# CONSTRUCTION PLANS AND SPECIFICATIONS

*FOR*

# BECKER ROAD AT RIVERLAND

**(FROM: SW COMMUNITY BLVD TO SW RIVERLAND BLVD)**

## SECTION 31, TOWNSHIP 37S, RANGE 39E

## PORT ST LUCIE, FLORIDA

ENVIRONMENTAL STATEMENT:
THIS SITE WAS INCLUDED IN THE OVERALL SOUTHERN GROVE DRI AND ENVIRONMENTAL ITEMS WERE ADDRESSED AS PART OF THAT DEVELOPMENT REVIEW PROCESS. THE PROJECT SITE IS CURRENTLY VACANT. ACCORDING TO THE ENVIRONMENTAL SUMMARY ASSESSMENT FROM OCTOBER 2020, THERE ARE NO ENVIRONMENTALLY SENSITIVE LANDS OR WETLANDS ON SITE. NO WILDLIFE OR EVIDENCE OF WILDLIFE INCLUDING THAT FROM THE LIST OF STATE AND FEDERALLY PROTECTED SPECIES, RARE, THREATENED, ENDANGERED, OR SPECIES OF SPECIAL CONCERN WAS OBSERVED ON THE PROPERTY. NO PORTIONS OF THE PROPERTY APPEAR TO BE ENVIRONMENTALLY SENSITIVE.

**LEGAL DESCRIPTION:**

BEING A PORTION OF THOSE LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 3902, PAGE 477, OFFICIAL RECORDS BOOK 3902, PAGE 503, OFFICIAL RECORDS BOOK 2899, PAGE 2933 AND OFFICIAL RECORDS BOOK 3935, PAGE 2995, ALL OF THE PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA, LYING IN SECTIONS 33 AND 34, TOWNSHIP 37 SOUTH, RANGE 39 EAST, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE MOST NORTHERLY, NORTHEAST CORNER OF SAID PARCEL OF LAND DESCRIBED IN OFFICIAL RECORDS BOOK 3902, PAGE 477; THENCE SOUTH 89°54'26" EAST, A DISTANCE OF 150.00 FEET; THENCE SOUTH 00°05'34" WEST, A DISTANCE OF 220.00 FEET; THENCE NORTH 89°54'26" WEST, A DISTANCE OF 150.00 FEET; THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND DESCRIBED IN OFFICIAL RECORDS BOOK 3902, PAGE 477 FOR THE FOLLOWING THREE (3) DESCRIBED COURSES, NORTH 44°54'48" WEST, A DISTANCE OF 49.50 FEET; THENCE NORTH 89°55'11" WEST, A DISTANCE OF 2932.60 FEET; THENCE NORTH 89°54'31" WEST, A DISTANCE OF 2230.14 FEET; THENCE NORTH 00°00'05"29 EAST, A DISTANCE OF 150.00 FEET; THENCE ALONG THE NORTH LINE OF SAID PARCEL OF LAND DESCRIBED IN OFFICIAL RECORDS BOOK 3902, PAGE 477 FOR THE FOLLOWING THREE (3) DESCRIBED COURSES, SOUTH 89°54'31" EAST, A DISTANCE OF 2230.13 FEET; THENCE SOUTH 89°55'11" EAST, A DISTANCE OF 2932.63 FEET; THENCE NORTH 45°05'12" EAST, A DISTANCE OF 49.49 FEET TO THE POINT OF BEGINNING

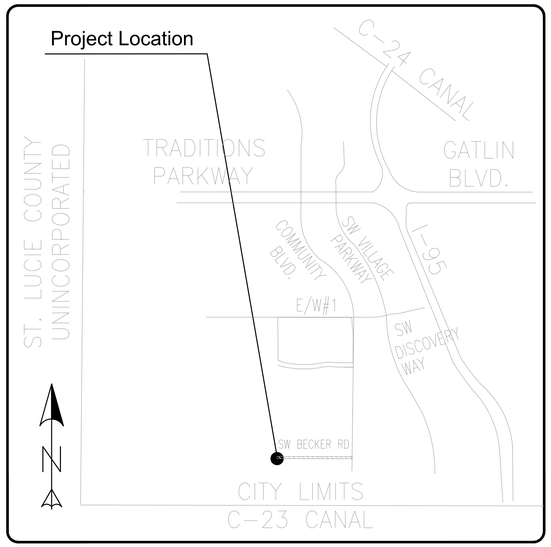
CONTAINING 18.684 ACRES, MORE OR LESS.

| LEGEND | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |

LAKE SECTIONS LEGEND:

| | |
|---|---|
| HPPP | -HIGH PERFORMANCE POLYPROPYLENE PIPE |
| C.A.P. | -CORRUGATED ALUMINUM PIPE |
| CONC. | -CONCRETE |
| EL. | -ELEVATION |
| L.M.E. | -LAKE MAINTENANCE EASEMENT |
| MAX. | -MAXIMUM |
| MIN. | -MINIMUM |
| R.C.P. | -REINFORCED CONCRETE PIPE |
| T.O.B. | -TOP OF BANK |
| TYP. | -TYPICAL |

## LOCATION MAP




## VICINITY MAP

| LENGTH OF PROJECT | | |
|---|---|---|
| STA: 10+00.00 - STA: 63+56.66 | | |
| | LF | MILES |
| UTILITY | 5,356.66 | 1.01 |
| ROADWAY | 5,366.66 | 1.01 |
| GROSS LENGTH OF PROJECT | 5,366.66 | 1.01 |

## THIS CONTRACT PLAN SET INCLUDES:

ROADWAY CONSTRUCTION PLANS

## INDEX OF SHEETS


| | |
|---|---|
| 1 | COVER |
| 2 | MASTER BUILDOUT PLAN |
| 3 | TYPICAL SECTIONS |
| 4-5 | PAVING, GRADING, & DRAINAGE DETAILS |
| 6 | GENERAL NOTES |
| 7 | KEYSHEET |
| 8-13 | ROADWAY PLAN |
| 14-18 | ROADWAY CROSS SECTIONS |
| 19-20 | STRIPING & SIGNAGE PLAN |
| 21 | OVERALL UTILITY PLAN |
| 22-26 | UTILITY PLAN |
| 27-28 | UTILITY DETAILS |
| 29 | STORMWATER POLLUTION PREVENTION PLAN |
| 30 | STORMWATER POLLUTION PREVENTION DETAILS |
| 31 | SPECIFICATIONS |


**PLANS PREPARED FOR:**

RIVERLAND DEVELOPMENT COMPANY, LLC
1600 SAWGRASS CORPORATE PARKWAY, SUITE 400
SUNRISE, FLORIDA 33323

| |
|---|
| STRIPING PER FDOT INDEX 711-001 |
| ROADWAY TRANSITION PER FDOT INDEX 711-001 |

POSTED SPEED:
40 MPH
DESIGN SPEED:
45 MPH

VERTICAL DATUM NOTE:
ALL ELEVATION SHOWN HERE REFERENCE THE NORTH AMERICAN VERTICAL DATUM NAVD88

GOVERNING STANDARDS & SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION, FY 2022-23 STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION AT THE FOLLOWING WEBSITE:
https://www.fdot.gov/design/standardplans/current/default.shtm

FLORIDA DEPARTMENT OF TRANSPORTATION, JULY 2022 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AT THE FOLLOWING WEBSITE:
https://www.fdot.gov/programmanagement/Implemented/SpecBooks

UTILITY CONSTRUCTION TO CONFORM TO THE CITY OF PORT ST LUCIE UTILITY SYSTEMS DEPARTMENT UTILITY STANDARDS MANUAL 2020 EDITION.

Jayson R Harrison
2023.08.07
13:53:57
-04'00'

J. R. HARRISON, LICENSE No. 82270, STATE OF FLORIDA, PROFESSIONAL ENGINEER


**J.R. HARRISON, P.E. (DATE)**
**#82270**
**10250 SW VILLAGE PKWY - SUITE 201**
**PORT SAINT LUCIE, FL 34987**
**772-462-2455**


THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JAYSON R. HARRISON ON AUGUST 07, 2023.

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PORT SAINT LUCIE, FL 34987
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www.edc-inc.com

F.B.P.E. CERTIFICATE OF AUTHORIZATION 9935
L.B. CERTIFICATE OF AUTHORIZATION 8098



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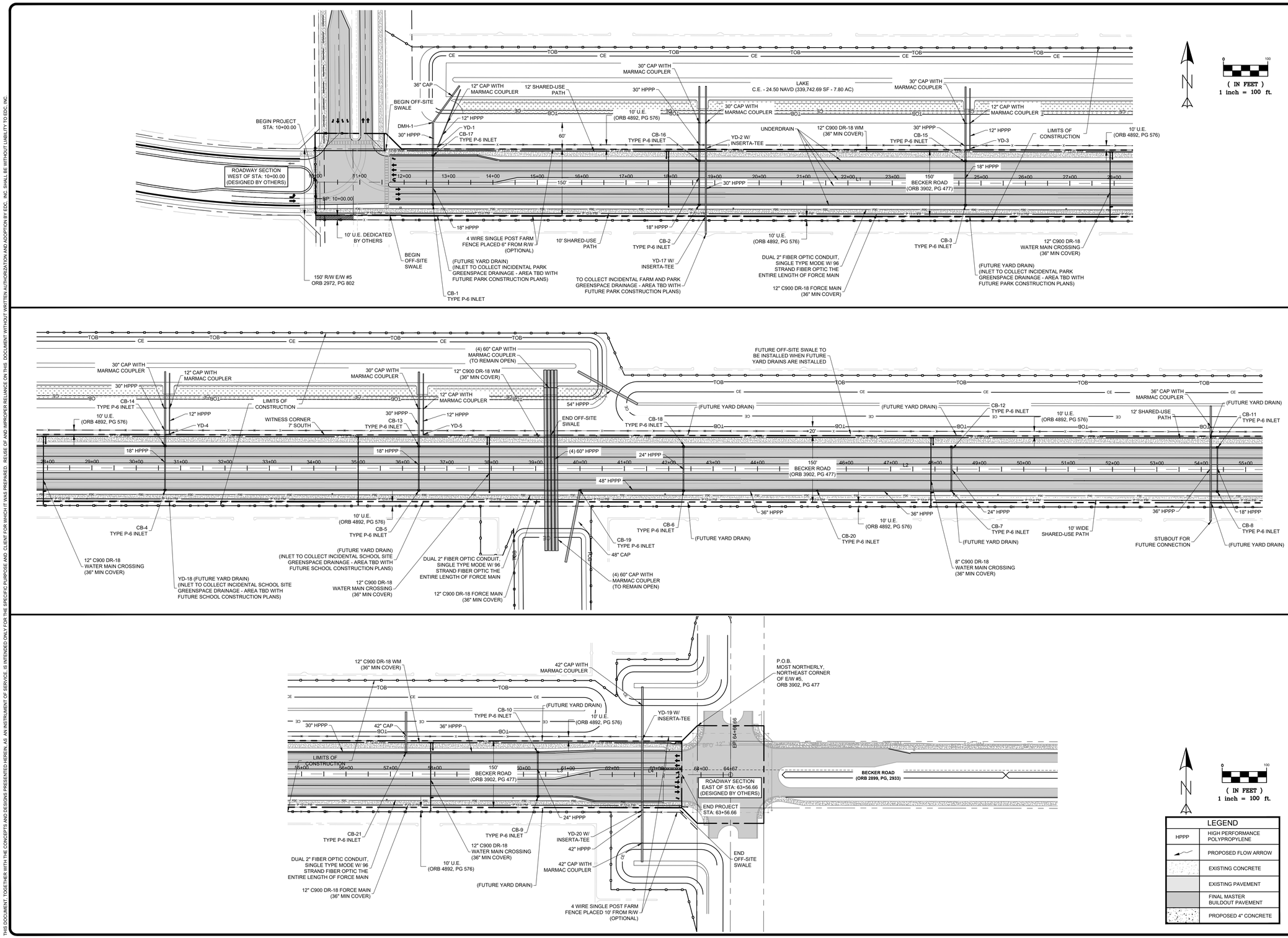
BECKER ROAD AT RIVERLAND - ROADWAY PLANS 07 AUGUST 2023 #21-288

PSLUSD #5405A
PSL PROJECT #P23-073




| LEGEND | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | FINAL MASTER BUILDOUT PAVEMENT |
| | PROPOSED 4" CONCRETE |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| | |
|---|---|
| JRH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-288 engineering r33.dwg | FILENAME |
| Master Buildout Plan | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

REVISION COMMENTS

DATE

# BECKER ROAD AT RIVERLAND
## CONCEPTUAL LAYOUT
## MASTER BUILDOUT PLAN

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270


10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
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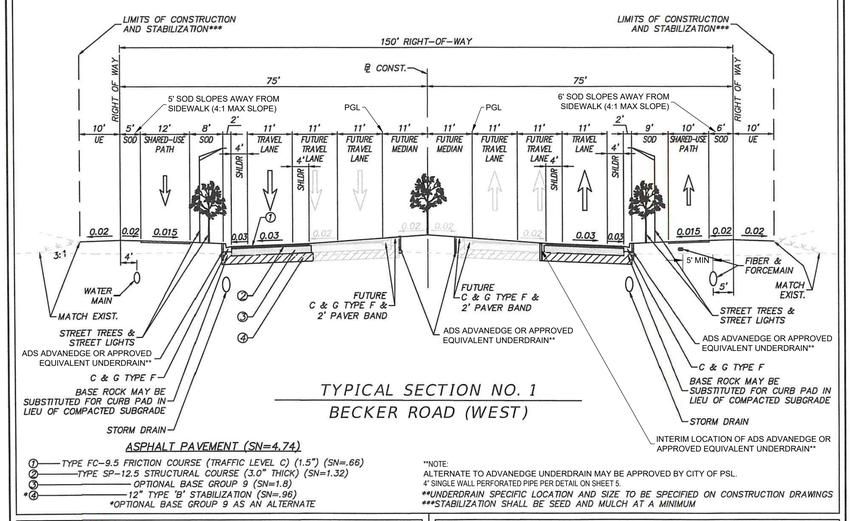



## TYPICAL SECTION NO. 1
## BECKER ROAD (WEST)

**ASPHALT PAVEMENT (SN=4.74)**

1. TYPE FC-9.5 FRICTION COURSE (TRAFFIC LEVEL C) (1.5") (SN=.66)
2. TYPE SP-12.5 STRUCTURAL COURSE (3.0" THICK) (SN=1.32)
3. OPTIONAL BASE GROUP 9 (SN=1.8)
4. 12" TYPE 'B' STABILIZATION (SN=.96)

*OPTIONAL BASE GROUP 9 AS AN ALTERNATE

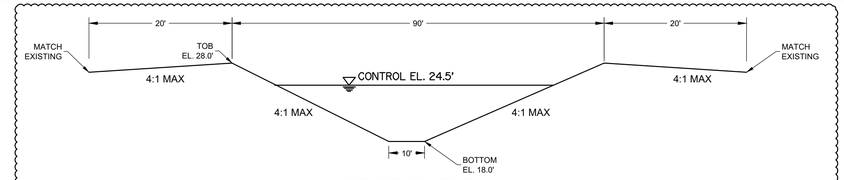
**NOTE:
ALTERNATE TO ADVANEDGE UNDERDRAIN MAY BE APPROVED BY CITY OF PSL.
4' SINGLE WALL PERFORATED PIPE PER DETAIL ON SHEET 5.
**UNDERDRAIN SPECIFIC LOCATION AND SIZE TO BE SPECIFIED ON CONSTRUCTION DRAWINGS
***STABILIZATION SHALL BE SEED AND MULCH AT A MINIMUM

CITY OF PORT ST. LUCIE
PUBLIC WORKS DEPARTMENT
121 SW PORT ST. LUCIE BLVD.
PORT ST. LUCIE, FL 34984
PHONE: (772) 871-5100
www.cityofpsl.com

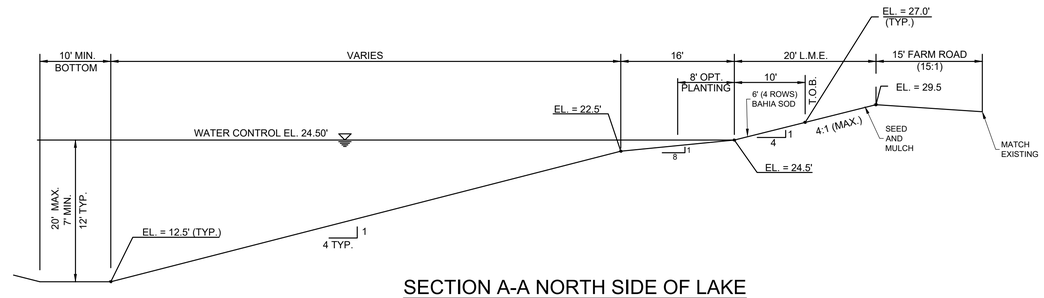
BECKER ROAD WEST

PROPOSED TYPICAL SECTIONS
09/02/2021

NOTES:
1. DESIGN SPEED 45 MPH
   POSTED SPEED LIMIT 40 MPH
2. PER THE CITY ENGINEERING STANDARDS, TREES PLANTED CLOSER THAN 5 FT. TO A SIDEWALK, CURB, PAVEMENT, OR DRAINAGE INFRASTRUCTURE SHALL INSTALL ROOT BARRIERS.
3. STREET TREES (REFER TO LANDSCAPE PLAN BY OTHERS.)
4. BASEROCK MAY BE EXTENDED UNDER CURB ON LOW SIDE.




## SECTION D-D
N.T.S.



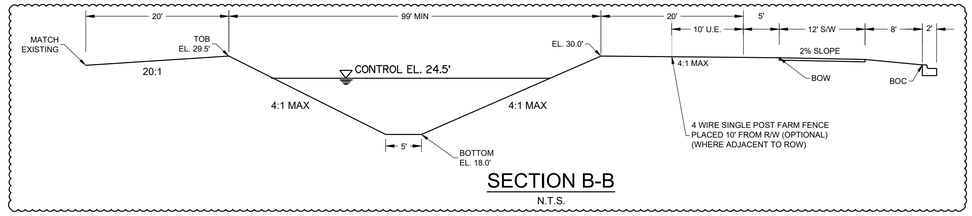

## SECTION A-A NORTH SIDE OF LAKE
N.T.S.

LAKE SECTIONS LEGEND:

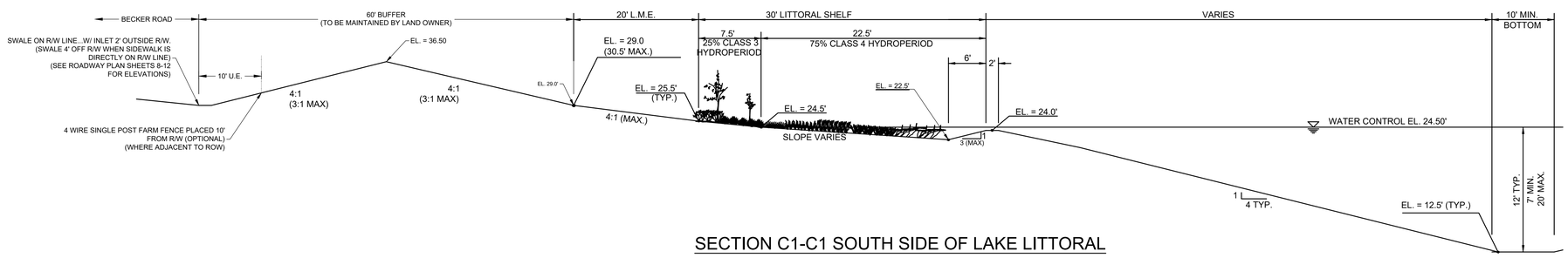
| | |
|---|---|
| HPPP | -HIGH PERFORMANCE POLYPROPYLENE PIPE |
| C.A.P. | -CORRUGATED ALUMINUM PIPE |
| CONC. | -CONCRETE |
| EL. | -ELEVATION |
| L.M.E. | -LAKE MAINTENANCE EASEMENT |
| MAX. | -MAXIMUM |
| MIN. | -MINIMUM |
| R.C.P. | -REINFORCED CONCRETE PIPE |
| T.O.B. | -TOP OF BANK |
| TYP. | -TYPICAL |

LAKE SECTION NOTES:

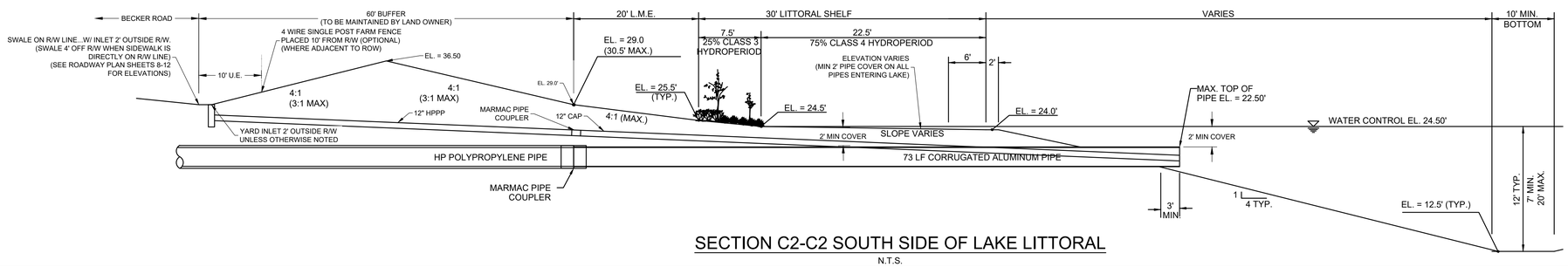
1. LAKE BANKS TO BE GRADED TO THE ABOVE TYPICAL SECTION AND REGRADED WHERE FINISHED LAKE AREAS ARE DISTURBED BY OUTFALL CONSTRUCTION.
2. ALL ELEVATIONS SHOWN ON THESE PLANS ARE IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). TO CONVERT ELEVATIONS TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29), ADD 1.475 FEET TO THE NAVD88 ELEVATION. FOR EXAMPLE NAVD88 1.475' = NGVD29.
3. LAKE CONTROL ELEVATION SHALL BE 24.50 NAVD88.




## SECTION B-B
N.T.S.




## SECTION C1-C1 SOUTH SIDE OF LAKE LITTORAL




## SECTION C2-C2 SOUTH SIDE OF LAKE LITTORAL
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| | |
|---|---|
| JRH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-288 engineering r33.dwg | FILENAME |
| Typical Section (2) | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

REVISION COMMENTS | DATE

BECKER ROAD AT RIVERLAND
CONCEPTUAL LAYOUT
TYPICAL SECTIONS
PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
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21-288



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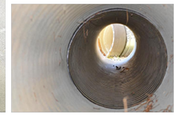
# DISSIMILAR PIPE COUPLERS

External couplers for jointing pipes of different materials

mar mac | CONSTRUCTION PRODUCTS



MarMac Dissimilar Pipe Couplers *("DP Couplers")* are designed to seal the joint connections between pipes of two different materials and/or diameters. MarMac's DP Coupler is an external sealing band with integrated mechanical compression straps. The couplers are a readily available and fully customizable product.

The rubberized mastic component of the coupler is formulated to adhere aggressively to all known pipe surfaces. Additionally, the integrated compression bands mechanically seal and form a permanent bond to the pipe walls. The coupler design also integrates a woven polypropylene component, providing shear and puncture resistance.

Minimum length of the coupler is the circumference of the larger outside diameter *(if applicable)* plus 8 inches for overlap. Three *(3)* layers of rubberized mastic *(0.180" thick)*; a sheet of strong, puncture-resistant woven polypropylene; and an outside backing of cross-laminated polypropylene creates a resistance to acids and bases.

*NOTE: Typical maximum size is a 6" difference in pipe diameters in order to allow for proper step-down. Contact MarMac for further details.*

## AVAILABILITY

All sizes of gravity flow pipe

* *Contact for details*

## APPLICATIONS

Concrete Pipe *(RCP)*
Corrugated HDPE Pipe
Corrugated Metal Pipe
Vitrified Clay Pipe
PVC *(gravity flow)*
Ductile Iron
All Gravity Flow Pipe

mar mac | CONSTRUCTION PRODUCTS Quality Matters.
334 N 7th St
McBee, SC 29101
marmac.com
877.962.7622
info@marmac.com

DISSIMILAR PIPE COUPLERS

DISSIMILAR PIPE COUPLERS

# DISSIMILAR PIPE COUPLERS

Technical information

mar mac | CONSTRUCTION PRODUCTS

## SPECIFICATIONS

Securing Straps:
- 4"- 24" pipe: 409 stainless steel
- 30"- 60" pipe: High Tensile Polyester Webbing *(1" min width)*

All typical properties are based on ASTM C877-09 and ASTM D3212 test methods.

## PERFORMANCE

In a laboratory setting, the coupler has been third party tested to prevent infiltration into the joint when the joint is subjected to 30 feet head pressure *(13 psi)* per ASTM C877-09, as well as hold 22" mercury *(74kPA)* internal vacuum with no leakage detected per ASTM D3212.

Since character of installation can neither be predicted nor controlled by MarMac, we make no claim on the hydrostatic performance of this product in field applications.

## STORAGE

DP Couplers should be stored carefully in their original packaging, out of direct sunlight and protected from the elements. Materials should be kept away from direct heat, sparks and open flame. For optimum results, store in a tepid *(60°-80°F)* environment prior to installation.

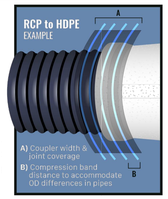
## TYPICAL PROPERTIES

| | MIN | MAX |
|---|---|---|
| **Rubberized Mastic** | | |
| Ash-inert matter | 8 % | 15 % |
| Volatiles | 0.1 % | 2.0 % |
| Softening temp | 175 °F | |
| Specific gravity | 0.95 | 1.05 |
| Penetration | 60 dmm | 90 dmm |
| Flow | 10 mm | 10 mm |
| **Polyethylene Backing** | | |
| Tensile strength | 4000 psi | |
| Elongation at break | 100 % | |
| Tear resistance | 1500 psi | |
| Water absorption | | 0.01 % |
| **Reinforcing Mesh Element** | | |
| Tensile strength | | |
| Warp | 75 lb/in | |
| Fill | 75 lb/in | |
| Elongation at break | | |
| Warp | 20 % | |
| Fill | 20 % | |

***CAUTION:*** *Prior to use, please read the Manufacturer Warranty & Disclaimer found at* ***marmac.com/cp/disclaimer****.*

## INSTALLATION

The coupler shall be placed around the pipe, mastic side to the pipe, spanning the joint *(see illustration)*. The protective release film shall be removed and the coupler applied with the overlap at the top of the pipe. The straps shall be secured *(outside straps first)* on the larger outside diameter pipe *(when applicable)* with the proper tools. Then the straps on the outside of the smaller outside diameter pipe shall be secured. The inside straps shall be tightened last. The closing flap shall cover the exposed strap work area, completing the joint.

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334 N 7th St
McBee, SC 29101
marmac.com
877.962.7622
info@marmac.com
v1.0 0322

MARMAC COUPLER DETAILS

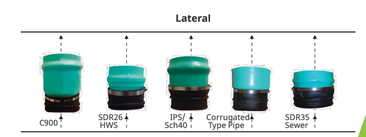
# Inserta Tee® Fittings

## Save Time and Money

ADS offers Inserta Tee, a high-performance, easy-to-install service connection consisting of a PVC hub, rubber sleeve and stainless steel band. Time will be saved on the job site with this unique lateral connection solution.

**Applications**
- Drainage
- Irrigation
- Wet wells
- Catch basins

**Benefits**
- 5-10 times faster installation than traditional fabricated fittings
- Watertight and sturdy, allowing no soil infiltration
- Requires 100 pounds of pressure to get the fitting out once installed
- Versatile enought to be installed on all products (concrete, clay, plastic, etc.) and sizes. Available in 2"-24" (50-600 mm) diameters
- Take up less space than fabricated fittings and come in multi-fit options so you can eliminate SKUs.




ADS

ADS "Terms and Conditions of Sale" are available on the ADS website, www.adspipe.com. ADS™, N-12® and the Green Stripe are registered trademarks of Advanced Drainage Systems, Inc. Inserta Tee® is a registered trademark of Inserta Fittings Co.
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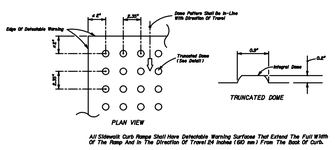
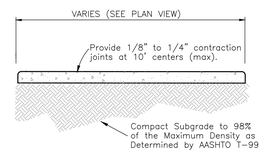
adspipe.com
800-733-3689

INSERTA TEE FITTINGS



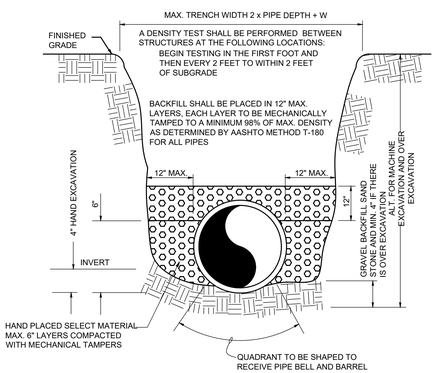

NOTES:
1. BRICK RED COLOR
2. REFER TO FDOT INDEX 522-002 FOR FURTHER DETAILS

CURB RAMP DETECTABLE WARNING



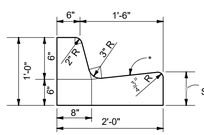

NOTES:
1. Use 3,000 P.S.I. NS Concrete At 28 Days for sidewalk construction.
2. A minimum sidewalk thickness of six inches is required for the following cases:
   a. Located within a concrete driveway
   b. Within five feet of an intersection
   c. Within easements and drainage rights-of-way
   (See Typical 6" Concrete Section on this sheet)
- All repairs required during construction shall be removed and replaced 10' minimum to next full joint.
- Sidewalk contraction control joints shall be tooled, not saw-cut.

4" THICK SIDEWALK DETAIL



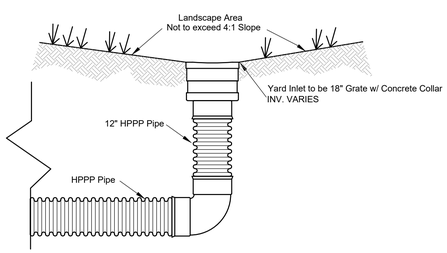

NOTE: IF PIPE IS NOT UNDER PROPOSED PAVEMENT, BACKFILL SHALL BE COMPACTED TO A FIRMNESS APPROXIMATELY EQUAL TO THAT OF THE SOIL ADJACENT TO THE PIPE TRENCH.

TYPICAL TRENCH DETAIL
N.T.S.



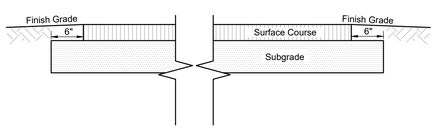

*NOTE: WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOWN ON PLANS.

TYPE F- CURB




NOTES:
1. Watertight adaptors to be used on all joint connections.
2. Construction of 12" pipe to be HPPP Pipe.
3. Grade landscape area towards inline drain.

YARD DRAIN DETAIL




SURFACE COURSE: 6" Concrete Pavement, 4,000 PSI Concrete with 10'X10' construction joints with fibermesh.

SUBGRADE: The subbase material to a depth of 12" should have a minimum Limerock Bearing Ration (LBR) value (FDOT FM 5-515) of 40 and it should be compacted to at least 98% of its modified Proctor (ASTM D1557 or AASHTO-180) maximum dry density. Extend subgrade 6" beyond all edges. The surficial fine sand (SP) on this site does not appear to have the required LBR value and may require mixing. The subgrade surface should be saturated immediately prior to concrete placement to provide adequate moisture for curing the concrete.

NOTE:
Surface course and subgrade construction within the right-of-way shall be according to FDOT Index NO. 000-515 and Sections 520 and 522 of the FDOT Standard Specifications.

TYPICAL 6" CONCRETE SECTION

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| | |
|---|---|
| JRH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-288 engineering r33.dwg | FILENAME |
| PGD Details | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

REVISION COMMENTS

DATE

BECKER ROAD AT RIVERLAND
CONCEPTUAL LAYOUT
PAVING, GRADING, & DRAINAGE DETAILS
PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270
10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
☎ 772-462-2455

21-288



PSLUSD #5405A
PSL PROJECT #P23-073

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADOPTION BY EDC, INC. SHALL BE WITHOUT LIABILITY TO EDC, INC.

BRO-SD950-0822

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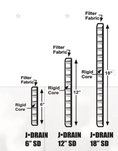
Engineered Drainage Systems



APPLICATIONS
TRENCH DRAINS
INTERCEPTOR DRAINS
HIGHWAY EDGE DRAINS
GAS VENTING

## J·DRAIN® SD 950 series

ENGINEERED STRIP DRAIN

Meets AASHTO M 288 Requirements

For over 30 years, **J-DRAIN** drainage composites have been successfully installed to provide drainage in building construction, civil engineering, DOT, environmental and landscape applications. Eliminating the costly and time-consuming installation of drainage aggregate, **J-DRAIN** drainage composites provide a more efficient, cost effective way to provide sub-surface drainage. The **SD** series of prefabricated drainage composites are engineered to provide superior performance to meet specific project conditions. The multi-directional flow design allows for a continuous path for water discharge. **J-DRAIN SD** is lightweight, easy to install and has drainage flow capacities that are 3-5 times that of traditional aggregate systems.

**J-DRAIN SD** consists of a heavy duty polypropylene sheet cuspated under heat and pressure to form a 3- dimensional, high flow, dimpled drainage core. The core is then wrapped and bonded with a non-woven filter fabric meeting AASHTO M288-06 specifications for survivability. The filter fabric retains soil or sand particles as well as freshly placed concrete or grout, allowing filtered water to pass into the drainage core. Soil backfill is retained while allowing water to pass into the drainage system providing hydrostatic relief. Collected water is then conveyed to a collection system. The drainage core is chemically resistant and designed for applications where chemical exposure is possible. The 1 inch (25 mm) profile design allows for higher venting and flow rates.

J-DRAIN SD Fittings & Accessories

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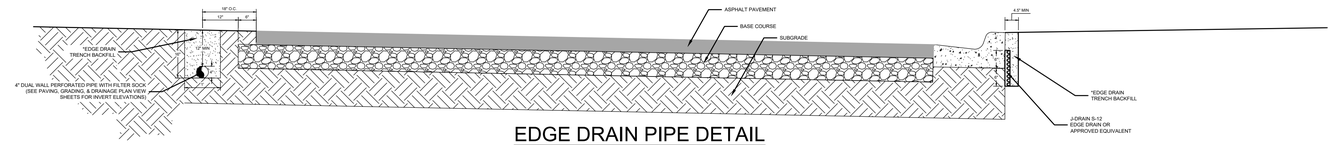
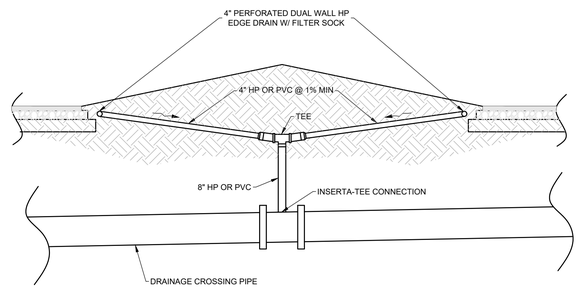
JDR Enterprises, Inc.
292 S. Main St., Suite 200 Alpharetta, GA 30009
(800) 843-7569 (770) 442-1461 Fax: (770) 664-7951




## EDGE DRAIN PIPE DETAIL

N.T.S.

*EDGE DRAIN BACKFILL MATERIAL SHALL BE CLEAN SAND WITH NO MORE THAN 6% PASSING THE NO. 200 SIEVE.
PROPOSED DIMENSIONS ARE APPROXIMATE.




## ALTERNATE INTERIOR MEDIAN PERFORATED PIPE CONNECTION DETAIL

N.T.S.

### GENERAL NOTES:

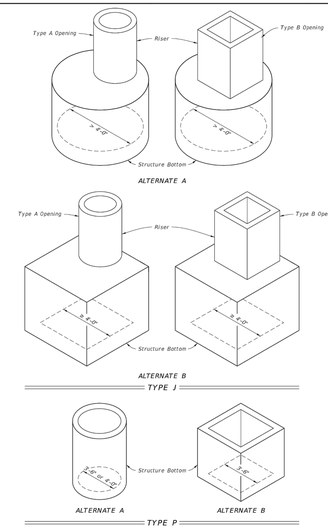
1. Work this Index with Specification 425 and Index 425-001.
2. Type P standard structure bottoms are 4'-0"diameter and smaller (Alt. A) and 3'-6" square (Alt. B). Larger standard structure bottoms are designated Type J. Risers are permitted for all structures.
3. Walls of circular structures (Alt. A) constructed in place may be of brick or reinforced concrete. Construct precast and rectangular structures (Alt. B) with reinforced concrete only.
4. Wall thickness and reinforcement are for either reinforced cast-in-place or precast concrete units except that precast circular units may be furnished with walls in accordance with ASTM C478 (See Table 1).
5. Top and bottom slab thickness and reinforcement are for precast and cast-in-place construction. Use Class II concrete, except when Class IV concrete is shown in the Plans.
6. Alt. A or Alt. B structure bottoms may be used in conjunction with curb inlet tops Types 1, 2, 3, 4, 5, 6, 9, and 10, and any manhole or junction box. Alt. B structure bottoms may be used in conjunction with curb inlet Types 7 & 8, or any ditch bottom inlet.
7. Rectangular structures may be rotated as directed by the Engineer in order to facilitate connections between the structure walls and pipes.
8. Use straight embedment reinforcement in top and bottom slabs ,except when ACI hooks are specifically required.
9. Construct corner fillets as shown for rectangular structures used with circular risers and inlet throats, and when used on skew with rectangular risers, inlets, and inlet throats. Construct fillets in the top slab of the Alt. A structure bottoms when used with the Type B risers. Reinforce each fillet with two #5 bars.
10. Units larger than specified standards may be substituted at the contractor's option when these units will not cause or increase the severity of utility conflicts. Furnish such larger units at no additional cost to the Department. Larger Alt. A units cannot replace Alt. B units without approval of the Engineer. This Note applies to this Index only.

