# BEACH STREET STREETSCAPE
# ORANGE TO BAY
## DAYTONA BEACH, FLORIDA
### CONTRACT NUMBER 0110-2660

## GENERAL NOTES

PROJECT NAME:
BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH, FLORIDA


OWNER:
CITY OF DAYTONA BEACH
MARK VEENSTRA, P.E.
TECHNICAL SERVICES PROJECT MANAGER
CITY OF DAYTONA BEACH,
301 S. RIDGEWOOD AVE.
DAYTONA BEACH, FL 32115
(386)-671-8614
E-MAIL: VEENSTRAMARK@CODB.US

AGENT:
CITY OF DAYTONA BEACH
DAVID WALLER
DEPUTY PUBLIC WORKS DIRECTOR
DAYTONA BEACH, FLORIDA 32118
(386)-671-8681
E-MAIL: WALLERDAVID@CODB.US

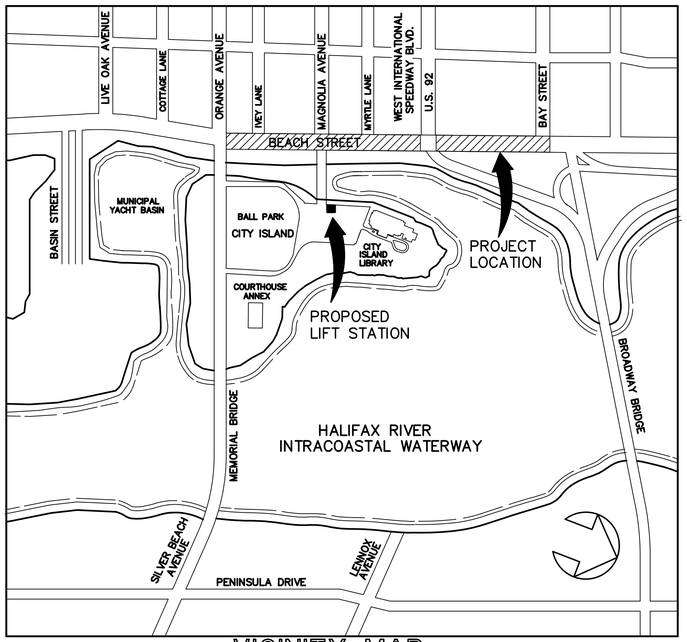
SURVEYOR:
SLIGER & ASSOCIATES, INC.
JOE ZAPERT. JOB NO. 18-0815
3921 NOVA RD. PORT ORANGE, FL. 32127
CONTACT # (386)-761-5385

ENGINEER & LANDSCAPE ARCHITECT:
PARKER MYNCHENBERG & ASSOCIATES, INC.
PARKER MYNCHENBERG, P.E. #32645, L.A. #1553
STEVE R. BUSWELL, P.E. #53985, R.L.A. #6667011
CERTIFICATE OF AUTHORIZATION #003910
1729 RIDGEWOOD AVE.
HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114
CONTACT# (386)-882-5022
E-MAIL: info@parkermynchenberg.com

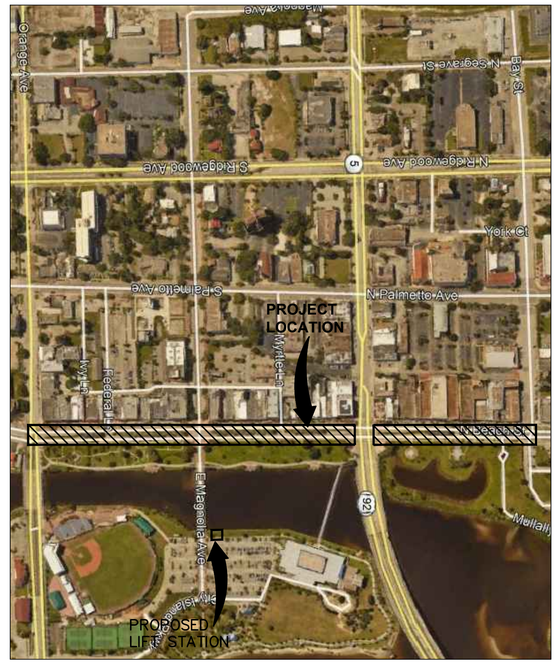
ELECTRICAL ENGINEER:
MIKE PATTERSON, P.E.
ELECTRICAL CONSULTANT
1291 JOHN ANDERSON DRIVE,
ORMOND BEACH, FL. 32176
(386)-441-2382
E-MAIL: MPATTERSON888@AOL.COM

GEOTECHNICAL ENGINEER:
BRIAN C. POHL, P.E.
UNIVERSAL ENGINEERING SCIENCES
911 BEVILLE ROAD, SUITE C
SOUTH DAYTONA, FL 32119
CELL: (386)-527-3938 OFFICE: (386)-756-1105
E-MAIL: BPOHL@UNIVERSALENGINEERING.COM

TRAFFIC CONSULTANT:
TRAFFIC PLANNING & DESIGN, INC.
TURGET DERVISH, P.E.
535 VERSAILLES DR., SUITE 200
MAITLAND, FLORIDA 32751-7305
(407) 628-9955


VICINITY MAP




AERIAL MAP

## INDEX TO DRAWINGS

| SHEET NO. | DESCRIPTION |
|---|---|
| 1 | COVER SHEET |
| S1 | SURVEY KEY MAP |
| S2-S3 | SURVEY |
| 2 | GENERAL NOTES |
| 3 | OVERALL PLAN / KEY MAP |
| 4-8 | DEMOLITION, & EROSION CONTROL PLAN |
| 9-13 | HORIZONTAL CONTROL STRIPING & SIGNAGE PLAN |
| 14-18 | OVERALL PAVING, & DRAINAGE PLAN |
| 19-23 | UTILITY PLAN |
| 24-28 | LANDSCAPE PLAN |
| 29 | LANDSCAPE DETAILS |
| 30-34 | IRRIGATION PLAN |
| 35 | IRRIGATION DETAILS |
| 36-40 | PAVING & DRAINAGE DETAILS |
| 41-42 | STREETSCAPE DETAILS |
| 43-44 | WATER STANDARD DETAILS |
| 45-46 | SANITARY SEWER STANDARD DETAILS |
| 47-48 | REUSE WATER SYSTEM DETAILS |
| 49-53 | LIFT STATION DETAILS |
| 54 | DIRECTIONAL DRILL & DETAILS |
| E1-E8 | LIGHTING & ELECTRICAL PLAN |
| T1-T2 | TRAFFIC & MOT PLAN |

STREET LIGHTING PROVIDED

| | "A" TALL POLE LIGHTS IN MEDIAN | "B1" SINGLE POST TOP | "B2" DOUBLE POST TOP | "B2" 90 DEG DOUBLE POST TOP | "U" UPLIGHTS | |
|---|---|---|---|---|---|---|
| ORANGE TO MAGNOLIA | 5 | 13 | 19 | 6 | 32 | |
| MAGNOLIA TO ISB | 2 | 8 | 13 | 8 | 34 | |
| ISB TO BAY ST. | 3 | 7 | 15 | 6 | 28 | |
| | 10 | 28 | 47 | 20 | 94 | TOTAL 199 |

NOTE – 28 TYPE B1 INCLUDES THREE IN ALLEY WEST OF THE WAR MEMORIAL
NOTE – 47 TYPE B2 DOUBLE TOP INCLUDES FOUR IN ALLEY NORTH OF IVEY LANE.


**PARKER MYNCHENBERG & ASSOCIATES, INC.**
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER: 00003910


30% CONSTRUCTION DRAWINGS

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

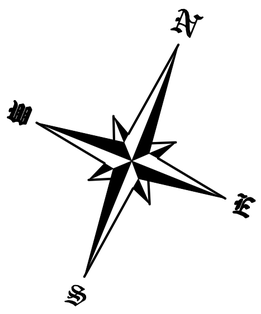
COVER SHEET

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH • FLORIDA

| | |
|---|---|
| FILE NO. 1831-CS.DWG | DESIGNER: P.MYNCHENBERG |
| DATE: 08-21-18 | DRAFTSMAN: B. HARNDEN |
| SCALE: NONE | SHEET 1 OF 54 |

SEAL


W:\Beach Street - Orange to Bay - 1831\1831-CS.dwg, Model, 10/9/2018 2:42:37 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1

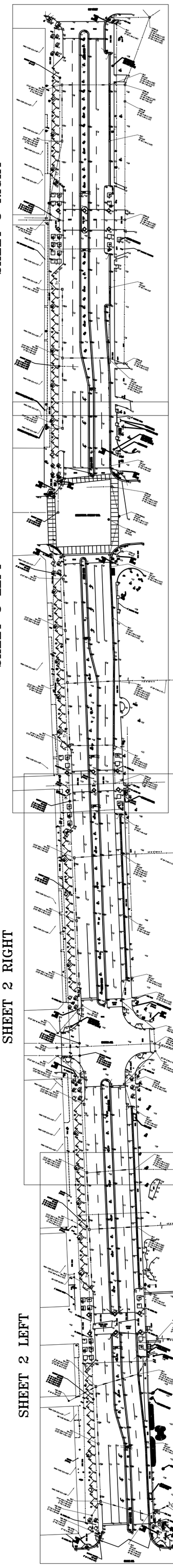



SHEET 3 RIGHT

SHEET 3 LEFT

SHEET 2 RIGHT

SHEET 2 LEFT



SURVEYORS NOTES

1. NOTICE: THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT OF SURVEY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY. THIS SURVEY PREPARED WITHOUT BENEFIT OF AN ABSTRACT.

2. DIMENSIONS ARE SHOWN IN FEET AND DECIMALS THEREOF.

3. BEARING STRUCTURE BASED ON NAD83 FLORIDA STATE PLANE, EAST ZONE, U.S. SURVEY FOOT WITH THE BEARING BETWEEN RMR-21 AND RMR-22 BEING S 49°50'16" E.

4. UNDERGROUND FOUNDATIONS, IF ANY, NOT LOCATED.

5. ELEVATIONS REFER TO N.A.V.D. OF 1988, PER FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION MONUMENT X-31 HAVING A PUBLISHED ELEVATION OF 3.921 FEET.

6. "NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER EXCEPT THOSE WITH AN ELECTRONIC SIGNATURE."

7. UNLESS OTHERWISE SHOWN, RECORD DISTANCES AND DIRECTIONS AND FIELD MEASURED DISTANCES AND DIRECTIONS ARE THE SAME.

## LEGEND

| | | | |
|---|---|---|---|
| ES | ELECTRIC SERVICE | TSB | TRAFFIC SIGNAL BOX |
| MB | MAIL BOX | CO | CLEAN OUT |
| | SIGN | | CONCRETE MONUMENT |
| | TREE | | PERMANENT REFERENCE MONUMENT |
| FH | FIRE HYDRANT | | PERMANENT CONTROL POINT |
| WM | WATER METER | (R) | RADIAL LINE |
| | GUY ANCHOR | (NR) | NON-RADIAL LINE |
| | UTILITY POLE | WV | WATER VALVE |
| | IRON ROD WITH CAP | | EXISTING ELEVATION |
| | IRON PIPE | TV | CABLE TELEVISION BOX |
| TB | TELEPHONE BOX | | |

# *BEACH STREET STREETSCAPE*
# *ORANGE AVE. NORTH TO BAY ST.*
# *DAYTONA BEACH, FLORIDA*

## ABBREVIATIONS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CM | CONCRETE MONUMENT | WV | WATER VALVE | D | CENTRAL ANGLE | INV | INVERT | —FC— | BURIED FIBER OPTIC CABLE | MES | MITERED END SECTION |
| TOB | TOP OF BANK | TSB | TRAFFIC SIGNAL BOX | R | RADIUS | SEC | SECTION | — T — | BURIED TELEPHONE LINE | RCP | REINFORCED CONCRETE PIPE |
| TOE | TOE OF SLOPE | FH | FIRE HYDRANT | L | ARC LENGTH | TWP | TOWNSHIP | — W — | BURIED WATER LINE | CMP | CORRUGATED METAL PIPE |
| CLS | CENTERLINE OF SWALE | WM | WATER METER | CB | CHORD BEARING | RGE | RANGE | — E — | BURIED ELECTRIC LINE | MH | MANHOLE |
| CLD | CENTERLINE OF DITCH | LP | LIGHT POLE | CH | CHORD DISTANCE | R/W | RIGHT OF WAY | — G — | BURIED GAS LINE | MB | MAP BOOK |
| CO | CLEANOUT | PP | POWER POLE/UTILITY POLE | FP&L CO | FLORIDA POWER & LIGHT COMPANY | CONC | CONCRETE | —TV— | BURIED TELEVISION LINE | BK | BOOK |
| SAN | SANITARY | GA | GUY ANCHOR | NGVD | NATIONAL GEODETIC VERTICAL DATUM | EL | ELEVATION | —FM— | BURIED FORCE MAIN | OR | OFFICIAL RECORDS BOOK |
| ES | ELECTRIC SERVICE | CPP | CONCRETE POWER POLE | | | (NR) | NON RADIAL | — • — | AERIAL UTILITY LINE | PG | PAGE |
| RCP | REINFORCED CONCRETE PIPE | WPP | WOOD POWER POLE | USC & GS | UNITED STATES COAST AND GEODETIC SURVEY | (P) | PLAT | (R) | RADIAL | ID | IDENTIFICATION |
| VCP | VITREOUS CLAY PIPE | PVC | POLYVINYL CHLORIDE | | | (M) | MEASURED | (D) | DEED | (TYP) | TYPICAL |
| INV | INVERT | CONC | CONCRETE | ℄ | CENTERLINE | | | (DESC) | DESCRIPTION | MH | MANHOLE |


**SLIGER & ASSOCIATES, INC.**
PROFESSIONAL LAND SURVEYORS
3921 NOVA ROAD
PORT ORANGE, FL. 32127
(386) 761-5385
LICENSED BUSINESS CERTIFICATION NUMBER 3019



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THIS PLAT OF SURVEY IS CERTIFIED TO AND PREPARED FOR THE SOLE AND EXCLUSIVE BENEFIT OF THE ENTITIES AND\OR INDIVIDUALS LISTED BELOW, ON THE MOST CURRENT DATE, AND SHALL NOT BE RELIED UPON BY ANY OTHER ENTITY OR INDIVIDUAL WHOMSOEVER.

| TYPE OF SURVEY | CERTIFIED TO | SURVEY DATE | JOB NUMBER |
|---|---|---|---|
| TOPOGRAPHIC | PARKER MYNCHENBERG & ASSOCIATES, INC. | 9-12-18 | 18-1118 |
| | | | |
| | | | |
| | NOT CERTIFIED TO ANY ENTITIES AND/OR INDIVIDUALS | | |
| | OTHER THAN THOSE LISTED ABOVE. | | |

FOR: PARKER MYNCHENBERG & ASSOCIATES, INC.

SCALE: 1"=80'

DIGITAL FIELD BOOK: 181118SS (A THRU H).TXT
FIELD BOOK: 1400 PAGES: 61-64

SHEET 1 OF 3

| TYPE OF SURVEY | | DATE OF SURVEY | JOB NUMBER | PARTY CHIEF | DRAWN BY | CHECKED BY |
|---|---|---|---|---|---|---|
| *SPECIFIC PURPOSE* | : | | – | – | – | – | |
| *BOUNDARY SURVEY* | : | | – | – | – | – | |
| *TOPOGRAPHIC SURVEY* | : | 9-12-18 | – 18-1118 | – S STRICKLAND | – D HITCHCOCK | – J ZAPERT |
| *FOUNDATION SURVEY* | : | | – | – | – | – | |
| *FINAL SURVEY* | : | | – | – | – | – | |
| *RECERTIFICATION SURVEY* | : | | – | – | – | – | |

I HEREBY CERTIFY THAT THIS PLAT MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17.05, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

J.E. ZAPERT, P.L.S. NO. 4046
STEVEN T. KRUGER, P.L.S. NO. 4722
C.O. VAN KLEECK JR., P.S.M. NO. 6149
MICHAEL S. MURPHY, P.S.M. NO. 6208

VALID WITH SIGNATURE & EMBOSSED SEAL ONLY


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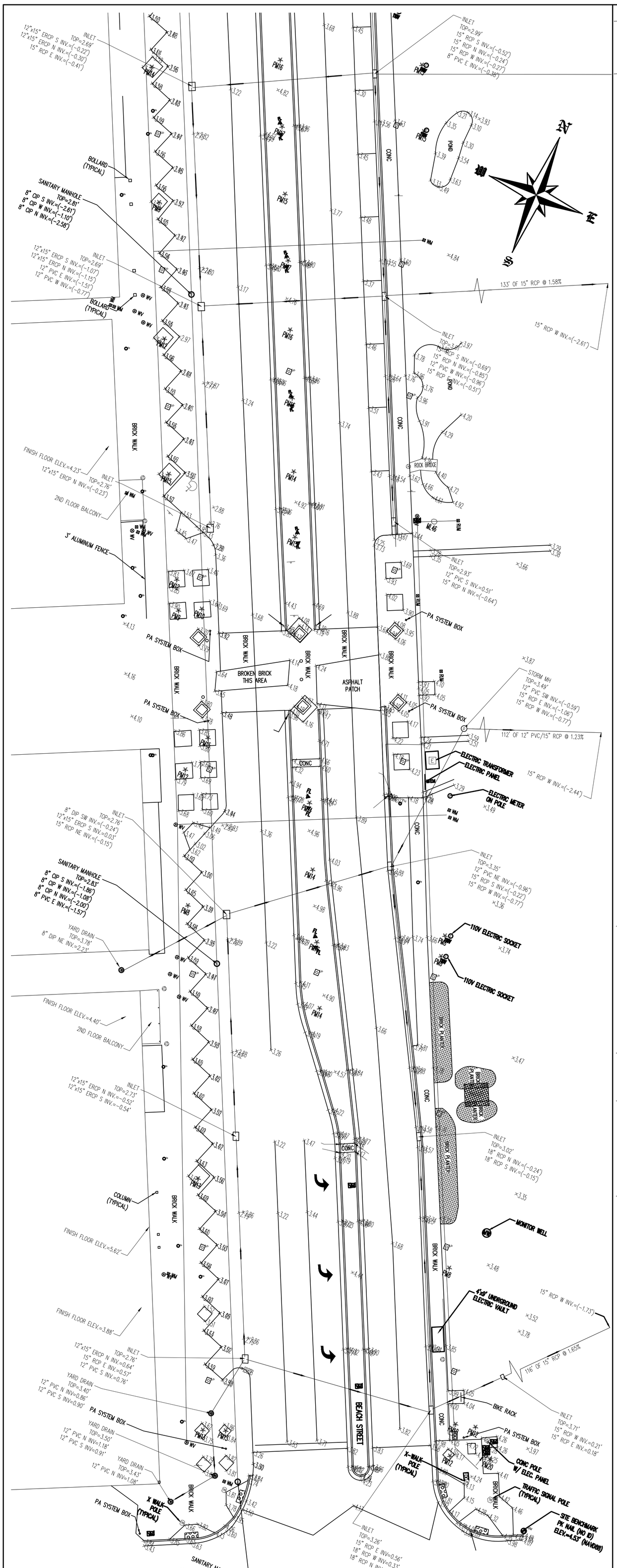


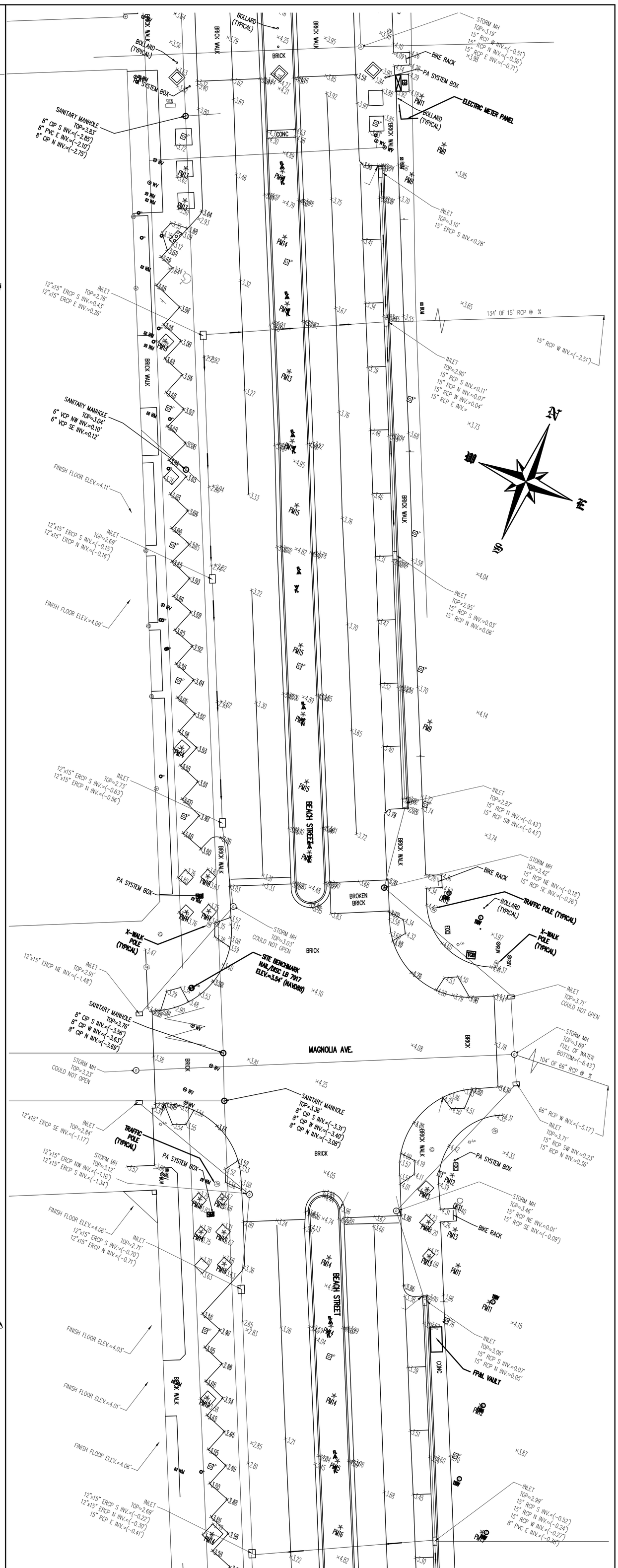


## LEGEND

- ES ELECTRIC SERVICE
- MB MAIL BOX
- SIGN
- TREE
- FH FIRE HYDRANT
- WM WATER METER
- GUY ANCHOR
- UTILITY POLE
- IRON ROD WITH CAP
- IRON PIPE
- TB TELEPHONE BOX
- TSB TRAFFIC SIGNAL BOX
- CO CLEAN OUT
- CONCRETE MONUMENT
- PERMANENT REFERENCE MONUMENT
- PERMANENT CONTROL POINT
- (R) RADIAL LINE
- (NR) NON-RADIAL LINE
- WV WATER VALVE
- EXISTING ELEVATION
- TV CABLE TELEVISION BOX

# *BEACH STREET STREETSCAPE*
# *ORANGE AVE. NORTH TO BAY ST.*
# *DAYTONA BEACH, FLORIDA*


**SLIGER & ASSOCIATES, INC.**
PROFESSIONAL LAND SURVEYORS
3921 NOVA ROAD
PORT ORANGE, FL. 32127
(386) 761-5385
LICENSED BUSINESS CERTIFICATION NUMBER 3019



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| TYPE OF SURVEY | CERTIFIED TO | SURVEY DATE | JOB NUMBER |
|---|---|---|---|
| TOPOGRAPHIC | PARKER MYNCHENBERG & ASSOCIATES, INC. | 9-12-18 | 18-1118 |
| | | | |
| | NOT CERTIFIED TO ANY ENTITIES AND/OR INDIVIDUALS | | |
| | OTHER THAN THOSE LISTED ABOVE. | | |

## ABBREVIATIONS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CM | CONCRETE MONUMENT | WV | WATER VALVE | D | CENTRAL ANGLE | INV | INVERT |
| TOB | TOP OF BANK | TSB | TRAFFIC SIGNAL BOX | R | RADIUS | SEC | SECTION |
| TOE | TOE OF SLOPE | FH | FIRE HYDRANT | L | ARC LENGTH | TWP | TOWNSHIP |
| CLS | CENTERLINE OF SWALE | WM | WATER METER | CB | CHORD BEARING | RGE | RANGE |
| CLD | CENTERLINE OF DITCH | LP | LIGHT POLE | CH | CHORD DISTANCE | R/W | RIGHT OF WAY |
| CO | CLEANOUT | PP | POWER POLE/UTILITY POLE | FP&L CO | FLORIDA POWER & LIGHT COMPANY | CONC | CONCRETE |
| SAN | SANITARY | GA | GUY ANCHOR | NGVD | NATIONAL GEODETIC VERTICAL DATUM | EL | ELEVATION |
| ES | ELECTRIC SERVICE | CPP | CONCRETE POWER POLE | USC & GS | UNITED STATES COAST AND GEODETIC SURVEY | (NR) | NON RADIAL |
| RCP | REINFORCED CONCRETE PIPE | WPP | WOOD POWER POLE | ℄ | CENTERLINE | (P) | PLAT |
| VCP | VITREOUS CLAY PIPE | PVC | POLYVINYL CHLORIDE | | | (M) | MEASURED |
| INV | INVERT | CONC | CONCRETE | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| —FC— | BURIED FIBER OPTIC CABLE | MES | MITERED END SECTION |
| — T — | BURIED TELEPHONE LINE | RCP | REINFORCED CONCRETE PIPE |
| — W — | BURIED WATER LINE | CMP | CORRUGATED METAL PIPE |
| — E — | BURIED ELECTRIC LINE | MH | MANHOLE |
| — G — | BURIED GAS LINE | MB | MAP BOOK |
| —TV— | BURIED TELEVISION LINE | BK | BOOK |
| —FM— | BURIED FORCE MAIN | OR | OFFICIAL RECORDS BOOK |
| — · — | AERIAL UTILITY LINE | PG | PAGE |
| (R) | RADIAL | ID | IDENTIFICATION |
| (D) | DEED | (TYP) | TYPICAL |
| (DESC) | DESCRIPTION | MH | MANHOLE |

FOR: PARKER MYNCHENBERG & ASSOCIATES, INC.

SCALE: 1"=1'

DIGITAL FIELD BOOK: 181118SS (A THRU H).TXT
FIELD BOOK: 1400 PAGES: 61-64

SHEET 2 OF 3

| TYPE OF SURVEY | DATE OF SURVEY | JOB NUMBER | PARTY CHIEF | DRAWN BY | CHECKED BY |
|---|---|---|---|---|---|
| *SPECIFIC PURPOSE* : | – | – | – | – | |
| *BOUNDARY SURVEY* : | – | – | – | – | |
| *TOPOGRAPHIC SURVEY* : | 9-12-18 | 18-1118 | S STRICKLAND | D HITCHCOCK | J ZAPERT |
| *FOUNDATION SURVEY* : | – | – | – | – | |
| *FINAL SURVEY* : | – | – | – | – | |
| *RECERTIFICATION SURVEY* : | – | – | – | – | |

I HEREBY CERTIFY THAT THIS PLAT MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17.05, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

SEE SHEET 1 OF 3 FOR SIGNATURE/SEAL
J.E. ZAPERT, P.L.S. NO. 4046
STEVEN T. KRUGER, P.L.S. NO. 4722
C.O. VAN KLEECK JR., P.S.M. NO. 6149
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VALID WITH SIGNATURE & EMBOSSED SEAL ONLY


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# GENERAL NOTES

1. EXISTING ZONING: ___ / PROPOSED ZONING: _____
2. BOUNDARY, AND TOPOGRAPHIC SURVEY BASED ON SURVEY PREPARED BY SLIGLER & ASSOCIATES, INC.. DATED: _____
3. UNDERGROUND UTILITY LOCATIONS AS FIELD MARKED BY THE FOLLOWING COMPANIES OR THEIR REPRESENTATIVES:

| | |
|---|---|
| FLORIDA POWER & LIGHT COMPANY<br>PORT ORANGE, FL. 32129 | 3000 SPRUCE CREEK ROAD<br>(386) 322-3425 |
| AT&T<br>DAYTONA BEACH, FL. 32117 | 900 N. NOVA ROAD<br>(386) 257-7950 |
| SPECTRUM<br>DAYTONA BEACH, FL. 32114 | 1475 S. NOVA ROAD<br>(386) 760-9941 |
| TECO PEOPLES GAS<br>HOLLY HILL, FL. 32117 | 1722 RIDGEWOOD AVE<br>(386) 527-8377 |
| CITY OF DAYTONA BEACH<br>DAYTONA BEACH, FL. 32114 | 950 BELLEVUE ROAD<br>(386) 671-8635 |

4. LOCATIONS OF EXISTING UTILITIES ARE SHOWN BASED ON AVAILABLE DATA.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES AND TO DETERMINE IF OTHER UTILITIES WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK AND TAKE WHATEVER STEPS NECESSARY TO PROVIDE FOR THEIR PROTECTION (I.E. SHEETING, DE-WATERING, ETC.). CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES OR CONFLICTS.
   CONTRACTOR TO COORDINATE DEMOLITION AND CONSTRUCTION WITH ALL PUBLIC AND PRIVATE UTILITY COMPANIES TO AVOID CONFLICTS AND/OR INTERRUPTIONS OF SERVICE.
6. CONTRACTOR TO PROVIDE AS BUILT DRAWINGS OF ALL IMPROVEMENTS ON 24" X 36" MYLAR, SIGNED AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR.
7. THERMOPLASTIC STRIPING AND TRAFFIC CONTROL SIGNAGE TO MEET FDOT AND CITY OF DAYTONA BEACH SPECIFICATIONS.
8. TRAFFIC CONTROL SIGNS TO BE IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATIONS . ALL STOP SIGNS, SPEED LIMIT AND STREET SIGNS REQUIRED TO BE PROVIDED BY DEVELOPER TO CITY OF DAYTONA BEACH SPECIFICATIONS.
9. ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES USING 3M BRAND "SCOTCHLIGHT" SHEETING (ENGINEER GRADE) ON MINIMUM 0.080 GAUGE 5052-H38 ALUMINUM BLANKS. ALL STOP SIGNS SHALL BE HIGH INTENSITY 30" OCTAGON INSTALLED ON 12', 3 LBS/FT. "U" CHANNEL POSTS (RAIL STEEL ONLY) OR 3" x 12', ROUND ALUMINUM POSTS."U" CHANNEL POSTS MAY BE USED FOR ALL SIGNS SMALLER THAN 36" x 48". ALL WARNING SIGNS SHALL BE 30" x 30".
10. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND/OR LICENSES TO COMMENCE CONSTRUCTION.
11. ALL CONCRETE SHALL DEVELOP A 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI UNLESS OTHERWISE NOTED.
12. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE, AT ALL TIMES, ONE COPY OF PLANS, SPECIFICATIONS, AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.
13. CONTRACTOR IS RESPONSIBLE FOR CHECKING ACTUAL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
14. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK.
15. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN TO BE MADE WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
16. "NO CONSTRUCTION ON THE PROPOSED PORTIONS OF THIS PROJECT MAY COMMENCE UNTIL A MANDATORY PRE-CONSTRUCTION MEETING IS HELD WITH THE CITY, AS STATED IN THE APPROVED DEVELOPMENT ORDER FROM THE CITY OF DAYTONA BEACH. ANY CESSATION OF CONTINUOUS ON-GOING CONSTRUCTION ON THIS PROJECT OF 90 DAYS OR MORE SHALL TRIGGER A REQUIREMENT FOR ANOTHER PRE CONSTRUCTION MEETING BE HELD WITH THE CITY PRIOR TO CONTINUATION OF THE CONTINUING CONSTRUCTION."
17. PLEASE NOTE THAT THE CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING PAVING, CURBS, SIDEWALKS, SOD, PLANTS, ETC. THAT ARE DAMAGED DURING CONSTRUCTION ACTIVITIES.
18. CONTRACTOR SHALL ENGAGE A QUALIFIED TESTING AND INSPECTION AGENCY TO PERFORM CORE TESTING TO CONFIRM THAT THE INTERIOR CONCRETE FLOORS AND EXTERIOR PAVING THICKNESS COMPLIES WITH THE SPECIFICATIONS. CONCRETE SHALL RECEIVE 1 CORE PER 25,000 SF; CAR PARKING STALLS SHALL RECEIVE 1 CORE PER 75 STALLS; HEAVY DUTY ASPHALT CIRCULATION/FIRE LANES SHALL RECEIVE 1 CORE PER EVERY 600 LF; TRAILER PARKING SHALL RECEIVE 1 CORE PER 50 STALLS; TRUCK COURTS SHALL RECEIVE 1 CORE PER 400 LF.
19. ADDRESS NUMBERS SHALL BE ARABIC NUMERALS. NUMBERS SHALL BE IN A COLOR CONTRASTING WITH THE STRUCTURE OR BACKGROUND SURFACE, AND NOT LESS THAN SIX (6) INCHES IN HEIGHT.
20. THE ADDRESS NUMBERS SHALL BE AFFIXED HORIZONTALLY IN A CONSPICUOUS PLACE ON THE PRINCIPAL BUILDING SO THAT THE NUMBER IS CLEARLY LEGIBLE FROM THE ROADWAY ON WHICH IT IS ADDRESSED.
21. CONTRACTOR SHALL EITHER CONDUCT ANY FIELD EXPLORATION OR ACQUIRE ANY GEOTECHNICAL ASSISTANCE REQUIRED DURING THE BID PROCESS TO ESTIMATE THE AMOUNT OF UNSUITABLE MATERIAL THAT WILL BE REQUIRED TO BE REMOVED/REPLACED FROM SITE.

    UNSUITABLE MATERIALS UNDER UTILITIES, STORM PIPING, STRUCTURES, PAVEMENT, BUILDING PADS, OR HARDSCAPE SHALL BE REMOVED AND REPLACED WITH SELECTED BACKFILL.

    ALL DEBRIS RESULTING FROM ALL ACTIVITIES SHALL BE DISPOSED OF OFF-SITE BY CONTRACTOR.

    THE COST OF OBTAINING THE NECESSARY STATE AND LOCAL BUILDING/SITE PERMITS REQUIRED FOR THE BUILDING CONSTRUCTION AS WELL AS ALL UTILITY TAP FEES SHALL BE PAID BY THE CONTRACTOR.

    CONTRACTOR IS RESPONSIBLE FOR ALL REPORTING/MONITORING AS REQUIRED BY SJRWMD AND FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS, AND SJRWMD.

    CONTRACTOR SHALL SWEEP AND CLEAN THE PUBLIC ROADWAY DURING CONSTRUCTION.

    THE GENERAL CONTRACTOR SHALL CLEAR, STRIP, EXCAVATE, FILL, AND ROUGH AND FINE GRADE THE SITE TO ACCOMPLISH BUILDING CONSTRUCTION AND PROPER STORM WATER DRAINAGE FROM THE SITE. ANY EXCESS CUT AND EXCESS SPOILS AND UNSUITABLE SOILS AND RUBBLE MUST BE REMOVED FROM THE SITE. ALL NECESSARY FILL MATERIAL SHALL BE PLACED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
    TESTING & INSPECTIONS: PLEASE NOTE THAT A FIELD-TESTING AND INSPECTIONS PROGRAM FOR QUALITY CONTROL DURING THE COURSE OF THE PROJECT SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL INCLUDE, BUT NOT BE LIMITED TO SOILS, CONCRETE, STRUCTURAL STEEL, FIREPROOFING, WATERPROOFING (INCLUDING ROOFING, CAULKING, GLAZING, ETC.).

    CONTRACTOR SHALL INSTALL AND MAINTAIN DEWATERING WHERE REQUIRED IN ACCORDANCE WITH ALL CODES AND LAWS.
22. ALL SIDEWALKS INCLUDING THROUGH DRIVEWAY TO BE EQUAL OR LESS THAN 2% CROSS SLOPE AND MEET ALL OTHER ADA REQUIREMENTS.
23. PRIOR TO FINAL ACCEPTANCE OF IMPROVEMENTS WITHIN THE VOLUSIA COUNTY RIGHT OF WAY, OWNER / DEVELOPER TO RECORD A 1 FOOT NON VEHICULAR ACCESS EASEMENT ALONG THE FRONTAGE OF CLYDE MORRIS BOULEVARD EXCLUDING THE DRIVEWAYS.

# SPECIFIC NOTES:

1. NO CONSTRUCTION ON THE PROPOSED PORTIONS OF THIS PROJECT MAY COMMENCE UNTIL A MANDATORY PRE-CONSTRUCTION MEETING IS HELD WITH THE CITY, AS STATED IN THE APPROVED DEVELOPMENT ORDER FROM THE CITY OF DAYTONA BEACH. ANY CESSATION OF CONTINUOUS ON-GOING CONSTRUCTION ON THIS PROJECT OF 90 DAYS OR MORE SHALL TRIGGER A REQUIREMENT FOR ANOTHER PRE-CONSTRUCTION MEETING BE HELD WITH THE CITY PRIOR TO CONTINUATION OF THE CONTINUING CONSTRUCTION.
2. NOTIFY VOLUSIA COUNTY DEVELOPMENT ENGINEERING DIVISION AT 386-736-5926 24 HOURS PRIOR TO THE START OF CONSTRUCTION.
3. VOLUSIA COUNTY TRAFFIC ENGINEERING IS NOT A MEMBER OF SUNSHINE ONE CALL. ALL TRAFFIC SIGNAL LOCATES SHALL BE REQUESTED FROM TRAFFIC ENGINEERING AT 386-736-5968.
4. ANY LANE OR ROAD CLOSURE (INCLUDING FLAGGING OPERATIONS) REQUIRES REVIEW AND APPROVAL IN ADVANCE AND A SEVEN (7) DAY MINIMUM NOTICE TO VOLUSIA COUNTY TRAFFIC OPERATIONS.


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CERTIFICATE OF AUTHORIZATON NUMBER 00003910


| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

GENERAL NOTES

DEV 2018-
CITY APPROVAL STAMP

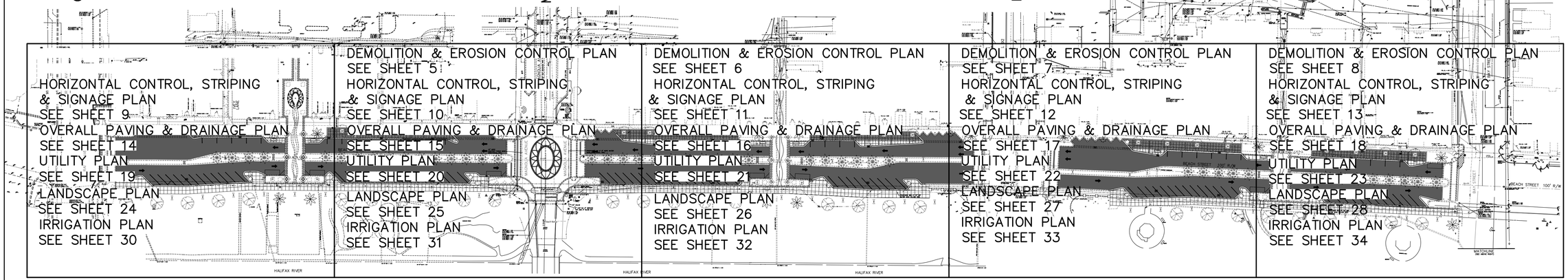
2
SHEET NO.

Drawn By:

Date:

SCALE: 1"=1'


W:\BEACH STREET ORANGE TO BAY\COVERSHEET.dwg, Model, 10/8/2018 1:37:58 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1




HORIZONTAL CONTROL, STRIPING & SIGNAGE PLAN SEE SHEET 9
OVERALL PAVING & DRAINAGE PLAN SEE SHEET 14
UTILITY PLAN SEE SHEET 19
LANDSCAPE PLAN SEE SHEET 24
IRRIGATION PLAN SEE SHEET 30

DEMOLITION & EROSION CONTROL PLAN SEE SHEET 5
HORIZONTAL CONTROL, STRIPING & SIGNAGE PLAN SEE SHEET 10
OVERALL PAVING & DRAINAGE PLAN SEE SHEET 15
UTILITY PLAN SEE SHEET 20
LANDSCAPE PLAN SEE SHEET 25
IRRIGATION PLAN SEE SHEET 31

DEMOLITION & EROSION CONTROL PLAN SEE SHEET 6
HORIZONTAL CONTROL, STRIPING & SIGNAGE PLAN SEE SHEET 11
OVERALL PAVING & DRAINAGE PLAN SEE SHEET 16
UTILITY PLAN SEE SHEET 21
LANDSCAPE PLAN SEE SHEET 26
IRRIGATION PLAN SEE SHEET 32

DEMOLITION & EROSION CONTROL PLAN SEE SHEET 7
HORIZONTAL CONTROL, STRIPING & SIGNAGE PLAN SEE SHEET 12
OVERALL PAVING & DRAINAGE PLAN SEE SHEET 17
UTILITY PLAN SEE SHEET 22
LANDSCAPE PLAN SEE SHEET 27
IRRIGATION PLAN SEE SHEET 33

DEMOLITION & EROSION CONTROL PLAN SEE SHEET 8
HORIZONTAL CONTROL, STRIPING & SIGNAGE PLAN SEE SHEET 13
OVERALL PAVING & DRAINAGE PLAN SEE SHEET 18
UTILITY PLAN SEE SHEET 23
LANDSCAPE PLAN SEE SHEET 28
IRRIGATION PLAN SEE SHEET 34

BEACH STREET

GRAPHIC SCALE
0 40 80 160 240
SCALE: 1" = 80'

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|

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OVERALL PLAN/ KEY MAP

DEV 2018–
CITY APPROVAL STAMP

3
SHEET NO.

Drawn By: BH
Date: 8/30/18
SCALE: 1"=80'

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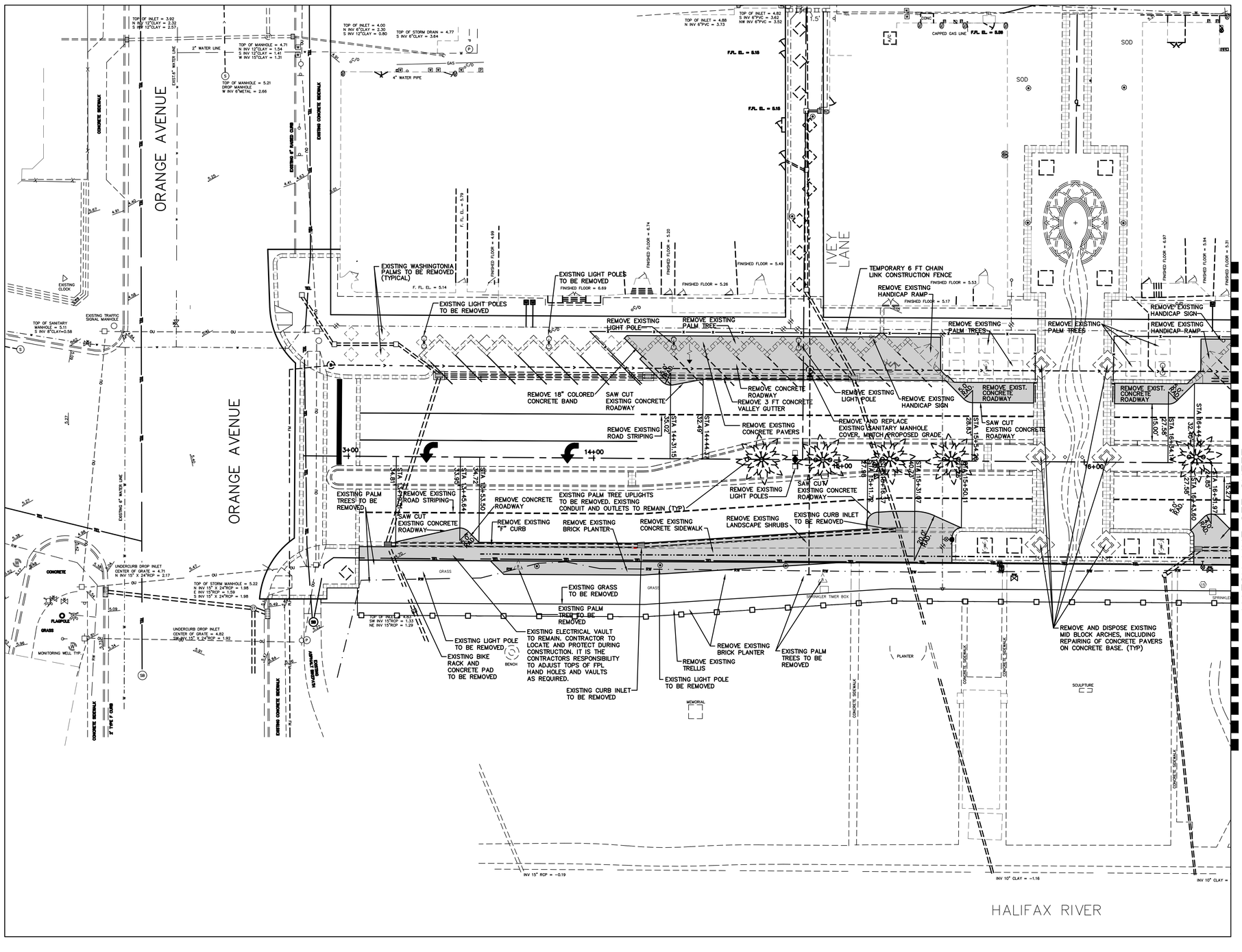


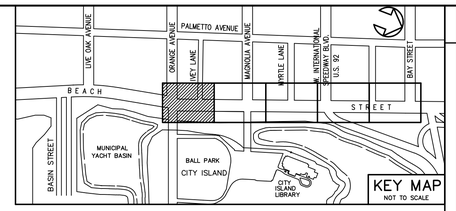


GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 20'

LEGEND

- DENOTES EXISTING GRADE
- EXISTING CONTOUR
- SILT FENCE
- EXISTING 6FT CHAIN LINK FENCE

| NO. | DATE | DESCRIPTION REVISIONS | BY |
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DEMOLITION & EROSION CONTROL PLAN

DEV 2018–
CITY APPROVAL STAMP

4
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'

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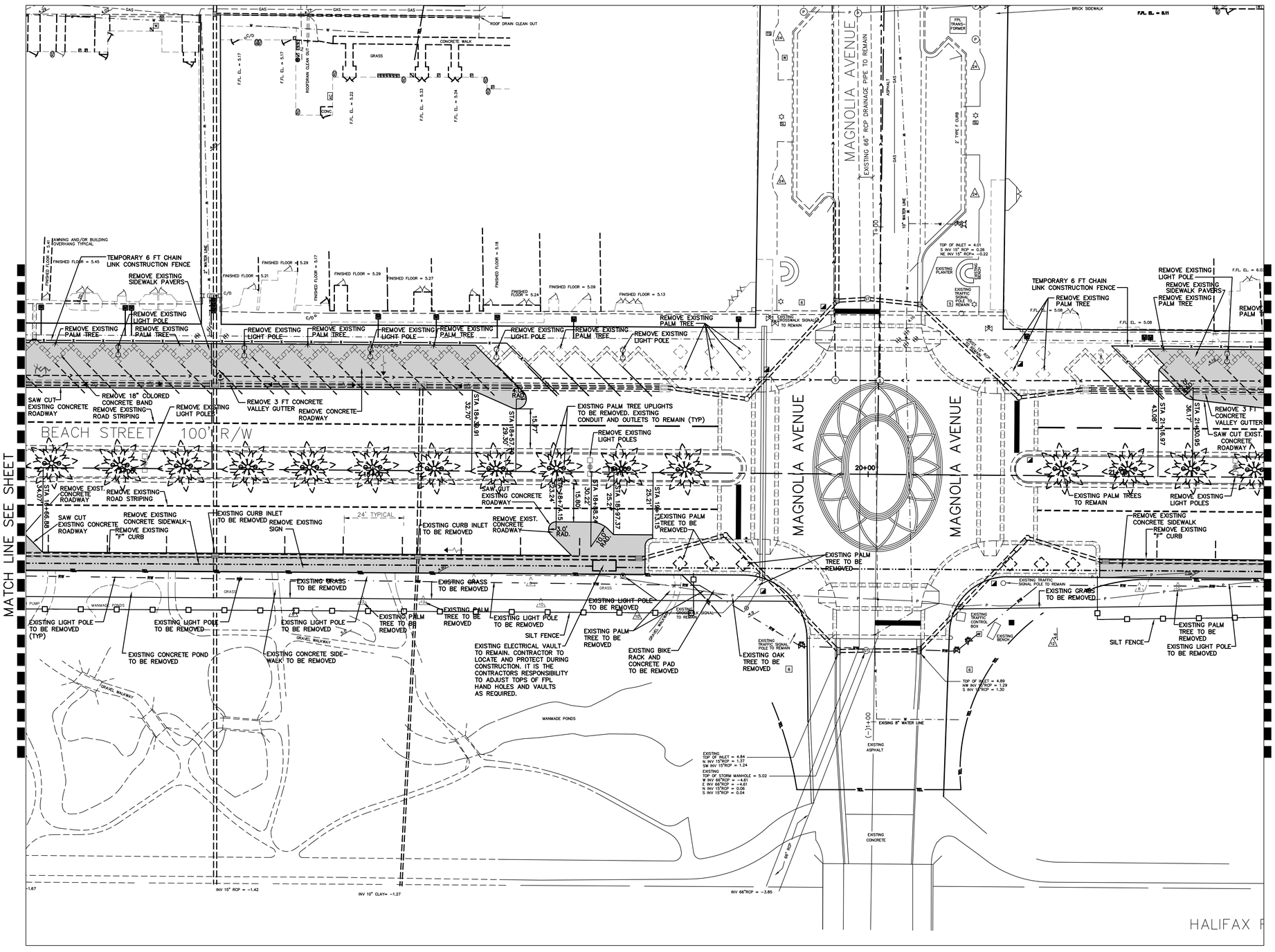


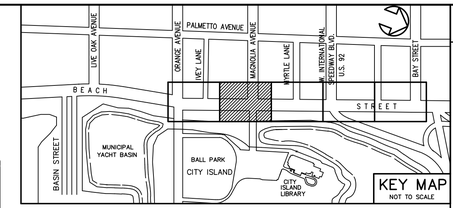


GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 20'

LEGEND

- DENOTES EXISTING GRADE
- EXISTING CONTOUR
- SILT FENCE
- EXISTING 6FT CHAIN LINK FENCE

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|


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# BEACH STREET STREETSCAPE ORANGE TO BAY

DAYTONA BEACH * FLORIDA

## DEMOLITION & EROSION CONTROL PLAN

DEV 2018–
CITY APPROVAL STAMP

SHEET NO. 5

Drawn By:

Date:

SCALE: 1"=20'

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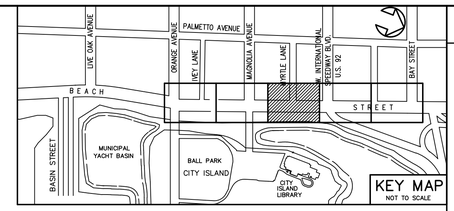


GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 20'

LEGEND

- DENOTES EXISTING GRADE
- EXISTING CONTOUR
- SILT FENCE
- EXISTING 6FT CHAIN LINK FENCE

MATCH LINE SEE SHEET

MATCH LINE SEE SHEET

MYRTLE LANE

TEMPORARY 6 FT CHAIN LINK CONSTRUCTION FENCE

REMOVE EXISTING LIGHT POLE

REMOVE EXISTING PALM TREE

REMOVE EXISTING HANDICAP SIGN

REMOVE EXISTING HANDICAP RAMP

REMOVE 18" COLORED CONCRETE BAND

REMOVE EXISTING SIDEWALK PAVERS

REMOVE CONCRETE ROADWAY

REMOVE EXISTING ROAD STRIPING

REMOVE 3 FT CONCRETE VALLEY GUTTER

REMOVE EXISTING "C" INLET

REMOVE EXIST. CONCRETE ROADWAY

SAW CUT EXISTING CONCRETE ROADWAY

REMOVE EXISTING "C" INLET GRATE

EXISTING PALM TREES TO REMAIN

REMOVE EXISTING LIGHT POLES

EXISTING PALM TREE UPLIGHTS TO BE REMOVED. EXISTING CONDUIT AND OUTLETS TO REMAIN (TYP)

EXISTING SIGN TO BE REMOVED

EXISTING CURB INLET TO BE REMOVED

EXISTING CURB INLET FRAME AND GRATE TO BE REMOVED

REMOVE EXISTING "F" CURB

REMOVE EXISTING CONCRETE SIDEWALK

EXISTING LIGHT POLE TO BE REMOVED

EXISTING GRASS TO BE REMOVED

EXISTING SIGN TO BE REMOVED

EXISTING PALM TREE TO BE REMOVED

EXISTING CONC. WALK TO BE REMOVED

REMOVE AND DISPOSE EXISTING MID BLOCK ARCHES, INCLUDING REPAIRING OF CONCRETE PAVERS ON CONCRETE BASE. (TYP)

SILT FENCE

EXISTING LIGHT POLE TO BE REMOVED

GRASS

CONCRETE WALK

INV 10"CLAY = -1.39

INV 15"RCP = -1.44

INV 10"CLAY = -1.15

HALIFAX RIVER

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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

DEMOLITION & EROSION CONTROL PLAN

DEV 2018–
CITY APPROVAL STAMP

6
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'

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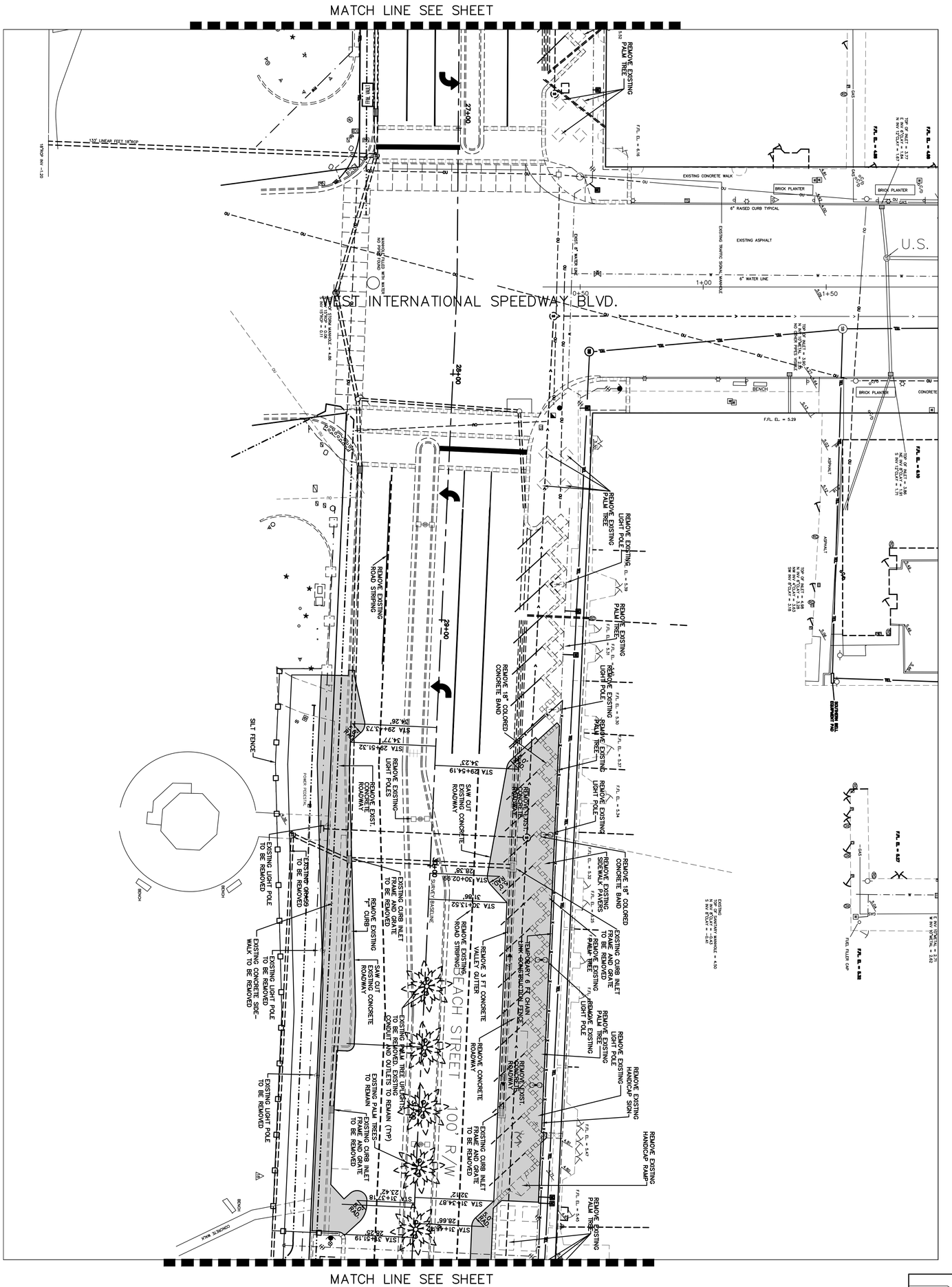


DEV 2018-
CITY APPROVAL STAMP

SHEET NO. 7

Drawn By:

Date:

SCALE: 1"=20'

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

DEMOLITION & EROSION CONTROL PLAN


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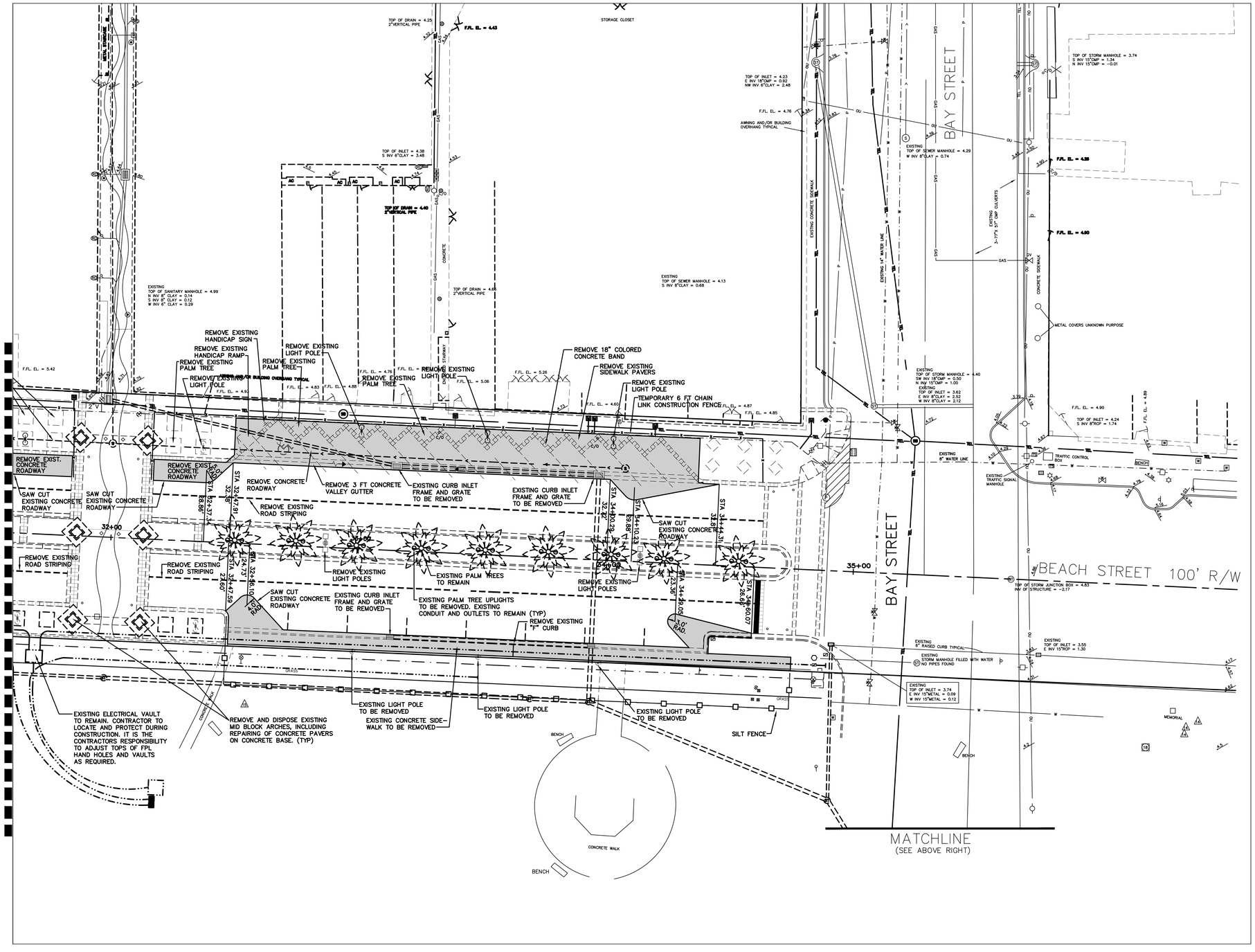


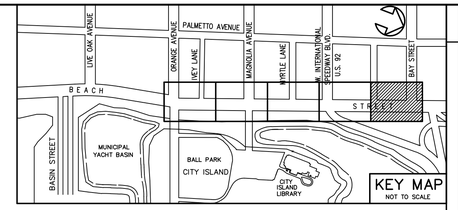


GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 20'

LEGEND

- DENOTES EXISTING GRADE
- EXISTING CONTOUR
- SILT FENCE
- EXISTING 6FT CHAIN LINK FENCE

| NO. | DATE | DESCRIPTION | BY |
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| | | REVISIONS | |


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DEMOLITION & EROSION CONTROL PLAN

DEV 2018–
CITY APPROVAL STAMP

8
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'

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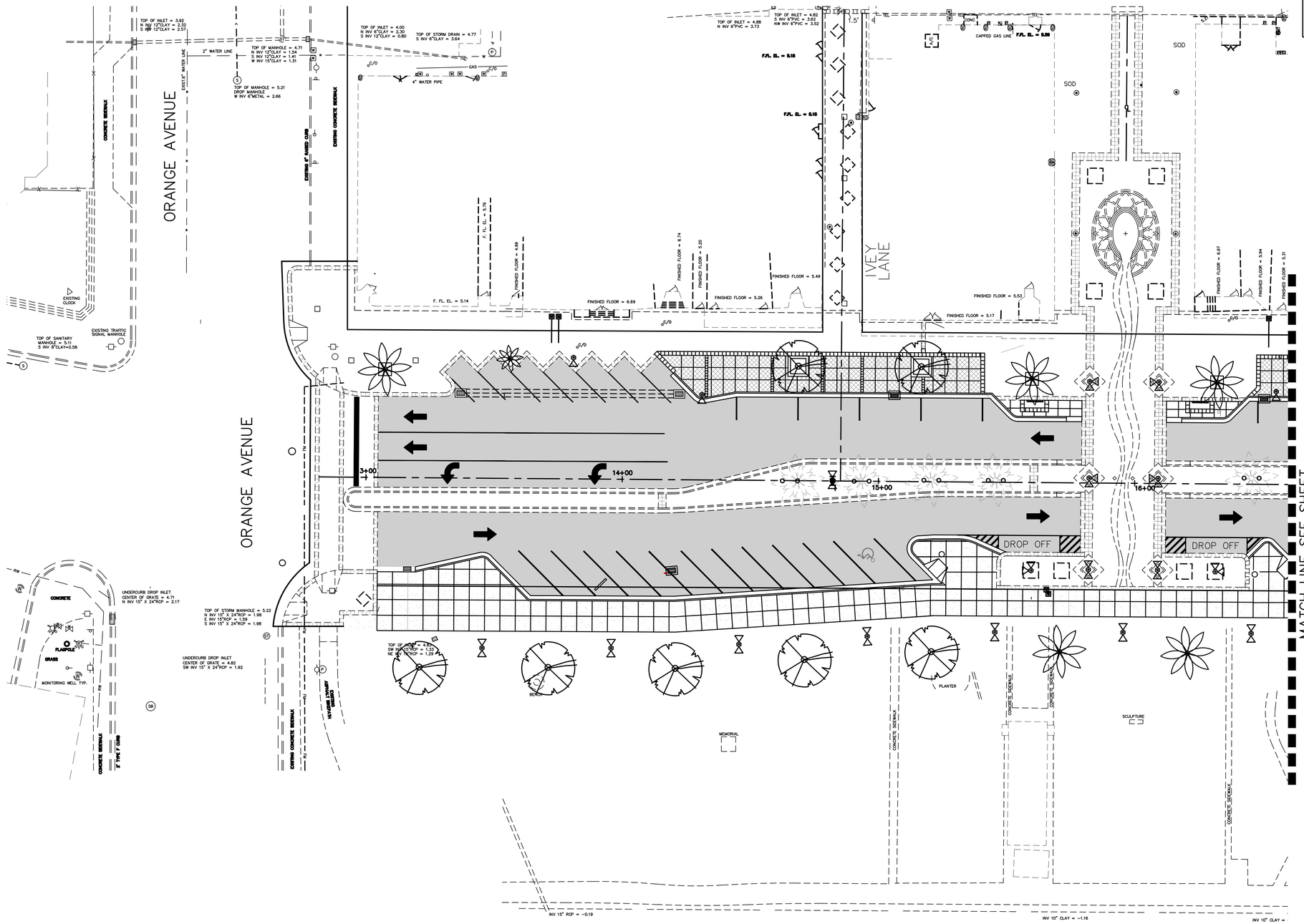


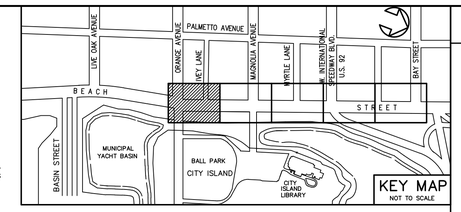


GRAPHIC SCALE

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SCALE: 1" = 20'

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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH • FLORIDA

HORIZONTAL CONTROL, STRIPING & SIGNAGE PLAN

DEV 2018–
CITY APPROVAL STAMP

9
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'

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GRAPHIC SCALE

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SCALE: 1" = 20'

| NO. | DATE | DESCRIPTION | BY |
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# BEACH STREET STREETSCAPE ORANGE TO BAY

DAYTONA BEACH * FLORIDA

## HORIZONTAL CONTROL, STRIPING & SIGNAGE PLAN

DEV 2018–
CITY APPROVAL STAMP

10
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'

