FINAL CONSTRUCTION PLANS FOR WHISPERING HEIGHTS

Howey-in-the-Hills, Florida

PROJECT DESCRIPTION (PROPOSED IMPROVEMENTS)

- CONSTRUCTION OF A NEW 156 LOT RESIDENTIAL SUBDIVISION WITH CONNECTION TO PUBLIC SEWER AND WATER

FLOOD CERTIFICATE:

- ZONE "X" & "AE" PER FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 12069C0485E, dated:12/18/2012

BEARING BASIS

- THE COORDINATE AND BEARING STRUCTURE FOR THIS SURVEY IS BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83), 1990 ADJUSTMENT. HORIZONTAL CONTROL STATION UTILIZED WAS NATIONAL GEODETIC SURVEY (NGS) FIRST (1ST) ORDER CONTROL STATION "LC 06".

General Notes:
1. Stormwater Retention Areas to be Owned & Maintained by HOA.
2. All Streets are Private. Private Streets are in Tract "D"
3. All signage shall comply with City Codes
4. Electrical Power will be provided by underground service.
5. All Recreation and Landscape Tracts shall be maintained by HOA.
6. All sidewalks not fronting single family lots and all sidewalk ramps shall be installed during road construction.
7. All extra recreational area improvements are shown for reference. Actual implementation is contingent upon results of a market study.
8. Based upon the results of market research to be done, the developer may elect to replace traditional telephone, cable, and internet services with a multi-purpose fiber optic service.
9. Construction Operating Hours 7:00 AM - 6:00 PM

Utility Contacts

Drinking Water
Howey-in-the-Hills
101 N Palm Ave
Howey-in-the-Hills, Fl 34737
Ph (352) 324-2264

Sewage Disposal
Howey-in-the-Hills
101 N Palm Ave
Howey-in-the-Hills, Fl 34737
Ph (352) 324-2264

Garbage Disposal
Howey-in-the-Hills
101 N Palm Ave
Howey-in-the-Hills, Fl 34737
Ph (352) 324-2264

Fire Protection
Lake County Fire Rescue
315 W Main Street
Tavares, Florida 32778
Ph (352) 343-9458

Electric
Sumter Electric
330 S US Highway 301
Sumterville, Florida 33585
Ph (352) 357-5600

Gas
TECO Peoples Gas
600 W Robinson St
Orlando, FL 32801
Ph (407) 425-4662

Communications Options
Phone
Sprint
PO Box 770339
Winter Garden, Florida 34777
Ph (407) 814-5246
Fx (407) 814-5320

Cable
Spectrum
1670 E Highway 50 Suite D
Clermont, Florida 34711
Ph (352) 394-5541

Fiber Optic
Centurylink
33 N Main Street
Winter Garden, Florida
Ph (407) 814-5271

Description: Project Limits
A portion of Government Lots 5 and 6, in Section 36, Township 20 South, Range 25 East, Lake County, Florida,

more particularly described as follows:

Commence at the Southwest corner of the Southeast ¼ of Section 36, Township 20 South, Range 25 East, Lake County, Florida; thence coincident with the South Boundary of said Southeast ¼, S 89°50'08" E a distance of 32.76 feet to a point on the East Right-of-way Boundary of Buckhill Road per OSPREY HEIGHTS-PHASE 1A, as recorded in Plat Book 33, Page 66 of the public records of Lake County, Florida, said point being the POINT OF BEGINNING; thence departing said South Boundary, coincident with said East Right-of-way Boundary and the Northerly extension thereof, N 00°36'32" E a distance of 2184.33 feet; thence N 47°09'43" E a distance of 28.30 feet; thence N 31°02'11" E a distance of 24.81 feet; thence N 86°55'48" E a distance of 40.31 feet; thence N 55°05'08" E a distance of 38.19 feet; thence S 71°01'20" E a distance of 52.29 feet; thence N 64°09'46" E a distance of 61.62 feet; thence S 79°41'54" E a distance of 70.94 feet; thence N 60°39'33" E a distance of 110.96 feet; thence N 36°52'01" E a distance of 91.94 feet; thence N 13°52'52" W a distance of 29.71 feet; thence N 14°17'52" W a distance of 61.64 feet; thence N 06°23'22" E a distance of 30.93 feet; thence N 16°45'59" E a distance of 28.88 feet; thence S 86°22'27" E a distance of 91.79 feet; thence N 45°57'51" E a distance of 66.74 feet; thence S 55°54'12" E a distance of 29.18 feet; thence S 70°43'29" E a distance of 52.36 feet; thence N 89°10'11" E a distance of 183.00 feet; thence N 82°49'33" E a distance of 87.24 feet; thence N 69°29'41" E a distance of 52.88 feet; thence S 00°53'22" W a distance of 108.93 feet to a point coincident with a non-tangent curve concave to the Southwest, said curve having a radius of 46.00 feet, a delta angle of 38°39'48" and being subtended by a chord bearing S 56°23'48" E for a distance of 30.46 feet; thence coincident with the arc of said curve a distance of 31.04 feet; thence S 70°02'13" E a distance of 36.99 feet; thence N 66°26'02" E a distance of 104.12 feet; thence N 16°19'52 E a distance of 108.8 feet, more or less, to the waters edge of Little Lake Harris; thence Southerly coincident with the waters edge of Little Lake Harris to the Northeast corner of the lands described in Official Records Book 1775, Page 275 of the Public Records of Lake County, Florida; thence departing said waters edge, coincident with the North Boundary of said lands for the following five (5) courses: 1.) N 84°17'12" W a distance of 269.90 feet; 2.) thence N 88°21'36" W a distance of 293.43 feet; 3.) thence S 89°30'46" W a distance of 224.96 feet; 4.) thence S 84°47'04" W a distance of 179.68 feet; 5.) thence N 89°13'45" W a distance of 421.93 feet to a point on the West Boundary of said lands; thence departing said North Boundary, coincident with said West Boundary, S 09°31'29" W a distance of 636.42 feet to a point on the aforementioned South Boundary of the Southeast ¼ of said Section 36; thence coincident with said South Boundary, N 89°51'03" W a distance of 112.96 feet to the POINT OF BEGINNING.

Containing an area of 2651920.89 square feet, 60.880 acres more or less.

Location Plan

STR – 36/20/25	Scale: N.T.S
Alt Key: 3564219	

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Development Information

Gross Acreage	60.88 ac (2,651,933 sf)
Wetlands Area	1.25 ac (54,355 sf)
Net Acreage	59.63 Ac (2,597,578 sf)
Current Zoning	MDR-2
Future Land Use	Medium Density Residential
Maximum Density	4.0 DU/net acreage
Proposed Lakefront	20 Lots
Proposed Pond Front	8 Lots
Proposed Standard	128 Lots
Total Number of lots	156 Lots
Proposed Density	2.62 DU/Net Acre
Minimum Lot Area	9,000 sf
Minimum Lot Width	75' minimum
Code Min. Living Area	1,200 sf (Under Heat & Air) Plus 400 sf Min Garage
Developer intention	2,500 sf (average)
Maximum Height	35' feet (2.5 stories)
Max ISR	0.50
Minimum Setbacks	
Front:	25'
Rear:	25'
Side:	12.5'
Side Street:	12.5'
Phasing	Multi-Phase Project
Open Space	25% Required open space
Project Traffic	1,474 Avg daily trips
Projected School Age Population	156 units x 0.404 = 63 students
Stormwater Management	Provide Retention system per City & SJRWMD Regulations
100 yr Flood	Flood zone X & AE Per 12069C0485E, dated:12/18/2012
Projected Fire Flow	Final fire flow provided to site to be determined by final design of off-site water distribution system
Utilities	
Sewer:	Howey-in-the-Hills
Water:	Howey-in-the-Hills

Open Space Calculation
Required 25% of Gross land Area - 15.22 Ac

Provided Open Space

Category	Area
Recreation Tracts	1.58 Ac
Stormwater Tract	9.18 Ac
Wetlands area	1.25 Ac
Open Space in ROW	2.55 Ac
Landscape Buffers	1.17 Ac
Common Open Space	15.73 Ac (25.8%)
Lot Open Space	18.92 Ac
Total Open Space	34.65 Ac (56.9%)

Impervious Areas

Lots 37.84 Ac @ 50%	18.92 Ac
Roads (9,592 lf)	5.28 Ac
Entry Tract	0.27 Ac
Walks (5' Wide)	1.76 Ac
Total Impervious	26.23 Ac (43.1%)
Open Space	34.65 Ac (56.9%)
Total	60.88 Ac (100.0%)

Civil Engineer:
Darcy Unroe PE
Unroe Engineering, Inc
PO Box 690942
Orlando, Florida 32869
Ph (407) 299-0650
Darcy@UnroeEngineering.com

Owner:
Whispering Hills Unified Land Trust and its Beneficiaries:
Whispering Hills Florida, LLC & Whispering Shores Florida, LLC & Bredco Development Group, each in its capacity as trustee
625 Waltham Road
Orlando, Florida 32809
Ph 407 855-1136
Contact Lawrence White

Surveyor:
SurvTech Solutions, Inc
10220 US Highway 92E
Tampa, Florida 33610
Ph (813) 621-4929
fx (813) 621-7194
Contact: David O'Brien Jr

Developer:
Red Jacket Development Group
625 Waltham Ave
Orlando, Florida 32809
Ph 407 855-1136
Fx 407 851-2226
Contact: Clay Frankel

Geotechnical Engineer:
Andreyev Engineering, Inc
1170 W Minneola Ave
Clermont, Fl 34711
Ph 352-241-0508
Fx 352-241-0977

Environmentalist:
Modica and Associates, Inc
302 Mohawk Street
Clermont, Florida 34711
Ph 352-394-2000
Fx 352-394-1159
Contact: Jim Modica

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Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Florida 32869-0942
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DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

COV

G - General

G1. These notes shall apply to all work in this set of drawings.
G2. It will be the responsibility of the contractor(s) to insure that all required permits are obtained and are in hand at the job site prior to the commencement of construction. Contractors shall abide by all conditions contained therein. It is the contractors sole responsibility to ensure that all construction is in accordance with local agencies codes, regulations and requirements.
G3. Prior to commencement, the contractor shall provide a construction schedule for various site work elements so that site visits may be coordinated.
G4. Contractor shall furnish the owner with accurate certified record drawings showing all as-constructed work at the of completion of construction. The surface water system shall include elevations and dimensions of control structures, weirs, inverts, manholes and volumes in storage ponds. Water and sewer system shall include location of all piped utilities, appurtenances and devices, elevations of manhole inverts, tops and pipe crossings. Drawings shall be certified by a Florida-registered land surveyor.
G5. Structure elevations controlling water levels shall be built to 1/8"± (0.01 ft); inverts and water control elevations shall be built to 1/4"± (0.02 ft). Assigned volumes are absolute minimums. All other tolerances shall be built to local jurisdiction or industry standards.
G6. The locations of all existing utilities and storm drainage shown on plans have been field verified to the best extent possible. However, it is the contractor's responsibility to verify the field locations of all underground utilities and to determine any possible conflicts prior to the start of any construction. Any delay or inconvenience to the contractor by the relocation of the various utilities shall be incidental to the contract and no extra compensation is allowed.
G7. The contractor shall immediately notify the engineer of any discrepancies found between the drawings and the field conditions prior to construction in the area impacted by the conflict.
G8. In accordance with Florida Law (553.851) the contractor must notify the gas or other utility a minimum of 48 hours and a maximum of five days prior to excavation. (Excluding weekends).
G9. All requirements and recommendations of inspection personnel other than the owner's shall be reported to the engineer/owner prior to implementation. Compensation will not be allowed for work which is not authorized by the engineer/owner in writing.
G10. All work shall be open to and subject to inspection by authorized personnel of the utility companies, project engineer and regulatory agencies.
G11. Contractor shall notify all appropriate utility companies and water management agencies of proposed start up.
G12. Contractor shall stake all improvements using the centerline, building dimensions and pond dimensions. Contractor shall confirm the building dimensions with the drawings prior to stakeout. It is the contractors sole responsibility to completely stake and check all improvements to ensure adequate positioning, both horizontal and vertical, including minimum building setbacks prior to the installation of any improvement. Any conflicts shall be brought to the attention of the EOR prior to construction
13. All work on public right-of-way shall comply with FDOT applicable indexes and all local jurisdiction regulations. Disturbed areas shall be compacted to design density and sodded. Signs and barricades per FDOT and Manual of Uniform Traffic Control Devices.
G14. All sidewalks and curb cuts shall be installed to meet the requirements of the ADA and Florida Accessibility Code. Specifically, no running slopes greater than 5.0% and not cross slopes greater than 2.0%. All curb ramps shall be constructed per standard FDOT indexes unless specifically noted otherwise.
G15. Compact all utility trenches within the top 2' of the roadway to 98% of the modified proctor density (AASHTO T-180). All other fill shall be compacted to 95% of maximum density.
G16. Recommendations of the Geotechnical Report are made part of the specifications and notations and shall be followed carefully. A copy of the report may be obtained from the Owner or Engineer.
G17 The concrete compressive strength for curb, gutter and flatwork shall be 3000 psi at 28 days (FDOT Class I). Provide concrete test cylinders and documentation.
G18. The contractor shall reference and restore property corners and land markers disturbed during construction (under the direction of a Florida registered land surveyor).
G19. All property affected by this work shall be restored to a condition equal to or better than existed unless specifically exempted by the plans. The cost for such restoration shall be incidental to other construction and no extra compensation will be allowed.
G20. Roadway markings and striping to be installed in accordance with FDOT index #17345 and local jurisdiction standards. Striping shall be coordinated with local jurisdiction standards.
G21. If seal coat is required on new pavement, temporary striping will be required until seal coat is applied (90 day curing time is required.)
G22. Prior to implementation, the contractor shall prepare a maintenance of traffic plan. The MOT plan shall conform to FDOT and local jurisdiction standards.

EXISTING UTILITIES
THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN THE CONVENIENCE OF THE CONTRACTOR THE ENGINEER ASSUMES NO RESPONSIBILT Y FOR THEIR ACCURACY. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, IT SHALL BE THE CONTRACTOR' S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITIES AND TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATIONS TO THESE UTILITIES WITH THE OWNER OF THE UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THE PLAN OR LOCATED BY THE UTILITY COMPANY. ALL UTILITIES THAT INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED BY THE RESPECTIVE UTILITY COMPANY AND THE CONTRACTOR SHALL COOPERATE WITH THEM DURING RELOCATION OPERATIONS. ANY DELAY OR INCONVENIENCE CAUSED TO THE CONTRACTOR BY THE RELOCATION OF VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT, AND NO EXTRA COMPENSATION WILL BE ALLOWED.

DRAINAGE SYSTEMS
THE CONTRACTOR SHALL PERFORM ALL WORK PERTAINING TO DRAINAGE INCLUDING EXCAVATION OF STORMWATER POND PRIOR TO THE COMMENCEMEN TOF OTHER WORK INCLUDED IN THESE PLANS. THE DRAINAGE FACILITIES SHALL BE MAINTAINED BY THE CONTRACTOR DURING THE COURSE OF THIS CONTRACT. THE CONTRACTOR SHALL INCLUDE FUNDS IN THE DRAINAGE COSTS OF THE CONTRACT TO OPERATE AND MAINTAIN THE DRAINAGE SYSTEMS DURING THE WORK PROCESS. ANY REQUIRED DE-SILTING OF THE STORMWATER MANAGEMENT SYSTEM SHALL BE COMPLETED PRIOR TO FINAL APPROVAL BY EOR

PERMITS AND PERMIT REQUIREMENTS
THE CONTRACTO RSHALL OBTAIN FROM THE OWNER COPIES OF ALL REGULATOR YAND LOCAL AGENCY PERMITS. THE CONTRACTOR SHALL BE EXPECTED TO REVIEW AND ABIDE BY ALL THE REQUIREMENT S AND LIMITATIONS SET FORTH IN THE PERMITS. A COPY OF THE PERMIT SHALL BE KEPT ON THE JOB AT ALL TIMES.

LAYOUT AND CONTROL
UNLESS OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR SHALL PROVIDE FOR THE LAYOUT OF ALL THE WORK TO BE CONSTRUCTED. BENCHMARK INFORMATION SHALL BE PROVIDED TO THE CONTRACTOR BY THE OWNER OR OWNER'S SURVEYOR. ANY DISCREPANCIES BETWEEN FIELD MEASUREMENTS AND CONSTRUCTION PLAN INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

QUALITY CONTROL TESTING REQUIREMENTS
ALL TESTING RESULTS SHALL BE PROVIDED TO THE OWNER/OPERATOR AND THE ENGINEER. TESTING REQUIREMENT SARE TO BE IN ACCORDANC EWITH THE OWNER/OPERATOR 'SSPECIFICATION SAND REQUIREMENTS A LL TEST RESULTS SHALL BE PROVIDED (PASSING AND FAILING) ON A REGULAR AND IMMEDIATE BASIS. CONTRACTOR SHALL PROVIDE TESTING SERVICES THROUGH A FLORIDA LICENSED GEOTECHNICA LENGINEERING FIRM ACCEPTABL ETO THE OWNER AND THE ENGINEER. CONTRACTOR TO SUBMIT TESTING FIRM TO OWNER FOR APPROVAL PRIOR TO COMMENCING TESTING.

SHOP DRAWINGS
SHOP DRAWINGS AND CERTIFICATION SFOR ALL STORM DRAINAGE, WATER SYSTEM, SEWER SYSTEM AND PAVING SYSTEM MATERIALS AND STRUCTURES ARE REQUIRED. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE MATERIALS REQUIRED FOR CONSTRUCTION.

EARTHWORK
EARTHWORK QUANTITIES
THE CONTRACTO RSHALL PERFORM HIS OWN INVESTIGATION SAND CALCULATION SAS NECESSARY TO ASSURE HIMSELF OF EARTHWORK QUANTITIES. THERE IS NO IMPLICATION THAT EARTHWORK BALANCES, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY IMPORT FILL NEEDED, OR FOR REMOVAL AND DISPOSAL OF EXCESS MATERIALS.

EROSION CONTROL
EROSION AND SILTRATION CONTROL MEASURES ARE TO BE PROVIDED AND INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION. IT IS THE SITE CONTACTORS RESPONSIBILITY TO OBTAIN FDEP NPDES NOI PRIOR TO ANY EARTHMOVING ACTIVITIES. THESE MEASURES ARE TO BE INSPECTED BY THE CONTRACTOR ON A REGULAR BASIS AND ARE TO BE MAINTAINED OR REPAIRED ON AN IMMEDIATE BASIS AS REQUIRED. REFER TO WATER MANAGEMEN TDISTRICT PERMIT FOR ADDITIONAL REQUIREMENTS FOR EROSION CONTROL AND SURFACE DRAINAGE. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED WITH SOD WITHIN 7 DAYS OF COMPLETION OF CONSTRUCTION. SOD SHALL BE THE SAME VARIETY OF EXISTING SOD LIMITS OF DISTURBANCE.

LIMITS OF DISTURBANCE
AT NO TIME SHALL THE CONTRACTOR DISTURB SURROUNDING PROPERTIES OR TRAVEL ON SURROUNDING PROPERTIES WITHOUT WRITTEN CONSENT FROM THE PROPERTY OWNER. REPAIR OR RECONSTRUCTIO NOF DAMAGED AREAS ON SURROUNDIN GPROPERTIES SHALL BE PERFORMED BY THE CONTRACTOR ON AN IMMEDIATE BASIS. ALL COSTS FOR REPAIRS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA COMPENSATIONS HALL BE PROVIDED. GRADING AND/OR CLEARING ON PROPERTIE SOTHER THAN SHOWN ON THE APPROVED PLANS IS PROHIBITED.

TREE REMOVAL
THE CONTRACTO RSHALL NOTIFY THE OWNER AND THE ENGINEER WHEN ALL WORK IS LAID OUT (SURVEY STAKED), SO THAT A DETERMINATION MAY BE MADE OF SPECIFIC TREES TO BE REMOVED. NO TREES ON THE CONSTRUCTIO NPLANS AS BEING SAVED SHALL BE REMOVED WITHOUT PERMISSION FROM THE OWNER AND ENGINEER.

CLEARING AND GRUBBING
THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING AND GRUBBING FOR SITE CONSTRUCTION INCLUDING CLEARING FOR PAVING, UTILITIES, DRAINAGE FACILITIES AND BUILDING CONSTRUCTION. ALL AREAS TO BE CLEARED SHALL BE FIELD STAKED AND REVIEWED BY THE OWNER AND/OR ENGINEER PRIOR TO ANY CONSTRUCTION.

MATERIAL STORAGE/DEBRIS REMOVAL
1. NO COMBUSTIBLE BUILDING MATERIALS MAY BE ACCUMULATED ON THE SITE AND NO CONSTRUCTION WORK INVOLVING COMBUSTIBLE MATERIALS MAY BEGIN UNTIL INSTALLATION OF ALL REQUIRED WATER MAINS AND FIRE HYDRANTS HAVE BEEN COMPLETED, DEP APPROVAL RECEIVED FOR THE WATER MAINS, AND THE HYDRANTS ARE IN OPERATION. CONSTRUCTION WORK INVOLVING NON-COMBUSTIBLE MATERIALS, SUCH AS CONCRETE, MASONRY AND STEEL MAY BEGIN PRIOR TO THE FIRE HYDRANTS BEING OPERATIONAL.
2. ALL MATERIA LS EXCAVATED SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE STOCKPILED AT ON-SITE LOCATIONS AS SPECIFIED BY THE OWNER ,MATERIALS SHALL BE STOCKPILED SEPARATEL YAS TO USABLE (NON-ORGANIC) FILL STOCKPILES AND ORGANIC (MUCK) STOCKPILES IF MUCK IS ENCOUNTERED C. ONTRACTO RSHALL BE RESPONSIBL EFOR THE REMOVAL OF ALL UNSUITABLE FILL MATERIALS FROM THE SITE. ALL CLAY ENCOUNTERED SHALL BE EXCAVATED OUT AND REPLACED WITH CLEAN GRANULAR FILL MATERIALS.

FILL MATERIAL
ALL MATERIALS SHALL CONTAIN NO MUCK, STUMPS, ROOTS ,BRUSH ,VEGETATIVE MATTER ,RUBBISH OR OTHER MATERIAL THAT WILL NOT COMPACT INTO A SUITABLE AND ENDURING BACKFILL .FILL SHALL BE CLEAN ,NON-ORGANIC G, RANULAR MATERIAL WITH NOT MORE THAN 10% PASSING THE NO. 200 SIEVE.

COMPACTION
FILL MATERIALS PLACED UNDER ROADWAYS SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. ALL OTHER FILL AREAS ARE TO BE COMPACTED TO AT LEAST 95% MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. FILL MATERIALS SHALL BE PLACED AND COMPACTED IN A MAXIMUM OF 12" LIFTS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER AND OWNER WITH ALL (PASSING AND FAILING) TESTING RESULTS. RESULTS SHALL BE PROVIDED ON A TIMELY AND REGULAR BASIS PRIOR TO CONTRACTOR'S PAY REQUEST SUBMITTAL FOR THE AFFECTED WORK.

PAVEMENT AND/OR ROAD AND RIGHT-OF-WAY WORK
GENERAL DESIGN INTENT
ALL PAVING SURFACES IN INTERSECTION SAND ADJACENT SECTIONS SHALL BE GRADED TO DRAIN POSITIVELY IN THE DIRECTION SHOWN BY THE FLOW ARROWS ON THE PLANS AND TO PROVIDE A SMOOTHLY TRANSITIONED DRIVING SURFACE FOR VEHICLES WITH NO SHARP BREAKS IN GRADE, AND NO UNUSUALLY STEEP OR REVERSE CROSS SLOPES. APPROACHES TO INTERSECTION SAND ENTRANCE AND EXIT GRADES TO INTERSECTION SWILL HAVE TO BE STAKED IN THE FIELD AT DIFFERENT GRADES THAN THE CENTERLINE GRADES TO ACCOMPLISH THE PURPOSES OUTLINED. IN ADDITION, THE STANDARD CROWN WILL HAVE TO BE CHANGED IN ORDER TO DRAIN POSITIVELY IN THE AREA OF INTERSECTIONS. IT IS THE CONTRACTOR' SRESPONSIBILIT YTO ACCOMPLISH THE ABOVE AND THE ENGINEER SHALL BE CONSULTED SO THAT HE MAY MAKE ANY AND ALL REQUIRED INTERPRETATION OSF THE PLANS OR GIVE SUPPLEMENTAR YINSTRUCTION TO ACCOMPLISH THE INTENT OF THE PLANS.

MATERIALS/CONSTRUCTION SPECIFICATIONS
MATERIALS AND CONSTRUCTION METHODS FOR THE ROADWAY CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST EDITION.

PAVEMENT SECTION REQUIREMENTS
CONSTRUCTION OF ROADWAY, SUBGRADE PREPARATION, AND PAVEMENT INSTALLATION SHALL CONFORM TO FDOT STANDARDS AND SOILS REPORT RECOMMENDATIONS UNLESS OTHERWISE NOTED IN THE CONSTRUCTION DOCUMENTS.

SIDEWALKS
SIDEWALKS ARE TO BE CONSTRUCTED IN THE AREA AS SHOWN ON THE CONSTRUCTION PLANS. SIDEWALK SHALL BE CONSTRUCTED OF 4 INCHES OF CONCRETE WITH A 28 DAY COMPRESSION STRENGTH OF 2500 PSI. JOINTS SHALL BE EITHER TOOLED OR SAWCUT AT A DISTANCE OF 5' LENGTHS, HANDICAPPED RAMPS SHALL BE PROVIDED AT ALL INTERSECTION SAND BE IN ACCORDANCE WITH STATE REGULATIONS FOR HANDICAP ACCESSIBILITY. ALL CROSS SLOPES SHALL BE LESS THAN 2.0% AND RUNNING SLOPES SHALL BE LESS THAN 5.0%

PAVEMENT MARKINGS/SIGNAGE
PAVEMENT MARKINGS AND SIGNAGE SHALL BE PROVIDED AS SHOWN ON THE CONSTRUCTION PLANS AND SHALL MEET THE REQUIREMENTS OF THE OWNER/OPERATOR. SIGNAGE SHALL BE IN CONFORMANC EWITH MUTCD (LATEST EDITION). A 48-HOUR PAVEMENT CURING TIME WILL BE PROVIDED PRIOR TO APPLICATION OF THE PAVEMENT MARKINGS. REFLECTIVE PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH FDOT INDEX NO. 17352.

TRAFFIC CONTROL
WHERE APPLICABLE A MOT PLAN SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO COMMENCEMEN OTF WORK. A MINIMUM OF 2-WAY, ONE LANE TRAFFIC SHALL BE MAINTAINED IN THE WORK SITE AREA. ALL CONSTRUCTION WARNING SIGNAGE SHALL BE IN PLACE PRIOR TO COMMENCEMEN TOF CONSTRUCTION AND BE MAINTAINED THROUGHOU TCONSTRUCTION. ACCESS SHALL BE CONTINUOUSLY MAINTAINED FOR ALL PROPERTY OWNERS SURROUNDIN GTHE WORK SITE AREA. LIGHTED WARNING DEVICES ARE TO BE OPERATIONAL PRIOR TO DUSK EACH NIGHT DURING CONSTRUCTION.

CURBING
CURBING SHALL BE CONSTRUCTED WHERE NOTED ON THE CONSTRUCTION PLANS. CONCRETE FOR CURBS SHALL BE DEPARTMENT OF TRANSPORTATION CLASS "1" CONCRETE WITH A 28 DAY COMPRESSION STRENGTH OF 2500 PSI. ALL CURBS SHALL HAVE SAW CUT CONTRACTION JOINTS AND SHALL BE CONSTRUCTED AT INTERVALS NOT TO EXCEED 10'-0" ON CENTER. CONSTRUCTION OF CURBS SHALL BE IN CONFORMANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 520 AND DETAILS PROVIDED ON THE CONSTRUCTION PLANS.

ROW RESTORATION
ALL AREAS WITHIN THE RIGHT-OF-WAY SHALL BE FINISH GRADED WITH A SMOOTH TRANSITION INTO EXISTING GROUND. ALL SWALES SHALL BE STABILIZED IMMEDIATEL YAFTER FINAL GRADING. ALL DISTURBED AREAS SHALL BE RAKED CLEAN OF ALL LIMEROCK AND ROCKS AND SODDED AFTER FINAL GRADING IN ACCORDANCE WITH THE CONSTRUCTION PLANS PRIOR TO FINAL INSPECTION. ALL GRASSING (SOD) SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL ACCEPTANCE BY THE OWNER/OPERATOR.

SITE ACCESS
ALL ACCESS TO THE JOB SITE FOR CONSTRUCTION AND RELATED ACTIVITIES SHALL BE BY EXISTING STREETS AND ROADS.

LANDSCAPING
PROVIDE MINIMUM 5' SEPARATION FROM UTILITIES AND TREES WITH INVASIVE ROOT SYSTEMS.

WATER PIPE MATERIALS
WATER SYSTEM SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND SHALL MEET THE LOCAL JURISDICTION MINIMUM REQUIREMENTS.

POLYVINYL CHLORIDE PLASTIC PIPE (PVC) 4" THROUGH 12" SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI/AWWA C900 (LATEST EDITION) AND SHALL HAVE A MINIMUM WORKING PRESSURE OF 150 PSI AND A DR (DIMENSION RATIO) OF 18. ALL PVC PIPE SHALL BEAR THE NSF LOGO FOR POTABLE WATER. JOINTS SHALL BE OF THE PUSH-ON TYPE AND COUPLINGS CONFORMING TO ASTM D3139, DR18 PIPE.

DUCTILE IRON PIPE (DIP) SHALL BE STANDARD PRESSURE CLASS 350 IN SIZES 4" THROUGH 12" AND CONFORM TO ANSI/AWWA C150/A21.50 (LATEST EDITION). ALL DUCTILE IRON PIPE SHALL HAVE A STANDARD THICKNESS OF CEMENT MORTAR LINING AS SPECIFIED IN ANSI/AWWA C104/A21.4 (LATEST EDITION). PIPE JOINTS SHALL BE OF THE PUSH-ON RUBBER GASKET TYPE CONFORMING TO ANSI/AWWA C111/A21.11 (LATEST EDITION).

PIPE DETECTOR WITH LOCATOR WIRE SHALL BE INSTALLED ON ALL WATER MAINS PER DETAIL. PIPE SIZES GREATER THAN 12" SHALL BE SEPARATELY SPECIFIED ON THE PLANS; WITH THICKNESS CLASSES TO BE SHOWN BASED ON WORKING PRESSURES, PIPE DEPTH AND TRENCH CONDITIONS F. ITTINGS FOR DUCTILE IRON PIPE AND PVC C-900 PIPE SHALL BE DUCTILE IRON AND SHALL CONFORM TO ANSI/AWWA C153/A21.10 (LATEST EDITION) AND SHALL BE CEMENT LINED IN CONFORMANCE WITH ANSI/AWWA C104/A21.4 (LATEST EDITION).

POLYETHYLEN EWRAP USED FOR CORROSION PREVENTION ON DUCTILE IRON PIPE SHALL CONFORM TO THE REQUIREMENT SOF ANSI/ASTM D1248, THE MINIMUM NOMINAL THICKNESS SHALL BE 0.008 IN. (8 MILS). INSTALLATION OF POLY WRAP SHALL BE IN ACCORDANCE WITH AWWA C105. TRANSMISSION MAIN SHALL BE DIP RATED FOR 250 PSI.

VALVES
GATE VALVES SHALL BE RESILIENT SEAT AND SHALL CONFORM TO ANSI/AWWA C509.87 WITH WRENCH NUT, EXTENSION STEMS AND OTHER APPURTENANCE SAS REQUIRED. MANUFACTURER 'SCERTIFICATIO NOF THE VALVES COMPLIANC EWITH AWWA SPECIFICATIO NC509 AND TESTS LISTED THEREIN WILL BE REQUIRED. VALVES SHALL BE CLOW, DRESSER, KENNEDY, AMERICAN.

AIR RELEASE VALVES
AIR RELEASE VALVES SHALL BE PLACED AT HIGH POINTS OF THE TRANSMISSION MAIN TO PERMIT ESCAPE OF TRAPPED AIR. THE VALVE SIZE, LOCATION AND METHOD OF INSTALLATIO NSHALL BE INDICATED ON THE DRAWINGS, OR AS DIRECTED BY THE ENGINEER. AIR RELEASEVALVES SHALL BE CRISPN PRESSURE AIR VALVE TYPE.

WATER SERVICES
UNLESS OTHERWISE NOTED IN THE PLANS, THE UTILITY COMPANY SHALL PROVIDE AND INSTALL WATER METERS. CONTRACTOR SHALL CONSTRUCT WATER SERVICE THROUGH THE CURB STOP AND SET METER BOXES TO FINISHED GRADE AS SHOWN ON THE WATER SYSTEM DETAIL SHEET.

POLYETHYLENE (PE) PRESSURE PIPE FOR WATER SERVICES 1/2" THROUGH 3" SHALL CONFORM TO AWWA C901.88,MIN. 200 PSI. AND SHALL BE PHILLIPS DRISCO CTS 5100 (DR-9) ASTM D-2737 ,200 PSI. ALL SERVICES SHALL INCLUDE THE FOLLOWING: LOCKING CURB STOPS, WYE BRANCHES, UNIONS AS REQUIRED, PE SERVICE PIPE AND CORPORATION STOPS. THE SERVICE SHALL BE COMPLETE THROUGH THE CURB STOP AS SHOWN ON THE DETAIL SHEET AND SHALL BE OF THE TYPE REQUIRED FOR COMPATIBILITY WITH THE SERVICE LINES SPECIFIED AND FITTINGS SHALL BE MANUFACTURED BY FORD.

WHERE APPLICABLE - UNLESS OTHERWISE NOTED IN PLANS, UTILITY COMPANY SHALL PROVIDE AND INSTALL IRRIGATION METERS. WHERE RECLAIM SERVICE IS NOT PROVIDED, CONTRACTOR SHALL CONSTRUC TIRRIGATION SERVICE THROUGH THE CURB STOP AND SET NEW BOXES TO FINISHED GRADE AS SHOWN ON THE WATER SYSTEM DETAIL SHEET.

PIPE INSTALLATION
PIPE INSTALLATIO NOF PVC WATER MAIN SHALL BE IN CONFORMANC EWITH ASTM D2774 (LATEST EDITION) .INSTALLATION OF DUCTILE IRON PIPE WATER MAIN SHALL BE IN CONFORMANCE WITH AWWA C600.87.

COMPACTED BACKFILL SHALL BE TO 98% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 UNDER ALL PAVEMENTS WITH 12" MAXIMUM LIFT THICKNESS .OTHER COMPACTION OF BACKFILL SHALL BE TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 WITH 12" MAXIMUM LIFT THICKNESS. SEE PIPE TRENCHING DETAILS.

MINIMUM COVER OVER ALL PIPE SHALL BE 36" FROM TOP OF PIPE TO FINISHED GRADE. SEE PLAN AND PROFILE SHEETS FOR REQUIRED DEPTH.

NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE. AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

ALL WATER MAINS SHALL BE INSTALLED WITH CONCRETE THRUST BLOCKS.
ALL PLUGS, CAPS, TEES, BENDS, FIRE HYDRANTS, VALVES, ETC. SHALL BE MECHANICAL JOINT FITTINGS.

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

#	Revisions	Date
	Description	

#	Revisions	Date
	Description	

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
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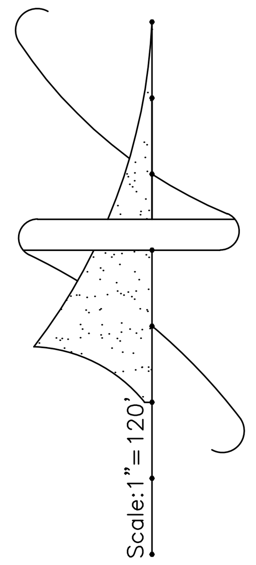
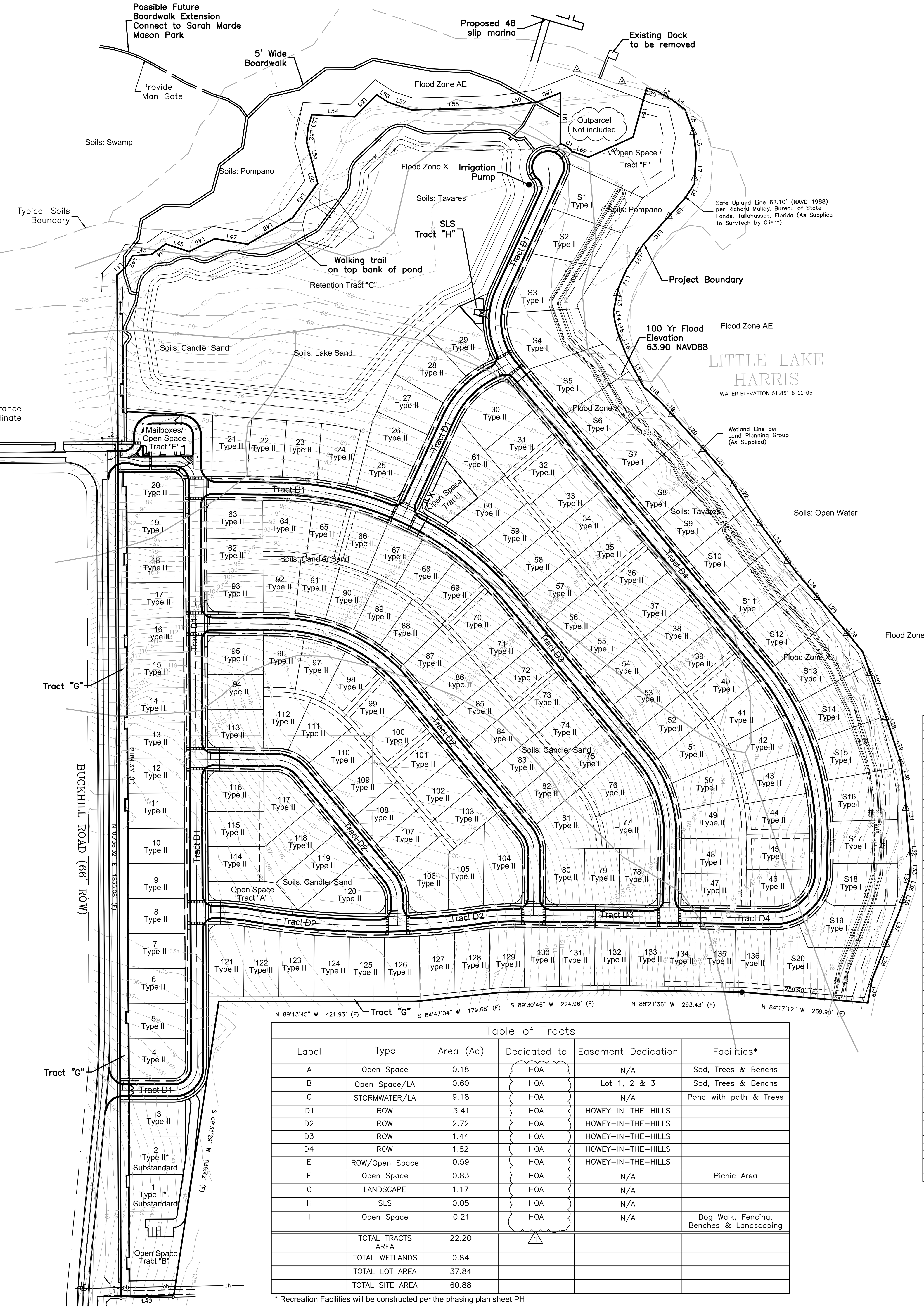
Specifications & Notations

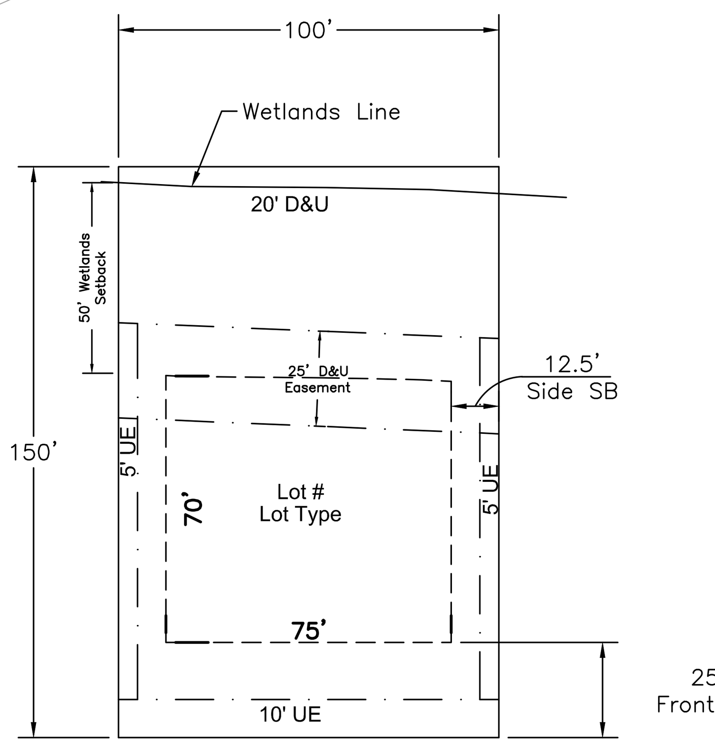
WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
----	Scale
09-07-21	Date
WH2-SPC	File

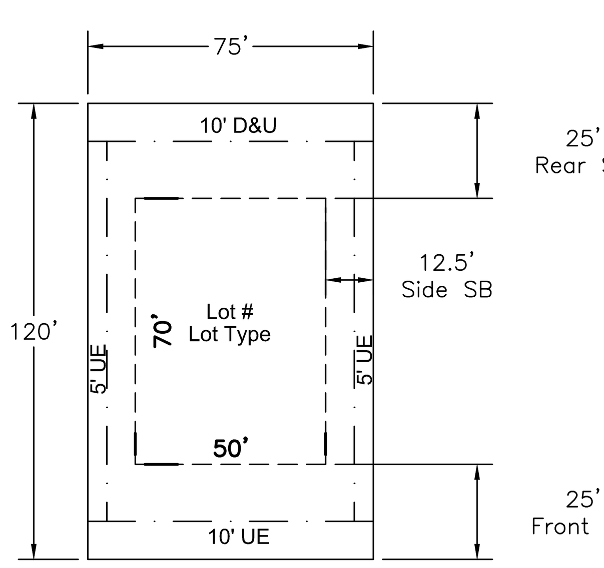
Dwg. No.
SPC
2 of 83







Typical Lot Layout
Type I



Typical Lot Layout
Type II

Swimming Pool Setback Note
Swimming pool setbacks are called out in Section 501.08 of the City of Groveland Land Development Code. Subsection B specifies that a screen enclosure must be 10-feet from side and rear property lines. Subsection F states that pools and pool decks must be 10-feet from side and rear property lines.
Home Builders shall ensure that the placement of the pool and pool deck relative to side and rear property lines must be done with consideration as to whether a screen enclosure is planned. If a screen enclosure is planned, the pool needs to be set further back from the property lines to allow for access around the pool. The maximum height of a screen enclosure is 25 feet. Pool equipment may be placed in a side yard no closer to the property line than 5-feet. The rear yard setback for pool equipment remains at 10 feet

Table of Tracts

Label	Type	Area (Ac)	Dedicated to	Easement Dedication	Facilities*
A	Open Space	0.18	HOA	N/A	Sod, Trees & Benchs
B	Open Space/LA	0.60	HOA	Lot 1, 2 & 3	Sod, Trees & Benchs
C	STORMWATER/LA	9.18	HOA	N/A	Pond with path & Trees
D1	ROW	3.41	HOA	HOWEY-IN-THE-HILLS	
D2	ROW	2.72	HOA	HOWEY-IN-THE-HILLS	
D3	ROW	1.44	HOA	HOWEY-IN-THE-HILLS	
D4	ROW	1.82	HOA	HOWEY-IN-THE-HILLS	
E	ROW/Open Space	0.59	HOA	HOWEY-IN-THE-HILLS	
F	Open Space	0.83	HOA	N/A	Picnic Area
G	LANDSCAPE	1.17	HOA	N/A	
H	SLS	0.05	HOA	N/A	
I	Open Space	0.21	HOA	N/A	Dog Walk, Fencing, Benches & Landscaping
	TOTAL TRACTS AREA	22.20	1		
	TOTAL WETLANDS	0.84			
	TOTAL LOT AREA	37.84			
	TOTAL SITE AREA	60.88			

* Recreation Facilities will be constructed per the phasing plan sheet PH

Legend

Symbol		Symbol	
	– Catch Basin		– New Pavement
	– Mitered End Section		– New Concrete
	– Manhole	Silt Fence	– Silt Fence
	– Cleanout	Water	– Waterline
		Storm	– Storm Sewer
	– Hydrant	Sanitary	– Sanitary Sewer
100.00	– Ex. Elevation	100.00	– New Elevation

Project Boundary Line/Curve Table

Curve Information: Field

CURVE	RADIUS	ARC LENGTH	CHORD BEARING	CHORD LENGTH	DELTA ANGLE	TANGENT
C1	46.00'	31.04'	S 56°23'48" E	30.46'	38°39'48"	16.14'

Line Information: Field

LINE	BEARING	DISTANCE
L1	S 89°50'08" E	32.76'
L2	N 89°36'12" W	33.26'
L3	S 59°21'44" E	39.46'
L4	S 51°48'39" E	32.32'
L5	S 20°06'30" E	52.66'
L6	S 05°48'50" E	46.69'
L7	S 04°14'38" W	63.65'
L8	S 33°26'19" W	33.87'
L9	S 42°12'38" W	63.00'
L10	S 43°27'07" W	70.97'
L11	S 34°38'41" W	66.78'
L12	S 24°34'08" W	43.64'
L13	S 12°12'12" W	51.72'
L14	S 07°46'34" E	19.89'
L15	S 14°19'43" E	34.15'
L16	S 21°00'25" E	43.53'
L17	S 27°45'01" E	76.71'
L18	S 47°28'28" E	45.18'
L19	S 42°26'57" E	51.56'
L20	S 41°22'02" E	87.92'
L21	S 40°24'32" E	86.99'
L22	S 32°00'05" E	82.70'
L23	S 35°51'18" E	158.38'
L24	S 39°44'36" E	86.83'
L25	S 38°30'16" E	48.41'
L26	S 38°37'19" E	88.55'
L27	S 18°50'58" E	150.83'
L28	S 17°00'24" E	31.36'
L29	S 17°24'59" E	66.00'
L30	S 06°59'58" E	62.36'
L31	S 04°11'13" E	110.04'
L32	S 04°23'45" E	41.16'
L33	S 04°33'28" W	36.78'
L34	S 14°23'11" W	7.18'
L35	S 20°10'10" W	13.99'
L36	S 17°31'58" W	50.58'
L37	S 22°56'32" W	68.25'
L38	S 22°36'49" W	91.03'
L39	S 11°13'03" W	51.32'

Line Information: Field

LINE	BEARING	DISTANCE
L40	N 89°51'03" W	112.96'
L41	N 47°09'43" E	28.30'
L42	N 31°02'11" E	24.81'
L43	N 86°55'48" E	40.31'
L44	N 55°05'08" E	38.19'
L45	S 71°01'20" E	52.29'
L46	N 64°09'46" E	61.62'
L47	S 79°41'54" E	70.94'
L48	N 60°39'33" E	110.96'
L49	N 36°52'01" E	91.94'
L50	N 13°52'52" W	29.71'
L51	N 14°17'52" W	61.64'
L52	N 06°23'22" E	30.93'
L53	N 16°45'59" E	28.88'
L54	S 86°22'27" E	91.79'
L55	N 45°57'51" E	66.74'
L56	S 55°54'12" E	29.18'
L57	S 70°43'29" E	52.36'
L58	N 89°10'11" E	183.00'
L59	N 82°49'33" E	87.24'
L60	N 69°29'41" E	52.88'
L61	S 00°53'22" W	108.93'
L62	S 70°02'13" E	36.99'
L63	N 66°26'02" E	104.12'
L64	N 16°19'52" E	108.8'±
L65	S 72°51'43" E	22.57'

Line Information: Deed

LINE	BEARING	DISTANCE
L66	N 89°17'20" E	146.00'

Lot Characteristic Table

Lot	Frontage	Depth	Area (ac)	Building Envelope	Lot	Frontage	Depth	Area (ac)	Building Envelope	Lot	Frontage	Depth	Area (ac)	Building Envelope
1	80.9	102.4	0.2	60'x53'	60	75	148.4	0.27	50'X85'	119	75	163.5	0.28	50'X70'
2	80.4	114.9	0.22	60'x66'	61	75	115.2	0.23	50'X68'	120	114.7	164	0.28	45'X60
3	79.2	120.5	0.21	55'x70'	62	75	120	0.21	55'X70'	121	75	151.1	0.27	50'X70'
4	85	121.2	0.24	60'x70'	63	82.5	120	0.22	55'X70'	122	75	139.8	0.25	50'X70'
5	75	121.1	0.21	50'X70	64	108.2	120	0.28	50'X70'	123	75	132	0.23	50'X70'
6	75	121.1	0.21	50'X70'	65	82.9	119.2	0.21	45'X65'	124	75	127.6	0.22	50'X70'
7	75	121	0.21	55'X70	66	82.8	119	0.2	45'X65'	125	75	127	0.22	50'X70'
8	75	120.8	0.21	50'X70'	67	82.8	119	0.2	45'X65'	126	75	0.27	0.22	50'X70'
9	75	120.8	0.21	50'X70'	68	82.8	119.2	0.2	45'X65'	127	75.3	127.7	0.22	50'X70'
10	75	120.8	0.21	50'X70'	69	89	119.7	0.21	45'X65'	128	75.1	127.7	0.22	50'X70'
11	75	120.7	0.21	50'X70'	70	84.6	120	0.22	50'X70'	129	75	128.4	0.22	50'X70'
12	75	120.6	0.21	50'X70'	71	75	120	0.21	50'X70'	130	75	125.9	0.22	50'X70'
13	75	120.5	0.21	50'X70'	72	75	120	0.21	50'X70'	131	75	123.4	0.21	50'X70'
14	75	120.5	0.21	50'X70'	73	75	120	0.21	50'X70'	132	75	122.8	0.21	50'X70'
15	75	120.4	0.21	50'X70'	74	75	120	0.21	50'X70'	133	75	123.1	0.21	50'X70'
16	75	120.3	0.21	50'X70'	75	75	120	0.21	50'X70'	134	75	123.1	0.21	50'X70'
17	75	120.2	0.21	50'X70'	76	108.5	120.1	0.25	50'X70'	135	75	123.4	0.21	50'X70'
18	75	120.1	0.21	50'X70'	77	116.5	120.3	0.27	50'X70'	136	75	123.6	0.22	50'X70'
19	75	120.1	0.21	50'X70'	78	82.5	120	0.22	50'X75'	S1	101.8	210.6	0.45	70'X60'
20	85.8	120.1	0.23	60'x70'	79	75	120	0.21	50'X70'	S2	105.4	202.6	0.4	65'X48'
21	75.2	125.9	0.23	50'x70'	80	83.1	120	0.22	50'X75'	S3	137.4	202.6	0.45	75X35'
22	75.2	121.1	0.21	50'X70'	81	51.1	120	0.26	48'X68'	S4	129	204.2	0.43	80'X55'
23	75	120.1	0.21	50'X70'	82	75	120	0.21	50'X70'	S5	123.7	173.5	0.4	60'X55'
24	75	120.1	0.24	50'X65'	83	75	120	0.21	50'X70'	S6	100	169.7	0.35	60'X40'
25	94.2	120	0.22	50'X58'	84	75	120	0.21	50'X70'	S7	100	169.7	0.4	75'X50'
26	75	120	0.21	50'X70'	85	75	120	0.21	50'X70'	S8	100	175.6	0.41	75'X50'
27	76.1	120.7	0.21	50'X70'	86	75	120	0.21	50'X70'	S9	100	171.8	0.41	75'X50'
28	74.9	120	0.25	50'X70'	87	69.8	120	0.21	50'X70'	S10	100	165.5	0.39	75'X50'
29	73.7	120	0.27	50'X70'	88	64.9	120	0.21	45'X65'	S11	100	162	0.37	75'X45'
30	82.4	135	0.29	50'X85'	89	64.9	120	0.21	45'X65'	S12	100	162	0.37	75'X45'
31	75	135	0.23	50'X85'	90	64.9	120	0.21	45'X65'	S13	93.3	162.6	0.42	75'X55'
32	75	135	0.23	50'X85'	91	64.9	120	0.21	45'X65'	S14	90	157.1	0.38	69'X50'
33	75	135	0.23	50'X85'	92	69.1	120	0.21	45'X65'	S15	88.3	157.1	0.37	67'X50'
34	75	135	0.23	50'X85'	93	82.5	120	0.22	50'X75'	S16	88.5	159.6	0.37	67'x45'
35	75	135	0.23	50'X85'	94	75	120	0.21	50'X70'	S17	90	159.6	0.34	65'X50'
36	75	135	0.23	50'X85'	95	82.5	120	0.23	50'X75'	S18	81.7	164.9	0.34	65'X35'
37	75	135	0.23	50'X85'	96	87.5	120	0.21	48'X68'	S19	75	172.8	0.38	50'x50'
38	75	135	0.23	50'X85'	97	92.9	120	0.21	48'X68'	S20	62.3	151.3	0.58	50'X90'
39	75	135	0.23	50'X85'	98	92.9	120	0.21	48'X68'	Subtotal	3,282	lf	11.85	Ac
40	75	135	0.23	50'X85'	99	83.4	120	0.21	48'X68'					
41	93.5	135	0.25	50'X65'	100	75	120	0.21	50'X70'					
42	86.1	135	0.23	45'X70'	101	75	120	0.21	50'X70'	Total	12,277	lf	37.82	Ac
43	86.1	135	0.23	45'X70'	102	75	120	0.21	50'X70'					
44	86.1	135	0.23	45'X70'	103	75	120	0.21	50'X70'					
45	77.9	135	0.24	50'X85'	104	93.2	174.6	0.32	50'X70'					
46	78.6	135	0.22	35'X41'	105	75.7	121.4	0.26	50'X65'					
47	68.5	139	0.23	45'X85'	106	95	121.4	0.28	50'X65'					
48	75	139	0.24	50'X85'	107	75	120	0.21	50'X70'					
49	60	139	0.24	45'X70'	108	75	120	0.21	50'X70'					
50	60	136.4	0.24	43'X70'	109	75	120	0.21	50'X70'					
51	60	135.5	0.25	45'X70'	110	75	120	0.21	50'X70'					
52	75	135	0.23	50'X85'	111	52.5	120	0.22	48'X68'					
53	75	135	0.23	50'X85'	112	52.5	120	0.22	48'X68'					
54	75	135	0.23	50'X85'	113	82.5	120	0.22	50'X70'					
55	75	135	0.23	50'X85'	114	75	120	0.21	50'X70'					
56	75	135	0.23	50'X85'	115	75	120	0.21	50'X70'					
57	75	135	0.23	50'X85'	116	85	120	0.23	55'X70'					
58	75	137.6	0.23	50'X85'	117	112.7	139.1	0.24	45'X50'					
59	75	137.6	0.23	50'X85'	118	75	139.1	0.28	50'X70'					
Subtotal	4,414	lf	13.13	Ac	Subtotal	4,582	lf	12.84	Ac					

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

#	Date	Description
Revisions

#	Date	Description
1	9/19/22	Town Comm
Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942 ph (407) 299-0650
Business Authorization Number - EB 00006579

Overall Subdivision Plan
WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=130'	Scale
09-07-21	Date
WH2-C1	File

Dwg. No.
C1

Phase Hatching

- Phase I
- Phase II
- Phase III
- Phase IV
- Phase V

Note:
Phasing refers to infrastructure construction and platting of lots/roads in individual phases.

#	Date	Description
1	9/19/22	Town Comm

Revisions

#	Date	Description

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Construction Phasing Plan

WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=120'	Scale
09-07-21	Date
WH2-C2	File

Dwg. No.
C2

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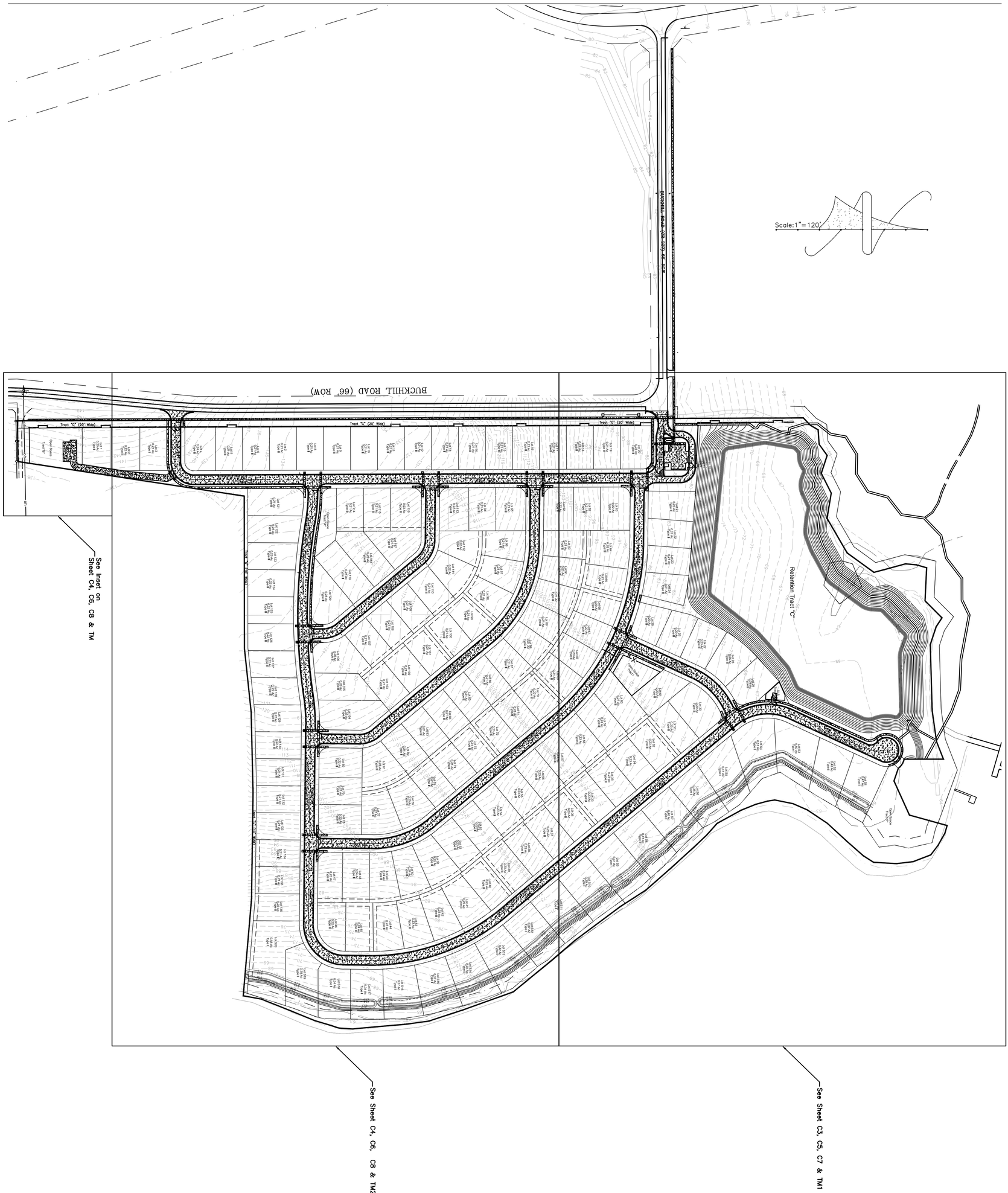
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



PROFESSIONAL ENGINEER
STATE OF FLORIDA
DARCY UNROE
LICENSE
No 60929

Darcy Unroe PE 60929

Subdivision Key Plan

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

C3

5 of 83

Dwg. No.	WH2-C3
Date	09-07-21
Scale	1"=130'
Checked	DP
Drawn	DP

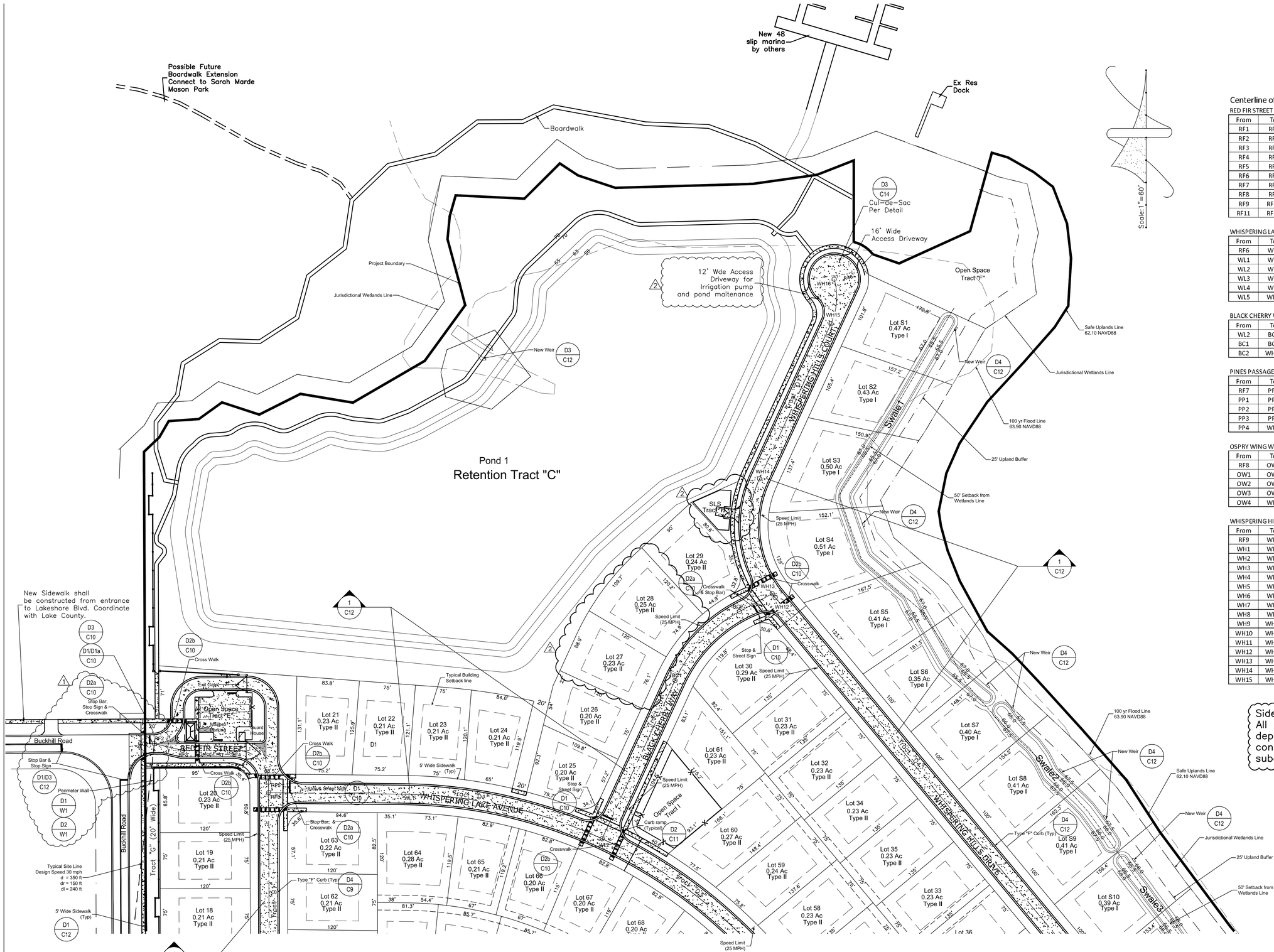
Unroe Engineering, Inc

Civil Engineering/Planning/Scientific Evaluation

PO Box 690942, Orlando, Fl 32869-0942

Business Authorization Number - EB 00006579 ph (407) 299-0650

Revisions				Revisions			
#	Date	Description		#	Date	Description	



Centerline of Road Distances, Bearings & Radii

RED FIR STREET

From	To	Distance	Bearing	Radius
RF1	RF2	12.56	N 89d46'46" E	
RF2	RF3	38.57	N 76d43'37" W	
RF3	RF4	71.89	S 89d46'40" W	
RF4	RF5	60.81	S 45d13'20" E	43.00
RF5	RF6	14.12	S 0d13'20" E	
RF6	RF7	290.03	S 0d13'20" E	
RF7	RF8	209.03	S 0d13'20" E	
RF8	RF9	327.03	S 0d13'20" E	
RF9	RF10	331.12	S 0d13'20" E	
RF11	RF12	114.66	S 89d53'30" E	

WHISPERING LAKE AVENUE

From	To	Distance	Bearing	Radius
RF6	WL1	180.50	S 89d23'48" E	
WL1	WL2	271.53	S 77d20'29" E	650.00
WL2	WL3	287.62	S 52d30'14" E	650.00
WL3	WL4	445.31	N 39d43'13" W	
WL4	WL5	172.34	S 19d33'30" E	250.00
WL5	WH7	176.34	S 0d36'14" W	

BLACK CHERRY WAY

From	To	Distance	Bearing	Radius
WL2	BC1	232.67	N 24d42'58" E	
BC1	BC2	125.99	N 43d4'28" E	200.00
BC2	WH13	49.83	N 61d25'59" E	

PINES PASSAGE ROAD

From	To	Distance	Bearing	Radius
RF7	PP1	180.94	S 89d23'48" E	
PP1	PP2	294.04	S 64d33'31" E	350.00
PP2	PP3	407.72	S 39d43'13" E	
PP3	PP4	51.70	S 19d33'30" E	75.00
PP4	WH6	134.11	S 0d36'14" W	

OSPRY WING WAY

From	To	Distance	Bearing	Radius
RF8	OW1	169.82	S 89d23'48" E	
OW1	OW2	63.01	S 64d33'31" E	75.00
OW2	OW3	290.82	S 39d43'13" E	
OW3	OW4	49.70	S 20d22'17" E	75.00
OW4	WH3	56.46	S 1d1'21" E	

WHISPERING HILLS DRIVE

From	To	Distance	Bearing	Radius
RF9	WH1	39.42	N 89d23'46" W	
WH1	WH2	78.65	S 84d53'6" E	500.00
WH2	WH3	312.56	S 86d7'24" E	1550.00
WH3	WH4	175.00	N 84d45'6" E	1550.00
WH4	WH5	78.65	N 86d5'34" E	500.00
WH5	WH6	38.18	N 89d23'46" W	
WH6	WH7	290.00	N 89d23'46" W	
WH7	WH8	224.00	N 89d23'46" W	
WH8	WH9	141.42	N 45d36'14" E	100.00
WH9	WH10	69.79	S 0d36'14" W	
WH10	WH11	396.38	N 19d33'30" W	575.00
WH11	WH12	830.21	S 39d43'13" E	
WH12	WH13	6.50	N 38d28'44" W	150.00
WH13	WH14	154.41	N 6d15'39" W	150.00
WH14	WH15	228.09	S 24d42'58" W	
WH15	WH16	59.57	N 4d4'31" E	

Sidewalk Note:
All sidewalks & curb ramps depicted on this plan shall be constructed at the time of the subdivision construction.

#	Description	Date
	Revisions	

#	Description	Date
2	Town Comm	12/9/22
1	Town Comm	9/19/22
	Revisions	

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Subdivision Layout Plan - North

WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=60'	Scale
09-07-21	Date
WH2-C4	File

Dwg. No.
C4
6 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

BUCKHILL ROAD (66' ROW)

Buckhill Road (Improvements by County)

Tract "C" (20' Wide)

RED FIR STREET

WHISPERING LAKE AVENUE

WHISPERING HILLS DRIVE

PINES PASSAGE ROAD

OSPREY WING WAY

Tract "A" Open Space

Tract "B"

Tract "C" (10' Wide)

Tract "D1"

Tract "D2"

Tract "D3"

Tract "D4"

Tract "E"

Tract "F"

Tract "G" (10' Wide)

Swale3

Swale4

Lot 1 0.20 Ac Type I

Lot 2 0.22 Ac Type I

Lot 3 0.21 Ac Type I

Lot 4 0.24 Ac Type II Secondary Entrance

Lot 5 0.21 Ac Type II

Lot 6 0.21 Ac Type II

Lot 7 0.21 Ac Type II

Lot 8 0.21 Ac Type II

Lot 9 0.21 Ac Type II

Lot 10 0.21 Ac Type II

Lot 11 0.21 Ac Type II

Lot 12 0.21 Ac Type II

Lot 13 0.21 Ac Type II

Lot 14 0.21 Ac Type II

Lot 15 0.21 Ac Type II

Lot 16 0.21 Ac Type II

Lot 17 0.21 Ac Type II

Lot 68 0.20 Ac Type II

Lot 69 0.21 Ac Type II

Lot 70 0.22 Ac Type II

Lot 71 0.21 Ac Type II

Lot 72 0.21 Ac Type II

Lot 73 0.21 Ac Type II

Lot 74 0.21 Ac Type II

Lot 75 0.21 Ac Type II

Lot 76 0.25 Ac Type II

Lot 77 0.27 Ac Type II

Lot 78 0.22 Ac Type II

Lot 79 0.21 Ac Type II

Lot 80 0.22 Ac Type II

Lot 81 0.26 Ac Type II

Lot 82 0.21 Ac Type II

Lot 83 0.21 Ac Type II

Lot 84 0.21 Ac Type II

Lot 85 0.21 Ac Type II

Lot 86 0.21 Ac Type II

Lot 87 0.21 Ac Type II

Lot 88 0.21 Ac Type II

Lot 89 0.21 Ac Type II

Lot 90 0.21 Ac Type II

Lot 91 0.21 Ac Type II

Lot 92 0.22 Ac Type II

Lot 93 0.21 Ac Type II

Lot 94 0.21 Ac Type II

Lot 95 0.23 Ac Type II

Lot 96 0.21 Ac Type II

Lot 97 0.21 Ac Type II

Lot 98 0.21 Ac Type II

Lot 99 0.21 Ac Type II

Lot 100 0.21 Ac Type II

Lot 101 0.21 Ac Type II

Lot 102 0.21 Ac Type II

Lot 103 0.21 Ac Type II

Lot 104 0.32 Ac Type II

Lot 105 0.26 Ac Type II

Lot 106 0.28 Ac Type II

Lot 107 0.21 Ac Type II

Lot 108 0.21 Ac Type II

Lot 109 0.21 Ac Type II

Lot 110 0.21 Ac Type II

Lot 111 0.22 Ac Type II

Lot 112 0.22 Ac Type II

Lot 113 0.22 Ac Type II

Lot 114 0.21 Ac Type II

Lot 115 0.21 Ac Type II

Lot 116 0.23 Ac Type II

Lot 117 0.24 Ac Type II

Lot 118 0.28 Ac Type II

Lot 119 0.28 Ac Type II

Lot 120 0.28 Ac Type II

Lot 121 0.27 Ac Type II

Lot 122 0.25 Ac Type II

Lot 123 0.23 Ac Type II

Lot 124 0.22 Ac Type II

Lot 125 0.22 Ac Type II

Lot 126 0.22 Ac Type II

Lot 127 0.22 Ac Type II

Lot 128 0.22 Ac Type II

Lot 129 0.22 Ac Type II

Lot 130 0.22 Ac Type II

Lot 131 0.21 Ac Type II

Lot 132 0.21 Ac Type II

Lot 133 0.21 Ac Type II

Lot 134 0.21 Ac Type II

Lot 135 0.21 Ac Type II

Lot 136 0.22 Ac Type II

Lot 36 0.23 Ac Type II

Lot 37 0.23 Ac Type II

Lot 38 0.23 Ac Type II

Lot 39 0.23 Ac Type II

Lot 40 0.23 Ac Type II

Lot 41 0.25 Ac Type II

Lot 42 0.23 Ac Type II

Lot 43 0.23 Ac Type II

Lot 44 0.23 Ac Type II

Lot 45 0.24 Ac Type II

Lot 46 0.22 Ac Type II

Lot 47 0.23 Ac Type II

Lot 48 0.24 Ac Type II

Lot 49 0.24 Ac Type II

Lot 50 0.24 Ac Type II

Lot 51 0.25 Ac Type II

Lot 52 0.23 Ac Type II

Lot 53 0.23 Ac Type II

Lot 54 0.23 Ac Type II

Lot 55 0.23 Ac Type II

Lot 56 0.23 Ac Type II

Lot 57 0.23 Ac Type II

Lot S11 0.37 Ac Type I

Lot S12 0.37 Ac Type I

Lot S13 0.42 Ac Type I

Lot S14 0.38 Ac Type I

Lot S15 0.37 Ac Type I

Lot S16 0.37 Ac Type I

Lot S17 0.34 Ac Type I

Lot S18 0.34 Ac Type I

Lot S19 0.38 Ac Type I

Lot S20 0.58 Ac Type I

Open Space Tract "A"

Secondary Entrance

Stop & Street Sign

Stop Bar & Crosswalk

Stop Bar, Crosswalk

Cross Walk

Curb ramp (Typical)

Speed Limit (25 MPH)

5' Wide Sidewalk (Typ)

Landscape Buffer

Perimeter Wall

Type "F" Curb (Typ)

New Weir

Safe Uplands Line 62.10 NAVD88

100 yr Flood Line 63.90 NAVD88

Project Boundary

Jurisdictional Wetlands Line

25' Upland Buffer

50' Setback from Wetlands Line

Typical Building Setback line

Typical SW to be Constructed with subdivision

Typical Site Line Design Speed 30 mph
d = 350 ft
dr = 150 ft
dl = 240 ft

Detectable warning Surface Typical

5' Wide Sidewalk to be constructed with lot (Typ)

Concrete Parking for Rec. Area

Split rail Fence

20' Access Easement

30' Acces Easement

Open Space

Sidewalk Note:
All sidewalks & curb ramps depicted on this plan shall be constructed at the time of the subdivision construction.

