BROWARD COUNTY COMMISSION

HIGHWAY CONSTRUCTION & ENGINEERING DIVISON

LANDSCAPE AND IRRIGATION PLANS

N.W. 21st AVENUE

FROM OAKLAND PARK BLVD. TO COMMERCIAL BLVD.

BROWARD COUNTY PROJECT NO. XXXXX

INDEX OF LANDSCAPE AND IRRIGATION PLANS

LANDSCAPE PLANS
SHOP DRAWINGS TO BE SUBMITTED TO:

RONALD B. ROLLINS, RLA
BROWARD COUNTY PUBLIC WORKS
HIGHWAY CONSTRUCTION & ENGINEERING DIVISION
ONE N. UNIVERSITY DRIVE, BOX B300
PLANTATION, FL 33324

PLANS PREPARED BY:

RONALD B. ROLLINS, RLA
BROWARD COUNTY PUBLIC WORKS
HIGHWAY CONSTRUCTION & ENGINEERING DIVISION
ONE N. UNIVERSITY DRIVE, BOX B300
PLANTATION, FL 33324

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

100% PLANS

UPDATED 6/16/2021

LANDSCAPE PLANS
LANDSCAPE ARCHITECT
OF RECORD: RONALD B. ROLLINS, RLA

R.L.A. NO.: FL 0001558

NOT FOR CONSTRUCTION

COUNTY PROJECT MANAGER: ROGER G. LALANNE, P.E.

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
_____	__	LD-0

NW 21st Avenue Landscaping

(Oakland Park Blvd to Commercial Blvd)

9/9/2019

LANDSCAPE TABULATION OF QUANTITIES / PLANT SCHEDULE

(BASE BID ITEMS)

PAY ITEM	BASE BID SYM	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS	NOTES	NATIVE	SYM	LP - 1 QUANTITY	LP - 2 QUANTITY	LP - 3 QUANTITY	LP - 4 QUANTITY	LP - 5 QUANTITY	LP - 6 QUANTITY	LP - 7 QUANTITY		SUB-TOTAL
		LARGE PLANTS		**TREES & PALMS**												
580-1-2A	IA	**Eagleston Holly**	***Ilex attenuata 'Eagleston'***	**12' ht. (min.) x 5' spr., FG, B&B**	Single Trunk	YES	IA	0	0	0	0	0	0	10		**10**
580-1-2B	QV	**Live Oak**	***Quercus virginiana***	**6" DBH, 18'-20' ht. x 8' sprd., FG, B&B**	Full Dense canopy, 5' c.t.	YES	QV	0	0	0	0	0	0	0		**0**
		SMALL PLANTS		**UNDERSTORY SHRUBS, NATIVE GRASSES, GROUNDCOVER, PLANTS**												
580-1-1A	CRI	**Crinum Lily**														
580-1-1B	FGI	**Green Island Ficus**	***Ficus microcarpa 'Green Island'***	**3 gal., 15" ht. x 15" sprd.**	install at 24" o.c.	NO	FGI	0	66	64	0	0	0	76		**206**
580-1-1C	HYM	**Spider Lily**	***Hymenocallis latifolia***	**3 gal., 15" ht. (min.)**	install at 24" o.c.	YES	HYM	0	20	58	0	48	0	0		**126**
580-1-1D	MUH	**Muhly Grass**	***Muhlenbergia capillaris***	**1 gal., 15" ht. x 15" sprd.**	install at 30" o.c.	YES	MUH	0	0	0	0	0	0	76		**76**
580-1-1E	ZAP	**Coontie**	***Zamia pumila***	**3 gal., 15" ht. x 15" sprd.**	install at 30" o.c.	YES	ZAP	41	0	0	0	0	0	0		**41**
		SOD		**GROUNDCOVER / SURFACE PLANTINGS**												
580-1-1F	SOD	**St. Augustine 'Floratam'**	***Stenotaphrum secundatum 'Floratam'***	**Sod Panels**	abutting panels; Quantity = Square Footage	NO	SOD	635	420	0	0	0	0	1405		**2,460**

PAY ITEM	BASE BID SYM	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS	NOTES	NATIVE	SYM	LP - 8 QUANTITY	LP - 9 QUANTITY	LP - 10 QUANTITY	LP - 11 QUANTITY	LP - 12 QUANTITY	LP - 13 QUANTITY	LP - 14 QUANTITY	LP - 15 QUANTITY	GRAND TOTAL
		LARGE PLANTS		**TREES & PALMS**												
580-1-2A	IA	**Eagleston Holly**	***Ilex attenuata 'Eagleston'***	**10'-12' ht. x 5' spr., FG. B&B**	Single Trunk	YES	IA	0	5	9	16	2	0	0	0	**42**
580-1-2B	QV	**Live Oak**	***Quercus virginiana***	**3" DBH, 14'-16' ht. x 6' sprd., FG, B&B**	Full Dense canopy - Single Trunk	YES	QV	0	0	0	0	0	5	0	0	**5**
		SMALL PLANTS		**UNDERSTORY SHRUBS, NATIVE GRASSES, GROUNDCOVER, PLANTS**												
580-1-1A	CRI	**Crinum Lily**														
580-1-1B	FGI	**Green Island Ficus**	***Ficus microcarpa 'Green Island'***	**3 gal., 15" ht. x 15" sprd.**	install at 24" o.c.	NO	FGI	45	72	72	172	0	139	0	0	**706**
580-1-1C	HYM	**Spider Lily**	***Hymenocallis latifolia***	**3 gal., 15" ht. (min.)**	install at 24" o.c.	YES	HYM	40	40	0	0	0	38	0	0	**244**
580-1-1D	MUH	**Muhly Grass**	***Muhlenbergia capillaris***	**1 gal., 15" ht. x 15" sprd.**	install at 30" o.c.	YES	MUH	0	0	56	95	18	75	0	0	**320**
580-1-1E	ZAP	**Coontie**	***Zamia pumila***	**3 gal., 15" ht. x 15" sprd.**	install at 30" o.c.	YES	ZAP	0	0	0	0	0	0	0	0	**41**
		SOD		**GROUNDCOVER / SURFACE PLANTINGS**												
580-1-1F	SOD	**St. Augustine 'Floratam'**	***Stenotaphrum secundatum 'Floratam'***	**Sod Panels**	abutting panels; Quantity = Square Footage	NO	SOD	0	640	690	660	975	840	0	0	**6,265**

PAY ITEM	MISCELLANEOUS					TOTAL THIS SHEET
	FloraMulch / Melaleuca Mulch	**medians; 6' dia Tree Ring**	**3" layer**	**included in plant unit cost**		**included**
	Root Zone Soil Mix	**includes soil amendments**	**see specifications**	**included in plant unit cost**		**included**
	Hand-watering		**3-month establishment period**	**refer to suggested watering schedule**		**3 months**

NOTE:
THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL LANDSCAPE QUANTITIES PRIOR TO BIDDING.
REFER TO FLORIDA GRADES AND STANDARDS FOR MINIMUM ROOT BALL SIZES AND MINIMUM CONTAINER SIZES. ANY AND ALL DISCREPANCIES ARE TO BE BROUGHT TO THE PROJECT MANAGER'S ATTENTION.

ABBREVIATIONS		
Cal.	=	Caliper
Gal.	=	Gallon
B&B	=	Ball & Burlap
FG	=	Field Grown
Ht.	=	Height
sprd.	=	Spread
SYM	=	Symbol
s.f.	=	Square feet
SY	=	Square Yards
LF	=	Linear Feet
c.t.	=	Clear Trunk

revised:
5/19/2020
10/7/2020
11/4/2020
5/20/2021
6/15/2021

Updated 6/15/21

REVISIONS	
DATE	DESCRIPTION

LANDSCAPE ARCHITECT OF RECORD
RONALD B. ROLLINS, RLA
LICENSE NO. LA 0001558
BROWARD COUNTY HIGHWAY
CONSTRUCTION & ENGINEERING DIVISION
1 NORTH UNIVERSITY DRIVE
PLANTATION, FL 33324

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

BASE BID
PLANT SCHEDULE

SHEET NO.
LD-G1

NW 21st Avenue Landscaping
(Oakland Park Blvd to Commercial Blvd)

9/9/2019

ALTERNATIVE BID(S) PLANT SCHEDULE

	BIOSWALE PLANTINGS & INDIVIDUAL PLANTS								LP - 1	LP - 2	LP - 3	LP - 4	LP - 5	LP - 6	LP - 7			SUB-
	SYM	CLUSTER TYPE	ALTERNATIVE BID DESIGNATION	SPECIFICATIONS			NOTES		QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY			TOTAL
		BIOSWALE A	1	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					0	0	0	1	2	0	0			3
		BIOSWALE B	1	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					0	0	0	1	0	0	1			2
	QV	INDIVIDUAL TREE	2	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					0	0	0	0	0	0	2			2
	IA	INDIVIDUAL TREE	2	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					0	0	0	0	0	0	0			0
	MYF	INDIVIDUALPLANT	2	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					0	0	0	0	0	0	0			0
	MYR	INDIVIDUALPLANT	2	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					0	0	0	0	0	0	0			0

	BIOSWALE PLANTINGS & INDIVIDUAL PLANTS								LP - 8	LP - 9	LP - 10	LP - 11	LP - 12	LP - 13	LP - 14	LP - 15		TOTAL
	SYM	CLUSTER TYPE	ALTERNATIVE BID DESIGNATION	SPECIFICATIONS			NOTES		QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY		THIS SHEET
		BIOSWALE A	1	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					1	0	1	1	1	1	1	0		9
		BIOSWALE B	1	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					1	1	0	1	1	0	1	0		7
	QV	INDIVIDUAL TREE	2	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					4	2	1	0	0	0	0	0		9
	IA	INDIVIDUAL TREE	2	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					0	3	6	0	0	0	0	0		9
	MYF	INDIVIDUALPLANT	2	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					0	0	22	0	0	0	0	0		22
	MYR	INDIVIDUALPLANT	2	SEE LARGE PLANT / SMALL PLANTS SPECIFICATIONS BELOW					0	0	19	0	0	0	0	0		19

ALTERNATIVE BID 1

PAY ITEM	LARGE & SMALL PLANTS				QUANTITY PER BIOSWALE			NATIVE		LP - 1	LP - 2	LP - 3	LP - 4	LP - 5	LP - 6	LP - 7		SUB-
	SYM	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS	BIOSWALE "A"	BIOSWALE "B"	NOTES		SYM	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY		TOTAL
580-1-1AA	CA	Crinum americanum	*Swamp Lily*	3 gal, 18" ht. (min.) x 15" sprd.	0	12	install As Shown	YES	CA	0	0	0	12	24	0	12		48
580-1-1BB	CRI	Crinum americanum	*Swamp Lily*	1 gal, 10" ht. x 10" sprd.	15	0	install @ 24" O.C.	YES	CRI	0	0	0	15	0	0	0		15
580-1-1CC	HYM	Spider Lily	*Hymenocallis latifolia*	1 gal, 12" ht. (min.)	60	45	install @ 24" O.C.	YES	HYM	0	0	0	105	120	0	45		270
580-1-1DD	MUH	Muhly Grass	*Muhlenbergia cappillis*	1 gal, 12" ht. (min.)	0	60	install @ 24" O.C.	YES	MUH	0	0	0	60	0	0	60		120
580-1-1EE	MYR	Wax Myrtle	*Myrica cerifera*	3 gal., 15" ht. x 15" sprd.	8	0	install As Shown	YES	MYR	0	0	0	8	16	0	0		24
580-1-1FF	SER	Saw Palmetto	*Serenoa repens*	3 gal., 15" ht. x 15" sprd.	0	8	install As Shown	YES	SER	0	0	0	8	0	0	8		16
580-1-1GG	TRD	Fakahatchee Grass	*Tripsacum dactyloides*	1 gal, 12" ht. (min.)	30	10	install @ 30" O.C.	YES	TRD	0	0	0	40	60	0	10		110
		MISCELLANEOUS																
580-1-1HH		Gravel	#57 Stone	3" depth	150	150		SF		0	0	0	300	300	0	150		750
		FloraMulch / Melaleuca Mulch	(No Mulch) (Bare Ground)		0	0		SF		0	0	0	0	0	0	0		0

PAY ITEM	LARGE & SMALL PLANTS				QUANTITY PER BIOSWALE			NATIVE		LP - 8	LP - 9	LP - 10	LP - 11	LP - 12	LP - 13	LP - 14	LP - 15	TOTAL
	SYM	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS	BIOSWALE "A"	BIOSWALE "B"	NOTES		SYM	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	THIS SHEET
580-1-1AA	CA	Crinum americanum	*Swamp Lily*	3 gal, 18" ht. (min.) x 15" sprd.	0	12	install As Shown	YES	CA	12	12	0	12	12	0	12	0	108
580-1-1BB	CRI	Crinum americanum	*Swamp Lily*	1 gal, 10" ht. x 10" sprd.	15	0	install @ 24" O.C.	YES	CRI	15	0	15	15	15	15	15	0	105
580-1-1CC	HYM	Spider Lily	*Hymenocallis latifolia*	1 gal, 12" ht. (min.)	60	45	install @ 24" O.C.	YES	HYM	105	45	60	105	105	60	105	0	855
580-1-1DD	MUH	Muhly Grass	*Muhlenbergia cappillis*	1 gal, 12" ht. (min.)	0	60	install @ 24" O.C.	YES	MUH	60	60	0	60	60	0	60	0	420
580-1-1EE	MYR	Wax Myrtle	*Myrica cerifera*	3 gal., 15" ht. x 15" sprd.	8	0	install As Shown	YES	MYR	8	0	8	8	8	8	8	0	72
580-1-1FF	SER	Saw Palmetto	*Serenoa repens*	3 gal., 15" ht. x 15" sprd.	0	8	install As Shown	YES	SER	8	8	0	8	8	0	8	0	160
580-1-1GG	TRD	Fakahatchee Grass	*Tripsacum dactyloides*	1 gal, 12" ht. (min.)	30	10	install @ 30" O.C.	YES	TRD	40	10	30	40	40	30	40	0	254
		MISCELLANEOUS			QUANTITY PER BIOSWALE													
					BIOSWALE "A"	BIOSWALE "B"												
580-1-1HH		Gravel	#57 Stone	3" depth	150	150		SF		300	150	150	300	300	150	300	0	1,810
		FloraMulch / Melaleuca Mulch	(No Mulch) (Bare Ground)		0	0		SF		0	0	0	0	0	0	0	0	0

ALTERNATIVE BID 2

PAY ITEM	LARGE & SMALL PLANTS						NATIVE			TOTAL
	SYM	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS		NOTES				THIS SHEET
580-1-2AA	IA2	**Eagleston Holly**	***Ilex attenuata 'Eagleston'***	**10'-12' ht. x 5' spr., FG. B&B**		Single Trunk	YES			9
580-1-1MM	MYF	**Simpson's Stopper**	***Myrciantnus fagans***	**7 gal., 30" ht. x 24" sprd.**		install at 48" o.c. (typ.)	YES			22
580-1-1NN	MYR	**Wax Myrtle**	***Myrica cerifera***	**7 gal., 30" ht. x 24" sprd.**		install at 48" o.c. (typ.)	YES			19
580-1-2BB	QV2	**Live Oak**	***Quercus virginiana***	**3" DBH, 14'-16' ht. x 6' sprd., FG, B&B**		Full Dense canopy - Single Trunk	YES			9
		MISCELLANEOUS								TOTAL
										THIS SHEET
		FloraMulch / Melaleuca Mulch	3" layer	For Plant beds / hedges, etc.; 6' dia Tree Ring		area = s.f.				included
		Root Zone Soil Mix	includes soil amendments	see specifications		included in plant unit cost				included
		Hand-watering		3 month establishment period		refer to suggested watering schedule				3 months

ABBREVIATIONS		
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FG	=	Field Grown
Ht.	=	Height
sprd.	=	Spread
SYM	=	Symbol
s.f.	=	Square feet
SY	=	Square Yards
LF	=	Linear Feet
CT	=	Clear Trunk

NOTE:

THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL LANDSCAPE QUANTITIES PRIOR TO BIDDING.

REFER TO FLORIDA GRADES AND STANDARDS FOR MINIMUM ROOT BALL SIZES AND MINIMUM CONTAINER SIZES. ANY AND ALL DISCREPANCIES ARE TO BE BROUGHT TO THE PROJECT MANAGER'S ATTENTION.

revised:
5/19/2020
10/7/2020
6/10/2021

REVISIONS	
DATE	DESCRIPTION

LANDSCAPE ARCHITECT OF RECORD
RONALD B. ROLLINS, RLA
LICENSE NO. LA 0001558
BROWARD COUNTY HIGHWAY
CONSTRUCTION & ENGINEERING DIVISION
1 NORTH UNIVERSITY DRIVE
PLANTATION, FL 33324

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

ALTERNATE BID
PLANT LIST

SHEET NO.
LD-G2

1. PLANT MATERIAL PAY ITEM:
A. UNIT COST OF EACH TREE AND PALM TO INCLUDE MATERIAL COST; INSTALLATION COSTS – INCLUDING SOIL PREPARATION, STAKING AND MULCHING; AND MAINTENANCE COSTS SUCH AS WATERING, FERTILIZATION, PRUNING, DEBRIS CLEAN-UP DURING THE CONSTRUCTION PERIOD.

B. CONTRACTOR TO SUBMIT A UNIT COST BREAK-DOWN OF LANDSCAPE MATERIALS TO THE CITY'S PROJECT MANAGER.

C. UNIT COST OF EACH TREE AND PALM TO INCLUDE MAINTENANCE COSTS FOR THE PLANT MATERIAL OVER THE DURATION OF THE WARRANTY PERIOD. COSTS INCLUDE, BUT NOT LIMITED TO: WATERING, MULCH RING MAINTENANCE (AND WEEDING), PRUNING, FERTILIZATION.

D. UNIT COST OF EACH TREE AND PALM SHALL INCLUDE A FACTOR TO REPLACE DEAD OR SUB-STANDARD MATERIAL.

E. UNIT COST OF EACH TREE AND PALM SHALL INCLUDE A FACTOR TO CONDUCT QUARTERLY INSPECTIONS OF THE MATERIAL – DURING THE 1-YEAR WARRANTY PERIOD. LANDSCAPE CONTRACTOR IS ENCOURAGED TO ATTEND THE INSPECTIONS.

F. QUARTERLY INSPECTIONS OF THE MATERIAL WILL BE CONDUCTED BY THE CITY. SUB-STANDARD MATERIAL WILL NEED TO BE REPLACED.

G. UNIT COST OF SOD TO INCLUDE MATERIAL COST; INSTALLATION COSTS – INCLUDING BED PREPARATION; AND MAINTENANCE COSTS SUCH AS WATERING, FERTILIZATION, DURING THE CONSTRUCTION PERIOD.

2. PLANT MATERIAL STANDARDS:
A. REFER TO CITY OF OAKLAND PARK'S LANDSCAPE SPECIFICATIONS. (USE BROWARD COUNTY'S SPECIFICATIONS AS A DEFAULT).

3. PLANTING BED PREPARATION & INSTALLATION:
A. REFER TO CITY OF OAKLAND PARK'S LANDSCAPE SPECIFICATIONS. (USE BROWARD COUNTY'S SPECIFICATIONS AS A DEFAULT).

4. SODDING:
A. REFER TO THE CITY OF OAKLAND PARK'S LANDSCAPE SPECIFICATIONS STANDARDS.
B. PROJECT LIMITS FOR SODDING EXTEND FROM PROJECT BEGINNING AND ENDING POINTS TO RIGHT-OF-WAY LINES, EXCLUSIVE OF HARDSCAPE ELEMENTS. SOD ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITHIN THE PROJECT CORRIDOR.
C. "SOD" FOR MEDIANS – REFER TO PLANT SCHEDULE.
D. SOD FOR AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, MATCH EXISTING SOD IN VICINITY. DEFAULT SOD WILL BE BAHIA SOD (PASPALUM NOTATUM 'ARGENTINE').

5. MAINTENANCE DURING WARRANTY PERIOD:
A. REFER TO BROWARD COUNTY LANDSCAPE SPECIFICATIONS FOR MAINTENANCE STANDARDS.

6. GUARANTEE / WARRANTY PERIOD:
A. REFER TO BROWARD COUNTY LANDSCAPE SPECIFICATIONS FOR WARRANTY INFORMATION.

7. MAINTENANCE:
A. THE LANDSCAPE CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE MAINTENANCE AND CARE OF ALL PLANT MATERIAL, SOD, AND MULCHED AREAS UNTIL FINAL ACCEPTANCE BY THE CITY.
B. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF ALL TREE STAKING AND GUYING DURING THE WARRANTY PERIOD.

8. SODDING:
A. SOD SHALL BE TRUE TO THE SPECIES INDICATED ON THE LANDSCAPE OR ROADWAY PLAN, BE WEED AND INSECT FREE, AND BE MECHANICALLY CUT SQUARE AND STRAIGHT, BE OF EQUAL THICKNESS, MOWED TO A MINIMUM HEIGHT OF TWO INCHES (2") AND SHOULD BE ABLE TO BE HELD IN ONE CORNER BY ONE HAND WITHOUT FALLING APART.
B. 'SOD' FOR THE MEDIANS MAY BE 1-GAL MATERIAL (PERENNIAL PEANUT).
C. THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY AGAINST EACH OTHER, AND STAGGERING SOD JOINTS.
D. SODDED AREAS WITH SLOPES EXCEEDING 4:1 SHALL BE SECURED TO THE SLOPE BY PEGGING OR OTHER METHOD APPROVED BY THE CITY'S PROJECT MANAGER.
D. IF AN AREA IS DISTURBED BY CONSTRUCTION ACTIVITIES – THE CONTRACTOR SHALL REPAIR THE AREA AND RE-SOD. MATCH SOD TO SURROUNDING AREA.
E. DISC AND RAKE ALL AREAS TO BE SODDED TO A DEPTH OF TWO INCHES (2"), REMOVE ALL WEEDS, DEBRIS AND STONES LARGER THAN ONE INCH (1") IN DIAMETER. GRADE AND WET DOWN THE AREA TO RECEIVE THE SOD PRIOR TO LAYING THE SOD.
F. COMPLETED SOD AREAS SHALL BE LIGHTLY ROLLED, (NOT TO EXCEED 100 LBS.) AND THOROUGHLY WATERED THROUGH THE ROOT SYSTEM.
G. THE FIRST MOWING SHALL NOT OCCUR UNTIL THE SOD IS FIRMLY ROOTED.

9. MISCELLANEOUS:
A. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALL UTILITY LOCATIONS AND CONFLICTS OF PLANT MATERIAL AND THE UTILITY, ALL CONFLICTS SHALL BE REPORTED TO THE CITY'S PROJECT REPRESENTATIVE.
B. THE LANDSCAPE CONTRACTOR SHALL COMPLY WITH ALL STATE, COUNTY AND MUNICIPAL CODES AND ORDINANCES (FDOT STANDARD INDEX #546) AND OBTAIN ALL APPLICABLE PERMITS.
C. ALL EXISTING TREES AND PALMS TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION (SEE THE TREE PROTECTION DETAIL FDOT STANDARD INDEX #544).
D. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE CLEANLINESS OF ALL LANDSCAPE AREAS WITHIN THE LIMITS OF THIS PROJECT, INCLUDING BUT NOT LIMITED TO THE REMOVAL OF DEBRIS, TRASH, ROCKS, CANS, BOTTLES, AND STAKES ETC.

10. WATER:
A. WATER SHALL BE SUPPLIED BY THE LANDSCAPE CONTRACTOR FROM THE TIME THAT THE FIRST PLANT IS INSTALLED, UNTIL FINAL ACCEPTANCE IS GRANTED BY THE CITY.
B. THE LANDSCAPE CONTRACTOR SHALL SUPPLY SUFFICIENT WATER TO ENSURE THE SURVIVABILITY OF ALL PLANT MATERIAL INCLUDED IN THESE PLANS THROUGHOUT THE GUARANTEE PERIOD. NOTE THAT SUPPLEMENTAL WATERING MAY BE NECESSARY IN ADDITION TO IRRIGATION. WATERING SHALL OCCUR ON AN AS NEEDED BASIS TO ENCOURAGE PLANT DEVELOPMENT AND SELF-RELIANCE ON NATURAL RAINFALL. ALL PLANTS ARE TO BE WEANED OFF OF WATERING OPERATIONS BY THE END OF THE GUARANTEE PERIOD.

11. SOILS:
A. REVIEW SOILS IN THE MEDIAN. VERIFY THAT THE SOIL IN THE MEDIAN IS A SANDY LOAM WITH GOOD ORGANIC CONTENT THAT CAN SUPPORT PLANT GROWTH. SUPPLEMENT/REPLACE SOIL AS NEEDED. THE MEDIANS IN THE PROJECT ARE NEWLY CONSTRUCTED MEDIANS AND MAY REQUIRE THE REMOVAL OF SOIL – ALONG WITH ROAD BASE AND SUB-BASE MATERIALS. REMOVE MATERIALS TO A DEPTH OF 36" (WHICHEVER IS A GREATER DEPTH) AND BACKFILL WITH CLEAN SANDY / SANDY-LOAM SOIL (FREE OF WEEDS, STONES, DEBRIS, CONSTRUCTION MATERIALS). BACKFILL CAN HAVE SOME ORGANIC MATERIALS – OVER 10% OF FINELY DIVIDIED AND DECOMPOSED ORGANIC MATERIALS, BUT LESS THAN 30%.
B. BACKFILL 30-INCH OF THE 36" DEPTH WITH THE SANDY/SANDY LOAM MATERIAL. THEN, ADD A 12" VENEER OF HIGH QUALITY TOP SOIL.
C. VERIFY MEDIANS HAVE ADEQUATE PERCOLATION. CONDUCT PERCOLATION TEST UNDER THE SUPERVISION OF THE CITY'S PROJECT MANAGER ON SELECT MEDIANS TO VERIFY PERCOLATION IS ADEQUATE. MAY HAVE TO AUGER HOLES (AND BACKFILL WITH PEA GRAVEL) TO GET THE AN ADEQUATE PERCOLATION RATE.

