

# RAW WATER PIPELINE PROJECT

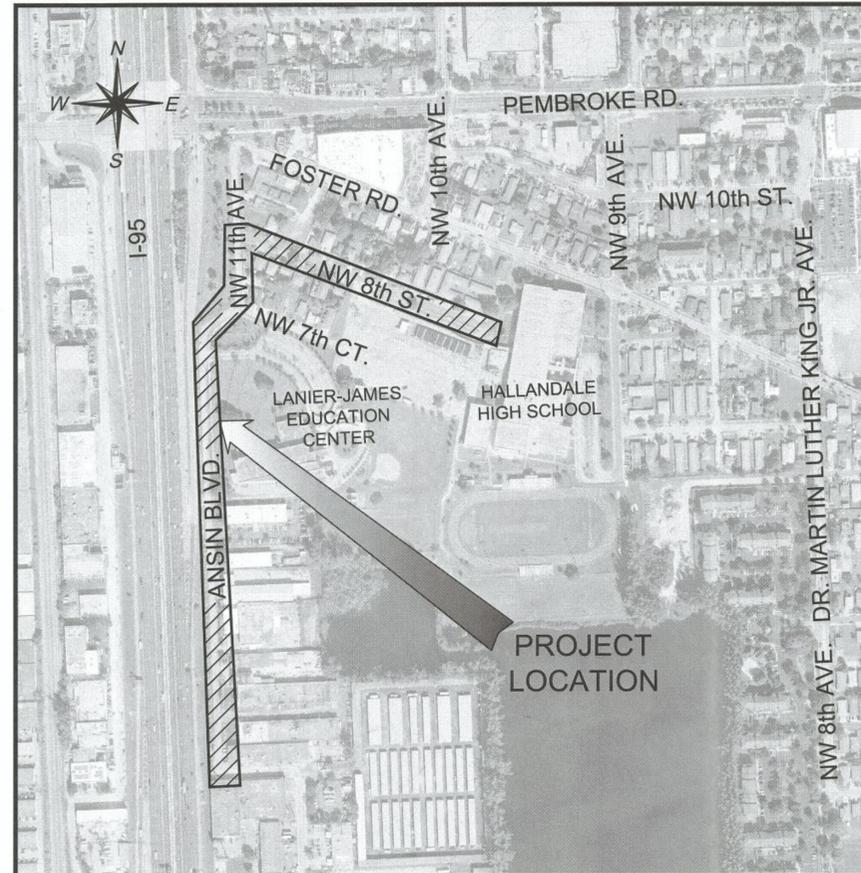
## HALLANDALE BEACH, FLORIDA



### CITY OFFICIALS

MAYOR: JOY COOPER  
 VICE MAYOR: SABRINA JAVELLANA  
 COMMISSIONERS: ANABELLE LIMA-TAUB  
 MIKE BUTLER  
 MICHELE LAZAROW  
 CITY MANAGER: GREG CHAVARRIA

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LOCATION MAP

Scale: 1" = 300'

SECTION 21, TOWNSHIP 51S, RANGE 42E

Calvin, Giordano & Associates, Inc.  
Approved for Bidding

By: *[Signature]*  
Date: 3/11/2020

NOTES:

- RESPONSIBILITY FOR THE USE OF THESE PLANS FOR ANY PURPOSE PRIOR TO SECURING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THIS PROJECT WILL FALL SOLELY UPON THE USER.
- AN ELECTRONIC CAD FILE WILL BE PROVIDED FOR SURVEY LAYOUT.

BENCHMARK:

ELEVATIONS AS SHOWN HEREON ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS PER NATIONAL GEODETIC SURVEY DESIGNATION MORRIS AZ MK, ELEVATION = 12.30' (NAVD88), BEING A 4" DISK IN CONCRETE SIDEWALK, 62 FEET WEST OF THE CENTERLINE OF NW 9TH AVENUE, 23 FEET SOUTHWEST OF AND LEVEL WITH THE CENTERLINE OF FOSTER ROAD.

BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION



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File Name: P:\Projects\2016\168470 Raw Water Pipeline Project\cadd Files\Drawings\168470-G-COVER.dwg - (Plotted by: Katharine Kupsky on Wednesday, March 4, 2020 1:50:51 PM)

| PERMITTING AGENCIES  | DATE SUBMITTED | CGA INITIALS | DATE APPROVED | PERMIT NUMBER  |
|--|----------------|--------------|---------------|----------------|
| BROWARD COUNTY TRAFFIC ENGINEERING DIVISION  | 01/14/20       | JDM          | 02/10/20      | 200115060      |
| FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AGENCY - SOUTHEAST DISTRICT                 | 01/16/20       | JDM          | 01/23/20      | 0131028-082-DS |
| CITY OF HALLANDALE BEACH PUBLIC WORKS AND ENGINEERING (BY CONTRACTOR)                      |                |              |               |                |
| SOUTH FLORIDA WATER MANAGEMENT DISTRICT DEWATERING PERMIT (BY CONTRACTOR)                  |                |              |               |                |
| FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION CONSTRUCTION GENERIC PERMIT (BY CONTRACTOR) |                |              |               |                |

| NO | DATE | REVISION | BY | NO | DATE | REVISION | BY |
|----|------|----------|----|----|------|----------|----|
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|                       |   |                     |
|-----------------------|---|---------------------|
| CURRENT REV No.: ---- | JAMES D. MESSICK, P.E.<br>STATE OF FLORIDA PROFESSIONAL ENGINEER<br>LICENSE No. 70870<br>DATE: 03/06/20 | SHEET:<br><b>G1</b> |
|-----------------------|---|---------------------|

File Name: P:\Projects\2016\168470 Raw Water Pipeline Project\cadd Files\Drawings\168470-G-LND-ABBR.dwg - (Plotted by: Katherine Kupsky on Friday, March 13, 2020 11:52:03 AM)

**ABBREVIATION LEGEND**

|        |                                     |
|--------|-------------------------------------|
| ARV    | AIR RELEASE VALVE                   |
| BE     | BURIED ELECTRIC                     |
| BFP    | BACKFLOW PREVENTER                  |
| BFV    | BUTTERFLY VALVE                     |
| BM     | BENCHMARK                           |
| BOP    | BOTTOM OF PIPE                      |
| BSP    | BACTERIOLOGICAL SAMPLING POINT      |
| CAP    | CORRUGATED ALUMINUM PIPE            |
| CB     | CATCH BASIN                         |
| CI     | CURB INLET                          |
| CIP    | CAST IRON PIPE                      |
| CLF    | CHAIN LINK FENCE                    |
| CMP    | CORRUGATED METAL PIPE               |
| CO     | CLEANOUT                            |
| CONC   | CONCRETE                            |
| DE     | DRAINAGE EASEMENT                   |
| DIP    | DUCTILE IRON PIPE                   |
| E      | EAST                                |
| EL     | ELEVATION                           |
| EOW    | EDGE OF WATER                       |
| EXIST  | EXISTING                            |
| EXFILT | EXFILTRATION                        |
| FF EL  | FINISHED FLOOR ELEVATION            |
| FH     | FIRE HYDRANT                        |
| FM     | FORCE MAIN                          |
| GALV   | GALVANIZED                          |
| GV     | GATE VALVE                          |
| HORZ   | HORIZONTAL                          |
| H.P.   | HIGH POINT                          |
| INV    | INVERT                              |
| JB     | JUNCTION BOX                        |
| LF     | LINEAR FEET                         |
| MAX    | MAXIMUM                             |
| MH     | MANHOLE                             |
| MIN    | MINIMUM                             |
| MJ     | MECHANICAL JOINT                    |
| N      | NORTH                               |
| NIC    | NOT INCLUDED                        |
| NTS    | NOT TO SCALE                        |
| NGVD   | NATIONAL GEODETIC VERTICAL DATUM    |
| OE     | OVERHEAD ELECTRIC                   |
| PCAP   | PERFORATED CORRUGATED ALUMINUM PIPE |
| PRB    | POLLUTION RETARDANT BAFFLE          |
| PROP   | PROPOSED                            |
| PSI    | POUNDS PER SQUARE INCH              |
| PV     | PLUG VALVE                          |
| PVC    | POLYVINYL CHLORIDE                  |
| PW     | PRODUCTION WELL                     |
| R      | RADIUS                              |
| RCP    | REINFORCED CONCRETE PIPE            |
| RCW    | RECLAIMED WATER                     |
| RED    | REDUCER                             |
| R/W    | RIGHT-OF-WAY                        |
| S      | SOUTH                               |
| SAN    | SANITARY                            |
| SB     | SOIL BORING                         |
| STA    | STATION                             |
| TOB    | TOP OF BANK                         |
| TOP    | TOP OF PIPE                         |
| TYP    | TYPICAL                             |
| UE     | UTILITY EASEMENT                    |
| VERT   | VERTICAL                            |
| W      | WEST                                |
| WM     | WATER MAIN                          |

**LINE TYPE LEGEND**

|  |                                      |
|--|--------------------------------------|
|  | LOT LINE                             |
|  | SECTION LINE                         |
|  | R/W LINE                             |
|  | PROPERTY LINE                        |
|  | CENTERLINE                           |
|  | NVAL                                 |
|  | EXIST. CHAIN LINK FENCE              |
|  | GUARDRAIL                            |
|  | EXISTING WOOD FENCE                  |
|  | EXISTING PICKET FENCE                |
|  | TO BE REMOVED/REPLACED               |
|  | WATER PIPE TO BE REMOVED/REPLACED    |
|  | SANITARY PIPE TO BE REMOVED/REPLACED |
|  | FPL LINE TO BE REMOVED/REPLACED      |
|  | ATT/CONDUIT TO BE REMOVED            |
|  | EXISTING 8" SANITARY SEWER           |
|  | EXISTING WATER MAIN                  |
|  | EXISTING STORM SEWER                 |
|  | EXISTING FORCE MAIN                  |
|  | EXISTING FIRE MAIN                   |
|  | EXISTING IRRIGATION                  |
|  | EXISTING OXYGEN                      |
|  | EXISTING UNDERGROUND POWER           |
|  | EXISTING NATURAL GAS                 |
|  | EXISTING CONDENSATION                |
|  | EXISTING BURIED FIBER OPTIC          |
|  | EXISTING UNDERGROUND COMCAST         |
|  | EXISTING OVERHEAD COMCAST            |
|  | EXISTING CHILLER                     |
|  | EXISTING BURIED TELPHONE             |
|  | EXISTING FUEL LINE                   |
|  | EXISTING OVERHEAD ELECTRIC           |
|  | EXISTING OVERHEAD WIRE               |
|  | EXISTING UNDERGROUND ELECTRIC        |
|  | EXISTING UNKNOWN UTILITY             |
|  | EXISTING ATT RETIRED IN PLACE        |
|  | EXISTING RAW WATER PIPE              |

**PROPOSED SYMBOL LEGEND**

|  |                                |
|--|--------------------------------|
|  | AIR RELEASE VALVE              |
|  | BACTERIOLOGICAL SAMPLE POINT   |
|  | WATER METER                    |
|  | FIRE HYDRANT                   |
|  | FIRE DEPARTMENT CONNECTION     |
|  | SINGLE WATER SERVICE           |
|  | DOUBLE WATER SERVICE           |
|  | BACKFLOW PREVENTER             |
|  | DOUBLE DETECTOR CHECK VALVE    |
|  | BLOWOFF                        |
|  | REDUCER                        |
|  | GATE VALVE                     |
|  | 90°, 45°, 22.5° & 11.25° BENDS |
|  | TEE                            |
|  | CROSS                          |
|  | PLUG                           |
|  | BLOWOFF                        |
|  | VERTICAL BENDS                 |
|  | SANITARY FLOW DIRECTION        |
|  | CLEAN OUT                      |
|  | SINGLE SANITARY LATERAL        |
|  | DOUBLE SANITARY LATERAL        |
|  | CONFLICT ID                    |
|  | DRAINAGE FLOW                  |
|  | SPOT GRADE                     |
|  | SIGN                           |
|  | CATCH BASIN                    |
|  | MANHOLE                        |
|  | CLEANOUT                       |
|  | SLOTTED DRAIN                  |
|  | STORM YARD DRAIN               |
|  | P5 STORM INLET                 |
|  | P6 STORM INLET                 |
|  | EXFILTRATION TRENCH            |
|  | HEADWALL                       |
|  | MITERED END - RCP              |
|  | MITERED END - HDPE             |
|  | HAY BALES                      |
|  | ROCK BAGS W/ HAY BALES         |
|  | SILT BARRIER FENCE             |

**EXISTING SYMBOL LEGEND**

|  |                              |
|--|------------------------------|
|  | EXISTING SPOT ELEVATION (FT) |
|  | GUY ANCHOR                   |
|  | FPL MANHOLE                  |
|  | CONC. LIGHT POLE             |
|  | CONC. UTILITY POLE           |
|  | CONC. SIGNAL POLE            |
|  | COMMUNICATION MH             |
|  | COMMUNICATION RISER          |
|  | CABLE TV MANHOLE             |
|  | CABLE TV RISER               |
|  | ELEC. HANDHOLE               |
|  | FPL TRANSFORMER              |
|  | GAS METER                    |
|  | LIGHT POLE                   |
|  | TRAFFIC CONTROL BOX          |
|  | WOOD POWER POLE              |
|  | GAS VALVE                    |
|  | SEWER VALVE                  |
|  | WATER VALVE                  |
|  | GATE VALVE                   |
|  | CLEANOUT                     |
|  | FIRE HYDRANT                 |
|  | REDUCER                      |
|  | IRRIGATION VALVE             |
|  | SANITARY MANHOLE             |
|  | FIRE DEPARTMENT              |
|  | CATCH BASIN                  |
|  | GROUND/LANDSCAPING LIGHTING  |
|  | SIGN                         |
|  | WATER METER                  |
|  | STORM MANHOLE                |
|  | LIGHT POLE                   |
|  | ELECTRIC MANHOLE             |

**GENERAL CONSTRUCTION NOTES:**

**BCTED REF #200115060**

- CONTRACTOR IS ADVISED THAT WORK BY OTHERS MAY TAKE PLACE DURING THE DURATION OF THE CONTRACT TIME.
- CONTRACTOR SHALL PREPARE AND SUBMIT MAINTENANCE OF TRAFFIC (MOT) PLANS TO CITY OF HALLANDALE BEACH FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK. SPECIFIC AGENCY MOT REQUIREMENTS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR'S MOT PLAN SHALL REOPEN THE ROADWAY TO TRAFFIC AT THE END OF EACH WORK PERIOD. IF EXTENDED LANE CLOSURES ARE REQUIRED THEY MUST BE SUBMITTED TO THE CITY 2 WEEKS IN ADVANCE OF THE ANTICIPATED CLOSURE AND GRANTED APPROVAL FROM THE CITY, IN WRITING.
- CONTRACTOR SHALL NOT WORK BEFORE 8:30 AM OR AFTER 4:30 PM. WORKING HOURS ARE MONDAY THRU FRIDAY FROM 8:30 AM TO 4:30 PM. NO WORK SHALL BE PROPOSED ON WEEKENDS OR HOLIDAYS.
- CONTRACTOR SHALL MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS TO PRIVATE PROPERTY AND SCHOOLS AT ALL TIMES.
- CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND ELEVATIONS BEFORE STARTING CONSTRUCTION.
- THE CONTRACTOR MUST USE EXTREME CARE TO AVOID DAMAGE OR DISRUPTION TO ANY EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT. ALL PLAN LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.
- PRIOR TO CONSTRUCTION, CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA AT 811 AND ALL OTHER PARTICIPATING UTILITIES AT LEAST TWO FULL BUSINESS DAYS PRIOR TO CONSTRUCTION FOR FIELD MARKUP LOCATIONS OF EXISTING UTILITIES AND FACILITIES.
- THE CONTRACTOR MUST INFORM THE CITY AT LEAST TWO BUSINESS DAYS IN ADVANCE OF CONSTRUCTION, IN WRITING, IF ANY CONFLICT IS DISCOVERED DURING POT HOLE OPERATIONS FOR CLARIFICATION.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE CITY'S UTILITIES DEPARTMENT AT LEAST TWO BUSINESS DAYS IN ADVANCE TO COORDINATE ANY ACTIVITY TO BE PERFORMED BY THE CITY'S UTILITIES DEPARTMENT.
- CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE OF THE PROJECT AREA. IF DISTURBED, CONTRACTOR SHALL REPAIR TO EQUAL OR BETTER WITH APPROVAL OF PROPERTY OWNER.
- CONTRACTOR SHALL COMPLY WITH ALL CITY OF HALLANDALE BEACH REGULATIONS PERTAINING TO THE CLOSING OF PUBLIC STREETS FOR USE OF TRAFFIC DURING CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE WITH BROWARD COUNTY PUBLIC SCHOOLS AND PROVIDE A DETAILED CONSTRUCTION SCHEDULE AND MAP SHOWING DRIVEWAY CLOSURES AND PREDICTED TIMELINE PRIOR TO CONSTRUCTION.
- DEWATERING PUMPS SHALL BE ENCLOSED AND "HOSPITAL QUIET" (DOES NOT EXCEED LOCAL NOISE ORDINANCE LIMITS). CONTRACTOR SHALL TAKE ANY ADDITIONAL MEASURES AS NECESSARY FOR NOISE ABATEMENT. CONTRACTOR SHALL SET UP THEIR BYPASS SYSTEM ONCE WORK COMMENCES.
- NO CONNECTIONS FOR THE PURPOSE OF OBTAINING WATER SUPPLY DURING CONSTRUCTION SHALL BE MADE TO ANY FIRE HYDRANT OR BLOW-OFF STRUCTURE WITHOUT FIRST OBTAINING WRITTEN PERMISSION AND A CONSTRUCTION METER FROM CITY OF HALLANDALE BEACH.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, PROTECTING, RELOCATING, OR REPLACING ALL WATER SERVICES OR SEWER LATERALS WHICH ARE DAMAGED DURING CONSTRUCTION. A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A WRITTEN PLAN FOR WATER SERVICE AND WASTEWATER SERVICE DISRUPTION FOR APPROVAL AT LEAST SEVEN (7) CALENDAR DAYS PRIOR TO THE ANTICIPATED DISRUPTION. THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNERS 48 HOURS IN ADVANCE OF ANY WORK ON THEIR SERVICES.
- STATIONS SHOWN ON THE DRAWINGS ARE BASED ON THE ESTABLISHED BASELINE AND SHALL NOT BE CONSIDERED AS DISTANCES OR AS A MEASURE OF THE LINEAR FOOTAGE OF PIPE TO BE INSTALLED.
- ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAY OR WALKWAY SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
- TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS SHALL NOT BE LEFT OPEN DURING NIGHT TIME HOURS OR ON WEEKENDS AND HOLIDAYS WITHOUT ADEQUATE PROTECTION AND WRITTEN APPROVAL FROM THE CITY.
- CONTRACTOR SHALL PROMPTLY REPAIR AND RESTORE EXISTING PAVEMENT, SIDEWALKS, CURBS, DRIVEWAYS, PIPES, RESIDENTIAL AND COMMERCIAL SPRINKLER LINES, CONDUIT, CABLES, ETC. AND LANDSCAPE AREAS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES IN A TIMEFRAME DICTATED BY THE CITY.
- CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AS REQUIRED BY AGENCIES HAVING JURISDICTION OVER THE PROJECT AND/OR WHEN REQUIRED FOR PUBLIC SAFETY.
- THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF WORK, FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES FROM DAMAGE OR DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
- CONTRACTOR SHALL ADJUST TO GRADE ALL EXISTING UTILITY CASTINGS INCLUDING VALVE BOXES, MANHOLES, HAND HOLES, PULL BOXES, INLETS AND SIMILAR STRUCTURES IN CONSTRUCTION AREAS TO BE RESURFACED OR OVERLAID WITH ASPHALT.
- CONTRACTOR SHALL RESTORE EXISTING PAVEMENT MARKINGS/SIGNAGE DISTURBED BY CONSTRUCTION ACTIVITIES.

BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION



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**RAW WATER PIPELINE PROJECT**

HALLANDALE BEACH, FLORIDA

**LEGEND, ABBREVIATIONS, AND GENERAL NOTES**

JAMES D. MESSICK, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE No. 70870

DATE: 03/06/20

|             |          |       |    |
|-------------|----------|-------|----|
| SCALE       | AS SHOWN | SHEET | G2 |
| PROJECT No. | 168470   |       |    |

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I. APPLICABLE CODES

- A. GENERAL: ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF CITY OF HALLANDALE BEACH... B. CONSTRUCTION SAFETY: ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER... C. TRENCH SAFETY ACT: C.1. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLIANCE WITH THE STATE OF FLORIDA TRENCH SAFETY ACT...

II. PRECONSTRUCTION RESPONSIBILITY

- A. UPON RECEIPT OF NOTICE OF AWARD, THE CONTRACTOR SHALL ARRANGE A PRECONSTRUCTION CONFERENCE TO INCLUDE THE OWNER, THE ENGINEER, BROWARD COUNTY PUBLIC SCHOOLS, AND THE AGENCIES HAVING JURISDICTION (AHJ) OR AFFECTED UTILITIES WITHIN THE PROJECT AFTER OBTAINING A CONSTRUCTION PERMIT FROM CITY OF HALLANDALE BEACH...

III. INSPECTIONS

- A. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER OF RECORD AT LEAST 24 HOURS PRIOR TO THE INSPECTION OF THE FOLLOWING ITEMS: A.1. RAW AND DOMESTIC WATER SYSTEM A.2. SUBGRADE, SUBMIT AND HAVE APPROVED DENSITIES PRIOR TO PLACEMENT OF ROCK...

IV. SHOP DRAWINGS

- A. PRIOR TO ISSUANCE OF A CONSTRUCTION PERMIT, A MATERIAL LIST SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD AND BY THE OWNER FOR VALVES, PIPING, AND OTHER ACCESSORIES. B. ANY PRODUCT THAT IS NOT ON THIS LIST MUST BE APPROVED IN ADVANCE BY THE ENGINEER OF RECORD AND THE OWNER...

V. TEMPORARY FACILITIES

- A. TEMPORARY UTILITIES: A.1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES, AND ELECTRICITY TO THEIR EMPLOYEES AND SUBCONTRACTORS FOR THEIR USE DURING CONSTRUCTION. A.2. OBTAIN CONSTRUCTION METER FOR ALL WATER USED ON JOB...

VI. PROJECT CLOSE OUT

- A. CLEANING UP: A.1. DURING CONSTRUCTION, THE PROJECT SITE AND ALL ADJACENT AREAS SHALL BE MAINTAINED IN A NEAT AND CLEAN MANNER. UPON FINAL CLEAN UP, THE PROJECT SITE SHALL BE LEFT CLEAR OF ALL SURPLUS MATERIAL OR TRASH... B. PROJECT RECORD DOCUMENTS: B.1. THE CONTRACTOR SHALL MAINTAIN ACCURATE AND COMPLETE RECORDS OF ALL WORK ITEMS COMPLETED...

