

THIS APPROVAL IS SUBJECT TO SPECIFIC CONFORMANCE TO THE OSCEOLA COUNTY LAND DEVELOPMENT CODE AND ANY SPECIAL REQUIREMENTS OF THE BOARD OF COUNTY COMMISSIONERS. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO CORRECT ANY DEFECTS IN THE PLANS OR THE FACILITY AS CONSTRUCTED WHICH RESULT IN A FAILURE TO MEET APPLICABLE CODE REQUIREMENTS NOR DOES IT RELIEVE THE DEVELOPER OF RESPONSIBILITY TO MEET THOSE REQUIREMENTS. ALL INFORMATION AND DETAILS THAT MAY BE INCLUDED WITHIN THESE DRAWINGS THAT ARE CONSIDERED UNDER THE PREVIEW AND AUTHORITY OF JURISDICTIONS OTHER THAN OSCEOLA COUNTY IS NOT PART OF THIS APPROVAL. THIS SPECIFIC APPROVAL IS VALID FOR A PERIOD OF THREE YEARS FROM THE DATE STAMPED.

[Signature]

NOT VALID WITHOUT AN ACTIVE CONSTRUCTION PERMIT

Construction Plans

for

Sunbridge NED

Cyrils Drive Phase 1 & Utility Access Road

Osceola County, FL

NOTE:
CONSTRUCTION PLANS WERE PREPARED IN ACCORDANCE WITH THE 2015 MANUAL OF UNIFORM STANDARDS FOR DESIGN, CONSTRUCTION, AND MAINTENANCE FOR STREETS AND HIGHWAYS, FDOT GREEN BOOK, AND THE OSCEOLA COUNTY REGULATIONS AND SPECIFICATIONS.

NOTES:
1. THIS PROJECT IS EXPECTED TO BALANCE WITH RESPECT TO EARTHWORK QUANTITIES, AND NO IMPORT OR EXPORT OF FILL MATERIAL IS PROPOSED. SHOULD EXPORT BE NEEDED, A PERMIT MODIFICATION WILL BE REQUIRED, AND ALL EXPORTED MATERIAL WILL BE SUBJECT TO OSCEOLA COUNTY FEES IN THE AMOUNT OF \$0.10 PER CUBIC YARD.
2. THE FOLLOWING PROPOSED FACILITIES SHOWN ON THE DEVELOPMENT PLANS ARE FOR REFERENCE PURPOSES ONLY AND EACH SHALL REQUIRE A SEPARATE BUILDING PERMIT. THE LIST INCLUDES, BUT IS NOT LIMITED TO: PROPOSED BUILDINGS, SANITARY LIFT STATIONS, LIGHT FIXTURES (POLES) THAT ARE INDEPENDENT FROM ANY BUILDING STRUCTURE, FENCES, GATES, MONUMENT SIGNS, DUMPSTER ENCLOSURES, AND DECORATIVE/RETAINING WALLS.

CONCEPT PLAN CP17-00002 (DRC JULY 7, 2017 STAFF REPORT) STAFF RECOMMENDATION AND REQUESTED ACTION:

- BOARD OF COUNTY COMMISSIONERS TO APPROVE RESCISSION OF THE NORTHEAST DISTRICT SECTOR PLAN WITH NOTICE TO THE FLORIDA DEPARTMENT OF ECONOMIC OPPORTUNITY.
- THE APPLICANT WILL SUBMIT TO THE COUNTY, PRIOR TO THE APPROVAL OF THE FIRST SITE DEVELOPMENT PLAN (SDP), A STRATEGIC ECONOMIC PLAN FOR THE REGION AS REQUIRED BY POLICY 14.39 OF THE NORTHEAST DISTRICT ELEMENT, AS WELL AS CONTINUED COORDINATION WITH OSCEOLA COUNTY ECONOMIC DEVELOPMENT.
- A DEVELOPER'S AGREEMENT (DA) BETWEEN THE APPLICANT AND THE COUNTY FOR THE OFFSITE IMPROVEMENTS OF CYRILS DRIVE WILL BE SUBMITTED CONCURRENTLY WITH THE FIRST SDP. THE DA MUST BE APPROVED BY THE BOARD OF COUNTY COMMISSIONERS BEFORE THE APPROVAL OF THE FIRST SDP.

Utility Mains		
Main Type	Main Size	Linear Footage
WATERMAIN	8"	125
	16"	148
	20"	3,193
RECLAIMED WATERMAIN	8"	76
	16"	3,281
	20"	21
FORCEMAIN	6"	45
	8"	49
	12"	3,147
	16"	98

Parcel Id. No.:
02-25-31-0000-0010-0000
11-25-31-0000-0010-0000

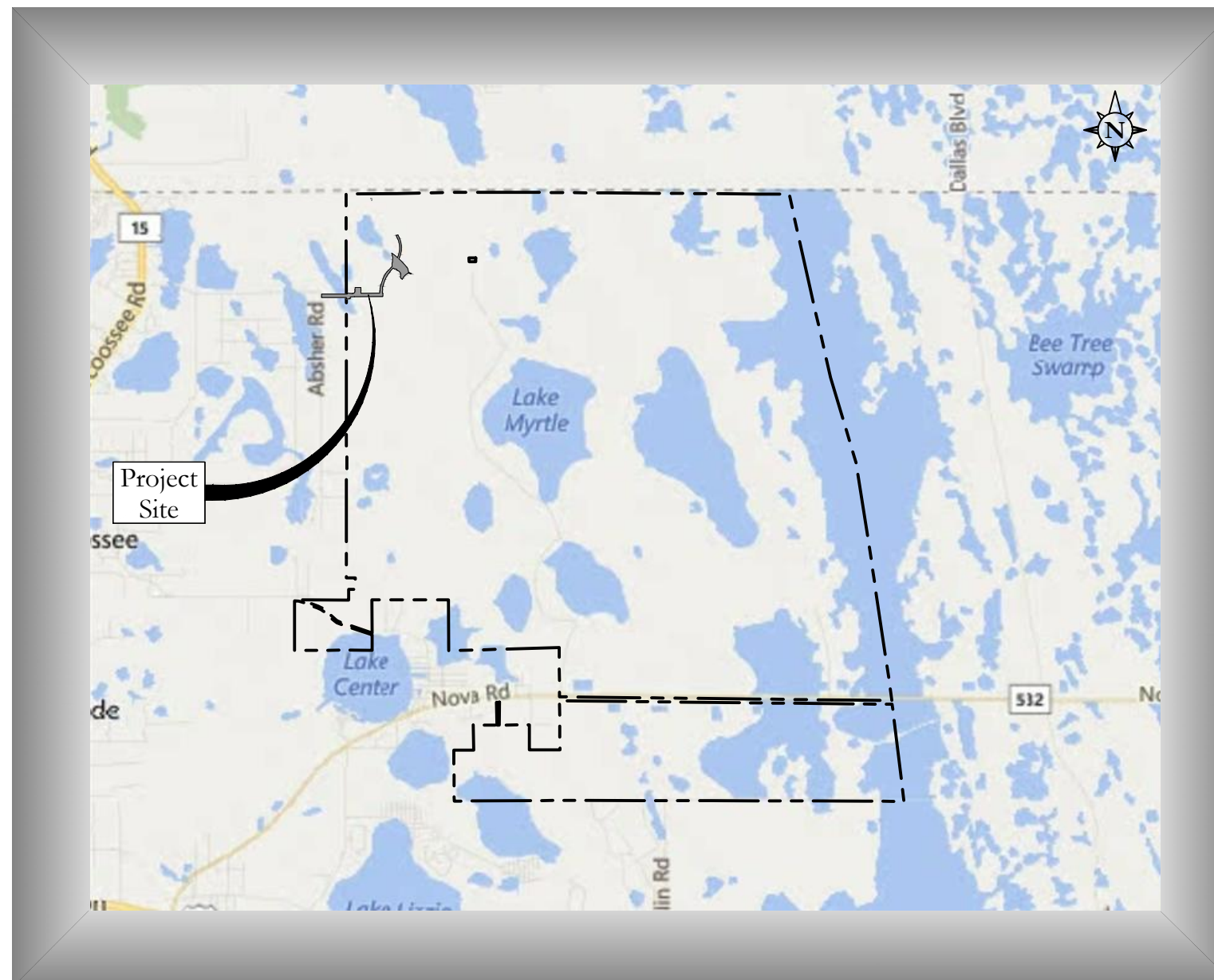
Owner

Central Florida Property Holdings 500, LLC
Central Florida Property Holdings 600, LLC
Central Florida Property Holdings 700, LLC
PO Box 511196
Salt lake City, UT 84151

Owner/Developer/Applicant:

Tavistock East Holdings, LLC
6900 Tavistock Lakes Blvd., Suite 200
Orlando, FL 32827

Sheet Id.	Sheet Title	Subm./Rev.																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
C0.01 - C0.02	General Notes	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C0.03	Existing Survey & Topography	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C0.04	Existing Conditions - Soils & Floodplain	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C0.05	Existing Conditions - FLUCFCS	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C0.06	Survey & Legal Description	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C2.00	Master Site Plan & Site Data	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C2.10	Erosion Control Plan & Details	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
DWP-1	Dewatering Operation Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
DWP-2	Dewatering Details & Notes	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C3.00 - C3.01	Typical Road Sections	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C3.10 - C3.11	Signing, Striping & Sidewalk Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C4.00	Roadway Soil Borings	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C4.01 - C4.02	Muck Probe Location Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C5.00 - C5.01	Drainage Map	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C5.03	Temporary Stabilized Access Road	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C5.10 - C5.11	Pond Details	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C5.20	Control Structure Details	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C6.00	Project Layout & Road Centerline Geometry	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C6.01 - C6.07	Plan & Profiles	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C7.00	Utility Site Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C7.01 - C7.07	Utility Plan & Profiles	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C7.50 - C7.51	Utility Asset Tables	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C8.00 - C8.10	Cross Sections	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C9.00 - C9.03	Standard FDOT Details	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C9.20 - C9.22	TWA Construction Details & Underdrain	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C9.23	Master Meter Assemblies	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C9.30	OUC Details	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
XLP-1.0	Roadway Permit Tree Mitigation Key Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
XLP-1.1	Roadway Permit Tree Mitigation Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
XLP-1.3	Roadway Permit Removed Tree List And Mitigation Calculations	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
LP-1.0	Roadway Permit Landscape Key Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
LP-1.1	Roadway Permit Landscape Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
LP-2.1	Roadway Permit Plant List, Details And Notes	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
LP-3.0	Roadway Permit Irrigation Key Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
LP-3.1	Roadway Permit Irrigation Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
LP-4.1	Roadway Permit Irrigation Schedules	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
LP-4.2	Roadway Permit Irrigation Details And Notes	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	<u>Date</u>																		
2	2/20/2018	Revised For Bid Set																	
3	2/23/2018	Revised Per TWA Comments																	
4	3/14/2018	Revised For Bid Addendum #3																	
5	6/6/2018	Plan Revisions																	
6	6/20/2018	Revised Per TWA Comments																	
7	6/28/2018	Revised Per County Comments																	
8	7/18/2018	Add RW STA. 106+67 - 137+97 & Add FM STA. 106+65 - 119+20																	
9	8/3/2018	Add OUC & Telecom Infrastructure																	
10	9/21/2018	Revised Watermain, Reclaimed Main & Forcemain Sizes																	
11	10/29/2018	Revised Forcemain Size, Add Conduit, & Revised Outfall Structure CS-CR-2																	
12	11/16/2018	Revised Per TWA Comments																	
13	11/30/2018	Stamping Approval																	
14	2/7/2019	Revised Outfall Structure CS-CR-2																	
15	5/3/2019	Add FM ARV @ Sta. 138+15																	
16	6/11/2019	Add Master Meters & AFD, Rev. OUC Conduits																	
17	7/9/2019	Revised Per TWA Comments																	
18	7/24/2019	Revised RW & FM Layout & Sizes																	



Vicinity Map
Scale: 1" = 8,000'

(SDP17-0155)(PS17-00025)(CP17-00002)(CPA09-009)

Civil Engineer:
Poulos & Bennett, LLC
2602 E. Livingston St.
Orlando, FL 32803
407.487.2594

Utilities:
Florida Public Utilities
450 S. Charles Richard Beall Blvd.
Debarry, FL 32713
800.427.7712
386.668.2600

Surveyor:
Allen & Company
16 E. Plant St
Winter Garden, FL
407.654.5355
407.654.5356

Electric:
Orlando Utility Commission
100 W. Anderson St.
Orlando, FL 32801
407.434.2569

Environmental:
Breedlove, Dennis & Associates, Inc
330 W. Canton Ave
Winter Park, FL 32789
407.677.1882

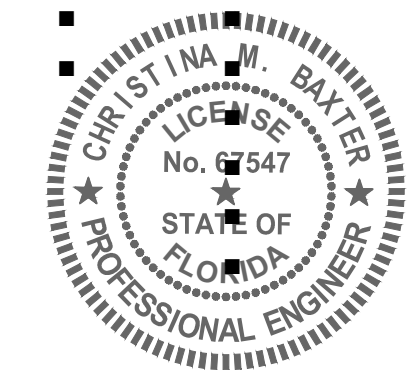
Telephone & Fiber Optic:
Century Link
1359 E. Vine St.
Kissimmee, FL 34744
407.814.5293

Geotechnical Engineer:
Universal Engineering Sciences
3532 Maggie Blvd.
Orlando, FL 32811
407.423.0504

Communications & Fiber Optics:
AT&T
1332 N. John Young Parkway
Kissimmee, FL 34741
770.918.5424
407.931.0300

Landscape Architect:
Foster Conant & Associates
120 W. Robinson St.
Orlando, FL 32801
407.648.2225

Cable, Telephone, & Fiber Optics:
Bright House Networks, LLC
3613 Grissom Lane
Kissimmee, FL 34741
407.532.8509



CHRISTINA M. BAXTER
P.E. NO. 067547
DATE: December 6, 2019



2602 E. Livingston St., Orlando, FL 32803
Tel. 407.487.2594 www.poulosandbennett.com
Eng. Bus. No. 28567
P&B Job No.: 17-042

Construction Plans for Sunbridge NED Cyrils Dr. Phase 1

Z:\2017\17-042 TAVISTOCK - SUNBRIDGE\CYRILS DR\CAD\FINAL\PHASE 1\17042-CD_P11-03

General Site Data

Land Use	Mixed Use
Zoning	MXD
Total Area of Disturbance	31.42 Ac.
Pond Area At NCL	7.88 Ac.

General Notes

Ownership / Maintenance	
Roadways	Public
Roadways	Private
Stormwater Ponds	Private
Medians	Public
Open Space	Private
Drainage Easements	Private
Utility Easements	Private
Wetland	Private
Future Development	Private

Miscellaneous

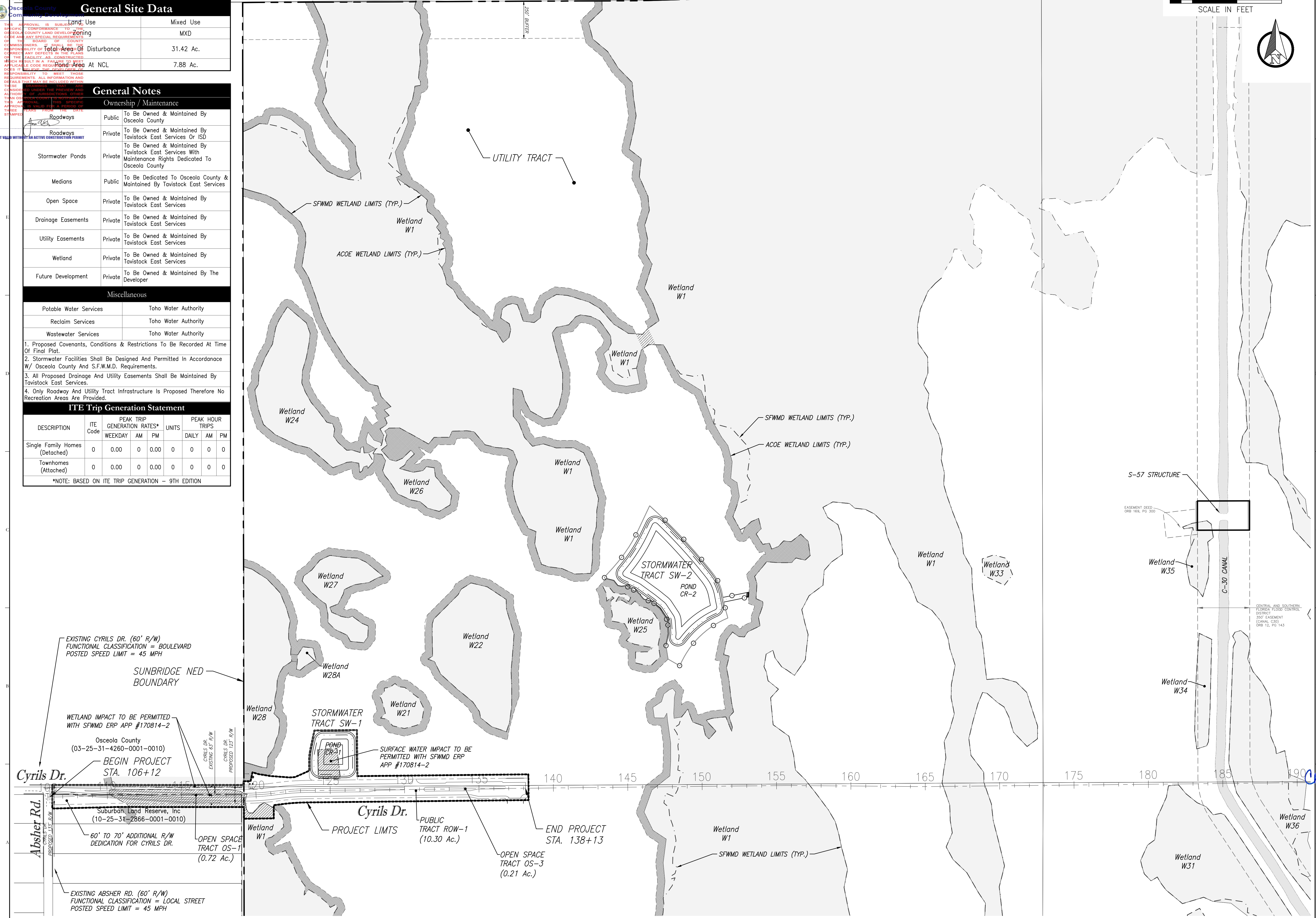
Potable Water Services	Toho Water Authority
Reclaim Services	Toho Water Authority
Wastewater Services	Toho Water Authority

- Proposed Covenants, Conditions & Restrictions To Be Recorded At Time Of Final Plat.
- Stormwater Facilities Shall Be Designed And Permitted In Accordance W/ Osceola County And S.F.W.M.D. Requirements.
- All Proposed Drainage And Utility Easements Shall Be Maintained By Tavistock East Services.
- Only Roadway And Utility Tract Infrastructure Is Proposed Therefore No Recreation Areas Are Provided.

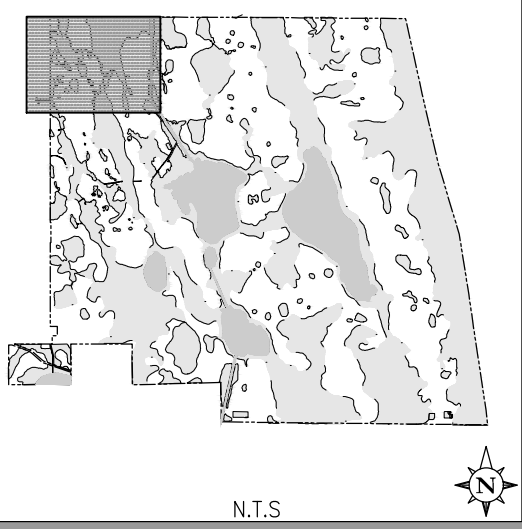
ITE Trip Generation Statement

DESCRIPTION	ITE Code	PEAK TRIP GENERATION RATES*			UNITS	PEAK HOUR TRIPS		
		WEEKDAY	AM	PM		DAILY	AM	PM
Single Family Homes (Detached)	0	0.00	0	0.00	0	0	0	0
Townhomes (Attached)	0	0.00	0	0.00	0	0	0	0

*NOTE: BASED ON ITE TRIP GENERATION - 9TH EDITION



Key Map:



Consultant:
19 12/10/19 FIEL REVISIONS & UAR REMOVAL

18	7/24/19	REVISED RW & FM LAYOUT & SIZES
17	7/9/19	REVISED PER TWA COMMENTS
16	6/11/19	ADD MM & AFD, REV. OUC CONDUITS
15	5/3/19	ADD FM ARV @ STA. 138+15
14	2/7/19	REV. OUTFALL STRUCTURE CS-CR-2
13	11/30/18	STAMPING APPROVAL
12	11/16/18	REVISED PER TWA COMMENTS
11	10/29/18	REV. FM SIZE, ADD CONDUIT & REV. OUTFALL STRUCTURE CS-CR-2
10	9/21/18	REV. W.M., R.W. & F.M. SIZES
9	8/3/18	ADD OUC & TELECOM INFRASTRUCTURE
8	7/18/18	ADD RW STA. 106+67.35+97 & ADD FM STA. 106+65.10+20
7	6/29/18	REVISED PER COUNTY COMMENTS
6	6/20/18	REVISED PER TWA COMMENTS
5	6/6/18	PLAN REVISIONS
4	5/14/18	REV. FOR BID ADDENDUM #3
3	2/23/18	REVISED PER TWA COMMENTS

NO.	DATE	DESCRIPTIONS
SUBMISSIONS/REVISIONS		
	VERTICAL DATUM:	NAVD 88
	JOB NO.:	17-042
	DESIGNED BY:	LEN/JLD
	DRAWN BY:	JLD
	CHECKED BY:	LEN/CMB
	APPROVED BY:	CMB
	SCALE IN FEET:	1" = 300'

**SUNBRIDGE NED
CYRILS DRIVE
PHASE 1 & UTILITY
ACCESS ROAD**

(SDP17-0155) (PS17-00025)
(CP17-00002) (CPA09-009)

Jurisdiction:
OSCEOLA COUNTY, FL

Sheet Title:
**MASTER SITE PLAN &
SITE DATA**

Sheet No.:
C2.00

Seal:
CHRISTINA M. BAXTER
LICENSE No. 67547
ST. FLORIDA
DATE: December 10, 2019

Digitally signed by Christina M Baxter
Date: 2019.12.10 15:56:27-05'00'



Poulos & Bennett, LLC
2602 E. Livingston St., Orlando, FL 32803
Tel. 407.487.2594 www.poulosandbennett.com
Eng. Bus. No. 28567

Z:\2017\17-042 TAVISTOCK - SUNBRIDGE\CYRILS DR\CD\FINAL\PHASE 1\17042-CD-PH1-MSP

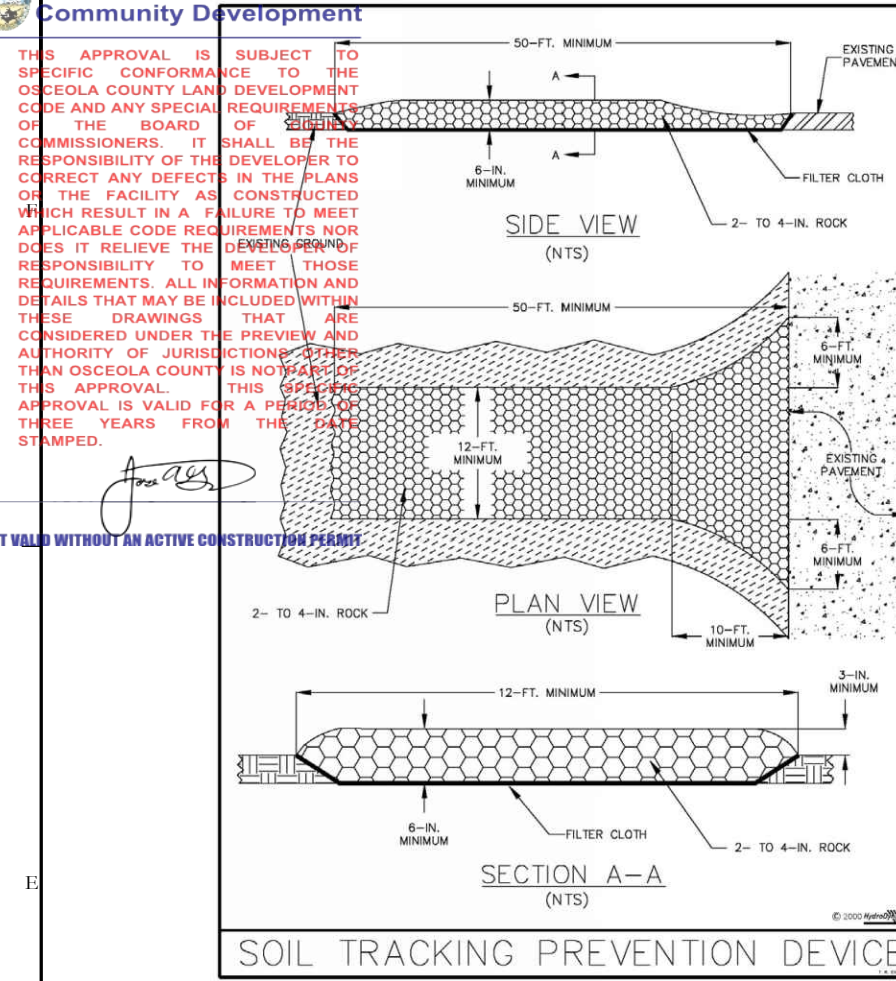
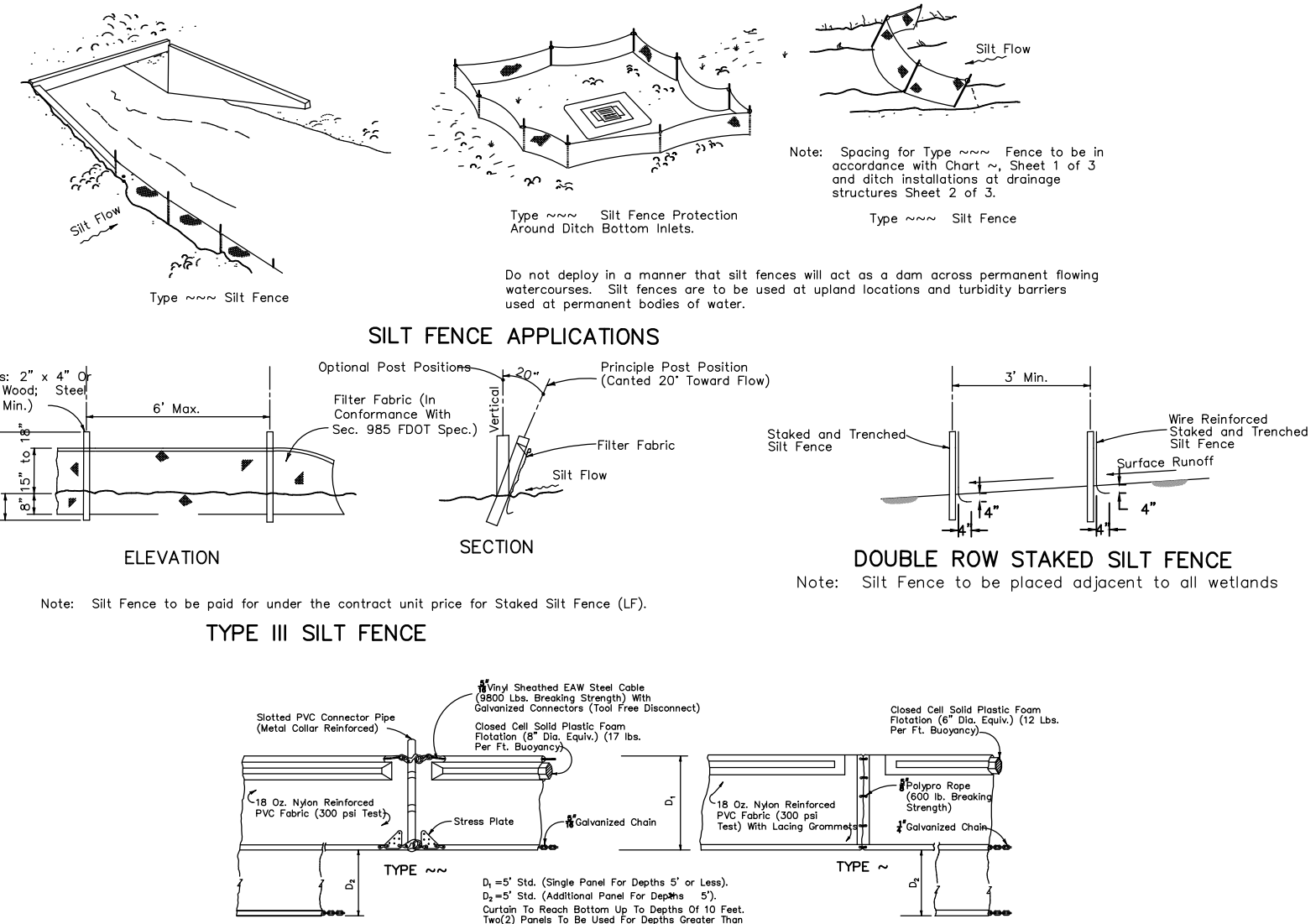


Figure V-19: Illustration of a Soil Tracking Prevention Device

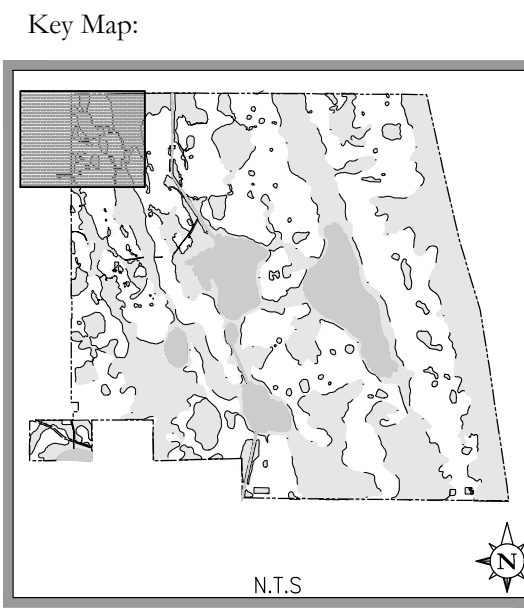
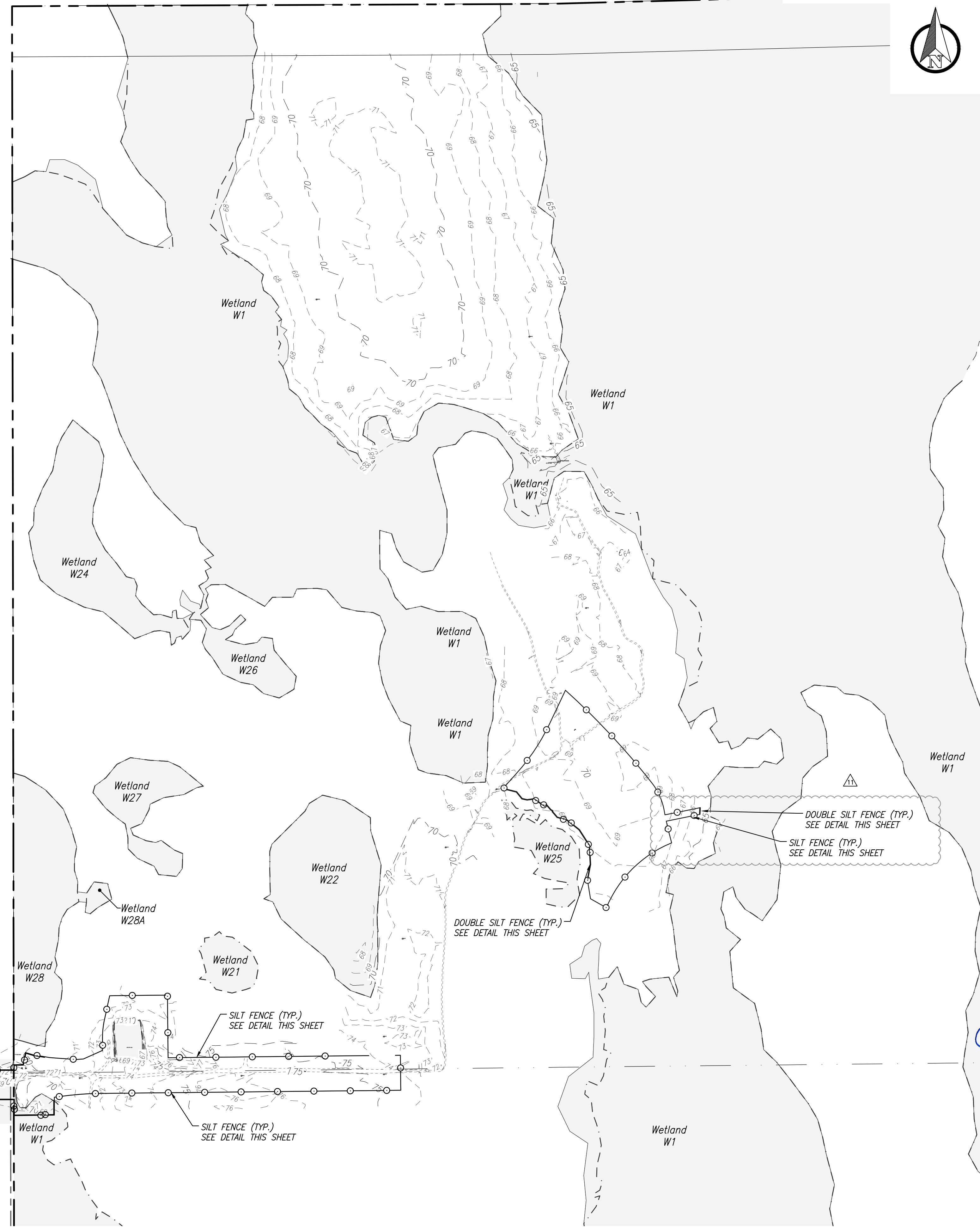
CONSTRUCTION ENTRANCE DETAIL
N.T.S.

- NOTES:**
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY.
 3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
 4. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE SHALL BE IN ACCORDANCE WITH FDOT EROSION AND SEDIMENT CONTROL MANUAL LATEST EDITION.



- EROSION CONTROL NOTES:**
1. DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO INSURE AGAINST POLLUTING, SILTING OR DISTURBING TO SUCH AN EXTENT AS TO CAUSE AN INCREASE IN TURBIDITY TO THE EXISTING SURFACE WATERS. SUCH MEASURES SHALL BE APPROVED BY THE PROJECT ENGINEER AND MAY INCLUDE, BUT NOT LIMITED TO, CONSTRUCTION OF TEMPORARY EROSION CONTROL STRUCTURES, SUCH AS SEDIMENT BASINS, SEDIMENT CHECKS, OR SILT BARRIERS.
 2. SODDING OF DETENTION PONDS SHOULD BE ACCOMPLISHED WITHIN SEVEN (7) DAYS FOLLOWING COMPLETION OF GRADING TO MINIMIZE EROSION POTENTIAL.
 3. AT A MINIMUM, THE RETENTION/DETENTION STORAGE AREA MUST BE EXCAVATED TO ROUGH GRADE PRIOR TO BUILDING CONSTRUCTION OR PLACEMENT OF IMPERVIOUS SURFACE WITHIN THE AREA TO BE SERVED BY THOSE FACILITIES TO PREVENT REDUCTION IN STORAGE VOLUME AND PERCOLATION RATES. ALL ACCUMULATED SEDIMENT MUST BE REMOVED FROM THE STORAGE AREA PRIOR TO FINAL GRADING AND STABILIZATION.
 4. IF DURING CONSTRUCTION, THE PROPOSED EROSION CONTROL SYSTEM DOES NOT PERFORM SATISFACTORILY, ALTERNATIVES AND ADDITIONAL METHODS OF PROTECTION SHALL BE IMPLEMENTED BY THE CONTRACTOR IN ORDER TO COMPLY WITH S.F.W.M.D. AND OSCEOLA COUNTY EROSION PROTECTION STANDARDS. CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR ALL EROSION CONTROL COSTS INCLUDING ANY COSTS ASSOCIATED WITH COMPLIANCE ISSUES AND ENFORCEMENT ACTIONS.
 5. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A DETAILED EROSION CONTROL PLAN TO OSCEOLA COUNTY FOR REVIEW AND APPROVAL A MINIMUM OF 2 WORKING DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. AT A MINIMUM, THE EROSION CONTROL PLAN SHALL PROPOSE SILT SCREEN OR SYNTHETIC HAY BALES AND TURBIDITY BARRIERS, IN ACCORDANCE WITH THE CONSTRUCTION PLANS.
 6. 2' STRIP OF SOD SHALL BE PLACED BEHIND BACK OF CURB. THE CURBSIDE BMP SHALL BE INSTALLED AS INDICATED IN THE SWPPP WHILE GRADING IS ACTIVE.
 7. ALL PERMANENT EROSION CONTROL MEASURES SHALL BE COMPLETED WITHIN 7 DAYS OF FINAL GRADING. ALL TEMPORARY EROSION CONTROL SHALL BE MAINTAINED UNTIL PERMANENT MEASURES ARE COMPLETED AND ESTABLISHED.
 8. CONTRACTOR SHALL STAKE IN ALL SOD UNTIL SUCH TIME THAT GROUND IS STABILIZED IN ORDER TO PREVENT EROSION.
 9. WORK SHALL BE DONE IN ACCORDANCE WITH EPA, FDEP, SFWMD, AND OSCEOLA COUNTY BEST MANAGEMENT PRACTICES AND EROSION CONTROL SPECIFICATIONS.
 10. DISCHARGE OF GROUNDWATER FROM DEWATERING OPERATIONS REQUIRES APPROVAL FROM FDEP AND THE APPLICABLE WATER MANAGEMENT DISTRICT. THE DEVELOPER/CONTRACTOR SHALL OBTAIN A FDEP GENERIC PERMIT FOR THE DISCHARGE OF GROUND WATER FROM DEWATERING OPERATIONS PURSUANT TO THE REQUIREMENTS OF 62-621.300(2)(A) AND 62-620 F.A.C. AND FLORIDA STATUTES CHAPTER 403.
 11. PRIOR TO THE START OF LAND DISTURBING ACTIVITIES, WHICH INCLUDES DEMOLITION, EARTHWORK AND/OR CONSTRUCTION, THE DEVELOPER/CONTRACTOR SHALL PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND SUBMIT TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) A NOTICE OF INTENT (NOI) TO OBTAIN COVERAGE UNDER THE NPDES GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES (CGP) PURSUANT TO THE REQUIREMENTS OF 62-621.300(4)(A) F.A.C. UPON COMPLETION OF ALL LAND DISTURBING ACTIVITIES AND AFTER FINAL STABILIZATION OF THE SITE IS COMPLETE, THE DEVELOPER/CONTRACTOR SHALL SUBMIT TO FDEP A NOTICE OF TERMINATION (NOT) TO END THEIR COVERAGE UNDER THE CGP.
 12. BMPs TO CONTROL DUST SHALL BE IMPLEMENTED, AS NEEDED, DURING THE COURSE OF LAND DISTURBING ACTIVITIES.
 13. EXCAVATION ACTIVITY SHALL BE CONDUCTED SO AS TO CONTROL THE GENERATION AND OFF-SITE MIGRATION OF DUSTS AND PARTICLES. ALL AREAS IN WHICH SUCH DUSTS OR PARTICLES MAY BE GENERATED SHALL BE KEPT WET, TREATED WITH CHEMICAL DUST DETERGENTS, OR CONTROLLED IN ANOTHER MANNER TO REDUCE THE POTENTIAL FOR THEIR OFF-SITE MIGRATION. ATMOSPHERIC DISCHARGES FROM PROCESSING AND DRYING EQUIPMENT SHALL COMPLY WITH ALL APPLICABLE STATE, FEDERAL AND LOCAL LAWS TO MINIMIZE DUST AND TO PREVENT THE DEPOSIT OF SOIL EXCAVATION MATERIAL ON PAVED ROADS. TRUCKS SHALL BE COVERED WITH THEIR TAILGATES LATCHED. DIRT ROAD SEGMENTS OF THE DESIGNATED HAUL ROUTE SHALL REQUIRE REGULAR WATERING, AS NECESSARY, TO MINIMIZE DUST GENERATED BY HAULING ACTIVITIES.
 14. NO EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER AS TO DIRECT RUNOFF DIRECTLY OFF THE PROJECT SITE OR DIRECTLY TO ANY ADJACENT WATER BODY OR STORMWATER COLLECTION FACILITY.
 15. CONTRACTOR TO EXTEND EROSION SOCK PIPE 1' (FT.) BEYOND CURB THROAT AT EACH END. THREE (3) SAND

BAGS ARE REQUIRED FOR EACH SOCK PIPE.



Consultant:

19	12/10/19	FIELD REVISIONS & UAR REMOVAL
18	7/24/19	REVISED RW & FM LAYOUT & SIZES
17	7/9/19	REVISED PER TWA COMMENTS
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5	6/6/18	PLAN REVISIONS
4	3/14/18	REV. FOR BID ADDENDUM #3
3	2/23/18	REVISED PER TWA COMMENTS

NO. DATE DESCRIPTIONS

SUBMISSIONS/REVISIONS	
VERTICAL DATUM:	NAVD 88
JOB NO.:	17-042
DESIGNED BY:	LEN/JLD
DRAWN BY:	JLD
CHECKED BY:	LEN/CMB
APPROVED BY:	CMB
SCALE IN FEET:	1" = ??

**SUNBRIDGE NED
CYRILS DRIVE
PHASE 1 & UTILITY
ACCESS ROAD**

(SDP17-0155) (PS17-00025)
(CP17-00002) (CPA09-009)

Jurisdiction:
OSCEOLA COUNTY, FL

Sheet Title:
**EROSION CONTROL
PLAN & DETAILS**

Sheet No.:
C2.10

Seal:
CHRISTINA M. BAXTER
LICENSE No. 67547
ST. FLORIDA
Professional Engineer
DATE: December 10, 2019

Digitally signed by Christina M Baxter
Date: 2019.12.10 15:56:29-0500

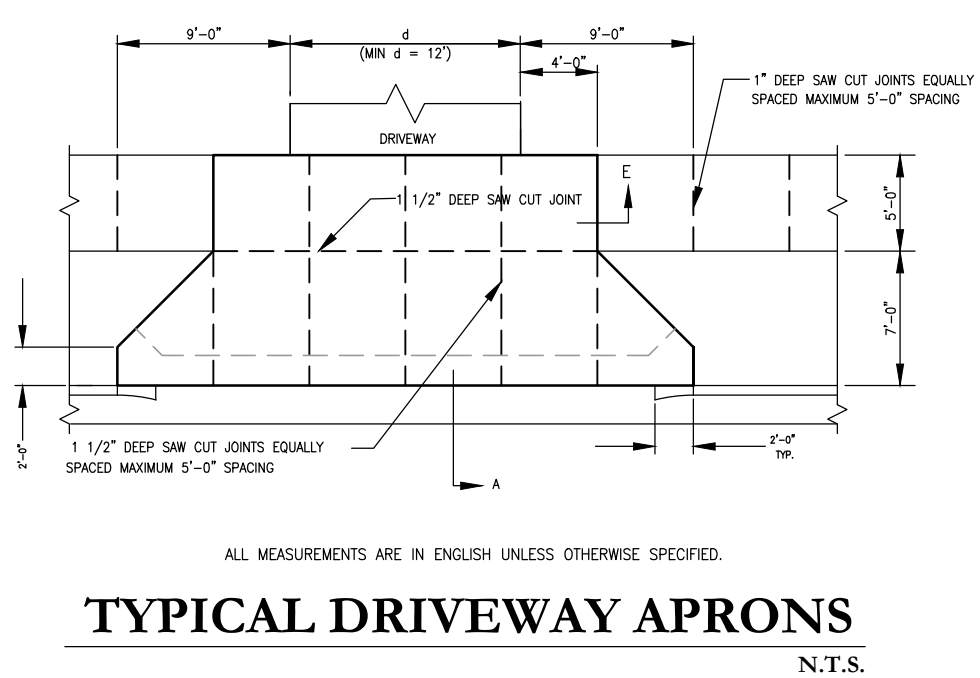
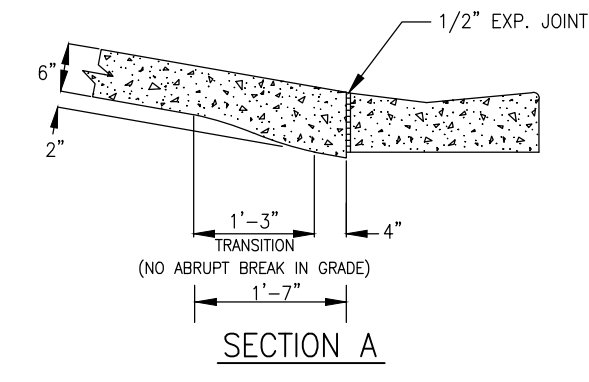
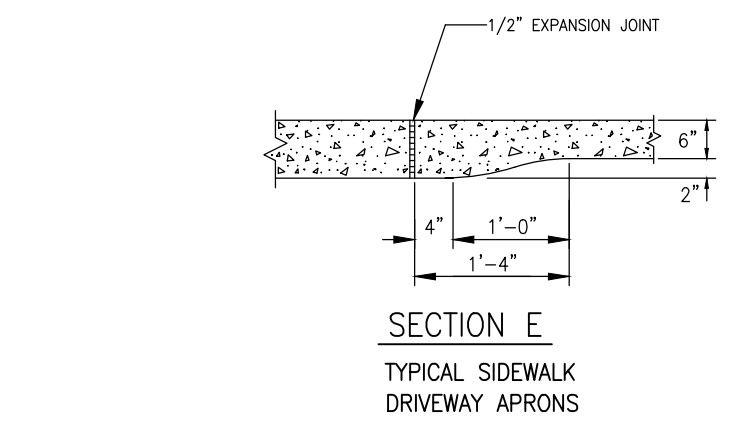
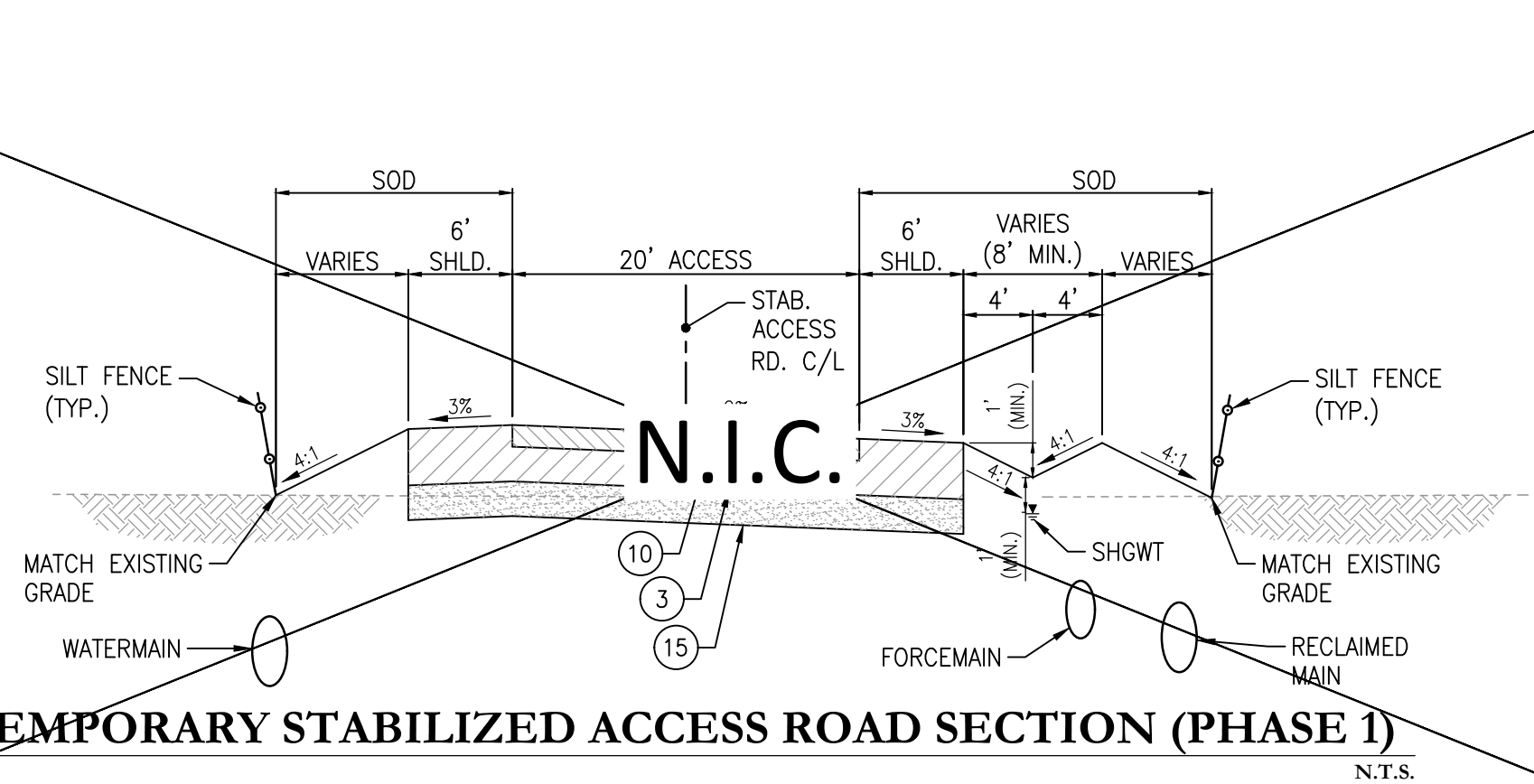
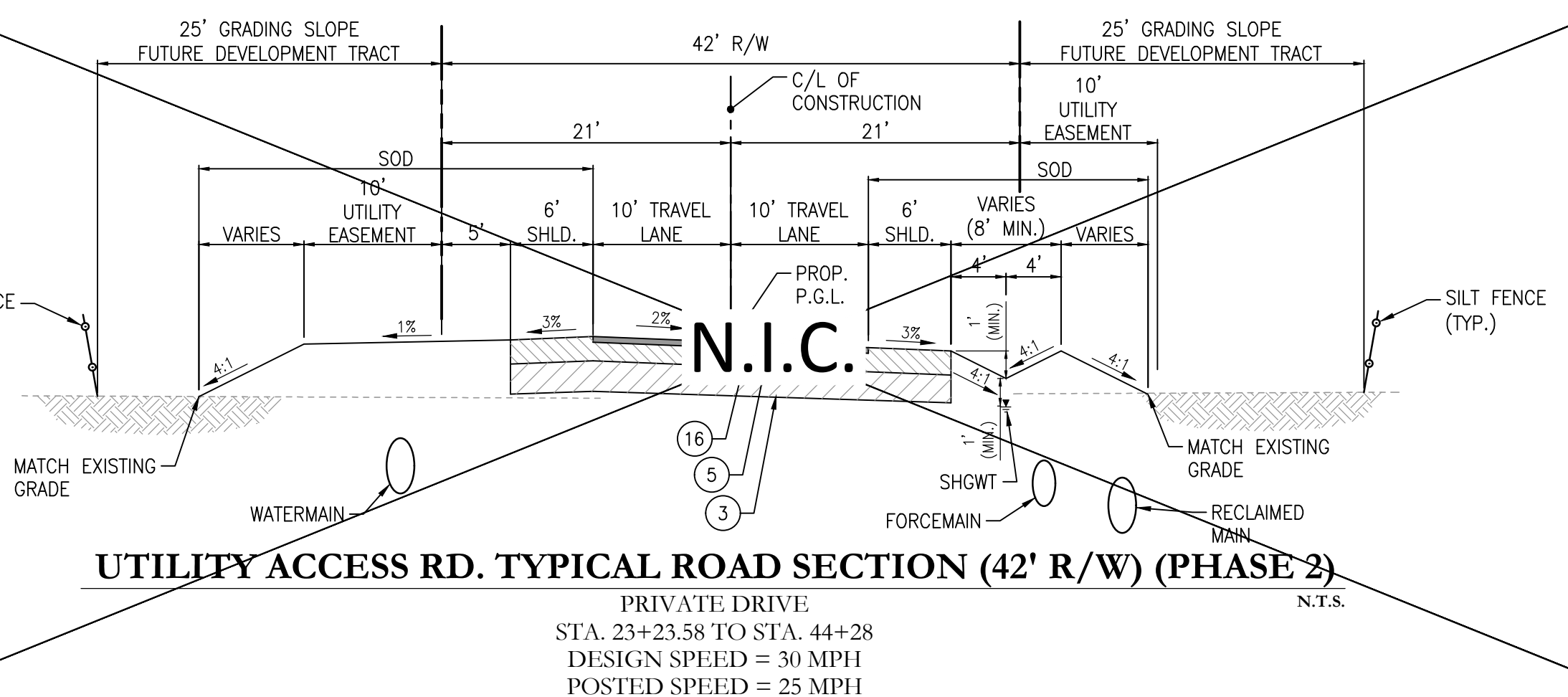
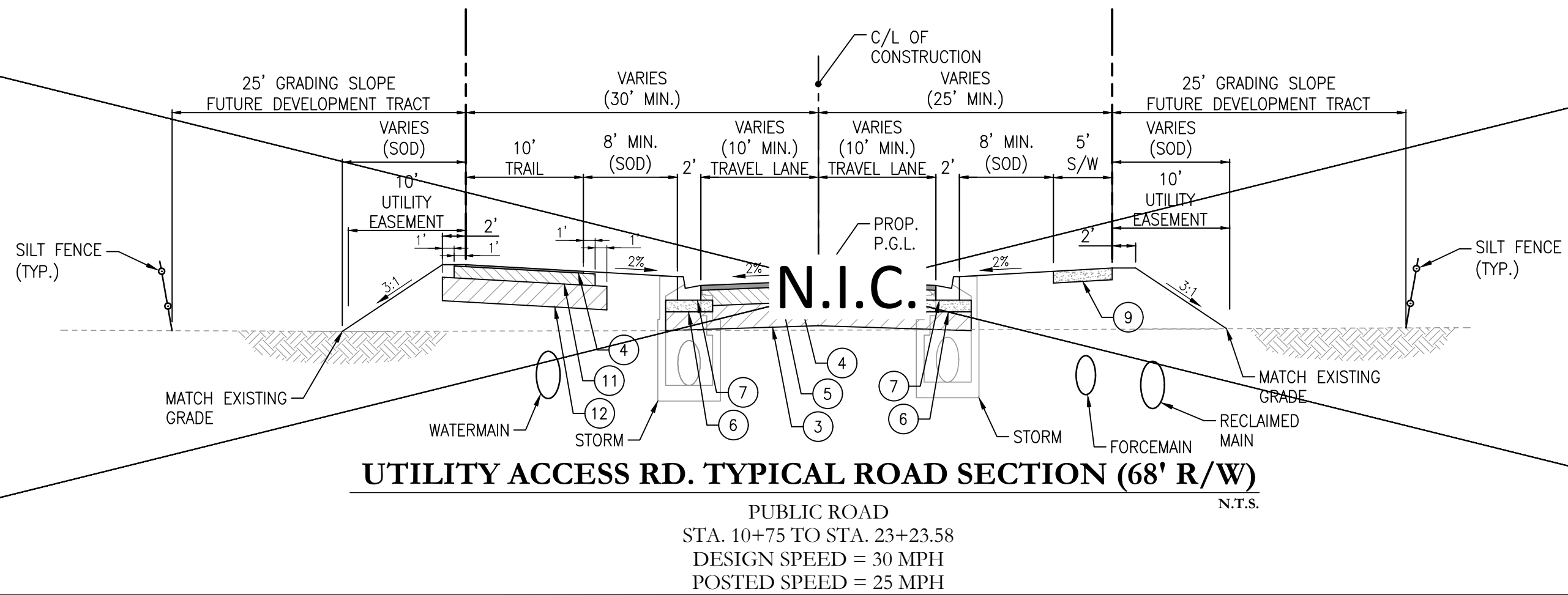
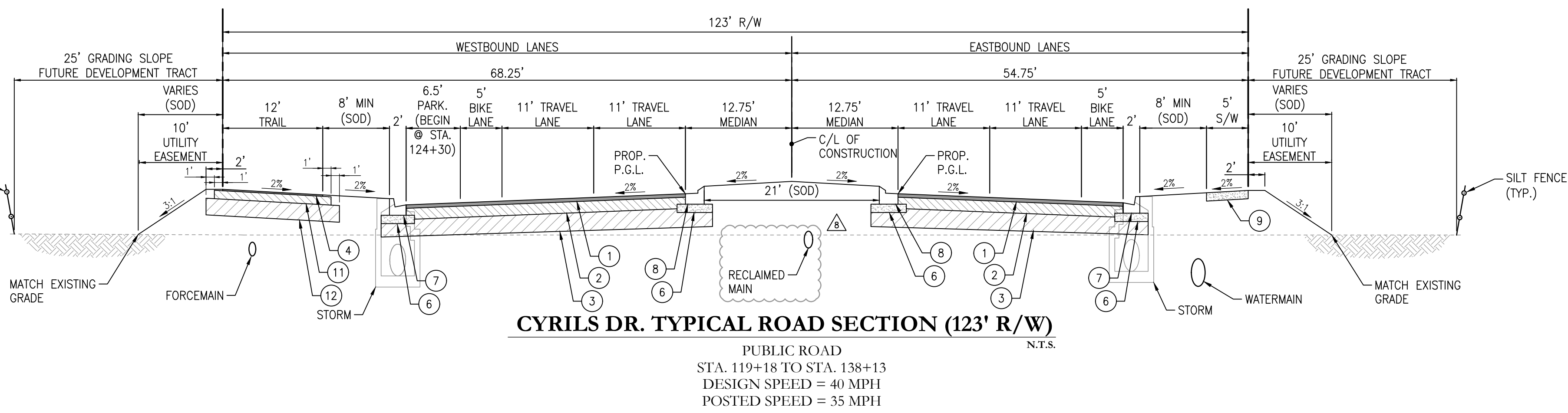
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POULOS & BENNETT

Poulos & Bennett, LLC
2602 E. Livingston St., Orlando, FL 32803
Tel. 407.487.2594 www.poulosandbennett.com
Eng. Bus. No. 28567

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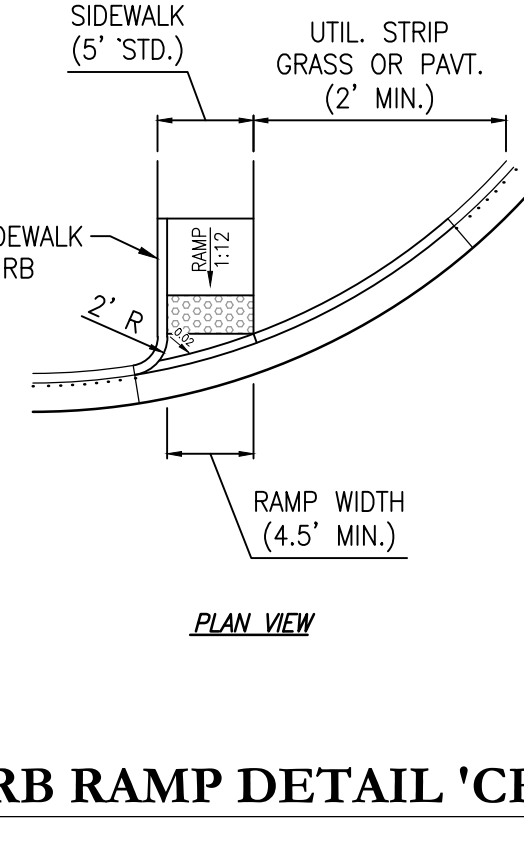
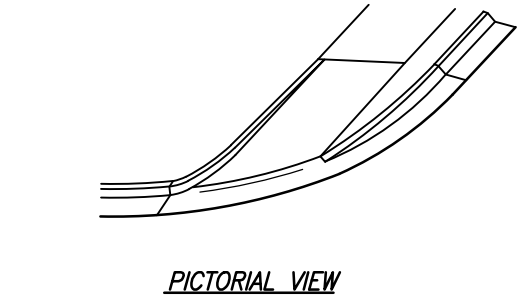
NOT VALID WITHOUT AN ACTIVE CONSTRUCTION PERMIT



Pavement Legend	
Symbol Id.	Description
1	3" (IN.) TYPE SP-12.5 ASPHALT (2 LIFTS OF 1.5" EACH)
2	10" (IN.) LIMEROCK (LBR 100) COMPACTED TO A MINIMUM DENSITY OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180) OR RECLAIMED CONCRETE AGGREGATE (LBR 120) COMPACTED TO A MINIMUM DENSITY OF 100% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180) (1)
3	12" (IN.) STABILIZED SUBGRADE (MIN. LBR 40)
4	1" (IN.) TYPE SP-9.5 ASPHALT
5	7.5" (IN.) LIMEROCK (LBR 100) COMPACTED TO A MINIMUM DENSITY OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180) OR RECLAIMED CONCRETE AGGREGATE (LBR 120) COMPACTED TO A MINIMUM DENSITY OF 100% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180) (1)
6	6" (IN.) STABILIZED SUBGRADE IN CURB AREA TO EXTEND 12" (IN.) EACH SIDE (MIN. LBR 40)
7	TYPE 'F' CONC. CURB
8	TYPE 'E' CONC. CURB
9	4" (IN.) THICK CONC. SIDEWALK (3,000 P.S.I.)
10	2" (IN.) SHELL OR RECLAIMED CONCRETE AGGREGATE (LBR 120) COMPACTED TO A MINIMUM DENSITY OF 100% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180) (1)
11	4" (IN.) LIMEROCK (LBR 100) COMPACTED TO A MINIMUM DENSITY OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180) OR RECLAIMED CONCRETE AGGREGATE (LBR 120) COMPACTED TO A MINIMUM DENSITY OF 100% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180) (1)
12	12" (IN.) STABILIZED SUBGRADE TYPE B (MIN. LBR 40)
13	7" (IN.) THICK CONC. DRIVEWAY W/ FIBER REINFORCEMENT (4,000 P.S.I.) 14' x 14' JOINT SPACING & 2.5" (IN.) SAW CUT DEPTH
14	6" (IN.) STABILIZED SUBGRADE WITH MINIMUM 40 LBR WITH 2" (IN.) CAP OF SHELL OR CRUSHED CONCRETE
15	12" (IN.) COMPACTED SUBGRADE, COMPACTED TO AT LEAST 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D 1557)
16	1.5" (IN.) TYPE SP-12.5 ASPHALT

NOTES:

- IF CRUSHED CONCRETE IS USED, MATERIALS MUST BE PRODUCED FROM A SOURCE APPROVED BY FDOT. BASE MATERIAL SHOULD COMPLY AND BE PLACED IN ACCORDANCE WITH THE LATEST EDITION OF THE FDOT ROAD AND BRIDGE CONSTRUCTION SPECIFICATIONS SUPPLEMENTAL SECTION 204-2.2 - "RECLAIMED CONCRETE AGGREGATE BASE MATERIALS". IN ORDER TO ENSURE CONSISTENCY OF THE CRUSHED CONCRETE MATERIAL, ADDITIONAL LBR AND SIEVE GRADATION TESTS SHOULD BE PERFORMED AT A MINIMUM FREQUENCY OF ONE TEST PER 15,000 SQUARE FEET, AND FOR EACH VISUAL CHANGE IN MATERIAL.
- THE ABOVE PAVEMENT THICKNESS IS THE MINIMUM REQUIRED THICKNESS. CONTRACTORS SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT WHERE TESTING RESULTS DO NOT MEET THE MINIMUM REQUIRED THICKNESS.
- ALL BASE MATERIALS SHALL COMPLY WITH THE LATEST EDITION OF THE FDOT ROAD AND BRIDGE CONSTRUCTION SPECIFICATIONS.



Consultant:	DESCRIPTIONS:
19 12/10/19	FIEL REVISIONS & UAR REMOVAL
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5 6/6/18	PLAN REVISIONS
4 3/14/18	REV. FOR BID ADDENDUM #3
3 2/23/18	REVISED PER TWA COMMENTS

NO. DATE: DESCRIPTIONS:

SUBMISSIONS/REVISIONS

VERTICAL DATUM: NAVD 88

JOB NO.: 17-042

DESIGNED BY: LEN/JLD

DRAWN BY: JLD

CHECKED BY: LEN/CMB

APPROVED BY: CMB

SCALE IN FEET: N.T.S.