12. SUBMITTALS – (TO CITY'S PROJECT MANAGER) :
A. SUBMIT SAMPLES OF THE TWO BACKFILL SOIL TYPES FOR REVIEW. SUBMIT TYPICAL ROOTZONE SOIL MIX AND TOP SOIL.
B. SUBMIT PHOTOS OF TYPICAL PLANT MATERIALS FROM SOURCE NURSERY ALONG WITH NURSERY NAME AND CONTACT INFO.
C. SUBMIT MULCH SAMPLE.
D. SUBMIT MATERIAL LIST OF FERTILIZERS AND HERBICIDES TO BE USED ON THE PROJECT.

13. FINAL ACCEPTANCE & INSPECTION:
A. A FINAL INSPECTION SHALL OCCUR WHEN THE LANDSCAPE IS 100% COMPLETE.
B. THE ACCEPTANCE OF THE FINAL INSPECTION SHALL BEGIN THE GUARANTEE PERIOD.
C. THE GUARANTEE PERIOD SHALL BE MONITORED AT QUARTERLY INSPECTIONS UNTIL THE "GUARANTEE INSPECTION" IS COMPLETED.

14. GUARANTEE:
A. ALL PLANT MATERIAL SHALL BE GUARANTEED TO BE ALIVE AND IN SATISFACTORY HEALTH AND CONDITION, FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE BY THE CITY.
B. THE GUARANTEE SHALL COVER BOTH LABOR AND PLANT MATERIAL.

15. GUARANTEE INSPECTION:
A. THE GUARANTEE INSPECTION SHALL OCCUR IN THE ELEVENTH (11) MONTH AFTER THE FINAL INSPECTION HAS BEEN APPROVED BY THE CITY.
B. THE LANDSCAPE CONTRACTOR SHALL REMOVE ALL EARTH SAUCERS AROUND TREES, STAKES, GUYS, AND BRACING PRIOR TO THE GUARANTEE INSPECTION.
C. THE LANDSCAPE CONTRACTOR SHALL REPLACE ANY AND ALL DEAD OR DECLINING PLANT MATERIAL, RE-MULCH AND CLEAN UP ALL PLANTING AREAS INSTALLED IN PREPARATION FOR THE GUARANTEE INSPECTION AT THE CONTRACTORS EXPENSE. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE CITY'S PROJECT MANAGER WHEN THE SITE IS READY FOR INSPECTION AND A DATE WILL BE SET WITHIN TWO WEEKS OF SAID NOTIFICATION.
D. ALL REPLACEMENT PLANTS SHALL BE OF THE SAME KIND AS ORIGINALLY PLANTED AND BE OF EQUAL SIZE OF THE ADJACENT PLANTING. THE COST OF ANY REPLACEMENT PLANT SHALL BE BORN BY THE LANDSCAPE CONTRACTOR.
E. ALL DEFICIENCIES SHALL BE NOTED AS FINAL PUNCH LIST ITEMS, AND SHALL BE CORRECTED WITHIN ANOTHER TWO WEEK PERIOD. ANOTHER FINAL GUARANTEE INSPECTION SHALL BE SCHEDULED PRIOR TO THE EXPIRATION OF THE GUARANTEE PERIOD.

REVISIONS	
DATE	DESCRIPTION

LANDSCAPE ARCHITECT OF RECORD
RONALD B. ROLLINS, RLA
LICENSE NO. LA 0001558
BROWARD COUNTY HWY. CONSTRUCTION AND ENGINEERING DIVISION
1 NORTH UNIVERSITY DRIVE
PLANTATION, FL 33324

BROWARD COUNTY FLORIDA

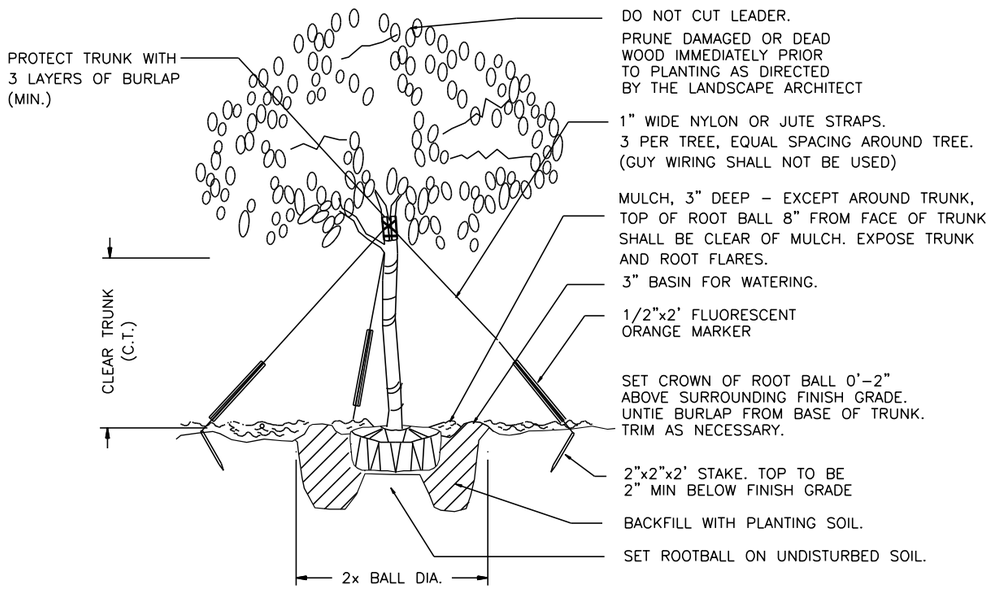
PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	1184

LANDSCAPE NOTES

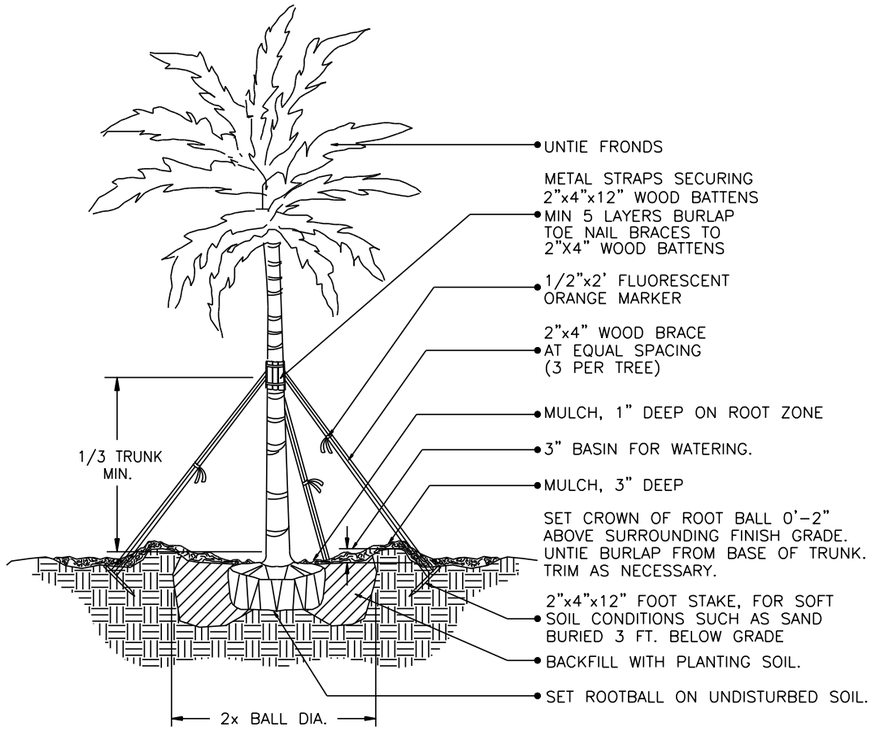
SHEET NO.
LD-G3

$USER$ $DATE$ $TIME$ $FILE$



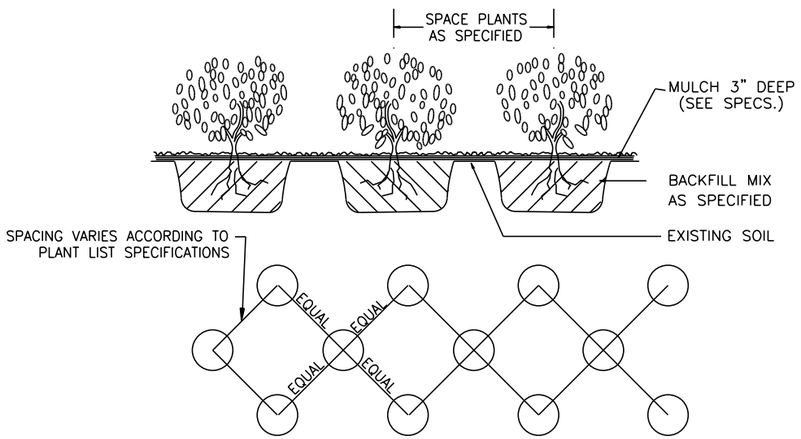
LARGE TREE PLANTING DETAIL

N.T.S.



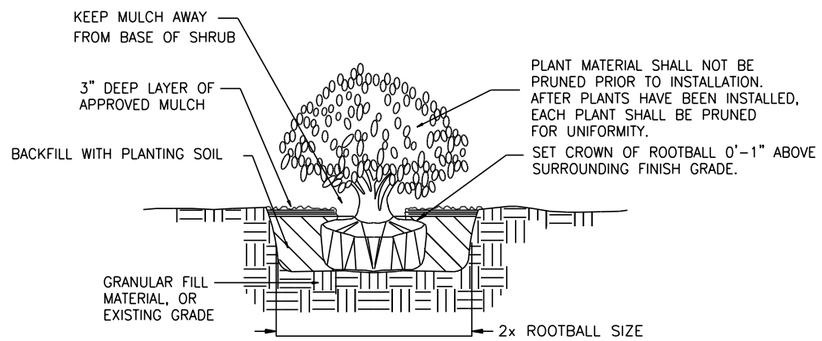
LARGE PALM PLANTING DETAIL

N.T.S.



SHRUB / GROUNDCOVER SPACING DETAIL

N.T.S.



SHRUB PLANTING DETAIL

N.T.S.

REVISIONS	
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N.W. 21st AVENUE	XXXXXX

$USER$ $DATE$ $TIME$ $FILE$

PLANTING DETAILS

SHEET NO. LD-G4

BID ALTERNATIVE 1:

NOTES:
3" (DEPTH) GRAVEL RIBBON. #57 GRAVEL.

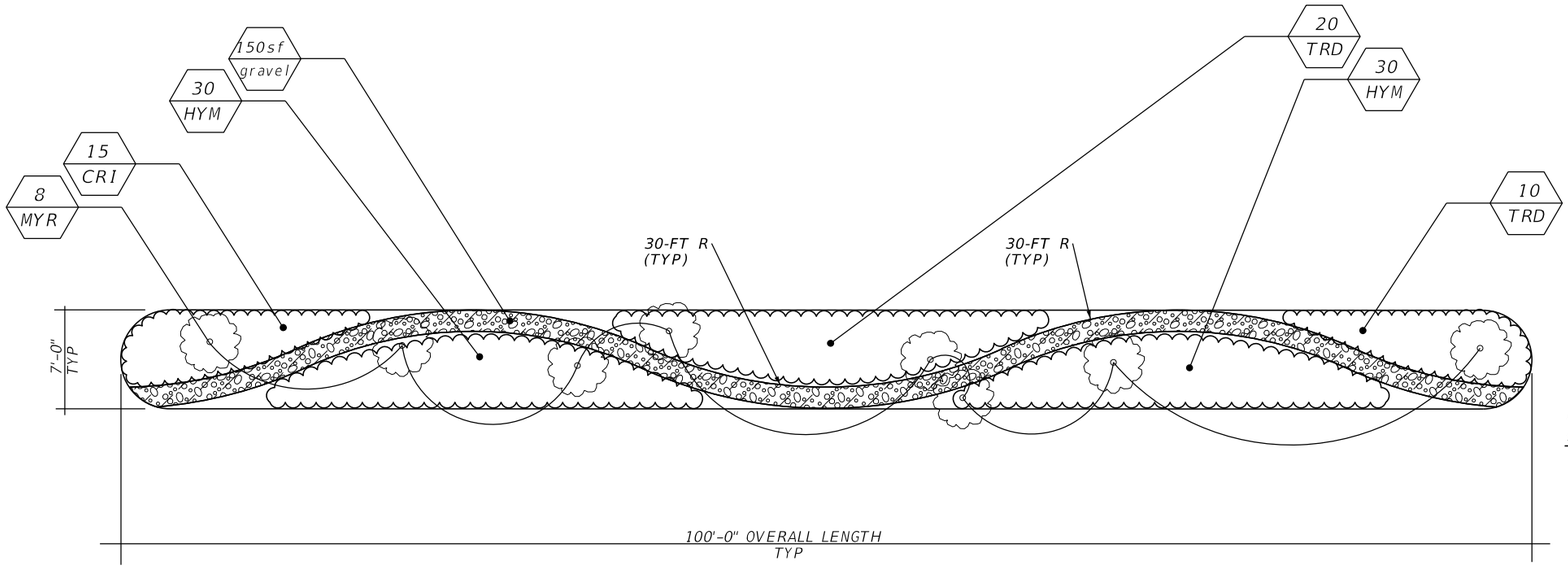
MEANDER GRAVEL RIBBON, AS SHOWN.

DO NOT MULCH PLANTING BED.

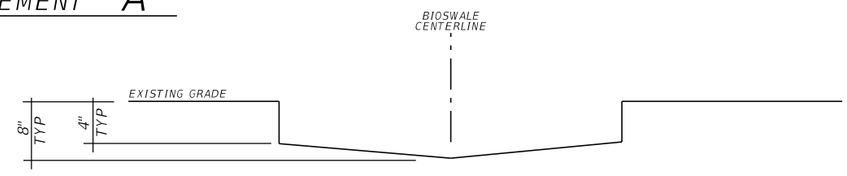
REMOVE (AND DISPOSE) EXISTING GRASS & VEGETATION WITHIN THE DEFINED BIOSWALE AREA.

EXCAVATE & REMOVE SOIL TO 4" AT PERIMETER OF BIOSWALE, GRADE DOWN (V-SHAPE GRADE) TO A DEPTH OF 8" ALONG THE CENTERLINE OF THE BIOSWALE. (PLUS, 3" FOR GRAVEL RIBBON).

REFER TO PLAN SHEETS FOR GRAVEL MEANDER ORIENTATION AND VEGETATION ORIENTATION.



BIOSWALE ENLARGEMENT "A"

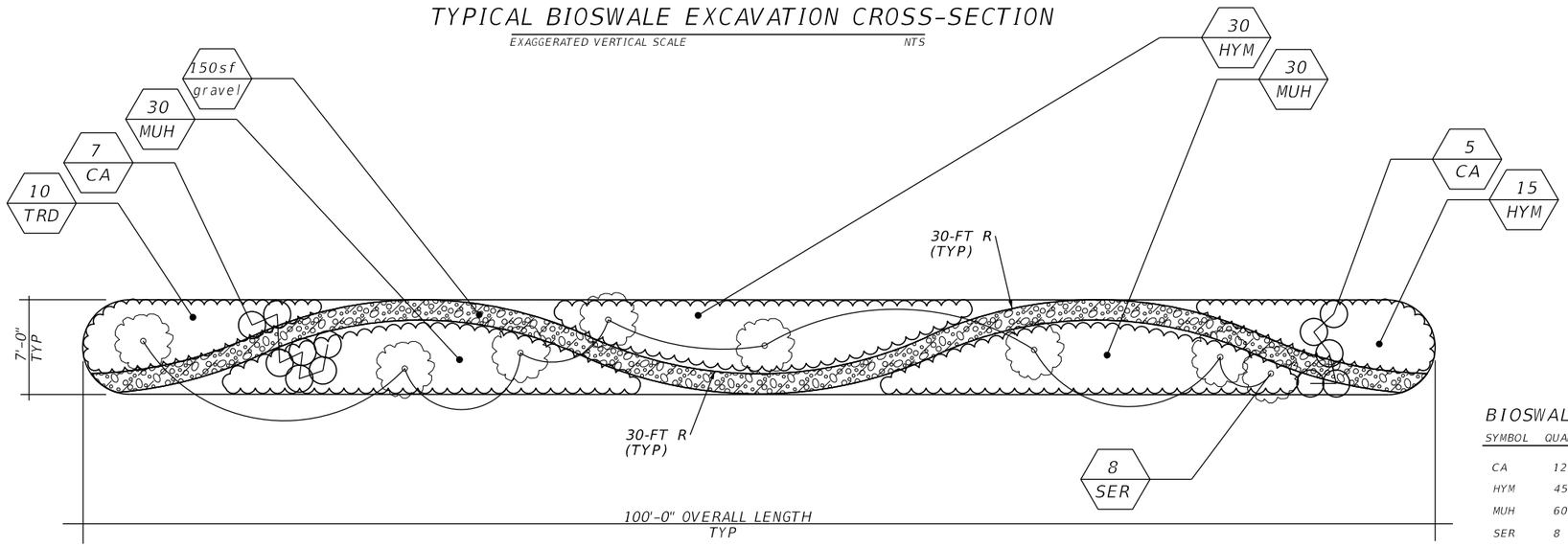


TYPICAL BIOSWALE EXCAVATION CROSS-SECTION

EXAGGERATED VERTICAL SCALE NTS

BIOSWALE - PLANT LIST "A"

SYMBOL	QUANTITY	BOTANICAL NAME / COMMON NAME	SPECIFICATION
CRI	15	Crinum americanum / Swamp Lily	1-gal material, planted 24" o.c.
HYM	60	Hymenocallis latifolia/ Spider Lily	1-gal material, planted 24" o.c.
MYR	8	Myrica cerifera / Wax Myrtle	3-gal material, planted As-Shown
TRD	30	Tripsacum dactyloides / Fakahatchee Grass	1-gal material, planted 30" o.c.



BIOSWALE ENLARGEMENT "B"

NOTES:
3" (DEPTH) GRAVEL RIBBON. #57 GRAVEL.

MEANDER GRAVEL RIBBON, AS SHOWN.

DO NOT MULCH PLANTING BED.

REMOVE (AND DISPOSE) EXISTING GRASS & VEGETATION WITHIN THE DEFINED BIOSWALE AREA.

EXCAVATE & REMOVE SOIL TO 4" AT PERIMETER OF BIOSWALE, GRADE DOWN (V-SHAPE GRADE) TO A DEPTH OF 8" ALONG THE CENTERLINE OF THE BIOSWALE. (PLUS, 3" FOR GRAVEL RIBBON).

REFER TO PLAN SHEETS FOR GRAVEL MEANDER ORIENTATION AND VEGETATION ORIENTATION.

BIOSWALE - PLANT LIST "B"

SYMBOL	QUANTITY	BOTANICAL NAME / COMMON NAME	SPECIFICATION
CA	12	Crinum americanum / Swamp Lily	3-gal material, planted As Shown
HYM	45	Hymenocallis latifolia/ Spider Lily	1-gal material, planted 24" o.c.
MUH	60	Muhlenbergia cappillis/Muhly Grass	1-gal material, planted 24" o.c.
SER	8	Serenoa repens / Saw Palmetto	3-gal material, planted As-Shown
TRD	10	Tripsacum dactyloides / Fakahatchee Grass	1-gal material, planted 30" o.c.

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RONALD B. ROLLINS, RLA
LICENSE NO. LA 0001558
BROWARD COUNTY HIGHWAY
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1 NORTH UNIVERSITY DRIVE
PLANTATION, FL 33324

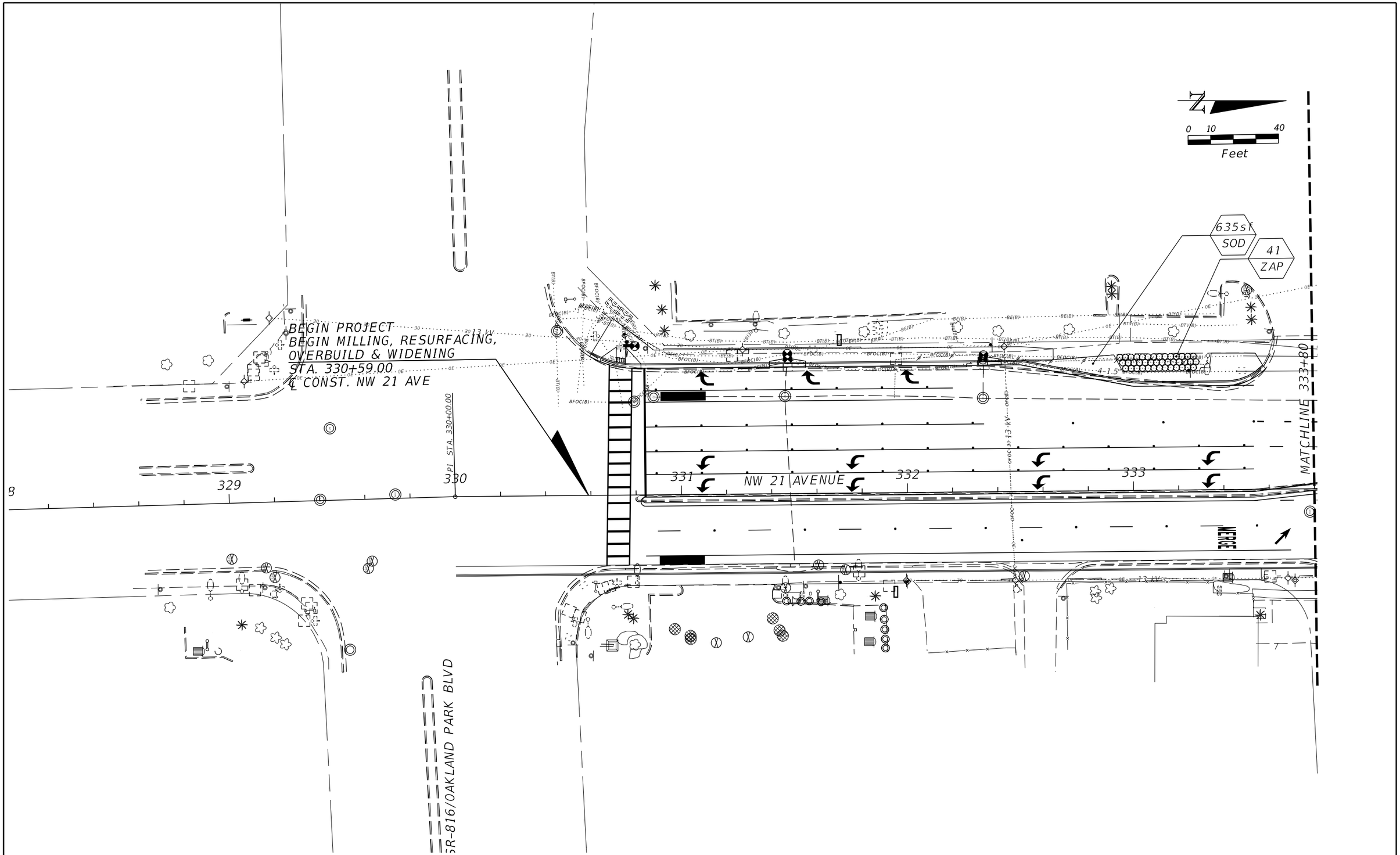
BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

