

GOLDEN HARBOUR INFRASTRUCTURE UPGRADES
CITY PROJECT #: 71-23-011
BID 2026-014-NP
CITY OF BOCA RATON
PALM BEACH COUNTY, FLORIDA



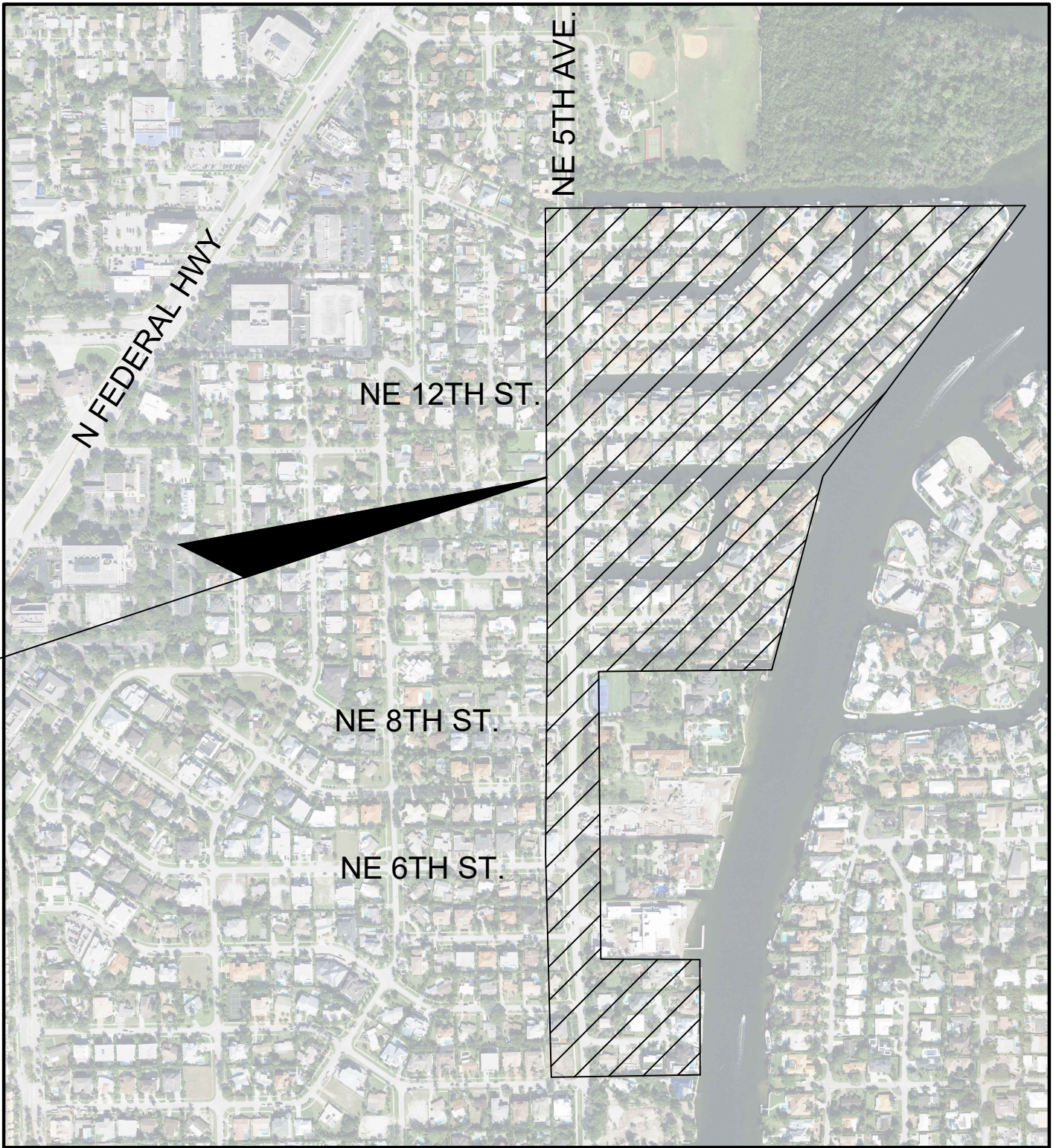
100% SET

CITY COUNCIL

SCOTT SINGER, MAYOR
FRAN NACHLAS, DEPUTY MAYOR
ANDY THOMSON
YVETTE DRUCKER
MARC WIGDER

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PROJECT LOCATION



LOCATION MAP

SECTION 20, TOWNSHIP 47 SOUTH, RANGE 43 EAST

PREPARED FOR:

CITY OF BOCA RATON

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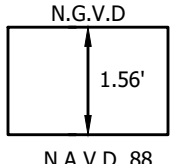
REV #	SHEET NO.	DESCRIPTION	DATE
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FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS No. C000114

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N.A.V.D. 88 = N.G.V.D. 29 - 1.56'
N.G.V.D. 29 = N.A.V.D. 88 + 1.56'

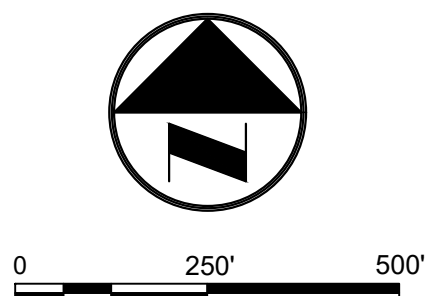
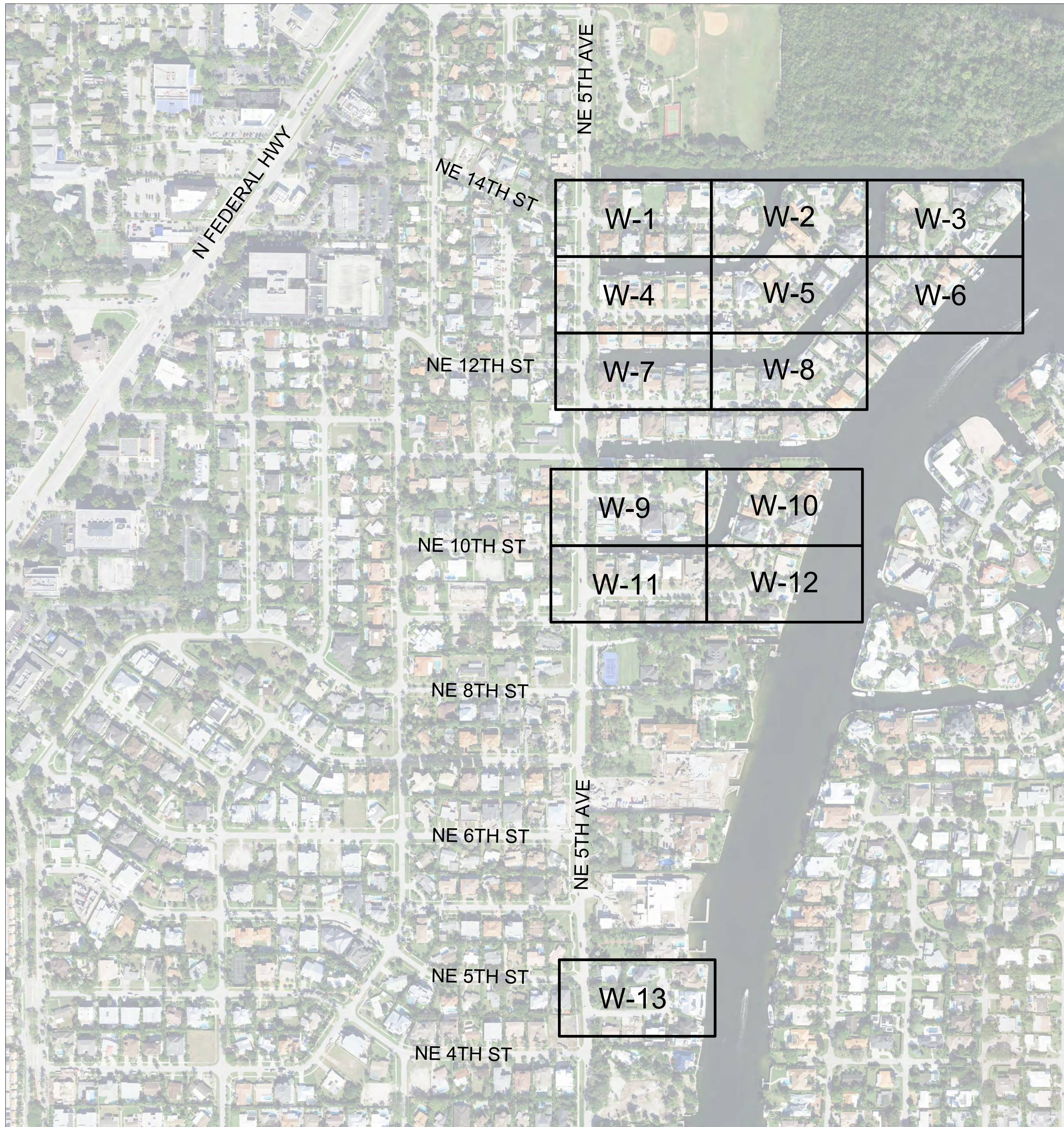
VERTICAL INFORMATION HEREON IS RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM (NAVD88).

Kevin Andrew Menting
Florida P.E. No. 92016
November 20, 2025

CTA PROJECT NUMBER: 24-0043-001-01

I. APPLICABLE CODES	A. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF CITY OF BOCA RATON UTILITY DEPARTMENT APPROVED PRODUCTS LIST & ALL OTHER LOCAL, STATE AND NATIONAL CODES WHERE APPLICABLE.												
	B. ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER AND IN STRICT COMPLIANCE WITH ALL THE REQUIREMENTS OF THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AND ALL STATE AND LOCAL SAFETY AND HEALTH REGULATIONS.												
	C. ALL ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (N.A.V.D.).												
	D. WITHIN THE CITY OF BOCA RATON JURISDICTIONAL RIGHT-OF-WAY, ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH CITY OF BOCA RATON APPROVED PRODUCTS LIST, CITY OF BOCA RATON PUBLIC SERVICES DEPARTMENT & UTILITY DEPARTMENT "MINIMUM STANDARDS" REQUIREMENTS.												
	E. TRENCH SAFETY ACT 1. ALL TRENCH EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 90-96 OF THE LAWS OF FLORIDA (THE TRENCH SAFETY ACT). 2. ALL TRENCH EXCAVATION IN EXCESS OF 5 FEET IN DEPTH SHALL BE UNDERTAKEN IN ACCORDANCE WITH O.S.H.A. STANDARD 29 CFR. SECTION 1926.650 SUBPART P. 3. A TRENCH SAFETY SYSTEM, IF REQUIRED, SHALL BE DESIGNED BY THE CONTRACTOR.												
II. PRECONSTRUCTION RESPONSIBILITIES	F. ASBESTOS CEMENT PIPE (ACP), AND TRANSITE PIPE, CONTAIN ASBESTOS MATERIAL. ALL ASBESTOS CONTAINING MATERIALS SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH THE CURRENT LOCAL, STATE AND FEDERAL REGULATIONS. THIS INCLUDES THE CUTTING, PLUGGING AND DISPOSAL OF EXISTING ACP OR TRANSITE WATER MAIN PIPES.												
	G. ALL HANDICAP ACCESSIBLE AREAS TO CONFORM WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT, LATEST EDITION.												
	H. IN THE EVENT OF A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND THE REQUIREMENTS OF ANY JURISDICTIONAL AUTHORITIES, THE MORE STRINGENT REQUIREMENT SHALL APPLY.												
	A. FOR WORK WITHIN CITY OF BOCA RATON JURISDICTIONAL RIGHT-OF-WAY, PLAN APPROVAL, AND CITY COUNCIL APPROVAL ARE REQUIRED PRIOR TO SCHEDULING PRE-CONSTRUCTION CONFERENCE.												
	B. UPON THE RECEIPT OF THE "NOTICE TO PROCEED", THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD AND ARRANGE A PRECONSTRUCTION CONFERENCE TO INCLUDE ALL INVOLVED GOVERNMENTAL AGENCIES, UTILITY OWNERS AND THE ENGINEER OF RECORD.												
III. INSPECTIONS	C. THE CONTRACTOR SHALL OBTAIN A SUNSHINE STATE ONE CALL CERTIFICATION NUMBER AND FIELD MARKINGS AT LEAST 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION, CALL 811.												
	D. LOCATION OF EXISTING FACILITIES AS SHOWN ON CONSTRUCTION DRAWINGS ARE DRAWN FROM AVAILABLE RECORDS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE EXISTING FACILITIES SHOWN OR FOR ANY EXISTING FACILITY NOT SHOWN. THE CONTRACTOR SHALL VERIFY THROUGH VACUUM EXCAVATION & TEST HOLE METHODS, THE ELEVATIONS AND LOCATIONS OF EXISTING FACILITIES PRIOR TO CONSTRUCTION. IF AN EXISTING FACILITY IS FOUND TO CONFLICT WITH THE PROPOSED CONSTRUCTION UPON EXCAVATION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF RECORD SO THAT APPROPRIATE MEASURES CAN BE TAKEN TO RESOLVE THE ISSUE.												
	E. THE CONTRACTOR SHALL COORDINATE W/ OTHER UTILITY OWNERS TO LOCATE, IDENTIFY OR RELOCATE EXISTING UTILITIES AS REQUIRED. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THIS WORK. IT SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.												
	F. FOR STREET EXCAVATION OR CLOSING OR FOR ALTERATION OF ACCESS TO PUBLIC OR PRIVATE PROPERTY, INFORM: 1. CITY OF BOCA RATON POLICE TRAFFIC SERGEANT 2. CITY OF BOCA RATON FIRE DEPARTMENT DISPATCH 3. CITY OF BOCA RATON UTILITY SERVICES AND MUNICIPAL SERVICES (NOTE: ROAD CLOSURES ARE NOT PERMITTED WITHOUT ADVANCED WRITTEN APPROVAL FROM THE CITY CIVIL ENGINEER.)												
	G. THE CONTRACTOR SHALL USE EXTREME CAUTION WORKING UNDER, OVER AND AROUND EXISTING ELECTRIC LINES. THE CONTRACTOR SHALL CONTACT THE CITY OF BOCA RATON ELECTRIC UTILITY DEPARTMENT TO VERIFY LOCATIONS, VOLTAGE AND REQUIRED CLEARANCES, ONSITE, IN RIGHT-OF-WAYS AND IN EASEMENTS, PRIOR TO ANY CONSTRUCTION IN THE VICINITY OF EXISTING LINES.												
IV. SHOP DRAWINGS	H. ALL UTILITY / ACCESS EASEMENTS TO BE SECURED PRIOR TO CONSTRUCTION.												
	I. NO CONSTRUCTION MAY COMMENCE UNTIL THE APPROPRIATE PERMITS HAVE BEEN OBTAINED FROM ALL LOCAL, STATE, AND FEDERAL AGENCIES.												
	J. ALL REQUIRED GOVERNMENTAL AGENCY BUILDING AND RIGHT OF WAY PERMITS TO BE OBTAINED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION ACTIVITY.												
	K. CONTRACTOR TO COORDINATE CONSTRUCTION SCHEDULING FOR CONNECTION TO THE EXISTING WATER LINES WITH THE CITY OF BOCA RATON UTILITY SERVICES DEPARTMENT WITH AT LEAST 48 HOURS NOTICE.												
	L. NO CONNECTIONS TO EXISTING LINES SHALL BE MADE UNTIL APPLICABLE TESTS HAVE BEEN PERFORMED AND PASSED AND THE SYSTEM IS APPROVED BY APPLICABLE REGULATORY AGENCIES, INCLUDING THE PALM BEACH COUNTY HEALTH DEPARTMENT.												
V. TEMPORARY FACILITIES	A. THE CONTRACTOR SHALL NOTIFY THE CITY OF BOCA RATON MUNICIPAL SERVICES & UTILITY SERVICES DEPARTMENTS, FDOT, PALM BEACH COUNTY, THE ENGINEER OF RECORD, AND ANY OTHER GOVERNMENTAL AGENCIES HAVING JURISDICTION AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION AND 24 HOUR ADVANCED NOTIFICATION PRIOR TO THE INSPECTION OF THE FOLLOWING ITEMS, WHERE APPLICABLE: 1. CLEARING AND FILLING 2. WATER DISTRIBUTION SYSTEM (INSTALLATION & TESTING) 3. STORMWATER DRAINAGE SYTEM 4. SUBGRADE 5. LIMEROCK BASE 6. ASPHALTIC CONCRETE 7. SIDEWALK 8. SUBSTANTIAL COMPLETION 9. FINAL												
	A. PRIOR TO THEIR CONSTRUCTION OR INSTALLATION, SHOP DRAWINGS SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD FOR THE FOLLOWING: FIRE HYDRANTS, VALVES, VALVES BOXES, METER BOXES, FITTINGS, PIPE MATERIAL, SERVICE CONNECTIONS AND ALL REQUIRED ACCESSORIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL OTHER AGENCY APPROVALS IF REQUIRED. CITY OF BOCA RATON APPROVED PRODUCTS LIST MUST BE SUBMITTED.												
	A. GENERAL: 1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR OR SUPPLY TEMPORARY WATER SERVICE AND ELECTRICITY.												
	B. TRAFFIC REGULATION: 1. MAINTENANCE OF TRAFFIC IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.). CONTRACTOR IS RESPONSIBLE TO PREPARE AND PROCESS A MAINTENANCE OF TRAFFIC PLAN AND OBTAIN APPROVAL FROM CITY OF BOCA RATON MUNICIPAL SERVICES & UTILITY SERVICES DEPARTMENTS AND PALM BEACH COUNTY TRAFFIC ENGINEERING AND FDOT WHERE APPLICABLE PRIOR TO THE START OF CONSTRUCTION.												
	2. ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAYS OR WALKWAYS SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.												
VI. WATER DISTRIBUTION SYSTEM	3. NO TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN DURING NIGHTTIME HOURS, UNLESS IN ACCORDANCE WITH METHODS APPROVED BY THE ENGINEER OF RECORD AND THE CITY OF BOCA RATON MUNICIPAL SERVICES & UTILITY SERVICES DEPARTMENTS.												
	4. THE SAFE WALK ROUTE FOR ALL SCHOOLS WITHIN THE VICINITY OF THE CONSTRUCTION ZONE SHALL BE MAINTAINED DURING												
	A. SEPARATION OF WATER AND SEWER MAINS FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT ARE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER.												
	HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATERMAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES AND ON SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.												
	1. NEW OR RELOCATED UNDERGROUND WATERMAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATERMAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED SEWER, STORMWATER FORCEMAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.												
VII. PAVING	2. NEW OR RELOCATED UNDERGROUND WATERMAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATERMAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.												
	3. NEW OR RELOCATED UNDERGROUND WATERMAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATERMAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE TYPE SANITARY SEWER, WASTEWATER FORCEMAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATERMAINS AND GRAVITY TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATERMAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.												
	4. NEW OR RELOCATED UNDERGROUND WATERMAINS SHALL BE LAID TO PROVIDE A MINIMUM HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATERMAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED 'ON SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM' AS DEFINED IN SECTION 381.0065(2), F.S. AND RULE 64E-6.002, F.A.C.												
	VERTICAL SEPARATION BETWEEN UNDERGROUND WATERMAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCEMAINS, AND RECLAIMED WATER PIPELINES.												
	1. NEW OR RELOCATED UNDERGROUND WATERMAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY OR VACUUM TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPE LINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATERMAIN IS AT LEAST TWELVE INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATERMAIN ABOVE THE OTHER PIPELINE. EXCEPTION MAY BE TAKEN IN ACCORDANCE WITH RULE FAC 62-555.314												
GENERAL PAVING	2. NEW OR RELOCATED UNDERGROUND WATERMAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPE LINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATERMAIN IS AT LEAST TWELVE INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATERMAIN ABOVE THE OTHER PIPELINE. EXCEPTION MAY BE TAKEN IN ACCORDANCE WITH RULE FAC 62-555.314.												
	3. AT THE UTILITY CROSSING DESCRIBED IN PARAGRAPH 1 AND 2 ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATERMAIN JOINTS SHALL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATERMAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM TYPE SANITARY SEWER, STORM SEWERS, STORMWATER FORCEMAINS, 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 FORCEMAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER III 62-610, F.A.C.												
	4. WHERE 12" VERTICAL SEPARATION BETWEEN POTABLE WATER MAINS AND SANITARY OR STORM SEWERS CANNOT BE MAINTAINED, A 20 LINEAR FOOT SEGMENT OF DUCTILE IRON PIPE WATER MAIN WILL BE INSTALLED ON CENTER OVER THE CONFLICT.												
	B. MATERIALS 1. PER CITY OF BOCA RATON APPROVED PRODUCTS LIST OR AS OTHERWISE NOTED.												
	2. ALL WATER MAIN PIPE, INCLUDING FITTINGS, SHALL BE COLOR CODED OR MARKED BLUE AS A PREDOMINANT COLOR TO DIFFERENTIATE DRINKING WATER FROM RECLAIMED OR OTHER WATER. UNDERGROUND PLASTIC PIPE SHALL BE SOLID-WALL BLUE PIPE, SHALL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN, OR SHALL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE SHALL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE SHALL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90 DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF PIPE, THE TAPE OR PAINT SHALL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE; FOR PIPES WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT SHALL BE APPLIED IN A CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE, AS WELL AS ALONG THE TOP OF THE PIPE.												
CITY/LOCAL ROW:	3. EXISTING PIPE (4" AND ABOVE) DESIGNATED FOR ABANDONMENT SHALL BE FILLED WITH NON-EXCAVATABLE FLOWABLE FILL AND MEETING THE REQUIREMENTS OF FDOT STANDARD SPECIFICATION SECTION 121.												
	4. DUCTILE IRON FITTINGS FOR WATER DISTRIBUTION MAINS SHALL CONFORM TO ANSI/AWWA STANDARD C153/A21.53-11. FITTINGS 4" AND LARGER SHALL BE CEMENT LINED AND SEAL COATED IN ACCORDANCE WITH ANSI/AWWA STANDARD C104/A21.3-08.												
	5. ALL WATER MAIN INSTALLATIONS SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTER 62-555.320, FLORIDA ADMINISTRATIVE CODE.												
	6. JOINTS FOR BELL AND SPIGOT DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO ANSI/AWWA STANDARD C111/A21.11-12 OR LATEST REVISION. MECHANICAL JOINT RESTRAINT SHALL BE PER CITY OF BOCA RATON APPROVED PRODUCTS LIST.												
	7. WATER DISTRIBUTION VALVES SHALL BE GATE VALVES (4"-16") CONFORMING TO ANSI/AWWA C509-09 OR LATEST REVISION. THEY SHALL BE RESILIENT SEAT AND BI-DIRECTIONAL FLOW ONLY. MAXIMUM WORKING PRESSURE OF 200 PSI AND TESTED AT 400 PSI.												
ROADWAY PAVEMENT RESTORATION:	8. BACKFLOW PREVENTION DEVICES SHALL BE USC APPROVED.												
	C. SERVICE CONNECTION 1. PER CITY OF BOCA RATON APPROVED PRODUCTS LIST OR AS OTHERWISE NOTED.												
	2. CONTRACTOR TO PROVIDE WRITTEN NOTIFICATION 48 HOURS IN ADVANCE TO EACH BUSINESS/RESIDENT PRIOR TO SWITCHING OVER WATER SERVICE.												
	D. INSTALLATION 1. ALL WATER AND FORCE MAINS SHALL BE LAID WITH A MINIMUM 36" COVER FOR PVC AND 30" FOR DIP.												
	2. ALL DIP SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/AWWA C600-10.												
NEW ROADWAY PAVEMENT SECTION:	3. PIPE DEFLECTION SHALL NOT EXCEED 75% OF THE MAXIMUM DEFLECTION RECOMMENDED BY THE MANUFACTURER.												
	4. NO CONNECTIONS TO EXISTING LINES SHALL BE MADE UNTIL PRESSURE TESTS & BACTERIOLOGICAL TESTS HAVE BEEN PERFORMED AND THE SYSTEM IS ACCEPTABLE TO THE CITY OF BOCA RATON UTILITY DEPARTMENT AND THE PALM BEACH COUNTY HEALTH DEPARTMENT.												
	5. PIPE BEDDING MATERIAL SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8"-7/8" SIZING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS, AND LARGER ROCK SHALL BE REMOVED. BEDDING MATERIAL SHALL BE COMPACTED IN 6" MAXIMUM LAYERS TO ACHIEVE 98% OF THE MAXIMUM DENSITY PER AASTHO T-180. BEDDING MATERIAL SHALL BE PLACED 8" BELOW BOTTOM OF PIPE AND EXTEND TO SPRING LINE OF PIPE.												
	6. BACKFILL MATERIAL SHALL BE WELL GRADED GRANULAR MATERIAL (2" MAX. SIZE), PLACED AND COMPACTED TO ACHIEVE 98% OF THE MAXIMUM DENSITY PER AASTHO T-180, WITH WELL TAMPED LAYERS NOT TO EXCEED 6" TO A HEIGHT 12" ABOVE PIPE. REFER TO UTILITY TRENCH DETAIL WITHIN PLAN SHEETS.												
	E. TESTING 1. BEFORE ANY PHYSICAL CONNECTIONS TO THE EXISTING WATER MAINS ARE MADE, THE COMPLETE WATER SYSTEM SHALL BE PRESSURE TESTED, DISINFECTED, AND CLEARED BY DEPARTMENT OF HEALTH.												
CITY/LOCAL ROW:	2. HYDROSTATIC TESTING OF NEW WATER AND FORCE MAINS SHALL BE PERFORMED AT A MINIMUM STARTING PRESSURE OF 150 PSI (200 PSI MIN. FOR FIRELINES) FOR TWO HOURS IN ACCORDANCE WITH ANSI/AWWA C600-05 OR LATEST REVISION, THE PRESSURE TEST SHALL NOT VARY MORE THAN 5 PSI DURING THE TEST. THE PRESSURE TEST SHALL BE WITNESSED BY A REPRESENTATIVE OF THE CITY OF BOCA RATON UTILITY SERVICES DEPARTMENT AND THE ENGINEER OF RECORD.												
	3. BEFORE ACCEPTANCE FOR OPERATION, THE WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH THE ANSI/AWWA C651-05; METER RECONNECTIONS MAY BE MADE TO NEW LINES AFTER TWO CONSECUTIVE DAYS OF BACTERIOLOGICAL SAMPLES HAVE PASSED, AND COPIES OF RESULTS HAVE BEEN RECEIVED AND ACCEPTED BY THE ENGINEER, CITY OF BOCA RATON UTILITY SERVICES DEPARTMENT, AND DEPARTMENT OF HEALTH.												
	4. BACTERIOLOGICAL TESTS THAT MUST BE SUBMITTED TO DEPARTMENT OF HEALTH WITH THE FINAL WATER MAIN CERTIFICATION PACKAGE EXPIRE AFTER 60 DAYS (FROM THE DATE TESTS WERE PERFORMED). CONTRACTOR WILL BE REQUIRED TO PROVIDE NEW BACTERIOLOGICAL TESTS (AT CONTRACTORS EXPENSE) IF THEY SHOULD EXPIRE. CITY OF BOCA RATON WILL ONLY PAY FOR PASSING BACTERIOLOGICAL TESTS AND FAILING TESTS MUST BE RETESTED ON ALL PORTIONS OF THE MAIN CONNECTED TO TESTING SITE, NOT JUST THE ONE LOCAL SITE THAT FAILS.												
	5. SAMPLING POINTS SHALL BE PROVIDED AT THE LOCATIONS SHOWN ON THE PLANS.												
	6. THE ALLOWABLE LEAKAGE SHALL BE LESS THAN THE NUMBER OF GALLONS PER HOUR AS DETERMINED BY THE FORMULA: $L = \frac{S \cdot D \cdot P}{148000}$ (0.5) IN WHICH L EQUALS THE ALLOWABLE LEAKAGE IN GALLONS PER HOUR. S EQUALS LENGTH OF PIPE (LINEAR FEET), D EQUALS NOMINAL DIAMETER OF PIPE (INCHES) AND P EQUALS THE MINIMUM TEST PRESSURE (POUNDS PER SQUARE INCH).												
CITY/LOCAL ROW:	C. INSTALLATION: 1. STABILIZED SUBGRADE FOR ROADWAYS SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY PER AASTHO T-180 AND HAVE A MIN. L.B.R. OF 40.												
	2. LIMEROCK BASE COURSE FOR PAVED AREAS SHALL BE COMPACTED TO 98% OF MAXIMUM DRY DENSITY AS PER AASTHO T-180, HAVE A L.B.R. OF 100, AND CONFORM WITH THE FOLLOWING: CITY/LOCAL ROW: A MINIMUM THICKNESS OF 16" & SHALL BE CONSTRUCTED IN TWO EIGHT INCH LIFTS. PRIME & TACK COAT PER FDOT SECTION 300. ALSO SEE DETAILS FOR ROADWAY PAVEMENT RESTORATION.												
	FDOT ROW (FEDERAL HIGHWAY): A MINIMUM THICKNESS OF 12.5" & O.C. SHALL BE CONSTRUCTED IN TWO EQUAL (6.25") LIFTS. PRIME & TACK COAT PER FDOT SECTION 300. ALSO SEE FDOT R/W ROADWAY PAVEMENT RESTORATION DETAIL.												
	PBC ROW (N DIXIE HIGHWAY) SEE DETAIL SHEETS OPEN CUT DETAIL FOR THOROUGHFARE ROADS (PAVED AREAS).												
	SEE DETAIL SHEETS OPEN CUT DETAIL FOR THOROUGHFARE ROADS (PAVED AREAS).												