Project Name:

**SUNBRIDGE NED
CYRILS DRIVE
PHASE 1 & UTILITY
ACCESS ROAD**

(SDP17-0155) (PS17-00025)
(CP17-00002) (CPA09-009)

Jurisdiction:
OSCEOLA COUNTY, FL

Sheet Title:
**TYPICAL ROAD
SECTIONS**

Sheet No.:
C3.01

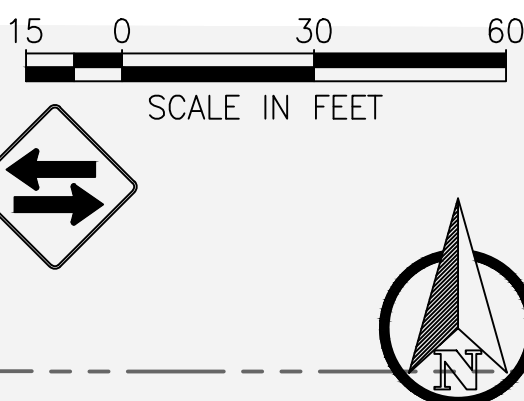
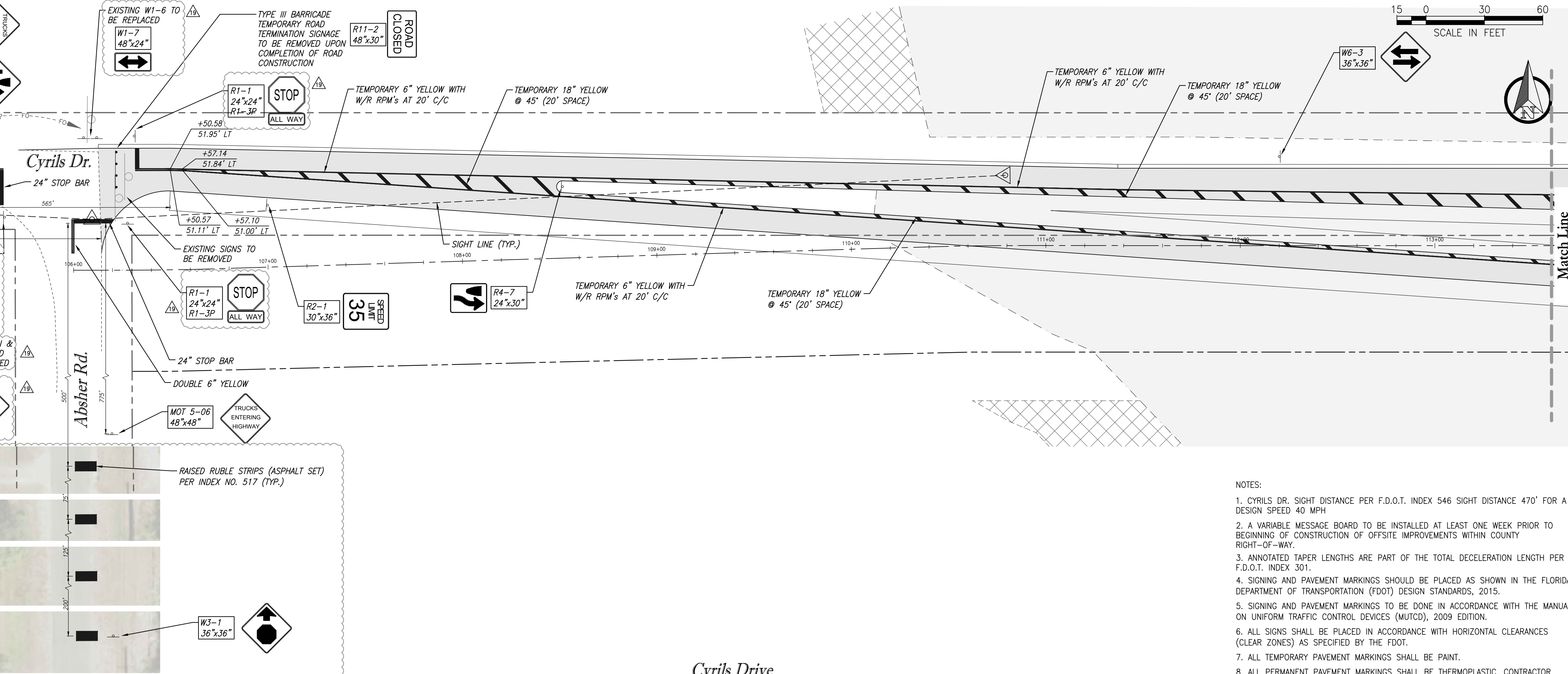
Seal:
CHRISTINA M. BAXTER
LICENSE
No. 67547
ST. FLORIDA
DATE: December 10, 2019

Digitally signed by Christina M Baxter
Date: 2019.12.10 15:56:31-0500

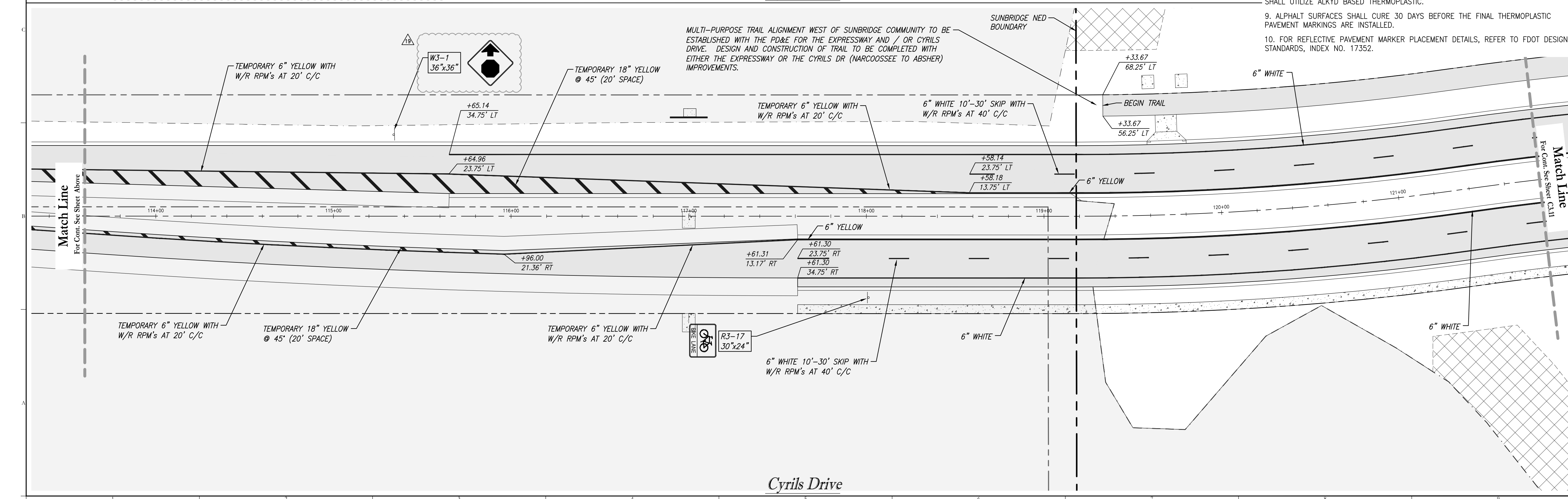
POULOS & BENNETT

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Tel. 407.487.2594 www.poulosandbennett.com
Eng. Bus. No. 28567

SDP17-0155
02/19/2020
Osceola County Development
MOT 5-06
48"x48"
W6-1
36"x36"
R1-1
24"x24"
R1-3P
24"x30"
R11-2
48"x30"
ROAD CLOSED



Cyrils Drive



- NOTES:
1. CYRILS DR. SIGHT DISTANCE PER F.D.O.T. INDEX 546 SIGHT DISTANCE 470' FOR A DESIGN SPEED 40 MPH
 2. A VARIABLE MESSAGE BOARD TO BE INSTALLED AT LEAST ONE WEEK PRIOR TO BEGINNING OF CONSTRUCTION OF OFFSITE IMPROVEMENTS WITHIN COUNTY RIGHT-OF-WAY.
 3. ANNOTATED TAPER LENGTHS ARE PART OF THE TOTAL DECELERATION LENGTH PER F.D.O.T. INDEX 301.
 4. SIGNING AND PAVEMENT MARKINGS SHOULD BE PLACED AS SHOWN IN THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) DESIGN STANDARDS, 2015.
 5. SIGNING AND PAVEMENT MARKINGS TO BE DONE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2009 EDITION.
 6. ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH HORIZONTAL CLEARANCES (CLEAR ZONES) AS SPECIFIED BY THE FDOT.
 7. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE PAINT.
 8. ALL PERMANENT PAVEMENT MARKINGS SHALL BE THERMOPLASTIC. CONTRACTOR SHALL UTILIZE ALKYD BASED THERMOPLASTIC.
 9. ALPHALT SURFACES SHALL CURE 30 DAYS BEFORE THE FINAL THERMOPLASTIC PAVEMENT MARKINGS ARE INSTALLED.
 10. FOR REFLECTIVE PAVEMENT MARKER PLACEMENT DETAILS, REFER TO FDOT DESIGN STANDARDS, INDEX NO. 17352.

Key Map:

Consultant:	REVISIONS
19 12/10/19	FIEL REVISIONS & UAR REMOVAL
18 7/24/19	REVISED RW & FM LAYOUT & SIZES
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NO.	DATE	DESCRIPTIONS	SUBMISSIONS/REVISIONS
			VERTICAL DATUM: NAVD 88
			JOB NO.: 17-042
			DESIGNED BY: LEN/JLD
			DRAWN BY: JLD
			CHECKED BY: LEN/CMB
			APPROVED BY: CMB
			SCALE IN FEET: 1" = 30'
			Project Name:

**SUNBRIDGE NED
CYRILS DRIVE
PHASE 1 & UTILITY
ACCESS ROAD**

(SDP17-0155) (PS17-00025)
(CP17-00002) (CPA09-009)

Jurisdiction:
OSCEOLA COUNTY, FL

Sheet Title:
**SIGNING, STRIPING &
SIDWALK PLAN**

Sheet No.:
C3.10

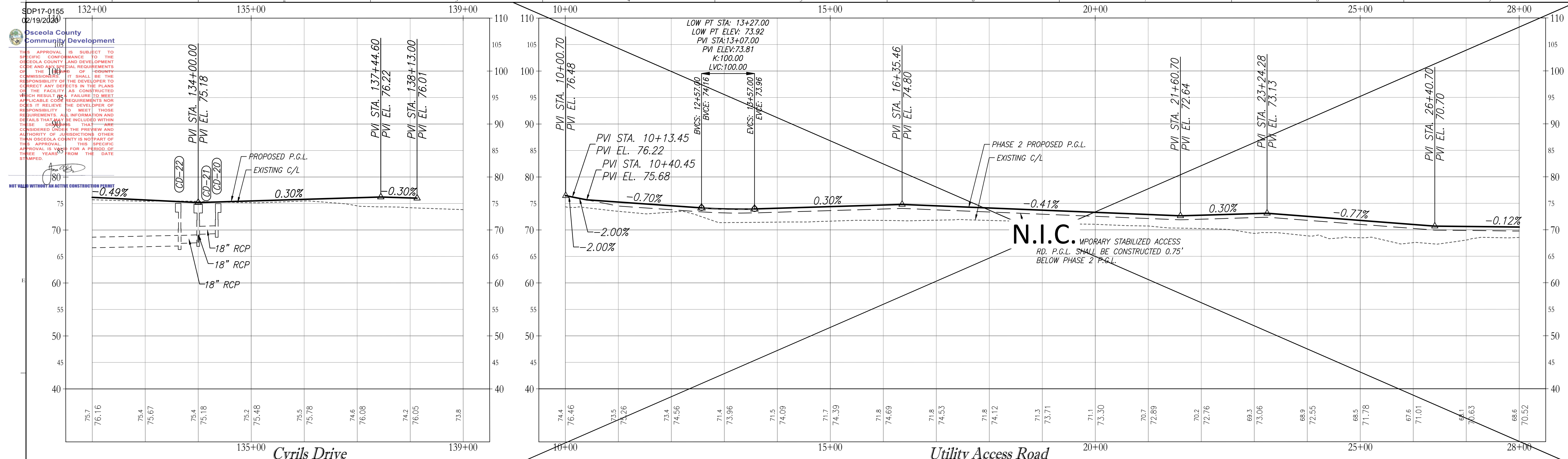
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CHRISTINA M. BAXTER
LICENSE
No. 67547
FLORIDA
Professional Engineer
DATE: December 10, 2019
Christina Baxter

Digitally signed by Christina M Baxter
Date: 2019.12.10 15:56:32-0500

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Poulos & Bennett, LLC
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Tel. 407.487.2594 www.poulosandbennett.com
Eng. Bus. No. 28567

Z:\2017\17-042 TAWSTOCK - SUNBRIDGE\CYRILS DR\CAD\FINAL\PHASE 1\17042-CD-PH1-SSP

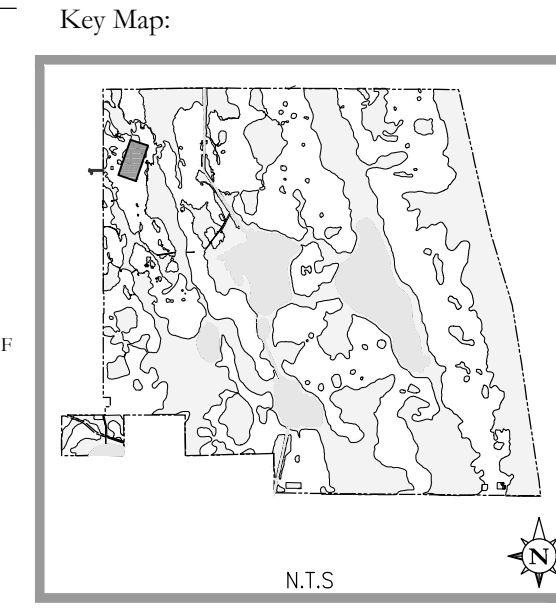


SDP17-0155
 (2/19/2020)

**Osceola County
 Community Development**

THIS APPROVAL IS SUBJECT TO SPECIFIC CONFORMANCE TO THE OSCEOLA COUNTY LAND DEVELOPMENT CODE AND APPLICABLE REQUIREMENTS OF THE 100-YEAR FLOOD COMMISSIONER. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO CORRECT ANY DEFECTS IN THE PLANS OF THE FACILITY AS CONSTRUCTED WHICH RESULT IN FAILURES TO MEET APPLICABLE CODE REQUIREMENTS. THIS DOES NOT RELIEVE THE DEVELOPER OF RESPONSIBILITY TO MEET THOSE REQUIREMENTS. ALL INFORMATION AND DETAILS THAT MAY BE INCLUDED WITHIN THE DRAWINGS THAT WERE CONSIDERED UNDER THE PREVIEW AND AUTHORITY OF JURISDICTIONS OTHER THAN OSCEOLA COUNTY IS NOT PART OF THIS APPROVAL. THIS SPECIFIC APPROVAL IS VALID FOR A PERIOD OF THREE YEARS FROM THE DATE DATED.

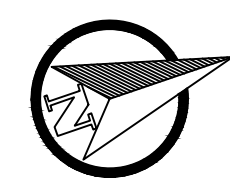
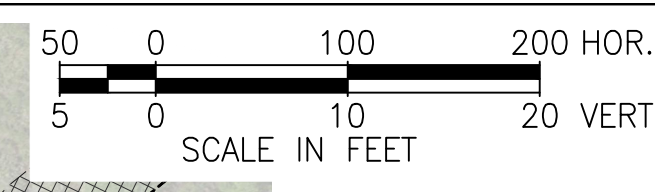
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NO. DATE: DISCUSSIONS:
 SUBMISSIONS/REVISIONS

VERTICAL DATUM: NAVD 88
 JOB NO.: 17-042
 DESIGNED BY: LEN/JLD
 DRAWN BY: JLD
 CHECKED BY: LEN/CMB
 APPROVED BY: CMB
 SCALE IN FEET: 1" = 100'



**SUNBRIDGE NED
 CYRILS DRIVE
 PHASE 1 & UTILITY
 ACCESS ROAD**

(SDP17-0155) (PS17-00025)
 (CP17-00002) (CPA09-009)

Jurisdiction:
 OSCEOLA COUNTY, FL

Sheet Title:
DRAINAGE MAP

Sheet No.:
C5.01

Seal:

 CHRISTINA M. BAXTER
 No. 67547
 FLORIDA
 P.E. No. 0667947
 DATE: December 10, 2019

Digitally signed by Christina M Baxter
 Date: 2019.12.10 15:56:35-05'00'

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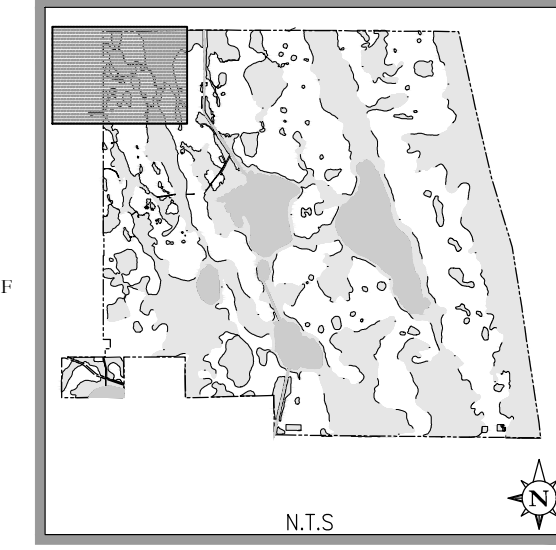
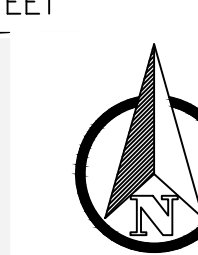
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Z:\2017\17-042 TAMISDOCK - SUNBRIDGE\CYRILS DR\CAD\FINAL\PHASE 1\17042-CD-PH1-DM

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SUBMISSIONS/REVISIONS

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SCALE IN FEET: 1" = 300'

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CYRILS DRIVE
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(SDP17-0155) (PS17-00025)
(CP17-00002) (CPA09-009)

Jurisdiction:
OSCEOLA COUNTY, FL

Sheet Title:
**PROJECT LAYOUT &
ROAD CENTERLINE
GEOMETRY**

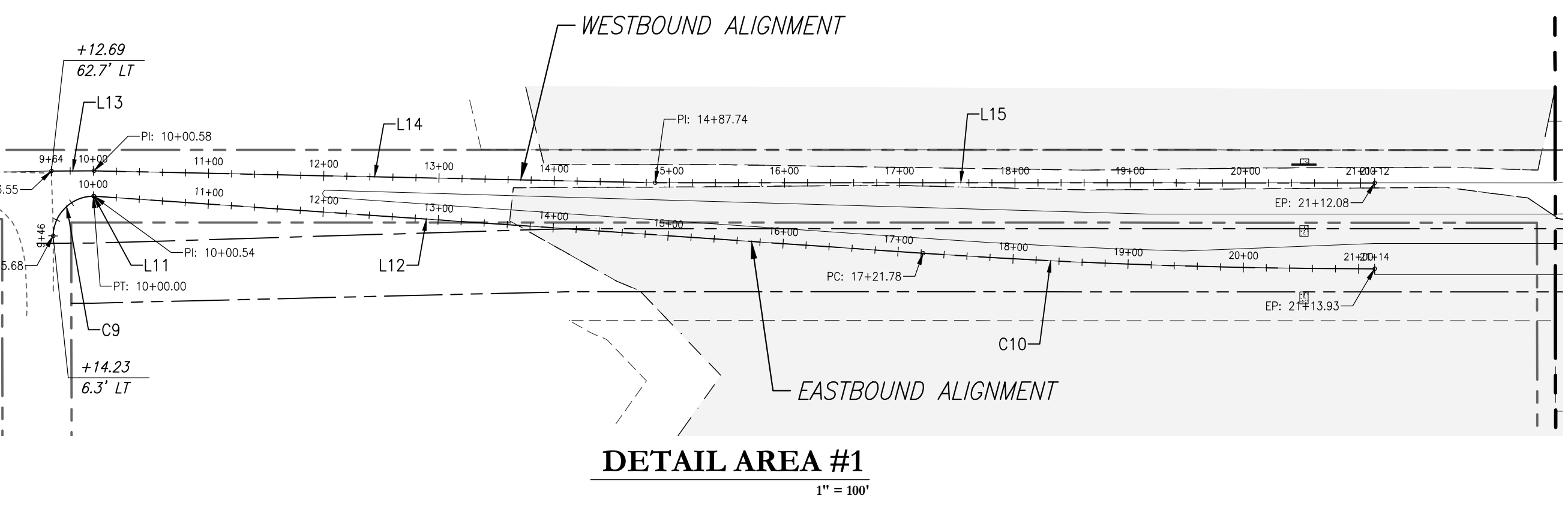
Sheet No.:
C6.00

Seal:
CHRISTINA M. BAXTER
LICENSE
No. 67547
FLORIDA
DATE: December 10, 2019

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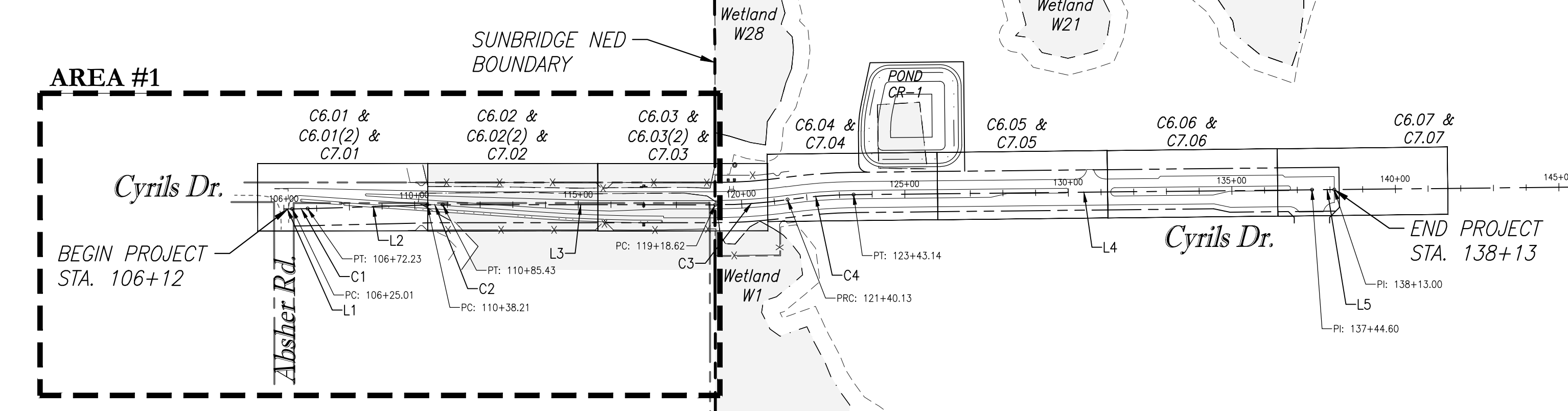
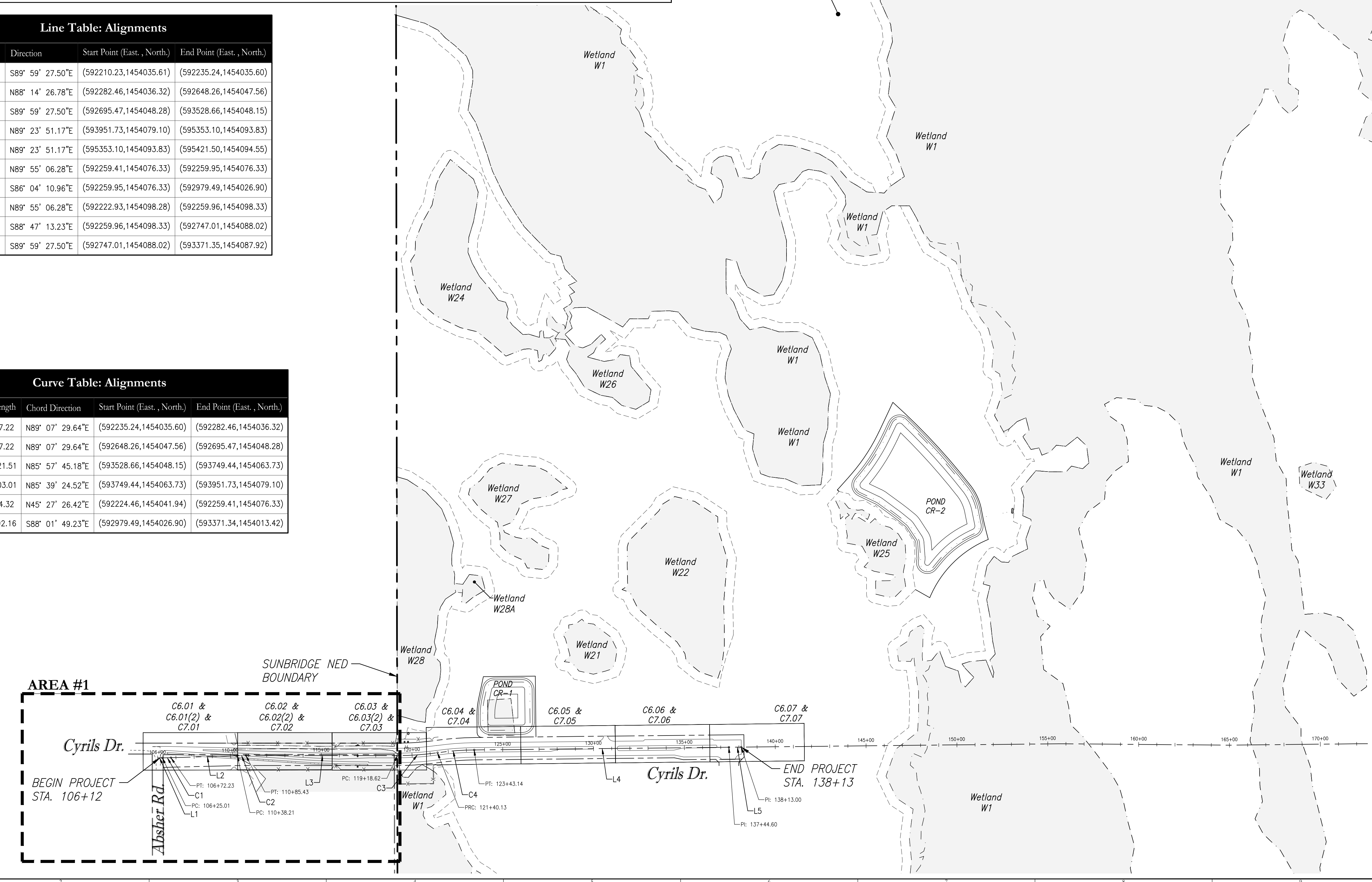


Line Table: Alignments

Line #	Length	Direction	Start Point (East., North.)	End Point (East., North.)
L1	25.01	S89° 59' 27.50"E	(592210.23,1454035.61)	(592235.24,1454035.60)
L2	365.97	N88° 14' 26.78"E	(592282.46,1454036.32)	(592648.26,1454047.56)
L3	833.19	S89° 59' 27.50"E	(592695.47,1454048.28)	(593528.66,1454048.15)
L4	1401.45	N89° 23' 51.17"E	(593951.73,1454079.10)	(595353.10,1454093.83)
L5	68.40	N89° 23' 51.17"E	(595353.10,1454093.83)	(595421.50,1454094.55)
L11	0.54	N89° 55' 06.28"E	(592259.41,1454076.33)	(592259.95,1454076.33)
L12	721.23	S86° 04' 10.96"E	(592259.95,1454076.33)	(592979.49,1454026.90)
L13	37.03	N89° 55' 06.28"E	(592222.93,1454098.28)	(592259.96,1454098.33)
L14	487.16	S88° 47' 13.23"E	(592259.96,1454098.33)	(592747.01,1454088.02)
L15	624.34	S89° 59' 27.50"E	(592747.01,1454088.02)	(593371.35,1454087.92)

Curve Table: Alignments

Curve #	Radius	Length	Chord Direction	Start Point (East., North.)	End Point (East., North.)
C1	1530.00	47.22	N89° 07' 29.64"E	(592235.24,1454035.60)	(592282.46,1454036.32)
C2	1530.00	47.22	N89° 07' 29.64"E	(592648.26,1454047.56)	(592695.47,1454048.28)
C3	1568.25	221.51	N85° 57' 45.18"E	(593528.66,1454048.15)	(593749.44,1454063.73)
C4	1554.75	203.01	N85° 39' 24.52"E	(593749.44,1454063.73)	(593951.73,1454079.10)
C9	35.00	54.32	N45° 27' 26.42"E	(592224.46,1454041.94)	(592259.41,1454076.33)
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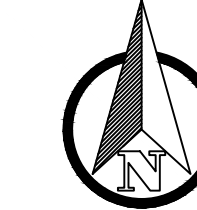
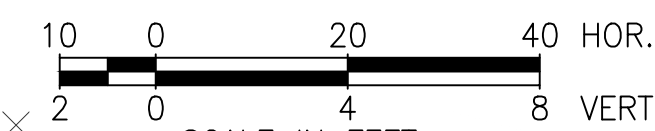
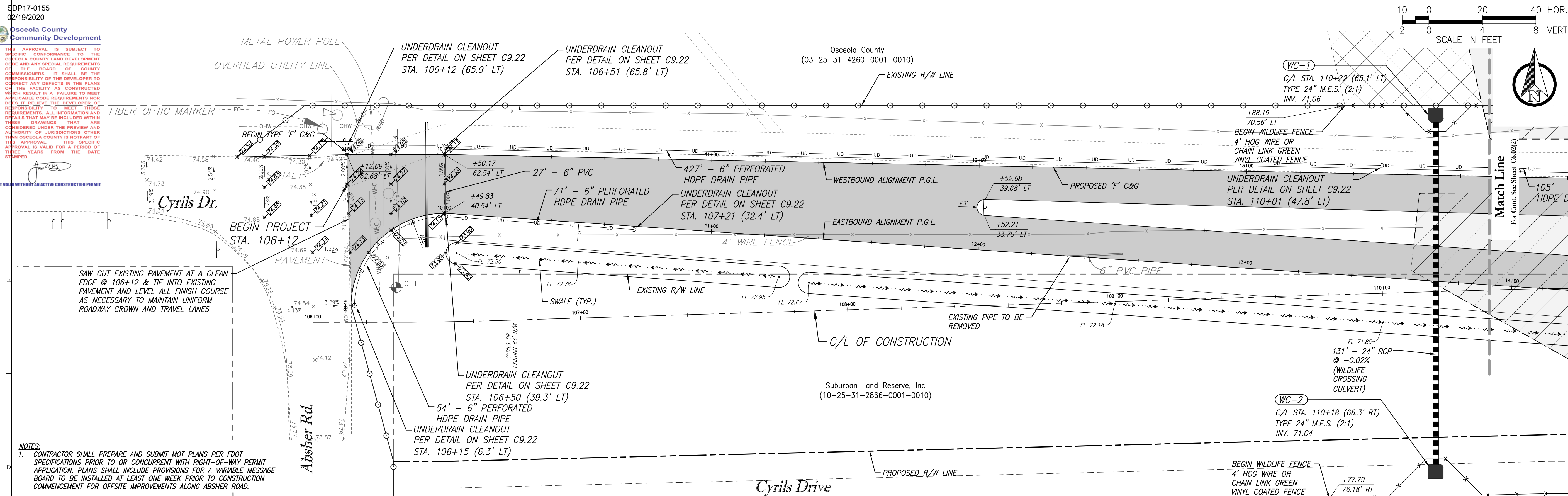


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THIS APPROVAL IS SUBJECT TO SPECIFIC CONFORMANCE TO THE OSCEOLA COUNTY LAND DEVELOPMENT CODE AND ANY SPECIAL REQUIREMENTS OF THE BOARD OF COUNTY COMMISSIONERS. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO CORRECT ANY DEFECTS IN THE PLANS OR THE FACILITY AS CONSTRUCTED WHICH RESULT IN A FAILURE TO MEET APPLICABLE CODE REQUIREMENTS NOR SHALL IT BE THE DUTY OF THE DEVELOPER TO MEET THESE REQUIREMENTS. ALL INFORMATION AND DETAILS THAT MAY BE INCLUDED WITHIN THESE DRAWINGS THAT ARE CONSIDERED UNDER THE PREVIEW AND AUTHORITY OF JURISDICTIONS OTHER THAN OSCEOLA COUNTY IS NOT PART OF THIS APPROVAL. THIS SPECIFIC APPROVAL IS VALID FOR A PERIOD OF THREE YEARS FROM THE DATE OF ISSUE.

NOT VALID WITHOUT AN ACTIVE CONSTRUCTION PERMIT

NOTES:
1. CONTRACTOR SHALL PREPARE AND SUBMIT MOT PLANS PER FOOT SPECIFICATIONS PRIOR TO OR CONCURRENT WITH RIGHT-OF-WAY PERMIT APPLICATION. PLANS SHALL INCLUDE PROVISIONS FOR A VARIABLE MESSAGE BOARD TO BE INSTALLED AT LEAST ONE WEEK PRIOR TO CONSTRUCTION COMMENCEMENT FOR OFFSITE IMPROVEMENTS ALONG ABSHER ROAD.



Key Map:

NO.	DATE	DESCRIPTION
19	12/10/19	FIEL REVISIONS & UAR REMOVAL
18	7/24/19	REVISED RW & FM LAYOUT & SIZES
17	7/9/19	REVISED PER TWA COMMENTS
16	6/11/19	ADD MM & AFD, REV. OUC CONDUITS
15	5/3/19	ADD FM ARV @ STA. 138+15
14	2/7/19	REV. OUTFALL STRUCTURE CS-CR-2
13	11/30/18	STAMPING APPROVAL
12	11/16/18	REVISED PER TWA COMMENTS
11	10/29/18	REV. FM SIZE, ADD CONDUIT & REV. OUTFALL STRUCTURE CS-CR-2
10	9/21/18	REV. W.M., R.W. & F.M. SIZES
9	8/3/18	ADD OUC & TELECOM INFRASTRUCTURE
8	7/18/18	ADD RW STA. 106+67.35+97 & ADD FM STA. 106+65-109+20
7	6/29/18	REVISED PER COUNTY COMMENTS
6	6/20/18	REVISED PER TWA COMMENTS
5	6/6/18	PLAN REVISIONS
4	5/14/18	REV. FOR BID ADDENDUM #3
3	2/23/18	REVISED PER TWA COMMENTS

NO. DATE DESCRIPTION

SUBMISSIONS/REVISIONS

VERTICAL DATUM: NAVD 88

JOB NO.: 17-042

DESIGNED BY: LEN/JLD

DRAWN BY: JLD

CHECKED BY: LEN/CMB

APPROVED BY: CMB

SCALE IN FEET: 1" = 20'

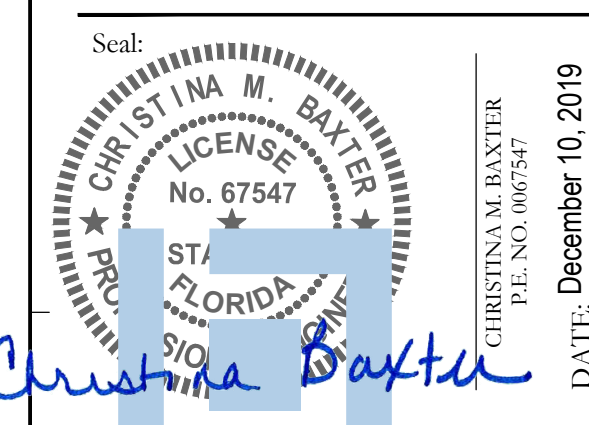
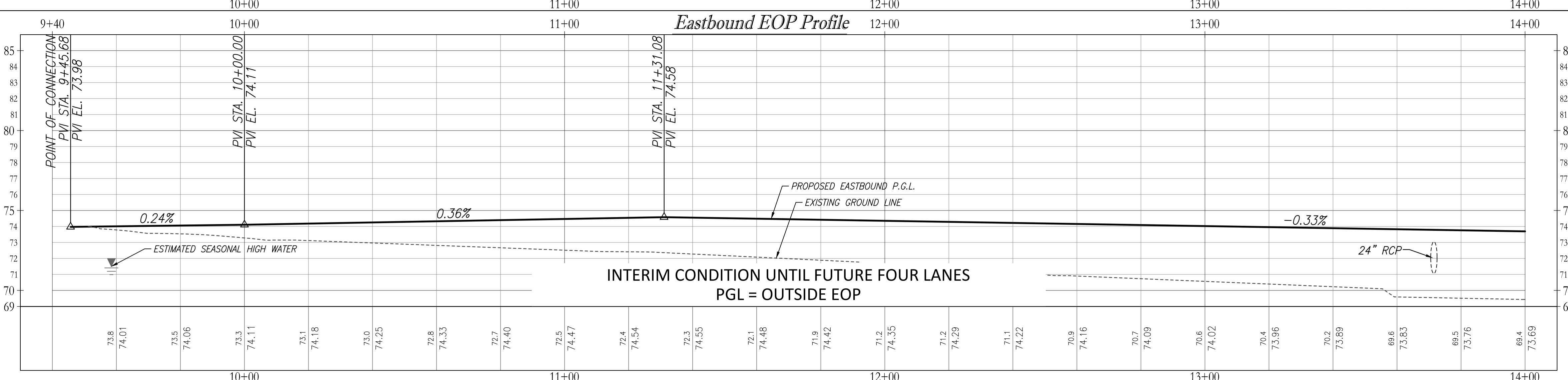
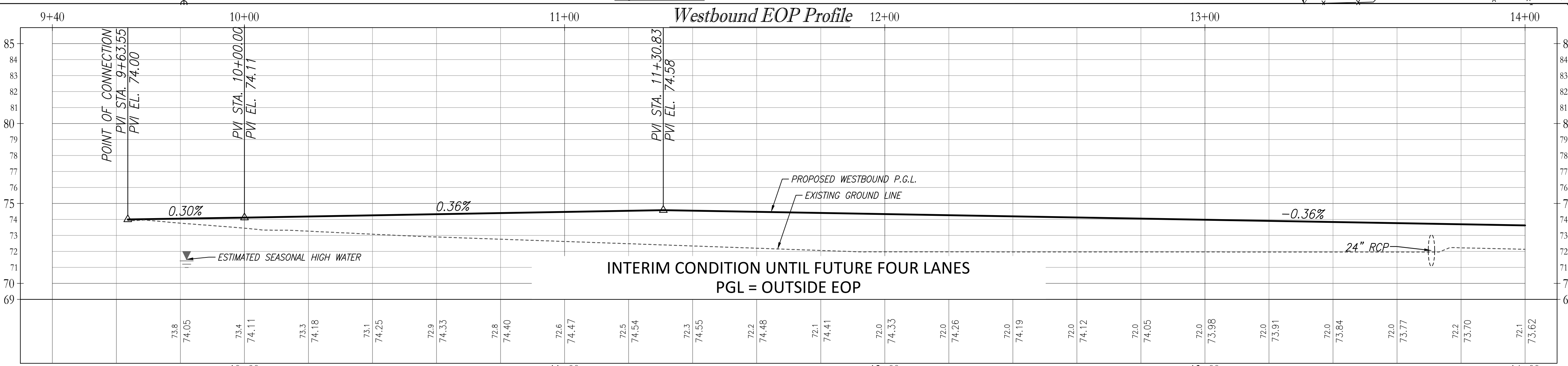
Project Name:
**SUNBRIDGE NED
CYRILS DRIVE
PHASE 1 & UTILITY
ACCESS ROAD**

(SDP17-0155) (PS17-00025)
(CP17-00002) (CPA09-009)

Jurisdiction:
OSCEOLA COUNTY, FL

Sheet Title:
PLAN & PROFILES

Sheet No.:
C6.01 (2)



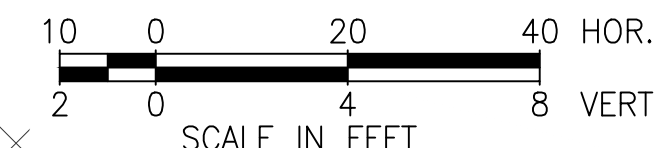
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Date: 2019.12.10 15:56:41-0500

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Poulos & Bennett, LLC
2602 E. Livingston St., Orlando, FL 32803
Tel. 407.487.2594 www.poulosandbennett.com
Eng. Bus. No. 28567

**SHEET FOR INFORMATION PURPOSES ONLY
NOT FOR CONSTRUCTION**



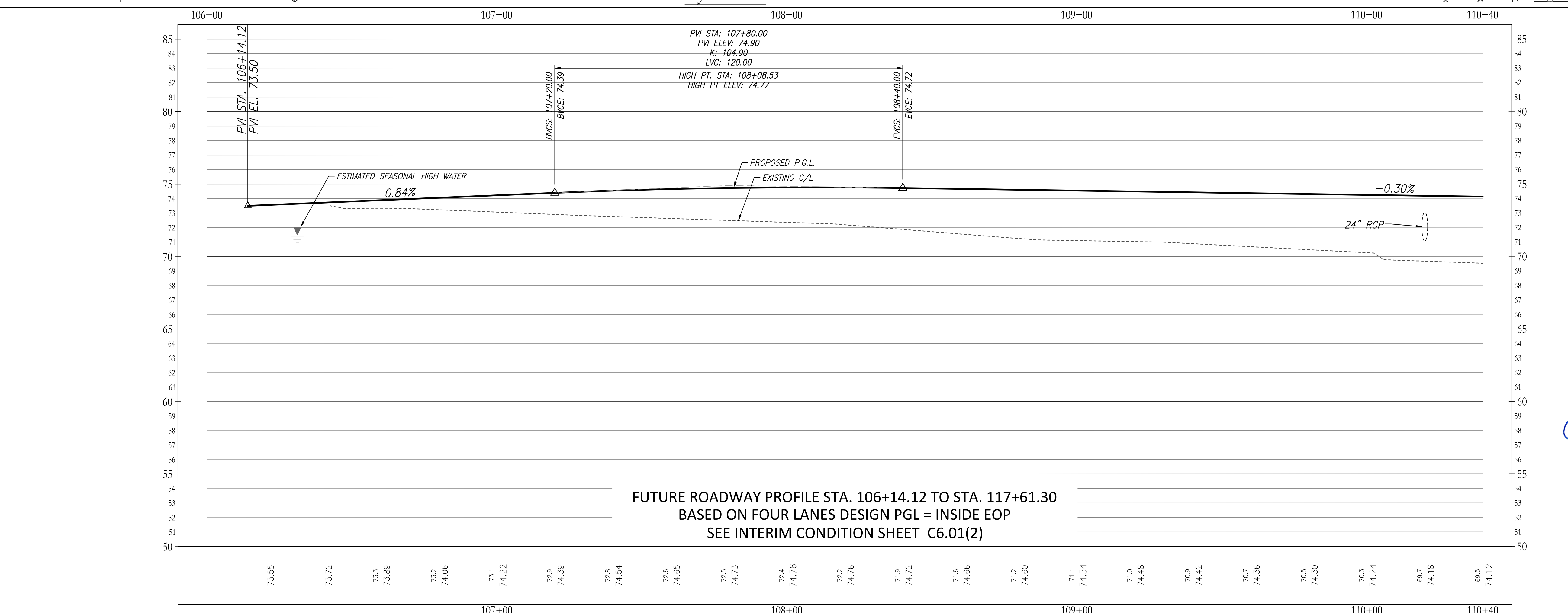
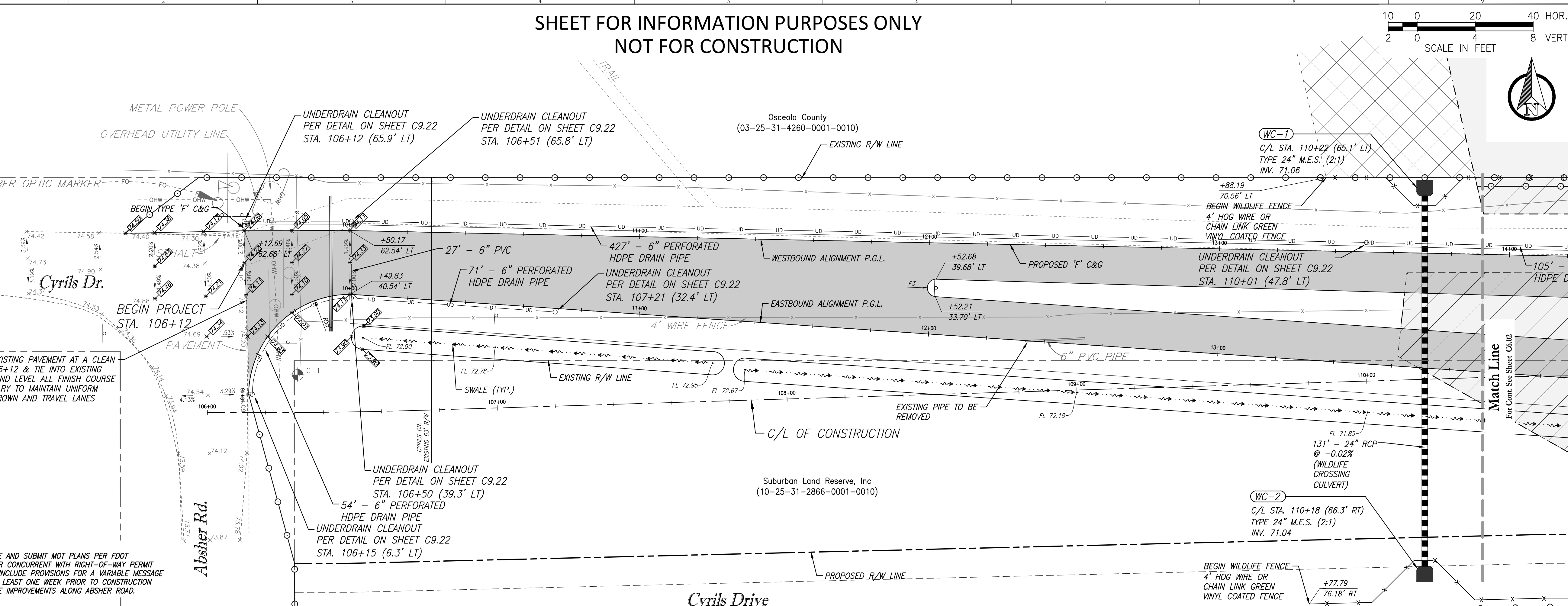
SDP17-0155
02/19/2020
Osceola County
Community Development

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**FUTURE ROADWAY PROFILE STA. 106+14.12 TO STA. 117+61.30
BASED ON FOUR LANES DESIGN PGL = INSIDE EOP
SEE INTERIM CONDITION SHEET C6.01(2)**

Key Map:

NO.	DATE	DESCRIPTION
19	12/10/19	FIELD REVISIONS & UAR REMOVAL
18	7/24/19	REVISED RW & FM LAYOUT & SIZES
17	7/9/19	REVISED PER TWA COMMENTS
16	6/11/19	ADD MM & AFD, REV. OUC CONDUITS
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5	6/6/18	PLAN REVISIONS
4	3/14/18	REV. FOR BID ADDENDUM #3
3	2/23/18	REVISED PER TWA COMMENTS

NO. DATE: DISCUSSIONS

SUBMISSIONS/REVISIONS

VERTICAL DATUM:	NAVD 88
JOB NO.:	17-042
DESIGNED BY:	LEN/JLD
DRAWN BY:	JLD
CHECKED BY:	LEN/CMB
APPROVED BY:	CMB
SCALE IN FEET:	1" = 20'

Project Name:

**SUNBRIDGE NED
CYRILS DRIVE
PHASE 1 & UTILITY
ACCESS ROAD**

(SDP17-0155) (PS17-00025)
(CP17-00002) (CPA09-009)

Jurisdiction:
OSCEOLA COUNTY, FL

Sheet Title:
PLAN & PROFILES

Sheet No.:

C6.01

Seal:

Christina M. Baxter
P.E. No. 67547
DATE: December 10, 2019

Digitally signed by Christina M Baxter
Date: 2019.12.10 15:56:43-05'00'

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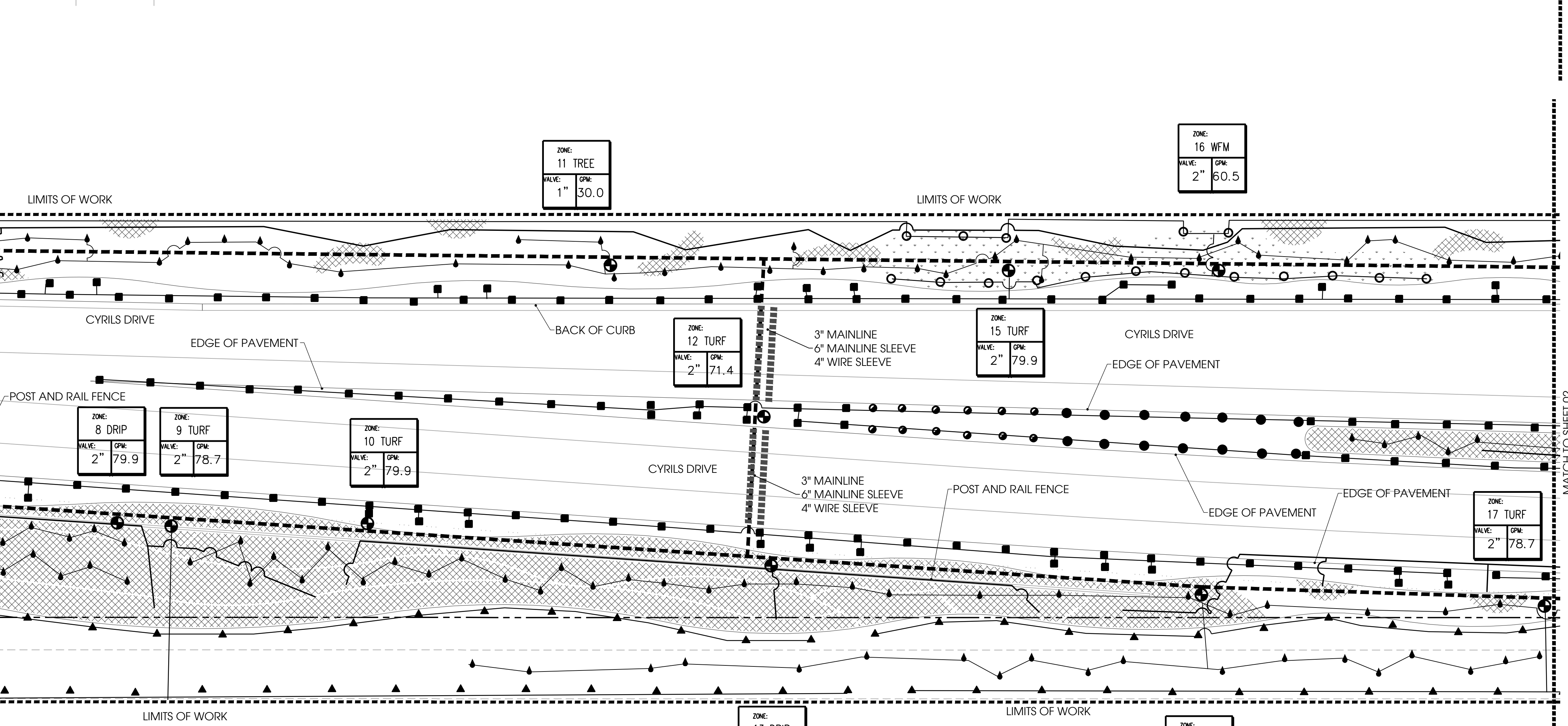
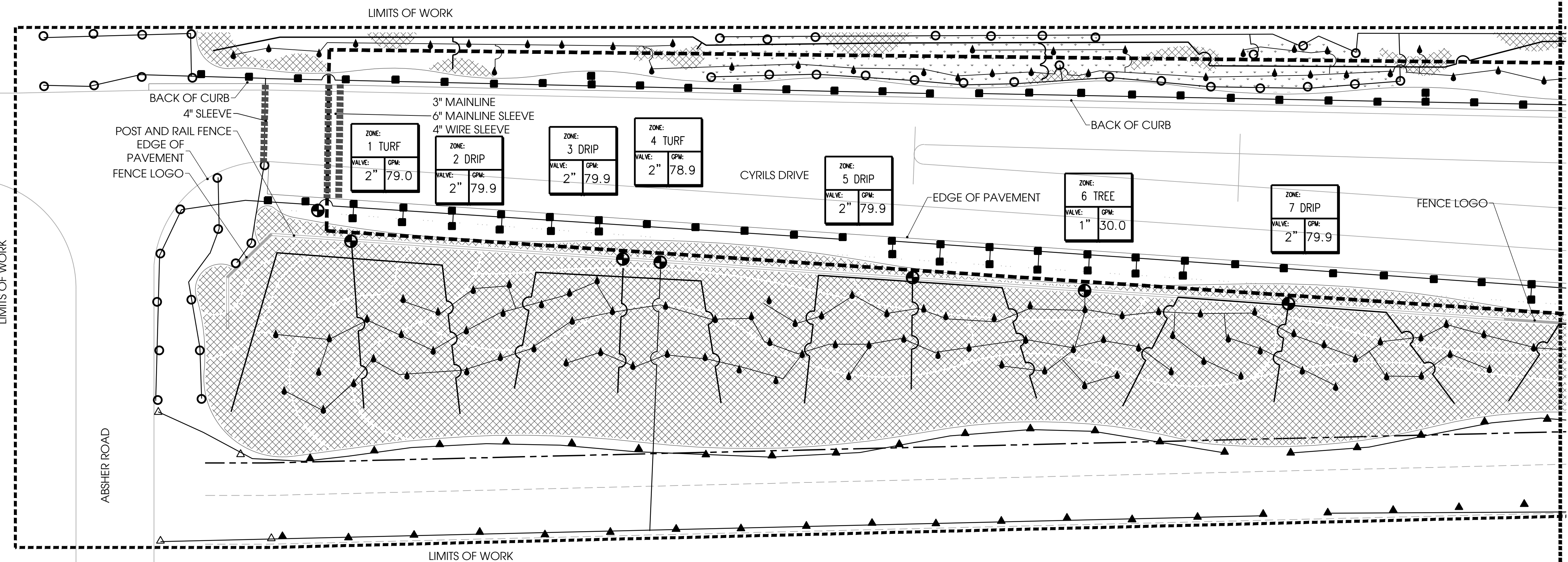


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Tel. 407.487.2594 www.poulosandbennett.com
Eng. Bus. No. 28567

Z:\2017\17-042 TAMISOCK - SUNBRIDGE\CYRILS DR\CAD\FINAL\PHASE 1\17042-CD_P11-PP

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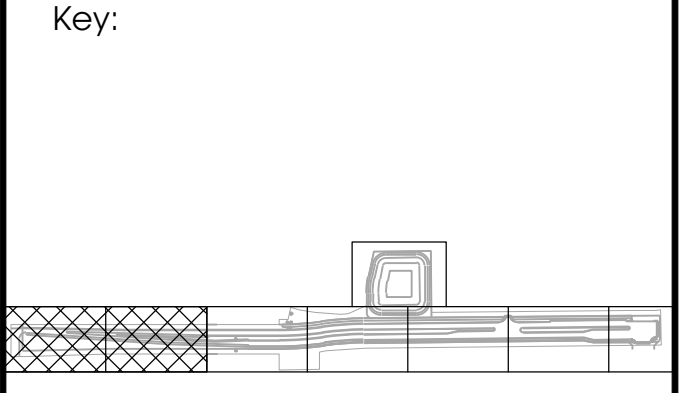
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○	V		

⊞	CONTROLLER
⊙	VALVE
---	MAINLINE
----	SLEEVE

⊞	WILD FLOWER SPRAY ZONE
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Designed By:

1200 HILLCREST ST., STE 305 ORLANDO, FL 32803
WWW.INNOVATIONS-DESIGN.COM 407-440-3574



Owner:

TAVISTOCK
DEVELOPMENT COMPANY

CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
IRRIGATION PLAN

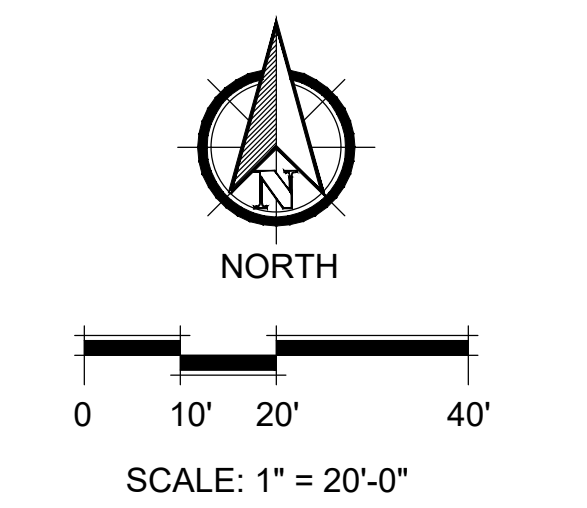
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Approved By: MM Project No: 19027
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Seal:

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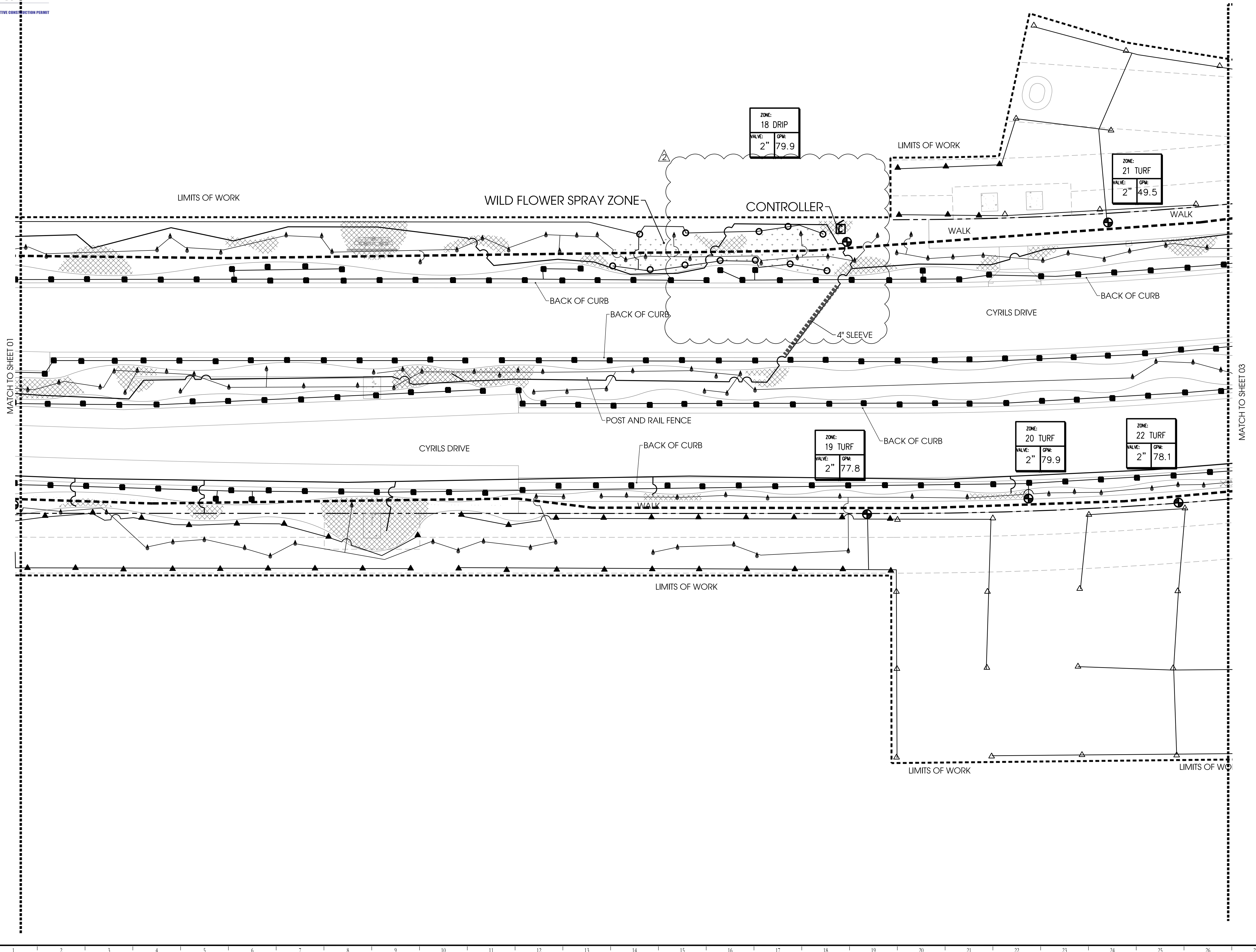
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(CP17-00002)(CPA09-009)

SDP17-0155
02/19/2020
Osceola County
Community Development

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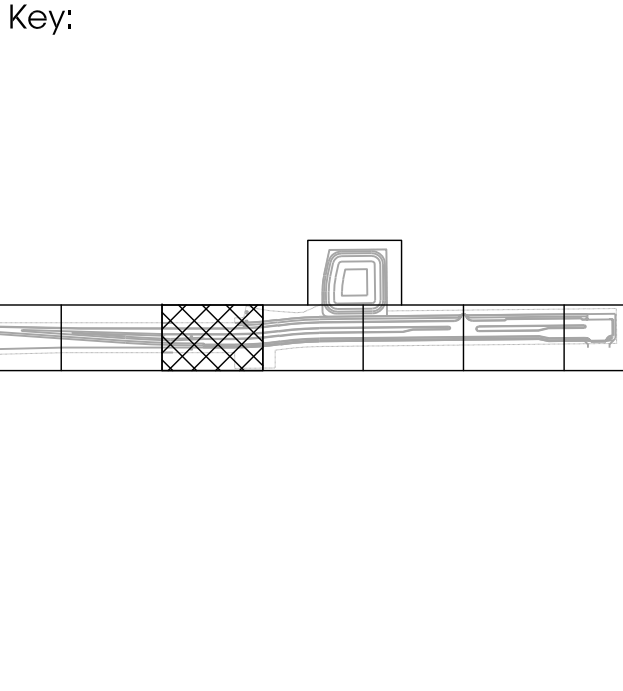
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○	V		

⊠	CONTROLLER
⊙	VALVE
---	MAINLINE
----	SLEEVE

⊙	WILD FLOWER SPRAY ZONE
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Designed By:

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Owner:

CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
IRRIGATION PLAN

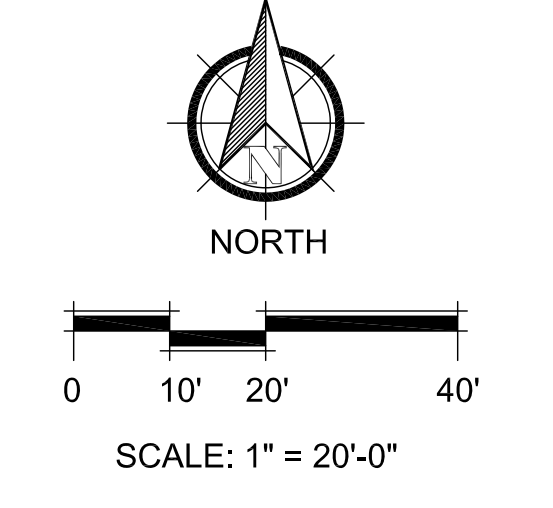
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Date: 11/22/2019 Scale: SEE PLAN
Drawn By: RR Designed By: MM
Approved By: MM Project No: 19027
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Seal:

Digitally signed by Matthew E. McFadden
DN: c=US, o=Innovations Design Group, Inc., ou=Engineering, email=mmcfadden@innovationsdesign.com, cn=Matthew E. McFadden
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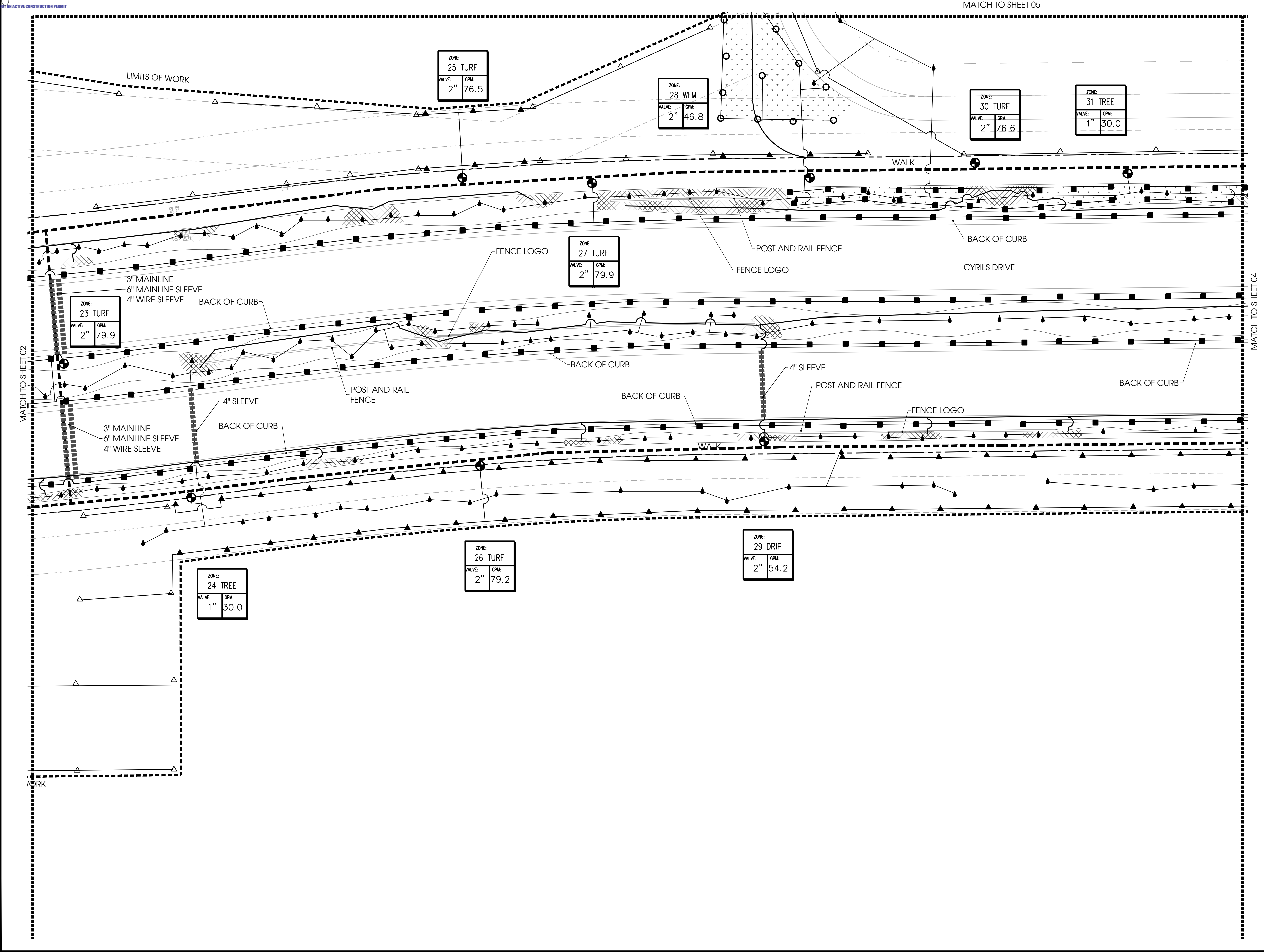


SDP17-0155
02/19/2020
Osceola County
Community Development

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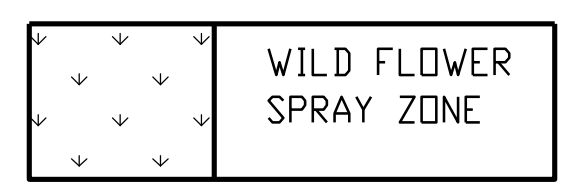
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⊙	CONTROLLER
⊙	VALVE
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Designed By:

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WWW.INNOVATIONS-DESIGN.COM 407-440-3574

Key:

Owner:

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OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
IRRIGATION PLAN

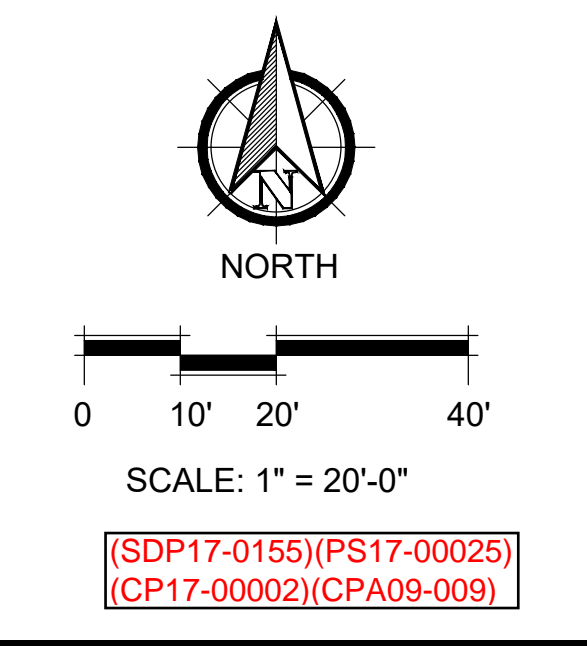
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Date: 11/22/2019	Scale: SEE PLAN
Drawn By: RRR	Designed By: MM
Approved By: MM	Project No: 19027
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Seal:

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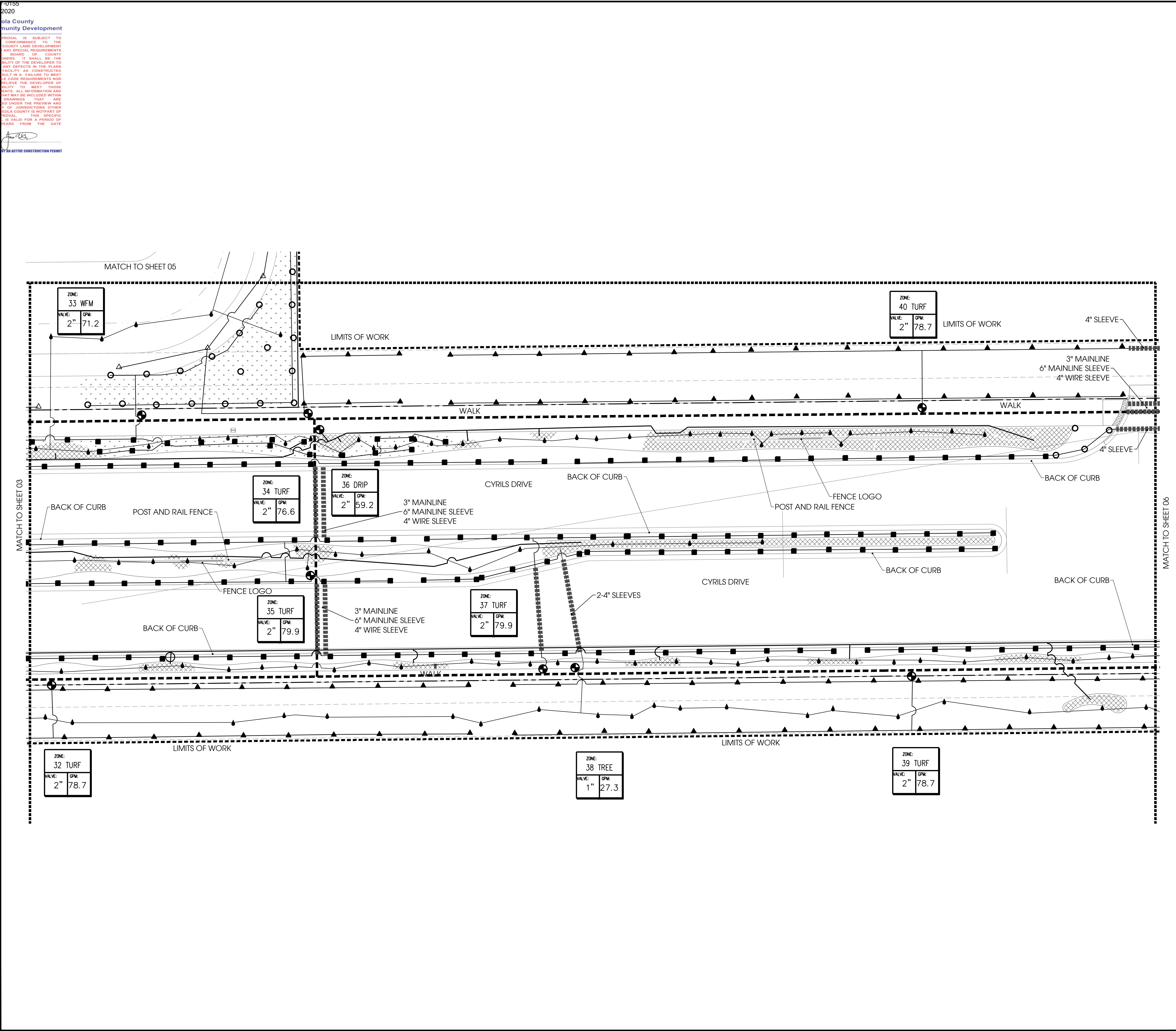


SDP17-0155
02/19/2020
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Community Development

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⊙	CONTROLLER
⊙	VALVE
---	MAINLINE
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⊙	WILD FLOWER SPRAY ZONE
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Designed By:

1200 HILLCREST ST., STE 305 ORLANDO, FL 32803
WWW.INNOVATIONS-DESIGN.COM 407-440-3574

Owner:

CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
IRRIGATION PLAN

Rev:	Date:	Description:	By:
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Date: 11/22/2019	Scale: SEE PLAN
Drawn By: RRR	Designed By: MM
Approved By: MM	Project No: 19027
©Innovations Design Group, Inc.	

