ATTACHMENT B

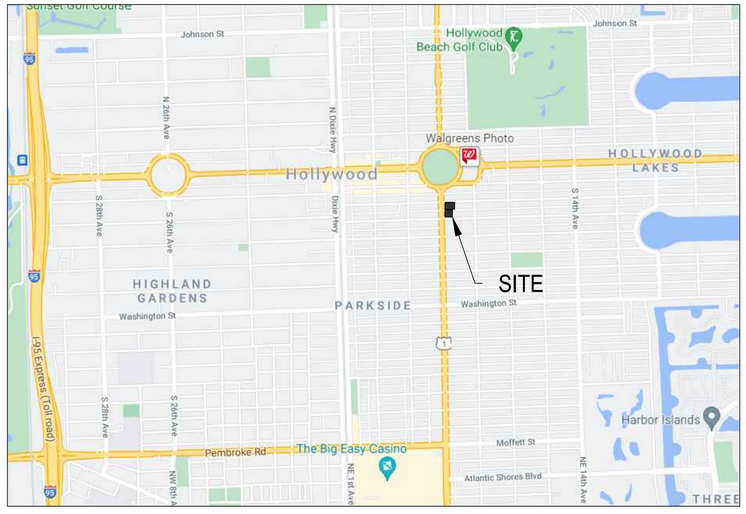
Initial Application Package Part II

CIVIL ENGINEERING PLANS

FOR

THE TROPIC

CITY OF HOLLYWOOD
BROWARD COUNTY, FLORIDA
SECTION 15, TOWNSHIP 51, RANGE 42



SITE MAP - N.T.S.

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LEGAL DESCRIPTION: (PARCEL 1)

LOTS 26, 27, 28, 29 AND 30, LESS THE WEST 15 FEET OF LOT 30, AND LESS THAT PART OF LOT 30 WHICH IS INCLUDED IN THE EXTERNAL AREA FORMED BY A 15 FOOT RADIUS ARC WHICH IS TANGENT TO THE NORTH LINE OF SAID LOT 30 AND TANGENT TO A LINE WHICH IS 15 FEET EAST OF AND PARALLEL TO THE WEST LINE OF SAID LOT 30, IN BLOCK 59, OF HOLLYWOOD, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 1, PAGE 21, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA.

LEGAL DESCRIPTION: (PARCEL 2)

LOT 1, LESS THE WESTERLY 15 THEREOF AND LESS THAT PORTION OF LOT 1 MORE SPECIFICALLY DESCRIBED IN THAT CERTAIN ORDER OF TAKING RECORDED IN OFFICIAL RECORDS BOOK 5966, PAGE 12, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA, AND ALL OF LOTS 2, LOT 3, AND LOT 4, IN BLOCK 59, OF THE TOWN OF HOLLYWOOD, ACCORDING TO THE PLAT THEROF AS RECORDED IN PLAT BOOK 1, PAGE 21, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA.

BTE REF DATE: 2-3-2022

#	DATE	REVISIONS
	3-16-22	PDB SUBMITTAL

STEPHEN F. BOTEK LICENSE No. 55335 STATE OF FLORIDA PROFESSIONAL ENGINEER

February 3, 2022

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY STEPHEN F. BOTEK, P.E. ON THE DATE ADJACENT TO THE SEAL.

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Celebrating 15 Years

CIVIL COVER SHEET

THE TROPIC
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BTE PROJECT #: 20-0902

PROJECT DATE: 6-30-2021

SHEET #: C-0

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

GENERAL NOTE

1. THIS CONSTRUCTION PROJECT MAY OR MAY NOT INCLUDE ALL ITEMS COVERED BY THESE NOTES AND SPECIFICATIONS, IE PAVING, GRADING, DRAINAGE LINES, WATER LINES, OR SANITARY SEWER LINES. SEE PLANS FOR DETAILED PROJECT SCOPE. NOTES AND SPECIFICATIONS ON THIS SHEET REFER TO PAVING, GRADING, DRAINAGE, WATER, AND SANITARY SEWER, AND ARE INTENDED FOR THIS PROJECTS SCOPE OF WORK AND FOR REFERENCE PURPOSES FOR OTHER WORK ITEMS THAT MAY BE REQUIRED DUE TO UNFORESEEN EXISTING CONDITIONS OR REQUIRED REMEDIAL WORK.

I. SPECIFIC SITE NOTES

A. "CITY" IN THESE NOTES REFERS TO THE CITY OF HOLLYWOOD
B. "COUNTY" IN THESE NOTES REFERS TO BROWARD COUNTY
C. "STATE" IN THESE NOTES REFERS TO THE STATE OF FLORIDA
D. SURVEY: PLANS ARE BASED ON THE SURVEY BY STONER & ASSOCIATES, INC.
E. DATUM: ALL ELEVATIONS ON THE PLANS ARE REFERENCED TO NAVD 1988

II. APPLICABLE CODES

A. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY, COUNTY AND ALL OTHER LOCAL, STATE AND NATIONAL CODES WHERE APPLICABLE.

B. IN THE EVENT OF A CONFLICT BETWEEN THE GENERAL NOTES AND CONSTRUCTION SPECIFICATIONS IN THESE PLANS, AND THE CONTRACT DOCUMENTS AND SPECIFICATIONS IN THE SPECIFICATION BOOKLET, THE CONTRACT DOCUMENTS AND SPECIFICATIONS IN THE SPECIFICATION BOOKLET SHALL GOVERN. IN THE EVENT OF A CONFLICT BETWEEN THESE CONTRACT DOCUMENTS AND THE CITY SPECIFICATIONS, THE CITY SPECIFICATIONS SHALL GOVERN.

C. ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER AND IN STRICT COMPLIANCE WITH ALL THE REQUIREMENTS OF THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AND ALL STATE AND LOCAL SAFETY AND HEALTH REGULATIONS.

D. THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH THE LAWS OF FLORIDA, AND THE CITY AND COUNTY CODES.

E. ALL HANDICAP ACCESSIBLE AREAS TO CONFORM WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT, LATEST EDITION.

F. TRENCH SAFETY ACT:

1. ALL TRENCH EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 90-96 OF THE LAWS OF FLORIDA (THE TRENCH SAFETY ACT).
2. ALL TRENCH EXCAVATION IN EXCESS OF 5 FEET IN DEPTH SHALL BE UNDERTAKEN IN ACCORDANCE WITH O.S.H.A. STANDARD 29 CFR. SECTION 1926.650 SUBPART P.
3. THE CONTRACTOR SHALL SUBMIT WITH HIS CONTRACT A COMPLETED, SIGNED, AND NOTARIZED COPY OF THE TRENCH SAFETY ACT COMPLIANCE STATEMENT. THE CONTRACTOR SHALL ALSO SUBMIT A SEPARATE COST ITEM IDENTIFYING THE COST OF COMPLIANCE WITH THE APPLICABLE TRENCH SAFETY CODES.
4. A TRENCH SAFETY SYSTEM, IF REQUIRED, SHALL BE DESIGNED BY THE CONTRACTOR.

G. ASBESTOS CEMENT PIPE (ACP), AND TRANSIT PIPE, CONTAIN ASBESTOS MATERIAL. ALL ASBESTOS CONTAINING MATERIALS SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH THE CURRENT LOCAL, STATE AND FEDERAL REGULATIONS. THIS INCLUDES THE CUTTING, PLUGGING AND DISPOSAL OF EXISTING ACP OR TRANSITE WATER MAIN PIPES.

III. PRECONSTRUCTION RESPONSIBILITIES

A. UPON THE RECEIPT OF THE "NOTICE TO PROCEED", THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD AND ARRANGE A PRECONSTRUCTION CONFERENCE TO INCLUDE ALL INVOLVED GOVERNMENTAL AGENCIES, UTILITY OWNERS AND THE ENGINEER OF RECORD.

B. THE CONTRACTOR SHALL NOTIFY AND OBTAIN AN UNDERGROUND CLEARANCE FROM ALL UTILITY COMPANIES AND GOVERNMENTAL AGENCIES AT LEAST 48 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN A SUNSHINE STATE ONE CALL OF FLORIDA, INC. CERTIFICATION CLEARANCE NUMBER AND FIELD MARKINGS AT LEAST 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION, CALL 1-800-432-4770 (FPL 305-347-3900) . CLEARANCE SHALL BE FOR ALL UTILITIES INCLUDING GAS, ELECTRIC, TELEPHONE, CABLE TELEVISION, WATER, AND SEWER, TRAFFIC LIGHT COMMUNICATION CABLES, ETC. ON BOTH PUBLIC AND PRIVATE PROPERTY IN THE VICINITY OF THE CONSTRUCTION PROJECT, INCLUDING THE FOLLOWING UTILITY COMPANIES, WHERE APPLICABLE:

FLORIDA POWER AND LIGHT COMPANY
BELL SOUTH-
LOCAL GAS COMPANY-
LOCAL WATER AND SEWER UTILITY COMPANY(S)-
LOCAL CABLE TELEVISION COMPANY(S)-
CITY OF FORT LAUDERDALE ENGINEERING DEPARTMENT-
BROWARD COUNTY ENGINEERING DEPARTMENT-
BROWARD COUNTY TRAFFIC ENGINEERING DEPARTMENT-
FLORIDA DEPARTMENT OF TRANSPORTATION-
SUNSHINE STATE ONE CALL OF FLORIDA (1-800-432-4770)

FOR STREET EXCAVATION OR CLOSING OR FOR ALTERATION OF ACCESS TO PUBLIC OR PRIVATE PROPERTY:
LOCAL POLICE TRAFFIC SERGEANT-
LOCAL FIRE DEPARTMENT DISPATCH

C. THE CONTRACTOR SHALL USE EXTREME CAUTION WORKING UNDER, OVER AND AROUND EXISTING ELECTRIC LINES. THE CONTRACTOR SHALL CONTACT THE ELECTRIC SUPPLY COMPANY TO VERIFY LOCATIONS, VOLTAGE AND REQUIRED CLEARANCES, ONSITE, IN RIGHT-OF-WAYS AND IN EASEMENTS, PRIOR TO ANY CONSTRUCTION IN THE VICINITY OF EXISTING LINES.

D. ALL UTILITY / ACCESS EASEMENTS TO BE SECURED PRIOR TO CONSTRUCTION.

E. LOCATION AND SIZE OF ALL EXISTING UTILITIES AND TOPOGRAPHY (FACILITIES) AS SHOWN ON CONSTRUCTION DRAWINGS ARE DRAWN FROM AVAILABLE RECORDS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE FACILITIES SHOWN OR FOR ANY FACILITY NOT SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION (VERTICAL & HORIZONTAL) OF ANY EXISTING UTILITIES AND TOPOGRAPHY PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE ELEVATIONS AND LOCATIONS OF ALL EXISTING FACILITIES, BY ELECTRONIC METHODS, VACUUM EXCAVATION, TEST HOLES AND BY HAND EXCAVATIONS AS REQUIRED, IN COORDINATION WITH ALL UTILITY COMPANIES, PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. IF AN EXISTING FACILITY IS FOUND TO CONFLICT WITH THE PROPOSED CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF RECORD SO THAT APPROPRIATE MEASURES CAN BE TAKEN TO RESOLVE THE CONFLICT.

F. NO CONSTRUCTION MAY COMMENCE UNTIL THE APPROPRIATE PERMITS HAVE BEEN OBTAINED FROM ALL LOCAL, STATE, AND FEDERAL AGENCIES.

G. ALL REQUIRED GOVERNMENTAL AGENCY BUILDING PERMITS TO BE OBTAINED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE TO PAY ALL ASSOCIATED PERMIT FEES INCLUDING WATER AND SEWER CONNECTION AND METER FEES.

H. CONTRACTOR TO COORDINATE CONSTRUCTION SCHEDULING FOR CONNECTION TO THE EXISTING WATER AND SEWER LINES WITH THE UTILITY DEPARTMENT THAT OWNS AND/OR MAINTAINS THE WATER AND SEWER LINES.

I. THE CONTRACTOR SHALL COORDINATE THE WORK WITH OTHER CONTRACTORS IN THE AREA AND ANY OTHER UNDERGROUND CONDUIT REQUIRED FOR FP&L, BELL SOUTH, IRRIGATION SYSTEM, ETC., PRIOR TO BEGINNING SUBGRADE. THE CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING UTILITIES WITH APPLICABLE UTILITY COMPANIES.

J. AT LEAST TWO (2) DAYS PRIOR TO THE START OF CONSTRUCTION, THE OWNER SHALL SUBMIT A CGP "NOTICE OF INTENT (N.O.I.) TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES THAT DISTURB ONE OR MORE ACRES OF LAND" FORM (DEP FORM 62-621.300(4)(B)) TO FDEP NOTICES CENTER. THE CONTRACTOR WILL BE RESPONSIBLE FOR (1) IMPLEMENTATION OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) THAT WAS REQUIRED TO BE DEVELOPED PRIOR TO NOI SUBMITTAL, AND (2) RETENTION OF RECORDS REQUIRED BY THE PERMIT, INCLUDING RETENTION OF A COPY OF THE SWPPP AT THE CONSTRUCTION SITE FROM THE DATE OF PROJECT INITIATION TO THE DATE OF FINAL SITE STABILIZATION. A "NOTICE OF TERMINATION (N.O.T.) OF GENERIC PERMIT COVERAGE" FORM (DEP FORM 62-621.300(6)) MUST BE SUBMITTED TO FDEP TO DISCONTINUE PERMIT COVERAGE, SUBSEQUENT TO COMPLETION OF CONSTRUCTION. FOR ADDITIONAL INFORMATION SEE FDEP WEBSITE: http://www.dep.state.fl.us/water/stormwater/npdes/index.htm

K. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL ACTIVITIES RELATED TO DEWATERING PERMITS, INCLUDING DESIGN PLANS.

IV. INSPECTIONS / TESTING:

A. THE CONTRACTOR SHALL NOTIFY IN WRITING THE CITY, THE COUNTY, THE ENGINEER OF RECORD, & ANY OTHER GOVERNMENTAL AGENCIES HAVING JURISDICTION AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION AND PRIOR TO REQUIRED INSPECTIONS OF THE FOLLOWING ITEMS, WHERE APPLICABLE:

1. CLEARING AND EARTHWORK
2. STORM DRAINAGE SYSTEMS
3. SANITARY SEWER SYSTEMS
4. WATER DISTRIBUTION SYSTEMS
5. LIMEROCK BASE
6. ASPHALT OR CONCRETE PAVEMENT
7. SIDEWALKS
8. LANDSCAPING
9. SITE LIGHTING
10. ELECTRICAL AND COMMUNICATION LINES
11. UTILITY CONDUITS
12. IRRIGATION
13. FINAL

B. THE OWNER, ENGINEER AND LOCAL PERMITTING AGENCIES MAY MAKE INSPECTIONS OF THE WORK AT ANY TIME. THE CONTRACTOR SHALL COOPERATE FULLY WITH ALL INSPECTIONS

C. TESTING - ALL TESTING REQUIRED BY THE PLANS AND SPECIFICATIONS SHALL BE PERFORMED BY AN INDEPENDENT LICENSED TESTING COMPANY. ALL TESTING COSTS (SITE CIVIL) SHALL BE PAID FOR BY THE OWNER/OR CONTRACTOR (AS SPECIFIED IN THE CONSTRUCTION CONTRACT), EXCEPT THOSE TESTS FAILING TO MEET THE SPECIFIED REQUIREMENTS, WHICH ARE TO BE PAID BY THE CONTRACTOR UNLESS OTHERWISE INDICATED ON THE PLANS OR SPECIFICATIONS. REQUIRED TEST FOR ASPHALT AND LIMEROCK SHALL BE TAKEN AT THE DIRECTION OF THE ENGINEER OR THE LOCAL GOVERNMENTAL AGENCY.

V. SHOP DRAWINGS

A. PRIOR TO CONSTRUCTION OR INSTALLATION, 5 SETS OF SHOP DRAWINGS SHALL BE SUBMITTED TO AND REVIEWED BY THE ENGINEER OF RECORD FOR THE FOLLOWING (IF APPLICABLE): LIFT/ PUMP STATION EQUIPMENT, SANITARY MANHOLES, CATCH BASINS, FIRE HYDRANTS, VALVES, PIPE MATERIAL AND ALL REQUIRED ACCESSORIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL OTHER AGENCY APPROVALS IF REQUIRED.

VI. TEMPORARY FACILITIES

A. GENERAL:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES, COMMUNICATIONS AND ELECTRICITY.

B. TRAFFIC REGULATION:

1. MAINTENANCE OF TRAFFIC IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.). A MAINTENANCE OF TRAFFIC PLAN MUST BE APPROVED BY THE GOVERNMENTAL ENGINEERING DIVISION HAVING JURISDICTION FOR THE SECTION OF ROADWAY BEFORE STARTING WORK IN THE PUBLIC RIGHT-OF-WAY.

2. ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAYS OR WALKWAYS SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.

3. NO TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN DURING NIGHTTIME HOURS, UNLESS IN ACCORDANCE WITH METHODS APPROVED BY THE GOVERNMENTAL ENGINEERING DIVISION HAVING JURISDICTION FOR THE SECTION OF ROADWAY.

4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR ANY NECESSARY CONSTRUCTION, PAVEMENT MARKING AND SIGNAGE OR PEDESTRIAN SIGNALIZATION AND/OR SIGNAL MODIFICATION TO ACCOMMODATE AN ALTERNATE SAFE WALK ROUTE.

5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE CONTINUOUS ACCESS TO THE ADJACENT SITES DURING CONSTRUCTION.

C. SECURITY FENCE:

1. CONTRACTOR SHALL CONSTRUCT TEMPORARY FENCING TO SECURE THE SITE AT ALL TIMES.

2. THE CONTRACTOR'S ONSITE EQUIPMENT, STOCKPILED MATERIAL AND SUPPLIES SHALL BE KEPT IN A SECURE FENCED AND LOCKED LOCATION WHEN CONTRACTOR IS NOT ONSITE.

VII. PROJECT PROGRESS AND CLOSEOUT

A. CLEANING UP:

1. DURING CONSTRUCTION, THE PROJECT SITE AND ALL ADJACENT AREAS SHALL BE MAINTAINED IN A NEAT AND CLEAN MANNER, AND UPON FINAL CLEAN-UP, THE PROJECT SITE SHALL BE LEFT CLEAR OF ALL SURPLUS MATERIAL OR TRASH. THE PAVED AREAS SHALL BE BROOM SWEPT CLEAN.

2. THE CONTRACTOR SHALL RESTORE OR REPLACE, WHEN AND AS DIRECTED BY THE ENGINEER OF RECORD, ANY PUBLIC OR PRIVATE PROPERTY (HIGHWAY, DRIVEWAY, WALK AND LANDSCAPING, ETC.), DAMAGED BY HIS WORK, EQUIPMENT, OR EMPLOYEES, TO A CONDITION AT LEAST EQUAL TO THAT EXISTING IMMEDIATELY PRIOR TO THE BEGINNING OF OPERATIONS. SUITABLE MATERIALS AND METHODS SHALL BE USED FOR SUCH RESTORATION.

3. WHERE MATERIAL OR DEBRIS HAS WASHED OR FLOWED INTO OR HAS BEEN PLACED IN WATER COURSES, DITCHES, DRAINS, CATCH BASINS, OR ELSEWHERE AS A RESULT OF THE CONTRACTOR'S OPERATIONS, SUCH MATERIAL OR DEBRIS SHALL BE REMOVED AND SATISFACTORILY DISPOSED OF DURING THE PROGRESS OF THE WORK AND THE AREA KEPT IN A CLEAN AND NEAT CONDITION.

B. ALL LAND SURVEY PROPERTY MONUMENTS OR PERMANENT REFERENCE MARKERS, REMOVED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED BY A STATE OF FLORIDA REGISTERED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

C. ALL UNPAVED SURFACES DISTURBED AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED BEFORE THE CONSTRUCTION.

D. PROJECT RECORD DOCUMENTS:

DURING THE DAILY PROGRESS OF THE JOB, THE CONTRACTOR SHALL RECORD ON HIS SET OF CONSTRUCTION DRAWINGS THE EXACT LOCATION, LENGTH, MATERIAL AND ELEVATION OF ANY FACILITY NOT BUILT EXACTLY ACCORDING TO PLANS.

1. UPON COMPLETION OF DRAINAGE IMPROVEMENTS AND LIMEROCK BASE CONSTRUCTION (AT LEAST 48 HOURS BEFORE PLACING ASPHALT PAVEMENT) THE CONTRACTOR SHALL FURNISH THE ENGINEER OF RECORD "AS-BUILT" PLANS FOR THESE IMPROVEMENTS, SHOWING THE LOCATIONS AND PERTINENT GRADES OF ALL DRAINAGE INSTALLATIONS AND THE FINISHED ROCK GRADES OF THE ROAD CROWN AND EDGES OF PAVEMENT AT 50 FOOT INTERVALS, INCLUDING LOCATIONS AND ELEVATIONS OF ALL HIGH AND LOW POINTS.

2. UPON COMPLETION OF CONSTRUCTION, AND PRIOR TO FINAL PAYMENT, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER OF RECORD ONE COMPLETE SET OF ALL "AS-BUILT" CONTRACT DRAWINGS. THESE DRAWINGS SHALL BE MARKED TO SHOW "AS-BUILT" CONSTRUCTION CHANGES AND DIMENSIONS, LOCATIONS, AND ELEVATIONS OF ALL IMPROVEMENTS.

3. AS-BUILTS OF WATER LINES SHALL INCLUDE THE FOLLOWING INFORMATION:

a. TOP OF PIPE ELEVATIONS EVERY 100 LF.
b. LOCATIONS AND ELEVATIONS OF ALL FITTINGS INCLUDING BENDS, TEES, VALVES, DOUBLE DETECTOR CHECK VALVES, FIRE HYDRANTS, ETC.
c. ALL TIE INS TO EXISTING LINES SHALL BE AS-BUILT.
d. THE TAP AND TERMINAL END AT ALL WATER SERVICES SHALL BE AS-BUILT.
e. AS BUILT DATA SHALL INCLUDE GPS DATA.

4. AS-BUILTS OF ALL GRAVITY SANITARY SEWER LINES SHALL INCLUDE THE FOLLOWING INFORMATION:

a. RIMS, INVERTS AND LENGTH OF PIPING BETWEEN STRUCTURES AS WELL AS SLOPES.
b. THE TAP AND STUB ENDS OF ALL SEWER LATERALS SHALL BE LOCATED AND IF THERE ARE ANY CLEANOUTS INSTALLED ON THE SEWER LATERALS THEN THE INVERT ELEVATION OF THESE CLEANOUTS SHALL BE OBTAINED.
c. LIFT STATION AS-BUILTS SHALL CONSIST OF TOP OF WET WELL ELEVATION, INVERT ELEVATION OF THE INCOMING LINE, BOTTOM OF THE WET WELL AND AS-BUILTS OF THE COMPOUND AREA.
d. AS BUILT DATA SHALL INCLUDE GPS DATA.

5. FORCE MAIN AS-BUILTS SHALL BE PREPARED THE SAME AS THE WATER LINE AS-BUILTS.

6. AS-BUILTS OF ALL DRAINAGE LINES SHALL INCLUDE THE FOLLOWING INFORMATION:

a. RIMS, INVERTS AND LENGTH OF PIPING BETWEEN STRUCTURES AND WEIR ELEVATIONS IF APPLICABLE.
b. THE SIZE OF THE PIPING SHALL BE VERIFIED BY THE SURVEY CREW AT THE TIME OF AS-BUILT. DRAINAGE WELL STRUCTURE AS-BUILTS SHALL INCLUDE, BUT NOT BE LIMITED TO, TOP OF CASING ELEVATION, TOP AND BOTTOM ELEVATIONS OF THE BAFFLE WALLS, RIM ELEVATIONS AND INVERTS OF PIPING.
c. EXFILTRATION TRENCH LENGTH, WIDTH, BOTTOM ELEVATION AND TOP ELEVATION

7. ALL ROCK AS-BUILTS FOR PARKING LOT AREAS SHALL CONSIST OF THE FOLLOWING:

a. ROCK ELEVATIONS AT ALL HIGH AND LOW POINTS, AND AT ENOUGH INTERMEDIATE POINTS TO CONFIRM SLOPE CONSISTENCY.
b. ROCK AS-BUILTS SHALL BE TAKEN AT ALL LOCATIONS WHERE THERE IS A FINISH GRADE ELEVATION SHOWN ON THE DESIGN PLANS.
c. ALL CATCH BASIN AND MANHOLE RIM ELEVATIONS SHALL BE SHOWN.
d. ELEVATIONS AROUND ISLAND AREAS WILL ALSO BE REQUIRED.
e. WHERE CONCRETE IS TO BE USED AS A FINISHED PRODUCT FOR THE ROADWAY OR PARKING LOT ROCK AS-BUILTS WILL BE REQUIRED AS INDICTED ABOVE AS WELL AS AS-BUILTS ON THE FINISHED CONCRETE AT LOCATIONS WHERE THERE IS A FINISH GRADE ELEVATION SHOWN ON THE DESIGN PLANS.
f. AS-BUILTS SHALL BE TAKEN ON ALL PAVED AND UNPAVED SWALES, PRIOR TO PLACEMENT OF ASPHALT OR TOPSOIL/SOD, AT ENOUGH INTERMEDIATE POINTS TO CONFIRM SLOPE CONSISTENCY AND CONFORMANCE TO THE PLAN DETAILS.

8. LAKE AND CANAL BANK AS-BUILTS SHALL INCLUDE A KEY SHEET OF THE LAKE FOR THE LOCATION OF CROSS SECTIONS. LAKE AND CANAL BANK CROSS SECTIONS SHALL BE PLOTTED AT A MINIMUM OF EVERY 100 LF, UNLESS OTHERWISE SPECIFIED. AS-BUILTS SHALL CONSIST OF THE LOCATION AND ELEVATION OF THE TOP OF BANK, EDGE OF WATER AND THE DEEP CUT LINE, WITH THE DISTANCE BETWEEN EACH SHOWN ON THE DRAWING.

9. RETENTION AREA AS-BUILT ELEVATIONS SHALL BE TAKEN AT THE BOTTOM OF THE RETENTION AREA AND AT THE TOP OF BANK. IF THERE ARE CONTOURS INDICATED ON THE DESIGN PLANS, THEN THEY SHALL BE AS-BUILT AS WELL.

10. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PREPARE RECORD DRAWINGS, "AS-BUILTS", ON FULL SIZE, 24" X 36" REPRODUCIBLE MATERIAL. ALL RECORD DRAWING, "AS-BUILT", INFORMATION SHALL BE PUT ON THE LATEST ENGINEERING DRAWINGS. ONE (1) SET OF REPRODUCIBLE RECORD DRAWINGS, "AS-BUILTS", SHALL BE SUBMITTED ALONG WITH THREE (3) SETS OF BLUE OR BLACK LINE DRAWINGS. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A FLORIDA REGISTERED PROFESSIONAL LAND SURVEYOR. ADDITIONALLY, AN ELECTRONIC COPY OF THESE RECORD DRAWINGS, "AS-BUILTS", SHALL BE SUBMITTED TO THE ENGINEER OF RECORD IN AUTOCAD, VERSION 2000.

VIII. GENERAL

A. IT IS THE INTENT OF THESE SPECIFICATIONS TO DESCRIBE THE MINIMUM ACCEPTABLE TECHNICAL REQUIREMENTS FOR THE MATERIALS AND WORKMANSHIP FOR CONSTRUCTION OF SITE IMPROVEMENTS FOR THIS PROJECT.

B. IT IS THE INTENT THAT THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION: (CURRENT EDITION) TOGETHER WITH "SUPPLEMENTAL SPECIFICATIONS TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (CURRENT EDITION), AND THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS (CURRENT EDITION) BE USED WHERE APPLICABLE FOR THE VARIOUS WORK, AND THAT WHERE SUCH WORDING THEREIN REFERS TO THE STATE OF FLORIDA AND ITS DEPARTMENT OF TRANSPORTATION AND PERSONNEL, SUCH WORDING IS INTENDED TO BE REPLACED WITH THE WORDING WHICH WOULD PROVIDE PROPER TERMINOLOGY; THEREBY MAKING SUCH "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" TOGETHER WITH THE "FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS" AS THE "STANDARD SPECIFICATIONS" FOR THIS PROJECT. IF WITHIN A PARTICULAR SECTION, ANOTHER SECTION, ARTICLE OR PARAGRAPH IS REFERRED TO, IT SHALL BE PART OF THE STANDARD SPECIFICATIONS ALSO. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL AND STATE LAWS, REGULATIONS AND BUILDING CODES WHICH HAVE JURISDICTION IN THE AREA.

C. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT AND PERFORM ALL OPERATIONS REQUIRED TO COMPLETE THE CONSTRUCTION OF SITE DEVELOPMENT INCLUDING PAVING, GRADING, DRAINAGE, WATER AND SANITARY SEWER AS SHOWN ON THE PLANS, SPECIFIED HEREIN, OR BOTH. IT IS THE INTENT TO PROVIDE A COMPLETE AND OPERATING FACILITY IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE CONSTRUCTION DRAWINGS. THE MATERIAL AND EQUIPMENT SHOWN OR SPECIFIED SHALL NOT BE TAKEN TO EXCLUDE ANY OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK.

D. ALL LABOR, MATERIALS, AND METHODS OF CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE PLANS AND CONSTRUCTION SPECIFICATIONS AND THE MINIMUM ENGINEERING AND CONSTRUCTION STANDARDS ADOPTED BY THE UNIT OF GOVERNMENT WHICH HAS JURISDICTION AND RESPONSIBILITY FOR THE CONSTRUCTION. WHERE CONFLICTS OR OMISSIONS EXIST, THE JURISDICTIONAL GOVERNMENT ENGINEERING DEPARTMENT'S STANDARDS SHALL GOVERN. SUBSTITUTIONS AND DEVIATIONS FROM PLANS AND SPECIFICATIONS SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE ENGINEER.

E. GUARANTEE - ALL MATERIALS AND EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR UNDER THIS CONTRACT, SHALL BE GUARANTEED FOR A PERIOD OF (1) ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE THEREOF, AGAINST DEFECTIVE MATERIALS, DESIGN AND WORKMANSHIP. UPON RECEIPT OF NOTICE FROM THE OWNER OF FAILURE OF ANY PART OF THE GUARANTEED EQUIPMENT OR MATERIALS, DURING THE GUARANTEE PERIOD, THE AFFECTED PART OR MATERIALS SHALL BE REPLACED PROMPTLY WITH NEW PARTS OR MATERIALS BY THE CONTRACTOR, AT NO EXPENSE TO THE OWNER. IN THE EVENT THE CONTRACTOR FAILS TO MAKE NECESSARY REPLACEMENT OR REPAIRS WITHIN (7) SEVEN DAYS AFTER NOTIFICATION BY THE OWNER, THE OWNER MAY ACCOMPLISH THE WORK AT THE EXPENSE OF THE CONTRACTOR.

IX. EARTHWORK

A. ALL AREAS TO BE CONSTRUCTED UPON WITH STRUCTURES, PAVEMENT, CURB, SIDEWALK, FENCING ETC. SHALL BE CLEARED AND GRUBBED PRIOR TO CONSTRUCTION. THIS SHALL CONSIST OF THE COMPLETE REMOVAL AND DISPOSAL OF ALL TREES, BRUSH, STUMPS, ROOTS, GRASS, WEEDS, RUBBISH AND ALL OTHER OBSTRUCTIONS RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE EXISTING GROUND TO A DEPTH OF 1'. ITEMS DESIGNATED TO REMAIN OR TO BE RELOCATED OR TO BE ADJUSTED SHALL BE PROTECTED FROM THE CONSTRUCTION OPERATION. ALL WORK SHALL BE IN ACCORDANCE WITH SECTION 110 OF THE STANDARD SPECIFICATIONS.

B. NONE OF THE EXISTING LIMEROCK MATERIAL FROM DEMOLISHED PAVEMENT IS TO BE INCORPORATED IN THE NEW LIMEROCK BASE. THE EXISTING LIMEROCK MATERIAL FROM DEMOLISHED PAVEMENT MAY BE INCORPORATED INTO THE STABILIZED SUBGRADE / SUBBASE, OR STABILIZED SHOULDER.

C. FILL MATERIAL SHALL BE CLASSIFIED AS A-1, A-3, OR A-2-4 IN ACCORDANCE WITH AASHTO N--145 AND SHALL BE FREE FROM VEGETATION AND ORGANIC MATERIAL. NOT MORE THAN 12% BY WEIGHT OF FILL MATERIAL SHALL PASS THE NO. 200 SIEVE.

D. ALL FILL MATERIAL IN AREAS NOT TO BE PAVED SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.

E. ALL MATERIAL AND CONSTRUCTION SHALL BE SUBJECT TO INSPECTION AND TESTING TO ESTABLISH CONFORMANCE WITH THE SPECIFICATIONS AND SUITABLY FOR THE USES INTENDED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO THE TIME HE WILL BE READY FOR AN INSPECTION OR TEST. THE CONTRACTOR SHALL FOLLOW CITY AND COUNTY INSPECTION PROCEDURES. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PHASE OF WORK DEPENDENT ON AN INSPECTION OR TEST OF AN EARLIER PHASE OF WORK, PRIOR TO THAT TEST OR INSPECTION PASSING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CERTIFIED MATERIAL TEST RESULTS TO THE ENGINEER OF RECORD PRIOR TO THE RELEASE OF FINAL CERTIFICATION BY THE ENGINEER. TEST RESULTS MUST INCLUDE, BUT MAY NOT BE LIMITED TO, DENSITIES FOR SUBGRADE AND LIMEROCK, UTILITIES, EXCAVATION, ASPHALT GRADATION REPORTS, CONCRETE CYLINDERS, ETC.

F. WHEN ENCOUNTERED, MUCK SHALL BE COMPLETELY REMOVED FROM THE CENTER LINE (10) TEN FEET BEYOND THE EDGE OF PAVEMENT EACH SIDE. ALL SUCH MATERIAL SHALL BE REPLACED BY APPROVED GRANULAR FILL, COMPACTED TO 98% OF MAXIMUM DENSITY (AASHTO T-180).

G. WHEN ENCOUNTERED WITHIN PROPOSED DRAINAGE SWALES, HARDPAN SHALL BE REMOVED FOR A WIDTH OF (5) FIVE FEET AT THE INVERT AND REPLACED WITH GRANULAR MATERIALS.

H. ALL UNDERGROUND UTILITIES AND DRAINAGE INSTALLATIONS SHALL BE IN PLACE PRIOR TO SUBGRADE COMPACTION AND PAVEMENT CONSTRUCTION.

I. GROUND ADJACENT TO ROADWAY/PAVEMENT WHERE STORMWATER RUNOFF FLOWS FROM PAVEMENT TO GROUND, SHALL BE GRADED (2) TWO INCHES LOWER THAN THE EDGE OF PAVEMENT TO ALLOW FOR THE PLACEMENT OF SOD.

J. SITE GRADING ELEVATIONS SHALL BE WITHIN 0.1' OF THE REQUIRED ELEVATION AND ALL AREAS SHALL BE GRADED TO DRAIN WITHOUT PONDING.

K. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION, FILL, EMBANKMENT AND GRADING TO ACHIEVE THE PROPOSED PLAN GRADES INCLUDING TYPICAL ROAD SECTIONS, SIDE SLOPES AND CANAL SECTIONS. ALL WORK SHALL BE IN ACCORDANCE WITH SECTION 120 OF THE STANDARD SPECIFICATIONS. IF FILL MATERIAL IS REQUIRED IN EXCESS OF THAT GENERATED BY THE EXCAVATION, THE CONTRACTOR SHALL SUPPLY THIS MATERIAL AS REQUIRED FROM OFF-SITE.

L. NO TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN OVERNIGHT.

X. ASPHALT PAVING

A. WHERE NEW ASPHALT MEETS EXISTING ASPHALT, THE EXISTING ASPHALT SHALL BE SAW CUT TO PROVIDE A STRAIGHT EVEN LINE. PRIOR TO REMOVING CURB OR GUTTER, THE ADJACENT ASPHALT SHALL BE SAW CUT TO PROVIDE A STRAIGHT EVEN LINE.

B. ASPHALT PAVING SHALL BE CONSTRUCTED ON A 12" SUBGRADE, COMPACTED TO A MINIMUM DENSITY OF 100% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99-C. THE COMPACTED SUBGRADE SHALL BE CONSTRUCTED TO THE LIMITS OF PAVING SHOWN ON THE PLANS. ALL SUBGRADE SHALL HAVE A MINIMUM LBR OF 40 UNLESS OTHERWISE NOTED.

C. ASPHALTIC CONCRETE SURFACE COURSE SHALL BE CONSTRUCTED TO THE LIMITS SHOWN ON THE PLANS. THE SURFACE COURSE SHALL CONSIST OF THE THICKNESS AND TYPE ASPHALTIC CONCRETE AS SPECIFIED IN THE PLANS.

D. LIMEROCK BASE SHALL BE PREPARED, COMPACTED AND GRADED AND SHALL BE IN ACCORDANCE WITH SECTION 200 OF THE STANDARD SPECIFICATIONS. ALL LIMEROCK SHALL BE COMPACTED TO 98% PER AASHTO T-180 AND HAVE NOT LESS THAN 70% OF CARBONATES OF CALCIUM AND MAGNESIUM UNLESS OTHERWISE DESIGNATED. ALL LIMEROCK SHALL BE PRIMED. THE ENGINEER SHALL INSPECT THE COMPLETED BASE COURSE AND THE CONTRACTOR SHALL CORRECT ANY DEFICIENCIES AND CLEAN THE BASE COURSE PRIOR TO THE PLACEMENT OF THE PRIME COAT. A TACK COAT WILL ALSO BE REQUIRED IF THE ENGINEER FINDS THAT THE PRIMED BASE HAS BECOME EXCESSIVELY DIRTY OR THE PRIME COAT HAS CURED TO THE EXTENT OF LOSING BOUNDING EFFECT PRIOR TO PLACEMENT OF THE ASPHALTIC CONCRETE SURFACE COURSE. THE PRIME AND TACK COATS SHALL BE IN ACCORDANCE WITH SECTION 300 OF THE STANDARD SPECIFICATIONS.

E. LIMEROCK BASE MATERIAL SHALL BE PLACED IN MAXIMUM 6" LIFTS. BASES GREATER THAN 6" SHALL BE PLACED IN TWO EQUAL LIFTS OR IN ACCORDANCE WITH THE APPLICABLE SECTION OF THE STANDARD SPECIFICATIONS.

F. ASPHALT EDGES THAT ARE NOT CURBED SHALL BE SAW CUT TO PROVIDE A STRAIGHT EVEN LINE TO THE DIMENSIONS SHOWN ON THE HORIZONTAL CONTROL PLAN.

G. ALL UNDERGROUND UTILITIES SHALL BE COMPLETED PRIOR TO FINISHED GRADING AND COMPACTION OF SUBGRADE.

H. EXISTING PAVEMENT, CUT OR DAMAGED BY CONSTRUCTION, SHALL BE PROPERLY RESTORED AT THE CONTRACTOR'S EXPENSE.

I. ALL REPAIRS TO EXISTING PAVEMENT SHALL RECEIVE SAW-CUT EDGES PRIOR TO RELAYING ASPHALT.

J. UTILITY PIPING OR WIRING LESS THAN FOUR (4) INCHES IN DIAMETER SHALL BE CONSTRUCTED IN A SCHEDULE 40 PVC CASING PIPE WITH SAND BACKFILLS UNDER PAVED AREAS ONLY.

K. UNLESS OTHERWISE INDICATED ON THE GRADING PLAN, THE MINIMUM SLOPE OF PAVEMENT SECTIONS SHALL BE:
TRANSVERSE SLOPE - 2.0% FOR ROADWAYS & 1.0% FOR PARKING AREAS.
LONGITUDINAL SLOPE - 0.3%.

L. ASPHALT PAVEMENT SECTIONS FOR ROADWAYS & PARKING LOTS SHALL CONFORM WITH THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION) AND THE FOLLOWING: IF THERE IS A DISCREPANCY BETWEEN THE PLANS, SPECS AND FDOT STANDARDS THE FDOT STANDARDS SHALL GOVERN.

PAVEMENT BASE COURSE:
SEE PLAN SHEET AND DETAILS FOR LIMEROCK BASE MINIMUM THICKNESS.

PAVEMENT SURFACE COURSE:
SEE PLAN SHEET AND DETAILS FOR THICKNESS AND TYPE OF ASPHALTIC CONCRETE PAVEMENT.
IF PLANS OR DETAILS CALL FOR ASPHALT TO BE CONSTRUCTED IN TWO LIFTS, A TACK COAT (0.25 GAL./SQ. YD.) SHALL BE APPLIED BETWEEN PAVING COURSES.
THE FINAL COURSE OF ASPHALT IS NOT BE APPLIED UNTIL ALL LANDSCAPE CONSTRUCTION, STREET LIGHTING CONSTRUCTION AND ALL SITE AND BUILDING CONSTRUCTION REQUIRING HEAVY EQUIPMENT, THAT MAY DAMAGE THE ASPHALT SURFACE, IS COMPLETE.

M. TESTING

1. THE FINISHED SURFACE OF THE BASE COURSE AND THAT OF THE WEARING SURFACE SHALL NOT VARY MORE THAN 1/4" FROM THE TEMPLATE. ANY IRREGULARITIES EXCEEDING THIS LIMIT SHALL BE CORRECTED.
2. DENSITY TESTS SHALL BE TAKEN BY AN INDEPENDENT TESTING LABORATORY CERTIFIED BY THE STATE OF FLORIDA, WHERE DIRECTED BY THE ENGINEER.
3. DENSITY TESTS ON THE STABILIZED SUBGRADE SHALL BE SUPPLIED TO THE ENGINEER OF RECORD, AND APPROVED BEFORE ANY LIMEROCK BASE IS CONSTRUCTED.
4. DENSITY TESTS (EVERY 7000 SQ. FT.) OF THE BASE AND SUBGRADE, AND AS-BUILTS ON THE FINISHED LIMEROCK BASE SHALL BE SUPPLIED TO THE ENGINEER OF RECORD, AND APPROVED BEFORE ANY ASPHALT PAVEMENT IS CONSTRUCTED.
5. PROCTOR DENSITIES SHALL BE PERFORMED ON ALL MATERIAL, SUBGRADE AND BASE OF ANY SUBSEQUENT CHANGES IN MATERIALS.
6. LIMEROCK BEARING RATIOS, SIEVE ANALYSIS AND DENSITIES REQUIRED BY THE CONTRACT DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER

XI. CONCRETE CONSTRUCTION

A. CONCRETE SIDEWALK SHALL BE IN ACCORDANCE WITH SECTION 522 OF THE STANDARD SPECIFICATIONS AND IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX NO. 310. CONCRETE SIDEWALK SHALL BE 4" THICK AND CONSTRUCTED ON COMPACTED SUBGRADE, WITH 1/2" EXPANSION JOINTS PLACED AT A MAXIMUM OF 75'. CRACK CONTROL JOINTS SHALL BE 5' ON CENTER. THE BACK OF SIDEWALK ELEVATION SHALL BE 3" HIGHER THAN THE EDGE OF PAVEMENT, UNLESS OTHERWISE SPECIFIED BY LOCAL CODES, OR SHOWN ON THE DRAWINGS. CONCRETE SIDEWALKS THAT CROSS DRIVEWAYS SHALL BE A MINIMUM OF 6" THICK.