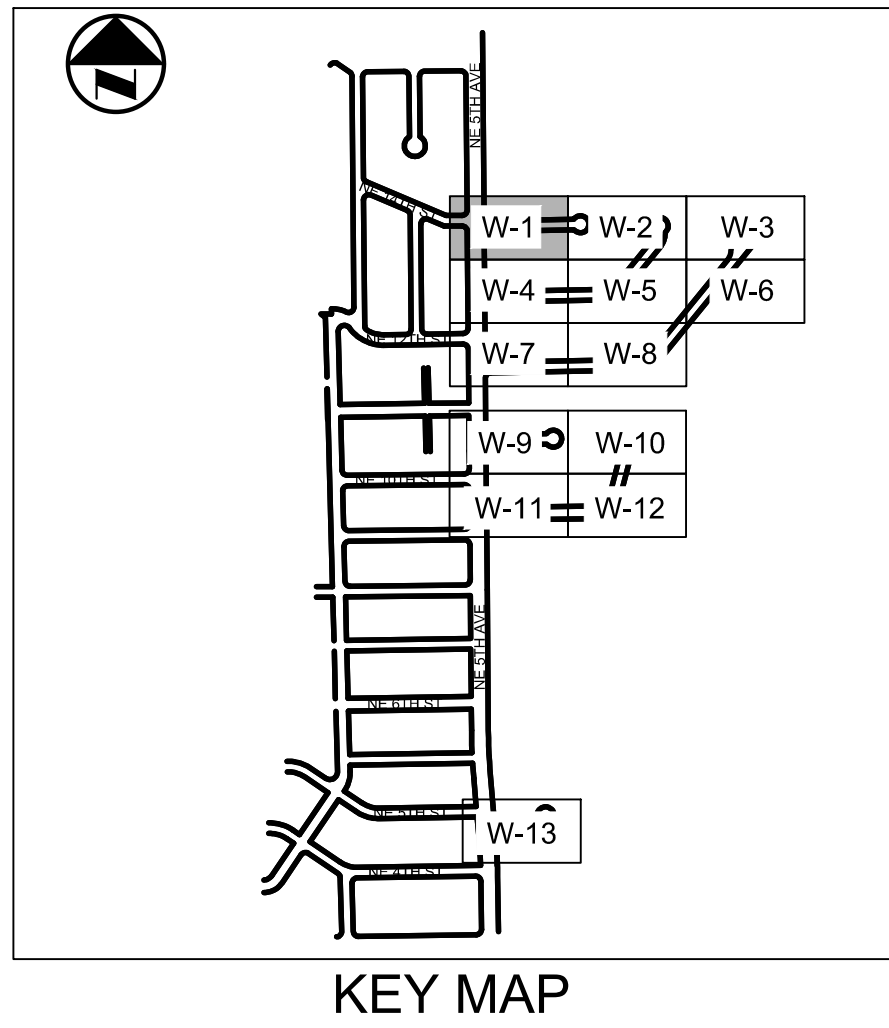
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CITY PROJECT #:XXXX
BID #XXXX

GOLDEN HARBOUR INFRASTRUCTURE UPGRADES	PREPARED FOR: CITY OF BOCA RATON	KEY MAP	 Craven • Thompson and Associates, Inc. ENGINEERS • PLANNERS • SURVEYORS 3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309 TEL.: (954) 739-6409 FAX: (954) 739-6400 FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS No. 271 FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS No. 0000114	DATE:	11/11/2025
				SCALE:	1"=80'
				DESIGN BY:	KAM
				DRAWN BY:	KAM
				CHECKED BY:	KAM
				APPROVED BY:	KAM
				BY:	DATE:
				DESCRIPTION:	
			MAJOR: GOLDEN HARBOR IS THE PROPERTY OF GOLDEN THOMPSON & ASSOCIATES, INC. AND SHALL NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF GOLDEN THOMPSON & ASSOCIATES, INC. Craven Thompson & Associates, Inc. copyright © 2024		

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GENERAL NOTES:

- 1.) WATER AND SEWER SERVICE PROVIDED BY THE CITY OF BOCA RATON.
- 2.) CONTRACTOR TO MAINTAIN INGRESS/EGRESS TO EXISTING DRIVEWAYS THROUGHOUT CONSTRUCTION. TRENCHES THRU DRIVEWAYS AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE IMMEDIATELY RESTORED TO MAINTAIN INGRESS/EGRESS.
- 3.) THE REMOVAL OR ABANDONMENT OF EXISTING UTILITIES (WATER, SEWER, GAS, ETC.) SHALL BE COORDINATED WITH THE CONSTRUCTION, ENGINEER'S ACCEPTANCE, AND CERTIFICATION OF THE PROPOSED WATER SYSTEM. ALL EXISTING UTILITIES (WATER, SEWER, GAS, ETC.) AND DRAINAGE SERVICES MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE ENTIRE DURATION OF CONSTRUCTION.
- 4.) CONTRACTOR IS RESPONSIBLE TO MAINTAIN EXISTING WATER AND FIRE SERVICE THROUGHOUT THE DURATION OF CONSTRUCTION.
- 5.) CONTRACTOR SHALL COORDINATE THE SHUTDOWN OF EXISTING WATER SERVICE WITH THE CITY OF BOCA RATON AND THE AFFECTED CITY RESIDENTS. OTHER THAN APPROVED SHUTDOWN HOURS BY THE CITY OF BOCA RATON, EXISTING WATER SERVICE MUST BE MAINTAINED AND OPERATIONAL THROUGHOUT CONSTRUCTION.

6.) CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO STARTING THE WORK.

NOTE: PROPOSED WATER METER BOXES AND SERVICES ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS OF EXISTING WATER METERS AND SERVICES ON PRIVATE PROPERTY OR NEAR THE PROPERTY LINE PRIOR TO INSTALLATION OF NEW WATER METER. CONTRACTOR SHALL FIELD ADJUST PROPOSED SERVICES FROM MAIN LINE CONNECTION TO ACCOMMODATE EXISTING SERVICE(S). NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.

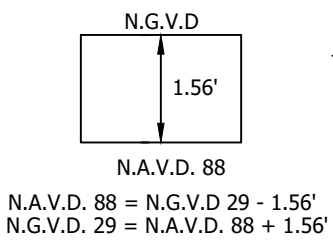
PROPOSED LEGEND- PAVING & GRADING

	INDICATES MILL & OVERLAY EXISTING ASPHALT		INDICATES SOD RESTORATION
	INDICATES ROADWAY RESTORATION		INDICATES NEW 6" CONCRETE SIDEWALK
	INDICATES CONCRETE RESTORATION		INDICATES TRUNCATED DOME
	INDICATES PAVER RESTORATION		INDICATES REMOVE CONCRETE SECTION

- 7.) CONTRACTOR IS REQUIRED TO OBTAIN PLUMBING PERMIT FROM CITY OF BOCA RATON BUILDING DEPARTMENT FOR NEW WATER SERVICE ROUTING ON PRIVATE PROPERTY.
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- 11.) CONTRACTOR TO REMOVE VALVES AND VALVE BOXES FROM ALL ABANDONED AND/OR GROUT-FILLED WATER MAINS.
- 12.) EXISTING FIRE HYDRANTS DESIGNATED FOR REMOVAL SHALL BE SALVAGED AND DELIVERED TO THE CITY OF BOCA RATON UTILITY SERVICES DEPARTMENT.

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	FIRE HYDRANT ASSEMBLY
	WATER METER
	INDICATES NEW WATER METER WITH WATER SERVICE ROUTED ON PRIVATE ON PRIVATE PROPERTY FROM REAR OF PROPERTY TO NEW METER LOCATION AT FRONT OF PROPERTY. SEE DETAIL ON SHEET DET-2.
	INSERTION VALVE/LINE STOP
	GATE VALVE
	BACTERIOLOGICAL SAMPLING POINT
	UTILITY TEST HOLE
	TO BE ABANDONED IN-PLACE & GROUT FILLED PER FDOT SPECIFICATION SECTION 121 TO BE REMOVED
	INDICATES APPROXIMATE LOCATION OF EXISTING WATER METER PER CITY WATER METER ATLAS. CONTRACTOR TO FIELD VERIFY EXISTING WATER METER LOCATION.



VERTICAL INFORMATION HEREON IS RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM (NAVD88).

CITY PROJECT #:XXXX
BID #XXXX

GRAVEN • THOMPSON AND ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS



3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309
FAX: (954) 739-6409
FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. C000114
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GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES

PREPARED FOR:

CITY OF BOCA RATON

WATER MAIN PLAN

Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

PROJECT NO.
24-0043-001-01

W-1
SHEET 5 OF 29

DATE:	SCALE:	DESIGN BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
11/11/2025	1" = 20'	KAM	KAM	KAM	KAM

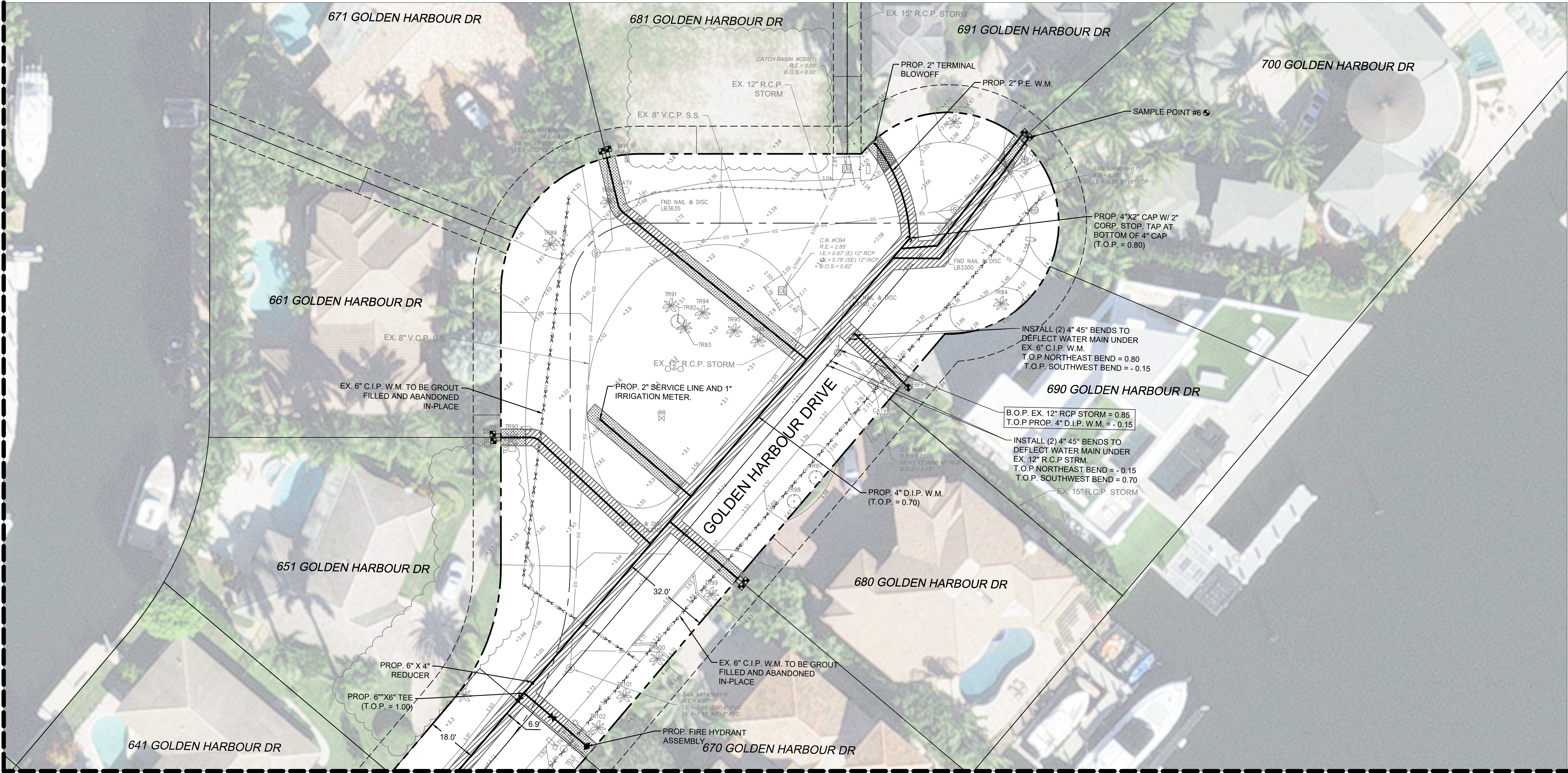
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11/11/2025	1" = 20'	KAM	KAM	KAM	KAM

DATE:	SCALE:	DESIGN BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
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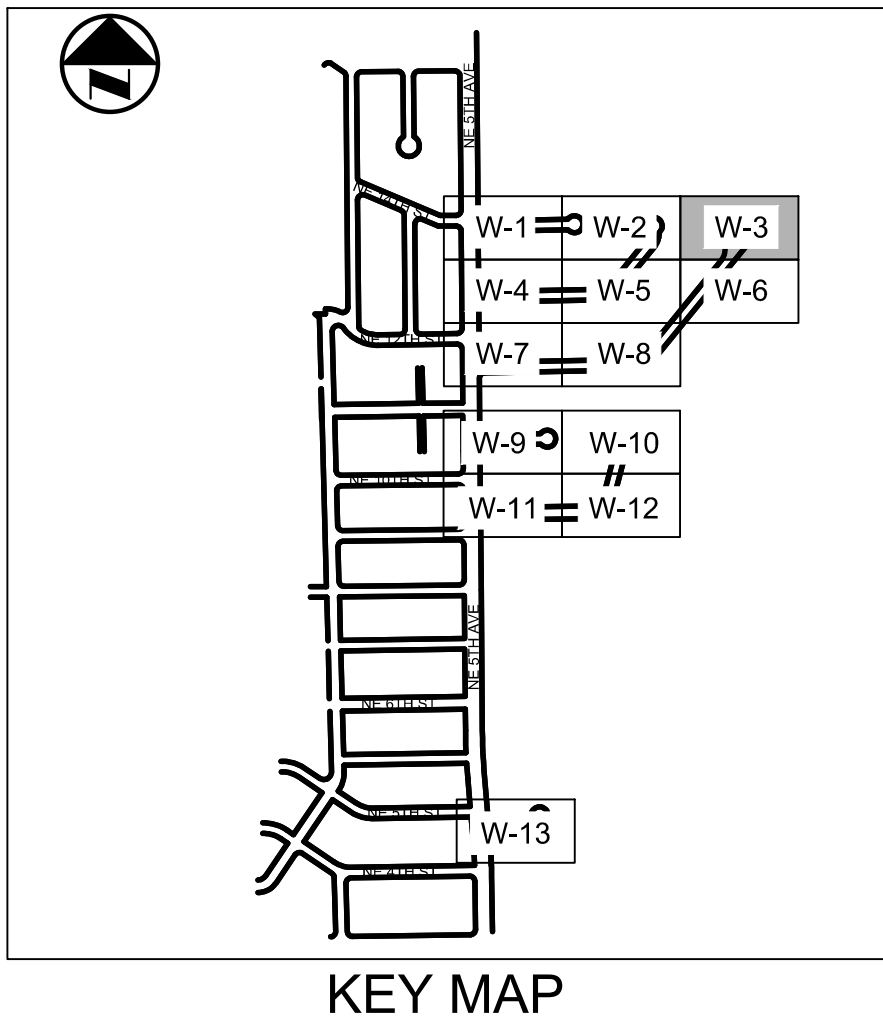
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11/11/2025	1" = 20'	KAM	KAM	KAM	KAM

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MATCHLINE SEE SHEET W-2



MATCHLINE SEE SHEET W-6



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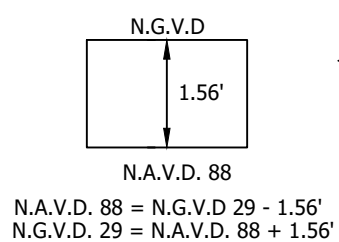
PROPOSED LEGEND- PAVING & GRADING

- | | | | |
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| | INSERTION VALVE/LINE STOP |
| | GATE VALVE |
| | BACTERIOLOGICAL SAMPLING POINT |
| | UTILITY TEST HOLE |
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VERTICAL INFORMATION HEREON IS RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM (NAVD88).

CITY PROJECT #:XXXX
BID #XXXX

CRAVEN • THOMPSON AND ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309
FAX: (954) 739-6409
FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS No. 271
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS No. C000114
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GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES
PREPARED FOR:
CITY OF BOCA RATON
WATER MAIN PLAN

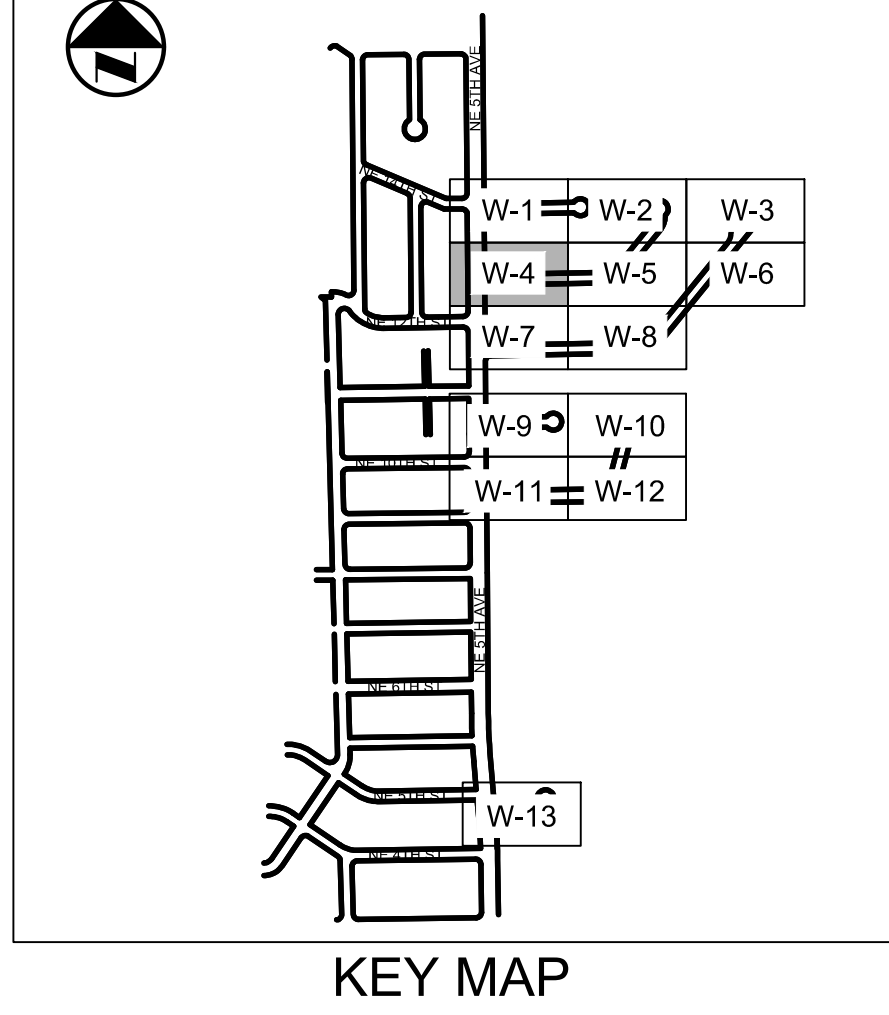
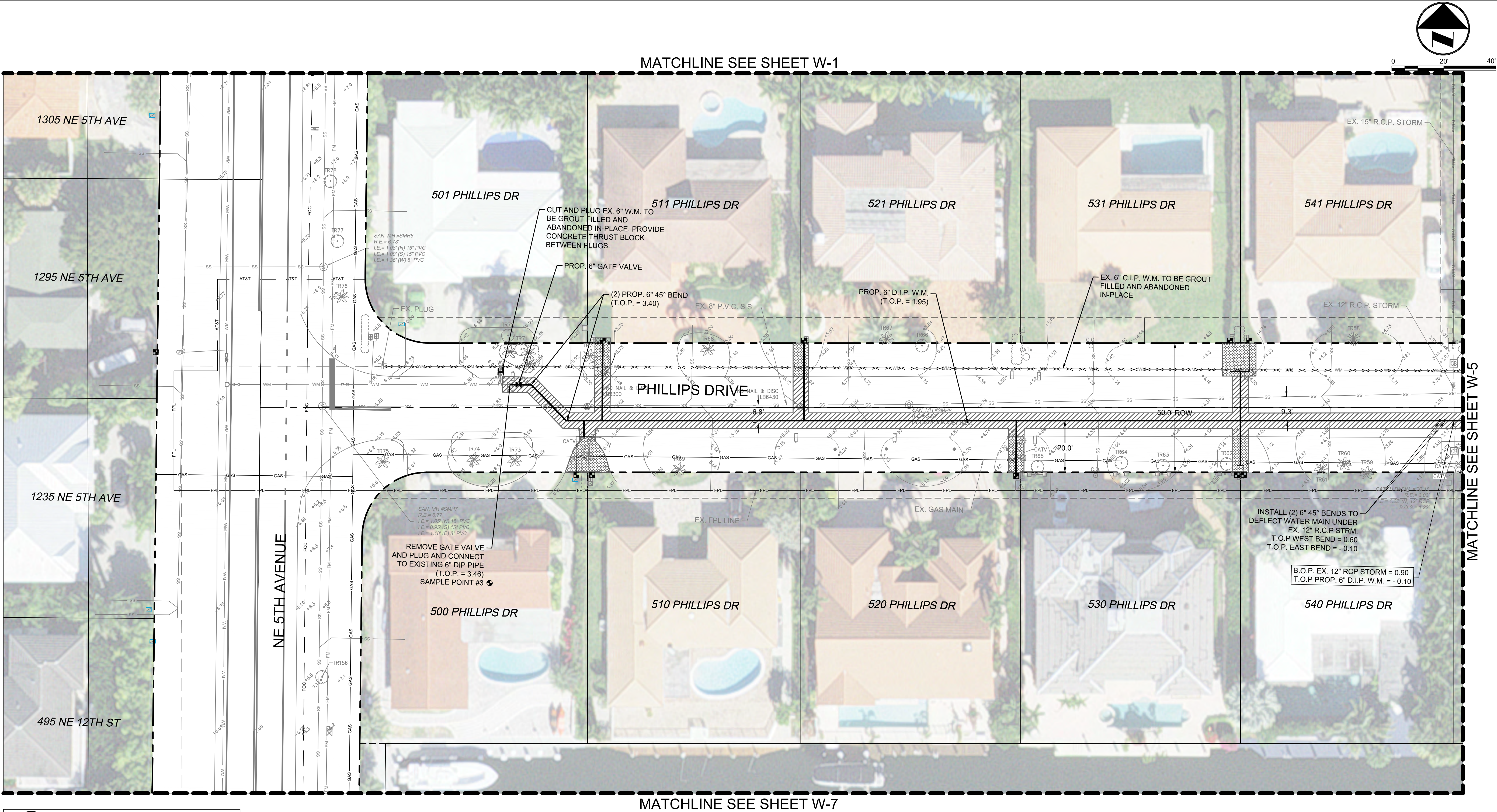
Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

PROJECT NO.
24-0043-001-01

W-3
SHEET 7 OF 29

DATE:	11/11/2025
SCALE:	1" = 20'
DESIGN BY:	KAM
DRAWN BY:	KAM
CHECKED BY:	KAM
APPROVED BY:	KAM
DATE:	
BY:	
DESCRIPTION:	

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GENERAL NOTES:

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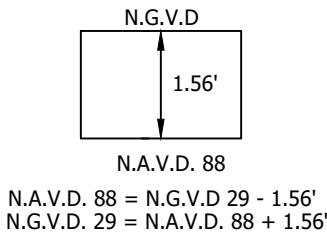
PROPOSED LEGEND- PAVING & GRADING

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VERTICAL INFORMATION HEREON IS RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM (NAVD88).