BIOSWALE PLANTING ENLARGEMENTS

SHEET NO. LD-G5



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PLANTATION, FL 33324

BROWARD COUNTY FLORIDA

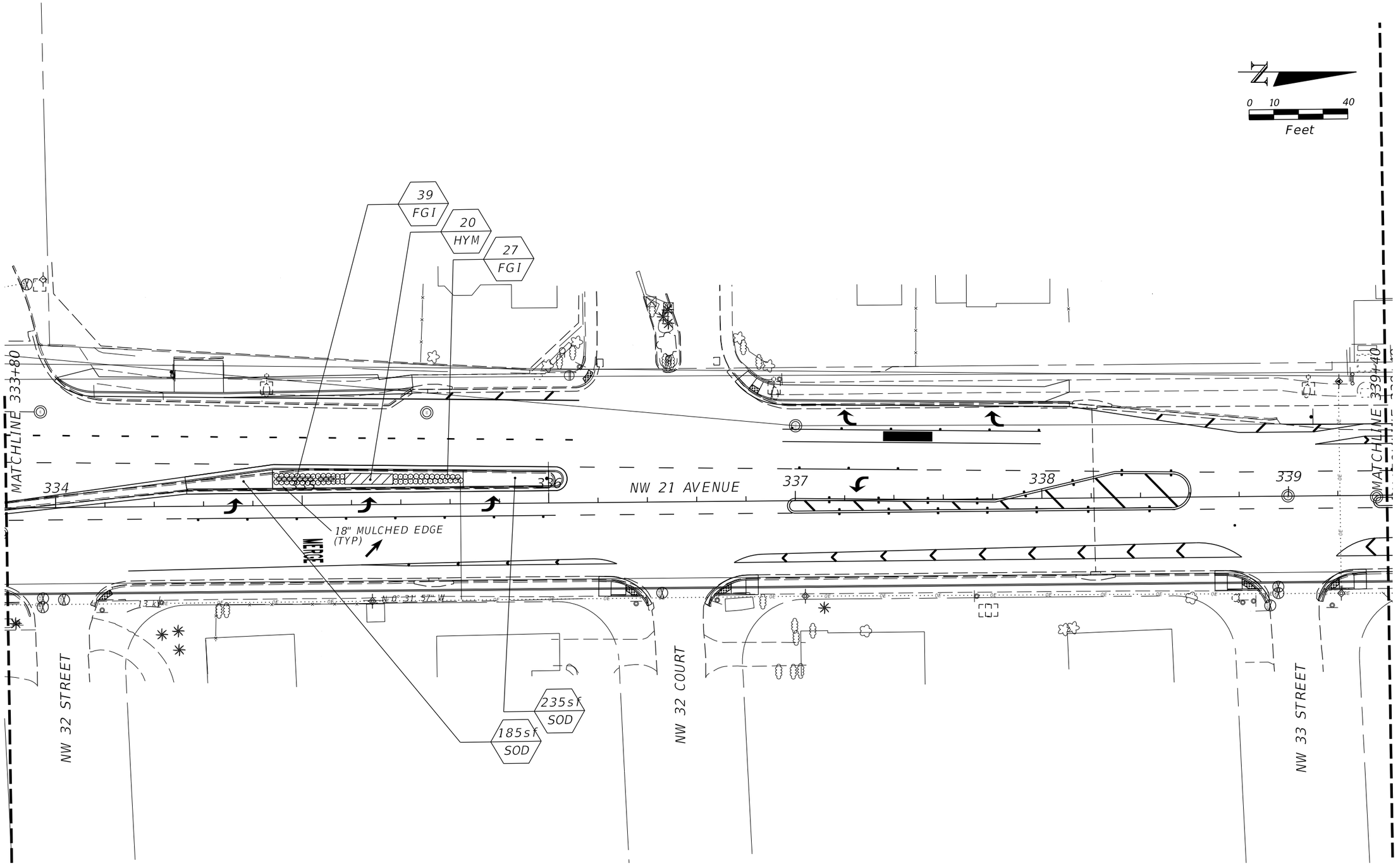
PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

LANDSCAPE PLANS

SHEET NO.
LP-1

rrollins 6/16/2021 1:04:50 PM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANLP01.dgn



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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

LANDSCAPE PLANS

SHEET NO.
LP-2

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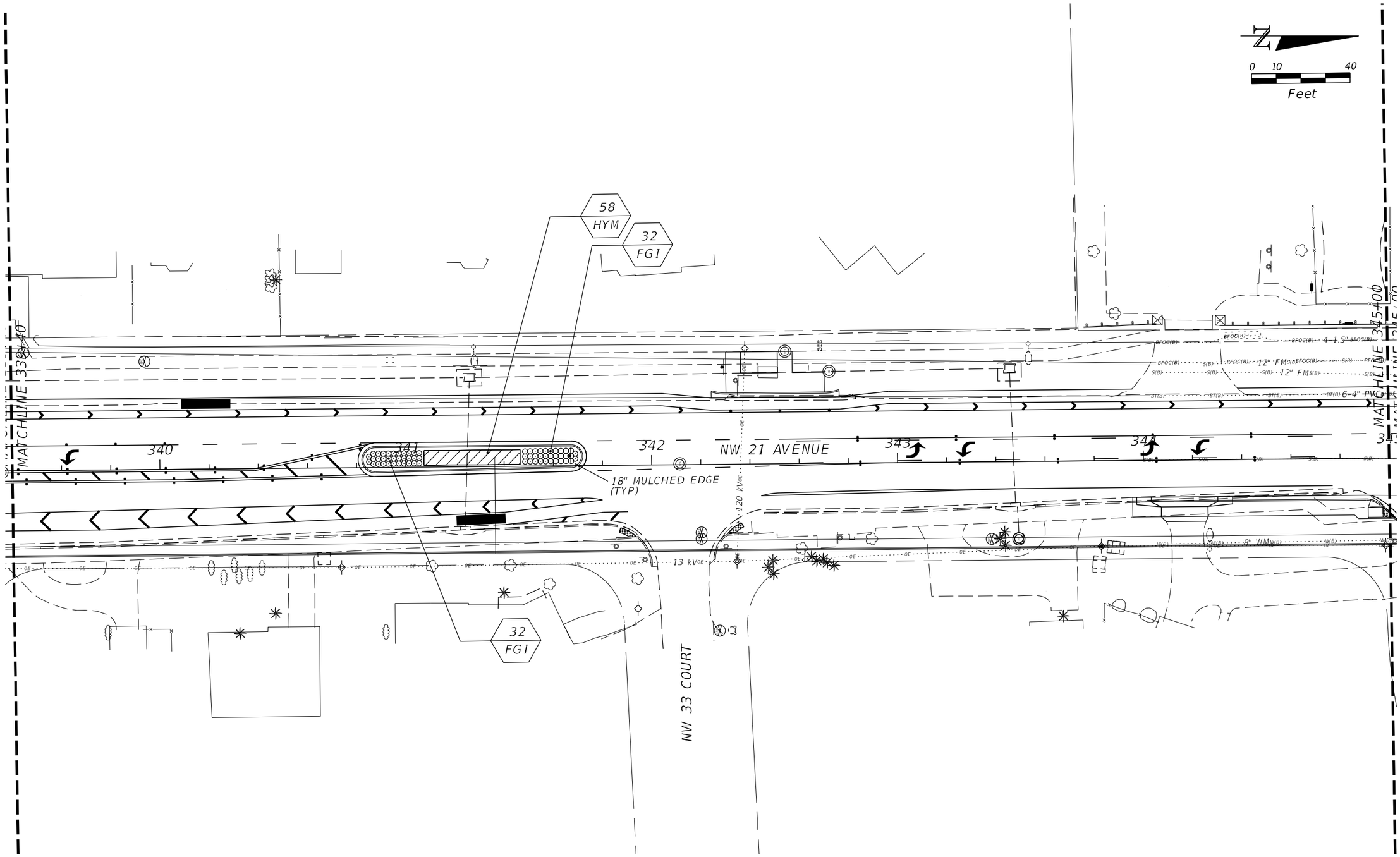

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RONALD B. ROLLINS, RLA
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LANDSCAPE PLANS

SHEET NO.
LP-3

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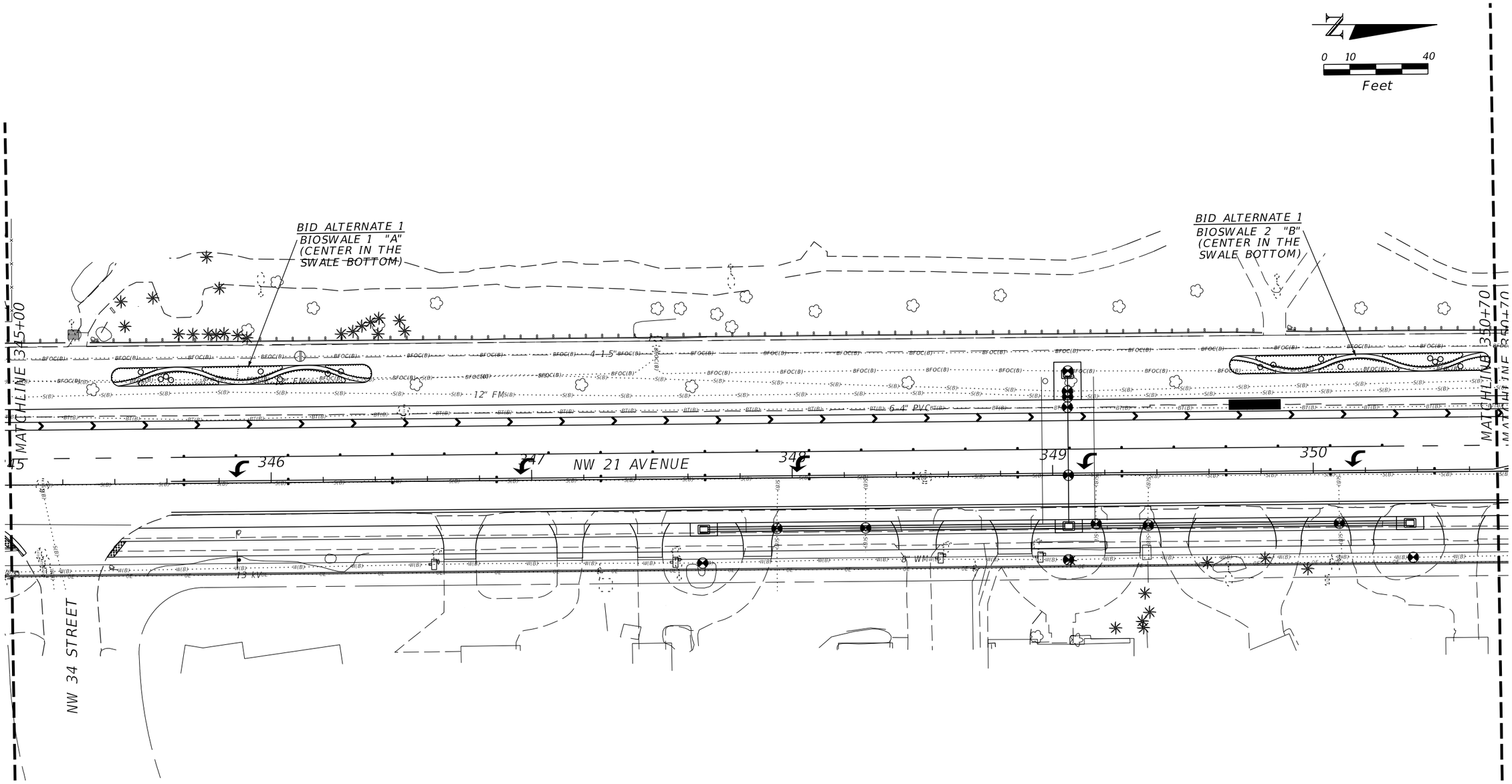

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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

LANDSCAPE PLANS

SHEET NO.
LP-4

RROLLINS 5/20/2020 11:51:18 AM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANLP04.dgn

0 10 40
Feet

48
HYM

BID ALTERNATE 1
BIOSWALE 3 "A"
(CENTER IN THE
SWALE BOTTOM)

BID ALTERNATE 1
BIOSWALE 4 "A"
(CENTER IN THE
SWALE BOTTOM)

4-1.5"
12" FM
6-4" PVC

NW 21 AVENUE

351 352 353 354 355 356

PI STA. 353+89.94

MATCHLINE 356+35

12" MULCHED EDGE
(TYP)

13 kV

8" WM

NW 35 STREET

NW 36 STREET

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COUNTY ROAD	COUNTY PROJECT NO.
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LANDSCAPE PLANS

SHEET NO.
LP-5

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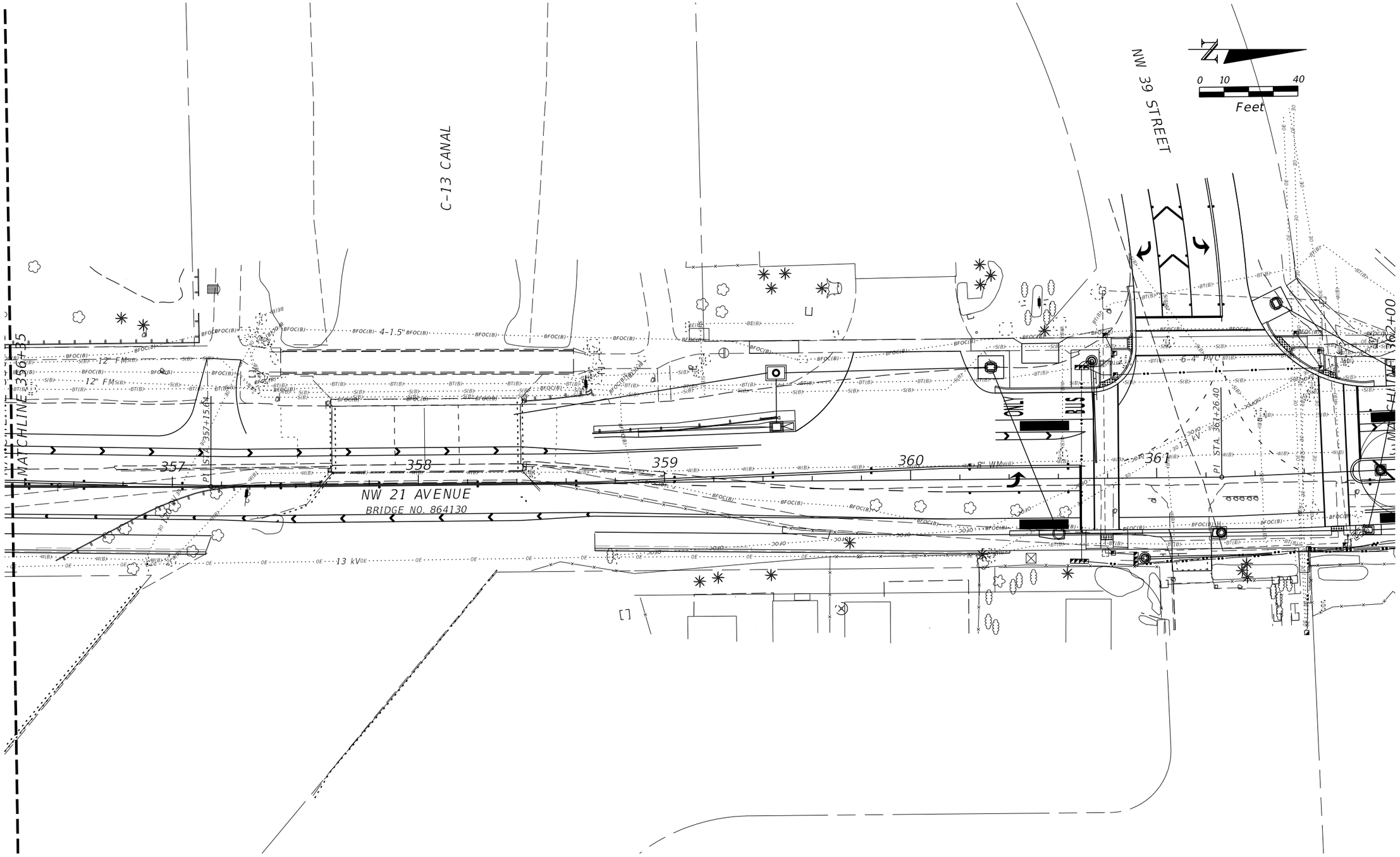

REVISIONS	
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RONALD B. ROLLINS, RLA
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BROWARD COUNTY HIGHWAY
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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

LANDSCAPE PLANS

SHEET NO.
LP-6

RROLLINS 5/20/2020 11:55:40 AM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANLP06.dgn

N

0 10 40

Feet

670 sf
SOD

38
MUH

10
I A

38
MUH

735 sf
SOD

13" KV

6-4" PVC

8" WM

4" FM

12" FM

12" FM

10" SAN

40' O.C.

20' O.C.
TYP

NW 21 AVENUE

363

364

365

366

367

N 2° 31' 57" W

N 2° 31' 57" W

MATCHLINE 367+80

12" MULCHED EDGE
(TYP)

NOTE: INSTALL SHRUBS/GROUNDCOVERS
AND NATIVE GRASSES OUTSIDE A RADIUS
OF 3-FEET FROM THE TRUNK OF ANY TREE.

76
FGI

BID ALTERNATE 1
BIOSWALE 5 "B"
(CENTER IN THE
SWALE BOTTOM)

2
QV2

BID ALTERNATE 2

REVISIONS	
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BROWARD COUNTY HIGHWAY
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PLANTATION, FL 33324

BROWARD COUNTY
FLORIDA

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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

LANDSCAPE PLANS

SHEET NO.

LP-7

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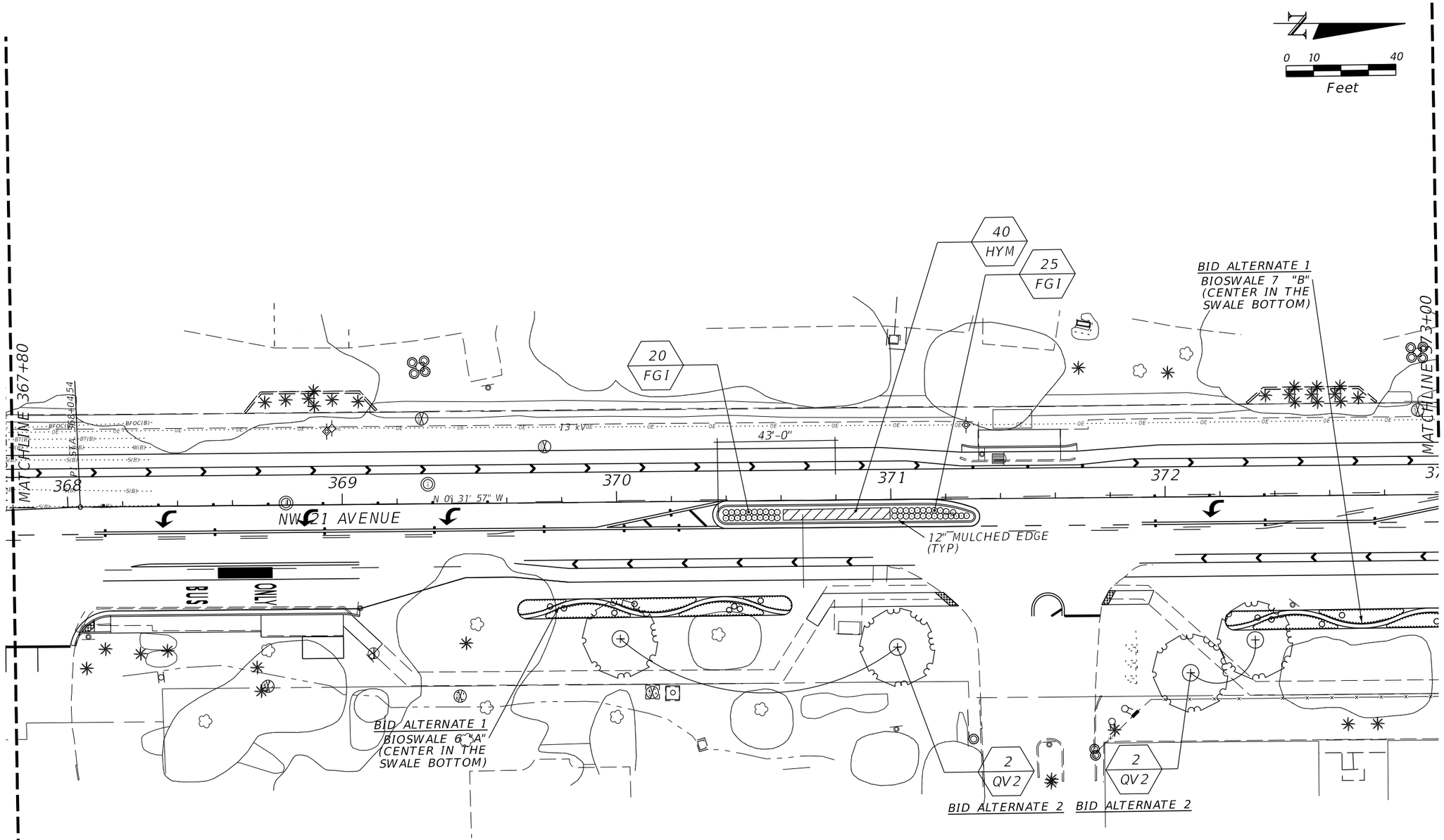

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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

LANDSCAPE PLANS

SHEET NO. LP-8

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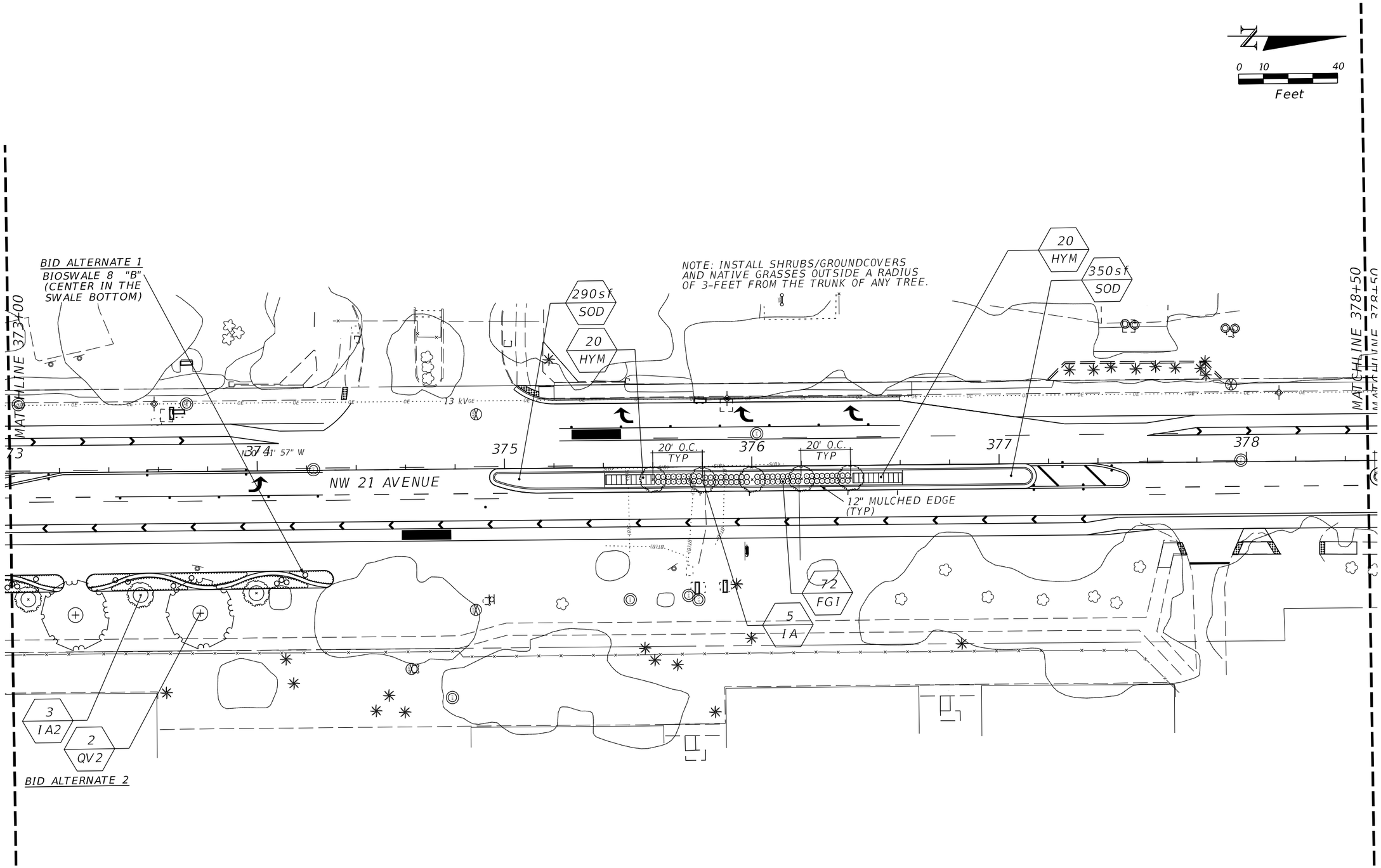

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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