Scale 1" = 60'

Centerline of Road Distances, Bearings & Radii

RED FIR STREET

From	To	Distance	Bearing	Radius
RF1	RF2	12.56	N 89d46'46" E	
RF2	RF3	38.57	N 76d43'37" W	
RF3	RF4	71.89	S 89d46'40" W	
RF4	RF5	60.81	S 45d13'20" E	43.00
RF5	RF6	14.12	S 0d13'20" E	
RF6	RF7	290.03	S 0d13'20" E	
RF7	RF8	209.03	S 0d13'20" E	
RF8	RF9	327.03	S 0d13'20" E	
RF9	RF10	331.12	S 0d13'20" E	
RF11	RF12	114.66	S 89d53'30" E	

WHISPERING LAKE AVENUE

From	To	Distance	Bearing	Radius
RF6	WL1	180.50	S 89d23'48" E	
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WL2	WL3	287.62	S 52d30'14" E	650.00
WL3	WL4	445.31	N 39d43'13" W	
WL4	WL5	172.34	S 19d33'30" E	250.00
WL5	WH7	176.34	S 0d36'14" W	

BLACK CHERRY WAY

From	To	Distance	Bearing	Radius
WL2	BC1	232.67	N 24d42'58" E	
BC1	BC2	125.99	N 43d4'28" E	200.00
BC2	WH13	49.83	N 61d25'59" E	

PINES PASSAGE ROAD

From	To	Distance	Bearing	Radius
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PP1	PP2	294.04	S 64d33'31" E	350.00
PP2	PP3	407.72	S 39d43'13" E	
PP3	PP4	51.70	S 19d33'30" E	75.00
PP4	WH6	134.11	S 0d36'14" W	

OSPRY WING WAY

From	To	Distance	Bearing	Radius
RF8	OW1	169.82	S 89d23'48" E	
OW1	OW2	63.01	S 64d33'31" E	75.00
OW2	OW3	290.82	S 39d43'13" E	
OW3	OW4	49.70	S 20d22'17" E	75.00
OW4	WH3	56.46	S 1d1'21" E	

WHISPERING HILLS DRIVE

From	To	Distance	Bearing	Radius
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WH1	WH2	78.65	S 84d53'6" E	500.00
WH2	WH3	312.56	S 86d7'24" E	1550.00
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WH4	WH5	78.65	N 86d5'34" E	500.00
WH5	WH6	38.18	N 89d23'46" W	
WH6	WH7	290.00	N 89d23'46" W	
WH7	WH8	224.00	N 89d23'46" W	
WH8	WH9	141.42	N 45d36'14" E	100.00
WH9	WH10	69.79	S 0d36'14" W	
WH10	WH11	396.38	N 19d33'30" W	575.00
WH11	WH12	830.21	S 39d43'13" E	
WH12	WH13	6.50	N 38d28'44" W	150.00
WH13	WH14	154.41	N 6d15'39" W	150.00
WH14	WH15	228.09	S 24d42'58" W	
WH15	WH16	59.57	N 4d4'31" E	

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

#	Description	Date
	Revisions	
	Town Comm	12/9/22
2		
1		
	Revisions	

Subdivision Layout Plan - South

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=60'	Scale
09-07-21	Date
WH2-C5	File

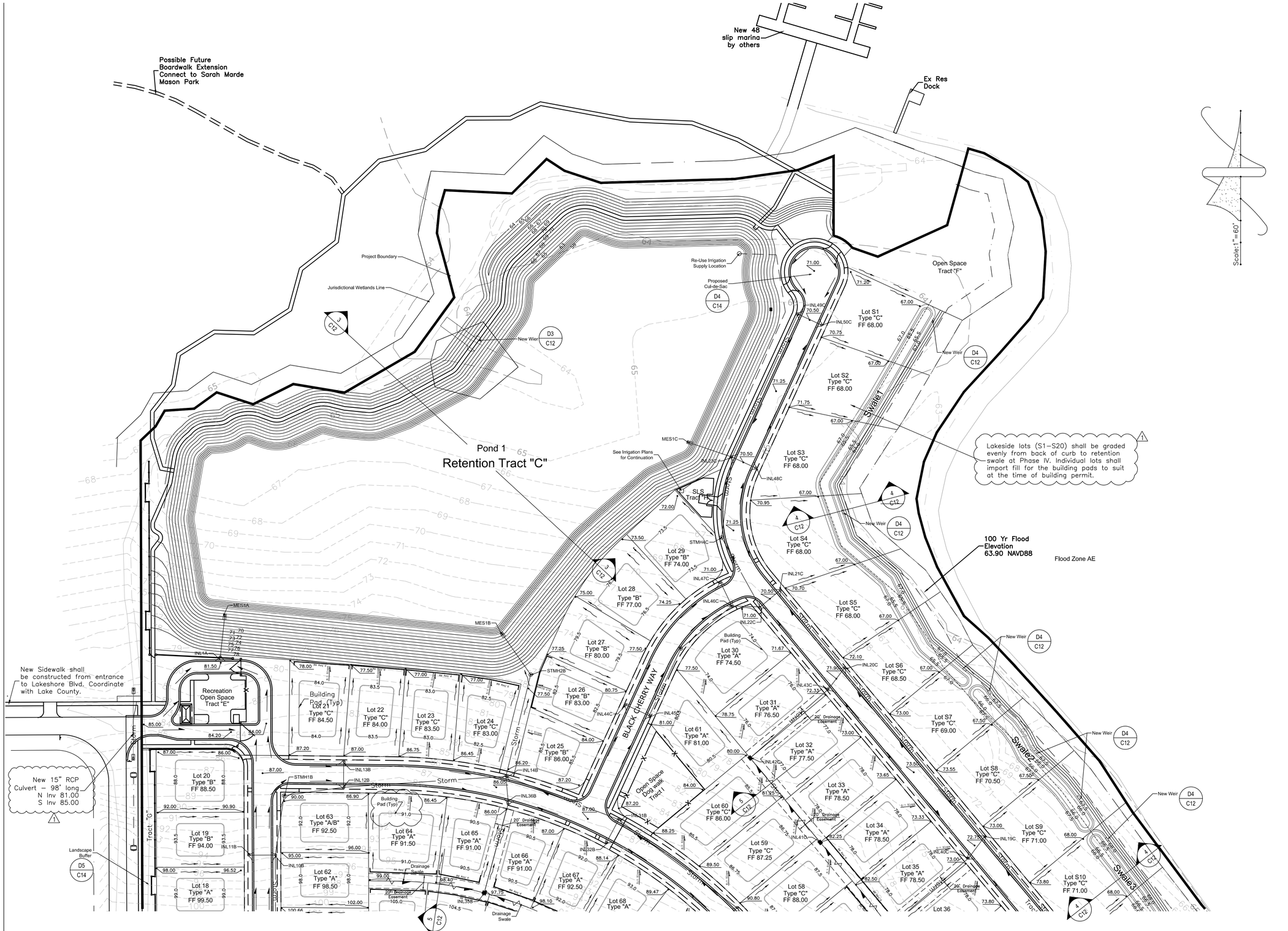
Dwg. No.

C5

7 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



Revisions

#	Date	Description
1	9/19/22	Town Comm

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Subdivision Grading Plan - South

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=60'	Scale
09-07-21	Date
WH2-C6	File

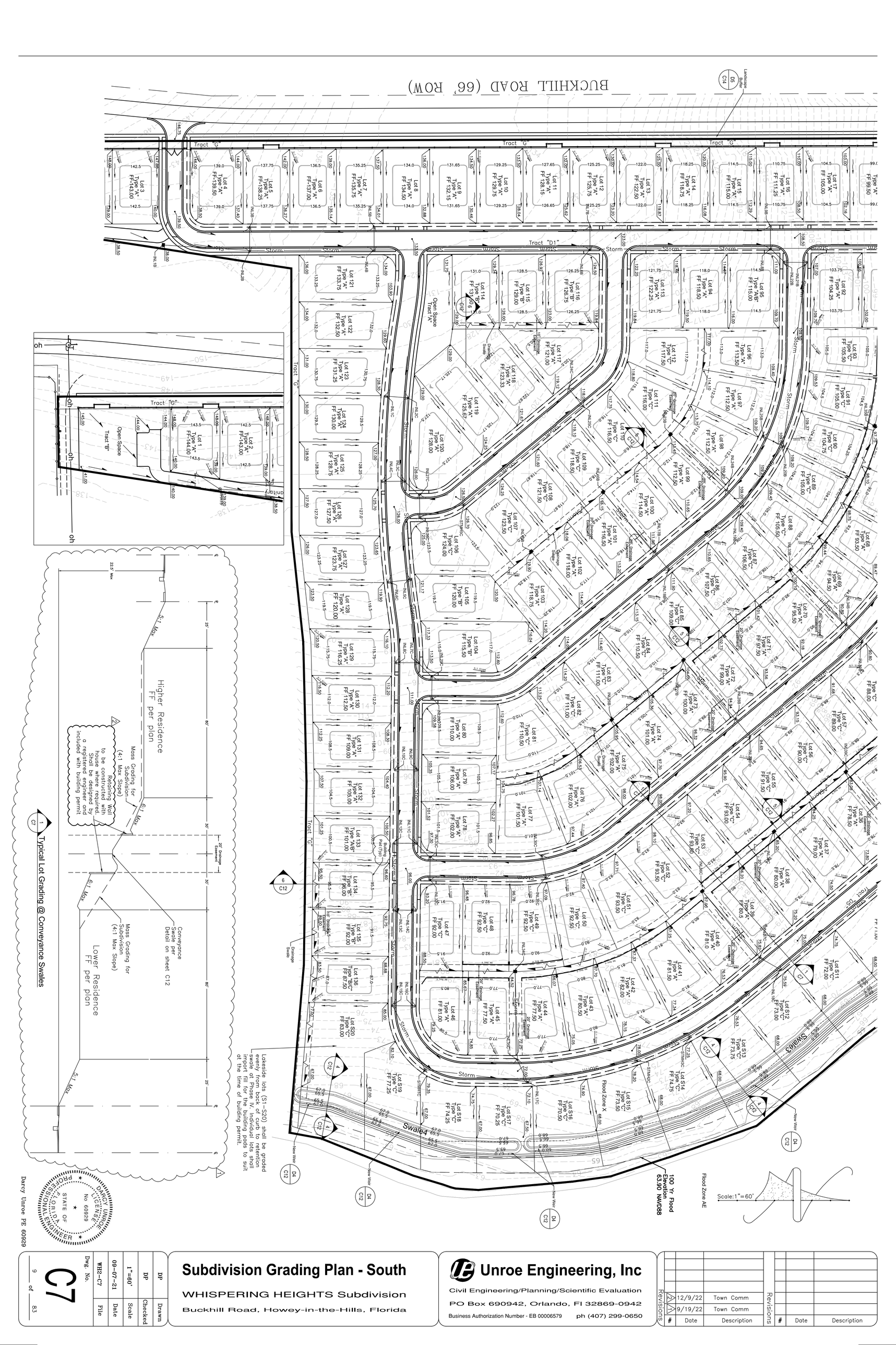
Dwg. No.

C6

8 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



Darcy Unroe PE 60929

STATE OF FLORIDA PROFESSIONAL ENGINEER DARCY UNROE LICENSE No 60929

Subdivision Grading Plan - South

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

Unroe Engineering, Inc

Civil Engineering/Planning/Scientific Evaluation

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Business Authorization Number - EB 00006579 ph (407) 299-0650

Revisions			
#	Date	Description	
2	12/9/22	Town Comm	
1	9/19/22	Town Comm	

Drawn	DP
Checked	DP
Scale	1"=60'
Date	09-07-21
File	WH2-C7
Dwg. No.	C7

Possible Future Boardwalk Extension Connect to Sarah Marde Mason Park

New 48 slip marina by others

Scale: 1"=60'

12' Wde Access Driveway for Irrigation pump and pond maitenance

406 – Irrigation Pump Station w/ 125 psi Pressure Tank

New 4" Irrigation well backup supply

Re-use Water Supply Inlet

405 – Irrigation Wet Well

Pond 1
Retention Tract "C"

Open Space Tract "F"

Open Space Tract "E"

Open Space Dog Walk Trail 1

Tract "G"

Lot S1 | Lot S2 | Lot S3 | Lot S4 | Lot S5 | Lot S6 | Lot S7 | Lot S8 | Lot S9 | Lot S10

Lot 18 | Lot 19 | Lot 20 | Lot 21 | Lot 22 | Lot 23 | Lot 24 | Lot 25 | Lot 26 | Lot 27 | Lot 28 | Lot 29 | Lot 30 | Lot 31 | Lot 32 | Lot 33 | Lot 34 | Lot 35 | Lot 58 | Lot 59 | Lot 60 | Lot 61 | Lot 62 | Lot 63 | Lot 64 | Lot 65 | Lot 66 | Lot 67 | Lot 68

New Hyd #1 | New Hyd #12 | New Hyd #13 | New Hyd #14

SLS Tract "I"

Swale1 | Swale2 | Swale3

Single Water Service | Double Water Service (Typ) | Double Reclaimed Service (Typ)

10" PVC Water Main | 8" PVC Water | 6" Water | 6" Reclaimed Water | 4" Reclaimed Water | 10" PVC Water | New 10" WM | New 4" PVC FM | 4" PVC FM | 8" PVC Water

Extend 4" FM To connection Point See Sheets OS1-OS5

Extend Water mains to Connection Points See Sheets OS1-OS5

Provide 4" Valve Cap & 2" Blowoff

New Off-Site Hydrant #1

10"x8" Tee (2) 10" GV (1) 8" GV

Deflect WM around Storm Structures w/ (4) 45° bends

8" Tee W/ (3) GV | 4" Tee W/ (3) GV | 4x6 Reducer | 8x6" Reducer | 8" Tee W/ (3) GV

Water | Storm | Sanitary | Swale | Contour

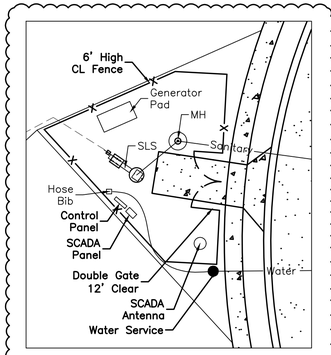
MES1A | MES1B | MES1C | INL1A | INL10B | INL11B | INL13B | INL14B | INL20C | INL21C | INL22C | INL23C | INL31B | INL32B | INL36B | INL40C | INL41C | INL42C | INL43C | INL44C | INL45C | INL46C | INL47C | INL48C | INL49C | INL50C | INL19C

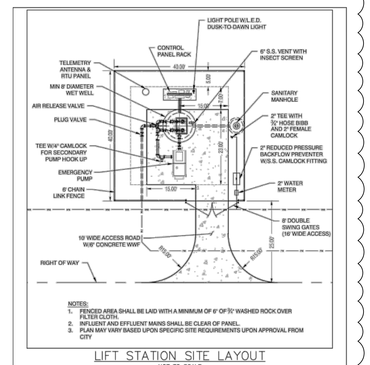
STMH2B | STMH4C | SAMH1A | SAMH1B | SAMH2A | SAMH3A | SAMH3B | SAMH4B | SAMH16A | STMH1B | MH8B | MH4A

C1 | C2 | C3 | C4 | C5 | C29 | C30 | C31 | C32 | C33 | C34 | C35 | C36 | C37 | C38 | C39 | C40 | C41

Lift Station Tract Layout

Scale: 1"=20'





NOTES:
1. FENCED AREA SHALL BE LAID WITH A MINIMUM OF 6" OF 72" WASHED ROCK OVER FILTER CLOTH
2. INFLUENT AND EFFLUENT MAINS SHALL BE CLEAR OF PANEL.
3. PLAN MAY VARY BASED UPON SPECIFIC SITE REQUIREMENTS UPON APPROVAL FROM CITY

LIFT STATION SITE LAYOUT
NOT TO SCALE

Howey-in-the-Hills Standard Details

DATE: DEC 2023

DETAIL WW-10

Utility Valve Note:
All water and reclaimed valves shall not be set within proposed curbs or curb ramps.

#	Date	Description
5	02/01/24	Town Comm
4	5/3/23	Town Comm
3	12/8/22	Town Comm
2	9/19/22	Town Comm
1		

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 0000679 ph (407) 299-0650

Subdivision Utility Plan - North

WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=60'	Scale
09-07-21	Date
WH2-C8	File

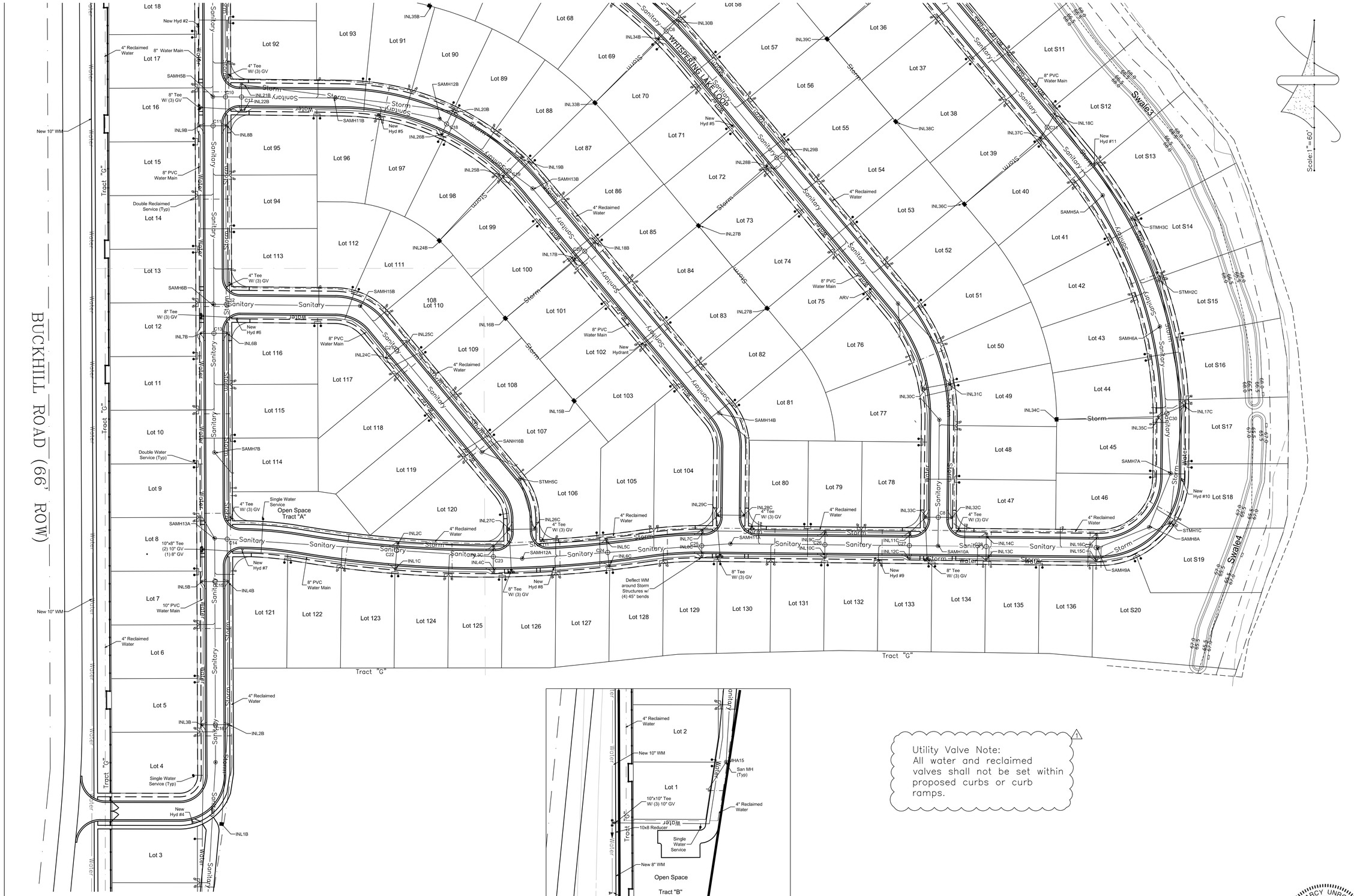
Dwg. No.

C8

10 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



Utility Valve Note:
All water and reclaimed valves shall not be set within proposed curbs or curb ramps.

#	Date	Description
1	9/19/22	Town Comm

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Subdivision Utility Plan - South

WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=60'	Scale
09-07-21	Date
WH2-C9	File

Dwg. No.
C9
11 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

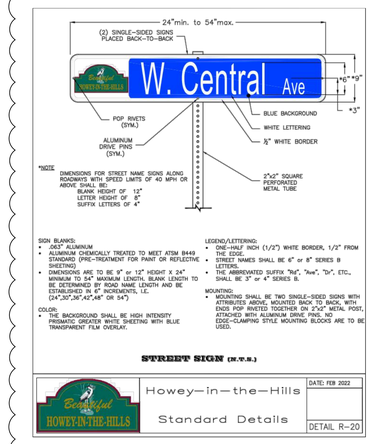
Darcy Unroe PE 60929

Storm Sewer Table #1

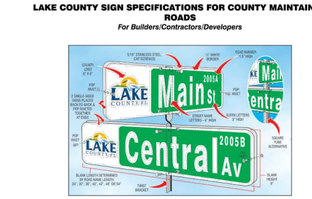
Structure Label	Top	Inv	Drop Inv	Description
Piping System A				
INL1A	81.50	73.44		FDOT Type 2
MES1A	---	70.00		Mitered End Section
Piping System B				
INL1B	138.00	132.19		FDOT Type C
INL2B	137.30	129.41		FDOT Type 1
INL3B	137.30	129.76		FDOT Type 1
INL4B	134.15	125.41		FDOT Type 1
INL5B	134.15	125.76		FDOT Type 1
INL6B	124.25	115.00		FDOT Type 1
INL7B	124.25	115.35		FDOT Type 1
INL8B	110.80	97.60		FDOT Type 1
INL9B	110.80	97.95		FDOT Type 1
INL10B	94.75	86.65		FDOT Type 1
INL11B	94.75	87.00		FDOT Type 1
INL12B	86.75	79.27		FDOT Type 1
INL13B	86.75	79.62		FDOT Type 1
INL14B	85.75	68.12		FDOT Type 2
INL15B	119.90	110.74		FDOT Type C
INL16B	116.15	107.74		FDOT Type C
INL17B	111.65	105.20		FDOT Type 1
INL18B	111.65	104.85		FDOT Type 1
INL19B	108.75	102.50		FDOT Type 2
INL20B	108.75	101.63		FDOT Type 2
INL21B	108.50	98.65		FDOT Type 2
INL22B	108.50	98.30		FDOT Type 2
INL23B	113.45	106.46		FDOT Type C
INL24B	108.75	102.62		FDOT Type 2
INL25B	108.75	101.98		FDOT Type 2
INL26B	105.95	99.88		FDOT Type C
INL27B	104.05	95.38		FDOT Type C
INL28B	94.69	82.58		FDOT Type 1
INL29B	94.69	81.88		FDOT Type 1
INL30B	90.55	77.14		FDOT Type 1
INL31B	87.37	73.10		FDOT Type 1
INL32B	87.40	73.45		FDOT Type 1
INL33B	100.10	87.65		FDOT Type C
INL34B	90.55	77.49		FDOT Type 1
INL35B	97.75	91.88		FDOT Type C
INL36B	85.80	68.82		FDOT Type 2
STMH1B	89.00	82.55		FDOT Type J Manhole
STMH2B	77.00	60.25		FDOT Type J Manhole
MES1B	---	56.00		Mitered End Section
Piping System C				
INL1C	128.00	120.62		FDOT Type 1
INL2C	128.00	118.87		FDOT Type 1
INL3C	126.45	112.17		FDOT Type 1
INL4C	126.45	112.52		FDOT Type 1
INL5C	119.80	104.27		FDOT Type 1
INL6C	119.80	104.62		FDOT Type 1
INL7C	112.75	96.23		FDOT Type 1
INL8C	112.75	96.58		FDOT Type 1
INL9C	103.97	89.35		FDOT Type 1
INL10C	103.97	89.70		FDOT Type 1
INL11C	97.83	85.81		FDOT Type 1
INL12C	97.80	84.06		FDOT Type 1
INL13C	92.50	78.71		FDOT Type 1
INL14C	92.50	79.06		FDOT Type 1
INL15C	84.75	71.01	73.00	FDOT Type 1
INL16C	84.75	73.35		FDOT Type 1
INL17C	73.95	64.26		FDOT Type 2
INL18C	75.30	62.67		FDOT Type 1
INL19C	72.50	61.63		FDOT Type 2
INL20C	71.75	60.58		FDOT Type 1
INL21C	70.25	59.20		FDOT Type 2
INL22C	70.25	58.85		FDOT Type 2
INL23C	70.25	56.65		FDOT Type 2
INL24C	118.70	113.65		FDOT Type 2
INL25C	118.70	113.53		FDOT Type 2
INL26C	126.00	112.40		FDOT Type 1
INL27C	126.00	112.28		FDOT Type 1
INL28C	111.25	96.90		FDOT Type 1
INL29C	111.25	96.55		FDOT Type 1
INL30C	96.90	89.26		FDOT Type 1
INL31C	96.90	89.14		FDOT Type 1
INL32C	95.90	88.49		FDOT Type 1
INL33C	95.90	88.37		FDOT Type 1
INL34C	84.52	76.08		FDOT Type C
INL35C	74.17	64.64		FDOT Type 2
INL36C	87.00	80.25		FDOT Type C
INL37C	75.50	64.52		FDOT Type 1
INL38C	85.20	79.37		FDOT Type 1
INL39C	83.08	74.87		FDOT Type C
INL40C	72.75	63.43		FDOT Type C
INL41C	82.25	75.46		FDOT Type C
INL42C	80.00	70.96		FDOT Type C
INL43C	72.08	62.38		FDOT Type 1
INL44C	79.90	72.20		FDOT Type 1
INL45C	79.90	70.45		FDOT Type 1
INL46C	71.20	60.80		FDOT Type 1
INL47C	71.20	61.15		FDOT Type 1
INL48C	70.25	57.00		FDOT Type 2
INL49C	70.25	62.03		FDOT Type 2
INL50C	70.25	62.38		FDOT Type 2
STMH1C	79.43	67.56		FDOT Type J Manhole
STMH2C	78.10	63.63		FDOT Type J Manhole
STMH3C	77.15	63.30		FDOT Type J Manhole
STMH4C	71.00	57.76		FDOT Type J Manhole
STMH5C	126.60	112.66		FDOT Type J Manhole
STMH6C	76.00	65.35		FDOT Type J Manhole
MES1C	---	56.00		Mitered End Section

Storm Sewer Table #2

Upstream	Downstream	Size (in)	Length (ft)	Slope (%)	Pipe
INL1A	MES1A	18	43	8.00%	RCP
MES1A	INL1B				
INL1B	INL2B	15	139	2.00%	RCP
INL2B	INL4B	18	200	2.00%	RCP
INL4B	INL6B	18	347	3.00%	RCP
INL6B	INL8B	24	290	6.00%	RCP
INL8B	INL10B	36	219	5.00%	RCP
INL10B	STMH1B	36	82	5.00%	RCP
STMH1B	INL12B	36	82	4.00%	RCP
INL12B	INL14B	36	223	5.00%	RCP
INL14B	STMH2B	48	143	5.50%	RCP
STMH2B	MES1B	48	85	5.00%	RCP
INL3B	INL2B	15	35	1.00%	RCP
INL5B	INL4B	15	35	1.00%	RCP
INL7B	INL6B	15	35	1.00%	RCP
INL9B	INL8B	15	35	1.00%	RCP
INL11B	INL10B	15	35	1.00%	RCP
INL13B	INL12B	15	35	1.00%	RCP
INL15B	INL16B	15	150	2.00%	RCP
INL16B	INL17B	15	127	2.00%	RCP
INL17B	INL18B	18	35	1.00%	RCP
INL18B	INL19B	18	157	1.50%	RCP
INL19B	INL20B	24	116	0.75%	RCP
INL20B	INL21B	24	298	1.00%	RCP
INL21B	INL22B	24	35	1.00%	RCP
INL22B	INL8B	24	35	2.00%	RCP
INL23B	INL24B	15	128	3.00%	RCP
INL24B	INL19B	18	35	0.35%	RCP
INL25B	INL20B	15	35	1.00%	RCP
INL26B	INL27B	15	150	3.00%	RCP
INL27B	INL28B	15	128	10.00%	RCP
INL28B	INL29B	18	35	2.00%	RCP
INL29B	INL30B	24	237	2.00%	RCP
INL30B	INL31B	24	202	2.00%	RCP
INL31B	INL14B	24	166	3.00%	RCP
INL32B	INL31B	15	35	1.00%	RCP
INL33B	INL34B	15	127	8.00%	RCP
INL34B	INL30B	15	35	1.00%	RCP
INL35B	INL36B	15	127	18.00%	RCP
INL36B	INL14B	15	35	2.00%	RCP
INL1C	INL2C	15	35	5.00%	RCP
INL2C	INL3C	15	134	5.00%	RCP
INL3C	INL5C	24	158	5.00%	RCP
INL5C	INL7C	24	134	6.00%	RCP
INL7C	INL9C	30	172	4.00%	RCP
INL9C	INL11C	30	118	3.00%	RCP
INL11C	INL12C	36	35	5.00%	RCP
INL12C	INL13C	36	107	5.00%	RCP
INL13C	INL15C	36	154	5.00%	RCP
INL15C	STMH1C	36	115	3.00%	RCP
STMH1C	INL17C	36	165	2.00%	RCP
INL17C	STMH2C	42	178	0.35%	RCP
STMH2C	STMH3C	42	94	0.35%	RCP
STMH3C	INL18C	42	182	0.35%	RCP
INL18C	INL19C	42	296	0.35%	RCP
INL19C	INL20C	48	300	0.35%	RCP
INL20C	INL21C	48	138	1.00%	RCP
INL21C	INL22C	48	35	1.00%	RCP
INL22C	STMH4C	54	109	1.00%	RCP
STMH4C	INL23C	54	111	1.00%	RCP
INL23C	MES1C	54	65	1.00%	RCP
INL4C	INL3C	15	35	1.00%	RCP
INL6C	INL5C	15	35	1.00%	RCP
INL8C	INL7C	15	35	1.00%	RCP
INL10C	INL9C	15	35	1.00%	RCP
INL14C	INL13C	15	35	1.00%	RCP
INL16C	INL15C	15	35	1.00%	RCP
INL34C	INL35C	15	143	8.00%	RCP
INL35C	INL17C	18	38	1.00%	RCP
INL24C	INL25C	15	35	0.35%	RCP
INL25C	STMH5C	15	249	0.35%	RCP
STMH5C	INL26C	15	73	0.35%	RCP
INL26C	INL27C	18	35	0.35%	RCP
INL27C	INL3C	18	33	0.35%	RCP
INL28C	INL29C	15	35	1.00%	RCP
INL29C	INL7C	15	32	1.00%	RCP
INL30C	INL31C	15	35	0.35%	RCP
INL31C	INL32C	15	187	0.35%	RCP
INL32C	INL33C	15	35	0.35%	RCP
INL33C	INL11C	18	32	8.00%	RCP
INL36C	INL37C	15	143	11.00%	RCP
INL37C	INL18C	15	37	5.00%	RCP
INL38C	INL39C	15	150	3.00%	RCP
INL39C	INL40C	15	143	8.00%	RCP
INL40C	INL19C	18	36	5.00%	RCP
INL41C	INL42C	15	150	3.00%	RCP
INL42C	INL43C	15	143	6.00%	RCP
INL43C	INL20C	15	36	5.00%	RCP
INL44C	INL45C	15	35	5.00%	RCP
INL45C	STMH6C	15	102	5.00%	RCP
STMH6C	INL46C	15	91	5.00%	RCP
INL46C	INL22C	15	39	5.00%	RCP
INL47C	INL46C	15	35	1.00%	RCP
INL48C	INL23C	15	35	1.00%	RCP
INL50C	INL49C	15	35	1.00%	RCP
INL49C	INL23C	15	215	2.50%	RCP



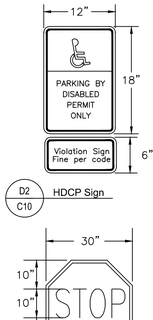
D1 C10 Typical Howey Street Sign Detail

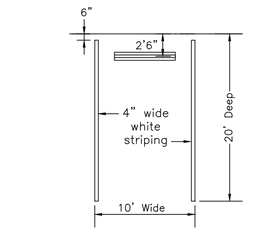


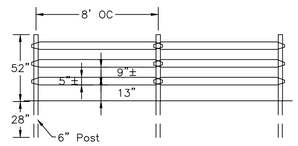
D1a C10 Typical Lake Co Street Sign Detail

Signs for Non-County Maintained Road shall NOT have the Lake County Logo

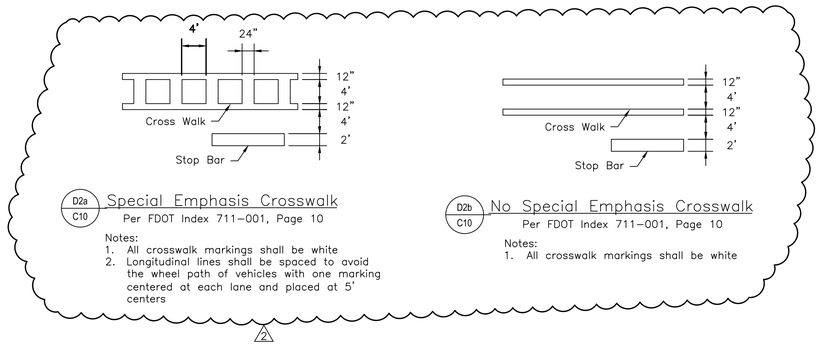
3







D6 C10 4' High Split Rail Fence



2

Sanitary Sewer Table #1

Description	Top	Inv In	Inv Out
MH1A	75.35	52.11	52.01
MH2A	70.75	52.27	52.17
MH3A	70.60	52.73	52.63
MH4A	73.00	54.73	54.63
MH5A	76.69	58.73	58.63
MH6A	76.00	60.73	60.63
MH7A	76.29	62.80	62.70
MH8A	79.60	66.85	66.75
MH9A	84.58	70.40	70.30
MH10A	96.00	77.12	77.02
MH11A	111.00	91.62	91.52
MH12A	125.69	101.84	101.74
MH13A	133.50	110.44	110.34
MH14A	138.10	126.09	125.99
MH15A	138.90	---	133.51
MH16A	70.65	---	58.20
MH17A	96.80	---	78.83
MH1B	75.60	56.23	56.13
MH2B	87.11	69.28	69.18
MH3B	86.10	71.49	71.39
MH4B	87.00	74.55	74.45
MH5B	108.50	83.10	83.00
MH6B	123.00	106.30	106.20
MH7B	129.68	---	122.81
MH8B	88.87	71.53	71.43
MH9B	90.50	74.31	74.21
MH10B	97.61	---	83.16
MH11B	109.40	88.23	88.13
MH12B	108.90	92.70	92.60
MH13B	109.60	97.56	97.46
MH14B	113.20	---	86.25
MH15B	118.50	108.35	108.25
MH16B	124.40	---	110.96
SLS	72.00	52.00	---

Sanitary Sewer Table #2

Upstream	Downstrea	Size (in)	Length (ft)	Slope (%)	Pipe
MH15A	MH14A	8	249	3.00%	PVC
MH14A	MH13A	8	313	5.00%	PVC
MH13A	MH12A	8	430	2.00%	PVC
MH12A	MH11A	8	292	3.50%	PVC
MH11A	MH10A	8	290	5.00%	PVC
MH10A	MH9A	8	224	3.00%	PVC
MH9A	MH8A	8	71	5.00%	PVC
MH8A	MH7A	8	81	5.00%	PVC
MH7A	MH6A	8	207	1.00%	PVC
MH6A	MH5A	8	200	1.00%	PVC
MH5A	MH4A	8	400	1.00%	PVC
MH4A	MH3A	8	500	0.40%	PVC
MH3A	MH2A	8	116	0.40%	PVC
MH2A	MH1A	8	40	0.40%	PVC
MH1A	SLS	8	15	0.40%	PVC
MH16A	MH2A	8	299	2.00%	PVC
MH17A	MH10A	8	176	1.00%	PVC
MH7B	MH6B	8	207	8.00%	PVC
MH6B	MH5B	8	290	8.00%	PVC
MH5B	MH4B	8	285	3.00%	PVC
MH4B	MH3B	8	306	1.00%	PVC
MH3B	MH2B	8	147	1.50%	PVC
MH2B	MH1B	8	261	5.00%	PVC
MH1B	MH3A	8	140	2.50%	PVC
MH10B	MH9B	8	445	2.00%	PVC
MH9B	MH8B	8	139	2.00%	PVC
MH8B	MH2B	8	150	1.50%	PVC
MH14B	MH13B	8	408	2.00%	PVC
MH13B	MH12B	8	162	3.00%	PVC
MH12B	MH11B	8	149	3.00%	PVC
MH11B	MH5B	8	171	3.00%	PVC
MH16B	MH15B	8	266	1.00%	PVC
MH15B	MH6B	8	205	1.00%	PVC

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

#	Description	Date
	Revisions	
3	Town Comm	5/3/23
2	Town Comm	12/9/22
1	Town Comm	9/19/22
#	Description	Date
	Revisions	

Sewer & Storm Structure Tables

WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
----	Scale
09-07-21	Date
WH2-C10	File

Dwg. No.
C10
12 of 83

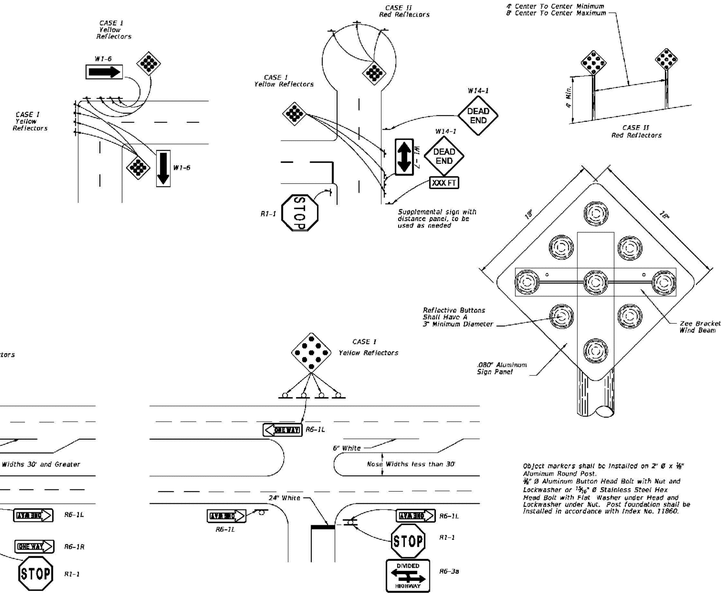
Darcy Unroe PE 60929

CASE I Type I Object Markers shall consist of nine yellow reflectors mounted on a yellow reflective background or consist of a retroreflective panel of the same size.

CASE II End of Road Markers shall consist of nine red reflectors mounted on a red reflective background or consist of a retroreflective panel of the same size.

NOTES:

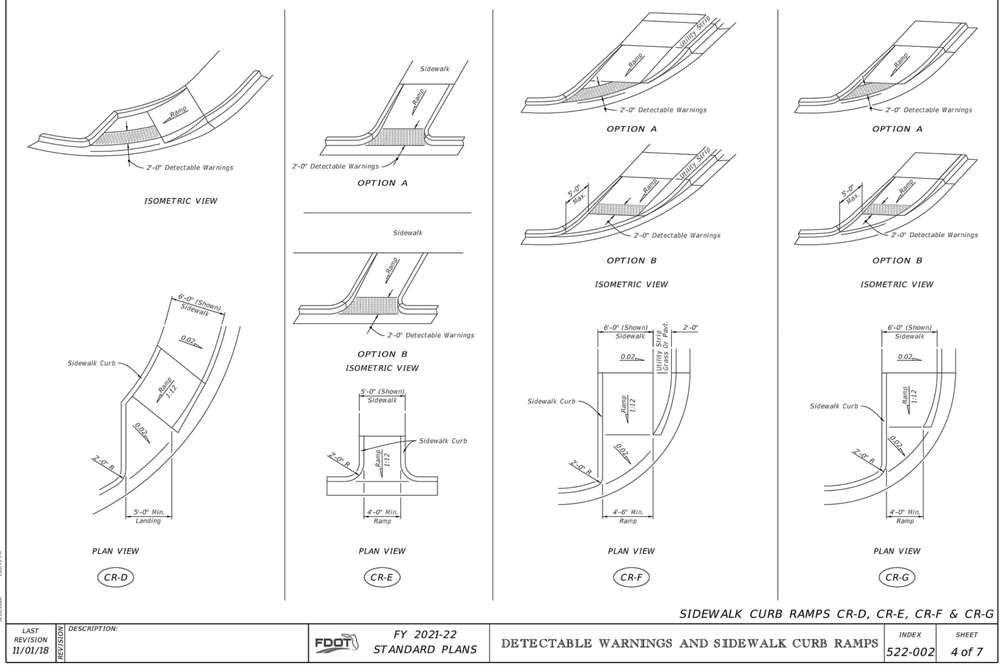
1. This index applicable to residential and minor streets only. Major streets to be evaluated on a case by case basis.
2. "T"-intersection-Two-way arrows and reflectors are optional. The need should be based on a review of each location.
3. For additional details on aluminum round post, sign panel material and bolts, nuts and washers see Index Nos. 11860.
4. Case I Installation - The arrow panels and object markers shall be located approximately 20', but not less than 12' from the edge of the travel lane.
5. Dead end sign shall be posted a sufficient advance distance to permit the vehicle operator to avoid the dead end by turning off, if possible, at the nearest intersecting street.
6. For pavement marking see Index No. 17346
7. No guardrail is required unless special field conditions require its use.



Object markers shall be installed on 2" Ø x ⅛" Aluminum Round Post.
⅜" Ø Aluminum Button Head Bolt with Nut and Lockwasher or ⅜" Ø Stainless Steel Hex Head Bolt with Flat Washer under Head and Lockwasher under Nut. Post foundation shall be installed in accordance with Index No. 11860.

LAST REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/12		FDOT DESIGN STANDARDS 2013	TRAFFIC CONTROLS FOR STREET TERMINATIONS	17349	1

D1 C11 Street Termination



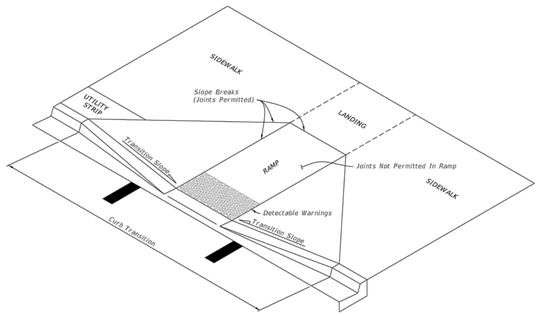
SIDEWALK CURB RAMPS CR-D, CR-E, CR-F & CR-G

LAST REVISION	DESCRIPTION:			INDEX	SHEET
11/01/18		FY 2021-22 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	522-002	4 of 7

D2 C11 Typical Curb Ramps

GENERAL NOTES:

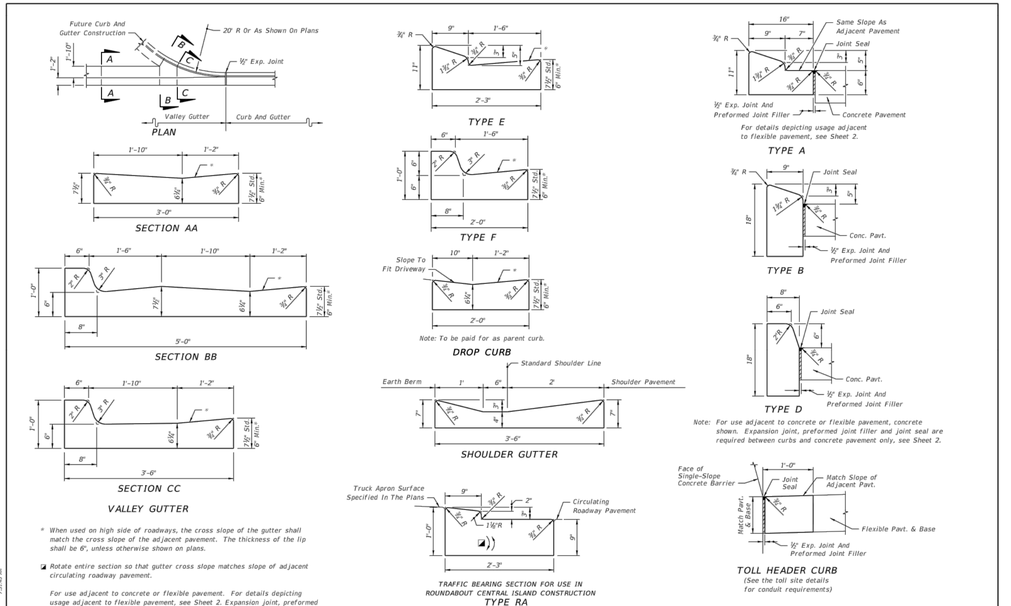
1. Cross Slopes and Grades:
   - A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.
   - B. Landings must have cross-slopes less than or equal to 0.02 in any direction.
   - C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.
   - D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.
2. Curb, Curb and Gutter and/or Sidewalk:
   - A. Refer to Index 522-001 for concrete thickness and sidewalk details.
   - B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.
3. Curb Ramp Alpha-Identification:
   - A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.
   - B. Alpha-identifications CR-I and CR-J are intentionally omitted.
4. Detectable Warnings:
   - A. Install detectable warnings in accordance with Specification 527.
   - B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.
   - C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.
5. Detectable Warnings - Acceptance Criteria:
   - A. Color and texture shall be complete and uniform.
   - B. 90% of individual truncated domes shall be in accordance with the Americans with Disabilities Act Standards for Transportation Facilities, Section 705.
   - C. There shall be no more than 4 non-compliant domes in any one square foot.
   - D. Non-compliant domes shall not be adjacent to other non-compliant domes.
   - E. Surfaces shall not deviate more than 0.10" from a true plane.



CURB RAMP NOMENCLATURE

LAST REVISION	DESCRIPTION:			INDEX	SHEET
11/01/19		FY 2021-22 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	522-002	1 of 7

D3 C11 Detectable Warning Surface



* When used on high side of roadways, the cross slope of the gutter shall match the cross slope of the adjacent pavement. The thickness of the lip shall be 6", unless otherwise shown on plans.

◪ Rotate entire section so that gutter cross slope matches slope of adjacent circulating roadway pavement.

For use adjacent to concrete or flexible pavement. For details depicting usage adjacent to flexible pavement, see Sheet 2. Expansion joint, preformed joint filler and joint seal are required between curb & gutter and concrete pavement only, see Sheet 2.

CONCRETE CURB AND GUTTER

LAST REVISION	DESCRIPTION:			INDEX	SHEET
11/01/20		FY 2021-22 STANDARD PLANS	CURB AND GUTTER	520-001	1 of 2

D4 C11 Typical Curbs Detail

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

#	Date	Description
		Revisions
#	Date	Description
		Revisions

General Details Sheet 1

WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

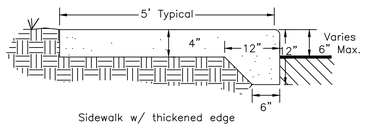
DP	Drawn
DP	Checked
----	Scale
09-07-21	Date
WH2-C11	File

Dwg. No. C11

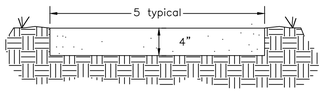
13 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



Sidewalk w/ thickened edge



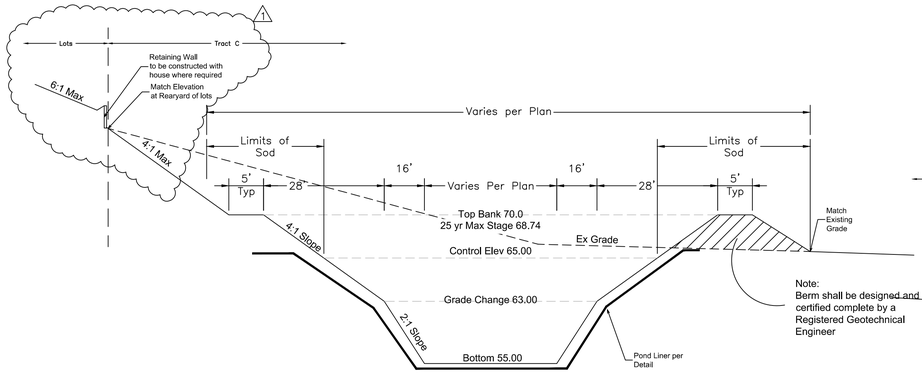
Standard sidewalk

Notes:
1. All concrete shall be 3,000 psi @ 28 days, fibermesh reinforced.
2. Soil below new walks shall be compacted to 95% max density.
3. Control joints shall be sawcut 1.5" deep in concrete at 5' on center.
4. Construction joints shall be provided at 50' OC max.
5. Sidewalks/crosswalks in Traffic areas shall be increased to 6" Thickness.

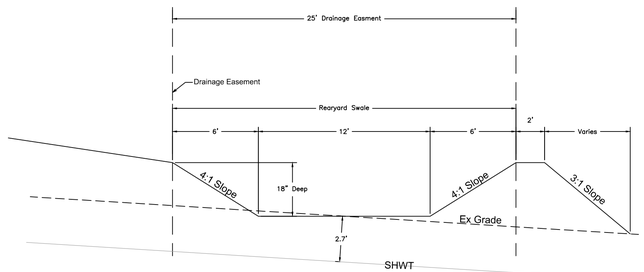
D1 / C12 Typical Sidewalk Details

Accessibility Notes

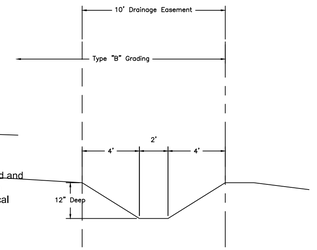
1. All handicapped parking spaces and access aisles adjacent to the handicap parking spaces shall have a maximum of 2% slope in all directions (this includes running slope and cross slope).
2. An accessible route from the public street or sidewalk to the building entrance must be provided. this accessible route shall be a minimum of 60" wide. The running slope of an accessible route shall not exceed 5% and the cross slope shall not exceed 2%.
3. Slopes exceeding 5% but less than 8% will require a ramp and must conform to the Florida Building Code requirements for ramp design (handrails, curbs, landings). No ramp shall exceed an 8% running slope or 2% cross slope.
4. Special attention shall be required during staking to make sure the 2% cross slope is met in the cross walk.
5. It will be the responsibility of the general contractor to ensure that the handicap parking spaces, accessible routes, and sidewalks/crosswalks are constructed to meet ADA requirements.
6. Any requirements listed above that can not be met shall be brought to the attention of the EOR prior to construction.



3 / C12 Wet Detention Pond Section

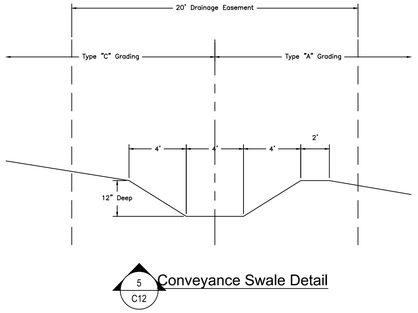


4 / C12 Rear Yard Swale Detail

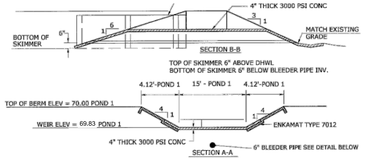


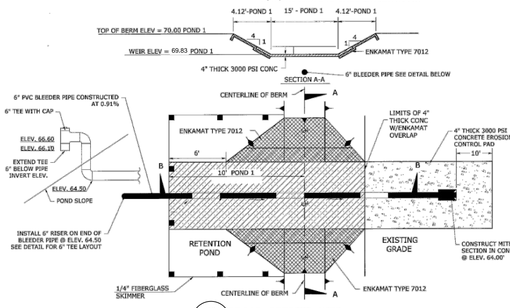
6 / C12 Conveyance Swale Detail

Note:
Berm shall be designed and certified complete by a Registered Geotechnical Engineer

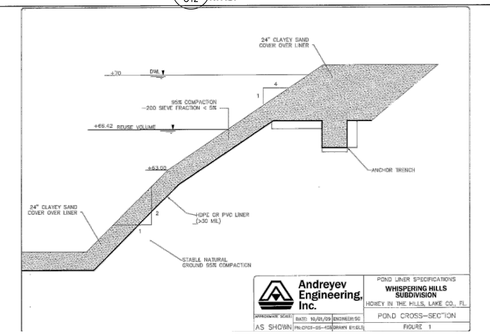


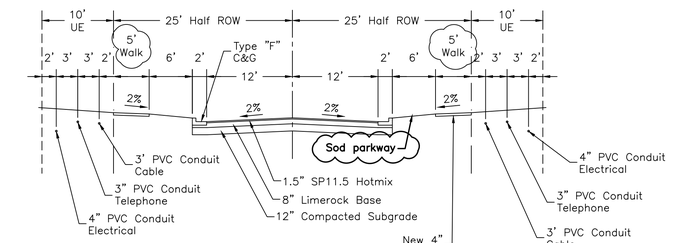
5 / C12 Conveyance Swale Detail





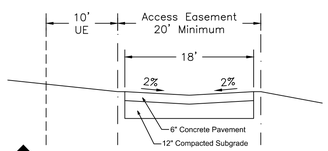
D3 / C12 BROAD CRESTED WEIR N.T.S.



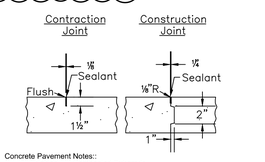


1 / C12 Typical 50' Wide ROW Pavement Section

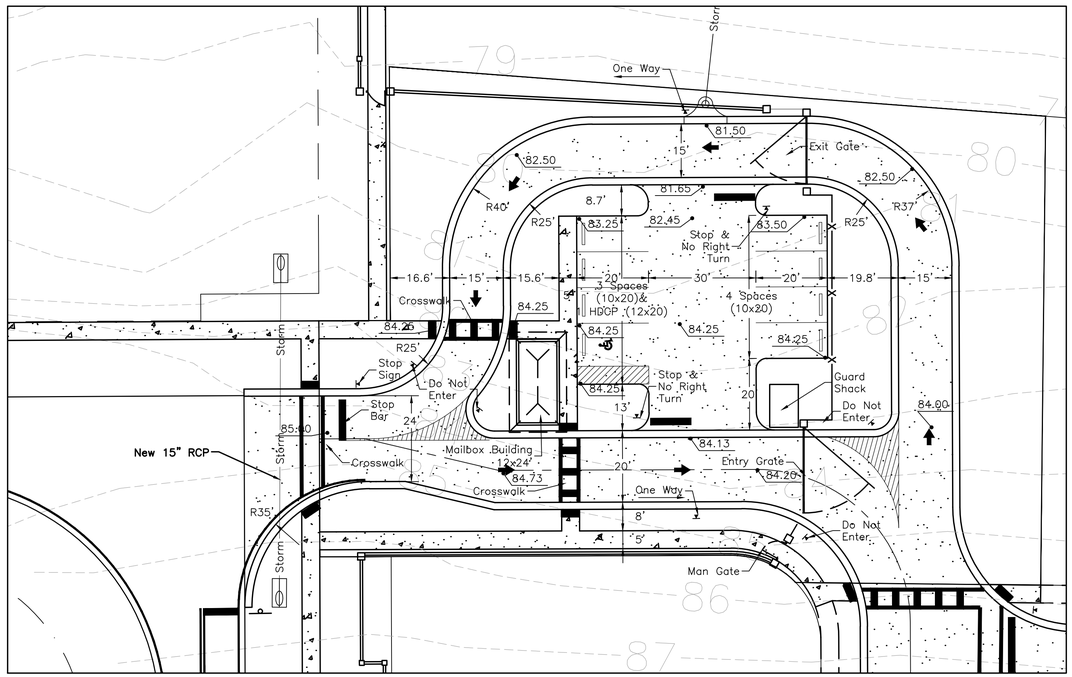
Notes:
1. Contractor to pave the first lift as ¾" and second ¾" lift will be installed at the time of substantial completion of homes for each phase.
2. Pavement section as shown is taken from Geotechnical Engineer's recommendations/
3. Site contractor to coordinate with developer to install sleeves for use by electrical, cable, telephone and etc.
4. After application of the first lift the contractor and homebuilders are jointly responsible for maintenance of pavement. The developer shall be notified when all repairs have been completed.
5. Where sidewalks are to be constructed, the entire area between the back of curb and sidewalk shall be sodded.



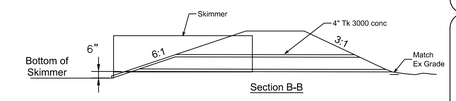
2 / C12 Typical Access Easement Section



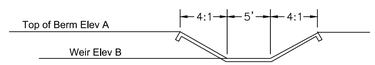
Concrete Pavement Notes::
1. 6" Thick on 12" Compacted Subgrade
2. All concrete 4,000 psi/28 day strength Portland Cement Type I
3. Contractor shall submitt jointing plan for approval prior to construction.
4. Expansion joints required at abutting structures, curbs, walks, etc.
5. Contraction joints shall be saw cut 1" deep, maximum spacing 20'.
6. Construction or cold joints shall be doweled or keyed on joint line only.
7. Site contractor to coordinate with developer to install sleeves for use by electrical, cable, telephone and etc.



Tract "E" Site Plan
Scale: 1"=20'



Section B-B



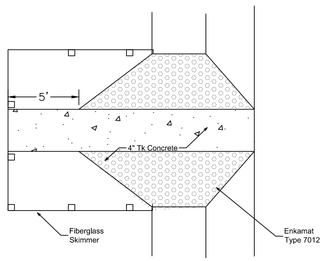
Section A-A

Swale #1
A - 67.00, B - 66.30

Swale #2
A - 67.50, B - 66.80

Swale #3
A - 68.0, B - 67.30

Swale #4
A - 67.0, B - 66.30



D4 / C12 Swale Weir

Revisions			
#	Date	Description	
1	9/19/22	Town Comm	

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

General Details Sheet 2

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
----	Scale
09-07-21	Date
WH2-C12	File

Dwg. No.

C12

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DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

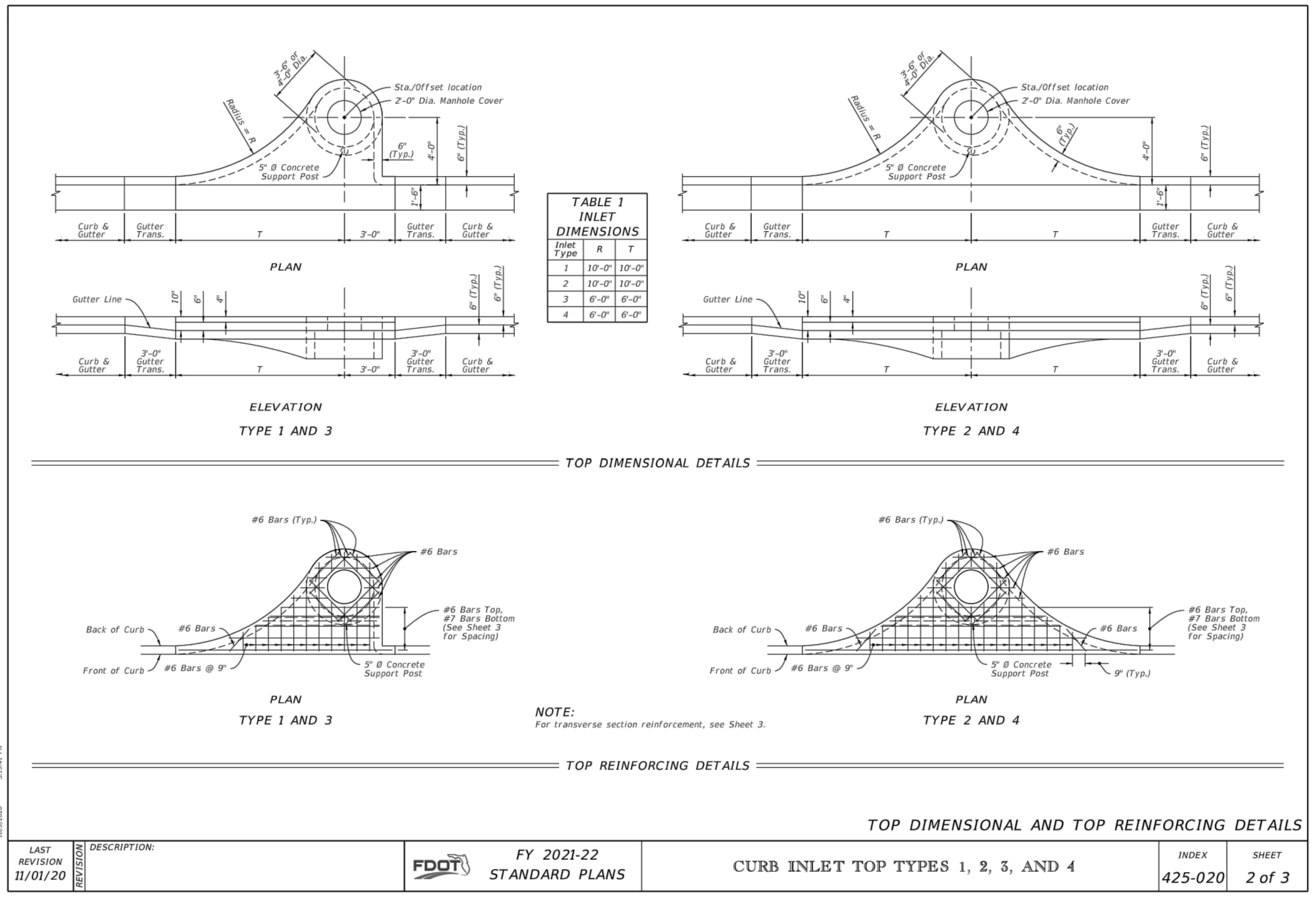
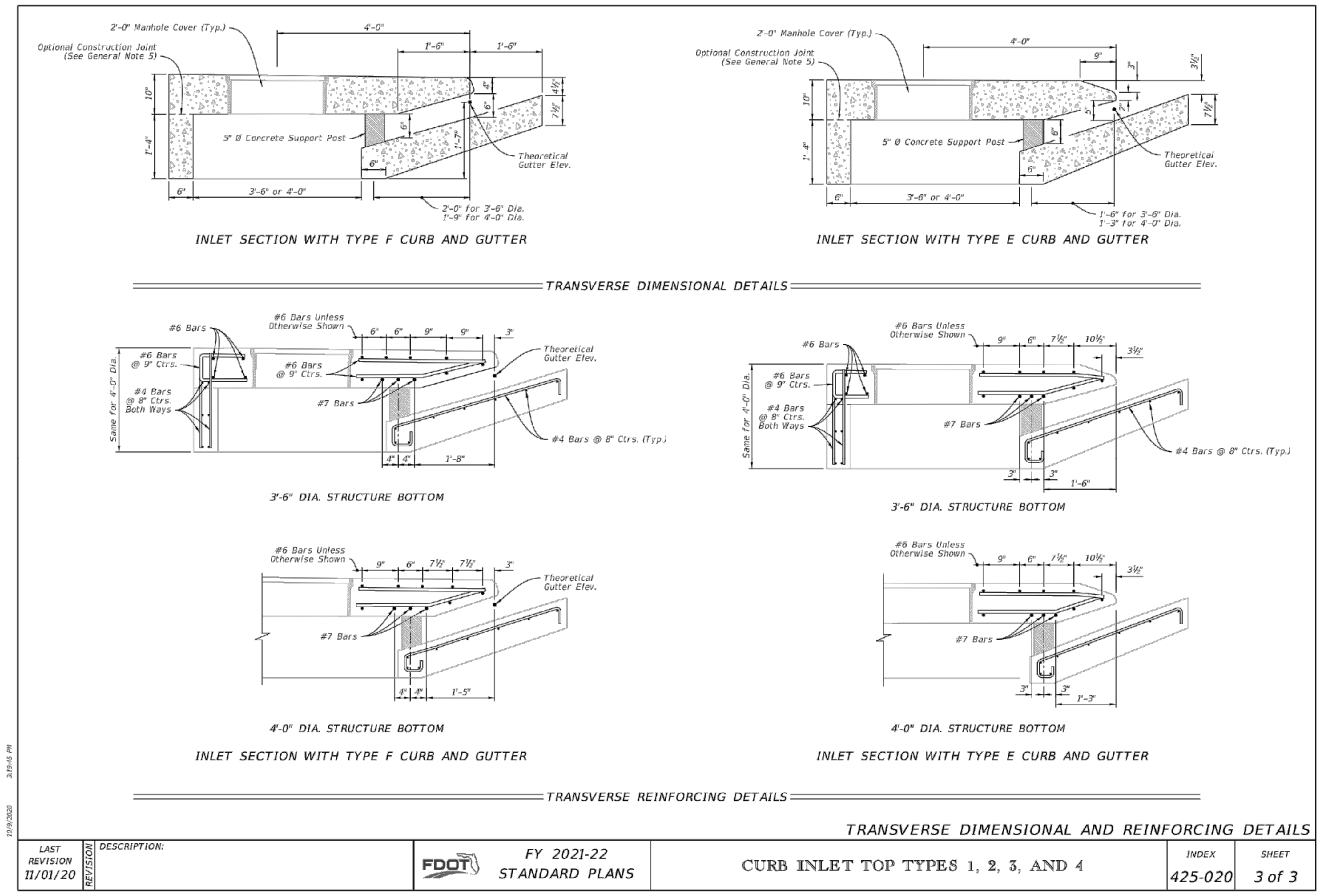
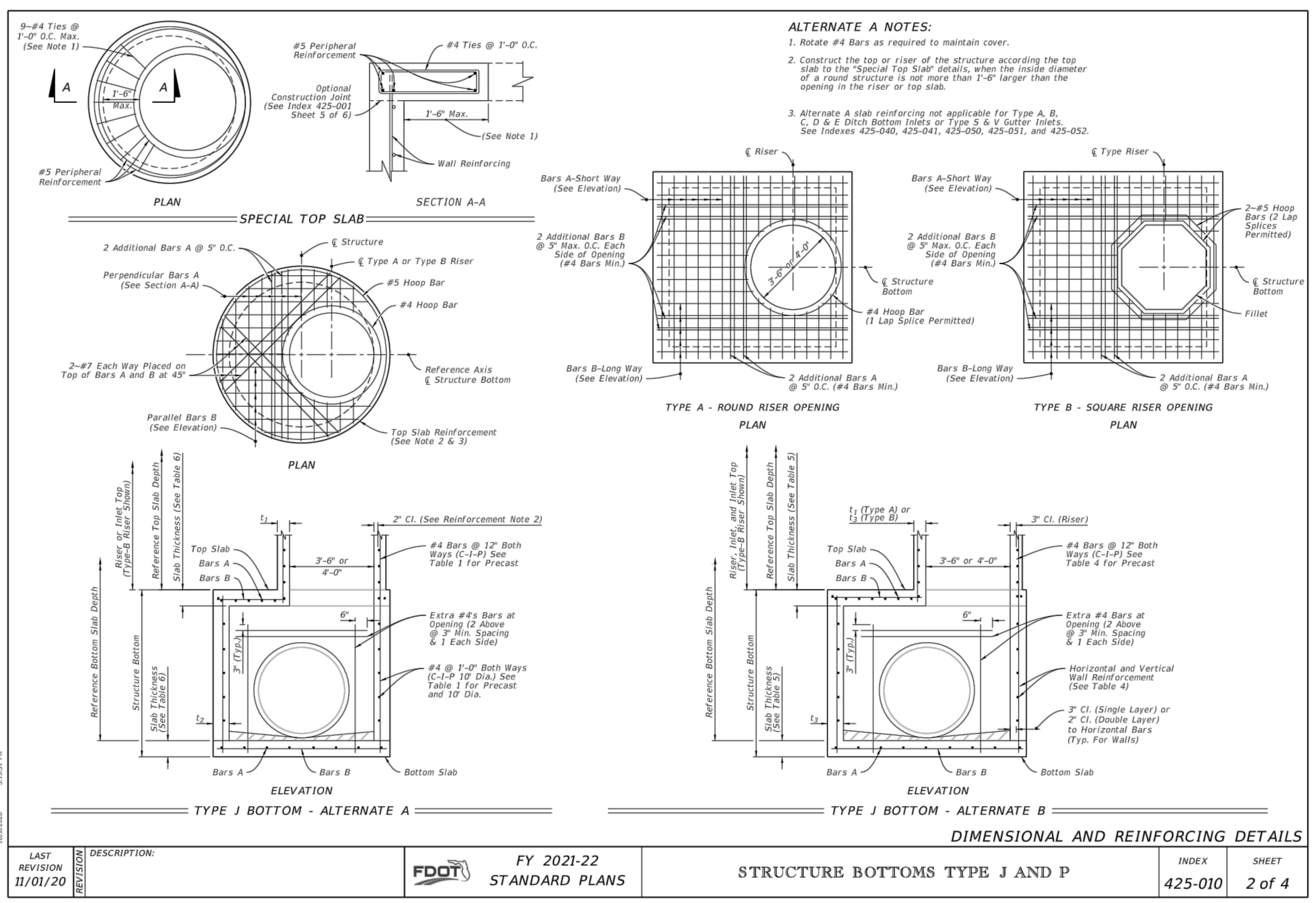


TABLE 1 INLET DIMENSIONS		
Inlet Type	R	T
1	10'-0"	10'-0"
2	10'-0"	10'-0"
3	6'-0"	6'-0"
4	6'-0"	6'-0"

D1 / C13 Curb Inlet Details



D2 / C13 Curb Inlet Details



D3 / C13 Storm Structure Bottom Details

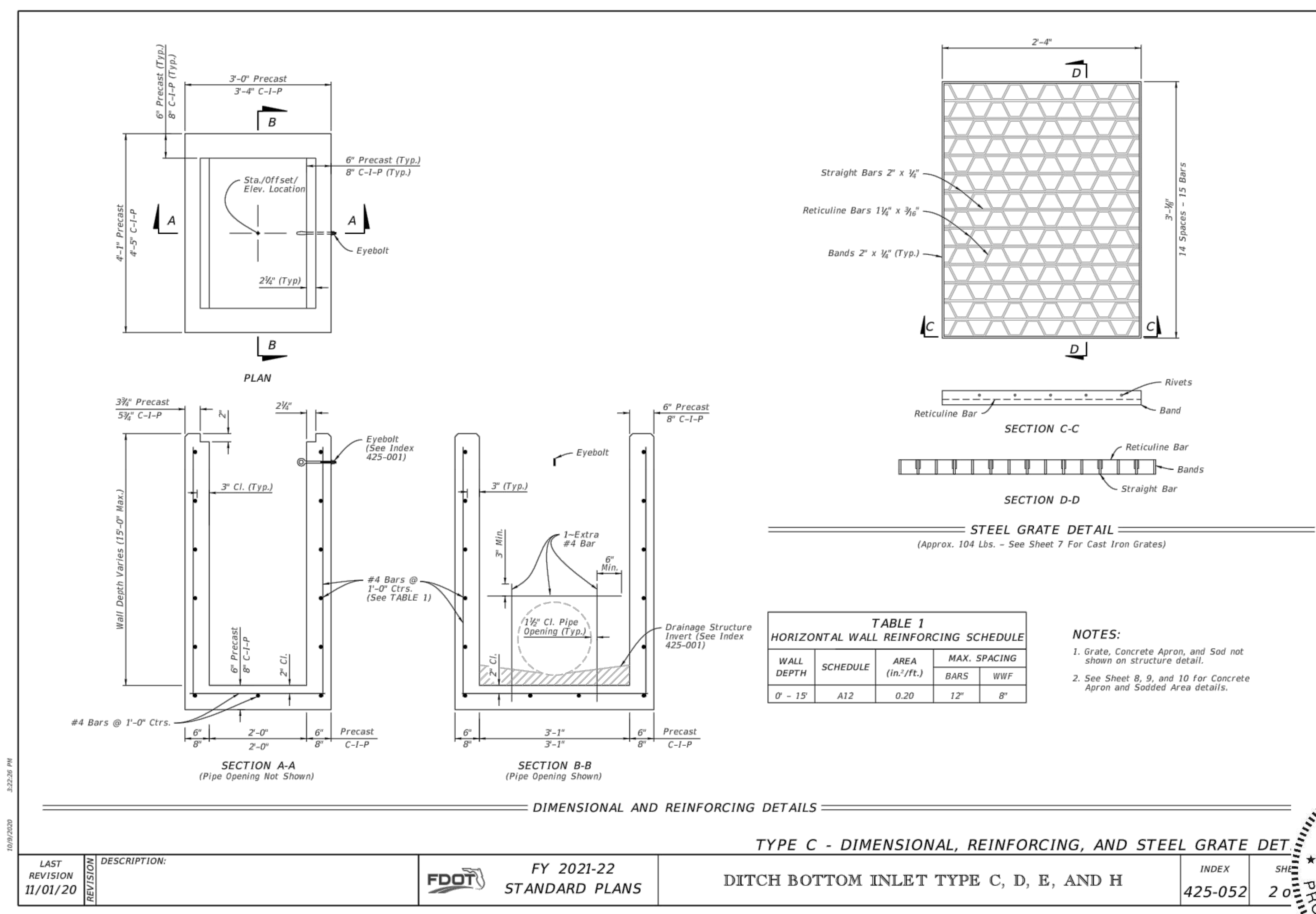


TABLE 1 HORIZONTAL WALL REINFORCING SCHEDULE				
WALL DEPTH	SCHEDULE	AREA (in.²/ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0' - 15'	A12	0.20	12"	8"

NOTES:
1. Grate, Concrete Apron, and Sod not shown on structure detail.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.