### REINFORCEMENT NOTES:

1. Locate wall reinforcement in rectangular structures as shown in the WALL REINFORCEMENT SPLICE DETAILS in Index 425-001.
2. Provide a minimum 2"clear cover for all reinforcement unless otherwise noted and except for 3/8"diameter ASTM C478 units.
3. Additional bars used to restrain hole formers for precast structures with grouted pipe connections may be left flush with the hole surface.
4. Cut or bend reinforcement at pipe openings to maintain cover.
5. Remove exposed ends of reinforcing at precast pipe openings and grouted joints to 1" below the concrete surface and seal with a Type F Epoxy meeting the requirements of Specification 926.
6. Equivalent area smooth or deformed welded wire reinforcement may be substituted in accordance with Index 425-001.

TABLE OF CONTENTS:

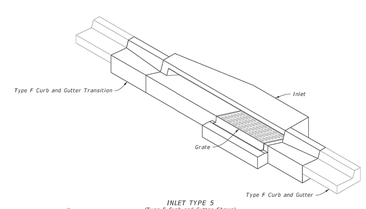

| Sheet | Description |
|---|---|
| 1 | General Notes and Contents |
| 2 | Dimensional and Reinforcing Details |
| 3 | Tables 1, 2, 3, and 4 |
| 4 | Tables 5 and 6 |

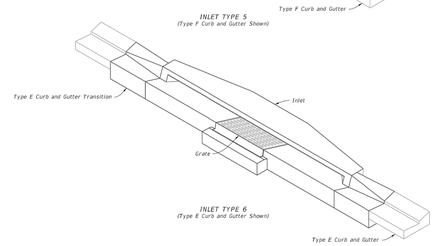

| LAST REVISION | REVISION | DESCRIPTION: | FDOT FY 2022-23 STANDARD PLANS | STRUCTURE BOTTOMS TYPE J AND P | INDEX 425-010 | SHEET 1 of 4 |
|---|---|---|---|---|---|---|
| 11/01/20 | | | | | | |

### GENERAL NOTES:

1. Work this Index with Index 425-001 and Index 425-010.
2. Conform the finished grade and slope of the inlet tops with the finished cross slope and grade of the proposed sidewalk and/or border.
3. For inlets constructed on a curve, refer to the plans to determine the radius. Bend steel when necessary.
4. Use Grade 60 reinforcing bars with 1½" minimum cover unless otherwise shown, see Sheet 6 for equivalent area Welded Wire Reinforcement details.
5. Inlet tops may be either cast-in-place or precast concrete. Conform precast units to the dimensions shown or in accordance with approved shop drawings.
6. Corner fillets are required at inlet opening for precast units or C-I-P units used in conjunction with circular inlet bottoms or skewed rectangular inlet boxes. Finish top of fillets flush with drain throat bottom and match slope.
7. For Type E curb and gutter, transition the shape of the curb over the gutter transition length to match the face of the inlet (Type F1).
8. Meet the requirements of ASTM A36/A36M with steel used for frames and grates.
9. Use either cast iron grates or steel grates.




INLET TYPE 5
(Type F Curb and Gutter Shown)




INLET TYPE 6
(Type E Curb and Gutter Shown)

CURB INLETS TOPS

TABLE OF CONTENTS:


| Sheet | Description |
|---|---|
| 1 | General Notes and Contents |
| 2 | Type 5 and 6 Dimensional Details |
| 3 | Type 5 and 6 Reinforcing and Bar Bending Details |
| 4 | Precast Dimensional and Reinforcing Details |
| 5 | Cast-In-Place Dimensional and Reinforcing Details |
| 6 | Alternate Welded Wire Reinforcing (WWR) Details |
| 7 | Grate, Anchor, and Grouting Details |


| LAST REVISION | REVISION | DESCRIPTION: | FDOT FY 2022-23 STANDARD PLANS | CURB INLET TOP TYPES 5 AND 6 | INDEX 425-021 | SHEET 1 of 7 |
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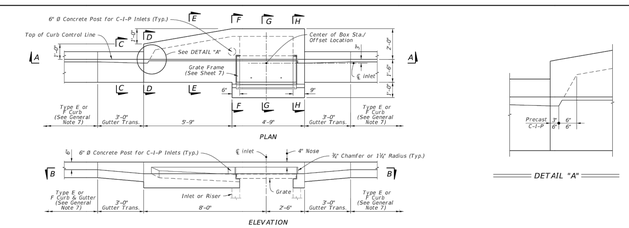
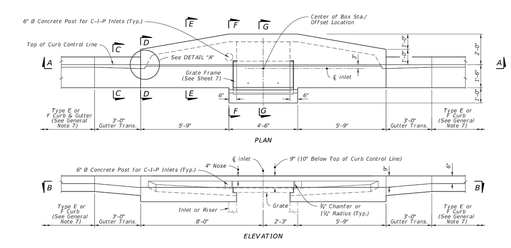



TYPE 5 DIMENSIONAL DETAILS




TYPE 6 DIMENSIONAL DETAILS

TYPE 5 AND 6 DIMENSIONAL DETAILS

| LAST REVISION | REVISION | DESCRIPTION: | FDOT FY 2022-23 STANDARD PLANS | CURB INLET TOP TYPES 5 AND 6 | INDEX 425-021 | SHEET 2 of 7 |
|---|---|---|---|---|---|---|
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|---|---|
| JRH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-1-288 engineering j-53.dwg | FILENAME |
| P-GD Details (3) | LAYOUT |
| AS SHOWN | SCALE |
| 07/AUG/23 | DATE |

| DATE | REVISION COMMENTS |
|---|---|
| 07-24-23 | UPDATE PERFORATED EDGE DRAIN PIPE DETAIL |
| 05-25-23 | UPDATE PERFORATED EDGE DRAIN PIPE DETAIL |

# BECKER ROAD AT RIVERLAND

## CONCEPTUAL LAYOUT

## PAVING, GRADING, & DRAINAGE DETAILS

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270
EDC
10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
772-462-2455

21-288



PSLUSD #5405A
PSL PROJECT #P23-073

1. ALL ELEVATIONS ARE REFERENCED FROM THE 1988 NAVD DATUM.

2. THE LOCATION(S) OF THE UTILITIES SHOWN IN THE PLANS (INCLUDING THOSE DESIGNATED VV, VH AND VVH) ARE BASED ON LIMITED INVESTIGATION TECHNIQUES AND SHOULD BE CONSIDERED APPROXIMATE ONLY. THE VERIFIED LOCATIONS/ELEVATIONS APPLY ONLY AT THE POINTS SHOWN. INTERPOLATIONS BETWEEN THESE POINTS HAVE NOT BEEN VERIFIED. UTILITIES SHALL REMAIN UNLESS OTHERWISE NOTED.

3. THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS THROUGH SUNSHINE STATE ONE CALL OF FLORIDA (811) AND UTILITY OWNERS LISTED BELOW TWO BUSINESS DAYS (OR 10 DAYS IF DIGGING UNDER WATER) IN ADVANCE OF BEGINNING CONSTRUCTION ON THE JOB SITE. THE FOLLOWING CONTACTS ARE UTILITY OWNERS WITHIN A ONE MILE RADIUS GOING EAST, WEST AND NORTH AND WITHIN 1500 FT SOUTH TO THE ST. LUCIE COUNTY/MARTIN COUNTY LINE FROM THE INTERSECTION OF SW VILLAGE PKWY AND SW BECKER RD, THE CLOSEST INTERSECTION.

| UTILITY/AGENCY OWNERS: | COMPANY | TELEPHONE NUMBERS |
|---|---|---|
| | COMCAST | (561)-227-3417 |
| | CITY GAS COMPANY OF FLORIDA | (321)-638-3419 |
| | FPL - MARTIN/ST. LUCIE COUNTY | (386)-586-6403 |
| | BLUE STREAM FIBER | (772)-528-2932 |
| | CITY OF PORT ST. LUCIE | (772-871-5182) |
| | | (772-871-5063) |
| | AT&T DISTRIBUTION | (561-997-0240) |

4. THE CONTRACTOR SHALL USE HAND EXCAVATION METHODS WHEN EXCAVATING NEAR EXISTING UTILITIES OR WHERE HAND-DIGGING IS SPECIFIED ON THE PLANS. NO SEPARATE PAYMENT SHALL BE MADE FOR THIS WORK. EXTREME CAUTION SHALL BE USED BY THE CONTRACTOR WHEN EXCAVATING, INSTALLING, BACKFILLING AND COMPACTING AROUND EXISTING UTILITIES.

5. EXISTING DRIVEWAYS WITHIN THE LIMITS OF THIS PROJECT ARE TO BE REPLACED AT THE SAME LOCATION AND WIDTH, UNLESS OTHERWISE SHOWN IN PLANS. CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES. TEMPORARY DRIVEWAY MAINTENANCE MATERIAL IS TO BE RECLAIMED ASPHALT PAVEMENT (RAP).

6. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE ENGINEER SHOULD NOTIFY THE CITY, WITHOUT DELAY, BY TELEPHONE AT (772)-871-5280.

7. ALL ACTIVITIES REQUIRING WELL - POINTING OR OTHER PUMPING OF GROUNDWATER OR SURFACE WATER WILL NEED TO BE COORDINATED WITH THE CITY IN ORDER TO INSURE ALL ASPECTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION ACT (NPDES) PERMIT REQUIREMENTS ARE FULFILLED. A SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD) GENERAL DEWATERING PERMIT MAY BE REQUIRED. AN ADDITIONAL PERMIT MAY BE NEEDED DEPENDENT UPON THE CONTRACTOR'S APPROACH TO CERTAIN ASPECTS OF THE PROJECT.

8. THE CONTRACTOR IS ADVISED THAT ANY DEWATERING WITHIN ONE MILE OF AN ENVIRONMENTAL PROTECTION AGENCY (EPA) SUPER FUND SITE OR A LANDFILL REQUIRES A GENERAL OR INDIVIDUAL WATER USE PERMIT FROM THE SFWMD. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE IF CONSTRUCTION LIES WITHIN THESE LIMITS AND TO ACQUIRE ALL NECESSARY PERMITS. THE LOCATION OF KNOWN EPA SUPER FUND SITES AND LANDFILLS NEAR THE PROJECT LIMITS ARE ACCESSIBLE FROM THE FOLLOWING SOURCES: ENVIRONMENTAL PROTECTION AGENCY, 703-603-8797, HTTP://WWW.EPA.GOV/ENVIRO/CLEANUPS/. CONTRACT UNIT PRICES WILL NOT BE ADJUSTED FOR MEANS AND METHODS NECESSARY FOR INSTALLATION OF STRUCTURES, PIPE, ETC. REQUIRED TO MEET PERMIT CONDITIONS.

9. EROSION CONTROL ITEMS ARE ESTIMATED FOR PREVENTION, CONTROL, ABATEMENT OF EROSION, SEDIMENTATION AND WATER POLLUTION. THESE ITEMS ARE TO BE USED AT THE LOCATIONS DESCRIBED IN THE CONTRACTOR'S APPROVED EROSION CONTROL PLAN OR AS DIRECTED BY THE ENGINEER TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

10. ALL STATION AND OFFSETS ARE FROM THE CL CONSTRUCTION UNLESS OTHERWISE NOTED.

11. THE CONTRACTOR SHALL NOT BRING ANY HAZARDOUS MATERIALS ONTO THE PROJECT. SHOULD THE CONTRACTOR REQUIRE SUCH FOR PERFORMING THE CONTRACTED WORK, THE CONTRACTOR SHALL REQUEST, IN WRITING, WRITTEN PERMISSION FROM THE CITY ENGINEER. THE CONTRACTOR SHALL PROVIDE A COPY OF REQUEST TO THE CITY ENGINEER. THE CONTRACTOR SHALL PROVIDE THE CITY WITH A COPY OF THE MATERIAL SAFETY DATA SHEET (MSDS) FOR EACH HAZARDOUS MATERIAL PROPOSED FOR USE AND PROVIDE A DESCRIPTION OF THE SPECIFIC MANNER IN WHICH THE MATERIAL WILL BE USED. THE ENGINEER SHALL COORDINATE WITH THE CITY PRIOR TO ISSUING WRITTEN APPROVAL TO THE CONTRACTOR. BECAUSE STATE LAW DOES NOT TREAT PETROLEUM PRODUCTS THAT ARE PROPERLY CONTAINERIZED AS HAZARDOUS MATERIAL, SUCH PRODUCTS DO NOT REQUIRE A MSDS SUBMITTAL. ALL BULK PETROLEUM PRODUCTS STORED ON SITE SHALL REQUIRE PROPER STORAGE WHICH INCLUDES SECONDARY CONTAINMENT.

12. IF SUSPECT CONTAMINATED OR HAZARDOUS MATERIAL IS FOUND ON THE PROJECT OR ENCOUNTERED DURING CONSTRUCTION THE CONTRACTOR SHALL CEASE OPERATIONS IN THAT AREA. IMMEDIATELY NOTIFY THE CITY AND PROTECT THE IMMEDIATE AREA OF SUSPECT CONTAMINATED OR HAZARDOUS MATERIAL FROM FURTHER ACCESS. THE CITY WILL ARRANGE FOR THE INVESTIGATION, IDENTIFICATION AND/OR REMOVAL/REMEDIATION OF THE MATERIAL IN QUESTION AS NEEDED.

13. THE CONTRACTOR SHALL COORDINATE SELECTION AND REVIEW OF ANY PROPOSED CONSTRUCTION STAGING AREA ASSOCIATED WITH THE PROJECT WITH THE CITY CONTRACT ADMINISTRATOR AT LEAST 30 CALENDAR DAYS PRIOR TO USE, IN ORDER TO COMPLY WITH THE FEDERAL ENDANGERED SPECIES ACT. THE STAGING AREA SHALL BE RESTORED TO ITS ORIGINAL OR BETTER CONDITION AS DETERMINED BY THE ENGINEER. ALL STAGING AND STOCKPILING AREAS, WHETHER WITHIN OR OUTSIDE CITY RIGHT-OF-WAY, USED BY THE CONTRACTOR MUST HAVE SEDIMENT AND EROSION CONTROL MEASURES INSTALLED PRIOR TO USE. THE CONTRACTOR SHALL INCLUDE ALL COST RELATED TO STAGING AREAS AND COMPLIANCE WITH PERMIT CONDITIONS IN PAY ITEM 101-1, MOBILIZATION.

14. SAW CUTTING OF THE EXISTING SIDEWALK SHALL BE ONLY AT THE NEAREST FLAG POINTS.

15. SPECIAL ATTENTION IS DIRECTED TO THE FACT THAT SOME DRAINAGE STRUCTURES AND UTILITIES EXTEND INTO THE STABILIZED PORTION OF THE ROAD BED AND EXTREME CAUTION WILL BE NECESSARY IN STABILIZATION OPERATIONS AT THOSE LOCATIONS.

16. DRAINAGE CONSTRUCTION NEAR THE RIGHT-OF-WAY LINE MAY REQUIRE SHEETING OR OTHER MEANS TO AVOID ENCROACHMENT ON PRIVATE PROPERTY AND TO PROTECT TREES, TREE ROOTS, HEDGES, LIGHTS, IRRIGATION, ETC. ALL COSTS ASSOCIATED WITH AVOIDANCE OF ENCROACHMENT ARE TO BE INCLUDED IN THE COST OF THE DRAINAGE ITEM.

17. EXISTING DRAINAGE STRUCTURES WITHIN CONSTRUCTION LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED.

18. CONTRACTOR SHALL REVIEW THE CONDITIONS OF THE PROJECT'S NO NOTICE DEWATERING PERMIT FROM SFWMD AND APPLY FOR A DEWATERING PERMIT THAT WILL MEET CONTRACTOR'S PROPOSED WORK CONDITIONS PRIOR TO ANY DEWATERING OPERATIONS.

19. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING EXISTING AND NEW INLETS AND DRAINAGE PIPES CLEAN OF MILLING MATERIAL, LIMEROCK, DEBRIS, ETC. DURING CONSTRUCTION.

20. OFFSETS FOR CURB INLETS ARE MEASURED TO THE EDGE OF PAVEMENT. OFFSETS FOR MANHOLES ARE MEASURED TO THE CENTER OF THE RIM.

21. ALL DETECTABLE WARNING PANELS ARE TO BE BRICK RED CAST-IN-PLACE.

22. SIDEWALK JOINTS SHALL BE TOOLED WITHOUT EXPANSION JOINTS.

23. CONSTRUCTION SHALL BE PER FDOT STANDARDS UNLESS OTHERWISE NOTED.

24. DITCHES/CANALS NOTE:
PROPOSED, FUTURE, AND EXISTING DITCHES/CANAL AREAS MUST BE PROPERLY STRIPPED AND CLEANSED OF UNSUITABLE DEPOSITS, THEN RESTORED TO GRADE WITH SUITABLE STRUCTURAL FILL PLACED IN THIN LIFTS AND COMPACTED TO A MINIMUM OF 98% OF THE FILL SOIL'S MAXIMUM DRY DENSITY. *FILLING OF CANALS SHOULD NOT BEGIN UNTIL THE BASE OF THE EXCAVATION IS INSPECTED AND APPROVED BY ALLTERRA.*

NOTES

1. FDOT "STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION, SHALL APPLY TO THE DESIGN AND CONSTRUCTION OF FACILITIES SHOWN ON THIS SET OF PLANS, UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE.

2. FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION, SHALL APPLY TO THE DESIGN AND CONSTRUCTION OF FACILITIES ON THIS SET OF PLANS, UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE.

3. THE FHWA "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION, SHALL APPLY TO THE DESIGN AND CONSTRUCTION OF ALL PAVEMENT MARKINGS, SIGNS, REFLECTIVE MARKERS, SIGNALS, TRAFFIC CONTROL DEVICES, ETC. UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE.

4. THE FDOT "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION, AND MAINTENANCE FOR STREETS AND HIGHWAYS", LATEST EDITION, SHALL APPLY TO THE DESIGN AND CONSTRUCTION OF FACILITIES SHOWN ON THIS SET OF PLANS, UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE.

5. THE FDOT "DESIGN MANUAL", LATEST EDITION, SHALL APPLY TO THE DESIGN AND CONSTRUCTION OF FACILITIES SHOWN ON THIS SET OF PLANS, UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE.

(NOTES ARE TO BE INCLUDED ON CONSTRUCTION PLANS FOR ALL ROADWAY PROJECTS)

| | | | |
|---|---|---|---|
| "A City for all Ages" | ENGINEERING STANDARDS FOR LAND DEVELOPMENT<br>COMMERCIAL, RESIDENTIAL SUBDIVISION, AND CAPITAL IMPROVEMENT PROJECTS | ROAD<br>CONSTRUCTION PLAN NOTES | DATE: 6/13/2020<br>SHEET: 1 OF 1 |


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L.B. CERTIFICATE OF AUTHORIZATION 8098


| | |
|---|---|
| JPH | DESIGNED BY |
| BJV | DRAWN BY |
| 2-1-288 engineering r33.dwg | FILENAME |
| General Notes | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

| DATE | REVISION COMMENTS |
|---|---|

BECKER ROAD AT RIVERLAND

GENERAL NOTES

PORT ST. LUCIE FLORIDA


J.R. HARRISON, P.E. (DATE)
#82270
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PORT SAINT LUCIE, FL 34987
772-462-2455


21-288



PSLUSD #5405A
PSL PROJECT #P23-073

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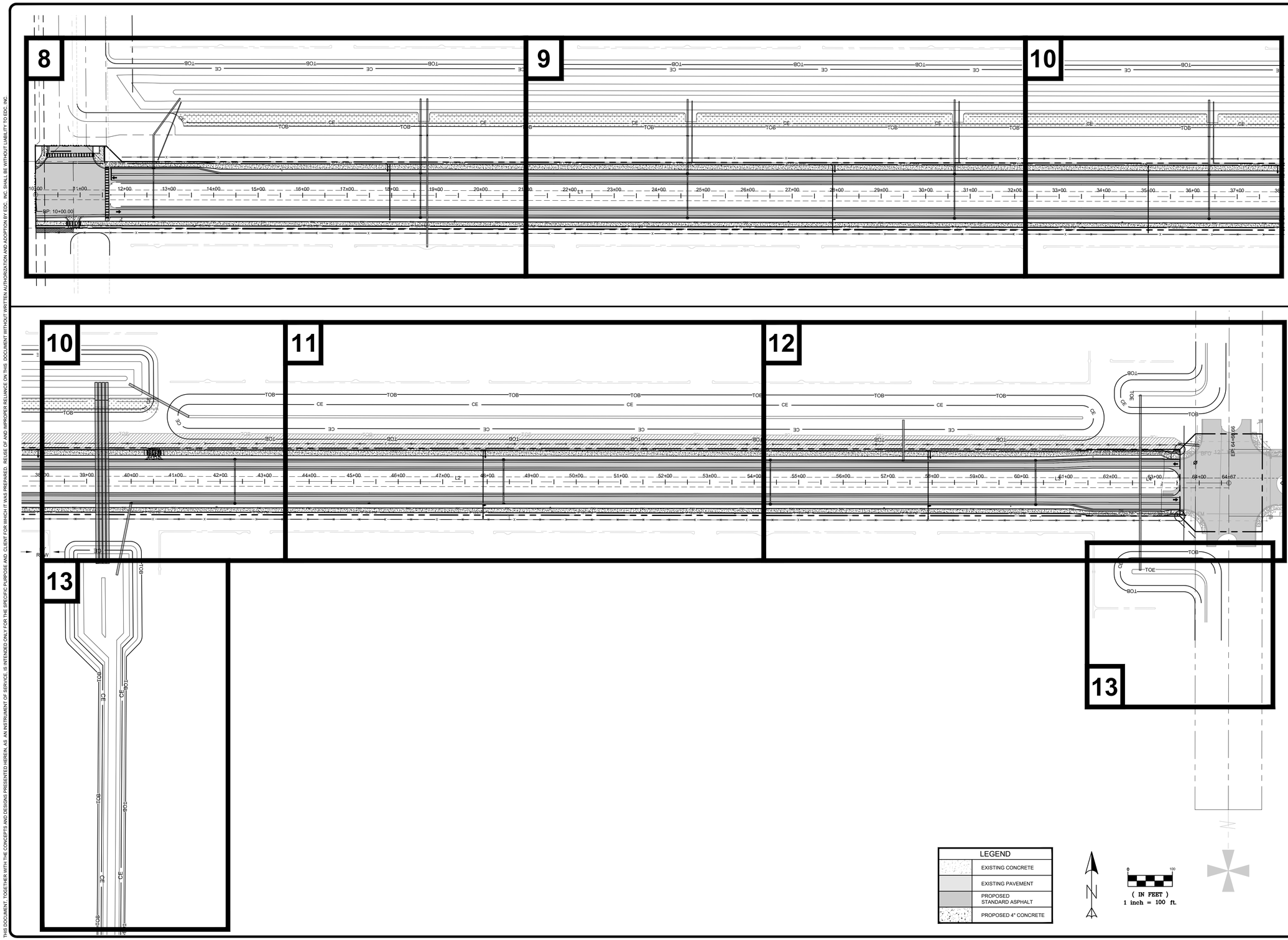


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☎ 772-462-2455
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F.B.P.E. CERTIFICATE OF AUTHORIZATION 9935
L.B. CERTIFICATE OF AUTHORIZATION 8098

| | |
|---|---|
| JPH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-1-288 engineering r33.dwg | FILENAME |
| Keysheet | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

REVISION COMMENTS

DATE

# BECKER ROAD AT RIVERLAND

## KEYSHEET

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270

10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
☎ 772-462-2455

21-288



PSLUSD #5405A
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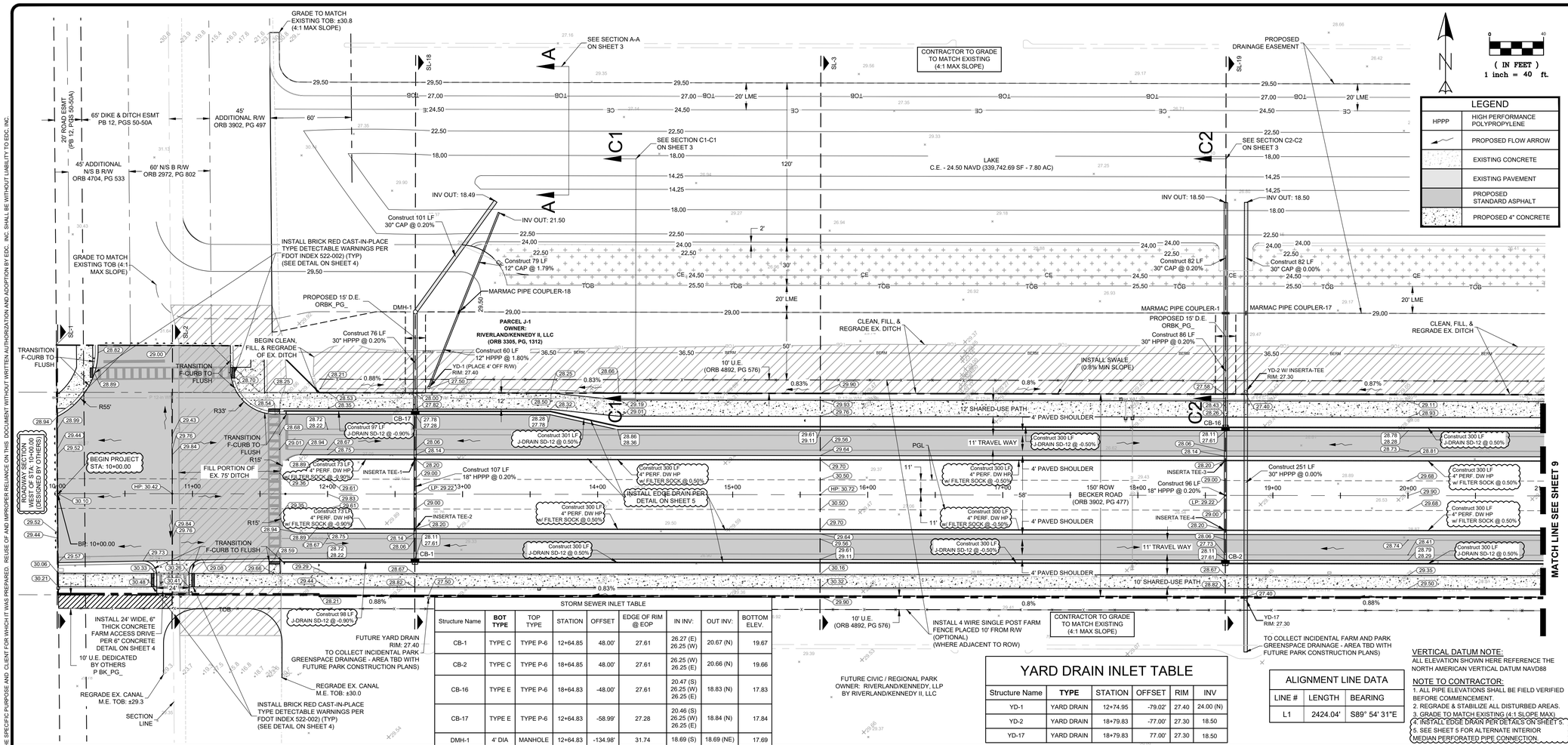



| LEGEND | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |

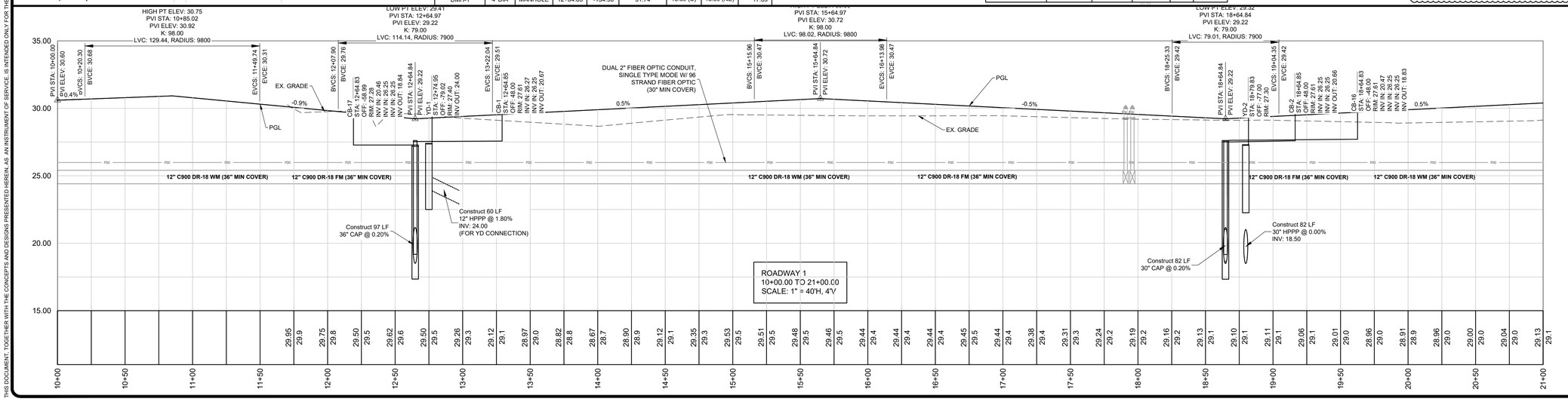
| STORM SEWER INLET TABLE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Structure Name | BOT TYPE | TOP TYPE | STATION | OFFSET | EDGE OF RIM @ EOP | IN INV: | OUT INV: | BOTTOM ELEV. |
| CB-1 | TYPE C | TYPE P-6 | 12+64.85 | 48.00' | 27.61 | 26.27 (E) 26.25 (W) | 20.67 (N) | 19.67 |
| CB-2 | TYPE C | TYPE P-6 | 18+64.85 | 48.00' | 27.61 | 26.25 (W) 26.25 (E) | 20.66 (N) | 19.66 |
| CB-16 | TYPE E | TYPE P-6 | 18+64.83 | -48.00' | 27.61 | 20.47 (S) 26.25 (W) 26.25 (E) | 18.83 (N) | 17.83 |
| CB-17 | TYPE E | TYPE P-6 | 12+64.83 | -58.99' | 27.28 | 20.46 (S) 26.25 (W) 26.25 (E) | 18.84 (N) | 17.84 |
| DMH-1 | 4' DIA | MANHOLE | 12+64.83 | -134.98' | 31.74 | 18.69 (S) | 18.69 (NE) | 17.69 |

| YARD DRAIN INLET TABLE | | | | | |
|---|---|---|---|---|---|
| Structure Name | TYPE | STATION | OFFSET | RIM | INV |
| YD-1 | YARD DRAIN | 12+74.95 | -79.02' | 27.40 | 24.00 (N) |
| YD-2 | YARD DRAIN | 18+79.83 | -77.00' | 27.30 | 18.50 |
| YD-17 | YARD DRAIN | 18+79.83 | 77.00' | 27.30 | 18.50 |

| ALIGNMENT LINE DATA | | |
|---|---|---|
| LINE # | LENGTH | BEARING |
| L1 | 2424.04' | S89° 54' 31"E |

VERTICAL DATUM NOTE:
ALL ELEVATION SHOWN HERE REFERENCE THE NORTH AMERICAN VERTICAL DATUM NAVD88

NOTE TO CONTRACTOR:
1. ALL PIPE ELEVATIONS SHALL BE FIELD VERIFIED BEFORE COMMENCEMENT.
2. REGRADE & STABILIZE ALL DISTURBED AREAS.
3. GRADE TO MATCH EXISTING (4:1 SLOPE MAX)
4. INSTALL EDGE DRAIN PER DETAILS ON SHEET 5
5. SEE SHEET 5 FOR ALTERNATE INTERIOR MEDIAN PERFORATED PIPE CONNECTION





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| | |
|---|---|
| DESIGNED BY | JPH |
| DRAWN BY | JLW |
| FILENAME | 2-288 engineering r33.dwg |
| PGD Plan | |
| LAYOUT | |
| SCALE | AS SHOWN |
| DATE | 07AUG23 |

| DATE | REVISION COMMENTS |
|---|---|
| 07-24-23 | UPDATE EDGE DRAIN |
| 06-22-23 | RAISE MEDIAN GRADES 6 INCHES |

# BECKER ROAD AT RIVERLAND

## ROADWAY PLAN

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270

10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
772-462-2455

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PSLUSD #5405A
PSL PROJECT #P23-073

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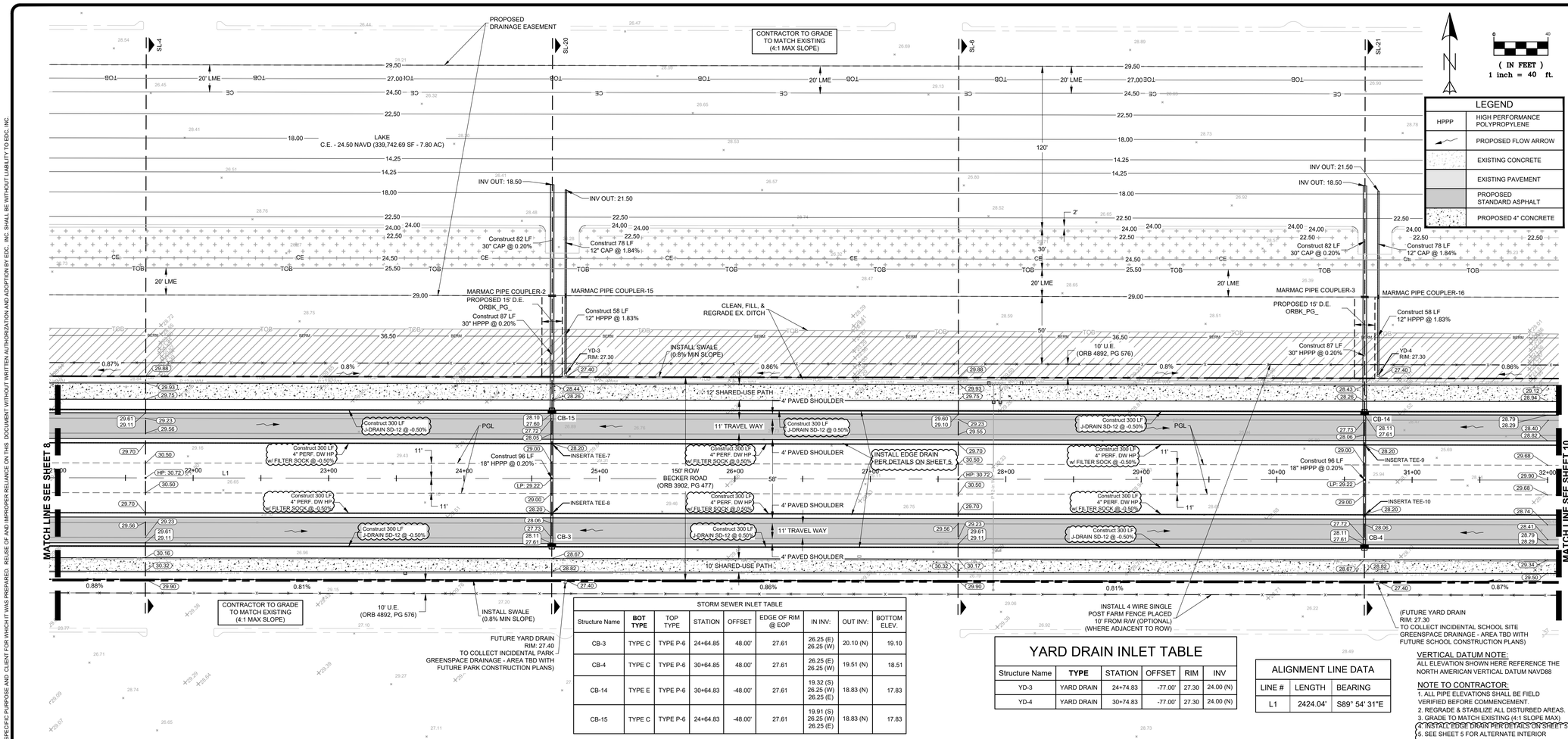


( IN FEET )
1 inch = 40 ft.

| LEGEND | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |

STORM SEWER INLET TABLE

| Structure Name | BOT TYPE | TOP TYPE | STATION | OFFSET | EDGE OF RIM @ EOP | IN INV: | OUT INV: | BOTTOM ELEV. |
|---|---|---|---|---|---|---|---|---|
| CB-3 | TYPE C | TYPE P-6 | 24+64.85 | 48.00' | 27.61 | 26.25 (E) 26.25 (W) | 20.10 (N) | 19.10 |
| CB-4 | TYPE C | TYPE P-6 | 30+64.85 | 48.00' | 27.61 | 26.25 (E) 26.25 (W) | 19.51 (N) | 18.51 |
| CB-14 | TYPE E | TYPE P-6 | 30+64.83 | -48.00' | 27.61 | 19.32 (S) 26.25 (W) 26.25 (E) | 18.83 (N) | 17.83 |
| CB-15 | TYPE C | TYPE P-6 | 24+64.83 | -48.00' | 27.61 | 19.91 (S) 26.25 (W) 26.25 (E) | 18.83 (N) | 17.83 |

YARD DRAIN INLET TABLE

| Structure Name | TYPE | STATION | OFFSET | RIM | INV |
|---|---|---|---|---|---|
| YD-3 | YARD DRAIN | 24+74.83 | -77.00' | 27.30 | 24.00 (N) |
| YD-4 | YARD DRAIN | 30+74.83 | -77.00' | 27.30 | 24.00 (N) |

ALIGNMENT LINE DATA

| LINE # | LENGTH | BEARING |
|---|---|---|
| L1 | 2424.04' | S89° 54' 31"E |

VERTICAL DATUM NOTE:
ALL ELEVATION SHOWN HERE REFERENCE THE NORTH AMERICAN VERTICAL DATUM NAVD88

NOTE TO CONTRACTOR:
1. ALL PIPE ELEVATIONS SHALL BE FIELD VERIFIED BEFORE COMMENCEMENT.
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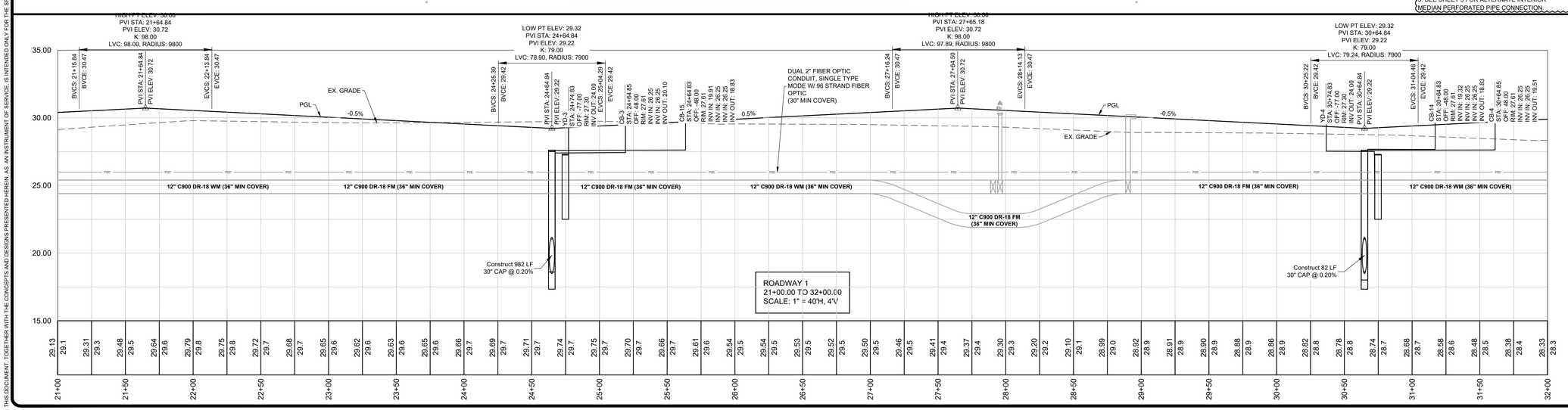
3. GRADE TO MATCH EXISTING (4:1 SLOPE MAX)
4. INSTALL EDGE DRAIN PER DETAILS ON SHEET 5
5. SEE SHEET 5 FOR ALTERNATE INTERIOR MEDIAN PERFORATED PIPE CONNECTION





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| | |
|---|---|
| DESIGNED BY | JPH |
| DRAWN BY | JLW |
| FILENAME | 2-288 engineering r33.dwg |
| LAYOUT | PGD Plan (2) |
| SCALE | AS SHOWN |
| DATE | 07AUG23 |

| DATE | REVISION COMMENTS |
|---|---|
| 07-24-23 | UPDATE EDGE DRAIN |
| 06-22-23 | RAISE MEDIAN GRADES 6 INCHES |

# BECKER ROAD AT RIVERLAND
## ROADWAY PLAN
PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270


10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
☎ 772-462-2455


21-288



PSLUSD #5405A
PSL PROJECT #P23-073

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STORM SEWER INLET TABLE

| Structure Name | BOT TYPE | TOP TYPE | STATION | OFFSET | EDGE OF RIM @ EOP | IN INV: | OUT INV: | BOTTOM ELEV. |
|---|---|---|---|---|---|---|---|---|
| CB-5 | TYPE C | TYPE P-6 | 36+36.81 | 48.00' | 27.61 | 26.25 (E)<br>26.25 (W) | 19.93 (N) | 18.93 |
| CB-6 | 7' DIA | TYPE P-6 | 42+33.14 | 48.00' | 27.61 | 19.51 (N)<br>17.83 (E)<br>26.25 (W)<br>26.25 (E) | 16.80 (W) | 15.80 |
| CB-13 | TYPE A, ALT J<br>TYPE E | TYPE P-6 | 36+36.70 | -48.00' | 27.61 | 19.74 (S)<br>26.25 (W)<br>26.25 (E) | 18.83 (N) | 17.83 |
| CB-18 | TYPE C | TYPE P-6 | 42+33.09 | -48.00' | 27.61 | 26.25 (W)<br>26.25 (E) | 19.70 (S) | 18.70 |
| CB-19 | TYPE E | TYPE P-6 | 40+00.01 | 48.02' | 28.78 | 16.33 (E) | 16.33 (S) | 15.33 |

( IN FEET )
1 inch = 40 ft.

