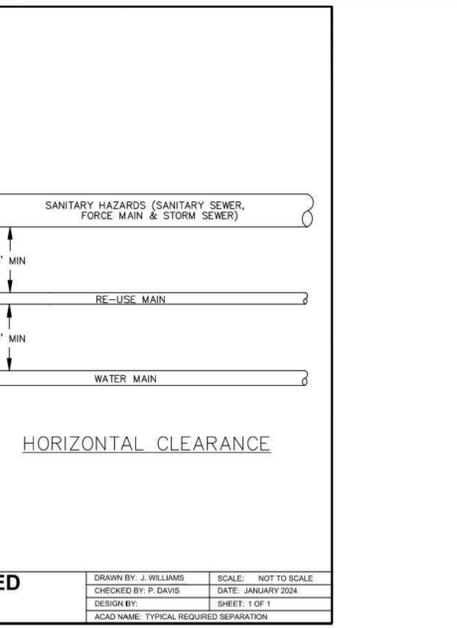
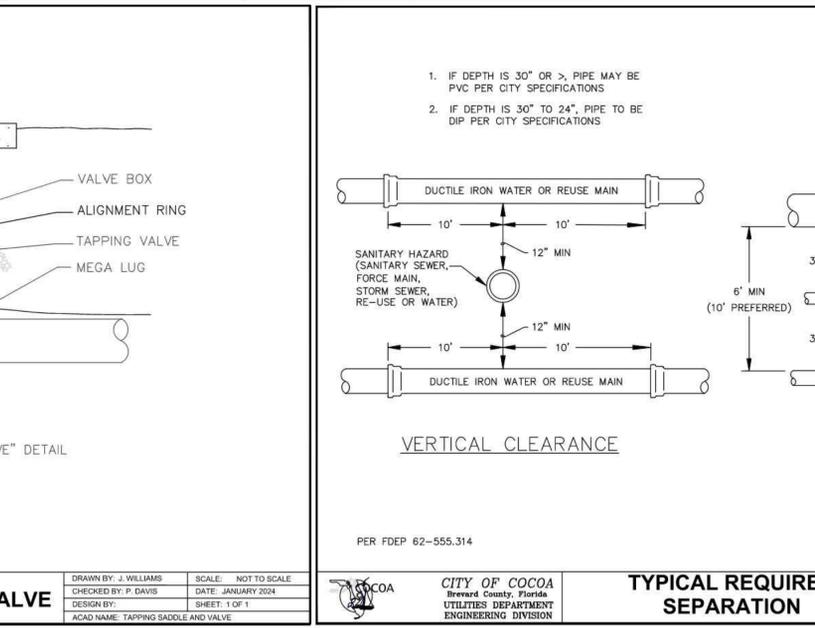
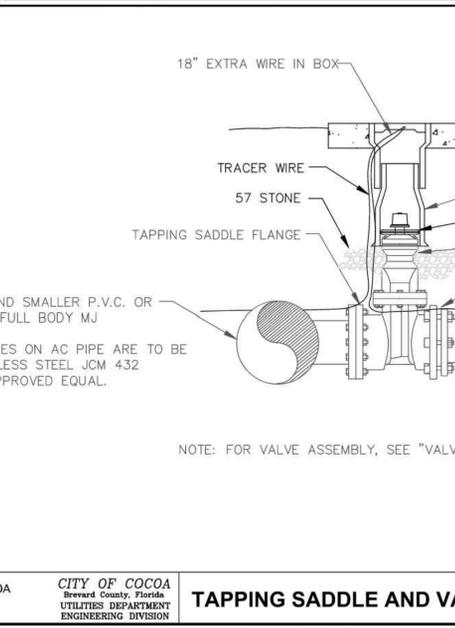
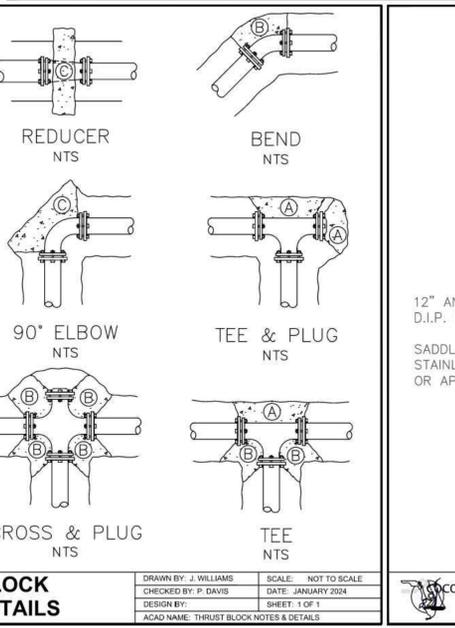
MINIMUM BEARING AREA (SQ. FT.)

LETTER	PIPE SIZE					
	4"	6"	8"	10"	12"	16"
A	1-1/2	2-3/4	5	7-1/4	10-1/4	18
B (22-1/2)	3/4	2	3	4	7	11
B (45°)	1	2-1/4	3-3/4	5-1/2	8	13-3/4
C	2	4	7	11-1/4	14-1/2	25-1/4

THE FIGURES IN THIS TABLE REPRESENT AREA OF CONCRETE BLOCKING AGAINST THE VERTICAL TRENCH WALL OF UNDISTURBED EARTH IN SQUARE FEET AT 2000 P.S.F. SOIL BEARING CAPACITY.

CITY OF COCOA
Brevard County, Florida
UTILITIES DEPARTMENT
ENGINEERING DIVISION

DRIVEN BY: J. WILLIAMS
CHECKED BY: P. DAVIS
SCALE: NOT TO SCALE
DATE: JANUARY 2024
DESIGN BY: P. DAVIS
SHEET: 1 OF 1
ACAD NAME: THRUST BLOCK NOTES & DETAILS



REVISIONS

NO.	DATE	DESCRIPTION
1	2/1/2026	DATE ISSUED
2	JANUARY, 2026	CHECKED
3		DATE
4		BID
5		BID
6		BID
7		BID
8		BID
9		BID
10		BID

COMMENTS

24-1104

MBV ENGINEERING, INC.
MOA BOWEN VILLAZAR & ASSOCIATES
Civil • Structural • Surveying • Environmental
1250 W. GAILLIE BLVD., SUITE H
MELBOURNE, FLORIDA 32935
P: 321.491.9911
F: 321.491.9912
ALSO WITH OFFICES IN:
VERO: 772-689-0036, FT. PIERCE: 772-466-9056, PALM CITY: 772-456-9690

THE JADE AT MERRITT ISLAND APARTMENTS - HOTEL TO MULTI-FAMILY APARTMENTS
BREVARD COUNTY, FLORIDA

BRUCE A. MOIA
LICENSE No. 47529
STATE OF FLORIDA
PROFESSIONAL ENGINEER

BRUCE A. MOIA
FL. P.E. #47529
DATE: 2/4/2026

C-803

SHEET 24-1104

PERMITTING SET

SECTION 2. WATER - POTABLE AND RECLAIMED

2. WATER - POTABLE AND RECLAIMED

2.1 WATER MAIN CROSSINGS

2.1.1 GENERAL

IN ALL CASES WHERE SANITARY GRAVITY OR FORCE MAINS CROSS WATER MAINS THE CROSSING SHALL MEET THE VERTICAL AND HORIZONTAL SEPARATION REQUIREMENTS OF FAC RULE 62-553.31...

2.2 MATERIALS SPECIFICATIONS

2.2.1 PIPE

2.2.1.1 POLYVINYL CHLORIDE PRESSURE PIPE, 4" - 12" (POTABLE WATER)

POLYVINYL CHLORIDE PRESSURE PIPE (SIZES 4" THROUGH 12") WITH CAST IRON PIPE OUTSIDE DIAMETER (CID) AND CLASS 235 (DR 18) CONFORMING TO THE AMERICAN WATER WORKS ASSOCIATION'S (AWWA) SPECIFICATION C900 AND WILL BE BLUE OR WHITE IN COLOR...

2.2.1.2 FUSIBLE POLYVINYL CHLORIDE PIPE, 4" - 12" (POTABLE WATER)

FUSIBLE POLYVINYL CHLORIDE PIPE (SIZE 4" THROUGH 12") WITH CAST IRON PIPE OUTSIDE DIAMETER (CID) AND PRESSURE RATING OF 235 PSI (DR 18) CONFORMING TO AWWA SPECIFICATION C900 AND WILL BE BLUE OR WHITE IN COLOR...

2.2.1.3 DUCTILE IRON PIPE (POTABLE WATER)

DUCTILE IRON PIPE WILL BE CEMENT-LINED PRESSURE CLASS 350 FOR 12"-DIAMETER AND SMALLER AND CLASS 250 FOR 16" AND LARGER CONFORMING TO AWWA SPECIFICATION C151. WATER MAIN AND STORM DRAIN CROSSING SHALL BE PROPERLY DESIGNED BY THE PROJECT ENGINEER AND APPROVED BY THE UTILITIES DEPARTMENT PRIOR TO INSTALLATION...

2.2.1.4 HIGH DENSITY POLYETHYLENE (HDPE) PIPE (POTABLE WATER)

HDPE PIPE IS GENERALLY NOT ACCEPTED IN THE CITY OF COCOA WATER SYSTEM, EXCEPT AS A CARRIER PIPE FOR A PRESSURIZED UTILITY MAIN.

2.2.1.5 RECLAIMED WATER

PVC PIPE INSTALLED IN RECLAIMED WATER SYSTEMS WILL BE CLASS 235 (DR 18) CONFORMING TO AWWA SPECIFICATION C900 AND WILL BE PURPLE IN COLOR. DUCTILE IRON PIPE INSTALLED IN THE RECLAIMED WATER SYSTEMS WILL BE CLASS 350 FOR 12" AND SMALLER AND PRESSURE RATING OF CLASS 250 FOR 16" AND LARGER...

2.2.2 VALVES, VALVE BOXES, AND VALVE EXTENSIONS

2.2.2.1 RESILIENT SEAT GATE VALVES, 4" - 36"

RESILIENT SEAT GATE VALVES WILL HAVE MECHANICAL JOINT ENDS AS MANUFACTURED BY AMERICAN FLOW CONTROL; AVK; M&H; U.S. PIPE; CLOW; MUELLER OR AN APPROVED EQUAL. THE RESILIENT SEAT SPECIFICATION C500 OR C515 (DR 18) CONFORMING TO AWWA SPECIFICATION C500 AND MANUFACTURED IN THE U.S.A. RESILIENT SEATS WILL BE OF NATURAL OR SYNTHETIC RUBBER AND BE FULLY ENCAPSULATED TO GATE. VALVES WILL HAVE 1/8" TYPE 304 STAINLESS STEEL BOLTS AND NUTS...

2.2.2.2 BUTTERFLY VALVES, 16" AND LARGER

BUTTERFLY VALVES SHALL BE USED FOR ABOVE GROUND SERVICE. BUTTERFLY VALVES SHALL HAVE FLANGED ENDS. RUBBER END OF RUBBER END. SHORT BODY. EXTERIOR AND INTERIOR WILL BE FUSION-BONDED EPOXY COATED IN ACCORDANCE WITH AWWA SPECIFICATION C550. THE VALVE SHALT WILL BE OF GRADE 316 STAINLESS STEEL. BODY DIMENSIONS AND MINIMUM SHAFT DIAMETER WILL BE IN ACCORDANCE WITH TABLES 1 AND 2 OF AWWA SPECIFICATION C504. THE VALVE SEAT WILL BE OF MOLDED NATURAL OR SYNTHETIC RUBBER...

2.2.2.3 VALVES, 2"

2" VALVES FOR USE WITH THE 2" BLOW-OFF GATE VALVE WILL BE RATED AT 120 SWP OR 200 WOG. ALL 2" GATE VALVES MUST MEET ALL EPA AND FDEP REQUIREMENTS REGARDING LEAD AND ZINC CONTENTS. BRASS FITTINGS AND TRAP VALVES ARE SHALL BE USED ON BLOW-OFFS. ALL VALVES MUST BE MANUFACTURED IN THE U.S.A.

2.2.2.4 VALVE BOXES

VALVE BOXES AND LIDS MUST BE MANUFACTURED IN THE U.S.A. BOXES AND LIDS MUST BE STRUCTURALLY SOUND AND BE PROTECTED BY EAST JORDAN IRON WORKS OR TYLER AND MUST HAVE 5/16" MINIMUM INSIDE DIAMETER. CAST IRON VALVE BOXES WILL CONSIST OF A CIRCULAR CAST IRON TOP AND BOTTOM SECTION. THE DEPTH MUST BE DETERMINED, AND THE APPROPRIATE VALVE BOX MUST BE INSTALLED IN THE VALVE BOX. BOXES MUST BE SET FLUSH WITH FINISHED GROUND SURFACE IN SUCH A MANNER AS TO PERMIT EASY USE OF A VALVE WRENCH AND TO PREVENT SURFACE LOADS FROM BEING TRANSMITTED TO THE VALVE OR PIPE...

2.2.2.5 VALVE EXTENSIONS

IF THE DEPTH OF THE VALVE NUT IS GREATER THAN 48" BELOW GRADE, OR 30" BELOW GRADE AND UNDER THE WATER TABLE, A VALVE EXTENSION STEM WILL BE REQUIRED. THE EXTENSION WILL HAVE A CENTERING COLLAR AND WILL BE MECHANICALLY ATTACHED TO THE VALVE OPERATING NUT, SUCH AS EXTENSIONS MANUFACTURED BY THE GENERAL ENGINEERING COMPANY, MODEL #4640-001-3, OR AN APPROVED EQUAL TO BE DETERMINED BY THE ENGINEERING SUPERVISOR OR HIS/HER DESIGNEE.

2.2.2.6 VALVE BOX DEBRIS SHIELD

ALL BURIED VALVES 4" THROUGH 12" REQUIRING A VALVE BOX SHALL BE FURNISHED WITH A VALVE BOX SHIELD (ALIGNMENT DEVICE). THE DEVICE SHALL MINIMIZE DEBRIS INFILTRATION AND CENTER THE VALVE BOX OVER THE OPERATING NUT. THE DEVICE SHALL BE MADE OF HDPE OR PLASTIC AND BE COLORED WHITE OR BLACK. IT SHALL BE FURNISHED IN TWO PIECES THAT WILL LOCK TOGETHER UNDER THE OPERATING NUT. THE DEBRIS SHIELD SHALL BE DESIGNED TO PROTECT THE OPERATING NUT. THE DEVICE SHALL NOT AFFECT THE OPERATION OF THE VALVE. NO ONE-PIECE DEVICE WILL BE ACCEPTED. THE DEVICE SHALL BE BOX LOG, AMERICAN OR APPROVED EQUAL.

2.2.2.7 INSERT VALVE SPECIFICATION

THE INSERT VALVE SHALL CONFORM TO THE FOLLOWING: THE DUCTILE IRON 250 PSIG INSERT VALVE SHALL BE A RESILIENT WEDGE GATE VALVE DESIGNED FOR USE IN POTABLE WATER, RECLAIMED WATER, WASTEWATER AND BACKFLOW CONTROL SYSTEMS. THE HOST PIPE SHALL NOT BE A PERMANENT COMPONENT OF THE INSERT VALVE. THE DUCTILE IRON BODY, BONNET, AND WEDGE PROVIDE STRENGTH AND A PRESSURE RATING THAT IS A MAXIMUM OF 24" ABOVE FINISHED GRADE. A MECHANICAL JOINT HYDRANT CONNECTION WILL BE PROVIDED USING A HYDRANT VALVE-ANCHORING TIE WITH INTEGRALLY CAST STANDARD MECHANICAL JOINT GLAND ON 6" FLANGE END BRANCH. THE CONTRACTOR WILL NOT BE ALLOWED TO INSTALL RISERS ON HYDRANTS. AT FINAL INSPECTION, IF IT IS DETERMINED THAT A FIRE HYDRANT IS NOT AT GRADE, THE CONTRACTOR SHALL PURCHASE A PROPER LENGTH HYDRANT AND INSTALL IT UNDER THE DIRECTION OF THE ENGINEERING DIVISION.

