PAVING, GRADING AND DRAINAGE IMPROVEMENTS

FOR

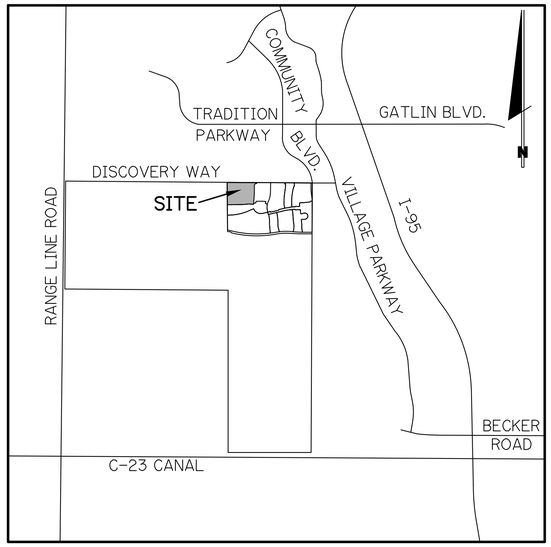
RIVERLAND – PARCEL A

PLAT ELEVEN

CITY OF PORT ST. LUCIE, ST. LUCIE COUNTY, FLORIDA

DEVELOPER: **RIVERLAND ASSOCIATES I, LLLP**

1600 SAWGRASS CORPORATE PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323
(954) 753-1730



LOCATION MAP

N.T.S.

SEC. 16 TWP. 37 S RGE. 39 E.

INDEX OF SHEETS

PREPARED BY:

GLH ENGINEERING, LLC

1600 SAWGRASS CORPORATE
PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323
PHONE: (954) 753-1730

FL CERTIFICATE OF AUTHORIZATION NO. 27459

NOTE: ALL GRADES SHOWN ARE IN NAVD88

P19-028

LAST REVISED: 5/21/19

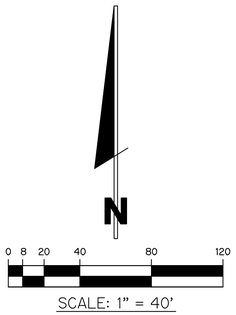
RIV-A PL11 PD

REVISION NO.	DATE

MATTHEW WOODS, P.E.
FLORIDA P.E. #68342

RIV-A PL11 | PD

SHEET 1 OF 17



SCALE: 1" = 40'

STRIPING KEY

- (A) — 6" SOLID WHITE
- (B) — 8" SOLID WHITE
- (C) — 12" SOLID WHITE
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- (E) — 24" SOLID WHITE
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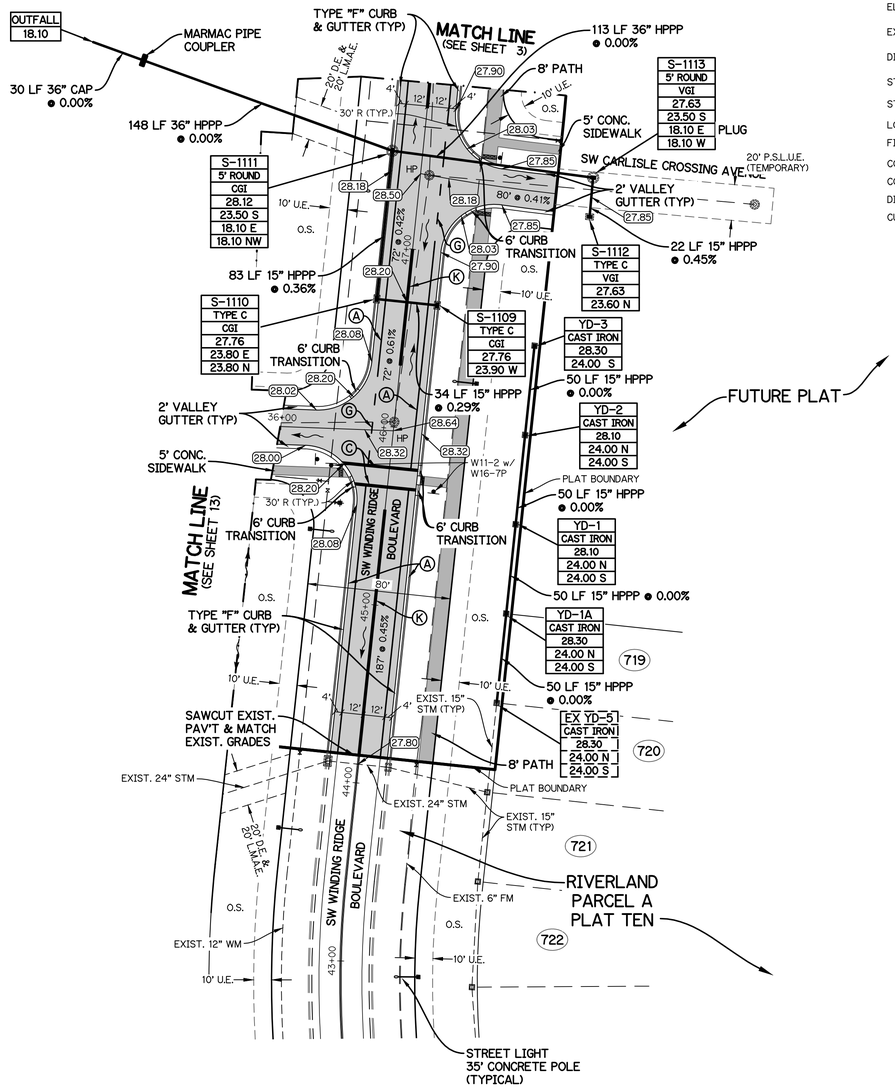

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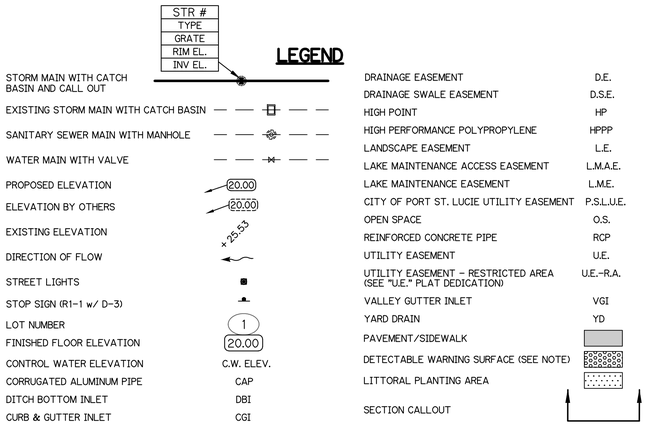

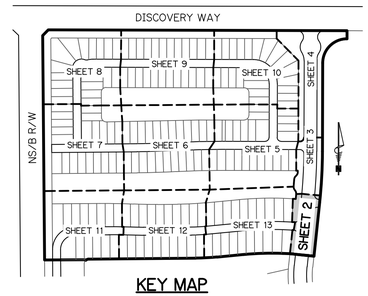

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DATE	BY	CK	REVISIONS

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SUNRISE, FLORIDA 33323
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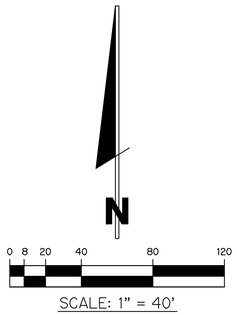

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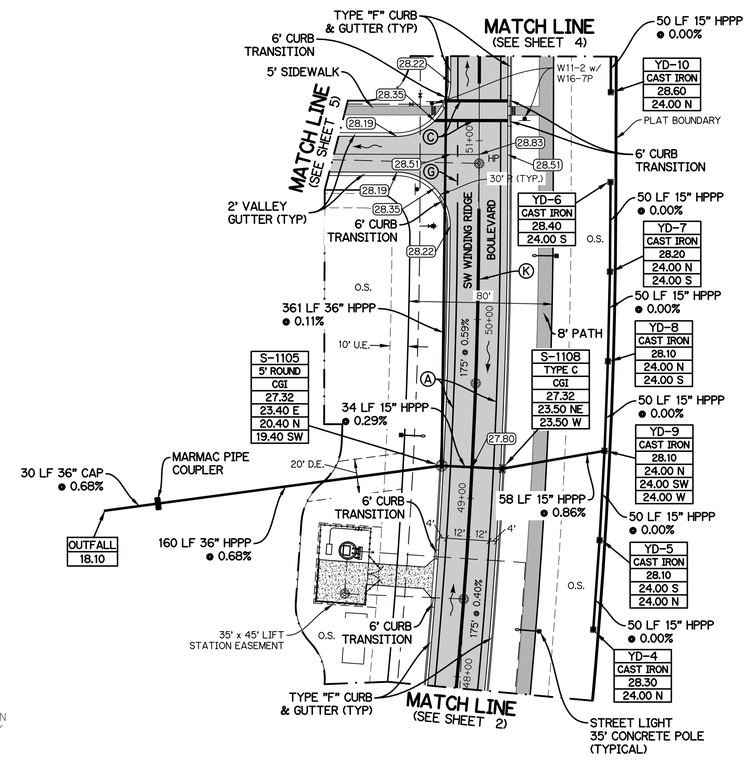

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LEGEND

STORM MAIN WITH CATCH BASIN AND CALL OUT	
EXISTING STORM MAIN WITH CATCH BASIN	
SANITARY SEWER MAIN WITH MANHOLE	
WATER MAIN WITH VALVE	
PROPOSED ELEVATION	20.00
ELEVATION BY OTHERS	20.00
EXISTING ELEVATION	+25.53
DIRECTION OF FLOW	
STREET LIGHTS	
STOP SIGN (R1-1 w/ D-3)	
LOT NUMBER	1
FINISHED FLOOR ELEVATION	20.00
CONTROL WATER ELEVATION	C.W. ELEV.
CORRUGATED ALUMINUM PIPE	CAP
DITCH BOTTOM INLET	DBI
CURB & GUTTER INLET	CGI

DRAINAGE EASEMENT	D.E.
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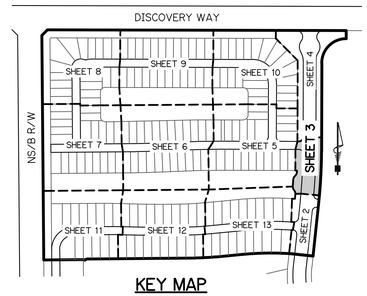
LAKE MAINTENANCE EASEMENT	L.M.E.
CITY OF PORT ST. LUCIE UTILITY EASEMENT	P.S.L.U.E.
OPEN SPACE	O.S.
REINFORCED CONCRETE PIPE	RCP
UTILITY EASEMENT	U.E.
UTILITY EASEMENT – RESTRICTED AREA (SEE "U.E." PLAT DEDICATION)	U.E.-R.A.
VALLEY GUTTER INLET	VGI
YARD DRAIN	YD
PAVEMENT/SIDEWALK	
DETECTABLE WARNING SURFACE (SEE NOTE)	
LITTORAL PLANTING AREA	
SECTION CALLOUT	

FUTURE PLAT



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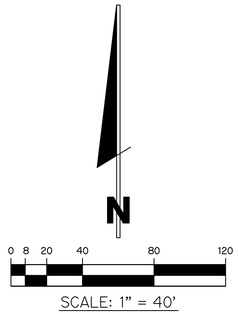

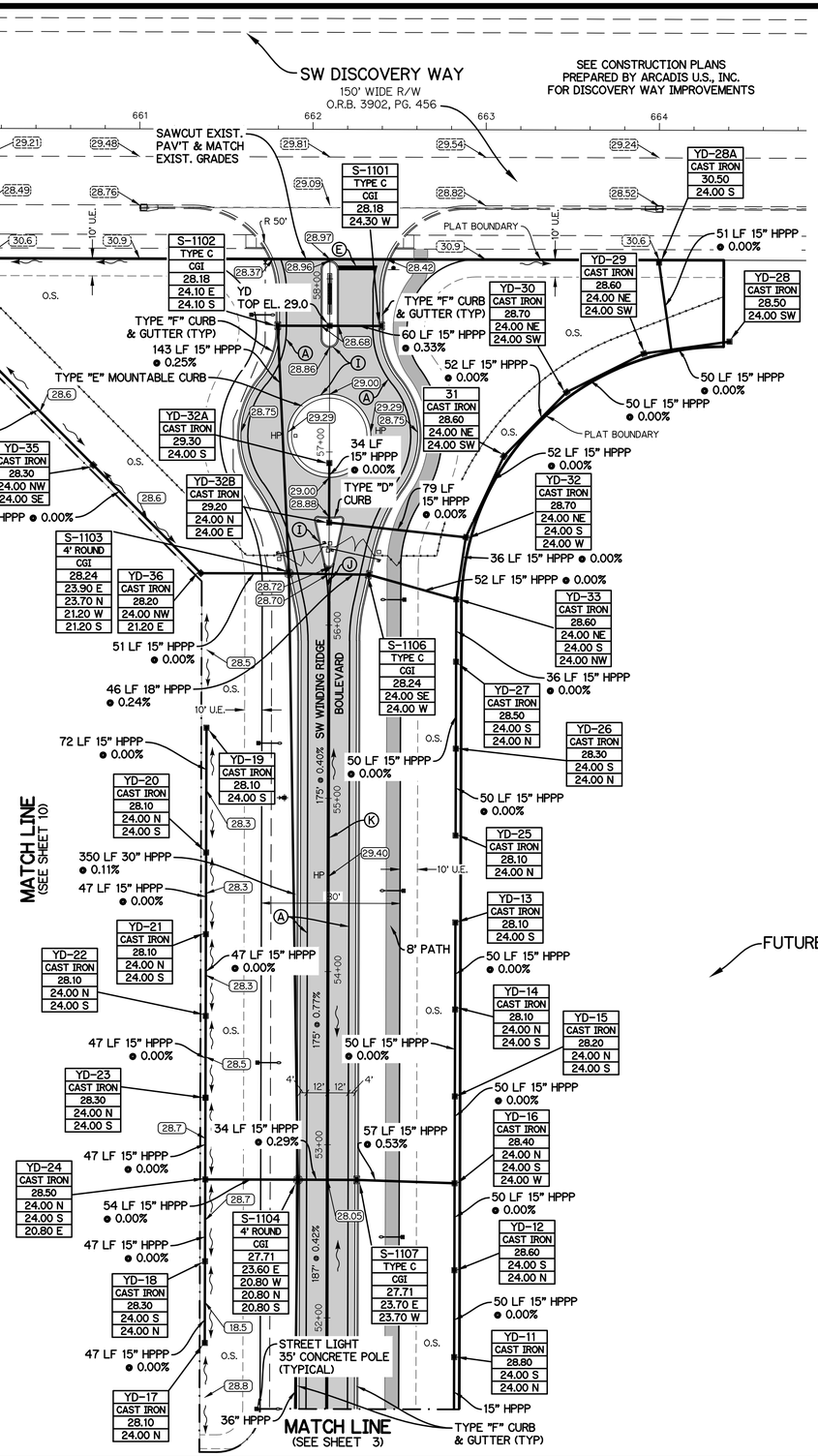

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STR #
TYPE
GRATE
RIM EL.
INV EL.