- B.4. "AS-BUILT" INFORMATION ON THE WATER SYSTEM SHALL INCLUDE, BUT IS NOT LIMITED TO LOCATIONS OF ALL VALVES, FITTINGS, FIRE HYDRANTS AND WATER SERVICES AND TOP-OF-PIPE ELEVATIONS. B.5. UPON A FINAL INSPECTION BY CITY OF HALLANDALE BEACH, THE CONTRACTOR SHALL SUBMIT TO THE CITY THREE (3) SETS OF "AS-BUILT" CONSTRUCTION DRAWINGS THAT HAVE BEEN CERTIFIED, SIGNED, AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR...

VII. RAW AND POTABLE WATER DISTRIBUTION AND/OR SEWAGE FORCE MAIN SYSTEM

- A. GENERAL: A.1. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER OF RECORD NO LATER THAN 72 HOURS PRIOR TO MAKING CONNECTIONS TO EXISTING SYSTEMS... A.2. SEPARATION OF WATER AND SEWER MAINS SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST REVISION OF THE FLORIDA ADMINISTRATIVE CODE... A.3. NO CONNECTIONS TO THE EXISTING LINES SHALL BE MADE UNTIL PRESSURE TESTS FOR THE WATER MAINS AND BACTERIOLOGICAL TESTS HAVE BEEN PERFORMED AND THE SYSTEM IS ACCEPTABLE TO CITY OF HALLANDALE BEACH AND FDP (SE DISTRICT) HEALTH DEPARTMENT...

B. MATERIALS:

- B.1. PIPE: B.1.1. RAW WATER MAIN SHALL BE DUCTILE IRON PIPE (DIP). THE POTABLE WATER MAIN AND/OR SEWAGE FORCE MAIN SHALL BE EITHER POLYVINYL CHLORIDE (PVC) OR DUCTILE IRON PIPE (DIP). B.1.2. PVC PIPE SHALL BE ASTM 1120 PRESSURE PIPE WITH IRON O.D., CLASS 150 (OR 18), CONFORMING TO ANS/AWWA C900-97 OR C905-97 AND SHALL HAVE PUSH RUBBER GASKET JOINTS... B.2. FITTINGS: B.2.1. FITTINGS SHALL BE DUCTILE IRON COMPACT MECHANICAL JOINT AND SHALL BE CLASS 350 THROUGH 24" CONFORMING TO ANS/AWWA C153/A21.53-00, OR LATEST REVISION, AND CLASS 250 IN SIZES 24" AND LARGER, CONFORMING TO ANS/AWWA C110/A21.10-03, OR LATEST REVISION, COMPLETE WITH GLANDS, GASKETS, BOLTS AND NUTS...

- B.3.2.2. RAW AND POTABLE WATER MAIN AIR RELEASE VALVES - VALVE BODY AND COVER SHALL BE OF DUCTILE IRON CONSTRUCTION. ALL INTERNAL WORKING PARTS SHALL BE OF STAINLESS STEEL, ASTM A240, TYPE 304 FOR THE FLANGES AND ASTM A276 - TYPE 316 FOR THE LININGS. THE VENTING ORIFICE SHALL BE 3/32" IN DIAMETER WITH BRASS SEAT. THE INLET OPENING SHALL BE A 2" NPT SCREWED CONNECTION. THE OVERALL HEIGHT SHALL NOT EXCEED 23 INCHES.

B.4. FIRE HYDRANTS:

- B.4.1. FIRE HYDRANTS SHALL HAVE A MINIMUM 5 1/4" VALVE OPENING AND SHALL OPEN AGAINST THE PRESSURE AND CLOSE WITH THE FLOW. HYDRANTS SHALL MEET OR EXCEED ANS/AWWA C502-05, C503-05 OR LATEST REVISION, AND SHALL COMPLY WITH FACTORY MUTUAL RESEARCH CORPORATION AND UNDERWRITERS LABORATORIES UL246 STANDARD. B.4.2. A BLUE REFLECTIVE PAVEMENT MARKER SHALL BE PROVIDED IN THE CENTER OF THE NEAREST LANES OF ROAD PAVEMENT ADJACENT TO ALL FIRE HYDRANT LOCATIONS...

B.5. DETECTOR TAPE:

- B.5.1. DETECTOR TAPE SHALL BE 3" WIDE BLUE TAPE FOR RAW AND POTABLE WATER MAIN AND GREEN TAPE FOR FORCE MAIN, WITH A METALLIZED POLY CARBON LAMINATED BETWEEN 2 LAYERS OF PLASTIC FILM. THE WORDS "CAUTION WATER LINE BURIED BELOW" OR "CAUTION WATER LINE BURIED BELOW" SHALL BE PRINTED AT 30" INTERVALS ALONG THE TAPE. TAPE SHALL BE PLACED 18" BELOW GRADE ABOVE ALL PVC MAINS AND SERVICES OR AS RECOMMENDED BY MANUFACTURER... B.6. SERVICE CONNECTIONS: B.6.1. SERVICE SADDLES SHALL BE DUCTILE IRON EPOXY OR NYLON COATED WITH DOUBLE STAINLESS STEEL STRAPS...

B.9. RETAINER GLANDS:

- B.9.1. RETAINER GLANDS SHALL CONFORM TO ANS/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.

B.10. DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY:

- B.10.1. THE ASSEMBLY SHALL CONFORM TO ANS/AWWA C510-97, OR LATEST REVISION, AND CAPABLE OF WITHSTANDING A WORKING PRESSURE OF AT LEAST 150 PSI WITHOUT DAMAGE TO WORKING PARTS OR IMPAIRMENT OF FUNCTION. IT SHALL CONSIST OF TWO INTERNALLY LOADED, INDEPENDENTLY OPERATING CHECK VALVES, LOCATED BETWEEN TWO THIRTY CLOSING RESILIENT-SEATED SHUT OFF VALVES, WITH FOUR PROPERLY PLACED RESILIENT-SEATED TEST COCKS.

C. INSTALLATION:

- C.1. BEDDING: C.1.1. BEDDING AND INITIAL BACKFILL (12 INCHES ABOVE PIPE) FOR ALL PIPES SHALL BE ROCK NO LARGER THAN 1" IN DIAMETER. PEA ROCK OR 3/4" WASHED ROCK WILL BE IN WATER OR WHERE UNSUITABLE BEDDING EXISTS AT THE DISCRETION OF THE OWNER... C.2. DUCTILE IRON PIPE: C.2.1. DIP SHALL BE INSTALLED IN ACCORDANCE WITH ANS/AWWA C600-05 OR LATEST REVISION AND SHALL BE THICKNESS CLASS 52. ALL BOLTS, NUTS, AND WASHERS SHALL BE 316 STAINLESS STEEL... C.2.2. DIP SHALL BE INSTALLED WITH A MINIMUM OF 30" COVER, UNLESS OTHERWISE SHOWN ON PLANS... C.2.3. IDENTIFICATION TAPE SHALL BE INSTALLED THE FULL LENGTH OF ALL DIP MAINS APPROXIMATELY 18" ABOVE THE MAIN, COLOR SIDE UP... C.2.4. DUCTILE IRON PIPE AND FITTING INSTALLATIONS IN PROJECT AREA SHALL BE FULLY ENCASED IN AN 8 MIL POLYETHYLENE SLEEVE IN ACCORDANCE WITH ANS/AWWA C105/A21.5 METHOD "A"...

C.3. VALVES:

- C.3.1. ALL VALVES SHALL BE INSTALLED WITH ADJUSTABLE CAST IRON VALVE BOXES WITH THE WORD "RAW", "WATER" OR "SEWER" CAST IN THE COVER. C.3.2. MAIN VALVES SHALL BE LOCATED ON AN EXTENSION OF THE RIGHT-OF-WAY LINE UNLESS DIMENSIONED OTHERWISE... C.3.3. MAIN VALVES SHALL BE INSTALLED AWAY FROM PARKING AREAS. IF THIS IS UNAVOIDABLE, PROPER MEASURES SHALL BE TAKEN TO AVOID THE PARKING OF VEHICLES OVER THE VALVES... C.3.4. THE DISTANCE FROM THE TOP OF THE VALVE ACTUATOR NUT TO FINAL GRADE SHALL BE A MINIMUM OF 12 INCHES AND A MAXIMUM OF 18 INCHES...

C.4. SERVICE LINES:

- C.4.1. COVER OVER SERVICE LINES SHALL BE 18 INCHES MINIMUM, 24 INCHES MAXIMUM BELOW FINISHED GRADE AND 36 INCHES UNDER PAVEMENT. C.4.2. POLYETHYLENE SHALL BE BEDDED IN BACKFILL OF SAND WITH NO ROCK GREATER THAN 1" INCH IN DIAMETER. C.4.3. METER STOPS SHALL HAVE 8 INCHES TO 10 INCHES COVER OR AS REQUIRED FOR PROPER METER/BOX INSTALLATION.

- C.4.4. WATER SERVICES UNDER PAVEMENT, AND SIDEWALKS SHALL BE ENCASED IN A SCHEDULE 80 PVC SLEEVE FOR THE FULL LENGTH OF THE PAVEMENT AND FOR 2 FEET BEYOND THE EDGE. C.4.5. THE END OF EACH SERVICE CONNECTION SHALL BE MARKED WITH A 2" X 4" TREATED TO THE CITY THREE (3) SETS OF "AS-BUILT" CONSTRUCTION DRAWINGS THAT HAVE BEEN INDICATED OTHERWISE.

D. TESTING:

- D.1. THE PHYSICAL CONNECTION OF THE NEW SYSTEM TO THE EXISTING SYSTEM SHALL BE DONE IN ACCORDANCE WITH THE "FILLING AND FLUSHING CONNECTION" DETAIL SHOWN IN THE DRAWINGS. D.2. THE COMPLETE WATER SYSTEM SHALL BE PRESSURE TESTED AND DISINFECTED. THE PRESSURE TEST SHALL BE FOR TWO HOURS AT 150 PSI MINIMUM TEST PRESSURE IN ACCORDANCE WITH THE LATEST REVISION OF ANS/AWWA C600. THE PRESSURE TEST SHALL NOT VARY MORE THAN 5 PSI DURING THE TEST... D.3. ALLOWABLE LEAKAGE SHALL NOT EXCEED THE FORMULA OF Q(GALLONS) = [L(D^0.5)]/148,000 PER AWWA C600... D.4. THE PRESSURE TEST SHALL BE WITNESSED BY A REPRESENTATIVE OF CITY OF HALLANDALE BEACH AND THE ENGINEER OF RECORD. EACH PRESSURE TEST SHALL BE LIMITED TO 400 LINEAR FEET... D.5. BACTERIOLOGICAL TESTING SHALL BE IN ACCORDANCE WITH AWWA C-651. MAXIMUM DISTANCE BETWEEN SAMPLING POINTS SHALL BE AS FOLLOWS: - TRANSMISSION MAINS: EVERY 800 FEET - BRANCH MAINS: EVERY 800 FEET - ISOLATED MAINS LESS THAN 1000 FEET: 2 SAMPLE POINTS - ISOLATED MAINS GREATER THAN 1000 FEET: 3 SAMPLE POINTS...

VII. EARTHWORK AND COMPACTION

- A. GENERAL: A.1. NONE OF THE EXISTING MATERIAL IS TO BE INCORPORATED INTO THE LIMEROCK BASE. A.2. ALL SUBGRADE UNDER PAVED AREAS SHALL HAVE A MINIMUM LBR VALUE OF 40 AND SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. A.3. ALL FILL MATERIAL IN AREAS NOT TO BE PAVED SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. A.4. A 2" BLANKET OF TOP SOIL SHALL BE PLACED OVER ALL AREAS TO BE SOODED. A.5. SOD SHALL BE BAHIA SOD AND SHALL BE PLACED ON THE GRADED TOP SOIL AND WATERED TO INSURE SATISFACTORY CONDITION UPON FINAL ACCEPTANCE OF THE PROJECT... B. ON-SITE: B.1. ALL ORGANIC AND OTHER UNSUITABLE MATERIAL WITHIN THREE FEET HORIZONTALLY OF AREAS TO BE PAVED SHALL BE REMOVED. B.2. SUITABLE BACKFILL SHALL BE MINIMUM LBR 40 MATERIAL COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 FOR THREE (3) FEET BEYOND THE PERIMETER OF THE PAVING...

IX. PAVING

- A. GENERAL: A.1. ALL UNDERGROUND UTILITIES SHALL BE COMPLETED PRIOR TO THE CONSTRUCTION OF LIMEROCK BASE AND PRIOR TO PLACEMENT OF THE PAVEMENT. A.2. ALL EXISTING PAVEMENT CUT OR DAMAGED BY CONSTRUCTION SHALL BE PROPERLY RESTORED AT THE CONTRACTOR'S EXPENSE. A.3. WHERE PROPOSED PAVEMENT IS TO BE CONNECTED TO EXISTING PAVEMENT, THE EXISTING EDGE OF PAVEMENT SHALL BE SAW CUT. A.4. UPON COMPLETION OF DRAINAGE IMPROVEMENTS AND LIMEROCK BASE CONSTRUCTION (AND BEFORE PLACING ASPHALT PAVEMENT) THE CONTRACTOR SHALL FURNISH THE ENGINEER OF RECORD AND THE OWNER "AS-BUILT" PLANS FOR THESE IMPROVEMENTS, SHOWING THE LOCATIONS AND THE PERTINENT GRADES OF ALL DRAINAGE INSTALLATIONS AND THE FINISHED ROCK GRADES OF THE ROAD CROWN AND EDGE OF PAVEMENT AT 50 FEET INTERVALS. THESE "AS-BUILTS" SHALL BE APPROVED BY THE VILLAGE AND ENGINEER OF RECORD PRIOR TO THE PLACEMENT OF ASPHALT. B. MATERIALS: B.1. BASE COURSE SHALL BE CRUSHED LIMEROCK MIAMI COLITE WITH A MINIMUM OF 60% CARBONATES OF CALCIUM AND MAGNESIUM AND A MINIMUM LIMEROCK BEARING RATIO 100. B.2. PRIME COAT AND TACK COAT SHALL MEET F.D.O.T. STANDARDS. B.3. SURFACE COURSE SHALL BE EQUAL TO F.D.O.T. TYPE SP-9.5 ASPHALT. C. INSTALLATION: C.1. LIMEROCK BASE MATERIAL SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T180-C. C.2. LIMEROCK BASE MATERIAL SHALL BE PLACED IN MAXIMUM 6" LIFTS. BASES GREATER THAN 6" SHALL BE PLACED IN TWO OR MORE EQUAL LIFTS. C.3. ASPHALT THICKNESS SHALL BE 2" THICKNESS MINIMUM AND SHALL BE SP-9.5. CONSTRUCTION OF ASPHALT SHALL BE IN ACCORDANCE WITH FDOT SPECS 334 AND 337. C.4. PRIME COAT SHALL BE PLACED ON ALL LIMEROCK BASES IN ACCORDANCE WITH F.D.O.T. STANDARDS. C.5. TACK COAT SHALL BE PLACED AS REQUIRED IN ACCORDANCE WITH F.D.O.T. STANDARDS. D. TESTING: D.1. ALL SUBGRADE, LIMEROCK AND ASPHALT TESTS REQUIRED SHALL BE TAKEN PER THE CONTRACT. D.2. 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. D.3. DENSITY TESTS SHALL BE TAKEN BY AN INDEPENDENT TESTING LABORATORY, CERTIFIED BY THE STATE OF FLORIDA, AND TAKEN PER THE SPECIFICATIONS. D.4. ALL TESTING COSTS SHALL BE PAID FOR BY THE CONTRACTOR AND INCLUDED IN THE BID. D.5. ALL REQUIRED DENSITY AND LBR TEST RESULTS FOR SUBGRADE SHALL BE PROVIDED TO AND APPROVED BY ENGINEER AND THE OWNER PRIOR TO PLACING THE LIMEROCK BASE MATERIAL. D.6. ALL REQUIRED DENSITY AND LBR TEST RESULTS FOR LIMEROCK SHALL BE PROVIDED TO AND APPROVED BY ENGINEER AND THE OWNER PRIOR TO PLACING ASPHALT. X. SIGNING AND MARKING: A. ALL FINAL PAVEMENT MARKINGS SHALL BE HOT APPLIED THERMOPLASTIC MANUFACTURED AND APPLIED IN ACCORDANCE WITH FOOT STANDARD SPECIFICATION'S SECTION 711 AND BROWARD COUNTY STANDARDS WHERE APPLICABLE. B. ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND BROWARD COUNTY STANDARDS. C. REFLECTIVE PAVEMENT MARKERS SHALL BE CLASS B MARKERS MANUFACTURED IN ACCORDANCE WITH FOOT STANDARD SPECIFICATIONS 706 AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES. D. CONTRACTOR SHALL RESTORE ALL PAVEMENT MARKINGS AND SIGNAGE FOLLOWING APPLICATION OF THE FINAL LIFT OF ASPHALT. ALL MARKINGS AND SIGNAGE SHALL BE PLACED TO MEET CURRENT BROWARD COUNTY REGULATIONS. CONTRACTOR SHALL INSTALL TEMPORARY PAINT WHILE WAITING 14 DAYS AFTER PAVING TO INSTALL THERMOPLASTIC MARKINGS.

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Table with 4 columns: NO, DATE, REVISION, BY. Contains revision history entries.

Calvin, Giordano & Associates, Inc. EXCEPTIONAL SOLUTIONS 1800 Eller Drive, Suite 600, Fort Lauderdale, Florida 33316 Phone: 954.921.7781 • Fax: 954.921.8807 Certificate of Authorization 514

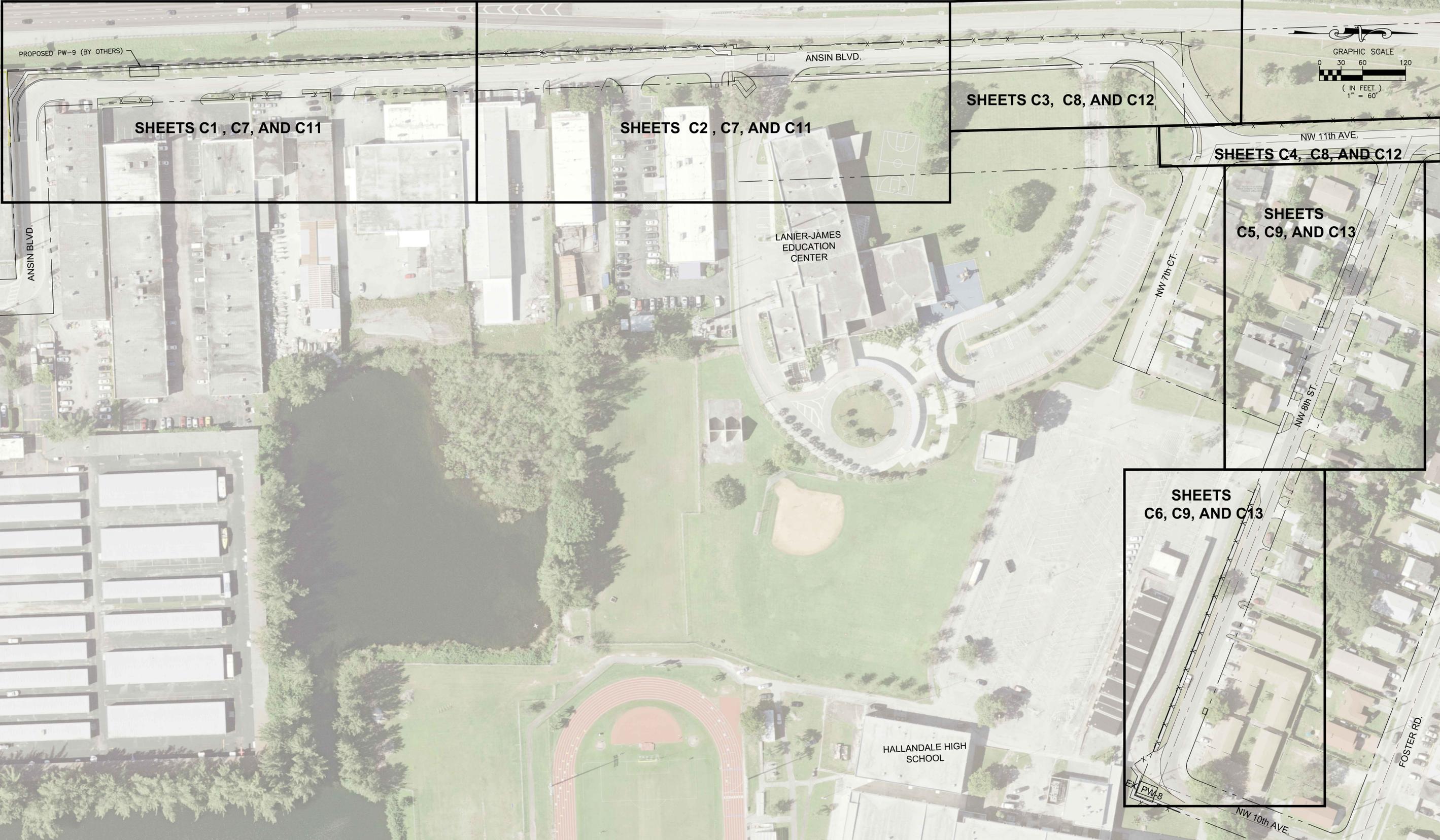
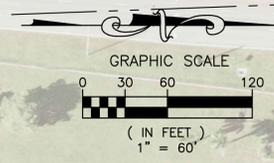
RAW WATER PIPELINE PROJECT HALLANDALE BEACH, FLORIDA

GENERAL NOTES AND SPECIFICATIONS

JAMES D. MESSICK, P.E. STATE OF FLORIDA PROFESSIONAL ENGINEER LICENSE No. 70870 DATE: 03/06/20 BID SET ELEVATIONS ARE IN NAVD 1988 NOT FOR CONSTRUCTION

SCALE AS SHOWN PROJECT No 168470 SHEET G3





File Name: P:\Projects\2016\168470 Raw Water Pipeline Project\cadd Files\Drawings\168470-G-KWP.dwg -- (Plotted by: Katherine Kupsky on Friday, March 13, 2020 11:41:46 AM)

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**RAW WATER PIPELINE PROJECT**  
 HALLANDALE BEACH, FLORIDA

KEY MAP

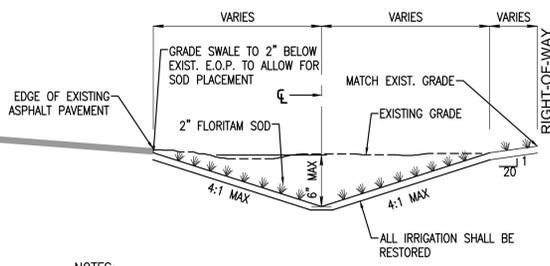
BID SET  
 ELEVATIONS ARE IN NAVD 1988  
 NOT FOR CONSTRUCTION

JAMES D. MESSICK, P.E.  
 STATE OF FLORIDA PROFESSIONAL ENGINEER  
 LICENSE No. 70870  
 DATE: 03/06/20

SCALE  
 AS SHOWN  
 PROJECT No.  
 168470

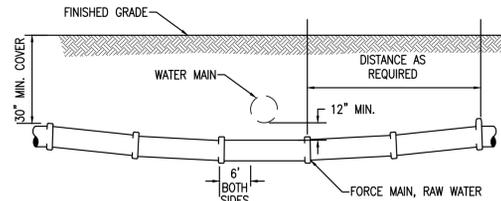
SHEET  
**G4**





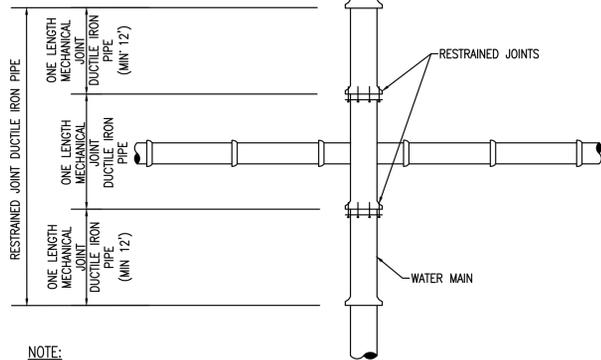
- NOTES:
- CONTRACTOR SHALL INSTALL 6" DEEP SWALE IN LOCATIONS WHICH ARE DISRUPTED BY PIPE INSTALLATION OR RESTORATION.