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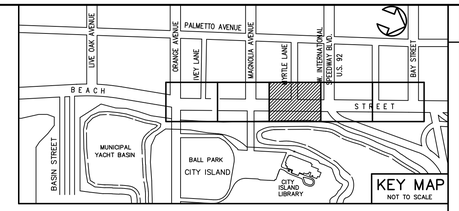


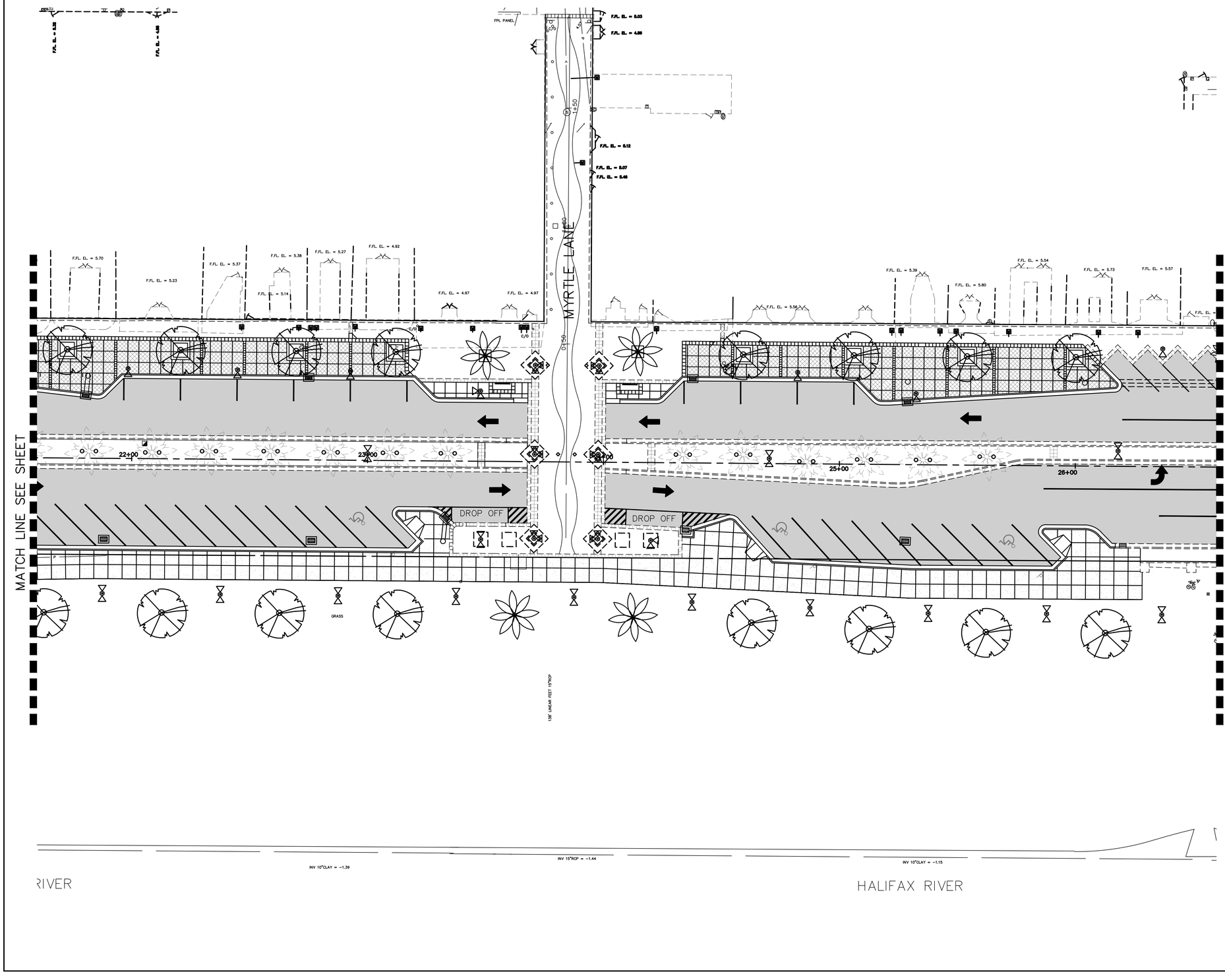


GRAPHIC SCALE

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SCALE: 1" = 20'

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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH • FLORIDA

HORIZONTAL CONTROL, STRIPING & SIGNAGE PLAN

DEV 2018–
CITY APPROVAL STAMP

11
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'

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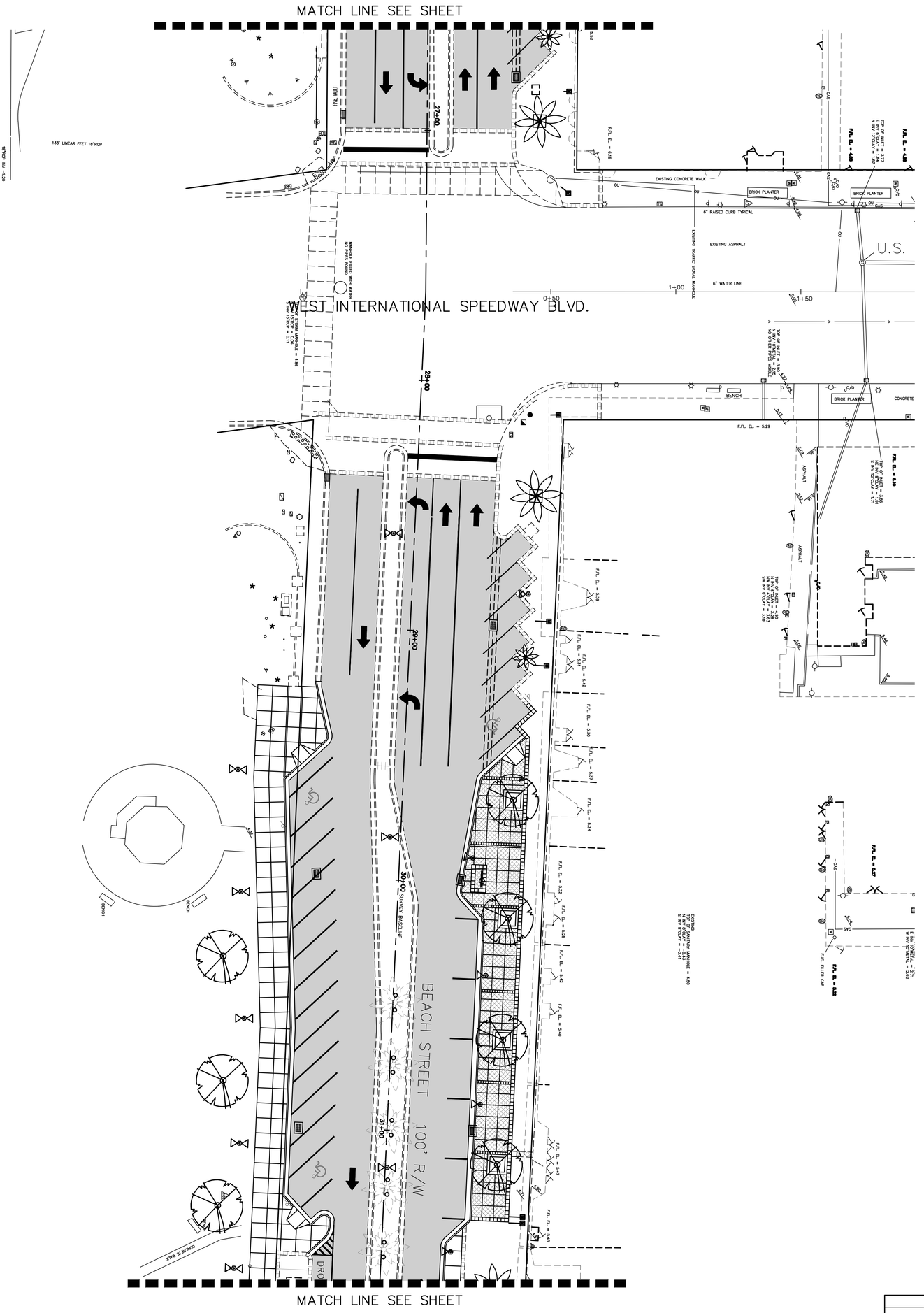


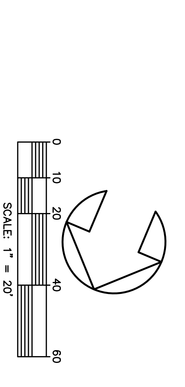


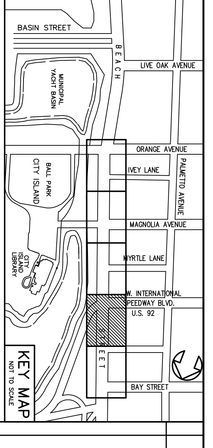


DEV 2018-
CITY APPROVAL STAMP

12
SHEET NO.

Date:

Drawn By:

SCALE: 1"=20'

# BEACH STREET STREETSCAPE
## ORANGE TO BAY
DAYTONA BEACH * FLORIDA

## HORIZONTAL CONTROL, STRIPING & SIGNAGE PLAN

**PARKER MYNCHENBERG & ASSOCIATES, INC.**
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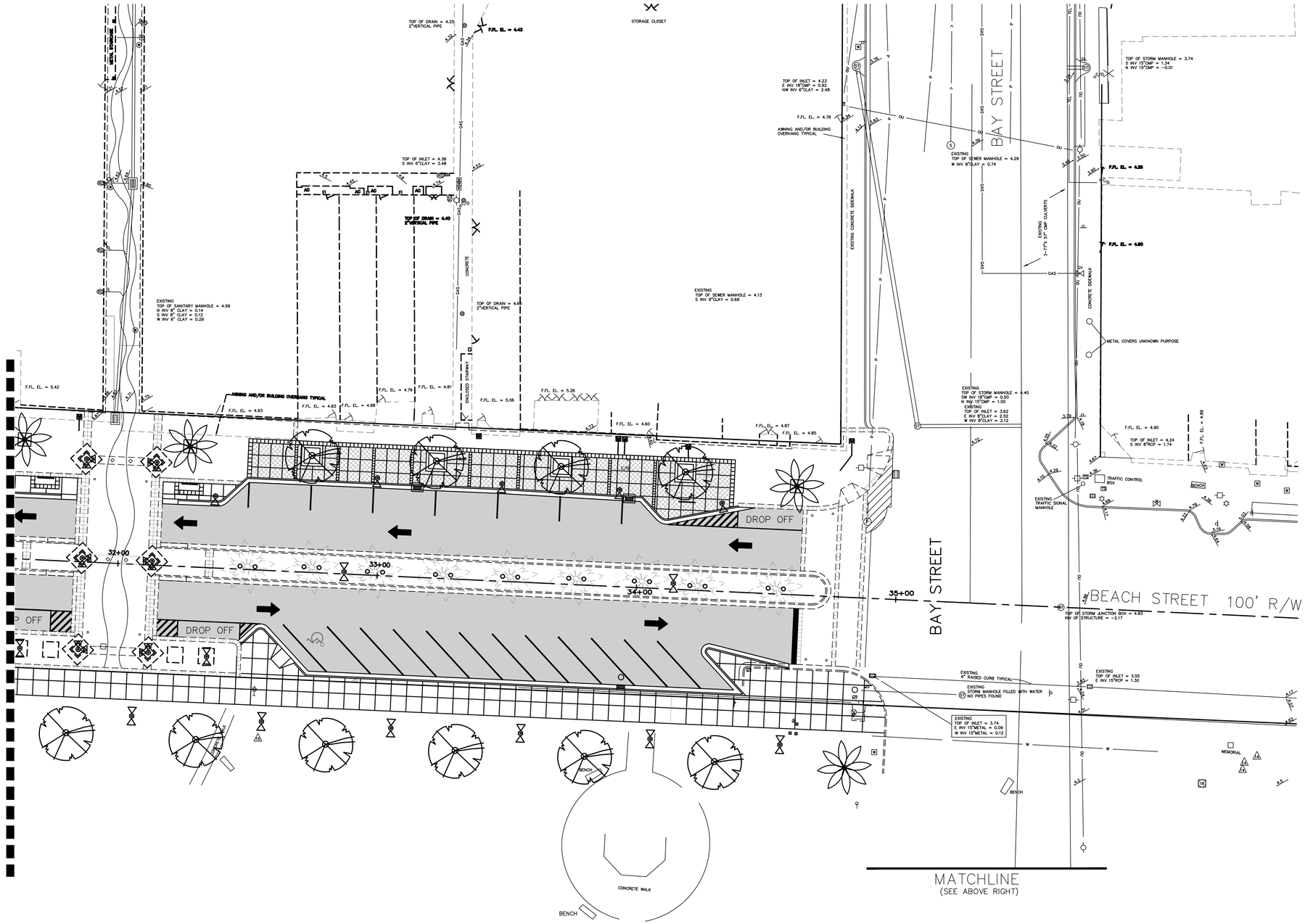


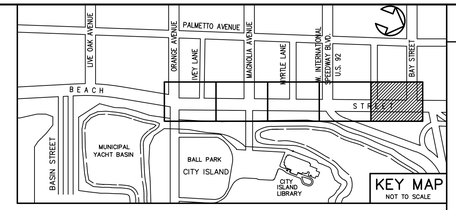


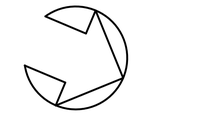


| NO. | DATE | DESCRIPTION | BY |
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1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATON NUMBER 00003910


# BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

## HORIZONTAL CONTROL, STRIPING & SIGNAGE PLAN

DEV 2018–
CITY APPROVAL STAMP

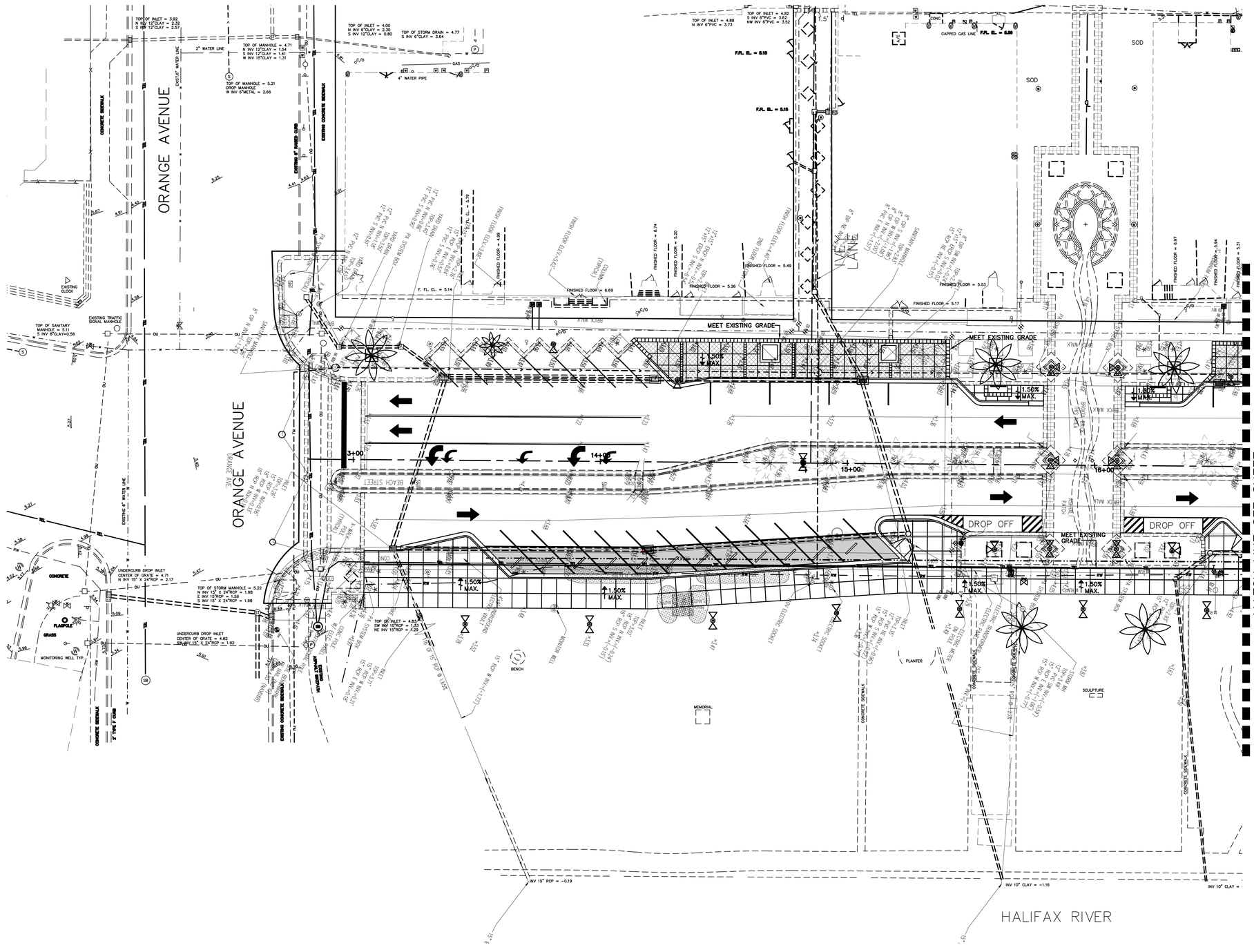
13
SHEET NO.

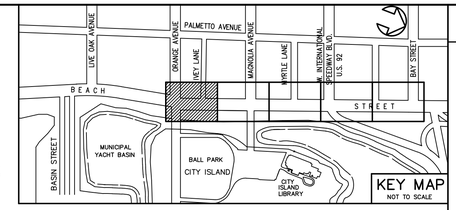
Drawn By:

Date:

SCALE: 1"=20'

W:\Beach Street - Orange to Bay - 1831\1831-SP.DWG, SITE PLAN, 10/9/2018 1:48:25 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:20




GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 20'

LEGEND

- EXISTING GRADE
- EXISTING CONTOUR
- 25.50 PROPOSED GRADE
- 28 PROPOSED CONTOUR
- PROPOSED DRAINAGE FLOW PATTERN

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |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CERTIFICATE OF AUTHORIZATION NUMBER 00003910


# BEACH STREET STREETSCAPE
## ORANGE TO BAY
DAYTONA BEACH * FLORIDA

## OVERALL PAVING & DRAINAGE PLAN

DEV 2018–
CITY APPROVAL STAMP

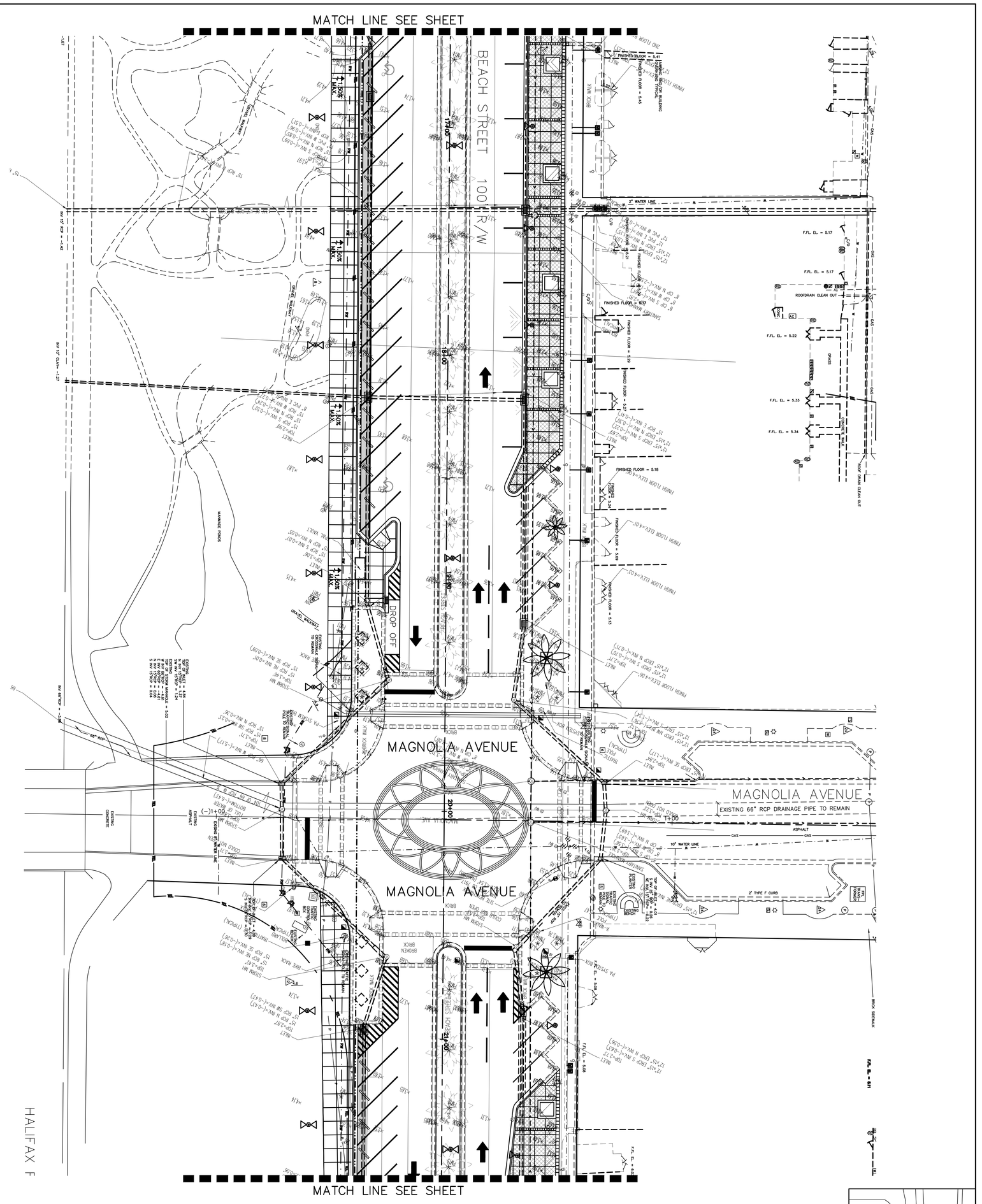
14
SHEET NO.

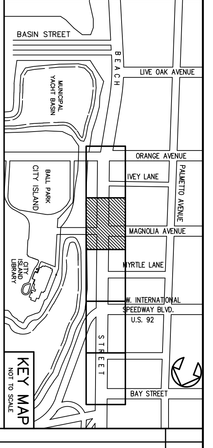
Drawn By:

Date:

SCALE: 1"=20'

W:\Beach Street - Orange to Bay - 18311\1831-SP.DWG, Layout1, 10/9/2018 11:55:27 AM, Shane_B, DWG To PDF.pc3, 24X36, 1:20




LEGEND
- PROPOSED DRAINAGE FLOW PATTERN
- PROPOSED CONTOUR
- EXISTING CONTOUR

GRAPHIC SCALE
SCALE: 1" = 20'
0 10 20 40 60

| | |
|---|---|
| DEV 2018-CITY APPROVAL STAMP | BEACH STREET STREETSCAPE<br>ORANGE TO BAY<br>DAYTONA BEACH * FLORIDA<br>OVERALL PAVING & DRAINAGE PLAN |
| SHEET NO. 15 | |
| Drawn By: | |
| Date: | |
| SCALE: 1"=20' | |

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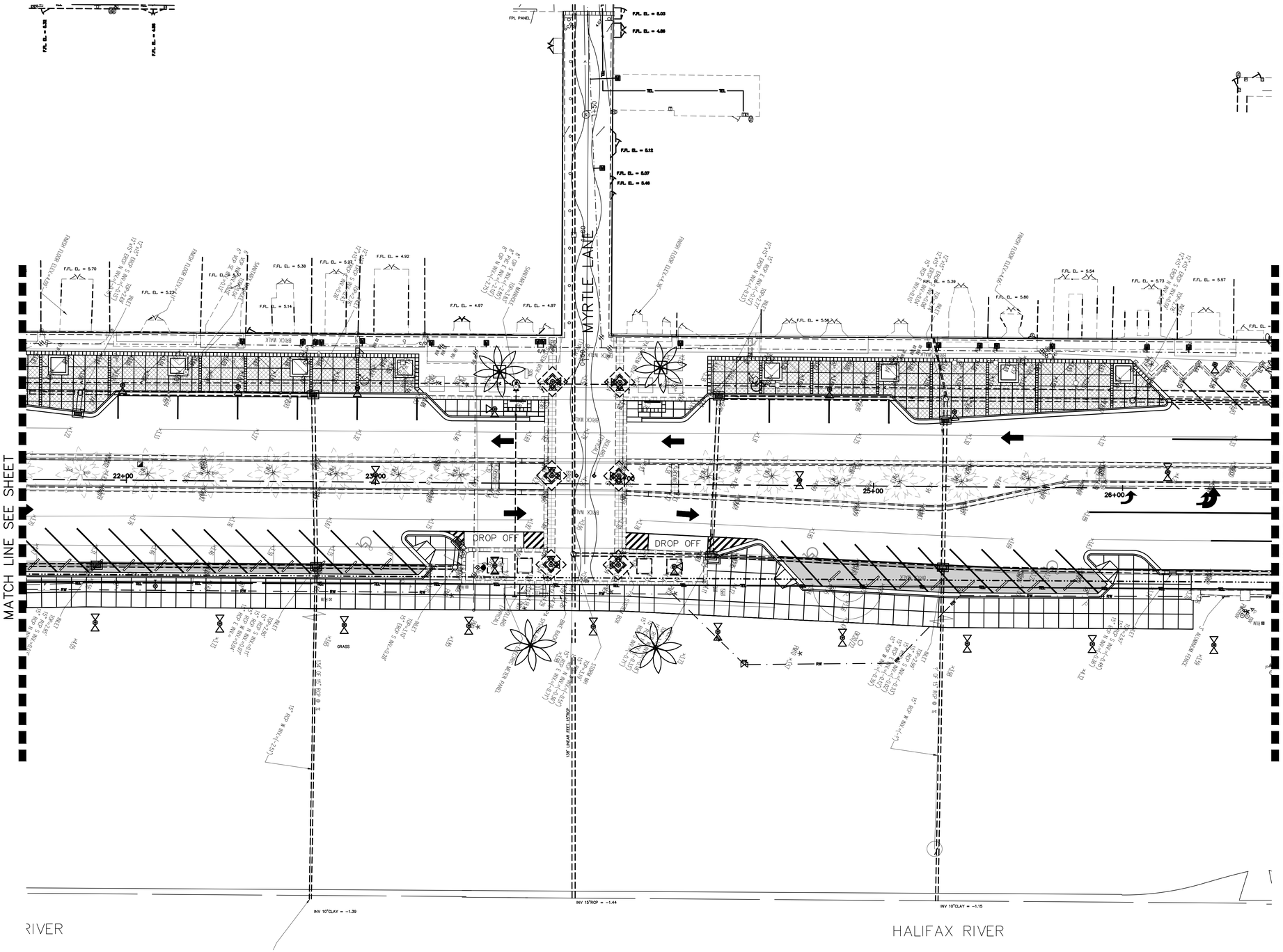
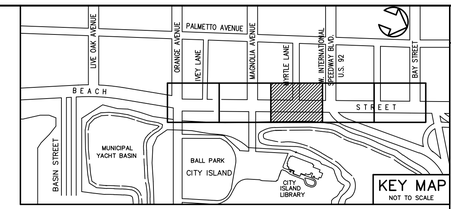
CERTIFICATE OF AUTHORIZATON NUMBER 00003910

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |




GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 20'

LEGEND

- EXISTING GRADE
- EXISTING CONTOUR
- 25.50 PROPOSED GRADE
- 28 PROPOSED CONTOUR
- PROPOSED DRAINAGE FLOW PATTERN

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|

REVISIONS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# BEACH STREET STREETSCAPE
## ORANGE TO BAY
DAYTONA BEACH * FLORIDA

# OVERALL PAVING & DRAINAGE PLAN

DEV 2018–
CITY APPROVAL STAMP

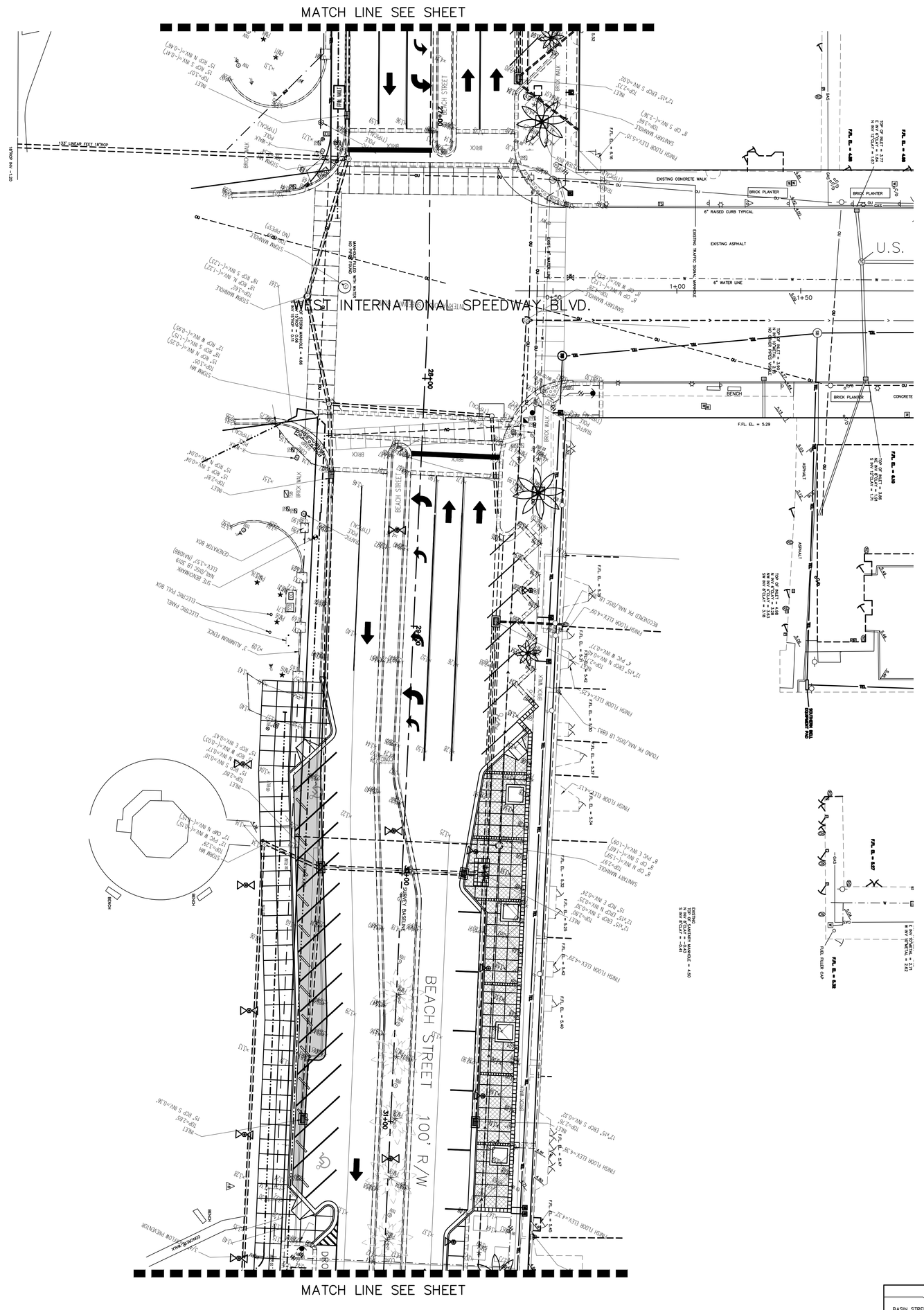
16
SHEET NO.

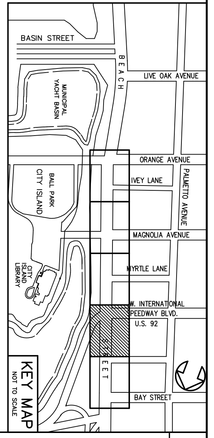
Drawn By:

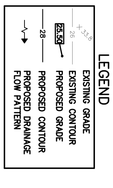
Date:

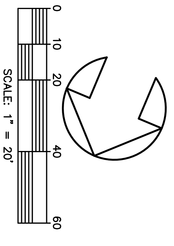
SCALE: 1"=20'

W:\Beach Street - Orange to Bay - 18311\1831-SP.DWG, Layout1, 10/9/2018 11:58:45 AM, Shane_B, DWG To PDF.pc3, 24X36, 1:20




| | |
|---|---|
| DEV 2018-CITY APPROVAL STAMP | |
| SHEET NO. | 17 |
| Drawn By: | |
| Date: | |
| SCALE: | 1"=20' |

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

OVERALL PAVING & DRAINAGE PLAN

**PARKER MYNCHENBERG & ASSOCIATES, INC.**
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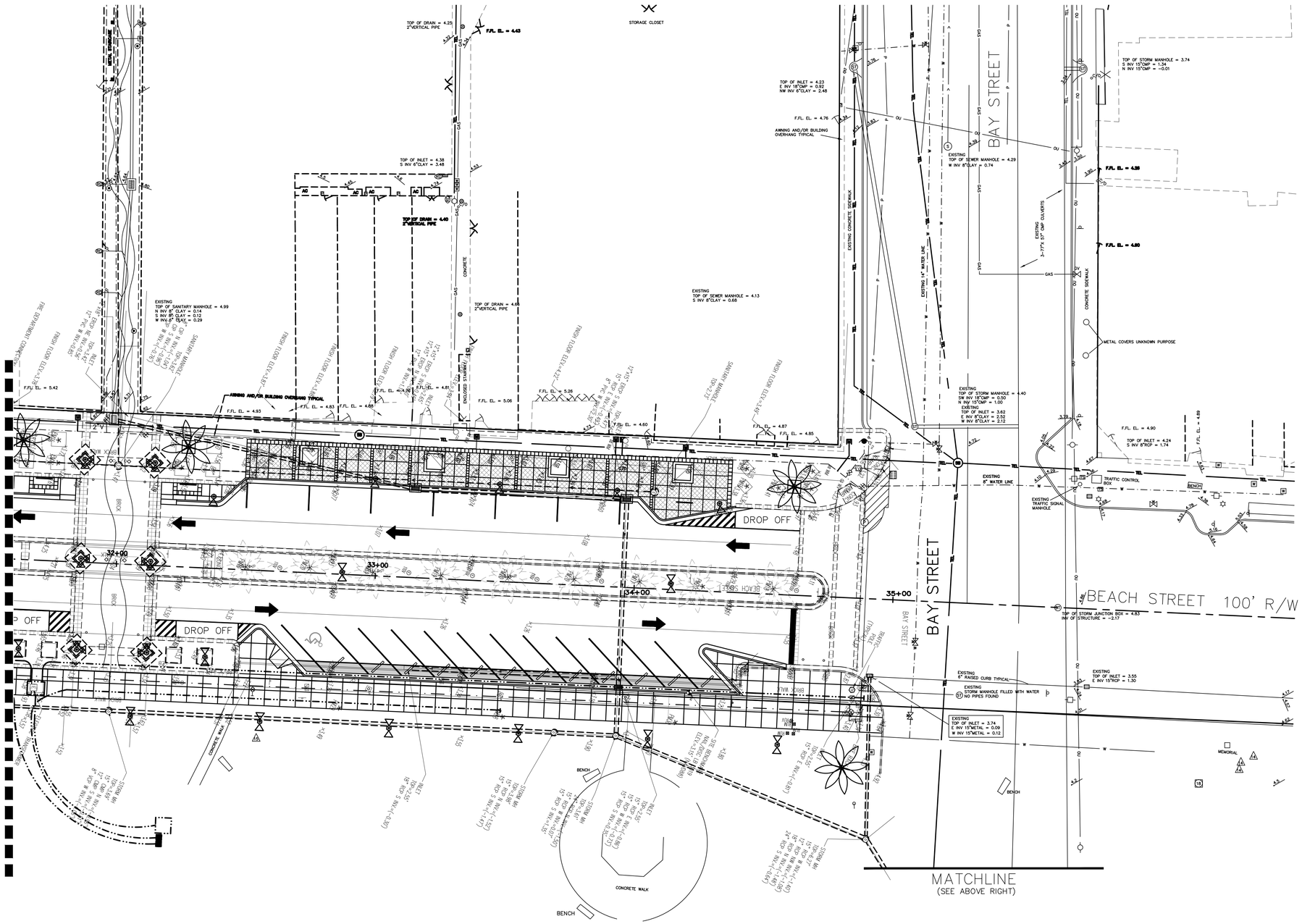
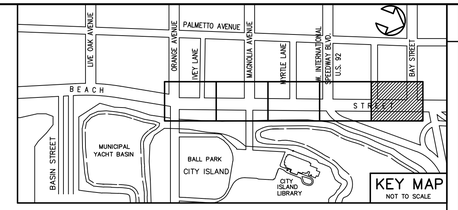
| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |




GRAPHIC SCALE
0 10 20 40 60
SCALE: 1" = 20'

LEGEND

| | |
|---|---|
| X.XX | EXISTING GRADE |
| 26 | EXISTING CONTOUR |
| 25.50 | PROPOSED GRADE |
| 28 | PROPOSED CONTOUR |
| | PROPOSED DRAINAGE FLOW PATTERN |

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH • FLORIDA

# OVERALL PAVING & DRAINAGE PLAN

DEV 2018–
CITY APPROVAL STAMP

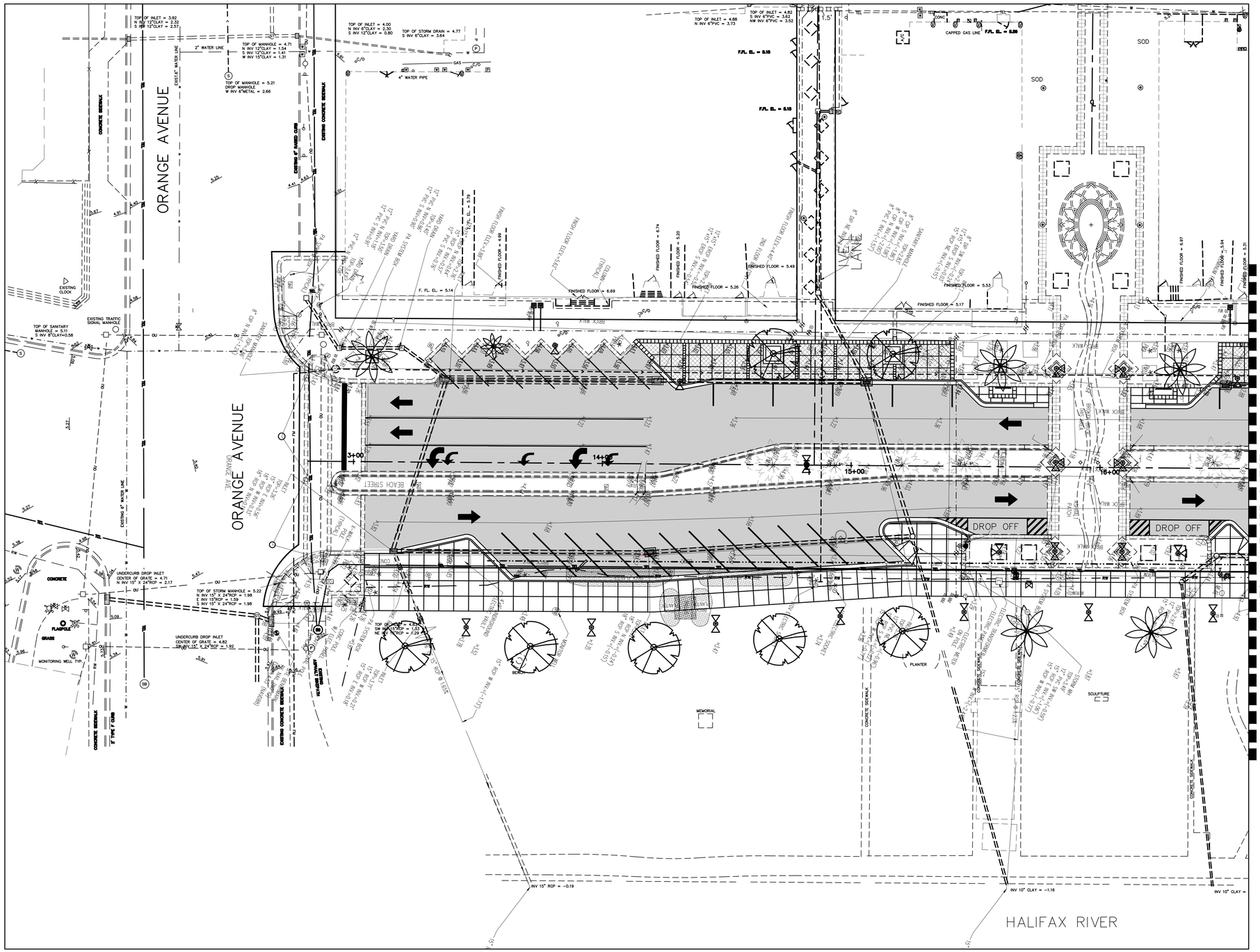
SHEET NO. 18

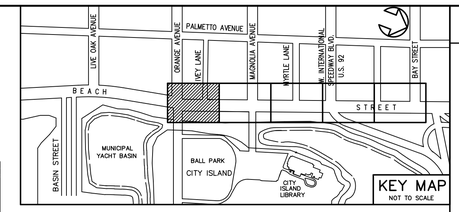
Drawn By:

Date:

SCALE: 1"=20'

W:\Beach Street - Orange to Bay - 18311\1831.SP.DWG, Layout1, 10/9/2018 11:59:37 AM, Shane_B, DWG To PDF.pc3, 24X36, 1:20




GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 20'

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH • FLORIDA

UTILITY PLAN

DEV 2018–
CITY APPROVAL STAMP

19
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'

W:\Beach Street - Orange to Bay - 183111831-SP.DWG, SITE PLAN, 10/9/2018 1:52:05 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:20

GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 20'

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|
| | | | |


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CERTIFICATE OF AUTHORIZATION NUMBER 00003970


# BEACH STREET STREETSCAPE
## ORANGE TO BAY
DAYTONA BEACH * FLORIDA

## UTILITY PLAN

DEV 2018–
CITY APPROVAL STAMP

20
SHEET NO.

Drawn By:

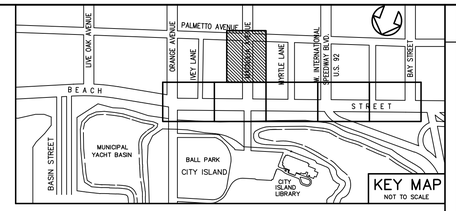
Date:

SCALE: 1"=20'

542 LF 10" HDPE SANITARY FORCE
MAIN DIRECTIONAL DRILL DR-11

MAGNOLIA AVE.

SEE SHEET 20 FOR CONTINUATION




GRAPHIC SCALE
0 10 20 40 60
SCALE: 1" = 20'

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|
| | | | |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CERTIFICATE OF AUTHORIZATION NUMBER 00003910

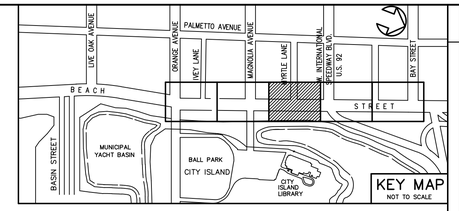

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH • FLORIDA

UTILITY PLAN

DEV 2018–
CITY APPROVAL STAMP

20–A
SHEET NO.

Drawn By: BH
Date:
SCALE: 1"=20'




GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 20'

MATCH LINE SEE SHEET

MATCH LINE SEE SHEET

MYRTLE LANE

DROP OFF

DROP OFF

CONNECT EXISTING 8" DIP WATER LINE TO PROPOSED 12" DIP WATER MAIN WITH A 12"X8" TEE

12" VALVE

PROPOSED 850 LF 12" DIP WATER MAIN (CLASS 350)

12"X14" COUPL

HALIFAX RIVER

RIVER

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|

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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

UTILITY PLAN

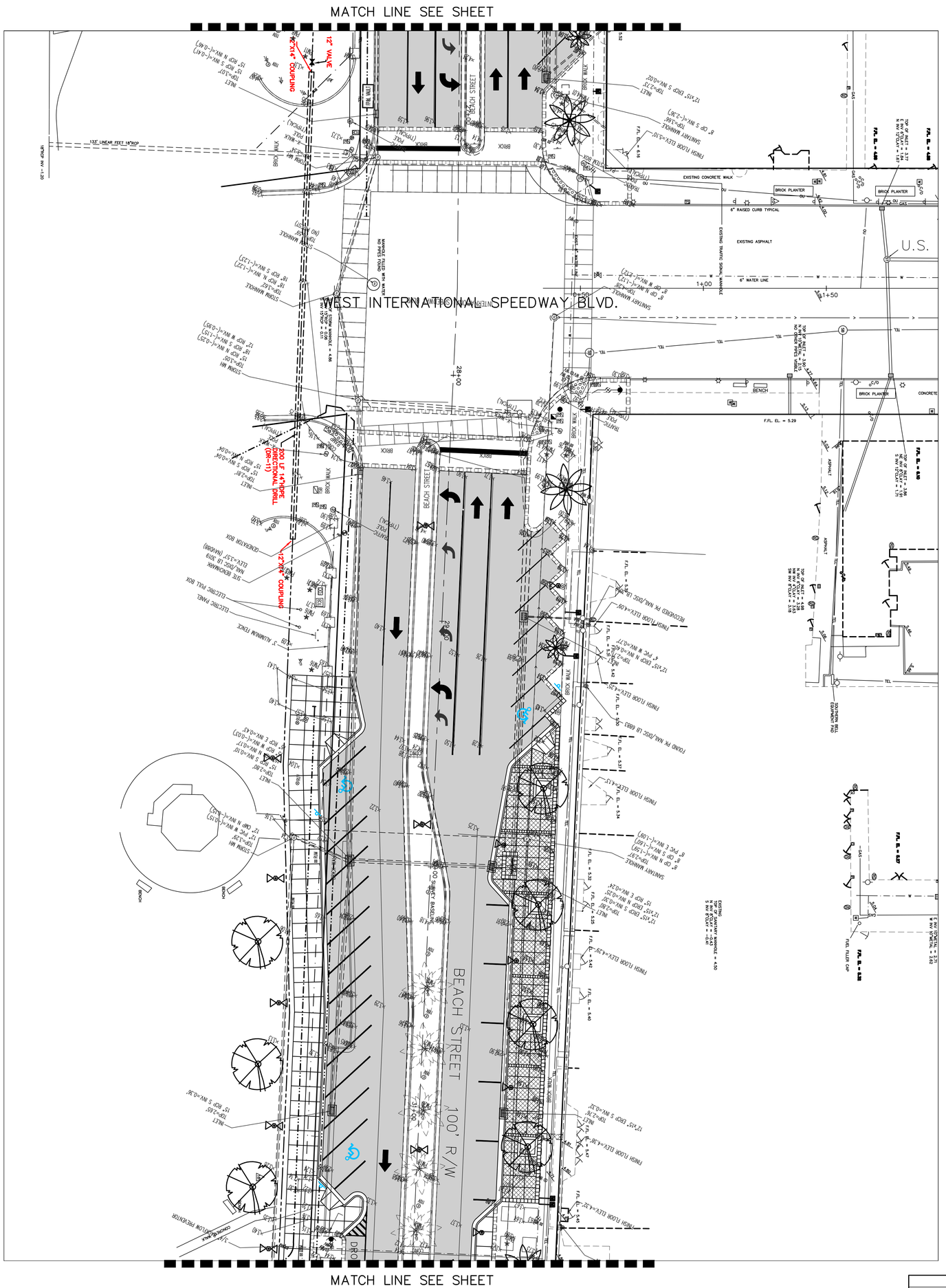
DEV 2018–
CITY APPROVAL STAMP

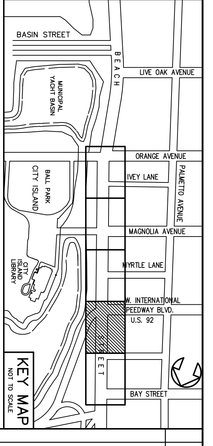
21
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'




SCALE: 1" = 20'

| | |
|---|---|
| DEV 2018-CITY APPROVAL STAMP | |
| SHEET NO. 22 | |
| Drawn By: | |
| Date: | |
| SCALE: 1"=20' | |

# BEACH STREET STREETSCAPE
# ORANGE TO BAY
DAYTONA BEACH * FLORIDA

## UTILITY PLAN

**PARKER MYNCHENBERG & ASSOCIATES, INC.**
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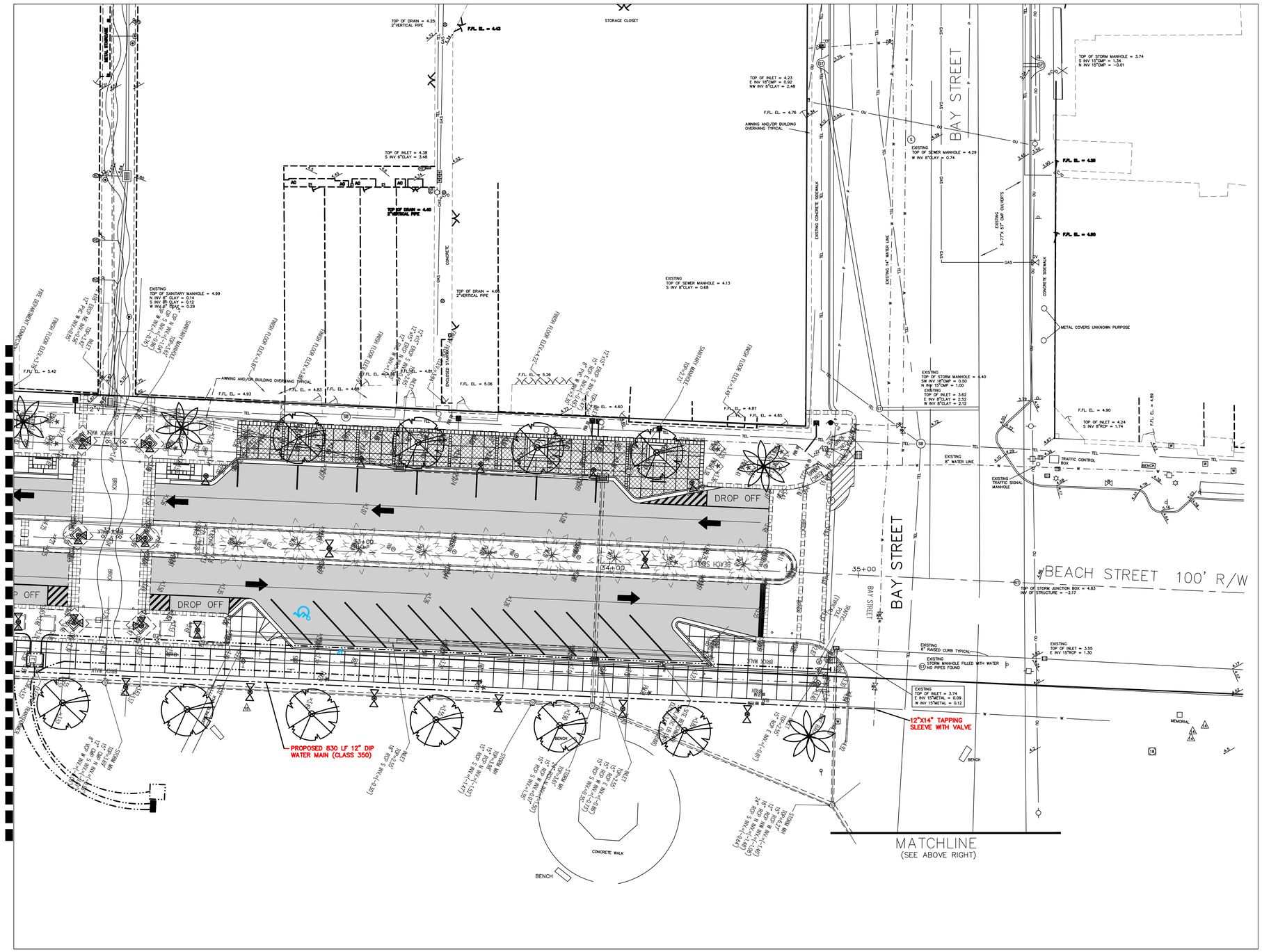
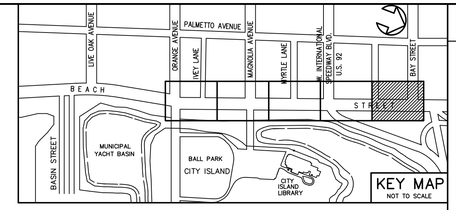
| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

M:\Beach Street - Orange to Bay - 2021\UR21-UTILITY, 11/15/2018 10:30:28 AM, DWG To PDF.pc3, ARCH expand D (36.00 x 24.00 inches), 1:20




GRAPHIC SCALE
0 10 20 40 60
SCALE: 1" = 20'

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |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# BEACH STREET STREETSCAPE
## ORANGE TO BAY
DAYTONA BEACH * FLORIDA

## UTILITY PLAN

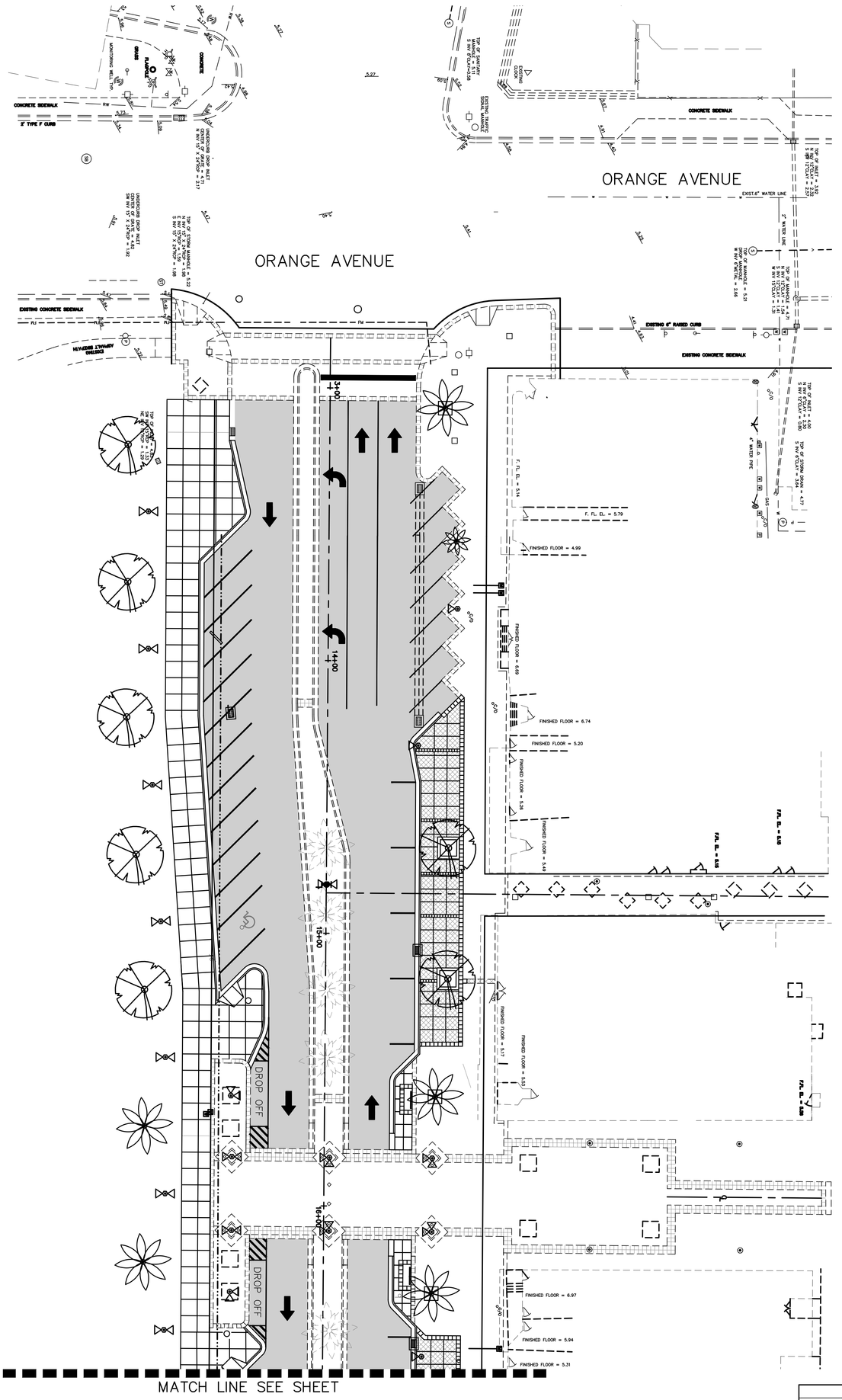
DEV 2018–
CITY APPROVAL STAMP

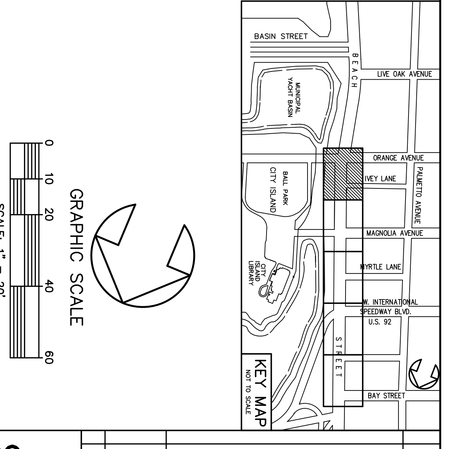
SHEET NO. 23

Drawn By:

Date:

SCALE: 1"=20'







DEV 2018-
CITY APPROVAL STAMP

SHEET NO. 24

Drawn By:

Date:

SCALE: 1"=20'

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LANDSCAPE PLAN

**PARKER MYNCHENBERG & ASSOCIATES, INC.**
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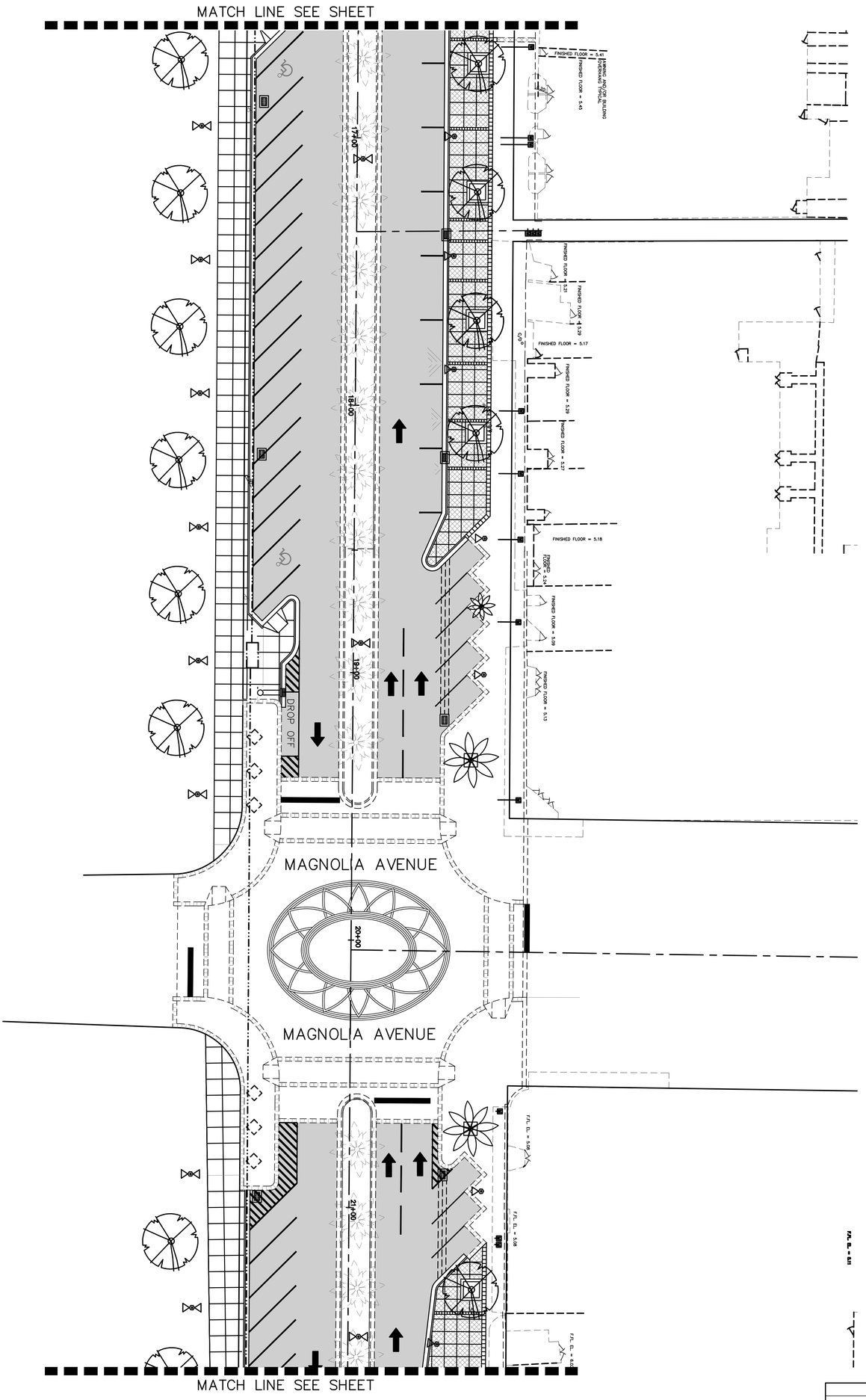
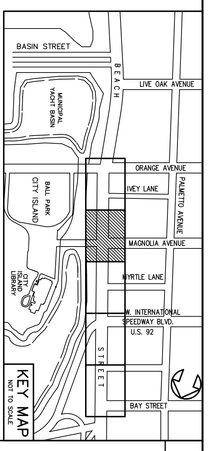
CERTIFICATE OF AUTHORIZATON NUMBER 00003910

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |




GRAPHIC SCALE
SCALE: 1" = 20'
0 10 20 40 60

DEV 2018-
CITY APPROVAL STAMP

25
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LANDSCAPE PLAN

**PARKER MYNCHENBERG & ASSOCIATES, INC.**
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CERTIFICATE OF AUTHORIZATON NUMBER 00003910

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |


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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LANDSCAPE PLAN

DEV 2018–
CITY APPROVAL STAMP

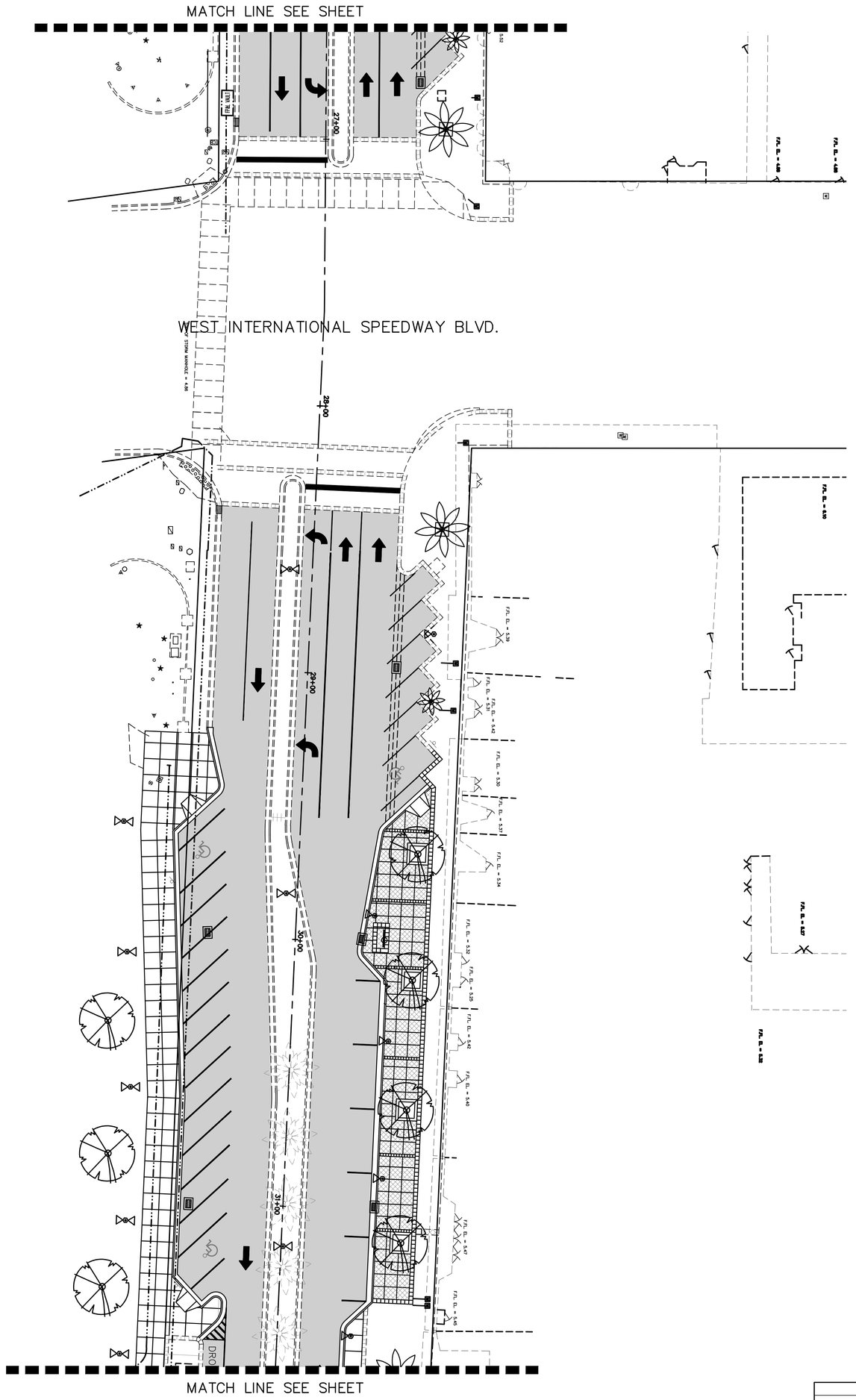
26
SHEET NO.