SEE "APPENDIX A" APPROVED MATERIALS FOR APPROVED INSERT GATE VALVES.

2.2.3 BACKFLOW PREVENTERS

ALL CONNECTIONS TO THE CITY OF COCOA POTABLE WATER SYSTEM SHALL CONTAIN A BACKFLOW PREVENTER ASSEMBLY AS REQUIRED IN THE "CITY OF COCOA CROSS CONNECTION CONTROL PROGRAM MANUAL". BACKFLOW PREVENTER ASSEMBLIES SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATION C510, ASSE 1048, UL 1469, AND AS LISTED IN "APPENDIX A" OF THIS DOCUMENT. ALL BACKFLOW PREVENTERS SHALL BE INSTALLED PER STANDARD DETAILS IN "APPENDIX B". BACKFLOW PREVENTERS ON FIRE LINE AND COMMERCIAL SERVICES SHALL HAVE TEST CERTIFICATIONS SUBMITTED AND APPROVED PRIOR TO FINAL INSPECTION.

COMMERCIAL SERVICES: CROSS CONNECTION CONTROL DEVICE REQUIRED FOR COMMERCIAL SERVICE, INCLUDING MULTI-FAMILY RESIDENCES, SHALL BE A REDUCED PRESSURE (RP) BACKFLOW PREVENTER UNLESS OTHERWISE APPROVED BY THE ENGINEERING DIVISION. BACKFLOW PREVENTERS WILL HAVE INTERIOR FUSION-BONDED EPOXY COATING 5 TO 12 MILS. ALL PVC PIPE AND COUPLINGS WILL BEAR THE UL LABEL AND NSF APPROVAL FOR POTABLE WATER.

RESIDENTIAL SERVICES: CROSS CONNECTION CONTROL DEVICE REQUIRED FOR RESIDENTIAL SERVICE SHALL BE A DUAL CHECK BACKFLOW PREVENTER.

CONSTRUCTION SITES: CROSS CONNECTION CONTROL DEVICE REQUIRED FOR TEMPORARY CONSTRUCTION JUMPERS SHALL BE A DOUBLE CHECK BACKFLOW PREVENTER. THE CONTRACTOR SHALL PROTECT TO THE CITY OF COCOA POTABLE WATER SYSTEM BEFORE THE JUMPER IS PLACED INTO SERVICE.

2.2.3.2 FIRE SERVICES

CROSS CONNECTION CONTROL DEVICES FOR FIRE LINE SYSTEMS SHALL BE DOUBLE CHECK DETECTOR ASSEMBLIES OR REDUCED PRESSURE DETECTOR ASSEMBLIES (RPA) DCCA AND RPSA SHALL MEET THE REQUIREMENTS OF THE FLORIDA BUILDING CODE AND MUST BE SUPPLIED WITH A 1/2" OR LARGER BYPASS ASSEMBLY. DCCA WILL BE ACCEPTED AS A COMPLETE APPROVED ASSEMBLY IN ACCORDANCE WITH THE SECTION ON "BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL" IN THE UTILITIES HANDBOOK. THE ENGINEERING DIVISION WILL INSPECT THE INTERIOR OF THE DCCA PRIOR TO INSTALLATION. DCCA MUST BE INSTALLED HORIZONTALLY ABOVE GROUND IN A GRASSED OR NON-TRAFFIC AREA. THE DCCA WILL BE INSTALLED WITH 24" MINIMUM AND 30" MAXIMUM CLEARANCE FROM FINISHED GRADE. "N" SHAPED DCCA WILL BE HANDLED ON A CASE-BY-CASE BASIS. THE ENGINEERING DIVISION SHALL PAINT THE DCCA, TO BE PAID FOR BY THE DEVELOPER/CONTRACTOR. ALL NEW FIRE LINES CONSTRUCTED ARE REQUIRED TO BE METERED.

2.2.3.3 METER STATION BACKFLOW PREVENTER

BACKFLOW PREVENTERS FOR THE LARGE METER STATIONS (3" AND LARGER) ARE AN RP2 ASSEMBLY AND MANUFACTURED IN ACCORDANCE WITH AWWA C211. THE ASSEMBLY WILL BE INSTALLED SO AS TO RELIEVE WATER MAINS FROM FOUNDATIONS. THE METER STATION SHALL BE INSTALLED ABOVE THE METER STATION IS IN A PLANTER, THE TOP OF THE PLANTER IS CONSIDERED THE FLOOD RIM AND THE RELIEF VALVE OPENING SHALL BE 12" ABOVE THE CONCRETE SLAB. THE ENGINEERING DIVISION SHALL PAINT THE METER STATION ASSEMBLY, TO BE PAID FOR BY THE DEVELOPER/CONTRACTOR.

2" METER STATIONS WILL BE ALLOWED ON A CASE-BY-CASE BASIS AS APPROVED BY THE ENGINEERING DIVISION.

A MACH 10 USG R9001 METER & STRAINER TO BE USED ON 2" AND LARGER METER STATIONS.

2.2.3.4 BACKFLOW PREVENTER CERTIFICATION TEST

THE CONTRACTOR WILL PROVIDE TEST CERTIFICATIONS ON THE JUMPER BACKFLOW PREVENTER BEFORE JUMPER IS PLACED INTO SERVICE. BACKFLOW PREVENTERS ON FIRELINE AND METER STATIONS WILL HAVE TEST CERTIFICATIONS SUBMITTED AND APPROVED PRIOR TO FINAL INSPECTION.

2.2.4 FITTINGS

ALL FITTINGS MUST BE OF THE MECHANICAL JOINT TYPE WITH AN APPROVED JOINT RESTRAINT, OR PUSH-ON JOINT WITH A GASKET JOINT FITE RESTRAINT SYSTEM. ALL FITTINGS MUST BE MANUFACTURED IN THE U.S.A.

2.2.4.1 CAST IRON

CAST IRON FITTINGS WILL BE AWWA SPECIFICATION C110. CLASS 250, CEMENT LINED WITH INSIDE SEAL COATING. THE FITTINGS WILL BE BITUMINOUS COATED ON THE OUTSIDE AND BE WRAPPED WITH 6 MIL POLYETHYLENE (SEALED WITH TAPE). CAST IRON FITTINGS ARE ONLY TO BE USED IN LARGER APPLICATIONS WHERE DUCTILE IRON FITTINGS ARE NOT AVAILABLE.

2.2.4.2 DUCTILE IRON, 4" - 16"

DUCTILE IRON COMPACT FITTINGS (SIZES 4" THROUGH 16") MUST CONFORM TO AWWA SPECIFICATION C153. DUCTILE IRON COMPACT FITTINGS WILL BE MECHANICAL JOINT WITH AN INTERIOR CEMENT LINING WITH SEAL (SEALED WITH TAPE).

2.2.4.3 BOLTS

ALL BURIED MECHANICAL JOINT BOLTS AND NUTS MUST BE CORTEN STEEL. ALL ABOVE GROUND BOLTS AND NUTS FOR FLANGED FITTINGS MUST BE 1/8" TYPE 304 STAINLESS STEEL. NEVER-SIZE/ANTI-ZINC SHALL BE APPLIED TO ALL SS BOLTS AND NUTS.

2.2.4.4 TAPPING SLEEVE

TAPPING SLEEVES ON MAINS 4" TO 12" IN DIAMETER WILL BE ALL STAINLESS STEEL SLEEVES.

THE ALL STAINLESS STEEL SLEEVE SHALL BE FABRICATED FROM 304 STAINLESS STEEL. THEY SHALL HAVE A PASS-THROUGH BOLT DESIGN AND FULL CIRCUMFERENTIAL GASKET TO PROVIDE 360° SEAL AROUND THE PIPE. THE TAPPING SLEEVE IS TO BE FULLY PASSIVATED TO RETURN THE STAINLESS STEEL TO ITS HIGHEST CORROSION RESISTANCE STATUS.

SLEEVES ON MAINS 16" TO 24" IN DIAMETER WILL BE FABRICATED STEEL WITH O-RING SEAL, FUSION BONDED, EPOXY COATED ON 304 STAINLESS STEEL NUTS AND BOLTS OR M.J. DUCTILE IRON BODY. SLEEVES ON MAINS LARGER THAN 24" WILL BE HANDLED ON A CASE-BY-CASE BASIS.

TAPPING SLEEVES FOR REINFORCED CONCRETE MAINS WILL BE HANDLED ON A CASE-BY-CASE BASIS. THE SLEEVES WILL HAVE A RUBBER EPDM COATING TO RETURN THE STAINLESS STEEL TO ITS HIGHEST CORROSION RESISTANCE STATUS. THE STRAPS AND BOLTS SHALL BE 1/8" TYPE 304 STAINLESS STEEL.

THE TAPPING VALVE MUST HAVE CENTERING RING AND CONFORM TO SECTION 2.2.2.1 RESILIENT SEAT GATE VALVES, 4" - 36" IN THESE TECHNICAL PROVISIONS.

TAPPING SADDLES TO BE PLACED ON ASBESTOS CONCRETE (AC) PIPE SHALL BE A JCM 432 ALL STAINLESS STEEL SLEEVE OR EQUAL.

2.2.4.5 LINE STOP SLEEVE SPECIFICATIONS

SIZES 4" THROUGH 12" SLEEVE/BODY

THE ENTIRE LINE STOP SLEEVE SHALL BE FABRICATED FROM 304 STAINLESS STEEL. THEY SHALL HAVE A PASS-THROUGH BOLT DESIGN AND PROVIDE 360° SEAL AROUND THE PIPE. THE LINE STOP SLEEVE SHALL BE FULLY PASSIVATED TO RETURN THE STAINLESS STEEL TO ITS HIGHEST CORROSION RESISTANCE STATUS. OUTLET ON SLEEVE WILL BE FULL PORT, I.E. ON 8" SLEEVE, OUTLET WILL BE 8", ON 6" SLEEVE, OUTLET WILL BE 6".

BOLTS, NUTS & WASHERS

1/8"-TYPE 304 STAINLESS STEEL. THE BOLTS SHALL BE TRACK HEAD TYPE AND FURNISHED WITH PERMANENTLY LUBRICATED HEAVY-HEX NUTS AND STAINLESS WASHERS.

GASKET

THE FULL CIRCUMFERENTIAL GASKET SHALL BE MOLDED OF SYNTHETIC RUBBER COMPOUNDED FOR USE WITH WATER SALT SOLUTIONS, MILK ACIDS, BASES AND SEWAGE. THE GASKET SHALL HAVE A MAXIMUM OF 24" ABOVE FINISHED GRADE. A MECHANICAL JOINT HYDRANT CONNECTION WILL BE PROVIDED USING A HYDRANT VALVE-ANCHORING TIE WITH INTEGRALLY CAST STANDARD MECHANICAL JOINT GLAND ON 6" FLANGE END BRANCH. THE CONTRACTOR WILL NOT BE ALLOWED TO INSTALL RISERS ON HYDRANTS. AT FINAL INSPECTION, IF IT IS DETERMINED THAT A FIRE HYDRANT IS NOT AT GRADE, THE CONTRACTOR SHALL PURCHASE A PROPER LENGTH HYDRANT AND INSTALL IT UNDER THE DIRECTION OF THE ENGINEERING DIVISION.

PRESSURE RATING

THE SLEEVES SHALL BE RATED AT 150 PSIG HYDROSTATIC WITH A TEST PRESSURE OF 200 PSI ON PIPE WITH A FULL CIRCUMFERENTIAL BREAK.

LINE STOP SLEEVES SHALL BE A JCM 440 LINE STOP SLEEVE OR APPROVED EQUAL.

2.2.5 FIRE HYDRANTS

FIRE HYDRANTS MUST BE MANUFACTURED IN ACCORDANCE WITH AWWA SPECIFICATION C502. HYDRANTS MUST HAVE BRONZE-TO-BRONZE MAIN SEAT THREADING SURFACES. THEY WILL BE TRAFFIC TYPE W/SHIELD OR FLARED ENDS. ABSOLUTELY NO LEAD-BASED SOLDER JOINTS WILL BE ACCEPTED. 304 STAINLESS STEEL BOLTS AND NUTS (BONNET, TRAFFIC FLANGE AND SHO). THE DEVICE SHALL NOT AFFECT THE OPERATION OF THE VALVE. NO ONE-PIECE DEVICE WILL BE ACCEPTED. THE DEVICE SHALL BE BOX LOG, AMERICAN OR APPROVED EQUAL.

HYDRANTS WILL HAVE A MINIMUM 5'-14" MAIN VALVE OPENING, WITH ONE 4'-12" PUMPER NOZZLE, AND TWO 2'-12" HOSE NOZZLES. NOZZLES TO HAVE NST THREADS. STEM COUPLINGS ARE TO BE CAST IRON OR STAINLESS STEEL. THE UPPER VALVE PLATE MUST BE BRONZE. THE HYDRANT SHO WILL BE COATED INSIDE WITH FUSION-BONDED EPOXY, 5 MIL MINIMUM. ALL HYDRANTS WILL BE PAINTED AT THE FACTORY WITH RUSTOLEUM HIGH-PERFORMANCE EPOXY 9100 SYSTEM, NON-LEAD, DRY FILM THICKNESS 5 TO 8 MILS, COLOR #9143 YELLOW. CITY CREWS WILL APPLY FINISH PAINT TO EACH NEW FIRE HYDRANT AFTER THE CONTRACTOR HAS PAID THE APPROPRIATE FEES.

FINISH GRADE IS TO BE ESTABLISHED AND THE PROPER LENGTH HYDRANT IS TO BE INSTALLED BY THE CONTRACTOR PRIOR TO ACCEPTANCE BY THE CITY. ALL NOZZLES WILL BE A MINIMUM OF 18" AND A MAXIMUM OF 24" ABOVE FINISHED GRADE. A MECHANICAL JOINT HYDRANT CONNECTION WILL BE PROVIDED USING A HYDRANT VALVE-ANCHORING TIE WITH INTEGRALLY CAST STANDARD MECHANICAL JOINT GLAND ON 6" FLANGE END BRANCH. THE CONTRACTOR WILL NOT BE ALLOWED TO INSTALL RISERS ON HYDRANTS. AT FINAL INSPECTION, IF IT IS DETERMINED THAT A FIRE HYDRANT IS NOT AT GRADE, THE CONTRACTOR SHALL PURCHASE A PROPER LENGTH HYDRANT AND INSTALL IT UNDER THE DIRECTION OF THE ENGINEERING DIVISION.

2.2.6 SERVICE CONNECTIONS, 3/4" - 2"

ALL SERVICE CONNECTIONS WILL BE SINGLE CONNECTIONS. SERVICES THAT ARE 3/4" AND 1" ARE TO BE TYPE K ANNEALED TEMPER SOFT COPPER. ALL CONNECTIONS ARE TO BE OF THE FLARE TYPE, 1-1/2" - 2" SERVICES ARE TO BE OF TYPE K DRAWN TEMPER IN STRAIGHT LENGTHS OR ANNEALED TEMPER IF FURNISHED IN COILS. ABSOLUTELY NO LEAD-BASED SOLDER JOINTS WILL BE ACCEPTED. ANY REPAIRS OF SERVICE LINES WILL BE BY FLARE-TO-FLARE COUPLING, NO COMPRESSION FITTINGS WILL BE ACCEPTED. TAPS IN THE PIPE WILL BE THE SAME NOMINAL DIAMETER AS THE SERVICE LINE. SERVICE TAPS IN PVC PIPE WILL BE DRILLED WITH A SHELLOUTTER DESIGNED TO CUT PVC PIPE, AND THE PVC PIPE WILL BE REMOVED. LONG SIDE SERVICE LINES ARE TO HAVE PVC OR HDPE SLEEVE.