7 6" DEEP SWALE  
SCALE: N.T.S.



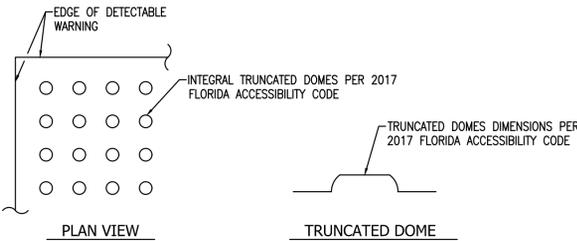
- NOTES:
- ALL UNSATISFACTORY SOILS ENCOUNTERED ARE TO BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.
  - SUITABLE BACKFILL SHALL BE IMPORTED AS NEEDED UP TO THE PIPE BEDDING FOUNDATION. SEE GEOTECHNICAL REPORT FOR SOIL CONDITIONS AND THICKNESS.
  - STREETS SHALL BE WASHED DOWN WITH A WATER TRUCK AND SWEEP EACH DAY. DETAIL FOR USE OF MAINS AND SERVICES.

4 TYPICAL PIPE TRENCH (UNSATISFACTORY SOILS)  
SCALE: N.T.S. CURRENT



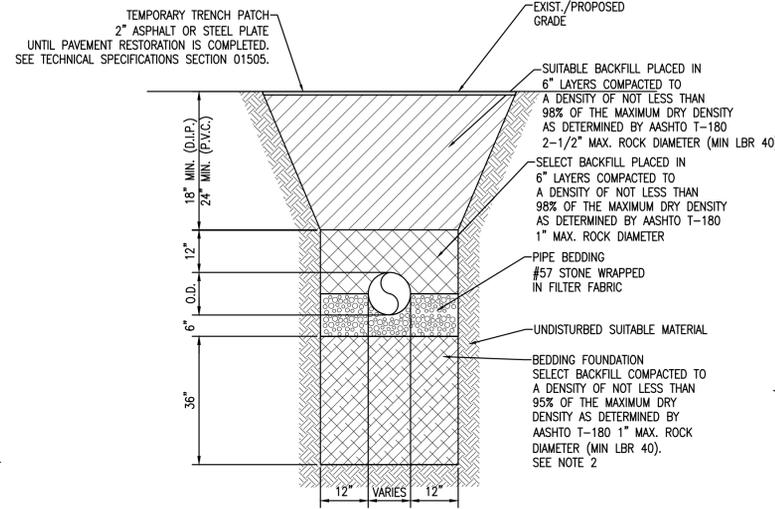
- NOTE:
- JOINTS SHALL NOT BE DEFLECTED MORE THAN 50% OF MANUFACTURER'S RECOMMENDED DEFLECTION

8 STANDARD UTILITY CROSSING  
SCALE: N.T.S.



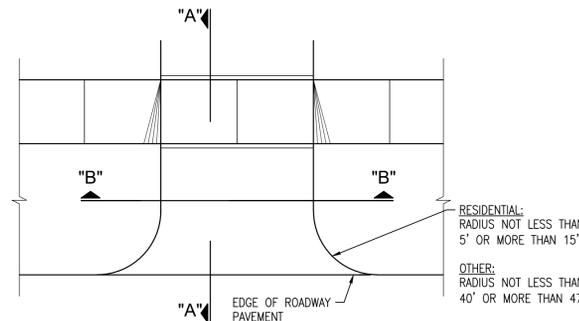
- NOTES:
- ALL FDOT CURB RAMPS SHALL HAVE DETECTABLE WARNING SURFACES PLACED IN ACCORDANCE WITH FDOT STANDARD PLANS INDEX 522
  - ROWS OF TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL BE ALIGNED TO BE PERPENDICULAR OR RADIAL TO THE STREET, ROADWAY, OR DRIVEWAY IN ACCORDANCE WITH FDOT STANDARD PLANS INDEX 522.
  - SIDEWALKS ABUTTING ROADWAYS SHALL BE INSTALLED WITH A DETECTABLE WARNING SURFACE IN ACCORDANCE WITH FDOT STANDARD PLANS INDEX 522.
  - ALL DETECTABLE WARNINGS SHALL BE IN COMPLIANCE WITH FDOT SPECIFICATION SECTION 527.
  - ALL DETECTABLE WARNINGS SHALL BE PRE-FORMED CAST-IN-PLACE TYPE BY ACO OR EPOXY SYSTEM PRODUCTS APPROVED BY FDOT IN THE APPROVED PRODUCTS LIST (APL). STAMPED, MECHANICAL FASTENED, GLUED OR TORCH APPLIED WILL NOT BE ACCEPTED. SUBMIT SHOP DRAWINGS FOR APPROVAL.
  - COLOR SHALL BE SAFETY YELLOW PER FDOT SPECIFICATION SECTION 527.

9 DETECTABLE WARNING SURFACE  
SCALE: N.T.S. CURRENT



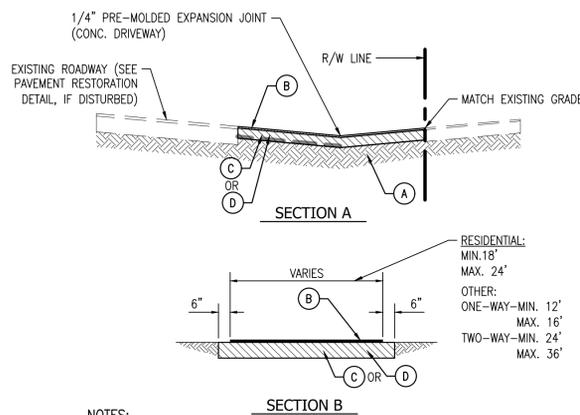
- NOTE:
- ALL SIDEWALKS WITHIN THE COUNTY R/W SHALL CONFORM TO BROWARD COUNTY MINIMUM STANDARDS 6-1.14 AND DRAWING No.14 (REV 6/1/05)

2 CONCRETE SIDEWALK  
SCALE: N.T.S. CURRENT



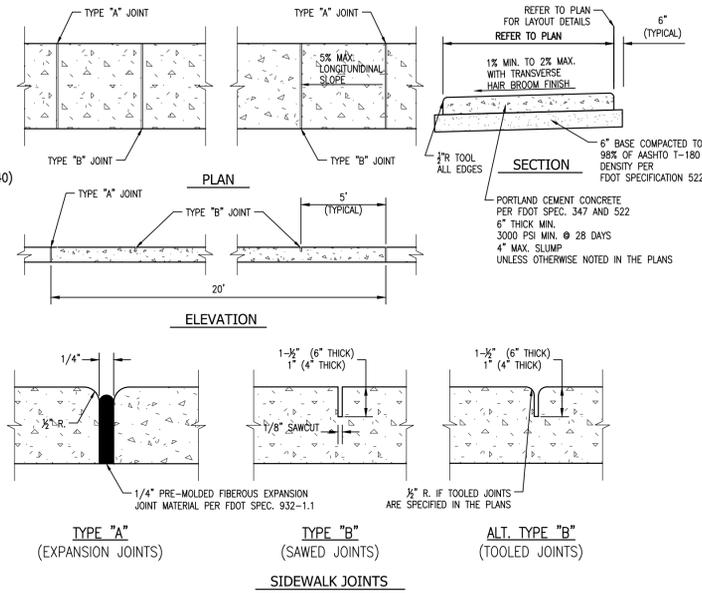
- NOTE:
- WHEREVER POSSIBLE, DEFLECTION OF THE PIPE WILL BE USED TO AVOID EXISTING OBSTRUCTIONS. THE CROSSING SHALL BE USED ONLY WHEN APPROVED BY CITY.

3 TYPICAL PIPE TRENCH (SATISFACTORY SOILS)  
SCALE: N.T.S. CURRENT



- NOTE:
- GRADING AND PREPARATION OF SUBGRADE SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO APPLICATION OF PAVING MATERIALS.
- NOTES:
- UNDISTURBED SUITABLE MATERIAL OR SELECT BACKFILL (SEE TYPICAL PIPE TRENCH FOR DETAILS)
  - ASPHALTIC CONCRETE SURFACE COURSE: 1" THICK MIN. COMPACTED (RESIDENTIAL) 1-1/2" THICK MIN. COMPACTED (NON-RESIDENTIAL)
  - 6" MIN. LIMEROCK BASE COURSE FOR RESIDENTIAL ASPHALT DRIVEWAYS. 8" MIN. 3,000 PSI CONCRETE REINFORCED WITH 6"x6" 10/10 WELDED WIRE MESH FOR CONCRETE RESIDENTIAL DRIVEWAYS.
  - 8" MIN. LIMEROCK BASE COURSE FOR NON-RESIDENTIAL ASPHALT DRIVEWAYS. 8" MIN. 3,000 PSI CONCRETE REINFORCED WITH 6"x6" 10/10 WELDED WIRE MESH FOR CONCRETE NON-RESIDENTIAL DRIVEWAYS.

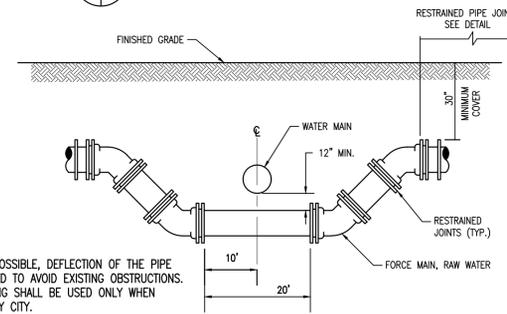
5 DRIVEWAY DETAILS  
SCALE: N.T.S.



| SIDEWALK JOINTS |   |
|-----------------|---|
| LOCATION        |   |
| "A"             | 20'-0" CENTER TO CENTER P.C. AND P.T. OF CURVES. JUNCTION OF EXISTING AND NEW SIDEWALKS, WHERE SIDEWALK ABUTS CONCRETE CURBS, DRIVEWAYS, AND SIMILAR STRUCTURES OR AT THE DISCRETION OF THE ENGINEER. |
| "B"             | 5'-0" CENTER TO CENTER ON SIDEWALKS THROUGHOUT THE SITE.  |

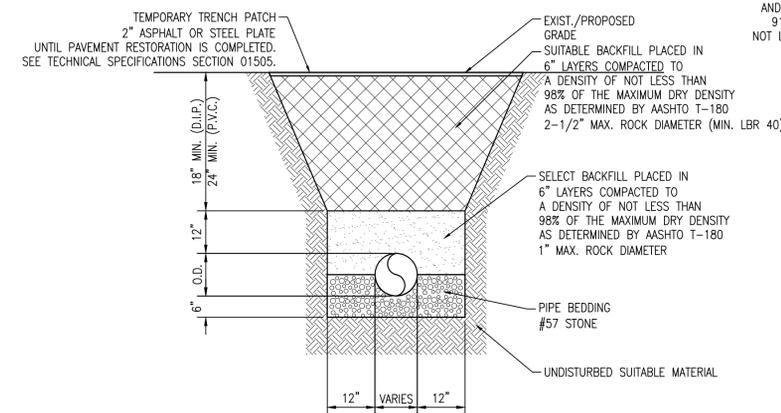
- NOTE:
- ALL SIDEWALKS WITHIN THE COUNTY R/W SHALL CONFORM TO BROWARD COUNTY MINIMUM STANDARDS 6-1.14 AND DRAWING No.14 (REV 6/1/05)

2 CONCRETE SIDEWALK  
SCALE: N.T.S. CURRENT



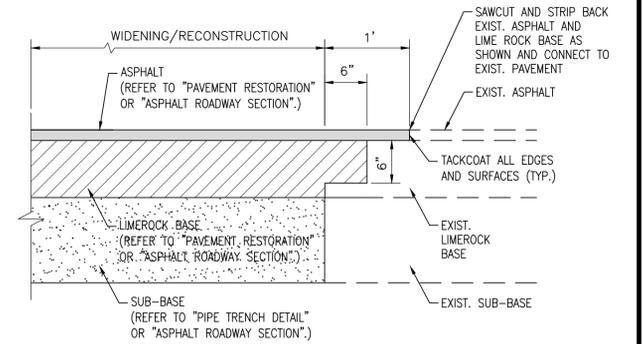
- NOTE:
- WHEREVER POSSIBLE, DEFLECTION OF THE PIPE WILL BE USED TO AVOID EXISTING OBSTRUCTIONS. THE CROSSING SHALL BE USED ONLY WHEN APPROVED BY CITY.

6 SPECIAL UTILITIES CROSSING  
SCALE: N.T.S.



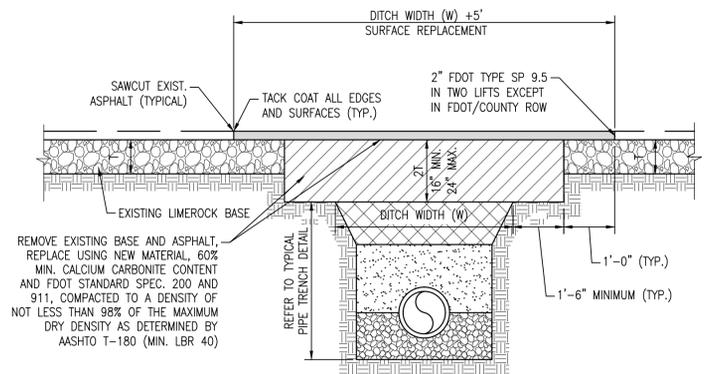
- NOTE:
- IF UNSATISFACTORY SOILS ARE ENCOUNTERED REFER TO DETAIL 4 ON SHEET G5.
  - DETAIL USED FOR MAINS AND SERVICES.

3 TYPICAL PIPE TRENCH (SATISFACTORY SOILS)  
SCALE: N.T.S. CURRENT



- NOTES:
- ALL EDGES OF THE EXISTING ASPHALT PAVEMENT WHERE RESURFACING WILL ABUT, SHALL BE SAWCUT IN STRAIGHT LINES PARALLEL TO OR PERPENDICULAR TO ROADWAY, PRIOR TO RESURFACING.
  - IF THE DITCH IS FILLED TEMPORARILY, IT SHALL COVERED WITH A 2" THICK SP 9.5 ASPHALTIC CONCRETE PATCH TO KEEP THE FILL MATERIAL FROM RAVELING, UNTIL REPLACED WITH A PERMANENT PAVEMENT PATCH.
  - ASPHALT THICKNESS SHALL MATCH EXISTING CONDITION WITH MINIMUM 2" THICKNESS.

1 PAVEMENT RESTORATION  
SCALE: N.T.S. CURRENT



TRENCH WITH PAVEMENT RESTORATION

- NOTES:
- ALL EDGES OF THE EXISTING ASPHALT PAVEMENT WHERE RESURFACING WILL ABUT, SHALL BE SAWCUT IN STRAIGHT LINES PARALLEL TO OR PERPENDICULAR TO ROADWAY, PRIOR TO RESURFACING.
  - IF THE DITCH IS FILLED TEMPORARILY, IT SHALL COVERED WITH A 2" THICK SP 9.5 ASPHALTIC CONCRETE PATCH TO KEEP THE FILL MATERIAL FROM RAVELING, UNTIL REPLACED WITH A PERMANENT PAVEMENT PATCH.
  - ASPHALT THICKNESS SHALL MATCH EXISTING CONDITION WITH MINIMUM 2" THICKNESS.

1 PAVEMENT RESTORATION  
SCALE: N.T.S. CURRENT

BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION



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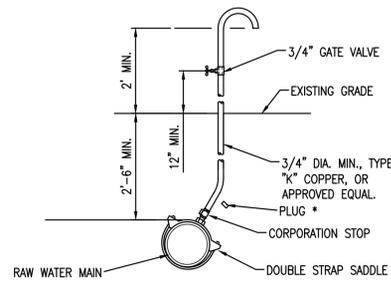
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RAW WATER PIPELINE PROJECT  
HALLANDALE BEACH, FLORIDA

GENERAL DETAILS

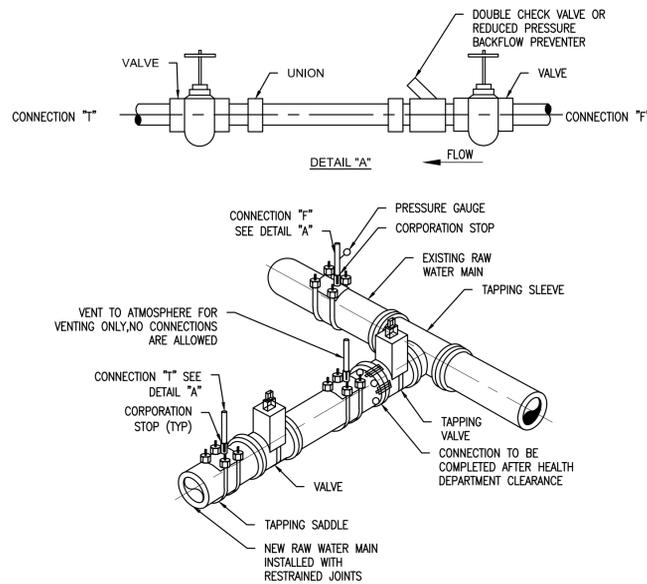
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STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE No. 70870  
DATE: 03/06/20

SCALE AS SHOWN  
PROJECT No. 168470  
SHEET G5



\* NOTE: AFTER TESTS REMOVE 3/4" TUBING AND INSTALL PLUG ON CORPORATION STOP.

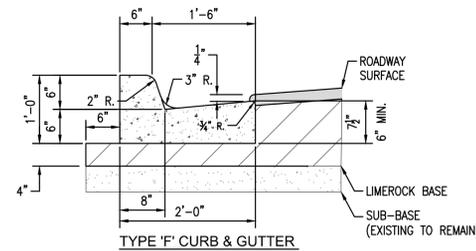
18 SAMPLE POINT DETAIL  
SCALE: N.T.S.



NOTES:

1. REMOVE TEMPORARY CONNECTION AT CORPORATION STOP ON EXISTING RAW WATER MAIN AFTER FILLING AND FLUSHING OF NEW LINE.
2. DO NOT REMOVE TEMPORARY CONNECTION AT CORPORATION STOP ON NEW MAIN UNTIL ALL TESTING HAS BEEN CLEARED BY HEALTH DEPARTMENT.
3. CLOSE CORPORATION STOPS AND PLUG/CAP WITH LEAD-FREE BRASS FITTINGS AFTER SAMPLING IS COMPLETED.
4. 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.

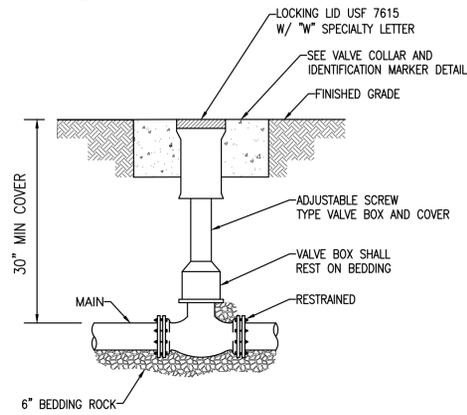
21 FILLING AND FLUSHING CONNECTION  
SCALE: N.T.S.



NOTES:

1. ALL CURBS, GUTTERS AND CURB AND GUTTER SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT DESIGN STANDARD INDEX 300 AND SPECIFICATION 520.
2. CONCRETE SHALL BE IN ACCORDANCE WITH FDOT SPECIFICATION 347 HAVING A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI
3. WHEN USED ON HIGH SIDE OF ROADWAYS, CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT. THE EDGE OF PAVEMENT SHALL MATCH THE LIP OF CURB ELEVATION. THE MINIMUM THICKNESS OF THE LIP SHALL BE 6".
4. REFER TO ROADWAY SECTION(S) FOR BASE AND SUB-BASE MATERIAL AND INSTALLATION SPECIFICATIONS.
5. BACKFILL BEHIND CURBS TO 2" BELOW TOP OF CURB TO ALLOW FOR SOD OR AS SPECIFIED IN LANDSCAPE PLANS AND SPECIFICATIONS.
6. ALL CONCRETE CURB WITHIN THE COUNTY R/W SHALL CONFORM TO BROWARD COUNTY MINIMUM STANDARDS 6-1-10

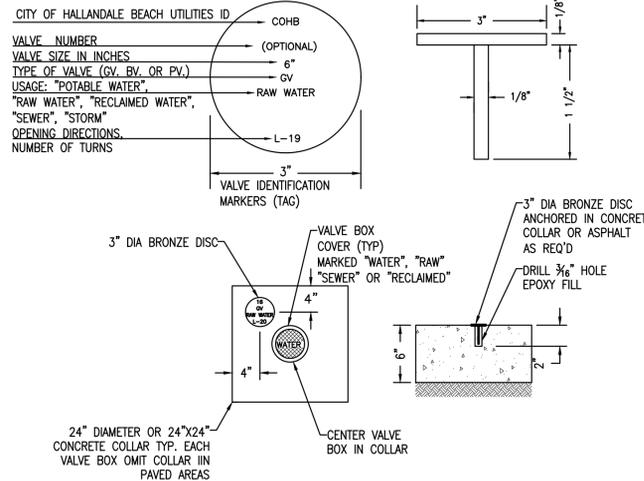
14 CONCRETE CURB DETAIL  
SCALE: N.T.S.