B. SIDEWALK CURB RAMPS HALL BE IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX NO. 304.

C. CONCRETE CURB SHALL BE CONSTRUCTED TO THE LIMITS SHOWN ON THE PLANS. THE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 P.S.I. AT 28 DAYS AND SHALL BE IN ACCORDANCE WITH SECTION 520 OF THE STANDARD SPECIFICATIONS. CONCRETE CURBING SHALL BE IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX NO. 300.

XII. SIGNAGE AND PAVEMENT MARKINGS

A. THE ROADS AND PARKING AREAS SHALL BE STRIPED IN ACCORDANCE WITH THE PLANS. NO STRIPE SHALL BE LESS THAN THE SPECIFIED WIDTH NOR SHALL IT EXCEED THE SPECIFIED WIDTH BY MORE THAN 1/2 INCH. STRIPING SHALL BE IN ACCORDANCE WITH SECTIONS 710 AND 971 OF THE STANDARD SPECIFICATIONS.

B. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL AND MAINTAIN ADEQUATE TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS FOR THE PURPOSE OF PROTECTING THE TRAVELING PUBLIC, HIS WORKMEN AND THE WORK AREA IN GENERAL. SUCH TRAFFIC CONTROL SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT PERIOD, INCLUDING ANY TEMPORARY SUSPENSIONS OF THE WORK. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH SECTION 102 OF THE STANDARD SPECIFICATIONS AND THE STATE OF FLORIDA, MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS.

C. ALL STRIPING WITHIN THE PUBLIC RIGHT-OF-WAY AND AT DRIVEWAY ACCESS POINTS SHALL BE THERMOPLASTIC IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. UNLESS OTHERWISE NOTED ON THE PLANS.

D. ALL SIGNING AND MARKINGS SHALL CONFORM TO M.U.T.C.D AND BROWARD COUNTY TRAFFIC ENGINEERING STANDARDS (LATEST EDITION).

E. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.

XIII STORM DRAINAGE

A. GENERAL:

1. CATCH BASIN GRATES AND RIM ELEVATIONS AS SHOWN ON PLANS MAY BE ADJUSTED TO CONFORM TO NEW OR EXISTING GRADES.

2. DISTANCES AND LENGTHS SHOWN ON PLANS AND PROFILE DRAWINGS ARE REFERENCED TO THE CENTER OF STRUCTURES.

B. MATERIALS:

NOTE: WHERE MORE THAN ONE SPECIFIED MATERIAL EXISTS FOR AN ITEM, IT IS THE CONTRACTORS OPTION TO USE EITHER MATERIAL.

1. REINFORCED CONCRETE PIPE (R.C.P.) SHALL MEET THE REQUIREMENTS OF ASTM C-76, LATEST REVISION. RUBBER GASKETS OR OTHER MANUFACTURER SUPPLIED JOINT SEALER SHALL BE USED.

2. HIGH DENSITY POLYETHYLENE PIPE (HDPE) SIZES 12"-36", SHALL BE CORRUGATED TYPE, SMOOTH INTERIOR, CONFORMING TO ASTM F405, ASTM F667, AASHTO M252 AND AASHTO M294 AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC. OR APPROVED EQUAL.

3. CORRUGATED ALUMINUM PIPE (C.A.P.) IS AN ALUMINUM SPIRAL PIPE FORMED FROM COILED ALUMINUM SHEETS AND SHALL CONFORM TO ASTM B745 AND AASHTO M196, AS MANUFACTURED BY KAISER ALUMINUM, INC., OR APPROVED EQUAL. THE CORRUGATION PATTERN AND GAUGE SHALL BE AS FOLLOWS:

DIAMETER	CORRUGATION	GAUGE
12" TO 21"	2 2/3" X 7/16"	16
24" TO 27"	2 2/3" X 1/2"	16
30"	2 2/3" X 1/2"	14
36" TO 54"	3" X 1"	14
60" TO 78"	3" X 1"	12

4. THE HIGH DENSITY POLYETHYLENE PIPE JOINTS SHALL BE OF A RUBBER OR NEOPRENE GASKET DESIGN TO SECURE A SOIL TIGHT JOINT.

5. PIPE COUPLINGS FOR C.A.P. SHALL BE 12" WIDE (MINIMUM) 24" FOR 60" DIAMETER OR LARGER. SPLIT BANDS OF THE SAME ALLOY AS THE PIPE MAY BE ONE GAUGE LIGHTER THAN THE PIPE. POLYURETHANE OR OTHER MANUFACTURER SUPPLIED SEALANT SHALL BE USED WITH THE COUPLINGS.

6. THE RIP RAP HEADWALLS SHALL BE CONSTRUCTED OF SAND/CEMENT WITH A MINIMUM 2000 P.S.I. COMPRESSIVE STRENGTH TO MEET FLORIDA D.O.T. STANDARDS. THE BAGS SHALL BE PERMEABLE BURLAP, CLOTH OR PAPER. A CONCRETE CAP SHALL BE POURED ON TOP OF THE SAND/CEMENT RIP RAP BAGS WITH A MINIMUM 3000 P.S.I. COMPRESSION STRENGTH.

7. ALL DRAINAGE CATCH BASINS AND STRUCTURES SHALL BE PRECAST CONCRETE AS MANUFACTURED BY U.S. PRECAST CORPORATION OR EQUAL, UNLESS OTHERWISE NOTED IN THE PLANS. THE MINIMUM WALL AND SLAB THICKNESS SHALL BE 8 INCHES AND THE MINIMUM REINFORCING SHALL BE NO. 4 BARS AT 12 INCHES EACH WAY UNLESS OTHERWISE INDICATED. CONCRETE SHALL BE MINIMUM OF FC=4000 P.S.I. AT 28 DAYS.

8. TRENCH DRAIN SHALL BE POLYCAST PRE-SLOPED 600 SERIES OR APPROVED EQUAL.

C. INSTALLATION:

1. PIPE SHALL BE PLACED ON A MINIMUM OF 8" STABLE GRANULAR MATERIAL FREE OF ROCK FORMATION AND OTHER FOREIGN FORMATIONS, AND CONSTRUCTED TO A UNIFORM GRADE AND LINE.

2. BACKFILL MATERIAL SHALL BE WELL GRADED GRANULAR MATERIAL, WELL TAMPED IN LAYERS NOT TO EXCEED 6 INCHES TO A HEIGHT OF 12 INCHES ABOVE PIPE AS SHOWN ON THE PLANS.

3. PROVIDE A MINIMUM PROTECTIVE COVER OF 18 INCHES OVER STORM SEWER AND AVOID UNNECESSARY CROSSING BY HEAVY CONSTRUCTION VEHICLES DURING CONSTRUCTION.

4. THE CONTRACTOR SHALL NOTIFY THE LOCAL ENGINEERING & UTILITIES DEPARTMENT AT LEAST 7 DAYS PRIOR TO THE START OF THE CONSTRUCTION.

5. HDPE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321.

XIV. WATER DISTRIBUTION / SANITARY FORCE MAINS.

A. MATERIALS:

NOTE: WHERE MORE THAN ONE SPECIFIED MATERIAL EXISTS FOR AN ITEM, IT IS THE CONTRACTORS OPTION TO USE EITHER MATERIAL., WHERE THE PLANS DO NOT CALL FOR A PIPE MATERIAL THE MATERIAL SHALL BE EITHER PVC OR DIP AS SPECIFIED BELOW.

1. PVC WATERMAINS 4"-12" SHALL BE PLASTIC PRESSURE PIPE WITH INTEGRAL BELL AND SPIGOT JOINTS FOR THE CONVEYANCE OF WATER AND OTHER FLUIDS. THIS PIPE SHALL MEET ALL THE REQUIREMENTS OF AWWA STANDARD C900, POLYVINYL CHLORIDE (PVC) WATER DISTRIBUTION PIPE. THE BELL SHALL CONSIST OF AN INTEGRAL WALL SECTION WITH A FACTORY INSTALLED ELASTOMERIC GASKET WHICH MEETS THE REQUIREMENT OF ASTM F477. THE JOINT DESIGN SHALL MEET THE REQUIREMENTS OF ASTM D3139.

2. DUCTILE IRON PIPE FOR WATER DISTRIBUTION MAINS SHALL CONFORM TO ANSI/AWWA STANDARD C151/A21.51-02 LATEST REVISION, "DUCTILE IRON PIPE CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS" WITH A MINIMUM WALL THICKNESS OF CLASS 51 (PRESSURE CLASS 350) UNLESS OTHERWISE DIRECTED BY THE ENGINEER. DUCTILE IRON PIPE SHALL BE CEMENT LINED AND SEAL COATED IN ACCORDANCE WITH ANSI/AWWA STANDARD C104/A21.4-95 LATEST REVISION. THE PIPE SHALL BE ADAPTED FOR USE WITH CLASS 250 FITTINGS FOR ALL SIZES.

3. DUCTILE IRON PIPE FOR SEWAGE FORCE MAINS SHALL CONFORM TO ANSI/AWWA STANDARD C151/A21.51-02 LATEST REVISION, "DUCTILE IRON PIPE CENTRIFUGALLY CAST IN METAL MOLDS OR SAND- LINED MOLDS" WITH A MINIMUM WALL THICKNESS OF CLASS 51 (PRESSURE CLASS 350) UNLESS OTHERWISE DIRECTED BY THE ENGINEER. DUCTILE IRON PIPE SHALL BE INTERIOR CERAMIC EPOXY LINED AND EXTERIOR COATED WITH THE MANUFACTURER'S COATING SYSTEM (PROTECTO 401 CERAMIC EPOXY WITH A MINIMUM DRY FILM THICKNESS OF 40 MILS AND AN OUTSIDE COATING OF EITHER COAL TAR EPOXY OR ASPHALT.) IN EITHER CASE, THE ENGINEER'S REVIEW AND APPROVAL IS REQUIRED FOR EITHER ALTERNATIVE PRIOR TO CONSTRUCTION. CEMENT MORTARED LININGS ARE NOT APPROPRIATE FOR THIS APPLICATION.

4. DUCTILE IRON FITTINGS FOR WATER DISTRIBUTION MAINS SHALL CONFORM TO ANSI/AWWA STANDARD C110/A21.10-98 LATEST REVISION. FITTINGS 4" AND LARGER SHALL BE CEMENT LINED AND SEAL COATED IN ACCORDANCE WITH ANSI/AWWA STANDARD C104/A21.4-95 LATEST REVISION.

5. CAST IRON AND DUCTILE IRON FITTINGS FOR SEWAGE FORCE MAINS SHALL CONFORM TO ANSI/AWWA STANDARD C110/A21.10-98 LATEST REVISION. FITTINGS 4" AND LARGER SHALL BE COATED IN ACCORDANCE WITH THE REQUIREMENTS OF DUCTILE IRON PIPE FOR SEWAGE FORCE MAINS.

6. JOINTS FOR BELL AND SPIGOT DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO ANSI/AWWA STANDARD C111/A21.11-00 LATEST REVISION. MECHANICAL JOINT OR PUSH-ON JOINT TO BE RUBBER GASKET COMPRESSION-TYPE. SPECIAL FITTINGS AND JOINTS SHALL BE CONSIDERED FOR SPECIFIC INSTALLATION SUBJECT TO THE APPROVAL OF THE ENGINEER.

7. JOINTS FOR PVC PRESSURE PIPE SHALL BE BELL AND SPIGOT PUSH-ON RUBBER GASKET TYPE ONLY. NO SOLVENT WELD OR THREADED JOINTS WILL BE PERMITTED.

8. WATER DISTRIBUTION SYSTEM RESTRAINT: ALL FITTINGS AND SPECIFIC PIPE JOINTS SHALL BE RESTRAINED AS OUTLINED BELOW:

JOINT	RESTRAINT
PUSH-ON P.V.C.	EBBA IRON SERIES 2800 HARNESS
PUSH-ON D.I.P.	TR-FLEX BY U.S. PIPE OR FLEX RING BY AMERICAN
FITTINGS W/ D.I.P.	EBBA IRON SERIES 1100 MEGALUG
FITTINGS W/ P.V.C.	EBBA IRON SERIES 2000 MEGALUG

LENGTH OF RESTRAINED PIPE SHALL BE AS INDICATED ON RESTRAINED JOINT PIPE DETAIL. (SEE WATER & SEWER DETAIL SHEET)

9. SEWAGE FORCE MAIN SYSTEM RESTRAINT: ALL FITTINGS AND SPECIFIC PIPE JOINTS SHALL BE RESTRAINED AS OUTLINED BELOW

JOINT	RESTRAINT
PUSH-ON P.V.C.	EBBA IRON SERIES 2800 HARNESS
PUSH-ON D.I.P.	TR-FLEX BY U.S. PIPE OR FLEX RING BY AMERICAN
FITTINGS W/ D.I.P.	EBBA IRON SERIES 1100 MEGALUG
FITTINGS W/ P.V.C.	EBBA IRON SERIES 2000 MEGALUG

LENGTH OF RESTRAINED PIPE SHALL BE AS INDICATED ON RESTRAINED JOINT PIPE DETAIL. (SEE WATER & SEWER DETAIL SHEET)

10. WATER DISTRIBUTION VALVES SHALL BE GATE VALVES, IRON BODY, FULLY RESILIENT SEAT BRONZED MOUNTED NON-RISING STEM, RATED AT 200 P.S.I. AND CONFORMING TO ANSI/AWWA C509-01 OR LATEST REVISION, AND SHALL HAVE MECHANICAL JOINTS.

a. GATE VALVES 2" AND LARGER SHALL BE MUELLER A-2380-20, AMERICAN 80 LINE OR CLOW F-6100, CONFORMING TO ANSI/AWWA C500-93, OR, IN EITHER CASE, APPROVED EQUAL.
b. TAPPING VALVES SHALL BE MUELLER H667 OR APPROVED EQUAL.

11. TAPPING SLEEVES SHALL BE MUELLER H615, CLOW F- 2505 OR APPROVED EQUAL.

12. VALVE BOXES SHALL BE U.S. FOUNDRY 7500 OR APPROVED EQUAL PAINTED BLUE WITH THE DESIGNATION "WATER". BLUE/WHITE RAISED REFLECTIVE PAVEMENT MARKER SHALL BE USED TO IDENTIFY VALVE BOX LOCATION.

13. RETAINER GLANDS FOR D.I.P. SHALL CONFORM TO ANSI/AWWA C111/A21.11-00 OR LATEST REVISION. ALL GLANDS SHALL BE MANUFACTURED FROM DUCTILE IRON AS LISTED BY UNDERWRITERS LABORATORIES FOR 250 PSI MINIMUM WATER PRESSURE RATING. CLOW CORPORATION MODEL F-1058, STANDARD FIRE PROTECTION EQUIPMENT COMPANY OR APPROVED EQUAL.

14. LOCATING WIRE SHALL BE INSTALLED 1 FOOT ABOVE INSTALLED PVC PRESSURE PIPE TO ENSURE THAT PIPE CAN BE LOCATED AFTER BURIAL.

15. DRESSER COUPLINGS SHALL BE REGULAR BLACK COUPLINGS WITH PLAIN GASKETS FOR GALVANIZED STEEL PIPE. THEY SHALL BE DRESSER STYLE 90. NO SUBSTITUTIONS ALLOWED.

16. FIRE HYDRANTS SHALL BE MUELLER CENTURION TRAFFIC TYPE A-423 WITH 5 1/4" INTERNAL VALVE OPENING OR APPROVED EQUIVALENT. MAIN VALVE OPENING TO BE DETERMINED BY THE WATER DEPARTMENT. PUMPER NOZZLE TO BE 18" FROM FINISHED GRADE. ALL HYDRANTS TO BE INSTALLED WITH CONTROL VALVE. RETAINER GLANDS ARE PREFERRED FOR RESTRAINING. FIRE HYDRANT SHALL COMPLY WITH ANSI/AWWA C502-94. FIRE HYDRANTS SHALL BE PAINTED YELLOW IN ACCORDANCE WITH N.F.P.A. #291 OR PER LOCAL/COUNTY STANDARDS HAVING JURISDICTION. BLUE RAISED REFLECTIVE PAVEMENT MARKER (RPM) SHALL BE USED TO IDENTIFY FIRE HYDRANT LOCATION. THE PLACEMENT OF THE RPM TO BE AT THE CENTERLINE OF THE OUTSIDE ROADWAY LANE.

17. SEWAGE FORCE MAIN VALVES SHALL BE PLUG VALVES WHICH SHALL BE OF THE NON-LUBRICATED, ECCENTRIC TYPE WITH RESILIENT FACED PLUGS, PORT AREAS FOR VALVES 20 INCHES AND SMALLER SHALL BE AT LEAST 80% OF FULL PIPE AREA. PORT AREA OF VALVES 24 INCHES AND LARGER SHALL BE AT LEAST 70% OF FULL PIPE AREA. THE BODY SHALL BE OF SEMI-STEEL (ASTM A-126 C1.B) AND SHALL HAVE BOLTED BONNET WHICH GIVES ACCESS TO THE INTERVALS OF THE VALVE. SEATS SHALL BE WELDED OVERLAY OF HIGH NICKEL CONTENT OR A STAINLESS STEEL PLATE LOCKED IN THE BODY CAVITY. IF A PLATE IS USED, IT SHALL BE REPLACEABLE THROUGH THE BONNET ACCESS. BEARINGS SHALL BE PERMANENTLY LUBRICATED OF STAINLESS STEEL, BRONZE OR TEFLON LINED, FIBER GLASS BACKED DURALON. BEARING AREAS SHALL BE ISOLATED FROM THE FLOW WITH GRIT SEALS. VALVES SHALL HAVE PACKING BONNETS WHERE THE SHAFT PROTRUDES FROM THE VALVE AND THE PACKING SHALL BE SELF-ADJUSTING CHEVRON TYPE WHICH CAN BE REPLACED WITHOUT REMOVING THE BONNET. ALL NUTS, BOLTS, SPRINGS AND WASHERS SHALL BE STAINLESS STEEL.

18. PLUG VALVES SHALL BE DESIGNED FOR A WORKING PRESSURE OF 150 P.S.I. THE VALVE AND ACTUATOR SHALL BE CAPABLE OF SATISFACTORY OPERATION IN EITHER DIRECTION OF FLOW AGAINST PRESSURE DROPS UP TO AND INCLUDING 100 P.S.I. (FOR PLUG VALVES OVER 12 INCHES IN DIAMETER). VALVES SHALL BE BUBBLE TIGHT IN BOTH DIRECTIONS AT 100 PSI DIFFERENTIAL. PLUG VALVES SHALL HAVE WORM GEAR OPERATORS. THE OPERATING MECHANISM SHALL BE FOR BURIED SERVICE WITH A 2 INCH SQUARE OPERATING NUT.

19. PLUG VALVES ARE TO BE INSTALLED WITH THE SEAT POINTED TOWARDS THE UPSTREAM FLOW, WHEN SPECIFIED.

20. SWING CHECK VALVES FOR WATER, SEWAGE, SLUDGE, AND GENERAL SERVICE SHALL BE OF THE OUTSIDE LEVER AND SPRING OR WEIGHT TYPE, IN ACCORDANCE WITH ANSI/AWWA C 508-01 SWING-CHECK VALVES FOR WATERWORKS SERVICE, 2 IN. THROUGH 24 IN. NPS, UNLESS OTHERWISE INDICATED, WITH FULL-OPENING PASSAGES, DESIGNED FOR A WATER-WORKING PRESSURE OF 150 P.S.I. THEY SHALL HAVE A FLANGED COVER PIECE TO PROVIDE ACCESS TO THE DISC.

21. COLOR CODING OF PIPING AT DRINKING WATER TREATMENT PLANTS. ALL NEW OR ALTERED, ABOVE GROUND PIPING AT DRINKING WATER TREATMENT PLANTS SHALL BE COLOR CODED AND LABELED AS RECOMMENDED IN SECTION 2.14 OF RECOMMENDED STANDARDS FOR WATER WORKS AS INCORPORATED INTO RULE 62-555.330, F.A.C. IN ADDITION, ALL UNDERGROUND WATER MAIN PIPE THAT IS INSTALLED AT DRINKING WATER TREATMENT PLANTS ON OR AFTER AUGUST 28, 2003, AND THAT IS CONVEYING FINISHED DRINKING WATER SHALL BE COLOR CODED AS REQUIRED UNDER SUBPARAGRAPH 62-555.320(21)(B)3, F.A.C. THIS SUBSECTION DOES NOT APPLY TO DRINKING WATER TREATMENT PLANT PIPING INSTALLED OR ALTERED UNDER A CONSTRUCTION PERMIT FOR WHICH THE DEPARTMENT RECEIVED A COMPLETE APPLICATION BEFORE AUGUST 28, 2003.

B. SERVICE CONNECTION:

1. SERVICE SADDLES SHALL BE EPOXY COATED DUCTILE IRON (ASTM A536) WITH STAINLESS STEEL STRAPS, SADDLES SHALL BE DOUBLE STRAP TYPE.

2. SERVICE LINES SHALL BE POLYETHYLENE (PE 3408), 200 P.S.I RATED, DR9. PIPE JOINTS SHALL BE OF THE COMPRESSION TYPE TOTALLY CONFINED GRIP SEAL AND COUPLING NUT.

3. CORPORATION STOPS SHALL BE MANUFACTURED OF BRASS ALLOY IN ACCORDANCE WITH ASTM B-62 WITH THREADED ENDS, AS MANUFACTURED BY FORD BALLCORP, CATALOG # 1100 OR APPROVED EQUAL.

4. CURB STOPS SHALL BE FORD V63-44W-1" & OR APPROVED EQUAL.

5. METER STOPS SHALL BE 900 LOCKWING TYPE AND SHALL BE OF BRONZE CONSTRUCTION IN ACCORDANCE FV63-777W-2" WITH ASTM B-62. METER STOPS SHALL BE CLOSED BOTTOM DESIGN AND RESILIENT "O" RING SEALED AGAINST EXTERNAL LEAKAGE AT THE TOP. STOPS SHALL BE EQUIPPED WITH A METER COUPLING NUT ON THE OUTLET SIDES, AS MANUFACTURED BY FORD OR APPROVED EQUAL.

C. INSTALLATION:

1. WHERE RESTRAINED PIPE JOINTS ARE REQUIRED DUE TO FITTINGS, APPURTENANCES, ETC., PIPE MATERIAL SHALL BE D.I.P..

2. ALL PVC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE UNI-BELL PLASTIC PIPE ASSOCIATION "GUIDE FOR INSTALLATION OF PVC PRESSURE PIPE FOR MUNICIPAL WATER DISTRIBUTION SYSTEM," AND ANSI/AWWA C605-94 STANDARD.

3. ALL DIP SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/AWWA C600-05 OR LATEST REVISION.

4. ALL WATER MAINS SHALL TYPICALLY BE LAID WITH A MINIMUM 36" COVER FOR PVC AND 30" COVER FOR DIP.

5. DETECTO TAPE SHALL BE LAID 18 INCHES ABOVE ALL WATER LINES. A 14 GAUGE MULTI-STRAND WIRE SHALL BE ATTACHED TO ALL NONCONDUCTIVE WATER MAINS TO FACILITATE LOCATION. AN EXTRA 4 FEET OF WIRE SHALL BE PROVIDED AT ALL VALVES, BLOW-OFFS, HYDRANTS, ETC. THE WIRE SHALL BE TESTED FOR CONTINUITY AT THE PRESSURE TEST.

6. PIPE DEFLECTION SHALL NOT EXCEED 50% OF THE MAXIMUM DEFLECTION RECOMMENDED BY THE MANUFACTURER.

7. A CONTINUOUS AND UNIFORM BEDDING SHALL BE PROVIDED. BACKFILL MATERIAL SHALL BE TAMPED IN 9" LAYERS AROUND THE PIPE AS SHOWN ON THE PLANS. STONES FOUND IN THE TRENCH SHALL BE REMOVED FOR A DEPTH OF AT LEAST 8" BELOW THE BOTTOM OF THE PIPE.

8. ALL VALVES SHALL BE INSTALLED WITH ADJUSTABLE CAST IRON VALVE BOXES WITH THE WORD "WATER", "SEWER", "SERVICE", "FIRE" AS APPLICABLE, CAST IN THE COVER. U.S.F. OR APPROVED EQUAL.

9. DETECTO TAPE SHALL BE LAID (18) INCHES BELOW FINAL GRADE ALONG ALL FORCE MAINS. A 14 GAUGE MULTI-STRAND WIRE SHALL BE ATTACHED TO ALL PVC FORCE MAINS TO FACILITATE LOCATION.

D. TESTING:

1. BEFORE ANY PHYSICAL CONNECTIONS AND ACCEPTANCE FOR OPERATION TO THE EXISTING WATER MAINS ARE MADE, THE COMPLETE WATER SYSTEM SHALL BE PRESSURE TESTED AND DISINFECTED. COPIES OF PASSING BACTERIOLOGICAL RESULTS AND PRESSURE TEST RESULTS MUST BE SUBMITTED TO, AND APPROVED BY, THE ENGINEER, UTILITY OWNER, AND HEALTH DEPARTMENT. HYDROSTATIC TESTING OF NEW MAINS SHALL BE PERFORMED AT A MINIMUM STARTING PRESSURE OF 150 P.S.I. FOR TWO HOURS IN ACCORDANCE WITH ANSI/AWWA C600-05 OR LATEST REVISION. THE PRESSURE TEST SHALL NOT VARY MORE THAN 5 P.S.I. DURING THE TEST. THE WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH THE ANSI/AWWA C651-05.

2. THE PRESSURE TEST SHALL BE WITNESSED BY A REPRESENTATIVE OF THE UTILITY OWNER AND THE ENGINEER OF RECORD.

3. SAMPLING POINTS SHALL BE PROVIDED BY THE CONTRACTOR AT THE LOCATIONS SHOWN ON THE PLANS IF BACTERIOLOGICAL SAMPLES ARE CONDUCTED BY THE UTILITY OWNER. THE UTILITY OWNER SHALL BE REIMBURSED BY THE CONTRACTOR.

4. BACTERIOLOGICAL TESTING SHALL BE IN ACCORDANCE WITH AWWA/ANSI C651-05. MAXIMUM DISTANCE BETWEEN SAMPLING POINTS SHALL BE AS FOLLOWS:
TRANSMISSION MAINS: EVERY 1200 FEET
BRANCH MAINS: EVERY 1000 FEET
ISOLATED MAINS < 1000 FEET: 2 SAMPLE POINTS
ISOLATED MAINS > 1000 FEET: 3 SAMPLE POINTS

5. THE ALLOWABLE LEAKAGE DURING THE PRESSURE TEST SHALL BE LESS THAN THE NUMBER OF GALLONS PER HOUR AS DETERMINED BY THE FORMULA:
$Q = LD\sqrt{P} / 148,000$
IN WHICH Q EQUALS THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR. L EQUALS LENGTH OF PIPE (LINEAR FEET), D EQUALS NOMINAL DIAMETER OF PIPE (INCHES) AND P EQUALS THE AVERAGE TEST PRESSURE (POUNDS PER SQUARE INCH GAUGE). MAXIMUM LENGTH OF TEST PIPE SECTION SHOULD BE 2000 FEET. REPUMPING OF LINE DURING PRESSURE TEST IS NOT ALLOWED.

6. SAMPLES ARE TO COMPLY WITH FLORIDA ADMINISTRATIVE CODE CHAPTER 62-555.340(2) WHICH REQUIRES AT LEAST TWO SAMPLES FOR NEW OR ALTERED TREATMENT OR STORAGE FACILITES AND WATERMAINS TO BE TAKEN IN TWO CONSECUTIVE DAYS (ONE PER DAY) AT EACH OF THE LOCATIONS. SAMPLES ARE TO BE ANALYZED FOR TOTAL RESIDUAL CHLORINE AND FOR THE PRESENCE OF TOTAL COLIFORM. CHAPTER 62-555.340(2) ALSO STATES: 'IF ANY SAMPLE CONTAINS MORE THAN FOUR MILLIGRAMS PER LITER OF TOTAL CHLORINE, THE SAMPLE SHALL BE CONSIDERED INVALID. BACTERIOLOGICAL TEST RESULTS SHALL BE CONSIDERED UNACCEPTABLE IF THE TESTS WERE COMPLETED MORE THAN 60 DAYS BEFORE THE DEPARTMENT RECEIVED THE RESULTS."

XV. GRAVITY SEWER COLLECTION SYSTEM

A. GENERAL:

1. MANHOLE RIM ELEVATIONS AS SHOWN ON PLANS MAY BE ADJUSTED TO CONFORM TO NEW OR EXISTING GRADES.

2. DISTANCE AND LENGTHS SHOWN ON PLANS AND PROFILE DRAWINGS ARE REFERENCED TO THE CENTER OF STRUCTURES.

B. MATERIALS:
NOTE: WHERE MORE THAN ONE SPECIFIED MATERIAL EXISTS FOR AN ITEM, IT IS THE CONTRACTORS OPTION TO USE EITHER MATERIAL.

1. ALL PVC SEWER PIPE AND FITTINGS SHALL BE NON-PRESSURE POLYVINYL CHLORIDE (PVC) PIPE CONFORMING TO ASTM D 3034, SDR 35, WITH PUSH-ON RUBBER GASKET JOINTS.

2. DUCTILE IRON PIPE SHALL CONFORM TO ANSI/AWWA C151/A21.51-02 LATEST REVISION, "DUCTILE IRON PIPE CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS" WITH WALL THICKNESS CLASS 50 FOR 8" AND ABOVE, CLASS 52 FOR 4" AND 6", UNLESS OTHERWISE DIRECTED BY THE ENGINEER. DUCTILE IRON PIPE SHALL BE EPOXY LINED OR COATED WITH THE MANUFACTURER'S COATING SYSTEM AS APPROVED BY THE ENGINEER OF RECORD AND THE CITY ENGINEER. IN EITHER CASE, THE ENGINEER'S REVIEW AND APPROVAL IS REQUIRED FOR EITHER ALTERNATIVE PRIOR TO CONSTRUCTION. CEMENT MORTARED LININGS ARE NOT APPROPRIATE FOR THIS APPLICATION.

3. ALL DUCTILE IRON FITTINGS SHALL CONFORM TO ANSI/AWWA STANDARD C110/A21.10-98 LATEST REVISION. ALL FITTINGS AND ACCESSORIES SHALL BE EPOXY LINED AND AS MANUFACTURED OR SUPPLIED BY THE PIPE MANUFACTURER OR APPROVED EQUAL.

4. MANHOLES SHALL BE PRECAST PER ASTM C 478 WITH 4,000 P.S.I. CONCRETE, 8" MINIMUM WALL THICKNESS AND GRADE 60 STEEL. MONOLITHICALLY POURED BASES ONLY (8" MIN. THICKNESS).

5. MANHOLES ARE TO BE SEALED WITH TYPE II SULPHATE RESISTANT CEMENT OR APPROVED EQUAL - NO MOLDING PLASTER.

6. JOINTS FOR BELL AND SPIGOT DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO ANSI/AWWA STANDARD C111/A21.11-00 LATEST REVISION. MECHANICAL JOINT OR PUSH-ON JOINT TO BE RUBBER GSKET COMPRESSION- TYPE. SPECIAL FITTINGS AND JOINTS SHALL BE CONSIDERED FOR SPECIFIC INSTALLATION SUBJECT TO THE APPROVAL OF THE ENGINEER.

7. P.V.C. CLEAN-OUTS TO HAVE SCREW TYPE ACCESS PLUG. LONG RADIUS WYE CONNECTIONS AND FITTINGS SHALL BE USED IN ORDER TO ACCESS CLEAN-OUT OPERATIONS.

8. CLEANOUTS SHALL BE INSTALLED AT ALL SEWER SERVICES EXCEEDING 75' IN LENGTH (EVERY 75') WITH A CLEANOUT AT THE PROPERTY LINE, EASEMENT LINE, OR 5' FROM A BUILDING. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF THE BUILDING CLEANOUT AND ELEVATION OF THE END OF THE SEWER SERVICE WITH THE BUILDING PLUMBING CONTRACTOR. CLEANOUTS SHALL BE THE SAME SIZE AS THE SERVICE LATERAL IN WHICH THEY ARE INSTALLED.

9. CLEANOUTS LOCATED IN ROADWAY ARE TO BE TRAFFIC RATED.

C. INSTALLATION:

1. PVC SEWER PIPE SHALL BE LAID IN ACCORDANCE WITH ASTM D 2321 AND THE UNI-BELL PLASTIC PIPE ASSOCIATION'S "RECOMMENDED PRACTICE FOR THE INSTALLATION OF PVC SEWER PIPE."

2. D.I.P. SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/AWWA C-600-99 OR LATEST REVISION.

3. PIPE TO MANHOLE CONNECTION TO BE FERNCO NEOPRENE BOOT COUPLINGS WITH STAINLESS STEEL ACCESSORIES OR APPROVED EQUAL.

4. MANHOLES SHALL BE SET PLUMB TO LINE AND GRADE ON FIRM SUBGRADE PROVIDING UNIFORM BEARING UNDER THE BASE.

5. ALL OPENINGS AND JOINTS SHALL BE SEALED WATERTIGHT.

6. TWO COATS OF KOPPERS 300-M, FIRST RED, SECOND ONE BLACK, SHALL BE APPLIED TO THE INSIDE OF ALL MANHOLES AND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS (16 MILS PER COAT). ONE COAT OF BLACK KOPPERS 300-M SHALL BE APPLIED TO THE OUTSIDE OF THE MANHOLE. THE INTERIOR COATS SHALL BE APPLIED AFTER SEWER LAMPING OF LINES. AFTER THE APPLICATION OF EACH COAT, THE UTILITY OWNER AND SHALL INSPECT THE MANHOLES. THE INSPECTION SHALL BE SCHEDULED A MINIMUM OF 48 HOURS PRIOR TO INSPECTION.

7. PROVIDE A MINIMUM (6) INCH BED OF 3/4" WASHED ROCK FOR ALL SUB-AQUEOUS GRAVITY SEWER PIPES.

D. TESTING:

1. AFTER CONSTRUCTION OF THE SEWER SYSTEM, THE ENGINEER MAY REQUIRE A VISUAL INFILTRATION AND/OR EXFILTRATION TEST TO BE PERFORMED ON THE ENTIRE SYSTEM OR ANY PART THEREOF.

2. AN AIR TEST MAY BE SUBSTITUTED FOR THE WATER EXFILTRATION TEST, UPON APPROVAL OF THE ENGINEER.

3. MANHOLE LEAKAGE TEST SHALL NOT EXCEED FOUR GALLONS PER DAY PER UNIT. NO VISIBLE LEAKAGE ALLOWED.

4. THE ALLOWABLE LIMITS OF SEWER PIPE LEAKAGE FOR GRAVITY SEWER MAINS SHALL NOT EXCEED 100 GALLONS PER INCH OF INSIDE PIPE DIAMETER PER MILE PER DAY FOR ANY SECTION TESTED. NO VISIBLE LEAKAGE SHALL BE ALLOWED AND LINES MAY BE T.V. INSPECTED AT NO EXPENSE TO THE CONTRACTOR.

5. TESTING OF GRAVITY SEWER MAINS AND LATERALS SHALL BE IN ACCORDANCE WITH THE UTILITY OWNER'S MINIMUM DESIGN AND CONSTRUCTION STANDARDS LATEST REVISION.

6. THE INSTALLED SEWERS SHALL UNDERGO TELEVISION INSPECTION AT (2) TIMES. THE FIRST SHALL BE PRIOR TO THE FINAL ACCEPTANCE BY THE UTILITY OWNER AND THE OTHER SHALL BE JUST PRIOR TO THE RELEASE OF THE ONE-YEAR MAINTENANCE BOND.

XVI. SEPARATION OF WATER AND SEWER MAINS

A. SANITARY SEWERS, STORM SEWERS, AND FORCE MAINS SHOULD CROSS UNDER WATER MAINS WHENEVER POSSIBLE. SANITARY SEWERS, STORM SEWERS, AND FORCE MAINS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE WHENEVER POSSIBLE. WHERE SANITARY SEWERS, STORM SEWERS, OR FORCE MAINS MUST CROSS A WATER MAIN WITH LESS THAN 18 INCHES VERTICAL DISTANCE, THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. SEWER LINES SHALL BE CONSTRUCTED OF PVC-SDR-26. SUFFICIENT LENGTHS OF DIP AND PVC-SDR-26 MUST BE TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 12 INCHES MUST BE MAINTAINED AT ALL CROSSINGS. ALL CROSSING SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING). WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE WITH LESS THAN 18 INCHES VERTICAL CLEARANCE, THE NEW PIPE SHALL BE CONSTRUCTED OF DIP, AND THE CROSSING SHALL BE ARRANGED TO MEET THE REQUIREMENTS ABOVE.

B. A MINIMUM 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE.

IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10 FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES IN PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SANITARY SEWER OR THE FORCE MAIN SHALL BE CONSTRUCTED OF DIP WITH A MINIMUM VERTICAL DISTANCE OF 12 INCHES. THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCE MAIN (STAGGERED JOINTS).

C. ALL DIP SHALL BE CLASS 51 OR HIGHER. ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED AS DETERMINED BY THE DESIGN.

BTE REF DATE: 2-3-2022

#	DATE	REVISIONS
	3-8-22	PDB SUBMITTAL

STEPHEN F. BOTEK LICENSE No. 55335 STATE OF FLORIDA PROFESSIONAL ENGINEER
February 3, 2022

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY STEPHEN F. BOTEK, P.E. ON THE DATE ADJACENT TO THE SEAL.

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2006 2021 Celebrating 15 Years

CIVIL GENERAL NOTES AND SPECIFICATIONS

THE TROPIC
1744 Federal Highway
Hollywood, Florida 33020

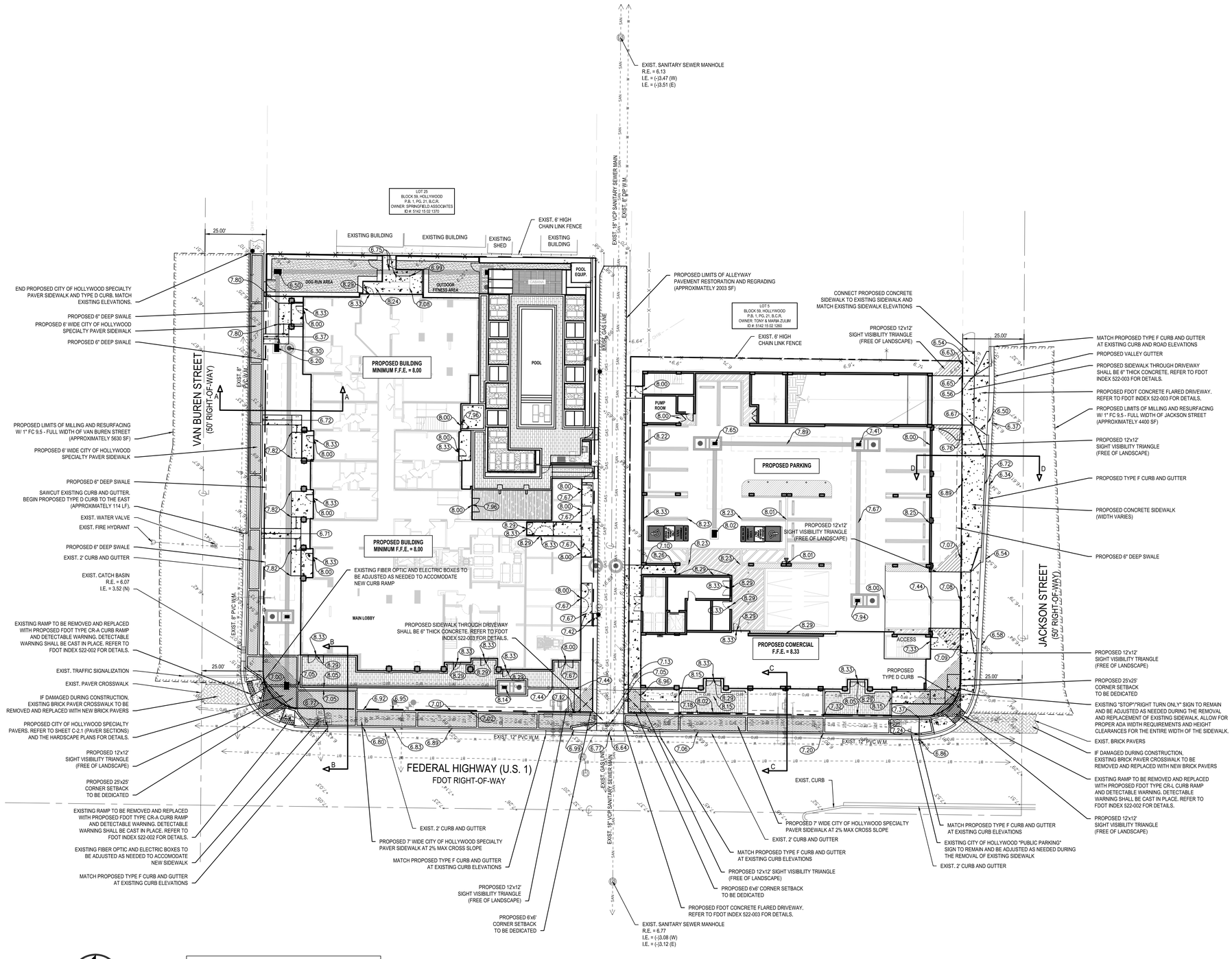
Botek Thurlow Engineering, Inc.
3409 NW 9th Avenue, Suite 1102, Ft. Lauderdale, FL 33309
www.botekthurlow-eng.com p: 954-568-0888 f: 954-568-0757

BTE PROJECT #: 20-0902

PROJECT DATE: 6-30-2021

SHEET #: C-1

PRELIMINARY PLANS - NOT FOR CONSTRUCTION



PAVING AND GRADING LEGEND

PROPERTY or R/W LINE

CENTER LINE

NON VEHICULAR ACCESS LINE

A — A CROSS SECTION

ABBREVIATIONS

PROP.	PROPOSED
EXIST.	EXISTING
I.E.	INVERT ELEVATION
M.H.	MANHOLE
C.B.	CATCH BASIN
D.W.	DRAINAGE WELL
R.E.	RIM ELEVATION
G.E.	GRATE ELEVATION
W.M.	WATER MAIN

GENERAL PAVING AND GRADING NOTES:

1. CONTRACTOR TO RESTORE ALL EXISTING PAVEMENT, PAVEMENT MARKINGS, SIDEWALK, LANDSCAPING, IRRIGATION, ETC, DAMAGED DURING CONSTRUCTION INCLUDING ANY DAMAGE TO EXISTING ROADWAY IN PUBLIC R.O.W.
2. EXISTING GRADES SHOWN BY (XX.XX) GOVERN. +X.XX' ARE FOR REFERENCE ONLY. FINISHED GRADES INDICATED
3. ALL ELEVATIONS SHOWN HEREON REFER TO NAVD 1988 UNLESS NOTED OTHERWISE.
4. CROSSWALKS AND HC RAMPS TO CONFORM TO ADA W/ DETECTABLE WARNING SURFACE.
5. EXACT LOCATION OF METERS AND BFPs TO BE COORDINATED IN THE FIELD.
6. REFER TO PAVING, GRADING, AND DRAINAGE DETAILS AND SECTIONS FOR ADDITIONAL INFORMATION.
7. RESTORE ANY PAVEMENT MARKINGS AFFECTED BY THE INSTALLATION OF THE TYPE 'F' CURB AND GUTTER PER BROWARD COUNTY MINIMUM STANDARDS.
8. ALL ADA MATS / DETECATBLE WARNINGS ARE TO BE CAST-IN-PLACE.
9. UNLESS NOTED OTHERWISE ON THE PLANS OR DETAILS, ANY MILLING AND RESURFACING REQUIRED BY THIS PROJECT SHALL BE A MINIMUM OF 1" DEPTH.