CITY PROJECT #:XXXX
BID #XXXX

DATE:	11/11/2025
SCALE:	1" = 20'
DESIGN BY:	KAM
DRAWN BY:	KAM
CHECKED BY:	KAM
APPROVED BY:	KAM

GRAVEN • THOMPSON AND ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
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FAX: (954) 739-6409
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FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271
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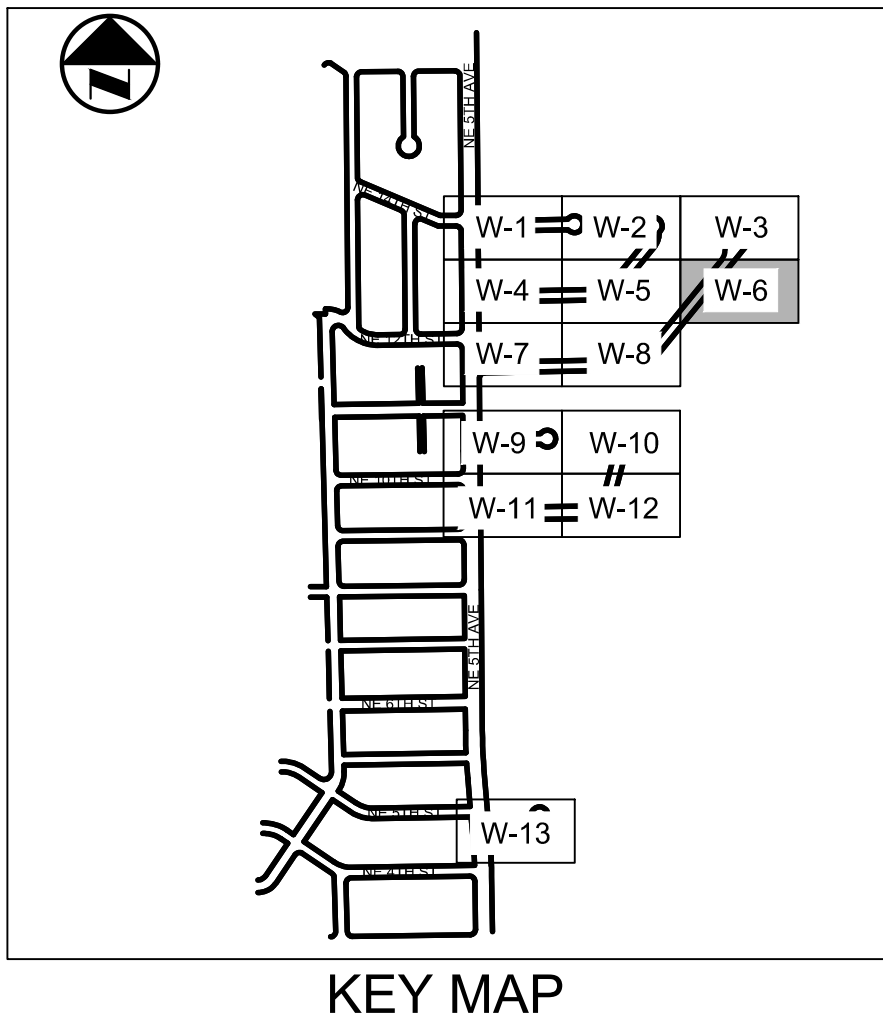
GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES
PREPARED FOR:
CITY OF BOCA RATON
WATER MAIN PLAN

Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

PROJECT NO.
24-0043-001-01

W-4
SHEET 8 OF 29

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GENERAL NOTES:

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FIRE HYDRANT ASSEMBLY

WATER METER

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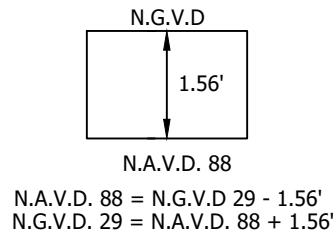
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GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES

PREPARED FOR:
CITY OF BOCA RATON

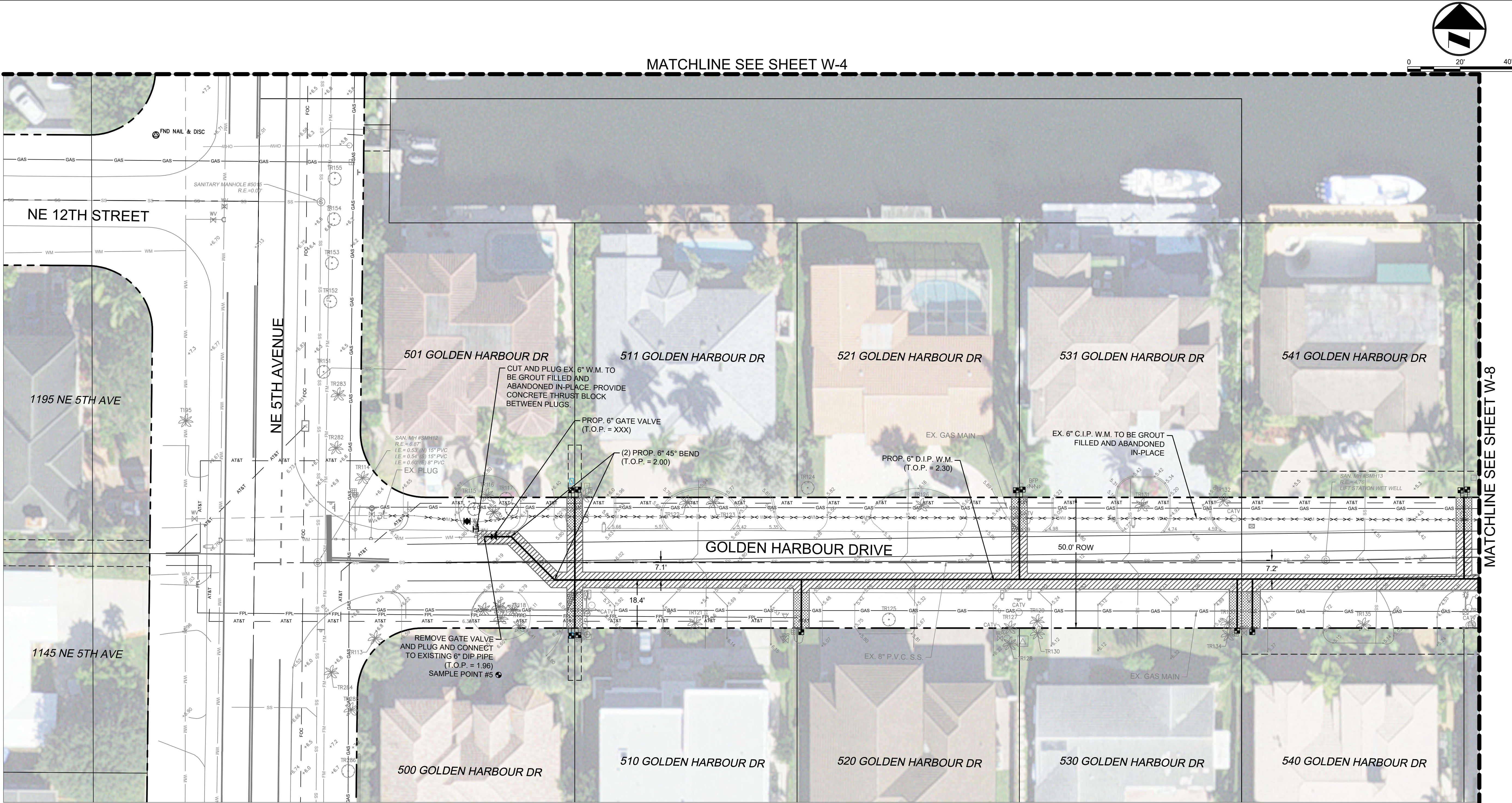
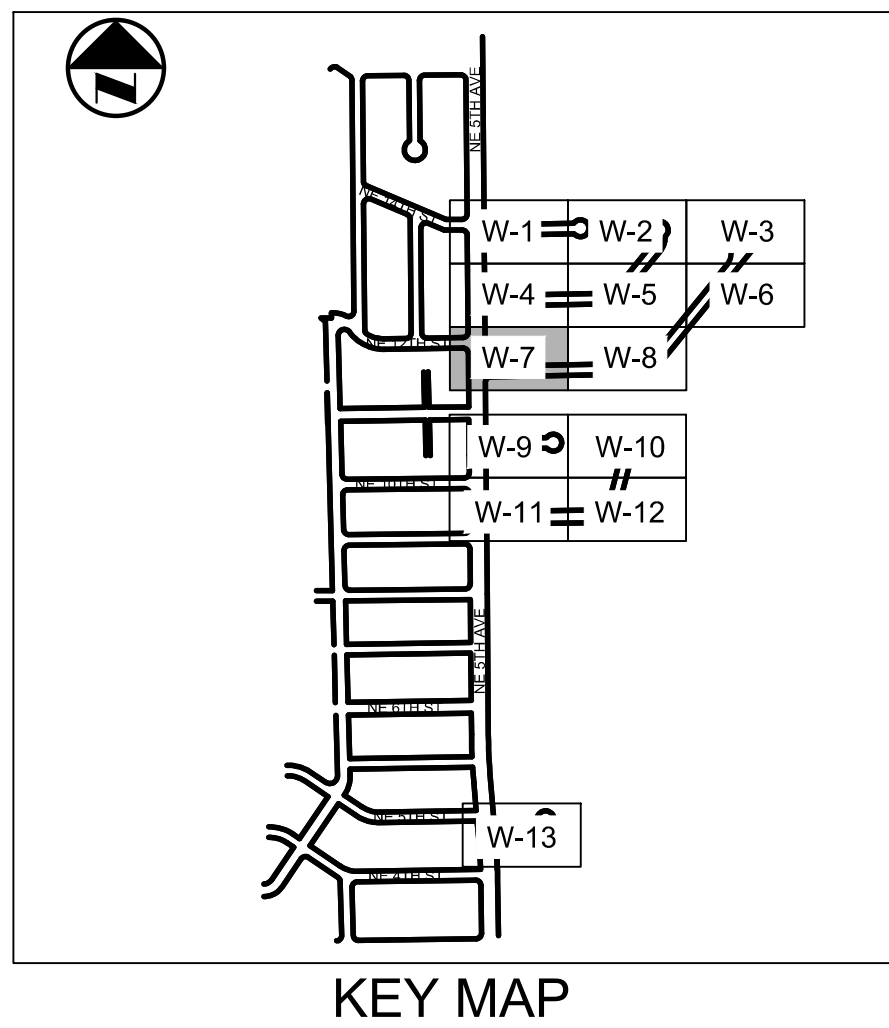
WATER MAIN PLAN

Kevin Andrew Menting
Florida P.E. No. 92016
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PROJECT NO.
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W-6
SHEET 10 OF 29

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	INDICATES CONCRETE RESTORATION
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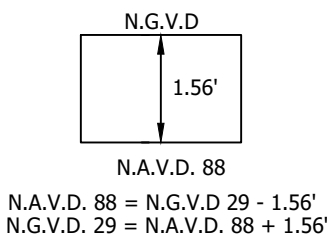
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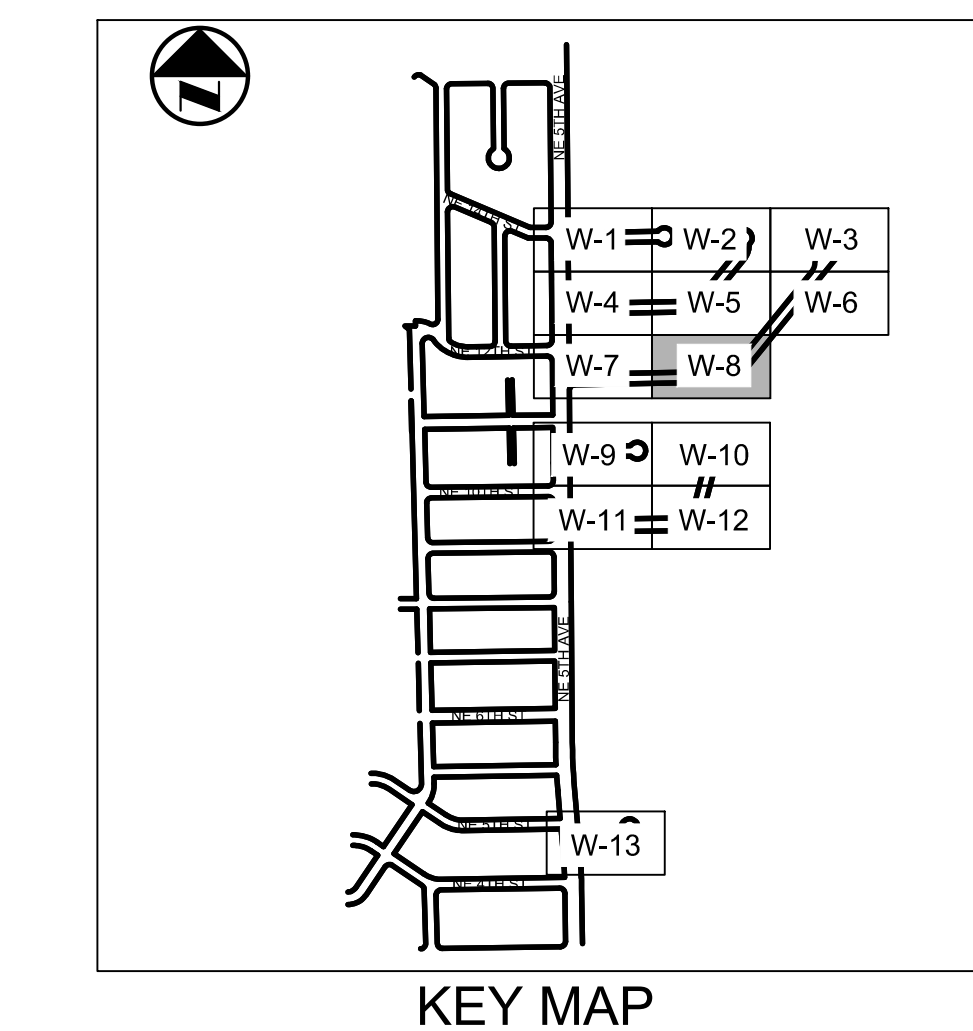
12.) EXISTING FIRE HYDRANTS DESIGNATED FOR REMOVAL SHALL BE SALVAGED AND DELIVERED TO THE CITY OF BOCA RATON UTILITY SERVICES DEPARTMENT.

PROPOSED LEGEND:

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	WATER METER
	INDICATES NEW WATER METER WITH WATER SERVICE ROUTED ON PRIVATE ON PRIVATE PROPERTY FROM REAR OF PROPERTY TO NEW METER LOCATION AT FRONT OF PROPERTY. SEE DETAIL ON SHEET DET-2.
	INSERTION VALVE/LINE STOP
	GATE VALVE
	BACTERIOLOGICAL SAMPLING POINT
	UTILITY TEST HOLE
	TO BE ABANDONED IN-PLACE & GROUT FILLED PER FDOT SPECIFICATION SECTION 121 TO BE REMOVED
	INDICATES APPROXIMATE LOCATION OF EXISTING WATER METER PER CITY WATER METER ATLAS. CONTRACTOR TO FIELD VERIFY EXISTING WATER METER LOCATION.



11/11/2025	DATE:	11/11/2025	DATE:	11/11/2025	DATE:
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KAM	APPROVED BY:	KAM	APPROVED BY:	KAM	APPROVED BY:
	BY:		BY:		BY:
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CRAVEN • THOMPSON AND ASSOCIATES, INC. ENGINEERS • PLANNERS • SURVEYORS 3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309 FAX: (954) 739-6409 FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS No. 271 FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS No. C000114 N.B. MATERIAL SHOWN HEREON IS THE PROPERTY OF CRAVEN THOMPSON & ASSOCIATES, INC. AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF CRAVEN THOMPSON & ASSOCIATES, INC. © 2025					
GOLDEN HARBOUR INFRASTRUCTURE UPGRADES PREPARED FOR: CITY OF BOCA RATON WATER MAIN PLAN					
Kevin Andrew Menting Florida P.E. No. 92016 November 11, 2025					
PROJECT NO. 24-0043-001-01					
W-7 SHEET 11 OF 29					



CITY PROJECT #:XXXX
BID #XXXX

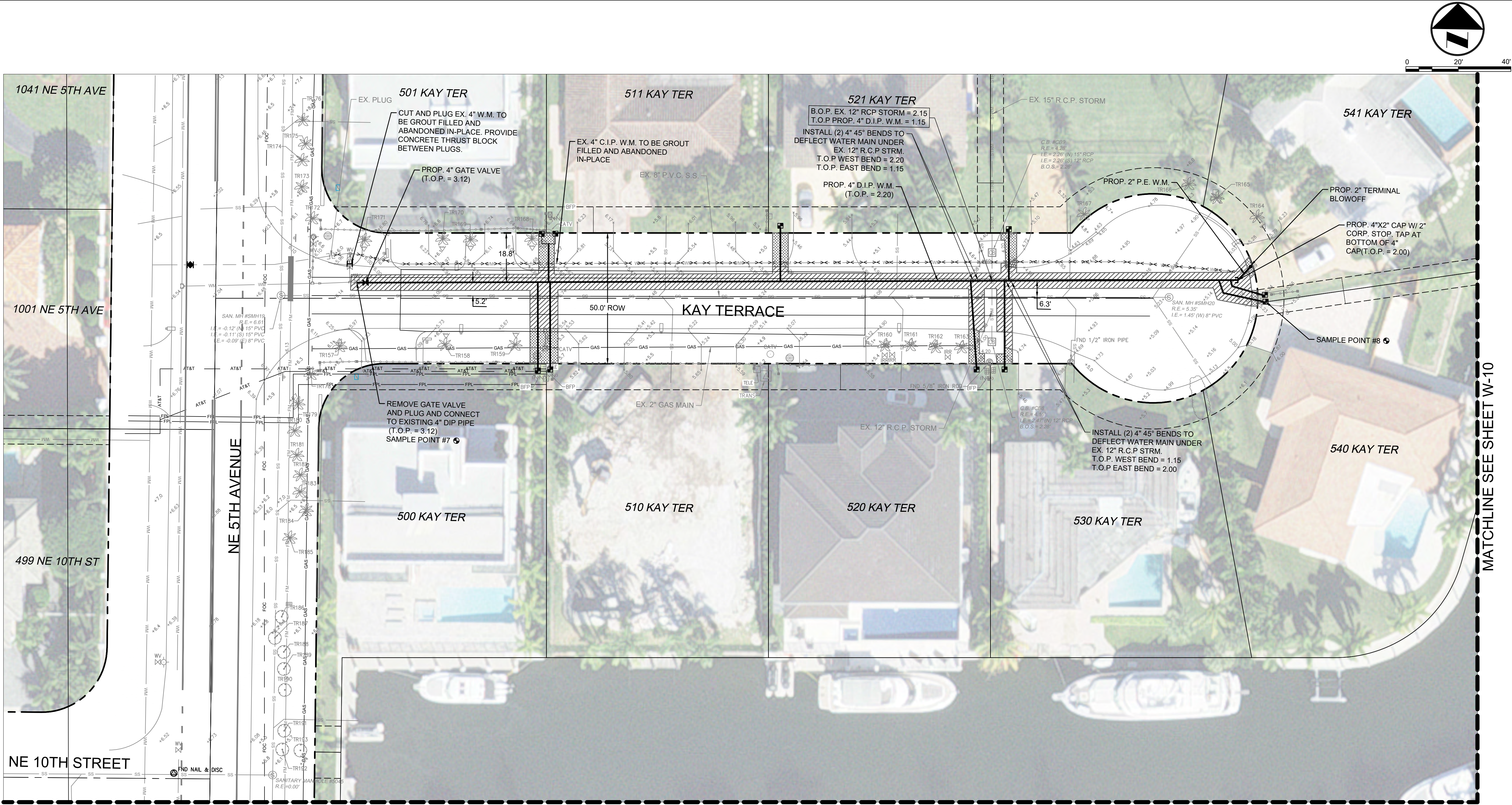
Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

PROJECT NO.
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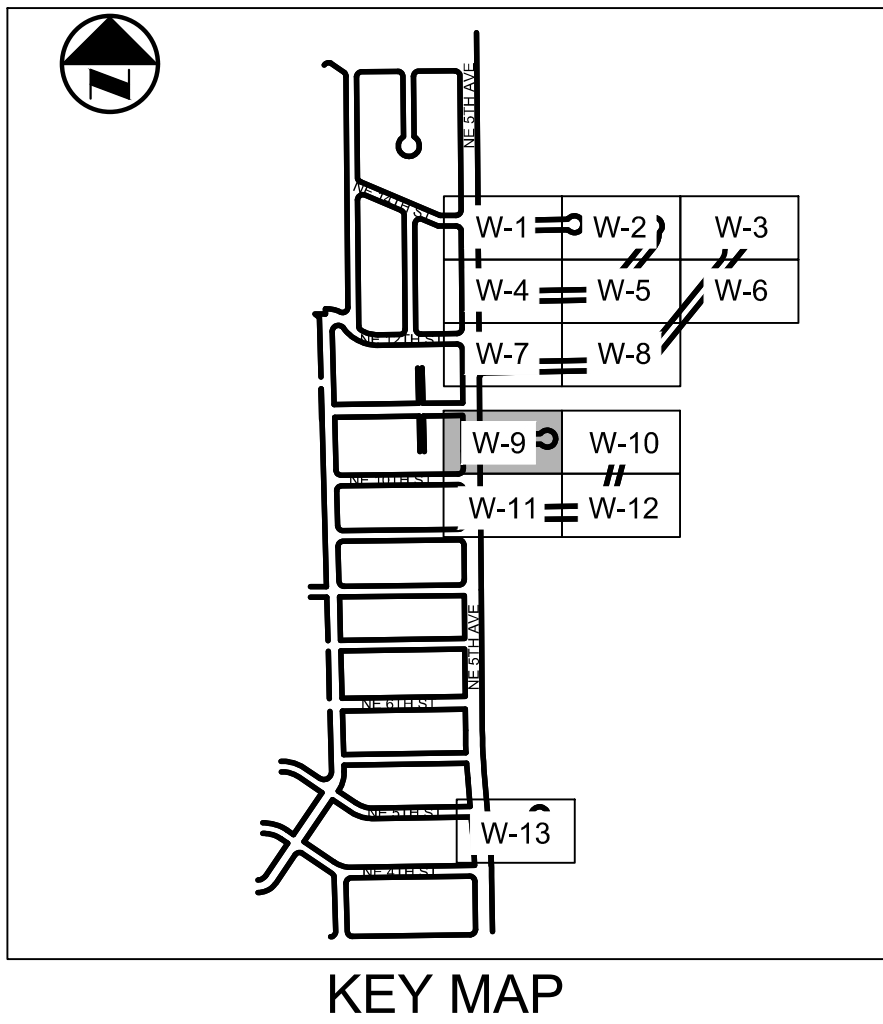
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SHEET 12 OF 29

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MATCHLINE SEE SHEET W-10



GENERAL NOTES:

- 1.) WATER AND SEWER SERVICE PROVIDED BY THE CITY OF BOCA RATON.
- 2.) CONTRACTOR TO MAINTAIN INGRESS/EGRESS TO EXISTING DRIVEWAYS THROUGHOUT CONSTRUCTION. TRENCHES THRU DRIVEWAYS AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE IMMEDIATELY RESTORED TO MAINTAIN INGRESS/EGRESS.
- 3.) THE REMOVAL OR ABANDONMENT OF EXISTING UTILITIES (WATER, SEWER, GAS, ETC.) SHALL BE COORDINATED WITH THE CONSTRUCTION, ENGINEER'S ACCEPTANCE, AND CERTIFICATION OF THE PROPOSED WATER SYSTEM. ALL EXISTING UTILITIES (WATER, SEWER, GAS, ETC.) AND DRAINAGE SERVICES MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE ENTIRE DURATION OF CONSTRUCTION.
- 4.) CONTRACTOR IS RESPONSIBLE TO MAINTAIN EXISTING WATER AND FIRE SERVICE THROUGHOUT THE DURATION OF CONSTRUCTION.
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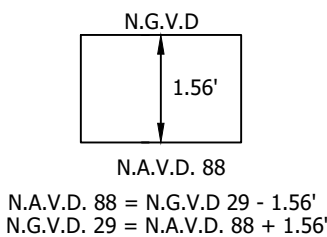
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	INDICATES ROADWAY RESTORATION		INDICATES NEW 6" CONCRETE SIDEWALK
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VERTICAL INFORMATION HEREON IS RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM (NAVD88).

CITY PROJECT #:XXXX
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3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309
FAX: (954) 739-6409
FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS No. 271
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GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES
PREPARED FOR:
CITY OF BOCA RATON
WATER MAIN PLAN

Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

PROJECT NO.
24-0043-001-01

W-9
SHEET 13 OF 29

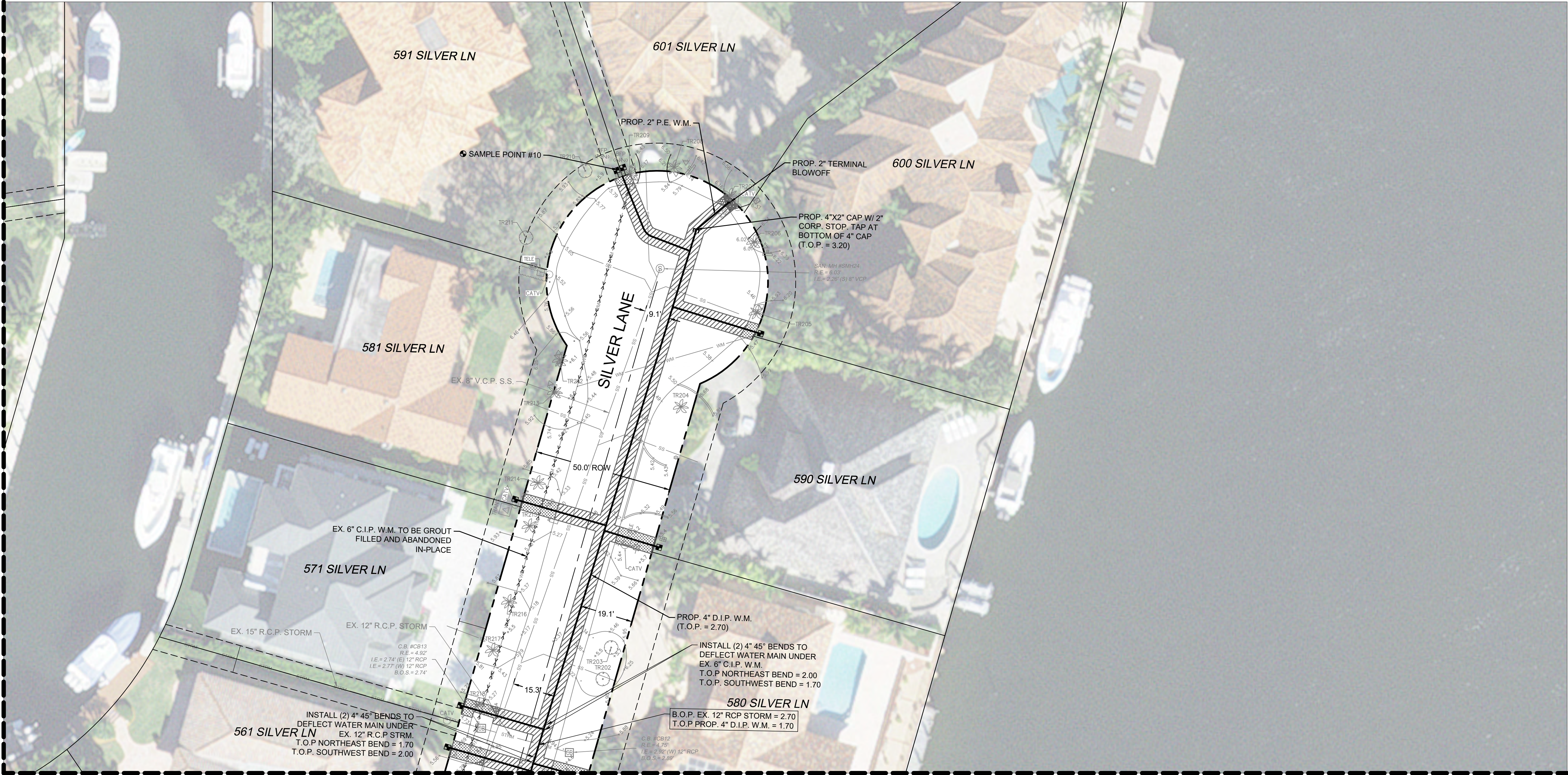
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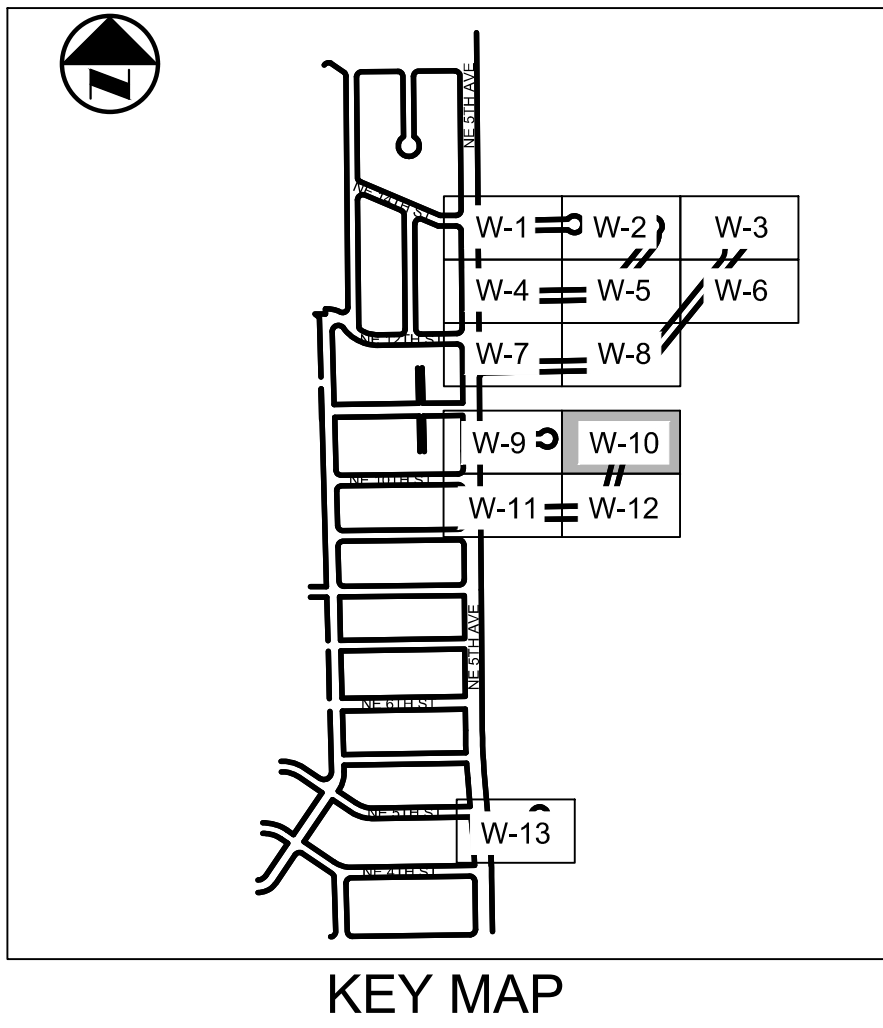
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MATCHLINE SEE SHEET W-9