D4 / C13 Type "C" Ditch Bottom Inlet

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

Revisions		
#	Date	Description

Revisions		
#	Date	Description

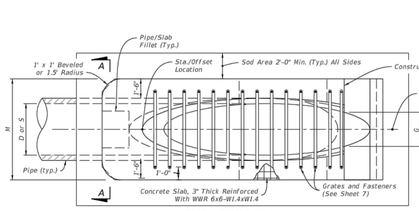
Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942 ph (407) 299-0650
Business Authorization Number - EB 00006579

General Details Sheet 3

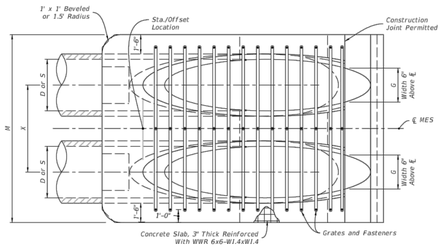
WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
----	Scale
09-07-21	Date
WH2-C13	File

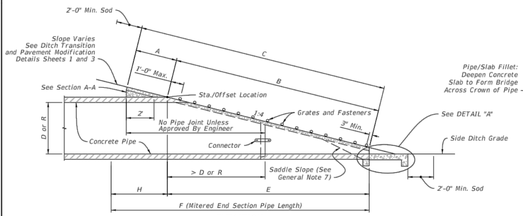
Dwg. No.
C13



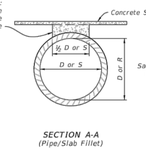
PLAN - SINGLE PIPE



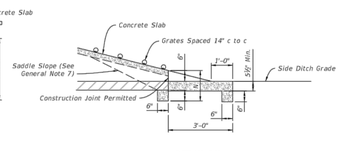
PLAN - MULTIPLE PIPE



ELEVATION



SECTION A-A
(Pipe/Slab Fillet)



DETAIL "A"

ROUND CONCRETE PIPE
(Elliptical Pipe Similar)

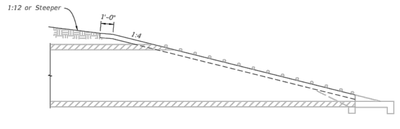
SINGLE AND MULTIPLE CONCRETE PIPE

LAST REVISION 11/01/18	DESCRIPTION:	FY 2020-21 STANDARD PLANS	SIDE DRAIN MITERED END SECTION	INDEX 430-022	SHEET 2 of 7

SINGLE AND MULTIPLE CONCRETE PIPE DIMENSIONS AND QUANTITIES

Pipe	Dia. D	Rise R	Span S	X	A	B	C	E	F	G	H	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad. Pipe	N	GRATE SIZES STANDARD WEIGHT PIPE	GRATE SIZES EXTRA STRONG PIPE	3" CONC. SLAB (CY) Single Pipe	3" CONC. SLAB (CY) Double Pipe	3" CONC. SLAB (CY) Triple Pipe	3" CONC. SLAB (CY) Quad. Pipe	SODDING (SY) Single Pipe	SODDING (SY) Double Pipe	SODDING (SY) Triple Pipe	SODDING (SY) Quad. Pipe
Round Concrete	15"	—	—	2'-7"	2.27	4.09	6.36	4.03	8	1.22	4.0	4.63	7.21	9.79	12.37	1.19			0.76	1.16	1.54	1.94	8	10	11	12
	18"	—	—	2'-10"	2.36	5.12	7.48	5.03	9	1.41	4.0	4.92	7.75	10.58	13.42	1.21			0.85	1.28	1.71	2.17	9	10	12	13
	24"	—	—	3'-5"	2.53	7.18	9.71	7.03	11	1.73	4.0	5.50	8.92	12.33	15.75	1.29			1.02	1.58	2.15	2.75	10	12	13	15
	30"	—	—	4'-3"	2.70	9.25	11.95	9.03	13	2.00	4.0	6.08	10.33	14.58	18.83	1.29	2½"	3"	1.23	1.98	2.74	3.50	12	14	15	17
	36"	—	—	5'-1"	2.87	11.31	14.18	11.03	15	2.24	4.0	6.67	11.75	16.83	21.92	1.33	2½"	3"	1.40	2.38	3.33	4.25	13	15	17	20
	42"	—	—	6'-0"	3.05	13.37	16.42	13.03	17	2.45	4.0	7.25	13.25	19.25	25.25	1.38	2½"	3½"	1.60	2.83	4.04	5.26	14	17	19	22
	48"	—	—	6'-9"	3.22	15.43	18.65	15.03	19	2.65	4.0	7.83	14.58	21.33	28.08	1.42	2½"	3½"	1.81	3.26	4.70	6.14	15	18	21	24
	54"	—	—	7'-8"	3.39	17.49	20.88	17.03	21	2.83	4.0	8.42	16.08	23.75	31.42	1.46	3"	4"	2.03	3.78	5.54	7.28	17	20	23	27
	60"	—	—	8'-6"	3.56	19.55	23.11	19.03	23	3.00	4.0	9.00	17.50	26.00	34.50	1.50	3"	4"	2.28	4.36	6.43	8.50	18	22	25	29
Elliptical Concrete	—	12"	18"	2'-10"	2.36	3.00	5.42	3.03	5	1.50	2.0	4.92	7.75	10.58	13.42	1.21			0.68	1.04	1.41	1.77	8	9	11	12
	—	14"	23"	3'-4"	2.44	3.75	6.19	3.70	6	1.90	2.3	5.38	8.71	12.04	15.38	1.23			0.76	1.19	1.63	2.05	9	10	12	13
	—	19"	30"	4'-0"	2.62	5.47	8.09	5.36	8	2.37	2.6	6.04	10.04	14.04	18.04	1.27	2½"	3"	0.95	1.52	2.09	2.65	10	12	13	15
	—	24"	38"	5'-0"	2.79	7.18	9.97	7.03	10	2.85	3.0	6.79	11.79	16.79	21.79	1.31	2½"	3"	1.18	1.95	2.74	3.53	11	13	15	18
	—	29"	45"	5'-11"	3.05	8.90	11.93	8.70	12	3.19	3.3	7.50	13.42	19.33	25.25	1.38	2½"	3½"	1.41	2.42	3.44	4.45	12	15	18	20
	—	34"	53"	7'-0"	3.22	10.62	13.84	10.36	13	3.57	3.6	8.25	15.25	22.25	29.25	1.42	3"	3½"	1.63	2.92	4.22	5.52	13	17	20	23
	—	38"	60"	7'-10"	3.39	11.99	15.38	11.70	15	3.95	3.7	8.92	16.75	24.58	32.42	1.46	3"	4"	1.83	3.36	4.89	6.41	14	18	21	25
	—	43"	68"	8'-11"	3.56	13.71	17.27	13.36	17	4.28	3.6	9.67	18.58	27.50	36.42	1.50	3"	4"	2.09	3.95	5.80	7.65	16	20	23	27
	—	48"	76"	9'-11"	3.73	15.43	19.18	15.03	19	4.59	4.0	10.42	20.58	30.75	40.17	1.54	3"	HSS 5"x5"x¼"	2.37	4.54	6.73	8.92	17	21	26	30
	—	53"	83"	10'-8"	3.91	17.19	21.06	16.70	20	4.77	3.3	11.08	21.79	32.42	43.08	1.58	3"	HSS 5"x9½"	2.61	5.09	7.56	10.03	18	23	27	32
	—	58"	91"	11'-8"	4.08	18.87	22.95	18.36	22	5.01	3.6	11.83	23.50	35.17	46.83	1.63	3½"	HSS 5"x18"	2.91	5.77	8.64	11.50	19	24	29	35

△8.42 ◇10.40 — △8.25 ◇10.10 — Dimensions permitted to allow use of 8' standard pipe lengths. Dimensions permitted to allow use of 12' standard pipe lengths.

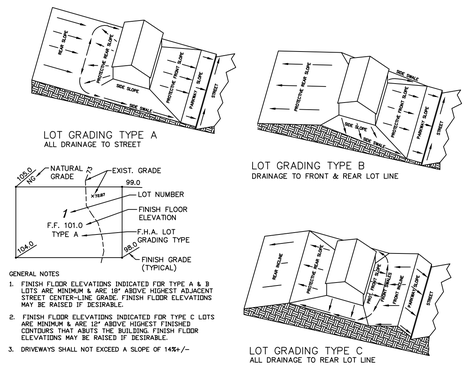


PERMISSIBLE PAVEMENT MODIFICATION

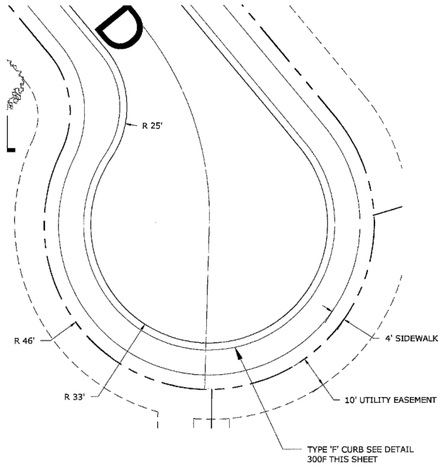
CONCRETE PIPE DIMENSIONS AND QUANTITIES AND PERMISSIBLE PAVEMENT MODIFICATION

LAST REVISION 11/01/19	DESCRIPTION:	FY 2020-21 STANDARD PLANS	SIDE DRAIN MITERED END SECTION	INDEX 430-022	SHEET 3 of 7

D1 C14 Mitered End Section

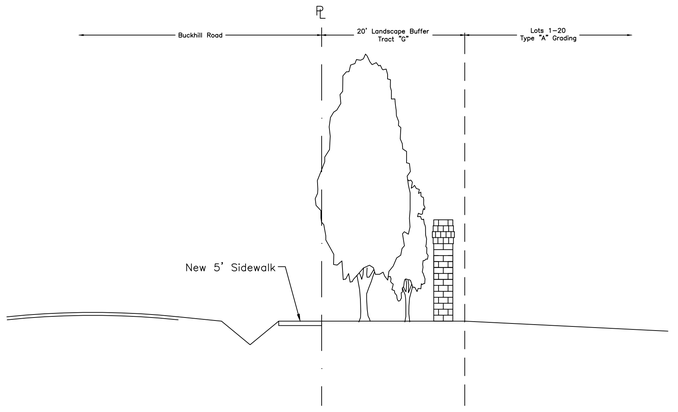


D3 C14 LOT GRADING DETAILS
NTS



D4 C14 TYPICAL CUL-DE-SAC DETAIL
1"=20'

D2 C14 Mitered End Section



D5 C14 Buckhill Road Landscape Buffer

Description	Date	#

Revisions

Description	Date	#

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

General Details Sheet 4

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
----	Scale
09-07-21	Date
WH2-C14	File

Dwg. No.

C14

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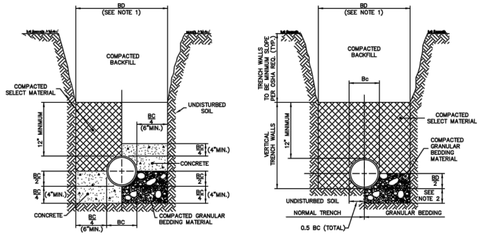
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



CLASS "A" BEDDING
SPECIAL CONDITIONS

CLASS "B" BEDDING
NORMAL CONDITIONS

NOTES: FOR BEDDING AND TRENCHING

1. DIMENSION BC = PIPE O.D.
   DIMENSION BC = TRENCH WIDTH AT TOP OF PIPE
   MAXIMUM BD = BC + 30"
   MINIMUM BD = MAXIMUM DIMENSION OF BELL + 8" (UNSHEETED TRENCH)
2. DEPTH FOR REMOVAL FOR UNSUITABLE MATERIAL SHALL BE AS REQUIRED TO REACH SUITABLE FOUNDATION. FOR ROCK OR OTHER NON-CUSHIONING MATERIAL, DEPTH SHALL BE 6" BELOW BOTTOM OF UTILITY.
3. ALL BACKFILL AND SELECT MATERIAL UNDER ALL ROADWAYS, DRIVES (INCLUDING DIRT DRIVES), AND PARKING AREAS SHALL BE COMPACTED TO 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY, (AASHTO T-180). BACKFILL AND SELECT MATERIAL UNDER ALL OTHER AREAS SHALL BE COMPACTED AS FOLLOWS: FROM BOTTOM OF TRENCH TO 12" ABOVE TOP OF PIPE – 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180), FROM 12" ABOVE TOP OF PIPE TO TOP OF BACKFILL – 90% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180)

TRENCHING AND BEDDING
NOT TO SCALE

Howey-in-the-Hills
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101 - Bedding & Trenching

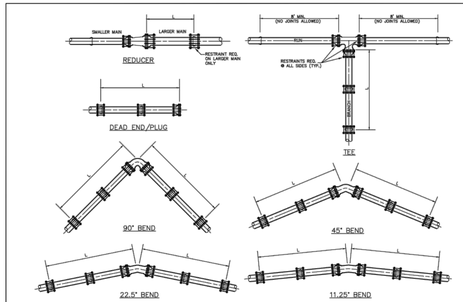

TABLE OF THRUST RESTRAINT LENGTHS

PIPE SIZE (Inches)	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEES		DEAD END & PLUG		REDUCER	
	P.V.C. DJ	DUCTILE IRON PUSH-ON	P.V.C. DJ	DUCTILE IRON PUSH-ON	P.V.C. DJ	DUCTILE IRON PUSH-ON	P.V.C. DJ	DUCTILE IRON PUSH-ON	P.V.C. DJ	DUCTILE IRON PUSH-ON	P.V.C. DJ	DUCTILE IRON PUSH-ON	PIPE SIZES	P.V.C. DJ	DUCTILE IRON PUSH-ON
4	20'	16'	8'	7'	4'	3'	2'	2'	15'	12'	40'	29'	6"x4"	3.5'	2'-7'
6	28'	22'	12'	9'	6'	4'	3'	2'	33'	21'	63'	40'	8"x6"	3.4'	2.2'
8	36'	29'	15'	12'	7'	6'	4'	3'	52'	33'	85'	52'	10"x8"	3.5'	2.1'
10	43'	34'	18'	14'	9'	7'	4'	3'	68'	43'	98'	63'	12"x10"	3.4'	2.2'
12	50'	40'	21'	17'	10'	8'	5'	4'	84'	54'	116'	74'	16"x12"	6.5'	4.0'
16	63'	51'	26'	21'	13'	10'	6'	5'	116'	74'	148'	94'	18"x16"	3.5'	2.1'
18	70.	56'	29'	23'	14'	11'	7'	6'	131'	83'	163'	103'	20"x18"	3.5'	2.1'
20	75'	61'	31'	25'	15'	12'	7'	6'	145'	93'	178'	113'	20"x20"	6.0'	3.9'
24	86'	70'	36'	29'	17'	14'	9'	7'	173'	110'	203'	132'			

THRUST RESTRAINT DESIGN NOTES

1. RESTRAINT JOINTS, FITTINGS, & VALVE REQUIREMENTS CALCULATED BY THE THRUST RESTRAINT DESIGN PROGRAM PROVIDED BY EBBA IRON SALES, INC.
2. DATA BASED ON MAX. PRESSURE OF 150 p.s.i., THE UNIFIED SOILS CLASSIFICATION SYSTEM (SOIL TYPE SP), THE PIPE BEDDED IN NATIVE SOIL w/ A MINIMUM OF 2.5' COMPACTED FILL OVER THE PIPE, AND USING A SAFETY FACTOR OF 1.5 FOR THE DATA.
3. ALL FITTINGS & VALVES SHALL HAVE RESTRAINED WITH "MEGA-LUG" RESTRAINTS, & ALL BELL & SPIGOT JOINTS TO BE RESTRAINED WITH A RESTRAINING HARNESS WITHIN THE REQUIRED LENGTH OF RESTRAINED PIPE (L).

THRUST RESTRAINT
NOT TO SCALE

Howey-in-the-Hills
Standard Details
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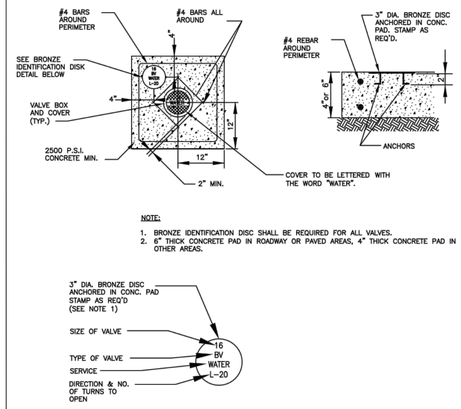
102 - Restrained Joint Table



NOTE:

1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS, 4" THICK CONCRETE PAD IN OTHER AREAS.

BRONZE IDENTIFICATION DISC DETAIL

VALVE COLLAR
NOT TO SCALE

Howey-in-the-Hills
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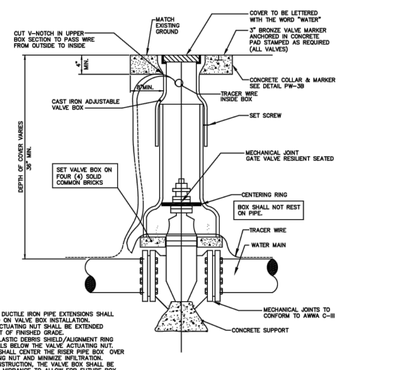
103 - Valve Collar



NOTES:

1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION.
4. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
5. VALVE BOX SHALL BE A TWO PIECE SCREW TYPE.

GATE VALVE AND BOX
NOT TO SCALE

Howey-in-the-Hills
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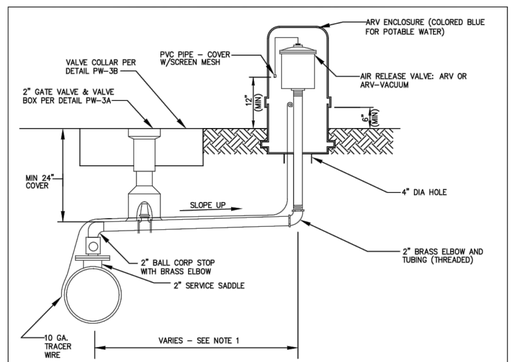
104 - Gate Valve and Box



NOTES:

1. OFFSET DISTANCE SHOWN ON DRAWINGS.
2. ADJUST HORIZONTAL LOCATION OF ARV ENCLOSURE, AS REQUIRED TO AVOID SIDEWALK. LOCATE ARV ENCLOSURE WITHIN 1' OF R/W OR AS OTHERWISE DETERMINED BY THE CITY.

OFFSET AIR RELEASE VALVE VAULT
NOT TO SCALE

Howey-in-the-Hills
Standard Details
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105 - Air Release Valve

GENERAL WATER NOTES

1. WATER SYSTEM COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND REGULATIONS, CLEANED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND CHAPTER 62-555 FLORIDA ADMINISTRATIVE CODE.
2. ALL PIPING SHALL BEAR THE "NSF" SEAL FOR POTABLE WATER.
3. WATER MAINS SHALL BE PVC CONFORMING TO AWWA C-900, DR 18 FOR PIPE SIZES 4"-12". PIPES 14" OR LARGER SHALL BE AWWA C-905, OR 18. ALL COUPLINGS, CLEANING COMPOUNDS, SOLVENTS, LUBRICANTS, AND PIPE PREPARATION, FOR LAYING, SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S LATEST RECOMMENDATIONS.
4. DEPTH OF WATER LINES TO BE 36" MINIMUM COVER FROM FINISH GRADE.
5. WATER MAINS TO BE LOCATED 5' FROM BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. ALL WATER MAINS UNDER PAVEMENT SHALL BE DUCTILE IRON.
7. ALL CASINGS UNDER PAVEMENT SHALL EXTEND 5' BEYOND THE BACK OF CURB.
8. DISINFECTING: FOLLOWING THE PRESSURE TESTING, THE CONTRACTOR SHALL DISINFECT ALL SECTIONS OF THE NEW WATER DISTRIBUTION SYSTEM. DISINFECTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF AWWA STANDARD C651 "DISINFECTING WATER MAINS", AND ALL APPROPRIATE AGENCY APPROVAL.
9. ALL HYDROSTATIC TESTS SHALL BE IN ACCORDANCE WITH AWWA C600 FOR DUCTILE IRON PIPE AND C605/M23 FOR PVC PIPE.
10. ALL WATER MAINS SHALL BE INSTALLED, PRESSURE AND LEAK TESTED IN ACCORDANCE WITH AWWA C600, (62-555.320(21)(B)1 AND 62-555.330, F.A.C. ALL INSTALLATION, TESTING AND FIELD PROCEDURES MUST BE PROVIDED AND MUST CONFORM TO THE APPLICABLE AWWA STANDARDS.
11. ALL PIPING MATERIALS AND SPECIFICATIONS COVERING PIPES, JOINTS AND PACKING MATERIALS, INTERNAL COATING AND LININGS, FITTINGS, SPECIALS AND APPURTENANCES SHALL ALL BE IN ACCORDANCE WITH THE CORRESPONDING AWWA STANDARDS AND BE CONFORMING TO NSF REQUIREMENTS, AS MAY BE APPLICABLE, WITH EXCEPTIONS ALLOWED ONLY IF DOCUMENTATION AND ASSURANCES ARE PROVIDED IN COMPLIANCE WITH PARAGRAPHS 62-555.320(3) (D), 622-555.320 (3) (B), AND 62-555.320 (21) (C), F.A.C. THE LEAD USE PROHIBITION IN RULE 62-555.322, F.A.C. SHALL ALSO APPLY. POLYETHYLENE TUBING SHALL BE PER AWWA C901. UNDERGROUND SERVICE LINES AND VALVES SHALL BE PER AWWA C800.

COLOR CODING

ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320(21)(B)3, F.A.C., USING BLUE AS A PREDOMINANT COLOR. (UNDERGROUND PLASTIC PIPE WILL BE SOLID-WALL BLUE PIPE, WILL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN OR WILL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE WILL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE WILL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90-DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT WILL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE; FOR PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT WILL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE WILL BE PAINTED BLUE OR WILL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE.) [FAC 62CELL 555.320(21)(B)3]

UNLESS DESCRIBED IN THE CITY CSM ELSEWHERE, ALL WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH **CHAPTER 62-555.314, F.A.C.,** AND ANY UPDATES TO THE F.A.C., AND IN CONFORMANCE WITH ALL SEPARATION REQUIREMENTS AS FOUND THEREIN.

62-555.314 LOCATION OF PUBLIC WATER SYSTEM MAINS.

FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT ARE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER.

(1) HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.

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

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GENERAL WATER NOTES

(D) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

(2) VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS AND RECLAIMED WATER PIPELINES.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(3) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES:

(A) NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.

(B) EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THIS REQUIREMENT (I.E., WHERE THERE IS A CONFLICT IN THE ROUTING OF A WATER MAIN AND A STORM SEWER AND WHERE ALTERNATIVE ROUTING OF THE WATER MAIN OR THE STORM SEWER IS NOT TECHNICALLY FEASIBLE OR IS NOT ECONOMICALLY SENSIBLE), THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THIS REQUIREMENT (I.E., THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES), BUT SUPPLIERS OF WATER OR PERSONS PROPOSING TO CONSTRUCT CONFLICT MANHOLES MUST FIRST OBTAIN A SPECIFIC PERMIT FROM THE DEPARTMENT AND MUST PROVIDE IN THE PRELIMINARY DESIGN REPORT OR DRAWINGS, SPECIFICATIONS, AND DESIGN DATA ACCOMPANYING THEIR PERMIT APPLICATION THE FOLLOWING INFORMATION:

1. TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.
2. A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.
3. ASSURANCE OF COMPLIANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB-PARAGRAPHS A. THROUGH D. BELOW. - 361
   A. EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE, WATERTIGHT JOINT ON EACH SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLING BETWEEN THE MAIN AND THE MANHOLE.
   B. WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATERTIGHT CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE).
   C. EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED, TO ALLOW FOR EASY CLEANING OF THE MANHOLE.
   D. GRATINGS SHALL BE INSTALLED AT ALL STORM SEWER INLETS UPSTREAM OF EACH CONFLICT MANHOLE TO PREVENT LARGE OBJECTS FROM ENTERING THE MANHOLE.

(4) SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

Howey-in-the-Hills
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GENERAL WATER NOTES

(5) EXCEPTIONS. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THE REQUIREMENTS IN SUBSECTION (1) OR (2) ABOVE, THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THESE REQUIREMENTS IF SUPPLIERS OF WATER OR CONSTRUCTION PERMIT APPLICANTS PROVIDE TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH EXCEPTION AND PROVIDE ALTERNATIVE CONSTRUCTION FEATURES THAT AFFORD A SIMILAR LEVEL OF RELIABILITY AND PUBLIC HEALTH PROTECTION. ACCEPTABLE ALTERNATIVE CONSTRUCTION FEATURES INCLUDE THE FOLLOWING:

(A) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE:
1. USE OF PRESSURE-RATED PIPE CONFORMING TO THE AMERICAN WATER WORKS ASSOCIATION STANDARDS INCORPORATED INTO RULE 62-555.330, F.A.C., FOR THE OTHER PIPELINE IF IT IS A GRAVITY- OR VACUUM-TYPE PIPELINE;
2. USE OF WELDED, FUSED, OR OTHERWISE RESTRAINED JOINTS FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE; OR
3. USE OF WATERTIGHT CASING PIPE OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE.

(B) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THREE FEET HORIZONTALLY FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE:
1. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE WATER MAIN; AND
2. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE OTHER PIPELINE IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER.

Howey-in-the-Hills
Standard Details
DATE: FEB 2022
DETAIL PW-11B

DARCY UNROE
STATE OF FLORIDA
No 60929
PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

Description	Date	#
Revisions		
Town Comm	9/19/22	1
Description	Date	#
Revisions		

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Howey-in-the-HillsDetails 1

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
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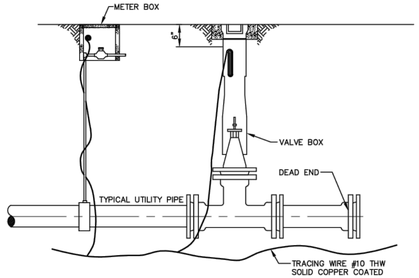


ALL PIPE INSTALLED VIA OPEN CUT SHALL BE INSTALLED WITH #10 THW SOLID COPPER COATED TRACING WIRE. ALL PIPE INSTALLED VIA HDD SHALL BE INSTALLED WITH TWO #10 COPPER CLAD STEEL WIRES.

THE TRACING WIRE MUST BE INSTALLED DIRECTLY BELOW THE PIPE AND BROUGHT TO THE SURFACE AT 500' MINIMUM INTERVALS. WIRE SHALL EXTEND A MINIMUM OF 12" ABOVE GRADE AT EACH INTERVAL AND BE COILED AND PLACED IN A VALVE BOX, METER BOX, MANHOLE, CLEANOUT, LOCATE WIRE BOX, OR OTHER APPLICABLE STRUCTURE.

COLOR CODING:

POTABLE WATER SYSTEM: BLUE
REUSE WATER SYSTEM: PANTONE PURPLE
SANITARY SEWER, FORCE MAINS AND LOW PRESSURE SEWER SYSTEMS: GREEN

1. FOR LOW PRESSURE SEWER, POTABLE WATER AND REUSE WATER SYSTEMS: WIRE SHALL BE INSTALLED BELOW ALL MAINS AND SERVICE LINES AND ATTACHED TO VALVES, HYDRANTS AND FITTINGS. WIRE INSTALLED WITH SERVICE LINES SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE CURB STOP.
2. FIRE SPRINKLER LINES: WIRE SHALL CONNECT TO THE WIRE INSTALLED BELOW THE MAIN AND EXTEND TO THE RISER CONNECTION.
3. SANITARY SEWER FORCE MAINS: WIRE SHALL BE INSTALLED BELOW THE FORCE MAIN AND ATTACHED TO ALL VALVES AND FITTINGS AND BROUGHT TO THE SURFACE AND PLACED IN A METAL, CITY OF TAVARES APPROVED, VALVE BOX.
4. DEAD END MAINS: WIRE SHALL BE PLACED IN A PROPERLY IDENTIFIED METAL VALVE BOX AT THE END OF THE RUN.
5. WIRE SHALL NOT BE FASTENED OR COILED TO VALVE OPERATING NUT.
6. UTILITY TRACING WIRE SHALL BE IN ACCORDANCE WITH CITY CSM AND PER CITY'S APPROVED MANUFACTURER LIST.

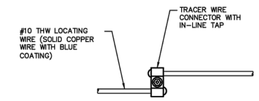
UTILITY PIPE LOCATION MATERIAL – WIRE

NOT TO SCALE

Howey-in-the-Hills
Standard Details

DATE: FEB 2022
DETAIL PW-8

201 - Utility Pipe Location Material



NOTES:

1. TRACER WIRE CONNECTOR SHALL BE DIRECT BURY, SELF-STRIPPING, LOCKING.
2. AFTER INSTALLATION OF THE LOCATING WIRE THE SYSTEM SHALL BE SUBJECTED TO TESTING, IN THE PRESENCE OF CITY UTILITY DIRECTOR OR HIS DESIGNEE PRIOR TO BACKFILL, IN ORDER TO CONFIRM THAT THE SYSTEM IS FUNCTIONAL.

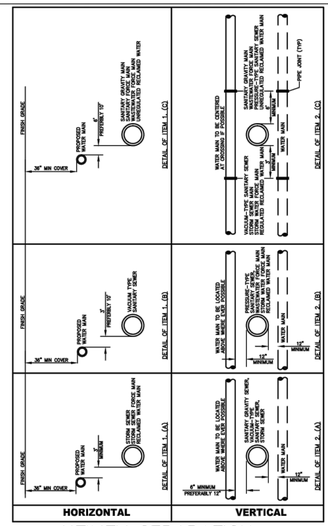
LOCATING WIRE SPLICING

NOT TO SCALE

Howey-in-the-Hills
Standard Details

DATE: FEB 2022
DETAIL PW-5

201 - Locating Wire Splice



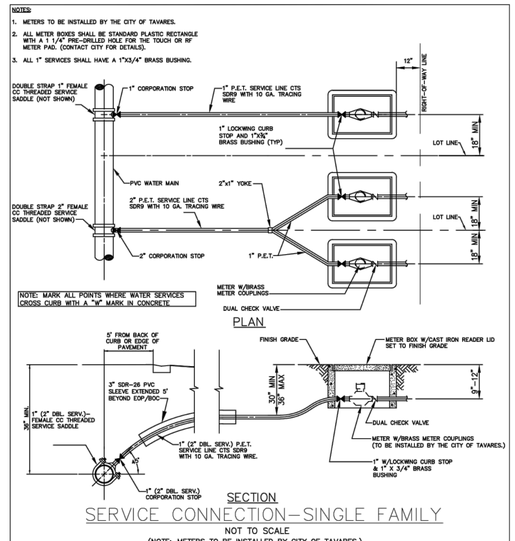
UTILITY SEPARATION

NOT TO SCALE

Howey-in-the-Hills
Standard Details

DATE: FEB 2022
DETAIL PW-11A

202 - Utility Separation



SERVICE CONNECTION–SINGLE FAMILY

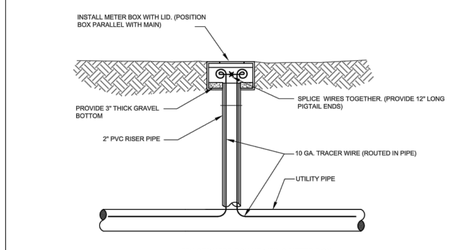
NOT TO SCALE

(NOTE: METERS TO BE INSTALLED BY CITY OF TAVARES.)

Howey-in-the-Hills
Standard Details

DATE: FEB 2022
DETAIL PW-1

203 - Service Connections – Domestic



TRACER WIRE BOX UTILIZING METER BOX

NOTES:

1. TRACER WIRE STATION BOX TO BE INSTALLED WHERE THE WIRE CANNOT BE BROUGHT TO GRADE IN A VALVE BOX WITHIN THE MANDATORY 500 FOOT INTERVAL OR WHERE A SPLICE MUST BE MADE ON THE TRACER WIRING. NO UNDERGROUND SPLICES.
2. BOXES SHALL NOT BE LOCATED IN ROADWAYS OR DRIVEWAYS.
3. BOX AND LID PER DETAIL PW-15
4. TRAFFIC RATED LID (STANDARD-NON BOLT DOWN)
5. LID COLOR SHALL BE PRE-MANUFACTURED OR PAINTED TO MATCH SERVICE (BLUE= POTABLE WATER, GREEN=WASTEWATER, PANTONE PURPLE=RECLAIMED WATER)

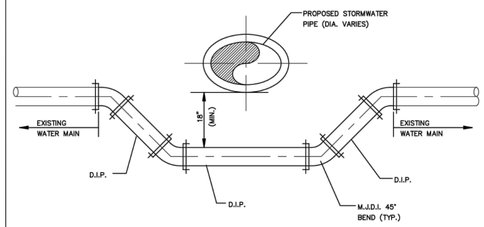
TRACER WIRE BOX

NOT TO SCALE

Howey-in-the-Hills
Standard Details

DATE: FEB 2022
DETAIL PW-9

201 - Tracer Wire Box



NOTES:

1. ALL PROPOSED JOINTS SHALL BE RESTRAINED.
2. ALL EXISTING JOINTS WITHIN SHALL BE RESTRAINED IN ACCORDANCE WITH GR-6.
3. ALL PIPING CLEARANCES SHALL BE IN ACCORDANCE WITH CHAPTER 62-555.314 F.A.C.

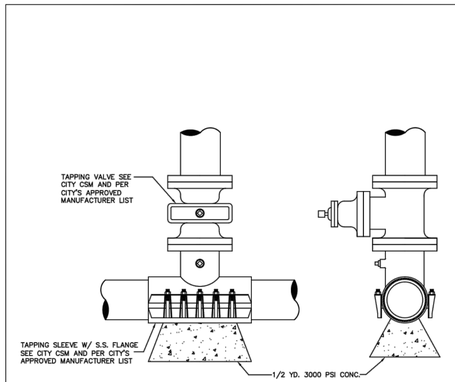
WATER LINE CROSSING

NOT TO SCALE

Howey-in-the-Hills
Standard Details

DATE: FEB 2022
DETAIL PW-11B

202 - Water Line Crossing



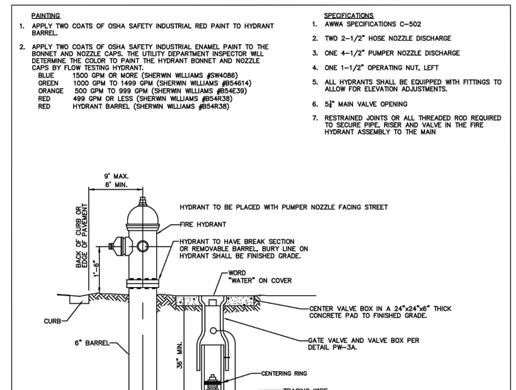
WET TAP SLEEVE AND TAPPING VALVE

NOT TO SCALE

Howey-in-the-Hills
Standard Details

DATE: FEB 2022
DETAIL PW-17

204 - Wet Tap Detail – Water



FIRE HYDRANT WITH VALVE

NOT TO SCALE

(STANDARD FIRE HYDRANT ASSEMBLY)

Howey-in-the-Hills
Standard Details

DATE: FEB 2022
DETAIL PW-1

205 - Fire Hydrant & Valve

DARCY UNROE
STATE OF FLORIDA
No 60929
PROFESSIONAL ENGINEER
LICENSED

Darcy Unroe PE 60929

	Description
	Date
	#
Revisions	
Town Comm	Description
9/19/22	Date
1	#
Revisions	

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Howey-in-the-HillsDetails 2

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
----	Scale
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C16

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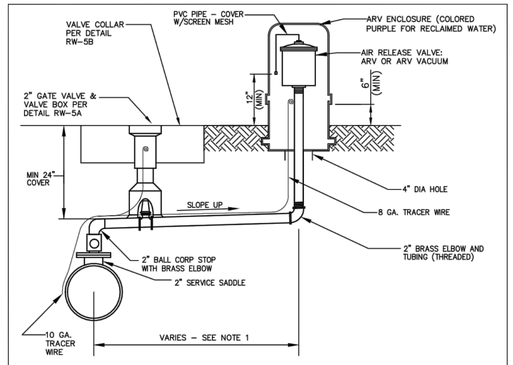
1. ALL RECLAIMED WATER PIPING TO BE OWNED AND MAINTAINED BY THE TOWN SHALL BE A SOLID PANTONE PURPLE COLOR.
2. RECLAIMED WATER MAINS SHALL BE PVC CONFORMING TO AWWA C-900, DR 18 FOR PIPE SIZES 4"-12". PIPES 14" & LARGER SHALL BE AWWA C-905, DR 25. PRESSURE CLASS 350 DIP IS AN ACCEPTABLE ALTERNATE. ALL COUPLINGS, CLEANING COMPOUNDS, SOLVENTS, LUBRICANTS, AND PIPE PREPARATION FOR LAYING SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS LATEST RECOMMENDATIONS.
3. DEPTH OF RECLAIMED WATER LINES TO BE 36" MIN. BELOW FINISHED GRADE.
4. RECLAIMED WATER MAINS TO BE LOCATED 5' FROM BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
5. ALL PIPING CLEARANCES SHALL BE IN ACCORDANCE WITH CHAPTER 62-555.314, F.A.C.
6. ALL RECLAIMED WATER MAINS UNDER PAVEMENT SHALL BE DUCTILE IRON PIPE AND SHALL EXTEND 5' BEYOND THE EDGE OF PAVEMENT OR BACK OF CURB, EXCEPT DIRECTIONAL BORES, WHICH SHALL BE SDR-11 HDPE.
7. ALL IRRIGATION SLEEVING UNDER PAVEMENT SHALL EXTEND 5' BEYOND THE EDGE OF PAVEMENT OR BACK OF CURB.
8. ALL OTHER REQUIREMENTS OF THE TOWN WATER SYSTEM SHALL APPLY TO THE RECLAIMED WATER SYSTEM.
9. PROPER SIGNAGE FOR PUBLIC ACCESS IRRIGATION AREAS TO BE SUPPLIED BY THE DEVELOPER / CONTRACTOR, IN ACCORDANCE WITH CHAPTER 62-610.418, F.A.C.

GENERAL RECLAIMED WATER NOTES

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL RW-1



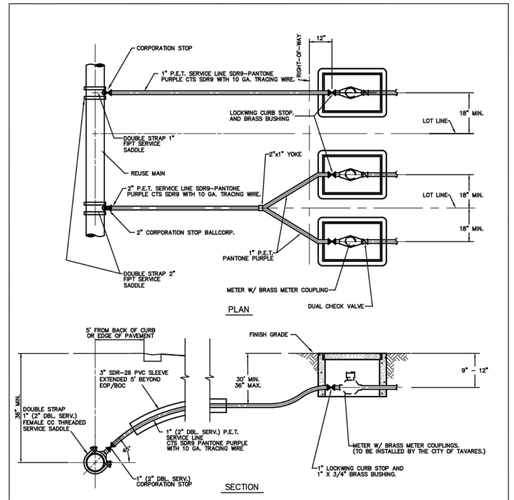
NOTES:
1. OFFSET DISTANCE SHOWN ON DRAWINGS.
2. ADJUST HORIZONTAL LOCATION OF ARV ENCLOSURE, AS REQUIRED TO AVOID SIDEWALK. LOCATE ARV ENCLOSURE WITHIN 1' OF R/W OR AS OTHERWISE DETERMINED BY THE CITY.

OFFSET AIR RELEASE VALVE VAULT

NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL RW-2

401 - Air Release – Reclaimed



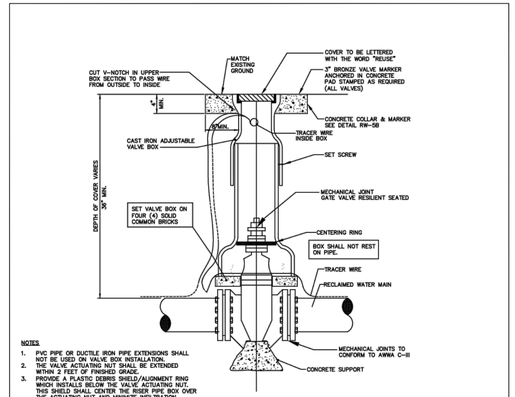
RECLAIMED WATER SERVICE CONNECTION

NOT TO SCALE

(NOTE: METERS TO BE INSTALLED BY CITY OF TAVARES.)

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL RW-3

402 - Service Connections – Reclaimed



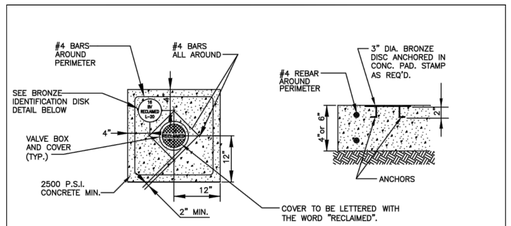
NOTES
1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT, AND ABOVE THE CENTERING RING IN THE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
4. VALVE BOX SHALL BE A TWO PIECE SCREW TYPE.

GATE VALVE AND BOX

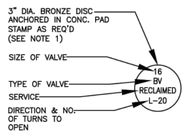
NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL RW-5A

403 - Gate Valve & Box – Reclaimed



NOTE:
1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS, 4" THICK CONCRETE PAD IN OTHER AREAS.



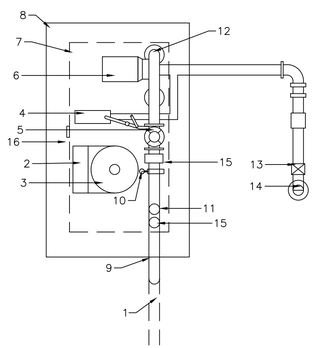
BRONZE IDENTIFICATION DISC DETAIL

VALVE COLLAR

NOT TO SCALE

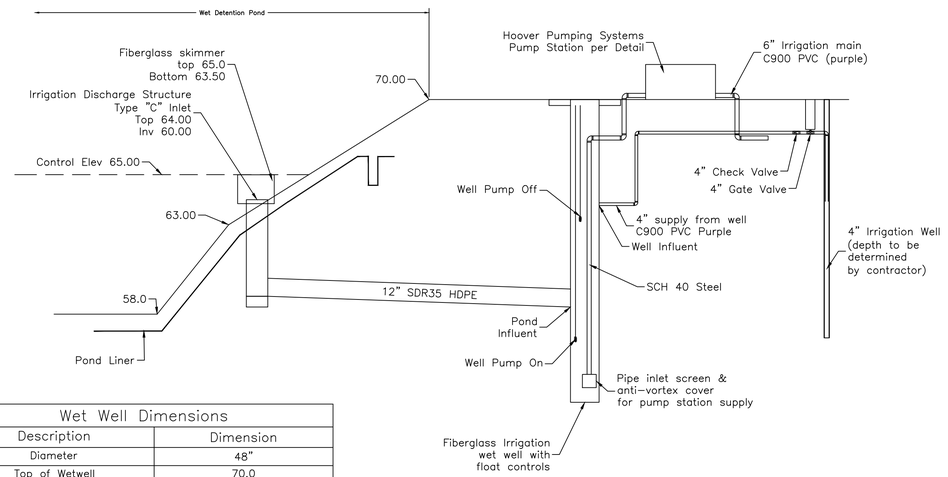
Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL RW-5B

404 - Valve Collar – Reclaimed



Work Notes
1. Irrigation main from source
2. Control Panel with UL listed assembly
3. Pressure tank, ASME, 15 gal, 125 psi
4. 5 HP Jockey Pump
5. Pressure Transducer
6. 30 HP irrigation Pump (427 gpm @ 230 ft)
7. 4x8 fiberglass reinforced shed with forest green gelcoat finish
8. 10x10x6" TK fiber reinforced pad
9. Main Discharge Valve (6")
10. Hose bib and ball valve
11. Magnetic flow meter
12. Check valves at each pump discharge
13. Swing check valve
14. 316 SS screen on crop pipe
15. Control/Shutoff valve with normally open Solendid connected to Hoover Flowguard
16. HASP Lock & Handle
17. Galvanized Steel skid and discharge header
18. 4"x6" Reducer
19. Drop pipe to Irrigation Main

405 - Irrigation Pump Station



Wet Well Dimensions	
Description	Dimension
Diameter	48"
Top of Wetwell	70.0
Well Influent Inv	60.00
Pond Influent Inv	59.45
Well Pump off	63.75
Well Pump on	54.25
Floor	50.00

406 - Irrigation/Pond Pipe Connection Detail

Darcy Unroe PE 60929

Revisions			
#	Date	Description	
1	9/19/22	Town Comm	

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Howey-in-the-HillsDetails 3

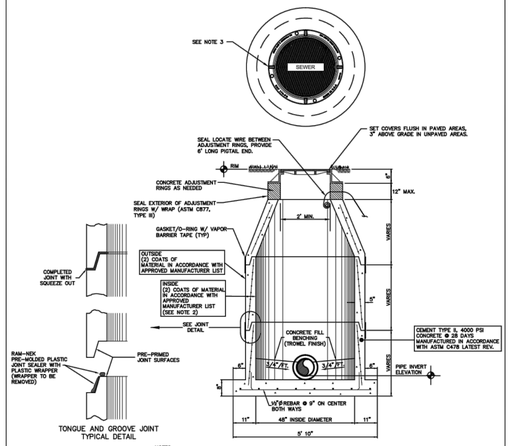
WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
----	Scale
09-07-21	Date
WH2-C16	File

Dwg. No.

C17



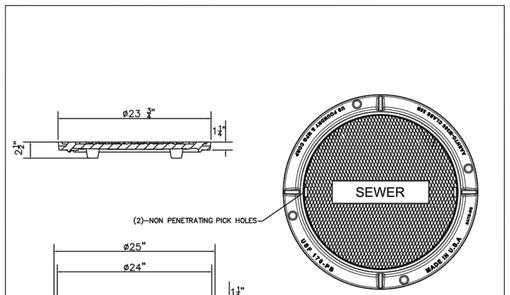
NOTES
1. ALTERNATE-PRECAST MANHOLE TOPS MUST BE APPROVED IN ADVANCE.
2. LINER (100 MILS DFT) SHALL BE USED WHERE SHOWN ON DRAWINGS AND/OR REQUIRED BY THE CITY.
3. MANHOLE LID TO BE CENTERED OVER EFFLUENT PIPE.
4. INSTALL ONE CONTINUOUS PIECE OF RAM-NEK AROUND ENTIRE MATING SURFACE BETWEEN ADJUSTMENT RINGS AND MANHOLE FRAME.

SANITARY PRECAST MANHOLE

NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL WW-1

501 - Sanitary Manhole



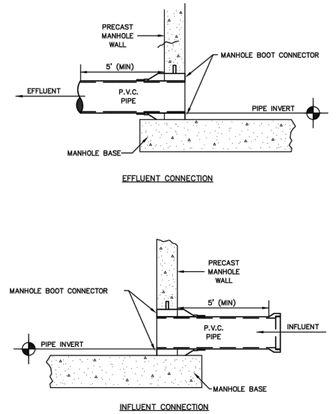
*MODEL USF 170-PB RING AND CE-PB COVER
RING NO. 8021468
COVER NO. 8017774
MATERIAL AASHTO M306 GRAY CAST IRON CLASS 35B

SANITARY MANHOLE COVER

NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL WW-2

501 - Sanitary Manhole Cover

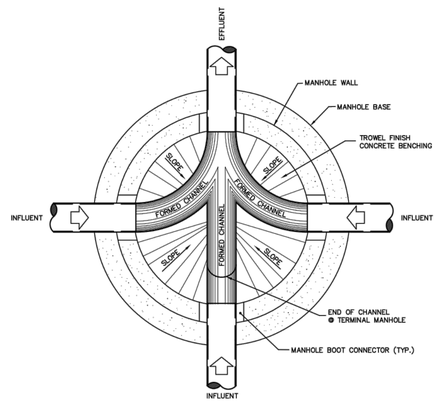


PIPE CONNECTION TO PRECAST SANITARY MANHOLE

NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL WW-3

501 - Pipe to MH Connection



FLOW PATTERNS FOR INVERT CHANNELS

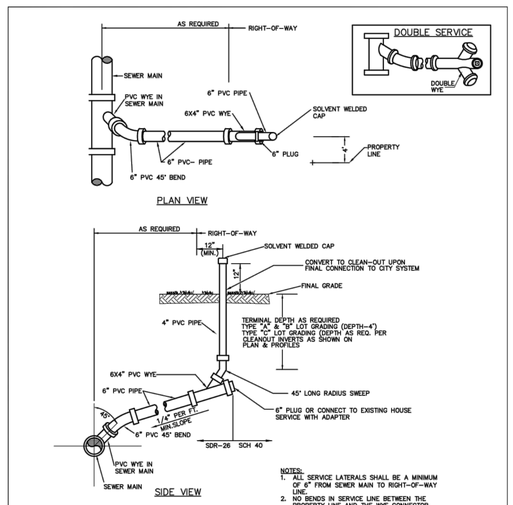
NOTES:
1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS, HALF PIPE INVERT CHANNELS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOWS.
3. CHANNELS FOR FUTURE CONNECTIONS (STUBS) SHALL BE CONSTRUCTED, FILLED WITH SAND AND COVERED WITH 1" OF MORTAR.

TYPICAL MANHOLE PLAN

NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL WW-4

501 - Manhole Plan



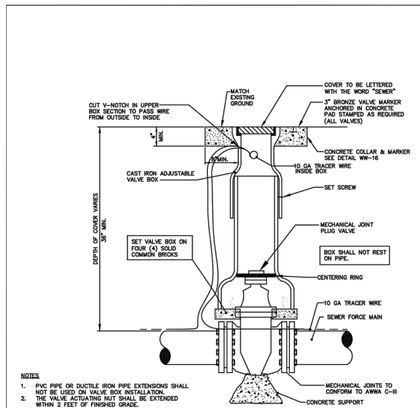
NOTES:
1. ALL SERVICE LATERALS SHALL BE A MINIMUM OF 6" FROM SEWER MAIN TO RIGHT-OF-WAY LINE.
2. NO BENDS IN SERVICE LINE BETWEEN THE PROPERTY LINE AND THE WYE CONNECTOR.

SANITARY SEWER SERVICE

PVC SEWER SERVICE – NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL WW-6

502 - Sanitary Sewer Service



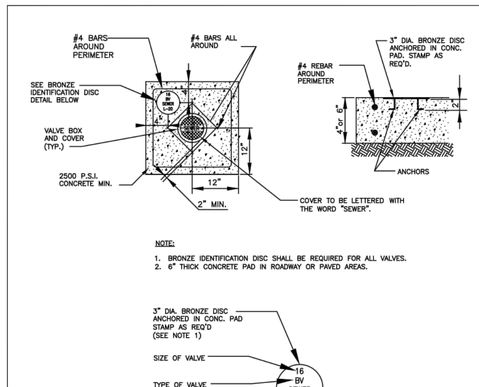
NOTES
1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED WITHIN 2 FEET OF FINISHED GRADE.
3. PROVIDE A PLASTIC DEBRIS SHIELD/ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE VALVE NUT AND PREVENT DIRT FROM ENTERING.
4. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
5. VALVE BOX SHALL BE A TWO PIECE SCREW TYPE.

PLUG VALVE AND BOX

NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL WW-13

503 - Plug Valve & Box – FM



NOTE:
1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
2. 6" THICK CONCRETE PAD IN ROADWAY OR PAVED AREAS.

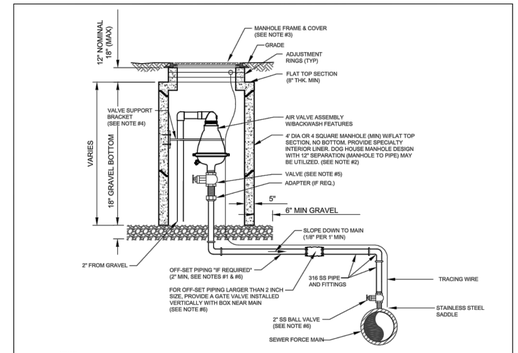
BRONZE IDENTIFICATION DISC DETAIL

VALVE COLLAR

NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL WW-15

201 - Valve Collar – FM



NOTES:
1. THE AIR ASSEMBLY MANHOLE SHALL BE LOCATED OUTSIDE OF THE ROADWAY PAVEMENT AREA. IF OFF-SET PIPING IS REQUIRED, THE PIPING SHALL BE 2 INCH MINIMUM, (SAME SIZE AS AIR VALVE INLET). FOR PIPE SIZES 3 INCH AND SMALLER, PIPING SHALL BE 316 STAINLESS STEEL SCH 40, STD GRADE, THREADED. FOR PIPE SIZES 4 INCH AND LARGER, PIPING SHALL BE 316 STAINLESS STEEL SCH. 10 (MIN), WELDED.
2. THE CONCRETE MANHOLE SHALL INCLUDE A LINER TO BE INSTALLED ON THE INTERIOR SURFACES INCLUDING THE RISER SECTION TOP AND THE ADJUSTMENT RINGS. A BITUMINOUS WATERPROOFING MATERIAL SHALL BE PROVIDED ON THE OUTSIDE SURFACES OF THE MANHOLE.
3. FRAME AND COVER SHALL BE CITY STANDARD. THE COVER SHALL HAVE NO GASKET TO ALLOW AIR TO EXIT VAULT (REMOVE GASKET IF NECESSARY FROM THE UNDERSIDE OF STANDARD COVER). THE COVER (WHEN FLIPPED OPEN) MUST CLEAR THE AIR VALVE ASSEMBLY AT ALL TIMES OR A SQUARE TOP WITH ALUMINUM DOOR SHALL BE PROVIDED (NON TRAFFIC LOCATIONS ONLY).
4. A VALVE SUPPORT BRACKET IS ONLY REQUIRED FOR ASSEMBLIES WHICH INCLUDE OFF-SET PIPING. THE BRACKET SHALL BE WELDED AND FABRICATED FROM ALL 316 STAINLESS STEEL MATERIALS AND INCLUDE 6" x 6" x 3/" THICK END PLATES (CONTOURED TO MATCH ATTACHING SURFACES). 3" ANGLE IRON FOR SUPPORT ARM AND TWO U-BOLTS 3/" DIA TO ATTACH AROUND AIR VALVE. SECURE TO CONCRETE MANHOLE WITH FOUR 3/" DIA X 2" LONG SS8 ANCHOR (MIN). MODIFY THE ABOVE AS REQUIRED TO FIT SPECIFIC AIR VALVE AND TO ASSURE A SOLID SUPPORT BRACKET.
5. FOR PIPE SIZES 3 INCH AND SMALLER, PROVIDE A STAINLESS STEEL BALL VALVE (2" MIN). FOR PIPE SIZES 4 INCH AND LARGER, PROVIDE A FLANGED PLUG VALVE. (LEVER ARM OPERATOR) SEE SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
6. FOR A 2" AIR VALVE, PROVIDE 2" STAINLESS STEEL BALL VALVE AT THE MAIN. FOR AIR VALVES LARGER THAN 2" SIZE, PROVIDE A TAPPING SLEEVE OR DUCTILE IRON TEE FITTING. ALSO, FOR OFF-SET PIPING LARGER THAN 2 INCH SIZE, PROVIDE A GATE VALVE (INSTALLED VERTICALLY NEAR MAIN WITH A GEAR ACTUATOR). SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

AIR VALVE ASSEMBLY INSIDE MANHOLE

NOT TO SCALE

Howey-in-the-Hills Standard Details — DATE: FEB 2022 — DETAIL WW-14

203 - Air Release Valve – FM

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

#	Date	Description
		Revisions
1	9/19/22	Town Comm
		Revisions

Howey-in-the-HillsDetails 4

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
----	Scale
09-07-21	Date
WH2-C17	File

Dwg. No.

C17

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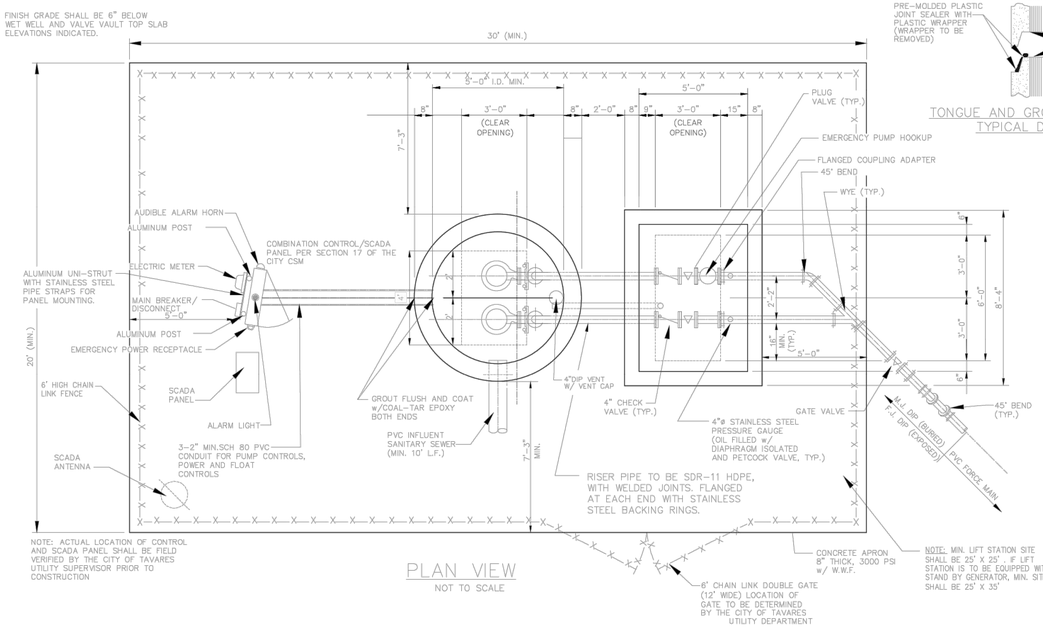
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

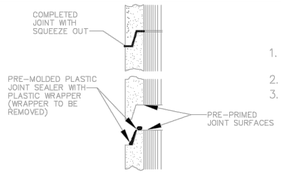
Darcy Unroe PE 60929

NOTES:

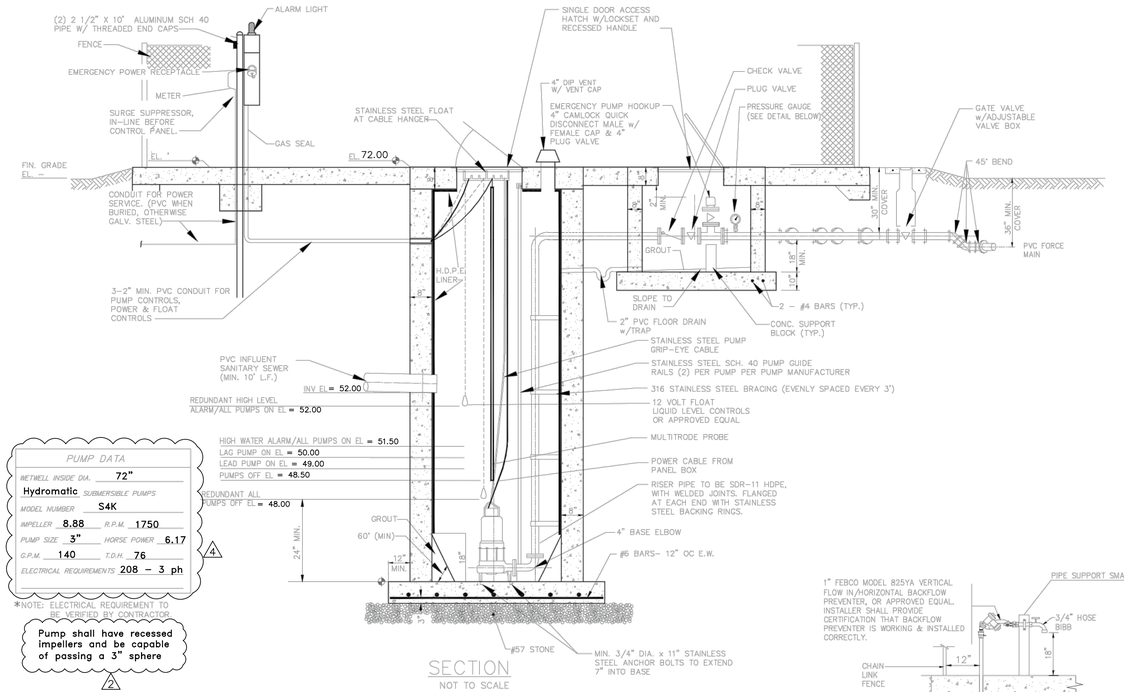
1. FINISH GRADE SHALL BE 6" BELOW WET WELL AND VALVE VAULT TOP SLAB ELEVATIONS INDICATED.



PLAN VIEW
NOT TO SCALE



TONGUE AND GROOVE JOINT
TYPICAL DETAIL



PUMP DATA

WETWELL INSIDE DIA.	72"
Hydromatic SUBMERSIBLE PUMPS	
MODEL NUMBER	S4K
IMPELLER 8.88 R.P.M.	1750
PUMP SIZE 3" HORSE POWER	6.17
G.P.M. 140 T.D.H.	76
ELECTRICAL REQUIREMENTS	208 - 3 ph

*NOTE: ELECTRICAL REQUIREMENT TO BE VERIFIED BY CONTRACTOR.

4

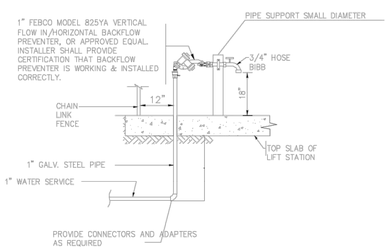
Pump shall have recessed impellers and be capable of passing a 3" sphere

2

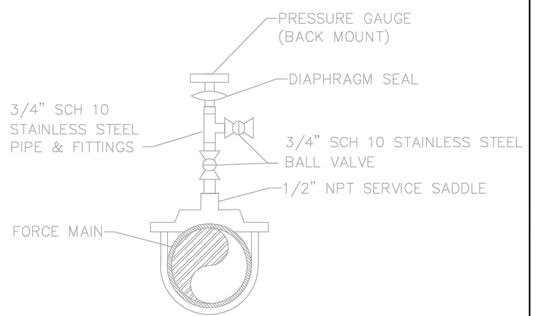
SECTION
NOT TO SCALE

DUPLEX LIFT STATION

NOT TO SCALE



HOSE BIBB DETAIL
NOT TO SCALE



PRESSURE GAUGE DETAIL
NOT TO SCALE

NOTES:

1. PUMPS: SHALL HAVE (2) 2" STAINLESS STEEL GUIDE RAILS PER PUMP AND A BPI FRONT DUPLEX SYSTEM.
2. LEVEL CONTROLS: SHALL BE IN ACCORDANCE WITH SECTION 17 OF THE CITY UTILITY MANUAL.
3. WET WELL ACCESS COVER: SHALL HAVE CLEAR OPENING OF 36"x48". ACCESS FRAME AND COVER SHALL HAVE A 1/4" THICK ONE-PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME, INCORPORATING A CONTINUOUS CONCRETE ANCHOR. DOOR PANEL(S) SHALL BE 1/4" ALUMINUM DIAMOND PLATE, REINFORCED TO WITHSTAND A LIVE LOAD OF 300 PSF. DOOR(S) SHALL OPEN TO 90° AND AUTOMATICALLY LOCK WITH STAINLESS STEEL HOLD OPEN ARMS WITH ALUMINUM RELEASE HANDLES. DOOR(S) SHALL CLOSE FLUSH WITH THE FRAME. UNIT SHALL LOCK WITH A NONCORROSIVE LOCKING BAR. FRAME SHALL SUPPORT GUIDE RAILS AND CABLE HOLDER FOR ELECTRICAL WIRING. ALL ACCESS FRAME, COVER, AND HARDWARE SHALL BE CONSTRUCTED OF STAINLESS STEEL. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER APPROVED ALKALI RESISTANT PAINT OR APPROVED PROTECTIVE COATING. DOUBLE DOOR ACCESS COVERS SHALL HAVE REMOVABLE CENTER BAR SUPPORT. COVER MUST BE COMPATIBLE WITH PUMP.
4. VALVE VAULT ACCESS COVER: SHALL HAVE CLEAR OPENING OF 36"x72" ACCESS AS MANUFACTURED IN ACCORDANCE WITH APPENDIX A, APPROVED MANUFACTURER LIST OF THE CITY CSM. ACCESS FRAME AND COVER SHALL HAVE A 1/4" THICK ONE-PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME, INCORPORATING A CONTINUOUS CONCRETE ANCHOR. DOOR PANEL(S) SHALL BE 1/4" ALUMINUM DIAMOND PLATE, REINFORCED TO WITHSTAND A LIVE LOAD OF 300 PSF. DOOR(S) SHALL OPEN TO 90° AND AUTOMATICALLY LOCK WITH STAINLESS STEEL HOLD OPEN ARMS WITH ALUMINUM RELEASE HANDLES. DOOR(S) SHALL CLOSE FLUSH WITH THE FRAME. UNIT SHALL LOCK WITH A NONCORROSIVE LOCKING BAR. ALL ACCESS FRAME, COVER, HARDWARE, AND FASTENERS SHALL BE CONSTRUCTED OF 316 STAINLESS STEEL. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER, APPROVED ALKALI RESISTANT PAINT OR APPROVED PROTECTIVE COATING. DOUBLE DOOR ACCESS COVERS SHALL HAVE REMOVABLE CENTER BAR SUPPORT. COVER MUST BE COMPATIBLE WITH PUMP.
5. ELECTRICAL SERVICE ENTRANCE: PROVIDE METER SOCKET AND MAIN DISCONNECT MEETING APPLICABLE ELECTRIC CODES AND REQUIREMENTS OF POWER COMPANY. LIGHTNING AND VOLTAGE SURGE PROTECTION TO BE PROVIDED.COST FOR THE ELECTRICAL SERVICE AND COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. CONTROL PANEL: SHALL BE IN ACCORDANCE WITH SECTION 17 OF THE CITY CSM. PANEL SHALL BE EQUIPPED WITH THREE, 2" X 6" ALUMINUM NIPPLES TO THE SEALOFFS, WITH SCH 80 PVC TO WET WELL.
7. PAINT: INSIDE AND OUTSIDE OF VALVE VAULT SHALL BE PAINTED WITH TWO COATS OF MATERIAL IN ACCORDANCE WITH APPENDIX A, APPROVED MANUFACTURER LIST OF THE CITY CSM APPLIED AS PER MANUFACTURER'S RECOMMENDATIONS.
8. VALVE VAULT : PRECAST CONCRETE 60"x 84" (MINIMUM) INSIDE DIMENSIONS.
9. STEEL PLACED IN BOTTOM SLAB IS TO BE IDENTICAL TO THE TOP SLAB EXCEPT THAT DIAGONAL BARS AND OPENINGS ARE ELIMINATED. STEEL IS CONTINUOUS AND SLAB IS SOLID.
10. CONTRACTOR TO CONFIRM SERVICE ARRANGEMENTS WITH POWER COMPANY BEFORE COMMENCING WORK. CONTRACTOR TO RUN UNDERGROUND WIRING TO NEAREST TRANSFORMER OR HAND HOLE.
11. ALL FASTENERS ON FLANGES AND ETC. INSIDE WET WELL WILL BE STAINLESS STEEL.
12. DIMENSIONS BETWEEN CENTERLINE OF PIPES ARE STANDARD FOR PIPE SIZES SPECIFIED.
13. SHOP DRAWINGS OF ENTIRE INSTALLATION MUST BE APPROVED BY CITY PRIOR TO PLACEMENT OF ORDER.
14. PLUG VALVES SHALL BE CONSTRUCTED WITH RESILIENT FACED PLUGS. ON BY-PASS LINES, VALVES SHALL BE BURIED WITH ACCESS THROUGH CAST IRON VALVE BOXES. VALVES SHALL HAVE A 2" OPERATION NUT. ONE(1) 5' LONG VALVE WRENCH SHALL BE PROVIDED TO THE CITY OF TAVARES PER LIFT STATION. ALL PLUG VALVES 8" AND SMALLER SHALL BE 1/4 TURN TYPE.
15. ALL EXPOSED AND EMBEDDED CONDUITS TO BE SCHEDULE 80 PVC.
16. ALL EXPOSED METAL SHALL BE PAINTED WITH TWO (2) COATS OF EXTERIOR BLACK ENAMEL PAINT.
17. ALL EXTERNAL PIPING SHALL BE DUCTILE IRON CLASS 50 (FLANGED JOINT FOR EXPOSED PIPE & MECHANICAL JOINT FOR BURIED PIPE). ALL INTERNAL WET WELL PIPING FROM THE PUMP DISCHARGE ELBOW TO THE VALVE BOX SHALL BE MINIMUM SDR-11 HDPE.
18. ALL DIMENSIONS AND LOCATIONS OF UTILITIES TO BE FIELD VERIFIED BY CONTRACTOR.
19. PRESSURE GAUGES SHALL BE STAINLESS STEEL WITH STAINLESS STEEL DIAPHRAGM, LIQUID FILLED, 4" DIAMETER DIAL WITH 0-100 PSI RANGE. CHECK VALVES SHALL OUTSIDE LEVER AND WEIGHT.
20. PADLOCKS FOR ACCESS COVERS AND CONTROL PANEL SHALL BE KEYED ALIKE, FURNISH TWO (2) KEYS PER LOCK. BOLTS IN LOCKING DEVICE SHALL BE STAINLESS STEEL.
21. WET WELL TO BE H.D.P.E. LINED WITH A MINIMUM THICKNESS OF 2 MM, MECHANICALLY ANCHORED TO THE CONCRETE. ALL JOINTS SHALL BE EXTRUSION WELDED BY CERTIFIED WELDERS.
22. SOD ALL AREAS DISTURBED BY CONSTRUCTION.
23. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE WILL REQUIRE SHOP COATING OF SUITABLE PROTECTIVE COATING TO RESIST CORROSION.
24. BYPASS PUMPING: CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BYPASS PUMPING. A BYPASS PUMPING PLAN SHALL BE SUBMITTED AT THE TIME OR PERMIT APPLICATION TO THE ENVIRONMENTAL SERVICES DIRECTOR. CITIZEN CONSIDERATION WILL BE REVIEWED WHEN BYPASS PUMPING EQUIPMENT IS REQUIRED. SOUND ATTENUATING ENCLOSURES MAY BE REQUIRED, AT THE DISCRETION OF THE ENVIRONMENTAL SERVICES DIRECTOR.
25. FIELD TESTING: THE CONTRACTOR SHALL FURNISH THE SERVICES OF THE SYSTEM SUPPLIER'S SERVICEMAN, ALL SPECIAL TOOLS, CALIBRATION EQUIPMENT, AND LABOR TO PERFORM THE TESTS. CERTIFIED COPIES OF THE TESTS SHALL BE FURNISHED IN DUPLICATE TO THE CITY ENGINEER PRIOR TO FINAL APPROVAL.
26. DRIVEWAY SHALL HAVE A MINIMUM WIDTH OF 12 FEET.

DATE: FEB 2022

DETAIL WW-11

Howey-in-the-Hills Standard Details

#	Description	Date
	Revisions	
4	Town Comm	11/27/23
3	Town Comm	12/9/22
2	Town Comm	9/19/22
1	Description	Date
#	Revisions	

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

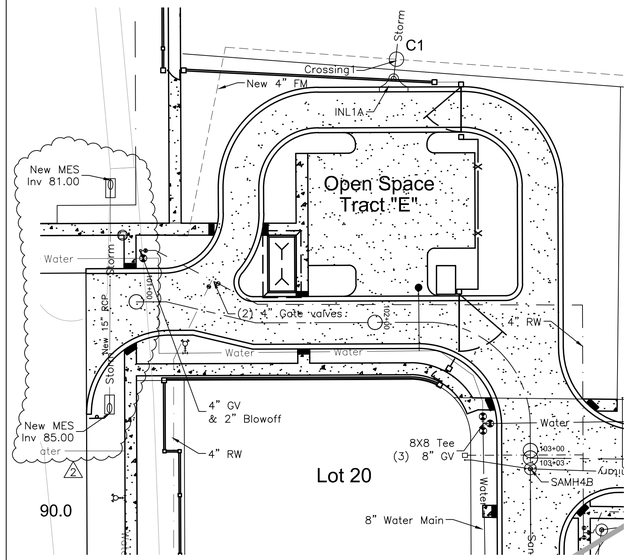
SANITARY SEWER LIFT STATION
WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
----	Scale
09-07-21	Date
WH2-C19	File

Dwg. No.
C19
21 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



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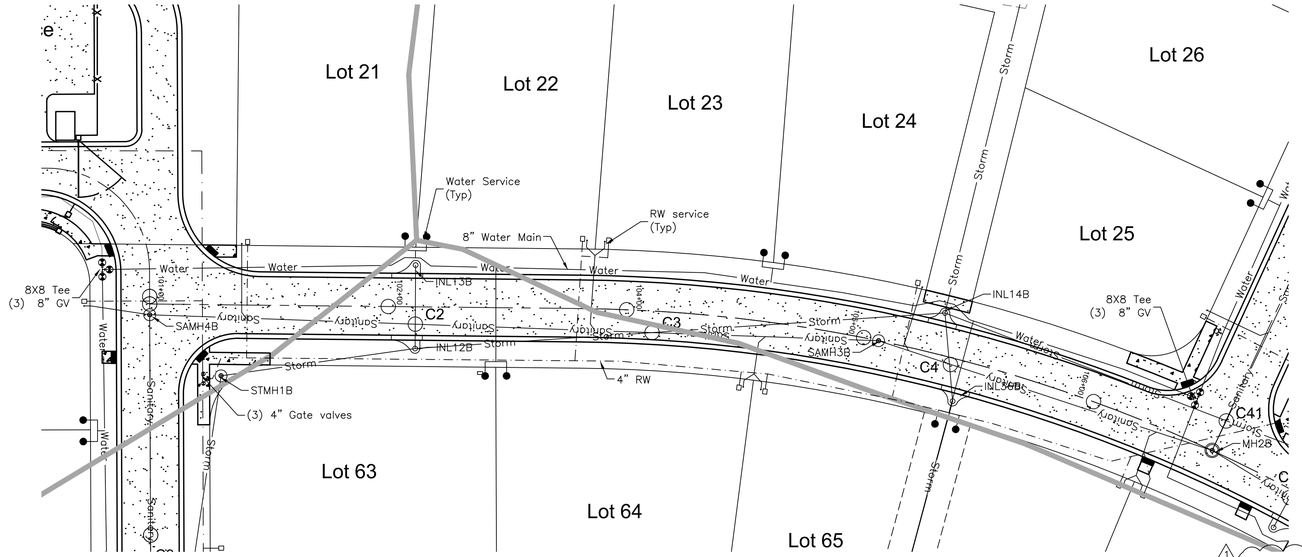

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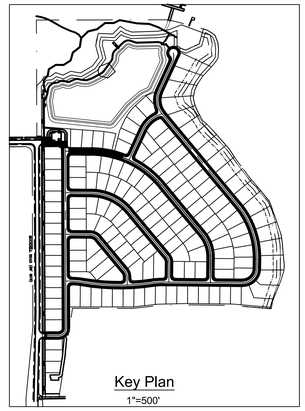
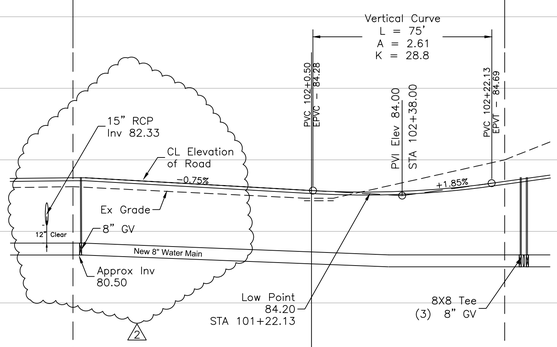


Note:
Reclaimed lines shall be set at the same vertical elevation as the proposed water main, on the other side of the street. The lines have been omitted from the profile for clarity.