COUNTY NOTES:

1. ALL SIDEWALKS WITHIN THE APPROVED PERMIT LIMITS ARE TO BE ADA COMPLIANT, UPGRADED CURB RAMPS SHALL BE PROVIDED PER FDOT STANDARD INDEX 304.
2. ANY DAMAGED SIDEWALK OR CURB AND GUTTER WITHIN THE APPROVED PERMIT LIMITS IS TO BE REMOVED AND REPLACED IN ACCORDANCE WITH BROWARD COUNTY MINIMUM STANDARDS LATEST EDITION.
3. ANY PAVEMENT WITHIN THE APPROVED PERMIT LIMITS DAMAGED DURING CONSTRUCTION SHALL BE RECONSTRUCTED IN ACCORDANCE WITH BROWARD COUNTY MINIMUM STANDARDS LATEST EDITION.

Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com

BTE REF DATE: 2-3-2022

#	DATE	REVISIONS
	3-16-22	PDB SUBMITTAL

STEPHEN F. BOTEK
LICENSE
No. 55335
STATE OF FLORIDA
PROFESSIONAL ENGINEER

February 3, 2022

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Celebrating 15 Years

PAVING AND GRADING PLAN

THE TROPIC
1744 Federal Highway
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BTE PROJECT #: 20-0902

PROJECT DATE: 6-30-2021

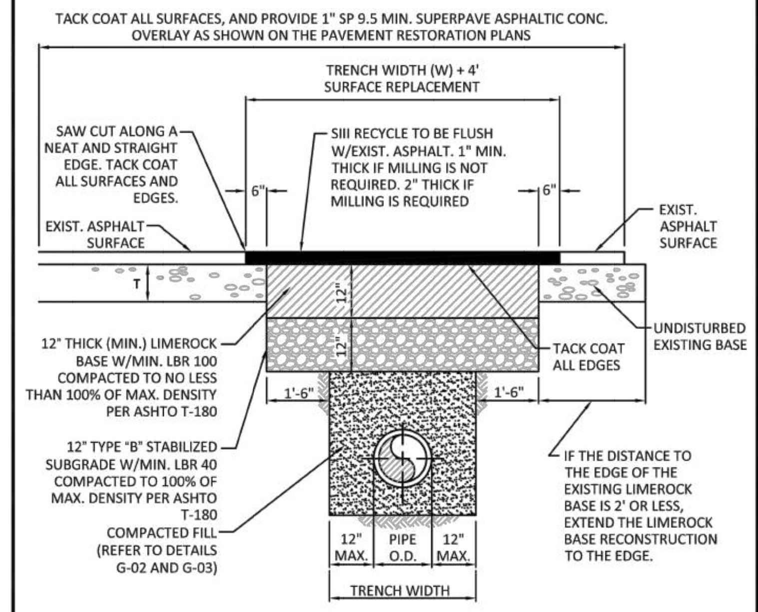
SHEET #: C-2

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

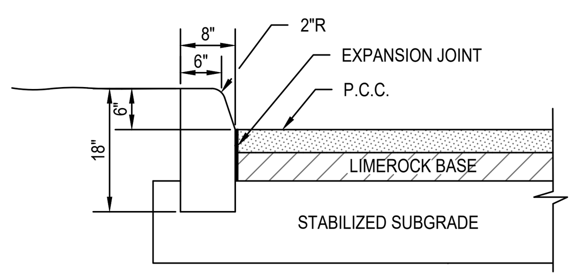
FLEXIBLE PAVEMENT RESTORATION NOTES:

1. THE ABOVE DETAILS APPLY ONLY TO ASPHALT PAVEMENT RESTORATION OVER UTILITY TRENCHES CUT WITHIN CITY OF HOLLYWOOD RIGHTS-OF-WAY. FOR PAVEMENT RESTORATION WITHIN BROWARD COUNTY OR FDOT RIGHTS-OF-WAY REFER TO THE CORRESPONDING DETAILS FOR THOSE AGENCIES.
2. LIMEROCK BASE MATERIAL SHALL HAVE A MINIMUM L.B.R. OF 100 AND A MINIMUM CARBONATE CONTENT OF 70%. REPLACED BASE MATERIAL OVER TRENCH SHALL BE A MINIMUM OF 12" THICK".
3. LIMEROCK BASE MATERIAL SHALL BE PLACED IN 12" MAXIMUM (LOOSE MEASUREMENT) THICKNESS LAYERS WITH EACH LAYER THOROUGHLY ROLLED OR TAMPED AND COMPACTED TO 100% OF MAXIMUM DENSITY, PER AASHTO T-180, PRIOR TO THE PLACEMENT OF THE SUCCEEDING LAYERS.
4. STABILIZED SUBGRADE MATERIAL SHALL BE GRANULAR AND SHALL HAVE A MINIMUM L.B.R. OF 40.
5. BACKFILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE PIPE LAYING CONDITION TYPICAL SECTIONS IN DETAILS G-02 AND G-03, AND THE SPECIFICATIONS, BUT TESTING WILL BEGIN 12" ABOVE THE INSTALLED FACILITY.
6. ALL EDGES AND JOINTS OF EXISTING ASPHALT PAVEMENT SHALL BE SAW CUT TO STRAIGHT LINES, PARALLEL TO OR PERPENDICULAR TO THE ROADWAY, PRIOR TO THE RESURFACING.
7. RESURFACING MATERIAL SHALL BE FDOT SUPERPAVE, AND SHALL BE APPLIED A MINIMUM OF TWO INCH IN THICKNESS.
8. MILL AND BUTT JOINT TO EXISTING PAVEMENT.
9. IF THE TRENCH IS FILLED TEMPORARILY, IT SHALL BE COVERED WITH A 2" ASPHALTIC CONCRETE PATCH TO KEEP THE FILL MATERIAL FROM RAVELING UNTIL REPLACED WITH A PERMANENT PATCH.
10. REFER TO SPECIFICATIONS FOR DETAILED PROCEDURES.
11. WHERE THE UTILITY TRENCH CROSSES EXISTING ASPHALT DRIVEWAYS, THE LIMEROCK BASE THICKNESS MAY BE A MINIMUM OF 6 INCHES THICK. REGARDLESS OF THE EXTENT OF IMPACT, THE ENTIRE DRIVEWAY SURFACE BETWEEN THE EDGE OF THE ROADWAY PAVEMENT AND PROPERTY LINE OR FRONT OF SIDEWALK SHALL BE OVERLAID USING 2-INCH THICK MINIMUM ASPHALTIC CONCRETE SURFACE COURSE WHERE INDICATED ON THE PLANS OR AS DIRECTED BY THE CITY/ENGINEER.

ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 11/06/2017
DRAWN: EAM	FLEXIBLE PAVEMENT RESTORATION NOTES	DRAWING NO. G-12
APPROVED: XXX		

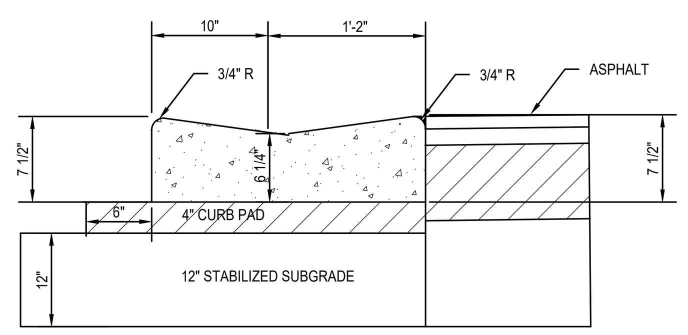


ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 11/06/2017
DRAWN: EAM	FLEXIBLE PAVEMENT RESTORATION FOR TRENCHES CUT PERPENDICULAR AND PARALLEL TO THE ROADWAY	DRAWING NO. G-12.1
APPROVED: XXX		



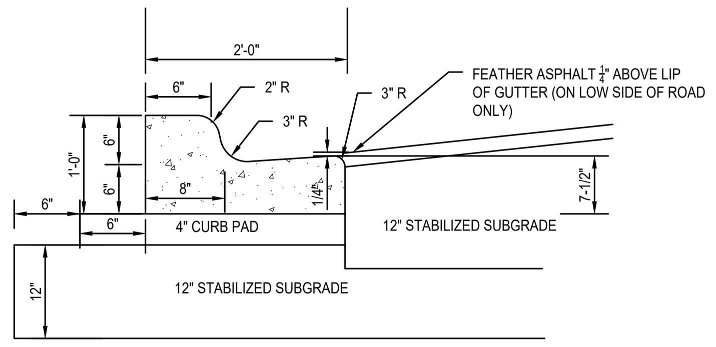
TYPE "D" CURB DETAIL

N.T.S.



STANDARD VALLEY GUTTER DETAIL

NTS

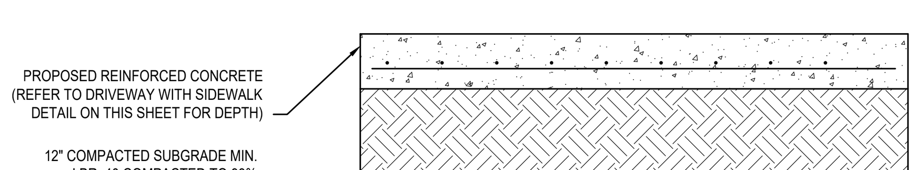


TYPE "F" CURB & GUTTER

WHEN USED ON HIGH SIDE OF ROADWAYS THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT AND THE THICKNESS OF THE LIP SHALL BE 6" INSTEAD OF 7 $\frac{1}{2}$"

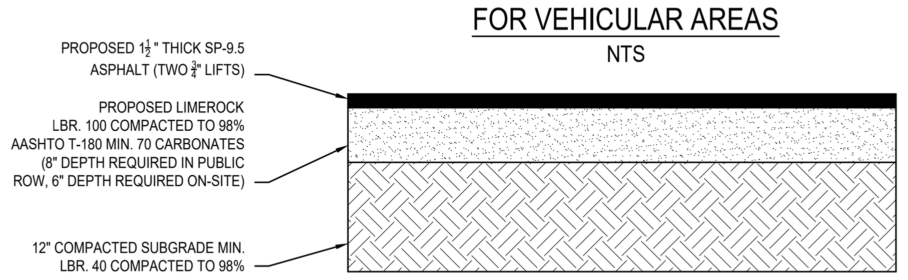
TYPE 'F' CURB AND GUTTER DETAIL

NTS



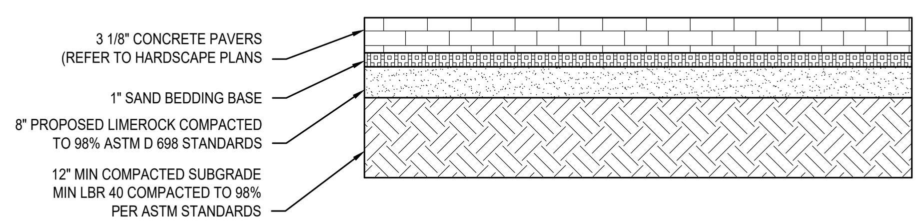
TYPICAL CONCRETE PAVEMENT SECTION FOR VEHICULAR AREAS

NTS



TYPICAL ASPHALT PAVEMENT SECTION

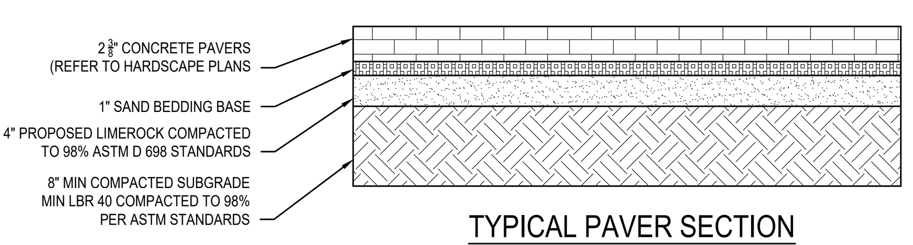
NTS



NOTE: SAND SETTING BED TO BE CONCRETE SAND AND SHOULD CONFORM TO ASTM C33 OR CSA A23.1 (MASONRY SAND IS NOT ALLOWED)

TYPICAL VEHICULAR PAVER SECTION

NTS



NOTE: SAND SETTING BED TO BE CONCRETE SAND AND SHOULD CONFORM TO ASTM C33 OR CSA A23.1 (MASONRY SAND IS NOT ALLOWED)

TYPICAL PAVER SECTION FOR NON-VEHICULAR AREAS

NTS

BROWARD COUNTY STANDARD DETAILS

ALL WORK WITHIN THE COUNTY RIGHT-OF-WAY SHALL CONFORM BROWARD COUNTY MINIMUM STANDARDS (BCMS)

SUBGRADE BCMS 6-1.6
- A. LBR MINIMUM OF 40
- B. TOP 12" OF UNDISTURBED SOIL SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY PER AASHTO T-99C

BASE BCMS 6-1.7
- C. TWELVE (12) INCH CONSTRUCTED IN TWO SIX (6) INCH LIFTS
- D. CARBONATE CONTENT MINIMUM 70% AND LBR MINIMUM OF 100%
- E. COMPACTED TO A MINIMUM 98% MAXIMUM DRY DENSITY PER AASHTO T-180

WEARING COURSE BCMS 6-1.8
- F. MINIMUM TOTAL THICKNESS OF TWO AND HALF (2-½) INCHES OF ASPHALTIC CONCRETE IN TWO (2) LIFTS AS FOLLOWS:
  1) STRUCTURAL COURSE TYPE SP ASPHALT CONCRETE MIXTURE PER FDOT STANDARD SPECIFICATIONS SECTION 334 (344-1.4.1) 1-½ INCHES MINIMUM

334-1.4.1 Layer Thicknesses: The allowable layer thicknesses for Type SP Asphalt Concrete mixtures are as follows:

Type SP-9.5	1 to 1-1/2 inches
Type SP-12.5	1-1/2 to 2-1/2 inches
Type SP-19.0	2 to 4 inches

  2) FRICTION COURSE PER FDOT FLEXIBLE PAVEMENT DESIGN MANUAL TABLE 4.1 (1 INCH MINIMUM)

TABLE 4.1

FRICTION COURSE SELECTION

The Following Friction Courses are Required For Design Speeds of 35 mph or Greater.

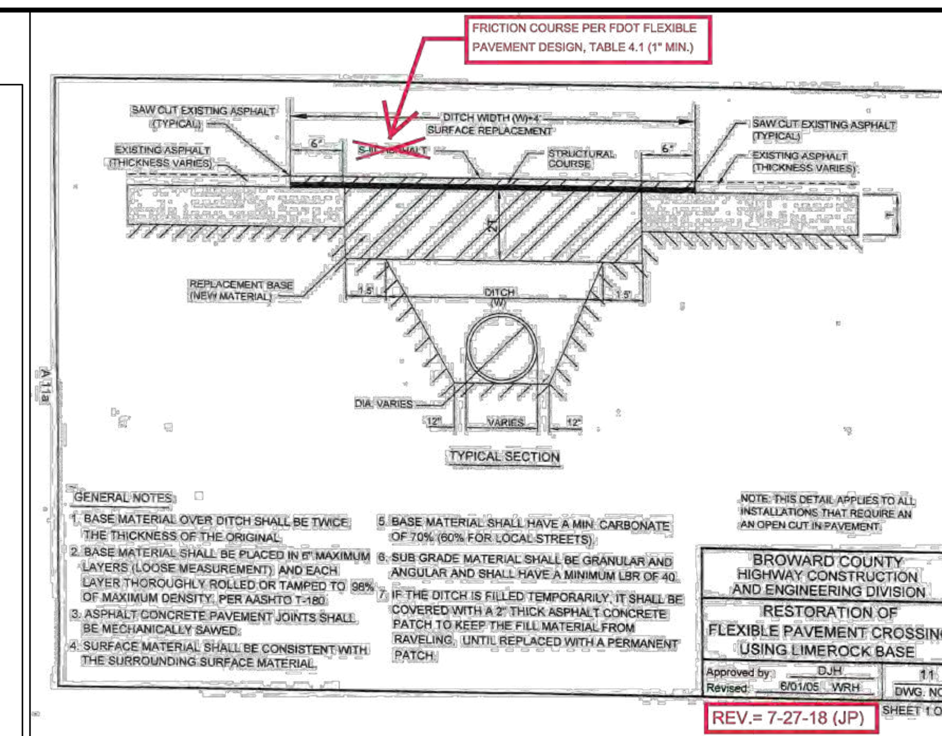
All Projects

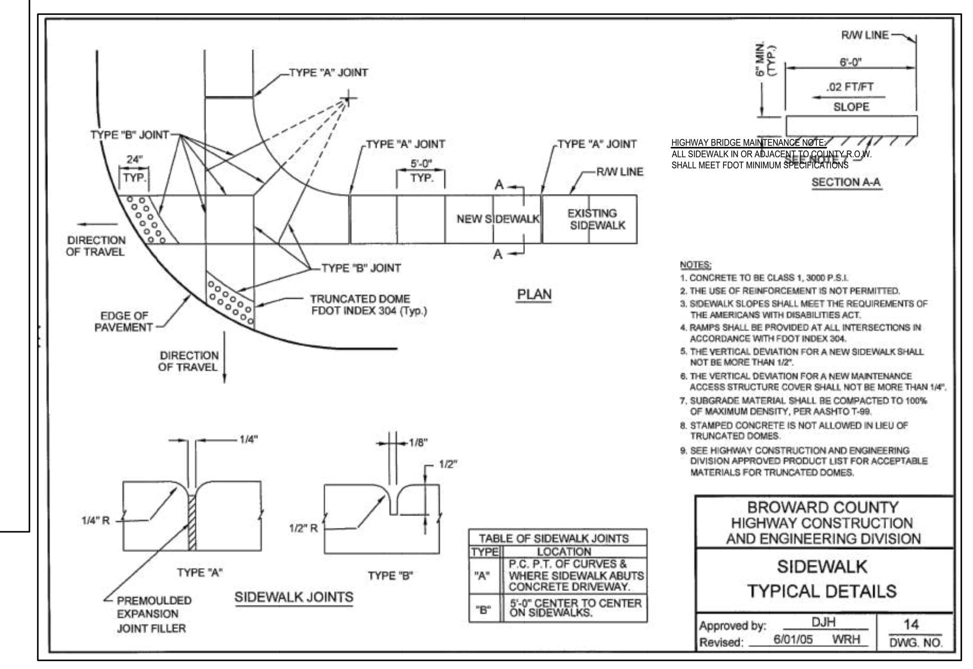
Design Speed	Two Lane	Multi Lane
35 thru 45 mph or curb & gutter	FC-12.5 or FC-9.5	FC-12.5 or FC-9.5
50 mph or Greater	FC-12.5 or FC-9.5	FC-5

  3) TACK COAT SHALL BE USED BETWEEN PAVING COURSES
  4) PRIME COAT SHALL BE USED ON THE FINISHED ROCK BASE

CURB AND GUTTER PER BCMS 6-1.10
- G. LIMEROCK FOUNDATION OR PAD MINIMUM LBR OF 100
- H. CARBONATE CONTENT MINIMUM 70%
- I. MINIMUM FOUR (4) INCHES THICK AND EXTENDS MINIMUM SIX (6) INCHES BEYOND EDGES OF CONCRETE
- J. COMPACTED TO 98% MAXIMUM DENSITY PER AASHTO T-180
- K. MINIMUM STRENGTH 3000 PSI
- L. TYPE "F" CURB SHALL BE PLACED ONE-QUARTER (¼) INCH HIGHER THAN ADJACENT INLET FRAMES AND GRATES

SIDEWALK PER BCMS 6-1.14 & DWG NO 14
- M. MINIMUM WIDTH SIX (6) FEET, CLEAR OF AL OBSTRUCTIONS
- N. NARROW GRASS STRIP ONE (1) TO THREE (3) FEET BETWEEN SIDEWALK AND CURB AND GUTTER NOT PERMITTED
- O. MINIMUM THICKNESS SIX (6) INCHES
- P. WIRE MESH NOT PERMITTED
- Q. MINIMUM TRANSVERSE SLOPE 0.01 FT/FT AND MAXIMUM TRANSVERSE SLOPE OF 0.02 FT/FT TOWARD SWALE OR GUTTER
- R. TRANSVERSE HAIR BROOM FINISH
- S. LONGITUDINAL SLOPE CONFORMS WITH ADA "GREENBOOK"
- T. HANDICAP RAMPS MUST BE PROVIDED AT ALL INTERSECTIONS PER FDOT INDEX 304
- U. MINIMUM STRENGTH 3000 PSI





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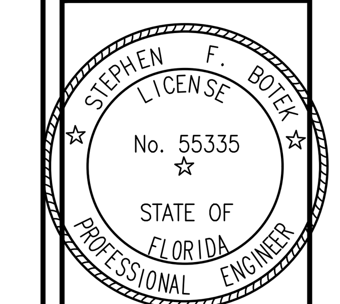
	3-8-22	PDB SUBMITTAL



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2006 2021 Celebrating 15 Years

PAVING AND GRADING DETAILS

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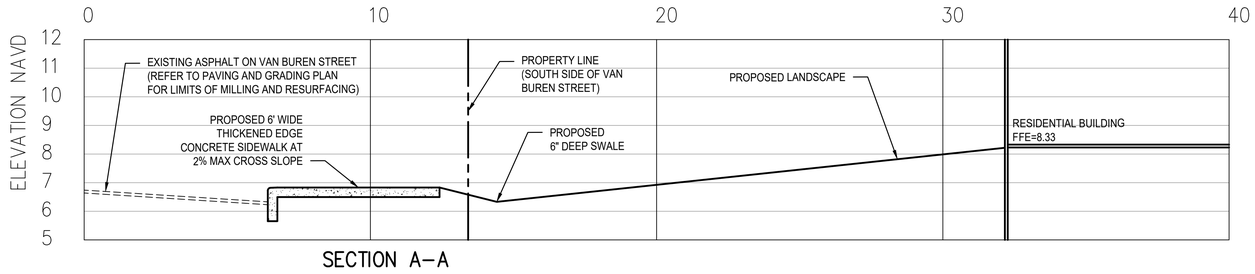
www.botekthurlow-eng.com p: 954-568-0888 f: 954-568-0757

BTE PROJECT #: 20-0902

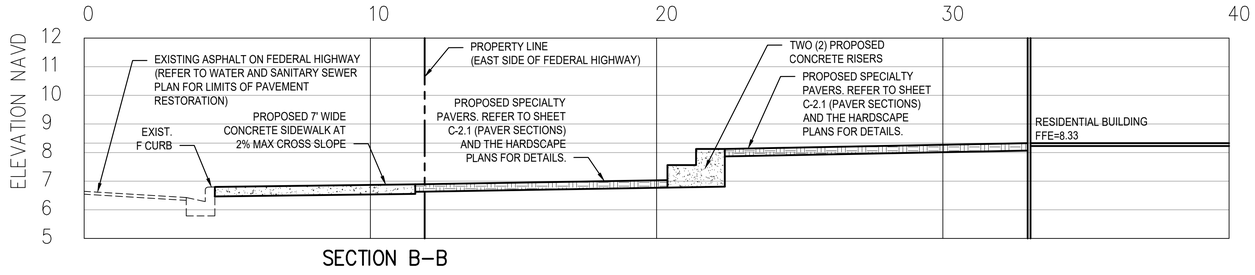
PROJECT DATE: 6-30-2021

SHEET #: C-2.1

PRELIMINARY PLANS - NOT FOR CONSTRUCTION



SECTION A–A



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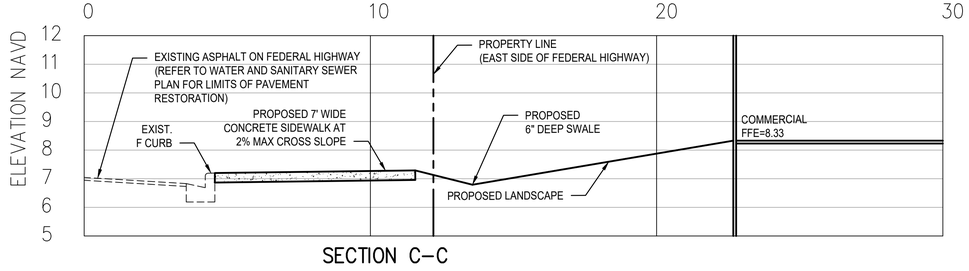

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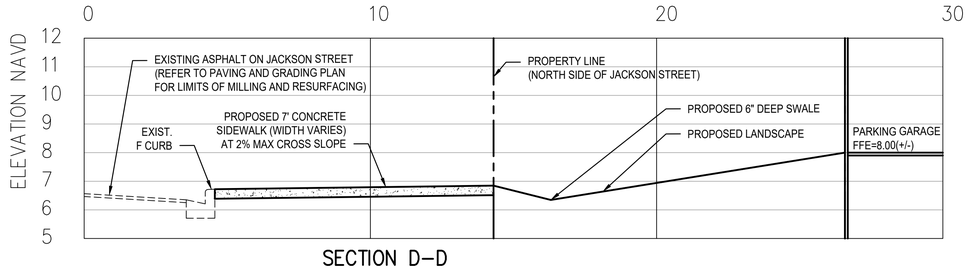

SECTION D–D

CROSS-SECTION LEGEND

- PROPERTY / R.O.W. LINE
- EASEMENT / DEDICATION
- EXIST. GRADE
- PROP. CONCRETE
- PROP. PAVERS

BTE REF DATE: 2-3-2022

#	DATE	REVISIONS
	3-8-22	PDB SUBMITTAL

STEPHEN F. BOTEK LICENSE No. 55335 STATE OF FLORIDA PROFESSIONAL ENGINEER

February 3, 2022

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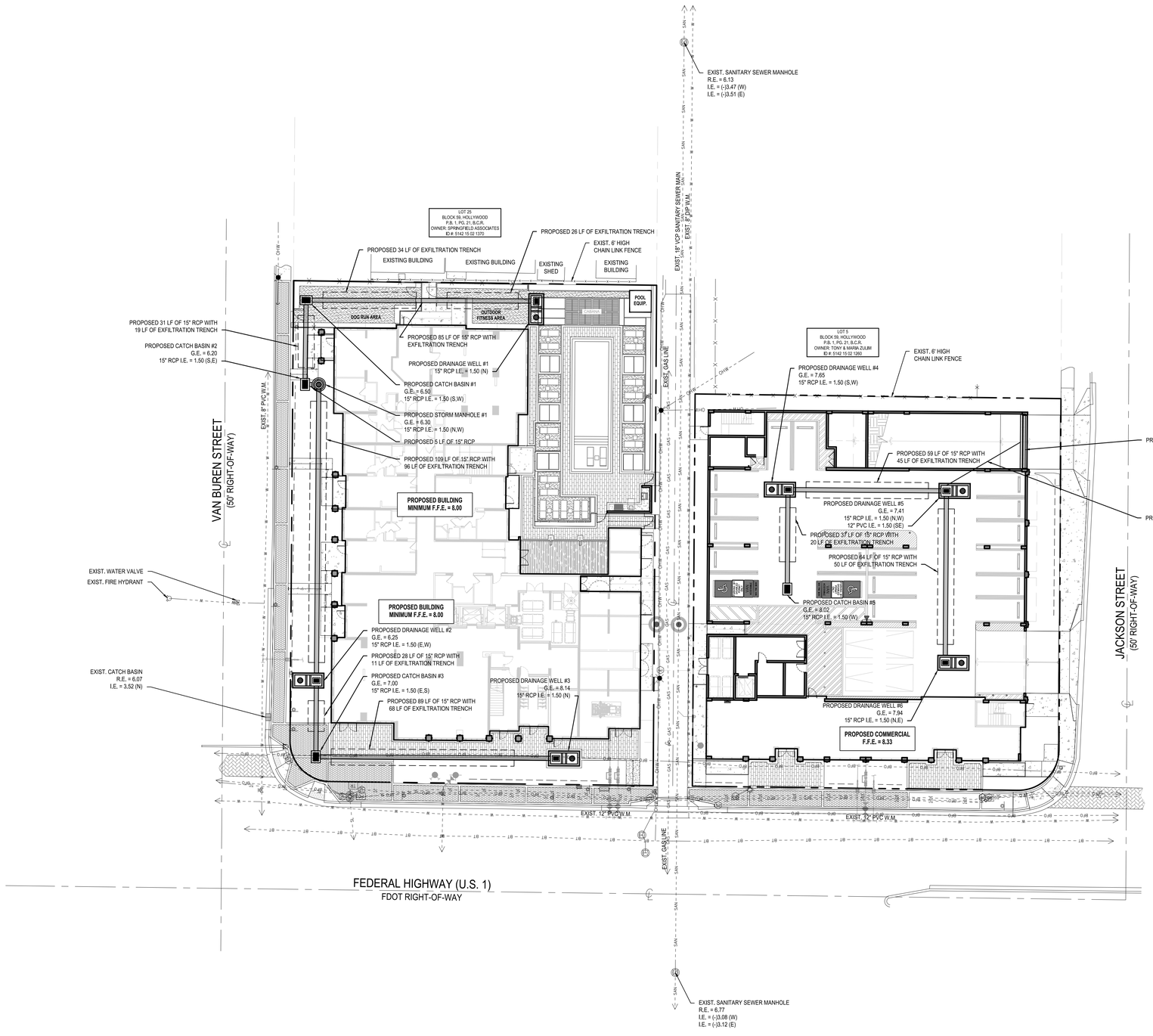
BTE PROJECT #: 20-0902

PROJECT DATE: 6-30-2021

SHEET #: C-2.2

PRELIMINARY PLANS - NOT FOR CONSTRUCTION



DRAINAGE LEGEND

- PROP. FDOT TYPE C BASIN INLET TOP
- PROP. FDOT TYPE C BASIN CURB INLET TOP
- PROP. ROUND BASIN INLET TOP
- PROP. ROUND BASIN MANHOLE TOP
- PROP. BASIN CURB INLET TOP
- PROP. SANITARY SEWER PIPE
- PROP. WATER PIPE
- EXIST. WATER PIPE
- EXIST. SANITARY SEWER PIPE
- EXIST. STORM PIPE
- EXIST. ATT UNDERGROUND
- EXIST. BROWARD TRAFFIC COMMUNICATIONS
- EXIST. BROWARD FIBER OPTIC
- EXIST. COMCAST UNDERGROUND
- EXIST. ELECTRICAL UNDERGROUND
- EXIST. FIBER OPTIC UNDERGROUND
- PROP. DRAINAGE WELL
- PROP. YARD DRAIN
- PROP. CLEAN OUT
- PROP. DRAINAGE PIPE
- PROP. EXFILTRATION TRENCH
- EXIST. UNKNOWN UNDERGROUND
- EXIST. FPL UNDERGROUND
- EXIST. ELECTRICAL UNDERGROUND
- EXIST. ATT UNDERGROUND
- EXIST. OVERHEAD
- EXIST. TELEPHONE UNDERGROUND

ABBREVIATIONS

PROP.	PROPOSED
EXIST.	EXISTING
I.E.	INVERT ELEVATION
M.H.	MANHOLE
C.B.	CATCH BASIN
D.W.	DRAINAGE WELL
R.E.	RIM ELEVATION
G.E.	GRATE ELEVATION

GENERAL DRAINAGE NOTES:

1. ALL ROOF DRAINS TO BE CONNECTED TO THE NEAREST STORM DRAINAGE STRUCTURE.
2. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL EXISTING DRAINAGE WITHIN FDOT AND/OR THE CITY RIGHT OF WAY THAT HAS BEEN AFFECTED BY THE CONSTRUCTION.
3. DURING CONSTRUCTION ACTIVITIES INLET PROTECTION SHALL BE PROVIDED FOR ALL DRAINAGE INLETS ADJACENT TO THE PROJECT SITE. REFER TO POLLUTION/EROSION CONTROL PLAN.
4. SHOULD DEWATERING BE REQUIRED, CONTRACTOR IS RESPONSIBLE FOR OBTAINING REQUIRED AGENCY APPROVALS AND OR PERMITS.
5. THE PROPOSED DRAINAGE WELLS SHOWN ON THIS PLAN ARE NOT TO BE USED FOR ANY DEWATERING PURPOSES.
6. ALL EXISTING UTILITIES SHOWN ON THIS PLAN ARE BASED ON THE BEST AVAILABLE INFORMATION. THE EXISTING UTILITY INFORMATION SHOWN HERE IS FOR THE CONTRACTOR'S CONVENIENCE AND THE E.O.R. ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. BEFORE COMMENCING CONSTRUCTION CONTRACTOR TO CALL FOR UTILITY LOCATES, VERIFY ALL EXISTING UTILITIES' LOCATIONS AND DEPTHS, AND NOTIFY E.O.R. OF ANY CONFLICTS.
7. ALL ELEVATIONS SHOWN HEREON REFER TO NAVD 1988 UNLESS NOTED OTHERWISE.

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STEPHEN F. BOTEK
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No. 55335
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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DRAINAGE PLAN

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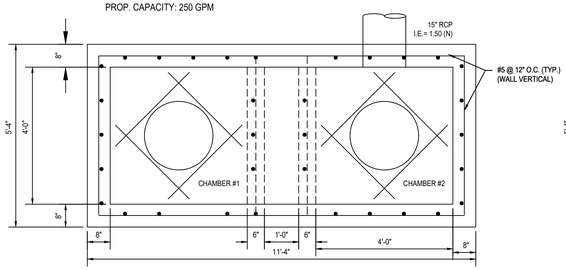
BTE PROJECT #: 20-0902

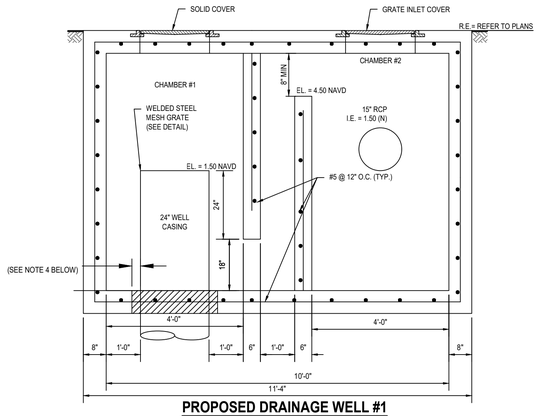
PROJECT DATE: 6-30-2021

SHEET #: C-3

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

APPROXIMATE LATITUDE/LONGITUDE:
PROP. CAPACITY: 250 GPM





PROPOSED DRAINAGE WELL #1
N.T.S.

APPROXIMATE LATITUDE/LONGITUDE:
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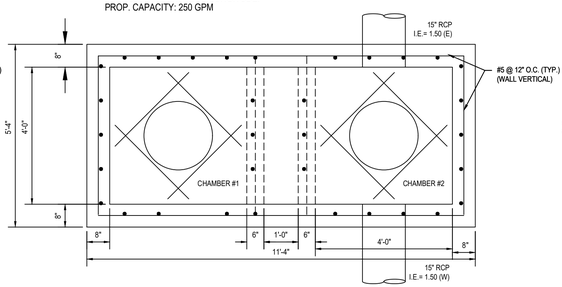

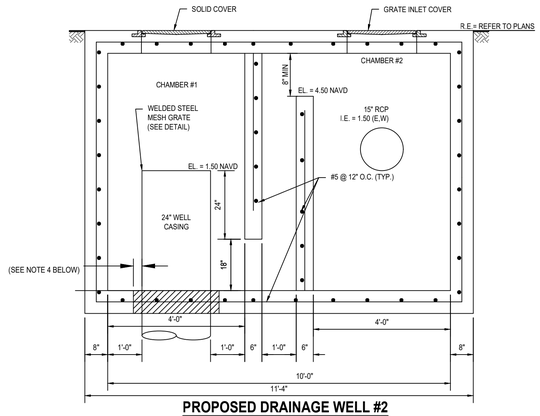

PROPOSED DRAINAGE WELL #2
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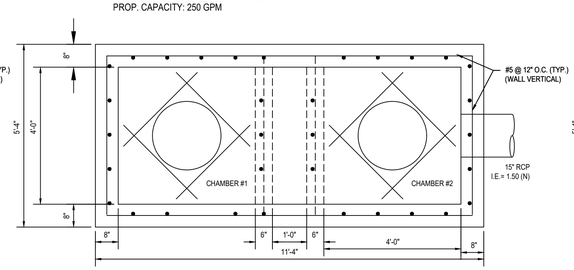

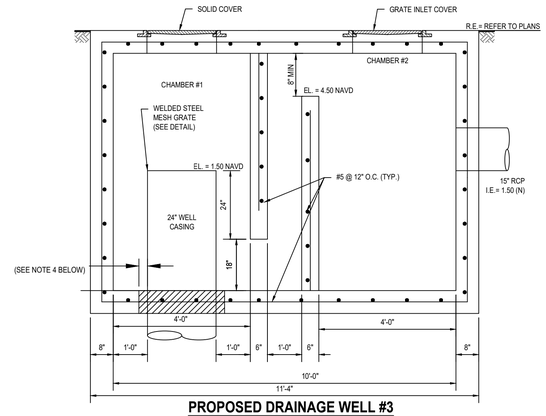

PROPOSED DRAINAGE WELL #3
N.T.S.

APPROXIMATE LATITUDE/LONGITUDE:
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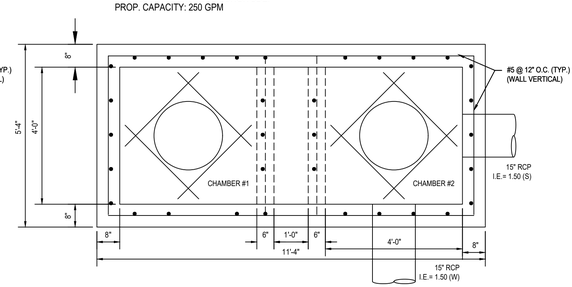
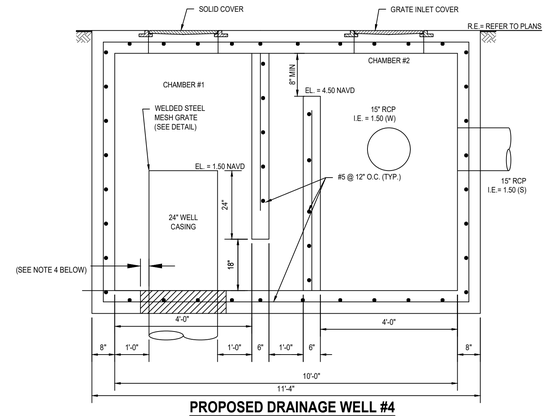




PROPOSED DRAINAGE WELL #4
N.T.S.

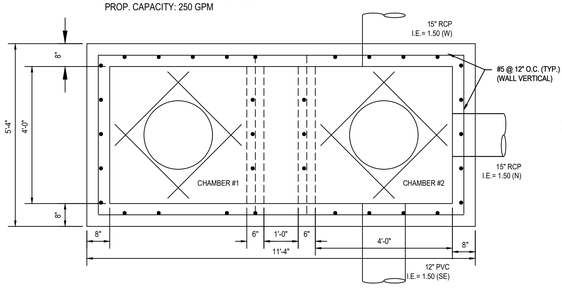
WELL NOTES:

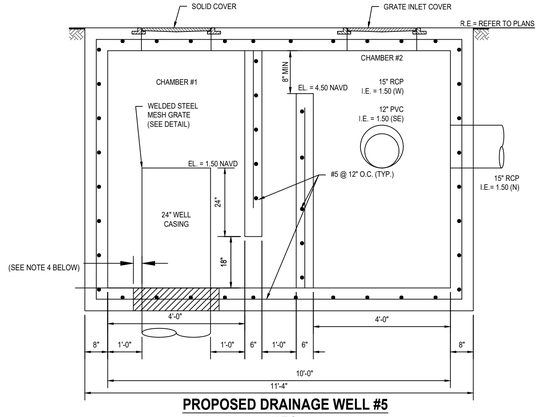
1. CONCRETE=4000 PSI @ 28 DAYS
2. HOLES FOR PIPING SHALL BE 6" LARGER THAN PIPE O.D. AND SHALL BE CAST AT TIME OF FABRICATION.
3. WET SEASON WATER TABLE ELEVATION = 1.50 N.A.V.D.
4. PROVIDE 4 ADDITIONAL (DIAGONAL) TYPE "D" REINFORCEMENT AROUND PIPE OPENING.

WELL TOP SLAB NOTES:

1. TOP SLAB REINFORCEMENT TO BE NO. 7 BARS @ 6" O.C. E.W. WITH ADDITIONAL NO. 8 BARS AROUND OPENINGS.
2. CHAMBER #1 TO HAVE (SOLID COVER) U.S.F. 150 RING AND COVER OR APPROVED EQUIVALENT.
   CHAMBER #2 TO HAVE (SLOTTED COVER) U.S.F. 3130 RING AND 5640 GRATE OR APPROVED EQUIVALENT.
3. SLAB OPENINGS SIZES WITHIN EACH CHAMBER SHALL BE AS REQUIRED BASED UPON INSTALLATION OF FRAME AND GRATE OR RING AND COVER.

APPROXIMATE LATITUDE/LONGITUDE:
PROP. CAPACITY: 250 GPM





PROPOSED DRAINAGE WELL #5
N.T.S.