MATCHLINE SEE SHEET W-12



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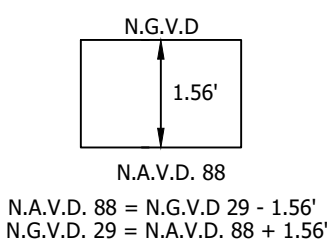
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BID #XXXX

GRAVEN • THOMPSON AND ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS

3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309
FAX: (954) 739-6409
FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS No. 271
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GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES

PREPARED FOR:

CITY OF BOCA RATON

WATER MAIN PLAN

Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

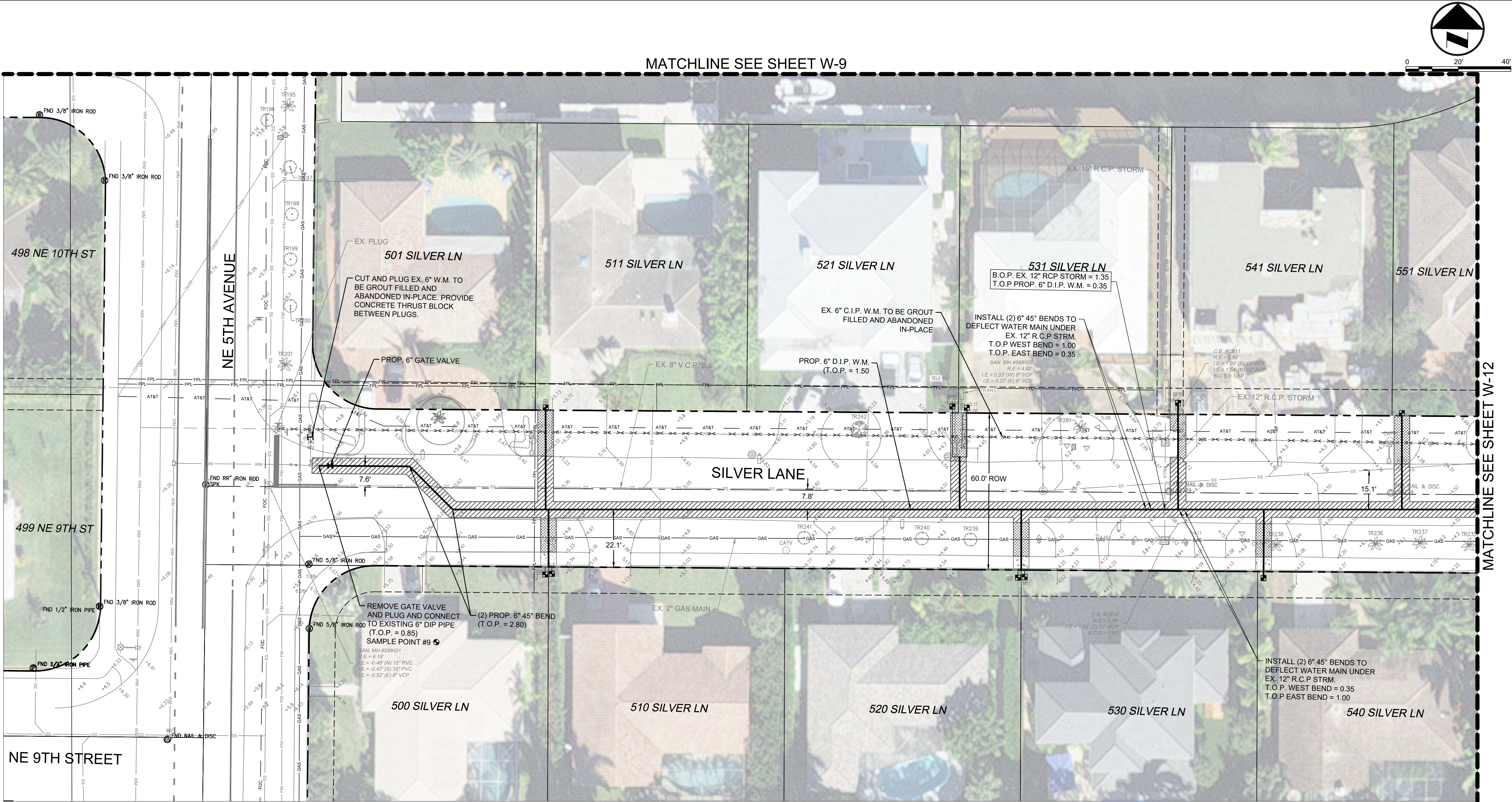
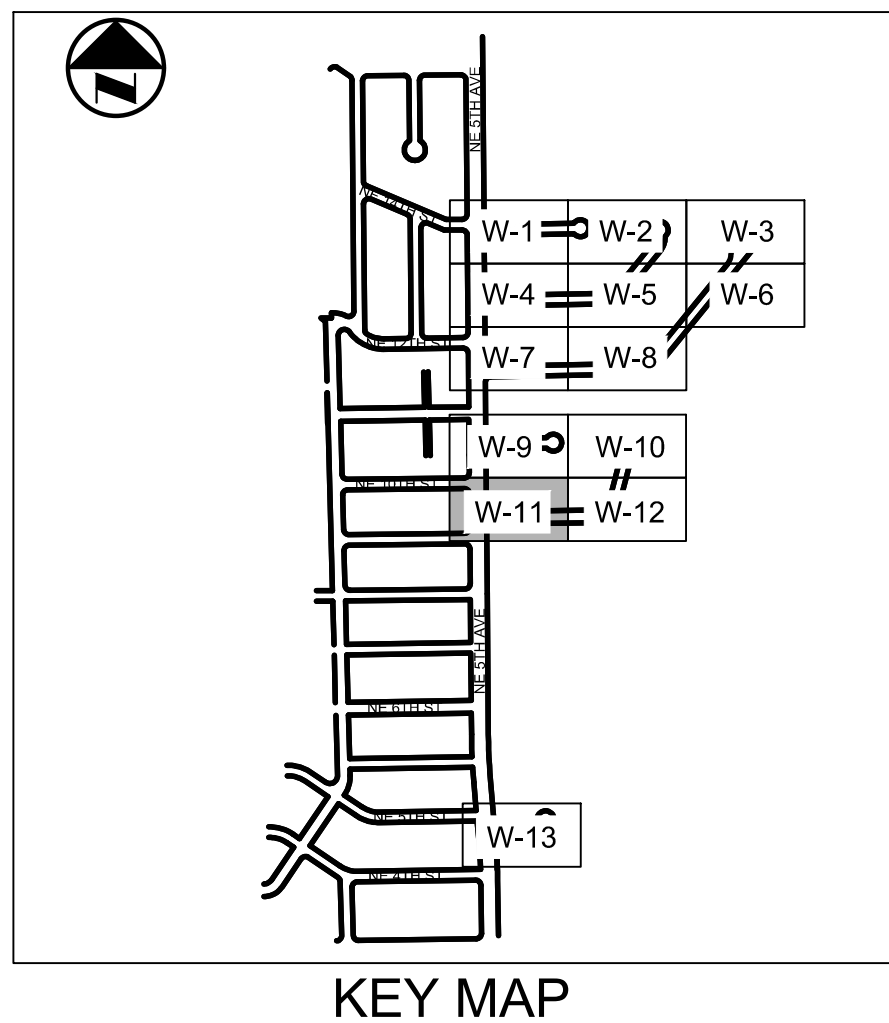
PROJECT NO.
24-0043-001-01

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SHEET 14 OF 29

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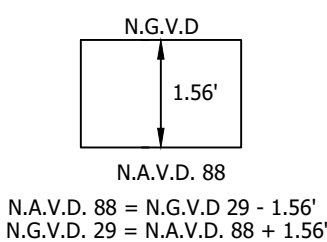
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GOLDEN HARBOUR INFRASTRUCTURE UPGRADES

PREPARED FOR:
CITY OF BOCA RATON

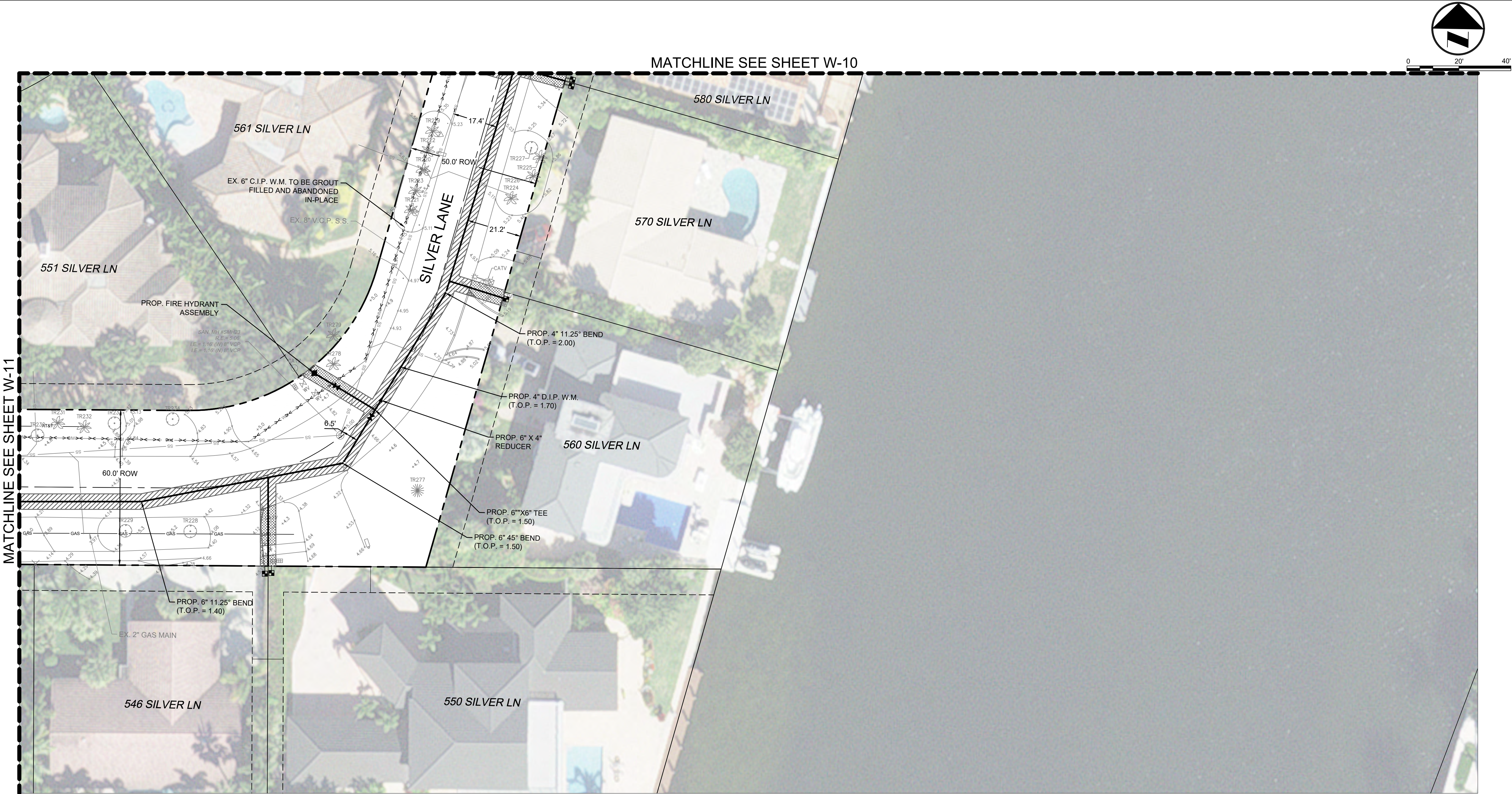
WATER MAIN PLAN

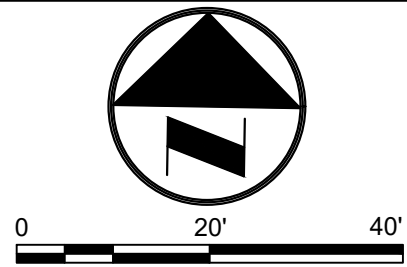
Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

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24-0043-001-01

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SHEET 15 OF 29

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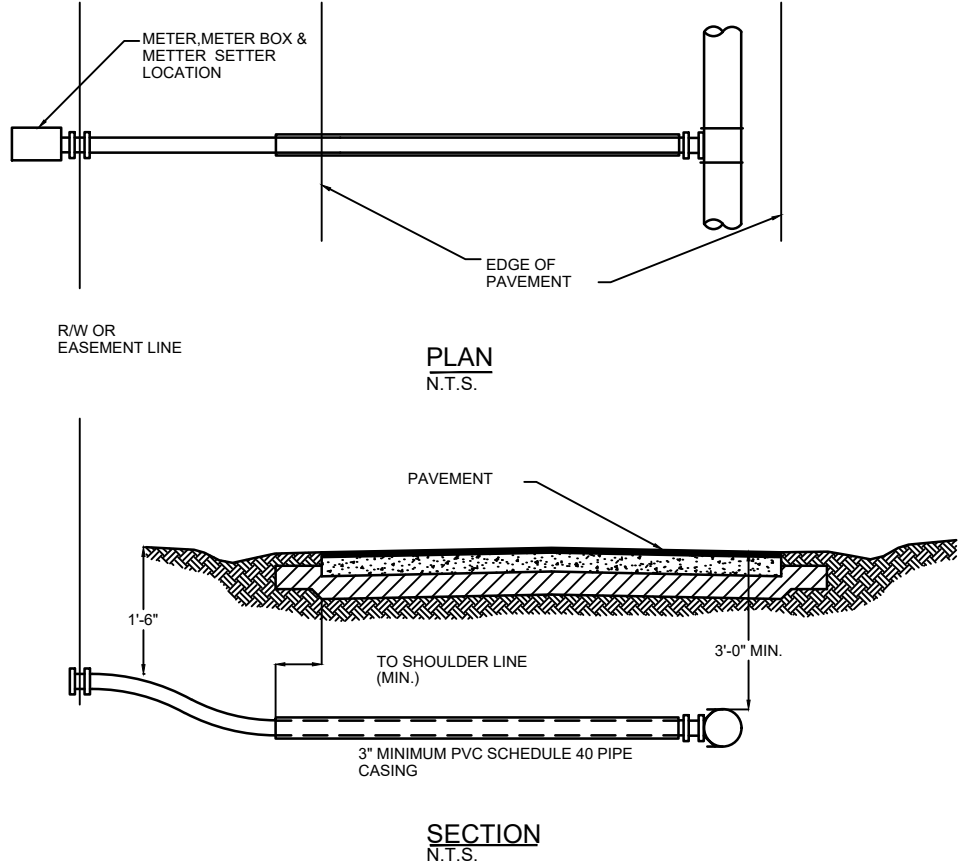




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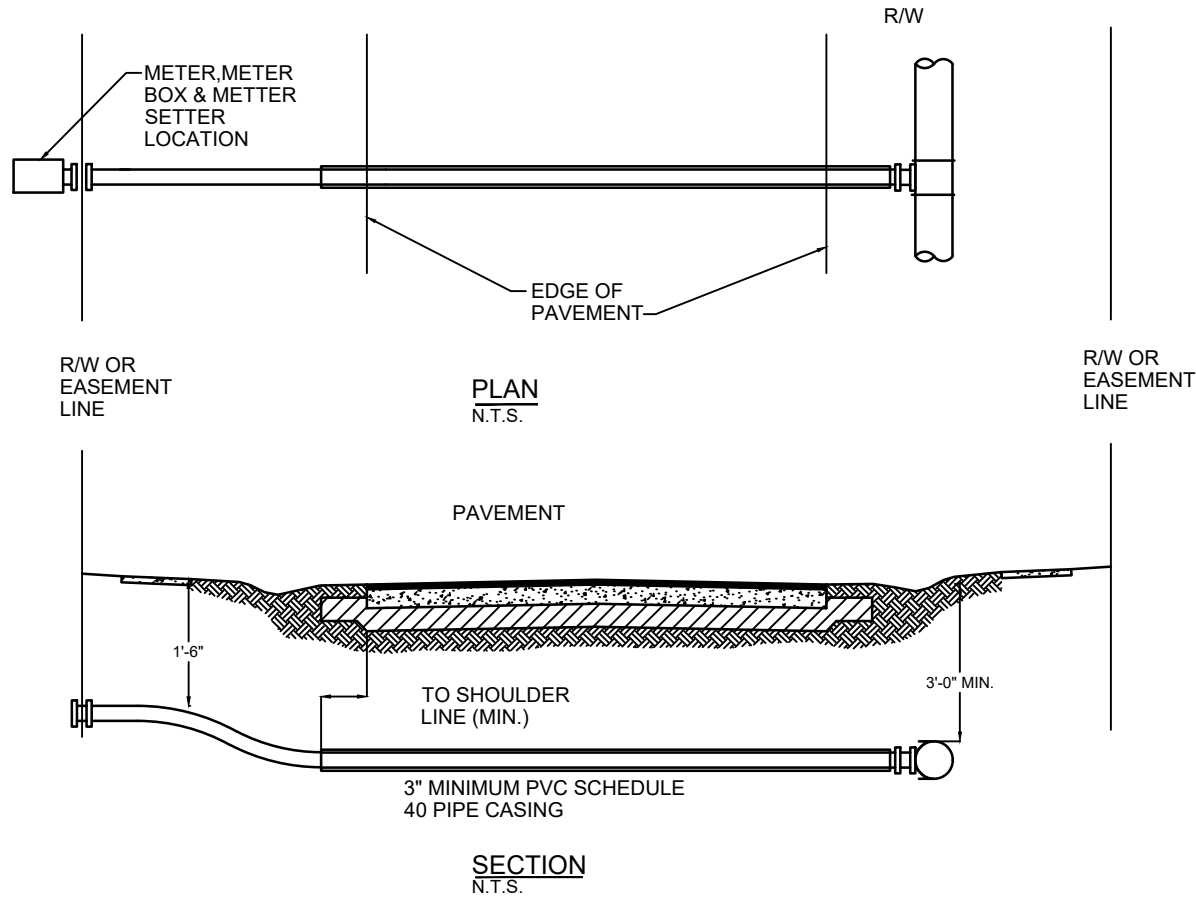
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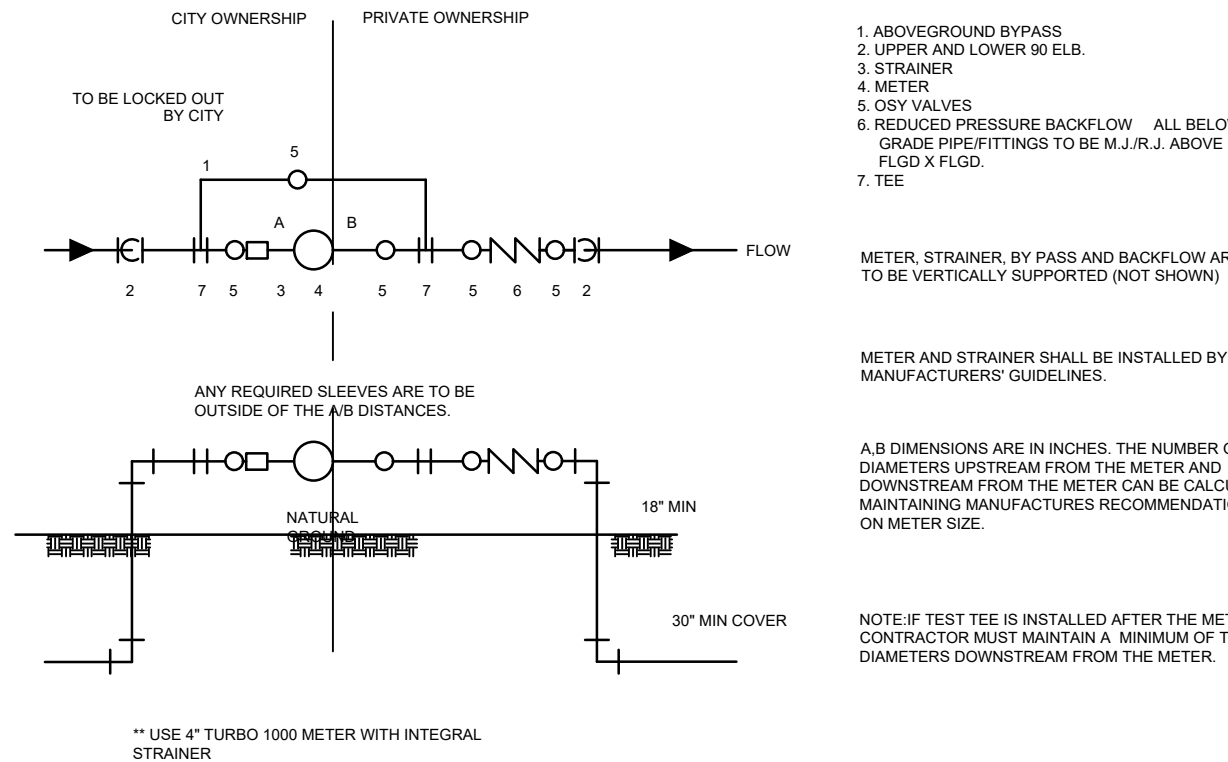
SD-17
C5003

WATER CASING LOCATION MAIN
UNDER PAVEMENT



SD-18
C5003

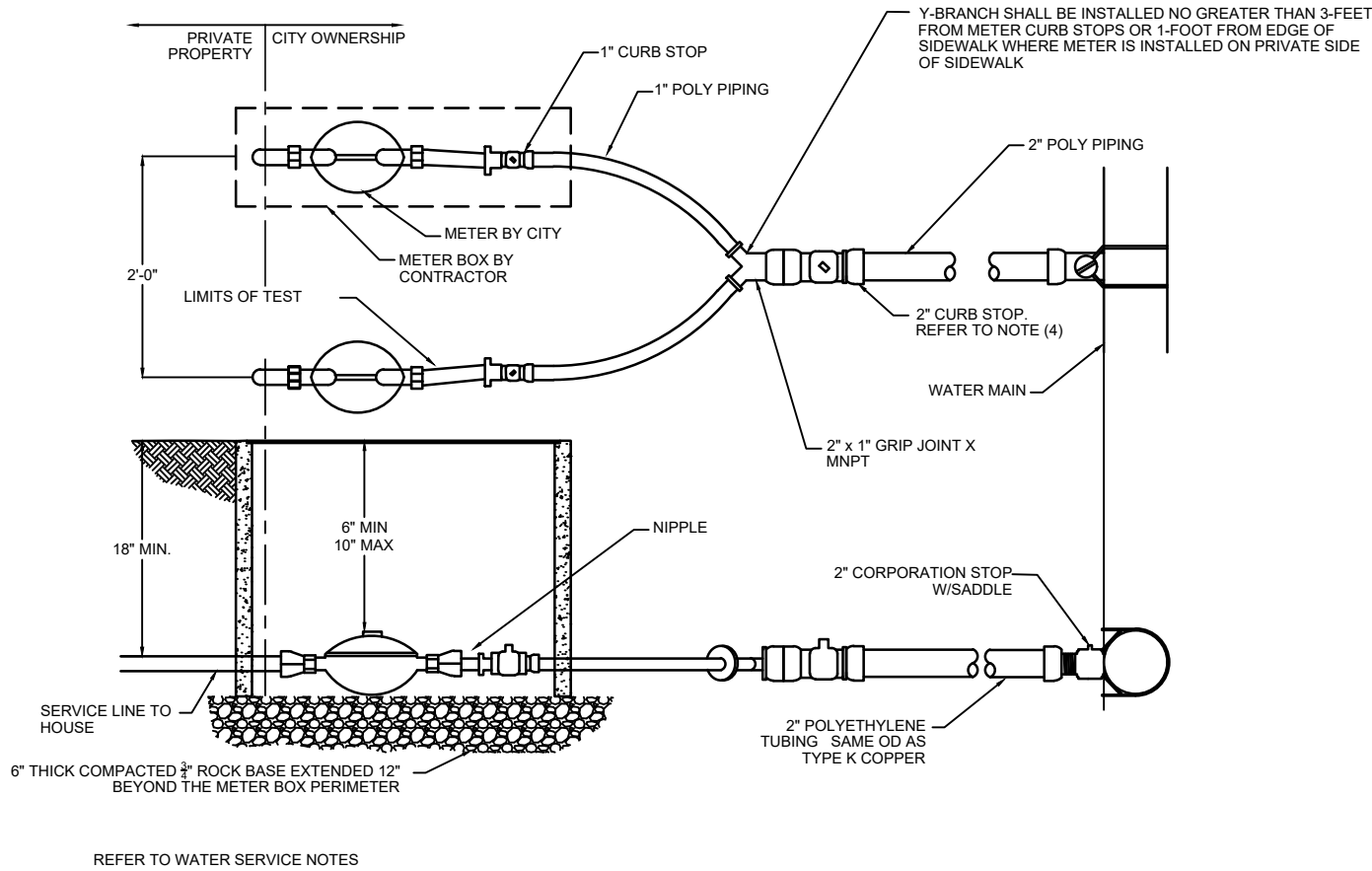
WATER CASING LOCATION MAIN
OUT SIDE PAVEMENT