LEGEND

STORM MAIN WITH CATCH BASIN AND CALL OUT	
EXISTING STORM MAIN WITH CATCH BASIN	
SANITARY SEWER MAIN WITH MANHOLE	
WATER MAIN WITH VALVE	
PROPOSED ELEVATION	20.00
ELEVATION BY OTHERS	20.00
EXISTING ELEVATION	+25.53
DIRECTION OF FLOW	
STREET LIGHTS	
STOP SIGN (R1-1 w/ D-3)	
LOT NUMBER	1
FINISHED FLOOR ELEVATION	20.00
CONTROL WATER ELEVATION	C.W. ELEV.
CORRUGATED ALUMINUM PIPE	CAP
DITCH BOTTOM INLET	DBI
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DRAINAGE EASEMENT	D.E.
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VALLEY GUTTER INLET	VGI
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PAVEMENT/SIDEWALK	
DETECTABLE WARNING SURFACE (SEE NOTE)	
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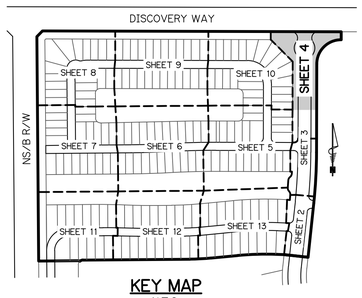
SECTION CALLOUT	



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REVISIONS	DATE	BY	CK

GLH ENGINEERING, LLC
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PHONE: (954) 753-1730

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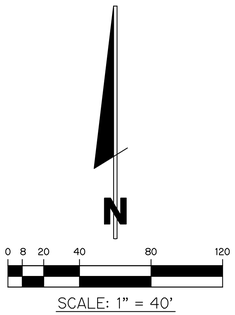
RIV-A PL11 | PD

SHEET 4 OF 17



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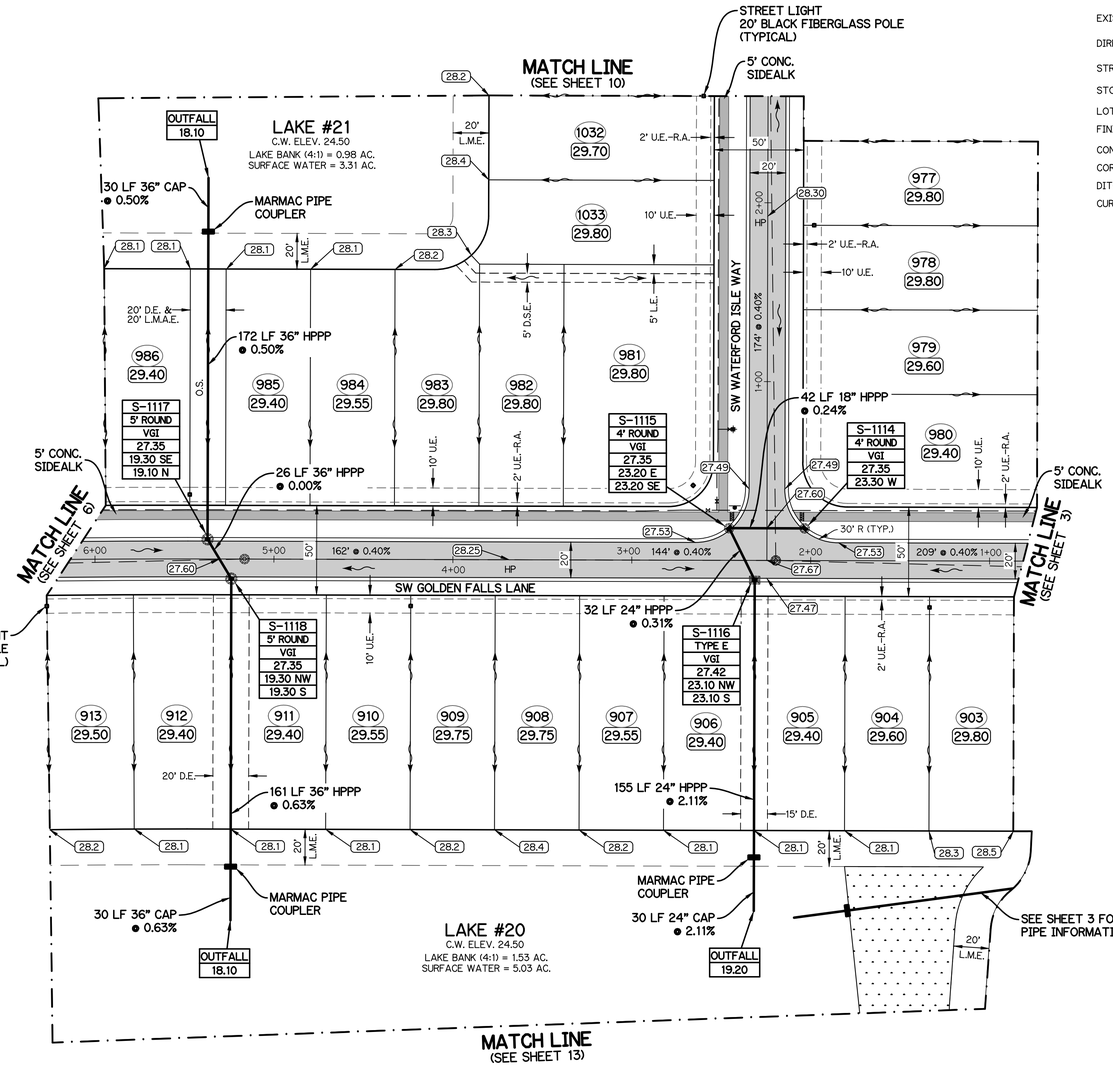

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STREET LIGHTS	
STOP SIGN (R1-1 w/ D-3)	
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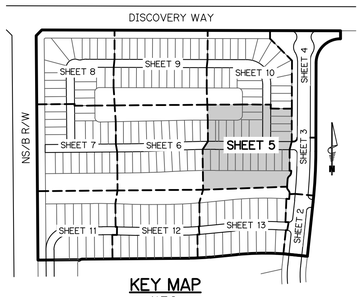

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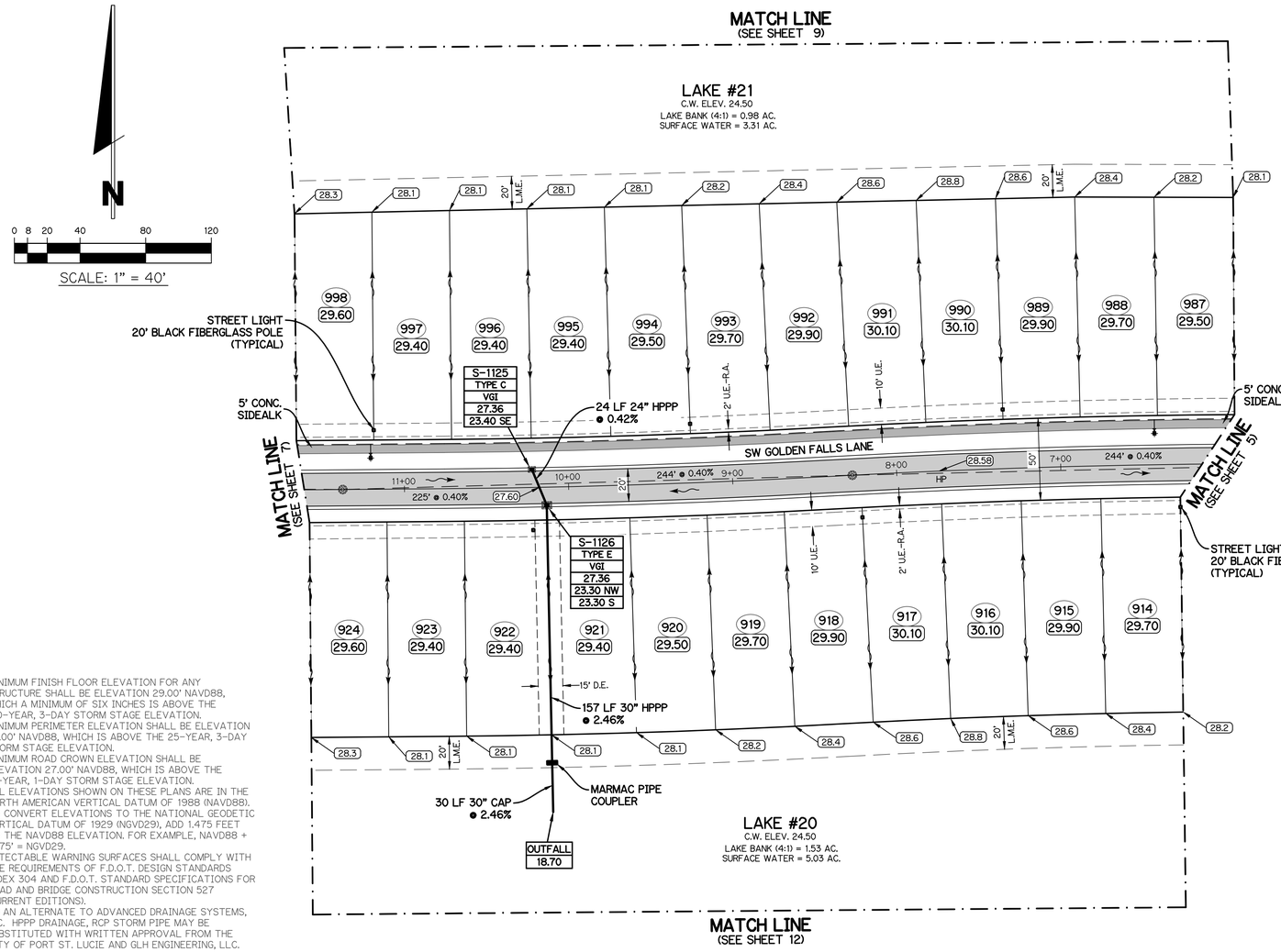

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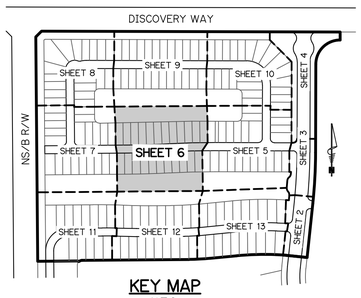

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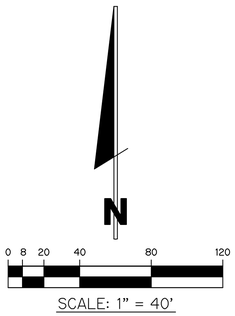

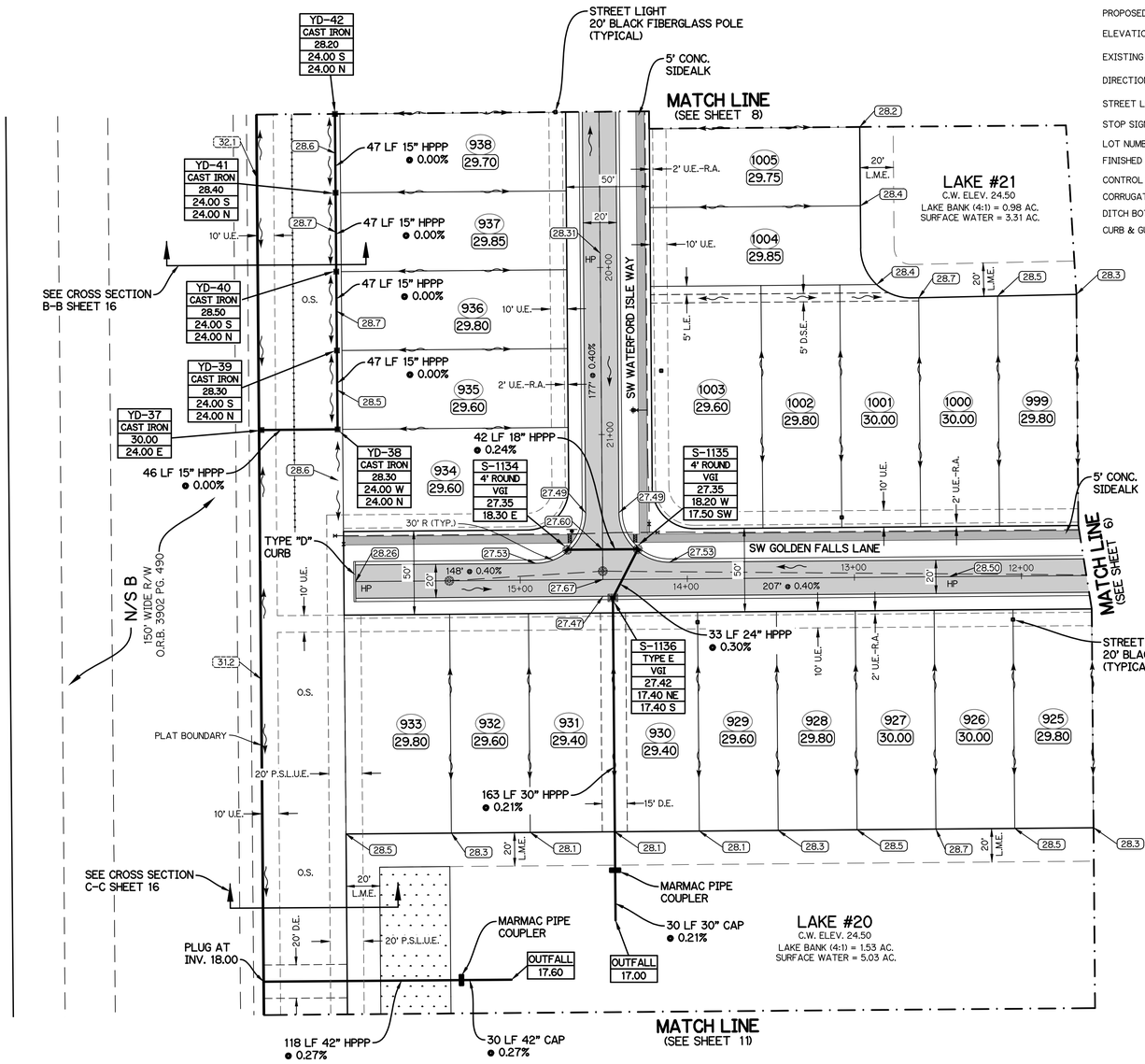

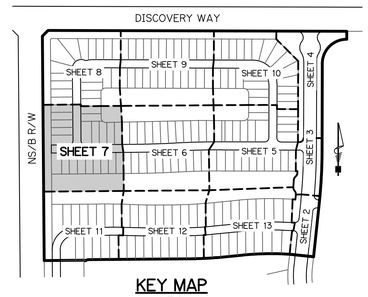

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LEGEND

STR # / TYPE / GRATE / RIM EL. / INV EL.	
STORM MAIN WITH CATCH BASIN AND CALL OUT	
EXISTING STORM MAIN WITH CATCH BASIN	
SANITARY SEWER MAIN WITH MANHOLE	
WATER MAIN WITH VALVE	
PROPOSED ELEVATION	20.00
ELEVATION BY OTHERS	20.00
EXISTING ELEVATION	+25.53
DIRECTION OF FLOW	
STREET LIGHTS	
STOP SIGN (R1-1 w/ D-3)	
LOT NUMBER	1
FINISHED FLOOR ELEVATION	20.00
CONTROL WATER ELEVATION	C.W. ELEV.
CORRUGATED ALUMINUM PIPE	CAP
DITCH BOTTOM INLET	DBI
CURB & GUTTER INLET	CGI

DRAINAGE EASEMENT	D.E.
DRAINAGE SWALE EASEMENT	D.S.E.
HIGH POINT	HP
HIGH PERFORMANCE POLYPROPYLENE	HPPP
LANDSCAPE EASEMENT	L.E.
LAKE MAINTENANCE ACCESS EASEMENT	L.M.A.E.
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OPEN SPACE	O.S.
REINFORCED CONCRETE PIPE	RCP
UTILITY EASEMENT	U.E.
UTILITY EASEMENT – RESTRICTED AREA (SEE "U.E." PLAT DEDICATION)	U.E.-R.A.
VALLEY GUTTER INLET	VGI
YARD DRAIN	YD
PAVEMENT/SIDEWALK	
DETECTABLE WARNING SURFACE (SEE NOTE)	
LITTORAL PLANTING AREA	
SECTION CALLOUT	