APPROXIMATE LATITUDE/LONGITUDE:
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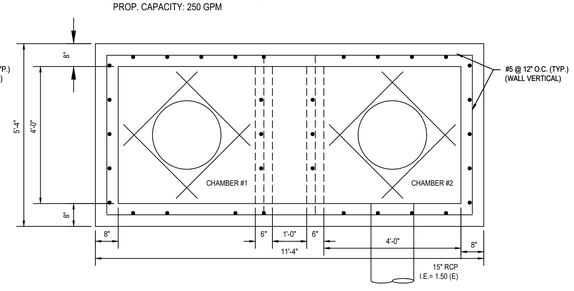

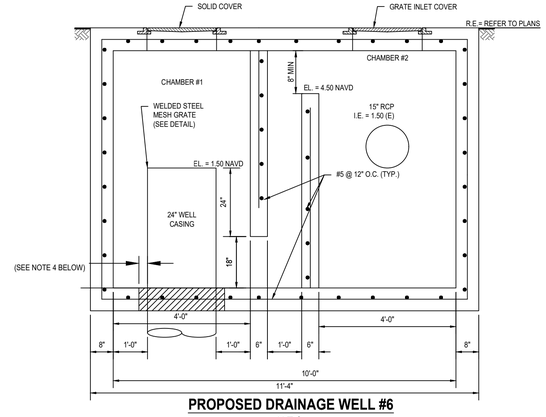

PROPOSED DRAINAGE WELL #6
N.T.S.

BTE REF DATE: 2-3-2022

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STEPHEN F. BOTEK
LICENSE
No. 55335
STATE OF FLORIDA
PROFESSIONAL ENGINEER

February 3, 2022

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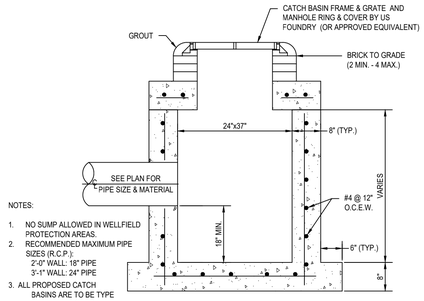
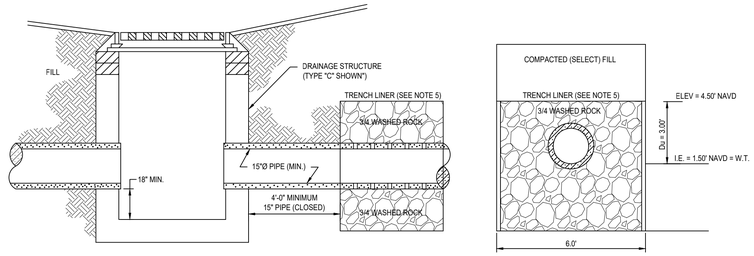
PROJECT DATE: 6-30-2021

SHEET #: C-3.1

PRELIMINARY PLANS - NOT FOR CONSTRUCTION



TYPE 'C' DRAINAGE STRUCTURE
NTS



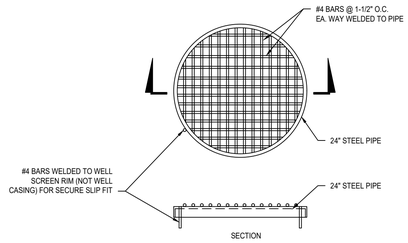
LONGITUDINAL SECTION

TRENCH SECTION

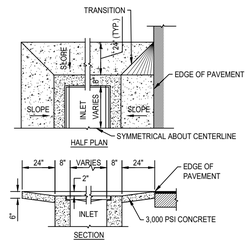
NOTES:

1. DRAIN FIELD MAY BE OF SLOTTED CONCRETE PIPE.
2. PIPES SHALL TERMINATE 2' FROM END OF TRENCH OR CONNECT TO ADDITIONAL CATCH BASINS WITH A MINIMUM OF 4' SEPARATION BETWEEN TRENCH AND CATCH BASIN AS REQUIRED.
3. COVER PIPE ENDS WITH NO. 10 GALVANIZED OR ALUMINUM SCREEN, OPENING NO LARGER THAN ½" x ½".
4. BALLAST ROCK SHALL BE FROM FRESH WATER WASHED FREE OF DELETERIOUS MATTER.
5. SIDES AND TOP OF TRENCH TO BE LINED WITH ONE LAYER OF PLASTIC TYPE FILTER CLOTH OR APPROVED EQUAL OVERLAP TRENCH LINING MATERIAL A MINIMUM OF TWO FEET AT TOP OF TRENCH
6. FILTER FABRIC TO BE GEOGTEX 351 OR AMOCO 4545 OR EQUIVALENT.

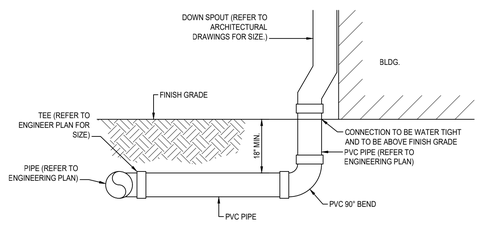
EXFILTRATION TRENCH DETAIL
NTS



DRAINAGE WELL GRATE DETAIL
NTS



INLET APRON DETAIL
NTS



DOWN SPOUT CONNECTION
NTS

BTE REF DATE: 2-3-2022

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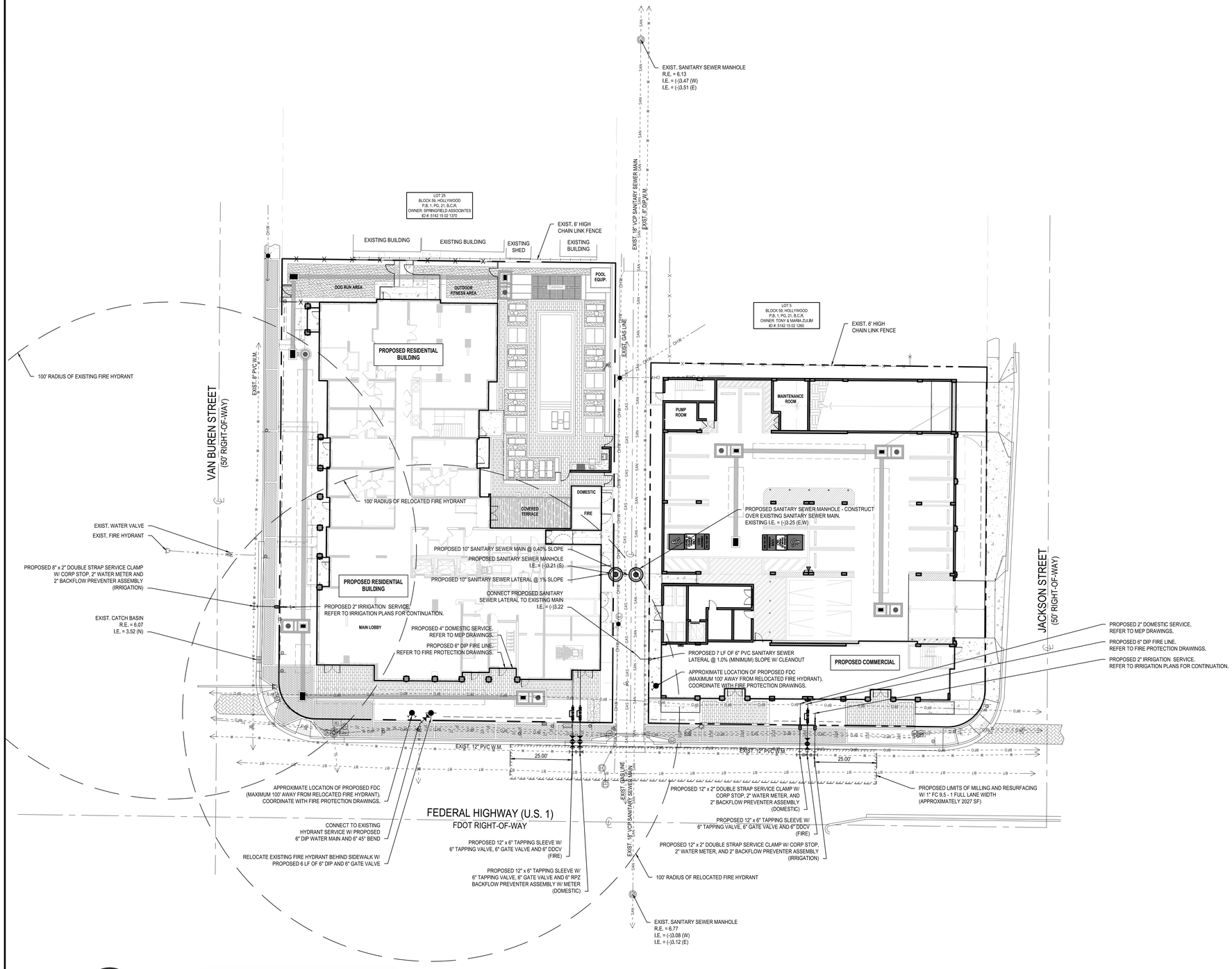
BTE PROJECT #: 20-0902

PROJECT DATE: 6-30-2021

SHEET #: C-3.2

PRELIMINARY PLANS - NOT FOR CONSTRUCTION



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WATER AND SEWER LEGEND

DOUBLE DETECTOR CHECK VALVE	EXIST. SANITARY SEWER MANHOLE
RPZ BACKFLOW PREVENTORS	PROP. SANITARY SEWER MANHOLE
GATE VALVE	PROP. SANITARY CLEAN OUT
METER	PROP. METER VAULT
TEE / TAP	PROP. BACTERIOLOGICAL SAMPLE
FIRE HYDRANT	PROP. REDUCER
FIRE DEPT. CONNECTION	
PROP. PLUG / CAP	

PROP. SANITARY SEWER PIPE — SS —— SS

PROP. WATER PIPE — W —— W

EXIST. WATER PIPE — W(E) —— W(E)

EXIST. SANITARY SEWER PIPE — SS(E) —— SS(E)

EXIST. STORM PIPE — STM(E) —— STM(E)

EXIST. ATT UNDERGROUND — ATT(E) —— ATT(E)

EXIST. BROWARD TRAFFIC COMMUNICATIONS — BCTED(E) ——

EXIST. BROWARD FIBER OPTIC — BCTEDF(E) ——

EXIST. COMCAST UNDERGROUND — COM(E) —— COM(E)

EXIST. ELECTRICAL UNDERGROUND — ELE(E) —— ELE(E)

EXIST. FIBER OPTIC UNDERGROUND — FO(E) —— FO(E)

EXIST. UNKNOWN UNDERGROUND — UNK(E) —— UNK(E)

EXIST. FPL UNDERGROUND — FPL(E) —— FPL(E)

EXIST. ELECTRICAL UNDERGROUND — ELE(E) —— ELE(E)

EXIST. ATT UNDERGROUND — GAS(E) —— GAS(E)

EXIST. OVERHEAD — OHE(E) —— OHE(E)

EXIST. TELEPHONE UNDERGROUND — TEL(E) —— TEL(E)

ABBREVIATIONS

PROP.	PROPOSED
EXIST.	EXISTING
I.E.	INVERT ELEVATION
M.H.	MANHOLE
B.F.P.	BACKFLOW PREVENTOR
G.V.	GATE VALVE
D.D.C.V.	DOUBLE DETECTOR CHECK VALVE
F.D.C.	FIRE DEPT. CONNECTION

SYMBOLS FOR FITTINGS, VALVES, ETC. ARE DIAGRAMMATIC ONLY AND DO NOT REFLECT ACTUAL SIZE; FOR ACTUAL DIMENSIONS REFER TO MANUFACTURER'S SPECIFICATIONS.

WATER & SEWER NOTES

1. NO GATE VALVES IN CURBS.
2. SLOPE OR PITCH SANITARY SEWER MANHOLE CASTINGS WITH DESIGN ROAD SECTIONS.
3. ALL SANITARY SEWER CLEANOUTS LOCATED IN ROADWAY ARE TO BE TRAFFIC-RATED.
4. WATER SHALL BE AVAILABLE TO FIRE HYDRANTS BEFORE INTERIOR BUILDING CONSTRUCTION CAN BEGIN.
5. ALL EXISTING WATER AND SANITARY SERVICES TO THE PROPERTY THAT ARE NOT BEING RE-USED SHALL BE CUT AND CAPPED AND ABANDONED IN ACCORDANCE WITH THE PUBLIC UTILITY'S MINIMUM STANDARDS.
6. AFTER WATER AND SEWER CONNECTIONS, RESTORE ALL RIGHT OF WAY (PAVEMENT, SIDEWALK, CURB, ETC.) IN ACCORDANCE WITH CITY OF HOLLYWOOD AND/OR BROWARD COUNTY MINIMUM STANDARDS.
7. ALL ELEVATIONS SHOWN IN THIS PLAN ARE IN THE NAVD DATUM.
8. ALL EXISTING UTILITIES SHOWN ON THIS PLAN ARE BASED ON THE BEST AVAILABLE INFORMATION. THE EXISTING UTILITY INFORMATION SHOWN HERE IS FOR THE CONTRACTOR'S CONVENIENCE AND THE E.O.R. ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. BEFORE COMMENCING CONSTRUCTION CONTRACTOR TO CALL FOR UTILITY LOCATES. VERIFY ALL EXISTING UTILITIES' LOCATIONS AND DEPTHS, AND NOTIFY E.O.R. OF ANY CONFLICTS.

FIRE LINE NOTES:

1. ALL PROPOSED FIRE MAINS, SERVICES, "SIAMESE" CONNECTION LINES ETC, MUST BE INSTALLED BY A STATE LICENSED FIRE PROTECTION CONTRACTOR HOLDING A CLASS I, II, OR V LICENSE PER F.S. 633.102.
2. ALL FIRE LINES ARE TO BE INSPECTED BY CERTIFIED FIRE LINE INSPECTORS PRIOR TO BEING PLACED INTO SERVICE.
3. UPON COMPLETION OF REQUIRED TESTING A STATE LICENSED FIRE LINE CONTRACTOR SHALL ISSUE A "LICENSED UNDERGROUND TEST CERTIFICATE". THE CERTIFICATE MUST BE ISSUED AND THE FIRE LINE MUST BE ACCEPTED BY THE BROWARD COUNTY HEALTH DEPT. (WHERE APPLICABLE) PRIOR TO BEING PLACED INTO SERVICE.
4. FIRE LINE SYSTEM COMPONENTS (FDC, DDCV, FIRE LINE PIPING, ETC.) SHOWN ON THESE PLANS ARE TO BE COORDINATED WITH THE FIRE PROTECTION DRAWINGS AND DESIGN AND FIRE PROTECTION SHOP DRAWINGS. NOTIFY ENGINEER OF ANY DISCREPANCY PRIOR TO INSTALLATION OF ANY PORTION OF THE FIRE PROTECTION SYSTEM.

UNDERGROUND UTILITIES NOTES:

1. SITE MAY CONTAIN EXISTING UTILITIES (DOMESTIC WATER, IRRIGATION, TELEPHONE, ELECTRIC, GAS, STORM DRAINAGE, SANITARY SEWER AND OTHERS).
2. ***NOT ALL*** EXISTING UTILITIES ARE SHOWN HEREON. SOME ARE SHOWN ON THIS PLAN AS OBTAINED FROM UTILITY LOCATES, ATLASES AND THE SURVEY.
3. ALL EXISTING UTILITIES WITHIN THE BOUNDARY OF THE SITE ARE TO BE REMOVED - EXCEPT WHERE NOTED OTHERWISE (SUCH AS "TO REMAIN" TO BE RELOCATED" ETC.), THIS PLAN IS LIMITED TO WATER AND SANITARY SEWER ONLY, NO DESIGN OF FPL, COMCAST, GAS, TELEPHONE IS SHOWN HEREON.
4. CONTRACTOR IS RESPONSIBLE FOR SEQUENCING ALL UTILITY REMOVAL/RELOCATION SUCH THAT NO OTHER USER OF SAID IS AFFECTED.

WATER & SEWER DEMAND:

WATER/SEWER DEMAND = 158,771 ERCs x 185 GPD PER ERC = 29373 GALLONS PER DAY (GPD)

BTE REF DATE: 2-3-2022

#	DATE	REVISIONS
	3-8-22	PDB SUBMITTAL

STEPHEN F. BOTEK LICENSE No. 55335 STATE OF FLORIDA PROFESSIONAL ENGINEER

February 3, 2022

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY STEPHEN F. BOTEK, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

Celebrating 15 Years

WATER AND SANITARY SEWER PLAN

THE TROPIC
1744 Federal Highway
Hollywood, Florida 33020

Botek Thurlow Engineering, Inc.
2400 NW 55th Avenue, Suite 1102, Ft. Lauderdale, FL 33309
www.botekthurlow-etg.com p: 954-568-0888 f: 954-568-0757

BTE PROJECT #: 20-0902

PROJECT DATE: 6-30-2021

SHEET #: C-4

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

WATER SYSTEM NOTES:

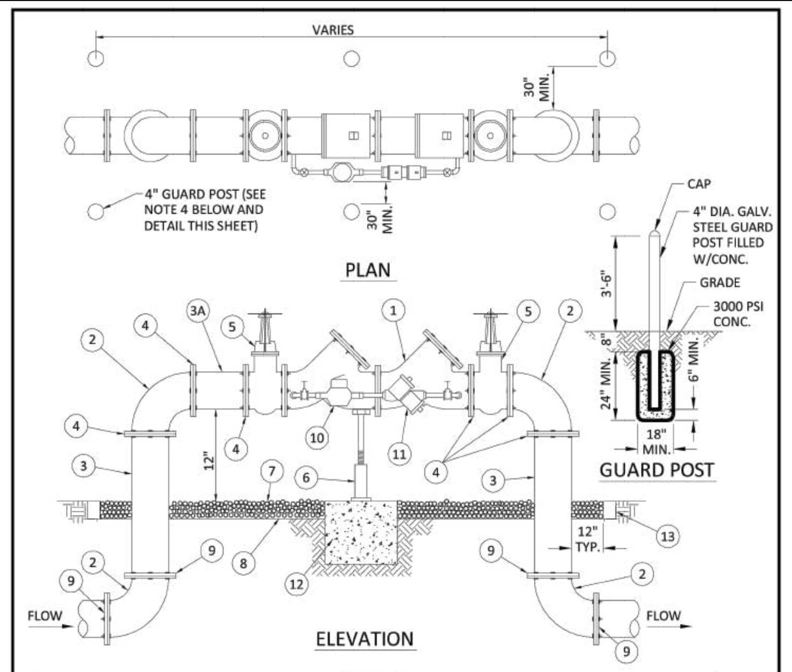
1. NEW OR RELOCATED UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT THAT WILL CROSS ANY EXISTING OR PROPOSED GRAVITY OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OTHER PIPELINE OR AT LEAST 12 INCHES BELOW THE OTHER PIPELINE.
2. NEW OR RELOCATED UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT THAT WILL CROSS ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OTHER PIPELINE. [FAC 62-555.314(2); EXCEPTIONS ALLOWED UNDER FAC 62-555.314(5)].
3. AT ALL UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE WILL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE, OR THE PIPES WILL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORM WATER FORCE MAINS, 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. [FAC 62-555.314(2); EXCEPTIONS ALLOWED UNDER FAC 62-555.314(5)].
4. NEW UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT TO BE DUCTILE IRON PIPE (D.I.P.) WHEN CROSSING BELOW SANITARY SEWER MAINS.
5. POLYETHYLENE ENCASEMENT MATERIAL SHALL BE USED TO ENCASE ALL BURIED DUCTILE IRON PIPE, FITTINGS, VALVES, RODS, AND APPURTENANCES IN ACCORDANCE WITH AWWA C105, METHOD A. THE POLYETHYLENE TUBING SHALL BE CUT TWO FEET LONGER THAN THE PIPE SECTION AND SHALL OVERLAP THE ENDS OF THE PIPE BY ONE FOOT. THE POLYETHYLENE TUBING SHALL BE GATHERED AND LAPPED TO PROVIDE A SNUG FIT AND SHALL BE SECURED AT QUARTER POINTS WITH POLYETHYLENE TAPE. EACH END OF THE POLYETHYLENE TUBING SHALL BE SECURED WITH A WRAP OF POLYETHYLENE TAPE.
6. THE POLYETHYLENE TUBING SHALL PREVENT CONTACT BETWEEN THE PIPE AND BEDDING MATERIAL, BUT IS NOT INTENDED TO BE A COMPLETELY AIRTIGHT AND WATERTIGHT ENCLOSURE. DAMAGED POLYETHYLENE TUBING SHALL BE REPAIRED IN A WORKMANLIKE MANNER USING POLYETHYLENE TAPE, OR THE DAMAGED SECTION SHALL BE REPLACED. POLY WRAP WILL NOT BE PAID FOR AS A SEPARATE BID ITEM. IT SHALL BE CONSIDERED TO BE A PART OF THE PRICE BID FOR WATER MAINS.
7. FIRE HYDRANT BARRELS SHALL BE ENCASED IN POLY WRAP UP TO THE GROUND SURFACE AND THE WEEP HOLES SHALL NOT BE COVERED BY THE POLY WRAP.
8. GATE VALVES FOR USE WITH PIPE LESS THAN THREE INCHES (3") IN DIAMETER SHALL BE RATED FOR TWO HUNDRED (200) PSI WORKING PRESSURE, NON-SHOCK, BLOCK PATTERN, SCREWED BONNET, NON-RISING STEM, BRASS BODY, AND SOLID WEDGE. THEY SHALL BE STANDARD THREADED FOR PVC PIPE AND HAVE A MALLEABLE IRON HANDWHEEL. GATE VALVES 3" THROUGH 16" IN DIAMETER SHALL BE RESILIENT SEAT AND BIDIRECTIONAL FLOW ONLY. VALVES FOR SPECIAL APPLICATIONS WILL REQUIRE CITY UTILITY APPROVAL.
9. VALVE BOXES AND COVERS FOR ALL SIZE VALVES SHALL BE OF CAST IRON CONSTRUCTION AND ADJUSTABLE SCREW-ON TYPE. THE LID SHALL HAVE CAST IN THE METAL THE WORD "WATER" FOR THE WATER LINES. ALL VALVE BOXES SHALL BE SIX INCH (6") NOMINAL DIAMETER AND SHALL BE SUITABLE FOR DEPTHS OF THE PARTICULAR VALVE. THE STEM OF THE BURIED VALVE SHALL BE WITHIN TWENTY-FOUR INCHES (24") OF THE FINISHED GRADE UNLESS OTHERWISE APPROVED BY THE CITY.
10. ALL WATER MAIN INSTALLATIONS SHALL COMPLY WITH THE COLOR CODING REQUIREMENTS OF CHAPTER 62-555.320 F.A.C.

ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 06/08/2014
DRAWN: EAM | APPROVED: XXX
WATER SYSTEM NOTES — DRAWING NO. W-01

WATER SYSTEM NOTES (CONTINUED):

11. ALL WATER MAIN INSTALLATIONS SHALL COMPLY WITH THE COLOR CODING REQUIREMENTS OF CHAPTER 62-555.320 F.A.C.
12. ALL PVC PIPE SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C900 LATEST REVISION AND CLASS DR 18. ALL DIP WATER MAINS SHALL BE DUCTILE IRON PRESSURE CLASS 350, WITH WALL THICKNESS COMPLYING WITH CLASS 52. ALL DUCTILE IRON PIPE SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C151/A21.51-02 AND BE CEMENT LINED AND SEAL COATED PER ANSI/AWWA C104/A21.4-03.
13. FITTINGS SHALL BE DUCTILE IRON, MEETING ANSI/AWWA C153/A21.53-00 SPECIFICATIONS, WITH 350 PSI MINIMUM WORKING PRESSURE. FITTINGS MUST BE CEMENT LINED AND SEAL COATED PER ANSI/AWWA C104/A21.4-03. ALL DUCTILE IRON PIPE AND FITTINGS MUST BE MANUFACTURED IN THE UNITED STATES OF AMERICA.
14. ALL DUCTILE IRON PIPE TO BE MECHANICAL JOINTS, WRAPPED IN POLY. ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED AS DETERMINED BY DESIGN.
15. PAVEMENT RESTORATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY.
16. ALL TRENCHING, PIPE LAYING, BACKFILL, PRESSURE TESTING, AND DISINFECTING MUST COMPLY WITH THE CITY OF HOLLYWOOD SPECIFICATIONS.
17. THE MINIMUM DEPTH OF COVER OVER WATER MAINS IS 30" (DIP) OR 36" (PVC).
18. MINIMUM HORIZONTAL SEPARATION BETWEEN STORM STRUCTURES AND WATER MAINS SHALL BE 3'.
19. MAXIMUM DEFLECTION PER EACH JOINT SHALL BE 50% OF MANUFACTURES RECOMMENDATION (MAXIMUM) WHERE DEFLECTION IS REQUIRED.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING CONFLICTS WITH WATER MAINS PLACED AT MINIMUM COVER. IN CASE OF CONFLICT, WATER MAIN SHALL BE LOWERED TO PASS UNDER CONFLICTS WITH 18" MINIMUM VERTICAL SEPARATION. NO ADDITIONAL PAYMENT SHALL BE DUE TO CONTRACTOR FOR LOWERING THE MAIN OR THE ADDITIONAL FITTINGS USED THEREON.
21. PIPE JOINT RESTRAINT SHALL BE PROVIDED BY THE USE OF DUCTILE IRON FOLLOWER GLANDS MANUFACTURED TO ASTM A 536-80. TWIST-OFF NUTS SHALL BE USED TO ENSURE PROPER ACTUATING OF THE RESTRAINING DEVICES. THE MECHANICAL JOINT RESTRAINING DEVICES SHALL HAVE A WORKING PRESSURE OF 250 PSI MINIMUM, WITH A MINIMUM SAFETY FACTOR OF 2:1, AND SHALL BE EBAA IRON INC., MEGALUG OR APPROVED EQUAL. JOINT RESTRAINTS SHALL BE PROVIDED AT A MINIMUM OF THREE JOINTS (60 FEET) FROM ANY FITTING.
22. WHENEVER IT IS NECESSARY, IN THE INTEREST OF SAFETY, TO BRACE THE SIDES OF A TRENCH, THE CONTRACTOR SHALL FURNISH, PUT IN PLACE AND MAINTAIN SUCH SHEETING OR BRACING AS MAY BE NECESSARY TO SUPPORT THE SIDES OF THE EXCAVATION TO ENSURE PERSONNEL SAFETY, AND TO PREVENT MOVEMENT WHICH CAN IN ANY WAY DAMAGE THE WORK OR ENDANGER ADJACENT STRUCTURES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SEQUENCE, METHODS AND MEANS OF CONSTRUCTION, AND FOR THE IMPLEMENTATION OF ALL OSHA AND OTHER SAFETY REQUIREMENTS.

ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 06/08/2014
DRAWN: EAM | APPROVED: XXX
WATER SYSTEM NOTES — DRAWING NO. W-02



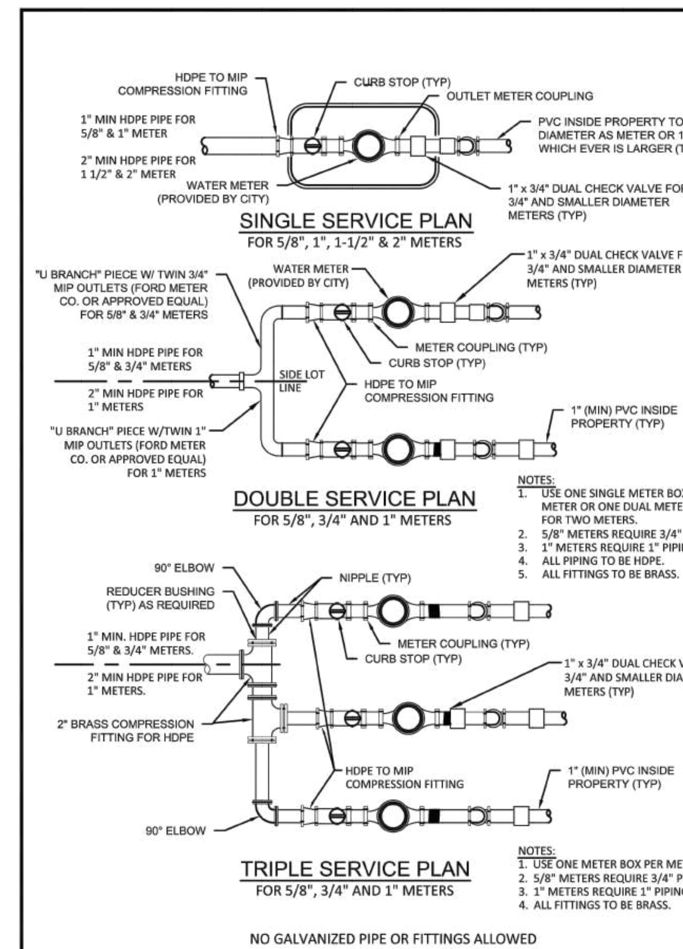
ITEM	QTY.	DESCRIPTION	ITEM	QTY.	DESCRIPTION
1	1	4",6",8" VALVE,DOUBLE CHECK	7	N/A	PEA GRAVEL (4" DEEP)
2	4	4",6",8" BEND-90°	8	N/A	PLASTIC LINER/WEED STOP (5 MILS)
3	2	4",6",8" D.I.P. SPOOL PIECE	9	4	RESTRAINED JOINTS
3A	1	4",6",8" D.I.P. SPOOL PIECE (24" LONG)	10	1	LOW FLOW METER
4	7	4",6",8" FLANGE, D.I.P.	11	1	VALVE, BYPASS DOUBLE CHECK
5	2	4",6",8" GATE VALVE (SEE NOTE 6)	12	1	16"X16"X16" CONC. SUPPORT
6	1	SCREW JACK/ANCHORED	13	1	P.T. 2X4 LUMBER ALL AROUND

MATERIALS

NOTES:

1. FIELD ADJUST AND CUT ITEM 3 TO THE PROPER LENGTH.
2. ALL PIPING SHALL BE D.I.P. CL 50/52 AS APPLICABLE TO MINIMUM STANDARDS.
3. ALL LOW FLOW METER PIPING SHALL BE BRASS OR COPPER.
4. PROTECTIVE 4" GALV. GUARD POSTS SHALL BE SPACED EVENLY APART AS SHOWN ABOVE OR IN ACCORDANCE WITH INSPECTOR'S DIRECTIONS.
5. MAY USE 45° BENDS (SEE DETAIL W-07.2) WHEN WORKING AREA IS NOT LIMITED, AS DIRECTED BY CITY.
6. GATE VALVES SHALL BE CHAINED AND LOCKED TOGETHER TO PREVENT TAMPERING.

ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 06/08/2014
DRAWN: EAM | APPROVED: XXX
TYPICAL 4", 6" AND 8" DOUBLE CHECK DETECTOR ASSEMBLY FOR FIRE SPRINKLER SERVICE (90° BENDS) — DRAWING NO. W-03

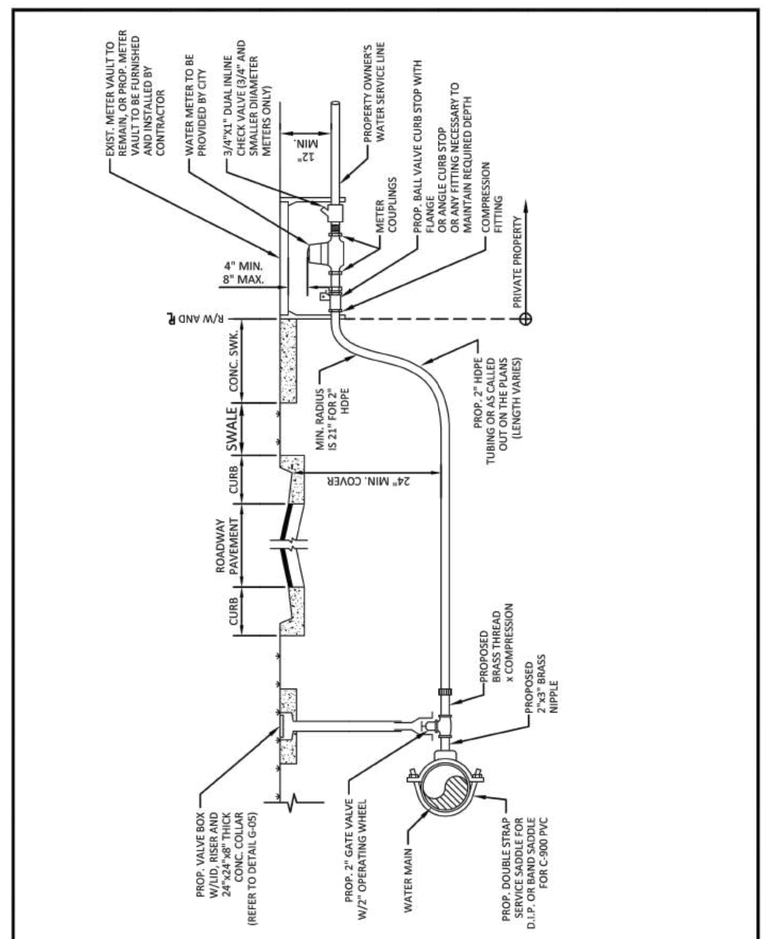


ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 11/06/2017
DRAWN: EAM | APPROVED: XXX
TYPICAL 5/8", 1", 1-1/2" AND 2" METER INSTALLATION — DRAWING NO. W-06

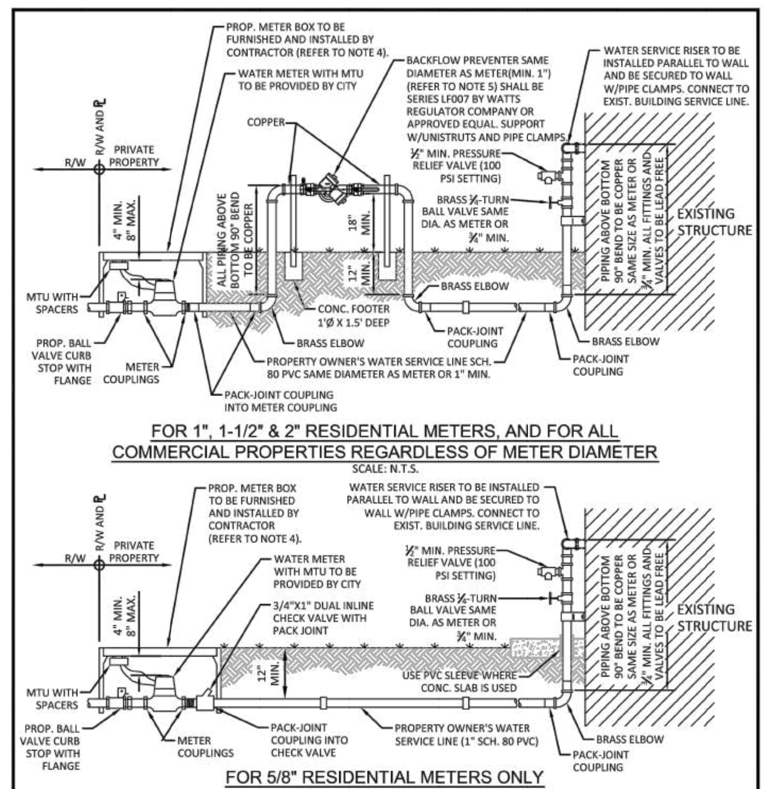
WATER METER SERVICE NOTES:

1. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED NOT LESS THAN 18" ON CENTER.
2. P.E. TUBING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AWWA STANDARD C901, "POLYETHYLENE (PE) PRESSURE PIPE AND TUBING, 1/2 IN. (13mm) THROUGH 3 IN. (76 mm), FOR WATER SERVICE".
3. MINIMUM SERVICE PIPE DIAMETER SHALL BE 1" FOR SINGLE OR DUAL ⅝" OR SINGLE 1" DIAMETER METERS.
4. MINIMUM SERVICE PIPE DIAMETER SHALL BE 2" FOR SINGLE OR DUAL 1-½" OR SINGLE 2" DIAMETER METERS.
5. FOR METER DIAMETERS LARGER THAN 2", THE MINIMUM SERVICE PIPE DIAMETER SHALL BE THE SAME AS THE METER DIAMETER.
6. APPROVED COPPER TUBING MAY BE USED AT THE CITY'S DISCRETION.
7. FOR NEW METER INSTALLATIONS, ALL SADDLES, VALVES, PIPING, FITTINGS,CURB STOPS, METER VALVES, METER COUPLINGS, METER VAULTS AND COVERS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE WATER METERS WILL BE PROVIDED AND INSTALLED BY THE CITY OF HOLLYWOOD (NEW ACCOUNTS).
8. FOR METER RELOCATIONS, ALL SADDLES, VALVES, PIPING, FITTINGS, CURB STOPS, METER VALVES, METER COUPLINGS, METER VAULTS AND COVERS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE EXISTING WATER METER TO BE RELOCATED AND INSTALLED BY CONTRACTOR.
9. FOR EXISTING METERS ABUTTING THE RIGHT-OF-WAY THAT ARE BEING DISCONNECTED FROM EXISTING MAINS AND RECONNECTED TO NEW MAINS, THE CONTRACTOR SHALL:
   a. CUT AND PLUG THE EXISTING SERVICE LINE AT THE MAIN AND AT THE METER, AND REMOVE THE EXISTING BALL VALVE CURB STOP.
   b. FURNISH AND INSTALL SERVICE SADDLE, CORPORATION STOP OR SERVICE VALVE AND VALVE BOX, PIPING AND FITTINGS UP TO AND INCLUDING THE BALL VALVE CURB STOP.
12. THE ELEVATION AT THE TOP OF THE METER BOX SHALL MATCH THE ELEVATION OF THE BACK OF SIDEWALK, WHENEVER PRACTICAL.
13. AS PART OF THE SERVICE INSTALLATION, THE CONTRACTOR SHALL RESTORE THE RIGHT-OF-WAY TO MATCH EXISTING CONDITIONS, INCLUDING ROADWAY PAVEMENT, PAVEMENT MARKINGS AND RPMs, CONCRETE CURBS, SIDEWALKS, RAMPS (INCLUDING DETECTABLE WARNING SURFACE), SODDING, AND ALL OTHER IMPROVEMENTS REMOVED OR DAMAGED DURING THE SERVICE INSTALLATION.
14. FOR UNPAVED AREAS, THE MINIMUM GROUND COVER ACCEPTED BY THE CITY IS SODDING.

ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 11/06/2017
DRAWN: EAM | APPROVED: XXX
WATER METER SERVICE NOTES FOR 5/8" THROUGH 2" METERS — DRAWING NO. W-07



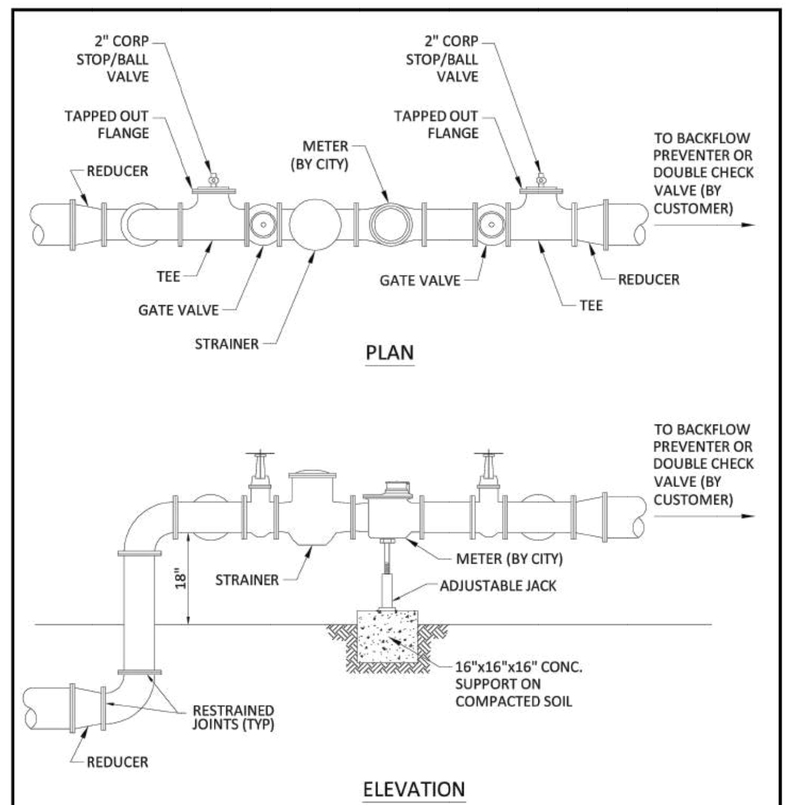
ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 11/06/2017
DRAWN: EAM | APPROVED: XXX
TYPICAL 2-INCH HDPE WATER SERVICE FOR SINGLE/DUAL 5/8" TO 1" METERS, AND ANY SINGLE 1-1/2" TO 2" METERS — DRAWING NO. W-09



NOTES FOR ALL SERVICES:

1. IF EXISTING HOSE BIB IS REMOVED, DAMAGED, OR NO HOSE BIB EXISTS, ONE MUST BE INSTALLED: A HOSE BIB VACUUM BREAKER MUST BE INSTALLED AS REQUIRED TO COMPLY WITH THE LATEST REVISION OF THE FLORIDA BUILDING CODE.
2. THREADED PVC FITTINGS (MALE OR FEMALE) NOT ALLOWED. ALL TRANSITIONS FROM PVC TO METAL PIPING/FITTINGS SHALL USE COMPRESSION PACK-JOINT COUPLINGS. THIS INCLUDES PVC CONNECTIONS TO INLINE CHECK VALVE AND BACKFLOW PREVENTER.
3. PIPE CLAMPS FOR ATTACHING WATER SERVICE RISER TO WALL SHALL BE HOT-DIPPED GALVANIZED, WITH ISOLATION MATERIAL BETWEEN THE PIPE AND GALVANIZED METAL.
4. IF EXISTING CONCRETE METER BOX IS IN ACCEPTABLE CONDITION (AS DETERMINED BY ECSD) IT MAY BE RE-USED.
5. IF EXISTING BACKFLOW PREVENTER IS DETERMINED TO BE IN ACCEPTABLE CONDITION IT MAY BE RE-USED PROVIDED IT IS RE-CERTIFIED.
6. ALL PRIVATE SERVICE LINE INSTALLATIONS SHALL COMPLY WITH THE LATEST REVISION OF THE FLORIDA BUILDING CODE.
7. ALL FITTINGS TO BE BRASS.