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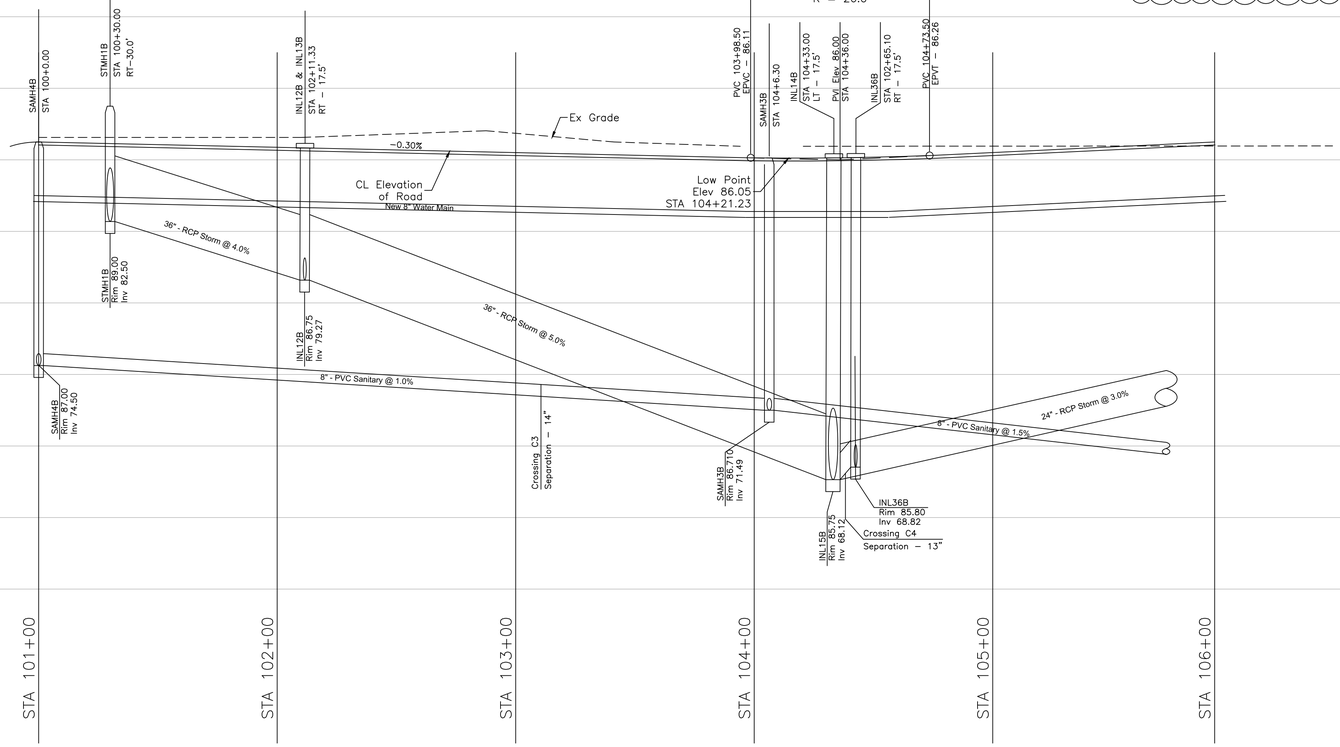

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STA 101+00 STA 102+00 STA 101+00 STA 102+00 STA 103+00 STA 104+00 STA 105+00 STA 106+00

94

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

#	Date	Description
		Revisions
2	12/9/22	Town Comm
1	9/19/22	Town Comm

Plan - Profile Sheet 1

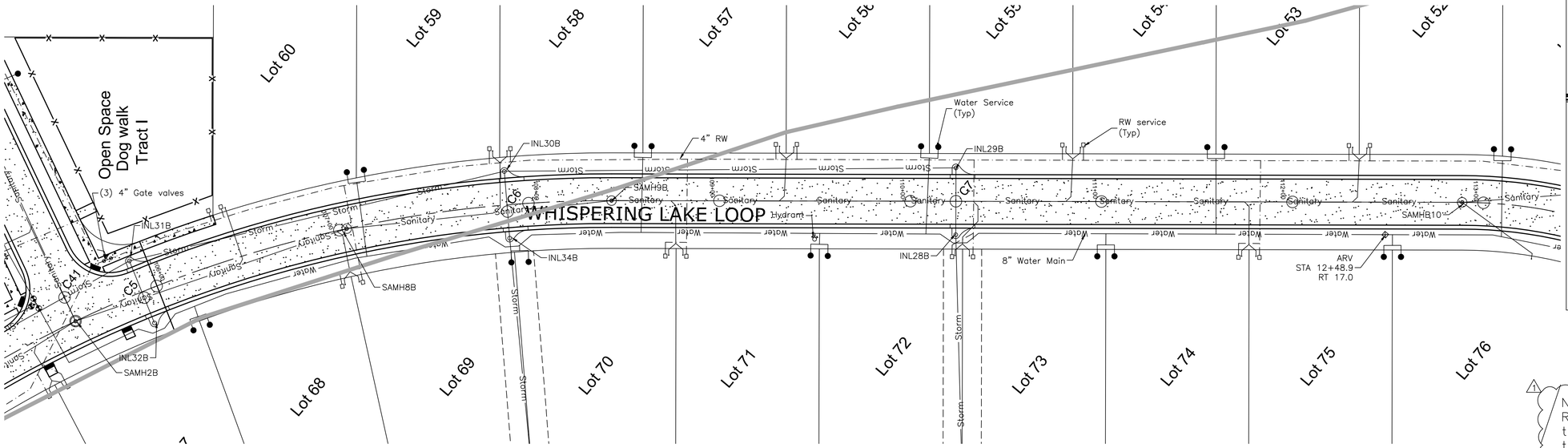
WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP1	File

Dwg. No.
PP1
22 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



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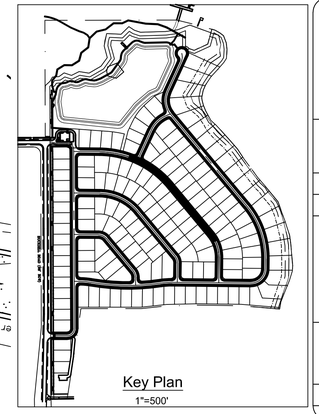

#	Revisions	Date	Description
1	9/19/22	Town Comm	

1 Note:
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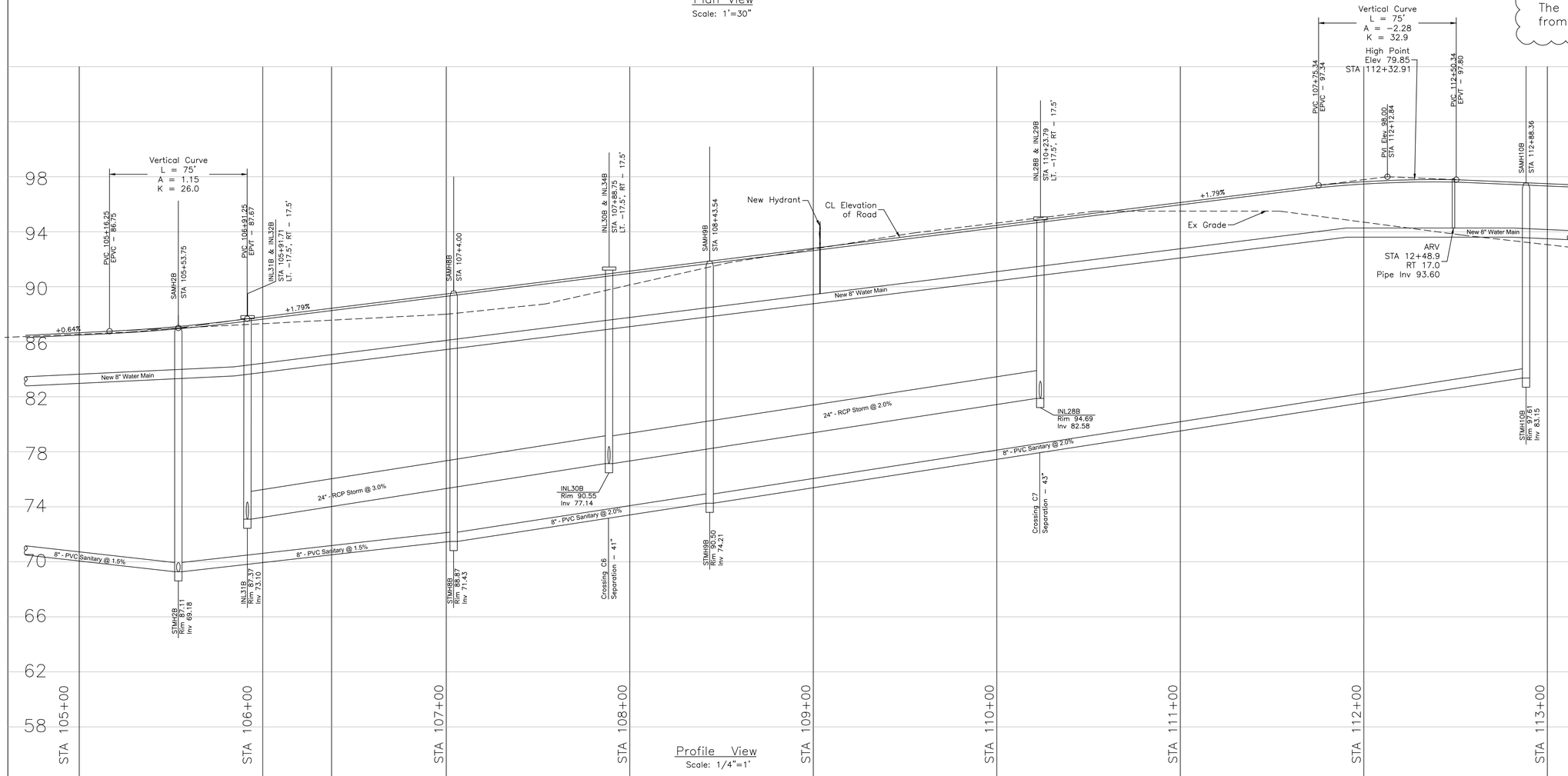

Profile View
Scale: 1/4"=1"

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Plan - Profile Sheet 2

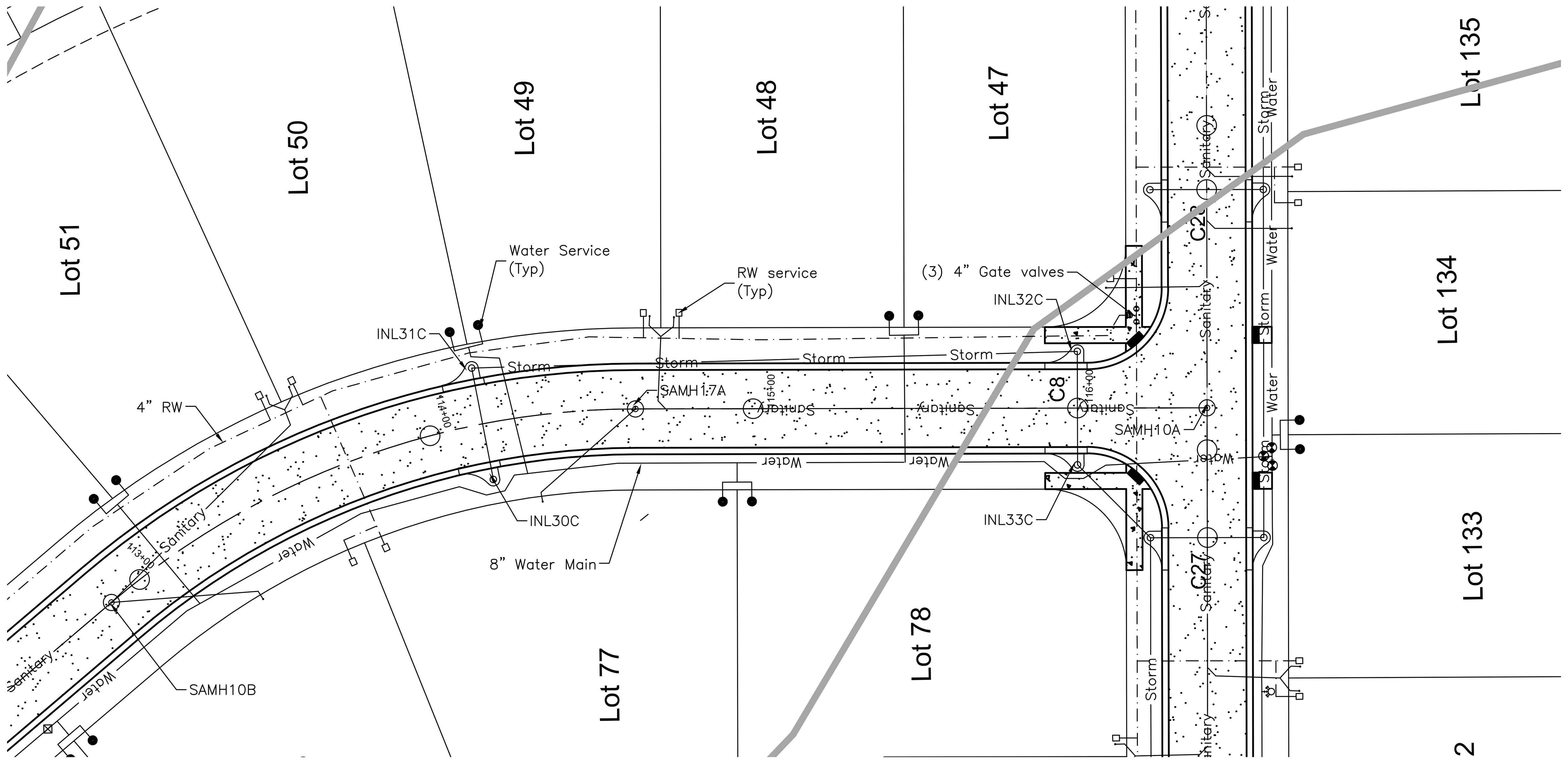
WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP2	File

Dwg. No.
PP2
23 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



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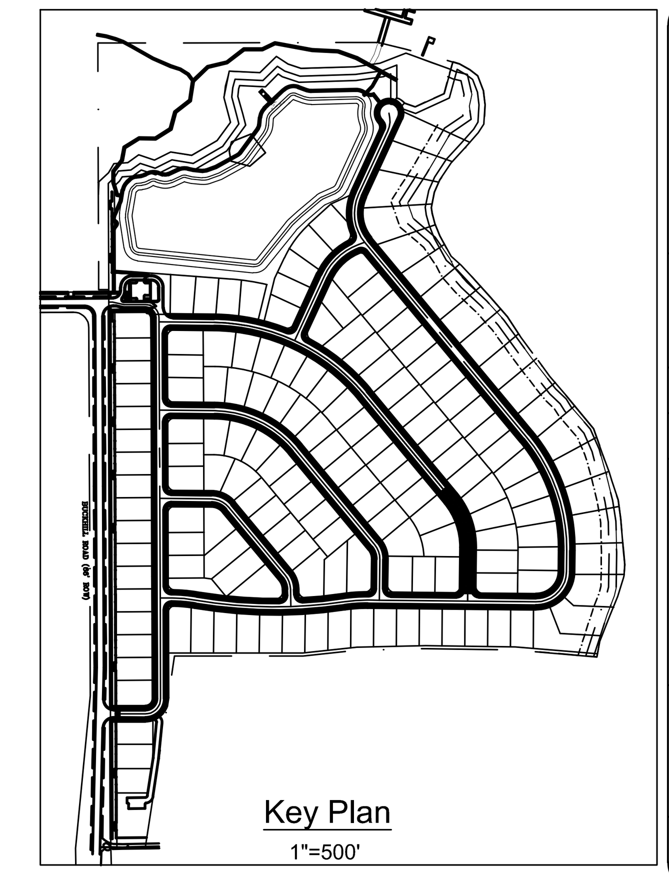

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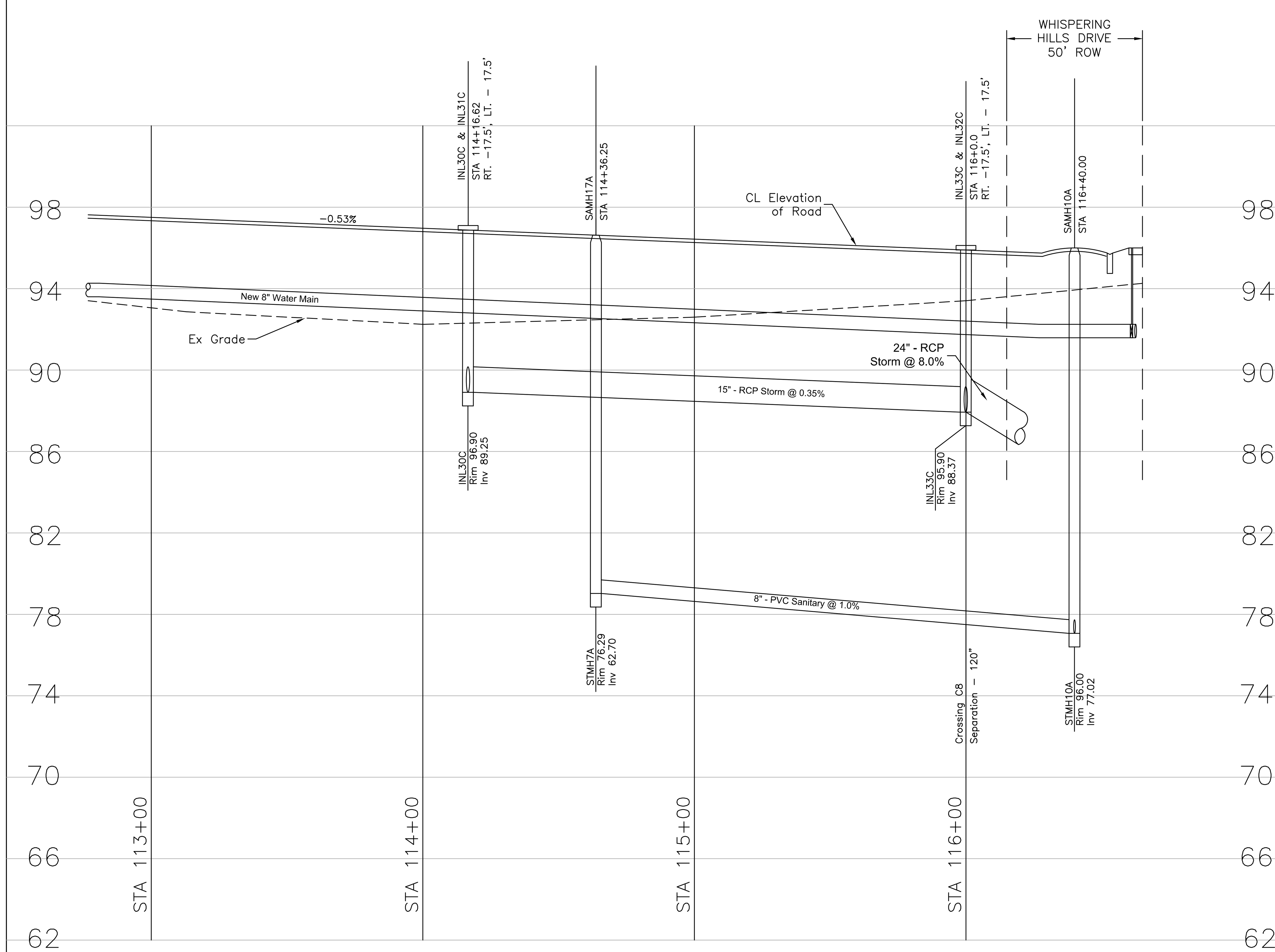

Profile View
Scale: 1/4"=1'

#	Date	Description

Revisions

#	Date	Description
1	9/19/22	Town Comm

Revisions

Unroe Engineering, Inc
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Business Authorization Number - EB 00006579

Plan - Profile Sheet 1

Whispering Hills Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP3	File

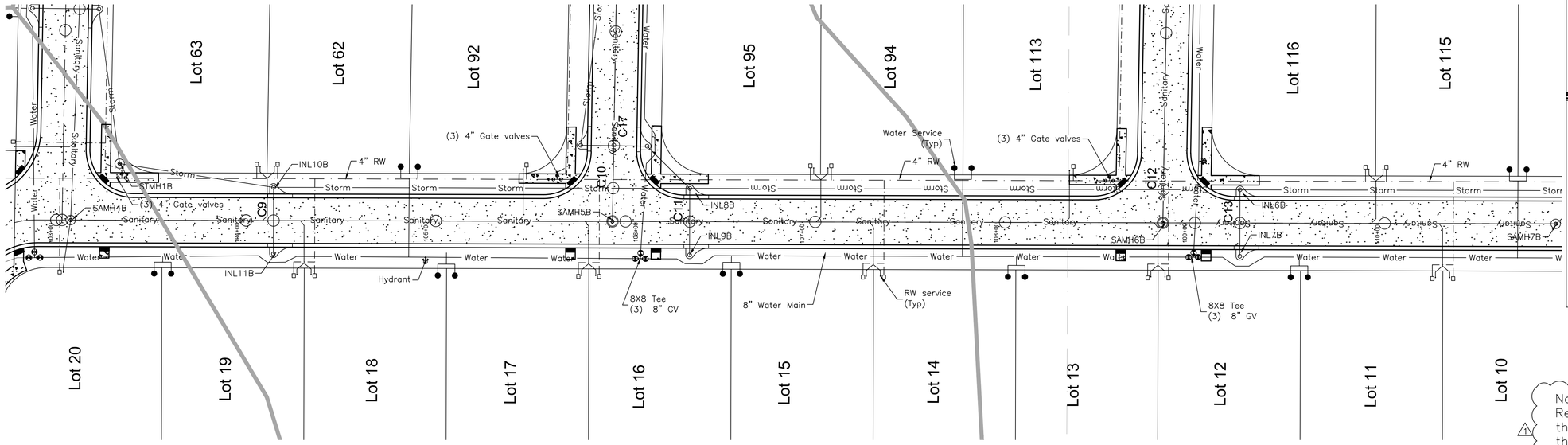
Dwg. No.

PP3

24 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



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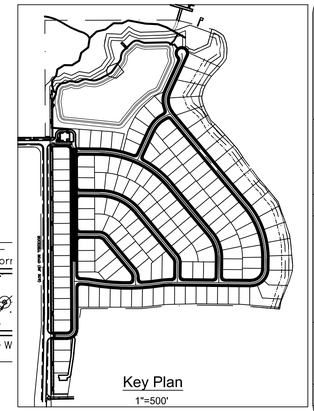
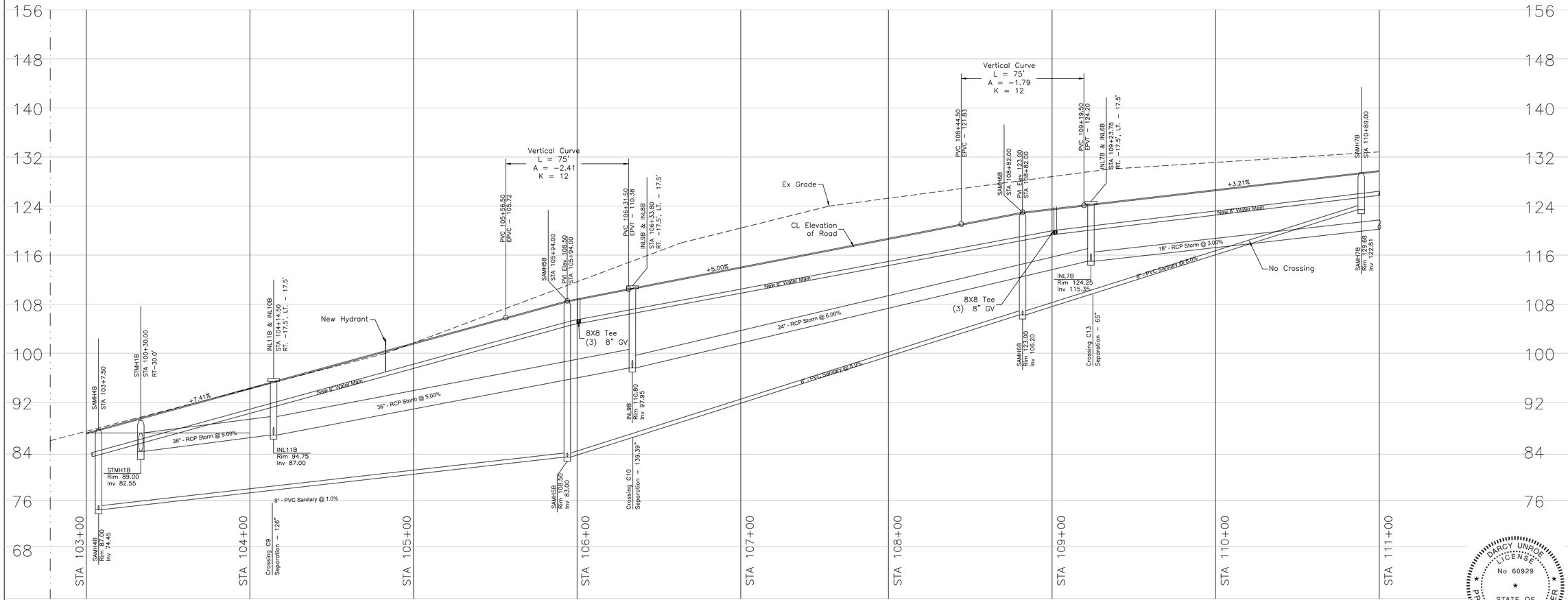


Note:
1 Reclaimed lines shall be set at the same vertical elevation as the proposed water main, on the other side of the street. The lines have been omitted from the profile for clarity.



Profile View
Scale: 1/8"=1'

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#	Date	Description
Revisions		
1	9/19/22	Town Comm
Revisions		

Plan - Profile Sheet 4

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP4	File

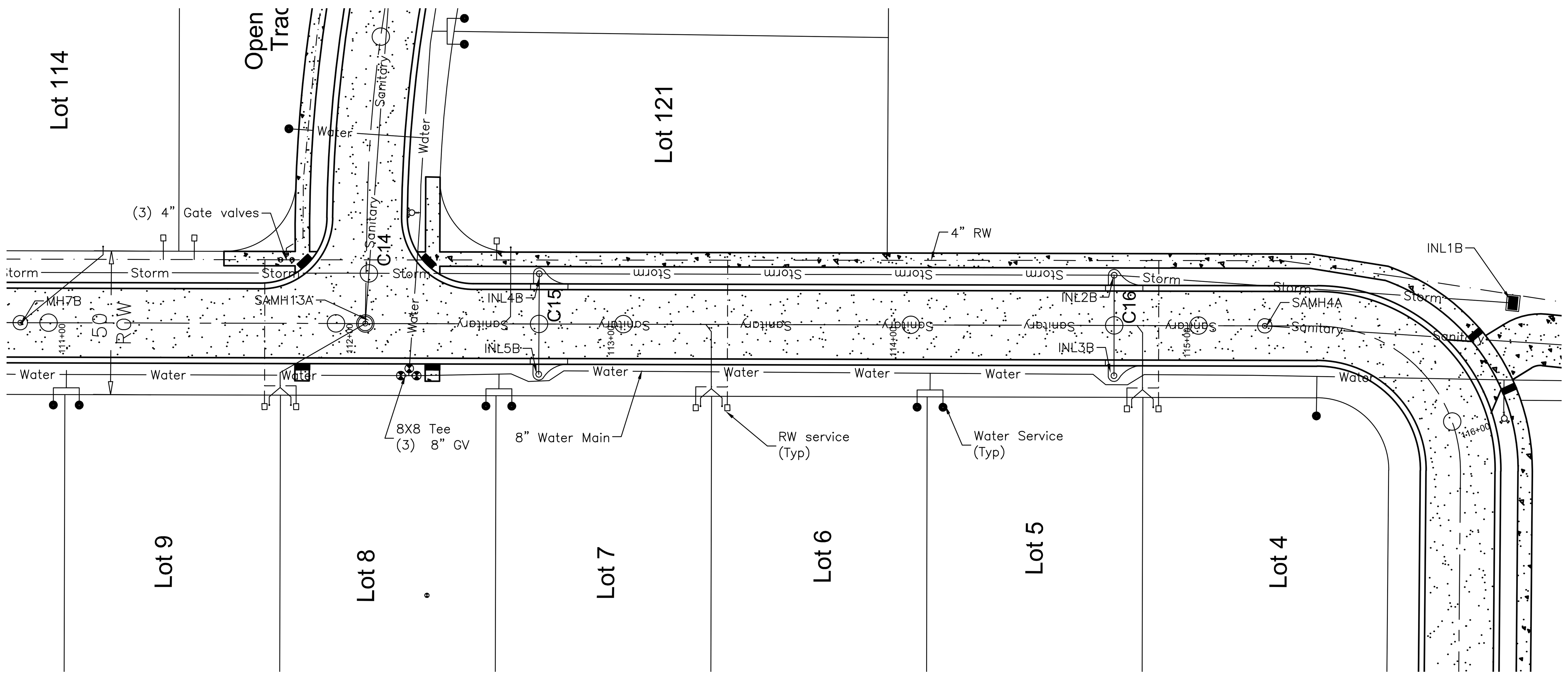
Dwg. No.

PP4

25 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



Plan View
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Note:
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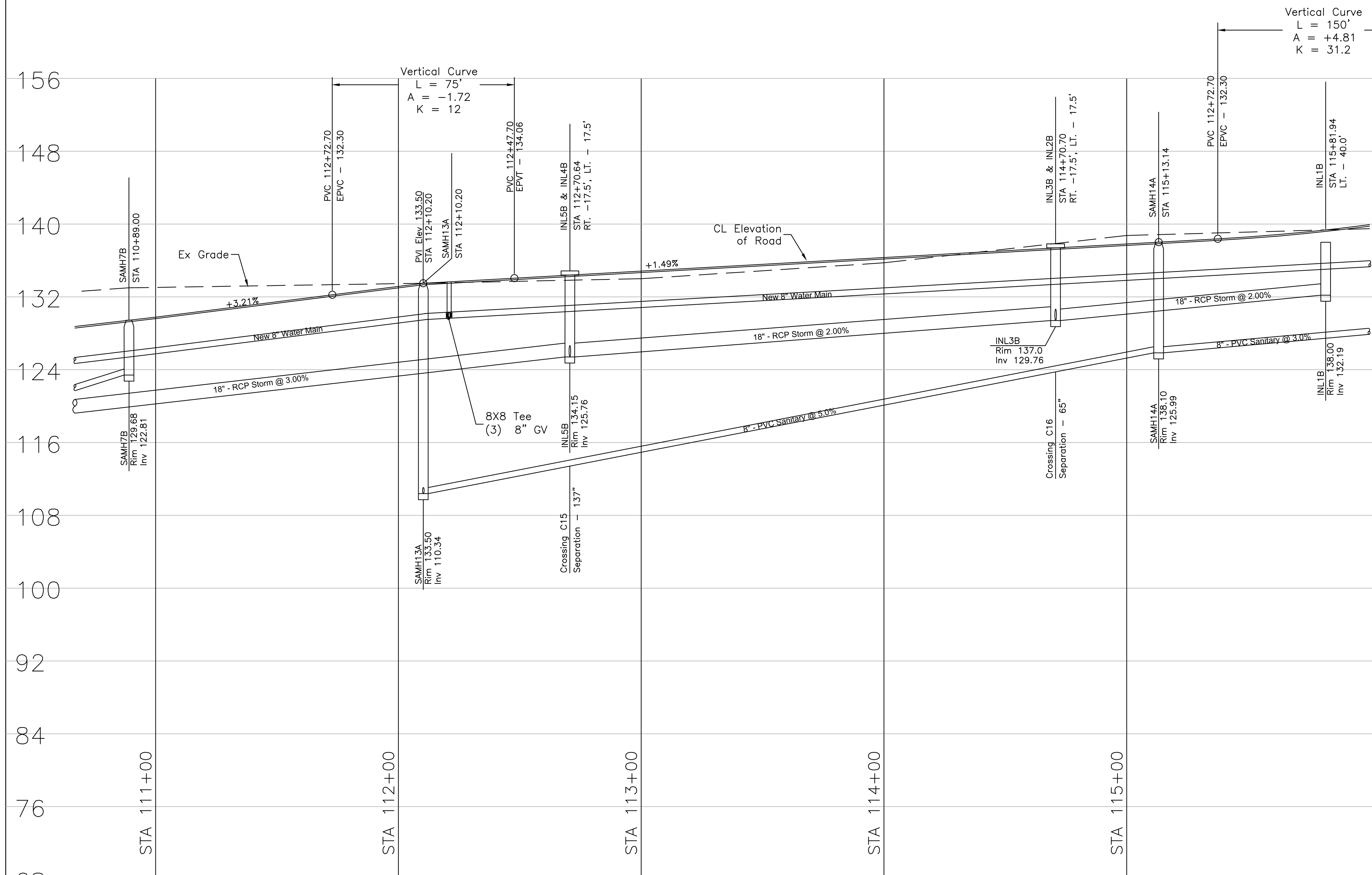

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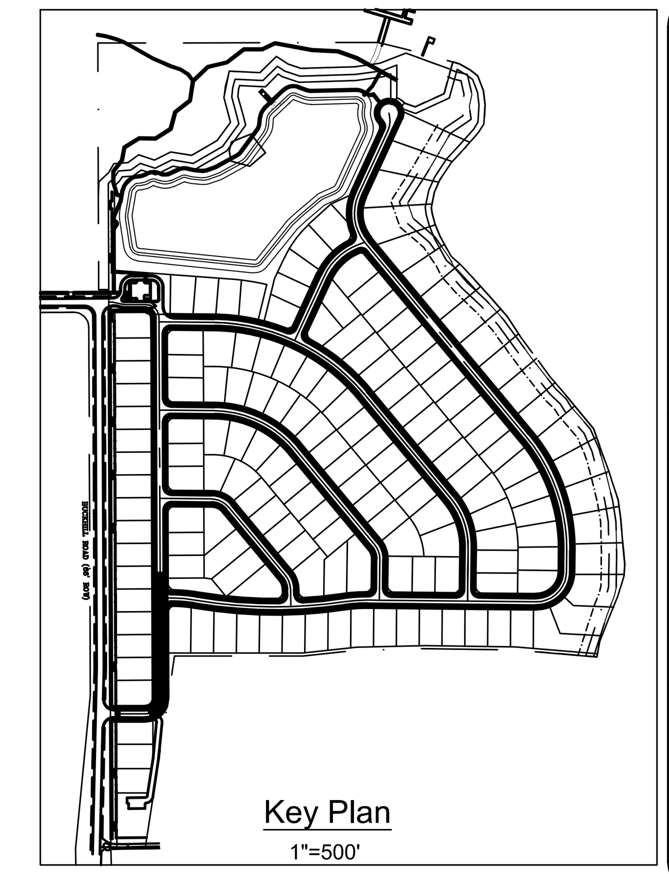

#	Date	Description

Revisions

#	Date	Description
1	9/19/22	Town Comm

Revisions

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Business Authorization Number - EB 00006579

Plan - Profile Sheet 5
Whispering Hills Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP5	File

Dwg. No.
PP5
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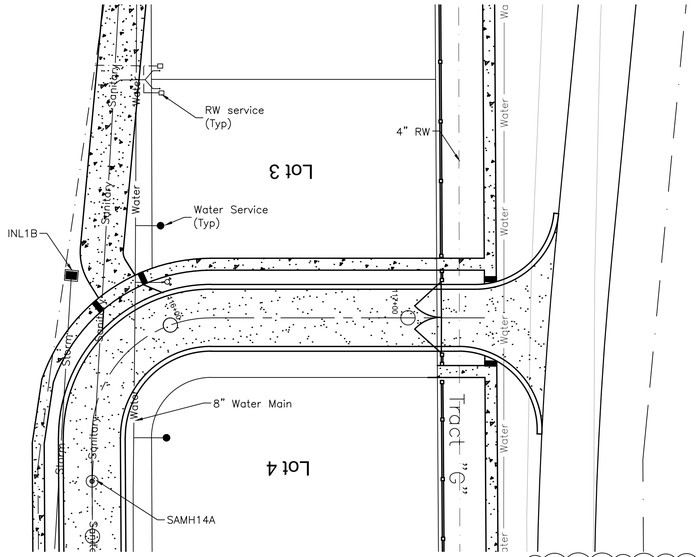
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



Plan View
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Note:
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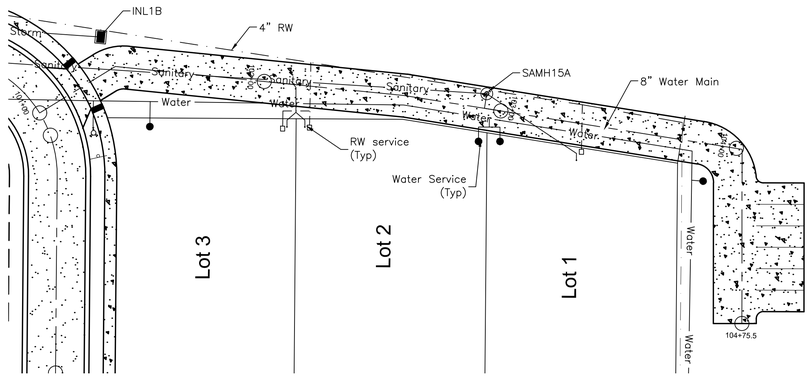

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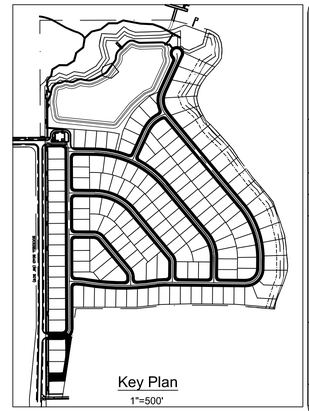

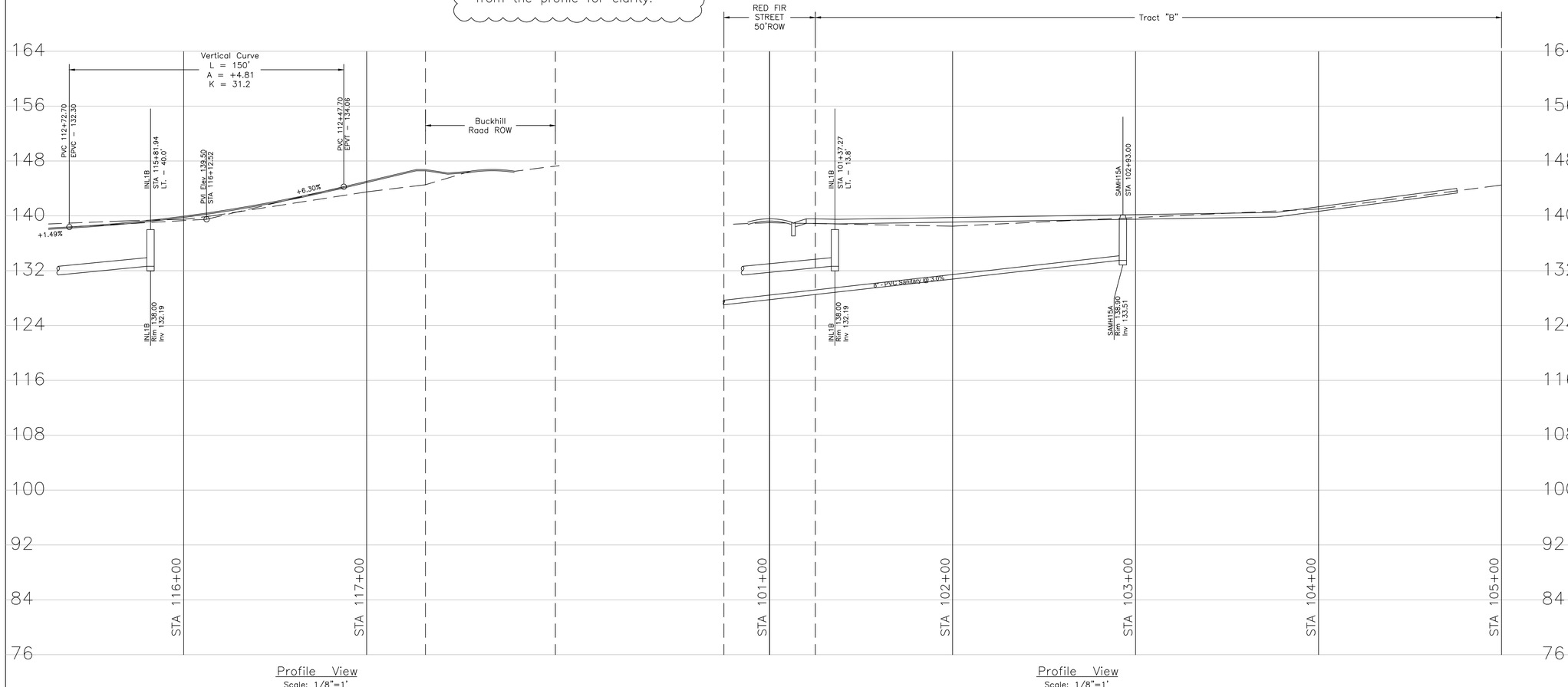

Profile View
Scale: 1/8"=1'

Profile View
Scale: 1/8"=1'

#	Revisions	Date	Description
1	Town Comm	9/19/22	

Revisions

Unroe Engineering, Inc
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Business Authorization Number - EB 00006579 ph (407) 299-0650

Plan - Profile Sheet 6

Whispering Hills Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP6	File

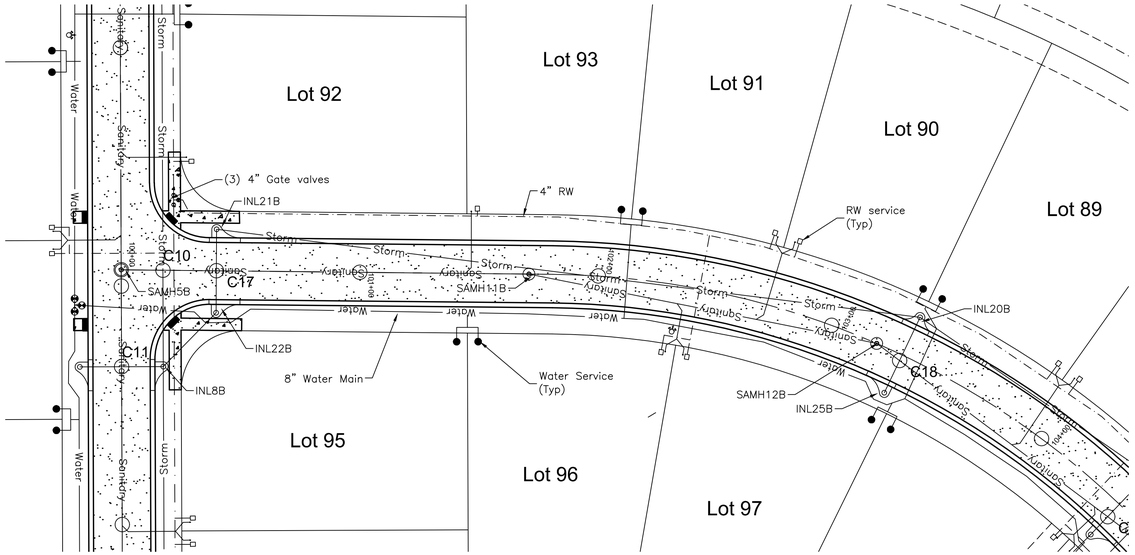
Dwg. No.

PP6

27 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



Plan View
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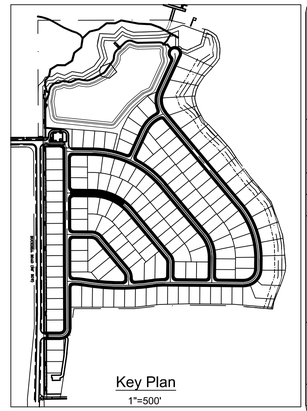

#	Description

Revisions

#	Description	Date
1	Town Comm	9/19/22

Revisions

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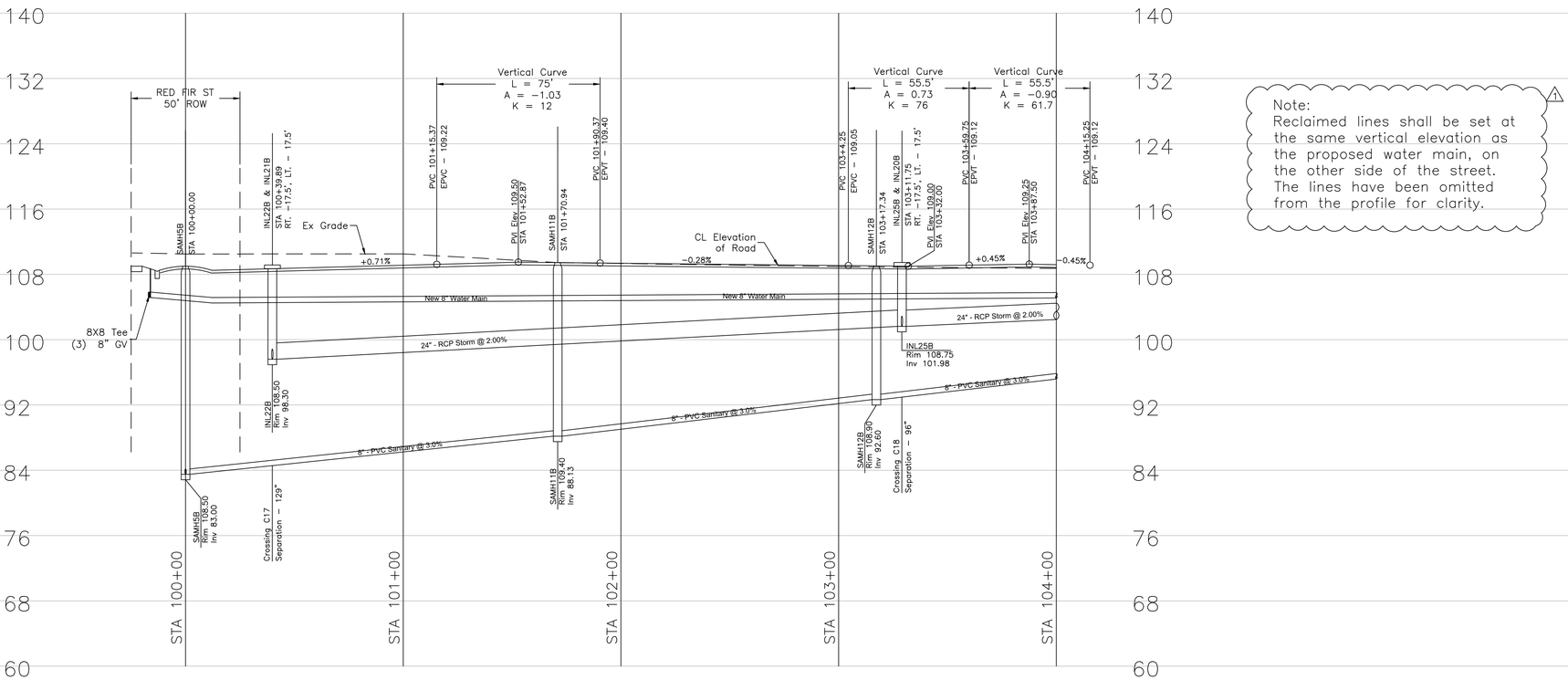
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650



Profile View
Scale: 1/4"=1'

Note:
Reclaimed lines shall be set at the same vertical elevation as the proposed water main, on the other side of the street. The lines have been omitted from the profile for clarity.

Plan - Profile Sheet 7

Whispering Hills Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP7	File

Dwg. No.

PP7

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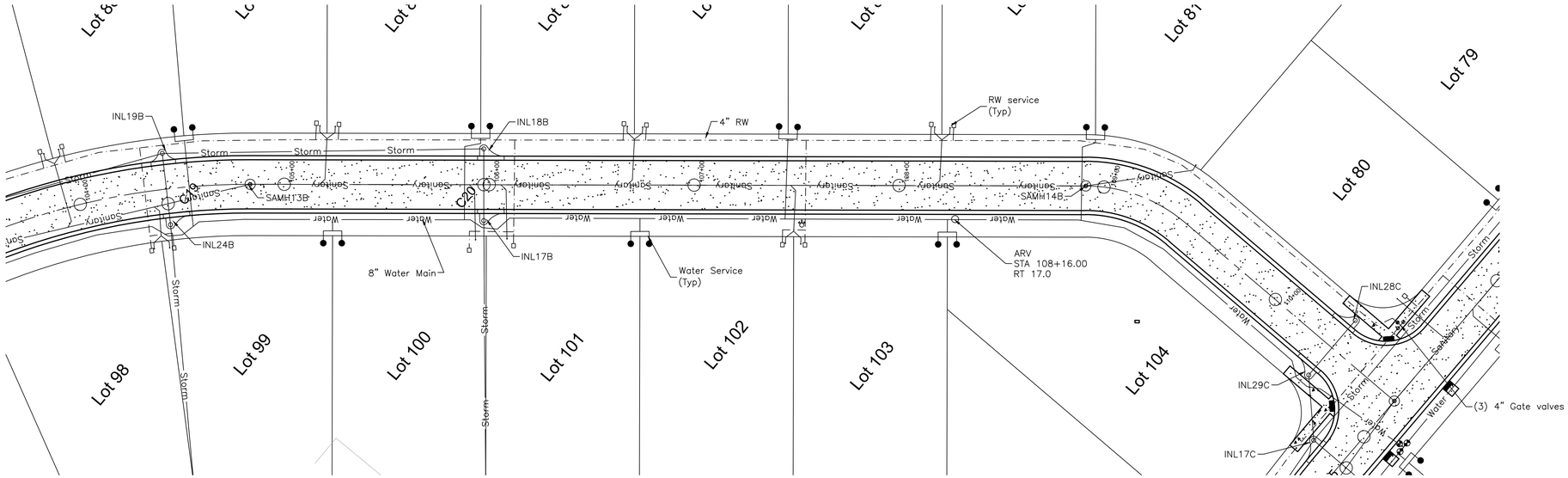
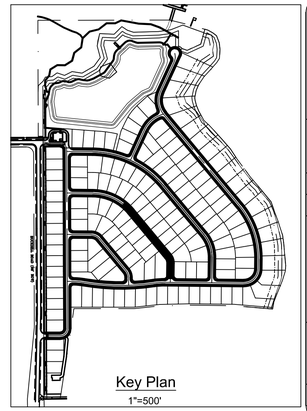
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



Plan View
Scale: 1'=30"



Note:
Reclaimed lines shall be set at the same vertical elevation as the proposed water main, on the other side of the street. The lines have been omitted from the profile for clarity.

Profile View
Scale: 1/8"=1'

#	Revisions	Date	Description
1	Town Comm	9/19/22	

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Plan - Profile Sheet 8

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP8	File

Dwg. No.

PP8

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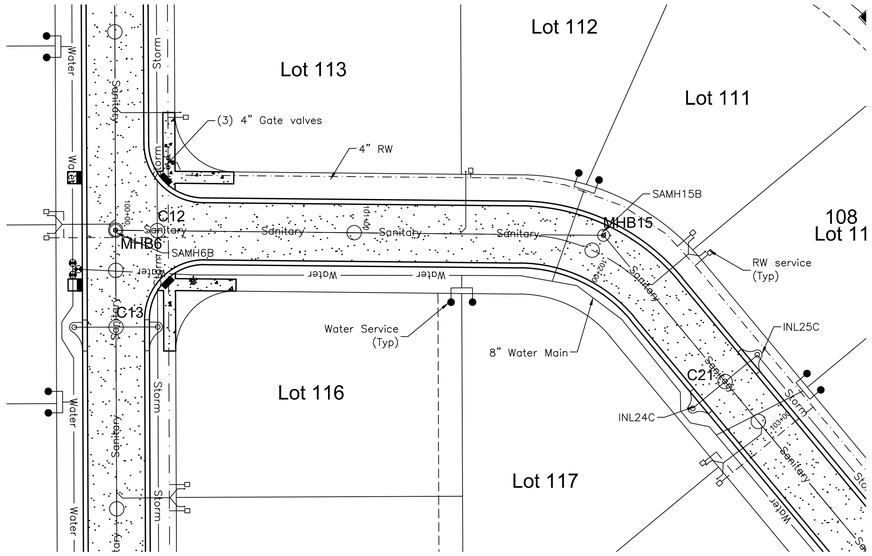
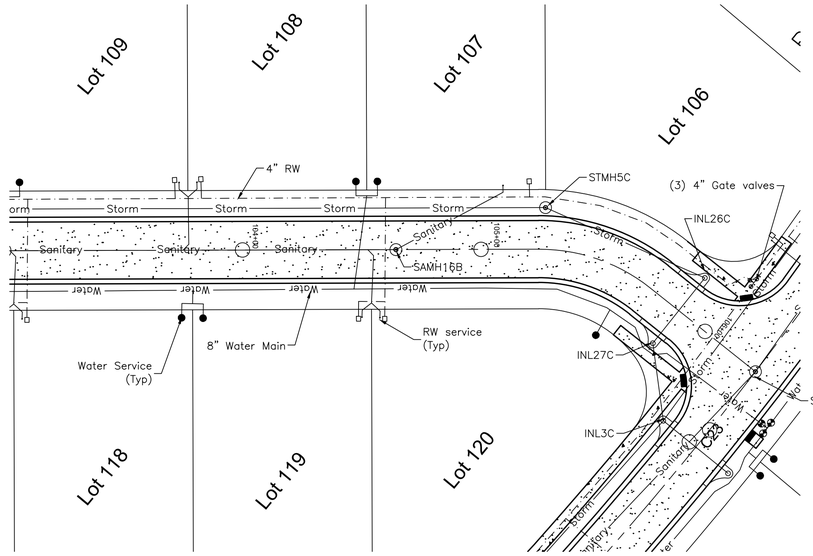
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

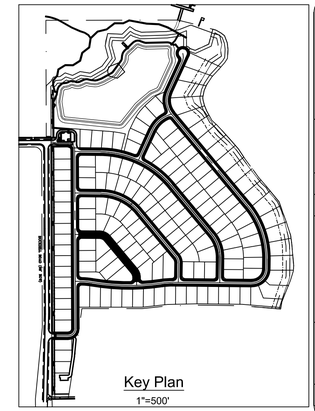
Darcy Unroe PE 60929



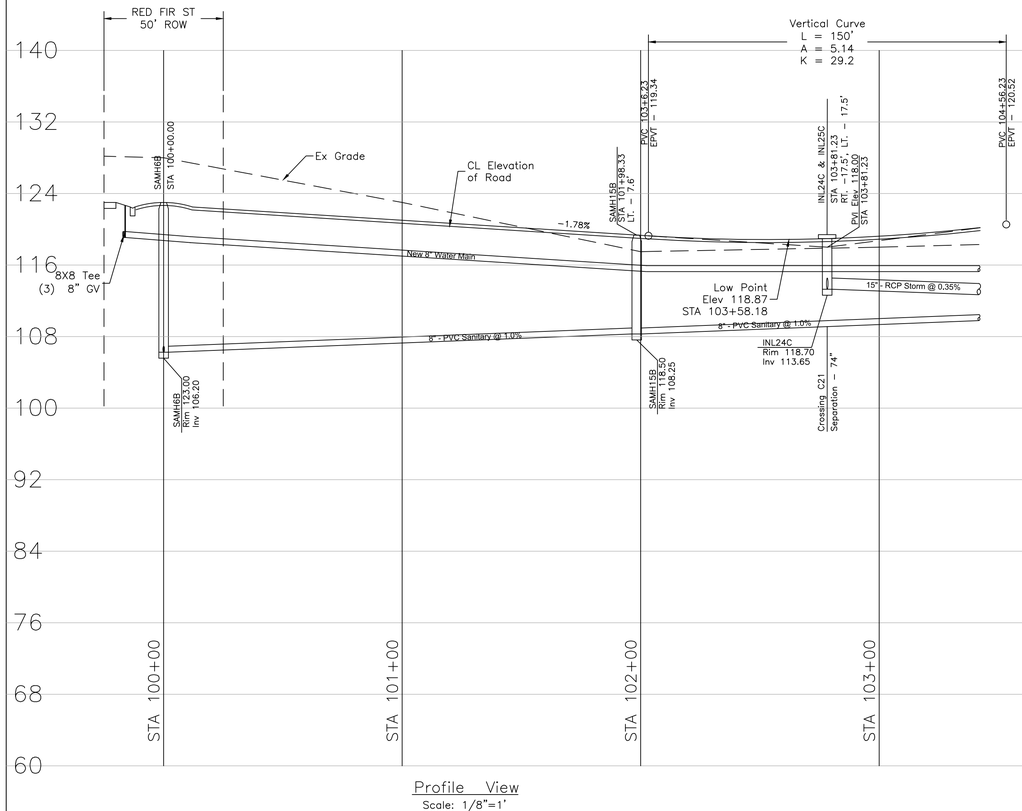
Plan View
Scale: 1"=30"



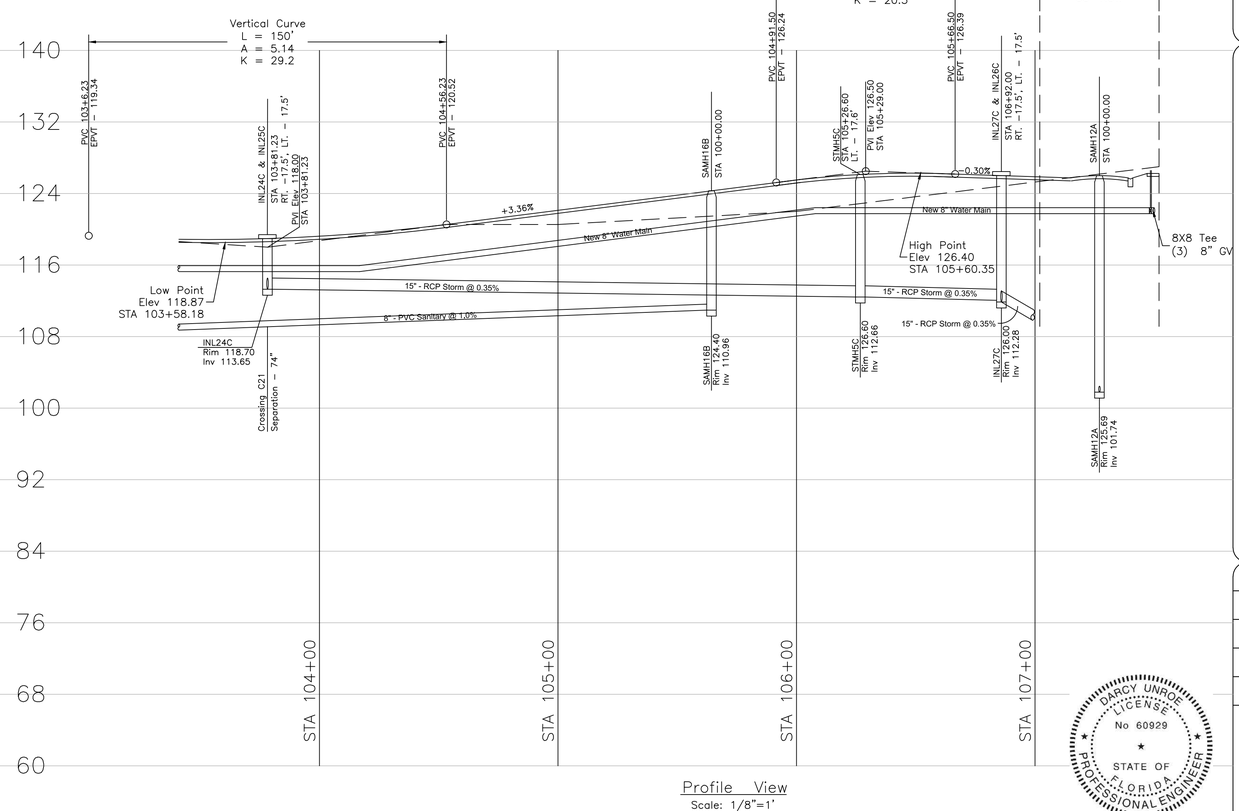
Plan View
Scale: 1"=30"



Note:
Reclaimed lines shall be set at the same vertical elevation as the proposed water main, on the other side of the street. The lines have been omitted from the profile for clarity.



Profile View
Scale: 1/8"=1'



Profile View
Scale: 1/8"=1'

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

#	Date	Description

Revisions

#	Date	Description
1	9/19/22	Town Comm

Revisions

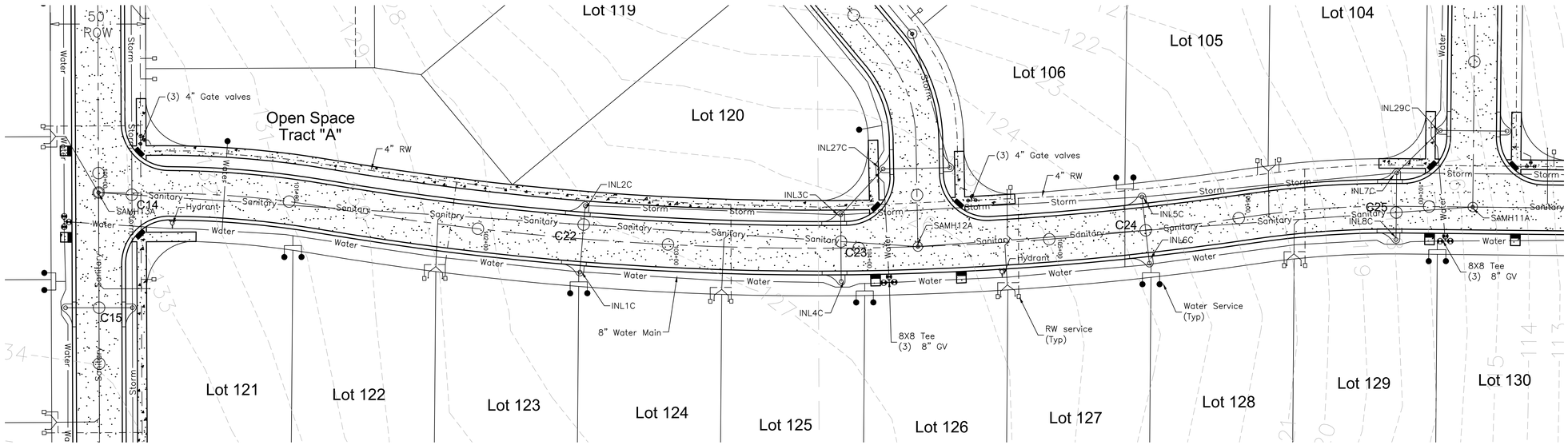
Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Plan - Profile Sheet 9

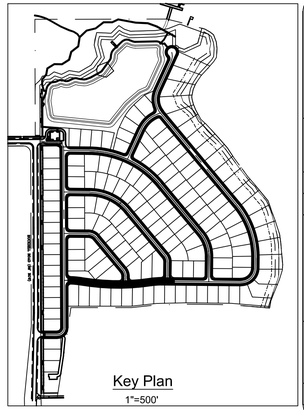
Whispering Hills Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP9	File

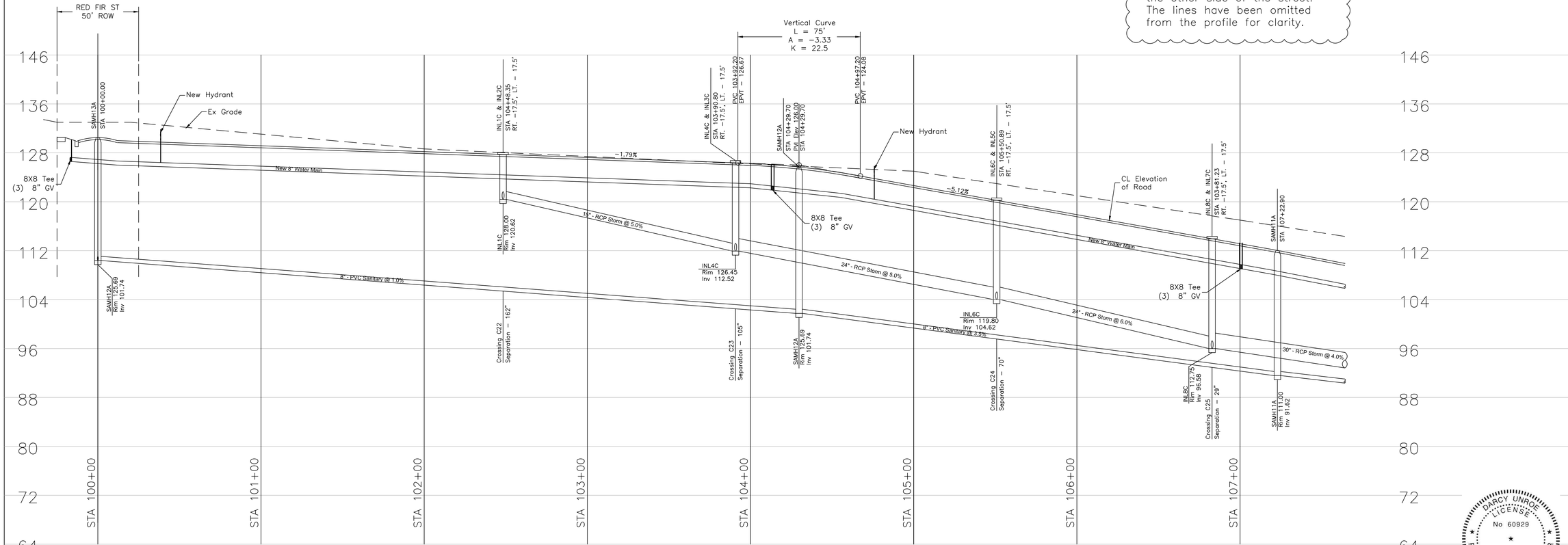
Dwg. No.
PP9



Plan View
Scale: 1"=30"



Note:
Reclaimed lines shall be set at the same vertical elevation as the proposed water main, on the other side of the street. The lines have been omitted from the profile for clarity.



Profile View
Scale: 1/8"=1'

#	Revisions	Date	Description
1	Town Comm	9/19/22	

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
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Business Authorization Number - EB 0000657 9 ph (407) 299-0650

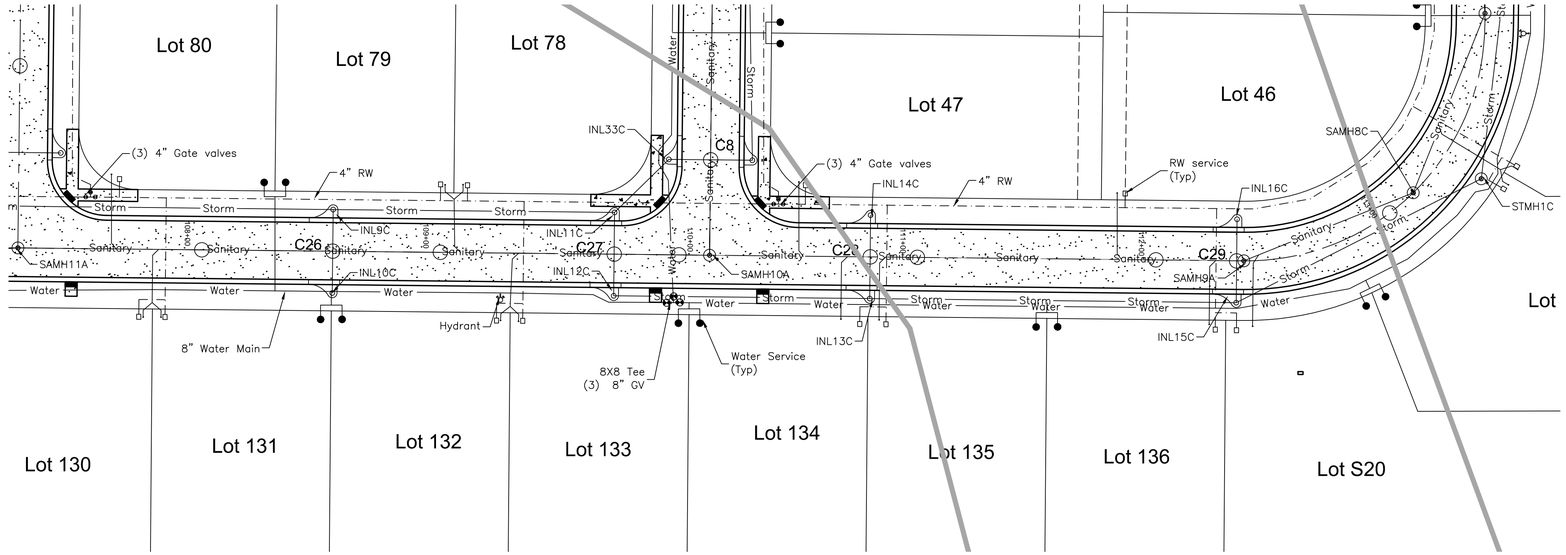
Plan - Profile Sheet 10

WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

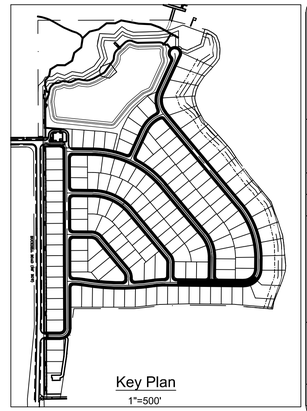
DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP10	File

Dwg. No.
PP10
31 of 83

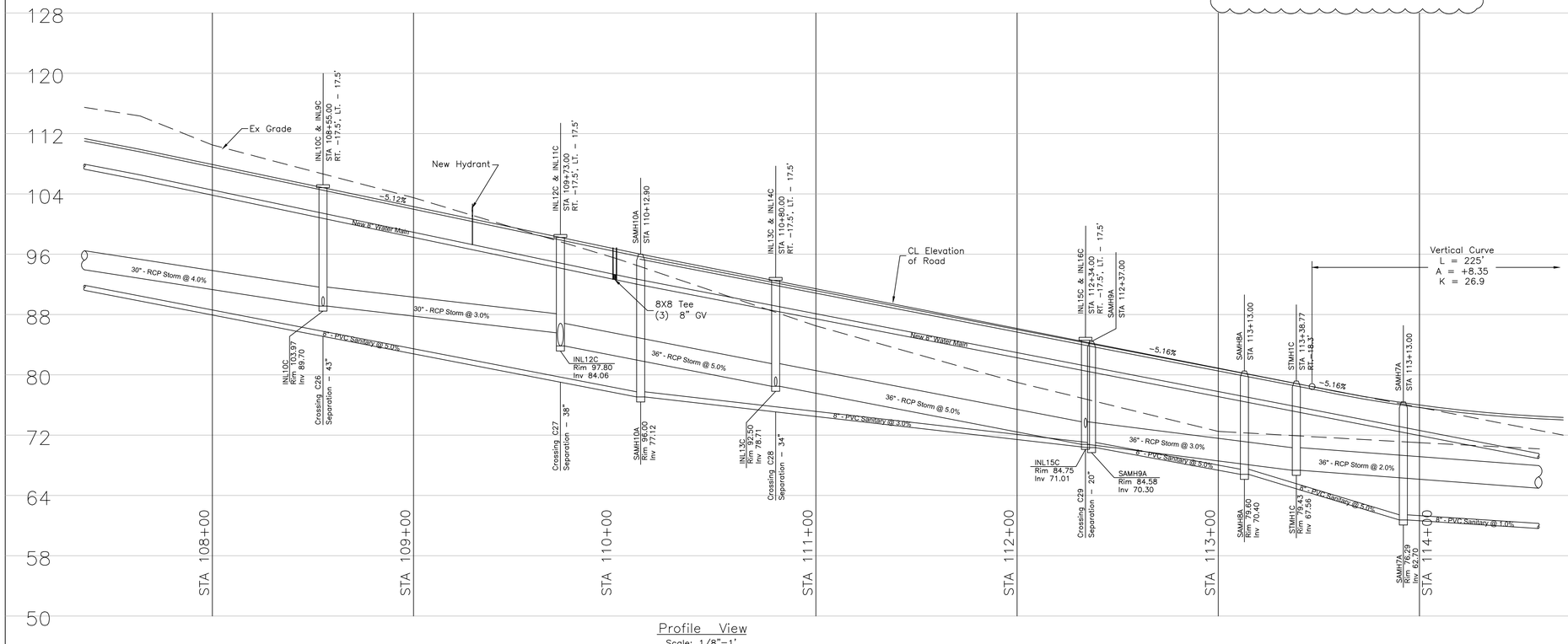
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER
Darcy Unroe PE 60929



Plan View
Scale: 1"=30"



Note:
Reclaimed lines shall be set at the same vertical elevation as the proposed water main, on the other side of the street. The lines have been omitted from the profile for clarity.