ALIGNMENT LINE DATA

| LINE # | LENGTH | BEARING |
|---|---|---|
| L1 | 2424.04' | S89° 54' 31"E |
| L2 | 2626.20' | S89° 55' 11"E |

LEGEND

| | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |

MATCH LINE SEE SHEET 8

MATCH LINE SEE SHEET 11

MATCH LINE SEE SHEET 13

VERTICAL DATUM NOTE:
ALL ELEVATION SHOWN HERE REFERENCE THE NORTH AMERICAN VERTICAL DATUM NAVD88

NOTE TO CONTRACTOR:
1. ALL PIPE ELEVATIONS SHALL BE FIELD VERIFIED BEFORE COMMENCEMENT.
2. REGRADE & STABILIZE ALL DISTURBED AREAS.
3. GRADE TO MATCH EXISTING (4:1 SLOPE MAX).
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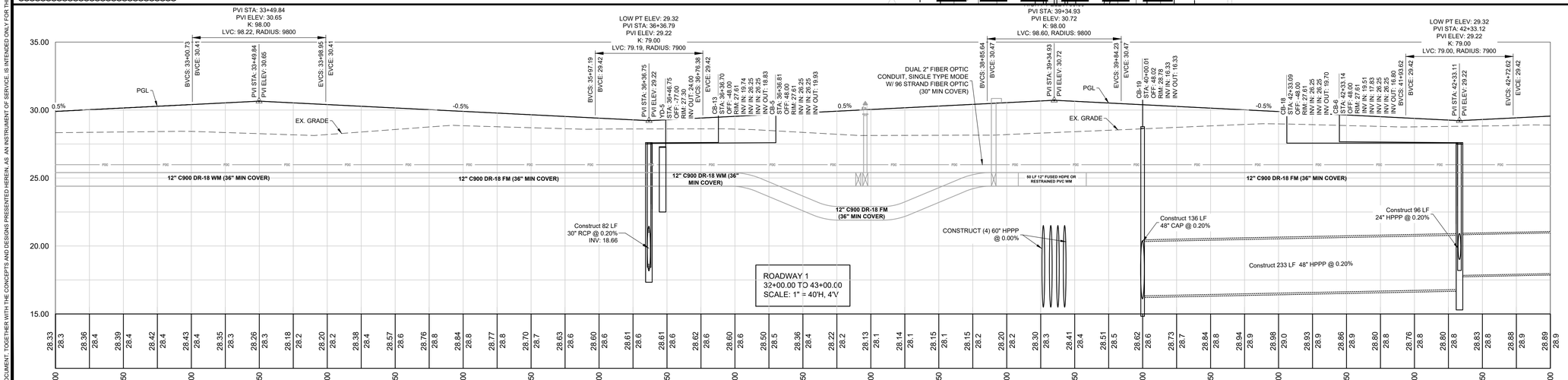
5. SEE SHEET 5 FOR ALTERNATE INTERIOR MEDIAN PERFORATED PIPE CONNECTION.

YARD DRAIN INLET TABLE

| Structure Name | TYPE | STATION | OFFSET | RIM | INV |
|---|---|---|---|---|---|
| YD-5 | YARD DRAIN | 36+46.75 | -77.00' | 27.30 | 24.00 (N) |

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L.B. CERTIFICATE OF AUTHORIZATION 8098

| | |
|---|---|
| DESIGNED BY | JPH |
| DRAWN BY | JLW |
| FILENAME | 2-1-288 engineering r33.dwg |
| LAYOUT | PGD Plan (4) |
| SCALE | AS SHOWN |
| DATE | 07AUG23 |

| DATE | REVISION COMMENTS |
|---|---|
| 07-24-23 | UPDATE EDGE DRAIN |
| 06-22-23 | RAISE MEDIAN GRADES 8 INCHES |

# BECKER ROAD AT RIVERLAND
## ROADWAY PLAN
PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270
10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
772-462-2455

21-288



PSLUSD #5405A
PSL PROJECT #P23-073

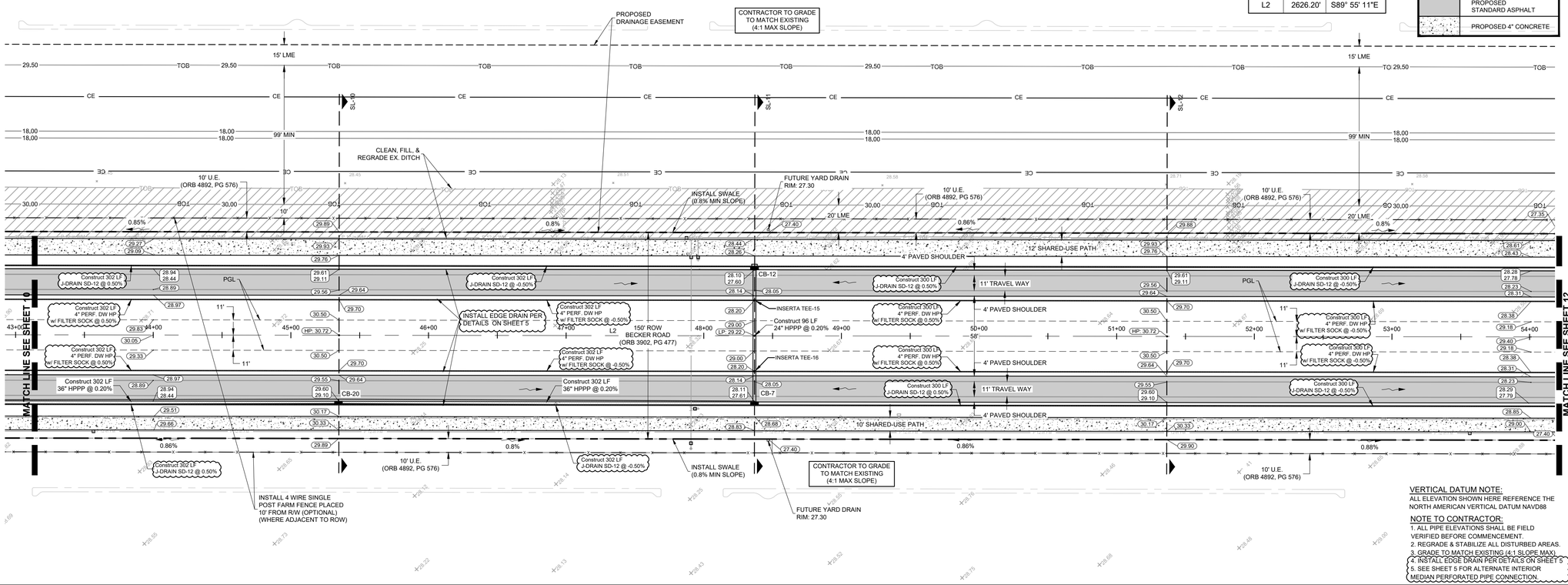
| STORM SEWER INLET TABLE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Structure Name | BOT TYPE | TOP TYPE | STATION | OFFSET | EDGE OF RIM @ EOP | IN INV: | OUT INV: | BOTTOM ELEV. |
| CB-7 | 6' DIA TYPE A, ALT J | TYPE P-6 | 48+36.85 | 48.00' | 27.61 | 19.57 (N)<br>26.25 (E)<br>26.25 (W) | 19.03 (W) | 18.03 |
| CB-12 | TYPE E | TYPE P-6 | 48+36.80 | -48.00' | 27.61 | 26.25 (W)<br>26.25 (E) | 19.76 (S) | 18.76 |
| CB-20 | TYPE E | TYPE P-6 | 45+34.74 | 48.00' | 29.11 | 18.43 (E) | 18.43 (W) | 17.43 |

N

( IN FEET )
1 inch = 40 ft.

| ALIGNMENT LINE DATA | | |
|---|---|---|
| LINE # | LENGTH | BEARING |
| L2 | 2626.20' | S89° 55' 11"E |

| LEGEND | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |




VERTICAL DATUM NOTE:
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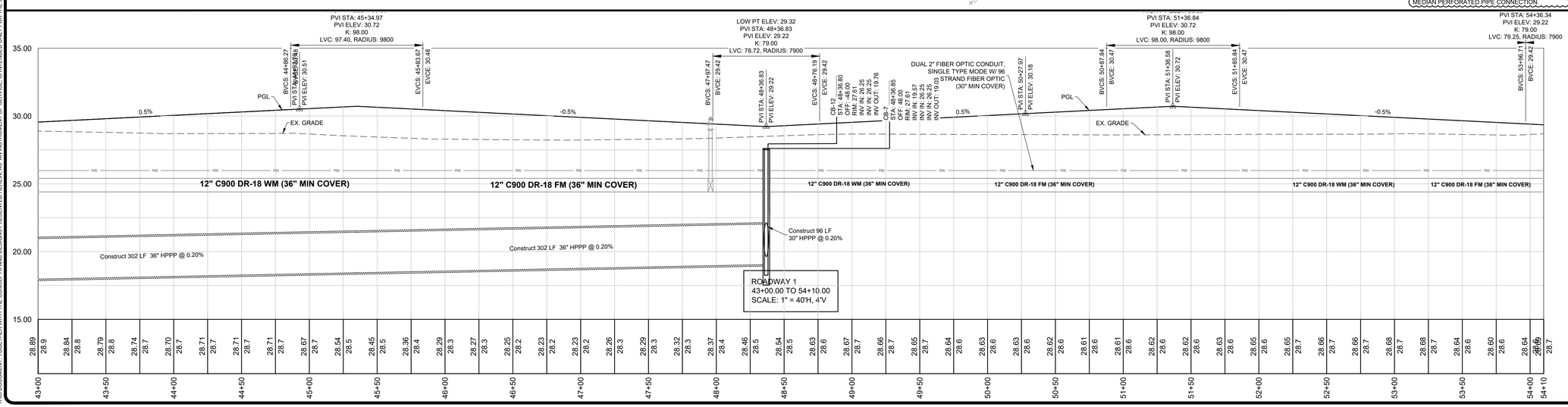



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L.B. CERTIFICATE OF AUTHORIZATION 8098


| | |
|---|---|
| DESIGNED BY | JRH |
| DRAWN BY | JLW |
| FILENAME | 2-1-288 engineering r33.dwg |
| LAYOUT | P-02 Plan (10) |
| SCALE | AS SHOWN |
| DATE | 07/AUG/23 |

| DATE | REVISION COMMENTS |
|---|---|
| 07-24-23 | UPDATE EDGE DRAIN |
| 08-22-23 | RAISE MEDIAN GRADES 8 INCHES |

# BECKER ROAD AT RIVERLAND

## ROADWAY PLAN

PORT ST. LUCIE FLORIDA


J.R. HARRISON, P.E. (DATE)
#82270
10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
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| LEGEND | |
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| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |

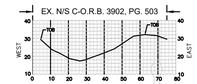
( IN FEET )
1 inch = 40 ft.

STORM SEWER INLET TABLE

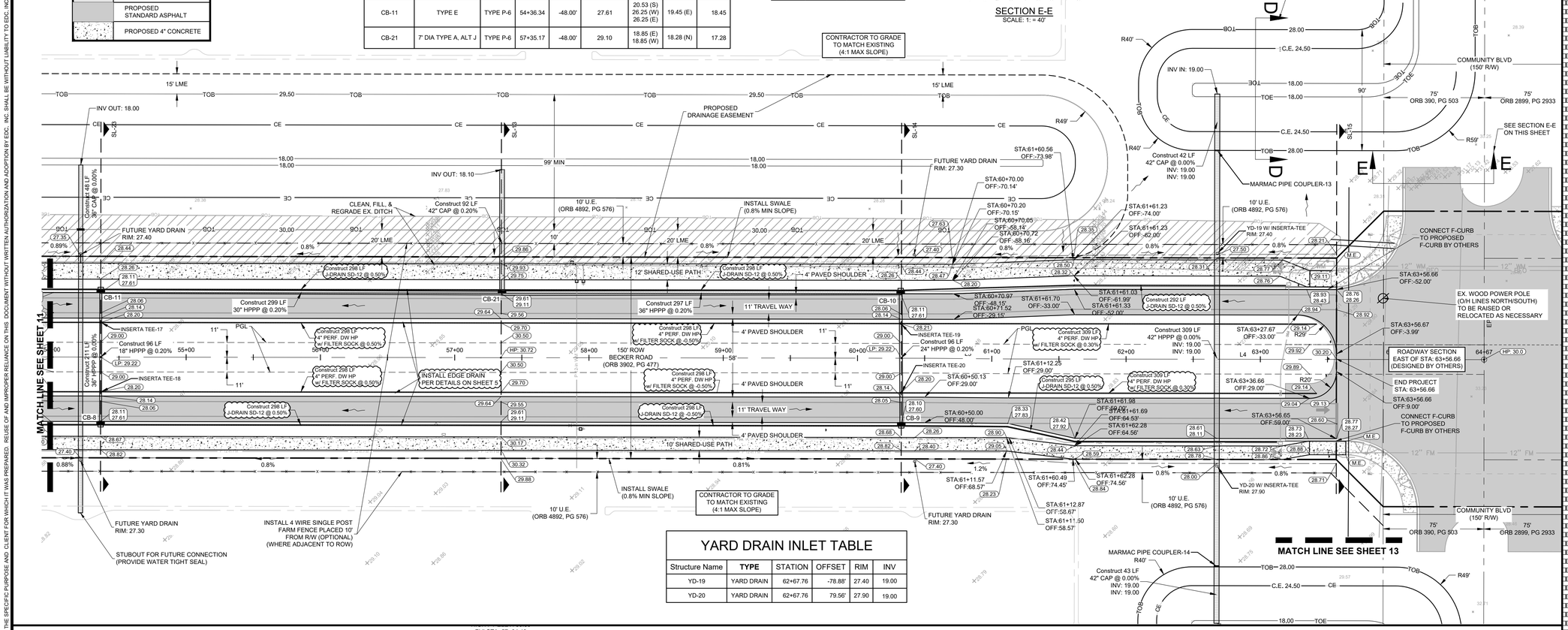
| Structure Name | BOT TYPE | TOP TYPE | STATION | OFFSET | EDGE OF RIM @ EOP | IN INV: | OUT INV: | BOTTOM ELEV. |
|---|---|---|---|---|---|---|---|---|
| CB-8 | TYPE C | TYPE P-6 | 54+36.34 | 48.00' | 27.61 | 26.25 (E) 26.25 (W) | 20.72 (N) | 19.72 |
| CB-9 | TYPE E | TYPE P-6 | 60+32.67 | 48.00' | 27.60 | 26.25 (W) 25.31 (E) | 20.17 (N) | 19.17 |
| CB-10 | 6' DIA TYPE A, ALT J | TYPE P-6 | 60+32.09 | -48.01' | 27.61 | 19.98 (S) 25.53 (E) 26.25 (W) | 19.44 (W) | 18.44 |
| CB-11 | TYPE E | TYPE P-6 | 54+36.34 | -48.00' | 27.61 | 20.53 (S) 26.25 (W) 26.25 (E) | 19.45 (E) | 18.45 |
| CB-21 | 7' DIA TYPE A, ALT J | TYPE P-6 | 57+35.17 | -48.00' | 29.10 | 18.85 (E) 18.85 (W) | 18.28 (N) | 17.28 |

ALIGNMENT LINE DATA

| LINE # | LENGTH | BEARING |
|---|---|---|
| L2 | 2626.20' | S89° 55' 11"E |
| L3 | 61.92' | S89° 30' 54"E |
| L4 | 354.51' | S89° 55' 11"E |

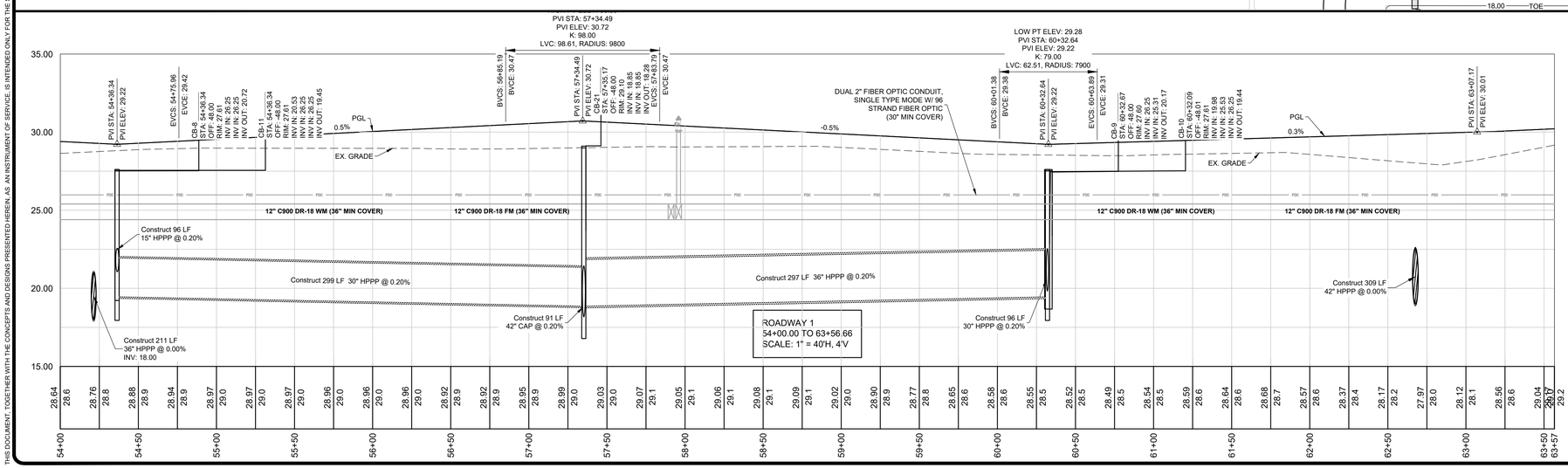



SECTION E-E
SCALE: 1: = 40'




YARD DRAIN INLET TABLE

| Structure Name | TYPE | STATION | OFFSET | RIM | INV |
|---|---|---|---|---|---|
| YD-19 | YARD DRAIN | 62+67.76 | -78.88' | 27.40 | 19.00 |
| YD-20 | YARD DRAIN | 62+67.76 | 79.56' | 27.90 | 19.00 |

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| JLW | DRAWN BY |
| 2-1-288 engineering r33.dwg | FILENAME |
| PSD Plan (12) | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

| DATE | REVISION COMMENTS |
|---|---|
| 07-24-23 | UPDATE EDGE DRAIN |
| 06-22-23 | RAISE MEDIAN GRADES 8 INCHES |

# BECKER ROAD AT RIVERLAND
## ROADWAY PLAN
PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270

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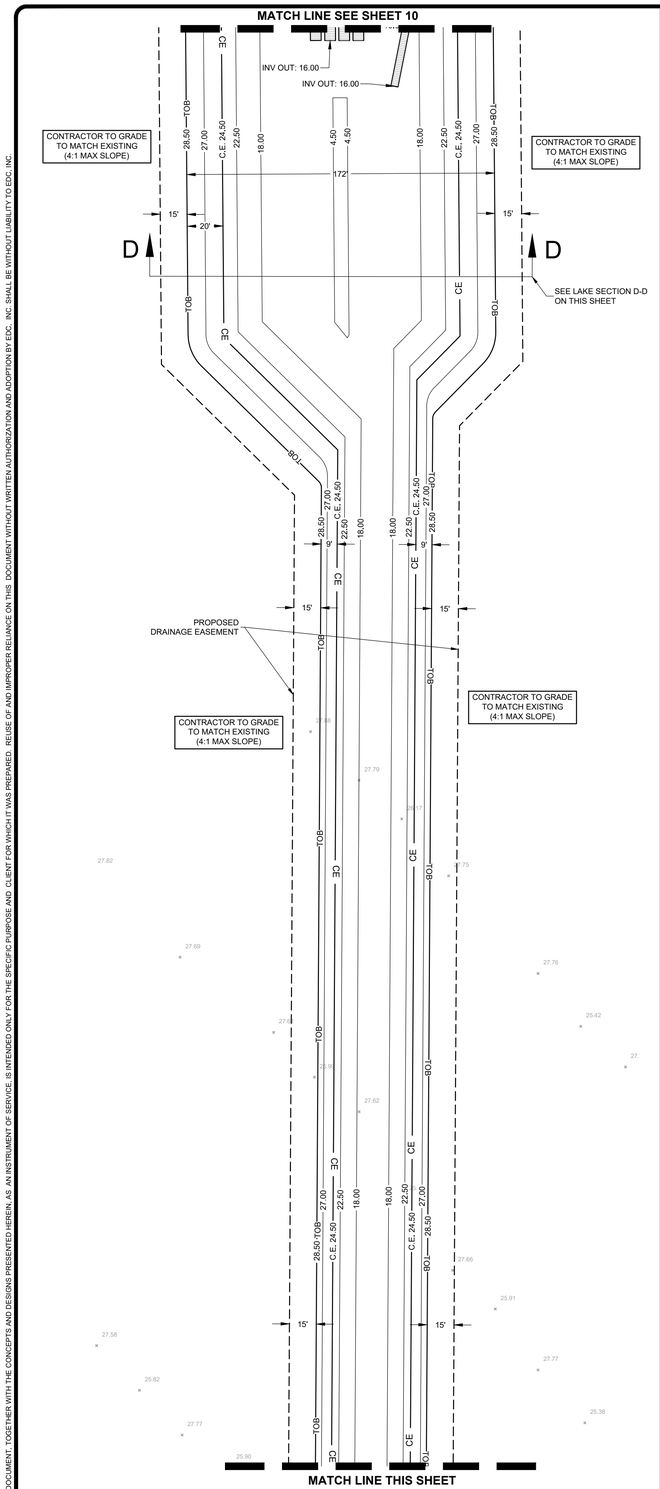
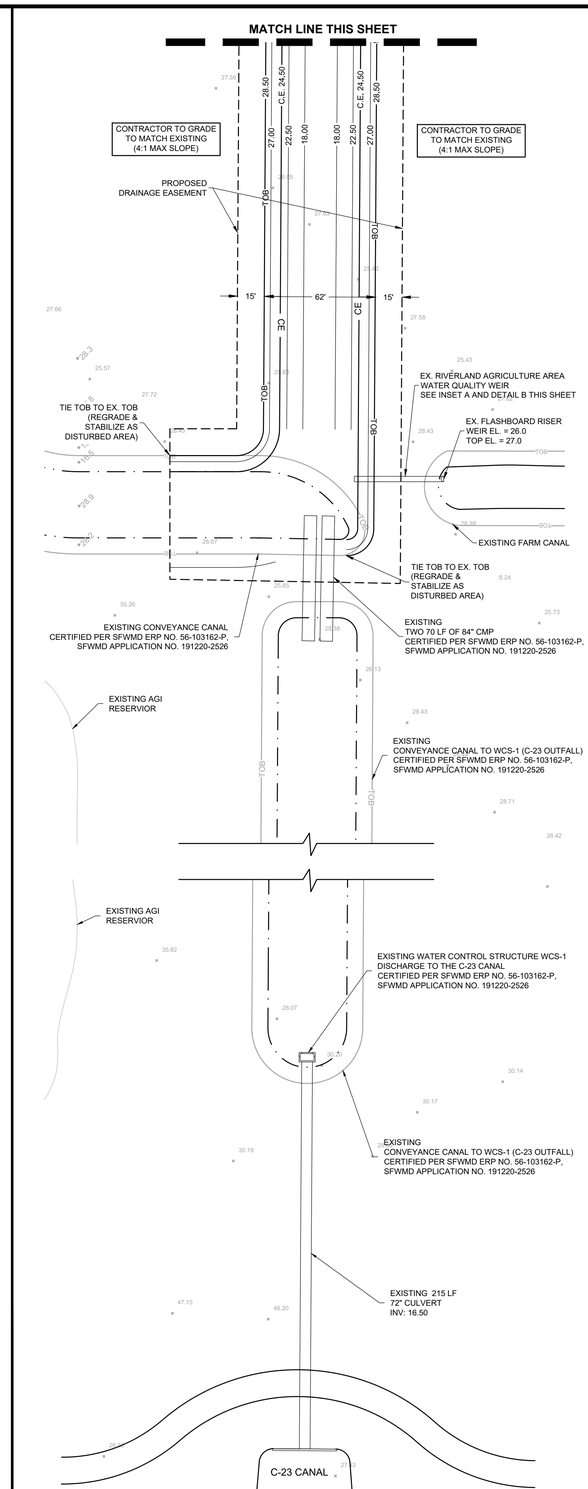


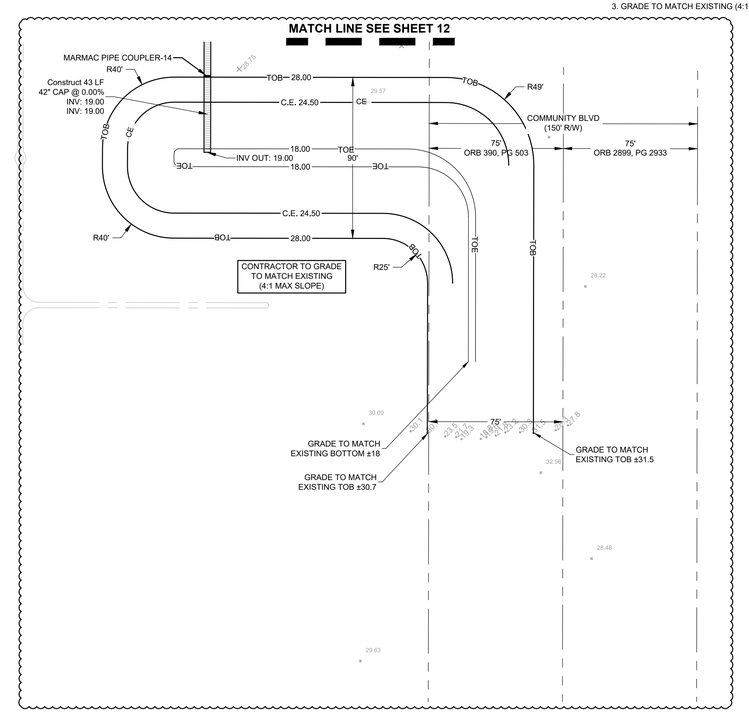

N

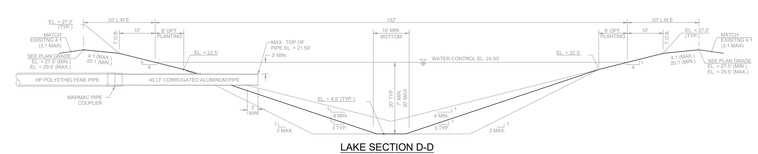
( IN FEET )
1 inch = 40 ft.

| LEGEND | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |

VERTICAL DATUM NOTE:
ALL ELEVATION SHOWN HERE REFERENCE THE NORTH AMERICAN VERTICAL DATUM NAVD88

NOTE TO CONTRACTOR:
1. ALL PIPE ELEVATIONS SHALL BE FIELD VERIFIED BEFORE COMMENCEMENT.
2. REGRADE & STABILIZE ALL DISTURBED AREAS.
3. GRADE TO MATCH EXISTING (4:1 SLOPE MAX)




LAKE SECTION D-D
N.T.S.

NOTE: LAKE SECTION D-D IS SHOWN ACCORDING TO MASS GRADING PLANS PROVIDED BY GLH ENGINEERING, LLC.