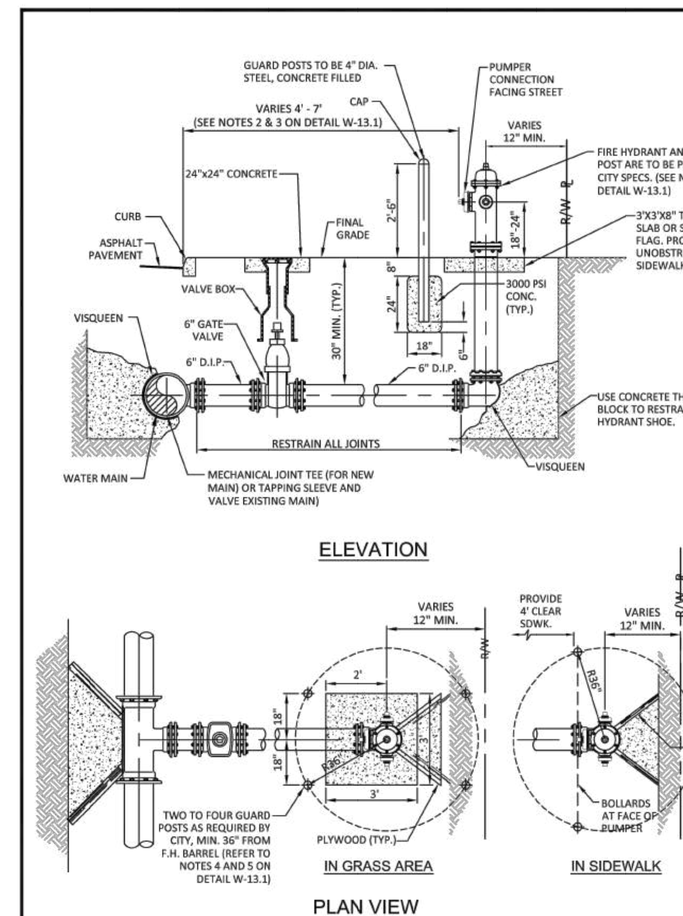
ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 02/14/2018
DRAWN: EAM | APPROVED: XXX
TYPICAL WATER SERVICE FROM METER TO STRUCTURE FOR 5/8" THROUGH 2" METERS — DRAWING NO. W-10



NOTES:

1. THE WATER METER AND STRAINER IS PROVIDED BY THE CITY OF HOLLYWOOD.
2. THE CITY'S RESPONSIBILITY ENDS AT THE REDUCER PRECEDING THE BACKFLOW PREVENTER.
3. TAPPED OUT FLANGE SHOULD MATCH SIZE OF TEE AND STANDARD 2" CORP STOP OR BALL VALVE.

ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 06/08/2014
DRAWN: EAM | APPROVED: XXX
TYPICAL METER 3" DIAMETER AND LARGER — DRAWING NO. W-11



ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 03/05/2019
DRAWN: EAM | APPROVED: XXX
TYPICAL FIRE HYDRANT INSTALLATION — DRAWING NO. W-13

NOTES:

1. IN ALL CASES, PROVIDE 4' UNOBSTRUCTED SIDEWALK CLEAR OF THE FIRE HYDRANT AND BOLLARDS.
2. FIRE HYDRANTS SHALL BE LOCATED BETWEEN 4' AND 7' FROM THE FACE OF CURB.
3. FIRE HYDRANTS SHALL NOT BE LOCATED WITHIN A RADIUS OR WITHIN FDOT CLEAR DRIVING ZONE.
4. GUARD POSTS SHALL BE INSTALLED AS REQUIRED FOR SAFETY OR AS APPROVED BY THE DEPT. OF PUBLIC UTILITIES. IN SIDEWALK, LOCATE GUARD POSTS AT THE FACE OF THE PUMPER AND 2'-6' LEFT/RIGHT OF ℄ OF THE FIRE HYDRANT.EXTRA POSTS MAY BE REQUIRED IN INDUSTRIAL AND CONGESTED TRAFFIC AREAS. (4 POSTS MAX.)
5. FIRE HYDRANT CONCRETE SLAB AND CONCRETE GUARD POST FOOTINGS SHALL BE DIFFERENT POURS.
6. THE FIRE HYDRANT BONNET, OPERATING NUT, HOLD-DOWN NUT, PUMPER CAP AND HOSE CAPS SHALL BE PAINTED GREEN, AND THE HYDRANT UPPER BARREL SHALL BE PAINTED SILVER IN ACCORDANCE WITH CITY SPECIFICATIONS.

ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 06/08/2014
DRAWN: EAM | APPROVED: XXX
TYPICAL FIRE HYDRANT NOTES — DRAWING NO. W-13.1

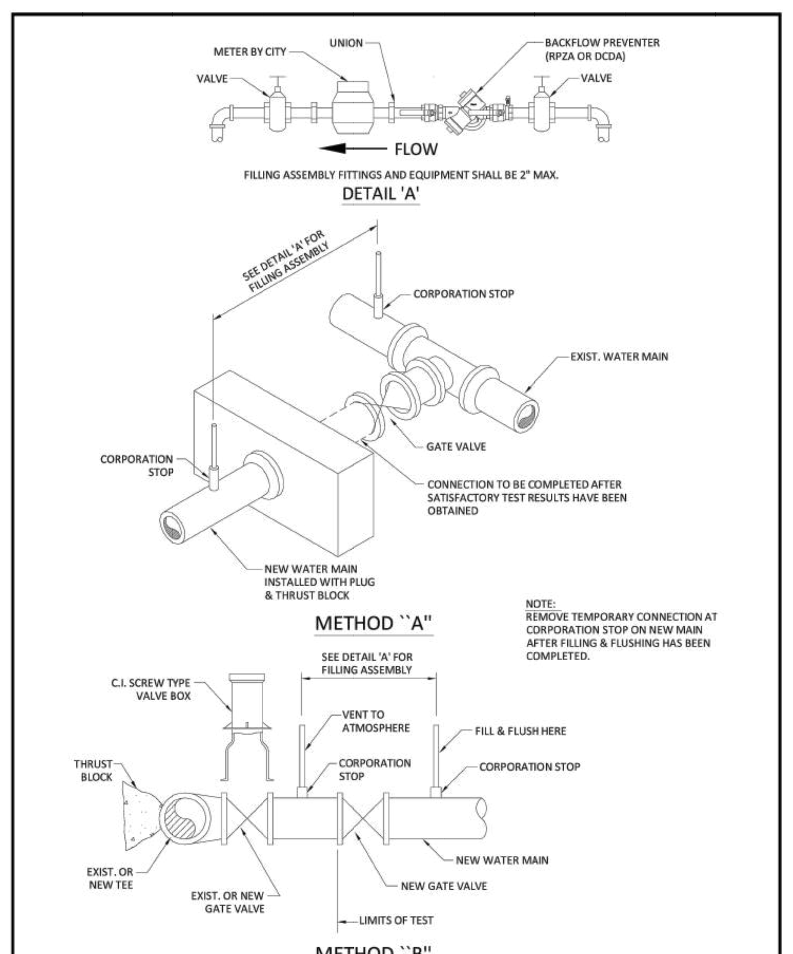
WATER MAIN TESTING AND DISINFECTION NOTES:

1. NO CONNECTIONS TO THE EXISTING LINES SHALL BE MADE UNTIL THE PRESSURE AND BACTERIOLOGICAL TESTS HAVE BEEN PERFORMED ON THE PROPOSED WATER MAINS AND THE SYSTEM HAS BEEN APPROVED BY THE CITY OF HOLLYWOOD AND THE BROWARD COUNTY HEALTH DEPARTMENT.
2. THE PRESSURE TEST SHALL BE PERFORMED FOR 2 HOURS AT A CONSTANT PRESSURE OF 150 PSI AND IN ACCORDANCE WITH RULE 62-555.330 (FAC) C600 AWWA LATEST REVISION, EXCEPT AS OTHERWISE SPECIFIED HEREIN AND IN SPECIFICATION SECTION 15995, "PIPELINE TESTING AND DISINFECTION". PRESSURE TEST SHALL BE WITNESSED BY THE CITY OF HOLLYWOOD. THE ALLOWABLE LEAKAGE SHALL BE LESS THAN THE NUMBER OF GALLONS PER HOUR AS DETERMINED BY THE FORMULA:

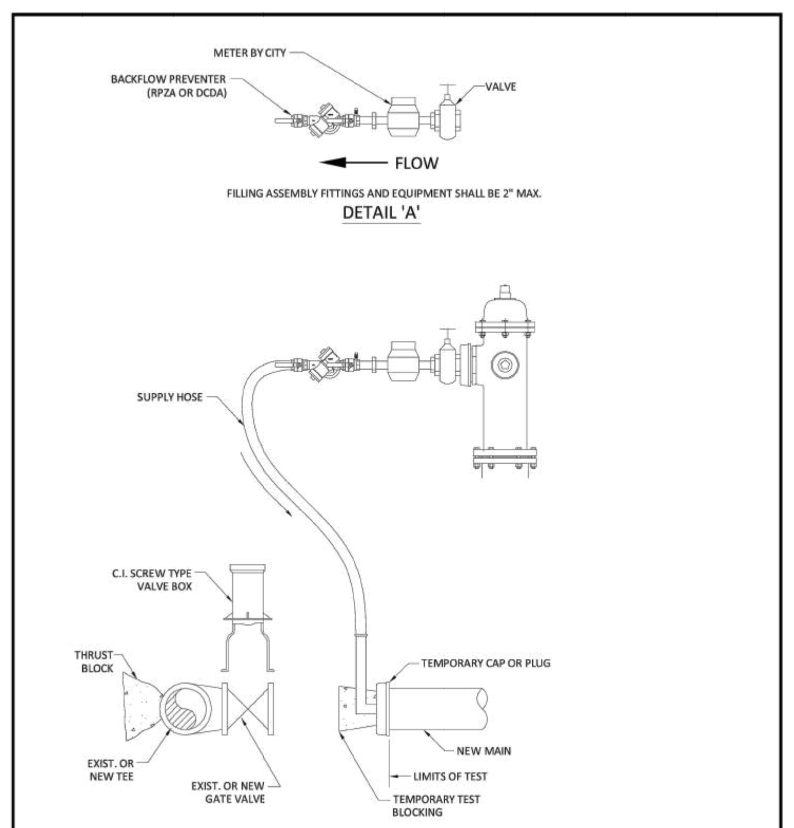
$$L = \frac{S \times D \times \sqrt{P}}{148{,}000}$$

   L = THE ALLOWABLE LEAKAGE IN GALLONS PER HOUR.
   S = THE LENGTH OF PIPE BEING TESTED.
   D = THE NOMINAL DIAMETER OF THE PIPE BEING TESTED.
   P = THE AVERAGE TEST PRESSURE IN POUNDS PER SQUARE INCH.
3. THE COMPLETE LENGTH OF THE PROPOSED WATER MAIN SHALL BE TESTED, IN LENGTHS NOT TO EXCEED 2,000 FEET PER TEST.
4. PROPOSED WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH THE LATEST EDITION OF ANSI/AWWA STANDARD C651 AND BACTERIOLOGICAL TESTED FOR TWO CONSECUTIVE DAYS IN ACCORDANCE WITH SPECIFICATION SECTION 15995, "PIPELINE TESTING AND DISINFECTION".
5. BACTERIOLOGICAL TESTS SHALL BE REQUESTED AND PAID FOR BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL DIRECTLY HIRE A TESTING LABORATORY CERTIFIED BY THE FLORIDA DEPARTMENT OF HEALTH IN ORDER TO COLLECT AND TEST WATER SAMPLES FROM THE WATER DISTRIBUTION SYSTEM TO BE PLACED INTO SERVICE. SAMPLE COLLECTION AND BACTERIOLOGICAL ANALYSES SHALL BE PERFORMED IN ACCORDANCE WITH RULES 62-555.315(6), 62-555.340 AND 62-555.330 (FAC), AS WELL AS ALL REQUIREMENTS OF THE BROWARD COUNTY HEALTH DEPARTMENT PERMIT.
7. THE WATER DISTRIBUTION SYSTEM SHALL NOT BE CONSIDERED COMPLETE AND READY FOR FINAL INSPECTION UNTIL SUCCESSFUL TEST RESULTS ARE OBTAINED FOR ALL TESTS DESCRIBED ABOVE.

ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 06/08/2014
DRAWN: EAM | APPROVED: XXX
WATER MAIN TESTING AND DISINFECTION NOTES — DRAWING NO. W-14



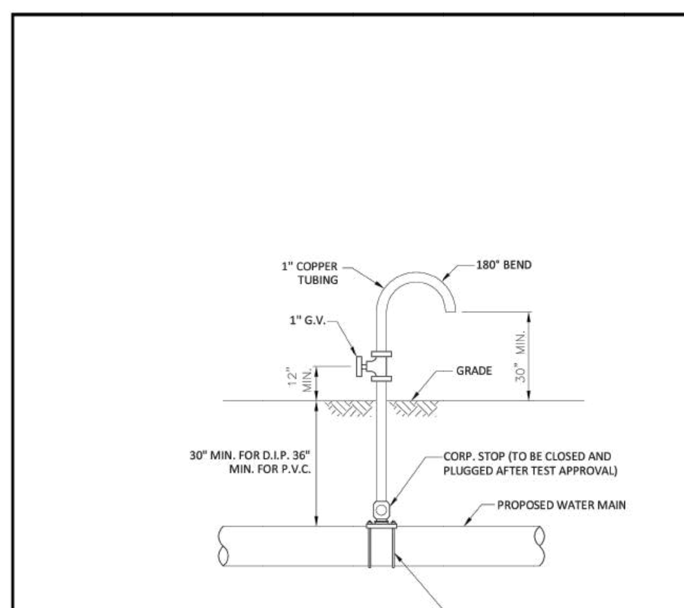
ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 06/08/2014
DRAWN: EAM | APPROVED: XXX
FILLING AND FLUSHING DETAILS — DRAWING NO. W-15



NOTES:

1. HOSE MUST BE REMOVED DURING THE HYDROSTATIC PRESSURE TEST.
2. REMOVE TEMPORARY CONNECTION ON NEW MAIN AFTER FILLING & FLUSHING HAS BEEN COMPLETED.

ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 06/08/2014
DRAWN: EAM | APPROVED: XXX
CROSS CONNECTION FILLING AND FLUSHING DETAILS — DRAWING NO. W-15.1



NOTES:
SAMPLING POINT SHALL NOT BE REMOVED UNTIL APPROVAL IS OBTAINED FROM BROWARD COUNTY HEALTH DEPARTMENT.

ISSUED: 03/01/1994 | DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL | REVISED: 06/08/2014
DRAWN: EAM | APPROVED: XXX
SAMPLING POINT DETAIL — DRAWING NO. W-16

BTE REF DATE: 2-3-2022

#	DATE	REVISIONS
	3-8-22	PDB SUBMITTAL

STEPHEN F. BOTEK LICENSE No. 55335 STATE OF FLORIDA PROFESSIONAL ENGINEER
February 3, 2022

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY STEPHEN F. BOTEK, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

2006 2021 Celebrating 15 Years

WATER AND SANITARY SEWER DETAILS

THE TROPIC
1744 Federal Highway
Hollywood, Florida 33020

Botek Thurlow Engineering, Inc.
3409 NW 9th Avenue, Suite 1102, Ft. Lauderdale, FL 33309
www.botekthurlow-eng.com p: 954-568-0888 f: 954-568-0757

BTE PROJECT #: 20-0902

PROJECT DATE: 6-30-2021

SHEET #: C-4.1

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

SEWER NOTES:

1. THE MINIMUM DEPTH OF COVER OVER D.I.P. SANITARY SEWER GRAVITY OR FORCE MAINS IS 30". THE MINIMUM DEPTH OF COVER OVER PVC SANITARY SEWER OR FORCE MAINS IS 36".
2. ALL CONNECTIONS TO EXISTING MAINS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. LEAKAGE TESTS AND ALIGNMENT (LAMPING) TESTS SHALL BE PERFORMED ON ALL NEW SEWER LINES UP TO THE CONNECTION POINT WITH THE EXISTING SEWER SYSTEM. THESE TESTS SHALL BE REQUESTED AND PAID FOR BY THE CONTRACTOR.
4. LAMPING TESTS SHALL BE PERFORMED ON GRAVITY SEWERS FROM MANHOLE TO MANHOLE UP TO AND INCLUDING THE POINT OF CONNECTION TO THE EXISTING SEWER SYSTEM.
5. LEAKAGE TESTS SHALL BE PERFORMED ON ALL SEGMENTS OF A GRAVITY SEWER SYSTEM, INCLUDING SERVICE LATERALS AND MANHOLES, FOR A CONTINUOUS PERIOD OF NO LESS THAN 2 HOURS. AT THE END OF THE TEST, THE TOTAL MEASURED LEAKAGE SHALL NOT EXCEED 100 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY FOR ANY SECTION OF THE SYSTEM. WITH ZERO ALLOWABLE LEAKAGE FOR LATERALS AND MANHOLES, AN EXFILTRATION OR INFILTRATION TEST SHALL BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET ON THE SECTION BEING TESTED.
6. FORCE MAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH RULE 62-555.330 (FAC). THE PRESSURE TEST SHALL CONSIST OF HOLDING A TEST PRESSURE OF 150 PSI ON THE PIPELINE FOR A CONTINUOUS PERIOD OF 2 HOURS THE MAXIMUM ALLOWABLE LEAKAGE SHALL BE DETERMINED BY THE FOLLOWING FORMULA:

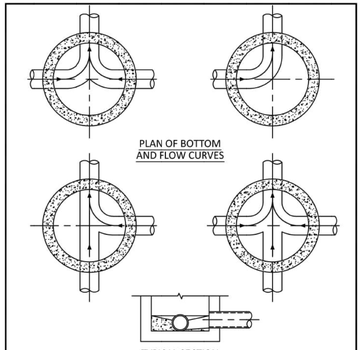
$$L = \frac{S \times D \times \sqrt{P}}{148{,}000}$$

WHERE:
L = ALLOWABLE LEAKAGE FOR SYSTEM IN GALLONS PER HOUR
D = PIPE DIAMETER IN INCHES
S = LENGTH OF LINES IN LINEAL FEET
P = AVERAGE TEST PRESSURE IN PSI

7. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTYFYING CONFLICTS WITH FORCE MAINS PLACED AT MINIMUM COVER. IN CASE OF CONFLICT, FORCE MAIN SHALL BE LOWERED TO PASS UNDER CONFLICTS WITH 12" MINIMUM SEPARATION FROM WATER MAINS AND 6" MINIMUM SEPARATION FROM OTHER UTILITIES. NO ADDITIONAL PAYMENT SHALL BE DUE TO CONTRACTOR FOR LOWERING THE MAIN OR THE ADDITIONAL FITTINGS USED THEREON.
8. WHENEVER IT IS NECESSARY, IN THE INTEREST OF SAFETY, TO BRACE THE SIDES OF A TRENCH, THE CONTRACTOR SHALL FURNISH, PUT IN PLACE AND MAINTAIN SUCH SHEETING OR BRACING AS MAY BE NECESSARY TO SUPPORT THE SIDES OF THE EXCAVATION TO ENSURE PERSONNEL SAFETY, AND TO PREVENT MOVEMENT WHICH CAN IN ANY WAY DAMAGE THE WORK OR ENDANGER ADJACENT STRUCTURES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SEQUENCE, METHODS AND MEANS OF CONSTRUCTION, AND FOR THE IMPLEMENTATION OF ALL OSHA AND OTHER SAFETY REQUIREMENTS.

ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	SANITARY SEWER MAIN CONSTRUCTION NOTES	DRAWING NO. S-01
APPROVED: XXX		

PLAN OF BOTTOM AND FLOW CURVES

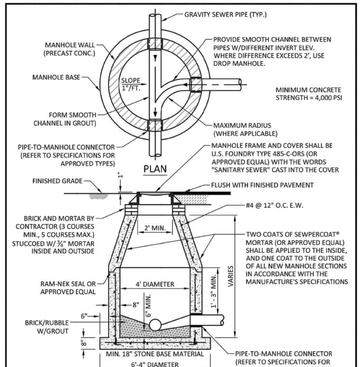


TYPICAL SECTION

NOTES:

1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING SMOOTH FLOWS.
3. CHANNELS FOR FUTURE CONNECTIONS (STUBS) SHALL BE CONSTRUCTED FILLED WITH SAND & COVERED WITH 1" OF MORTAR.
4. WHEN FLOW LINE DEFLECTS MORE THAN 45°, A DROP OF 0.10' IS REQUIRED.

ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	MANHOLE FLOW PATTERNS	DRAWING NO. S-02
APPROVED: XXX		

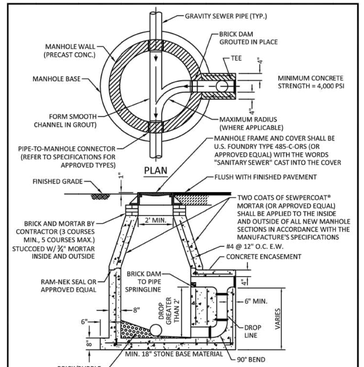


NOTES:

1. SHOP DRAWINGS SHOWING ALL DIMENSIONS, INCLUDING CONCRETE REINFORCEMENT AND BUOYANCY, SHALL BE SUBMITTED TO THE CITY PRIOR TO INSTALLATION.
2. THE BOTTOM SLAB SHALL BE CAST MONOLITHICALLY WITH THE LOWER WALL SECTION TO A MINIMUM OF 3" ABOVE SLAB BASE.
3. NO CONSTRUCTION JOINTS ARE ALLOWED BELOW ELEVATION +2.00 NAVD. ABOVE ELEVATION +2.00 NAVD CONSTRUCTION JOINTS ARE ALLOWED, IF ADEQUATE JOINTS WITH KEY-WAYS AND WATER STOPS ARE PROVIDED. SUBMIT SHOP DRAWINGS OF JOINT DETAILS TO THE ENGINEER FOR APPROVAL.

SECTION

ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 07/18/2018
DRAWN: EAM	STANDARD PRECAST MANHOLE	DRAWING NO. S-03
APPROVED: XXX		



NOTES:

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2. THE BOTTOM SLAB SHALL BE CAST MONOLITHICALLY WITH THE LOWER WALL SECTION TO A MINIMUM OF 3" ABOVE SLAB BASE.
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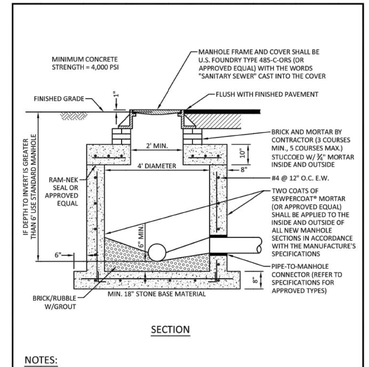
SECTION

ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 07/18/2018
DRAWN: EAM	DROP MANHOLE	DRAWING NO. S-04
APPROVED: XXX		

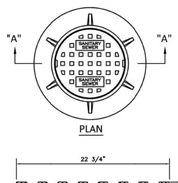


SECTION

NOTES:

1. SHOP DRAWINGS SHOWING ALL DIMENSIONS, INCLUDING CONCRETE REINFORCEMENT AND BUOYANCY, SHALL BE SUBMITTED TO THE CITY PRIOR TO INSTALLATION.
2. THE BOTTOM SLAB SHALL BE CAST MONOLITHICALLY WITH THE LOWER WALL SECTION TO A MINIMUM OF 3" ABOVE SLAB BASE.
3. NO CONSTRUCTION JOINTS ARE ALLOWED BELOW ELEVATION +2.00 NAVD. ABOVE ELEVATION +2.00 NAVD CONSTRUCTION JOINTS ARE ALLOWED, IF ADEQUATE JOINTS WITH KEY-WAYS AND WATER STOPS ARE PROVIDED. SUBMIT SHOP DRAWINGS OF JOINT DETAILS TO THE ENGINEER FOR APPROVAL.

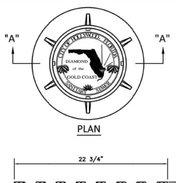
ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 07/18/2018
DRAWN: EAM	SHALLOW MANHOLE	DRAWING NO. S-05
APPROVED: XXX		



NOTES:

1. LETTERS ON COVER TO BE 3/8" HIGH, 1/4" TO 5/16" THICK AND FLUSH WITH TOP OF COVER.
2. ALL BEARING SURFACES TO BE MACHINED.
3. MINIMUM WEIGHTS: COVER - 160 LBS., TOTAL - 400 LBS.
4. MANHOLE FRAME AND COVER SHALL BE U.S. FOUNDRY 485-C-ORS WITH THE WORDS "SANITARY SEWER" CAST INTO THE COVER.

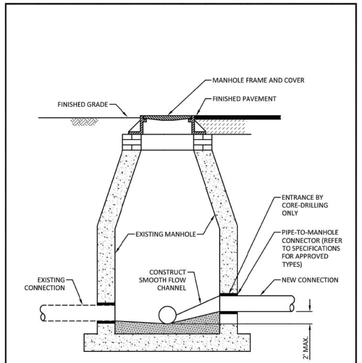
ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	MANHOLE FRAME AND COVER	DRAWING NO. S-06
APPROVED: XXX		



NOTES:

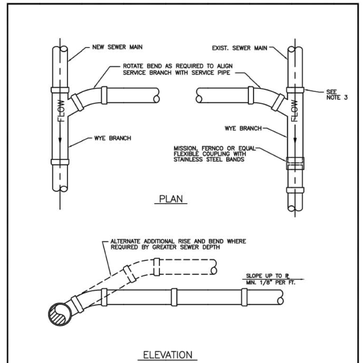
1. LETTERS ON COVER TO BE 3/8" HIGH, 1/4" TO 5/16" THICK AND FLUSH WITH TOP OF COVER.
2. ALL BEARING SURFACES TO BE MACHINED.
3. MINIMUM WEIGHTS: COVER - 160 LBS., TOTAL - 400 LBS.
4. MANHOLE FRAME AND COVER SHALL BE U.S. FOUNDRY 485-C-ORS TYPE EL, WITH THE WORDS "SANITARY SEWER" CAST INTO THE COVER.

ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	MANHOLE FRAME AND COVER CITY OF HOLLYWOOD	DRAWING NO. S-06.1
APPROVED: XXX		



SECTION

ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	NEW CONNECTION TO EXISTING MANHOLE	DRAWING NO. S-07
APPROVED: XXX		

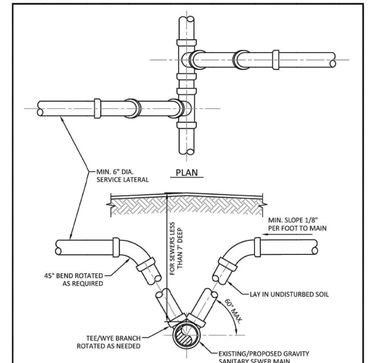


ELEVATION

NOTES:

1. SINGLE SERVICE CONNECTIONS SHALL USE 6" PIPE AND FITTINGS.
2. USE RISER CONNECTIONS WHERE INVERT OF SEWER IS GREATER THAN 7'-0" DEEP.
3. WHERE BELL OF WYE AND SPIGOT OF EXISTING MAIN ARE NOT COMPATIBLE, USE A SECOND FLEXIBLE COUPLING.

ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	WYE BRANCH CONNECTION	DRAWING NO. S-09
APPROVED: XXX		

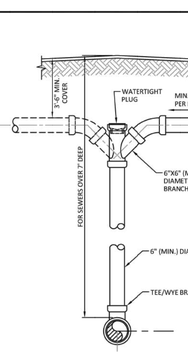


FRONT ELEVATION

NOTES:

1. MODIFIED RISER CONNECTION TO BE USED ONLY WHEN DIRECTED BY THE CITY.
2. NO. 57 ROCK OR ¾" DRAINFIELD LIMEROCK MAY BE USED AS BEDDING OVER UNDISTURBED SOIL WITH PVC PIPE.
3. SINGLE SERVICE CONNECTIONS SHALL USE 6" (MIN.) DIAMETER PIPE AND FITTINGS.

ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	SANITARY SEWER LATERAL MODIFIED RISER	DRAWING NO. S-10
APPROVED: XXX		

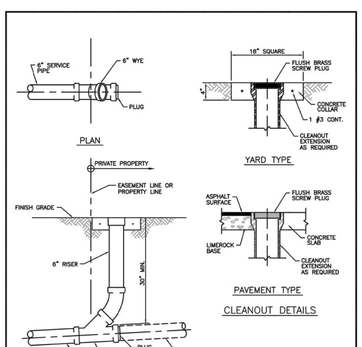


FRONT ELEVATION

NOTES:

1. RISER CONNECTION TO BE USED ONLY WHEN SANITARY SEWER IS MORE THAN 7'-0" DEEP OR WHEN DIRECTED BY THE CITY.
2. NO. 57 ROCK OR ¾" DRAINFIELD LIMEROCK MAY BE USED AS BEDDING OVER UNDISTURBED SOIL WITH PVC PIPE.
3. SINGLE SERVICE CONNECTIONS SHALL USE 6" (MIN.) DIAMETER PIPE AND FITTINGS.

ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	SANITARY SEWER LATERAL VERTICAL RISER	DRAWING NO. S-11
APPROVED: XXX		



ELEVATION

SINGLE SERVICE CONNECTION

ISSUED: 03/01/99	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	SEWER SERVICE CONNECTION AND CLEANOUT AT PROPERTY LINE	DRAWING NO. S-12
APPROVED: XXX		

BTE REF DATE: 2-3-2022

#	DATE	REVISIONS
	3-8-22	PDB SUBMITTAL

STEPHEN F. BOTEK LICENSE No. 55335 STATE OF FLORIDA PROFESSIONAL ENGINEER

February 3, 2022

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY STEPHEN F. BOTEK, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

Celebrating 15 Years

WATER AND SANITARY SEWER DETAILS

THE TROPIC
1744 Federal Highway
Hollywood, Florida 33020

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3409 NW 9th Avenue, Suite 1102, Ft. Lauderdale, FL 33309
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BTE PROJECT #: 20-0902

PROJECT DATE: 6-30-2021

SHEET #: C-4.2

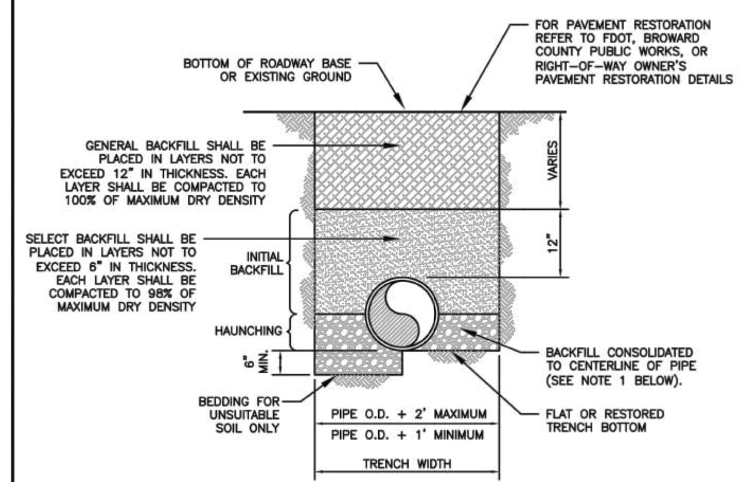
PRELIMINARY PLANS - NOT FOR CONSTRUCTION

WATER MAIN SEPARATION IN ACCORDANCE WITH F.A.C. RULE 62-555.314

OTHER PIPE	HORIZONTAL SEPARATION	CROSSING (1), (4)	JOINT SPACING @ CROSSING (FULL JOINT CENTERED) (8)
STORM SEWER, STORM WATER FORCE MAIN, RECLAIMED WATER (2)	WATER MAIN — 3 ft minimum	WATER MAIN — 12 inches is the minimum except for storm sewer, then 6 inches is the minimum and 12 inched is preferred	Alternate 3 ft minimum — WATER MAIN
GRAVITY SANITARY SEWER, (3) SANITARY SEWER FORCE MAIN, RECLAIMED WATER	WATER MAIN — 10 ft prefered 6 ft minimum	WATER MAIN — 12 inches is the minimum except for gravity sewer, then 6 inches is the minimum and 12 inched is preferred	Alternate 6 ft minimum — WATER MAIN
ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM	10 ft minimum	———	———

1. WATER MAIN SHOULD CROSS ABOVE OTHER PIPE, WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
2. RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
3. 3 FT. FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
4. 18" VERTICAL MINIMUM SEPARATION REQUIRED BY CITY OF HOLLYWOOD, UNLESS OTHERWISE APPROVED.
5. A MINIMUM 6 FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE.
6. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10 FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.
7. WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES IN A PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SANITARY SEWER OR FORCE MAIN SHALL BE CONSTRUCTED OF DIP WITH A MINIMUM VERTICAL DISTANCE OF 6 INCHES. THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCE MAIN (STAGGERED JOINTS).
8. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALY RESTRAINED.

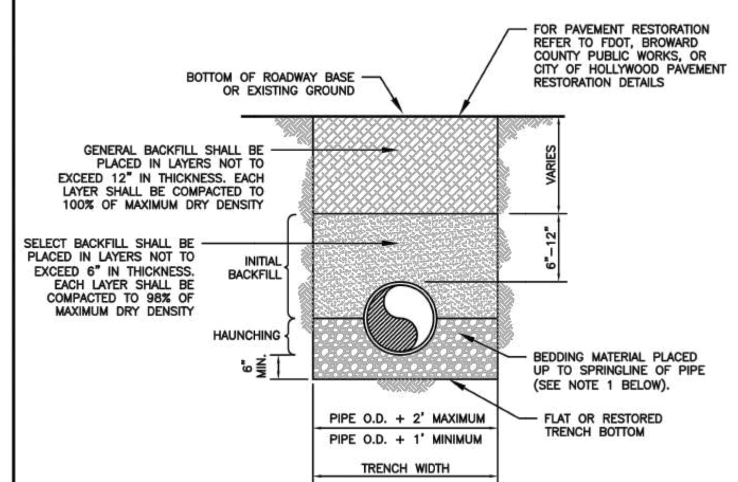
ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 11/06/2017
DRAWN: EAM	SEPARATION REQUIREMENTS OF F.D.E.P.	DRAWING NO. G-01.1
APPROVED: XXX		



NOTES:

1. WHEN PIPE INSTALLATION IS ABOVE THE GROUND WATER TABLE ELEVATION, OR WHENEVER BEDDING COPPER PIPE UNDER ANY CONDITION, BEDDING MATERIAL SHALL BE CLEAN SANDY SOIL IF AVAILABLE WITHIN THE LIMITS OF CONSTRUCTION. IMPORTED BEDDING SHALL BE WELL GRADED, WASHED CRUSHED STONE (OR DRAINFIELD LIMEROCK). CRUSHED STONE SHALL CONSIST OF HARD, DURABLE, SUB-ANGULAR PARTICLES OF PROPER SIZE AND GRADATION, AND SHALL BE FREE FROM ORGANIC MATERIAL, WOOD, TRASH, SAND, LOAM, CLAY, EXCESS FINES, AND OTHER DELETERIOUS MATERIALS.
2. ALL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY BEFORE ANY PIPE IS LAID. FOR ADDITIONAL MATERIAL SPECIFICATIONS REFER TO SPECIFICATION SECTION 02222, "EXCAVATION AND BACKFILL FOR UTILITIES".
3. DENSITY TESTING SHALL BE IN ACCORDANCE WITH AASHTO T-180 AND ASTM D-3017.
4. BACKFILL TO COMPLY WITH FDOT DESIGN STANDARDS 125-8.

ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	PIPE LAYING CONDITION TYPICAL SECTION (D.I.P.)	DRAWING NO. G-02
APPROVED: XXX		



NOTES:

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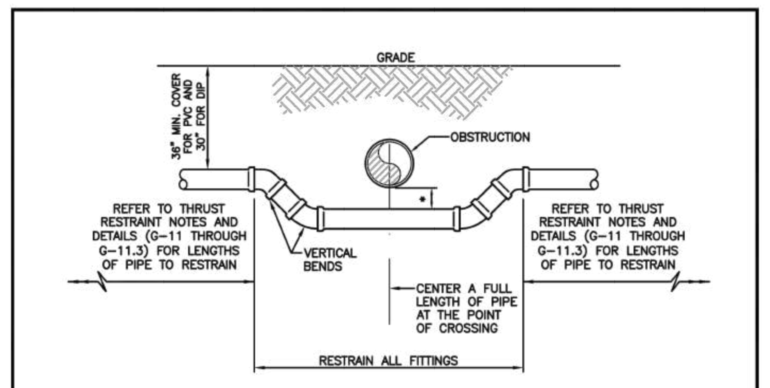
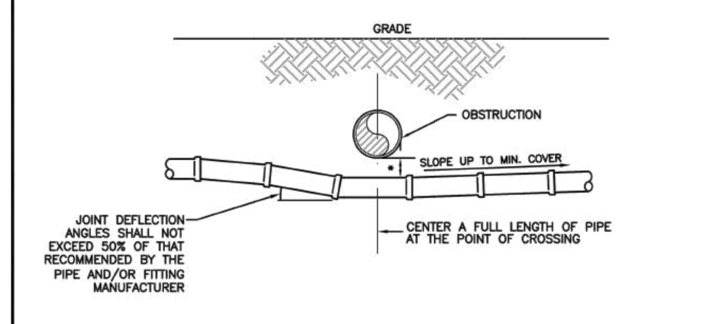
2. ALL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY BEFORE ANY PIPE IS LAID. FOR ADDITIONAL MATERIAL SPECIFICATIONS REFER TO SPECIFICATION SECTION 02222, "EXCAVATION AND BACKFILL FOR UTILITIES".
3. DENSITY TESTING SHALL BE IN ACCORDANCE WITH AASHTO T-180 AND ASTM D-3017.
4. BACKFILL TO COMPLY WITH FDOT DESIGN STANDARD 125-8.

ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	PIPE LAYING CONDITION TYPICAL SECTION (P.V.C.)	DRAWING NO. G-03
APPROVED: XXX		



UTILITY CROSSING USING FITTINGS

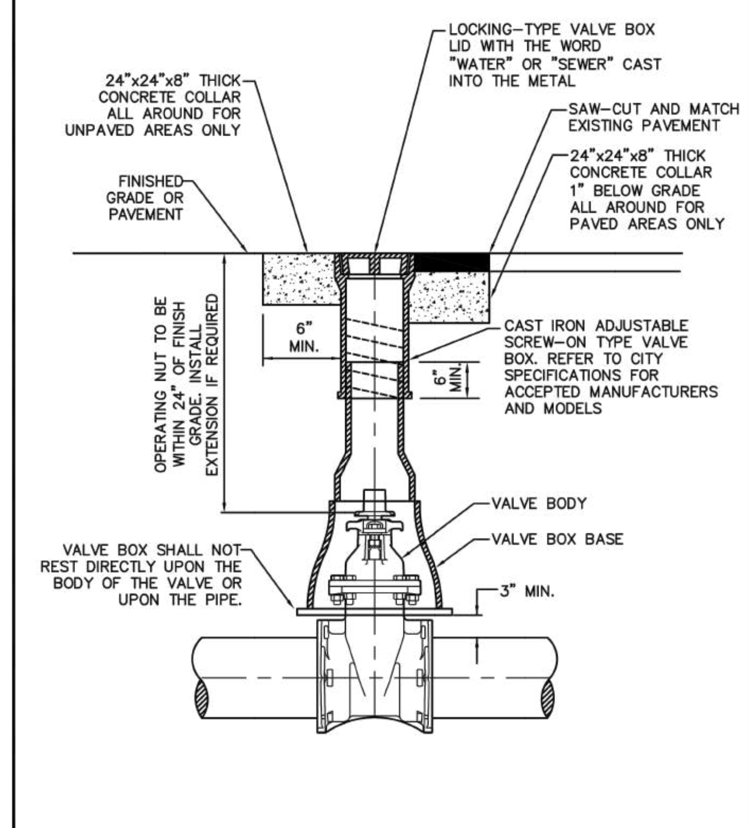
* REFER TO STANDARD DETAIL G-01.1, "SEPARATION REQUIREMENTS", FOR FDEP AND HEALTH DEPARTMENT SEPARATION REQUIREMENTS.



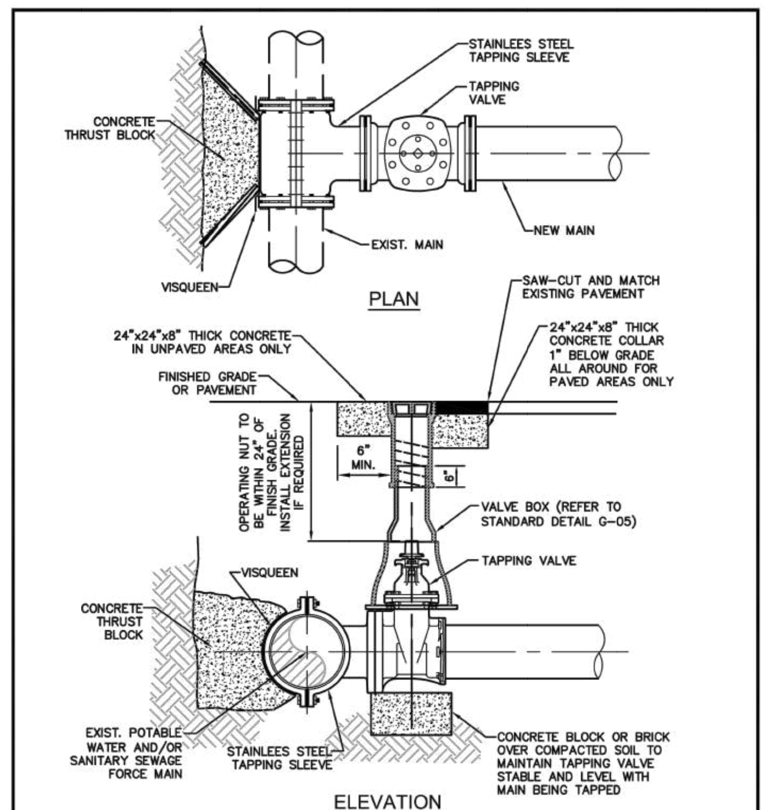
UTILITY CROSSING USING JOINT DEFLECTIONS

* REFER TO STANDARD DETAIL G-01.1, "SEPARATION REQUIREMENTS", FOR FDEP AND HEALTH DEPARTMENT SEPARATION REQUIREMENTS.

ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	UTILITY CROSSING DETAIL	DRAWING NO. G-04
APPROVED: XXX		



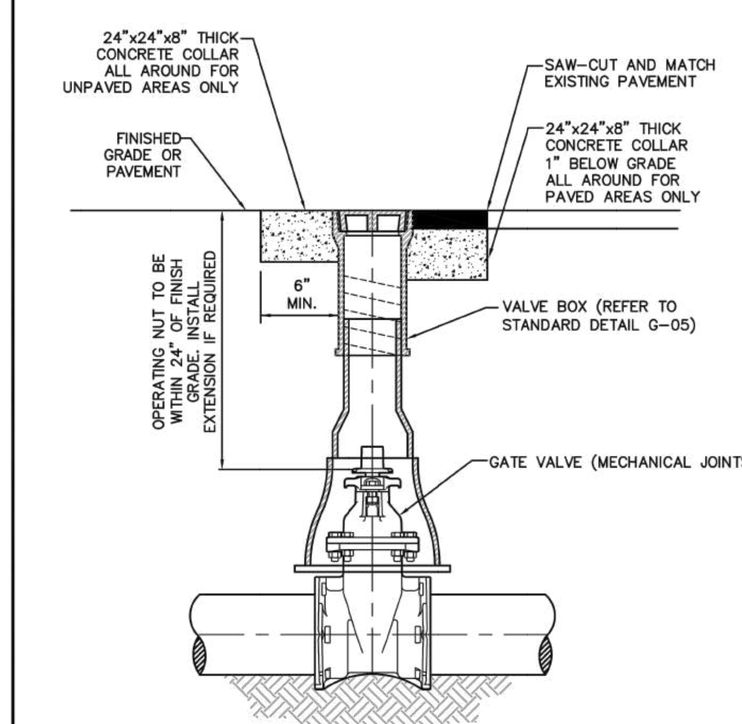
ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	TYPICAL VALVE BOX SETTING	DRAWING NO. G-05
APPROVED: XXX		



NOTES:

1. NOTIFY THE CITY OF HOLLYWOOD 48 HOURS IN ADVANCE OF PROPOSED TAP.
2. TAPPING MUST BE DONE IN THE PRESENCE OF AN AUTHORIZED CITY REPRESENTATIVE.
3. TEMPORARY THRUST BLOCKS TO BE INSTALLED AND REMAIN IN PLACE DURING TAPPING OPERATIONS.
4. FOR SEWAGE FORCE MAINS, REFER TO DETAIL OF PRIVATE FORCE MAIN TIE-IN AT PROPERTY LINE.
5. FOR WATER MAINS, A GATE VALVE OF SAME DIAMETER SHALL BE INSTALLED ON THE DOWNSTREAM SIDE OF THE TAPPING VALVE.

ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	TYPICAL TAPPING SLEEVE AND VALVE SETTING	DRAWING NO. G-06
APPROVED: XXX		



ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	TYPICAL GATE VALVE AND VALVE BOX SETTING	DRAWING NO. G-07
APPROVED: XXX		

RESILIENT SEATED GATE VALVE SPECIFICATIONS:

4" THROUGH 12" SIZE
(WATER AND FORCE MAIN)

1. GATE VALVES SHALL BE RESILIENT SEATED, MANUFACTURED TO MEET OR EXCEED THE REQUIREMENTS OF AWWA C509 (LATEST REVISION) AND IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

1.1. VALVES SHALL HAVE AN UNOBSTRUCTED WATERWAY EQUAL TO OR GREATER THAN THE FULL NOMINAL DIAMETER OF THE VALVE.

1.2. THE VALVES ARE TO BE NON-RISING STEM WITH THE STEM MADE OF CAST, FORGED OR ROLLED BRONZE SHOWN IN AWWA C509, TWO STEM SEALS SHALL BE PROVIDED AND SHALL BE OF THE O-RING TYPE, ONE ABOVE AND ONE BELOW THE THRUST COLLAR WITH LUBRICANT BETWEEN O-RING.

1.3. THE STEM NUT, ALSO MADE OF BRONZE, MAY BE INDEPENDENT OF THE GATE OR CAST INTEGRALLY WITH THE GATE. IF THE STEM NUT IS CAST INTEGRALLY, THE THREADS SHALL BE STRAIGHT AND TRUE WITH THE AXIS OF THE STEM TO AVOID BINDING DURING THE OPENING OR CLOSING CYCLE.

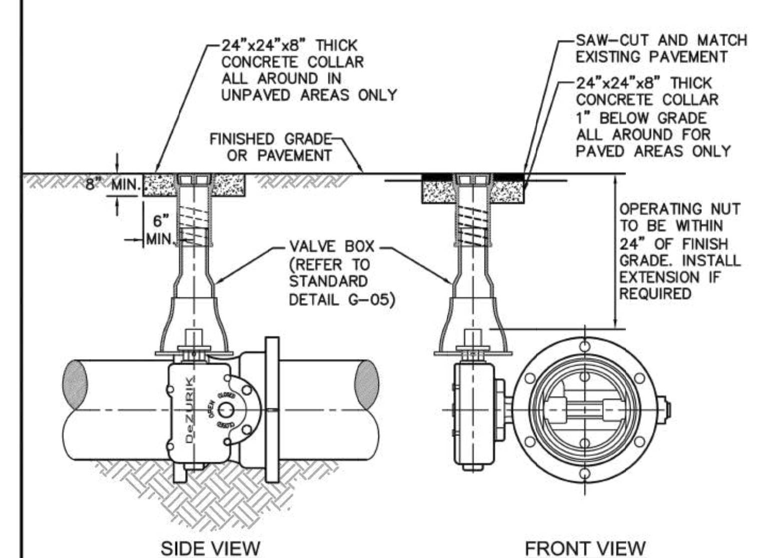
1.4. THE SEALING MECHANISM SHALL CONSISTS OF A CAST IRON GATE HAVING A VULCANIZED SYNTHETIC RUBBER COATING OR A RUBBER SEAT MECHANICALLY RETAINED ON THE GATE, THE RESILIENT SEALING MECHANISM SHALL PROVIDE ZERO LEAKAGE AT THE WATER WORKING PRESSURE WHEN INSTALLED WITH THE LINE FLOW IN EITHER DIRECTION.

1.5. A 2-INCH SQUARE WRENCH NUT SHALL BE PROVIDED FOR OPERATING THE VALVE.

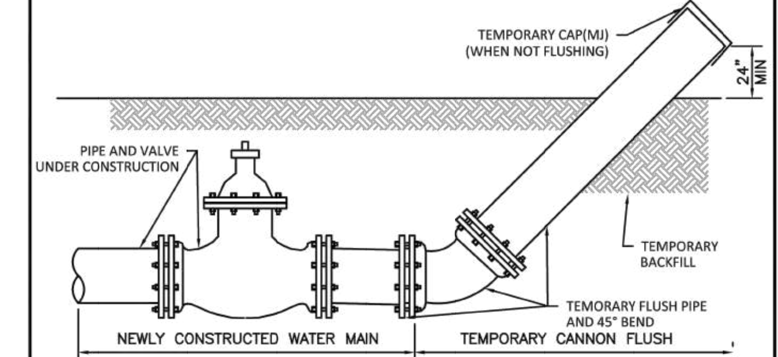
1.6. ALL VALVES ARE TO BE SUPPLIED COMPLETE AND READY FOR INSTALLATION INCLUDING, BUT NOT LIMITED TO ALL NUTS, BOLTS RINGS AND RUBBERS.

1.7. ALL VALVES ARE TO BE TESTED IN STRICT ACCORDANCE WITH AWWA C509 LATEST REVISION).

ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	RESILIENT SEATED GATE VALVE SPECIFICATIONS	DRAWING NO. G-07.1
APPROVED: XXX		



ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	TYPICAL BUTTERFLY VALVE SETTING	DRAWING NO. G-08
APPROVED: XXX		



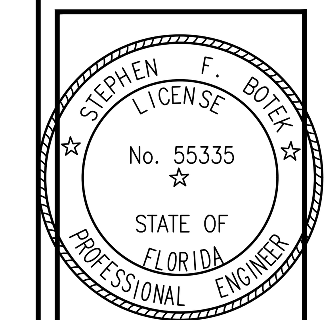
GENERAL NOTES:

1. FLUSHING LOCATIONS ARE TO BE PROPOSED BY CONTRACTOR AND APPROVED BY ECSD.
2. UPON COMPLETION OF THE PIPE INSTALLATION FOR ANY SECTION, THE MAIN SHALL BE CANNON FLUSHED TO REMOVE DIRT AND ANY OTHER FOREIGN MATTER.
3. INSTALL A TEMPORARY 45° BEND AND ASSOCIATED TEMPORARY PIPING AS SHOWN TO DIRECT THE FLUSHING WATER AWAY FROM THE IMMEDIATE WORK AREA AND EXERCISE DUE CARE SO AS TO ENSURE THAT THE WATER USED IN FLUSHING DOES NOT CAUSE A NUISANCE OR INFLICT PROPERTY DAMAGE.
4. BENDS AND PIPING SHALL BE THE SAME SIZE OR LARGER AS THE LINE BEING FLUSHED.
5. PRIOR TO THE ACTUAL LINE FLUSHING OPERATION THE CONTRACTOR SHALL PROPERLY NOTIFY ECSD INSPECTOR OF SUCH INTENDED WATER USE.
6. NO EXISTING VALVE SHALL BE OPERATED, EXCEPT BY AUTHORIZED CITY PERSONNEL.
7. FLUSHING SHALL NOT BE ACCOMPLISHED WITHOUT THE ACTUAL PRESENCE OF THE ECSD INSPECTOR.
8. AFTER THE LINE UNDER CONSTRUCTION HAS BEEN SUCCESSFULLY FLUSHED, THE CONTRACTOR SHALL REMOVE THE TEMPORARY PIPING ARRANGEMENT AND PROCEED WITH THE REMAINING CONSTRUCTION AS SPECIFIED.
9. ALL PIPING SHALL BE MECHANICALLY RESTRAINED IN ACCORDANCE WITH CITY STANDARDS.
10. IF REQUIRED BY ECSD, WATER SHALL MAINS SHALL BE CLEANED BY PIGGING.
11. CONTRACTOR WILL INSTALL A PRESSURE GAUGE AT OR NEAR THE FILL AND FLUSH LOCATION AND MAINTAIN A MINIMUM PRESSURE OF 40 PSI AT ALL TIMES. THE FILL VALVE WILL BE OPENED AND CLOSED SLOWLY TO AVOID RAPID PRESSURE CHANGES IN THE WATER SYSTEM.
12. CONTRACTOR IS CAUTIONED THAT GOVERNING AGENCIES OR UTILITIES MAY HAVE REGULATIONS LIMITING OR PROHIBITING DISCHARGE INTO SEWERS, SURFACE WATERS, CANALS, DITCHES AND OTHER CONVEYANCES/RETENTION AREA. ALL COMPLIANCE WITH GOVERNING AGENCIES REQUIREMENTS (INCLUDING PERMITTING, IF REQUIRED) IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
13. CANNON FLUSHING TO PROCEED AFTER HEALTH DEPARTMENT CLEARANCE IS RECEIVED.

ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DRAWN: EAM	CANNON FLUSHING	DRAWING NO. G-13
APPROVED: XXX		

BTE REF DATE: 2-3-2022

#	DATE	REVISIONS
	3-8-22	PDB SUBMITTAL



February 3, 2022

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY STEPHEN F. BOTEK, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

2006 2021 Celebrating 15 Years

WATER AND SANITARY SEWER DETAILS

THE TROPIC
1744 Federal Highway
Hollywood, Florida 33020

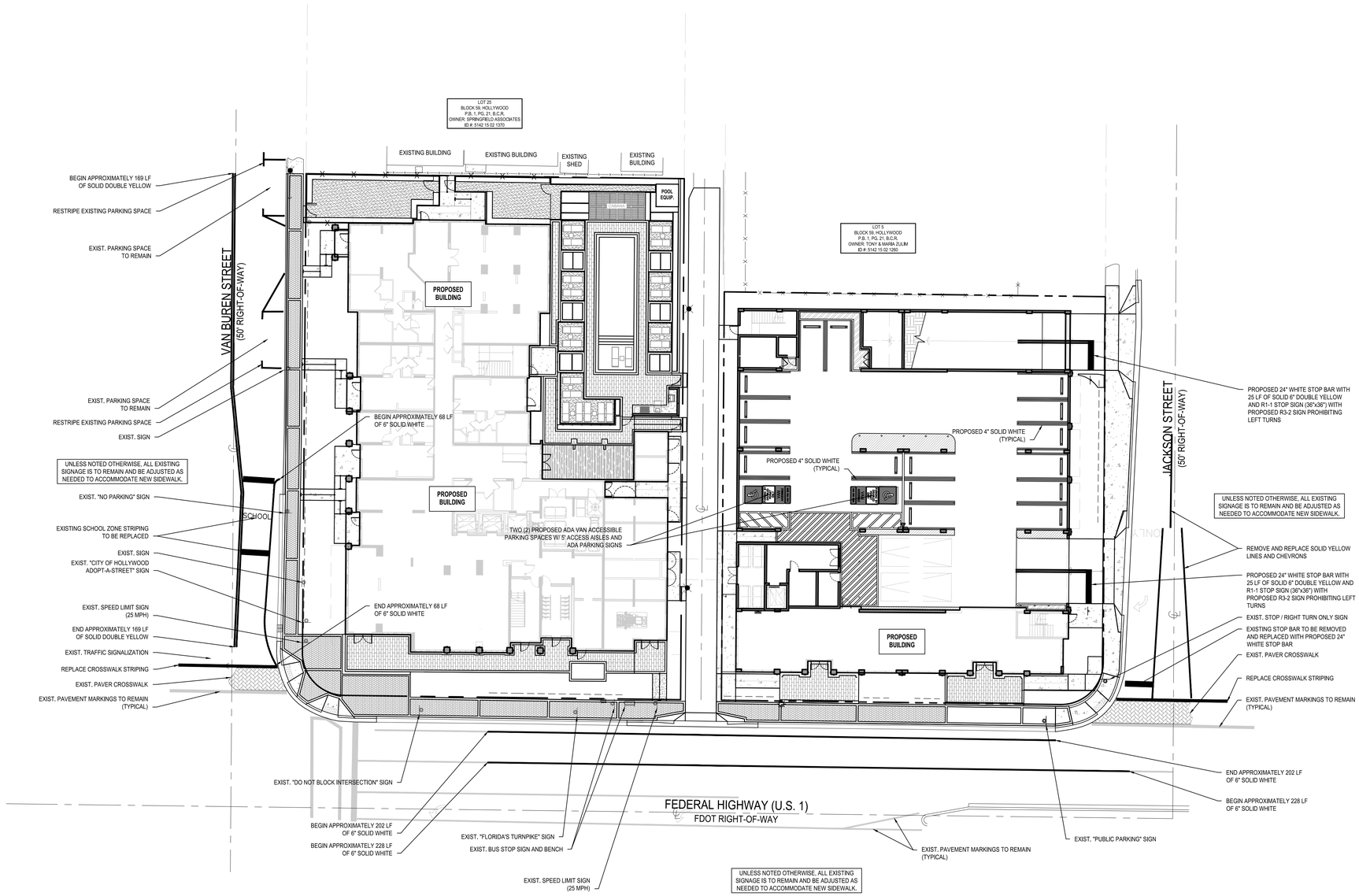
Botek Thurlow Engineering, Inc.
3409 NW 9th Avenue, Suite 1102, Ft. Lauderdale, FL 33309
www.botekthurlow-eng.com p: 954-568-0888 f: 954-568-0757

BTE PROJECT #: 20-0902

PROJECT DATE: 6-30-2021

SHEET #: C-4.3

PRELIMINARY PLANS - NOT FOR CONSTRUCTION



PAVEMENT MARKING & SIGNAGE NOTES:

1. ALL PAVEMENT MARKING & SIGNAGE TO BE IN ACCORDANCE WITH THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) (LATEST EDITION), FDOT STANDARDS (LATEST EDITION), AND BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION STANDARDS (LATEST EDITION).
2. ALL PAVEMENT MARKINGS IN OR ADJACENT TO THE PUBLIC RIGHT OF WAY ARE TO BE ALKYD BASED THERMOPLASTIC AND FULLY RETROREFLECTORIZED.
3. PAVEMENT MARKING SHALL BE UNIFORM ACROSS THE ENTIRE STRIPE AND HAVE A MINIMUM RETRO-REFLECTIVITY OF 250 MILLICANDELAS FOR WHITE AND 175 FOR YELLOW PER BCTED MOST CURRENT STANDARDS.
4. ALL PAVEMENT MARKINGS ON PAVER SYSTEMS SHALL BE 3M 380/381 SERIES TAPE AND APPLIED WITH P60 ADHESIVE AS PER MANUFACTURER'S SPECIFICATIONS.
5. FDOT APPROVED SEALER SHALL BE USED WHEN APPLYING MARKINGS ON CONCRETE.
6. EXISTING MARKINGS SHALL BE REMOVED BY SANDBLASTING ONLY.
7. ALL REGULATORY SIGNS SHALL BE TYPE XI SHEETING MATERIAL.
8. SEE FDOT INDEX NO. 706 FOR PLACEMENT OF RPM's. (FOR BULLNOSE RPM TREATMENT, SEE LEGEND NO. 1)
9. RPM's SHALL BE CLASS "B" 911 OR EQUIVALENT, APPLIED WITH EPOXY OR BITUMINOUS ADHESIVE.
10. ALL STOP BARS TO BE 4' BEHIND CROSSWALK OR SIDEWALK.

BCTED NOTE:

THE FOLLOWING ITEMS ARE NOT REVIEWED OR ACCEPTED BY BROWARD COUNTY:

1. BROWARD COUNTY TRAFFIC ENGINEERING DIVISION'S REVIEW DOES NOT INCLUDE A REVIEW AND ACCEPTANCE OF THE PROJECT'S DESIGN OR OPERATION. THESE ITEMS ARE TO BE REVIEWED AND APPROVED BY THE CITY ENGINEER.

2. BROWARD COUNTY TRAFFIC ENGINEERING DIVISION DOES NOT REVIEW AND APPROVE, OR INSPECT AND ACCEPT THE FOLLOWING ITEMS FOR MAINTENANCE: PAVEMENT MARKINGS ON OR ADJACENT TO PAVER BRICKS, PAINTED ASPHALT, STAMPED ASPHALT OR PAVEMENT MARKINGS MADE OF PAVER BRICKS, RAISED INTERSECTIONS AND RELATED MARKINGS AND SIGNING, UN-WARRANTED MID-BLOCK CROSSWALKS AND RELATED MARKINGS AND SIGNING, UN-WARRANTED CROSSWALKS AND RELATED MARKINGS AND SIGNING, PAINTED/DECORATIVE CROSSWALKS, RAISED CROSSWALKS AND RELATED MARKINGS AND SIGNING, BLINKER SIGNS, RECTANGULAR RAPID FLASHER BEACONS AND RELATED MARKINGS AND SIGNING, ON-STREET PARKING AND RELATED MARKINGS AND SIGNING, IN-ROAD LIGHTING AND RELATED MARKINGS AND SIGNING, GREEN BIKE LANES, FLEXIBLE DELINEATORS, DECORATIVE SIGNS AND DECORATIVE SIGN POSTS, PLANTERS, ON-SITE PAVEMENT MARKINGS AND SIGNING, OFF-SITE PAVEMENT MARKINGS AND SIGNING IN RIGHT-OF-WAY THAT IS NOT DEDICATED FOR PUBLIC USE, SIDEWALK WORK OR ASPHALT WORK.

3. THE CITY ENGINEER IS RESPONSIBLE FOR THE REVIEW AND APPROVAL OF THE DESIGN AND OPERATION OF THE PROJECT, AND FOR THE INSPECTION AND ACCEPTANCE OF THE FOLLOWING ITEMS THAT WILL BE MAINTAINED BY THE CITY: PAVEMENT MARKINGS ON OR ADJACENT TO PAVER BRICKS, PAINTED ASPHALT, STAMPED ASPHALT OR PAVEMENT MARKINGS MADE OF PAVER BRICKS, PAVEMENT MARKINGS ON OR ADJACENT TO PAINTED ASPHALT, RAISED INTERSECTIONS AND RELATED MARKINGS AND SIGNING, UN-WARRANTED MID-BLOCK CROSSWALKS AND RELATED MARKINGS AND SIGNING, UN-WARRANTED CROSSWALKS AND RELATED MARKINGS AND SIGNING, PAINTED/DECORATIVE CROSSWALKS, RAISED CROSSWALKS AND RELATED MARKINGS AND SIGNING, BLINKER SIGNS,RECTANGULAR RAPID FLASHER BEACONS AND RELATED MARKINGS AND SIGNING, ON-STREET PARKING AND RELATED MARKINGS AND SIGNING, IN-ROAD LIGHTING AND RELATED MARKINGS AND SIGNING, GREEN BIKE LANES, FLEXIBLE DELINEATORS, DECORATIVE SIGNS AND DECORATIVE SIGN POSTS, PLANTERS, ON-SITE PAVEMENT MARKINGS AND SIGNING, OFF-SITE PAVEMENT MARKINGS AND SIGNING IN RIGHT-OF-WAY THAT IS NOT DEDICATED FOR PUBLIC USE, SIDEWALK WORK AND ASPHALT WORK.

BTE REF DATE: 2-3-2022

#	DATE	REVISIONS
	3-8-22	PDB SUBMITTAL

STEPHEN F. BOTEK
LICENSE
No. 55335
STATE OF FLORIDA
PROFESSIONAL ENGINEER

February 3, 2022

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY STEPHEN F. BOTEK, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

Celebrating 15 Years

PAVEMENT MARKING AND SIGNAGE PLAN

THE TROPIC
1744 Federal Highway
Hollywood, Florida 33020

Botek Thurlow Engineering, Inc.
3409 NW 9th Avenue, Suite 1102, Ft. Lauderdale, FL 33309
www.botekthurlow-eng.com p: 954-568-0888 f: 954-568-0757

BTE PROJECT #: 20-0902

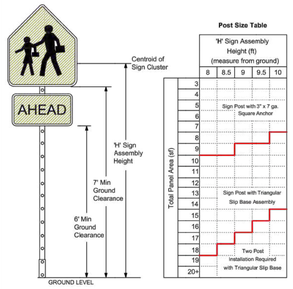
PROJECT DATE: 6-30-2021

SHEET #: C-5

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

GUIDE TO USE THIS STANDARD:

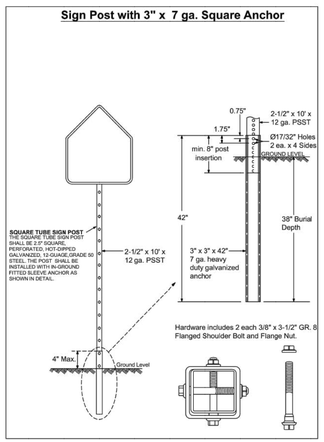
1. Calculate the Total Panel Area and the centroid 'C' for an individual sign or a sign cluster.
2. Determine the height 'H' from the groundline for the individual sign or the cluster.
3. Consult the Post Size Table and find the intersection point.
4. Design the post and the foundation according to the required Post Size and Assembly Details.



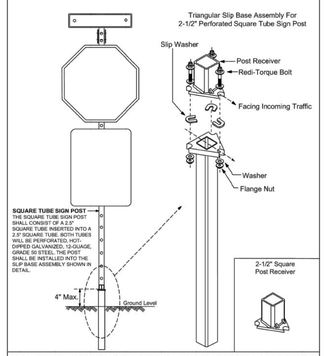
Post Size Table

Total Panel Area (sf)	'H' Sign Assembly Height (ft) (measure from ground) 8	8.5	9	9.5	10
3					
4					
5	Sign Post with 3" x 7 ga. Square Anchor				
6					
7					
8					
9					
10					
11					
12					
13	Sign Post with Triangular Slip Base Assembly				
14					
15					
16					
17					
18					
19	Two Post Installation Required with Triangular Slip Base				
20+					

Sign Post with 3" x 7 ga. Square Anchor



Sign Post with Triangular Slip Base



Note: Dimensions and certain details for the parts used to assemble the slip base connections are intentionally not shown. Slip base connections are patented manufactured products that are in compliance with NCHRP 350 crash test criteria. The base connection details are only shown on this plan to illustrate how the parts are assembled. The complete assembly must be designed to withstand 150 mph Base Wind Speed per 2013 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th edition and interims.

REVISIONS	
DATE	DESCRIPTION
01-05-2016	N/A
03-21-2017	UPDATED POST SIZE

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
TRAFFIC ENGINEERING DIVISION

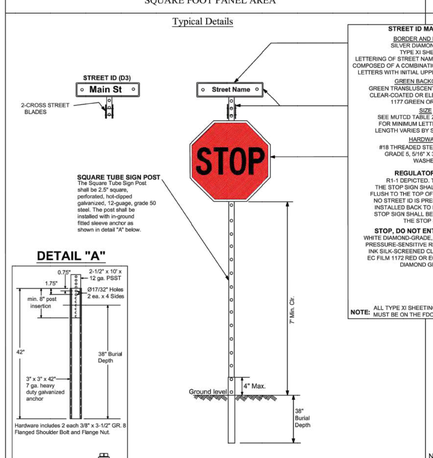
DESIGN BY: YVES D'ANJOU, P.E.	SCALE: NTS
DRAWN BY: STEPHON RAMOUTAR	
CHECKED BY: ANDREW SEBO, P.E., PTOE	

GROUND SIGN ASSEMBLY DETAILS

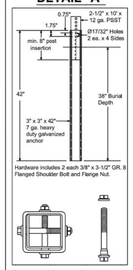
SHEET NO. 1 OF 1

FOR SIGN ASSEMBLIES WITH MAXIMUM 8.75 SQUARE FOOT PANEL AREA

Typical Details



DETAIL "A"



STREET ID MATERIALS:

BORDER AND LETTERS
SILVER DIAMOND GRADE
TYPE XI SHEETING
LETTERING OF STREET NAME SIGNS SHALL BE COMPOSED OF A COMBINATION OF LOWERCASE LETTERS WITH INITIAL UPPERCASE LETTERS

GREEN BACKGROUND
GREEN TRANSLUSCENT INK SILK-SCREENED CLEAR-COATED OR ELECTRO-CUT (EC) FILM 1177 GREEN OR EQUIVALENT

SIZE
SEE MUTCD TABLE 2D-2 (PG 163) FOR MINIMUM LETTER HEIGHTS LENGTH VARIES BY STREET NAME

HARDWARE
#18 THREADED STEEL ZINC BOLTS, GRADE 5, 5/16" X 3/4", WINYLON WASHERS.

REGULATORY SIGN
R1-1 DEPICTED, THE TOP OF THE STOP SIGN SHALL BE MOUNTED FLUSH TO THE TOP OF THE POST WHEN NO STREET ID IS PRESENT. ANY SIGN INSTALLED BACK TO BACK WITH THE STOP SIGN SHALL BE SMALLER THAN THE STOP SIGN.

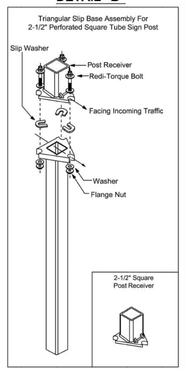
STOP, DO NOT ENTER OR YIELD
WHITE DIAMOND-GRADE, TYPE XI SHEETING PRESSURE-SENSITIVE REG TRANSLUCENT INK SILK-SCREENED CLEAR-COATED OR EC FILM 1172 RED OR EQUIVALENT OVER DIAMOND GRADE.

NOTE: ALL TYPE XI SHEETING UTILIZED MUST BE ON THE FDOT APL LIST.

FOR SIGN ASSEMBLIES WITH GREATER THAN 8.75 SQUARE FOOT PANEL AREA WITH SUPPLEMENTAL SIGN

Typical Details

DETAIL "B"



Notes:
1. Dimensions and certain details for the parts used to assemble the slip base connections are intentionally not shown. Slip base connections are patented manufactured products that are in compliance with NCHRP 350 crash test criteria. The base connection details are only shown on this plan to illustrate how the parts are assembled. The complete assembly must be designed to withstand 150 mph Base Wind Speed per 2013 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th edition and interims.

2. For standard ground sign installation, see detail entitled " Ground Sign Assembly Details".

REVISIONS	
DATE	DESCRIPTION
06-07-2016	N/A
03-21-2017	UPDATED POST SIZE

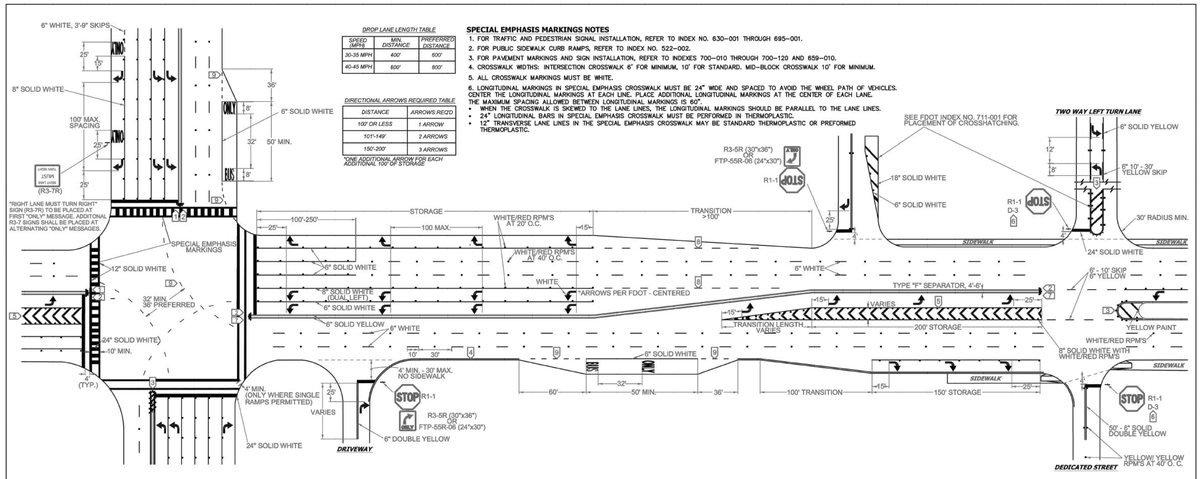
BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DESIGN BY: CARMELO CARATOZZOLO, P.E.	SCALE: NTS
DRAWN BY: STEPHON RAMOUTAR	
CHECKED BY: ANDREW SEBO, P.E., PTOE	

STOP SIGN AND STREET IDENTIFICATION ASSEMBLY TYPICAL DETAILS

SHEET NO. 1 OF 1



DROP LANE LENGTH TABLE

SPEED LIMIT	MIN. DISTANCE	PREFERRED DISTANCE
30-35 MPH	400'	600'
40-45 MPH	600'	800'

DIRECTIONAL ARROWS REQUIRED TABLE

DISTANCE	ARROWS REQ'D
100' OR LESS	1 ARROW
101'-149'	2 ARROWS
150'-300'	3 ARROWS

*ONE ADDITIONAL ARROW FOR EACH ADDITIONAL 100' OF STORAGE

SPECIAL EMPHASIS MARKINGS NOTES

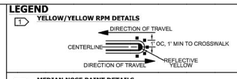
1. FOR TRAFFIC AND PEDESTRIAN SIGNAL INSTALLATION, REFER TO INDEX NO. 630–001 THROUGH 695–001.
2. FOR PUBLIC SIDEWALK CURB RAMPS, REFER TO INDEX NO. 522–002.
3. FOR PAVEMENT MARKINGS AND SIGN INSTALLATION, REFER TO INDEXES 700–010 THROUGH 700–120 AND 659–010.
4. CROSSWALK WIDTHS: INTERSECTION CROSSWALK 6' FOR MINIMUM, 10' FOR STANDARD. MID–BLOCK CROSSWALK 10' FOR MINIMUM.
5. ALL CROSSWALK MARKINGS MUST BE WHITE.
6. LONGITUDINAL MARKINGS IN SPECIAL EMPHASIS CROSSWALK MUST BE 24" WIDE AND SPACED TO AVOID THE WHEEL PATH OF VEHICLES. CENTER THE LONGITUDINAL MARKINGS AT EACH LINE. PLACE ADDITIONAL LONGITUDINAL MARKINGS AT THE CENTER OF EACH LANE. THE MAXIMUM SPACING ALLOWED BETWEEN LONGITUDINAL MARKINGS IS 60".
   - WHEN THE CROSSWALK IS SKEWED TO THE LANE LINES, THE LONGITUDINAL MARKINGS SHOULD BE PARALLEL TO THE LANE LINES.
   - 24" LONGITUDINAL BARS IN SPECIAL EMPHASIS CROSSWALK MUST BE PERFORMED IN THERMOPLASTIC.
   - 12" TRANSVERSE LANE LINES IN THE SPECIAL EMPHASIS CROSSWALK MAY BE STANDARD THERMOPLASTIC OR PREFORMED THERMOPLASTIC.

NOTES

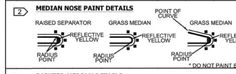
1. ALL PAVEMENT MARKINGS SHALL BE AUX'O BASED THERMOPLASTIC AND FULLY RETROREFLECTORIZED.
2. ALL PAVEMENT MARKINGS ON PAVER SYSTEMS SHALL BE 3M 380/381 SERIES TAPE OR EQUIVALENT AND APPLIED WITH P60 ADHESIVE AS PER MANUFACTURERS SPECIFICATIONS.
3. ALL PAVEMENT MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", BCTED STANDARDS, AND FDOT DESIGN STANDARDS.
4. SEE FDOT INDEX NO 706–001 FOR PLACEMENT OF RPM's (FOR BULLNOSE RPM TREATMENT, SEE LEGEND NO. 1)
5. RPM's SHALL BE CLASS "B" OR EQUIVALENT, APPLIED WITH EPOXY OR BITUMINOUS ADHESIVE.
6. FDOT APPROVED SEALER SHALL BE USED WHEN APPLYING MARKINGS ON CONCRETE.
7. FOR BIKE LANE DETAILS SEE FDOT INDEX NO. 711–002.
8. MARKINGS IN AND ADJACENT TO BIKE LANES SHALL BE THERMOPLASTIC WITH A MIXTURE OF 50% GLASS SPHERES AND 50% SHARP SILICA SAND APPLIED AT A RATE DETERMINED BY THE MANUFACTURER'S SPECIFICATIONS.
9. EXISTING MARKINGS SHALL BE REMOVED BY WATER BLASTING OR SAND BLASTING.
10. ALL STOP LINES TO BE 4' BEHIND CROSSWALK OR SIDEWALK.
11. PAVEMENT MARKING REFLECTIVITY SHALL BE UNIFORM ACROSS THE ENTIRE STRIPE AND SHALL HAVE A MINIMUM REFLECTIVITY READING OF 250 MILLICANDELAS FOR WHITE AND 175 MILLICANDELAS FOR YELLOW.
12. ALL PRODUCTS MUST BE ON FDOT'S APPROVED PRODUCTS LIST (APL).

LEGEND

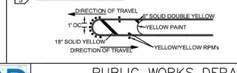
1. **YELLOW/YELLOW RPM DETAILS**



2. **MEDIAN NOSE PAINT DETAILS**



3. **PAINTED MEDIAN DETAILS**

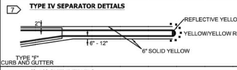


4. **EDGE LINE DETAILS**

5. **CHEVRON DETAILS - CROSSWALK AREAS AND IN FRONT OF CURB RAMPS**

6. **STREET NAME BLADE DETAILS**
SEE BCTED STOP SIGN AND STREET IDENTIFICATION ASSEMBLY TYPICAL DETAILS.

7. **TYPE IV SEPARATOR DETTAILS**



8. **6'-10' SKIP DETAILS**
6' - 10' SKIPS 6" WHITE SHALL BE USED FOR THE FOLLOWING CONDITIONS:
   - HORIZONTAL CURVE SECTIONS
   - CONVENTIONAL LANE ASSIGNMENT
   - TRANSITIONS GREATER THAN 100'

9. **2'-4' SKIP DETAILS**
2' - 4' SKIPS 6" WHITE SHALL BE USED FOR THE FOLLOWING CONDITIONS:
   - RADIUS GUIDE LINES BETWEEN DUAL LEFTS TURN MOVEMENT (60' RADIUS PREFERRED OR AS NOTED ON PLANS)
   - BUS BAY TRANSITIONS

STOP SIGN NOTE
WHERE SIDE ROADS INTERSECT A MULTI LANE STREET OR HIGHWAY THAT HAS A SPEED LIMIT OF 45 MPH OR HIGHER, THE MINIMUM SIZE OF THE STOP SIGNS FACING THE SIDE ROAD APPROACHES, EVEN IS THE SIDE ROAD ONLY HAS ONE APPROACH LANE, SHALL BE 36"X36".

WHERE SIDE ROADS INTERSECT A MULTI–LANE (INCLUDING TURN LANE) STREET OR HIGHWAY THAT HAS A SPEED LIMIT OF 40 MPH OR LOWER, THE MINIMUM SIZE OF THE STOP SIGN FACING THE SIDE ROAD APPROACHES SHALL BE 36"X36".

REVISIONS	
DATE	DESCRIPTION
01-15-2016	N/A
06-11-2018	UPDATED FDOT INDEX REFERENCE

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DESIGN BY: CARMELO CARATOZZOLO, P.E.	SCALE: NTS
DRAWN BY: STEPHON RAMOUTAR	
CHECKED BY: ANDREW SEBO, P.E., PTOE	

PAVEMENT MARKINGS AND SIGNS DETAILS

SHEET NO. 1 OF 1

BTE REF DATE: 2-3-2022

#	DATE	REVISIONS
	3-8-22	PDB SUBMITTAL

STEPHEN F. BOTEK LICENSE No. 55335 STATE OF FLORIDA PROFESSIONAL ENGINEER

February 3, 2022

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY STEPHEN F. BOTEK, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

Celebrating 15 Years

BCTED DETAILS

THE TROPIC
1744 Federal Highway
Hollywood, Florida 33020

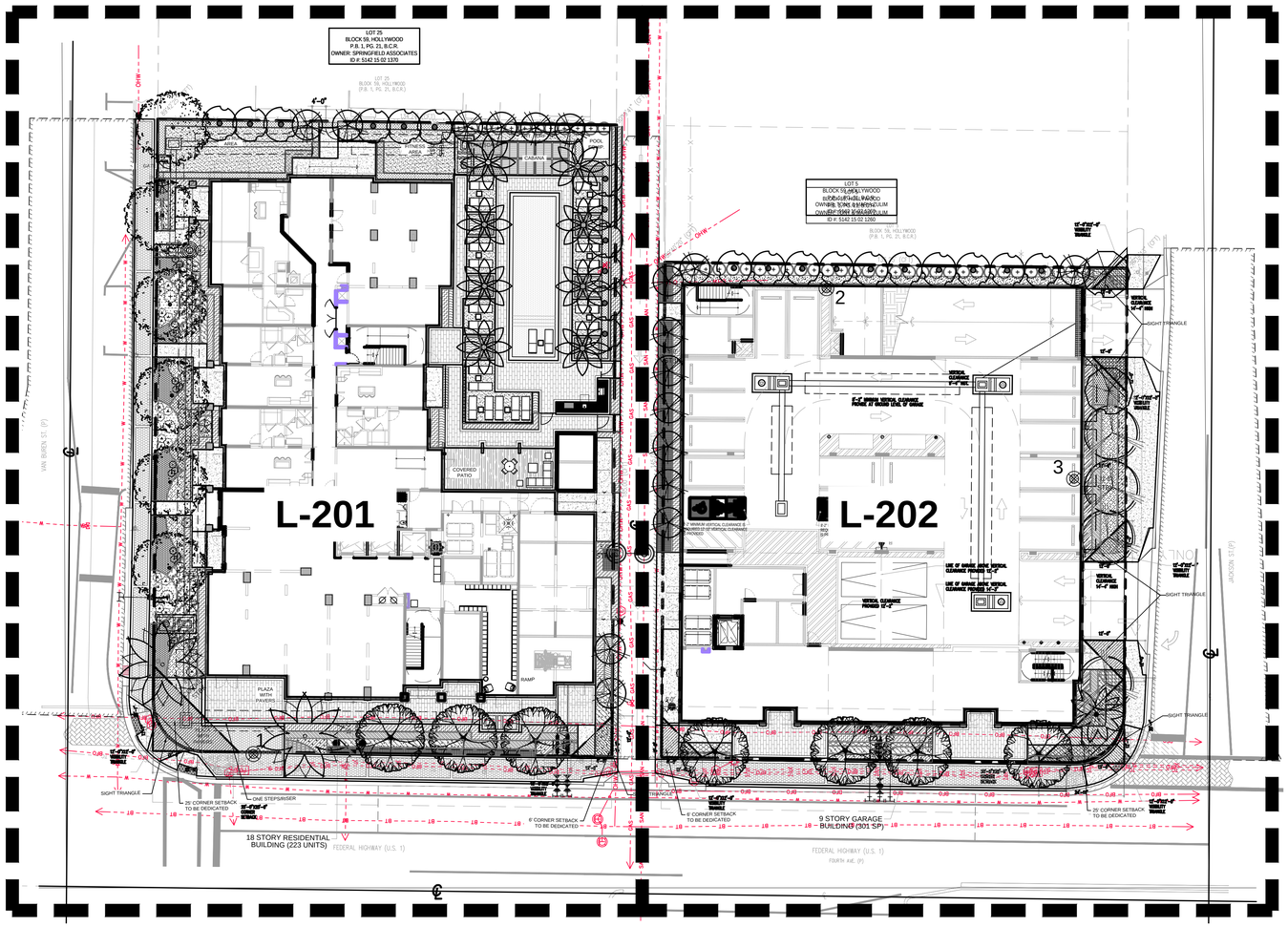
Botek Thurlow Engineering, Inc.
3409 NW 9th Avenue, Suite 1102, Ft. Lauderdale, FL 33309
www.botekthurlow-eng.com p: 954-568-0888 f: 954-568-0757

BTE PROJECT #: 20-0902

PROJECT DATE: 6-30-2021

SHEET #: C-5.1

PRELIMINARY PLANS - NOT FOR CONSTRUCTION



LANDSCAPE CALCULATIONS ZONING: RM				
		CALCULATION	REQUIRED	PROVIDED
ARTICLE 4				
COMMERCIAL DISTRICTS				
PERIMETER LANDSCAPE				
STREET TREES				
1	(1) 2" CALIPER X 12' H TREE PER 50 LINEAR FEET OR PORTION THEREOF STREET FRONTAGE OF PROPERTY WHEREIN IMPROVEMENTS ARE PROPOSED			
	NORTH PARCEL			
	FEDERAL HIGHWAY	134.5 L.F. / 50	**3 TREES**	**4 TREES**
	VAN BUREN STREET	185.5 L.F. / 50	**4 TREES**	**7 TREES**
	SOUTH PARCEL			
	FEDERAL HIGHWAY	136 L.F. / 50	**3 TREES**	**4 TREES**
	JACKSON STREET	145 L.F. / 50	**3 TREES**	**7 TREES**
PERIMETER TREES				
2	5' LANDSCAPE BUFFER AND (1) TREE PER EVERY 20 LINEAR FT.			
	EAST (NORTH PARCEL)	134.5 L.F. / 20	**7 TREES**	**12 TREES**
	EAST (SOUTH PARCEL)	135.5 L.F. / 20	**7 TREES**	**12 TREES**
INTERIOR LANDSCAPE FOR VEHICULAR USE AREA				
PARKING LOT				
4	TERMINAL ISLANDS SHALL BE INSTALLED AT EACH END OF ALL ROWS OF VUA PARKING SPACES AND SHALL HAVE MIN. 190 S.F. OF PERVIOUS AREA. EACH ISLAND SHALL CONTAIN AT LEAST (1) ONE TREE			
	N/A - NO INTERIOR VUA			
6	LOTS WITH A WIDTH MORE THAN 50 FT.: 25% OF THE TOTAL SQUARE FOOTAGE OF THE PAVED VUA SHALL BE LANDSCAPED			
	N/A - NO INTERIOR VUA			
OPEN SPACE				
7	ALL PREVIOUS AREAS MUST BE LANDSCAPED WITH GRASS, GROUND COVER, AND/OR SHRUBBERY.			
8	MINIMUM (1) TREE PER 1,000 S.F. OF PERVIOUS AREA OF PROPERTY			
	NORTH PARCEL	9,908.60 S.F. / 1,000	**10 TREES**	**16 TREES**
	SOUTH PARCEL	3,003.20 S.F. / 1,000	**3 TREES**	**5 TREES**
TOTAL TREES				
	TOTAL TREES REQUIRED		**40**	**67**
	MIN. 60% REQUIRED NATIVE TREES	67 X 60%	40	52
	MAX. 50% PERCENT OF PALMS	67 X 50%	33.5 MAX.	33