BRASS GOODS FURNISHED UNDER THIS SPECIFICATION SHALL BE NEW AND UNUSED. ALL FITTINGS SHALL CONFORM TO ANSI/AWWA STANDARD C800, LATEST REVISION.

ALL BRASS COMPONENTS IN CONTACT WITH POTABLE WATER MUST BE MADE FROM EITHER CDAUNS

BRASS ALLOYS C89320 OR C89833 WITH A MAXIMUM LEAD CONTENT OF .25% BY WEIGHT. BRASS SHALL NOT BE LISTED IN ANSI/AWWA C800 PARAGRAPH 4.1.2 ARE NOT APPROVED. ALL SERVICE FITTINGS SHALL BE CERTIFIED AS SUITABLE FOR CONTACT WITH DRINKING WATER BY AN ANSI ACCREDITED ORGANIZATION IN ACCORDANCE WITH ANSINSP STANDARD #1. ALL FITTINGS SHALL BE MARKED OR EMBOSSED WITH A MARK OR NAME INDICATING THAT THE PRODUCT IS MANUFACTURED FROM THE LOW-LEAD ALLOY AS SPECIFIED ABOVE.

BRASS SADDLES SHALL BE MADE FROM CDAUNS C83600 AND ARE EXEMPT FROM THE "NO LEAD" REQUIREMENT.

2.2.6.1 SADDLES

SADDLES MUST BE USED FOR ALL CONNECTIONS TO PVC, AC AND D.I. PIPE. SADDLES MUST BE ALL BRASS WITH "CROSS" THREADS AS MANUFACTURED BY MUELLER COMPANY, OR FORD METER BOX WILL HAVE INTERIOR FUSION-BONDED EPOXY COATING 5 TO 12 MILS. ALL PVC PIPE AND COUPLINGS WILL BEAR THE UL LABEL AND NSF APPROVAL FOR POTABLE WATER.

MUELLER: FOR DUCTILE IRON PIPE SIZES 4" TO 12", FOR 3/4" AND 1" SERVICES, THE SINGLE STRAP DESIGN MUST BE USED. FOR 1-1/2" AND 2" SERVICES, THE BR 2 DOUBLE STRAP DESIGN MUST BE USED.

FORD: FOR PIPE SIZES 4" TO 12", FOR 3/4" AND 1" SERVICES, THE STYLE 1018 SINGLE STRAP DESIGN MUST BE USED. FOR 1-1/2" AND 2" SERVICES, THE STYLE 2028 DOUBLE STRAP DESIGN MUST BE USED. FOR PIPE SIZES 16" AND LARGER, FOR 3/4", 1", 1-1/2", AND 2" SERVICES, THE STYLE 2028 DOUBLE STRAP DESIGN MUST BE USED.

AN APPROVED EQUAL MAY BE USED IN LIEU OF ANY OF THE ABOVE-LISTED DESIGNS/MODELS.

2.2.6.2 CURB STOPS, 3/4" - 2"

CURB STOPS 3/4" AND 1" IN SIZE WILL BE FLARE-BY-METER COUPLING. CURB STOPS MUST HAVE LOCKING WINGS AND A SWIVEL METER NUT. CURB STOPS THAT ARE 1-1/2" OR 2" SHALL BE ACCORDANCE WITH THE SECTION ON "BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL" IN THE UTILITIES HANDBOOK. THE ENGINEERING DIVISION WILL INSPECT THE INTERIOR OF THE DCCA PRIOR TO INSTALLATION. DCCA MUST BE INSTALLED HORIZONTALLY ABOVE GROUND IN A GRASSED OR NON-TRAFFIC AREA. THE DCCA WILL BE INSTALLED WITH 24" MINIMUM AND 30" MAXIMUM CLEARANCE FROM FINISHED GRADE. "N" SHAPED DCCA WILL BE HANDLED ON A CASE-BY-CASE BASIS. THE ENGINEERING DIVISION SHALL PAINT THE DCCA, TO BE PAID FOR BY THE DEVELOPER/CONTRACTOR. ALL NEW FIRE LINES CONSTRUCTED ARE REQUIRED TO BE METERED.

2.2.6.3 CORPORATION STOPS, 3/4" - 2"

ALL CORPORATION STOPS FOR WATER SERVICE 1/2" THRU 2" WILL BE BRASS AND HAVE "CC"-INLET THREADS AND COPPER FLANGE OUTLET. 2" CORPORATION STOPS FOR "JUMPS" WILL BE "CC"-BY-F.I.P.

2.2.6.4 METER BOXES

METER BOXES FOR RADIO-RATE METERS MUST HAVE A LIP COMPATIBLE WITH CITY'S AMR METER ANTENNA (4-1/2" ROUND). SERVICE LOCATIONS WILL BE PERMANENTLY CUT AND PAINTED ON CONCRETE CURB OR THE STREET WITH A BLUE "W" FOR POTABLE WATER OR A PURPLE "R" FOR RECLAIMED. RECLAIMED SERVICES WILL BE LOCATED AT THE OPPOSITE LOT CORNER FROM WATER SERVICES WHERE PRACTICAL OR WITH 5' MINIMUM SEPARATION.

FOR LARGER 1-1/2" AND 2" METERS, 17" X 30" METER BOXES SHALL BE USED.

METER BOXES SHALL HAVE THE APPROPRIATE ANSIS/ICE 77 LOAD RATING FOR THEIR INTENDED LOCATION: METER BOXES LOCATED WITHIN PAVED AREAS SUBJECT TO DELIBERATE HEAVY VEHICULAR TRAFFIC SUCH AS ROADWAYS, DRIVEWAYS, AND PARKING LOTS SHALL BE ASHITO H-20 LOAD RATED; OTHERWISE, METER BOXES SHALL BE TIER 15 LOAD RATED.

RECLAIMED WATER SERVICES WILL BE SET IN PURPLE METER BOXES OF MATERIALS PER ABOVE. THEY ARE ALSO REQUIRED TO HAVE A 3" X 5" PERMANENT PLASTIC TAG, SECURED TO THE CURB STOP WITH A NYLON TIE WRAP, WHICH WILL BE SUPPLIED. TAGS WILL BE INSCRIBED, "RECLAIMED WATER DO NOT DRINK".

2.3 PROTECTION OF PROPERTY AND OBSTRUCTIONS

2.3.1 PROTECTION

TEMPORARY SUPPORTS AND/OR ADEQUATE PROTECTION AND MAINTENANCE MUST BE PROVIDED ON ALL UNDERGROUND AND SURFACE STRUCTURES ENCOUNTERED IN THE PROGRESS OF THE WORK. STRUCTURES THAT HAVE BEEN DISTURBED WILL BE RESTORED TO A CONDITION EQUAL TO THEIR ORIGINAL STATE UPON COMPLETION OF THE WORK.

2.3.2 OBSTRUCTIONS

ALL UTILITY OWNERS MUST BE NOTIFIED PRIOR TO BEGINNING CONSTRUCTION, ANY KNOWN OBSTRUCTIONS WILL BE SHOWN ON THE PLANS; HOWEVER, CONTRACTOR IS SOLELY RESPONSIBLE FOR THE LOCATION OF ALL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE CONTRACTOR OF THIS RESPONSIBILITY. THE UTMOST CAUTION WILL BE TAKEN IN ALL OPERATIONS TO AVOID DAMAGE TO EXISTING OBSTRUCTIONS WHETHER OR NOT SHOWN ON THE PLANS. DAMAGE TO OTHER UTILITIES WILL BE AT THE CONTRACTOR'S EXPENSE.

IF THE CONTRACTOR ENCOUNTERS ANY UNFORESEEN OBSTRUCTIONS DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY CEASE WORK IN THE AREA AND NOTIFY THE CITY OF COCOA. THE DESIGN AND APPROVED DETAILED DRAWINGS TO CORRECT THE SITUATION. DRAWINGS SHALL BE SUBMITTED TO THE ENGINEERING DIVISION FOR APPROVAL. AFTER APPROVAL BY THE ENGINEERING DIVISION, A SET OF APPROVED DRAWINGS WILL BE GIVEN TO THE CONTRACTOR AND THEY MAY RESUME WORK.

2.3.3 EXISTING ASBESTOS CEMENT WATERMAINS

IN AREAS WHERE ASBESTOS CEMENT WATER MAINS ARE EXISTING, WATER MAIN RELOCATIONS OR REPLACEMENTS MAY BE NECESSARY. IF NEW CONSTRUCTION OF FACILITIES IS OVER, UNDER, OR ADJACENT TO EXISTING WATER MAINS, IT SHALL REQUIRE THAT THE ASBESTOS CEMENT WATER MAIN BE CHANGED OUT TO POLYVINYL CHLORIDE PIPE OR DUCTILE IRON PIPE. ALL ASBESTOS CEMENT PIPE THAT IS REPLACED SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR UNLESS SHOWN OTHERWISE BY WRITING BY THE CITY TO ABANDON IN PLACE. NEW PIPE MATERIAL SHALL DEPEND UPON THE TYPE AND LOCATION OF THE FACILITIES BEING CONSTRUCTED. THE DEVELOPER'S ENGINEER SHALL DESIGN THE REPLACEMENT AND SUBMIT IT TO THE ENGINEERING DIVISION FOR APPROVAL. THE DEVELOPER IS RESPONSIBLE FOR ALL DESIGN, MATERIALS, LABOR, EQUIPMENT, TESTING, AND COSTS FOR THE REPLACEMENT.

2.3.4 ABANDONMENT OF ASBESTOS CEMENT PIPE

CONTRACTOR SHALL REMOVE AND DISPOSE OF AC PIPE IN ACCORDANCE WITH FAC CODES 62-204.800 AND 62-207. WHERE ASBESTOS CEMENT WATER MAINS HAVE BEEN DIRECTED BY THE CITY TO BE ABANDONED IN PLACE THEY SHALL BE FILLED WITH A SAND/CEMENT GROUT BY THE CONTRACTOR. GROUT SHALL BE INJECTED WITHIN THE PIPE SECTIONS TO BE ABANDONED WHERE THE ENDS OF THE SECTIONS SHALL BE CAPPED OR PLUGGED. THE GROUTING PROGRAM SHALL CONSIST OF PUMPING SAND-CEMENT GROUT WITH SUITABLE CHEMICAL ADDITIVES AT PRESSURES NECESSARY TO FILL THE PIPE SECTIONS TO PREVENT THE POTENTIAL FOR FUTURE COLLAPSE. THE RATE OF PUMPING SHALL NOT EXCEED SIX (6) CUBIC FEET PER MINUTE. THE PUMPING PRESSURES SHALL BE IN THE RANGE OF 100 TO 150 PSI.

THE CONTRACTOR SHALL PROVIDE STANDPIPES AND/OR ADDITIONAL MEANS OF VISUAL INSPECTIONS AS REQUIRED BY THE CITY TO DETERMINE IF ADEQUATE GROUT MATERIAL HAS FILLED THE ENTIRE PIPE SECTIONS).

2.4 TRENCH PREPARATION

2.4.1 EXCAVATION

A TRENCH WILL BE OPENED SO THAT THE PIPE CAN BE INSTALLED TO THE ALIGNMENT AND DEPTH REQUIRED. EXCAVATION SHALL BE SECURED AND TAPED TO THE TOP OF THE PIPE. THE TRENCH WILL BE EXCAVATED TO THE DEPTH REQUIRED TO PROVIDE A UNIFORM AND CONTINUOUS BEARING SUPPORT FOR THE PIPE OR UNDISTURBED GROUND. BELL HOLES WILL BE PROVIDED AT EACH JOINT TO PERMIT JOINTING TO BE MADE AND INSPECTED PROPERLY.

DURING EXCAVATION, IF ASHES, CINDERS, MUCK OR OTHER ORGANIC MATERIAL CONSIDERED UNSUITABLE IS DISCOVERED AT THE BOTTOM OF THE TRENCH AT SUB-GRADE, UNSUITABLE MATERIAL WILL BE REMOVED AND BACKFILLED WITH APPROVED MATERIAL. THIS MATERIAL WILL BE COMPACTED IN LAYERS TO PROVIDE A UNIFORM AND CONTINUOUS BEARING CHARACTERISTIC OF THAT AREA'S SOIL. EXCAVATED MATERIAL WILL BE PILED IN SUCH A MANNER THAT IT WILL NOT ENDANGER WORK OR ACCESSIBLE AT ALL TIMES. GUTTERS WILL BE REMOVED AFTER BACKFILLING HAS BEEN COMPLETED OR HAS BEEN BROUGHT UP TO SUCH AN ELEVATION AS TO PERMIT ITS SAFE REMOVAL. THE USE OF A TRENCHING BOX MAY BE USED IN PLACE OF SHEETING AND BRACING WHERE APPROPRIATE. THE CONTRACTOR IS REQUIRED TO HAVE A COMPETENT PERSON DESIGNATED AND IN CHARGE AT ALL TIMES WHILE WORKERS ARE IN THE TRENCH.

2.4.2 DE-WATERING

EXCESS WATER MUST NOT BE ALLOWED IN THE TRENCH AT ANY TIME. AN ADEQUATE SUPPLY OF WELL POINTS, HEADERS OR PUMPS, ALONG WITH CLASS OPERATING CONDITION, MAY BE USED TO REMOVE THE WATER. THE USE OF GRAVEL AND PUMPS WILL ALSO BE AN ACCEPTABLE MEANS OF REMOVING THE WATER. THE TRENCH WILL BE EXCAVATED NO MORE THAN THE AVAILABLE PUMPING FACILITIES CAN HANDLE. EXCESS WATER DISCHARGE FROM PUMPS WILL BE ACCOMMODATED IN ACCORDANCE WITH THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICTS REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL DE-WATERING PERMITS SUCH AS NPDES PERMIT.

2.5 PIPELINE CONSTRUCTION

2.5.1 GENERAL

ALL WATER MAINS, SERVICE LINES, AND APPURTENANCES MUST BE INSTALLED AS SPECIFIED ON THE STANDARD DETAILS AND IN ACCORDANCE WITH THE STANDARD DETAIL SHEET. INSTALLATION WILL CONFORM TO AWWA SPECIFICATION C800 EXCEPT AS MODIFIED HEREIN.

DOMESTIC WATER SERVICE CAN ONLY COME FROM A DISTRIBUTION MAIN, WHEN WATER SERVICE IS REQUESTED AND THE ONLY WATER MAIN AVAILABLE IS A TRANSMISSION MAIN, A LARGE TAP AND SECTION OF PIPE SHALL BE INSTALLED ON THE TRANSMISSION MAIN FOR THE WATER SERVICE. THE MINIMUM SIZE TAP SHALL BE A TRANSMISSION MAIN SHALL BE 8".