SD-19
C5003

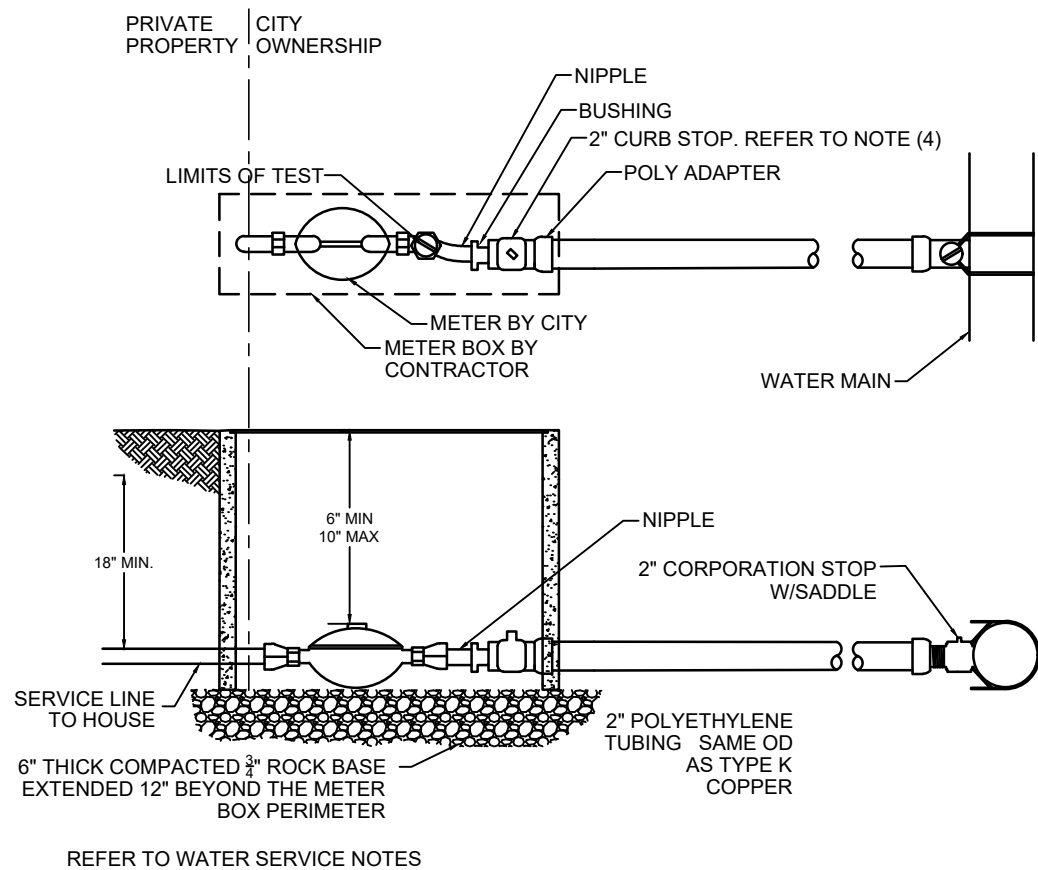
POTABLE WATER ABOVE GROUND
METER INSTALLATION

METER SIZE	SIZE OF SPOOL PIECE BETWEEN OSY VALVE AND METER FLANGE	
	A	B
4"	**	8"
6"	30"	12"
8"	40"	16"



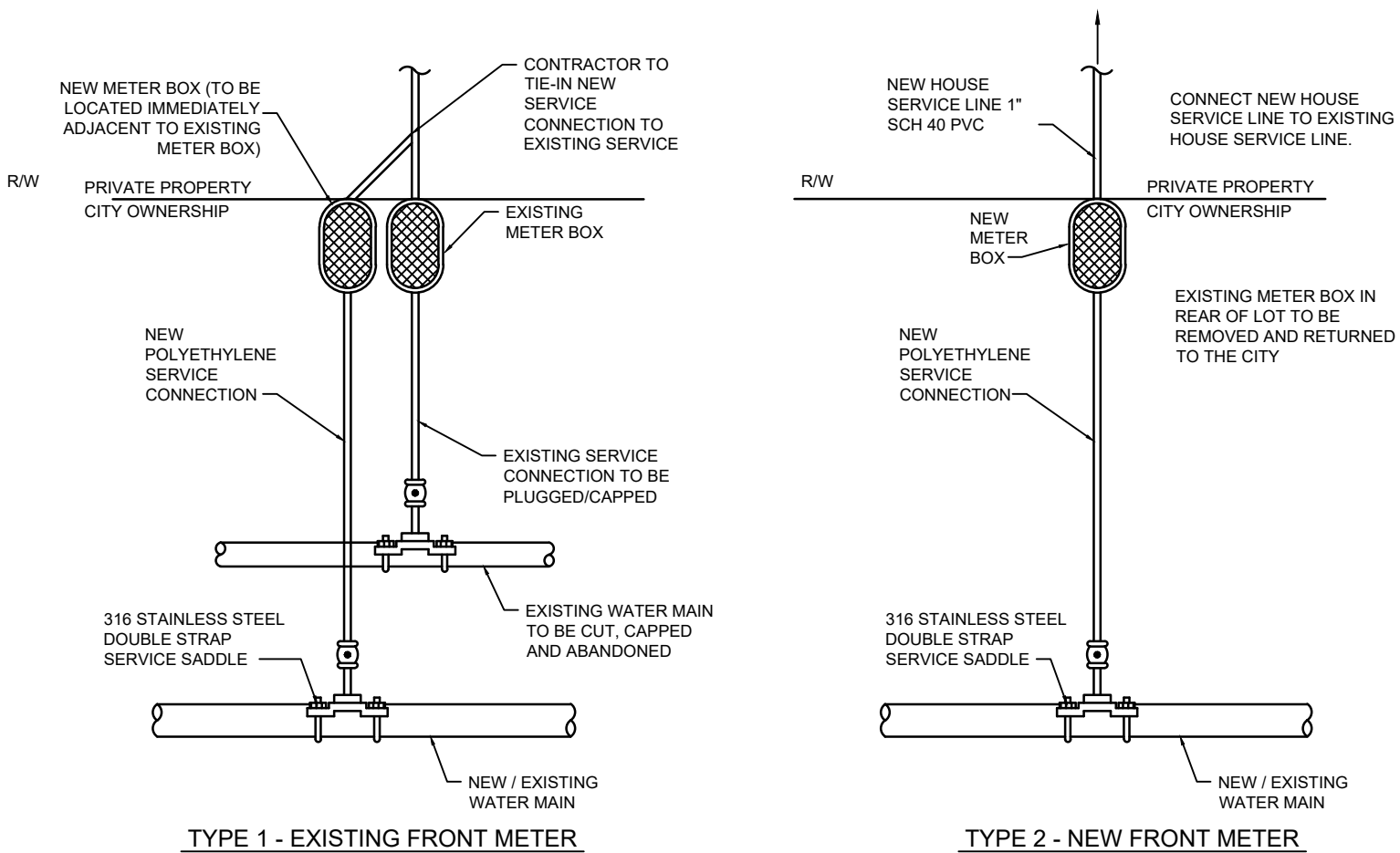
SD-20
C5003

DOUBLE WATER SERVICE LINE
FOR 1" OR 1-1/2" METER
(RESIDENTIAL ONLY)



SD-21
C5003

SINGLE WATER SERVICE LINE
FOR 1" OR 1-1/2" METER
(RESIDENTIAL ONLY)



SD-22
C5003

SINGLE WATER SERVICE LINE
FOR 1", 1-1/2", & 2" METER
(NON RESIDENTIAL)

- ALL FITTINGS TO BE LEAD-FREE BRASS AND APPROVED FOR USE WITH POTABLE WATER SYSTEMS (NSF-61 CERTIFIED). FITTINGS, VALVES AND SERVICE PIPING SHALL MATCH METER SIZE FOR 1-1/2" AND 2" METERS.
- METER SETTERS SHALL BE USED WHEN CONNECTING EXISTING SERVICES WITH METER SETTERS INSTALLED OR UPON PERMISSION OF CITY TO MAINTAIN MIN. 6" AND MAX. 10" CLEARANCE BETWEEN THE TOP OF THE METER REGISTER AND THE UNDERSIDE OF THE METER BOX LID. IF CURB STOP VALVES CANNOT BE INSTALLED WITHIN METER BOX WHEN METER SETTER IS REQUIRED, VALVES SHALL BE INSTALLED WITHIN 2-FEET UPSTREAM OF THE METER BOX.
- IN ACCORDANCE WITH THE CITY'S CROSS-CONNECTION CONTROL & BACKFLOW PREVENTION POLICY FOR PREMISES WHERE THERE IS AN AUXILIARY OR RECLAIMED WATER SYSTEM, THE INSTALLATION OF AN APPROPRIATE AND APPROVED BACKFLOW PROTECTION DEVICE IS REQUIRED. WHEN METER SETTER IS REQUIRED PER NOTE 2, REPLACEABLE DUAL-CHECK VALVE SHALL BE INTEGRAL TO METER SETTER PROVIDED BY THE MANUFACTURER. FOR NON-RESIDENTIAL SERVICES, AN APPROVED BACKFLOW DEVICE IS REQUIRED IN ACCORDANCE WITH THE CITY'S CROSS CONNECTION CONTROL & BACKFLOW PREVENTION POLICY.
- CURB STOPS VALVE CLOSEST TO METERS MUST BE INSTALLED WITHIN THE METER BOX.

SD-23
C5003

WATER SERVICE GENERAL
NOTES

- SEE TYPICAL SINGLE/DOUBLE WATER SERVICE CONNECTION DETAIL FOR ADDITIONAL REQUIREMENTS.
- WHERE SERVICES CROSS UNDER THE ROADWAY, THE POLYETHYLENE TUBING SHALL BE INSTALLED WITHIN SCHEDULE 40 PVC CASING PIPE, OR POLYETHYLENE CASING PIPE UNLESS OTHERWISE NOTED. WATER SERVICE CASINGS CROSSING CAMINO REAL SHALL BE SCHEDULE 80 PVC. WATER SERVICES CROSSING CAMINO REAL SHALL BE INSTALLED UNDER THE ROADWAY VIA TRENCHLESS METHODS. OPEN CUTTING CAMINO REAL ROADWAY WILL NOT BE ALLOWED FOR INSTALLATION OF WATER SERVICES.
- CONTRACTOR SHALL FIELD-VERIFY LOCATION OF ALL EXISTING WATER METERS TO BE REPLACED. CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF EXISTING WATER METERS AND METER BOXES ON PRIVATE PROPERTY SERVICED FROM THE REAR FOLLOWING SUCCESSFUL TIE-IN AND PLACEMENT INTO SERVICE OF NEW WATER SERVICE AND METER ASSEMBLY.
- EXISTING SERVICES MUST REMAIN IN SERVICE UNTIL THE NEW MAIN HAS BEEN CLEARED AND CERTIFIED. FOLLOWING CERTIFICATION, THE CONTRACTOR MAY TIE-IN THE NEW SERVICE LINES AND METER ASSEMBLIES TO THE EXISTING WATER SERVICE ASSEMBLIES.
- CONTRACTOR SHALL COORDINATE WITH CITY AND ENGINEER TO DETERMINE ROUTING/LOCATION OF NEW WATER SERVICE LINES AND METER/METER BOX ASSEMBLIES ON PROPERTIES PRIOR TO INSTALLATION OF WATER METERS AND/OR METER BOXES. WHERE THE WATER SERVICE IS BEING RELOCATED FROM THE REAR OF A PROPERTY TO THE FRONT OF THE PROPERTY, NEW WATER SERVICE AND METER ASSEMBLIES SHALL BE LOCATED AS NECESSARY TO MINIMIZE LENGTH OF NEW WATER SERVICE TO THE TIE-IN LOCATION AND TO MINIMIZE DISRUPTION OF PRIVATE PROPERTY LANDSCAPING, HARDSCAPES, STRUCTURES, DRIVEWAYS, ETC. AT PROPERTIES WITH EXISTING FRONT METER, PROPOSED METERS SHALL BE INSTALLED IMMEDIATELY ADJACENT TO EXISTING METERS AND EXISTING PRIVATE SIDE WATER SERVICE SHALL BE CONNECTED TO PROPOSED SERVICE.
- REPLACEMENT WATER METERS SHALL BE FURNISHED BY THE CITY OF BOCA RATON FOR INSTALLATION BY THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING METER BOX AS APPROVED BY THE ENGINEER AND CITY. CONTRACTOR SHALL RECORD METER READINGS AND CORRESPONDING METER ADDRESSES PRIOR TO REMOVING EXISTING WATER METERS FROM SERVICE.
- CONTRACTOR SHALL COORDINATE WITH THE CITY TO OBTAIN ALL NECESSARY PERMITS PRIOR TO INSTALLATION OF NEW WATER SERVICE LINES AND METERS/METER BOXES ON PRIVATE PROPERTY.
- AT CONTRACTOR'S SOLE EXPENSE, CONTRACTOR SHALL COMPLETELY RESTORE TO ORIGINAL CONDITION OR BETTER ANY EXISTING DRIVEWAYS, WALKWAYS, SOD, HARDSCAPES, FENCING, STRUCTURES, UTILITIES, ETC. ON PRIVATE PROPERTY WHICH ARE DAMAGED/REMOVED DURING CONSTRUCTION OF THE PROPOSED WATER MAINS AND WATER SERVICES.

SD-24
C5003

SERVICE CONNECTION TYPES

CRAVEN • THOMPSON AND ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
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TEL.: (954) 739-6409
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FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. C000114



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GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES
PREPARED FOR:
CITY OF BOCA RATON
DETAILS

Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

PROJECT NO.
24-0043-001-01

DET-1
SHEET 18 OF 29

CITY PROJECT #:XXXX
BID #XXXX

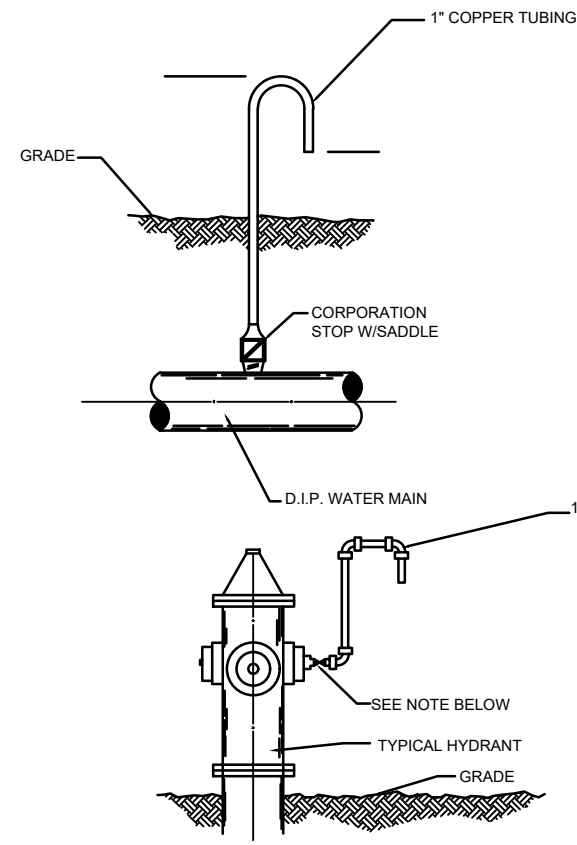
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MIN. LENGTH OF PIPE (FEET) TO BE RESTRAINED FOR DUCTILE IRON AND PVC PIPE, RELEASE 3.1, AND DIPRA THRUST RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2												
FITTING TYPE	PIPE SIZE											
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"
90° HORIZ. BEND	14	20	25	30	35	45	54	62	98	112	124	135
45° HORIZ. BEND	6	8	11	13	15	19	22	26	41	46	51	56
22.5° HORIZ. BEND	3	4	5	6	7	9	11	12	19	22	25	27
11.25° HORIZ. BEND	1	2	3	3	4	4	5	6	10	11	12	13
90° VERT. OFFSET	UPPER BEND	29	41	53	64	74	95	115	134	214	246	304
	LOWER BEND	7	10	13	16	19	25	30	35	57	66	83
45° VERT. OFFSET	UPPER BEND	12	19	24	29	34	39	48	56	89	102	114
	LOWER BEND	3	4	6	7	8	10	12	15	23	27	31
22.5° VERT. OFFSET	UPPER BEND	6	9	12	14	17	19	23	27	43	49	55
	LOWER BEND	1	2	4	4	4	5	6	7	11	13	15
11.25° VERT. OFFSET	UPPER BEND	3	4	6	7	8	9	11	13	21	24	27
	LOWER BEND	1	1	1	2	2	3	3	6	6	7	8
PLUG (DEAD END)	32	45	59	70	83	107	129	151	214	246	276	304
IN-LINE VALVE	32	45	45	45	45	55	65	80	110	125	140	152
TEE (BRANCH RESTRAINT)	4"X Ø	23	-	-	-	-	-	-	-	-	-	-
	6"X Ø	21	35	-	-	-	-	-	-	-	-	-
	8"X Ø	18	34	47	-	-	-	-	-	-	-	-
	10"X Ø	16	32	46	58	-	-	-	-	-	-	-
	12"X Ø	13	30	44	57	69	-	-	-	-	-	-
	16"X Ø	7	26	41	55	67	90	-	-	-	-	-
	20"X Ø	1	21	38	52	65	88	109	-	-	-	-
	24"X Ø	1	16	34	49	62	86	108	129	-	-	-
	30"X Ø	1	8	28	44	58	83	106	127	208	-	-
	36"X Ø	1	1	22	39	54	80	103	124	208	240	-
REDUCER (LARGER PIPE RESTRAINT)	42"X Ø	1	1	15	33	49	77	100	122	206	239	270
	48"X Ø	1	1	7	27	44	73	97	120	203	238	269
	6"X Ø	23	-	-	-	-	-	-	-	-	-	-
	8"X Ø	38	25	-	-	-	-	-	-	-	-	-
	10"X Ø	57	43	24	-	-	-	-	-	-	-	-
	12"X Ø	72	60	44	41	-	-	-	-	-	-	-
200psi	16"X Ø	89	80	78	75	65	-	-	-	-	-	-
	20"X Ø	123	116	107	105	81	45	-	-	-	-	-
	24"X Ø	146	140	132	131	111	82	45	-	-	-	-
	30"X Ø	209	204	197	188	177	153	116	75	-	-	-
	36"X Ø	243	236	233	226	217	196	168	135	74	-	-
	42"X Ø	273	270	265	259	252	234	211	183	133	72	-
	48"X Ø	301	298	294	289	283	268	249	226	183	131	71

- NOTES:
- THE DATA IN THE ABOVE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
SOIL TYPE-SAND
TEST PRESSURE-150 PSI/200 PSI
TRENCH TYPE-3
SAFETY FACTOR-1.5
MINIMUM PIPE LENGTH ALONG TEE RUN-2
THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON AND PVC PIPE
ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED
RESTRAINED PIPE LENGTHS APPLY TO PIPE ON BOTH SIDES OF VALVES AND FITTINGS
MULTIPLY PIPE LENGTH BY 1.4 FOR POLYETHYLENE ENCASED PIPE
RESTRAINED PIPE LENGTH EQUAL TO AN "IN-LINE VALVE" CONDITION ARE REQUIRED AT EACH END OF A TRANSITION FROM HDPE PIPE TO OTHER PIPE MATERIALS.

SD-25
C5004

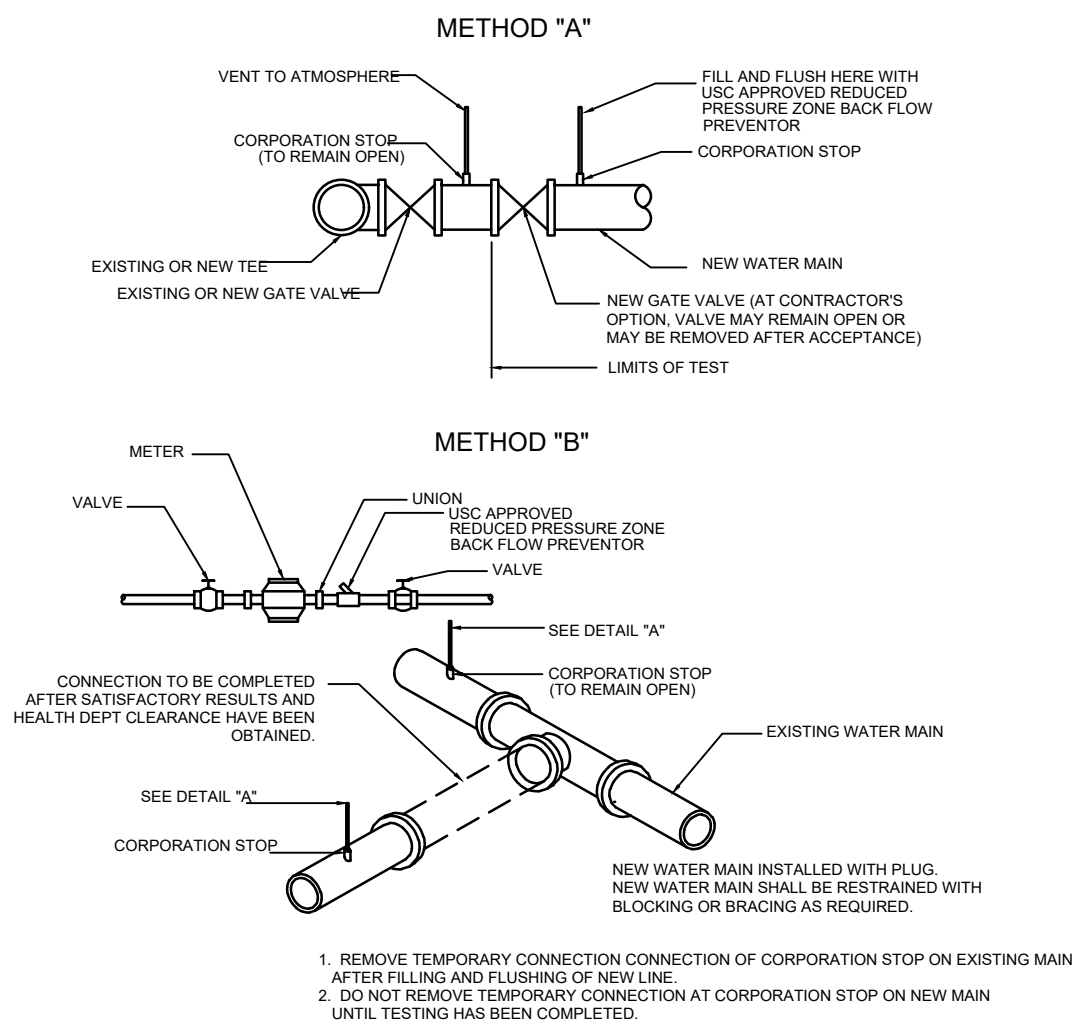
MECHANICAL THRUST RESTRAINT
MINIMUM PIPE LENGTHS



- NOTES:
- SAMPLE POINTS COMING FROM HYDRANTS TO INCLUDE A SMALL VALVE WITH A REMOVABLE HANDLE.
 - LABEL AND NUMBER LABEL AND NUMBER ALL SAMPLE POINTS PER PLAN SHEETS.
 - SAMPLING POINTS ON WATER MAINS: A CORPORATION STOP SHALL BE INSTALLED WITH A PIECE OF 1" COPPER TUBING EXTENDING UP OF THE GROUND. THE TUBING SHALL BE BENT SO THAT THE END OF THE TUBING IS LOOKING STRAIGHT DOWN. THE DISTANCE BETWEEN THE END OF THE TUBING AND THE GROUND LINE WILL BE A MINIMUM OF 2" AFTER SATISFACTORY BACTERIOLOGICAL TESTING CORPORATION IS TO BE SHUT OFF AT MAIN AND ALL TUBING REMOVED.

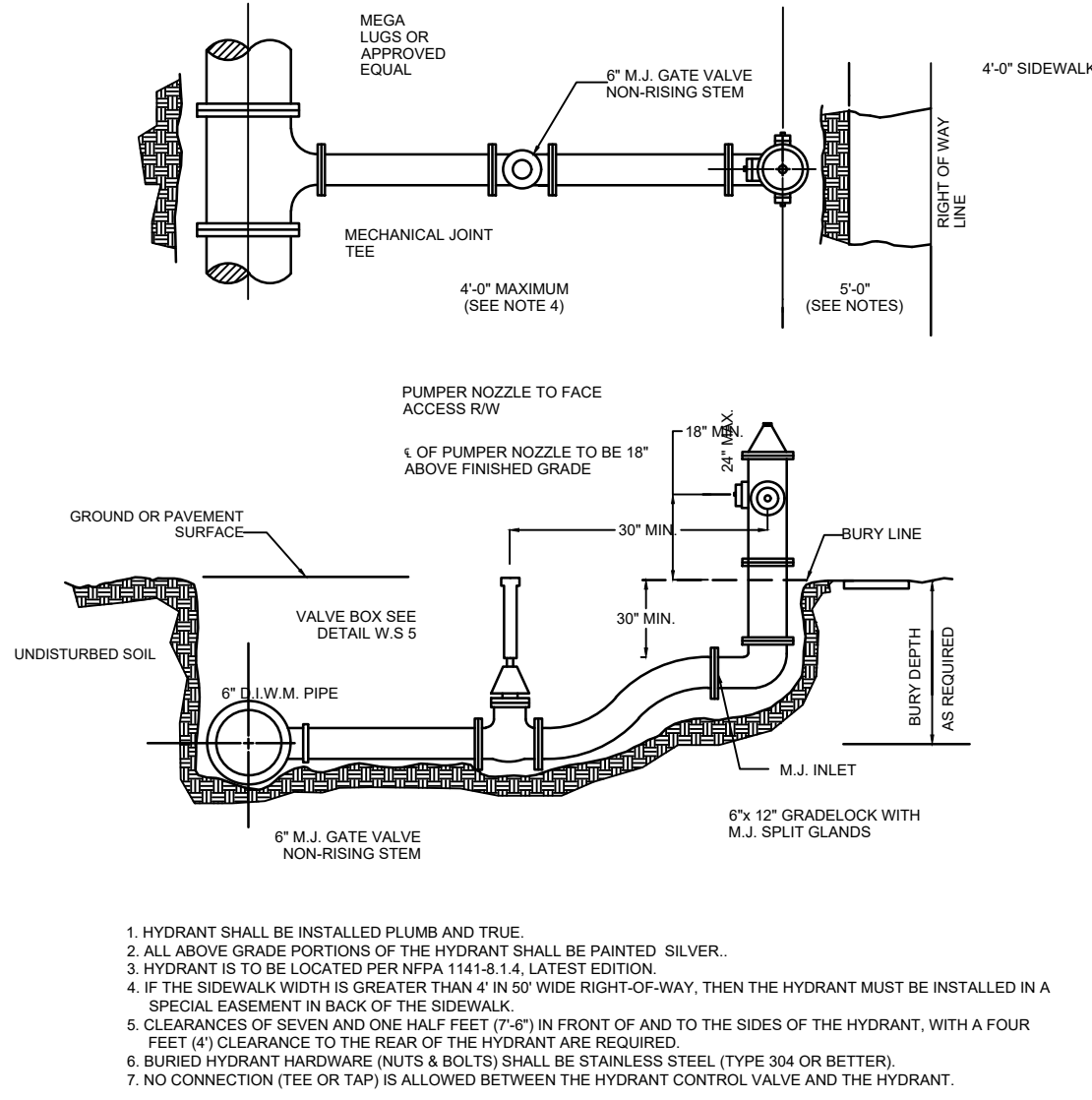
SD-26
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SAMPLING POINT DETAILS