MITIGATION
2 TREES AND 1 PALM HAVE BEEN REMOVED FROM THE SITE WITH A TOTAL OF 44 DBH INCHES REMOVED. PROPOSED PLAN PROVIDES A TOTAL OF 49" OF REPLACEMENT DBH INCHES - 39" OF NEW OAKS (13 TREES AT 3") AND 10" OF NEW GREEN BUTTONWOODS (4 TREES AT 2.5")

HARDSCAPE LEGEND

ON-SITE

- STANDARD CONCRETE WALKWAY
- SYNTHETIC TURF
- STANDARD CONCRETE UNIT PAVERS
- PORCELAIN PLANK PAVERS

WITHIN ROW - STREETSCAPE
APPLIES TO FEDERAL HIGHWAY AND VAN BUREN ONLY

- CITY OF HOLLYWOOD - STANDARD PAVERS

FIELD: UNI-DECOR PAVER
BAND: STANDARD 4"x8"

COLOR: MATCH CITY OF HOLLYWOOD STREETSCAPE

KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
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Call 811 two business days before digging

SCALE: 1"=20'-00"
0' 10' 20' 40' 60'
NORTH

Architectural Alliance Landscape
613 SW 4th Ave. Fort Lauderdale FL 33315 LC0000237
TEL: 954-764-8858 EMAIL: HJohnson@archallnet
HUGH JOHNSON REGISTERED LANDSCAPE ARCHITECT LA0000855 STATE OF FLORIDA

Revision Dates

PDB SUBMITTAL SET

The Tropic Hollywood

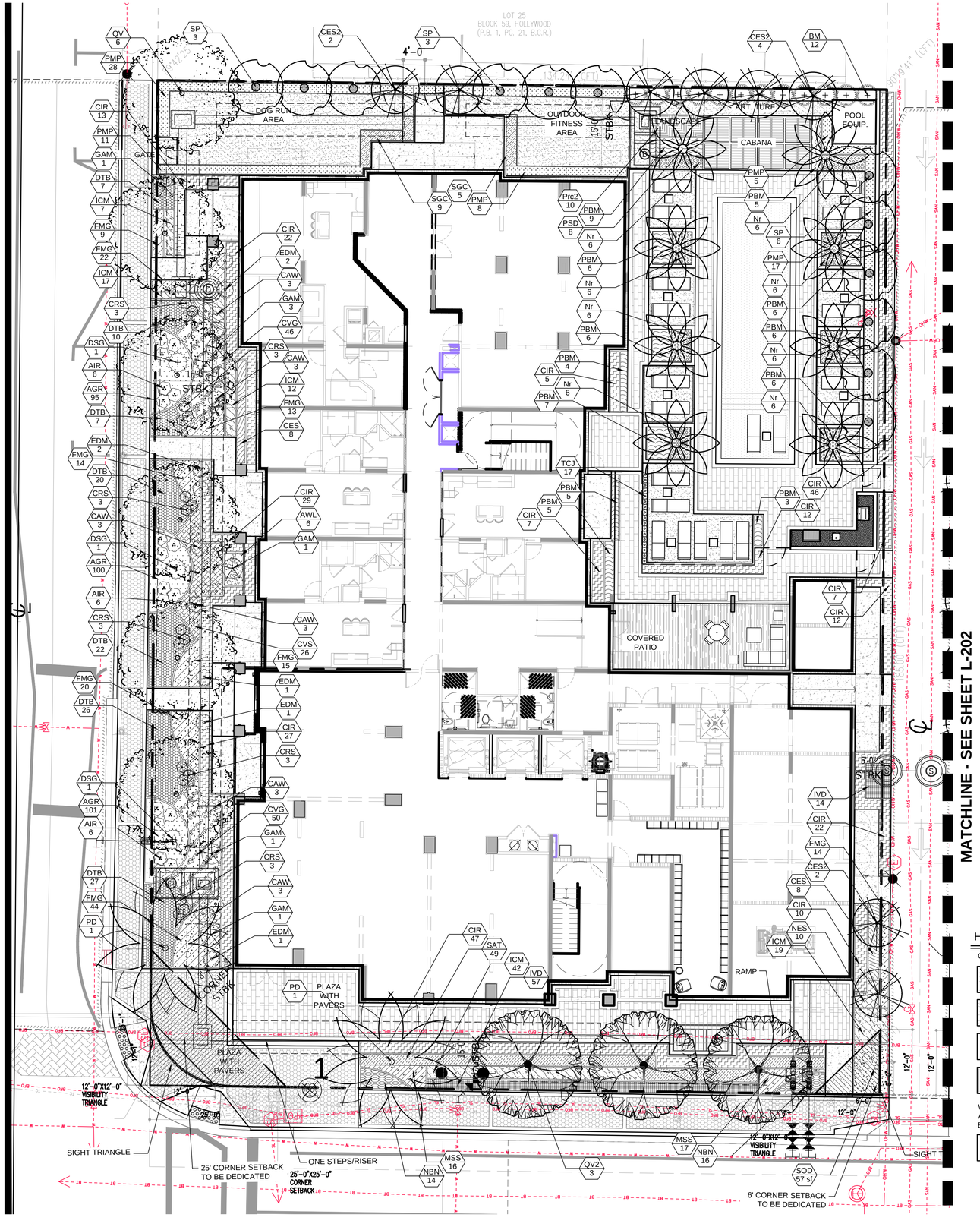
Van Jackson LLC
Hollywood, FL

Sheet Description
OVERALL LANDSCAPE PLAN

Release Date
03-08-2022

Project Number
2135

Drawing Number
L-200



PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	
CE	4	CONOCARPUS ERECTUS	BUTTONWOOD	FG/B&B	2.5"CAL	12` HT. X 5` SPR, 5` CT., FULL CANOPY	YES	HIGH	
CES2	17	CONOCARPUS ERECTUS SERICEUS	SILVER BUTTONWOOD	FG/B&B	2" CAL.	12` HT. X 5` SPR, 5` CT., FULL CANOPY	YES	HIGH	
QV2	7	QUERCUS VIRGINIANA	HIGH RISE LIVE OAK	FG/B&B	3" CAL.	14` HT. X 6` SPR., 5` CT., FULL CANOPY	YES	HIGH	
QV	6	QUERCUS VIRGINIANA	LIVE OAK	FG/B&B	3" CAL.	14` HT. X 6` SPR., 5` CT., FULL CANOPY	YES	HIGH	
FLOWERING TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	
BA	2	BULNESIA ARBOREA	VERAWOOD	B&B FIELD GROWN	2.5"CAL	14` HT. X 5` SPR, 5` CT., FULL CANOPY	NO	HIGH	
PALM TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	
PD	2	PHOENIX DACTYLIFERA `MEDJOOL`	MEDJOOL DATE PALM	FG/B&B	10`-12" CAL	12` GW.	NO	HIGH	
PSD	8	PHOENIX SYLVESTRIS	WILD DATE PALM	FG/B&B		8` GW. MIN.	NO	HIGH	
SP	22	SABAL PALMETTO	CABBAGE PALMETTO	FG/B&B	10`-12" CAL	16` OA	YES	HIGH	
VM	1	VEITCHIA MONTGOMERYANA	MONTGOMERY PALM	FG/B&B	3"CAL	16-18` OA. HT., SINGLE STRAIGHT LEADER	NO	HIGH	
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	
BM	43	BAMBUSA MULTIPLEX `GOLDEN GODDESS`	GOLDEN GODDESS BAMBOO	15 GAL		8`-10` OA	NO	HIGH	
GAM	7	GARDENIA AUGUSTA `MIAMI SUPREME`	MIAMI SUPREME GARDENIA	15 GAL		5-6` OA, STANDARD	NO	MEDIUM	
ACCENT SHRUB	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	
AIR	18	ALCANTAREA IMPERIALIS `RUBRA`	RUBRA IMPERIAL BROMELIAD	3 GAL		30-36" OA	NO	HIGH	
CRS	18	CORDYLINE FRUTICOSA `RED SISTER`	RED SISTER TI	3 GAL.		24-28" OA	NO	HIGH	
CAW	18	CRINUM ASIATICUM	WHITE CRINUM LILY	7 GAL.		36" HT. X 30" SPR.	NO	HIGH	
DSG	3	DIOON SPINULOSUM	CYCAD	15 GAL		30-36" OA	NO	HIGH	
EDM	7	ELAEOCARPUS DECIPIENS `MONPROUD`	JAPANESE BLUEBERRY TREE DWARF	25 GAL		5-6` OA, FULL TO BASE	NO	HIGH	
VINE/ESPALIER	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	
TCJ	17	TRACHELOSPERMUM JASMINOIDES `CONFEDERATE`	CONFEDERATE JASMINE	3 GAL.		5`-6` OA HT., TRELLIS	NO	HIGH	
SHRUB AREAS	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	SPACING
AWL	6	ACALYPHA WILKESIANA `LOUISIANA RED`	LOUISIANA RED COPPERLEAF	-		24"HT X 24"SPR	NO	HIGH	24" o.c.
CIR	322	CHRYSOBALANUS ICACO `REDTIP`	RED TIP COCOPLUM	-		24"HT X 24"SPR	YES	MEDIUM	24" o.c.
CGS	73	CLUSIA GUTTIFERA	SMALL-LEAF CLUSIA	-		30"HT X 24"SPR	YES	HIGH	24" o.c.
CVS	26	CODIAEUM VARIEGATUM `SLOPPY PAINTER`	SLOPPY PAINTER CROTON	-		24"HT X 24"SPR	NO	HIGH	24" o.c.
CES	16	CONOCARPUS ERECTUS SERICEUS	SILVER BUTTON WOOD	-		24"HT X 24"SPR	YES	HIGH	24" o.c.
ING	18	IXORA COCCINEA `NORA GRANT`	NORA GRANT IXORA	3 GAL		24"HT X 24"SPR	NO	HIGH	24" o.c.
PBM	68	PHILODENDRON X `BURLE MARX`	PHILODENDRON	-		18"HT X 18"SPR	NO	MEDIUM	24" o.c.
Prc2	10	PHILODENDRON X `ROJO CONGO`	ROJO CONGO PHILODENDRON	-		20" HT. X 20" SPR.	NO	MEDIUM	24" o.c.
PMP	69	PODOCARPUS MACROPHYLLUS	PODOCARPUS	-		6` HT., 30" O.C., FULL TO BASE	NO	MEDIUM	30" o.c.
SGC	14	SCHEFFLERA ARBORICOLA `GOLD CAPELLA`	GOLD CAPELLA ARBORICOLA	-		24"HT X 24"SPR	NO	HIGH	24" o.c.
SAT	84	SCHEFFLERA ARBORICOLA `TRINETTE`	SCHEFFLERA	-		24"HT X 24"SPR	NO	HIGH	24" o.c.
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	SPACING
ATC	87	ACALYPHA PENDULA	TRAILING CHENILLE	-		6"HT X 12"SPR @	NO	MEDIUM	12" o.c.
AGR	296	ARACHIS GLABRATA	PERENNIAL PEANUT `LARGE LEAF`	-		6"HT X 12"SPR @	NO	HIGH	12" o.c.
CVG	96	CODIAEUM VARIEGATUM `GOLDEN DUST`	GOLD DUST CROTON	-		16" HT X 16" SPR	NO	HIGH	20" o.c.
DTB	125	DIANELLA TASMANICA	BLUEBERRY FLAX LILY	-		18" HT X 18" SPR	NO	MEDIUM	24" o.c.
FMG	242	FICUS MICROCARPA `GREEN ISLAND`	GREEN ISLAND FICUS	-		14" HT X 16" SPR	NO	HIGH	18" o.c.
IVD	219	ILEX VOMITORIA `STOKES DWARF`	DWARF YAUPON HOLLY	3 GAL.,		12"HT X 12"SPR	YES	HIGH	18" o.c.
ICM	151	IXORA COCCINEA `MAUI SUNSET`	MAUI SUNSET DWARF IXORA	-		16" HT X 16" SPR	NO	MEDIUM	18" o.c.
MSS	129	MICROSORUM SCOLOPENDRUM	WART FERN	-		4"HT X 12"SPR @	NO	MEDIUM	16" o.c.
Nr	48	NEOMARICA CAERULEA `REGINA`	GIANT WALKING IRIS	-		24" HT. X 18" SPD	NO	MEDIUM	24" o.c.
NBN	73	NEOREGELIA X `BOSSA NOVA`	GREEEN & WHITE BROMELIAD	-		8" HT X 12" SPR	NO	HIGH	16" o.c.
NES	96	NEPHROLEPIS EXALTATA	BOSTON FERN	-		12" HT X 12" SPR.	YES	HIGH	16" o.c.
SOD/SEED	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	SPACING
SOD	337 SF	STENOTAPHRUM SECUNDATUM `FLORITAM`	`FLORITAM` ST. AUGUSTINE SOD	SOD			NO	MEDIUM	

HARDSCAPE LEGEND

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- SYNTHETIC TURF
- STANDARD CONCRETE UNIT PAVERS
- PORCELAIN PLANK PAVERS

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AAL
Architectural Alliance Landscape
613 SW 4th Ave., Fort Lauderdale FL 33315 LC26000237
TEL: 954-764-8858 EMAIL: HJohnson@archallnet

HUGH JOHNSON LANDSCAPE ARCHITECT REGISTERED HUGH JOHNSON LA0000855 STATE FLORIDA

Revision Dates

PDB SUBMITTAL SET

The Tropic Hollywood

Van Jackson LLC
Hollywood, FL

Sheet Description
LANDSCAPE PLAN

Release Date
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Project Number
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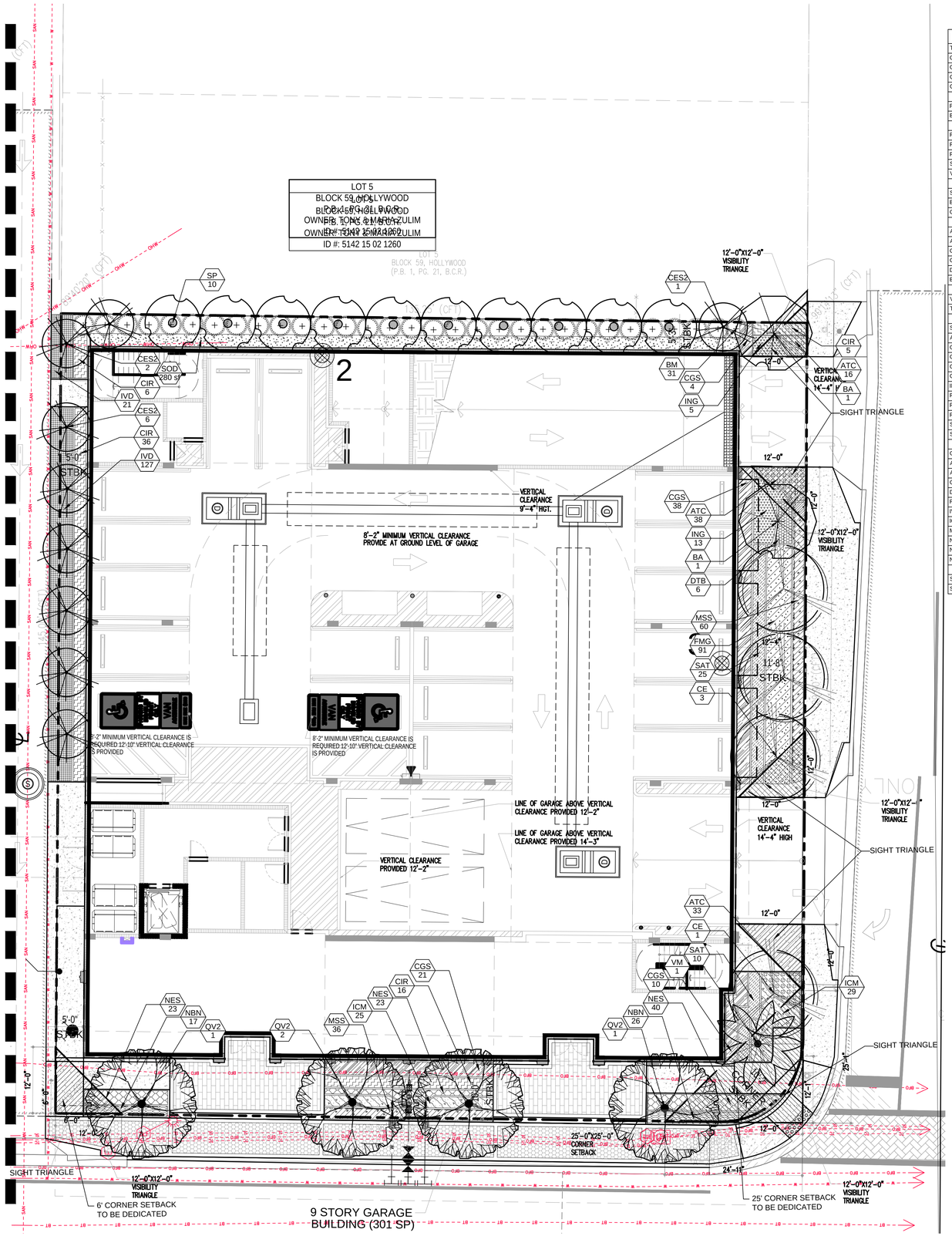
Drawing Number
L-201

Sheet 2 of 4



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CES2	17	CONOCARPUS ERECTUS SERICEUS	SILVER BUTTONWOOD	FG/B&B	2" CAL.	12` HT. X 5` SPR, 5` CT., FULL CANOPY	YES	HIGH	
QV2	7	QUERCUS VIRGINIANA	HIGH RISE LIVE OAK	FG/B&B	3" CAL.	14` HT. X 6` SPR., 5` CT., FULL CANOPY	YES	HIGH	
QV	6	QUERCUS VIRGINIANA	LIVE OAK	FG/B&B	3" CAL.	14` HT. X 6` SPR., 5` CT., FULL CANOPY	YES	HIGH	
FLOWERING TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	
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PSD	8	PHOENIX SYLVESTRIS	WILD DATE PALM	FG/B&B		8` GW. MIN.	NO	HIGH	
SP	22	SABAL PALMETTO	CABBAGE PALMETTO	FG/B&B	10`-12" CAL	16` OA	YES	HIGH	
VM	1	VEITCHIA MONTGOMERYANA	MONTGOMERY PALM	FG/B&B	3"CAL	16-18` OA. HT., SINGLE STRAIGHT LEADER	NO	HIGH	
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	
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GAM	7	GARDENIA AUGUSTA `MIAMI SUPREME`	MIAMI SUPREME GARDENIA	15 GAL		5-6` OA, STANDARD	NO	MEDIUM	
ACCENT SHRUB	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	
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CRS	18	CORDYLINE FRUTICOSA `RED SISTER`	RED SISTER TI	3 GAL.		24-28" OA	NO	HIGH	
CAW	18	CRINUM ASIATICUM	WHITE CRINUM LILY	7 GAL.		36" HT. X 30" SPR.	NO	HIGH	
DSG	3	DIOON SPINULOSUM	CYCAD	15 GAL		30-36" OA	NO	HIGH	
EDM	7	ELAEOCARPUS DECIPIENS `MONPROUD`	JAPANESE BLUEBERRY TREE DWARF	25 GAL		5-6` OA, FULL TO BASE	NO	HIGH	
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CIR	322	CHRYSOBALANUS ICACO `REDTIP`	RED TIP COCOPLUM	-		24"HT X 24"SPR	YES	MEDIUM	24" o.c.
CGS	73	CLUSIA GUTTIFERA	SMALL-LEAF CLUSIA	-		30"HT X 24"SPR	YES	HIGH	24" o.c.
CVS	26	CODIAEUM VARIEGATUM `SLOPPY PAINTER`	SLOPPY PAINTER CROTON	-		24"HT X 24"SPR	NO	HIGH	24" o.c.
CES	16	CONOCARPUS ERECTUS SERICEUS	SILVER BUTTON WOOD	-		24"HT X 24"SPR	YES	HIGH	24" o.c.
ING	18	IXORA COCCINEA `NORA GRANT`	NORA GRANT IXORA	3 GAL		24"HT X 24"SPR	NO	HIGH	24" o.c.
PBM	68	PHILODENDRON X `BURLE MARX`	PHILODENDRON	-		18"HT X 18"SPR	NO	MEDIUM	24" o.c.
Prc2	10	PHILODENDRON X `ROJO CONGO`	ROJO CONGO PHILODENDRON	-		20" HT. X 20" SPR.	NO	MEDIUM	24" o.c.
PMP	69	PODOCARPUS MACROPHYLLUS	PODOCARPUS	-		6` HT., 30" O.C., FULL TO BASE	NO	MEDIUM	30" o.c.
SGC	14	SCHEFFLERA ARBORICOLA `GOLD CAPELLA`	GOLD CAPELLA ARBORICOLA	-		24"HT X 24"SPR	NO	HIGH	24" o.c.
SAT	84	SCHEFFLERA ARBORICOLA `TRINETTE`	SCHEFFLERA	-		24"HT X 24"SPR	NO	HIGH	24" o.c.
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	SPACING
ATC	87	ACALYPHA PENDULA	TRAILING CHENILLE	-		6"HT X 12"SPR @	NO	MEDIUM	12" o.c.
AGR	296	ARACHIS GLABRATA	PERENNIAL PEANUT `LARGE LEAF`	-		6"HT X 12"SPR @	NO	HIGH	12" o.c.
CVG	96	CODIAEUM VARIEGATUM `GOLDEN DUST`	GOLD DUST CROTON	-		16" HT X 16" SPR	NO	HIGH	20" o.c.
DTB	125	DIANELLA TASMANICA	BLUEBERRY FLAX LILY	-		18" HT X 18" SPR	NO	MEDIUM	24" o.c.
FMG	242	FICUS MICROCARPA `GREEN ISLAND`	GREEN ISLAND FICUS	-		14" HT X 16" SPR	NO	HIGH	18" o.c.
IVD	219	ILEX VOMITORIA `STOKES DWARF`	DWARF YAUPON HOLLY	3 GAL.,		12"HT X 12"SPR	YES	HIGH	18" o.c.
ICM	151	IXORA COCCINEA `MAUI SUNSET`	MAUI SUNSET DWARF IXORA	-		16" HT X 16" SPR	NO	MEDIUM	18" o.c.
MSS	129	MICROSORUM SCOLOPENDRUM	WART FERN	-		4"HT X 12"SPR @	NO	MEDIUM	16" o.c.
Nr	48	NEOMARICA CAERULEA `REGINA`	GIANT WALKING IRIS	-		24" HT. X 18" SPD	NO	MEDIUM	24" o.c.
NBN	73	NEOREGELIA X `BOSSA NOVA`	GREEEN & WHITE BROMELIAD	-		8" HT X 12" SPR	NO	HIGH	16" o.c.
NES	96	NEPHROLEPIS EXALTATA	BOSTON FERN	-		12" HT X 12" SPR.	YES	HIGH	16" o.c.
SOD/SEED	QTY	BOTANICAL NAME	COMMON NAME	CONT	DBH	SIZE	NATIVE	DROUGHT	SPACING
SOD	337 SF	STENOTAPHRUM SECUNDATUM `FLORITAM`	`FLORITAM` ST. AUGUSTINE SOD	SOD			NO	MEDIUM	

HARDSCAPE LEGEND

ON-SITE

- STANDARD CONCRETE WALKWAY
- SYNTHETIC TURF
- STANDARD CONCRETE UNIT PAVERS
- PORCELAIN PLANK PAVERS

WITHIN ROW - STREETSCAPE APPLIES TO FEDERAL HIGHWAY AND VAN BUREN ONLY

- CITY OF HOLLYWOOD - STANDARD PAVERS

FIELD: UNI-DECOR PAVER BAND: STANDARD 4"x8"

COLOR: MATCH CITY OF HOLLYWOOD STREETSCAPE

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HUGH JOHNSON REGISTERED LANDSCAPE ARCHITECT LA0000855 STATE OF FLORIDA

Revision Dates

PDB SUBMITTAL SET

The Tropic Hollywood

Van Jackson LLC
Hollywood, FL

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast, it's free, it's the law.
Call 811 two business days before digging

SCALE: 1"=10'-00"
0' 5' 10' 20' 30'
NORTH

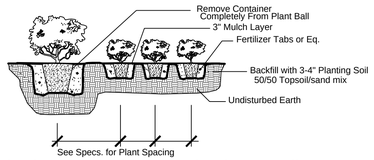
Sheet Description: LANDSCAPE PLAN

Release Date: 03-08-2022

Project Number: 2135

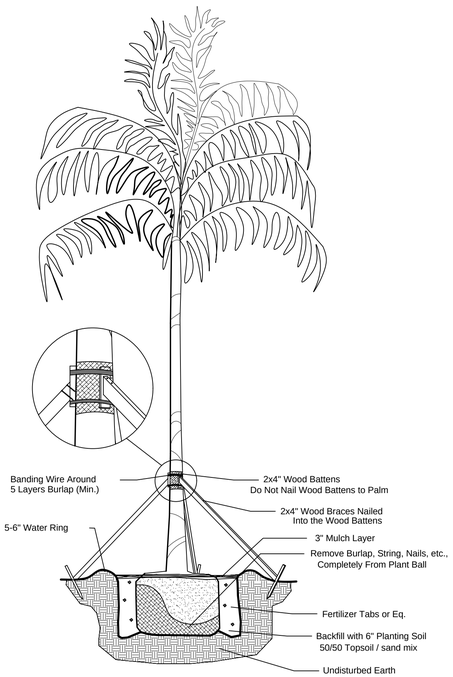
Drawing Number: L-202

Sheet 3 of 4



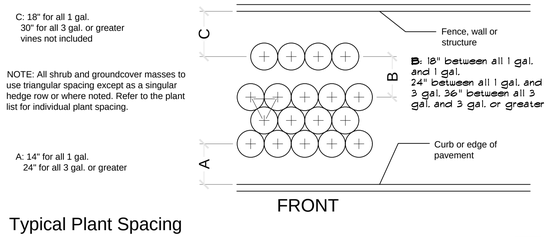
Shrub & Ground Cover Planting Detail

NTS



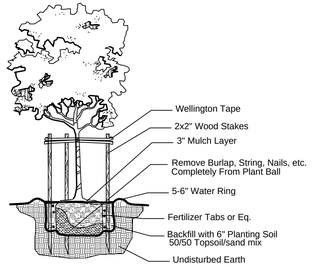
Palm Planting Detail

NTS



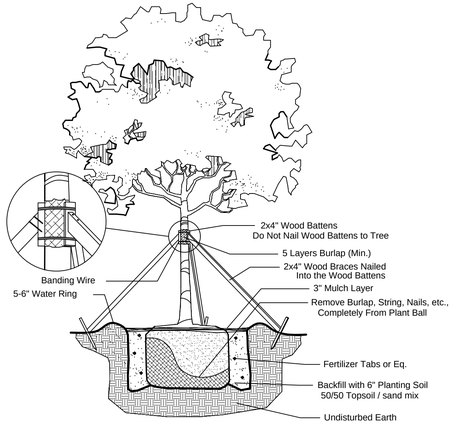
Typical Plant Spacing

NTS



Small Tree Planting Detail

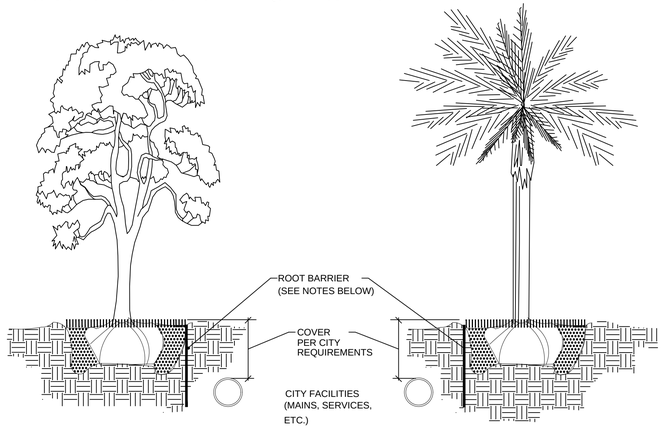
NTS



Large Tree Planting Detail

NTS

NOTE:
PROVIDE ROOT BARRIERS AS REQUIRED ON ALL TREES IN CONFLICT WITH MINIMUM CLEARANCE WITH UTILITIES. MINIMUM CLEARANCE OF 5' FT FOR PALMS AND SMALL TREES AND 10' FT FOR LARGE TREES WITH INTRUSIVE ROOT SYSTEMS PER CITY OF FORT LAUDERDALE REQUIREMENTS.SEE TYPICAL DETAIL BELOW.



NOTES:

1. THE INSTALLATION OF ROOT BARRIERS SHALL BE COORDINATED WITH CITY AND INSPECTED BY CITY PRIOR TO BACKFILLING. ALL ROOT BARRIERS SHALL EXTEND UP TO FINISHED GRADE.
2. ROOT BARRIERS SHALL HAVE MINIMUM DEEP PER CITY REQUIREMENTS. APPROVED PRODUCTS INCLUDE "DEEP ROOT" AND "ROOT SOLUTIONS". FLEXIBLE BARRIERS SHALL BE 36" PANELS MANUFACTURED BY BIOBARRIER.
3. ALL ROOT BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.

Typical Root Barrier Detail

NTS

GENERAL PLANTING REQUIREMENTS

All sizes shown for plant material on the plans are to be considered Minimum. All plant material must meet or exceed these minimum requirements for both height and spread. Any other requirements for specific shape or effect as noted on the plan(s) will also be required for final acceptance.

All plant material furnished by the landscape contractor shall be Florida #1 or better as established by "Grades and Standards for Florida Nursery Plants" and "Grades and Standards for Florida Nursery Trees". All material shall be installed as per CSI specifications.

All plant material as included herein shall be warrantied by the landscape contractor for a minimum period as follows: All trees and palms for 12 months, all shrubs, vines, groundcovers and miscellaneous planting materials for 90 days, and all lawn areas for 60 days after final acceptance by the owner or owner's representative.

All plant material shall be planted in planting soil that is delivered to the site in a clean loose and friable condition. All soil shall have a well drained characteristic. Soil must be free of all rocks, sticks, and objectionable material including weeds and weed seeds as per CSI specifications.

Twelve inches (12") of planting soil 50/50 sand/topsoil mix is required around and beneath the root ball of all trees and palms, and 1 cubic yard per 50 bedding or groundcover plants.

All landscape areas shall be covered with Eucalyptus or sterilized seed free Melaleuca mulch to a minimum depth of three inches (3") of cover when settled. A four-inch clear space must be left for air between plant bases and the mulch. Cypress bark mulch shall not be used.

All plant material shall be thoroughly watered in at the time of planting; no dry planting permitted. All plant materials shall be planted such that the top of the plant ball is flush with the surrounding grade.

All landscape and lawn areas shall be irrigated by a fully automatic sprinkler system adjusted to provide 100% coverage of all landscape areas. All heads shall be adjusted to 100% overlap as per manufacturers specifications and performance standards utilizing a rust free water source. Each system shall be installed with a rain sensor.

It is the sole responsibility of the landscape contractor to insure that all new plantings receive adequate water during the installation and during all plant warranty periods. Deep watering of all new trees and palms and any supplemental watering that may be required to augment natural rainfall and site irrigation is mandatory to insure proper plant development and shall be provided as a part of this contract.

All plant material shall be installed with fertilizer, which shall be State approved as a complete fertilizer containing the required minimum of trace elements in addition to N-P-K, of which 50% of the nitrogen shall be derived from an organic source as per CSI specifications.

Contractors are responsible for coordinating with the owners and appropriate public agencies to assist in locating and verifying all underground utilities prior to excavation.

All ideas, designs and plans indicated or represented by this drawing are owned by and are the exclusive property of AAL.

The plan takes precedence over the plant list.

SPECIAL INSTRUCTIONS:

1. GENERAL SITE AND BERM GRADING TO +/- 1 INCH (1") SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. ALL FINISHED SITE GRADING AND FINAL DECORATIVE BERM SHAPING SHALL BE PROVIDED BY THE LANDSCAPE CONTRACTOR.
2. ALL SOD AREAS AS INDICATED ON THE PLANTING PLAN SHALL RECEIVE STENOTAPHRUM SECUNDATUM, ST. AUGUSTINE 'PALMETTO' SOLID SOD. IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO INCLUDE IN THE BID, THE REPAIR OF ANY SOD WHICH MAY BE DAMAGED FROM THE LANDSCAPE INSTALLATION OPERATIONS.

NOTES:

1. ALL SOD AND LANDSCAPE RECEIVE 100% COVERAGE FROM AN AUTOMATIC IRRIGATION SYSTEM USING AN APPROVED WATER SOURCE.
2. IRRIGATION SYSTEM SHALL ALSO BE EQUIPPED WITH RAIN SENSOR
3. SEE SHEET XXX TREE DISPOSITION PLAN.
4. SEE SHEET XXX PLANTING PLAN
5. SEE SHEET XXX FOR LANDSCAPE SCHEDULE AND CALCULATIONS
6. SEE SHEET XXX FOR LANDSCAPE DETAILS AND NOTES
7. A PRE-PLANTING MEETING SHALL BE SCHEDULED WITH THE CITY FORESTER OR LANDSCAPE INSPECTOR AND THE LANDSCAPE CONTRACTOR PRIOR TO ANY INSTALLATION ON THE SITE.

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HUGH JOHNSON REGISTERED LANDSCAPE ARCHITECT HUGH JOHNSON LA0000855 STATE OF FLORIDA

Revision Dates

PDB SUBMITTAL SET

The Tropic Hollywood

Van Jackson LLC
Hollywood, FL

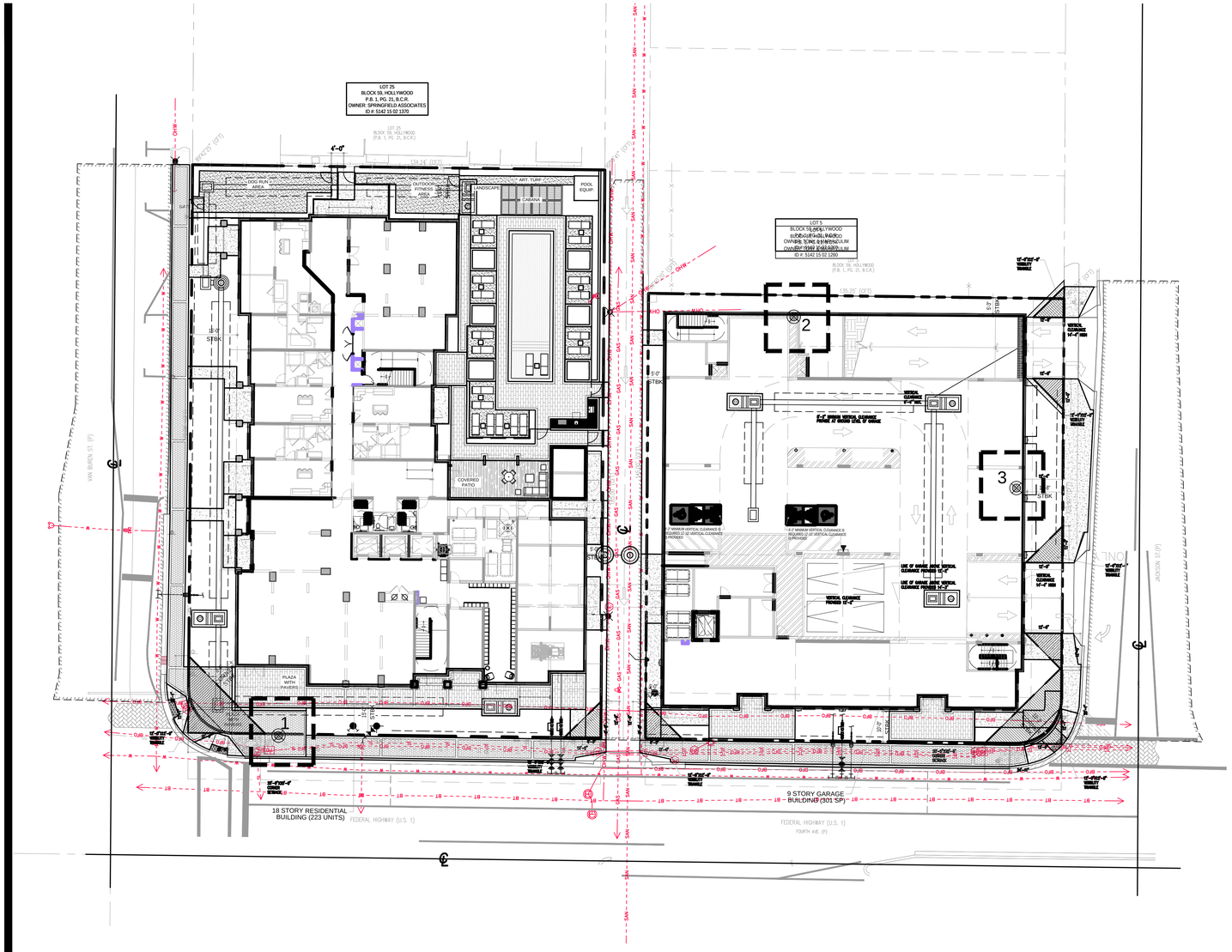
Sheet Description
PLANTING DETAILS AND NOTES

Release Date
03-08-2022

Project Number
2135

Drawing Number
L-203

Sheet 4 of 4



THE TROPIC HOLLYWOOD

TREE SURVEY - 10/11/2021

Tree Number	Botanical Name	Common Name	DBH (inches)	Height (feet)	Canopy (feet)	Condition	Disposition	Notes
1	*Quercus virginiana*	Live Oak	20"	24'	24'	Poor	Remove	Located within ROW, next to underground utilities, sidewalk
2	*Mangifera indica*	Mango Tree	24"	22'	26'	Average	Remove	Located within proposed parking structure
3	*Cocos nucifera*	Coconut Palm	10"	16' CT	20'	Poor	Remove	Located within proposed parking structure

TREE DISPOSITION LEGEND
TREES/PALMS TO REMAIN
TREES/PALMS TO BE RELOCATED
TREES/PALMS TO BE REMOVED

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SCALE: 1"=20'-00"

0' 10' 20' 40' 60'

NORTH

Architectural Alliance Landscape
613 SW 4th Ave, Fort Lauderdale FL 33315 LC0000237
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HUGH JAMES JOHNSON REGISTERED LANDSCAPE ARCHITECT LA0000855 STATE OF FLORIDA

Revision Dates

PDB SUBMITTAL SET

The Tropic Hollywood

Van Jackson LLC
Hollywood, FL

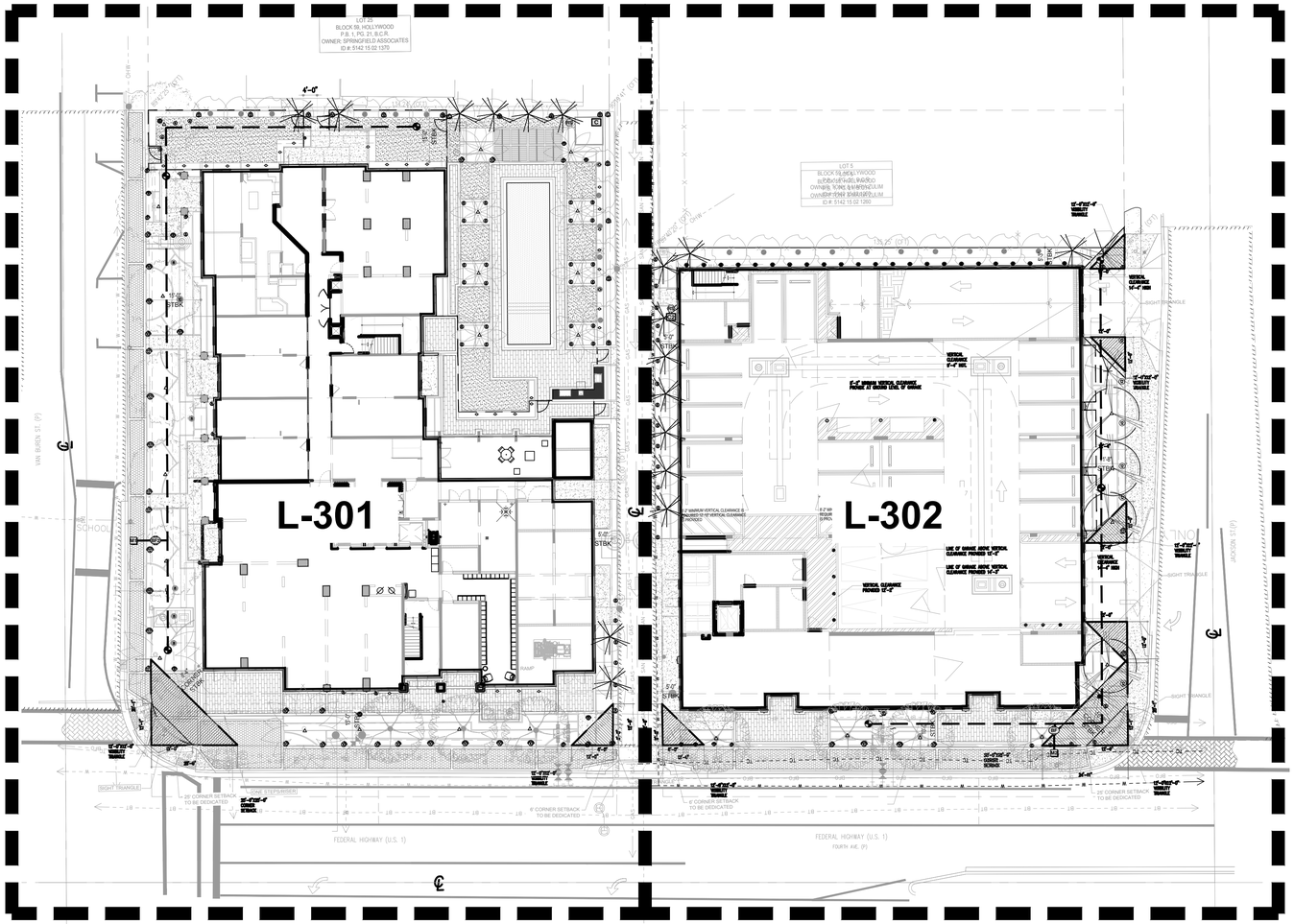
Sheet Description
TREE DISPOSITION PLAN

Release Date
03-08-2022

Project Number
2135

Drawing Number
L-210

Sheet 1 of 1



VALVE SCHEDULE NORTH

NUMBER	MODEL	SIZE	TYPE	GPM	HEADS	WIRE	PSI	PSI @ POC	PRECIP
1	RAIN BIRD PEB	2"	SHRUB SPRAY	39.40	77	126.3	37.01	54.69	2.5 in/h
2	RAIN BIRD PEB	1-1/2"	BUBBLER	19.00	19	140.4	35.24	48.58	3.4 in/h
3	RAIN BIRD PEB	2"	SHRUB SPRAY	37.44	59	278.6	37.68	53.16	1.19 in/h
	Common Wire					234.5			