ENGINEERS ✪ SURVEYORS
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L.B. CERTIFICATE OF AUTHORIZATION 8098

| | |
|---|---|
| JRH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-1-288 engineering r33.dwg | FILENAME |
| PSD Plan (14) | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

REVISION COMMENTS | DATE

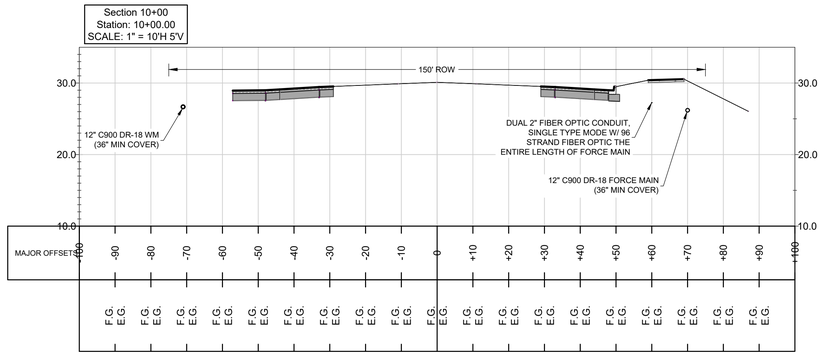
# BECKER ROAD AT RIVERLAND
## ROADWAY PLAN
PORT ST. LUCIE — FLORIDA

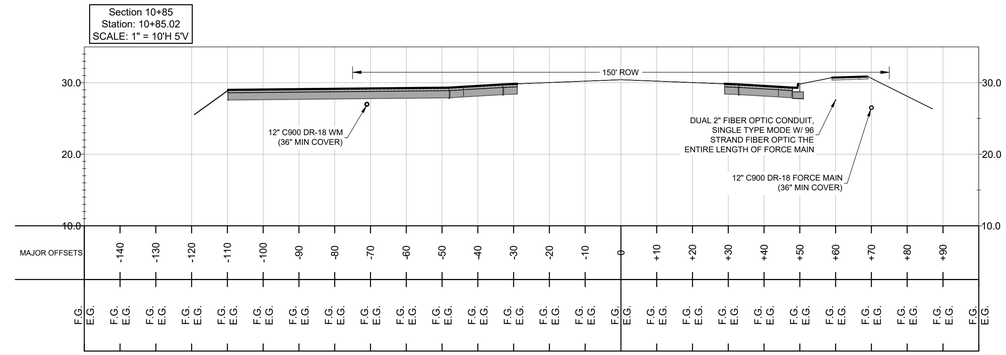
J.R. HARRISON, P.E. (DATE)
#82270
10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
772-462-2455

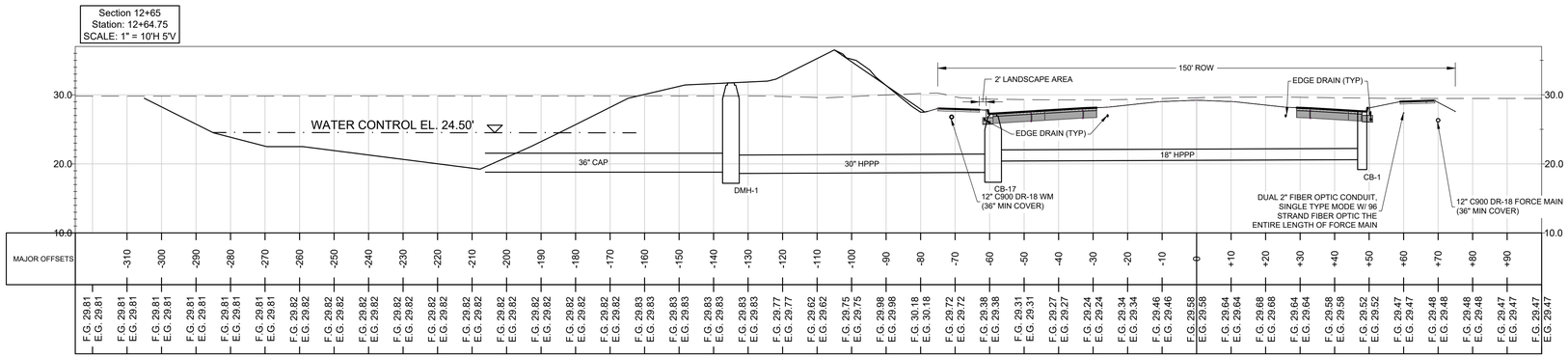
21-288

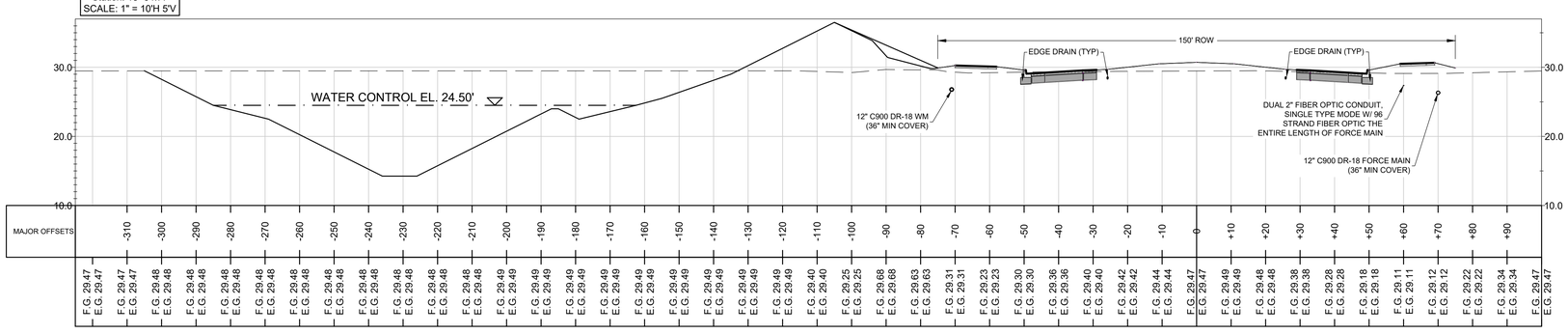


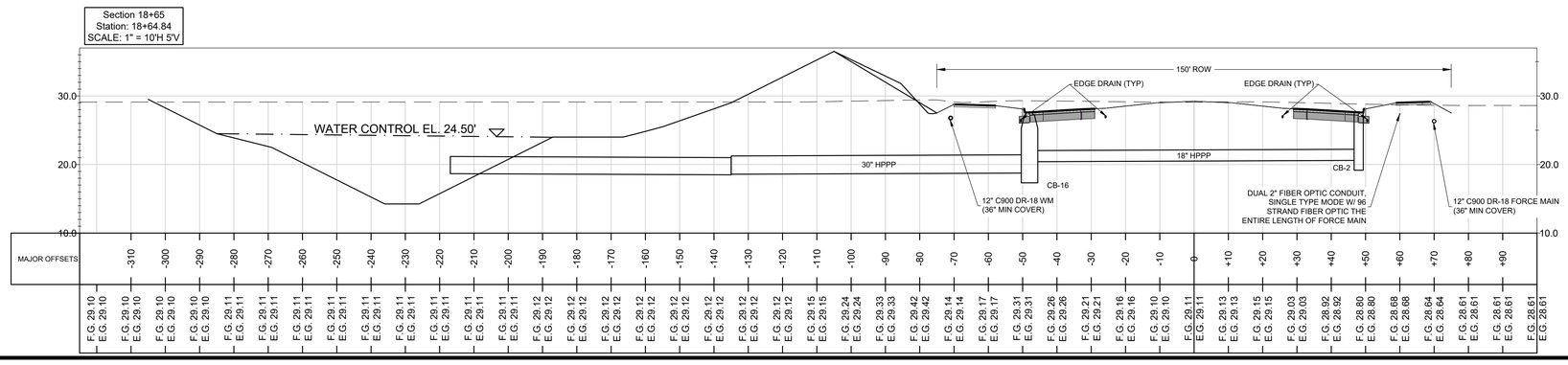
PSLUSD #5405A
PSL PROJECT #P23-073





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| | |
|---|---|
| JRH | DESIGNED BY |
| JLW | DRAWN BY |
| 2 1-288 engineering r33.dwg | FILENAME |
| Roadway Cross-Sections | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

REVISION COMMENTS

DATE

# BECKER ROAD AT RIVERLAND

## ROADWAY CROSS SECTIONS

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270


10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
772-462-2455


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PSLUSD #5405A
PSL PROJECT #P23-073

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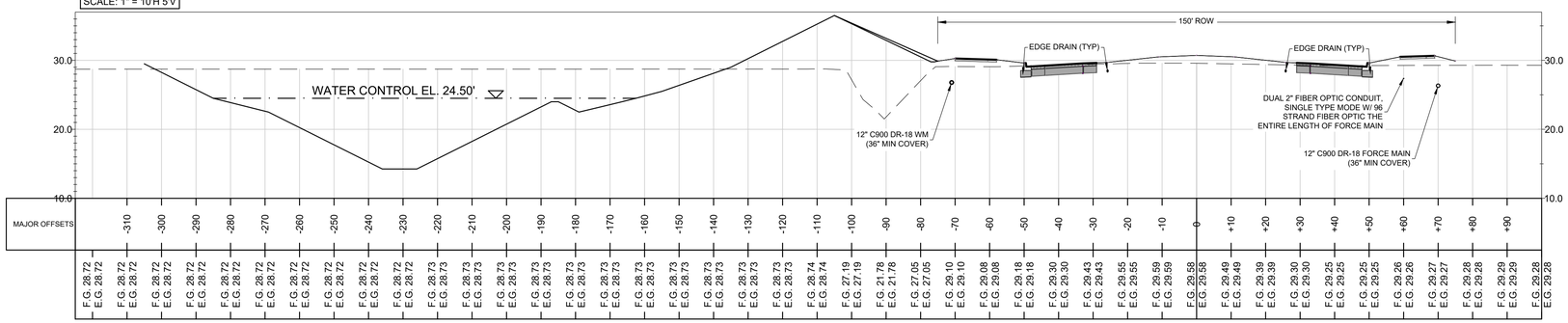
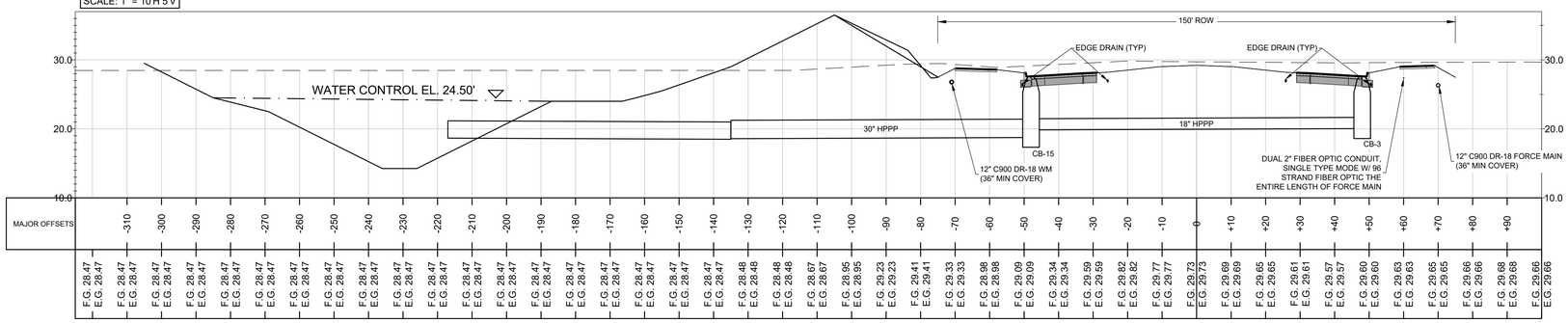
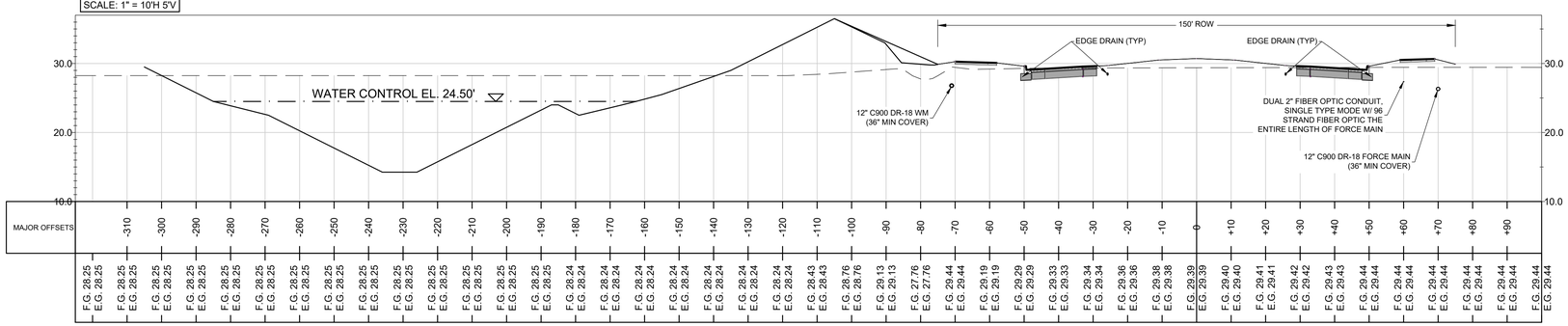
Section 21+65
Station: 21+64.84
SCALE: 1" = 10'H 5'V



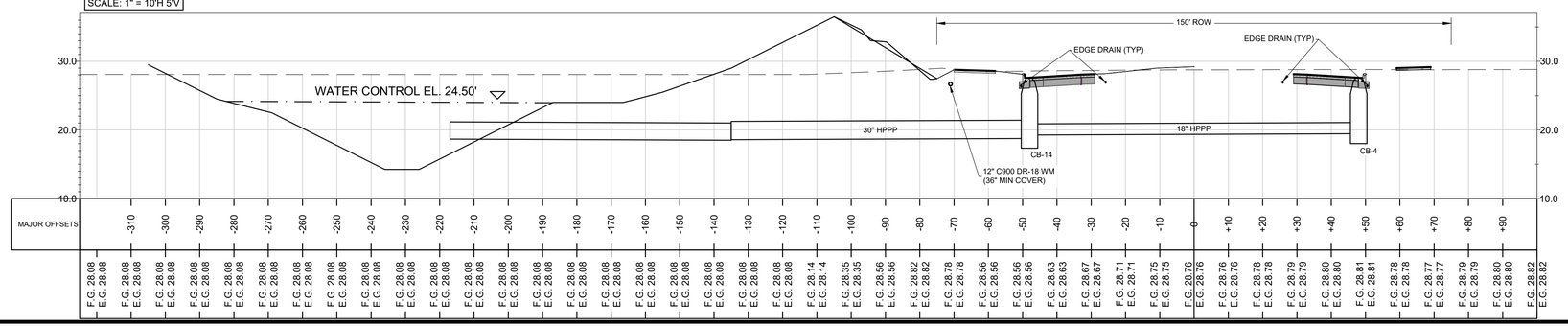

Section 24+65
Station: 24+64.84
SCALE: 1" = 10'H 5'V




Section 27+65
Station: 27+64.84
SCALE: 1" = 10'H 5'V




Section 30+65
Station: 30+64.84
SCALE: 1" = 10'H 5'V

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| | |
|---|---|
| JPH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-1-288 engineering r33.dwg | FILENAME |
| Roadway Cross-Sections (2) | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

| DATE | REVISION COMMENTS |
|---|---|

# BECKER ROAD AT RIVERLAND

## ROADWAY CROSS SECTIONS

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270

10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
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PSLUSD #5405A
PSL PROJECT #P23-073

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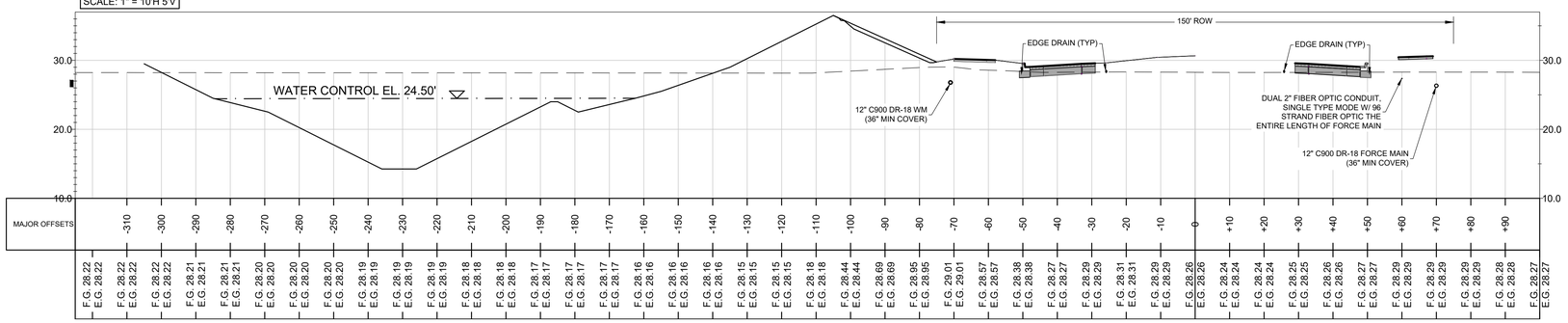
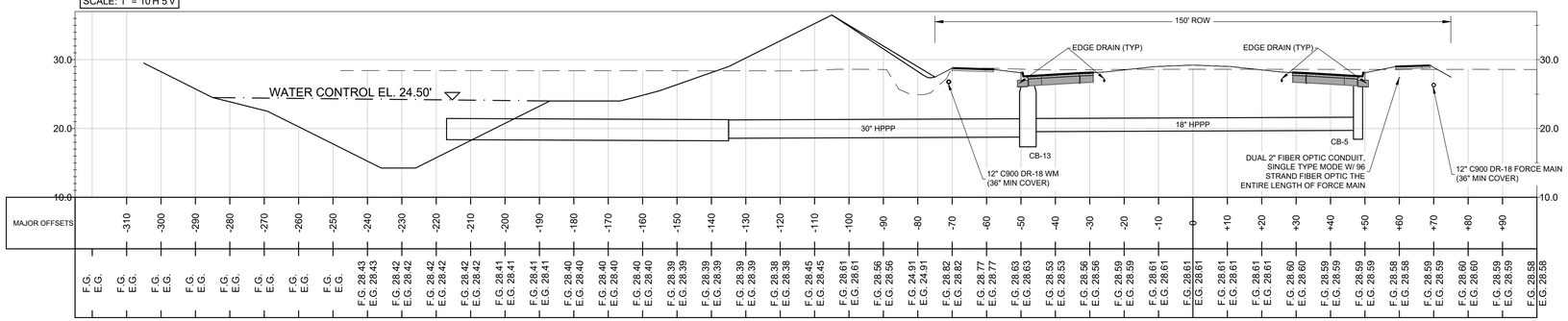
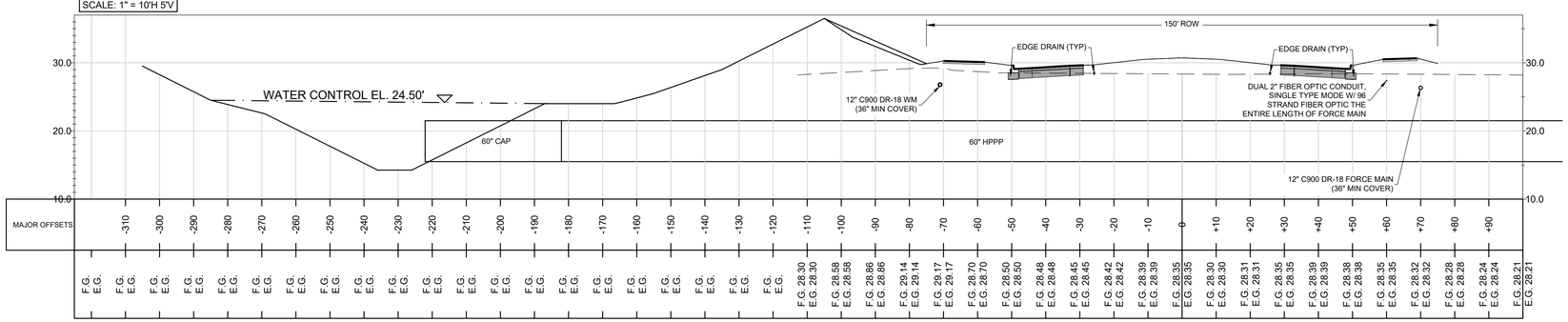
Section 33+50
Station: 33+49.79
SCALE: 1" = 10'H 5'V



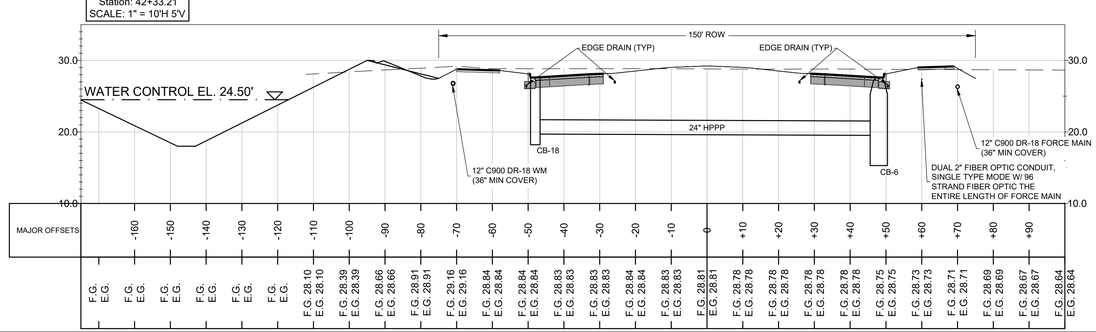

Section 36+37
Station: 36+36.66
SCALE: 1" = 10'H 5'V




Section 39+35
Station: 39+35.03
SCALE: 1" = 10'H 5'V




Section 42+33
Station: 42+33.21
SCALE: 1" = 10'H 5'V

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| | |
|---|---|
| JPH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-1-288 engineering r33.dwg | FILENAME |
| Roadway Cross-Sections (3) | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

| DATE | REVISION COMMENTS |
|---|---|

# BECKER ROAD AT RIVERLAND

## ROADWAY CROSS SECTIONS

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270

10250 SW VILLAGE PARKWAY - SUITE 201
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PSLUSD #5405A
PSL PROJECT #P23-073

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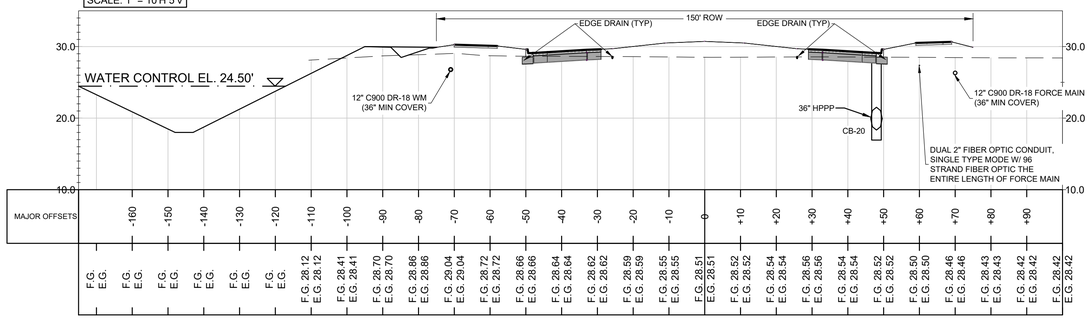
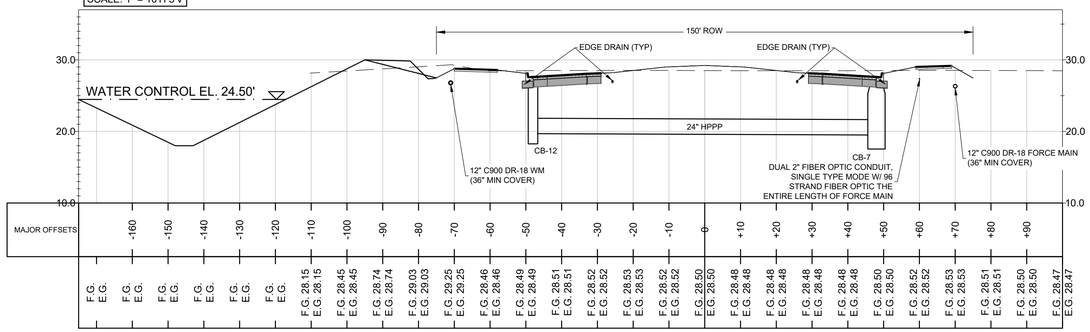
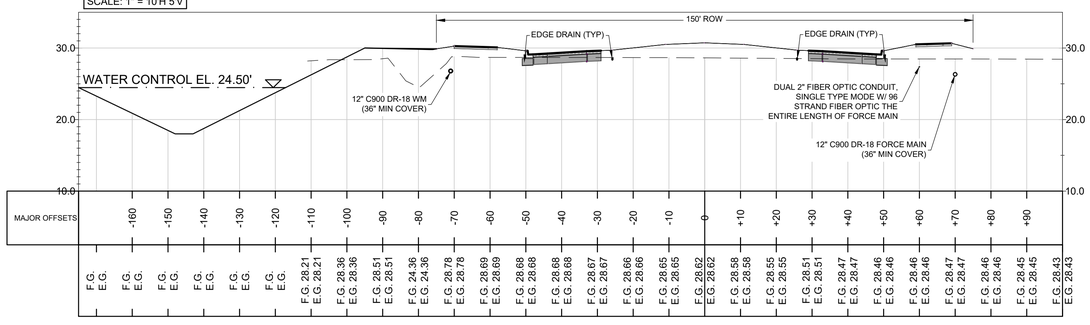
Section 45+35
Station: 45+34.98
SCALE: 1" = 10'H 5'V



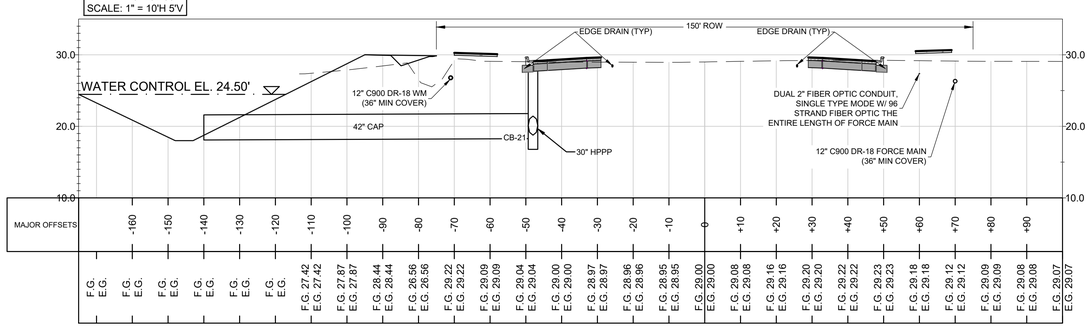

Section 48+37
Station: 48+36.92
SCALE: 1" = 10'H 5'V




Section 51+36
Station: 51+36.49
SCALE: 1" = 10'H 5'V




Section 57+35
Station: 57+34.58
SCALE: 1" = 10'H 5'V

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L.B. CERTIFICATE OF AUTHORIZATION 8098

| | |
|---|---|
| JPH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-1-288 engineering r33.dwg | FILENAME |
| Roadway Cross-Sections (4) | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

| DATE | REVISION COMMENTS |
|---|---|

# BECKER ROAD AT RIVERLAND

## ROADWAY CROSS SECTIONS

PORT ST. LUCIE FLORIDA

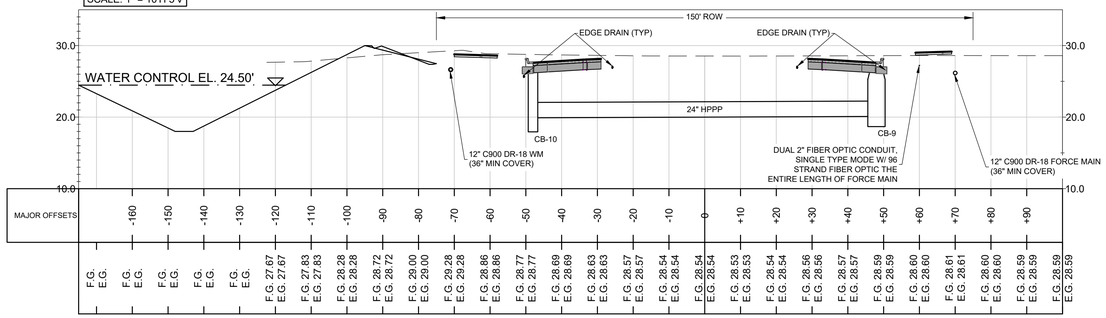
J.R. HARRISON, P.E. (DATE)
#82270
10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
☎ 772-462-2455

21-288

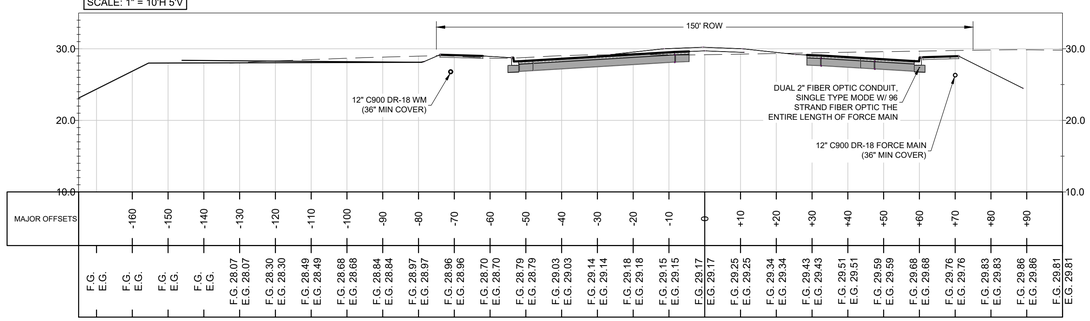


PSLUSD #5405A
PSL PROJECT #P23-073

Section 60+33
Station: 60+32.64
SCALE: 1" = 10'H 5'V




Section 63+57
Station: 63+56.66
SCALE: 1" = 10'H 5'V





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L.B. CERTIFICATE OF AUTHORIZATION 8098

| | |
|---|---|
| JPH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-1-288 engineering r33.dwg | FILENAME |
| Roadway Cross-Sections (5) | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

REVISION COMMENTS

DATE

# BECKER ROAD AT RIVERLAND

## ROADWAY CROSS SECTIONS

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270


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PSLUSD #5405A
PSL PROJECT #P23-073

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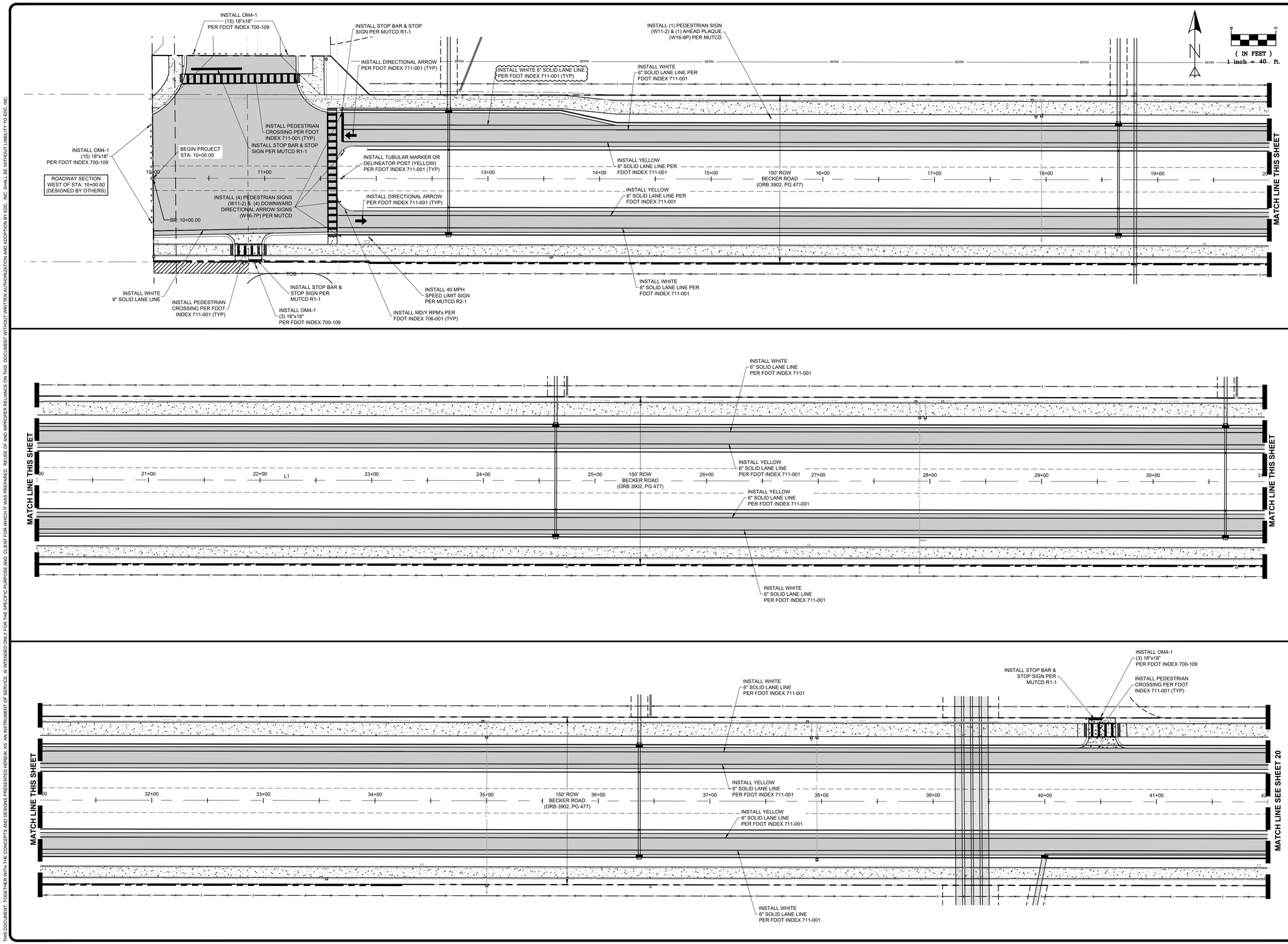



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| | |
|---|---|
| JPH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-1-288 engineering r33.dwg | FILENAME |
| Striping & Signage Plan | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

| DATE | REVISION COMMENTS |
|---|---|

# BECKER ROAD AT RIVERLAND

## STRIPING & SIGNAGE PLAN

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270


10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
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PSLUSD #5405A
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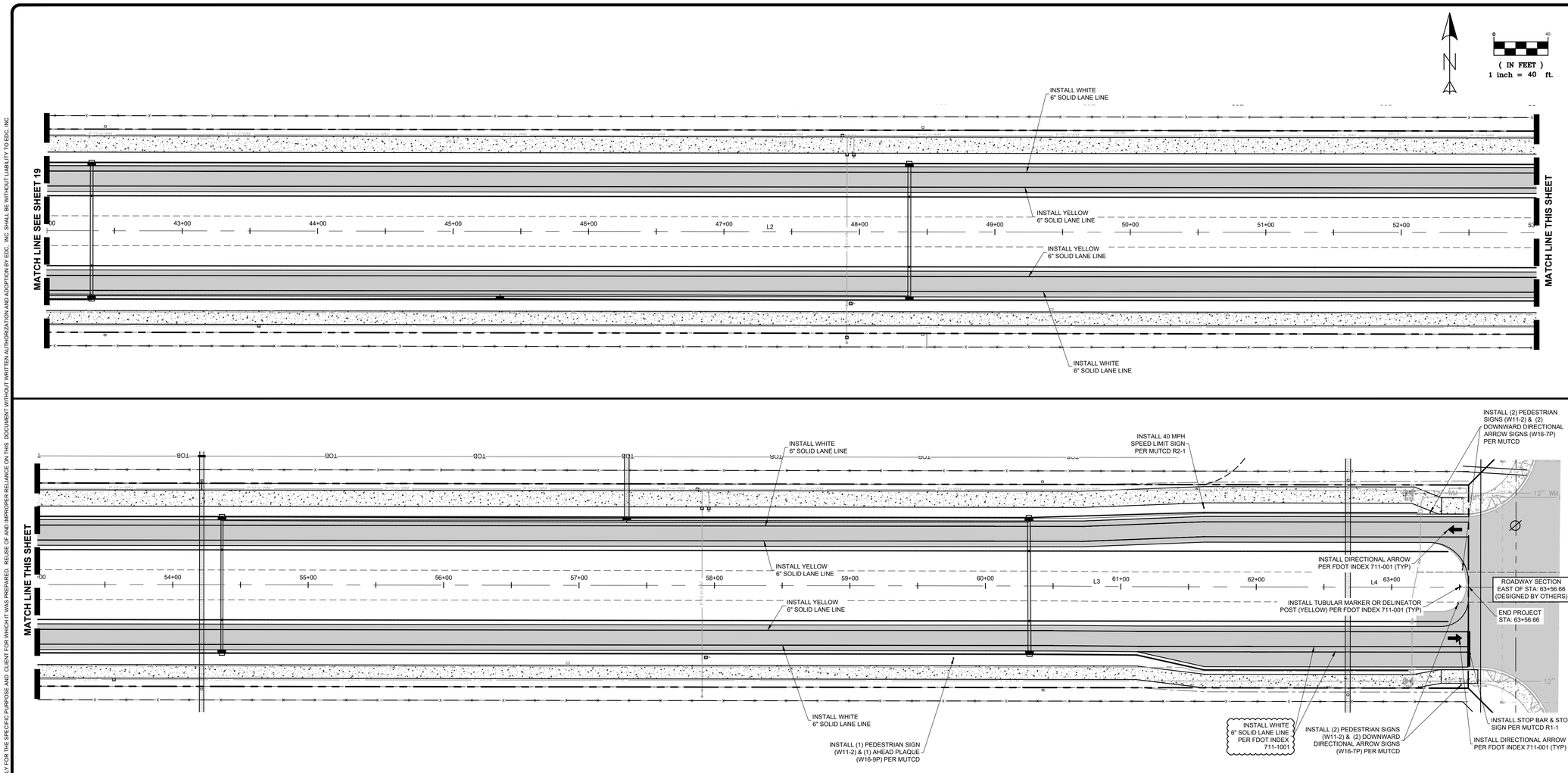



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L.B. CERTIFICATE OF AUTHORIZATION 8098


| | |
|---|---|
| JPH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-r-288 engineering r33.dwg | FILENAME |
| Striping & Signage Plan (2) | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

| DATE | REVISION COMMENTS |
|---|---|

# BECKER ROAD AT RIVERLAND

## STRIPING & SIGNAGE PLAN

PORT ST. LUCIE FLORIDA


J.R. HARRISON, P.E. (DATE)
#82270

10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
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PSLUSD #5405A
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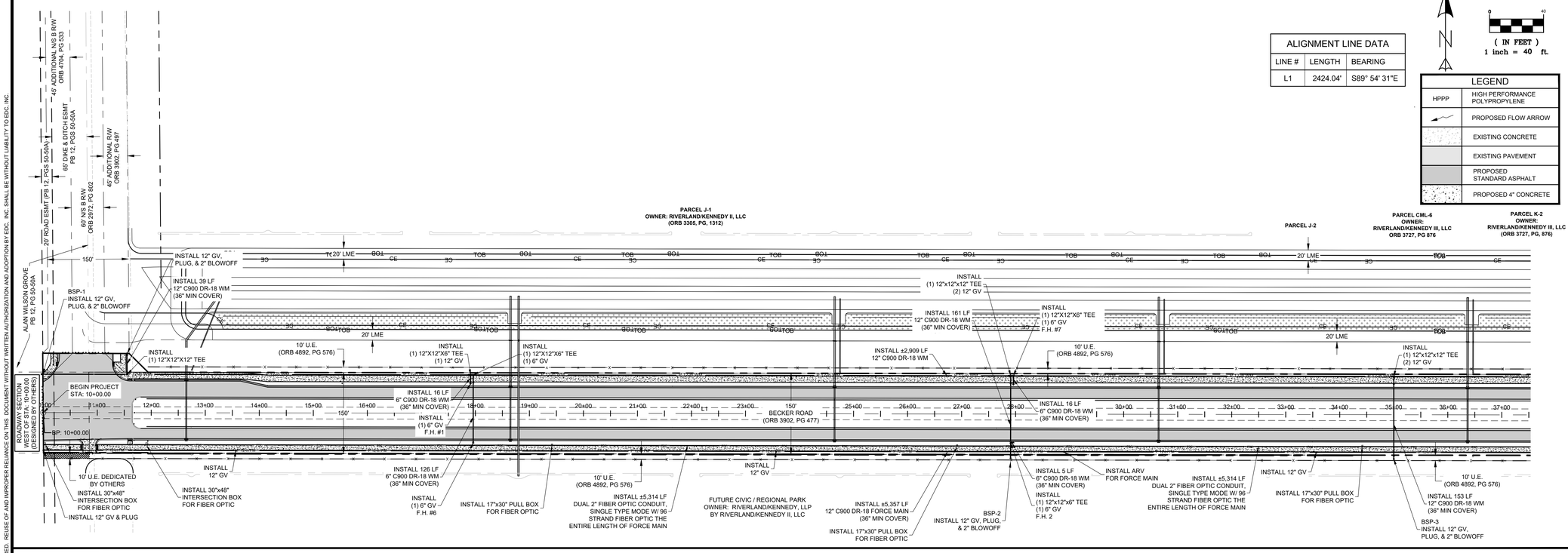
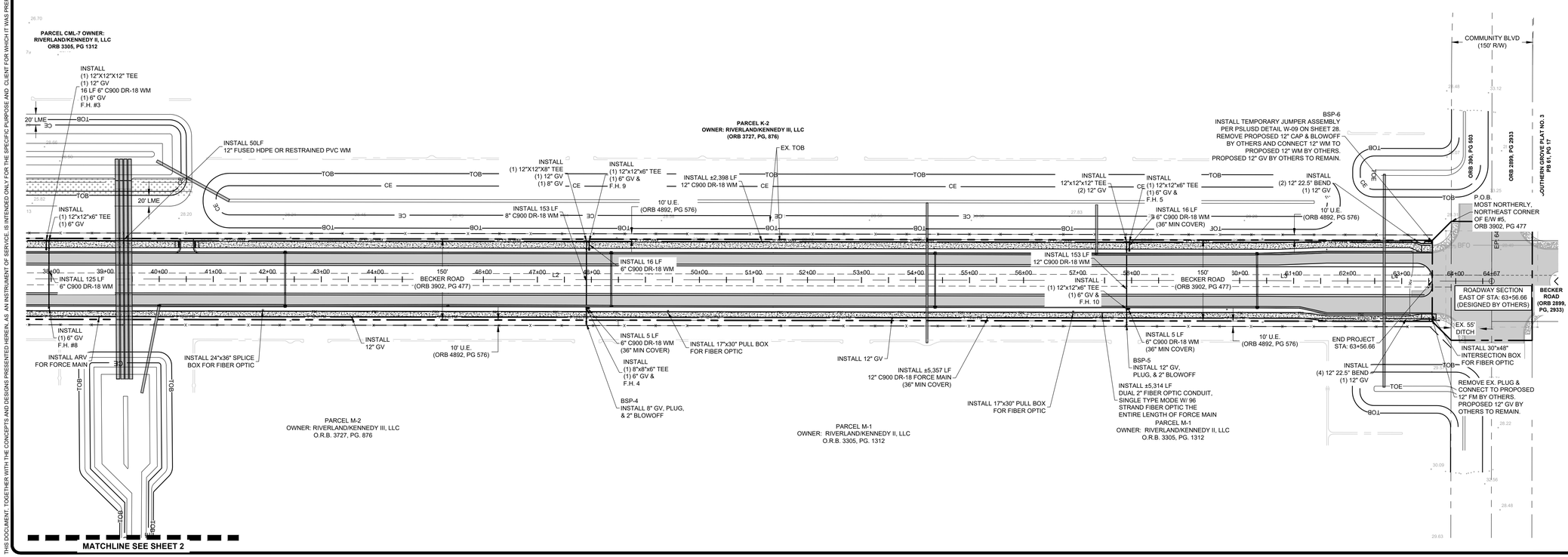
| ALIGNMENT LINE DATA | | |
|---|---|---|
| LINE # | LENGTH | BEARING |
| L1 | 2424.04' | S89° 54' 31"E |