NOTE: ALL GRADES SHOWN ARE IN NAVD88

P19-028

PAVING, GRADING AND DRAINAGE PLAN FOR RIVERLAND-PARCEL A PLAT ELEVEN

DATE	BY	CK
REVISIONS		

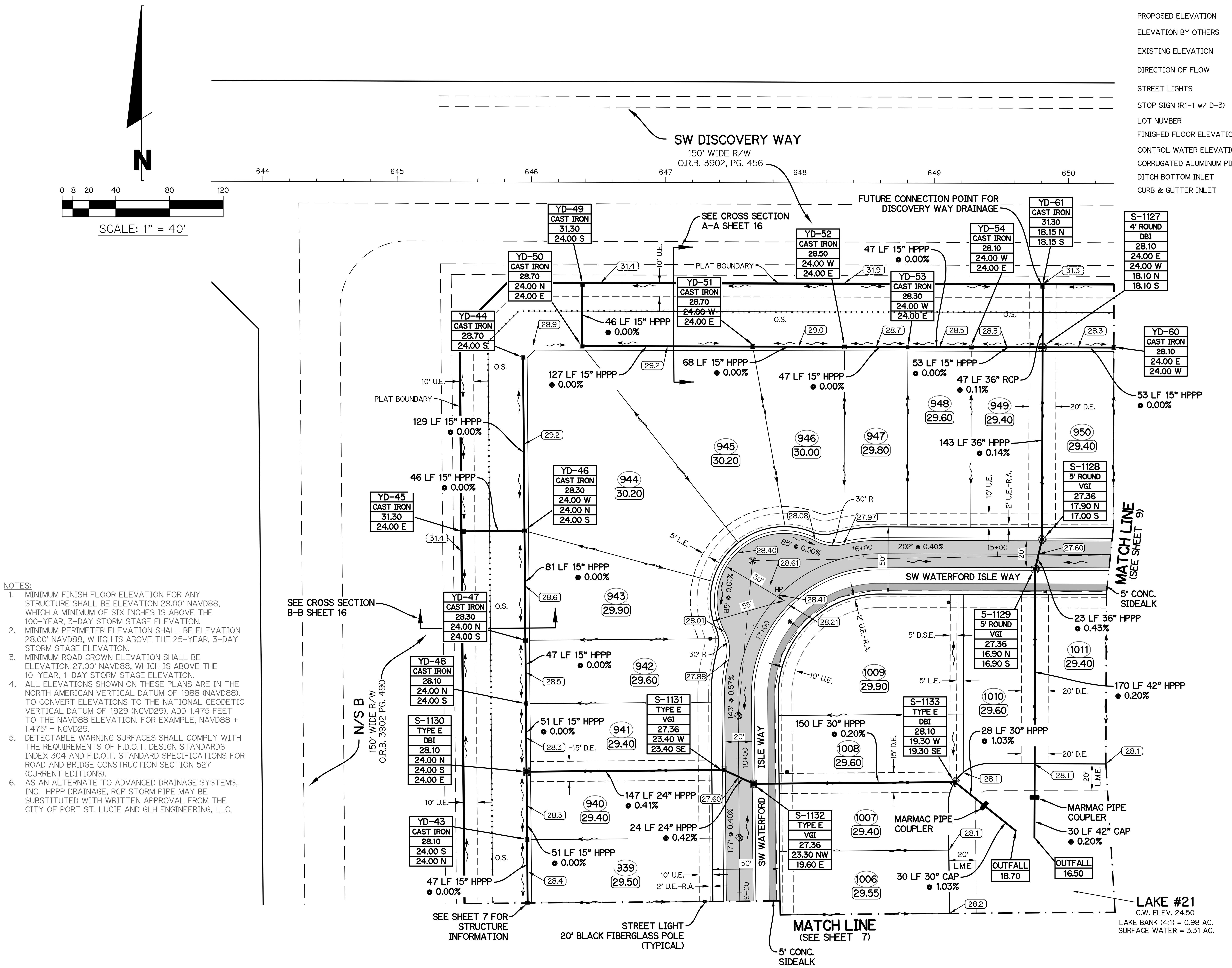
GLH ENGINEERING, LLC
1600 SAWGRASS CORPORATE
PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323
PHONE: (954) 753-1730

SCALE: 1"=40'
DATE: 5/21/19
DESIGNED BY: AQC
CHECKED BY: MW
FILE NAME: RIV-A PL11 PD

MATTHEW WOODS, P.E.
FLORIDA P.E. #68342

RIV-A PL11 | PD

SHEET 7 OF 17



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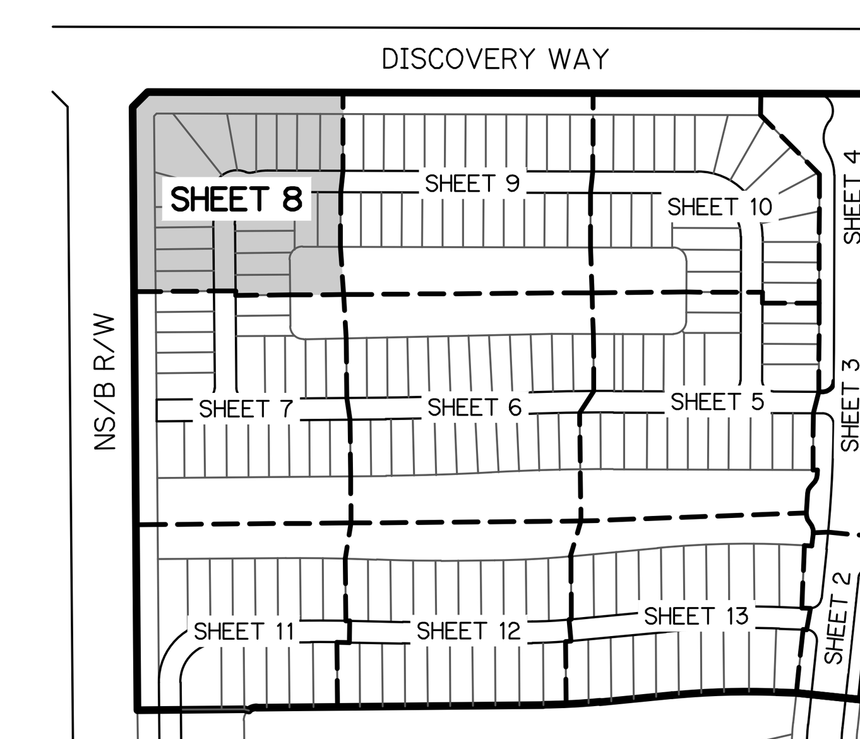

KEY MAP
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P19-028

PAVING, GRADING AND DRAINAGE PLAN FOR RIVERLAND-PARCEL A PLAT ELEVEN

	DATE	BY	CK
REVISIONS			

GLH ENGINEERING, LLC
1600 SAWGRASS CORPORATE PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323
PHONE: (954) 753-1730

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MATTHEW WOODS, P.E.
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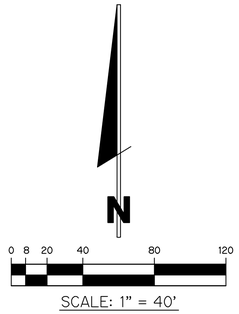
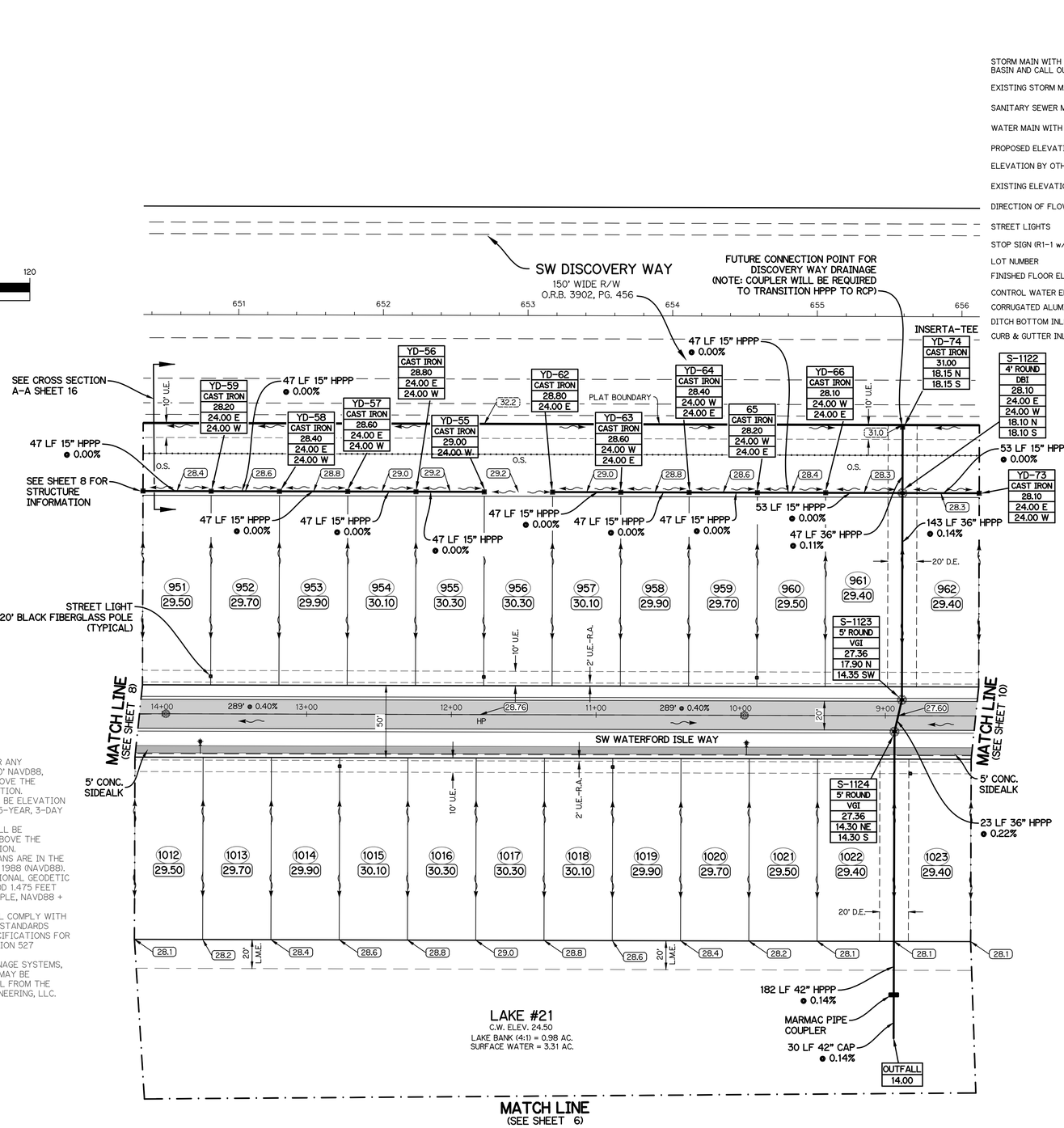
RIV-A PL11 | PD





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DIRECTION OF FLOW	
STREET LIGHTS	
STOP SIGN (R1-1 w/ D-3)	
LOT NUMBER	1
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DETECTABLE WARNING SURFACE (SEE NOTE)	
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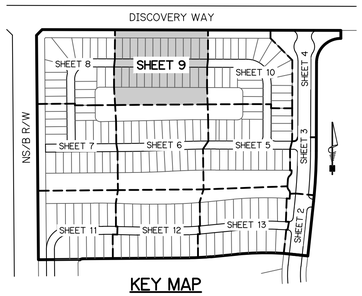
SECTION CALLOUT	



KEY MAP
N.T.S.

NOTE: ALL GRADES SHOWN ARE IN NAVD88

P19-028

PAVING, GRADING AND DRAINAGE PLAN FOR
RIVERLAND-PARCEL A PLAT ELEVEN

REVISIONS	DATE	BY	CK

GLH ENGINEERING, LLC
1600 SAWGRASS CORPORATE PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323
PHONE: (954) 753-1730

SCALE: 1"=40'
DATE: 5/21/19
DESIGNED BY: AQC
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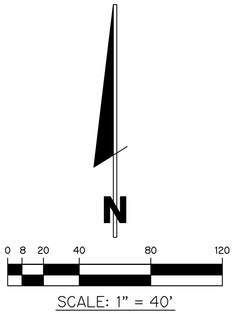
FILE NAME: RIV-A PL11 PD

MATTHEW WOODS, P.E.
FLORIDA P.E. #68342

RIV-A PL11 | PD



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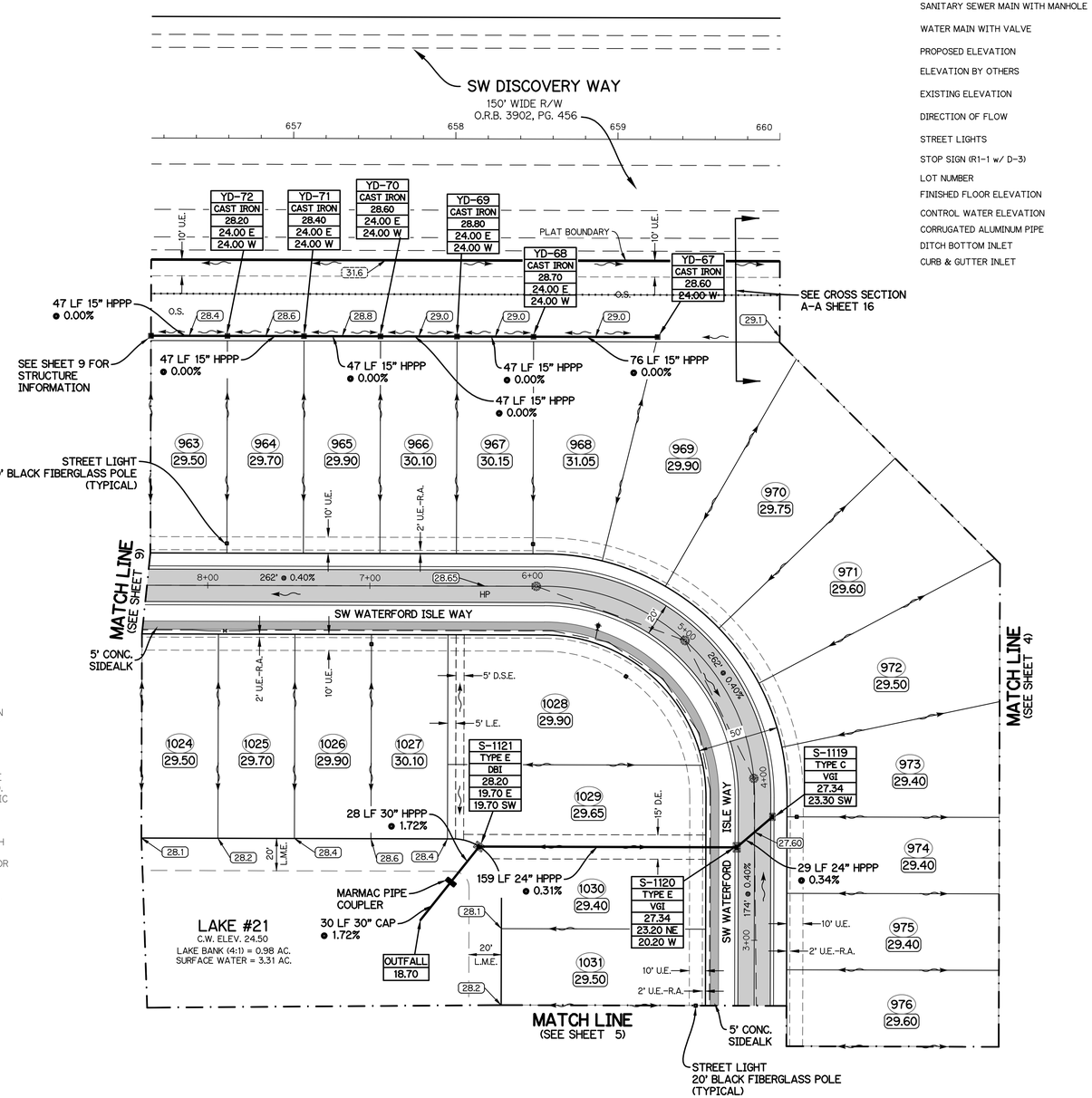

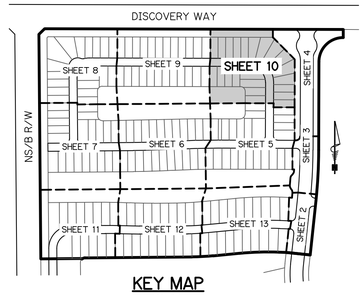

KEY MAP
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P19-028

PAVING, GRADING AND DRAINAGE PLAN
FOR
RIVERLAND-PARCEL A
PLAT ELEVEN

DATE	BY	CK	REVISIONS

GLH ENGINEERING, LLC
1600 SAWGRASS CORPORATE
PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323
PHONE: (954) 753-1730