Seal:

Digitally signed by Matthew E. McFadden
DN: c=US, o=Innovations Design Group Inc.
ou=AO141 0D000001E1284E020009 760 cn=Matthew E. McFadden
Date: 2019.12.06 17:13:21 -0500

Sheet Number:
IR-04

NORTH

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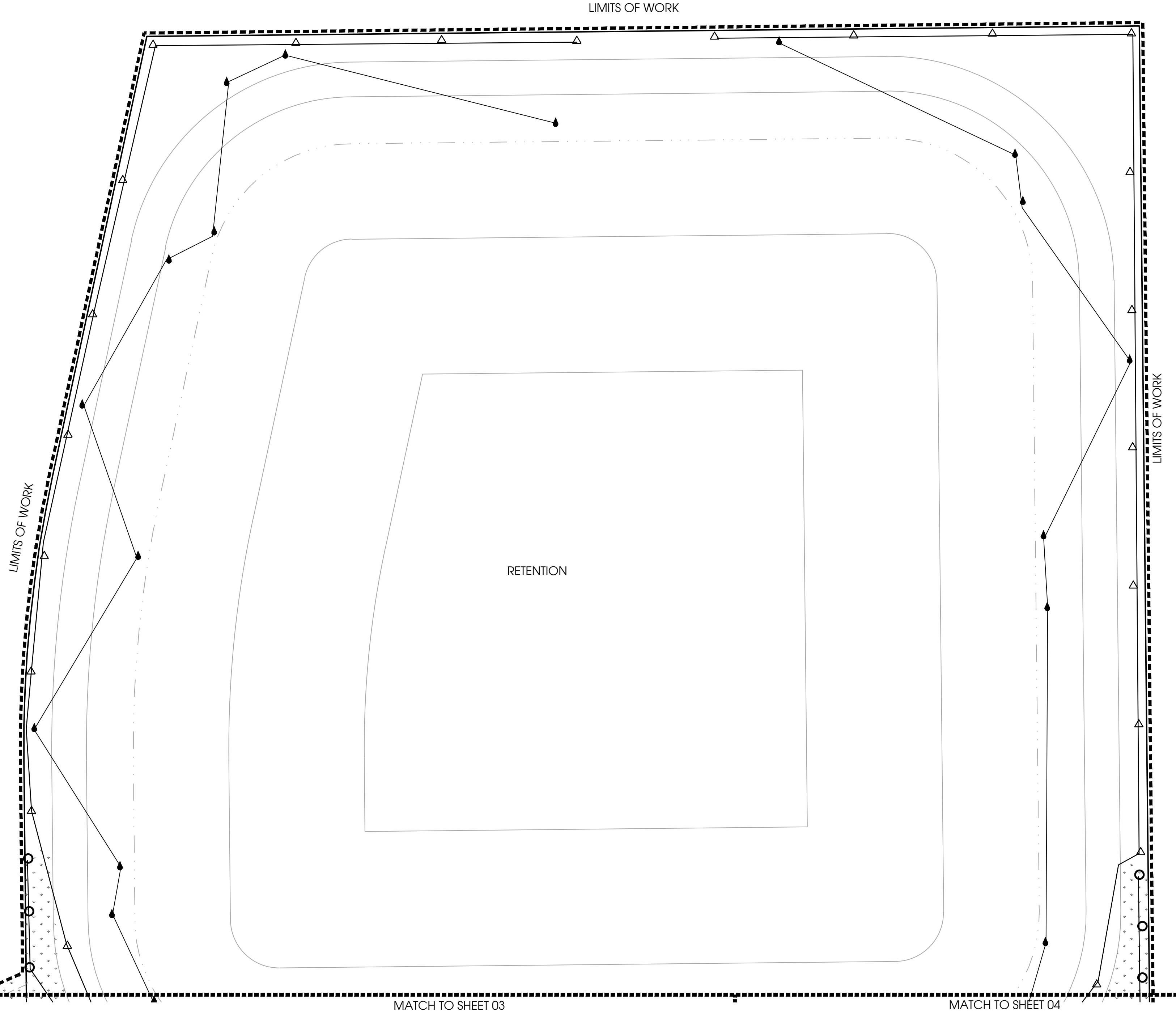
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(CP17-00002)(CPA09-009)

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NOT VALID WITH AN ACTIVE CONSTRUCTION PERMIT

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DRAWING SIZE: 24" X 36"



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Ⓜ	CONTROLLER
⊕	VALVE
---	MAINLINE
----	SLEEVE

⬇	WILD FLOWER SPRAY ZONE
---	------------------------

Designed By:

1200 HILLCREST ST., STE 305 ■ ORLANDO, FL ■ 32803
WWW.INNOVATIONS-DESIGN.COM ■ 407-440-3574

Owner:

CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
IRRIGATION PLAN

Rev:	Date:	Description:	By:
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Date: 11/22/2019	Scale: SEE PLAN
Drawn By: RRR	Designed By: MM
Approved By: MM	Project No: 19027
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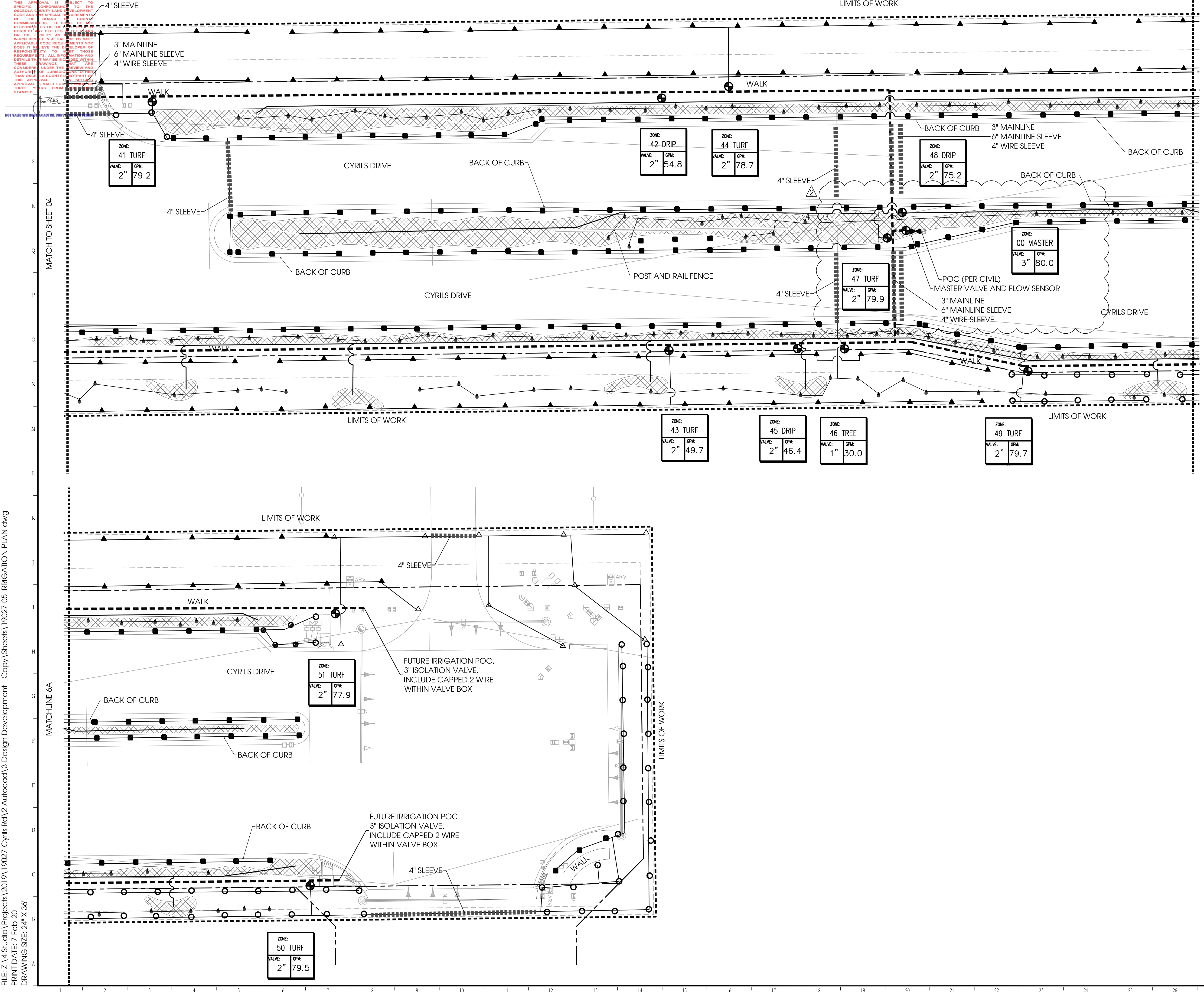
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NORTH

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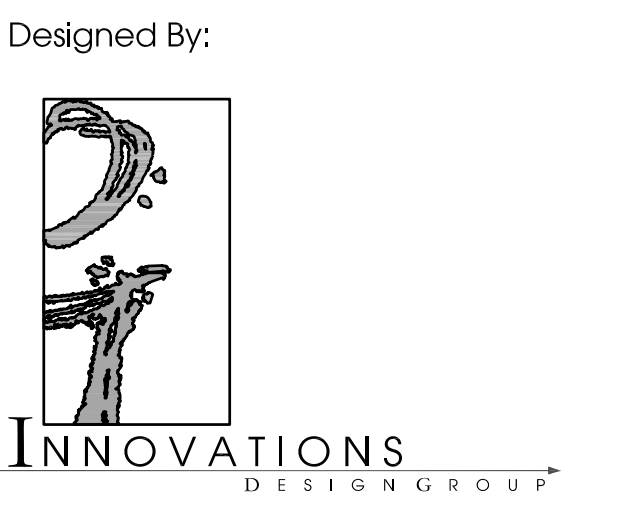
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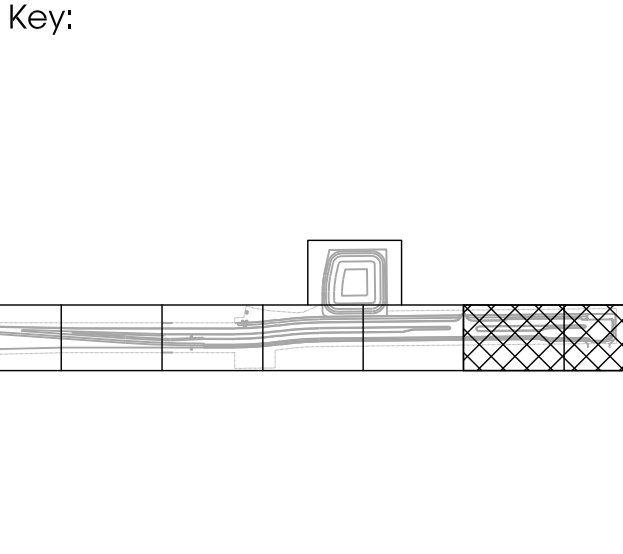
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☑	CONTROLLER
⊕	VALVE
---	MAINLINE
----	SLEEVE

⬅️	WILD FLOWER SPRAY ZONE
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CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

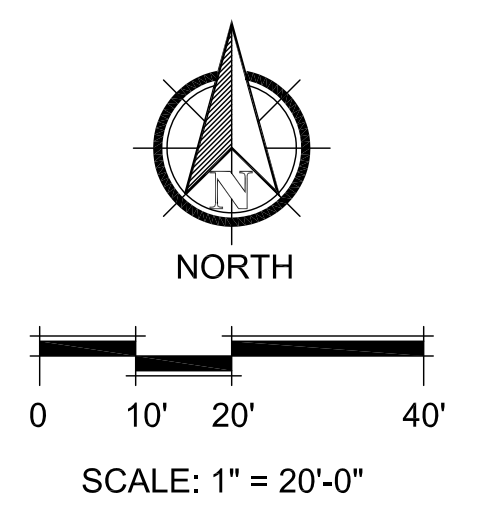
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IRRIGATION PLAN

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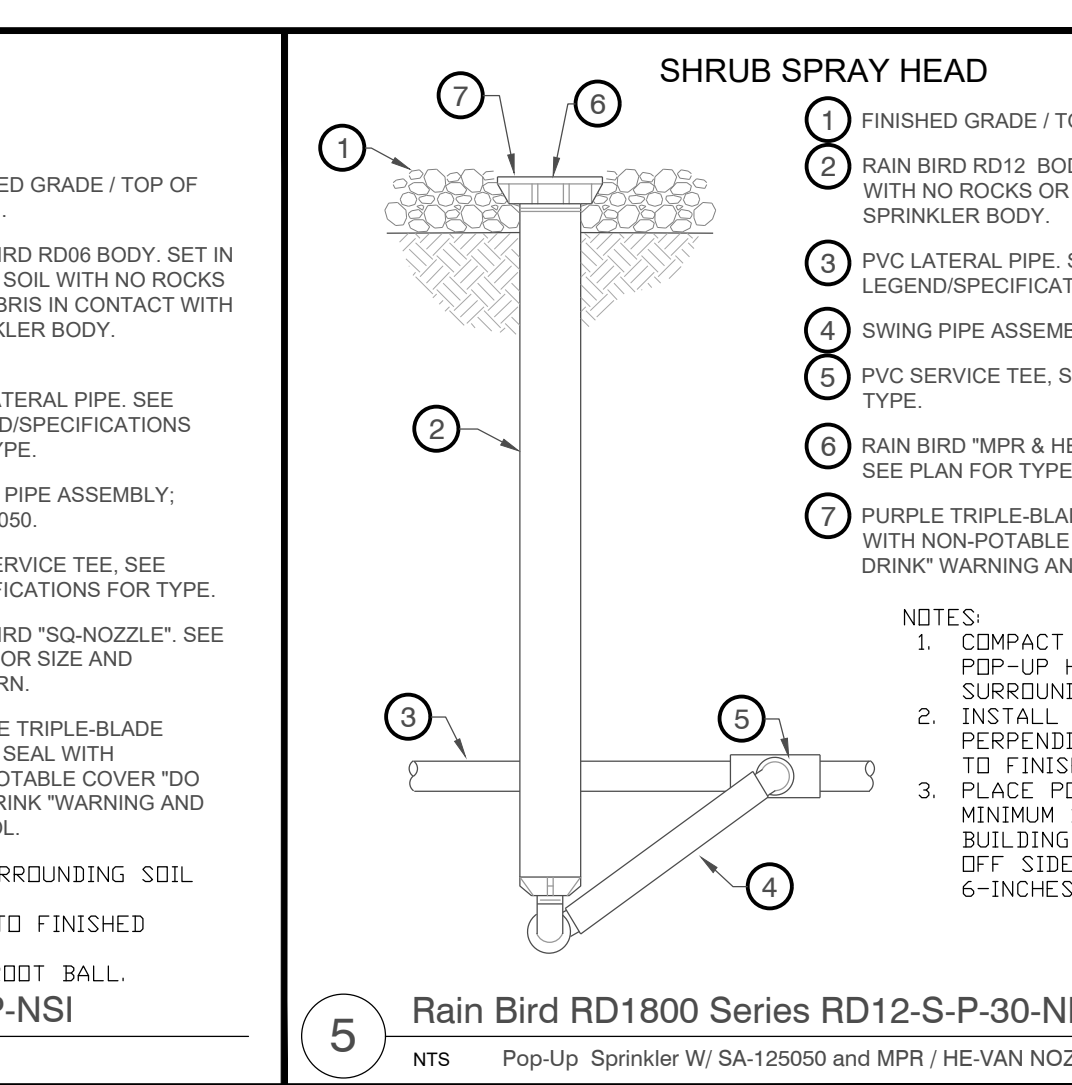
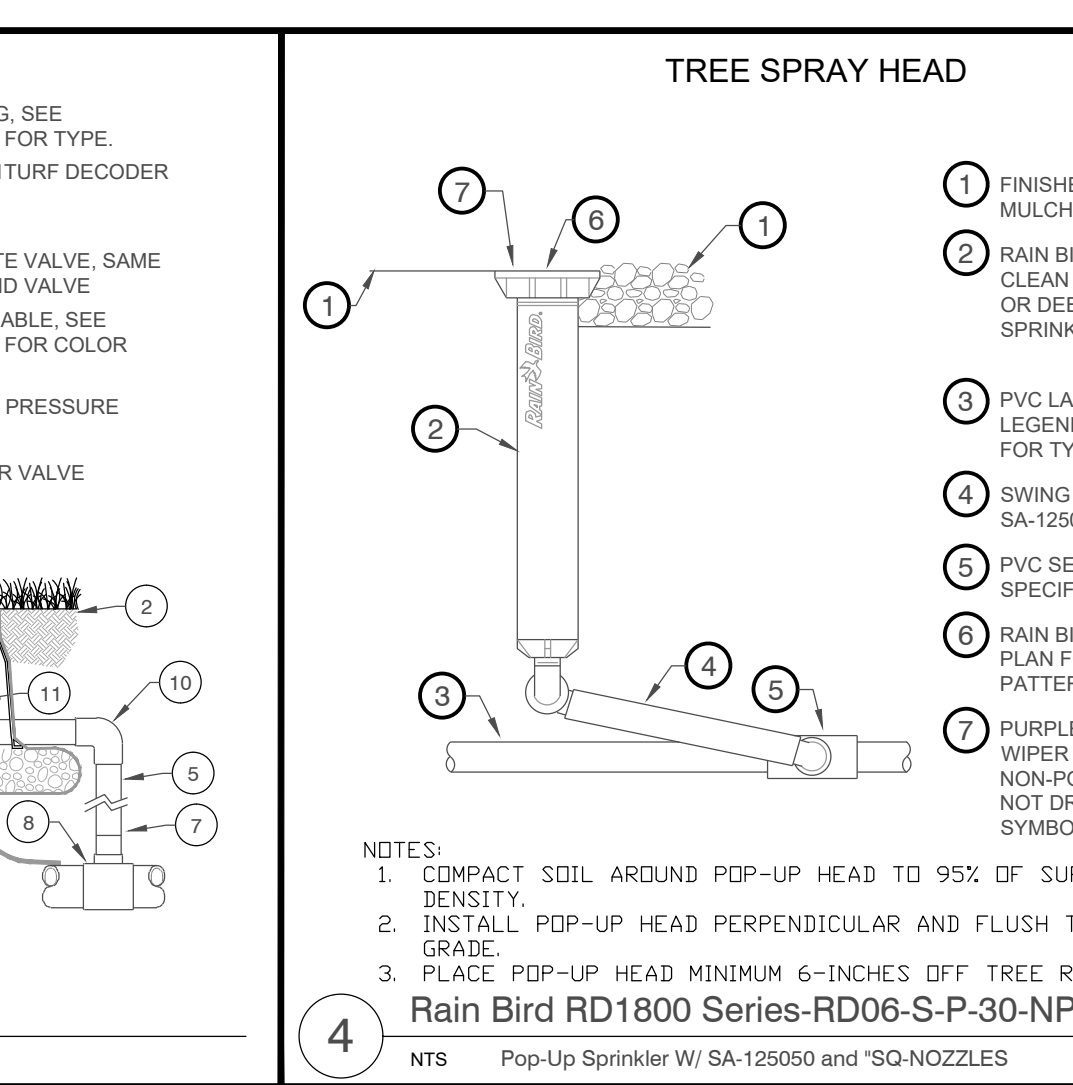
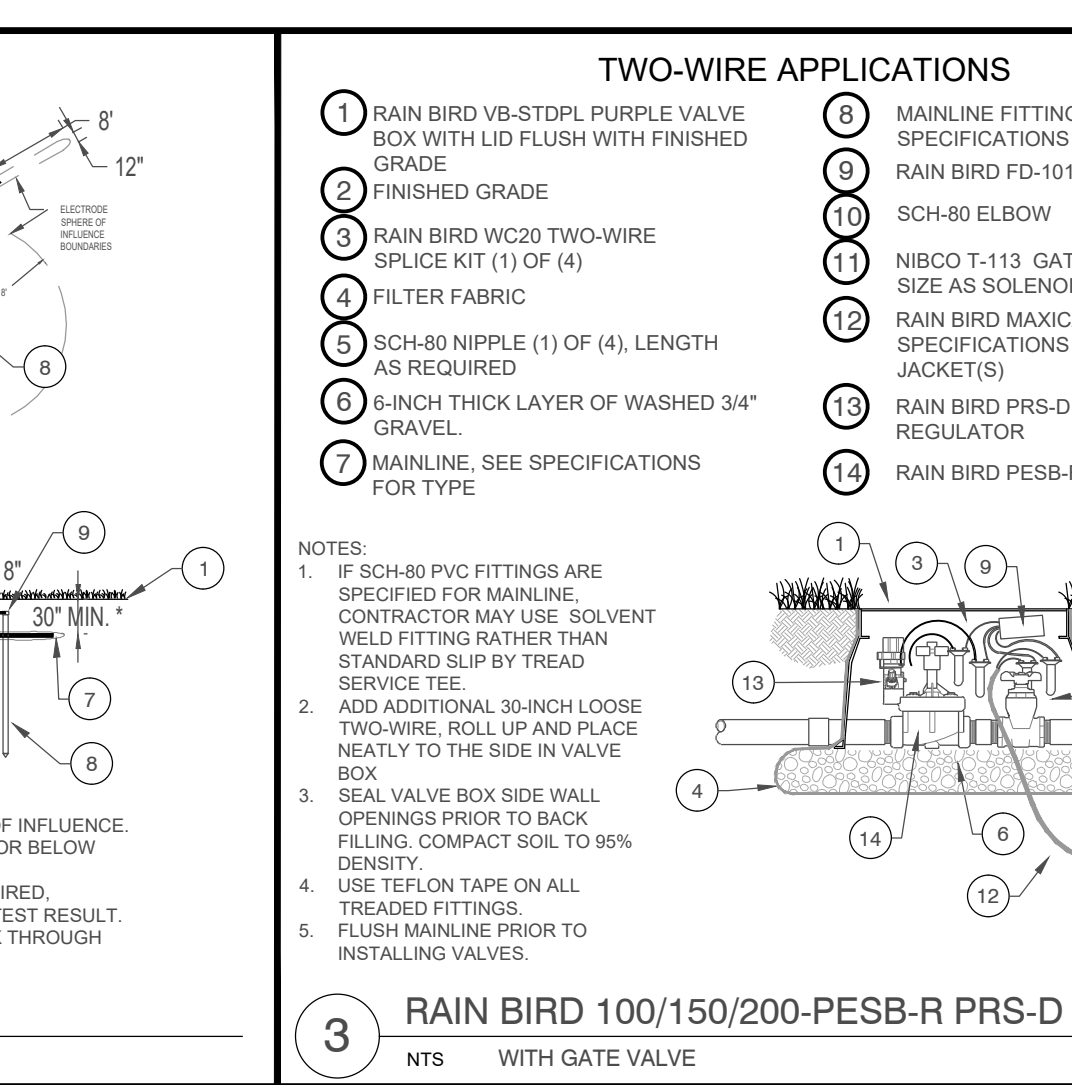
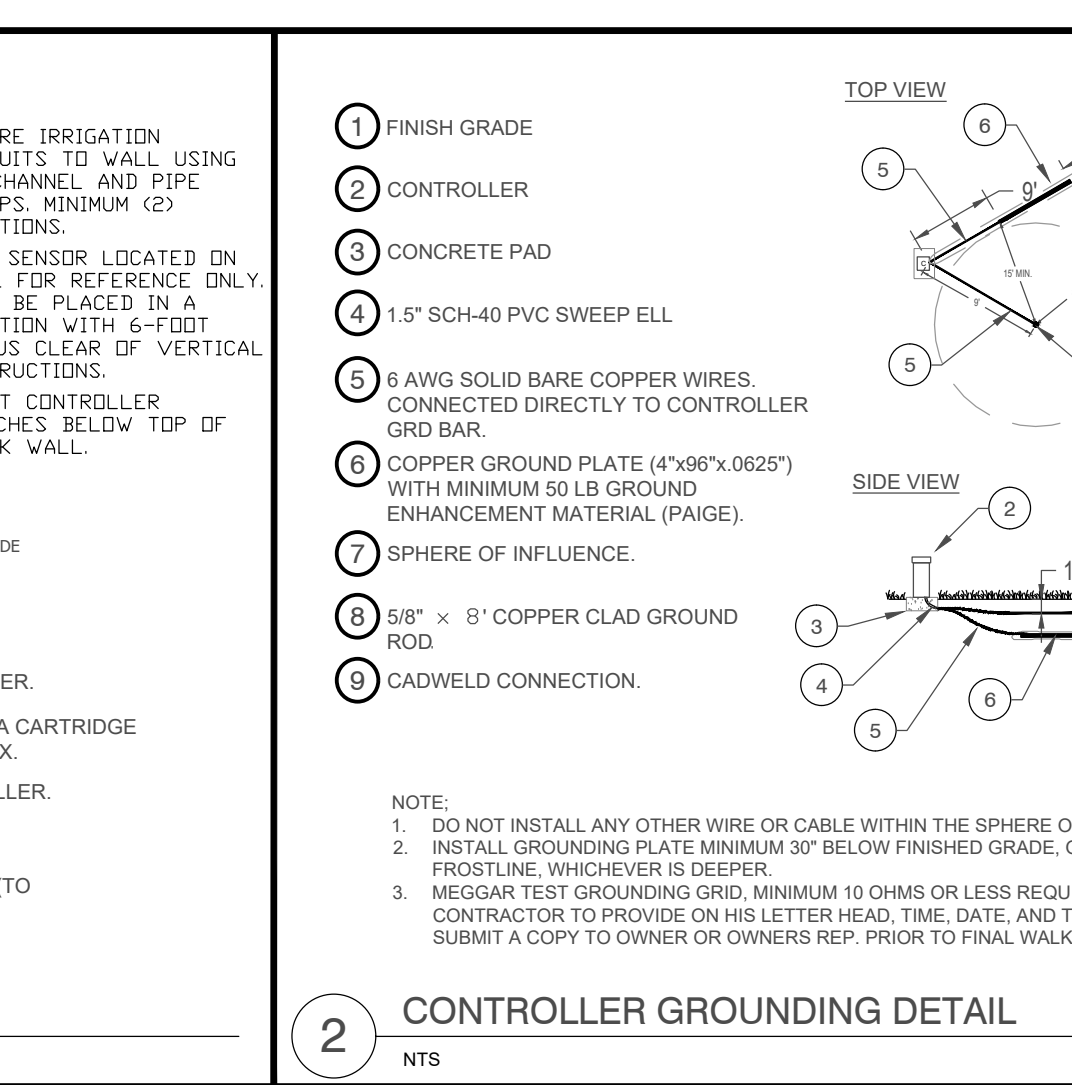
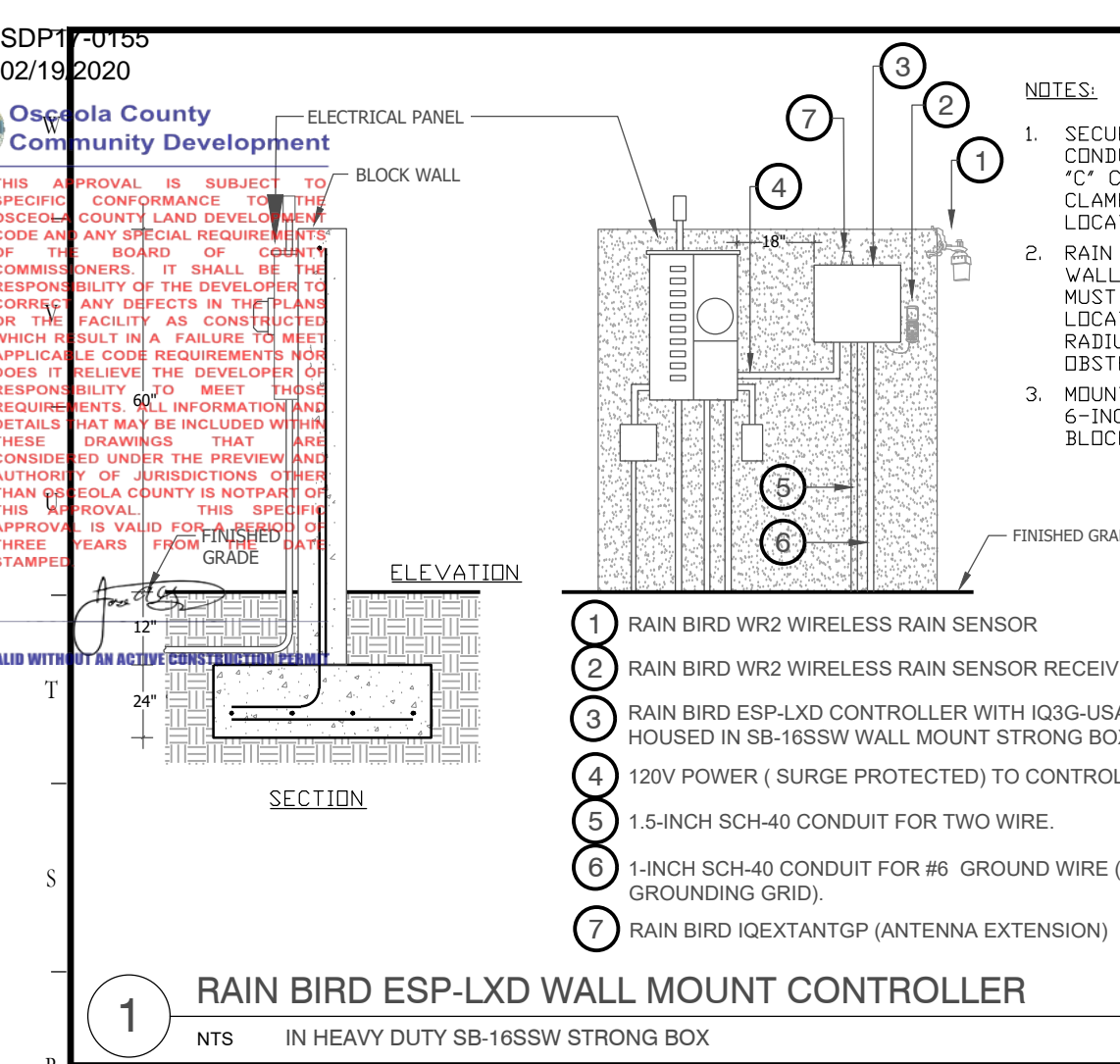
Date: 11/22/2019 Scale: SEE PLAN
 Drawn By: RR Designed By: MM
 Approved By: MM Project No: 19027
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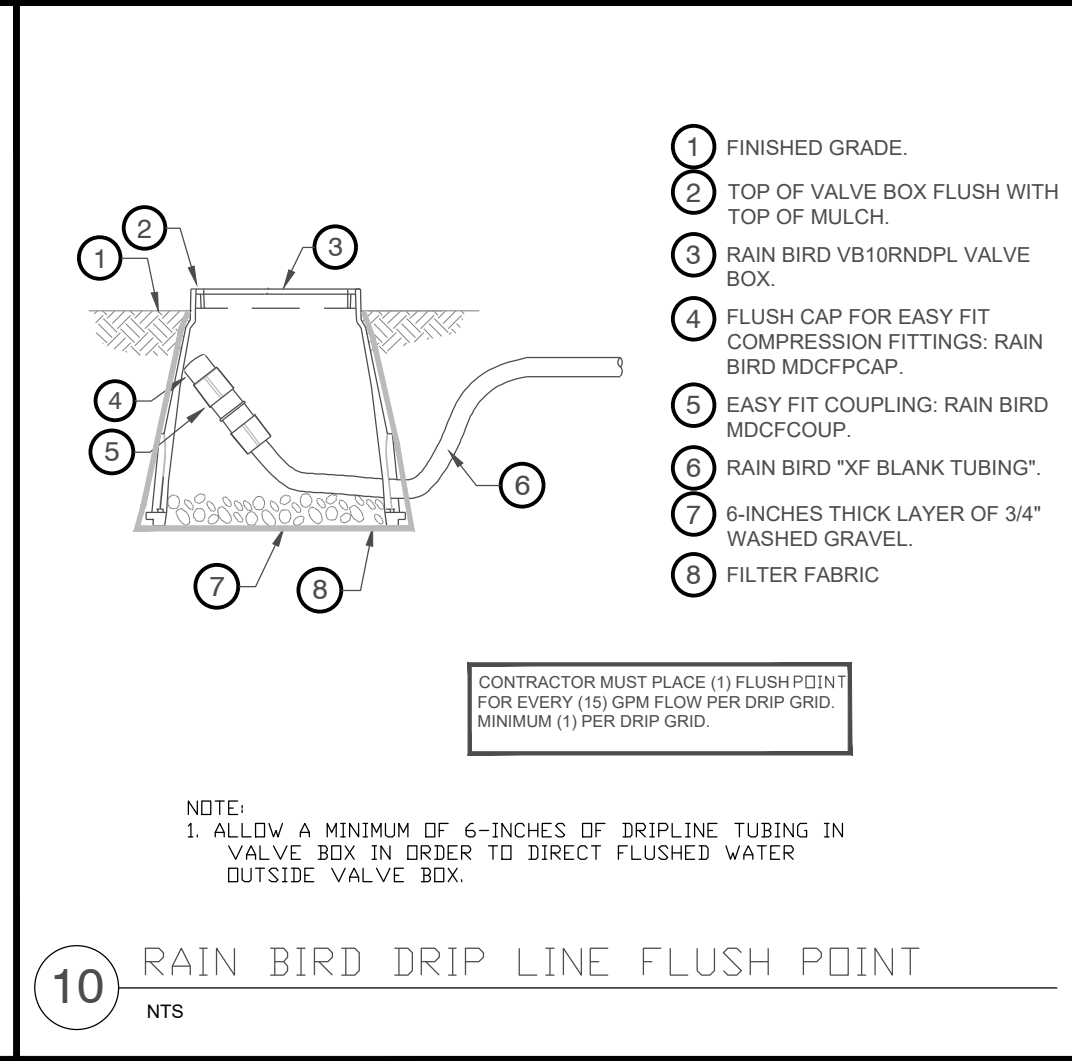
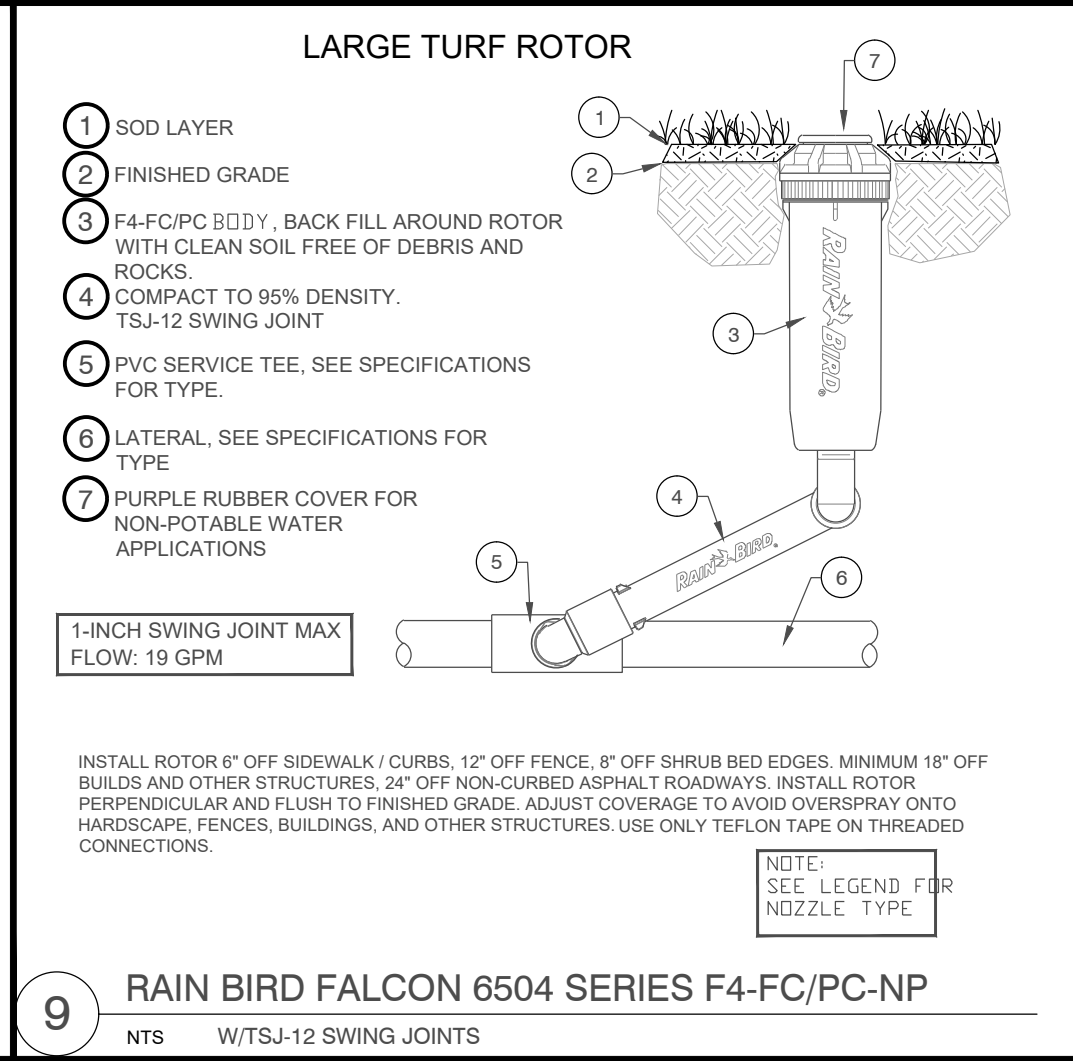
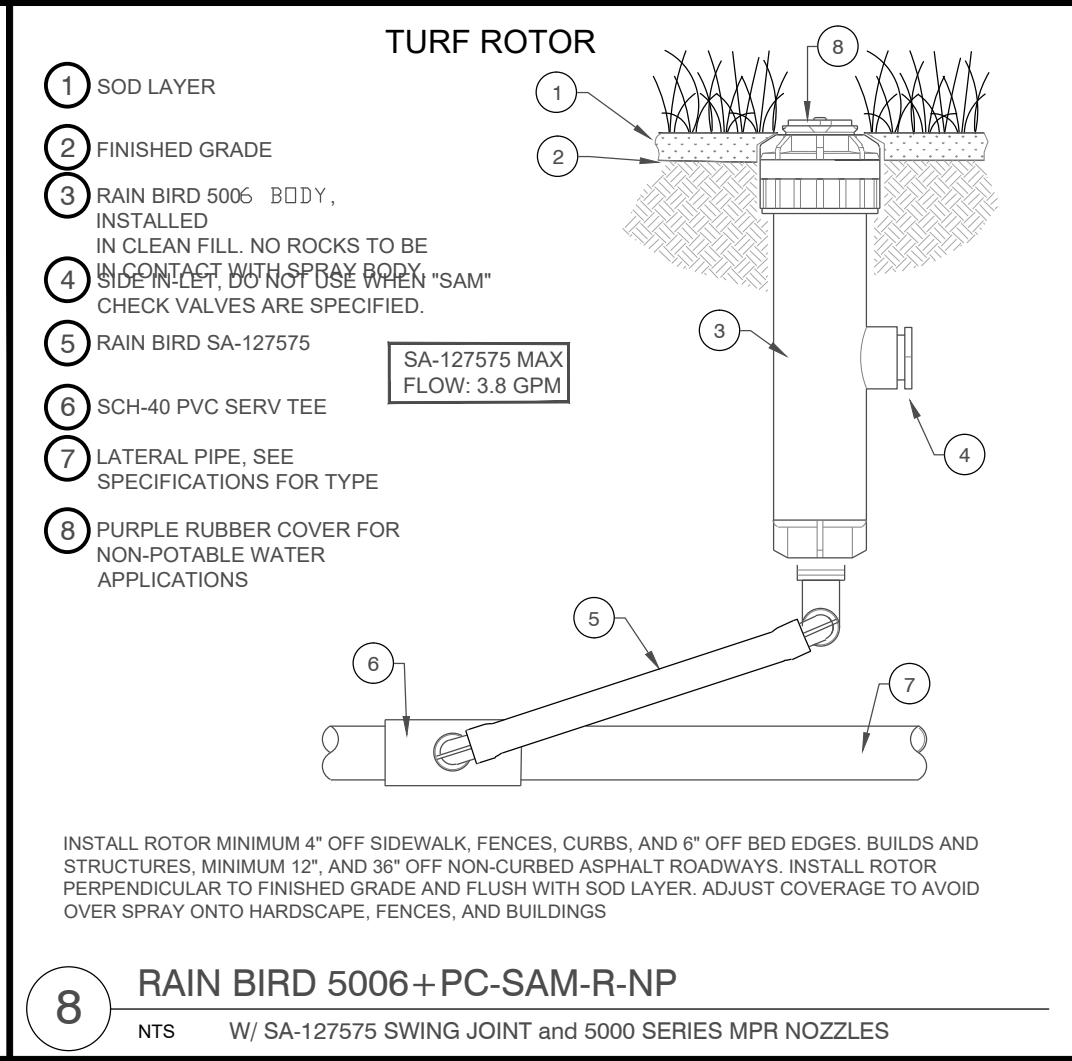
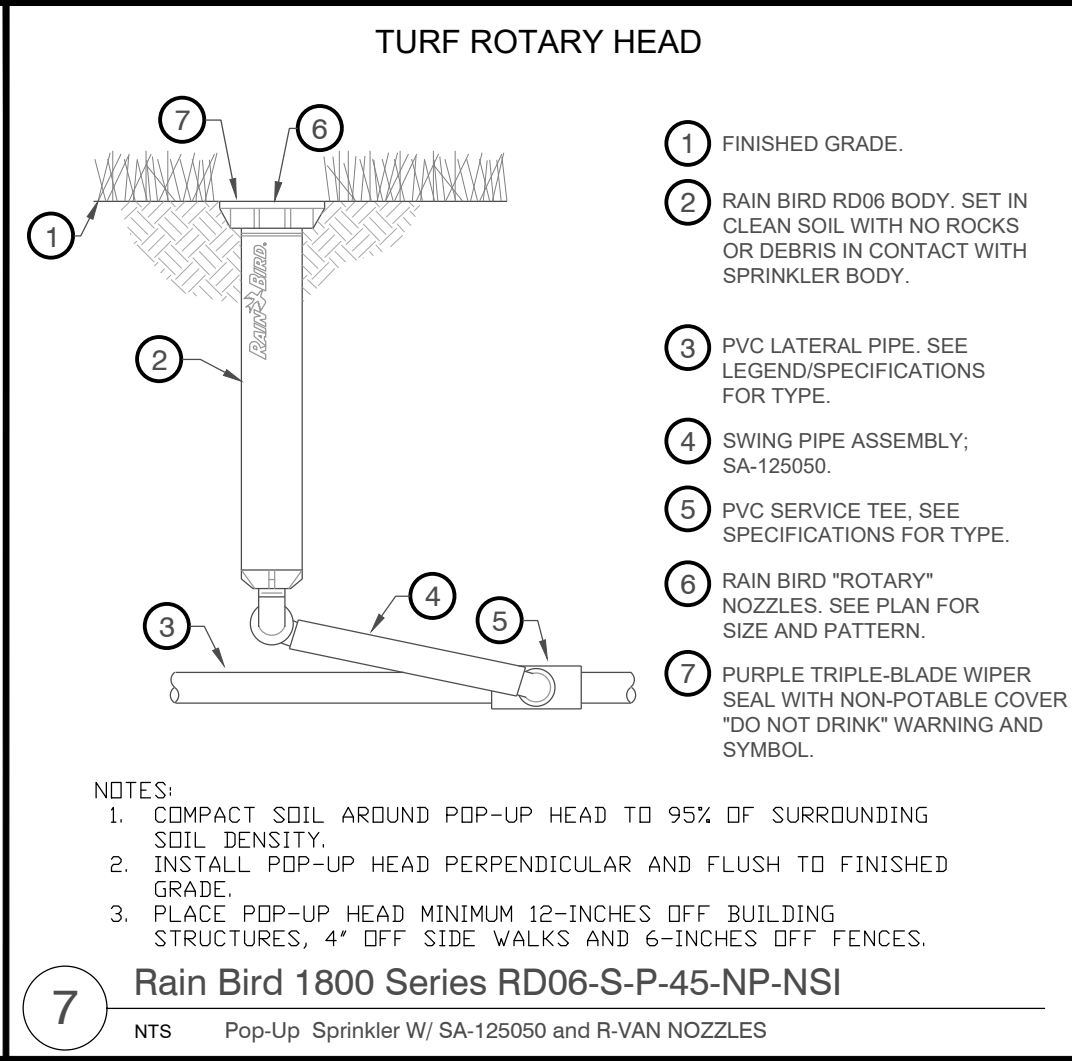
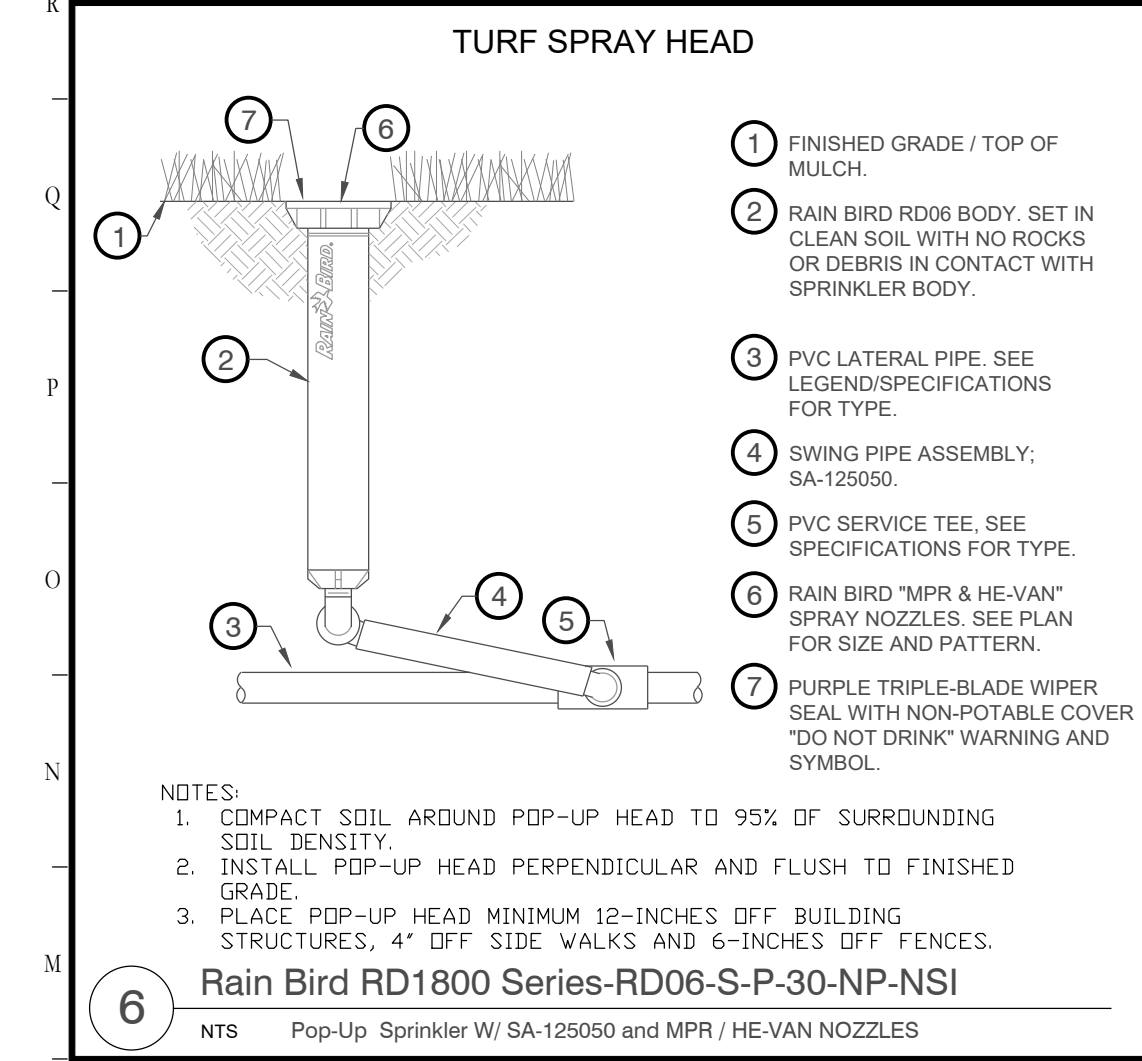


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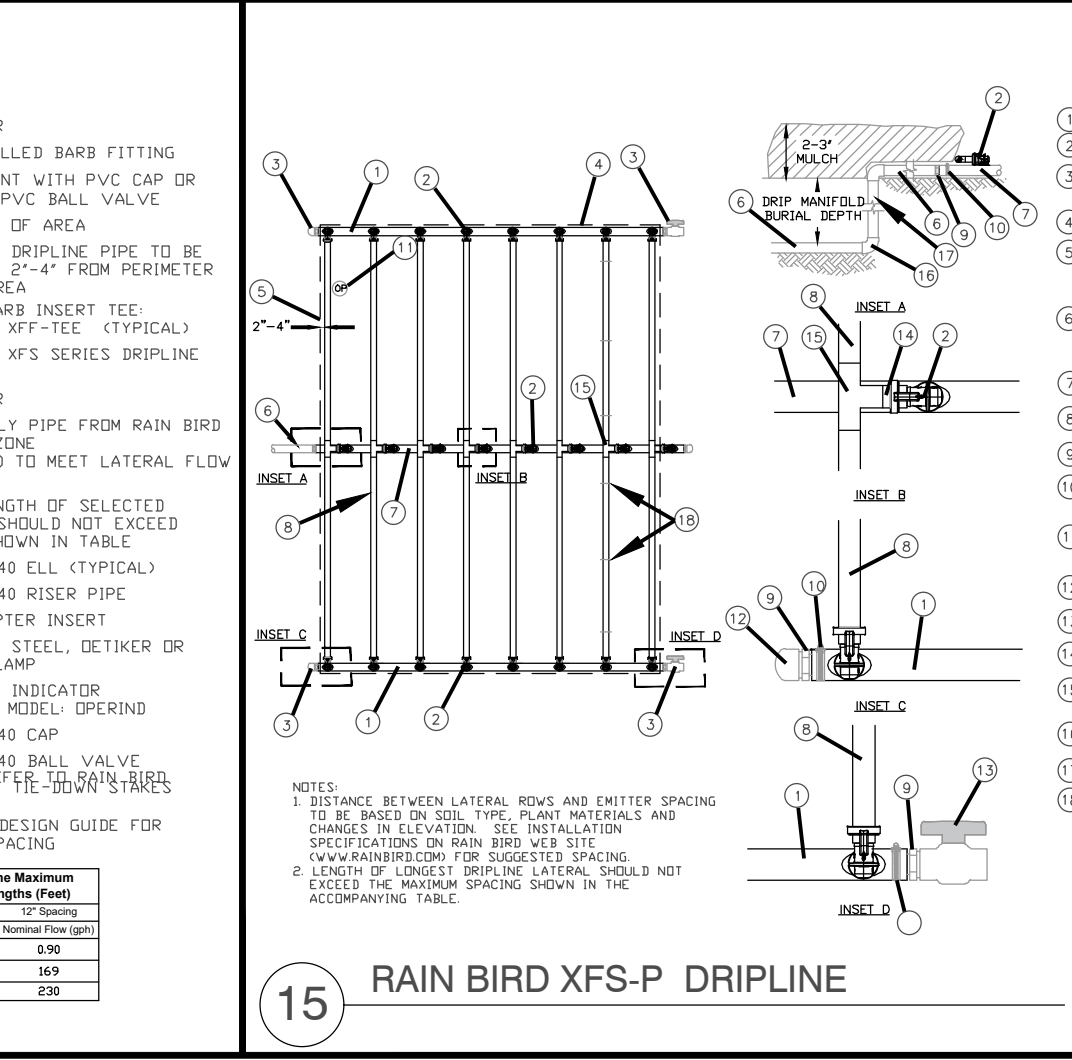
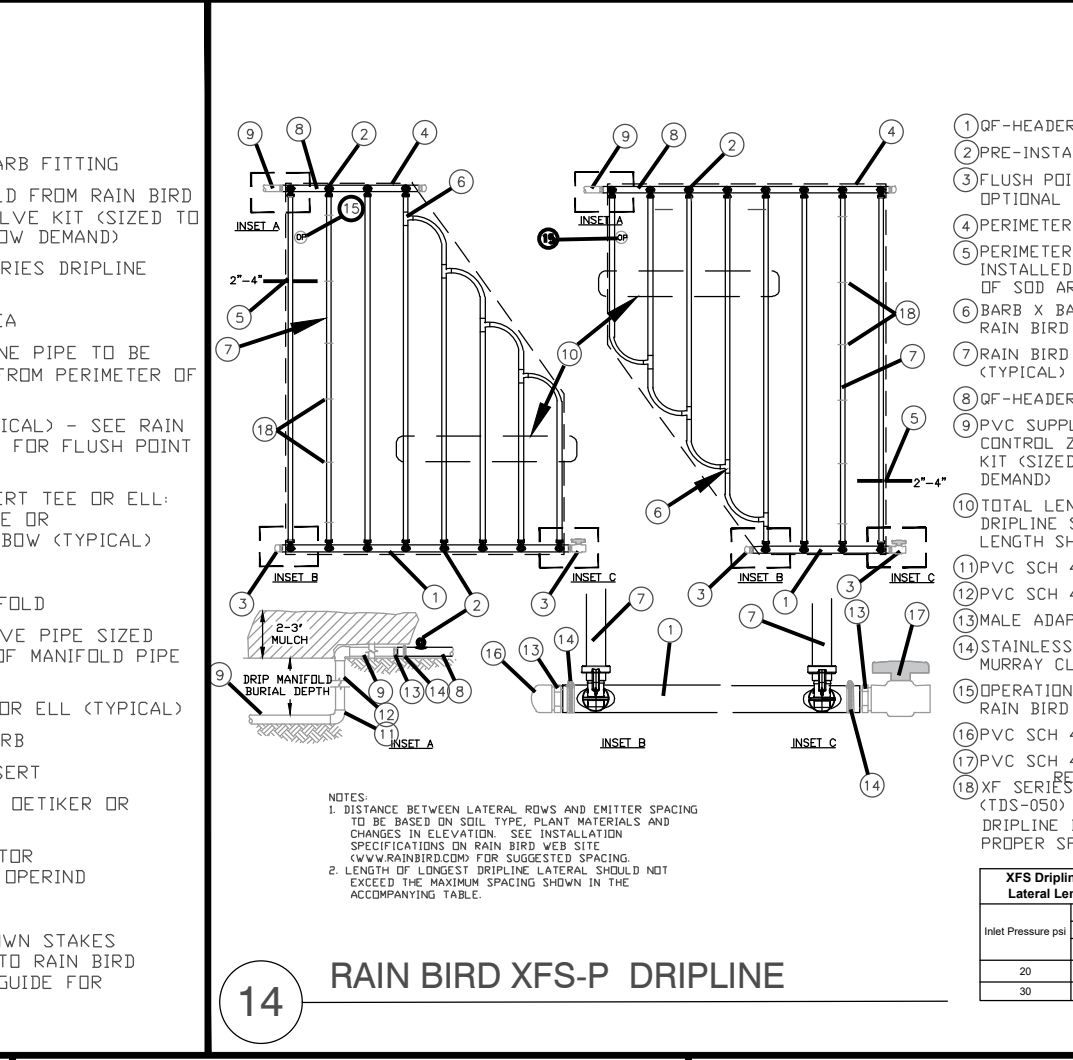
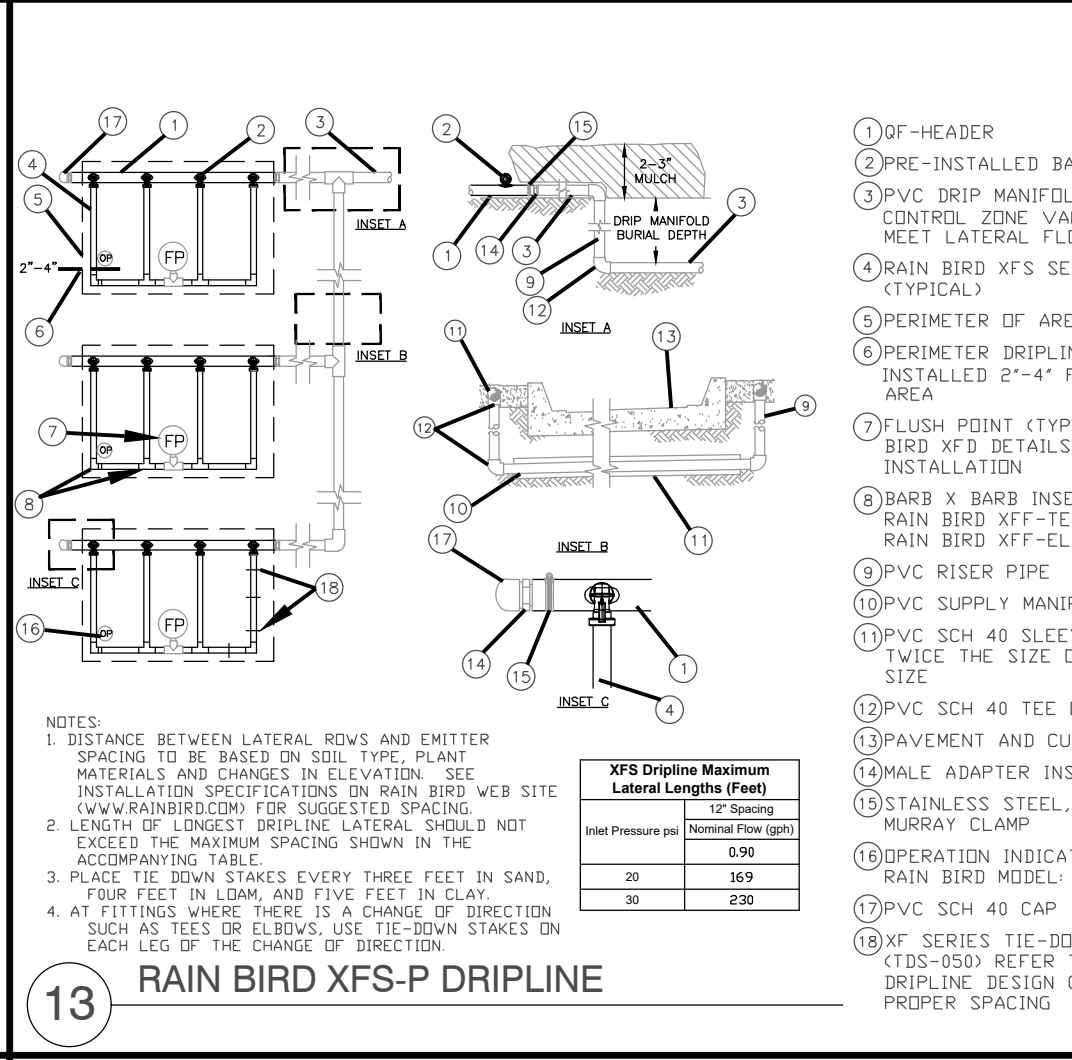
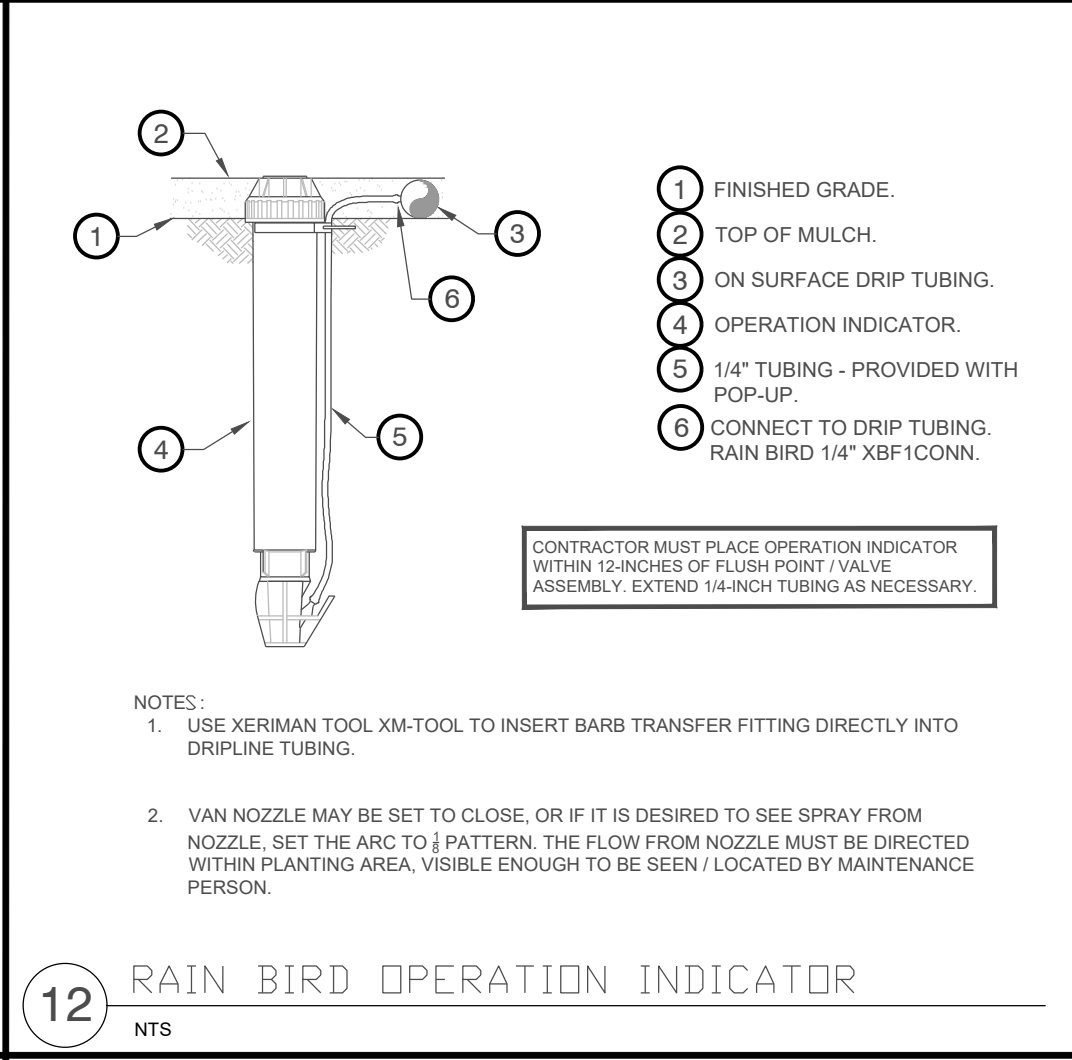
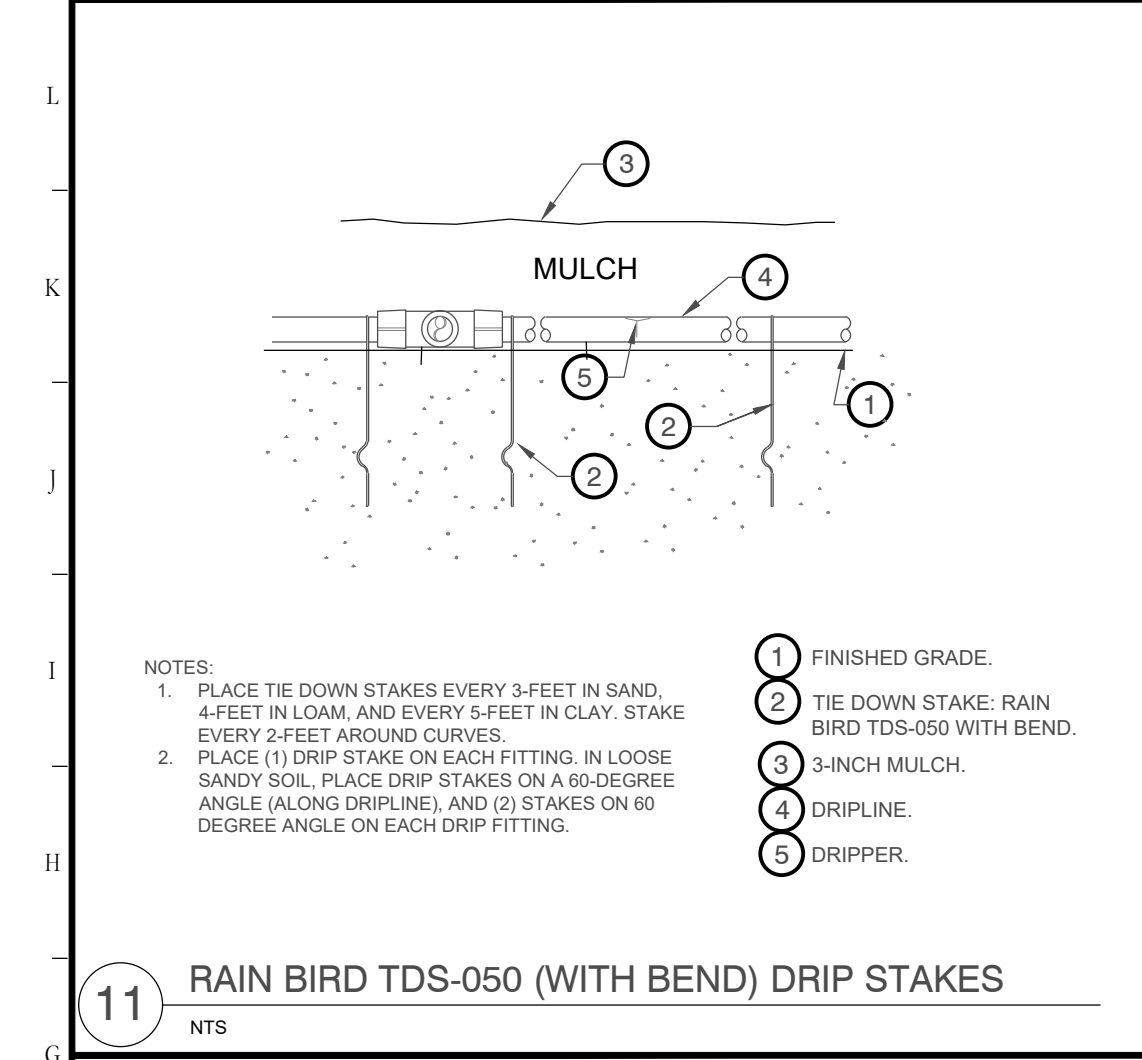
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Owner:



CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
IRRIGATION DETAILS

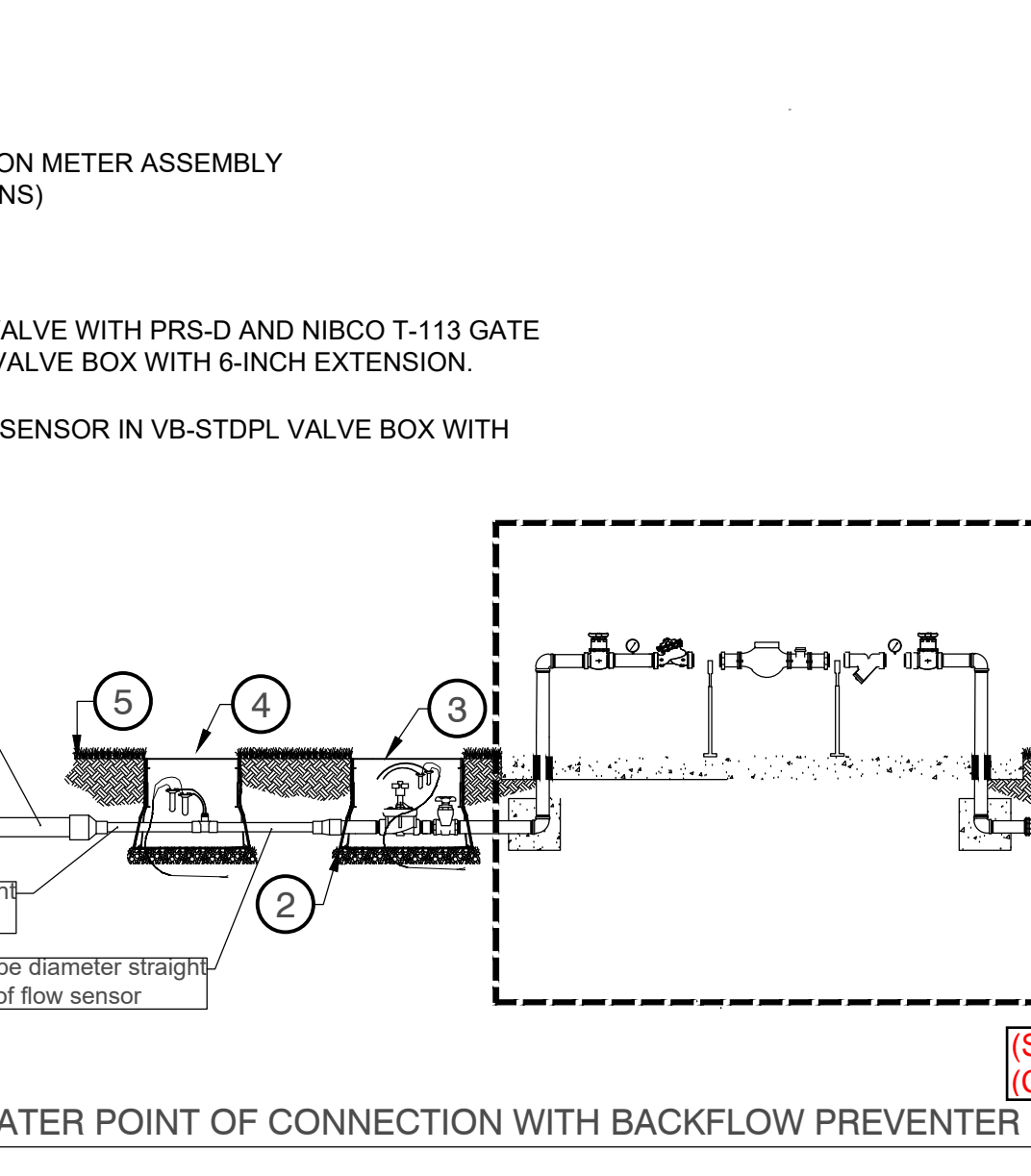
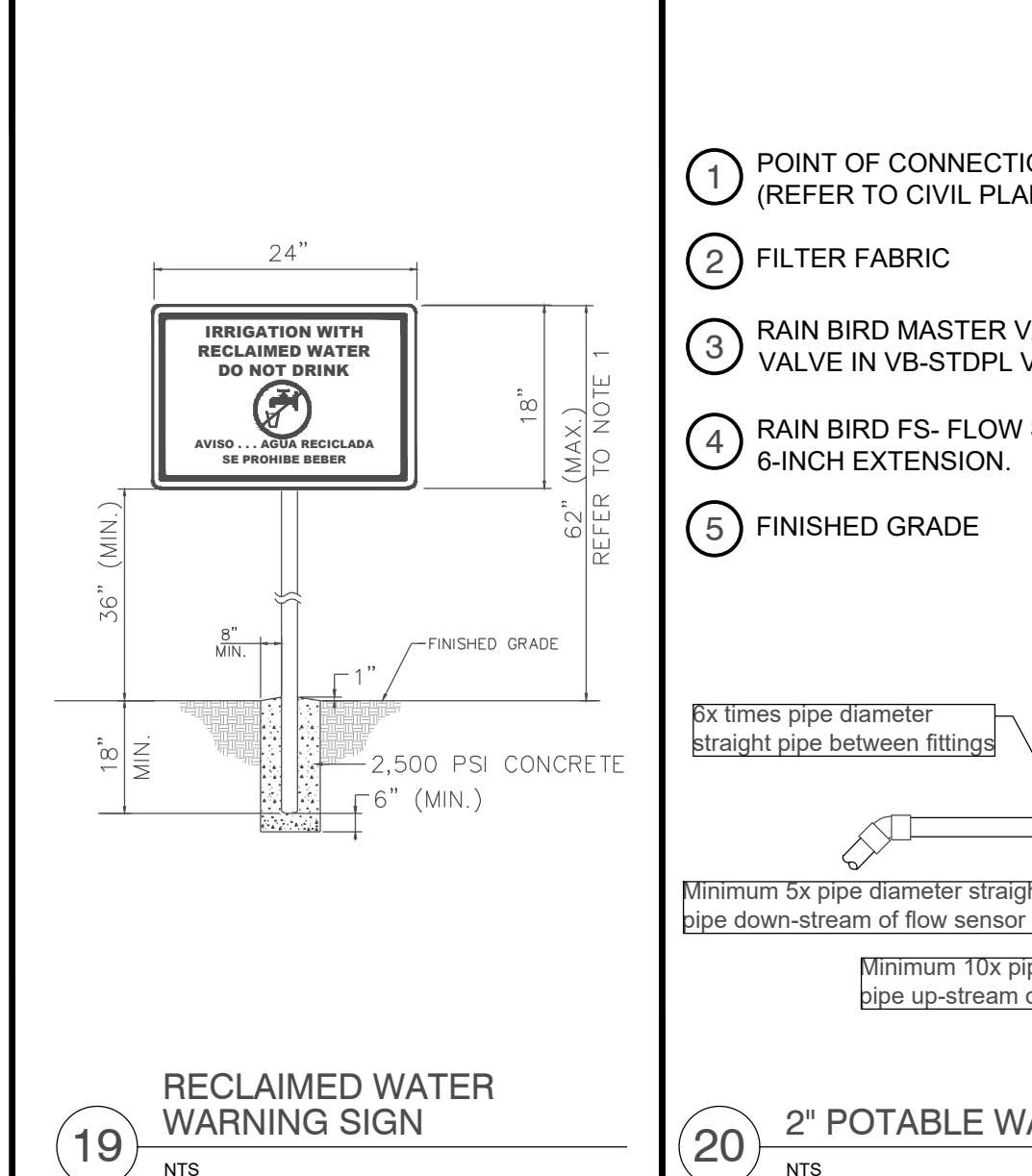
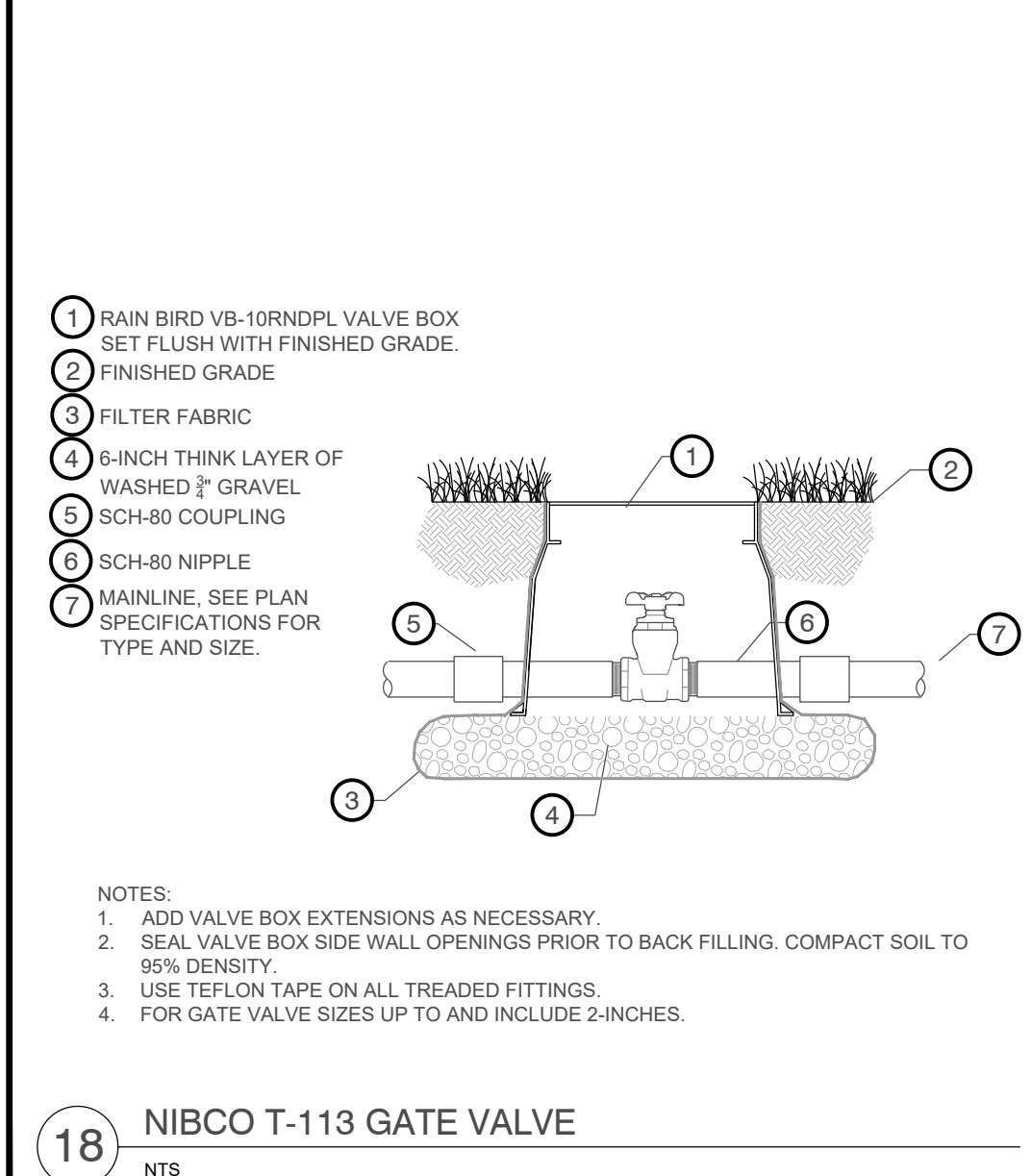
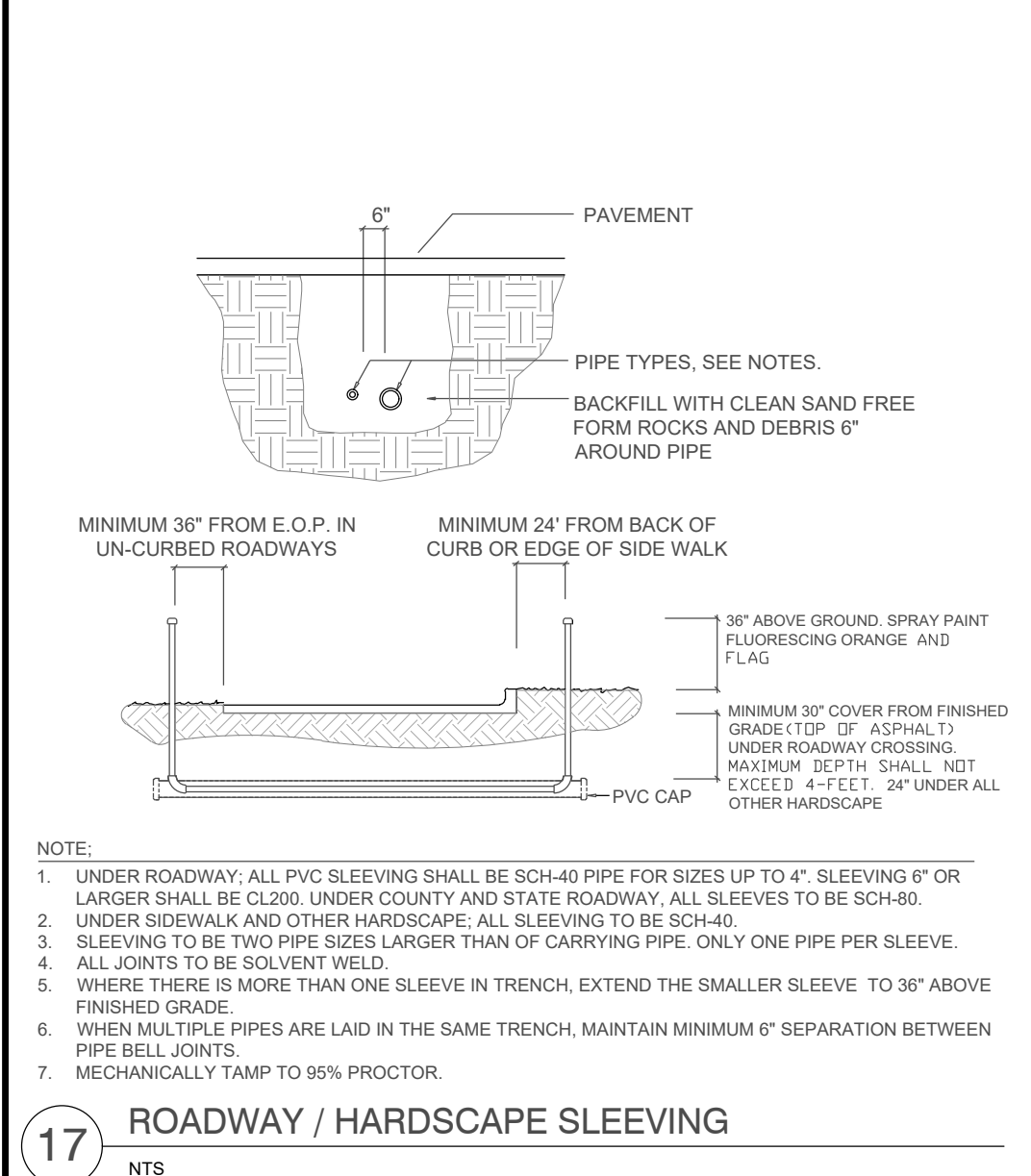
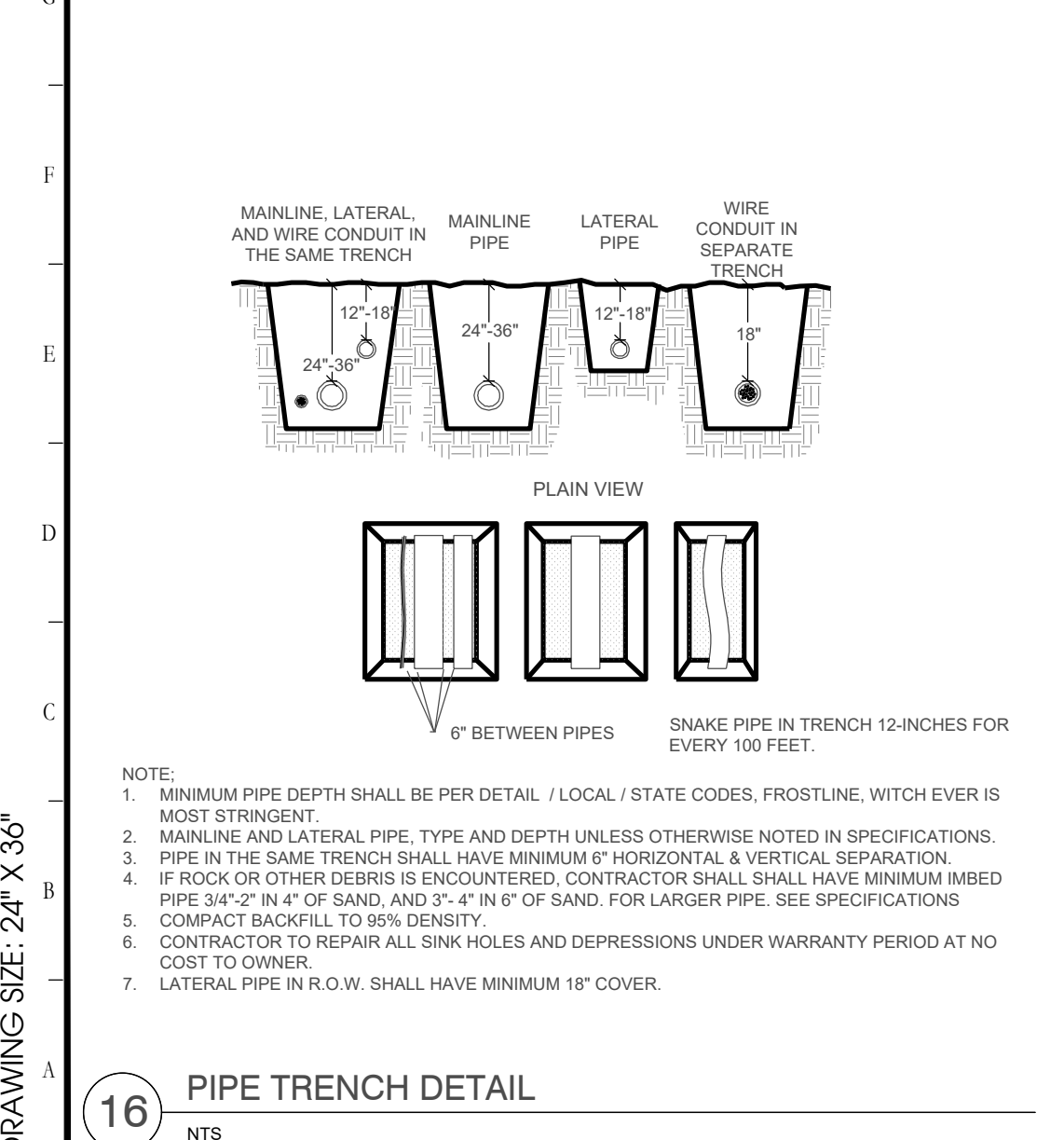


Rev: Date: Description: By:

Date: 11/22/2019 Scale: SEE PLAN
 Drawn By: RRR Designed By: MM
 Approved By: MM Project No: 19027
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Seal: Sheet Number: IR-07

Digitally signed by Matthew E McFadden
 DN: c=US, o=Innovations Design Group, ou= , email=1410D000016E1284EE02000976D_cn=Matthew E McFadden
 Date: 2019.12.06 17:42:27 -05'00'



1 POINT OF CONNECTION METER ASSEMBLY (REFER TO CIVIL PLANS)

2 FILTER FABRIC

3 RAIN BIRD MASTER VALVE WITH PRS-D AND NIBCO T-113 GATE VALVE IN VB-SDPL VALVE BOX WITH 6-INCH EXTENSION.

4 RAIN BIRD FS- FLOW SENSOR IN VB-SDPL VALVE BOX WITH 6-INCH EXTENSION.

5 FINISHED GRADE

6x times pipe diameter straight pipe between fittings

Minimum 5x pipe diameter straight pipe down-stream of flow sensor

Minimum 10x pipe diameter straight pipe up-stream of flow sensor

(SDP17-0155)(PS17-00025)(CP17-0002)(CPA09-009)

THIS APPROVAL IS SPECIFIC TO THE PROJECT AND ANY SPECIAL REQUIREMENTS OF THE BOARD OF COUNTY COMMISSIONERS. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO OBTAIN ALL NECESSARY PERMITS FROM THE LOCAL, STATE AND FEDERAL AGENCIES. THIS APPROVAL IS VALID FOR A PERIOD OF THREE YEARS FROM THE DATE OF ISSUANCE.

NOT VALID WHILE UNDER ACTIVE CONSTRUCTION

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1.02 REFERENCES

- A. ANSI - American National Standards Institute
- B. ASIC - American Society of Irrigation Consultants: ASIC Grounding Guideline.
- C. ASSE - American Society of Sanitary Engineering: ASSE 1013, 1015: Backflow Preventers, Pressure Reducers.
- D. ASTM - American Society of Testing and Materials
- E. IA - The Irrigation Association: Main BMP Document.
- F. NFPA - National Fire Protection Association: NFPA 70 National Electrical Codes.
- G. UL - Underwriters Laboratories: UL Wires and Cables.

1.03 DEFINITIONS

- A. Point of Connection: Location where the Irrigation Contractor shall tie the irrigation mainline into the water supply to provide irrigation water to the Project.
- B. Mainline: Pressurized piping downstream of the Point of Connection to provide water to remote control valves and quick couplers. Normally under constant pressure.
- C. Lateral Pipe: The system of pipes down stream of remote-control valves that provide water to the sprinkler heads or emitters.

1.04 QUALITY ASSURANCE

- A. The irrigation system is to be installed by a license Irrigation Contractor that has installed at least 5 projects of equal or comparable size and complexity. Irrigation work shall be performed by a single firm, acceptable to the Owner's Representative and licensed as an Irrigation Contractor where the project is to be installed. The Irrigation Contractor and the installation crew must have experience and in-depth knowledge of all equipment installation procedures recommended by the manufacturers.
- B. Codes and Standards: Irrigation design and installation must comply with all applicable federal, state and local governing agency requirements and to industry standards. Notify Landscape Architect immediately in writing of any discrepancies, inconsistencies, or contradictory requirements.
- C. Location of Equipment: Irrigation materials shown on plans are approximate location. Minor adjustments in the system layout will be permitted to clear fixed obstructions. Any major revisions to the irrigation system shall be submitted in writing to the Landscape Architect for approval. The final system layout must be acceptable to the Owner.
- D. The number of heads or valves cannot be less than that indicated on plans without approval by Landscape Architect. Irrigation zones for turf and planting beds are to be separate. Spacing of all sprinkler heads and drip shall not exceed the Manufacturer's published recommendations. "Head to head" coverage is required in all turf areas.
- E. Substitutions: Substitutions of irrigation equipment or other material as called for on the plan will not be permitted without review and approval by the Owner's Representative prior to bid.
- F. All materials shall come from a regionally authorized irrigation distributor for the product specified.
- G. Workmanship: Install materials and equipment in a neat and professional manner following Manufacturer's recommendations.
- H. Certifications: All general laborers and workers shall be previously trained and familiar with sprinkler installation and have a minimum of one-year experience

1.05 SUBMITTALS

- A. Product Data: Submit Manufacturer's technical data and installation instructions prior to ordering of any materials. Delivered material shall match approved submittals.
- B. As-Built Drawings: Submit a CAD file of layout and details illustrating field installed points of connection, controllers, mainline and lateral line locations, size, and assembly. Include type and coverage of heads, type of valves, controllers, fittings, emitters, and accessories. The drawing shall be scaled no smaller than 1" = 20'-0". The drawings shall be in compliance with Owner's requirements for loading into GIS database. Submittal, review, and approval by the Owner's Representative and Landscape Architect of the As-Built Drawing shall precede Application for Final Payment by the Irrigation Contractor
- C. Operation and Maintenance Data:
 - 1. Submit instructions covering full operation, care, and maintenance of system (and controls) and Manufacturer's catalog.
 - 2. Provide an irrigation water schedule showing length of time each valve is to be open to provide the determined amount of water. Include drain procedures, cleanout features, etc.
 - 3. Instruct Owner's maintenance personnel on how to operate controller, adjust sprinkler heads and other equipment, and use special tools for adjustments.
 - 4. Provide color-coded zone map of the system.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store materials and equipment in such a manner as not to damage the parts or decrease the useful life of equipment.
- B. Store materials away from detrimental elements. Coordinate with Owner's Representative or General Contractor, as appropriate, to secure a safe staging area. Irrigation Contractor is responsible for security of all materials on site.
- C. Handle, load, unload, stack, and transport materials carefully to avoid damage. Handle pipe in accordance with Manufacturer's recommendations.

1.07 JOB CONDITIONS

- A. Prior to commencing any work required under the Contract, the Irrigation Contractor shall obtain and maintain a current locating ticket on job site during work. The Irrigation Contractor shall work with Owner to locate all utilities, subsurface drainage, and underground construction so that proper precautions may be taken not to disturb or damage any subsurface improvements. Damage to any of the above-mentioned items or others, shall be promptly repaired by the Irrigation Contractor at no additional cost to the Owner.
- B. Water service and electric service for the purpose of the automatic irrigation system is the responsibility of the Irrigation Contractor unless noted otherwise on the plans. Connections shall meet all applicable laws, codes, regulations and manufacturers recommendations. Coordinate the location of the water and electric service with the General Contractor.
- C. The Irrigation Contractor shall verify design pressure and flow meets the requirements of the irrigation plan. Irrigation Contractor shall be responsible for determining these parameters and reporting any deviations to the Landscape Architect between these existing conditions and the required parameters as stated on the irrigation plans.
- D. Insurance on irrigation materials or equipment stored or installed is the responsibility of the Irrigation Contractor. Such insurance shall cover fire, theft, and vandalism. Should the Irrigation Contractor elect not to provide such insurance the Owner shall in no way be responsible for any losses incurred by the aforementioned acts. The Irrigation Contractor is responsible for all costs incurred in replacing damaged or stolen materials or equipment prior to Substantial Completion of the Work.
- E. Obtain all required permits and pay all required fees at no additional cost to the Owner. Any penalties imposed due to failure to obtain permits, reinspection and other related fees are the responsibility of the Irrigation Contractor.
- F. Provide and maintain all passageways, guard fences, warning lights, and other protection devices required by OSHA and local authorities having jurisdiction.
- G. Irrigation Contractor shall adequately protect adjacent property as provided by law and the Contract Documents.
- H. Existing Site Improvements: Perform Work in a manner that avoids damage to existing site improvements. The Irrigation Contractor is responsible for any damage caused by their work to existing landscape, structures, hardscape and other sub-contractors work due to their negligence or otherwise.
- I. Test water conditions: It shall be the responsibility of the Irrigation Contractor to measure or analyze the existing water pressure at the point of connection.

1.08 WARRANTY

- A. Warranty all Work for a period of one (1) year, starting on the Date of final Inspection and acceptance. Warranty to cover against defects in materials, equipment, workmanship, and any repairs required resulting from leaks or other defects of workmanship, material, or equipment.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Specific requirements concerning the various materials and the arrangements in which they are to be installed are outlined in this Specification.
- B. Quality and Size
 - 1. Material specified by name and / or model number in the Specifications, on the site, or detailed drawings are used for the purpose of identification of materials and to ensure specific use of that material in the construction of the system. No substitutions will be permitted without approval.
 - 2. All materials used in the system must be new and without flaws or defects of any type and be the best quality available. All sprays, rotors and valves shall have a minimum three (3) year warranty against material defects or defective workmanship.
- 2.02 NON-POTABLE WATER SOURCE: When applicable, major components associated with a non-potable irrigation system must be distinguished from potable by the use of light purple color and descriptive signage. All valves, valve boxes, irrigation heads, dripline, quick coupling valves, etc. must be manufactured in the appropriate color to avoid improper use. Valves need to have purple valve tags to identify them as non-potable. Signage must also be used (CAUTION-NON-POTABLE WATER, DO NOT DRINK) at any distribution point (i.e. quick coupling connection, etc.). Signage must be in both English and Spanish and located as to be readily visible to potential users. Potable and reclaimed water lines shall be a minimum of 18" apart. This separation shall be verified and documented on the As-Built drawings. The horizontal separation shall be 5' center to center and 3' outside to outside if vertical minimum of 18" is not met. Refer to the specific code if this separation cannot be met. Verify compliance with local agencies.
- 2.03 METER AND POINT OF CONNECTION: The meter and point of connection shall be the responsibility of the Infrastructure General Contractor and installed to meet all applicable laws, codes and regulations. It is the Irrigation Contractor's responsibility to coordinate the timeframe needed for the irrigation connection after the meter. Refer to Details for further instructions.
- 2.04 BACKFLOW PREVENTER (POTABLE WATER SOURCE): The backflow preventer shall be the responsibility of the Irrigation Contractor and installed to meet all applicable laws, codes, regulations and manufacturers recommendations. It is the Irrigation Contractor's responsibility for all necessary coordination, labor, materials, components, etc. for a complete and proper connection to the irrigation system. The size and type shall be as shown on the irrigation plans. The Irrigation Contractor is responsible for coordinating the exact location with the Owner. The backflow preventer shall be a PVB or RPZ type, as required by code and shall meet or exceed specifications and standards set by the State and USC Foundation for Cross-Connection Control and Hydraulic Research. All exposed standpipe and fittings shall be copper or brass pipe to 18" below grade. Backflow preventer assembly must include (2) gate valves for isolating unit. Refer to Details for further instructions.

2.05 PIPE AND FITTINGS

- A. Mainline: IPS Class 200 SDR 21 PVC pipe, ASTM D-2241, D-1785. All mainline 1" - 2.5" shall be solvent weld. All mainline 3" and larger shall be PVC gasketed type. All mainline fittings up to 2.5" shall be Sch-80 ASTM D-2467. Use only IPSV05 PVC Clear Median-body, medium setting cement (ASTM D2564) with purple primer for fittings. Apply solvent weld and primer as per manufacturers instructions and guidelines. Fittings 3" and above shall be LEEMCO ductile iron fittings with fitting restraints. All mainline directional changes shall be thrust blocked. When pipe ends are cut, the Irrigation Contractor shall remove burrs from cut and clean pipe ends as per manufacturer installation procedures. Installed mainline pipe up to 4-inches with minimum 24" cover, 6" and above with minimum 30" measured from finished grade to top of pipe. All pipe using non-potable water sources must be distinguished from potable by the use of light purple color.
- B. Laterals: IPS Class 200 SDR 21 PVC pipe, ASTM D-2241, D-1785 solvent weld. All lateral pipe fittings up to 2.5" shall be Sch-80 ASTM D-2467. Use IPS 725 solvent weld (ASTM D2564) Blue cement with purple primer for welding sch-80 PVC joints/fittings up to 3". When pipe ends are cut, the Irrigation Contractor shall remove burrs from cut and clean pipe ends as per manufacturer installation procedures. Apply solvent weld as per manufacturer's instructions and guidelines. Install lateral pipe with a minimum 18" cover, measured from finished grade to top of pipe. All pipe using non-potable water sources must be distinguished from potable by the use of light purple color.
- C. All pipes above finished grade shall be Schedule 80 PVC with Sch-80 fittings.
- D. Expansion Joints shall be installed every three hundred (300) feet of straight run.
- E. PVC Pipe Couplings located within sleeves shall be solvent weld.
- F. The Irrigation Contractor shall run a Detectable Purple Recycled/Reclaimed Water Marking Tape 12" above the mainline. The tape shall be 2" purple color coded and permanently printed on both sides with a repeating warning message "Caution Recycled/Reclaimed Water Line Below".

2.06 RISERS: Not allowed for sprinkler applications (Bubblers only if specified).

2.07 ELECTRIC WIRING

- A. 120 Volt AC Wiring: Electrical service is to be provided by the Infrastructure General Contractor unless otherwise directed by Owner's Representative. It is the Irrigation Contractor's responsibility to coordinate electrical service needed for the controller.
- B. Splices in controller wiring shall be waterproof and rated for direct burial. Only Rain Bird WC20 wire connectors are permitted
- C. Control Wiring shall be (14) gauge solid strand wire, Underwriters Laboratory (UL) approved for direct burial. Minimum wire size shall be fourteen gauge. All control wiring and wiring connections from the controller to the valves and other necessary equipment is included in this Contract.

2.08 SPRINKLER HEADS AND NOZZLES

- A. Spray Sprinkler Heads:
 - 1. The full or part circle pop-up spray head sprinkler shall be Rain Bird RD1800 Series (NP for non-potable), capable of covering the radius as shown on the drawings at a minimum base pressure of 30 PSI or 45 PSI (as required by the nozzle). Provide the non-potable model with the Triple-Blade Wiper Seal built with materials to resist degradation caused by chlorine in reclaimed water and the international "Do Not Drink" symbol and warnings in English and Spanish. The nozzle piston shall have a smooth external surface, riser wiper seal in cap, full-length stainless steel retraction spring, and filter screen. Sprinkler body constructed of non-corrosive heavy duty plastic. All parts shall be removable through top of unit by removal of threaded nozzle. The overall pop-up height shall be 6" or 12" as indicated on the plans.
 - a. Turf Spray Head Models:
 - RD06SP30NP (RD1806 Check Valve, 30PRS, Non-Potable) (Spray Nozzles)
 - RD06SP45NP (RD1806 Check Valve, 45PRS, Non-Potable) (Rotary Nozzles)
 - b. Shrub Spray Head Models:
 - RD12SP30NP (RD1812 Check Valve, 30PRS, Non-Potable) (Spray Nozzles)

- 1. In the event water pressure is insufficient to operate the system per designed pressure and flow, the Irrigation Contractor shall be responsible for notifying the Landscape Architect for specification of a booster pump capable of increasing the pressure as required. The Irrigation Contractor shall supply and install the booster pump. The booster pump shall be operated by a magnetic starter, flow, or pressure transducer/switch. Coordinate provision of adequate electrical service for the pump with General Contractor. The booster pump shall be provided in a lockable enclosure on a WWF reinforced concrete pad 5" thick, over 6" CA6 base if it is to be installed outdoors. Indoor installation of a booster pump is also acceptable provided the proper approval and space requirements exist.
- 2. In the event the water pressure significantly exceeds an appropriate operating pressure, it shall be the Irrigation Contractor's responsibility to provide and install a pressure regulator downstream from the backflow preventer. Pressure regulation may be accomplished via a master valve with a pressure reducing dial.
- 3. Each spray head, rotary sprinkler or emission device must contain a built in, in-stem pressure regulator designed to optimize pressure at the nozzle. Sprays are 30 PSI with standard nozzles, 45PSI for use with rotary sprays and turf rotors.
- J. Sleeves for irrigation piping and wiring under roadways/paving shall be coordinated with the Civil and installed by the General Contractor unless noted otherwise on the drawings. Sleeves under sidewalks and hardscapes shall be the responsibility of the Irrigation Contractor.
 - 1. It shall be the Landscape Architect responsibility to submit the Irrigation Design Drawing, showing sleeves, in a timely manner, such that the General Contractor is able to install sleeves within an appropriate sequence of work, i.e., without undoing, damaging, or otherwise compromising work that has already been installed.
 - 2. Irrigation sleeves shall be Schedule 40 PVC pipe up to 4" pipe and CL200 for 6" and above. Minimum 2X pipe size of carrying pipe. A separate Schedule 40 PVC sleeve shall be installed for irrigation wire (1.5-inch for Rain Bird MaxiCable and minimum 2" for conventional wires). The depth of the sleeves shall be a minimum 30" cover from finished grade (top of asphalt) under roadway crossings. The maximum depth of the sleeves shall not exceed 4'. Maintain a depth of 24" under all sidewalks and hardscapes.
 - 3. Ends of all irrigation sleeves shall be marked with PVC pipe, indicating in indelible marker "Irrigation Sleeve", or with a "V" marking in the curb. General Contractor shall expose any irrigation sleeves that are not marked for the Irrigation Contractor prior to start of irrigation work. Coordination and scheduling for excavation of sleeves ends is the responsibility of the Irrigation Contractor.

- 1. It shall be the Landscape Architect responsibility to submit the Irrigation Design Drawing, showing sleeves, in a timely manner, such that the General Contractor is able to install sleeves within an appropriate sequence of work, i.e., without undoing, damaging, or otherwise compromising work that has already been installed.
- 2. Irrigation sleeves shall be Schedule 40 PVC pipe up to 4" pipe and CL200 for 6" and above. Minimum 2X pipe size of carrying pipe. A separate Schedule 40 PVC sleeve shall be installed for irrigation wire (1.5-inch for Rain Bird MaxiCable and minimum 2" for conventional wires). The depth of the sleeves shall be a minimum 30" cover from finished grade (top of asphalt) under roadway crossings. The maximum depth of the sleeves shall not exceed 4'. Maintain a depth of 24" under all sidewalks and hardscapes.
- 3. Ends of all irrigation sleeves shall be marked with PVC pipe, indicating in indelible marker "Irrigation Sleeve", or with a "V" marking in the curb. General Contractor shall expose any irrigation sleeves that are not marked for the Irrigation Contractor prior to start of irrigation work. Coordination and scheduling for excavation of sleeves ends is the responsibility of the Irrigation Contractor.

2.09 TRADITIONALLY WIRED AUTOMATIC CONTROLLERS (LIMITED USE, TWO-WIRE PREFERRED) (ONLY AS

INDICATED ON PLANS)

A. Rain Bird ESP-LXMEF (12 to 48 zones)

- 1. The controller shall be housed in stainless steel wall enclosure or pedestal unit (as directed by the Owner-See Details for further information). The controller shall have a modular station capacity, by receiving expansion modules of 4, 8, or 12 stations, to create a controller of up to 48 stations. The controller shall have 4 separate and independent programs which can have 8 different start times, start day cycles and station run times. SimuStations™ are programmable to allow up to 5 stations to operate at the same time. The controller shall have a Cycle+Soak water management feature.
- 2. The controller shall incorporate a FloManager feature that shall provide real-time flow, power, and station management. FloWatch shall compare the current real-time flow rate to the learned rates and take user defined actions if problem is detected. FloWatch shall automatically determine the location of the flow problem and isolate the problem by turning off the affected station or master valve.
- 3. The controller shall support 1 independently managed flow sensor and 1 master valve.
- 4. All surge protection, grounding and installation of equipment specified, shall be installed in strict compliance with the Manufacturer's recommendations and in accordance with Local, State and Federal requirements. Grounding shall be included in Controller Pedestal Enclosure detail.
- 5. The controller shall be compatible with the IQv3 Cloud Central Control System utilizing IQ-NCC Network Communication Cartridges providing remote computer control of the controller via a variety of communication options (GPRS/Cellular or Ethernet).
- 6. IQv3 Cloud shall include IQ-Mobile to provide quick access to key features in an interface designed for touchscreen devices found in smartphones or tablets.
- 7. The system shall provide automatic program adjustment based management allowed depletion scheduling. ET/rain weather sources shall include IQ Global Weather.

2.10 BATTERY OPERATED CONTROLLERS (ONLY AS REQUIRED/DIRECTED BY OWNER AND/OR AS INDICATED ON PLANS)

A. The 9V Battery-Operated Controller shall be the Rain Bird TBOS-BT. The controller shall allow the use of automatic irrigation in the absence of AC power. The controller shall operate one valve per station, available in 4 models: 1, 2, 4, 8 stations (TBOS-BT1, TBOS-BT2, TBOS-BT4, TBOS-BT8) with a IP68 rated waterproof case, 8 start times per program day, 3 independent programs, seasonal adjust, and master valve support. The irrigation controller (control module) shall be programmable from the Rain Bird Smartphone App, or using the TBOS-II Field Transmitter. Use with Rain Bird latching solenoids only.

2.11 TWO-WIRE DECODER AUTOMATIC CONTROLLER (PREFERRED CONTROLLER)

A. Rain Bird ESP-LXD (50-200 Zones)

- 1. The controller shall be housed in stainless steel wall enclosure or pedestal unit (as directed by the Owner-See Details for further information). The controller shall be capable of supporting up to 50 stations and shall have a maximum capacity of up to 200 stations. The controller shall interface to decoders capable of controlling 1, 2, 4 or 6 valves per unit (FD101, 102, 104 and 106). Sensor decoder for flow sensing is SD210. The controller shall have 4 independent programs with 8 start times each and a Cycle Soak water management feature. The controller shall include 2-wire diagnostic tools for diagnosis of field wiring, 2-wire path and solenoid issues.
- 2. Field Wire Surge Protection shall be LSP-1TURF (1 at the controller, 1 every 500' or 8 decoders (whichever is smaller) & 1 at the end of wire path. Install in 10" round valve box. Provide grounding plate system with a ground resistance of ten (10) ohms or less).
- 3. The controller shall incorporate a FloManager feature that provides real-time flow, power, and station management. FloWatch shall compare the current real-time flow rate to the learned rates and take user defined actions if problem is detected. FloWatch shall automatically determine the location of the flow problem and isolate the problem by turning off the affected station or master valve
- 4. The controller shall support up to 5 independently managed flow sensors interfaced with sensor decoders. The controller shall support up to five flow zones.
- 5. Manufacturer's recommendations must be followed for proper wire type (Maxi-Wire) its length and configuration. Furnish and install surge protection on the power circuit that will supply power to the controller.
- 6. All surge protection, grounding and installation of equipment specified, shall be installed in strict compliance with the Manufacturer's recommendations and in accordance with Local, State and Federal requirements. Surge protectors shall be installed at every line termination point. Additional surge protectors shall be installed at every 600-foot interval along the two-wire path, located at the nearest line decoder. Connect surge ground wires to a single 8-foot ground rod. If the valve is metallic or the solenoid has a metallic center pin, one of the surge ground wires shall be connected to it. Grounding shall be included in Controller Pedestal Enclosure detail.
- 7. The controller shall be compatible with the IQv3 Cloud Central Control System utilizing IQ-NCC Network Communication Cartridges providing remote computer control of the controller via a variety of communication options (GPRS/Cellular or Ethernet).
- 8. IQv3 Cloud shall include IQ-Mobile to provide quick access to key features in an interface designed for touchscreen devices found in smartphones or tablets.
- 9. The system shall provide automatic program adjustment based management allowed depletion scheduling. ET/rain weather sources shall include IQ Global Weather.

B. TWO-WIRE ELECTRICAL WIRING

- 1. All wire used for communication between the controller and the decoders shall be double-jacketed, two (2) conductor cable specifically designed by Paige Electric Model # P7072D for use with two-wire control systems. The cable shall be suitable for direct burial, or for installation in ducts or conduits.
- 2. The distance of the farthest decoder from the ESP-LXD controller shall not exceed 1.65 miles. The layout shall be STAR configuration (Loop Configuration not accepted) with each two-wire leg having a different color.
- 3. The conductors shall be #14 AWG in-coated, soft drawn, annealed, solid copper conforming to ASTM 33 with 4/84" thick PVC (polyvinyl chloride) insulation, conforming to UL Standard #493 for thermoplastic insulated style UF (Underground Feeder), rated at 60 degrees.
- 4. The two insulated conductors shall be laid parallel and encased in a single outer jacket of 3/64" thick, high density, sunlight resistant polyethylene conforming to ICEA S-61-402 and NEMA WCS, having a minimum wall thickness of .045". The outer jacket shall be pressure extruded so as to completely fill the interstices between the two insulated wires, or may have tube jacketing or form an envelope over the two insulated UF conductors lying in parallel at the discretion of the manufacturer. The two conductors shall be color coded with one conductor black and the other red. Both conductors shall be the SAME SIZE.
- 5. Use Rain Bird UF Strippers for stripping the outer jacket of the Maxi-Wire #10, #12 and #14 2-wire cable for best results.
- 6. Any wire splices outside of the valve box shall be enclosed in a Rain Bird VB-10RNDPLV valve box. Leave an additional 30-inch of loose wire (measured from top of valve box), rolled up to the side in all splice boxes and valve boxes.
- 7. All splices and connections in this wiring shall be made using Rain Bird WR20 or 3M-DBRV-6 waterproof splice connector kits. Any other type of wire connector will NOT be accepted. Care shall be taken with each wire connection to assure a tight, waterproof connection. IT IS ESSENTIAL THAT ALL CONNECTIONS BE ABSOLUTELY WATERTIGHT WITH NO LEAKAGE TO GROUND NOR SHORTING BETWEEN CONDUCTORS.

2.12 CONTROLLER REMOTE ACCESS

A. The remote access shall be via the IQ Platform.

2.13 CONTROLLER STAINLESS STEEL ENCLOSURES (SELECT TYPE PER OWNERS REQUEST) (SEE DETAILS FOR FURTHER INSTRUCTIONS)

A. Stainless Steel Pedestal Enclosure: Provide Tavistock standard Controller/Pedestal as noted on irrigation plans.

- 1. (PREFERRED) ESP-LXD Model # SA6-RB05200/NONAM/MVR/WR2FRC/SD210TURF/FD101TURF
- 2. (LIMITED USE) ESP-LXMEF-Model # SA6-RB0548/NONAM/MVR/WR2FRC
- 3. The part numbers include the following components:
 - o LXD or LXMEF controller
 - o IQ Cell or Ethernet cartridge (as specified)
 - o External antenna (w/ cell cartridge option)
 - o Incoming surge arrester
 - o MVR - Master valve relay assembly (required for master valve)
 - o WR2FRC - Wireless rain sensor pre-mounted
 - o SD210TURF and FD101TURF (for master valve)
- 4. When ordered with the assembly they are wired and mounted inside pedestal
- 5. Flow sensor and master valve NOT included

B. Stainless Steel Wall Enclosure: Provide Stainless Steel Strong Box, Model LD16S

• RD12SP45NP (RD1812 Check Valve, 45PRS, Non-Potable) (Rotary Nozzles)

INDICATED ON PLANS)

A. Rain Bird ESP-LXMEF (12 to 48 zones)

- 1. The controller shall be housed in stainless steel wall enclosure or pedestal unit (as directed by the Owner-See Details for further information). The controller shall have a modular station capacity, by receiving expansion modules of 4, 8, or 12 stations, to create a controller of up to 48 stations. The controller shall have 4 separate and independent programs which can have 8 different start times, start day cycles and station run times. SimuStations™ are programmable to allow up to 5 stations to operate at the same time. The controller shall have a Cycle+Soak water management feature.
- 2. The controller shall incorporate a FloManager feature that shall provide real-time flow, power, and station management. FloWatch shall compare the current real-time flow rate to the learned rates and take user defined actions if problem is detected. FloWatch shall automatically determine the location of the flow problem and isolate the problem by turning off the affected station or master valve.
- 3. The controller shall support 1 independently managed flow sensor and 1 master valve.
- 4. All surge protection, grounding and installation of equipment specified, shall be installed in strict compliance with the Manufacturer's recommendations and in accordance with Local, State and Federal requirements. Grounding shall be included in Controller Pedestal Enclosure detail.
- 5. The controller shall be compatible with the IQv3 Cloud Central Control System utilizing IQ-NCC Network Communication Cartridges providing remote computer control of the controller via a variety of communication options (GPRS/Cellular or Ethernet).
- 6. IQv3 Cloud shall include IQ-Mobile to provide quick access to key features in an interface designed for touchscreen devices found in smartphones or tablets.
- 7. The system shall provide automatic program adjustment based management allowed depletion scheduling. ET/rain weather sources shall include IQ Global Weather.

2.10 BATTERY OPERATED CONTROLLERS (ONLY AS REQUIRED/DIRECTED BY OWNER AND/OR AS INDICATED ON PLANS)

A. The 9V Battery-Operated Controller shall be the Rain Bird TBOS-BT. The controller shall allow the use of automatic irrigation in the absence of AC power. The controller shall operate one valve per station, available in 4 models: 1, 2, 4, 8 stations (TBOS-BT1, TBOS-BT2, TBOS-BT4, TBOS-BT8) with a IP68 rated waterproof case, 8 start times per program day, 3 independent programs, seasonal adjust, and master valve support. The irrigation controller (control module) shall be programmable from the Rain Bird Smartphone App, or using the TBOS-II Field Transmitter. Use with Rain Bird latching solenoids only.

2.11 TWO-WIRE DECODER AUTOMATIC CONTROLLER (PREFERRED CONTROLLER)

A. Rain Bird ESP-LXD (50-200 Zones)

- 1. The controller shall be housed in stainless steel wall enclosure or pedestal unit (as directed by the Owner-See Details for further information). The controller shall be capable of supporting up to 50 stations and shall have a maximum capacity of up to 200 stations. The controller shall interface to decoders capable of controlling 1, 2, 4 or 6 valves per unit (FD101, 102, 104 and 106). Sensor decoder for flow sensing is SD210. The controller shall have 4 independent programs with 8 start times each and a Cycle Soak water management feature. The controller shall include 2-wire diagnostic tools for diagnosis of field wiring, 2-wire path and solenoid issues.
- 2. Field Wire Surge Protection shall be LSP-1TURF (1 at the controller, 1 every 500' or 8 decoders (whichever is smaller) & 1 at the end of wire path. Install in 10" round valve box. Provide grounding plate system with a ground resistance of ten (10) ohms or less).
- 3. The controller shall incorporate a FloManager feature that provides real-time flow, power, and station management. FloWatch shall compare the current real-time flow rate to the learned rates and take user defined actions if problem is detected. FloWatch shall automatically determine the location of the flow problem and isolate the problem by turning off the affected station or master valve
- 4. The controller shall support up to 5 independently managed flow sensors interfaced with sensor decoders. The controller shall support up to five flow zones.
- 5. Manufacturer's recommendations must be followed for proper wire type (Maxi-Wire) its length and configuration. Furnish and install surge protection on the power circuit that will supply power to the controller.
- 6. All surge protection, grounding and installation of equipment specified, shall be installed in strict compliance with the Manufacturer's recommendations and in accordance with Local, State and Federal requirements. Surge protectors shall be installed at every line termination point. Additional surge protectors shall be installed at every 600-foot interval along the two-wire path, located at the nearest line decoder. Connect surge ground wires to a single 8-foot ground rod. If the valve is metallic or the solenoid has a metallic center pin, one of the surge ground wires shall be connected to it. Grounding shall be included in Controller Pedestal Enclosure detail.
- 7. The controller shall be compatible with the IQv3 Cloud Central Control System utilizing IQ-NCC Network Communication Cartridges providing remote computer control of the controller via a variety of communication options (GPRS/Cellular or Ethernet).
- 8. IQv3 Cloud shall include IQ-Mobile to provide quick access to key features in an interface designed for touchscreen devices found in smartphones or tablets.
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B. TWO-WIRE ELECTRICAL WIRING

- 1. All wire used for communication between the controller and the decoders shall be double-jacketed, two (2) conductor cable specifically designed by Paige Electric Model # P7072D for use with two-wire control systems. The cable shall be suitable for direct burial, or for installation in ducts or conduits.
- 2. The distance of the farthest decoder from the ESP-LXD controller shall not exceed 1.65 miles. The layout shall be STAR configuration (Loop Configuration not accepted) with each two-wire leg having a different color.
- 3. The conductors shall be #14 AWG in-coated, soft drawn, annealed, solid copper conforming to ASTM 33 with 4/84" thick PVC (polyvinyl chloride) insulation, conforming to UL Standard #493 for thermoplastic insulated style UF (Underground Feeder), rated at 60 degrees.
- 4. The two insulated conductors shall be laid parallel and encased in a single outer jacket of 3/64" thick, high density, sunlight resistant polyethylene conforming to ICEA S-61-402 and NEMA WCS, having a minimum wall thickness of .045". The outer jacket shall be pressure extruded so as to completely fill the interstices between the two insulated wires, or may have tube jacketing or form an envelope over the two insulated UF conductors lying in parallel at the discretion of the manufacturer. The two conductors shall be color coded with one conductor black and the other red. Both conductors shall be the SAME SIZE.
- 5. Use Rain Bird UF Strippers for stripping the outer jacket of the Maxi-Wire #10, #12 and #14 2-wire cable for best results.
- 6. Any wire splices outside of the valve box shall be enclosed in a Rain Bird VB-10RNDPLV valve box. Leave an additional 30-inch of loose wire (measured from top of valve box), rolled up to the side in all splice boxes and valve boxes.
- 7. All splices and connections in this wiring shall be made using Rain Bird WR20 or 3M-DBRV-6 waterproof splice connector kits. Any other type of wire connector will NOT be accepted. Care shall be taken with each wire connection to assure a tight, waterproof connection. IT IS ESSENTIAL THAT ALL CONNECTIONS BE ABSOLUTELY WATERTIGHT WITH NO LEAKAGE TO GROUND NOR SHORTING BETWEEN CONDUCTORS.

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A. The remote access shall be via the IQ Platform.

2.13 CONTROLLER STAINLESS STEEL ENCLOSURES (SELECT TYPE PER OWNERS REQUEST) (SEE DETAILS FOR FURTHER INSTRUCTIONS)

A. Stainless Steel Pedestal Enclosure: Provide Tavistock standard Controller/Pedestal as noted on irrigation plans.

- 1. (PREFERRED) ESP-LXD Model # SA6-RB05200/NONAM/MVR/WR2FRC/SD210TURF/FD101TURF
- 2. (LIMITED USE) ESP-LXMEF-Model # SA6-RB0548/NONAM/MVR/WR2FRC
- 3. The part numbers include the following components:
 - o LXD or LXMEF controller
 - o IQ Cell or Ethernet cartridge (as specified)
 - o External antenna (w/ cell cartridge option)
 - o Incoming surge arrester
 - o MVR - Master valve relay assembly (required for master valve)
 - o WR2FRC - Wireless rain sensor pre-mounted
 - o SD210TURF and FD101TURF (for master valve)
- 4. When ordered with the assembly they are wired and mounted inside pedestal
- 5. Flow sensor and master valve NOT included

B. Stainless Steel Wall Enclosure: Provide Stainless Steel Strong Box, Model LD16S

• RD12SP45NP (RD1812 Check Valve, 45PRS, Non-Potable) (Rotary Nozzles)

INDICATED ON PLANS)

A. Rain Bird ESP-LXMEF (12 to 48 zones)

- 1. The controller shall be housed in stainless steel wall enclosure or pedestal unit (as directed by the Owner-See Details for further information). The controller shall have a modular station capacity, by receiving expansion modules of 4, 8, or 12 stations, to create a controller of up to 48 stations. The controller shall have 4 separate and independent programs which can have 8 different start times, start day cycles and station run times. SimuStations™ are programmable to allow up to 5 stations to operate at the same time. The controller shall have a Cycle+Soak water management feature.
- 2. The controller shall incorporate a FloManager feature that shall provide real-time flow, power, and station management. FloWatch shall compare the current real-time flow rate to the learned rates and take user defined actions if problem is detected. FloWatch shall automatically determine the location of the flow problem and isolate the problem by turning off the affected station or master valve.
- 3. The controller shall support 1 independently managed flow sensor and 1 master valve.
- 4. All surge protection, grounding and installation of equipment specified, shall be installed in strict compliance with the Manufacturer's recommendations and in accordance with Local, State and Federal requirements. Grounding shall be included in Controller Pedestal Enclosure detail.
- 5. The controller shall be compatible with the IQv3 Cloud Central Control System utilizing IQ-NCC Network Communication Cartridges providing remote computer control of the controller via a variety of communication options (GPRS/Cellular or Ethernet).
- 6. IQv3 Cloud shall include IQ-Mobile to provide quick access to key features in an interface designed for touchscreen devices found in smartphones or tablets.
- 7. The system shall provide automatic program adjustment based management allowed depletion scheduling. ET/rain weather sources shall include IQ Global Weather.

2.10 BATTERY OPERATED CONTROLLERS (ONLY AS REQUIRED/DIRECTED BY OWNER AND/OR AS INDICATED ON PLANS)

A. The 9V Battery-Operated Controller shall be the Rain Bird TBOS-BT. The controller shall allow the use of automatic irrigation in the absence of AC power. The controller shall operate one valve per station, available in 4 models: 1, 2, 4, 8 stations (TBOS-BT1, TBOS-BT2, TBOS-BT4, TBOS-BT8) with a IP68 rated waterproof case, 8 start times per program day, 3 independent programs, seasonal adjust, and master valve support. The irrigation controller (control module) shall be programmable from the Rain Bird Smartphone App, or using the TBOS-II Field Transmitter. Use with Rain Bird latching solenoids only.