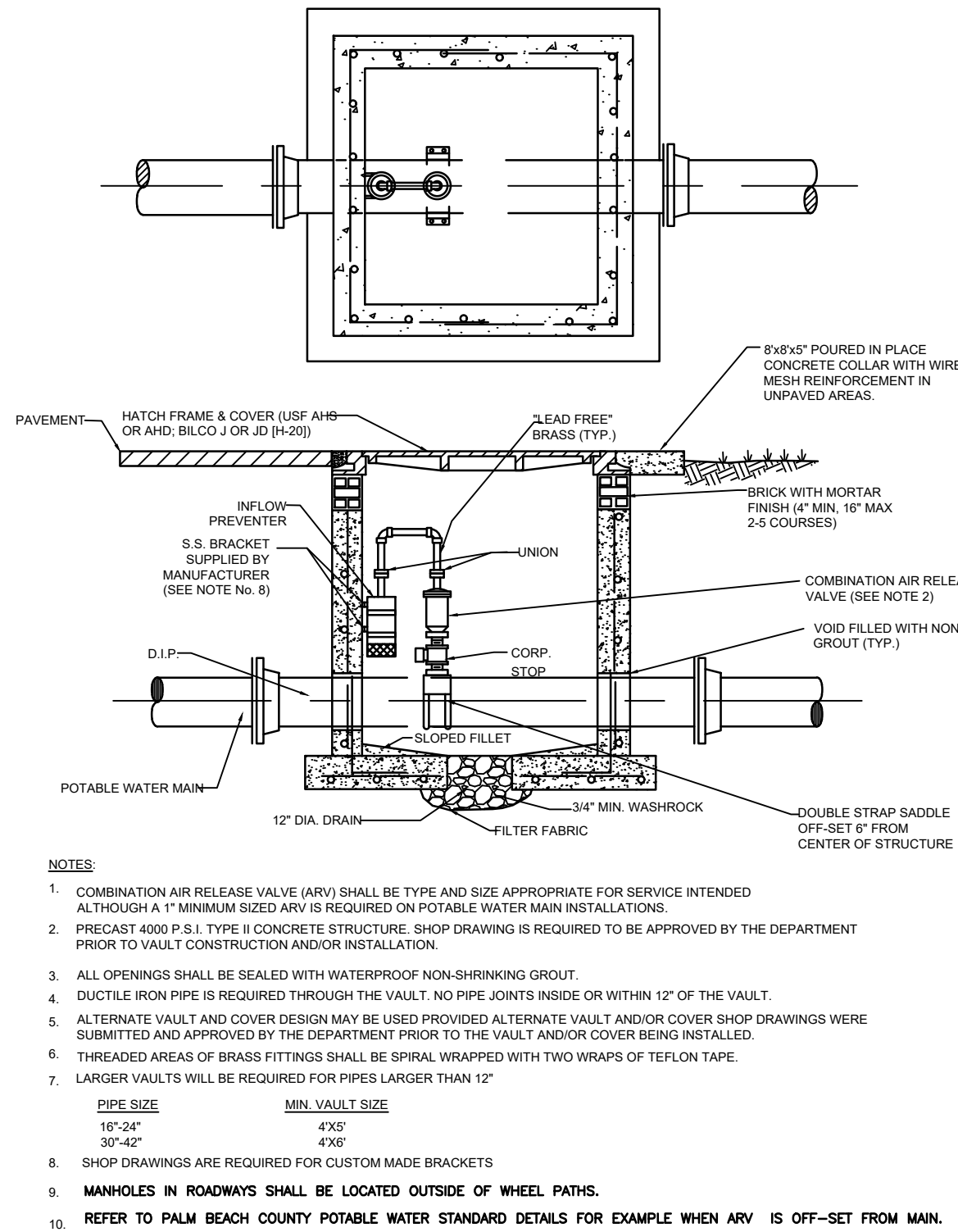
SD-27
C5004

FILLING AND FLUSHING
CONNECTION



SD-28
C5004

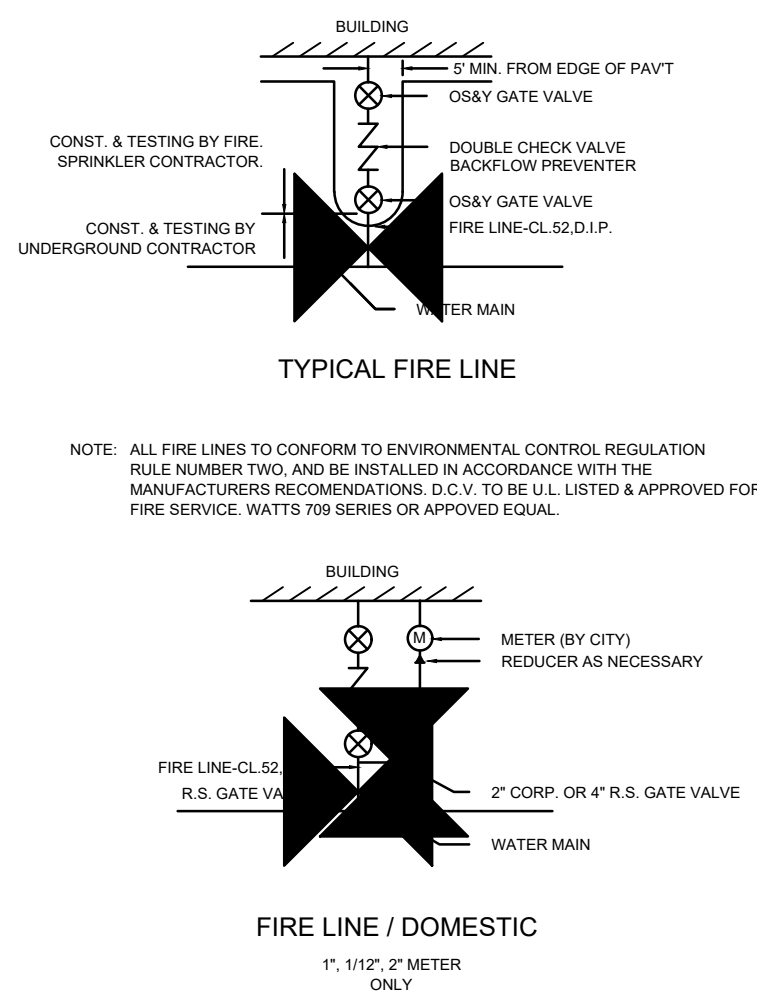
TYPICAL FIRE
HYDRANT INSTALLATION



- NOTES:
- COMBINATION AIR RELEASE VALVE (ARV) SHALL BE TYPE AND SIZE APPROPRIATE FOR SERVICE INTENDED ALTHOUGH A 1" MINIMUM SIZED ARV IS REQUIRED ON POTABLE WATER MAIN INSTALLATIONS.
 - PRECAST 4000 P.S.I. TYPE II CONCRETE STRUCTURE. SHOP DRAWING IS REQUIRED TO BE APPROVED BY THE DEPARTMENT PRIOR TO VAULT CONSTRUCTION AND/OR INSTALLATION.
 - ALL OPENINGS SHALL BE SEALED WITH WATERPROOF NON-SHRINKING GROUT.
 - DUCTILE IRON PIPE IS REQUIRED THROUGH THE VAULT. NO PIPE JOINTS INSIDE OR WITHIN 12" OF THE VAULT.
 - ALTERNATE VAULT AND COVER DESIGN MAY BE USED PROVIDED ALTERNATE VAULT AND/OR COVER SHOP DRAWINGS WERE SUBMITTED AND APPROVED BY THE DEPARTMENT PRIOR TO THE VAULT AND/OR COVER BEING INSTALLED.
 - THREADED AREAS OF BRASS FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.
 - LARGER VAULTS WILL BE REQUIRED FOR PIPES LARGER THAN 12"
- PIPE SIZE MIN. VAULT SIZE
- | | |
|---------|-------|
| 16"-24" | 4'X5' |
| 30"-42" | 4'X6' |
- SHOP DRAWINGS ARE REQUIRED FOR CUSTOM MADE BRACKETS
- MANHOLES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS.
- REFER TO PALM BEACH COUNTY POTABLE WATER STANDARD DETAILS FOR EXAMPLE WHEN ARV IS OFF-SET FROM MAIN.

SD-29
C5004

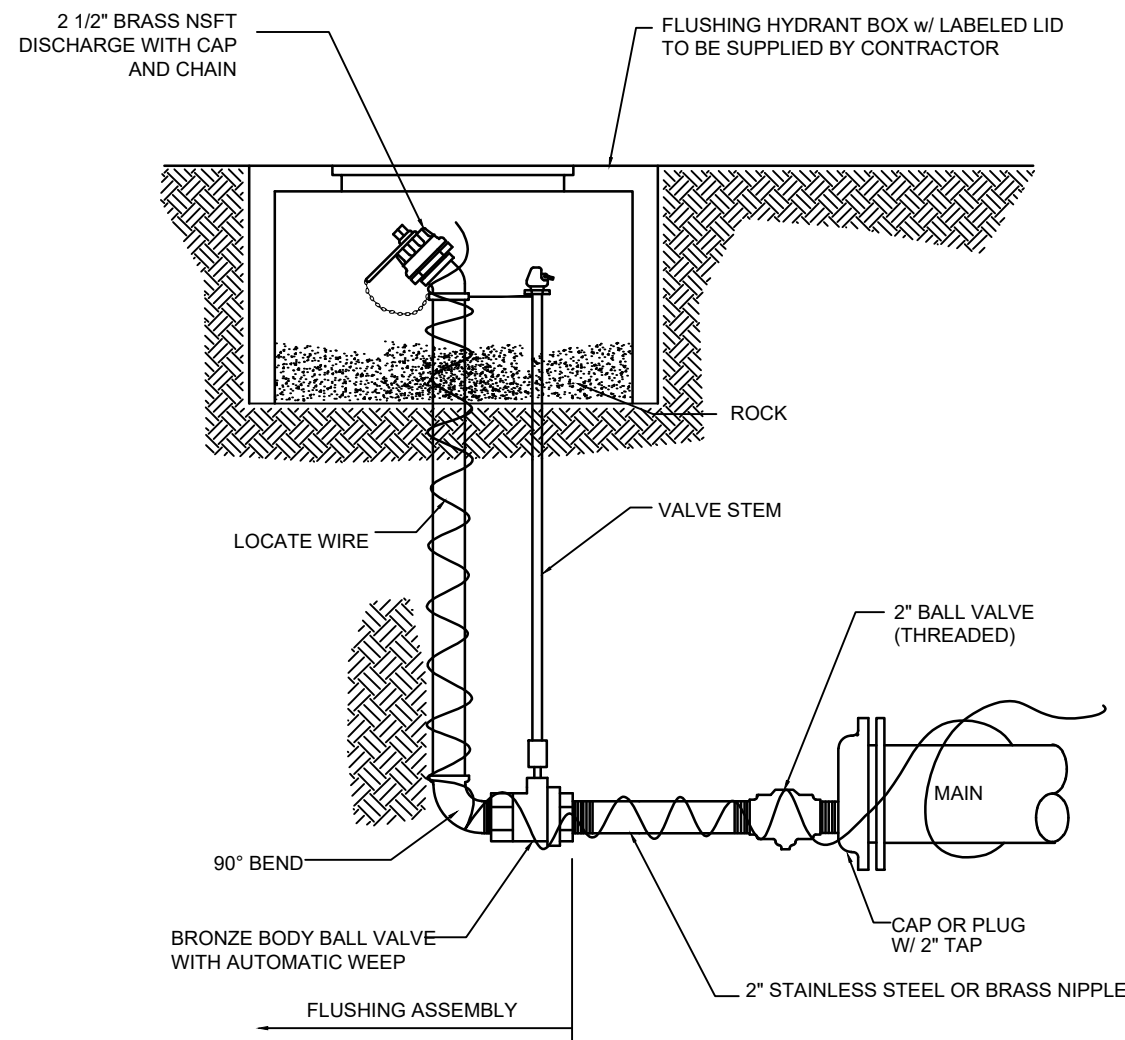
POTABLE WATER MAIN
UDNERGROUND AIR RELEASE VALVE
AND VAULT



- NOTE: ALL FIRE LINES TO CONFORM TO ENVIRONMENTAL CONTROL REGULATION RULE NUMBER TWO, AND BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. D.C.V. TO BE U.L. LISTED & APPROVED FOR FIRE SERVICE. WATTS 709 SERIES OR APPROVED EQUAL.

SD-30
C5004

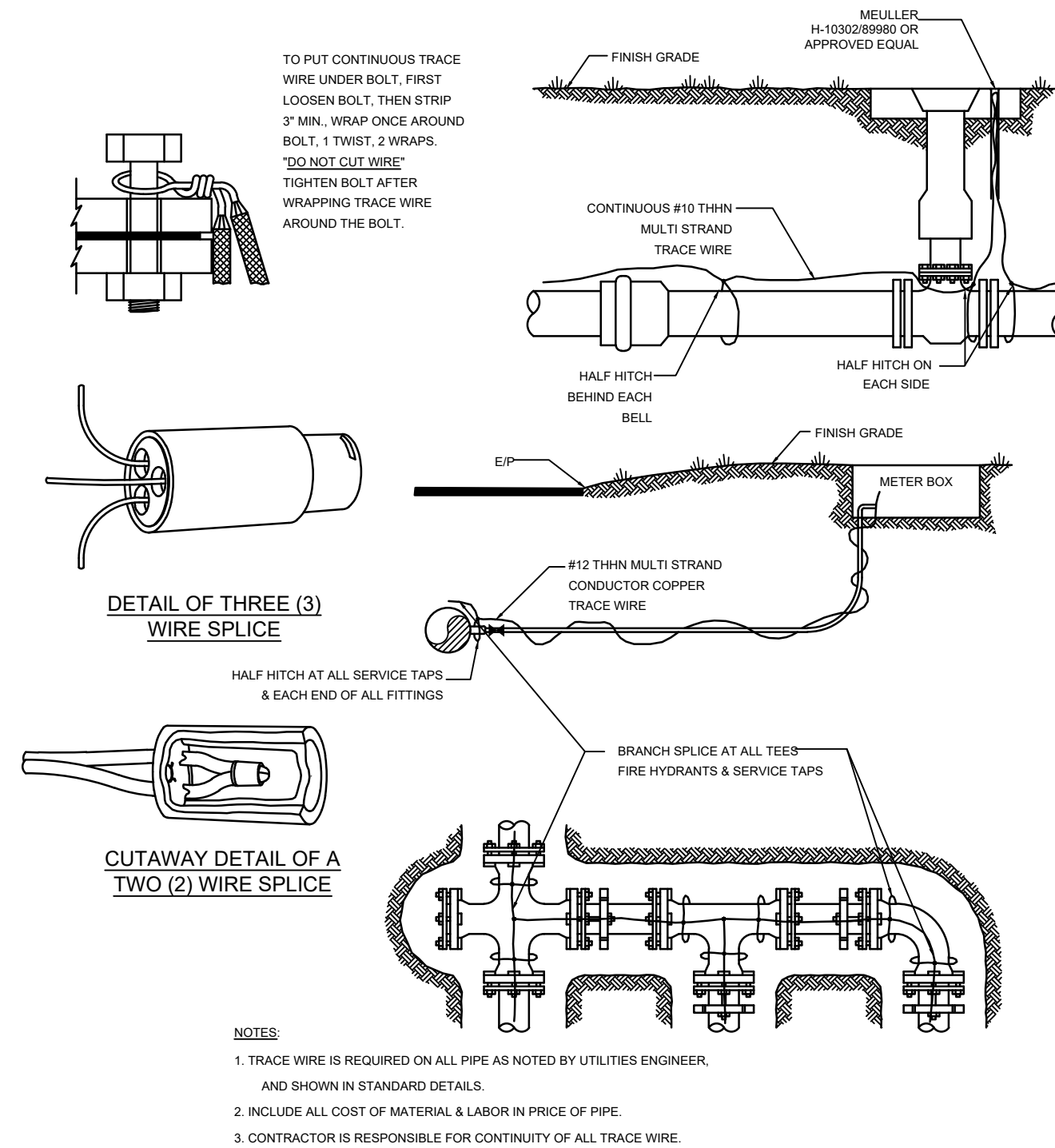
FIRE LINES



- NOTES:
- MAIN TO BE RESTRAINED PER CITY OF BOCA RATON SPECIFICATIONS.

SD-31
C5004

POTABLE WATER FLUSHING
HYDRANT



- NOTES:
- TRACE WIRE IS REQUIRED ON ALL PIPE AS NOTED BY UTILITIES ENGINEER, AND SHOWN IN STANDARD DETAILS.
 - INCLUDE ALL COST OF MATERIAL & LABOR IN PRICE OF PIPE.
 - CONTRACTOR IS RESPONSIBLE FOR CONTINUITY OF ALL TRACE WIRE.

SD-32
C5004

TRACE WIRE DETAIL

CRAVEN • THOMPSON AND ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309
TEL.: (954) 739-5400
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FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS No. 271
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS No. C000114

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GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES

PREPARED FOR:
CITY OF BOCA RATON

DETAILS

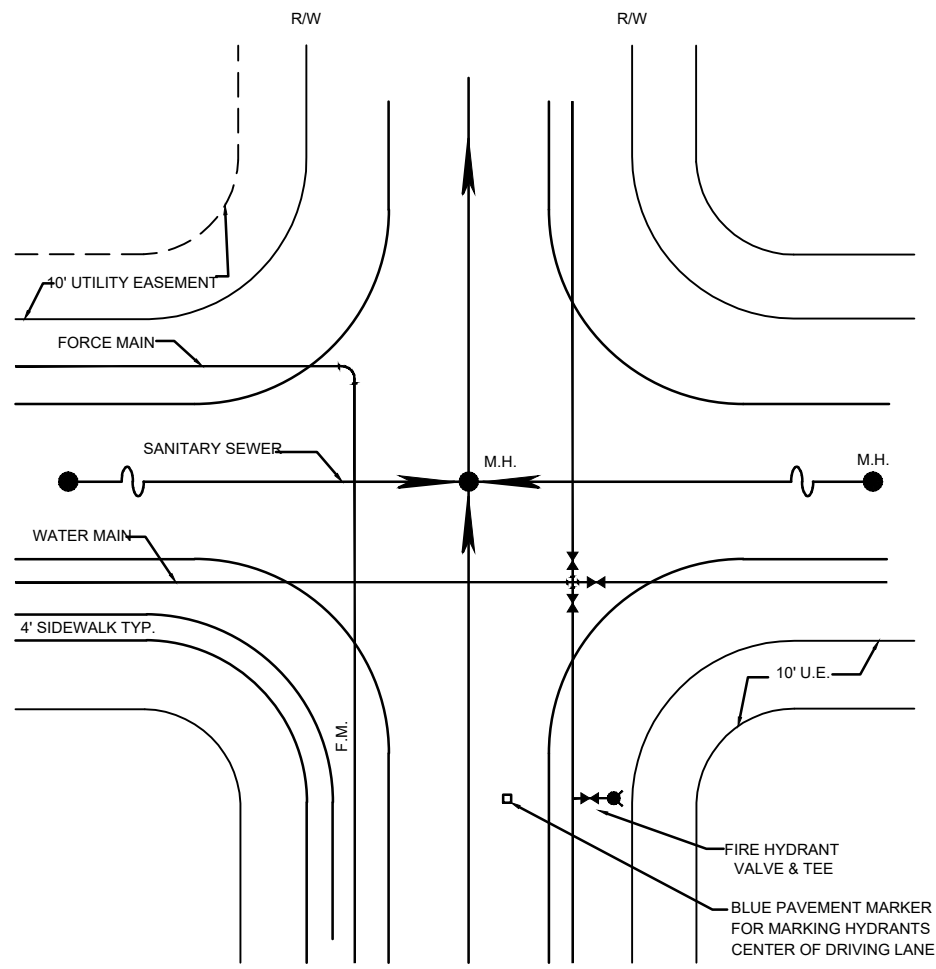
Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

PROJECT NO.
24-0043-001-01

DET-2
SHEET 19 OF 29

CITY PROJECT #:XXXX
BID #XXXX

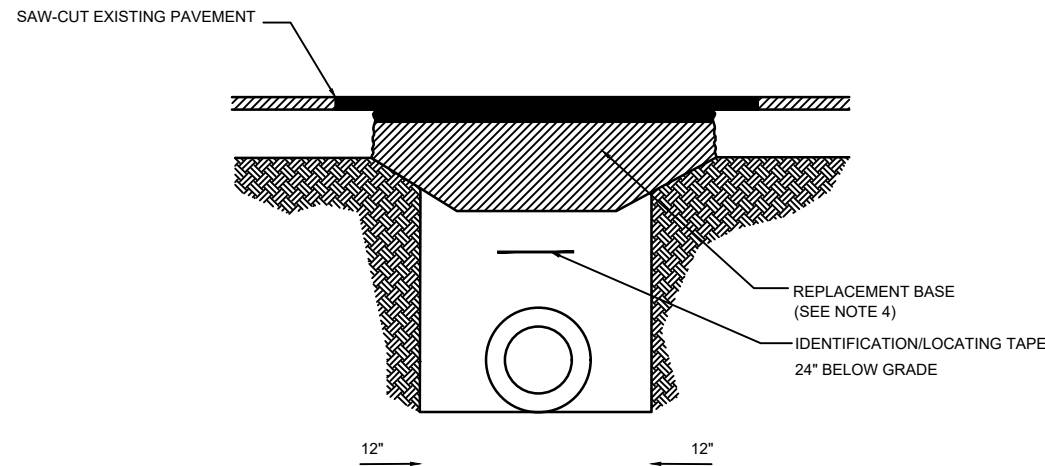
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PLAN

SD-33
C5005

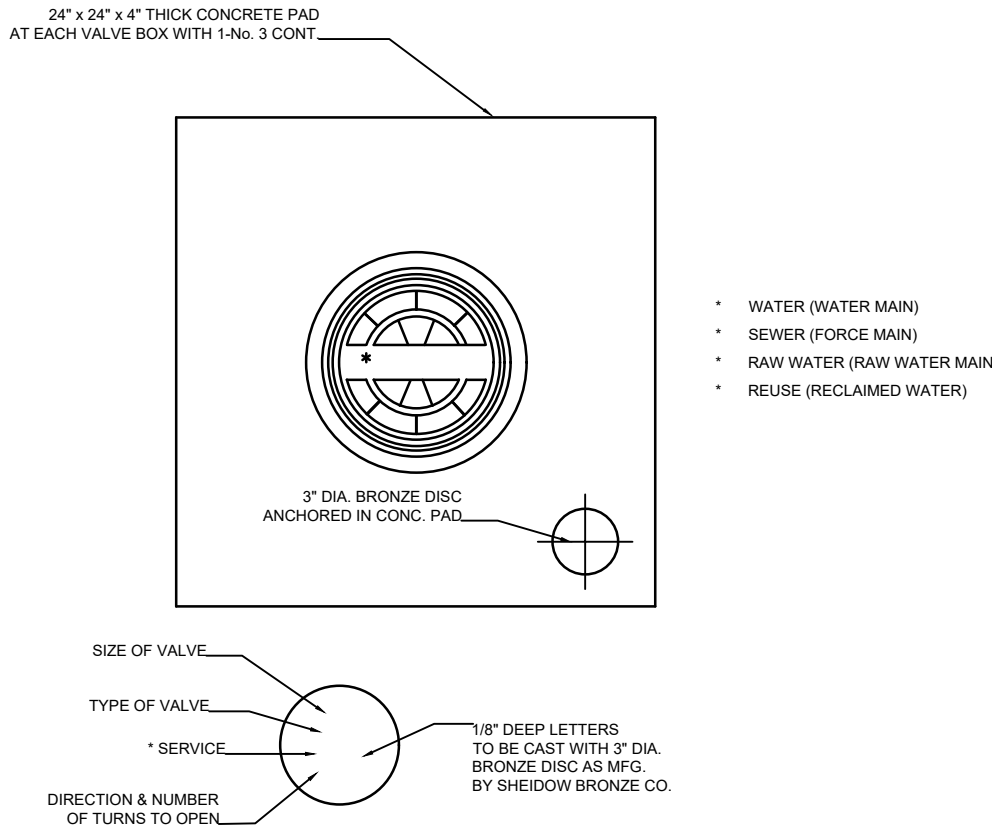
UTILITY LOCATION
50' RIGHT OF WAY



- ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED AND BUTT-JOINTED.
- PIPE SHALL BE PLACED IN A DRY TRENCH
- CONTRACTOR SHALL PROVIDE ADEQUATE COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPS SUITABLE FOR THIS PURPOSE.
- REFER TO ENGINEERING DESIGN STANDARDS MANUAL FOR MINIMUM PAVEMENT CRITERIA