SCALE: 1"=40'
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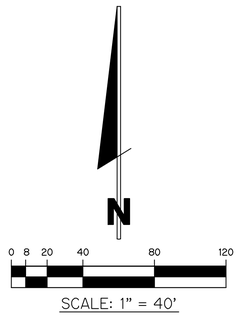
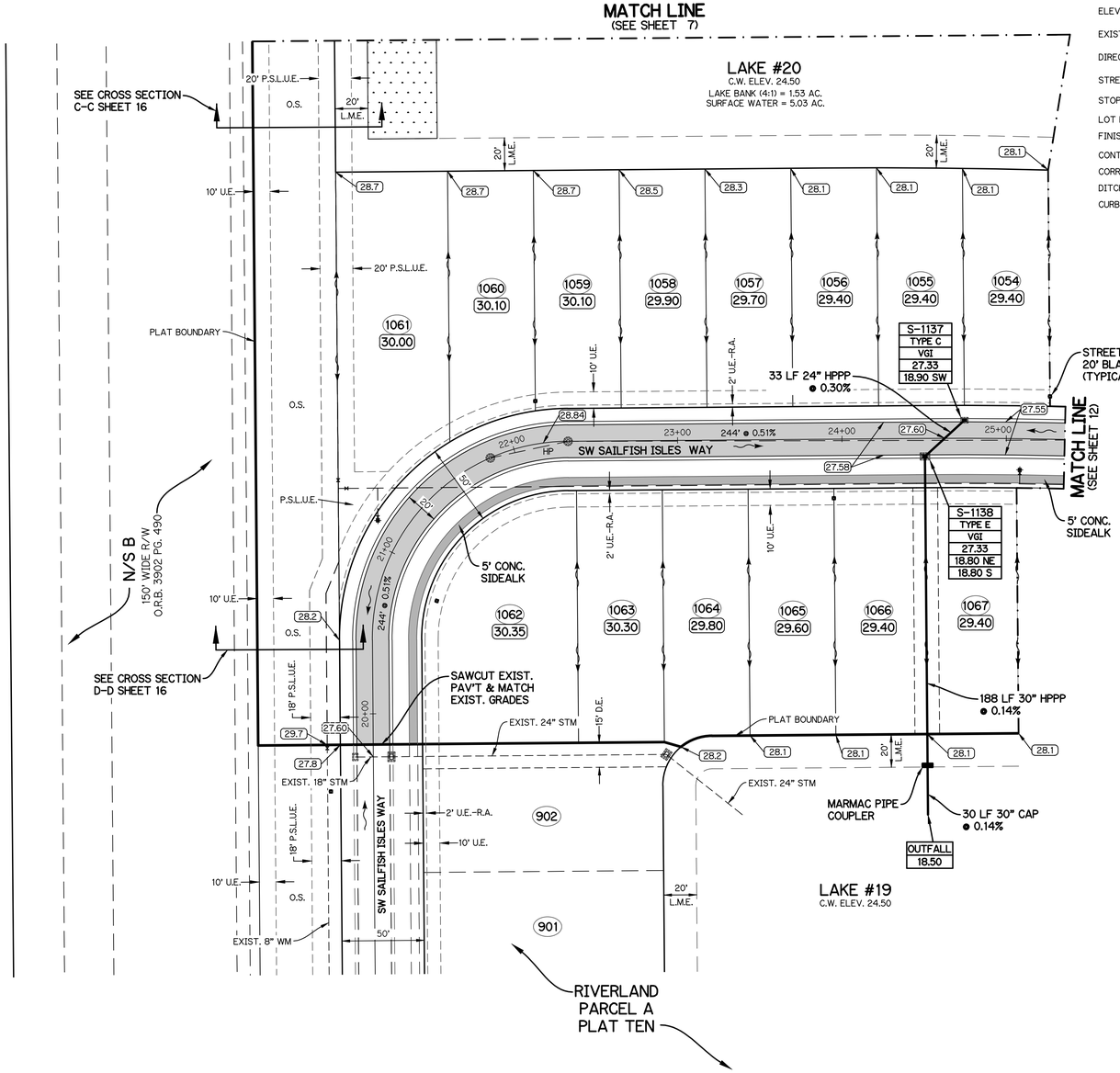
MATTHEW WOODS, P.E.
FLORIDA P.E. #68342

RIV-A PL11 | PD

SHEET 10 OF 17





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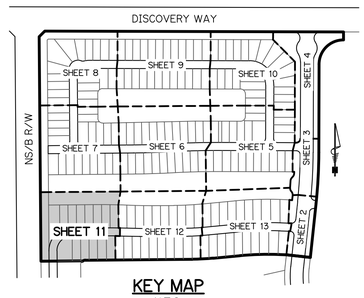

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P19-028

PAVING, GRADING AND DRAINAGE PLAN FOR RIVERLAND-PARCEL A PLAT ELEVEN

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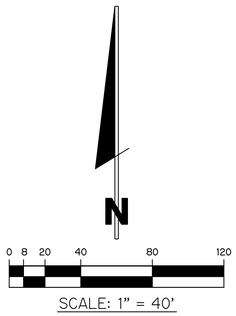
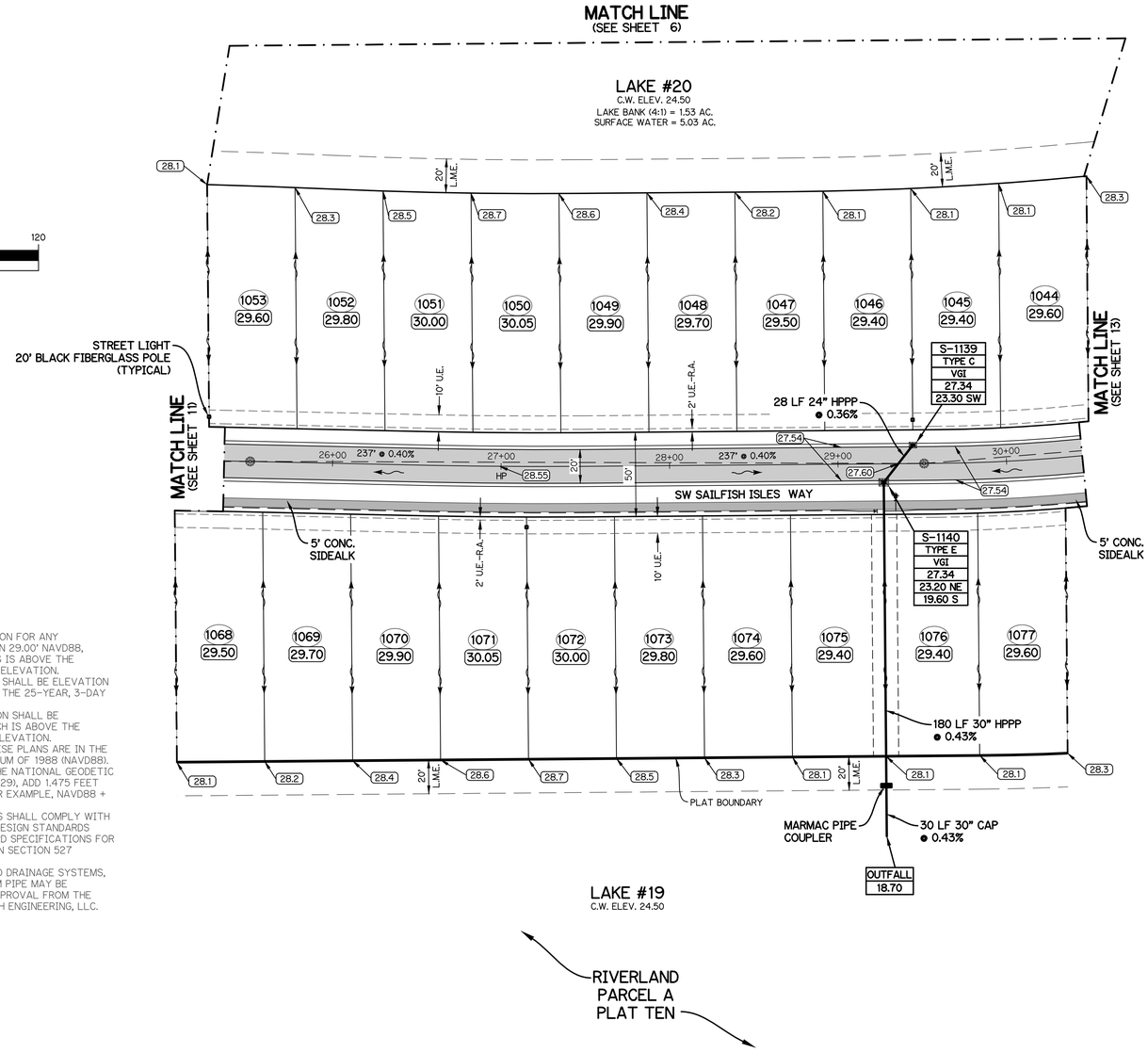
SHEET 11 OF 17





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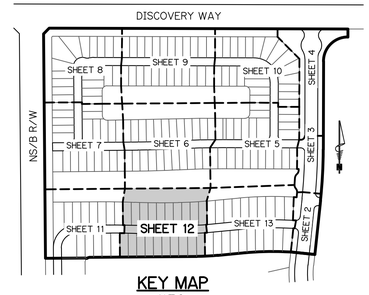
DIRECTION OF FLOW	
STREET LIGHTS	
STOP SIGN (R1-1 w/ D-3)	
LOT NUMBER	1
FINISHED FLOOR ELEVATION	20.00
CONTROL WATER ELEVATION	C.W. ELEV.
CORRUGATED ALUMINUM PIPE	CAP
DITCH BOTTOM INLET	DBI
CURB & GUTTER INLET	CGI
DRAINAGE EASEMENT	D.E.
DRAINAGE SWALE EASEMENT	D.S.E.
HIGH POINT	HP
HIGH PERFORMANCE POLYPROPYLENE	HPPP
LANDSCAPE EASEMENT	L.E.
LAKE MAINTENANCE ACCESS EASEMENT	L.M.A.E.
LAKE MAINTENANCE EASEMENT	L.M.E.
CITY OF PORT ST. LUCIE UTILITY EASEMENT	P.S.L.U.E.
OPEN SPACE	O.S.
REINFORCED CONCRETE PIPE	RCP
UTILITY EASEMENT	U.E.
UTILITY EASEMENT - RESTRICTED AREA (SEE "U.E." PLAT DEDICATION)	U.E.-R.A.
VALLEY GUTTER INLET	VGI
YARD DRAIN	YD
PAVEMENT/SIDEWALK	
DETECTABLE WARNING SURFACE (SEE NOTE)	
LITTORAL PLANTING AREA	
SECTION CALLOUT	



KEY MAP
N.T.S.

NOTE: ALL GRADES SHOWN ARE IN NAVD88

P19-028

PAVING, GRADING AND DRAINAGE PLAN FOR RIVERLAND-PARCEL A PLAT ELEVEN

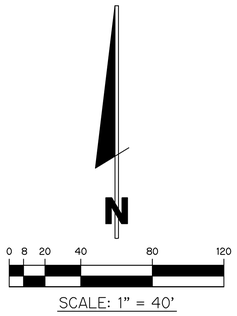
DATE	BY	CK	REVISIONS

GLH ENGINEERING, LLC
1600 SAWGRASS CORPORATE PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323
PHONE: (954) 753-1730

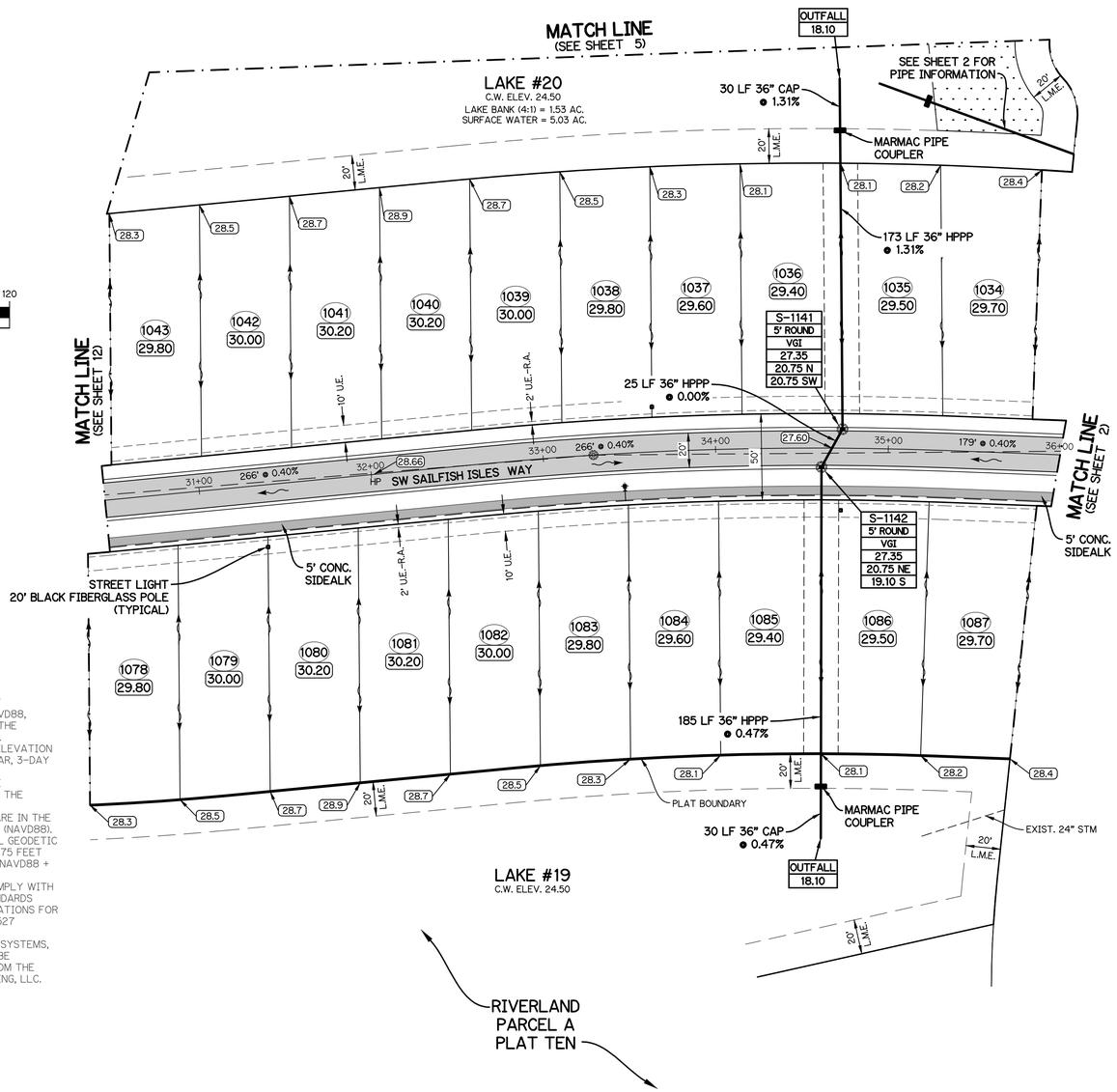
SCALE: 1"=40'
DATE: 5/21/19
DESIGNED BY: AQC
CHECKED BY: MW
FILE NAME: RIV-A PL11 PD

MATTHEW WOODS, P.E.
FLORIDA P.E. #68342

RIV-A PL11 | PD



SCALE: 1" = 40'



NOTES:

1. MINIMUM FINISH FLOOR ELEVATION FOR ANY STRUCTURE SHALL BE ELEVATION 29.00' NAVD88, WHICH A MINIMUM OF SIX INCHES IS ABOVE THE 100-YEAR, 3-DAY STORM STAGE ELEVATION.
2. MINIMUM PERIMETER ELEVATION SHALL BE ELEVATION 28.00' NAVD88, WHICH IS ABOVE THE 25-YEAR, 3-DAY STORM STAGE ELEVATION.
3. MINIMUM ROAD CROWN ELEVATION SHALL BE ELEVATION 27.00' NAVD88, WHICH IS ABOVE THE 10-YEAR, 1-DAY STORM STAGE ELEVATION.
4. ALL ELEVATIONS SHOWN ON THESE PLANS ARE IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). TO CONVERT ELEVATIONS TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29), ADD 1.475 FEET TO THE NAVD88 ELEVATION. FOR EXAMPLE, NAVD88 + 1.475' = NGVD29.
5. DETECTABLE WARNING SURFACES SHALL COMPLY WITH THE REQUIREMENTS OF F.D.O.T. DESIGN STANDARDS INDEX 304 AND F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 527 (CURRENT EDITIONS).
6. AS AN ALTERNATE TO ADVANCED DRAINAGE SYSTEMS, INC. HPPP DRAINAGE, RCP STORM PIPE MAY BE SUBSTITUTED WITH WRITTEN APPROVAL FROM THE CITY OF PORT ST. LUCIE AND GLH ENGINEERING, LLC.

STR #
TYPE
GRATE
RIM EL.
INV EL.