( IN FEET )
1 inch = 40 ft.

| LEGEND | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |





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| | |
|---|---|
| DESIGNED BY | JPH |
| DRAWN BY | JLW |
| FILENAME | 2-288 engineering r33.dwg |
| LAYOUT | Overall Utility Plan |
| SCALE | AS SHOWN |
| DATE | 07AUG23 |

REVISION COMMENTS

DATE

# BECKER ROAD AT RIVERLAND
## CONCEPTUAL LAYOUT
## OVERALL UTILITY PLAN

PORT ST. LUCIE FLORIDA


J.R. HARRISON, P.E. (DATE)
#82270
10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
772-462-2455


21-288



PSLUSD #5405A
PSL PROJECT #P23-073

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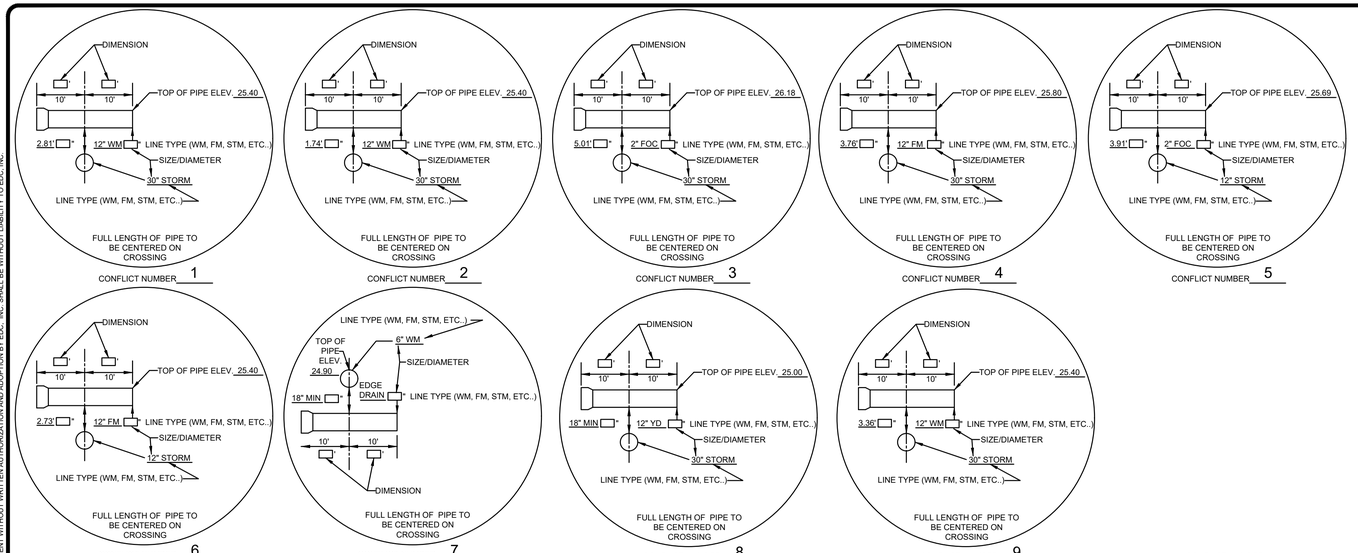



## FORCE MAIN VALVE / FITTING TABLE

| NAME | TYPE | STATION | OFFSET | TOP OF PIPE: | FINISHED GROUND: |
|---|---|---|---|---|---|
| GV-50 | 12" GV | 10+00.68 | 70.00' | ±26.98 | ±29.98 |
| GV-51 | 12" GV | 13+56.65 | 70.00' | ±26.09 | ±29.09 |

## WATER MAIN VALVE / FITTING TABLE

| NAME | TYPE | STATION | OFFSET | TOP OF PIPE: | FINISHED GROUND: |
|---|---|---|---|---|---|
| BO-1 | 2" BLOWOFF ASSEMBLY | --- | --- | 3' BELOW GRADE | TBD |
| BO-7 | 2" BLOWOFF ASSEMBLY | 11+54.94 | -108.11' | ±25.60 | ±28.60 |
| GV-1 | 12" GV | --- | --- | 3' BELOW GRADE | TBD |
| GV-5 | 12" GV | 17+87.38 | -71.00' | ±25.67 | ±28.67 |
| GV-29 | 6" GV (FOR FH) | 17+96.04 | 53.00' | ±25.64 | ±28.64 |
| GV-39 | 6" GV (FOR FH) | 17+90.86 | -57.00' | ±25.61 | ±28.61 |
| GV-40 | 6" GV | 17+95.86 | -57.00' | ±25.58 | ±28.58 |
| GV-48 | 12" GV | 11+54.94 | -106.83' | ±25.63 | ±28.63 |
| TEE-2 | 12"x12"x6" TEE | 17+90.84 | -71.00' | ±25.66 | ±28.66 |
| TEE-12 | 12"x12"x6" TEE | 17+95.86 | -71.00' | ±25.63 | ±28.63 |
| TEE-18 | 12"x12"x12" TEE | 11+55.29 | -71.00' | ±25.65 | ±28.65 |

( IN FEET )
1 inch = 40 ft.

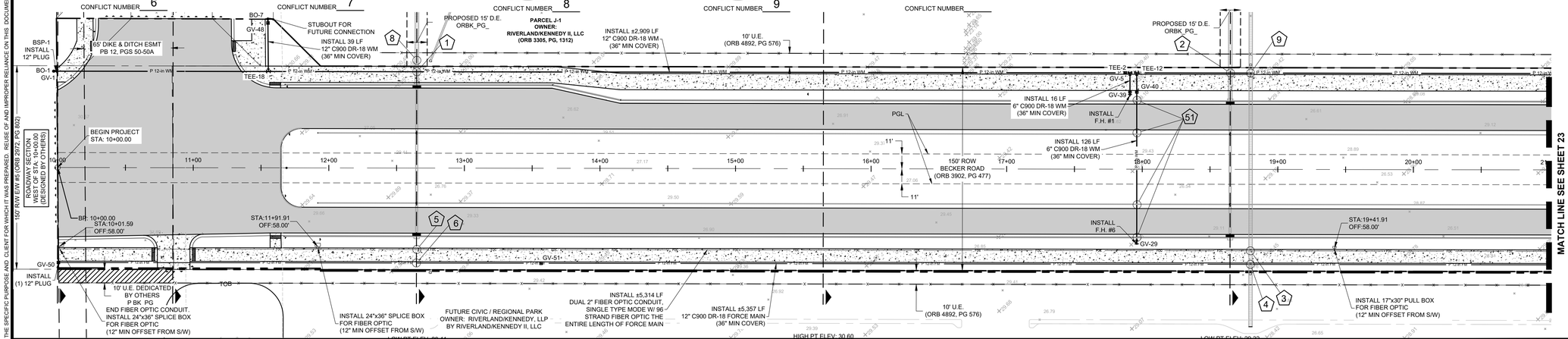
## LEGEND

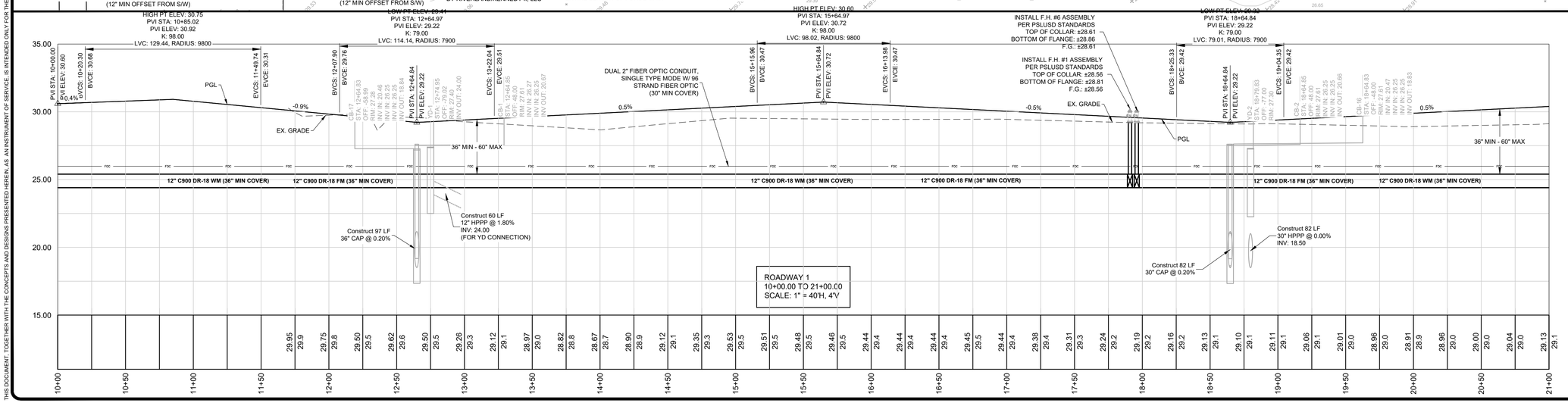
| | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |

VERTICAL DATUM NOTE:
ALL ELEVATION SHOWN HERE REFERENCE THE NORTH AMERICAN VERTICAL DATUM NAVD88

NOTE TO CONTRACTOR:
1. ALL PIPE ELEVATIONS SHALL BE FIELD VERIFIED BEFORE COMMENCEMENT.
2. CONTRACTOR RESPONSIBLE TO OBTAIN AND UTILIZE CORRECT PSLUSD STANDARD DETAILS.

NOTES:
1. CONTRACTOR TO INSTALL ALL GATE VALVES (GV) PER PSLUSD DETAIL G-07.
2. CONTRACTOR TO INSTALL ALL BLOW-OFFS (BO) PER PSLUSD DETAIL W-04.





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F.B.P.E. CERTIFICATE OF AUTHORIZATION 9935
L.B. CERTIFICATE OF AUTHORIZATION 8098


| | |
|---|---|
| JPH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-288 engineering r33.dwg | FILENAME |
| Utility Plan | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

REVISION COMMENTS

DATE

# BECKER ROAD AT RIVERLAND

# UTILITY PLAN

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270

10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
772-462-2455

21-288



PSLUSD #5405A
PSL PROJECT #P23-073

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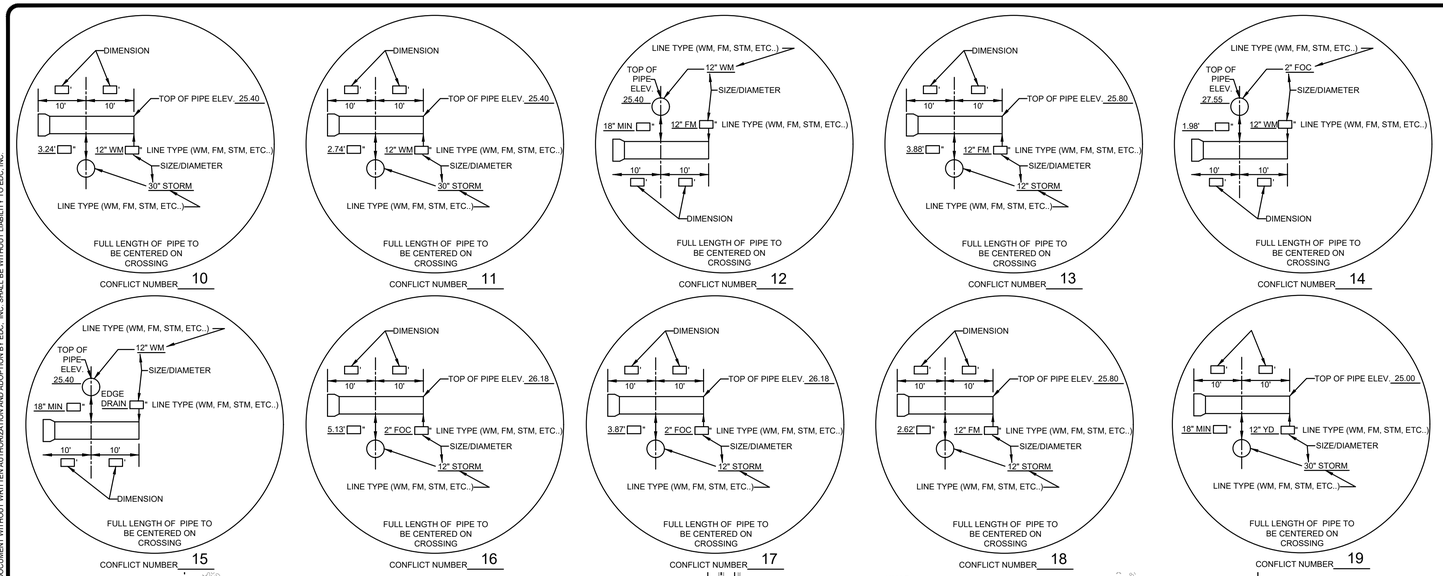


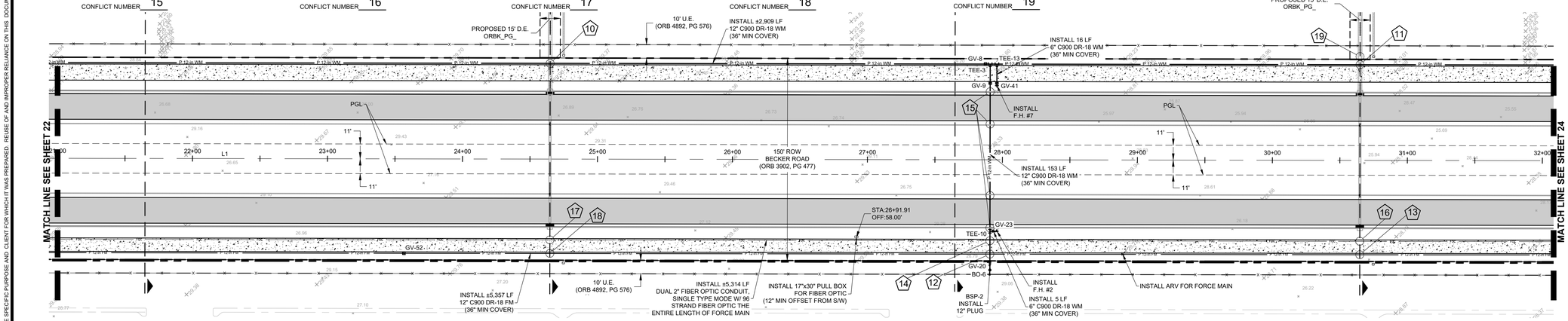


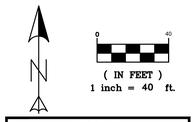


| LEGEND | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |

## FORCE MAIN VALVE / FITTING TABLE

| NAME | TYPE | STATION | OFFSET | TOP OF PIPE: | FINISHED GROUND: |
|---|---|---|---|---|---|
| GV-52 | 12" GV | 23+56.65 | 70.00' | ±26.19 | ±29.19 |

## WATER MAIN VALVE / FITTING TABLE

| NAME | TYPE | STATION | OFFSET | TOP OF PIPE: | FINISHED GROUND: |
|---|---|---|---|---|---|
| BO-6 | 12" GV | 27+90.85 | 80.23' | 3' BELOW GRADE | TBD |
| GV-8 | 12" GV | 27+87.38 | -71.00' | ±26.80 | ±29.80 |
| GV-9 | 12" GV | 27+90.84 | -57.00' | ±26.61 | ±29.61 |
| GV-20 | 12" GV | 27+90.84 | 77.82' | 3' BELOW GRADE | TBD |
| GV-23 | 6" GV (FOR FH) | 27+93.95 | 53.00' | ±26.65 | ±29.65 |
| GV-41 | 6" GV (FOR FH) | 27+95.84 | -57.00' | ±26.58 | ±29.58 |
| TEE-3 | 12"x12"x12" TEE | 27+90.84 | -71.00' | ±26.79 | ±29.79 |
| TEE-10 | 12"x12"x6" TEE | 27+90.84 | 53.00' | ±26.66 | ±29.66 |
| TEE-13 | 12"x12"x6" TEE | 27+95.84 | -71.00' | ±26.76 | ±29.76 |

NOTES:
1. CONTRACTOR TO INSTALL ALL GATE VALVES (GV) PER PSLUSD DETAIL G-07.
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NOTE TO CONTRACTOR:
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VERTICAL DATUM NOTE:
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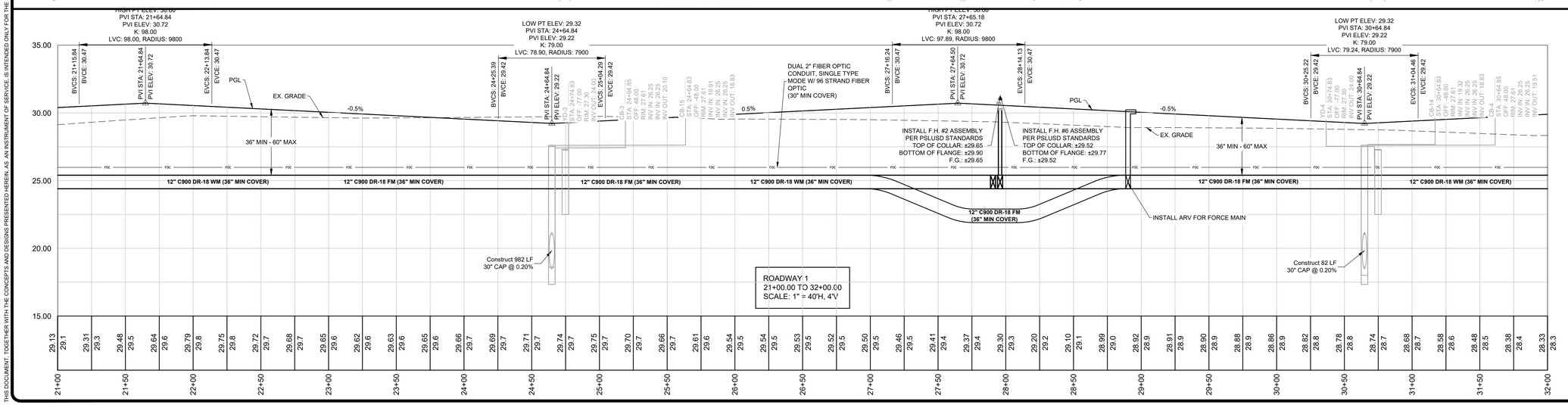


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| | |
|---|---|
| DESIGNED BY | JRH |
| DRAWN BY | JLW |
| FILENAME | 2-288 engineering r33.dwg |
| LAYOUT | Utility Plan (2) |
| SCALE | AS SHOWN |
| DATE | 07AUG23 |

REVISION COMMENTS

DATE

# BECKER ROAD AT RIVERLAND

## UTILITY PLAN

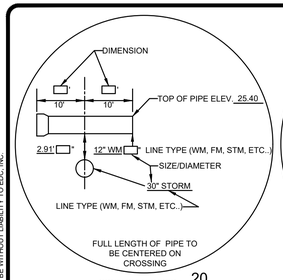
PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270
10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
772-462-2455

21-288



PSLUSD #5405A
PSL PROJECT #P23-073

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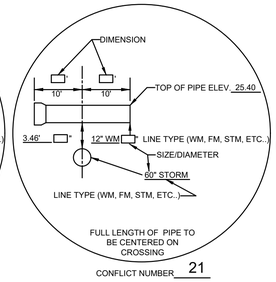


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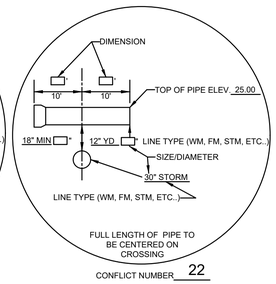


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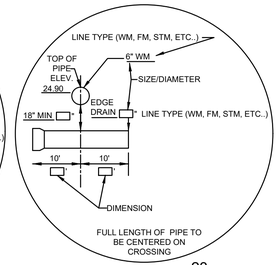


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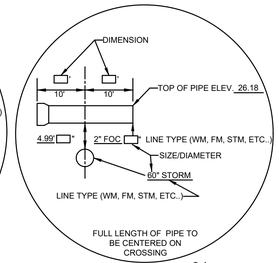


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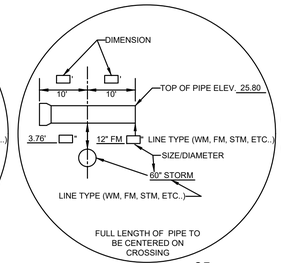


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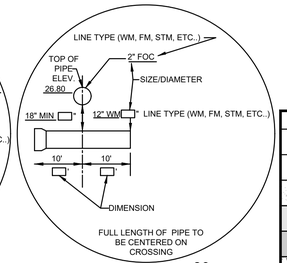


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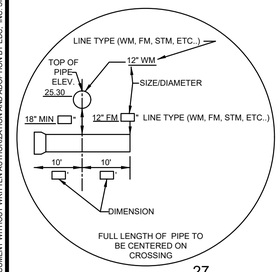


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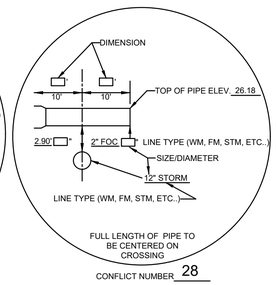


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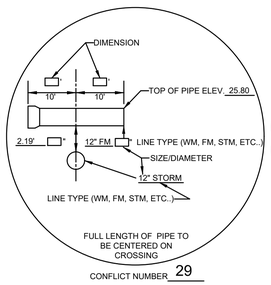


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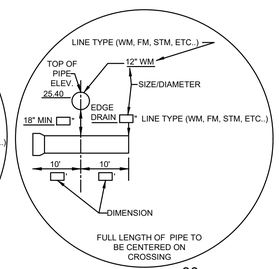


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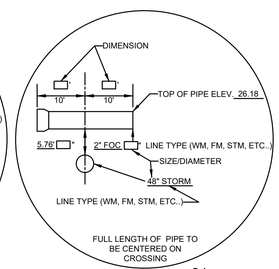


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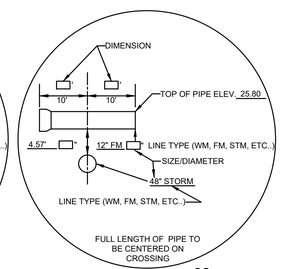


CONFLICT NUMBER 32

N

( IN FEET )
1 inch = 40 ft.

## LEGEND

| | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |

## WATER MAIN VALVE / FITTING TABLE

| NAME | TYPE | STATION | OFFSET | TOP OF PIPE: | FINISHED GROUND: |
|---|---|---|---|---|---|
| BO-3 | 12" GV | 35+00.24 | 80.57' | 3' BELOW GRADE | TBD |
| GV-15 | 12" GV | 37+87.35 | -71.00' | ±26.08 | ±29.08 |
| GV-16 | 6" GV | 37+90.83 | -57.02' | ±26.01 | ±29.01 |
| GV-18 | 6" GV (FOR FH) | 37+95.83 | -57.02' | ±26.04 | ±29.04 |
| GV-19 | 12" GV | 35+00.23 | 75.98' | ±-3.00 | ±0.00 |
| GV-43 | 6" GV (FOR FH) | 37+96.01 | 52.17' | ±26.04 | ±29.04 |
| GV-46 | 12" GV | 34+96.54 | -71.00' | ±26.04 | ±29.04 |
| GV-47 | 12" GV | 35+00.02 | -57.02' | ±25.92 | ±28.92 |
| TEE-5 | 12"x12"x6" TEE | 37+90.81 | -71.00' | ±26.10 | ±29.10 |
| TEE-6 | 12"x12"x6" TEE | 37+95.81 | -71.00' | ±26.12 | ±29.12 |
| TEE-17 | 12"x12"x12" TEE | 35+00.00 | -71.00' | ±26.01 | ±29.01 |

## FORCE MAIN VALVE / FITTING TABLE

| NAME | TYPE | STATION | OFFSET | TOP OF PIPE: | FINISHED GROUND: |
|---|---|---|---|---|---|
| GV-53 | 12" GV | 33+56.64 | 70.00' | ±27.15 | ±30.15 |

NOTES:
1. CONTRACTOR TO INSTALL ALL GATE VALVES (GV) PER PSLUSD DETAIL G-07.
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NOTE TO CONTRACTOR:
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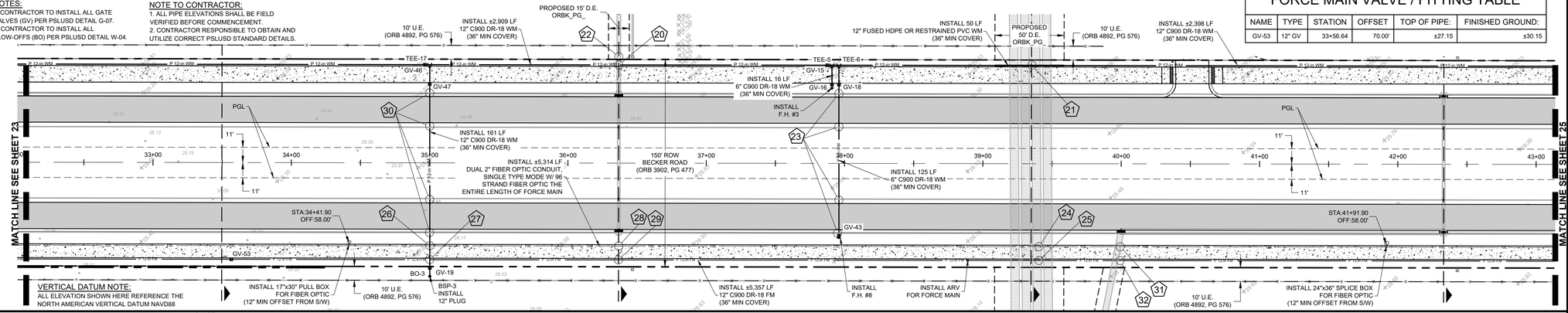


VERTICAL DATUM NOTE:
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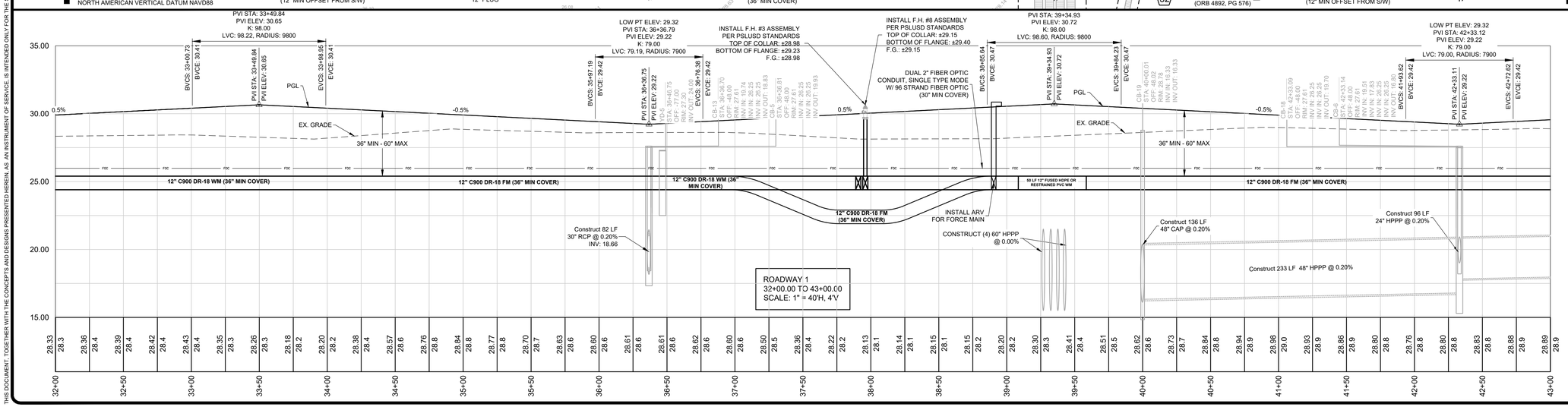



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|---|---|
| JPH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-1-288 engineering r33.dwg | FILENAME |
| Utility Plan (3) | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

REVISION COMMENTS | DATE

# BECKER ROAD AT RIVERLAND

## UTILITY PLAN

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270


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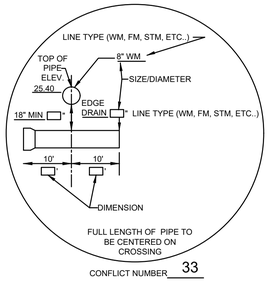


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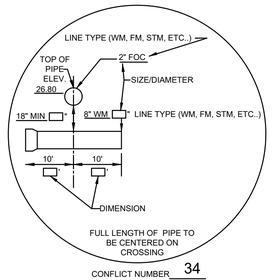


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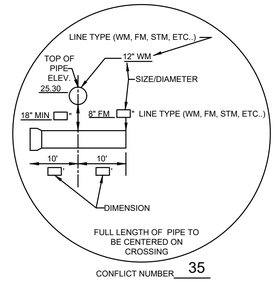


CONFLICT NUMBER 35

## FORCE MAIN VALVE / FITTING TABLE

| NAME | TYPE | STATION | OFFSET | TOP OF PIPE: | FINISHED GROUND: |
|---|---|---|---|---|---|
| GV-54 | 12" GV | 43+56.65 | 70.00' | ±26.27 | ±29.27 |
| GV-55 | 12" GV | 53+56.63 | 70.00' | ±26.02 | ±29.02 |

## WATER MAIN VALVE / FITTING TABLE

| NAME | TYPE | STATION | OFFSET | TOP OF PIPE: | FINISHED GROUND: |
|---|---|---|---|---|---|
| BO-5 | 8" GV | 47+90.81 | 80.45' | 3' BELOW GRADE | TBD |
| GV-21 | 12" GV | 47+87.35 | -71.00' | ±25.53 | ±28.53 |
| GV-22 | 8" GV | 47+90.81 | 78.06' | 3' BELOW GRADE | TBD |
| GV-33 | 8" GV | 47+90.81 | -57.00' | ±25.46 | ±28.46 |
| GV-34 | 6" GV (FOR FH) | 47+93.68 | 53.00' | ±25.51 | ±28.51 |
| GV-44 | 6" GV (FOR FH) | 47+95.81 | -56.99' | ±25.44 | ±28.44 |
| TEE-7 | 12"x12"x8" TEE | 47+90.81 | -71.00' | ±25.51 | ±28.51 |
| TEE-11 | 8"x8"x6" TEE | 47+90.81 | 53.00' | ±25.52 | ±28.52 |
| TEE-15 | 12"x12"x6" TEE | 47+95.81 | -71.00' | ±25.48 | ±28.48 |

N

( IN FEET )
1 inch = 40 ft.

| LEGEND | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |

NOTES:
1. CONTRACTOR TO INSTALL ALL GATE VALVES (GV) PER PSLUSD DETAIL G-07.
2. CONTRACTOR TO INSTALL ALL BLOW-OFFS (BO) PER PSLUSD DETAIL W-04.

VERTICAL DATUM NOTE:
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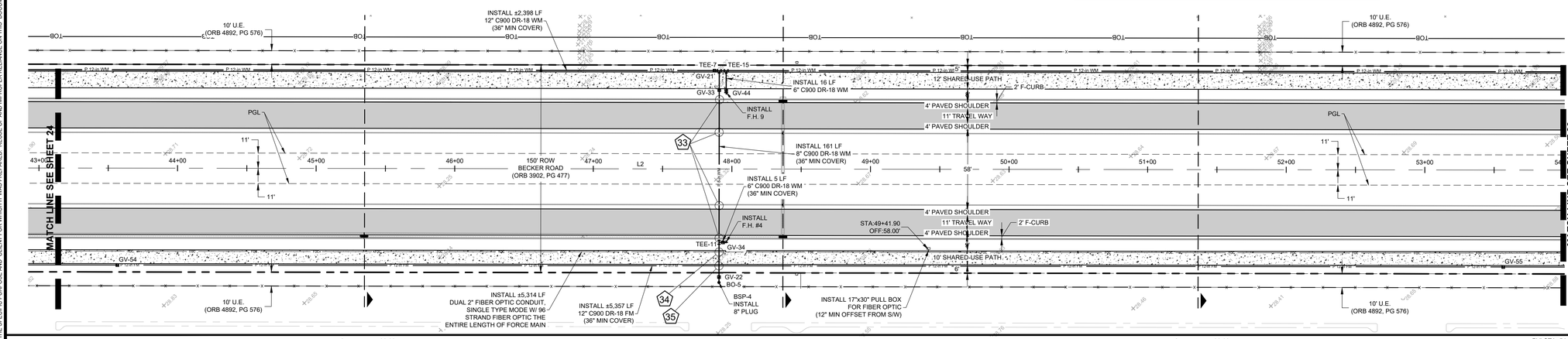
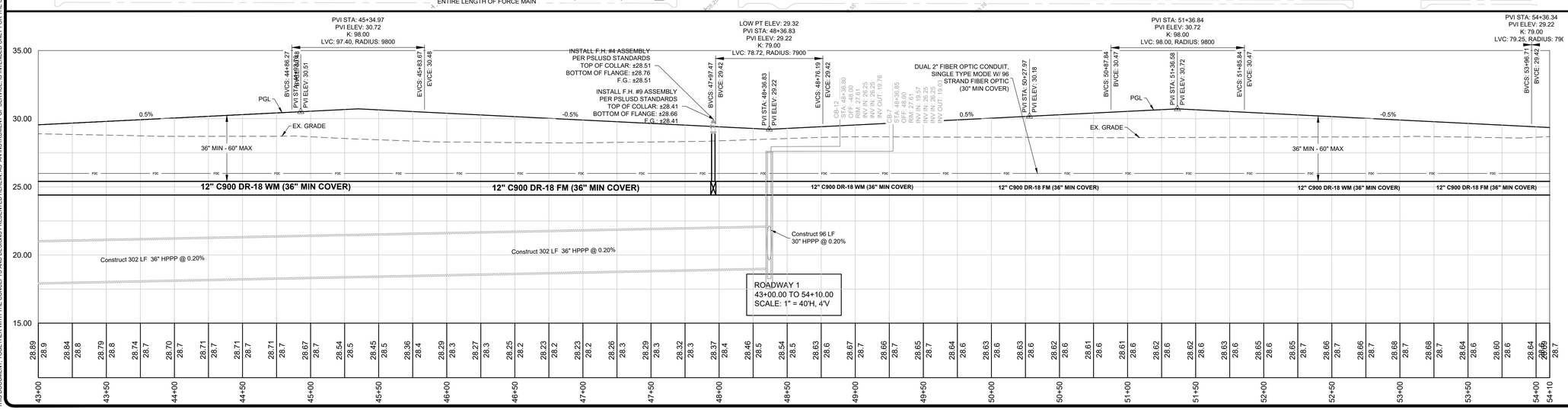
NOTE TO CONTRACTOR:
1. ALL PIPE ELEVATIONS SHALL BE FIELD VERIFIED BEFORE COMMENCEMENT.
2. CONTRACTOR RESPONSIBLE TO OBTAIN AND UTILIZE CORRECT PSLUSD STANDARD DETAILS.