2.5.2 INSPECTION

MATERIALS DELIVERED TO THE JOB SITE WILL BE SUBJECT TO INSPECTION BY THE ENGINEERING DIVISION PRIOR TO INSTALLATION. CONTRACTOR SHALL NOTIFY INSPECTIONS 24 HOURS IN ADVANCE. ALL MATERIALS FOUND TO BE DEFECTIVE OR NOT MEETING SPECIFICATIONS DURING INSPECTION OR DURING THE PROGRESS OF THE WORK WILL BE REJECTED AND REMOVED FROM THE JOB SITE WITHOUT DELAY. ALL MATERIALS DELIVERED TO THE JOB SITE WILL BE IN ACCORDANCE WITH THE MATERIALS SPECIFICATIONS. MATERIALS NOT INSPECTED BY THE ENGINEERING DIVISION PRIOR TO INSTALLATION WILL BE UNCOVERED BY THE CONTRACTOR AT THEIR EXPENSE TO VERIFY COMPLIANCE WITH THESE SPECIFICATIONS. THE CONTRACTOR WILL FURNISH COPIES OF THE PACKING LIST(S) FOR MATERIALS UNDER DEMAND.

THE BOTTOM OF THE TRENCH WILL NOT BE EXCAVATED BELOW THE SPECIFIED GRADE. IF UNDERCUTTING OCCURS, THE BOTTOM OF THE TRENCH WILL BE BROUGHT UP TO THE ORIGINAL GRADE. MATERIALS FOUND TO BE DEFECTIVE OR NOT MEETING SPECIFICATIONS DURING INSPECTION OR DURING THE PROGRESS OF THE WORK WILL BE REJECTED AND REMOVED FROM THE JOB SITE WITHOUT DELAY. ALL MATERIALS DELIVERED TO THE JOB SITE WILL BE IN ACCORDANCE WITH THE MATERIALS SPECIFICATIONS. MATERIALS NOT INSPECTED BY THE ENGINEERING DIVISION PRIOR TO INSTALLATION WILL BE UNCOVERED BY THE CONTRACTOR AT THEIR EXPENSE TO VERIFY COMPLIANCE WITH THESE SPECIFICATIONS. THE CONTRACTOR WILL FURNISH COPIES OF THE PACKING LIST(S) FOR MATERIALS UNDER DEMAND.

ALL MECHANICAL JOINTS WILL BE MADE UP IN STRICT ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. BEVELED ENDS WILL BE REMOVED FROM PVC PIPE ENTERING A MECHANICAL JOINT. ALL MATERIALS FOUND TO BE DEFECTIVE OR NOT MEETING SPECIFICATIONS DURING INSPECTION OR DURING THE PROGRESS OF THE WORK WILL BE REJECTED AND REMOVED FROM THE JOB SITE WITHOUT DELAY. ALL MATERIALS DELIVERED TO THE JOB SITE WILL BE IN ACCORDANCE WITH THE MATERIALS SPECIFICATIONS. MATERIALS NOT INSPECTED BY THE ENGINEERING DIVISION PRIOR TO INSTALLATION WILL BE UNCOVERED BY THE CONTRACTOR AT THEIR EXPENSE TO VERIFY COMPLIANCE WITH THESE SPECIFICATIONS. THE CONTRACTOR WILL FURNISH COPIES OF THE PACKING LIST(S) FOR MATERIALS UNDER DEMAND.

ALL FIRE HYDRANTS (HYDRANTS) WILL BE LOCATED AS SHOWN ON THE PLANS AND MARKED ON THE PAVEMENT WITH A BLUE REFLECTOR. ON UNPAVED STREETS, A BLUE REFLECTOR WILL BE AFFIXED TO THE PAVEMENT WITH A BLUE REFLECTOR. ON UNPAVED STREETS, A BLUE REFLECTOR WILL BE AFFIXED TO THE PAVEMENT WITH A BLUE REFLECTOR. ON UNPAVED STREETS, A BLUE REFLECTOR WILL BE AFFIXED TO THE PAVEMENT WITH A BLUE REFLECTOR.

2.5.2 MATERIAL HANDLING

2.5.2.1 PRECAUTIONS

SECTION 024304
PRESSURE TESTING OF PIPE

PART 1 - GENERAL

- 1.01 DESCRIPTION
A. Scope of Work
1. This Specification specifies the leakage testing requirements for water, sanitary force mains and reuse main.
2. It is the intent of this specification that all piping be pressure tested. At a minimum, the pipe shall be tested at 150 psi or 1.5 times the working pressure for a duration of 2 hours, whichever is greater, unless specified otherwise herein.
B. Test Pressures
1. Test pressure for the various services and types of piping are shown in Table 15044-A.
C. Test Times
1. Duration of pressure tests for the various services and types of piping are shown in Table 15044-A.
D. Testing Records
1. Provide record of each piping installation during the testing. The pressure test form furnished by the Utilities Department shall be completed for the record of this testing. These records shall include:
a. Date of Test.
b. Identification of use of pipeline tested or retested.
c. Identification of pipeline material.
d. Identification of pipe section length (feet) tested.
e. Test pressure (psi).
f. Remarks
1. Leaks identified (type and location), types of repairs or corrections made.
g. Certification by Developer that the leakage rate measured conformed to the specifications.
h. Signature of Owner's representative witnessing pipe test.
Submit three (3) copies of the pressure test form to the Owner's representative upon completion of the testing.

PART 2 - PRODUCTS

- 2.01 GENERAL
A. Testing fluid shall be approved by the Utility Representative.
2.02 MATERIALS AND EQUIPMENT
A. The Developer shall provide pressure gauges, pipes, bulkheads, pumps and meters to perform the hydrostatic testing.

PART 3 - EXECUTION

- 3.01 TESTING
A. The Developer shall perform hydrostatic testing of all pressurized water, wastewater force and reuse mains, as set forth herein, and shall conduct said tests in the presence of representatives from other authorized agencies, with two business (2) days advance notice provided.
1. Piping and appurtenances to be tested shall be within sections between valves, unless alternate methods have received prior approval. Testing shall not proceed until concrete thrust blocks are in place and cured, or other restraining devices installed. All piping shall be thoroughly cleaned and flushed prior to testing to clear the lines of all foreign matter. While the piping is being filled with water, care shall be exercised to permit the escape of air from extremities of the test section, with additional release cocks provided if required. Flushing shall be at full flow conditions and at least 2.5 feet per second flow rate.
2. Hydrostatic testing shall be performed for a period of not less than two (2) hours. Testing shall be in accordance with the applicable provisions as set forth in section 4 of AWWA Standard C600.
The allowable rate of leakage for Ductile Iron piping shall be less than the number of gallons per hour determined by the following formula:
L = (ND)P / 133,200
L = allowable leakage in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of the pipe in inches
P = average test pressure maintained during the leakage test in pounds per square inch gauge, (min. 150 psi)
The allowable leakage for PVC piping shall be determined by the following formula:
L = (ND)P / 7,400
L = allowable leakage in gallons per hour
N = number of joints in length of pipeline tested
D = nominal diameter of the pipe in inches
P = average test pressure maintained during the leakage test in pounds per square inch gauge, (min. 150 psi)
3. The testing procedure shall include the continued application of the specified pressure to the test system, for the two hour period, by way of a pump taking supply from a container suitable for measuring water loss. The amount of loss shall be determined by measuring the volume displaced from said container. Should the test fail, necessary repairs shall be accomplished by the Developer and the test repeated until within the established limits. The Developer shall furnish the necessary labor, water, pumps, gauges and all other items required to conduct the required reclaim foreman testing and perform necessary repairs.
3.02 DISINFECTION (WATER AND RECLAIM SYSTEM)
A. Following pressure testing, the Developer shall disinfect all sections of the distribution system, and receive approval thereof from the appropriate agencies, prior to placing in service. Two (2) business days advance notice shall be provided to the Utilities Department before disinfecting procedures start. The disinfection shall be accomplished in accordance with the applicable provisions of AWWA Standard C651, "Disinfecting Water Mains", and all appropriate approval agencies.
B. Care shall be taken to provide disinfection to the total system and extremities shall be carefully flushed to accomplish this end. Following disinfection, bacteriological test results shall be submitted to the Utilities Department. Should the test results be unsatisfactory the piping shall again be disinfected and re-tested until sufficient number of satisfactory results are obtained.

TABLE 15044-A TEST SCHEDULE
Mark (hours) Service Test Pressure (psig) Duration (min)
PW Potable Water 150 2
FM Force Main 150 2
RM Reclaim Main 150 2

SECTION 15070
SMALL DIAMETER POLYVINYL CHLORIDE (PVC) PIPES AND FITTINGS

PART 1 - GENERAL

- 1.01 DESCRIPTION
A. This specification outlines the requirements for small diameter (1" or 2") polyvinyl chloride pipe, fittings and appurtenances installed within the Utility Service Area.
PART 2 - PRODUCTS
2.01 MATERIALS - Refer to Section 11: Approved Materials
2.02 PVC PIPE
A. Pipe shall be made of polyvinyl chloride, Schedule 80 pipe, conforming to ASTM D1785. Schedule 80 pipe shall have solvent welded or threaded joints. B. PVC pipes must bear NSF logo for potable water use.
2.03 FITTINGS
A. Fittings for Schedule 80 pipe shall be socket type, solvent welded in conformance with ASTM D 2467 or threaded type in conformance with ASTM D 2464. Solvent welded and threaded joints shall be watertight.
2.04 SOLVENT CEMENT
A. PVC solvent cement shall be in compliance with ASTM D 2564.

PART 3 - EXECUTION

- 3.01 INSTALLATION
A. Install PVC pipe in strict accordance with the manufacturer's technical data and printed instructions.
B. Joints for Schedule 80 PVC pipe and fittings shall be solvent welded or threaded. All joints shall be made watertight. All pipe cutting, threading and jointing procedures for solvent welded and threaded PVC pipe joints shall be in strict accordance with the pipe and fittings manufacturer's printed installation instructions. Thread lubricant for threaded joints shall be Teflon tape only. In making solvent welded connections, clean dirt and moisture from pipe and fittings, bevel pipe ends slightly with emery cloth, if necessary and apply solvent cement of proper grade.
C. Installation of valves and fittings shall be strictly in accordance with the manufacturer's instructions. Particular care shall be taken not to over-stress threaded connections at sleeves. In making solvent weld connections the solvent shall not be spilled on valves or allowed to run from joints.
D. All piping shall have sufficient number of unions to allow convenient removal.
E. Where plastic passes through wall sleeves, joints shall be sealed with a mechanical sealing element.
3.02 FIELD PAINTING
A. Pipe normally exposed to view shall be painted and marked as specified by CPBUD.
3.03 TESTING AND FLUSHING
A. All PVC piping shall be hydrostatically pressure tested and flushed in accordance with the applicable section of this Handbook.

SECTION 15071
POLYVINYL CHLORIDE (PVC) PRESSURE PIPE

PART 1 - GENERAL

- 1.01 DESCRIPTION A. Work
1. This Specification outlines the requirements for PVC pressure pipe installed within the Utility Service Area.
1.02 QUALITY ASSURANCE A. Standards
1. Florida Administrative Code, 62-555.320(21)(b)
2. Recommended Standards for Water Works, Sections 8.0 through 8.5 and 8.7 through 8.11
3. Pressure rated (DR/SDR) pipe: ASTM-D2241.
4. AWWA C-900 (4", 6", 8", or 12").
5. AWWA C-905 (16", 20", 24", 30", 36", 42", 48", 54")
6. Materials: ASTM 1784:
a. Class 12454-A, 4000 psi @ 73.4°F
b. Class 12454-B, 4000 psi @ 73.4°F B. Fittings
1. Fittings shall be the compact Ductile Iron fitting for mechanical joint and rated at a minimum pressure of 250 psi: AWWA C-153 / ANSI A-21.53
2. Submit the manufacturer specification to the Utility Engineer for review
1.03 PRODUCT DELIVERY, STORAGE AND HANDLING
A. Pipe and fittings shall be handled and stored in a manner which will ensure installation in sound, undamaged condition. Handling methods and equipment used shall prevent damage to the pipe. Bare cables, chains, or metal bars shall not be used. Pipe shall be stored off the ground on wide padded skids. Whenever the storage period on the job exceeds 30 days, pipe shall be covered or otherwise protected from exposure to sunlight.

PART 2 - PRODUCTS

- 2.01 MATERIALS - Refer to Section 11: Approved Materials
A. Pipe
1. Pipe shall be homogeneous throughout. It shall be free from voids, cracks, inclusions and other defects.
2. It shall be uniform as commercially practical in color, density, and other physical properties.
3. Pipe surfaces shall be free from nicks and scratches.
4. Joining surfaces of spigots and joints shall be free from gouges and imperfections that could cause leakage.
5. Pipe and pipe fittings shall be gasketed style, utilizing single gasket bell and spigot, unless otherwise approved by CPBUD.
6. Pipe shall be of the class and color as specified herein:
a. Wastewater force mains: Minimum DR-25; green b. Potable Water Main: Minimum DR-25; blue
c. Reuse Main: Minimum DR-25; purple
B. Fittings
1. Fittings for use with PVC pressure pipe shall be the compact ductile iron mechanical joint fitting with a minimum pressure rating of 250 psi and shall conform to AWWA C-153 / A21.53 and approved by CPBUD, via submittal.
2. Interior lining of fittings shall be as follows:
a. Epoxy lining for wastewater service: Two component self-priming, chemically cured, epoxy protective coating with a minimum DFT of 30 mils.
b. Cement-Mortar lining for potable water and reuse service: In accordance with ANSI 21.4 for cement-mortar linings.
C. Joints
1. A gasket joint shall be provided with each length of pipe.
2. The joints shall provide a positive seal against pressure or vacuum.
3. Joints shall comply with the requirements defined in UNI-B-1 for pipe sizes greater than 12 inches, and in ASTM D3139 for pipe sizes less than or equal to 12 inches.
4. The dimensions of the gasket joint for pipe size greater than 12 inches when measured according to ASTM D2122 shall meet the following requirements:
a. The coupling wall thickness at any point shall conform to the dimensions ratio (DR) of the pipe, except in the annular gasket space and coupling entry section where the wall thickness shall be at least the minimum wall thickness of the pipe.
b. In lieu of Paragraph C.4.a. above, the manufacturer's joint design shall be tested to verify that the Hydrostatic Design Basis Category for the joint assembly is not lower than the pressure rating requirements in ASTM D3139. The dimensions and tolerances shall be those specified by the manufacturer's drawings.
5. Provide couplings of the same quality as the pipe that will maintain tight joints when subjected to the same hydrostatic tests designated for the pipe.
D. Adapters
1. When applicable, provide adapters for connecting PVC pipe to pipes constructed from other material.
E. Restrained Joints
1. Pipe joints shall be restrained each side of the fitting for a continuous distance in accordance with DIPRA "Thrust Restraint Design for Ductile Iron Pipe." Distance restrained shall be based on sand-silt soil type, test pressure as specified in the applicable section of this Handbook, 3.0 feet of cover, polyethylene encased and Type 3 laying condition.
F. Mechanical joint restraint shall be accomplished using a mechanism consisting of plurality of individually activated gripping surfaces incorporated into the design of the following gland.
G. Push-on joints for pipe that are required to be restrained shall be restrained using a harness device. The harness shall be split to enable installation after the spigot has been installed into the bell. The restraint ring of the harness shall consist of a plurality of individually activated gripping surfaces to hold the spigot.
H. Thrust Blocks
1. Shall only be allowed with written request and prior approval by the CPBUD Engineer.