LEGEND

STORM MAIN WITH CATCH BASIN AND CALL OUT	
EXISTING STORM MAIN WITH CATCH BASIN	
SANITARY SEWER MAIN WITH MANHOLE	
WATER MAIN WITH VALVE	
PROPOSED ELEVATION	20.00
ELEVATION BY OTHERS	20.00
EXISTING ELEVATION	+25.53
DIRECTION OF FLOW	
STREET LIGHTS	
STOP SIGN (R1-1 w/ D-3)	
LOT NUMBER	1
FINISHED FLOOR ELEVATION	20.00
CONTROL WATER ELEVATION	C.W. ELEV.
CORRUGATED ALUMINUM PIPE	CAP
DITCH BOTTOM INLET	DBI
CURB & GUTTER INLET	CGI

DRAINAGE EASEMENT	D.E.
DRAINAGE SWALE EASEMENT	D.S.E.
HIGH POINT	HP
HIGH PERFORMANCE POLYPROPYLENE	HPPP
LANDSCAPE EASEMENT	L.E.
LAKE MAINTENANCE ACCESS EASEMENT	L.M.A.E.
LAKE MAINTENANCE EASEMENT	L.M.E.
CITY OF PORT ST. LUCIE UTILITY EASEMENT	P.S.L.U.E.
OPEN SPACE	O.S.
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UTILITY EASEMENT	U.E.
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VALLEY GUTTER INLET	VGI
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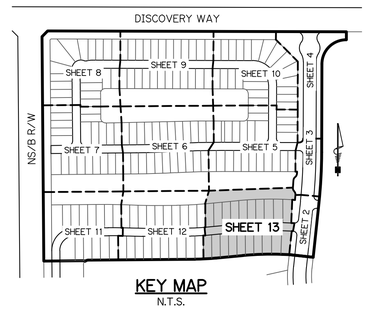
PAVEMENT/SIDEWALK	
DETECTABLE WARNING SURFACE (SEE NOTE)	
LITTORAL PLANTING AREA	
SECTION CALLOUT	



KEY MAP
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NOTE: ALL GRADES SHOWN ARE IN NAVD88

P19-028

PAVING, GRADING AND DRAINAGE PLAN
FOR
RIVERLAND-PARCEL A
PLAT ELEVEN

REVISIONS	DATE	BY	CK

GLH ENGINEERING, LLC
1600 SAWGRASS CORPORATE
PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323
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FILE NAME:
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MATTHEW WOODS, P.E.
FLORIDA P.E. #68342

RIV-A PL11 | PD

SHEET 13 OF 17

GENERAL NOTES

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4. ALL ELEVATIONS SHOWN ON THESE PLANS ARE IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). TO CONVERT ELEVATIONS TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29), ADD 1.475 FEET TO THE NAVD88 ELEVATION. FOR EXAMPLE, NAVD88 + 1.475' = NGVD29.
5. ALL WORK SHALL BE DONE IN A WORKMANLIKE MANNER AND SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY, STATE OR FEDERAL REGULATIONS AND/OR CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND LICENSES REQUIRED PRIOR TO INITIATING THE WORK.
6. THE CONTRACTOR SHALL CALL SUNSHINE (1-800-432-4770), 48 HOURS BEFORE DIGGING FOR FIELD LOCATIONS OF UNDERGROUND UTILITIES.
7. UTILITIES -IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE EXACT LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES, WHETHER SHOWN OR NOT, PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION. NOTIFY ENGINEER PRIOR TO CONSTRUCTION OF ANY DEVIATION FROM WHAT IS SHOWN ON THE PLAN.
8. AS-BUILTS - THE CONTRACTOR SHALL SUBMIT "AS-BUILT" INFORMATION OBTAINED BY A FLORIDA REGISTERED LAND SURVEYOR. INFORMATION SHALL BE IN A FORMAT SPECIFIED BY THE GOVERNING AGENCIES.
9. GUARANTY - ALL MATERIAL AND EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR UNDER THIS CONTRACT SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE THEREOF, AGAINST DEFECTIVE MATERIALS, INSTALLATION AND WORKMANSHIP. UPON RECEIPT OF NOTICE FROM THE OWNER OF FAILURE OF ANY PART FOR THE GUARANTEED EQUIPMENT OR MATERIALS, DURING THE GUARANTY PERIOD, THE AFFECTED PART, PARTS OR MATERIALS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
10. SEQUENCE OF CONSTRUCTION -THE SEQUENCE OF CONSTRUCTION SHALL BE SUCH THAT ALL UNDERGROUND INSTALLATIONS OF EVERY KIND THAT ARE BENEATH THE PAVEMENT, SHALL BE IN PLACE AND HAVE PROPER DENSITY PRIOR TO THE CONSTRUCTION AND COMPACTION OF THE SUBGRADE.
11. CLEARING AND GRUBBING -WITHIN THE LIMITS OF CONSTRUCTION, ALL VEGETATION AND ROOT MATERIAL SHALL BE REMOVED.
12. GUMBO -WHERE GUMBO OR OTHER PLASTIC CLAYS ARE ENCOUNTERED, THEY SHALL BE REMOVED WITHIN THE ROADWAY AND PARKING AREAS ONE FOOT BELOW THE SUBGRADE EXTENDING HORIZONTALLY TO THE OUTSIDE EDGE OF THE SHOULDER AREA.
13. MUCK AND PEAT -IF MUCK AND/OR PEAT ARE ENCOUNTERED IN THE ROAD, PARKING OR BUILDING AREA, THEY SHALL BE REMOVED COMPLETELY TO A WIDTH OF TEN FEET BEYOND THE EDGE OF PAVEMENT OR FOUNDATION AND SHALL BE BACKFILLED WITH GRANULAR MATERIAL.
14. SOD - WHERE SOD IS SHOWN, LOWER THE GROUND 2 INCHES BELOW THE FINISHED GRADE TO ALLOW FOR THE THICKNESS OF THE SOD.
15. SUBGRADE -SHALL BE COMPACTED AS NOTED ON THE PLANS AND MEET THE DENSITY REQUIREMENTS AS DETERMINED BY THE A.A.S.H.T.O. T-180 SPECIFICATIONS. SUBGRADE SHALL BE 12" THICK AND EXTEND 12" BEYOND THE PROPOSED EDGE OF PAVEMENT AND/OR 6" BEYOND VALLEY GUTTER, TYPE "F" CURB & GUTTER OR TYPE "D" CURB. IF SUBGRADE IS REQUIRED TO BE STABILIZED, THE REQUIRED BEARING VALUE DETERMINATIONS SHALL BE MADE PER FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, LATEST EDITION. WHEN FILLING IS REQUIRED, SUBGRADE SHALL BE COMPACTED IN 6" LIFTS.
16. BASE MATERIAL -APPROVED BASE MATERIAL, MINIMUM L.B.R. 100, SHALL BE COMPACTED TO NOT LESS THAN 98% MAXIMUM DENSITY AS DETERMINED BY A.A.S.H.T.O. T-180 SPECIFICATIONS AND MEET THE CRITERIA SET FORTH IN THE PLANS AND SPECIFICATIONS AND AS CALLED FOR IN BOTH FLORIDA D.O.T. INDEX 514 AND FLORIDA D.O.T SPECIFICATIONS, LATEST EDITION. CONTRACTOR SHALL NOTIFY BOTH THE OWNER AND OWNER'S GEOTECHNICAL ENGINEER A MINIMUM OF 48 HOURS PRIOR TO BASE MATERIAL DELIVERY TO THE PROJECT TO SCHEDULE MATERIAL TESTING. TEST RESULTS THAT DO NOT MEET THE SPECIFIED CRITERIA, SHALL CAUSE THE CONTRACTOR, AT HIS SOLE EXPENSE, TO REMOVE ANY AND ALL OF SAME MATERIAL THAT IS EITHER ALREADY PLACED IN ROADWAYS OR IN STOCKPILES AND NOT USE IT IN AREAS REQUIRING BASE MATERIAL. CONTRACTOR SHALL NOTIFY OWNER AND OWNER'S GEOTECHNICAL ENGINEER 48 HOURS PRIOR TO DELIVERY OF BASE MATERIAL THAT IS FROM A NEW SOURCE TO SCHEDULE MATERIAL TESTING. CONTRACTOR SHALL PROVIDE THE OWNER AND OWNER'S GEOTECHNICAL ENGINEER A SCHEMATIC INDICATING WHERE ON THE PROJECT THE CHANGE IN MATERIAL SOURCE HAS OCCURRED. AT MINIMUM, ALL BASE MATERIAL SHALL BE TESTED PRIOR TO THE START OF EACH NEW PHASE OF THE WORK AND AS THE OWNER OR OWNER'S GEOTECHNICAL ENGINEER DEEMS AS NECESSARY DURING FIELD INSPECTIONS TO ENSURE ALL BASE MATERIAL THROUGHOUT THE PROJECT MEETS ALL MINIMUM CRITERIA.
17. PRIME COAT -BITUMINOUS PRIME COAT SHALL CONFORM WITH THE REQUIREMENTS OF THE FLORIDA D.O.T. SPECIFICATIONS, LATEST EDITION AND SHALL BE APPLIED AT A RATE OF 0.25 GALLONS PER SQUARE YARD, UNLESS A DIFFERENT RATE IS DIRECTED BY THE ENGINEER. PRIME COAT IS TO BE APPLIED AT LEAST 24 HOURS PRIOR TO PLACEMENT OF PAVEMENT WITH AN ABSOLUTE MINIMUM APPLICATION LEAD TIME OF 12 HOURS PERMITTED ONLY WITH THE WRITTEN APPROVAL FROM THE ENGINEER.
18. TACK COAT -BITUMINOUS TACK COAT SHALL CONFORM WITH THE REQUIREMENTS OF THE FLORIDA D.O.T. SPECIFICATIONS, LATEST EDITION AND SHALL BE APPLIED AT THE RATE OF 0.08 GALLONS PER SQUARE YARD, UNLESS A VARIATION IS APPROVED BY THE ENGINEER.
19. SURFACE COURSE -ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM WITH THE REQUIREMENTS OF THE FLORIDA D.O.T. SPECIFICATIONS, LATEST EDITION. THE MINIMUM COMPACTED THICKNESS TO BE AS NOTED ON PLANS.
20. PAVEMENT MARKINGS AND GEOMETRICS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION.
21. CONCRETE -ALL CONCRETE SHALL DEVELOP 2500 P.S.I. (MINIMUM) 28 DAY COMPRESSIVE STRENGTH OR GREATER WHERE NOTED ON PLANS. CLASS I CONCRETE SHALL CONFORM WITH THE FLORIDA D.O.T. SPECIFICATIONS, LATEST EDITION. CLASS I CONCRETE USED AS PAVING SHALL DEVELOP 3000 P.S.I. (MINIMUM) 28 DAYS COMPRESSIVE STRENGTH.
22. ANY EXISTING ROADWAY AND/OR UTILITY THAT IS DAMAGED BY THE CONTRACTOR SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER'S ENGINEER.
23. PIPE BACKFILL -REQUIREMENTS FOR PIPE BACKFILL CROSSING ROADS OR PARKING AREAS SHALL BE DEFINED IN THE FLORIDA D.O.T. SPECIFICATIONS, LATEST EDITION. PIPELINE BACKFILL SHALL BE PLACED IN SIX INCH LIFTS AND COMPACTED TO 100% OF THE STANDARD PROCTOR (A.A.S.H.T.O.) T-99 SPECIFICATIONS.
24. ALL PIPE LENGTHS AND CENTERLINE SLOPE LENGTHS SHOWN ON THESE DRAWINGS ARE SCALED DISTANCES. THE CONTRACTOR SHALL CONFIRM ALL MEASUREMENTS IN THE FIELD AND NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCY WITH THE DRAWINGS PRIOR TO PERFORMING THE WORK. ALL CONCRETE PIPES SHALL HAVE GASKET JOINTS.
25. THE PROPERTY OWNER, CONTRACTOR AND AUTHORIZED REPRESENTATIVES SHALL PROVIDE PICKUP, REMOVAL AND DISPOSAL OF LITTER WITHIN THE PROJECT LIMITS AND SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE AREA FROM THE EDGE OF PAVEMENT TO THE PROPERTY LINE WITHIN THE CITY'S RIGHT-OF-WAY IN ACCORDANCE WITH CITY CODE, SECTION 41.08 (G).
26. AN ENVIRONMENTAL ASSESSMENT WAS PREPARED ON FEBRUARY 28, 2019 BY EW CONSULTANTS, INC. THE FOLLOWING TABLE HAS BEEN COMPLETED BASED ON THE ENVIRONMENTAL ASSESSMENT:

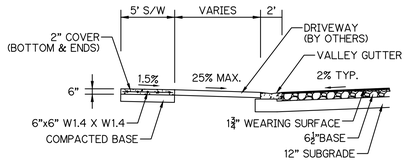
DESCRIPTION	FOUND (YES/NO)	AGENCY CONTACT INFORMATION	MANAGEMENT PLAN (YES/NO)	RELOCATION PLAN (YES/NO)
WETLANDS	NO	N/A	NO	NO
RARE HABITAT	NO	N/A	NO	NO
THREATENED SPECIES	NO	N/A	NO	NO
ENDANGERED SPECIES	NO	N/A	NO	NO
SPECIES OF SPECIAL CONCERN	NO	N/A	NO	NO
INVASIVE/EXOTIC VEGETATION	NO	N/A	NO	NO

PAVING / SIDEWALK SPECIFICATIONS

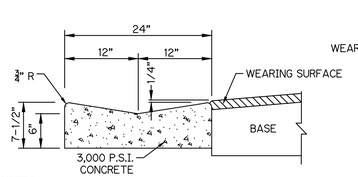
TYPE	WEARING SURFACE	STRUCTURAL COEFFICIENT PER INCH = 0.44	BASE	STRUCTURAL COEFFICIENT PER INCH = 0.18	SUBGRADE	STRUCTURAL COEFFICIENT PER INCH = 0.08	STRUCTURAL NUMBER (SN) (LOCAL ROADS SN = 1.89 MIN.)
80' RIGHT-OF-WAY ROAD SECTION AND ENTRY ROAD SECTION	1-3/4" THICK, TYPE S-III A.C.A.C. INSTALLED IN TWO LIFTS (FIRST LIFT TO BE 1" & SECOND LIFT TO BE 3/4"). TACK COAT REQUIRED WITH MULTIPLE LIFTS.		8" THICK, LIMEROCK (LBR 100) COMPACTED IN ONE LIFT TO 98% MAXIMUM DRY DENSITY, A.A.S.H.T.O. T-180		12" THICK, STABILIZED SUBGRADE, COMPACTED TO 98% MAXIMUM DRY DENSITY A.S.H.T.O. T-180 AND STABILIZED TO EITHER L.B.R. = 40 OR F.B.V. = 75		1.75 X 0.44 = 0.77 8 X 0.18 = 1.44 12 X 0.08 = 0.96 SN = 3.17
			OPTIONAL BLACK BASE 5" THICK, TYPE B-12.5 (BLACK BASE) MAY BE SUBSTITUTED IN LIEU OF 6-1/2" LIMEROCK	STRUCTURAL COEFFICIENT PER INCH = 0.30	12" THICK, STABILIZED SUBGRADE, COMPACTED TO 98% MAXIMUM DRY DENSITY A.S.H.T.O. T-180 AND STABILIZED TO EITHER L.B.R. = 40 OR F.B.V. = 75	STRUCTURAL COEFFICIENT PER INCH = 0.08	1.75 X 0.44 = 0.77 5 X 0.30 = 1.50 12 X 0.08 = 0.96 SN = 3.23
			OPTIONAL DOUBLE ROCK 5.5" ADDITIONAL LIMEROCK BASE AND 12" COMPACTED SUBGRADE MAY BE SUBSTITUTED IN LIEU OF 12" STABILIZED SUBGRADE	STRUCTURAL COEFFICIENT PER INCH = 0.18	12" THICK COMPACTED	STRUCTURAL COEFFICIENT PER INCH = 0	1.75 X 0.44 = 0.77 13.5 X 0.18 = 2.43 12 X 0 = 0 SN = 3.20
50' RIGHT-OF-WAY ROAD SECTION	1-3/4" THICK, TYPE S-III A.C.A.C. INSTALLED IN TWO LIFTS (FIRST LIFT TO BE 1" & SECOND LIFT TO BE 3/4"). TACK COAT REQUIRED WITH MULTIPLE LIFTS.		6-1/2" THICK, LIMEROCK (LBR 100) COMPACTED IN ONE LIFT TO 98% MAXIMUM DRY DENSITY, A.A.S.H.T.O. T-180		12" THICK, STABILIZED SUBGRADE, COMPACTED TO 98% MAXIMUM DRY DENSITY A.S.H.T.O. T-180 AND STABILIZED TO EITHER L.B.R. = 40 OR F.B.V. = 75		1.75 X 0.44 = 0.77 6.5 X 0.18 = 1.17 12 X 0.08 = 0.96 SN = 2.90
			OPTIONAL BLACK BASE 5" THICK, TYPE B-12.5 (BLACK BASE) MAY BE SUBSTITUTED IN LIEU OF 6-1/2" LIMEROCK				1.75 X 0.44 = 0.77 5 X 0.30 = 1.50 12 X 0.08 = 0.96 SN = 3.23
			OPTIONAL DOUBLE ROCK 5.5" ADDITIONAL LIMEROCK BASE AND 12" COMPACTED SUBGRADE MAY BE SUBSTITUTED IN LIEU OF 12" STABILIZED SUBGRADE		12" THICK COMPACTED		1.75 X 0.44 = 0.77 12.0 X 0.18 = 2.16 12 X 0 = 0 SN = 2.93
16' CART PATH SECTION	1-1/2" THICK, TYPE S-III A.C.A.C. INSTALLED IN TWO LIFTS (FIRST LIFT TO BE 1" & SECOND LIFT TO BE 1/2"). TACK COAT REQUIRED WITH MULTIPLE LIFTS.		6-1/2" THICK, LIMEROCK (LBR 100) COMPACTED IN ONE LIFT TO 98% MAXIMUM DRY DENSITY, A.A.S.H.T.O. T-180		12" THICK, STABILIZED SUBGRADE, COMPACTED TO 98% MAXIMUM DRY DENSITY A.S.H.T.O. T-180 AND STABILIZED TO EITHER L.B.R. = 40 OR F.B.V. = 75		1.50 X 0.44 = 0.66 6.5 X 0.18 = 1.17 12 X 0.08 = 0.96 SN = 2.79
			OPTIONAL BLACK BASE 5" THICK, TYPE B-12.5 (BLACK BASE) MAY BE SUBSTITUTED IN LIEU OF 6-1/2" LIMEROCK				1.50 X 0.44 = 0.66 5 X 0.30 = 1.50 12 X 0.08 = 0.96 SN = 3.12
SIDEWALKS *	4" THICK 3,000 PSI CONCRETE OR 6" THICK 3,000 PSI CONCRETE WITH W1.4 X W1.4, 6" X 6" REINFORCING MESH AT ALL DRIVEWAYS & L.M.A.E.'S	N/A	4" THICK, CLEAN SAND COMPACTED TO 98% PER A.A.S.H.T.O. T-180	N/A	N/A	N/A	N/A
PAVER STONE ON 80' RIGHT-OF-WAY ROAD SECTION AND ENTRY ROAD SECTION	INTERLOCKING CONC. PAVER STONES 2⅜" THICK (MIN.) 1" SCREENED OR CONC. SAND	STRUCTURAL COEFFICIENT PER INCH = 0	8" THICK LIMEROCK LBR 100 COMPACTED IN ONE LIFT TO 98% MAXIMUM DRY DENSITY, A.A.S.H.T.O. T-180	STRUCTURAL COEFFICIENT PER INCH = 0.18	12" THICK, STABILIZED SUBGRADE, COMPACTED TO 98% MAXIMUM DRY DENSITY A.S.H.T.O. T-180 AND STABILIZED TO EITHER L.B.R. = 40 OR F.B.V. = 75	STRUCTURAL COEFFICIENT PER INCH = 0.08	2.375 X 0 = 0 8 X 0.18 = 1.44 12 X 0.08 = 0.96 SN = 2.40
			OPTIONAL BLACK BASE 5" TYPE B-12.5 (BLACK BASE) MAY BE SUBSTITUTED IN LIEU OF 8" LIMEROCK	STRUCTURAL COEFFICIENT PER INCH = 0.30			2.375 X 0 = 0 5 X 0.30 = 1.50 12 X 0.08 = 0.96 SN = 2.46