2.11 TWO-WIRE DECODER AUTOMATIC CONTROLLER (PREFERRED CONTROLLER)

A. Rain Bird ESP-LXD (50-200 Zones)

- 1. The controller shall be housed in stainless steel wall enclosure or pedestal unit (as directed by the Owner-See Details for further information). The controller shall be capable of supporting up to 50 stations and shall have a maximum capacity of up to 200 stations. The controller shall interface to decoders capable of controlling 1, 2, 4 or 6 valves per unit (FD101, 102, 104 and 106). Sensor decoder for flow sensing is SD210. The controller shall have 4 independent programs with 8 start times each and a Cycle Soak water management feature. The controller shall include 2-wire diagnostic tools for diagnosis of field wiring, 2-wire path and solenoid issues.
- 2. Field Wire Surge Protection shall be LSP-1TURF (1 at the controller, 1 every 500' or 8 decoders (whichever is smaller) & 1 at the end of wire path. Install in 10" round valve box. Provide grounding plate system with a ground resistance of ten (10) ohms or less).
- 3. The controller shall incorporate a FloManager feature that provides real-time flow, power, and station management. FloWatch shall compare the current real-time flow rate to the learned rates and take user defined actions if problem is detected. FloWatch shall automatically determine the location of the flow problem and isolate the

THIS APPROVAL IS SUBJECT TO CONFORMANCE TO THE OSCEOLA COUNTY LAND DEVELOPMENT CODE AND THE COMMUNITY DEVELOPMENT DEPARTMENT'S POLICIES AND PROCEDURES. THE APPLICANT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE OSCEOLA COUNTY DEPARTMENT OF PERMITTING AND INSPECTION. THE APPLICANT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE OSCEOLA COUNTY DEPARTMENT OF PERMITTING AND INSPECTION. THE APPLICANT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE OSCEOLA COUNTY DEPARTMENT OF PERMITTING AND INSPECTION.

2.14 AUTOMATIC RAIN / FREEZE SHUT OFF DEVICE
Rain Bird WSPRF Wireless rain freeze sensor shall employ an electro-mechanical actuating mechanism designed to cause a circuit interrupt if programmable low temperature or rainfall set points are satisfied.
The device shall be used with 24VAC controllers and shall be of sufficient capacity to be used with a maximum of six 24VAC VVA solenoids plus an additional master valve or pump start that does not exceed 53VA.
The Rain Bird sensor shall incorporate a provision that allows the installer to select from several rainfall or low temperature settings that can be programmed through the use of icons on a controller interface. A sensor LED shall communicate signal strength during the installation process.
Install per manufacturer's recommendations. The controller interface shall be installed in the stainless steel enclosure with external antenna. The sensor shall be secured up to 700' line of sight and a minimum 6' height. Select a mounting location where the rains sensor will receive direct rainfall. Make sure the sensor extends beyond the roofline, tree limbs and any other obstructions. Install the Rain Sensor in an area that receives as much direct sunlight as the landscape. Be sure to mount the sensor above spray from the sprinklers.

2.15 FLOW SENSORS (used with ESP-LXMEF or ESP-LXD controller's flow manager)
A. The Rain Bird FS Series Flow Sensor shall be in a line type with a nonmagnetic, spinning impeller (paddle wheel) as the only moving part. The electronics housing shall have two O-Rings and shall be easily removed from the meter body. The sensor electronics will be potted in an epoxy compound designed for prolonged immersion. Electrical connections shall be 2 single conductor 18 AWG leads 48 inches long. Insulation shall be made using special direct burial "UF" type, electrically shielded cable to avoid interference, colored red for the positive lead and black for the negative lead. The sensor shall be capable of operating in line pressures up to 400 psi and liquid temperatures up to 220° F, and operating in flows of 1/2 foot per second to 15 feet per second with linearity of ±1% and repeatability of ±1%. The meter body shall be cast 85-5-5 bronze, in 1" and 1 1/2" female iron pipe thread sizes. The Flow Sensor shall be appropriately sized based on the lowest -highest output flow to be read as per manufactures recommendations.
B. ESP-LXD Controllers: Flow Sensor connects to 2-wire path. Provide (1) SD-210 Sensor Decoder for each Flow Sensor. Provide grounding plate system with a ground resistance of ten (10) ohms or less.
C. ESP-LXMEF Controllers: Flow Sensor connects to the controller w/ 16 AWG-1 Pair aluminum shielded communication cable manufactured by Paige Electric P7162D-A. No surge protection required for traditional wired system.

2.16 WATER MANAGEMENT
A. Description: The irrigation central control system shall be the Rain Bird IQ™ Platform as hereafter specified and as shown on the drawings. The system shall be fully programmable, providing the operator with absolute and full control of the entire control system. The system shall provide a degree of flexibility such that, in effect, anything that could be done at the satellite controller shall be capable of being done at the central computer. The IQ™ Platform shall be as manufactured by Rain Bird Corporation.
B. Rain Bird IQv3.0 Cloud Platform specifications include but are not limited to:
1. The system shall be cloud based with no annual fee allowing for multiple users to control the all functions of the irrigation system at an internet connected device (supplied by Owner) that could be completed at the physical satellite controller.
2. The system shall be compatible with Rain Bird ESP-LXMEF traditionally-wired and ESP-LXD 2-wire decoder controllers.
3. Users shall not be restricted to an initial controller capacity and can add controllers at will.
4. The system shall include IQ-Mobile for quick access to key features in an interface designed for touchscreen devices found in smartphones or tablets.
5. IQv3.0 Cloud shall include the following features:
a. Site, satellite, and station names
b. Programming in seconds, minutes, and hours
c. Daily or Monthly Seasonal Adjust % or ET station run time adjustments by site
d. Dry-Run Graphical Program Review
e. Manual Program, Test Program, Station starts
f. Detailed logs and reports
g. Automated or user initiated satellite Synchronize & Retrieve Logs and Weather Source Retrieve Weather Data communication
h. Automated Email Alarm/Warning and Satellite Station Run Time Reports
i. Satellite PIN-Code Protection (4-digit PIN-Code required to make programming changes at the satellite)
j. Satellite 2-Way Programming (changes made at the satellite can be viewed and accepted in the IQ software)
k. Copy/Move Satellite Utility (copy or move a satellite to another site)
l. Automated MAD (Management Allowed Depletion) Irrigation Scheduling adjustments
m. Software uses Irrigation Association terminology and formulas
n. ET/Rainfall Weather Sources include Rain Bird WSPROLT Weather Station or Rain Bird WSPRO2 Weather Station
o. IQ Global Weather Internet Service which provides local weather data including rainfall
p. 4 ET Checkbooks per satellite controller
q. Export Microsoft Excel® for customized reports
r. Retrieves minute-by-minute flow logs from flow sensor equipped ESP-LXMEF and ESP-LXD Satellite Controllers
s. Flow Logs vs. Projected Flow Graphical Report(Identifies which programs & stations where running at any point in time)
t. Actual Flow Totals added to Satellite Station Run Time Report (included in Automated Email Reports) u. Content-sensitive help system.
v. User selectable language includes English, Spanish, French, German, Italian and Portuguese.

C. Rain Bird IQ v3.0 Platform hardware
1. The Satellite Controller shall require a Rain Bird IQ Cartridge with an IP Address utilizing one of the following communication options to interface between the system controller and the Rain Bird IQv3.0 Cloud (as specified in Legend):
a. GPRS/3G Cellular Network (includes 1 year of service) (IQ3G-USA) with an external Cellular Antenna (IQEXTANTGP).
b. IONCCEN Ethernet (requires Static IP Address on LAN & CAT5 connection)
2. The cartridge shall be installed in the ESP-LX Series controller faceplate.
3. The communication cartridge shall be user configurable as a Direct, Server, or Client satellite controller (As indicated on Plans/Legend).
4. The IQ-Cloud shall allow for shared access with a team. It shall not be restricted to satellite capacity and shall be mobile compatible with a Smart Phone or Tablet. Free registration is available at <http://iweb.rainbird.com/ig/>.
5. The Server satellite shall share its IQ communication link with up to 149 Client satellites and be capable of sharing weather sensors and master valves amongst the 150 satellite controllers.
6. The Client Satellites shall be linked to the Server Satellite via Radio or Direct connect Cable (RS-232 / DSS Radio or Direct Connect Network Cartridge (IONCCRS). A site survey will be required to determine radio signal compatibility and antenna requirements.
a. Radio option: Provide 900MHz Spread Spectrum Radio(IQSSRAD) and a SS Radio Programming Kit (IQSSRADPK).
b. Direct Connect option: Provide one pair PE-39(19AWG) shielded, twisted communication cable.
c. Satellite controllers on a single IQNet network can share up to 8 master valves and 32 weather sensors. Master valves and weather sensors shall be shared across ESP-LXMEF traditionally-wired and ESP-LXD.

2.17 PUMP STATION (AS REQUIRED)
A. The Rain Bird Pump Station shall meet or exceeds the needs of the irrigation system. The station shall be a complete prefabricated, variable frequency drive, with UL Listed components and Marine Grade Aluminum Deck and Enclosure. The station shall include a built-in controller bracket and Pump Start Relay. Available in single and three phase 208V, 220V, 230V VAC configurations. Stainless steel piping shall provide for discharge and intake. Design, fabrication and testing will be the responsibility of the pump system manufacturer.
1. The Rain Bird 5HP, 7.5HP or 10HP CLP Series Pump Station shall be a complete pump package that

includes a professional-grade pump, variable frequency drive, an aluminum enclosure, highest quality pump protection, and an internal mounting bracket for a Rain Bird controller (sold separately).
a. CLP Series to provide ____ PSI boost/suction lift at ____ GPM.
1. Pump Control shall run based on signal from irrigation controller. A 24VAC Pump start relay shall be included. Other voltages available as an accessory.
2. Full submittal package must also include the detailed drawing that identifies all specifications and components supplied with the pump station.
3. The Irrigation Contractor is responsible to coordinate with the Owner's Representative the electrical requirements and site provisions that will be required to install a working pump station.
4. Installation of the proper concrete pad, sleeving, piping, trench blocking, necessary communication and final connections are the responsibility of the Irrigation Contractor.
5. Contact your Rain Bird's Representative for assistance.

2.18 VALVE BOXES
A. Control Valves and Quick Coupling Valves shall be installed in Rain Bird VB-10RNDPL or VB-2DPL for multiple valves (PL for non-potable).
B. Valve box body and lid shall be composed of 100% recycled HDPE. There shall be no pre-punched hole in the valve box lid. The standard rectangular body shall have 14 knock-outs molded into the sides that can be readily removed. The valve box shall have corrugated sides for lateral strength. Lids shall have beveled edges to minimize potential damage from lawn equipment. Lids shall be clearly marked with the words "Irrigation Control Valve" molded onto the top. Lids shall have a marking area measuring 6.0" by 2.0" suitable for branding or other identification. The locking bolt, washer and clip shall be made of stainless steel. All valve boxes, including splice / pull boxes shall part of as-built drawings.

2.19 SLEEVES: Class 200 PVC Pipe Type II20 or 1220 coordinate with and installed by the General Contractor unless noted on print.
2.20 QUICK COUPLING VALVES: (FOR SPORTS FIELDS ONLY OR AS DIRECTED BY THE OWNER)
A. Rain Bird Quick Coupling Valves (QCVs) will be used for manual access to the pressurized main line so that a hose can be attached and used for hand watering. QCVs shall be constructed of brass with a spring loaded seal that will keep the valve in a closed position until the key is inserted into the valve.
B. Two-piece body design for easy servicing (Rain Bird models 5-RC, 1" Rubber Cover, 5-LRC, 1" Locking Rubber Cover, 5-NP, 1" Non-potable, Purple Locking Cover). QCVs shall be installed on a triple elbow swing joint.
C. Irrigation Contractor to contact Owner's Representative to determine hose type. Key and swivel shall both be constructed of brass.

2.21 ELECTRIC REMOTE MASTER VALVES:
A. Preferred: Rain Bird 300BPES 3" normally closed, globe and angle configuration, brass valve, to be used for remote master valves with flow zones 60 to 300 GPM and pressures from 20 to 200 PSI. The valve shall be a hybrid construction featuring a durable brass body and glass-filled nylon bonnet and a nylon scrubber to prevent debris build-up and clogging.
B. Rain Bird EFB-CP Series, shall be a normally closed globe configuration, brass valve, to be used for remote master valves with flow zones 5 to 200 GPM and pressures from 15 to 200 PSI. The valve shall be constructed of rugged red brass, with a fabric-reinforced diaphragm composed of EPDM, a rubber material which is chlorine and chemical resistant. The valve shall have a contamination proof self-flushing stainless steel screen located at the valve inlet to filter out grit and prevent clogging of hydraulic control ports and assure reliable operation. Purple handle cover included to designate non-potable water. Available Models: 1"-100-EFB-CP; 1.5"-150-EFB-CP and 2"-200-EFB-CP. Size per to manufacturers recommendations.

2.22 ELECTRIC REMOTE CONTROL VALVES:
A. Control Valves shall be Rain Bird model PESB-R-PRS-D Series (1", 1.5", 2") with scrubber technology & chlorine-resistant material to prevent debris build-up and clogging on harsh reclaimed water applications. The pressure regulating module shall regulate outlet pressure between 15 and 100 PSI, as required. The durable plastic valve shall be industrial-strength, glass-filled nylon, normally closed globe pattern design. Valve pressure rating shall not be less than 200 PSI. Internal and external manual open/close control (internal and external bleed) shall provide the ability to manually open and close the valve without electronically energizing the solenoid. The valve shall be compatible with ESP-LXD-decoders. A brass flow control stem shall provide for accurate manual regulation and/or shut off of outlet flow. Slow closing to prevent warmer and subsequent system damage. Accepts latching solenoid for use with battery-operated controllers up to 150 PSI. Operating flow rate of 5 to 200 GPM. Operating pressure range of 20 to 200 PSI.
B. Drip Control Zone Kit shall be the Rain Bird XCZ-100-PRBR (1" PESB-R valve and 1" PRBF filter). The kit shall include a PESB-R scrubber reclaimed control valve, and a pressure-regulating basket filter which combines filtration and pressure regulation in one integrated unit for protection of downstream components of drip irrigation system. Pressure regulating basket filter components include: Standard 200 mesh (75 micron) filter screen constructed of stainless steel and a normally-open in-line pressure regulating device. Operating flow rate of 3 to 20 GPM. Operating pressure range of 15 to 150 PSI. Regulated pressure of 40 PSI. Temperature rating to 150° F.
C. Large Capacity Drip Control Zone shall be Rain Bird XCZ-150-LCDR Series (1 1/2" PESB-R valve, 1 1/2" pressure regulator, and 1 1/2" Disc Filter, 120 PSI). The PESB-R valve shall have a self-cleaning stainless steel screen designed for use in dirty water applications. The kit shall provide extra-large filtration capacity for less cleaning and lower maintenance. Operating flow rates of 15-62 GPM. Operating pressure range of 15 to 115 psi. Regulated pressure of 40 PSI. Temperature rating to 110° F.

2.23 DRIPLINE
A. Dripline shall be Rain Bird XFSP-09-12, 0.9 GPH (Subsurface, Copper Shield Technology, NP). The dripline shall be pressure-compensating, multi-layered inline emitters and dripline row spacing at 12" O.C.. All fittings shall be Rain Bird XF Series barbed 17mm insert fitting. Operating pressure range of 8.5 to 60 PSI.
B. Dripline Header shall be Rain Bird QF Header. The flexible, pre-manufactured header shall be made of polyethylene tubing and shall have factory installed elbows for use with any 1/4-17mm drip irrigation tubing.
C. The elbows shall be spaced evenly per listed spacing (12 inch or 18 inch spacing). The polyethylene tubing shall be either 0.75 inch or 1 inch. Refer to the irrigation plans and Manufacturer's recommendation regarding spacing and fittings for the Rain Bird QF Header models. Select one of the following to meet requirements.
• XQF7512100: XQF 3/4" Dripline Header (12" Spacing 100' Coil)
• XQF7518100: XQF 3/4" Dripline Header (18" Spacing 100' Coil)
• XQF1012100: XQF 1" Dripline Header (12" Spacing 100' Coil)
• XQF1018100: XQF 1" Dripline Header (18" Spacing 100' Coil)
• Accepts TLF Series Twist Lock Fittings: 600 Series: fits all XF Series Dripline, 800 Series: fits 3/4 inch QF Dripline Header, 1000 Series: fits 1 inch QF Dripline Header
D. Drip System Operation Indicator Kit. Each drip zone shall include a Rain Bird OPERIND operational indicator installed close to the end of each zone in an inconspicuous location and noted on the as-built drawing. OPERIND is designed to open at 20PSI, confirming normal pressure and flow are present.

2.24 GATE VALVES
A. Provide LEEMCO gate valves for mainline isolation purposes, allowing full diameter opening when in full open position. Install per Detail and manufacturers recommendations. Contractor must provide Owner with (2) 48-inch valve keys.
B. Manually operated valves shall be the same size as the line.

PART 3 - EXECUTION
3.01 GENERAL
A. Supervision: Provide a full-time superintendent and necessary assistants on the job while Work is in progress. Irrigation contracting firm shall have a C.I.C. (IA certified Irrigation Contractor) on site at all times and must be an employee of said irrigation contracting company. The Superintendent represents the Irrigation Contractor in all functions, and directives given to him by the Owner's Representative, Landscape Architect, General Contractor, and / or Landscape Contractor are binding as if given to the Irrigation Contractor in person.
B. Inspection of Work in progress: During installation the Owner's Representative or the Landscape Architect may review and observe the Work on a regular or random basis, and may reject any work and / or materials that do not meet the requirements of the Contract Documents. Rejected Work must be promptly corrected. No time extension will be allowed replacement or repair of rejected work.
3.02 REVIEW IN ADVANCE OF CONSTRUCTION: The Irrigation Contractor shall review the Project Site prior to start of Work to determine that all site conditions are acceptable for irrigation Work to begin. Inform the Owner's Representative and the Landscape Architect of any and all unsuitable conditions. Do not proceed with installation of irrigation system until unsatisfactory conditions have been corrected in an acceptable manner.
3.03 PREPARATION: Flag all existing underground utilities prior to trenching and / or boring operations. Obtain locations of any new utilities from the Owner's Representative and / or the General Contractor. Irrigation Contractor is solely responsible for contacting the utility locating service(s) and Owner's Representative (with 48 hours minimum notification) and locating on-site utilities in advance of installation.
3.04 SLEEVING (by General Contractor unless otherwise on the plans)
A. Location of sleeving shall be coordinated with the General Contractor. Make adjustments necessary to accommodate existing vegetation, utilities, and other existing conditions.
B. Repair of damage to existing utilities, structures or other construction resulting from installation of sleeves is the responsibility of the Contractor installing the sleeving.

3.05 PIPE
A. Lateral Lines shall be installed according to Manufacturer's recommendations using standard techniques. Plug lines immediately upon installation to minimize infiltration of foreign matter. Flush lateral lines prior to installation of sprinkler heads
B. Mainline shall be installed straight and horizontal. All direction changes shall be accomplished with fittings. No bending of pipe is permitted. Ensure a minimum 4-inch clearance between pipe bells in trenches with multiple pipes. Plug lines immediately upon installation to minimize infiltration of foreign matter.
C. Solvent weld fittings shall conform to Schedule 40 or Schedule 80 PVC dimensions and specifications.
D. Pipe joints shall be installed per Manufacturer's recommendations using pipe and bell from the same manufacturer.
E. Solvent weld PVC Pipe shall be assembled according to Manufacturer's recommendations, using appropriate PVC pipe cleaner/primer and solvent cement.
F. Main Line Inspection and Hydrostatic Tests: Test with mainline components installed. Provide (2) pressure gauges on the system at opposite ends of the mainline. Elevate pressure to 100psi hydrostatic pressure and note pressure on gauges. Continue hydrostatic pressure test of 100psi for 2 hours and note pressure loss if any. To pass the test, no pressure variation is allowed. If O-ring or push-on gate valves are used, refer to Florida Plumbing Code Appendix F for allowable pressure loss. Owner's Representative or Landscape Architect to observe testing.

3.06 TRENCHING
A. All mainline to be installed in separate trenching process from lateral lines.
B. The initial backfill will always be placed by hand and shoveled in evenly along both sides of the pipe and hand tamped into place. Care will be exercised to insure that soil does not bridge and final to go under the pipe. The soil in the trench shall be backfilled to the point of the same condition of the density of the surrounding soil.
C. In backfilling trenches, the addition of water should be limited to achieving optimum moisture content for tamping procedures. Do not knock the backfill on the trench area with the thought that it will eventually settle; this will not be accepted as a finished job. All excess materials shall be removed from the site in a satisfactory manner.
D. During the entire process of the work, it shall be the Irrigation Contractor's sole responsibility to secure all open trenches and pipe sub-ups for public safety and workers according OSHA regulations, by the use of barricades, warning tape, etc.
E. Trenching and excavation in newly sodded areas: Prior to trenching and excavation remove sod, preserve, and replace after backfilling is completed.
F. Trenching and excavation in established grass or newly seeded areas: After trenching, excavation and backfilling is completed, re-grade trenched area consistent with surrounding area and reseed with turf seed matching existing grass or seed. Mulch seed after broadcasting.
G. Trenching and excavation through existing asphalt or concrete: Cutting, removal and replacement of asphalt or concrete is the responsibility of the Irrigation Contractor.
H. Trenching and excavation near existing trees: Irrigation Contractor shall plant the proposed trenching or excavation which occurs within the "drip line" or within fifty (50) feet of the trunks of the existing trees, whichever is greater. Irrigation Contractor must contact the Owner's Representative for review of the proposed trenching and excavation lines in order to avoid damage to tree root systems and other plants. Such adjustments shall be made by the Irrigation Contractor at no additional cost to the Owner.

I. Should utilities be found during excavations that are not documented on the Construction Documents, the Irrigation Contractor shall promptly notify Owners Representative for instructions as to further action. Failure to do so will make the Irrigation Contractor liable for any and all damages arising from operations subsequent to discovery of such utilities. Indicate such utility crossings on the record drawings.
J. Trenches shall be open, vertical sided construction, wide enough to provide free working space around work installed and to provide ample space for backfilling and compaction.
K. When (2) pipes are placed in the same trench, a six (6") is to be maintained between pipes. Do not place two pipes on top of each other.
L. Trenches located under paving shall be backfilled with sand (a layer of 6-inch below the pipe and 3-inches above the pipe) and compacted in layers 12-inches to 95% compaction. See pipe coverage Details.
M. Cut trenches for pipe to required grade lines and compact trench bottom to prove accurate grade and uniform bearing for the full length of the line.
N. The Irrigation Contractor shall be held responsible for any damages caused by these operations and shall immediately repair or replace damaged parts.

3.07 SPRINKLER HEADS
A. Sprinklers with a 1" and larger bottom inlet shall be installed on Rain Bird swing joints, minimum 3" off inside edge of curbs, drives and sidewalks. Sprinkler with a 3/4" and smaller inlet may be installed using flexible swing joints. Consistency in placement must be maintained throughout the project in all cases.
B. Low Pop-up Sprinkler Heads: Install in such manner that top is flush with finish grade. Where finish grade has not been established extend riser a minimum of twelve (12) inches above existing grade to mark location of head. After finish grade is established install heads at specified height.
C. High Pop-up Shrub Heads: Finish height to be proposed by Irrigation Contractor as a function of plants specified on landscape plans and noted on irrigation design submittal.
D. Backfill around sprinkler head assembly in such manner as to stabilize the sprinkler head so that no lateral motion occurs during operation.

3.08 ELECTRIC CONTROL WIRES
A. Install control wires in orderly fashion, locate in main line trench. Bundle wires together and tape at ten (10) foot intervals. Position wires to the right of the water supply line in the direction of the water flow.
B. Provide looped slack at directional changes in supply line to allow for contraction of wires.
C. Keep wire splices to a minimum and provide ten (10) inch round valve box at each splice location.
D. Pass wires under existing or future paving, construction, etc., through PVC sleeves provided by General Contractor.
E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
F. Ground electric-powered controllers, valves, and devices.
1. Tighten electrical connectors and terminals according to Manufacturer's published torque-tightening values. If Manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
G. Arrange for electric-power connections to controllers, control valves, and devices that require power. Electric power, wiring, and disconnect switches are specified in Division 16 Sections.

3.09 CONTROL EQUIPMENT: All automatic valves and controllers shall be installed following the recommendations of the manufacturer of said equipment and in accordance with any detailed drawings which may accompany these specifications as part of the Contract Documents. Location of controller(s) shall be approved by the Owner's Representative and the Landscape Architect prior to installation.
3.10 VALVE BOXES: All valves are to be housed in valve boxes. Install according to Manufacturer's recommendations and any detailed drawings which may accompany these specifications as part of the Contract Documents. Position boxes at a height where they will not interfere with maintenance machinery (e.g., mowers) and such that soil and mulch do not wash into the box. In essence, valve boxes to be installed flush with grade.
3.11 BACKFLOW PREVENTER: Installation by a licensed Florida Plumbing Contractor in accordance with Manufacturer's recommendations and all federal, state and local codes.
3.12 BALANCING AND ADJUSTMENT: Balance and adjust the various components of the sprinkler system so that the overall operation of the system is most efficient. This includes synchronization of the controllers, adjustments to pressure regulators, part circle sprinkler heads, and individual station adjustments on the controllers. The Irrigation Contractor may call in the Landscape Architect to aid in the balancing and adjustment of the system.
3.13 OPERATION TESTING: Upon completion of the irrigation system, and after head installation, test the entire system for proper operation. Flush all air from the system and check components for proper operation.
3.14 AS-BUILT DRAWINGS: As-Built Drawings shall include locations of the mainline, grounding, flow sensors, wire splice boxes, valves (automatic and manual), with triangulated measurements to each location. Include any deviations in location of piping and heads as represented by the irrigation design submittal. Provide an updated valve schedule as shown on the detail sheet of irrigation construction documents.

3.15 OWNER ORIENTATION
A. Upon completion of the Work and final acceptance by the Owner's Representative and the Landscape Architect, the Irrigation Contractor shall be responsible for the orientation of Tavistock personnel in the operation, maintenance, and repair of the system.

B. Set initial watering schedules and programming of the automatic controller(s). Changes in the schedules and programming and instruction on how to make such changes is the responsibility of the Landscape Contractor.
3.16 DRIP SYSTEM PROCEDURES
A. Landscape Drip Line shall be located in a manner that will provide optimum concentration of water to plant material.
B. Tie-down Stakes shall be placed every 3 feet in sandy soils, 4 feet in loam and 5 feet in clay. Use tie-down stakes at fittings where there is a direction change at each leg of direction change.
C. Distance from the edge of the zone to the first row in the grid shall be the following:
D. 1. For turf that is planted against a hardscape edge or curb, the first row should be 2 inches away from the edge.
E. 2. For turf that is adjacent to a planted area, the first row should be 6 inches away from the edge.
F. Recommended Dripline and Emitter Lateral Flushing Procedures.

1. Flush the system completely after any repairs are made and monitor system operation closely under regular system flushing schedule.
2. Check the pressure at the supply and flush headers on a regular basis and compare with the pressure readings taken after installation.
3. Recommended Dripline and Emitter Lateral Leakage Testing Procedures.
1. Subject installed dripline tubing and emitter lateral piping to water pressure equal to specified operating pressure for ten (10) minutes. Test with control zone components and dripline flush valve components installed.
2. Partially backfill buried pipe and tubing to prevent movement under pressure. Expose couplings, fittings, and valve components.
3. Visually inspect valve assemblies and fittings for leakage and replace defective pipe, fitting, joint, valve, or appurtenance. Repeat test until test segment is free from leaks. Cement or caulking to seal leaks is prohibited.

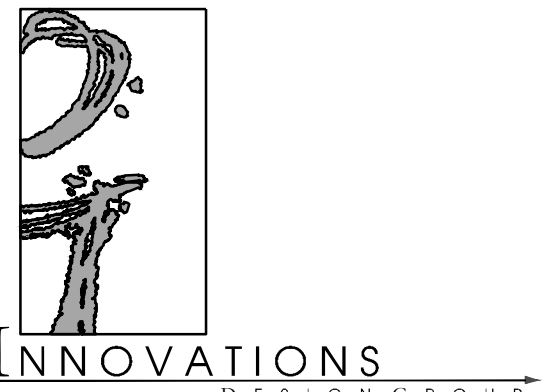
3.17 CLEAN UP AND PROTECTION
A. During irrigation Work keep Project Site clean and orderly.
B. Upon completion of Work clear grounds of debris, superfluous materials and all equipment. Remove from site to the satisfaction of the Owner's Representative and the Landscape Architect.
C. Protect Irrigation Work and materials from damage due to irrigation operations, operations by other contractors and trades, and trespassers. Maintain protection until Date of Substantial Completion.
D. Cover all openings in the system as it is being installed to prevent obstructions in the pipe and the breakage, misuse, or disfigurement of the equipment.
E. Theft: Irrigation Contractor shall be responsible for theft of equipment and material at the job site before, during, and after installation, until Date of Substantial Completion of the Work in total.

3.18 COMMISSIONING
A. Starting Procedures: Follow Manufacturer's written procedures. If no procedures are prescribed by manufacturers, proceed as follows:
1. Verify that specialty valves and their accessories are installed and operate correctly.
2. Verify that specified tests of piping are complete.
3. Verify that sprinklers and devices are correct type.
4. Verify that damaged sprinklers and devices are replaced with new materials.
5. Verify that potable-water supply connections have backflow preventers.
6. Energize circuits to electrical equipment and devices.
7. Adjust operating controls, master valves, pressure regulator and learned flow.
B. Operational Tests: Measure and record water flow rate and area coverage at each sprinkler. Adjust to achieve indicated values and perform learn flow controller function.

3.19 INSPECTION, ACCEPTANCE, RETAINANCE AND PAYMENT
A. Upon completion of Work, the Irrigation Contractor shall notify the Owner's Representative and the Landscape Architect at least ten (10) days prior to requested date of review for Substantial Completion of all portions of the work. Landscape Architect will issue a punch list for work to be corrected. All work on the punch list must be completed within five (5) working days from the date of inspection. Where Irrigation Work does not comply with requirements, replace rejected Work. In unusual circumstances a longer time period may be granted by the Owner's Representative. If such replacements are not completed within the time specified, the Irrigation Contractor may be considered to be in default of the Contract, and the Owner's Representative may use the contract retainage to hire other Irrigation Contractors to finish the Work.
B. It will be the responsibility of the Irrigation Contractor to provide a reliable communication system (i.e., two way radios or remote radio control activation system) for Substantial Completion and Final Inspections.
C. If an inspection/acceptance walk-thru has been scheduled and the Landscape Architect arrives at the site and determines that the Irrigation System is not substantially complete (all system components in place, operational, and checked with 100% sprinkler coverage), the Irrigation Contractor shall be responsible for all costs incurred by the Landscape Architect to revisit the site at a future date. Reimbursement expenses include, but are not limited to, automobile mileage, airfare, Landscape Architect's hourly billing rate, parking fee, meals, rental car, etc. All incurred expenses will be deducted from the final contract amount or the contract retainage.
D. Certificate of Substantial Completion will be issued for satisfactory completion of repairs and replacements and completion of As-Built Drawings. If punch list items are issued with the Certificate, they must be corrected within five (5) working days.
E. Final Acceptance: Final acceptance is at the completion of all punch items, at which time retainage can be released. Irrigation Contractor shall attend warranty walkthrough with Landscape Architect and Owner at 6 and 11 months and complete all warranty obligations before the end of warranty period. Upon satisfactory completion of repairs and/or replacements, the Landscape Architect will certify, in writing, Final Acceptance of the Work. The Final Acceptance Certification issued by the Landscape Architect will serve as evidence that Irrigation Contractor's one (1) year warranty obligations have been met.

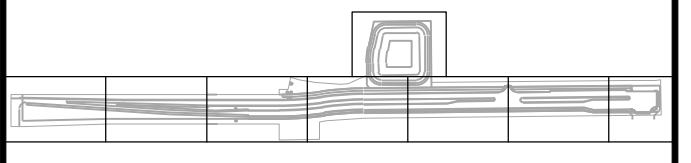
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Owner:

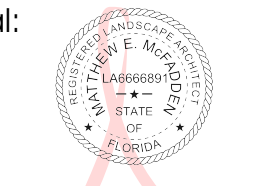


CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
IRRIGATION SPECIFICATIONS

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Date: 11/22/2019 Scale: SEE PLAN
Drawn By: RR Designed By: MM
Approved By: MM Project No: 19027
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Seal:  Sheet Number: IR-09

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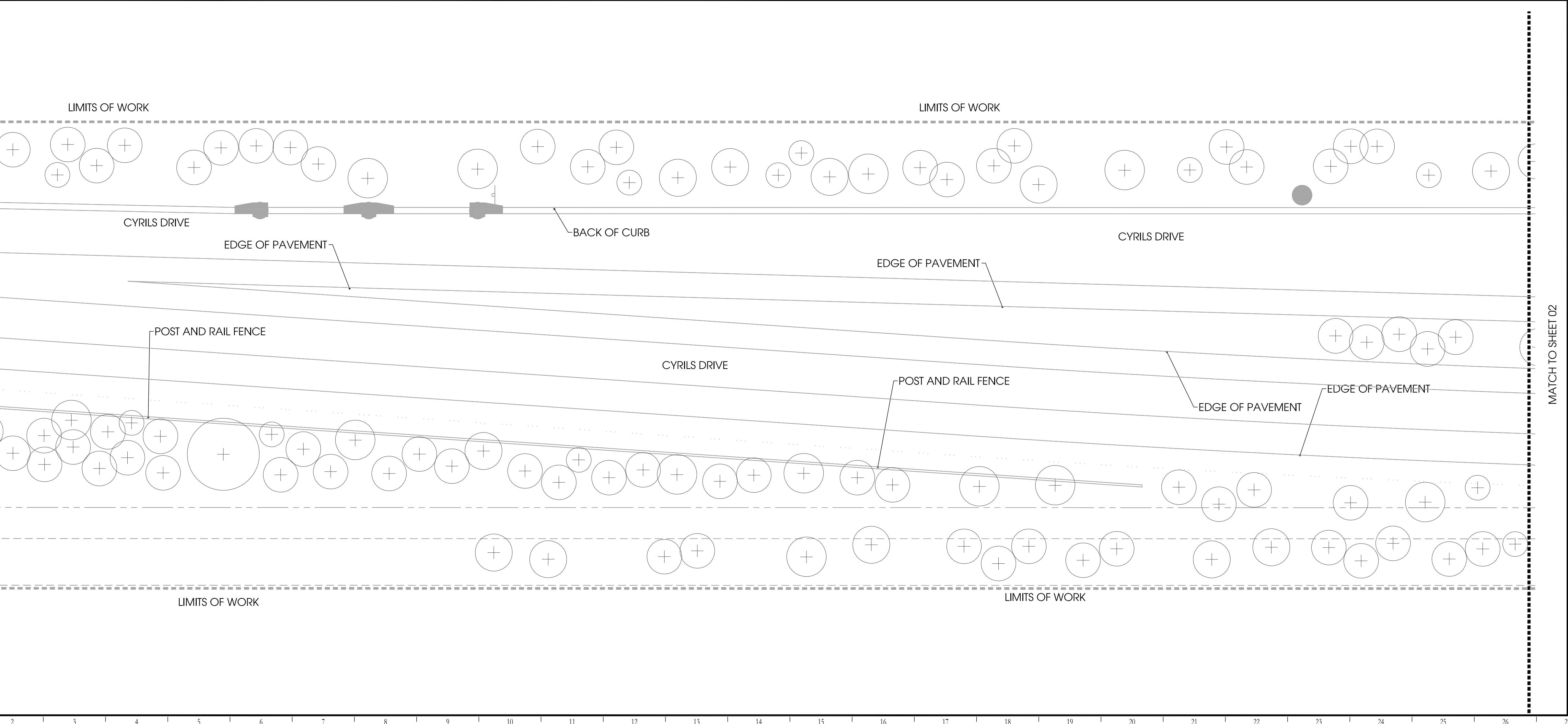
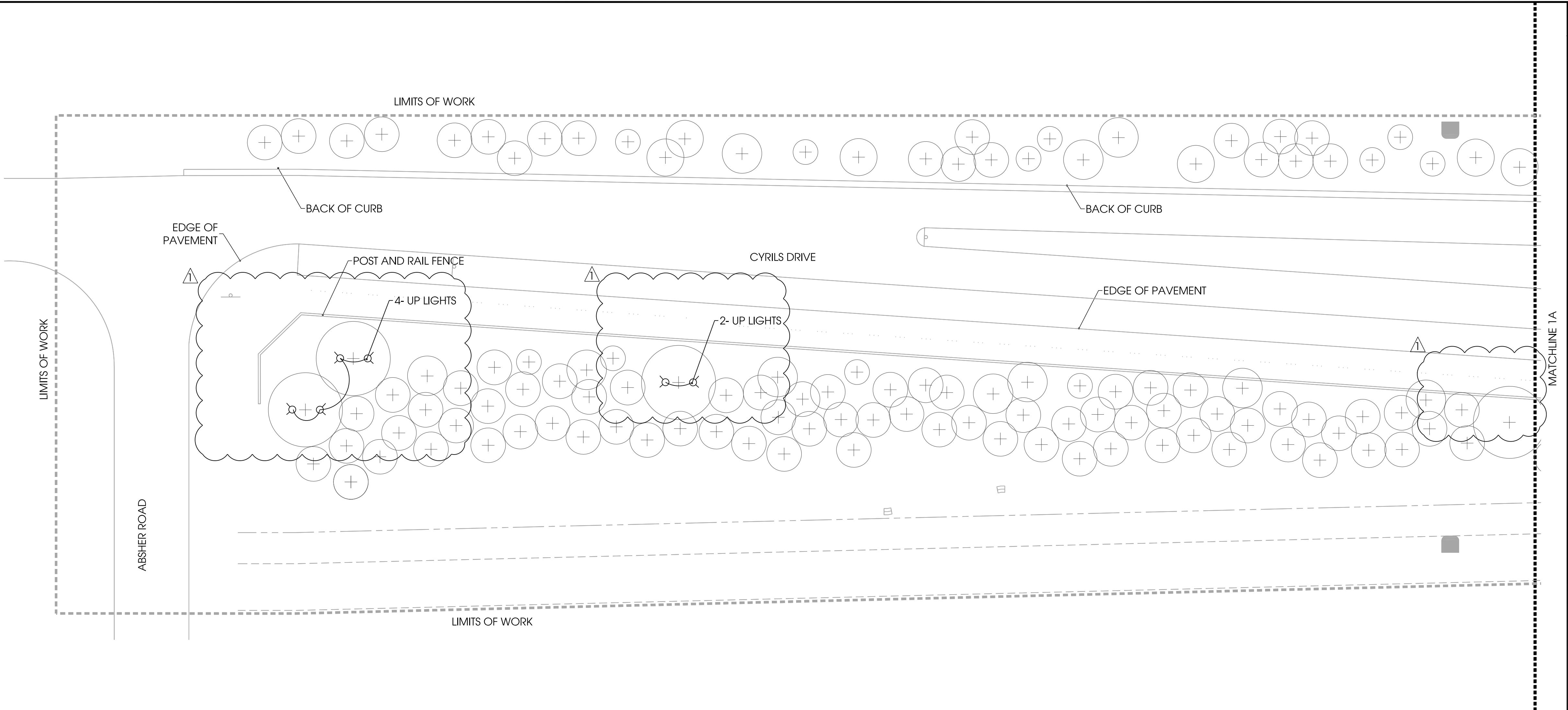
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SDP17-0155
02/19/2020
Osceola County
Community Development

THIS APPROVAL IS SUBJECT TO SPECIFIC PERFORMANCE TO THE OSCEOLA COUNTY LAND DEVELOPMENT CODE AND ANY SPECIAL REQUIREMENTS OF THE BOARD OF COUNTY COMMISSIONERS. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO CORRECT ANY DEFECTS IN THE PLANS OR THE FACILITY AS CONSTRUCTED WHICH RESULT IN A FAILURE TO MEET APPLICABLE CODE REQUIREMENTS. THIS APPROVAL DOES NOT CONSTITUTE A GUARANTEE OF ANY KIND. THE DEVELOPER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES. THIS APPROVAL IS VALID FOR A PERIOD OF THREE YEARS FROM THE DATE STAMPED.

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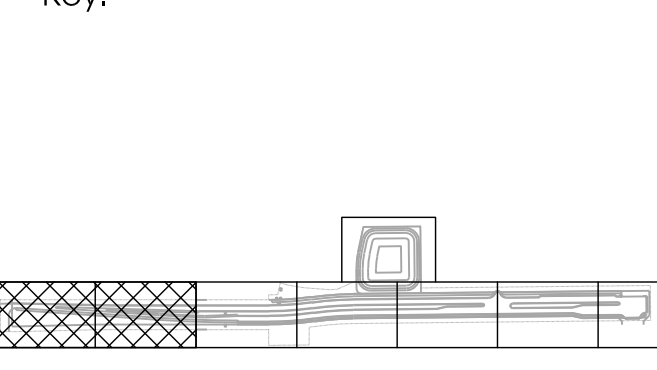
Owner:



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Owner:



CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
LIGHTING PLAN

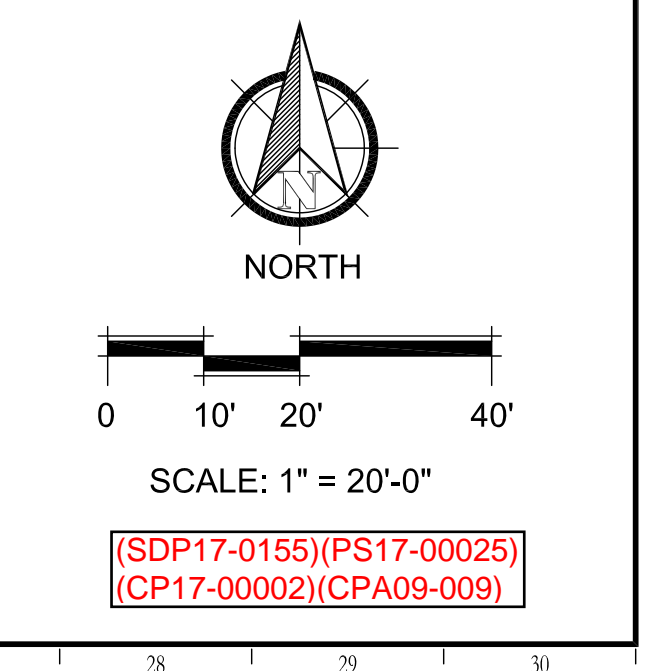
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Approved By: MM Project No: 19027
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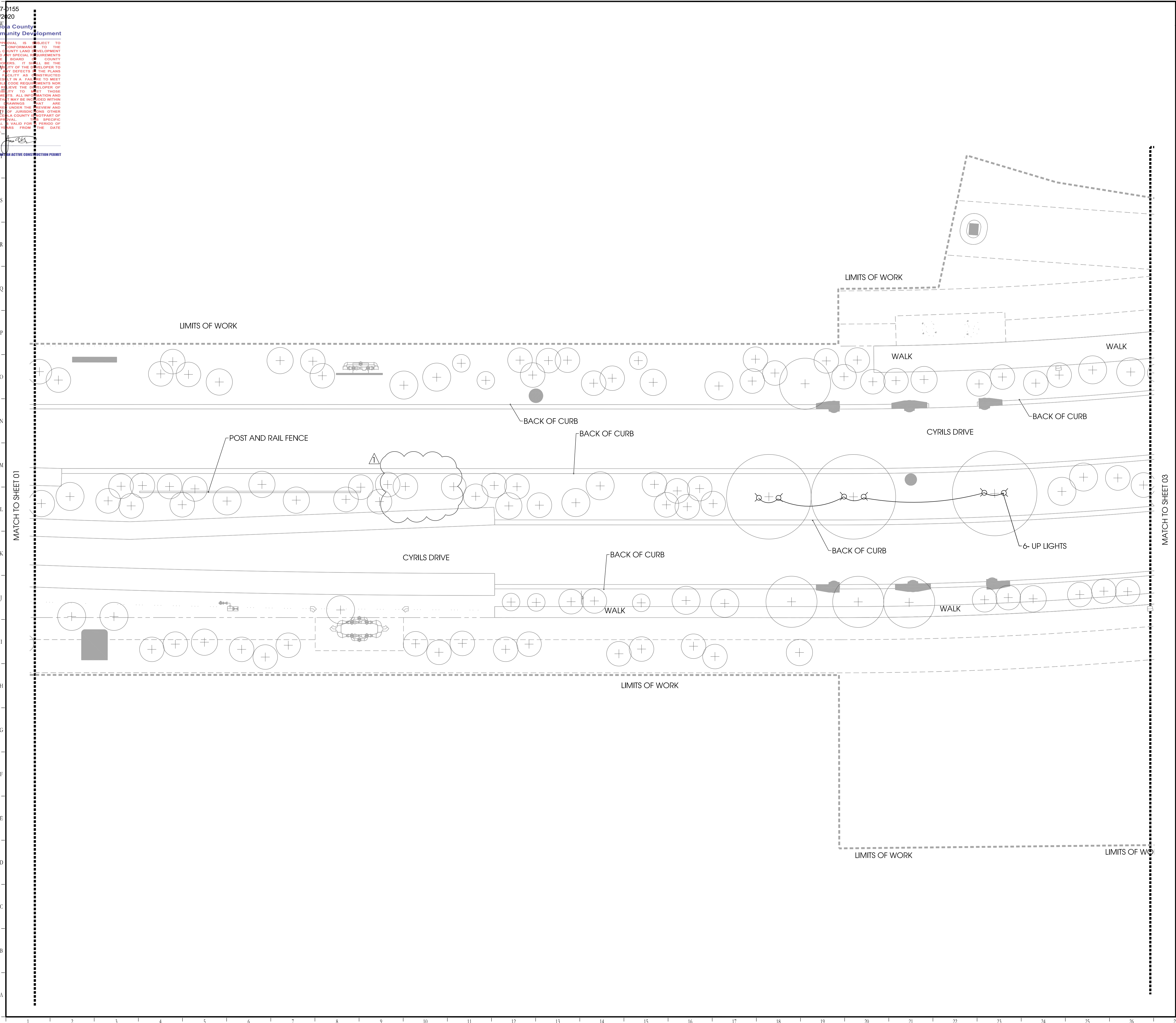


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02/19/2020
Osceola County
Community Development

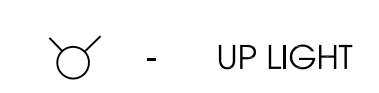
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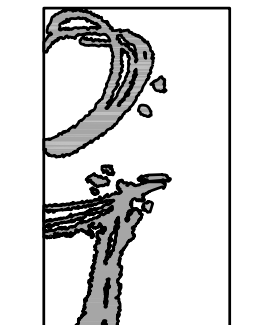
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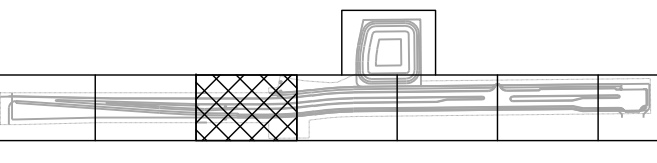


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Key:



Owner:



CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
LIGHTING PLAN

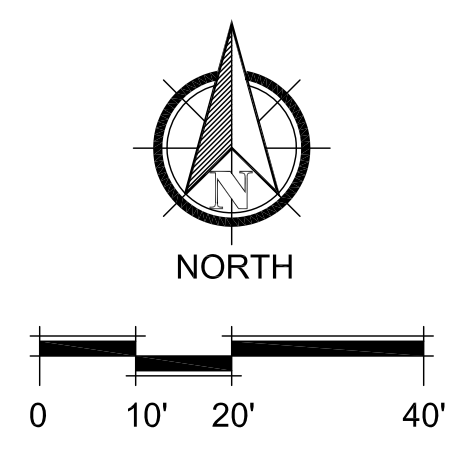
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Drawn By: RR	Designed By: MM
Approved By: MM	Project No: 19027
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Seal:

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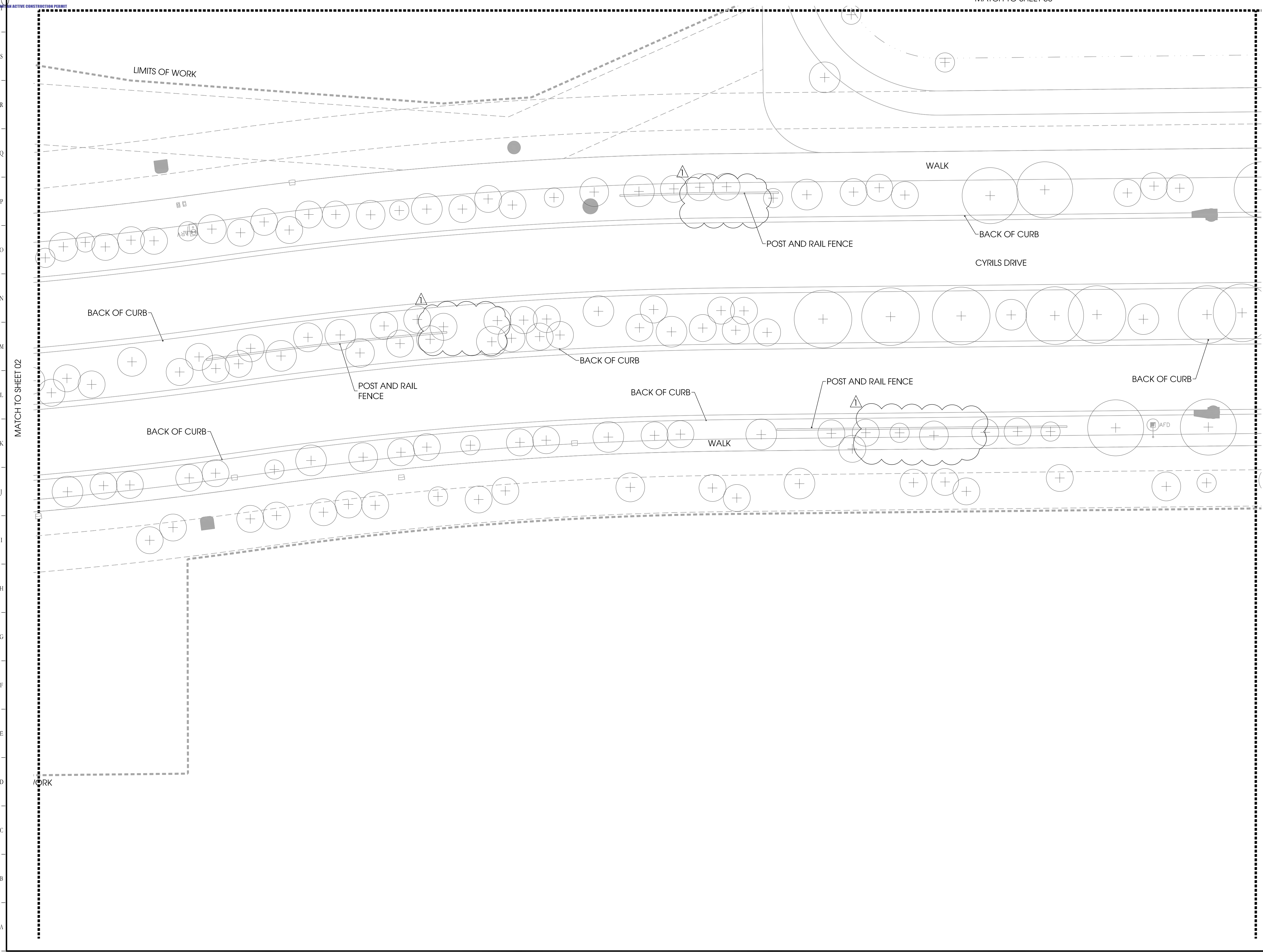
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(CP17-00002)(CPA09-009)

SDP17-0155
02/19/2020
Osceola County
Community Development

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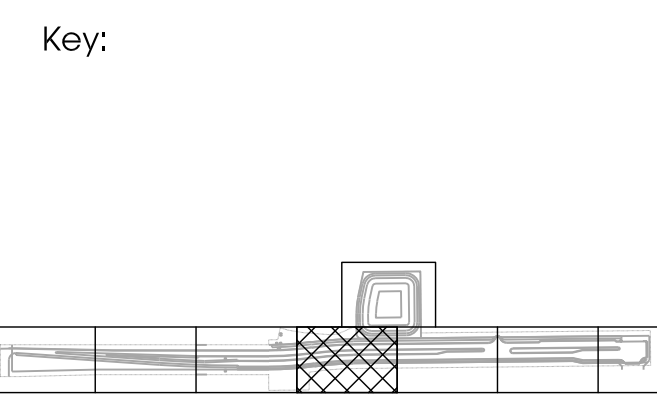
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PRINT DATE: 10-Jan-20
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Owner:

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OSCEOLA COUNTY, FLORIDA

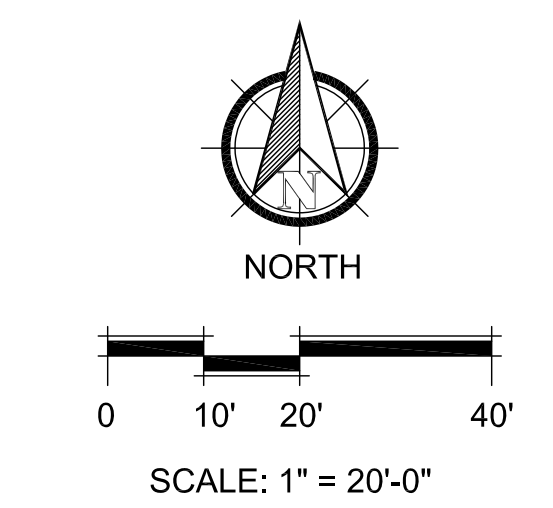
CONSTRUCTION DOCUMENTS
LIGHTING PLAN

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Date: 11/22/2019 Scale: SEE PLAN
 Drawn By: RR Designed By: MM
 Approved By: MM Project No: 19027
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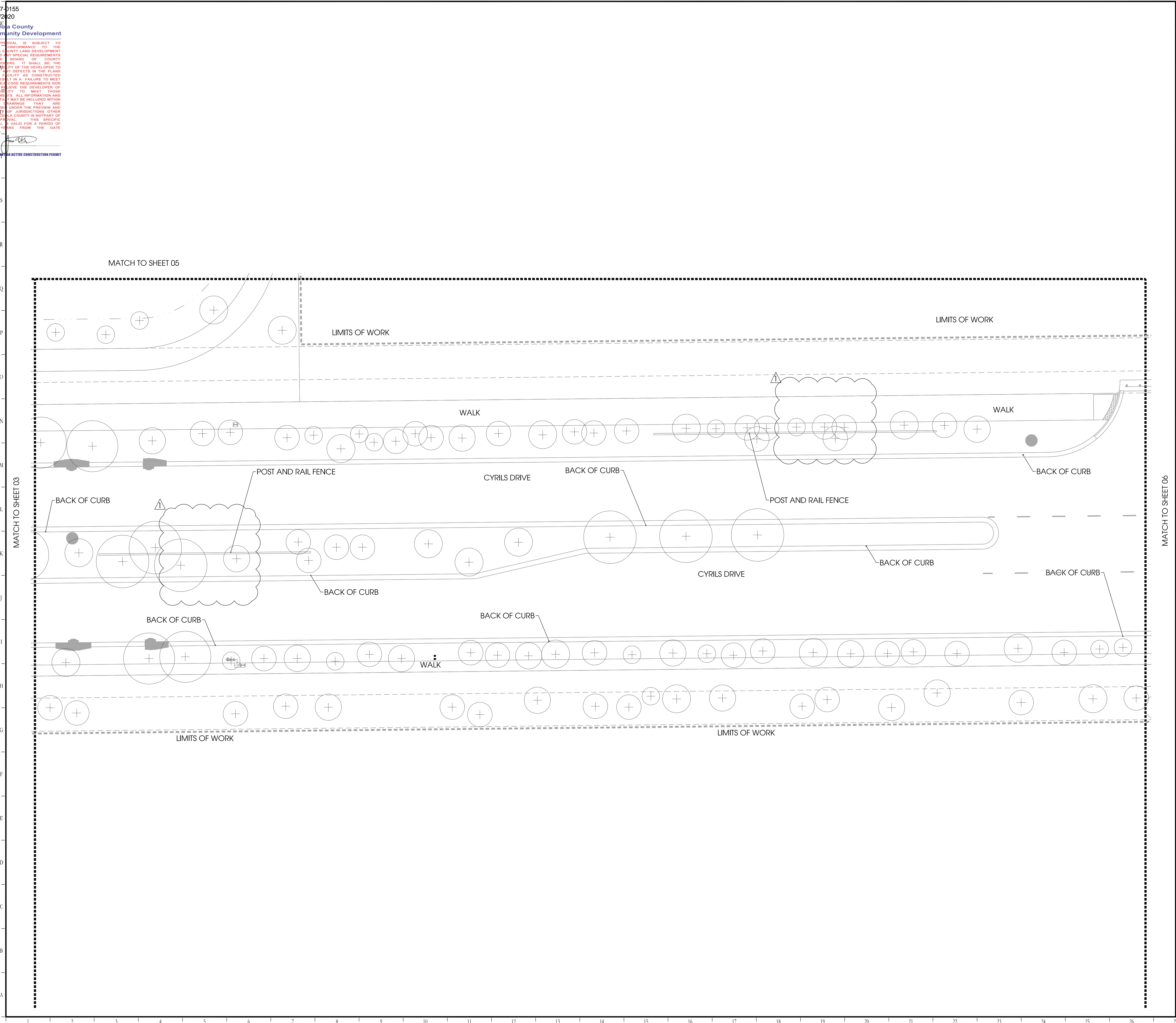
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Osceola County
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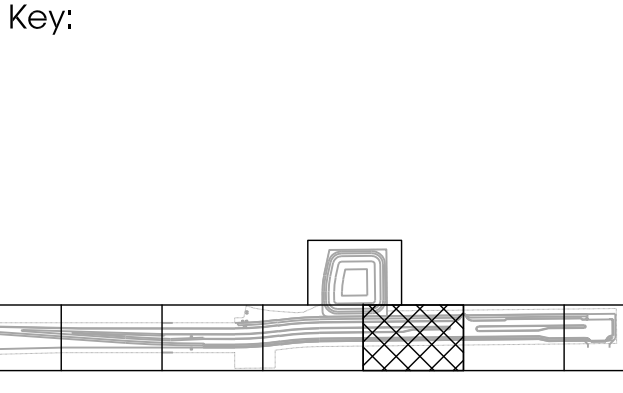
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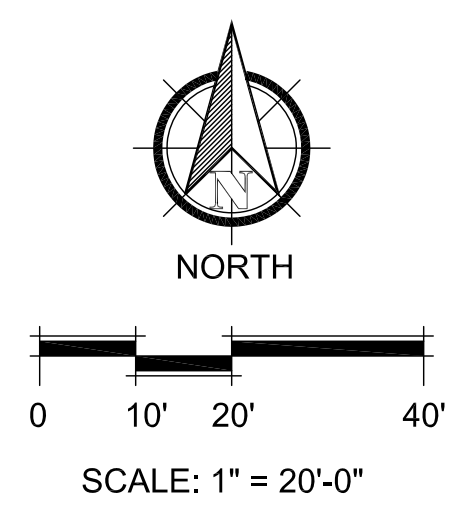
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Date: 11/22/2019 Scale: SEE PLAN
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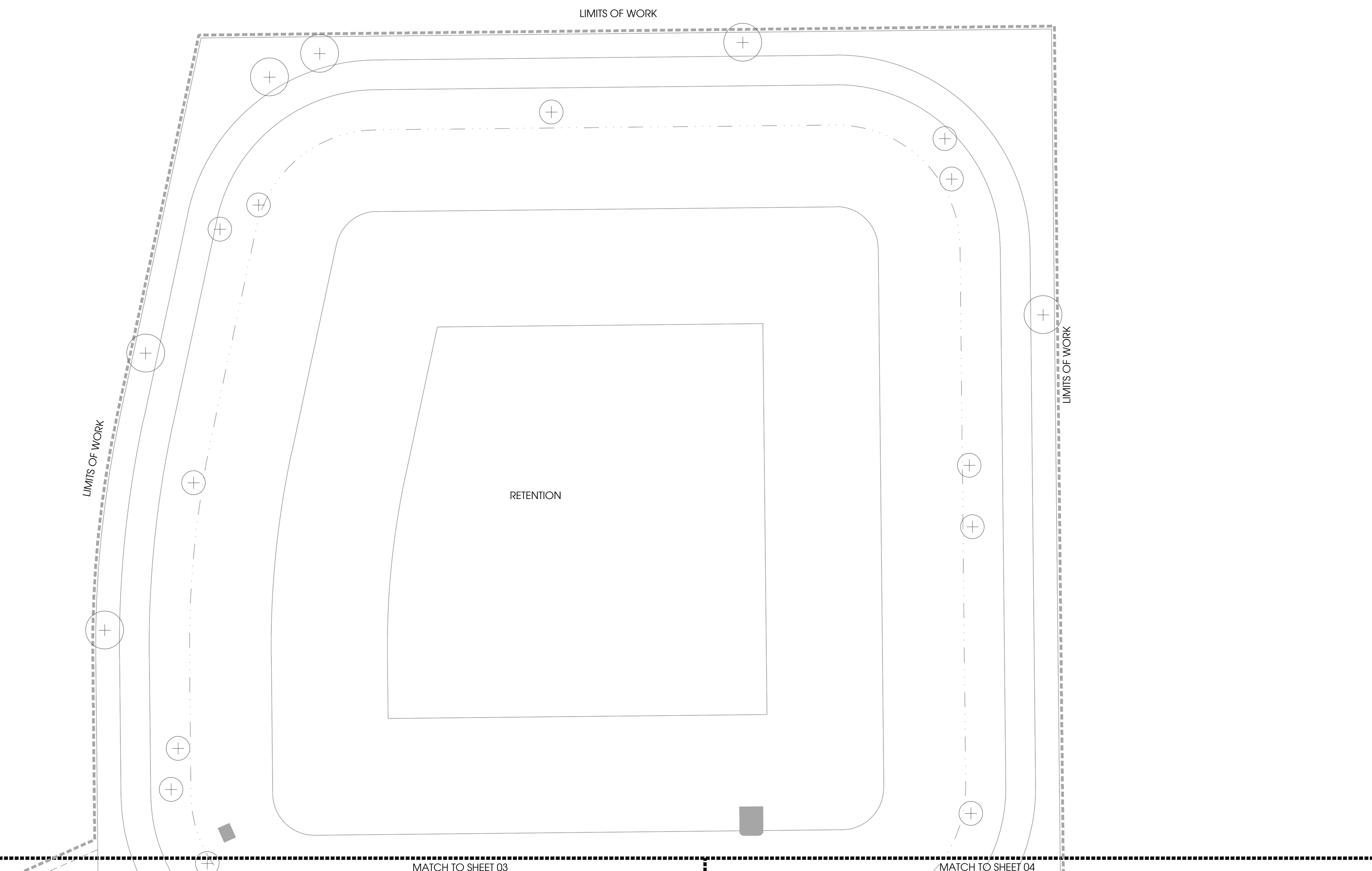
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LEGEND

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TAVISTOCK
DEVELOPMENT COMPANY

CYRILS DRIVE
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CONSTRUCTION DOCUMENTS
LIGHTING PLAN

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Date: 11/22/2019 Scale: SEE PLAN
Drawn By: RRR Designed By: MM
Approved By: MM Project No: 19027
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Seal: [Professional Engineer Seal]

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Date: 2019.12.06 17:17:51 -05'00'

Sheet Number:
LI-05

NORTH

0 10' 20' 40'

SCALE: 1" = 20'-0"

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(CP17-00002)(CPA09-009)

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Drawn By: RRR Designed By: MM
Approved By: MM Project No: 19027
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Seal: [Professional Engineer Seal]

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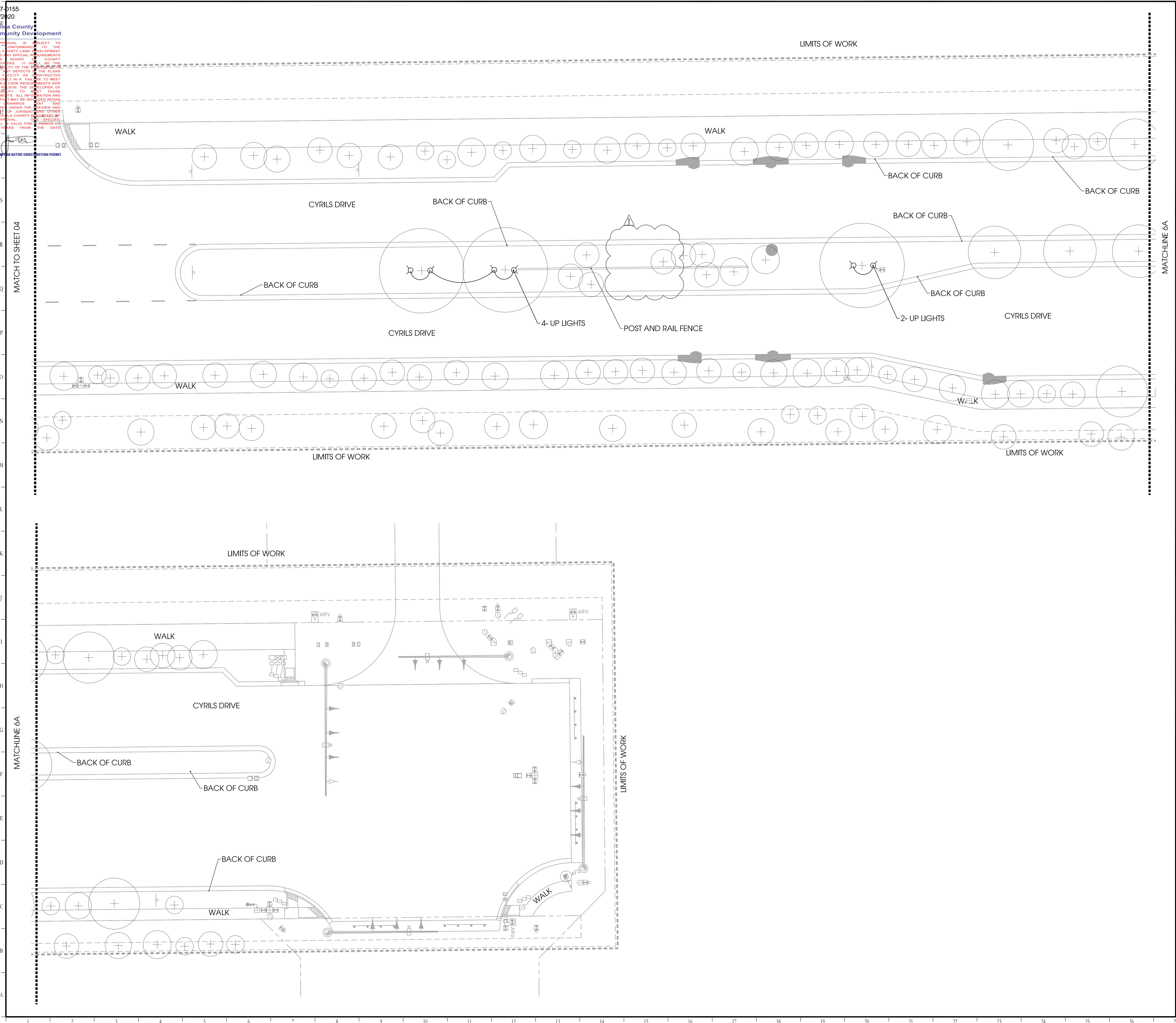
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02/19/2020
Oscola County
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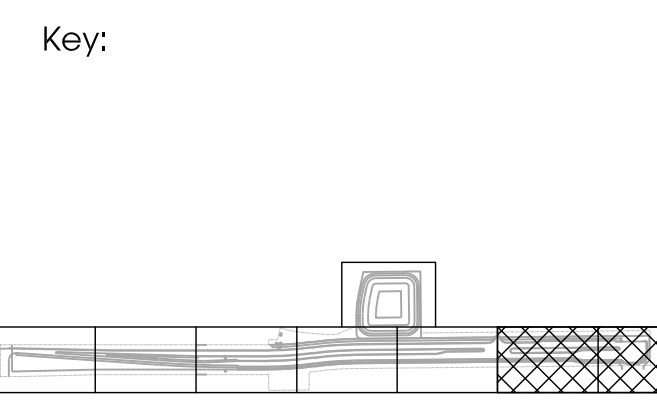


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OSCEOLA COUNTY, FLORIDA

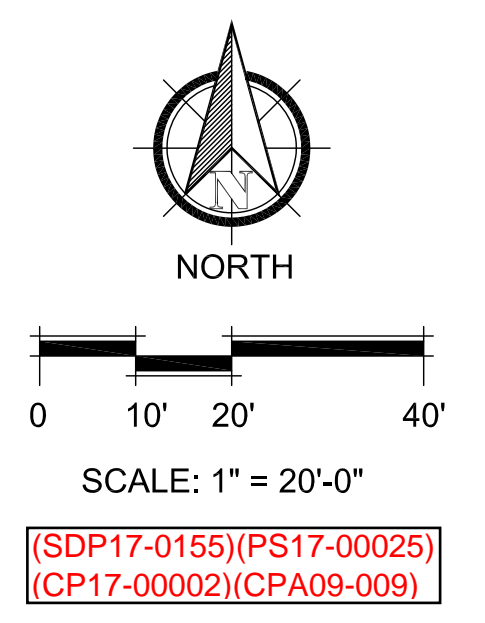
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LIGHTING PLAN

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 Drawn By: RR Designed By: MM
 Approved By: MM Project No: 19027
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Sheet Number:
LI-06



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02/19/2020
Ocala VOLT
Community Development

THIS APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
1. THE APPLICANT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE APPLICABLE JURISDICTIONS.
2. THE APPLICANT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INSURANCE COVERAGE.
3. THE APPLICANT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CONTRACTS FROM THE APPLICABLE JURISDICTIONS.
4. THE APPLICANT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY APPROVALS FROM THE APPLICABLE JURISDICTIONS.
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30. THE APPLICANT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY APPROVALS FROM THE APPLICABLE JURISDICTIONS.