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10250 VILLAGE PARKWAY
SUITE 201
PORT ST. LUCIE, FL 34987
☎ 772-462-2455
www.edc-inc.com


F.B.P.E. CERTIFICATE OF AUTHORIZATION 9935
L.B. CERTIFICATE OF AUTHORIZATION 8098

| | |
|---|---|
| JPH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-288 engineering r33.dwg | FILENAME |
| Utility Plan (4) | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

REVISION COMMENTS

DATE

# BECKER ROAD AT RIVERLAND

# UTILITY PLAN

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270

10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
☎ 772-462-2455

21-288



PSLUSD #5405A
PSL PROJECT #P23-073

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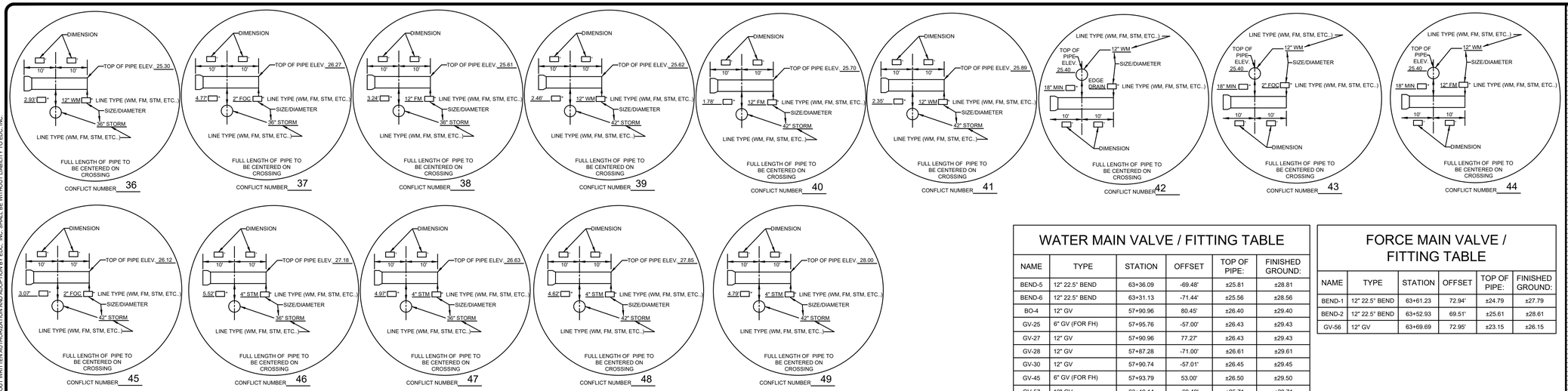
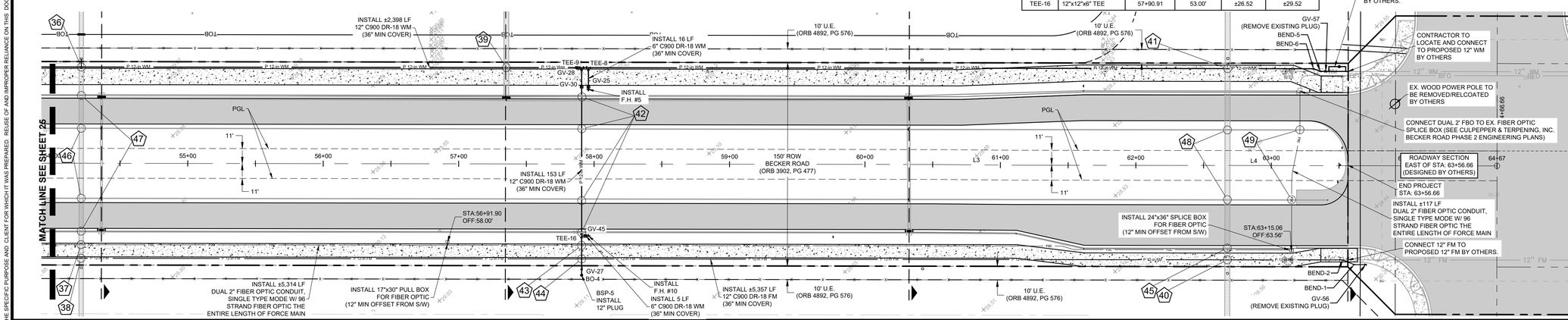


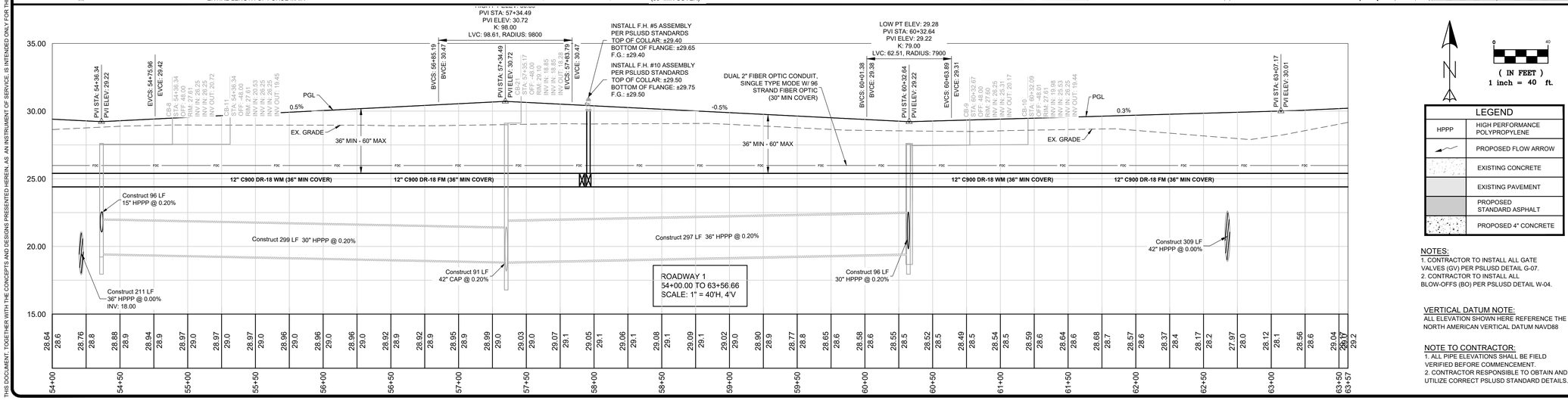

## WATER MAIN VALVE / FITTING TABLE

| NAME | TYPE | STATION | OFFSET | TOP OF PIPE: | FINISHED GROUND: |
|---|---|---|---|---|---|
| BEND-5 | 12" 22.5° BEND | 63+36.09 | -69.48' | ±25.81 | ±28.81 |
| BEND-6 | 12" 22.5° BEND | 63+31.13 | -71.44' | ±25.56 | ±28.56 |
| BO-4 | 12" GV | 57+90.96 | 80.45' | ±26.40 | ±29.40 |
| GV-25 | 6" GV (FOR FH) | 57+95.76 | -57.00' | ±26.43 | ±29.43 |
| GV-27 | 12" GV | 57+90.96 | 77.27' | ±26.43 | ±29.43 |
| GV-28 | 12" GV | 57+87.28 | -71.00' | ±26.61 | ±29.61 |
| GV-30 | 12" GV | 57+90.74 | -57.01' | ±26.45 | ±29.45 |
| GV-45 | 6" GV (FOR FH) | 57+93.79 | 53.00' | ±26.50 | ±29.50 |
| GV-57 | 12" GV | 63+40.14 | -69.48' | ±25.71 | ±28.71 |
| TEE-8 | 12"x12"x6" TEE | 57+95.74 | -71.01' | ±26.57 | ±29.57 |
| TEE-9 | 12"x12"x12" TEE | 57+90.74 | -71.00' | ±26.60 | ±29.60 |
| TEE-16 | 12"x12"x6" TEE | 57+90.91 | 53.00' | ±26.52 | ±29.52 |

## FORCE MAIN VALVE / FITTING TABLE

| NAME | TYPE | STATION | OFFSET | TOP OF PIPE: | FINISHED GROUND: |
|---|---|---|---|---|---|
| BEND-1 | 12" 22.5° BEND | 63+61.23 | 72.94' | ±24.79 | ±27.79 |
| BEND-2 | 12" 22.5° BEND | 63+52.93 | 69.51' | ±25.61 | ±28.61 |
| GV-56 | 12" GV | 63+69.69 | 72.95' | ±23.15 | ±26.15 |




( IN FEET )
1 inch = 40 ft.

| LEGEND | |
|---|---|
| HPPP | HIGH PERFORMANCE POLYPROPYLENE |
| | PROPOSED FLOW ARROW |
| | EXISTING CONCRETE |
| | EXISTING PAVEMENT |
| | PROPOSED STANDARD ASPHALT |
| | PROPOSED 4" CONCRETE |

NOTES:
1. CONTRACTOR TO INSTALL ALL GATE VALVES (GV) PER PSLUSD DETAIL G-07.
2. CONTRACTOR TO INSTALL ALL BLOW-OFFS (BO) PER PSLUSD DETAIL W-04.

VERTICAL DATUM NOTE:
ALL ELEVATION SHOWN HERE REFERENCE THE NORTH AMERICAN VERTICAL DATUM NAVD88

NOTE TO CONTRACTOR:
1. ALL PIPE ELEVATIONS SHALL BE FIELD VERIFIED BEFORE COMMENCEMENT.
2. CONTRACTOR RESPONSIBLE TO OBTAIN AND UTILIZE CORRECT PSLUSD STANDARD DETAILS.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| | |
|---|---|
| DESIGNED BY | JPH |
| DRAWN BY | JLW |
| FILENAME | 2-288 engineering r23.dwg |
| LAYOUT | Utility Plan (5) |
| SCALE | AS SHOWN |
| DATE | 07AUG23 |

REVISION COMMENTS | DATE

# BECKER ROAD AT RIVERLAND
# UTILITY PLAN
PORT ST. LUCIE FLORIDA


J.R. HARRISON, P.E. (DATE)
#82270
10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
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21-288



PSLUSD #5405A
PSL PROJECT #P23-073

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## MINIMUM SEPARATION BETWEEN PSLUSD FACILITIES AND OTHER UTILITIES

| OTHER PIPE | HORIZONTAL SEPARATION | CROSSINGS (1) | JOINT SPACING & CROSSINGS (FULL JOINT CENTERED) |
|---|---|---|---|
| GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (2), (3), WATER MAIN, WATER SERVICE, STORM SEWER, STORM SEWER FORCE MAIN | WATER MAIN — 10' MINIMUM | WATER MAIN — 18" MINIMUM | 8' MINIMUM — WATER MAIN |
| ALL OTHER FACILITIES, INCLUDING ELECTRIC, GAS, FIBER OPTIC, TELEPHONE, CABLE TV, POWER, ETC. | PSLUSD FACILITY (4) — 5' MINIMUM | PSLUSD FACILITY (4) — 18" MINIMUM | 8' MINIMUM — WATER MAIN |
| ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM | 10' MINIMUM | ***** | ***** |

(1) WATER MAIN SHOULD CROSS OVER OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 18".

(2) RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

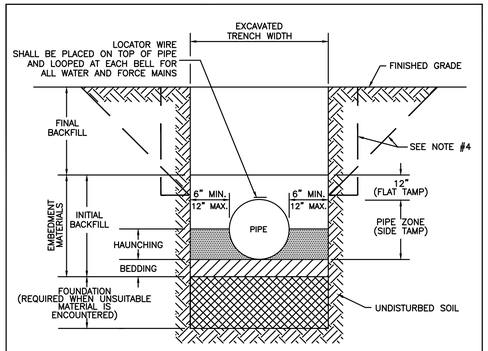
(3) RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(4) A PSLUSD FACILITY INCLUDES MAINS AND STRUCTURES FOR POTABLE WATER, WASTEWATER AND RECLAIMED WATER.

MINIMUM CONSTRUCTION STANDARDS FOR CITY OF PORT ST. LUCIE
900 S.E. OGDEN LANE
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

**STANDARD SEPARATION REQUIREMENTS**

DETAIL: G-01 | DATE: 2019 | SCALE: N.T.S. | SHEET: 1 OF 1




NOTES:

1. FOR TRENCHES REQUIRING SHEETING, SHORING, STAY BRACING, TRENCH JACKS OR TRENCH BOX, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SUPPORTS.

2. IF THE MAXIMUM TRENCH WIDTH MUST BE EXCEEDED, THE AREA OUTSIDE OF THE MAXIMUM EMBEDMENT SHALL BE COMPACTED TO FINAL BACKFILL REQUIREMENTS. IF THE PIPE IS INSTALLED IN A COMPACTED EMBANKMENT, THE EMBANKMENT SHALL BE IN PLACE AND COMPACTED TO 12" MIN. COVER BEFORE INSTALLATION OF PIPE.

3. IF BEDDING IS REQUIRED TO BRING TRENCH BOTTOM UP TO GRADE AND PROVIDE UNIFORM AND ADEQUATE LONGITUDINAL SUPPORT UNDER THE PIPE, THEN A MINIMUM COMPACTED DEPTH OF 4 TO 6 INCHES OF SELECT EMBEDMENT MATERIAL IS REQUIRED.

4. THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE FLORIDA TRENCH SAFETY ACT.

5. AN APPROVED LOCATOR WIRE SHALL BE USED.

6. EARTHWORK, EXCAVATION, BACKFILL AND COMPACTION SHALL BE IN ACCORDANCE WITH PSLUSD STANDARDS.

MINIMUM CONSTRUCTION STANDARDS FOR CITY OF PORT ST. LUCIE
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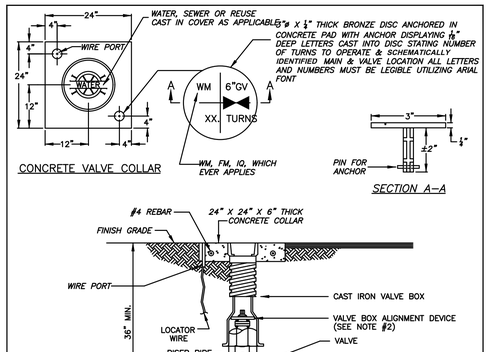
**STANDARD PIPE TRENCH CROSS SECTION**

DETAIL: G-04 | DATE: 2019 | SCALE: N.T.S. | SHEET: 1 OF 1




NOTES:

1. WHEN TOP OF OPERATING NUT IS DEEPER THAN 30", A HIGH STRENGTH STEEL EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT 24"–30" BELOW FINISHED GRADE. A STEEL CENTERING PLATE, WELDED TO THE EXTENSION, IS ALSO REQUIRED.

2. A VALVE BOX ALIGNMENT DEVICE SHALL BE PROVIDED TO ELIMINATE SHIFTING OF THE VALVE BOX AGAINST THE OPERATING NUT.

3. C900 OR SDR–26 P.V.C. RISER PIPE SHALL BE ADDED TO EXTEND THE VALVE BOX IF NEEDED.

4. RPM'S SHALL NOT BE INSTALLED IN CROSSWALKS OR PEDESTRIAN WALKWAYS.

5. THE TOP SIDE OF THE VALVE BOX COVER AND THE INSIDE OF TOP SECTION OF THE VALVE BOX SHALL BE PAINTED BLUE FOR WATER MAINS, GREEN FOR SEWER MAINS AND PURPLE FOR RECLAIMED WATER MAINS.

MINIMUM CONSTRUCTION STANDARDS FOR CITY OF PORT ST. LUCIE
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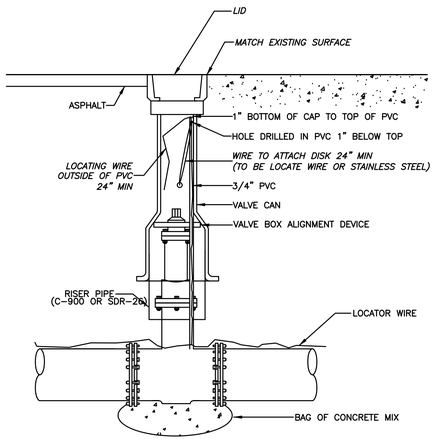
**TYPICAL VALVE BOX AND COLLAR IN UN-PAVED AREA**

DETAIL: G-07 | DATE: 2019 | SCALE: N.T.S. | SHEET: 1 OF 2

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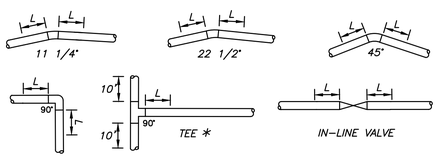
**TYPICAL VALVE BOX IN PAVED AREA**

DETAIL: G-07 | DATE: 2019 | SCALE: N.T.S. | SHEET: 2 OF 2

## HORIZONTAL BENDS




| HORIZONTAL – L (FEET) | | | | | | |
|---|---|---|---|---|---|---|
| DIAMETER | 11–1/4° | 22–1/2° | 45° | 90° | TEE* (BRANCH) | VALVES OR DEAD END |
| 4" | 2 | 4 | 8 | 18 | 20 | 39 |
| 6" | 3 | 5 | 11 | 25 | 36 | 55 |
| 8" | 4 | 7 | 14 | 33 | 52 | 72 |
| 10" | 4 | 8 | 16 | 39 | 65 | 87 |
| 12" | 5 | 9 | 19 | 45 | 80 | 102 |
| 14" | 5 | 11 | 21 | 51 | 93 | 116 |
| 16" | 6 | 12 | 24 | 57 | 107 | 131 |
| 18" | 7 | 13 | 26 | 63 | 120 | 145 |
| 20" | 7 | 14 | 29 | 68 | 133 | 159 |
| 24" | 8 | 16 | 33 | 79 | 157 | 185 |
| 30" | 10 | 19 | 39 | 93 | 192 | 222 |
| 36" | 11 | 21 | 44 | 106 | 225 | 257 |
| 42" | 12 | 24 | 49 | 117 | 254 | 289 |
| 48" | 13 | 26 | 53 | 128 | 283 | 321 |

NOTES:

1. THE REQUIREMENTS SET FORTH ABOVE WERE CALCULATED FOR PVC PIPE BASED UPON THE FOLLOWING ASSUMPTIONS:

- SOIL CONDITIONS: SILTY SAND (SM)
- TRENCH TYPE: 3 (PIPE BEDDED IN 4" MINIMUM OF LOOSE SOIL WITH BACKFILL LIGHTLY COMPACTED)
- MINIMUM COVER: 3 FT
- SAFETY FACTOR: 1.5
- TEST PRESSURE: 150 PSI
- * SIZE ON SIZE TEE & 5' LENGTH ALONG RUN

2. IF FIELD CONDITIONS DIFFER FROM THE ABOVE, THE ENGINEER–OF–RECORD (EOR) SHALL SUBMIT CALCULATIONS BASED ON THE FIELD CONDITION FOR REVIEW AND APPROVAL OF PSLUSD.

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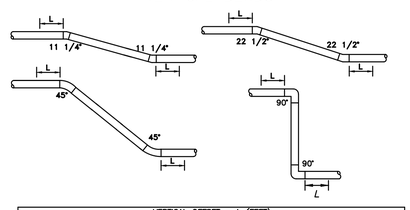
**PIPELINE RESTRAINT REQUIREMENTS (HORIZONTAL)**

DETAIL: G-09 | DATE: 2019 | SCALE: N.T.S. | SHEET: 1 OF 3

## VERTICAL BENDS




| VERTICAL OFFSET – L (FEET) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DIAMETER | 11–1/4° | | 22–1/2° | | 45° | | 90° | |
| | UPPER BEND | LOWER BEND | UPPER BEND | LOWER BEND | UPPER BEND | LOWER BEND | UPPER BEND | LOWER BEND |
| 4" | 4 | 2 | 8 | 3 | 17 | 5 | 39 | 11 |
| 6" | 6 | 2 | 11 | 4 | 23 | 7 | 55 | 15 |
| 8" | 8 | 2 | 15 | 4 | 30 | 9 | 72 | 20 |
| 10" | 9 | 3 | 18 | 5 | 36 | 10 | 87 | 24 |
| 12" | 11 | 3 | 21 | 6 | 43 | 12 | 102 | 28 |
| 14" | 12 | 4 | 24 | 7 | 49 | 14 | 116 | 32 |
| 16" | 13 | 4 | 27 | 8 | 55 | 16 | 131 | 36 |
| 18" | 15 | 4 | 29 | 8 | 60 | 17 | 145 | 40 |
| 20" | 16 | 5 | 32 | 9 | 66 | 19 | 158 | 44 |
| 24" | 19 | 6 | 37 | 11 | 77 | 22 | 185 | 51 |
| 30" | 22 | 7 | 45 | 13 | 92 | 26 | 222 | 62 |
| 36" | 26 | 8 | 52 | 15 | 107 | 30 | 256 | 71 |
| 42" | 29 | 8 | 58 | 16 | 120 | 34 | 289 | 80 |
| 48" | 32 | 9 | 64 | 18 | 133 | 37 | 320 | 89 |

NOTES:

1. THE REQUIREMENTS SET FORTH ABOVE WERE CALCULATED FOR PVC PIPE BASED UPON THE FOLLOWING ASSUMPTIONS:

- SOIL CONDITIONS: SILTY SAND (SM)
- TRENCH TYPE: 3 (PIPE BEDDED IN 4" MINIMUM OF LOOSE SOIL WITH BACKFILL LIGHTLY COMPACTED)
- UPPER SIDE MINIMUM COVER: 3 FT
- LOWER SIDE MINIMUM COVER: 5 FT
- SAFETY FACTOR: 1.5
- TEST PRESSURE: 150 PSI

2. WHEN CONDITIONS DIFFER FROM THE ABOVE, THE ENGINEER–OF–RECORD (EOR) SHALL SUBMIT CALCULATIONS FOR REVIEW AND APPROVAL OF PSLUSD.

3. ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.

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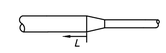
900 S.E. OGDEN LANE
PORT ST. LUCIE, FL. 34983
PHONE (772) 873-6400 FAX (772) 873-6433

**PIPELINE RESTRAINT REQUIREMENTS (VERTICAL)**

DETAIL: G-09 | DATE: 2019 | SCALE: N.T.S. | SHEET: 2 OF 3

## REDUCER




| L = RETRAINED LENGTH AT LARGER SIZE OF REDUCER (FEET) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIAMETER | 4" | 6" | 8" | 10" | 12" | 14" | 16" | 18" | 20" | 24" | 30" | 36" | 42" | 48" |
| 4" | | 29 | 52 | 71 | 89 | 105 | 121 | 136 | 151 | 179 | 217 | 253 | 285 | 318 |
| 6" | | | 31 | 53 | 74 | 93 | 111 | 127 | 143 | 172 | 211 | 249 | 282 | 315 |
| 8" | | | | 29 | 54 | 76 | 96 | 114 | 131 | 163 | 204 | 243 | 277 | 310 |
| 10" | | | | | 30 | 55 | 78 | 98 | 117 | 151 | 195 | 235 | 271 | 305 |
| 12" | | | | | | 30 | 56 | 79 | 100 | 137 | 184 | 226 | 263 | 299 |
| 14" | | | | | | | 30 | 56 | 79 | 120 | 171 | 216 | 255 | 292 |
| 16" | | | | | | | | 30 | 56 | 101 | 156 | 204 | 245 | 283 |
| 18" | | | | | | | | | 30 | 80 | 140 | 190 | 233 | 273 |
| 20" | | | | | | | | | | 56 | 121 | 175 | 221 | 263 |
| 24" | | | | | | | | | | | 78 | 141 | 192 | 238 |
| 30" | | | | | | | | | | | | 78 | 140 | 194 |
| 36" | | | | | | | | | | | | | 75 | 139 |
| 42" | | | | | | | | | | | | | | 75 |
| | | | | | | | | | | | | | | |

NOTES:

1. THE REQUIREMENTS SET FORTH ABOVE WERE CALCULATED FOR PVC PIPE BASED UPON THE FOLLOWING ASSUMPTIONS:

- SOIL CONDITIONS: SILTY SAND (SM)
- TRENCH TYPE: 3 (PIPE BEDDED IN 4" MINIMUM OF LOOSE SOIL WITH BACKFILL LIGHTLY COMPACTED)
- MINIMUM COVER: 3 FT
- SAFETY FACTOR: 1.5
- TEST PRESSURE: 150 PSI

2. IF FIELD CONDITIONS DIFFER FROM THE ABOVE, THE ENGINEER–OF–RECORD (EOR) SHALL SUBMIT CALCULATIONS BASED ON THE FIELD CONDITION FOR REVIEW AND APPROVAL OF PSLUSD.

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PHONE (772) 873-6400 FAX (772) 873-6433

**PIPELINE RESTRAINT REQUIREMENTS (REDUCER)**

DETAIL: G-09 | DATE: 2019 | SCALE: N.T.S. | SHEET: 3 OF 3

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| | |
|---|---|
| DESIGNED BY | JPH |
| DRAWN BY | BJV |
| FILENAME | 2-288 engineering r33.dwg |
| LAYOUT | Utility Details |
| SCALE | AS SHOWN |
| DATE | 07AUG23 |

REVISION COMMENTS | DATE

# BECKER ROAD AT RIVERLAND

## UTILITY DETAILS

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270

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PORT SAINT LUCIE, FL 34987
☎ 772-462-2455

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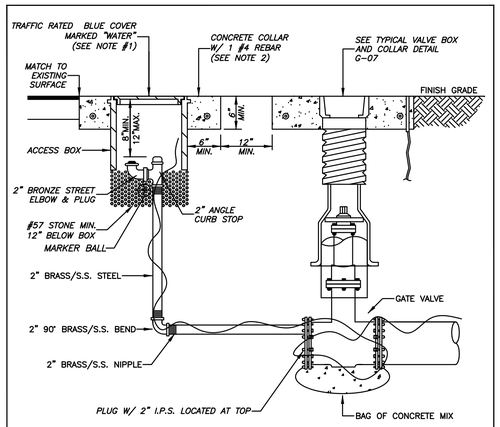
PSLUSD #5405A
PSL PROJECT #P23-073



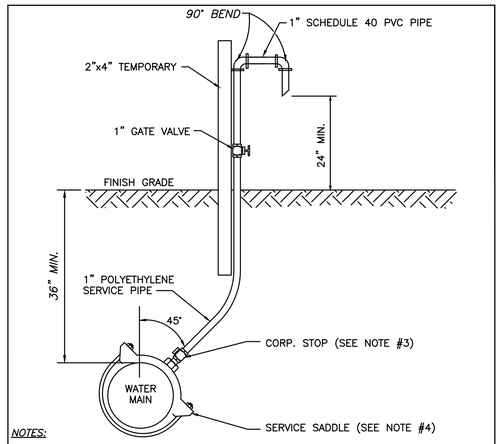

NOTES:

1. COVER SHALL BE PAINTED BLUE FOR "WATER".
2. NO CONCRETE COLLAR IF LOCATED IN ASPHALT OR CONCRETE.
3. LOCATE WIRE NOT REQUIRED IF SEPARATION BETWEEN THE VALVE BOX AND ACCESS BOX IS 6" OR LESS.

MINIMUM CONSTRUCTION STANDARDS FOR
CITY OF PORT ST. LUCIE
900 S.E. OGDEN LANE
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

**BLOW-OFF ASSEMBLY**

DETAIL: W-04
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1




NOTES:

1. SAMPLING POINTS SHALL BE LOCATED AS SHOWN ON PLANS APPROVED BY PSLUSD AND AS REQUIRED BY FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION. A SAMPLE POINT MAP (SINGLE SHEET PDF) SHALL BE SUBMITTED TO PSLUSD FOR REVIEW PRIOR TO DISINFECTION.
2. THE EXCAVATED HOLE FOR THIS INSTALLATION SHALL BE BACKFILLED TO FINISHED GRADE PRIOR TO DISCHARGING ANY WATER ON THE GROUND.
3. AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED, THE CONTRACTOR SHALL TURN CORPORATION STOP OFF, REMOVE TUBING AND PLUG CORPORATION STOP WITH BRASS PLUG/CAP.
4. NO DIRECT TAPS SHALL BE PERMITTED.

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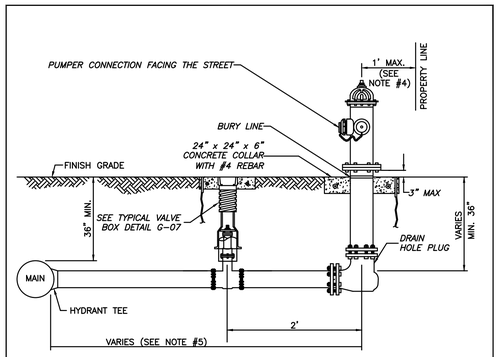
**WATER SAMPLING POINT**

DETAIL: W-05
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1




NOTES:

1. HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/AWWA C600. THE HYDRANTS SHALL BE PAINTED BY THE MANUFACTURER WITH 2 COATS (MIN.).
2. VERTICAL BENDS MAY BE NECESSARY TO OBTAIN COVER UNDER SWALES OR AT HYDRANT LOCATION. VERTICAL BENDS OR OFFSETS ARE INCLUDED IN HYDRANT ASSEMBLY. ALL BENDS MUST BE RESTRAINED.
3. CONNECTOR PIPE AND ANY REQUIRED VERTICAL BENDS SHALL HAVE AN ANCHORING FEATURE ON BOTH ENDS SO THAT WHEN USED WITH M.J. SPLIT GLANDS, A RESTRAINED JOINT IS PROVIDED.
4. WHEN INSTALLED WITH SIDEWALK OR CURB, PROVIDE MIN. 2 FOOT CLEARANCE TO ANY PORTION OF THE HYDRANT, UTILIZING THE SIDE LOT EASEMENT IF NECESSARY.
5. A GATE VALVE SHALL BE INSTALLED WITHIN 2 FEET OF THE FIRE HYDRANT. IF DISTANCE FROM THE WATER MAIN TO THE FIRE HYDRANT IS GREATER THAN 20 FEET, A SECOND GATE VALVE SHALL BE INSTALLED WITHIN 2 FEET OF THE MAIN.
6. ANY DEVIATIONS FROM THE CRITERIA ABOVE REQUIRE A WRITTEN RECOMMENDATION FROM THE ENGINEER-OF-RECORD AND WRITTEN APPROVAL BY PSLUSD.

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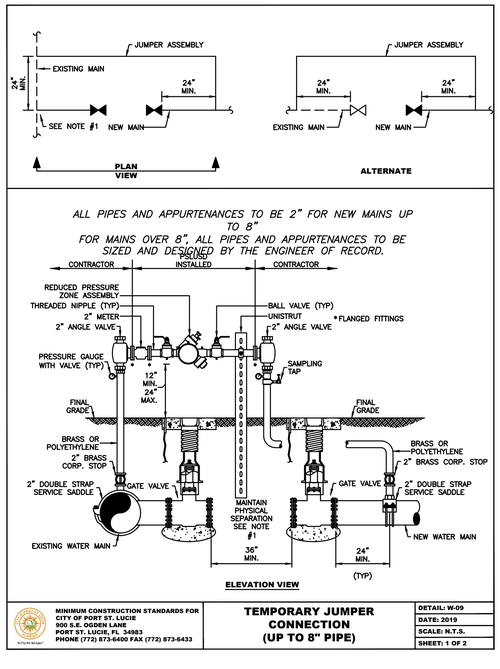
**FIRE HYDRANT ASSEMBLY**

DETAIL: W-06
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1

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**TEMPORARY JUMPER CONNECTION (UP TO 8" PIPE)**

DETAIL: W-09
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2

NOTES:

1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE PSLUSD WATER MAINS AND PROPOSED NEW WATER MAINS. A PHYSICAL SEPARATION SHALL BE MAINTAINED, EXCEPT AS NOTED IN #5 BELOW. THE PROCEDURES ARE APPLICABLE WHEN CONNECTING TO AN EXISTING PSLUSD WATER MAIN, WHETHER BY TAPPING TEE AND VALVE OR BY CONTINUATION OF A PLUGGED STUB OUT WITH AN EXISTING GATE VALVE.
2. THE CONTRACTOR SHALL CONTACT THE PSLUSD REGARDING SCHEDULING OF REQUIRED INSPECTIONS RELATING TO THE CONNECTION. PSLUSD INSPECTIONS ARE SPECIFICALLY REQUIRED FOR TIE-INS OR WET TAPS TO EXISTING WATER MAINS, JUMPER INSTALLATION, FLUSHING, PRESSURE TESTING, DISINFECTION, SAMPLING, PLUGGING OF SAMPLING POINTS AND PERMANENT CONNECTION OF THE NEW WATER MAIN. THE CONTRACTOR SHALL FOLLOW ALL PROCEDURES STRICTLY IN ACCORDANCE WITH THE PSLUSD UTILITY STANDARDS MANUAL.
3. THE TEMPORARY JUMPER ASSEMBLY (FLANGE TO FLANGE) WILL BE SUPPLIED, INSTALLED AND TESTED BY THE PSLUSD, IN COORDINATION WITH THE ENGINEER OF RECORD AND CONTRACTOR. OTHER MATERIALS AND INSTALLATION REQUIRED FOR THE CONNECTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE UNDERGROUND FITTINGS SHALL BE RESTRAINED MECHANICAL JOINT TYPE. ALL MATERIALS SHALL BE PER THE PSLUSD APPROVED QUALIFIED PRODUCTS LIST. THE JUMPER CONNECTION SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE ASSEMBLY IS REMOVED BY THE PSLUSD.
4. ALL NEW WATER MAINS SHALL BE DOUBLE-PIGGED, FLUSHED, PRESSURE TESTED AND DISINFECTED. NEW MAIN SHALL NOT BE PLACED INTO SERVICE UNTIL THE BACTERIOLOGICAL TEST RESULTS ARE SATISFACTORY AND A WRITTEN APPROVAL HAS BEEN OBTAINED FROM THE PSLUSD.
5. A PHYSICAL SEPARATION SHALL BE MAINTAINED BETWEEN THE EXISTING MAIN AND NEW MAIN, EXCEPT AS NOTED HEREIN. IF THE NEW MAIN IS OF A SIZE OR LENGTH THAT PIGGING/FLUSHING CANNOT BE EFFECTIVELY ACCOMPLISHED WITH THE JUMPER CONNECTION, MORE THAN ONE JUMPER MAY BE USED AS DETERMNED BY THE EOR OR, THE PSLUSD MAY ALLOW A PHYSICAL CONNECTION UNDER CONTROLLED CONDITIONS AS FOLLOWS:
   a. THE PROCEDURE WILL BE CONDUCTED BY THE CONTRACTOR IN THE PRESENCE OF A PSLUSD INSPECTOR AND THE ENGINEER-OF-RECORD (EOR) OR REPRESENTATIVE.
   b. THE NEW VALVE(S) SHOWN IN THIS DETAIL SHALL BE PRESSURE/LEAKAGE TESTED AND REPLACED IF LEAKAGE IS OBSERVED. THE VALVES WILL BE KEPT CLOSED BY THE PSLUSD AND SHALL NOT BE OPERATED BY ANY ONE OTHER THAN PSLUSD PERSONNEL.
   c. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW MAIN.
   d. THE CONTRACTOR SHALL DISINFECT THE PIPE AND FITTINGS USED TO MAKE THE CONNECTION BY SPRAYING AND SWABBING WITH CHLORINE.
   e. ALL VALVES IN THE NEW SYSTEM DOWNSTREAM OF THE JUMPER SHALL BE OPENED BY THE CONTRACTOR PRIOR TO FLUSHING. THE VALVES SHOWN IN THIS DETAIL SHALL BE OPENED BY PSLUSD PERSONNEL ONLY.
   f. THE PIGGING AND FLUSHING SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF A PSLUSD INSPECTOR. THE VALVES WILL BE CLOSED BY PSLUSD PERSONNEL AFTER THE MAIN HAS BEEN FLUSHED.
6. THE WATER MAINS SHALL BE PRESSURE TESTED AFTER FLUSHING AND PRIOR TO DISINFECTION. ALL VALVES SHALL REMAIN CLOSED DURING THE PRESSURE TEST AND WILL NOT BE OPENED UNTIL THE RESULTS OF PRESSURE TESTING AND BACTERIOLOGICAL TESTING ARE SATISFACTORY AND THE SYSTEM HAS BEEN ACCEPTED FOR OPERATION BY THE PSLUSD.
7. DISINFECTION SHALL BE CONDUCTED IN ACCORDANCE WITH AWWA C651. A MINIMUM PRESSURE OF 20 PSI SHALL BE MAINTAINED IN THE NEW MAIN AFTER DISINFECTION.
8. CONNECTION TO EXISTING MAINS SHALL NOT BE MADE PRIOR TO BACTERIOLOGICAL CLEARANCE AND UNTIL APPROVED BY THE PSLUSD.
9. UPON WRITTEN ACCEPTANCE OF BACTERIOLOGICAL CLEARANCE BY THE PSLUSD, THE SAMPLING POINTS CAN BE REMOVED AND PLUGGED BY THE CONTRACTOR. THE CONTRACTOR SHALL MAKE THE PERMANENT CONNECTION IN THE PRESENCE OF A PSLUSD INSPECTOR, UNLESS THE CONNECTION WAS PREVIOUSLY MADE AS INDICATED IN NOTE 5D; THE PIPE AND FITTINGS FOR CONNECTION SHALL BE DISINFECTED BY SPRAYING AND SWABBING WITH CHLORINE. ONCE APPROVAL TO PLACE THE WATER SYSTEM INTO OPERATION HAS BEEN RECEIVED, THE JUMPER ASSEMBLY (FLANGE TO FLANGE) WILL BE REMOVED BY THE PSLUSD IN COORDINATION WITH THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE THE REST OF THE JUMPER CONNECTION PIPING AND PLUG THE CORPORATION STOP VALVES.
10. ABANDONED TAP LOCATIONS TO BE SHOWN ON THE AS-BUILTS.