*SIDEWALK NOTES:

1. SIDEWALKS ADJACENT TO RESIDENTIAL UNITS WILL BE CONSTRUCTED WITH RESPECTIVE UNIT.
2. SIDEWALK TO BE 4" THICK, PORTLAND CEMENT CONCRETE, MINIMUM 3,000 P.S.I. @ 28 DAYS.
3. SIDEWALK TO BE BROOM FINISHED WITH EVEN DUSTLESS SURFACE.
4. COMPACTED BASE TO BE A MINIMUM 4" OF CLEAN SAND OR SANDY LOAM, COMPACTED TO 98% PER A.A.S.H.T.O. T-180, FULL WIDTH.
5. AT DRIVEWAYS, SIDEWALKS SHALL BE THICKENED TO 6" WITH 6"X6" W1.4 X W1.4 MESH.
6. TYPE "A" EXPANSION JOINTS (½" WITH PREFORMED JOINT FILLER PER F.D.O.T. STANDARD INDEX #310) SHALL BE LOCATED WHERE NEW CONCRETE MEETS EXISTING CONCRETE.
7. TYPE "B" (½" TOOLED JOINTS) OR TYPE "D" (⅜" SAWCUT JOINTS) PER F.D.O.T. STANDARD INDEX #310 SHALL BE LOCATED AT 5' O.C. SAW-CUT JOINTS AVOIDED WHENEVER POSSIBLE.

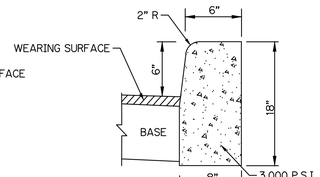


SIDEWALK AT DRIVEWAYS
N.T.S.



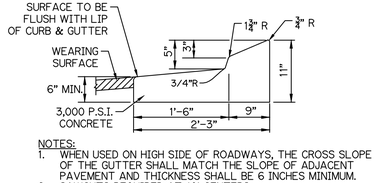
NOTES:
1. SAWCUTS REQUIRED AT 5' CENTERS.
2. CURB SHALL BE PLACED ON SPECIFIED SUBGRADE COURSE.

2' VALLEY GUTTER
N.T.S.



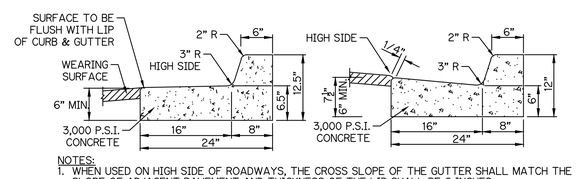
NOTE:
SAWCUTS REQUIRED AT 10' CENTERS.

TYPE "D" CURB
N.T.S.



NOTES:
1. WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE SLOPE OF ADJACENT PAVEMENT AND THICKNESS SHALL BE 6 INCHES MINIMUM.
2. SAWCUTS REQUIRED AT 10' CENTERS.
3. CURB SHALL BE PLACED ON SPECIFIED SUBGRADE COURSE.

TYPE "E" MOUNTABLE CURB
N.T.S.

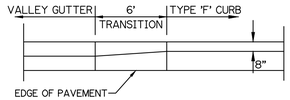


NOTES:
1. WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE SLOPE OF ADJACENT PAVEMENT AND THICKNESS OF THE LIP SHALL BE 6 INCHES.
2. SAWCUTS REQUIRED AT 10' CENTERS.
3. CURB SHALL BE PLACED ON SPECIFIED SUBGRADE COURSE.

TYPE "F" CURB & GUTTER
N.T.S.

DETAILS LEGEND:

C/L	-CENTERLINE
CONC.	-CONCRETE
EL.	-ELEVATION
L/L	-LOT LINE
LME	-LAKE MAINTENANCE EASEMENT
MAX.	-MAXIMUM
MIN.	-MINIMUM
P.S.L.U.E.	-CITY OF PORT ST. LUCIE UTILITY EASEMENT
R	-RADIUS
R/W	-RIGHT-OF-WAY
S/W	-SIDEWALK
TYP.	-TYPICAL
U.E.	-UTILITY EASEMENT
U.E.-R.A.	-UTILITY EASEMENT - RESTRICTED AREA



CURB TRANSITION DETAIL
N.T.S.

NOTE: ALL GRADES SHOWN ARE IN NAVD88

P19-028

PAVING, GRADING AND DRAINAGE DETAILS FOR
RIVERLAND-PARCEL A
PLAT ELEVEN

REVISIONS	DATE	BY	CK

GLH ENGINEERING, LLC
1600 SAWGRASS CORPORATE PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323
PHONE: (954) 753-1730

SCALE: N.T.S.
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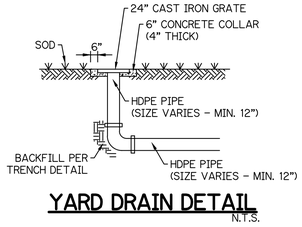
FILE NAME: RIV-A PL11 PD

MATTHEW WOODS, P.E.
FLORIDA P.E. #68342

RIV-A PL11 | PD

SHEET 14 OF 17



YARD DRAIN DETAIL
N.T.S.

INLET AND MANHOLE NOTES:

1. ALL INLET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT F.D.O.T. STANDARDS INDEX # 201 & 232.

2. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER.

3. STRUCTURES WITH SKEWED PIPE CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH F.D.O.T. STANDARDS INDEX # 200, SHEET 3 OF 5 AND INDEX # 201, SHEET 5 OF 5. ROUND STRUCTURES ARE TO BE USED WHERE SKEW ANGLES EXCEED MAXIMUM ALLOWED OR WHEN PIPE CONNECTION WOULD BE AT THE CORNER OF A RECTANGULAR STRUCTURE. RECTANGULAR STRUCTURES WITH A CORNER OPENING IS ONLY TO BE USED WHEN A ROUND STRUCTURE IS NOT POSSIBLE.

4. ALL EXPOSED CORNERS AND EDGES SHALL BE CHAMFERED ¾".

5. INLETS AND MANHOLES SHALL BE PRECAST CLASS "A" 3,000 P.S.I. CONCRETE.

6. FRAMES AND GRATES SHALL BE CAST IRON AND IN ACCORDANCE WITH F.D.O.T. SPECIFICATIONS.

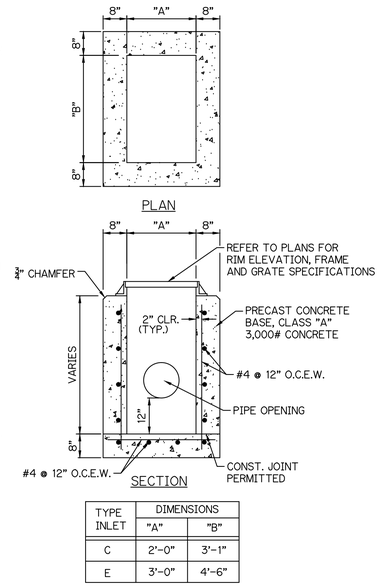
7. INLET GRATES SHALL BE U.S. FOUNDRY OR EQUAL.

8. ALL INLET GRATES SHALL HAVE LOCKING CHAINS IN ACCORDANCE WITH F.D.O.T. STANDARD INDEX #201, OR AN APPROVED ALTERNATE SECURING MECHANISM.

9. REINFORCING STEEL SHALL CONFORM TO A.S.T.M. 615 GRADE 40.

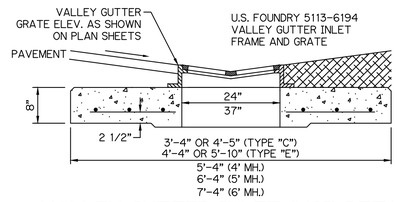
10. AS AN ALTERNATE, PRECAST CIRCULAR (MANHOLES) MAY BE FURNISHED IN ACCORDANCE WITH F.D.O.T. STANDARD INDEX #200 WITH WALLS AND REINFORCEMENT IN ACCORDANCE WITH A.S.T.M. C-478 SPECIFICATIONS, EXCEPT THAT MINIMUM WALL THICKNESS SHALL BE 6".

11) ALL INLETS IN GRASSED AREAS SHALL BE STANDARD TYPE "C" & "E" INLETS HAVING CONCRETE COLLARS. ALL INLETS IN GRASSED AREA AND ADJACENT TO GRASSED AREAS SHALL BE PROTECTED FROM SCOUR BY INSTALLATION OF A 4' WIDE PERIMETER APRON OF SOD. ADDITIONALLY ALL INLET GRATES SHALL BE WRAPPED WITH FILTER CLOTH DURING CONSTRUCTION.

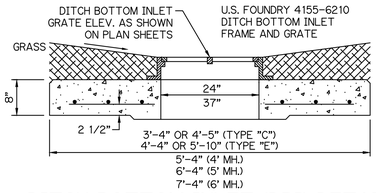


TYPE INLET	DIMENSIONS	
	"A"	"B"
C	2'-0"	3'-1"
E	3'-0"	4'-6"

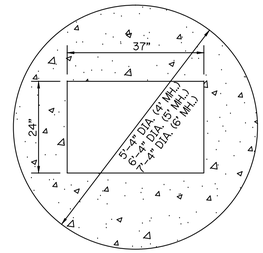
STANDARD TYPE "C"&"E" INLET DETAIL
N.T.S.



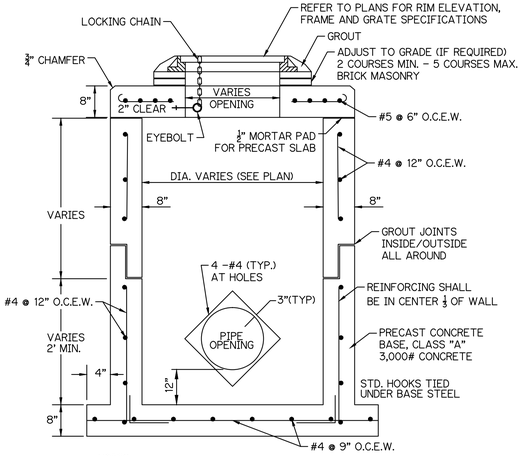
VALLEY GUTTER INLET (VGI) DETAIL
N.T.S.



DITCH BOTTOM INLET (DBI) DETAIL
N.T.S.



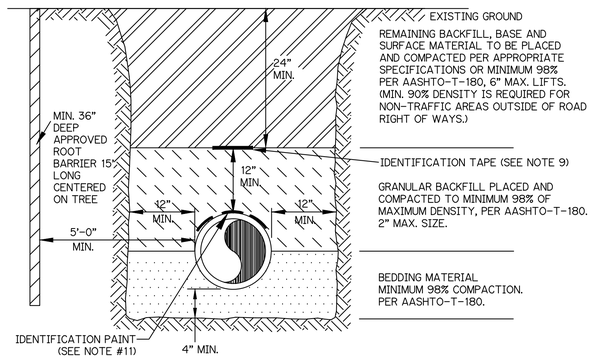
PLAN (4', 5' OR 6' MH)
N.T.S.



NOTES:

1. ALL REINFORCEMENT TO MEET CURRENT F.D.O.T. SPECIFICATIONS.
2. THIS STRUCTURE MAY BE SUBSTITUTED WITH OTHER STRUCTURES ONLY IF THE STANDARDS HAVE BEEN MET.

STORM MANHOLE DETAIL
N.T.S.



TRENCH NOTES:

1. BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8"- 7/8" SIZING WITH EQUAL OR GREATER STRUCTURAL ADEQUACY AS EXISTING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
2. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
3. THE PIPE SHALL BE PLACED IN A DRY TRENCH.
4. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK AND DEBRIS.
5. DENSITY TESTS SHALL BE TAKEN IN 1 FOOT LIFTS ABOVE THE PIPE AT INTERVALS OF 400' MAXIMUM, (MINIMUM 1 SET) OR AS DIRECTED BY THE CONSTRUCTION COORDINATION DIVISION. RESULTS SHALL BE SUBMITTED TO CONSTRUCTION COORDINATION AS PART OF THEIR FIELD REVIEW.
6. THE PERMITTEE/DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL TRENCH SAFETY LAWS AND REGULATIONS.
7. SEE SEPARATE DETAIL FOR PAVED AREAS (OPEN CUT FOR THOROUGHFARE AND NON-THOROUOGHFARE ROADS)
8. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT/CONTRACT DOCUMENTS.
*9. APPROVED MAGNETIC TAPE IS REQUIRED FOR ALL MAIN PRESSURE PIPES AND CONDUIT IN THE CITY'S RIGHT-OF-WAY. INSTALL TAPE 24" BELOW FINISHED GRADE.
10. ROOT BARRIER IS REQUIRED FOR APPROVED PIPE INSTALLATION CLOSER THAN 10 FEET FROM AN EXISTIG TREE.
11. CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SANITARY FORCE MAINS (GREEN), DIP RECLAIMED WATER MAINS (PURPLE), GAS MAINS (YELLOW), OR AS REQUIRED BY THE APWA.
12. PERMANENT ABOVE GROUND UTILITY MARKER SHALL BE INSTALLED IF REQUIRED BY PROPERTY OWNER GRANTING THE PIPE INSTALLATION PERMIT.

TYPICAL TRENCH DETAIL
N.T.S.

GENERAL SIGN SPECIFICATIONS:

FLAT BLADE: ALCOA #86054.6063-T6 ALLOY, ETCHED, DEGREASED WITH #1200 ALODINE FINISH WITH #3877 GREEN HIGH INTENSITY BACKGROUND AND EQUAL DIMENSIONS - 9" & 12" MIN. H, 24", 30", 36" AND 42" L.

LETTERS: NAME - 6" UPPERCASE WITH 4.5" LOWERCASE & 9" UPPERCASE WITH 6.75" LOWERCASE. SERIES 'B' # 3870 HIGH INTENSITY (SILVER) OR EQUAL - SUFFIX - 4.5".

POST: STEEL FLANGED CHANNEL POST 3 LBS. WEIGHT PER FOOT WITH BAKED GREEN ALKYD OR GALVANIZED FINISH PER A.S.T.M. -A-123 WITHOUT ANCHOR PLATES. SQUARE POST PER FDOT INDEX 11860.

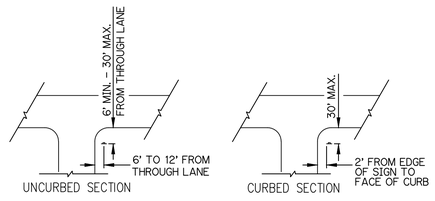
BRACKETS SHALL BE ATTACHED FIRMLY ON STANDARD SQUARE TUBE OR U-CHANNEL POSTS BY MEANS OF (2)5/16" DIAMETER HEX HEAD BOLTS.