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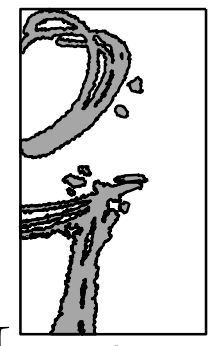


INSTALL PER
MANUFACTURERS
SPECIFICATIONS

01 UP LIGHT
PRODUCT

NTS

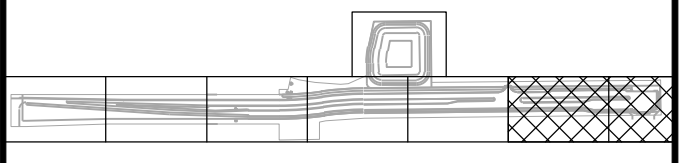
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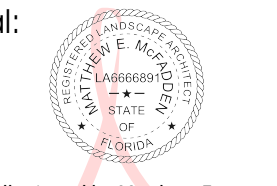
CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
LIGHTING CUTSHEETS

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Date: 11/22/2019 Scale: SEE PLAN
Drawn By: RRR Designed By: MM
Approved By: MM Project No: 19027
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Sunbridge NED

Cyrils Drive Phase 1 & Utility Access Road

Osceola County, Florida

Permit Number SDP17-0155

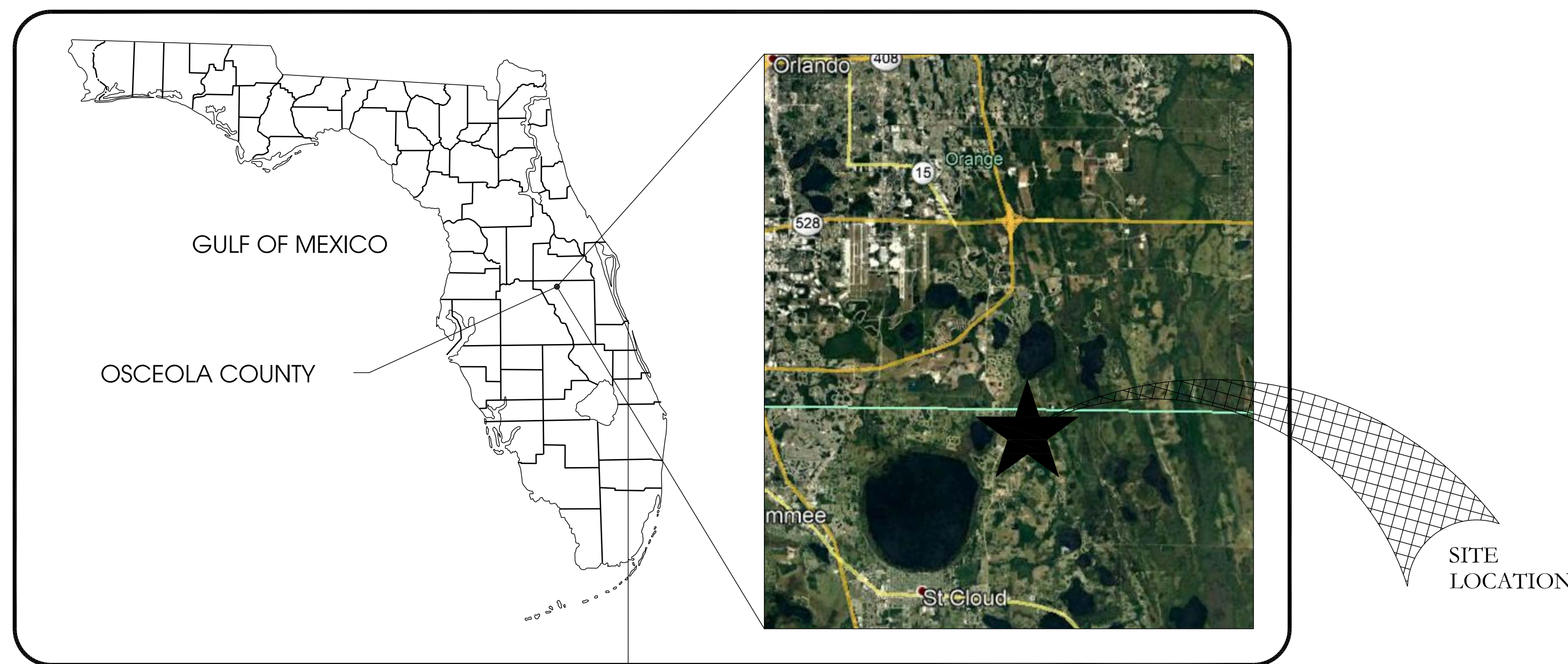
Construction Plans - Landscape Architecture

November 22, 2019

SHEET INDEX

		To Replace Sheets:	
LP-1.0	CO-00	LA COVER SHEET	LP-1.0 Roadway Permit Landscape Key Plan
LP-1.1	KM-01	KEY MAP	LP-1.1 Roadway Permit Landscape Plan
LP-1.2	HS-01	HARDSCAPE PLAN	LP-1.2 Roadway Permit Landscape Plan
LP-2.1	HS-02	HARDSCAPE PLAN	LP-2.1 Roadway Permit Plant List, Details And Notes
LP-3.0	HS-03	HARDSCAPE PLAN	LP-3.0 Roadway Permit Irrigation Key Plan
LP-3.1	HS-04	HARDSCAPE PLAN	LP-3.1 Roadway Permit Irrigation Plan
LP-3.2	HS-05	HARDSCAPE PLAN	LP-3.2 Roadway Permit Irrigation Plan
LP-3.3	HS-06	HARDSCAPE PLAN	LP-3.3 Roadway Permit Irrigation Plan
LP-4.1	HD-01	HARDSCAPE DETAILS	LP-4.1 Roadway Permit Irrigation Schedules
LP-4.2	LT-00	LANDSCAPE NOTES	LP-4.2 Roadway Permit Irrigation Details And Notes
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LT-02		LANDSCAPE TREE PLAN	
LT-03		LANDSCAPE TREE PLAN	
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LS-05		LANDSCAPE SHRUB PLAN	
LS-06		LANDSCAPE SHRUB PLAN	
LS-07		LANDSCAPE DETAILS	
LS-08		TAVISTOCK SPECIFICATIONS	
IR-00		IRRIGATION NOTES	
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LI-06		LIGHTING PLAN	
LI-07		LIGHTING CUT SHEETS	

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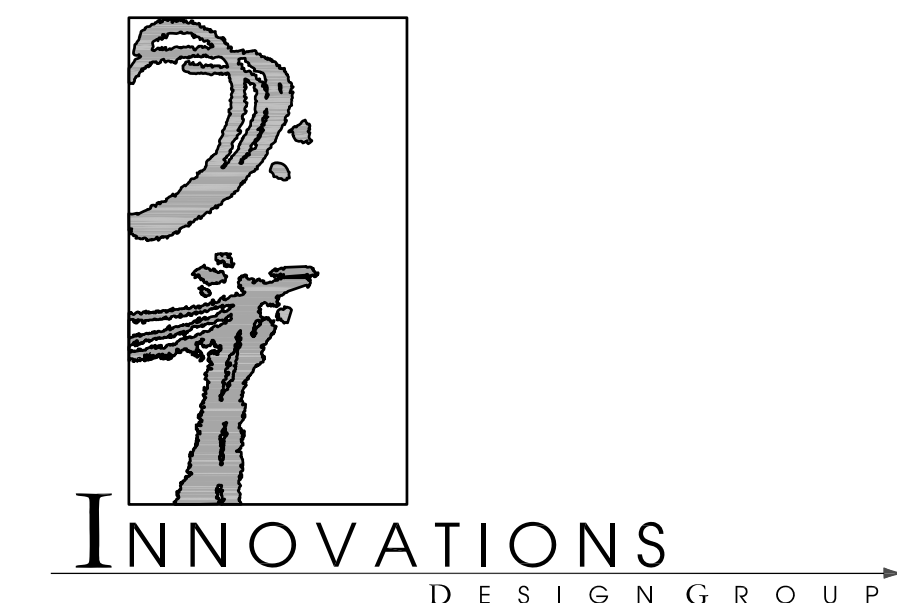


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PREPARED FOR:



PREPARED BY:



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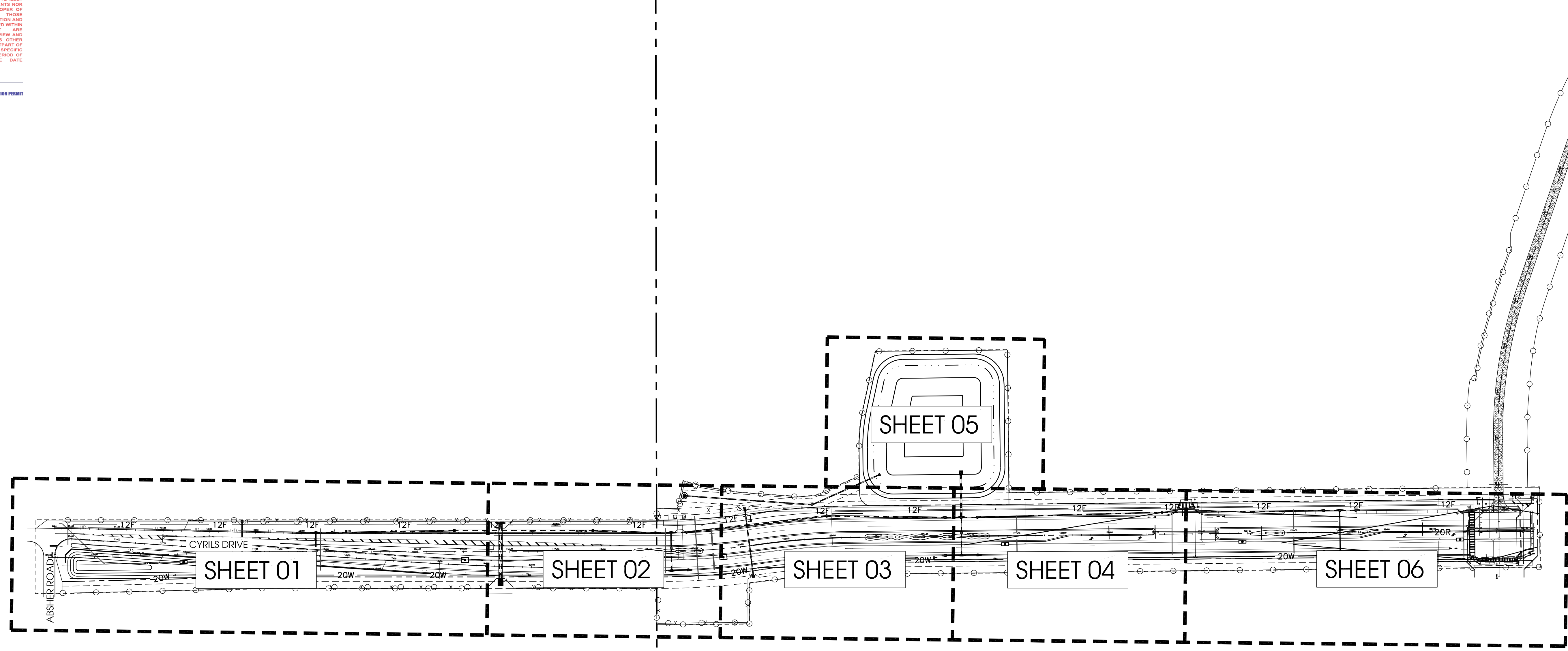
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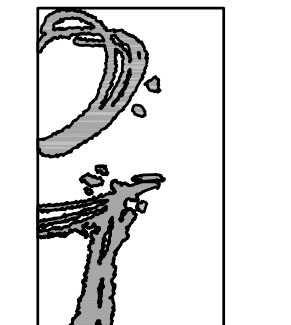
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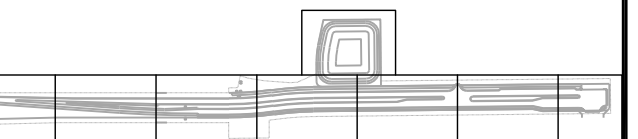
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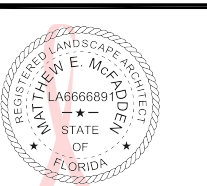


CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
KEY MAP

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Approved By: MM	Project No: 19027
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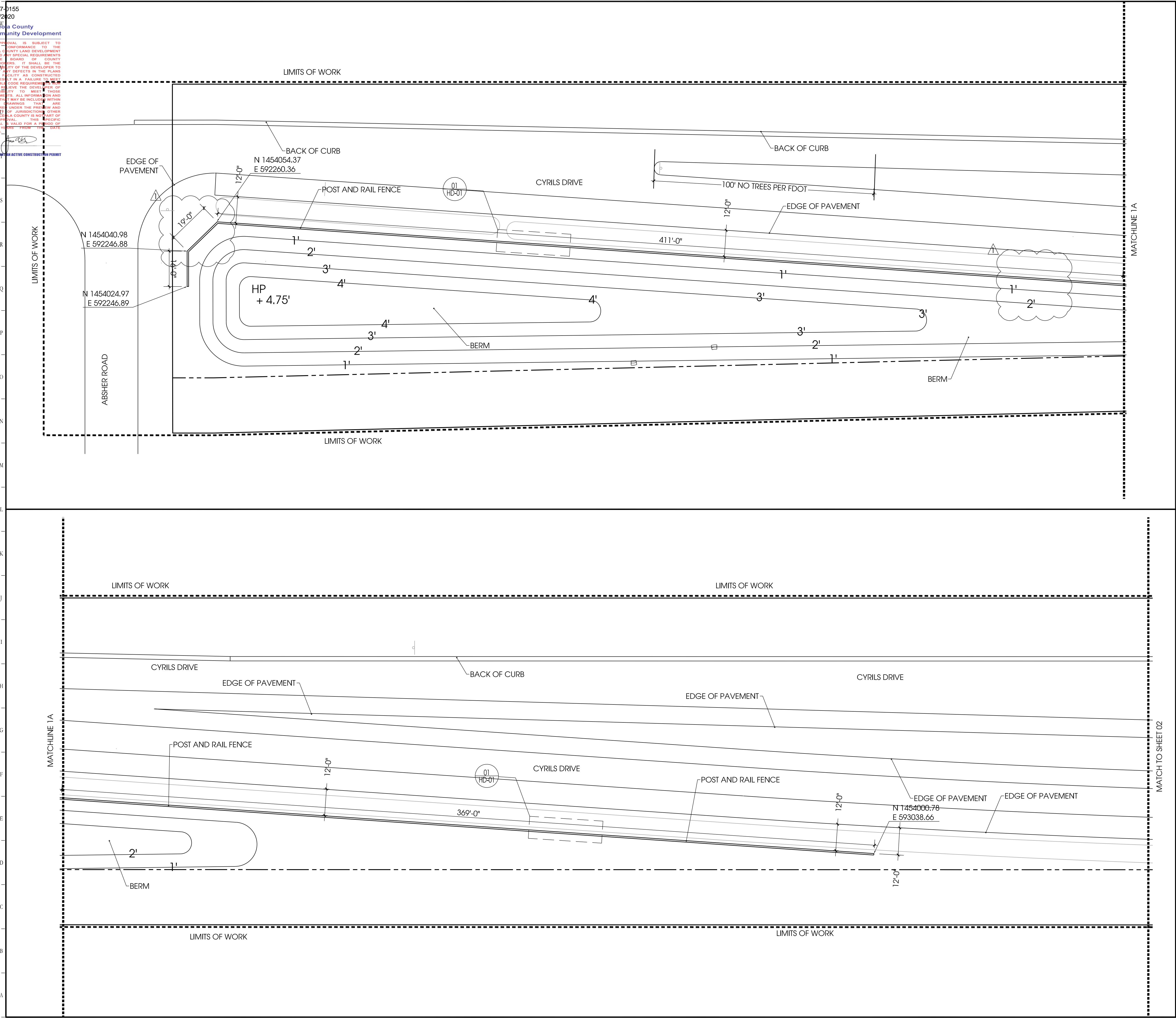
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02/19/2020
Osceola County
Community Development

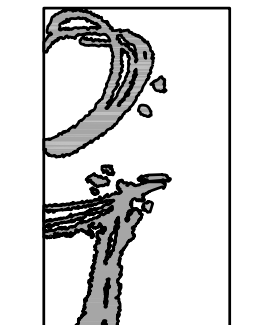
THIS APPROVAL IS SUBJECT TO SPECIFIC PERFORMANCE TO THE OSCEOLA COUNTY LAND DEVELOPMENT CODE AND ANY SPECIAL REQUIREMENTS OF THE BOARD OF COUNTY COMMISSIONERS. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO CORRECT ANY DEFECTS IN THE PLANS OR THE FACILITY AS CONSTRUCTED WHICH RESULT IN A FAILURE TO MEET APPLICABLE CODE REQUIREMENTS. THE DESIGNER DOES NOT HAVE THE OBLIGATION OR RESPONSIBILITY TO MEET THOSE REQUIREMENTS. ALL INFORMATION AND DETAILS THAT MAY BE INCLUDED WITHIN THESE DRAWINGS TO BE CONSIDERED UNDER THE PERMIT AND AUTHORITY OF JURISDICTION OTHER THAN OSCEOLA COUNTY IS NOT PART OF THIS APPROVAL. THIS SPECIFIC APPROVAL IS VALID FOR A PERIOD OF THREE (3) YEARS FROM THE DATE STAMPED.

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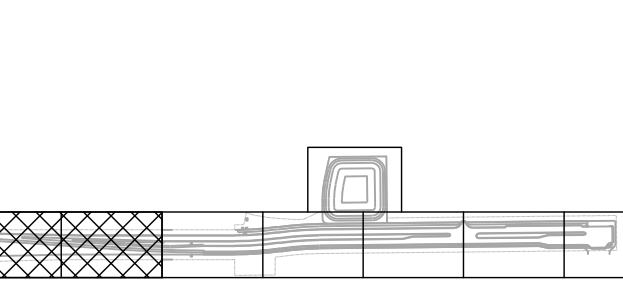
Designed By:



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Key:



Owner:



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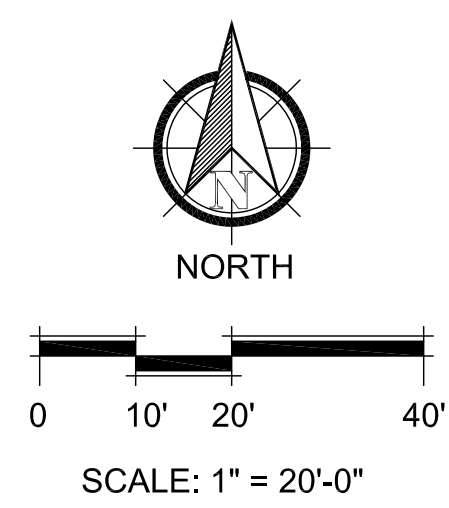
CONSTRUCTION DOCUMENTS
HARDSCAPE PLAN

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Date: 11/22/2019 Scale: SEE PLAN
Drawn By: RR Designed By: MM
Approved By: MM Project No: 19027
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Sheet Number:
LP-1.2
HS-01



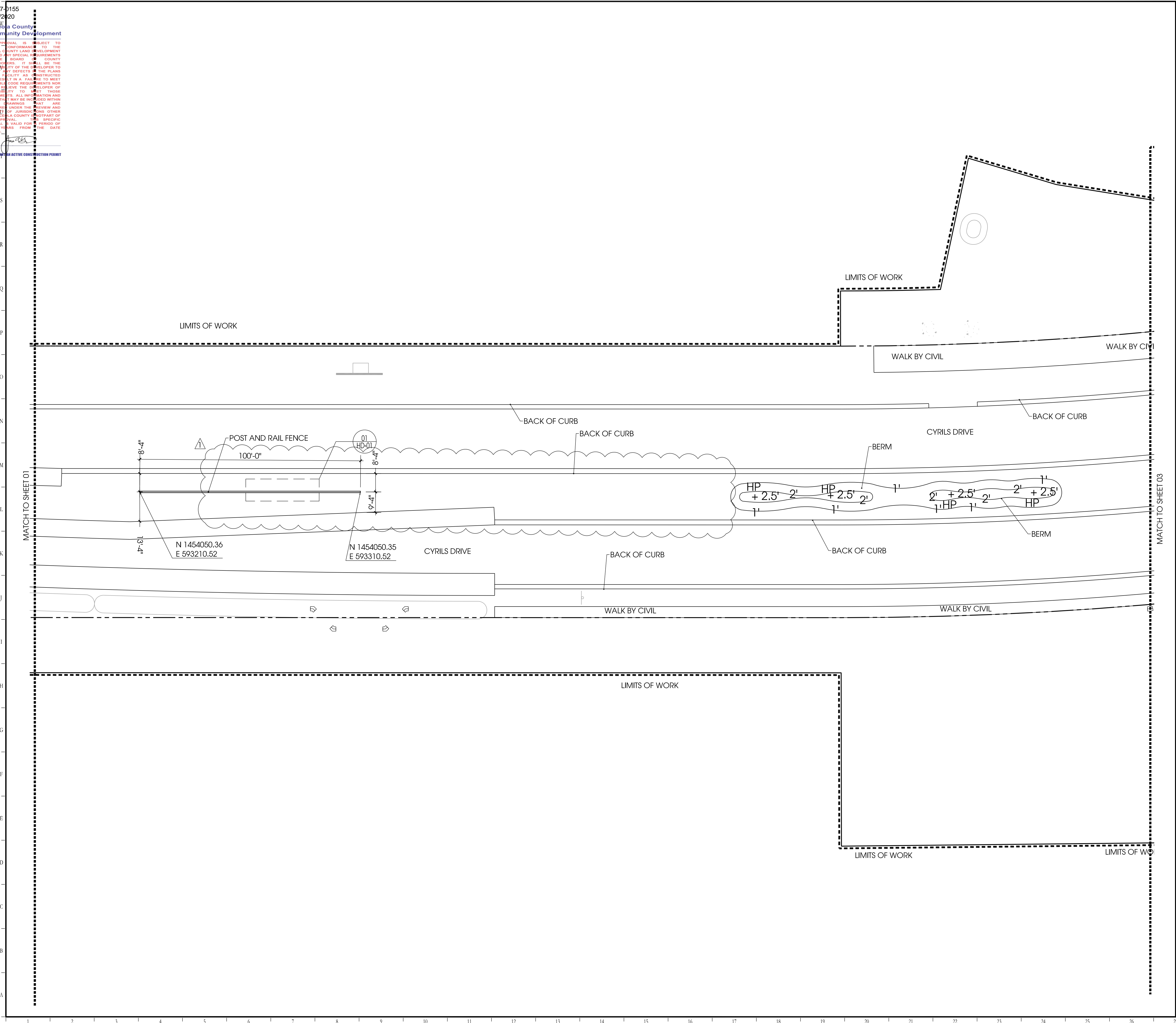
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SDP17-0155
02/19/2020
Osceola County
Community Development

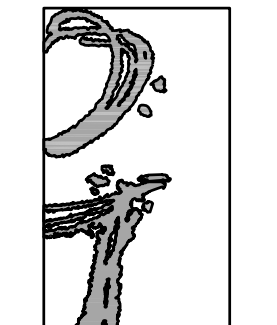
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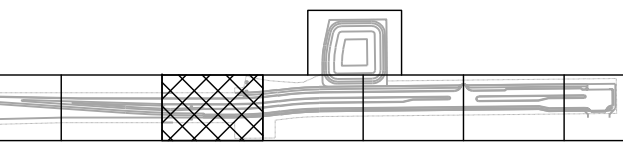


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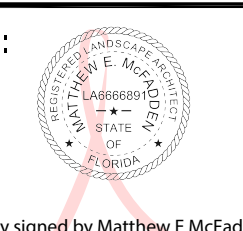


CYRILS DRIVE
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CONSTRUCTION DOCUMENTS
HARDSCAPE PLAN

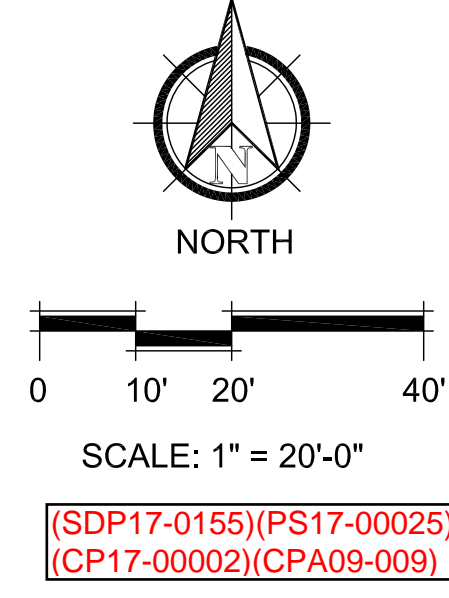
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Drawn By: RR	Designed By: MM
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LP-2.1
HS-02



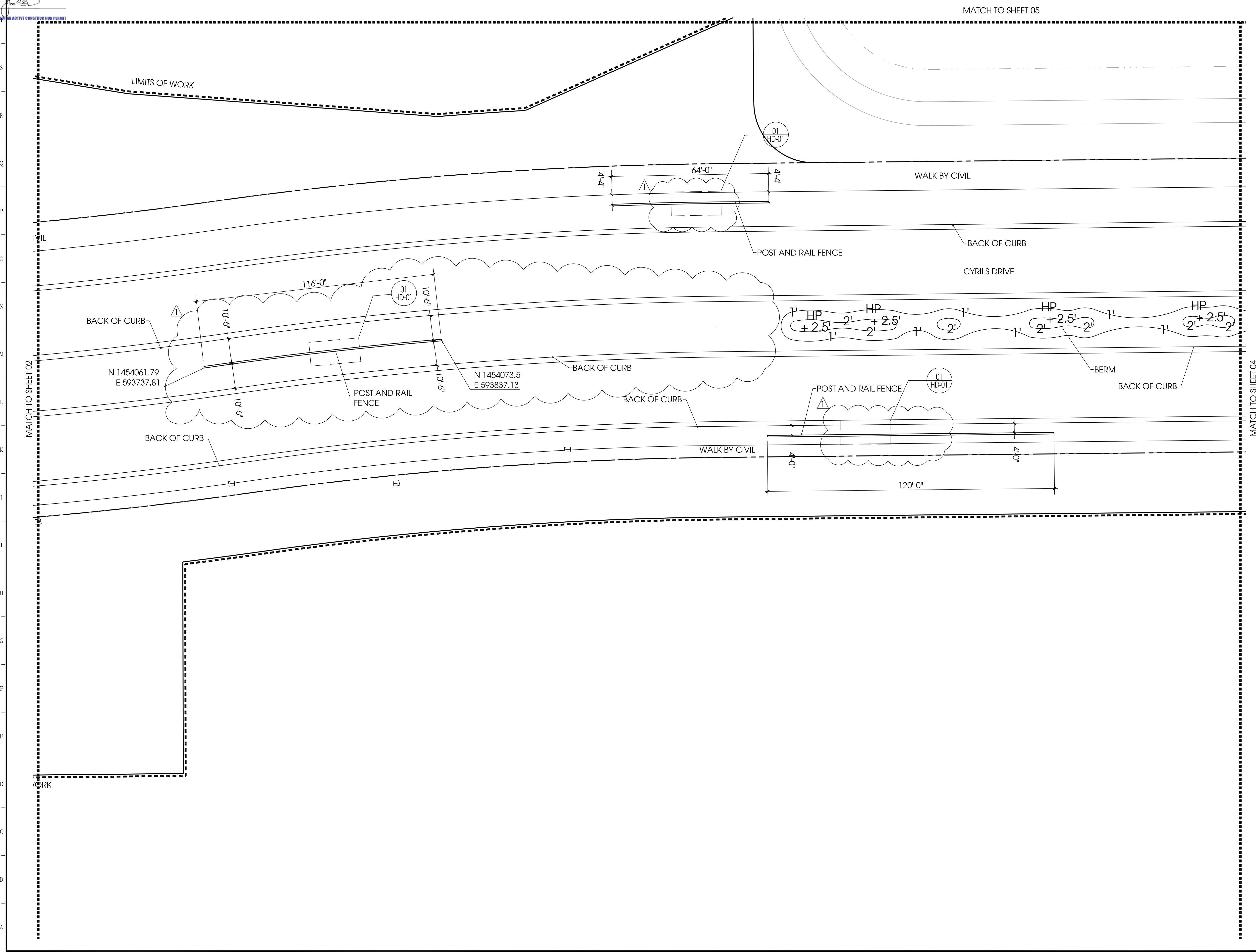
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(CP17-00002)(CPA09-009)

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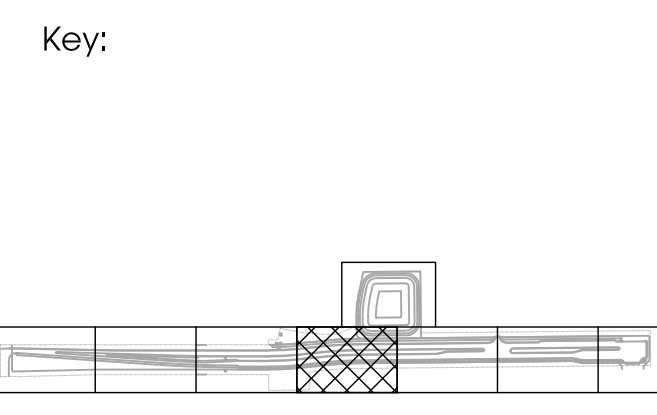
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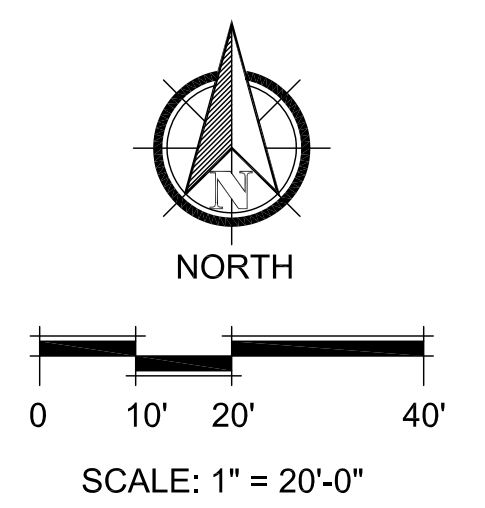
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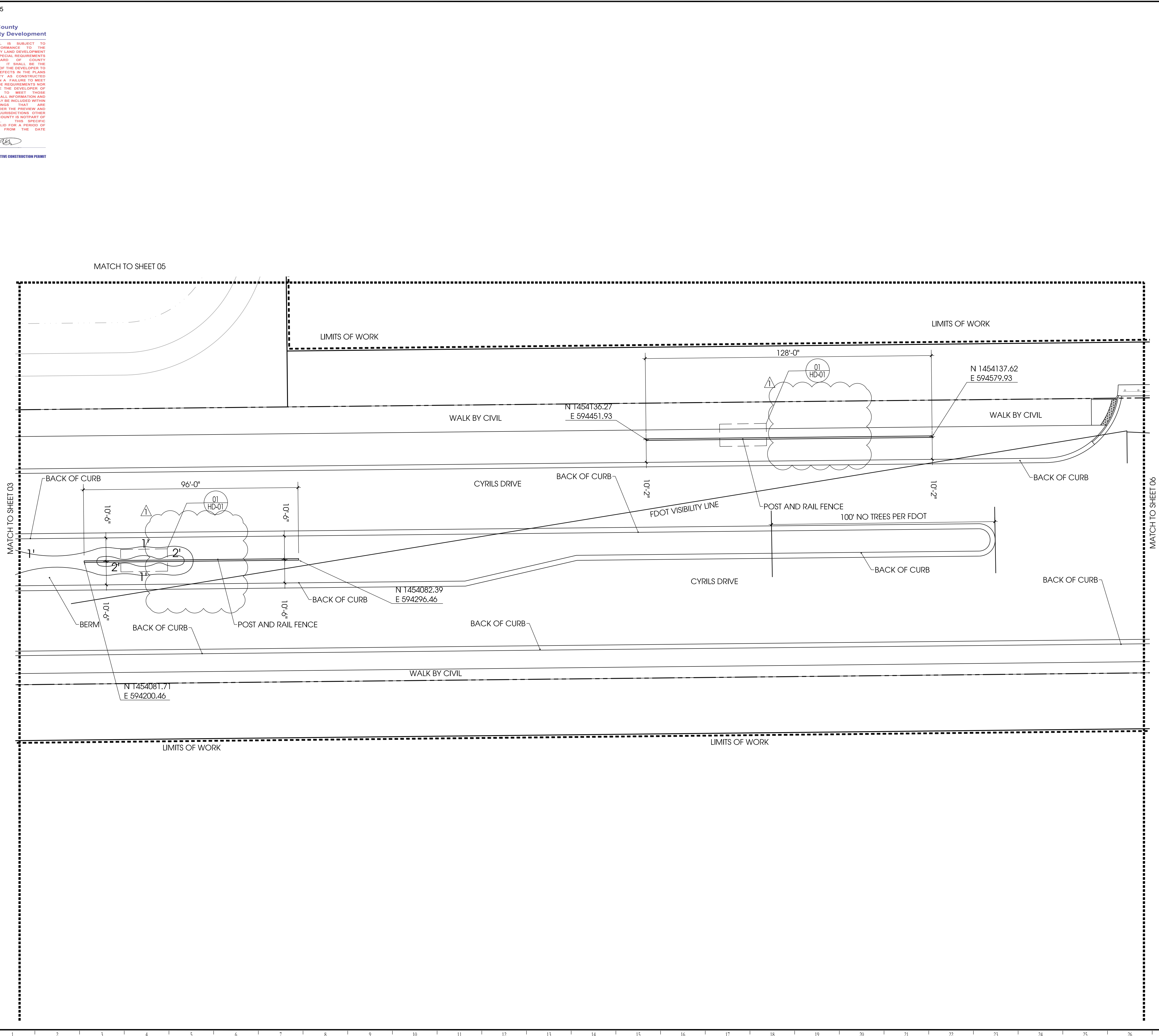
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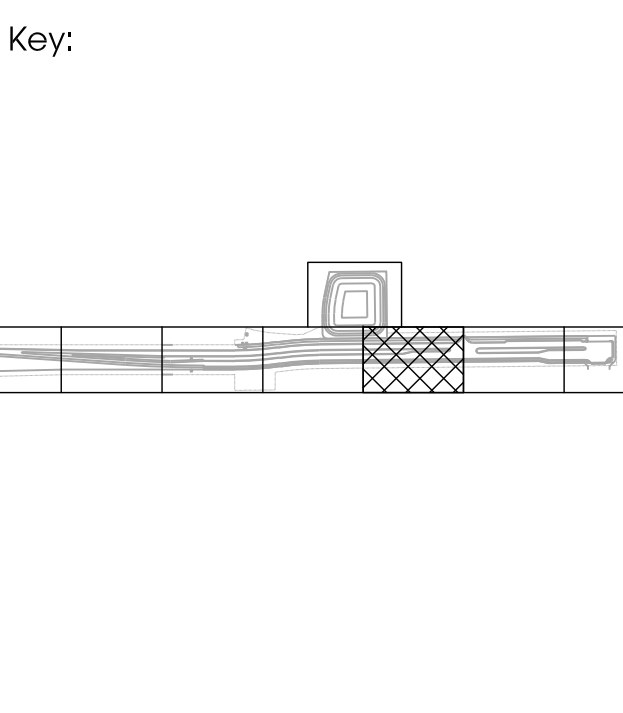
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HARDSCAPE PLAN

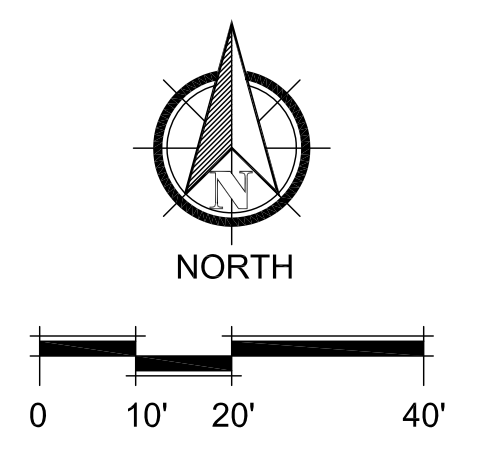
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Date: 11/22/2019 Scale: SEE PLAN
Drawn By: RR Designed By: MM
Approved By: MM Project No: 19027
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LP-3.1
HS-04



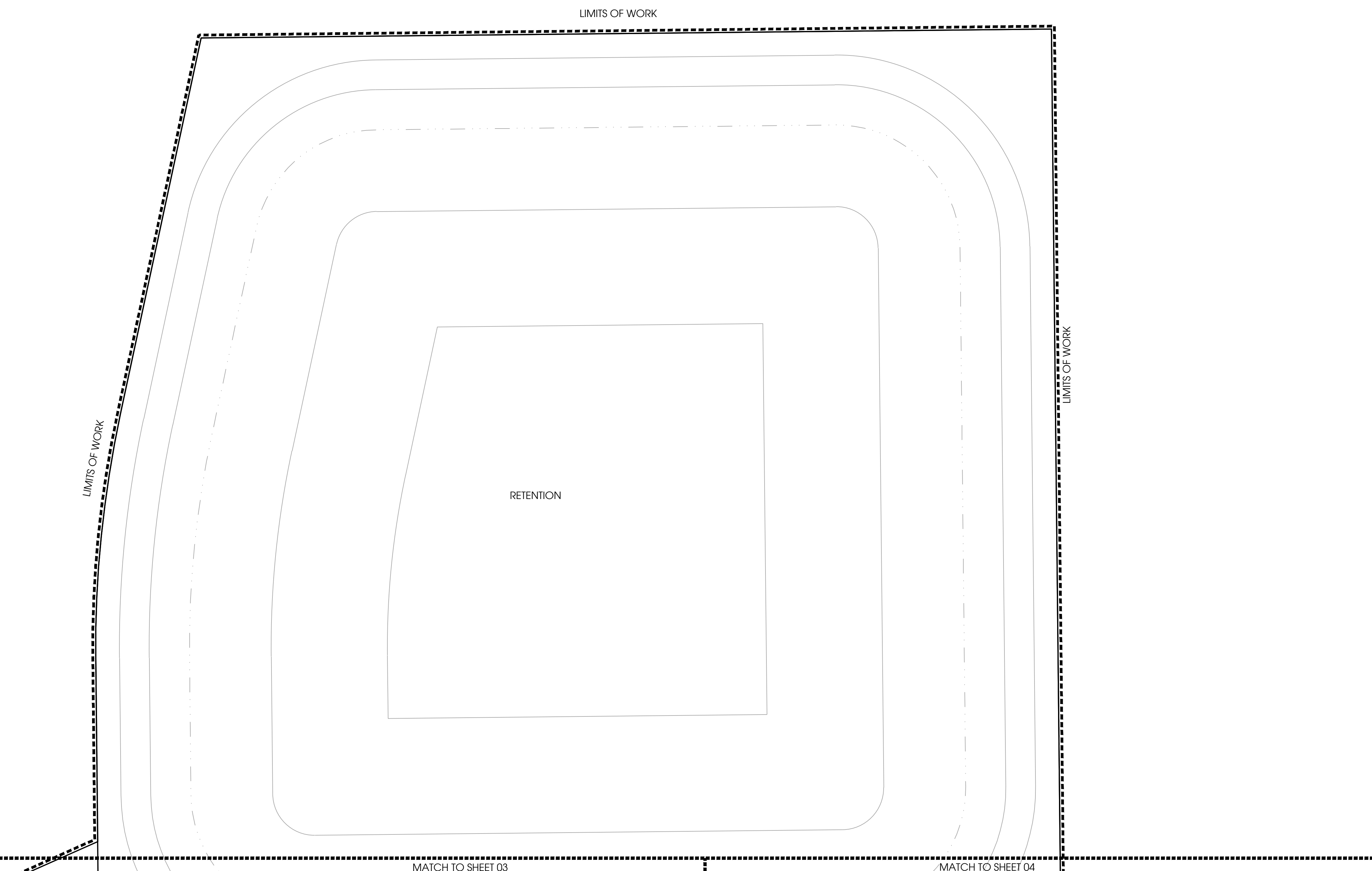
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Date: 11/22/2019	Scale: SEE PLAN
Drawn By: RRR	Designed By: MM
Approved By: MM	Project No: 19027
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Sheet Number:
LP-3.2
HS-05

NORTH

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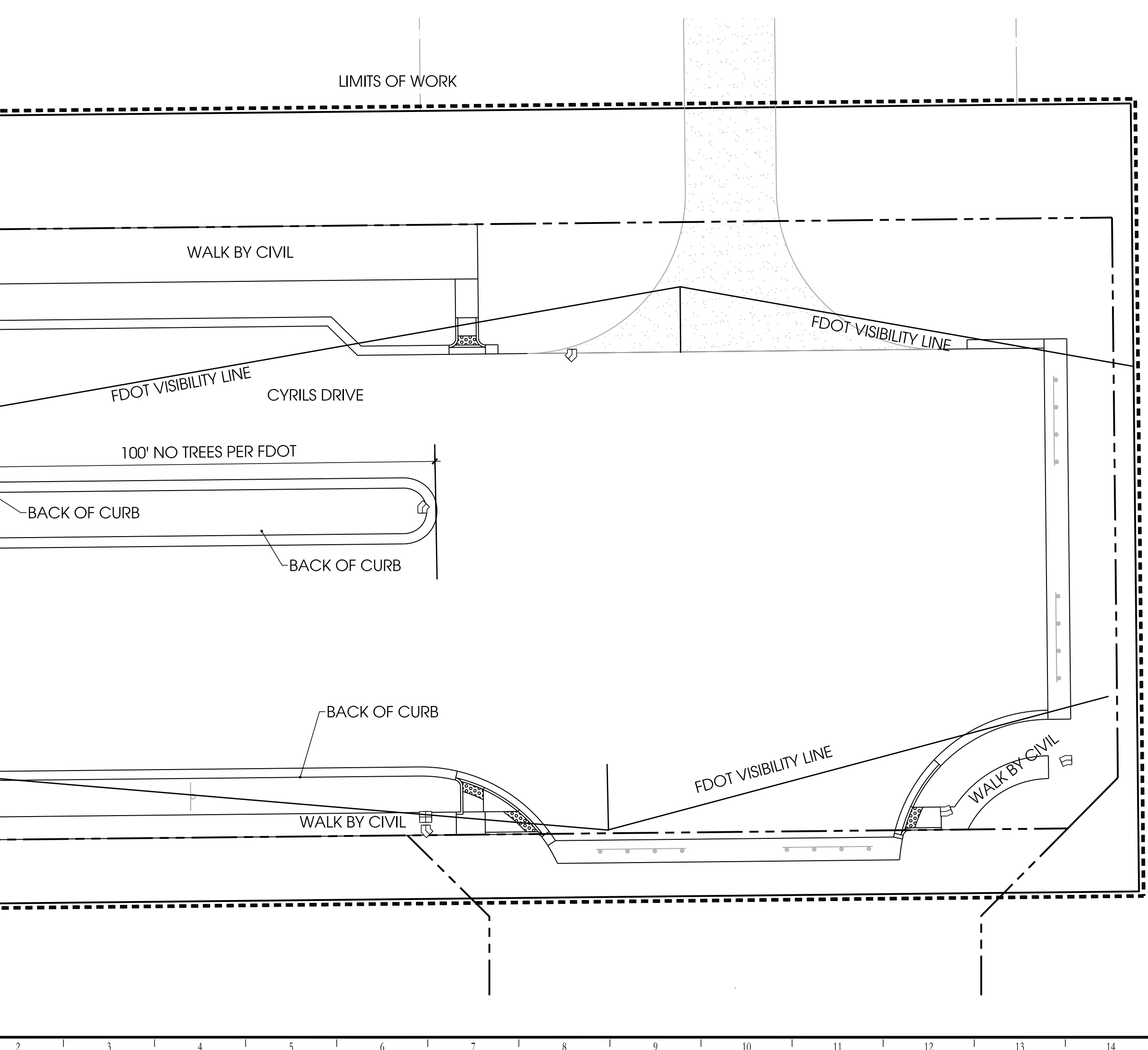
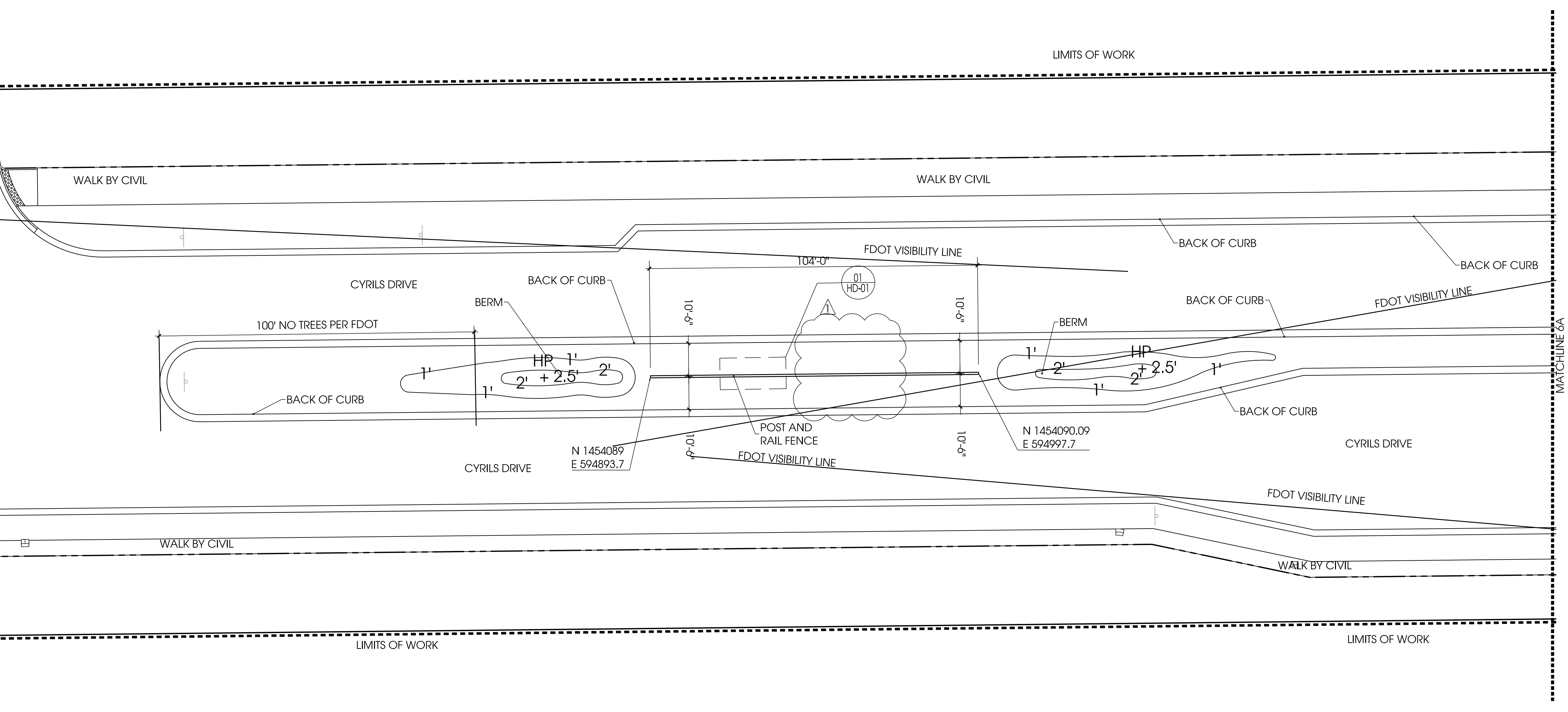
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(CP17-00002)(CPA09-009)

NOTES: 1. THE DRAWING SHALL BE USED FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT RESPONSIBLE FOR THIS APPROVAL. THE DRAWING SHALL NOT BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN CONSENT OF INNOVATIONS DESIGN GROUP, INC. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.

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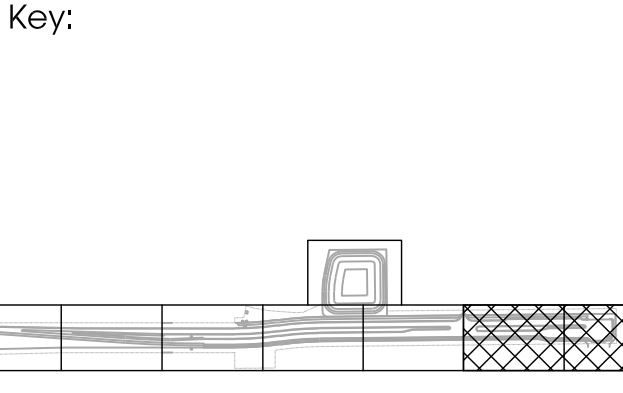
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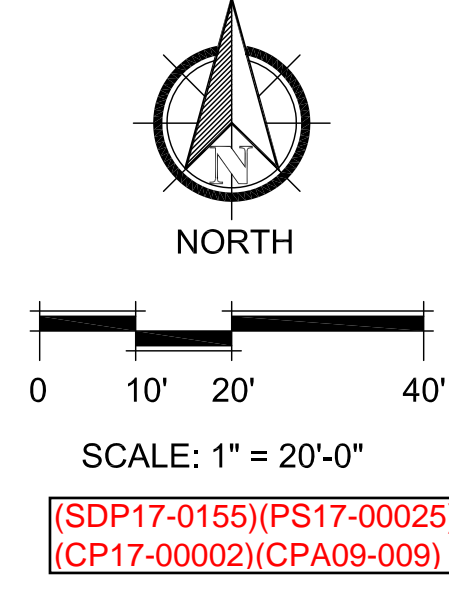
CONSTRUCTION DOCUMENTS
HARDSCAPE PLAN

Rev:	Date:	Description:	By:
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Drawn By: RR Designed By: MM
Approved By: MM Project No: 19027
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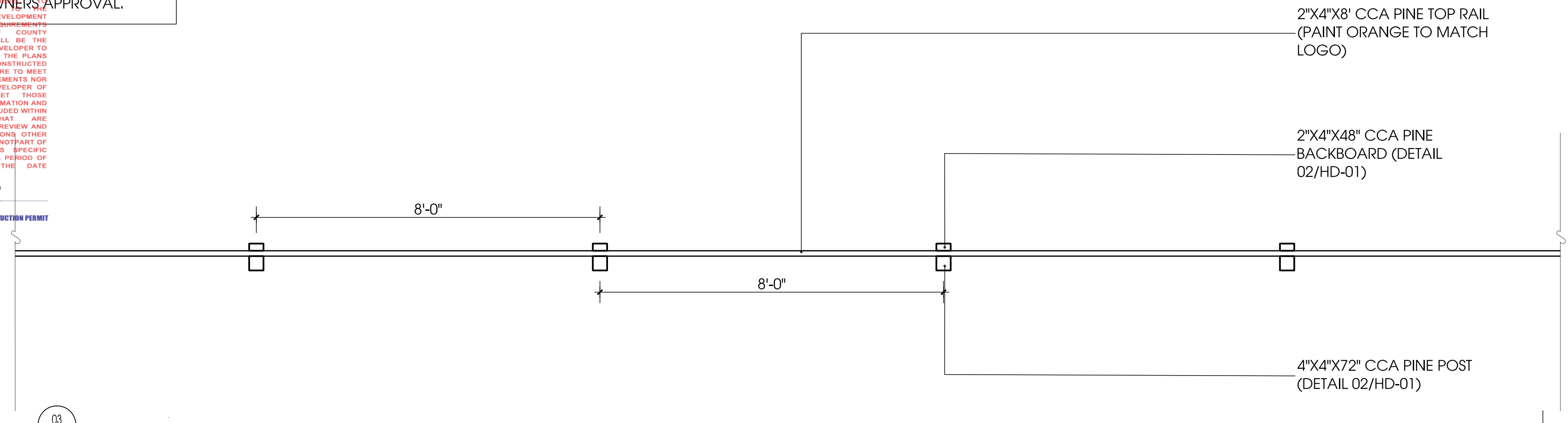
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Community Development

CONTRACTOR TO SUBMIT SHOP DRAWINGS OF THE FENCE AND LOGOS FOR OWNERS APPROVAL.

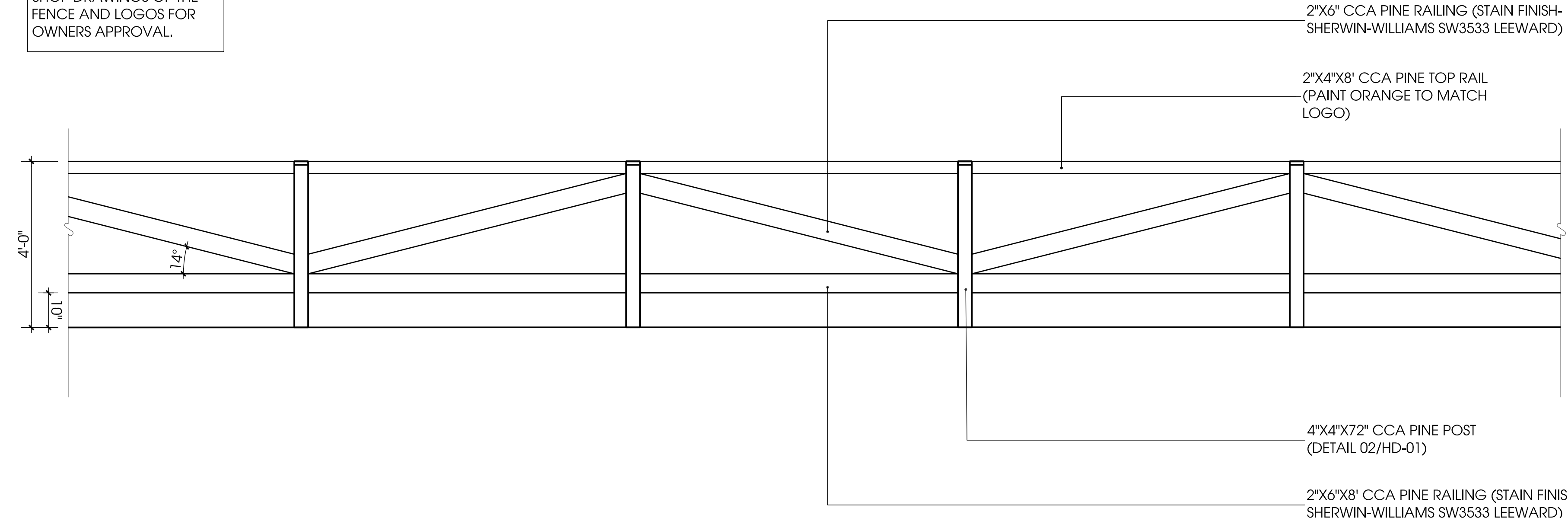
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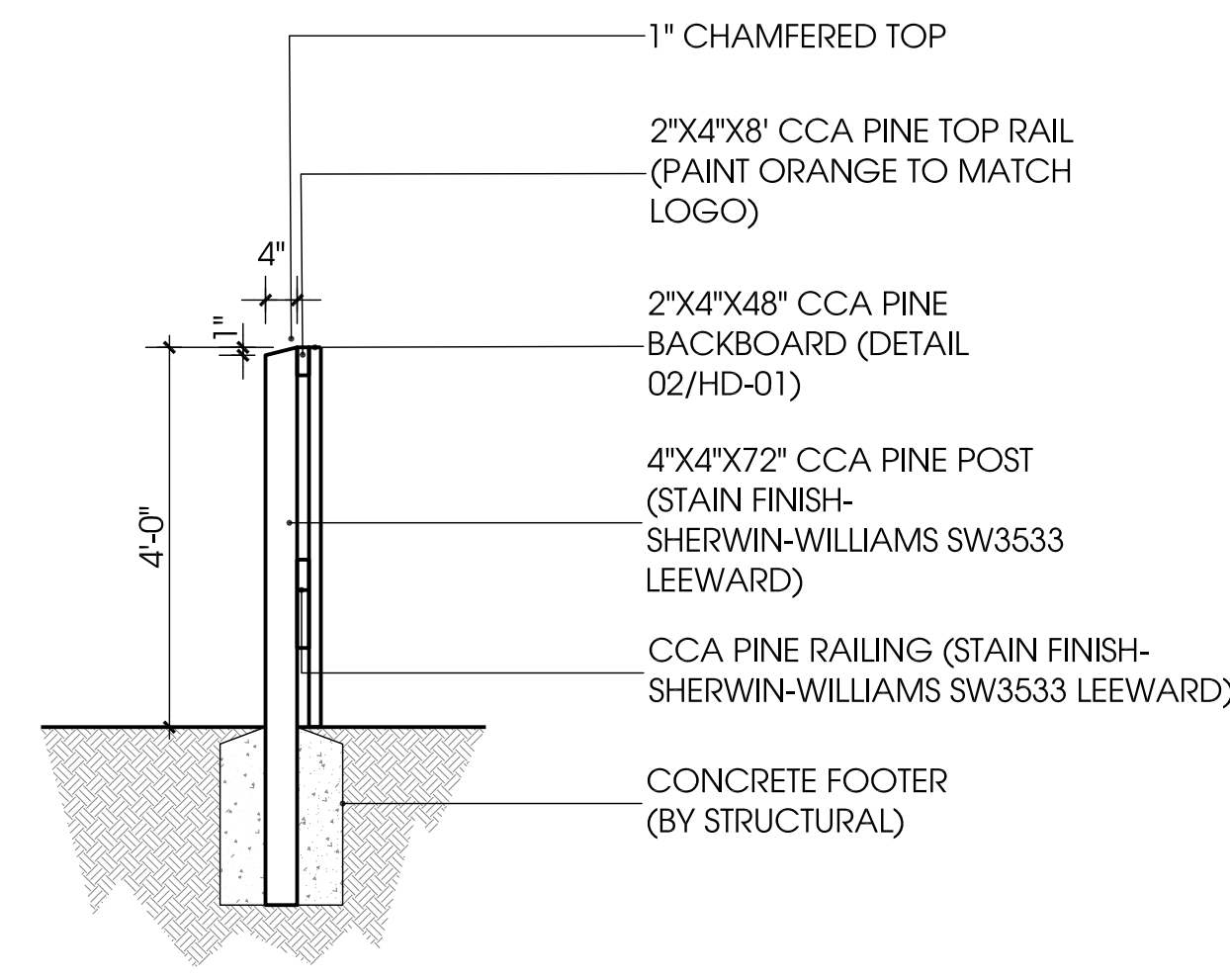
01 POST AND RAIL FENCE
PLAN SCALE: 1/2" = 1'-0"

CONTRACTOR TO SUBMIT SHOP DRAWINGS OF THE FENCE AND LOGOS FOR OWNERS APPROVAL.



03 POST AND RAIL FENCE
ELEVATION SCALE: 1/2" = 1'-0"

CONTRACTOR TO SUBMIT SHOP DRAWINGS OF THE FENCE AND LOGOS FOR OWNERS APPROVAL.

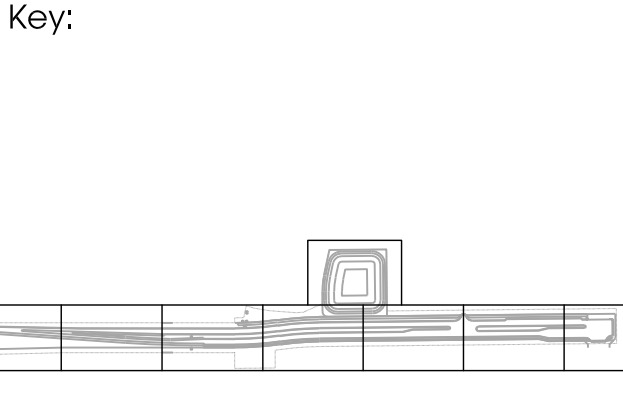


02 POST AND RAIL FENCE (POST)
SECTION SCALE: 1/2" = 1'-0"

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Date: 11/22/2019 Scale: SEE PLAN
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Approved By: MM Project No: 19027
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PRINT DATE: 10-Jan-20
DRAWING SIZE: 24" X 36"

LANDSCAPE INSTALLATION NOTES :

THIS APPROVAL IS SUBJECT TO THE OSCEOLA COUNTY LAND DEVELOPMENT CODE AND ANY SPECIAL REQUIREMENTS OF THE BOARD OF COUNTY COMMISSIONERS. THE RESPONSIBILITY OF THE DEVELOPER IS TO CORRECT ANY DEFECTS IN THE PLAN OR THE FACILITY AS CONSTRUCTED WHICH DOES NOT MEET THE APPLICABLE CODE REQUIREMENTS NOR DOES IT HAVE THE DEVELOPER OR RESPONSIBILITY TO MEET THE REQUIREMENTS. ALL INFORMATION AND DETAILS THAT MAY BE INCLUDED WITH THESE DRAWINGS THAT ARE CONSIDERED UNDER THE PREVIEW AND APPROVAL OF JURISDICTION OF THE BOARD OF COUNTY COMMISSIONERS IS NOT PART OF THIS APPROVAL. THIS SPECIAL APPROVAL IS VALID FOR A PERIOD OF THREE YEARS FROM THE DATE STAMPED.