PART 3 - EXECUTION

- 3.01 INSTALLATION A. Pipe
1. Pipe shall be installed as recommended by the pipe manufacturer.
2. Pipe shall be cut from measurements taken at the site and not from the drawings.
3. All necessary provisions shall be taken in laying out and installing piping to provide for expansion and contraction throughout.
B. Jointing
1. Clear each pipe length, coupling and fitting of all debris and dirt before installing.
2. Provide and use coupling pullers for joining the pipe when required.
3. Shove home each length of pipe against the pipe previously laid and hold securely in position.
4. Do not pull or clamp joints.
5. Use water soluble gasket lubricant for joint assembly for pipes smaller than or equal to 12 inches in size.
C. Fabrication - Cutting
1. Use a hand saw or pipe cutter with blades (not rollers).
2. Examine all cut ends for possible cracks caused by cutting.
3.02 INSPECTION AND TESTING
A. Before installation, make sure there is no evidence of splitting or cracking, or breaking in the pipe.
B. Upon installation, all pipe shall be hydrostatically tested in accordance applicable AWWA STANDARD and sections of this Handbook.

SECTION 15072
POLYETHYLENE (PE) TUBING, PIPE AND FITTINGS

PART 1 - GENERAL

- 1.01 DESCRIPTION
A. Product Submittal
1. The use of Polyethylene PE products within the Utilities Systems shall require the review of submittal for the pipe and fittings prior to the commencement of any installation.
B. Work
1. This Specification outlines the requirements for PE pipe, tubing, and solid Blue, Purple, and Green pipe intended for the transportation of water, reuse water and sanitary wastewater that may be installed within the Utility Service Area, respectively.
1.02 QUALITY ASSURANCE A. Standards:
1. ASTM D3261: Butt heat fusion polyethylene pipe and tubing.
2. AWWA C-901/ASTM D2683, SDR-11, PE (CTS) 2708 pipe/tubing for water service; 1/2 inches to 3 inches.
3. AWWA C-906/ ASTM D3350, SDR-11, PE 3408 (DI) water distribution pipe, reclaim distribution pipe, or force main transmission pipe; 4 inches to 30 inches. Refer to 2.1 A 2 for specific use of SDR-9 or SDR-11 pipe.
4. Call Classification of 345434C, 1600 psi @ 73°F in accordance with PPI TR-3 and be listed in the name of the manufacturer in PPI TR-4.
5. Meet Pipe and Fitting requirements and be approved by the National Sanitation Foundation (NSF) meeting NSF 61 Standards
6. PE permanent identification of pipe service shall be provided by co-extruding a solid blue or purple pipe or longitudinal blue stripes for water or purple stripes for reclaim transmission / distribution main or a solid green or longitudinal green stripes for sanitary sewer force main, of the same pipe material into the pipe's outside surface. Stripes painted or printed on the pipe outside surface shall not be accepted.
7. Related work specifications and standards described elsewhere; Sections 02541, 09905, 15044, 15062, 15071, 15101, 15110, 15117, 15120, B.
Fittings
1. Consult the pipe manufacturer for recommendation and instruction specification for their use of fittings. Submit the manufacturer recommendation and instruction specification to the Utilities Engineer for review and written approval.
2. Fittings shall be the compact ductile iron fitting AWWA C-153 / ANSI A-21.5 mechanical joint (MJ) and rated at a minimum pressure of 250 psi.
3. Polyethylene fittings shall be molded or fabricated by the manufacturer of the pipe.
4. Pipe Stiffening inserts to provide circumferential support shall be of stainless steel and of the wedge type and shall be required for use in all plain ends of the PE pipe. In conjunction with all mechanical fittings and any fittings that rely on compressing the pipe outer diameter, the insert shall be installed per the manufacturer's instructions.
5. Service Saddle, either fused or mechanical shall be installed and tested per the pipe manufacturer's instructions.

PART 2 - PRODUCTS

- 2.01 MATERIALS - Refer to Section 11: Approved Materials
A. Pipe
1. Pipe shall be homogeneous throughout. It shall be free from voids, cracks, inclusions and other defects. It shall be uniform as commercially practical in color, density, and other physical properties. Pipe surfaces shall be free from nicks and scratches. Joining surfaces shall be free from gouges and imperfections that could cause leakage.
2. PE Pipe shall be of the class and color as specified herein:
a. Potable Water Main
1. Minimum SDR-11, BLUE or longitudinal blue line striped. b. Reclaim Main
2. Minimum SDR-11, PURPLE or longitudinal blue line striped. c. Wastewater force mains
1. Minimum SDR-11, GREEN or longitudinal green line striped.
3. All PE Pipe shall be provided in Ductile Iron Pipe Size (DIPS). The use of Iron Pipe Size (IPS) will only be approved with a written request/justification and prior approval by the Utilities Engineer.
B. Fittings
1. Polyethylene fittings shall be molded or fabricated by the manufacturer of the pipe.
2. Push joint fittings for use with C906 SDR-11 PE 3408 (DI) pressure pipe shall be the compact ductile iron mechanical joint fitting with a minimum pressure rating of 250 psi and shall conform to AWWA 153 / A21.53 and approved by CPBUD, via submittal. Interior lining of fittings shall be as follows:
a. Epoxy lining for wastewater service
1. Two component self-priming, chemically cured, epoxy protective coating with a minimum DFT of 30 mils.
b. Cement-Mortar lining for potable water and reclaim service
1. In accordance with ANSI 21.4 for cement-mortar linings
C. Joints
1. The fuse joints shall provide a leak tight joint and a positive seal against pressure or vacuum.
2. Mechanical coupled joints shall maintain leak tight joints when subjected to the same hydrostatic tests designated for the pipe.

PART 3 - EXECUTION

- 3.01 INSTALLATION A. Pipe
1. Pipe shall be installed as recommended by the pipe manufacturer.
2. Pipe shall be cut from measurements taken at the site and not from the drawings.
3. All necessary provisions shall be taken in laying out and installing piping to provide for expansion and contraction throughout.
B. Jointing
1. Clear each pipe length, coupling and fitting of all debris and dirt before installing.
2. Provide and use coupling pullers for joining the pipe when required.
3. Shove home each length of pipe against the pipe previously laid and hold securely in position.
4. Do not pull or clamp joints.
5. Use water soluble gasket lubricant for joint assembly for pipes smaller than or equal to 12 inches in size.
C. Fabrication - Cutting
1. Use a hand saw or pipe cutter with blades (not rollers).
2. Examine all cut ends for possible cracks caused by cutting.
3.02 INSPECTION AND TESTING
A. Before installation, make sure there is no evidence of splitting or cracking, or breaking in the pipe.
B. Upon installation, all pipe shall be hydrostatically tested in accordance applicable AWWA STANDARD and sections of this Handbook.

PART 3 - EXECUTION

- D. Adapters
1. When applicable, provide adapters for connecting PE pipe to pipes constructed from other material.
E. Thrust Restraint
2. Restrained Joints
a. As detailed and called out on the Drawings.
b. Push-on pipe joints when required shall be restrained each side of the fitting for a continuous distance in accordance with DIPRA "Thrust Restraint Design for Ductile Iron Pipe." Distance restrained shall be based on sand-silt soil type, test pressure as specified in the applicable section of this Handbook, 3.0 feet of cover, polyethylene encased and Type 3 laying condition.
c. Mechanical joint restraint shall be accomplished using a mechanism consisting of plurality of individually activated gripping surfaces incorporated into the design of the following gland.
d. Push-on joints for pipe that are required to be restrained shall be restrained using a harness device. The harness shall be split to enable installation after the spigot has been installed into the bell. The restraint ring of the harness shall consist of a plurality of individually activated gripping surfaces to hold the spigot.
e. The use of "Manufacturer's Restrained Joint Pipe" shall meet all the restrained distance requirements as specified by the design Engineer.
3. Thrust Block
a. Shall only be approved with a written request and prior approval by the CPBUD Engineer.
3.01 INSTALLATION
NOTE: FAILURE OF THE CONTRACTOR TO FOLLOW THE INSTRUCTIONS FOR INSTALLATION AND TESTING OF THE PIPE AND FITTING, AS FURNISHED BY THE MANUFACTURER MAY RESULT IN REJECTION OF THE WORK, CAUSE FOR THE REMOVAL OR PERMITTED ABANDONMENT AND SEALING OF THE MATERIAL. ALL RESTORATION AT NO EXPENSE TO THE OWNER OR THIS UTILITY AS TO INCURRED COST.
A. Pipe
1. Pipe shall be installed as recommended by the pipe manufacturer.
2. Pipe shall be cut from measurements taken at the site and not from the drawings. All necessary provisions shall be taken in laying out and installing piping to provide throughout for expansion and contraction.
B. Jointing
1. Pipe shall be joined and tested as recommended by the pipe manufacturer. C. Fabrication - Cutting and fitting
2. Pipe shall be cut and fitted as recommended by the pipe manufacturer
3.02 INSPECTION AND TESTING
A. The contractor shall furnish as part of the required work; all test equipment, material, labor and the specialty to complete the inspection and testing. Water shall be the test medium. Air will not be used as a test medium.
B. Before installation, insure that all of the fuse joints are satisfactory and make sure there is no evidence of splitting or cracking, or breaking in the pipe.
C. Upon installation, all pipe shall be hydrostatically tested in accordance with Section 5, 6, 7 or per the manufacturer procedures as applicable. Test on PE shall be readied during the morning and only after equilibrium is established, then the testing may be conducted.
D. Bacteriologically test and clear the main and appurtenance for the FDEP Permit per AWWA Standard C-651 "Disinfecting Water Mains", where required.

PART 3 - EXECUTION

- 3.01 INSTALLATION
NOTE: FAILURE OF THE CONTRACTOR TO FOLLOW THE INSTRUCTIONS FOR INSTALLATION AND TESTING OF THE PIPE AND FITTING, AS FURNISHED BY THE MANUFACTURER MAY RESULT IN REJECTION OF THE WORK, CAUSE FOR THE REMOVAL OR PERMITTED ABANDONMENT AND SEALING OF THE MATERIAL. ALL RESTORATION AT NO EXPENSE TO THE OWNER OR THIS UTILITY AS TO INCURRED COST.
A. Pipe
1. Pipe shall be installed as recommended by the pipe manufacturer.
2. Pipe shall be cut from measurements taken at the site and not from the drawings. All necessary provisions shall be taken in laying out and installing piping to provide throughout for expansion and contraction.
B. Jointing
1. Pipe shall be joined and tested as recommended by the pipe manufacturer. C. Fabrication - Cutting and fitting
2. Pipe shall be cut and fitted as recommended by the pipe manufacturer
3.02 INSPECTION AND TESTING
A. The contractor shall furnish as part of the required work; all test equipment, material, labor and the specialty to complete the inspection and testing. Water shall be the test medium. Air will not be used as a test medium.
B. Before installation, insure that all of the fuse joints are satisfactory and make sure there is no evidence of splitting or cracking, or breaking in the pipe.
C. Upon installation, all pipe shall be hydrostatically tested in accordance with Section 5, 6, 7 or per the manufacturer procedures as applicable. Test on PE shall be readied during the morning and only after equilibrium is established, then the testing may be conducted.
D. Bacteriologically test and clear the main and appurtenance for the FDEP Permit per AWWA Standard C-651 "Disinfecting Water Mains", where required.

MUNICIPAL APPROVAL STAMP

Job No. 24-1104, Revisions table, MBV Engineering, Inc. logo, Brevard County Sanitary Sewer Specifications-1, The Jade at Merritt Island Apartments - Hotel to Multi-Family Apartments, Florida, Bruce A. Moia License No. 47529, State of Florida Professional Engineer, C-806, SHEET 24-1104, PERMITTING SET