Profile View
Scale: 1/8"=1'

Unroe Engineering, Inc
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Business Authorization Number - EB 00006579 ph (407) 299-0650

#	Revisions	Date
1	Town Comm Description	9/19/22

Plan - Profile Sheet 11

Whispering Hills Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP11	File

Dwg. No.
PP11

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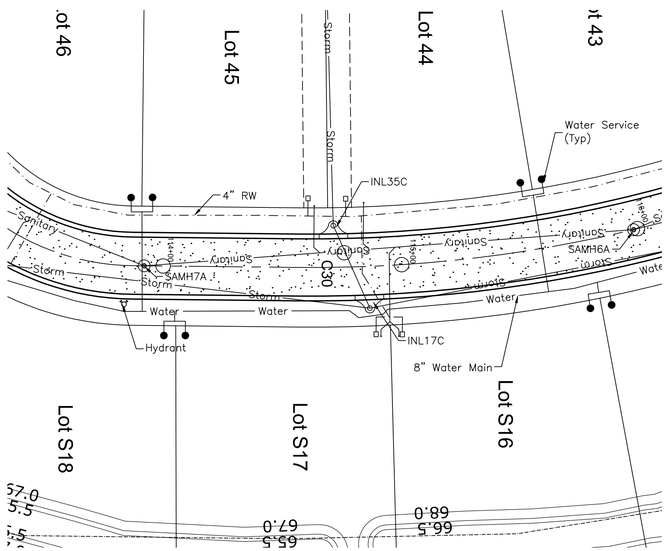
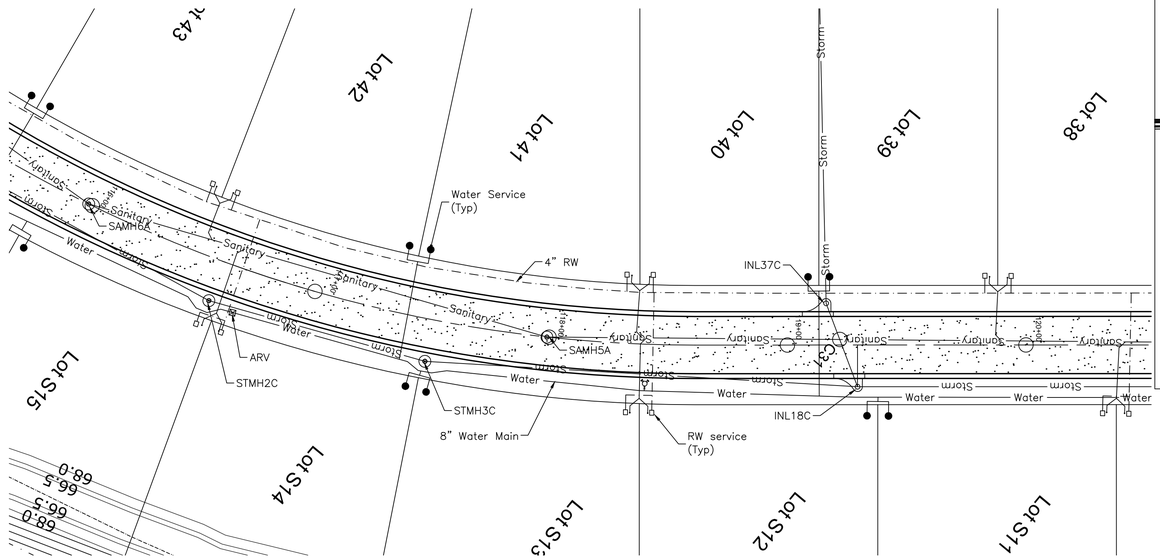
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

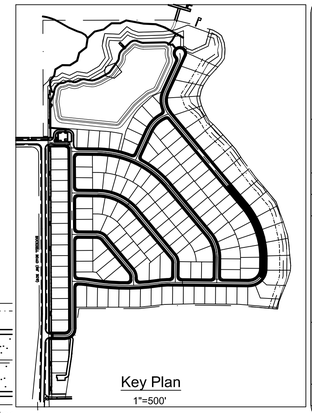
Darcy Unroe PE 60929



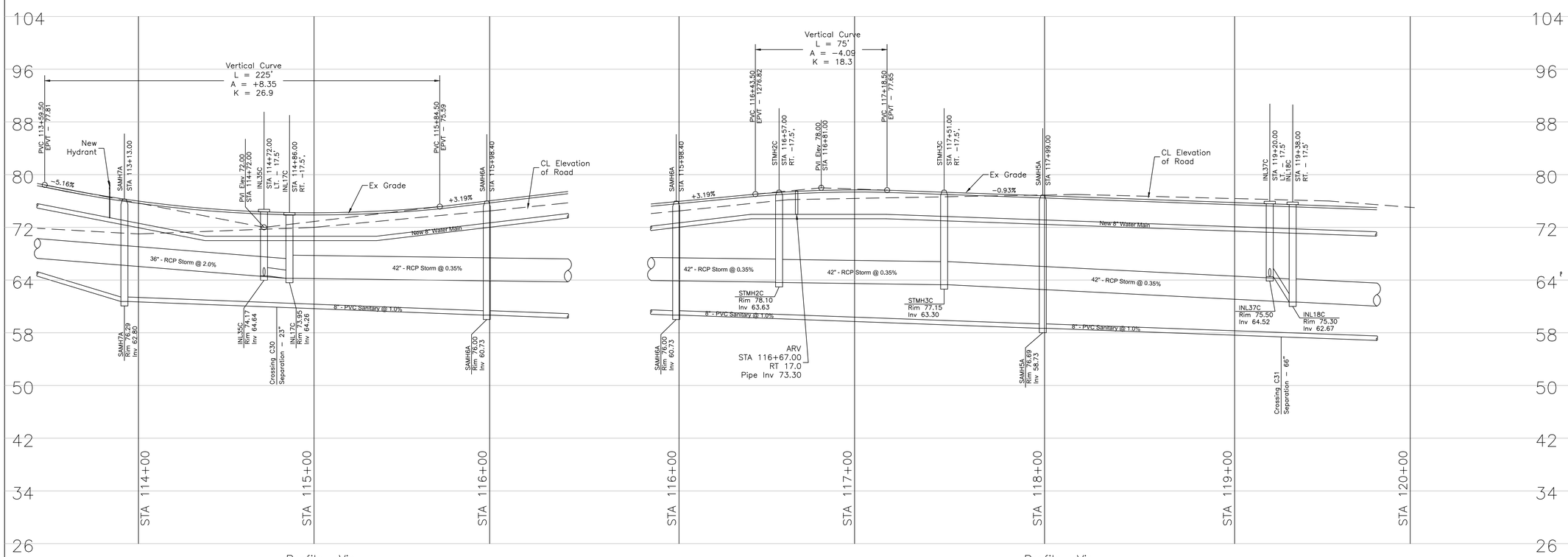
Plan View
Scale: 1'=30"



Plan View
Scale: 1'=30"



Note:
Reclaimed lines shall be set at the same vertical elevation as the proposed water main, on the other side of the street. The lines have been omitted from the profile for clarity.



Profile View
Scale: 1/8"=1'

Profile View
Scale: 1/8"=1'

#	Date	Description
1	9/19/22	Town Comm

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
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Business Authorization Number - EB 00006579 ph (407) 299-0650

Plan - Profile Sheet 12

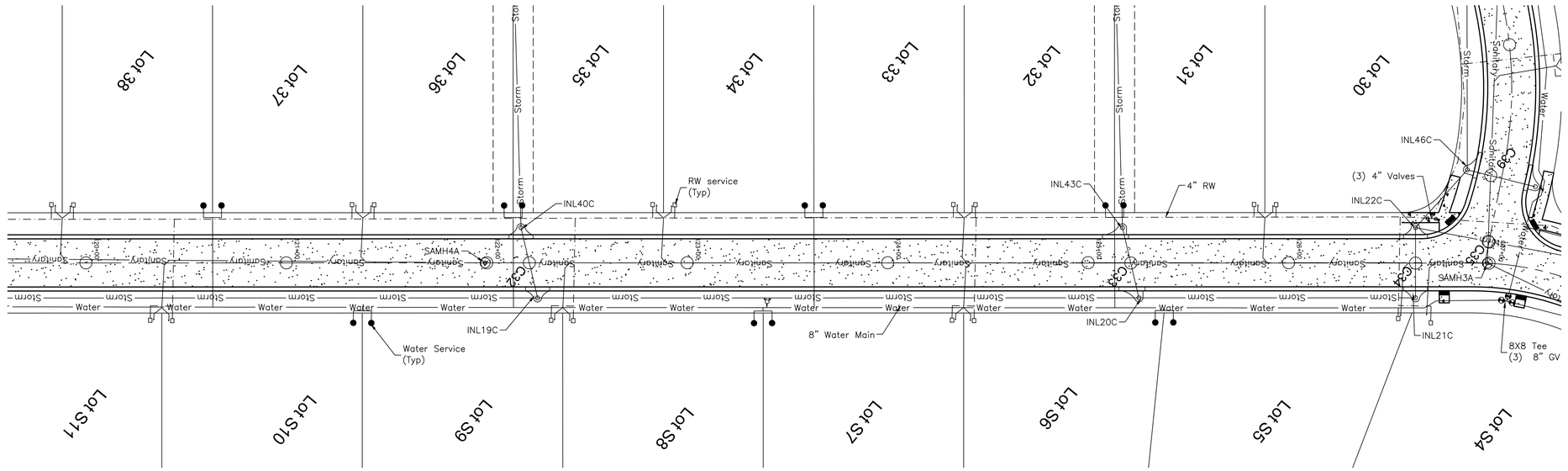
Whispering Hills Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP12	File

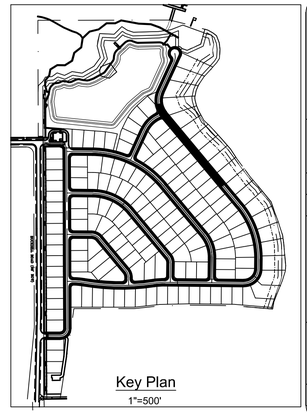
Dwg. No.
PP12

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

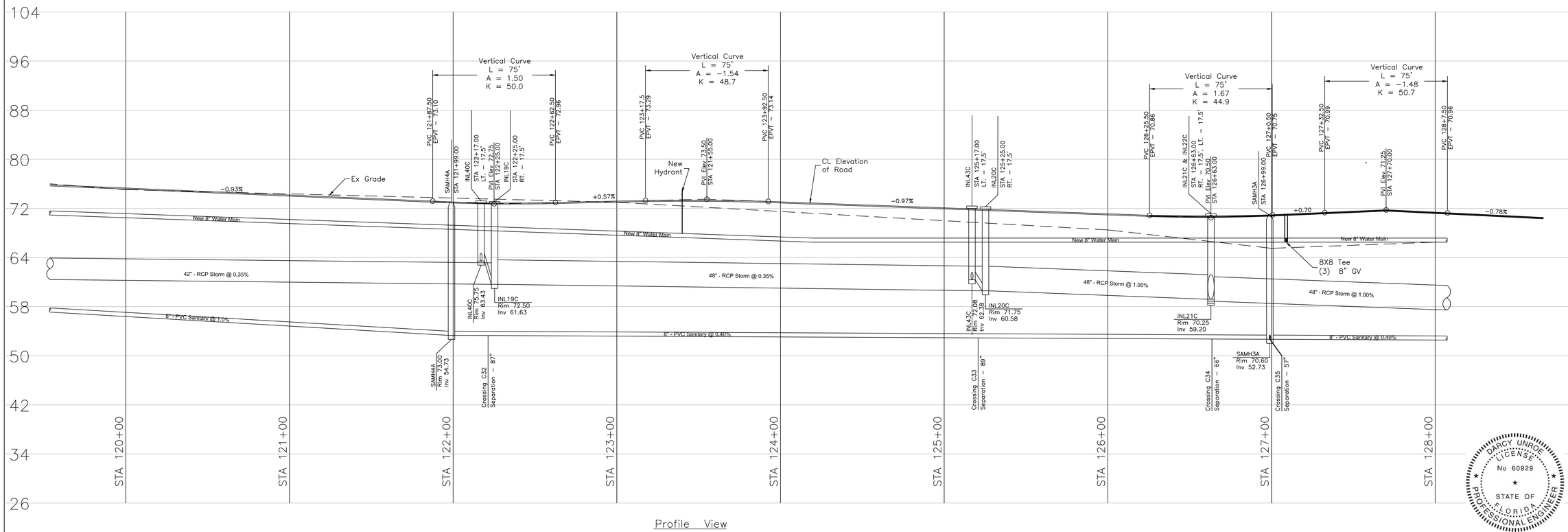
Darcy Unroe PE 60929



Plan View
Scale: 1"=30"



Note:
Reclaimed lines shall be set at the same vertical elevation as the proposed water main, on the other side of the street. The lines have been omitted from the profile for clarity.



Profile View
Scale: 1/8"=1'

Unroe Engineering, Inc
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Business Authorization Number - EB 00006579 ph (407) 299-0650

#	Description	Date
	Revisions	
	Town Comm	9/19/22
1	Revisions	

Plan - Profile Sheet 13

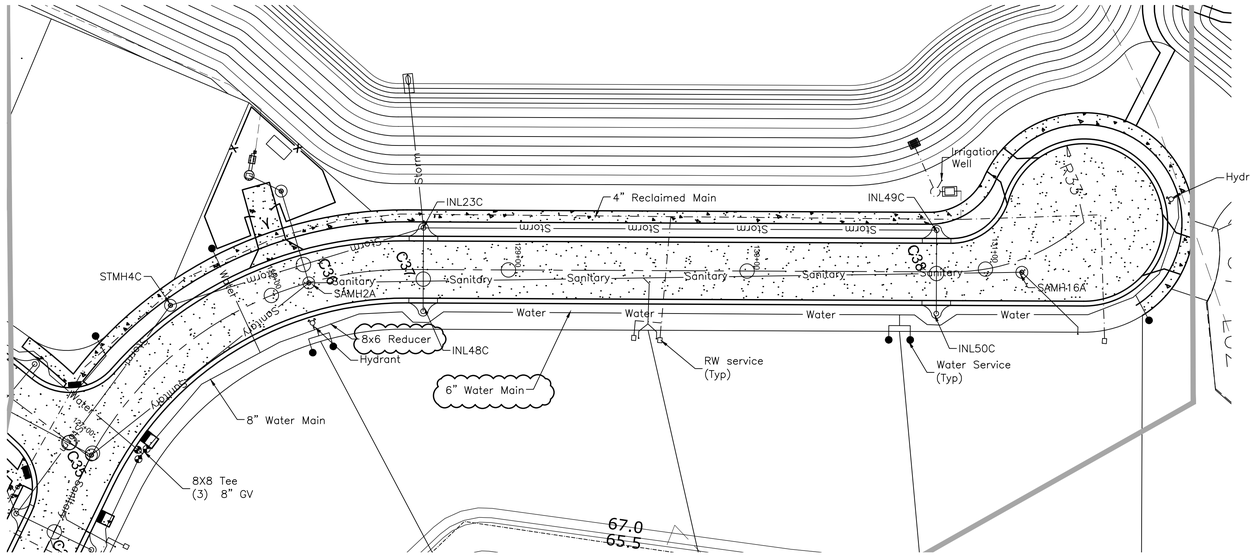
WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP13	File

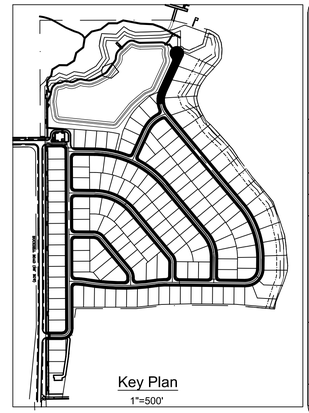
Dwg. No.
PP13

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



Plan View
Scale: 1"=30'



Revisions

#	Date	Description
1	9/19/22	Town Comm

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
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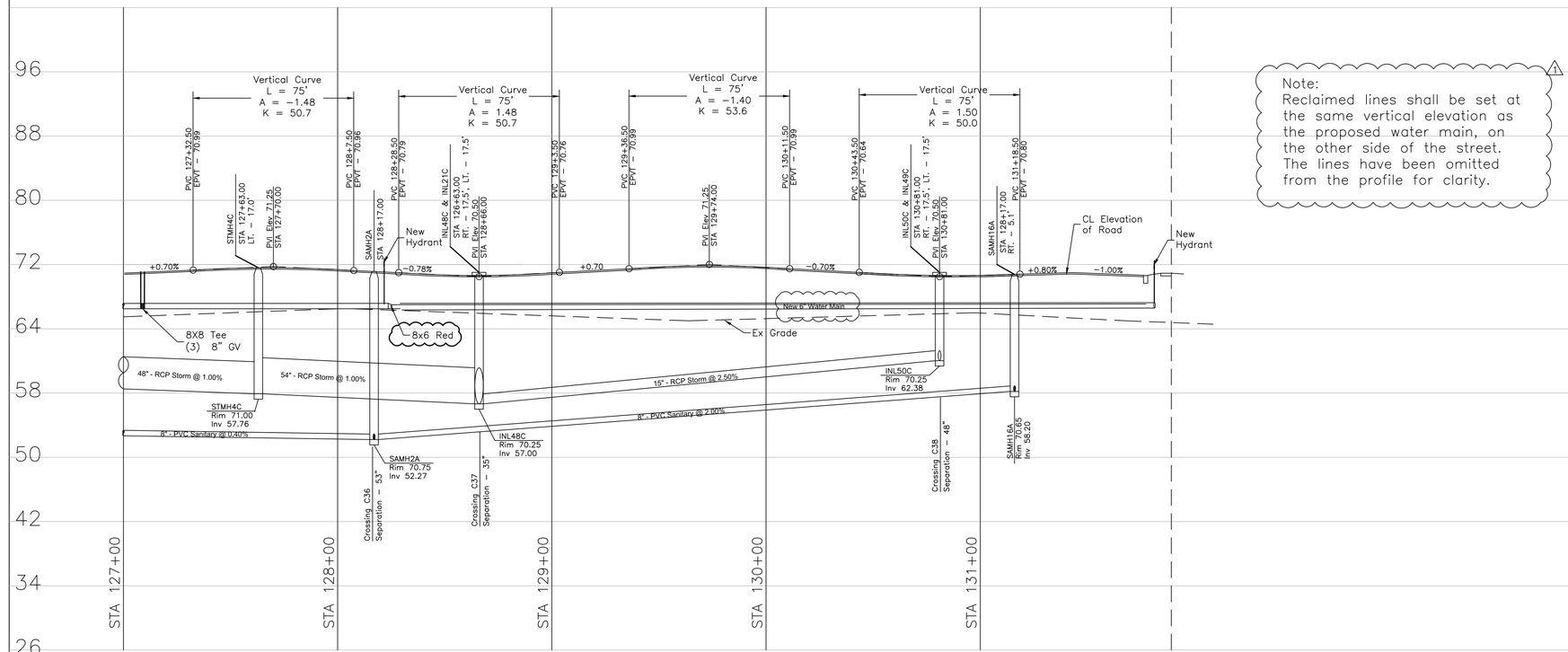
Business Authorization Number - EB 00006579 ph (407) 299-0650

Plan - Profile Sheet 14

Whispering Hills Subdivision

Buckhill Road, Howey-in-the-Hills, Florida



Profile View
Scale: 1/8"=1'

Note:
Reclaimed lines shall be set at the same vertical elevation as the proposed water main, on the other side of the street. The lines have been omitted from the profile for clarity.

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP14	File

Dwg. No.

PP14

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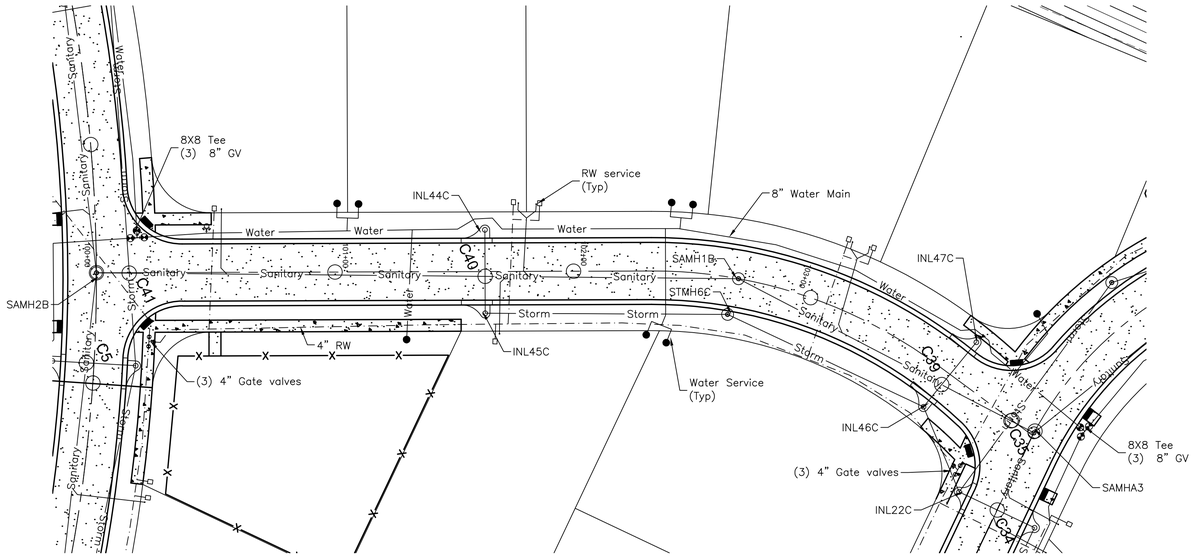
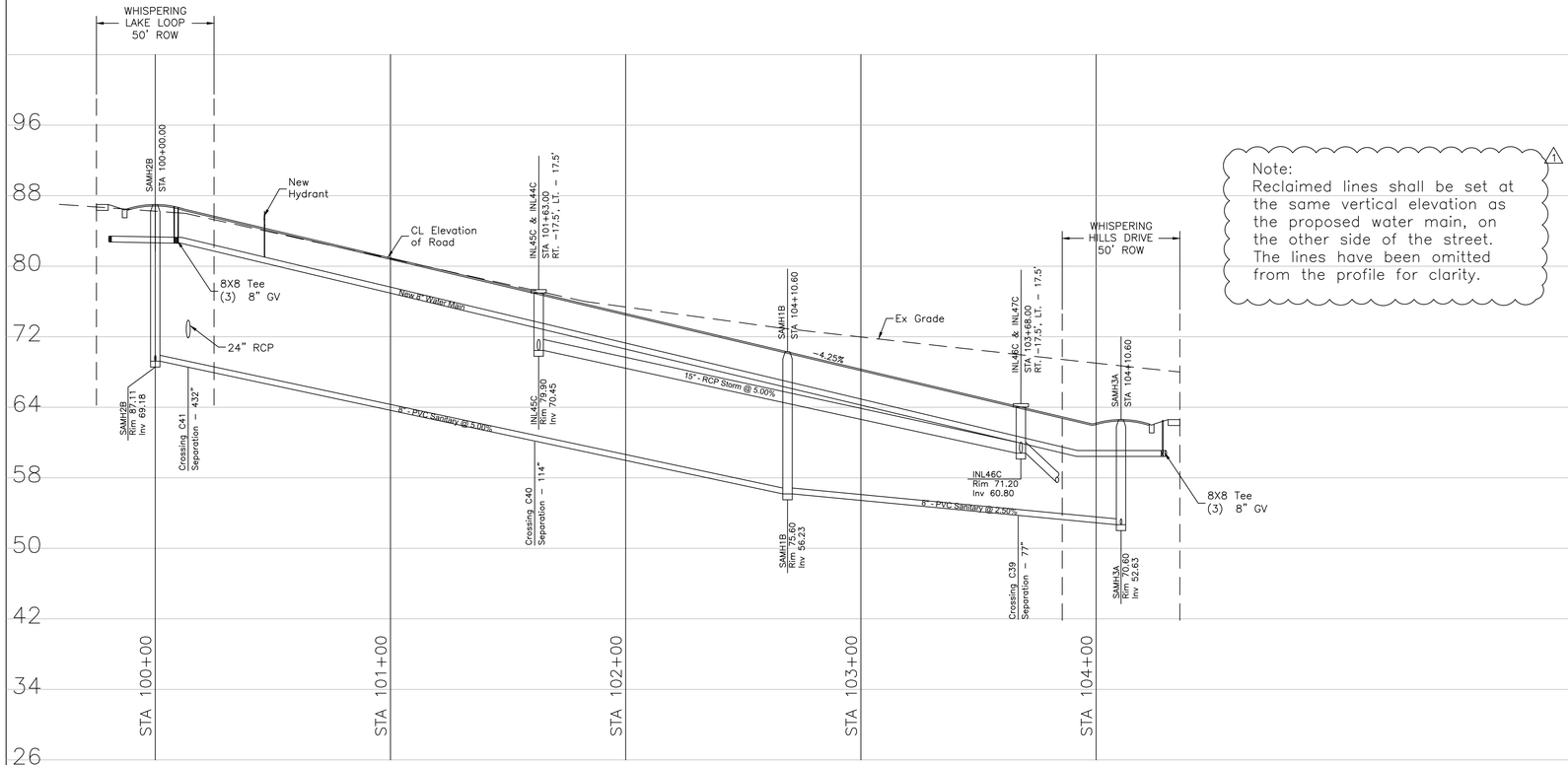
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

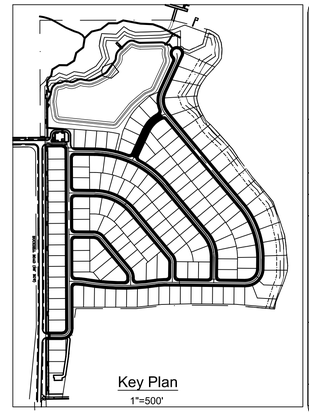


Plan View
Scale: 1"=30"



Note:
Reclaimed lines shall be set at the same vertical elevation as the proposed water main, on the other side of the street. The lines have been omitted from the profile for clarity.

Profile View
Scale: 1/8"=1'



#	Date	Description
Revisions		
1	9/19/22	Town Comm Description
Revisions		

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Plan - Profile Sheet 15

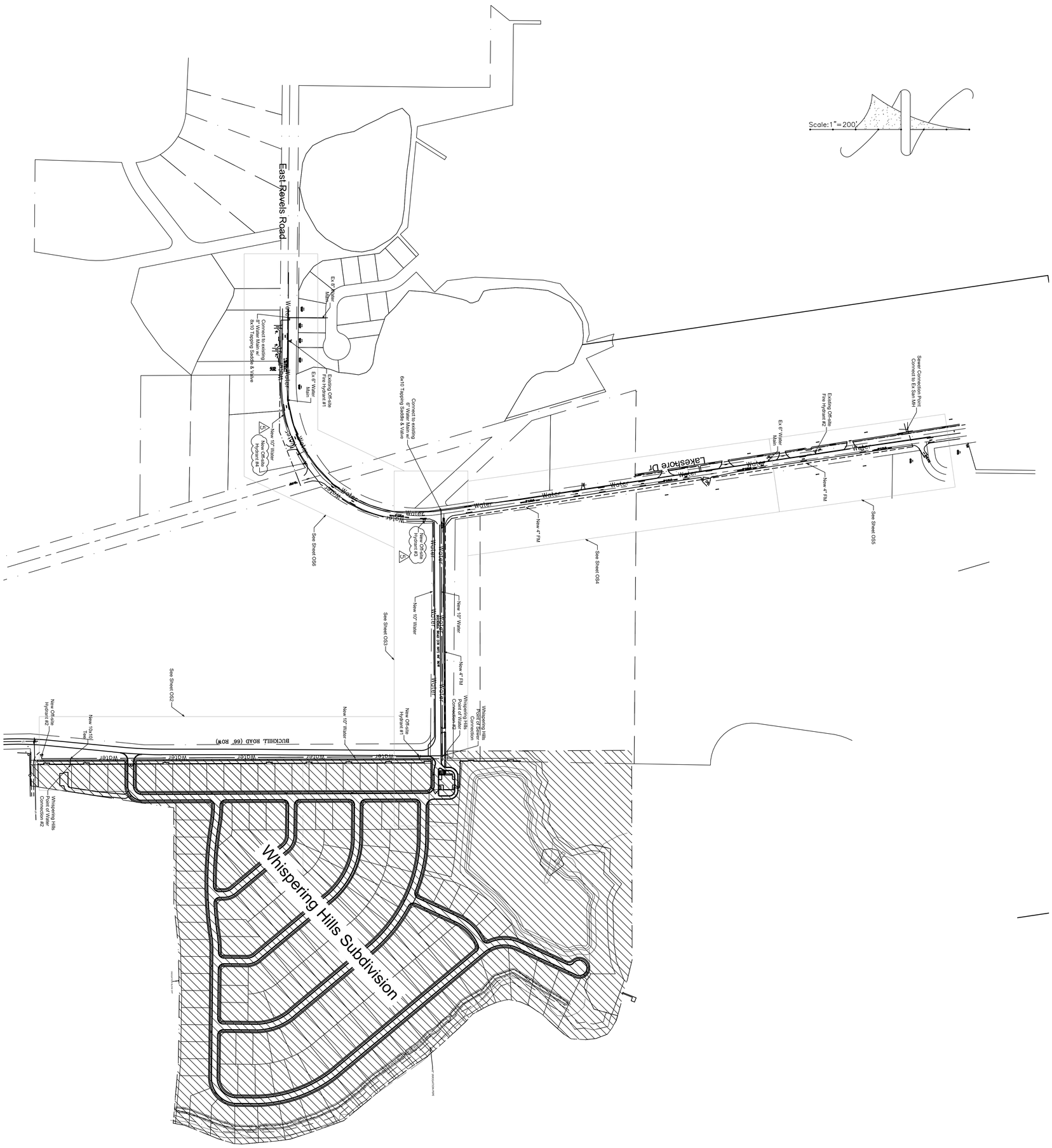
WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=30'	Scale
09-07-21	Date
WH2-PP15	File

Dwg. No.
PP15
36 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



Darcy Unroe PE 60929

STATE OF FLORIDA PROFESSIONAL ENGINEER DARCY UNROE LICENSE No 60929

Drawn	DP
Checked	DP
Scale	1"=200'
Date	11/27/23
File	WH2-OS1
Dwg. No.	OS1
	37 of 83

Overall Off-Site Utility Plan

Whispering Hills Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

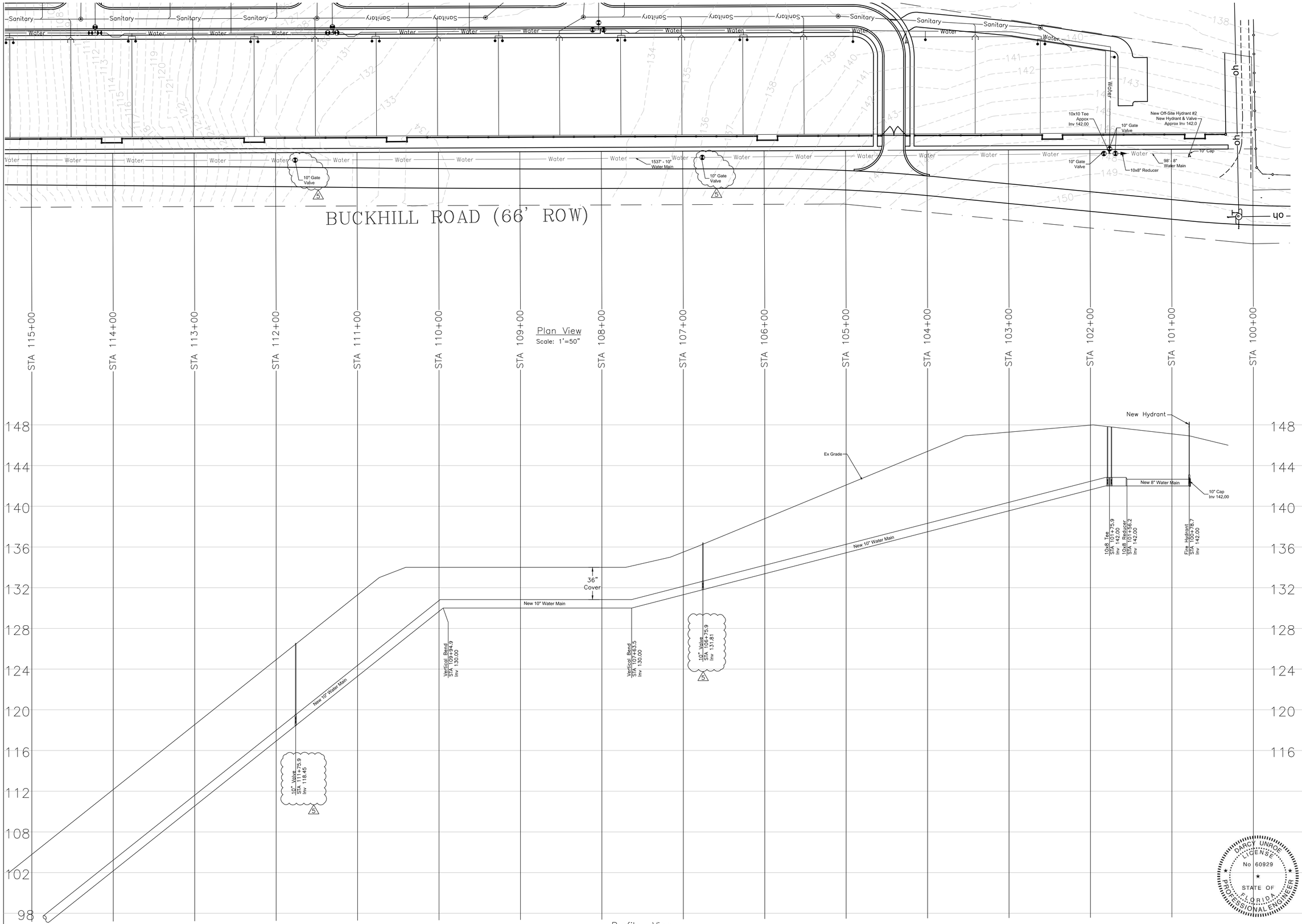
Unroe Engineering, Inc

Civil Engineering/Planning/Scientific Evaluation

PO Box 690942, Orlando, Fl 32869-0942

Business Authorization Number - EB 00006579 ph (407) 299-0650

Revisions				Revisions			
#	Date	Description		#	Date	Description	
A	02/01/24	Town Comm					



#	Description

Revisions

#	Date	Description
5	02/01/24	Town Comm

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Off-Site Plan - Profile #1

Whispering Hills Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=50'	Scale
11/27/23	Date
WH2-OS2	File

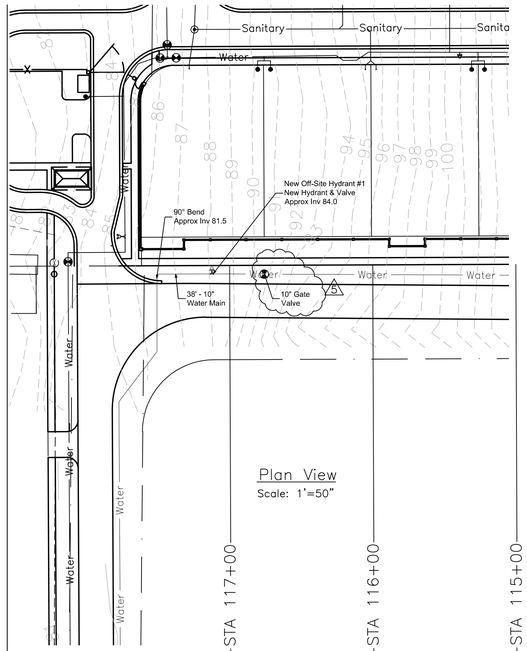
Dwg. No.

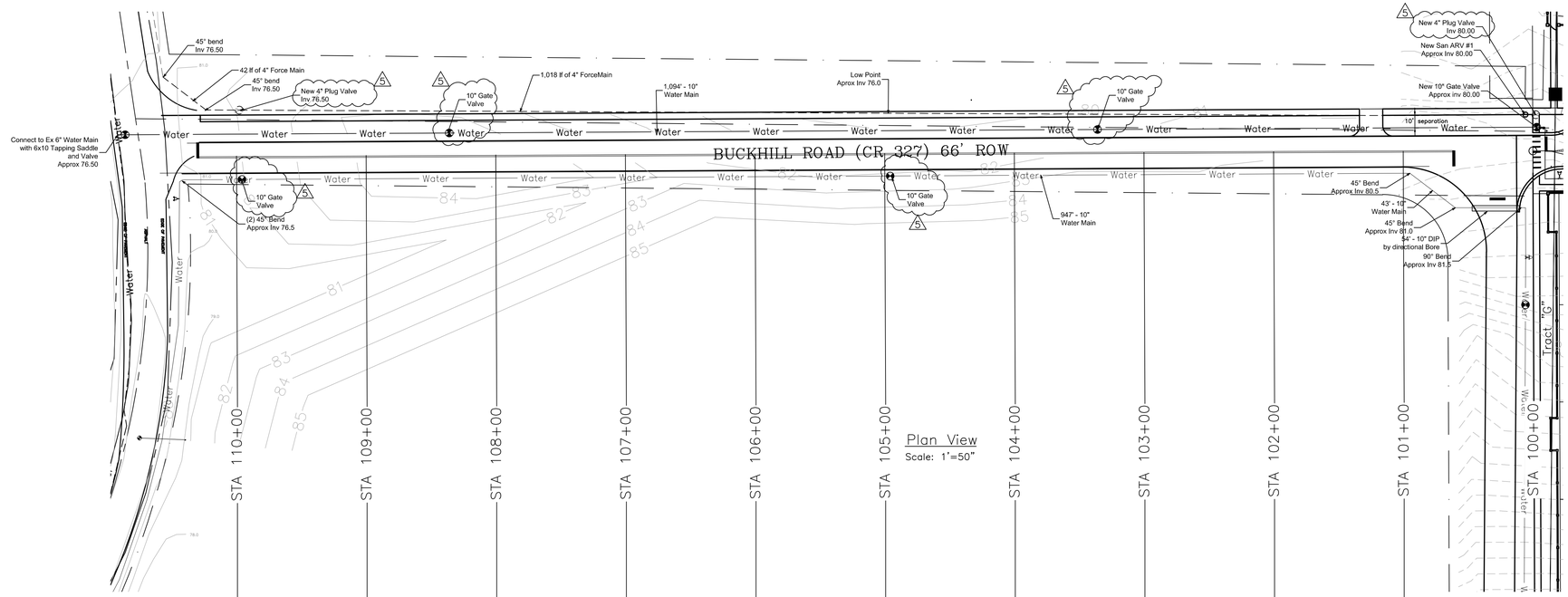
OS2

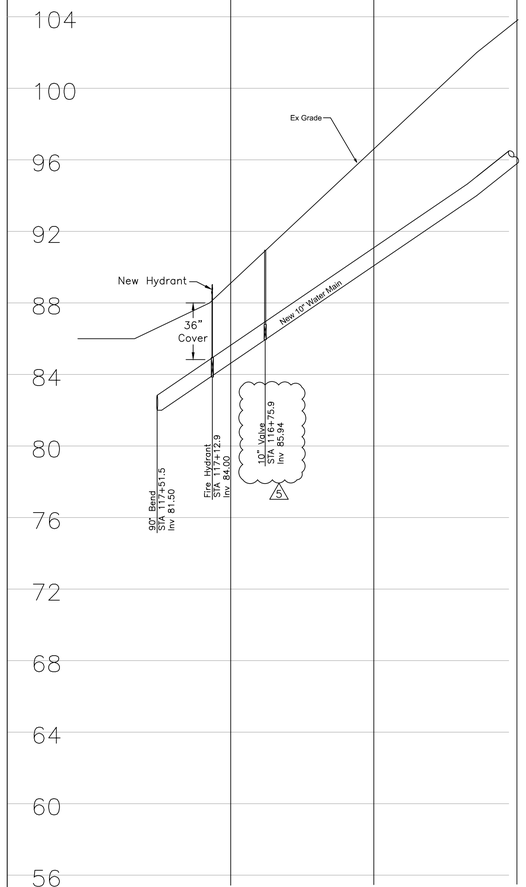
38 of 83

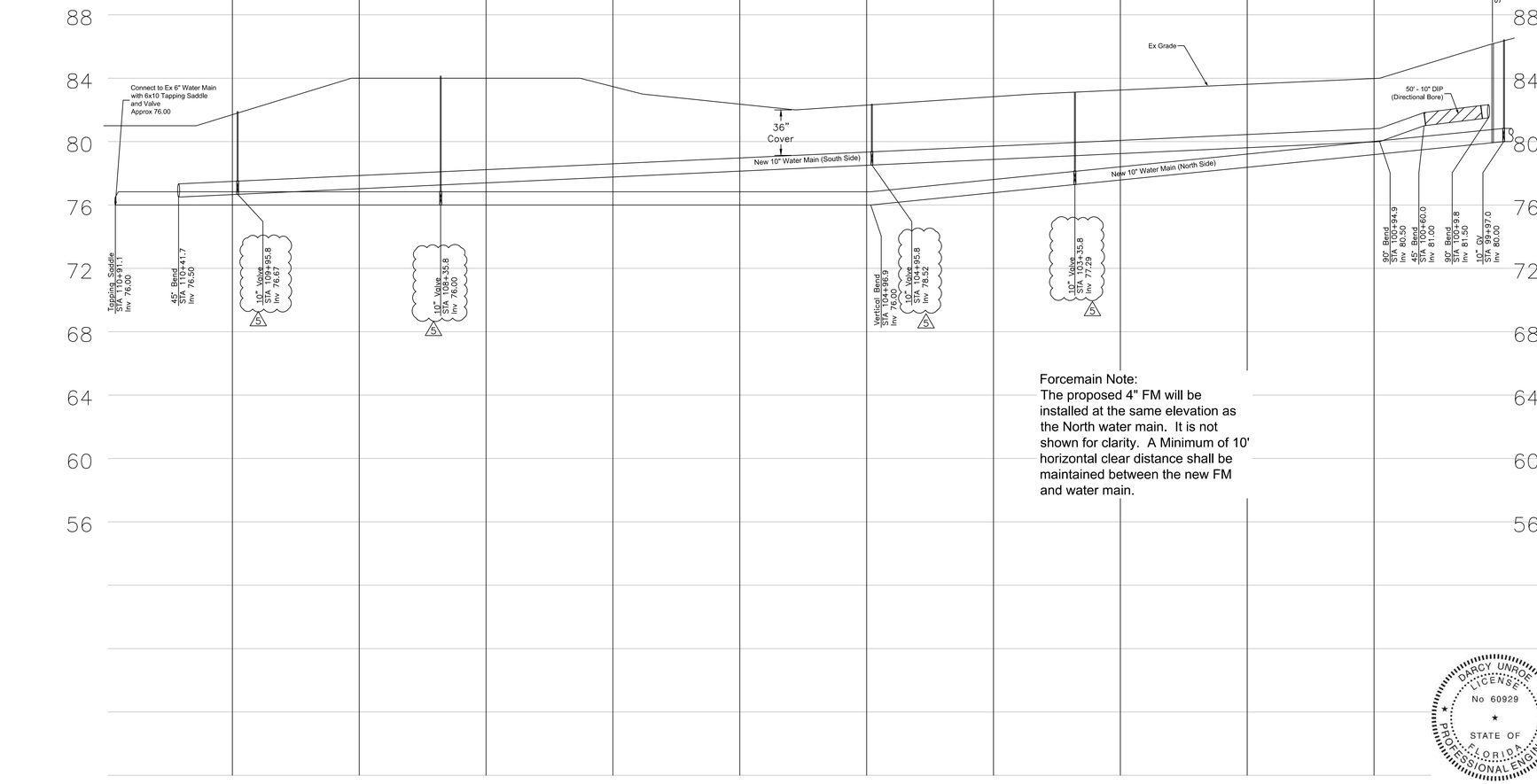
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929









Forcemain Note:
The proposed 4" FM will be installed at the same elevation as the North water main. It is not shown for clarity. A Minimum of 10' horizontal clear distance shall be maintained between the new FM and water main.

#	Description	Date
	Revisions	
5	Town Comm	02/01/24
	Revisions	

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
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Business Authorization Number - EB 00006579 ph (407) 299-0650

Off-Site Plan - Profile #2

Whispering Hills Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=50'	Scale
11/27/23	Date
WH2-OS3	File

Dwg. No.

OS3

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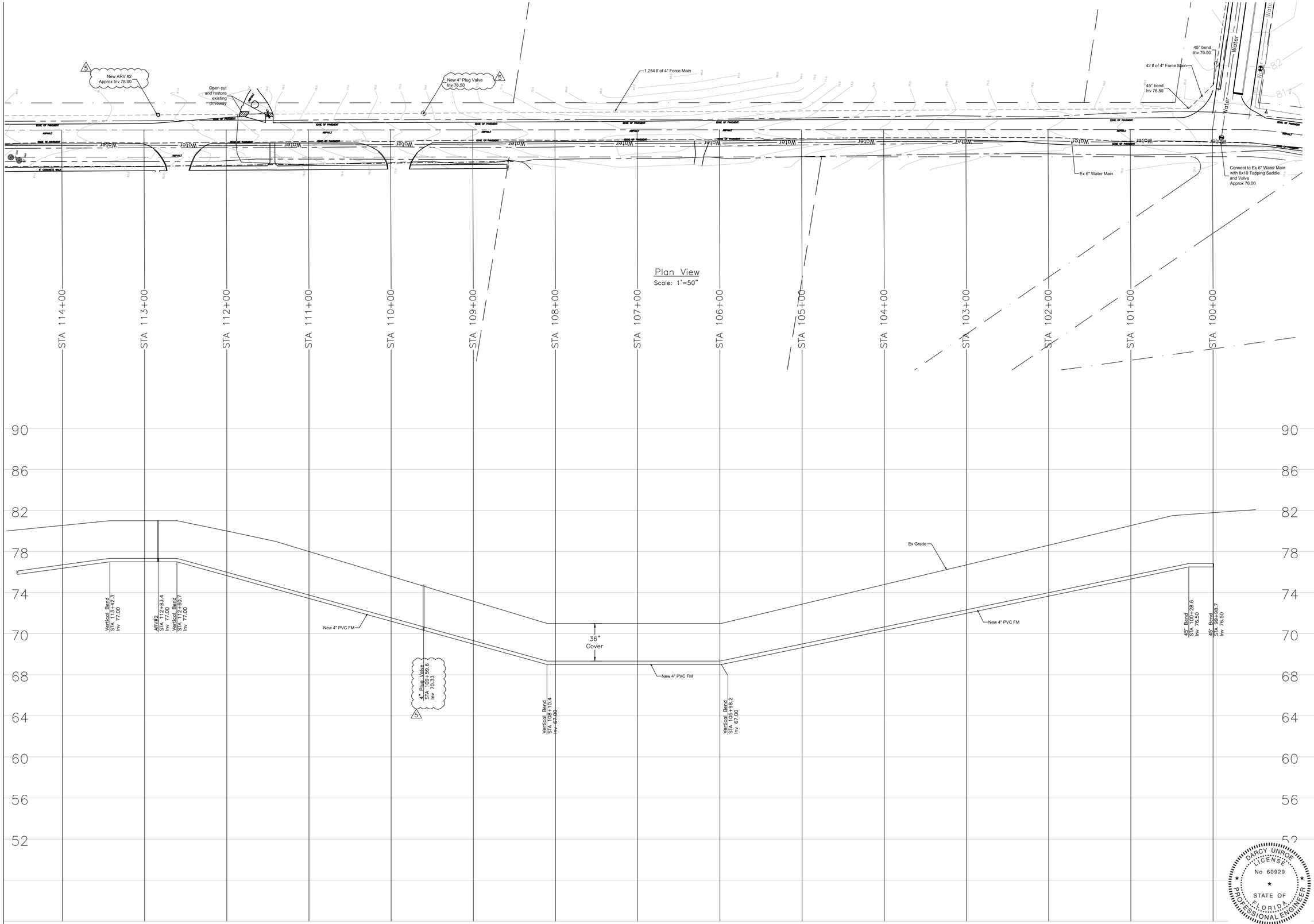
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



#	Date	Description

Revisions

#	Date	Description
5	02/01/24	Town Comm

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Off-Site Plan - Profile #3

Whispering Hills Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

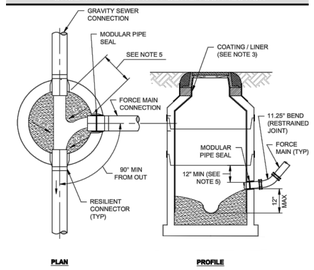
DP	Drawn
DP	Checked
1"=50'	Scale
11/27/23	Date
WH2-OS4	File

Dwg. No.
OS4

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

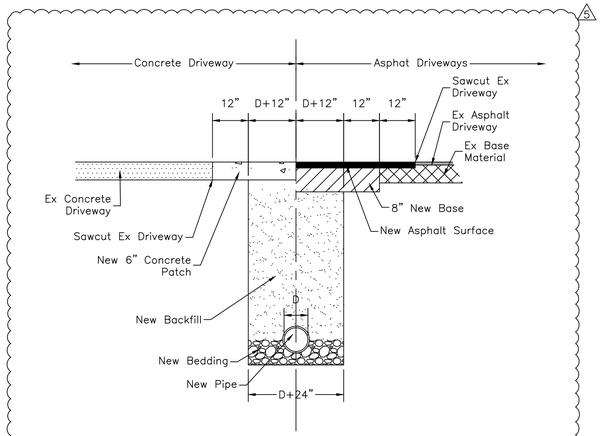
FORCE MAIN TO GRAVITY SEWER CONNECTION



Forcemain to MH Connection

Notes:

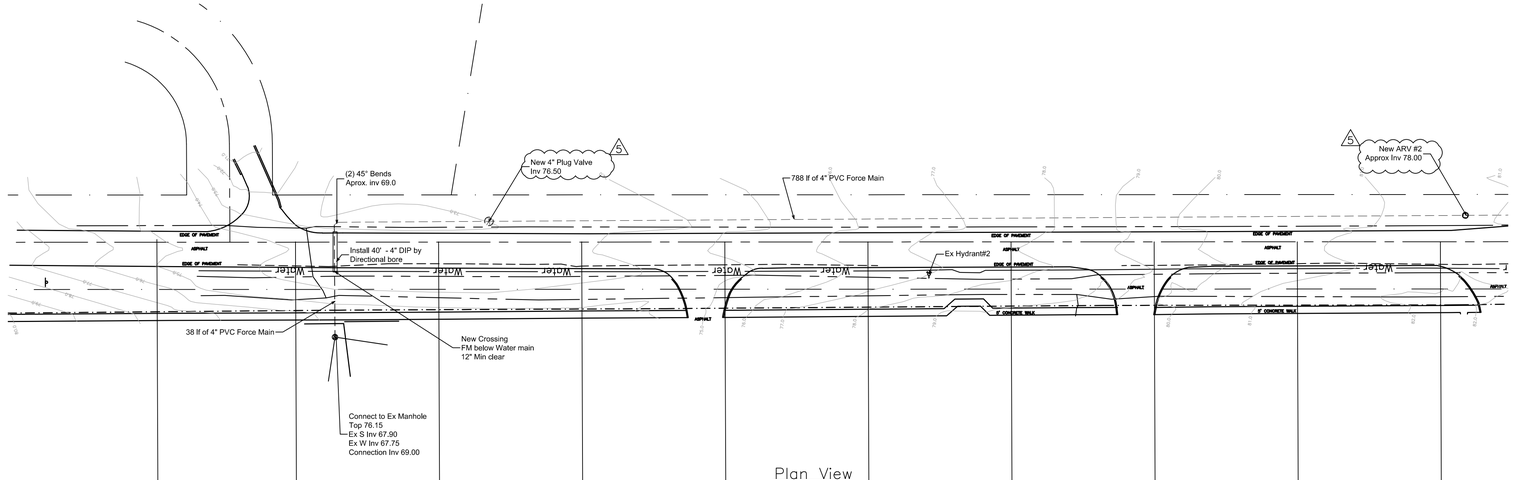
1. FORCE MAIN ORIENTED TO FACILITATE FLOW AND SHALL ENTER MANHOLE WITHIN 1-FT ABOVE INVERT OF THE EFFLUENT PIPE.
2. BENCH AS REQUIRED FOR FORCE MAIN.
3. EXISTING MANHOLE RECEIVING FORCE MAIN SHALL BE EPOXY COATED PER CITY APPROVED MATERIALS LIST.
4. CONTRACTOR SHALL COORDINATE THE PRESENCE OF UTILITIES INSPECTOR DURING EXCAVATION, CORING, AND CONNECTIONS TO EXISTING MANHOLES.
5. ALL PIPE CONNECTIONS SHALL HAVE A MINIMUM OF 12-IN SEPARATION FROM ALL JOINTS AND CORES.



Typical Driveway Restoration

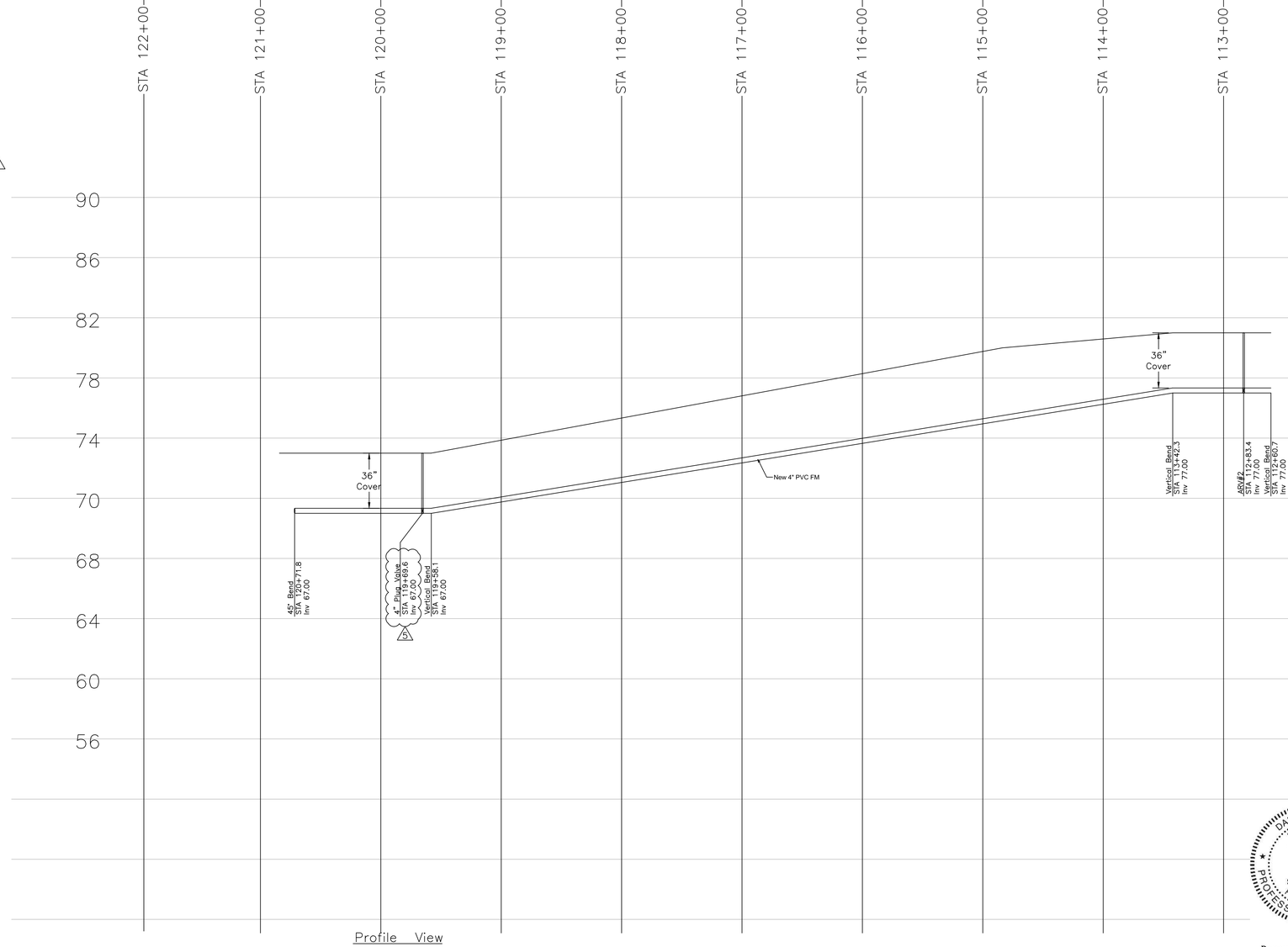
General notes

1. Base replacement shall be 3,000 psi high early strength concrete at 48 hours or 13" min. thickness of Duralock compacted to 98% T-180
2. Minimum asphaltic concrete surface thickness is 1.5" of SP9.5 over the cut area in one layer.
3. All surface joints shall be mechanically saw cut
4. RC-70 or equivalent liquid asphalt should be added to all surface joints to form seal in asphalt patches
5. Bedding and backfill with selected materials to be placed and compacted to 100% T-180 in 6" lifts



Plan View

Scale: 1"=50"



Profile View

Scale: 1/4"=1'

Description	Date	#

Revisions

Description	Date	#
Town Comm	02/01/24	5

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Off-Site Plan - Profile #4

Whispering Hills Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=50'	Scale
11/27/23	Date
WH2-OS5	File

Dwg. No.

OS5

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DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

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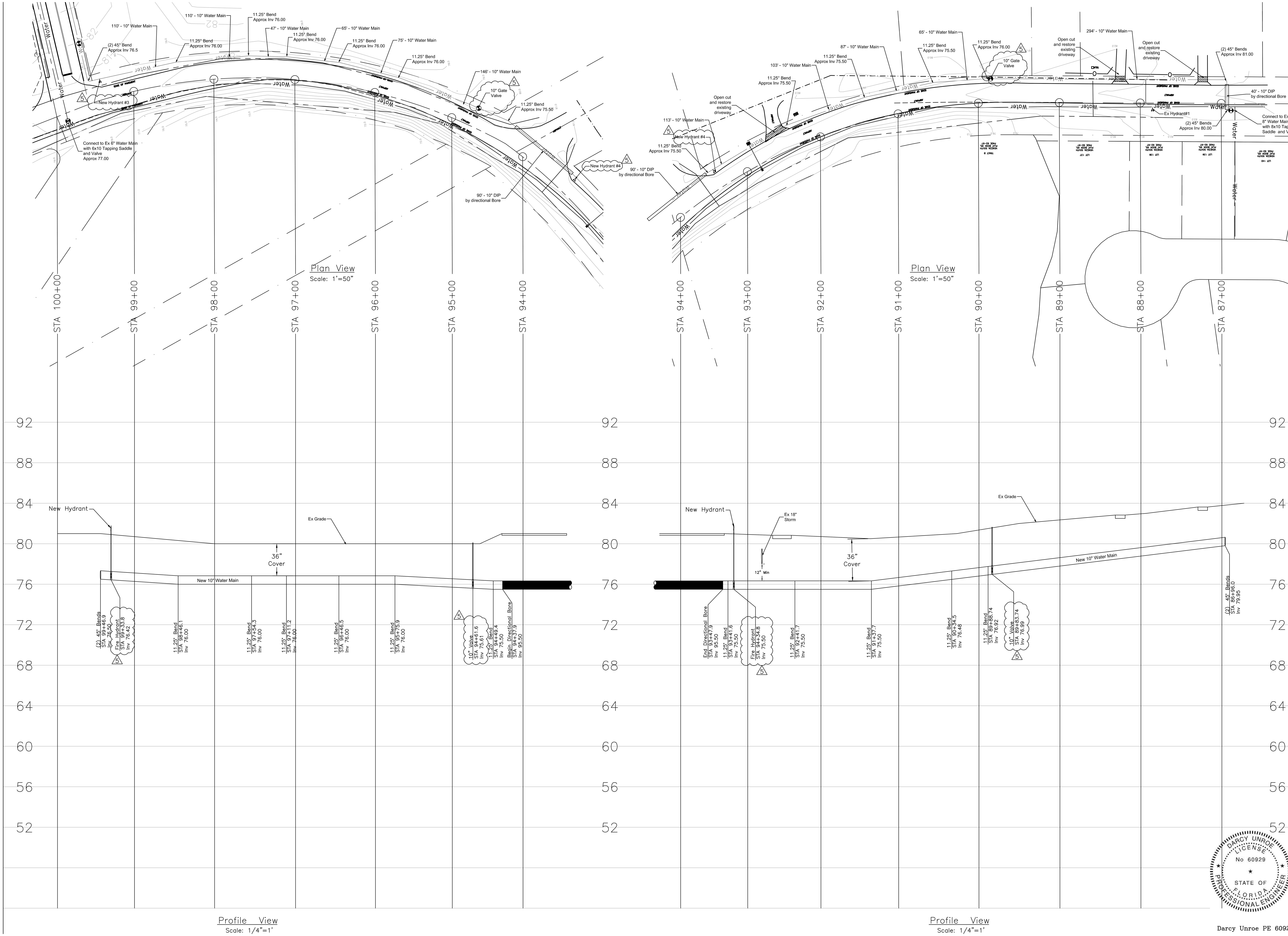

#	Date	Description

Revisions

#	Date	Description
5	02/01/24	Town Comm

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942 ph (407) 299-0650
Business Authorization Number - EB 00006579

Off-Site Plan - Profile #5

Whispering Hills Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=50'	Scale
11/27/23	Date
WH2-OS6	File

Dwg. No.

OS6

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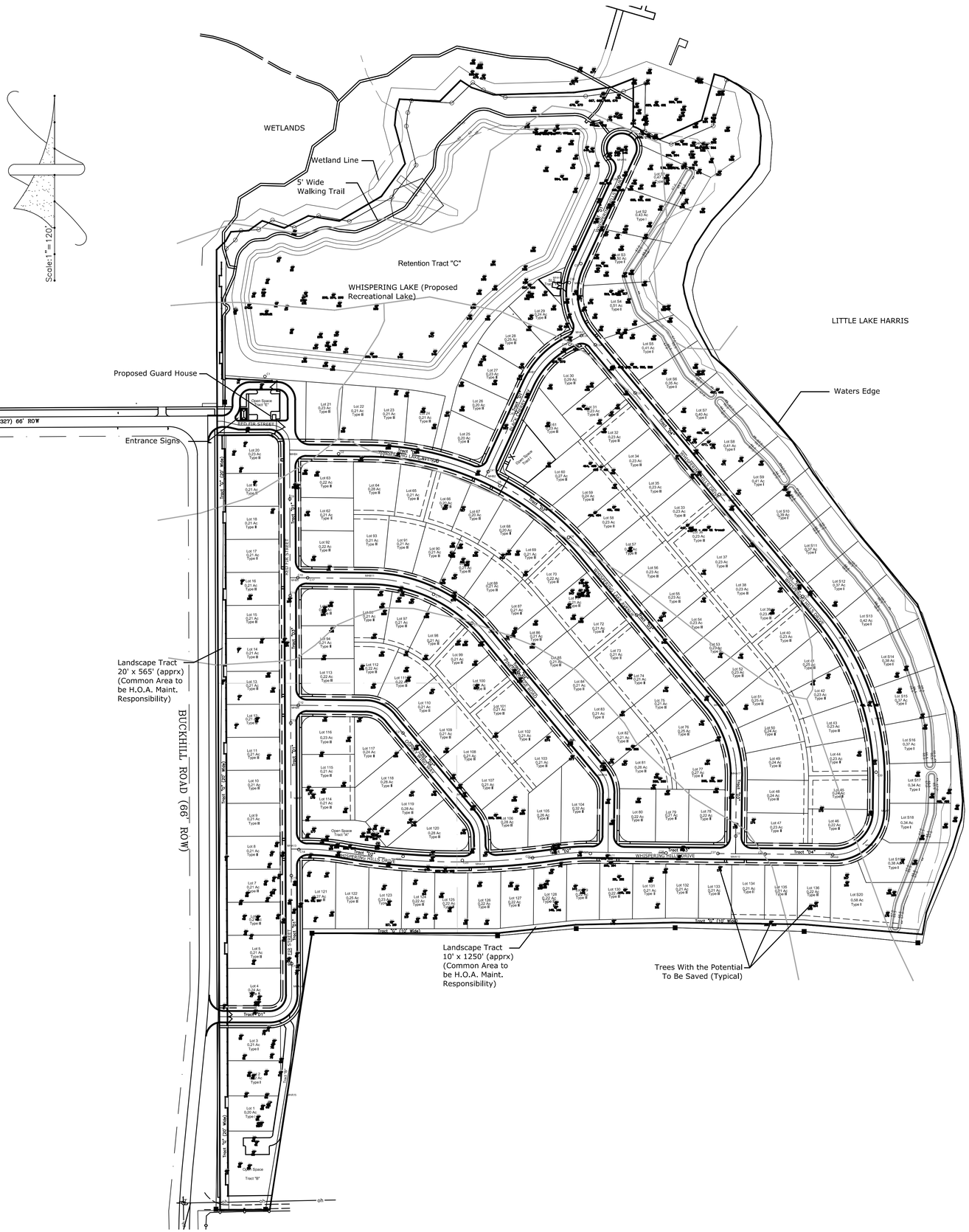
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929

Tree Save Table

Tree#	Save	Diameter (inches)	Species	Condition	Comments
10	1	10	Quercus virginiana	65	
14	1	17	Quercus laurifolia	50	leaning
32	1	8	Quercus laurifolia	65	
36	1	10&11	Quercus laurifolia	50	
39	1	16	Quercus laurifolia	60	
44	1	6	Quercus laurifolia	60	
46	1	6	Quercus laurifolia	60	
48	1	6	Quercus laurifolia	65	
49	1	9	Quercus laurifolia	60	
51	1	7	Quercus laurifolia	60	
54	1	7	Quercus laurifolia	60	
59	1	7	Quercus laurifolia	60	
60	1	7	Quercus laurifolia	60	
66	1	7	Prunus caroliniana	55	
70	1	7	Quercus laurifolia	50	Remove "Y"
73	1	11	Prunus caroliniana	45	
74	1	20	Quercus laurifolia	35	Check voids
76	1	9	Quercus laurifolia	40	Remove codominant stem and low w/ branches
81	1	8	Quercus laurifolia	65	
89	1	8	Quercus laurifolia	65	
95	1	6,6,&6	Quercus laurifolia	45	
100	1	7	Prunus caroliniana	60	
101	1	6	Prunus caroliniana	65	
105	1	8, 5, & 3	Quercus laurifolia	50	Remove 3" stem
109	1	10	Quercus laurifolia	65	
110	1	6	Quercus laurifolia	60	
111	1	6	Quercus laurifolia	60	
112	1	10&10	Prunus caroliniana	60	
117	1	7	Quercus laurifolia	50	Remove 5" tree between 117& 118
118	1	7	Quercus laurifolia	60	
122	1	8	Quercus laurifolia	65	
130	1	6	Prunus caroliniana	65	
131	1	6	Fraxinus americana	65	
137	1	8	Quercus laurifolia	55	Remove lower limbs
146	1	9&13	Prunus caroliniana	50	
159	1	8	Prunus caroliniana	60	
162	1	28	Quercus virginiana	65	
163	1	10	Quercus virginiana	60	
170	1	7	Quercus laurifolia	60	
171	1	8	Prunus caroliniana	55	
173	1	12	Quercus virginiana	55	
176	1	20	Quercus laurifolia	60	
177	1	6	Prunus caroliniana	65	
178	1	8	Quercus laurifolia	65	
179	1	7	Prunus caroliniana	65	
180	1	10	Prunus caroliniana	60	
181	1	6	Quercus laurifolia	55	
183	1	7	Quercus laurifolia	60	
190	1	14&15	Quercus laurifolia	40	Remove northern limb
195	1	8&10	Quercus laurifolia	50	Remove 8 stem
199	1	11&12	Prunus caroliniana	55	
200	1	6	Quercus laurifolia	60	Remove two stems Prunus caroliniana
201	1	6	Quercus laurifolia	65	
202	1	10	Quercus laurifolia	65	
207	1	8	Quercus laurifolia	65	
208	1	7	Quercus laurifolia	65	
209	1	6	Quercus laurifolia	65	
210	1	6	Quercus laurifolia	60	
211	1	6	Quercus laurifolia	60	Remove codominant stem
212	1	11 &12	Prunus caroliniana	50	
216	1	8	Quercus laurifolia	50	Codominant leader at 20'
221	1	14, 22, &13	Quercus laurifolia	50	
222	1	16	Quercus laurifolia	65	
224	1	20	Quercus laurifolia	65	
228	1	8	Quercus laurifolia	45	Codominant stems - remove one
229	1	21&25	Quercus laurifolia	40	Native vitality
232	1	8&8	Quercus laurifolia	50	
236	1	10&, 16	Prunus caroliniana	50	
239	1	10	Prunus caroliniana	55	Remove lower limbs
240	1	8	Quercus laurifolia	60	
246	1	7	Prunus caroliniana	60	
247	1	9, 10&12	Prunus caroliniana	50	
248	1	6 &6	Quercus laurifolia	55	Remove 5" stem
252	1	8&, 13	Prunus caroliniana	50	Remove 5" stem
263	1	9	Prunus caroliniana	45	
264	1	9	Prunus caroliniana	55	
271	1	7, 11&6	Quercus laurifolia	50	Remove 5" stem
274	1	13 &14	Quercus laurifolia	50	
282	1	10	Quercus virginiana	55	
310	1	20	Quercus virginiana	60	
311	1	14	Prunus caroliniana	55	
312	1	17	Quercus laurifolia	60	
317	1	13	Quercus laurifolia	50	
318	1	17	Quercus laurifolia	55	
319	1	11, 9 &8	Prunus caroliniana	45	
320	1	8, 9 & 10	Prunus caroliniana	45	
321	1	7&9	Prunus caroliniana	55	
322	1	8	Prunus caroliniana	50	
324	1	9&8	Prunus caroliniana	55	
325	1	11	Quercus laurifolia	45	
326	1	12	Quercus laurifolia	50	
329	1	6	Prunus caroliniana	50	
330	1	10&11	Quercus virginiana	55	Remove lower limbs
342	1	10& 12	Quercus laurifolia	50	
347	1	9&6	Quercus virginiana	55	Remove 4," stem
348	1	10& 10	Quercus virginiana	55	
359	1	7	Quercus laurifolia	50	Remove nearby 3 stem tree
359	1	13	Quercus laurifolia	55	
366	1	12	Prunus caroliniana	60	
380	1	7&8	Quercus laurifolia	50	Remove 3"and low w/ limb
381	1	16	Quercus laurifolia	60	
399	1	14	Fraxinus americana	55	
400	1	9	Quercus laurifolia	55	
401	1	16	Prunus caroliniana	60	
402	1	10	Fraxinus americana	55	
403	1	9	Fraxinus americana	55	
404	1	12	Prunus caroliniana	60	
406	1	9	Prunus caroliniana	60	
409	1	10	Prunus caroliniana	60	
413	1	8	Prunus caroliniana	60	
416	1	7	Prunus caroliniana	60	
417	1	10	Prunus caroliniana	65	
418	1	7&8	Prunus caroliniana	55	
422	1	9&14	Quercus laurifolia	50	Remove 3" stem
427	1	10	Prunus caroliniana	50	Remove adjacent oak
442	1	13	Prunus caroliniana	60	
446	1	27	Quercus laurifolia	60	
461	1	10&4	Quercus laurifolia	50	Remove 4" stem
462	1	10	Quercus laurifolia	50	
463	1	9	Quercus laurifolia	50	
464	1	7	Quercus laurifolia	50	
482	1	8	Quercus laurifolia	50	
486	1	10&8	Quercus laurifolia	50	Remove 8"stem
469	1	12	Prunus caroliniana	50	
470	1	11, 10& 10	Prunus caroliniana	50	
476	1	16	Prunus caroliniana	50	
477	1	11	Quercus laurifolia	55	Remove lower limb
478	1	16	Quercus laurifolia	50	
480	1	9&12	Quercus laurifolia	50	Remove lower limbs
481	1	7&8	Quercus laurifolia	50	Remove lower limbs
488	1	8&13	Quercus laurifolia	50	
489	1	8&8	Quercus laurifolia	50	
492	1	30	Prunus caroliniana	50	Rake crown
495	1	12&, 7	Prunus caroliniana	50	Remove 7" stem
496	1	11 & 10	Prunus caroliniana	50	Rake crown
500	1	9	Prunus caroliniana	50	
501	1	10	Prunus caroliniana	50	
502	1	8	Prunus caroliniana	50	
503	1	7	Prunus caroliniana	50	
507	1	11	Quercus laurifolia	60	
509	1	8	Quercus laurifolia	50	
510	1	11&8	Prunus caroliniana	50	Remove 6" stem
511	1	9	Quercus laurifolia	55	
512	1	22	Prunus caroliniana	55	
519	1	10&8	Prunus caroliniana	50	Remove 6" stem
520	1	15	Quercus laurifolia	50	
521	1	11	Quercus laurifolia	50	
522	1	8	Quercus laurifolia	50	
523	1	9 &13	Quercus laurifolia	50	Remove 9" stem
544	1	20	Prunus caroliniana	50	
557	1	14	Quercus virginiana	55	Remove two 9" stems
558	1	8	Quercus virginiana	60	
559	1	17	Prunus caroliniana	65	
560	1	20	Quercus virginiana	60	Remove lower stems
561	1	13&12	Quercus virginiana	50	Remove lower limbs
562	1	16 & 10	Quercus virginiana	50	Remove 10" stem
563	1	7	Quercus virginiana	60	
564	1	14&14	Quercus virginiana	55	
565	1	8	Quercus virginiana	55	
566	1	8	Quercus virginiana	60	
567	1	19	Quercus virginiana	50	
568	1	30	Quercus virginiana	65	
569	1	18	Quercus virginiana	60	
570	1	11	Quercus virginiana	60	
571	1	11	Quercus virginiana	60	
573	1	10&16	Quercus virginiana	50	
574	1	15&8	Quercus virginiana	50	
575	1	8&8	Prunus caroliniana	50	
576	1	10	Quercus virginiana	50	
577	1	8	Quercus virginiana	50	
578	1	10	Quercus virginiana	50	
579	1	12	Quercus virginiana	50	Remove three nearby trees
580	1	13	Quercus virginiana	55	
581	1	10	Quercus virginiana	50	
582	1	14&, 13	Quercus virginiana	55	
583	1	10&, 14	Quercus virginiana	55	
584	1	11&13	Quercus virginiana	50	
585	1	14	Quercus virginiana	60	
591	1	11	Quercus virginiana	50	
592	1	13	Quercus virginiana	50	
593	1	9	Quercus virginiana	50	
594	1	12	Quercus virginiana	50	Remove lower stems
595	1	11&11	Quercus virginiana	50	
596	1	9	Quercus virginiana	60	
597	1	12	Quercus virginiana	60	
601	1	7&13	Quercus virginiana	50	
602	1	16	Quercus virginiana	50	
603	1	10&15	Quercus virginiana	50	
660	1	9	Quercus virginiana	55	
661	1	11 & 14	Quercus virginiana	55	
662	1	11	Quercus virginiana	55	
663	1	12 & 14	Prunus caroliniana	50	
664	1	11, 12 & 10	Quercus virginiana	50	
665	1	21 & 12	Quercus virginiana	50	
666	1	14	Quercus virginiana	55	
667	1	10	Quercus virginiana	60	
668	1	10	Quercus virginiana	50	
669	1	9	Quercus virginiana	55	Remove dead stem
670	1	9,9&3	Quercus virginiana	50	Remove 3" stem
671	1	11	Quercus virginiana	55	
672	1	10	Quercus virginiana	50	
673	1	12	Quercus virginiana	50	
Total	202				

Note:
This table refers to trees that can potentially be saved as depicted on sheet TM2 & TM3

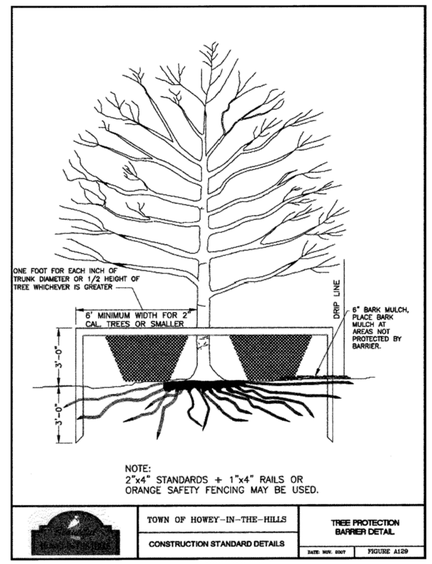


Landscape Notes:
- Entrance Signs may be located In the Landscape Easements. Such Landscape Buffers and Screens will be consistent with COHH LDR's.