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- CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH EXISTING SITE CONDITIONS PRIOR TO INITIATING PLANTING. ALL EXISTING SITE FURNISHINGS, PAVING, LANDSCAPE AND OTHER ELEMENTS TO REMAIN SHALL BE PROTECTED FROM ANY DAMAGE UNLESS OTHERWISE NOTED.
- UNLESS OTHERWISE NOTED, THE LIMITS OF CONSTRUCTION ARE THE CLEARING LIMITS NOTED ON THE DRAWINGS. (REFER TO CIVIL ENGINEERING DRAWINGS).
- REPORT ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DRAWINGS AND FIELD CONDITIONS TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.
- LANDSCAPE CONTRACTOR SHALL COORDINATE ALL WORK WITH RELATED CONTRACTORS AND WITH THE GENERAL CONSTRUCTION OF THE PROJECT IN ORDER NOT TO IMPEDE THE PROGRESS OF THE WORK OF OTHERS OR THE CONTRACTOR'S OWN WORK.
- CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE EXISTING GROUND COVER FOR ALL PLANTING BEDS AS SPECIFIED PRIOR TO PLANTING INSTALLATION. CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE ALL PORTIONS OF EXISTING LAWN AREAS DAMAGED WHILE COMPLETING PLANTING INSTALLATION WITH THE SAME GRASS SPECIES TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL BEAR ALL COSTS OF TESTING OF SOILS, AMENDMENTS, ETC. ASSOCIATED WITH THE WORK AND INCLUDED IN THE SPECIFICATIONS PRIOR TO COMMENCEMENT OF THE LANDSCAPE PLANTING WORK. THE CONTRACTOR SHALL PROVIDE COMPLETE SOIL TESTS FOR AT LEAST TWO ON-SITE AREAS ONE OF WHICH PLANTING AREA THAT HAS BEEN IMPACTED BY CONSTRUCTION ACTIVITIES.
- ALL PLANT MATERIAL SHALL BE IN FULL AND STRICT ACCORDANCE WITH THE FLORIDA GRADES AND STANDARDS FOR NURSERY PLANTS AS PUBLISHED BY THE STATE OF FLORIDA DEPARTMENT OF AGRICULTURE. ALL PLANT MATERIAL SHALL MEET FLORIDA #1 OR BETTER.
- ALL TREES SHALL HAVE SIX FEET (6') CLEAR TRUNK UNLESS OTHERWISE SPECIFIED.
- ALL CONTAINER SIZES NOTED ON PLANT LIST ARE MINIMUM. INCREASE SIZE IF NECESSARY TO CONFORM TO PLANT SIZE AND SPECIFICATIONS.
- ALL TREE CALIPER SIZES NOTED ON PLANT LIST ARE MINIMUM. INCREASE SIZE IF NECESSARY TO CONFORM TO PLANT SIZE AND SPECIFICATIONS.
- ANY TREES WITH A TRUNK FORMED "V" SHAPE CROTCH WILL BE REJECTED.
- EROSION CONTROL FABRIC SHALL BE INSTALLED IN ALL SHRUB AND GROUND COVER PLANTING AREAS AS PER SPECIFICATIONS FOR ALL SLOPES THAT EXCEED 3:1. SEE GRADING PLANS FOR LOCATION OF SLOPES GREATER THAN 3:1 AND ADJACENT TO ANY WETLAND AREAS.

FILE: Z:\4 Studio\Projects\2019\19027-Cyrils Rd\12 Autocad\3 Design Development - Copy\1\Sheets\19027-03-TREE PLAN.dwg
PRINT DATE: 10-Jan-20
DRAWING SIZE: 24" X 36"

- TYPICALLY, SHRUB AND GROUND COVER PLANTINGS ARE SHOWN AS MASS PLANTING BEDS. PLANTS SHALL BE PLACED ON A TRIANGULAR SPACING CONFIGURATION (STAGGERED SPACING). PLANT CENTER TO CENTER DIMENSIONS (O.C.) ARE LISTED UNDER "COMMENTS" ON THE DIMENSIONS (O.C.) ARE LISTED UNDER "COMMENTS" ON THE PLANT LIST.
- LANDSCAPE CONTRACTOR SHALL FIELD STAKE THE LOCATION OF ALL PLANT MATERIAL PRIOR TO INITIATING INSTALLATION FOR THE REVIEW AND APPROVAL OF THE OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT.
- LANDSCAPE CONTRACTOR SHALL FIELD ADJUST LOCATION OF PLANT MATERIAL AS NECESSARY TO AVOID DAMAGE TO ALL EXISTING UNDERGROUND UTILITIES AND/OR EXISTING ABOVE GROUND ELEMENTS. ALL CHANGES REQUIRED SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE AND SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE AND THE LANDSCAPE ARCHITECT.
- CONTRACTOR SHALL MULCH ALL NEW PLANT MATERIAL THROUGHOUT AND COMPLETELY TO DEPTH SPECIFIED.
- ANY SUBSTITUTIONS IN SIZE AND/OR PLANT MATERIAL MUST BE APPROVED BY LANDSCAPE ARCHITECT AND/OR OWNER'S REPRESENTATIVE BEFORE PLANTING CAN BEGIN.
- CONTRACTOR SHALL REFER TO THE LANDSCAPE PLANTING DETAILS, PLANT LIST, GENERAL NOTES AND THE PROJECT MANUAL AND SPECIFICATIONS FOR FURTHER AND COMPLETE LANDSCAPE PLANTING INSTRUCTIONS.
- LANDSCAPE CONTRACTOR SHALL COORDINATE ALL PLANTING WORK WITH IRRIGATION WORK. LANDSCAPE PLANTING WORK WITH IRRIGATION WORK. LANDSCAPE WATERING AS REQUIRED BY OWNER'S REPRESENTATIVE TO SUPPLEMENT IRRIGATION WATERING AND RAINFALL. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR HAND WATERING IN ALL PLANTING AREAS, REGARDLESS OF THE STATUS OF EXISTING OR PROPOSED IRRIGATION.
- LANDSCAPE CONTRACTOR SHALL CLEAN THE WORK AREAS AT THE END OF EACH WORKING DAY. RUBBISH AND DEBRIS SHALL BE COLLECTED AND DEPOSITED OFF-SITE DAILY. ALL MATERIALS, PRODUCTS AND EQUIPMENT SHALL BE STORED IN AN ORGANIZED FASHION AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
- LANDSCAPE CONTRACTOR SHALL RE-GRADE ALL AREAS DISTURBED BY PLANT REMOVAL, RELOCATION AND/OR INSTALLATION WORK. LANDSCAPE CONTRACTOR SHALL REPLACE (BY EQUAL SIZE AND QUALITY) ANY AND ALL EXISTING PLANT MATERIAL DISTURBED OR DAMAGED BY PLANT REMOVAL, RELOCATION AND/OR INSTALLATION.
- CONTRACTORS SHALL COMPLY WITH ALL NPDES REQUIREMENTS.
- LANDSCAPE CONTRACTOR SHALL ENSURE THAT ALL PLANTING AREAS IMPACTED BY CONSTRUCTION ACTIVITIES ARE MADE SUITABLE FOR PLANTING AREAS. THIS INCLUDES BUT IS NOT LIMITED TO COMPACTED SOILS AND FILL MATERIALS, POORLY DRAINED SOILS AND SOILS WITH DEBRIS. OWNER'S REP AND LANDSCAPE ARCHITECT MUST BE CONSULTED WITH WHEN POOR PLANTING CONDITIONS ARE PRESENT PRIOR TO COMMENCEMENT OF WORK.
- LANDSCAPE CONTRACTOR SHALL REMOVE OR SPRAY ANY INVASIVE PLANT MATERIALS FOUND ON SITE.
- LANDSCAPE CONTRACTOR SHALL PROVIDE AN ALLOWANCE FOR TREE PRUNING. AND TREE LIMBS THOUGH TO ENDANGER LIFE OR PROPERTY SHALL BE PRUNED.

KEY	QTY	BOTANICAL NAME	COMMON NAME	SPACING	SPECIFICATION
TREES					
QVT	6	Quercus virginiana	Transplanted Live Oak	See Plan	SEE NOTE BELOW
QV4	19	Quercus virginiana	Live Oak	See Plan	4" CAL. 14'-16' HT
QV3	24	Quercus virginiana	Live Oak	See Plan	3" CAL. 10'-12' HT
AR	88	Acer rubrum	Red Maple	See Plan	2.5" CAL. 10'-12' HT
PE4	115	Pinus elliotii	Slash Pine	See Plan	4" CAL. 14'-16' HT
PE2	283	Pinus elliotii	Slash Pine	See Plan	2.5" CAL. 10'-12' HT
TD	89	Taxodium distichum	Bald Cypress	See Plan	2" CAL. 10'-12' HT
SHRUBS					
CA	568	Calliocalpa americana	American Beautyberry	30" O.C.	3 GAL. 16"-18" HT
IF	323	Illicium floridanum	Florida Anise	30" O.C.	3 GAL. 16"-18" HT
IV	90	Ilex vomitoria	Yaupon Holly	30" O.C.	3 GAL. 24"-30" HT
LD	181	Lantana depressa	Pineland trailing lantana	30" O.C.	3 GAL. 16"-18" HT
MC	850	Muhlenbergia capillaris	Muhly Grass	30" O.C.	3 GAL. 18"-24" HT
SB	458	Sparfina bakeri	Sand Cordgrass	30" O.C.	3 GAL. 18"-24" HT
SR7	1	Serenoa repens	Green Saw Palmetto	As Shown	7 GAL. 18"-20" HT
SR3	2	Serenoa repens	Green Saw Palmetto	As Shown	3 GAL. 12"-14" HT
SRS7	1	Serenoa repens	Silver Saw Palmetto	As Shown	7 GAL. 18"-20" HT
SRS3	2	Serenoa repens	Silver Saw Palmetto	As Shown	3 GAL. 12"-14" HT
TDA	803	Tripsacum dactyloides	Fakahatchee Grass	36" O.C.	3 GAL. 24"-30" HT
VO	2850	Viburnum odoratissimum	Sweet Viburnum	36" O.C.	3 GAL. 24"-30" HT
VOM	843	Viburnum Obovatum, 'Mrs. Schiller's Delight'	Mrs Schiller's Delight Viburnum	30" O.C.	3 GAL. 16"-18" HT
GROUND COVER					
BF	505	Bulbine frutescens	Stalked Bulbine	18" O.C.	1 GAL. FULL POT
ZP	474	Zamia pumila	Cootie	24" O.C.	3 GAL. 12"-14" HT
PM	1431	Perennial Flower Mix		18" O.C.	1 GAL. FULL POT
		Helianthus debilis 25%	Beach Sunflower		
		Dianthus caryophyllus 25%	Dianthus		
		Coreopsis lanceolata 25%	Coreopsis		
		Rudbeckia hirta 25%	Black-eyed Susan		
SOD AND SEED					
SOD		Paspalum notatum, 'Argentine'	Argentine Bahia	0" No Gap in Joints	SOD/ NO WEEDS
WFM		Florida Upland Meadow Mix	Wildflower Mix	1LB PER 3,000SF	SEED

TRANSPLANTED TREE NOTES:
TREE TRANSPLANT PLANTING AND IRRIGATION PLANS PROVIDED BY OTHERS.

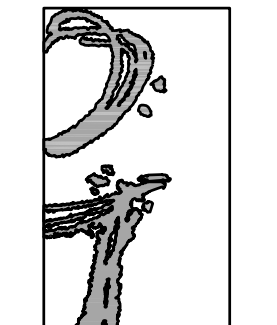
OSCEOLA COUNTY LDC 4.8.4.D.6 BOULIVARD OR AVENUE STREET PLANTING ON CYRILS DRIVE

REQUIRED:
3 CANOPY TREES PER 100 L.F. OF PROPERTY FRONTAGE PLANTED WITHIN THE PARKWAY AND CONTINUOUS GROUND COVER.

4,399 L.F. OF FRONTAGE / 100 = 44
44 X 3 = 132 CANOPY TREES REQUIRED

PROVIDED:
600 CANOPY TREES AND CONTINUOUS GROUND COVER.

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Owner:



CYRILS DRIVE
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CONSTRUCTION DOCUMENTS
LANDSCAPE NOTES

Rev:	Date:	Description:	By:
△	01/22/20	COUNTY	RR
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△			
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Date: 11/22/2019 Scale: SEE PLAN
Drawn By: RR Designed By: MM
Approved By: MM Project No: 19027
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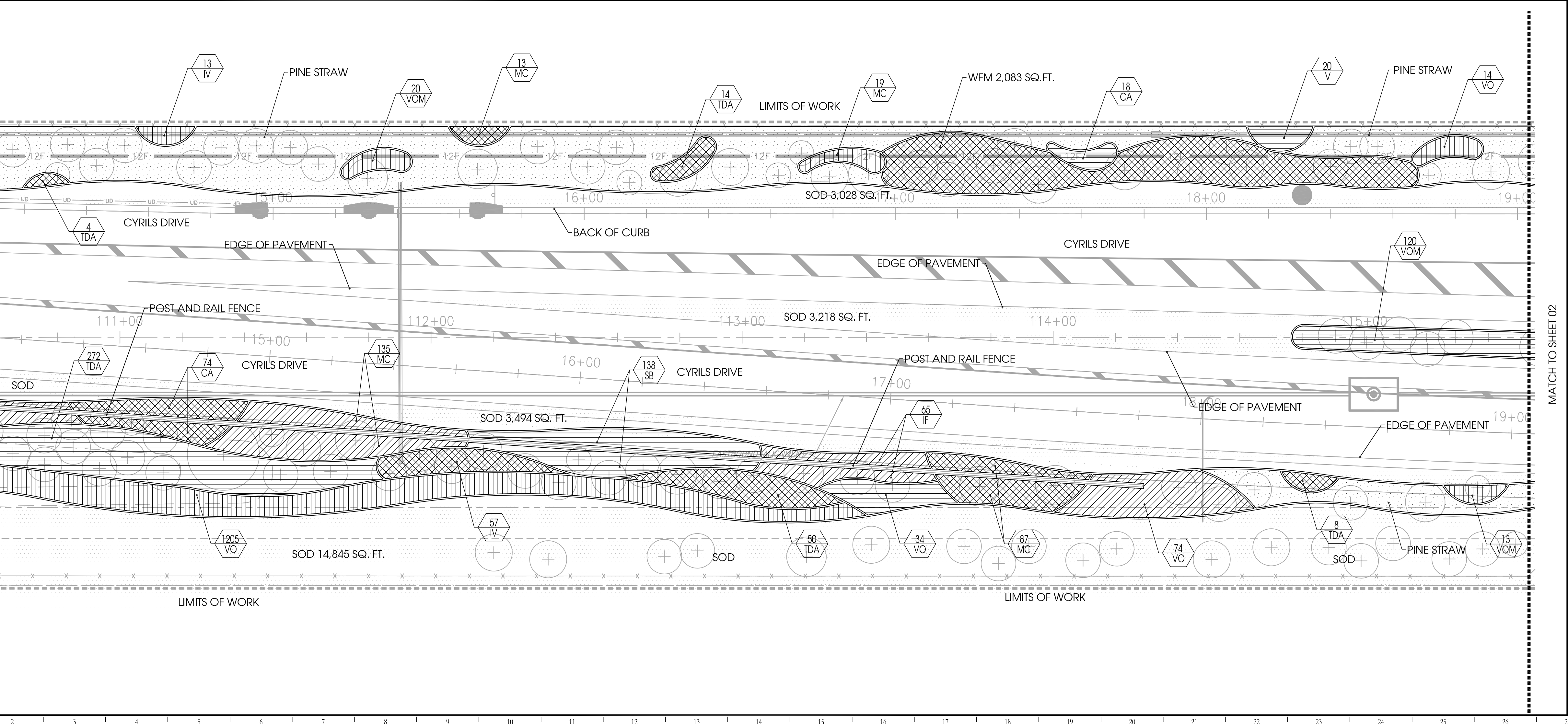
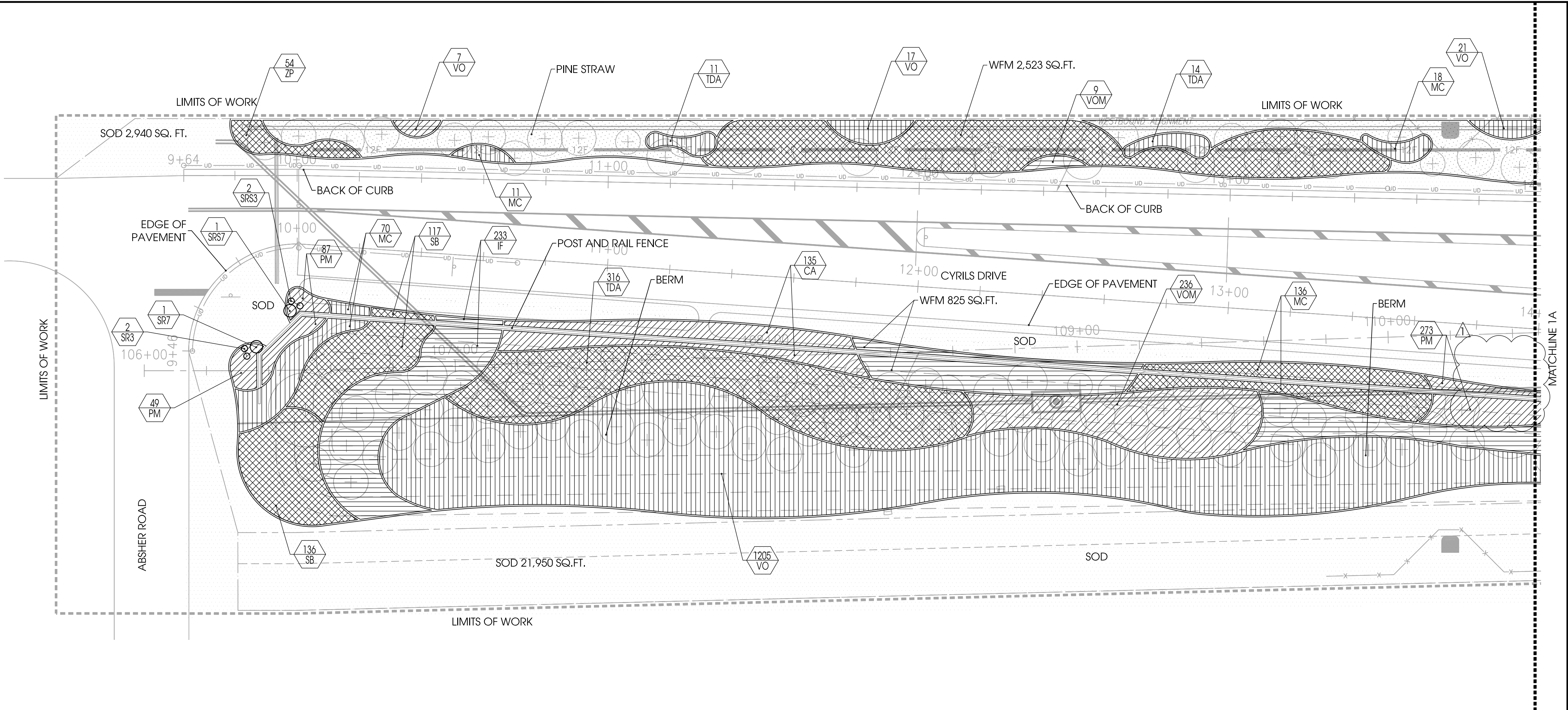
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SDP17-0155
02/19/2020
Osceola County
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LEGEND

SHRUB	COMMON NAME
CA	American Beautyberry
IF	Florida Anise
IV	Yaupon Holly
LD	Pineland trailing lantana
MC	Muhly Grass
SB	Sand Cordgrass
SR7	Green Saw Palmetto
SR3	Green Saw Palmetto
SRS7	Silver Saw Palmetto
SRS3	Silver Saw Palmetto
TDA	Fakahatchee Grass
VO	Sweet Viburnum
VOM	Mrs Schiller's Delight Viburnum

GROUND COVER	COMMON NAME
BF	Stalked Bulbine
ZP	Cootie
PM	Perennial Flower Mix
	Beach Sunflower 25%
	Dianthus 25%
	Coreopsis 25%
	Black-eyed Susan 25%

SOD AND SEED	COMMON NAME
SOD	Argentine Bahia
WFM	Wildflower Mix

Designed By:

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Key:

Owner:

CYRILS DRIVE
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CONSTRUCTION DOCUMENTS
SHRUB PLAN

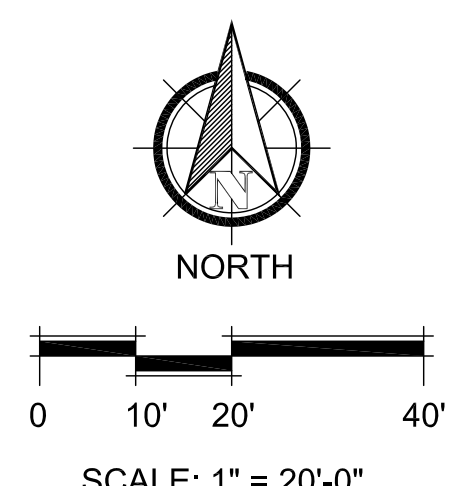
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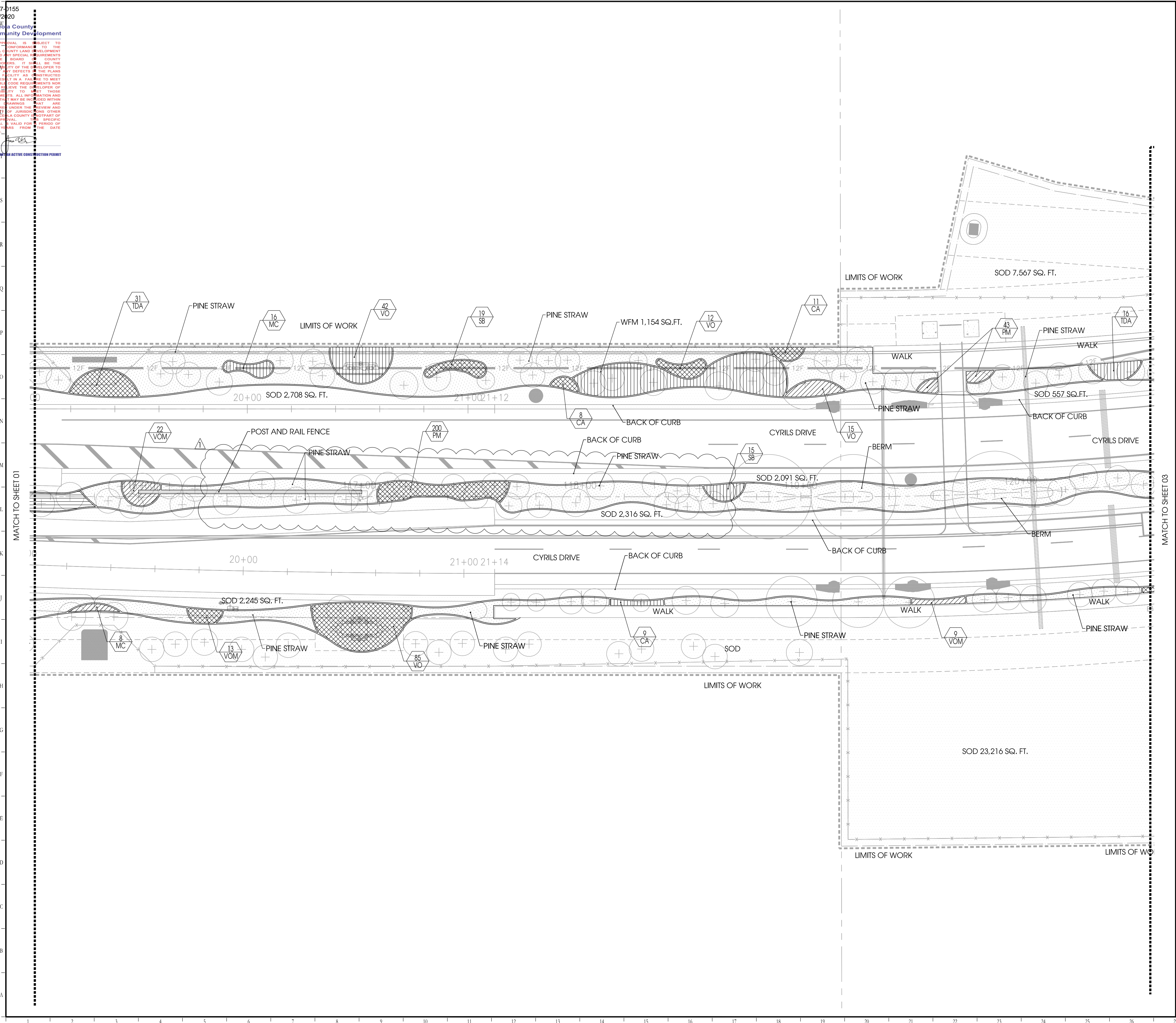


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02/19/2020
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LEGEND	
SHRUB	
KEY	COMMON NAME
CA	American Beautyberry
IF	Florida Anise
IV	Yaupon Holly
LD	Pineland trailing lantana
MC	Muhly Grass
SB	Sand Cordgrass
SR7	Green Saw Palmetto
SR3	Green Saw Palmetto
SRS7	Silver Saw Palmetto
SRS3	Silver Saw Palmetto
TDA	Fakahatchee Grass
VO	Sweet Viburnum
VOM	Mrs Schiller's Delight Viburnum
GROUND COVER	
KEY	COMMON NAME
BF	Stalked Bulbine
ZP	Cootie
PM	Perennial Flower Mix
	Beach Sunflower 25%
	Dianthus 25%
	Coreopsis 25%
	Blacked Eyed Susan 25%
SOD AND SEED	
KEY	COMMON NAME
SOD	Argentine Bahia
WFM	Wildflower Mix

Designed By:

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Owner:

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CONSTRUCTION DOCUMENTS
SHRUB PLAN

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Approved By: MM Project No: 19027
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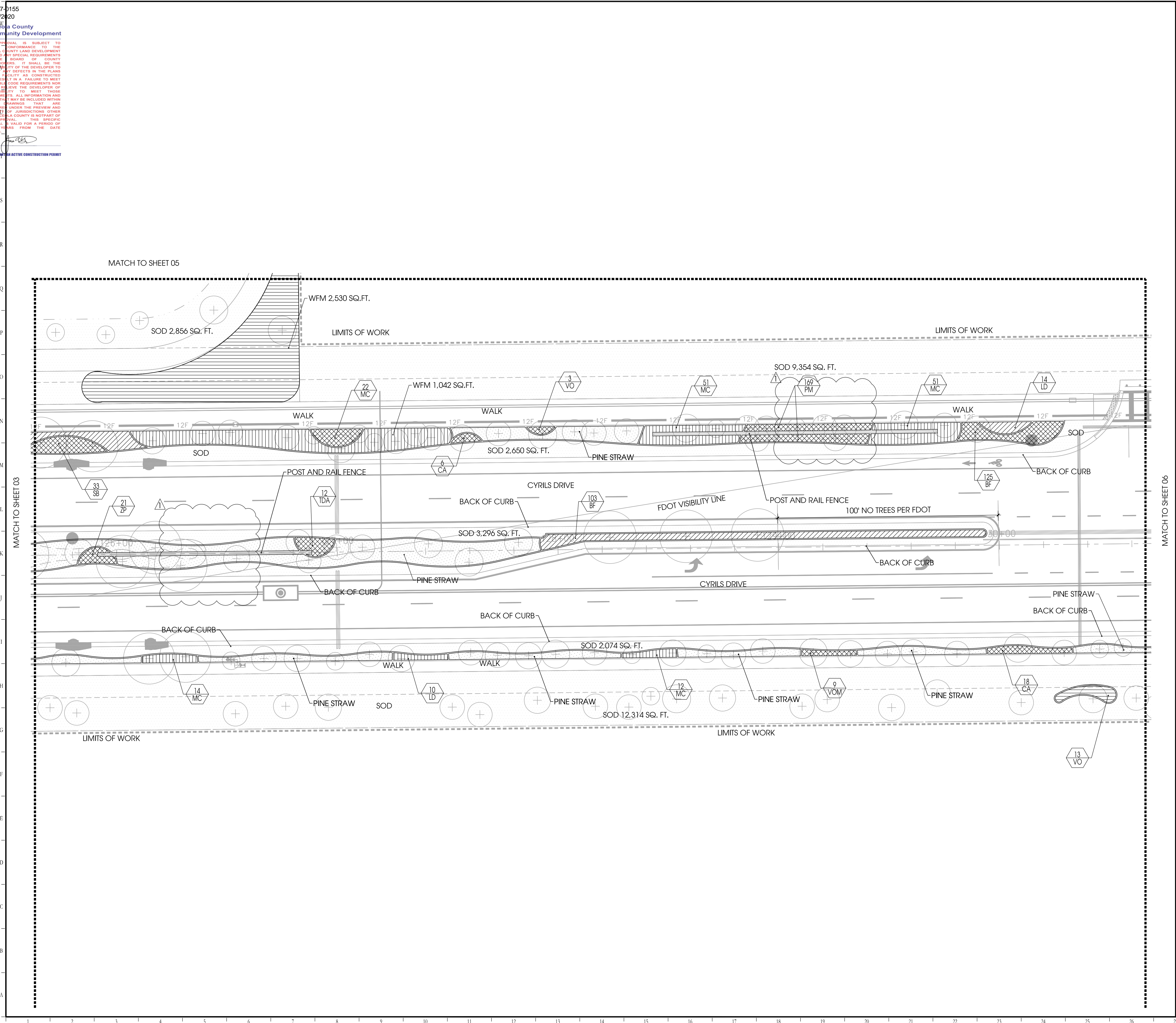
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02/19/2020
Osceola County
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LEGEND

SHRUB	
KEY	COMMON NAME
CA	American Beautyberry
IF	Florida Anise
IV	Yaupon Holly
LD	Pineland trailing lantana
MC	Muhly Grass
SB	Sand Cordgrass
SR7	Green Saw Palmetto
SR3	Green Saw Palmetto
SR57	Silver Saw Palmetto
SR53	Silver Saw Palmetto
TDA	Fakahatchee Grass
VO	Sweet Viburnum
VOM	Mrs Schiller's Delight Viburnum

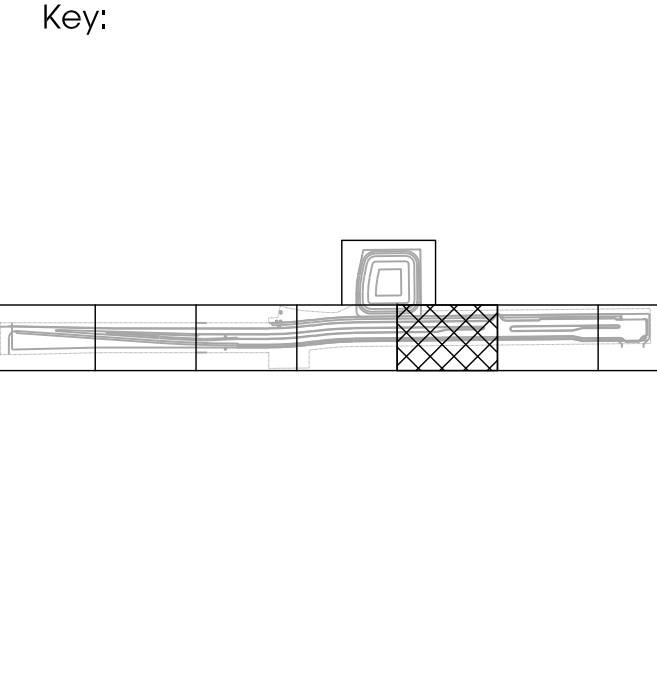
GROUND COVER	
KEY	COMMON NAME
BF	Stalked Bulbine
ZP	Cootie
PM	Perennial Flower Mix
	Beach Sunflower 25%
	Dianthus 25%
	Coreopsis 25%
	Black-eyed Susan 25%

SOD AND SEED	
KEY	COMMON NAME
SOD	Argentine Bahia
WFM	Wildflower Mix

Designed By:

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Owner:

TAVISTOCK DEVELOPMENT COMPANY

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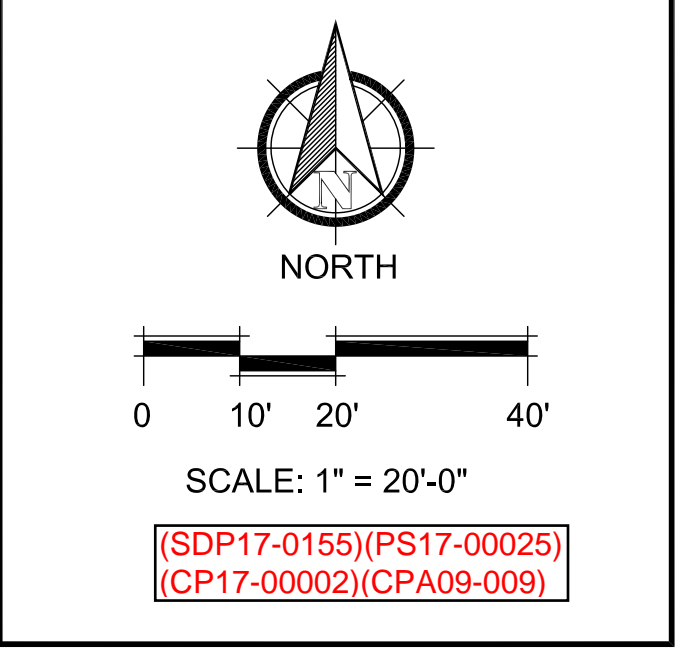
CONSTRUCTION DOCUMENTS
SHRUB PLAN

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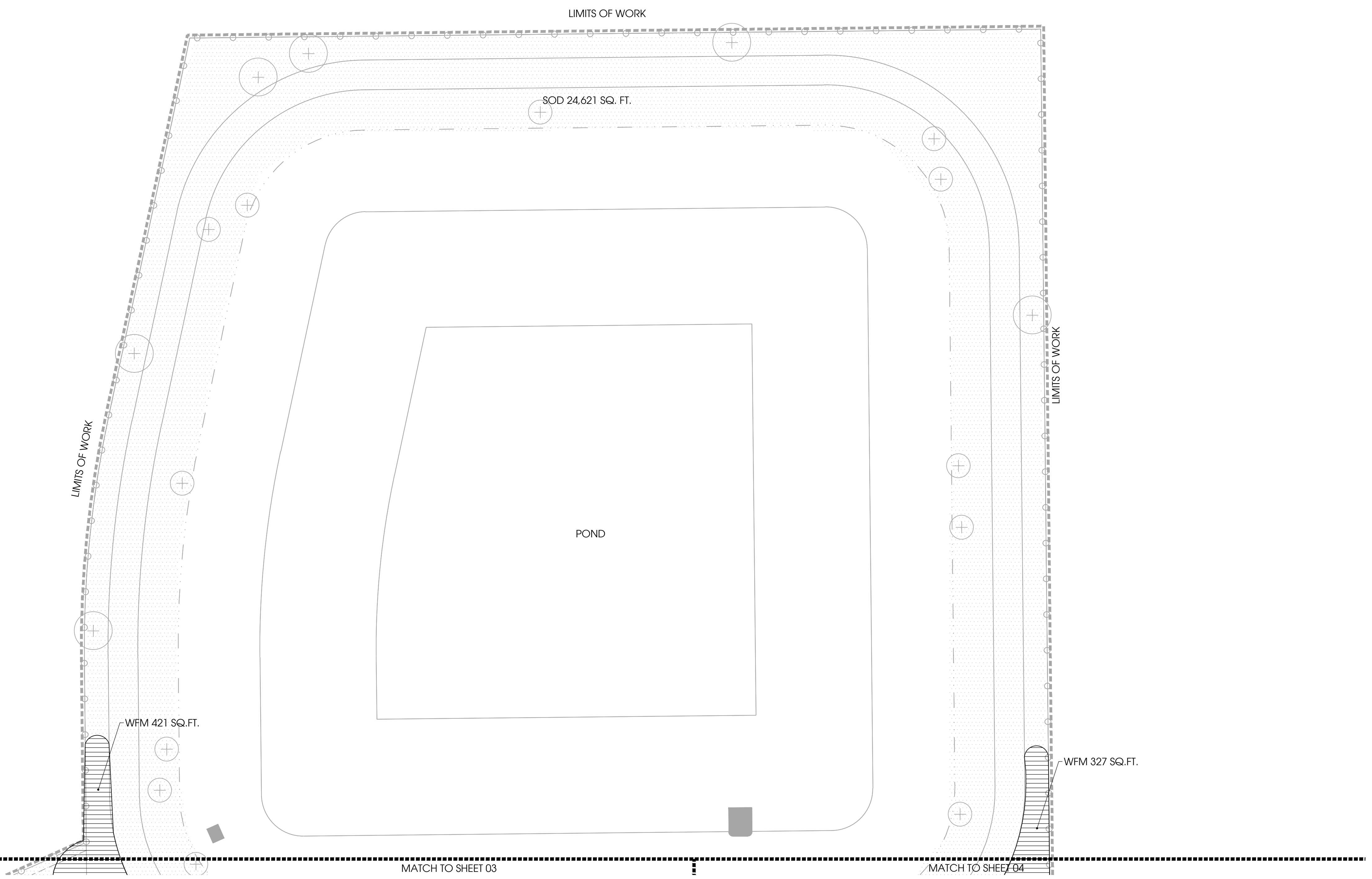
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LEGEND

SHRUB	
KEY	COMMON NAME
CA	American Beautyberry
IF	Florida Anise
IV	Yaupon Holly
LD	Pineland trailing lantana
MC	Muhly Grass
SB	Sand Cordgrass
SR7	Green Saw Palmetto
SR3	Green Saw Palmetto
SRS7	Silver Saw Palmetto
SRS3	Silver Saw Palmetto
TDA	Fakahatchee Grass
VO	Sweet Viburnum
VOM	Mrs Schiller's Delight Viburnum
GROUND COVER	
KEY	COMMON NAME
BF	Stalked Bulbine
ZP	Cootie
PM	Perennial Flower Mix
	Beach Sunflower 25%
	Dianthus 25%
	Coreopsis 25%
	Black-eyed Susan 25%
SOD AND SEED	
KEY	COMMON NAME
SOD	Argentine Bahia
WFM	Wildflower Mix

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Key:

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CONSTRUCTION DOCUMENTS
SHRUB PLAN

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Approved By: MM	Project No: 19027
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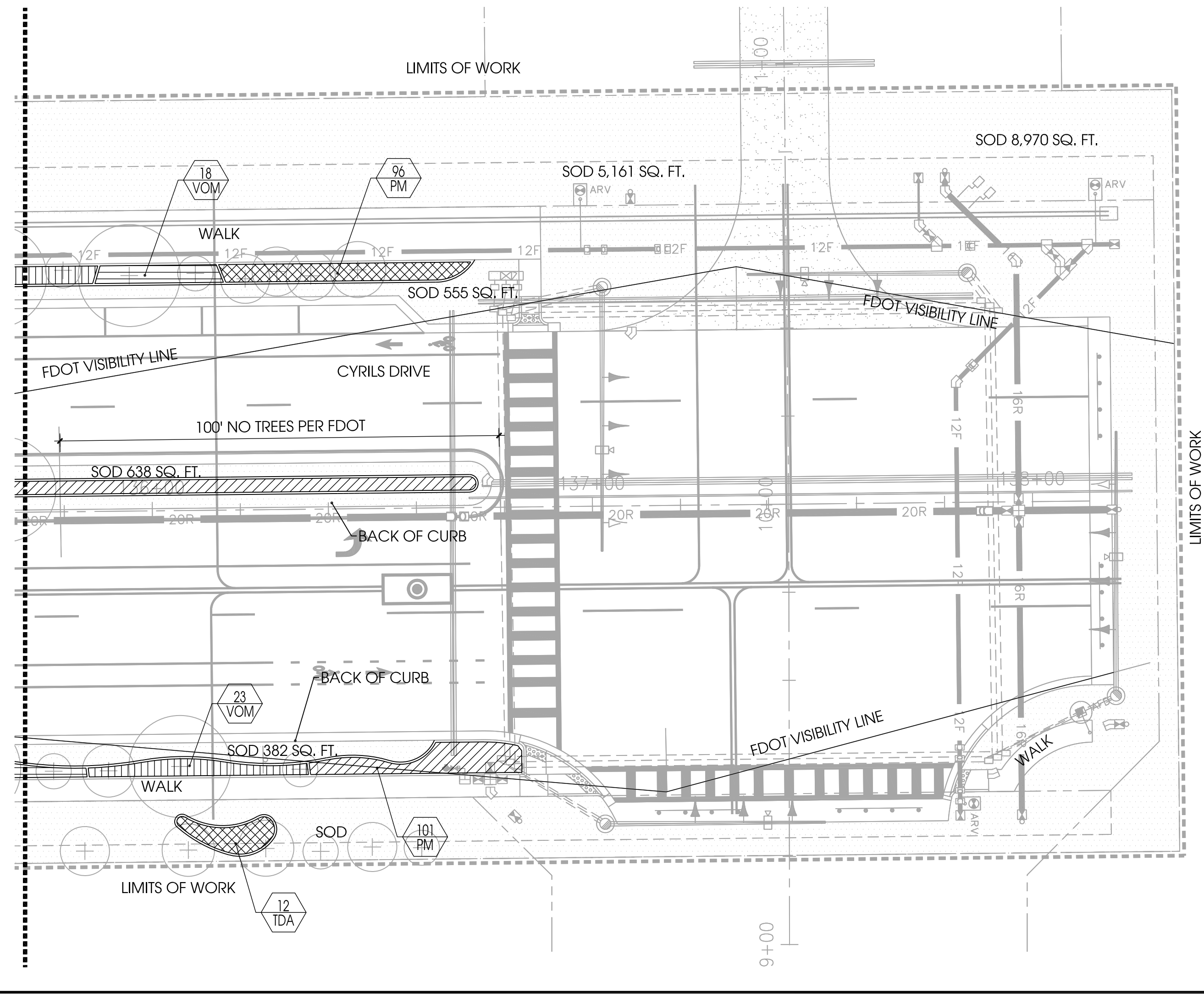
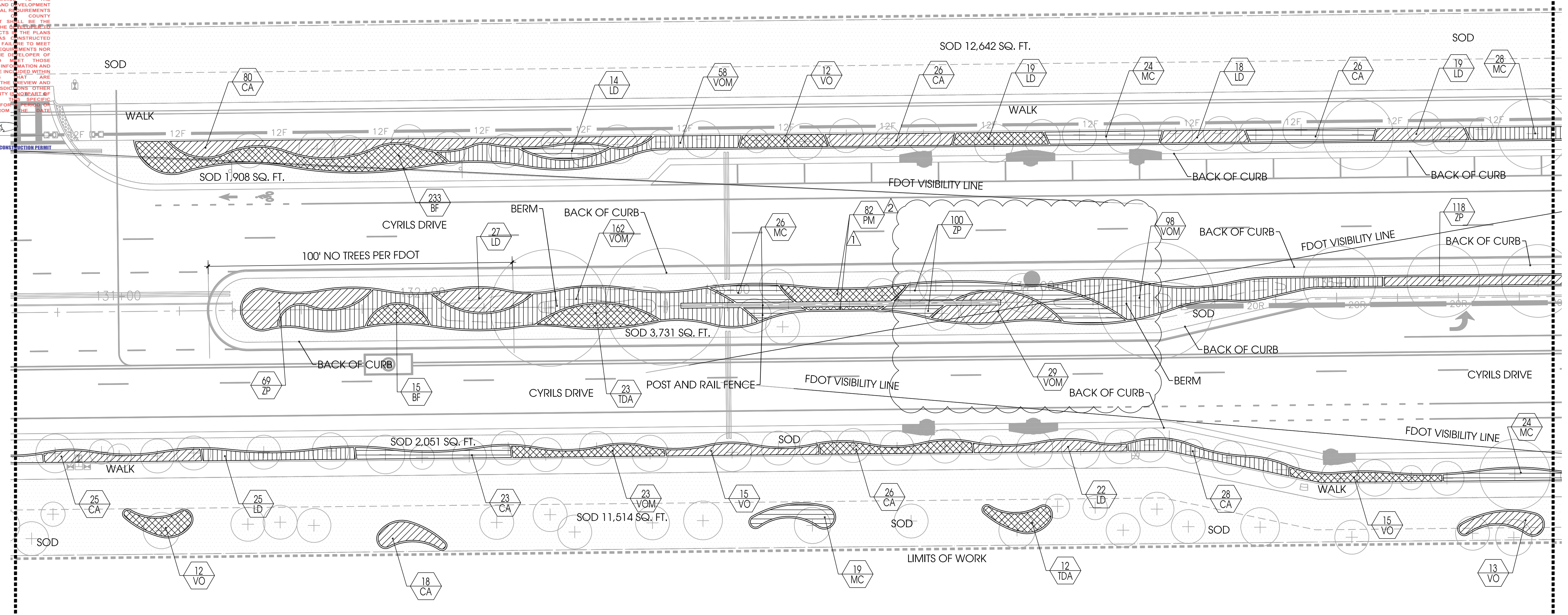
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PRINT DATE: 30-Jan-20
DRAWING SIZE: 24" X 36"

LIMITS OF WORK



LEGEND

SHRUB	COMMON NAME
CA	American Beautyberry
IF	Florida Anise
IV	Yaupon Holly
LD	Pineland trailing lantana
MC	Muhly Grass
SB	Sand Cordgrass
SR7	Green Saw Palmetto
SR3	Green Saw Palmetto
SRS7	Silver Saw Palmetto
SRS3	Silver Saw Palmetto
TDA	Fakahatchee Grass
VO	Sweet Viburnum
VOM	Mrs Schiller's Delight Viburnum

GROUND COVER	COMMON NAME
BF	Stalked Bulbine
ZP	Cootie
PM	Perennial Flower Mix
	Beach Sunflower 25%
	Dianthus 25%
	Coreopsis 25%
	Black-eyed Susan 25%

SOD AND SEED	COMMON NAME
SOD	Argentine Bahia
WFM	Wildflower Mix

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Owner:

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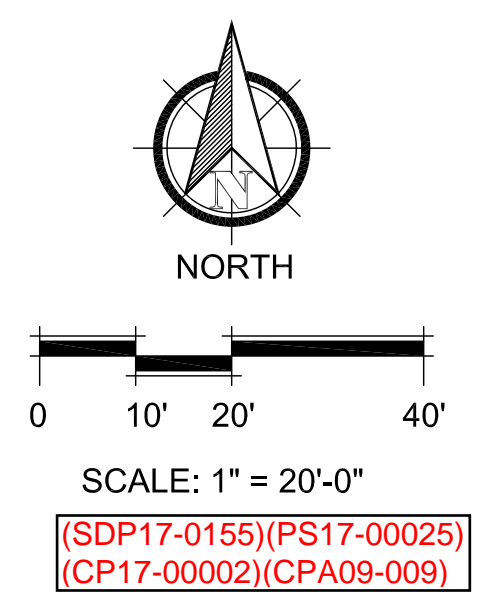
CONSTRUCTION DOCUMENTS
SHRUB PLAN

Rev:	Date:	Description:	By:
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2	01/30/20	COUNTY	RR

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 Approved By: MM Project No: 19027
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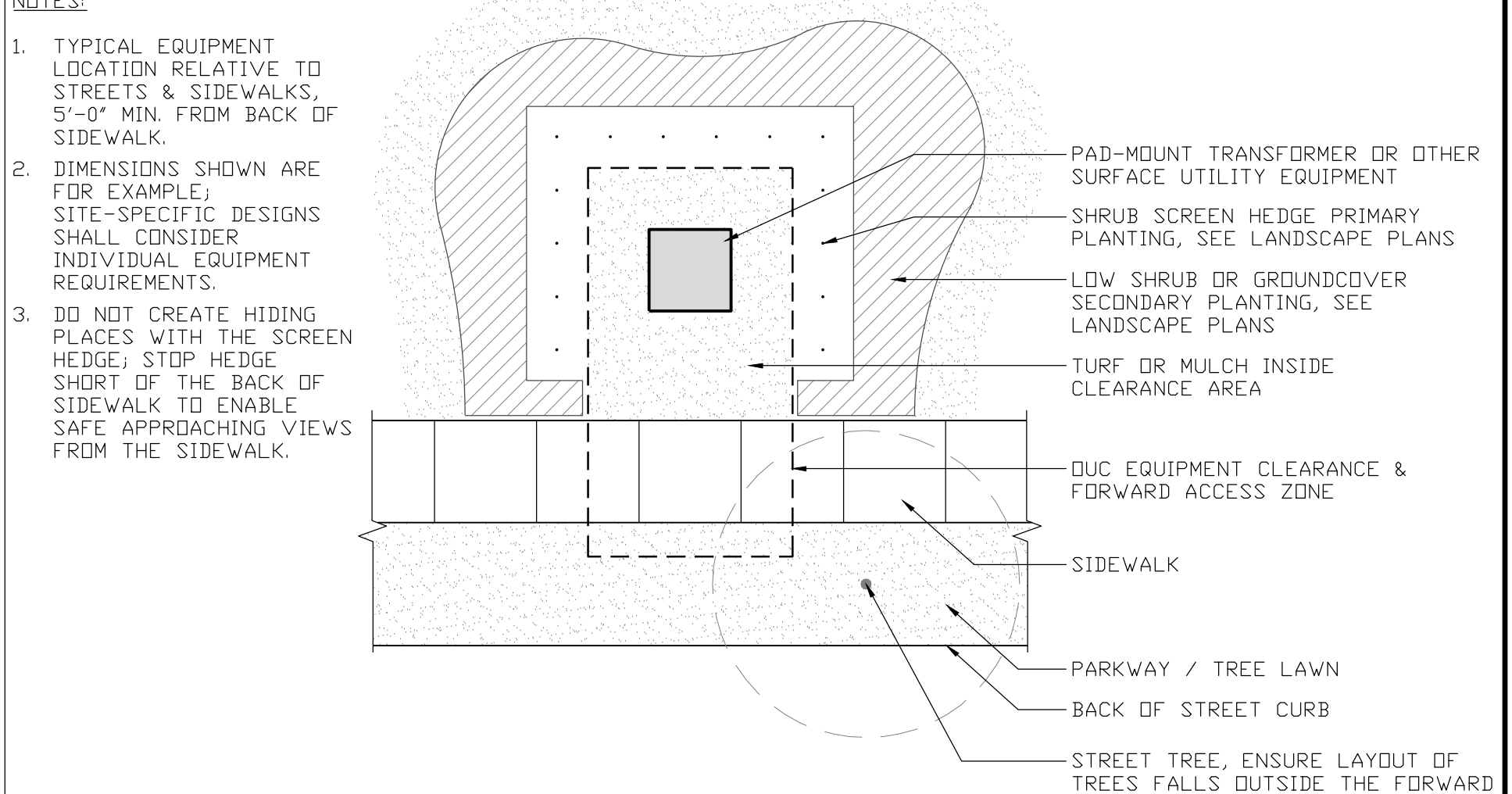
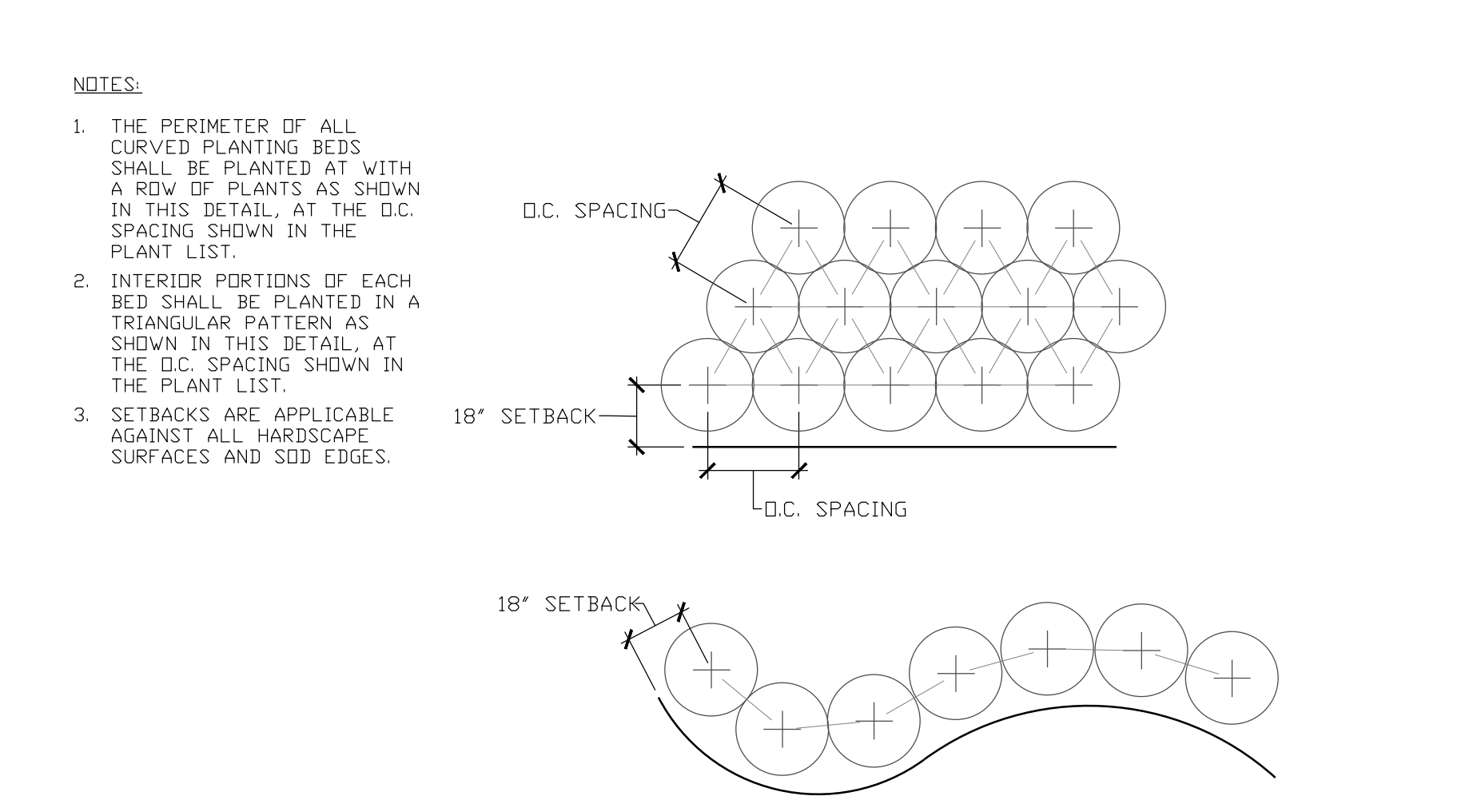
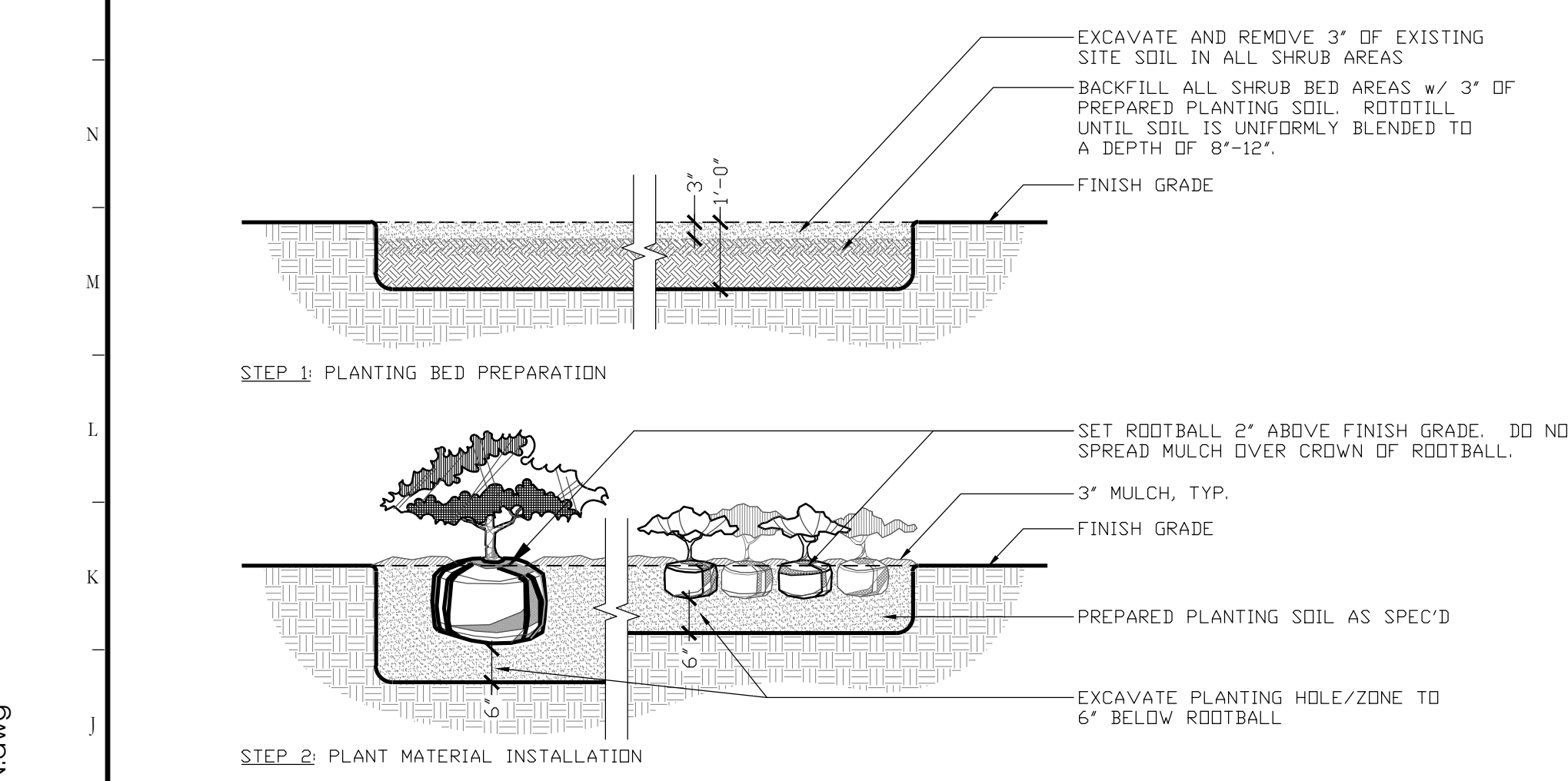
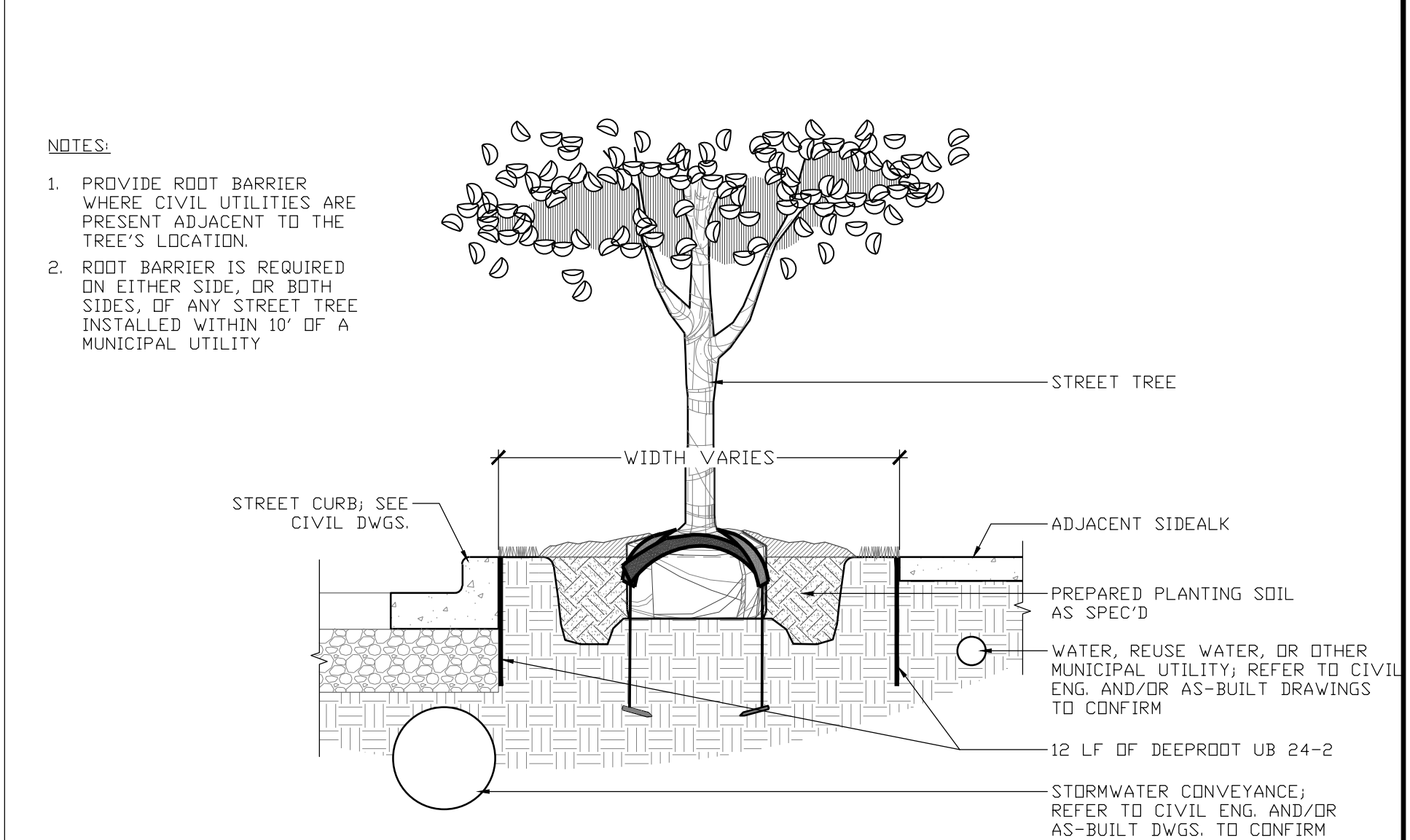
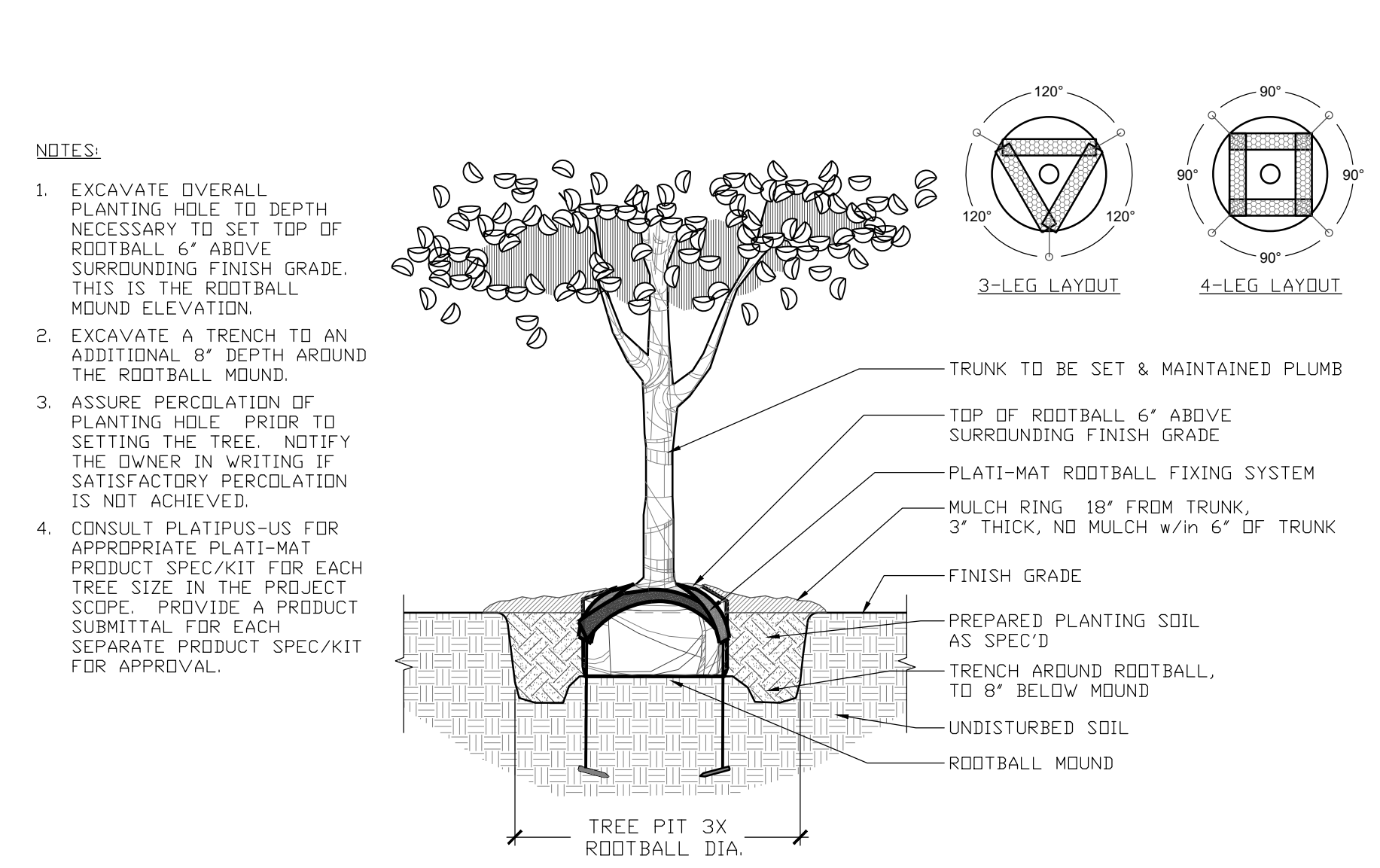
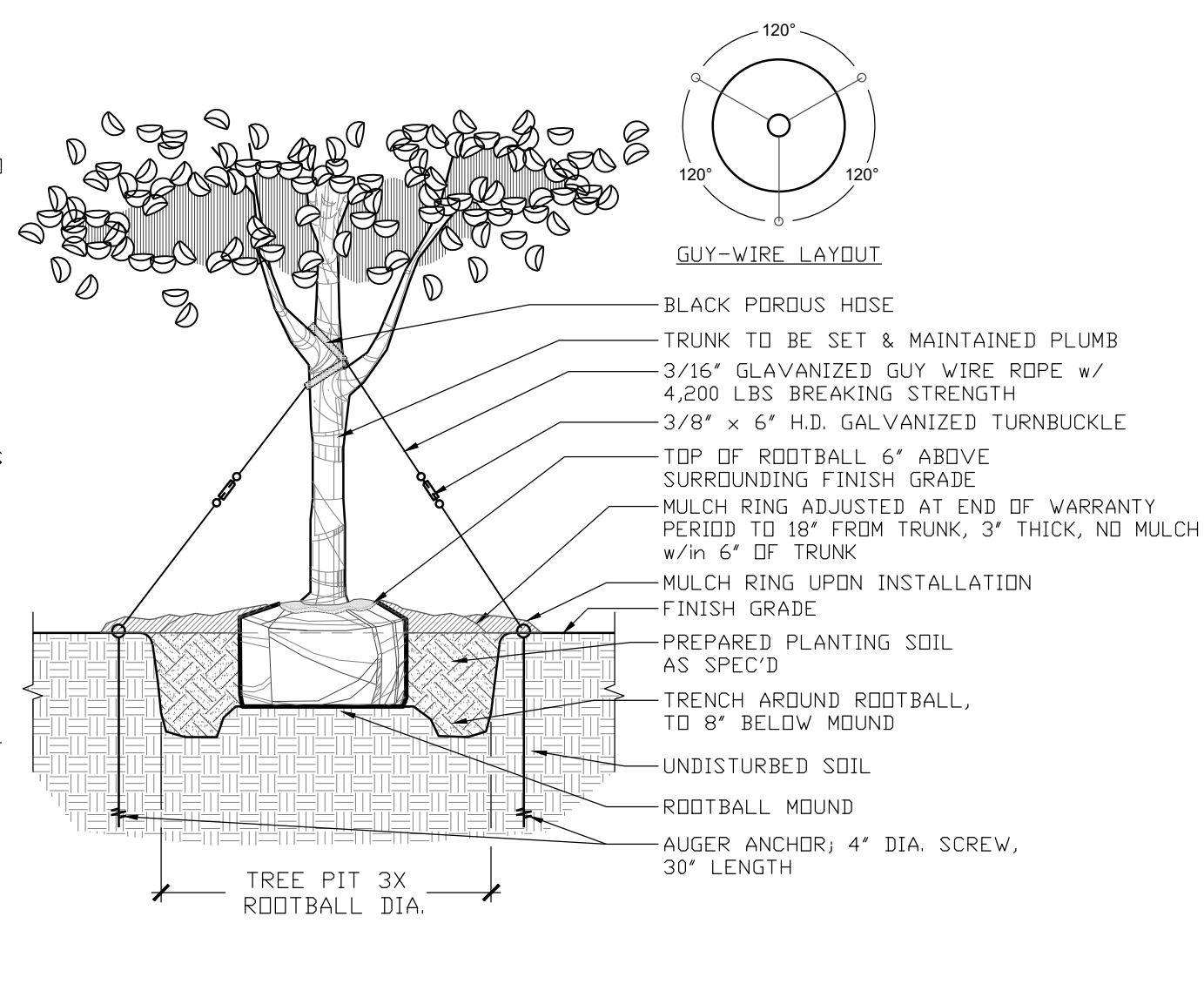
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 (SDP17-0155)(PS17-00025)
 (CP17-00002)(CPA09-009)

THIS APPROVAL IS SUBJECT TO SPECIFIC CONFORMANCE TO THE OSCEOLA COUNTY DEVELOPMENT CODE AND ANY SUBSEQUENT AMENDMENTS OF THE BOARD OF COUNTY COMMUNITY DEVELOPMENT. THE APPLICABLE CODE REQUIRES THAT THE RESPONSIBILITY OF THE CONTRACTOR SHALL BE TO VERIFY THE ACCURACY OF ALL INFORMATION PROVIDED TO THEM BY THE OWNER OR ARCHITECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THIS APPROVAL IS VALID FOR THREE YEARS.