LANDSCAPE PLANS

SHEET NO.
LP-9

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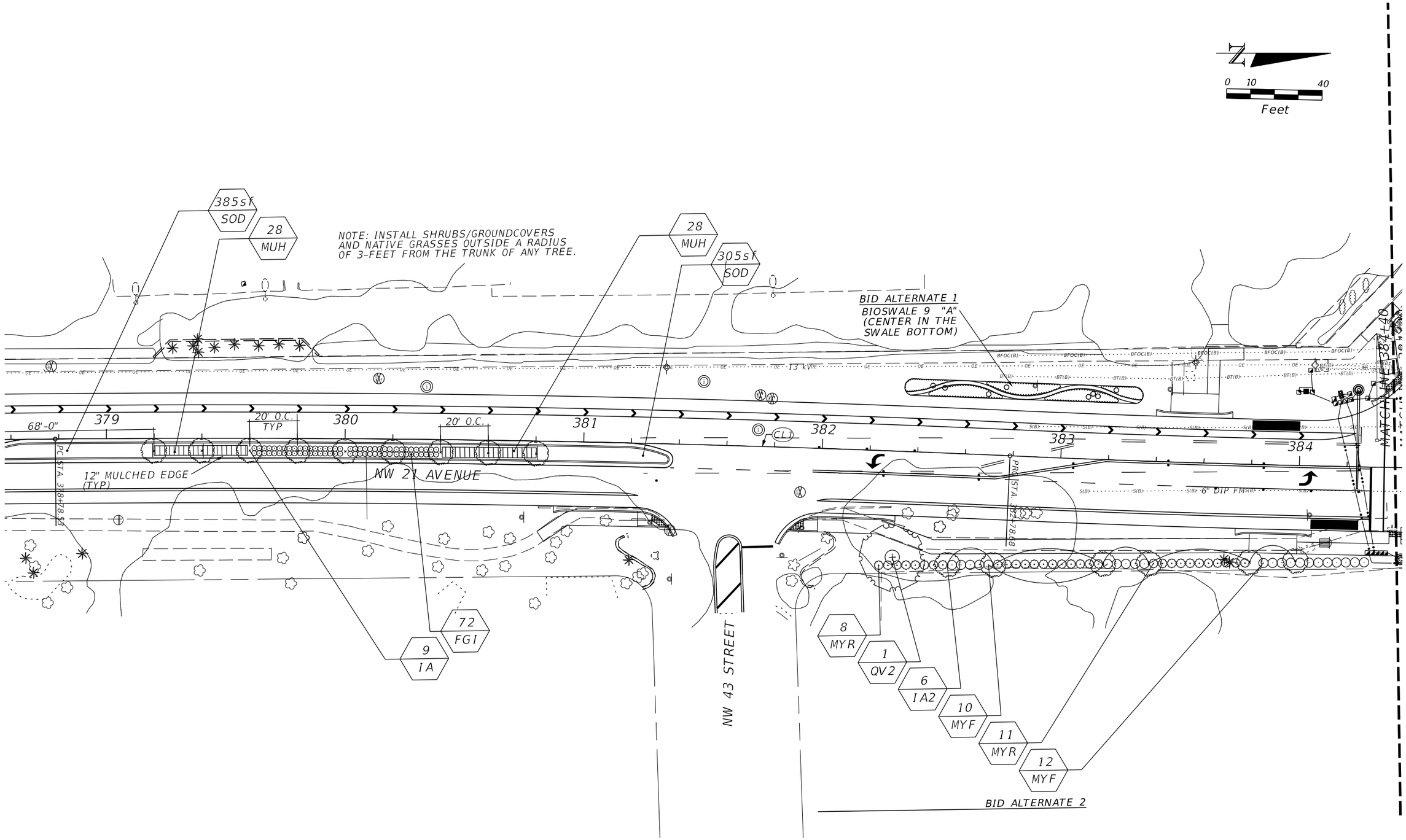

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N.W. 21st AVENUE	XXXXXX

LANDSCAPE PLANS

SHEET NO.
LP-10

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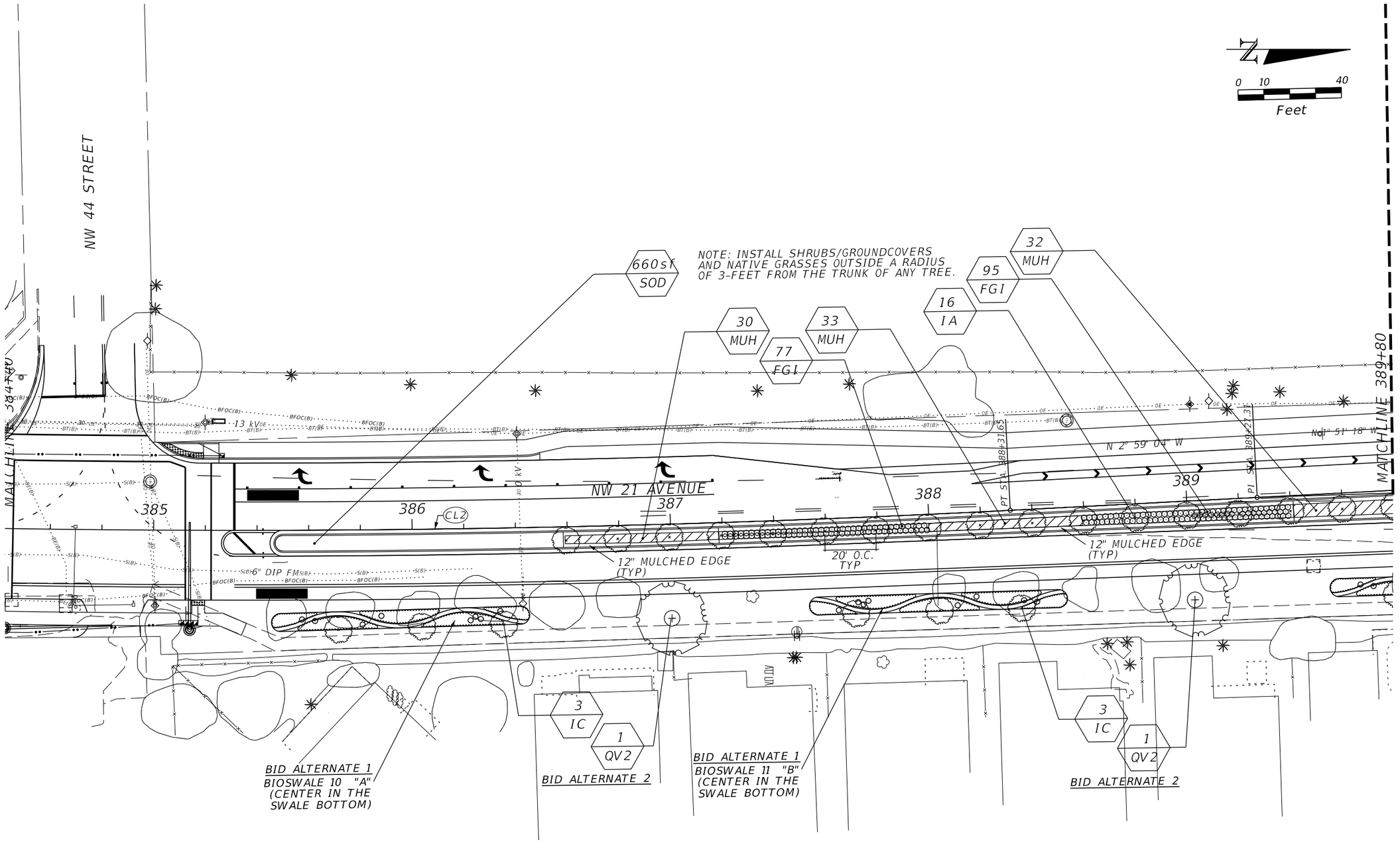

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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

LANDSCAPE PLANS

SHEET NO. LP-11

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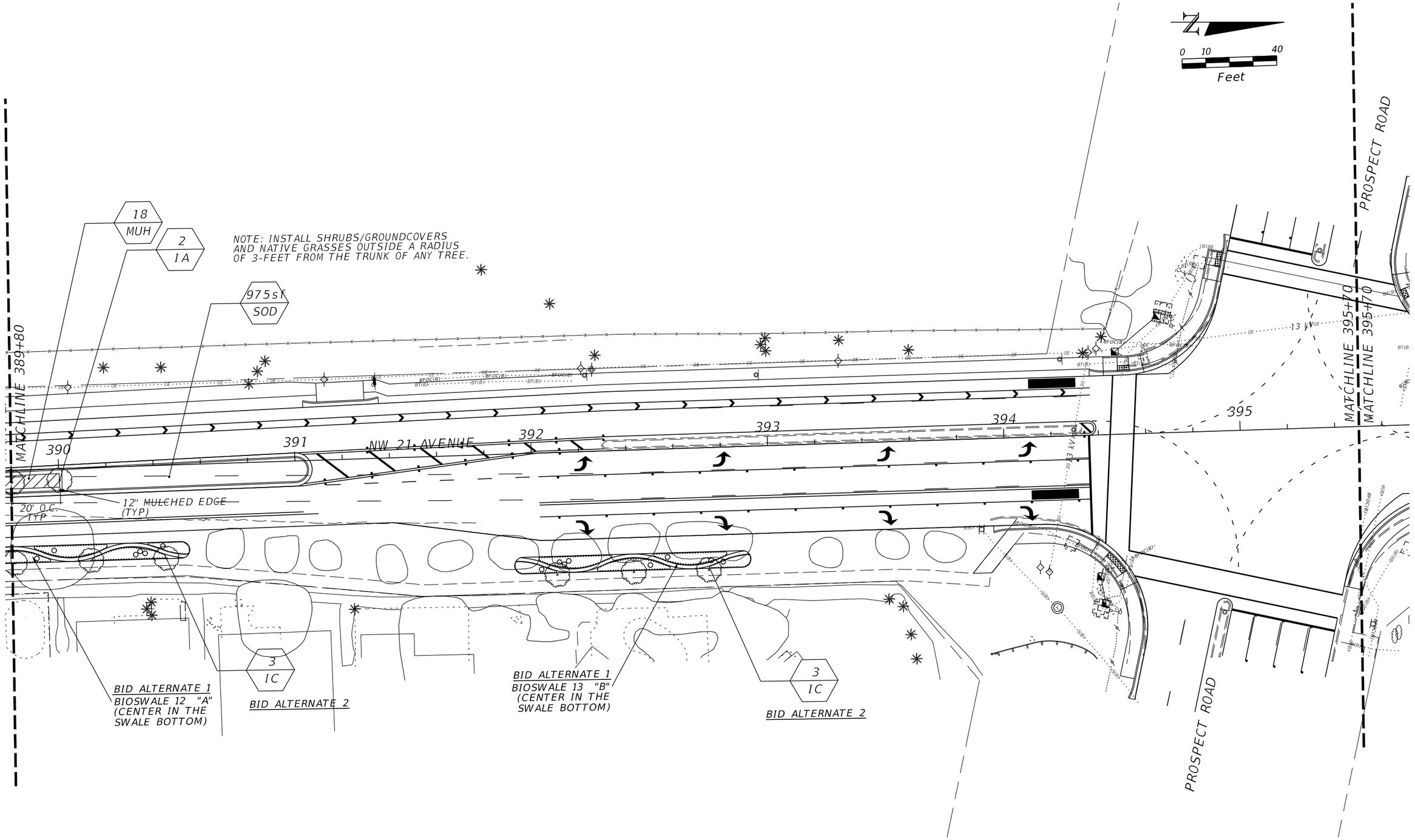

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COUNTY ROAD	COUNTY PROJECT NO.
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LANDSCAPE PLANS

SHEET NO.
LP-12

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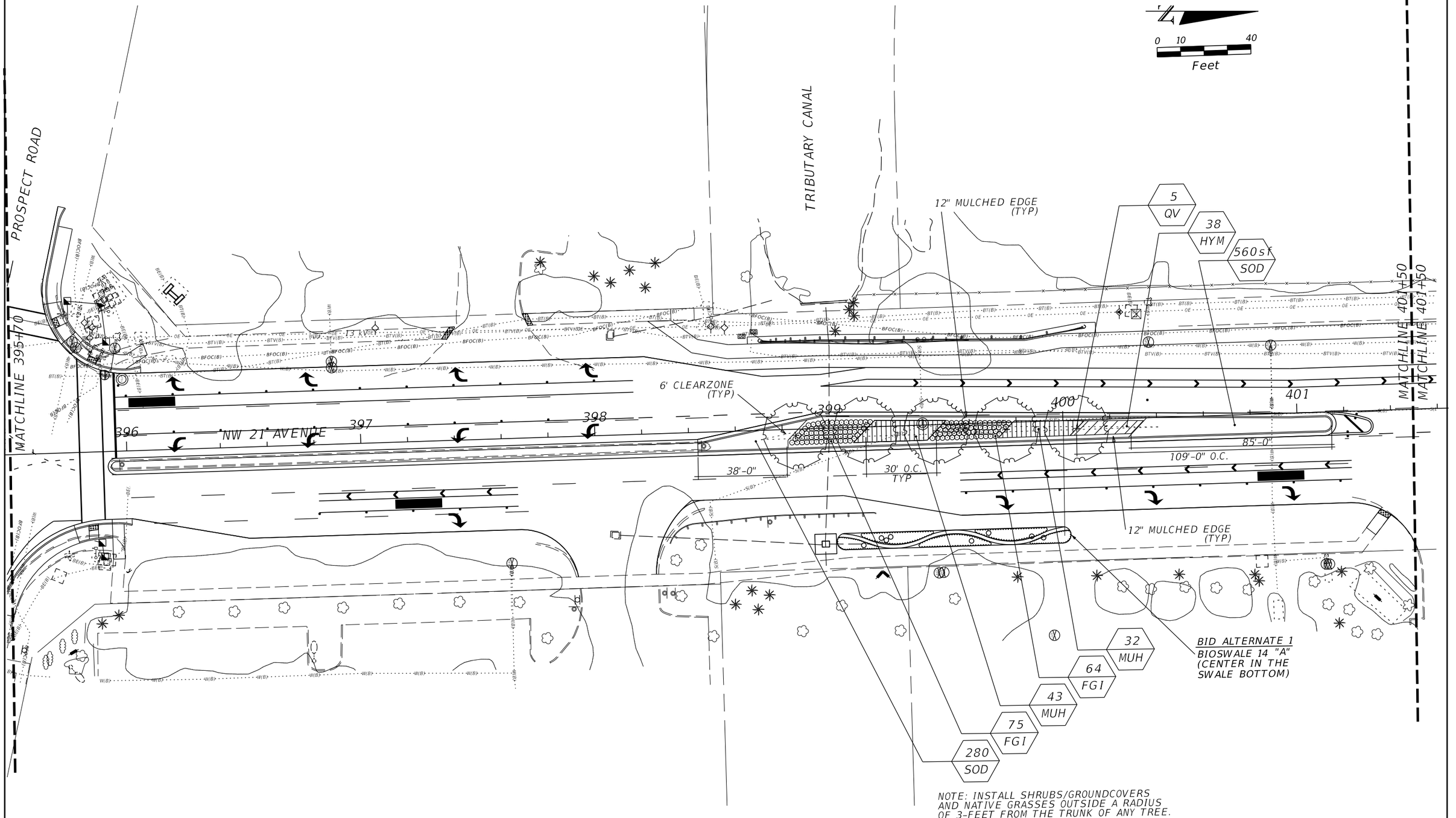

NOTE: INSTALL SHRUBS/GROUNDCOVERS AND NATIVE GRASSES OUTSIDE A RADIUS OF 3-FEET FROM THE TRUNK OF ANY TREE.

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LANDSCAPE PLANS

SHEET NO.
LP-13

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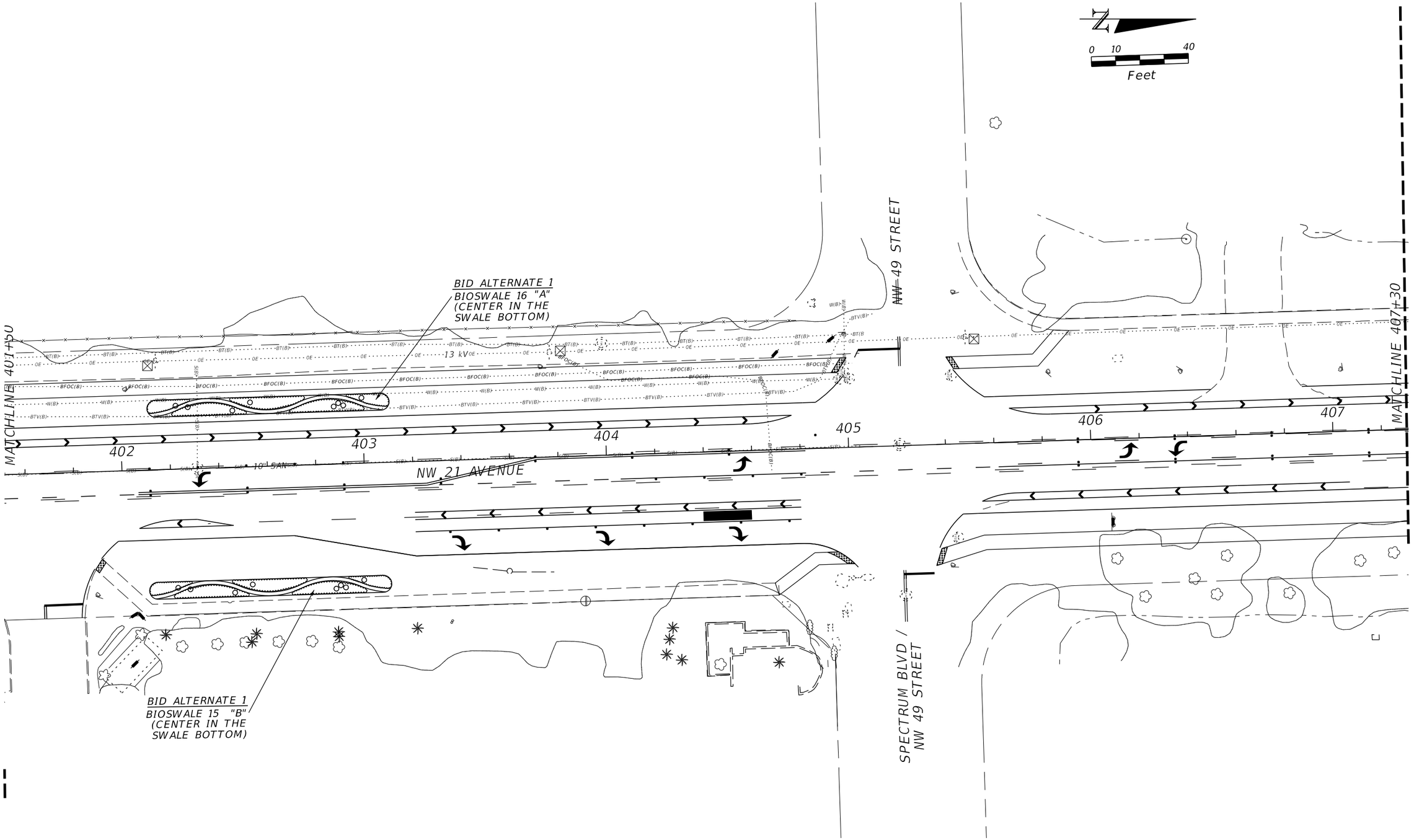

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LANDSCAPE PLANS

SHEET NO.
LP-14

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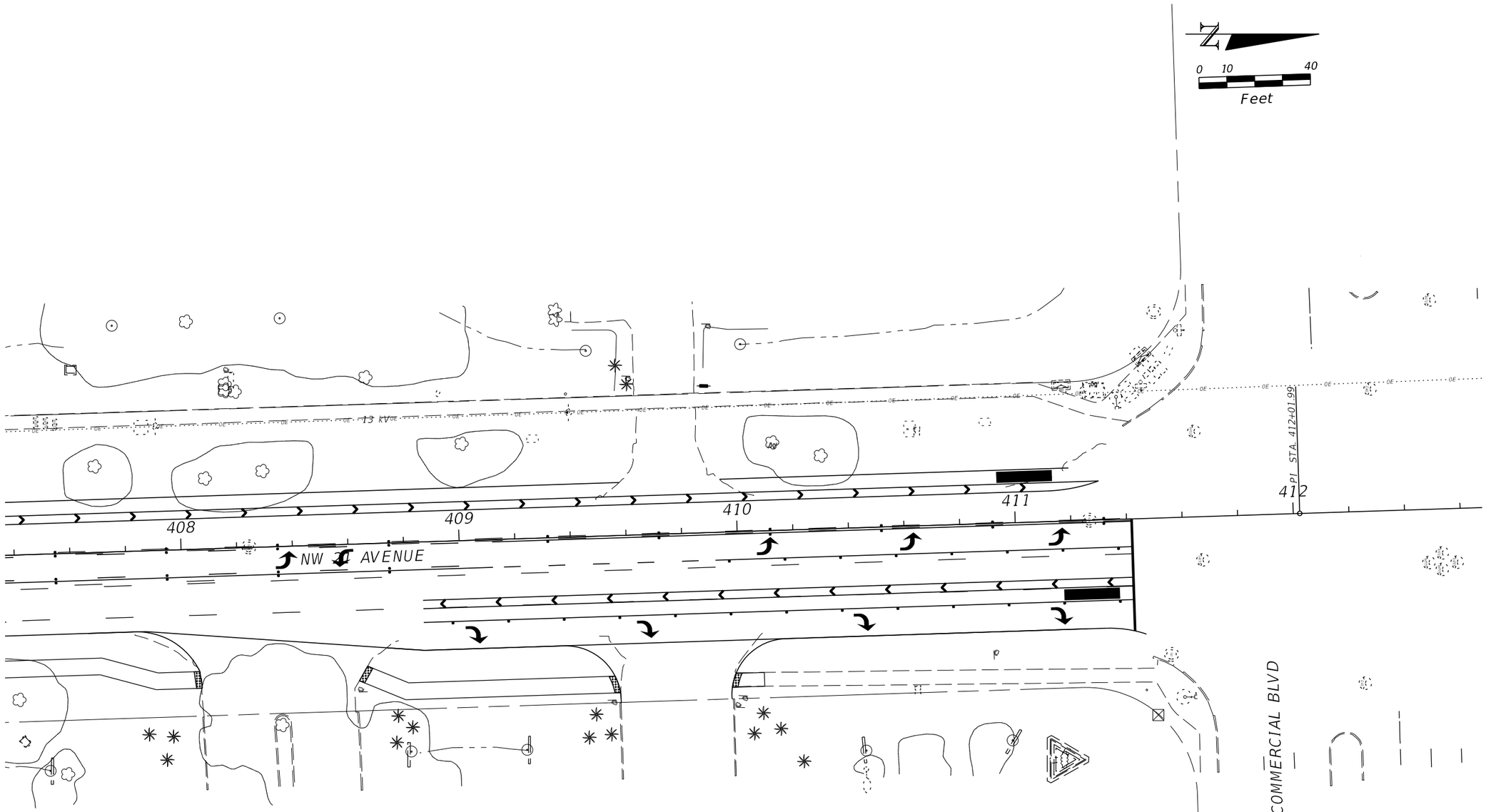

NO LANDSCAPE OR IRRIGATION IMPROVEMENTS ON THIS SHEET

REVISIONS	
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BROWARD COUNTY HIGHWAY
CONSTRUCTION & ENGINEERING DIVISION
1 NORTH UNIVERSITY DRIVE
PLANTATION, FL 33324

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

LANDSCAPE PLANS

SHEET NO. LP-15

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IRRIGATION NOTES:

1. IRRIGATION NOTES & SPECIFICATIONS:

A. THE IRRIGATION DESIGN IS BASED ON BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION'S IRRIGATION PLAN. THE CONTRACTOR SHALL REFER TO THESE PLANS TO COORDINATE SPRINKLER AND PIPE LOCATIONS.

B. THE IRRIGATION SYSTEM HAS BEEN DESIGNED TO CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE STATE, COUNTY AND MUNICIPAL CODES, IF ANY CONFLICT EXISTS, THE REQUIREMENTS OF THE CODES SHALL PREVAIL. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO INSURE THE ENTIRE SYSTEM IS INSTALLED ACCORDING TO ALL APPLICABLE LAWS, RULES, REGULATIONS, AND CONVENTIONS. THE IRRIGATION CONTRACTOR IS ALSO RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS ACCORDING TO FEDERAL, STATE AND LOCAL LAWS.

C. THE SCOPE OF WORK IS SHOWN ON THE PLANS, NOTES, AND DETAILS.

D. THE IRRIGATION CONTRACTOR SHALL BE LICENSED AS A CERTIFIED IRRIGATION CONTRACTOR BY THE STATE OF FLORIDA AND BROWARD COUNTY. THE CERTIFICATIONS SHALL BE CURRENT AND IN GOOD STANDING.

2. THE WORK:

A. THE WORK SPECIFIED IN THIS SECTION CONSISTS OF FURNISHING ALL COMPONENTS NECESSARY FOR THE INSTALLATION, TESTING, AND DELIVERY OF A COMPLETE, FULLY FUNCTIONAL AUTOMATIC LANDSCAPE IRRIGATION SYSTEM THAT COMPLETELY COMPLIES WITH THE IRRIGATION PLANS, SPECIFICATIONS, NOTES, DETAILS AND ALL APPLICABLE LAWS, REGULATIONS, CODES AND ORDINANCES. THIS WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE PROVIDING OF ALL REQUIRED MATERIAL (PIPE, VALVES, FITTINGS, CONTROLLERS, WIRE, PUMPS, PRIMER, GLUE, ETC.), LAYOUT, PROTECTION TO THE PUBLIC, EXCAVATION, ASSEMBLY, INSTALLATION, BACK FILLING, COMPACTING, REPAIR OF ROAD SURFACES, CONTROLLER AND LOW VOLTAGE FEEDS TO VALVES, CLEANUP, MAINTENANCE, GUARANTEE AND AS- BUILT PLANS.

B. ALL IRRIGATED AREAS SHALL BE PROVIDED WITH 100% HEAD-TO-HEAD COVERAGE FROM A FULLY AUTOMATIC IRRIGATION SYSTEM, EQUIPPED WITH A RAIN SENSOR. THE RAIN SENSOR SHALL BE INSTALLED TO PREVENT ACTIVATION OF THE RAIN SENSOR BY ADJACENT SPRINKLER HEADS. ALL WATERING PROCEDURES SHALL CONFORM TO LOCAL CODES, AS WELL AS THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT'S RESTRICTIONS AND REGULATIONS. ALL IRRIGATION CONSTRUCTION IS PRIORITIZED FIRST BY PUBLIC SAFETY, AND THEN BY HYDRAULIC CONCERNS, THIS SEQUENCING IS MANDATORY. THESE PLANS HAVE BEEN DESIGNED TO SATISFY OR EXCEED THE FLORIDA BUILDING CODE, APPENDIX F AND THE FLORIDA IRRIGATION SOCIETY STANDARDS AND SPECIFICATIONS FOR TURF AND LANDSCAPE IRRIGATION SYSTEMS, FOURTH EDITION.

C. THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES 72 HOURS PRIOR TO COMMENCEMENT OF WORK.

D. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE THEMSELVES WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, RETAINING WALLS, STRUCTURES, AND UTILITIES. THE CONTRACTOR WILL NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT AN UNKNOWN OBSTRUCTION, GRADE DIFFERENCE, OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN ENGINEERING THE SYSTEM. ANY OBSTRUCTIONS, OR DIFFERENCES, SHALL BE BROUGHT TO THE ATTENTION OF THE COUNTY LANDSCAPE ARCHITECT. IN THE EVENT THIS NOTIFICATION IS NOT PERFORMED, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.

E. THE IRRIGATION CONTRACTOR SHALL REPAIR OR REPLACE ALL ITEMS DAMAGED BY THEIR WORK, AND SHALL COORDINATE THEIR WORK WITH OTHER CONTRACTORS ON SITE FOR THE LOCATION AND INSTALLATION OF ALL IRRIGATION PIPE, SLEEVES, AND LATERALS THROUGH WALLS, UNDER ROADWAYS AND PAVING, ETC.

F. THE IRRIGATION CONTRACTOR SHALL TAKE IMMEDIATE STEPS TO REPAIR, REPLACE, OR RESTORE ALL SERVICES TO ANY UTILITIES WHICH ARE DISRUPTED DUE TO THEIR OPERATIONS. ALL COSTS INVOLVED IN ANY DISRUPTION OF UTILITY SERVICE OR REPAIRS DUE TO NEGLIGENCE ON THE PART OF THE IRRIGATION CONTRACTOR, SHALL BE THE IRRIGATION CONTRACTOR'S RESPONSIBILITY.

G. OBTAIN NECESSARY PERMITS REQUIRED FOR THE INSTALLATION OF THE IRRIGATION SYSTEM.

3. POINT OF CONNECTION (P.O.C.): (4) POC'S WILL BE EMPLOYED. ONE IS NORTH OF THE RIVER/BRIDGE. AND THREE ARE LOCATED SOUTH OF THE BRIDGE. ALL FOUR (4) ARE ON THE EAST SIDE OF N.W. 27th AVENUE. ALL FOUR (4) P.O.C.'S MUST BE CAPABLE OF DELIVERING THE SPECIFIED MINIMUM FLOWRATE AT 50 P.S.I.

A. # 1: SOUTH P.O.C.
1. THE P.O.C. IS A 1-1/2" TAP OF A MUNICIPAL WATER MAIN LINE.
THIS P.O.C. MUST BE CAPABLE OF DELIVERING A MINIMUM OF 25 GPM AND 50 P.S.I.
2. THE P.O.C. SHALL BE CONTROLLED BY A 4 STATION CONTROLLER,
K-RAIN MODEL BL-KR (OR EQUAL): 4 STATION OUTDOOR, 120V. THE CONTROLLER SHALL BE INSTALLED IN A VALVE BOX LOCATED W/IN THE R.O.W., OR EASEMENT, BEHIND THE SIDEWALK.

B. P.O.C. # 2: LIBRARY P.O.C. - SOUTH OF SISTRUNK
1. THE P.O.C. IS A 2-1/2" TAP OF THE IRRIGATION WATER MAIN SERVICING THE COUNTY LIBRARY - NORTH OF THE LIBRARY'S ENTRANCE.
THIS P.O.C. MUST BE CAPABLE OF DELIVERING A MINIMUM OF 55 GPM AND 50 P.S.I.
2. K-RAIN MODEL BL-KR (OR EQUAL): 4 STATION OUTDOOR, 120V. THE CONTROLLER SHALL BE INSTALLED IN A VALVE BOX LOCATED W/IN THE R.O.W., OR EASEMENT, BEHIND THE SIDEWALK.
3. THE CONTROLLER SHALL BE INSTALLED IN A VALVE BOX LOCATED ADJACENT TO THE REMOTE CONTROL VALVE BOXES - ON LIBRARY PROPERTY. COORDINATE LOCATION W/ LIBRARY FACILITY'S STAFF.

3. POINT OF CONNECTION (P.O.C.): CONTINUED:

C. P.O.C. # 3: CENTER P.O.C. - NORTH OF SISTRUNK AND SOUTH OF THE BRIDGE/RIVER.
1. THE P.O.C. IS A 1-1/2" TAP OF A MUNICIPAL WATER MAIN.
THIS P.O.C. MUST BE CAPABLE OF DELIVERING A MINIMUM OF 15 GPM AND 50 P.S.I.
2. THE P.O.C. SHALL BE CONTROLLED BY A 4 STATION CONTROLLER,
K-RAIN MODEL BL-KR (OR EQUAL): 4 STATION OUTDOOR, 120V. THE CONTROLLER SHALL BE INSTALLED IN A VALVE BOX LOCATED NEAR THE R.O.W., AND ADJACENT TO THE REMOTE CONTROL VALVE BOXES.

D. P.O.C. # 4: NORTH P.O.C.
1. THE P.O.C. IS A 2-1/2" TAP OFF THE EXISTING IRRIGATION SYSTEM AT THE BROWARD COUNTY PARK (AT SE CORNER OF NW 8TH STREET & NW 27TH AVE).
THIS P.O.C. MUST BE CAPABLE OF DELIVERING A MINIMUM OF 55 GPM AND 50 P.S.I.
2. THE P.O.C. SHALL BE CONTROLLED BY A 4 STATION CONTROLLER,
K-RAIN MODEL BL-KR (OR EQUAL): 4 STATION OUTDOOR, 120V. THE CONTROLLER SHALL BE INSTALLED IN A VALVE BOX LOCATED W/IN THE R.O.W., BEHIND THE SIDEWALK OR BEHIND THE PARK'S MONUMENT SIGN.

E. FOR EACH P.O.C: THE IRRIGATION CONTRACTOR SHALL VERIFY THAT THE MINIMUM CONDITIONS CAN BE MET PRIOR TO THE BEGINNING OF INSTALLATION. IF THE CONDITIONS CAN NOT BE MET, THE CONTRACTOR MUST NOTIFY THE DESIGNER PRIOR TO PROCEEDING WITH THE WORK. IF THE CONTRACTOR DOES NOT DO SO AND THE CONTRACTOR PROCEEDS AT THEIR OWN RISK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FUTURE WORK REQUIRED TO MAKE THE SYSTEM PERFORM AS REQUIRED.

4. PIPE:

A. THE PIPE LOCATIONS SHOWN ON THE PLAN ARE SCHEMATIC AND SHALL BE ADJUSTED IN THE FIELD. ALL MAINLINES SHALL BE PLACED A MAXIMUM OF 18" AWAY FROM EITHER THE BACK OF CURB, FRONT OF WALK, BACK OF WALK, OR OTHER HARDSCAPE TO ALLOW FOR EASE IN LOCATING AND PROTECTION FROM PHYSICAL DAMAGE. A TRACING WIRE OR TAPE SHALL BE PROVIDED WITH THE MAIN LINE, THE CONTRACTOR IS REQUIRED TO PROVIDE SHOP DRAWINGS. INSTALL ALL LATERAL PIPES NEAR EDGES OF PAVEMENT OR WHENEVER POSSIBLE TO ALLOW SPACE FOR PLANT ROOT BALLS. ALL IRRIGATION PIPE SHALL BE INSTALLED INSIDE OF THE PROJECT BOUNDARY.

B. ALL PIPES ARE TO BE PLACED IN LANDSCAPED AREAS WHEREVER POSSIBLE. IF IT IS NECESSARY TO HAVE PIPING UNDER HARDSCAPE, SUCH AS ROADS, OR WALKS, THE PIPE MUST BE SLEEVED USING SCH 40 PVC WITH THE SLEEVE DIAMETER BEING TWICE THE SIZE OF THE PIPE IT IS CARRYING WITH A MINIMUM SLEEVE SIZE OF 2" DIAMETER.

C. ALL PIPE SIZES SHALL CONFORM TO THOSE SHOWN ON THE DRAWINGS. NO SUBSTITUTIONS OF SMALLER PIPE SIZES SHALL BE PERMITTED, BUT SUBSTITUTIONS OF LARGER SIZES MAY BE APPROVED. ALL DAMAGED AND REJECTED PIPE SHALL BE REMOVED FROM THE SITE AT THE TIME OF SAID REJECTION.

D. ALL MAINLINE AND ZONE LINES SHALL BE SCH 40 SOLVENT- WELD PVC WITH SCH 40 PVC SOLVENT- WELD PVC FITTINGS (SIZED PER PLANS).

E. THE CONTRACTOR SHALL ENSURE ALL MAINLINE PIPING IS PROPERLY RESTRAINED, WHERE REQUIRED. THE CONTRACTOR SHALL REFER TO THE MANUFACTURER'S RECOMMENDED INSTALLATION PRACTICES FOR FURTHER DIRECTION.

F. ALL PVC JOINT COMPOUND AND PRIMER SHALL BE SLOW -DRYING, HEAVY DUTY CEMENT AND TINTED PRIMER (PURPLE), THAT IS COMPATIBLE WITH THE CEMENT. THE PVC CEMENT SHALL BE WELD -ON 2711 GREY AND THE PRIMER SHALL BE WELD -ON P70 PURPLE PRIMER, OR APPROVED EQUALS.

5. REMOTE CONTROL VALVES (RCV):

A. SEQUENCE ALL RCV'S SO THAT THE FARTHEST VALVE FROM THE P.O.C. OPERATES FIRST AND THE CLOSEST TO THE P.O.C. OPERATES LAST.

B. ADJUST THE FLOW CONTROL ON EACH RCV TO ENSURE SHUT OFF WITHIN TEN (10) SECONDS AFTER DEACTIVATION BY THE CONTROLLER.

C. EACH VALVE SHALL BE NUMBERED WITH THE SAME NUMBER AS THE CONTROLLER STATION NUMBER (1A-S) ON A METAL TAG .

D. IRRITROL (MODEL 100P1 & 100P2) PLASTIC REMOTE CONTROL VALVES OR EQUAL.

6. ELECTRICAL POWER SUPPLY:

A. THE ELECTRICAL SUPPLY CONTROLLER(S) SHALL BE PROVIDED BY THE IRRIGATION CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITIES FOR THE INSTALLATION OF, AND CONNECTION TO, THE VARIOUS IRRIGATION CONTROLLERS - AS SET FORTH IN THE IRRIGATION PLANS.

B. ALL ELECTRICAL COMPONENTS SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AND ANY AND ALL OTHER APPLICABLE ELECTRICAL CODES, LAWS AND REGULATIONS. A FLORIDA LICENSED ELECTRICIAN SHALL PERFORM ALL ELECTRICAL HOOK- UPS. POWER FOR THE CONTROLLER SHALL BE 120 VOLT, 10 AMP.

C. THE GENERAL CONTRACTOR OR ELECTRICAL CONTRACTOR SHALL OBTAIN THE ELECTRICAL PERMIT.

REVISIONS	
DATE	DESCRIPTION

LANDSCAPE ARCHITECT OF RECORD
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IRRIGATION NOTES

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IRRIGATION NOTES CONTINUED:

7. WIRING:

A. ALL IRRIGATION CONTROL WIRE SHALL BE THERMOPLASTIC SOLID COPPER, SINGLE CONDUCTOR, LOW VOLTAGE IRRIGATION CONTROLLER WIRE; SUITABLE FOR DIRECT BURIAL AND CONTINUOUS OPERATION AT THE RATED VOLTAGES.
B. ALL IRRIGATION CONTROL WIRE SHALL BE INSTALLED IN TWO INCH (2") DIAMETER ELECTRICAL CONDUIT AND RUN ALONGSIDE THE MAINLINE AT THE SAME DEPTH AS THE MAINLINE. AT ALL TURNS IN DIRECTION, MAKE A 2' COIL OF WIRE AND PROVIDE A WIRE PULL BOX. AT ALL VALVE BOXES, MAKE A COIL USING 30 LINEAR INCHES OF WIRE. MAKE ALL LOW VOLTAGE ELECTRICAL CONNECTIONS WITH 3M-DBY, DBR CONNECTORS.
C. WIRE;
   1. WIRE SIZED, AND COLORED AS FOLLOWS:
      #12 WHITE FOR COMMON WIRE
      #12 BLACK FOR COMMON SPARE WIRES (2)
      #14 RED FOR HOT WIRES
      #14 YELLOW FOR SPARE HOT WIRES (4)
E. SPARE WIRES:
   RUN ALL SPARE WIRES INTO EVERY RCV VALVE BOX AND INSTALL A MINIMUM OF 2 COMMON AND 4 HOT WIRES IN ALL DIRECTIONS, MAKE A COIL USING 30 LINEAR INCHES OF WIRE.

8. LAYOUT:

A. THE LAYOUT OF THE IRRIGATION SYSTEM MAINLINES AND LATERAL LINES ARE SCHEMATIC ON THE PLANS. THE CONTRACTOR CAN MAKE THE NECESSARY ADJUSTMENTS AS REQUIRED TO AVOID ANY SITE OBSTRUCTIONS AND LIMITATIONS PRIOR TO EXCAVATING TRENCHES.
B. THE IRRIGATION CONTRACTOR SHALL ADJUST THE LOCATION AND MAKE THE NECESSARY MODIFICATIONS TO NOZZLE TYPES REQUIRED TO INSURE 100% HEAD TO HEAD COVERAGE OF THE SYSTEM.
C. SPRAY HEADS SHALL BE INSTALLED 4" FROM SIDEWALKS OR CURBED ROADWAYS, AND 12" FROM UNCURBED ROADWAYS. ROTORS SHALL BE INSTALLED 4" FROM SIDEWALKS OR CURBED ROADWAYS, AND 36" FROM UNCURBED ROADWAYS.
D. SHRUB HEADS SHALL BE INSTALLED ON 3/4" SCH 40 PVC RISERS. THE RISERS SHALL BE SET AT A MINIMUM OF 18" FROM SIDEWALKS, ROADWAY CURBING, AND/OR ANY OTHER HARDSCAPE AREAS. SHRUB HEADS SHALL BE INSTALLED TO A STANDARD HEIGHT OF 4" BELOW THE MAINTAINED HEIGHT OF PLANTS AND SHALL BE INSTALLED WITHIN PLANTED MASSES TO BE LESS VISIBLE AND OFFER PROTECTION. PAINT ALL SHRUB RISERS WITH FLAT BLACK PAINT.
E. LOCATE ALL VALVES PRIOR TO EXCAVATION AND INSURE THAT THEIR LOCATION PROVIDES FOR EASY ACCESS, NOT ANY INTERFERENCE WITH PHYSICAL STRUCTURES, PLANTS, TREES, POLES, ETC.

9. EQUIPMENT:

A. ALL POP-UP HEADS AND SHRUB RISERS SHALL BE PRESSURE COMPENSATING AND BE MOUNTED ON FLEX-PIPE, SHRUB RISERS SHALL BE STABILIZED WITH A 5/8"x 3' REBAR ATTACHED TO THE PIPE AND PAINTED BLACK.
B. ANY AND ALL IRRIGATION EQUIPMENT NOT DETAILED OR SPECIFIED ON THE PLANS MUST BE ACCOMPANIED BY SHOP DRAWINGS PRIOR TO INSTALLATION, AND ACCORDING TO ALL LOCAL AND STATE LAWS.

10. TRENCHING:

A. EXCAVATE STRAIGHT AND VERTICAL TRENCHES WITH A SMOOTH, LEVEL OR SLOPING DEPTH. THE TRENCH WIDTH AND DEPTH SHALL BE SUFFICIENT TO ALLOW FOR THE PROPER VERTICAL AND HORIZONTAL SEPARATION BETWEEN PIPING AS SHOWN IN THE TRENCH DETAIL.
B. ALL EXISTING LANDSCAPING SHALL BE PROTECTED FROM DAMAGE. ANY DAMAGED PLANT MATERIAL SHALL BE REPLACED WITH THE SAME GENUS AND SPECIES, AND OF THE SAME SIZE OF THE MATERIAL IT IS REPLACING.

11. INSTALLATION:

A. ALL PVC PIPE SHALL BE CUT SQUARE AND DE-BURRED. ALL PIPE AND FITTINGS SHALL BE NEW AND CLEAN.
   1. APPLY A SMALL AMOUNT OF PRIMER (ENSURING THAT ANY EXCESS IS WIPED OFF IMMEDIATELY, PRIMER SHOULD NOT PUDDLE OR DRIP FROM PIPE OR FITTINGS).
   2. APPLY A THIN COAT OF PVC CEMENT; FIRST APPLY A THIN LAYER TO THE PIPE, NEXT A THIN LAYER INSIDE THE FITTING, INSERT THE PIPE INTO THE FITTING (INSURE THAT THE PIPE IS INSERTED TO THE BOTTOM OF THE FITTING AND TURN THE PIPE A 1/4 TURN AND HOLD FOR 10 SECONDS).
B. ALL GLUED PIPE AND FITTINGS MUST CURE A MINIMUM OF 30 MINUTES PRIOR TO HANDLING AND PLACING INTO TRENCHES. ALL PVC PIPE MUST CURE A MINIMUM OF 24 HOURS PRIOR TO FILLING WITH WATER.
C. SCREENS SHALL BE USED IN ALL SPRINKLER HEADS AND ALL HEADS SHALL BE ADJUSTED FOR PROPER COVERAGE, AVOIDING EXCESS WATER ON WALLS, WALKS AND PAVING.

12. BACKFILL:

A. ALL BACKFILL 6" BELOW AND 6" ABOVE ALL PIPING SHALL BE OF CLEAN SAND AND/OR NATIVE MATERIAL, NOTHING LARGER THAN 2"IN DIAMETER.
B. ALL MAIN LINE PIPE DEPTHS SHALL BE MEASURED FROM THE TOP OF PIPE:
   1. 12"MINIMUM COVER FOR PVC ZONE LINES.
   2. 24"MINIMUM COVER FOR PVC MAIN LINES AND 36"MINIMUM COVER UNDER ROADWAYS.
C. THE CONTRACTOR SHALL BACKFILL AND COMPACT ALL TRENCHES, BOTH MAINLINE AND LATERALS, PRIOR TO PERFORMING ANY PRESSURE TESTS. THE PIPE SHALL BE BACKFILLED WITH THE EXCEPTION OF 2' ON EACH SIDE OF EVERY JOINT (BELL FITTINGS, 90'S, TEES, 45'S, ETC.). THESE JOINTS SHALL NOT BE BACKFILLED UNTIL ALL PIPING HAS SATISFACTORILY PASSED ITS APPROPRIATE PRESSURE TEST AS OUTLINED BELOW.

13. FLUSHING:

A. PRIOR TO THE PLACEMENT OF ANY HEADS, THE CONTRACTOR SHALL FLUSH ALL LINES FOR A MINIMUM OF 10 MINUTES OR UNTIL THE LINES ARE COMPLETELY CLEAN OF DEBRIS, WHICHEVER IS LONGER.

14. TESTING:

A. BEFORE INSTALLING ANY VALVES, THE MAINLINE OR ANY SECTIONS OF MAINLINE, MUST PASS A PRESSURE TEST AND BE ACCEPTED BY THE COUNTY.
B. EACH VALVE LOCATION SHALL BE CAPED OF THE APPROPRIATE SIZE. FILL THE MAINLINE WITH WATER AND PRESSURIZE THE SYSTEM TO 125 PSI. MONITOR THE SYSTEM PRESSURE AT TWO GAUGE LOCATIONS; THE GAUGE LOCATIONS MUST BE AT OPPOSITE ENDS OF THE MAINLINE OR SECTION OF MAINLINE, BOTH PRESSURE GAUGES MUST READ THE SAME PRESSURE, MONITOR THE GAUGES FOR TWO HOURS. THERE CANNOT BE ANY LOSS IN PRESSURE AT EITHER GAUGE FOR THE TESTING PERIOD. IF THESE PARAMETERS ARE NOT MET, LOCATE THE PROBLEM; REPAIR IT; WAIT 24 HOURS AND RETRY THE TEST. THIS PROCEDURE MUST BE FOLLOWED UNTIL THE MAINLINE PASSES THE TEST.
C. ALL LATERAL LINES MUST BE FILLED WITH WATER AS EACH ZONE IS COMPLETED AND VISUALLY CHECKED FOR LEAKS. ANY LEAKS DETECTED MUST BE REPAIRED BEFORE INSTALLING ANY HEADS. NO PRESSURE TEST OF THE LATERAL LINES IS REQUIRED.
D. AFTER THE MAINLINE AND LATERAL LINES HAVE PASSED THEIR RESPECTIVE TESTS, AND THE SYSTEM IS COMPLETELY OPERATIONAL, A COVERAGE TEST AND DEMONSTRATION OF THE SYSTEM IS REQUIRED.
E. THE IRRIGATION CONTRACTOR MUST DEMONSTRATE TO THE COUNTY REPRESENTATIVE THAT PROPER COVERAGE IS OBTAINED AND THAT THE SYSTEM WORKS AUTOMATICALLY FROM THE CONTROLLER. THIS DEMONSTRATION REQUIRES THAT EACH ZONE IS TURNED ON, IN THE PROPER SEQUENCE AS SHOWN ON THE PLANS, FROM THE CONTROLLER. EACH ZONE WILL BE INSPECTED FOR PROPER COVERAGE AND FUNCTION. THE DETERMINATION OF PROPER COVERAGE AND FUNCTION IS AT THE SOLE DISCRETION OF THE COUNTY REPRESENTATIVE.

15. SUBMITTALS:

A. THE IRRIGATION CONTRACTOR MUST SUBMIT FOR APPROVAL, PRIOR TO INSTALLATION, COPIES OF THE MANUFACTURER'S CUT SHEETS/SPECIFICATIONS FOR ALL COMPONENTS TO BE USED IN THE IRRIGATION SYSTEM.
B. AFTER PROJECT COMPLETION, AND AS A CONDITION OF FINAL ACCEPTANCE, THE IRRIGATION CONTRACTOR SHALL PROVIDE THE COUNTY WITH AN, ACCURATE, AND LEGIBLE SET OF AS-BUILT DRAWINGS. THE AS-BUILT DRAWINGS MUST IDENTIFY ALL REMOTE CONTROL VALVES, GATE VALVES, BALL VALVES, SPLICE BOXES, CONTROLLERS, MAINLINE, SLEEVING, AND LOW VOLTAGE WIRING. EACH OF THESE ITEMS SHALL BE LOCATED USING A SUB METER GPS SYSTEM. THE IRRIGATION CONTRACTOR MUST ALSO PROVIDE ACCURATE, INFORMATIVE, AND EASY TO FOLLOW AND UNDERSTANDABLE OPERATION AND MAINTENANCE MANUALS FOR ALL COMPONENTS OF THE IRRIGATION SYSTEM.

16. FINAL ACCEPTANCE:

A. THE FINAL ACCEPTANCE OF THE IRRIGATION SYSTEM SHALL BE GIVEN AFTER THE FOLLOWING DOCUMENTS AND CONDITIONS HAVE BEEN COMPLETED AND APPROVED BY THE COUNTY. FINAL PAYMENT WILL NOT BE RELEASED UNTIL THESE CONDITIONS ARE SATISFIED.
   1. FINAL WALK-THRU AND CORRECTION OF ALL PUNCH LIST ITEMS.
   2. COMPLETION AND ACCEPTANCE OF THE 'AS-BUILT' DRAWINGS.
   3. ACCEPTANCE OF ALL CONTROLLER CHARTS AND PLACEMENT OF THESE CHARTS INSIDE OF THE CONTROLLERS.