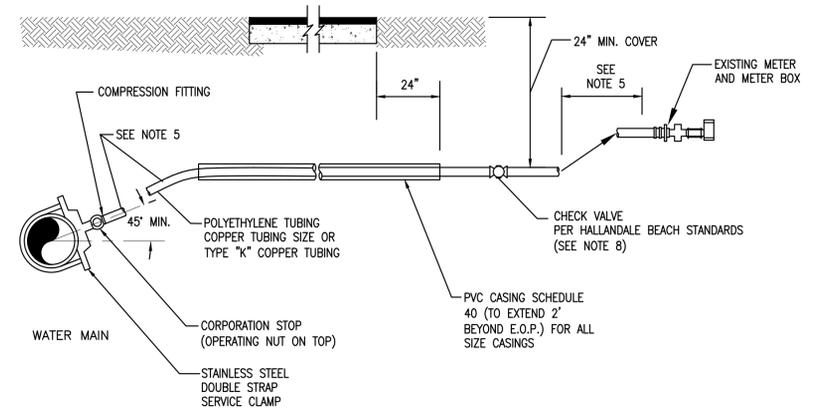
NOTES:

1. WHEN VALVE IS NOT LOCATED IN PAVEMENT, PLACE A WHITE PAVEMENT REFLECTOR MARKER IN THE DRIVE LANE, ADJACENT TO THE VALVE.
2. OPERATOR EXTENSION SHAFT SHALL BE PROVIDED WHEN OPERATING NUT IS MORE THAN 24" BELOW TOP OF VALVE BOX.
3. PVC PIPE OR DUCTILE IRON PIPE IS NOT ACCEPTABLE FOR VALVE BOX RISER.

19 VALVE BOX DETAIL  
SCALE: N.T.S.



21 VALVE COVER AND IDENTIFICATION MARKER DETAIL  
SCALE: N.T.S.



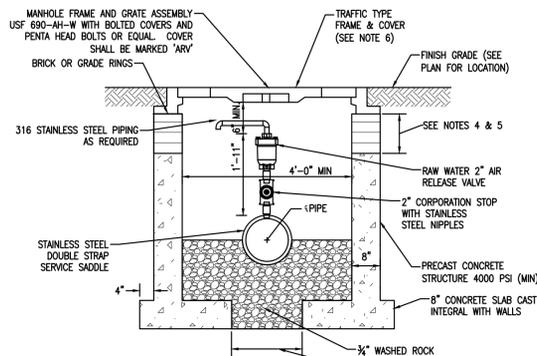
NOTES:

1. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED NOT LESS THAN 18" ON CENTER. NO TAPS SHALL BE CLOSER THAN 18" TO A JOINT.
2. 1" SERVICE REQUIRE A 2" MINIMUM INSIDE DIAMETER CASING PIPE.
3. 2" SERVICE REQUIRE A 3" MINIMUM INSIDE DIAMETER CASING PIPE.
4. ALL CASING PIPE SHALL EXTEND A MINIMUM OF 2' BEYOND THE EDGE OF PAVING STREETS.
5. FOR 1" SERVICE LINES THE MINIMUM RADIUS SHALL BE 14". FOR 2" SERVICE LINES THE MINIMUM RADIUS SHALL BE 21".
6. ALL CASING PIPE ENDS SHALL BE FILED SMOOTH WITH NO BURRS AND SEALED WITH URETHANE FOAM.
7. THE POLYETHYLENE OR COPPER TUBING SHALL BE ONE CONTINUOUS PIECE FROM THE CORPORATION STOP TO THE CHECK VALVE. NO JOINTS WILL BE PERMITTED BETWEEN THESE POINTS.
8. THE CHECK VALVE IS TO BE INSTALLED 5 FEET BEFORE THE METER VALVE. SEE MATERIALS REVIEW LIST.

THIS DETAIL APPLIES ONLY TO RESIDENTIAL ROADS WITH LESS THAN 70' R.O.W. (NO MEDIAN) OR WITHIN EASEMENTS

\*CONTRACTOR SHALL REPLACE DAMAGED WATER SERVICE LATERAL AT FULL TRENCH WIDTH AND USE FORD METER BOX COUPLING(S) PER MANUFACTURE'S RECOMMENDATIONS.

16 TYPICAL SINGLE WATER SERVICE DETAIL  
SCALE: N.T.S.



NOTES:

1. LIFT HOLES ARE TO BE SEALED WITH MORTAR INSIDE AND OUTSIDE AFTER INSTALLATION.
2. MAINTENANCE ACCESS STRUCTURE WALLS (INSIDE AND OUTSIDE) TO BE COATED WITH 16 MIL THICKNESS COAL TAR EPOXY.
3. ALL OPENINGS EXCEPT BOTTOM SHALL BE SEALED WITH A WATERPROOF, EXPANDING GROUT. ACTUAL LOCATION AND MANHOLE FRAME ELEVATIONS SHALL BE DETERMINED BY ENGINEER BASED ON AS-BUILT SURVEY DATA.
4. THE CHIMNEY AREA SHALL BE MINIMUM OF 6" AND A MAXIMUM OF 12" IN HEIGHT. A MINIMUM OF 3 COURSES OF BRICK SHALL BE INSTALLED.
5. SET IN TWO STRIPS OF SEALANT/ADHESIVE COMPOUND ON EACH SEALING FACE.
6. SET MAINTENANCE ACCESS STRUCTURE FRAME ON A BED OF PORTLAND CEMENT AND SILICA SAND. BRING MORTAR UP OVER FRAME.
7. AUTOMATIC AIR RELEASE VALVE FOR RAW WATER MAIN SHALL BE VALVE AND PRIMER CORP. MODEL APCO 200A.

20 AIR RELEASE VALVE WITH MANHOLE  
SCALE: N.T.S.

**BROWARD COUNTY PUBLIC WORKS DEPARTMENT** | WATER & WASTEWATER SERVICES ENGINEERING DIVISION | 3555 WEST COPPIN ROAD, FORT LAUDERDALE, FL 33309 | PHONE NO. 954-831-0745 | FAX: 954-831-0925

## STANDARD DETAIL

**HORIZONTAL**

**DUCTILE IRON PIPE**

| Diameter | HORIZONTAL, L (FEET) |         |     |     | 45° VERTICAL OFFSET (FEET) |       |
|----------|----------------------|---------|-----|-----|----------------------------|-------|
|          | 11 1/2"              | 22 1/2" | 45" | 90" | UPPER                      | LOWER |
| 4        | 1                    | 2       | 4   | 10  | 7                          | 20    |
| 6        | 2                    | 3       | 6   | 14  | 15                         | 28    |
| 8        | 2                    | 4       | 8   | 17  | 23                         | 37    |
| 10       | 2                    | 5       | 9   | 21  | 30                         | 44    |
| 12       | 3                    | 5       | 10  | 24  | 38                         | 52    |

**PVC PIPE**

| Diameter | HORIZONTAL, L (FEET) |         |     |     | 45° VERTICAL OFFSET (FEET) |       |
|----------|----------------------|---------|-----|-----|----------------------------|-------|
|          | 11 1/2"              | 22 1/2" | 45" | 90" | UPPER                      | LOWER |
| 4        | 2                    | 3       | 5   | 12  | 11                         | 32    |
| 6        | 2                    | 4       | 7   | 16  | 23                         | 45    |
| 8        | 3                    | 5       | 9   | 21  | 37                         | 59    |
| 10       | 3                    | 5       | 11  | 25  | 48                         | 71    |
| 12       | 3                    | 6       | 12  | 29  | 61                         | 83    |

THE NOTED REQUIREMENTS WERE CALCULATED IN ACCORDANCE WITH THRUST RESTRAINT CALCULATOR V7.2 BY EBAA IRON WITH THE FOLLOWING ASSUMPTIONS:  
SOIL CONDITIONS: SW OR GW; NOMINAL SIZE EQUALS BRANCH SIZE; LENGTH ALONG RUN EQUALS 4 FEET  
LAYING CONDITION: 4" SAND BEDDING, BACKFILL COMPACTED > 80%; VERTICAL LOW SIDE DEPTH EQUALS 3.5 FEET  
MINIMUM COVER: 3.0 FT SAFETY FACTOR: 1.5 BARE PIPE (NO POLY WRAP)  
IF FIELD CONDITIONS DIFFER FROM THE ABOVE, CONTRACTOR SHALL NOTIFY WWS.  
FOR PIPE LARGER THAN INCLUDED IN THE ABOVE TABLES, ENGINEER OF RECORD SHALL SUBMIT CALCULATIONS FOR EACH JOINT REQUIRING RESTRAINT.

**45° VERT OFFSET**

**RESTRAINED JOINT REQUIREMENTS SINGLE FITTING**

150 PSI TEST PRESSURE

REPLACES FORMER DWG NO. 109 | REVISED 5/14/2018 | **FIGURE 109**

File Name: P:\Projects\2016\168470 - Raw Water Pipeline Project\cadd Files\Drawings\168470-C-DTLS.dwg - (Plotted by: Katharine Kupsky on Friday, March 13, 2020 11:42:09 AM)

| NO | DATE | REVISION | BY | NO | DATE | REVISION | BY |
|----|------|----------|----|----|------|----------|----|
|    |      |          |    |    |      |          |    |

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Phone: 954.921.7781 • Fax: 954.921.8807  
Certificate of Authorization 514

**RAW WATER PIPELINE PROJECT**  
HALLANDALE BEACH, FLORIDA

**GENERAL DETAILS**

BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION

JAMES D. MESSICK, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE No. 70870

DATE: 03/06/20

SCALE: AS SHOWN  
PROJECT No: 168470  
SHEET: **G6**

FOR SIGN ASSEMBLIES WITH MAXIMUM 8.75 SQUARE FOOT PANEL AREA

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

Typical Details

STREET ID (D3-1) MATERIALS:

LETTERS  
WHITE TYPE X SHEETING  
LETTERING OF STREET NAME SIGNS SHALL BE COMPOSED OF A COMBINATION OF LOWERCASE LETTERS WITH INITIAL UPPERCASE LETTERS

BORDER  
BORDER WIDTHS WILL VARY BASED ON LETTER HEIGHTS

LETTER HEIGHTS - BORDER WIDTHS  
4 INCH LETTER = 0.375 INCH BORDER WIDTH  
6 INCH LETTER = 0.500 INCH BORDER WIDTH  
8 INCH LETTER = 0.750 INCH BORDER WIDTH

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

LETTER SIZES  
SEE MUTCD TABLE 2D-3 (PG 163) FOR MINIMUM LETTER HEIGHTS  
LENGTH VARIES BY STREET NAME

HARDWARE  
BOLTS - #18 HEX HEAD STAINLESS STEEL 5/16" x 3" NUTS - 5/16" STAINLESS STEEL W/ NYLON WASHERS

REGULATORY SIGN  
WHEN NO STREET ID IS PRESENT THE STOP SIGN SHALL BE MOUNTED FLUSH TO THE TOP OF THE POST WHILE MAINTAINING 7 FEET MIN. CLEARANCE BETWEEN BOTTOM OF SIGN AND GROUND LEVEL. ANY SIGN INSTALLED BACK TO BACK WITH THE STOP SIGN SHALL BE SMALLER THAN THE STOP SIGN.

STOP, DO NOT ENTER OR YIELD  
WHITE TYPE X SHEETING  
PRESSURE-SENSITIVE RED TRANSLUCENT INK SILK-SCREENED CLEAR-COATED OR ELECTRO-CUT (EC) FILM OR EQUIVALENT

HARDWARE  
FRONT: #18 HEX HEAD STAINLESS STEEL 5/16" x 3" BOLT W/ 38" NYLON WASHER  
BACK: 5/16" HEX HEAD STAINLESS STEEL NUT W/ 38" STAINLESS STEEL WASHER

NOTES:  
1. ALL TYPE X SHEETINGS UTILIZED MUST BE ON THE FDOT APL LIST.  
2. SEE BCTED TECHNICAL POLICY MEMO #TPM-16-001 - SPECIFICATIONS FOR RETROREFLECTIVE TRAFFIC SIGN MATERIALS.

SQUARE TUBE SIGN POST  
The Square Tube Sign Post shall consist of a 2.5" square tube inserted into a 2.5" square post receiver. Both tubes will be perforated, hot-dipped galvanized, 12-gauge, grade 50 steel. The post shall be installed into the slip base assembly shown in detail "B".

DETAIL "A"  
Hardware includes 2 each 3/8" x 3-1/2" GR. 8 Flanged Shoulder Bolt and Flange Nut.

DETAIL "B"  
Triangular Slip Base Assembly For 2-1/2" Perforated Square Tube Sign Post  
Slip Washer  
Post Receiver  
Redi-Torque Bolt  
Facing Incoming Traffic  
Washer  
Flange Nut  
2-1/2" Square Post Receiver

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, 6<sup>th</sup> edition and interims.  
2. For standard ground sign installation, see detail entitled "Ground Sign Assembly Details".

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.

Sign Post with 3" x 7 ga. Square Anchor

Sign Post with Triangular Slip Base

Post Size Table

| Total Panel Area (sq ft) | 8 | 8.5 | 9 | 9.5 | 10 |
|--------------------------|---|-----|---|-----|----|
| 3                        |   |     |   |     |    |
| 4                        |   |     |   |     |    |
| 5                        |   |     |   |     |    |
| 6                        |   |     |   |     |    |
| 7                        |   |     |   |     |    |
| 8                        |   |     |   |     |    |
| 9                        |   |     |   |     |    |
| 10                       |   |     |   |     |    |
| 11                       |   |     |   |     |    |
| 12                       |   |     |   |     |    |
| 13                       |   |     |   |     |    |
| 14                       |   |     |   |     |    |
| 15                       |   |     |   |     |    |
| 16                       |   |     |   |     |    |
| 17                       |   |     |   |     |    |
| 18                       |   |     |   |     |    |
| 19                       |   |     |   |     |    |
| 20                       |   |     |   |     |    |

REVISIONS

| DATE       | DESCRIPTION            |
|------------|------------------------|
| 01-25-2018 | N/A                    |
| 04-09-2019 | UPDATED MATERIAL NOTES |
| 02-28-2020 | ADDED ISOMETRIC VIEW   |

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT  
TRAFFIC ENGINEERING DIVISION

DESIGN BY: CARMELO CARATOZZO, 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

REVISIONS

| DATE       | DESCRIPTION            |
|------------|------------------------|
| 01-25-2018 | N/A                    |
| 04-09-2019 | UPDATED MATERIAL NOTES |
| 02-28-2020 | ADDED ISOMETRIC VIEW   |

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT  
TRAFFIC ENGINEERING DIVISION

DESIGN BY: CARMELO CARATOZZO, 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

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 DANJOU, P.E. SCALE: NTS  
DRAWN BY: STEPHON RAMOUTAR  
CHECKED BY: ANDREW SEBO, P.E., PTOE

GROUND SIGN ASSEMBLY DETAILS

SHEET NO. 1 OF 1

REVISIONS

| DATE       | DESCRIPTION                  |
|------------|------------------------------|
| 01-15-2016 | N/A                          |
| 06-11-2018 | UPDATED FDOT INDEX REFERENCE |
| 08-23-2018 | UPDATED NOTES                |

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT  
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CHECKED BY: ANDREW SEBO, P.E., PTOE

PAVEMENT MARKINGS AND SIGNS DETAILS

SHEET NO. 1 OF 1

REVISIONS

| DATE     | DESCRIPTION |
|----------|-------------|
| 11-15-18 | SCALE: NTS  |

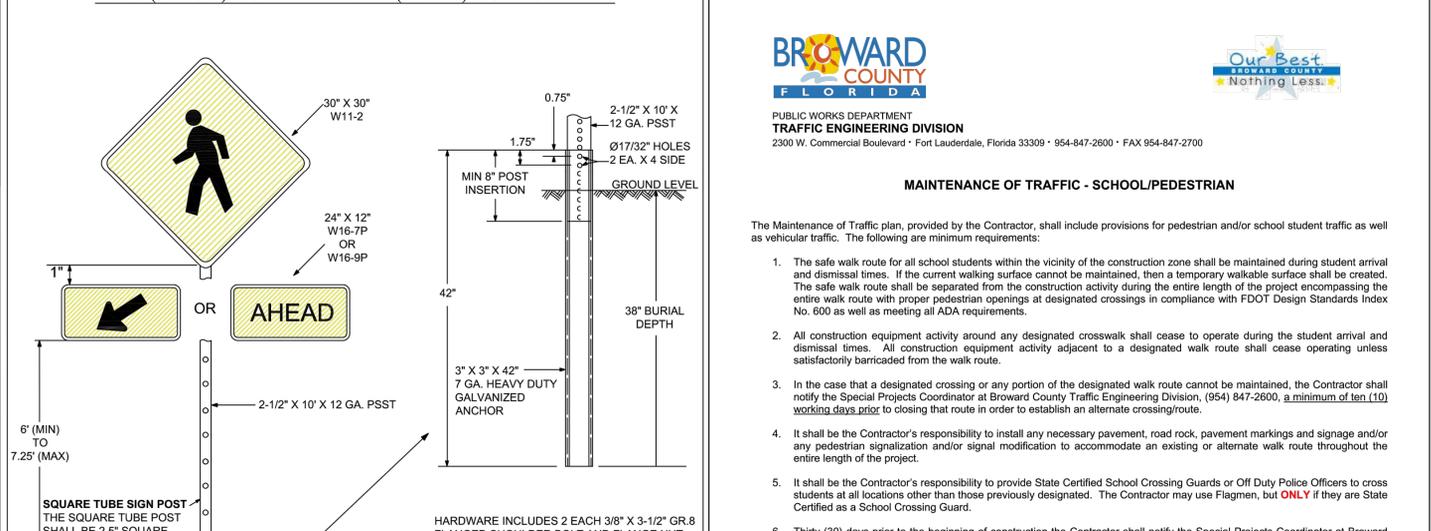
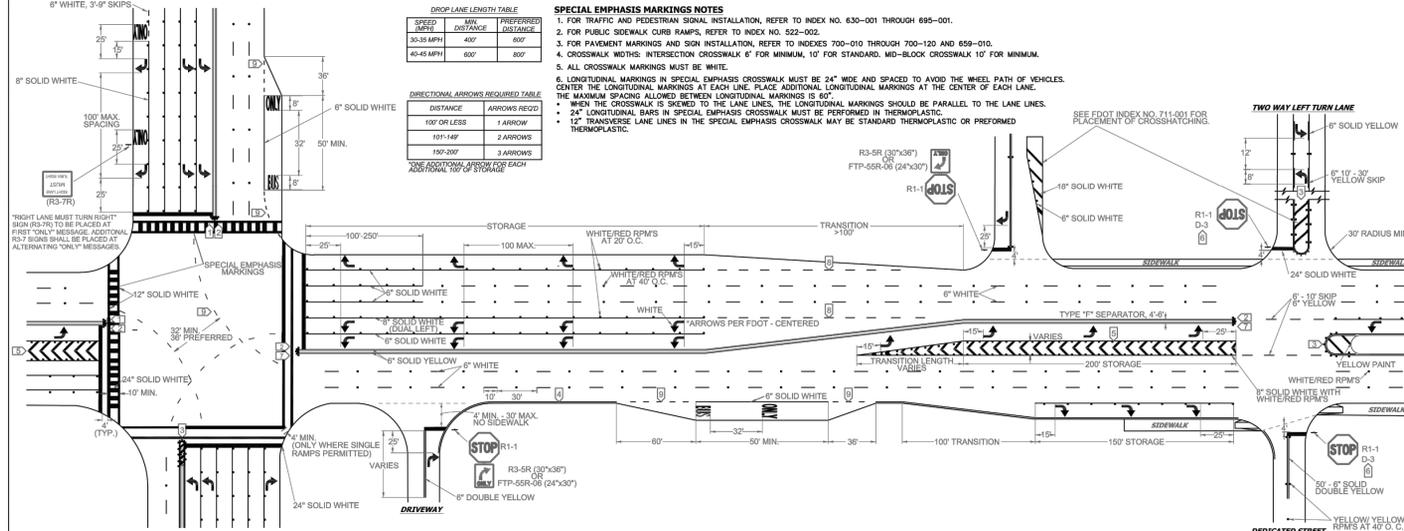
BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT  
TRAFFIC ENGINEERING DIVISION

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

W11-2 (30'x 30') & SUPPLEMENTAL (24"x12") SIGN ASSEMBLY

SHEET 1 OF 1



NOTES

- ALL PAVEMENT MARKINGS SHALL BE ALKO BASED THERMOPLASTIC AND FULLY RETROREFLECTORIZED.
- ALL PAVEMENT MARKINGS ON PAPER SYSTEMS SHALL BE 300/300 SERIES TAPE OR EQUIVALENT AND APPLIED WITH F80 ADHESIVE AS PER MANUFACTURERS SPECIFICATIONS.
- ALL PAVEMENT MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", BCTED STANDARDS, AND FDOT DESIGN STANDARDS.
- SEE FDOT INDEX NO. 706-001 FOR PLACEMENT OF RPM'S (FOR BULLNOSE RPM TREATMENT, SEE LEGEND NO. 1)
- RPM'S SHALL BE CLASS "B" OR EQUIVALENT, APPLIED WITH EPOXY OR BITUMINOUS ADHESIVE.
- FDOT APPROVED SEALER SHALL BE USED WHEN APPLYING MARKINGS ON CONCRETE.
- FOR BIKE LANE DETAILS SEE FDOT INDEX NO. 711-002.
- 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.
- EXISTING MARKINGS SHALL BE REMOVED BY WATER BLASTING OR SAND BLASTING.
- ALL STOP LINES TO BE 4" BROWN CROSSWALK OR SIDEWALK.
- 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.
- ALL PRODUCTS MUST BE ON FDOT'S APPROVED PRODUCTS LIST (APL).
- RPM'S SHALL NOT BE INSTALLED ADJACENT TO BIKE LANES.