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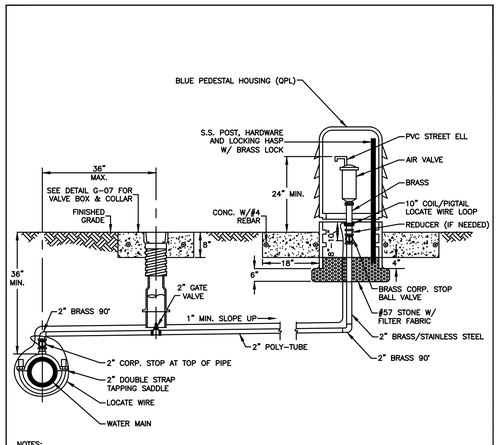
**TEMPORARY JUMPER CONNECTION**

DETAIL: W-09
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2




NOTES:

1. AIR VALVE, PIPING AND APPURTENANCES SHALL BE IN ACCORDANCE WITH PSLUSD UTILITY STANDARDS.
2. THE AIR VALVE SHALL BE SIZED BY THE ENGINEER-OF-RECORD (EOR) BASED ON MANUFACTURER'S RECOMMENDATION. THE EOR SHALL CONSULT WITH THE PSLUSD REGARDING THE TYPE OF THE VALVE TO BE USED AND LOCATION.
3. AT THE DIRECTION OF THE PSLUSD, BOLLARDS MAY BE REQUIRED TO PREVENT DAMAGE FROM ACCIDENTS. REFER TO DETAIL G-15 FOR BOLLARD INSTALLATION.

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**AUTOMATIC AIR RELEASE VALVE FOR WATER MAINS**

DETAIL: W-10
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1


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| | |
|---|---|
| DESIGNED BY | JPH |
| DRAWN BY | BJV |
| FILENAME | 2-288 engineering r33.dwg |
| LAYOUT | Utility Details (2) |
| SCALE | AS SHOWN |
| DATE | 07AUG23 |

REVISION COMMENTS

DATE

BECKER ROAD AT RIVERLAND

UTILITY DETAILS

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270


10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
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21-288



PSLUSD #5405A
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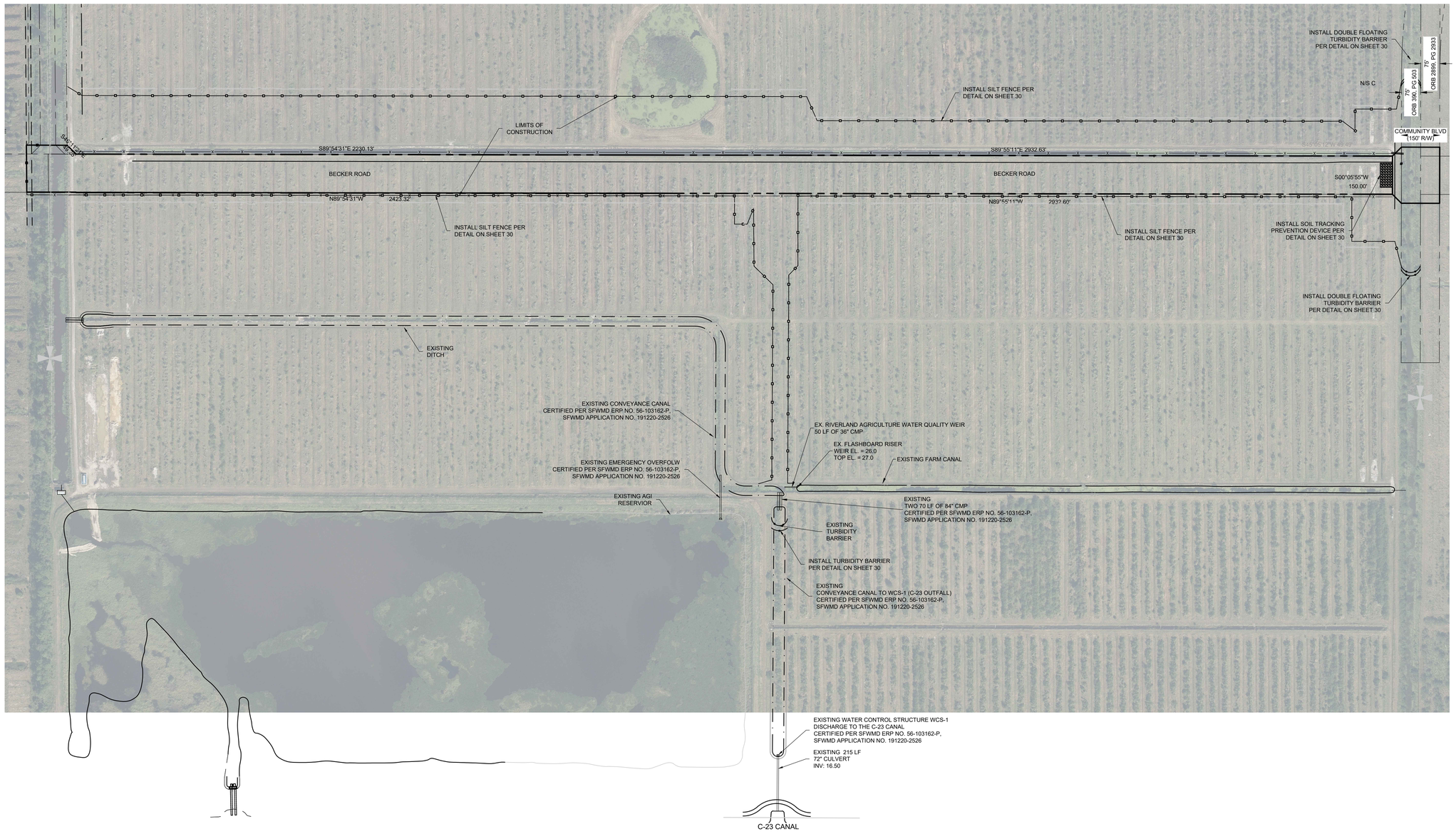



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L.B. CERTIFICATE OF AUTHORIZATION 8098


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|---|---|
| JRH | DESIGNED BY |
| JLW | DRAWN BY |
| 2-1-288 engineering r33.dwg | FILENAME |
| SWPPP | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

| DATE | REVISION COMMENTS |
|---|---|

# BECKER ROAD AT RIVERLAND

## STORMWATER POLLUTION PREVENTION PLAN

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270


10250 SW VILLAGE PARKWAY - SUITE 201
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PSLUSD #5405A
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| | | |
|---|---|---|
| Section 1 | Project Name and location information: | BECKER ROAD AT RIVERLAND<br><br>Becker Road, west of intersection of Becker Road and Community Blvd |
| Section 2 | Describe the nature of the construction activity: | Construction activity consists of an extension of Becker Road past the west intersection of Becker Road and Community Blvd in Port St. Lucie, St. Lucie County, Florida. |
| Section 3 | Describe the intended sequence of major soil disturbing activities: | 1. Placement of all erosion control devices.<br>2. Clearing and grubbing, earthwork.<br>3. Storm sewer construction.<br>4. Water and wastewater utility construction.<br>5. Earthwork associated with roadway, curb, subgrade, base and pavement.<br>6. Landscaping |
| Section 4 | Total area of the site: | ±18.68 Acres |
| Section 5 | Total area of the site to be disturbed: | ±18.68 Acres |
| Section 6 | Existing data describing the soil or quality of any stormwater discharge from the site: | Refer to Geotechnical Report by Others |
| Section 7 | Estimate the drainage area size for each discharge point: | ±18.68 Acres |
| Section 8 | Latitude and longitude of each discharge point and identify the receiving water or MS4 for each discharge point: | The ultimate receiving water for stormwater runoff is the South Florida Water Management District (SFWMD) C-23 Canal.<br><br>Lat. 27°12'35" N, Long. 80°26'24" W |
| Section 9 | Give a detailed description of all controls, Best Management Practices (BMPs) and measures that will be implemented at the construction site for each activity identified in the intended sequence of major soil disturbing activities section. Provide time frames in which the controls will be implemented.<br>NOTE: All controls shall be consistent with performance standards for erosion and sediment control and stormwater treatment set forth in s. 62-40.432, F.A.C., the applicable Stormwater or Environmental Resource Permitting requirements of the Department or a Water Management District, and the guidelines contained in the State of Florida Erosion and Sediment Control Designer and Reviewer Manual, FDOT, FDEP, and any subsequent amendments. | |
| | The following defines general quantities for the sequence of construction and the use of stabilization and structural practices. The contractor is also responsible for documenting this portion of the SWPPP. The construction of this project is expected to start on ____, 2022 and end ___, 2022.<br><br>Install stabilized construction entrances at all common areas where construction vehicles will be entering and exiting the construction site. The driveways shall be constructed per the Florida Sediment and Erosion Control Manual.<br><br>Install silt fences, Type III, around all ditch bottom inlets on the project, and the project perimeter.<br><br>Filter cloth under the grates on catch basins may be used in lieu of a silt fence.<br>Install floating turbidity barriers at the locations as indicated in the Paving and Drainage Plan (discharge points). | |
| Section 10 | Describe all temporary and permanent stabilization practices. Stabilization practices include temporary seeding, mulching, permanent seeding, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, vegetative preservations, etc. | |
| | Temporary:<br>Seed and mulch, and sod.<br><br>Permanent:<br>All stabilization practices shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily ceased. The contractor is also responsible for documenting this portion of the SWPP. | |
| Section 11 | Describe all structural controls to be implemented to divert stormwater flow from exposed soils and structural practices to store flows, retain sediment on-site or in any other way limit stormwater runoff. These controls include silt fences, earth dikes, diversions, swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, coagulating agents and temporary or permanent sediment basins. | |
| | Temporary:<br><br>Silt Fence in accordance with the Florida Sediment and Erosion Control Manual.<br>Floating turbidity barrier in accordance with the Florida Sediment and Erosion Control Manual.<br>Soil tracking prevention device in accordance with the Florida Sediment and Erosion Control Manual.<br>A stabilized construction entrance to be constructed per the Florida Sediment and Erosion Control Manual.<br>All sediment controls shall be in place prior to any soil disturbing activity upstream of the control. | |
| Section 12 | Describe all sediment basins to be implemented for areas that will disturb 10 or more acres at one time. The sediment basins (or an equivalent alternative) should be able to provide 3,600 cubic feet of storage for each acre drained. Temporary sediment basins (or an equivalent alternative) are recommended for drainage areas under 10 acres. | |
| | Temporary swales shall be used in construction to provide storage.<br><br>The pollution prevention plan is a minimum guideline only. Additional BMP's may be necessary at contractor's expense. | |
| Section 13 | Describe all permanent stormwater management controls such as, but not limited to, detention or retention systems or vegetated swales that will be installed during the construction process. | |
| | Proposed lake - ±11.03 acres<br>Proposed east-west ditch on north side of ROW connecting to proposed lake - ±2.5 acres<br>Proposed ditch on south side of ROW connecting proposed lake to ultimate outfall - ±2.23 acres | |
| Section 14 | Waste disposal, this may include construction debris, chemicals, litter, and sanitary wastes: | All construction materials and debris will be placed in a dumpster and hauled off site to a landfill or other proper disposal site. No materials will be buried on site. |
| Section 15 | Offsite vehicle tracking from construction entrances/exits: | Off site vehicle tracking of sediments and dust generation will be minimized via a rock construction entrance, street sweeping and the use of water to keep dust down. |
| Section 16 | The proper application rates of all fertilizers, herbicides and pesticides used at the construction site: | Florida-friendly fertilizers and pesticides will be used at a minimum and in accordance with the manufacturer's suggested application rates. |
| Section 17 | The storage, application, generation and migration of all toxic substances: | All paints and other chemicals will be stored in a locked covered shed. |
| Section 18 | Other: | |

| | |
|---|---|
| Section 19 | Provide a detailed description of the maintenance plan for all structural and non-structural controls to assure that they remain in good and effective operating condition. |
| | Contractor shall provide routine maintenance of permanent and temporary sediment and erosion control features in accordance with the technical specifications or as follows, whichever is more stringent:<br><br>• Silt fence shall be inspected at least weekly. Any required repairs shall be made immediately. Sediment deposits shall be removed when they reach approximately one-half the height of the barrier.<br>• Maintenance shall be performed on the rock entrance when any void spaces are full of sediment.<br>• Inlet(s)/outfalls shall be inspected immediately after each rain event and any required repairs to the filter inlets, silt fence, or filter fabric shall be performed immediately.<br>• Bare areas of the site that were previously seeded shall be reseeded per manufactures' instructions.<br>• Mulch and sod that has been washed out shall be replaced immediately.<br>• Maintain all other areas of the site with proper controls as necessary. |
| Section 20 | Inspections: Describe the inspection and inspection documentation procedures, as required by the FDEP NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities. |
| | Qualified personnel will inspect all points of discharges, all disturbed areas of construction that have not been stabilized, constructed areas and locations where vehicles enter and exit the site, and all BMPs at least once every 7 calendar days and within 24 hours of the end of a rainfall event that is 0.5 inches or greater. Where sites have been finally stabilized, said inspections shall be conducted at least once every month until the Notice of Termination is filed. |
| Section 21 | Identify and describe all sources of non-stormwater discharges as allowed by the FDEP NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities. |
| | The contractor is required to submit a dewatering plan to SFWMD for approval prior to commencement of any construction activities that require dewatering. This plan shall include any stockpile areas and excavation areas. The contractor is responsible for documenting this portion of the SWPPP. If contaminated soil or groundwater is encountered, contact the District Hazardous Materials Coordinator. |
| Section 22 | All contractor(s) and subcontractor(s) identified in the SWPPP must sign the following certification: |
| | "I certify under penalty of law that I understand, and shall comply with, the terms and conditions of the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities and this Stormwater Pollution Prevention Plan prepared thereunder. The document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."<br><br>_____ _____<br>Name (Operator and/or Responsible Authority) Date |

| Section 22 | Name | Title | Company Name, Address and Phone Number | Date |
|---|---|---|---|---|
| | | | | |
| | | | | |
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ENVIRONMENTAL SITE ASSESSMENT TABLE

| DESCRIPTION | FOUND (YES/NO) | AGENCY CONTACT INFORMATION | MANAGEMENT PLAN (YES OR NO) | RELOCATION PLAN (YES OR NO) |
|---|---|---|---|---|
| WETLANDS | NO | N/A | NO | NO |
| RARE SPECIES | NO | N/A | NO | NO |
| THREATENED SPECIES | NO | N/A | NO | NO |
| ENDANGERED SPECIES | NO | N/A | NO | NO |
| LISTED SPECIES | NO | N/A | NO | NO |
| INVASIVE/EXOTIC VEGETATION | NO | N/A | NO | NO |

NOTE: PLEASE REFER TO THE ENVIRONMENTAL ASSESSMENT COMPLETED BY EW CONSULTANTS, INC. ON 04/18/22.



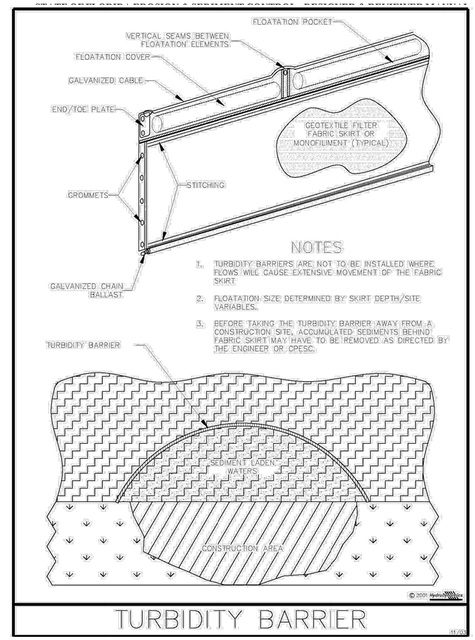


**Figure V-44: Illustration of a Turbidity Barrier Curtain**

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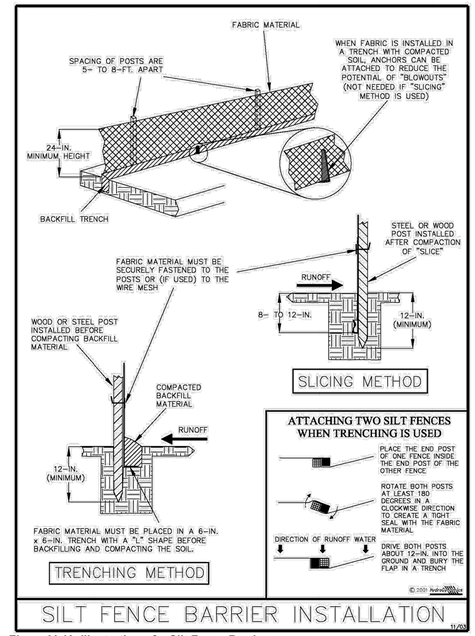


**Figure V-40: Illustration of a Silt Fence Barrier**

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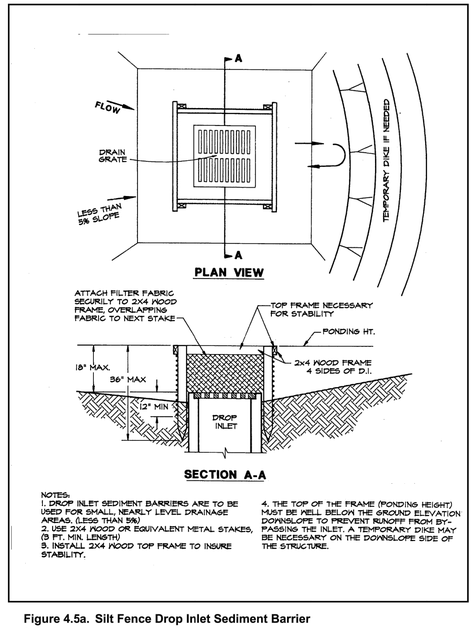
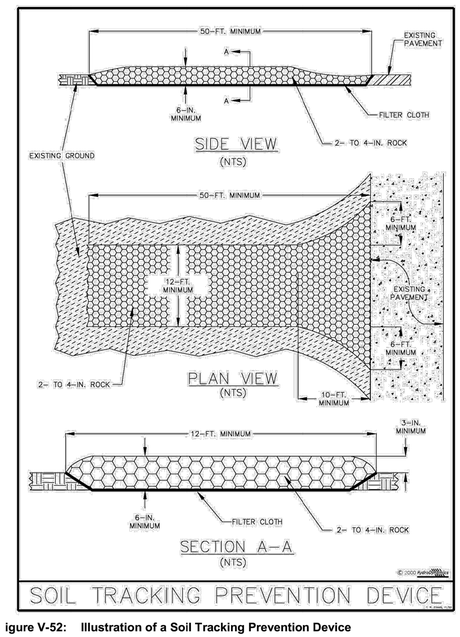



**Figure 4.5a. Silt Fence Drop Inlet Sediment Barrier**

Source: Erosion Draw






**igure V-52: Illustration of a Soil Tracking Prevention Device**

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L.B. CERTIFICATE OF AUTHORIZATION 8098

| | |
|---|---|
| JPH | DESIGNED BY |
| BJK | DRAWN BY |
| 2-288 engineering r33.dwg | FILENAME |
| SWPPP Details | LAYOUT |
| AS SHOWN | SCALE |
| 07AUG23 | DATE |

REVISION COMMENTS

DATE

BECKER ROAD AT RIVERLAND

STORMWATER POLLUTION PREVENTION DETAILS

PORT ST. LUCIE FLORIDA

J.R. HARRISON, P.E. (DATE)
#82270
10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
☎ 772-462-2455

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PSLUSD #5405A
PSL PROJECT #P23-073

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## GENERAL NOTES

1. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGE OR DEVIATIONS FROM THE DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER.

2. THE CONTRACTOR SHALL CONTACT ENGINEER OF RECORD, THE APPROPRIATE GOVERNMENTAL JURISDICTIONAL AGENCY AND ALL OTHER CONCERNED UTILITIES AT LEAST 2 FULL BUSINESS DAYS IN ADVANCE OF CONSTRUCTION OPERATIONS.

3. THE LOCATION AND SIZE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PHYSICALLY LOCATING ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITIES BY ELECTRONIC METHODS AND BY HAND EXCAVATION IN COORDINATION WITH ALL UTILITY COMPANIES, PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. ANY AND ALL CONFLICTS OF EXISTING UTILITIES WITH PROPOSED IMPROVEMENTS SHALL BE RESOLVED BY THE ENGINEER AND THE OWNER PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

4. PROJECT SUPERINTENDENT: THE CONTRACTOR SHALL PROVIDE A QUALIFIED SUPERINTENDENT TO REMAIN ON THE JOB SITE AT ALL TIMES WHEN WORK IS BEING PERFORMED. THE SUPERINTENDENT SHALL BE PRESENT AT THE PRE-CONSTRUCTION MEETING. THE CONTRACTOR SHALL NOTIFY THE OWNER BY LETTER, PRIOR TO THE PRE-CONSTRUCTION MEETING, APPOINTING THE SUPERINTENDENT FOR THIS PROJECT INCLUDING A FORMAL RESUME SHOWING QUALIFICATIONS.

5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE HIS COMPLETE FAMILIARITY WITH THE PROJECT SITE AND COMPONENTS TO INCLUDE SUBSURFACE CONDITIONS OF SOIL AND GROUNDWATER TABLE. BY SUBMITTAL OF A BID FOR THIS PROJECT, THE CONTRACTOR ACKNOWLEDGES HIS COMPLETE UNDERSTANDING AND RESPONSIBILITIES WITH RESPECT TO THE CONSTRUCTION ACTIVITIES REQUIRED UNDER THE SCOPE OF THIS PROJECT.

6. THE "TRENCH SAFETY ACT" SHALL BE INCORPORATED INTO THIS CONTRACT AS ENHANCED BY THE LEGISLATURE OF THE STATE OF FLORIDA TO BE IN EFFECT AS OF OCTOBER 1, 1990.

7. AS-BUILT PLANS: THE CONTRACTOR SHALL PROVIDE ONE (1) DIGITAL FORMAT (CAD & PDF) AND FOUR (4) BLACK LINE COPIES OF A CERTIFIED AS-BUILT SURVEY. DRAWINGS SHALL BE IN STATE PLANE COORDINATES AND MEET ALL AUTHORITIES HAVING JURISDICTION (AHJ) REQUIREMENTS. DRAWINGS SHALL BEAR THE ORIGINAL SIGNATURE AND EMBOSSED SEAL OF THE SURVEYOR AND SHALL BE SUBMITTED AFTER THE COMPLETION OF CONSTRUCTION, BUT PRIOR TO FINAL APPROVAL. THE AS-BUILT SURVEY SHALL BE PREPARED IN PLAN AND PROFILE FORMAT BY A LICENSED PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA AND SHALL COMPLY WITH APPLICABLE PROVISIONS OF THE FLORIDA ADMINISTRATIVE CODE AND CHAPTER 472 OF THE FLORIDA STATUES. THE DRAWINGS SHALL BE AT A SCALE COMPARABLE TO THE DESIGN DRAWINGS PREPARED BY THE ENGINEER AND SHALL REFERENCE THE BASE LINE OF SURVEY APPEARING ON THE ENGINEERING DRAWINGS. THE HORIZONTAL AND VERTICAL LOCATION OF ALL CONSTRUCTED ITEMS SHOWN ON THESE PLANS AND ALL APPURTENANCES SHALL BE ACCURATELY DEPICTED TO SCALE AND SHALL BE IDENTIFIED RELATIVE TO THE BASE LINE AND TO READILY IDENTIFIABLE PERMANENT OR SEMI-PERMANENT REFERENCE POINTS EXISTING AFTER THE COMPLETION OF CONSTRUCTION. LOCATIONS SHALL BE SHOWN FOR ALL FITTINGS, VALVES, HYDRANTS, MANHOLES, SAMPLE POINTS, AIR RELEASES, ETC., BOTH HORIZONTAL AND VERTICAL, AND THE LOCATION OF THE MAIN AT EACH BASELINE STATION AS SHOWN ON THE PLANS (100 FEET MAXIMUM) BOTH HORIZONTAL AND VERTICAL. UNDERGROUND FACILITIES (I.E., DRAINAGE, GAS, ELECTRIC, TELEPHONE, ETC.) CROSSING THE MAINS SHALL BE ACCURATELY SHOWN BOTH HORIZONTAL AND VERTICAL AND SHALL IDENTIFY SIZE, TYPE, FACILITY, MATERIAL AND CLEARANCE. ALL INFORMATION SHALL BE BASED UPON MEASUREMENTS AND OBSERVATIONS MADE IN THE FIELD BY THE SURVEYOR CERTIFYING THE SURVEY OR BY PERSONNEL UNDER HIS EMPLOYMENT, DIRECTION AND SUPERVISION. THE COST FOR PREPARING AND MAINTAINING THE AS-BUILT PLANS SHALL BE BORN BY THE CONTRACTOR..

8. THE CONTRACTOR SHALL PREPARE A PLAN SHOWING THE SCHEDULE OF WORK, INCLUDING A HIGHLIGHTED PLAN SHOWING THE ORDER OF CONSTRUCTION WHICH WILL FACILITATE MAINTAINING EXISTING SERVICES DURING CONSTRUCTION. THIS PLAN SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION MAINTENANCE OF TRAFFIC AND STAGING PLAN.

9. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION, DESIGN STANDARDS DATED 2020-21, AND STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION DATED 2020. UTILITY CONSTRUCTION TO CONFORM TO THE PSLUSD UTILITY STANDARDS MANUAL DATED 2019.

10. ALL UNDERGROUND MUNICIPAL UTILITIES, IRRIGATION, FIBER OPTIC, TELEPHONE, FPL, LOCAL CABLE AND ALL OTHER LOCAL UTILITY COMPANY LOCATIONS SHOWN ARE TAKEN FROM INFORMATION PROVIDED BY THAT UTILITY COMPANY. THESE LOCATIONS HAVE NOT BEEN VERIFIED IN THE FIELD. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL EXPOSE ALL CROSSINGS WITH PUBLIC & PRIVATE UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND DELIVERY OF PIPE. THE CONTRACTOR SHALL USE EXTREME CAUTION WITHIN THE VICINITY OF PUBLIC & PRIVATE UTILITY FACILITIES. THE CONTRACTOR WILL REQUEST THE PRESENCE OF THE RESPECTIVE UTILITY REPRESENTATIVES DURING CONSTRUCTION IN THE VICINITY OF THEIR FACILITIES EVEN IF A PROFILE OF THE UTILITY FACILITIES IS PROVIDED IN THESE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE PUBLIC & PRIVATE UTILITIES AND VERIFYING / OBTAINING THE LOCATION(S) OF THESE FACILITIES.

**ALL CITY OWNED UTILITIES**
CITY OF PORT ST. LUCIE
UTILITY SYSTEMS DEPARTMENT
(772) 871-7313

11. ANY NGVD 29 AND NAVD 88 MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHOULD NOTIFY:

GEODETIC INFORMATION CENTER
ATTN: MARK MAINTENANCE CENTER
ATTN: M/CG - 162
6001 EXECUTIVE BOULEVARD
ROCKVILLE, MD 20852
TELEPHONE: (301) 443-8319

FIBER OPTIC UTILITIES SHOULD BE
COORDINATED WITH THE IT DEPARTMENT.
CITY OF PORT ST LUCIE
INFORMATION TECHNOLOGY
TELEPHONE: (772) 344-4339

CITY OF PORT ST. LUCIE
PUBLIC WORKS DEPARTMENT
ATTN: RICK COMPITELLO, CITY SURVEYOR
121 S.W. PORT ST. LUCIE BLVD, BUILDING B
PORT ST. LUCIE, FL 34984

12. CONTRACTOR TO UTILIZE "APPROVED FOR CONSTRUCTION" PLANS ONLY. ANY PLANS NOT "APPROVED FOR CONSTRUCTION" SHALL BE CONSIDERED PRELIMINARY AND SHOULD NOT BE USED FOR BIDDING OR CONSTRUCTION.

13. SHOP DRAWINGS FOR ALL STRUCTURES SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING.

14. SHOP DRAWINGS ARE REQUIRED ON ALL STRUCTURES. THE ENGINEER REQUIRES FIVE (5) BUSINESS DAYS TO REVIEW SHOP DRAWINGS AFTER RECEIPT. ADDITIONAL TIME MAY BE REQUIRED IF LOCAL GOVERNMENT OR MUNICIPALITIES REQUIRE AN INTERNAL REVIEW AND APPROVAL PROCESS.

15. CONCRETE SHALL BE CLASS I - 3,000 PSI MINIMUM COMPRESSIVE STRENGTH UNLESS NOTED OTHERWISE. REINFORCING SHALL BE GRADE 60 DEFORMED STEEL BARS IN ACCORDANCE ASTM A-615.

16. CONTRACTOR SHALL PROTECT ALL EXISTING ABOVE OR UNDERGROUND STRUCTURES, LANDSCAPE FEATURES, TREES AND UTILITIES NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY ITEM DAMAGED BY CONSTRUCTION ACTIVITY TO MEET ALL APPLICABLE CURRENT CODES. ANY REPAIRED / REPLACED ITEMS ARE SUBJECT TO REVIEW AND APPROVAL BY APPLICABLE LOCAL JURISDICTIONAL AGENCY.

17. ALL PROPOSED UTILITY MATERIALS, CONSTRUCTION METHODS, TESTING AND DISINFECTION SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT LOCAL UTILITY COMPANY STANDARDS AND AWWA CURRENT STANDARD. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AND UTILIZE A CURRENT COPY OF THE PSLUSD SPECIFICATIONS AND ENSURE ALL CONSTRUCTION IS IN ACCORDANCE WITH THEIR STANDARDS. ANY CONFLICT WITH THE CONSTRUCTION DRAWINGS AND THE LOCAL UTILITY COMPANY SHALL BE RESOLVED UTILIZING THE MOST STRINGENT DIRECTIONS.

18. ALL HORIZONTAL AND VERTICAL SURVEY CONTROL POINTS SHALL BE PROTECTED AND UNDISTURBED. IN THE EVENT THAT A CONTROL POINT IS DISTURBED OR DESTROYED, THE POINT SHALL BE RE-ESTABLISHED BY A FLORIDA REGISTERED LAND SURVEYOR. THE METHOD TO RE-ESTABLISH THE POINT SHALL BE APPROVED BY THE CITY / COUNTY ENGINEER AT THE EXPENSE OF THE CONTRACTOR.

19. THE CONTRACTOR SHALL PREPARE A COMPLETE VIDEO RECORD OF THE PROJECT SITE BEFORE BEGINNING ANY WORK. THE VIDEO RECORD SHALL INCLUDE ALL ROADWAY, DRAINAGE AND UTILITIES POINTS OF CONNECTION AND SHALL EXTEND A MINIMUM OF 1800 FEET BEYOND THE WORK LIMITS TO DOCUMENT THE EXISTING CONDITIONS. THE CONTRACTOR SHALL ALSO VIDEO DOCUMENT ALL HAUL ROUTES NEEDED FOR THE OFF-SITE MOVEMENT OF EARTHWORK. COPIES OF THE VIDEO RECORD SHALL BE PROVIDED TO THE ENGINEER OF RECORD AND THE OWNER PRIOR TO SUBMITTAL OF THE FIRST PAY REQUEST. IF DAMAGE TO EXISTING INFRASTRUCTURE IS RECOGNIZED DURING THE COURSE OF THE PROJECT AND CANNOT BE IDENTIFIED AS A PRE-CONSTRUCTION CONDITION ON THE VIDEO RECORD, THE CONTRACTOR MAY BE REQUIRED TO MAKE PROPER REPAIRS.

20. THE CONTRACTOR SHALL VIDEO TAPE THE EXTERIOR AND REAR YARDS OF ALL HOUSES / BUSINESSES IN THE PROJECT AREA.

21. THE CONTRACTOR WILL BE REQUIRED TO SUPPLY A MATERIALS LIST, IF REQUIRED BY THE AUTHORITY HAVING JURISDICTION, OUTLINING THE APPURTENANCES BEING CONVEYED TO THE AUTHORITY HAVING JURISDICTION. THIS MATERIALS LIST MUST BE ITEMIZED TO REFLECT QUANTITIES AND ITEMIZED COSTS. THE CONTACTOR WILL BE REQUIRED TO SUPPLY AN EXECUTED CONTRACTORS AFFIDAVIT AND RELEASE OF LIEN PRIOR TO FINAL CERTIFICATION BY ENGINEER.

## PAVING, GRADING AND DRAINAGE NOTES

1. ALL UNSUITABLE MATERIALS, SUCH AS MUCK, ORGANIC MATERIAL AND OTHER DELETERIOUS MATERIAL AS CLASSIFIED BY AASHTO M-145, FOUND SHALL BE REMOVED DOWN TO ROCK OR SUITABLE MATERIAL, AND REPLACED WITH THE SPECIFIED FILL MATERIAL IN MAXIMUM 12 INCH LIFTS COMPACTED TO NOT LESS THAN 100% MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE IN ACCORDANCE WITH AASHTO T-99. THICKNESS OF LAYERS MAY BE INCREASED, PROVIDED THAT THE EQUIPMENT AND METHODS USED ARE PROVEN BY FIELD DENSITY TESTING AND CAPABLE OF COMPACTING THICK LAYERS TO SPECIFIED DENSITIES.

2. ALL AREAS SHALL BE CLEARED AND GRUBBED PRIOR TO CONSTRUCTION. THIS SHALL CONSIST OF THE COMPLETE REMOVAL AND DISPOSAL OF ALL TREES, BRUSH, STUMPS, GRASS, WEEDS, RUBBISH AND ALL OTHER OBSTRUCTIONS RESTING ON, OR PROTRUDING THROUGH THE SURFACE OF THE EXISTING GROUND TO A DEPTH OF ONE (1) FOOT. ITEMS DESIGNATED TO REMAIN, TO BE RELOCATED, OR TO BE ADJUSTED SHALL BE SO DESIGNATED ON THE DRAWINGS.

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

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CERTIFIED MATERIAL TEST RESULTS TO THE ENGINEER OF THE RECORD PRIOR TO THE RELEASE OF FINAL CERTIFICATION BY THE ENGINEER. TEST RESULTS MUST INCLUDE, BUT MAY NOT BE LIMITED TO, DENSITIES FOR SUBGRADE AND BASE DENSITIES AT UTILITY CROSSINGS, MANHOLES, INLETS, AND STRUCTURES. TEST SHALL INCLUDE ASPHALT GRADATION REPORTS, CONCRETE CYLINDERS, ETC. DENSITY TESTS SHALL BE PERFORMED AT THREE (3) LOCATIONS AROUND ANY STRUCTURE. BEGIN TESTING IN THE FIRST FOOT ABOVE THE BOTTOM OF THE STRUCTURE AND THEN EVERY TWO FEET TO WITHIN TWO FEET OF THE FINISH GRADE; THESE DENSITY REQUIREMENTS ARE THE MINIMUM. THE CONTRACTOR SHALL VERIFY DENSITY REQUIREMENTS AND PROTOCOLS WITH THE LOCAL APPROVING AUTHORITY PRIOR TO CONSTRUCTION OR BIDDING OF THE PROJECT.

5. ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION TO PREVENT SILTATION IN THE DRAINAGE SYSTEMS BY WAY OF TEMPORARY PLUGS AND PLYWOOD OR PLASTIC COVERS OVER THE INLETS. THE ENTIRE DRAINAGE SYSTEMS SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE. ALL CONCRETE SHALL BE A MINIMUM 3,000 PSI. SOME LOCAL GOVERNMENT STORMWATER PROJECTS MAY REQUIRE TELEVISING OF THE STORM SEWER. CONTRACTOR SHOULD BE KNOWLEDGEABLE OF THIS REQUIREMENT PRIOR TO BIDDING OF THE PROJECT.

6. ALL PROPOSED ELEVATIONS REFER TO FINISHED GRADES.

7. THE CONTRACTOR MUST OBTAIN A WATER USE PERMIT PRIOR TO CONSTRUCTION DEWATERING UNLESS THE WORK QUALIFIES FOR A GENERAL PERMIT PURSUANT TO SUBSECTION 40E-20 302(4), F. A C.

## STORM SEWER NOTES

1. STANDARD SEPARATION FOR ALL WATER AND/OR WASTEWATER MAINS, HORIZONTAL AND VERTICAL, SHALL BE PER FDEP REQUIREMENTS, PROVISIONS OF F.A.C. RULE 62.604 AND TEN STATES STANDARD OR LOCAL MUNICIPALITIES, WHICHEVER IS MORE STRINGENT.

2. ALL DISTURBED OUTFALL DRAINAGE AREAS SHALL BE SODDED UPON COMPLETION OF GRADING AFTER AS-BUILT GRADE ELEVATIONS ARE APPROVED BY THE ENGINEER.

3. PRIOR TO FINAL PAYMENT FOR RETENTION, DETENTION AND DRAINAGE DITCH QUANTITIES, ALL SLOPES AND SWALES SHALL BE SODDED TO AVOID EROSION.

4. THERE IS TO BE NO OFF-SITE HAULING WITHOUT PRIOR APPROVAL AND ALL EXCAVATED MATERIAL SHALL BE USED ON-SITE. COORDINATION WITH THE OWNER IS REQUIRED FOR THE REMOVAL OF ANY UNSUITABLE MATERIALS.