17. GUARANTEE:

A. THE COMPLETE IRRIGATION SYSTEM SHALL BE GUARANTEED FOR ONE CALENDAR YEAR FROM THE DATE OF FINAL ACCEPTANCE.

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IRRIGATION NOTES

SHEET NO.
IRD-2

$USERS $DATE$ $TIME$ $FILE$

NW 21st AVENUE

IRRIGATION QUANTITIES

ALTERNATIVE BID ITEMS

ITEM	UNIT	SIZE	SPECIFICATIONS	NOTES	QUANTITY IR - 1	QUANTITY IR - 2	QUANTITY IR - 3	QUANTITY IR - 4			QUANTITY IR - 5			QUANTITY IR - 6	QUANTITY IR - 7			QUANTITY IR - 8			QUANTITY IR - 9			QUANTITY IR - 10			QUANTITY IR - 11			QUANTITY IR - 12			QUANTITY IR - 13			QUANTITY IR - 14			QUANTITY IR - 15	QUANTITY TOTAL			C E
BID ALTERNATIVE #								1	2	3	1	2	3		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		1	2	3	
SPRINKLERS																																										
SPRINKLER SPRAY HEAD	EA.	12" POP-UP, (12' R)	RAIN BIRD - Model 1812, 12 SERIES	HE-VAN NOZZLES																																			0	0	0	$
SPRINKLER SPRAY HEAD	EA.	12" POP-UP, (8' R)	RAIN BIRD - Model 1812, 8 SERIES	HE-VAN NOZZLES				48			24	24				23			48			24			24			48		48			24			48			168	0	239	
SPRINKLER SPRAY HEAD	EA.	12" POP-UP, MP 15' STRIP	RAIN BIRD - Model 1812-STRIP SERIES	MPR NOZZLES																				15															0	15	0	$
BUBBLER	EA.	1 / 2", 2 GPM	RAIN BIRD - Model 1300A-F	AS INDICATED ON PLANS											4			8			7			8			4												4	34	0	$
PIPE																																										
PVC PIPE	LF	(A) 1 INCH	SCH 40	SOLVENT-WELD				360			90	90			135	180		435	180		180	90		485	90		550			360			190			360			1,360	1,415	1,270	$
PVC PIPE	LF	(B) 1-1/4 INCH	SCH 40	SOLVENT-WELD				440			10	115				95			285		165	100			265		220			265			15			70			935	330	1,045	$
PVC PIPE	LF	(C) 1-1/2 INCH	SCH 40	SOLVENT-WELD				56			395							85	140			155		200			170			30			155			115			651	285	720	$
PVC PIPE	LF	(D) 2 INCH	SCH 40	SOLVENT-WELD																													10						0	0	10	$
PVC PIPE	LF	(E) 2-1/2 INCH	SCH 40	SOLVENT-WELD							70																40													110	0	0	$
PVC PIPE	LF	(F) 3 INCH	SCH 40	SOLVENT-WELD																																				0	0	0	$
PVC PIPE	LF	2 INCH	SCH 40	GRAY CONDUIT							35										15	15		15	15		25						25							60	45	70	$
PVC PIPE - MAIN	LF	1-1/4 INCH	SCH 40	SOLVENT-WELD																																				0	0	0	
PVC PIPE - MAIN	LF	2 INCH	SCH 40	SOLVENT-WELD																	15	15		15	15												30			0	45	75	
PVC PIPE - MAIN	LF	2-1/2 INCH	SCH 40	SOLVENT-WELD							70																25									30			95	0	30	
PVC PIPE - MAIN	LF	3 INCH	SCH 40	SOLVENT-WELD																													25			30			0	0	55	$
PVC PIPE - SLEEVE	LF	3 INCH	SCH 40	SOLVENT-WELD												10		30	30					65												75			0	30	180	$
PVC PIPE - SLEEVE	LF	4 INCH	SCH 40	SOLVENT-WELD											30																								0	30	0	$
PVC PIPE - SLEEVE	LF	6 INCH	SCH 40	SOLVENT-WELD							65								55					50												275			65	50	330	$
VALVES																																										
REMOTE VALVE	EA.	SIZE AS NOTED	Rainbird PGA Series	With Box							1							1	1			1			1		1						1						2	1	5	$
REMOTE VALVE	EA.	SIZE AS NOTED	Rainbird DV Series	With Box																	1			1			1												1	3	0	$
GATE VALVE	EA.	SIZE AS NOTED	Febco or Equal	With Box																																				0	0	0	
CONTROLLERS																																										
CONTROLLER	EA.	K-RAIN BL-KR Battery-Powered Controller	4 STATION	INSTALL IN VALVE BOX; PROVIDE NEW BATTERY(S)																																				0	0	0	$
RAIN SHUT-OFF DEVICE	EA.			COMPLETE MOUNTING AND CONNECTION PACKAGE																																				0	0	0	
SMART PHONE CONTROLLER CONNECTION / TRAINING FOR BC HBMD PERSONNEL	EA.		Ensure Controller / System Operation. Train BC HBMD Personnel in Controller/System Operation	Lump-Sum																																				0	0	0	$
DIRECTIONAL BORE																																										
6"	LF			linear foot							65							55																						65	0	55	$
4"	LF			linear foot											30																					110			0	30	110	$
2"	LF			linear foot																																				0	0	0	$
MISCELLANEOUS																																										
TAP	EA.	SIZE AS NOTED	TAP WATERMAIN	COMPLETE PACKAGE							#3, 2-1/2"							#5, 2"			#6, 2"																				$
WATER METER	EA.	SIZE AS NOTED	FURNISH & INSTALL, IN APPROVED UTILITY BOX	COMPLETE PACKAGE																																				0	0	0	
BACKFLOW PREVENTOR	EA.	SIZE AS NOTED	REDUCED PRESSURE ASSEMBLY BY WATTS OR EQUAL	COMPLETE PACKAGE																																				0	0	0	$
WATER SERVICE FEES	EA.		Each Point of Connection / Service																																					0	0	0	$
VALVE BOX	EA.	STD. RECTANGULAR	VALVE BOX	FOR EACH VALVE																							2													2	0	0	$
VALVE BOX	EA.	STD. RECTANGULAR	CONTROLLER HOUSING	FOR EACH CONTROLLER																																				0	0	0	$
VALVE BOX	EA.	STD. RECTANGULAR	DEFINE END POINT OF SLEEVES UNDER ROADWAY AND DRIVEWAYS	AT EACH TERMINATION POINT FOR DIRECTIONAL BORES							2					1			3													1			3			2	1	7	$

REVISED:

NOTES:

THE IRRIGATION CONTRACTOR SHALL VERIFY ALL IRRIGATION QUANTITIES PRIOR TO BIDDING.
ANY DISCREPANCIES ARE TO BE BROUGHT TO THE PROJECT MANAGER'S ATTENTION.
SHEETS IR-6 AND IR-15 DO NOT HAVE ANY PROPOSED IRRIGATION IMPROVEMENTS.

REVISIONS	
DATE	DESCRIPTION

LANDSCAPE ARCHITECT OF RECORD
RONALD B. ROLLINS, RLA
LICENSE NO. LA 0001558
BROWARD COUNTY HIGHWAY
CONSTRUCTION & ENGINEERING DIVISION
1 NORTH UNIVERSITY DRIVE
PLANTATION, FL 33324

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION QUANTITIES
ALTERNATIVE BID ITEMS

SHEET NO.
IRD-4

$USERS $DATES $TIMES $FILES

NW 21st AVENUE

IRRIGATION QUANTITIES

BASE BID ITEMS

ITEM	UNIT	SIZE	SPECIFICATIONS	NOTES	QUANTITY IR - 1	QUANTITY IR - 2	QUANTITY IR - 3	QUANTITY IR - 4	QUANTITY IR - 5	QUANTITY IR - 6	QUANTITY IR - 7	QUANTITY IR - 8	QUANTITY IR - 9	QUANTITY IR - 10	QUANTITY IR - 11	QUANTITY IR - 12	QUANTITY IR - 13	QUANTITY IR - 14	QUANTITY IR - 15	QUANTITY TOTAL
SPRINKLERS																				
SPRINKLER SPRAY HEAD	EA.	12" POP-UP, (12' R)	RAIN BIRD - Model 1812, 12 SERIES	HE-VAN NOZZLES	7	0	0	0	0	0	0	0	0	0	0	0	19	0	0	26
SPRINKLER SPRAY HEAD	EA.	12" POP-UP, (8' R)	RAIN BIRD - Model 1812, 8 SERIES	HE-VAN NOZZLES	0	18	21	0	0	0	0	0	0	0	15	31	33	0	0	118
SPRINKLER SPRAY HEAD	EA.	12" POP-UP, MP 15' STRIP	RAIN BIRD - Model 1812-STRIP SERIES	MPR NOZZLES	2	2	0	0	8	0	59	12	29	44	50	0	3	0	0	209
BUBBLER	EA.	1 / 2", 2 GPM	RAIN BIRD - Model 1300A-F	AS INDICATED ON PLANS	0	0	0	0	0	0	0	8	0	0	0	0	10	0	0	18
PIPE																				
PVC PIPE	LF	(A) 1 INCH	SCH 40	SOLVENT-WELD	155	450	175	0	115	0	465	305	300	360	395	225	580	0	0	3,525
PVC PIPE	LF	(B) 1-1/4 INCH	SCH 40	SOLVENT-WELD	0	110	85	0	0	0	135	0	90	80	120	0	100	0	0	720
PVC PIPE	LF	(C) 1-1/2 INCH	SCH 40	SOLVENT-WELD	0	0	0	0	0	0	0	70	0	0	65	25	40	0	0	200
PVC PIPE	LF	(D) 2 INCH	SCH 40	SOLVENT-WELD	0	0	0	0	0	0	60	0	0	0	0	0	0	0	0	60
PVC PIPE	LF	(E) 2-1/2 INCH	SCH 40	SOLVENT-WELD	0	0	0	0	0	0	0	0	0	0	0	0	35	0	0	35
PVC PIPE	LF	(F) 3 INCH	SCH 40	SOLVENT-WELD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PVC PIPE	LF	2 INCH	SCH 40	GRAY CONDUIT	0	25	45	0	35	0	30	35	25	25	50	0	240	0	0	510
PVC PIPE - MAIN	LF	1-1/4 INCH	SCH 40	SOLVENT-WELD	0	25	45	0	35	0	0	0	0	0	0	0	0	0	0	105
PVC PIPE - MAIN	LF	2 INCH	SCH 40	SOLVENT-WELD	0	0	0	0	0	0	30	75	25	25	0	0	0	0	0	155
PVC PIPE - MAIN	LF	2-1/2 INCH	SCH 40	SOLVENT-WELD	0	0	0	0	0	0	0	0	0	0	130	580	185	0	0	895
PVC PIPE - MAIN	LF	3 INCH	SCH 40	SOLVENT-WELD	0	0	0	0	0	0	0	0	0	0	0	0	240	0	0	240
PVC PIPE - SLEEVE	LF	3 INCH	SCH 40	SOLVENT-WELD	0	0	0	0	0	0	0	35	15	0	0	0	80	0	0	130
PVC PIPE - SLEEVE	LF	4 INCH	SCH 40	SOLVENT-WELD	50	95	45	0	35	0	25	25	25	40	25	175	15	0	0	555
PVC PIPE - SLEEVE	LF	6 INCH	SCH 40	SOLVENT-WELD	0	0	0	0	0	0	0	55	0	0	0	0	100	0	0	155
VALVES																				
REMOTE VALVE	EA.	SIZE AS NOTED	Rainbird PGA Series	With Box	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	3
REMOTE VALVE	EA.	SIZE AS NOTED	Rainbird DV Series	With Box	0	1	1	0	1	0	0	1	1	1	0	0	1	0	0	7
GATE VALVE	EA.	SIZE AS NOTED	Febco or Equal	With Box	0	1	1	0	1	0	1	1	1	1	1	0	1	0	0	9
CONTROLLERS																				
CONTROLLER	EA.	K-RAIN BL-KR Battery-Powered Controller	4 STATION	INSTALL IN VALVE BOX; PROVIDE NEW BATTERY(S)	0	1	1	0	1	0	1	1	1	1	1	0	1	0	0	9
RAIN SHUT-OFF DEVICE	EA.			COMPLETE MOUNTING AND CONNECTION PACKAGE	0	1	1	0	1	0	1	1	1	1	1	0	1	0	0	9
SMART PHONE CONTROLLER CONNECTION / TRAINING FOR BC HBMD PERSONNEL	EA.		Ensure Controller / System Operation. Train BC HBMD Personnel in Controller/System Operation	Lump-Sum																1
DIRECTIONAL BORE																				
6"	LF			linear foot	0	0	0	0	0	0	0	55	0	0	0	0	100	0	0	155
4"	LF			linear foot	50	95	45	0	35	0	25	25	25	40	25	175	0	0	0	540
2"	LF			linear foot	0	0	0	0	0	0	0	0	0	0	0	175	0	0	0	175
MISCELLANEOUS																				
TAP	EA.	SIZE AS NOTED	TAP WATERMAIN	COMPLETE PACKAGE		#1, 1-1/4"	#2, 1-1/4"		#3, 2-1/2"		#4, 2"	#5, 2"	#6, 2"	#7, 2"			#8, 3"			
WATER METER	EA.	SIZE AS NOTED	FURNISH & INSTALL,IN APPROVED UTILITY BOX	COMPLETE PACKAGE	0	1	1	0	1	0	1	1	1	1	0	0	1	0	0	8
BACKFLOW PREVENTOR	EA.	SIZE AS NOTED	REDUCED PRESSURE ASSEMBLY BY WATTS OR EQUAL	COMPLETE PACKAGE	0	1	1	0	1	0	1	1	1	1	0	0	1	0	0	8
WATER SERVICE FEES	EA.		Each Point of Connection / Service		0	1	1	0	1	0	1	1	1	1	0	0	1	0	0	8
VALVE BOX	EA.	STD. RECTANGULAR	VALVE BOX	FOR EACH VALVE	0	2	2	0	2	0	2	2	2	2	2	0	3	0	0	19
VALVE BOX	EA.	STD. RECTANGULAR	CONTROLLER HOUSING	FOR EACH CONTROLLER	0	1	1	0	1	0	1	1	1	1	0	0	1	0	0	8
VALVE BOX	EA.	STD. RECTANGULAR	DEFINE END POINT OF SLEEVES UNDER ROADWAY AND DRIVEWAYS	AT EACH TERMINATION POINT FOR DIRECTIONAL BORES	1	5	2	0	2	0	2	2	2	4	2	1	5	0	0	28

REVISED:

NOTES:

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SHEETS IR-6 AND IR-15 DO NOT HAVE ANY PROPOSED IRRIGATION IMPROVEMENTS.

NOTE: INSTALL RAIN SHUT-OFF SENSOR WITH EACH CONTROLLER. MOUNT IN A POSITION THAT IS OUT OF RANGE OF IRRIGATION SPRAY.

NOTE: THERE ARE SEVERAL POINTS OF CONNECTIONS (P.O.C.'S) - CONNECTED TO MUNICIPAL WATER SOURCES. CONFIRM THE LOCATION OF THE POTABLE WATERMAINS. P.O.C.'S TO INCLUDE TAP, METER AND BACKFLOW PREVENTOR DEVICES. EACH INCLUDES A CONTROLLER.

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PLANTATION, FL 33324

BROWARD COUNTY FLORIDA

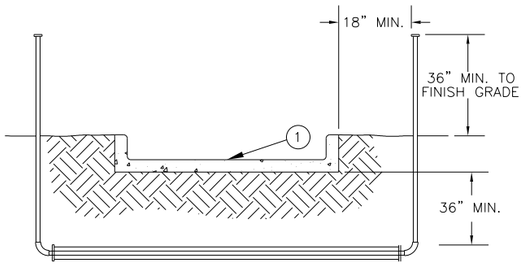
PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

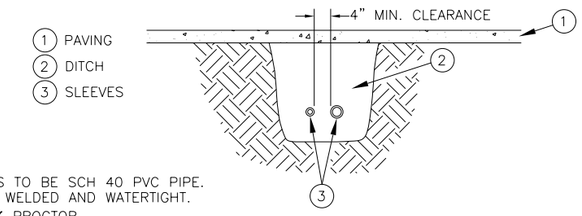
$USER$ $DATE$ $TIME$ $FILE$

IRRIGATION QUANTITIES
BASE BID ITEMS

SHEET NO.
IRD-3



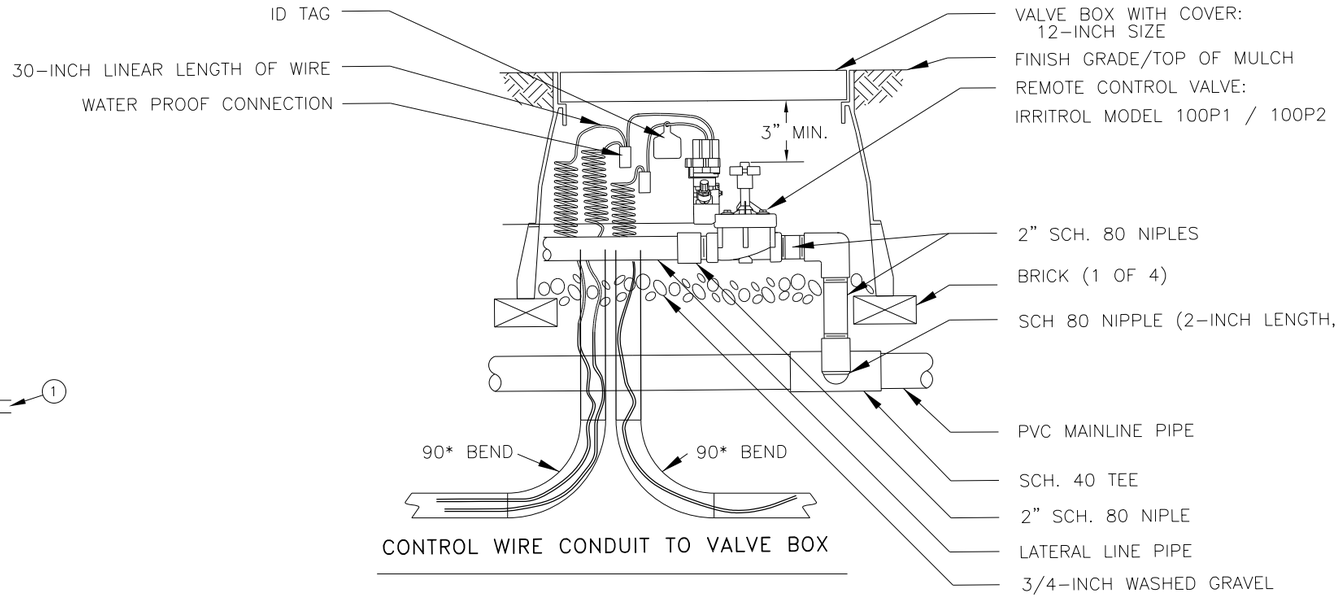
SECTION VIEW



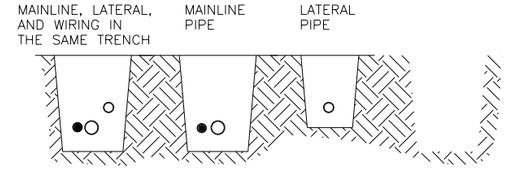
SECTION VIEW

NOTES:
1. ALL PVC IRRIGATION SLEEVES TO BE SCH 40 PVC PIPE.
2. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
3. MECHANICALLY TAMP TO 95% PROCTOR.

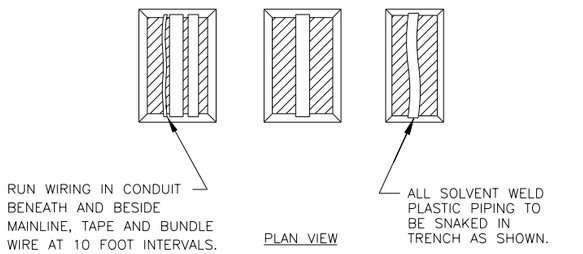
SLEEVING



REMOTE CONTROL VALVE



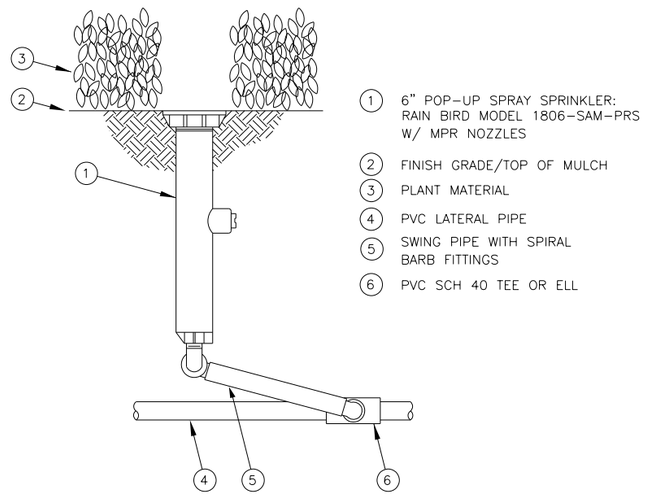
SECTION VIEW



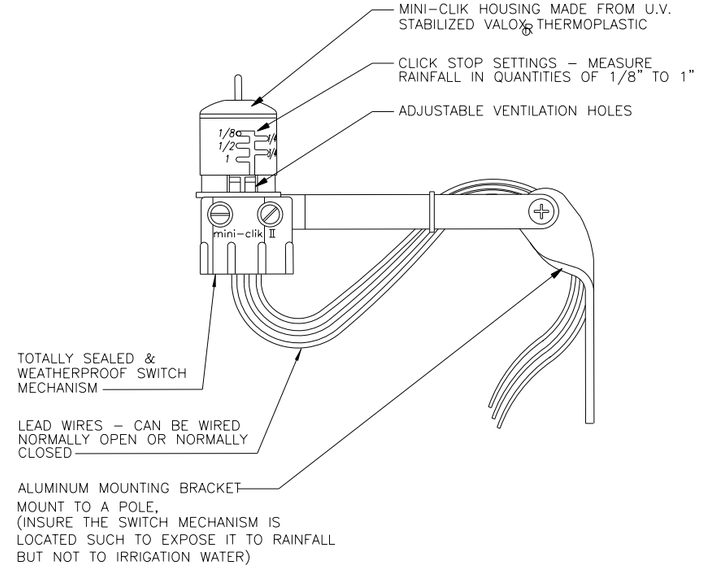
PLAN VIEW

NOTES:
1. SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH SCH 40 PVC TWICE THE DIAMETER OF THE PIPE.
2. FOR PIPE AND WIRE BURIAL DEPTHS SEE SPECIFICATIONS.

PIPE & WIRE TRENCHING



6" POP-UP SPRAY SPRINKLER



RAIN SENSOR

REVISIONS	
DATE	DESCRIPTION

LANDSCAPE ARCHITECT OF RECORD
RONALD B. ROLLINS, RLA
LICENSE NO. LA 0001558
BROWARD COUNTY HIGHWAY CONSTRUCTION & ENGINEERING DIVISION
1 NORTH UNIVERSITY DRIVE
PLANTATION, FL 33324

BROWARD COUNTY FLORIDA

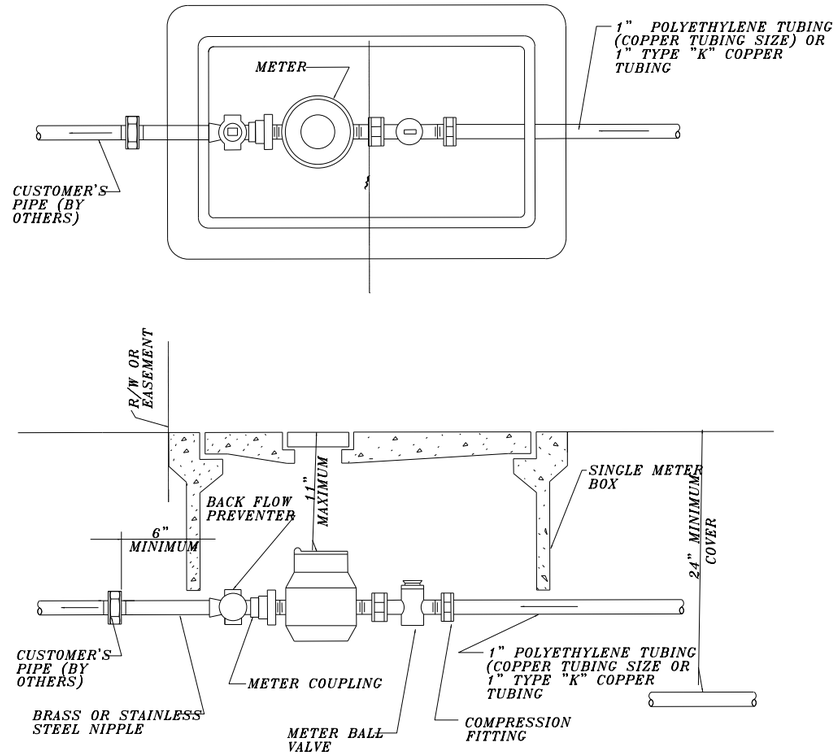
PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

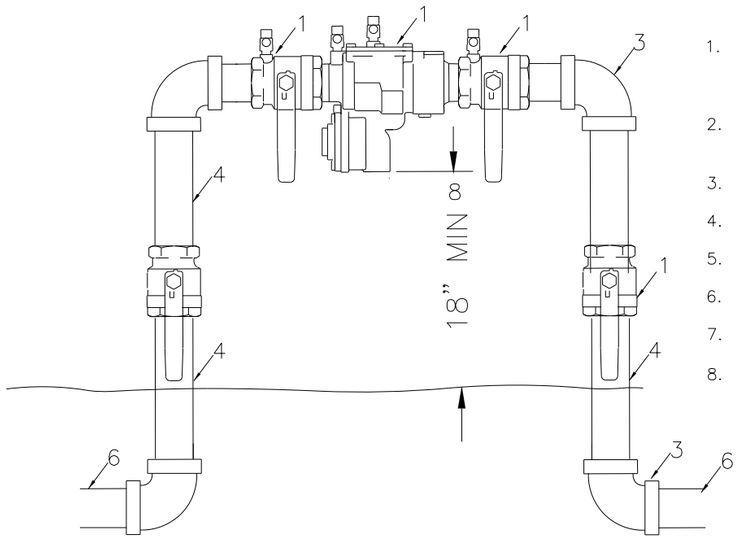
COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION DETAILS

SHEET NO.
IRD-5

$USER$ $DATE$ $TIME$ $FILE$





1. REDUCED PRESSURE ASSEMBLY BACKFLOW PREVENTOR (SIZE PER PLAN)
2. BRASS BALL VALVE (SIZE PER PLAN)
3. BRASS ELBOW
4. BRASS NIPPLE
5. BRASS UNION
6. SCH 40 PVC MAIN
7. FINISHED GRADE
8. 18" (MINIMUM)

BACKFLOW PREVENTOR DETAIL

Reduced Pressure Assembly

NTS

NOTES:

1. *ALL STRUCTURES IN R/W TO BE TRAFFIC BEARING TYPE.*
2. *R/W LINE OR EASEMENT LINE IS THE CUSTOMERS SIDE OF METER BOX.*
3. *B.C.O.E.S. RESPONSIBILITY ENDS AT THE CUSTOMERS SIDE OF METER.*
4. *CURVE IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL AND MINIMUM RADIUS SHALL BE 14" FOR 1" TUBING.*
5. *ALL METERS WILL BE SUPPLIED AND INSTALLED BY B.C.O.E.S. METER HAS IRON PIPE THREAD MALE CONNECTION ON EACH END.*
6. *ALL BACKFLOW PREVENTION DEVICES TO BE SUPPLIED BY THE CUSTOMER. FOR RESIDENTIAL CUSTOMERS, A STRAIGHT DUAL CHECK VALVE IS REQUIRED.*
7. *METER BOXES ARE TO BE DOWELED INTO SIDEWALK OR ROCK BASE, USING A MINIMUM OF SIX 1/4 " DIAMETER THREADED RODS EXTENDING 6" BEYOND THE METER BOX EXTERIOR.*
8. *WHEN SIDEWALKS ARE PRESENT, OR PLANNED FOR IN THE R/W, THE BACK EDGE OF THE METER BOX SHALL LINE UP WITH THE BACK EDGE OF THE SIDEWALK.*

METER DETAIL

NTS

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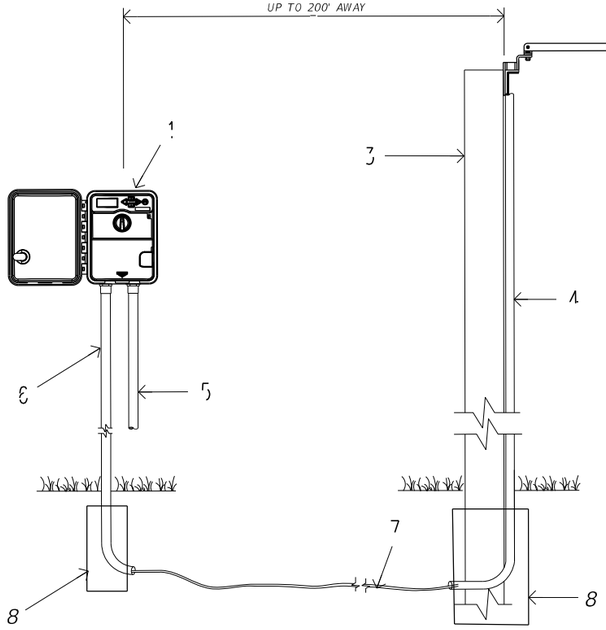
COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION DETAILS

SHEET NO.