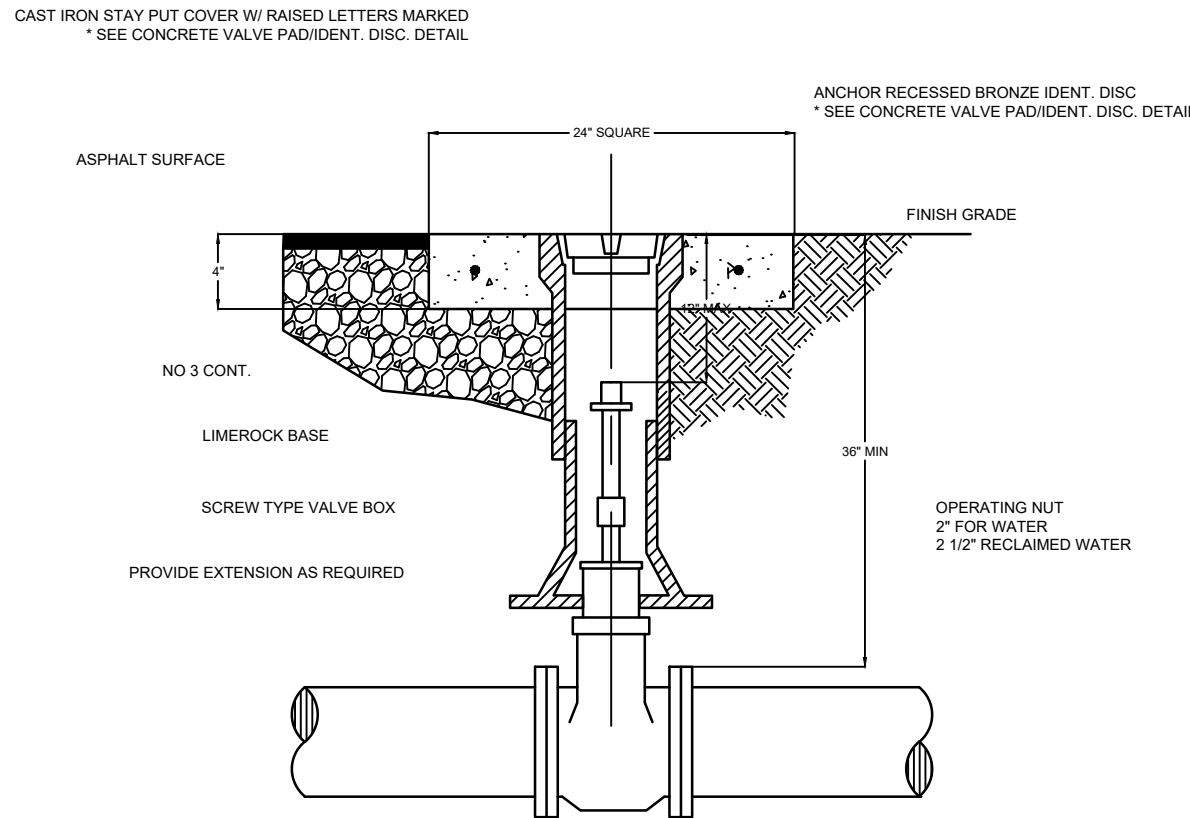
SD-34
C5005

ROADWAY
PAVEMENT RESTORATION



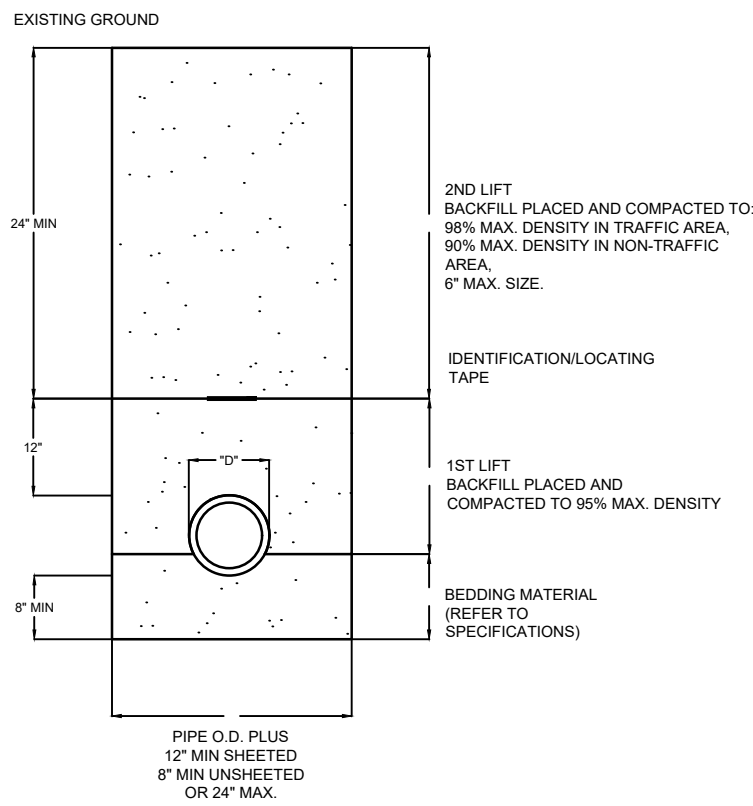
SD-35
C5005

CONCRETE VALVE PAD
IDENTIFICATION DISC



SD-36
C5005

VALVE AND BOX DETAIL

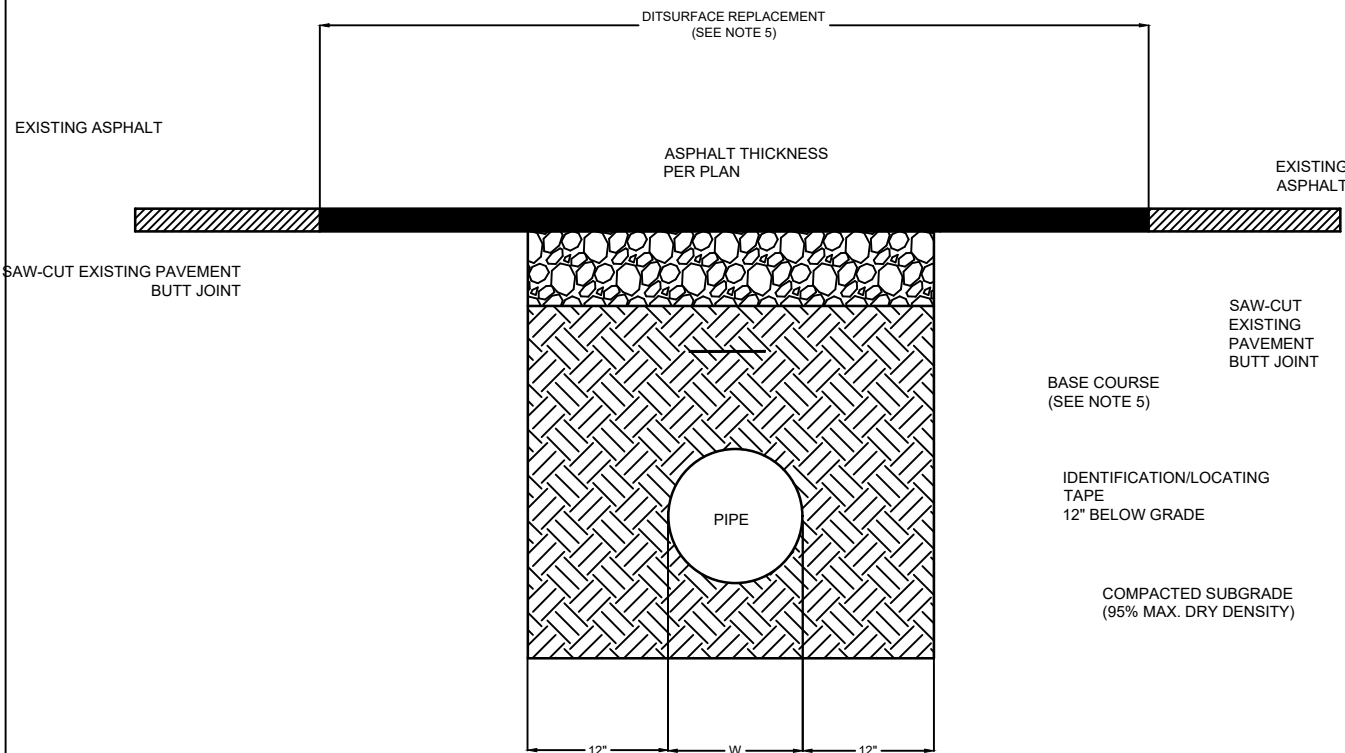


NOTES

- FOR EXCAVATION AND BACKFILL AROUND MANHOLES, APPURTENANCES, OR IN WATER, REFER TO PROVISIONS WITHIN THE SPECIFICATIONS.
- UNLESS OTHERWISE SPECIFIED, BEDDING MATERIAL SHALL CONSIST OF WASHED AND GRADED LIMEROCK (3/8"-7/8").
- WHERE REQUIRED, SHEETING AND SHORING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS
- REFER TO SPECIFICATIONS FOR EXCAVATION IN MUCK OR OTHER UNSUITABLE MATERIAL

SD-37
C5005

TYPICAL
TRENCH EXCAVATION



NOTES

- NO OPEN CUTS PERMITTED WITHIN CITY-OWNED RIGHTS-OF-WAY WITHOUT WRITTEN PERMISSION OF THE CITY OF BOCA RATON ENGINEERING DEPARTMENT.
- CITY OF BOCA RATON ENGINEERING DEPARTMENT TO BE NOTIFIED FOR INSPECTION OF LIMEROCK AND SUBGRADE PRIOR TO RECONSTRUCTION OF ASPHALT.
- ANY CUTS GREATER THAN 36" THE CONTRACTOR MUST SUBMIT TO THE CITY OF BOCA RATON ENGINEERING DEPARTMENT A SHOP DRAWING OF HIS PROPOSED PAVEMENT REPAIR FOR APPROVAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC IN ACCORDANCE WITH THE STATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL & SAFE PRACTICES.
- REFER TO ENGINEERING DESIGN STANDARDS MANUAL FOR MINIMUM DRIVEWAY CRITERIA

SD-38
C5005

OPEN-CUT
DRIVEWAY REPLACEMENT

RESILIENT SEATED GATE VALVE SPECIFICATIONS

- GATE VALVES SHALL BE RESILIENT SEATED, MANUFACTURED TO MEET OR EXCEED THE REQUIREMENTS OF AWWA C509 OF LATEST REVISION AND IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS.
- VALVES SHALL HAVE AN UNOBSTRUCTED WATERWAY EQUAL TO OR GREATER THAN THE FULL NOMINAL DIAMETER OF THE VALVE.
 - THE VALVES ARE TO BE NON-RISING STEM WITH THE STEM MADE OF CAST, FORGED OR ROLLED BRONZE SHOWN IN AWWA C509. TWO STEM SEALS SHALL BE PROVIDED AND SHALL BE OF THE O-RING TYPE, ONE ABOVE AND ONE BELOW THE THRUST COLLAR WITH LUBRICANT BETWEEN O-RING.
 - THE STEM NUT, ALSO MADE OF BRONZE, MAY BE INDEPENDENT OF THE GATE OR CAST INTEGRALLY WITH THE GATE. IF THE STEM NUT IS CAST INTEGRALLY, THE THREADS SHALL BE STRAIGHT AND TRUE WITH THE AXIS OF THE STEM TO AVOID BINDING DURING THE OPENING OR CLOSING CYCLE.
 - THE SEALING MECHANISM SHALL CONSIST OF A CAST IRON GATE HAVING A VULCANIZED SYNTHETIC RUBBER COATING OR A RUBBER SEAT MECHANICALLY RETAINED ON THE GATE. THE RESILIENT SEALING MECHANISM SHALL PROVIDE ZERO LEAKAGE AT THE WATER THE RESILIENT SEALING MECHANISM SHALL PROVIDE ZERO LEAKAGE AT THE WATER WORKING PRESSURE WHEN INSTALLED WITH THE LINE FLOW IN EITHER DIRECTION.
 - THE VALVE BODY, BONNET AND BONNET COVER SHALL BE CAST IRON ASTM A126, CLASS B. ALL FERROUS SURFACE INSIDE SHALL HAVE A BONDED EPOXY COATING. CLASS B. ALL FERROUS SURFACE INSIDE SHALL HAVE A BONDED EPOXY COATING.
 - A 2-INCH SQUARE WRENCH NUT SHALL BE PROVIDED FOR OPERATING THE VALVE.
 - ALL VALVES ARE TO BE SUPPLIED COMPLETE AND READY FOR INSTALLATION INCLUDING, BUT NOT LIMITED TO ALL NUTS, BOLTS RINGS AND RUBBERS.
 - ALL VALVES ARE TO BE TESTED IN STRICT ACCORDANCE WITH AWWA C509.

SD-39
C5005

RESILIENT GATE VALVE
SPECIFICATIONS

STANDARD SEPARATIONS

NEW OR RELOCATED, UNDERGROUND WATER MAINS WILL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER, STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-410, F.A.C.; A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER OR A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER IF THE BOTTOM OF THE WATER MAIN WILL BE LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER; A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-410, F.A.C.; AND A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE TREATMENT AND DISPOSAL SYSTEM."

NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT WILL CROSS ANY EXISTING OR PROPOSED GRAVITY-OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OTHER PIPELINE OR AT LEAST 12 INCHES BELOW THE OTHER PIPELINE; AND NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT WILL CROSS ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER WILL BE LAID SO THE OUTSIDE OF THE WATER MAINS AT LEAST 12 INCHES ABOVE OR BELOW THE OTHER PIPELINE.

AT THE UTILITY CROSSINGS DESCRIBE IN PART II.C.1.V OF DEP FORM 62-555.900(7), ONE FULL LENGTH OF WATER MAIN PIPE WILL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE OR THE PIPES WILL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-410, 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 III OF CHAPTER 62-410, F.A.C.

PIPE MARKINGS

ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320(2)(B)3, F.A.C.; USING BLUE AS A PREDOMINANT COLOR. UNDERGROUND PLASTIC PIPE WILL BE SOLID-WALL BLUE PIPE. WILL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN, OR WILL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE WILL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE WILL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90-DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIKE PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT WILL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE. FOR PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT WILL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE WILL BE PAINTED BLUE OR WILL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE.)

SD-40
C5005

STANDARD SEPARATIONS
& PIPE MARKING NOTES

DATE:	11/11/2025
SCALE:	1"=80'
DESIGN BY:	KAM
DRAWN BY:	KAM
CHECKED BY:	KAM
APPROVED BY:	KAM

CRAVEN • THOMPSON AND ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309
TEL.: (954) 739-6400
FAX: (954) 739-6409
FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS NO. 271
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS NO. C000114

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GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES

PREPARED FOR:
CITY OF BOCA RATON

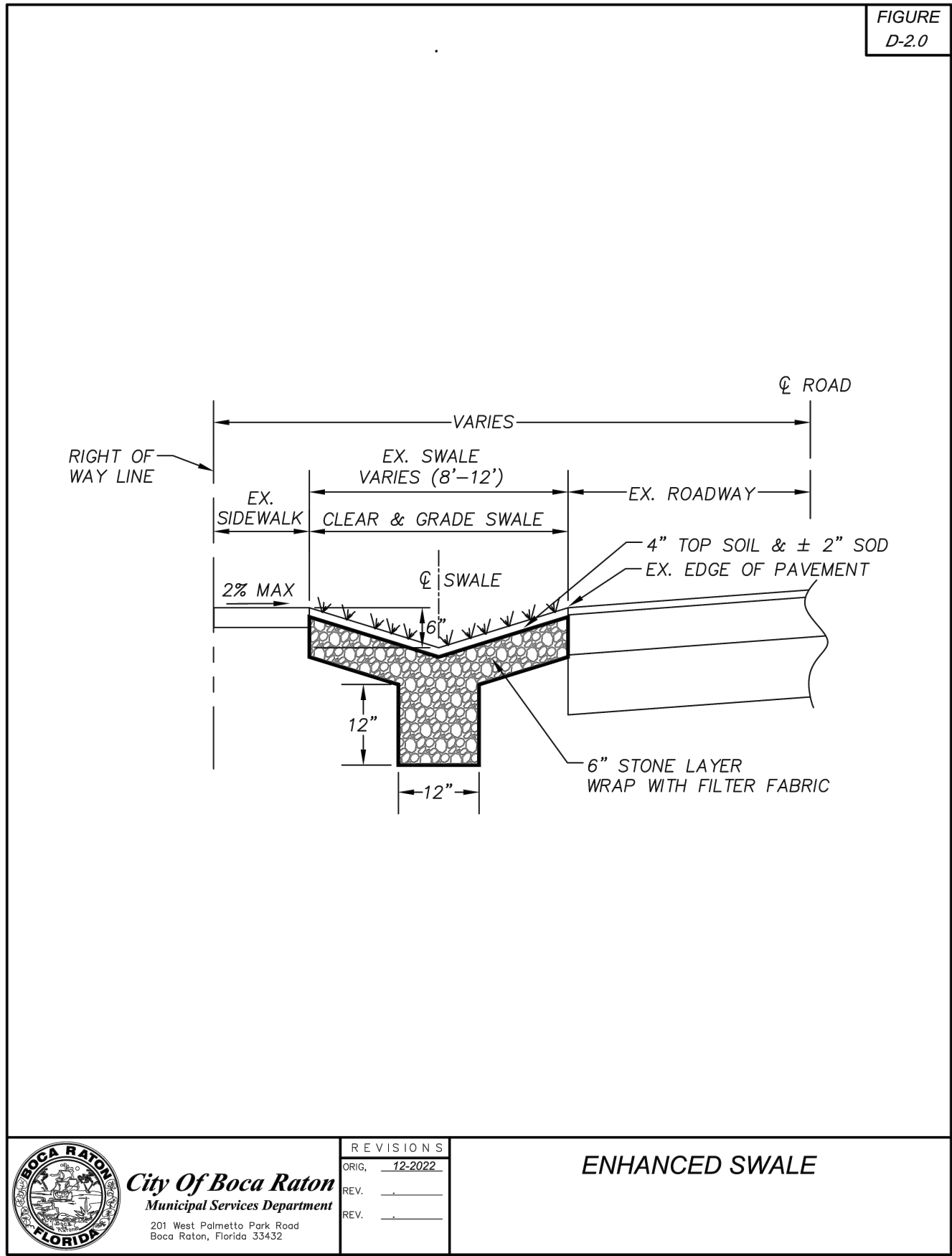
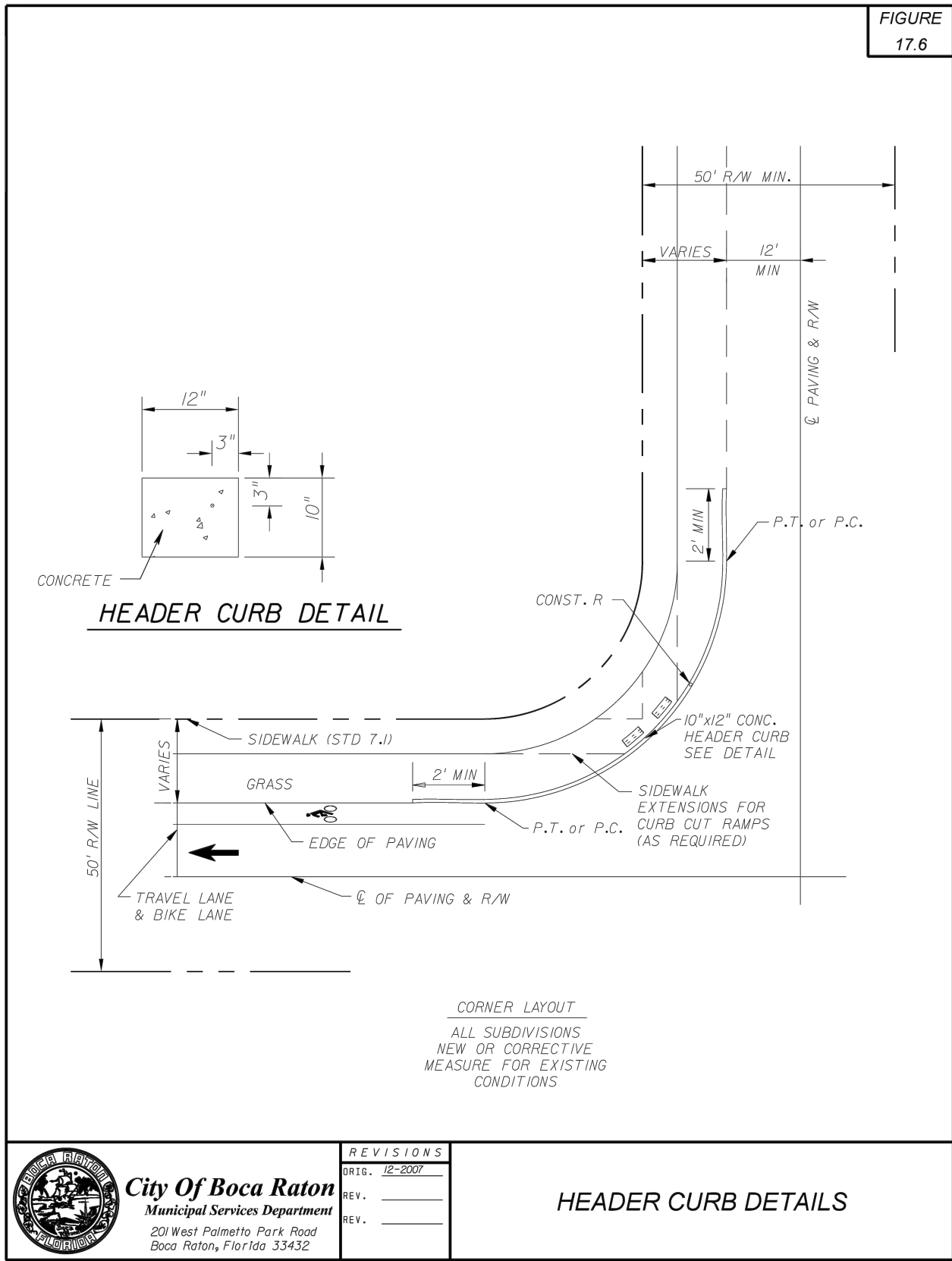
DETAILS

Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

PROJECT NO.
24-0043-001-01

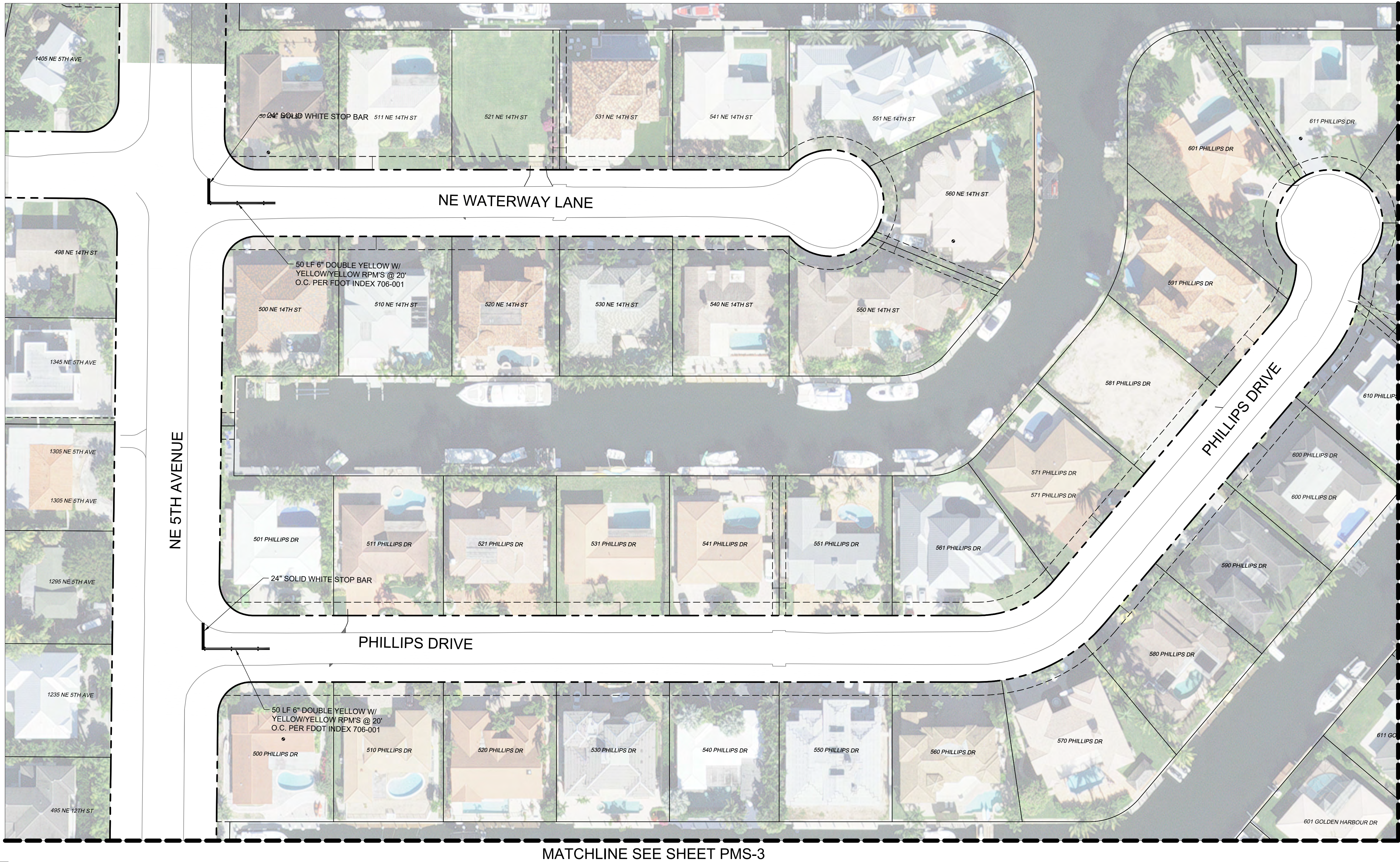
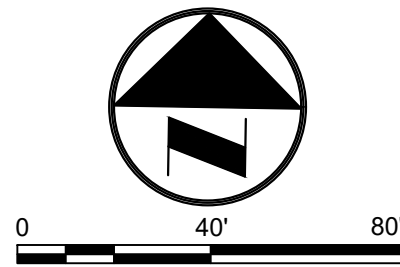
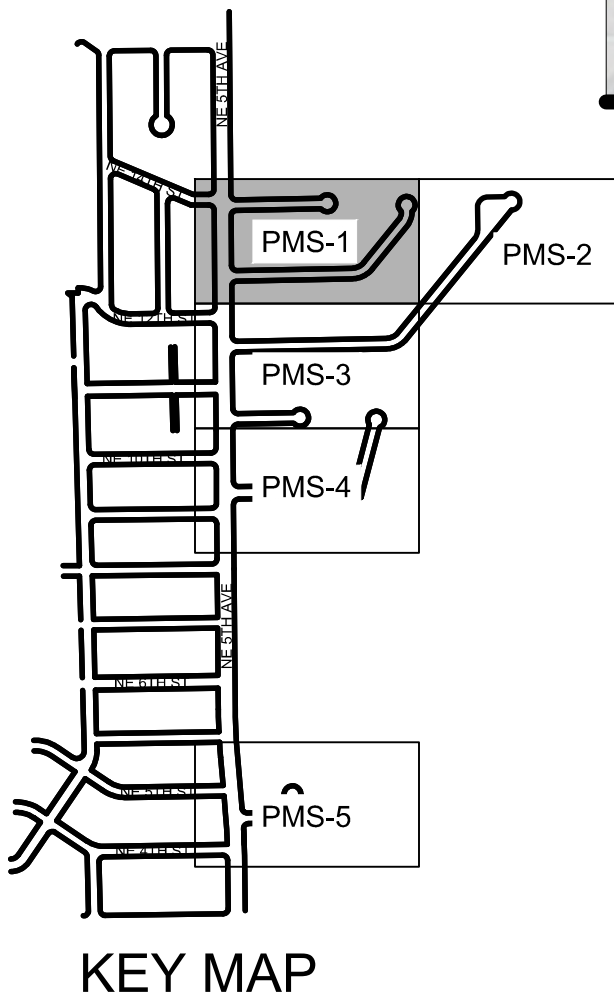
DET-3
SHEET 20 OF 29

CITY PROJECT #:XXXX
BID #XXXX



GOLDEN HARBOUR INFRASTRUCTURE UPGRADES	PREPARED FOR: CITY OF BOCA RATON	DETAILS	Kevin Andrew Menting Florida P.E. No. 92016 November 11, 2025		PROJECT NO. 24-0043-001-01		DET-5		SHEET 22 OF 29	
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GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES

PREPARED FOR:
CITY OF BOCA RATON

PAVEMENT MARKING & SIGNAGE PLAN

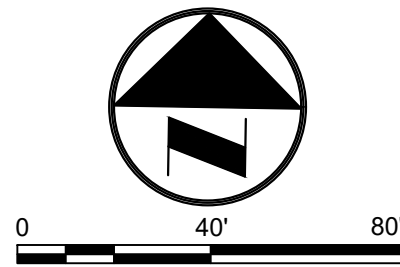
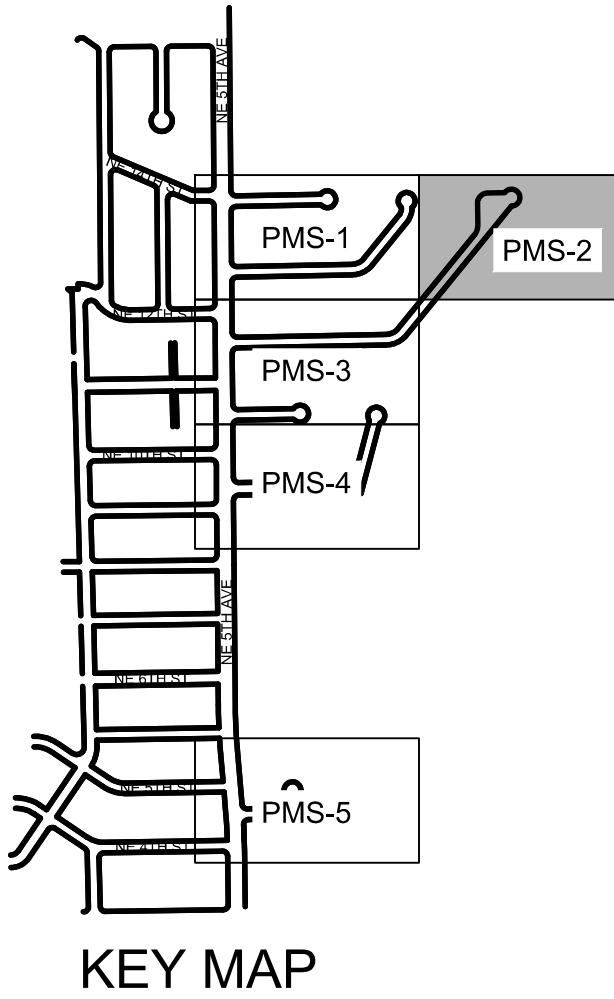
Kevin Andrew Menting
Florida P.E. No. 92016
November 12, 2025