Tree Protection Notes
A certified tree survey has been conducted by Ellis Surveying, Inc.
Of the total non-Pines located within the Parcel, the majority have ,been Identified as Diseased, Decayed, Dying, or Dangerous and will be removed. Of the remaining healthy non-Pines, many are in the way of construction. The Developer agree to maximize the number of healthy non-Pine trees .

Trees will be saved in accordance with COHH Tree Protection Barrier Details.

Tree Requirements:
1, Howie LDR's require 3 trees per lot therefore a total of no less than 468 trees will be provided on the completed project. For any Lots having less than 3 trees homebuilders will be required to cure the deficiency.
2, In addition, to satisfy the replacement plantings requirement homebuilders will be required to provide the requisite replacement trees.



#	Revisions	Date	Description

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

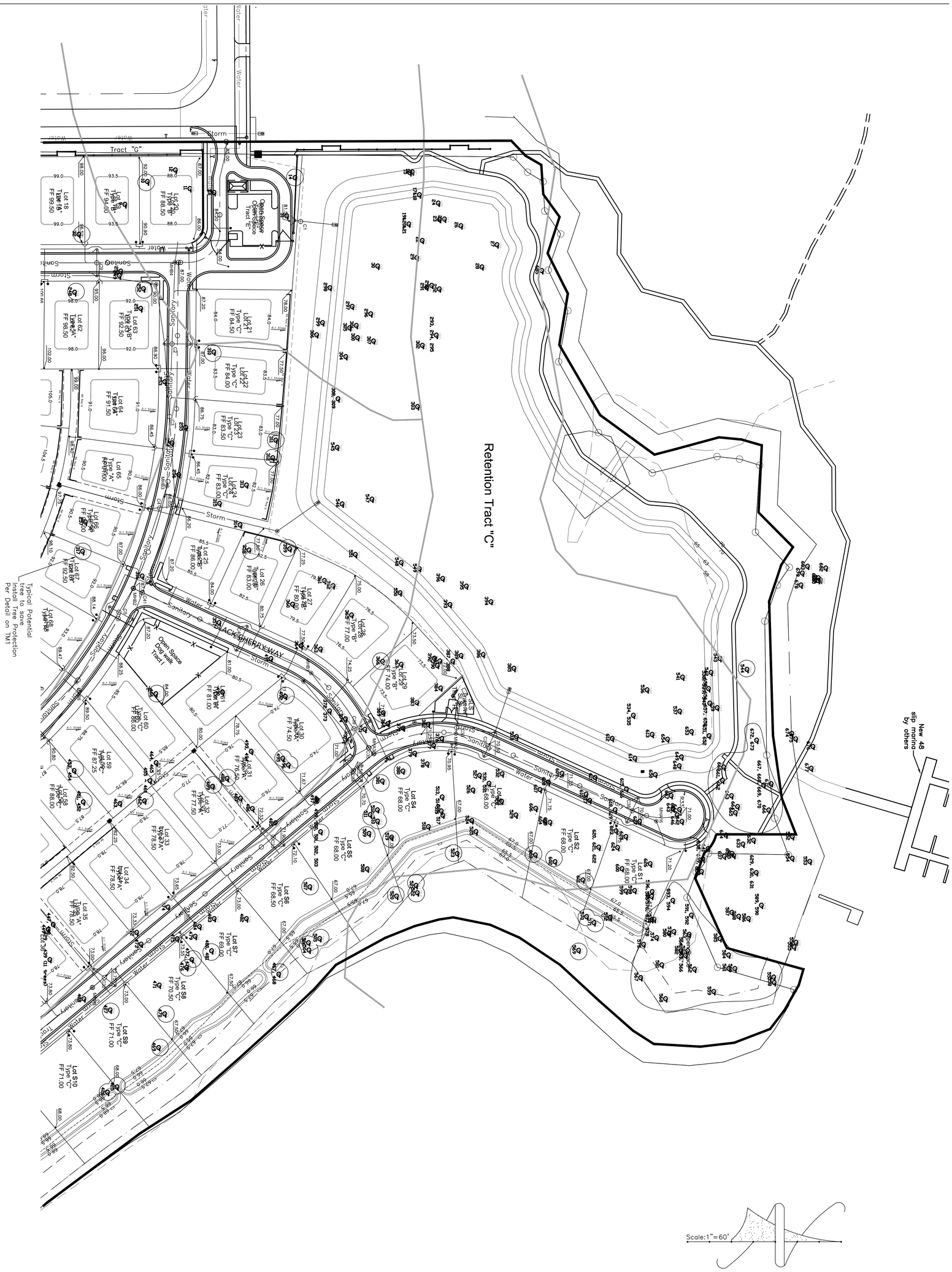
Tree Mitigation Plan - Overall

WHISPERING HEIGHTS Subdivision
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=130'	Scale
09-07-21	Date
WH2-CTM	File

Dwg. No.
TM1
43 of 83

Darcy Unroe PE 60929



Darcy Unroe PE 60929

STATE OF FLORIDA PROFESSIONAL ENGINEER
DARCY UNROE LICENSE
No 60929

Tree Mitigation Plan - North

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

Dwg. No.	TM2
File	WH2-TM2
Date	09-07-21
Scale	1"=60'
Checked	DP
Drawn	DP

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Unroe Engineering, Inc

Civil Engineering/Planning/Scientific Evaluation

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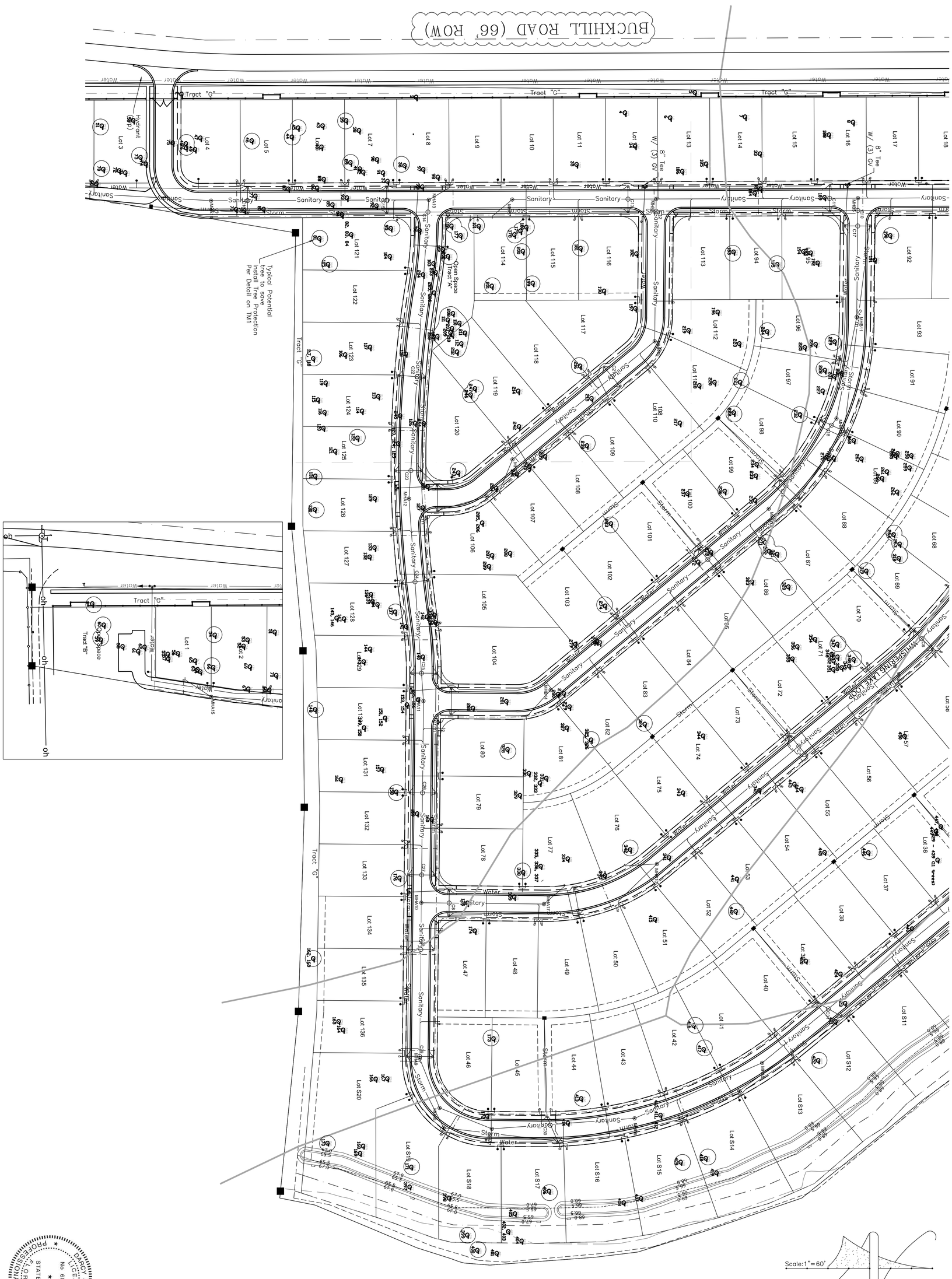
Revisions				Revisions			
#	Date	Description		#	Date	Description	



STATE OF FLORIDA PROFESSIONAL ENGINEER
DARCY UNROE LICENSE No. 60929

Darcy Unroe PE 60929

Tree Mitigation Plan - South

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

Unroe Engineering, Inc

Civil Engineering/Planning/Scientific Evaluation

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Revisions				Revisions			
#	Date	Description		#	Date	Description	

Drawn	DP
Checked	DP
Scale	1"=60'
Date	09-07-21
File	WH2-TM3
Dwg. No.	TM3

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Landmark Lighting Luminaire Schedule									
Symbol	MANUFAC	Qty	Label	Arrangement	Description	LLF	Lum. Watts	Lum. Lumens	BUG Rating
	NLS LIGHTING	57	SLA	SINGLE	CAL-S-TP1-SS-TO-32L-53-30K-UNV-AM-FINISH-10K MOUNTED ON A4-S-SQL-18-FINISH ARM & DSPSAP 14' S 188 FINISH H1 TSR POLE	1.000	54	5508	TG-U-G32
	SIGSA	1	SLB	SINGLE	7726S K3 BLK	1.000	7	131	TG-U-G0

Scale:1"=60'

Retention Tract "C"

Open Space Tract "F"

Open Space Tract "E"

Open Space Dog walk Tract I

Lot S1
Lot S2
Lot S3
Lot S4
Lot S5
Lot S6
Lot S7
Lot S8
Lot S9
Lot S10
Lot 18
Lot 19
Lot 20
Lot 21
Lot 22
Lot 23
Lot 24
Lot 25
Lot 26
Lot 27
Lot 28
Lot 29
Lot 30
Lot 31
Lot 32
Lot 33
Lot 34
Lot 35
Lot 58
Lot 59
Lot 60
Lot 61
Lot 62
Lot 63
Lot 64
Lot 65
Lot 66
Lot 67
Lot 68

Tract "G"

R33'

MHA1B

MH1

MH2

MH3

MH4

MH5

MH6

SLS Transformer

C1 C2 C3 C4 C41 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35 C36 C37 C38 C39 C40

Water
Storm
Sanitary
Curb

Revisions

#	Date	Description

Revisions

#	Date	Description

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Site Lighting Photometrics - North

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=60'	Scale
09-07-21	Date
WH2-SL1	File

Dwg. No.

SL1

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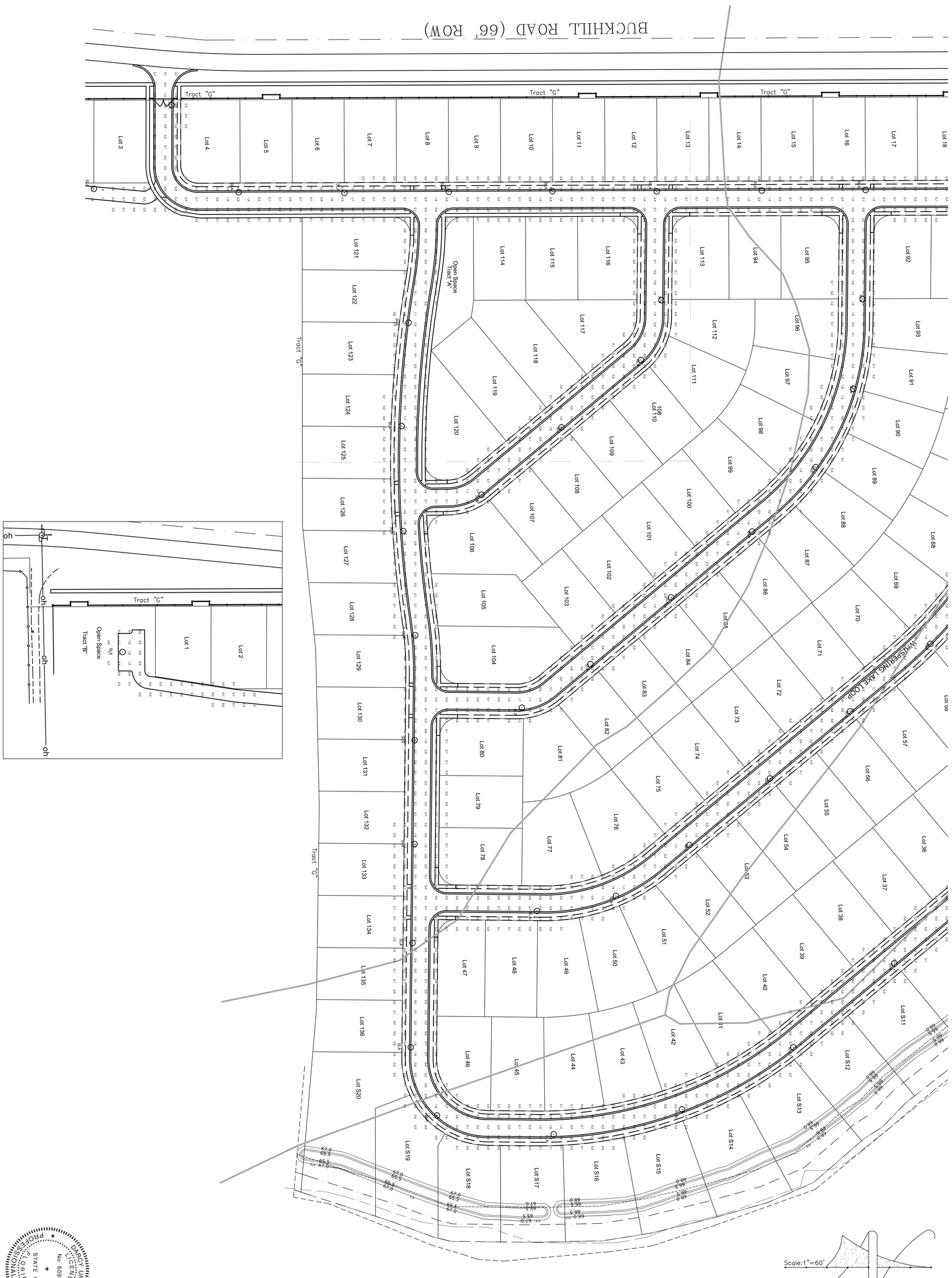
DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



PROFESSIONAL ENGINEER
DARCY UNROE
LICENSE
STATE OF FLORIDA
No 60929

Darcy Unroe PE 60929

Drawn	DP
Checked	DP
Scale	1"=60'
Date	09-07-21
File	WH2-SL2

Dwg. No. SL2

47 of 83

Site Lighting - South

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

Unroe Engineering, Inc

Civil Engineering/Planning/Scientific Evaluation

PO Box 690942, Orlando, Fl 32869-0942

Business Authorization Number - EB 00006579 ph (407) 299-0650

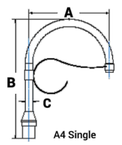
Revisions				Revisions			
#	Date	Description		#	Date	Description	

NLS LIGHTING

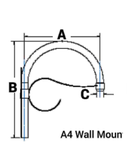
ARCHITECTURAL ARM 4

ARMS

A4 Single



A4 Single



A4 Wall Moun

A4 Double 180

A4 Wall Mount

MODEL	A	B	C	D	E	EPA SGL	EPA DBL	EPA WM
A4-S	17 in.	30 in.	1 7/8" Ø (1-1/2 in. SCH40)	N/A	N/A	1.8	3.0	1.2
A4-S-WM	17 in.	25 in.	1 7/8" Ø (1-1/2 in. SCH40)	16 in.	6 in.	-	-	-
A4-L	26 in.	38 in.	1 7/8" Ø (1-1/2 in. SCH40)	N/A	N/A	1.5	2.7	1.0
A4-L-WM	26 in.	33 in.	1 7/8" Ø (1-1/2 in. SCH40)	24 in.	7 in.	-	-	-

Architectural Arm 4 is constructed of extruded aluminum tubing. Integrates with poles or tenons of 3-1/2", 4", 4-1/2", or 5" OD and is secured with 3/8" stainless steel Allen set screws.

Contact NLS for custom configuration or others mounting options. Arms are designed, tooled, fabricated and assembled in the USA.

WM Drill Patterns

A4-S-WM A4-L-WM

Project Name: Type:

Cat #	Mounting	Pole or Tenon Diameter	Color
Architectural Arm 4 Small **(A4-S)**	Single **(SGL)**	3" Round **(3R)**	Bronze **(BRZ)**
	Double 180° **(D180)**	4" Round **(4R)**	White **(WHT)**
Architectural Arm 4 Large **(A4-L)**	Wall Mount **(WM)**	4 ½" Round **(412R)**	Silver **(SVR)**
		5" Round **(5R)**	Black **(BLK)**
			Hunter Green **(HGN)**
			Graphite **(GPH)**
			Grey **(GRY)**
			Custom **(CS)**

NLS LIGHTING

CALIFORNIA SMALL

SITE + ARCHITECTURAL LIGHTING

The beautiful and simple California Series LED Pedestrian Luminaires depict not only the California lifestyle, but the architecture of California as well. This ornamental piece is a delightful sight to see and a great model to illuminate any urban, rural, retail, or park, or campus setting.

The different caps and shades depict different California styles and a touch of California's historic Spanish mission era. The California Series is the perfect selection to combine both design and efficiency in light performance. Designed, tooled, manufactured and assembled in the USA.

* Using Architectural Arm 4 (AA4)

STAR POWER OPTICAL SYSTEM

The Star Power reflector is an excellent system which provides great value and performance.

LED WATTAGE CHART

	16L	32L
350 milliamps	18w	32w
530 milliamps	28w	54w
700 milliamps	36w	71w
1050 milliamps	56w	106w

Project Name: Type:

Cat #	Top	Shade	Light Dist.	# of LEDs	Milliamps	Kelvin	Volts	Mount	Color	Options
California Small 18" Diameter **(CAL-S)**	Top 1 **(TP1)**	Shade 1 **(S1)**	Type 2 **(T2)**	16 **(16L)**	350 **(35)**	3000K **(30K)**	120-277 **(UNV)**	Arm Mount **(AM)**	Bronze **(BRZ)**	House Side Shield **(HSS)**
	Top 2 **(TP2)**	Shade 6 **(S6)**	Type 3 **(T3)**	32 **(32L)**	530 **(53)**	4000K **(40K)**	347-480 **(HV)**	***For Arm Mount, please select an Architectural Arm: (AA) separately.***	White **(WHT)**	Bird Spikes **(BS)**
	Top 3 **(TP3)**	Shade 7 **(S7)**	Type 4 **(T4)**		700 **(7)**	5000K **(50K)**			Silver **(SVR)**	Marine Grade Finish **(MGF)**
		Shade 8 **(S8)**	Type 5 **(T5)**		1050 **(1)**				Hunter Green **(HGN)**	Photocell **(PC)** **Universal Voltage 120-277*
									Black **(BLK)**	FSP-211 with Motion Sensor (Universal Voltage) **(FSP-8)** ****For 8' + Below*** **(FSP-20)** ****For 9' to 20'*** **(FSP-40)** ****For 21' to 40'***
									Graphite **(GPH)**	Surge Protector **(10K)**
									Grey **(GRY)**	
									Custom **(CS)**	

PRODUCT SPECIFICATIONS

Housing: Heavy Duty Marine Grade Cast and Spun Aluminum with 4 shade options and 3 cap options
LED: Lumileds Luxeon MX, CRI 70
Optics: Star Power T2, T3, T4 and T5
Watts: 18-106
L70 Depreciation: 483,000 Hours (@77°F/ 25°C)
L90: 70,000

Listings: UL 1598 Listed
Driver: 0-10V Dimming driver as standard by Philips Advance
THD @ Max Load < 15%
Power Factor @ Max Load < 0.95
Kelvin: 3000, 4000, or 5000
Finish: 5 mils Powder Coat
Warranty: Standard Warranty is 5 years for Driver and LEDs

PRODUCT DIMENSIONS

TOPS

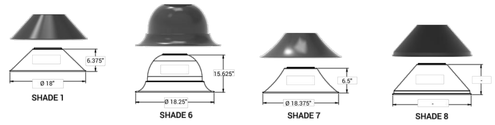
TOP 1
Smooth

TOP 2
Alum. Rings

TOP 3

PART NUMBER	T2 LUMENS	LM/W	T3 LUMENS	LM/W	T4 LUMENS	LM/W	T5 LUMENS	LM/W	Watts
CAL-S-16L-35-30K	1826	102	1854	103	1872	104	1800	100	18
CAL-S-16L-35-40K	1926	107	1908	106	1926	107	1854	103	18
CAL-S-16L-35-50K	2034	113	1998	111	2016	112	1908	106	18
CAL-S-16L-53-30K	2856	102	2884	103	2912	104	2800	100	28
CAL-S-16L-53-40K	2968	106	2968	106	2996	107	2884	103	28
CAL-S-16L-53-50K	3136	112	3108	111	3136	112	2968	106	28
CAL-S-16L-7-30K	3672	102	3708	103	3744	104	3600	100	36
CAL-S-16L-7-40K	3816	106	3816	106	3852	107	3708	103	36
CAL-S-16L-7-50K	4032	112	3996	111	4032	112	3816	106	36
CAL-S-16L-1-30K	5712	102	5768	103	5824	104	5600	100	56
CAL-S-16L-1-40K	5936	106	5936	106	5992	107	5768	103	56
CAL-S-16L-1-50K	6272	112	6216	111	6272	112	5936	106	56
CAL-S-32L-35-30K	3066	102	3399	103	3432	104	3300	100	33
CAL-S-32L-35-40K	3498	106	3498	106	3531	107	3399	103	33
CAL-S-32L-35-50K	3696	112	3663	111	3696	112	3498	106	33
CAL-S-32L-53-30K	5508	102	5562	103	5616	104	5400	100	54
CAL-S-32L-53-40K	5724	106	5724	106	5778	107	5562	103	54
CAL-S-32L-53-50K	6048	112	5994	111	6048	112	5724	106	54
CAL-S-32L-7-30K	7242	102	7313	103	7384	104	7100	100	71
CAL-S-32L-7-40K	7526	106	7597	107	7597	107	7313	103	71
CAL-S-32L-7-50K	7952	112	7881	111	7952	112	7526	106	71
CAL-S-32L-1-30K	10812	102	10918	103	11024	104	10600	100	106
CAL-S-32L-1-40K	11236	106	11342	107	11342	107	10918	103	106
CAL-S-32L-1-50K	11872	112	11766	111	11872	112	11236	106	106

SHADES



SHADE 1 SHADE 6 SHADE 7 SHADE 8

EPA	CAL-S
Single	0.82

NLS LIGHTING

DIRECT BURIAL POLE

STEEL, ALUM., SQUARE, ROUND, TAPERED

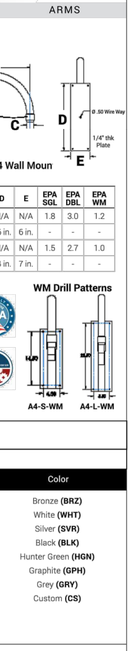
POLES + BASES

SHAFT
Shall be Grade B straight steel with yield strength of 46,000 PSI conforming to ASTM A500 Standards. All poles with hand hole have a welded ground lug.

Direct Burial poles can be ordered with optional coupling (specify height), optional hand hole (specify height), or optional Slot for conduit ingress and egress (specify height) . When poles are ordered with a three-way combination of Coupling, Hand Hole and Ground Lug, then the Ground Lug is positioned at 90 degrees to the Hand Hole and the Coupling is opposite the Hand Hole. When the pole is ordered with Hand Hole only, the Ground Lug is at 180 to the Hand Hole.

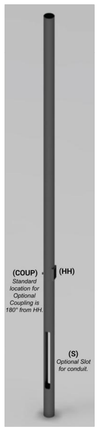
HAND HOLE COVER AND POLE CAP
Pole caps are injection molded snap-in caps in black finish. Optional hand hole covers are provided with internal bridge support. For added strength, constructed of 3" x 5" rectangular steel tubing, is welded to pole shaft.

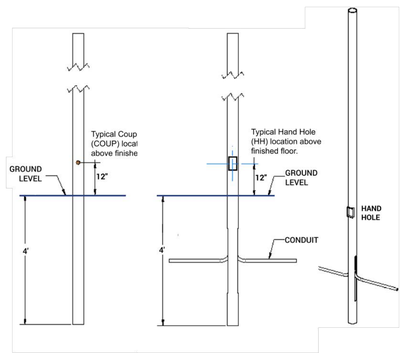
FINISH
All poles are finished with 3 to 5 mils of powder coat. All poles are sandblasted prior to powder coat application.



Project Name: Type:

Cat #	Height (Above Grade)	Pole Dim.	Size	Orient	Color	Options
STEEL Direct Burial Round Straight Steel Pole **(DBRSSP)**	10' **(10)**	**ROUND** 3" OD **(3R)**	**STEEL** .120 in **(11G)**	Single **(SGL)**	Bronze **(BRZ)**	Slot **(S)**
Direct Burial Square Straight Steel Pole **(DBSSP)**	12' **(12)**	4" OD **(4R)**		Double **(D-90)** **(D-180)**	White **(WHT)**	Coupling **(COUP)**
ALUMINUM Direct Burial Round Straight Alum. Pole **(DBRSAP)**	14' **(14)**	5" OD **(5R)**	180 in **(7G)**		Silver **(SVR)**	**Standard location is opposite of HH. See next page for details. Consult Factory for Custom Height Above Finished Floor (AFF)*
Direct Burial Square Straight Alum. Pole **(DBSSAP)**	15' **(15)**	**SQUARE** 4" SQ **(4S)**	250 in **(25)**	Triple **(T-90)**	Green **(GRN)**	Hand Hole **(HH)**
	16' **(16)**	5" SQ **(5S)**	**ALUMINUM** .188 in **(18G)**	Quad **(QD)**	Black **(BLK)**	Galvanized **(GLV)**
	18' **(18)**		250 in **(25G)**	No Drill **(ND)** **Tenon Option*	Graphite **(GPH)**	**Tenon** 2 ⅜" Round **(T2R)**
	20' **(20)**				Grey **(GRY)**	3" Round **(T3R)**
	21' **(21)**				Custom **(CS)**	3 ½" Round **(T312R)**
	22' **(22)**					4 ½" Round **(T412R)**
	24' **(24)**					





#	Date	Description
		Revisions
		Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

Site Lighting - South

WHISPERING HEIGHTS Subdivision

Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
1"=60'	Scale
09-07-21	Date
WH2-SL3	File

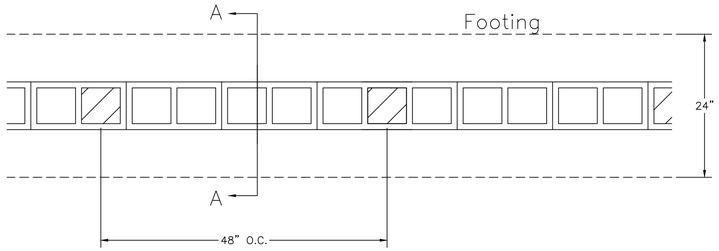
Dwg. No.

SL3

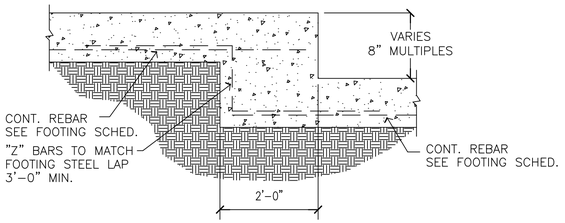
48 of 83

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

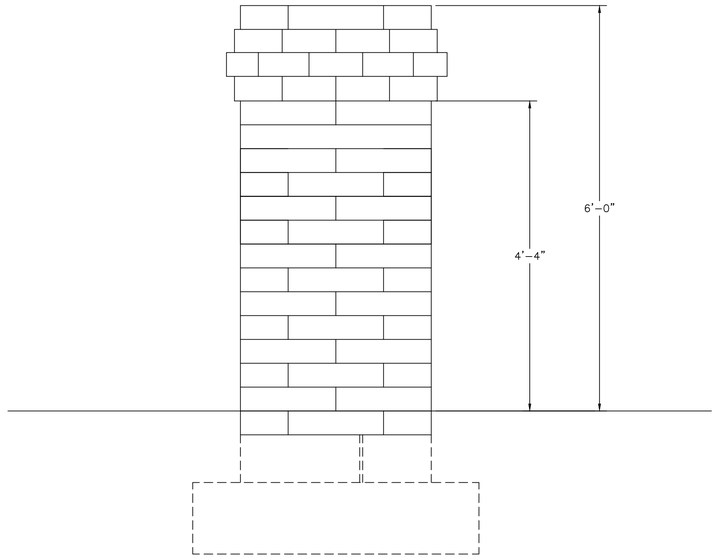
Darcy Unroe PE 60929



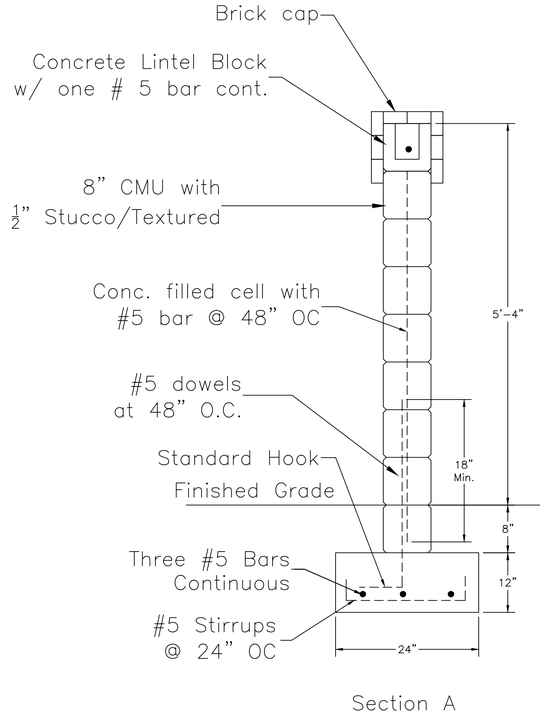
Plan View



TYPICAL STEP FOOTING DETAIL

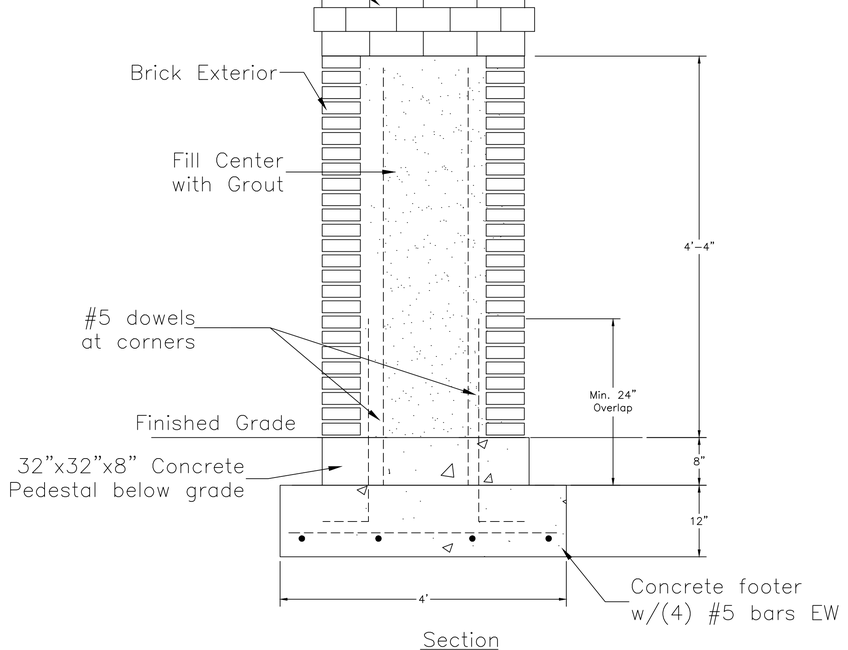


Side View

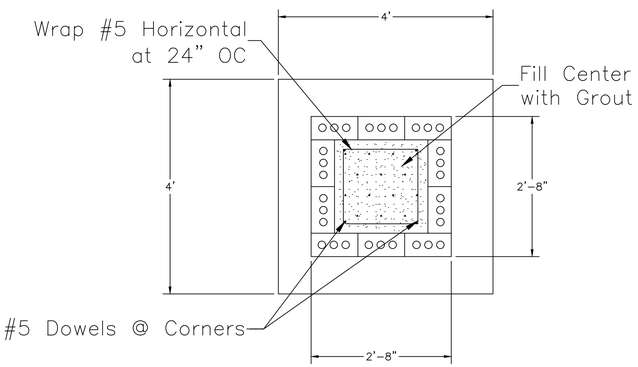


Section A

Block Wall Detail



Section



Top View

Brick Column Detail

Construction Notes
1. All work shall be in strict accordance with the 2020 Florida Building Codes.
2. A concrete work shall be in accordance with ACI 318-08.
3. All concrete 28 day strength shall be 3,000 psi
4. Footing design is based on the minimum soil bearing pressure of 2,000 psi
5. If footing elevation occurs in unsuitable soils, the engineer shall be notified immediately.

Engineering Notes
Basic Wind Speed - 130 MPH
Wind importance factor - 1
Building Category - 2
Wind exposure - C
Design wind pressure - 29.4 PSF

FOUNDATIONS:

SPREAD FOOTINGS SHALL BEAR ON SOIL COMPACTED TO DENSITY OF AT LEAST 95% OF MODIFIED PROCTOR MAXIMUM DENSITY (ASTM D1557) THE SOIL SHALL BE COMPACTED TO THIS DENSITY TO A DEPTH OF AT LEAST TWO (2) FEET BELOW TO BOTTOM OF FOOTING.

FILL UNDER FLOOR SLABS SHALL SHALL BE COMPACTED TO DENSITY OF AT LEAST 95% OF MODIFIED PROCTOR MAXIMUM DENSITY (ASTM).

IT SHALL BE OWNER'S RESPONSIBILITY TO VERIFY SOIL BEARING CAPACITY AND SUB SURFACE CONDITIONS, PRIOR TO START OF CONSTRUCTION. OWNERS GEOTECHNICAL CONSULTANT MAY RECOMMEND SITE PREPARATION . CONTRACTOR SHALL COORDINATE SOIL INVESTIGATION FINDINGS AND REQUIREMENTS OTHER THAN LISTED ABOVE WITH OWNER AND HIS GEOTECHNICAL CONSULTANTS SUBSEQUENT RECOMMENDATIONS

CONCRETE:

DESIGN OF REINFORCED CONCRETE CONFORMS WITH BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE- AC1 318, LATEST EDITION.

CONCRETE SHALL HAVE AN UNCONFINED COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.

REINFORCING STEEL SHALL BE ASTM A-615 GRADE 60 DEFORMED NEW BILLET STEEL CONFORMING TO ACI 301, ACI315, AVI 318 AND CRSI MANUAL OF STANDARD PRACTICE, LATEST EDITION.

ALL CONTINUOUS VERTICAL AND HORIZONTAL REINFORCING STEEL IN FOOTINGS, BEAMS, AND COLUMN SHALL BE LAP SPLICED A MINIMUM OF 36 BAR DIAMETERS OR 18", WHATEVER IS GREATER.

CONCRETE PROTECTION FOR REINFORCING BARS SHALL BE AS FOLLOWS:

FOOTING	3" CLEAR, BOTTOM AND SIDES, 2" CLEAR , TOP
SLABS	3/4" CLEAR, U.N.O.
PIERS	1-1/2" CLEAR TO STIRRUPS
COLUMNS	1-1/2" CLEAR TO TIES

Color and Finish Notes:
1. Block Wall Finish: ½" Textured Stucco with a 4x8 brick cap per detail.
2. Block Wall Color: Wall will be painted Off-White/Ash. The Brick Cap Color – Grey Mist
3. Brick Column Finish: 4x8 brick exterior
4. Brick Column Color: Brick Cap & Field Color – Grey Mist

#	Date	Description

Revisions

#	Date	Description

Revisions

Unroe Engineering, Inc
Civil Engineering/Planning/Scientific Evaluation
PO Box 690942, Orlando, Fl 32869-0942
Business Authorization Number - EB 00006579 ph (407) 299-0650

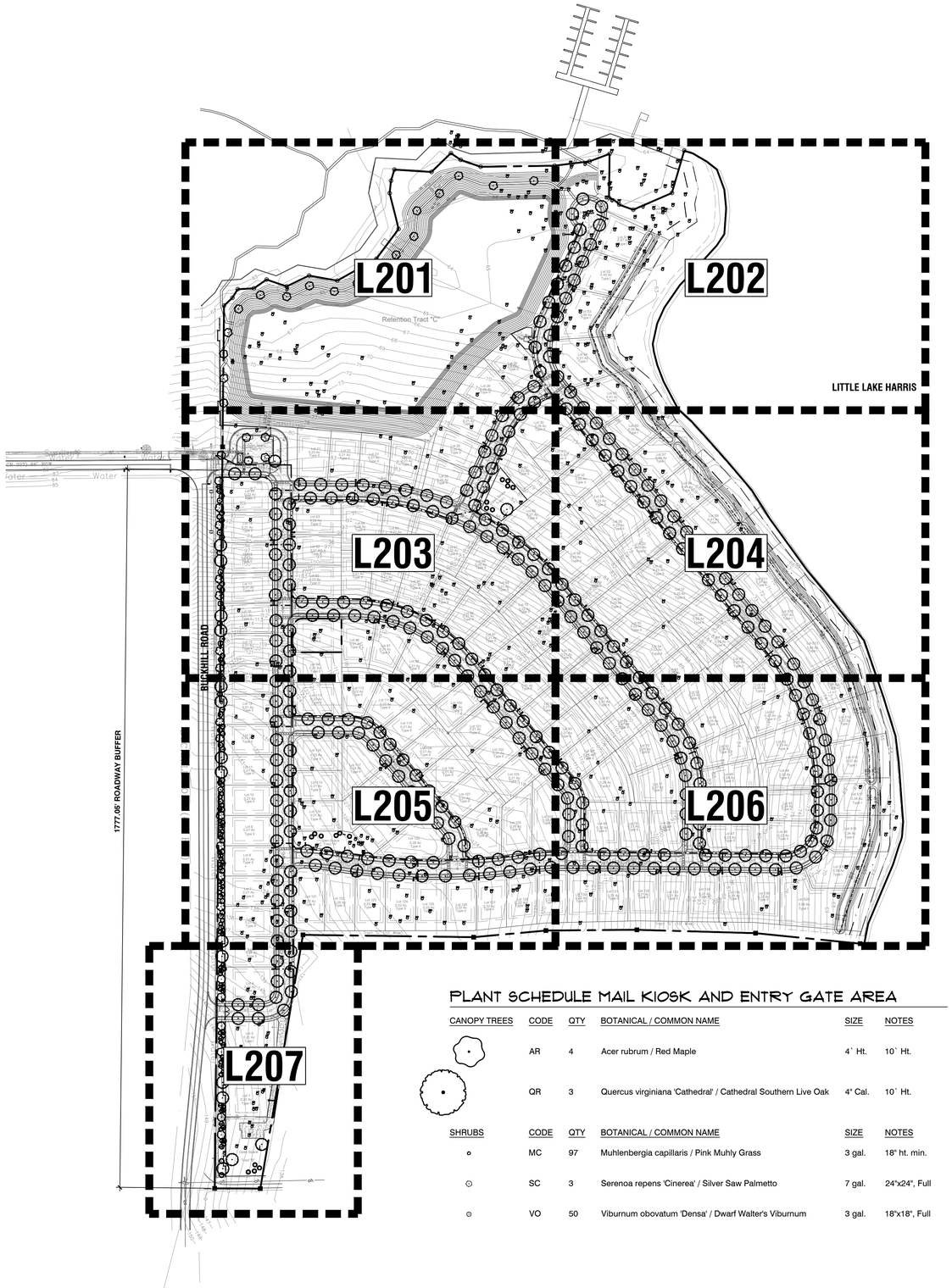
Block Wall & Brick Column Details
For Whispering Hills
Buckhill Road, Howey-in-the-Hills, Florida

DP	Drawn
DP	Checked
per plan	Scale
09-07-21	Date
WH2-W1	File

Dwg. No.
W1

DARCY UNROE LICENSE No 60929 STATE OF FLORIDA PROFESSIONAL ENGINEER

Darcy Unroe PE 60929



OVERALL NOTES: per sheet TM1 of Unroe Engineering, Inc. Whispering Hills Subdivision Plan Set dated 7/2/2020

Tree Protection Notes

A certified tree survey has been conducted by Ellis Surveying, Inc.
Of the total non-Pines located within the Parcel, the majority have ,been Identified as Diseased, Decayed, Dying, or Dangerous and will be removed. Of the remaining healthy non-Pines, many are in the way of construction. The Developer agree to maximize the number of healthy non-Pine trees .
Trees will be saved in accordance with COHH Tree Protection Barrier Details.

Tree Requirements:
1. Howie LDR's require 3 trees per lot therefore a total of no less than 468 trees will be provided on the completed project. For any Lots having less than 3 trees homebuilders will be required to cure the deficiency. For single family lots that are one half acre or less in size, a minimum of three (3) canopy trees is required. Each such single family lot will be required to have one tree with a caliper of at least four inches (4") and two (2) trees each with a caliper of at least two and one half inches (4 2½"). These trees shall have a minimum height of 10 feet at time of planting. These trees should be canopy trees as listed in this chapter. Existing trees may be counted as meeting this requirement, as long as they are of sufficient size and accepted species. One of the canopy trees on each such single-family lot shall be planted in the front yard, no less than 5 feet and no more than 8 feet from the sidewalk or lot line. These trees will help to form a canopy over the sidewalk and street sides. Corner lots are required to provide two such trees, one on the front and one on the side of the lot. Additionally, if the lot is more than 100 feet wide at the sidewalk, then the lot will be required to have two such trees. Existing trees in this specific area can be counted as meeting this requirement. These trees shall be coordinated with the placement of streetlights to prevent conflicts. A list of approved canopy trees is included in this chapter.
2. In addition, to satisfy the replacement plantings requirement homebuilders will be required to provide the requisite replacement trees.

PLANT SCHEDULE

CANOPY TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	NOTES
	AR	30	Acer rubrum / Red Maple Florida Fancy #1	4` Ht.	10` Ht.
	MG	12	Magnolia grandiflora / Southern Magnolia Florida Fancy #1, 30 gallon container or greater.	4" Cal.	10` Ht.
	PE	56	Pinus elliottii / Slash Pine Florida Fancy #1	4" Cal.	10` Ht.
	QR	328	Quercus virginiana 'Cathedral' / Cathedral Southern Live Oak Florida Fancy #1	4" Cal.	10` Ht.
ORNAMENTAL TREES	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**NOTES**
	IC	26	Ilex cassine / Dahoon Holly Florida Fancy #1	2.5" Cal.	8` Ht.
	LR	26	Lagerstroemia indica x fauriei 'Tuscarora' / Tuscarora Crape Myrtle Multi-Trunk Florida Fancy #1	1.5" Cal. Canes	8` Ht.
	PA	19	Prunus angustifolia / Chickasaw Plum Florida Fancy #1	2.5" Cal.	8` Ht.
SHRUBS	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**NOTES**
	HP	50	Hamelia patens 'Firefly' / Firefly Firebush	3 gal.	18"x18", Full
	MC	220	Muhlenbergia capillaris / Pink Muhly Grass	3 gal.	18" ht. min.
	SC	48	Serenoa repens 'Cinerea' / Silver Saw Palmetto	7 gal.	24"x24", Full
	VO	50	Viburnum obovatum 'Densa' / Dwarf Walter's Viburnum	3 gal.	18"x18", Full
	VS	471	Viburnum suspensum / Sandankwa Viburnum	3 gal.	30" Ht. Min.

SOD NOTE:
All sod areas to be non-irrigated Bahia Sod

PLANT SCHEDULE ROADWAY BUFFER

CANOPY TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	NOTES
	AR	7	Acer rubrum / Red Maple	4` Ht.	10` Ht.
	MG	12	Magnolia grandiflora / Southern Magnolia	4" Cal.	10` Ht.
	PE	39	Pinus elliottii / Slash Pine	4" Cal.	10` Ht.
	QR	14	Quercus virginiana 'Cathedral' / Cathedral Southern Live Oak	4" Cal.	10` Ht.
ORNAMENTAL TREES	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**NOTES**
	IC	26	Ilex cassine / Dahoon Holly	2.5" Cal.	8` Ht.
	LR	26	Lagerstroemia indica x fauriei 'Tuscarora' / Tuscarora Crape Myrtle Multi-Trunk	1.5" Cal. Canes	8` Ht.
	PA	19	Prunus angustifolia / Chickasaw Plum	2.5" Cal.	8` Ht.
SHRUBS	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**NOTES**
	HP	50	Hamelia patens 'Firefly' / Firefly Firebush	3 gal.	18"x18", Full
	MC	123	Muhlenbergia capillaris / Pink Muhly Grass	3 gal.	18" ht. min.
	SC	45	Serenoa repens 'Cinerea' / Silver Saw Palmetto	7 gal.	24"x24", Full
	VS	471	Viburnum suspensum / Sandankwa Viburnum	3 gal.	30" Ht. Min.

PLANT SCHEDULE MAIL KIOSK AND ENTRY GATE AREA

CANOPY TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	NOTES
	AR	4	Acer rubrum / Red Maple	4` Ht.	10` Ht.
	QR	3	Quercus virginiana 'Cathedral' / Cathedral Southern Live Oak	4" Cal.	10` Ht.
SHRUBS	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**NOTES**
	MC	97	Muhlenbergia capillaris / Pink Muhly Grass	3 gal.	18" ht. min.
	SC	3	Serenoa repens 'Cinerea' / Silver Saw Palmetto	7 gal.	24"x24", Full
	VO	50	Viburnum obovatum 'Densa' / Dwarf Walter's Viburnum	3 gal.	18"x18", Full

PREPARED BY:
floravie design
Contact: KALEY DUNLAP
916 VASSAR STREET
ORLANDO, FL 32804
TEL | 321-277-0826
kaley@floraviedesign.com

PREPARED FOR:
RED JACKET DEVELOPMENT
CONTACT: CLAY FRANKEL
625 WALTHAM AVENUE
ORLANDO, FLORIDA 32409
PHONE: 407-855-1136

0 150 300 feet
SCALE: 1:150

No.	Date	Comment
1	2022-09-16	PER CITY COMMENTS
2	2022-12-08	UPDATED BACKGROUNDS

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001
Project Phase: CITY SUBMITTAL
Project Title: WHISPERING HEIGHTS SUBDIVISION HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA
Sheet Title: OVERALL PLAN

Designed: KMD
Drawn: ZRR
Checked: KMD
Date: 01/12/2022
Sheet No.: L100

LANDSCAPE REQUIREMENTS

PER HOWEY-IN-THE-HILLS LAND DEVELOPMENT CODE

7.02.00 BUFFERS

2. A landscaped wall buffer with a minimum depth of 15 feet. The wall shall maintain a height of six feet from grade on highest side and all walls shall have a decorative exterior (no exposed block). Acceptable materials for wall faces are brick, stucco or stone or a combination of those materials. Wall columns shall have a maximum spacing of thirty feet (30') on walls up to two hundred feet (200') in length and forty feet (40') on walls more than two hundred feet (200') in length. Wall columns may extend up to two feet (2') above the height of the wall. Within each fifty-foot (50') increment along the wall, two (2) canopy trees, two (2) understory trees, and 30 linear feet of shrubs shall be planted. The trees shall not be closer than five feet (5') to a walk or wall. The shrubs shall be at least 30" in height at time of planting. For single family subdivisions, these buffers shall be on common property and dedicated to the homeowners' association for ownership and maintenance responsibilities. For multi-family sites, the buffer will be either owned by the property owner, or in the event of multiple owners, a condominium association or other common entity will own and maintain the buffer.

PROVIDED: 6' HEIGHT FINISHED WALL WITH LANDSCAPE BUFFER (SEE CHART BELOW)
REQUIREMENT SATISFIED.

7.04.01 Florida Water Star Program/Florida Friendly Landscaping

A. All required landscaping and irrigation shall be installed and maintained to be consistent with the water-efficient landscaping requirements established herein. Landowners are additionally encouraged to follow Waterwise Florida Landscapes, Florida Water Star Program, and Florida Irrigation Society Standards.
B. Landscape plants shall be selected based on appropriateness to the site considering conditions such as soil type, moisture, and sunlight using the principal of "right plant – right place," as described by the Florida Friendly Landscaping program. The plants shall be grouped and irrigated by hydrozone in accordance with their respective water needs. A list of appropriate plants and plant resources is contained in The Plant List for Lake County.
C. Synthetic Lawns and Plants: Synthetic or artificial turf, trees and plants shall be prohibited from use in lieu of required live plantings.
D. Limit irrigated lawn areas. Irrigation is not mandated by the Town. The use, type and location of irrigated lawn area in the landscape shall be selected in a planned manner and used as a fill-in material. Since most lawn varieties used in landscape require supplemental watering more frequently than other types of landscape plants, turf shall be placed so that it can be irrigated separately. The installation of turf grass shall be subject to the following:

1. Irrigated turf grasses may be installed on a maximum of sixty (60) percent of the pervious (landscape) area of any lot or parcel as follows:

TURF GRASS TABLE

Site Size	Irrigated Turf Area
< 5 Acres	60% of the pervious landscaped areas
5 to 10 Acres	60% of the pervious landscaped area, not to exceed 5 acres, whichever is less.
>10 acres	60% of the pervious landscaped area, not to exceed 10 acres, whichever is less

2. Exemptions:
(a) Unirrigated turf having an excellent drought tolerance rating, such as Bahia grass, may be used on the entire site and is not subject to this limitation.
(b) Agricultural uses, commercial golf courses greens and fairways, cemeteries, and public or private active recreation fields such as ball fields are exempt from this limitation.
(c) Existing Development: Property owners shall be encouraged to replace lawns and plants with Florida-Friendly Landscaping and drought tolerant turf for development existing as of June 14, 2021.
(d) The percentage of micro irrigation and/or non-irrigated areas shall be no less than 40 percent of the total irrigable area.

PROVIDED: BAHIA SOD AND FLORIDA FRIENDLY LANDSCAPING
REQUIREMENT SATISFIED.

7.05.01 Parking Lots

A. Terminal islands. Each row of parking spaces shall be terminated by landscaped islands to separate parking from adjacent drive aisles. Terminal islands shall measure a minimum of ten feet (10') in width and 20 feet (20') in length. Each terminal island shall include a canopy tree which is at least 4 inches DBH at time of planting, and ground cover. Shrubs may also be included.
B. Interior islands. Interior islands shall be used to shade parking lots. Interior islands are required every ten (10) parking spaces and shall be, at a minimum, the same size of a parking space (10 feet by 20 feet). Each interior island shall include a canopy tree which is at least 4 inches DBH at time of planting, and ground cover. Shrubs may also be included.
C. Divider medians. Landscaped divider medians shall form a continuous landscaped strip between abutting rows of parking. The minimum width of a divider median shall be 10 feet. Canopy trees at least 4 inches DBH at time of planting shall be spaced no fewer than one tree every 40 feet. Ground cover, shrubs, and understory trees shall also be included in divider medians.
D. All parking lot landscaping shall be designed with an irrigation system.

PARKING AREA LOCATED AT MAIL KIOSK AND ENTRY GATES
PROVIDED: (1) CANOPY TREE PER TERMINAL ISLAND AND GROUNDCOVER
REQUIREMENT SATISFIED.

SURVEY NOTES:

1. SEE CIVIL DRAWINGS FOR EXISTING CONDITIONS SURVEY.
2. SEE CIVIL DRAWINGS FOR EROSION AND SEDIMENTATION CONTROL PLAN.
3. THE CONTRACTOR SHALL MAKE A FULL REVIEW OF ALL EXISTING CONDITIONS OF THE SITE AND SHALL REPORT DISCREPANCIES TO THE LANDSCAPE ARCHITECT BEFORE STARTING WORK. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ACTUAL CONDITIONS AS THEY EXIST ON SITE.
4. EXISTING TREE CANOPIES WERE NOT SURVEYED. ALL TREE CANOPIES INDICATED ARE BASED ON SATELLITE IMAGERY AND AVERAGE CANOPY SIZE PER SURVEYED D.B.H. AND SPECIES.
5. EXISTING AND PROPOSED UTILITY LOCATIONS SHOWN ARE APPROXIMATE UNLESS SPECIFICALLY NOTED OTHERWISE IN THE DRAWINGS. SEE CIVIL PLANS FOR LOCATION OF BOTH PROPOSED AND EXISTING UTILITIES.
6. VERIFY LOCATIONS AND DEPTHS OF ALL UTILITIES IN THE FIELD AND NOTIFY LANDSCAPE ARCHITECT OF ANY CONFLICTS BETWEEN LAYOUT/GRADING AND SITE UTILITIES PRIOR TO THE START OF CONSTRUCTION.

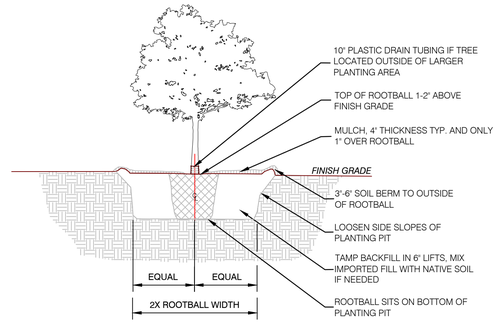
GENERAL NOTES:

1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO REVIEW THE SITE CONDITIONS AND INFORM THE LANDSCAPE ARCHITECT AND OWNER OF ANY DISCREPANCIES IN SITE CONDITIONS OR EXISTING GRADES THAT ARE NOT DESCRIBED ON THE PLANS BEFORE COMMENCING WORK.
2. LANDSCAPE PLANTING CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT TO REVIEW PLANS BEFORE COMMENCING WORK IN ORDER TO ASSURE CLOSE COORDINATION.
3. PRIOR TO PROJECT COMPLETION THE SITE IS TO BE THOROUGHLY CLEANED OF ALL CONSTRUCTION DEBRIS, SIGNS, ETC. AND REVIEWED BY THE LANDSCAPE ARCHITECT AND OWNER.
4. NO CONSTRUCTION ACTIVITY INCLUDING GRADE CHANGES, SURFACE TREATMENTS OR EXCAVATIONS OF ANY KIND IS PERMITTED WITHIN THE AREA IDENTIFIED AS A TREE PROTECTION ZONE (TPZ). IN ADDITION, NO ROOT CUTTING, NO STORAGE OF MATERIALS OR FILL, NO MOVEMENT OR STORAGE OF VEHICLES OR EQUIPMENT IS PERMITTED WITHIN THESE AREAS. THE AREAS IDENTIFIED AS A TPZ MUST REMAIN UNDISTURBED AT ALL TIMES.
5. ARBORICULTURAL WORK: ANY ROOTS OR BRANCHES WHICH EXTEND BEYOND THE TREE PROTECTION ZONE WHICH REQUIRE PRUNING, MUST BE PRUNED BY A QUALIFIED ARBORIST OR OTHER TREE PROFESSIONAL AS APPROVED BY THE OWNER OR OWNER'S REP. ALL PRUNING OF TREE ROOTS AND BRANCHES MUST BE IN ACCORDANCE WITH APPROPRIATE ARBORICULTURAL STANDARDS.
6. CONTRACTORS MUST CLEAN UP ALL TRASH AND DEBRIS ON THE CONSTRUCTION SITE AT THE END OF EACH DAY. LIGHTWEIGHT MATERIAL, PACKAGING, AND OTHER ITEMS MUST BE COVERED OR WEIGHTED DOWN TO PREVENT WIND FROM BLOWING SUCH MATERIALS OFF OF THE CONSTRUCTION SITE. DURING THE CONSTRUCTION PERIOD, THE CONSTRUCTION SITE MUST BE KEPT NEAT AND TIDY, DIRT, MUD OR OTHER DEBRIS RESULTING FROM ACTIVITY ON SITE MUST BE PROMPTLY REMOVED FROM SURROUNDING ROADS/PARKING AREAS.
7. CONTRACTOR TO CALL 1-800-432-4770 (CALL 811) TWO WEEKS PRIOR TO VERIFY LOCATION OF UNDERGROUND LINES, PIPES AND CABLES.

PLANTING INSTALLATION NOTES:

1. PLANT MATERIAL TO BE FLORIDA FANCY OR FLORIDA #1 OR BETTER. ALL PLANT MATERIALS SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
2. ALL PLANTS SHALL BE HEALTHY, VIGOROUS, FREE OF DISEASE, INSECTS AND PESTS.
3. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT PLANT MATERIAL AT THE NURSERY OR AT THE SITE.
4. THE LANDSCAPE CONTRACTOR SHALL STAKE THE LOCATION OF ALL PROPOSED PLANT MATERIAL FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. NO PLANTS SHALL BE PLANTED BEFORE THE ACCEPTANCE OF ROUGH GRADING. THE TRUNK FLARE (AT THE BASE OF THE TREE) SHALL BE PROPERLY EXPOSED FOR ALL PLANTINGS.
5. KEEP ROOTBALLS INTACT PRIOR TO AND DURING PLANTING OPERATIONS. PLANTS WITH BROKEN OR DAMAGED ROOT BALLS SHALL BE REJECTED AND IMMEDIATELY REMOVED FROM THE SITE. KEEP ROOT BALLS DAMP AND PROTECTED FROM DAMAGE DUE TO SUN AND WIND.
6. PLANTING PIT EXCAVATION: EXCAVATE FOR TREES WITH SLIGHTLY VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY CROWNED TO PROMOTE DRAINAGE. SOIL EXCAVATED FROM PITS WILL BE USED TO BACKFILL THE PLANTING PITS.
7. ALL PLANTED AREAS WITHIN OR OUTSIDE THE LIMIT OF WORK WHICH ARE DISTURBED DURING CONSTRUCTION (INCLUDING PLANTING OPERATIONS) SHALL BE RETURNED TO ORIGINAL GRADE, LOAMED AND SEEDED OR MULCHED (AS APPROPRIATE) BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
8. TREE PLANTING: SEE DETAILS HEREIN FOR ADDITIONAL INFORMATION RELATED TO PLANTING PIT DIMENSIONS, PLANTING OPERATIONS, BACKFILLING, AND STAKING OF TREES.
9. CONTAINER STOCK PLANTING: PLANT CONTAINER GROWN STOCK THE SAME AS SPECIFIED FOR BALLED AND BURLAPPED STOCK, BUT REMOVE CONTAINERS COMPLETELY.
10. OBSTRUCTIONS: IF OBSTRUCTIONS OR OTHER CONDITIONS DETRIMENTAL TO HEALTHY PLANT GROWTH ARE ENCOUNTERED, NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY AND REQUEST ADDITIONAL INSTRUCTIONS.
11. WATERING AND DRAINAGE: FILL EXCAVATIONS WITH WATER AND ALLOW WATER TO PERCOLATE OUT BEFORE PLANTING. IF PLANTING PITS DO NOT PERCOLATE OR DRAIN PROPERLY, NOTIFY LANDSCAPE ARCHITECT AND REQUEST ADDITIONAL INSTRUCTIONS PRIOR TO PLANTING. DO NOT PLANT INTO POORLY DRAINING PITS; POORLY DRAINING PLANTING PITS MAY HOLD WATER AND DROWN PLANTS.
12. WATERING: FLOOD ALL PLANTS WITH WATER TWICE WITHIN THE FIRST 24 HOURS AFTER PLANTING.
13. 13. ALL PLANT MATERIAL SHALL BE MULCHED AFTER PLANTING. BACKFILL TO ALLOW ROOM FOR 3" THICKNESS OF MULCH AFTER SETTLING, AND PLACE MULCH IN DISH AFTER FIRST WATERING AND WITHIN ONE WEEK OF PLANTING.
14. PRUNING AND SHAPING: PRUNE, THIN OUT AND SHAPE PLANTS IN COMPLIANCE WITH AMERICAN ASSOCIATION OF NURSERYMEN, HORTICULTURAL STANDARDS TO PRESERVE THE NATURAL CHARACTER AND ONLY AS APPROVED BY THE LANDSCAPE ARCHITECT. RETAIN REQUIRED HEIGHT AND SPREAD. DO NOT ALTER SHAPE AND DO NOT CUT LEADERS. REMOVE ALL DEAD WOOD, SUCKERS, BROKEN OR BRUISED BRANCHES, AND CROSSING BRANCHES.

LOCATION AND BUFFER TYPE	REQUIREMENT	PROVIDED
NORTH Timber S I 70 Land Use Code: 5400	not required	***not required***
WEST Government Submerged Land Land Use Code 8095 Little Lake Harris Wetland Area	not required	***not required***
SOUTH Single Family Lakefront Land Use Code: 0103	not required	***not required***
EAST Public R.O.W TYPE A BUFFER 1,777 linear feet	20' WIDTH per 50 linear feet 1,777 LF/50 LF = 35.54 (2) CANOPY TREES = 35.54*2 = 71 CANOPY TREES (2) ORNAMENTAL TREES = 35.54*2 = 71 ORNAMENTAL TREES (1) SINGLE ROW OF SHRUBS	***SOLID WALL*** ***(71) CANOPY TREES*** ***(71) ORNAMENTAL TREES*** ***(1) HEDGE ROW***



NOTES:

1. ENSURE PLANTING PIT DRAINS WELL PRIOR TO INSTALLATION.
2. REMOVE TREE FROM CONTAINER OR REMOVE UPPER ⅓ OF BURLAP AND WIRE MESH FOR B&B TREES.
3. SLICE ROOTBALL VERTICALLY ON OUTSIDE EDGES OF AND AROUND ROOTBALL.
4. TREE TO BE PLUMB. STAKE TREE, SUBMIT TREE STAKING DETAILS AND LAYOUT FOR APPROVAL.

1 TREE PLANTING DETAIL

SCALE: N.T.S. P-ED-01

2 SHRUB PLANTING DETAIL

SCALE: N.T.S. P-ED-04

811 Know what's **below.** **Call** before you dig.

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RED JACKET DEVELOPMENT
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ORLANDO, FLORIDA 32409
PHONE: 407-855-1136

No.	Date	Comment
1	2022-09-16	PER CITY COMMENTS
2	2022-12-08	UPDATED BACKGROUNDS

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

Project Title: WHISPERING HEIGHTS SUBDIVISION HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title: LANDSCAPE CALCULATIONS, NOTES, AND DETAILS

Designed:	KMD
Drawn:	ZRR
Checked:	KMD
Date:	01/12/2022

Sheet No.: L200

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0 60 30 feet

SCALE: 1:30

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Project Title:

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HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title: LANDSCAPE PLAN

Designed:	KMD
Drawn:	ZRR
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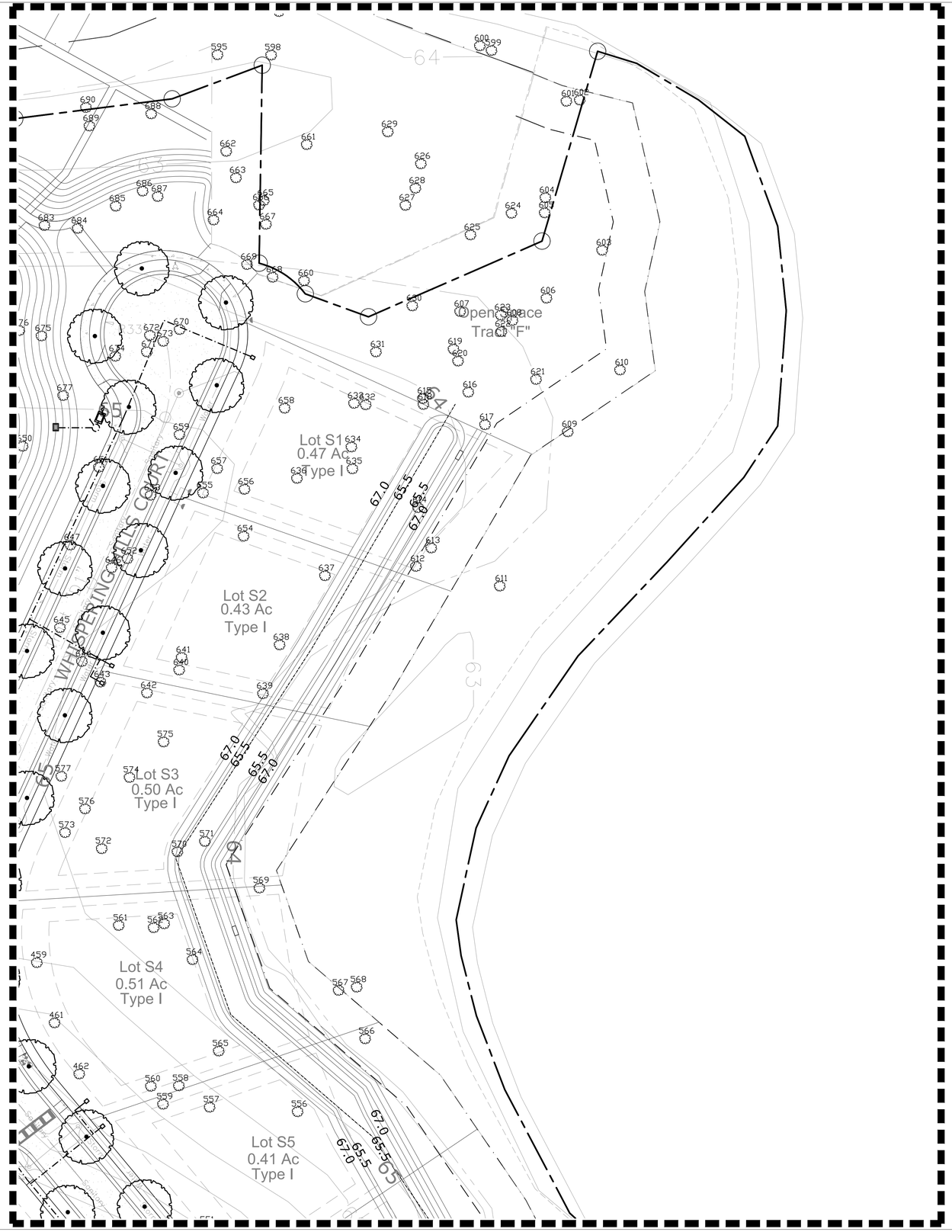
Date:	01/12/2022

Sheet No.: L201



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MAIL KIOSK AND ENTRY GATE AREA

4" CHERRY

12"OAK

Open Space
Tract "E"

RED FIR STREET

WHISPERING LAKE AVENUE

BLACK CHERRY WAY

Open Space
Tract I

ROADWAY BUFFER

CANOPY TREE IN OPEN SPACE; BAHIA SOD GROUNDCOVER IN REMAINDER OF RECREATION TRACT, TYP.

BENCH, TYP.

TRASH RECEPTACLE, TYP.