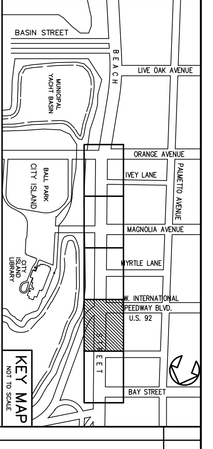
Drawn By:

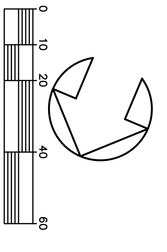
Date:

SCALE: 1"=20'

W:\Beach Street - Orange to Bay - 18311\18831-SP.DWG, SITE PLAN, 10/9/2018 2:02:30 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:20

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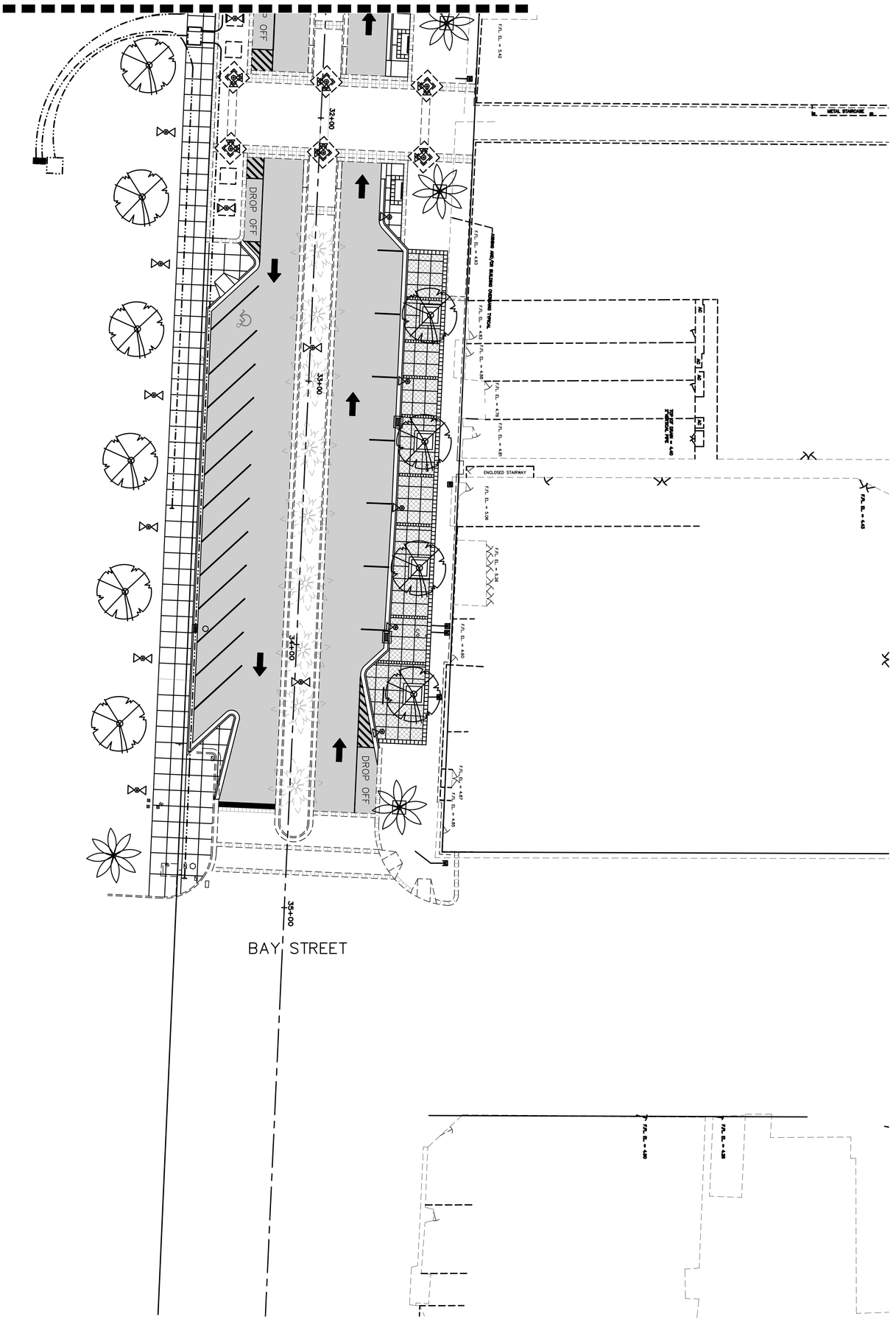
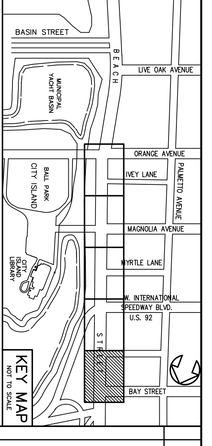
|---|---|
| DEV 2018-- CITY APPROVAL STAMP | BEACH STREET STREETSCAPE<br>ORANGE TO BAY<br>DAYTONA BEACH * FLORIDA |
| SHEET NO. 27 | LANDSCAPE PLAN |
| Drawn By: | |
| Date: | |
| SCALE: 1"=20' | |

**PARKER MYNCHENBERG & ASSOCIATES, INC.**
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATON NUMBER 00003910

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |




GRAPHIC SCALE
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SCALE: 1" = 20'

DEV 2018-
CITY APPROVAL STAMP

SHEET NO. 28

Date:

Drawn By:

SCALE: 1"=20'

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LANDSCAPE PLAN

**PARKER MYNCHENBERG & ASSOCIATES, INC.**
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| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

# LANDSCAPE NOTES

1.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS AND WORK CALLED FOR IN THE LANDSCAPE PLAN. THE PLANT LIST QUANTITIES SHALL BE USED AS A GUIDE ONLY. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES AND REPORT ANY DISCREPANCIES.

2.) ALL PLANT BEDS AND ALL EXISTING AND PROPOSED PARKING LOT ISLANDS SHALL BE DRESSED WITH 2"–3" MINIMUM SHREDDED CYPRESS MULCH.

3.) THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR STABILITY AND PLUMB CONDITION OF ALL PLANTS AND SHALL BE LEGALLY LIABLE FOR ANY DAMAGE CAUSED BY INSTABILITY OF PLANT MATERIALS.

4.) THE CONTRACTOR SHALL DISPOSE OF STUMPS AND MAJOR ROOTS OF ALL PLANTS TO BE REMOVED.

5.) THE LANDSCAPE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH ALL OTHER WORK TO BE DONE ON SITE, PRIOR TO LANDSCAPE INSTALLATION.

6.) THE CONTRACTOR SHALL INSURE ADEQUATE VERTICAL DRAINAGE IN ALL PLANT PITS. TEST HOLES FOR THE VISUAL INSPECTION OF DRAINAGE SHALL BE DUG PRIOR TO INSTALLATION OF ANY PLANTS. THE CONTRACTOR SHALL AMEND POOR DRAINAGE UNTIL ACCEPTABLE FOR PLANT SURVIVABILITY.

7.) ALL PLANT PITS TO BE TWICE THE WIDTH OF THE ROOT BALL AND SHALL BE BACKFILLED WITH 50% SAND, 30% PEAT, 25% COW MANURE UNIFORMLY MIXED.

8.) THE CONTRACTOR SHALL REPLACE ALL PLANTS WHICH ARE NOT IN A HEALTHY, GROWING CONDITION PRIOR TO ACCEPTANCE. ALL PLANTS SHALL BE MAINTAINED AND GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF 90 DAYS FOLLOWING ACCEPTANCE BY THE OWNER. ANY PLANTS FOUND NOT TO BE IN A HEALTHY GROWING CONDITION AT THE END OF THE GUARANTEE PERIOD SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.

9.) SOD SHALL BE STRONG, SOLID SOD PLACED EVENLY AND WITHOUT GAPS BETWEEN PIECES. GROUND SHALL BE THOROUGHLY WETTED BEFORE PLACING SOD. SOD SHALL BE PLACED TO LIMITS SHOWN AND TO THE EXTENT OF DAMAGED EXISTING SOD. EXISTING GROUND SHALL BE STRIPPED BEFORE PLACING NEW SOD.

10.) ALL TREES AND SHRUBS TO BE PLANTED NO LOWER THAN PROPOSED GRADE.

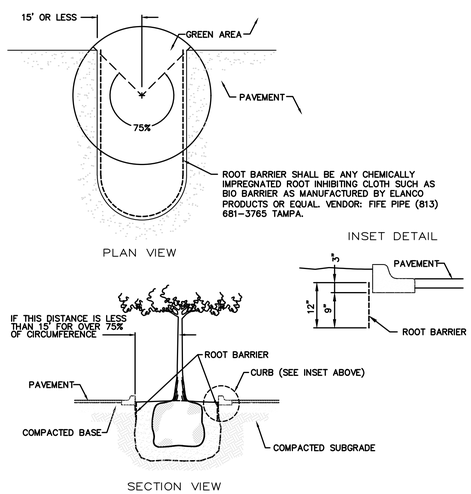
11.) THE TWO AREAS SHOWN HEREON ON THIS DRAWING AND ON THE SITE DEVELOPMENT PLAN ARE LABELED, TO REMAIN NATURAL. NO TREES ARE TO BE REMOVED FROM THESE AREAS WITHOUT APPROVAL OF THE OWNER AND CITY

12.) CLEARING PROCEDURE: THE OWNER OR DEVELOPER IS RESPONSIBLE FOR INSURING THAT ALL POSSIBLE MEASURES ARE TAKEN DURING THE CLEARING PROCESS TO AVOID DAMAGE TO TREES AND VEGETATION DESIGNATED TO REMAIN AFTER CONSTRUCTION. THIS INCLUDES USE OF HAND LABOR RATHER THAN LARGE MACHINERY WHERE NECESSARY TO PROTECT TREES TO BE PRESERVED. ALL FELLED MATERIAL SHALL BE PROMPTLY AND CAREFULLY REMOVED FROM THE SITE IN ORDER TO AVOID POTENTIAL DAMAGE TO REMAINING TREES AND VEGETATION AND THE HARBORING OF INSECTS AND RODENTS.

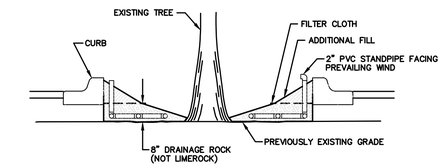
13.) ALL PLANT MATERIALS SHALL BE FLORIDA NO. 1 GRADE, OR BETTER, ACCORDING TO THE CURRENT "GRADES AND STANDARDS FOR NURSERY PLANTS", STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE, TALLAHASSEE, EXCEPT WHERE IN THE DISCRETION OF THE ENFORCEMENT OFFICIAL NATURAL VEGETATION IS ADEQUATE TO PROVIDE THE NECESSARY VISUAL SCREENING.

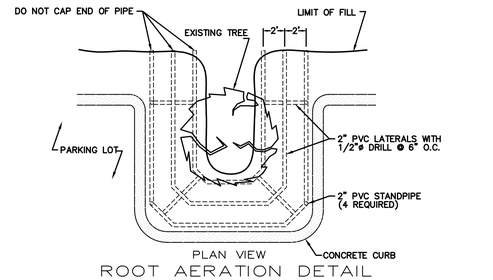
A. GROUND COVERS. GROUND COVERS MAY INCLUDE ANY PLANT MATERIALS THAT REACH AN AVERAGE HEIGHT OF NOT MORE THAN 12 INCHES. GROUND COVERS MUST PRESENT A FINISHED APPEARANCE AND PROVIDE REASONABLY COMPLETE COVERAGE AT TIME OF PLANTING.
THICK MULCH BED.

B. LAWN GRASS. GRASSED AREAS SHALL BE PLANTED WITH ST. AUGUSTINE "FLORATAM" OR EQUAL APPROVED BY OWNER.

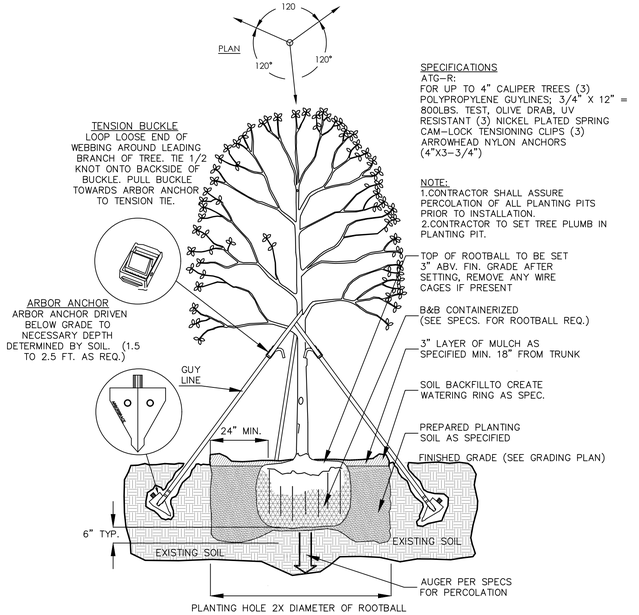



## ROOT BARRIER DETAIL
NTS
DBL–1 DATED 3–21–05

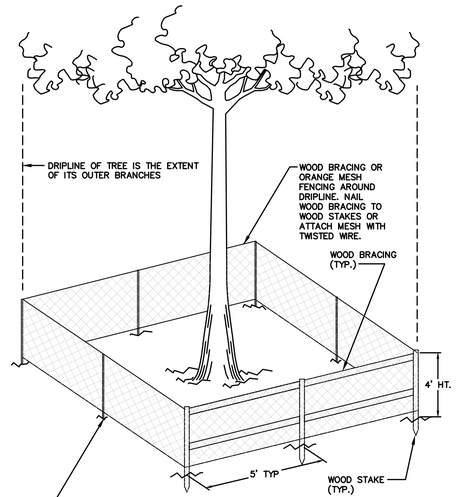



## ROOT AERATION DETAIL
NTS
DBL–2 DATED 3–21–05

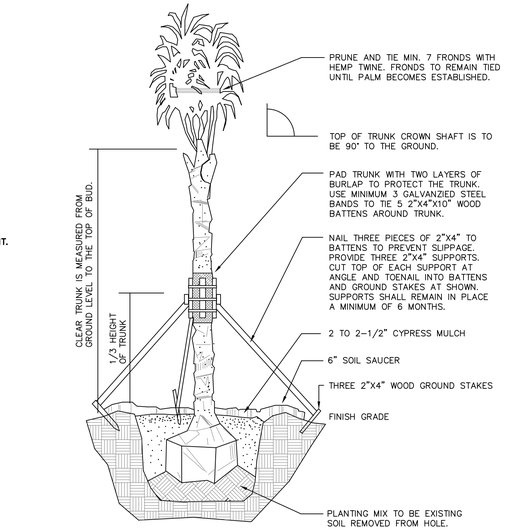



## TREE PLANTING & GUY DETAILS

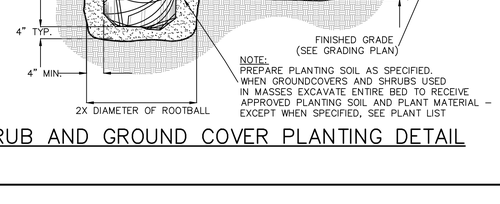



NOTE:
BARBED WIRE FENCING IS NOT PERMISSIBLE

## TREE PROTECTION BARRICADE
DBL–5 DATED 3–21–05

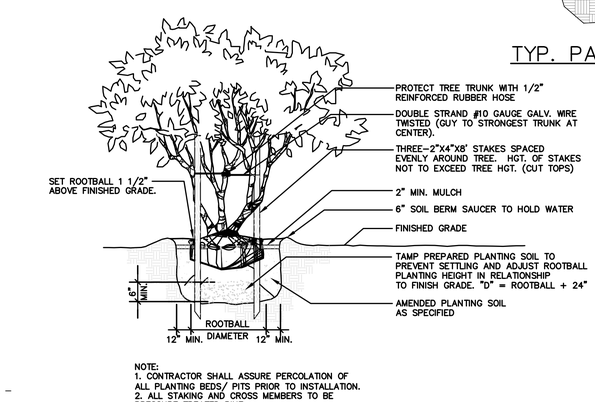



## TYP. PALM TREE PLANTING DETAIL



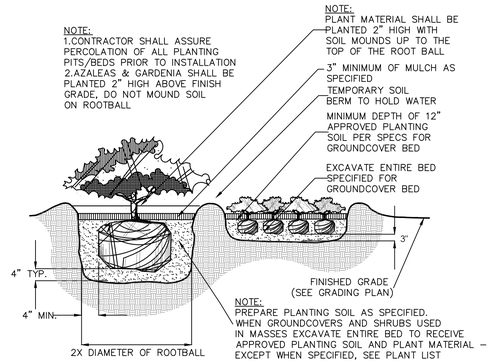

NOTES:
1) CUTS ARE TO BE MADE CLEANLY WITH A SHARP ROOT PRUNING TOOL (SUCH AS A DOSCO OR VERMEER ROOT PRUNER).
2) INSTALL ORANGE PLASTIC MESH TREE BARRIER, WITH REBAR SUPPORTS, AT POINT OF PRUNING AND CONTINUE COMPLETELY AROUND TREE, PROTECTING THE AREA WITHIN THE DRIPLINE (EXTENT OF OUTER BRANCHES).
3) ROOT PRUNING PROCEDURE MUST BE DONE AND INSPECTED PRIOR TO ISSUANCE OF A BUILDING PERMIT OR GRADING AND FILLING PERMIT.

## ROOT PRUNING DETAIL
NTS
DBL–3 DATED 3–21–05




NOTE:
1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING BEDS/ PITS PRIOR TO INSTALLATION.
2. ALL STAKING AND CROSS MEMBERS TO BE PRESSURE TREATED PINE.
3. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY THE OWNER.

## TYPICAL MULTI–TRUNK TREE
NTS




## SHRUB AND GROUND COVER PLANTING DETAIL

DBL–7 DATED 3–21–05

## SODDING, SEEDING, & MULCHING NOTES

A. SCOPE OF WORK. THE WORK IN THIS SECTION CONSISTS OF FURNISHING AND COMPLETELY INSTALLING SOD, OR SEED AND MULCH OVER THE LIMITS CALLED FOR ON THE CONSTRUCTION DRAWINGS. AT A MINIMUM, ALL WORK SHALL MEET THE MINIMUM SPECIFICATIONS OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS OUTLINED IN SECTIONS 570 (GRASSING BY SEEDING) AND 575 (SODDING). IN ADDITION, ALL WORK SHALL MEET THE MINIMUM REQUIREMENTS OF THE CITY.

B. MATERIALS. GRASS SEED SHALL BE A MIXTURE OF:

| | |
|---|---|
| PENSACOLA BAHIA (USE 50% SCARIFIED SEED) | 50% |
| HULLED BERMUDA | 25% |
| BROWN TOP MILLET | 25% |

IN THE FALL AND WINTER MONTHS, AND WITH THE APPROVAL OF THE CITY, ANNUAL RYE GRASS SHALL BE SUBSTITUTED IN EQUAL AMOUNTS FOR THE BROWN TOP MILLET. SEED SHALL BE PRE–MIXED BY A SEED COMPANY TO THE PERCENTAGES DESCRIBED ABOVE, WITH CERTIFICATION FROM THE SUPPLIER PROVIDED TO THE CITY'S DESIGNATED PROJECT LANDSCAPE INSPECTOR PRIOR TO USE.

MULCH USED SHALL BE STRAW OR HAY CONSISTING OF OATS, RYE, OR WHEAT STRAW, OR OF PANGOLA, PEANUT, COASTAL BERMUDA, OR BAHIA GRASS HAY. MULCH SHALL BE FREE FROM UNDESIRABLE WEED AND OTHER UNDESIRABLE GRASS.

C. METHODS. GRASSING SHALL BE DONE IMMEDIATELY UPON COMPLETION OF THE FINE GRADING OPERATION. HOWEVER, NO SEEDING SHALL BE DONE WHEN THE GROUND IS FROZEN OR UNDULY WET. THE RATE OF SPREAD FOR THE SEED MATERIAL SHALL BE ONE HUNDRED AND THIRTY (130) POUNDS PER ACRE.

APPROXIMATELY ONE INCH (1"), LOOSE THICKNESS, OF MULCH MATERIAL SHALL BE APPLIED UNIFORMLY OVER THE SEEDED AREAS (APPROXIMATELY ONE AND ONE–HALF (1–1/2) BALES PER 1000 SQUARE FEET). THE MULCH MATERIAL SHALL BE CUT INTO THE SOIL WITH A DISC HARROW OR OTHERWISE ANCHORED DOWN. UNDER PROPER CIRCUMSTANCES, CONTRACTOR MAY REQUEST OPTION TO INSTALL HYDRO–SEEDING SUBJECT TO THE APPROVAL OF THE PROJECT LANDSCAPE ARCHITECT AND THE CITY

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|
| | | | |


**PARKER MYNCHENBERG & ASSOCIATES, INC.**
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677–6891 FAX (386) 677–2114 E–MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910


BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LANDSCAPE DETAILS

DEV 2018–
CITY APPROVAL STAMP

29
SHEET NO.

Drawn By: M. GRECO
Date: 08/30/18
SCALE: N.T.S.

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SCALE: 1" = 20'

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HALIFAX RIVER

| NO. | DATE | DESCRIPTION REVISIONS | BY |
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**PARKER MYNCHENBERG & ASSOCIATES, INC.**

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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

IRRIGATION PLAN

DEV 2018–
CITY APPROVAL STAMP

30
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'

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| NO. | DATE | DESCRIPTION REVISIONS | BY |
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**PARKER MYNCHENBERG & ASSOCIATES, INC.**
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# BEACH STREET STREETSCAPE ORANGE TO BAY

DAYTONA BEACH * FLORIDA

## IRRIGATION PLAN

DEV 2018–
CITY APPROVAL STAMP

SHEET NO. 31

Drawn By:

Date:

SCALE: 1"=20'

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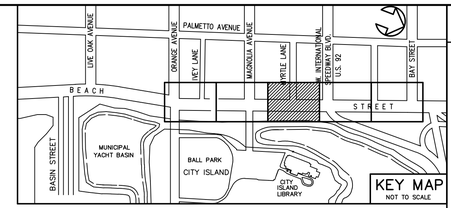


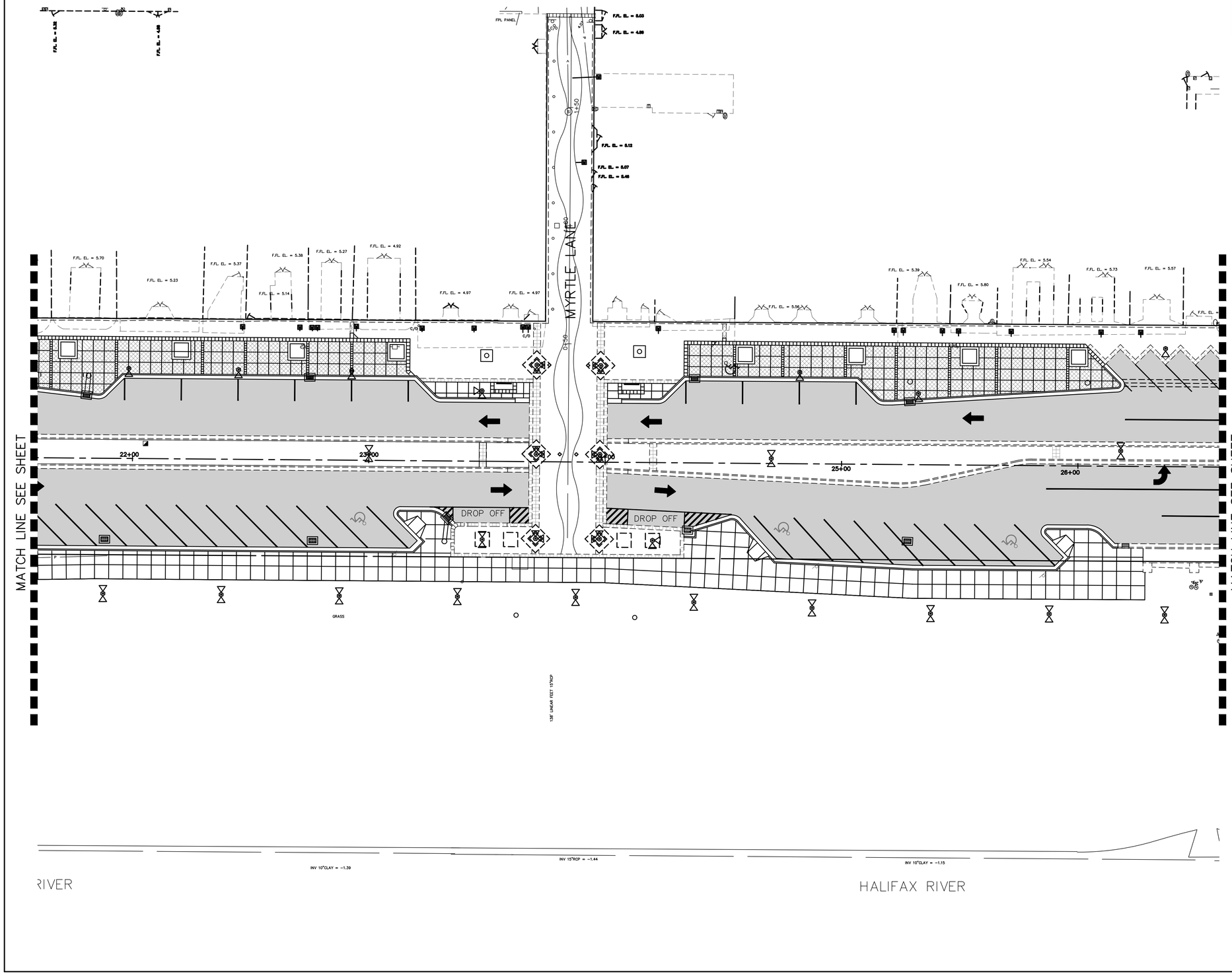


GRAPHIC SCALE

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SCALE: 1" = 20'

| NO. | DATE | DESCRIPTION | BY |
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| | | REVISIONS | |

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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

IRRIGATION PLAN

DEV 2018–
CITY APPROVAL STAMP

32
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'

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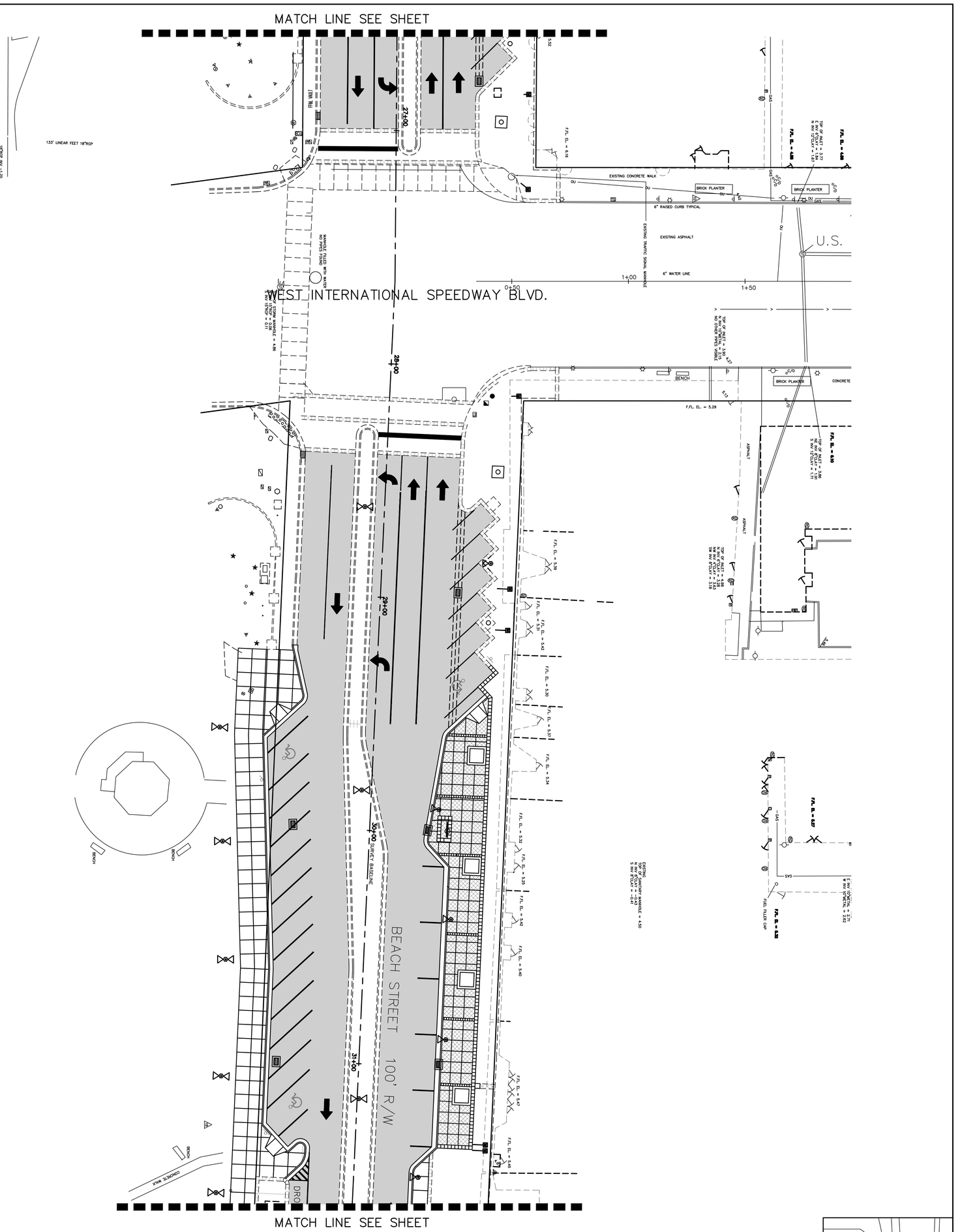


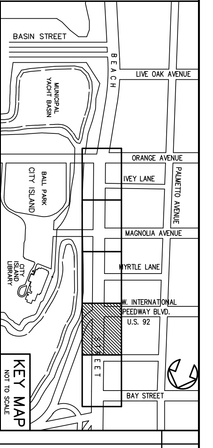


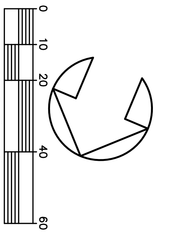


DEV 2018-
CITY APPROVAL STAMP

SHEET NO. 33

Drawn By:

Date:

SCALE: 1"=20'

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

IRRIGATION PLAN

**PARKER MYNCHENBERG & ASSOCIATES, INC.**
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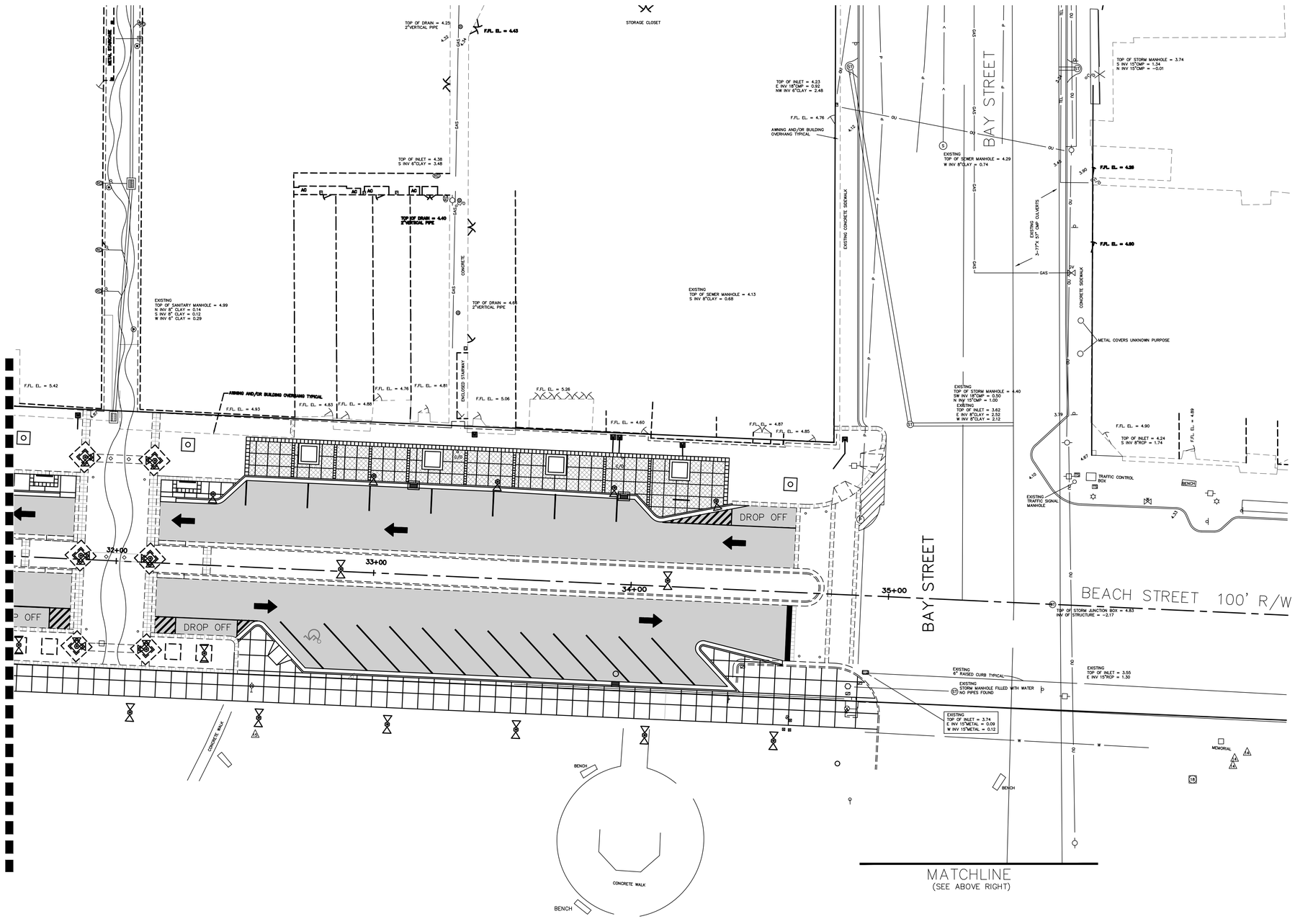


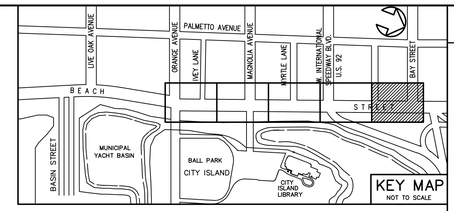


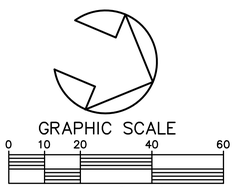


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# BEACH STREET STREETSCAPE
## ORANGE TO BAY
DAYTONA BEACH * FLORIDA

## IRRIGATION PLAN

DEV 2018–
CITY APPROVAL STAMP

34
SHEET NO.

Drawn By:

Date:

SCALE: 1"=20'

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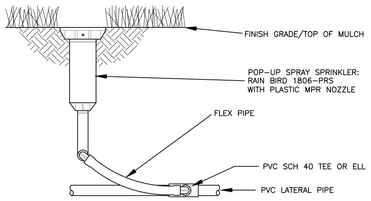
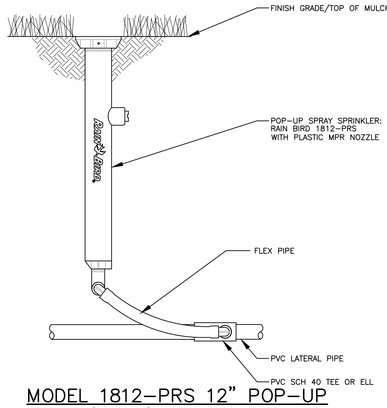


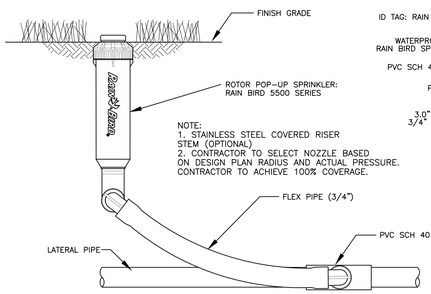

## MODEL 1806-PRS 6" POP-UP

**FIXED-SPRAY (MPR SERIES), FLEX PIPE, PRESSURE REGULATING**



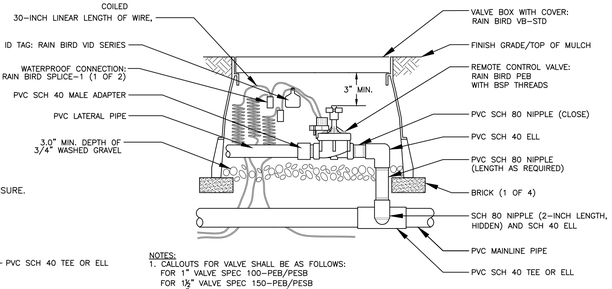

## MODEL 1812-PRS 12" POP-UP

**FIXED-SPRAY (MPR SERIES), FLEX PIPE, PRESSURE REGULATING**




## MODEL 5500 SERIES POP-UP ROTOR

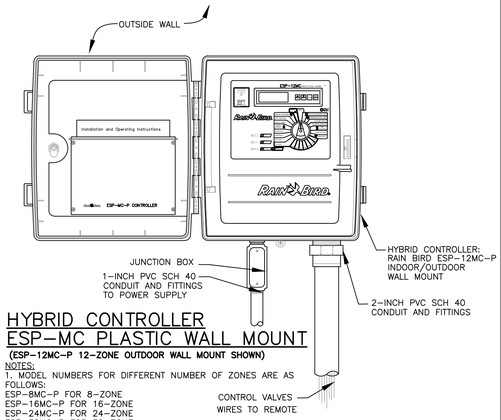
**GEAR DRIVE (5500 NOZZLE), FLEX PIPE, PRESSURE REGULATING**




NOTES:
1. CALLOUTS FOR VALVE SHALL BE AS FOLLOWS:
FOR 1" VALVE SPEC 100-PEB/PESB
FOR 1½" VALVE SPEC 150-PEB/PESB
FOR 2" VALVE SPEC 200-PEB/PESB
2. PESB SERIES INCORPORATES SELF-CLEANING SCRUBBER & STAINLESS STEEL SCREEN.

## VALVES: PEB OR PESB SERIES

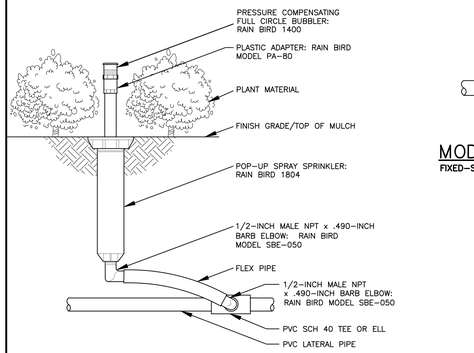
**PLASTIC VALVE, ELECTRIC (MODEL PEB SHOWN)**




## HYBRID CONTROLLER ESP-MC PLASTIC WALL MOUNT

**(ESP-12MC-P 12-ZONE OUTDOOR WALL MOUNT SHOWN)**

NOTES:
1. MODEL NUMBERS FOR DIFFERENT NUMBER OF ZONES ARE AS FOLLOWS:
ESP-8MC-P FOR 8-ZONE
ESP-16MC-P FOR 16-ZONE
ESP-24MC-P FOR 24-ZONE
ESP-32MC-P FOR 32-ZONE
ESP-40MC-P FOR 40-ZONE
2. FOR INDOOR WALL MOUNT, JUST CHANGE NOTATION ON DETAIL.
3. CONTRACTOR MAY SUBSTITUTE STEEL WALL MOUNT IN LIEU OF PLASTIC WALL MOUNT AT NO ADDITIONAL COST TO THE OWNER.




## SPRINKLERS: PRESSURE COMPENSATING FULL-CIRCLE BUBBLER

**RAIN BIRD N-1400 BUBBLER (MPR SERIES) ON 1804 POP-UP, FLEX PIPE**

### RAIN BIRD MPR SERIES NOZZLE SELECTION CHART

| SYM | SPEC | P.S.I. | G.P.M. | RADIUS | PATTERN |
|---|---|---|---|---|---|
| A | 15F | 30 | 3.7 | 15' | FULL |
| B | 15TQ | 30 | 2.78 | 15' | THREE QUARTER |
| C | N/A | – | – | – | N/A |
| D | 15H | 30 | 1.85 | 15' | HALF |
| E | 15T | 30 | 1.23 | 15' | THIRD |
| F | 15Q | 30 | 0.92 | 15' | QUARTER |
| G | 15EST | 30 | 0.61 | 4'X15' | END STRIP |
| H | 15CST | 30 | 1.21 | 4'X30' | CENTER STRIP |
| J | 15SST | 30 | 1.21 | 4'X30' | SIDE STRIP |
| K | 12F | 30 | 2.6 | 12' | FULL |
| L | 12TQ | 30 | 1.95 | 12' | THREE QUARTER |
| M | N/A | – | – | – | N/A |
| N | 12H | 30 | 1.3 | 12' | HALF |
| O | 5Q-B | 30 | 0.50 | 5' | BUBBLER |
| P | 12T | 30 | 0.87 | 12' | THIRD |
| R | 12Q | 30 | 0.65 | 12' | QUARTER |
| S | 10F | 30 | 1.58 | 10' | FULL |
| T | 10H | 30 | 0.79 | 10' | HALF |
| V | 10Q | 30 | 0.39 | 10' | QUARTER |
| W | 8F | 30 | 1.05 | 8' | FULL |
| X | 8H | 30 | 0.52 | 8' | HALF |
| Y | 8T | 30 | 0.35 | 8' | THIRD |
| Z | 8Q | 30 | 0.26 | 8' | QUARTER |
| 5F | 5F | 30 | 0.41 | 5' | FULL |
| 5H | 5H | 30 | 0.20 | 5' | HALF |
| 5T | 5T | 30 | 0.13 | 5' | THIRD |
| 5Q | 5Q | 30 | 0.10 | 5' | QUARTER |

### 5500 NOZZLE PERFORMANCE DATA CHART

| NOZZLE NO. | PSI | GPM | RADIUS |
|---|---|---|---|
| 2 | 40 | 1.6 | 37' |
| 3 | 40 | 2.7 | 39' |
| 4 | 40 | 2.9 | 41' |
| 5 | 40 | 3.5 | 41' |
| 6 | 40 | 4.8 | 45' |
| 8 | 40 | 6.4 | 45' |
| 10 | 40 | 7.5 | 41' |
| 12 | 40 | 10.1 | 39' |

### 5500 SHORT RADIUS NOZZLE PERFORMANCE DATA CHART

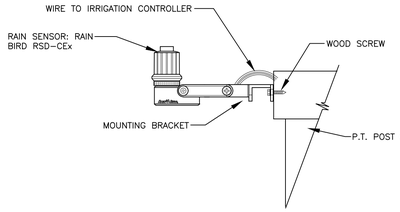
| NOZZLE NO. | PSI | GPM | RADIUS |
|---|---|---|---|
| 18S | 40 | 1.5 | 19' |
| 22S | 40 | 1.6 | 21' |
| 26S | 40 | 1.9 | 25' |
| 30S | 40 | 1.8 | 29' |

## IRRIGATION LEGEND

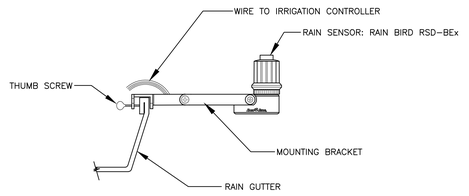
- RAIN BIRD 1800 SERIES – SPRAY HEAD ON RISER, INSTALLED AS SHOWN, SEE NOZZLE CHART
- RAIN BIRD 1806-PRS SERIES – 6" POP-UP SPRAY HEAD, INSTALLED AS SHOWN, SEE NOZZLE CHART
- RAIN BIRD MODEL 5500 SERIES SPRINKLER-GEAR DRIVE, FULLY ADJUSTABLE
- RAIN BIRD PEB OR PESB SERIES – ELECTRIC CONTROL VALVE INSTALLED IN VB-STD VALVE BOX.
- DENOTES PROPOSED VALVE (SIZE AS SHOWN)
- DENOTES PROPOSED IRRIGATION MAIN, SCH. 40 (SIZE AS SHOWN)
- DENOTES PROPOSED IRRIGATION LATERAL SCH. 40 (SIZE AS SHOWN)
- P.V.C. SLEEVE SIZE AS SHOWN
- DENOTES PROPOSED RAIN SENSOR, RAIN BIRD RSD SERIES
- DENOTES PROPOSED RAIN BIRD ESP-MC SERIES CONTROLLER

VALVE KEY ID-BOX

ZONE NUMBER → 1 / 1-1/2" / 35 ← SIZE OF VALVE; GALLONS PER MINUTE




## MODEL RSD-CEx POST/FENCE MOUNTING




## MODEL RSD-BEx GUTTER MOUNTING

## GENERAL IRRIGATION NOTES

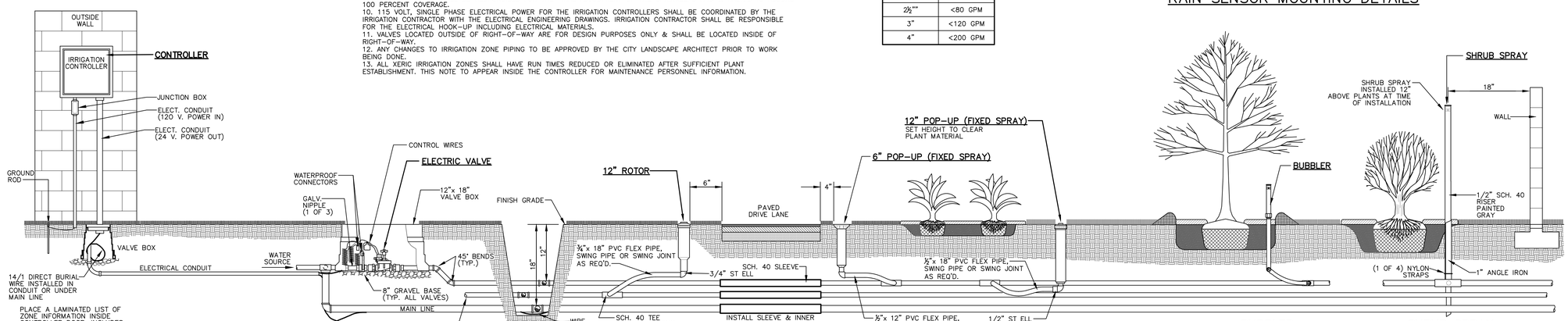
1. THE CONTRACTOR SHALL REFER TO THE LANDSCAPING PLAN WHEN TRENCHING TO LAY PIPE TO AVOID NEW & EXISTING TREES & LARGE SHRUBS.
2. ALL WIRING FROM THE IRRIGATION CONTROLLER TO THE REMOTE CONTROL VALVES SHALL BE UF-14/1 DIRECT BURIAL CABLE. ALL WIRE SPLICES SHALL BE MADE IN VALVE BOXES USING ONLY RAIN BIRD CONNECTORS & SEALANT.
3. UNLESS OTHERWISE INDICATED, PIPING TO A SINGLE SPRAY HEAD SHALL BE ¾" PVC PIPING. UNLESS OTHERWISE INDICATED, PIPING TO A SINGLE ROTOR HEAD SHALL BE ¾" PVC PIPING.
4. ALL MAIN LINE PIPING SHALL BE BURIED TO HAVE A MINIMUM COVER OF 18". ALL LATERAL PIPING DOWNSTREAM OF THE MAIN LINE SHALL BE BURIED TO HAVE A MINIMUM COVER OF 12".
5. THE CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE ARCHITECT ON THE EXACT LOCATION OF THE IRRIGATION CONTROLLERS.
6. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS & DIMENSIONS SHOWN ON PLANS AT THE SITE PRIOR TO COMMENCEMENT OF WORK UNDER THIS CONTRACT.
7. ALL IRRIGATION INSTALLATION SHALL CONFORM TO LOCAL CODES & REGULATIONS.
8. ALL PIPING ON THE PLANS IS DIAGRAMMATICALLY ROUTED FOR CLARITY & SHALL BE ROUTED TO AVOID PLANTS. DESIGN MODIFICATIONS SHALL ONLY BE MADE AS NECESSARY TO MEET FIELD CONDITIONS & ONLY UPON APPROVAL OF THE LANDSCAPE ARCHITECT. PIPING SHOWN RUNNING PARALLEL UNDER SIDEWALKS ADJACENT TO PLANTED AREAS IS FOR DESIGN CONVENIENCE ONLY & SHALL BE INSTALLED WITHIN THE PLANTED AREA.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL ADJUSTMENT OF THE SPRINKLERS ARC & RADIUS TO ASSURE 100 PERCENT COVERAGE.
10. 115 VOLT, SINGLE PHASE ELECTRICAL POWER FOR THE IRRIGATION CONTROLLERS SHALL BE COORDINATED BY THE IRRIGATION CONTRACTOR WITH THE ELECTRICAL ENGINEERING DRAWINGS. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR THE ELECTRICAL HOOK-UP INCLUDING ELECTRICAL MATERIALS.
11. VALVES LOCATED OUTSIDE OF RIGHT-OF-WAY ARE FOR DESIGN PURPOSES ONLY & SHALL BE LOCATED INSIDE OF RIGHT-OF-WAY.
12. ANY CHANGES TO IRRIGATION ZONE PIPING TO BE APPROVED BY THE CITY LANDSCAPE ARCHITECT PRIOR TO WORK BEING DONE.
13. ALL XERIC IRRIGATION ZONES SHALL HAVE RUN TIMES REDUCED OR ELIMINATED AFTER SUFFICIENT PLANT ESTABLISHMENT. THIS NOTE TO APPEAR INSIDE THE CONTROLLER FOR MAINTENANCE PERSONNEL INFORMATION.

## SPECIFIC IRRIGATION NOTES

1. IRRIGATION SPRAY HEADS SHALL BE PRESSURE REGULATING.
2. SYSTEM SUPPLY REQUIREMENTS ARE: 40 GPM @ 40 PSI AT WATER SOURCE. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IF DESIGN FLOW RATE AND PRESSURE DOES NOT EXIST.
3. LATERAL PIPES SHALL BE SIZED SUCH THAT THE WATER VELOCITY DOES NOT EXCEED 5 FEET/SECOND. CONTRACTOR SHALL APPLY THE FOLLOWING TABLE:

| PIPE SIZE (MIN) | FLOW |
|---|---|
| 1/2" | <6 GPM |
| 3/4" | <10 GPM |
| 1" | <15 GPM |
| 1¼" | <26 GPM |
| 1½" | <36 GPM |
| 2" | <50 GPM |
| 2½"" | <80 GPM |
| 3" | <120 GPM |
| 4" | <200 GPM |

## RAIN SENSOR MOUNTING DETAILS




CONTROLLER DETAIL | ELECTRIC VALVE DETAIL | TRENCH DETAIL | 12" POP-UP ROTOR DETAIL | SLEEVE DETAIL | 6" POP-UP SPRAY DETAIL | 12" POP-UP SPRAY DETAIL | BUBBLER DETAIL | SHRUB SPRAY DETAIL

NOTE: REQUIREMENTS VARY; CHECK LOCAL CODES PRIOR TO INSTALLATION.

## TYPICAL IRRIGATION DETAILS

RAIN BIRD

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|


**PARKER MYNCHENBERG & ASSOCIATES, INC.**
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910


BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

IRRIGATION DETAILS

DEV 2018-
CITY APPROVAL STAMP

SHEET NO. 35

Drawn By: M. GRECO

Date: 08/30/18

SCALE: N.T.S.

W:\BEACH STREET ORANGE TO BAY\Landscape & Irrigation Details.dwg, Model, 10/8/2018 4:02:22 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1

# AS-BUILTS/RECORD DOCUMENTS

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. CONTRACTOR shall maintain record documents including as-built/record drawings as required in this section.

B. CONTRACTOR at his expense shall secure the services of a Florida licensed surveyor to collect data and maintain as-built/record drawings according to City of Daytona Beach Utilities Department standards that follows:

As-Built/Record Drawing Requirements

In order to ensure that the City's project records are maintained to the highest standards and the information can easily be added to the City's electronic records the following information is required on all as-built/record drawings.

The intent of these details for as-built/record drawings is for all public facilities constructed by this project. At the pre-construction conference these as-built/record standards will be reviewed to be certain the Contractor's surveyor has a clear understanding of what is required for completion of this work.

1. Pavement and curb widths shall be verified and dimensioned for each street at each block (for subdivisions) and as appropriate to confirm paving limits (on site plans).
2. All radii at intersections shall be verified and dimensioned. This information is to be clearly indicated on the as-built/record drawings.
3. Roadway elevations shall be recorded at all grade changes, 100' intervals along roadway, and other intervals as needed along all streets. Street centerline and curb invert elevations shall be recorded as noted. The as-built centerline profile of all streets shall also be shown on the plan and profile so it may be compared to the design profile grade lines. In the event that the as-built centerline longitudinal grade does not meet the City minimum standards, additional longitudinal grades of the adjacent curbing and similar roadway cross-section surveys to verify the correct cross slope, shall be required to verify that the system will function as originally designed.
4. Storm drainage structures shall be located and/or dimensioned from centerlines or lot lines as appropriate. Each structure shall be located by sub-meter GPS with latitude, longitude and elevation data.
5. Storm drainage pipe invert and inlet elevations shall be recorded and clearly denoted as as-built information. Design elevations shall be crossed out and as-built information written next to it.
6. Storm drainage pipe material, length, and size shall be measured and/or verified. This information is to be clearly indicated as being as-built information.
7. All applicable topographic information pertinent to the on-site drainage system, such as ditches, swales, lakes, canals, etc. that are deemed necessary by the City to verify the functional performance of the storm water system, shall be noted. Normally, recording elevations every 100 feet at the top of bank and toe of slope will be required. Measurements shall be taken and recorded in order to accurately tie down these features to the roadway centerlines and to plat lines. Whenever possible, contour lines shall be utilized to graphically describe these topographic features.
8. Retention areas shall have their top of bank and bottom elevations recorded. Actual measurements shall be taken and dimensions recorded of the size of all retention areas. Measurements shall be done from top-of-bank with side slopes indicated. Separate calculations shall be submitted to indicate required and provided retention volumes.
9. Actual materials used and elevations and dimensions of overflow weir structures and skimmers shall be noted on the as-built.
10. Roadway swale centerlines shall be located and elevations of flow line and top-of-bank shall be recorded every 100 feet. Side slopes shall also be indicated.
11. Sanitary sewer manholes shall be verified and dimensioned from street centerlines or lot lines as appropriate. All rim and invert elevations shall be verified and recorded. This information shall be clearly indicated as being as-built information. Design elevations shall be crossed out and as-built information written next to it.
12. For subdivisions, proposed design finish floor elevations shall appear on all subdivision lots on the appropriate plan and profile sheet as well as on the master drainage plan.
13. Sanitary sewer line lengths, sizes, material, slope, etc., shall be verified and recorded. This information is to be clearly indicated as being as-built information.
14. Sewer laterals shall be verified and recorded at their clean out locations. Stationing and offset distances shall be measured from downstream manholes towards upstream manholes. Invert information at clean out shall be provided, and be located by sub-meter GPS with latitude, longitude and elevation data provided.
15. Lift stations and force mains shall be verified and dimensioned from street centerlines or lot lines as appropriate. Force main depth and location including valves will be provided and tied to permanent above grade features. Dimensional and elevation information indicated on the approved plan shall be verified and recorded. This information shall be clearly indicated as being as-built information. Buried potable water line and electrical service line shall be clearly dimensioned, located, and labeled. Each lift station shall be located by sub-meter GPS with latitude, longitude and elevation data provided.
16. Curb cuts or metal tabs used to mark sewer laterals, water services and water valves shall be verified for presence and accuracy of location.
17. Potable and reclaimed water main lines shall be dimensioned off the baseline construction. Water main line material size, length and depth placed shall be noted. Locations of valves shall also be tied to baseline construction. This information shall be clearly indicated as being as-built information.
18. Potable and reclaimed water valves, tees, bends, all services, and fire hydrants shall be located by tying them to baseline construction (Sta. & Offset). Similarly, force main valves, tees and bends shall be located in the same manner. Stationing and offset distances shall be measured from downstream manholes to upstream manholes. All valves and hydrants shall be located by sub-meter GPS with latitude, longitude and elevation data provided.
19. For perpendicular crossings of storm water, sanitary sewer, potable water, or reclaimed water, the as-built plans shall clearly indicate which utilities are located over or under other utilities, as necessary.
20. Any special features such as concrete flumes, lake banks, walls, fencing, etc. which were a part of the approved construction drawings should also be located and dimensioned.
21. If an approved subdivision plat or site plan shows a conservation easement, the project surveyor should provide the exact location of the specimen tree(s) from the right-of-way or property lines and proposed easement boundaries on the as-built drawing. The as-built location of these trees will help verify the sufficiency of the conservation easement prior to plat recording or certificate of occupancy.
22. When storm water, potable water, reclaimed water, or sanitary sewer improvements are located within an easement, the as-built drawing shall accurately depict the location of the easement itself as well as the exact location of the improvements within the easement. This is required in order to verify that the improvements have been properly located and to ensure that future subsurface excavation to perform remedial repair can be accomplished without disturbance beyond the easement.
23. As-built drawings are to be prepared by a Florida licensed surveyor and shall include a signed certification statement by the Florida licensed engineer of record. A Mylar set of as-built record drawings shall be provided with a digital copy in a compatible AutoCad format.
24. Elevations shall be referenced to NGVD 1988 Data. As-built survey information shall be referenced to at least two Florida State Plane east coordinates NAD 83.
25. Benchmark Datum utilizes North American Vertical Datum of 1929 monumentation with elevations adjusted to NGVD 1988 data. Any NAVD 1929 monument within the limits of construction is to be protected.

1.2 SUBMITTALS

4. CONTRACTOR shall submit each month to CITY the draft RECORD DOCUMENTS that show current construction activities AND a copy of notices to agencies including the City regarding road closures; plus a RECORD OF EVENTS that may be needed in the future.
5. CONTRACTOR shall submit to CITY as required the proposed shut-off schedule, capping, temporary service scheduling, record of notices to customers and proposed roadway closings.
6. CONTRACTOR shall submit when requested copies of published notices.
7. CONTRACTOR shall submit Record Drawings on CD and Mylar. When the As-Builts are delivered for clearance of water lines (two paper copies), they will be scheduled for chlorination. CITY will not release the drinking water bacteriological laboratory report to the Volusia County Health Department until the As-built information meets CITY requirements. CONTRACTOR will have 60 days from the time the bacteriological samples are collected to submit the as-built Mylar and CD to the CITY. Send the two paper copies for approval before making the Mylar. If CONTRACTOR goes past the 60 days, re-chlorination will be required and pay for the bacteriological laboratory report will be required. Below are minimum detail samples of how the As-built drawing information will need to be presented:

Example of how we need to see the valves, fittings, and pipes labeled, with an arrow going to the object.

Valve Example:

20" GATE VALVE
STA. 22+33.54 LT. 55.32'
LAT=29°12'53.009"N
LONG=81°04'03.355"W
TOP OF VALVE ELEV.=27.50
FINISH GROUND ELEV.=30.50

Pipes Example:

20" WATER MAIN
STA. 22+00.43 LT. 55.24'
LAT=29°12'50.009"N
LONG=81°04'26.355"W
TOP OF PIPE ELEV.=23.43

Benchmark Example:

BM#13
STA. 20+33.65 LT. 55.83'
N=1,774,373.4058
E=634,602.7566
LAT=29°04'53.355"N
LONG=81°04'53.355"W
ELEV.=32.55
(A Bench Mark must be shown on the site plans)
ALL DRAWINGS TO BE DRAWN TO TRUE STATE PLANE COORDINATES

PART 2 – EXECUTION

2.1 GENERAL

All materials, equipment, and labor needed to ensure accurate AS BUILT/RECORD DRAWINGS shall be provided by the CONTRACTOR.

A. It is acceptable to the CITY if the surveyor utilizes an after the fact approach to collecting and verifying the location and depth by vertical PVC pipes placed by the CONTRACTOR as markers for this purpose. The surveyor shall verify to accuracy defined in Florida Statutes the As-built conditions and certify the RECORD DRAWINGS.

B. The CITY'S REPRESENTATIVE shall not be considered the best source of information for valve locations that may have been lost during final grading. The surveyor or CONTRACTOR shall excavate and properly mark all valve boxes and each valve shall have a tag or be color coded to define water, sewer or reuse water valves. The use of temporary PVC pipe markers color coded is acceptable so long as cross references are provided on the RECORD DRAWINGS to prevent the tops from a water valve being placed on a sewer valve.

C. THE CONTRACTOR SHALL PROVIDE THE UTILITIES DEPARTMENT ENGINEERING DIVISION THE FINAL AS-BUILT/RECORD DRAWINGS ON CD AND MYLARS. THE AS-BUILT/RECORD DRAWINGS SHALL BE PREPARED AND PRESENTED IN MODEL SPACE USING AUTOCAD FORMAT 2007 OR LATER. THE MODEL SPACE DRAWING SHALL BE IN FLAS–EF STATE PLANE AND SHALL BE ABLE TO BE INSERTED INTO THE CITY'S OVERALL GIS SYSTEM. THE RECORD DRAWINGS SHALL ALSO BE PRINTED ON MYLAR SIGNED AND SEALED AS ALLOWED BY STATE OF FLORIDA REGULATIONS. A DISCLAIMER MAY BE NOTED IN A TRANSMITTAL LETTER PLUS THE SURVEYOR MAY ADD A SPECIAL NOTICE ON EACH SHEET REGARDING THE LOCATION OF THE TRUE ORIGINAL RECORD DRAWINGS OR PLACE LIMITS ON RESPONSIBILITY SHOULD IN THE FUTURE SOMEONE MODIFY THE MYLARS.

D. Identify the source markers for the survey used for Record Drawings.

## SITE PLAN & SUBDIVISION TESTING

### A. MATERIALS

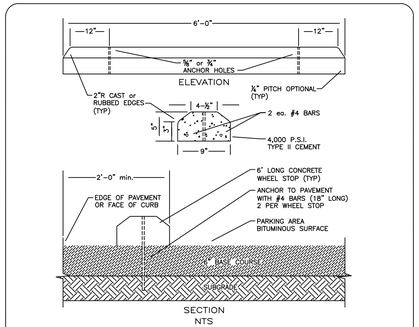
THE INSPECTION AND TESTING OF MATERIALS AND FINISHED ARTICLES TO BE INCORPORATED IN THE WORK SHALL BE MADE BY BUREAUS, LABORATORIES, OR AGENCIES APPROVED BY THE ENGINEER OF RECORD. THE CONTRACTOR SHALL SUBMIT SUCH SAMPLES, OR SUCH SPECIAL OR TEST PIECES OF MATERIALS AS THE ENGINEER OF RECORD MAY REQUIRE. THE CONTRACTOR SHALL NOT INCORPORATE ANY MATERIAL OR FINISHED ARTICLE INTO THE WORK UNTIL THE RESULTS OF THE INSPECTIONS OR TESTS ARE KNOWN AND THE CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER OF RECORD THAT THE MATERIAL OR FINISHED ARTICLE IS ACCEPTED. ALL MATERIALS MUST BE OF THE SPECIFIED QUALITY AND BE EQUAL TO THE APPROVED SAMPLE IF A SAMPLE HAS BEEN SUBMITTED. CERTIFIED COPIES OF ALL TESTS MADE SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AS WELL AS TO THE CITY'S DESIGNATED SITE INSPECTOR.
THE CITY'S DESIGNATED SITE INSPECTOR MUST RECEIVE COPIES OF ALL TESTING REPORTS AND CERTIFICATES PRIOR TO THE ENGINEER OF RECORD REQUESTING A FINAL PROJECT INSPECTION FROM THE CITY.

### B. LABORATORY CONTROL AND CERTIFICATES

1. **SPECIFICATIONS**. SAMPLING, TESTING, AND LABORATORY METHODS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE AASHTO OR ASTM. WHERE AASHTO OR ASTM SPECIFICATIONS ARE USED, THE REFERENCE SHALL BE CONSTRUED TO BE THE MOST RECENT STANDARD SPECIFICATIONS OR TENTATIVE SPECIFICATIONS OF THE AASHTO OR ASTM IN FORCE ON THE DATE OF THE TEST.

2. **TEST & CERTIFICATES**. THE CONTRACTOR SHALL ENGAGE AN APPROVED TESTING LABORATORY TO PROVIDE THE FOLLOWING TESTS AND CERTIFICATIONS SIGNED BY A REGISTERED ENGINEER OF THE STATE OF FLORIDA. ALL TECHNICIANS PERFORMING THE TESTS SHALL BE STATE CERTIFIED FOR THE TESTING PERFORMED. ADDITIONAL TESTS THAT MAY BE REQUIRED BY EITHER THE ENGINEER OF RECORD OR THE CITY SHALL ALSO BE PROVIDED BY THE CONTRACTOR, AND THE FOLLOWING SHALL NOT BE TAKEN AS A COMPLETE AND EXHAUSTIVE LIST OF THE CONTRACTOR'S TESTING RESPONSIBILITIES.

A. SOIL ANALYSIS FOR STRUCTURAL FILL MATERIAL PRIOR TO INSTALLATION.
B. PROCTOR DENSITIES, MOISTURE CONTENT, COMPACTED FIELD DENSITIES, AND ATTERBERG LIMITS.
C. SOIL CEMENT MIX DESIGNS AND COMPRESSIVE STRENGTH TESTS (FOR SOIL CEMENT ROAD BASE ONLY).
D. SUPERVISION OF ALL SOIL CEMENT BASE CONSTRUCTION.
E. ANALYSIS OF RECYCLED CONCRETE BASE MATERIAL PRIOR TO INSTALLATION.
F. ASPHALT MIX DESIGN, BITUMEN CONTENT, SIEVE ANALYSIS, HUBBARD FIELD STABILITY TESTS, NUCLEAR DENSITY TESTS (BACKSCATTER METHOD), AND ANALYSIS OF CORE SAMPLES.
G. CONCRETE MIX DESIGNS FOR ALL APPLICATIONS INCLUDING PAVEMENT, CAST–IN–PLACE STRUCTURES, CURBING, GUTTERS, SIDEWALKS, BIKE PATHS, APRONS AND DRIVEWAYS.
H. COMPRESSIVE TEST CYLINDERS AND SLUMP TESTS FOR ALL APPLICATIONS OF CONCRETE, INCLUDING PAVEMENT, CAST–IN–PLACE STRUCTURES, CURBING, GUTTERS, SIDEWALKS, BIKE PATHS, APRONS, AND DRIVEWAYS.
I. CHLORINE RESIDUAL AND BACTERIOLOGICAL TESTING OF WATER MAINS.
J. PRESSURIZED LEAK TESTING OF WATER MAINS, FORCE MAINS, AND RECLAIMED WATER MAINS.