BREVARD COUNTY PUBLIC WORKS ENGINEERING STANDARD DEVELOPMENT NOTES

GENERAL

1. ALL CONSTRUCTION SHALL CONFORM TO FDOT DESIGN STANDARDS (LATEST EDITION), FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION (LATEST EDITION), BREVARD COUNTY UTILITY SERVICES CRITERIA FOR WATER AND SANITARY SEWER SYSTEMS, AND BREVARD COUNTY CODE OF ORDINANCES.
2. ISSUANCE OF CERTIFICATE OF COMPLETION UPON COMPLETION OF CONSTRUCTION OF THE PROJECT AND PRIOR TO SCHEDULING OF THE FINAL INSPECTION, THE APPLICANT OR THEIR AUTHORIZED REPRESENTATIVE, SHALL PROVIDE THE FOLLOWING DOCUMENTATION TO BREVARD COUNTY PUBLIC WORKS ENGINEERING:
 - a. A CERTIFICATE OF COMPLETION - REQUEST FOR FINAL INSPECTION FORM. THE FORM MUST BE FROM A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA WITH THEIR SEAL AFFIXED. THE FORM CERTIFIES THAT THE IMPROVEMENTS HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS.
 - b. A COMPLETE SET OF TESTING REPORTS FOR ALL TESTS PERFORMED ON THE PROJECT WITHIN THE COUNTY RIGHT-OF-WAY AND/OR FOR ALL SUBDIVISION CONSTRUCTION REGARDLESS OF PUBLIC OR PRIVATE.
 - c. THREE SETS OF AS-BUILT DRAWINGS MEETING THE REQUIREMENTS OF SECTION 61G17, F.A.C., AND SIGNED AND SEALED BY A SURVEYOR LICENSED IN THE STATE OF FLORIDA. AT A MINIMUM, ALL AS-BUILT DRAWINGS MUST INCLUDE:
 - i. ROAD/PAVEMENT ELEVATIONS, ROADWAY CROSS SLOPES, PAVEMENT WIDTH, PAVEMENT SPOT ELEVATIONS NECESSARY TO CONFIRM STORMWATER DRAINAGE PATTERNS AT INTERSECTIONS AND SIDEWALKS, CURB SLOPES;
 - ii. STORMWATER PIPE SIZES AND INVERT ELEVATIONS, LOCATION OF OUTFALL STRUCTURE(S) WITH AS-BUILT ELEVATIONS FOR ALL CONTROL STRUCTURE & SKIMMER ELEVATIONS SHOWN ON THE APPROVED PLANS, TOP OF BANK, GRADE BREAKS, BOTTOM ELEVATIONS FOR ALL STORMWATER PONDS OR BERM AREAS;
 - iii. ANY OTHER ADDITIONAL AS-BUILT DATA THAT IS APPLICABLE TO THE PROJECT TO ENSURE COMPLETION IN ACCORDANCE WITH THE APPROVED CONSTRUCTION PLANS.
 - d. PIPE INSPECTION VIDEO PER FDOT REQUIREMENTS. (IF APPLICABLE PER NOTE 4 OF DRAINAGE NOTES)
 - e. IF A MUNICIPALITY IS ACCEPTING A PUBLIC WATER AND/OR SEWER SYSTEM, THERE MUST BE DOCUMENTATION INDICATING MUNICIPAL ACCEPTANCE OF THE CONSTRUCTION OF THE WATER AND/OR SEWER SYSTEM.
 - f. PUBLIC WORKS ENGINEERING WILL NOT SIGN OFF ON A TEMPORARY CERTIFICATE OF OCCUPANCY (TCO) FROM THE BREVARD COUNTY BUILDING DEPARTMENT UNTIL THE AS-BUILT DRAWINGS AND OTHER DOCUMENTATION LISTED ABOVE HAVE BEEN SUBMITTED AND REVIEWED BY PUBLIC WORKS ENGINEERING.
 - g. PROJECTS CONNECTED TO THE BREVARD COUNTY WATER, SANITARY SEWER, AND/OR RECLAIMED WATER SYSTEMS MUST OBTAIN FINAL APPROVAL FOR THE PROJECT DIRECTLY FROM BREVARD COUNTY UTILITY SERVICES AS OUTLINED IN THE BREVARD COUNTY CRITERIA FOR WATER AND SANITARY SEWERAGE SYSTEMS.
3. UPON APPROVAL OF FINAL INSPECTION, AN ENGINEER'S CERTIFIED COST ESTIMATE WILL BE REQUIRED ALONG WITH A 2-YEAR MAINTENANCE BOND FOR ALL IMPROVEMENTS WITHIN THE COUNTY RIGHT-OF-WAY AS REQUIRED BY CHAPTER 86 OF THE BREVARD COUNTY CODE OF ORDINANCES. THE MAINTENANCE BOND SHALL BE 25% OF THE ENGINEER'S CERTIFIED COST ESTIMATE.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO THE COUNTY INFRASTRUCTURE DURING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE STRUCTURAL INTEGRITY OF THE ROADWAY ASPHALT, BASE, AND STABILIZED SUB-BASE, SIDEWALKS, STORMWATER DRAINAGE SYSTEM, DRAINAGE STRUCTURES, CURBS, GROUND COVER, WATER SYSTEMS, SANITARY SEWER SYSTEMS, AND RECLAIMED WATER SYSTEMS. ALL REPAIRS SHALL BE COMPLETED IN ACCORDANCE WITH FDOT AND BREVARD COUNTY STANDARDS. ALL REPAIRS SHALL BE COMPLETED PRIOR TO THE FINAL INSPECTION OF THE PROJECT. SIDEWALK PATCHING WILL NOT BE ACCEPTABLE.
5. A VISUAL OR MECHANICAL INTERIOR INSPECTION OF EXISTING CULVERTS WILL BE REQUIRED PRIOR TO THE FINAL INSPECTION.
6. ALL DISTURBED AREAS WITHIN THE COUNTY RIGHT-OF-WAY SHALL BE SODDED. SEED & MULCH IS NOT ACCEPTABLE. SOD SHALL MATCH EXISTING SOD TYPE. BAHIA SOD SHALL BE USED IN AREAS ADJACENT TO VACANT PROPERTY. DISTURBED AREAS OUTSIDE THE CONSTRUCTION LIMITS WILL BE SODDED AT THE CONTRACTOR'S EXPENSE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL SURVEY MONUMENTATION. ANY SURVEY MONUMENTATION DISTURBED OR DESTROYED DURING CONSTRUCTION SHALL BE REPLACED BY A FLORIDA LICENSED SURVEYOR PRIOR TO ISSUANCE OF A CERTIFICATE OF COMPLETION FOR THE PROJECT.
8. REGARDLESS OF PRIVATE OR PUBLIC DEDICATION, THERE SHALL BE NO UTILITY CONNECTIONS OR METER BOXES WITHIN PROPOSED OR EXISTING SIDEWALKS OR DRIVEWAY AREAS.
9. ALL DIRECTIONAL BORES SHALL BE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 555, DIRECTIONAL BORES AND THE FDOT UTILITIES ACCOMMODATION MANUAL.
10. ALL DIRECTIONAL BORES MUST EXTEND A MINIMUM OF EIGHT (8) FEET PAST THE EDGE OF PAVEMENT OF ANY ROADWAY OR COMMERCIAL DRIVEWAY. FOR RESIDENTIAL DRIVEWAYS AND SIDEWALKS, THE BORE MUST EXTEND THREE (3) FEET PAST THE EDGE ON EITHER SIDE.
11. THE CONTRACTOR SHALL CONTROL DUST GENERATED BY THIS PROJECT AT ALL TIMES, SHALL PROVIDE STREET SWEEPING AS REQUIRED, AND PREVENT SEDIMENT FROM ENTERING INTO THE EXISTING DRAINAGE SYSTEM AT ALL TIMES.
12. THE CONTRACTOR SHALL NOT EXCEED NOISE LEVELS AS SPECIFIED IN BREVARD COUNTY CODE OF ORDINANCES SECTION 62-2271.
13. ALL STRIPING AND PAVEMENT MARKINGS IN THE COUNTY RIGHT-OF-WAY SHALL BE THERMOPLASTIC AND SHALL NOT BE APPLIED UNTIL A MINIMUM OF 30 DAYS AFTER THE PLACEMENT OF THE FINAL ASPHALT SURFACE. IN THE INTERIM, STRIPING SHALL BE PAINT AND ANY REQUIRED RPM'S INSTALLED PER THE PLANS. DO NOT STRIPE ACROSS MANHOLE LIDS OR DRAINAGE GRATES.
14. REFLECTIVE PAVEMENT MARKINGS (RPM'S) SHALL BE INSTALLED IN ALL LOCATIONS AS REQUIRED BY FDOT DESIGN STANDARD, (LATEST EDITION)
15. ANY PAVEMENT MARKINGS AND RPM'S THAT ARE DESTROYED, DAMAGED, OR DIMINISHED BY CONSTRUCTION ACTIVITIES FOR UP TO 500 FEET IN EITHER DIRECTION BEYOND THE LIMITS OF CONSTRUCTION SHALL BE REPLACED OR REFINISHED BY THE CONTRACTOR.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE COUNTY RIGHT-OF-WAY FOR THE DURATION OF CONSTRUCTION. AT A MINIMUM, THE CONTRACTOR SHALL MOW THE RIGHT-OF-WAY ON AN AS NEEDED BASIS AND MAINTAIN THE DRAINAGE CONVEYANCE SYSTEM. ADDITIONAL MAINTENANCE MAY BE REQUIRED ON A CASE BY CASE BASIS.

TRAFFIC CONTROL

1. MOT PLAN REVIEW: A PROJECT-SPECIFIC MAINTENANCE OF TRAFFIC (MOT) PLAN OR ROADWAY CLOSURE MOT/DETOUR PLAN MUST BE SUBMITTED TO BREVARD COUNTY TRAFFIC OPERATIONS (321-633-2077) FOR APPROVAL A MINIMUM OF TWO (2) WEEKS PRIOR TO START OF CONSTRUCTION. THE MOT PLAN SHALL BE IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND FDOT STANDARD INDEX 600 SERIES, (LATEST EDITIONS). PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS OR VMS) MAY BE REQUIRED TO SUPPLEMENT THE STANDARD MOT SIGNAGE.
2. ROAD CLOSURES: THE CONTRACTOR SHALL NOTIFY BREVARD COUNTY TRAFFIC OPERATIONS (321-633-2077) A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF THE PROPOSED START DATE OF CONSTRUCTION WITHIN THE RIGHT-OF-WAY. FOR EACH PHASE OF CONSTRUCTION, IF APPLICABLE, CONSTRUCTION SHALL NOT BEGIN UNTIL THE MOT PLAN IS APPROVED AND NOTIFICATIONS HAVE BEEN SENT TO AFFECTED AGENCIES. CERTAIN LOCATIONS MAY REQUIRE WORK IN THE RIGHT-OF-WAY TO BE PERFORMED AT NIGHT ONLY.

3. LANE CLOSURES: THE CONTRACTOR SHALL NOTIFY BREVARD COUNTY TRAFFIC OPERATIONS (321-633-2077) A MINIMUM OF ONE (1) WEEK IN ADVANCE OF THE PROPOSED START DATE OF CONSTRUCTION WITHIN THE RIGHT-OF-WAY. CONSTRUCTION SHALL NOT BEGIN UNTIL THE MOT PLAN IS APPROVED AND NOTIFICATIONS HAVE BEEN SENT TO AFFECTED AGENCIES. NO LANE CLOSURES WILL BE PERMITTED DURING PEAK HOUR TRAFFIC VOLUMES.
4. ALL TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF THE MUTCD FOR STREETS AND HIGHWAYS, FDOT STANDARDS (LATEST EDITIONS), AND BREVARD COUNTY LAND DEVELOPMENT EXHIBIT #26.

DRAINAGE - ROADWAYS

1. ALL DRAINAGE SYSTEM CONSTRUCTION SHALL CONFORM TO FDOT STANDARD SPECIFICATIONS AND FDOT DESIGN STANDARDS, (LATEST EDITIONS).
2. ALL RETICULINE STEEL GRATES SHALL BE HOT DIPPED GALVANIZED AND HAVE A TRAFFIC BEARING H-20 LOAD RATING.
3. ALL GRATES UTILIZED WITHIN THE COUNTY RIGHT-OF-WAY SHALL BE TRAFFIC BEARING H-20 LOADING.
4. ALL STORMWATER PIPING WITHIN THE ROAD RIGHT-OF-WAY, REGARDLESS OF PUBLIC OR PRIVATE, OR STORMWATER PIPING THAT CONVEYS STORMWATER UNDER THE ROADWAY BETWEEN STORMWATER TREATMENT PONDS, SHALL BE INSPECTED PER SECTIONS 430-4.8, 430-4.8.1, AND 430-4.8.2 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, (LATEST EDITION). A COPY OF THE PIPE VIDEO SHALL BE PROVIDED TO THE COUNTY AS PART OF THE SUBMITTAL OF THE CERTIFICATION OF COMPLETION REQUEST FOR FINAL INSPECTION. THE COUNTY SHALL BE NOTIFIED ONE WEEK PRIOR TO THE START OF THE PIPE VIDEO INSPECTION PROCESS.
5. ALL OPEN CUTS SHALL CONFORM TO LAND DEVELOPMENT EXHIBIT #25. FOR ALL OPEN CUTS, THE FLOWABLE FILL AND TEMPORARY ASPHALT SHALL BE INSTALLED WITHIN TWO (2) DAYS OF THE EXCAVATION (UNLESS OTHERWISE APPROVED IN WRITING BY BREVARD COUNTY PUBLIC WORKS ENGINEERING). PERMANENT ASPHALT INCLUDING MILLING AND RESURFACING, IF NEEDED, SHALL BE COMPLETED WITHIN THIRTY (30) DAYS OF EXCAVATION.
6. THE CONTRACTOR SHALL REMOVE THE SHOULDER OF THE ROADWAY TO A POINT WHERE THE BASE MATERIAL OF THE EXISTING ROADWAY MEETS THE MINIMUM THICKNESS OF THE PROPOSED ROADWAY/COMMERCIAL DRIVEWAY CONNECTION.

CONCRETE PAVING AND SIDEWALK

1. ALL DRIVEWAYS SHALL BE CONSTRUCTED PER FDOT INDEX 515 AND/OR BREVARD COUNTY STANDARD EXHIBITS UNLESS OTHERWISE NOTED.
2. ALL CONCRETE SHALL MEET FDOT DESIGN MIX AND SPECIFICATIONS. CURING METHOD SHALL BE IN ACCORDANCE WITH THE FDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, (LATEST EDITION).
3. ALL SIDEWALKS WITHIN THE COUNTY RIGHT-OF-WAY OR WITHIN A PUBLIC SIDEWALK EASEMENT SHALL BE CONSTRUCTED OF 6-INCH THICK, 3000-PSI CONCRETE WITH FIBER MESH REINFORCEMENT. CONCRETE SIDEWALKS (OR PEDWAYS) AND CONCRETE DRIVEWAY APRONS SHALL BE CONSTRUCTED OVER SOILS COMPACTED TO 98% DENSITY. OF AASHTO T - 180. SHOULD EXISTING SOILS BE FOUND UNSUITABLE FOR COMPACTION, ADDITIONAL COMPATIBLE MATERIALS SHALL BE BROUGHT TO THE SITE FOR USE AS SUBGRADE. ALTERNATE METHODS OF COMPACTION MAY BE REQUIRED TO AVOID DAMAGE TO SURROUNDING PROPERTIES.
4. CONSTRUCT SIDEWALK JOINTS PURSUANT TO FDOT INDEX 310 (LATEST EDITION). EXPANSION JOINTS SHALL BE EVERY 50 FEET, AND BETWEEN NEW AND OLD CONCRETE.
5. TWO BY FOUR FORM BOARDS SHALL NOT BE USED FOR SIDEWALK/DRIVEWAY CONSTRUCTION. FORM BOARDS SHALL MATCH PROPOSED CONCRETE THICKNESS. SLIP FORMS SHALL NOT BE USED FOR SIDEWALK CONSTRUCTION. FIXED FORMWORK SHALL BE REQUIRED PER FDOT INDEX 300.
6. THE CONTRACTOR SHALL PROVIDE A 3-FOOT CURB TRANSITION AT ALL CURB TERMINATIONS.
7. ALL SIDEWALK AND ACCESS RAMP CONSTRUCTION SHALL COMPLY WITH THE DEPARTMENT OF JUSTICE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, FDOT DESIGN STANDARDS (LATEST EDITION), AND BREVARD COUNTY DEVELOPMENT REQUIREMENTS.

ASPHALT PAVING AND TESTING

THE FOLLOWING TESTING REQUIREMENTS APPLY TO:

- a. ALL PUBLIC AND PRIVATE SUBDIVISION PROJECTS PERMITTED THROUGH BREVARD COUNTY PLANNING AND DEVELOPMENT;
 - b. ALL SITE PLAN PROJECTS PERMITTED THROUGH BREVARD COUNTY PLANNING AND DEVELOPMENT REQUIRING WORK IN THE COUNTY RIGHT-OF-WAY;
 - c. ALL PROJECTS PERMITTED THROUGH BREVARD COUNTY PUBLIC WORKS FOR WORK WITHIN THE COUNTY RIGHT-OF-WAY.
- SECTIONS WITHIN THE FDOT STANDARD SPECIFICATIONS LIMITING TESTING REQUIREMENTS BASED ON LOT SIZE, SUB-LOT SIZE, TONNAGE, MINIMUM THICKNESS, OR SPREAD RATE WILL NOT APPLY TO THE PROJECTS LISTED ABOVE. AT A MINIMUM, ONE SET OF TESTS WILL BE REQUIRED FOR ALL PAVING PROJECTS LARGER THAN 50 TONS TOTAL AND ADDITIONAL TESTING MAY BE REQUIRED ON A CASE BY CASE EVALUATION OF THE PROJECT. TESTING REQUIREMENTS AT THE ASPHALT PLANT WILL NOT APPLY.

FOR S-TYPE ASPHALT AS SPECIFIED IN THE 2000-2004 FDOT STANDARD SPECIFICATION :

1. THE CONTRACTOR SHALL PROVIDE A DESIGN MIX SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA AND APPROVED BY THE ENGINEER OF RECORD FOR THE PROJECT TO PUBLIC WORKS ENGINEERING FIVE BUSINESS DAYS PRIOR TO PAVING. THE MIX DESIGN SHALL MEET FDOT MINIMUM REQUIREMENTS AS OUTLINED IN SECTION 331-4 (2000). DESIGN MIXES BY FDOT CERTIFIED MIX DESIGNERS WILL NOT BE ACCEPTED.
2. THE CONTRACTOR SHALL PROVIDE EXTRACTION/GRADATION TESTS IN ACCORDANCE WITH SECTION 331-4.4.2 (2000).
3. THE CONTRACTOR SHALL PROVIDE MARSHALL STABILITY TESTING IN ACCORDANCE WITH SECTION 331-5.5.1 (2000).
4. PAVEMENT SURFACE SHALL MEET ALL REQUIREMENTS SPECIFIED IN SECTION 330-13 (2000).
5. THE CONTRACTOR SHALL PROVIDE SURFACE TOLERANCE TESTING FOR ROADWAYS WITH DESIGN SPEEDS OF 35 MPH OR GREATER IN ACCORDANCE WITH SECTION 330-13.3 (2000).
6. QUALITY CONTROL CORE BORINGS SHALL BE OBTAINED FOR THICKNESS PER SECTION 330-2.2 ROADWAY, (2004) AND DENSITY PER SECTION 330-11, TABLE 330-3 (2000).
7. ASPHALT TEST RESULTS FOR EACH CORE TAKEN ARE REVIEWED ON AN INDIVIDUAL BASIS FOR THICKNESS AND DENSITY. THICKNESS AND DENSITY AVERAGES WILL NOT BE ACCEPTED. NO UNDER TOLERANCE FOR THE THICKNESS OF EACH ASPHALT CORE WILL BE ALLOWED.