MAINTENANCE OF TRAFFIC - SCHOOL/PEDESTRIAN

The Maintenance of Traffic plan, provided by the Contractor, shall include provisions for pedestrian and/or school student traffic as well as vehicular traffic. The following are minimum requirements:

- The safe walk route for all school students within the vicinity of the construction zone shall be maintained during student arrival and dismissal times. If the current walking surface cannot be maintained, then a temporary walkable surface shall be created. The safe walk route shall be separated from the construction activity during the entire length of the project encompassing the entire walk route with proper pedestrian openings at designated crossings in compliance with FDOT Design Standards Index No. 600 as well as meeting all ADA requirements.
- All construction equipment activity around any designated crosswalk shall cease to operate during the student arrival and dismissal times. All construction equipment activity adjacent to a designated walk route shall cease operating unless satisfactorily barricaded from the walk route.
- In the case that a designated crossing or any portion of the designated walk route cannot be maintained, the Contractor shall notify the Special Projects Coordinator at Broward County Traffic Engineering Division, (954) 847-2600, a minimum of ten (10) working days prior to closing that route in order to establish an alternate crossing/route.
- It shall be the Contractor's responsibility to install any necessary pavement, road, pavement markings and signage and/or any pedestrian signalization and/or signal modification to accommodate an existing or alternate walk route throughout the entire length of the project.
- It shall be the Contractor's responsibility to provide State Certified School Crossing Guards or Off Duty Police Officers to cross students at all locations other than those previously designated. The Contractor may use Flagmen, but ONLY if they are State Certified as a School Crossing Guard.
- Thirty (30) days prior to the beginning of construction the Contractor shall notify the Special Projects Coordinator at Broward County Traffic Engineering Division, (954) 847-2600 or at [broward@traffic.org](mailto:broward@traffic.org) to discuss all necessary safety measures.
- It shall be the Contractor's responsibility to notify the following Broward County School Board Pupil Transportation Department personnel if construction will impact any bus routes:
  - Ruth Masters Routing (754) 321-4400 Ext. # 2309 [ruth.masters@browardschools.com](mailto:ruth.masters@browardschools.com)
  - Vincent Harrell Student Transportation & Fleet Service (754) 321-4472 [vincent.harrell@browardschools.com](mailto:vincent.harrell@browardschools.com)
  - Mary Tochtermann Student Transportation & Fleet Service (754) 321-4400 Ext. # 2006 [mary.tochtermann@browardschools.com](mailto:mary.tochtermann@browardschools.com)
- Upon coordination with the aforementioned personnel, and if deemed necessary, a pre-construction meeting will be held to determine all bus routes and to make any necessary arrangements for rerouting. The Special Projects Coordinator from the Broward County Traffic Engineering Division, (954) 847-2600, will be notified and may attend the pre-construction meeting.
- The Contractor shall be responsible for obtaining an approved Maintenance of Traffic Plan (MOT), specifying the above school/pedestrian conditions, through the Broward County Traffic Engineering Division or the Local Municipality, depending on the roadway jurisdiction. The conditions outlined in the MOT are fully effective as part of the proposed improvements. The Contractor shall be responsible for ensuring that all work associated with the project is in compliance with all the requirements of the approved MOT.
- The Contractor shall ensure that there are NO speed limit signs installed within the designated reduced speed school zone at any time throughout the project.

BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION

JAMES D. MESSICK, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE NO. 70870

SCALE AS SHOWN  
PROJECT NO. 168470

DATE: 03/06/20

File Name: P:\Projects\2016\168470 - Raw Water Pipeline - Project\cadd Files\Drawings\168470-C-DTL.Swg - (Plotted by: Katherine Kupsky on Friday, March 13, 2020, 11:42:23 AM)

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Certificate of Authorization 514

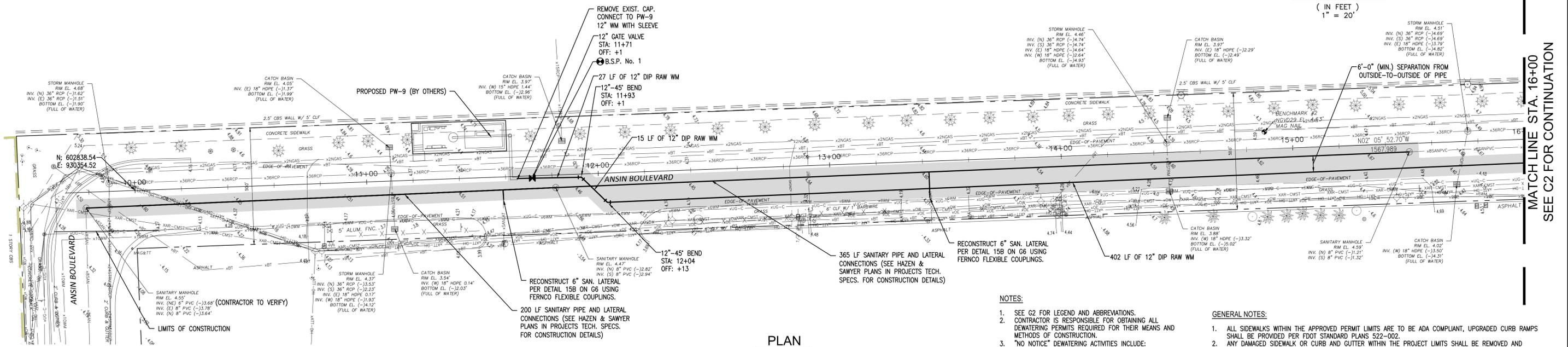
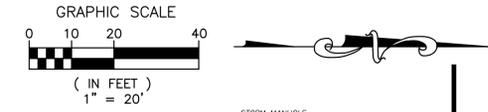
RAW WATER PIPELINE PROJECT  
HALLANDALE BEACH, FLORIDA

PAVEMENT MARKING AND SIGNAGE  
DETAILS

SCALE AS SHOWN  
PROJECT NO. 168470  
DATE: 03/06/20

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MATCH LINE STA. 16+00  
SEE C2 FOR CONTINUATION

LEGEND

- R/W LINE
LOT LINE
EXISTING STORM SEWER
EXISTING SANITARY SEWER
EXISTING WATER MAIN
EXISTING BURIED TELEPHONE
EXISTING RAW WATER PIPE
EXISTING OVERHEAD ELECTRIC
EXISTING OVERHEAD WIRES
EXISTING ATT RETIRED IN PLACE
EXISTING OVERHEAD COMCAST
EXISTING NATURAL GAS
EXISTING ELEVATIONS
PROPOSED RESTORATION
PROPOSED CONCRETE SIDEWALK/DRIVEWAY
PROPOSED SOD RESTORATION

PLAN
SCALE: 1" = 20'

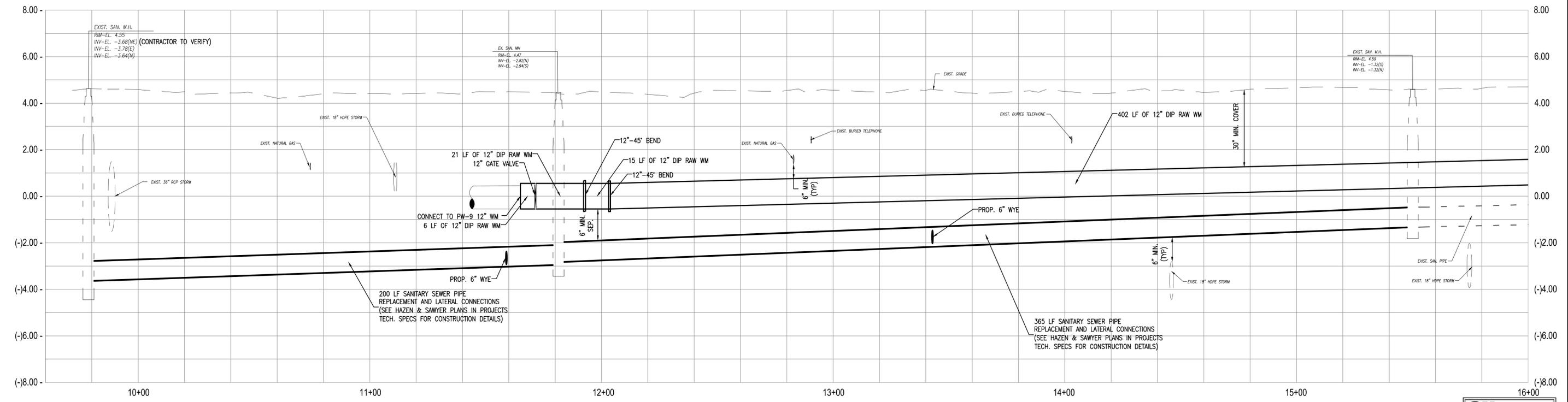
SANITARY SEWER REPLACEMENT NOTE:
1. REMOVE EXISTING CLAY SANITARY SEWER BETWEEN CITY OF HALLANDALE BEACH MANHOLES WHERE INDICATED...

NOTES:

- 1. SEE G2 FOR LEGEND AND ABBREVIATIONS.
2. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL DEWATERING PERMITS REQUIRED FOR THEIR MEANS AND METHODS OF CONSTRUCTION.
3. "NO NOTICE" DEWATERING ACTIVITIES INCLUDE:
3.1. A MAXIMUM DAILY PUMPAGE RATE OF 5 MILLION GPD
3.2. A MAXIMUM TOTAL PROJECT PUMPAGE OF 100 MG IN ONE YEAR.
3.3. ALL DISCHARGE IS TO BE RETAINED ON SITE.
3.4. ACTIVITIES MUST COMPLY WITH SFWMD CONSUMPTIVE USE PERMIT APPLICANTS HANDBOOK SECTION 5 DATED 7/16/14.
3.5. THE CONTRACTOR IS RESPONSIBLE TO MITIGATE ANY HARM THAT MAY OCCUR AS A RESULT OF DEWATERING ACTIVITIES.
4. ALL PIPES SHALL BE RESTRAINED DUCTILE IRON PIPE CL350.
5. CONTRACTOR TO COORDINATE WITH ATT AND CONFIRM EXISTING ATT-RIIP UTILITY BEFORE REMOVAL.

GENERAL NOTES:

- 1. ALL SIDEWALKS WITHIN THE APPROVED PERMIT LIMITS ARE TO BE ADA COMPLIANT, UPGRADED CURB RAMP SHALL BE PROVIDED PER FOOT STANDARD PLANS 522-002.
2. ANY DAMAGED SIDEWALK OR CURB AND GUTTER WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND REPLACED.
3. ANY PAVEMENT WITHIN PROJECT LIMITS DAMAGED DURING CONSTRUCTION SHALL BE RECONSTRUCTED IN ACCORDANCE WITH BROWARD COUNTY MINIMUM STANDARDS LATEST ADDITION.
4. WEARING COURSES SHALL NOT BE PLACED UNTIL ALL UNDERGROUND UTILITIES ARE INSTALLED, AND ACCEPTED, AND A FINISH ROCK SURVEY HAS BEEN SUBMITTED TO AND ACCEPTED BY THE OWNER.
5. FOR PIPE AND FITTINGS SHOW WITH LESS THAN 30" OF COVER, WRAP PIPE AND FITTINGS WITH VISQUEEN AND POUR 3000 PSI CONCRETE FROM SPRINGLINE TO 6" ABOVE PIPE. CONCRETE SHALL EXTEND 24" (MIN.) BEYOND PIPE RUN WITH LESS THAN MINIMUM COVER OF 30".
6. WHEN UNSUITABLE SOILS ARE ENCOUNTERED, CONTRACTOR SHALL INSTALL PIPE PER DETAIL 4 ON G5. REFER TO GEOTECHNICAL REPORT FOR EXISTING SOIL CONDITIONS.
7. LIMITS OF TRENCH RESTORATION SHALL BE ADJUSTED AS NEEDED BY CONTRACTOR TO SUCCESSFULLY CONSTRUCT ALL UNDERGROUND UTILITY IMPROVEMENTS, AT NO ADDITIONAL CHARGE TO THE OWNER.



PROFILE
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=2'

\* CONTRACTOR SHALL FOLLOW LENGTH OF PIPE IDENTIFIED ON PLAN VIEW, AS PIPE LENGTHS SHOWN IN PROFILE ARE REPRESENTATIVE OF STATIONING

BID SET
ELEVATIONS ARE IN NAVD 1988
NOT FOR CONSTRUCTION



File Name: P:\Projects\2016\168470 Raw Water Pipeline Project\cadd Files\Drawings\168470-C-WATR.dwg - (Plotted by: Katherine Kupsky on Friday, March 13, 2020 11:43:51 AM)

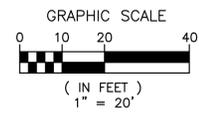
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RAW WATER PIPELINE PROJECT
HALLANDALE BEACH, FLORIDA

ENGINEERING PLAN

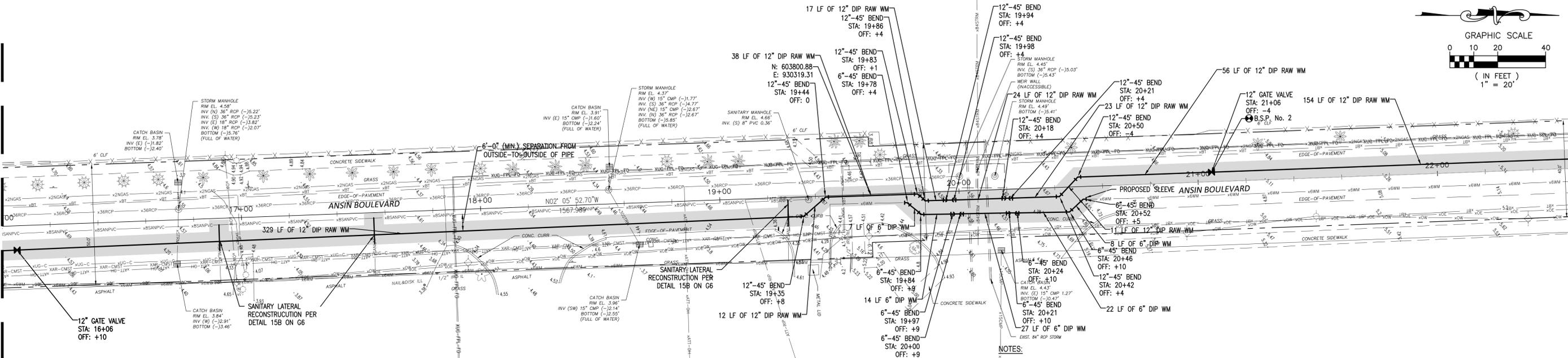
JAMES D. MESSICK, P.E.
STATE OF FLORIDA PROFESSIONAL ENGINEER
LICENSE No. 70870
DATE: 03/06/20

Table with columns: SCALE (AS SHOWN), PROJECT No. (168470), SHEET (C1)



MATCH LINE STA. 16+00 SEE C1 FOR CONTINUATION

MATCH LINE STA. 22+60 SEE C3 FOR CONTINUATION



LEGEND

- R/W LINE
--- LOT LINE
--- EXISTING STORM SEWER
--- EXISTING SANITARY SEWER
--- EXISTING WATER MAIN
--- EXISTING BURIED TELEPHONE
--- EXISTING RAW WATER PIPE
--- EXISTING OVERHEAD ELECTRIC
--- EXISTING OVERHEAD WIRES
--- ATT-RIIP EXISTING ATT RETIRED IN PLACE
--- XAR-CMST EXISTING OVERHEAD COMCAST
--- XNGAS EXISTING NATURAL GAS
--- EXISTING ELEVATIONS
--- PROPOSED RESTORATION
--- PROPOSED CONCRETE SIDEWALK/DRIVEWAY
--- PROPOSED SOD RESTORATION

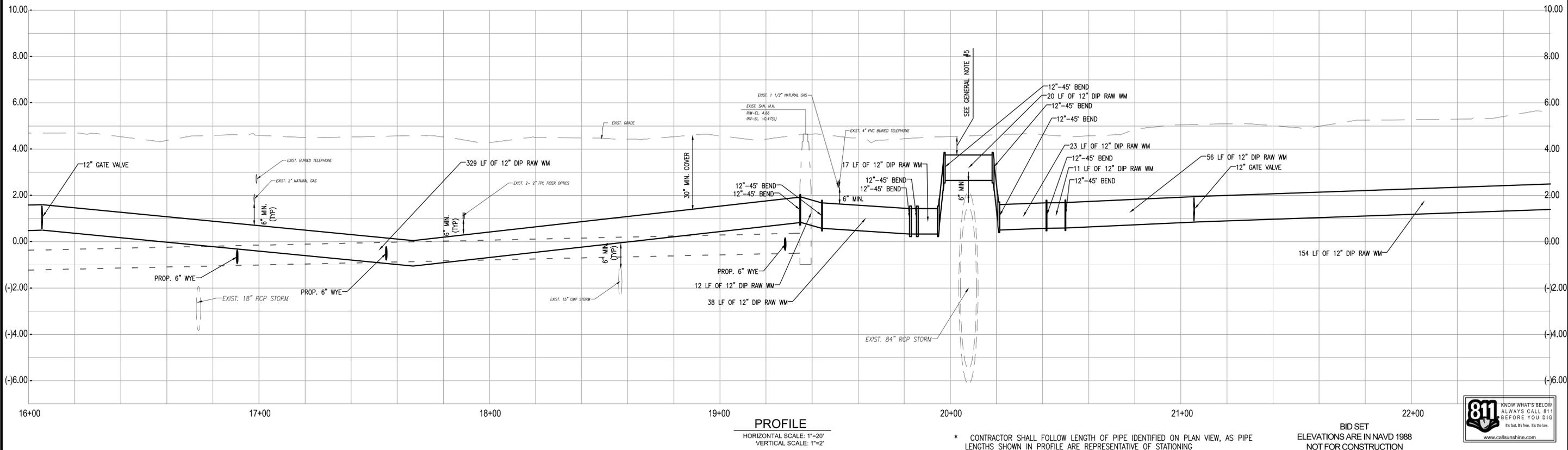
PLAN SCALE: 1" = 20'

NOTES:

- 1. SEE G2 FOR LEGEND AND ABBREVIATIONS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL DEWATERING PERMITS REQUIRED FOR THEIR MEANS AND METHODS OF CONSTRUCTION.
2. "NO NOTICE" DEWATERING ACTIVITIES INCLUDE:
3.1. A MAXIMUM DAILY PUMPAGE RATE OF 5 MILLION GPD
3.2. A MAXIMUM TOTAL PROJECT PUMPAGE OF 100 MG IN ONE YEAR.
3.3. ALL DISCHARGE IS TO BE RETAINED ON SITE.
3.4. ACTIVITIES MUST COMPLY WITH SFWMD CONSUMPTIVE USE PERMIT APPLICANTS HANDBOOK SECTION 5 DATED 7/16/14
3.5. THE CONTRACTOR IS RESPONSIBLE TO MITIGATE ANY HARM THAT MAY OCCUR AS A RESULT OF DEWATERING ACTIVITIES.
4. ALL PIPES SHALL BE RESTRAINED DUCTILE IRON PIPE CL350. CONTRACTOR TO COORDINATE WITH ATT AND CONFIRM EXISTING ATT-RIIP UTILITY BEFORE REMOVAL.

GENERAL NOTES:

- 1. ALL SIDEWALKS WITHIN THE APPROVED PERMIT LIMITS ARE TO BE ADA COMPLIANT, UPGRADED CURB RAMPS SHALL BE PROVIDED PER FDOT STANDARD PLANS 522-002.
2. ANY DAMAGED SIDEWALK OR CURB AND GUTTER WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND REPLACED.
3. ANY PAVEMENT WITHIN PROJECT LIMITS DAMAGED DURING CONSTRUCTION SHALL BE RECONSTRUCTED IN ACCORDANCE WITH BROWARD COUNTY MINIMUM STANDARDS LATEST ADDITION.
4. WEARING COURSES SHALL NOT BE PLACED UNTIL ALL UNDERGROUND UTILITIES ARE INSTALLED, AND ACCEPTED, AND A FINISH ROCK SURVEY HAS BEEN SUBMITTED TO AND ACCEPTED BY THE OWNER.
5. FOR PIPE AND FITTINGS SHOWN WITH LESS THAN 30" OF COVER, WRAP PIPE AND FITTINGS WITH VISQUEEN AND POUR 3000 PSI CONCRETE FROM SPRINGLINE TO 6" ABOVE PIPE. CONCRETE SHALL EXTEND 24" (MIN.) BEYOND PIPE RUN WITH LESS THAN MINIMUM COVER OF 30".
6. WHEN UNSUITABLE SOILS ARE ENCOUNTERED, CONTRACTOR SHALL INSTALL PIPE PER DETAIL 4 ON G5. REFER TO GEOTECHNICAL REPORT FOR EXISTING SOIL CONDITIONS.
7. LIMITS OF TRENCH RESTORATION SHALL BE ADJUSTED AS NEEDED BY CONTRACTOR TO SUCCESSFULLY CONSTRUCT ALL UNDERGROUND UTILITY IMPROVEMENTS, AT NO ADDITIONAL CHARGE TO THE OWNER.