NOTES:
1. CONCRETE WHEEL STOP TO BE PRE–MANUFACTURED REINFORCED 4,000 P.S.I. TYPE II CEMENT.
2. #4 ANCHOR BAR ENDS TO BE INSTALLED FLUSH WITH TOP OF WHEEL STOP.
3. CENTER WHEEL STOP IN EACH STALL, SIDE TO SIDE.

## ROADWAY CONSTRUCTION NOTES

ALL MATERIALS AND INSTALLATION METHODS USED FOR LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS FOR SUBDIVISIONS AND SITE PLANS SHALL BE IN CONFORMANCE WITH THE CITY'S DESIGN STANDARDS, FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AND THE FDOT DESIGN STANDARDS (LATEST EDITION).

1. ALL RIGHT–OF–WAY OTHER THAN ROADWAY AREAS SHALL BE GRASSED AND MULCHED OR SODDED. ALL SLOPES STEEPER THAN 6:1 SHALL REQUIRE SODDING. THE CITY RESERVES THE RIGHT TO REQUIRE SODDING IN SPECIAL AREAS WHERE EROSION IS A CONCERN.
2. THE FOLLOWING WILL BE THE STANDARD PROTECTION FOR DITCHES UNLESS DRAINAGE CALCULATIONS INDICATE OTHERWISE:

| SWALE PROFILE GRADES | PROTECTION REQUIRED |
|---|---|
| 0.2% – 1.0% | GRASSING AND MULCHING |
| 1.0% – 4.0% | SODDING |
| 4.0% AND GREATER | DITCH PAVING |

3. THE PAVEMENT, BASE, AND SUBBASE THICKNESS PRESENTED ON DETAILS REPRESENTS THE MINIMUM REQUIREMENTS FOR LOCAL PUBLIC STREETS AND PRIVATE PARKING LOTS. THE CITY RESERVES THE RIGHT AT ITS' DISCRETION TO INCREASE THESE REQUIREMENTS FOR COLLECTOR AND ARTERIAL ROADWAYS AND PRIVATE PARKING LOTS SUBJECTED TO HEAVY VEHICULAR COMMERCIAL TRAFFIC.
4. THE DEVELOPER SHALL PROVIDE AT THEIR OWN EXPENSE A CERTIFIED SOILS ENGINEERING LABORATORY TO PERFORM ALL FIELD AND LABORATORY TESTING REQUIRED TO VERIFY THAT THE CONSTRUCTION IS IN COMPLIANCE WITH THE CITY'S MINIMUM STANDARDS. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO ENSURE THAT COPIES OF ALL TEST REPORTS ARE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR PRIOR TO THE PROJECT FINAL INSPECTION IN ORDER TO ALLOW PROJECT ACCEPTANCE BY THE CITY.
5. THE LIMEROCK SUBBASE SHALL EXTEND TO A DEPTH OF SIX INCHES (6") BELOW THE BOTTOM OF THE BASE AND OUTWARD TO TWELVE INCHES (12") BEYOND THE CURB.
6. THE STABILIZING MATERIAL, IF REQUIRED, SHOULD BE A HIGH BEARING VALUE SOIL, SAND–CLAY, LIMEROCK, RECYCLED CONCRETE, OR OTHER MATERIAL AS APPROVED BY THE CITY'S ENGINEER OR DESIGNEE AND A LICENSED SOILS ENGINEER.
7. COMPACTION, STABILITY AND DENSITY TESTING FOR PAVEMENT, BASE AND SUB–BASE ARE TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROADWAY & BRIDGE CONSTRUCTION, LATEST EDITION.
8. FOR ROADWAYS, TESTS FOR SUBBASE BEARING CAPACITY AND COMPACTION SHALL BE DONE AT A MINIMUM OF FIVE LOCATIONS PER MILE AND SHALL BE STAGGERED TO THE LEFT, RIGHT, AND AT CENTER LINE OF THE ROADWAY. FOR SITE PLANS, TEST SHALL BE PERFORMED FOR EVERY 600 SQUARE YARDS OF STABILIZED AREA, OR PORTIONS THEREOF.
9. CEMENT DELIVERY TICKETS SHALL BE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR AT THE TIME OF PLACEMENT. IF THE INSPECTOR IS NOT ON SITE THROUGHOUT THE ENTIRE INSTALLATION, ACCUMULATED DELIVERY TICKETS CAN BE PROVIDED TO THE INSPECTOR BY THE CONTRACTOR ON THE FOLLOWING DAY.
10. TESTING OF THE IN–PLACE BASE SHALL BE DONE AT INTERVALS EQUIVALENT TO SUBGRADE TESTING AND SHALL CONSIST OF, AS A MINIMUM, A MOISTURE CONTENT AND COMPACTION TEST.
11. PORTLAND CEMENT CONCRETE, LIMEROCK, RECYCLED CONCRETE, OR FULL DEPTH ASPHALT PAVEMENT MAY BE USED IN PLACE OF SOIL CEMENT BASE. ALL BASE AND ROADWAY DESIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE CITY.
12. RECYCLED CONCRETE CAN BE USED AS A BASE MATERIAL PROVIDED THE MATERIAL IS A MINIMUM OF 60% CARBONATE OF CALCIUM AND MAGNESIUM. THE MATERIAL SHALL BE LIMITED TO MAXIMUM OF 3% OF NON–PLASTIC, AND THE PLASTICITY INDEX SHALL NOT EXCEED 10. THE MATERIAL SHALL NOT CONTAIN ORGANIC MATERIAL, CHERTY OR OTHER EXTREMELY HARD PIECES, LUMPS, BALLS OR POCKETS OF SAND SIZE MATERIAL. IF ANY MATERIAL LIQUID LIMIT SHALL NOT EXCEED 35 AND BE NON–PLASTIC, AND THE PLASTICITY INDEX SHALL NOT EXCEED 10. THE MATERIAL SHALL NOT CONTAIN ORGANIC MATERIAL, CHERTY OR OTHER EXTREMELY HARD PIECES, LUMPS, BALLS OR POCKETS OF SAND SIZE MATERIAL OF A QUANTITY AS TO BE DETRIMENTAL TO THE PROPER BONDING, FINISHING, OR STRENGTH OF THE RECYCLED CONCRETE BASE. FOR BASE APPLICATIONS, AT LEAST 97% (BY WEIGHT) OF THE MATERIAL SHALL PASS A 1" SIEVE AND FOR SUBBASE APPLICATIONS, AT LEAST 97% (BY WEIGHT) OF THE MATERIAL SHALL PASS A 1–½" SIEVE. FOR BOTH APPLICATIONS, THE MATERIAL SHALL BE GRADED UNIFORMLY DOWN TO DUST AND THE MINIMUM LBR VALUES ARE TO BE NOT LESS THAN 120. COARSE AGGREGATE USED IN THE RECYCLED CONCRETE SHALL HAVE A MAXIMUM LOSS OF 45% PER LOS ANGELES ABRASION TEST. ALL MATERIALS SHALL BE GRADED N ACCORDANCE WITH REQUIREMENTS SET FORTH IN SECTION 204, F.D.O.T., STANDARD SPEC. FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).

## ROADWAY CONSTRUCTION NOTES (CONT'D)

13. RECYCLED CONCRETE OR LIMEROCK FOR BASE OR SUBBASE APPLICATIONS SHALL BE ALLOWED ON CITY ROADWAYS ONLY WHERE THE LOWEST ELEVATION OF THE ROADWAY SUBBASE IS A MINIMUM OF 6" ABOVE THE SEASONAL HIGH GROUNDWATER TABLE AS CERTIFIED BY A FLORIDA LICENSED PROFESSIONAL SOILS ENGINEER AND SUBSEQUENTLY APPROVED FOR BY THE CITY. ALL CRUSHING OF RECYCLED CONCRETE SHALL BE DONE PRIOR TO THE MATERIAL BEING PLACED IN THE ROADWAY. TESTING SHALL HAVE THE SAME REQUIREMENTS AND BE PERFORMED AT THE SAME LOCATION AND INTERVALS AS REQUIRED FOR LIMEROCK.
14. DESIGN MIXES AND PRODUCT GRADATION INFORMATION FOR ALL MATERIALS TO BE INSTALLED AS PART OF THE LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS SHALL BE SUBMITTED TO THE CITY'S DESIGNATED SITE INSPECTOR FOR ACCEPTANCE BY THE CITY. THE INFORMATION SHALL BE SUBMITTED NO LESS THAN THREE (3) WORKING DAYS PRIOR TO ANY CONSTRUCTION. SUBMITTALS SHALL INCLUDE, BUT NOT BE LIMITED TO, INFORMATION TO EVALUATE THE MATERIALS PROPOSED FOR INSTALLATION AS SUBBASE, BASE, AND PAVEMENT FOR ALL ROADWAY AND PARKING AREA SURFACES AS WELL AS SIMILAR INFORMATION FOR ALL OTHER CONCRETE SIDEWALKS, CURBING, AND COMPARABLE STRUCTURES AND APPLICATIONS.
15. PRIOR TO PLACEMENT FLORIDA STATE CERTIFIED BATCH PLANTS MUST CERTIFY TO THE CITY'S RESIDENT PROJECT INSPECTOR THAT THE ASPHALT DELIVERED TO THE SITE IS IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
16. EXTRACTION AND GRADATION TESTS ON ASPHALT MIXES SHALL BE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR FOR EVERY 2500 SQUARE YARDS OF ASPHALT, OR PART THEREOF, TO ENSURE THAT DESIGN MIXES MEET THE CITY STANDARD SPECIFICATIONS AT NO ADDITIONAL COST TO THE CITY.
17. ASPHALT PAVEMENT TESTING IS TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION TABLE 334–1, LATEST EDITION.
18. IN ADDITION TO THE FIELD DENSITY TESTS NOTED, THE CITY RESERVES THE RIGHT TO REQUIRE CORE SAMPLES OF PAVEMENT SECTIONS EXTRACTED AND TESTED BY A CERTIFIED SOILS ENGINEERING LABORATORY AT THE DEVELOPER'S EXPENSE. THE CITY'S DESIGNATED SITE INSPECTOR SHALL DESIGNATE THE LOCATIONS OF THE TEST CORE LOCATIONS.
19. THE ROADWAY CROWN SHALL HAVE A STANDARD ONE QUARTER INCH (¼") PER FOOT CROSS SLOPE.
20. ALL ROADWAYS WITH CURB AND GUTTER SECTIONS SHALL HAVE AS A STANDARD A MINIMUM LONGITUDINAL SLOPE OF 0.30%. THE ROADWAY CENTERLINE SHALL BE CLEARLY MARKED ON THE DESIGN PLANS. AT A MINIMUM, DESIGN ROADWAY CENTERLINE ELEVATIONS SHALL BE NOTED AT ALL GRADE CHANGES AND AT 50' min. INTERVALS ALONG THE ROADWAY PROFILE ON BOTH THE DESIGN PLANS AND AS–BUILT DRAWINGS.
21. THE FINISHED PAVEMENT EDGE SHALL BE WITHIN ONE EIGHTH INCH (⅛") ABOVE THE ADJACENT CONCRETE CURB FOR CURBS COLLECTING AND CONVEYING STORMWATER.
22. CONCRETE CURBS SHALL BE PROVIDED ON BOTH SIDES OF ALL STREETS AND ALL CONCRETE CURBS SHALL BE CONSTRUCTED WITH 3500 P.S.I. CONCRETE AT 28 DAYS.
23. CONTROL JOINTS IN CONCRETE CURBING, SIDEWALKS, PAVEMENT AND SIMILAR CONCRETE AREAS SHALL BE SAW CUT WITHIN 4 TO 18 HOURS OF PLACEMENT. ALL CONTROL JOINTS SHALL BE ⅛" IN WIDTH TO A DEPTH OF 25% OF THE TOTAL DEPTH OF CONCRETE OR 1–½", WHICHEVER IS LESS. CONTROL JOINTS SHALL BE SPACED AT INTERVALS OF TEN FEET (10') FOR CURBING, TEN FEET (10') FOR BIKE TRAILS AND FIVE FEET (5') FOR SIDEWALKS WITH EXPANSION JOINTS AT STREET INTERSECTIONS, RADIUS POINTS, STRUCTURES, AND ALONG CURVES AT SIXTY FEET (60') INTERVALS. EXPANSION JOINTS ARE TO BE ½" PREFORMED SYNTHETIC OR RECYCLED RUBBER. ALL EXPANSION JOINTS ARE REQUIRED TO BE INSTALLED THROUGH TO THE FULL DEPTH AND WIDTH OF THE CONCRETE AREA. FOR LINEAL SECTIONS OF CURBS, EXPANSION JOINTS SHALL BE LOCATED AT A MAXIMUM SPACING OF FIVE–HUNDRED FEET (500') AND SHALL BE ½" IN WIDTH.
24. AN "X" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF WATER DISTRIBUTION SYSTEM VALVE.
25. A "V" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL SEWER SERVICES.
26. A "A" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL RECLAIMED WATER SERVICES.
27. A "()" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL POTABLE WATER SERVICES.
28. THREE (3) CONCRETE CYLINDERS SHALL BE TAKEN AND TESTED (1 IN 14 DAYS, 1 IN 28 DAYS AND 1 IN 56 DAYS) FOR EVERY FIFTY (50) CUBIC YARDS OF CONCRETE OR LESS PLACED. TEST RESULTS SHALL THEN BE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR AS THEY BECOME AVAILABLE.

## ROADWAY CONSTRUCTION NOTES (CONT'D)

29. A CONCRETE SLUMP TEST SHALL BE REQUIRED WITHIN THE FIRST 30 CUBIC YARDS OF CONCRETE. THEREAFTER, SLUMP TESTS SHALL BE REQUIRED FOR EVERY FIFTY (50) CUBIC YARDS OF CONCRETE, OR FRACTION THEREOF, WITH COPIES OF THE RESULTS PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR. THE SLUMP TEST SHALL MEET THE REQUIRED MIX DESIGN ON EACH LOAD DELIVERED.
30. THE DEVELOPER SHALL PROVIDE ALL REQUIRED PAVEMENT MARKINGS ON ALL ROADWAYS PER CITY, COUNTY, AND STATE REQUIREMENTS. CENTERLINE STRIPES SHALL BE PROVIDED ON EXTENSIONS OF CITY COLLECTOR OR ARTERIAL ROADS, COUNTY ROADS, STATE HIGHWAYS, AND ALONG LOCAL STREETS IN THE VICINITY OF THEIR INTERSECTION WITH THE ABOVE MENTIONED ROADWAYS.
31. A FDOT APPROVED STOP SIGN AND A 24"–WIDE WHITE THERMOPLASTIC STOP BAR ARE REQUIRED AT ALL ROADWAY INTERSECTIONS.
32. ALL TRAFFIC CONTROL DEVICES PLACED AT INTERSECTIONS, PRIVATE STREETS, PUBLIC STREETS, COUNTY ROADS, AND STATE HIGHWAYS WITHIN THE CITY LIMITS SHALL BE INSTALLED ACCORDING TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION. THE MAINTENANCE–OF–TRAFFIC (MOT) INSTALLATION AND SUBSEQUENT OPERATION SHALL BE OVERSEEN BY A CONTRACTOR CERTIFIED BY THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION, OR EQUIVALENT CERTIFICATION RECOGNIZED BY FDOT.
33. THE DEVELOPER IS RESPONSIBLE FOR PAYING FEES FOR TRAFFIC CONTROL DEVICES TO THE CITY FOR INSTALLATION. STREET SIGNS AND STOP SIGNS SHALL BE PLACED AT ALL INTERSECTIONS, INCLUDING BUT NOT LIMITED TO PRIVATE STREETS, PUBLIC STREETS, COUNTY ROADS, AND STATE HIGHWAYS WITHIN THE CITY LIMITS.
34. THE DEVELOPER IS RESPONSIBLE FOR PAYING FEES FOR ALL STREET LIGHTS PRIOR TO ACCEPTANCE OF THE PROJECT BY THE CITY.
35. FIVE FOOT min. (5') WIDE SIDEWALKS SHALL BE PROVIDED ON BOTH SIDES OF ALL RESIDENTIAL STREETS. PER THE CITY &/OR FDOT DESIGN STANDARDS, LATEST EDITION.
36. EIGHT FOOT min. (8') WIDE BIKE PATHS SHALL BE ALONG ARTERIAL HIGHWAYS AS DIRECTED BY THE CITY. PER THE CITY &/OR FDOT DESIGN STANDARDS, LATEST EDITION.
37. STANDARD TURNING RADII FOR INTERSECTIONS:

| | |
|---|---|
| RESIDENTIAL STREETS WITH STATE AND COUNTY ROADWAYS, OR | |
| MAJOR THOROUGHFARES WITHIN THE CITY; | 35–50 FT. |
| ENTRANCES TO COMMERCIAL SITES OFF OF CITY STREETS; | 35 FT. |
| INTERSECTIONS INTERIOR TO SUBDIVISIONS | 35 FT. |

SHOULD VOLUSIA COUNTY OR THE FLORIDA DEPARTMENT OF TRANSPORTATION (F.D.O.T.) DETERMINE THAT LARGER RADII ARE WARRANTED WITHIN THEIR RIGHT–OF–WAY, THE LARGER RADII SHALL PREVAIL.

38. CONSTRUCTION METHODS AND DESIGN FOR CONCRETE PAVEMENT SHALL CONFORM TO FDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
39. ALL CONTRACTORS THAT ARE PERFORMING THE CONSTRUCTION THAT AND DEVELOPMENT CODE REQUIRED IMPROVEMENTS (INCLUDING WATER MAINS, SANITARY SEWER MAINS, RECLAIMED WATER MAINS, STORM WATER PIPES AND INLETS, ROADWAYS, AND PARKING FACILITIES) SHALL BE CERTIFIED WITH THE STATE OF FLORIDA BOARD OF PROFESSIONAL REGULATIONS (BPR) FOR THE TYPE OF WORK THAT THEY PERFORM.
40. ALL CONTRACTORS THAT ARE PERFORMING THE CONSTRUCTION WORK OF LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS SHALL BE LICENSED BY THE STATE OF FLORIDA AND REGISTERED WITH THE CITY OF DAYTONA BEACH. THE LICENSE AND REGISTRATION SHALL PERTAIN DIRECTLY TO THE TYPE OF WORK BEING PERFORMED.
41. EXCEPT AS PROVIDED IN THE LAND DEVELOPMENT CODE, ALL ELECTRIC, TELEPHONE, TELEVISION LINES AND SIMILAR UTILITIES ARE REQUIRED TO BE INSTALLED UNDERGROUND AT THE EXPENSE OF THE OWNER, DEVELOPER, AND BUILDER.

## AS–BUILT DRAWING REQUIREMENTS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL AS–BUILT DRAWINGS.

1. PAVEMENT AND CURB WIDTHS SHALL BE VERIFIED AND DIMENSIONED FOR EACH STREET AT EACH BLOCK. (FOR SUBDIVISIONS) AND AS APPROPRIATE TO CONFIRM PAVING LIMITS (ON SITE PLANS).
2. ALL RADII AT INTERSECTIONS SHALL BE VERIFIED AND DIMENSIONED. THIS INFORMATION IS TO BE CLEARLY INDICATED ON THE AS–BUILT.
3. ROADWAY ELEVATIONS SHALL BE RECORDED AT ALL GRADE CHANGES, 100' INTERVALS ALONG ROADWAY, AND OTHER INTERVALS AS NEEDED ALONG ALL STREETS. STREET CENTERLINE AND CURB INVERT ELEVATIONS SHALL BE RECORDED AS NOTED. THE AS–BUILT CENTERLINE PROFILE OF ALL STREETS SHALL ALSO BE SHOWN ON THE PLAN AND PROFILE SO IT MAY BE COMPARED TO THE DESIGN PROFILE GRADE LINES. IN THE EVENT THAT THE AS–BUILT CENTERLINE LONGITUDINAL GRADE DOES NOT MEET THE CITY MINIMUM STANDARDS, ADDITIONAL LONGITUDINAL GRADES OF THE ADJACENT CURBING AND SIMILAR ROADWAY CROSS–SECTION SURVEYS TO VERIFY THE CORRECT CROSS SLOPE, SHALL BE REQUIRED TO VERIFY THAT THE SYSTEM WILL FUNCTION AS ORIGINALLY DESIGNED.
4. ALL APPLICABLE TOPOGRAPHIC INFORMATION PERTINENT TO THE ON–SITE DRAINAGE SYSTEM, SUCH AS DITCHES, SWALES, LAKES, CANALS, ETC. THAT ARE DEEMED NECESSARY BY THE CITY TO VERIFY THE FUNCTIONAL PERFORMANCE OF THE STORM WATER SYSTEM, SHALL BE NOTED. NORMALLY, RECORDING ELEVATIONS EVERY 100 FEET AT THE TOP OF BANK AND TOE OF SLOPE WILL BE REQUIRED. MEASUREMENTS

## STORMWATER CONSTRUCTION NOTES

1. ALL MATERIALS AND INSTALLATION AND SEDIMENT AND EROSION CONTROL METHODS USED FOR LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS FOR SUBDIVISIONS AND SITE PLANS SHALL BE IN CONFORMANCE WITH THE CITY, FDEP, FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AND THE FDOT DESIGN STANDARDS (LATEST EDITION). THE USE OF BEST MANAGEMENT PRACTICES (BMP'S) IS REQUIRED.
2. BEST MANAGEMENT PRACTICES (BMP'S) FOR EROSION AND SEDIMENT CONTROL SHALL BE PLANNED, DESIGNED AND IMPLEMENTED THROUGHOUT THE SITE DEVELOPMENT ENGINEERING AND CONSTRUCTION PHASES.
3. ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS PER ARTICLE 7 SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, OR IN ANY CONSTRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAINTENANCE TO BE DONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS ARE FOUND AT http://www.codb.us/index.aspx?NID=262. FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BASIN STREET SUITE 130, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
4. CONTRACTOR SHALL FOLLOW REQUIRED EROSION AND SEDIMENT CONTROL PRACTICES AND INCLUDE AN EROSION CONTROL PLAN FOR REVIEW AND APPROVAL BY THE CITY PRIOR TO CONSTRUCTION. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO THE CITY'S EROSION AND SEDIMENT CONTROL STANDARD DETAILS ST-2.
5. CONTRACTOR WILL FOLLOW ALL OF THE CITY'S REQUIRED WASTE MANAGEMENT PRACTICES. ALL CONSTRUCTION, RENOVATION, AND DEMOLITION SITES ARE TO BE KEPT CLEAN AND FREE OF REFUSE, DEBRIS, AND LITTER DURING THE CONSTRUCTION, RENOVATION, OR DEMOLITION PROCESS. A CERTIFICATE OF OCCUPANCY FOR A NEWLY CONSTRUCTED OR RENOVATED BUILDING SHALL NOT BE ISSUED UNTIL ALL REFUSE AND LITTER CAUSED BY THE CONSTRUCTION OR REMODELING IS REMOVED FROM THE SITE AS PER THE DAYTONA BEACH CODE OF ORDINANCES CHAPTER 28 SECTION 78-5 AND 78-8.
6. ALL DEVELOPMENT PLANS SHALL BE CONSISTENT WITH THE DAYTONA BEACH LAND DEVELOPMENT CODE ARTICLE 1 PURPOSE ADMINISTRATION AND ENFORCEMENT, ARTICLE 5 SECTION 2 STORMWATER MANAGEMENT, ARTICLE 4 LAND DEVELOPMENT ORDERS AND PROCEDURES, ARTICLE 5 SUBDIVISION AND SITE PLANS SECTION AND ARTICLE 7 SECTION 4 FLOOD PLAIN MANAGEMENT.
7. PIPED STORMWATER SYSTEMS SHALL HAVE A MINIMUM DRAINAGE MAINTENANCE EASEMENT AND ACCESS WIDTH OF 20 FEET, AND MAY BE INCREASED DEPENDING UPON THE SIZE AND DEPTH OF PIPE.
8. CONCRETE EROSION CONTROL BMP'S MUST BE PROVIDED WHERE SWALES OR CULVERTS INTERCEPT DRAINAGE DITCHES.
9. SOIL EROSION AND SEDIMENT CONTROL BMP MEASURES, SATISFACTORY TO THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, FDEP AND THE CITY, SHALL BE EMPLOYED DURING CONSTRUCTION.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | STORMWATER CONSTRUCTION NOTES (PAGE 1 OF 4) ST-1

| FY-17/18 |
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| File Name: Const Notes ST-1 |
| Page 133 |

## STORMWATER CONSTRUCTION NOTES (CONT'D)

22. THE CITY MAY REQUEST THAT THE DEVELOPER SUBMIT A REPORT BY A QUALIFIED HYDROLOGIST OR HYDROGEOLOGIST ON THE IMPACT THE WET POND WILL HAVE ON NEIGHBORING WATER TABLE ELEVATIONS BOTH DURING CONSTRUCTION AND AFTER LAKE COMPLETION. THE CITY MAY REQUIRE GROUNDWATER MONITORING DURING THE LAKE EXCAVATION.
23. ADEQUATE MAINTENANCE BERMS, MINIMUM 10' IN WIDTH, SHALL BE PROVIDED AROUND THE ENTIRE PERIMETER OF ALL WET PONDS AND ASSOCIATED OUTFALLS DISCHARGING INTO AND OUT OF LAKES. APPLICABLE CROSS SECTIONS SHALL BE INCLUDED ON ALL FINAL DEVELOPMENT PLANS.
24. DEVELOPMENT PLANS FOR ALL STORMWATER MANAGEMENT SYSTEMS SHALL CONTAIN POP-OFF DATA (OVERFLOW), BOTTOM ELEVATION, NORMAL WATER LEVELS, MEAN ANNUAL SEASONAL HIGH WATER TABLE ELEVATION, TREATMENT VOLUME AND CORRESPONDING ELEVATION, 100 YEAR HIGH WATER LEVELS, AND THE DESIGN TAILWATER ELEVATION (IF APPLICABLE).
25. ALL STORM SEWERS AND CULVERTS LOCATED IN ROADWAY RIGHT-OF-WAYS AND ROADWAY EASEMENTS SHALL BE A MINIMUM OF CLASS III O-RING REINFORCED CONCRETE PIPE. OUTSIDE OF ROADWAY EASEMENTS AND R.O.W., PIPE MAY BE MADE OF ALTERNATE MATERIALS INCLUDING:
    A. SMOOTH INNER WALL HIGH DENSITY POLYETHYLENE (HDPE) IN ACCORDANCE WITH AASHTO M-294, AASHTO MP7, ASTM D3350 AND ASTM D2412 FOR SIZES UP TO 42" IN DIAMETER OR
    B. PVC IN ACCORDANCE WITH THE PROVISION NOTED IN THE "SEWER DETAILS" OF THESE SPECIFICATIONS.
26. ALL STORM SEWER PIPE JOINTS LOCATED IN ROADWAY RIGHT-OF-WAYS AND ROADWAY EASEMENTS SHALL BE ENTIRELY WRAPPED WITH NON-WOVEN FILTER FABRIC WITH A MINIMUM WIDTH OF 24" AND A MINIMUM OF 24" OVERLAP. GASKETS ARE NOT PERMITTED AS AN EQUIVALENT SUBSTITUTE FOR MEETING THIS REQUIREMENT. THIS PRACTICE IS ENCOURAGED ON PRIVATE SITES. ADDITIONALLY, ALL JOINTS SHALL BE RUBBER GASKETED FOR BOTH ROUND AND ELLIPTICAL PIPE.
27. DEPTH OF COVER MEASURED TO THE TOP OF PIPE (INCLUDING THE BELL JOINT) SHALL BE A MINIMUM OF 3 FEET OVER RCP. DEVIATION FROM THIS REQUIREMENT MAY BE ALLOWED BY INCREASING THE PIPE'S STRUCTURAL STRENGTH. IF AN ALTERNATE MATERIAL IS APPROVED, DEPTH OF COVER SHALL MEET MANUFACTURER'S RECOMMENDATION.
28. ALL STORM DRAINAGE PIPES LOCATED IN ROADWAY RIGHT-OF-WAYS AND ROADWAY EASEMENTS SHALL BE A MINIMUM OF FIFTEEN INCH (15") INSIDE DIAMETER OR EQUIVALENT. STORM DRAINAGE PIPES SMALLER THAN 15" ARE PERMITTED ON PRIVATE SITE PLANS PROVIDING THAT MAINTENANCE SHALL BE PERFORMED BY THE OWNER.
29. FOR NON-METALLIC STORMWATER FORCE MAINS A #12 UF INSULATED SINGLE STRAND COPPER WIRE SHALL BE ATTACHED TO ALL PIPES AND TERMINATED AT THE VALVES IN ACCORDANCE WITH RECLAIM WATER VALVE DETAIL RW-4.
30. STORM INLETS, MANHOLES, AND CATCH BASINS SHALL BE FDOT COMPLIANT. EITHER POURED IN PLACE OR PRECAST REINFORCED CONCRETE STRUCTURES SHALL BE REQUIRED AT EACH CHANGE OF PIPE SIZE OR CHANGE IN PIPE DIRECTION. ALL STRUCTURES SHALL BE IN COMPLIANCE WITH ASTM C-478 AND SHALL HAVE 6" THICK WALLS. THINNER WALLS MAY BE PERMITTED PROVIDING THAT THE DESIGN IS IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 200 AND NO. 201. IN ADDITION, THIS REQUIREMENT MUST BE REFLECTED ON BOTH THE SHOP DRAWING AND AS-BUILT PLANS. STRUCTURES PLACED IN HIGH TRAFFIC AREAS SHALL BE OF TRAFFIC BEARING CONSTRUCTION IN ACCORDANCE WITH FDOT STANDARDS.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | STORMWATER CONSTRUCTION NOTES (PAGE 3 OF 4) ST-3

| FY-17/18 |
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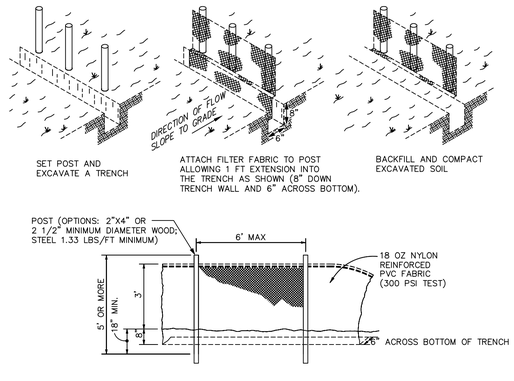
| Page 135 |

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NOTES:

1. MATERIALS, CONSTRUCTION METHODS AND MAINTENANCE SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND DESIGN STANDARDS CURRENT EDITION.
2. CONTRACTOR SHALL PROVIDE SILT FENCES, TURBIDITY BARRIERS OR APPROVED BARRIERS AT ALL STORMWATER DISCHARGE POINTS FOR EROSION CONTROL AND SEDIMENT CONTROL DURING CONSTRUCTION. DEPENDING UPON FLOW VELOCITIES AND VOLUME, REDUNDANT (MULITPLE) PARALLEL FENCES MAY BE NEEDED.
3. CONTRACTOR SHALL ROUGH GRADE STORMWATER SWALES AND RETENTION AREAS VEGETATING IN COMPLIANCE WITH BEST MANAGEMENT PRACTICES PRIOR TO CONSTRUCTION OF SITE IMPROVEMENTS.
4. CONTRACTOR SHALL MEET ALL PERMIT CONDITIONS AS ESTABLISHED BY THE CITY OF DAYTONA BEACH AND ALL OTHER APPLICABLE AGENCIES, INCLUDING BUT NOT LIMITED TO COUNTY, FDOT, STATE, FEDERAL, AND THE SJRWMD.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | STAKED SILT FENCE DETAIL ST-14

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| Page 146 |

## EROSION & SEDIMENT CONTROL NOTES

1. ALL CONSTRUCTION ACTIVITIES SHALL INCORPORATE BEST MANAGEMENT PRACTICES (BMP'S) TO CONTROL EROSION, SEDIMENTATION, AND THE POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
2. CONTRACTOR SHALL MINIMIZE DISTURBANCE OF EXISTING VEGETATION, (PARTICULARLY AROUND THE PROJECT PERIMETER) AND ADJACENT EXISTING DRAINAGE PATTERNS TO THE MAXIMUM EXTENT PRACTICAL DURING THE CONSTRUCTION PROCESS.
3. SILT FENCES AND TURBIDITY BARRIERS SHALL BE INSTALLED ON SITE AND APPROVED BY THE CITY PRIOR TO CONSTRUCTION, AND SHALL BE INSPECTED WEEKLY BY THE CONTRACTOR AND CORRECTIVE ACTION TAKEN AS NECESSARY.
4. STORMWATER RETENTION, DETENTION, STORAGE AND CONVEYANCE SYSTEMS MUST BE EXCAVATED TO ROUGH GRADE PRIOR TO BUILDING CONSTRUCTION OR PLACEMENT OF IMPERVIOUS SURFACE WITHIN THE AREA SERVED BY THOSE SYSTEMS. ADEQUATE MEASURES MUST BE TAKEN TO PREVENT SILTATION OF THESE TREATMENT SYSTEMS AND CONTROL STRUCTURES DURING CONSTRUCTION. SILTATION MUST BE REMOVED FROM THE STORMWATER SYSTEM WHEN HALF FULL AND IMMEDIATELY PRIOR TO FINAL GRADING AND GRASSING OF THE PROJECT.
5. CONTRACTOR SHALL SOD ALL SWALES AND STORMWATER FACILITIES IN ACCORDANCE WITH TEMPORARY BMP'S WITHIN 14 DAYS AFTER CONSTRUCTION. THIS IS REQUIRED TO STABILIZE THE SLOPES AND MINIMIZE EROSION.
6. DURING ALL CONSTRUCTION OF THE PERMITTED SYSTEM INCLUDING STABILIZATION AND REVEGETATION OF DISTURBED SURFACES, CONTRACTOR IS RESPONSIBLE FOR THE SELECTION, IMPLEMENTATION, AND OPERATION OF ALL EROSION AND SEDIMENT CONTROL MEASURES REQUIRED TO RETAIN ALL SEDIMENT ONSITE AND PREVENT VIOLATIONS OF THE WATER QUALITY STANDARDS IN ACCORDANCE WITH THE FLORIDA ADMINISTRATIVE CODE AND PROJECT PERMIT REQUIREMENTS.
7. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN A PROTECTIVE COVER (VEGETATIVE OR SUITABLE ALTERNATIVE) FOR EROSION AND SEDIMENT CONTROL ON ALL LAND SURFACES EXPOSED OR DISTURBED BY CONSTRUCTION OF THE PERMITTED PROJECT, UNLESS MODIFIED BY ANOTHER CONDITION OF THE PERMIT OR OTHERWISE SPECIFIED ON A DISTRICT APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE PROTECTIVE COVER MUST BE INSTALLED WITHIN FOURTEEN (14) DAYS AFTER FINAL GRADING OF THE AFFECTED LAND SURFACE. A PERMANENT VEGETATIVE COVER MUST BE ESTABLISHED WITHIN 60 DAYS OF IT'S INSTALLATION. THE PERMITTEE'S REQUIREMENT TO MAINTAIN COVER ON OFFSITE AND ONSITE SURFACES SHALL NOT BE COMPLETE UNTIL AFTER THE WATER MANAGEMENT DISTRICT RECEIVES THE PERMITTEE'S STATEMENT OF COMPLIANCE.
8. AT A MINIMUM, SILT FENCES AND TURBIDITY BARRIERS SHALL BE INSTALLED PER PLAN. ADDITIONAL BMP MEASURES MUST BE TAKEN TO MINIMIZE IMPACTS OF RECEIVING WATERS SUCH AS THE USE OF APPROVED BARRIERS AT INLETS, ADDITIONAL SILT FENCING, SOIL ANTI-TRACKING DEVICES AND SODDING.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE PROJECT LIMITS IN COMPLIANCE WITH ALL JURISDICTIONAL PERMIT AND CITY REQUIREMENTS.
10. ANY TIME THE CONTRACTOR NEEDS TO SUBMIT A NOTICE OF INTENT TO USE A GENERAL PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES, A COPY OF THE PERMIT SHALL ALSO BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT.
11. THE CONTRACTOR SHALL AS A MINIMUM PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN IN ACCORDANCE WITH FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) GUIDELINES.
12. DEWATERING ACTIVITIES SHALL BE APPROVED BY THE UTILITIES DEPARTMENT BEFORE DISCHARGING INTO THE CITY'S MS4 SYSTEM (ST-1A NOTE 3).

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | EROSION AND SEDIMENT CONTROL NOTES ST-5

| FY-17/18 |
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| Drawing Date: 01/08 |
| Drawn By: KLH |
| Checked By: JMP |
| Scale: N/A |
| Revision Date: |
| File Name: Erosion Notes ST-5 |
| Page 137 |

## STORMWATER CONSTRUCTION NOTES (CONT'D)

10. IN GENERAL, ALL RETENTION/DETENTION SITES MUST BE CONSTRUCTED AND VEGETATED AS NECESSARY ON ALL PROJECTS PRIOR TO ANY ROAD, PARKING LOT, OR BUILDING CONSTRUCTION COMMENCING OR AS CURRENT PERMIT CONDITIONS DICTATE. SEWER AND WATER MAINS MAY BE INSTALLED PRIOR TO RETENTION/DETENTION SITE CONSTRUCTION IF DEWATERING IS NOT REQUIRED. HOWEVER BMP'S FOR EROSION AND SEDIMENT CONTROL WILL BE IMPLEMENTED AS NECESSARY.
11. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ANY AND ALL DEWATERING PERMITS THAT MAY BE REQUIRED (SEE ST-1A NOTE 3).
12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND MAINTAIN A COPY OF THE SJRWMD, NPDES, AND ALL OTHER JURISDICTIONAL PERMITS AT THE CONSTRUCTION SITE, AND ABIDE BY ALL CONDITIONS OF THOSE PERMITS.
13. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE DESIGN LOCATION OF TEMPORARY AND PERMANENT PLANTINGS RELATIVE TO THE LOCATION OF PUBLIC UTILITIES AND STORMWATER INFRASTRUCTURE IN ORDER TO EVALUATE POTENTIAL CONFLICTS.
14. THE MAXIMUM PERMISSIBLE SLOPE OF ANY NEW SITE GRADING IS 1:3 (VERTICAL:HORIZONTAL). THIS LIMIT SHALL BE APPLIED TO ALL AREAS EXCEPT STORMWATER CONVEYANCE AND TREATMENT SYSTEMS WHICH HAVE A MAXIMUM SIDE SLOPE OF 1:4 (EXCEPT BELOW THE WATER TABLE WHERE STEEPER SLOPES ARE PERMISSIBLE).
15. ALL SWALES AND DITCHES SHALL HAVE A MAXIMUM PERMITTED FRONT (SIDE) SLOPE NOT STEEPER THAN 1 TO 4. THE MAXIMUM PERMITTED BACK (SIDE) SLOPE, SHALL BE 1:3, PROVIDED THAT A 2' WIDE BERM IS INSTALLED. DESIGN CENTERLINE AND TOP-OF-BANK ELEVATIONS SHALL BE NOTED AT INTERVALS OF 100' AND AT SIGNIFICANT GRADE CHANGES.
16. SWALES THAT ARE NORMALLY DRY AND INTENDED FOR CONVEYANCE OF STORMWATER RUNOFF AND ARE NOT INTENDED FOR RETENTION SHALL HAVE A MINIMUM DRAINAGE MAINTENANCE EASEMENT WIDTH MEASURING 15 FEET. SWALED AREAS INTENDED FOR RETENTION SHALL PROVIDE APPROPRIATE EASEMENT AREAS FOR ACCESS AND MAINTENANCE MEASURED UPLAND FROM THE TOP OF BANK. AT A MINIMUM, THE SAID EASEMENT SHALL MEASURE 10 FEET IN WIDTH FROM THE TOP OF THE SWALE.
17. NORMAL ROADSIDE SWALES ARE PERMITTED TO BE CONSTRUCTED TO A MAXIMUM DEPTH OF 18" BELOW THE OUTSIDE EDGE OF PAVEMENT OR CONCRETE CURB.
18. WHEN CULVERTS ARE INSTALLED TO MAINTAIN THE FLOW OF EXISTING DRAINAGE WAYS WHERE NEWLY PROPOSED ROADS WOULD OTHERWISE SEVER THE DRAINAGE RIGHT-OF-WAY, THEN CULVERTS CROSSING RIGHTS-OF-WAY SHALL EXTEND FROM RIGHT-OF-WAY LINE TO RIGHT-OF-WAY LINE UNDER THE ROADWAY. CULVERTS SHALL BE DESIGNED TO ACCOMODATE THE FLOW FROM THE 100 YEAR - 24 HOUR STORM EVENT WITHOUT FLOODING ADJACENT PROPERTY OR SURCHARGING THE SAID ROADWAY.
19. WET POND DEPTHS SHALL BE EIGHT FEET (8') MINIMUM TO FIFTEEN FEET (15') MAXIMUM, MEASURED FROM THE TOP OF BANK.
20. WHEN A WET POND IS INCORPORATED WITHIN A SUBDIVISION AND IS ABUTTED BY LOTS, SUCH ABUTTING LOT LINES SHALL BE EXTENDED INTO THE LAKE PROPORTIONATELY ENCOMPASSING ALL OF THE LAKE AREA.
21. WET POND INFLOW AND OUTLET STRUCTURES SHALL GENERALLY BE CONSTRUCTED WITH REINFORCED CONCRETE AND SHALL BE SUBJECT TO THE APPROVAL OF THE CITY. SKIMMERS FOR WET PONDS SHALL BE CONSTRUCTED SUCH THAT THE BOTTOM EXTENDS 6" BELOW THE NORMAL WATER LEVEL AND 6" ABOVE THE OVERFLOW. FOR DRY PONDS, THE SKIMMER BOTTOM SHALL BE SET 6" BELOW THE LOWEST OVERFLOW ELEVATION AND 6" ABOVE THE HIGHEST POINT OF OVERFLOW. ALL SKIMMERS SHALL BE CONSTRUCTED OF MINIMUM 1/4" THICK ALUMINUM OR FIBERGLASS ADEQUATELY SUPPORTED TO PREVENT DEFLECTION.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | STORMWATER CONSTRUCTION NOTES (PAGE 2 OF 4) ST-2

| FY-17/18 |
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| Drawing Date: 01/08 |
| Drawn By: KLH |
| Checked By: JMP |
| Scale: NTS |
| Revision Date: |
| File Name: Const Notes ST-2 |
| Page 134 |

## STORMWATER CONSTRUCTION NOTES (CONT'D)

31. STORM INLETS SHALL BE SPACED IN SUCH A MANNER AS TO ACCEPT ONE HUNDRED (100) PERCENT OF THE DESIGN STORM RUNOFF WITHOUT IMPEDING THE FLOW OF TRAFFIC. FOR ROADWAY SECTIONS WITH DESIGN SPEEDS OF 45 MPH AND LESS AND WITHOUT FULL WIDTH SHOULDERS, SPREAD RESULTING FROM A RAINFALL INTENSITY OF FOUR INCHES (4") PER HOUR SHALL NOT EXCEED ONE-HALF OF THE TRAVEL LANE ADJACENT TO THE GUTTER. FOR SITE PLANS, INLET SPACING SHALL BE DESIGNED TO ACCEPT ONE HUNDRED (100) PERCENT OF THE RUNOFF FROM A RAINFALL INTENSITY OF FOUR INCHES (4") PER HOUR WITHOUT RESULTING IN PONDING OF WATER AROUND THE INLET.
32. FOR CONNECTIONS BETWEEN INLETS WITH PIPING 15" IN DIAMETER AND LARGER, THE MAXIMUM DISTANCES BETWEEN INLETS AND / OR CLEAN-OUT JUNCTION BOXES SHALL BE 300 FEET. CULVERTS SHALL BE SLOPED TO MAINTAIN A MINIMUM SELF-CLEANING VELOCITY OF 2.5 FEET PER SECOND USING A MANNING'S 'n' OF 0.012. SPACING FOR CLEAN-OUTS AND INLETS FOR SMALLER PIPING SHALL BE REDUCED AND EVALUATED ON A CASE BY CASE BASIS.
33. ALL STORMWATER INLETS SHALL MEET FDOT CRITERIA IN THE FDOT DESIGN STANDARD LATEST EDITION.
34. TRACER WIRE SHALL BE TESTED FOR CONTINUITY UNDER SUPERVISION BY CITY REPRESENTATIVE AFTER INSTALLATION.
35. ALL GASKETS SHALL BE LUBRICATED BEFORE BEING INSTALLED.
36. ALL FITTINGS SHALL MEET THE MINIMUM RESTRAINED REQUIREMENTS PER ANSI/AWWA/DIPRA, AND ALL PRESSURE PIPES UNDER THE ROADWY SHALL BE RESTRAINED.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | STORMWATER CONSTRUCTION NOTES (PAGE 4 OF 4) ST-4

| FY-17/18 |
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| Drawing Date: 01/08 |
| Drawn By: KLH |
| Checked By: JMP |
| Scale: NTS |
| Revision Date: 07/10 |
| File Name: Const Notes ST-4 |
| Page 136 |

ES BMP 1.01

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

DEFINITION

A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE.

PURPOSE

TO REDUCE THE AMOUNT OF SEDIMENT TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF.

CONDITIONS WHERE PRACTICE APPLIES

WHEREVER TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE AND MOVES DIRECTLY ONTO A PUBLIC ROAD OR OTHER PAVED AREA.

PLANNING CONSIDERATIONS

CONSTRUCTION ENTRANCES PROVIDE AN AREA WHERE MUD CAN BE REMOVED FROM CONSTRUCTION VEHICLE TIRES BEFORE THE ENTER A PUBLIC ROAD. IF THE ACTION OF THE VEHICLE TRAVELING OVER THE GRAVEL PAD IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF THE MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLE ENTERS A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF-SITE. CONSTRUCTION ENTRANCES SHOULD BE USED IN CONJUNCTION WITH THE STABILIZATION OF CONSTRUCTION ROADS TO REDUCE THE AMOUNT OF MUD PICKED UP BY CONSTRUCTION VEHICLES.

DESIGN CRITERIA

AGGREGATE SIZE

FDOT AGGREGATE NO. 1 (1.5 – 3.5 INCH STONE) SHOULD BE USED.

ENTRANCE DIMENSIONS

AGGREGATE LAYER MUST BE AT LEAST 6 INCHES THICK. IT MUST EXTEND THE FULL WIDTH OF THE VEHICULAR INGRESS AND EGRESS AREA. THE LENGTH OF THE ENTRANCE MUST BE AT LEAST 50 FEET. (SEE DETAIL).

WASHING

IF CONDITIONS OF THE SITE ARE SUCH THAT THE MAJORITY OF THE MUD IS NOT REMOVED BY THE VEHICLES TRAVELING OVER THE GRAVEL, THEN THE TIRES OF THE VEHICLES MUST BE WASHED BEFORE ENTERING A PUBLIC ROAD. WASH WATER MUST BE CARRIED AWAY FROM THE ENTRANCE TO A SETTLING AREA TO REMOVE SEDIMENT. A WASH RACK MAY ALSO BE USED TO MAKE WASHING MORE CONVENIENT AND EFFECTIVE. SEE DETAIL.

LOCATION

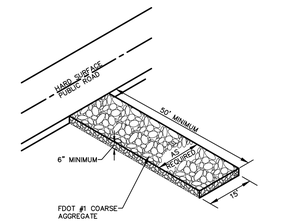
THE ENTRANCE SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES.

CONSTRUCTION SPECIFICATIONS

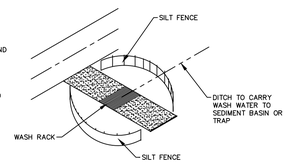
THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL. THE GRAVEL SHALL BE PLACED TO THE SPECIFIED DIMENSIONS. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS. IF WASH RACKS ARE USED, THEY SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS. IF WASH RACKS ARE TO MANUFACTURER'S SPECIFICATIONS.

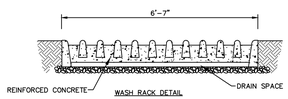
MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONE, AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.




GRAVEL CONSTRUCTION ENTRANCE
N.T.S.




WASH RACK DETAIL

GRAVEL CONSTRUCTION ENTRANCE W/ WASH RACK (IF REQUIRED)

## TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|


PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910


BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

PAVING & DRAINAGE DETAILS

DEV 2018-
CITY APPROVAL STAMP

37
SHEET NO.

Drawn By: M. GRECO

Date: 08/30/18

SCALE: 1"=1'

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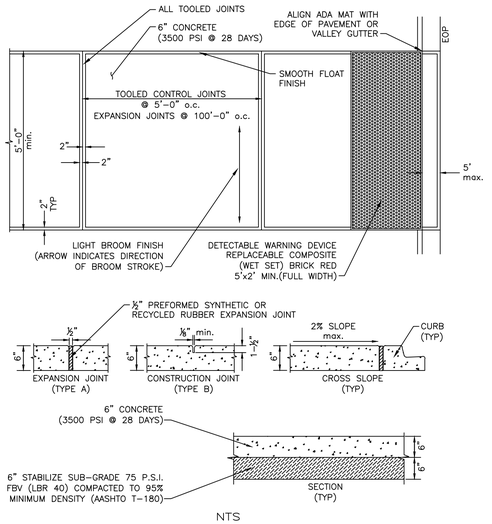


NOTES:

1. SIDEWALKS, BIKE PATHS, RAMPS AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3", A MINIMUM DEVELOPED COMPRESSIVE STRENGTH OF 3500 P.S.I. IN 28 DAYS AND A MINIMUM UNIFORM THICKNESS OF 6".
2. SIDEWALKS AND BIKE PATHS SHALL BE PLACED PARALLEL TO, AND ONE FOOT WITHIN THE RIGHT-OF-WAY LINE EXCEPT THAT THE CITY MAY APPROVE DEVIATIONS TO SAVE SPECIMEN TREES PROVIDED THAT THE SIDEWALK REMAINS WITHIN THE RIGHT-OF-WAY OR AN APPROVED SIDEWALK EASEMENT ABUTTING THE RIGHT OF WAY. SIDEWALKS AND BIKE PATHS SHOULD BE LOCATED A MINIMUM OF 4'-0" FROM THE EDGE OF THE STREET PAVEMENT UNLESS OTHERWISE APPROVED BY THE CITY.
3. ALL CURB CUTS AND HANDICAP RAMPS SHALL BE ADA COMPLIANT AND TO BE CONSTRUCTED IN ACCORDANCE WITH FDOT DESIGN STANDARDS AND FLORIDA BUILDING CODE ACCESSIBILITY, LATEST EDITIONS.
4. THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6" ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND.
5. EXPANSION AND ISOLATION JOINTS (TYPE A JOINTS) SHALL BE PROVIDED BETWEEN EXISTING SLABS OR STRUCTURES AND FRESH CONCRETE, TO SEPARATE PEDESTRIAN SECTIONS FROM SECTIONS WHICH WILL ENCOUNTER VEHICLE TRAFFIC, TO SEPARATE FRESH PLACEMENT OF CONCRETE WHICH HAS SET FOR MORE THAN 60 MINUTES, AND NO FARTHER APART THAN ONE HUNDRED FEET (100') IN SIDEWALKS AND THIRTY FEET (30') IN BIKE PATHS.
6. PREFORMED ½" EXPANSION JOINT MATERIAL SHALL BE AS SPECIFIED IN FDOT STANDARDS AND SPECIFICATIONS, LATEST EDITION, AND SHALL BE SYNTHETIC, RECYCLED RUBBER OR OTHER PRE-APPROVED NON-BIODEGRADABLE ELASTOMERIC MATERIAL. WOOD AND DECCA-DRAIN STYLE POOL DRAINS ARE STRICTLY PROHIBITED IN ACCORDANCE WITH CHAPTER 8.1.2 OF THE FDOT SOILS AND FOUNDATIONS HANDBOOK, LATEST EDITION.
7. CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOLED INTO THE FRESH CONCRETE OR SAW CUT INTO CURED CONCRETE TO A DEPTH EQUAL TO 25% THE SLAB THICKNESS AND SPACED APART A DISTANCE EQUAL TO THE WIDTH OF THE SLAB OR 5' WHICHEVER IS LESS.
8. THE SLAB SURFACE SHALL BE BROOM FINISHED TO BE SLIP RESISTANT, AND SHALL MATCH AS CLOSELY AS POSSIBLE THE FINISH OF EXISTING ADJACENT SLABS AND ALL EDGES SHALL BE TOOLED TO ELIMINATE SHARP CORNERS.
9. THE BEARING SUBSURFACE SHALL HAVE ALL ORGANIC, LOOSE, AND DELETERIOUS MATTER REMOVED, AND THE REMAINING CLEAN SOIL SHALL BE SMOOTH, SOUND, AND SOLID. ANY FILL MATERIAL SHALL BE COMPACTED WITH A VIBRATORY OR IMPACT COMPACTION MACHINE IN MAXIMUM 12" LIFTS OR COMPACTED WITH A HAND TAMPER IN MAXIMUM 4" LIFTS THE CITY SHALL REQUIRE A COMPACTION TEST FOR EACH LIFT IF THE TOTAL FILLED SECTION IS MORE THAN 12" DEEP OR IF THE SUBSURFACE HAS BEEN DISTURBED MORE THAN 12" DEEP. WHERE SUCH TEST IS REQUIRED, THE SIDEWALK BASE SHALL BE COMPACTED AND TESTED TO 95% WITH MINIMUM L.B.R. BASED ON AASHTO T-180 MODIFIED PROCTOR TEST. MOISTURE SHALL BE APPLIED TO DRY FILL MATERIAL TO ACHIEVE DENSITY REQUIREMENTS.
10. ALL CONCRETE WORK IN THE RIGHT-OF-WAY SHALL BE INSPECTED BY THE CITY AFTER THE SUBSOIL IS PREPARED AND THE FORMS ARE SET, BUT BEFORE THE CONCRETE PLACEMENT BEGINS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CITY ACCEPTS OR APPROVES THE SLAB, AFTER WHICH TIME THE OWNER OF THE ABUTTING LAND SHALL BE RESPONSIBLE FOR THE SLAB IN ACCORDANCE WITH THE CITY CODE. ANY SLAB SECTION DAMAGED OR VANDALIZED PRIOR TO ACCEPTANCE OR APPROVAL SHALL BE CUT OUT BETWEEN JOINTS AND REPLACED AT NO ADDITIONAL COST TO THE OWNER. REPAIRS ARE NOT ACCEPTABLE.
12. ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL AND THE DISTURBED GROUND SHALL BE BACKFILLED, RE-GRADED, AND SODDED SO THAT THE WEAR SURFACE OF THE CONCRETE IS REASONABLY FLUSH WITH THE ADJACENT GRADE.
13. DETECTABLE WARNING DEVICES SHALL EXTEND THE FULL WIDTH OF THE SIDEWALK AND TO A DEPTH OF 2' min.
14. SEE FDOT DESIGN STANDARDS INDEX 304, LATEST EDITION, FOR REFERENCE.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION

SIDEWALK
CONSTRUCTION
DETAIL
C-1

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| Drawing Date: 11/2000 |
| Drawn By: PFT |
| Checked By: |
| Scale: NTS |
| Revision Date: 08/2015 |
| File Name: dc-1 |

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION

SIDEWALK/BIKE TRAIL
CONSTRUCTION
NOTES
C-3

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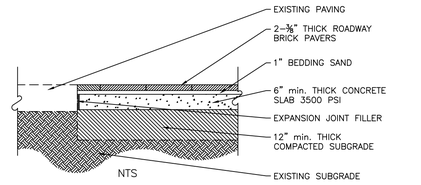
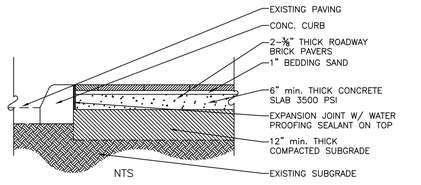
| Drawing Date: 09/2003 |
| Drawn By: PFT |
| Checked By: |
| Scale: NTS |
| Revision Date: 12/2013 |
| File Name: dc-3 |




NOTES:

1. PAVERS TO BE 2 ⅜" MIN. INTERLOCKING 7700 PSI CONCRETE.
2. PAVERS TO BE LAID FLAT ON 1" CRUSHED CONCRETE BED W/ SAND SWEPT JOINTS.
3. MAINTAIN MIN. 1.5% CROSS SLOPE THROUGH OUT THE ENTIRE PROJECT.
4. THE CITY OF DAYTONA RESERVES THE RIGHT TO REQUEST SUBGRADE COMPACTION TESTING AT THE OWNERS EXPENSE.

BRICK PAVEMENT SECTION AT
PAVEMENT DETAIL




NOTES:

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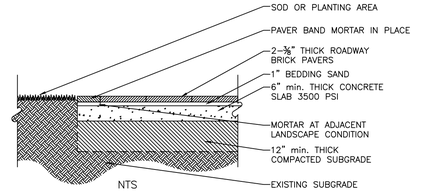
4. THE CITY OF DAYTONA RESERVES THE RIGHT TO REQUEST SUBGRADE COMPACTION TESTING AT THE OWNERS EXPENSE.

BRICK PAVEMENT SECTION AT
CURB DETAIL




NOTES:

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2. PAVERS TO BE LAID FLAT ON 1" CRUSHED CONCRETE BED W/ SAND SWEPT JOINTS.
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4. THE CITY OF DAYTONA RESERVES THE RIGHT TO REQUEST SUBGRADE COMPACTION TESTING AT THE OWNERS EXPENSE.

BRICK PAVEMENT SECTION AT
GRADE DETAIL

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION

BRICK PAVEMENT
PARKAGE AND APRON
DETAIL
C-9

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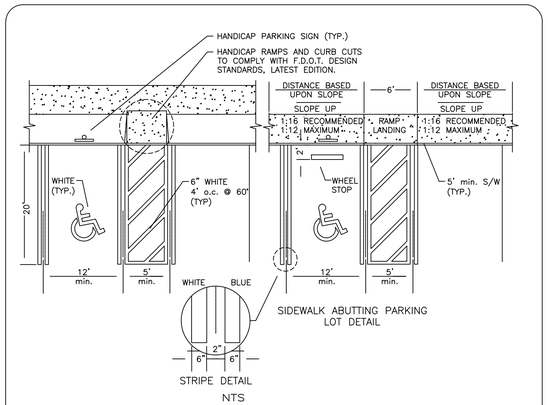
| Drawing Date: 11/14/14 |
| Drawn By: PFT |
| Checked By: RD |
| Scale: NTS |
| Revision Date: 09/01/15 |
| File Name: dc-9 |



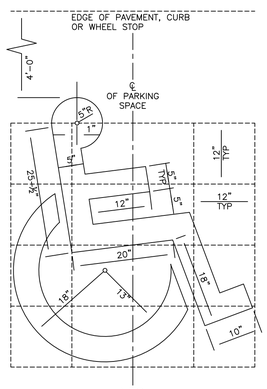

NOTES:

1. ALL HANDICAP PARKING STALLS, 5' ACCESS AISLES, HANDICAP RAMPS AND ACCESSIBLE ROUTES SHALL BE PAVED.
2. PERPENDICULAR AND DIAGONAL HANDICAP PARKING STALLS WILL BE 12'-0" WIDE AND 20'-0" LONG WITH A 5'-0" min. WIDE ACCESS AISLE ADJACENT TO EACH STALL. THE 5' ACCESS AISLE MAY BE SHARED BY TWO ADJACENT HANDICAP PARKING STALLS.
3. PARALLEL HANDICAP PARKING STALLS WILL BE 12'-0" WIDE AND 22'-0" LONG WITH A 5'-0" min. WIDE ACCESS AISLE ADJACENT TO EACH STALL.
4. ALL HANDICAP RAMPS SHALL BE OF 5'-0" min. WIDE EXCLUSIVE OF THE FLARED SIDES WITH A MAXIMUM SLOPE OF 1:21. HANDICAP RAMPS AND CURB CUTS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH FDOT DESIGN STANDARDS, LATEST EDITION.
5. BLUE STRIPING SHALL BE BLUE TINT TO MATCH SHADE 15180 OF FEDERAL STANDARD 595a.
6. WHEN FDOT TYPE 'D' CURB IS USED IN LIEU OF WHEEL STOPS, SIDEWALK ABUTTING CURB SHALL BE WIDENED BY 18" min. SO THAT THE TOTAL SIDEWALK WIDTH IS 72" min. ALLOWING FOR 54" min. CLEAR ACCESSIBLE ROUTE.
7. 6" WHEEL STOPS ARE TO BE CENTERED SIDE TO SIDE IN EACH PARKING STALL, REFER TO CODB STANDARD DETAIL M-1 (dbM-1.dwg).
8. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 (2%) IN ALL DIRECTIONS.
9. DIMENSIONS ARE CENTERLINE OF PAVEMENT MARKINGS.
10. FOR COMPLETE DETAIL OF HANDICAP SIGN INSTALLATION, REFER TO CODB STANDARD DETAIL M-6 (dbM-6.dwg).

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION

HANDICAP PARKING
SPACE STRIPING
DETAIL
M-4

| |
|---|
| Drawing Date: 05/2003 |
| Drawn By: PFT |
| Checked By: |
| Scale: NTS |
| Revision Date: 10/2011 |
| File Name: dbM-4 |



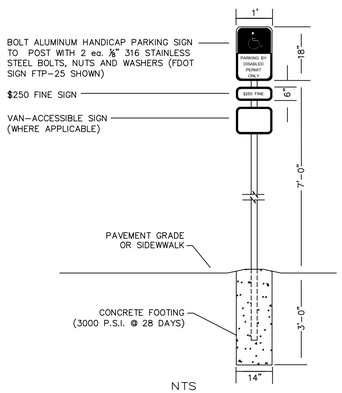

NOTE:

1. PAVEMENT SYMBOL SHALL BE SOLID WHITE IN COLOR AND COMPLY WITH FDOT DESIGN STANDARDS, LATEST EDITION.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION

HANDICAP PARKING
PAVEMENT SYMBOL
DETAIL
M-5

| |
|---|
| Drawing Date: 09/2003 |
| Drawn By: PFT |
| Checked By: |
| Scale: NTS |
| Revision Date: 03/08 |
| File Name: dbM-5 |



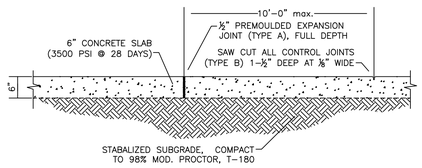

NOTES:

1. ONE SIGN IS REQUIRED FOR EACH HANDICAP PARKING STALL.
2. HANDICAP PARKING SIGN SHALL CONFORM WITH CURRENT FEDERAL, STATE LOCAL & ADA CODES & REGULATIONS, LATEST EDITION.
3. SIGNS WILL BE FABRICATED BY USING A REFLECTING COATING IN THE SYMBOL, MESSAGE AND BORDERS APPLIED TO A SHEET OF ALUMINUM (12"x 18"x 0.80").
4. MESSAGE LETTERING SHALL BE UPPER CASE (SERIES B) 2" HIGH IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. THE SYMBOL IS COMPOSED OF TWO ELEMENTS, A WHITE WHEEL-CHAIR FIGURE (WHICH SHOULD ALWAYS FACE RIGHT) ON A SQUARE BACKGROUND, INTERNATIONAL BLUE IN COLOR (FED. STD. 595a, COLOR #15180).
6. SUPPLEMENTAL SIGN PLATES SHALL BE UPPER CASE (SERIES B) 1" BLUE OR BLACK MESSAGE LETTERING W/ ½" BLUE OR BLACK BORDER ON WHITE BACK GROUND.
7. METAL SIGN POSTS TO BE GALVANIZED U-IRON. ALL BOLTS, NUTS, WASHERS AND SCREWS MUST BE 316 STAINLESS STEEL.
8. CONCRETE FOOTING SHALL BE OF PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I. @ 28 DAYS.
9. SIGN POST SHALL BE MINIMUM 2'-0" CLEAR FROM BACK OF CURB OR WHEEL STOP.
10. SIGN POST SHALL BE DESIGNED TO WITHSTAND 120 M.P.H. WIND LOAD.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION

HANDICAP PARKING
SIGN DETAIL
(FDOT TYPE FTP-25)
M-6

| |
|---|
| Drawing Date: 05/2003 |
| Drawn By: PFT |
| Checked By: MS |
| Scale: NTS |
| Revision Date: 10/2011 |
| File Name: dbM-6 |




NOTES:

1. EXPANSION JOINTS ARE TO BE ½" PREFORMED SYNTHETIC OR RECYCLED RUBBER
2. ALL EXPANSION JOINTS ARE REQUIRED TO BE INSTALLED THROUGH TO THE FULL DEPTH AND WIDTH OF THE CONCRETE AREA
3. EXPANSION JOINTS SHALL BE SPACED AT INTERVALS OF SIXTY FEET (60') FOR CURBING, THIRTY FEET (30') FOR BIKE TRAILS AND ONE HUNDRED FEET (100') FOR SIDEWALKS
4. EXPANSION JOINTS SHALL BE PLACED AT STREET INTERSECTIONS, RADIUS POINTS, STRUCTURES, AND ALONG CURVES AT SIXTY FEET (60') INTERVALS
5. FOR LINEAL SECTIONS OF CURBS, EXPANSION JOINTS SHALL BE LOCATED AT A MAXIMUM SPACING OF FIVE-HUNDRED FEET (500') AND SHALL BE ½" IN WIDTH CONTROL JOINTS SHALL BE HAND TOOLED INTO FRESH CONCRETE OR SAW CUT INTO CURED CONCRETE
6. SAW CUT CONTROL JOINTS IN CONCRETE CURBING, SIDEWALKS, PAVEMENT AND SIMILAR CONCRETE AREAS SHALL BE DONE WITHIN 4 TO 18 HOURS OF CONCRETE PLACEMENT
7. ALL CONTROL JOINTS SHALL BE ⅛" IN WIDTH TO A DEPTH OF 25% OF THE TOTAL DEPTH OF CONCRETE OR 1-½", WHICHEVER IS LESS
8. CONTROL JOINTS SHALL BE SPACED AT INTERVALS OF TEN FEET (10') FOR CURBING, TEN FEET (10') FOR BIKE TRAILS & FIVE FEET (5') FOR SIDEWALKS

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION

CONCRETE HANDICAP
PARKING SECTION
DETAIL
M-7

| |
|---|
| Drawing Date: 09/2003 |
| Drawn By: PFT |
| Checked By: |
| Scale: NTS |
| Revision Date: 12/2013 |
| File Name: dbM-7 |

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |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CERTIFICATE OF AUTHORIZATION NUMBER 00003910


BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

PAVING & DRAINAGE DETAILS

DEV 2018-
CITY APPROVAL STAMP

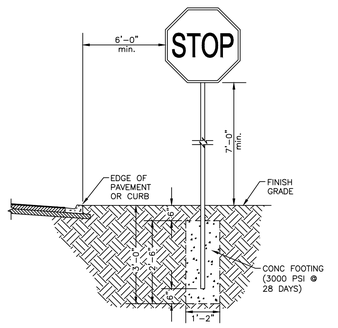
38
SHEET NO.