FOR SUPERPAVE (SP) ASPHALT AS SPECIFIED IN THE 2010 FDOT STANDARD SPECIFICATION :

1. THE CONTRACTOR SHALL PROVIDE AN FDOT APPROVED DESIGN MIX, APPROVED BY THE ENGINEER OF RECORD FOR THE PROJECT, TO PUBLIC WORKS ENGINEERING FIVE BUSINESS DAYS PRIOR TO PAVING. THE MIX DESIGN SHALL MEET FDOT MINIMUM REQUIREMENTS AS OUTLINED IN SECTION 334-2 & 334-3 (2010). DESIGN MIXES BY FDOT CERTIFIED MIX DESIGNERS THAT ARE NOT FDOT APPROVED WILL NOT BE ACCEPTED.
2. THE CONTRACTOR SHALL PROVIDE GRADATION AND BINDER CONTENT TESTING IN ACCORDANCE WITH SECTION 334-5. (2010) HOWEVER, THE SAMPLE(S) MAY BE TAKEN AT THE PROJECT LOCATION IN LIEU OF AT THE ASPHALT PLANT AS SPECIFIED. RESULTS MUST BE PROVIDED TO THE COUNTY WITHIN ONE WEEK AFTER THE COMPLETION OF PAVING.
3. THE CONTRACTOR SHALL PROVIDE QUALITY CONTROL, DENSITY, AND THICKNESS TESTING IN ACCORDANCE WITH SECTIONS 334-3, 334-4, 334-5, AND 334-5.2.3 (2010).
4. ASPHALT TESTING RESULTS FOR EACH CORE TAKEN ARE REVIEWED ON AN INDIVIDUAL BASIS FOR THICKNESS AND DENSITY. THICKNESS AND DENSITY AVERAGES, AS NOTED IN TABLE 334-5, NOTE 2, OF SECTION 334-5 (2010) WILL NOT BE ACCEPTED. NO UNDER TOLERANCE FOR THE THICKNESS OF EACH ASPHALT CORE WILL BE ALLOWED.
5. PAVEMENT SURFACE SHALL MEET ALL REQUIREMENTS SPECIFIED IN SECTION 330-12 (2010).
6. THE CONTRACTOR SHALL PROVIDE QUALITY CONTROL SURFACE TOLERANCE TESTING FOR ROADWAYS WITH DESIGN SPEEDS OF 35 MPH OR GREATER IN ACCORDANCE WITH SECTION 330-12 (2010).

FOR FRICTION COURSE FC-5 AS SPECIFIED IN THE 2010 FDOT STANDARD SPECIFICATION :

1. THE CONTRACTOR SHALL PROVIDE AN FDOT APPROVED DESIGN MIX, APPROVED BY THE ENGINEER OF RECORD FOR THE PROJECT, TO PUBLIC WORKS ENGINEERING FIVE BUSINESS DAYS PRIOR TO PAVING. THE MIX DESIGN SHALL MEET FDOT MINIMUM REQUIREMENTS AS OUTLINED IN SECTION 337-4 (2010). DESIGN MIXES BY FDOT CERTIFIED MIX DESIGNERS THAT ARE NOT FDOT APPROVED WILL NOT BE ACCEPTED.
2. THE CONTRACTOR SHALL PROVIDE GRADATION AND BINDER CONTENT TESTING IN ACCORDANCE WITH SECTION 337-5 & 337-6 (2010). THE SAMPLE(S) MAY BE TAKEN AT THE PROJECT LOCATION IN LIEU OF AT THE ASPHALT PLANT AS SPECIFIED. RESULTS MUST BE PROVIDED TO THE COUNTY WITHIN ONE WEEK AFTER THE COMPLETION OF PAVING.
3. PAVEMENT SURFACE SHALL MEET ALL REQUIREMENTS SPECIFIED IN SECTION 330-12 (2010).
4. QUALITY CONTROL CORE BORINGS SHALL BE OBTAINED FOR THICKNESS TESTING USING SECTION 334-5.2.3 (2010).
5. THE CONTRACTOR SHALL PROVIDE QUALITY CONTROL SURFACE TOLERANCE TESTING FOR ROADWAYS WITH DESIGN SPEEDS OF 35 MPH OR GREATER IN ACCORDANCE WITH SECTION 330-12 (2010).

FOR SUPERPAVE FRICTION COURSES FC-9.5 & FC-12.5 AS SPECIFIED IN THE 2010 FDOT STANDARD SPECIFICATIONS:

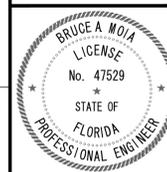
1. THE CONTRACTOR SHALL PROVIDE AN FDOT APPROVED DESIGN MIX, APPROVED BY THE ENGINEER OF RECORD FOR THE PROJECT, TO PUBLIC WORKS ENGINEERING FIVE BUSINESS DAYS PRIOR TO PAVING. THE MIX DESIGN SHALL MEET FDOT MINIMUM REQUIREMENTS AS OUTLINED IN SECTION 337-4 (2010). DESIGN MIXES BY FDOT CERTIFIED MIX DESIGNERS THAT ARE NOT FDOT APPROVED WILL NOT BE ACCEPTED.
2. THE CONTRACTOR SHALL PROVIDE GRADATION AND BINDER CONTENT TESTING IN ACCORDANCE WITH SECTION 337-5 & 337-6 (2010). THE SAMPLE(S) MAY BE TAKEN AT THE PROJECT LOCATION IN LIEU OF AT THE ASPHALT PLANT, AS SPECIFIED. RESULTS MUST BE PROVIDED TO THE COUNTY WITHIN ONE WEEK AFTER THE COMPLETION OF PAVING.
3. THE CONTRACTOR SHALL PROVIDE QUALITY CONTROL, DENSITY, AND THICKNESS TESTING IN ACCORDANCE WITH SECTIONS 337-1, 337-3, 337-4, 337-6, 337-8, AND 334-5.2.3 (2010).
4. ASPHALT TESTING RESULTS FOR EACH CORE TAKEN ARE REVIEWED ON AN INDIVIDUAL BASIS FOR THICKNESS AND DENSITY. THICKNESS AND DENSITY AVERAGES, AS NOTED IN TABLE 334-5, NOTE 2, OF SECTION 334-5 (2010) WILL NOT BE ACCEPTED. NO UNDER TOLERANCE FOR THE THICKNESS OF EACH ASPHALT CORE WILL BE ALLOWED.
5. PAVEMENT SURFACE SHALL MEET ALL REQUIREMENTS SPECIFIED IN SECTION 330-12 (2010).
6. THE CONTRACTOR SHALL PROVIDE QUALITY CONTROL SURFACE TOLERANCE TESTING FOR ROADWAYS WITH DESIGN SPEEDS OF 35 MPH OR GREATER IN ACCORDANCE WITH SECTION 330-12 (2010).

CONCRETE BOX CULVERT NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH FDOT DESIGN STANDARDS (LATEST EDITION), FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AND BREVARD COUNTY STANDARDS.
2. PRIOR TO START OF CONSTRUCTION, THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING STRUCTURAL ENGINEERING DRAWINGS (SIGNED & SEALED BY A PROFESSIONAL ENGINEER LICENSED & REGISTERED IN THE STATE OF FLORIDA) FOR ALL COMPONENTS OF THE CONCRETE BOX CULVERTS, INCLUDING WINGWALLS, TOE SLAB & CUTOFF WALLS, AND HEADWALLS. THE DRAWINGS SHALL INCLUDE QUANTITIES TABULATIONS FOR CLASS IV CONCRETE (CUBIC YARDS), AND REINFORCING STEEL (POUNDS). THE DESIGN MUST BE BASED ON FDOT'S LOAD & RESISTANCE FACTOR DESIGN (LRFD) PROGRAM. SEPARATE DRAWINGS ARE REQUIRED FOR ALL WINGWALLS, TOE SLABS & CUTOFF WALLS, AND HEADWALLS, WHICH MUST BE CAST-IN-PLACE PER FDOT SPECIFICATIONS.
3. ALL BOX CULVERT MATERIALS THAT ARE TO BE INSTALLED UNDER ROADWAYS AND/OR DRIVEWAYS ARE TO BE DELIVERED TO SITE (AND PASS INITIAL INSPECTIONS) PRIOR TO START OF DEMOLITION OF EXISTING SYSTEM.
4. CONCRETE (PRECAST OR CAST-IN-PLACE) REQUIREMENTS: CLASS IV (5500 PSI).
5. REINFORCING STEEL REQUIREMENTS: ASTM A615 GRADE 60 DEFORMED BAR UNLESS OTHERWISE NOTED, WITH A MINIMUM CLEARANCE OF 3" (THREE INCHES), UNLESS OTHERWISE SHOWN. EQUAL AREA SUBSTITUTION OF WELDED WIRE (WWF) REINFORCEMENT IS PERMITTED.
6. REFER TO FDOT INDEX 292 FOR PRECAST CONCRETE BOX CULVERT SLAB & WALL THICKNESSES, REINFORCEMENT AREAS, GENERAL NOTES (SHEET 2 OF 14), AND WELDED WIRE REINFORCEMENT BENDING DIAGRAMS (SHEET 14 OF 14).
7. REFER TO FDOT INDEX 289 FOR CONCRETE BOX CULVERT DETAILS RELATED TO LRFD.
8. REFER TO FDOT INDEX 291 FOR SUPPLEMENTAL DETAILS FOR PRECAST CONCRETE BOX CULVERTS.
9. IF REQUIRED, BY-PASS PUMPING AND/OR PIPING SHALL BE APPROVED BY BREVARD COUNTY PUBLIC WORKS PRIOR TO THE START OF CONSTRUCTION.

PROJECT NAME: DWG DESIGNED/DRAWN BY: CHECKED BY:	DATE: REVISION: 1. FOR DISTRIBUTION 10-10-12 2. 3. 4.	BY:	PREPARED BY: PUBLIC WORKS DEPARTMENT ENGINEERING PROGRAM BREVARD COUNTY BOARD OF COUNTY COMMISSIONERS 2725 JUDGE FRAN JAMIESON WAY, RM. 204, BLDG. A, VIERA, FL 32940 Ph. (321) 637-5437, Fx. (321) 633-2083	DATE: OCTOBER 2012	APPROVED BY: RICHARD B. SZPYRKA, P.E. ENGINEERING PROGRAM MANAGER	BREVARD COUNTY PUBLIC WORKS ENGINEERING STANDARD DEVELOPMENT NOTES	SHEET 1 OF 1
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MUNICIPAL APPROVAL STAMP



BRUCE A. MOIA
P.E. #47529 DATE: 2/4/2026

C-808

SHEET
24-1104

PERMITTING SET

NO.	REVISIONS	DATE
1	COMMENTS	
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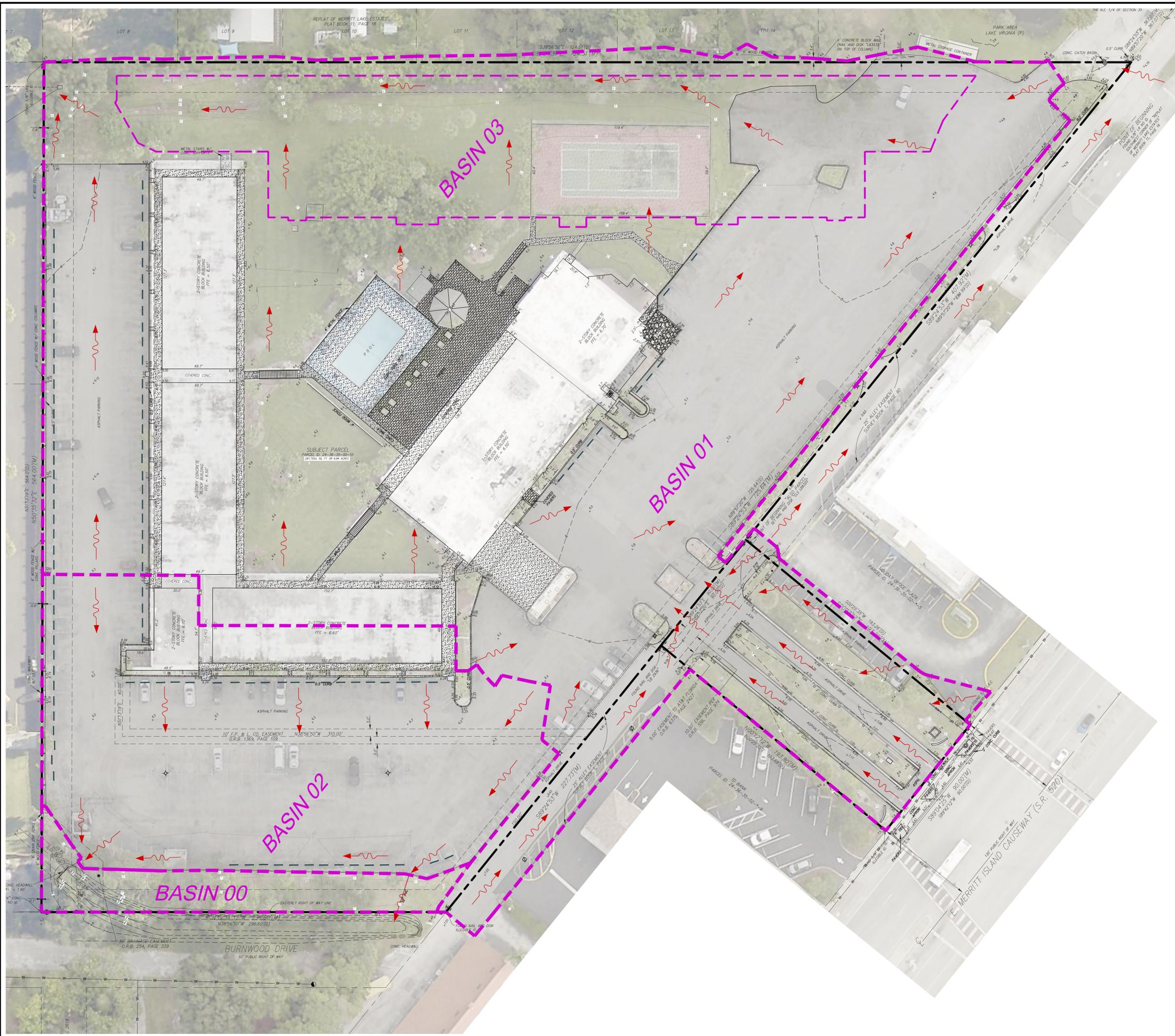
JOB NO.	DESIGNED	DRAWN	DATE	CHECKED	DATE ISSUED
24-1104	BID	BID	JANUARY, 2026	BAM	2/4/2026

MBV ENGINEERING, INC.
MOA BOWLES VILLANAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLE BLVD. SUITE H
MELBOURNE, FLORIDA 32935
P: 321-498-9911
F: 321-498-9911
ALSO WITH OFFICES IN:
VERO: 772-569-0036, FT. PIERCE: 772-466-6056, PALM CITY: 772-466-9950