IRD-6

$USER$ $DATE$ $TIME$ $FILE$



1 HUNTER XC HYBRID CONTROLLER, OR EQUAL

2 SOLAR PANEL
MODEL: SPXCH

3 SUITABLE POST, OR POLE.
SET IN 12"x12"x18" CONCRETE FOOTER.
MOUNT IN LOCATION THAT MAXIMIZES DIRECT SUNLIGHT

4 CONDUIT FROM SOLAR PANEL TO CONTROLLER OR TO A POINT 12" BELOW GRADE

5 CONDUIT FOR VALVE CONTROL WIRE

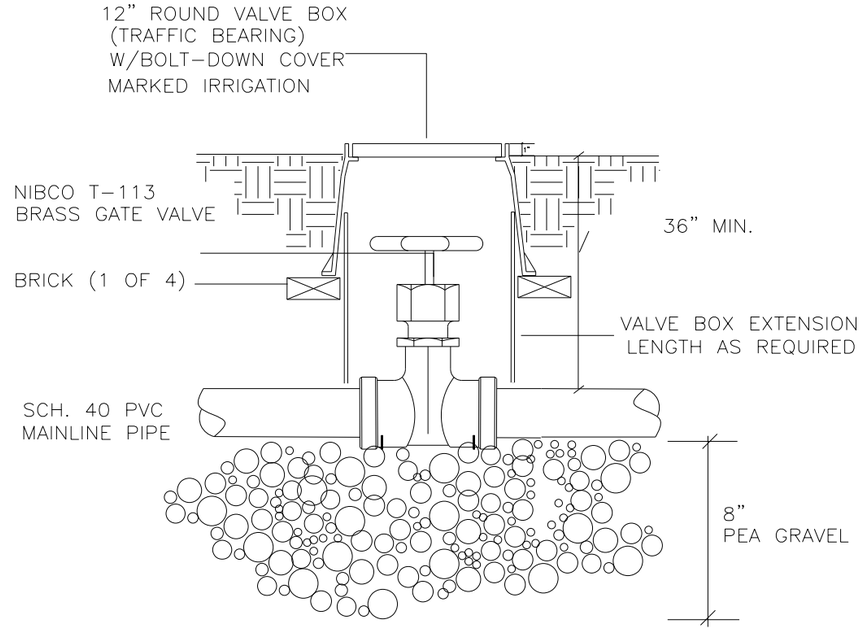
6 XCHSPOLE (CONDUIT)
FOR CONTROLLER POWER SOURCE,
SET IN 12"x12"x18" CONCRETE FOOTER

7 POWER WIRE, 18-20AWG (WIRE TYPE TO MEET INSTALLATION CODE REQUIREMENTS), FROM MODULE TO SENSOR. MAXIMUM TOTAL WIRE DISTANCE IS 200 FEET.

8 12"x12"x18" CONCRETE FOOTER

CONTROLLER / PEDESTAL MOUNT DETAIL

NTS



GATE VALVE DETAIL

NTS

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HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION DETAILS

SHEET NO.
IRD-7

$USER$ $DATE$ $TIME$ $FILE$

PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM — ZONE FLOWRATE

B-1 | 1" — VALVE SIZE

ZONE NUMBER

N

0 10 40

Feet

BEGIN PROJECT
BEGIN MILLING, RESURFACING, OVERBUILD & WIDENING
STA. 330+59.00
℄ CONST. NW 21 AVE

PI STA. 330+00.00

329 330 331 NW 21 AVENUE 332 333

MATCHLINE 333+80

MP CORNER MP 5x15

MP 12'R HEADS (TYP)

18" MULCHED EDGE

3" SLEEVE

4-1.5

120

MERGE

SR-816/OAKLAND PARK BLVD

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PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-1

IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM	ZONE FLOWRATE
B-1 | 1"	VALVE SIZE
B-1	ZONE NUMBER

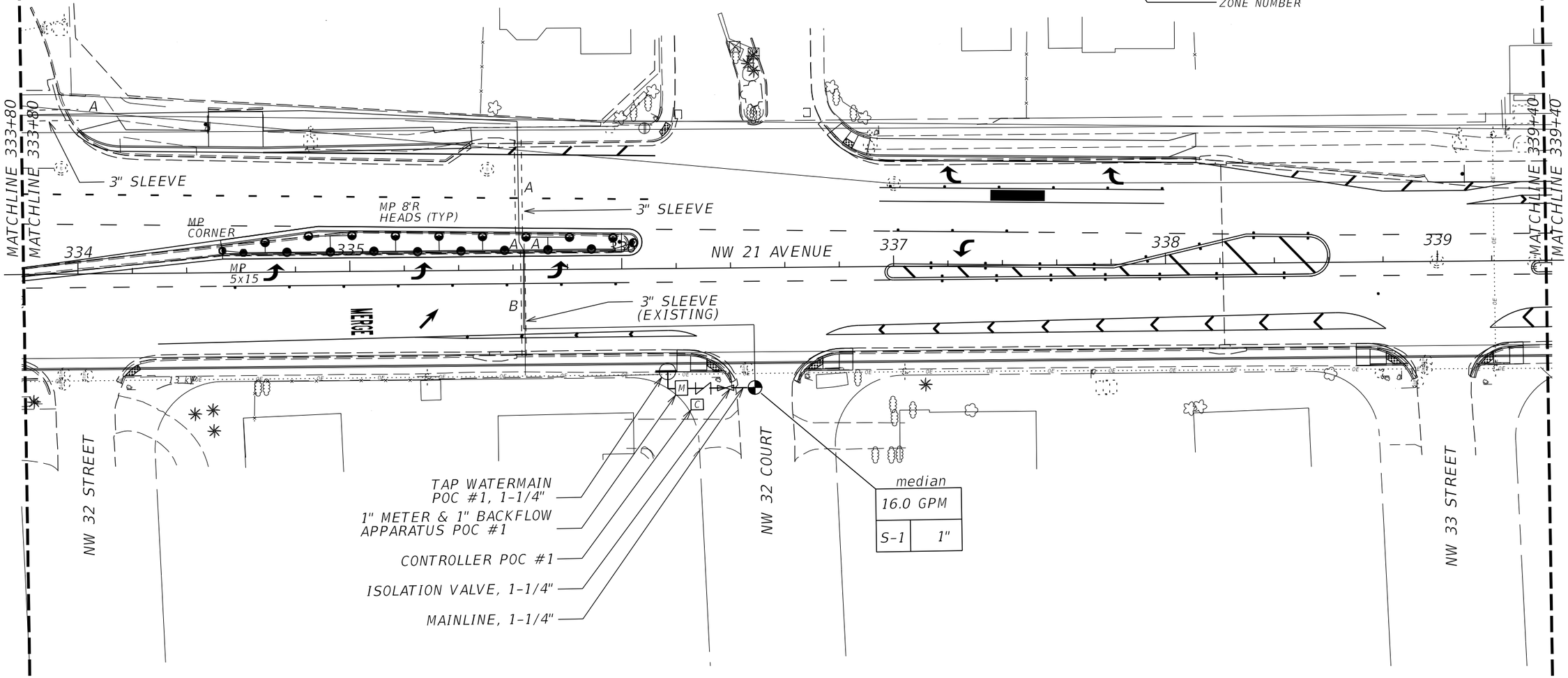
N

0 10 40

Feet

PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.



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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-2

RROLLINS 5/20/2020 10:16:33 AM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANIR02.dgn

IRRIGATION KEY

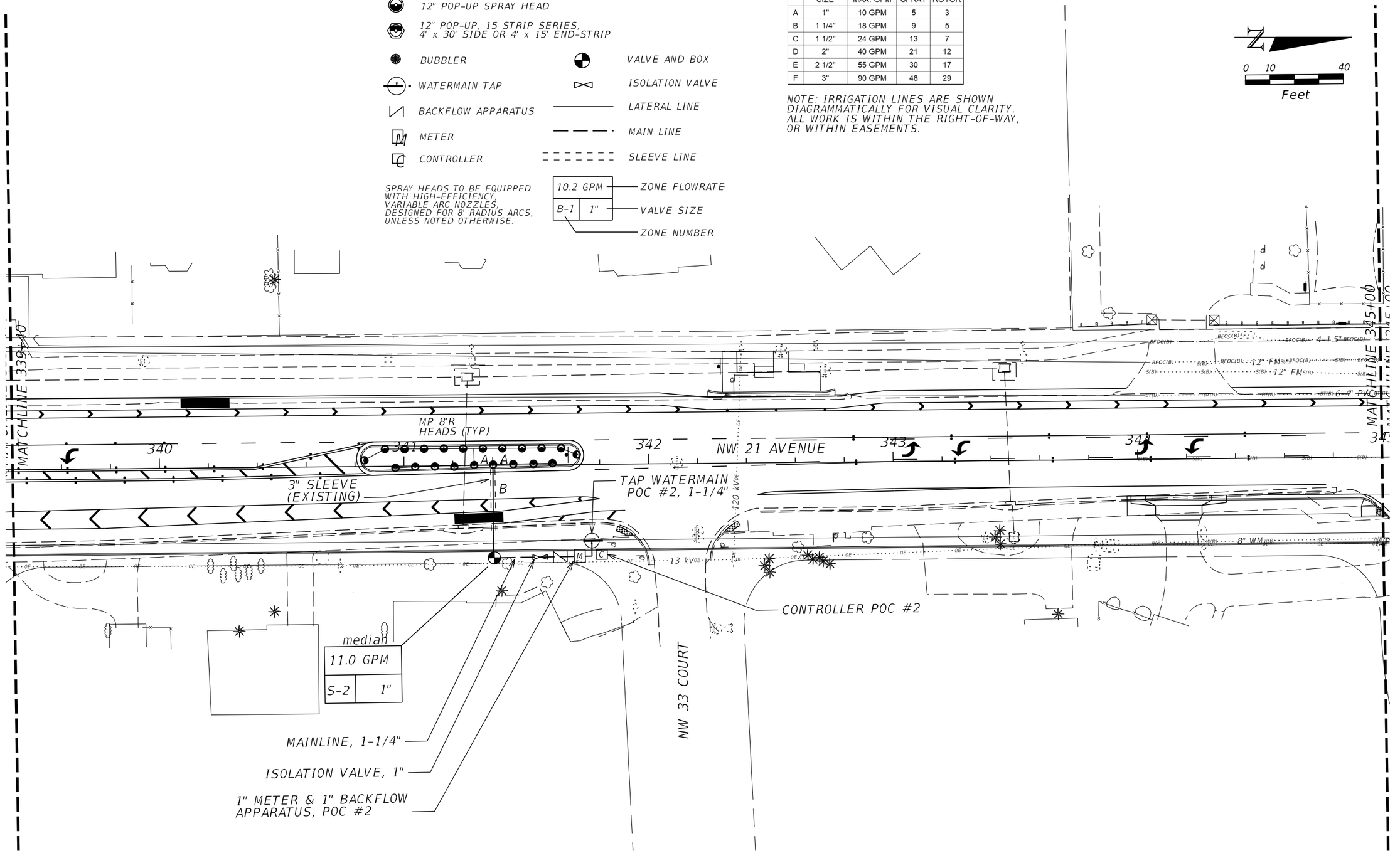
- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM	ZONE FLOWRATE
B-1 | 1"	VALVE SIZE
	ZONE NUMBER

PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.



REVISIONS	
DATE	DESCRIPTION

LANDSCAPE ARCHITECT OF RECORD
RONALD B. ROLLINS, RLA
LICENSE NO. LA 0001558
BROWARD COUNTY HIGHWAY
CONSTRUCTION & ENGINEERING DIVISION
1 NORTH UNIVERSITY DRIVE
PLANTATION, FL 33324

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

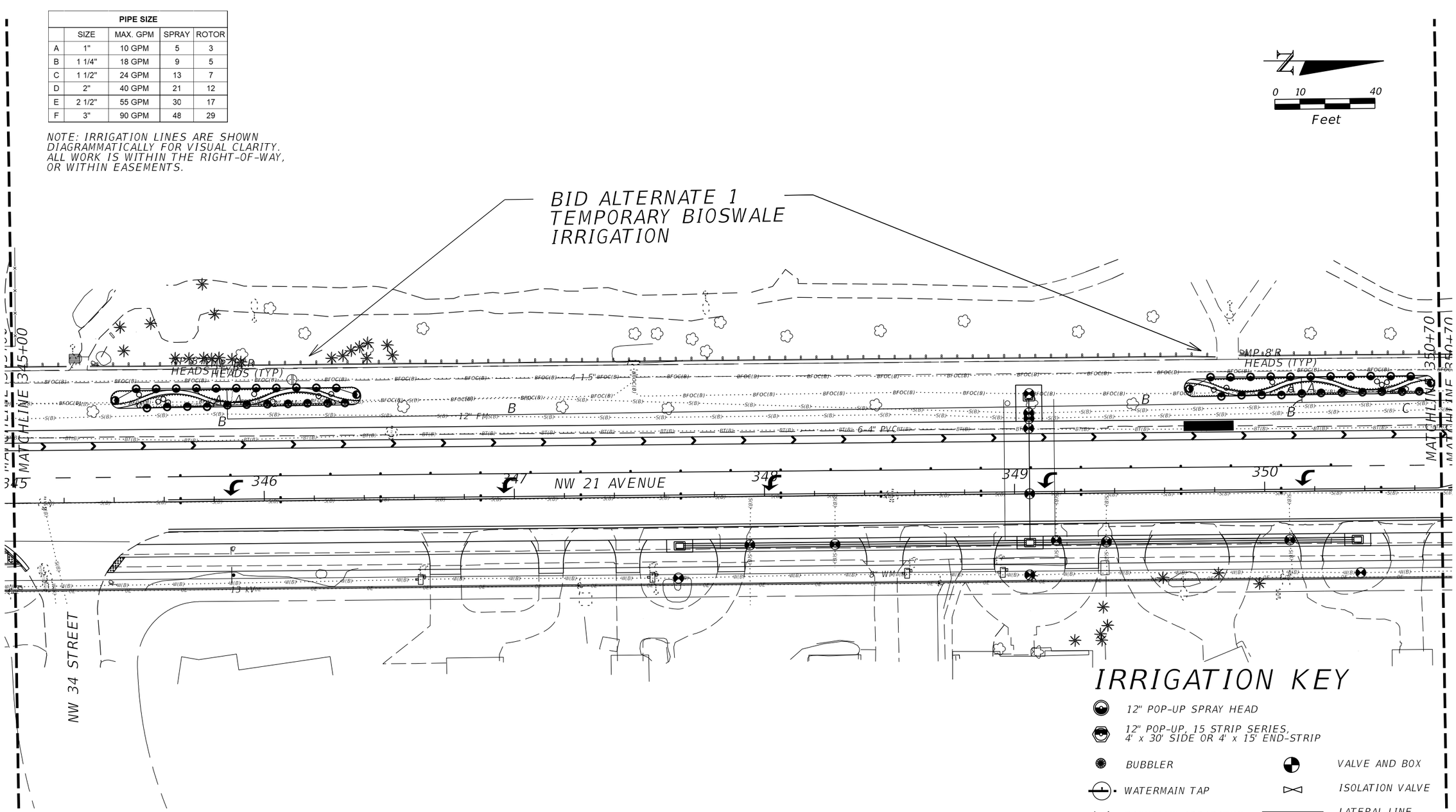
IRRIGATION PLANS

SHEET NO. IR-3

RROLLINS 5/20/2020 10:17:09 AM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANIR03.dgn

PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.



IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM	ZONE FLOWRATE
B-1 | 1"	VALVE SIZE
	ZONE NUMBER

REVISIONS	
DATE	DESCRIPTION

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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-4

RROLLINS 5/20/2020 10:17:53 AM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANIR04.dgn

IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM	ZONE FLOWRATE
B-1 | 1"	VALVE SIZE
	ZONE NUMBER

N

0 10 40

Feet

BID ALTERNATE 1
TEMPORARY BIOSWALE
IRRIGATION

4" SLEEVE

MATCHLINE 350+70

MP 5x15 STRIP HEADS (TYP)

3" SLEEVE (EXISTING)

MP CORNER

MP CORNER

TAP WATERMAIN POC #3, 2-1/2"

NW 21 AVENUE

351 352 353 354 355 356

MP 8'R HEADS (TYP)

12" FM

4-1.5" PVC

12" FM

6-4" PVC

MP 8'R HEADS (TYP)

MATCHLINE 356+35

BID ALTERNATE 1
TEMPORARY BIOSWALE
IRRIGATION

NW 35 STREET

NW 36 STREET

13 kV

8" WM

swale
44.0 GPM
S-3 | 2-1/2"

median
3.0 GPM
S-4 | 1"

CONTROLLER POC #3

2" METER & 2" BACKFLOW APPARATUS, POC #3

ISOLATION VALVE, 2"

MAINLINE, 2-1/2"

BID ALTERNATE 1
TEMPORARY BIOSWALE
IRRIGATION

PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-5

RROLLINS 5/20/2020 10:18:58 AM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANIR05.dgn

IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM	ZONE FLOWRATE
B-1 | 1"	VALVE SIZE
	ZONE NUMBER

N

0 10 40

Feet

C-13 CANAL

NW 39 STREET

NW 21 AVENUE

BRIDGE NO. 864130

MATCHLINE STA. 356+35

MATCHLINE STA. 362+00

PI STA. 357+15.64

PI STA. 361+26.40

357 358 359 360 361

4-1.5" BFOC(B)

12" FM S(B)

6-4" PVC BT(B)

8" WM W(B)

13 kV OE

ONLY BUS

NO IRRIGATION ON THIS SHEET

PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

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HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-6

IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

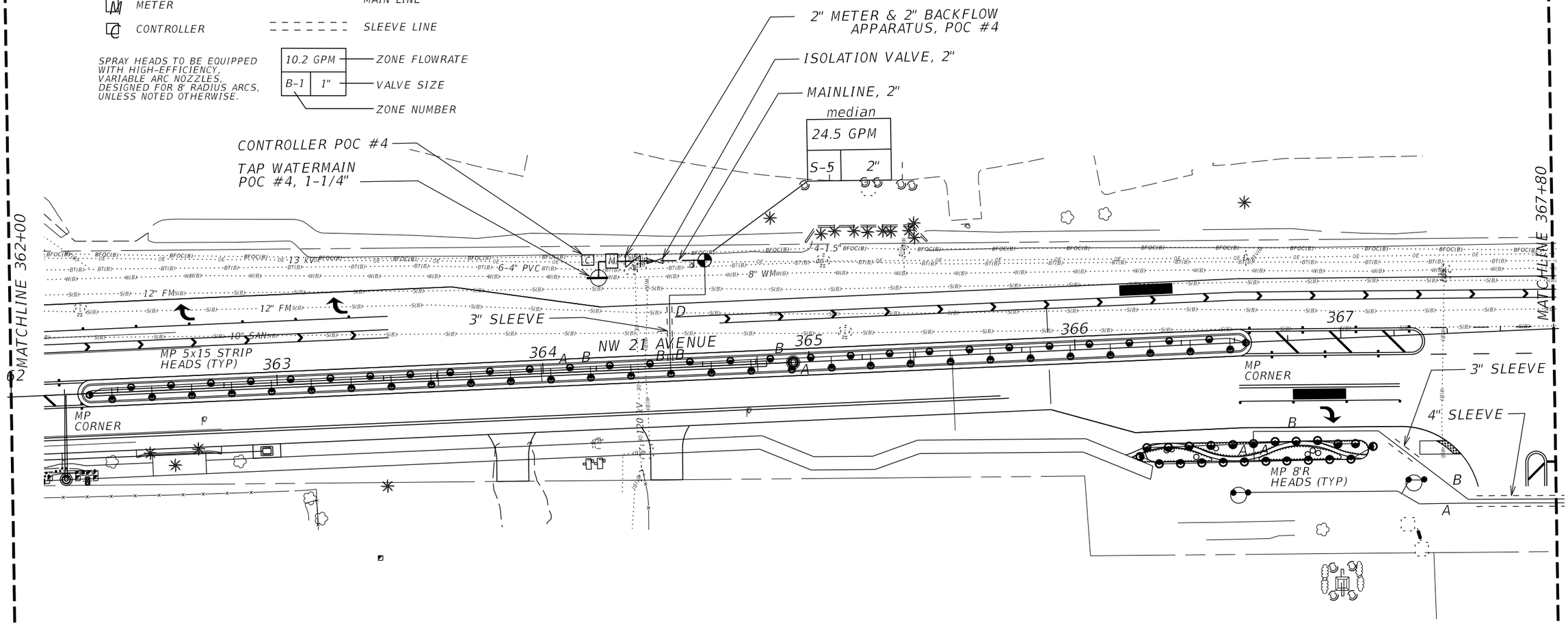
SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM	ZONE FLOWRATE
B-1 | 1"	VALVE SIZE
	ZONE NUMBER

N

0 10 40

Feet



PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

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HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-7

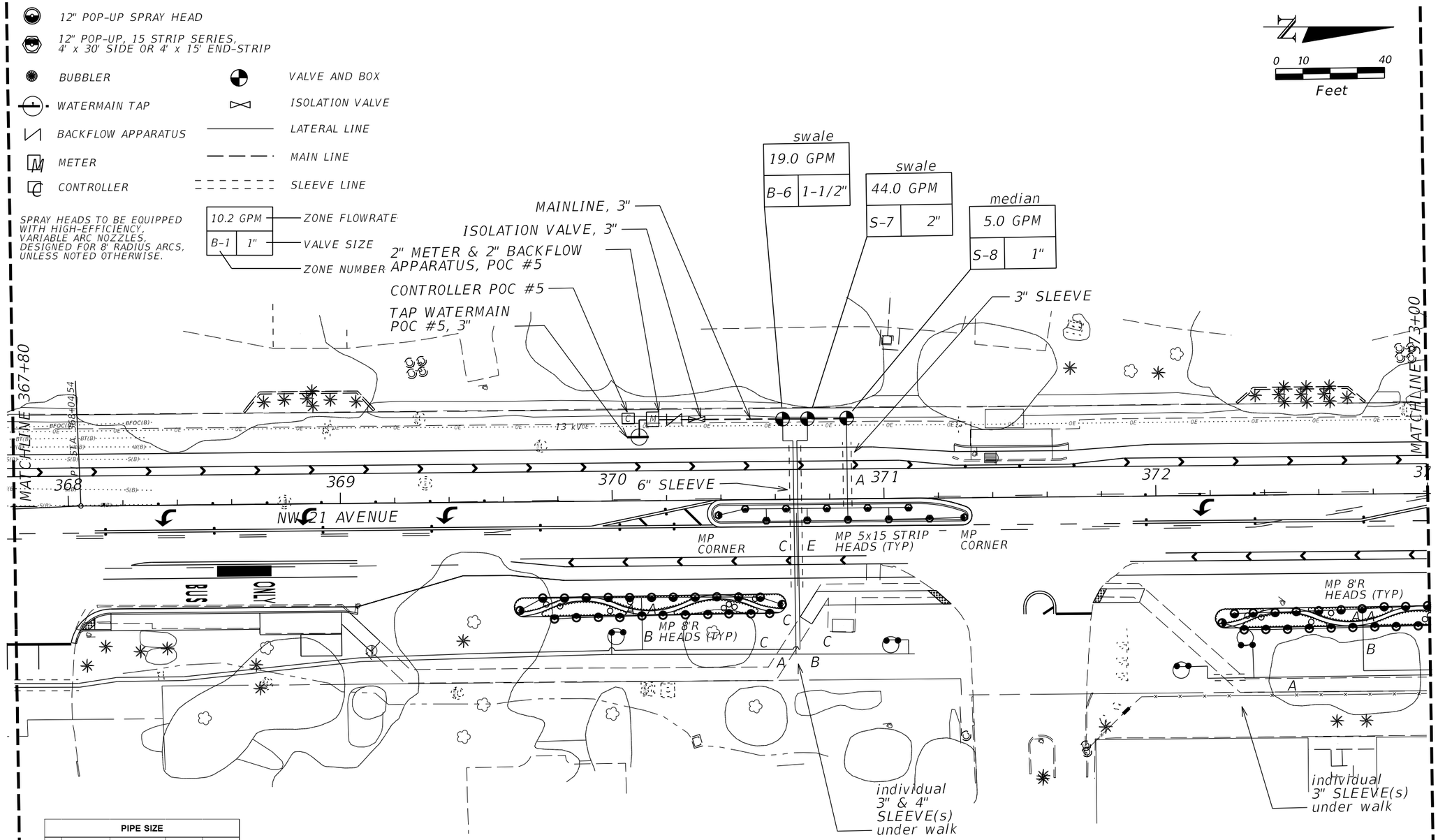
RROLLINS 5/20/2020 10:20:29 AM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANIR07.dgn

IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

10.2 GPM	ZONE FLOWRATE
B-1 | 1"	VALVE SIZE
	ZONE NUMBER

SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.



PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-8

RROLLINS 5/20/2020 10:21:20 AM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANIR08.dgn

IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

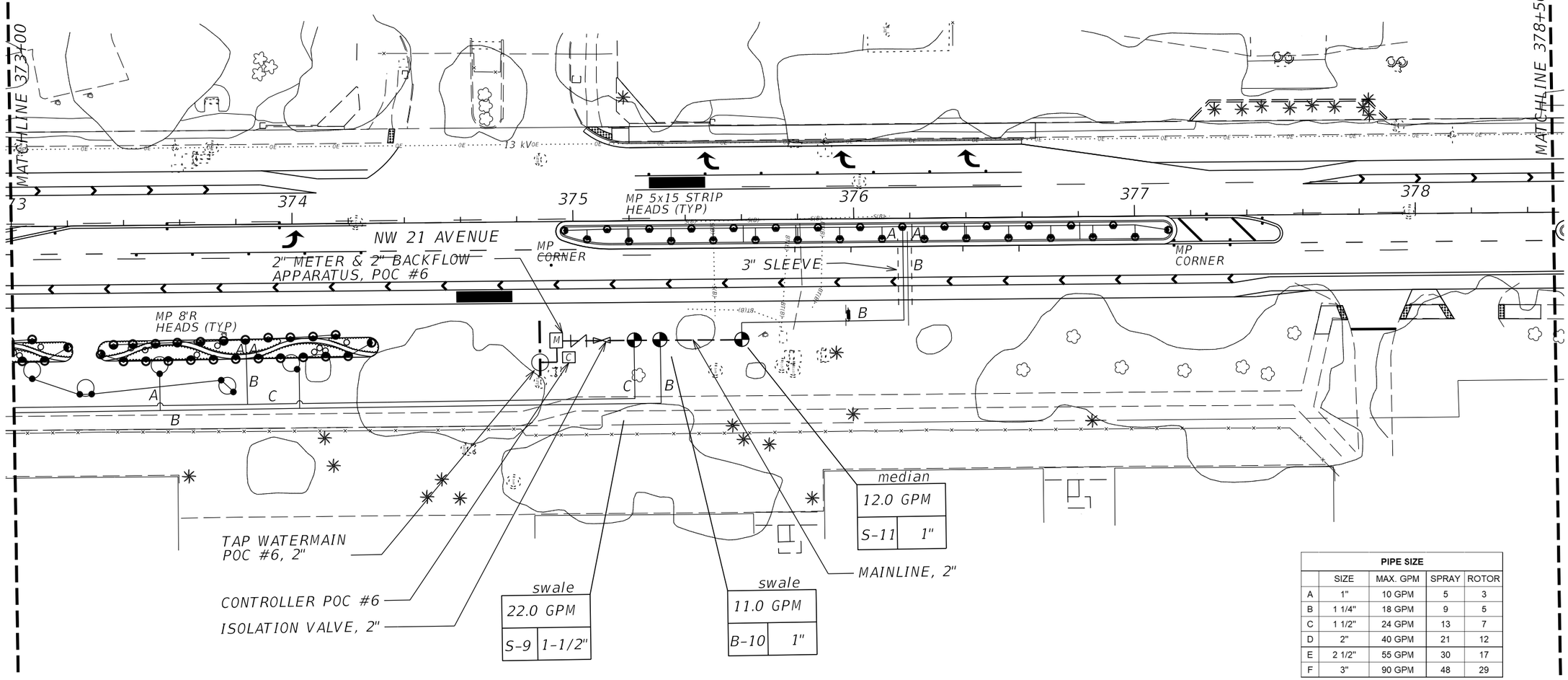
SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM	
B-1	1"

ZONE FLOWRATE
VALVE SIZE
ZONE NUMBER

N

0 10 40
Feet



PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

REVISIONS	
DATE	DESCRIPTION

LANDSCAPE ARCHITECT OF RECORD
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PLANTATION, FL 33324

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-9

RROLLINS 5/20/2020 10:22:24 AM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANIR09.dgn

IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM	ZONE FLOWRATE
B-1 | 1"	VALVE SIZE
	ZONE NUMBER

N

0 10 40

Feet

MATCHLINE 378+50

379 380 381 382 383 384

MP 5x15 STRIP HEADS (TYP)

MP 8'R HEADS (TYP)

MP CORNER

MP CORNER

3" SLEEVE

NW 21 AVENUE

MAINLINE, 2"

3" SLEEVE

6" DIP FM

MATCHLINE 383+40

13 kV

BFOC(B) BT(B) S(B) OE

NW 43 STREET

TAP WATERMAIN POC #7, 2"

CONTROLLER POC #7

1-1/4" METER & 1-1/4" BACKFLOW APPARATUS, POC #7

ISOLATION VALVE, 2"

median
16.0 GPM
S-12 | 1"

swale
8.0 GPM
B-13 | 1"

swale
16.5 GPM
S-14 | 1-1/4"

PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

REVISIONS	
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BROWARD COUNTY FLORIDA

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HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-10

IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

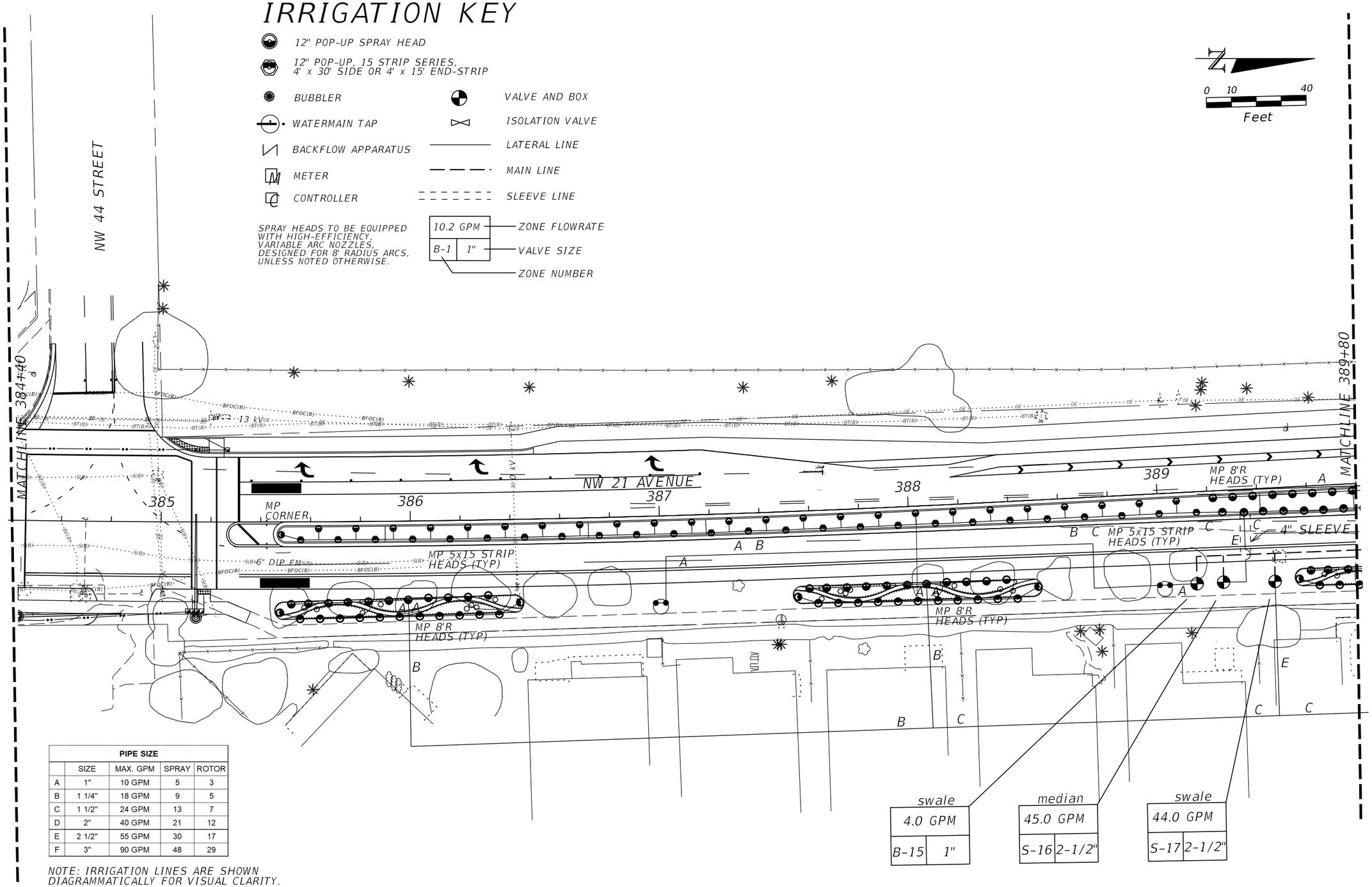
SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM	ZONE FLOWRATE
B-1 | 1"	VALVE SIZE
	ZONE NUMBER

N

0 10 40

Feet



swale	median	swale
4.0 GPM	45.0 GPM	44.0 GPM
B-15 | 1"	S-16 | 2-1/2"	S-17 | 2-1/2"

PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

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PLANTATION, FL 33324

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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-11

RROLLINS 5/20/2020 10:25:24 AM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANIR11.dgn

IRRIGATION KEY

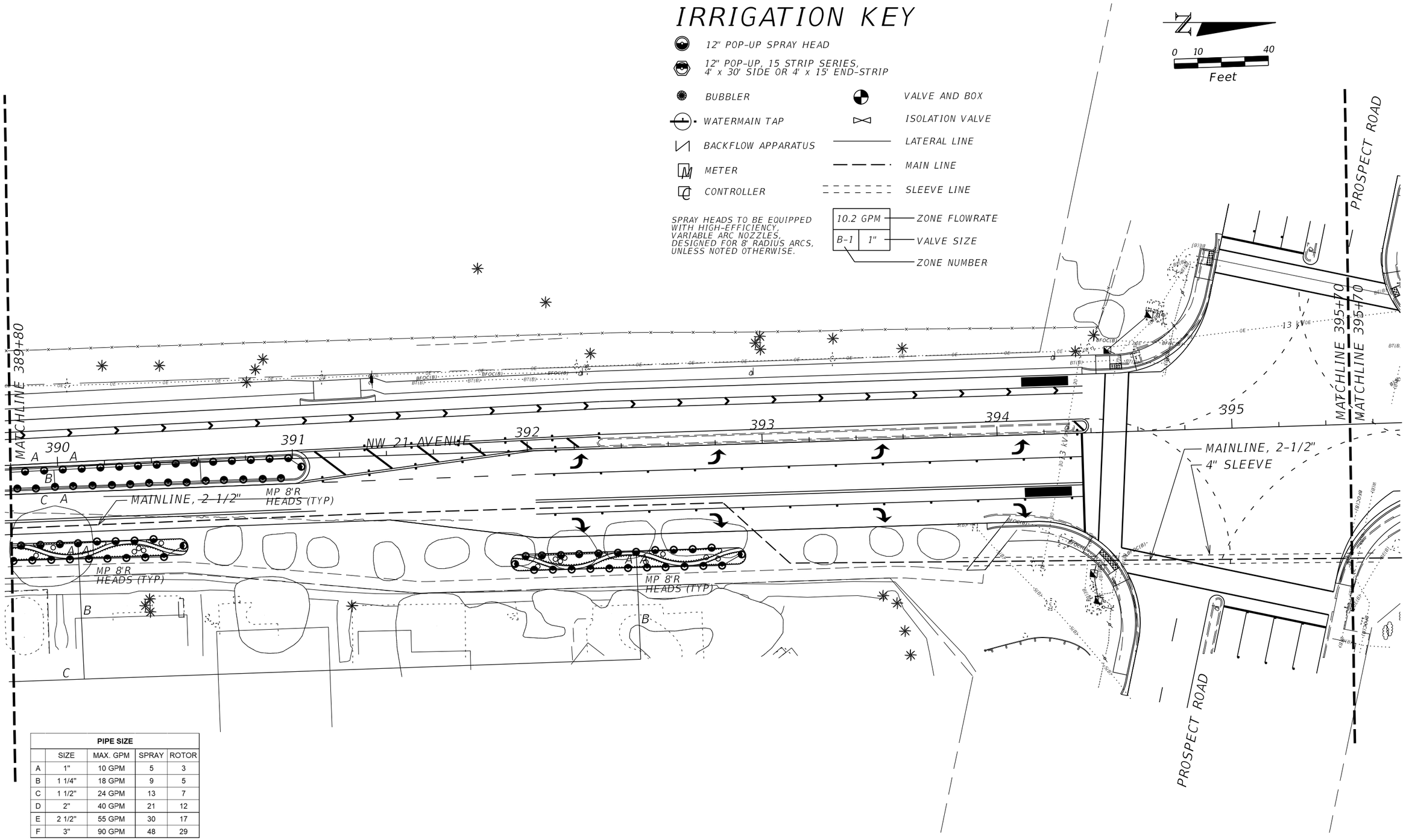
- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM — ZONE FLOWRATE
B-1 | 1" — VALVE SIZE
ZONE NUMBER

N

0 10 40
Feet



PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-12

IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM	— ZONE FLOWRATE
B-1 | 1"	— VALVE SIZE
	— ZONE NUMBER

0 10 40
Feet

PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

PROSPECT ROAD
MATCHLINE 395+70
TRIBUTARY CANAL
MATCHLINE 401+50
NW 21ST AVENUE
396
397
398
399
400
401
MP 8'R HEADS (TYP)
MP 12'R HEADS (TYP)
MP 5x15 STRIP CORNER HEADS (TYP)
MAINLINE, 3"
6" SLEEVE
MAINLINE, 2-1/2"
4" SLEEVE
ISOLATION VALVE, 3"
2-1/2" METER & 2-1/2" BACKFLOW APPARATUS, POC #8
TAP WATERMAIN POC #8, 3"
CONTROLLER POC #8
13 KVOE

median
43.5 GPM
S-18 | 2-1/2"

median
10.0 GPM
B-19 | 1"

swale
33.0 GPM
S-20 | 2"

REVISIONS	
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COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-13

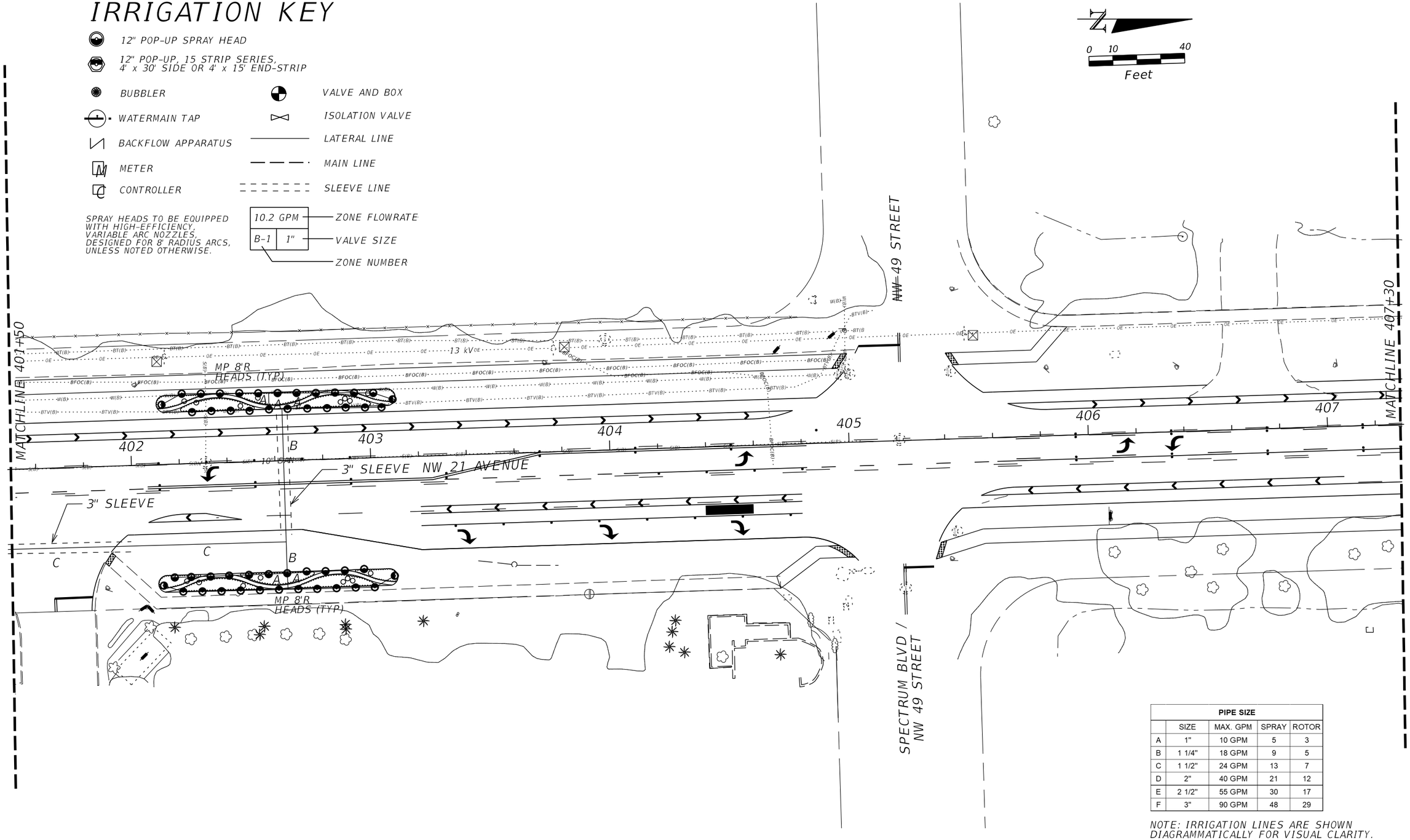
RROLLINS 5/20/2020 10:27:24 AM G:\NW 21st Ave Oakland to Commercial\landscape plans\PLANIR13.dgn

IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
- WATERMAIN TAP
- BACKFLOW APPARATUS
- METER
- CONTROLLER
- VALVE AND BOX
- ISOLATION VALVE
- LATERAL LINE
- MAIN LINE
- SLEEVE LINE

SPRAY HEADS TO BE EQUIPPED WITH HIGH-EFFICIENCY, VARIABLE ARC NOZZLES, DESIGNED FOR 8' RADIUS ARCS, UNLESS NOTED OTHERWISE.

10.2 GPM	ZONE FLOWRATE
B-1 | 1"	VALVE SIZE
	ZONE NUMBER



PIPE SIZE				
	SIZE	MAX. GPM	SPRAY	ROTOR
A	1"	10 GPM	5	3
B	1 1/4"	18 GPM	9	5
C	1 1/2"	24 GPM	13	7
D	2"	40 GPM	21	12
E	2 1/2"	55 GPM	30	17
F	3"	90 GPM	48	29

NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

REVISIONS	
DATE	DESCRIPTION

LANDSCAPE ARCHITECT OF RECORD
RONALD B. ROLLINS, RLA
LICENSE NO. LA 0001558
BROWARD COUNTY HIGHWAY CONSTRUCTION & ENGINEERING DIVISION
1 NORTH UNIVERSITY DRIVE
PLANTATION, FL 33324

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-14

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IRRIGATION KEY

- 12" POP-UP SPRAY HEAD
- 12" POP-UP, 15 STRIP SERIES, 4' x 30' SIDE OR 4' x 15' END-STRIP
- BUBBLER
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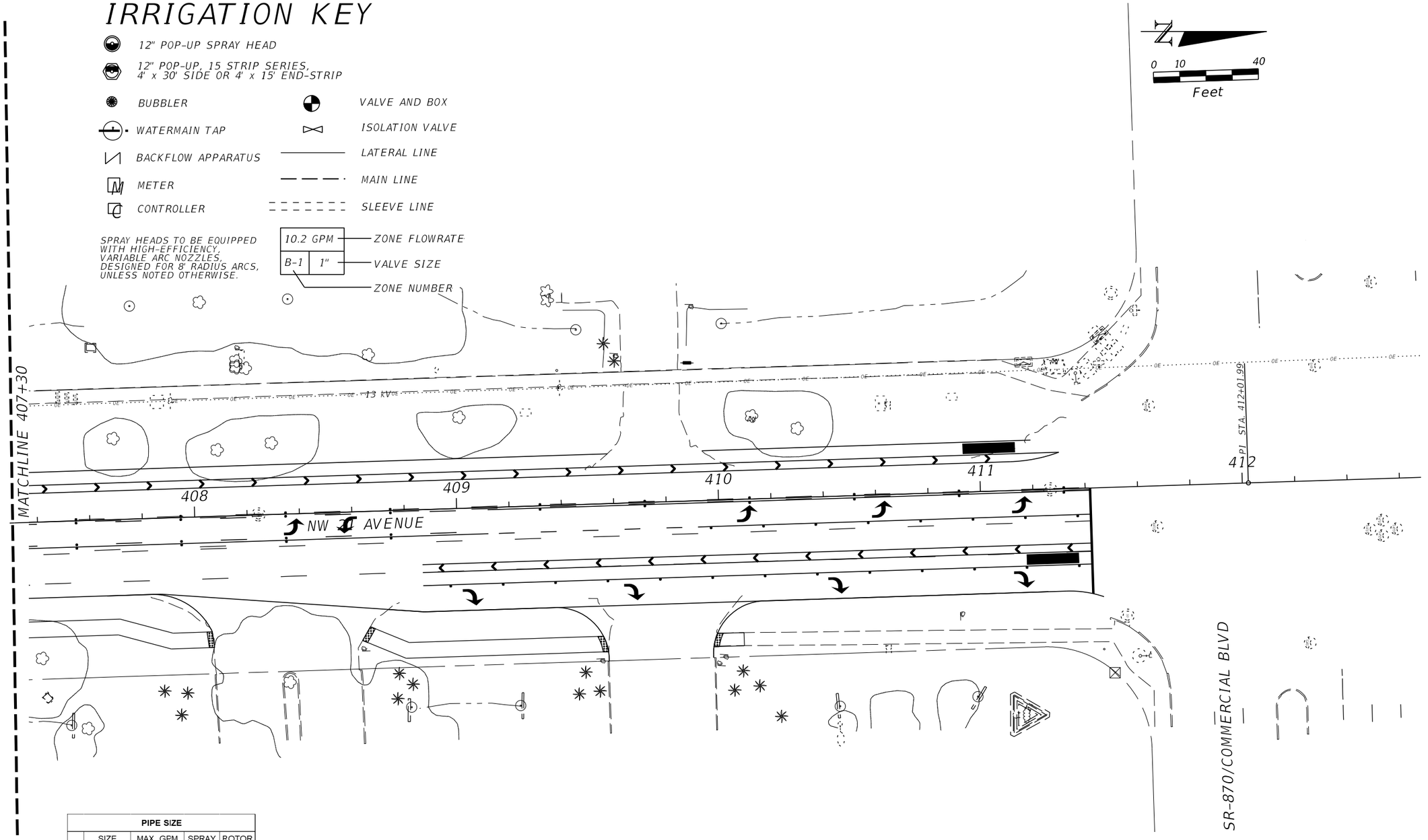
10.2 GPM	ZONE FLOWRATE
B-1 / 1"	VALVE SIZE
B-1	ZONE NUMBER



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NOTE: IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY FOR VISUAL CLARITY. ALL WORK IS WITHIN THE RIGHT-OF-WAY, OR WITHIN EASEMENTS.

NO LANDSCAPE OR IRRIGATION IMPROVEMENTS ON THIS SHEET

REVISIONS	
DATE	DESCRIPTION

LANDSCAPE ARCHITECT OF RECORD
RONALD B. ROLLINS, RLA
LICENSE NO. LA 0001558
BROWARD COUNTY HIGHWAY
CONSTRUCTION & ENGINEERING DIVISION
1 NORTH UNIVERSITY DRIVE
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BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION

COUNTY ROAD	COUNTY PROJECT NO.
N.W. 21st AVENUE	XXXXXX

IRRIGATION PLANS

SHEET NO. IR-15

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