Drawn By: M. GRECO

Date: 08/30/18

SCALE: 1"=1'

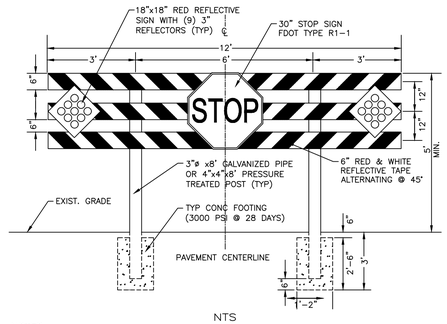
W:\BEACH STREET ORANGE TO BAY\Paving & Drainage Details.dwg, Model, 10/8/2018 4:05:57 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1




NTS

NOTES:
1. STOP SIGN SHALL CONFORM WITH CURRENT FEDERAL, STATE & LOCAL CODES & REGULATIONS, LATEST EDITION.
2. STOP SIGN (FDOT R1-1) WILL BE FABRICATED BY USING A WHITE REFLECTIVE COATING IN THE TEXT & BORDER W/ A RED REFLECTIVE BACK GROUND APPLIED TO A SHEET ALUMINUM BACKING 30" OCTAGONAL SHAPE (0.80" THK).
3. MESSAGE LETTERING SHALL BE UPPER CASE (SERIES B) 10" HIGH W/ ⅜" WHITE REFLECTIVE BORDER IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
4. ALUMINUM SIGN POSTS TO BE 2-3/8"ø. ALL BOLTS, NUTS, WASHERS AND SCREWS MUST BE 316 STAINLESS STEEL.
5. CONCRETE FOOTING SHALL BE OF PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.
6. SIGN POST SHALL BE MINIMUM 6'-0" CLEAR FROM BACK OF CURB OR EDGE OF PAVEMENT.
7. SIGN POST SHALL BE DESIGNED TO WITHSTAND 120 M.P.H. WIND LOAD.

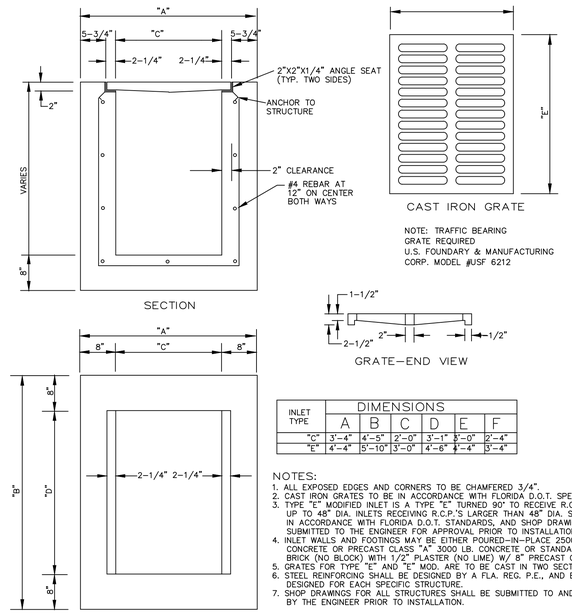
| THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | STOP SIGN INSTALLATION DETAIL (FDOT TYPE R1-1) T-1 | Drawing Date: 12/2003<br>Drawn By: PFT<br>Checked By:<br>Scale: NTS<br>Revision Date: 10/2011<br>File Name: ab1-1 |
|---|---|---|




NTS

NOTES:
1. STOP SIGN SHALL CONFORM WITH CURRENT FEDERAL, STATE & LOCAL CODES & REGULATIONS.
2. SIGNS WILL BE FABRICATED BY USING A REFLECTING COATING IN THE TEXT & BORDER APPLIED TO A SHEET ALUMINUM BACKING (0.80" IN THICKNESS).
3. SIGN LETTERING SHALL BE UPPER CASE (SERIES B) 2" HIGH IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
4. CONCRETE FOOTING SHALL BE OF PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.
5. SIGN SHALL BE MINIMUM 6'-0" CLEAR FROM EDGE OF PAVEMENT.
6. BARRICADE SHALL BE DESIGNED TO WITHSTAND 120 M.P.H. WIND LOAD.

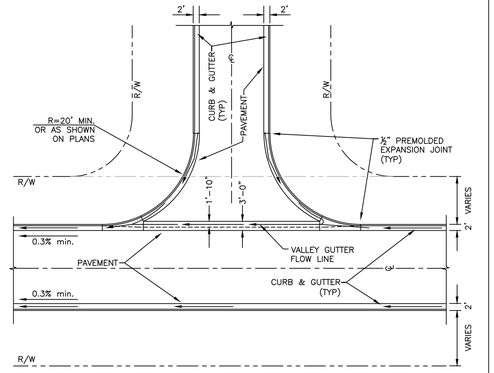
| THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | ROAD BARRICADE DETAIL T-7 | Drawing Date: 05/2003<br>Drawn By: PFT<br>Checked By:<br>Scale: NTS<br>Revision Date: 10/2011<br>File Name: ab1-7 |
|---|---|---|




| INLET TYPE | DIMENSIONS | | | | | |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| "C" | 3'-4" | 4'-5" | 2'-0" | 3'-1" | 3'-0" | 2'-4" |
| "E" | 4'-4" | 5'-10" | 3'-0" | 4'-6" | 4'-4" | 3'-4" |

NOTES:
1. ALL EXPOSED EDGES AND CORNERS TO BE CHAMFERED 3/4".
2. CAST IRON GRATES TO BE IN ACCORDANCE WITH FLORIDA D.O.T. SPECS.
3. TYPE "E" MODIFIED INLET IS A TYPE "E" TURNED 90° TO RECEIVE R.C.P.'S UP TO 48" DIA. INLETS RECEIVING R.C.P.'S LARGER THAN 48" DIA. SHALL BE IN ACCORDANCE WITH FLORIDA D.O.T. STANDARDS, AND SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
4. INLET WALLS AND FOOTINGS MAY BE EITHER POURED-IN-PLACE 2500 LB. CONCRETE OR PRECAST CLASS "A" 3000 LB. CONCRETE OR STANDARD MANHOLE BRICK (NO BLOCK) WITH 1/2" PLASTER (NO LIME) W/ 8" PRECAST CAP.
5. GRATES FOR TYPE "E" AND "E" MOD. ARE TO BE CAST IN TWO SECTIONS.
6. STEEL REINFORCING SHALL BE DESIGNED BY A FLA. REG. P.E., AND BE DESIGNED FOR EACH SPECIFIC STRUCTURE.
7. SHOP DRAWINGS FOR ALL STRUCTURES SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

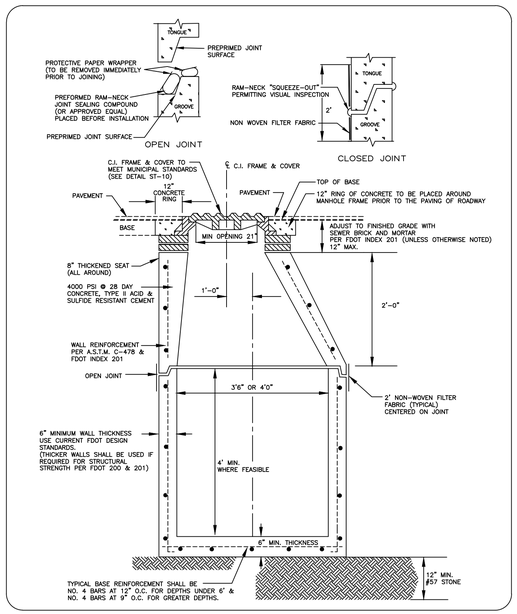
FDOT TYPE 'C' & 'E' INLET
NTS



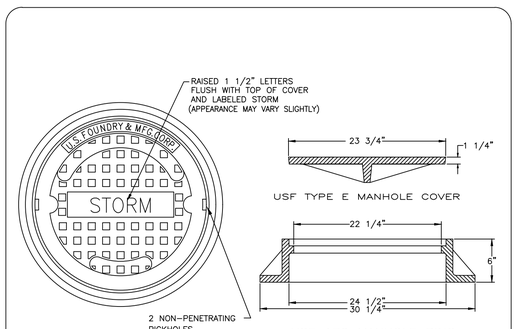

NTS

NOTES:
1. VALLEY GUTTERS ARE REQUIRED WHEN STORMWATER CROSSES THE INTERSECTION OF ROADWAYS AND DRIVEWAY CONNECTIONS.
2. VALLEY GUTTERS CAN BE USED ONLY WITH THE APPROVAL OF THE CITY'S ENGINEER.
3. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
4. COMPACTION, STABILITY & DENSITY TESTING ARE TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROADWAY & BRIDGE CONSTRUCTION, LATEST EDITION.
5. VALLEY GUTTER SHALL HAVE A STANDARD MINIMUM LONGITUDINAL SLOPE OF 0.30%.
6. VALLEY GUTTER SHALL BE CONSTRUCTED OF CONCRETE 3500 P.S.I. @ 28 DAY.
7. EXPANSION JOINTS (TYPE A) SHALL BE PLACED AT CURB TRANSITIONS AND AT SIXTY FEET (60') INTERVALS.
8. CONTROL JOINTS (TYPE B) SHALL BE PLACED AT TEN FEET (10') INTERVALS.
9. REFER TO FDOT DESIGN STANDARDS, LATEST EDITION FOR ADDITIONAL DESIGN REQUIREMENTS.

| THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | VALLEY GUTTER DETAIL R-12 | Drawing Date: 05/2003<br>Drawn By: PFT<br>Checked By:<br>Scale: NTS<br>Revision Date: 10/2011<br>File Name: ab-12 |
|---|---|---|

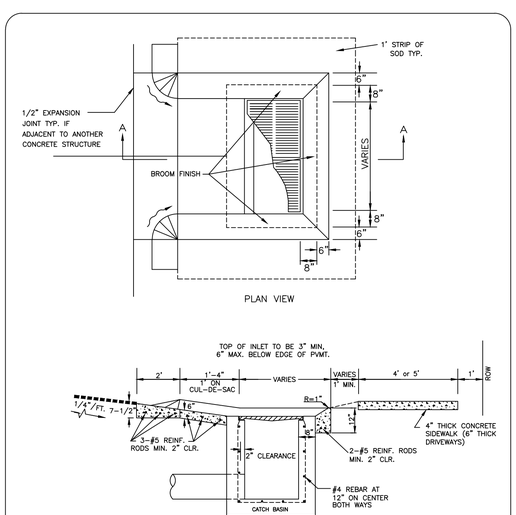



| THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | STORMWATER MANHOLE DETAIL ST-20 | FY- 17/18<br>Drawing Date: 01/08<br>Drawn By: KLH<br>Checked By: JMP<br>Scale: NTS<br>Revision Date: 08/10<br>File Name: Manhole ST-20<br>Page 152 |
|---|---|---|




NOTES:
1. MORTAR TO CONTAIN "HYDRATITE", OR APPROVED EQUAL, TO PREVENT SHRINKAGE.
2. SUB-GRADE BENEATH MANHOLES SHALL BE FIRM UNDISTURBED GRANULAR UNSATURATED SOIL. No. 57 AGGREGATE STONE SHALL BE USED IN WET CONDITIONS AND/OR WHERE UNSUITABLE MATERIAL IS ENCOUNTERED.
3. UNLESS DETAILED PLANS SHOW OTHERWISE, ALL MANHOLE RING AND COVER CASTINGS IN PAVED AREAS ARE TO BE ADJUSTED TO FINAL GRADE, SEALED AND SECURED IN PLACE WITH A CONCRETE COLLAR AFTER THE ROAD BASE IS PLACED AND JUST PRIOR TO PLACEMENT OF ASHPALT WEARING SURFACE.
4. CONTRACTOR SHALL PROVIDE THICKER MANHOLE WALLS AND BASES AS REQUIRED TO PREVENT FLOTATION BASED ON HISTORIC HIGH GROUND WATER TABLE ELEVATIONS AS DETERMINED USING ACCEPTED ENGINEERING PRACTICES AND/OR APPROVED BY THE UTILITIES DEPARTMENT.
5. CONCRETE COLLAR AROUND MANHOLE FRAME IS REQUIRED IN PAVED AREAS ONLY.
6. SHOP DRAWINGS FOR ALL STRUCTURES SHALL BE SUBMITTED TO AND APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION.
7. NO BUG HOLES OR HONEYCOMB WILL BE ACCEPTED.
8. ENDS OF SECTION SHALL FIT FLUSH TOGETHER
9. MANHOLES SHALL BE CLEARED OF ALL DEBRIS PRIOR TO CITY ACCEPTANCE AND SYSTEM USE.

| THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | STORM-SEWER COVER DETAIL & MH GENERAL NOTES ST-21 | FY- 17/18<br>Drawing Date: 01/08<br>Drawn By: KLH<br>Checked By: JMP<br>Scale: NTS<br>Revision Date:<br>File Name: Storm Cover ST-21<br>Page 153 |
|---|---|---|




| THE CITY OF DAYTONA BEACH ENGINEERING DIVISION | CONCRETE STORM INLET & APRON DETAIL ST-22 | FY- 17/18<br>Drawing Date: 01/08<br>Drawn By: KLH<br>Checked By: JMP<br>Scale: NTS<br>Revision Date:<br>File Name: Storm Inlet ST-22<br>Page 154 |
|---|---|---|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(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910


| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

PAVING & DRAINAGE DETAILS

DEV 2018-
CITY APPROVAL STAMP

39
SHEET NO.

Drawn By: M. GRECO

Date: 08/30/18

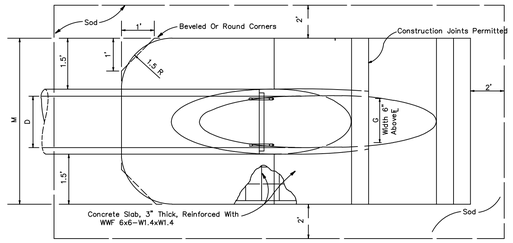
SCALE: 1"=1'

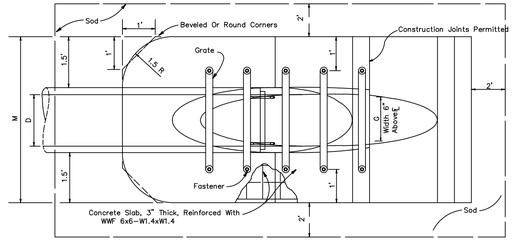
W:\BEACH STREET ORANGE TO BAY\Paving & Drainage Details.dwg, Model, 10/8/2018 4:06:24 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1

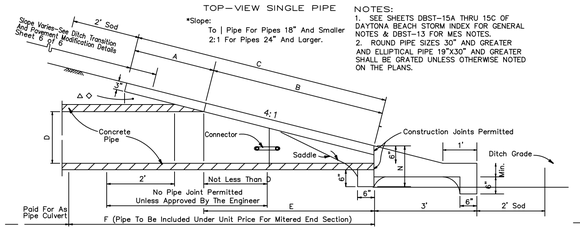
| DIMENSIONS & QUANTITIES | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | X | A | B | C | E | F | G | M Single Pipe | M Double Pipe | M Triple Pipe | M Quad Pipe | N |
| 15" | 2'-7" | 2.27' | 4.09' | 6.36' | 4.03' | 8" | 1.22' | 4.63' | 7.21' | 9.79' | 12.37' | 1.19' |
| 18" | 2'-10" | 2.36' | 5.12' | 7.48' | 5.03' | 9" | 1.41' | 4.92' | 7.75' | 10.58' | 13.42' | 1.21' |
| 24" | 3'-5" | 2.53' | 7.18'Δ | 9.71' | 7.03'Δ | 11" | 1.73' | 5.50' | 8.92' | 12.33' | 15.75' | 1.25' |
| 30" | 4'-3" | 2.70' | 9.25' | 11.95' | 9.03' | 13" | 2.00' | 6.08' | 10.33' | 14.58' | 18.83' | 1.29' |
| 36" | 5'-1" | 2.87' | 11.33◇ | 14.18' | 11.03◇ | 15" | 2.24' | 6.67' | 11.75' | 16.83' | 21.92' | 1.33' |
| 42" | 6'-0" | 3.05' | 13.37' | 16.42' | 13.03' | 17" | 2.45' | 7.25' | 13.25' | 19.25' | 25.25' | 1.38' |
| 48" | 6'-9" | 3.22' | 15.43' | 18.65' | 15.03' | 19" | 2.65' | 7.83' | 14.58' | 21.33' | 28.08' | 1.42' |
| 54" | 7'-8" | 3.39' | 17.49' | 20.88' | 17.03' | 21" | 2.83' | 8.42' | 16.08' | 23.75' | 31.42' | 1.46' |
| 60" | 8'-6" | 3.58' | 19.55' | 23.11' | 19.03' | 23" | 3.00' | 9.00' | 17.50' | 26.00' | 34.50' | 1.50' |

| D | GRATE SIZES Standard WeightPipe | GRATE SIZES Extra StrongPipe | CONCRETE (Cu. Yds.) Single Pipe | CONCRETE (Cu. Yds.) Double Pipe | CONCRETE (Cu. Yds.) Triple Pipe | CONCRETE (Cu. Yds.) Quad Pipe | SODDING (Sq. Yds.) Single Pipe | SODDING (Sq. Yds.) Double Pipe | SODDING (Sq. Yds.) Triple Pipe | SODDING (Sq. Yds.) Quad Pipe |
|---|---|---|---|---|---|---|---|---|---|---|
| 15" | | | 0.76 | 1.16 | 1.54 | 1.94 | 8 | 10 | 11 | 12 |
| 18" | | | 0.85 | 1.28 | 1.71 | 2.17 | 9 | 10 | 12 | 13 |
| 24" | | | 1.02 | 1.58 | 2.15 | 2.75 | 10 | 12 | 13 | 15 |
| 30" | | 3" | 1.23 | 1.98 | 2.74 | 3.50 | 12 | 14 | 15 | 17 |
| 36" | | 3" | 1.40 | 2.38 | 3.33 | 4.24 | 13 | 15 | 17 | 20 |
| 42" | | | 1.60 | 2.83 | 4.04 | 5.26 | 14 | 17 | 19 | 22 |
| 48" | | | 1.81 | 3.26 | 4.70 | 6.14 | 15 | 18 | 21 | 24 |
| 54" | 3" | 4" | 2.03 | 3.78 | 5.54 | 7.28 | 17 | 20 | 23 | 27 |
| 60" | 3" | 4" | 2.28 | 4.36 | 6.43 | 8.50 | 18 | 22 | 25 | 29 |

△ 6.42' ◇ 10.40' Dimensions permitted to allow use of 8' standard pipe lengths.
△ 6.25' ◇ 10.10' Dimensions permitted to allow use of 12' standard pipe lengths.
△ ◇ Concrete slab shall be deepened to form bridge across crown of pipe. See section below.

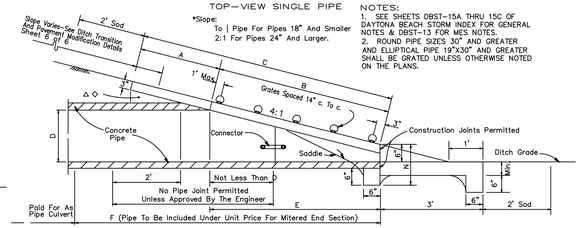


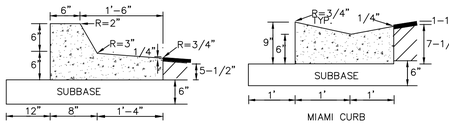

NOTES:
1. SEE SHEETS DBST–15A THRU 15C OF DAYTONA BEACH STORM INDEX FOR GENERAL NOTES & DBST–13 FOR MES NOTES.
2. ROUND PIPE SIZES 30" AND GREATER AND ELLIPTICAL PIPE 19"X30" AND GREATER SHALL BE GRATED UNLESS OTHERWISE NOTED ON THE PLANS.

FDOT MITERED END SECTION




NOTES:
1. SEE SHEETS DBST–15A THRU 15C OF DAYTONA BEACH STORM INDEX FOR GENERAL NOTES & DBST–13 FOR MES NOTES.
2. ROUND PIPE SIZES 30" AND GREATER AND ELLIPTICAL PIPE 19"X30" AND GREATER SHALL BE GRATED UNLESS OTHERWISE NOTED ON THE PLANS.

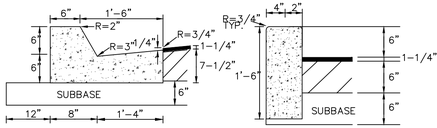
FDOT MITERED END SECTION




FDOT TYPE 'F' OUTFALL CURB




MIAMI CURB




FDOT TYPE 'F' STANDARD CURB

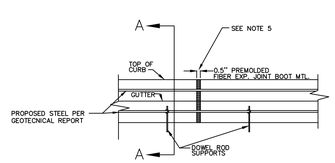



HEADER CURB

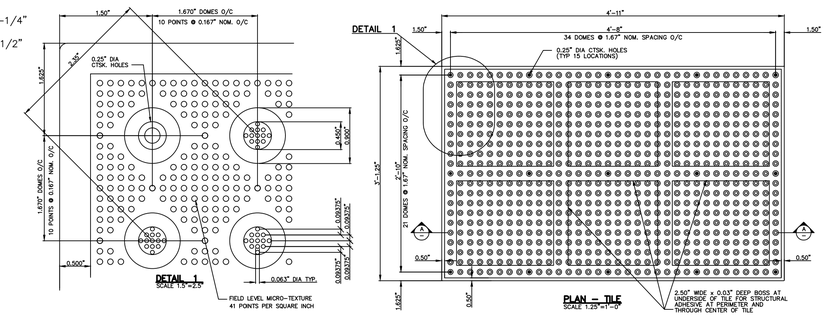
NOTES: NTS

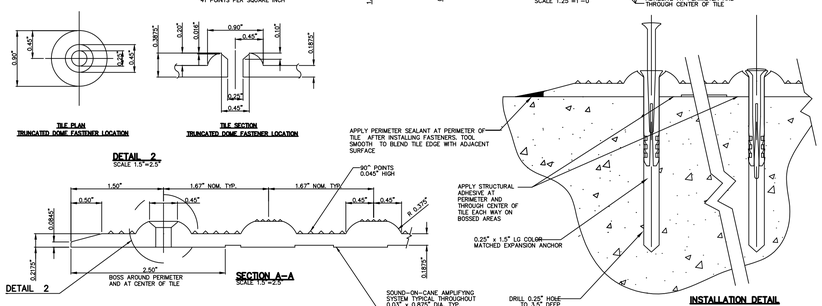
1. ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 3000 P.S.I. CONCRETE
2. 1/2" PRE–MOLDED EXPANSION JOINT REQUIRED EVERY 500', CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM).
3. 1/2" PRE–MOLDED EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADIUS POINTS.
4. 6" SUBBASE TO BE COMPACTED AND TESTED TO 98% DENSITY BASED ON AASHTO T–180 MODIFIED PROCTOR TEST AND SHALL BE STABILIZED TO A MINIMUM L.B.R. 40.
5. EXPANSION JOINT MATERIAL MUST COVER THE ENTIRE CROSS SECTION OF CURB.
6. IN NO INSTANCE SHALL EXTRUDED CURBS (DEFINED AS HEADER–TYPE CURBS INSTALLED DIRECTLY ON TOP OF PAVEMENT) BE PERMITTED.
7. ALL ASPHALT AND/OR PAVER DRIVEWAY APRONS LOCATED IN PUBLIC RIGHTS–OF–WAY, SHALL INCLUDE CURBING.

## ROADWAY CURB CONSTRUCTION DETAIL
**DB M–7 DATED 2–23–07**




CURB EXPANSION JOINT DOWEL DETAIL
N.T.S.



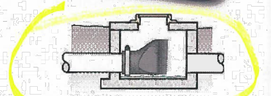

*All Sidewalk Curb Ramps Shall Have Detectable Warning Surfaces That Extend The Full Width Of The Ramp And In The Direction Of Travel 24 Inches (610 mm) From The Back Of Curb.*

NOTE: *On Ramps That Are Perpendicular With The Curb Line, The Dome Pattern Shall Be In–Line With The Direction Of Travel. On Ramps Intersecting Curbs On A Radius, The Dome Pattern Shall Be In–Line With The Direction Of Travel To The Extent Practical.*

## CURB RAMP DETECTABLE WARNING DETAIL

# Series TF-1

- Ideal for manhole installations
- Minimal bottom clearance required
- Lightweight, all-elastomer design
- Seals around small solids
- Available in slip-on or flanged design



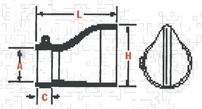
### Materials of Construction
**Neoprene, Hypalon®, Buna-N, EPDM, Viton®.**

### Mounting Bands
**304 or 316 Stainless steel.**

The TF-1 is designed for installation in existing structures such as interceptors, manholes and vaults where the invert of the pipe is close to the floor. The flat-bottom and offset-bill design of the TF-1 allows it to be installed without any modifications to the structure.

The TF-1 offers low cracking pressure to reduce the potential for standing water and very low headloss which is not affected by rust, corrosion or lack of lubrication.

The TF-1 is ideal for sewer systems because it will seal around small debris. The TF-1 design is available with a slip-on or flanged pipe connection. Tideflex® TF-1 valves are constructed with a curved bill as standard.




| Pipe O.D. (A) | Length (L) | Bill Height (H) | Cuff Length (C) |
|---|---|---|---|
| 4 | 10 | 8 | 1 1/2 |
| 5 | 10 | 8 | 1 1/2 |
| 6 | 16 | 12 | 2 |
| 8 | 18 | 16 | 2 |
| 10 | 23 | 19 | 3 |
| 12 | 27 | 23 | 4 |
| 14 | 27 | 23 | 4 |
| 16 | 35 | 30 | 5 |
| 18 | 36 | 34 | 6 |
| 20 | 44 | 37 | 8 |
| 22 | 44 | 37 | 8 |
| 24 | 48 | 43 | 8 |
| 26 | 48 | 43 | 8 |
| 28 | 48 | 43 | 8 |
| 30 | 56 | 55 | 9 |
| 32 | 56 | 55 | 9 |
| 36 | 67 | 69 | 10 |
| 38 | 67 | 69 | 10 |
| 40 | 67 | 69 | 10 |
| 42 | 61 | 71 | 10 |
| 44 | 61 | 71 | 10 |
| 48 | 66 | 78 | 10 |
| 50 | 66 | 78 | 10 |
| 54 | 66 | 78 | 10 |
| 58 | 66 | 78 | 10 |
| 60 | 72 | 91 | 14 |
| 68 | 73 | 91 | 14 |
| 72 | 96 | 115 | 16 |

*Numbers indicate maximum dimensions in inches.*

PVC STORM SEWER TESTING NOTES:

PRESSURE PIPE HYDROSTATIC TESTING: AFTER THE PIPE HAS BEEN BEDDED AND INSTALLED AND ALL SERVICE LATERALS AND OTHER APPURTENANCES INSTALLED AND CONNECTED AND PRIOR TO FINAL BACKFILL, A PRESSURE TEST, FOLLOWED BY A LEAKAGE TEST, WILL BE CONDUCTED BY THE CONTRACTOR FOLLOWING 48–HOURS NOTICE TO THE OWNER AND PROJECT ENGINEER. IF TESTING IS PERFORMED BY A THIRD PARTY COMPANY, THE CONTRACTOR SHALL BE PRESENT AND SHALL FURNISH ALL NECESSARY ASSISTANCE FOR CONDUCTING THE TESTS. THE SPECIFIED TEST PRESSURES WILL BE BASED ON THE ELEVATION OF THE LOWEST POINT OF THE LINE OR SECTION UNDER TEST. BEFORE APPLYING THE SPECIFIED TEST PRESSURE, ALL AIR SHALL BE EXPELLED FROM THE PIPE. IF PERMANENT AIR VENTS ARE NOT LOCATED AT ALL HIGH POINTS, THE CONTRACTOR SHALL INSTALL CORPORATION COCKS AT SUCH POINTS.

(A) PRESSURE TEST

THE ENTIRE PROJECT OR EACH VALVED/ISOLATED SECTION SHALL BE TESTED, AT A CONSTANT PRESSURE OF 50 PSI (MIN) FOR A SUFFICIENT PERIOD (APPROXIMATELY 10 MINUTES) TO DISCOVER DEFECTIVE MATERIALS OR SUBSTANDARD WORK. THE CONTRACTOR ASSUMES ALL RISKS ASSOCIATED WITH TESTING AGAINST VALVES AND/OR ISOLATION DEVICES. REPAIRS SHALL BE MADE BY THE CONTRACTOR TO CORRECT ANY DEFECTIVE MATERIALS OR SUBSTANDARD WORK. THE CONTRACTOR SHALL PRE–TEST NEW LINES BEFORE REQUESTING OWNER AND PROJECT ENGINEER OBSERVATION. THE CONTRACTOR SHALL HAVE NEW LINES PRESSURIZED TO A MINIMUM OF 50 PSI (OR AS SPECIFIED IN THE PLANS), ON THE DATE OF TESTING, PRIOR TO ARRIVAL OF OWNER AND/OR PROJECT ENGINEER. DOCUMENTATION OF THE TESTING, INCLUDING DATE, ATTENDEES, TESTED SEGMENT(S), AND RESULTS SHALL BE PROVIDED TO THE OWNER AND PROJECT ENGINEER CLEAR LEGIBLE FORMAT.

(B) LEAKAGE TEST

A LEAKAGE TEST WILL FOLLOW THE PRESSURE TEST AND WILL BE CONDUCTED ON THE ENTIRE PROJECT OR EACH VALVED/ISOLATED SECTION. THE CONTRACTOR ASSUMES ALL RISKS ASSOCIATED WITH TESTING AGAINST VALVES. THE LEAKAGE TEST SHALL BE CONDUCTED AT 5 PSI (MIN) FOR AT LEAST 2 HOURS. THE TEST PRESSURE SHALL NOT VARY BY MORE THAN ±0.5 PSI FOR THE DURATION OF THE TEST.

(1) ALLOWABLE LEAKAGE – LEAKAGE SHALL BE DEFINED AS THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO ANY TEST SECTION OF PIPE TO MAINTAIN THE SPECIFIED LEAKAGE TEST PRESSURE AFTER THE AIR IN THE PIPELINE HAS BEEN EXPELLED AND THE PIPE HAS BEEN FILLED WITH WATER.

NO PIPE INSTALLATION WILL BE ACCEPTED IF LEAKAGE EXCEEDS THE AMOUNT GIVEN BY THE FOLLOWING FORMULA:

ALLOWABLE LEAKAGE (GAL/HR) = [L D] ÷ 10,875

WHERE L = LENGTH OF PIPE TESTED, IN FEET

D= NOMINAL PIPE DIAMETER, IN INCHES, AS MARKED ON THE PIPE

(2) LOCATION AND CORRECTION OF LEAKAGE – IF SUCH TESTING DISCLOSES LEAKAGE IN EXCESS OF THIS SPECIFIED ALLOWABLE, THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE, SHALL LOCATE AND CORRECT ALL DEFECTS IN THE PIPELINE UNTIL THE LEAKAGE IS WITHIN THE INDICATED ALLOWANCE.

ALL VISIBLE LEAKAGE IN PIPE SHALL ALSO BE CORRECTED BY CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|


**PARKER MYNCHENBERG & ASSOCIATES, INC.**
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677–6891 FAX (386) 677–2114 E–MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910


BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

PAVING & DRAINAGE DETAILS

DEV 2018–
CITY APPROVAL STAMP

SHEET NO. 40

Drawn By: M. GRECO
Date: 08/30/18
SCALE: 1"=1'

W:\BEACH STREET ORANGE TO BAY\Paving & Drainage Details\dwg, Model, 10/9/2018 9:35:35 AM, Shane_B, DWG To PDF.pc3, 24X36, 1:1

# COMING SOON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CERTIFICATE OF AUTHORIZATION NUMBER 00003910


| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

STREETSCAPE DETAILS

DEV 2018–
CITY APPROVAL STAMP

41
SHEET NO.

Drawn By: BH

Date: 08/30/18

SCALE: AS SHOWN


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# COMING SOON


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|---|---|---|---|
| | | REVISIONS | |

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

STREETSCAPE DETAILS

DEV 2018–
CITY APPROVAL STAMP

42
SHEET NO.

Drawn By: BH

Date: 08/30/18

SCALE: AS SHOWN


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## POTABLE WATER CONSTRUCTION & DESIGN STANDARDS

1. THE CITY'S UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 3 BUSINESS DAYS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS OR WEEKENDS) PRIOR TO BEGINNING ANY POTABLE WATER SYSTEM CONSTRUCTION.
2. ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS PER ARTICLE 7 SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, OR IN ANY CON-STRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAIN-TENANCE TO BE DONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS MAY BE FOUND AT http://www.codb.us/index.aspx?NID=262. FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BASIN STREET SUITE 100, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
3. ALL WORK PERFORMED UPON POTABLE WATER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY SHALL BE CONSTRUCTED BY AN UNDERGROUND UTILITY CONTRACTOR OR GENERAL CONTRACTOR LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
4. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE DEPARTMENT OF HEALTH, AND THAT AS-BUILTS DRAWINGS (MEETING THE CITY'S AS-BUILT DRAWING REQUIREMENTS) ARE PROVIDED TO THE CITY PRIOR TO ANY USE OF THIS SYSTEM.
5. WATER DISTRIBUTION SYSTEM SHALL BE DESIGNED TO COMPLY WITH THE CITY'S FIRE (WATER) FLOW CODE.
6. ALL WATER SERVICE ENDINGS SHALL BE MARKED WITH A 2" X 4" LUMBER (PRESSURE TREATED) EXTENDING 4 FEET ABOVE GRADE, INFRONT OF THE METER BOX WITH 2' OF ENDOTRACE COILED AND CAPPED WITH AN ELSTER HYDROSERT CAP INSIDE OF THE METER BOX.
7. ALL WATER SERVICES SHALL BE MARKED WITH AN "/\" SAW CUT INTO THE CURB.
8. ALL WATER VALVES SHALL BE MARKED WITH AN "X" SAW CUT INTO THE CURB.
9. ALL TAPPING OF MAINS SHALL BE PERFORMED WITH A UTILITY REPRESENTATIVE PRESENT. SCHEDULING OF THESE CONNECTIONS SHALL BE REQUIRE A MINIMUM OF 3 (THREE BUSINESS DAYS FOR NOTIFICATION AND SHALL BE COORDINATED WITH THE WATER DISTRIBUTION DIVISION (386) 671-8815.
10. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION STATIONING & OFFSETS FROM THE CENTER LINE OF CONSTRUCTION AND RIGHT-OF-WAY LINES THE PROPOSED LOCATIONS OF ALL WATER MAINS.
11. DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW MAIN BEING LAID.
12. ALL WATER MAINS SHALL BE LAID ON A FIRM UNYIELDING FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
13. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 98% IN PAVED AREAS AND 95% IN UNPAVED AREAS IN ACCORDANCE WITH AASHTO T-180 MODIFIED PROCTOR TEST.
14. ON PROJECTS THAT ARE NOT INITIATED BY THE CITY IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 12 INCHES ABOVE THE PIPE AND AT 12 INCH VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 1 OF 4) W-1

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 05/13 | File Name: Water Notes W-1 | Page 5

## POTABLE WATER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

15. WHERE POTABLE WATER AND SANITARY SEWER MAINS CROSS WITH LESS THAN TWELVE (12) INCHES OF VERTICAL CLEARANCE OR WHERE THE SEWER MAIN IS ABOVE THE WATER MAIN, THE SEWER MAIN SHALL BE ENCASED WITH CONCRETE, OR UPGRADED TO C-900 PVC PIPE FOR A MINIMUM LENGTH OF TWENTY (20) FEET, CENTERED ON THE POINT OF CROSSING. A MINIMUM HORIZONTAL SEPARATION OF SIX (6) FEET (SIDE TO SIDE) BETWEEN POTABLE WATER MAINS AND SEWER MAINS SHALL BE MAINTAINED WHEN AT ALL POSSIBLE. WHEN THE SIX (6) FOOT HORIZONTAL SEPARATION CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF AT LEAST 18" ABOVE THE SEWAGE MAIN. ALTERNATIVELY, THE SEWER MAIN SHALL BE ENCASED WITH CONCRETE OR ENCLOSED IN A WATER TIGHT CARRIER PIPE, OR UPGRADED TO PRESSURE RATED PVC PIPE (MEETING THE AWWA C-900 OR C-905 SPECIFICATION) AND PRESSURE TESTED. **SEE PIPE SEPARATION DETAIL (W-5) AND UTILITY PIPE ENCASEMENT DETAIL (W-9).
16. WATER MAINS ARE TO BE CONSTRUCTED A MINIMUM OF FOUR FEET MEASURED FROM THE OUTSIDE WALL OF THE WATER MAIN, BEHIND THE BACK OF CURB OR OUTSIDE OF THE EDGE OF ROADWAY PAVEMENT, WHICHEVER IS GREATER.
17. 3" METALIZED PIPE LOCATION TAPE SHALL BE LOCATED BETWEEN 15" AND 24" BELOW FINISHED GRADE OR AS SPECIFIED BY MANUFACTURER FOR ALL PVC LINES, AND UF#12 SINGLE STRAND INSULATED COPPER WIRE SHALL BE ATTACHED TO ALL PVC PIPE. UF#12 SINGLE STRAND INSULATED COPPER WIRE SHALL BE ATTACHED TO ALL PIPE. WIRE RUNS SHALL BE CONNECTED WITH SILICONE FILLED WIRE CONNECTORS. EACH RUN SHALL TERMINATED AT EVERY VALVE. SEE STANDARD DETAIL "MAIN VALVE BOX" FOR INSTALLATION OF WIRE ON RISER PIPE. SERVICES SHALL BE CONNECTED TO THE MAIN WIRE WITH WIRE FILLED CONNECTORS. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE CONTINUITY AND TEST FOR CONTINUITY (SEE CITY SPECIFICATIONS #15049 TRACER WIRE AND ALARMING TAPE).
18. SINGLE RESIDENTIAL WATER SERVICES SHALL BE A COPPER 1" MINIMUM, OR ENDOT, ENDOTRACE POLY-TUBE (MEETS THE SPECIFICATIONS OF NSF-14, AND AWWA C901.)
19. ALL WATER MAINS SHALL BE NSF-APPROVED FOR POTABLE WATER USE, AND SHALL HAVE A MINIMUM COVER OF 36 INCHES.
20. WATER MAINS SHALL BE DUCTILE IRON PIPE (D.I.P.), CLASS 350, CEMENT LINED UNLESS OTHER-WISE APPROVED BY THE CITY. ALL NON DUCTILE IRON PIPE HORIZONTAL DIRECTIONAL DRILL WATER MAINS SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT ON SITE CONDITIONS.
21. ALL POTABLE WATER MAINS SHALL USE A THRUST RESTRAINT JOINT METHOD IN COMPLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) GUIDELINES.
22. MEGALUGS, BOLTLESS RESTRAINED JOINTS, GRIPPER GASKETS, OR STAR GRIPS SHALL BE USED ON ALL RESTRAINED JOINT INSTALLATIONS. MINIMUM DEPTH OF BURY ON PIPES NOT MEETING REQUIRED COVER REQUIREMENTS SHALL FOLLOW THE MOST RECENT DIPRA THRUST RESTRAINT DESIGN GUIDELINES.
23. GRIPPER RING GASKETS SHALL BE USED AS APPROPRIATE FOR RESTRAINING PRESSURE PIPE TO FITTINGS, VALVES, ETC.
24. WATER VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACING OF 750 FEET. SPACING OF VALVES ON PRIMARY TRANSMISSION MAINS WILL BE DETERMINED BY THE CITY.
25. AT ALL WATER MAIN TEES AND VALVES SHALL BE INSTALLED ON ALL LEGS EXCEPT ONE.
26. APPROVED WATER VALVE TYPES ARE THE FOLLOWING:
    A. RESILIENT SEAT GATE VALVES (AWWA C-509)
    B. TAPPING VALVES WITH MECHANICAL TAPPING SLEEVE.
27. ALL WATER VALVES, INCLUDING CONCRETE COLLAR (WITH DEBRIS CAP), SHALL BE ADJUSTED TO FINISHED GRADE AND THE VALVE BOX LID, PRIMED PAINTED BLUE TO MAKE THEM PLAINLY VISIBLE.
28. UPON FINAL ACCEPTANCE OF NEW WATER SYSTEMS, WATER VALVES SHALL BE COMPLETELY OPENED BY PUBLIC UTILITIES PERSONNEL. AT NO TIME SHALL CONTRACTOR OPERATE ANY EXISTING VALVES WITHOUT A CITY INSPECTOR PRESENT.
29. ALL VALVES 2" AND SMALLER SHALL BE CURB STOPS. VALVES LARGER THAN 2" SHALL BE GATE VALVES.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 2 OF 4) W-2

FY: 17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 01/2014 | File Name: Water Notes W-2 | Page 6

## POTABLE WATER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

30. TYPICALLY, A MINIMUM OF ONE FIRE HYDRANT SHALL BE LOCATED AT EVERY INTERSECTION. OTHER FIRE HYDRANTS SHALL BE LOCATED SO AS TO PRODUCE A MAXIMUM 500 FOOT RADIUS OF COVERAGE. ALL FIRE HYDRANTS SHALL BE CONSTRUCTED TO MAKE THEM EASILY ACCESSIBLE TO FIRE PERSONNEL. THE PRIMARY HYDRANT PORT IS TO FACE THE STREET.
31. IN AREAS WHERE RECLAIMED WATER IS NOT AVAILABLE THE CONTRACTOR SHALL BE REQUIRED TO TRANSFER THE WATER FROM THE POTABLE WATER LINES WITH NECESSARY BACKFLOW PREVENTION DEVICES TO THE NON-POTABLE WATER LINES FOR UTILIZATION IN THEIR PRESSURE TEST.
32. THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL POTABLE MAINS 6" OR GREATER IN DIAMETER. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CONTRACTOR.
33. WITH RESPECT, TO FLUSHING, PIGGING, TESTING, AND TIE-IN CONNECTIONS, THE CITY RESERVES THE RIGHT TO REQUIRE WORK TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 6:00 A.M.) IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
34. THE CITY RESERVES THE RIGHT TO PERFORM THE SAMPLING AND ANALYSIS FOR BACTERIOLOGICAL CLEARANCE OF THE WATER MAIN. ANY RETESTING WILL BE AT THE CONTRACTORS EXPENSE.
35. POTABLE WATER SYSTEM EXTENSIONS MAY NOT BE USED PRIOR TO FINAL TESTING, UNTIL CLEARANCE IS ACCEPTED BY THE CITY OF DAYTONA BEACH AND THE VOLUSIA COUNTY HEALTH DEPARTMENT.
36. A BACK FLOW PREVENTER (BFP) SHALL BE PLACED ON ALL POTABLE AND FIRELINES SERVING COMMERCIAL PROPERTIES AND RESIDENTIAL WHERE ALTERNATIVE WATER IS AVAILABLE. THE TYPE OF BACKFLOW PREVENTERS REQUIRED ARE AS FOLLOWS:

    POTABLE WATER SERVICE; REDUCED PRESSURE ZONE BFP
    FIRELINE SERVICING A FIRE SPRINKLER SYSTEM AND/OR PRIVATE FIRE HYDRANT; DOUBLE CHECK VALVE SYSTEM
    FIRELINE; DOUBLE CHECK VALVE SYSTEM

    IN CASES WHERE A WATER LINE SERVES BOTH DOMESTIC AND FIRE SERVICES, A REDUCED PRESSURE ZONE BFP SHALL BE REQUIRED.
37. ALL JACK & BORES REQUIRED WITH COMMERCIAL DEVELOPMENTS SHALL BE AT THE SOLE COST OF THE OWNER \ DEVELOPER.
38. ALL C-900 PVC PIPE REQUIREMENTS ARE REFERENCED TO THE C-900-97 STANDARDS. DR UPGRADES FOR BURST PROTECTION MAY BE REQUIRED WHEN USING THE C-900-07 STANDARDS.
39. CHLORINATED WATER MUST BE DE-CHLORINATED PRIOR TO DISCHARGE INTO ANY JURISDICTIONAL WETLAND OR WATER BODY AS PER AWWA STANDARD, ANSI/AWWA C655-09.
40. TRACER WIRE WILL BE TESTED FOR CONTINUITY UNDER SUPERVISION BY CITY REPRESENTATIVE AFTER INSTALLATION.
41. ALL GASKETS SHALL BE LUBRICATED BEFORE BEING INSTALLED.
42. ALL FITTINGS SHALL MEET THE MINIMUM RESTRAINED REQUIREMENTS PER ANSI/AWWA/DIPRA, AND ALL PRESSURE PIPES UNDER THE RAODWAY SHALL BE RESTRAINED.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 3 OF 4) W-3

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 01/2014 | File Name: Water Notes W-3 | Page 7

## POTABLE WATER CONSTRUCTION & DESIGN STANDARDS

TESTING REQUIREMENTS:

1. ON ALL PROJECTS OTHER THAN THOSE INITIATED BY THE CITY THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY AT HIS OWN EXPENSE TO INSURE THAT COMPACTION OF ALL FILL MATERIAL IS COMPLETED PROPERLY. HOWEVER, ON ALL CITY PROJECTS THE TESTING WILL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. TESTS SHALL BE DONE ONE FOOT ABOVE THE PIPE AND THEN AT ONE FOOT VERTICAL INTERVALS UNTIL FINAL GRADE IS REACHED. INDENTIFICATION OF TEST LOCATIONS SHALL BE CLEARLY INDICATED ON TEST REPORTS. TEST RESULTS SHALL BE FORWARDED PROMPTLY TO THE CITY'S DESIGNATED SITE INSPECTOR.
2. ALL POTABLE WATER MAINS SHALL BE FLUSHED, DISINFECTED, PRESSURE TESTED AND BAC-TERIOLOGICALLY CLEARED FOR SERVICE WHEN APPROPRIATE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND THE FLORIDA DEPARTMENT OF ENVIROMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED INSPECTOR WHO SHALL COORDINATE WITH CITY PERSONNEL AT THE WATER TREATMENT PLANT AT LEAST 3 (THREE) BUSINESS DAYS PRIOR TO BEGINNING FLUSH OF THE MAINS PRIOR TO THE COMMENCEMENT OF PRESSURE TESTING. NO HOSE OR FIRE HYDRANT SHALL BE USED IN THE COLLECTION OF BACTERIOLOGICAL SAMPLES. THE SAMPLING TAP MUST BE DEDICATED AND CLEAN, AND DISINFECTED AND FLUSHED PRIOR TO SAMPLING. SAMPLING TAP SHALL BE SMOOTH, UNTHREADED 1/2" HOSE BIB. DISINFECTION & SAMPLING SHALL BE SCHEDULED AT THE CITY'S CONVENIENCE.
3. PRESSURE TEST FOR TAPPING SADDLES AND VALVES. (MINIMUM OF 30 MINUTES AT 150 PSI OR 30 MINUTES AT MANUFACTURERS LABILED TESTING PRESSURE).
4. WATERMAINS SHALL BE PRESSURE TESTED TO 150 PSI FOR 4 HOURS. TESTING SHALL BE IN ACCORDANCE WITH AWWA C-600 AND AWWA C-605 AS APPLICABLE, WITH ALLOWABLE LEAKAGE TO BE X GAL/HR PER X" DIA. OF PIPE, PER X' OF MAIN TO BE TESTED.

ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE * -GPH

| AVERAGE PRESSURE TEST | NOMINAL PIPE DIAMETER - INCHES | | | | | | | | | | | | | | | | | AVERAGE TEST PRESSURE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (PSI) | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 64 | (PSI) |
| 450 | 0.48 | 0.64 | 0.95 | 1.27 | 1.59 | 1.91 | 2.23 | 2.55 | 2.87 | 3.18 | 3.82 | 4.78 | 5.73 | 6.69 | 7.64 | 8.60 | 9.56 | 10.19 | 450 |
| 400 | 0.45 | 0.60 | 0.90 | 1.20 | 1.50 | 1.80 | 2.10 | 2.40 | 2.70 | 3.00 | 3.60 | 4.50 | 5.41 | 6.31 | 7.21 | 8.11 | 9.01 | 9.61 | 400 |
| 350 | 0.42 | 0.56 | 0.84 | 1.12 | 1.40 | 1.69 | 1.97 | 2.25 | 2.53 | 2.81 | 3.37 | 4.21 | 5.06 | 5.90 | 6.74 | 7.58 | 8.43 | 8.99 | 350 |
| 300 | 0.39 | 0.52 | 0.78 | 1.04 | 1.30 | 1.56 | 1.82 | 2.08 | 2.34 | 2.60 | 3.12 | 3.90 | 4.68 | 5.46 | 6.24 | 7.02 | 7.80 | 8.32 | 300 |
| 275 | 0.37 | 0.50 | 0.75 | 1.00 | 1.24 | 1.49 | 1.74 | 1.99 | 2.24 | 2.49 | 2.99 | 3.73 | 4.48 | 5.23 | 5.98 | 6.72 | 7.47 | 7.97 | 275 |
| 250 | 0.36 | 0.47 | 0.71 | 0.95 | 1.19 | 1.42 | 1.66 | 1.90 | 2.14 | 2.37 | 2.85 | 3.56 | 4.27 | 4.99 | 5.70 | 6.41 | 7.12 | 7.60 | 250 |
| 225 | 0.34 | 0.45 | 0.68 | 0.90 | 1.13 | 1.35 | 1.58 | 1.80 | 2.03 | 2.25 | 2.70 | 3.38 | 4.05 | 4.73 | 5.41 | 6.03 | 6.76 | 7.21 | 225 |
| 200 | 0.32 | 0.43 | 0.64 | 0.85 | 1.06 | 1.28 | 1.48 | 1.70 | 1.91 | 2.12 | 2.55 | 3.19 | 3.82 | 4.46 | 5.09 | 5.73 | 6.37 | 6.80 | 200 |
| 175 | 0.30 | 0.40 | 0.59 | 0.80 | 0.99 | 1.19 | 1.39 | 1.59 | 1.79 | 1.98 | 2.38 | 2.98 | 3.58 | 4.17 | 4.77 | 5.36 | 5.96 | 6.36 | 175 |
| 150 | 0.28 | 0.37 | 0.55 | 0.74 | 0.92 | 1.10 | 1.29 | 1.47 | 1.66 | 1.84 | 2.21 | 2.76 | 3.31 | 3.86 | 4.41 | 4.97 | 5.52 | 5.88 | 150 |
| 125 | 0.25 | 0.34 | 0.50 | 0.67 | 0.84 | 1.01 | 1.18 | 1.34 | 1.51 | 1.68 | 2.01 | 2.52 | 3.02 | 3.53 | 4.03 | 4.53 | 5.04 | 5.37 | 125 |
| 100 | 0.23 | 0.30 | 0.45 | 0.60 | 0.75 | 0.90 | 1.05 | 1.20 | 1.35 | 1.50 | 1.80 | 2.25 | 2.70 | 3.15 | 3.60 | 4.05 | 4.50 | 4.80 | 100 |

** IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE.*

WHERE:

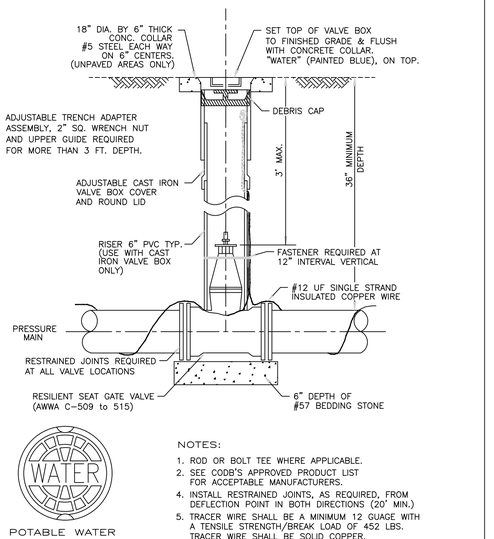
$$L = \frac{SD\sqrt{P}}{133{,}200}$$

L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR
S = LENGTH OF PIPE TESTED, IN FEET
D = NOMINAL DIAMETER OF PIPE, IN INCHES
P = AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH (GAUGE)

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 4 OF 4) W-4

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 12/13 | File Name: Water Notes W-4 | Page 8




POTABLE WATER COVER

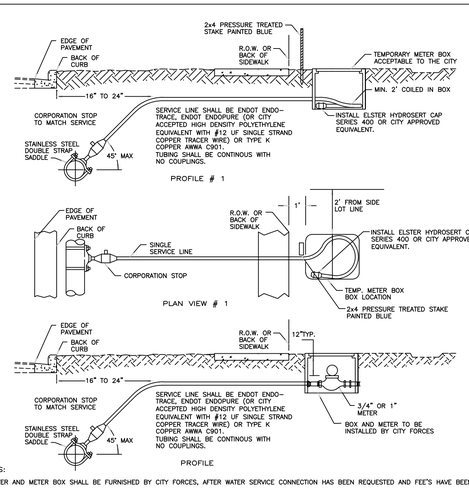
NOTES:

1. ROD OR BOLT TEE WHERE APPLICABLE.
2. SEE CODB'S APPROVED PRODUCT LIST FOR ACCEPTABLE MANUFACTURERS.
4. INSTALL RESTRAINED JOINTS, AS REQUIRED, FROM DEFLECTION POINT IN BOTH DIRECTIONS (20' MIN.)
5. TRACER WIRE SHALL BE A MINIMUM 12 GUAGE WITH A TENSILE STRENGTH/BREAK LOAD OF 452 LBS. TRACER WIRE SHALL BE SOLID COPPER.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

WATER VALVE AND VALVE BOX DETAIL W-16

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 04/17 | File Name: Water Valve W-16 | Page 20



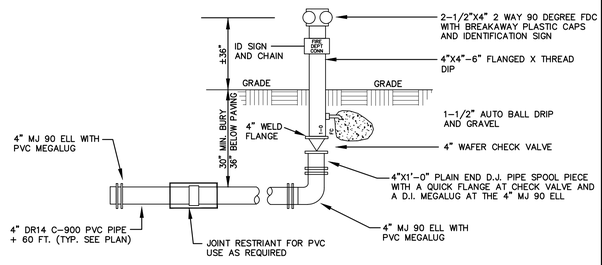

NOTES:

1. METER AND METER BOX SHALL BE FURNISHED BY CITY FORCES, AFTER WATER SERVICE CONNECTION HAS BEEN REQUESTED AND FEE'S HAVE BEEN PAID.
2. METER SHALL BE INSTALLED BEHIND SIDEWALK OR R.O.W. AS SHOWN.
3. BACKFLOW PREVENTION DEVICES (REDUCED PRESSURE ZONE) MAY BE REQUIRED ON WATER CONNECTIONS. THEY ARE TO BE SUPPLIED AND INSTALLED BY THE DEVELOPER/BUILDER, AT NO COST TO THE CITY. TO BE INSTALLED ON THE CUSTOMER'S SIDE OF THE METER.
4. IRRIGATION METERS REQUIRE AN APPROVED BACKFLOW PREVENTER.
5. ACCEPTABLE MANUFACTURERS: SEE CODB'S APPROVED PRODUCT LIST.
6. SERVICE SADDLES SHALL BE STAINLESS STEEL STRAPS-EPOXY COATED. ACCEPTABLE MANUFACTURERS INCLUDE: SMITH BLAIR (ROCKWELL), JCM, FORD OR APPROVED EQUAL.
7. ALL METER LOCATIONS ON COMMERICAL SITES SHALL BE LOCATED AS SHOWN ON THE CITY APPROVED SITE PLAN AND FIELD VERIFIED HORIZONTALLY & VERTICALLY BY THE OWNER OR OWNER'S REPRESENTATIVE.
8. CONTRACTOR IS TO SUPPLY METER BOXES AS SHOWN IN PROFILE #1 AND PLAN VIEW #1 WHEN BUILDING A SUBDIVISION TYPE DEVELOPMENT. WHERE THERE WILL BE A SERVICE OR SERVICES THAT WILL NOT REQUIRE A WATER CONNECTION AS SOON AS THE WATER LINE HAS BEEN INSTALLED, PRESSURED TESTED, CHLORINATED AND CLEARED FOR USE.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

WATER SERVICE CONNECTION (PAGE 1 OF 2) W-21

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 12/13 | File Name: Service Connect W-21 | Page 25




FREE STANDING FIRE DEPARTMENT CONNECTION DETAIL

N.T.S.

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |


PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910


BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

WATER DISTRIBUTION SYSTEM DETAILS

DEV 2018-
CITY APPROVAL STAMP

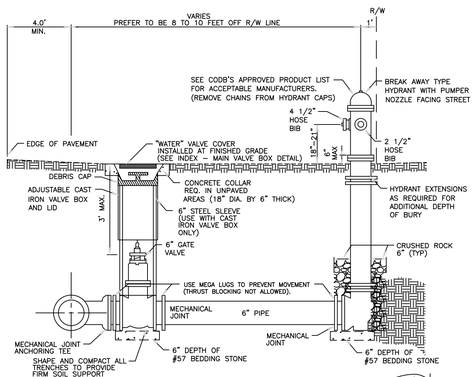
43
SHEET NO.

Drawn By: M. GRECO

Date: 08/30/18

SCALE: 1"=1'

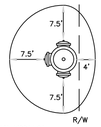
W:\BEACH STREET ORANGE TO BAY\Water Standard Details.dwg, Model, 10/8/2018 4:18:17 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1




NOTES:

1. HYDRANTS SHALL BE OF THE SELF DRAINING TYPE.
2. HYDRANTS ARE TO BE SUPPLIED FROM THE MANUFACTURER WITH A SILVER PRIMER.
3. HOSE BIBS TO BE AMERICAN STANDARD THREADS.
4. RESTRAINED JOINTS REQUIRED. THRUST BLOCKS ARE NOT PERMITTED.
5. ADJUSTABLE TRENCH ADAPTOR ASSY. REQUIRED FOR ALL VALVES GREATER THAN 3' DEEP.
6. INSTALL AT SIDE LOT LINES OR AT CORNERS OF ROADWAY RIGHT-OF-WAY INTERSECTIONS (TYPICAL).
7. INSTALL AT 500' RADIUS OF COVERAGE.
8. REFLECTIVE PAVEMENT MARKER INSTALLED 3' INTO PAVEMENT (TYPICAL).
9. FIRE HYDRANT TESTING SHALL BE FLOWED THRU THE 2 1/2" OPENINGS. TEST RESULTS SHALL BE ACTUAL, NOT ESTIMATED. FLOW TESTING SHALL BE SUBMITTED TO THE CITY AS LISTED.
   ACTUAL GPM ____
   STATIC ____ PSI
   RESIDUAL ____ PSI
   THE CITY WILL DETERMINE THE COLOR OF THE BONNET.
10. FIRE HYDRANT BODY SHALL BE PAINTED COLOR 151 OSHA YELLOW PRIOR TO ACCEPTANCE BY THE CITY.

REFLECTIVE PAVEMENT MARKER




MIN. HORIZONTAL CLEARANCE REQUIRED

PLAN VIEW OF HYDRANT LOCATION

| | |
|---|---|
| RED BONNET = | 499 GPM OR LESS |
| ORANGE BONNET = | 500 - 999 GPM |
| GREEN BONNET = | 1000 - 1499 GPM |
| BLUE BONNET = | 1500 GPM OR MORE |

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

FIRE HYDRANT ASSEMBLY DETAIL
W-19

FY-17/18
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 03/17
File Name: Fire Hydrant Assem W-19
Page 23

| SCHEDULE OF LENGTHS OF RESTRAINED DIP (FT.) | | | | | |
|---|---|---|---|---|---|
| FITTING | 90° BEND | 45° BEND | 22.5° BEND | 11.25° BEND | TEE OR DEAD END |
| PIPE SIZE (IN.) : | | | | | |
| 4" | 21 (26) | 18 (18) | 18 (18) | 18 (18) | 37 (55) |
| 6" | 30 (36) | 18 (18) | 18 (18) | 18 (18) | 52 (78) |
| 8" | 38 (45) | 18 (18) | 18 (18) | 18 (18) | 67 (100) |
| 10" | 45 (54) | 18 (22) | 18 (18) | 18 (18) | 81 (122) |
| 12" | 52 (63) | 22 (26) | 18 (18) | 18 (18) | 94 (141) |
| 14" | 60 (72) | 25 (30) | 18 (18) | 18 (18) | 107 (160) |
| 16" | 66 (80) | 27 (33) | 18 (18) | 18 (18) | 120 (180) |
| 18" | 74 (87) | 31 (36) | 18 (18) | 18 (18) | 132 (198) |
| 20" | 80 (94) | 33 (39) | 18 (18) | 18 (18) | 144 (216) |
| 24" | 92 (108) | 38 (45) | 18 (22) | 18 (18) | 167 (250) |
| 30" | 106 (128) | 44 (53) | 21 (25) | 18 (18) | 199 (298) |
| 36" * | 69 (82) | 28 (34) | 18 (18) | 18 (18) | 170 (204) |
| 42" * | 76 (92) | 31 (37) | 18 (18) | 18 (18) | 191 (229) |
| 48" * | 90 (106) | 40 (46) | 18 (18) | 18 (18) | 212 (254) |

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.

TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FROM WHICH RESTRAINT IS REQUIRED.

TABLE APPLIES TO DUCTILE IRON PIPE FOR THE FOLLOWING CONDITIONS:

TEST PRESSURE: 150 PSIG
SOIL TYPE: SP
COVER DEPTH: 3 FEET (MIN.)
SAFETY FACTOR: 1.5
TRENCH TYPE: 2

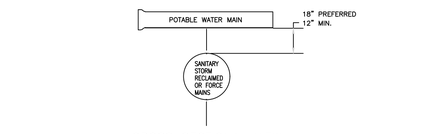
VALUES IN PARENTHESIS (X) ARE FOR PIPE ENCASED IN POLYETHYLENE.

* VALUES APPLY TO DUCTILE IRON PIPE AT 50 PSI TEST PRESSURE.

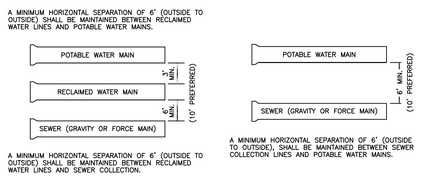
THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

DIP RESTRAINED JOINT TABLE
W-10

FY: 17/18
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date:
File Name: Restrained Joint W-10
Page 14




CROSS SECTIONAL VIEW




PLAN VIEW

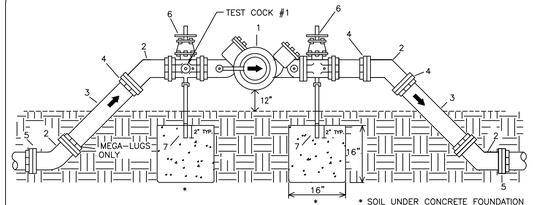
NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM HORIZONTAL DISTANCE OF SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST TWELVE INCHES, AND PREFERABLY EIGHTEEN INCHES, ABOVE OR AT LEAST TWELVE INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE POTABLE WATER MAIN ABOVE THE OTHER PIPELINE. NEW OR RELOCATED UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE AND CONDUIT. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610 F.A.C.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

PIPE SEPARATION DETAIL
W-7

FY: 17/18
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 12/12
File Name: Pipe Separation W-7
Page 11




NTS

| MATERIALS | | |
|---|---|---|
| ITEM | QUANT. | DESCRIPTION |
| 1 | 1 | VALVE, REDUCED PRESSURE PRINCIPLE |
| 2 | 4 | ELBOW -45° |
| 3 | 2 | D.I.P. RISER PIPE |
| 4 | 3 | ADAPTER FLANGE D.I.P. |
| 5 | 2 | ADAPTER FLANGE D.I.P. |
| 6 | 2 | VALVE, GATE, C.I., F-F |
| 7 | SEE NOTES | |

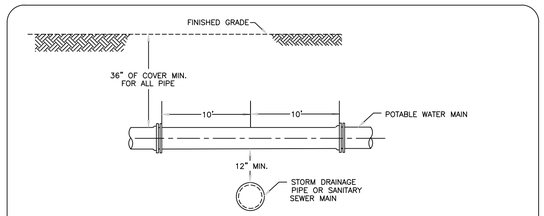
NOTES:

1. ACCEPTABLE MANUFACTURERS: (SEE CODB'S ACCEPTABLE PRODUCT LIST)
2. FIELD ADJUST AND CUT ITEM 3 & ITEM 7 (PIPE SUPPORT) TO THE PROPER LENGTH.
3. THE RISER & ELBOW TO BE PAINTED 136 OSHA RED FOR COMMERCIAL FIRE SERVICE, 137 OSHA BLUE FOR COMMERCIAL DOMESTIC SERVICE.
4. 2" GALV. IRON PIPE/CONCRETE FOUNDATION (16"x16"x16" MIN.)
5. TEST PORTS (QUANTITY/LOCATIONS DEPENDING ON MANUFACTURER)

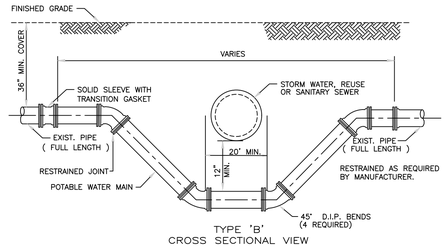
THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

REDUCED PRESSURE ZONE BACKFLOW PREVENTER, SINGLE SERVICE, 6" or 8" (PAGE 3 OF 3)
W-29

FY-17/18
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date:
File Name: Backflow Preventer Large W-29
Page 33




TYPE 'A'
CROSS SECTIONAL VIEW




TYPE 'B'
CROSS SECTIONAL VIEW

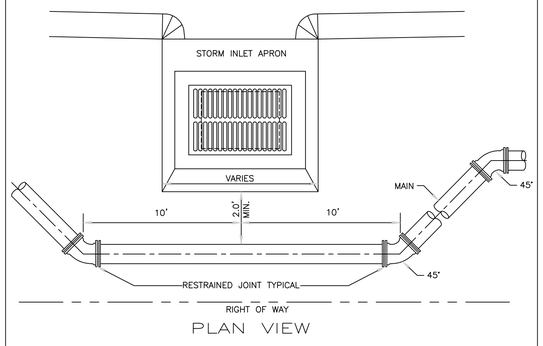
NOTES:

1. TYPE "A" CROSSING SHALL BE THE PREFERRED CONFIGURATION. TYPE "B" MAY BE USED ONLY UPON SPECIFIC APPROVAL.
2. CONCRETE ENCASEMENT OF A SANITARY SEWER MAIN IS AN ALTERNATIVE METHOD OF ADDRESSING A CONFLICT WHEN 12" VERTICAL SEPARATION DISTANCE CANNOT BE MAINTAINED. IN SUCH INSTANCES, THE MINIMUM PIPE VERTICAL SEPARATION SHALL BE 9". (NOTE THAT THIS DOES NOT APPLY TO SERVICE LATERALS. SEE STANDARD DETAILS S-3A AND S-3B).
3. LOWERING OF EXISTING WATER MAIN & FORCE MAIN BY DEFLECTION METHOD MAY BE ACCEPTABLE IF EXISTING FIELD CONDITIONS PERMIT AND APPROVAL IS RECEIVED FROM CODB.
4. LENGTH OF SECTION BASED ON MINIMUM LENGTH AS DETERMINED BY DIPRA RESTRAINED JOINT MANUAL.
5. INSTALL RESTRAINED JOINTS, AS REQUIRED, FROM DEFLECTION POINT IN BOTH DIRECTIONS (20' MIN.).