CRITICAL ANALYSIS

Generated:	2021-10-21 14:22
P.O.C. NUMBER: 01	
Water Source Information:	2` CITY WATER METER
FLOW AVAILABLE	
Water Meter Size:	2"
Flow Available:	77.18 GPM
PRESSURE AVAILABLE	
Static Pressure at POC:	65.00 PSI
Elevation Change:	5.00 ft
Service Line Size:	2"
Length of Service Line:	20 ft
Pressure Available:	61.00 psi
DESIGN ANALYSIS	
Maximum Station Flow:	39.4 GPM
Flow Available at POC:	77.18 GPM
Residual Flow Available:	37.77 GPM
Critical Station:	1
Design Pressure:	30 PSI
Friction Loss:	2.01 PSI
Fittings Loss:	0.2 PSI
Elevation Loss:	0 PSI
Loss through Valve:	4.8 PSI
Pressure Req. at Critical Station:	37.0 PSI
Loss for Fittings:	0 PSI
Loss for Main Line:	2.37 PSI
Loss for POC to Valve Elevation:	0 PSI
Loss for Backflow:	12.1 PSI
Loss for Water Meter:	3.22 PSI
Critical Station Pressure at POC:	54.69 PSI
Pressure Available:	61 PSI
Residual Pressure Available:	6.31 PSI

VALVE SCHEDULE SOUTH

NUMBER	MODEL	SIZE	TYPE	GPM	HEADS	WIRE	PSI	PSI @ POC	PRECIP
1	RAIN BIRD PEB	1-1/2"	SHRUB SPRAY	25.64	43	192.2	36.54	52.4	1.11 in/h
2	RAIN BIRD PEB	1"	BUBBLER	4.00	4	328.8	31.63	44.11	3.4 in/h
3	RAIN BIRD PEB	1"	TURF SPRAY	4.60	23		31.83	44.73	0.78 in/h
	Common Wire					211.7			

CRITICAL ANALYSIS

Generated:	2021-10-21 14:22
P.O.C. NUMBER: 02	
Water Source Information:	2" CITY WATER METER
FLOW AVAILABLE	
Water Meter Size:	2"
Flow Available:	77.18 GPM
PRESSURE AVAILABLE	
Static Pressure at POC:	65.00 PSI
Elevation Change:	5.00 ft
Service Line Size:	2"
Length of Service Line:	20 ft
Pressure Available:	61.00 psi
DESIGN ANALYSIS	
Maximum Station Flow:	25.64 GPM
Flow Available at POC:	77.18 GPM
Residual Flow Available:	51.53 GPM
Critical Station:	1
Design Pressure:	30 PSI
Friction Loss:	2.26 PSI
Fittings Loss:	0.23 PSI
Elevation Loss:	0 PSI
Loss through Valve:	3.73 PSI
Pressure Req. at Critical Station:	36.54 PSI
Loss for Fittings:	0 PSI
Loss for Main Line:	2.32 PSI
Loss for POC to Valve Elevation:	0 PSI
Loss for Backflow:	12.18 PSI
Loss for Water Meter:	1.36 PSI
Critical Station Pressure at POC:	52.4 PSI
Pressure Available:	61 PSI
Residual Pressure Available:	8.6 PSI

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HUGH JOHNSON REGISTERED LANDSCAPE ARCHITECT HUGH F. JOHNSON LA0000855 STATE OF FLORIDA

Revision Dates

PDB SUBMITTAL SET

The Tropic Hollywood

Van Jackson LLC
Hollywood, FL

Sheet Description
OVERALL IRRIGATION PLAN

Release Date
03-08-2022

Project Number
2135

Drawing Number
L-300

Sheet 1 of 5

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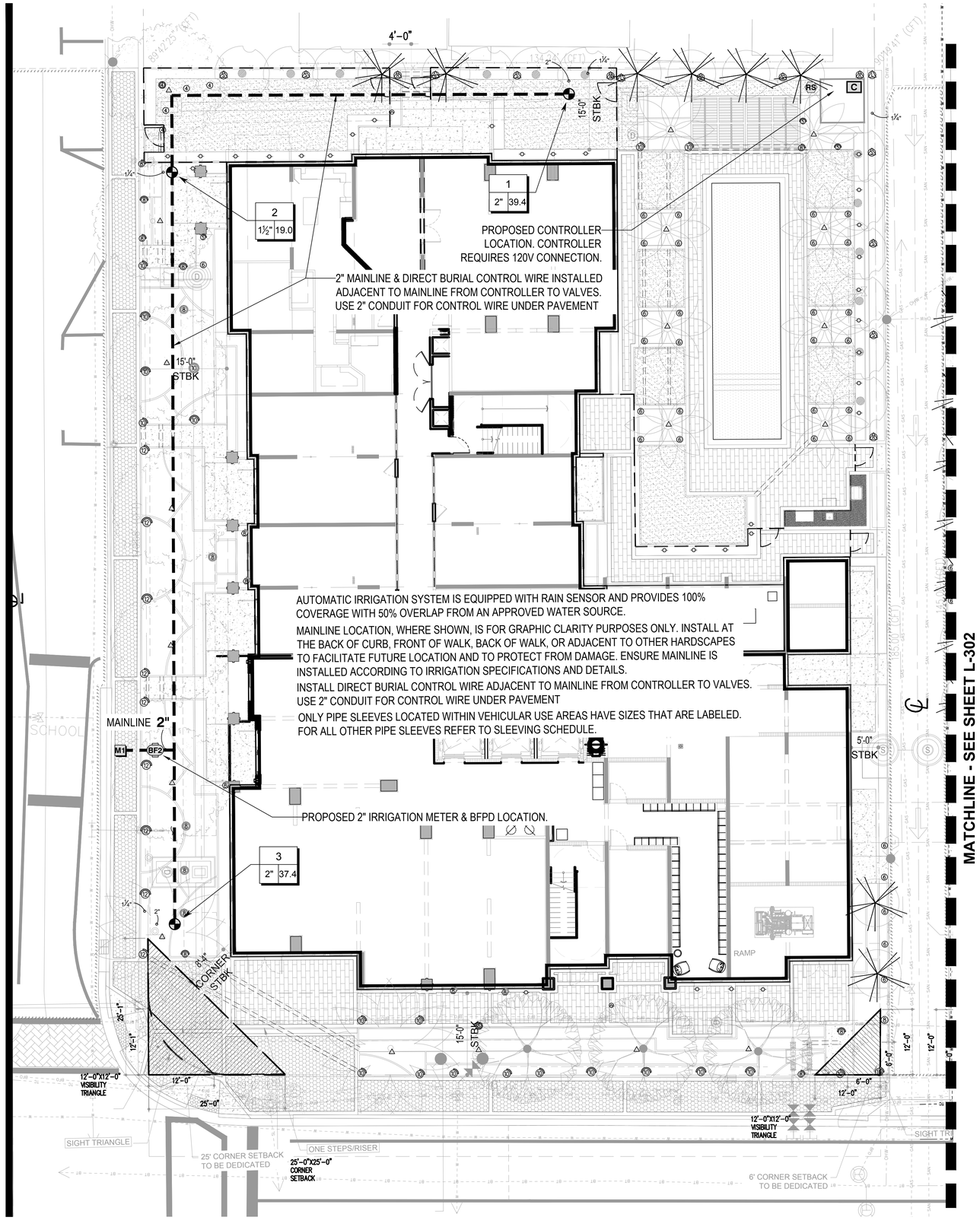
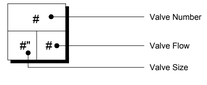
SCALE: 1"=20'-00"
0' 10' 20' 40' 60'
NORTH



IRRIGATION SCHEDULE NORTH BLDG

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
2Q 2H 2F 4Q 4H 4F	RAIN BIRD 1812-SAM-PRS SQ SERIES SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	2	30
EST LCS RCS CST SST	RAIN BIRD 1812-SAM-PRS 15 STRIP SERIES SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	15	30
Q H F	RAIN BIRD 1812-SAM-PRS 5 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	3	30
Q T H F	RAIN BIRD 1812-SAM-PRS 8 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	8	30
Q T H F	RAIN BIRD 1812-SAM-PRS 10 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	20	30
Q T H TQ F	RAIN BIRD 1812-SAM-PRS 12 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	9	30
4V 6V 18V	RAIN BIRD 1812-SAM-PRS ADJ SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	34	30
08HE-VAN 12HE-VAN 10HE-VAN 15HE-VAN	RAIN BIRD 1812-SAM-PRS ADJ SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	1	30
2Q 2H 2F 4Q 4H 4F	RAIN BIRD 1806-SAM-PRS SQ SERIES SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	1	30
Q H F	RAIN BIRD 1806-SAM-PRS 5 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	1	30
Q T H F	RAIN BIRD 1806-SAM-PRS 8 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	10	30
Q T H F	RAIN BIRD 1806-SAM-PRS 10 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	1	30
1401 1402 1404 1408	RAIN BIRD 1800-1400 FLOOD 1401 FIXED FLOW RATE (0.25-2.0GPM), FULL CIRCLE BUBBLER, 1/2\\" FIPT.	19	30
CST Q H F	RAIN BIRD 1812-SAM-PRS-5 SERIES STREAM 5CST-B STREAM BUBBLER 12" POPUP WITH CHECK VALVE AND PRESSURE REGULATOR.	31	30
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	
	RAIN BIRD PEB 1", 1-1/2", 2" PLASTIC INDUSTRIAL VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION.	3	
BF2	FEBCO 825Y 1-1/2" REDUCED PRESSURE BACKFLOW PREVENTER	1	
C	RAIN BIRD ESP4ME3 WITH (1) ESP-SM3 7 STATION, HYBRID MODULAR OUTDOOR CONTROLLER. FOR RESIDENTIAL OR LIGHT COMMERCIAL USE. LNK WIFI MODULE AND FLOW SENSOR READY.	1	
RS	RAIN BIRD RSD-BEX RAIN SENSOR, WITH METAL LATCHING BRACKET, EXTENSION WIRE.	1	
M1	WATER METER - PROPOSED 2"	1	
1¼"	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21 ONLY LATERAL LINES SIZED 1-1/4" AND LARGER ARE LABELED WITH ALL OTHER LATERAL LINES BEING 1" IN DIAMETER.	1,694 L.F.	
1"	IRRIGATION MAINLINE: PVC SCHEDULE 40	242.6 L.F.	
2"	PIPE SLEEVE: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE. PIPE SLEEVE SIZE SHALL BE AT MINIMUM TWICE THE DIAMETER OF THE IRRIGATION PIPE IT IS TO ENCASE, AND ALLOW FOR IRRIGATION PIPING AND THEIR RELATED COUPLINGS TO EASILY SLIDE THROUGH.	301.1 L.F.	

Valve Callout



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Revision Dates

PDB SUBMITTAL SET

The Tropic Hollywood

Van Jackson LLC
Hollywood, FL

Sheet Description: IRRIGATION PLAN

Release Date: 03-08-2022

Project Number: 2135

Drawing Number: L-301

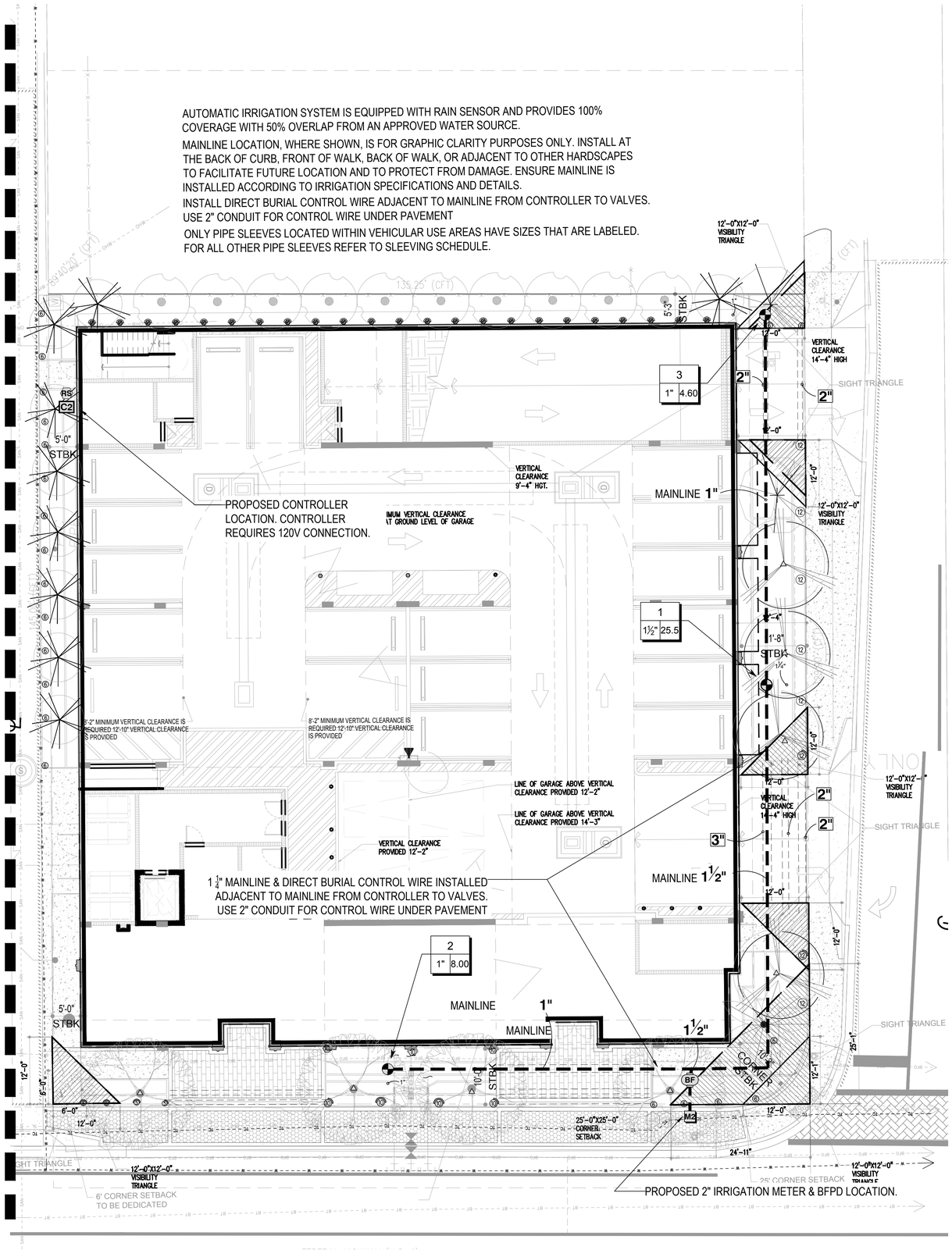
Sheet 2 of 5

AUTOMATIC IRRIGATION SYSTEM IS EQUIPPED WITH RAIN SENSOR AND PROVIDES 100% COVERAGE WITH 50% OVERLAP FROM AN APPROVED WATER SOURCE.

MAINLINE LOCATION, WHERE SHOWN, IS FOR GRAPHIC CLARITY PURPOSES ONLY. INSTALL AT THE BACK OF CURB, FRONT OF WALK, BACK OF WALK, OR ADJACENT TO OTHER HARDSCAPES TO FACILITATE FUTURE LOCATION AND TO PROTECT FROM DAMAGE. ENSURE MAINLINE IS INSTALLED ACCORDING TO IRRIGATION SPECIFICATIONS AND DETAILS.

INSTALL DIRECT BURIAL CONTROL WIRE ADJACENT TO MAINLINE FROM CONTROLLER TO VALVES. USE 2" CONDUIT FOR CONTROL WIRE UNDER PAVEMENT

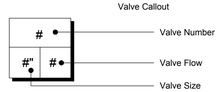
ONLY PIPE SLEEVES LOCATED WITHIN VEHICULAR USE AREAS HAVE SIZES THAT ARE LABELED. FOR ALL OTHER PIPE SLEEVES REFER TO SLEEVING SCHEDULE.



IRRIGATION SCHEDULE SOUTH GARAGE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
Q H F	RAIN BIRD 1806-SAM-PRS 5 SERIES MPR TURF SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING.	23	30
Q H F	RAIN BIRD 1812-SAM-PRS 5 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	4	30
Q T H F	RAIN BIRD 1812-SAM-PRS 10 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	4	30
Q T H TQ F	RAIN BIRD 1812-SAM-PRS 12 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	2	30
4V 6V 18V	RAIN BIRD 1812-SAM-PRS ADJ SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	22	30
08HE-VAN 12HE-VAN 10HE-VAN 15HE-VAN	RAIN BIRD 1812-SAM-PRS ADJ SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	6	30
Q T H F	RAIN BIRD 1806-SAM-PRS 10 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	3	30
1401 1402 1404 1408	RAIN BIRD 1800-1400 FLOOD 1401 FIXED FLOW RATE (0.25-2.0GPM), FULL CIRCLE BUBBLER, 1/2\\" FIPT.	8	30
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	
	RAIN BIRD PEB 1", 1-1/2", 2" PLASTIC INDUSTRIAL VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION.	3	
BF	FEBCO 825Y 1-1/2" REDUCED PRESSURE BACKFLOW PREVENTER	1	
C2	RAIN BIRD ESP4ME3 WITH (1) ESP-SM3 7 STATION, HYBRID MODULAR OUTDOOR CONTROLLER. FOR RESIDENTIAL OR LIGHT COMMERCIAL USE. LNK WIFI MODULE AND FLOW SENSOR READY.	1	
RS	RAIN BIRD RSD-BEX RAIN SENSOR, WITH METAL LATCHING BRACKET, EXTENSION WIRE.	1	
M2	WATER METER 2" 2" CITY WATER METER	1	
1¼"	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21 ONLY LATERAL LINES SIZED 1-1/4" AND LARGER ARE LABELED WITH ALL OTHER LATERAL LINES BEING 1" IN DIAMETER.	864.7 L.F.	
1"	IRRIGATION MAINLINE: PVC SCHEDULE 40	211.3 L.F.	
2"	PIPE SLEEVE: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE. PIPE SLEEVE SIZE SHALL BE AT MINIMUM TWICE THE DIAMETER OF THE IRRIGATION PIPE IT IS TO ENCASE, AND ALLOW FOR IRRIGATION PIPING AND THEIR RELATED COUPLINGS TO EASILY SLIDE THROUGH.	262.3 L.F.	

Valve Callout



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HUGH JOHNSON REGISTERED LANDSCAPE ARCHITECT HUGH F. JOHNSON LA0000855 STATE OF FLORIDA

Revision Dates

PDB SUBMITTAL SET

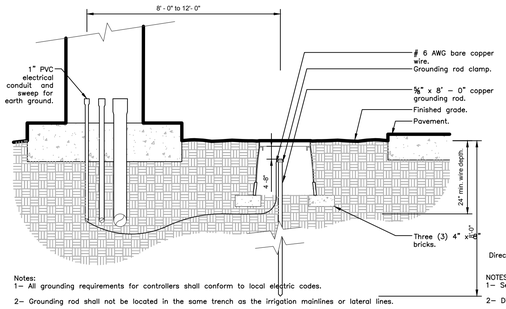
The Tropic Hollywood

Van Jackson LLC
Hollywood, FL

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast, it's free, it's the law.
Call 811 two business days before digging

SCALE: 1"=10'-00"
0' 5' 10' 20' 30'
NORTH

Sheet Description: IRRIGATION PLAN
Release Date: 03-08-2022
Project Number: 2135
Drawing Number: L-302
Sheet 3 of5



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 the 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 GROUNDING ROD
1 1/2" = 1'-0" — FX-IR-FX-AUXEQ-01

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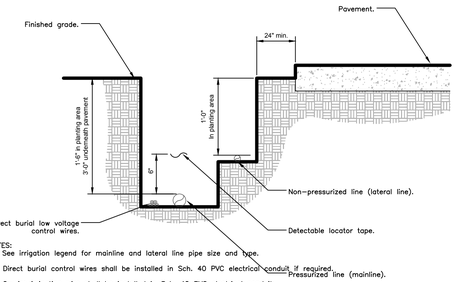

NOTES:
1– See irrigation legend for mainline and lateral line pipe size and type.

2– Direct burial control wires shall be installed in Sch. 40 PVC electrical conduit if required.

3– 2-wire irrigation wire shall be installed in Sch. 40 PVC electrical conduit.

4– Detectable locator tape shall be located six inches (6") above the entire mainline run.

2 IRRIGATION TRENCHING
1 1/2" = 1'-0" — FX-IR-FX-AUXEQ-08

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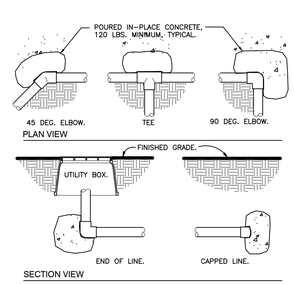
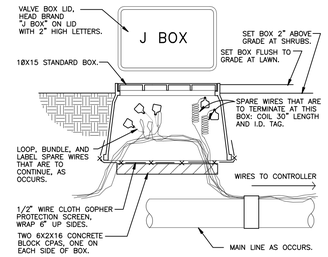
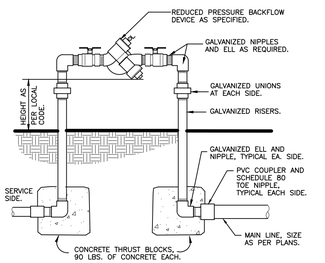


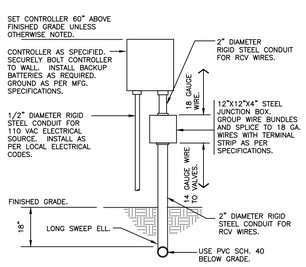
3 THRUST BLOCKING
3/4" = 1'-0" — FX-IR-FX-AUXEQ-11



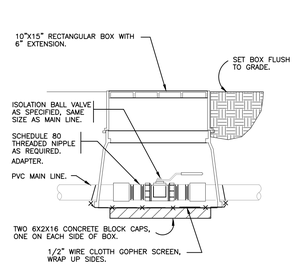
4 WIRE BUNDLE JUNCTION BOX
1 1/2" = 1'-0" — FX-IR-FX-AUXEQ-16



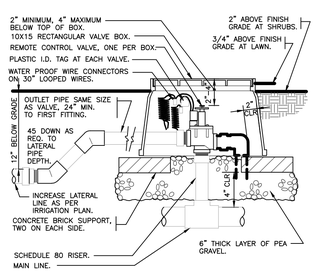
5 REDUCED PRESSURE BACKFLOW DEVICE
1" = 1'-0" — FX-IR-FX-BACK-03



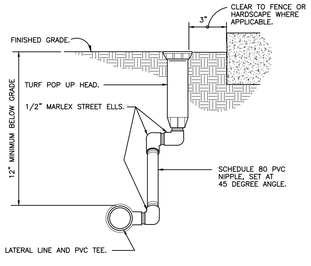
6 WALL MOUNT CONTROLLER
1" = 1'-0" — FX-IR-FX-CONT-08



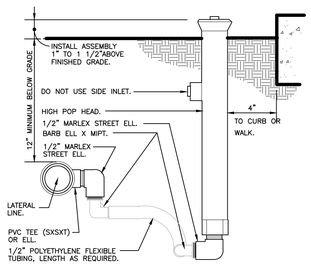
7 BRASS BALL ISOLATION VALVE
1 1/2" = 1'-0" — FX-IR-FX-ISOV-02



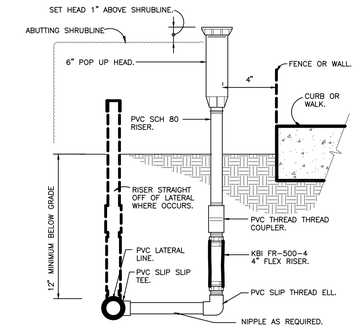
8 ELECTRIC REMOTE CONTROL VALVE
1 1/2" = 1'-0" — FX-IR-FX-RCV-04



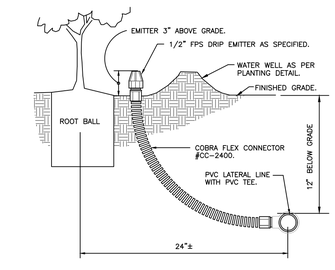
9 TURF SPRAY MARLEX ASSEMBLY
3" = 1'-0" — FX-IR-FX-HEAD-04



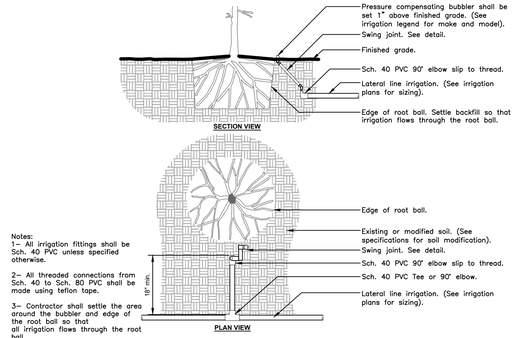
10 SHRUB SPRAY HIGHPOP W/FLEX ASSEMBLY
3" = 1'-0" — FX-IR-FX-HEAD-09



11 SHRUB POP-UP SPRAY ON FIXED RISER
3" = 1'-0" — DETAIL-FILE



12 BUBBLER ON COBRA FLEX HOSE RISER
3" = 1'-0" — FX-IR-FX-HEAD-14



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.

13 IRRIGATION BUBBLER W/ LAYOUT
3/4" = 1'-0" — FX-IR-FX-BUBB-04

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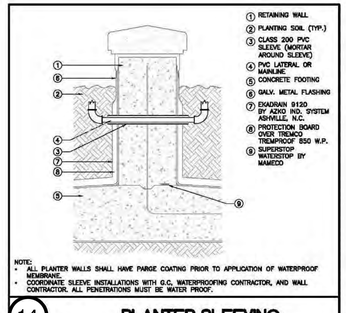
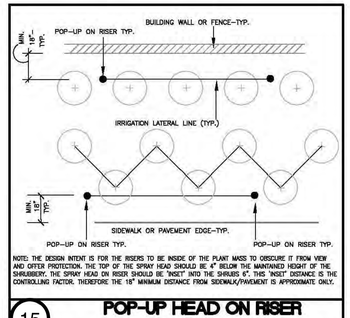


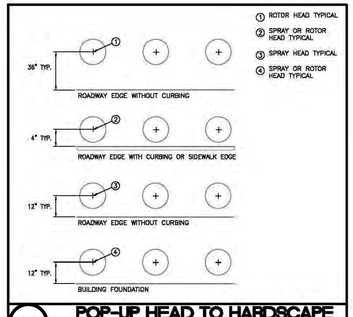
NOTE:
- ALL PLANTER WALLS SHALL HAVE PARGE COATING PRIOR TO APPLICATION OF WATERPROOF MEMBRANE.
- COORDINATE SLEEVE INSTALLATIONS WITH G.C., WATERPROOFING CONTRACTOR, AND WALL CONTRACTOR. ALL PENETRATIONS MUST BE WATER PROOF.

14 PLANTER SLEEVING



NOTE: THE DESIGN INTENT IS FOR THE RISERS TO BE INSIDE OF THE PLANT MASS TO OBSCURE IT FROM VIEW AND OFFER PROTECTION. THE TOP OF THE SPRAY HEAD SHOULD BE 4" BELOW THE MAINTAINED HEIGHT OF THE SHRUBBERY. THE SPRAY HEAD ON RISER SHOULD BE "INSET" INTO THE SHRUBS 6". THIS "INSET" DISTANCE IS THE CONTROLLING FACTOR. THEREFORE THE "18" MINIMUM DISTANCE FROM SIDEWALK/PAVEMENT IS APPROXIMATE ONLY.

15 POP-UP HEAD ON RISER LOCATION DETAIL-B



16 POP-UP HEAD TO HARDSCAPE LOCATION DETAIL-A

SLEEVING SCHEDULE	
PIPE SIZE	SLEEVING PIPE SIZE
3/4"	2"
1"	2"
1-1/4"	3"
1-1/2"	3"
2"	4"
3"	6"
4"	8"
6"	12"
8"	16"

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REGISTERED LANDSCAPE ARCHITECT
HUGH F. JOHNSON
LA0000085
STATE OF FLORIDA

Revision Dates

PDB SUBMITTAL SET

The Tropic Hollywood

Van Jackson LLC
Hollywood, FL

Sheet Description
IRRIGATION DETAILS

Release Date
03-08-2022

Project Number
2135

Drawing Number
L-303

Sheet 4 of 5

WIRING

Irrigation control wire shall be thermoplastic solid copper, single conductor, low voltage irrigation controller wire, suitable for direct burial and continuous operation at rated voltages.

Tape and bundle control wire every 10' and run alongside the mainline. At all turns in direction, make a 2' coil of wire. At all valve boxes coil wire around a ¾" piece of PVC pipe to make a coil using 30 linear inches of wire. Make electrical connections with 3MDBY/R connectors.

Number all wires, using an electrical book of numbers, according to the plans. Number wires in all valve boxes, junction boxes and at the controller.

Wire sized, numbered and colored as follows:

#14 white for common
#14 spare black common
#14 individual color coded hot wire
#14 spare yellow hot wire

Spare wires
Leaving each controller, run four spare wires in both directions (eight spare wires total). Install as 1 common spare (2 total) and 3 hot wires (6 total). Loop these wires into each RCV along their path and terminate in the last valve box controlled by the wires respective controller. The loop into each valve box shall extend up into the valve box a minimum of 8" and be readily accessible by opening the valve box lid. These wires must all be color coded and numbered as required in the plans.

Controller and pump station Control Panel grounding - Contractor to utilize 4"x8"x⅝" copper grounding plates, ⅝"x10' copper clad grounding rods, 'One Strike' CAD wells at all connection points, #6 insulated copper wire, and earth contact material. Install these and other required components as outlined in the detail. Contractor to verify that the earth to ground resistance does not exceed 10 ohms. Contractor shall provide a written certification, on a licensed electrical contractors letter head, showing the date of the test, controller/pump location, and test results. Each controller/pump shall be so grounded an tested. Each component must have its own separate ground grid, unless they are sitting side by side, in which case up to two controllers can share a common grounding grid.

LAYOUT

Lay out irrigation system mainlines and lateral lines. Make the necessary adjustments as required to take into account all site obstructions and limitations prior to excavating trenches.

Stake all sprinkler head locations. Adjust location and make the necessary modifications to nozzle types, etc. required to ensure 100% head to head coverage. Refer to the Edge of Pavement Detail on the Irrigation Detail sheet.

Spray heads shall be installed 4" from sidewalks or curbed roadways and 12" from uncurbed roadways and building foundations. Rotors shall be installed 4" from sidewalks or curbed roadways, 12" from building foundations, and 36" from uncurbed roadways.

Shrub heads shall be installed on ¾" Sch 40 PVC risers. The risers shall be set at a minimum of 18" off sidewalks, roadway curbing, building foundations, and/or any other hardscaped areas. Shrub heads shall be installed to a standard height of 2" above maintained height of plants and shall be installed a minimum of 6" within planted masses to be less visible and offer protection. Paint all shrub risers with flat black or forest green paint, unless irrigation system will utilize reuse water; in this case the risers shall be purple PVC and shall not be painted.

Locate valves prior to excavation. Ensure that their location provides for easy access and that there is no interference with physical structures, plants, trees, poles, etc. Valve boxes must be placed a minimum of 12" and a maximum of 15" from the edge of pavement, curbs, etc. and the top of the box must be 2" above finish grade. No valve boxes shall be installed in turf areas without approval by the irrigation designer - only in shrub beds. Never install in sport field areas.

VALVES

Sequence all valves so that the farthest valve from the POC operates first and the closest to the POC operates last. The closest valve to the POC should be the last valve in the programmed sequence.

Adjust the flow control on each RCV to ensure shut off in 10 seconds after deactivation by the irrigation controller.

Using an electric branding iron, brand the valve ID letter/number on the lid of each valve box. This brand must be 2"-3" tall and easily legible.

EQUIPMENT

All pop-up heads and shrub risers shall be pressure compensating. All pop-up heads shall be mounted on flex-type swing joints. All rotors shall be installed with PVC triple joints unless otherwise detailed.

All sprinkler equipment, not otherwise detailed or specified on these plans, shall be installed as per manufacturer's recommendations and specifications, and according to local and state laws.

TRENCHING

Excavate straight and vertical trenches with smooth, flat or sloping bottoms. Trench width and depth should be sufficient to allow for the proper vertical and horizontal separation between piping as shown in the pipe installation detail on the detail sheet.

Protect existing landscaped areas. Remove and replant any damaged plant material upon job completion. The replacement material shall be of the same genus and species, and of the same size as the material it is replacing. The final determination as to what needs to be replaced and the acceptability of the replacement material shall be solely up to the owner or owner's representative.

INSTALLATION

Solvent Wld Pipe: Cut all pipe square and deburr. Clean pipe an fittings of foreign material; then apply a small amount of primer while ensuring that any excess is wiped off immediately. Primer should not puddle or drip from pipe or fittings. Next apply a thin coat of PVC cement; first apply a thin layer to the pipe, next a thin layer inside the fitting, and finally another very thin on the pipe. Insert the pipe into the fitting. Insure that the pipe is inserted to the bottom of the fitting, then urn the pipe a ¼ turn and hold for 10 seconds. make sure that the pipe doesn't recede from the fitting. If the pipe isn't at the bottom of the fitting upon completion, the glue joint is unacceptable and must be discarded.
Pipes must curwe a minimum of 30 minutes prior to handling and placing into trenches. A longer curing time may be required; refer to the manufacturer's specifications. The pipe must cure a minimum of 24 hous prior to filling with water.

BACK FILL

The back fill 6" below, 6" above, and around all piping shall be clean sand and anything beyond that in the trench can be of native material but nothing larger than 2" in diameter. All piping and excavations shall be backfilled and compacted to a density of 95% modified Proctor, or greater.

Main line pipe depth measure to the top of pipe shall be:

24" minimum for ¾" - 2½" PVC with a 30" minimum at vehicular crossings;
30" minimum for 3" & 4" PVC with a 36" minimum at vehicular crossings.

Lateral line depths measure to top of pipe shall be:

18" minimum for ¾" - 3" PVC with a 30" minimum at vehicular crossings;
24" minimum for 4" PVC and above with a 30" minimum at vehicular crossings.

Contractor shall backfill all piping, both mainline and laterals, prior to performing any pressure tests. The pipe shall be backfilled with the exception of 2' on each side of every joint (bell fittings, 90's, tees, 45's, etc). These joints shall not be backfilled until all piping has satisfactorily passed its appropriate pressure test as outlined below.

FLUSHING

Prior to the placement of valves, flush all mainlines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Prior to the placement of heads, flush all lateral lines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Use screens in heads and adjust heads for proper coverage avoiding excess water on walks, walls and paving.

TESTING

Schedule testing with Owner's Representative a minimum of three (3) days in advance of testing.

Mainline: Remove all remote control valves and cap using a threaded cap on SCH 80 nipple. Hose bibs and gate valves shall not be tested against during a pressure test unless authorized by written permission from the owner. fill mainline with water and pressurize the system to 125 PSI. Monitor the system pressure at two gauge locations; the gauge locations must be at opposite ends of the mainline. With the same respective pressures, monitor the gauges for two hours. There can be no loss in pressure at either gauge for solvent-welded pipe.

If these parameters are exceeded, locate the problem; repair it; wait 24 hours and retry the test. This procedure must be followed until the mainline passes the test.

Lateral lines: The lateral lines must be fully filled to operational pressure and visually checked for leaks. Any leaks detected must be repaired.

Operational Testing - Once the mainline and lateral lines have passed their respective tests, and the system is completely operational, a coverage test and demonstration of the system is required. The irrigation contractor must demonstrate to the owner, or his/her representative, that proper coverage is obtained and the system works automatically from the controller. This demonstration requires each zone to be turned on, in the proper sequence as shown on the plans, from the controller. Each zone will be inspected for proper coverage and function. The determination of proper coverage and function is at the sole discretion of the owner or owner's representative.

Upon completion of the operational test, run each zone until water begins to puddle or run off. This will allow you to determine the number of irrigation start times necessary to meet the weekly evapotranspiration requirements of the planting material in each zone. In fine sandy soils, it is possible no puddling will occur. If this is experienced, then theoretical calculations for run times will be required for controller programming.

SUBMITTALS

Pre-Construction: Deliver five (5) copies of submittals to Owner's Representative within ten (10) working days from date of Notice to Proceed. Furnish information in 3-ring binder with table of contents and index sheet. Index sections for different components and label with specification section number and name of component. Furnish submittals for components on material list. Indicated which items are being supplied on catalog cut sheets when multiple items are shown on one sheet. Incomplete submittals will be returned without review. in lieu of hardcopies, an electronic package in PDF format can be submitted.

After project completion:
As a condition of final acceptance, the irrigation contractor shall provide the owner with:

1. Irrigation As-builts - shall be provided accurately locating all mainlines, sleeves, remote control valves, gate valves, independent wire runs, wire splice boxes, controllers, high voltage supply sources/conduit path, control mechanisms, sensors, wells and water source connections. All mainline and independent runs of wire shall be located every 30' for straight runs and at every change of direction. Sleeves will be located at end points and every 20' of length. All underground items shall include depth in inch format.

2. Controller charts - Upon completion of "as-built" prepare controller charts; one per controller. Indicate on each chart the area controlled by a remote control valve (using a different color for each zone). This chart shall be reduced to a size that will fit inside the controller door. The reduction shall be hermetically sealed inside two 2ml pieces of clear plastic.

3. Grounding Certification - Provide ground certification results for each controller and pump panel grounding grid installed. This must be on a licensed electrician letter head indication location tested (using IR plan symbols), date, time, test method and testing results.

INSPECTIONS AND COORDINATION MEETINGS REQUIRED - Contractor is required to schedule, perform, and attend the following, and demonstrate to the owner and/or owners representative to their satisfaction, as follows:

1.Pre-construction meeting - Designer and contractor to review entire install process and schedule with owner/general contractor.
2. Mainline installation inspection(s) - All mainline must be inspected for proper pipe, fittings, depth of coverage, backfill and installation method.
3. Mainline pressure test - All mainline shall be pressure tested according to this design's requirements.
4. Flow meter calibration - All flow meters must be calibrated. Provide certified calibration report for all flow meters.
5. Coverage and operational test
6. Final inspection
7. Punch list inspection

FINAL ACCEPTANCE

Final acceptance of the irrigation system will be given after the following documents and conditions have been completed and approved. Final payment will not be released until these conditions are satisfied.

1.All above inspections are completed, documented, approved by owner.
2.Completion and acceptance of 'as-built' drawings.
3. Acceptance of required controller charts and placement inside controllers.
4. All other submittals have been made to the satisfaction of the owner.

GUARANTEE: The irrigation system shall be guaranteed for a minimum of one calendar year from the time of final acceptance.

MINIMUM RECOMMENDED
IRRIGATION MAINTENANCE PROCEDURES

1. Every irrigation zone should be checked monthly and written reports generated describing the date(s) each zone was inspected, problems identified, date problems repaired, and a list of materials used in the repair. At minimum, these inspections should include the following tasks:

A. Turn on each zone from the controller to verify automatic operation.

B. Check schedules to ensure they are appropriate for the season, plant and soil type, and irrigation method. Consult an I.A. certified auditor for methods used in determining proper irrigation scheduling requirements.

C. Check remote control valve to ensure proper setting, if present.

D. Check setting on pressure regulator it verify proper setting, if present.

E.Check flow control and adjust as needed; ensure valve closure within 10-15 seconds after deactivation by controller.

F. Check for leaks - mainline, lateral lines, valves, heads, etc.

G. Check all heads as follows:
1. Proper set height (top of sprinkler is 1" below mow height
2. Verify head pop-up height - 6" in turf, 12" in groundcover, and riser in shrub beds
3. Check wiper seal for leaks - if leaking , clean head and re-inpect.
4. If still leaking, replace head with the appropriate head with pressure regulator and built-in check valve.
5. All nozzles checked for proper pattern, clogging, leaks, correct make & model, etc. - replace as needed
6. Check for proper alignment - perfectly vertical; coverage area is correct;p minimize over spray onto hardscapes
7. Riser height raised/lowered to accommodate plant growth patterns and ensure proper coverage.
8. Verify pop-ups retract after operation. If not, repair/replace as needed.

H. Check controller/C.C.U. grounds for resistance (10 ohms or less) once per year. Submit written reports.

I. check rain shut-off device monthly and clean/repair/replace as needed.

J. Inspect all valve boxes to ensure they are in good condition, lids are in place and locked.

K. Inspect backflow devices by utilizing a properly licensed backflow inspector. This should be done annually, at minimum.

L. Inspect all filters monthly and clean/repair/replace as needed.

M. Check pump stations fpr proper operation, pressures, filtration, settings, etc. - refer to pump station operations manual.

N. Check and clean intake screens on all suction lines quarterly, at minimum. Clean and/or repair, as needed.

O. Winterize, if applicable, as weather in your area dictates. follow manufacturer recommendations and blow out all lines and equipment using compressed air. Perform seasonal startup of system as per manufacturer recommendations.

P. Conduct additional inspections, maintenance tasks, etc. that are particular for your site.

SOIL MOISTURE SENSOR (When applicable)

1. Place all soil moisture sensor wiring in 1" SCH 40 PVC conduit

2. Soil moisture sensor should be placed in the middle of a spray or drip area as per manufacturer's recommendations.

3. Controller shall be set to the Florida Automated Weather Network's urban scheduler settings using the SMS as a moisture cut off device (like a rain switch) per manufacturer directions.

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Revision Dates

PDB SUBMITTAL SET
The Tropic Hollywood
Van Jackson LLC
Hollywood, FL

Sheet Description
IRRIGATION NOTES

Release Date
03-08-2022

Project Number
2135

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L-304
Sheet 5 of 5