PROFILE HORIZONTAL SCALE: 1"=20' VERTICAL SCALE: 1"=2'

\* CONTRACTOR SHALL FOLLOW LENGTH OF PIPE IDENTIFIED ON PLAN VIEW, AS PIPE LENGTHS SHOWN IN PROFILE ARE REPRESENTATIVE OF STATIONING

BID SET ELEVATIONS ARE IN NAVD 1988 NOT FOR CONSTRUCTION



File Name: P:\Projects\2016\168470 Raw Water Pipeline Project\cadd Files\Drawings\168470-C-WATR.dwg - (Plotted by: Katherine Kupsky on Friday, March 13, 2020 11:44:25 AM)

Table with columns: NO, DATE, REVISION, BY, NO, DATE, REVISION, BY

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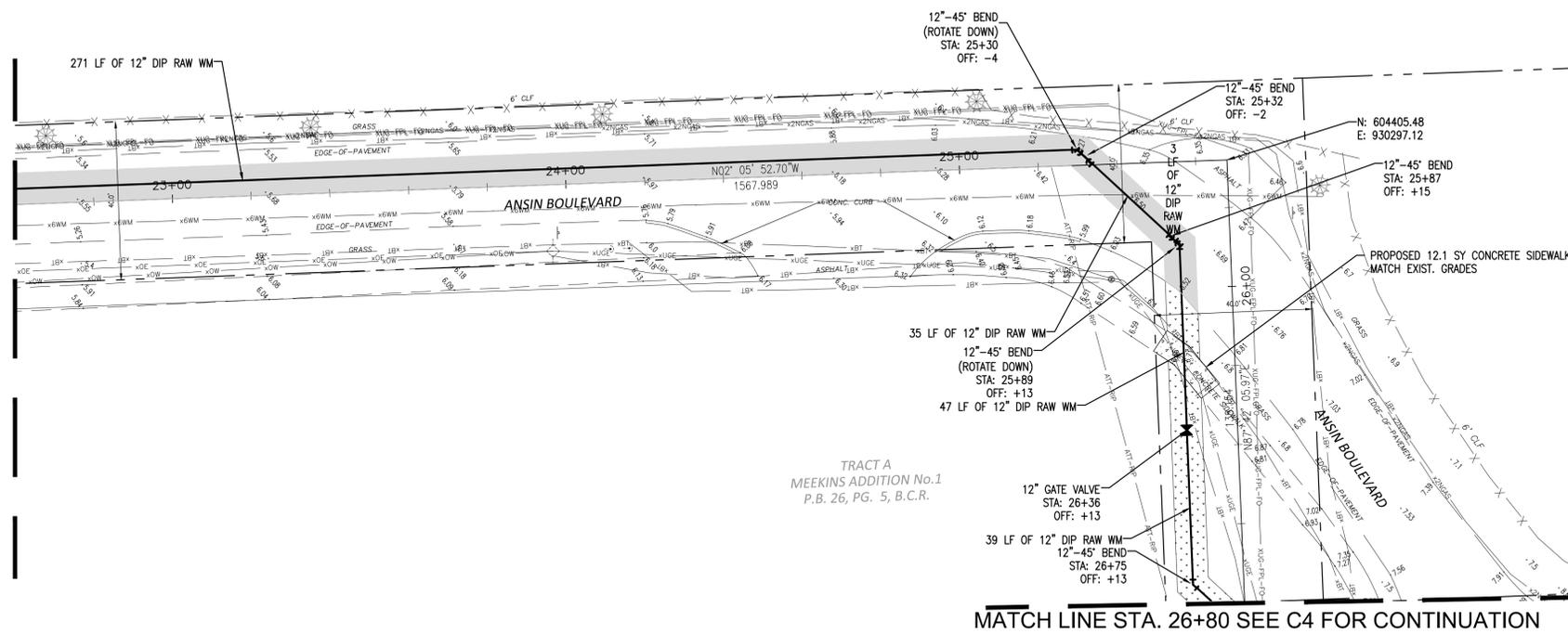
RAW WATER PIPELINE PROJECT HALLANDALE BEACH, FLORIDA

ENGINEERING PLAN

JAMES D. MESSICK, P.E. STATE OF FLORIDA PROFESSIONAL ENGINEER LICENSE No. 70870 DATE: 03/06/20

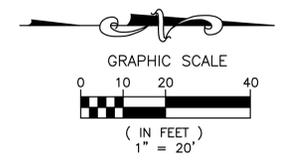
Table with columns: SCALE AS SHOWN, PROJECT No. 168470, SHEET C2

MATCH LINE STA. 22+60 SEE C2 FOR CONTINUATION



TRACT A  
MEEKINS ADDITION No.1  
P.B. 26, PG. 5, B.C.R.

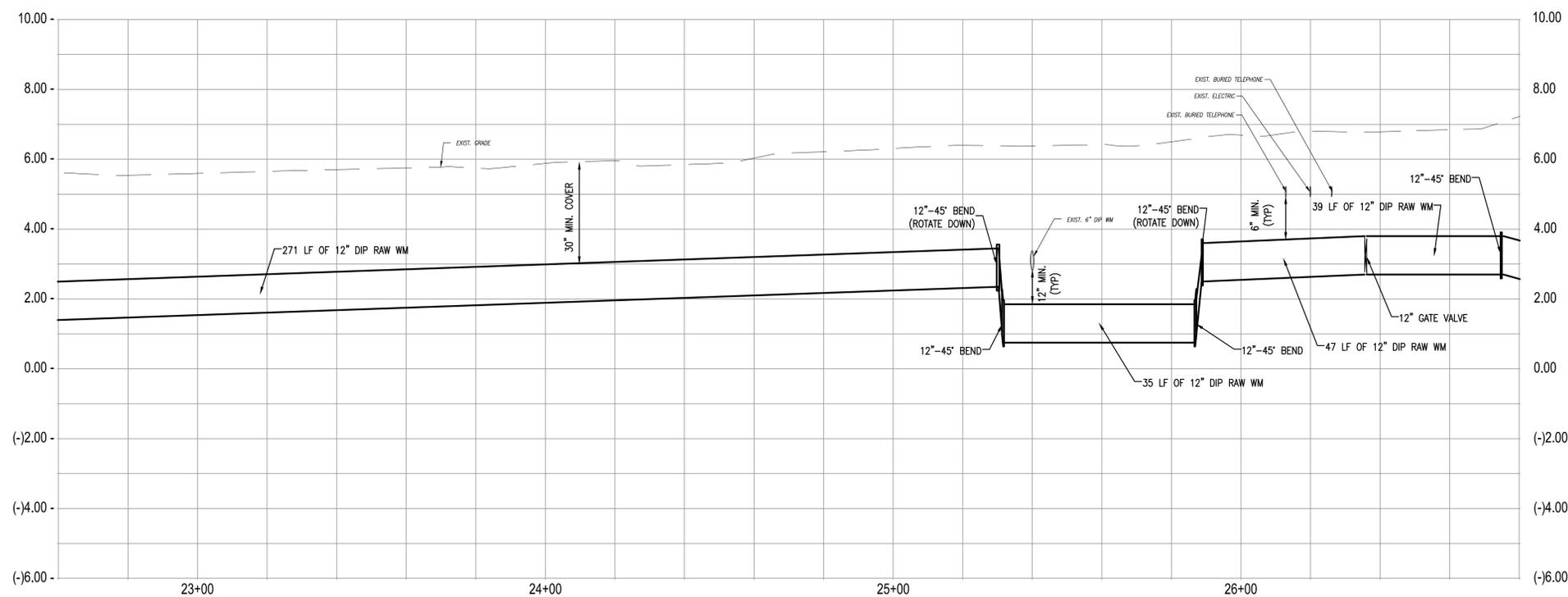
**PLAN**  
SCALE: 1" = 20'



**LEGEND**

|     |                                     |
|-----|-------------------------------------|
| --- | R/W LINE                            |
| --- | LOT LINE                            |
| --- | EXISTING STORM SEWER                |
| --- | EXISTING SANITARY SEWER             |
| --- | EXISTING WATER MAIN                 |
| --- | EXISTING BURIED TELEPHONE           |
| --- | EXISTING RAW WATER PIPE             |
| --- | EXISTING OVERHEAD ELECTRIC          |
| --- | EXISTING OVERHEAD WIRES             |
| --- | EXISTING ATT RETIRED IN PLACE       |
| --- | EXISTING OVERHEAD COMCAST           |
| --- | EXISTING NATURAL GAS                |
| --- | EXISTING ELEVATIONS                 |
| --- | PROPOSED RESTORATION                |
| --- | PROPOSED CONCRETE SIDEWALK/DRIVEWAY |
| --- | PROPOSED SOD RESTORATION            |

MATCH LINE STA. 26+80 SEE C4 FOR CONTINUATION



**PROFILE**  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'

- NOTES:**
- SEE G2 FOR LEGEND AND ABBREVIATIONS.
  - CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL DOWATERING PERMITS REQUIRED FOR THEIR MEANS AND METHODS OF CONSTRUCTION.
  - "NO NOTICE" DOWATERING ACTIVITIES INCLUDE:
    - A MAXIMUM DAILY PUMPAGE RATE OF 5 MILLION GPD
    - A MAXIMUM TOTAL PROJECT PUMPAGE OF 100 MG IN ONE YEAR.
  - ALL DISCHARGE IS TO BE RETAINED ON SITE.
  - ACTIVITIES MUST COMPLY WITH SPWMD CONSUMPTIVE USE PERMIT APPLICANTS HANDBOOK SECTION 5 DATED 7/16/14.
  - THE CONTRACTOR IS RESPONSIBLE TO MITIGATE ANY HARM THAT MAY OCCUR AS A RESULT OF DOWATERING ACTIVITIES.
  - ALL PIPES SHALL BE RESTRAINED DUCTILE IRON PIPE CL350.
  - CONTRACTOR TO COORDINATE WITH ATT AND CONFIRM EXISTING ATT-RIP UTILITY BEFORE REMOVAL.

- GENERAL NOTES:**
- ALL SIDEWALKS WITHIN THE APPROVED PERMIT LIMITS ARE TO BE ADA COMPLIANT, UPGRADED CURB RAMPS SHALL BE PROVIDED PER FDOT STANDARD PLANS 522-002.
  - ANY DAMAGED SIDEWALK OR CURB AND GUTTER WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND REPLACED.
  - ANY PAVEMENT WITHIN PROJECT LIMITS DAMAGED DURING CONSTRUCTION SHALL BE RECONSTRUCTED IN ACCORDANCE WITH BROWARD COUNTY MINIMUM STANDARDS LATEST ADDITION.
  - WEARING COURSES SHALL NOT BE PLACED UNTIL ALL UNDERGROUND UTILITIES ARE INSTALLED, AND ACCEPTED, AND A FINISH ROCK SURVEY HAS BEEN SUBMITTED TO AND ACCEPTED BY THE OWNER.
  - FOR PIPE AND FITTINGS SHOWN WITH LESS THAN 30" OF COVER, WRAP PIPE AND FITTINGS WITH VISQUEEN AND POUR 3000 PSI CONCRETE FROM SPRINGLINE TO 6" ABOVE PIPE. CONCRETE SHALL EXTEND 24" (MIN.) BEYOND PIPE RUN WITH LESS THAN MINIMUM COVER OF 30".
  - WHEN UNSUITABLE SOILS ARE ENCOUNTERED, CONTRACTOR SHALL INSTALL PIPE PER DETAIL 4 ON G5. REFER TO GEOTECHNICAL REPORT FOR EXISTING SOIL CONDITIONS.
  - LIMITS OF TRENCH RESTORATION SHALL BE ADJUSTED AS NEEDED BY CONTRACTOR TO SUCCESSFULLY CONSTRUCT ALL UNDERGROUND UTILITY IMPROVEMENTS, AT NO ADDITIONAL CHARGE TO THE OWNER.

\* CONTRACTOR SHALL FOLLOW LENGTH OF PIPE IDENTIFIED ON PLAN VIEW, AS PIPE LENGTHS SHOWN IN PROFILE ARE REPRESENTATIVE OF STATIONING

BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION



File Name: P:\Projects\2016\168470 Raw Water Pipeline Project\cadd Files\Drawings\168470-C-WATR.dwg - (Plotted by: Katherine Kupsky on Friday, March 13, 2020 11:45:00 AM)

| NO | DATE | REVISION | BY | NO | DATE | REVISION | BY |
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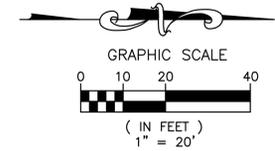
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**RAW WATER PIPELINE PROJECT**  
HALLANDALE BEACH, FLORIDA

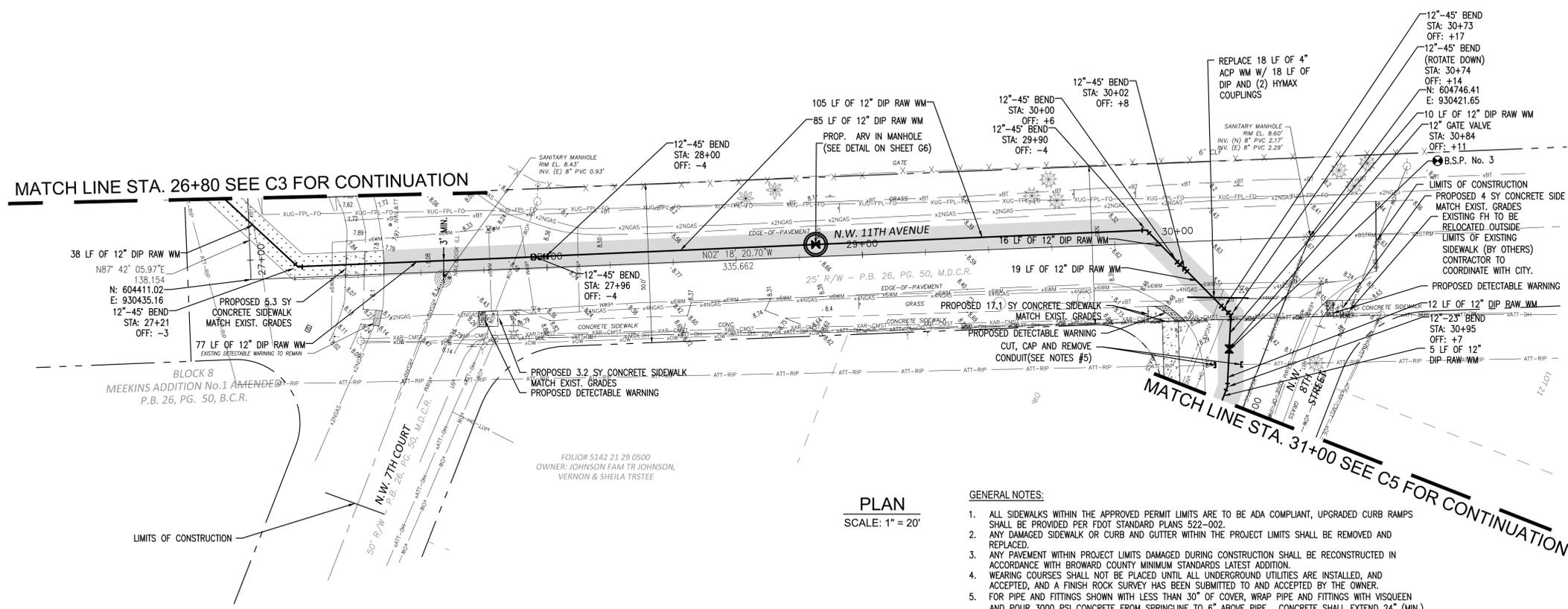
**ENGINEERING PLAN**

JAMES D. MESSICK, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE No. 70870  
DATE: 03/06/20

|             |          |                    |
|-------------|----------|--------------------|
| SCALE       | AS SHOWN | SHEET<br><b>C3</b> |
| PROJECT No. | 168470   |                    |



MATCH LINE STA. 26+80 SEE C3 FOR CONTINUATION



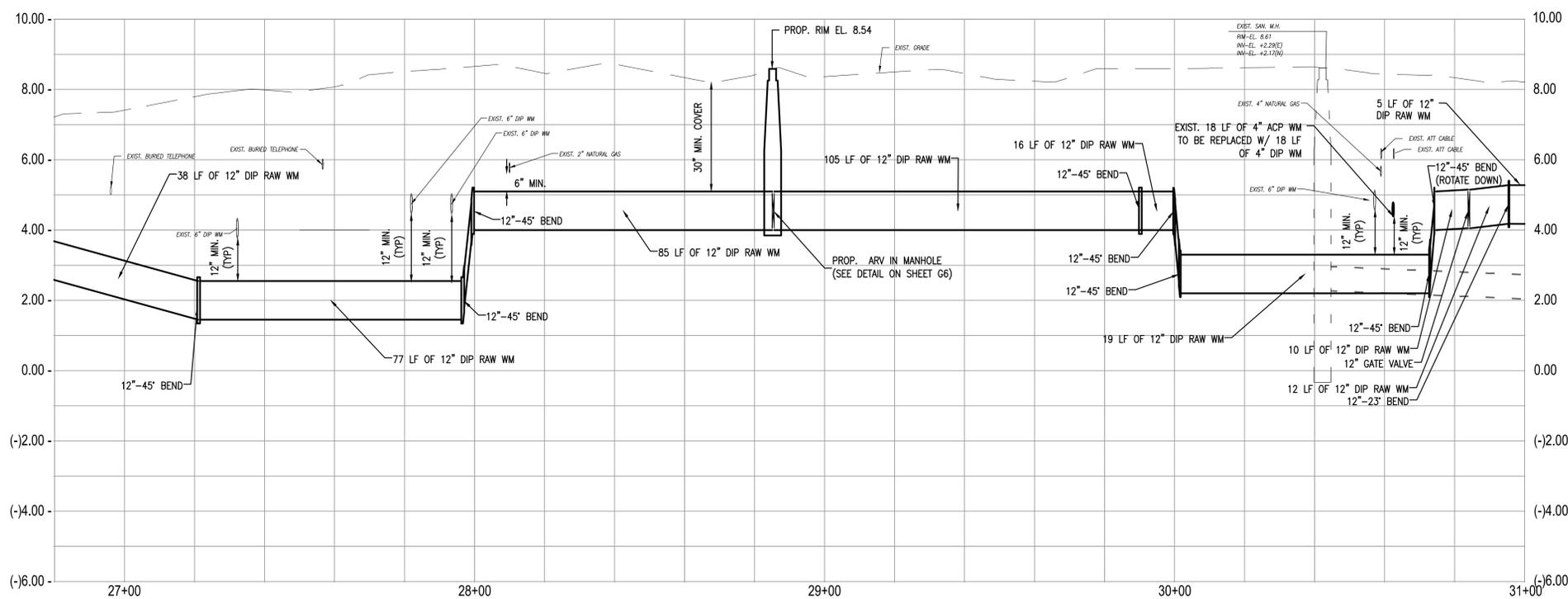
PLAN  
SCALE: 1" = 20'

GENERAL NOTES:

1. ALL SIDEWALKS WITHIN THE APPROVED PERMIT LIMITS ARE TO BE ADA COMPLIANT, UPGRADED CURB RAMPS SHALL BE PROVIDED PER FDOT STANDARD PLANS 522-002.
2. ANY DAMAGED SIDEWALK OR CURB AND GUTTER WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND REPLACED.
3. ANY PAVEMENT WITHIN PROJECT LIMITS DAMAGED DURING CONSTRUCTION SHALL BE RECONSTRUCTED IN ACCORDANCE WITH BROWARD COUNTY MINIMUM STANDARDS LATEST ADDITION.
4. WEARING COURSES SHALL NOT BE PLACED UNTIL ALL UNDERGROUND UTILITIES ARE INSTALLED, AND ACCEPTED, AND A FINISH ROCK SURVEY HAS BEEN SUBMITTED TO AND ACCEPTED BY THE OWNER.
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6. WHEN UNSUITABLE SOILS ARE ENCOUNTERED, CONTRACTOR SHALL INSTALL PIPE PER DETAIL 4 ON G5. REFER TO GEOTECHNICAL REPORT FOR EXISTING SOIL CONDITIONS.
7. LIMITS OF TRENCH RESTORATION SHALL BE ADJUSTED AS NEEDED BY CONTRACTOR TO SUCCESSFULLY CONSTRUCT ALL UNDERGROUND UTILITY IMPROVEMENTS, AT NO ADDITIONAL CHARGE TO THE OWNER.

NOTES:

1. SEE G2 FOR LEGEND AND ABBREVIATIONS.
2. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL DEWATERING PERMITS REQUIRED FOR THEIR MEANS AND METHODS OF CONSTRUCTION.
3. "NO NOTICE" DEWATERING ACTIVITIES INCLUDE:
  - 3.1. A MAXIMUM DAILY PUMPAGE RATE OF 5 MILLION GPD
  - 3.2. A MAXIMUM TOTAL PROJECT PUMPAGE OF 100 MG IN ONE YEAR.
  - 3.3. ALL DISCHARGE IS TO BE RETAINED ON SITE.
  - 3.4. ACTIVITIES MUST COMPLY WITH SFWMD CONSUMPTIVE USE PERMIT APPLICANTS HANDBOOK SECTION 5 DATED 7/16/14
4. THE CONTRACTOR IS RESPONSIBLE TO MITIGATE ANY HARM THAT MAY OCCUR AS A RESULT OF DEWATERING ACTIVITIES.
5. ALL PIPES SHALL BE RESTRAINED DUCTILE IRON PIPE CL350. CONTRACTOR TO COORDINATE WITH ATT AND CONFIRM EXISTING ATT-RIP UTILITY BEFORE REMOVAL.