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

TYPICAL PIPE CROSSING DETAIL
W-8

FY-17/18
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 12/12
File Name: Pipe Crossing W-8
Page 12




PLAN VIEW

NTS

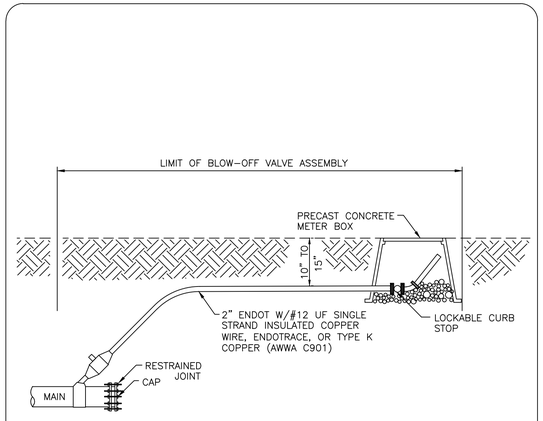
NOTES:

1. MAIN MAY PASS OVER STORM LINE IF 36" OF COVER IS PROVIDED OVER WATER MAIN.
2. PIPE MAY BE DEFLECTED AROUND DRAINAGE INLET IN ACCORDANCE WITH THE RESTRAINED JOINT GUIDELINES OF THE DIPRA.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

WATERMAIN INSTALLATION BETWEEN STORM INLET AND R.O.W. DETAIL
W-13

FY-17/18
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date:12/12
File Name: Watermain by Storm Inlet W-13
Page 17



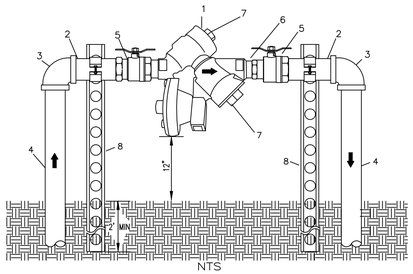

NOTE: INSTALL RESTRAINED JOINTS ON MAIN FOR MINIMUM OF 20' IN EACH DIRECTION FROM THE CORPORATION STOP.

1. ALL TEMPORARY BLOW-OFFS INSTALLED FOR SAMPLING PURPOSES MUST BE REMOVED BY CONTRACTOR.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

STANDARD 2" BLOW-OFF VALVE ASSEMBLY DETAIL
W-31

FY-17/18
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 12/12
File Name: 2 Inch Blow Off Valve W-31
Page 35




NTS

| MATERIALS | | |
|---|---|---|
| ITEM | QUANT. | DESCRIPTION |
| 1 | 1 | BACKFLOW PREVENTER ASSEMBLY |
| 2 | 2 | NOM. NIPPLES - BRASS |
| 3 | 2 | 90° ELBOWS - GALV. OR PVC (SCH 80) |
| 4 | 2 | VARIES RISER - GALV. |
| 5 | 2 | BALL VALVE |
| 6 | 1 | UNION |
| 7 | * | TEST PORTS (SEE NOTES) |
| 8 | 2 | SS BRACKETS W/SS CLAMPS |

NOTES:

1. ACCEPTABLE MANUFACTURERS: (SEE CODB'S ACCEPTABLE PRODUCT LIST)
2. FIELD ADJUST AND CUT ITEM 4 TO THE PROPER LENGTH.
3. THE RISER & ELBOW TO BE PAINTED 136 OSHA RED FOR COMMERCIAL FIRE SERVICE, 137 OSHA BLUE FOR COMMERCIAL DOMESTIC SERVICE.
4. TEST PORTS (QUANTITY/LOCATIONS DEPENDING ON MANUFACTURER)
5. PVC PIPE REQUIRES SS BRACKETS W/SS CLAMPS

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

REDUCED PRESSURE ZONE BACKFLOW PREVENTER, SINGLE SERVICE 3/4",1",1-1/2" or 2" (PAGE 1 OF 3)
W-27

FY-17/18
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 07/10
File Name: Backflow Preventer Small W-27
Page 31

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE * HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|

BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

WATER DISTRIBUTION SYSTEM DETAILS

DEV 2018-
CITY APPROVAL STAMP

44
SHEET NO.

Drawn By: M. GRECO
Date: 08/30/18
SCALE: 1"=1'

W:\BEACH STREET ORANGE TO BAY\Water Standard Details.dwg, Model 10/8/2018 4:18:39 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1

## SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS

1. THE CITY'S UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 2 BUSINESS DAYS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS) PRIOR TO BEGINNING ANY SANITARY SEWER CONSTRUCTION.
2. ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS PER ARTICLE 7 SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, OR IN ANY CONSTRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAINTENANCE TO BE DONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS MAY BE FOUND AT http://www.codb.us/index.aspx?NID=262. FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BASIN STREET SUITE 100, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
3. UPON COMPLETION, THE CONTRACTOR SHALL PROVIDE THE CITY UTILITIES DEPARTMENT WITH A CCTV INSPECTION LOG ON DVD AND A PRINTED REPORT FOR ALL GRAVITY MAINS AND LATERALS CONSTRUCTED. ALL WORK, WITH THE EXCEPTION OF FINAL GRADE ADJUSTMENT TO THE MANHOLES, SHALL BE COMPLETED PRIOR TO COMMENCING THE CCTV INSPECTION. THE CONTRACTOR SHALL COORDINATE THE CCTV INSPECTION TIME WITH THE CITY UTILITY INSPECTOR PRIOR TO INITIATING THE WORK. FINAL PAVING SHALL NOT COMMENCE UNTIL APPROVAL HAS BEEN RECEIVED FROM THE CITY UTILITY INSPECTOR.
4. SEWER LATERALS LOCATIONS SHALL BE MARKED ALONG THE OUTSIDE OF THE CURB WITH A SAW CUT "V", OR BY A METAL TAB SET INTO THE PAVEMENT.
5. THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL FORCE MAINS EQUAL TO OR GREATER THAN 6" IN DIAMETER AND PRIMARY TRANSMISSION MAINS LOCATED ON COLLECTOR AND ARTERIAL ROADWAYS. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CITY.
6. WITH RESPECT TO TIE-IN CONNECTIONS AND CORING OPERATIONS, THE CITY RESERVES THE RIGHT TO REQUIRE CONNECTIONS TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 6:00 A.M.) IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
7. ALL WORK PERFORMED UPON SANITARY SEWER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY SHALL BE CONSTRUCTED BY A LICENSED UNDERGROUND UTILITY CONTRACTOR OR LICENSED GENERAL CONTRACTOR, WHO IS LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
8. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND AS-BUILTS ARE PROVIDED TO THE CITY'S UTILITIES DEPARTMENT PRIOR TO ANY USE OF THE SYSTEM.
9. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION THE LOCATION OF ALL FORCE MAINS, VALVES, MANHOLES & LATERALS FROM THE BASELINE CONSTRUCTION AND FROM RIGHT-OF-WAY LINE.
10. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE DESIGN LOCATION OF PLANTINGS RELATIVE TO THE LOCATION OF PUBLIC UTILITIES AND STORM WATER INFRASTRUCTURE IN ORDER TO EVALUATE POTENTIAL CONFLICTS.
11. ALL SANITARY STANDARD DETAILS SHALL APPLY TO ALL CONSTRUCTION WORK PERFORMED IN THE CITY OF DAYTONA BEACH BY REFERENCE IN THESE NOTES (S-1 TO S-16).
12. ALL VALVES SHALL BE IDENTIFIED AS SUCH WITH AN ENGRAVED BRASS 2" x 6" NAME PLATE EMBEDDED IN SURFACE OF CONCRETE COLLAR WITH SIZE, TYPE AND NUMBER OF TURNS.
13. FOR AS-BUILTS INFORMATION SEE THE CITY'S AS-BUILT DRAWING REQUIREMENTS ATTACHED TO THE BACK OF THE UTILITIES DEPARTMENT'S STANDARD DETAILS.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT — SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (PAGE 1 OF 4) S-1

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 08/29/2017 | File Name:Sanitary Sewer Notes P1 | Page 71

## SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

14. ALL LIFT STATION WETWELL FASTENERS AND THROUGH-TOP CONNECTORS THAT CONTACT THE WETWELL (SUCH AS NIPPLES) SHALL BE 316 SS FASTENERS.
15. ALL GRAVITY SANITARY SEWER MAIN LINES SHALL BE 8" DIAMETER MINIMUM. COMMERCIAL SERVICE LATERALS ALL SHALL BE GREEN 6" DIA. OR LARGER. ALL SINGLE FAMILY RESIDENTIAL SERVICE LATERALS SHALL BE 6" – SINGLE SERVICES WITH CLEAN OUTS INSTALLED AT PROPERTY LINE.
16. ALL GRAVITY SANITARY SEWER MAIN LINES SHALL BE GREEN PVC SDR-26, ASTM D-3034, OR C-900 DR-25 MINIMUM PRESSURE CLASS 100. IN PLACES WHERE A MINIMUM COVER OF 4.0' CANNOT BE MAINTAINED OR IN DEPTHS OF TEN (10) FEET OR GREATER C-900 OR C-905 GREEN PVC DR-25, MINIMUM PRESSURE CLASS 100 SHALL BE USED.
17. FOR SINGLE FAMILY HOMES, SINGLE SIX INCH SEWER SERVICES LATERALS SHALL BE CONSTRUCTED AT EACH LOT OR UNIT AND LOCATED ON THE DOWNSTREAM SIDE OF THE LOT CENTER LINE. THESE SERVICES SHALL BE EXTENDED 4 FEET ABOVE GROUND AT THE PROPERTY LINE WITH A PVC RISER AND PLUG BEING EASILY VISIBLE FROM THE ROAD. RUBBER SEAL FITTINGS SHALL BE USED ON ALL LINES. NO GLUED JOINTS ARE PERMITTED ON LATERALS.
18. FOR MULTI-FAMILY AND COMMERCIAL SITES, SIX INCH MINIMUM SEWER SERVICES AND CLEANOUTS SHALL BE PROVIDED AS APPROVED BY THE CITY.
19. ALL SANITARY SEWER FORCE MAINS, INCLUDING FITTINGS, SHALL BE DUCTILE IRON PIPE (D.I.P.), EPOXY LINED, CLASS 350. FORCE MAIN MINIMUM DEPTH OF COVER SHALL BE 36". ALL FORCE MAINS SHALL BE DISTINCTLY MARKED BY A GREEN STRIPE OR COLORED GREEN. ALL NON DIP HORIZONTAL DIRECTIONAL DRILL FORCE MAINS SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT ON SITE CONDITIONS.
20. ALL SANITARY SEWER FORCE MAINS SHALL USE A THRUST RESTRAINT JOINT METHOD IN COMPLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION GUIDELINES. IN NO INSTANCE SHALL THRUST BLOCKS BE PERMITTED.
21. AS A GENERAL RULE, THE NUMBER OF JOINTS SHALL BE LIMITED WHENEVER POSSIBLE. IN SPECIAL CASES WHERE A POINT REPAIR TO AN 8" TO 12" PVC SEWER MAIN IS REQUIRED, THE PROPER RIGID WRAP AROUND SLEEVE MAY BE ALLOWED BY SPECIAL APPROVAL BY THE CITY.
22. ALL IN-LINE SANITARY SEWER FORCE MAIN VALVES SHALL BE PLUG VALVES UNLESS OTHERWISE NOTED. VALVES SHALL BE SPACED A MAXIMUM OF 1000 FEET APART
23. ALL C-900 PVC PIPE REQUIREMENTS ARE REFERENCED TO THE C-900-97 STANDARDS. DR UPGRADES FOR BURST PROTECTION MAY BE REQUESTED WHEN USING THE C-900-07 STANDARDS.
24. MINIMUM GRAVITY SANITARY SEWER SLOPES ARE AS FOLLOWS:
    - 8" PIPE 0.40%
    - 10" PIPE 0.28%
    - 12" PIPE 0.22%
    - 15" PIPE 0.15%
    - OR OTHERWISE NOTED BY THE UTILITIES DEPARTMENT.
25. GRAVITY SANITARY SEWER LINES SHALL BE INSTALLED WHENEVER POSSIBLE UNDER PAVED AREAS WITHIN PUBLIC RIGHT-OF-WAYS. UTILITY EASEMENTS SHALL BE PROVIDED WHEN-EVER PUBLICLY-OWNED SEWER LINES ARE CONSTRUCTED OUTSIDE OF A PUBLIC RIGHT-OF-WAY.
26. GRAVITY SANITARY SEWER LINE CONSTRUCTION SHALL BE ACCOMPLISHED BY THE USE OF A LASER INSTRUMENT UNLESS ANOTHER METHOD IS PREVIOUSLY APPROVED BY THE CITY.
27. THE CONTRACTOR SHALL AT ALL TIMES, DURING PIPE LAYING OPERATIONS, DEWATER THE GROUND SUFFICIENTLY TO KEEP THE GROUNDWATER ELEVATION A MINIMUM OF 6" BELOW THE PIPE BEING LAID WITHIN THE AREA OF THE TRENCH.
28. ALL PIPES SHALL BE LAID ON A FIRM FOUNDATION. SOFT OR SPONGY BEDDING FOR PIPES IS NOT ACCEPTABLE. ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH A DRY, COMPACTED, GRANULAR MATERIAL SATISFACTORY TO THE CITY.
29. ON ALL EXCAVATION AND BACKFILLING THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING AND BRACING IN ORDER TO PROVIDE FOR THE SAFETY OF WORKERS, AS WELL AS REPRESENTATIVES OF THE CITY, THE DESIGN ENGINEER, AND THE DEVELOPER.
30. ALL TRENCHES SHALL BE BACKFILLED WITH ACCEPTABLE MATERIAL AND COMPACTED TO THE SPECIFIED MINIMUM COMPACTION (95% IN UNPAVED AREAS AND 98% IN PAVED AREAS) OF THE OPTIMUM DENSITY OF THAT MATERIAL BASED ON THE AASHTO T-180 MODIFIED PROCTOR TEST.
31. ALL GASKETS SHALL BE LUBRICATED BEFORE BEING INSTALLED.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT — SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (PAGE 2 OF 4) S-2

FY: 17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 08/29/2017 | File Name:Sanitary Sewer Notes P2 | Page 72

## SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

32. THE CONTRACTOR SHALL INSTALL A #12-GAUGE MINIMUM COPPER TRACER WIRE TAPED TO THE TOP OF THE PIPE AT INTERVALS NO GREATER THEN 4-FEET. COPPER WIRE SHALL HAVE A MIN. TENSILE STRENGH/BREAK LOAD OF 452 LBS. AND APPROVED BY THE CITY FOR THE FULL LENGTH OF ALL SEWER FORCE MAINS. THIS PIPE LOCATOR ALARM TAPE SHALL BE INSTALLED BETWEEN 18" AND 24" BELOW FINISHED GRADE OR AS DIRECTED BY THE MANUFACTURER. TAPE SHALL BE COLOR CODED GREEN FOR SANITARY SEWER AND FORCE MAIN. LOCATER WIRE/DEVICE SHALL TERMINATE AT A LOCATION AND IN A MANNER CONVENIENT FOR CITY LOCATER STAFF.
33. ALL SEWER LINES WHICH ARE CONSTRUCTED OUTSIDE OF PUBLIC RIGHT-OF-WAYS WITHIN SIDE YARDS, BACKYARDS, AND OTHER POORLY ACCESSIBLE AREAS SHALL BE CONSTRUCTED OF GREEN C-900 PVC. ABSOLUTELY NO USE OF PLASTIC STYRENE FITTINGS SHALL BE ALLOWED.
34. ALL LOCAL COLLECTION SANITARY SEWER MANHOLES SHALL BE PRECAST WITH A MINIMUM INSIDE DIAMETER OF 4 FEET. MANHOLES OVER 6 FEET IN DEPTH SHALL HAVE THE BOTTOM PRE-CAST SECTION AT A MINIMUM OF FOUR FEET TALL.
35. STANDARD MANHOLES SHALL BE LOCATED AT INTERVALS NOT EXCEEDING 400 FEET.
36. ALL SEWER FITTINGS TO BE "HARCO" OR APPROVED EQUAL.
37. MANHOLE RIMS SHALL MATCH FLUSH WITH THE FINISH GRADE ELEVATION IN PAVED AREAS AND A MINIMUM OF 0.5 FEET AND MAXIMUM OF 1.0 FEET ABOVE GRADE GENERALLY IN UNPAVED AREAS.
38. THE CONTRACTOR SHALL CONSTRUCT SANITARY SEWER MANHOLES IN SUCH A WAY THAT SEWER LINES DO NOT INTERSECT SEALED JOINTS BETWEEN SECTIONS OF THE MANHOLE.
39. RUBBER BOOTS AND STAINLESS STEEL BANDS SHALL BE UTILIZED IN THE CONNECTION OF THE SEWER MAIN TO THE MANHOLES (SEE STANDARD MANHOLE AND BOOT DETAIL).
40. INDIVIDUAL SANITARY SERVICE CONNECTORS ON NEW CONSTRUCTION SHALL NOT BE CONNECTED DIRECTLY INTO MANHOLES, AND MUST BE CONNECTED TO SEWER MAIN LINES BY USE OF WYE CONNECTIONS, UNLESS OTHERWISE APPROVED BY THE CITY.
41. SANITARY SEWER DROP MANHOLES SHALL ONLY BE USED UNDER SPECIAL CONDITIONS AS APPROVED BY THE CITY. DROPS LESS THAN 3.0' SHALL NOT BE ALLOWED.
42. ALL SANITARY SEWER MANHOLE COVERS SHALL HAVE THE WORD "SANITARY" CAST INTO THEM AS SHOWN ON DETAIL S-9.
43. SANITARY SEWER MANHOLES WHICH HAVE SEWER FORCE MAINS DISCHARGING DIRECTLY INTO THEM SHALL BE FIBERGLASS OR POLY-ETHYLENE LINED. RETRO-FITTING OF MANHOLES WITH LINERS SHALL BE REQUIRED WHEN NEW CONNECTIONS SUCH AS THIS ARE MADE. FIBERGLASS SHALL BE A MINIMUM 1/2" THICKNESS UNLESS APPROVED OTHERWISE BY THE CITY. OTHER TYPES OF LINING METHODS AND MATERIALS MAY BE CONSIDERED ON A CASE BY CASE BASIS. UNDER SPECIAL CIRCUMSTANCES WHERE HYDROGEN SULFIDE IS A MAJOR CONCERN MANHOLES UPSTREAM AND/OR DOWNSTREAM OF THE FORCE MAIN TIE-IN OR WET WELL MAY ALSO BE REQUIRED TO HAVE LININGS INSTALLED.
44. EZ-WRAP PLASTIC, AS MANUFACTURED BY PRESS SEAL GASKET CORPORATION, SHALL BE USED ON THE OUTSIDE OF ALL MANHOLE AND WETWELL JOINTS. APPLY ONE LAYER OF 9" WRAP CENTERED ON EACH JOINT. A CITY INSPECTOR SHALL PERSONALLY INSPECT ALL JOINT SEALS PRIOR TO BACKFILLING OPERATIONS.
45. ANY NEW OR EXISTING ESTABLISHMENT WITH THE POTENTIAL TO DISCHARGE INDUSTRIAL OR COMMERCIAL WASTES INTO THE SEWER SYSTEM SHALL CONSTRUCT AND MAINTAIN AT HIS EXPENSE A SUITABLE CONTROL MANHOLE, OR MANHOLES, DOWNSTREAM FROM ANY TREATMENT, STORAGE, OR OTHER APPROVED WORKS, PRIOR TO THE CITY'S COLLECTION SYSTEM TO FACILITATE OBSERVATION, MEASUREMENT, AND SAMPLING OF ALL WASTES, INCLUDING ALL DOMESTIC SEWAGE FROM THE ESTABLISHMENT.
46. THE CONTROL MANHOLE OR MANHOLES SHALL BE CONSTRUCTED AT SUITABLE AND SATISFACTORY LOCATIONS MAKING THE MANHOLE ACCESSIBLE TO CITY PERSONNEL AT ALL TIMES FOR SAMPLING.
47. SANITARY SEWER LIFT STATIONS AND FORCE MAINS SIZE, MATERIAL, AND DESIGNS SHALL BE APPROVED BY THE CITY. LIFT STATIONS SHALL BE CONSTRUCTED WITH A MINIMUM WET WELL AS PER THE LIFT STATION DETAIL. A MINIMUM OF 6 FEET SHALL BE MAINTAINED BETWEEN LOWEST INFLUENT INVERT AND WETWELL FLOOR.
48. IT SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO PREPARE AND SUBMIT FLOTATION CALCULATIONS TO SIZE THE BASE OF THE WET WELL AND ANY MANHOLES AS DEEMED NECESSARY BY THE CITY.
49. TRACER WIRE SHALL BE TESTED FOR CONTINUITY UNDER SUPERVISION BY CITY REPRESENTATIVE AFTER INSTALLATION.
50. ALL FITTINGS SHALL MEET THE MINIMUM RESTRAINED REQUIREMENTS PER ANSI/AWWA/DIPRA, AND ALL PRESSURE PIPES UNDER THE ROADWAY SHALL BE RESTRAINED.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT — SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (CONT'D) (PAGE 3 OF 4) S-3

FY-- 17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 8/29/2017 | File Name:Sanitary Sewer Notes P3 | Page 73

## SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS

### TESTING REQUIREMENTS:

1. THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY AT HIS OWN EXPENSE TO INSURE THAT COMPACTION OF ALL FILL MATERIAL IS COMPLETED PROPERLY. TESTS SHALL BE DONE ONE FOOT ABOVE THE PIPE AND THEN AT ONE FOOT VERTICAL INTERVALS UNTIL FINAL GRADE IS REACHED. TESTING SHALL BE COMPLETED AND TEST DOCUMENTS SUBMITTED TO THE CITY AT A MINIMUM FREQUENCY OF ONE SET OF TESTS PER EACH 300 FOOT OF PIPING AND ONE ADDITIONAL SET OF TESTS AT EVERY MANHOLE. IDENTIFICATION OF TEST LOCATIONS SHALL BE CLEARLY INDICATED ON TEST REPORTS. TEST RESULTS SHALL BE FORWARDED PROMPTLY TO THE CITY'S DESIGNATED SITE INSPECTOR.
2. ALL TESTING REQUIRED BY THE CITY SHALL BE PAID FOR BY THE CONTRACTOR / DEVELOPER.
3. THE CITY OF DAYTONA BEACH RESERVES THE RIGHT TO REQUIRE THE DEVELOPER TO PERFORM VACUUM TESTING OF ALL SANITARY MANHOLES AND TO AIR TEST SEWER MAINS.
4. ALL PROPOSED SEWER FORCE MAINS SHALL BE FLUSHED, PRESSURE TESTED AND CLEARED FOR SERVICE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF ENVIROMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED SITE INSPECTOR WHO SHALL COORDINATE WITH CITY PERSONNEL AT THE WASTEWATER TREATMENT PLANT AT LEAST (3) THREE BUSINESS DAYS PRIOR TO BEGINNING A FULL-DIAMETER FLUSH OF THE MAINS PRIOR TO THE COMMENCEMENT OF PRESSURE TESTING. (SUBJECT TO AVAILABILITY).
5. SANITARY SEWER FORCE MAINS SHALL BE PRESSURE TESTED TO 100 PSI FOR 2 HOURS. WITH ALLOWABLE LEAKAGE TO BE X GAL/HR PER X" DIA. OF PIPE, PER X' OF MAIN TO BE TESTED.

ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE * -GPH

| AVERAGE TEST PRESSURE (PSI) | NOMINAL PIPE DIAMETER – INCHES | | | | | | | | | | | | | | AVERAGE TEST PRESSURE (PSI) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 64 | |
| 450 | 0.48 | 0.64 | 0.95 | 1.27 | 1.59 | 1.91 | 2.23 | 2.55 | 2.87 | 3.18 | 3.82 | 4.78 | 5.73 | 6.69 | 7.64 | 8.60 | 9.56 | 10.19 | 450 |
| 400 | 0.45 | 0.60 | 0.90 | 1.20 | 1.50 | 1.80 | 2.10 | 2.40 | 2.70 | 3.00 | 3.60 | 4.50 | 5.41 | 6.31 | 7.21 | 8.11 | 9.01 | 9.61 | 400 |
| 350 | 0.42 | 0.56 | 0.84 | 1.12 | 1.40 | 1.69 | 1.97 | 2.25 | 2.53 | 2.81 | 3.37 | 4.21 | 5.06 | 5.90 | 6.74 | 7.58 | 8.43 | 8.99 | 350 |
| 300 | 0.39 | 0.52 | 0.78 | 1.04 | 1.30 | 1.56 | 1.82 | 2.08 | 2.34 | 2.60 | 3.12 | 3.90 | 4.68 | 5.46 | 6.24 | 7.02 | 7.80 | 8.32 | 300 |
| 275 | 0.37 | 0.50 | 0.75 | 1.00 | 1.24 | 1.49 | 1.74 | 1.99 | 2.24 | 2.49 | 2.99 | 3.73 | 4.48 | 5.23 | 5.98 | 6.72 | 7.47 | 7.97 | 275 |
| 250 | 0.36 | 0.47 | 0.71 | 0.95 | 1.19 | 1.42 | 1.66 | 1.90 | 2.14 | 2.37 | 2.85 | 3.56 | 4.27 | 4.99 | 5.70 | 6.41 | 7.12 | 7.60 | 250 |
| 225 | 0.34 | 0.45 | 0.68 | 0.90 | 1.13 | 1.35 | 1.58 | 1.80 | 2.03 | 2.25 | 2.70 | 3.38 | 4.05 | 4.73 | 5.41 | 6.03 | 6.76 | 7.21 | 225 |
| 200 | 0.32 | 0.43 | 0.64 | 0.85 | 1.06 | 1.28 | 1.48 | 1.70 | 1.91 | 2.12 | 2.55 | 3.19 | 3.82 | 4.46 | 5.09 | 5.73 | 6.37 | 6.80 | 200 |
| 175 | 0.30 | 0.40 | 0.59 | 0.80 | 0.99 | 1.19 | 1.39 | 1.59 | 1.79 | 1.98 | 2.38 | 2.98 | 3.58 | 4.17 | 4.77 | 5.36 | 5.96 | 6.36 | 175 |
| 150 | 0.28 | 0.37 | 0.55 | 0.74 | 0.92 | 1.10 | 1.29 | 1.47 | 1.66 | 1.84 | 2.21 | 2.76 | 3.31 | 3.86 | 4.41 | 4.97 | 5.52 | 5.88 | 150 |
| 125 | 0.25 | 0.34 | 0.50 | 0.67 | 0.84 | 1.01 | 1.18 | 1.34 | 1.51 | 1.68 | 2.01 | 2.52 | 3.02 | 3.53 | 4.03 | 4.53 | 5.04 | 5.37 | 125 |
| 100 | 0.23 | 0.30 | 0.45 | 0.60 | 0.75 | 0.90 | 1.05 | 1.20 | 1.35 | 1.50 | 1.80 | 2.25 | 2.70 | 3.15 | 3.60 | 4.05 | 4.50 | 4.80 | 100 |

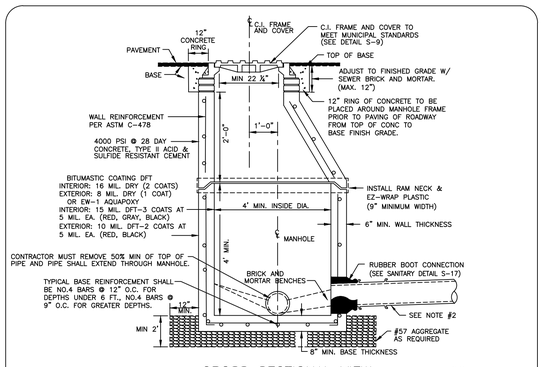
** IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE.*

$$L = \frac{SD\sqrt{P}}{133{,}200}$$

WHERE:
- L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR
- S = LENGTH OF PIPE TESTED, IN FEET
- D = NOMINAL DIAMETER OF PIPE, IN INCHES
- P = AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH (GAUGE)

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT — SANITARY SEWER TESTING REQUIREMENTS NOTES (PAGE 4 OF 4) S-4

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 08/29/2017 | File Name:Sanitary Sewer Notes P4 | Page 74



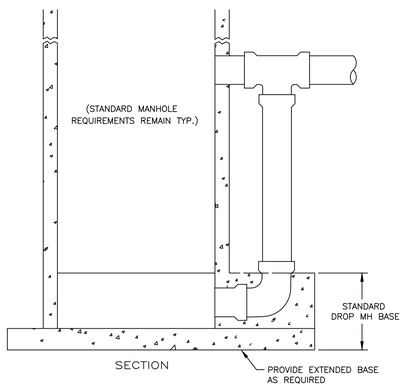

CROSS SECTIONAL VIEW NTS

NOTES:
1. ON TRANSITIONS BETWEEN LARGER DIAMETER AND SMALLER SEWER COLLECTORS, INVERTS OF SEWERS SHALL BE MATCHED.
2. LAST 60' OF F.M. 12" PIPING ENTERING SEWER MANHOLE SHALL BE P.V.C. C-900 PLACED AT A NEGATIVE GRADE. 15" AND ABOVE SHALL BE P.V.C. C-905.
3. NON-PENETRATING PICK-HOLES IN ALL CONCRETE SECTIONS.
4. DFT = DRY FILM THICKNESS
5. 0.1' – DROP ACROSS MANHOLE TYP. (MEASURED DIA. OF CONCRETE RING)
6. MANHOLES 8' DEEP OR GREATER SHALL HAVE A MIN. 4' HIGH WALL BASE.
7. ANY PIPE ENTERING MANHOLE MUST HAVE A RUBBER BOOT CONNECTION.
8. MORTAR TO CONTAIN "HYDRATITE", OR APPROVED EQUAL, TO PREVENT SHRINKAGE.
9. SUB-GRADE BENEATH MANHOLES SHALL BE UNDISTURBED GRANULAR UNSATURATED SOIL. No. 57 AGGREGATE STONE SHALL BE USED IN WET CONDITIONS AND/OR WHERE UNSUITABLE MATERIAL IS ENCOUNTERED.
10. CONTRACTOR SHALL PROVIDE THICKER MANHOLE WALLS AND BASES AS REQUIRED TO PREVENT FLOTATION BASED ON HISTORIC HIGH GROUND WATER TABLE ELEVATIONS AS DETERMINED USING ACCEPTED ENGINEERING PRACTICES AND/OR APPROVED BY UTILITIES DEPARTMENT.
11. SHOP DRAWINGS FOR ALL STRUCTURES SHALL BE SUBMITTED TO AND APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION.
12. NO BUG HOLES OR HONEYCOMB WILL BE ACCEPTED.
13. ENDS OF THE TOP AND BOTTOM SECTIONS OF THE MANHOLE SHALL FIT FLUSH TOGETHER.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT — SANITARY SEWER MANHOLE AND GENERAL NOTES S-13

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 06/10 | File Name:Sanitary Sewer Manhole S-13 | Page 84

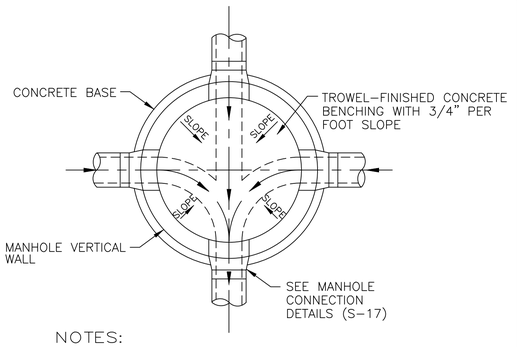
NOTE:
GENERAL NOTES ON DETAIL S-10 APPLY.




SECTION

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT — OUTSIDE DROP SANITARY MANHOLE DETAIL (NEW-STANDARD) S-14

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: | File Name:Outside Drop New S-14 | Page 85




NOTES:
1. FLOW CHANNELS SHALL HAVE THE SAME SLOPES AS THE SEWERS THEY ARE CONNECTED TO. (EXCEPT THAT AT CHANGES OF DIRECTION EXCEEDING 45°, THE DROP SHALL BE 0.1' MINIMUM)
2. NO STANDING WATER WILL BE ALLOWED.
3. FORM BENCH IN MANHOLE FROM MID-LINE OF 8" PIPE TO WALL OF MANHOLE, 3/4" PER FT. OF SLOPE. FOR LARGER PIPE, CONSTRUCT FROM INSIDE CROWN OF PIPE WITH 3/4" PER FT. OF SLOPE TO WALL.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT — SANITARY MANHOLE INVERT DETAIL S-16

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 07/10 | File Name: Invert Detail S-16 | Page 87

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|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CERTIFICATE OF AUTHORIZATION NUMBER 00003910


BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

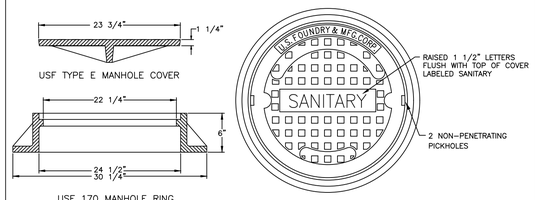
SANITARY COLLECTION SYSTEM DETAILS

DEV 2018–
CITY APPROVAL STAMP

45
SHEET NO.

Drawn By: M. GRECO
Date: 08/30/18
SCALE: 1"=1'

W:\BEACH STREET ORANGE TO BAY\Sanitary Sewer Details.dwg, Model, 10/8/2018 4:21:24 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1



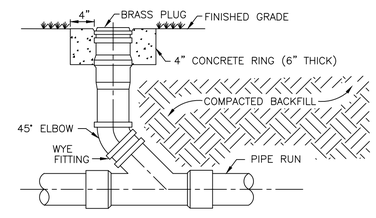

NOTES:

1. UNLESS DETAILED PLANS SHOW OTHERWISE, ALL MANHOLE RING AND COVER CASTINGS IN PAVED AREAS ARE TO BE ADJUSTED TO FINAL GRADE, SEALED AND SECURED IN PLACE WITH A CONCRETE COLLAR AFTER THE ROAD BASE IS PLACED AND JUST PRIOR TO PLACEMENT OF ASPHALT WEARING SURFACE.
2. CONCRETE COLLAR AROUND MANHOLE FRAME IS REQUIRED IN PAVED AREAS ONLY.

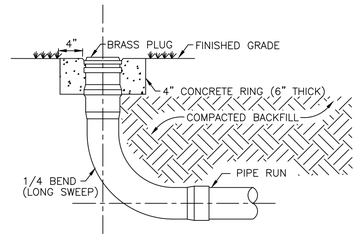
THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

SANITARY SEWER
COVER DETAIL
S-18

| FY-17/18 |
|---|
| Drawing Date: 01/08 |
| Drawn By: KLH |
| Checked By: JMP |
| Scale: NTS |
| Revision Date: |
| File Name: Sanitary Sewer Cover S-18 |
| Page 89 |




IN-LINE CLEANOUT



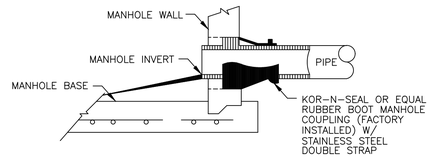

TERMINAL CLEANOUT

NOTE:
CONCRETE COLLAR REQUIRED IN UNPAVED AREAS

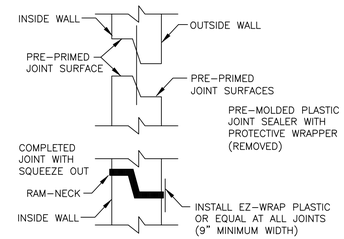
THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

SANITARY LATERAL
CLEANOUT
DETAIL
S-12

| FY-17/18 |
|---|
| Drawing Date: 01/08 |
| Drawn By: KLH |
| Checked By: JMP |
| Scale: NTS |
| Revision Date: |
| File Name: Sanitary Cleanout S-12 |
| Page 83 |




MANHOLE PIPE CONNECTION DETAIL
FOR NEW CONNECTIONS IN EXISTING MANHOLES



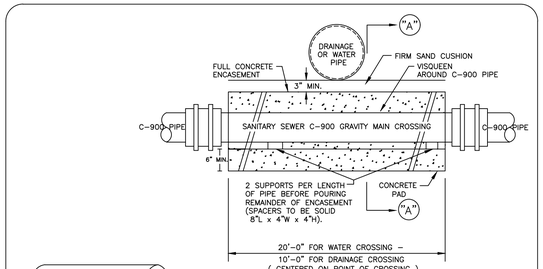

PRECAST JOINT CONNECTION

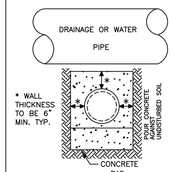
NOTES:
1. ALL NEW CONNECTIONS TO EXISTING SANITARY SEWER MANHOLES SHALL UTILIZE A CORING METHOD AND THE IN-FIELD INSTALLATION OF A RUBBER BOOT INTO THE MANHOLE.
2. BOOTS SHALL BE SNAPPED IN PLACE AND WATER TIGHT.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

RUBBER BOOT
AND PRECAST JOINT
CONNECTION DETAIL
S-17

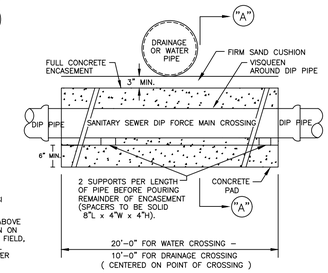
| FY-17/18 |
|---|
| Drawing Date: 01/08 |
| Drawn By: KLH |
| Checked By: JMP |
| Scale: NTS |
| Revision Date: |
| File Name: Rubber Boot and Precast Joint Connection S-17 |
| Page 88 |




SECTION "A"–"A"

NOTES:
1. ALL CONCRETE SHALL BE 3000 PSI MINIMUM STRENGTH AT 28 DAYS.
2. WATER MAIN SHALL BE LOCATED ABOVE OR BELOW ENCASEMENT AS SHOWN ON PLANS OR AS DETERMINED IN THE FIELD, USE ENCASEMENT WHERE VERTICAL CLEARANCE WATER MAIN AND SEWER MAIN IS LESS THAN 12 INCHES.

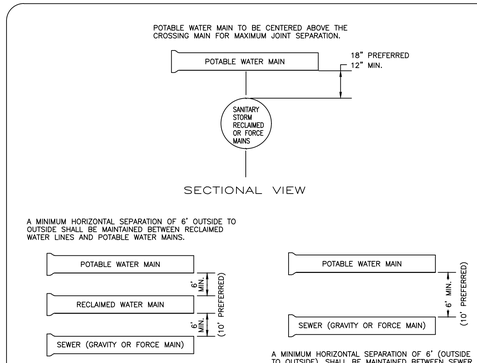



ELEVATION

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

SANITARY SEWER
CONCRETE ENCASEMENT
DETAIL
S-7

| FY-17/18 |
|---|
| Drawing Date: 01/08 |
| Drawn By: KLH |
| Checked By: JMP |
| Scale: NTS |
| Revision Date: |
| File Name: Sanitary Concrete Encasement S-7 |
| Page 77 |




SECTIONAL VIEW

A MINIMUM HORIZONTAL SEPARATION OF 6' OUTSIDE TO OUTSIDE SHALL BE MAINTAINED BETWEEN RECLAIMED WATER LINES AND POTABLE WATER MAINS.




A MINIMUM HORIZONTAL SEPARATION OF 6' OUTSIDE TO OUTSIDE SHALL BE MAINTAINED BETWEEN RECLAIMED WATER LINES AND SEWER COLLECTION.




A MINIMUM HORIZONTAL SEPARATION OF 6' (OUTSIDE TO OUTSIDE), SHALL BE MAINTAINED BETWEEN SEWER COLLECTION LINES AND POTABLE WATER MAINS.

NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY– OR PRESSURE–TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62–610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY–TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY– OR VACUUM–TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE–TYPE SANITARY SEWER, WASTEWATER OR STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE AND CONDUIT. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

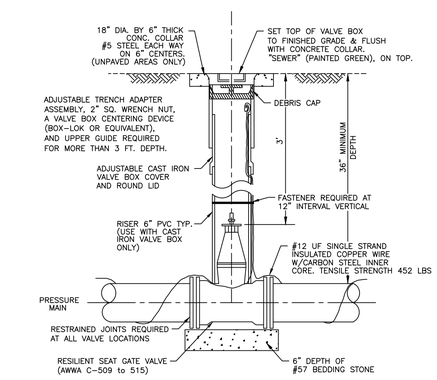
AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM–TYPE SANITARY SEWERS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62–610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE–TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62–610, F.A.C.

NTS

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

PIPE SEPARATION
DETAIL
S-6

| FY- 17/18 |
|---|
| Drawing Date: 01/08 |
| Drawn By: KLH |
| Checked By: JMP |
| Scale: NTS |
| Revision Date: 06/10 |
| File Name: Pipe Separation S-6 |
| Page 76 |




NTS

NOTES:
1. ROD OR BOLT TEE WHERE APPLICABLE.
2. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION THE LOCATION OF ALL VALVES AND VALVE BOXES BY STATE PLANE COORDINATES WITH STATION & OFFSETS FROM CL OF R/W.
3. #12 INSULATED SOLID COPPER UF TRACER WIRE SHALL BE LAID THE ENTIRE LENGTH OF THE REUSE PIPE. ALL CONNECTION ENDS SHALL USE LIQUID TAPE AND A DIRECT BURIED SPLICE KIT (LAWSON 95313) OR EQUIVALENT.
4. ANY VALVE DEEPER THAN 36" SHALL HAVE AN EXTENSION BOLTED ON THE VALVE. THE OPERATING NUT SHALL BE 12" BELOW FINISHED GRADE.
5. WHERE PLUG VALVES ARE SPECIFIED THE CONCRETE COLLAR SURROUNDING THE TOP OF THE VALVE BOX SHALL HAVE AN ENGRAVED 2" x 6" BRASS NAME PLATE CLEARLY MARKED "PLUG VALVE" IN 1" HIGH BLOCK PRINT LETTERS.

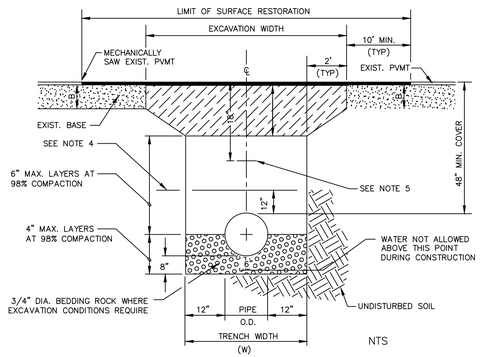
SEWER
SEWER VALVE COVER

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

SANITARY VALVE AND
VALVE BOX
DETAIL
S-19

| FY-17/18 |
|---|
| Drawing Date: 01/08 |
| Drawn By: KLH |
| Checked By: JMP |
| Scale: NTS |
| Revision Date: 06/10 |
| File Name: Sanitary Valve & Box S-19 |
| Page 90 |

NOTE: TO DETERMINE THE MOST CURRENT REQUIREMENTS FOR STABILIZATION MATERIAL, BASE MATERIAL, AND ASPHALT MATERIAL PATCH AND THE REPLACEMENT DIMENSIONS CONTACT CITY ENGINEER IN THE PUBLIC WORKS DEPT AT 386–671–8610.




NTS

NOTES:
1. WHERE SOIL CONDITIONS CAN NOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED METHOD OF CONSTRUCTION.
2. SHEETING WILL BE REQUIRED AS DETERMINED IN THE FIELD.
3. COMPACTION PERCENTAGES SHOWN REFER TO A.A.S.H.T.O. T–180. PROVIDE COMPACTION TEST REPORTS TO CITY INSPECTOR.
4. MECHANICAL COMPACTION NOT ALLOWED BELOW THIS LEVEL.
5. INSTALL METALLIC TAPE AND UF #12 INSULATED TRACER WIRE OVER FULL LENGTH OF PIPE.
6. THE CONTRACTOR SHALL, UNLESS OTHERWISE NOTED, RESTORE ALL STRIPING, PAVEMENT MARKINGS, DELINEATORS, SIGNAGE AND TRAFFIC SIGNAL SYSTEM COMPONENTS DISTURBED DURING CONSTRUCTION ACTIVITIES. COST OF ALL WORK AND MATERIALS WILL BE CONSIDERED INCIDENTAL TO PATCH MATERIAL ITEMS.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

PAVEMENT CUT
AND PATCH
DETAIL
S-9

| FY-17/18 |
|---|
| Drawing Date: 01/08 |
| Drawn By: KLH |
| Checked By: JMP |
| Scale: NTS |
| Revision Date: 8/29/2017 |
| File Name: Pavement Cut and Patch S-9 |
| Page 79 |

| SCHEDULE OF LENGTHS OF RESTRAINED DIP (FT.) | | | | | |
|---|---|---|---|---|---|
| FITTING | 90° BEND | 45° BEND | 22.5° BEND | 11.25° BEND | TEE OR DEAD END |
| PIPE SIZE (IN.) : | | | | | |
| 4" | 21 (26) | 18 (18) | 18 (18) | 18 (18) | 37 (55) |
| 6" | 30 (36) | 18 (18) | 18 (18) | 18 (18) | 52 (78) |
| 8" | 38 (45) | 18 (18) | 18 (18) | 18 (18) | 67 (100) |
| 10" | 45 (54) | 18 (22) | 18 (18) | 18 (18) | 81 (122) |
| 12" | 52 (63) | 22 (26) | 18 (18) | 18 (18) | 94 (141) |
| 14" | 60 (72) | 25 (30) | 18 (18) | 18 (18) | 107 (160) |
| 16" | 66 (80) | 27 (33) | 18 (18) | 18 (18) | 120 (180) |
| 18" | 74 (87) | 31 (36) | 18 (18) | 18 (18) | 132 (198) |
| 20" | 80 (94) | 33 (39) | 18 (18) | 18 (18) | 144 (216) |
| 24" | 92 (108) | 38 (45) | 18 (22) | 18 (18) | 167 (250) |
| 30" | 106 (128) | 44 (53) | 21 (25) | 18 (18) | 199 (298) |
| 36" * | 69 (82) | 28 (34) | 18 (18) | 18 (18) | 170 (204) |
| 42" * | 76 (92) | 31 (37) | 18 (18) | 18 (18) | 191 (229) |
| 48" * | 90 (106) | 40 (46) | 18 (18) | 18 (18) | 212 (254) |

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.

TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.

TABLE APPLIES TO DUCTILE IRON PIPE FOR THE FOLLOWING CONDITIONS:

TEST PRESSURE: 150 PSIG
SOIL TYPE: SP
COVER DEPTH: 3 FEET (MIN.)
SAFETY FACTOR: 1.5
TRENCH TYPE: 2

VALUES IN PARENTHESIS (X) ARE FOR PIPE ENCASED IN POLYETHYLENE.

* VALUES APPLY TO DUCTILE IRON PIPE AT 50 PSI TEST PRESSURE.

DIP RESTRAINED JOINT TABLE

DEV 2018–
CITY APPROVAL STAMP

46
SHEET NO.

Drawn By: M. GRECO

Date: 08/30/18

SCALE: 1"=1'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CERTIFICATE OF AUTHORIZATION NUMBER 00003910


| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|

BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

SANITARY COLLECTION SYSTEM DETAILS

W:\BEACH STREET ORANGE TO BAY\Sanitary Sewer Details.dwg, Model, 10/8/2018 4:21:47 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1

## RECLAIMED WATER CONSTRUCTION NOTES

1. THE CITY'S UTILITIES DEPARTMENT (671-8815) SHALL BE GIVEN A MINIMUM OF (2) TWO BUSINESS DAYS (NOT INCLUDING HOLIDAYS) PRIOR TO BEGINNING ANY RECLAIMED WATER SYSTEM CONSTRUCTION.
2. ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS PER ARTICLE 7 SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, OR IN ANY CON-STRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAIN-TENANCE TO BE DONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS MAY BE FOUND AT http://codb.us/index.aspx?NID=262. FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BASIN STREET SUITE 130, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
3. RECLAIMED WATER SERVICE ENDINGS SHALL BE SECURED BY WIRE TO 2" x 4" PRESSURE TREATED STAKES, APPROXIMATELY 2' ABOVE GRADE, OR MAY BE PLACED IN RECLAIMED WATER METER BOXES, PROVIDED BY THE CONTRACTOR, AT THE TIME OF FINAL SUBDIVISION INSPECTION.
4. ALL PROPOSED RECLAIMED WATER MAINS SHALL BE FLUSHED, TESTED AND CLEARED FOR SERVICE, WHEN APPROPRIATE, IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED SITE INSPECTOR WHO SHALL COORDINATE WITH CITY PERSONNEL AT THE WASTEWATER PLANT AT LEAST (2) TWO BUSINESS DAYS PRIOR TO THE BEGINNING OF A FULL-DIAMETER FLUSH OF THE MAINS PRIOR TO THE COMMENCEMENT OF PRESSURE TESTING.
5. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM BY THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SUPPLY "AS-BUILTS DRAWINGS" TO THE CITY PRIOR TO ANY USE OF THIS SYSTEM. **SEE CITY OF DAYTONA BEACH AS-BUILT REQUIREMENTS.**
6. ALL RECLAIMED WATER SERVICES SHALL BE MARKED ALONG THE OUTSIDE EDGE OF CURB WITH A "Ô" OR BY METAL TABS SET INTO PAVEMENT. VALVES AND BLOW-OFFS FOR RECLAIMED WATER MAINS SHALL BE MARKED BY AN "+" SET INTO THE PAVEMENT AND PAINTED WITH PURPLE ENAMEL.
7. RECLAIMED WATER SERVICES SHALL BE LOCATED AT THE SIDE LOT LINES, ALTERNATING WITH POTABLE WATER SERVICE LOCATIONS. IN INSTANCES WHERE RECLAIMED WATER SERVICES NEED TO BE OFFSET, THESE SERVICES MAY BE OFFSET FROM THE LOT LINE A MAXIMUM DISTANCE OF 2 FEET.
8. ALL RECLAIMED WATER, HAND-OPERATED CONNECTIONS AND OUTLETS SHALL BE CONTAINED IN UNDERGROUND SERVICE VAULTS AND SHALL BE APPROPRIATELY TAGGED OR LABELED TO WARN THE PUBLIC AND EMPLOYEES THAT THE WATER IS NOT INTENDED FOR DRINKING OR SWIMMING.

NTS

9. VAULTS FOR OUTLETS SHALL BE LOCKED OR REQUIRE A SPECIAL TOOL FOR OPERATION OF OUTLETS.
10. A 75 FOOT SETBACK DISTANCE SHALL BE PROVIDED FROM PUBLIC ACCESS RECLAIMED WETTED AREAS TO ANY PUBLIC AND ANY PRIVATE POTABLE WATER SUPPLY WELLS.
11. LOW TRAJECTORY NOZZLES ARE REQUIRED WITHIN 100 FEET OF PUBLIC EATING, DRINKING OR BATHING FACILITIES.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

DESIGN AND CONSTRUCTION NOTES PAGE 1 OF 3 RW-1

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 07/10 | File Name:Reclaimed Notes RW-1 | Page 46

## RECLAIMED WATER CONSTRUCTION NOTES (CONT'D)

12. ANY SIGNIFICANT IRRIGATION SITE UTILIZING RECLAIMED WATER, SUCH AS AN ATHLETIC FIELD, GOLF COURSE, PARK OR POND, IS REQUIRED TO POST A 12" x 12" RECLAIMED WATER SIGN WARNING THE PUBLIC AND EMPLOYEES ITHAT RECLAIMED WATER IS NOT INTENDED FOR DRINKING OR SWIMMING. THIS SIGN SHALL BE PLACED AT THE ENTRANCE TO THE SITE AND THE LOCATION OF THE PRIVATE REUSE SYSTEM. SEE SHEET RW-16
13. DEWATERING SHALL BE PROVIDED TO KEEP GROUND WATER ELEVATION A MINIMUM OF 6 INCHES BELOW RECLAIMED WATER MAIN BEING LAID.
14. ALL RECLAIMED WATER MAINS SHALL BE LAID ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
15. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COM-PACTION OF 95% IN UNPAVED AREAS AND 98 T-180.
16. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 1 FOOT VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET.
17. MAXIMUM OBTAINABLE SEPARATION OF PUBLIC RECLAIMED WATER MAINS, STORM WATER SYSTEMS, POTABLE WATER AND SANITARY SEWER MAINS SHALL BE MAINTAINED. A MINIMUM HORIZONTAL SEPARATION OF SIX (6) FEET (SIDE TO SIDE). WHERE RECLAIMED WATER AND SANITARY SEWAGE MAINS CROSS WITH LESS THAN TWELVE (12) INCHES VERTICAL CLEARANCE, THE SANITARY SEWAGE MAIN SHALL BE TWENTY (20) FEET OF EITHER CONCRETE ENCASED PVC PIPE OR ENCASED IN A WATERTIGHT CARRIER PIPE, CENTERED ON THE POINT OF CROSSING (SEE PIPE SEPARATION CHART).
18. 3" METALIZED PIPE LOCATION TAPE SHALL BE LOCATED BETWEEN 15" AND 24" BELOW FINISHED GRADE OR AS SPECIFIED BY MANUFACTURER FOR ALL PVC LINES, AND UF#12 SINGLE STRAND INSULATED COPPER WIRE SHALL BE ATTACHED TO ALL PVC PIPE. UF#12 SINGLE STRAND INSULATED COPPER WIRE SHALL BE ATTACHED TO ALL PIPE. WIRE RUNS SHALL BE CONNECTED WITH SILICONE FILLED WIRE CONNECTORS. EACH RUN SHALL TERMINATED AT EVERY VALVE. SEE STANDARD DETAIL "MAIN VALVE BOX" FOR INSTALLATION OF WIRE ON RISER PIPE. SERVICES SHALL BE CONNECTED TO THE MAIN WIRE WITH WIRE FILLED CONNECTORS. IT IS THE CONTRACTORS RESPONSIBLY TO ENSURE CONTINUITY AND TEST FOR CONTINUITY (SEE CITY SPECIFICATIONS #15049 TRACER WIRE AND ALARMING TAPE).
19. ALL SINGLE RESIDENTIAL WATER SERVICES SHALL BE 1". SERVICES SHALL BE CTS 3408 HIGH DENSITY POLYETHYLENE TUBING RATED FOR A MINIMUM OF 200 PSI WITH SODR 9 (CTS). THE TUBING SHALL HAVE A VIRGIN HIGH DENSITY POLYETHYLENE CENTER FOR WHICH THE MANU-FACTURER SHALL FURNISH A CERTIFICATE OF PURITY. THE TUBING SHALL BE LAVENDER IN COLOR AND SHALL HAVE THE WORDS "RECLAIMED WATER" PERMANENTLY PRINTED ON THE OUTSIDE. THE TUBING SHALL HAVE U.V. PROTECTION AND SHALL NOT BE AFFECTED BY DIRECT SUNLIGHT. THE TUBING SHALL COMPLY WITH OR EXCEED THE APPLICABLE STANDARDS OF A.S.T.M. D1248, D3350, D2239, D2737, N.S.F.-14 AND A.W.W.A. C901 AND SHALL COME WITH A LIFETIME WARRANTY. APPROVED SIZES: 1" AND 2" DIAMETERS. SEE APPROVED PRODUCT LIST FOR ACCEPTABLE MANUFACTURERS.
20. AS STANDARD PRACTICE AND IF POSSIBLE RECLAIMED WATER MAINS SHALL BE INSTALLED 4 FEET OFF THE BACK OF THE CURB ON THE OPPOSITE SIDE OF THE ROAD OF THE POTABLE WATER LINES, (NOT UNDER PROPOSED SIDEWALK LOCATION) OR AS APPROVED BY THE CITY.
21. ALL RECLAIMED WATER MAINS SHALL HAVE A MINIMUM COVER OF 36 INCHES. IN SPECIAL CASES WHERE IT IS IMPOSSIBLE OR INAPPROPRIATE TO PROVIDE ADEQUATE COVER. DUCTILE IRON PRESSURE CLASS 350 OR CONCRETE ENCASEMENT/PROTECTIVE SLAB MAY BE USED AT THE DISCRETION OF THE UTILITIES DEPARTMENT.
22. RECLAIMED WATER MAINS SHALL BE PURPLE PVC, DR-18 AWWA CLASS C-900 OR C-905, CL 150, OR DIP PRESSURE CLASS 350, STANDARD CEMENT LINED (PAINTED PURPLE) UNLESS APPROVED OTHERWISE BY THE CITY. ALL HORIZONTAL DIRECTIONAL DRILLS USING HDPE SHALL BE DR-11 WORKING PRESSURE RATING 160 OR GREATER. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT UPON SITE CONDITIONS.
23. ALL GASKETS SHALL BE LUBRICATED BEFORE BEING INSTALLED.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

DESIGN AND CONSTRUCTION NOTES PAGE 2 OF 3 RW-2

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 06/10 | File Name:Reclaimed Notes RW-2 | Page 47

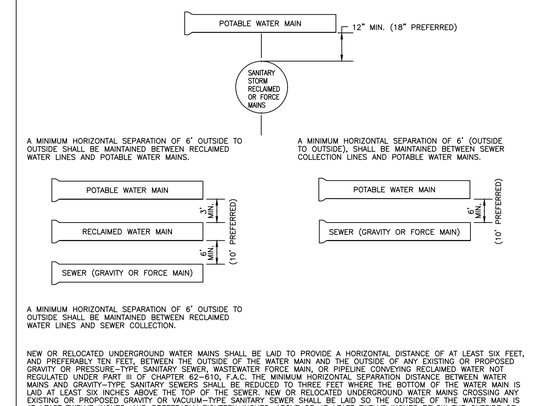
## RECLAIMED WATER CONSTRUCTION NOTES (CONT'D)

24. RECLAIMED WATER MAINS SHALL BE PURPLE PVC, DR-18 AWWA CLASS C-900 OR C-905, CL 150, OR DIP PRESSURE CLASS 350, STANDARD CEMENT LINED (PAINTED PURPLE) UNLESS APPROVED OTHERWISE BY THE CITY. ALL HORIZONTAL DIRECTIONAL DRILLS USING HDPE SHALL BE DR-11 WORKING PRESSURE RATING 160 OR GREATER. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT UPON SITE CONDITIONS.
25. ALL RECLAIMED WATER MAINS SHALL USE A RESTRAINED JOINT METHOD IN COMPLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) GUIDELINES. IN THE EVENT THAT PVC FITTINGS ARE SPECIFIED, THE RESTRAINED JOINT SHALL BE MODIFIED IN ACCORDANCE WITH THE RECOMMENDED ADDITIONAL RESTRAINED LENGTH REQUIRED FOR PIPE WRAPPED WITH POLYETHYLENE. IN NO INSTANCE SHALL THRUST BLOCKS BE PERMITTED.
26. MEGALUGS, BOLTLESS RESTRAINED JOINTS, OR GRIPPER GASKETS SHALL BE USED ON ALL RESTRAINED JOINT INSTALLATIONS. MINIMUM DEPTH OF BURY ON PIPES NOT MEETING REQUIRED COVER REQUIRE-MENTS SHALL FOLLOW THE MOST RECENT DIPRA RESTRAINT DESIGN GUIDELINES.
27. GRIPPER RING GASKETS BY ROMAC MAY BE USED AS APPROPRIATE FOR RESTRAINING PRESSURE PIPE TO FITTINGS, VALVES, ETC.
28. ALL RECLAIMED WATER LINES SHALL BE READILY DISTINGUISHABLE BY THEIR PURPLE COLOR OR TAPE MARKINGS. DUCTILE IRON PIPE SHALL BE WRAPPED WITH PURPLE POLYETHYLENE OR COMPLETELY PAINTED PURPLE.
29. ALL DIP PIPE SHALL HAVE 2" PURPLE STRIPES PAINTED AT 12 O'CLOCK, 3 O'CLOCK, 6 O'CLOCK AND 9 O'CLOCK FOR THE FULL LENGTH OF PIPE. PURPLE PAINT WITH EPOXY SHALL BE USED AND REUSE CLEARLY MARKED (N/A IF PIPE IS PAINTED).
30. VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACINGS OF 1000 FEET.
31. AT ALL RECLAIMED WATER MAIN TEES AND CROSSES, VALVES SHALL BE INSTALLED ON ALL LEGS EXCEPT ONE.
32. APPROVED WATER VALVE TYPES ARE THE FOLLOWING:
    A. RESILIENT SEAT GATE VALVES (AWWA C-509)
    B. TAPPING VALVES WITH MECHANICAL OR STAINLESS STEEL TAPPING SLEEVE.
33. ALL VALVES SHALL BE ADJUSTED TO FINISH GRADE AND THE CAPS SHALL BE PAINTED PURPLE TO MAKE THEM PLAINLY DISTINGUISHABLE.
34. THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL RECLAIMED WATER MAINS EQUAL TO OR GREATER THAN 6" IN DIAMETER AND PRIMARY DISTRIBUTION MAINS LOCATED ON COLLECTOR AND ARTERIAL ROADWAYS. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CONTRACTOR.
35. IN AREAS WHERE RECLAIMED WATER IS AVAILABLE, RECLAIMED WATER WILL BE UTILIZED IN THE PRESSURE TESTING OF NEW NON-POTABLE WATER LINES.
36. THE RECLAIMED WATER MAIN SHALL NOT BE PLACED IN SERVICE UNTIL A SATISFACTORY 150 PSI @ (4) FOUR HOURS PRESSURE TEST HAS PASSED AND THE RESULTS ARE FORWARDED TO THE CITY.
37. WATER UTILITIES DEPARTMENT NO LONGER DOES RECLAIMED WATER TAPS.
38. WITH RESPECT TO TIE-IN CONNECTIONS, THE CITY RESERVES THE RIGHT TO REQUIRE CONNEC-TIONS TO BE PERFORMED DURING PERIODS OF LOW FLOW IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
39. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION THE PROPOSED LOCATIONS OF ALL RECLAIMED WATER MAINS MEASURED FROM THE BACK OF CURB (EDGE OF PAVEMENT IF NO CURB EXISTS), AND THE RIGHT-OF-WAY LINE.
40. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE DESIGN LOCATION OF PLANTINGS RELATIVE TO THE LOCATION OF PUBLIC UTILITIES AND STORM WATER INFRASTRUCTURE IN ORDER TO EVALUATE POTENTIAL CONFLICTS.
41. THE RECLAIMED WATER MAIN SHALL NOT BE PLACED IN SERVICE UNTIL AN APPROVED BACKFLOW PREVENTER HAS BEEN INSTALLED ON THE CUSTOMER'S POTABLE SERVICE LINE.
42. PRESSURE TESTS FOR TAPPING SADDLES AND VALVES TO BE A MINIMUM OF 30 MINUTES AT 150 PSI OR 30 MINUTES AT THE MANUFACTURER'S LABELED TESTING PRESSURE.
43. TRACER WIRE SHALL BE TESTED FOR CONTINUITY UNDER SUPERVISION BY CITY REPRESENTATIVE AFTER INSTALLATION.
44. ALL FITTINGS SHALL MEET THE MINIMUM RESTRAINED REQUIREMENTS PER ANSI/AWWA/DIPRA, AND ALL PRESSURE PIPES UNDER THE ROADWAY SHALL BE RESTRAINED.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

DESIGN AND CONSTRUCTION NOTES PAGE 3 OF 3 RW-3

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 04/16 | File Name:Reclaimed Notes RW-3 | Page 48




PIPE SEPARATION DETAIL

NTS

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

PIPE SEPARATION DETAIL RW-4

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 07/10 | File Name:Pipe Separation RW-4 | Page 49

| NO. | DATE | DESCRIPTION REVISIONS | BY |
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CERTIFICATE OF AUTHORIZATION NUMBER 00003910


BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

REUSE WATER SYSTEM DETAILS

DEV 2018-
CITY APPROVAL STAMP

47
SHEET NO.

Drawn By: M. GRECO

Date: 08/30/18

SCALE: 1"=1'

| SCHEDULE OF LENGTHS OF RESTRAINED PVC PIPE (FT.) | | | | | |
|---|---|---|---|---|---|
| FITTING | 90° BEND | 45° BEND | 22.5° BEND | 11.25° BEND | TEE OR DEAD END |
| PIPE SIZE (IN.) | | | | | |
| 4" | 20 | 18 | 18 | 18 | 45 |
| 6" | 28 | 18 | 18 | 18 | 63 |
| 8" | 36 | 18 | 18 | 18 | 82 |
| 10" | 44 | 28 | 18 | 18 | 98 |
| 12" | 51 | 21 | 18 | 18 | 116 |
| 14" | 57 | 24 | 18 | 18 | 132 |
| 16" | 63 | 26 | 18 | 18 | 148 |
| 18" | 69 | 29 | 18 | 18 | 163 |
| 20" | 75 | 31 | 18 | 18 | 179 |
| 24" | 87 | 36 | 18 | 18 | 208 |
| 30" | 102 | 42 | 20 | 18 | 248 |

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.

TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.

TABLE APPLIES TO PVC PIPE FOR THE FOLLOWING CONDITIONS:
TEST PRESSURE: 150 PSIG
SOIL TYPE: SP
COVER DEPTH: 3 FEET (MIN.)
SAFETY FACTOR: 1.5
TRENCH TYPE: 2

| SCHEDULE OF LENGTHS OF RESTRAINED DIP (FT.) | | | | | |
|---|---|---|---|---|---|
| FITTING | 90° BEND | 45° BEND | 22.5° BEND | 11.25° BEND | TEE OR DEAD END |
| PIPE SIZE (IN.) | | | | | |
| 4" | 21 (26) | 18 (18) | 18 (18) | 18 (18) | 37 (55) |
| 6" | 30 (36) | 18 (18) | 18 (18) | 18 (18) | 52 (78) |
| 8" | 38 (45) | 18 (18) | 18 (18) | 18 (18) | 67 (100) |
| 10" | 45 (54) | 18 (22) | 18 (18) | 18 (18) | 81 (122) |
| 12" | 52 (63) | 22 (26) | 18 (18) | 18 (18) | 94 (141) |
| 14" | 60 (72) | 25 (30) | 18 (18) | 18 (18) | 107 (160) |
| 16" | 66 (80) | 27 (33) | 18 (18) | 18 (18) | 120 (180) |
| 18" | 74 (87) | 31 (36) | 18 (18) | 18 (18) | 132 (198) |
| 20" | 80 (94) | 33 (39) | 18 (18) | 18 (18) | 144 (216) |
| 24" | 92 (108) | 38 (45) | 18 (22) | 18 (18) | 167 (250) |
| 30" | 106 (128) | 44 (53) | 21 (25) | 18 (18) | 199 (298) |
| 36" * | 69 (82) | 28 (34) | 18 (18) | 18 (18) | 170 (204) |
| 42" * | 76 (92) | 31 (37) | 18 (18) | 18 (18) | 191 (229) |
| 48" * | 90 (106) | 40 (46) | 18 (18) | 18 (18) | 212 (254) |

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.

TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.

TABLE APPLIES TO DUCTILE IRON PIPE FOR THE FOLLOWING CONDITIONS:
TEST PRESSURE: 150 PSIG
SOIL TYPE: SP
COVER DEPTH: 3 FEET (MIN.)
SAFETY FACTOR: 1.5
TRENCH TYPE: 2

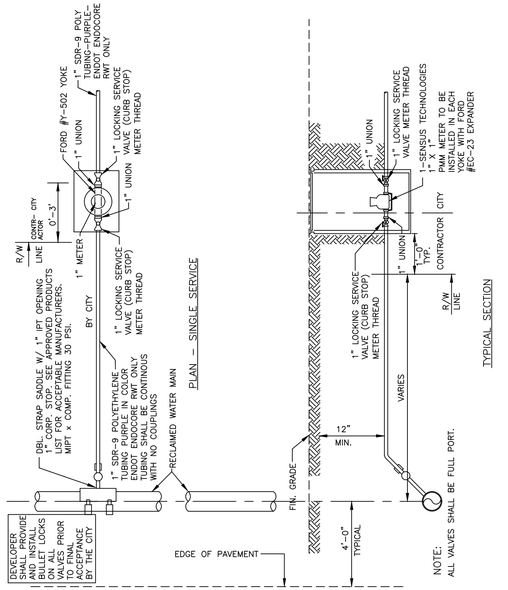
VALUES IN PARENTHESIS (X) ARE FOR PIPE ENCASED IN POLYETHYLENE.

* VALUES APPLY TO DUCTILE IRON PIPE AT 50 PSI TEST PRESSURE.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

PVC AND DIP RESTRAINED JOINT TABLE RW-6

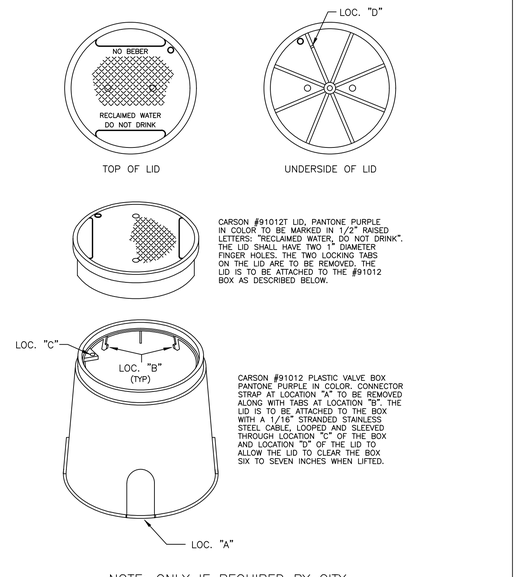
FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: | File Name:Restrained Joint Table RW-6 | Page 51




THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

IRRIGATION (SPRINKLER) SERVICE CONNECTION DETAIL PAGE 1 OF 2 RW-9

FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: | File Name: Irrigation Connection RW-9 | Page 54

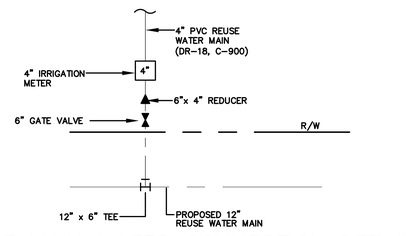



NOTE: ONLY IF REQUIRED BY CITY

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

CARSON PLASTIC VALVE BOX DETAIL RW-14

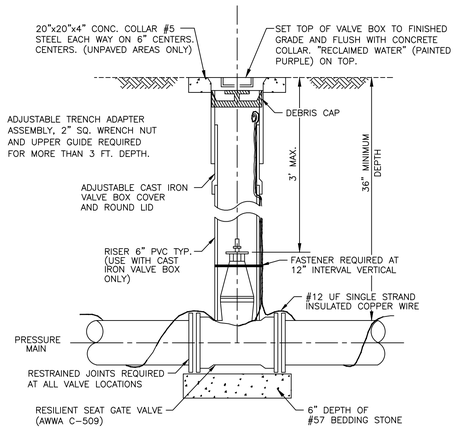
FY-17/18 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: | File Name:Carson Valve Box RW-14 | Page 59




REUSE MAIN WATER CONNECTION DETAIL

NTS

W:\BEACH STREET ORANGE TO BAY\Reuse Water Details.dwg, Model, 10/8/2018 4:23:09 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1




RECLAIMED WATER

REUSE WATER COVER

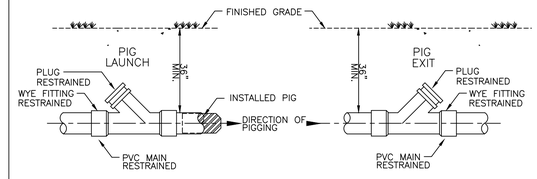
NOTES:

1. ROD OR BOLT TEE WHERE APPLICABLE.
2. ACCEPTABLE MANUFACTURERS OF GATE VALVES INCLUDE: AMERICAN DARLING, KENNEDY, M&H, MUELLER, CLOW.
3. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION THE LOCATION OF ALL VALVES AND VALVE BOXES BY STATE PLANE COORDINATES WITH STATION & OFFSETS FROM CL OF R/W.
4. A UF #12 SINGLE STRAND INSULATED COPPER TRACER WIRE SHALL BE LAID THE ENTIRE LENGTH OF ALL RECLAIMED WATER PIPE. ALL CONNECTION ENDS SHALL USE LIQUID TAPE AND A DIRECT BURIED SPLICE KIT (LAWSON 95313) OR EQUIVALENT.
5. ANY VALVE DEEPER THAN 36" SHALL HAVE AN EXTENSION BOLTED ON THE VALVE. THE OPERATING NUT SHALL BE 12" BELOW FINISHED GRADE.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

VALVE AND VALVE BOX DETAIL RW-12

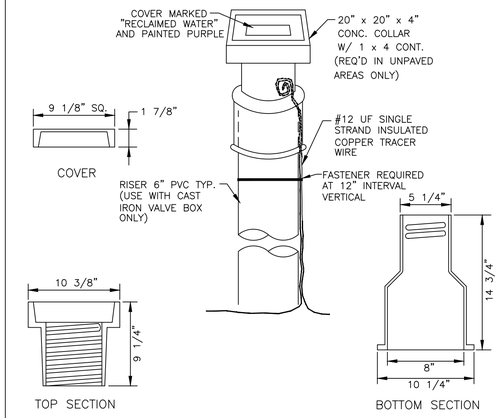
| | |
|---|---|
| FY-17/18 | |
| Drawing Date: | 01/08 |
| Drawn By: | KLH |
| Checked By: | JMP |
| Scale: | NTS |
| Revision Date: | 07/10 |
| File Name: | Valve and Box RW-12 |
| Page | 57 |




THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

PIG LAUNCH AND RECEIVING DETAIL RW-16

| | |
|---|---|
| FY-17/18 | |
| Drawing Date: | 01/08 |
| Drawn By: | KLH |
| Checked By: | JMP |
| Scale: | NTS |
| Revision Date: | |
| File Name: | Pig Launch RW-16 |
| Page | 61 |




NOTE:

1. RECLAIMED WATER MAIN VALVE BOX AND COVER SHALL BE ADJUSTABLE SCREW TYPE.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

MAIN VALVE BOX DETAIL RW-13

| | |
|---|---|
| FY-17/18 | |
| Drawing Date: | 01/08 |
| Drawn By: | KLH |
| Checked By: | JMP |
| Scale: | NTS |
| Revision Date: | |
| File Name: | Main Valve Box RW-13 |
| Page | 58 |

NTS

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

RECLAIMED WATER IN USE SIGN RW-17

| | |
|---|---|
| FY-17/18 | |
| Drawing Date: | 12/10 |
| Drawn By: | KLH |
| Checked By: | JMP |
| Scale: | NTS |
| Revision Date: | 03/17 |
| File Name: | Reclaimed Sign RW-17 |
| Page | 62 |

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|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CERTIFICATE OF AUTHORIZATION NUMBER 00003910


BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

REUSE WATER SYSTEM DETAILS

DEV 2018–
CITY APPROVAL STAMP

48
SHEET NO.

Drawn By: M. GRECO

Date: 08/30/18

SCALE: 1"=1'

W:\BEACH STREET ORANGE TO BAY\Reuse Water Details.dwg, Model, 10/8/2018 4:23:50 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1

ENGINE–GENERATOR SYSTEM

PROVIDE A COMPLETE FACTORY ASSEMBLED ENGINE–GENERATOR UNIT TO PROVIDE AUTOMATIC STANDBY ELECTRICAL POWER FOR THE PUMPING STATION. AN AUTOMATIC TRANSFER SWITCH (ATS) SHALL ALSO BE PROVIDED TO SENSE LOSS OF UTILITY POWER AND TO INITIATE AUTOMATIC START OF THE ENGINE–GENERATOR UNIT AND THE TRANSFER OF POWER FROM THE UTILITY FEED.

PROVIDE COMPLETE ENGINE FUEL SYSTEM, ELECTRONIC GOVERNOR SYSTEM, ENGINE COOLING SYSTEM, ELECTRIC STARTING SYSTEM COMPLETE WITH BATTERIES AND CHARGING SYSTEM, EXHAUST SYSTEM WITH SILENCER, VIBRATION ISOLATION SYSTEM, DIGITAL (MICROPROCESSOR–BASED) ELECTRONIC CONTROLS, OUTPUT METERING (RMS VOLTAGE, CURRENT, FREQUENCY, POWER FACTOR, AND KW HOURS), SOUND–INSULATED OUTDOOR WEATHER–PROOF ENCLOSURE, AND OTHER REQUIRED APPURTENANCES, ALL OF WHICH SHALL BE MOUNTED ON A HEAVY–DUTY STEEL BASE WHICH SHALL BE FIELD MOUNTED ON A CAST IN PLACE CONCRETE FOUNDATION AS SHOWN.

THE ENGINE SHALL BE DIESEL FUELED, RADIATOR AND FAN COOLED. ENGINE SHALL HAVE A CAST IRON BLOCK V–CONFIGURATION FOR A MINIMUM OF 4 CYLINDERS AND 256 CUBIC INCHES. THE HORSEPOWER RATING OF THE ENGINE AT IT'S MINIMUM TOLERANCE LEVEL SHALL BE SUFFICIENT TO DRIVE THE ALTERNATOR AND ALL CONNECTED ACCESSORIES.

THE AC GENERATOR SHALL BE; SYNCHRONOUS, FOUR POLE, 2/3 PITCH, REVOLVING FIELD, DRIP–PROOF CONSTRUCTION, SINGLE PRELUBRICATED SEALED BEARING, AIR COOLED BY A DIRECT DRIVE CENTRIFUGAL BLOWER FAN, AND DIRECTLY CONNECTED TO THE ENGINE WITH FLEXIBLE DRIVE DISC. ALL INSULATION SYSTEM COMPONENTS SHALL MEET NEMA MG1 TEMPERATURE LIMITS FOR CLASS F (105'C) INSULATION SYSTEM. ACTUAL TEMPERATURE RISE MEASURED BY RESISTANCE METHOD AT FULL LOAD SHALL NOT EXCEED 105 DEGREES CENTIGRADE.

THE GENERATOR SET SHALL BE PROVIDED WITH AN OUTDOOR, ALUMINUM SOUND–ATTENUATED ENCLOSURE. THE ENCLOSURE SHALL REDUCE THE SOUND LEVEL OF THE GENERATOR SET WHILE OPERATING AT FULL RATED LOAD TO A MAXIMUM OF 75 DBA AT ANY LOCATION 23 FT FROM THE GENERATOR SET IN A FREE FIELD ENVIRONMENT. THE ENCLOSURE PACKAGE SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE FOR ALL WIRING MATERIALS AND COMPONENT SPACING. ALL DOORS SHALL BE LOCKABLE, AND INCLUDE RETAINERS TO HOLD THE DOOR OPEN DURING SERVICE. ENCLOSURE ROOF SHALL BE CAMBERED TO PREVENT RAINWATER ACCUMULATION. OPENINGS SHALL BE SCREENED TO LIMIT ACCESS OF RODENTS INTO THE ENCLOSURE. PROVIDE CHART OF AVAILABLE COLOR SELECTIONS FOR SELECTION OF ENCLOSURE COLOR BY THE OWNER.

ALL ELECTRICAL POWER AND CONTROL INTERCONNECTIONS SHALL BE MADE WITHIN THE PERIMETER OF THE ENCLOSURE. A FACTORY–MOUNTED EXHAUST SILENCER SHALL BE INSTALLED INSIDE THE ENCLOSURE. ALL SHEET METAL SURFACES SHALL BE PRIMED FOR CORROSION PROTECTION AND FINISH PAINTED WITH THE MANUFACTURERS STANDARD COLOR, OR OWNER–SELECTED COLOR AS NOTED IN PREVIOUS PARAGRAPH USING A TWO STEP ELECTROCOATING PAINT PROCESS. THE PAINTING PROCESS SHALL RESULT IN A COATING THAT MEETS THE FOLLOWING REQUIREMENTS:

PRIMER THICKNESS, 0.5–2.0 MILS.
TOP COAT THICKNESS, 0.8–1.2 MILS.
GLOSS, PER ASTM D523–89, 80% PLUS OR MINUS 5%.
GLOSS RETENTION AFTER ONE YEAR SHALL EXCEED 50%.
CROSSHATCH ADHESION, PER ASTM D3359–93, 4B–5B.
IMPACT RESISTANCE, PER ASTM D2794–93, 120–160 INCH–POUNDS.
SALT SPRAY, PER ASTM B117–90, 1000+ HOURS.
HUMIDITY, PER ASTM D2247–92, 1000+ HOURS.

THE ENGINE–GENERATOR UNIT SHALL INCLUDE THE NECESSARY FEATURES TO MEET THE REQUIREMENTS OF NFPA 70, NFPA 110, AND IEEE 446. THE UNIT SHALL BE MANUFACTURED BY CUMMINS OR CATERPILLAR.

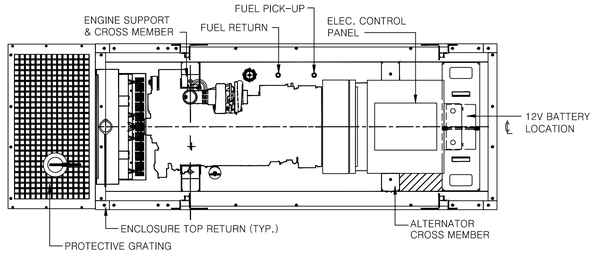
THE ENGINE–GENERATOR PERFORMANCE SHALL MEET THE FOLLOWING CRITERIA:

| | |
|---|---|
| RATED POWER OUTPUT (STANDBY): 120 KW (150 **kVA**)* | SIZED TO MEET LIFT STATION DEMAND, INCLUDING 2 EA., 23 HP LIFT PUMPS, VFD COOLING AND ALL ACCESSORIES DESCRIBED HEREIN. |
| OUTPUT VOLTAGES: 480V; 3 PHASE; 4 WIRE | 3–PHASE, 60 HZ, 4 WIRE |
| RATED SPEED: | 1,800 RPM |
| | 500 GALLONS |
| VOLTAGE REGULATION, NO LOAD TO FULL LOAD: | +/– 1.0% |
| RANDOM VOLTAGE VARIATION: | +/– 1.0% |
| FREQUENCY REGULATION: | ISOCHRONOUS |
| RANDOM FREQUENCY VARIATION: | +/– 0.6% |
| OPERATE AT FULL LOAD FOR AMBIENT CONDITIONS: | 100 DEG F, AT 100' MSL |
| EXCITATION | PMG |

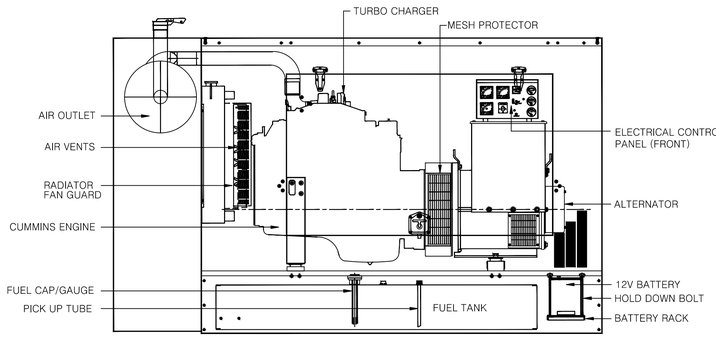
*GENERATOR SIZED FOR STARTING ONE 23 HP MOTOR, WHILE THE OTHER IS RUNNING AND SYSTEM IS IN BYPASS MODE **(VFD'S OUT OF SERVICE)**. GENERATOR WILL NOT BE LOADED IN EXCESS OF 80% OF THE NAMEPLATE RATING, WHILE RUNNING ALL LIFT STATION LOADS.

THE ENGINE–GENERATOR SET SHALL START ON RECEIPT OF A START SIGNAL FROM THE AUTOMATIC TRANSFER SWITCH. THE START SIGNAL SHALL BE VIA HARDWIRED CONNECTION TO THE GENERATOR SET CONTROL, AND THE UNIT SHALL COMPLETE A TIME DELAY START PERIOD AS PROGRAMMED INTO THE CONTROL. THE GENERATOR SET CONTROL SHALL INITIATE THE STARTING SEQUENCE WHICH SHALL INCLUDE:
VERIFICATION THAT THE ENGINE IS ROTATING WHEN THE STARTER IS SIGNALED.
ENGINE START AND ACCELERATION TO START DISCONNECT SPEED. (IF THE ENGINE DOES NOT START, IT SHALL COMPLETE A CYCLE CRANKING PROCESS.
IF THE ENGINE DOES NOT START IT SHALL BE SHUT DOWN AND LOCKED OUT, AND THE CONTROL SYSTEM SHALL INDICATE "FAIL TO START"; THE ENGINE SHALL ACCELERATE TO RATED SPEED AND THE ALTERNATOR TO RATED VOLTAGE. EXCITATION SHALL BE DISABLED UNTIL THE ENGINE HAS EXCEEDED PROGRAMMED IDLE SPEED, AND REGULATED TO PREVENT OVER VOLTAGE CONDITIONS AND OSCILLATION AS THE ENGINE ACCELERATES AND THE ALTERNATOR BUILDS TO RATED VOLTAGE.
UPON REACHING RATED SPEED AND VOLTAGE, THE GENERATOR SET SHALL OPERATE AS DICTATED BY THE CONTROL SYSTEM IN ISOCHRONOUS, SYNCHRONIZE, LOAD SHARE, LOAD DEMAND, OR LOAD GOVERN STATE.
WHEN ALL START SIGNALS HAVE BEEN REMOVED FROM THE GENERATOR SET, IT SHALL COMPLETE A TIME DELAY STOP SEQUENCE. THE DURATION OF THE TIME DELAY STOP PERIOD SHALL BE ADJUSTABLE BY THE OPERATOR.
UPON COMPLETION OF THE TIME DELAY STOP PERIOD, THE GENERATOR SET CONTROL SHALL SWITCH OFF THE EXCITATION SYSTEM AND SHALL SHUT DOWN.
ANY START SIGNAL RECEIVED AFTER THE TIME STOP SEQUENCE HAS BEGUN SHALL IMMEDIATELY TERMINATE THE STOPPING SEQUENCE AND RETURN THE GENERATOR SET TO ISOCHRONOUS OPERATION.

THE GENERATOR SET AND ASSOCIATED EQUIPMENT SHALL BE WARRANTED FOR A PERIOD OF NOT LESS THAN 5 YEARS FROM THE DATE OF COMMISSIONING AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP. THE WARRANTY SHALL BE COMPREHENSIVE. NO DEDUCTIBLES SHALL BE ALLOWED FOR TRAVEL TIME, SERVICE HOURS, REPAIR PARTS COST, ETC. GENERATOR UNIT SHALL MEET THE REQUIREMENTS OF ISO 9001 AND U.L. 2200.

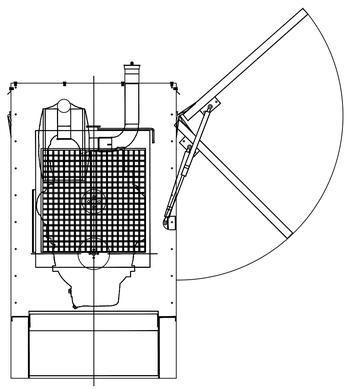



PLAN VIEW WITHOUT ROOF




LEFT SIDE VIEW

THE ENCLOSURE, GENERATOR AND BASE MOUNTED FUEL TANK SHALL BE CERTIFIED BY A LICENSED STRUCTURAL PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA AND TO BE DESIGN RATED FOR A WIND LOAD RESISTANCE AS REQUIRED BY THE FLORIDA BUILDING CODE. PROVIDE TWO (2) ORIGINALS AND SIX (6) COPIES OF THE P.E. STAMPED CERTIFIED WIND LOAD CALCULATIONS REPORT INDICATING COMPLIANCE TO THE OWNER'S REPRESENTATIVE. THE ENCLOSURE WIND LOAD RATING SHALL BE INCLUDED ON THE MANUFACTURER'S ENCLOSURE DRAWINGS.



FRONT VIEW

SIZING OF THE GENERATOR SHALL BE SIGNED AND SEALED BY AN ELECTRICAL ENGINEER.

## GENERATOR DETAILS

DIESEL STORAGE SYSTEM

PROVIDE A DIESEL STORAGE AND SUPPLY SYSTEM FOR THE ENGINE GENERATOR CONFIGURED AS SHOWN. THE SYSTEM SHALL MEET THE REQUIREMENTS OF THE DIESEL FUEL CODE, THE APPLICABLE PROVISIONS OF FLORIDA STATUTES, CHAPTER 206.874, AND FLORIDA ADMINISTRATIVE CODE, CHAPTER SF–2.001 DIESEL. FUEL TANK TO BE SIZED FOR 500 GALLONS AND SHALL MEET REQUIREMENTS FOR A COMPLETE INSTALLATION AS PER STATE AND LOCAL REQUIREMENTS.

THE GENERATOR SET AND ENCLOSURE SHALL BE MOUNTED AND SHIPPED TO THE JOBSITE ON THE FORMED STEEL SUB–BASE PROVIDED BY THE GENERATOR SUPPLIER. PROVISIONS FOR CRANE UNLOADING OF THE COMPLETE PACKAGE SHALL BE DESIGNED INTO THE BASE OF THE UNIT. NEOPRENE PADS SHALL BE INSTALLED BETWEEN THE FUEL TANK AND THE CONCRETE SLAB. A 500 GALLON BASE MOUNTED FUEL TANK SHALL BE ATTACHED TO THE CONCRETE SLAB WITH STAINLESS STEEL EXPANSION ANCHORS. THE BASE AND ENCLOSURE ASSEMBLY SHALL ALLOW ROOM WITHIN THE PACKAGE TO MOUNT AND MAINTAIN THE SPECIFIED BATTERY CHARGER, ENGINE STARTING BATTERIES, RACKS, AND CABLES, MAIN LINE CIRCUIT BREAKER, AND ENGINE–GENERATOR CONTROL PANEL, AND OTHER ITEMS AS SPECIFIED OR AS SHOWN ON THE DRAWINGS. THE WEIGHT OF THE ENTIRE UNIT CONSISTING OF GENERATOR SET, BASE, ENCLOSURE, AND ALL OTHER SPECIFIED ITEMS INCLUDING ALL LIQUIDS (I.E., FUEL OIL, LUBE OIL, AND COOLING WATER SHALL BE CALCULATED BY THE MANUFACTURER. THE BASE OF THE UNIT SHALL BE DESIGNED AND MANUFACTURED AS A HEAVY DUTY, FORMED STEEL CONSTRUCTION WITH FOUR (4)POINT LIFTING PROVISION TO SUPPORT THE CALCULATED WEIGHT. DETAILS AND MANUFACTURER'S CERTIFICATION OF THE BASE CONSTRUCTION SHALL BE INCLUDED WITH THE DRAWINGS SUBMITTED FOR APPROVAL AS WELL AS ALL WEIGHT CALCULATIONS. THE UNIT SHALL BE EQUIPPED WITH A DOUBLE WALL IN–BASE UL142 FUEL TANK AND SHALL BE SUPPLIED WITH A LOCKABLE, EXTERIOR LOCATED FILL CAP. ALL NECESSARY FUEL AND VENT LINES WITH VENT CAPS FOR PROPER ENGINE PERFORMANCE SHALL BE PROVIDED AS WELL AS A MEANS TO READILY DETECT THE FUEL LEVEL IN THE TANK WITHOUT THE USE OF A MEASURING STICK. THE FUEL TANK BASE MAXIMUM LENGTH & WIDTH DIMENSIONS SHALL BE AS NOTED ON THE DRAWINGS AND BE FORMED FROM STEEL OF A MINIMUM METAL THICKNESS OF 0.25–INCH (1/4–INCH) AND SHALL BE FITTED WITH LOW FUEL LEVEL INNER WALL LEAK ALARM CONTACT FOR LOCAL AND REMOTE ANNUNCIATION. THE FUEL TANK HEIGHT SHALL BE SUCH THAT THE BREAKER HEIGHT LIMITATION OF 6'–6" IS NOT VIOLATED.

AUTOMATIC TRANSFER SWITCH

PROVIDE AN AUTOMATIC TRANSFER SWITCH (ATS) **RATED FOR 225A, 3–PHASE, 480 VOLT, SOLID NEUTRAL.** THE ATS SHALL BE RATED TO CARRY 100 PERCENT OF RATED CURRENT CONTINUOUSLY IN THE ENCLOSURE SUPPLIED, IN AMBIENT TEMPERATURES OF 40 TO +60 DEGREES C, RELATIVE HUMIDITY UP TO 95% (NON CONDENSING), AND ALTITUDES UP TO 1,000 FEET. TRANSFER SWITCH EQUIPMENT SHALL HAVE FAULT CURRENT RATINGS SUITABLE FOR USE IN THE APPLICATION, AS INDICATED BY THE AVAILABLE FAULT CURRENT AT THE SITE AS PER THE ELECTRIC UTILITY.THE ATS SHALL BE A CUMMINS–ONAN 3–POLE OR APPROVED EQUAL.

THE ATS SHALL BE DOUBLE THROW, ELECTRICALLY AND MECHANICALLY INTERLOCKED, AND MECHANICALLY HELD IN THE SOURCE 1 AND SOURCE 2 POSITIONS. THE TRANSFER SWITCH SHALL BE SPECIFICALLY DESIGNED TO TRANSFER TO THE BEST AVAILABLE SOURCE IF IT INADVERTENTLY STOPS IN A NEUTRAL POSITION. THE ATS SHALL BE ELECTRICALLY INTERLOCKED IN BOTH AUTOMATIC AND MANUAL OPERATION MODES TO PERFORM THE OPERATION SEQUENCE SPECIFIED. THE POWER TRANSFER MECHANISM SHALL INCLUDE PROVISIONS FOR MANUAL OPERATION UNDER LOAD WITH THE DOOR OF THE CABINET CLOSED. ALL WIRING SHALL BE TAGGED TO MATCH THE SCHEMATIC, SHALL BE UL LISTED 105 DEGREE C, 600 VOLT RATED, AND SIZED AS REQUIRED. CIRCUIT BOARDS SHALL BE CONNECTED WIRING HARNESSES BY MEANS OF LOCKING DISCONNECT PLUG(S). THE 3–POLE ATS SHALL BE PROVIDED WITH A NEUTRAL BUS AND LUGS SIZED TO CARRY 100% OF THE ATS CURRENT RATING. FIELD CONTROL CONNECTIONS SHALL BE MADE ON A COMMON TERMINAL BLOCK THAT IS CLEARLY AND PERMANENTLY LABELED.
THE ATS SHALL INCORPORATE ADJUSTABLE TIME DELAYS FOR GENERATOR SET START (ADJUSTABLE IN A RANGE FROM 0–15 SECONDS); TRANSFER (ADJUSTABLE IN A RANGE FROM 0–120 SECONDS); RETRANSFER (ADJUSTABLE IN A RANGE FROM 0–30 MINUTES); AND GENERATOR STOP (COOLDOWN; ADJUSTABLE IN A RANGE OF 0–30 MINUTES), AND SHALL BE CONFIGURABLE TO CONTROL THE OPERATION TIME FROM SOURCE TO SOURCE (PROGRAM TRANSITION OPERATION) IN OPEN TRANSITION MODE. THE CONTROL SYSTEM SHALL BE CAPABLE OF ENABLING OR DISABLING THIS FEATURE, AND ADJUSTING THE TIME PERIOD TO A SPECIFIC VALUE. A PHASE BAND MONITOR OR SIMILAR DEVICE IS NOT AN ACCEPTABLE ALTERNATE FOR THIS FEATURE.

THE ATS SHALL PROVIDE AN ISOLATED NORMALLY HELD OPEN, AND CLOSE TO START RELAY CONTACT FOR STARTING OF THE ENGINE–GENERATOR SET. OUTPUT CONTACTS SHALL BE FORM C, FOR COMPATIBILITY. THE ATS SHALL PROVIDE RELAY CONTACTS TO INDICATE THE FOLLOWING CONDITIONS: SOURCE 1 AVAILABLE, LOAD CONNECTED TO SOURCE 1, SOURCE 2 AVAILABLE, SOURCE 2 CONNECTED TO LOAD.

THE ATS ENCLOSURE SHALL BE NEMA 4X 304 STAINLESS STEEL (OR BETTER), UL LISTED AND SHALL PROVIDE NEC REQUIRED WIRE BEND SPACE. THE CABINET DOOR SHALL BE KEY LOCKING. SEPARATE ENCLOSURES SHALL BE THE NEMA TYPE SPECIFIED. MANUAL OPERATING HANDLES AND ALL CONTROL SWITCHES (OTHER THAN KEY OPERATED SWITCHES) SHALL BE ACCESSIBLE TO AUTHORIZED PERSONNEL ONLY BY OPENING THE KEY LOCKING CABINET DOOR.

FACTORY TESTING: THE TRANSFER SWITCH SUPPLIER SHALL PERFORM A COMPLETE OPERATIONAL TEST ON THE TRANSFER SWITCH PRIOR TO SHIPPING FROM THE FACTORY. A CERTIFIED TEST REPORT SHALL BE AVAILABLE ON REQUEST. TEST PROCESS SHALL INCLUDE CALIBRATION OF VOLTAGE SENSORS.

AFTER INSTALLATION, THE SUPPLIER SHALL CONDUCT A COMPLETE OPERATION, BASIC MAINTENANCE, AND EMERGENCY SERVICE SEMINAR FOR UP TO 10 PERSONS EMPLOYED BY THE CITY. THE SEMINAR SHALL INCLUDE INSTRUCTION ON OPERATION OF THE TRANSFER EQUIPMENT, NORMAL TESTING AND EXERCISE, ADJUSTMENTS TO THE CONTROL SYSTEM AND EMERGENCY OPERATION PROCEDURES. THE CLASS DURATION SHALL BE AT LEAST 4 HOURS IN LENGTH, AND INCLUDE PRACTICAL OPERATION WITH THE INSTALLED EQUIPMENT.

AUTOMATIC TRANSFER SWITCH TO INCLUDE 5–YEAR WARRANTY ON PARTS AND LABOR INCLUDING TRAVEL.

REINFORCED CONCRETE EQUIPMENT PADS

PROVIDE BUILT–UP PAD AREA FOR NEW CONCRETE FOUNDATIONS TO ELEVATIONS AS SHOWN. USE CLEAN GRANULAR FILL IN 6–INCH LIFTS. GRANULAR FILL SHALL BE CLEAN SAND WITH NO MORE THAN 10% FINES PASSING THROUGH A NO.200 SIEVE. COMPACT TO 95% RELATIVE COMPACTION PER ASTM D1557. PROVIDE TEST REPORT FROM INDEPENDENT TEST LAB SATISFACTORY TO OWNER AND ENGINEER.

COORDINATE FORM PLACEMENT WITH PIPING AND ELECTRICAL CONDUITS AS SHOWN IN THESE DRAWINGS. FORMWORK FOR SLAB SHALL BE IN ACCORDANCE WITH ACI 347, FOR PLACEMENT OF CONCRETE IN ACCORDANCE WITH ACI 304R.

REINFORCING STEEL SHALL BE DEFORMED BARS IN ACCORDANCE WITH ASTM A615, GRADE 60, PLACED ON SUPPORTS IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE.

CONCRETE MIX SHALL UTILIZE TYPE II PORTLAND CEMENT WITH NATURAL AGGREGATE MEETING ASTM C150 AND ASTM C33 REQUIREMENTS RESPECTIVELY. THE MINIMUM 28–DAY STRENGTH SHALL BE 4,000 PSI. TAKE SAMPLES DURING POUR AND PROVIDE TEST CYLINDER BREAK REPORT FROM INDEPENDENT TEST LAB.

PLACE CONTROL JOINTS AS SHOWN. ROUND OFF ALL TOP EXPOSED EDGES WITH 0.25–INCH RADIUS EDGING TOOL.

PROTECT SURFACES AND WET CURE CONCRETE FOR A MINIMUM OF 7 DAYS AFTER PLACEMENT.

THE CONCRETE SUPPORT PAD FINISHED GRADE SHALL BE 18" ABOVE BASE FLOOD ELEVATION. FUEL TANK VENTS SHALL BE PROTECTED FROM FLOODING.

NOTE:
PUMP STATION TO INCLUDE HMI–PLC VSP'S.

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|


PARKER MYNCHENBERG & ASSOCIATES, INC.
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CERTIFICATE OF AUTHORIZATION NUMBER 00003910


BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LIFT STATION DETAILS

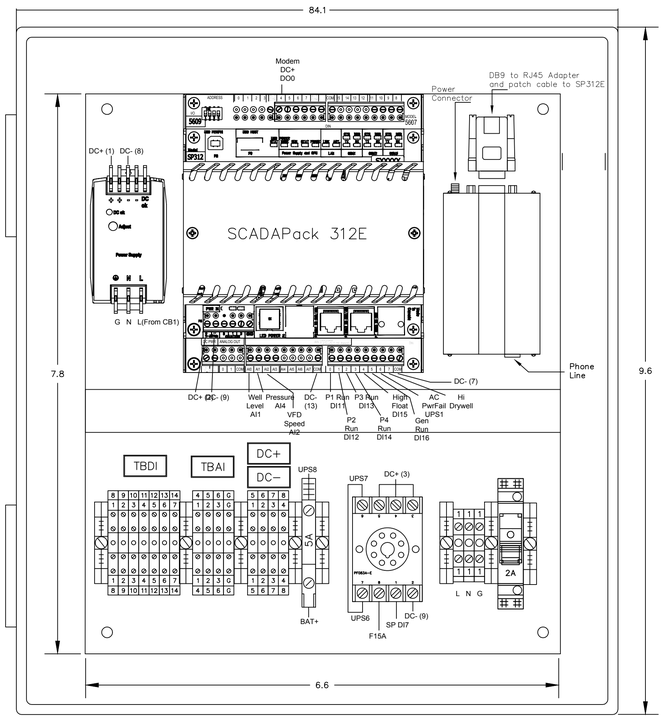
DEV 2018–
CITY APPROVAL STAMP

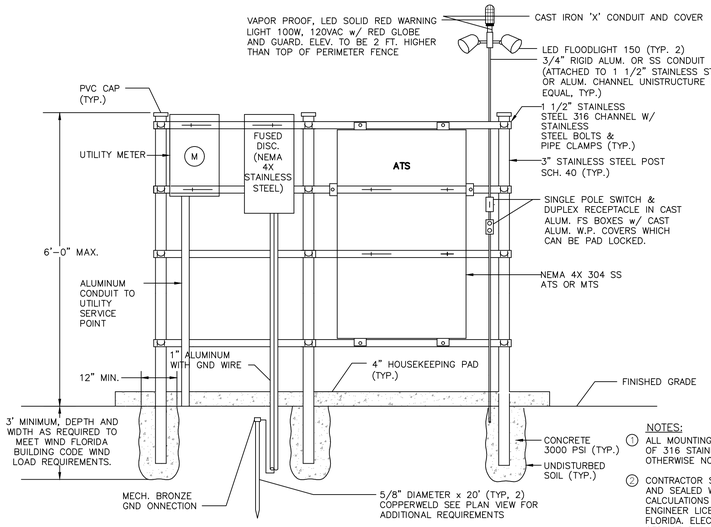
49
SHEET NO.

Drawn By: M. GRECO
Date: 08/30/18
SCALE: 1"=1'

W:\BEACH STREET ORANGE TO BAY\Lift Station Details.dwg, Model, 10/8/2018 4:26:13 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1

## LSPro – Daytona Monitor ONLY



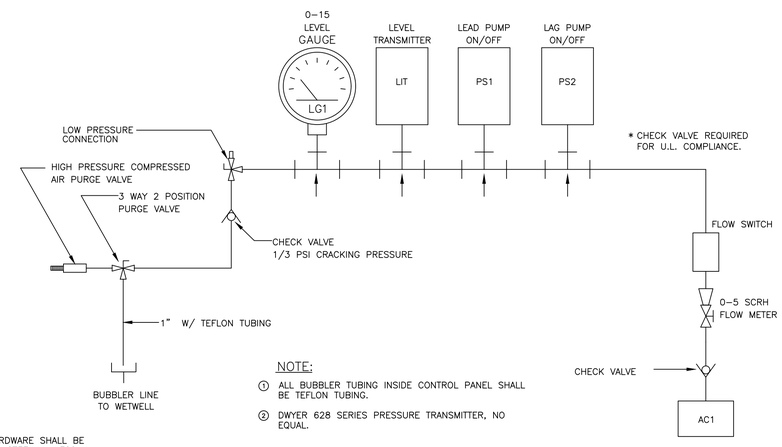




## SERVICE RACK DETAIL

N.T.S.

NOTES:

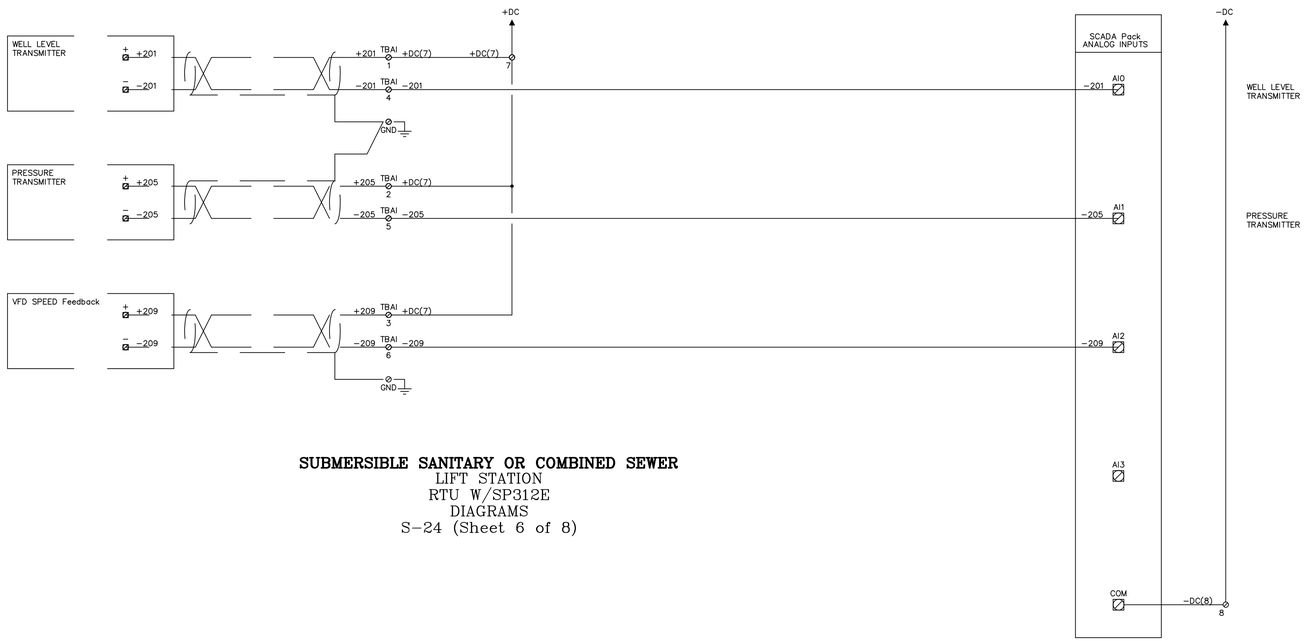
1. ALL MOUNTING HARDWARE SHALL BE OF 316 STAINLESS STEEL, UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED WIND LOAD CALCULATIONS FROM A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA. ELECTRICAL EQUIPMENT SERVICE RACK TO BE CERTIFIED PER FLORIDA BUILDING CODE.
3. ABOVE GRADE ALUMINUM CONDUIT TO BE TRANSITIONED TO PVC SCHEDULE 80 BELOW GRADE FOR NON-SIGNAL CONDUITS.




NOTE:

1. ALL BUBBLER TUBING INSIDE CONTROL PANEL SHALL BE TEFLON TUBING.
2. DWYER 628 SERIES PRESSURE TRANSMITTER, NO EQUAL.

## PNEUMATIC PIPING DETAIL




**SUBMERSIBLE SANITARY OR COMBINED SEWER**
LIFT STATION
RTU W/SP312E
DIAGRAMS
S-24 (Sheet 6 of 8)

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|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BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LIFT STATION DETAILS

DEV 2018-
CITY APPROVAL STAMP

50
SHEET NO.

Drawn By: M. GRECO
Date: 08/30/18
SCALE: 1"=1'

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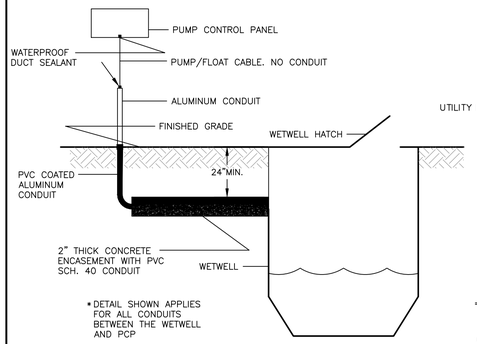
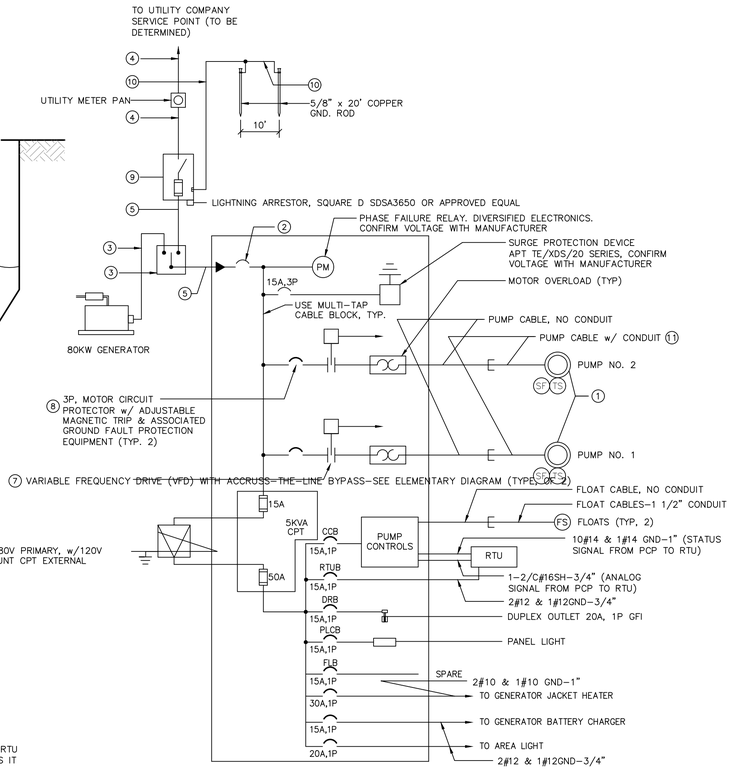



## CONDUIT INSTALLATION DETAIL



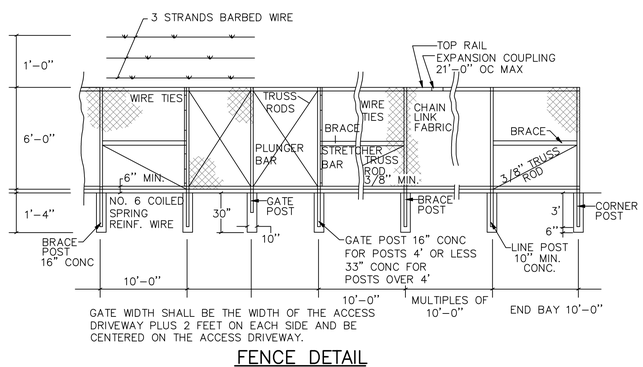

## PUMP CONTROL SINGLE LINE DIAGRAM

NOTES:

1. FUSES SHALL BE BUSSMAN CLASS RK1 CURRENT LIMITING.
2. NEMA 4X 304 SS FUSED SWITCH AND ASSOCIATED REJECTION CLIPS AND 4W NEUTRAL KIT w/ CURRENT LIMITING FUSES. SWITCH SHALL BE EQUIPPED w/ SPLIT BOLTS ON LOAD SIDE FOR INSTALLATION OF LIGHTNING ARRESTOR (SERVICE ENTRANCE RATED).
3. 225 AMP ATS
4. ALL CONTROL PANELS SHALL BE U.L. LABELED AND SHALL COMPLY WITH ARTICLE 409 OF THE N.E.C.
5. AN ESSEX PHONE LINE MUST BE PROVIDED WITH ALL RTU FROM AT&T. ALSO MUST COORDINATE WITH THE CITY'S IT DEPARTMENT ABOUT PHONE INFORMATION.

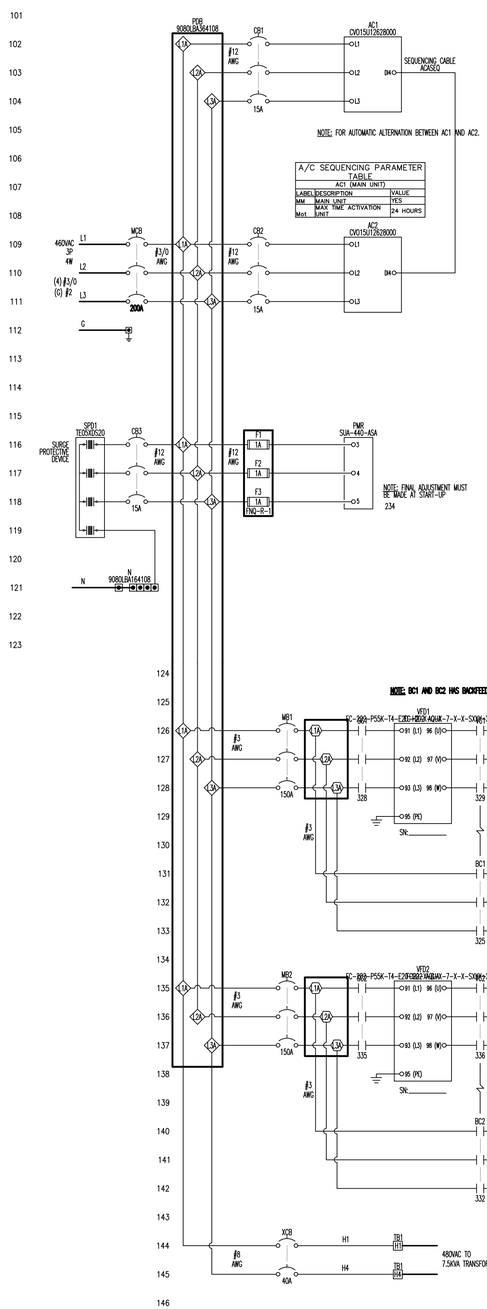
| ① PROPOSED VOLTAGE | ② PROPOSED MOTOR SIZE (HP) | ③ PANEL MAIN BKR. | ④ ATS OR MTS | ⑤ SERVICE CONDUIT & CONDUCTORS | ⑥ LOAD CONDUIT & CONDUCTORS | ⑦ EMERGENCY CONDUCTORS | ⑧ STARTER SIZE | ⑨ MOTOR BREAKER | ⑩ FUSED DISC/FUSES (SEE NOTES) | ⑪ GROUND | ⑫ PUMP CABLE CONDUIT SIZE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 480V, 3ø, 3W | X ≥ 25 HP | 200A,3P | 200A,3P | 4#3/0-2 1/2" | 3#3/0 & 1#4GND-2 1/2" | 3#3/0 & 1#6GND | 3 | 125A,3P | 200A,3P/200A | #2 | PER N.E.C. |
| 480V, 3ø, 3W | 10HP ≤ X < 25 HP | 200A,3P | 200A,3P | 4#3/0-2 1/2" | 3#3/0 & 1#4GND-2 1/2" | 3#3/0 & 1#6GND | 2 | 70A,3P | 200A,3P/200A | #2 | PER N.E.C. |
| 480V, 3ø, 3W | X < 10 HP | 200A,3P | 200A,3P | 4#3/0-2 1/2" | 3#3/0 & 1#4GND-2 1/2" | 3#3/0 & 1#6GND | 1 | 30A,3P | 200A,3P/200A | #2 | PER N.E.C. |
| 240V, 3ø, 3W | 15HP ≤ X ≤ 20 HP | 200A,3P | 200A,3P | 4#3/0-2 1/2" | 3#3/0 & 1#4GND-2 1/2" | 3#3/0 & 1#4GND | 3 | 125A,3P | 200A,3P/200A | #2 | PER N.E.C. |
| 240V, 3ø, 3W | 7.5HP ≤ X < 15 HP | 100A,3P | 100A,3P | 4#2-1 1/2" | 3#2 & 1#6GND-1 1/2" | 3#2 & 1#6GND | 2 | 80A,3P | 100A,3P/100A | #6 | PER N.E.C. |
| 240V, 3ø, 3W | X < 7.5 HP | 100A,3P | 100A,3P | 4#2-1 1/2" | 3#2 & 1#6GND-1 1/2" | 3#2 & 1#6GND | 1 | 50A,3P | 100A,3P/100A | #6 | PER N.E.C. |

NOTE: SOLID STATE SOFT STARTERS SHALL BE PROVIDED FOR MOTOR SIZES ABOVE 50 HP.




## FENCE DETAIL

## CONTROL PANEL ABBREVIATIONS




## PARTIAL ELEMENTARY DIAGRAM

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|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BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LIFT STATION DETAILS

DEV 2018-
CITY APPROVAL STAMP

51
SHEET NO.

Drawn By: M. GRECO
Date: 08/30/18
SCALE: 1"=1'

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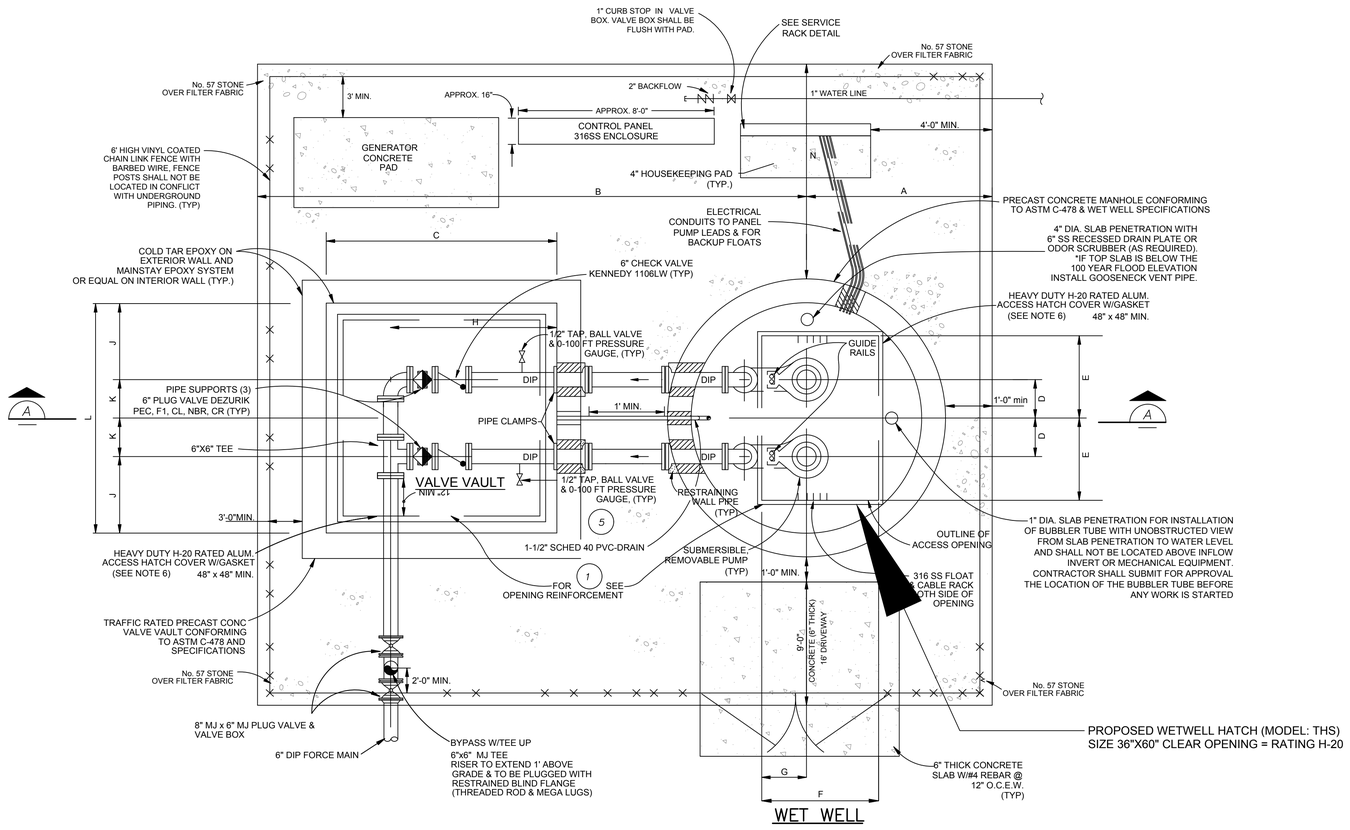
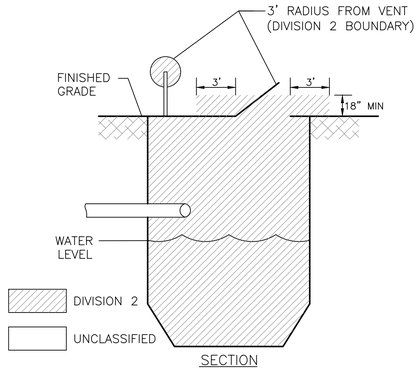



## WET WELL




## NFPA BOUNDARY CLASSIFICATION

N.T.S.

NOTES:

1. THE AREA INSIDE THE WET WELL IS A HAZARDOUS, CLASS 1, DIV. 2 LOCATION.
2. THE AREA WITHIN 3 FEET FROM THIS HATCH AND 1.5 FEET ABOVE THE WET WELL SLAB IS A HAZARDOUS, CLASS 1, DIV. 2 LOCATION.
3. THE AREA WITHIN A 3 FOOT RADIUS FROM THE VENT OPENING IS A HAZARDOUS, CLASS 1, DIV. 2 LOCATION. THE AREA WITHIN A 5 FOOT RADIUS FROM THE VENT OPENING IS A HAZARDOUS, CLASS 1, DIV. 2 LOCATION.
4. THE AREA INSIDE THE VALVE VAULT IS A HAZARDOUS, CLASS 1, DIV. 2 LOCATION.
5. PROVIDE WIRING METHODS AND MATERIALS SUITABLE FOR A CLASS 1, DIVISION 2 AREA WITHIN ALL HAZARDOUS AREAS. USE CROUSE-HINDS MODEL EYSR RETROFIT SEALING FITTING.
6. THE CONSULTING ENGINEER MUST SPECIFY IF THE STATION IS FOR A 'RESIDENTIAL' OR 'SANITARY OR COMBINED' SEWER SERVICE.

## PUMP DATA

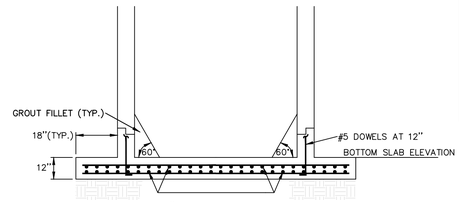
| | |
|---|---|
| MANUFACTURER: FLYGT | MODEL: NP 3153 |
| IMPELLER NO.: 167mm | NOMINAL SIZE: 9-9/16 IN. |
| SPEED: 3510 RPM | DISCHARGE SIZE: 3-3/8 IN. |
| VOLTAGE: 460 v. 60 Hz. | PHASE: 3 |
| HORSEPOWER: 23 hp. | MIN. SOLID SIZE: 2.5 IN. |
| OPERATING CONDITIONS SHALL BE 210 GPM, 141.0 FT. TDH, MIN. SHUT OFF HEAD 200 FT. | |

## LIFT STATION DATA

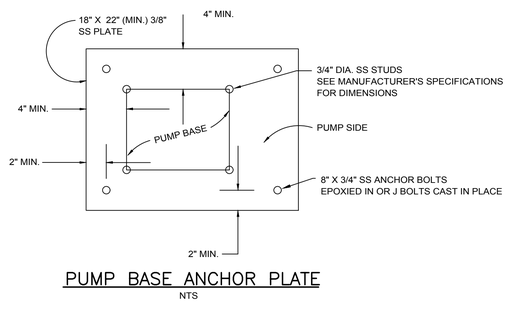
| DIMENSIONS | DESIGN | ASBUILT |
|---|---|---|
| DIM. A | 8' | |
| DIM. B | 42' | |
| DIM. C | 84" | |
| DIM. D | 12" | |
| DIM. E | 30" | |
| DIM. F | 36" | |
| DIM. G | 21" | |
| DIM. H | 48" | |
| DIM. J | 24" | |
| DIM. K | 18" | |
| DIM. L | 84" | |
| DIM. M | 8' | |
| DIM. N | 20' | |

| ELEVATION | DESIGN | ASBUILT |
|---|---|---|
| ELEV. P | 15.95 | |
| ELEV. Q | 15.85 | |
| ELEV. R | 15.70 | |
| ELEV. S | 9.70 | |
| ELEV. T | 6.70 | |
| ELEV. U | 6.37 | |
| ELEV. V | 5.37 | |
| ELEV. W | 2.17 | |

ALL ITEMS MUST BE FILLED IN.

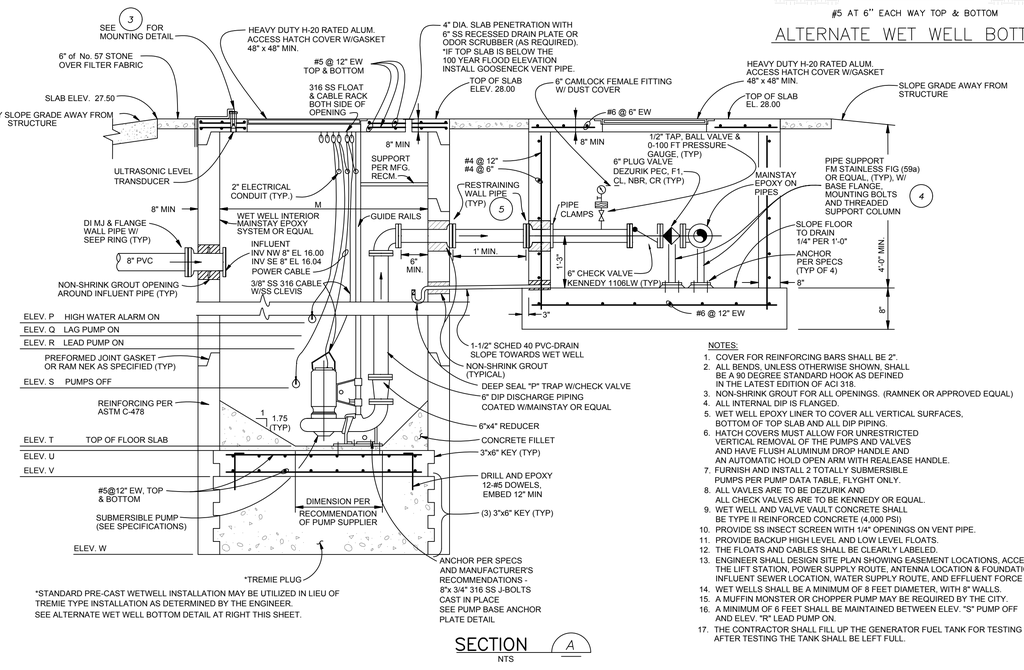



## ALTERNATE WET WELL BOTTOM




## PUMP BASE ANCHOR PLATE

NTS




*STANDARD PRE-CAST WETWELL INSTALLATION MAY BE UTILIZED IN LIEU OF TREMIE TYPE INSTALLATION AS DETERMINED BY THE ENGINEER. SEE ALTERNATE WET WELL BOTTOM DETAIL AT RIGHT THIS SHEET.

## SECTION A

NTS

NOTES:

1. COVER FOR REINFORCING BARS SHALL BE 2".
2. ALL BENDS, UNLESS OTHERWISE SHOWN, SHALL BE A 90 DEGREE STANDARD HOOK AS DEFINED IN THE LATEST EDITION OF ACI 318.
3. NON-SHRINK GROUT FOR ALL OPENINGS. (RAMNEK OR APPROVED EQUAL)
4. ALL INTERNAL DIP IS FLANGED.
5. WET WELL EPOXY LINER TO COVER ALL VERTICAL SURFACES, BOTTOM OF TOP SLAB AND ALL DIP PIPING.
6. HATCH COVERS MUST ALLOW FOR UNRESTRICTED VERTICAL REMOVAL OF THE PUMPS AND VALVES AND HAVE FLUSH ALUMINUM DROP HANDLE AND AN AUTOMATIC HOLD OPEN ARM WITH REALEASE HANDLE.
7. FURNISH AND INSTALL 2 TOTALLY SUBMERSIBLE PUMPS PER PUMP DATA TABLE, FLYGHT ONLY.
8. ALL VAVLES ARE TO BE DEZURIK AND ALL CHECK VALVES ARE TO BE KENNEDY OR EQUAL.
9. WET WELL AND VALVE VAULT CONCRETE SHALL BE TYPE II REINFORCED CONCRETE (4,000 PSI)
10. PROVIDE SS INSECT SCREEN WITH 1/4" OPENINGS ON VENT PIPE.
11. PROVIDE BACKUP HIGH LEVEL AND LOW LEVEL FLOATS.
12. THE FLOATS AND CABLES SHALL BE CLEARLY LABELED.
13. ENGINEER SHALL DESIGN SITE PLAN SHOWING EASEMENT LOCATIONS, ACCESS TO THE LIFT STATION, POWER SUPPLY ROUTE, ANTENNA LOCATION & FOUNDATION, THE INFLUENT SEWER LOCATION, WATER SUPPLY ROUTE, AND EFFLUENT FORCE MAIN ROUTE.
14. WET WELLS SHALL BE A MINIMUM OF 8 FEET DIAMETER, WITH 8" WALLS.
15. A MUFFIN MONSTER OR CHOPPER PUMP MAY BE REQUIRED BY THE CITY.
16. A MINIMUM OF 6 FEET SHALL BE MAINTAINED BETWEEN ELEV. "S" PUMP OFF AND ELEV. "R" LEAD PUMP ON.
17. THE CONTRACTOR SHALL FILL UP THE GENERATOR FUEL TANK FOR TESTING AND AFTER TESTING THE TANK SHALL BE LEFT FULL.