STOP SIGN: R1-1 MUTCD (HIGH INTENSITY)

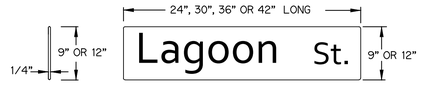
LOCATION: ONE PER INTERSECTION AS INDICATED ON THE PLANS.

POLICY: 9" BLADES WITH 6" UPPERCASE WITH 4.5" LOWERCASE LETTERS FOR TWO ROADS WITH A SPEED LIMIT UNDER 45 MPH.

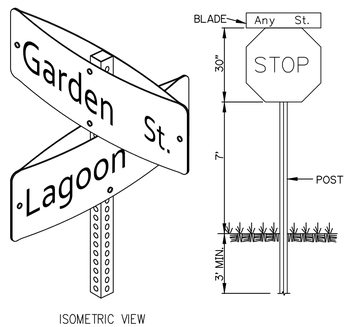
12" BLADES WITH 9" UPPERCASE WITH 6.75" LOWERCASE LETTERS FOR:
-THOROUGHFARE ROADS FOUR LANES OR WIDER.
-TWO LANE ROADS WITH A POSTED SPEED LIMIT OF 45 MPH OR MORE.
ONLY ONE BLADE WILL BE INSTALLED AT INTERSECTION WITH THOROUGHFARE ROAD INDICATING THE SIDE STREET NAME.



TYPICAL STOP SIGN PLACEMENT



STREET NAME SIGN (SNS) OR (D-3)



STREET NAME SIGN WITH STOP SIGN
N.T.S.

STEEL SQUARE TUBE POST DETAILS

NOTE: ALL GRADES SHOWN ARE IN NAVD88

P19-028

PAVING, GRADING AND DRAINAGE DETAILS FOR
RIVERLAND-PARCEL A
PLAT ELEVEN

REVISIONS	DATE	BY	CK

GLH ENGINEERING, LLC
1600 SAWGRASS CORPORATE PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323
PHONE: (954) 753-1730

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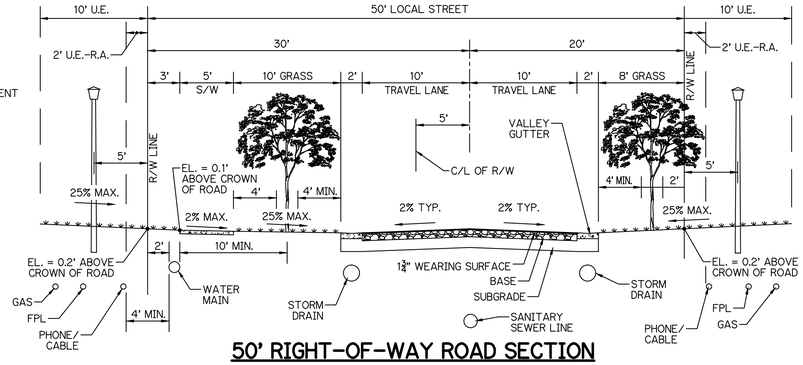
MATTHEW WOODS, P.E.
FLORIDA P.E. #68342

RIV-A PL11 | PD

SHEET 15 OF 17

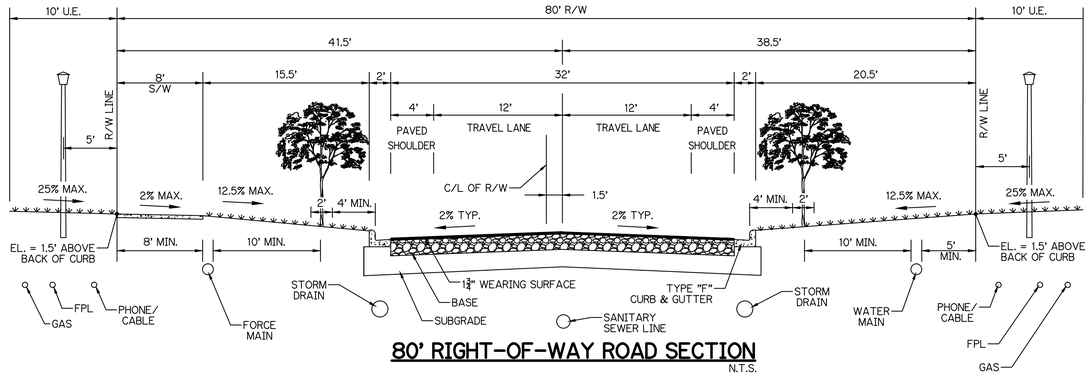
SECTIONS LEGEND:

C/L	-CENTERLINE
CONC.	-CONCRETE
EL.	-ELEVATION
L/L	-LOT LINE
LME	-LAKE MAINTENANCE EASEMENT
MAX.	-MAXIMUM
MIN.	-MINIMUM
P.S.L.U.E.	-CITY OF PORT ST. LUCIE UTILITY EASEMENT
R/W	-RIGHT-OF-WAY
S/W	-SIDEWALK
TYP.	-TYPICAL
U.E.	-UTILITY EASEMENT
U.E.-R.A.	-UTILITY EASEMENT - RESTRICTED AREA



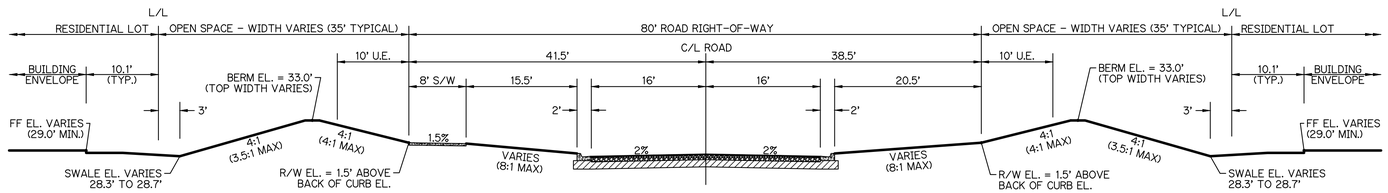
50' RIGHT-OF-WAY ROAD SECTION

N.T.S.



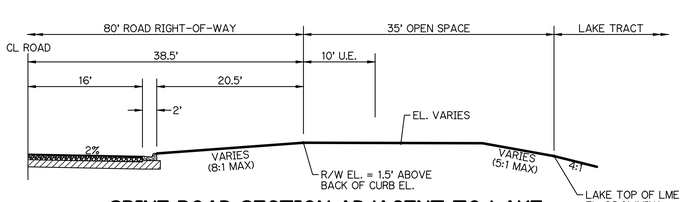
80' RIGHT-OF-WAY ROAD SECTION

N.T.S.



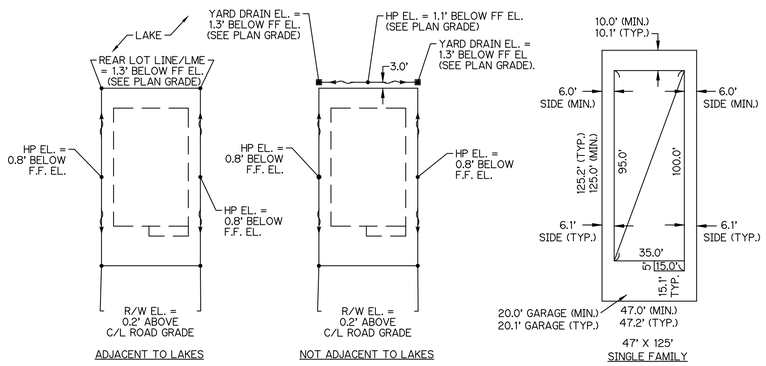
SPINE ROAD SECTION ADJACENT TO LOT

N.T.S.



SPINE ROAD SECTION ADJACENT TO LAKE

N.T.S.

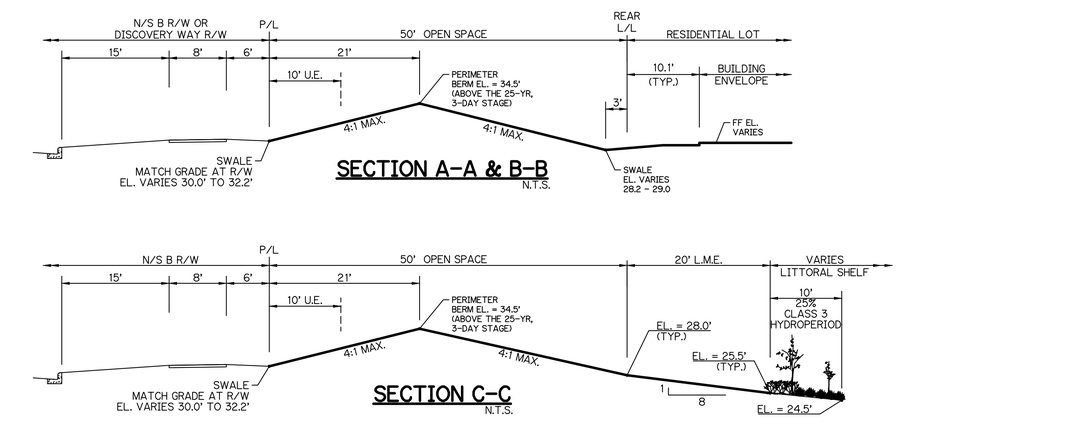


TYPICAL LOT GRADING PLAN

N.T.S.

TYPICAL LOT/BUILDING DIMENSIONS

N.T.S.

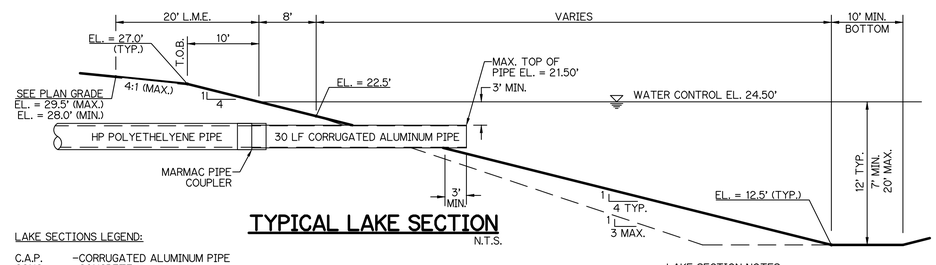


SECTION A-A & B-B

N.T.S.

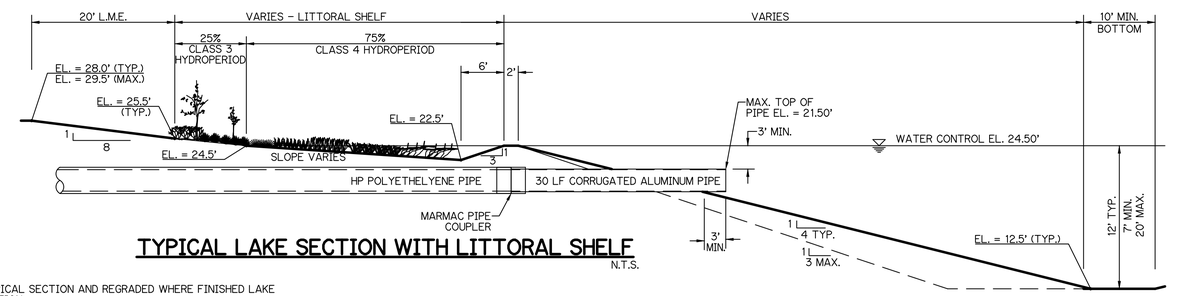
SECTION C-C

N.T.S.



TYPICAL LAKE SECTION

N.T.S.



TYPICAL LAKE SECTION WITH LITTORAL SHELF

N.T.S.

LAKE SECTIONS LEGEND:

C.A.P.	-CORRUGATED ALUMINUM PIPE
CONC.	-CONCRETE
EL.	-ELEVATION
L.M.E.	-LAKE MAINTENANCE EASEMENT
MAX.	-MAXIMUM
MIN.	-MINIMUM
R.C.P.	-REINFORCED CONCRETE PIPE
T.O.B.	-TOP OF BANK
TYP.	-TYPICAL

LAKE SECTION NOTES:

1. LAKE BANKS TO BE GRADED TO THE ABOVE TYPICAL SECTION AND REGRADED WHERE FINISHED LAKE AREAS ARE DISTURBED BY OUTFALL CONSTRUCTION.
2. ALL ELEVATIONS SHOWN ON THESE PLANS ARE IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). TO CONVERT ELEVATIONS TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29), ADD 1.475 FEET TO THE NAVD88 ELEVATION. FOR EXAMPLE NAVD88 + 1.475' = NGVD29.
3. LAKE CONTROL ELEVATION SHALL BE 24.50 NAVD88.

NOTE: ALL GRADES SHOWN ARE IN NAVD88

P19-028

PAVING, GRADING AND DRAINAGE DETAILS FOR

RIVERLAND-PARCEL A PLAT ELEVEN

REVISIONS	DATE	BY	CK

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1600 SAWGRASS CORPORATE PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323
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FILE NAME: RIV-A PL11 PD

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FLORIDA P.E. #68342

RIV-A PL11 | PD

GENERAL NOTES

1. ALL RUNOFF SHALL BE ROUTED THROUGH THE WATER MANAGEMENT SYSTEM UNLESS THE CONTRACTOR SUBMITS A SEPARATE EROSION CONTROL PLAN.

2. GRADE THE PERIMETER OF THE SITE TO ENSURE THAT RUNOFF DURING CONSTRUCTION DOES NOT FLOW DIRECTLY TO ADJACENT LANDS. PROVIDE AND INSTALL SILT FENCES IN CONFORMANCE WITH F.D.O.T. STANDARD INDEX 120, OR EQUIVALENT SEDIMENT CONTROLS, AROUND THE ENTIRE WORK AREA DURING CONSTRUCTION.

3. STABILIZATION (SEED AND MULCH, SOD, TREES, ETC.) SHALL BE APPLIED ON ANY AREAS WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED. STABILIZATION SHALL BE IN PLACE WITHIN 7 DAYS OF THE COMPLETION OF CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN A LOG OF THE DATES OF ALL MAJOR GRADING ACTIVITIES. THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE, AND THE DATES WHEN EACH STABILIZATION TECHNIQUE IS INITIATED.

4. INSTALL BASEROCK AND/OR STABILIZER MATERIAL AT THE CONSTRUCTION ENTRANCE TO LIMIT OFF-SITE TRACKING OF SEDIMENTS DURING CONSTRUCTION, AS NECESSARY, OR AS DIRECTED BY THE ENGINEER.

5. THE SITE SHALL BE WATERED TO LIMIT DUST POLLUTION AS NEEDED OR AS DIRECTED BY THE ENGINEER.

6. FERTILIZERS AND PESTICIDES SHALL BE APPLIED ONLY AT THE RATES NECESSARY TO ESTABLISH AND MAINTAIN VEGETATION.

7. THE CONTRACTOR SHALL CONDUCT VISUAL INSPECTIONS OF THE TEMPORARY AND PERMANENT STABILIZATION DEVICES. THE CONTRACTOR SHALL INSPECT THE CONSTRUCTION SITE WITHIN 24 HOURS OF A STORM WITH A RAINFALL DEPTH OF 1/2" OR MORE, BUT NOT LESS FREQUENTLY THAN ONCE PER WEEK FOR DEFICIENCIES IN THE STORMWATER POLLUTION PREVENTION TECHNIQUES BEING USED. SHOULD THE STORMWATER POLLUTION PREVENTION TECHNIQUES BE FOUND TO BE INEFFECTIVE OR IN POOR CONDITION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND, WITHIN 72 HOURS, REPAIR OR REPLACE THEM AS NECESSARY AS DIRECTED BY THE ENGINEER.

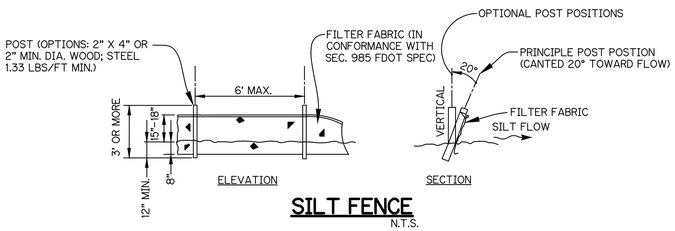
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REPAIRS OF THE EROSION AND SEDIMENT CONTROL DEVICES UNTIL AN AREA IS DETERMINED BY THE ENGINEER TO BE PERMANENTLY STABILIZED AT WHICH TIME THE CONTRACTOR SHALL REMOVE ANY TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES.