PROJECT NO.
24-0043-001-01

PMS-1
SHEET 23 OF 29

CITY PROJECT #:XXXX
BID #XXXX

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**GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES**

PREPARED FOR:
CITY OF BOCA RATON

PAVEMENT MARKING & SIGNAGE PLAN

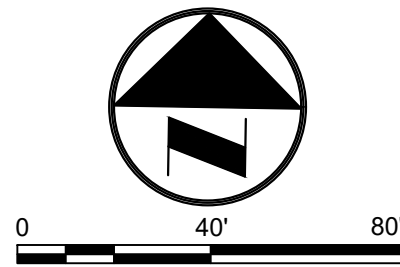
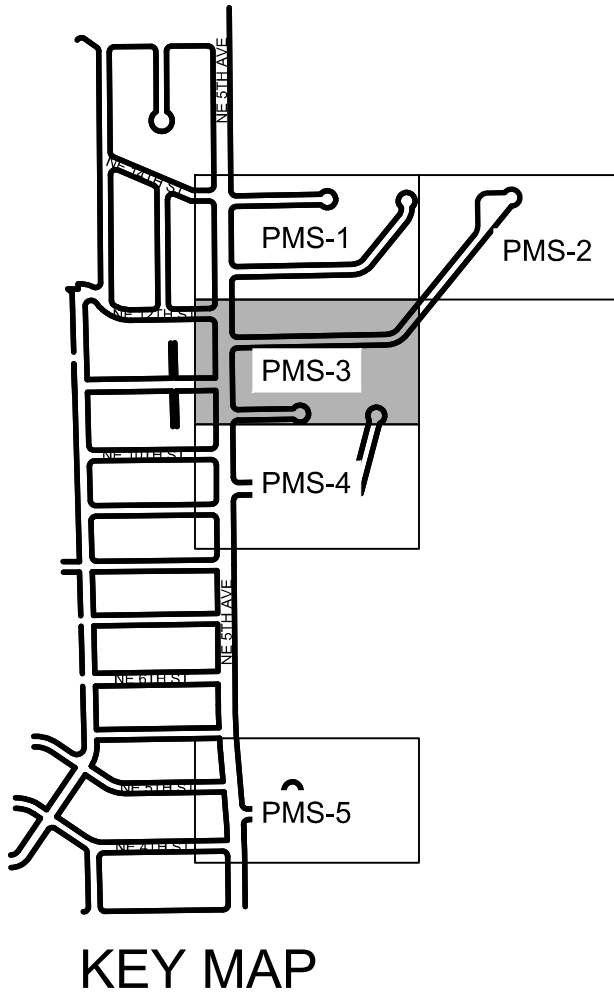
Kevin Andrew Menting
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November 12, 2025

PROJECT NO.
24-0043-001-01

PMS-2
SHEET 24 OF 29

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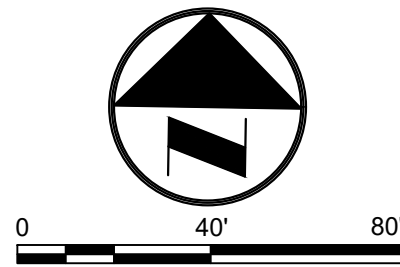
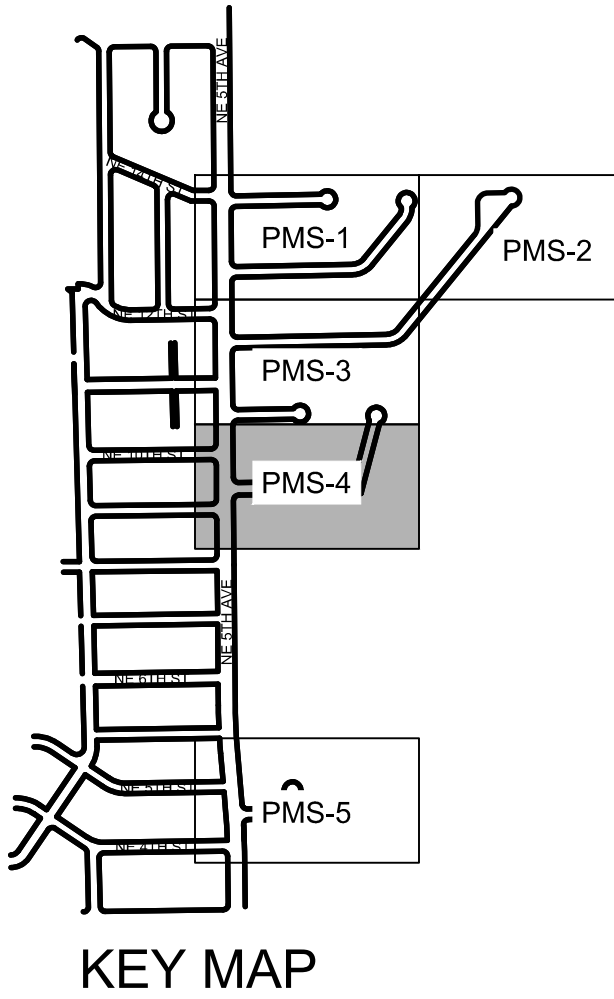
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CITY PROJECT #:XXXX
BID #XXXX

GOLDEN HARBOUR INFRASTRUCTURE UPGRADES		CRAVEN • THOMPSON AND ASSOCIATES, INC. ENGINEERS • PLANNERS • SURVEYORS 3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309 TEL: (954) 739-6409 FAX: (954) 739-6400 FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS No. 271 FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS No. C000114	DATE:						11/12/2025
			SCALE:						1" = 20'
PREPARED FOR: CITY OF BOCA RATON		MATERIAL SHOWN HEREON IS THE PROPERTY OF CRAVEN THOMPSON & ASSOCIATES, INC. AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF CRAVEN THOMPSON & ASSOCIATES, INC. © 2024	DESIGN BY:						KAM
			DRAWN BY:						KAM
PAVEMENT MARKING & SIGNAGE PLAN			CHECKED BY:						KAM
			APPROVED BY:						KAM
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BID #XXXX

PROJECT NO. 24-0043-001-01	GOLDEN HARBOUR INFRASTRUCTURE UPGRADES	
	PREPARED FOR: CITY OF BOCA RATON	
PMS-4	PAVEMENT MARKING & SIGNAGE PLAN	

Kevin Andrew Menting
Florida P.E. No. 92016
November 12, 2025

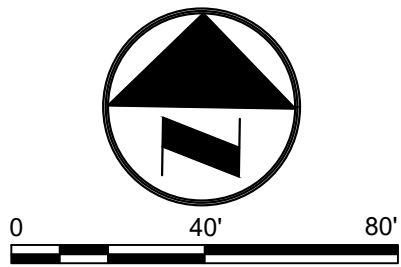
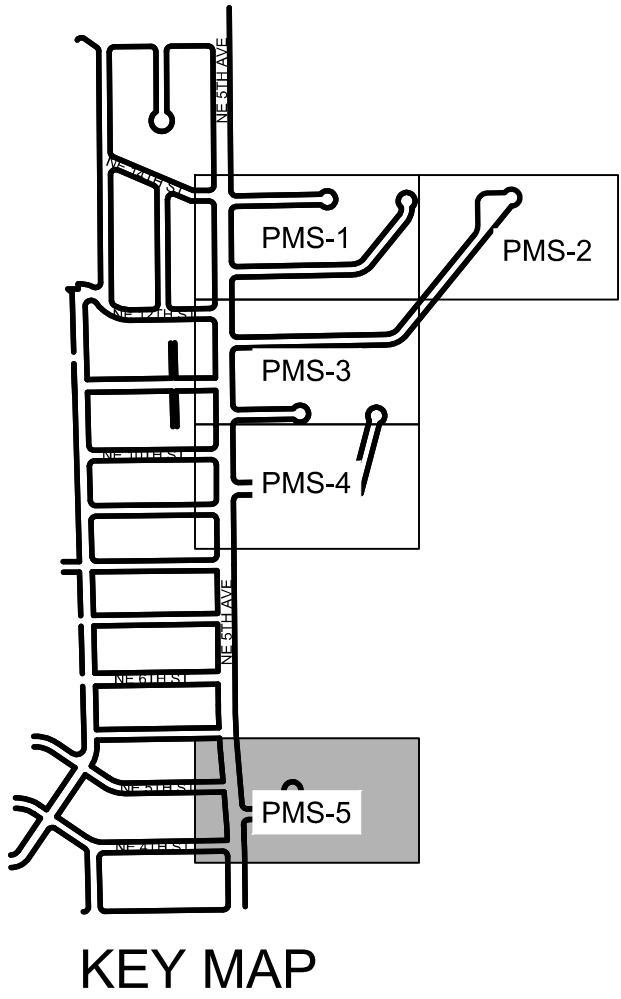


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FAX: (954) 739-6409 TEL: (954) 739-6400
FLORIDA LICENSED ENGINEERING, SURVEYING & MAPPING BUSINESS No. 271
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS No. C000114

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CITY PROJECT #:XXXX
BID #XXXX

GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES

PREPARED FOR:
CITY OF BOCA RATON

PAVEMENT MARKING & SIGNAGE PLAN

Kevin Andrew Menting
Florida P.E. No. 92016
November 12, 2025

PROJECT NO.
24-0043-001-01

PMS-5

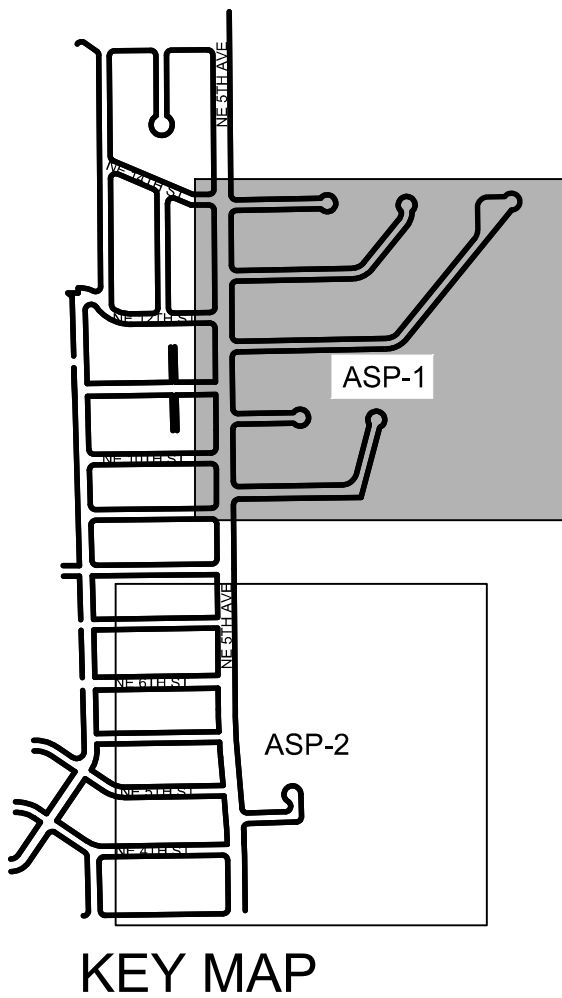
SHEET 27 OF 29

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FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS No. C000114

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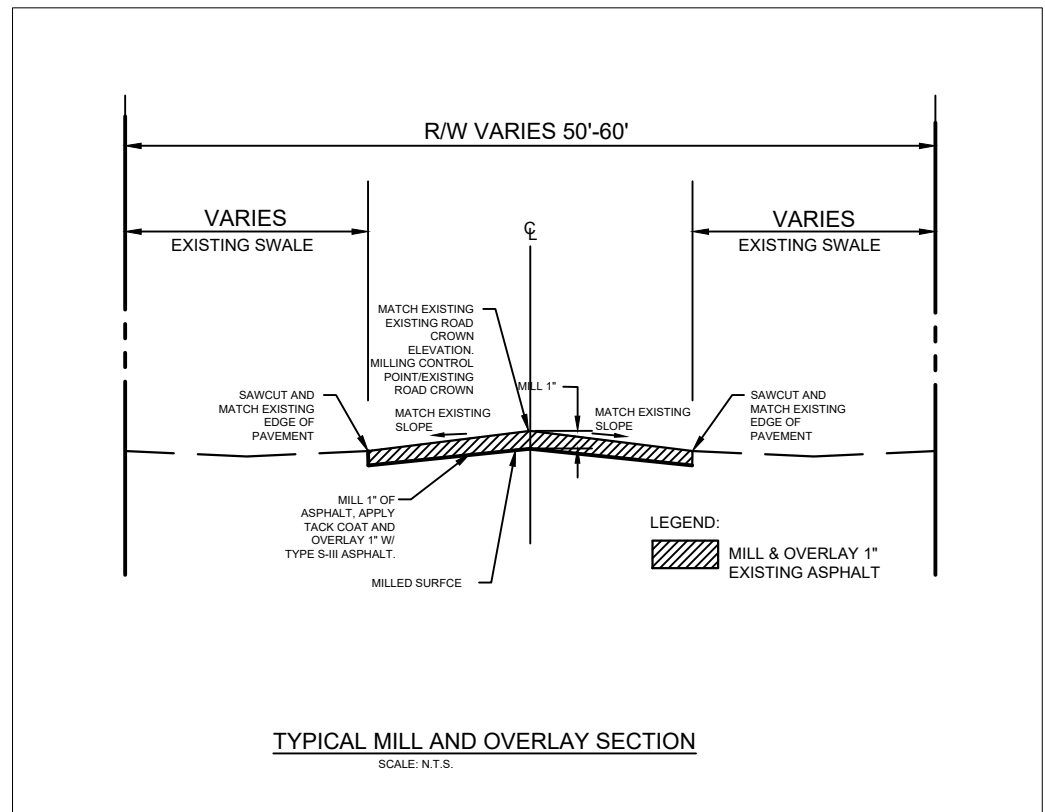
KEY MAP

GENERAL NOTES:

1.) CONTRACTOR TO NOTE EXISTING OVERHEAD WIRES AND TAKE NECESSARY PRECAUTIONS ALONG WITH FOLLOWING OSHA REQUIREMENTS WHEN WORKING IN THE VICINITY. CONTRACTOR SHALL UTILIZE APPROPRIATE MACHINERY/EQUIPMENT OR MAKE ARRANGEMENTS WITH THE APPROPRIATE FRANCHISE UTILITIES TO DE-ENERGIZE THEIR UTILITY TO ALLOW FOR THE SAFE INSTALLATION OF PROPOSED IMPROVEMENTS. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THIS WORK.

2.) CONTRACTOR SHALL UTILIZE APPROPRIATE EQUIPMENT/MACHINERY WHEN WORKING ADJACENT TO EXISTING OVERHANGING TREE LIMBS. TRIMMING OF EXISTING TREE LIMBS TO ENABLE THE INSTALLATION OF PROPOSED IMPROVEMENTS SHALL BE DONE AT THE APPROVAL OF THE ENGINEER AND CITY. NO ADDITIONAL PAYMENT SHALL BE MADE FOR TRIMMING OF EXISTING TREE LIMBS DEEMED NECESSARY TO COMPLETE AND INSTALL ANY PROPOSED IMPROVEMENTS ASSOCIATED WITH THIS PROJECT.

- 1) ANY AND ALL CITY STORM DRAIN/SIDEWALK/PATHWAY/ C&G/ADA AND OR ADDITIONAL ROADWAY THAT IS AFFECTED BY THE PROPOSED CONSTRUCTION MUST BE RESTORED TO LIKE OR BETTER THEN LIKE CONDITION.
- 2) SIDEWALK AFFECTED TO INCLUDE ONE FLAG ON EITHER SIDE OF THE DISTURBED AREA. SIDEWALKS WILL BE RESTORED BY REPLACING. TWO FLAGS IF THE POINT OF CONSTRUCTION IS LOCATED AT A CONTROL JOINT AND THREE FLAGS IF THE POINT OF CONSTRUCTION IS LOCATED BETWEEN CONTROL JOINTS. NO PARTIAL JOINTS ACCEPTED. (PER SITUATION)
- 3) ROADWAY LANES AFFECTED WILL REQUIRE THE AFFECTED LANES AND/OR ADDITIONAL LANES BE RESTORED TO LIKE OR BETTER THEN LIKE CONDITION AND TO EQUAL DIMENSIONS AS THE ADJACENT LANES (EOP TO EOP).
- 4) ALL AFFECTED ROADWAYS ARE TO BE RESTORED FROM EOP TO EOP, LANE WIDTH MIN. AND 50' EITHER DIRECTION (THOROUGHFARE) AND 25' MIN. RESTORATION (NON-THOROUGHFARE).
- 5) ANY DRAINAGE SWALES AFFECTED BY THE PROPOSED CONSTRUCTION, SHALL BE RESTORED TO LIKE OR BETTER THEN LIKE CONDITION TO INCLUDE ORIGINAL DESIGN ELEVATIONS.



LEGEND

- INDICATES TYPICAL MILL 1" & OVERLAY 1" EXISTING ASPHALT
- INDICATES TO REPAIR PAVEMENT SECTION BY REMOVING EXISTING PAVEMENT AND A MINIMUM OF 12" OF UNDERLYING MATERIAL. COMPACT SUBGRADE, INSTALL NEW LIMEROCK BASE AND COMPACT TO SPECIFICATIONS, THEN INSTALL 2" SP-9.5 ASPHALT.
- INDICATES NEW PAVEMENT SPOT ELEVATION
- RAISE MANHOLE COVER TO NEW ASPHALT ELEVATION.
- RAISE VALVE COVER TO NEW ASPHALT ELEVATION.

CITY PROJECT #:XXXX
BID #XXXX



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GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES
PREPARED FOR:
CITY OF BOCA RATON
ASPHALT PLAN

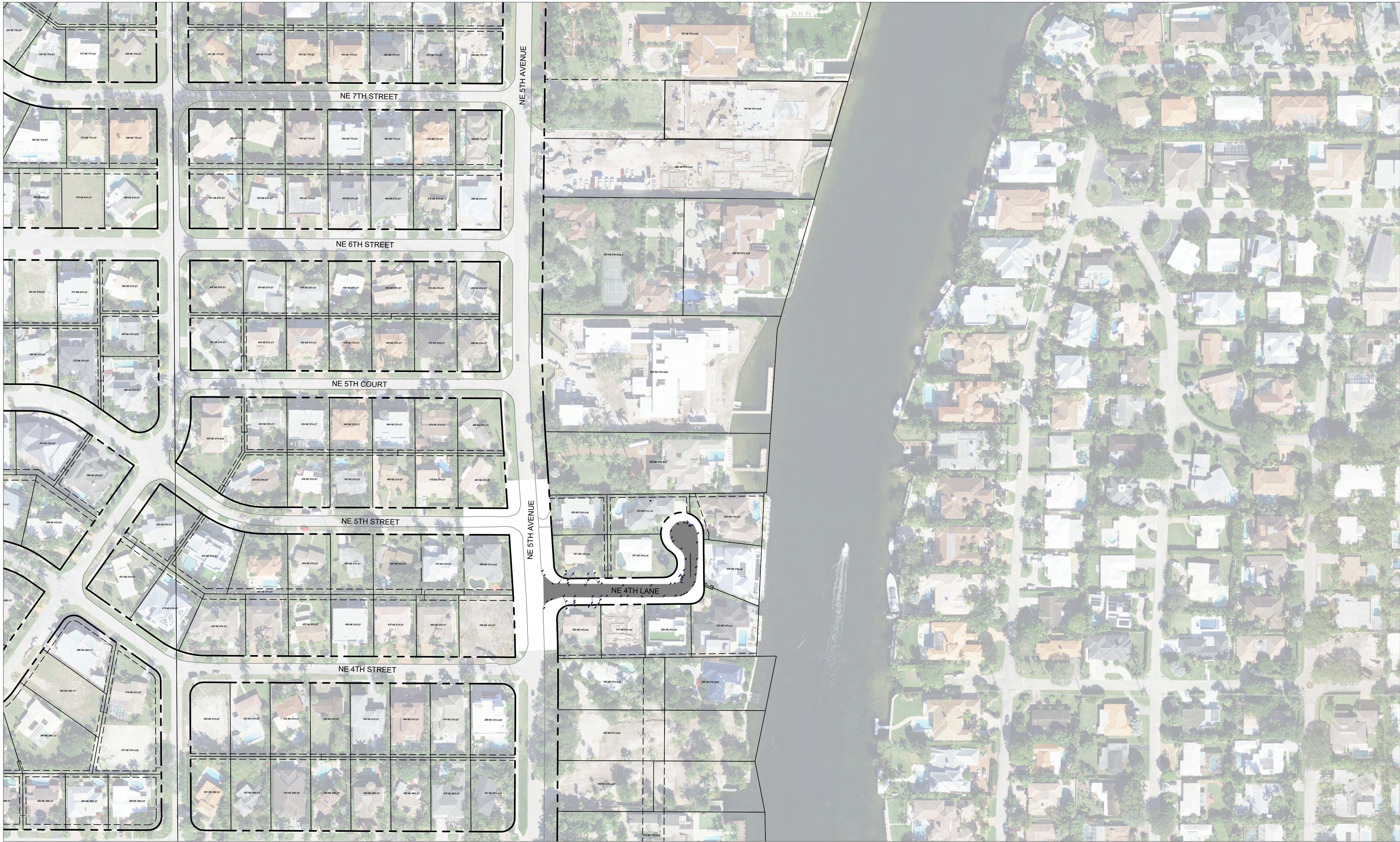
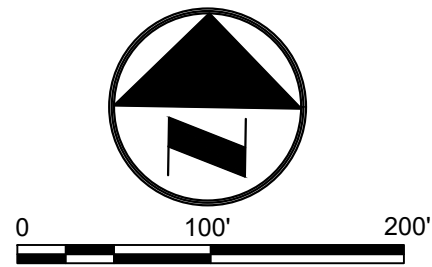
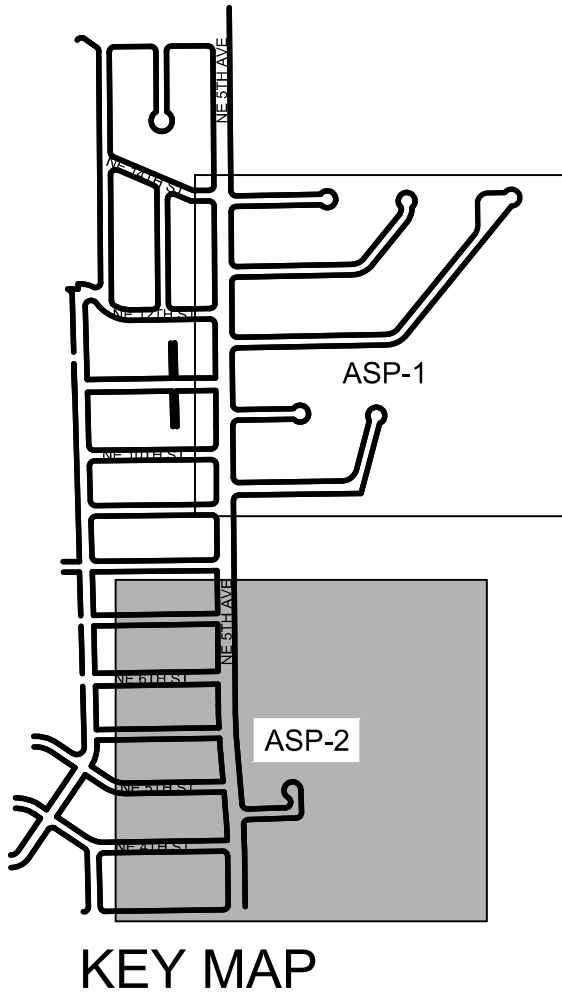
Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

PROJECT NO.
24-0043-001-01

ASP-1
SHEET 28 OF 29

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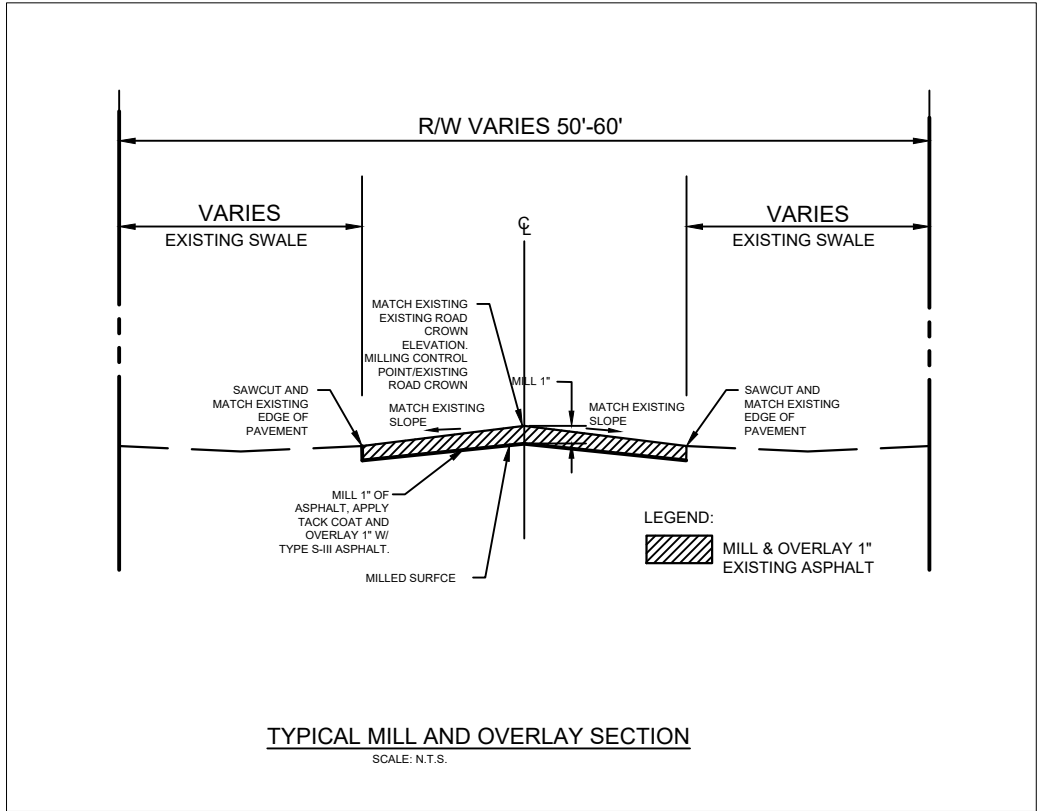
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GENERAL NOTES:

- 1.) CONTRACTOR TO NOTE EXISTING OVERHEAD WIRES AND TAKE NECESSARY PRECAUTIONS ALONG WITH FOLLOWING OSHA REQUIREMENTS WHEN WORKING IN THE VICINITY. CONTRACTOR SHALL UTILIZE APPROPRIATE MACHINERY/EQUIPMENT OR MAKE ARRANGEMENTS WITH THE APPROPRIATE FRANCHISE UTILITIES TO DE-ENERGIZE THEIR UTILITY TO ALLOW FOR THE SAFE INSTALLATION OF PROPOSED IMPROVEMENTS. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THIS WORK.
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LEGEND

- INDICATES TYPICAL MILL 1" & OVERLAY 1" EXISTING ASPHALT
- INDICATES NEW PAVEMENT SPOT ELEVATION
- RAISE MANHOLE COVER TO NEW ASPHALT ELEVATION.
- RAISE VALVE COVER TO NEW ASPHALT ELEVATION.

CITY PROJECT #:XXXX
BID #XXXX

GOLDEN HARBOUR
INFRASTRUCTURE UPGRADES
PREPARED FOR:
CITY OF BOCA RATON
ASPHALT PLAN

Kevin Andrew Menting
Florida P.E. No. 92016
November 11, 2025

PROJECT NO.
24-0043-001-01

ASP-2
SHEET 29 OF 29

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