Lot 17 0.21 Ac Type II

Lot 18 0.21 Ac Type II

Lot 19 0.21 Ac Type II

Lot 20 0.23 Ac Type II

Lot 21 0.23 Ac Type II

Lot 22 0.21 Ac Type II

Lot 23 0.21 Ac Type II

Lot 24 0.21 Ac Type II

Lot 25 0.20 Ac Type II

Lot 26 0.20 Ac Type II

Lot 27 0.21 Ac Type II

Lot 30 0.29 Ac Type II

Lot 61 0.23 Ac Type II

Lot 60 0.27 Ac Type II

Lot 71 0.21 Ac Type II

Lot 70 0.22 Ac Type II

Lot 69 0.21 Ac Type II

Lot 68 0.20 Ac Type II

Lot 67 0.20 Ac Type II

Lot 66 0.20 Ac Type II

Lot 65 0.21 Ac Type II

Lot 64 0.28 Ac Type II

Lot 63 0.22 Ac Type II

Lot 62 0.21 Ac Type II

Lot 92 0.22 Ac Type II

Lot 93 0.21 Ac Type II

Lot 91 0.21 Ac Type II

Lot 90 0.21 Ac Type II

Lot 89 0.21 Ac Type II

Lot 88 0.21 Ac Type II

Lot 87 0.21 Ac Type II

Lot 86 0.21 Ac Type II

Lot 95 0.23 Ac Type II

Lot 96 0.21 Ac Type II

Lot 97 0.21 Ac Type II

Lot 98 0.21 Ac Type II

Lot 94 0.21 Ac Type II

Lot 16 0.21 Ac Type II

Lot 15 0.21 Ac Type II

Lot 14 0.21 Ac

0 60 30 feet

SCALE: 1:30

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LA6667256 — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

Project Title:

WHISPERING HEIGHTS SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title:

LANDSCAPE PLAN

Designed:	KMD
Drawn:	ZRR
Checked:	KMD
Date:	01/12/2022

Sheet No.: L203

8" IRRIGATION PIPE

Lot S6
0.35 Ac
Type I

Lot S7
0.40 Ac
Type I

Lot S8
0.41 Ac
Type I

Lot S9
0.41 Ac
Type I

Lot S10
0.39 Ac
Type I

Lot S11
0.37 Ac
Type I

Lot S12
0.37 Ac
Type I

Lot S13
0.42 Ac
Type I

Lot 31
0.23 Ac
Type II

Lot 32
0.23 Ac
Type II

Lot 33
0.23 Ac
Type II

Lot 34
0.23 Ac
Type II

Lot 35
0.23 Ac
Type II

Lot 36
0.23 Ac
Type II

Lot 37
0.23 Ac
Type II

Lot 38
0.23 Ac
Type II

Lot 39
0.23 Ac
Type II

Lot 40
0.23 Ac
Type II

Lot 53
0.23 Ac
Type II

Lot 54
0.23 Ac
Type II

Lot 55
0.23 Ac
Type II

Lot 56
0.23 Ac
Type II

Lot 57
0.23 Ac
Type II

Lot 58
0.23 Ac
Type II

Lot 59
0.24 Ac
Type II

Lot 72
0.21 Ac
Type II

Lot 73

WHISPERING HILLS DRIVE

WHISPERING LAKE AVENUE

WHISPERING HILLS DRIVE

Water

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0 60 30 feet

SCALE: 1:30

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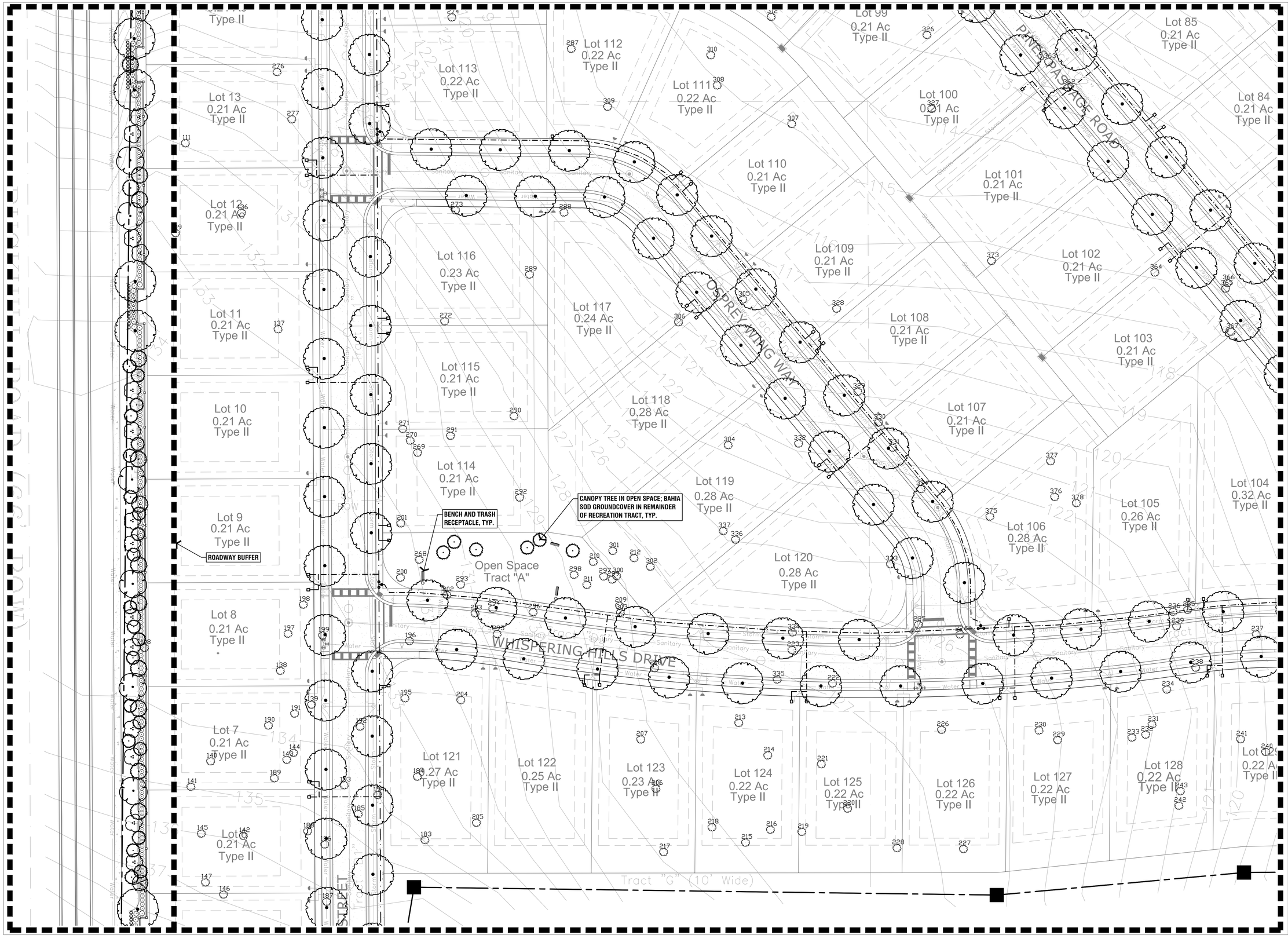
Sheet No.: L204



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0 60 30 feet

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Project No.: 22-001

Project Phase: CITY SUBMITTAL

Project Title:

WHISPERING HEIGHTS SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title: LANDSCAPE PLAN

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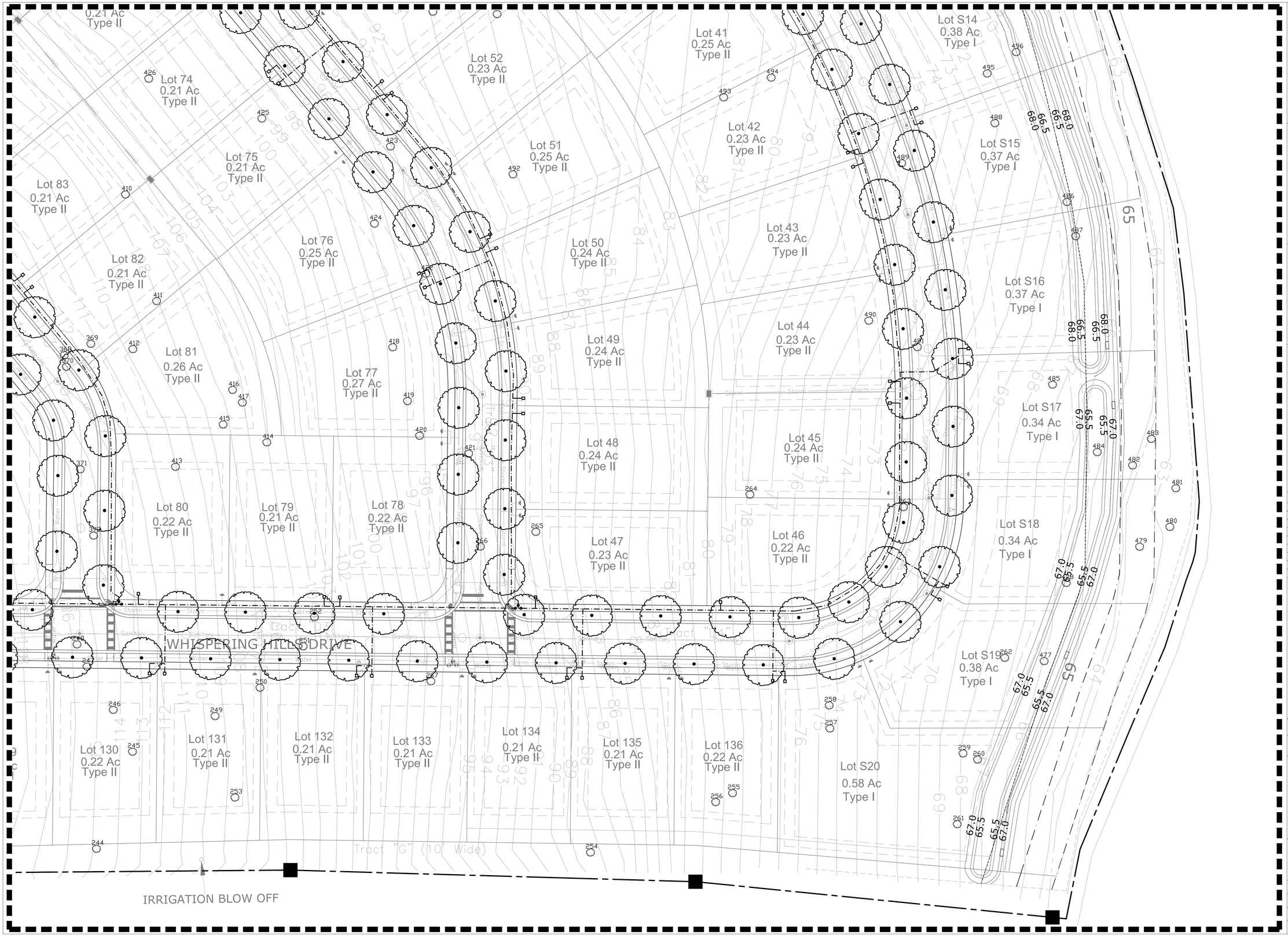
Sheet No.: L205



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0 60 30 feet

SCALE: 1:30

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Landscape Architect — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

Project Title:

WHISPERING HEIGHTS SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title:

LANDSCAPE PLAN

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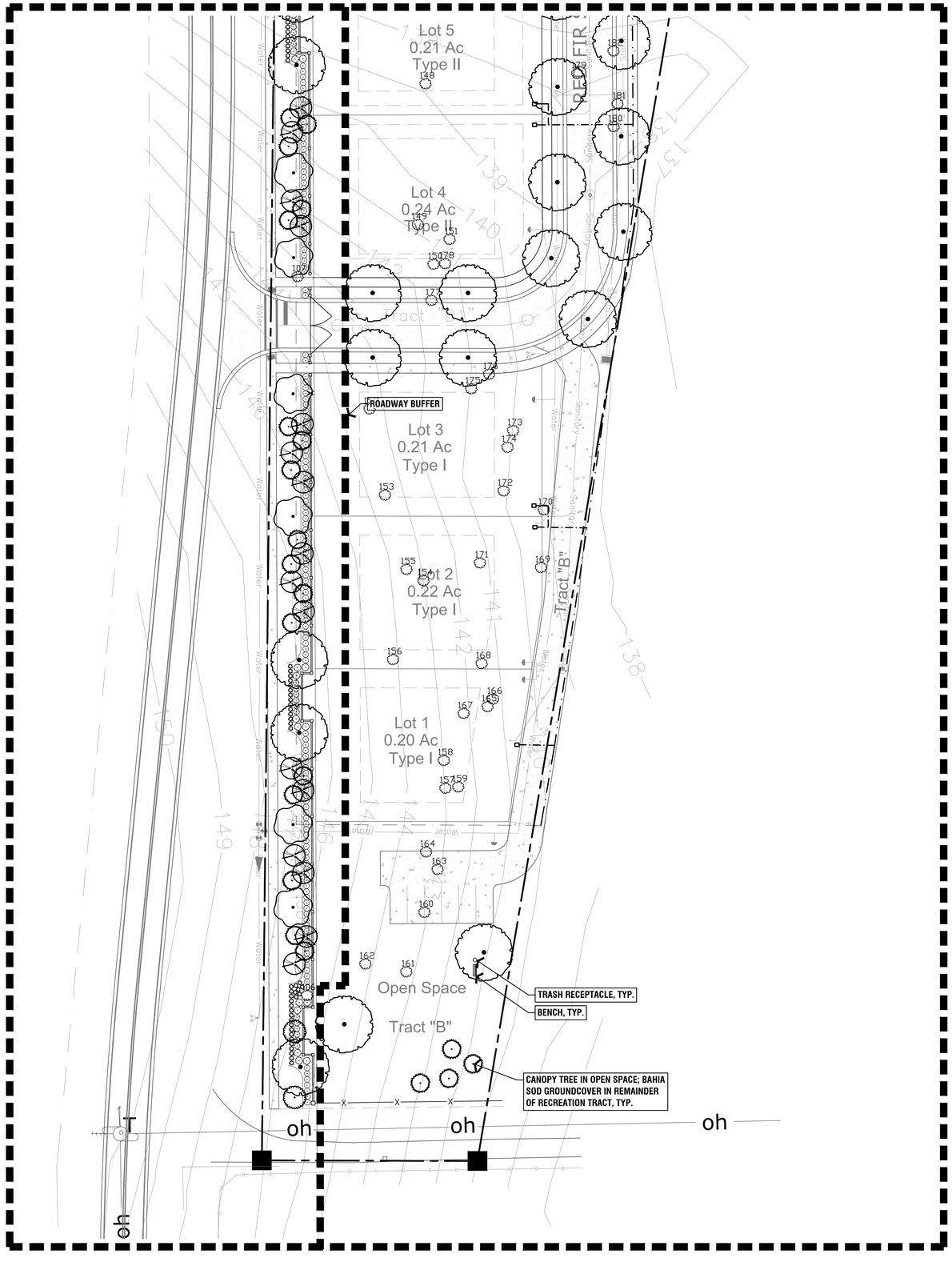
Sheet No.: L206



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0 60 30 feet

SCALE: 1:30

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Landscape Architect — Certificate No.

Project No.
22-001

Project Phase:
CITY SUBMITTAL

Project Title:
WHISPERING HEIGHTS SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title:
LANDSCAPE PLAN

Designed:	KMD
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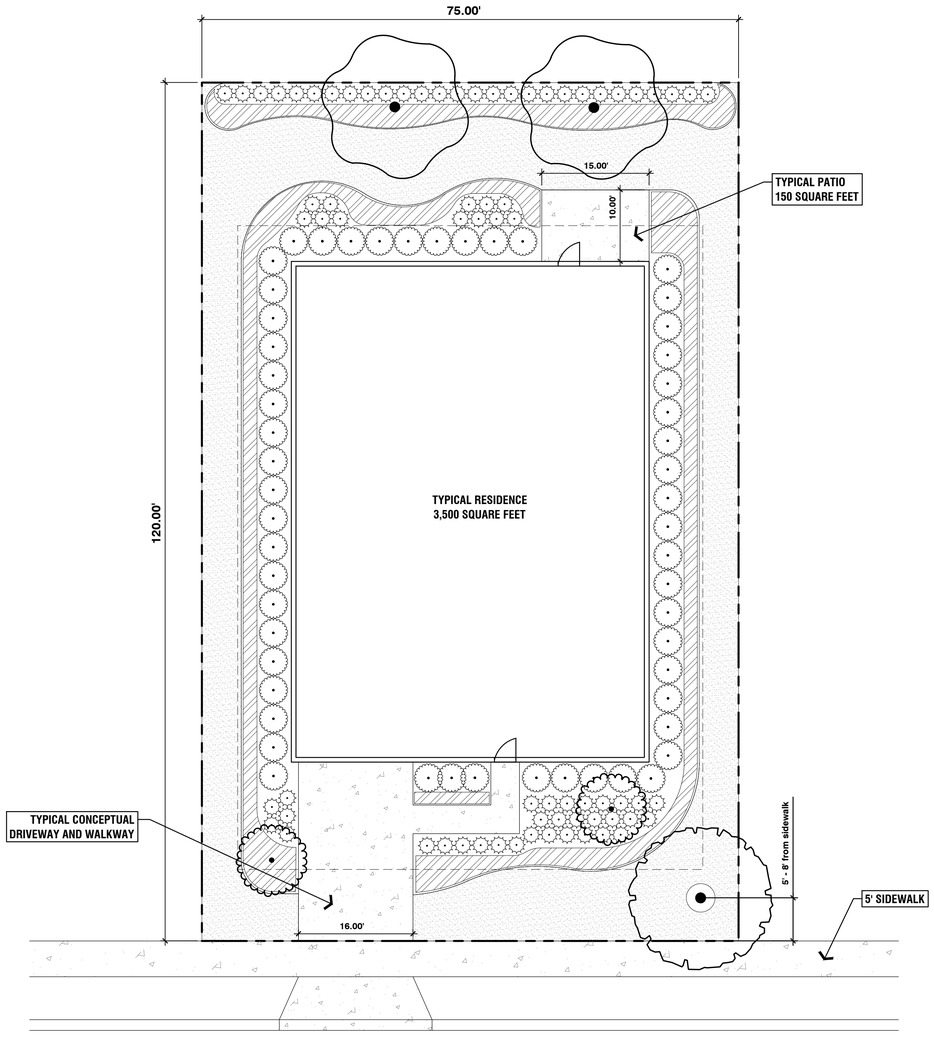
Checked:	KMD
Date:	01/12/2022

Sheet No.:
L207



7.08.01 Required Landscaping

A. For single family lots that are one half acre or less in size, a minimum of three (3) canopy trees is required. Each such single family lot will be required to have one tree with a caliper of at least four inches (4") and two (2) trees each with a caliper of at least two and one half inches (4 2½"). These trees shall have a minimum height of 10 feet at time of planting. These trees should be canopy trees as listed in this chapter. Existing trees may be counted as meeting this requirement, as long as they are of sufficient size and accepted species. One of the canopy trees on each such single-family lot shall be planted in the front yard, no less than 5 feet and no more than 8 feet from the sidewalk or lot line. These trees will help to form a canopy over the sidewalk and street sides. Corner lots are required to provide two such trees, one on the front and one on the side of the lot. Additionally, if the lot is more than 100 feet wide at the sidewalk, then the lot will be required to have two such trees. Existing trees in this specific area can be counted as meeting this requirement. These trees shall be coordinated with the placement of streetlights to prevent conflicts. A list of approved canopy trees is included in this chapter.

B. A minimum of two (2) understory trees are required for single family lots of onehalf acre or less in size. For lots greater than one half acre in size, an additional understory tree is required for each additional one quarter of an acre above the one-half acre, or portion thereof.

C. A maximum of fifty percent (50%) of the landscaped area may be covered with other ground covers should be used to the extent possible

D. Shrubs and other plants shall be used as foundation plants along the outline of the house, except where doors or patios are located. Alternate plantings may be permitted if the architectural style of the house warrants it.

E. A minimum of two areas of the yard that have at least 400 square feet of non-turf plantings in a row or cluster, not including the foundation plantings, is required. For single family lots greater than one half acre in size, an additional 400 square feet of non-turf plantings in a row or cluster, not including the foundation plantings, is required for each additional eighth of an acre, or portion thereof.

F. At least 50% of the landscaped area for each single-family lot shall be drought tolerant or Florida Friendly plants. Florida Friendly plants require a minimum of irrigation and shall be grouped together on the lot in order to reduce the irrigation requirement for those zones.

TYPICAL CALCULATIONS

TOTAL LOT SIZE:	9,000 SQUARE FEET
PERVIOUS AREA	4,801 SQUARE FEET
50% MAX SOD AREA:	2,400.5 SQUARE FEET
PROVIDED SOD AREA:	2,339 SQUARE FEET
48.7% SOD AREA	
REQUIREMENT SATISFIED.	

CONCEPT PLANT SCHEDULE TYPICAL LOT LAYOUT

LARGE CANOPY	1	
Magnolia grandiflora / Southern Magnolia		4" Cal., 10` Ht.
Quercus virginiana / Southern Live Oak		4" Cal., 10` Ht.
SMALL CANOPY	2	
Acer rubrum / Red Maple		2.5" Cal., 10` Ht.
Platanus occidentalis / American Sycamore		2.5" Cal., 10` Ht.
Quercus shumardii / Shumard Oak		2.5" Cal., 10` Ht.
UNDERSTORY	2	
Ilex opaca / American Holly		2.5" Cal., 8` Ht.
Lagerstroemia indica / Multi-trunk Crape Myrtle		1.5" Cal. Canes, 8` Ht.
Ligustrum japonicum / Multi-trunkJapanese Privet		1.5" Cal. Canes, 8` Ht.
Sabal palmetto / Cabbage Palmetto		FG, 8` Clear Trunk, Slick
FOUNDATION SHRUB	54	
Hamelia patens 'Firefly' / Firefly Firebush		7 gal., 24"x24", Full
Illicium floridanum / Florida Anise		7 gal., 24"x24", Full
Viburnum suspensum / Sandankwa Viburnum		7 gal., 24"x24", Full
SMALL SHRUBS AND GRASSES	72	
Hypericum perforatum / St. John's Wort		3 gal., 15"x15"
Muhlenbergia capillaris / Pink Muhly Grass		3 gal., 15"x15"
Rhaphiolepis indica / Indian Hawthorn		3 gal., 15"x15"
Sabal minor / Dwarf Palmetto		3 gal., 15"x15"
Zamia pumila / Coontie Cycad		3 gal., 15"x15"
GROUNDCOVERS	853 sf	
Arachis glabrata / Perennial Peanut		1 gal.
Lantana camara / Lantana		1 gal.
Liriope muscari / Lilyturf		1 gal.
Trachelospermum asiaticum / Asiatic Jasmine		1 gal.
SOD	2,339 sf	
Stenotaphrum secundatum / St. Augustine Grass		---

PREPARED BY:

floravie design

Contact: KALEY DUNLAP

916 VASSAR STREET
ORLANDO, FL 32804
TEL | 321-277-0826
kaley@floraviedesign.com

PREPARED FOR:

RED JACKET DEVELOPMENT

CONTACT: CLAY FRANKEL
625 WALTHAM AVENUE
ORLANDO, FLORIDA 32409
PHONE: 407-855-1136

0 20 10 feet

SCALE: 1:10

No.	Date	Comment
1	2022-09-16	PER CITY COMMENTS
2	2022-12-08	UPDATED BACKGROUNDS

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

Project Title:

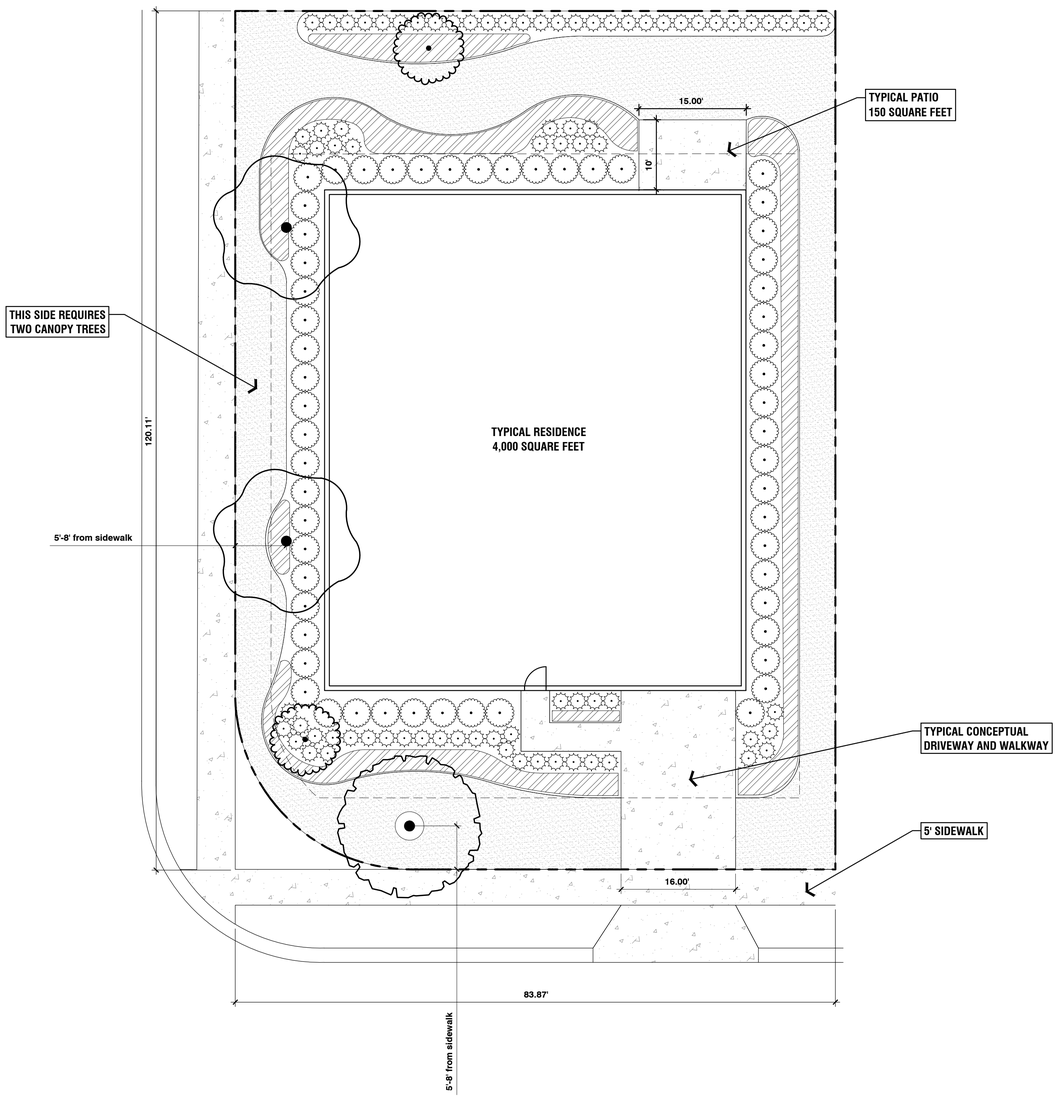
WHISPERING HEIGHTS SUBDIVISION
HOWEY-IN-THE-HILLS,
LAKE COUNTY, FLORIDA

Sheet Title:

TYPICAL LOT LANDSCAPE PLAN

Designed:	KMD
Drawn:	ZRR
Checked:	KMD
Date:	01/12/2022

Sheet No.: L300



7.08.01 Required Landscaping

A. For single family lots that are one half acre or less in size, a minimum of three (3) canopy trees is required. Each such single family lot will be required to have one tree with a caliper of at least four inches (4") and two (2) trees each with a caliper of at least two and one half inches (4 2½"). These trees shall have a minimum height of 10 feet at time of planting. These trees should be canopy trees as listed in this chapter. Existing trees may be counted as meeting this requirement, as long as they are of sufficient size and accepted species. One of the canopy trees on each such single-family lot shall be planted in the front yard, no less than 5 feet and no more than 8 feet from the sidewalk or lot line. These trees will help to form a canopy over the sidewalk and street sides. Corner lots are required to provide two such trees, one on the front and one on the side of the lot. Additionally, if the lot is more than 100 feet wide at the sidewalk, then the lot will be required to have two such trees. Existing trees in this specific area can be counted as meeting this requirement. These trees shall be coordinated with the placement of streetlights to prevent conflicts. A list of approved canopy trees is included in this chapter.

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C. A maximum of fifty percent (50%) of the landscaped area may be covered with other ground covers should be used to the extent possible

D. Shrubs and other plants shall be used as foundation plants along the outline of the house, except where doors or patios are located. Alternate plantings may be permitted if the architectural style of the house warrants it.

E. A minimum of two areas of the yard that have at least 400 square feet of non-turf plantings in a row or cluster, not including the foundation plantings, is required. For single family lots greater than one half acre in size, an additional 400 square feet of non-turf plantings in a row or cluster, not including the foundation plantings, is required for each additional eighth of an acre, or portion thereof.

F. At least 50% of the landscaped area for each single-family lot shall be drought tolerant or Florida Friendly plants. Florida Friendly plants require a minimum of irrigation and shall be grouped together on the lot in order to reduce the irrigation requirement for those zones.

TYPICAL CALCULATIONS

TOTAL LOT SIZE:	9,900 SQUARE FEET
PERVIOUS AREA	5,276 SQUARE FEET
50% MAX SOD AREA:	2,638 SQUARE FEET
PROVIDED SOD AREA:	2,529 SQUARE FEET
47.9% SOD AREA	
REQUIREMENT SATISFIED.	

CONCEPT PLANT SCHEDULE TYPICAL CORNER LOT

	LARGE CANOPY	1	
	Magnolia grandiflora / Southern Magnolia		4" Cal., 10` Ht.
	Quercus virginiana / Southern Live Oak		4" Cal., 10` Ht.
	SMALL CANOPY	2	
	Acer rubrum / Red Maple		2.5" Cal., 10` Ht.
	Platanus occidentalis / American Sycamore		2.5" Cal., 10` Ht.
	Quercus shumardii / Shumard Oak		2.5" Cal., 10` Ht.
	UNDERSTORY	2	
	Ilex opaca / American Holly		2.5" Cal., 8` Ht.
	Lagerstroemia indica / Multi-trunk Crape Myrtle		1.5" Cal. Canes, 8` Ht.
	Ligustrum japonicum / Multi-trunkJapanese Privet		1.5" Cal. Canes, 8` Ht.
	Sabal palmetto / Cabbage Palmetto		FG, 8` Clear Trunk, Slick
	FOUNDATION SHRUB	57	
	Hamelia patens 'Firefly' / Firefly Firebush		7 gal., 24"x24", Full
	Illicium floridanum / Florida Anise		7 gal., 24"x24", Full
	Viburnum suspensum / Sandankwa Viburnum		7 gal., 24"x24", Full
	SMALL SHRUBS AND GRASSES	78	
	Hypericum perforatum / St. John's Wort		3 gal., 15"x15"
	Muhlenbergia capillaris / Pink Muhly Grass		3 gal., 15"x15"
	Rhaphiolepis indica / Indian Hawthorn		3 gal., 15"x15"
	Sabal minor / Dwarf Palmetto		3 gal., 15"x15"
	Zamia pumila / Coontie Cycad		3 gal., 15"x15"
	GROUNDCOVERS	798 sf	
	Arachis glabrata / Perennial Peanut		1 gal.
	Lantana camara / Lantana		1 gal.
	Liriope muscari / Lilyturf		1 gal.
	Trachelospermum asiaticum / Asiatic Jasmine		1 gal.
	SOD	2,529 sf	
	Stenotaphrum secundatum / St. Augustine Grass		---

PREPARED BY:

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kaley@floraviedesign.com

PREPARED FOR:

RED JACKET DEVELOPMENT

CONTACT: CLAY FRANKEL
625 WALTHAM AVENUE
ORLANDO, FLORIDA 32409
PHONE: 407-855-1136

0 20 10 feet

SCALE: 1:10

No.	Date	Comment
1	2022-09-16	PER CITY COMMENTS
2	2022-12-08	UPDATED BACKGROUNDS

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

Project Title: WHISPERING HEIGHTS SUBDIVISION HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title: TYPICAL LOT LANDSCAPE PLAN

Designed:	KMD
Drawn:	ZRR
Checked:	KMD
Date:	01/12/2022

Sheet No.: L301

0 40 80 feet

SCALE: 1:40

No.	Date	Comment

PREPARED BY:

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Contact: KALEY DUNLAP

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Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

Project Title:

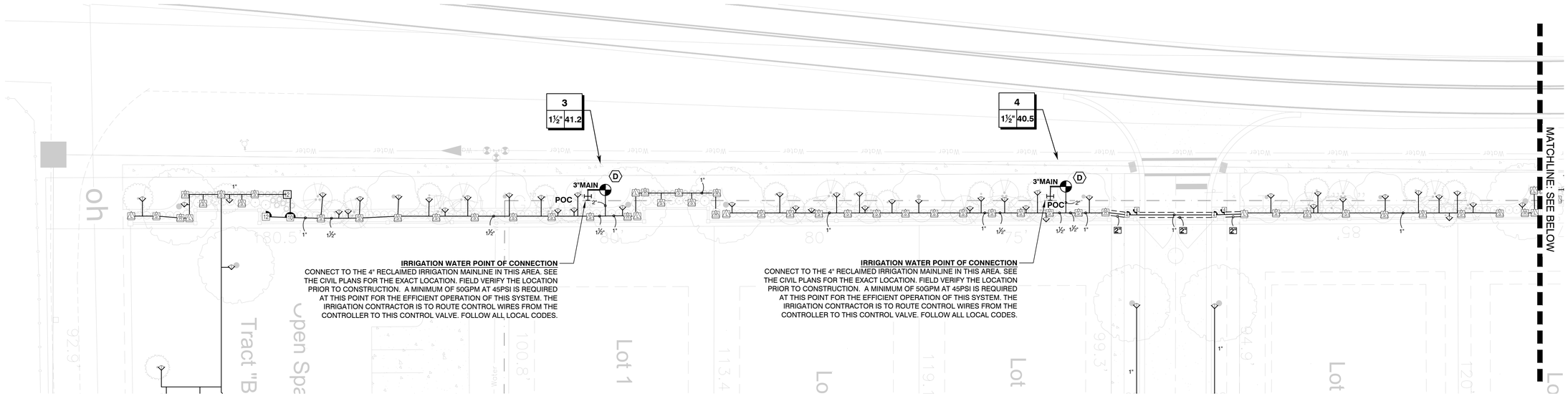
WHISPERING HEIGHTS SUBDIVISION HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

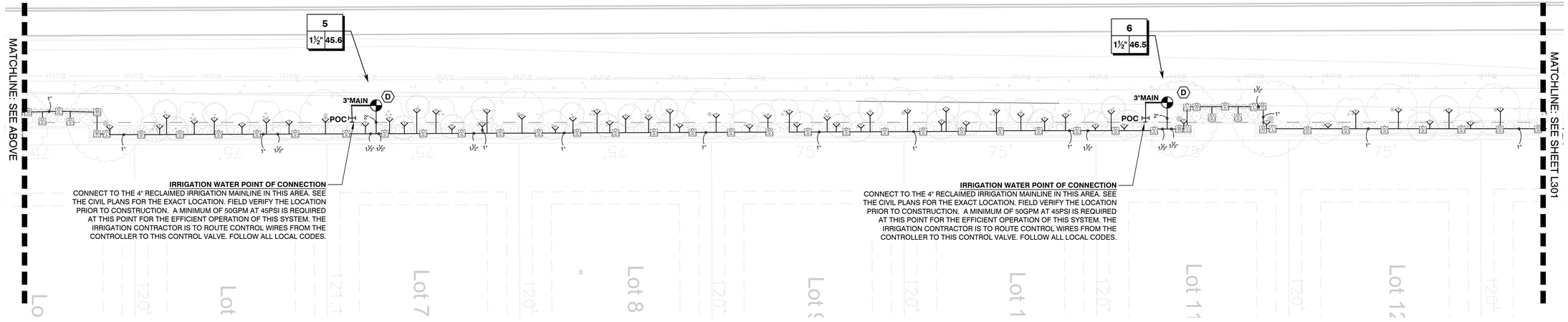
Sheet Title:

LANDSCAPE PLAN

Designed:	KMD
Drawn:	ZRR
Checked:	KMD
Date:	01/12/2022

Sheet No.: L301





NOT FOR CONSTRUCTION.
THESE PLANS ARE DIAGRAMMATIC OF THE WORK TO BE PERFORMED. ALL LANDSCAPED AREAS ARE TO RECEIVED 100% COVERAGE. DO NOT IRRIGATE BAHIA SOD. IRRIGATION EQUIPMENT MAY BE SHOWN OFFSET FOR GRAPHIC CLARITY PURPOSES ONLY. AVOID ALL UTILITIES AND TREE ROOT BALLS DURING INSTALLATION. ALL PUMPING EQUIPMENT IS TO BE COORDINATED PRIOR TO CONSTRUCTION.

811 TWO DAYS BEFORE YOU DIG
CALL: TOLL FREE 1.800.422.4133
UNDERGROUND SERVICE ALERT

PREPARED BY:
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916 VASSAR STREET
ORLANDO, FL 32804
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kaley@floraviedesign.com

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PHONE: 407-855-1136

0 20 40 feet
SCALE: 1:20

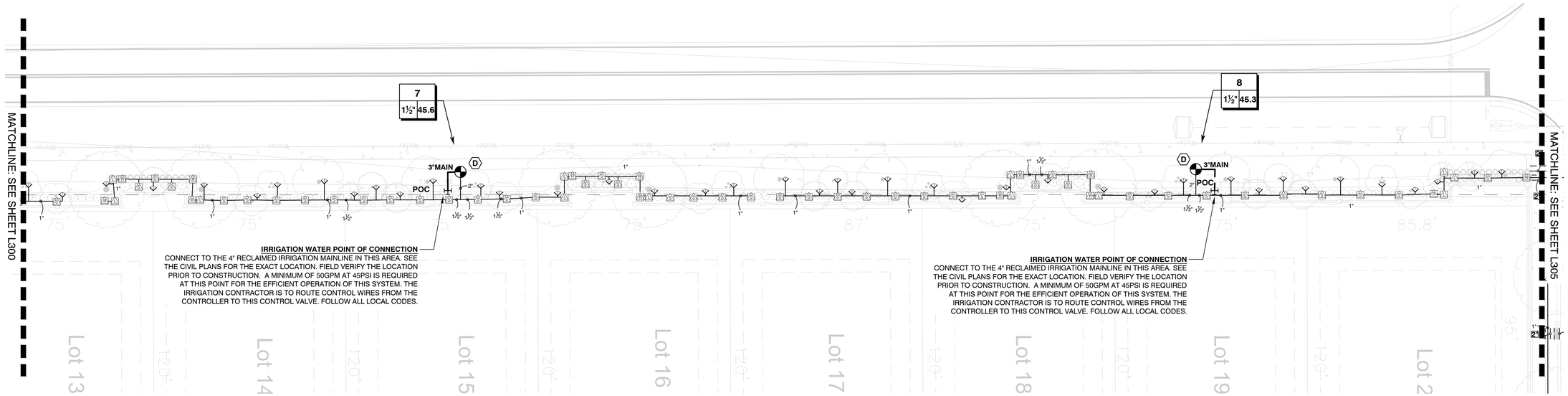
No.	Date	Comment

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001
Project Phase: CITY SUBMITTAL
Project Title: WHISPERING HILLS SUBDIVISION HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA
Sheet Title: IRRIGATION PLAN

Designed: IDS
Drawn: CAZ
Checked: KMD
Date: 01/12/22
Sheet No.: L300



IRRIGATION WATER POINT OF CONNECTION
CONNECT TO THE 4" RECLAIMED IRRIGATION MAINLINE IN THIS AREA. SEE THE CIVIL PLANS FOR THE EXACT LOCATION. FIELD VERIFY THE LOCATION PRIOR TO CONSTRUCTION. A MINIMUM OF 50GPM AT 45PSI IS REQUIRED AT THIS POINT FOR THE EFFICIENT OPERATION OF THIS SYSTEM. THE IRRIGATION CONTRACTOR IS TO ROUTE CONTROL WIRES FROM THE CONTROLLER TO THIS CONTROL VALVE. FOLLOW ALL LOCAL CODES.

IRRIGATION WATER POINT OF CONNECTION
CONNECT TO THE 4" RECLAIMED IRRIGATION MAINLINE IN THIS AREA. SEE THE CIVIL PLANS FOR THE EXACT LOCATION. FIELD VERIFY THE LOCATION PRIOR TO CONSTRUCTION. A MINIMUM OF 50GPM AT 45PSI IS REQUIRED AT THIS POINT FOR THE EFFICIENT OPERATION OF THIS SYSTEM. THE IRRIGATION CONTRACTOR IS TO ROUTE CONTROL WIRES FROM THE CONTROLLER TO THIS CONTROL VALVE. FOLLOW ALL LOCAL CODES.

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CONTACT: CLAY FRANKEL
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ORLANDO, FLORIDA 32409
PHONE: 407-855-1136

0 20 40 feet
SCALE: 1:20

No.	Date	Comment

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001

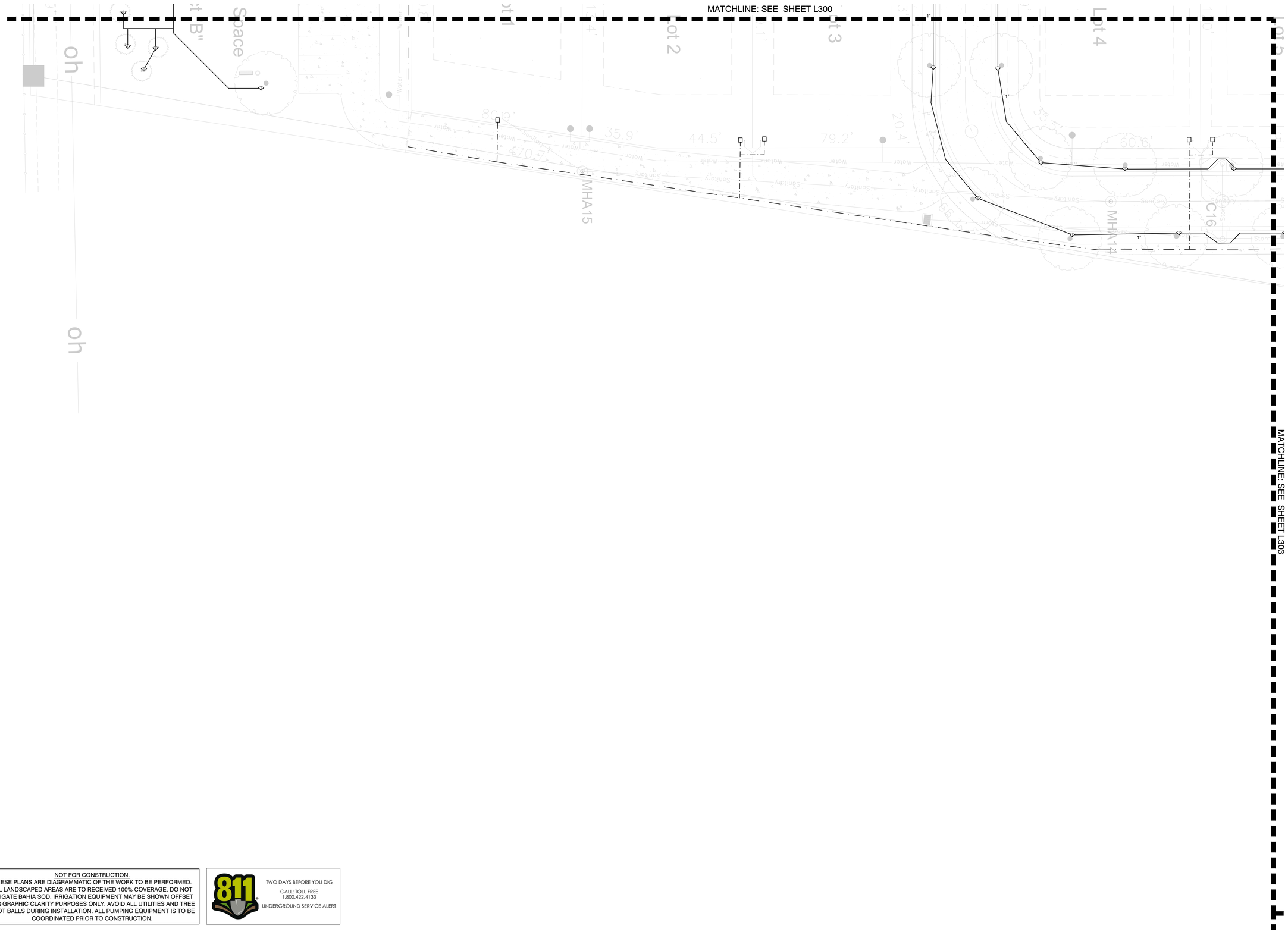
Project Phase: CITY SUBMITTAL

Project Title:
WHISPERING HILLS SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title: IRRIGATION PLAN

Designed:	IDS
Drawn:	CAZ
Checked:	KMD
Date:	01/12/22

Sheet No.: L301



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ORLANDO, FLORIDA 32409
PHONE: 407-855-1136

0 20 40 feet
SCALE: 1:20

No.	Date	Comment

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

Project Title:
WHISPERING HILLS SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title: IRRIGATION PLAN

Designed:	IDS
Drawn:	CAZ
Checked:	KMD
Date:	01/12/22

Sheet No.: L302

NOT FOR CONSTRUCTION.
THESE PLANS ARE DIAGRAMMATIC OF THE WORK TO BE PERFORMED. ALL LANDSCAPED AREAS ARE TO RECEIVED 100% COVERAGE. DO NOT IRRIGATE BAHIA SOD. IRRIGATION EQUIPMENT MAY BE SHOWN OFFSET FOR GRAPHIC CLARITY PURPOSES ONLY. AVOID ALL UTILITIES AND TREE ROOT BALLS DURING INSTALLATION. ALL PUMPING EQUIPMENT IS TO BE COORDINATED PRIOR TO CONSTRUCTION.

811 TWO DAYS BEFORE YOU DIG
CALL: TOLL FREE 1-800.422.4133
UNDERGROUND SERVICE ALERT

IRRIGATION WATER POINT OF CONNECTION
CONNECT TO THE 4" RECLAIMED IRRIGATION MAINLINE IN THIS AREA. SEE THE CIVIL PLANS FOR THE EXACT LOCATION. FIELD VERIFY THE LOCATION PRIOR TO CONSTRUCTION. A MINIMUM OF 20GPM AT 45PSI IS REQUIRED AT THIS POINT FOR THE EFFICIENT OPERATION OF THIS SYSTEM. THE IRRIGATION CONTRACTOR IS TO ROUTE CONTROL WIRES FROM THE CONTROLLER TO THIS CONTROL VALVE. FOLLOW ALL LOCAL CODES.

IRRIGATION WATER POINT OF CONNECTION
CONNECT TO THE 4" RECLAIMED IRRIGATION MAINLINE IN THIS AREA. SEE THE CIVIL PLANS FOR THE EXACT LOCATION. FIELD VERIFY THE LOCATION PRIOR TO CONSTRUCTION. A MINIMUM OF 20GPM AT 45PSI IS REQUIRED AT THIS POINT FOR THE EFFICIENT OPERATION OF THIS SYSTEM. THE IRRIGATION CONTRACTOR IS TO ROUTE CONTROL WIRES FROM THE CONTROLLER TO THIS CONTROL VALVE. FOLLOW ALL LOCAL CODES.

IRRIGATION WATER POINT OF CONNECTION
CONNECT TO THE 4" RECLAIMED IRRIGATION MAINLINE IN THIS AREA. SEE THE CIVIL PLANS FOR THE EXACT LOCATION. FIELD VERIFY THE LOCATION PRIOR TO CONSTRUCTION. A MINIMUM OF 20GPM AT 45PSI IS REQUIRED AT THIS POINT FOR THE EFFICIENT OPERATION OF THIS SYSTEM. THE IRRIGATION CONTRACTOR IS TO ROUTE CONTROL WIRES FROM THE CONTROLLER TO THIS CONTROL VALVE. FOLLOW ALL LOCAL CODES.

2 | 1" | 15
9 | 1" | 14
10 | 1" | 10

1.5"MAIN
POC

MATCHLINE: SEE SHEET L302
MATCHLINE: SEE SHEET L304
MATCHLINE: SEE SHEET L306

PREPARED BY:
floravie design
Contact: KALEY DUNLAP
916 VASSAR STREET
ORLANDO, FL 32804
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kaley@floraviedesign.com

PREPARED FOR:
RED JACKET DEVELOPMENT
CONTACT: CLAY FRANKEL
625 WALTHAM AVENUE
ORLANDO, FLORIDA 32409
PHONE: 407-855-1136

0 20 40 feet
SCALE: 1:20

No.	Date	Comment

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001
Project Phase: CITY SUBMITTAL
Project Title: WHISPERING HILLS SUBDIVISION HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA
Sheet Title: IRRIGATION PLAN

Designed: IDS
Drawn: CAZ
Checked: KMD
Date: 01/12/22
Sheet No.: L303

MATCHLINE: SEE SHEET L301

MATCHLINE: SEE SHEET L303

MATCHLINE: SEE SHEET L305

MATCHLINE: SEE SHEET L307

NOT FOR CONSTRUCTION.
THESE PLANS ARE DIAGRAMMATIC OF THE WORK TO BE PERFORMED. ALL LANDSCAPED AREAS ARE TO RECEIVED 100% COVERAGE. DO NOT IRRIGATE BAHIA SOD. IRRIGATION EQUIPMENT MAY BE SHOWN OFFSET FOR GRAPHIC CLARITY PURPOSES ONLY. AVOID ALL UTILITIES AND TREE ROOT BALLS DURING INSTALLATION. ALL PUMPING EQUIPMENT IS TO BE COORDINATED PRIOR TO CONSTRUCTION.

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0 20 40 feet
SCALE: 1:20

No.	Date	Comment

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

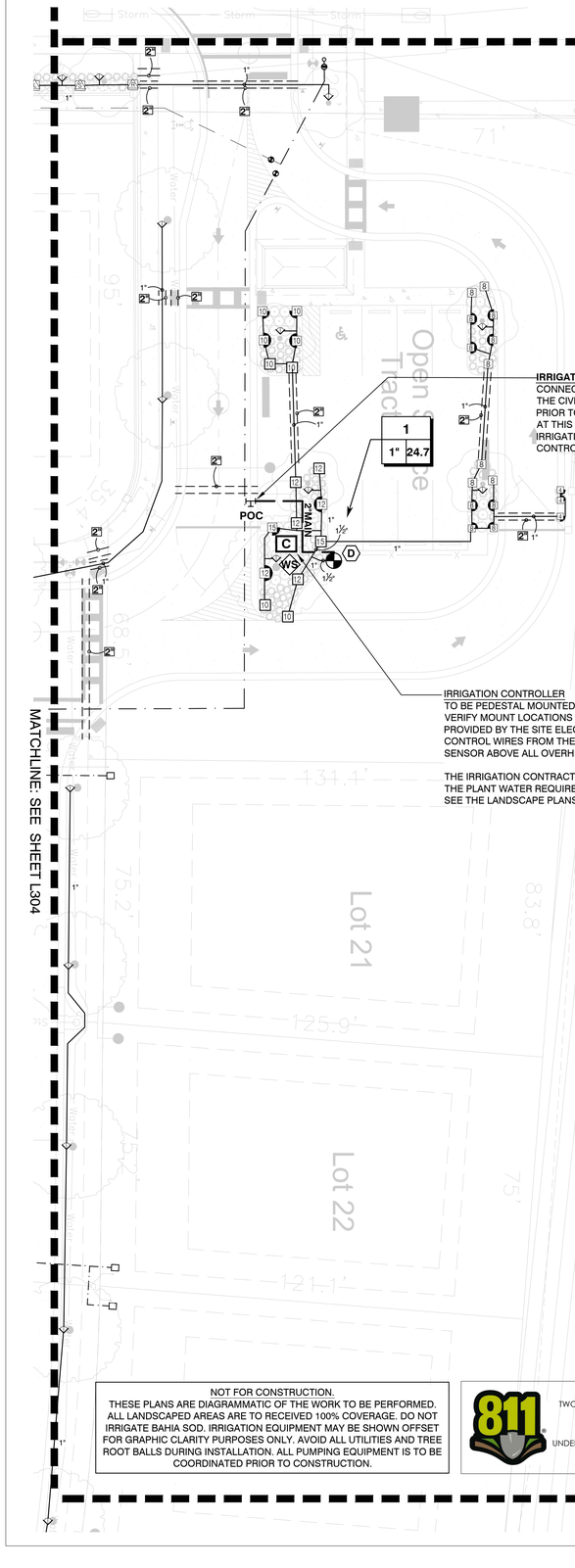
Project Title:
WHISPERING HILLS SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title:
IRRIGATION PLAN

Designed:	IDS
Drawn:	CAZ
Checked:	KMD
Date:	01/12/22

Sheet No.: L304

MATCHLINE: SEE SHEET L301



IRRIGATION WATER POINT OF CONNECTION
CONNECT TO THE 4" RECLAIMED IRRIGATION MAINLINE IN THIS AREA. SEE THE CIVIL PLANS FOR THE EXACT LOCATION. FIELD VERIFY THE LOCATION PRIOR TO CONSTRUCTION. A MINIMUM OF 30GPM AT 45PSI IS REQUIRED AT THIS POINT FOR THE EFFICIENT OPERATION OF THIS SYSTEM. THE IRRIGATION CONTRACTOR IS TO ROUTE CONTROL WIRES FROM THE CONTROLLER TO THIS CONTROL VALVE. FOLLOW ALL LOCAL CODES.

IRRIGATION CONTROLLER
TO BE PEDESTAL MOUNTED ON A CONCRETE PAD IN THIS AREA. BEFORE INSTALLATION VERIFY MOUNT LOCATIONS IN THE FIELD. 120VAC, 1.0 AMP, ELECTRIC POWER SUPPLY PROVIDED BY THE SITE ELECTRICAL CONTRACTOR. ROUTE AND DIRECT BURY THE CONTROL WIRES FROM THE CONTROLLER TO EACH CONTROL VALVE. MOUNT THE RAIN SENSOR ABOVE ALL OVERHEAD OBSTRUCTIONS.

THE IRRIGATION CONTRACTOR IS TO SET THE RUN TIMES FOR EACH ZONE TO MATCH THE PLANT WATER REQUIREMENTS, SITE CONDITIONS AND MICRO-CLIMATE FACTORS. SEE THE LANDSCAPE PLANS FOR PLANT SPECIFICATIONS.

NOT FOR CONSTRUCTION.
THESE PLANS ARE DIAGRAMMATIC OF THE WORK TO BE PERFORMED. ALL LANDSCAPED AREAS ARE TO RECEIVED 100% COVERAGE. DO NOT IRRIGATE BAHIA SOD. IRRIGATION EQUIPMENT MAY BE SHOWN OFFSET FOR GRAPHIC CLARITY PURPOSES ONLY. AVOID ALL UTILITIES AND TREE ROOT BALLS DURING INSTALLATION. ALL PUMPING EQUIPMENT IS TO BE COORDINATED PRIOR TO CONSTRUCTION.

811 TWO DAYS BEFORE YOU DIG
CALL: TOLL FREE
1.800.422.4133
UNDERGROUND SERVICE ALERT

MATCHLINE: SEE SHEET L304

MATCHLINE: SEE SHEET L308

PREPARED BY:
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Contact: KALEY DUNLAP
916 VASSAR STREET
ORLANDO, FL 32804
TEL | 321-277-0826
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ORLANDO, FLORIDA 32409
PHONE: 407-855-1136

0 20 40 feet
SCALE: 1:20

No.	Date	Comment

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

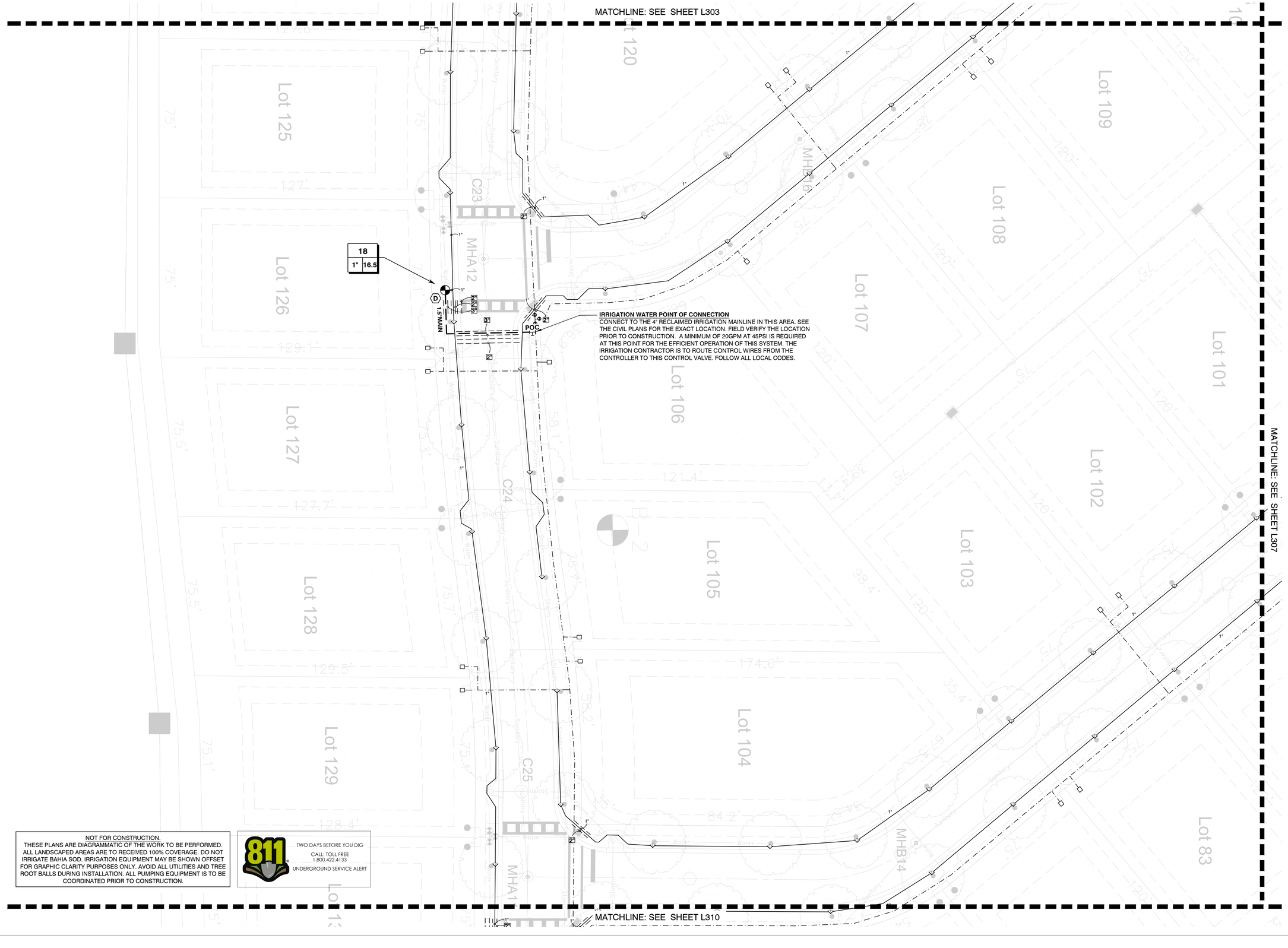
Project Title:
WHISPERING HILLS SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title: IRRIGATION PLAN

Designed:	IDS
Drawn:	CAZ
Checked:	KMD
Date:	01/12/22

Sheet No.: L305

MATCHLINE: SEE SHEET L303



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811 TWO DAYS BEFORE YOU DIG
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UNDERGROUND SERVICE ALERT

PREPARED BY:
floravie design
Contact: KALEY DUNLAP
916 VASSAR STREET
ORLANDO, FL 32804
TEL | 321-277-0826
kaley@floraviedesign.com

PREPARED FOR:
RED JACKET DEVELOPMENT
CONTACT: CLAY FRANKEL
625 WALTHAM AVENUE
ORLANDO, FLORIDA 32409
PHONE: 407-855-1136

0 20 40 feet
SCALE: 1:20

No.	Date	Comment

Professional Landscape Architect of Record:

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Landscape Architect — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

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Sheet Title:
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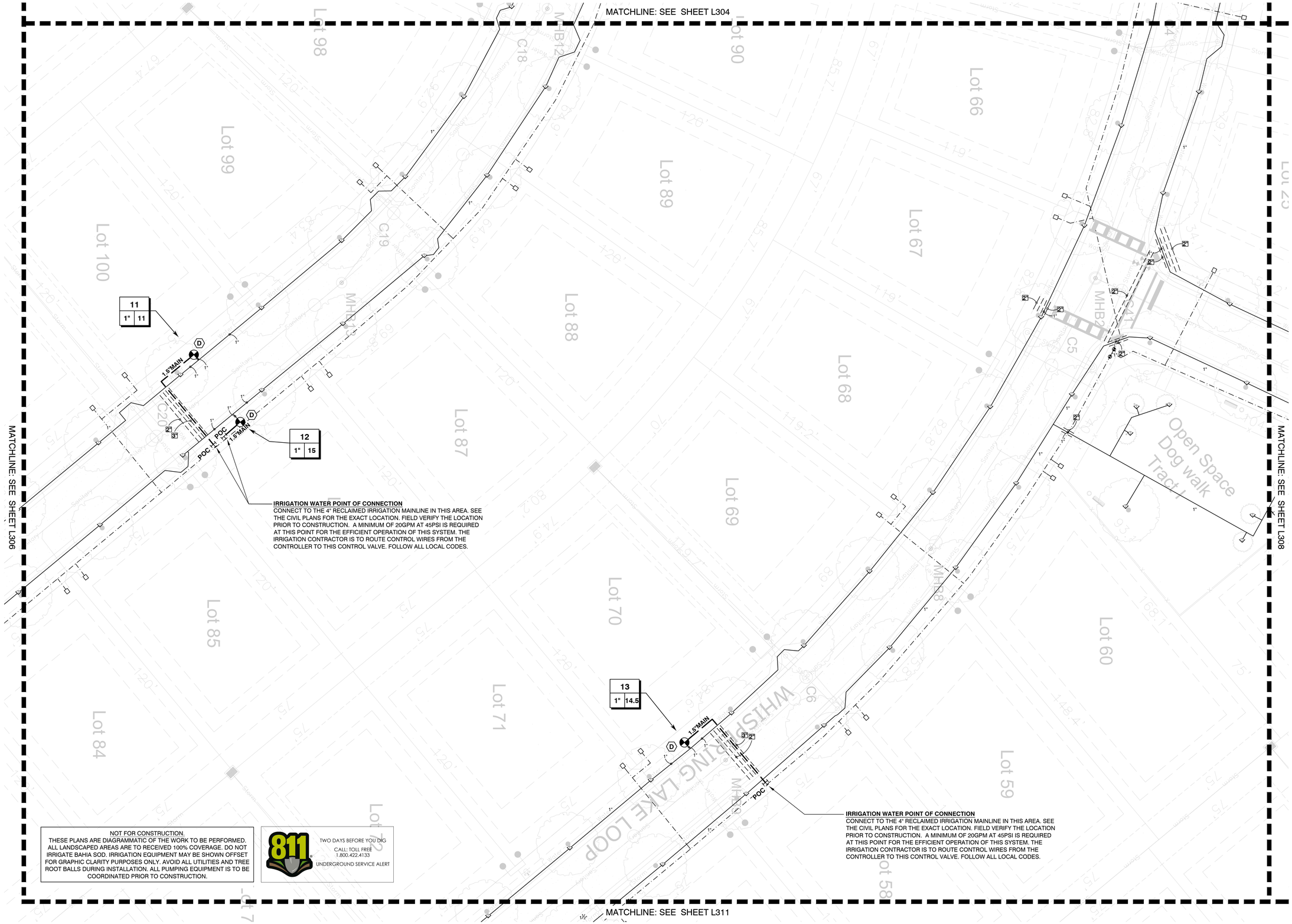
Sheet No.: L306



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HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title:

IRRIGATION PLAN

Designed: IDS
Drawn: CAZ
Checked: KMD
Date: 01/12/22

Sheet No.: L307

MATCHLINE: SEE SHEET L305

MATCHLINE: SEE SHEET L307

MATCHLINE: SEE SHEET L309

MATCHLINE: SEE SHEET L312

Lot 25
Lot 26
Lot 27
Lot 28
Lot 29
Lot 30
Lot 31
Lot 61
Tract "C"
6B

IRRIGATION WATER POINT OF CONNECTION
CONNECT TO THE 4" RECLAIMED IRRIGATION MAINLINE IN THIS AREA. SEE THE CIVIL PLANS FOR THE EXACT LOCATION. FIELD VERIFY THE LOCATION PRIOR TO CONSTRUCTION. A MINIMUM OF 20GPM AT 45PSI IS REQUIRED AT THIS POINT FOR THE EFFICIENT OPERATION OF THIS SYSTEM. THE IRRIGATION CONTRACTOR IS TO ROUTE CONTROL WIRES FROM THE CONTROLLER TO THIS CONTROL VALVE. FOLLOW ALL LOCAL CODES.

16
1" | 18

D 1.5" MAIN

POC

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HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title:
IRRIGATION PLAN

Designed:	IDS
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Sheet No.: L308

MATCHLINE: SEE SHEET L305

MATCHLINE: SEE SHEET L308

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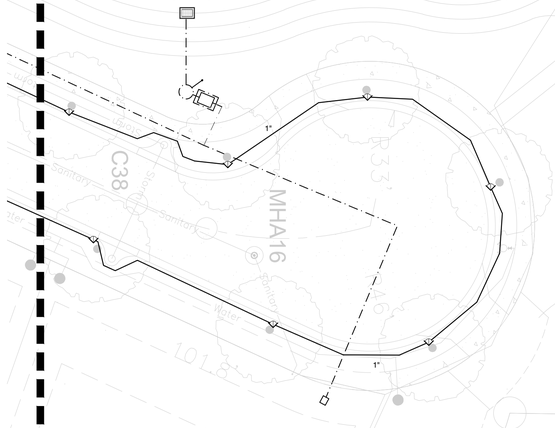

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Sheet Title:

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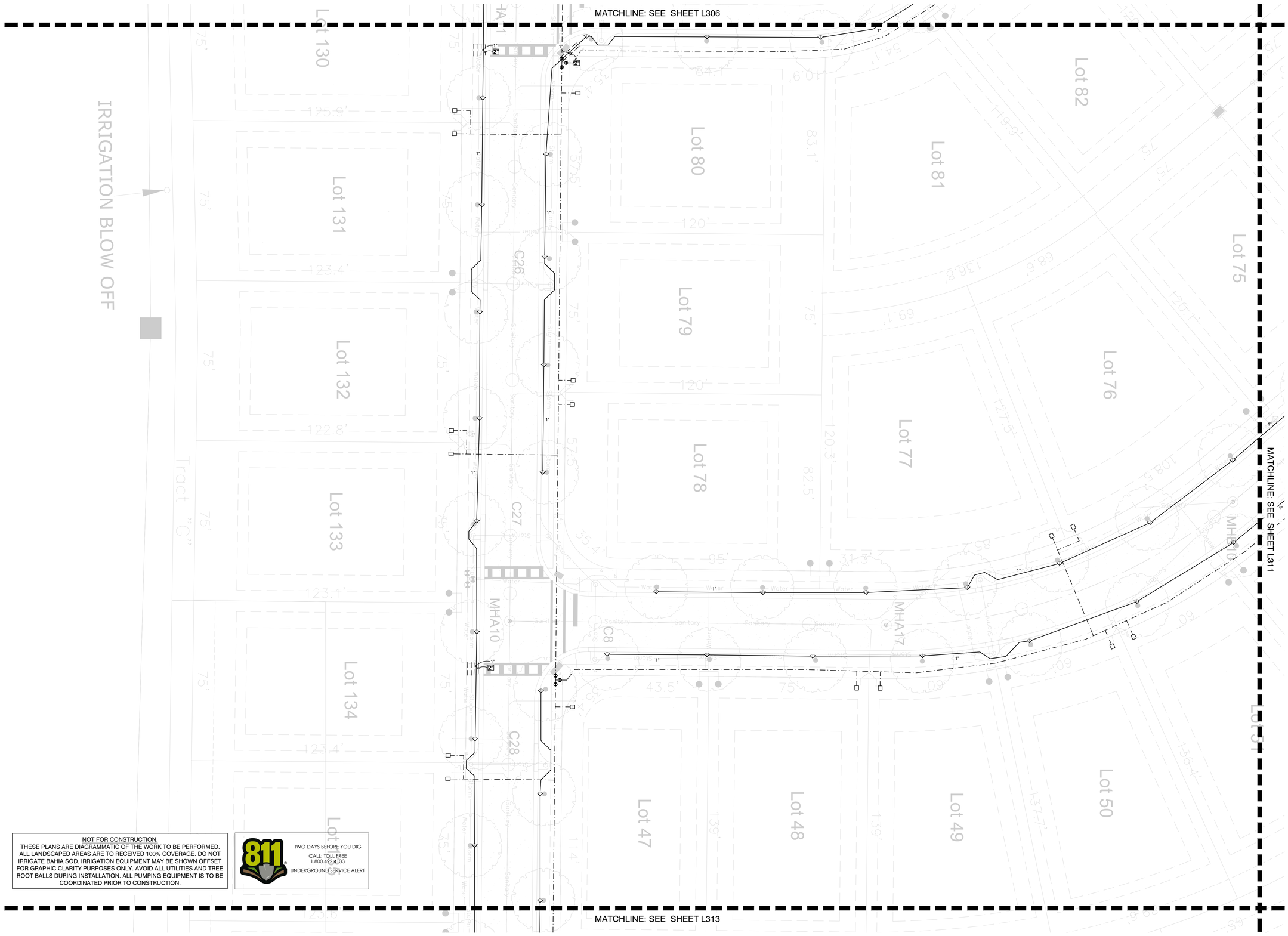

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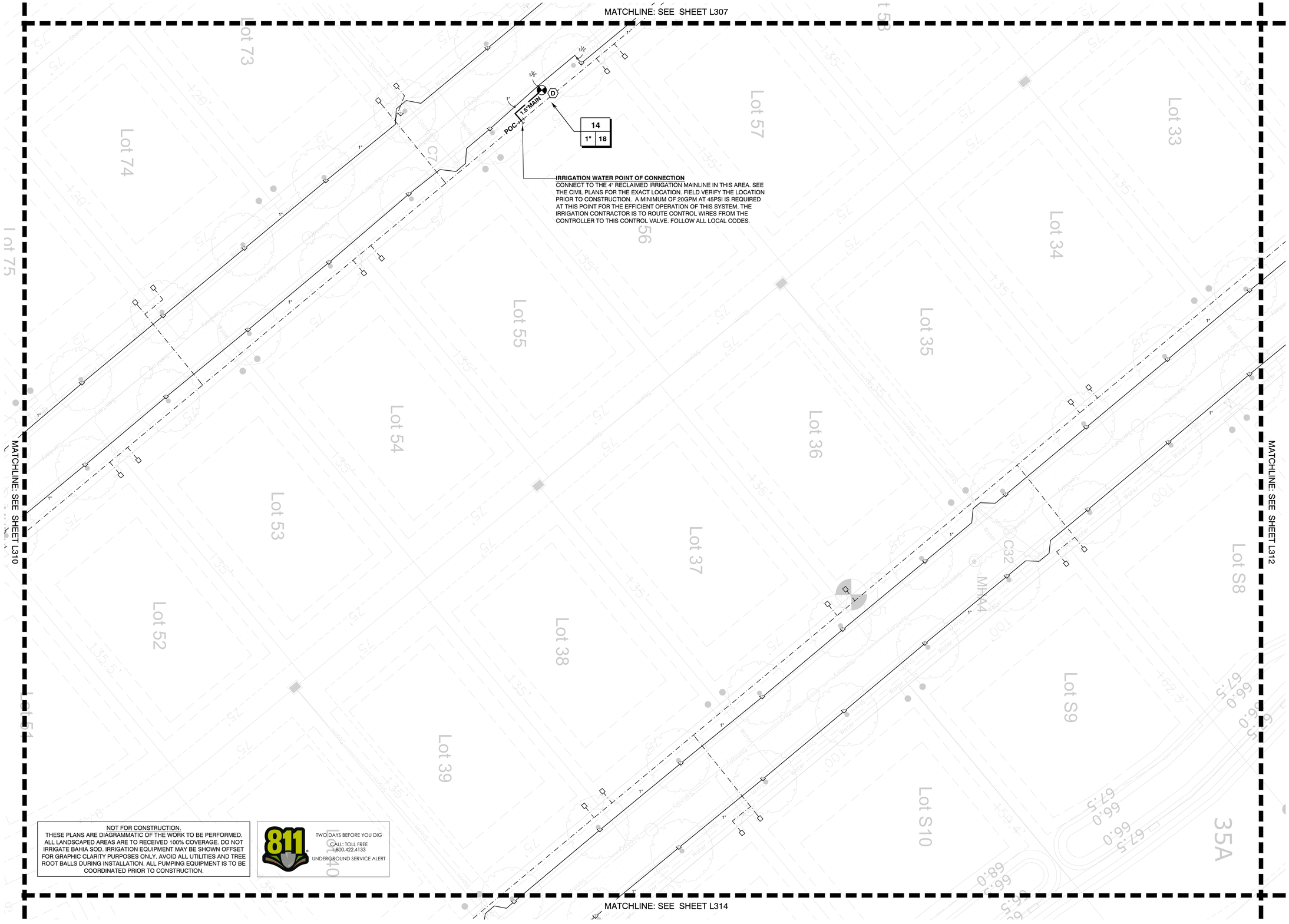

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Sheet Title:

IRRIGATION PLAN

Designed:	IDS
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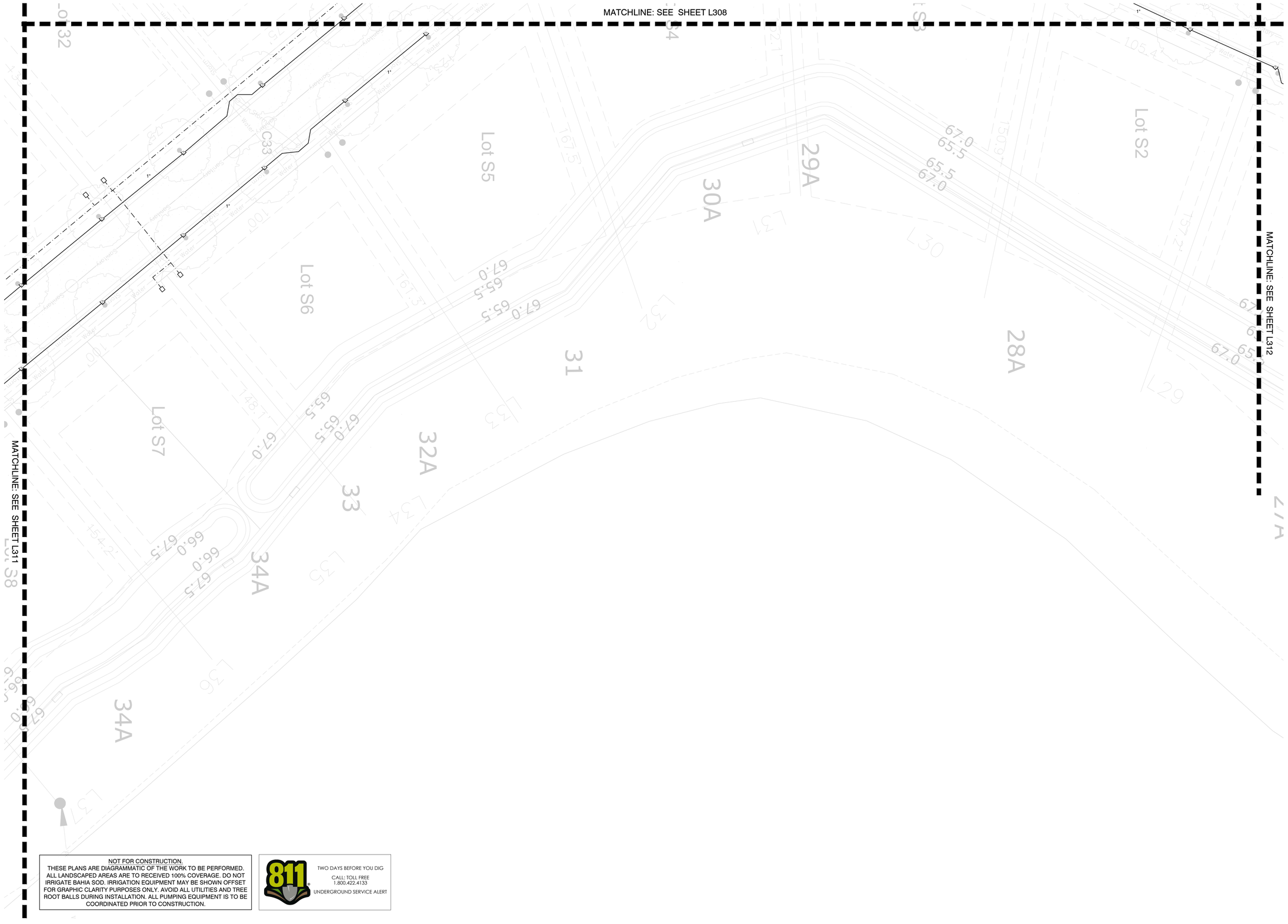
Checked:	KMD
Date:	01/12/22

Sheet No.: L311

MATCHLINE: SEE SHEET L308

MATCHLINE: SEE SHEET L312

MATCHLINE: SEE SHEET L311



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HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title:

IRRIGATION PLAN

Designed:	IDS
Drawn:	CAZ
Checked:	KMD
Date:	01/12/22

Sheet No.: L312

MATCHLINE: SEE SHEET L310

MATCHLINE: SEE SHEET L314

S85°08'00"E 259.36'
TIE TO WETLAND FLAG #49

Lot 136 | Lot S20 | Lot S19 | Lot S18 | Lot S17 | Lot S16 | Lot S15
Lot 46 | Lot 45 | Lot 44 | Lot 43
C29 | C30 | MHA9 | MHA8 | MHA7 | MHA6
49 | 48 | 46 | 44A | 43 | 42
L51 | L50 | L49 | L48 | L47 | L46

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LAKE COUNTY, FLORIDA

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IRRIGATION WATER POINT OF CONNECTION
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15
1" | 16.5

17
1" | 14

POC

1.5" MAIN

MATCHLINE: SEE SHEET L313

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Sheet Title:
IRRIGATION PLAN

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Sheet No.: L314

IRRIGATION NOTES

1. THE PLANS AND DRAWINGS ARE DIAGRAMMATIC OF THE WORK TO BE PERFORMED. SOME COMPONENTS MAY BE SHOWN OUTSIDE THE WORK AREA FOR CLARITY. THE WORK SHALL BE EXECUTED IN A MANNER TO AVOID CONFLICTS WITH UTILITIES AND OTHER ELEMENTS OF CONSTRUCTION, INCLUDING LANDSCAPE MATERIALS. ALL DEVIATIONS FROM THE PLANS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE BEFORE BEING INSTALLED.