PROFILE  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'

\* CONTRACTOR SHALL FOLLOW LENGTH OF PIPE IDENTIFIED ON PLAN VIEW, AS PIPE LENGTHS SHOWN IN PROFILE ARE REPRESENTATIVE OF STATIONING

LEGEND

|            |                                     |
|------------|-------------------------------------|
| ---        | R/W LINE                            |
| ---        | LOT LINE                            |
| -xSTRM-    | EXISTING STORM SEWER                |
| -xSAN-     | EXISTING SANITARY SEWER             |
| -xWM-      | EXISTING WATER MAIN                 |
| -xBT-      | EXISTING BURIED TELEPHONE           |
| -x12RAW-   | EXISTING RAW WATER PIPE             |
| -xOE-      | EXISTING OVERHEAD ELECTRIC          |
| -xOW-      | EXISTING OVERHEAD WIRES             |
| -ATT-RIP-  | EXISTING ATT RETIRED IN PLACE       |
| -XAR-CMST- | EXISTING OVERHEAD COMCAST           |
| -xNGAS-    | EXISTING NATURAL GAS                |
| •••        | EXISTING ELEVATIONS                 |
| ■          | PROPOSED RESTORATION                |
| ■          | PROPOSED CONCRETE SIDEWALK/DRIVEWAY |
| ■          | PROPOSED SOD RESTORATION            |

BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION



File Name: P:\Projects\2016\168470 Raw Water Pipeline Project\cadd Files\Drawings\168470-C-WATR.dwg - (Plotted by: Katherine Kupsky on Friday, March 13, 2020 11:45:32 AM)

| NO | DATE | REVISION | BY | NO | DATE | REVISION | BY |
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RAW WATER PIPELINE PROJECT  
HALLANDALE BEACH, FLORIDA

ENGINEERING PLAN

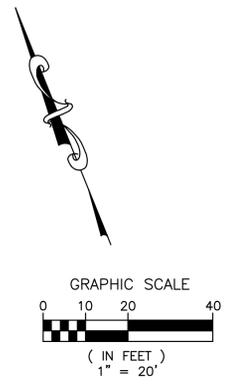
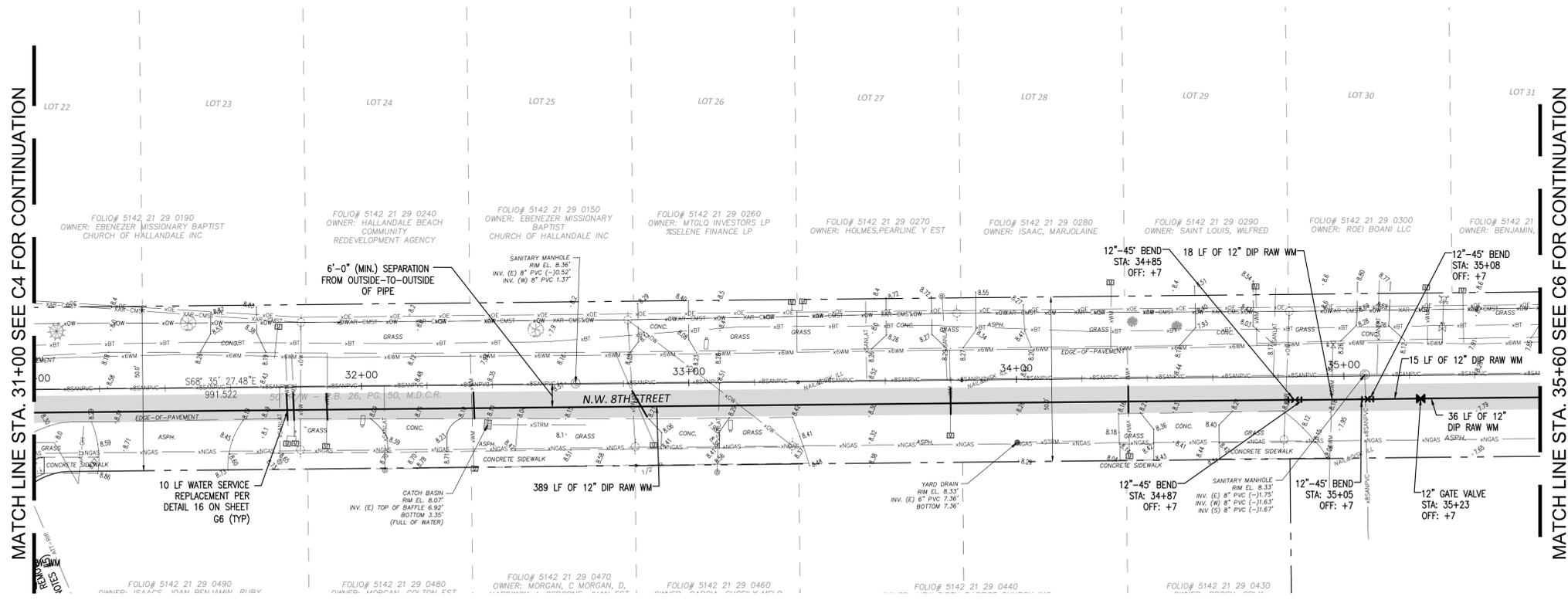
JAMES D. MESSICK, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE No. 70870

DATE: 03/06/20

|             |          |                    |
|-------------|----------|--------------------|
| SCALE       | AS SHOWN | SHEET<br><b>C4</b> |
| PROJECT No. | 168470   |                    |

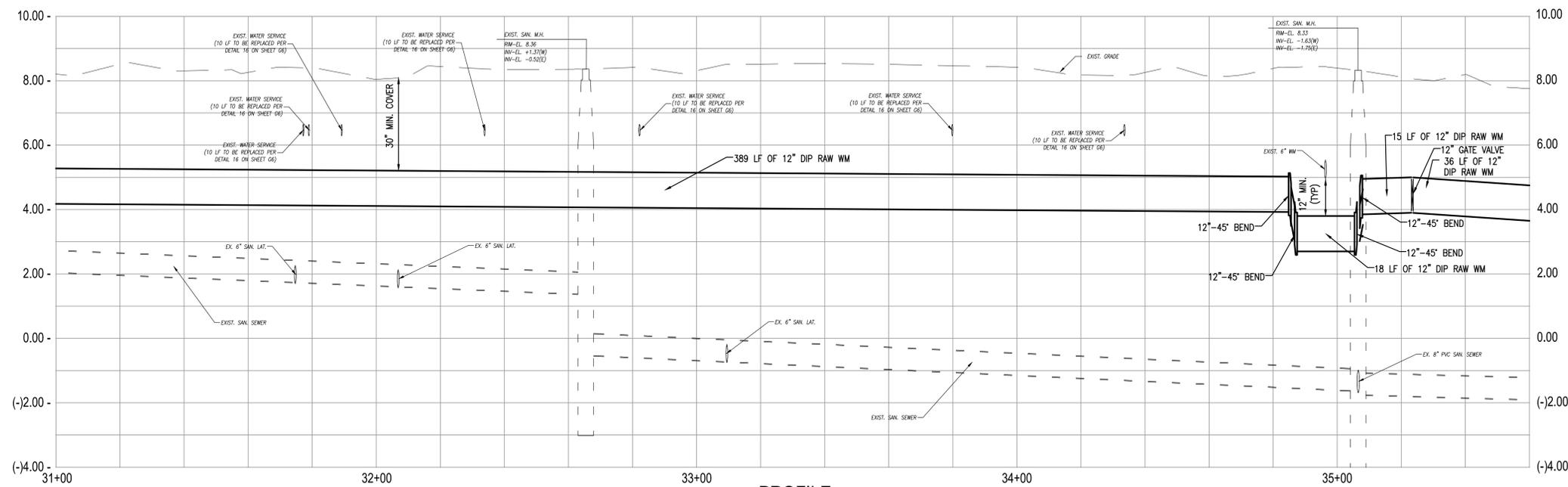
MATCH LINE STA. 31+00 SEE C4 FOR CONTINUATION

MATCH LINE STA. 35+60 SEE C6 FOR CONTINUATION



| LEGEND   |                                     |
|----------|-------------------------------------|
| ---      | R/W LINE                            |
| ---      | LOT LINE                            |
| xSTRM    | EXISTING STORM SEWER                |
| xSAN     | EXISTING SANITARY SEWER             |
| xWM      | EXISTING WATER MAIN                 |
| xBT      | EXISTING BURIED TELEPHONE           |
| x12RAW   | EXISTING RAW WATER PIPE             |
| xOE      | EXISTING OVERHEAD ELECTRIC          |
| xOW      | EXISTING OVERHEAD WIRES             |
| ATT-RIP  | EXISTING ATT RETIRED IN PLACE       |
| XAR-CMST | EXISTING OVERHEAD COMCAST           |
| xNGAS    | EXISTING NATURAL GAS                |
| +        | EXISTING ELEVATIONS                 |
| ■        | PROPOSED RESTORATION                |
| □        | PROPOSED CONCRETE SIDEWALK/DRIVEWAY |
| □        | PROPOSED SOD RESTORATION            |

**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'

- NOTES:**
- SEE G2 FOR LEGEND AND ABBREVIATIONS.
  - CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL DEWATERING PERMITS REQUIRED FOR THEIR MEANS AND METHODS OF CONSTRUCTION.
  - "NO NOTICE" DEWATERING ACTIVITIES INCLUDE:
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    - A MAXIMUM TOTAL PROJECT PUMPAGE OF 100 MG IN ONE YEAR.
    - ALL DISCHARGE IS TO BE RETAINED ON SITE.
    - ACTIVITIES MUST COMPLY WITH SFWM CONSUMPTIVE USE PERMIT APPLICANTS HANDBOOK SECTION 5 DATED 7/16/14
  - THE CONTRACTOR IS RESPONSIBLE TO MITIGATE ANY HARM THAT MAY OCCUR AS A RESULT OF DEWATERING ACTIVITIES.
  - ALL PIPES SHALL BE RESTRAINED DUCTILE IRON PIPE CL350. CONTRACTOR TO COORDINATE WITH ATT AND CONFIRM EXISTING ATT-RIP UTILITY BEFORE REMOVAL.

- GENERAL NOTES:**
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BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION



\* CONTRACTOR SHALL FOLLOW LENGTH OF PIPE IDENTIFIED ON PLAN VIEW, AS PIPE LENGTHS SHOWN IN PROFILE ARE REPRESENTATIVE OF STATIONING

File Name: P:\Projects\2016\168470 Raw Water Pipeline Project\cadd Files\Drawings\168470-C-WATR.dwg - (Plotted by: Katharine Kupsky on Friday, March 13, 2020 11:46:06 AM)

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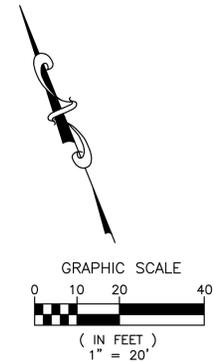
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**RAW WATER PIPELINE PROJECT**  
HALLANDALE BEACH, FLORIDA

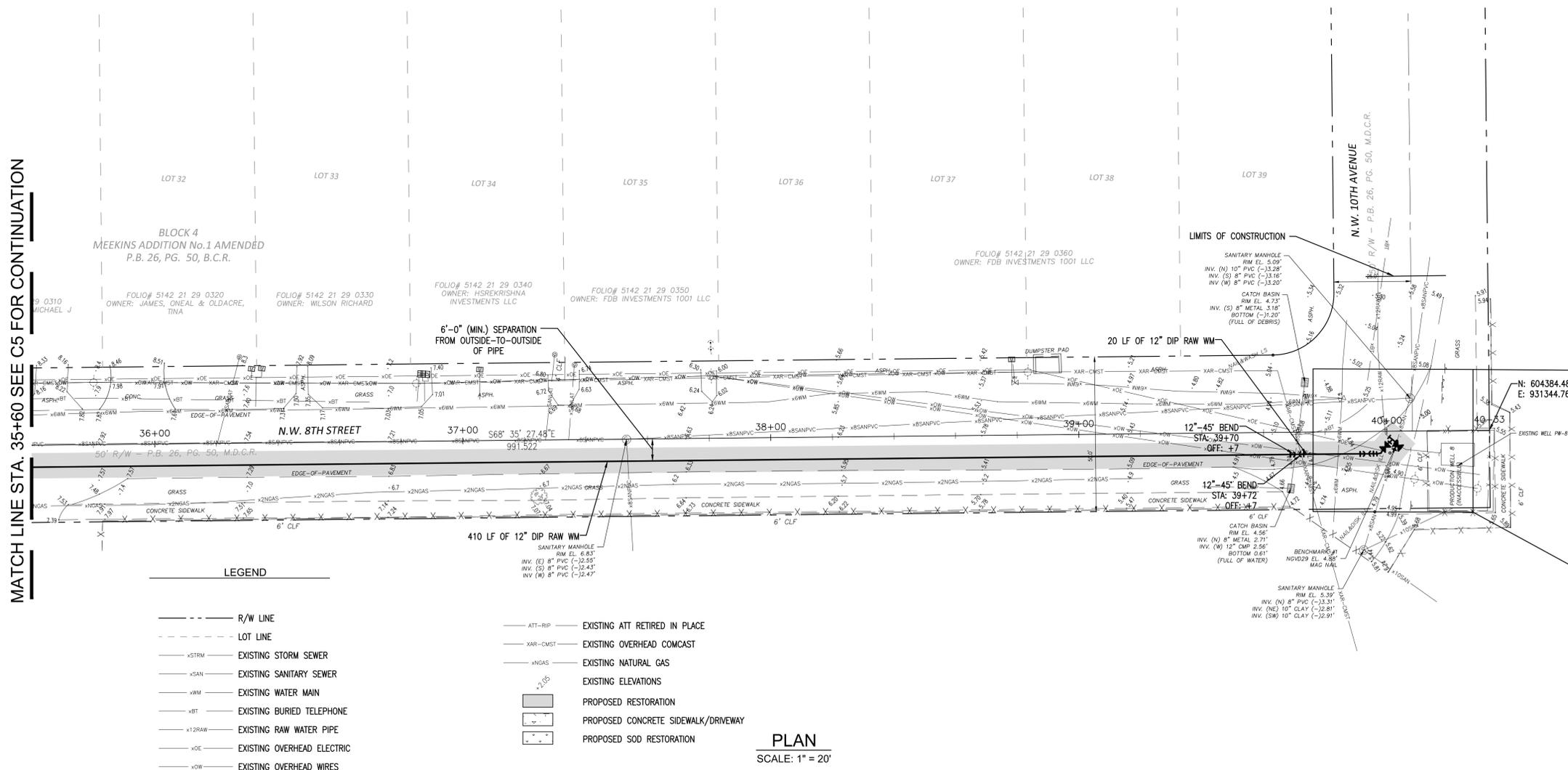
**ENGINEERING PLAN**

JAMES D. MESSICK, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE No. 70870  
DATE: 03/06/20

SCALE: AS SHOWN  
PROJECT No: 168470  
SHEET: C5



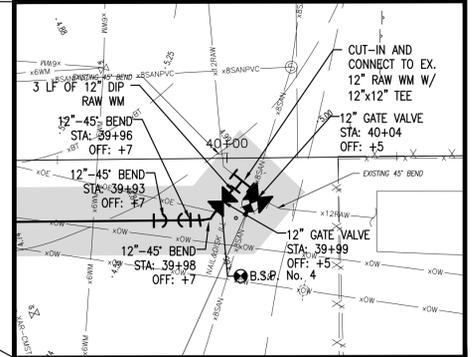
MATCH LINE STA. 35+60 SEE C5 FOR CONTINUATION



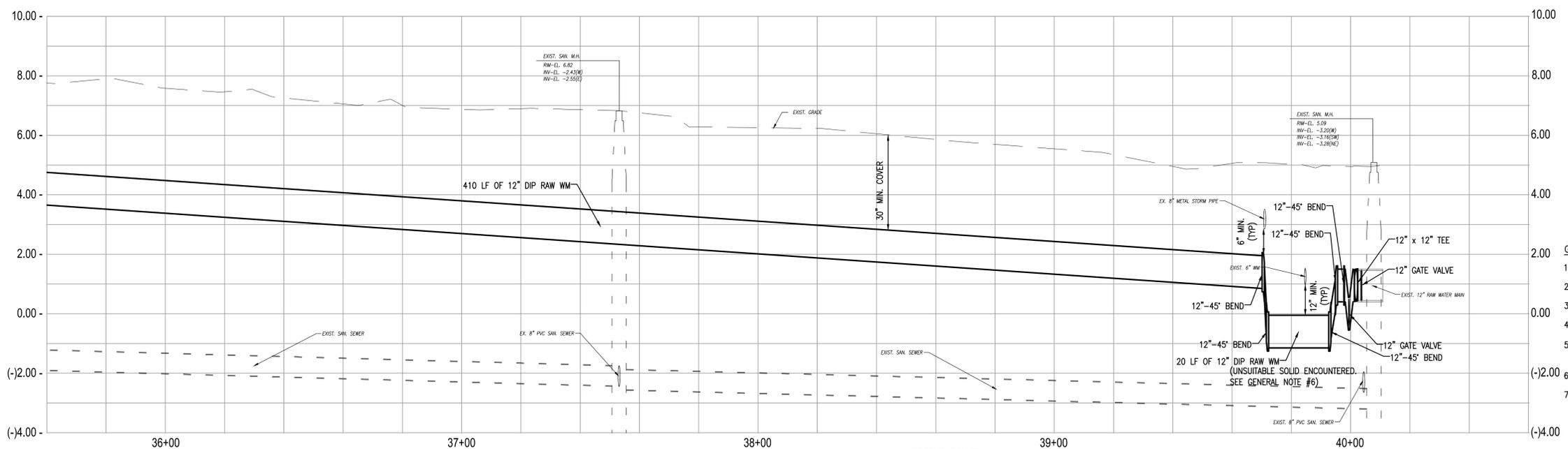
**LEGEND**

- R/W LINE
- LOT LINE
- xSTRM- EXISTING STORM SEWER
- xSAN- EXISTING SANITARY SEWER
- xWM- EXISTING WATER MAIN
- xBT- EXISTING BURIED TELEPHONE
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- xOE- EXISTING OVERHEAD ELECTRIC
- xOW- EXISTING OVERHEAD WIRES
- ATT-RIP --- EXISTING ATT RETIRED IN PLACE
- xAR-CMST- EXISTING OVERHEAD COMCAST
- xNGAS- EXISTING NATURAL GAS
- EXISTING ELEVATIONS
- PROPOSED RESTORATION
- PROPOSED CONCRETE SIDEWALK/DRIVEWAY
- PROPOSED SOD RESTORATION

**PLAN**  
SCALE: 1" = 20'



**RAW WATER CONNECTION DETAIL**  
SCALE: 1" = 10'



**PROFILE**  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'

- NOTES:**
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BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION



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| NO | DATE | REVISION | BY | NO | DATE | REVISION | BY |
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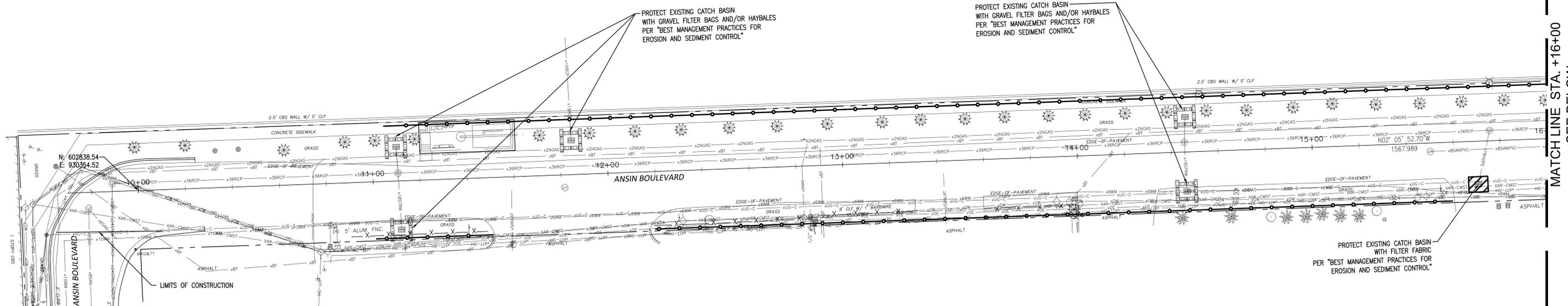
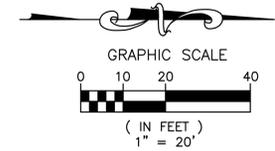
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**RAW WATER PIPELINE PROJECT**  
HALLANDALE BEACH, FLORIDA

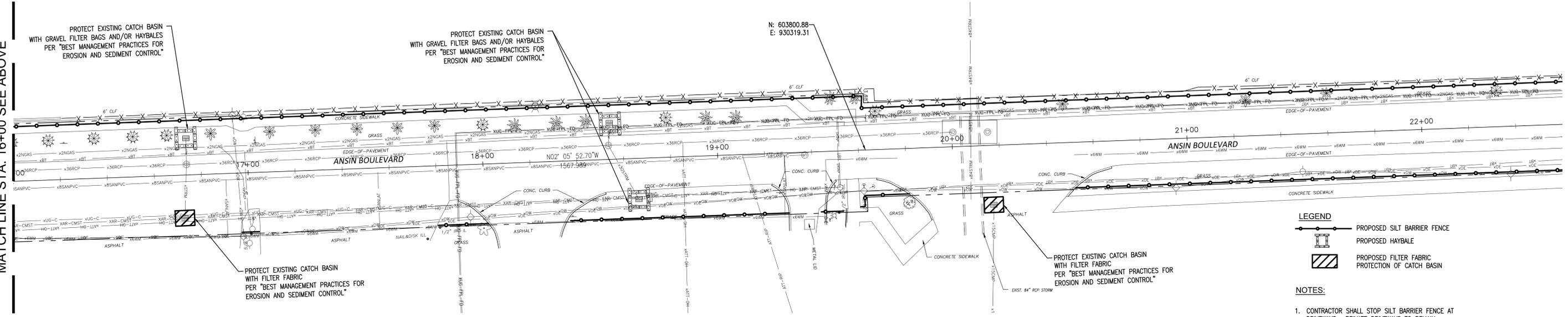
**ENGINEERING PLAN**

JAMES D. MESSICK, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE NO. 70870  
DATE: 03/06/20

|             |       |
|-------------|-------|
| SCALE       | SHEET |
| AS SHOWN    | C6    |
| PROJECT NO. |       |
| 168470      |       |



PLAN  
SCALE: 1" = 20'



PLAN  
SCALE: 1" = 20'

- LEGEND**
- PROPOSED SILT BARRIER FENCE
  - PROPOSED HAYBALE
  - PROPOSED FILTER FABRIC
  - PROTECTION OF CATCH BASIN

- NOTES:**
1. CONTRACTOR SHALL STOP SILT BARRIER FENCE AT DRIVEWAYS. PRIVATE DRIVEWAYS TO REMAIN ACCESSIBLE AT ALL TIMES.
  2. FOR LEGEND AND ABBREVIATIONS, SEE SHEET G2.
  3. STREETS SHALL BE WASHED DOWN WITH A WATER TRUCK AND SWEEPED EACH DAY.

BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION



File Name: P:\Projects\2016\168470 Raw Water Pipeline Project\cadd Files\Drawings\168470-C-EROS.dwg - (Plotted by: Katharine Kupsky on Friday, March 13, 2020 11:52:32 AM)

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Certificate of Authorization 514

**RAW WATER PIPELINE PROJECT**  
HALLANDALE BEACH, FLORIDA

**STORMWATER POLLUTION PREVENTION PLAN**

JAMES D. MESSICK, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE No. 70870  
DATE: 03/06/20

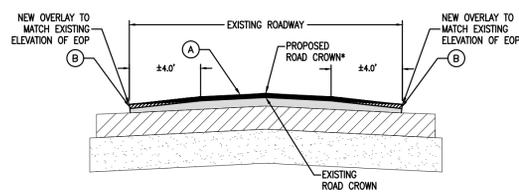
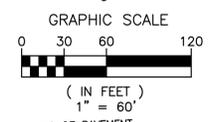
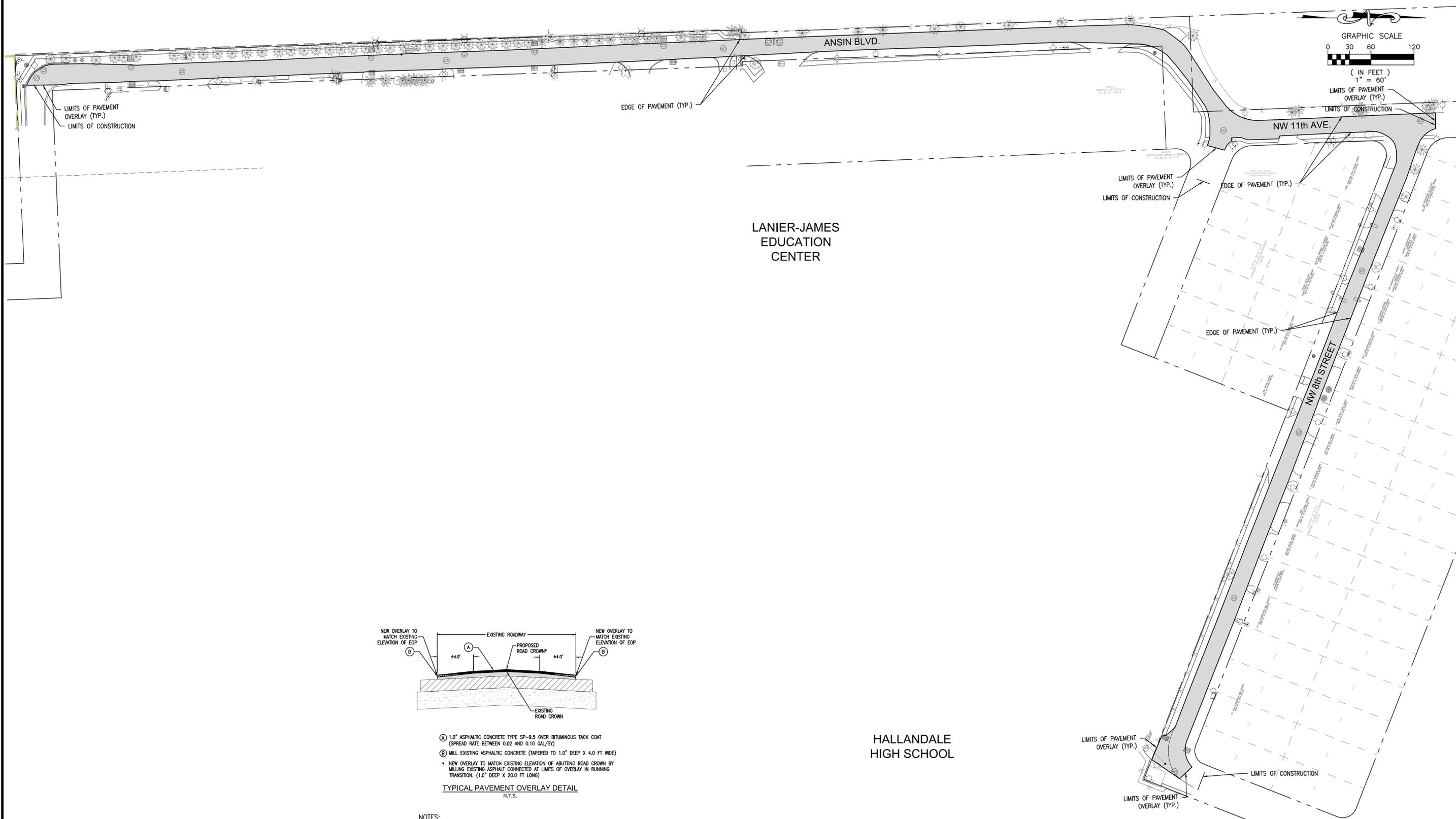
SCALE  
AS SHOWN  
PROJECT No.  
168470

SHEET  
**C7**

MATCH LINE STA. +16+00 SEE BELOW  
MATCH LINE STA. 22+60 SEE C8 FOR CONTINUATION







- Ⓐ 1.0" ASPHALTIC CONCRETE TYPE SP-9.5 OVER BITUMINOUS TACK COAT (SPREAD RATE BETWEEN 0.02 AND 0.10 GAL/SY)
- Ⓑ MILL EXISTING ASPHALTIC CONCRETE (TAPERED TO 1.0" DEEP X 4.0 FT WIDE)
- NEW OVERLAY TO MATCH EXISTING ELEVATION OF ABUTTING ROAD CROWN BY MILLING EXISTING ASPHALT CONNECTED AT LIMITS OF OVERLAY IN RUNNING TRANSITION. (1.0" DEEP X 20.0 FT LONG)

TYPICAL PAVEMENT OVERLAY DETAIL  
N.T.S.

- NOTES:
1. ALL EXISTING UTILITIES MH COVERS, ELECTRICAL BOXES, VALVE BOXES, METER BOXES, DRAINAGE STRUCTURES, ETC. WITHIN PROPOSED AREAS OF IMPROVEMENTS SHALL BE ADJUSTED TO NEW GRADE ELEVATION, UNLESS OTHERWISE NOTED.
  2. PAVEMENT OVERLAY PER DETAIL SHALL NOT TAKE PLACE UNTIL TRENCH RESTORATION PER DETAIL ON SHT. GS HAS BEEN COMPLETED AND ACCEPTED BY CITY.

HALLANDALE HIGH SCHOOL



BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION



File Name: P:\Projects\2016\168470 Raw Water Pipeline Project\cadd Files\Drawings\168470-C-PNMF-OVL.dwg -- (Plotted by: Katherine Kupsky on Friday, March 13, 2020 11:48:07 AM)

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RAW WATER PIPELINE PROJECT  
HALLANDALE BEACH, FLORIDA

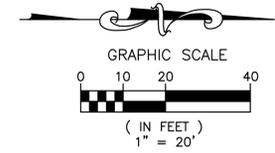
PAVEMENT OVERLAY SHEET

JAMES D. MESSICK, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
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DATE: 03/06/20

SCALE AS SHOWN  
PROJECT No 168470  
SHEET C10

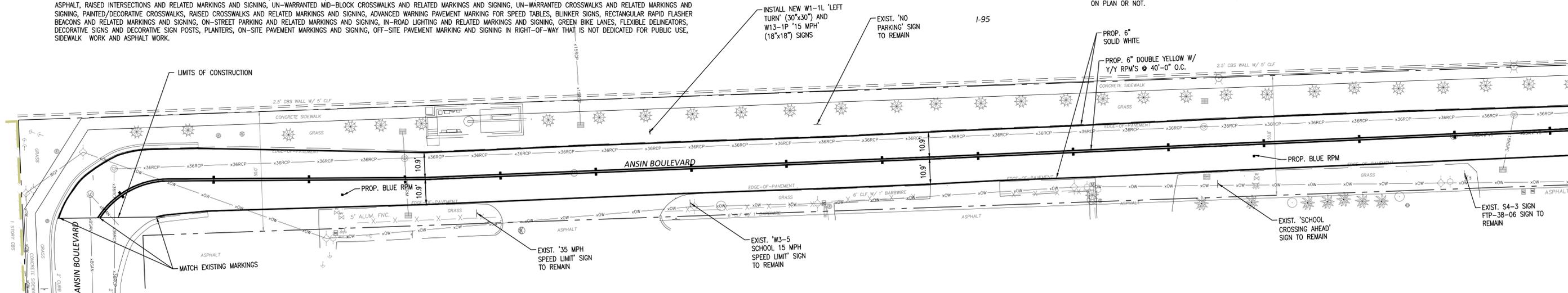
NOTES:

1. THE CONTRACTOR AND/OR SUBCONTRACTOR THAT PERFORMS THE PAVEMENT MARKINGS AND SIGNAGE WORK FOR THE PROJECT MUST HAVE A CURRENT BROWARD COUNTY CERTIFICATE OF COMPETENCY, ISSUED BY THE BROWARD COUNTY PERMITTING, LICENSE AND CONSUMER PROTECTION DIVISION.
2. ALL EXISTING SIGNAGE TO REMAIN.
3. ALL PROPOSED STRIPING TO BE THERMOPLASTIC MEETING FDOT SPECIFICATIONS.
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7. ALL FIRE HYDRANTS LOCATIONS REQUIRE A BLUE/BLEU RPM WHETHER SHOWN ON PLAN OR NOT.

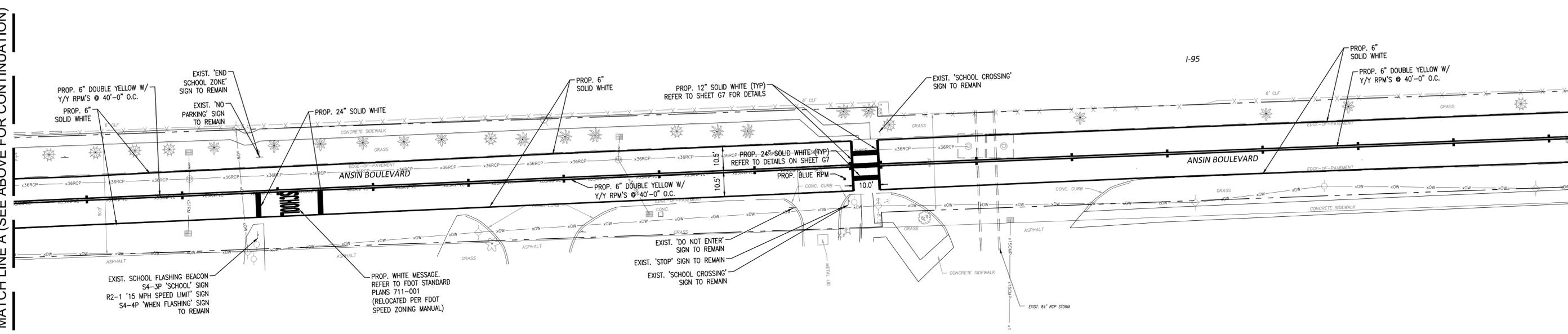


THE FOLLOWING ITEMS ARE NOT REVIEWED OR ACCEPTED BY BROWARD COUNTY:

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2. BROWARD COUNTY TRAFFIC ENGINEERING DIVISION DOES NOT REVIEW AND APPROVE, OR INSPECT AND ACCEPT THE FOLLOWING ITEMS FOR MAINTENANCE: PAVEMENT MARKING 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, ADVANCED WARNING PAVEMENT MARKING FOR SPEED TABLES, BLINKER SIGNS, RECTANGULAR RAPID FLASHER BEACONS AND RELATED MARKINGS AND SIGNING, ON-STREET PARKING AND RELATED MARKING 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 OR ASPHALT WORK.
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PLAN  
SCALE: 1" = 20'



PLAN  
SCALE: 1" = 20'

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MATCH LINE A (SEE ABOVE FOR CONTINUATION)

MATCH LINE A (SEE BELOW FOR CONTINUATION)

MATCH LINE B (SEE SHEET C12 FOR CONTINUATION)

| NO | DATE | REVISION | BY | NO | DATE | REVISION | BY |
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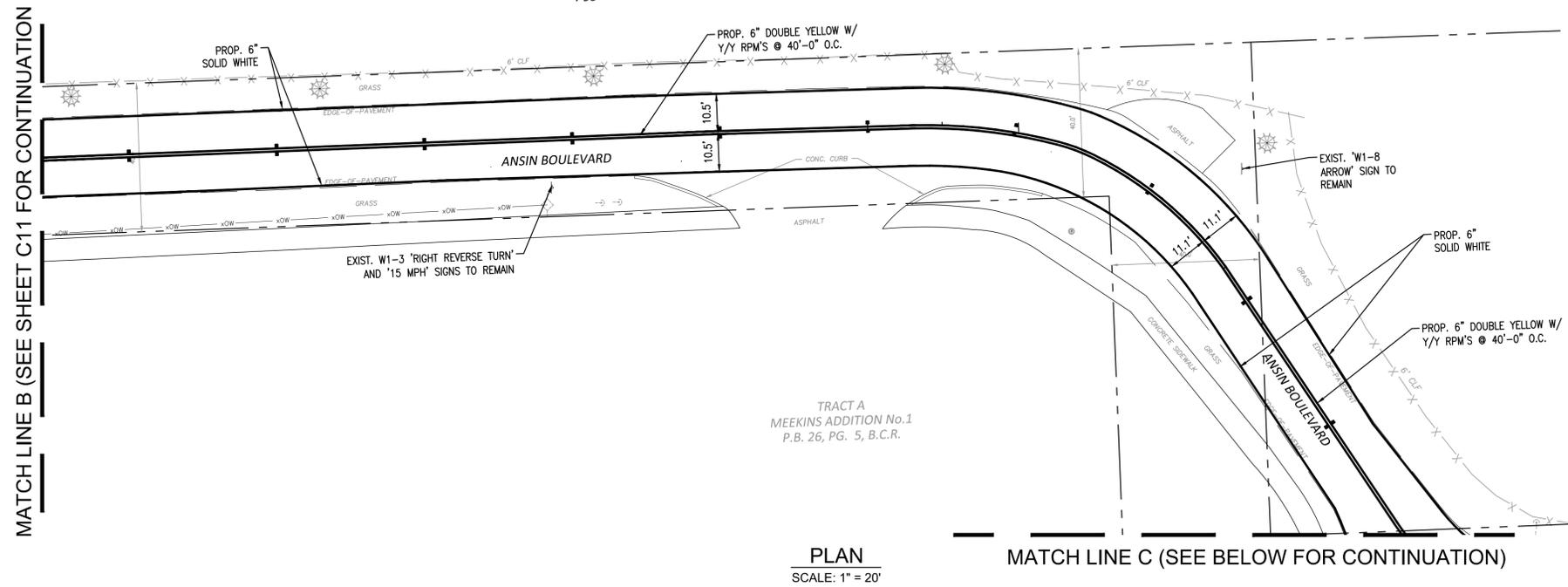
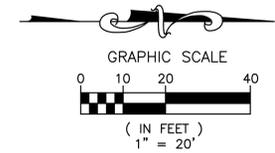
**RAW WATER PIPELINE PROJECT**  
HALLANDALE BEACH, FLORIDA

**PAVEMENT MARKING AND SIGNAGE PLAN**

BID SET  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION  
JAMES D. MESSICK, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE No. 70870  
DATE: 03/06/20

SCALE AS SHOWN  
PROJECT No. 168470  
SHEET C11





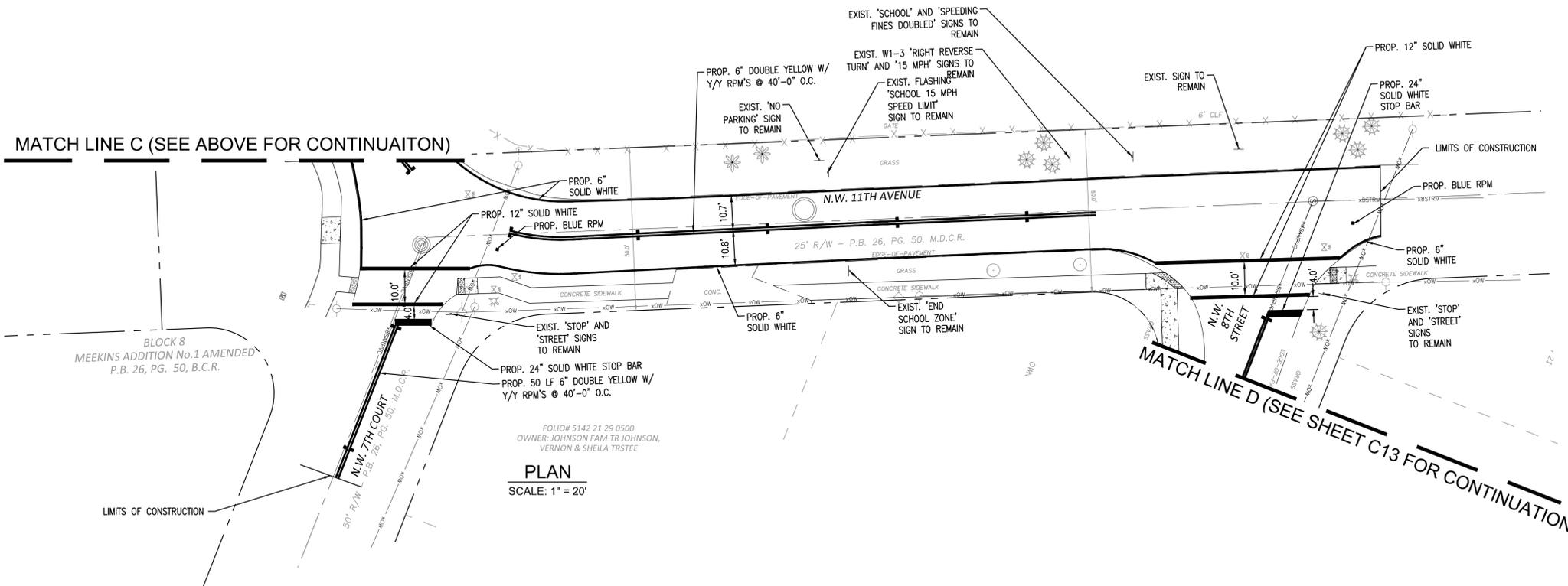
PLAN  
SCALE: 1" = 20'

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PLAN  
SCALE: 1" = 20'

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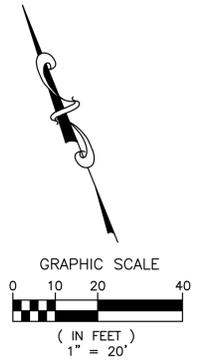
**RAW WATER PIPELINE PROJECT**  
HALLANDALE BEACH, FLORIDA

**PAVEMENT MARKING AND SIGNAGE**  
PLAN

**BID SET**  
ELEVATIONS ARE IN NAVD 1988  
NOT FOR CONSTRUCTION  
JAMES D. MESSICK, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE No. 70870  
DATE: 03/06/20

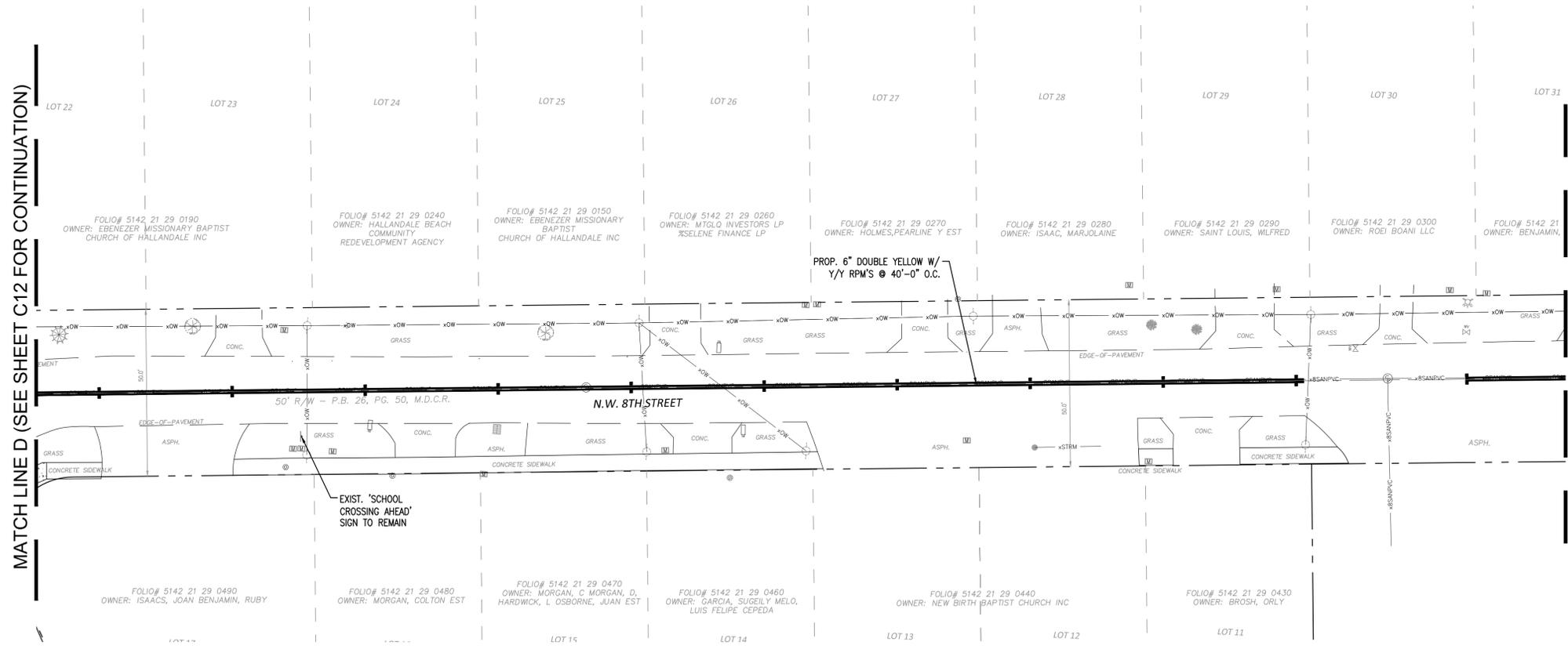
SCALE: AS SHOWN  
PROJECT No: 168470  
SHEET: C12





MATCH LINE D (SEE SHEET C12 FOR CONTINUATION)

MATCH LINE E (SEE BELOW FOR CONTINUATION)



**PLAN**  
SCALE: 1" = 20'

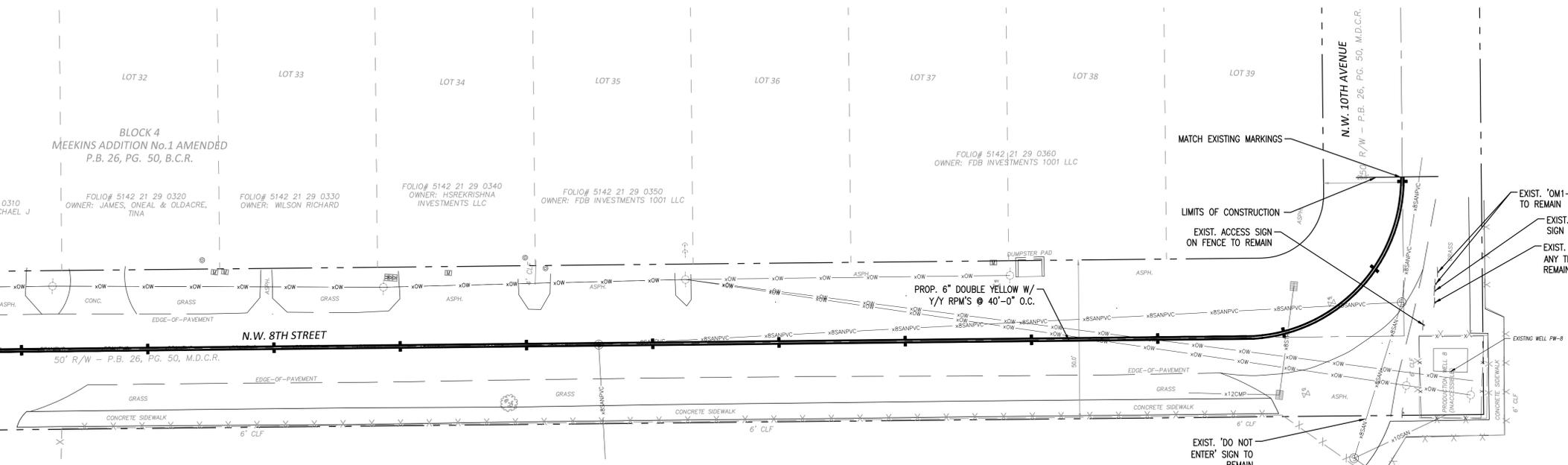
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MATCH LINE E (SEE ABOVE FOR CONTINUATION)



**PLAN**  
SCALE: 1" = 20'

BID SET  
ELEVATIONS ARE IN NAVD 1988  
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**RAW WATER PIPELINE PROJECT**  
HALLANDALE BEACH, FLORIDA

**PAVEMENT MARKING AND SIGNAGE PLAN**

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STATE OF FLORIDA PROFESSIONAL ENGINEER  
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SCALE: AS SHOWN  
PROJECT No: 168470  
SHEET: C13