5. THE CONTRACTOR SHALL CONSTRUCT THE STORMWATER MANAGEMENT SYSTEM IN A MANNER SO AS TO MINIMIZE ANY ADVERSE IMPACTS OF THE WORKS ON FISH, WILDLIFE, NATURAL ENVIRONMENTAL VALUES AND WATER QUALITY ON OR OFF-SITE. THE CONTRACTOR SHALL INSTITUTE NECESSARY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING FULL COMPACTION OF ANY FILL MATERIAL PLACED AROUND NEWLY INSTALLED STRUCTURES TO REDUCE EROSION, TURBIDITY, NUTRIENT LOADING AND SEDIMENTATION IN THE RECEIVING WATERS.

6. WITHIN THIRTY (30) DAYS AFTER COMPLETION OF CONSTRUCTION OF THE SURFACE WATER MANAGEMENT SYSTEM, THE CONTRACTOR SHALL ASSIST THE DESIGN ENGINEER TO PROVIDE A WRITTEN STATEMENT OF COMPLETION AND CERTIFICATION BY A FLORIDA PROFESSIONAL ENGINEER. THESE STATEMENTS MUST SPECIFY THE ACTUAL DATE OF CONSTRUCTION COMPLETION AND MUST CERTIFY THAT ALL FACILITIES HAVE BEEN CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. THE CONSTRUCTION COMPLETION CERTIFICATION MUST INCLUDE, AT A MINIMUM EXISTING ELEVATIONS, LOCATIONS AND DIMENSIONS OF THE COMPONENTS OF THE SURFACE WATER MANAGEMENT FACILITIES. ADDITIONALLY, IF DEVIATIONS FROM THE APPROVED DRAWINGS ARE DISCOVERED DURING THE CERTIFICATION PROCESS, THE CERTIFICATION MUST BE ACCOMPANIED BY A COPY OF THE APPROVED PERMIT DRAWINGS WITH DEVIATIONS NOTED. SEE ALSO AS-BUILT REQUIREMENTS.

7. A STABLE PERMANENT AND ACCESSIBLE ELEVATION REFERENCE SHALL BE ESTABLISHED ON OR WITHIN ONE HUNDRED (100) FEET OF ALL PERMITTED DISCHARGE STRUCTURES NO LATER THAN THE SUBMISSION OF THE CERTIFICATION TO THE WATER MANAGEMENT DISTRICT. THE LOCATION OF THE ELEVATION REFERENCE MUST BE NOTED ON OR WITHIN THE CERTIFICATION REPORT.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION OR SHOALING OF THE WATER QUALITY MANAGEMENT SYSTEM.

9. INLETS (PER FDOT ROAD AND BRIDGE CONSTRUCTION SPECIFICATIONS 425 / 430): INCLUDES THE LIST OF MATERIALS / INSTALLATION / DEWATERING STABILIZATION / AS-BUILT SURVEYING / TESTING. ALL STRUCTURES WILL REQUIRE THREE (3) COMPACTION TESTS AT DIFFERENT LOCATIONS AND UNDER STRUCTURES OR PER LOCAL APPROVING AUTHORITY, WHICHEVER IS MORE STRINGENT.

10. PIPE CULVERTS AND STORM SEWERS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SECTION 430 FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

11. HDPE (HIGH DENSITY POLYETHYLENE) CULVERT SHALL BE N-12 INSTALLED PER MANUFACTURER RECOMMENDATIONS. MANUFACTURER IS ADS (ADVANCED DRAINAGE SYSTEMS, INC.) AIR ENTRENCHED PIPE.

12. REINFORCED CONCRETE PIPE SHALL BE ASTM C-76 CLASS III IN ACCORDANCE WITH SECTION 941 OF THE FDOT STANDARD SPECIFICATIONS.

## FILTER FABRIC (STORM PIPE JOINTS)

THE CONTRACTOR SHALL WRAP ALL STORM PIPE JOINTS. CONSTRUCTION SHALL BE PER F.D.O.T. INDEX NO. 430-001 WITH WOVEN GEOTEXTILE TYPE D-3 (F.D.O.T. SECTION 985), SECURED W / STRAPPING. ALL JOINTS SHALL BE WRAPPED FOR A MINIMUM OF 18 INCHES FROM THE BAND OR JOINT OR BELL AND SPIGOT AS APPLICABLE.

## DEWATERING

STORM SEWER PIPES AND STRUCTURES AND UTILITIES SHALL BE LAID "IN THE DRY", UNLESS OTHERWISE APPROVED IN WRITING BY THE UTILITY AND ENGINEER OF RECORD. THE CONTRACTOR, AT NO DIRECT COST TO THE OWNER, SHALL PERFORM ALL DEWATERING ACTIVITY. TRENCH EXCAVATIONS SHALL BE DEWATERED BY USING ONE OR MORE OF THE FOLLOWING METHODS: SOCK DRAINS, WELL POINT SYSTEM, SUMP PUMPS OR OTHER METHOD(S) AS APPROVED BY THE ENGINEER. DEWATERING SYSTEMS SHALL BE UTILIZED IN ACCORDANCE WITH GOOD STANDARD PRACTICE AND MUST BE EFFICIENT ENOUGH TO LOWER THE WATER LEVEL IN ADVANCE OF THE EXCAVATION AND MAINTAIN IT CONTINUOUSLY TO KEEP THE TRENCH BOTTOM AND SIDES FIRM AND DRY. IF THE MATERIAL ENCOUNTERED AT TRENCH GRADE IS SUITABLE FOR THE PASSAGE OF WATER WITHOUT DESTROYING THE SIDES OR UTILITY FOUNDATION OF THE TRENCH, SUMPS MAY BE PROVIDED AT INTERVALS AT THE SIDE OF THE MAIN TRENCH EXCAVATION, WITH PUMPS USED TO LOWER THE WATER LEVEL BY TAKING THEIR SUCTION FROM SAID SUMPS. DISCHARGE FROM DEWATERING SHALL BE DISPOSED OF IN SUCH A MANNER THAT IT WILL NOT INTERFERE WITH NORMAL DRAINAGE OF THE AREA IN WHICH THE WORK IS BEING PERFORMED, CREATE A PUBLIC NUISANCE OR FORM PONDING. ALL DISCHARGE SHALL BE IN ACCORDANCE WITH ANY SFWMD ISSUED PERMITS. THE OPERATIONS SHALL NOT CAUSE INJURY TO ANY PORTION OF THE WORK COMPLETED OR IN PROGRESS OR TO THE SURFACE OF STREETS OR TO PRIVATE PROPERTY. THE ENGINEER OF RECORD AND NECESSARY REGULATORY AGENCIES, PRIOR TO CONSTRUCTION, SHALL APPROVE THE PROPOSED DEWATERING METHOD(S) AND SCHEDULE. ADDITIONALLY, WHERE PRIVATE PROPERTY WILL BE INVOLVED, THE CONTRACTOR SHALL OBTAIN ADVANCE PERMISSION FROM THE PROPERTY OWNER.

## CONFLICTS

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BECOME ACQUAINTED WITH EXISTING CONDITIONS AND TO LOCATE STRUCTURES AND STORM PIPES ALONG THE PROPOSED STORM PIPE ALIGNMENT IN ORDER TO AVOID CONFLICTS. WHERE ACTUAL CONFLICTS ARE UNAVOIDABLE, WORK SHALL BE COORDINATED WITH THE FACILITY OWNER AND PERFORMED SO AS TO CAUSE AS LITTLE INTERFERENCE AS POSSIBLE WITH THE SERVICE RENDERED BY THE FACILITY DISTURBED. ALL AFFECTED UTILITIES SHALL BE NOTIFIED PRIOR TO EXCAVATION IN THEIR VICINITY. CONTRACTOR TO POTHOLE ALL CONFLICTS OF EXISTING UTILITIES AND PROPOSED IMPROVEMENTS AT LEAST 10 DAYS PRIOR TO CONSTRUCTION TO CONFIRM CONFLICT RESOLUTION SHOWN ON THE PLANS.

## SOD

1. THE SOD SHALL BE CERTIFIED TO MEET FLORIDA STATE PLANT BOARD SPECIFICATIONS, ABSOLUTELY TRUE TO VARIETAL TYPE AND FREE FROM WEEDS, FUNGUS, INSECTS AND DISEASE OF ANY KIND. ALL SODDED AREAS SHALL BE GRASSED AS SPECIFIED ON PLANS AND SURVIVAL GUARANTEED FOR NINETY DAYS FROM DATE OF REPLACEMENT. SURVIVAL OF ALL RELOCATED TREES SHALL BE GUARANTEED FOR 1 YEAR AFTER TRANSPLANTING.

2. SODDING SHALL CONSIST OF SITE PREPARATION, FURNISHING AND PLACING SOD, STAPLES AND FERTILIZER AND IRRIGATING AT THE RATES AND MANNER DESCRIBED IN THIS SPECIFICATION FOR THE DESIGNATED AREAS.

3. UNLESS NOTED OTHERWISE ON LANDSCAPE PLANS, SOD SHALL BE ARGENTINE BAHIA GRASS AND SHALL BE 12-INCH BY 12-INCH SQUARES OR OTHER COMMERCIALLY AVAILABLE RECTANGLES. THE SOD SHALL BE SUFFICIENTLY THICK (MINIMUM THICKNESS OF 2 INCHES) TO PROVIDE A DENSE STAND OF LIVE GRASS. THE SOD SHALL HAVE BEEN GROWN ON MINERAL SOIL. SOD SHALL BE LIVE, FRESH, AND UNINJURED AT THE TIME OF PLANTING AND SHALL BE PROTECTED FROM DRYING OUT BY SHADING AND WATERING FROM THE TIME IT IS DUG UNTIL PLANTING.

4. FERTILIZER SHALL BE EITHER IN THE LIQUID OR DRY FORM. FERTILIZER SHALL BE UNIFORM IN COMPOSITION, FREE-FLOWING AND SUITABLE FOR APPLICATION WITH STANDARD EQUIPMENT. THE FERTILIZER SHALL CONFORM TO THE FLORIDA FERTILIZER LAWS IN EFFECT ON THE DATE OF IT BEING PLACED AND SHALL BE DELIVERED IN BAGS, BOTTLES, DRUMS, OR OTHER CONVENIENT CONTAINERS, EACH FULLY LABELED AND BEARING THE NAME, TRADEMARK, ANALYSIS, AND WARRANTY OF THE PRODUCT. FERTILIZER SHALL HAVE AN AVAILABLE PLANT FOOD ANALYSIS OF 18-0-10 OR EQUIVALENT PLANT FOOD VALUE AND SHALL BE MIXED WITH THE TOP 3 TO 4 INCHES OF SOIL. FERTILIZER SHALL BE APPLIED AT THE RATE OF 1 POUND PER 1,000 SQ. FT. NOT TO EXCEED 2-4 LBS. PER YEAR. ALL FERTILIZERS MUST BE AT LEAST 50% SLOW RELEASE NITROGEN AND CONTAIN NO PHOSPHORUS UNLESS THE SITE HAS BEEN TESTED AND VERIFIED AS PHOSPHORUS DEFICIENT BY THE UF-IFAS EXTENSION OFFICE. ALL FERTILIZER APPLICATION SHALL BE IN ACCORDANCE WITH PORT ST. LUCIE CITY ORDINANCE 14-10.

6. STAPLES FOR SOD PLACED ON SIDE SLOPES 3:1 & STEEPER SHALL BE BLACK IRON WIRE NOT SMALLER THAN 14 GAUGE, AND BENT FROM A LENGTH OF WIRE AT LEAST 25 INCHES LONG INTO A 'U' WITH A 1 INCH WIDTH AT THE CROWN. COST OF STAPLES SHALL BE INCIDENTAL TO THE SOD UNIT PRICE.

7. WATER USED FOR IRRIGATION MAY BE OBTAINED FROM ANY APPROVED SOURCE. IT SHALL BE FREE OF EXCESS AND HARMFUL CHEMICALS, ACIDS, ALKALIES, OR ANY SUBSTANCE, WHICH IS HARMFUL TO PLANT GROWTH.

8. WHERE SODDING WILL BE DONE, ALL LOOSE ROCK, WOODY MATERIAL, AND OTHER OBSTRUCTIONS THAT WILL INTERFERE WITH SODDING SHALL BE REMOVED AND THE AREA SHALL BE REASONABLY SMOOTH AND UNIFORM. LIME AND FERTILIZER WILL BE APPLIED IN THE SAME QUANTITY AND MANNER AS SPECIFIED BY THE MANUFACTURER.

9. THE SOD STRIPS SHALL BE LAID IN A STAGGERED PATTERN WITH SNUG EVEN JOINTS. ALL JOINTS SHALL BE BUTTED TIGHT TO PREVENT VOIDS. IMMEDIATELY FOLLOWING SOD PLACEMENT, IT SHALL BE ROLLED OR TAMPED TO INSURE SOLID CONTACT OF ROOT MAT TO SOIL SURFACE. THE SOD SHALL BE SECURELY ANCHORED TO THE SOIL BY PINNING WITH STAPLES OR WOODEN PEGS WHEN PLACED ON SLOPES 3:1 OR STEEPER. COST OF STAPLES AND PEGS SHALL BE INCIDENTAL TO THE SOD UNIT PRICE. PIN OR PEG EACH SEPARATE PIECE OF SOD PLACED OR EVERY 3 FEET ALONG EACH CONTINUOUS STRIP OF SOD.

## SOIL EROSION PLAN

1. NO POLLUTION OR EROSION CAUSED BY THIS PROJECT WILL BE ALLOWED IN THE STORMWATER DRAINAGE SYSTEM. THE CONTRACTOR SHALL INSTALL ANY DEVICES NECESSARY TO PREVENT POLLUTION OR EROSION. THE COST OF POLLUTION AND EROSION CONTROL SHALL BE INCIDENTAL TO THE COST OF THE CONSTRUCTION.

2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC SOIL EROSION CONTROL PLAN. IN GENERAL, THE SOIL EROSION CONTROL PLAN SHALL REQUIRE THAT ALL ON-SITE SOILS WILL REMAIN ON-SITE AND WILL NOT ERODE INTO THE ADJACENT ROADSIDE SWALES, ADJACENT PROPERTIES OR RETENTION DITCHES. ALL EXISTING SWALES SHALL REMAIN SODDED DURING CONSTRUCTION. THE CONTRACTOR SHALL SCARIFY ONLY AS NECESSARY TO CONSTRUCT THE PROJECT. THE CONTRACTOR SHALL SCARIFY AREAS TO PLACE VARIOUS PIPE WORK. AFTER PLACEMENT OF THE PIPE, THESE TRENCHES SHALL BE BACKFILLED AND COMPACTED TO 98% MODIFIED PROCTOR AASHTO T-180. PRIOR TO DISCHARGE FROM THE SITE, SILTATION BARRIERS SHALL BE UTILIZED AS PER THE MOST RECENT FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL. THE DRAINAGE WHICH OUTFALLS TO THE RETENTION AREAS SHALL BE STABILIZED AND SODDED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION. ANY DEWATERING OR PUMPING OF WATER INTO THE ROADSIDE SWALES OR RETENTION SWALES SHALL BE STAKED WITH SILTATION FENCES AS PER THE MOST RECENT FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL TO AVOID FILLING THESE AREAS. UPON COMPLETION OF THE SITE WORK, ALL AREAS SHALL BE SODDED TO AVOID EROSION. CONTRACTOR IS REQUIRED TO COMPLY WITH ALL STATE WATER QUALITY CRITERIA. SPECIFICALLY, NO OFF-SITE DISCHARGES WILL BE ALLOWED WHICH EXCEED THE STATE TURBIDITY CRITERIA.

## WATER QUALITY NOTES

1. THE CONTRACTOR MUST MAINTAIN A COPY OF THE LATEST LOCAL WATER MANAGEMENT DISTRICT SURFACE WATER PERMIT, COMPLETE WITH ALL CONDITIONS, ATTACHMENTS, EXHIBITS AND PERMIT MODIFICATIONS IN GOOD CONDITION AT THE CONSTRUCTION SITE. THE COMPLETE PERMIT MUST BE AVAILABLE FOR REVIEW UPON REQUEST BY DISTRICT REPRESENTATIVES. THE CONTRACTOR SHALL REVIEW THE COMPLETE PERMIT PRIOR TO COMMENCEMENT OF THE ACTIVITY AUTHORIZED BY THE PERMIT.

2. ALL ACTIVITIES SHALL BE IMPLEMENTED AS SET FORTH IN THE PLANS, SPECIFICATIONS AND PERFORMANCE CRITERIA AS APPROVED BY LOCAL SURFACE WATER PERMIT. ANY DEVIATION FROM THE PERMITTED ACTIVITY AND THE CONDITIONS FOR UNDERTAKING THAT ACTIVITY SHALL BE CONSIDERED A VIOLATION OF THE PERMIT. PRIOR TO ANY WORK COVERED BY A PERMIT FROM SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD), A NOTICE OF CONSTRUCTION COMMENCEMENT (FORM 0960) MUST BE SUBMITTED TO SFWMD BY THE PERMITTEE OR AUTHORIZED AGENT.

3. THE LOCAL WATER MANAGEMENT DISTRICT AUTHORIZED STAFF, UPON PROPER IDENTIFICATION, MUST BE GRANTED PERMISSION TO ENTER, INSPECT AND OBSERVE THE SYSTEM TO INSURE CONFORMITY WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE PERMIT.

4. PRIOR TO AND DURING CONSTRUCTION, THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES (BEST MANAGEMENT PRACTICES) REQUIRED TO RETAIN SEDIMENT ON-SITE AND TO PREVENT VIOLATIONS OF STATE WATER QUALITY STANDARDS. ALL PRACTICES MUST BE IN ACCORDANCE WITH THE GUIDELINES AND SPECIFICATIONS IN CHAPTER 6 OF THE FLORIDA LAND DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATIONS 1988), WHICH ARE HEREBY INCORPORATED BY REFERENCE, UNLESS A PROJECT'S SPECIFIC EROSION AND SEDIMENT CONTROL PLAN IS APPROVED AS PART OF THE SFWMD PERMIT, IN WHICH CASE THE PRACTICES MUST BE IN ACCORDANCE WITH THE PLAN. IF SITE'S SPECIFIC CONDITIONS REQUIRE ADDITIONAL MEASURES DURING ANY PHASE OF CONSTRUCTION OR OPERATION TO PREVENT EROSION OR CONTROL SEDIMENT, BEYOND THOSE SPECIFIED IN THE EROSION AND SEDIMENT CONTROL PLAN, THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL BEST MANAGEMENT PRACTICES AS NECESSARY, IN ACCORDANCE WITH THE SPECIFICATIONS IN CHAPTER 6 OF THE FLORIDA LAND DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION 1988). THE CONTRACTOR SHALL CORRECT ANY EROSION OR SHOALING THAT CAUSES ADVERSE IMPACTS TO THE WATER RESOURCES AT NO ADDITIONAL COST TO OWNER.

5. WITHIN 30 DAYS AFTER COMPLETION OF THE STORMWATER SYSTEM, THE CONTRACTOR MUST ASSIST IN SUBMITTING TO THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT THE FOLLOWING: DISTRICT FORM EN-45 (AS-BUILT CERTIFICATION BY A REGISTERED PROFESSIONAL), SIGNED AND SEALED BY AN APPROPRIATE PROFESSIONAL REGISTERED IN THE STATE OF FLORIDA AND TWO SETS OF AS-BUILT DRAWINGS WHEN, A) REQUIRED BY A SPECIAL CONDITION OF THIS PERMIT; B) THE PROFESSIONAL USES AS-BUILT DRAWINGS TO SUPPORT THE AS-BUILT CERTIFICATION; OR C) WHEN THE COMPLETED SYSTEM SUBSTANTIALLY DIFFERS FROM PERMITTED PLANS. THIS SUBMITTAL WILL SERVE TO NOTIFY THE DISTRICT STAFF THAT THE SYSTEM IS READY FOR INSPECTION AND APPROVAL.

6. STABILIZATION MEASURES SHALL BE INITIATED FOR EROSION AND SEDIMENT CONTROL ON DISTURBED AREAS AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN SEVEN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

7. THE STORMWATER MANAGEMENT SYSTEM MUST BE COMPLETE IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO THE INITIATION OF THE PERMITTED USE OF SITE INFRASTRUCTURE. THE SYSTEM MUST BE COMPLETED IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO TRANSFERRING RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF THE STORMWATER MANAGEMENT SYSTEM TO A RESPONSIBLE ENTITY.

8. IF DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION OR THEREAFTER AND THE SURFACE WATER PUMP(S), WELL(S) OR FACILITIES ARE CAPABLE OF WITHDRAWING ONE MILLION GALLONS OF WATER PER DAY OR MORE OR AN AVERAGE OF 1800,000 GALLONS PER DAY OR MORE OVER A YEAR AND ANY DISCHARGE IS TO BE OFF-SITE, THE CONTRACTOR MUST APPLY FOR AND OBTAIN A CONSUMPTIVE USE PERMIT (40C-2) FROM THE SFWMD. CONTRACTOR SHALL NOTIFY ENGINEER IF ADDITIONAL INFORMATION OR APPLICATION MATERIALS ARE NEEDED.

9. WATER QUALITY MONITORING SHALL BE PERFORMED DAILY. SAMPLING SHALL BE PERFORMED IN THE MIDDLE OF ADJACENT CHANNELS MEASURING FOR TURBIDITY, 100 FEET UPSTREAM AND 100 FEET DOWNSTREAM OF DISCHARGES. WHEN TURBIDITY EXCEEDS 29 NTU'S ABOVE BACKGROUND LEVELS AT A SAMPLE POINT 100 FEET UPSTREAM OF DISCHARGES AND / OR 0 NTU'S ABOVE BACKGROUND LEVELS AT A SAMPLE POINT 100 FEET DOWNSTREAM OF DISCHARGES, WORK MUST CEASE AND REMEDIAL MEASURES MUST BE PERFORMED TO RETURN CONDITIONS TO ACCEPTABLE TURBIDITY LEVELS. CONTRACTOR MUST RECEIVE ENGINEER'S APPROVAL PRIOR TO RESTARTING WORK. SAMPLE POINT LOCATIONS ARE IDENTIFIED IN THE SFWMD PERMITS.

10. THE CONTRACTOR SHALL PLACE TURBIDITY BARRIERS AT ALL OUTFALLS PRIOR TO CONSTRUCTION. ALL CUT / FILL WILL BE RELOCATED WITHIN THE EXISTING SITE AND THEREFORE HAULING OF MATERIAL WILL NOT BE REQUIRED, UNLESS APPROVED BY THE OWNER. CONTRACTOR SHALL INSTALL TURBIDITY CONTROL MEASURES PRIOR TO COMMENCEMENT OF CONSTRUCTION, MAINTAIN SAID CONTROLS IN WORKING ORDER THROUGHOUT THE CONSTRUCTION PERIOD, ASSURE THAT TURBID DISCHARGES FROM THE PROJECT TO PROTECTED WATERS AND WETLANDS DO NOT EXCEED LIMITS STATED IN NOTE 9 AND REMOVE SAID CONTROLS AFTER COMPLETION OF CONSTRUCTION.

## EARTHWORK AND RELATED OPERATIONS
## PLEASE REFER TO AACE GEOTECH REPORT BY OTHERS.

1. THE CONTRACTOR SHALL PROVIDE A QUALITY CONTROL PLAN FOR MONITORING OF ALL EARTHWORK AND RELATED OPERATIONS. THE QUALITY CONTROL PLAN SHALL INCLUDE AS A MINIMUM, ALL TESTS THAT WILL BE PERFORMED INCLUDING THE PROPOSED TEST FREQUENCIES, ALL MATERIAL SOURCES, THE NAME AND BACKGROUND OF THE PERSON THAT THE CONTRACTOR WILL DESIGNATE AS THE CONTRACTOR'S QUALITY CONTROL MANAGER. THE NAME AND QUALIFICATIONS OF THE TESTING LABORATORY THAT WILL BE PERFORMING QUALITY CONTROL TESTING AND THE NAMES AND QUALIFICATIONS OF THE TESTING LABORATORY PERSONNEL THAT WILL BE PERFORMING THE QUALITY CONTROL TESTING.

2. THE TESTING LABORATORY THAT IS RETAINED TO PERFORM THE CONTRACTOR'S QUALITY CONTROL TESTING MUST BE CERTIFIED BY A RECOGNIZED QUALIFYING AGENCY SUCH AS FDOT, CMEC OR AASHTO FOR THE TYPE OF WORK TO BE PERFORMED.

3. THE QUALITY CONTROL PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE START OF ANY EARTHWORK OR RELATED OPERATION.

4. UTILIZATION OF MATERIALS WITHIN ANY ROADWAY CROSS-SECTION SHALL BE IN ACCORDANCE WITH FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS (LATEST EDITION) UNLESS OTHERWISE SHOWN ON THE PLANS.

5. IF THE EXISTING FILL IS CLASSIFIED AS A-2-4 BASED ON AASHTO M-145 CRITERIA, THE MAXIMUM PERMISSIBLE MOISTURE CONTENT SHALL BE 2 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT.

## COMPACTION
## PLEASE REFER TO AACE GEOTECH REPORT BY OTHERS.

1. WHERE THERE ARE EXISTING STRUCTURES ADJACENT TO THE SITE THAT MAY BE AFFECTED BY THE SELF-PROPELLED STEEL DRUM VIBRATORY EQUIPMENT, DENSIFICATION MUST BE PERFORMED USING EQUIPMENT THAT WILL SATISFY THE REQUIRED DENSIFICATION WITHOUT THE RISK OF DAMAGE TO THE EXISTING STRUCTURE(S).

2. LOADERS AND HEAVY PLATE COMPACTORS ARE TWO TYPES OF EQUIPMENT THAT HAVE BEEN USED SUCCESSFULLY.

3. DENSIFICATION PROCEDURES MUST COMPLY WITH THE CAPABILITY OF THE EQUIPMENT EMPLOYED.

4. WHEN SELF-PROPELLED STEEL DRUM VIBRATORY EQUIPMENT CANNOT BE USED AS SPECIFIED, VIBRATORY PLATE COMPACTORS MAY BE USED. WHEN THIS CONDITION OCCURS, THE OVERALL DENSIFICATION PROCEDURE MUST BE REVISED TO COMPLY WITH THE CAPABILITY OF THE EQUIPMENT EMPLOYED. IN GENERAL, SMALL PLATE COMPACTORS WILL BE EFFECTIVE TO A MAXIMUM DEPTH OF 6 TO 8 INCHES.

## SOIL RECOMMENDATION AND REQUIREMENTS
## PLEASE REFER TO AACE GEOTECH REPORT BY OTHERS.

1. STRIPPING AND GRUBBING:
DURING THE GRUBBING OPERATION, ROOTS WITH A DIAMETER GREATER THAN ½ INCH, OR SMALL ROOTS IN A DENSE STATE, SHOULD BE GRUBBED AND COMPLETELY REMOVED WITHIN AND TO A DISTANCE OF 5 FEET BEYOND ROADWAY LIMITS. PROOF-ROLLING THE CLEARED SURFACE IS RECOMMENDED TO LOCATE ANY UNFORESEEN SOFT AREAS OR UNSUITABLE SURFACE OR LOOSE TO LOOSE FINE SAND SOILS WITHIN THE TOP 3 TO 4 FEET, AND TO PREPARE THE EXISTING SURFACE FOR THE ADDITION OF THE FILL SOILS (AS REQUIRED). ONE COVERAGE CONSISTS OF PARALLEL PASSES OF THE VIBRATORY ROLLER TRAVELING AT "WALKING SPEED". EACH PASS SHOULD OVERLAP THE PRECEDING PASS BY 30% TO INSURE COMPLETE COVERAGE. SUBSEQUENT COVERAGES SHOULD BE CONDUCTED IN A DIRECTION PERPENDICULAR TO THE PRECEDING COVERAGE. IN AREAS THAT CONTINUE TO "YIELD" REMOVE ALL DELETERIOUS MATERIAL AND REPLACE WITH A CLEAN, COMPACTED SAND BACKFILL. THE PROOF ROLLING SHOULD PRODUCE A DENSITY EQUIVALENT TO 98% OF THE MODIFIED PROCTOR (AASHTO T-180) MAXIMUM DRY DENSITY VALUE FOR A DEPTH OF 3 FEET IN THE ROADWAY AREA. ADDITIONAL PASSES MAY BE REQUIRED IF THESE MINIMUM DENSITY REQUIREMENTS ARE NOT ACHIEVED.

2. FILL REPLACEMENTS:
- WHERE FILL IS TO BE PLACED ON NATURAL GROUND, THE SURFACE MUST FIRST BE PREPARED AS OUTLINED ABOVE. THE FILL AT GRADE SHOULD EXTEND A MINIMUM OF FIVE FEET (5') BEYOND THE STRUCTURE OUTLINE.
- FILL SHOULD BE A UNIFORM FREE DRAINING GRANULAR SOIL (CLEAN SAND), INORGANIC (CLASSIFIED AS SP/GW) CONTAINING NOT MORE THAN 5% (BY WEIGHT) FIBROUS ORGANIC MATERIALS AND BE PLACED IN LAYERS NOT TO EXCEED 12 INCHES LOOSE MEASURE AND COMPACTED AS OUTLINED ABOVE. SUFFICIENT COMPACTIVE EFFORT SHOULD BE APPLIED TO OBTAIN A MINIMUM OF 98% OF THE MODIFIED PROCTOR (AASHTO T-180) MAXIMUM VALUE.
- FILL MATERIAL HAVING SILT/CLAY-SIZE FINES IN EXCESS OF 10% SHOULD NOT BE USED, INCLUDING CYCLONE SAND MATERIAL.
- REFER TO LANDSCAPING PLANS FOR GUIDANCE ON ANY FILL MATERIAL TO BE LOCATED IN ANY PLANTING AREAS.

3. EXCAVATION AND BACKFILLING:
- WHERE EXCAVATION AND BACKFILLING ARE REQUIRED, THE SOILS SHOULD BE REMOVED TO THE SPECIFIED DEPTH. SUFFICIENT COMPACTIVE EFFORT MUST THEN BE APPLIED TO THE EXCAVATED SURFACE TO OBTAIN A MINIMUM OF 98% OF THE MODIFIED PROCTOR (AASHTO T-180) MAXIMUM VALUE. BACKFILL SHALL BE UNIFORM FREE DRAINING GRANULAR SOIL (CLEAN SAND) AND BE PLACED IN LAYERS NOT TO EXCEED 12 INCHES LOOSE MEASURE. SUFFICIENT COMPACTIVE EFFORT SHOULD BE APPLIED TO EACH LAYER TO OBTAIN A MINIMUM OF 98% OF THE MODIFIED PROCTOR (AASHTO T-180) MAXIMUM VALUE. THE EXCAVATED SURFACE AND EACH LAYER OF BACKFILL SHOULD BE COMPACTED WITH A SELF-PROPELLED STEEL DRUM VIBRATORY ROLLER HAVING A MINIMUM TOTAL APPLIED FORCE OF 180 TONS.

4. FOOTING EXCAVATION:
SEE SOILS LABORATORY RECOMMENDATIONS.

5. GROUNDWATER:
- HEAVY RAINFALL AND / OR A HIGH WATER TABLE MAY OCCUR BEFORE THE EARTHWORK COMMENCES, OR DURING THE EARTHWORK OPERATION. WHEN THESE CONDITIONS OCCUR AND THE SITE PREPARATION CANNOT BE ACHIEVED AS SPECIFIED, AN EXCAVATION OF THE EXISTING CONDITIONS SHOULD BE CONDUCTED AND THE SPECIFICATIONS REVISED ACCORDINGLY.

6. PAVING AREAS SUITABLE FILL MATERIAL AND THE COMPACTION OF FILL SOILS:
- ALL FILL MATERIAL SHOULD BE FREE OF ORGANIC MATERIALS, SUCH AS ROOTS AND VEGETATION AS A GENERAL GUIDE TO AID THE CONTRACTOR, USE FILLINGS WITH 3 TO 12 PERCENT BY DRY WEIGHT OF MATERIAL PASSING THE U.S. STANDARDS NO. 200 SIEVE SIZE. WITH PROPER MOISTURE CONTROL, THESE SOILS SHOULD DENSIFY USING VIBRATORY COMPACTION METHODS. SOILS WITH MORE THAN 12% PASSING THE NO. 200 SIEVE WILL BE MORE DIFFICULT TO COMPACT.

7. ALL IMPORTED FILL SHALL HAVE RADIUM 226 CONTENT LESS THAN 1.0 PCI PER GRAM.

## EXCAVATION FOR STRUCTURES AND PIPES
## PLEASE REFER TO AACE GEOTECH REPORT BY OTHERS.

1. EARTHWORK AND RELATED OPERATIONS PERFORMED ON STRUCTURES AND PIPES SHALL BE CONDUCTED IN ACCORDANCE WITH SECTIONS 125 AND OTHER APPLICABLE SECTIONS OF THE F.D.O.T. STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION (LATEST EDITION) UNLESS OTHERWISE SHOWN ON THE PLANS.

2. REMOVAL OF UNSUITABLE, ORGANIC OR PLASTIC MATERIAL SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE AND SHALL BE INCIDENTAL TO OTHER WORK.

3. UTILIZATION OF MATERIALS WITHIN THE WORK LIMITS SHALL BE AS DIRECTED BY THE GEOTECHNICAL ENGINEER UNLESS OTHERWISE SHOWN ON THE PLANS.

## PIPE AND STRUCTURE BACKFILL
## PLEASE REFER TO AACE GEOTECH REPORT BY OTHERS.

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE IF EXCAVATED SOILS MEET THE REQUIREMENTS OF THE PROJECT PLANS AND SPECIFICATIONS RELATIVE TO MATERIAL CLASSIFICATION. PIPE AND STRUCTURE BACKFILL MATERIAL SHALL BE LIMITED TO MATERIAL CLASSIFIED AS A-1, A-3 AND A-2-4 IN ACCORDANCE WITH AASHTO M-145 AND SHALL BE COMPACTED IN ACCORDANCE WITH F.D.O.T. SECTION 125 REQUIREMENTS.

2. IF THE BACKFILL MATERIAL IS CLASSIFIED AS A-2-4 BASED ON AASHTO M-145 CRITERIA, THE MAXIMUM PERMISSIBLE MOISTURE CONTENT SHALL BE 2 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT.

## CLEAN-UP

1. THE CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A NEAT CONDITION AT ALL TIMES AND SHALL RESTORE / REPAIR ALL DRIVEWAYS, SIDEWALKS, UTILITIES, LANDSCAPING, IRRIGATION SYSTEMS, ETC., AFFECTED BY CONSTRUCTION ACTIVITIES.

2. THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIALS, DEBRIS, EQUIPMENT, ETC., FROM THE JOBSITE IMMEDIATELY AFTER COMPLETION OF CONSTRUCTION OPERATIONS.

3. FOR FURTHER SITE MAINTENANCE REQUIREMENTS THE CONTRACTOR IS REFERRED TO THE "AGREEMENT BETWEEN OWNER AND CONTRACTOR".

4. UNLESS OTHERWISE SPECIFIED OR NOTED; ALL DISTURBED AREAS TO BE RESTORED BY CONTRACTOR TO PRE-CONSTRUCTION CONDITION OR BETTER PRIOR TO ACCEPTANCE BY THE OWNER OR LOCAL APPROVING AUTHORITY.

## PAVEMENT MARKING AND SIGNAGE

1. PAVEMENT MARKINGS: THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS AND LABOR REQUIRED TO COMPLETE THE PROJECT WORK IN THIS SECTION. MATERIALS AND CONSTRUCTION METHODS FOR APPLYING PAINTED TRAFFIC STRIPES AND MARKINGS, COMPLETE WITH REFLECTIVE GLASS SPHERES, SHALL CONFORM TO THE REQUIREMENTS OF SECTION 710 AND 711, FDOT SPECIFICATIONS. TRAFFIC PAINT SHALL BE APPLIED IN ALL LOCATIONS SHOWN ON THE PLANS. IN THE EVENT THAT BRICK PAVERS ARE UTILIZED IN AN AREA PLANNED FOR STRIPING, COLORED BRICKS SHALL BE USED IN LIEU OF PAINT.

2. SIGNAGE: THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR NEEDED, INCLUDING ALL SUPPORTING ELEMENTS, TO INSTALL SIGNS AT THE LOCATIONS SHOWN ON THE PLANS. MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO SECTION 700, FDOT SPECIFICATIONS. STOP SIGNS ARE TO BE HIGH INTENSITY REFERENCE PER FDOT STANDARDS, LOCAL COUNTY/CITY STANDARD AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. IF THE PROJECT IS WITHIN A COMMUNITY DEVELOPMENT DISTRICT (OR THE LIKE) WITH SEPARATE SIGNAGE REQUIREMENTS, SUCH AS ARCHITECTURAL POSTS OR SIGN BODIES, ETC.. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO BE FAMILIAR WITH THESE REQUIREMENTS AND PROVIDE SIGNS MEETING THESE REQUIREMENTS. AT NO TIME SHALL ANY SIGNS NOT MEET THE SAFETY REQUIREMENTS SET FORTH BY FDOT.

3. TURN LANES SHALL BE STRIPED PER FDOT INDEX 711-001 IN THEIR ENTIRETY TO INCLUDE EDGE STRIPING, CROSS WALKS, AND TURN ARROW PLACEMENT. ALL FINAL ROADWAY STRIPING SHALL BE THERMOPLASTIC INSTALLED PER FDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION SECTION 711.

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SPECIFICATIONS
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