BREVARD COUNTY
ENGINEERING NOTES

THE JADE AT MERRITT ISLAND
APARTMENTS - HOTEL TO
MULTI-FAMILY APARTMENTS

FLORIDA
BREVARD COUNTY



Pre-Development Basin Calculations: BASIN 00

Area Description	Square Feet	Acreage	% of Total
Impervious Areas			
Subtotal Impervious	0	0.00	0%
Pervious Areas			
Open Space - Green Areas	8,043	0.18	100%
Subtotal Pervious	8,043	0.18	100.0%
Total Basin Area	8,043	0.18	100%
Total Contributing Areas:			
Total Impervious Areas:	0.00	0.0%	
Total Pervious Areas:	0.18	100.0%	

Pre-Development Basin Calculations: BASIN 01

Area Description	Square Feet	Acreage	% of Total
Impervious Areas			
Buildings	33,192	0.76	17%
Pavement	87,246	2.00	44%
Concrete	19,251	0.44	10%
Pool Area	1,225	0.03	1%
Subtotal Impervious	140,915	3.23	71.8%
Pervious Areas			
Open Space - Green Areas	55,382	1.27	28%
Subtotal Pervious	55,382	1.27	28.2%
Total Basin Area	196,297	4.51	100%
Total Contributing Areas:			
Total Impervious Areas:	3.23	71.8%	
Total Pervious Areas:	1.27	28.2%	

Pre-Development Basin Calculations: BASIN 02

Area Description	Square Feet	Acreage	% of Total
Impervious Areas			
Buildings	6,118	0.14	11%
Pavement	44,459	1.02	83%
Concrete	1,956	0.04	4%
Subtotal Impervious	52,533	1.21	97.7%
Pervious Areas			
Open Space - Green Areas	1,244	0.03	2%
Subtotal Pervious	1,244	0.03	2.3%
Total Basin Area	53,777	1.23	100%
Total Contributing Areas:			
Total Impervious Areas:	1.21	97.7%	
Total Pervious Areas:	0.03	2.3%	

Pre-Development Basin Calculations: BASIN 03

Area Description	Square Feet	Acreage	% of Total
Impervious Areas			
Pavement	9,954	0.23	22%
Tennis Court	7,167	0.16	16%
Subtotal Impervious	17,130	0.39	37.7%
Pervious Areas			
Open Space - Green Areas	28,340	0.65	62%
Subtotal Pervious	28,340	0.65	62.3%
Total Basin Area	45,470	1.04	100%
Total Contributing Areas:			
Total Impervious Areas:	0.39	37.7%	
Total Pervious Areas:	0.65	62.3%	

Pre-Development Basin Calculations: TOTALS

Area Description	Square Feet	Acreage	% of Total
Impervious Areas			
Buildings	39,310	0.90	13%
Pavement	141,669	3.25	47%
Concrete	21,207	0.49	7%
Tennis Court	7,167	0.16	2%
Pool Area	1,225	0.03	0%
Subtotal Impervious	210,578	4.83	69.4%
Pervious Areas			
Open Space - Green Areas	93,008	2.14	31%
Subtotal Pervious	93,008	2.14	30.6%
Total Basin Area	303,587	6.97	100%
Total Contributing Areas:			
Total Impervious Areas:	4.83	69.4%	
Total Pervious Areas:	2.14	30.6%	

GRAPHIC SCALE
 30 0 15 30
 (IN FEET)
 1 inch = 30 ft.

72 HOURS BEFORE DIGGING
 CALL TOLL FREE
811
 Know what's below.
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MUNICIPAL APPROVAL STAMP

JOB NO.	DESIGNED	DRAWN	DATE	CHECKED	BAM	DATE ISSUED	DATE
24-1104	B/D	B/D	JANUARY, 2026	BAM		2/4/2026	

MBV
 ENGINEERING, INC.
 MOA BOWLES VILLANAR & ASSOCIATES
 CIVIL & STRUCTURAL SURVEYING & ENVIRONMENTAL
 1250 W. EAU GALLE BLVD., SUITE H
 MELBOURNE, FLORIDA 32935
 P. 321-255-1510 F. 321-255-5281
 VERO: 772-569-0335 FT. PENCE: 772-488-8056 PALM CITY: 772-426-9869

EXISTING DRAINAGE BASIN MAP

THE JADE SPACE COAST
 HOTEL CONVERSION
 TO MULTI-FAMILY
 APARTMENTS

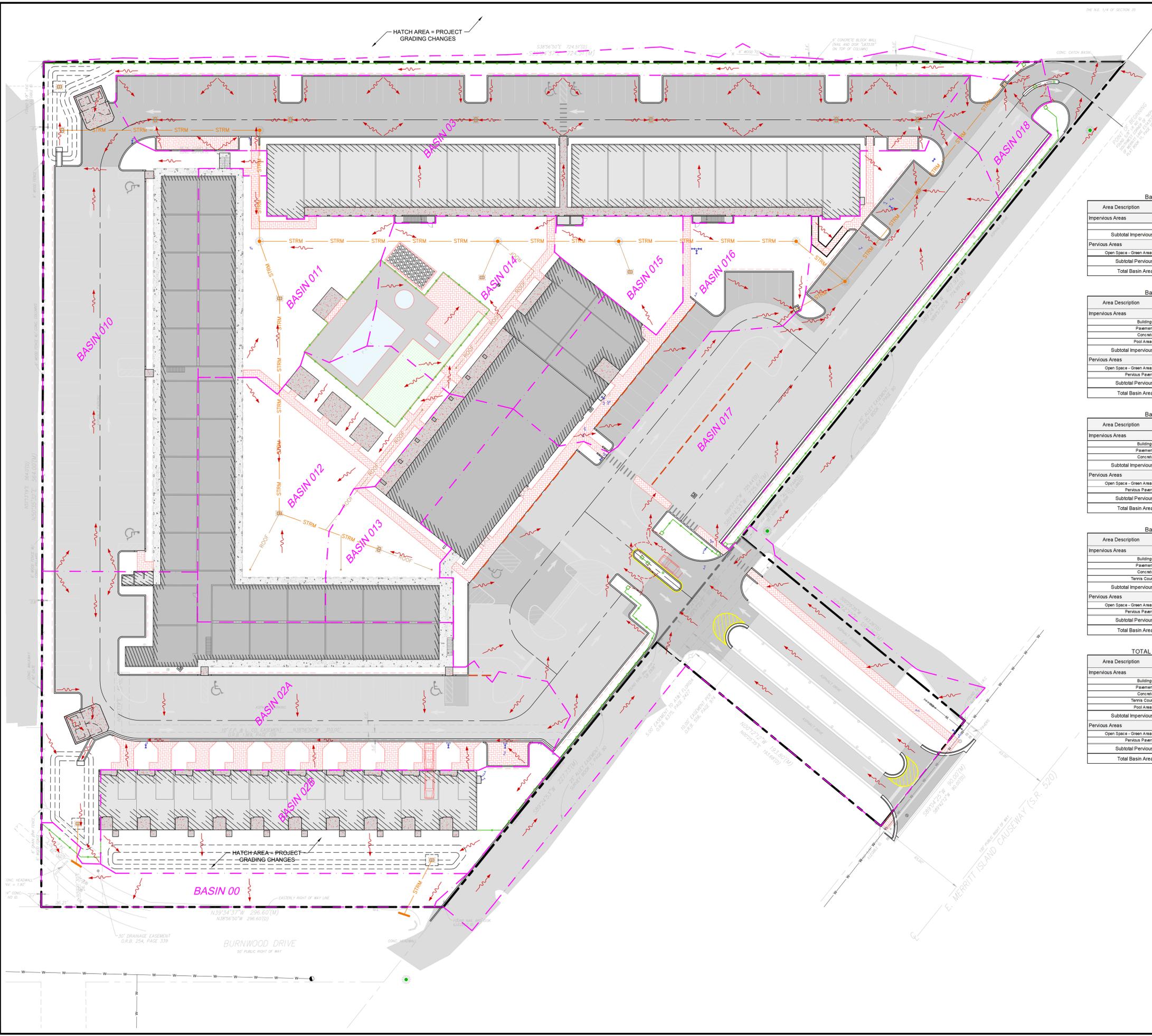
BREVARD COUNTY
 FLORIDA

BRUCE A. MOA
 LICENSE
 No. 47529
 STATE OF
 FLORIDA
 PROFESSIONAL ENGINEER

BRUCE A. MOA
 P.E. #47529 DATE: 2/4/2026

DB-01

SHEET
 24-1104
 PERMITTING SET



Post-Development Basin Calculations: BASIN 00

Area Description	Square Feet	Acres	% of Total
Impervious Areas			
Buildings	0	0.00	0%
Pavement	0	0.00	0.0%
Concrete	0	0.00	0.0%
Subtotal Impervious	0	0.00	0.0%
Pervious Areas			
Open Space - Green Areas	7,216	0.17	100%
Pervious Pavers	0	0.00	0%
Subtotal Pervious	7,216	0.17	100.0%
Pool Areas	1,428	0.03	1%
Total Basin Area	7,216	0.17	100%
Total Contributing Areas: 0.17 100%			
Total Impervious Areas: 0.00 0.0%			
Total Pervious Areas: 0.17 100.0%			

Basin 00 Changes

Area Description	Pre-Dev.	Post-Dev.	DELTA
Impervious Areas			
Buildings	0	0	0
Pavement	0	0	0
Concrete	0	0	0
Subtotal Impervious	0	0	0
Pervious Areas			
Open Space - Green Areas	8,043	7,216	-827
Pervious Pavers	0	0	0
Subtotal Pervious	8,043	7,216	-827
Pool Areas	1,225	1,428	183
Total Basin Area	8,043	7,216	-827

Post-Development Basin Calculations: BASIN 01

Area Description	Square Feet	Acres	% of Total
Impervious Areas			
Buildings	31,280	0.72	16%
Pavement	76,379	1.75	39%
Concrete	12,462	0.29	6%
Pool Areas	1,428	0.03	1%
Subtotal Impervious	121,529	2.79	62.4%
Pervious Areas			
Open Space - Green Areas	63,685	1.46	33%
Pervious Pavers	3,648	0.22	5%
Subtotal Pervious	73,333	1.68	37.6%
Pool Areas	1,428	0.03	1%
Total Basin Area	194,862	4.47	100%
Total Contributing Areas: 4.47 100%			
Total Impervious Areas: 2.79 62.4%			
Total Pervious Areas: 1.68 37.6%			

Basin 01 Changes

Area Description	Pre-Dev.	Post-Dev.	DELTA
Impervious Areas			
Buildings	33,192	31,280	-1,912
Pavement	87,246	76,379	-10,867
Concrete	19,251	12,462	-6,789
Pool Areas	1,225	1,428	183
Subtotal Impervious	140,915	121,529	-19,386
Pervious Areas			
Open Space - Green Areas	55,382	63,685	8,303
Pervious Pavers	0	3,648	3,648
Subtotal Pervious	55,382	73,333	17,952
Pool Areas	1,225	1,428	183
Total Basin Area	196,297	194,862	-1,435

Post-Development Basin Calculations: BASIN 02

Area Description	Square Feet	Acres	% of Total
Impervious Areas			
Buildings	15,231	0.35	27%
Pavement	16,763	0.38	30%
Concrete	4,414	0.10	8%
Subtotal Impervious	36,408	0.84	65.0%
Pervious Areas			
Open Space - Green Areas	16,937	0.39	30%
Pervious Pavers	2,693	0.06	5%
Subtotal Pervious	19,630	0.45	35.0%
Pool Areas	0	0.00	0%
Total Basin Area	56,038	1.29	100%
Total Contributing Areas: 1.29 100%			
Total Impervious Areas: 0.84 65.0%			
Total Pervious Areas: 0.45 35.0%			

Basin 02 Changes

Area Description	Pre-Dev.	Post-Dev.	DELTA
Impervious Areas			
Buildings	6,118	15,231	9,113
Pavement	44,459	16,763	-27,696
Concrete	1,956	4,414	2,458
Subtotal Impervious	52,533	36,408	-16,125
Pervious Areas			
Open Space - Green Areas	1,244	16,937	15,693
Pervious Pavers	0	2,693	2,693
Subtotal Pervious	1,244	19,630	18,386
Pool Areas	0	0	0
Total Basin Area	53,777	56,038	2,261

Post-Development Basin Calculations: BASIN 03

Area Description	Square Feet	Acres	% of Total
Impervious Areas			
Buildings	16,968	0.39	37%
Pavement	21,037	0.48	46%
Concrete	2,319	0.05	5%
Subtotal Impervious	40,324	0.93	88.7%
Pervious Areas			
Open Space - Green Areas	4,378	0.10	10%
Pervious Pavers	770	0.02	2%
Subtotal Pervious	4,378	0.10	9.6%
Pool Areas	0	0.00	0%
Total Basin Area	45,470	1.04	100%
Total Contributing Areas: 1.04 100%			
Total Impervious Areas: 0.93 88.7%			
Total Pervious Areas: 0.10 9.6%			

Basin 03 Changes

Area Description	Pre-Dev.	Post-Dev.	DELTA
Impervious Areas			
Buildings	0	16,968	16,968
Pavement	9,864	21,037	11,074
Concrete	0	2,319	2,319
Tennis Court	7,167	0	-7,167
Subtotal Impervious	17,130	40,324	23,194
Pervious Areas			
Open Space - Green Areas	28,340	4,378	-23,962
Pervious Pavers	0	770	770
Subtotal Pervious	28,340	5,148	-23,192
Pool Areas	1,225	1,428	183
Total Basin Area	45,470	45,470	0

Post-Development Basin Calculations: TOTALS

Area Description	Square Feet	Acres	% of Total
Impervious Areas			
Buildings	63,479	1.46	21%
Pavement	114,180	2.62	38%
Concrete	19,194	0.44	6%
Pool Areas	1,428	0.03	0%
Subtotal Impervious	198,280	4.55	65.3%
Pervious Areas			
Open Space - Green Areas	92,214	2.12	30%
Pervious Pavers	13,112	0.30	4%
Subtotal Pervious	105,326	2.42	34.7%
Pool Areas	0	0.00	0%
Total Basin Area	303,596	6.97	100%
Total Contributing Areas: 6.97 100%			
Total Impervious Areas: 4.55 65.3%			
Total Pervious Areas: 2.42 34.7%			

TOTAL Watershed Changes

Area Description	Pre-Dev.	Post-Dev.	DELTA
Impervious Areas			
Buildings	39,310	63,479	24,169
Pavement	141,669	114,180	-27,489
Concrete	21,207	19,194	-2,013
Tennis Court	7,167	0	-7,167
Pool Areas	1,225	1,428	183
Subtotal Impervious	210,578	198,280	-12,298
Pervious Areas			
Open Space - Green Areas	93,008	92,214	-794
Pervious Pavers	0	13,112	13,112
Subtotal Pervious	93,008	105,326	12,317
Pool Areas	0	0	0
Total Basin Area	303,587	303,596	9

GRAPHIC SCALE
 0 15 30
 (IN FEET)
 1 inch = 30 ft.

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NO.	DATE	BY	REVISIONS
8	24-11-04	BAM	DATE ISSUED
7		BAM	CHECKED
6		BAM	DATE
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2		BAM	
1		BAM	

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 CIVIL & STRUCTURAL - SURVEYING & ENVIRONMENTAL
 1250 W. EAU GALLE BLVD., SUITE H
 MELBOURNE, FLORIDA 32935
 P. 321-255-1511 FAX 321-255-0911
 VERO 772-566-0035 FT. PENCE 772-566-8065 PALM CITY 772-426-8969

PROPOSED DRAINAGE BASIN MAP

THE JADE AT MERRITT ISLAND
 APARTMENTS - HOTEL TO
 MULTI-FAMILY APARTMENTS

BRUCE A. MOA
 FL. P.E. 447529
 DATE: 2/14/2026

DB-02

SHEET
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