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |


**PARKER MYNCHENBERG & ASSOCIATES, INC.**
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910


BEACH STREET, STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LIFT STATION DETAILS

DEV 2018–
CITY APPROVAL STAMP

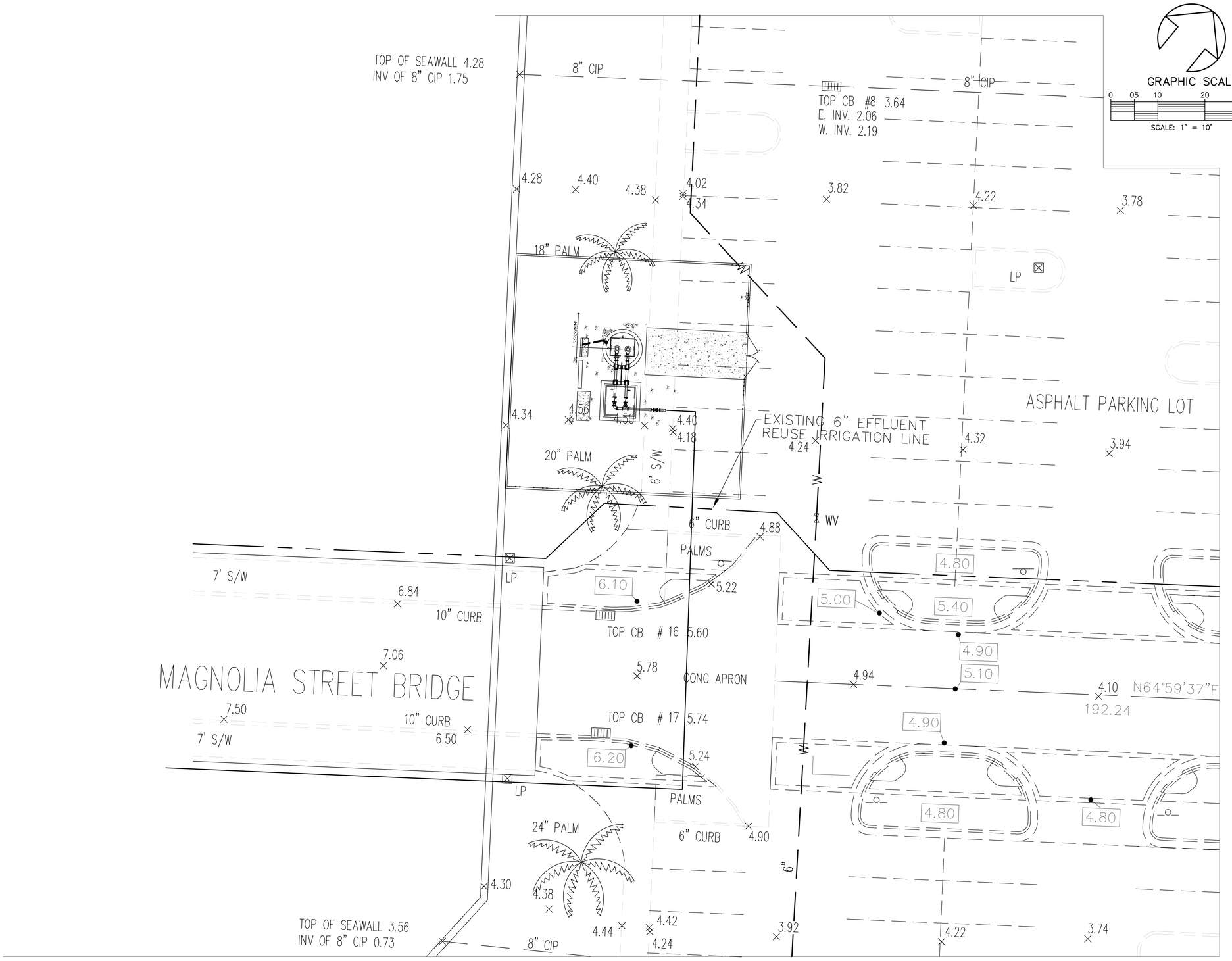
52
SHEET NO.

Drawn By: M. GRECO

Date: 08/30/18

SCALE: 1"=1'

W:\BEACH STREET ORANGE TO BAY\Lift Station Details.dwg, Model, 10/8/2018 4:30:10 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1




| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

# CITY ISLAND LIFT STATION SITE PLAN

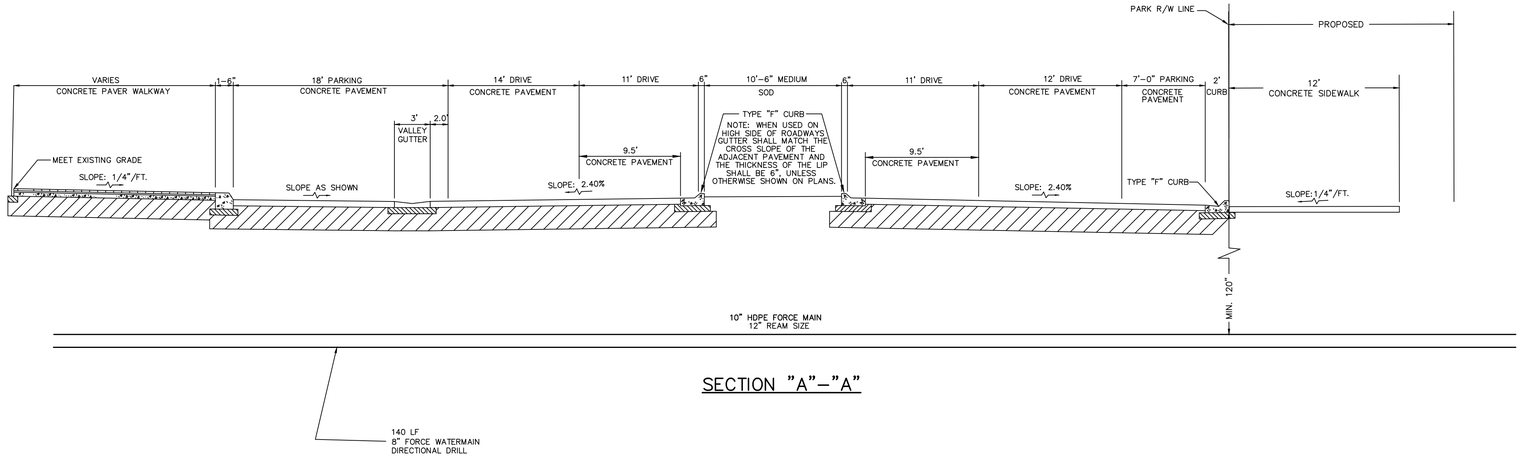
DEV 2018–
CITY APPROVAL STAMP

SHEET NO. 53

Drawn By: BH

Date: 8/21/18

SCALE: 1"=10'




SECTION "A"–"A"


**PARKER MYNCHENBERG & ASSOCIATES, INC.**

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CERTIFICATE OF AUTHORIZATION NUMBER 00003910


| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

DIRECTIONAL DRILL DETAILS

DEV 2018–
CITY APPROVAL STAMP

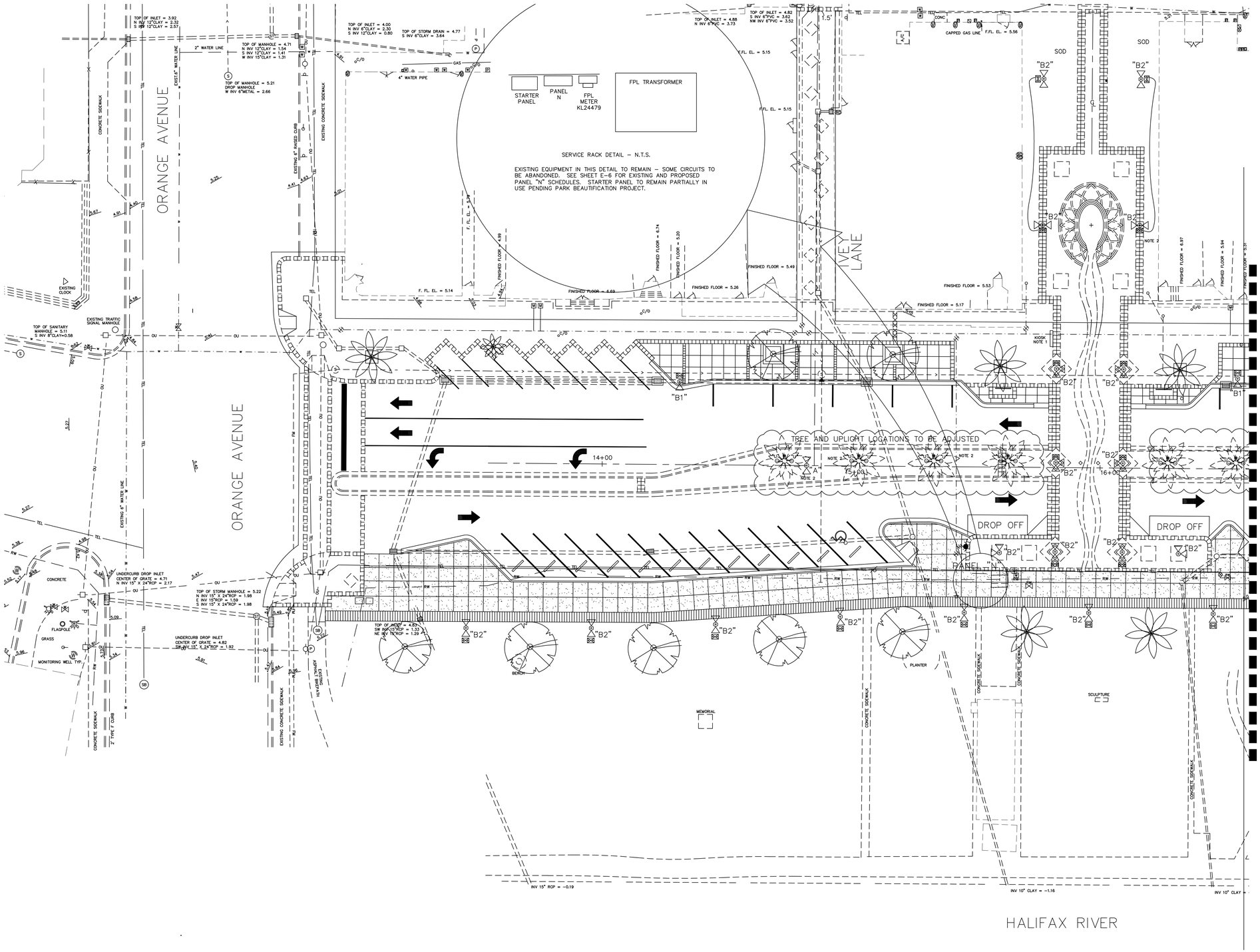
54
SHEET NO.

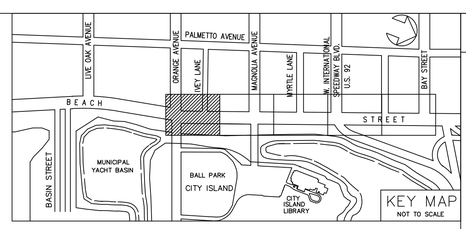
Drawn By: M. GRECO

Date: 08/30/18

SCALE: AS SHOWN


W:\Beach Street - Orange to Bay - 18311\1831 DIR_DRILL.dwg, Model, 10/9/2018 2:39:51 PM, Shane_B, DWG To PDF.pc3, 24X36, 1:1




GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 20'

ELECTRICAL PLAN NOTES

1. KIOSK HAS POWER FROM EITHER CIRCUIT N-15 OR N-16. DETERMINE WHICH CIRCUIT AND PRESERVE CIRCUIT TO THIS KIOSK FOR FUTURE USE.
2. CIRCUIT N-17 NOW FEEDS 4 ALLEY POST LIGHTS, THE SOUTH-MOST TALL TYPE "A" MEDIAN POLE LIGHT, AND FOUR MEDJOOL PALM UP LIGHTS (TWO TREES). RECONFIGURE THIS CIRCUIT SUCH THAT IT WILL FEED EIGHT MEDJOOL UP LIGHTS (FOUR TREES), AND NOT THE TYPE 'A' POLE LIGHT NOR THE 4 ALLEY POST LIGHTS.

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|

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ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LANDSCAPE PLAN

DEV 2018–
CITY APPROVAL STAMP

E1
SHEET NO.

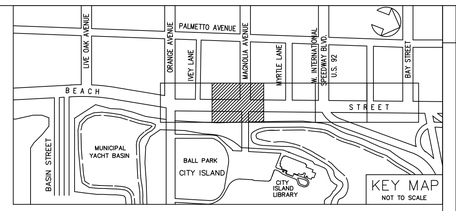
Drawn By: JMP

Date: Oct. 6, 2018

SCALE: 1"=20'

**PRELIMINARY - NOT FOR CONSTRUCTION**

JOHN M. PATTERSON, P.E.
ELECTRICAL CONSULTANT
1291 JOHN ANDERSON DR.
ORMOND BEACH, FL. 32176
(386)-441-2382
FL. REG. PE # 54181




GRAPHIC SCALE

0 10 20 40 60

SCALE: 1" = 20'

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|
| | | | |

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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LANDSCAPE PLAN

DEV 2018-
CITY APPROVAL STAMP

E2
SHEET NO.

Drawn By: JMP

Date: Oct. 6, 2018

SCALE: 1"=20'

**PRELIMINARY - NOT FOR CONSTRUCTION**

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ELECTRICAL CONSULTANT
1291 JOHN ANDERSON DR.
ORMOND BEACH, FL. 32176
(386)-441-2382
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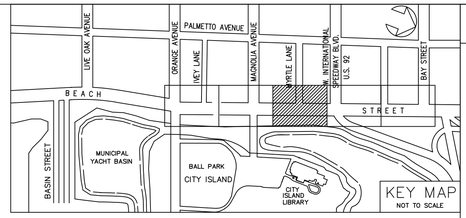

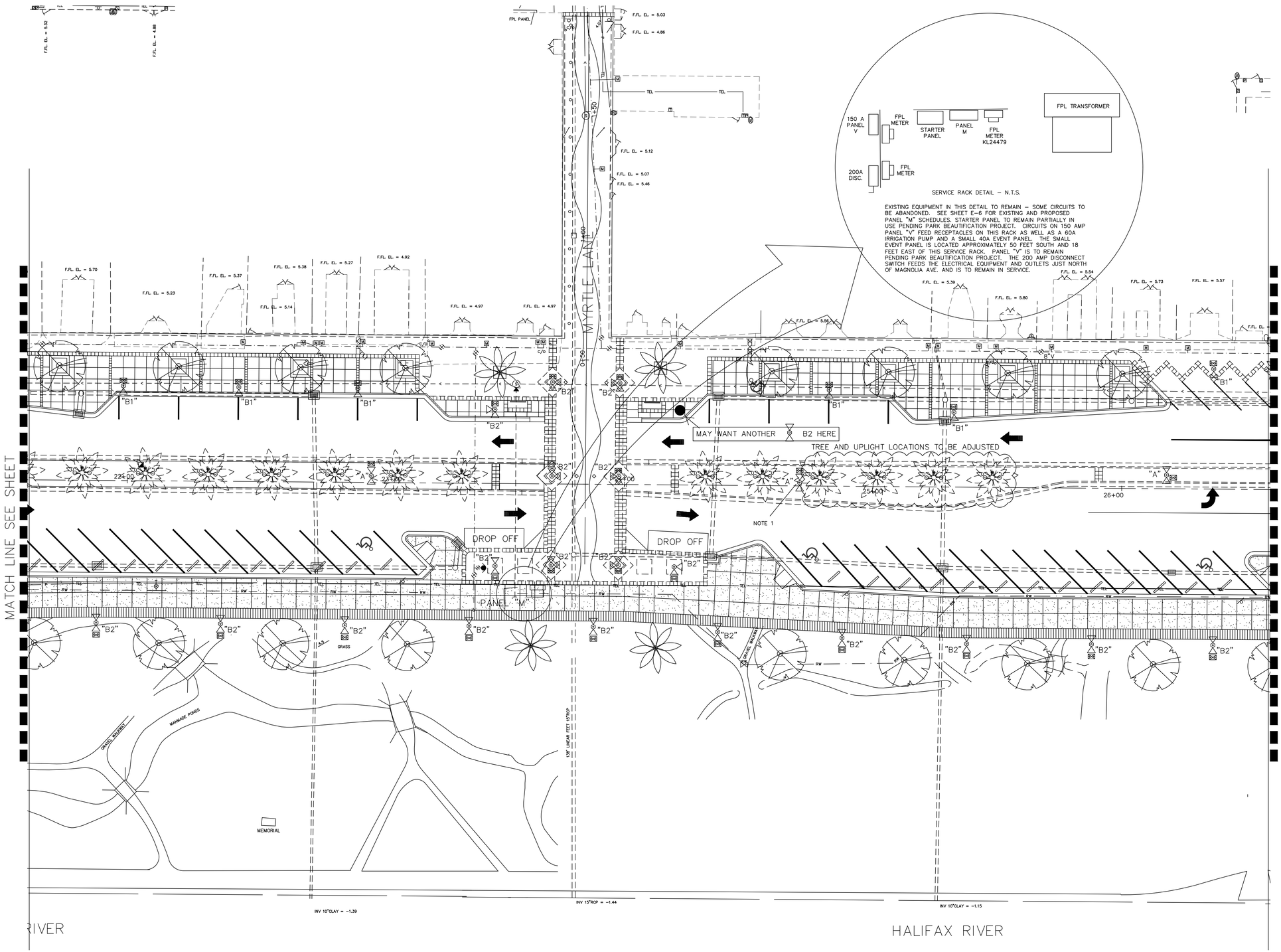


ELECTRICAL PLAN NOTES

1. TAG READER MOUNTED ON THIS POLE. IF FPL REPLACES THIS POLE, ELECTRICAL CONTRACTOR TO REMOVE THIS EQUIPMENT UNDER THE SUPERVISION OF THE CONTRACT ADMINISTRATOR AND TURN IT OVER FOR SAFE-KEEPING. ONCE THE NEW POLE IS IN PLACE, ELECTRICAL CONTRACTOR TO RE-MOUNT THE EQUIPMENT UNDR THE SUPERVISION OF THE CONTRACTOR ADMINISTRATOR OR HIS DESIGNEE.

**PRELIMINARY - NOT FOR CONSTRUCTION**

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BEACH STREET STREETSCAPE
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DAYTONA BEACH * FLORIDA

LANDSCAPE PLAN

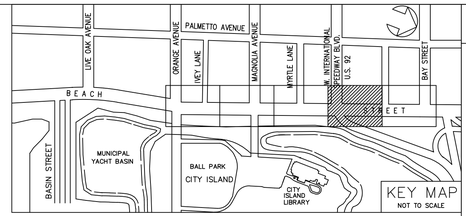
DEV 2018-
CITY APPROVAL STAMP

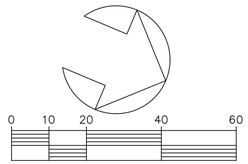
E3
SHEET NO.

Drawn By: JMP

Date: Oct. 6, 2018

SCALE: 1"=20'



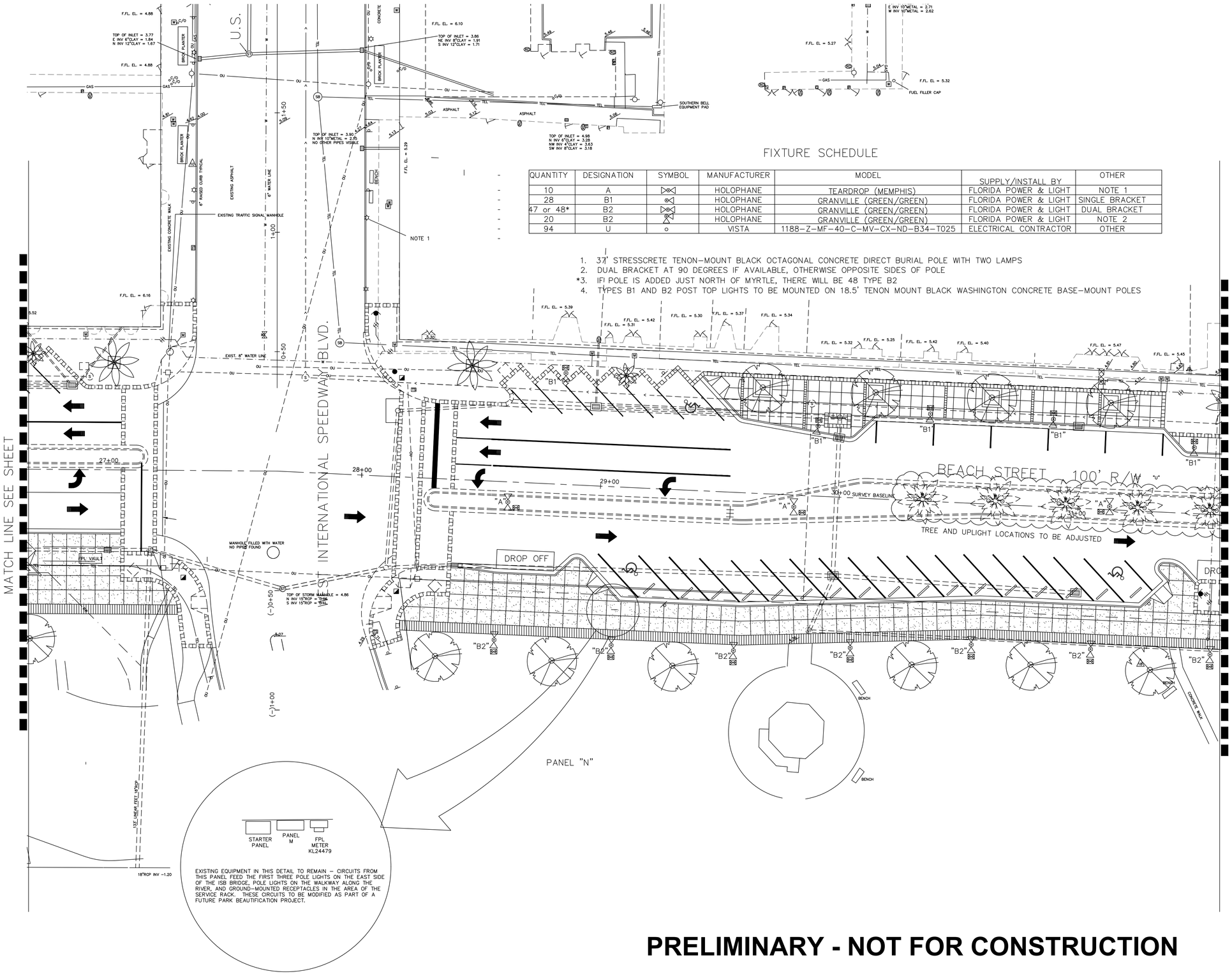

## FIXTURE SCHEDULE

| QUANTITY | DESIGNATION | SYMBOL | MANUFACTURER | MODEL | SUPPLY/INSTALL BY | OTHER |
|---|---|---|---|---|---|---|
| 10 | A | | HOLOPHANE | TEARDROP (MEMPHIS) | FLORIDA POWER & LIGHT | NOTE 1 |
| 28 | B1 | | HOLOPHANE | GRANVILLE (GREEN/GREEN) | FLORIDA POWER & LIGHT | SINGLE BRACKET |
| 47 or 48* | B2 | | HOLOPHANE | GRANVILLE (GREEN/GREEN) | FLORIDA POWER & LIGHT | DUAL BRACKET |
| 20 | B2 | | HOLOPHANE | GRANVILLE (GREEN/GREEN) | FLORIDA POWER & LIGHT | NOTE 2 |
| 94 | U | | VISTA | 1188-Z-MF-40-C-MV-CX-ND-B34-T025 | ELECTRICAL CONTRACTOR | OTHER |

1. 37' STRESSCRETE TENON-MOUNT BLACK OCTAGONAL CONCRETE DIRECT BURIAL POLE WITH TWO LAMPS
2. DUAL BRACKET AT 90 DEGREES IF AVAILABLE, OTHERWISE OPPOSITE SIDES OF POLE
*3. IF1 POLE IS ADDED JUST NORTH OF MYRTLE, THERE WILL BE 48 TYPE B2
4. TYPES B1 AND B2 POST TOP LIGHTS TO BE MOUNTED ON 18.5' TENON MOUNT BLACK WASHINGTON CONCRETE BASE-MOUNT POLES

ELECTRICAL PLAN NOTES

1. TAG READER ON ISB MOUNTED ON THIS POLE. [TO BE CONFIRMED] POWER FOR THIS UNIT COMES FROM PANEL "P[" LOCATED BEHIND THE WAR MEMORIAL - DO NOT INTERRUPT THIS POWER.

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| NO. | DATE | DESCRIPTION | BY |
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| | | REVISIONS | |

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BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH • FLORIDA

LANDSCAPE PLAN

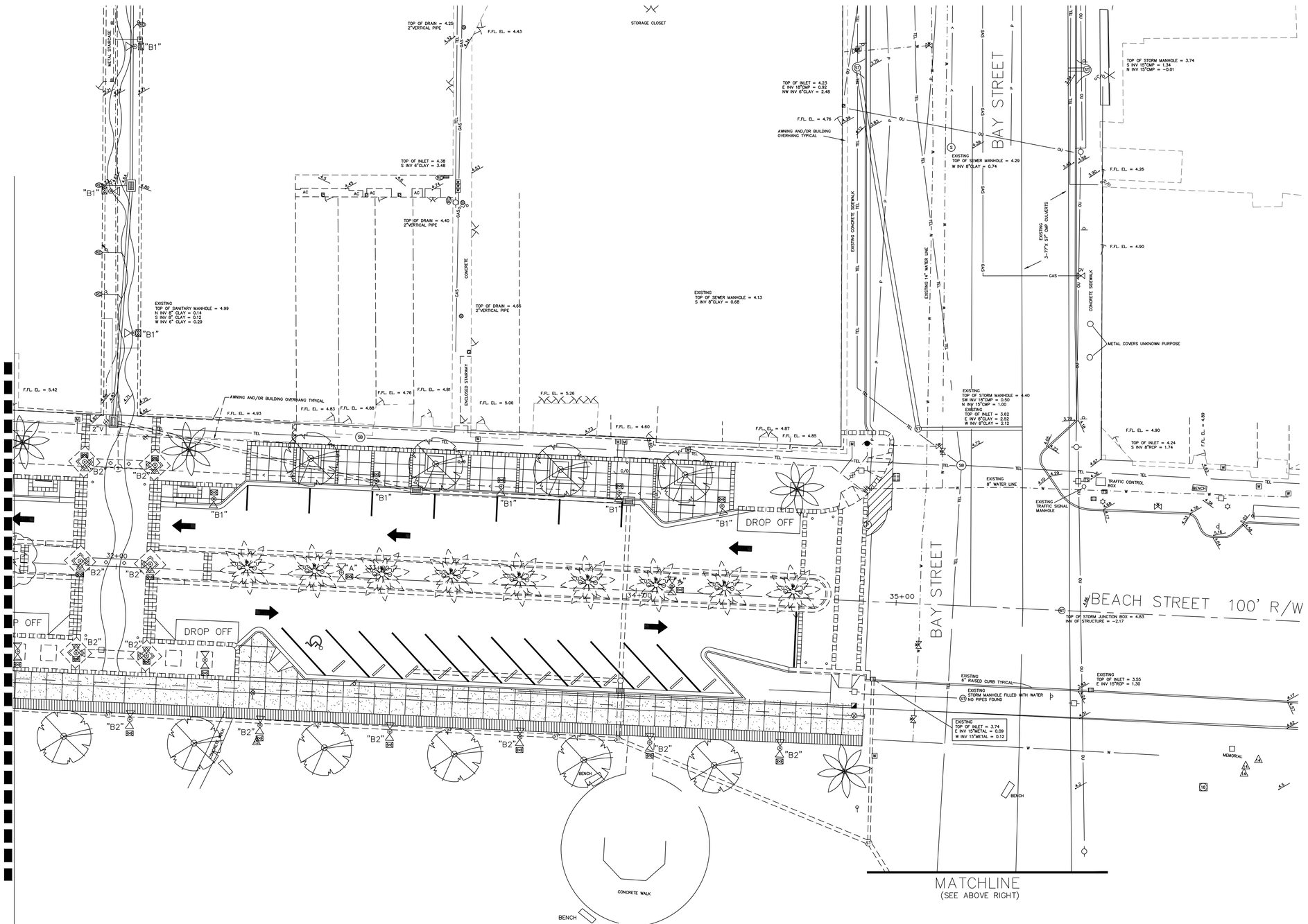
DEV 2018-
CITY APPROVAL STAMP

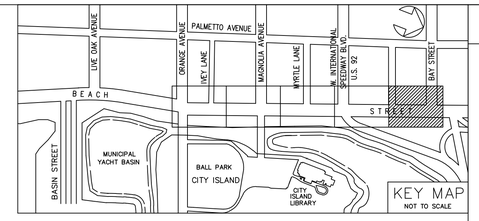
E4
SHEET NO.

Drawn By: JMP

Date: Oct. 6, 2018

SCALE: 1"=20'




GRAPHIC SCALE
0 10 20 40 60
SCALE: 1" = 20'

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

PARKER MYNCHENBERG & ASSOCIATES, INC.
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CERTIFICATE OF AUTHORIZATION NUMBER 00003910

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

LANDSCAPE PLAN

PANEL "P" PANEL "Q"

ELECTRICAL "HUT" LOCATED APPROX. 100 FT EAST OF BEACH STREET R.O.W. AND BEHIND THE WAR MEMORIAL THIS HUT HOUSES PANELS "P" AND "Q". SEE SHEET E-6 FOR REQUIRED WORK INVOLVING PANEL "P"

DEV 2018–
CITY APPROVAL STAMP

E5
SHEET NO.

Drawn By: JMP
Date: Oct. 6, 2018
SCALE: 1"=20'

**PRELIMINARY - NOT FOR CONSTRUCTION**

JOHN M. PATTERSON, P.E.
ELECTRICAL CONSULTANT
1291 JOHN ANDERSON DR.
ORMOND BEACH, FL. 32176
(386)-441-2382
FL. REG. PE # 54181

EXISTING PANEL "N"

SCHEDULE FOR PANEL: N BUSSING AMPS: 200A VOLTAGE: 120/208 PHASE: 3 WIRE: 4 NEMA: 3R
MAINS: 200A/3 C/B MOUNTING: RACK MFGR.: SQ D REMARKS: EXISTING AIC

| | CCT | LOAD DESCRIPTION | AMP | P | WIRE | cond. | kva | Ø | kva | cond. | WIRE | P | AMP | LOAD DESCRIPTION | CCT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | S. ARCH LTS, POLES 17,19,21 | 20 | 1 | | – | – | A | – | – | | 1 | 20 | RECEPTACLES | 2 | |
| | 3 | N. & CNTR. HIGH POLES | 20 | 1 | | | | B | | | | 1 | 20 | RECEPTACLES | 4 | |
| B | 5 | POLES 14,16,18,20,22,24,26 | 20 | 1 | | | | C | | | | 1 | 20 | POLES 28–34 – RECEPTACLES | 6 | |
| B | 7 | N. ARCH LTS. POLES 28,30,32,34 | 20 | 1 | | | | A | | | | 1 | 20 | POLES 14,24,26 – RECEPTACLES | 8 | |
| | 9 | "D" MEDIAN UPLIGHTS 5–16 | | 1 | | | | B | | | | 1 | 20 | RECEPTACLES | 10 | |
| C | 11 | "C" FIXT. LIGHTS 1,3,5,7,9,11,13,15 | 20 | 1 | | | | C | | | | 1 | 20 | POLES 17,19,21 RECEPTACLES | 12 | |
| | 13 | RIVERFRONT PARK WALKWAY LIGHTS | 20 | 1 | | | | A | | | | 1 | 20 | POLES 6,8,10,12 – RECEPTACLES | 14 | |
| B | 15 | POLES 8,10,12,14 | 20 | 1 | | | | B | | | | 1 | 20 | RECEPTACLES | 16 | |
| | 17 | "D" MED UPLITS 1–4 & ALLEY LTS | 20 | 1 | | | | C | | | | 1 | 20 | POLES 1,3,5,7 – RECEPTACLES | 18 | |
| | 19 | SPARE | 20 | 1 | | | | A | | | | 1 | 20 | POLES 9,11,13,15 – RECEPTACLES | 20 | D |
| | 21 | SPARE | 20 | 1 | | | | B | | | | 1 | 20 | DOCK RECEPTACLE | 22 | |
| | 23 | SPARE | 20 | 1 | | | | C | | | | 1 | 20 | CONTROL POWER | 24 | |
| | 25 | SPARE | 20 | 1 | | | | A | | | | 1 | 20 | SPARE | 26 | |
| | 27 | SPARE | | | | | | B | | | | | | BLANK | 28 | |
| | 29 | BLANK | | | | | | C | | | | | | BLANK | 30 | |
| | 31 | BLANK | | | | | | A | | | | | | BLANK | 32 | |
| | 33 | BLANK | | | | | | B | | | | | | BLANK | 34 | |
| | 35 | BLANK | | | | | | C | | | | | | BLANK | 36 | |
| | 37 | BLANK | | | | | | A | | | | | | BLANK | 38 | |
| | 39 | BLANK | | | | | | B | | | | | | BLANK | 40 | |
| | 41 | BLANK | | | | | | C | | | | | | BLANK | 42 | |

KILOVOLTAMPS: PHASE A: PHASE B: PHASE C: TOTAL CONNECTED KVA:
(CONTINUOUS KVA ( 0 ) x 1.25 : 0 ) + (REMAINDER x 1.00) = TOTAL DEMAND KVA: TL AMPS:

BASED ON PANEL DIRECTORY, PHOTO AND INSPECTION (9–19–18)

PANEL "N" AFTER CHANGES

SCHEDULE FOR PANEL: N BUSSING AMPS: 200A VOLTAGE: 120/208 PHASE: 3 WIRE: 4 NEMA: 3R
MAINS: 200A/3 C/B MOUNTING: RACK MFGR.: SQ D REMARKS: EXISTING AIC

| | CCT | LOAD DESCRIPTION | AMP | P | WIRE | cond. | kva | Ø | kva | cond. | WIRE | P | AMP | LOAD DESCRIPTION | CCT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | SPARE | 20 | 1 | | – | – | A | – | – | | 1 | 20 | RECEPTACLES | 2 | |
| | 3 | SPARE | 20 | 1 | | | | B | | | | 1 | 20 | RECEPTACLES | 4 | |
| B | 5 | SPARE | 20 | 1 | | | | C | | | | 1 | 20 | SPARE | 6 | |
| B | 7 | SPARE | 20 | 1 | | | | A | | | | 1 | 20 | SPARE | 8 | |
| | 9 | "D" MEDIAN UPLIGHTS 5–16 | | 1 | | | | B | | | | 1 | 20 | RECEPTACLES | 10 | |
| C | 11 | SPARE | 20 | 1 | | | | C | | | | 1 | 20 | SPARE | 12 | |
| | 13 | RIVERFRONT PARK WALKWAY LIGHTS | 20 | 1 | | | | A | | | | 1 | 20 | SPARE | 14 | |
| B | 15 | SPARE | 20 | 1 | | | | B | | | | 1 | 20 | RECEPTACLES | 16 | |
| | 17 | "D" MED UPLITS 1–4 & ALLEY LTS | 20 | 1 | | | | C | | | | 1 | 20 | SPARE | 18 | |
| | 19 | SPARE | 20 | 1 | | | | A | | | | 1 | 20 | SPARE | 20 | |
| | 21 | SPARE | 20 | 1 | | | | B | | | | 1 | 20 | DOCK RECEPTACLE | 22 | |
| | 23 | SPARE | 20 | 1 | | | | C | | | | 1 | 20 | CONTROL POWER | 24 | |
| | 25 | SPARE | 20 | 1 | | | | A | | | | 1 | 20 | SPARE | 26 | |
| | 27 | SPARE | | | | | | B | | | | | | BLANK | 28 | |
| | 29 | BLANK | | | | | | C | | | | | | BLANK | 30 | |
| | 31 | BLANK | | | | | | A | | | | | | BLANK | 32 | |
| | 33 | BLANK | | | | | | B | | | | | | BLANK | 34 | |
| | 35 | BLANK | | | | | | C | | | | | | BLANK | 36 | |
| | 37 | BLANK | | | | | | A | | | | | | BLANK | 38 | |
| | 39 | BLANK | | | | | | B | | | | | | BLANK | 40 | |
| | 41 | BLANK | | | | | | C | | | | | | BLANK | 42 | |

KILOVOLTAMPS: PHASE A: PHASE B: PHASE C: TOTAL CONNECTED KVA:
(CONTINUOUS KVA ( 0 ) x 1.25 : 0 ) + (REMAINDER x 1.00) = TOTAL DEMAND KVA: TL AMPS:

BASED ON PANEL DIRECTORY, PHOTO AND INSPECTION (9–19–18)

SPECIAL NOTES
1. KIOSK HAS POWER FROM EITHER CIRCUIT N–15 OR N–16. DETERMINE WHICH CIRCUIT AND PRESERVE CIRCUIT TO THIS KIOSK FOR FUTURE USE.
2. CIRCUIT N–17 NOW FEEDS 4 ALLEY POST LIGHTS, THE SOUTH–MOST TALL TYPE "A" MEDIAN POLE LIGHT, AND FOUR MEDJOOL PALM UP LIGHTS (TWO TREES). RECONFIGURE THIS CIRCUIT SUCH THAT IT WILL FEED EIGHT MEDJOOL UP LIGHTS (FOUR TREES), AND NOT THE TYPE "A" POLE LIGHT NOR THE 4 ALLEY POST LIGHTS.

EXISTING PANEL "V"

SCHEDULE FOR PANEL: V BUSSING AMPS: 150A VOLTAGE: 120/208 PHASE: 3 WIRE: 4 NEMA: 3R
MAINS: 150A/3 C/B MOUNTING: RACK MFGR.: SQ D REMARKS: EXISTING AIC

| CCT | LOAD DESCRIPTION | AMP | P | WIRE | cond. | kva | Ø | kva | cond. | WIRE | P | AMP | LOAD DESCRIPTION | CCT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | OUTLETS | 20 | 1 | | – | – | A | – | – | | 2 | 30 | 30A 208V RECEPT. | 2 | |
| 3 | OUTLETS | 20 | 1 | | | | B | | | | | | | 4 | |
| 5 | OUTLETS | 20 | 1 | | | | C | | | | 2 | 50 | 50A 208V RECEPT. | 6 | |
| 7 | OUTLETS | 20 | 1 | | | | A | | | | | | | 8 | |
| 9 | 30A 208V RECEPT. | 30 | 2 | | | | B | | | | 2 | 50 | 50A 208V RECEPT. | 10 | |
| 11 | | | | | | | C | | | | | | | 12 | |
| 13 | BLANK | | | | | | A | | | | | | BLANK | 14 | |
| 15 | BLANK | | | | | | B | | | | | | BLANK | 16 | |
| 17 | BLANK | | | | | | C | | | | | | BLANK | 18 | |
| 19 | BLANK | | | | | | A | | | | | | BLANK | 20 | D |
| 21 | BLANK | | | | | | B | | | | | | BLANK | 22 | |
| 23 | BLANK | | | | | | C | | | | | | BLANK | 24 | |
| 25 | NOT KNOWN | 20 | 1 | | | | A | | | | | | BLANK | 26 | |
| 27 | EVENT PANEL | 40 | 2 | | | | B | | | | 2 | 60 | IRRIGATION PUMP | 28 | |
| 29 | | | | | | | C | | | | | | | 30 | |
| | | | | | | | A | | | | | | | | |
| | | | | | | | B | | | | | | | | |
| | | | | | | | C | | | | | | | | |
| | | | | | | | A | | | | | | | | |
| | | | | | | | B | | | | | | | | |
| | | | | | | | C | | | | | | | | |

KILOVOLTAMPS: PHASE A: PHASE B: PHASE C: TOTAL CONNECTED KVA:
(CONTINUOUS KVA ( 0 ) x 1.25 : 0 ) + (REMAINDER x 1.00) = TOTAL DEMAND KVA: 2.1 TL AMPS:

PANEL DIRECTORY BASED ON PANEL INSPECTION

NO CHANGES ANTICIPATED AT THIS PANEL

EXISTING PANEL "M"

SCHEDULE FOR PANEL: M BUSSING AMPS: 200 VOLTAGE: 120/208 PHASE: 3 WIRE: 4 NEMA: 3R
MAINS: 200/3 C/B MOUNTING: RACK MFGR.: SQ D REMARKS: EXISTING AIC

| | CCT | LOAD DESCRIPTION | AMP | P | WIRE | cond. | kva | Ø | kva | cond. | WIRE | P | AMP | LOAD DESCRIPTION | CCT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | ONE "A" MEDIAN POLE | 20 | 1 | #10 | – | – | A | – | – | #10 | 1 | 20 | ONE "A" MEDIAN POLE | 2 | |
| | 3 | ONE "A" MEDIAN POLE | 20 | 1 | #10 | – | – | B | | | #10 | 1 | 20 | ONE "A" MEDIAN POLE | 4 | |
| | 5 | LIGHTS N. WALK 23–27 RIVER N–DOCK RECEPT. | 20 | 1 | | – | – | C | | | | 1 | 20 | PHOTOCELL | 6 | |
| | 7 | MAGNOLIA TRAFFIC CONTROL | 60 | 2 | | | | A | | | | 1 | 20 | TIME CLOCK | 8 | |
| | 9 | MAGNOLIA TRAFFIC CONTROL | | – | | | | B | | | | | | BLANK | 10 | |
| | 11 | BLANK | | 1 | | | | C | | | | | | BLANK | 12 | |
| | 13 | BLANK | 20 | 1 | | | | A | | | | | | BLANK | 14 | |
| C | 15 | POLES 33–37 "B" AND "C" | 20 | 1 | | | | B | | | | | | BLANK | 16 | |
| | 17 | POLES 35–39 RECEPTACLES | 20 | 1 | | | | C | | | | | | BLANK | 18 | |
| C | 19 | POLES 50–54 "C" LIGHTS | 20 | 1 | | | | A | | | | 1 | 20 | MEDIAN "D" UPLIGHTS 29–34 | 20 | D |
| | 21 | POLES 50–54 RECEPTACLES | 20 | 1 | | | | B | | | | 1 | 20 | SPARE | 22 | |
| D | 23 | MEDIAN LIGHTS N. 25–28 | 20 | 1 | | | | C | | | | 1 | 20 | S. MEDIAN "D" UPLIGHTS 17–24 | 24 | D |
| C | 25 | POLES 41–43 "C" LIGHTS | 20 | 1 | | | | A | | | | 1 | 20 | POLES 42–48 "B" LIGHTS | 26 | |
| | 27 | POLES 41–43 RECEPTACLES | 20 | 1 | | | | B | | | | 1 | 20 | POLES 42–44 RECEPTACLES | 28 | |
| | 29 | POLES 36–40 "B" LIGHTS | 20 | 1 | | | | C | | | | 1 | 20 | POLES 27–31 "C" LIGHTS | 30 | C |
| | 31 | POLES 36–40 RECEPTACLES | 20 | 1 | | | | A | | | | 1 | 20 | POLES 27–33 RECEPTACLES | 32 | |
| | 33 | LIGHTS S. WALK 11–15 RIVER S–DOCK RECEPT. | 20 | 1 | | | | B | | | | 1 | 20 | TAG READER | 34 | |
| | 35 | TOWER NORTH | 20 | 1 | | | | C | | | | 1 | 20 | BLANK | 36 | |
| | 37 | "D" LIGHTS S. WALK RIVERFRONT | 20 | 1 | | | | A | | | | 1 | 20 | POLES 46–48 RECEPTACLES | 38 | |
| | 39 | BLANK | | | | | | B | | | | | | BLANK | 40 | |
| | 41 | LIGHTS N. WALK 29–33 RIVER | | | | | | C | | | | | | BLANK | 42 | |

KILOVOLTAMPS: PHASE A: X PHASE B: X PHASE C: X TOTAL CONNECTED KVA: X
(CONTINUOUS KVA ( 0 ) x 1.25 : 0 ) + (REMAINDER x 1.00) = TOTAL DEMAND KVA: TL AMPS: X

** WEST OF MAGNOLIA

SCHEDULE DEVELOPED FROM PHOTO OF PANEL DIRECTORY AND INSPECTION 9–6–18

PANEL "M" AFTER CHANGES

SCHEDULE FOR PANEL: M BUSSING AMPS: 200 VOLTAGE: 120/208 PHASE: 3 WIRE: 4 NEMA: 3R
MAINS: 200/3 C/B MOUNTING: RACK MFGR.: SQ D FPL METER # KL2 REMARKS: EXISTING AIC

| | CCT | LOAD DESCRIPTION | AMP | P | WIRE | cond. | kva | Ø | kva | cond. | WIRE | P | AMP | LOAD DESCRIPTION | CCT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | SPARE | 20 | 1 | | – | – | A | – | – | #10 | 1 | 20 | SPARE | 2 | |
| | 3 | SPARE | 20 | 1 | | – | – | B | | | #10 | 1 | 20 | SPARE | 4 | |
| | 5 | LIGHTS N. WALK 23–27 RIVER N–DOCK RECEPT. | 20 | 1 | | – | – | C | | | | 1 | 20 | PHOTOCELL | 6 | |
| | 7 | MAGNOLIA TRAFFIC CONTROL | 60 | 2 | | | | A | | | | 1 | 20 | TIME CLOCK | 8 | |
| | 9 | MAGNOLIA TRAFFIC CONTROL | | – | | | | B | | | | | | BLANK | 10 | |
| | 11 | BLANK | | 1 | | | | C | | | | | | BLANK | 12 | |
| | 13 | BLANK | 20 | 1 | | | | A | | | | | | BLANK | 14 | |
| | 15 | SPARE | 20 | 1 | | | | B | | | | | | BLANK | 16 | |
| | 17 | SPARE | 20 | 1 | | | | C | | | | | | BLANK | 18 | |
| | 19 | SPARE | 20 | 1 | | | | A | | | | 1 | 20 | MEDIAN "D" UPLIGHTS 29–34 | 20 | |
| | 21 | SPARE | 20 | 1 | | | | B | | | | 1 | 20 | SPARE | 22 | |
| | 23 | MEDIAN LIGHTS N. 25–28 | 20 | 1 | | | | C | | | | 1 | 20 | S. MEDIAN "D" UPLIGHTS 17–24 | 24 | |
| | 25 | SPARE | 20 | 1 | | | | A | | | | 1 | 20 | SPARE | 26 | |
| | 27 | SPARE | 20 | 1 | | | | B | | | | 1 | 20 | SPARE | 28 | |
| | 29 | SPARE | 20 | 1 | | | | C | | | | 1 | 20 | SPARE | 30 | |
| | 31 | SPARE | 20 | 1 | | | | A | | | | 1 | 20 | SPARE | 32 | |
| | 33 | LIGHTS S. WALK 11–15 RIVER S–DOCK RECEPT. | 20 | 1 | | | | B | | | | 1 | 20 | TAG READER | 34 | |
| | 35 | SPARE | 20 | 1 | | | | C | | | | 1 | 20 | BLANK | 36 | |
| | 37 | "D" LIGHTS S. WALK RIVERFRONT | 20 | 1 | | | | A | | | | 1 | 20 | SPARE | 38 | |
| | 39 | BLANK | | | | | | B | | | | | | BLANK | 40 | |
| | 41 | LIGHTS N. WALK 29–33 RIVER | | | | | | C | | | | | | BLANK | 42 | |

KILOVOLTAMPS: PHASE A: X PHASE B: X PHASE C: X TOTAL CONNECTED KVA: X
(CONTINUOUS KVA ( 0 ) x 1.25 : 0 ) + (REMAINDER x 1.00) = TOTAL DEMAND KVA: TL AMPS: X

** WEST OF MAGNOLIA

SCHEDULE DEVELOPED FROM PHOTO OF PANEL DIRECTORY 9–6–18

GENERAL PROJECT ELECTRICAL NOTES

1. DEMOLITION – REMOVAL AND DISPOSAL OF EXISTING POLES AND LAMPS – TO BE DISCUSSED
2. ON THE EAST SIDE OF BEACH STREET, THERE IS A CONDUIT WITH A FIBER TRAFFIC CABLE LOCATED UNDERGROUND SLIGHTLY EAST OF THE EXISTING SIDEWALK. HANDHOLES LABELED "TRAFFIC" ARE VISIBLE IN SOME LOCATIONS. THIS CONDUIT AND FIBER CABLE ARE TO BE PRESERVED AND MAINTAINED IN SERVICE AT ALL TIMES.
3.

EXISTING PANEL "P"

SCHEDULE FOR PANEL: P BUSSING AMPS: 200 VOLTAGE: 120/208 PHASE: 3 WIRE: 4 NEMA: 3R
MAINS: 200A/3 C/B MOUNTING: RACK MFGR.: GE REMARKS: EXISTING AIC

| CCT | LOAD DESCRIPTION | AMP | P | WIRE | cond. | kva | Ø | kva | cond. | WIRE | P | AMP | LOAD DESCRIPTION | CCT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TALL MEDIAN POLE 3RD FROM SOUTH | 20 | 1 | | – | – | A | – | – | | 1 | 20 | TALL MEDIAN POLE 4TH FROM SOUTH | 2 | |
| 3 | POLE LIGHTS – POLES 56,58,60,62 | 20 | 1 | | – | – | B | | | | 1 | 20 | POLE LIGHTS – POLES 64,66,68 | 4 | |
| 5 | POLE RECEPT'S. – POLES 56,58,60,62 | 20 | 1 | | – | – | C | | | | 1 | 20 | POLE RECEPT'S. – POLES 64,66,68 | 6 | |
| 7 | S. "D" COLUMN LIGHTS | 20 | 1 | | | | A | | | | 1 | 20 | N. "D" COLUMN LIGHTS | 8 | |
| 9 | "B" EAST | 20 | 1 | | | | B | | | | 1 | 20 | POLE LIGHTS – POLES 70,72,74 | 10 | |
| 11 | POLE RECEPT'S. – ALLEY POLES | 20 | 1 | | | | C | | | | 1 | 20 | POLE RECEPT'S. – POLES 70,72,74 | 12 | |
| 13 | POLE LIGHTS – POLES 51,53,55 | 20 | 1 | | | | A | | | | 1 | 20 | POLE LIGHTS – POLES 47,49 | 14 | |
| 15 | POLE RECEPT'S. – POLES 51,53,55 | 20 | 1 | | | | B | | | | 1 | 20 | POLE RECEPT'S. – POLES 47,49 | 16 | |
| 17 | MEDIAN "D" TREE LIGHTS – #'s 47,49,51,53,55,57 | 20 | 1 | | | | C | | | | 1 | 20 | POLE LIGHTS – ALLEY POLES | 18 | |
| 19 | MEDIAN 'D' TREE LIGHTS – #'s 34,35,36,37,38,39 | 20 | 1 | | | | A | | | | 1 | 20 | MEDIAN "D" TREE LIGHTS #'s 40,41,42,43,44,45 | 20 | |
| 21 | TALL MEDIAN POLE 5TH FROM SOUTH | 20 | 1 | | | | B | | | | 1 | 20 | RECEPTACLE | 22 | |
| 23 | TALL MEDIAN POLE 1ST FROM SOUTH | 20 | 1 | | | | C | | | | 1 | 20 | RECEPTACLE | 24 | |
| 25 | TALL MEDIAN POLE 2ND FROM SOUTH | 20 | 1 | | | | A | | | | 1 | 20 | RECEPTACLE | 26 | |
| 27 | KIOSK ?? | 20 | 1 | | | | B | | | | 1 | 20 | PUMP OUTSIDE | 28 | |
| 29 | IRRIGATION | 20 | 1 | | | | C | | | | 1 | 20 | PUMP OUTSIDE | 30 | |
| 31 | BLANK | | | | | | A | | | | 1 | 20 | TAG READER | 32 | |
| 33 | BLANK | | | | | | B | | | | 1 | 20 | BLANK | 34 | |
| 35 | BLANK | | | | | | C | | | | 1 | 20 | BLANK | 36 | |
| 37 | BLANK | | | | | | A | | | | 1 | 20 | BLANK | 38 | |
| 39 | BLANK | | | | | | B | | | | | | BLANK | 40 | |
| 41 | BLANK | | | | | | C | | | | | | BLANK | 42 | |

KILOVOLTAMPS: PHASE A: X PHASE B: X PHASE C: X TOTAL CONNECTED KVA: X
(CONTINUOUS KVA ( 0 ) x 1.25 : 0 ) + (REMAINDER x 1.00) = TOTAL DEMAND KVA: TL AMPS: X

** WEST OF MAGNOLIA

SCHEDULE DEVELOPED FROM HANDWRITTEN NOTES PROVIDED BY WILLIAM (BUDDY) JOHNSON AND PHOTOS

PANEL "P" AFTER CHANGES

SCHEDULE FOR PANEL: P BUSSING AMPS: 200 VOLTAGE: 120/208 PHASE: 3 WIRE: 4 NEMA: 3R
MAINS: 200A/3 C/B MOUNTING: RACK MFGR.: GE REMARKS: EXISTING AIC

| CCT | LOAD DESCRIPTION | AMP | P | WIRE | cond. | kva | Ø | kva | cond. | WIRE | P | AMP | LOAD DESCRIPTION | CCT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SPARE | 20 | 1 | | – | – | A | – | – | | 1 | 20 | SPARE | 2 | |
| 3 | SPARE | 20 | 1 | | – | – | B | | | | 1 | 20 | SPARE | 4 | |
| 5 | SPARE | 20 | 1 | | – | – | C | | | | 1 | 20 | SPARE | 6 | |
| 7 | SPARE | 20 | 1 | | | | A | | | | 1 | 20 | SPARE | 8 | |
| 9 | SPARE | 20 | 1 | | | | B | | | | 1 | 20 | SPARE | 10 | |
| 11 | SPARE | 20 | 1 | | | | C | | | | 1 | 20 | SPARE | 12 | |
| 13 | SPARE | 20 | 1 | | | | A | | | | 1 | 20 | SPARE | 14 | |
| 15 | SPARE | 20 | 1 | | | | B | | | | 1 | 20 | SPARE | 16 | |
| 17 | MEDIAN "D" TREE LIGHTS – #'s 47,49,51,53,55,57 | 20 | 1 | | | | C | | | | 1 | 20 | SPARE | 18 | |
| 19 | MEDIAN 'D' TREE LIGHTS – #'s 34,35,36,37,38,39 | 20 | 1 | | | | A | | | | 1 | 20 | MEDIAN "D" TREE LIGHTS #'s 40,41,42,43,44,45 | 20 | |
| 21 | SPARE | 20 | 1 | | | | B | | | | 1 | 20 | RECEPTACLE | 22 | |
| 23 | SPARE | 20 | 1 | | | | C | | | | 1 | 20 | RECEPTACLE | 24 | |
| 25 | SPARE | 20 | 1 | | | | A | | | | 1 | 20 | RECEPTACLE | 26 | |
| 27 | KIOSK ?? | 20 | 1 | | | | B | | | | 1 | 20 | PUMP OUTSIDE | 28 | |
| 29 | IRRIGATION | 20 | 1 | | | | C | | | | 1 | 20 | PUMP OUTSIDE | 30 | |
| 31 | BLANK | | | | | | A | | | | 1 | 20 | TAG READER –(WHERE IS IT?) | 32 | |
| 33 | BLANK | | | | | | B | | | | 1 | 20 | BLANK | 34 | |
| 35 | BLANK | | | | | | C | | | | 1 | 20 | BLANK | 36 | |
| 37 | BLANK | | | | | | A | | | | 1 | 20 | BLANK | 38 | |
| 39 | BLANK | | | | | | B | | | | | | BLANK | 40 | |
| 41 | BLANK | | | | | | C | | | | | | BLANK | 42 | |

KILOVOLTAMPS: PHASE A: X PHASE B: X PHASE C: X TOTAL CONNECTED KVA: X
(CONTINUOUS KVA ( 0 ) x 1.25 : 0 ) + (REMAINDER x 1.00) = TOTAL DEMAND KVA: TL AMPS: X

** WEST OF MAGNOLIA

SCHEDULE DEVELOPED FROM HANDWRITTEN NOTES PROVIDED BY WILLIAM (BUDDY) JOHNSON AND PHOTOS

**PRELIMINARY - NOT FOR CONSTRUCTION**

JOHN M. PATTERSON, P.E.
ELECTRICAL CONSULTANT
1291 JOHN ANDERSON DR.
ORMOND BEACH, FL. 32176
(386)–441–2382
FL. REG. PE # 54181

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677–6891 FAX (386) 677–2114 E–MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

BEACH STREET STREETSCAPE
ORANGE TO BAY
DAYTONA BEACH * FLORIDA

ELECTRICAL SCHEDULES

DEV 2018–
CITY APPROVAL STAMP

E6
SHEET NO.

Drawn By: JMP

Date: Oct. 6, 2018

SCALE: AS NOTED

GRAPHIC SCALE

0 20 40 100

SCALE: 1" = 40'

# GENERAL NOTES:

1. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE THE 2018–2019 FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD PLANS.
2. FOR GENERAL TCZ REQUIREMENTS & ADDITIONAL INFORMATION, REFER TO FDOT STANDARD PLAN 102–600.
3. THE CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL SUPERVISOR (TCS) WHO WILL BE RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF THE TRAFFIC CONTROL OPERATION. THE TCS SHALL BE RESPONSIBLE FOR CONDUCTING PERIODIC INSPECTIONS OF THE TRAFFIC CONTROL ZONES, AND SHALL BE AVAILABLE ON–CALL WITHIN ONE HOUR OF NOTIFICATION BY PHONE IN THE CASE OF AN EMERGENCY.
4. UNLESS OTHERWISE SHOWN, CHANNELIZING DEVICES SHALL BE SPACED AS FOLLOWS:
   TAPERS & TURNING RADII: 25'
   TANGENT: 50'
5. THE NUMBER OF DEVICES SHOWN IN THESE PLANS IS FOR ILLUSTRATION PURPOSES. ADDITIONAL DEVICES MAY BE REQUIRED TO PROPERLY PROTECT THE WORKERS AND WORK ZONE FROM VEHICULAR TRAFFIC.
6. DURING NON–WORKING HOURS, NO EQUIPMENT, VEHICLES OR MATERIAL SHALL BE PARKED OR STORED WITHIN THE CLEAR ZONE OF A ROADWAY OPEN TO VEHICULAR TRAFFIC.
7. A MINIMUM 2' BUFFER ZONE SHALL BE MAINTAINED BETWEEN THE WORK ZONE AND TRAVEL LANES AT ALL TIMES.
8. MINIMUM WORK ZONE LANE WIDTHS SHALL BE 11'. 6" WHITE EDGE LINES ARE REQUIRED.
9. ALL MARKINGS IN CONFLICT SHALL BE REMOVED.
10. AS APPLICABLE, TEMPORARY STRIPING PLACED BY THE CONTRACTOR SHALL BE SUPPLEMENTED BY RPMs PER STANDARD PLAN 102–600.
11. NO DROP OFF CONDITION SHALL BE ALLOWED DURING NONWORKING HOURS WITHIN THE CLEAR ZONE OF ANY ROADWAY. DROP OFF CONDITIONS SHALL BE ELIMINATED PER STANDARD PLAN 102–600.
12. PER STANDARD PLAN 102–600, PROVISION FOR THE DISABLED MUST BE MAINTAINED/PROVIDED.

G20–2A
PLACED 500' BEYOND WORK ZONE
END ROAD WORK

W20–1
ROAD WORK AHEAD
200' FROM STOP BAR

R9–10
SIDEWALK CLOSED
USE OTHER SIDE

DETOUR

DETOUR

DETOUR

COMPLETED STREETSCAPE CONSTRUCTION

BEACH STREET

6" White

WORK ZONE

END ROAD WORK
G20–2A
PLACED 500' BEYOND WORK ZONE

ROAD WORK AHEAD
200' FROM STOP BAR

SIDEWALK CLOSED
USE OTHER SIDE
R9–10(L)

SIDEWALK CLOSED
USE OTHER SIDE
R9–10(R)

END ROAD WORK
G20–2A
PLACED 500' BEYOND WORK ZONE

400' FROM STOP BAR
ROAD WORK AHEAD
W20–1

300' FROM STOP BAR
SPEEDING FINES DOUBLED WHEN WORKERS PRESENT
MOT 14–04

PLACED AT STOP BAR
W21–1

## MAINTENANCE OF TRAFFIC: LEGEND

- WORK ZONE
- ADVANCE WARNING ARROW BOARD PER STANDARD PLANS: 102–600 SERIES DISPLAY TYPE: CAUTION
- TYPE III BARRICADE PER STANDARD PLANS: 102–600 SERIES
- CHANNELIZING DEVICE PER STANDARD PLANS: 102–600 SERIES
- WORK ZONE SIGN PER STANDARD PLANS: 102–600 SERIES

| SCALE | DRAWN | DESIGNED | CHECKED |
|---|---|---|---|
| 1"=40' | DF | DF | TD |

| DATE | REVISIONS |
|---|---|
| 10–8–18 | ORIGINAL PLAN DATE |


TRAFFIC PLANNING AND DESIGN, INC.
535 Versailles Drive Maitland, FL 32751
Tel: (407) 628–9955 Fax: (407) 628–8850
info@tpdtraffic.com www.tpdtraffic.com
Certificate of Authorization No. EB–3702


MOT TYPICAL (SUBSEQUENT CONSTRUCTION SECTION)

BEACH STREET STREETSCAPE

CITY OF DAYTONA BEACH, FLORIDA

MOT–2 OF MOT–2

TURGUT DERVISH
FLORIDA P.E. NO. 20400
10–8–18

TPD JOB# 5115 D1

GRAPHIC SCALE

0 20 40 100

SCALE: 1" = 40'

## GENERAL NOTES:

1. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE THE 2018-2019 FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD PLANS.
2. FOR GENERAL TCZ REQUIREMENTS & ADDITIONAL INFORMATION, REFER TO FDOT STANDARD PLAN 102-600.
3. THE CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL SUPERVISOR (TCS) WHO WILL BE RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF THE TRAFFIC CONTROL OPERATION. THE TCS SHALL BE RESPONSIBLE FOR CONDUCTING PERIODIC INSPECTIONS OF THE TRAFFIC CONTROL ZONES, AND SHALL BE AVAILABLE ON-CALL WITHIN ONE HOUR OF NOTIFICATION BY PHONE IN THE CASE OF AN EMERGENCY.
4. UNLESS OTHERWISE SHOWN, CHANNELIZING DEVICES SHALL BE SPACED AS FOLLOWS:
   TAPERS & TURNING RADII: 25'
   TANGENT: 50'
5. THE NUMBER OF DEVICES SHOWN IN THESE PLANS IS FOR ILLUSTRATION PURPOSES. ADDITIONAL DEVICES MAY BE REQUIRED TO PROPERLY PROTECT THE WORKERS AND WORK ZONE FROM VEHICULAR TRAFFIC.
6. DURING NON-WORKING HOURS, NO EQUIPMENT, VEHICLES OR MATERIAL SHALL BE PARKED OR STORED WITHIN THE CLEAR ZONE OF A ROADWAY OPEN TO VEHICULAR TRAFFIC.
7. A MINIMUM 2' BUFFER ZONE SHALL BE MAINTAINED BETWEEN THE WORK ZONE AND TRAVEL LANES AT ALL TIMES.
8. MINIMUM WORK ZONE LANE WIDTHS SHALL BE 11'. 6" WHITE EDGE LINES ARE REQUIRED.
9. ALL MARKINGS IN CONFLICT SHALL BE REMOVED.
10. AS APPLICABLE, TEMPORARY STRIPING PLACED BY THE CONTRACTOR SHALL BE SUPPLEMENTED BY RPMs PER STANDARD PLAN 102-600.
11. NO DROP OFF CONDITION SHALL BE ALLOWED DURING NONWORKING HOURS WITHIN THE CLEAR ZONE OF ANY ROADWAY. DROP OFF CONDITIONS SHALL BE ELIMINATED PER STANDARD PLAN 102-600.
12. PER STANDARD PLAN 102-600, PROVISION FOR THE DISABLED MUST BE MAINTAINED/PROVIDED.

G20-2A
PLACED 500' BEYOND WORK ZONE
END ROAD WORK

W20-1
ROAD WORK AHEAD
200' FROM STOP BAR

G20-2A
PLACED 500' BEYOND WORK ZONE
END ROAD WORK

Temporary Arrows & Messages (White)

DETOUR

DETOUR

R9-10
SIDEWALK CLOSED
USE OTHER SIDE

6" White

DETOUR

BEACH STREET

WORK ZONE

SIDEWALK CLOSED
USE OTHER SIDE
R9-10(R)

END ROAD WORK
G20-2A
PLACED 500' BEYOND WORK ZONE

END ROAD WORK
G20-2A
PLACED 500' BEYOND WORK ZONE

ROAD WORK AHEAD
W20-1
200' FROM STOP BAR

SIDEWALK CLOSED
USE OTHER SIDE
R9-10(L)

600' FROM STOP BAR
ROAD WORK AHEAD
W20-1

500' FROM STOP BAR
SPEEDING FINES DOUBLED WHEN WORKERS PRESENT
MOT 14-04

400' FROM STOP BAR
THRU TRAFFIC MERGE LEFT

200' FROM STOP BAR
MUST TURN RIGHT
RIGHT LANE
R3-7R

PLACED AT STOP BAR
MUST TURN RIGHT
RIGHT LANE
R3-7R

## MAINTENANCE OF TRAFFIC: LEGEND

- WORK ZONE
- ADVANCE WARNING ARROW BOARD PER STANDARD PLANS: 102-600 SERIES DISPLAY TYPE: CAUTION
- TYPE III BARRICADE PER STANDARD PLANS: 102-600 SERIES
- CHANNELIZING DEVICE PER STANDARD PLANS: 102-600 SERIES
- WORK ZONE SIGN PER STANDARD PLANS: 102-600 SERIES

| SCALE | DRAWN | DESIGNED | CHECKED |
|---|---|---|---|
| 1"=40' | DF | DF | TD |

REVISIONS

| DATE | |
|---|---|
| 10-8-18 | ORIGINAL PLAN DATE |


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MOT TYPICAL (INITIAL CONSTRUCTION)

BEACH STREET STREETSCAPE

CITY OF DAYTONA BEACH, FLORIDA

MOT-1 OF MOT-2

TURGUT DERVISH
FLORIDA P.E. NO. 20400
10-8-18

TPD JOB# 5115 D1