9. THE CONTRACTOR SHALL REMOVE BUILT-UP SEDIMENT FROM STAKED SILT FENCES, HAY BALES, ETC. WHEN IT REACHES A HEIGHT OF 1/3 THE HEIGHT OF THE BARRIER OR WHEN WATER FLOW IS IMPEDED. THE CONTRACTOR SHALL INSPECT AND REPAIR ANY TEMPORARY OR PERMANENT SEEDING OR SODDING, AS NEEDED.

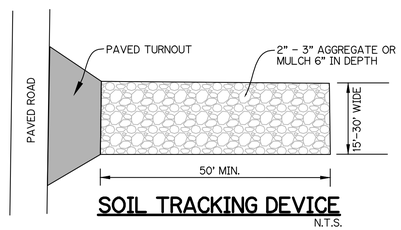
10. THE CONTRACTOR SHALL MAINTAIN A COPY OF THIS STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND ALL LOGS AND INSPECTION REPORTS AS MENTIONED IN THE SWPPP ON SITE AT ALL TIMES.

11. THE CONTRACTOR SHALL SUBMIT A NOTICE OF INTENT (NOI) TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES THAT DISTURB ONE OR MORE ACRES OF LAND (RULE 62-621.300(4), F.A.C.) TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AT LEAST ONE WEEK PRIOR TO CONSTRUCTION. A COPY OF THE NOI SHALL BE PROVIDED TO THE ENGINEER AND LOCAL AGENCIES WITH THE SHOP DRAWINGS SUBMITTAL.

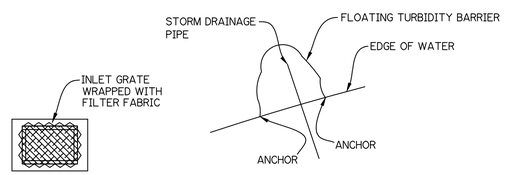
12. THE CONTRACTOR SHALL SUBMIT A NOTICE OF TERMINATION (NOT) OF GENERIC PERMIT COVERAGE (RULE 62-621.300(6), F.A.C.) TO THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AT THE COMPLETION OF THE PROJECT. A COPY OF THE NOT SHALL BE PROVIDED TO THE ENGINEER AND LOCAL AGENCIES WITH THE FINAL DOCUMENTS AND PRIOR TO THE FINAL INSPECTION.



SILT FENCE
N.T.S.



SOIL TRACKING DEVICE
N.T.S.



INLET PROTECTION
N.T.S.

TURBIDITY BARRIER
N.T.S.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

I. SITE DESCRIPTION

A. LOCATION

THE PROJECT IS LOCATED IN ST. LUCIE COUNTY, FLORIDA AT THE SOUTHWEST CORNER OF DISCOVERY WAY AND COMMUNITY BOULEVARD. THE PROJECT IS APPROXIMATELY 1 MILE WEST OF INTERSTATE 95.

B. CONSTRUCTION ACTIVITY

THE PROJECT CONSISTS OF RIVERLAND PARCEL A PLAT ELEVEN, A 56.04 ACRE SINGLE-FAMILY RESIDENTIAL DEVELOPMENT AND RELATED SITE WORK AND UNDERGROUND UTILITIES.

CONSTRUCTION ACTIVITY WILL INCLUDE CLEARING AND GRUBBING OF THE SITE, CONSTRUCTION OF LAKES AND INSTALLATION OF UNDERGROUND STORM DRAINAGE, POTABLE WATER SYSTEMS, SANITARY SEWER SYSTEMS, ASPHALT PAVING AND MISCELLANEOUS ITEMS ASSOCIATED WITH THE OVERALL PROJECT.

C. MAJOR SOIL DISTURBING ACTIVITIES

THE MAJOR SOIL DISTURBING ACTIVITIES WILL INCLUDE CLEARING AND GRUBBING, EXCAVATION OF LAKES AND FILLING FOR THE BUILDING FOUNDATIONS AND TRENCHING FOR THE INSTALLATION OF UNDERGROUND FACILITIES. THE SEQUENCE OF CONSTRUCTION WILL GENERALLY FOLLOW THE ORDER OF CLEARING AND GRUBBING, EXCAVATION OF LAKES AND FILLING FOR BUILDING FOUNDATIONS, TRENCHING FOR THE INSTALLATION OF UNDERGROUND FACILITIES, GRADING FOR ROADWAY SUBGRADE AND THE INSTALLATION OF THE PAVEMENT SECTION.

D. RUNOFF COEFFICIENTS

THE PROJECT AREA IS CURRENTLY AGRICULTURAL. THE RUNOFF COEFFICIENTS BEFORE, DURING AND AFTER CONSTRUCTION ARE AS FOLLOWS:

BEFORE CONSTRUCTION – AGRICULTURAL USE: C = 0.3
DURING CONSTRUCTION–DISTURBED UPLANDS & PARTIAL CONSTRUCTION: C = 0.3–0.7
AFTER CONSTRUCTION: C = 0.7–0.9

E. RECEIVING WATERS

THE ULTIMATE RECEIVING WATER FOR STORMWATER RUNOFF IS THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD) C-23 CANAL.

II. CONTROLS

NARRATIVE – THE SEQUENCE OF SOIL DISTURBING ACTIVITIES AND IMPLEMENTATION OF CONTROLS AND MEASURES ARE AS FOLLOWS FOR THE GENERAL CONSTRUCTION ACTIVITIES:

CLEARING AND GRUBBING: BASED ON THE EXISTING TOPOGRAPHY OF THE PROJECT AREAS, CERTAIN AREAS WITHIN THE LIMITS OF WORK MAY REQUIRE TEMPORARY SILT FENCES AND EROSION CONTROL DEVICES TO CONTAIN UNFINISHED SOILS WITHIN THE CONSTRUCTION AREA. THESE CONTROLS WILL BE TEMPORARY AND WILL BE REMOVED FOLLOWING THE FINAL STABILIZATION OF THE DISTURBED AREAS.

EXCAVATION ACTIVITIES: EXCAVATION FOR FOUNDATIONS WILL OCCUR WITHIN THE LIMITS OF THE FINISHED PROJECT AREA. THE LIMITS OF CONSTRUCTION AND PROJECT BOUNDARIES WILL BE GRADED TO CONTAIN ALL SPOIL MATERIAL FROM THE EXCAVATION ACTIVITIES ONSITE AND ANY DEWATERING ACTIVITIES WILL PROVIDE THE NECESSARY CONTAINMENT BERMS AND DIKES TO PREVENT UNCONTROLLED OFFSITE DISCHARGES. TEMPORARY CONTROLS WILL BE INSTALLED AS NECESSARY IN THE AREA OF THE EXCAVATION TO PREVENT EROSIONS OF UNSTABILIZED MATERIAL AND WILL BE MAINTAINED UNTIL THE FINAL STABILIZATION OF THESE AREAS IS COMPLETED.

GRADING: GRADING FOR THE PROJECT WILL BE COMPLETED IN PHASES AS EACH SECTION OF THE WORK PROGRESSES. ROUGH GRADING WILL OCCUR FOLLOWING THE CLEARING AND GRUBBING ACTIVITIES. FINAL GRADING WILL BE COMPLETED AROUND THE PERIMETER OF THE SITE. TEMPORARY CONTROLS WILL BE INSTALLED ALONG THE LIMITS OF THE WORK AS NECESSARY AND THESE CONTROLS WILL BE REMOVED FOLLOWING FINAL STABILIZATION.

A. EROSION AND SEDIMENT CONTROLS

1. STABILIZATION PRACTICES: THE PROPOSED WORK WILL BE STABILIZED ON AN INTERIM AND PERMANENT BASIS AS THE WORK PROGRESSES. STABILIZATION PRACTICES WILL CONSIST OF BUT MAY NOT BE LIMITED TO SEEDING, MULCHING AND SODDING.

2. STRUCTURAL PRACTICES: STRUCTURAL PRACTICES WILL BE IMPLEMENTED DURING CONSTRUCTION AS TEMPORARY CONTROLS. THESE ITEMS WILL INCLUDE BUT ARE NOT LIMITED OF THE FOLLOWING:

   a. BERMS AND DIKES FOR CONTAINMENT OF RUNOFF AND FOR DEWATERING ACTIVITIES.
   b. SILT FENCES FOR PERIMETER CONTROLS. IN LIEU OF OR IN ADDITION TO SILT FENCE, A 6' WIDE VEGETATED STRIP MAY BE INSTALLED FOR SEDIMENT CONTAINMENT.
   c. FILTER CLOTH AND HAY BALES FOR INLET PROTECTION.

TEMPORARY EROSION CONTROL SHALL BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION, AND PERMANENT CONTROL MEASURES SHALL BE COMPLETED WITHIN 7 DAYS OF THE COMPLETED CONSTRUCTION ACTIVITIES.

B. STORMWATER MANAGEMENT

CONSTRUCTION ACTIVITIES WILL INCLUDE THE INSTALLATION OF UNDERGROUND PIPING.

UPON COMPLETION OF THE PROJECT, STORMWATER RUNOFF WILL BE DIRECTED TO THE LAKES FOR WATER QUALITY TREATMENT AND FLOOD PROTECTION. RUNOFF WILL BE DIRECTED TO THE LAKES BY UNDERGROUND DRAINAGE LINES, CONTROL STRUCTURES, CURBING AND SHEET FLOW OVER GRASS AREAS.

THIS PROJECT HAS BEEN SUBMITTED TO THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT FOR A MODIFICATION TO CONCEPTUAL ENVIRONMENTAL RESOURCE PERMIT NO. 56-00558-S.

C. OTHER CONTROLS

1. WASTE DISPOSAL: THE CONTRACTOR SHALL PROVIDE LITTER CONTROL AND COLLECTION OF MATERIALS WITHIN THE PROJECT BOUNDARIES DURING CONSTRUCTION. ALL FERTILIZER, HYDROCARBON, OR OTHER CHEMICAL CONTAINERS SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH THE EPA'S STANDARD PRACTICES. NO SOLID MATERIAL INCLUDING BUILDING AND CONSTRUCTION MATERIAL SHALL BE DISPOSED OF, DISCHARGED OR BURIED ONSITE.

2. OFFSITE VEHICLE TRACKING: LOADED HAUL TRUCKS SHALL BE COVERED WITH A TARPAULIN. EXCESS DIRT MATERIAL ON THE ROADS SHALL BE REMOVED IMMEDIATELY. HAULING ON UNPAVED SURFACES SHALL BE MONITORED TO MINIMIZE DUST AND CONTROL EROSION. HAUL ROADS SHALL BE WATERED OR OTHER CONTROLS PROVIDED AS NECESSARY TO REDUCE DUST AND CONTROL SEDIMENTS.

3. SANITARY WASTE: THE CONTRACTOR SHALL PROVIDE PORTABLE SANITARY WASTE FACILITIES. THESE FACILITIES SHALL BE COLLECTED OR EMPTIED BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR AS REQUIRED BY STATE REGULATIONS.

4. FERTILIZERS AND PESTICIDES: FERTILIZER SHALL BE APPLIED AT A RATE SPECIFIED BY THE LANDSCAPE ARCHITECT. THE APPLICATION OF FERTILIZERS SHALL BE ACCOMPLISHED IN A MANNER AS DESCRIBED BY THE MANUFACTURER OR LANDSCAPE ARCHITECT TO ENSURE THE PROPER INSTALLATION AND TO AVOID OVER FERTILIZING.

D. APPROVED SITE AND LOCAL PLANS

CONSTRUCTION PERMIT FROM THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT IS BEING APPLIED FOR. A PERMIT FROM THE UNITED STATES ARMY CORPS OF ENGINEERS HAS BEEN ISSUED FOR THE IMPACTS TO EXISTING WETLANDS.

THE MEASURES AND CONTROLS OUTLINED ABOVE WILL BE IMPLEMENTED BY THE CONTRACTOR DURING CONSTRUCTION AND THESE MEASURES AND CONTROLS WILL PROVIDE THE NECESSARY POLLUTION PREVENTION AND SEDIMENTATION CONTROL DURING CONSTRUCTION.

III. MAINTENANCE

THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE AND REPAIRS OF EROSION AND SEDIMENT CONTROL DEVICES AND REMOVAL OF THE EROSION AND SEDIMENT CONTROL DEVICES AFTER THE NOTICE OF TERMINATION IS EXECUTED.

THE CONTRACTOR SHALL REVIEW THE PROJECT AND ALL EROSION AND SEDIMENTATION CONTROLS ON A DAILY BASIS AND DURING AND FOLLOWING RAINFALL EVENTS. THE FOLLOWING PRACTICES WILL BE IMPLEMENTED TO MAINTAIN AND MONITOR EROSION AND SEDIMENTATION CONTROLS.

A. PROJECT REVIEW ON A DAILY BASIS.

B. PROVIDE AND MAINTAIN RAIN GAUGES ONSITE (IF WEATHER STATIONS ARE NOT AVAILABLE IN THE AREA) TO RECORD RAINFALL DATA DAILY.

C. REVIEW STABILIZATION PRACTICES AND CONTROLS ON A DAILY BASIS AND MAINTAIN AND REPAIR THESE MEASURES AND CONTROLS AS NECESSARY. TEMPORARY AND PERMANENT SEEDING, MULCHING AND SODDING SHALL BE REPAIRED IN BARE SPOTS AND WASHOUTS AND HEALTHY GROWTH ESTABLISHED.

D. REVIEW STRUCTURAL PRACTICES ON A DAILY BASIS AND MAINTAIN AND REPAIR THESE MEASURES AND CONTROLS AS NECESSARY. BUILT UP SEDIMENTS SHALL BE REMOVED FROM SILT FENCES, HAY BALES AND FILTER CLOTH. SUCH CONTROLS SHALL BE REPLACED AS NECESSARY AND REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS.

E. AN INSPECTION AND MAINTENANCE REPORT SHALL BE COMPLETED AT LEAST EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT OF 0.50 INCHES OR MORE.

F. IF THE CONTRACTOR ELECTS TO APPLY FOR PERMITS FOR DISCHARGE OF STORMWATER FROM THE SITE DURING CONSTRUCTION, ALL POINTS OF DISCHARGE OF STORMWATER RUNOFF FROM THE SITE SHALL BE INSPECTED ON A DAILY BASIS AND CONTROLS AND MEASURES REPAIRED AS NECESSARY TO MAINTAIN ACCEPTABLE WATER QUALITY AND DISCHARGE VOLUMES IN ACCORDANCE WITH THE STATE PERMITS.

IV. INSPECTIONS

QUALIFIED PERSONNEL SHALL INSPECT ALL POINTS OF DISCHARGE, AS APPLICABLE, FROM THE PROJECT SITE AND ALL DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN STABILIZED.

DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF, OR POTENTIAL FOR POLLUTANTS ENTERING THE STORMWATER MANAGEMENT SYSTEM. THE STORMWATER MANAGEMENT SYSTEM AND EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. INSPECTION AND MAINTENANCE REPORTS SHALL BE COMPLETED AT LEAST EVERY 7 DAYS AND FOLLOWING A RAINFALL EVENT OF 0.50 INCHES OF WATER OR GREATER (SEE ATTACHED FORM). THESE FORMS SHALL BE RETAINED FOR A PERIOD OF AT LEAST 3 YEARS FOLLOWING THE DATE THE SITE IS FINALLY STABILIZED.

V. NON-STORMWATER DISCHARGES

DEWATERING, WHEN NECESSARY, WILL BE DETAINED ONSITE WITHIN SMALL IMPOUNDMENTS AND MAY DISCHARGE FROM THE SITE UNDER EXTREME CONDITIONS. ANY DISCHARGE FROM THE SITE WILL REQUIRE FILTRATION AND TREATMENT PRIOR TO ENTERING THE OFFSITE CONVEYANCE SYSTEM AND SHALL MEET THE REQUIREMENTS OF THE STATE PERMITS FOR STORMWATER DISCHARGE AND DEWATERING ACTIVITIES FOR THE SITE. SPILL REPORTING FOR ITEMS SUCH AS OILS, FUEL, ETC. SHALL MEET THE REQUIREMENTS OF 40 CFR PART 117 AND 40 CFR PART 302. CLEANUP AND DISPOSAL OF ALL SPILLS SHALL MEET THE APPLICABLE REGULATORY AGENCY REQUIREMENTS AND SHALL BE HANDLED AND DISPOSED OF AS REQUIRED BY LAW.

NAME AND TITLE	COMPANY NAME, ADDRESS, AND PHONE NUMBER	RESPONSIBLE ITEMS	DATE

P19-028

STORMWATER POLLUTION PREVENTION PLAN
FOR
RIVERLAND-PARCEL A
PLAT ELEVEN

REVISIONS	DATE	BY	CK

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DATE: 5/21/19
DESIGNED BY: MW
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