Designed By:

1200 HILLCREST ST., STE 305 ■ ORLANDO, FL ■ 32803
WWW.INNOVATIONS-DESIGN.COM ■ 407-440-3574

Key:

Owner:

CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
LANDSCAPE DETAILS

Rev:	Date:	Description:	By:

Date: 11/22/2019	Scale: SEE PLAN
Drawn By: RRR	Designed By: MM
Approved By: MM	Project No: 19027
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Seal: Digitally signed by Matthew E. McFadden, DN: cn=US, o=Innovations Design Group Inc, ou=A01410D0000, 016E1284EE02000, 0976D, c=Matthew E. McFadden, Date: 2019.12.06 17:10:26 -0500

Sheet Number: LS-07

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PRINT DATE: 22-Nov-19
DRAWING SIZE: 24" X 36"

LANDSCAPE SPECIFICATIONS

THIS APPROVAL IS SUBJECT TO SPECIFIC CONFORMANCE WITH THE OSCEOLA COUNTY LAND DEVELOPMENT CODE AND ANY SPECIAL REQUIREMENTS OF THE BOARD OF COUNTY COMMUNITY DEVELOPMENT. THE RESPONSIBILITY OF THE DEVELOPER OR THE FACILITY AS CONSTRUCTED WHICH MAY BE A FAILURE TO MEET THE APPLICABLE CODE REQUIREMENTS FROM THE DRAWINGS. THE DEVELOPER SHALL BE RESPONSIBLE TO MEET THROUGH THE DETAILS THAT MAY BE INCLUDED WITHIN THE DRAWINGS. THE DEVELOPER SHALL CONSIDER UNDER THE PERMITS AND REGULATIONS AND INSPECTION: PLANT TRANSPORTATION SHALL COMPLY WITH ALL FEDERAL AND STATE REGULATIONS.

1.03 GUARANTEE

A. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTING AND SOD WORK FOR A PERIOD OF ONE YEAR AFTER THE DATE OF FINAL ACCEPTANCE. DURING THIS PERIOD, THE LANDSCAPE CONTRACTOR SHALL CONTINUE THE OBSERVATION OF PLANTS AND GUARANTEED WORK. THE LANDSCAPE CONTRACTOR SHALL SUBMIT MONTHLY OBSERVATION REPORTS TO THE OWNER DURING THE GUARANTEE PERIOD. THE PURPOSE OF THESE REPORTS IS TO STATE ANY MAINTENANCE DEFICIENCIES OBSERVED. IT IS THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO REPORT THESE TO PROTECT HIS GUARANTEE. FAILURE TO SUBMIT REPORTS ELIMINATES ANY CLAIMS THAT THE GUARANTEE IS NOT VALID DUE TO IMPROPER MAINTENANCE BY THE OWNER.

B. REPLACEMENT OF DEFECTIVE PLANTS: ANY DEAD PLANTS OR PLANTS SHOWING INDICATION OF PROBABLE NON-SURVIVAL OR LACK OF HEALTH AND VIGOR, OR WHICH DO NOT EXHIBIT THE CHARACTERISTICS TO MEET SPECIFICATIONS, SHALL BE REPLACED WITHIN TWO WEEKS OF NOTICE FROM OWNER OR OWNER'S REP. ALL REPLACEMENT PLANTS SHALL BE FURNISHED & INSTALLED AT NO ADDITIONAL COST TO THE OWNER AND SHALL BE GUARANTEED FOR SIX MONTHS. ALL REPLACEMENTS SHALL MEET ORIGINAL SPECIFICATIONS.

C. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER TEN DAYS PRIOR TO THE END OF THE GUARANTEE PERIOD AND SUCH GUARANTEE SHALL BE EXTENDED UNTIL NOTIFICATION IS RECEIVED.

D. AT THE END OF THE GUARANTEE PERIOD, ALL PLANTS AND TREES THAT ARE DEAD OR UNSATISFACTORY SHALL BE REPLACED WITHIN TWO WEEKS, WITH PLANTS OR TREES THAT MEET OR EXCEED THE ORIGINAL SPECIFICATION.

1.04 JOB CONDITIONS

A. PROTECTION: THE LANDSCAPE CONTRACTOR SHALL PROTECT ALL MATERIALS AND WORK AGAINST INJURY FROM ANY CAUSES AND SHALL PROVIDE AND MAINTAIN ALL NECESSARY SAFEGUARDS FOR THE PROTECTION OF THE PUBLIC. HE SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE OR INJURY TO PERSON OR PROPERTY THAT MAY OCCUR AS A RESULT OF THE NEGLIGENCE IN THE PROSECUTION OF THE WORK.

B. EXISTING CONDITIONS:
1. THE LANDSCAPE CONTRACTOR AND THEIR SUBCONTRACTORS SHALL EXERCISE CARE IN DIGGING AND OTHER WORK SO AS NOT TO DAMAGE EXISTING WORK, INCLUDING UNDERGROUND PIPES AND CABLES, AND THE PIPES AND HYDRANTS OF WATERING SYSTEMS. SHOULD SUCH OVERHEAD OR UNDERGROUND OBSTRUCTIONS BE ENCOUNTERED WHICH INTERFERE WITH PLANTING, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIR OF ANY DAMAGE CAUSED BY HIS WORK. (SEE SECTION 3.01)

2. SHOULD ANY OBJECTIONABLE MATERIAL SUCH AS OLD CONCRETE, BRICKS OR OTHER DEBRIS BE ENCOUNTERED DURING PLANTING OPERATIONS, THEY SHALL BE REMOVED FROM THE SITE BY THE LANDSCAPE CONTRACTOR.

3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER PLANT GROWTH IN EXISTING ON-SITE SOILS. PRIOR TO COMMITMENT OF PLANT SHIPMENTS, THE LANDSCAPE CONTRACTOR SHALL EXAMINE THE SOILS IN ALL AREAS OF WORK BY CONDUCTING SOIL TESTS AND FILLING TEST HOLES WITH WATER TO DETERMINE IF SOIL CHEMISTRY AND DRAINAGE ARE SATISFACTORY. ANY UNSATISFACTORY CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER OR OWNER'S REP. FOR POSSIBLE CORRECTIVE ACTION OR PLANT MATERIAL SUBSTITUTIONS. THE OWNER & OWNER'S REP. RESERVES THE RIGHT TO MAKE CHANGES OR SUBSTITUTIONS IN PLANT TYPE OR QUANTITIES FOR THE PURPOSES OF INSURING PROPER PLANT GROWTH, HEALTH AND VIGOR.

4. PRIOR TO WORK, LANDSCAPE CONTRACTOR SHALL BECOME FULLY FAMILIAR WITH THE SITE AND THE WORK OF ALL OTHER TRADES, INCLUDING HARDCAPE AND GRADING, IN ORDER TO UNDERSTAND THE FULL EXTENT AND SCHEDULE OF THE WORK.

1.05 QUALITY CONTROL

A. THE OWNER AND OWNER'S REP. SHALL HAVE THE RIGHT, AT ANY STAGE OF CONSTRUCTION, TO REJECT ANY AND ALL WORK AND MATERIAL THAT, IN HIS/HER OPINION, DO NOT MEET THE REQUIREMENTS OF THESE SPECIFICATIONS OR THE CONTRACT DRAWINGS.

B. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURE AND UNDER THE SUPERVISION OF A QUALIFIED PLANTING FOREMAN.

C. ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND REGULATIONS.

D. THE WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS.

1.06 QUANTITIES

A. IN THE EVENT OF A CONFLICT BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND PLANS, THE PLANS SHALL CONTROL.

PART 2 - PRODUCTS

2.01 MATERIALS

A. GENERAL:
1. NOMENCLATURE: ALL TREES, SHRUBS AND PLANTS SHALL BE TRUE TO NAME AS ESTABLISHED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE PUBLICATION 'STANDARD PLANTS NAMES', THE DESIGNATED AUTHORITY FOR THE IDENTIFICATION OF ALL MATERIAL SHALL BE THE TWO PUBLICATIONS OF L.H. BAILY, 'HORTUS III' AND 'MANUAL OF CULTIVATED PLANTS', AND ALL SPECIMENS SHALL BE TRUE TO TYPE, NAME, ETC., AS DESCRIBED THEREIN.

2. GRADE STANDARDS AND QUALITY: ALL PLANTS SHALL BE NURSERY GROWN, AND SHALL COMPLY WITH ALL REQUIRED INSPECTION, GRADING STANDARDS AND PLANT REGULATIONS AS SET FORTH IN THE FLORIDA DEPARTMENT OF AGRICULTURE, 'GRADES AND STANDARDS FOR NURSERY PLANTS,' PARTS 1 AND 2 INCLUDING REVISIONS.

a. THE MINIMUM GRADE FOR ALL TREES AND SHRUBS SHALL BE FLORIDA NO. 1 UNLESS OTHERWISE INDICATED AND ALL PLANTS SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL BRANCHED AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS AND SHALL BE FREE OF DISEASE AND INSECT PESTS, EGGS OR LARVAE.

3. MEASUREMENTS: THE MINIMUM ACCEPTABLE SIZE OF PLANTS, MEASURED AFTER PRUNING, WITH BRANCHES IN NORMAL POSITIONS, SHALL CONFORM TO THE SPECIFIED SIZES AS SHOWN ON THE PLANS. SIZES SPECIFIED ARE MINIMUM STANDARDS. PLANTS SHALL BE EQUAL TO OR LARGER THAN ALL CATEGORIES (HEIGHT, SPREAD, CALIPER) OF SIZE SPECIFICATION. SUBSTANTIAL DEVIATIONS FROM THESE MEASUREMENTS MUST BE APPROVED BY THE OWNER OR OWNER'S REP. CALIPER OF TREE TRUNKS SHALL BE MEASURED ONE FOOT ABOVE ROOTBALL FOR TREES OVER 6 INCHES IN CALIPER, AND SHALL BE MEASURED 6 INCHES ABOVE THE ROOT BALL FOR TREES UNDER 6 INCHES IN CALIPER.

4. PLANT PROTECTION: PLANTS SHALL BE PROTECTED UPON ARRIVAL AT THE SITE, BY BEING THOROUGHLY WATERED, KEPT MOIST, AND PROPERLY MAINTAINED UNTIL PLANTED.

B. PLANT MATERIALS: WITH REFERENCE TO METHOD OF CULTIVATION, ROOT SYSTEM STATUS, ETC., PLANTS FOR LANDSCAPING SHALL BE CLASSIFIED UNDER THE FOLLOWING DESIGNATIONS:
1. BALLED AND BURLAPPED PLANTS SO CLASSIFIED SHALL BE DUG WITH FIRM NATURAL ROOT BALLS OF EARTH COMING FROM SINGULAR CLIMATIC AND SOIL CONDITIONS AS THOSE ON PROJECT SITE AND OF SUFFICIENT DIAMETER AND DEPTH TO INCLUDE MOST OF THE FIBROUS ROOTS. THE ROOT BALL OF THESE PLANTS SHALL BE PROPERLY WRAPPED WITH BURLAP SACK MATERIAL AND REMAIN PROTECTED AND WET UNTIL THEY ARE PLANTED. THE PLANTS SHALL BE HANDLED ONLY BY THE EARTH BALL AND NOT BY THE PLANT ITSELF. ALL BALLED AND BURLAPPED PLANTS WHICH CANNOT BE PLANTED IMMEDIATELY UPON DELIVERY SHALL BE SET ON THE GROUND AND SHALL BE WELL PROTECTED WITH SOIL, WET SOIL, WET MOSS, OR OTHER ACCEPTABLE MATERIAL. THE PLANTS SHALL BE SET WITH THE BURLAP COVER INTACT AND WITH THE BURLAP SHOWING, UNTIL INSPECTION AT FINAL INSPECTION THE BURLAP SHALL BE CUT AWAY TO GROUND LEVEL AND THEN COMPLETELY COVERED WITH SOIL. BURLAP SHALL BE PURE BURLAP, ORGANIC FIBER WITH THE ABILITY TO DECOMPOSE.

3. BARE ROOT PLANTS: NO BARE ROOT PLANTS SHALL BE USED, UNLESS SPECIFIED.

4. GROW BAG PLANTS: GROW-BAG PLANTS SHALL ONLY BE USED UPON RECEIVING APPROVAL FROM THE OWNER OR OWNER'S REP.

C. PLANTING MATERIALS:

1. PLANTING SOIL:
a. SOIL CHARACTERISTICS: THE PLANTING SOIL SHALL BE A READILY-AVAILABLE LOCAL 'LANDSCAPE MIX' PRODUCT, COMPRISED OF 1/2 PINE BARK AND WOOD, 1/4 PEAT, AND 1/4 COARSE SAND. IT SHALL BE FREE OF WEEDS, WEED SEEDS, STONES, CLODS, STICKS, ROOTS OR OTHER OBJECTIONABLE EXTRANEIOUS MATTER OR DEBRIS. IT SHALL NOT CONTAIN TOXIC MATERIALS AND SHALL HAVE ACIDITY RANGE OF pH 6.0 TO 7.0.

b. DESIRED PARTICLE SIZE DISTRIBUTION IN TOP 6"-12" OF SOIL:
1.1. COARSE SAND (0.5-2mm): MEDIUM SAND (0.25-0.5mm): MINIMUM OF 60% (BY WEIGHT) OF PARTICLES SHALL FALL WITHIN THIS RANGE (#60 SIEVE).

1.2. FINE SAND (0.15-0.25mm): MAXIMUM OF 20% (BY WEIGHT) OF PARTICLES SHALL FALL WITHIN THIS RANGE (#100 SIEVE).

1.3. VERY FINE SAND (0.075-0.15mm): MAXIMUM OF 5% (BY WEIGHT) OF PARTICLES SHALL FALL WITHIN THIS RANGE (#200 SIEVE).

1.4. SILT (0.037-0.075mm): MAXIMUM OF 5% (BY WEIGHT) OF PARTICLES SHALL FALL WITHIN THIS RANGE (#400 SIEVE).

1.5. CLAY (LESS THAN 0.037mm): MAXIMUM 3% OF PARTICLES (BY WEIGHT) SHALL FALL WITHIN THIS RANGE (#200 SIEVE).

c. INFILTRATION OR PERCOLATION RATE OF SOIL: GENERALLY, THE DESIRED LEVEL OVER THE SITE IS 2" PER HOUR. HOWEVER PERCOLATION TESTS ARE REQUIRED FOR ONE OUT OF EVERY FIVE TREES PLANTED ON SITE. TREE PITS FROM EACH PLANTING AREA OF THE PROJECT SHALL BE TESTED FOR PERCOLATION. HOWEVER, IN AREAS WHERE OVER-EXCAVATION OF A BUILDING FOUNDATION HAS OCCURRED, OR ANY OTHER CONSTRUCTION PRACTICE TYPICALLY RESULTING IN EXTREMELY COMPACTED SUBSOIL CONDITIONS, ALL TREE PITS MUST BE TESTED FOR PERCOLATION. TREE PITS SHALL BE FILLED WITH WATER AND THE DRAINAGE RATE OBSERVED. PERCOLATION RATE SHALL BE A MINIMUM OF HALF THE DEPTH OF THE TREE PIT WITHIN 24 HOURS. THE TREE PIT MUST BE FULLY DRAINED WITHIN 36 HOURS. IF PERCOLATION RATE IS LESS THAN THAT, MITIGATION MEASURES SHALL BE IMPLEMENTED.

2. FERTILIZER: FERTILIZER SHALL BE A COMPLETE BALANCED BLEND FORMULA, OF WHICH PART OF THE ELEMENTS SHALL BE DERIVED FROM ORGANIC SOURCES. IT SHALL CONTAIN NITROGEN, PHOSPHORUS AND POTASSIUM AS WELL AS RECOMMENDED MICRONUTRIENTS SUCH AS MAGNESIUM, IRON, COPPER, ZINC, BORON, AND MANGANESE IN SULFATE FORM. NITROGEN SHALL BE APPLIED OVER ALL TURF, SHRUB AND TREE AREAS AT A RATE OF 1 1/2 POUNDS PER 1,000 SQUARE FEET. THE COMPLETE FERTILIZER ANALYSIS SHALL BE APPROVED BY THE OWNER OR OWNER'S REP.

3. MULCH: MULCH SHALL BE CLEAN, BRIGHT AND FREE OF WEEDS, MOSS, STICKS AND OTHER DEBRIS. SEE PLANT SCHEDULE FOR MULCH TYPE, LAYOUT AND DEPTH TO BE USED. ACCEPTABLE MULCH TYPES INCLUDE THE FOLLOWING:
a. SHREDDED HARDWOOD WITH NO CYPRESS CONTENT, 'ENVIRONMENTAL' FROM FLORIDA MULCH OR EQUAL

b. PINE STRAW, FOR SLOPED AREAS ONLY

c. PINE FINES, FOR SPREADING GROUND COVER AND ANNUAL BEDS

4. WATER: SUITABLE WATER FOR THE IRRIGATION OF THE NEW PLANTINGS DURING THE PROGRESS OF CONSTRUCTION SHALL BE PROVIDED AND PAID FOR BY THE LANDSCAPE CONTRACTOR, WHO SHALL ALSO FURNISH ADEQUATE WATERING EQUIPMENT.

5. STAKES AND TIES: STAKES AND TREE TIES SHALL BE PROVIDED IN ACCORDANCE WITH THE LANDSCAPE DETAILS.

PART 3 - EXECUTION

3.01 PREPARATION

A. UNDERGROUND OBSTRUCTIONS:
1. PRIOR TO CONSTRUCTION, THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL PUBLIC AND PRIVATE UTILITIES.

2. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER OF POTENTIAL CONFLICTS WITH UTILITIES PRIOR TO COMMENCING WORK, IN AN EFFORT TO COORDINATE ANY NECESSARY ADJUSTMENTS IN ADVANCE OF THE WORK BEING SCHEDULED.

3. IN THE EVENT THAT ROCK, UNDERGROUND CONSTRUCTION WORK, UTILITY LINES OR OBSTRUCTION OUT OF THE ORDINARY ARE ENCOUNTERED IN ANY PLANT PIT EXCAVATION, ALTERNATIVE LOCATIONS SHALL BE SELECTED BY THE OWNER'S REP. WHERE LOCATIONS CANNOT BE CHANGED AND THE OBSTRUCTIONS MAY BE REMOVED, THE OBSTRUCTIONS SHALL BE REMOVED TO A DEPTH OF NOT LESS THAN 3" BELOW GRADE AND NO LESS THAN 6" BELOW BOTTOM OF BALLS OR ROOTS WHEN PLANT IS PROPERLY SET AT THE REQUIRED GRADE.

B. SOIL TESTING: LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PLANT HEALTH AND SURVIVAL IN PLANTED CONDITION. LANDSCAPE CONTRACTOR SHALL COLLECT SOIL SAMPLES FROM THE SITE AND SUPPLY SAMPLES OF THE PLANTING SOIL PRODUCT BEING USED FOR PH, FERTILITY, AND PERCOLATION TESTING. ENGAGE A STATE-REGISTERED TESTING FACILITY TO TEST THE SOILS, GENERATE RESULTS, AND MAKE SOIL AMENDMENT AND/OR FERTILIZATION RECOMMENDATIONS.

1. SOIL PH AND FERTILITY TESTING: SOIL TESTING SHALL BE PERFORMED AND ANALYZED BY A STATE-REGISTERED TESTING FACILITY (e.g. THE UNIVERSITY OF FLORIDA'S INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES, IFAS). THE RESULTS OF THE TESTS SHALL BE FORWARDED TO THE OWNER OR OWNER'S REP. FOR REVIEW. THE RECOMMENDATIONS FROM THE TESTING FACILITY FOR FERTILIZER AND SOIL AMENDMENTS SHALL TAKE PRECEDENCE OVER THE FERTILIZER RATINGS AND ANALYSES ELSEWHERE IN THE CONTRACT DOCUMENTS. SOIL TESTING IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR AND SHALL BE PERFORMED PRIOR TO LANDSCAPE INSTALLATION.

2. SOIL DRAINAGE EVALUATIONS: WELL-DRAINED SOILS ARE REQUIRED FOR NEW LANDSCAPES TO SURVIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EVALUATE THE ON-SITE SOILS TO DETERMINE THE ABILITY TO DRAIN PROPERLY. SOILS WITH TOO MUCH CLAY HOLD WATER AND CAUSE PROBLEMS FOR PLANT SURVIVAL. CONTRACTOR SHALL VISUALLY INSPECT THE SITE FOR SIGNS OF POORLY DRAINED SOILS (STANDING WATER, SURFACE CRACKING, HARD TO THE TOUCH, ETC.) AND DIG TEST HOLES. CONTRACTOR SHALL WRITE A REPORT DEMONSTRATING THEIR FINDINGS AND ALERT THE OWNER OR OWNER'S REP. IF ANY EVIDENCE OF POORLY-DRAINED SOILS ARE DISCOVERED.

C. SOIL PREPARATION: PRIOR TO PLACING PLANTING SOIL AND BACKFILL, OR COMMENCING WITH PLANTING, ROTOTILL ANY OR ALL AREAS THAT HAVE BEEN PREVIOUSLY COMPACTED OVER 90% FOR OTHER CONSTRUCTION PURPOSES.

D. EXCAVATION OF PLANTING BEDS AND/OR PLANT HOLES:
1. WHERE EXCAVATION ENCOUNTERS MATERIAL WHICH ARE SUITABLE FOR PLANT GROWTH, THE PLANT HOLE EXCAVATIONS SHALL BE ROUGHLY CYLINDRICAL IN SHAPE, WITH THE SIDES APPROXIMATELY VERTICAL. PLANTS SHALL BE CENTERED IN THE HOLE, WITH THE TRUNK AND ROOTBALL LOCATION AS SHOWN IN THE DRAWINGS. BOTTOMS OF THE HOLES SHALL BE UNDISTURBED NATURAL SUBGRADE PREVENTING THE TREE FROM SETTLING.

E. PROTECTION OF EXISTING TREES: THE LANDSCAPE CONTRACTOR SHALL PROTECT EXISTING TREES FROM DAMAGE WHERE DAMAGE DOES OCCUR. THE LANDSCAPE CONTRACTOR SHALL REMOVE THE DAMAGED TREE, THEN REPLACE IT IN KIND AND SIZE IN ACCORDANCE WITH THE INSTRUCTION OF THE LANDSCAPE ARCHITECT AND THE APPROPRIATE SPECIFICATIONS, ALL AT NO ADDITIONAL COST TO THE OWNER.

F. GRADES: IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO FINISH (FINE) GRADE ALL LANDSCAPE AREAS ELIMINATING ALL SURFACE IRREGULARITIES, DEPRESSIONS, STICKS, STONES AND OTHER DEBRIS INDICATED IN THE DRAWINGS TO THE SATISFACTION OF THE OWNER OR OWNER'S REP. NO PLANT MATERIAL SHALL BE PLANTED UNTIL FINAL GRADE HAS BEEN ESTABLISHED, ENSURING POSITIVE DRAINAGE, COMPACTED TO THE REQUIRED DEPTH, AND APPROVED BY THE OWNER'S REP.

3.02 INSTALLATION

A. GENERAL:
1. EXCEPT WHERE JURISDICTIONAL REQUIREMENTS APPLY, THE CONTRACTOR SHALL UTILIZE THE LAKE NONA STANDARD LANDSCAPE AND DETAILS.

B. PLANTING MATERIALS:
1. WHEN LOWERING INTO THE HOLE, THE PLANT SHALL REST ON A PREPARED HOLE BOTTOM SUCH THAT THE TOP OF THE ROOTBALL IS SITUATED PER THE APPLICABLE LANDSCAPE DETAIL (TREE OR SHRUB AND GROUND COVER) AND SO ORIENTED SUCH AS TO PRESENT THE BEST APPEARANCE. THE LANDSCAPE CONTRACTOR, WHEN SETTING PLANTS IN HOLES, SHALL MAKE ALLOWANCES OF ANY ANTICIPATED SETTLING OF THE PLANTS. IF WET CONDITIONS ARE ANTICIPATED, PLANTS SHALL BE SET 2 INCHES TO 3 INCHES HIGHER THAN THE DETAIL INDICATES.

2. THE BACKFILL SHALL BE MADE WITH PLANTING SOIL AS DESCRIBED IN PART 2, AND SHALL BE FIRMLY RODDED AND WATERED-IN, SO THAT NO AIR POCKETS REMAIN. THE QUANTITY OF WATER APPLIED IMMEDIATELY UPON PLANTING SHALL BE SUFFICIENT TO THOROUGHLY MOISTEN ALL OF THE BACKFILL MATERIAL. PLANTS SHALL BE KEPT IN A MOISTENED, BUT NOT SATURATED, CONDITION FOR THE DURATION OF THE ESTABLISHMENT PERIOD.

C. SECURING THE PLANT MATERIAL: IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO MAINTAIN ALL PLANTS IN A PLANTED UPRIGHT POSITION UNTIL THE END OF THE GUARANTEE PERIOD. SECURING SHALL BE EXECUTED ACCORDING TO THE APPLICABLE LANDSCAPE DETAIL IN THE DRAWINGS. ALL DAMAGED PLANTS RESULTING FROM THE LACK OF PROPER SECURING SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR AT NO

EXPENSE TO THE OWNER.

D. PRUNING:

1. ALL BROKEN OR DAMAGED ROOTS SHALL BE CUT OFF SMOOTHLY IN A MANNER COMPLYING WITH STANDARD HORTICULTURAL PRACTICE. AT THE TIME PRUNING IS COMPLETED, ALL REMAINING WOOD SHALL BE ALIVE.

2. FINE PRUNING FOR TREE SHAPE AND APPEARANCE SHALL BE DONE ONLY AT THE DIRECTION OF THE OWNER'S REP. ON A PLANT-BY-PLANT BASIS, AND TYPICALLY SHALL NOT BE UNDERTAKEN UNTIL AFTER THE SUBSTANTIAL COMPLETION REVIEW.

3. AT THE END OF THE GUARANTEE PERIOD, AT LEAST 80% OF THE REMAINING WOOD SHALL BE ALIVE.

4. CRAPE MYRTLE PRUNING SHALL NOT INCLUDE THE REMOVAL OF ANY BRANCHING LARGER THAN PENCIL THICKNESS UNLESS DISEASED, DEAD OR DYING.

E. MULCHING: WITHIN ONE WEEK AFTER THE PLANTING, MULCH MATERIAL SHALL BE UNIFORMLY APPLIED TO A LOOSE THICKNESS OF 3" OVER THE ENTIRE AREA OF THE BACKFILLED HOLE OR BED. THE MULCH SHALL BE MAINTAINED CONTINUOUSLY IN PLACE UNTIL THE TIME OF FINAL INSPECTION. ENSURE MULCH IS NOT PLACED AGAINST THE ROOT FLARE OF TREES AND SHRUBS.

F. WATERING: THE LANDSCAPE CONTRACTOR SHALL CONTINUE WATERING AS LONG AS IS NECESSARY TO PROPERLY ESTABLISH THE NEW PLANTINGS, WHILE ALSO ENSURING OVER-WATERING DOES NOT OCCUR. CARE SHALL BE TAKEN TO PREVENT STAINING OF NEW CONSTRUCTION WHERE TEMPORARY WELL WATER IS USED.

G. PEST CONTROL: PRIOR TO FINAL ACCEPTANCE, OCCURRENCE OF SCALE, BORERS, FOLIAR FEEDERS, APHIDS, MITES, LEAF-SPOT AND DIEBACK, NEMATODES AND CANKER-PRODUCING FUNGI, SHALL BE TREATED WITH APPROPRIATE PESTICIDE.

H. ALL PLANTS SHALL RECEIVE THE SPECIFIED FERTILIZER PRIOR TO FINAL ACCEPTANCE

3.03 BERMING

A. FILL DIRT SHALL BE LOCALLY OBTAINED MATERIAL FROM NATURALLY DRAINED SOURCES, FREE FROM DRY, ORGANIC DEBRIS, STONES LARGER THAN 1-INCH DIAMETER AND OTHER MATERIALS HARMFUL TO SUCCESSFUL DRAINAGE AND PLANT GROWTH. SOIL SHALL BE WELL MIXED AND CONTAIN NO MORE THAN 25% MUCK.

B. GRADE AREAS INDICATED WITH UNIFORM LEVELS OR SLOPES WITH NO MORE THAN 4:1 MAXIMUM SLOPE. BERMS SHALL BE GENTLY ROLLING AND PARABOLIC.

C. REPAIR AND RE-ESTABLISH GRADES, PLANTING AND MULCH IN SETTLED, ERODED, RUTTED, OR OTHERWISE DAMAGED AREAS.

3.04 SODDING

A. THE SOD SHALL BE OF FIRM, TOUGH TEXTURE HAVING A COMPACT GROWTH OF GRASS WITH GOOD ROOT DEVELOPMENT. IT SHALL CONTAIN NO BERMUDA GRASS, WEEDS OR ANY OTHER OBJECTIONABLE VEGETATION. THE SOD EMBEDDED IN THE SOD SHALL BE GOOD CLEAN FERN, FREE FROM STICKS AND DEBRIS. THE SOD SHALL BE FREE FROM FUNGUS, VERMIN AND OTHER DISEASES. FINAL TURF SHALL HAVE NO AREA GREATER THAN 6 SQUARE INCHES OF UNSODDED AREA.

B. SOD SOIL SHALL BE LAID WITH CLOSELY ABUTTING JOINTS WITH A ROLLED EVEN SURFACE. IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO BRING THE SOD EDGE IN A NEAT, CLEAN MANNER TO THE EDGE OF ALL PAVING AND SHRUB AREAS. TOP OF SOD SOIL SHALL BE LEVEL WITH ABUTTING HARDCAPE PAVING SURFACES. AFTER THE SOD IS LAID, A TOP DRESSING OF CLEAN SAND WILL BE EVENLY APPLIED OVER THE ENTIRE SURFACE AND THOROUGHLY WASHED IN. PEG SOD ON SLOPES AS REQUIRED TO PREVENT SLIPPAGE. FERTILIZE ALL SOD: 1 POUND NITROGEN PER 1,000 SQUARE FEET.

3.05 FIELD QUALITY CONTROL

A. MAINTENANCE PRIOR TO ACCEPTANCE OF WORK:
1. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER EACH PLANT IS PLANTED AND SHALL CONTINUE UNTIL FINAL ACCEPTANCE. PLANTS SHALL BE WATERED, MULCHED, WEEDED, PRUNED, SPRAYED, FERTILIZED, CULTIVATED AND OTHERWISE MAINTAINED AND PROTECTED FOR THE PERIOD OF TIME STATED ABOVE. SOD SHALL BE MOWED, IF REQUIRED.

2. SETTLED PLANTS SHALL BE RESET TO PROPER GRADE POSITION AND DEAD MATERIAL REMOVED. TREE ROOTBALL SECURING SYSTEMS SHALL BE TIGHTENED, OR REPAIRED IF NECESSARY.

3. DEFECTIVE WORK SHALL BE CORRECTED AS SOON AS POSSIBLE AFTER IT BECOMES APPARENT AND WEATHER AND SEASON PERMIT. UPON COMPLETION OF PLANTING, THE LANDSCAPE CONTRACTOR SHALL REMOVE FROM THE SITE EXCESS SOIL AND DEBRIS, AND REPAIR ANY DAMAGE TO STRUCTURES, ETC., RESULTING FROM PLANTING OPERATIONS.

4. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PROTECTION AGAINST MECHANICAL DAMAGE. THIS SHALL INCLUDE PROVIDING PROTECTION FROM VEHICLES, INCLUDING THE POSTING OF APPROVED WARNING SIGNS AND BARRIERS, AS NEEDED. THE LANDSCAPE CONTRACTOR SHALL REPAIR, RESTORE OR REPLACE ANY PLANTS OR PLANTING AREAS WHICH MIGHT BECOME DAMAGED AS A RESULT OF ANY NEGLIGENCE BY THE LANDSCAPE CONTRACTOR OR THEIR SUBCONTRACTORS IN COMPLYING WITH THESE REQUIREMENTS. AS A SPECIFIC REQUIREMENT OF THESE CONDITIONS, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ASSURING THAT ALL PLANTS AT THE TIME OF FINAL ACCEPTANCE, EXHIBIT THE CHARACTERISTICS AND QUALIFICATIONS REQUIRED FOR THE GRADE OF PLANT AS ORIGINALLY SPECIFIED.

5. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL WATERING REQUIRED IF IRRIGATION PROVES TO BE INADEQUATE FOR FRESHLY PLANTED MATERIAL, AS WELL AS PERMANENT RESOLUTION OF ANY SUCH INADEQUACIES. CONTRACTOR IS RESPONSIBLE FOR WATERING REGARDLESS OF STATUS OF IRRIGATION SYSTEM.

6. THE LANDSCAPE CONTRACTOR SHALL FOLLOW THE OWNER'S LANDSCAPE MAINTENANCE STANDARDS. EXCEPT AS OTHERWISE SPECIFIED THEREIN, MAINTENANCE WORK SHALL CONFORM TO ACCEPTED HORTICULTURAL PRACTICES USED IN THE TRADE.

B. SUBSTANTIAL ACCEPTANCE:

1. UPON SUBSTANTIAL COMPLETION OF ALL WORK, THE LANDSCAPE CONTRACTOR SHALL ARRANGE FOR A SUBSTANTIAL COMPLETION REVIEW. THE LANDSCAPE WORK MAY NOT BE REVIEWED FOR PHASED SUBSTANTIAL ACCEPTANCE UNLESS APPROVED BY THE OWNER OR OWNER'S REP., AND IN SUCH CASES, ONLY WHEN THE WORK IS COMPRISED OF ONE FULL UNIT OR AREA OF SUBSTANTIAL SIZE.

C. FINAL ACCEPTANCE:

1. UPON COMPLETION OF ALL WORK, INCLUDING MAINTENANCE, THE LANDSCAPE CONTRACTOR SHALL ARRANGE FOR A FINAL REVIEW. THE LANDSCAPE WORK MAY BE REVIEWED FOR ACCEPTANCE IN PARTS, PROVIDED THE WORK COMPRISES OF ONE FULL UNIT OR AREA OF SUBSTANTIAL SIZE.

2. DATE OF FINAL ACCEPTANCE DETERMINED BY THE OWNER OR OWNER'S REP. SHALL MARK THE BEGINNING OF THE GUARANTEE PERIOD.

D. GUARANTEE PERIOD REVIEW: TWICE DURING THE GUARANTEE PERIOD, AT 5 AND 11 MONTHS, REVIEW OF PLANTS WILL BE MADE BY THE OWNER AND OWNER'S REP. UPON WRITTEN NOTICE REQUESTING SUCH REVIEW, SUBMITTED BY THE LANDSCAPE CONTRACTOR AT LEAST TEN DAYS PRIOR TO THE ANTICIPATED DATE OF REVIEW. ALL DEFECTS DISCOVERED SHALL BE REPAIRED OR REPLACED BY THE LANDSCAPE CONTRACTOR.

3.06 ADJUSTMENT AND CLEANING

A. CLEANING UP THE SITE: UPON COMPLETION OF ANY LANDSCAPE PROJECT, THE LANDSCAPE CONTRACTOR MUST THOROUGHLY CLEAN UP THE PROJECT SITE. IN ADDITION TO REMOVING ALL EQUIPMENT, UNUSED MATERIALS, DELETERIOUS MATERIAL, AND SURPLUS EXCAVATED MATERIAL, THE LANDSCAPE CONTRACTOR SHALL FINE GRADE ALL DISTURBED AREAS AND THE AREAS ADJACENT TO THE NEW PLANTINGS TO PROVIDE A NEAT AND UNIFORM SITE. ALL DAMAGED OR ALTERED EXISTING STRUCTURES, AS A RESULT OF THE LANDSCAPE WORK, SHALL BE CORRECTED.

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Key:

Owner:

CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA
CONSTRUCTION DOCUMENTS
TAVISTOCK SPECIFICATIONS

Rev:	Date:	Description:	By:
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Date: 11/22/2019	Scale: SEE PLAN
Drawn By: RR	Designed By: MM
Approved By: MM	Project No: 19027
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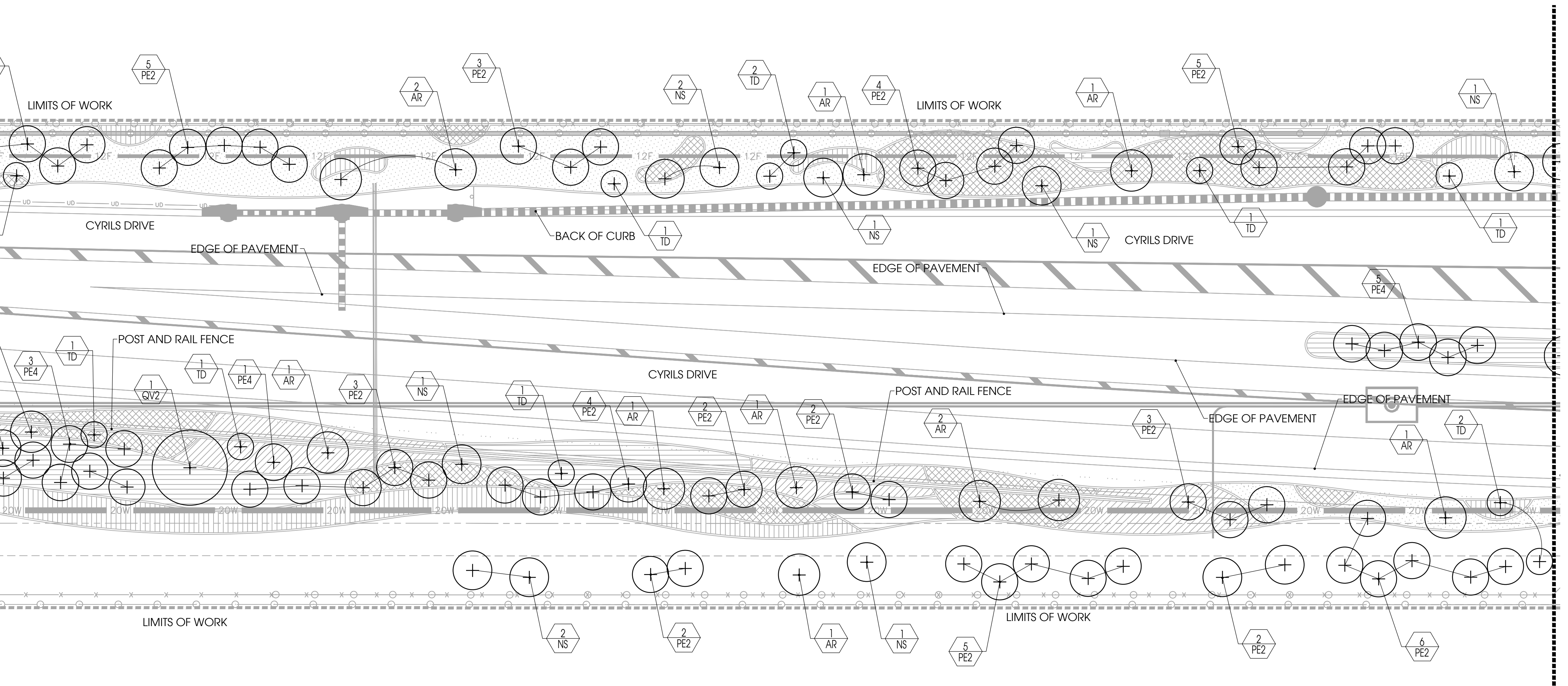
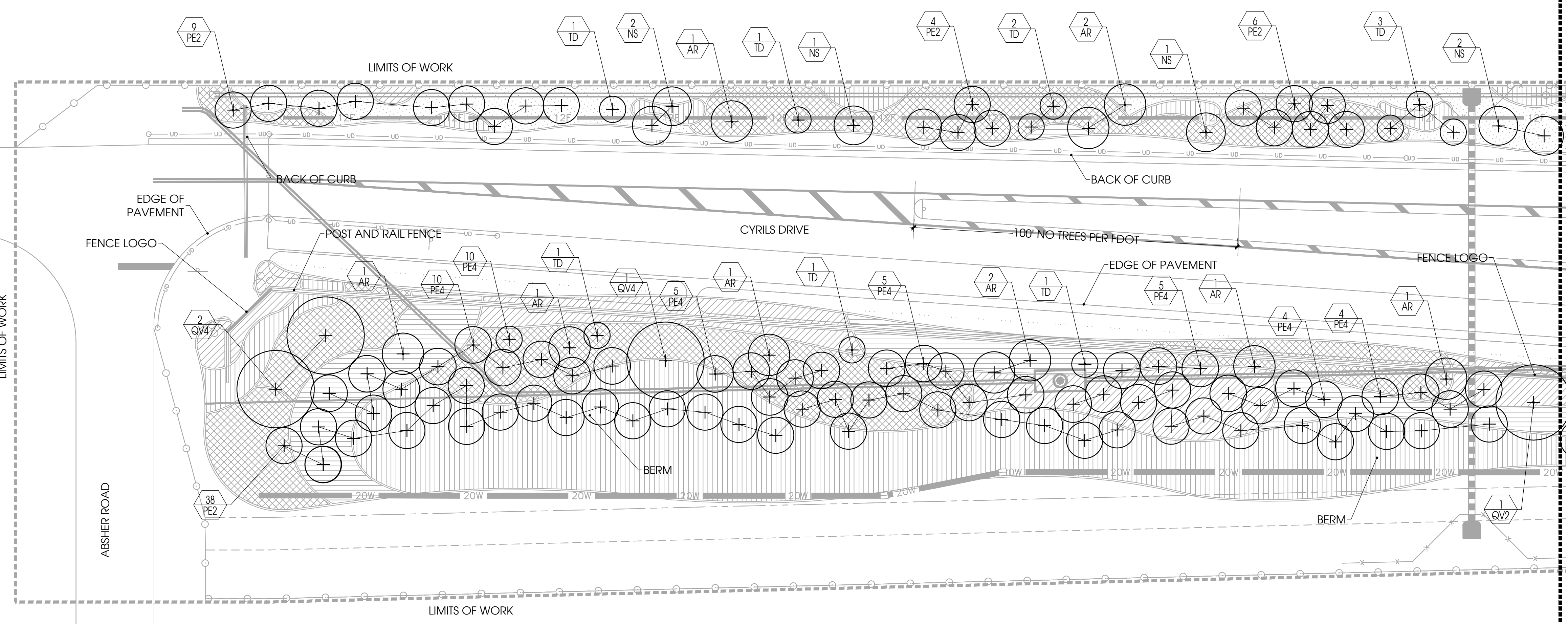
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(SDP17-0155)(PS17-00025)
(CP17-00002)(CPA09-009)

SDP17-0155
02/19/2020
Osceola County
Community Development

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LEGEND

TREE KEY	COMMON NAME	SPECIFICATION
QV1	Transplanted Live Oak	
QV4	Live Oak	4" CAL. 14'-16' HT
QV3	Live Oak	3" CAL. 10'-12' HT
AR	Red Maple	2.5" CAL. 10'-12' HT
NS	Black Gum	2.5" CAL. 14'-16' HT
PE4	Slash Pine	4" CAL. 10'-12' HT
PE2	Slash Pine	2.5" CAL. 10'-12' HT
TD	Bald Cypress	2" CAL. 10'-12' HT

Designed By:

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Owner:

TAVISTOCK
DEVELOPMENT COMPANY

CYRILS DRIVE
OSCEOLA COUNTY, FLORIDA

CONSTRUCTION DOCUMENTS
TREE PLAN

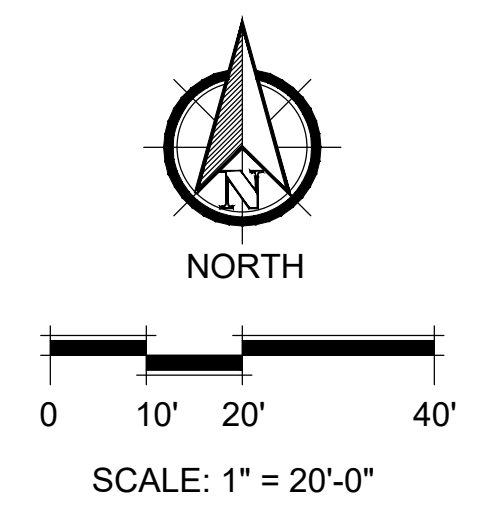
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Approved By: M.M.	Project No: 19027
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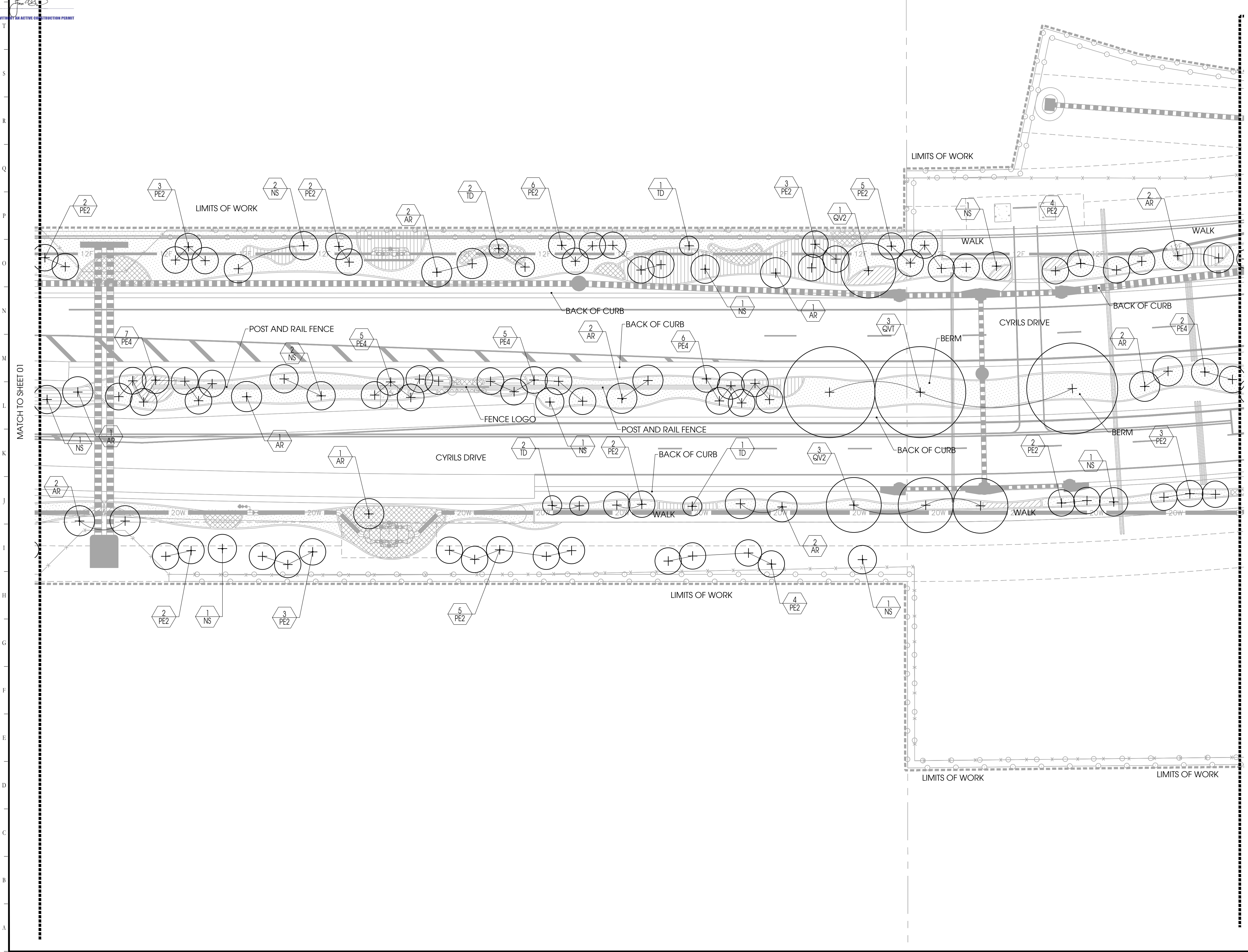
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PRINT DATE: 22-Nov-19
DRAWING SIZE: 24" X 36"

SDP17-0155
02/19/2020
Osceola County
Community Development

THIS APPROVAL IS SUBJECT TO THE SPECIFIC CONFORMANCE TO THE OSCEOLA COUNTY LAND DEVELOPMENT CODE AND ANY SPECIAL REQUIREMENTS OF THE BOARD OF COUNTY COMMUNITY DEVELOPMENT. THE RESPONSIBILITY OF THE DEVELOPER TO COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS DOES NOT RELIEVE THE DEVELOPER OF ANY LIABILITY TO MEET THOSE REQUIREMENTS THAT ARE NOT INCLUDED WITHIN THESE DRAWINGS. THESE DRAWINGS ARE CONSIDERED UNDER THE PREVIEW AND AUTHORITY OF JURISDICTION OTHER THAN OSCEOLA COUNTY. THIS APPROVAL IS VALID FOR A PERIOD OF THREE YEARS FROM THE DATE STAMPED.

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LEGEND

TREE KEY	COMMON NAME	SPECIFICATION
QV1	Transplanted Live Oak	
QV4	Live Oak	4" CAL. 14'-16' HT
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AR	Red Maple	2.5" CAL. 10'-12' HT
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PE4	Slash Pine	4" CAL. 10'-12' HT
PE2	Slash Pine	2.5" CAL. 10'-12' HT
TD	Bald Cypress	2" CAL. 10'-12' HT

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Owner:

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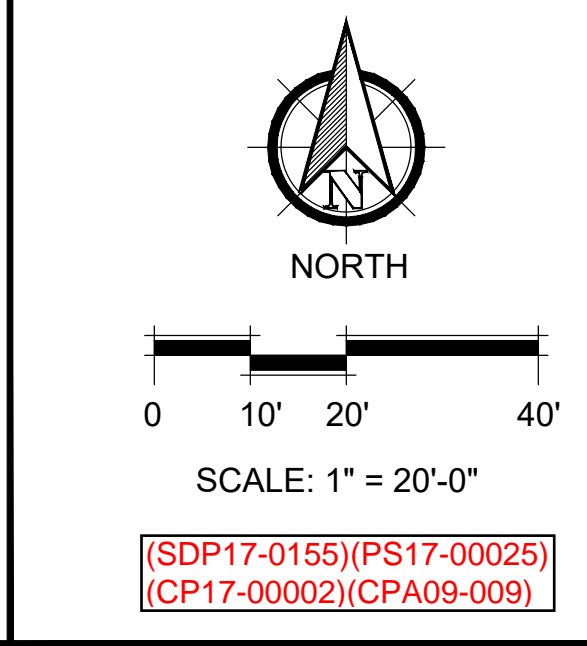
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TREE PLAN

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Approved By: MM	Project No: 19027
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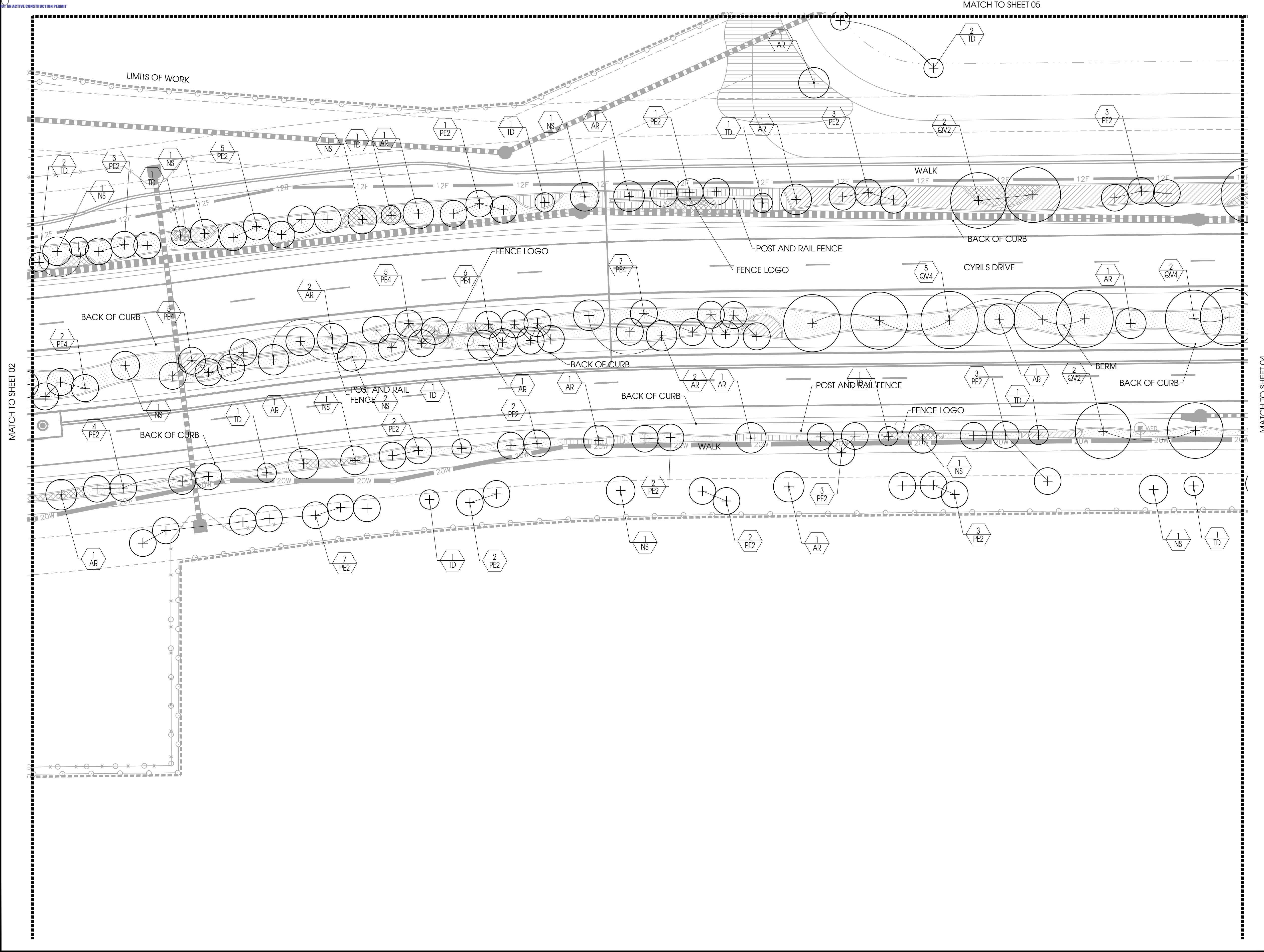


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LEGEND

TREE KEY	COMMON NAME	SPECIFICATION
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CONSTRUCTION DOCUMENTS
TREE PLAN

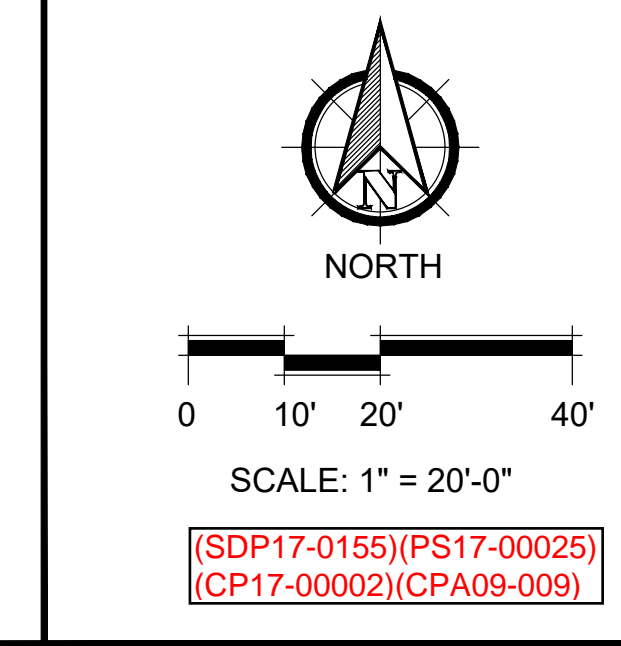
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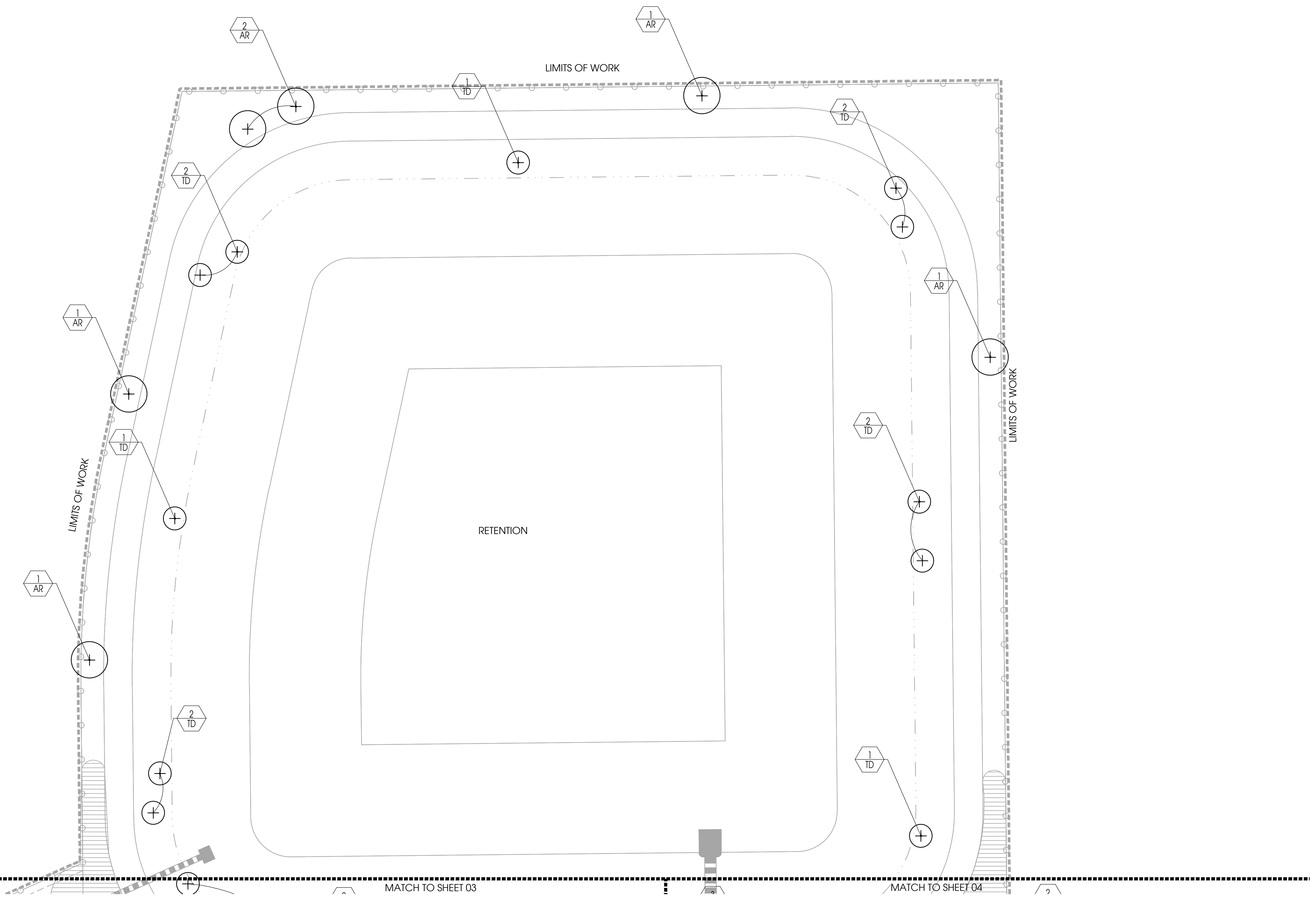


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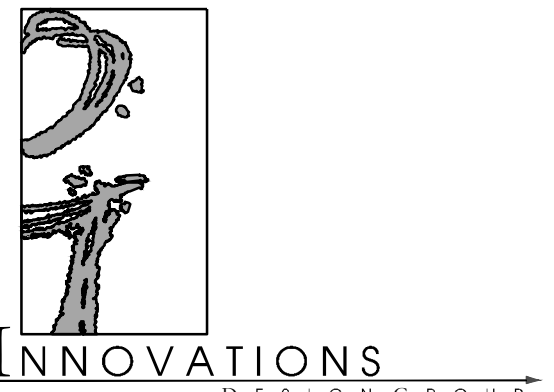
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LEGEND


TREE	COMMON NAME	SPECIFICATION
QVT	Transplanted Live Oak	
QV4	Live Oak	4" CAL. 14'-16' HT
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Designed By:



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