2. THE CONTRACTOR SHALL COMPLY WITH ALL CURRENT LOCAL CODES, ORDINANCES, AND REGULATIONS.

3. ALL IRRIGATION MAINLINE AND LATERAL LINES ARE TO NOT EXCEED A VELOCITY OF 5FPS.

4. THE CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY ASPECT OF THE IRRIGATION SYSTEM AS SHOWN ON THE PLANS AND DRAWINGS, WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES, OR DISCREPANCIES EXIST THAT MIGHT NOT HAVE BEEN KNOWN DURING THE DESIGN OF THE IRRIGATION SYSTEM. IN THE EVENT THAT NOTIFICATION OF THE CONFLICT IS NOT APPROVED BY THE OWNER'S REPRESENTATIVE, THE CONTRACTOR WILL ASSUME FULL RESPONSIBILITY FOR ALL REVISIONS.

5. REFER TO THE LANDSCAPE PLANS WHEN TRENCHING TO AVOID TREE ROOT BALLS WHEN INSTALLING IRRIGATION EQUIPMENT. CALL 811 AND REFER TO UTILITY PLANS PRIOR TO TRENCHING.

6. IRRIGATION CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS, INCLUDING UTILITY LOCATIONS BEFORE INSTALLATION OF THE IRRIGATION SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING INSTALLATION WITH ALL OTHER CONSTRUCTION ON SITE, ESPECIALLY LANDSCAPE INSTALLATION. THE IRRIGATION SYSTEM SHALL BE RELOCATED AT NO ADDITIONAL COST FOR ANY CONFLICT WITH LANDSCAPE INSTALLATION OR ANY OTHER SITE CONSTRUCTION OR EXISTING CONDITIONS.

7. VERIFY THE REQUIRED MINIMUM STATIC WATER PRESSURE IS AVAILABLE AT THE PROJECT SITE PRIOR TO BEGINNING THE IRRIGATION INSTALLATION. NOTIFY THE IRRIGATION DESIGN CONSULTANT AND LANDSCAPE ARCHITECT IN WRITING IF THE MINIMUM STATIC WATER PRESSURE OR WATER VOLUME IS NOT AVAILABLE. SEE PLAN SHEET FOR REQUIREMENTS.

8. WHERE EXISTING OR NEW TREES, LIGHT FIXTURES, SIGNS, ELECTRONIC CONTROLLERS AND/OR OTHER OBJECTS ARE AN OBSTRUCTION TO AN IRRIGATION SPRINKLER'S PATTERN, THE COMPONENT AND PIPING SHALL BE RELOCATED AS NECESSARY TO OBTAIN PROPER COVERAGE OF AN IRRIGATION SPRINKLER'S PATTERN WITHOUT DAMAGING THE OBSTRUCTION.

9. 100% HEAD TO HEAD COVERAGE IS REQUIRED. ASSURE THAT ANY MODIFIED SPACING DOES NOT EXCEED THE SPACING SHOWN IN THE PLANS.

10. THE IRRIGATION CONTRACTOR SHALL ADJUST ALL SPRINKLERS TO AVOID OVER SPRAY ONTO IMPERVIOUS AREAS.

11. ALL MATERIALS AND EQUIPMENT SHOWN SHALL BE NEW. IF THE DRAWINGS DO NOT THOROUGHLY DESCRIBE THE TECHNIQUES TO BE USED, THE INSTALLER SHALL FOLLOW THE INSTALLATION METHODS AND INSTRUCTIONS RECOMMENDED BY THE PRODUCT MANUFACTURER.

12. THE LOCATION OF THE IRRIGATION MAINLINE SHALL BE IDENTIFIED IN THE FIELD AND APPROVED BY THE OWNER'S REPRESENTATIVE BEFORE INSTALLATION.

13. THE IRRIGATION CONTRACTOR IS TO SUBMIT PRODUCT SPECIFICATION SHEETS FOR ALL IRRIGATION EQUIPMENT TO BE USED FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

14. THE QUANTITIES SHOWN IN THE LEGEND SHEETS SHALL NOT BE USED FOR BIDDING PURPOSES. THE CONTRACTOR WILL BE RESPONSIBLE FOR CONDUCTING A COMPREHENSIVE MATERIALS TAKEOFF TO DETERMINE THE ACTUAL QUANTITIES OF MATERIAL NECESSARY TO EXECUTE THE WORK DESCRIBED IN THE DOCUMENTS.

15. ALL TRENCHES SHALL BE BACKFILLED WITH CLEAN DEBRIS-FREE MATERIALS.

16. IRRIGATION CONTRACTOR IS TO INSTALL CHRISTY ZONE TAGS WITH THE CORRESPONDING CONTROLLER ZONE NUMBER AT EACH CONTROL VALVE.

17. WHEN THE IRRIGATION MAINLINE IS 3" OR LARGER, ALL CHANGES OF DIRECTION SHALL BE ACCOMPLISHED WITH THE USE OF DUCTILE IRON ELBOWS AND TEES W/ PROPER THRUST BLOCKING. INSTALL JOINT RESTRAINT FITTINGS AS NECESSARY.

18. AS BUILT DOCUMENTS ARE TO BE PROVIDED TO THE OWNER UPON COMPLETION OF THE PROJECT. THE MAINLINE, CONTROL VALVES, ISOLATION VALVES, GROUND RODS AND SPLICE BOXES SHALL BE LOCATED WITH A MEASUREMENT FROM TWO FIXED POINTS.

19. THE IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF ON-SITE OPERATIONS.

20. A MAINLINE PRESSURE TEST IS TO BE CONDUCTED BEFORE BACKFILLING. ALL FINDINGS ARE TO BE REPORTED TO THE LANDSCAPE ARCHITECT WITHIN TWENTY FOUR HOURS POST TEST.

21. ALL SLEEVES ARE TO BE TWO TIMES THE SIZE OF THE PIPE AND TO BE COORDINATED WITH THE HARDSCAPE CONTRACTORS PRIOR TO CONSTRUCTION.

22. PROVIDE ALL NECESSARY EQUIPMENT FOR THE TWO-WIRE SYSTEM TO OPERATE EFFICIENTLY. SEE THE TWO-WIRE NOTES.

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TWO-WIRE NOTES

DECODERS

CONTROLLER SHALL INTERFACE WITH HUNTER ICD DECODERS, EACH CAPABLE OF CONTROLLING 1, 2, 4, OR 6 VALVES (ICD-100, ICD-200, ICD-400, AND ICD-600)

PROVIDE AN ICD-SEN SENSOR DECODER FOR FLOW SENSOR(S) AND/OR CLIK SENSOR(S) ON TWO WIRE PATH

WIRE CONNECTIONS FROM DECODER OUTPUT TO SOLENOID SHALL BE 14 AWG, TYPE PE

WIRE DISTANCE FROM DECODER OUTPUT TO SOLENOID UNDER NORMAL CONDITIONS SHALL NOT EXCEED 150-FT [45-M]

INSTALL IN VALVE BOX ON DECODER STAKE KIT (DECSTAKE-10) WITH BOTTOM OF DECODER FACING UP

CONTRACTOR SHALL INDICATE ASSOCIATED VALVE NUMBER(S) ON MANUFACTURER PROVIDED LABEL ON DECODER WITH PERMANENT MARKER

WIRES

WIRE FOR TWO-WIRE PATH SHALL BE TWISTED AND JACKETED HUNTER IDWIRE, OR APPROVED EQUAL (PAIGE ELECTRIC P7354D); COATED WIRE SHALL NOT BE ACCEPTED AS AN EQUAL: ACCEPTABLE EQUAL PRODUCTS MUST CONSIST OF TWO SEPARATELY PE JACKETED WIRE TWISTED INSIDE OF A PE JACKET

CONTRACTOR SHALL INSTALL IDWIRE1 (14 AWG) FOR WIRE PATH LENGTH UP TO 10,000-FT [3,048-M] AND IDWIRE2 (12 AWG) FOR WIRE PATH LENGTH UP TO 15,000-FT [4,572-M], WIRE PATH LENGHTS DECREASE WITH SUBSTITUTED WIRE

WIRE JACKET COLORS SHALL BE SUCH TO FACILITATE THE IDENTIFICATION OF VARIOUS WIRE PATH ZONES; SEE WIRE JACKET CHART FOR WIRE TYPE, COLOR AND ASSOCIATED VALVES

THE CONTROLLER ALLOWS UP TO THREE (3) TWO-WIRE PATHS PER OUTPUT MODULE, CONTRACTOR SHALL NOT CONNECT ANY TWO-WIRE PATH FROM ONE OUTPUT MODULE TO ANOTHER OUTPUT MODULE

WIRE CONNECTION FROM DECODER OUTPUT TO SOLENOID SHALL BE COLORED TO MATCH THE ASSOCIATED DECODER OUTPUT STATION COLOR; RED AND BLUE COLORED WIRES SHALL NOT BE USED FOR CONNECTION BETWEEN DECODER OUTPUT AND SOLENOID

SPLICES

ALL CONNECTIONS AND SPLICES IN THE RED/BLUE TWO-WIRE PATH MUST BE MADE WITH 3M DBR/Y-6 WATERPROOF CONNECTORS INSTALLED PER MANUFACTURERS INSTRUCTIONS IN VALVE BOX WITH OPEN END OF CONNECTOR FACING DOWN

CONTRACTOR SHALL PROVIDE 36-IN [1-M] LOOP OF SLACK WIRE, MEASURED FROM TOP OF VALVE BOX, NEATLY COILED INSIDE ALL SPLICE BOXES AND VALVE BOXES

ANY SPLICES IN THE TWO-WIRE PATH NOT ASSOCIATED WITH A DECODER SHALL BE HOUSED IN SEPARATE VALVE BOXES WITH 36-IN [1-M] LOOP OF SLACK WIRE

CONTRACTOR SHALL INDICATE TWO-WIRE PATH DIRECTIONS IN PERMANENT MARKER WITHIN 6-IN [2.5-CM] OF TWO-WIRE SPLICE ON WIRE JACKET OR ID TAG ZIP TIED TO WIRE: INCOMING WIRE SHALL BE MARKED "CONTROLLER" ON WIRE JACKET OR ID TAG AND MUST INCLUDE ZIP-TIE ATTACHED TO WIRE JACKET EACH OUTGOING TWO-WIRE PATH SHALL BE MARKED WITH CONNECTED VALVES ON WIRE JACKET

CONTRACTOR SHALL ENSURE ALL CONNECTIONS TO BE WATERTIGHT WITH NO ELECTRICAL LEAKAGE TO GROUND OR SHORTING BETWEEN CONDUCTORS

GROUNDING

ALL 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

BOTH THE CONTROLLER AND THE DECODERS SHALL BE GROUNDED TO GROUND RODS OR PLATES WITH LESS THAN 10 OHMS RESISTANCE

IRRIGATION CONTROLLER AND PAD SHALL NOT FALL WITHIN THE SPHERE OF INFLEUNCE OF A GROUND ROD OR PLATE

AT A MINIMUM, EARTH GROUND SHALL BE CONNECTED AT THE FIRST DECODER OF EACH WIRE PATH LEAVING THE CONTROLLER, AND EVERY 12TH VALVE/DECODER OR 1,000-FT [304-M] OF TWO-WIRE RUN (WHICHEVER IS SHORTER), AND AT THE LAST VALVE/DECODER IN ANY WIRE RUN EXCEEDING 50' FROM MAIN WIRE PATH

FOR USE OF GROUNDING PLATE:

SOLID COPPER GROUNDING PLATE SHALL HAVE A PRE-WELDED #6 AWG INSULATED GREEN-YELLOW WIRE

GROUND PLATES ARE TO BE INSTALLED TO A MINIMUM DEPTH OF 30-IN [76-CM]

GROUND PLATES SHALL BE MADE OF A COPPER ALLOY INTENDED FOR GROUNDING APPLICATIONS AND HAVE MINIMUM DIMENSIONS AS FOLLOWS:

A. FOR GROUNDING CONTROLLERS - 4-IN [10-CM] X 8-FT [1.2-M] X 0.0625-IN [1.5-MM] SOLID COPPER GROUNDING PLATE, WITH 25-FT [7.6-M] CONTINUOUS LENGTH OF 6 AWG, GREEN INSULATED, WITH EXTRUDED YELLOW STRIPE, SOLID BARE COPPER WIRE WELDED TO THE PLATE (PAIGE ELECTRIC 182199IC) AND TWO 50-LB [22.6-KG] BAGS OF POWERSET EARTH CONTACT MATERIAL (PAIGE ELECTRIC 1820058) FOR POROUS SOILS OR TWO 50-LB [22.6-KG] BAGS OF POWERFILL EARTH CONTACT MATERIAL (PAIGE ELECTRIC 1820059) FOR NON-POROUS SOILS

B. FOR GROUNDING DECODERS - 4-IN [10-CM] X 3-FT [1-M] X 0.0625-IN [1.5-MM] SOLID COPPER GROUNDING PLATE, WITH 15-FT [4.5-M] CONTINUOUS LENGTH OF 10 AWG, GREEN INSULATED, WITH EXTRUDED YELLOW STRIPE, SOLID BARE COPPER WIRE IS WELDED TO THE PLATE (PAIGE ELECTRIC 182201IC) AND ONE 50-LB [22.6-KG] BAG OF POWERSET EARTH CONTACT MATERIAL (PAIGE ELECTRIC 1820058) FOR POROUS SOILS OR ONE 50-LB [22.6-KG] BAG OF POWERFILL EARTH CONTACT MATERIAL (PAIGE ELECTRIC 1820059) FOR NON-POROUS SOILS FOR USE OF GROUNDING ROD: GROUND ROD SHALL BE 5/8-IN [15-MM] DIAMETER X 8-FT [1.2-M] LONG COPPER CLAD STEEL GROUND RODS WITH 15-FT [4.5-M] PRE-WELDED #6 AWG INSULATED GREEN-YELLOW WIRE (PAIGE ELECTRIC PART # 182000IC6)

GROUND ROD SHALL BE DRIVEN INTO THE GROUND IN A VERTICAL POSITION OR AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES AT A LOCATION 10-FT [3-M] FROM THE ELECTRONIC EQUIPMENT, THE GROUND PLATE, OR THE WIRES AND CABLES CONNECTED TO EQUIPMENT BEING GROUNDED

ADDITIONAL GROUND ROD IN DAISY CHAIN INSTALLATION SHALL BE 5/8-IN [15-MM] DIAMETER X 8-FT [1.2-M] LONG COPPER CLAD STEEL GROUND RODS WITH 25-FT [4.5-M] PRE-WELDED #6 AWG INSULATED GREEN-YELLOW WIRE (PAIGE ELECTRIC PART # 182007IC6)

GROUND RODS SHALL BE COVERED BY A VALVE BOX

ALL CIRCUIT COMPONENTS SHALL BE INSTALLED IN STRAIGHT LINES

GROUND ROD AND PLATE LOCATION

CONTRACTOR SHALL LOCATE AND INSTALL GROUND ROD AND/OR PLATE IN AREA OF MOIST SOIL TO MAXIMIZE ELECTRICAL CONDUCTIVITY

SURGE PROTECTION (LIGHTING ARRESTOR)

CONTRACTOR SHALL INSTALL PAIGE ELECTRIC 250090LED LIGHTENING ARRESTOR PER MANUFACTURERS SPECIFICATIONS AS CLOSE TO CONTROLLER POWER SOURCE AS POSSIBLE TO PROTECT THE IRRIGATION CONTROLLER FROM SURGES THROUGH 120 OR 240 VAC WIRES

TURN OVER ITEMS

CONTRACTOR SHALL PROVIDE PROJECT OWNER WITH THE FOLLOWING AT PROJECT COMPLETION AND TURN OVER: A2C-D SD CARD WITH SAVED STATION AND IRRIGATION PROGRAM INFORMATION

PRODUCT MANUALS

IN ADDITION TO IRRIGATION AS-BUILT REQUIREMENTS, THE CONTRACTOR SHALL INCLUDE IN THE AS-BUILT DRAWINGS OF IRRIGATION SYSTEM GRAPHICALLY DEPICTING LOCATION OF TWO-WIRE PATH(S), GROUNDING LOCATION AND TYPE, DECODERS, NON-DECODER WIRE SPLICES, INDICATION OF TWO-WIRE SPLICE TYPES (1-WAY, 2-WAY, 3-WAY, ETC), AND TERMINATION OF TWO-WIRE PATHS ICD-HP HANDHELD PROGRAMMER AND DIAGNOSTIC TOOL ROAM XL HANDHELD REMOTE AND RECEIVER

MANUFACTURER TRAINING

PRIOR TO INSTALLATION THE CONTRACTOR SHALL HAVE COMPLETED AND RECEIVED CERTIFICATION FOR THE FOLLOWING TRAINING MODULES PROVIDED BY HUNTER INDUSTRIES:

DECODER SPECIALIST PROGRAM

MULTIMETER BASICS COURSE

EXPERT PROGRAM

PRE-CONSTRUCTION MEETING

PRIOR TO INSTALLATION OF TWO-WIRE IRRIGATION SYSTEM, A PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED WITH PROJECT OWNER'S REPRESENTATIVE, INSTALLING CONTRACTOR, AND IRRIGATION TWO-WIRE MANUFACTURER AT NO ADDITIONAL COST FROM MANUFACTURER

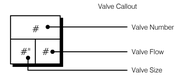
TECHNICAL SUPPORT

HUNTER INDUSTRIES (800) 733-2823

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
2Q 2H 4Q 4H 6Q 6H	HUNTER PROS-12-PRS30-CV-F-R SHORT RADIUS NOZZLES SHRUB SPRAY, 30 PSI REGULATED 12" POP-UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE, FLOGUARD AND RECLAIMED PURPLE BODY CAP. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	7	30
ES LCS RCS CS SS	HUNTER PROS-12-PRS30-CV-F-R 5` STRIP SPRAY SHRUB SPRAY, 30 PSI REGULATED 12" POP-UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE, FLOGUARD AND RECLAIMED PURPLE BODY CAP. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	171	30
Q T H F	HUNTER PROS-12-PRS30-CV-F-R 8` RADIUS SHRUB SPRAY, 30 PSI REGULATED 12" POP-UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE, FLOGUARD AND RECLAIMED PURPLE BODY CAP. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	8	30
Q T H F	HUNTER PROS-12-PRS30-CV-F-R 10` RADIUS SHRUB SPRAY, 30 PSI REGULATED 12" POP-UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE, FLOGUARD AND RECLAIMED PURPLE BODY CAP. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	5	30
Q T H F	HUNTER PROS-12-PRS30-CV-F-R 12` RADIUS SHRUB SPRAY, 30 PSI REGULATED 12" POP-UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE, FLOGUARD AND RECLAIMED PURPLE BODY CAP. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	3	30
Q T H F	HUNTER PROS-12-PRS30-CV-F-R 15` RADIUS SHRUB SPRAY, 30 PSI REGULATED 12" POP-UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE, FLOGUARD AND RECLAIMED PURPLE BODY CAP. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	1	30
4 6 8 10 12 8 7	HUNTER PROS-12-PRS30-CV-F-R ADJUSTABLE ARC SHRUB SPRAY, 30 PSI REGULATED 12" POP-UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE, FLOGUARD AND RECLAIMED PURPLE BODY CAP. CO-MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	16	30
25 30 10 20	HUNTER PCB-R FLOOD BUBBLER, 1/2" FIPT. WITH PURPLE CAP FOR RECLAIMED WATER USE.	477	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	HUNTER ICV-G-R 1", 1-1/2", 2", AND 3" PLASTIC ELECTRIC REMOTE CONTROL VALVES, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE. WITH RECLAIMED WATER ID, PURPLE HANDLE.	18
C	HUNTER ACC-PED-A2C-75D-M 75-STATION DECODER CONTROLLER IN AN OUTDOOR METAL PEDESTAL.	1
D	HUNTER ICD-100 SINGLE STATION DECODER W/SURGE SUPPRESSION AND GROUND WIRE. TO BE INSTALLED ON UNIVERSAL DECODER STAKE KIT (DECSTAKE10).	18
WS	HUNTER RAIN-CLIK RAIN SENSOR, WITH CONDUIT INSTALLATION, MOUNT AS NOTED. NORMALLY CLOSED SWITCH.	1
POC	POINT OF CONNECTION 1 1/2" CONNECT TO THE RECLAIMED MAINLINE PROPOSED BY THE CIVIL ENGINEER	18
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21-NP	19,375 L.F.
	IRRIGATION MAINLINE: PVC CLASS 200 SDR 21-NP	515.8 L.F.
	PIPE SLEEVE: PVC SCHEDULE 40	1,040 L.F.



THE QUANTITIES SHOWN IN THE LEGEND SHEETS SHALL NOT BE USED FOR BIDDING PURPOSES. THE CONTRACTOR WILL BE RESPONSIBLE FOR CONDUCTING A COMPREHENSIVE MATERIALS TAKEOFF TO DETERMINE THE ACTUAL QUANTITIES OF MATERIAL NECESSARY TO EXECUTE THE WORK DESCRIBED IN THE DOCUMENTS. ALL PUMPING EQUIPMENT IS YET TO BE SPECIFIED AND COORDINATED.

VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC	PRECIP
1	HUNTER ICV-G-R	1"	SHRUB SPRAY	24.72	33.1	33.7	1.81 in/h
2	HUNTER ICV-G-R	1"	BUBBLER	15	35.8	35.9	1.7 in/h
3	HUNTER ICV-G-R	1-1/2"	SHRUB SPRAY	41.16	34.1	34.8	1.96 in/h
4	HUNTER ICV-G-R	1-1/2"	SHRUB SPRAY	40.45	34.2	35.6	2.14 in/h
5	HUNTER ICV-G-R	1-1/2"	SHRUB SPRAY	45.55	33.9	37.4	1.82 in/h
6	HUNTER ICV-G-R	1-1/2"	SHRUB SPRAY	46.5	34.7	39.9	1.91 in/h
7	HUNTER ICV-G-R	1-1/2"	SHRUB SPRAY	45.55	33.9	40.7	2.59 in/h
8	HUNTER ICV-G-R	1-1/2"	SHRUB SPRAY	45.3	34.5	42.7	2.25 in/h
9	HUNTER ICV-G-R	1"	BUBBLER	14	38.5	38.5	1.7 in/h
10	HUNTER ICV-G-R	1"	BUBBLER	10	33.9	33.9	1.7 in/h
11	HUNTER ICV-G-R	1"	BUBBLER	11	34.1	34.1	1.7 in/h
12	HUNTER ICV-G-R	1"	BUBBLER	15	35.9	35.9	1.7 in/h
13	HUNTER ICV-G-R	1"	BUBBLER	14.5	35.4	35.5	1.7 in/h
14	HUNTER ICV-G-R	1"	BUBBLER	18	37.6	37.8	1.7 in/h
15	HUNTER ICV-G-R	1"	BUBBLER	16.5	36.4	36.5	1.7 in/h
16	HUNTER ICV-G-R	1"	BUBBLER	18	36.8	37.1	1.7 in/h
17	HUNTER ICV-G-R	1"	BUBBLER	14	36.5	36.6	1.7 in/h
18	HUNTER ICV-G-R	1"	BUBBLER	16.5	36.3	36.4	1.7 in/h

THE IRRIGATION CONTRACTOR IS TO SET THE RUN TIMES FOR EACH ZONE TO MATCH THE PLANT WATER REQUIREMENTS, SITE CONDITIONS AND MICRO-CLIMATE FACTORS. SEE THE LANDSCAPE PLANS FOR PLANT SPECIFICATIONS.

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No.	Date	Comment

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001

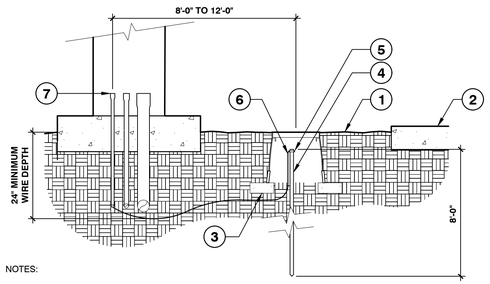
Project Phase: CITY SUBMITTAL

Project Title:
WHISPERING HILLS SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title:
IRRIGATION NOTES & LEGEND

Designed: IDS
Drawn: CAZ
Checked: KMD
Date: 01/12/22

Sheet No.: L315



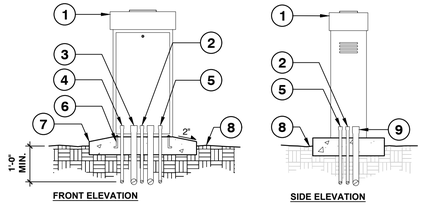
NOTES:

1. ALL GROUNDING REQUIREMENTS FOR CONTROLLERS SHALL CONFORM TO LOCAL ELECTRIC CODES.
2. GROUNDING ROD SHALL NOT BE LOCATED IN THE SAME TRENCH AS IRRIGATION MAINLINES OR LATERAL LINES.
3. VALVE BOX SHALL BE WRAPPED WITH A MINIMUM 3 MIL THICK PLASTIC AND SECURED TO THE VALVE BOX USING DUCT TAPE OR ELECTRICAL TAPE.
4. INSTALL GROUNDING ROD PER THE CONTROLLER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

1. FINISH GRADE
2. PAVEMENT
3. THREE (3) 4" x 8" BRICKS
4. 5/8" x 8'-0" COPPER GROUNDING ROD
5. GROUNDING ROD CLAMP
6. #6 AWG BARE COPPER WIRE
7. 1/2" PVC ELECTRICAL CONDUIT AND SWEEP FOR EARTH GROUND

1 GROUNDING ROD

1" = 1'-0" FX-IR-FX-AUXEQ-01



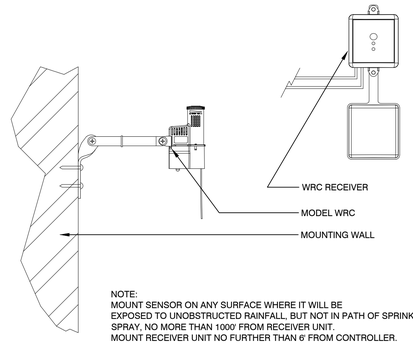
NOTES:

1. COMMON AND CONTROLLER WIRE TO BE BUNDLED USING ELECTRICAL TAPE AT 10'-0" ON CENTER.
2. GROUNDING RODS SHALL BE LOCATED BETWEEN 8'-0" AND 12'-0" AWAY FROM THE CONTROLLER. GROUNDING RODS SHALL BE 3/8" IN DIAMETER X 8' IN LENGTH. CONNECT THE GROUNDING ROD TO THE CONTROLLER USING 6 GAUGE BARE COPPER WIRE OR PER THE MANUFACTURER'S SPECIFICATIONS.SEE GROUNDING ROD DETAIL.
3. ET STATION TO BE INSTALLED NO FURTHER THAN 90' AWAY FROM THE CONTROLLER AND A MINIMUM OF 15' OFF OF THE GROUND, OUT FROM UNDER ANY OVERHEAD OBSTRUCTIONS SUCH AS, BUT NOT LIMITED TO BUILDING OVERHANGS, TREES, OR UTILITIES.

1. PEDESTAL MOUNTED CONTROLLER (SEE IRRIGATION LEGEND FOR MAKE AND MODEL, INSTALL CONTROLLER PER MANUFACTURER SPECIFICATIONS)
2. 1" PVC ELECTRICAL CONDUIT FOR GROUNDING WIRE
3. 2" PVC ELECTRICAL CONDUIT FOR REMOTE CONTROL WIRES (TRADITIONAL & 2-WIRE)
4. 1" PVC ELECTRICAL CONDUIT FOR INPUT POWER PER LOCAL AND NATIONAL CODES
5. 1" PVC ELECTRICAL CONDUIT FOR SENSOR WIRES
6. 1/2" x 4" CADIUM PLATED 'J' ANCHOR BOLTS AT FOUR LOCATIONS
7. CONCRETE FOOTING (INSTALL PER MANUFACUTURER'S SPECIFICATION)
8. FINISHED GRADE
9. OPTIONAL 2" PVC ELECTRICAL CONDUIT FOR AN ADDITIONAL WIRES

2 PEDESTAL MOUNTED CONTROLLER

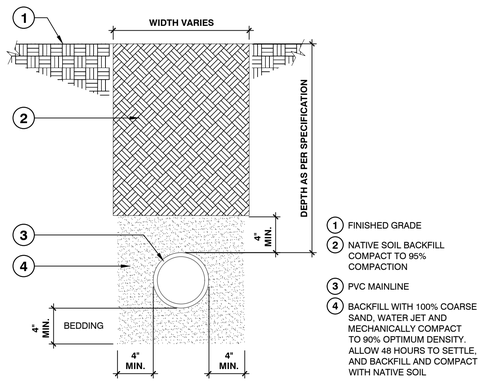
1/2" = 1'-0" FX-IR-FX-CONT-04



NOTE:
MOUNT SENSOR ON ANY SURFACE WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED RAINFALL, BUT NOT IN PATH OF SPRINKLER SPRAY, NO MORE THAN 1000' FROM RECEIVER UNIT.
MOUNT RECEIVER UNIT NO FURTHER THAN 6' FROM CONTROLLER.

3 WIRELESS RAIN-CLIK

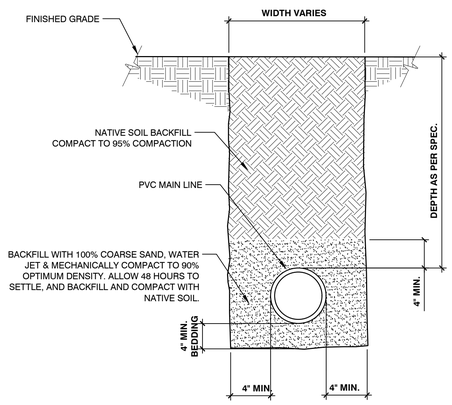
3" = 1'-0" FX-IR-HUNT-SENS-17



1. FINISHED GRADE
2. NATIVE SOIL BACKFILL COMPACT TO 95% COMPACTION
3. PVC MAINLINE
4. BACKFILL WITH 100% COARSE SAND, WATER JET AND MECHANICALLY COMPACT TO 90% OPTIMUM DENSITY. ALLOW 48 HOURS TO SETTLE, AND BACKFILL AND COMPACT WITH NATIVE SOIL

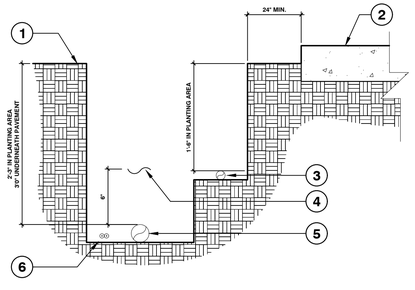
4 MAINLINE WITH SAND BEDDING

1 1/2" = 1'-0" FX-IR-FX-AUXEQ-13



5 SLEEVE AT ROAD

1 1/2" = 1'-0" FX-IR-FX-AUXEQ-15



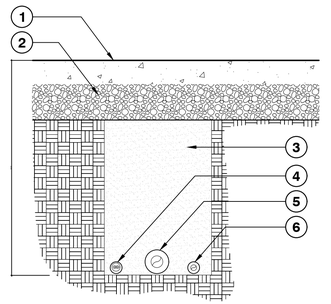
NOTES:

1. SEE IRRIGATION LEGEND FOR MAINLINE AND LATERAL LINE PIPE SIZE AND TYPE.
2. 2-WIRE IRRIGATION WIRE SHALL BE DIRECT BURIED UNLESS UNDER HARDSCAPE OR SPECIFIED OTHERWISE.
3. DETECTABLE LOCATOR TAPE SHALL BE LOCATED SIX INCHES (6") ABOVE THE ENTIRE MAINLINE RUN.

1. FINISHED GRADE
2. PAVEMENT
3. NON-PRESSURIZED LINE (LATERAL LINE)
4. DETECTABLE LOCATOR TAPE
5. PRESSURIZED LINE (MAINLINE)
6. TWO WIRE CONTROL WIRES DIRECT BURY

6 IRRIGATION TRENCHING - TWO WIRE - DIRECT BURY

N.T.S I-09



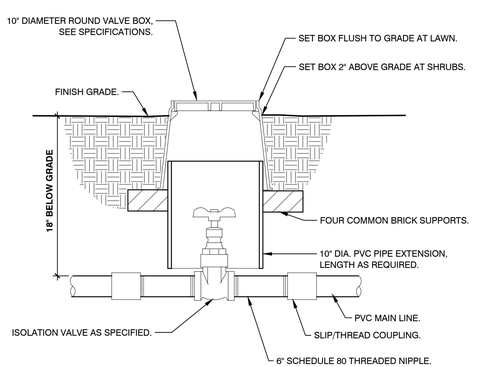
NOTES:

1. SEE IRRIGATION LEGEND FOR MAINLINE SIZE AND TYPE.
2. ALL SLEEVES SHALL BE SCH. 40 PVC PIPE.
3. ALL SLEEVES SHALL EXTEND 12" BEYOND THE EDGE OF PAVEMENT.
4. END OF SLEEVES SHALL BE LOCATED WITH A WOODEN STAKE OR PVC PIPE. LOCATORS SHALL RUN CONTINUOUSLY FROM THE END OF THE SLEEVE TO FINISHED GRADE.

1. PAVEMENT
2. BASE ROCK
3. CLEAN BACKFILL, 95% RELATIVE COMPACTION UNDER PAVING OR PER CIVIL ENGINEER'S PLANS
4. TWO-WIRE CONTROL WIRES IN CONDUIT, SLEEVE UNDER PAVING. INSTALL ADJACENT TO PRESSURIZED MAINLINE. BUNDLE SHALL BE NO MORE THAN 50% OF PIPE DIAMETER
5. MAINLINE, SLEEVE UNDER PAVING TO BE TWO TIMES THE DIAMETER OF THE PRESSURIZED MAINLINE PIPE
6. NON-PRESSURIZED LINE, SLEEVE UNDER PAVING TO BE BE TWO TIMES THE DIAMETER OF THE LATERAL LINE

7 PIPE BENEATH PAVEMENT - TWO WIRE

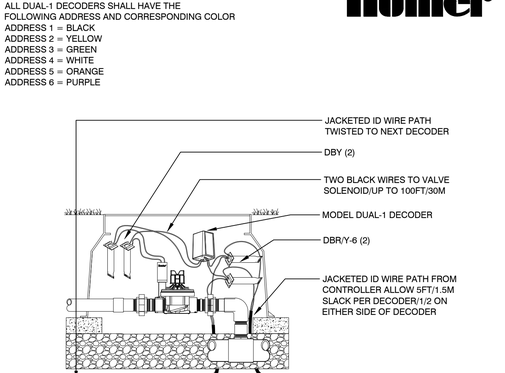
N.T.S I-04



8 BRASS ISOLATION VALVE

1 1/2" = 1'-0" FX-IR-FX-ISOV-01

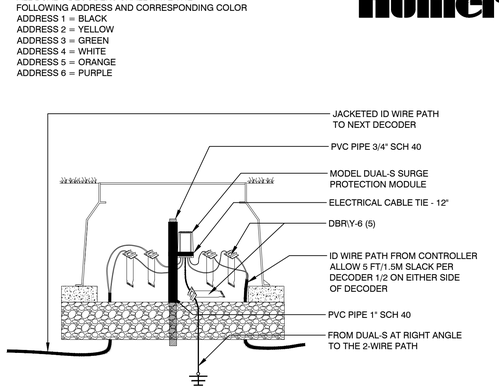
NOTE:
ALL DUAL-1 DECODERS SHALL HAVE THE FOLLOWING ADDRESS AND CORRESPONDING COLOR
ADDRESS 1 = BLACK
ADDRESS 2 = YELLOW
ADDRESS 3 = GREEN
ADDRESS 4 = WHITE
ADDRESS 5 = ORANGE
ADDRESS 6 = PURPLE



9 DUAL-1 DECODER

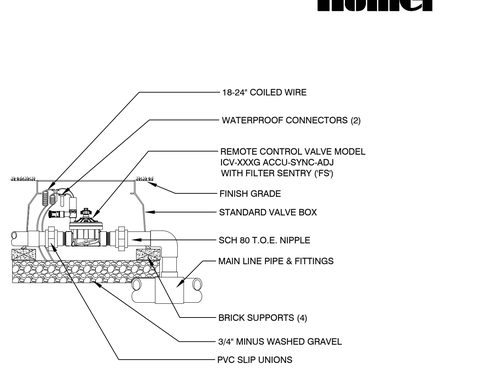
1 1/2" = 1'-0" FX-IR-HUNT-CONT-11

NOTE:
ALL DUAL-1 DECODERS SHALL HAVE THE FOLLOWING ADDRESS AND CORRESPONDING COLOR
ADDRESS 1 = BLACK
ADDRESS 2 = YELLOW
ADDRESS 3 = GREEN
ADDRESS 4 = WHITE
ADDRESS 5 = ORANGE
ADDRESS 6 = PURPLE



10 DUAL-S SURGE DEVICE

1 1/2" = 1'-0" FX-IR-HUNT-CONT-15



11 ICV GLOBE VALVE W/ ACCU-SYNC-ADJ AND UNIONS

1" = 1'-0" FX-IR-HUNT-VALV-19

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No.	Date	Comment

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

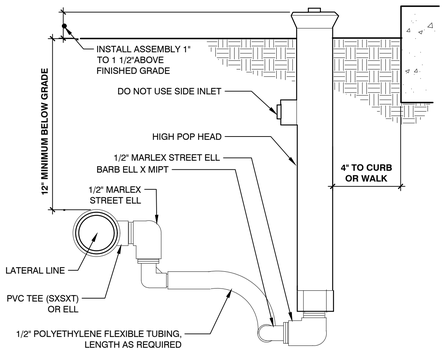
Project Title:

WHISPERING HILLS SUBDIVISION
HOWEY-IN-THE-HILLS, LAKE COUNTY, FLORIDA

Sheet Title:

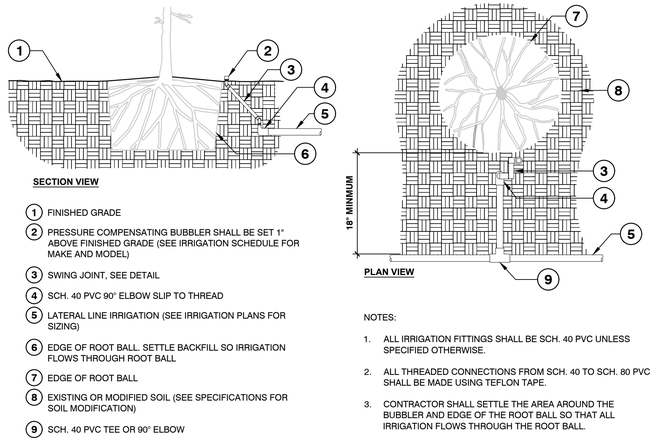
IRRIGATION DETAILS

Designed:	IDS	Sheet No.:	L316
Drawn:	CAZ		
Checked:	KMD		
Date:	01/12/22		



1 SHRUB SPRAY HIGHPOP W/FLEX ASSEMBLY

3" = 1'-0" FX-IR-FX-HEAD-08



1. FINISHED GRADE
2. PRESSURE COMPENSATING BUBBLER SHALL BE SET 1" ABOVE FINISHED GRADE (SEE IRRIGATION SCHEDULE FOR MAKE AND MODEL)
3. SWING JOINT, SEE DETAIL
4. SCH. 40 PVC 90° ELBOW SLIP TO THREAD
5. LATERAL LINE IRRIGATION (SEE IRRIGATION PLANS FOR SIZING)
6. EDGE OF ROOT BALL. SETTLE BACKFILL SO IRRIGATION FLOWS THROUGH ROOT BALL
7. EDGE OF ROOT BALL
8. EXISTING OR MODIFIED SOIL (SEE SPECIFICATIONS FOR SOIL MODIFICATION)
9. SCH. 40 PVC TEE OR 90° ELBOW

NOTES:

1. ALL IRRIGATION FITTINGS SHALL BE SCH. 40 PVC UNLESS SPECIFIED OTHERWISE.
2. ALL THREADED CONNECTIONS FROM SCH. 40 TO SCH. 80 PVC SHALL BE MADE USING TEFLON TAPE.
3. CONTRACTOR SHALL SETTLE THE AREA AROUND THE BUBBLER AND EDGE OF THE ROOT BALL SO THAT ALL IRRIGATION FLOWS THROUGH THE ROOT BALL.

2 IRRIGATION BUBBLER W/ LAYOUT

3/4" = 1'-0" FX-IR-FX-BUBB-04

PREPARED BY:

Floravie design

Contact: KALEY DUNLAP
916 VASSAR STREET
ORLANDO, FL 32804
TEL | 321-277-0826
kaley@floraviedesign.com

PREPARED FOR:

RED JACKET DEVELOPMENT
CONTACT: CLAY FRANKEL
625 WALTHAM AVENUE
ORLANDO, FLORIDA 32409
PHONE: 407-855-1136

No.	Date	Comment

Professional Landscape Architect of Record:

Kaley M. Dunlap, PLA — LA6667256
Landscape Architect — Certificate No.

Project No.: 22-001

Project Phase: CITY SUBMITTAL

Project Title:

WHISPERING HILLS
SUBDIVISION
HOWEY-IN-THE-HILLS,
LAKE COUNTY, FLORIDA

Sheet Title:

IRRIGATION DETAILS

Designed:	IDS
Drawn:	CAZ
Checked:	KMD
Date:	01/12/22

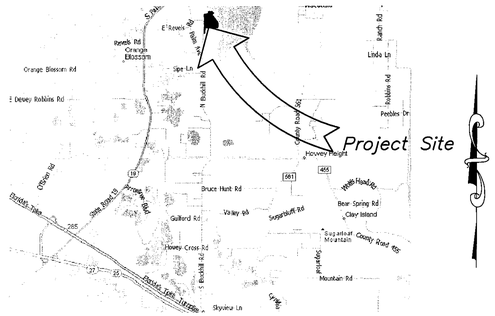
Sheet No.: L317

Boundary Survey
Section 36, Township 20 South, Range 25 East
Lake County, Florida
Whispering Hills

Legend & Abbreviations

● Found Iron Rod or Pipe	Power Pole
■ Found Concrete Monument	Guy Wire
◉ Found P.K. Nail & Disk	Fence
× Found X-Cut	Overhead Utility Lines
○ Set 5/8" Capped Iron Rod	Well
◎ Set P.K. Nail & Disk	
(F) Field Measurement	
(D) Deed Reference	
(P) Plat Reference	

Vicinity Map

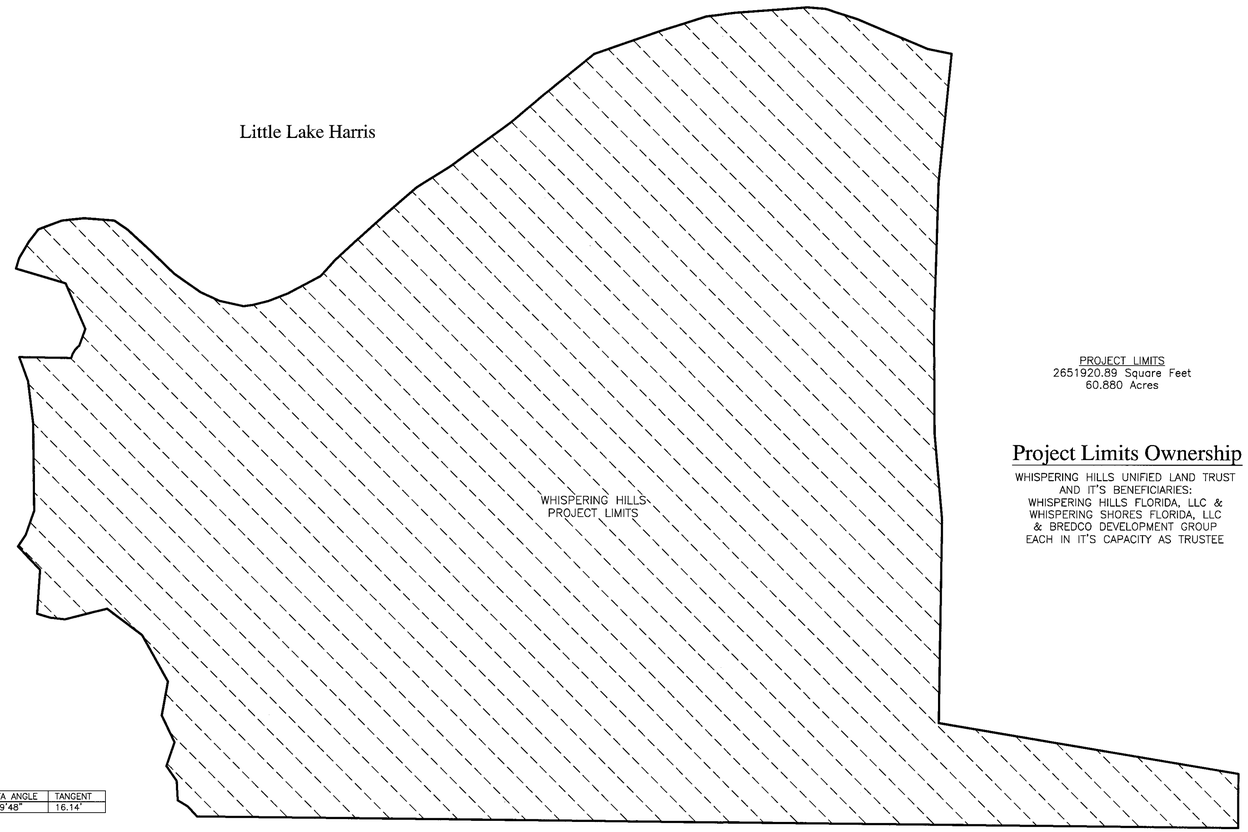


Description: Project Limits
A portion of Government Lots 5 and 6, in Section 36, Township 20 South, Range 25 East, Lake County, Florida,

more particularly described as follows:

Commence at the Southwest corner of the Southeast ¼ of Section 36, Township 20 South, Range 25 East, Lake County, Florida; thence coincident with the South Boundary of said Southeast ¼, S 89°50'08" E a distance of 32.76 feet to a point on the East Right-of-way Boundary of Buckhill Road per OSPREY HEIGHTS-PHASE 1A, as recorded in Plat Book 33, Page 66 of the public records of Lake County, Florida, said point being the POINT OF BEGINNING; thence departing said South Boundary, coincident with said East Right-of-way Boundary and the Northerly extension thereof, N 00°36'32" E a distance of 2184.33 feet; thence N 47°09'43" E a distance of 28.30 feet; thence N 31°02'11" E a distance of 24.81 feet; thence N 86°55'48" E a distance of 40.31 feet; thence N 55°05'08" E a distance of 38.19 feet; thence S 71°01'20" E a distance of 52.29 feet; thence N 64°09'46" E a distance of 61.62 feet; thence S 79°41'54" E a distance of 70.94 feet; thence N 60°39'33" E a distance of 110.96 feet; thence N 36°52'01" E a distance of 91.94 feet; thence N 13°52'52" W a distance of 29.71 feet; thence N 14°17'52" W a distance of 61.64 feet; thence N 06°23'22" E a distance of 30.93 feet; thence N 16°45'59" E a distance of 28.88 feet; thence S 86°22'27" E a distance of 91.79 feet; thence N 45°57'51" E a distance of 66.74 feet; thence S 55°54'12" E a distance of 29.18 feet; thence S 70°43'29" E a distance of 52.36 feet; thence N 89°10'11" E a distance of 183.00 feet; thence N 82°49'33" E a distance of 87.24 feet; thence N 69°29'41" E a distance of 52.88 feet; thence S 00°53'22" W a distance of 108.93 feet to a point coincident with a non-tangent curve concave to the Southwest, said curve having a radius of 46.00 feet, a delta angle of 38°39'48" and being subtended by a chord bearing S 56°23'48" E for a distance of 30.46 feet; thence coincident with the arc of said curve a distance of 31.04 feet; thence S 70°02'13" E a distance of 36.99 feet; thence N 66°26'02" E a distance of 104.12 feet; thence N 16°19'52 E a distance of 108.8 feet, more or less, to the waters edge of Little Lake Harris; thence Southerly coincident with the waters edge of Little Lake Harris to the Northeast corner of the lands described in Official Records Book 1775, Page 275 of the Public Records of Lake County, Florida; thence departing said waters edge, coincident with the North Boundary of said lands for the following five (5) courses: 1.) N 84°17'12" W a distance of 269.90 feet; 2.) thence N 88°21'36" W a distance of 293.43 feet; 3.) thence S 89°30'46" W a distance of 224.96 feet; 4.) thence S 84°47'04" W a distance of 179.68 feet; 5.) thence N 89°13'45" W a distance of 421.93 feet to a point on the West Boundary of said lands; thence departing said North Boundary, coincident with said West Boundary, S 09°31'29" W a distance of 636.42 feet to a point on the aforementioned South Boundary of the Southeast ¼ of said Section 36; thence coincident with said South Boundary, N 89°51'03" W a distance of 112.96 feet to the POINT OF BEGINNING.

Containing an area of 2651920.89 square feet, 60.880 acres more or less.



0' 150' 300' 450'
Scale: 1" = 150'

PROJECT LIMITS
2651920.89 Square Feet
60.880 Acres

Project Limits Ownership

WHISPERING HILLS UNIFIED LAND TRUST
AND IT'S BENEFICIARIES:
WHISPERING HILLS FLORIDA, LLC &
WHISPERING SHORES FLORIDA, LLC
& BREDCO DEVELOPMENT GROUP
EACH IN IT'S CAPACITY AS TRUSTEE

Curve Information: Field

CURVE	RADIUS	ARC LENGTH	CHORD BEARING	CHORD LENGTH	DELTA ANGLE	TANGENT
C1	46.00'	31.04'	S 56°23'48" E	30.46'	38°39'48"	16.14'

Line Information: Field

LINE	BEARING	DISTANCE
L1	S 89°50'08" E	32.76'
L2	N 89°36'12" W	33.26'
L3	S 59°21'44" E	39.46'
L4	S 51°48'39" E	32.32'
L5	S 20°06'30" E	52.66'
L6	S 05°48'50" E	46.69'
L7	S 04°14'38" W	63.65'
L8	S 33°26'19" W	33.87'
L9	S 42°12'38" W	63.00'
L10	S 43°27'07" W	70.97'
L11	S 34°38'41" W	66.78'
L12	S 24°34'08" W	43.64'
L13	S 12°12'12" W	51.72'
L14	S 07°48'34" E	19.89'
L15	S 14°19'43" E	34.15'
L16	S 21°00'25" E	43.53'
L17	S 27°45'01" E	76.71'
L18	S 47°28'28" E	45.18'
L19	S 42°26'57" E	51.56'
L20	S 41°22'02" E	87.92'
L21	S 40°24'32" E	86.99'
L22	S 32°00'05" E	82.70'
L23	S 35°51'18" E	158.38'
L24	S 39°44'36" E	86.83'
L25	S 38°30'16" E	48.41'
L26	S 38°37'19" E	88.55'
L27	S 18°50'58" E	150.83'
L28	S 17°00'24" E	31.36'
L29	S 17°24'59" E	66.00'
L30	S 06°59'58" E	62.36'
L31	S 04°11'13" E	110.04'
L32	S 04°23'45" E	41.16'
L33	S 04°33'28" W	36.78'
L34	S 14°23'11" W	7.18'
L35	S 20°10'10" W	13.99'
L36	S 17°31'58" W	50.58'
L37	S 22°56'32" W	68.25'
L38	S 22°36'49" W	91.03'
L39	S 11°13'03" W	51.32'

Line Information: Field

LINE	BEARING	DISTANCE
L40	N 89°51'03" W	112.96'
L41	N 47°09'43" E	28.30'
L42	N 31°02'11" E	24.81'
L43	N 86°55'48" E	40.31'
L44	N 55°05'08" E	38.19'
L45	S 71°01'20" E	52.29'
L46	N 64°09'46" E	61.62'
L47	S 79°41'54" E	70.94'
L48	N 60°39'33" E	110.96'
L49	N 36°52'01" E	91.94'
L50	N 13°52'52" W	29.71'
L51	N 14°17'52" W	61.64'
L52	N 06°23'22" E	30.93'
L53	N 16°45'59" E	28.88'
L54	S 86°22'27" E	91.79'
L55	N 45°57'51" E	66.74'
L56	S 55°54'12" E	29.18'
L57	S 70°43'29" E	52.36'
L58	N 89°10'11" E	183.00'
L59	N 82°49'33" E	87.24'
L60	N 69°29'41" E	52.88'
L61	S 00°53'22" W	108.93'
L62	S 70°02'13" E	36.99'
L63	N 66°26'02" E	104.12'
L64	N 16°19'52" E	108.8'±
L65	S 72°51'43" E	22.57'

Line Information: Deed

LINE	BEARING	DISTANCE
L66	N 89°17'20" E	146.00'

Surveyor's Notes

1.) Not valid without the signature and original raised seal of a Florida Licensed Surveyor and Mapper.
2.) The coordinate and bearing structure for this survey is based on Florida State Plane Coordinate System, East zone, North American Datum of 1983 (NAD83), 1990 adjustment. Horizontal control station utilized was National Geodetic Survey (NGS) first (1st) order control station "LC 06".
3.) All utilities depicted hereon are from visible evidence only. Surveyor did not contact subsurface utility locator service.
4.) No underground foundations or footers were excavated or located for this survey.
5.) Boundary Survey has been performed without benefit of title policy or abstract. Therefore surveyor can make no guarantees to ownership or encumbrances.

Stacy L. Brown P.S.M. No. 6516
SurvTech Solutions, Inc. L.B. No. 7340

Project Name: Whispering Hills	PROJECT NO.: 20060189
Address: North Buckhill Road	City: Howey-in-the-Hills State: Florida

REVISION	DATE	INITIALS
Revised parent parcel & project limits boundaries.	11/18/08	T.M.
Added wetland line.	5/14/09	S.B.
Added Army Corp of Engineers wetland areas.	9/9/10	S.B.
Added information for Parcels C, F, S & T.	3/31/11	T.M.
Revised legal descriptions.	12/12/11	T.M.
Removed all internal parcels	5/16/12	S.B.

SURVEYING TODAY WITH TOMORROWS TECHNOLOGY

Drafted By: S. Brown
Date Drafted: 7/07/07
Approved By: S. Brown
Date Approved: 7/09/07
Field Date: 3/28/07
Phase: 6
Revision Date: 5/16/12
Drawing Name: 20060189_6PL
Scale: 1" = 100'
Field Book/Page: 27-09/7

SURVTECH SOLUTIONS, INC.
10220 U.S. Highway 92 East
Tampa, FL 33610
phone: (813)-621-4929
fax: (813)-621-7194
Licensed Business #7340
email: sbrown@survtechsolutions.com
http://www.survtechsolutions.com

Project Limits Boundary Detail Sheet
Whispering Hills

0' 100' 200' 300'

Scale: 1" = 100'

Little Lake Harris

Little Lake Harris

Little Lake Harris

10' Witness Corner
Found 4"x4" Concrete
Monument "L.B. #4709"
LAT:28°41'50.3072"
LON:-81°45'31.9325"

Wetland Line per
Land Planning Group
(As Supplied)

Survey Closure Line

Safe Upland Line 62.10' (NAVD 1988)
per Richard Malloy, Bureau of State
Lands, Tallahassee, Florida (As Supplied
to SurvTech by Client)

Parent Parcel

Wetland Line per
Land Planning Group
(As Supplied)

Note: An ordinary high water elevation has not been determined for Lake Harris, therefore, the safe upland line is depicted hereon for constraint purposes as well as for a survey closure line.

Project Limits

Found 4x4 Concrete
Monument "LB #4709"
LAT:28°42'10.3575"
LON:-81°45'39.7139"

Southerly (D)

259.90' (F)
S 85°08'00" E 270'± (D)
N 84°17'12" W 269.90' (F)

Found 6" Concrete
Monument "L.S. #1916"

North Boundary of lands described
in O.R. Book 1775, Page 275 of the
Public Records of Lake County, Florida

S 89°10'40" E 283.40' (D)
N 88°21'36" W 283.43' (F)

Found 6" Concrete
Monument "L.S. #1916"

GOVERNMENT LOT 6

Total Project Acreage
2651920.89 Square Feet
60.880 Acres

S 89°30'46" E 224.98' (D)
N 89°30'46" W 224.96' (F)

Found 6" Concrete
Monument "L.S. #1916"

GOVERNMENT LOT 5

LESS OUT PARCEL

S 89°17'20" W 1310.00' (D)

N 83°58'40" E 179.74' (D)
S 84°47'04" W 178.68' (F)

Found 6" Concrete
Monument "L.S. #1916"

Project Limits

South Boundary of Government Lot 5, also
being the North Boundary of Government Lot 6

Wetland Line per
Army Corps of Engineers

South Boundary of the S.E. ¼
of Section 36-20S-25E

N 89°19'07" W 921.33' (F)

Wetland Line per
Land Planning Group
(As Supplied)

10' Dirt Drive

North Boundary of the S.E. ¼
of Section 36-20S-25E

North Boundary of Government Lot 5
per Township Plat Dated March 13, 1850
and Original Conveyances Out of U.S.
Government and the State of Florida

Found 4"x4" Concrete
Monument (No Id.)
LAT:28°41'50.4351"
LON:-81°45'47.4034"

S 09°31'29" W 636.42' (F)
N 08°42'20" E 636.35' (D)

Point of Beginning
LESS OUT PARCEL
Found 4"x4" Concrete
Monument (No Id.)
LAT:28°41'44.2146"
LON:-81°45'48.5407"

West Boundary of lands described
in O.R. Book 1775, Page 275 of the
Public Records of Lake County, Florida

Point of Beginning
Project Limits
Found 4"x4" Concrete
Monument "L.B. #4709"

30' Ingress/Egress Easement
per O.R. Book 282, Page 579

10' Dirt Drive

West Boundary of Government Lot
5 per Township Plat Dated March
21, 1850 on File at the Bureau
of Land Management and Has
Been Distributed by Lake County

LAT:28°42'02.3786"
LON:-81°45'49.7220"

Found 4"x4" Concrete
Monument "L.B. #4709"

Possible Encroachment

2184.33' (F)

East Right-of-way Boundary of Buckhill Road per
OSPREY HEIGHTS--PHASE 1A, as recorded
in Plat Book 33, Page 66

N 00°36'32" E 1835.08' (F)

Clay Road

298.28' (F)

810.90' (F)

N 00°35'36" E 1109.18' (F)

N 00°35'36" E 1835.25' (F)

Clay Road

Buckhill Road
Public Right-of-way width varies
Clay Road (width varies)

Northwest Corner
of the SE ¼ of
Section 36-20S-25E
Found 3" Pipe (No Id.)
LAT:28°42'10.4077"
LON:-81°45'50.0595"

Found 4"x4" Concrete
Monument "L.B. #4709"
LAT:28°42'02.3795"
LON:-81°45'50.0955"

West Boundary of the S.E. ¼
of Section 36-20S-25E

Point of Commencement
Southwest Corner
of the SE ¼ of
Section 36-20S-25E
Found 4"x4" Concrete
Monument (No Id.)
LAT:28°41'44.2092"
LON:-81°45'50.1789"

Boundary Survey
PREPARED FOR:
Whispering Hills

SURVTECH SOLUTIONS, INC.
10220 U.S. Highway 92 East
Tampa, FL 33610
Licensed Business #7340
phone: (813)-621-4929
fax: (813)-621-7194
email: sbrown@survtechsolutions.com
http://www.survtechsolutions.com

Topographic Detail Sheet

0' 100' 200' 300'

Scale: 1" = 100'

Little Lake Harris

Little Lake Harris

Project Limits

10'± Dirt Drive

Project Limits

Project Limits

Overhead Utility Line

Edge of Road

Utility Pole

Buckhill Road

Public Right-of-way width varies
Clay Road (width varies)

Note: Topographic data shown hereon is for informational purposes only.

Stacy L. Brown P.S.M. No. 6516
SurvTech Solutions, Inc. L.B. No. 7340

Boundary Survey
PREPARED FOR:
Whispering Hills

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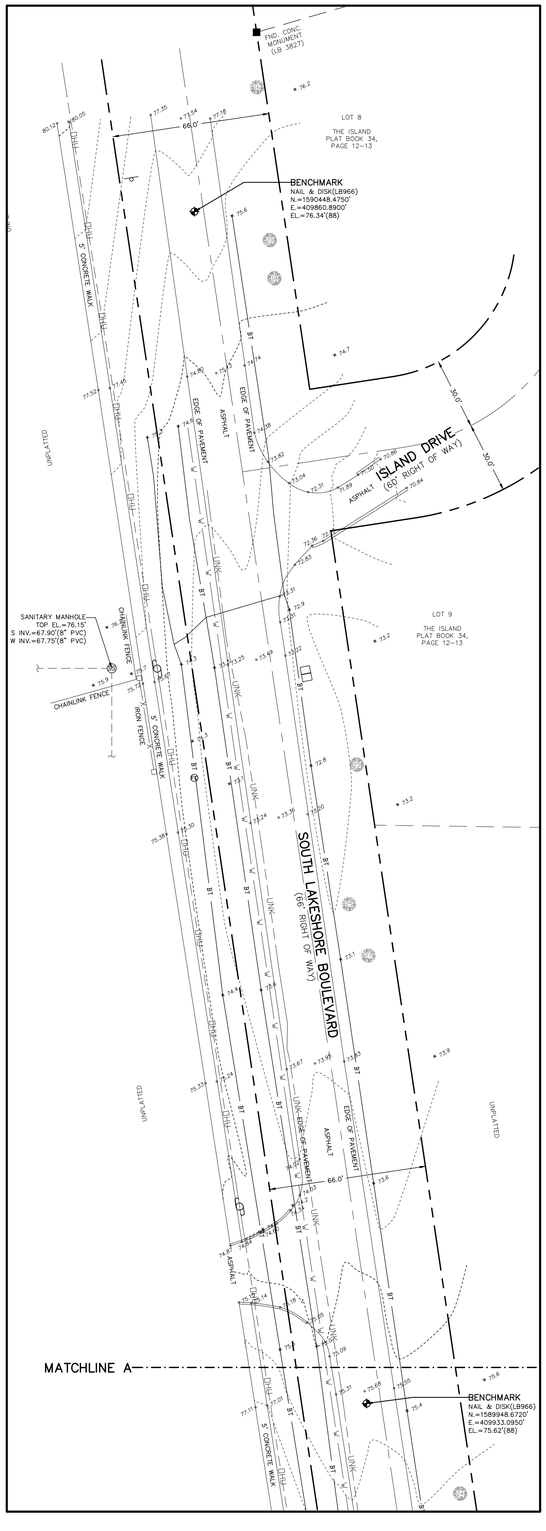

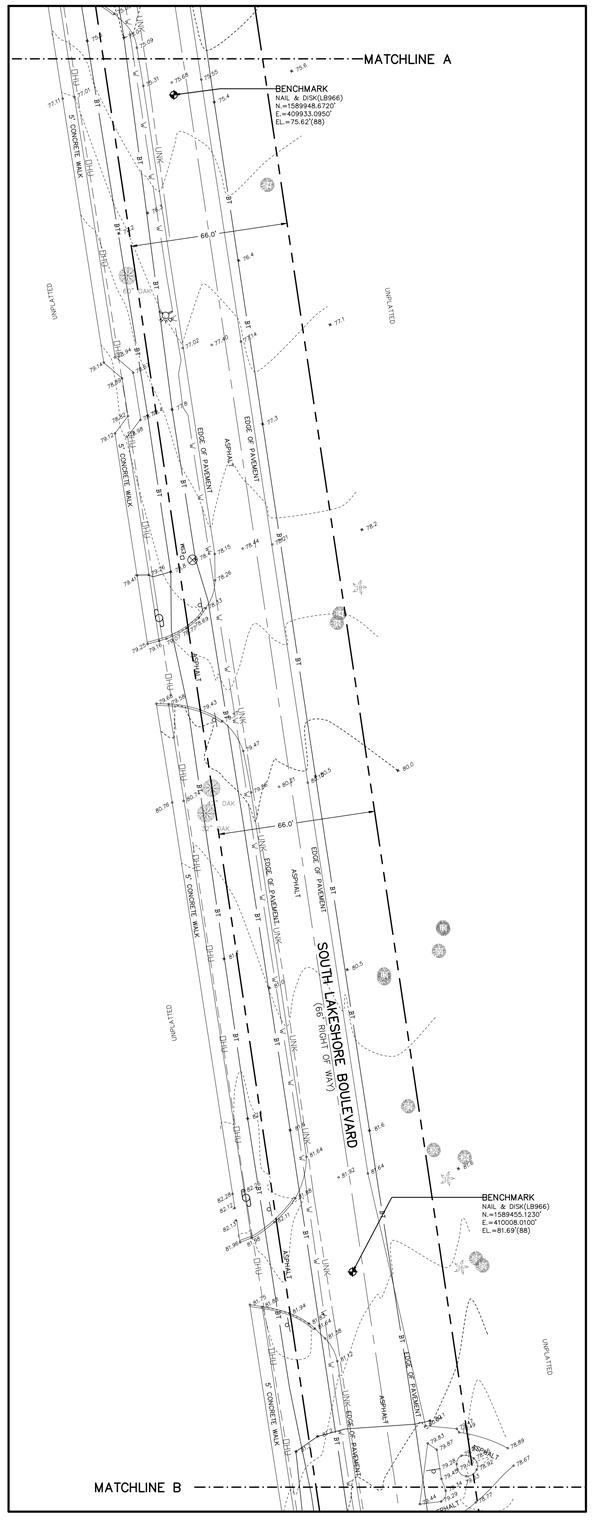

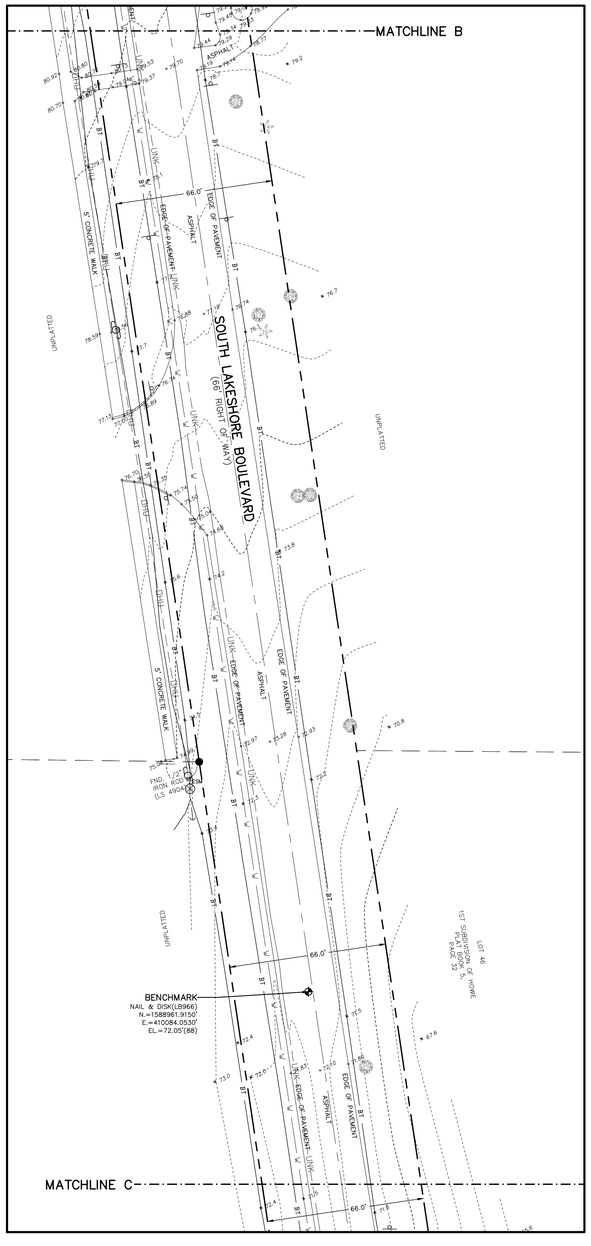

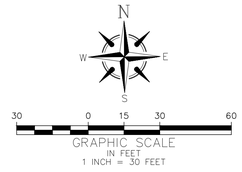

SURVEYOR'S NOTES:

ELEVATIONS SHOWN HEREON ARE BASED ON N.A.V.D. 1988 DATUM. REFERENCE BENCHMARK IS XXX

BEARINGS SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE. (NAD 83, 2007 ADJUSTMENT) AS DETERMINED FROM GLOBAL POSITIONING SYSTEM (GPS).

UNLESS OTHERWISE NOTED, PLAT INFORMATION IS EQUAL TO FIELD MEASURED DATA.

NO UNDERGROUND INSTALLATIONS, IMPROVEMENTS OR ROOF OVERHANGS HAVE BEEN LOCATED EXCEPTS AS NOTED HEREON.

THE SURVEYOR HAS NOT MADE A SEARCH OF THE PUBLIC RECORDS FOR EASEMENTS, RESTRICTIONS, RESERVATIONS AND/OR RIGHTS-OF-WAY OF RECORD.

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

POINT ELEVATIONS WITH TWO DECIMAL PRECISION DENOTE PAVEMENT, CONCRETE AND TOP OF WATER SHOTS. ONE DECIMAL PRECISION DENOTES NATURAL GROUND OR A SOFT SHOT, ALL OTHERS ARE AS NOTED.

RIGHT OF WAY SHOWN HEREON IS BASED UPON FIELD MONUMENTATION AND BEST AVAILABLE RIGHT OF WAY INFORMATION.

= PINE = CAMPHOR
= PALM = OAK

CERTIFICATION:

I HEREBY CERTIFY TO:

RED JACKET DEVELOPMENT GROUP, LLC

RICHARD D. BROWN, P.S.M.
STATE OF FLORIDA
REGISTRATION NO. 5700
(NOT VALID WITHOUT SIGNATURE AND SEAL)

11/15/2023
DATE

ABBREVIATIONS

P.B. PLAT BOOK	(C) CALCULATED	° DEGREES	ALL PROPERTY CORNERS AS NOTED.	EL. ELEVATION	BENCHMARK	CLEAN OUT
O.B. DEED BOOK	(P) PLAT	' MINUTES	D.U.E. DRAINAGE AND UTILITY EASEMENT	P.T. POINT OF TANGENCY	WOOD POWER POLE	SANITARY SEWER M.HOLE
BK. BOOK	(D) DESCRIBED	" SECONDS	ID IDENTIFICATION	P.C. POINT OF CURVE	CONCRETE POWER POLE	STORM SEWER M.HOLE
PG. PAGE	(M) MEASURED	± MORE OR LESS	P.C.P. PERMANENT CONTROL POINT	P.R.C. POINT OF REVERSE CURVE	METAL POWER POLE	GAS METER
SECT. SECTION	L.B. LICENSED BUSINESS	P.O.B. POINT OF BEGINNING	P.I. POINT OF INTERSECTION	GUY WIRE ANCHOR	GAS VALVE
TWP. TOWNSHIP	CB. CHORD BEARING	L.S. LICENSED SURVEYOR	P.O.C. POINT OF COMMENCEMENT	N.&T. NAIL AND TAB	WOOD LIGHT POLE	CATV CABLE TELEVISION RISER
RGE. RANGE	CH. CHORD	B.W.F. BARBED WIRE FENCE	C.M.P. CORRUGATED METAL PIPE	CONCRETE LIGHT POLE	TELR TELEPHONE RISER
COR. CORNER	R. RADIUS	H.W.F. HOG WIRE FENCE	R.C.P. REINFORCED CONCRETE PIPE	MLP METAL LIGHT POLE	TCB TELEPHONE CONTROL BOX
AC. ACRES	L. LENGTH	C.L.F. CHAIN LINK FENCE	F/F. FINISH FLOOR ELEVATION	INV. INVERT	FLP FIBERGLASS LIGHT POLE	TRAN ELECTRIC TRANSFORMER
P.S.M. PROFESSIONAL SURVEYOR AND MAPPER	Δ DELTA	W.F. WOOD FENCE	L.F.E. LOWEST FLOOR ELEVATION	FD. FOUND	FIRE HYDRANT	ELSM ELECTRIC SERVICE METER
BM BENCHMARK	T TANGENT	E/P EDGE OF PAVEMENT	G.F.E. GARAGE FLOOR ELEVATION	R/W RIGHT OF WAY	WATER VALVE	TRAF. SIGNAL CONTROL BOX
C.B.S. CONCRETE BLOCK & STUCCO	C/L CENTERLINE	FRM. FRAME	O.R. OFFICIAL RECORDS	P.R.M. PERMANENT REFERENCE MONUMENT	WELL	BOLLARD
UNDERGROUND POWER LINE	O/S OFFSET	STY. STORY	WATER METER	SIGN
OHU OVERHEAD POWER LINE	CONC. CONCRETE	TX TRANSFORMER	RECLAIMED WATER VALVE	FIBER OPTIC MARKER
BURIED TELEPHONE LINE	RECLAIMED WATER METER	TELEPHONE MARKER
BURIED GAS MAIN	AIR RELEASE VALVE	GAS GAS MARKER
BURIED WATER LINE
SAN BURIED SANITARY SEWER LINE

TOPOGRAPHIC SURVEY

LANDS IN SEC. 36-20-25

REVISIONS	NAVD 1988 VERTICAL DATUM
ADDITIONAL TOPO 11/15/23	
CAD FILE# 23-378 ROUTE.DWG	SECT. 36 TWP. 20 S. RGE. 25 E.
DATE OF SURVEY 9/5/23 | JOB #23-378 | SCALE: 1"=30' | DRAWN BY: AB | CHECKED BY: RDB	

JOHNSTON'S SURVEYING INC.
900 Cross Prairie Parkway, Kissimmee, Florida 34744
(407) 847-2179 • Fax (407) 847-6140 LB 966

MATCHLINE C

MATCHLINE D

MATCHLINE E

MATCHLINE F

SOUTH LAKESHORE BOULEVARD
(66' RIGHT OF WAY)

NORTH BUCKHILL ROAD
(RIGHT OF WAY)
ASPHALT

PALM AVENUE
(RIGHT OF WAY)

℄ EAST REVELS ROAD
(RIGHT OF WAY PER
PLAT BOOK 65, PAGES 92-97)

BENCHMARK
NAIL & DISK(LB966)
N.=1585468.0900'
E.=410156.4390'
EL.=77.33'(88)

BENCHMARK
NAIL & DISK(LB966)
N.=1587970.6470'
E.=410199.8930'
EL.=81.18'(88)

BENCHMARK
NAIL & DISK(LB966)
N.=1587575.6510'
E.=409892.5480'
EL.=81.24'(88)

BENCHMARK
NAIL & DISK(LB966)
N.=1587518.1810'
E.=409394.1640'
EL.=83.54'(88)

N
W E
S

30 0 15 30 60
GRAPHIC SCALE
IN FEET
1 INCH = 30 FEET

JOHNSTON'S
SURVEYING INC.
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